HARRIMAN

YORK COMMUNITY AUDITORIUM
AT YORK HIGH SCHOOL

York, Maine

TOWN OF YORK
PLANNING BOARD - PRELIMINARY PLAN REVIEW

December 22, 2015

STATE OF MAINE
FRANK L. CRABTREE
No. 3993
LICENSED
PROFESSIONAL ENGINEER

Owner:
York School Department

Architect/Engineer:
Harriman

PLANNING BOARD APPLICATION FORM

INSTRUCTIONS
This application form must be filled out completely and accurately for any application to the Planning Board. Attach additional information, plans, studies, etc. as required.

PROJECT INFORMATION

Project Name: **YORK COMMUNITY AUDITORIUM**

Project Description: **Remove the existing York High School Auditorium and construct a larger Community Auditorium in the same location, between the High School Music Wing and the Gym.**

Street Address: **1 Robert Stevens Drive**

Tax Map(s) & Lot(s): **Map 125 / Lot 245**

AUTHORIZED REPRESENTATIVE
Identify the one person who will be the primary contact for this project.

Name: **Zak Harding**

e-mail: **zharding@yorkschools.org** Phone #: **363-3403**

PROPERTY OWNER(S)
Identify the owner or owners of all property involved in this application. Attach additional sheets if necessary. The property owner is the applicant.

Name: **York School Department**

Mailing Address: **469 US Route One, York, ME 03909**

By signing, I certify that the information provided is true and accurate, and that my authorized representative, if applicable, has my consent to represent this application.

Owner's Signature: Zak Harding Date: 2015-12-15

In the event there is more than one owner, all must sign. Attach additional sheets if necessary.

YORK COMMUNITY AUDITORIUM
AT YORK HIGH SCHOOL
PRELIMINARY SITE PLAN REVIEW

ARTICLE 5.6 – REVISIONS TO APPROVED PLANS

5.6.1 This expanded auditorium is a revision to the approved plans for the York High School, most recently reviewed and approved by the York Planning Board for the adjacent Music Wing on August 13, 2009. Since the auditorium expansion from 250 seats to 750 seats is a significant revision to the approved plans, both the Preliminary Plan Review and Final Plan Review procedures will be followed.

5.6.2 Copies of the pertinent approved plans entitled York High School Music Wing, dated July 2009 and approved August 13, 2009, have been included with this submission as drawings C00.3 and C00.4. The entire set of fourteen documents is available as needed. Revised documents are furnished to address all jurisdictional regulations that are affected by the auditorium expansion.

5.6.3 Since the expanded auditorium will be located at the existing auditorium and will be enclosed within the overall existing building wings, there will be no revision to jurisdictional issues such as wetland impact, wildlife impact, etc. Revised documents are submitted for all areas affected by the new auditorium, to meet all pertinent regulations.

5.6.4 Revisions to the original approved plan will be recorded in the Registry of Deeds, as required.

5.6.5 Field changes made since the August 13, 2009 approval date: The front entry walk to the High School was upgraded with a reconstructed sidewalk and new overhead canopy and sign, in 2012. A Site Location Permit revision was approved by Maine DEP for the additional 774 sq.ft. of impervious walkway. This area is included in the Storm Water Assessment calculations in Exhibit 3.

ARTICLE 6.3 – SUBMISSIONS FOR PRELIMINARY PLAN

6.3.2 The "Boundary Survey for York High School", Sheet1 of 1 dated August 6, 2009, is attached as drawing C00.4. Names of some abutters are the same, except as updated on the Revised Abutters List for 2015.

6.3.3 The Existing Site Conditions and Demolition Plan C10.1 is attached, which focuses on the immediate vicinity of the revised construction for the auditorium. Information on the entire property was included in the original Boundary Survey, as noted above; and on the "Site Location of Development Plan", approved on August 13, 2009, which has been copied onto the new C00.3 plan sheet, titled Shore Land Setback Plan.

6.3.4 The Existing Site Conditions and Demolition Plan C10.1 is attached, which includes all proposed site disturbance due to this revision.

6.3.5 Impact Statements. The following describe impacts by the proposed auditorium expansion:

a. The expanded auditorium will have 500 additional seats compared to the existing auditorium. The Maine Plumbing Code lists 5 gpd/seat for theater use. On a day that has an event in the auditorium attended by the public, it is expected to generate approximately 2,500 gallons per day more than the current auditorium event. Any school-day use of the auditorium will be attended primarily by students and staff within the building and will not add to the current daily water use. The renovated

school/auditorium will have a net increase of 8 toilets, 1 urinal, 4 lavatories, 7 single sinks, and 4 drinking fountains. All water supply lines for the auditorium will be connected into the existing high school water lines with no exterior water line extensions.

b. The expanded auditorium will be fed from the existing high school sprinkler system. An additional sprinkler zone riser, connected to the existing system at the sprinkler service entrance inside the building, will be added. No added exterior water pipe connections will be needed.

c. As calculated for water use above, waste water treatment and disposal to the municipal sewer system is expected to generate approximately 2,500 gallons per day more than the current auditorium event, each day that has an event in the auditorium attended by the public.

d. It is not anticipated that the increased size of the existing auditorium will have a direct impact on police, fire, or ambulance services. The new facility will likely generate a few more public events each year, which could require police for traffic control.

e. The 2009 approved site plans, particularly the "Site Location of Development Plan", approved on August 13, 2009, which has been copied onto the new C00.3 plan sheet, titled Shore Land Setback Plan, addressed the "future auditorium" in the storm water system that was constructed. In summary, the storm water storage and treatment basin was sized larger than needed so it would treat the storm water from the auditorium that is currently proposed. See Exhibit 3 for the Storm Water Assessment for the calculations.

f. The impact of the expanded auditorium on the on-site parking or the traffic on the street network is expected to be minimal, since the 750 seat capacity of the new auditorium will be less than the current 1100 seat capacity of the existing gym. Since the school policy is to not schedule two events at the same time, the expanded auditorium will not produce more traffic or parking demand than existing school campus events. See Exhibit 4 for the Traffic Assessment for detailed explanation.

g. As noted above, the impact of the expanded auditorium on the on-site parking is expected to be minimal, since the 750 seat capacity of the new auditorium will be less than the current 1100 seat capacity of the existing gym. Parking is calculated as follows:

   Town of York Zoning Ordinance – Parking (Art. 15)

   - Auditorium or assembly: 1 parking space for each 3 seats.
   - Therefore Auditorium, 750 seats/3 = <u>250 parking spaces needed</u>.
   - Therefore Gym seating, 1100 seats/3 = <u>367 parking spaces needed.</u>
   - Existing parking spaces: <u>370 existing</u>
   - See Exhibit 4 for the York School Department Parking Procedures plan and the traffic engineer's Parking Demand study.

h. No impact to water quality is anticipated, due to this localized auditorium construction project. Construction erosion and sedimentation control will be performed as described on drawings C00.2 and C30.1.

i. No impact to environmental quality is anticipated, due to this localized auditorium construction project. No construction will be occurring near wetland areas.

j. No historic or archaeological significant buildings or sites will be disturbed by the auditorium construction, within the area of the property previously disturbed by construction projects. See Exhibit 5 for the Historic Preservation agency letters.

k. The anticipated fiscal impacts of the new Auditorium to the community are:

   1. One additional School Department employee = $60,000 per year.
   2. Building cleaning service and consumables = $10,000 per year.
   3. Building energy costs = $46,000 per year.
   4. Added water and sewer costs = $400 per year.
   5. The approximate Total Additional Operating Cost = $116,400 per year.

l. The enlarged auditorium will result in the following:

- Additional employees = 1
- Gross auditorium building ground area = 26,570 sq.ft.
- Net added building impervious area = 18,950 sq.ft.
- Total added impervious building and pavements = 21,300 sq.ft.

m. Not Applicable, since this is not a residential project.
n. Not Applicable, since this is not a residential project.

6.3.6 The revisions due to this auditorium expansion are primarily contained between the existing school building and the adjacent loop driveway and sidewalk. No changes are proposed to streets, lots, or parking lots. Revisions to storm drain collection systems, and other utilities are shown on the attached drawing C40.1 Site Grading and Utility Plan.

6.3.7 Site grading and landscaping is shown on the attached drawing C40.1 Site Grading, Utility, and Landscaping Plan. Conforming to Article 7, 7.3.1, the York School Department will preserve vegetation surrounding the existing school building and site. The disturbance for this auditorium project will have a very limited area. Most trees and shrubs in the two interior courtyards between existing building wings will be removed for the construction process, however, one mature tree and several shrubs are scheduled to remain as shown on drawing C10.1 Existing Site Conditions & Demolition Plan.

6.3.8 The Initial Assessment of traffic impacts is attached in Exhibit 4 and is titled "Preliminary Traffic and Parking Assessment – York High School Auditorium", by Gorrill Palmer, dated December 4, 2015. This has been forwarded to the York Public Works Director for review.

6.3.9 The property deed is attached in Exhibit 1.

6.3.10 The attached deed confirms the land owner is the Town of York School Department.

6.3.11 No new easements are proposed. Any current easements, rights-of-way, or encumbrances are shown on the existing 2009 plans.

6.3.12 Not Applicable, since no great pond is in the watershed of this parcel.

6.3.13 No scenic resources are affected by this building expansion project.

6.3.14 No historic or archaeological resources will be impacted by this building expansion project, surrounded by the existing building and driveway. Letters of review have been sent to both the York Historic District Commission and the Maine Historic Preservation Commission, for their concurrence.

6.3.15 The August 13, 2009 approved plans include drawing C1.5 Watershed Plan. No additional watershed impacts are proposed by this building addition.

6.3.16 The August 13, 2009 approved plans include drawing C1.5 Watershed Plan. No additional wildlife impacts are proposed by this building addition on disturbed lawn area surrounded by the existing building and driveway.

6.3.17 All surrounding street information was shown on the August 13, 2009 approved plans, particularly the Boundary Survey drawing, copied onto the new C00.3 plan sheet.

6.3.18 Not Applicable.

6.3.19 No new lot lines are proposed.

6.3.20 No new land is proposed to be dedicated to public use.

6.3.21 Not Applicable.

6.3.22 The August 13, 2009 approved site plan C1.4 titled "Site Location of Development Plan", shows the flood zone line, which does not impact the proposed building addition.

6.3.23 Not Applicable.

6.3.24 The sanitary flow from the expanded auditorium will be connected to the existing High School sewer piping, with no new exterior sewer line extension. A letter has been requested from the Sewer District. A copy a response e-mail and the letter of request is attached in Exhibit 6.

6.3.25 The water supply to the expanded auditorium will be connected to the existing High School water piping, with no new exterior water line extension. A letter has been requested from the Water District. Copies of the letter of request and the e-mail response are attached in Exhibit 6.

6.3.26 A letter of review has been requested from the Fire Chief. A copy of the letter of request is attached in Exhibit 6.

6.3.27 The August 13, 2009 approved site plan C1.4 titled "Site Location of Development Plan"(current plan C00.3) addressed storm water flows and treatment for both the 2009 Music Wing and the "Future Auditorium". The 2009 storm water management storage and disposal system was designed with excess capacity to account for this current auditorium expansion. See Exhibit 3 for the Storm Water Assessment for the calculations.

6.3.28 The August 13, 2009 approved site plans, particularly C1.1 Existing Conditions and Demolition Plan and the Boundary Survey plan, together with the current drawing C40.1 Site Grading and Utility Plan, show existing and proposed utility lines and drainage systems.

6.3.29 Upon scheduling of a Planning Board site visit, the proposed building corners will be marked on the ground.

6.3.30 No revision to on-site or off-site driveways or streets is proposed. The Initial Traffic Assessment report in Exhibit 4 describes the adequacy of the existing driveway sight distances.

6.3.31 Not Applicable.

6.3.32 The August 13, 2009 approved drawing C1.5 Watershed Plan depicted the soil types on the high school parcel. The soils information necessary for the proposed auditorium building expansion is included in the Report of Geotechnical Evaluation by R.W. Gillespie & Associates, dated July 21, 2015. A copy of this report is enclosed in Exhibit 7.

6.3.33 The current auditorium expansion project is not proposing to add 40 or more parking spaces, nor generate 400 vehicle trips per day. The Initial Assessment of traffic and parking is attached in Exhibit 4.

6.3.34 Requests for Waivers: None identified.

6.3.35 No Planning Board review fee is anticipated for this 'Town Project'.

York Community Auditorium
At York High School
York, Maine

PRELIMINARY SITE PLAN REVIEW APPLICATION

EXHIBITS

1. **Title, Right or Interest**
2. **Maps**
3. **Storm Water Assessment**
4. **Traffic Assessment**
5. **Historic Preservation**
6. **Water, Sewer, Fire, Public Works Letters**
7. **Soils Evaluation**

1.

TITLE, RIGHT, INTEREST

This Agreement made this 30th day of April 1975 by and between KATHARINE E. WULFECK, Executrix under the Will of George A. Ernst, late of York, Maine deceased, acting in her capacity as said Executrix and pursuant to the authority granted her in the Last Will and Testament of said George A. Ernst, hereinafter called the SELLER, and TOWN OF YORK SCHOOL DISTRICT, a quasi-municipal corporation organized under the laws of the State of Maine and having its place of business in the Town and County of York in said State, hereinafter called the BUYER.

The Seller hereby agrees to SELL and the Buyer hereby agrees to PURCHASE certain real estate and any buildings that may be thereon situated in the Town of York and bounded and described as follows:

> A certain lot or parcel of land lying on the easterly side of Ridge Road, so-called, bounded westerly by said Ridge Road; northerly by Webber Road and land of owner or owners unknown; easterly by Moody Avenue, so-called; and southerly by land of Virginia Neal Freeman, the whole containing fifty-five (55) acres, more or less, and being subject to an existing easement in favor of the Central Maine Power Company and/or the New England Telephone Company to keep and maintain power transmission lines as the same may presently be found upon said premises; and together with all rights of way and easements appurtenant to said premises, including the right to pass over on Moody Lane, so-called.

Said premises are to be conveyed on or before July 1, 1975 by and good and sufficient warranty deed executed by the Seller in her capacity and under the authority granted to her as aforestated and conveying a good and marketable title to the same, free from all encumbrances except valid zoning ordinances and any conditions and restrictions affecting said premises. For such deed and conveyance, the Buyer is to pay the sum of One Hundred Thousand ($100,000.00) Dollars, of which the sum of Ten Thousand ($10,000.00) Dollars has been paid; Five Thousand ($5,000.00) Dollars in February of 1974 at the time of the execution of an Option between the parties and Five Thousand ($5,000.00) Dollars in October of 1974 upon the execution of an extension of said Option by

SEWALL, STRATER
AND HANCOCK
COUNSELLORS-AT-LAW
280 YORK STREET
YORK, MAINE

the parties hereto; and the balance of Ninety Thousand ($90,000.00) Dollars shall be paid at the time of closing.

The execution of this Agreement shall be considered as the exercise by the Buyer of said Option To Purchase dated February 25, 1974.

The cost of Maine Transfer Tax Stamps shall be borne by the Seller.

Real Estate taxes assessed from April 1, 1975 until the date of closing shall be paid by the Seller.

In the event that a dispute shall rise as to whether or not title to the premises is good and marketable under the terms of this contract, the Seller and the Buyer shall each engage an attorney at law licensed to practice in the State of Maine and approved as a Title Examiner by the Maine Bar Association Mutual Title Insurance Company, which attorneys shall not have represented either party prior to said dispute. If said attorneys fail to agree as to whether or not title is good and marketable, the parties shall have such rights as the law affords, otherwise, the opinion of said attorney shall be binding on the Seller and the Buyer.

It is hereby agreed by the parties hereto that this sale was brought about through the efforts of The A. M. Bragdon Agency of York, Maine and that a commission of five (5%) per cent upon the total sales price shall be payable by the Seller.

Full possession of said premises, free of all tenants, is to be delivered to the Buyer at the time of the delivery of the deed. The said premises to be then in the same

SEWALL, STRATER
AND HANCOCK
COUNSELLORS-AT-LAW
280 YORK STREET
YORK, MAINE

condition in which they now are, reasonable use and wear and tear of the buildings only excepted.

This agreement shall be binding upon the said Seller, her successors and assigns, and upon the Buyer, its successors and assigns.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals this 30th day of April, 1975.

IN PRESENCE OF:

Katherine E. Wilfinger
Executrix
Estate of George A. Ernst

TOWN OF YORK SCHOOL DISTRICT

By: Frederick E. Lessing

SEWALL, STRATER
AND HANCOCK
COUNSELLORS-AT-LAW
280 YORK STREET
YORK, MAINE

Know all Men by these Presents,

H.S. File.

That I, VIRGINIA NEAL FREEMAN, of Plandome, in the County of Nassau, State of New York,

in consideration of One Dollar and other valuable considerations,

paid by TOWN OF YORK SCHOOL DISTRICT, a quasi-municipal corporation, organized by the legislature of the State of Maine, and having its place of business in the Town of York, in the County of York, ~~xxxxxxxxxxxxxxxxxxxxxxxxxxxx~~ and State of Maine,

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey, unto the said York School District,

its successors~~xxxxxx~~ and assigns forever,

a certain lot or parcel of land situated in said York, lying on the Northwesterly side of the highway leading from York Village to Long Sands, known as Long Sands Road, bounded and described as follows:

Beginning at a hub set in the ground at or near a stone wall in the Northwesterly sideline of said Long Sands Road at the Southerly corner of the lot or parcel herein conveyed, at the Easterly corner of other land of the Grantor herein; running thence by and along said other land of the Grantor North 26° 17' 57" West 323.51 feet to a hub in the ground; running thence by other land of the Grantor North 40° 23' 40" West 135.80 feet to a hub in the ground; running thence by other land of the Grantor North 59° 2' 32" West 72.72 feet to a hub in the ground; running thence by other land of the Grantor herein South 85° 38' 35" West 240.06 feet to an angle and a hub in the ground, and running thence by other land of the Grantor herein North 48° 35' 53" West 849.04 feet to a hub in the ground at a point in the Southeasterly sideline of an easement of the Central Maine Power Company; running thence by and along the Southeasterly side of said easement North 36° 57" East 370 feet to a hub at a stone wall at land of the Grantee herein, formerly of George Ernst; running thence by and along said stone wall and land of the Grantee South 60°23' 19" East 40.73 feet to a point; running thence by said stone wall and land of the Grantee South 61° 42' 52" East 66.62 feet to a point; running thence by said wall and said Grantee's land South 60° 42' 07" East 114.37 feet to a point; running thence by said wall and said Grantee's land South 60° 28' 25" East 89.69 feet to a point; running thence by said wall and said Grantee's land South 58° 56' 11" East 46.41 feet to a point; running thence by said wall and said Grantee's land South 54° 30' 12" East 145.20 feet to a point; running thence by said wall and said Grantee's land South 51° 17' East 74.84 feet to a point; running thence by said wall and said Grantee's land South 51° 47' 32" East 156.75 feet to a point; running thence by said wall and said Grantee's land South 51° 16' 30" East 135.46 feet to a point; running thence by said wall and said Grantee's land South 50° 8' 8" East 66.37 feet to a point at a wall corner at a cemetary enclosure; running thence by said wall and the cemetary enclosure on the Southwesterly side thereof South 59° 13' 20" East 29.95 feet to a point at the juncture of the wall on the Southeasterly side of said cemetary lot and at other land of the Grantee; running thence by said wall and land of the Grantee South 58° 30' 43" East 69.90 feet to a point; running thence by said wall and land of the Grantee South 62° 12' East 77.98 feet to a point; running thence by said wall and Grantee's land South 60° 30' 20" East 116.62 feet to a point; running thence South 60° 15' East by said wall and Grantee's land 134.54 feet to a point at the end of the stone wall at what was

formerly a set of bars or a gate, which point is also in the Northwesterly sideline of the existing paved drive leading from said Long Sands Road Northerly to the former residence of the late George Ernst; running thence by said drive and other land of George Ernst and now of the Grantee, South 30°23' 44" West 16.16 feet to a point at the end of another stone wall; running thence by said stone wall and land of the Grantee South 4° 07' 24" West 141.09 feet to a point; running thence by said wall and land of the Grantee South 03° 37' 41" West 288.84 feet to an angle in the Northwesterly sideline of said Long Sands Road; running thence by the Northwesterly sideline of said Long Sands Road South 59° 58' 16" West 33.28 feet to a point in another stone wall; running thence by said wall and the Northwesterly sideline of said Long Sands Road South 60° 14' 06" West 141.55 feet to the point of beginning.

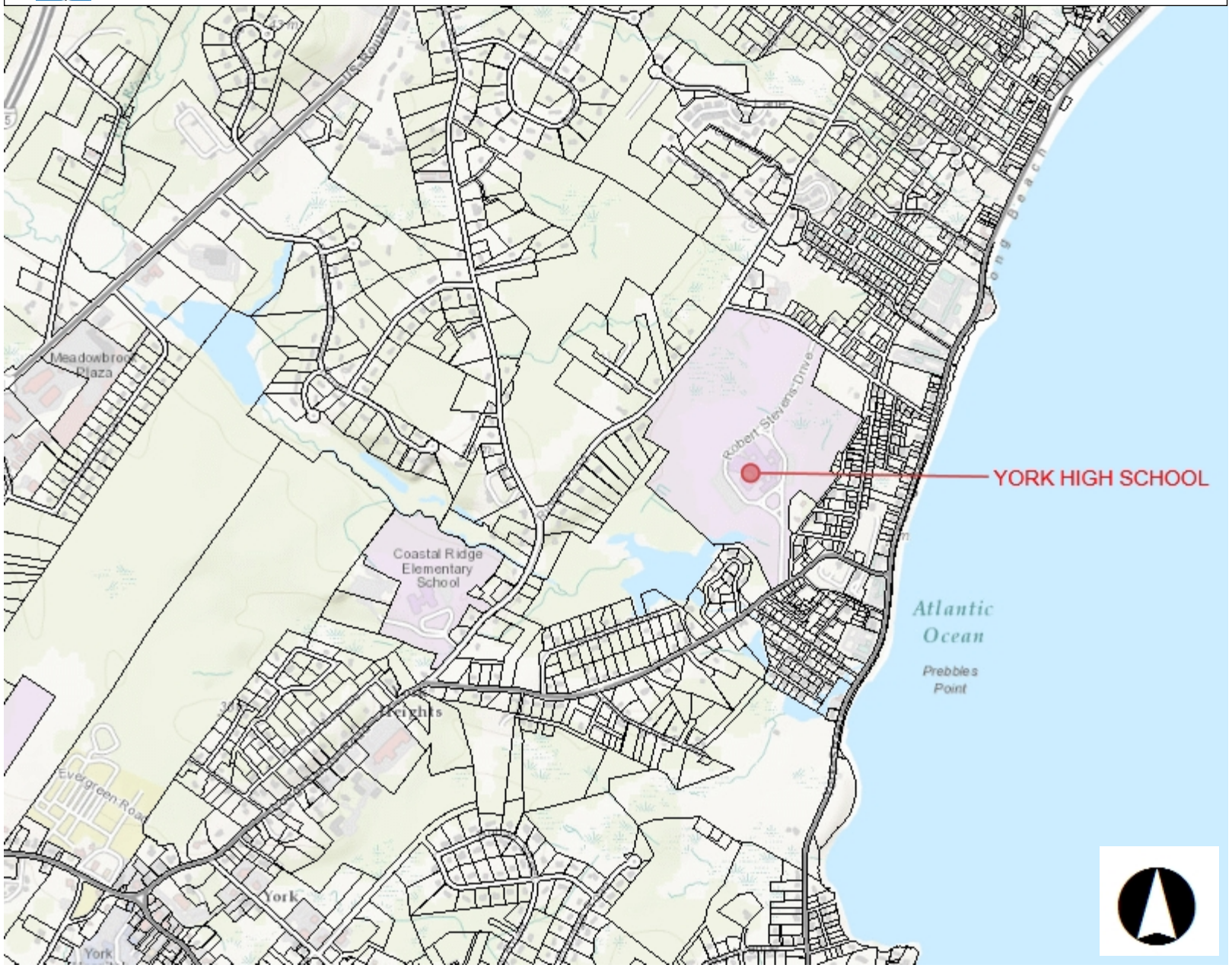
Meaning and intending hereby to convey a portion only of the lot of land lying between the above mentioned Central Maine Power Company easement and said Long Sands Road which the Grantor herein inherited as the sole heir at law and devisee of her mother, the late Edna Moody Neal; see York County Probate Docket No. 68245.

The above described and conveyed lot of land equals 14.56 acres in extent. The compass courses and descriptions were taken from a plan entitled, "Plan of Land, Long Sands Road, York, Maine, to be conveyed to Town of York School District, January 1976; Plato C. Houliares, Registered Land Surveyors", which said plan is to be recorded herewith.

2.

MAPS

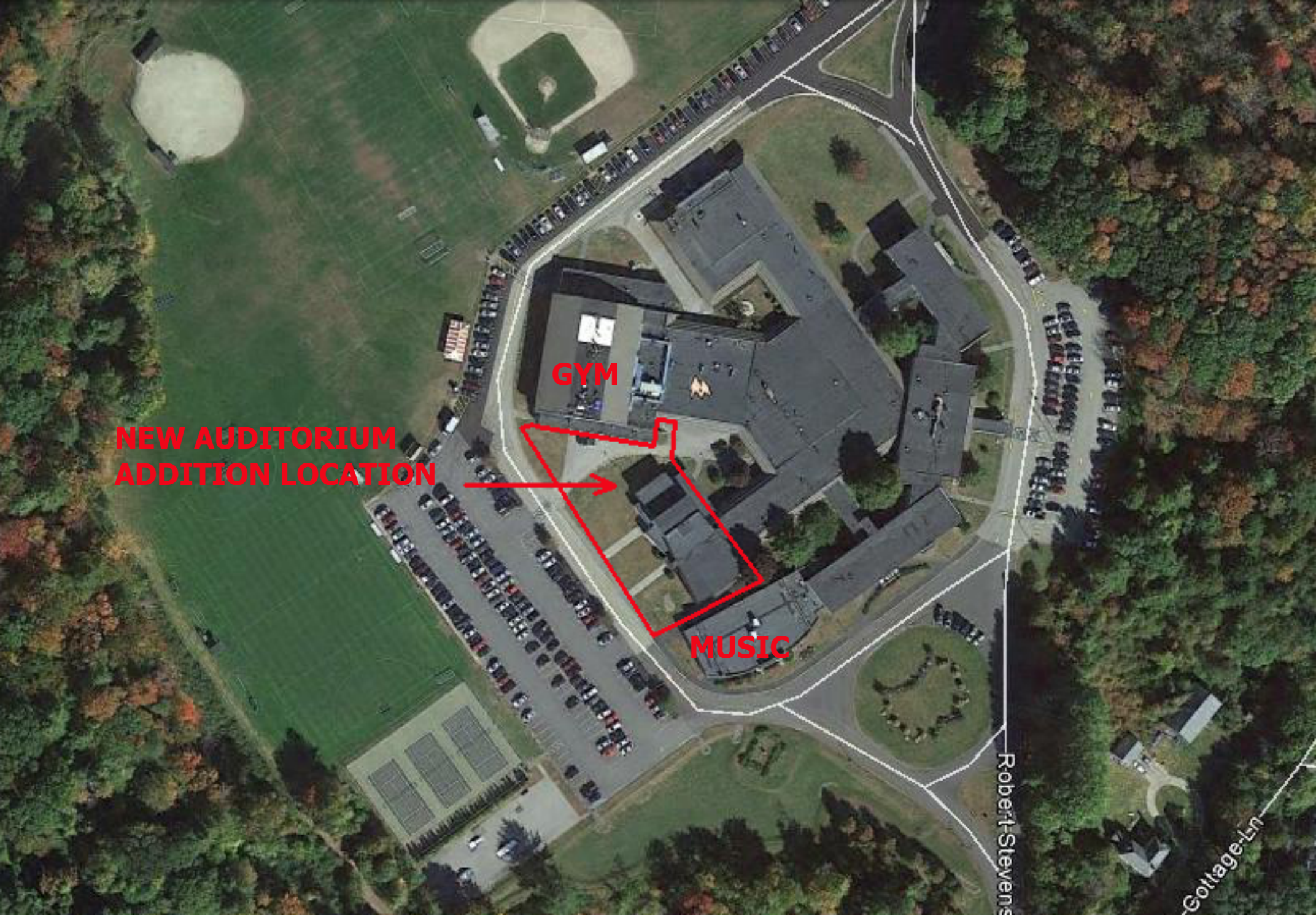
Quick Map



Legend

- Parcels
- Citations

GIS Data Disclaimer-The data contained in this document, or any accompanying document is a resource of general information provided on the World Wide Web for public convenience. The Town of York makes no warranty, representation or guaranty as to the content, sequence, accuracy, timeliness or completeness of any of the database information provided herein. The reader should not rely on the data provided herein. The Town of York expressly disclaims any representations and warranties, including, without limitation, the implied warranties of merchantability and fitness for a particular purpose. This disclaimer can be seen at under the Community Development Department GIS Maps website.


GYM
NEW AUDITORIUM
ADDITION LOCATION
MUSIC
Robert Stevens
Cottage Ln

HARRIMAN

YORK COMMUNITY AUDITORIUM
1 ROBERT STEVENS DRIVE
YORK, MAINE

AERIAL VIEW

3.

STORM WATER ASSESSMENT

HARRIMAN

YORK COMMUNITY AUDITORIUM 12-10-2015
AT YORK HIGH SCHOOL

STORM WATER ASSESSMENT

York High School is designing and proposing to construct the addition to their auditorium that has been under consideration for many years. The York Planning Board Site permit amendment for the Music Wing, approved on August 18, 2009, created a new detention pond and forested treatment buffer for storm water quality and quantity treatment(see the "Site Location of Development Plan", approved on August 13, 2009, which has been copied onto the new C00.3 plan sheet, titled Shore Land Setback Plan). Due to the site configuration, the applicant captured and treated runoff from the large parking lot and driveway on the west side of the school, in lieu of the actual building and pavement additions on other sides of the building. In 2013 a new main entry canopy was added on the east side, and the added total of 774 sq.ft. impervious area was also treated by compensation from the existing detention pond and buffer.

Since the 2009 detention pond and buffer were sized to treat the runoff from approximately 85,500 sq.ft., and the previous development that required treatment was only 69,524 sq.ft., there is additional capacity to compensate for the proposed auditorium development. A portion of that amount, equal to 7,500 sq.ft., was included as a place-holder for the 'future auditorium addition', and deducting that place-holder amount yields a current facility treatment required area of 62,024 sq.ft.. The following tabulation shows the post-1976 impervious additions to the original 1975 campus that are treated by the 2009 detention pond and treatment buffer. The existing auditorium was constructed and permitted with the original building in 1975.

1999 Additions (Science, Parking, Gym, Opposite Wing)	39,850 sq.ft.
2003 Access Drive Parking along Robert Stevens Drive	12,000 sq.ft.
2009 Music Wing Addition	9,400 sq.ft.
2013 Main Entry Canopy	774 sq.ft.
"Future Auditorium" (area proposed in 2009)	7,500 sq.ft.
Total Impervious Areas - Post-1976 =	69,524 sq.ft.
Remove "Future Auditorium place-holder"	(-7,500)
Total Actual Impervious Areas - Post-1976 =	62,024 sq.ft.
Impervious Treatment Capacity of 2009 Detention & Buffer =	85,500 sq.ft.

As shown in this tabulation, the present excess capacity of the pond/buffer for the proposed auditorium development is (85,500-62,024) = 23,467 sq.ft.

The proposed 2015 addition to the auditorium is actually 18,950 sq.ft.,(not 7,500 sq.ft. as predicted). Combined with 2,350 sq.ft. of proposed paved walkway enlargements, the total increased impervious area is approx. 21,300 sq.ft. This is slightly less than the existing excess storm water treatment pond and buffer capacity, and therefore meets the intent of the original design.

Excess pond treatment capacity = 23,467 sq.ft.
Auditorium building/pavement impervious increase = 21,300 sq.ft. OK.

4.

TRAFFIC ASSESSMENT

NEPN/NSBA Code: ECE-E1

TRAFFIC AND PARKING PROCEDURES

Policy Intent
To ensure the York High School site is always accessible for emergency responders after the increase in size of the Auditorium from 256 to 750 people.

Policy Background
The York School Department has always managed the schedule of its assembly spaces. This has been done to ensure that our students have the ability to participate in multiple programs that may hold events in the same season, to ensure that emergency responders can access the building during events, and to ensure there are adequate parking spaces to make the building accessible to our students, staff and guests.

Code Compliance
The parking load has always been based on the largest assembly space size. The high school currently has 371 spaces (5 are ADA spaces). The largest assembly space is and will continue to be the gymnasium, which, with seating on the floor, has an occupancy load of 1,100 people – requiring 367 parking spaces.

Policy
The York School Department will take reasonable and prudent steps to ensure an undue burden is not placed on the parking facilities at York High School by the expansion of the York Community Auditorium at York High School. The school department will take the following actions:

1. Not schedule multiple major events at York High School that would require parking at the high school at the same time
2. Not schedule events in the Auditorium with large expected outside attendance while school is in session and parking is thus restricted
3. Coordinate with the York Police Department for parking assistance for any events that may fill the high school parking lots
4. Coordinate with the York Village Fire Department to ensure acceptable emergency response access

Adopted by School Committee: 12/16/15

YORK SCHOOL DEPARTMENT

GORRILL PALMER

PO Box 1237, 15 Shaker Road
Gray, Maine 04039
207.657.6910

Preliminary Traffic and Parking Assessment
York High School Auditorium
York, Maine
December 4, 2015

Gorrill Palmer (GP) is pleased to provide this preliminary traffic and parking assessment for the York High School auditorium in York, Maine. The existing auditorium has 250 seats and will be demolished and replaced with a 750 seat auditorium, for a net increase of 500 seats. The auditorium would primarily be used for major events after school hours. The school already has a policy that major events would not occur in the 1,100 seat gym and the auditorium at the same time.

Trip Generation

Typically, trip generation for a new facility is based on the Institute of Transportation Engineers' (ITE) publication, *Trip Generation Manual*. However, this publication does not have sufficient information (only one study) for Land Use Code (LUC) 441 – Live Theater to provide a reliable trip generation estimate. For that reason, GP used the ITE's publication *Parking Generation*, Fourth Edition, to forecast the trip generation for the proposed auditorium. GP assumed that the parking demand ratio for the site would be equal to the trip generation rate for the site during the PM peak hour. The average parking supply ratio for the expanded auditorium is 0.33 spaces/seat, so the trip generation rate would be 0.33 trip ends/seat, giving a forecast trip generation of 165 trip ends during the PM peak hour for the additional 500 seats. The total forecast trip generation for the 750 seats is 248 trip ends. A trip end is a trip into or out of the site, thus a round trip would be two trip ends. The trip generation rate of the existing gymnasium is expected to be equal to that of the auditorium, so the existing trip generation of the 1,100 seat gymnasium is approximated to be 363 trip ends, significantly more than the proposed auditorium will experience. The detailed trip generation calculations are attached.

In addition to checking the trip generation of a proposed school expansion, whenever a school is added onto or expanded, MaineDOT requires that the student enrollment for the previous ten years be reviewed to determine if the school has increased in enrollment over those ten years such that it triggers the threshold for requiring a MaineDOT Traffic Movement Permit. GP reviewed the High School enrollment numbers for the past ten years provided by Zak Harding, Director of Facilities, to determine if trip generation for the school has increased. The overall trend for student enrollment over the past ten years is decreasing, so no additional traffic has been added to the site and the school does not trigger the 99 trip end per peak hour threshold increase requiring a MaineDOT Traffic Movement Permit.

Since the proposed auditorium is forecast to generate less trips than the existing gymnasium, it is our opinion that the proposed expanded auditorium does not trigger the threshold for requiring a MaineDOT Traffic Movement Permit. A letter requesting concurrence of this conclusion has been sent to Mr. Timothy Soucie, MaineDOT Region One Traffic Engineer.

Sight Distance

Both the Town of York and MaineDOT have guidelines for measuring sight distance. MaineDOT also has sight distance standards for driveways with greater than 30% larger vehicles (busses, commercial trucks, etc.). The Town does not have sight distance standards for larger vehicles. Since the site entrances are school driveways, a high percentage of busses is a potential. The basic sight line standards are as follows:

Sight Line Criteria

Posted Speed (mph)	Town of York Sight Distance (ft)	MaineDOT Standard Vehicles Sight Distance (ft)	MaineDOT Larger Vehicles Sight Distance (ft)
25	250	200	300
30	300	250	375
35	350	305	460
40	400	360	540
45	450	425	640

The MaineDOT and Town measure sight distance using the same methodology. The evaluation method is as follows:

Driveway observation point	10 feet from travel way
Height of eye at driveway	3 ½ feet above ground*
Height of approaching vehicle	4 ¼ feet above ground

*MaineDOT requirement for larger vehicles is height of eye is 6 feet above the ground

The existing high school has two primary accesses, one onto Webber Road to the north and one onto Long Sands Road to the south. Both driveways are full movement driveways. GP has evaluated the available sight lines at the existing driveways in accordance with both Town and MaineDOT criteria. The speed limit on Webber Road is posted 25 mph and the speed limit on Long Sands Road is posted 35 mph. The following table summarizes the measured sight distances:

Sight Distance Summary

Approach	Sight Distance (ft)						
	Passenger Vehicles		Busses		Town and MaineDOT Requirements		
	Looking Left	Looking Right	Looking Left	Looking Right	York Required	MaineDOT Standard Required	MaineDOT Large Required
Exiting Driveway onto Webber Road	350	+460	350	+460	250	200	300
Exiting Driveway onto Long Sands Road	275	+640	275	+640	350	305	460

As summarized in the table, the sight distances at the site driveway onto Webber Road exceed both the Town and MaineDOT requirement. The site driveway onto Long Sands Road exceeds the Town and MaineDOT requirements looking right, but not looking left due to the horizontal curve of the road and dense vegetation. It is our recommendation that the vegetation be cut back to the maximum extent practicable and if the recommended sight distance is still not achieved, that a warning sign be erected for vehicles on Long Sands Road traveling westerly toward the school driveway.

Crash Summary Data

GP obtained the crash data from MaineDOT for the period of 2012-2014, the most recent period available at the time this report was prepared (attached).

In order to evaluate whether a location has a crash problem, MaineDOT uses two criteria to define a High Crash Location (HCL). Both criteria must be met in order to be classified as an HCL.

1. A critical rate factor of 1.00 or more for a three-year period. (A Critical Rate Factor {CRF} compares the actual crash rate to the rate for similar intersections in the state. A CRF of less than 1.00 indicates a rate of less than average) **and**:

2. A minimum of eight crashes over the same three-year period.

Based on the crash data provided by MaineDOT, there are no high crash locations in the vicinity of the site. The intersection of the school driveway and Long Sands Road identified in the previous section as having a sight distance restriction, recorded two crashes in the three year time period reviewed, well below the criteria for a high crash location.

Parking Demand

GP used the Institute of Transportation Engineers' publication *Parking Generation*, Fourth Edition, LUC 441 – Live Theater and the Town of York Zoning Ordinance to forecast the parking demand of the proposed auditorium.

Parking Demand Summary

Building	Capacity	ITE		York Ordinance Parking Demand	
		Rate	Spaces	Rate	Spaces
Auditorium	750 seats	0.33 spaces/seat	248	1 space / 3 seats	250
Gymnasium	1,100 seats	0.33 spaces/seat	363	1 space / 3 seats	367

As shown in the table, the existing gymnasium is forecast to have a higher parking demand than the proposed auditorium. It is our understanding that the existing parking lot has 370 parking spaces. Since the school has a policy that there will not be major events in the auditorium and gymnasium at the same time, and that the existing parking supply is greater than the forecast parking demand, no additional parking spaces are needed to accommodate the expanded auditorium.

Conclusions

The following is a summary of the conclusions:

1. The proposed auditorium is forecast to generate 165 more trip ends than the existing auditorium during the PM Peak Hour. Since the total auditorium trip generation is less than the existing trip generation of the gymnasium, it is our opinion that a MaineDOT Traffic Movement Permit is not required.

2. Sight distances at the site driveways meet or exceed the requirements in all but one direction, which is due to a horizontal curve and dense vegetation. We recommend that the vegetation be cut back to the maximum extent practicable.

3. The crash data shows that there are no high crash locations within the study area.

4. The anticipated parking demand for the expanded auditorium is 250 spaces, which is less than the 370 existing parking spaces available. Therefore, since concurrent major events at the auditorium and gymnasium are against policy, as well as not allowing major events during school hours, no additional parking spaces are needed to accommodate the expansion.

Prepared By: Randall Dunton, PE, PTOE
Senior Engineer

GORRILL PALMER

PO Box 1237, 15 Shaker Road
Gray, Maine 04039
207.657.6910

December 4, 2015

Mr. Timothy Soucie, PE
MaineDOT Region 1 Traffic Engineer
51 Pleasant Hill Road
Scarborough, Maine 04070

Subject: Request for Concurrence
York High School Auditorium
York, Maine

Dear Tim,

Gorrill Palmer (GP) has been retained by the York School Department to complete a preliminary traffic assessment for the proposed York High School auditorium in York, Maine. The existing auditorium is 250 seats and will be demolished and replaced with a 750 seat auditorium, for a net increase of 500 seats. The school also has an existing 1,100 seat gymnasium. The school already has a policy that major events cannot occur either during school hours, or in the auditorium and gymnasium at the same time. As part of this traffic assessment we have investigated whether or not the new auditorium would require a MaineDOT Traffic Movement Permit.

As part of this project we examined the High School student enrollment for the last ten years provided by the York School Department Director of Facilities, Zak Harding. The overall trend for student enrollment is decreasing (675 students in 2006 to 619 students in 2015), so no additional school traffic is expected.

Additionally, GP forecasted the trip generation for the proposed auditorium. The Institute of Transportation Engineers' (ITE) publication, *Trip Generation*, Seventh Edition, Land Use Code (LUC) 441 – Live Theater has data from only one study. To more accurately forecast the trip generation, GP used the ITE publication *Parking Generation*, Fourth Edition and assumed that the trip generation rate during the PM Peak Hour would be equal to the parking demand rate. The average parking supply ratio for LUC 441 is 0.33 spaces/seat, giving a trip generation rate of 0.33 trip ends/seat. This rate gives an increase in trip generation (for 500 seats) of 165 trip ends during the PM Peak Hour.

GP compared the forecast trip generation for the auditorium to the trip generation of the existing 1,100 seat gymnasium. The total trip generation for the auditorium (all 750 seats) is 248 trip ends. The trip generation rate of the gymnasium is estimated to be the same as that of the auditorium, so the gymnasium is estimated to generate 363 trip ends during a major event. York High School has a policy that states that they will not schedule major events in the gymnasium and the auditorium at the same time. The auditorium is forecast to generate fewer trips during the PM Peak Hour than the existing gymnasium.

After a review of this information, it is our opinion that although the site is forecast to generate more than 99 peak hour trip ends, it will not require a MaineDOT Traffic Movement Permit because the forecast trip generation for the auditorium is less than the trip generation of the existing gymnasium, and major events will not occur concurrently.

We respectfully request your review of this information and if you agree, your concurrence in writing that a TMP is not required.

If you have any questions or wish to discuss this in more detail, please contact our office.

Sincerely,

Gorrill Palmer

Randy Dunton, P.E., PTOE
Senior Engineer

Copy: Zak Harding, Director of Facilities
Frank Crabtree, P.E., Harriman
Jeffery Larimer, AIA, CSI, Harriman

5.

HISTORIC PRESERVATION

Frank L. Crabtree

From: Scott Stevens <groundrootpres@gmail.com>
Sent: Tuesday, December 22, 2015 10:00 AM
To: Frank L. Crabtree
Subject: Re: York High School Auditorium historic review letter

Follow Up Flag: Follow up
Flag Status: Flagged

December 22, 2015

Mr. Crabtree:

Per your request regarding historic or archaeological resources within the current footprint of the York High School building where the new auditorium is planned: the Historic District Commission has not met since you sent your letter to me. I cannot, therefore, speak for the Commission, since it has not rendered an official opinion. However, my personal opinion is that an addition within the current footprint of the high school will not affect any known or suspected historic resources not already affected by past construction at the site. Furthermore, I note that the site is not in an historic district established by York ordinances, nor in the National Register District in York.

I hope this is helpful to you.

Scott Stevens

HARRIMAN

December 9, 2015

Scott Stevens, Secretary groundrootpres@gmail.com
York Historic District Commission
16 Algonquin Drive
Cape Neddick, ME 03902

Re: York High School, Community Auditorium
York, Maine
Project No. 14467
Permitting for Expanded Auditorium

Dear Mr. Stevens:

We are currently assisting the York School Department in planning an addition to the York High School facility on Robert Stevens Drive in York. The existing auditorium that currently seats 250 will be removed and a new Community Auditorium that seats 750 will be constructed in the same location. As shown on the enclosed aerial views, the addition will be constructed within the current high school footprint without disturbing the existing perimeter driveway. Enclosed you will find a copy of a GIS York map, an aerial view showing the new auditorium outline in red, and a perspective view showing the appearance of the new addition matching the existing architecture. The expansion site is presently fully developed with existing school building, walkways, and grass lawns.

Information is needed on sites of historic significance on the project site or in the immediate vicinity. If no such historic sites exist in the area, a written statement from your commission to that effect is required for a Town Planning Board Permit. Please send us your response by December 16, 2015, if at all possible.

Should you need further information on site location or other aspects of the project, please let me know. Thank you.

Sincerely,
Harriman

Frank L. Crabtree, P.E., LEED AP BD+C
Civil Engineer
fcrabtree@harriman.com
sbest

Enclosures: GIS Map
Aerial Plan
Perspective Plan

Cc: Zak Harding (zharding@yorkschools.org)

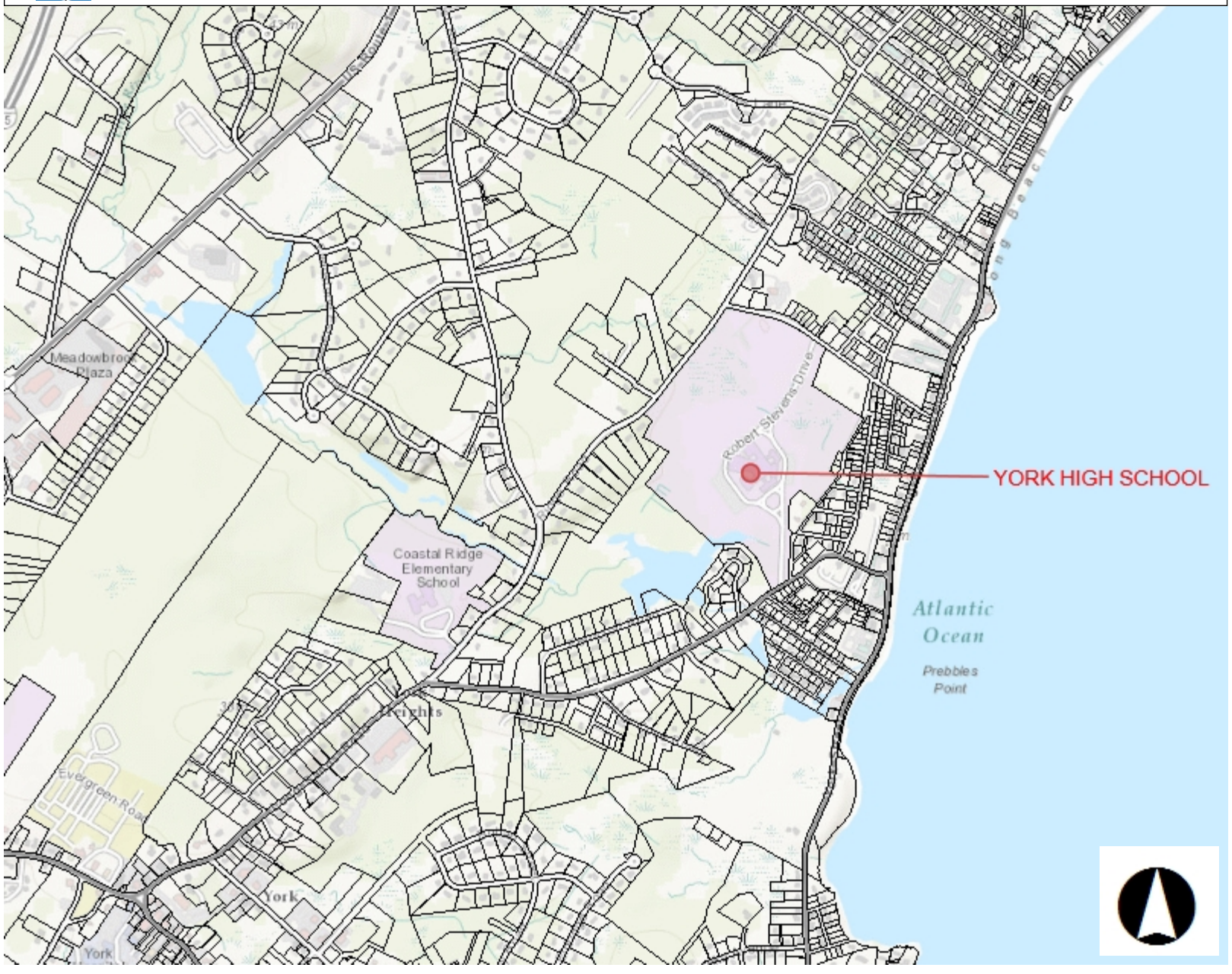
46 HARRIMAN DRIVE
AUBURN, ME 04210
207.784.5100

123 MIDDLE STREET
PORTLAND, ME 04101
207.775.0053

ONE PERIMETER ROAD
MANCHESTER, NH 03103
603.626.1242

www.harriman.com

Quick Map



Legend

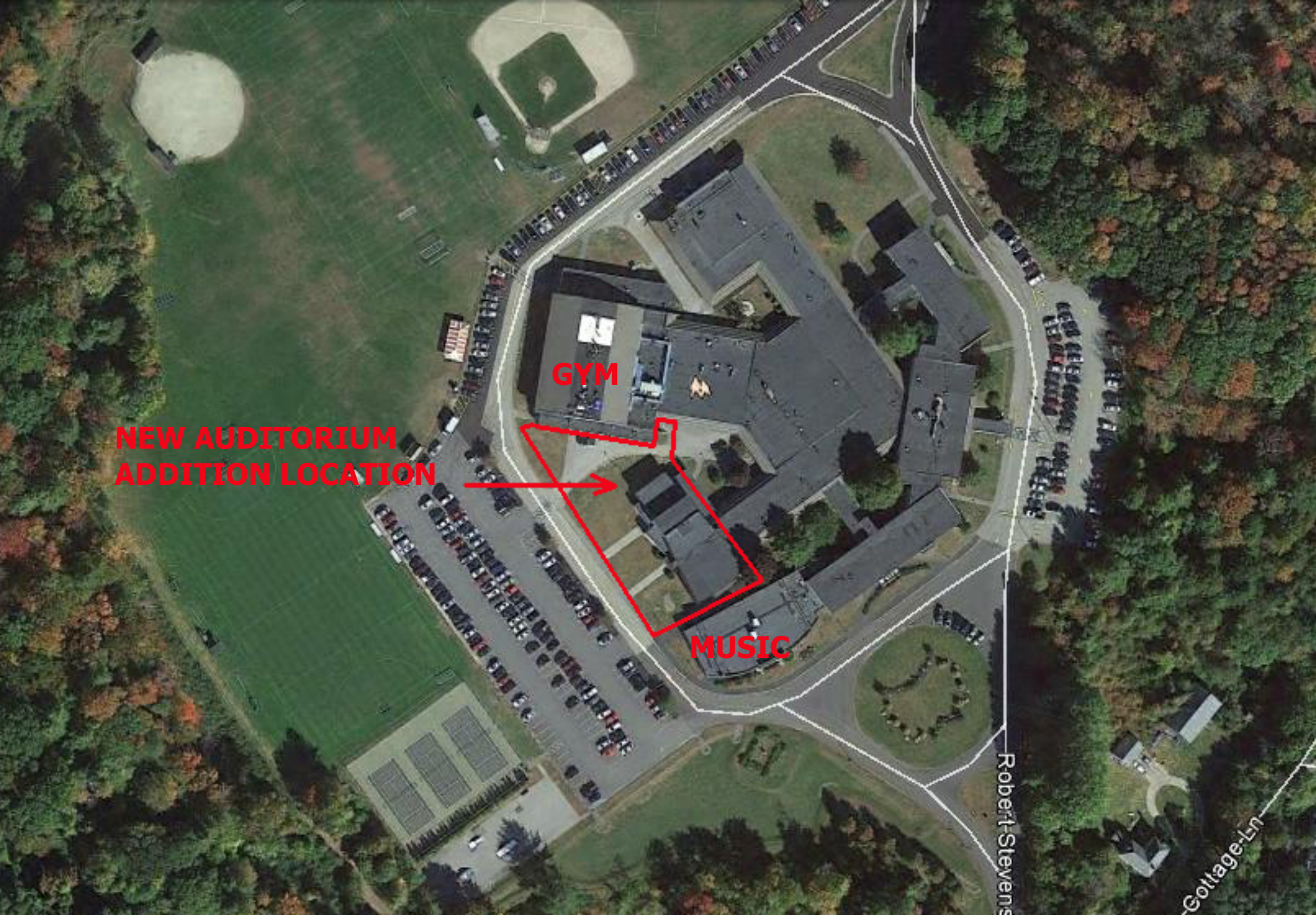
- Parcels
- Citations

GIS Data Disclaimer-The data contained in this document, or any accompanying document is a resource of general information provided on the World Wide Web for public convenience. The Town of York makes no warranty, representation or guaranty as to the content, sequence, accuracy, timeliness or completeness of any of the database information provided herein. The reader should not rely on the data provided herein. The Town of York expressly disclaims any representations and warranties, including, without limitation, the implied warranties of merchantability and fitness for a particular purpose. This disclaimer can be seen at under the Community Development Department GIS Maps website.

HARRIMAN

YORK COMMUNITY AUDITORIUM
1 ROBERT STEVENS DRIVE
YORK, MAINE

AERIAL VIEW


GYM
NEW AUDITORIUM
ADDITION LOCATION
MUSIC
Robert Stevens
Cottage Ln

HARRIMAN

RECEIVED
DEC 08 2015
By 1712-15

December 7, 2015

Mr. Earle Shettleworth
Maine Historic Preservation Commission
55 Capitol Street
State House Station 65
Augusta, ME 04333

Re: York High School
York, Maine
Project No. 14467
Permitting for Expanded Auditorium

Dear Mr. Shettleworth:

We are currently assisting the York School Department in planning an addition to the York High School facility on Robert Stevens Drive in York. The existing auditorium that currently seats 250 will be removed and a new Community Auditorium that seats 750 will be constructed in the same location. As shown on the enclosed aerial views, the addition will be constructed within the current high school footprint without disturbing the existing perimeter driveway. Enclosed you will find a copy of a GIS York map, an aerial view showing the new auditorium outline in red, and a perspective view showing the appearance of the new addition matching the existing architecture. The expansion site is presently fully developed with existing school building, walkways, and grass lawns.

Information is needed on sites of historic significance on the project site or in the immediate vicinity. If no such historic sites exist in the area, a written statement from your agency to that effect is required for a Town Planning Board Permit. Please send us your response by December 16, 2015, if at all possible.

Should you need further information on site location or other aspects of the project, please let us know. Thank you.

Sincerely,
Harriman

Frank L. Crabtree, P.E., LEED AP BD+C
Civil Engineer
fcrabtree@harriman.com
sbest

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Kirk F. Mohney
Kirk F. Mohney,
Deputy State Historic Preservation Officer
Maine Historic Preservation Commission

12/16/15
Date

Enclosures: GIS Map
Aerial Plan
Perspective Plan

Cc: Zak Harding

46 HARRIMAN DRIVE
AUBURN, ME 04210
207.784.5100

123 MIDDLE STREET
PORTLAND, ME 04101
207.775.0053

ONE PERIMETER ROAD
MANCHESTER, NH 03103
603.626.1242

www.harriman.com

6.

WATER, SEWER, FIRE, PUBLIC WORKS LETTERS

YORK WATER DISTRICT

From: Don Neumann <dneumann@yorkwaterdistrict.org>
Sent: Thursday, December 10, 2015 2:52 PM
To: Frank L. Crabtree; 'Scott Hastings'; Dylan Smith
Cc: zharding@yorkschools.org; Jeffrey P. Larimer; 'Todd T. Hill'; Richard O. Marchessault
Subject: RE: York High School Auditorium - Capacity Letter

Importance: High

Follow Up Flag: Follow up
Flag Status: Flagged

Hello Frank;

This message is to confirm the York Water District will have no issue serving the proposed expansion of the York High School Auditorium.
If you have any questions or concerns, don't hesitate to contact me.

Respectfully,

Don

Donald D. Neumann Jr.
Superintendent
York Water District
86 Woodbridge Road
York, Maine 03909
tel 207-363-2265
cell 207-451-8106
dneumann@yorkwaterdistrict.org
www.yorkwaterdistrict.org

From: Frank L. Crabtree [mailto:fcrabtree@harriman.com]
Sent: Wednesday, December 09, 2015 5:35 PM
To: Don Neumann <dneumann@yorkwaterdistrict.org>
Cc: zharding@yorkschools.org; Jeffrey P. Larimer <jlarimer@harriman.com>; Todd T. Hill <thill@yorkwaterdistrict.org>; Richard O. Marchessault <rmarchessault@harriman.com>
Subject: York High School Auditorium - Capacity Letter

Don, our plumbing designer, Richard Marchessault, has the following answer to your question:

"The addition will be fed from the existing sprinkler system. We are going to add another sprinkler zone riser connected to the existing one at the sprinkler service entrance inside the building."

Any other information/coordination that you need, please let us know. Thank you.

Frank L. Crabtree, PE, LEED AP BD+C
HARRIMAN
207.784.5100

HARRIMAN

December 8, 2015

Mr. Don Neumann dneumann@yorkwaterdistrict.org
York Water District
P.O. Box 447
86 Woodbridge Road
York, ME 03909

Re: York High School, Community Auditorium
York, Maine
Project No. 14467
Water Supply for Community Auditorium – Capacity Letter

Dear Mr. Neumann:

We are currently assisting the York School Department in planning an addition to the York High School facility on Robert Stevens Drive in York. The existing auditorium that currently seats 250 will be removed and a new Community Auditorium that seats 750 will be constructed in the same location. As shown on the enclosed drawings, the addition will be constructed within the current high school footprint without encroaching on the existing perimeter driveway. Enclosed you will find a copy of an aerial view showing the new auditorium outline in red, and two "preliminary" drawings showing the demolition and construction of the new addition.

The expanded auditorium will have 500 additional seats compared to the existing auditorium. The Maine Plumbing Code lists 5 gpd/seat for theater use. On a day that has an event in the auditorium, it is expected to generate approximately 2,500 gallons per day more than the current auditorium event. Any school-day use of the auditorium will be attended by students and staff within the building and will not add to the current daily water use. The renovated school/auditorium will have a net increase of 8 toilets, 1 urinal, 4 lavatories, 7 single sinks, and 4 drinking fountains. All water supply lines for the auditorium will be connected into the existing high school water lines with no exterior water line extensions.

Please send us a letter stating the adequacy of the municipal water supply system to serve the expanded auditorium at the High School. This letter is required by the Town of York for inclusion in the Site Plan Review permit. Please contact me with any questions you have.

Thank you very much.

Sincerely,
Harriman

Frank L. Crabtree, P.E., LEED AP BD+C
Civil Engineer
fcrabtree@harriman.com
sbest

Encl: Aerial View
Existing/Demolition Plan C10.1
Site Grading/Utility Plan C40.1

Cc w/enc: Zak Harding (zharding@yorkschools.org)

46 HARRIMAN DRIVE
AUBURN, ME 04210
207.784.5100

123 MIDDLE STREET
PORTLAND, ME 04101
207.775.0053

ONE PERIMETER ROAD
MANCHESTER, NH 03103
603.626.1242

www.harriman.com

YORK SEWER DISTRICT

From: tim haskell [mailto:thaskell@yorksewerdistrict.org]
Sent: Tuesday, December 08, 2015 1:50 PM
To: 'Scott Hastings'
Cc: Dylan Smith; Sara B. Estes
Subject: FW: 14467: York High School, Community Auditorium - File Transfer - Sewer Capacity Letter

Scott:
I received the attached documentation regarding the proposed additional wastewater flow to be added to the collection system by the York School Departments new auditorium addition at the high school. The estimate indicates an additional amount of 2500 gallons per day which the District has more than enough capacity to accommodate.
Once the project has gone through the Town's approval process the applicant will have to receive a Connection Permit from the York Sewer District prior to commencement of any construction.
Please let me know if you require any additional information.

Timothy H. Haskell
Superintendent

York Sewer District
P.O. Box 1039
21 Bay Haven
York Beach, ME 03910-1039
thaskell@yorksewerdistrict.org
(P) 207-363-4232
(F) 207-363-6701

Confidentiality notice: This message is intended only for the person to whom addressed in the text above and may contain privileged or confidential information. If you are not that person, any use of this message is prohibited. We request that you notify us by reply to this message, and then delete all copies of this message including any contained in your reply. Thank you.

HARRIMAN

December 8, 2015

Mr. Tim Haskell thaskell@yorksewerdistrict.org
York Sewer District
21 Bay Haven Rd.
P.O. Box 1039
York Beach, ME 03910-1039

Re: York High School, Community Auditorium
York, Maine
Project No. 14467
Sewer Use for Community Auditorium – Capacity Letter

Dear Mr. Haskell:

We are currently assisting the York School Department in planning an addition to the York High School facility on Robert Stevens Drive in York. The existing auditorium that currently seats 250 will be removed and a new Community Auditorium that seats 750 will be constructed in the same location. As shown on the enclosed drawings, the addition will be constructed within the current high school footprint without encroaching on the existing perimeter driveway. Enclosed you will find a copy of an aerial view showing the new auditorium outline in red, and two "preliminary" drawings showing the demolition and construction of the new addition.

The expanded auditorium will have 500 additional seats compared to the existing auditorium. The Maine Plumbing Code lists 5 gpd/seat for theater use. On a day that has an event in the auditorium, it is expected to generate approximately 2500 gallons per day more than the current auditorium event. Any school-day use of the auditorium will be attended by students and staff within the building and will not add to the current daily water use. The renovated school/auditorium will have a net increase of 8 toilets, 1 urinal, 4 lavatories, 7 single sinks, and 4 drinking fountains. All sewer lines for the auditorium will be connected into the existing high school sewer lines with no exterior line extensions.

Please send us a letter stating the adequacy of the municipal sewer system to serve the expanded auditorium at the High School. This letter is required by the Town of York for inclusion in the Site Plan Review permit by December 16, 2015. Please contact me with any questions you have.

Thank you very much.

Sincerely,
Harriman

Frank L. Crabtree, P.E., LEED AP BD+C
Civil Engineer
fcrabtree@harriman.com
sbest

Encl: Aerial View
Existing/Demolition Plan C10.1
Site Grading/Utility Plan C40.1

Cc w/enc: Zak Harding (zharding@yorkschools.org)

46 HARRIMAN DRIVE
AUBURN, ME 04210
207.784.5100

123 MIDDLE STREET
PORTLAND, ME 04101
207.775.0053

ONE PERIMETER ROAD
MANCHESTER, NH 03103
603.626.1242

www.harriman.com

HARRIMAN

December 11, 2015

Mr. Dean Lessard dlessard@yorkmaine.org
York Public Works
115 Chase's Pond Road
York, ME 03909

Re: Community Auditorium
York High School, York, Maine
Project No. 14467
Initial Traffic Assessment Letter

Dear Mr. Lessard:

We are currently assisting the York School Department in planning an addition to the York High School facility on Robert Stevens Drive in York. The existing auditorium that currently seats 250 will be removed and a new Community Auditorium that seats 750 will be constructed in the same location. As shown on the enclosed drawing, the addition will be constructed within the current high school footprint without encroaching on the existing perimeter driveway. Enclosed you will also find a copy of an aerial view showing the new auditorium outline in red.

Randy Dunton of Gorrill-Palmer Engineers has prepared a Preliminary Parking and Traffic Assessment, dated December 4, 2015. A copy is enclosed for your review. The assessment was also sent to the MDOT office in Scarborough for their concurrence, and a copy of that letter is also enclosed for your use.

Please review this information and let me know if you have any comments or concerns. Please contact Randy Dunton at Gorrill-Palmer or me with any questions you may have.

Thank you very much.

Sincerely,
Harriman

Frank L. Crabtree, P.E., LEED AP BD+C
Civil Engineer
fcrabtree@harriman.com
sbest

Encl: Aerial View
Gorrill-Palmer Preliminary Traffic Assessment
Gorrill-Palmer MDOT Concurrence Letter

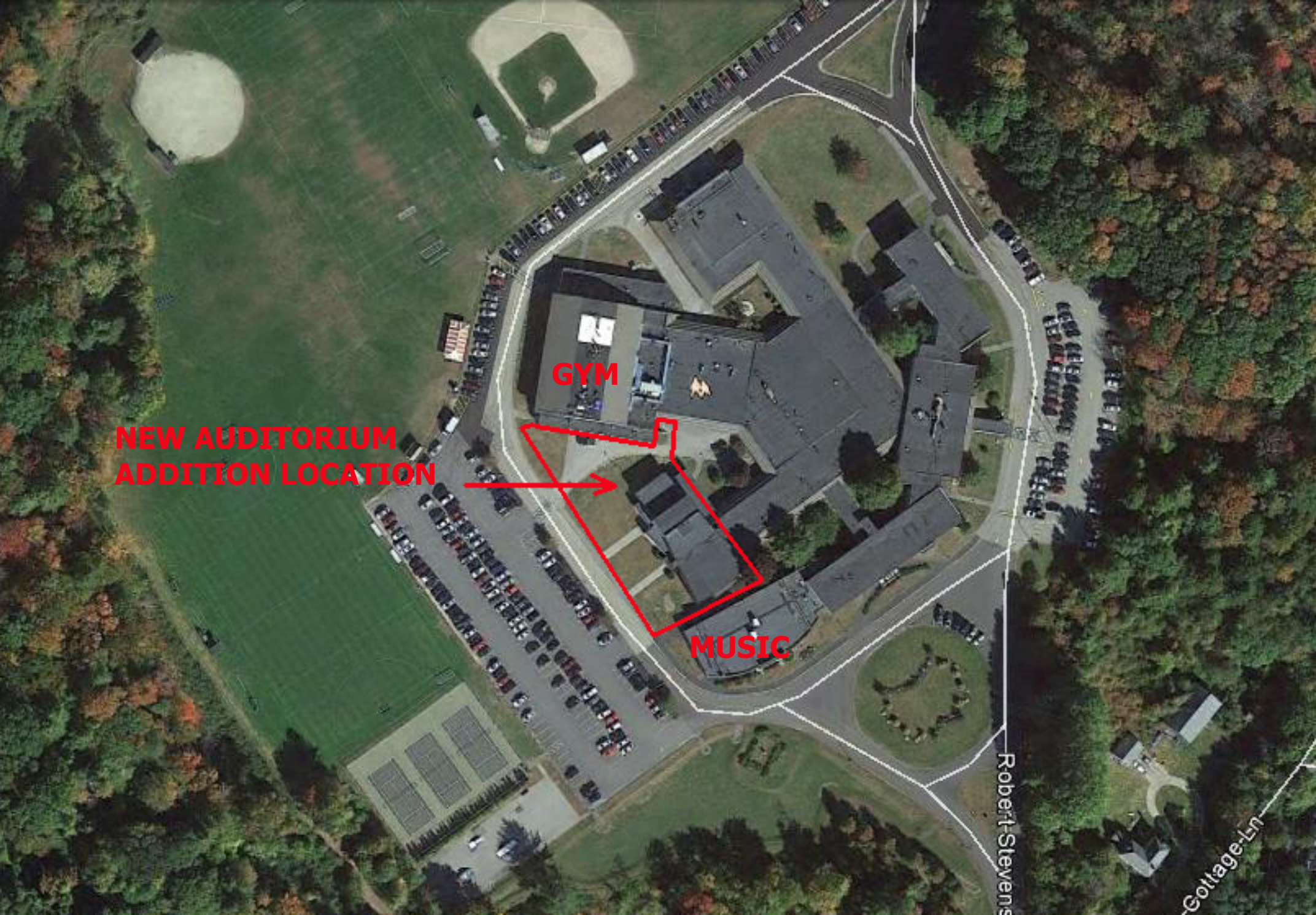
Cc w/enc: Zak Harding (zharding@yorkschools.org)

46 HARRIMAN DRIVE
AUBURN, ME 04210
207.784.5100

123 MIDDLE STREET
PORTLAND, ME 04101
207.775.0053

ONE PERIMETER ROAD
MANCHESTER, NH 03103
603.626.1242

www.harriman.com


GYM
NEW AUDITORIUM
ADDITION LOCATION
MUSIC
Robert Stevens
Cottage Ln

GORRILL PALMER

PO Box 1237, 15 Shaker Road
Gray, Maine 04039
207.657.6910

Preliminary Traffic and Parking Assessment
York High School Auditorium
York, Maine
December 4, 2015

Gorrill Palmer (GP) is pleased to provide this preliminary traffic and parking assessment for the York High School auditorium in York, Maine. The existing auditorium has 250 seats and will be demolished and replaced with a 750 seat auditorium, for a net increase of 500 seats. The auditorium would primarily be used for major events after school hours. The school already has a policy that major events would not occur in the 1,100 seat gym and the auditorium at the same time.

Trip Generation

Typically, trip generation for a new facility is based on the Institute of Transportation Engineers' (ITE) publication, *Trip Generation Manual*. However, this publication does not have sufficient information (only one study) for Land Use Code (LUC) 441 – Live Theater to provide a reliable trip generation estimate. For that reason, GP used the ITE's publication *Parking Generation*, Fourth Edition, to forecast the trip generation for the proposed auditorium. GP assumed that the parking demand ratio for the site would be equal to the trip generation rate for the site during the PM peak hour. The average parking supply ratio for the expanded auditorium is 0.33 spaces/seat, so the trip generation rate would be 0.33 trip ends/seat, giving a forecast trip generation of 165 trip ends during the PM peak hour for the additional 500 seats. The total forecast trip generation for the 750 seats is 248 trip ends. A trip end is a trip into or out of the site, thus a round trip would be two trip ends. The trip generation rate of the existing gymnasium is expected to be equal to that of the auditorium, so the existing trip generation of the 1,100 seat gymnasium is approximated to be 363 trip ends, significantly more than the proposed auditorium will experience. The detailed trip generation calculations are attached.

In addition to checking the trip generation of a proposed school expansion, whenever a school is added onto or expanded, MaineDOT requires that the student enrollment for the previous ten years be reviewed to determine if the school has increased in enrollment over those ten years such that it triggers the threshold for requiring a MaineDOT Traffic Movement Permit. GP reviewed the High School enrollment numbers for the past ten years provided by Zak Harding, Director of Facilities, to determine if trip generation for the school has increased. The overall trend for student enrollment over the past ten years is decreasing, so no additional traffic has been added to the site and the school does not trigger the 99 trip end per peak hour threshold increase requiring a MaineDOT Traffic Movement Permit.

Since the proposed auditorium is forecast to generate less trips than the existing gymnasium, it is our opinion that the proposed expanded auditorium does not trigger the threshold for requiring a MaineDOT Traffic Movement Permit. A letter requesting concurrence of this conclusion has been sent to Mr. Timothy Soucie, MaineDOT Region One Traffic Engineer.

Sight Distance

Both the Town of York and MaineDOT have guidelines for measuring sight distance. MaineDOT also has sight distance standards for driveways with greater than 30% larger vehicles (busses, commercial trucks, etc.). The Town does not have sight distance standards for larger vehicles. Since the site entrances are school driveways, a high percentage of busses is a potential. The basic sight line standards are as follows:

Sight Line Criteria

Posted Speed (mph)	Town of York Sight Distance (ft)	MaineDOT Standard Vehicles Sight Distance (ft)	MaineDOT Larger Vehicles Sight Distance (ft)
25	250	200	300
30	300	250	375
35	350	305	460
40	400	360	540
45	450	425	640

The MaineDOT and Town measure sight distance using the same methodology. The evaluation method is as follows:

Driveway observation point	10 feet from travel way
Height of eye at driveway	3 ½ feet above ground*
Height of approaching vehicle	4 ¼ feet above ground

*MaineDOT requirement for larger vehicles is height of eye is 6 feet above the ground

The existing high school has two primary accesses, one onto Webber Road to the north and one onto Long Sands Road to the south. Both driveways are full movement driveways. GP has evaluated the available sight lines at the existing driveways in accordance with both Town and MaineDOT criteria. The speed limit on Webber Road is posted 25 mph and the speed limit on Long Sands Road is posted 35 mph. The following table summarizes the measured sight distances:

Sight Distance Summary

Approach	Sight Distance (ft)						
	Passenger Vehicles		Busses		Town and MaineDOT Requirements		
	Looking Left	Looking Right	Looking Left	Looking Right	York Required	MaineDOT Standard Required	MaineDOT Large Required
Exiting Driveway onto Webber Road	350	+460	350	+460	250	200	300
Exiting Driveway onto Long Sands Road	275	+640	275	+640	350	305	460

As summarized in the table, the sight distances at the site driveway onto Webber Road exceed both the Town and MaineDOT requirement. The site driveway onto Long Sands Road exceeds the Town and MaineDOT requirements looking right, but not looking left due to the horizontal curve of the road and dense vegetation. It is our recommendation that the vegetation be cut back to the maximum extent practicable and if the recommended sight distance is still not achieved, that a warning sign be erected for vehicles on Long Sands Road traveling westerly toward the school driveway.

Crash Summary Data

GP obtained the crash data from MaineDOT for the period of 2012-2014, the most recent period available at the time this report was prepared (attached).

In order to evaluate whether a location has a crash problem, MaineDOT uses two criteria to define a High Crash Location (HCL). Both criteria must be met in order to be classified as an HCL.

1. A critical rate factor of 1.00 or more for a three-year period. (A Critical Rate Factor {CRF} compares the actual crash rate to the rate for similar intersections in the state. A CRF of less than 1.00 indicates a rate of less than average) **and**:

2. A minimum of eight crashes over the same three-year period.

Based on the crash data provided by MaineDOT, there are no high crash locations in the vicinity of the site. The intersection of the school driveway and Long Sands Road identified in the previous section as having a sight distance restriction, recorded two crashes in the three year time period reviewed, well below the criteria for a high crash location.

Parking Demand

GP used the Institute of Transportation Engineers' publication *Parking Generation*, Fourth Edition, LUC 441 – Live Theater and the Town of York Zoning Ordinance to forecast the parking demand of the proposed auditorium.

Parking Demand Summary

Building	Capacity	ITE		York Ordinance Parking Demand	
		Rate	Spaces	Rate	Spaces
Auditorium	750 seats	0.33 spaces/seat	248	1 space / 3 seats	250
Gymnasium	1,100 seats	0.33 spaces/seat	363	1 space / 3 seats	367

As shown in the table, the existing gymnasium is forecast to have a higher parking demand than the proposed auditorium. It is our understanding that the existing parking lot has 370 parking spaces. Since the school has a policy that there will not be major events in the auditorium and gymnasium at the same time, and that the existing parking supply is greater than the forecast parking demand, no additional parking spaces are needed to accommodate the expanded auditorium.

Conclusions

The following is a summary of the conclusions:

1. The proposed auditorium is forecast to generate 165 more trip ends than the existing auditorium during the PM Peak Hour. Since the total auditorium trip generation is less than the existing trip generation of the gymnasium, it is our opinion that a MaineDOT Traffic Movement Permit is not required.

2. Sight distances at the site driveways meet or exceed the requirements in all but one direction, which is due to a horizontal curve and dense vegetation. We recommend that the vegetation be cut back to the maximum extent practicable.

3. The crash data shows that there are no high crash locations within the study area.

4. The anticipated parking demand for the expanded auditorium is 250 spaces, which is less than the 370 existing parking spaces available. Therefore, since concurrent major events at the auditorium and gymnasium are against policy, as well as not allowing major events during school hours, no additional parking spaces are needed to accommodate the expansion.

Prepared By: Randall Dunton, PE, PTOE
Senior Engineer

GORRILL PALMER

PO Box 1237, 15 Shaker Road
Gray, Maine 04039
207.657.6910

December 4, 2015

Mr. Timothy Soucie, PE
MaineDOT Region 1 Traffic Engineer
51 Pleasant Hill Road
Scarborough, Maine 04070

Subject: Request for Concurrence
York High School Auditorium
York, Maine

Dear Tim,

Gorrill Palmer (GP) has been retained by the York School Department to complete a preliminary traffic assessment for the proposed York High School auditorium in York, Maine. The existing auditorium is 250 seats and will be demolished and replaced with a 750 seat auditorium, for a net increase of 500 seats. The school also has an existing 1,100 seat gymnasium. The school already has a policy that major events cannot occur either during school hours, or in the auditorium and gymnasium at the same time. As part of this traffic assessment we have investigated whether or not the new auditorium would require a MaineDOT Traffic Movement Permit.

As part of this project we examined the High School student enrollment for the last ten years provided by the York School Department Director of Facilities, Zak Harding. The overall trend for student enrollment is decreasing (675 students in 2006 to 619 students in 2015), so no additional school traffic is expected.

Additionally, GP forecasted the trip generation for the proposed auditorium. The Institute of Transportation Engineers' (ITE) publication, *Trip Generation*, Seventh Edition, Land Use Code (LUC) 441 – Live Theater has data from only one study. To more accurately forecast the trip generation, GP used the ITE publication *Parking Generation*, Fourth Edition and assumed that the trip generation rate during the PM Peak Hour would be equal to the parking demand rate. The average parking supply ratio for LUC 441 is 0.33 spaces/seat, giving a trip generation rate of 0.33 trip ends/seat. This rate gives an increase in trip generation (for 500 seats) of 165 trip ends during the PM Peak Hour.

GP compared the forecast trip generation for the auditorium to the trip generation of the existing 1,100 seat gymnasium. The total trip generation for the auditorium (all 750 seats) is 248 trip ends. The trip generation rate of the gymnasium is estimated to be the same as that of the auditorium, so the gymnasium is estimated to generate 363 trip ends during a major event. York High School has a policy that states that they will not schedule major events in the gymnasium and the auditorium at the same time. The auditorium is forecast to generate fewer trips during the PM Peak Hour than the existing gymnasium.

After a review of this information, it is our opinion that although the site is forecast to generate more than 99 peak hour trip ends, it will not require a MaineDOT Traffic Movement Permit because the forecast trip generation for the auditorium is less than the trip generation of the existing gymnasium, and major events will not occur concurrently.

We respectfully request your review of this information and if you agree, your concurrence in writing that a TMP is not required.

If you have any questions or wish to discuss this in more detail, please contact our office.

Sincerely,

Gorrill Palmer

Randy Dunton, P.E., PTOE
Senior Engineer

Copy: Zak Harding, Director of Facilities
Frank Crabtree, P.E., Harriman
Jeffery Larimer, AIA, CSI, Harriman

7.

SOILS EVALUATION

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Environmental Consulting • Materials Testing Services

21 July 2015

York School Department
Zak Harding, Director of Facilities
469 U.S. Route One
York, Maine 03909

Subject: Geotechnical Evaluation
Proposed York High School Community Auditorium
York, Maine
RWG&A Project No. 1017-005

Dear Mr. Harding:

R. W. Gillespie & Associates, Inc., (RWG&A) is pleased to present the attached report of geotechnical evaluation for the proposed Community Auditorium addition to the York High School in York, Maine. Geotechnical engineering services were performed in general accordance with RWG&A Proposal No. P-9049GI, dated 08 June 2015. The purpose of the services was to obtain information regarding subsurface conditions on which to base recommendations for design and construction of foundations, ground floor slabs, foundation drainage, and to determine building code seismic site class for the Community Auditorium.

The attached report presents the results of RWG&A's subsurface explorations, laboratory testing, engineering evaluations, and provides geotechnical design recommendations. In summary, subsurface conditions in the area of the project site consist of surficial topsoil on fill, over naturally deposited silty sand with gravel extending to bedrock.

With proper site preparation, the proposed addition may be supported on spread footings bearing on naturally deposited soils and compacted structural fill, with slab-on-grade ground floors. Perimeter footing drains are recommended.

RWG&A has enjoyed working with York High School and HARRIMAN Architects+Engineers (HARRIMAN) on this project. If you have any questions, or if we may be of further service, please contact us.

Sincerely,
R. W. GILLESPIE & ASSOCIATES, INC.

Joshua M. Boynton, E.I.
Geotechnical Engineer

Erik J. Wiberg, P.E.
Chief Geotechnical Engineer

Charles R. Nickerson, P.E.
Principal Reviewer

JMB/EJW:md
In duplicate

Copy: Frank Crabtree, PE, LEED AP BD+C, Harriman Architects+Engineers

G:\PROJECTS\1000\1017\1017-005\Reports\2015-07-21 GI Report 1017-005.docx

R.W. Gillespie & Associates, Inc.

Report
of
GEOTECHNICAL EVALUATION
for
PROPOSED YORK HIGH SCHOOL COMMUNITY AUDITORIUM
YORK, MAINE

Prepared
for
YORK SCHOOL DEPARTMENT
YORK, MAINE

Prepared
by
R. W. GILLESPIE & ASSOCIATES, INC.
SACO, MAINE

STATE OF MAINE
ERIK J. WIBERG
No. 9178
LICENSED
PROFESSIONAL ENGINEER

21 July 2015

Erik J. Wiberg
Maine P.E. Serial No. 9178

TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.01 Background 1
1.02 Scope of Services 1

2.0 SUBSURFACE EXPLORATION 2

3.0 LABORATORY TESTING 3

4.0 SUBSURFACE CONDITIONS 3

4.01 Subsurface Soils 3
4.02 Groundwater 3
4.03 Existing Foundations 4

5.0 EVALUATION OF GEOTECHNICAL DATA 4

5.01 General 4
5.02 Proposed Construction 4
5.03 Foundation and Ground Floor Slab 4
5.04 Rock Excavation 5
5.05 Foundation Drainage 5
5.06 Construction Considerations 5

6.0 RECOMMENDATIONS 6

6.01 Site Preparation 6
6.02 Site Filling 7
6.03 Foundations 8
6.04 Foundation Drainage 9
6.05 Ground Floor Slabs 9
6.06 Utilities 9
6.07 Temporary Excavations 10
6.08 Geotechnical Observation 10

7.0 CLOSURE 11

FIGURES
Figure 1, Locus Map
Figure 2, Exploration Location Plan

APPENDIXES
Appendix A, Limitations
Appendix B, Exploration Logs
Appendix C, Laboratory Test Results

1.0 INTRODUCTION

1.01 Background

The site is located at the York High School off of 1 Robert Stevens Drive in York, Maine as shown in Figure 1, *Locus Map*. The project consists of an addition that infills the area between the gym, music wing and a classroom wing. The area of proposed construction consists of the current auditorium and paved walkways and lawn. The project includes demolishing and removing the current auditorium to make way for the larger Community Auditorium. It is understood that the addition finish floor level will match the existing building floor level.

R.W. Gillespie & Associates, Inc.'s (RWG&A's) understanding of the site and proposed construction is based on communications with Harriman Architects+Engineers (HARRIMAN) including a site visit, review of HARRIMAN's *Request for Geotechnical Proposals York High School Community Auditorium* dated 28 May 2015 (RFP), results of the soil explorations and laboratory tests, and review of Sheet A10.1, titled *First Floor Plan* marked *Preliminary Not for Construction*, undated, prepared by HARRIMAN.

1.02 Scope of Services

Geotechnical engineering services were performed to develop site-specific field and laboratory soil data to make geotechnical evaluations for the proposed addition. RWG&A's services were performed in general accordance with RWG&A Proposal No. P-9049GI dated 08 June 2015. Refer to Appendix A for use and limitations of this report. As performed, RWG&A's scope of services included the following items:

- Reviewed RWG&A's soil borings and probe logs from its 2009 Music Wing geotechnical evaluation.

- Prepared a geotechnical subsurface exploration and sampling program to obtain information for use in geotechnical evaluations.

- Marked out exploration locations in the field prior to drilling. Contacted DigSafe and OK-to-DIG registered utility owners to verify planned boring locations were clear of utilities.

- Arranged to have the soil borings made by a drilling contractor as a subcontractor to RWG&A. Provided technical monitoring of the exploration activities so that depth, location, and sampling methods could be modified in response to subsurface conditions encountered.

- Arranged to have the test pits made by an earthwork contractor as a subcontractor to RWG&A. Provided technical monitoring of the exploration activities so that depth, location, and sampling methods could be modified in response to subsurface conditions encountered.

- Performed laboratory tests on soil samples recovered from the subsurface explorations to aid in soil description, and for determination of engineering properties needed for foundation design and site development analysis.

- Made engineering analyses with respect to proposed construction and geotechnical information requested in the RFP. Emphasis was placed on foundation type, allowable foundation loads, ground floor slabs, lateral load resistance, seismic site coefficient, perimeter foundation drainage, and excavations.

- Prepared this report of geotechnical evaluation presenting the findings, conclusions, and recommendations for design and construction.

2.0 SUBSURFACE EXPLORATION

The subsurface exploration program consisted of three machine-excavated test pits (TP-1 through TP-3) and eight test borings (B-101 through B-108). Figure 2, *Exploration Location Plan*, shows the approximate locations of the explorations.

Exploration activities were coordinated and monitored by an RWG&A representative who prepared the exploration logs. The soils were described in general accordance with *ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*. Logs of the explorations are included in Appendix B. Stratification lines shown on the exploration logs represent the estimated boundaries between the different soil types encountered and approximate refusal depths; the actual transitions will be more gradual and vary over short distances. Subsurface information should only be considered representative of subsurface conditions encountered within the vertical reach of the explorations on the date the explorations were made.

RWG&A marked the exploration locations in the field by taping from identifiable features shown on plans provided. Exploration locations should be considered accurate only to the degree implied by the method used to locate them.

Test Pits: Test pits TP-1 through TP-3, were excavated on 22 June 2015 by Abbot Construction of York, Maine using a John Deere 410B excavator. The test pits were excavated to depths of about 7 feet below local ground surface. Bulk samples of select soils encountered in the test pits were collected for laboratory testing. Test pits were terminated after encountering the bottom of foundations. The test pits were backfilled with material excavated from the test pit. The materials were placed in approximately one-foot thick lifts and compacted with the excavator bucket.

Test Borings: The test borings were drilled on 22 June 2015 by Great Works Test Borings Inc. of Rollinsford, New Hampshire using a track-mounted drill rig. Split-barrel sampling with standard penetration testing (*ASTM D1586, Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils*) was generally performed at about 5-foot intervals in the soil borings. The borings were advanced with solid-stem augers.

2009 RWG&A Music Wing Explorations: Soil borings B-1 and B-5 were drilled near the proposed Community Auditorium location in 2009 during the design phase of the Music Wing project. B-1 and B-5 were advanced through fill and naturally deposited soil to a refusal surface

of about 10.5 and 8.5 feet below local ground surface, respectively. The approximate locations of B-1 and B-5 are shown on Figure 2 and exploration logs are also provided in Appendix B.

3.0 LABORATORY TESTING

Laboratory testing was performed to assist in description and estimation of engineering properties of the soils. The laboratory testing program consisted of two grain-size distribution tests and moisture content determinations. The tests were performed in general accordance with the following methods and procedures:

- *ASTM D2216, Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass*.
- *ASTM C136 & C117, Standard Test Method for Sieve Analysis of Coarse & Fine Aggregate through #200 Sieve.*

Moisture content test results are presented on the exploration logs. Results of other tests are presented in Appendix C, *Laboratory Test Results*. Tests were conducted at the RWG&A soil and materials testing laboratory in Saco, Maine, which is accredited by the American Association of State Highway and Transportation Officials (AASHTO) for the tests performed.

4.0 SUBSURFACE CONDITIONS

4.01 Subsurface Soils

Subsurface conditions encountered in the proposed Community Auditorium area below the surficial topsoil, generally consisted of 0.5 to 5.5 feet of fill, over naturally deposited silty sand with gravel extending to refusal surfaces. Fill generally consisted of sand with silt to silty sand with gravel. Refusal surfaces were encountered at depths ranging from about 2.5 to 10 feet below existing ground surface. Refusal surfaces were generally interpreted to represent bedrock, but might be due to cobbles or boulders; rock coring would be needed to verify the nature of refusal surfaces. Please refer to the explorations logs in Appendix B for descriptions of subsurface conditions encountered at specific locations and depths.

4.02 Groundwater

Free water was not observed in the explorations. Water levels were influenced by the exploration methods (e.g., slow groundwater response due to low soil permeability) and are not considered representative of year-round stabilized groundwater levels. The absence of free water levels implies groundwater was not encountered in the explorations, but does not necessarily mean that groundwater would not be encountered at these locations within the vertical reaches of the explorations in the future. Groundwater levels at the site will fluctuate due to season, temperature, rainfall and construction activity in the area; therefore, water levels during and following construction will vary from those observed in the explorations.

4.03 Existing Foundations

Building foundations were exposed at the gym, music, and classroom wings by machine-excavated test pits. Observed conditions are summarized below.

Gym & Classroom: Exposed foundation dimensions and backfill were similar for TP-1 and TP-2 performed near the gym and classroom part of the existing building, respectively. The top of footing was about 6.5 feet below the top of wall. Top of wall was about 0.5 feet above local ground surface. From the outside edge of foundation wall to the outside edge of footing was about 4 inches. Fill generally consisted of silty sand with gravel and cobbles. The footings were bearing on soil; free water was not observed in the test pits.

Music Wing: TP-3 was excavated to expose foundation conditions near the music wing. The top of footing was about 6.5 feet below the top of wall. Top of wall was about 0.5 feet above local ground surface. Rigid insulation (2 inches thick) was on the outside of the foundation wall and extended from the top of footing to 1 foot below the top of wall. From the outside edge of the rigid insulation to the outside edge of footing was 8 inches. Fill generally consisted of sand with gravel and trace silt. The footings were bearing on soil; free water was not observed in the test pit.

5.0 EVALUATION OF GEOTECHNICAL DATA

5.01 General

Engineering evaluations for this project are based on subsurface explorations, laboratory testing, and the design features and structural loads currently available to RWG&A. Should differing information become known prior to or during construction, these evaluations should be reviewed by RWG&A to confirm their continued applicability.

5.02 Proposed Construction

The proposed building addition is irregular in shape and infills the area between the gym, music and existing auditorium. The proposed addition foot print will fit in a plan area of approximately 130 feet by 270 feet. The proposed finished floor level is elevation 37.6 feet, which is understood to be at the same level as in the existing building. It is understood that there are no below grade spaces and exterior grades will be within 1 to 2 feet above current ground surface.

Preliminary design column load information provided to RWG&A indicates column loads range from about 4 kips to 132 kips in the proposed addition area. Tolerable total and differential settlements provided by the structural engineer are ¾ inch and ½ inch respectively. If actual column loading will vary from the above, the following evaluations should be reviewed by RWG&A to confirm their continued applicability.

5.03 Foundation and Ground Floor Slab

With proper site preparation, the proposed Community Auditorium may be supported by shallow foundations consisting of spread and/or continuous footings with slab-on-grade floors all bearing on naturally deposited inorganic soil or newly compacted structural fill. Due to differences in

subgrade modulus and the potential for excessive differential settlement and crack damage, foundations should be supported entirely on soil and compacted fill, and not a combination of the soil and bedrock. It is anticipated that cobbles or boulders might be encountered within the limits of excavation for the foundations. Boulders protruding above bottom of footing subgrade level should be removed and the void backfilled with compacted structural fill.

5.04 Rock Excavation

Refusal surfaces were encountered at depths of 2.5 to 10 feet below current ground, which is above or near the anticipated bottom of footings. For relatively small quantities, rock excavation can likely be accomplished with mechanical methods (e.g., bulldozer or hydraulic excavator with rippers, jackhammers, and hydraulic hammers).

5.05 Foundation Drainage

Although groundwater was not observed in the explorations, it is anticipated that groundwater will tend to collect around building foundations. It is recommended perimeter footing drains be provided around the proposed addition to reduce accumulation of water and fugitive moisture.

5.06 Construction Considerations

Site Preparation: Up to about 5.5 feet of fill was encountered below ground surface in the proposed addition area. Preparation of the site prior to placement of the fill and methods used to place and compact the fill are uncertain. For planning and cost estimating purposes it should be anticipated that fill below the addition footprint will need to be excavated down to naturally deposited inorganic soil or bedrock, and replaced with structural fill.

Vibrations During Construction: Vibrations from construction activities might have deleterious effects on existing structures, occupants, and vibration sensitive equipment. Where self-propelled drum rollers are used for fill compaction, they might need to be operated in static mode. If compaction requirements cannot be met with this approach, then smaller sized and/or hand-operated compaction equipment and thinner fill lifts could be used to achieve compaction requirements while reducing construction vibrations.

Construction Dewatering: The on-site naturally deposited soils are moderately sensitive to disturbance when wet. To reduce disturbance of exposed subgrade soils due to precipitation, it will be important to divert runoff, provide positive grading to shed seepage and runoff from flat areas, and roll exposed soils to reduce rutting, ponding, and surface water infiltration. RWG&A anticipates that if groundwater is encountered during construction then groundwater control can be accomplished through the use of ditches, sumps, and open pumping.

Use of On-site Soils: It is anticipated the surficial topsoil will be stripped and be either incorporated into proposed landscaped areas, where practicable, or hauled off-site. Topsoil and organic materials are not considered suitable for use as common fill.

The subsurface soils from foundation and site work excavations in the proposed addition generally consist of fill and naturally deposited silty sand with gravel. Particle size test indicates the fill soils near the gym and classrooms contains a high percentage of fine particles (finer than #200 sieve) and is considered unsuitable for use as compacted structural fill beneath or as

backfill around foundations. Particle size test indicates the fill soils near the music wing might be considered suitable for use as compacted structural fill beneath or as backfill around foundations. If on-site soils are proposed for use other than common fill, the soil should be stockpiled separately and tested to determine if it meets specification requirements for its intended use.

6.0 RECOMMENDATIONS

The recommendations presented below are provided for use in design of the proposed addition foundations and ground floor slabs. Foundation design and site work construction will be greatly influenced by subsurface conditions at the project site. RWG&A recommends foundation design and construction be in compliance with the requirements of all applicable ordinances, regulations, and rules. When this report was prepared, the applicable building code in York, Maine was the Maine Uniform Building Code which adopts *2009 International Building Code®* by reference.

6.01 Site Preparation

1. All topsoil, fill, organic material, debris, rubbish, frozen soils, muck, loose, or disturbed soils and other unsuitable materials should be removed from areas of proposed construction. Unsuitable materials include uncontrolled fills (i.e., fills placed without systematic densification and moisture control to an acceptable percent compaction) and deleterious substances.

2. Due to the previously developed nature of the site, the Project Contractor and their Subcontractors should be sensitive to the potential of encountering obstructions such as remnants from prior structures and buildings, associated foundations, and underground utilities (note: both active and abandoned) during site and earthwork activities. It is anticipated that obstructions may include, but not limited to, pipes, concrete footings, masonry block, rubble, dry wells, and buried utilities. Where such items are encountered beneath the proposed building limits, they should be excavated to their full extent, removed, and replaced with compacted structural fill. The ends of underground pipes and utility conduits outside the proposed building footprints that will be abandoned in-place should be filled with concrete and capped to prevent erosion of material into the conduit or pipe.

3. Existing fill below ground floor slabs areas and within 10 feet outside of building limits that does not meet specification requirements for compacted structural fill should be removed and replaced. Excavated fill proposed for reuse at other locations should be stockpiled and tested for conformance with its intended use.

4. Proof-rolling should be performed using a fully-loaded, tandem-axle dump truck weighing not less than 25 tons. Proof-rolling should not be performed over culverts, pipes, conduits, or other underground construction that might be damaged by proof-rolling equipment. Soft areas or areas that yield excessively during proof-rolling should be over excavated and replaced with structural fill. Soft areas or areas that yield excessively are characterized by weaving or rutting more than one inch deep.

5. Surface grading should provide positive drainage away from constructed facilities both during and after construction. Dewatering requirements will vary across the site based on groundwater levels encountered during construction and soil types. In general, it should be practical to accomplish construction dewatering from within excavations using open pumping methods to a depth of one to two feet below groundwater surface. Surface runoff and infiltration of groundwater should be controlled so that excavation, filling, and foundation construction can be completed in-the-dry.

6.02 Site Filling

6. Only structural fill should be used as fill below foundations, ground floor slabs, and as backfill within 2 feet of footings, piers, and foundation walls. Structural fill should be a well-graded sand and gravel mixture free of roots, topsoil, loam, organic material, and any other deleterious materials, as well as clods of silt or clay, and meet the following gradation requirements:

Screen or Sieve Size	Percent Passing
6 inches	100
3 inches	70 – 100
No. 4	35-70
No. 40	5-35
No. 200	0-5

(Note: Maximum particle size should be limited to 3 inches within 2 feet of foundation walls, footings, and floor slabs.)

7. In open areas, structural fill should be placed in level, uniform lifts not exceeding 12 inches in uncompacted thickness and be compacted with self-propelled compaction equipment. In confined areas and within 4 feet of foundation walls, structural fill should be placed in lifts not exceeding 6 inches in uncompacted thickness and be compacted with hand-operated compaction equipment. All fill placed for footing and slab support should be structural fill compacted to at least 95 percent of the maximum dry density as determined by *ASTM Standard D1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3(2,700 kN-m/m^3)).*

8. Large compaction equipment may cause perceptible shaking inside and near existing buildings. This is due, in part, to the close proximity of proposed construction to existing buildings. The shaking may be disturbing to occupants inside the building, and also may cause items hanging on the walls to fall and windows to crack. Methods of reducing these vibrations include using smaller compaction equipment, and compacting with vibratory energy at low settings or statically, if necessary. Compacting with low vibratory energy or statically will require use of thinner fill lifts and more passes/coverages with the equipment to achieve the necessary density.

6.03 Foundations

9. The proposed building addition should be designed to withstand lateral, uplift, and overturning forces due to earthquakes. The in-place soils encountered in the explorations are not considered susceptible to liquefaction. In accordance with the *2009 International Building Code*®, the site is classified as Site Class C.

10. The proposed addition may be supported on spread and/or continuous footings bearing on the inorganic naturally deposited soils or compacted structural fill. The footings should be proportioned for an allowable load bearing value of 3,000 pounds per square foot. Total and differential settlements of about ½ inch are anticipated. Minimum footing width should be in accordance with concrete design and building code requirements, and no less than 2 feet. For footings having a least lateral dimension less than 3 feet, the above allowable pressure should be taken as ⅓ of the above value times the least lateral dimension in feet.

11. Where bedrock is encountered at/or above foundation subgrade level, the bedrock should be removed to a minimum depth of 12 inches below design bottom of foundation and replaced with compacted structural fill (i.e. no direct bearing on bedrock). For relatively small quantities, rock excavation can likely be accomplished with mechanical methods (e.g., bulldozer or hydraulic excavator with rippers, jackhammers, and hydraulic hammers).

12. Excavation for footing and ground floor slab bearing surfaces in soil or fill should be performed by earthwork equipment fitted with smooth-edged buckets. Final subgrade preparation should include compaction of fill or naturally deposited soil subgrades with hand-guided, vibratory compaction equipment. Following compaction and prior to placement of concrete, care should be taken to limit disturbance of the bearing surfaces. Any loose, softened, or disturbed material due to construction traffic should be removed prior to placement of concrete, and backfilled with compacted structural fill.

13. It is recommended that design bottom of footing level for exterior footings bearing on structural fill or naturally deposited soil be a minimum of 4 feet below lowest adjacent ground surface exposed to freezing temperatures. At heated interior locations footings may be designed to bear a minimum of 2 feet below top of ground floor slab or adjacent ground surface whichever is lower. If exposure to freezing temperatures is anticipated, either during or following construction, then interior footings bearing on structural fill or naturally deposited soils should be lowered in accordance with the recommendations for exterior footings.

14. The integrity of natural soils and structural fill must be maintained during cold weather conditions. Footing and slab subgrades should not be allowed to freeze. The naturally deposited soils are considered moderately to highly frost susceptible. Freezing of subgrade soils beneath footings and floor slabs might result in heaving and post-construction settlement. The Contractor should make every effort to prevent freezing of subgrade soils. In the event frost penetration occurs, all frozen and previously frozen soils should be removed and replaced with compacted structural fill. At no time should frozen material be placed as fill.

15. Lateral loads from wind and earthquake may be resisted by friction between the bottoms of footings and supporting subgrades, and by passive earth pressures against the sides of the foundation. A friction coefficient of 0.25 and an equivalent fluid pressure of 150 pcf against sides of footings should be used in design of footings.

6.04 Foundation Drainage

16. Perimeter footing drains should be installed around the addition. The drains should be installed at the exterior bottom of footing level or at least 18 inches below the adjacent finished floor level, whichever is lower. The drains should consist of perforated pipe bedded in 2 cubic feet of underdrain stone per linear foot. The underdrain stone should be encapsulated in a filter fabric.

17. Flow from the foundation drains should be conveyed by gravity to a surface drainage feature or storm drain that will be free flowing at all times and under all conditions. Multiple outlets should be provided so as not to be dependent on a single flow path. Surface water drainage features including roof drains, pipes, catch basins, manholes, drip edges, and infiltration trenches and basins, should direct water away from foundation drainage at all times and locations. Surface and roof drains should not be connected to the foundation drains.

6.05 Ground Floor Slabs

18. Interior floors may be slab-on-grade construction based on a subgrade modulus of 150 pounds per cubic inch. The slab should be underlain by a minimum of 12 inches of compacted structural fill. A vapor retarder should be provided below the ground floor slab to reduce moisture infiltration. Concrete slab-on-grade floors, regardless of their design or construction, are prone to some cracking and the use of control joints and concrete reinforcing are methods to reduce random patterned cracking. It is anticipated design and construction details of the floor slab, including concrete thickness, reinforcing, bedding, control joint depth and spacing, and the vapor retarder type and thickness, will be provided by the project Structural Engineer.

19. Exterior slabs at entrances and other locations sensitive to frost action should be underlain by a minimum of 4 feet of underdrain stone. The underdrain stone should be completely wrapped in a filter fabric to prevent the migration of surrounding soils into the stone. Underdrain stone should consist of State of Maine Department of Transportation, *Standard Specifications Revision of December 2002, 703.22 Underdrain Backfill Material Type C*. Slabs at locations where frost heaving is tolerable should be underlain by a minimum of 24 inches of structural fill. The surrounding area should be pitched to drain away in order to reduce available moisture for ice and frost lens generation.

6.06 Utilities

20. Utilities may be earth supported. Bedding placed between the utility and subgrade should be in compliance with the utility and manufacturer requirements for the type of conduit or pipe being installed.

21. Trench backfill beneath slabs and pavements should be systematically compacted in lifts to reduce post-construction settlement of the ground surface.

6.07 Temporary Excavations

22. Soils at this site, encountered below surficial topsoil consist of fill, and naturally deposited silty sand with gravel. We anticipate that foundation and utility excavations can be accomplished using sloped, open-cut techniques. It is also anticipated that dewatering can be accomplished using sumps and open pumping methods.

    The Contractor should be aware that slope height, slope inclination, and excavation depths (including utility trench excavations) should in no case exceed those specified in local, state, or federal safety regulations (e.g., OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations). Such regulations are strictly enforced and, if they are not followed, the Owner, Contractor, and/or earthwork and utility subcontractors could be liable for substantial penalties.

    As a safety measure, it is recommended all vehicles and spoil piles be kept a minimum lateral distance from the top of excavations equal to no less than 100 percent of the slope height. Exposed slope faces should be protected against the elements.

6.08 Geotechnical Observation

The geotechnical recommendations provided as the basis for design of this project were developed using limited numbers of observations and tests. The Owner should be sensitive to the potential need for adjustment in the field. It is recommended that the Owner retain RWG&A to observe geotechnical construction aspects of the project. These services should include observing general compliance with the design concepts, specifications and recommendations, and assisting in development of design changes should subsurface conditions differ from those anticipated prior to the start of construction. Observation improves the likelihood that the design intent will be carried out during construction. In addition, it allows RWG&A to confirm its design recommendations. For this project, geotechnical observation of the following aspects is recommended:

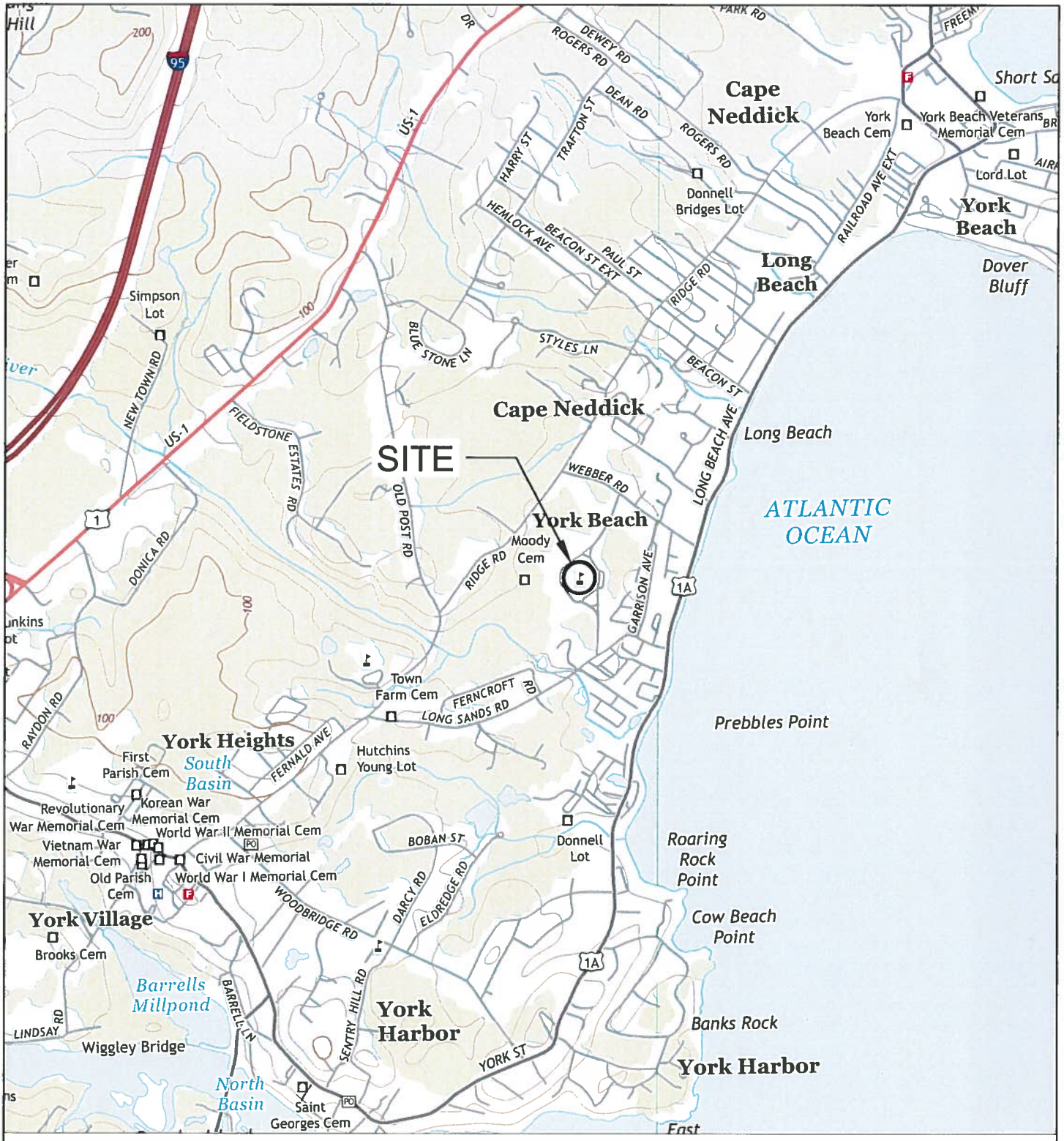
- Site stripping
- Removal of unsuitable fills
- Proof-Rolling
- Structural fill placement and compaction
- Preparation of foundation subgrades

In addition to geotechnical observation, RWG&A can also provide full service construction inspection and materials testing. This would include soils, portland cement and asphaltic concrete, structural steel and welding inspections, destructive and non-destructive testing, and special inspection services in fulfillment of building code requirements.

7.0 CLOSURE

This report has been prepared for specific application for the Proposed Community Auditorium to be built at York High School in York, Maine, for the exclusive use of HARRIMAN. This work has been completed in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made. In the event any changes are made in the nature, design, or location of the proposed construction, the conclusions and recommendations of this report should be reviewed by RWG&A.

The recommendations presented are based on the results of widely spaced explorations. The nature of variations between the explorations may not become evident until construction has begun. If variations are encountered, it will be necessary for RWG&A to re-evaluate the recommendations presented in this report. RWG&A requests an opportunity for a general review of the final design and specifications in order to determine that earthwork and foundation recommendations have been interpreted in the manner in which they were intended.



N

0 2000 3000 4000

SCALE, FEET

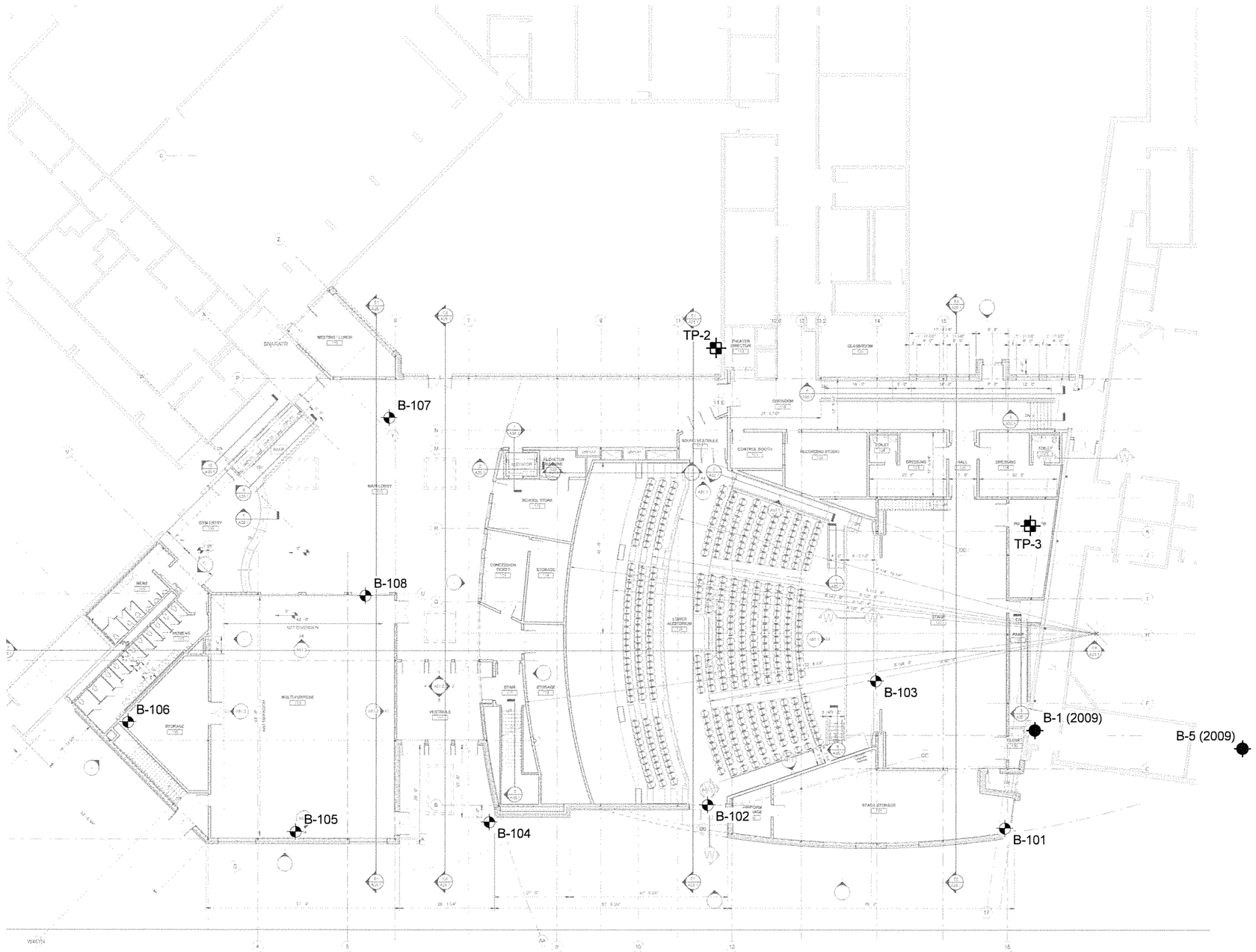
FIGURE 1
LOCUS MAP
GEOTECHNICAL ENGINEERING SERVICES
PROPOSED YORK HIGH SCHOOL COMMUNITY AUDITORIUM
YORK, MAINE

JULY 2015 PROJECT NO. 1017-005

SOURCE:
USGS 7.5-MINUTE TOPOGRAPHIC QUADRANGLE OF YORK HARBOR, ME, DATED 2014, AND YORK BEACH, ME, DATED 2014.

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Environmental Consulting • Materials Testing Services
Quality Services • Timely Advice • Sensible Solutions
www.rwgillespie.com

G:\AutoCad\1000\1017\1017-05\FIG 1, LOCUS MAP 1017-005.dwg, 7/21/2015 3:09:43 PM, \\SACO\Xerox WorkCentre 7855 PCL



LEGEND:

B-107 — APPROXIMATE LOCATION OF SOIL BORING PERFORMED BY RWG&A JULY 2015.

TP-2 — APPROXIMATE LOCATION OF TEST PIT PERFORMED BY RWG&A JULY 2015.

B-1 (2009) — APPROXIMATE LOCATION OF BORING PERFORMED BY RWG&A IN 2009.

SOURCE:
PRELIMINARY, UNDATED DRAWING A10.0, TITLED "FIRST FLOOR PLAN" BY HARRIMAN.

N

0 30 45 60
SCALE, FEET

FIGURE 2
EXPLORATION LOCATION PLAN
GEOTECHNICAL ENGINEERING SERVICES
PROPOSED YORK HIGH SCHOOL COMMUNITY AUDITORIUM
YORK, ME

JULY 2015 PROJECT NO. 1017-005

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Environmental Consulting • Materials Testing Services
Quality Services • Timely Advice • Sensible Solutions
www.rwgillespie.com

G:\AutoCad\1000\1017\1017-05\FIG 2, ELP 1017-005.dwg, 7/21/2015 2:24:02 PM, \\SACO\Xerox WorkCentre 7855 PCL

APPENDIX A

LIMITATIONS

Geotechnical Evaluation
Proposed York High School Community Auditorium
York High School
York, Maine

LIMITATIONS

This evaluation has been limited to consideration of the geotechnical aspects of the proposed Community Auditorium to be built at York High School in York, Maine. The purpose of the evaluation was to obtain information regarding subsurface conditions on which to base recommendations for design and construction of foundations, ground floor slabs, subsurface drainage, and to determine building code seismic site class for the Community Auditorium.

This geotechnical evaluation might also aid Contractors responsible for construction of the proposed addition. However, the recommendations and comments provided hereinafter are not intended to be instructions or directives to the project Contractors. The project Contractors must evaluate construction issues encountered in the work on the basis of their experience with similar projects taking in to account their own methods and procedures.

RWG&A has not considered the construction from a worker safety perspective. Construction safety is the responsibility of the project Contractor, who is also solely responsible for the means, methods, and sequencing of construction operations. RWG&A is providing this information as a service to HARRIMAN. Under no circumstances should this information be interpreted to mean that RWG&A, HARRIMAN, and/or the owner are assuming responsibility for construction site safety or the Contractor's activities; such responsibility is not being implied and should not be inferred.

RWG&A's services exclude an environmental site assessment relative to oil and hazardous materials or evidence of a potential release or threat of oil or hazardous materials on, below, or around the site. (Note: any statement in this report, or on the exploration logs, regarding odors or unusual or suspicious conditions is for informational purposes only and is not intended to constitute an environmental assessment.) Also exclude any service to investigate or detect the presence of mold or other biological contaminants, or any service that was designed or intended to prevent or lower the risk of the occurrence of an infestation of mold or other biological contaminants (MOBC infestation).

APPENDIX B

EXPLORATION LOGS

Geotechnical Evaluation
Proposed York High School Community Auditorium
York High School
York, Maine

RWG&A, Inc. soil descriptions are based on the following criteria. Descriptive terminology is used to denote the grain size and percentage of each component. The soil descriptions are based on visual-manual classification procedures, Standard Penetration Test results, and the results of laboratory testing on selected soil samples, where available. The Unified Soil Classification Group Symbol will be indicated in capital letters.

COMPONENT DEFINITIONS BY GRADATION SIEVE LIMITS

Materials	Definitions	Fractions	Upper	Lower
Boulders	Material too large to pass through an opening 12 in. square.			
Cobbles	Material passing through a 12 in. opening and retained on the 3 in. sieve.			
Gravel	Material passing the 3 in. sieve and retained on 1/4" (No. 4 sieve).	Coarse	3 in.	3/4 in.
		Fine	3/4 in.	1/4 in.
Sand	Material passing the No. 4 sieve and retained on the No. 200 sieve.	Coarse	No. 4 (1/4")	No. 10 (1/8")
		Medium	No. 10 (1/8")	No. 40 (1/32")
		Fine	No. 40 (1/32")	No. 200
Silt	Material passing the No. 200 sieve which is usually non-plastic in character and exhibits little or no strength when air dried.		No. 200	
Clay	Material passing the No. 200 sieve which can also be made to exhibit plasticity within a certain range of moisture contents and which exhibits considerable strength when air dried.		No. 200	

SOIL DESCRIPTION

General

Soils are described as to the Unified Soil Classification Systems Group Symbol, density or consistency, color, grain size distribution and other pertinent properties such as plasticity and dry strength. The RWG&A order of descriptors is as follows:

1. USCS Group Name and Symbol, or Fill
2. Density or Consistency
3. Moisture
4. Grain Size & Constituent percentages
5. Other pertinent descriptors
6. Color

DESCRIPTIVE TERMINOLOGY DENOTING COMPONENT PROPORTIONS

Descriptive Terms	Range of Proportions
Noun (major component)	≥50%
Adjective (secondary component)	20 - 50%
Some (third component)	25 - 45%
Little (second or third component)	15 - 25%
Few (second or third component)	5 - 15%
Trace	0 - 5%
With	Amount of component not determined. Used as a conjunction only. Does not indicate component percentile

OTHER DESCRIPTIVE TERMS

Where appropriate, geological classifications are also used (Glacial Till, etc.)

TYPICAL DESCRIPTIONS

SAND WITH SILT (SP-SM): Medium dense, moist, coarse to medium sand, few silt, brown.
FILL; Loose, dry, fine sand, some gravel and silt, with brick and concrete fragments, dark brown.
SILTY CLAY (CL); Very stiff, moist, silty clay, olive-brown.

DENSITY OR CONSISTENCY OF SOILS

COHESIVE SOILS

Consistency of Cohesive Soils	Standard Penetration Test (Blows Per Foot) (N)	Undrained Shear Strength (TSF)
Very Soft	0 - 2	Below 0.13 (250 psf)
Soft	2 - 4	0.13 to 0.25 (to 500 psf)
Medium	4 - 8	0.25 to 0.5 (to 1,000 psf)
Stiff	8 - 15	0.5 to 1.0 (to 2,000 psf)
Very Stiff	15 - 30	1.0 to 2.0 (to 4,000 psf)
Hard	Over 30	over 2.0 (over 4,000 psf)

Consistency of cohesive soils is based upon field vane shear, torvane, or pocket penetrometer, or laboratory vane shear or Unconsolidated-Undrained Triaxial Compression tests. Consistency of cohesive soils is based upon the Standard Penetration test when no other data is available.

COHESIONLESS SOILS

Density of Cohesionless Soils	Standard Penetration Test (Blows per Foot) (in)
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	over 50

PENETRATION RESISTANCE

STANDARD PENETRATION TEST (ASTM D1586) - a 2.0-inch diameter, 1-3/8 inch inside diameter split barrel sample is driven into soil by means of a 140-pound weight falling freely through a vertical distance of 30 inches. The total number of blows required for penetration from 6 to 18 inches is the Standard Penetration Resistance (N).

COBBLES AND BOULDERS

The percentage of cobbles and boulders is estimated visually where possible.

Descriptive Term	Estimated Percentage
Very Few	0 - 10%
Few	10 - 25%
Common	25 - 40%
Numerous	40 - 50%

If the percentage cannot be determined, as in a typical test boring, then use "with" to indicate the presence of cobbles and/or boulders. (i.e., gravelly sand with cobbles and boulders).

FILLS

The following terminology is used to denote size range of man-made materials within fill deposits:

Size Range	Comparative Soil Terms
<No. 200 Sieve	Silt - size
No. 200 to 1/4 in.	Sand - size
1/4 in. to 3 in.	Gravel - size
3 in. to 12 in.	Cobble - size
>12 in.	Boulder - size

SUPPLEMENTAL SOIL DESCRIPTION TERMINOLOGY

Term	Example	
Seam	Typically 1/16 to 1/2 inch thick	1/4 inch sand seams
Layer	Greater than 1/2 inch thick	2-inch sand layers
Occasional	One or less per foot of thickness	
Frequent	More than one per foot of thickness	
Interbedded	Alternating soil layers of different composition	
Varved	Alternating thin seams of silt and clay	
Mottled	Variations in color	

© R. W. Gillespie & Associates, Inc. 2008-12-17

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

Boring Log: B-101
Total Depth (ft): 5.5
Sheet 1 of 1

Project Name: York High School Community Auditorium
RWG&A Project No. 1017-005
Location: York, Maine
Client: York School Department
RWG&A Representative: C. Morrell
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: Not Obs.

Drilling Contractor: Great Works Test Boring
Drill Rig: Mobile B53
Driller Rep.: Jeff Lee
Date Started: 06/22/2015
Date Completed: 06/22/2015
Surface Elevation: ()
Drilling Method: SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	FILL; TOPSOIL WITH ORGANIC MATERIAL (3 inches).	4	2 50/3"	50+		
				FILL; Sand with gravel, dense, moist, fine to medium sand, little gravel, few silt, brown.					
5				Bottom of Exploration at 5.5'; Auger Refusal, possible bedrock.					
10									
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

Boring Log: B-102
Total Depth (ft): 7.5
Sheet 1 of 1

Project Name: York High School Community Auditorium
RWG&A Project No. 1017-005
Location: York, Maine
Client: York School Department
RWG&A Representative: C. Morrell
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: Not Obs.

Drilling Contractor: Great Works Test Boring
Drill Rig: Mobile B53
Driller Rep.: Jeff Lee
Date Started: 06/22/2015
Date Completed: 06/22/2015
Surface Elevation: ()
Drilling Method: SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	FILL; TOPSOIL WITH ORGANIC MATERIAL (4 inches).	11	2 3 4	7		
			S-2	FILL; Silty sand with gravel, medium dense, moist, fine to medium sand, some silt, little gravel, brown.	5	6 12 12	50+		
				SILTY SAND WITH GRAVEL (SM); Very dense, moist, fine sand, some silt, little gravel, gray and brown.		50/2"			
5			S-3		4	6 15 50/1"	50+		
				Bottom of Exploration at 7.5'; Auger Refusal, possible bedrock.					
10									
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

Boring Log: B-103
Total Depth (ft): 3
Sheet 1 of 1

Project Name: York High School Community Auditorium
RWG&A Project No. 1017-005
Location: York, Maine
Client: York School Department
RWG&A Representative: C. Morrell
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: Not Obs.

Drilling Contractor: Great Works Test Boring
Drill Rig: Mobile B53
Driller Rep.: Jeff Lee
Date Started: 06/22/2015
Date Completed: 06/22/2015
Surface Elevation: ()
Drilling Method: SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	FILL; TOPSOIL AND ORGANIC MATERIAL (3 inches).	8	3	25		
				FILL; Silty sand, medium dense, moist, fine sand, some silt, dark brown.		8			
				SILTY SAND WITH GRAVEL (SM); Medium dense, moist, fine to medium sand, some silt, little gravel, brown.		17			
						22			
				Bottom of Exploration at 3'; Auger Refusal, possible bedrock or boulder.					
5									
10									
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

Boring Log: B-104
Total Depth (ft): 8
Sheet 1 of 1

Project Name: York High School Community Auditorium
RWG&A Project No. 1017-005
Location: York, Maine
Client: York School Department
RWG&A Representative: C. Morrell
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: Not Obs.

Drilling Contractor: Great Works Test Boring
Drill Rig: Mobile B53
Driller Rep.: Jeff Lee
Date Started: 06/22/2015
Date Completed: 06/22/2015
Surface Elevation: ()
Drilling Method: SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	FILL; TOPSOIL AND ORGANIC MATERIAL (5 inches).	7	2 11 7 11	18		
				SILTY SAND WITH GRAVEL (SM); Medium dense, moist, fine to coarse sand, some silt, little gravel, brown.					
5			S-2	Increased drilling resistance possible weathered rock from 6-8'	3	5 50/5"	50+		
				Bottom of Exploration at 8'; Auger Refusal, possible bedrock or boulder.					
10									
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

Boring Log: B-105
Total Depth (ft): 2.5
Sheet 1 of 1

Project Name: York High School Community Auditorium
RWG&A Project No. 1017-005
Location: York, Maine
Client: York School Department
RWG&A Representative: C. Morrell
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: Not Obs.

Drilling Contractor: Great Works Test Boring
Drill Rig: Mobile B53
Driller Rep.: Jeff Lee
Date Started: 06/22/2015
Date Completed: 06/22/2015
Surface Elevation: ()
Drilling Method: SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	FILL; TOPSOIL AND ORGANIC MATERIAL (2 inches).	12	2	7		
				FILL; Silty sand, loose, moist, fine to medium sand, some silt, dark brown.		3 4			
			S-2	SILTY SAND WITH GRAVEL (SM); loose then very dense, fine to medium sand, some silt, little gravel, brown.	0	12 23 50/2"	50+		
				Bottom of Exploration at 2.5'; Auger Refusal, possible bedrock or boulder.					
5									
10									
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

Boring Log: B-106
Total Depth (ft): 10
Sheet 1 of 1

Project Name: York High School Community Auditorium
RWG&A Project No. 1017-005
Location: York, Maine
Client: York School Department
RWG&A Representative: C. Morrell
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: Not Obs.

Drilling Contractor: Great Works Test Boring
Drill Rig: Mobile B53
Driller Rep.: Jeff Lee
Date Started: 06/22/2015
Date Completed: 06/22/2015
Surface Elevation: ()
Drilling Method: SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	FILL; TOPSOIL AND ORGANIC MATERIAL (6 inches).	8	3 10 15 20	25		
				FILL: Silty sand with gravel, medium dense, moist, fine to medium sand, some silt, little gravel, brown.					
				SAND WITH SILT (SM); Dense, moist, fine to coarse sand, little silt, few gravel, brown.					
5			S-2		15	10 18 18 20	36		
10				Bottom of Exploration at 10'; Auger Refusal, possible bedrock or boulder.					
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

Boring Log: B-107
Total Depth (ft): 6
Sheet 1 of 1

Project Name: York High School Community Auditorium
RWG&A Project No. 1017-005
Location: York, Maine
Client: York School Department
RWG&A Representative: C. Morrell
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: Not Obs.

Drilling Contractor: Great Works Test Boring
Drill Rig: Mobile B53
Driller Rep.: Jeff Lee
Date Started: 06/22/2015
Date Completed: 06/22/2015
Surface Elevation: ()
Drilling Method: SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	FILL: Silty sand with gravel, medium dense, moist, fine to medium sand, some silt, little gravel, dark brown.	8	4 6 6	12		
			S-2		7	4 4 3 5 5	8		
5			S-3	SILTY SAND WITH GRAVEL (SM); Very dense, moist, fine to medium sand, some silt, little gravel, brown.	2	50/2"	50+		
				Bottom of Exploration at 6'; Auger Refusal, possible bedrock or boulder.					
10									
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

Boring Log: B-108
Total Depth (ft): 8
Sheet 1 of 1

Project Name: York High School Community Auditorium
RWG&A Project No. 1017-005
Location: York, Maine
Client: York School Department
RWG&A Representative: C. Morrell
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: Not Obs.

Drilling Contractor: Great Works Test Boring
Drill Rig: Mobile B53
Driller Rep.: Jeff Lee
Date Started: 06/22/2015
Date Completed: 06/22/2015
Surface Elevation: ()
Drilling Method: SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	FILL; TOPSOIL AND ORGANIC MATERIAL (3 inches).	2	4	22		
				FILL: Silty sand, medium dense, moist, fine to medium sand, some silt, few gravel, brown.		13 9			
			S-2	SILTY SAND WITH GRAVEL (SM); Medium dense to dense, moist, fine to medium sand, some silt, little gravel, brown.	14	7 6	27		
5			S-3		17	10 17 20 22 22 18 25	40		
				Bottom of Exploration at 8'; Auger Refusal, possible bedrock or boulder.					
10									
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Project Name:	Music Wing Addition - York High School	Log:	B-1
Location:	York, Maine	Surface Elevation:	36.5
Client:	York School Department	Observed Water Depth:	Not Obs.
RWG&A Project No.	1017-03	Date Completed:	02/27/09

Depth (ft.)	Symbol Samples	Sample No.	Description of Material	Sample Recovery (in.)	Blows per 6"	SPT-N Blows per foot	Moisture Content (%)	Lab Tests
0		S-1	FILL; Topsoil and organic material (2 inches).	10	2 12 10 14	22	32	GS
		S-2	FILL; Gravelly sand with silt, medium dense, moist, medium to fine sand, few gravel and shotrock fill, few silt.	5	12 13 12 12	25	16	
5		S-3		8	5 18 15 23	33	17	
		S-4	SILTY SAND (SP-SM); Dense, moist, fine sand, trace silt, yellow-brown.	4	8 19 50/5"	64+	5	
10			Apparent weathered rock recovered from sample spoon.					
			Bottom of Exploration at 10.5'. Auger refusal, possible bedrock.					
15								
20								
25								
30								
35								

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Project Name:	Music Wing Addition - York High School	Log:	B-5
Location:	York, Maine	Surface Elevation:	34
Client:	York School Department	Observed Water Depth:	Not Obs.
RWG&A Project No.	1017-03	Date Completed:	02/27/09

Depth (ft.)	Symbol Samples	Sample No.	Description of Material	Sample Recovery (in.)	Blows per 6"	SPT-N Blows per foot	Moisture Content (%)	Lab Tests
0		S-1	FILL; Topsoil and organic material (2 inches).	6	1 6 8 17	14		
		S-2	FILL; Gravelly sand with silt, medium dense, moist, medium to fine sand, few gravel, few to trace silt, brown.	12	20 15 12 11	27	16	GS
5		S-3		7	3 7 20 50/5"	27		
			SILTY SAND (SM); Dense, medium to fine sand, little silt, few gravel, brown.					
			Bottom of Exploration at 8.5'. Auger refusal, possible bedrock.					
10								
15								
20								
25								
30								
35								

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

TEST PIT LOG
Test Pit No. TP-1

PROJECT York High School Community Auditorium	PROJECT NO. 1017-005
CLIENT York School Department	DATE 06/22/2015
LOCATION York Maine	ELEV.
EXCAVATION METHOD John Deere 410 B	LOGGER J. Boynton
EXCAVATION LOCATION See Exploration Location Plan	
DEPTH TO - Water: Not Obs. When checked: During Excavation Caving:	

DEPTH	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION	LAB TESTS	MOISTURE %
0				TOPSOIL WITH ORGANIC MATERIAL (6 inches).		
				FILL; Silty sand with gravel, moist, medium to fine sand, some gravel and cobbles, little silt, brown.		
2						
4				FILL; Silty sand, moist, medium to fine sand, some silt, light brown.		
				FILL; Silty sand with gravel, moist, medium to fine sand, some gravel, little silt, gray-brown.		
6						
				Bottom of Exploration at 7' at top of footing; Not Refusal.		
8						

Notes: *Footing and Wall Dimensions: Top of wall to top of footing 6.5 feet. Top of wall to ground surface 0.5 feet. From wall to outside edge of footing 4 inches.*

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

TEST PIT LOG
Test Pit No. TP-2

PROJECT York High School Community Auditorium	PROJECT NO. 1017-005
CLIENT York School Department	DATE 06/22/2015
LOCATION York Maine	ELEV.
EXCAVATION METHOD John Deere 410 B	LOGGER J. Boynton
EXCAVATION LOCATION See Exploration Location Plan	
DEPTH TO - Water: Not Obs. When checked: During Excavation Caving:	

DEPTH	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION	LAB TESTS	MOISTURE %
0				TOPSOIL WITH ORGANIC MATERIAL (4 inches).		
				FILL; Silty sand with gravel, moist, medium to fine sand, some silt and gravel, brown.		
2						
4						
6						
				Bottom of Exploration at 7' at top of footing; Not Refusal.		
8						

Notes: *Footing and Wall Dimensions: Top of wall to top of footing 6.5 feet. Top of wall to ground surface 0.5 feet. From wall to outside edge of footing 4 inches.*

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

TEST PIT LOG
Test Pit No. TP-3

PROJECT York High School Community Auditorium	PROJECT NO. 1017-005
CLIENT York School Department	DATE 06/22/2015
LOCATION York Maine	ELEV.
EXCAVATION METHOD John Deere 410 B	LOGGER J. Boynton
EXCAVATION LOCATION See Exploration Location Plan	
DEPTH TO - Water: Not Obs. When checked: During Excavation Caving:	

DEPTH	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION	LAB TESTS	MOISTURE %
0				TOPSOIL WITH ORGANIC MATERIAL (6 inches).		
				SILL; Sand with gravel, moist, coarse to fine sand, some gravel, trace silt, light brown.		
2						
4						
6						
				Bottom of Exploration at 7' at top of footing; Not Refusal.		
8						

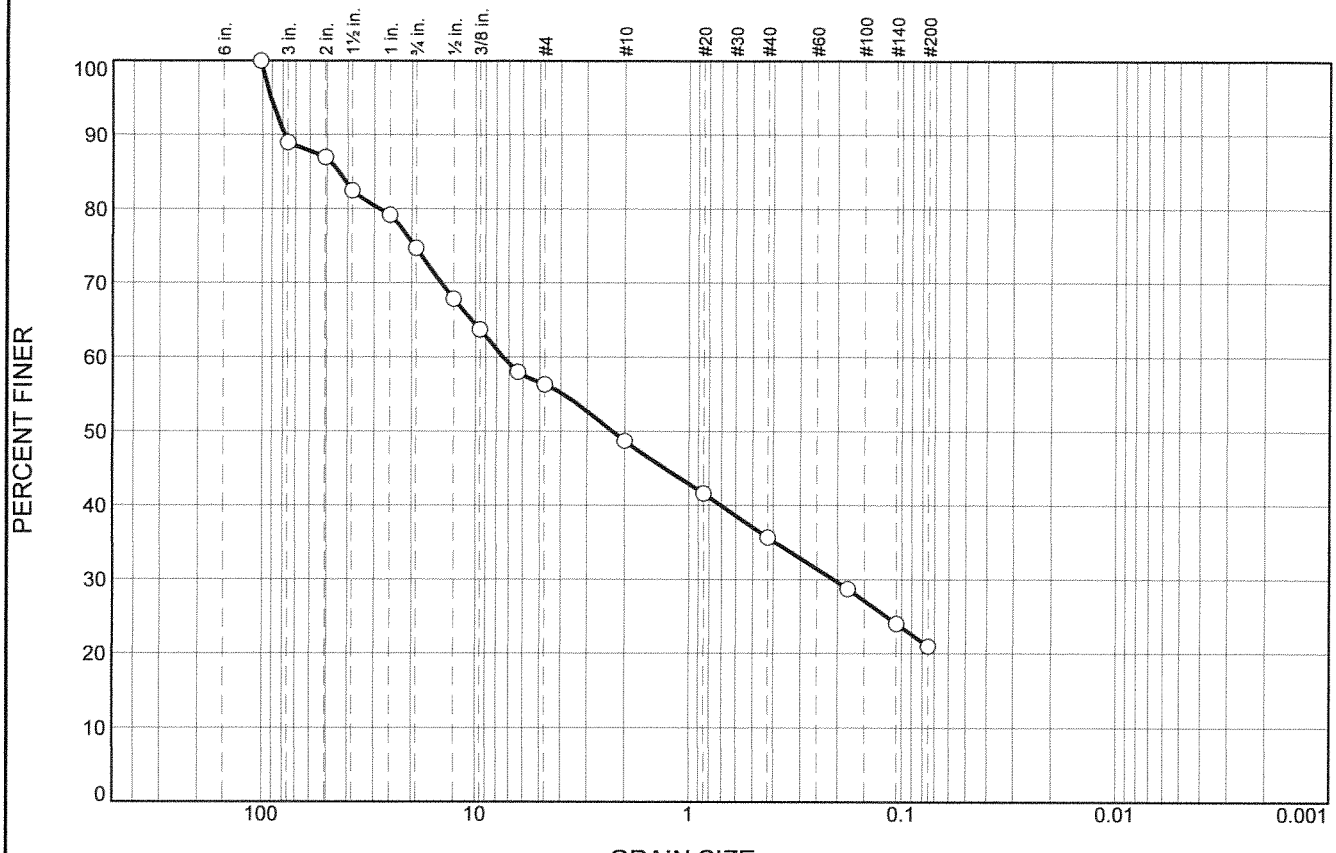
Notes: *Footing and Wall Dimensions: Top of wall to top of footing 6.5 feet. Top of wall to ground surface 0.5 feet. Rigid insulation from top of footing to 1 foot below top of wall, 2 inches thick. From outside of rigid insulation to outside edge of footing 8 inches.*

APPENDIX C

LABORATORY TEST RESULTS

Geotechnical Evaluation
Proposed York High School Community Auditorium
York High School
York, Maine

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
11.0	14.3	18.4	7.6	13.0	14.7	21.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
4"	100.0		
3"	89.0		
2"	87.0		
1 1/2"	82.5		
1"	79.2		
3/4"	74.7		
1/2"	67.9		
3/8"	63.7		
1/4"	58.0		
#4	56.3		
#10	48.7		
#20	41.6		
#40	35.7		
#80	28.7		
#140	24.1		
#200	21.0		

* (no specification provided)

Soil Description

Fill - silty sand with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 44.0988 D_{60}= 7.4855 D_{50}= 2.2889
D_{30}= 0.2096 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= A-1-b

Remarks

Moisture Content: 11.0%

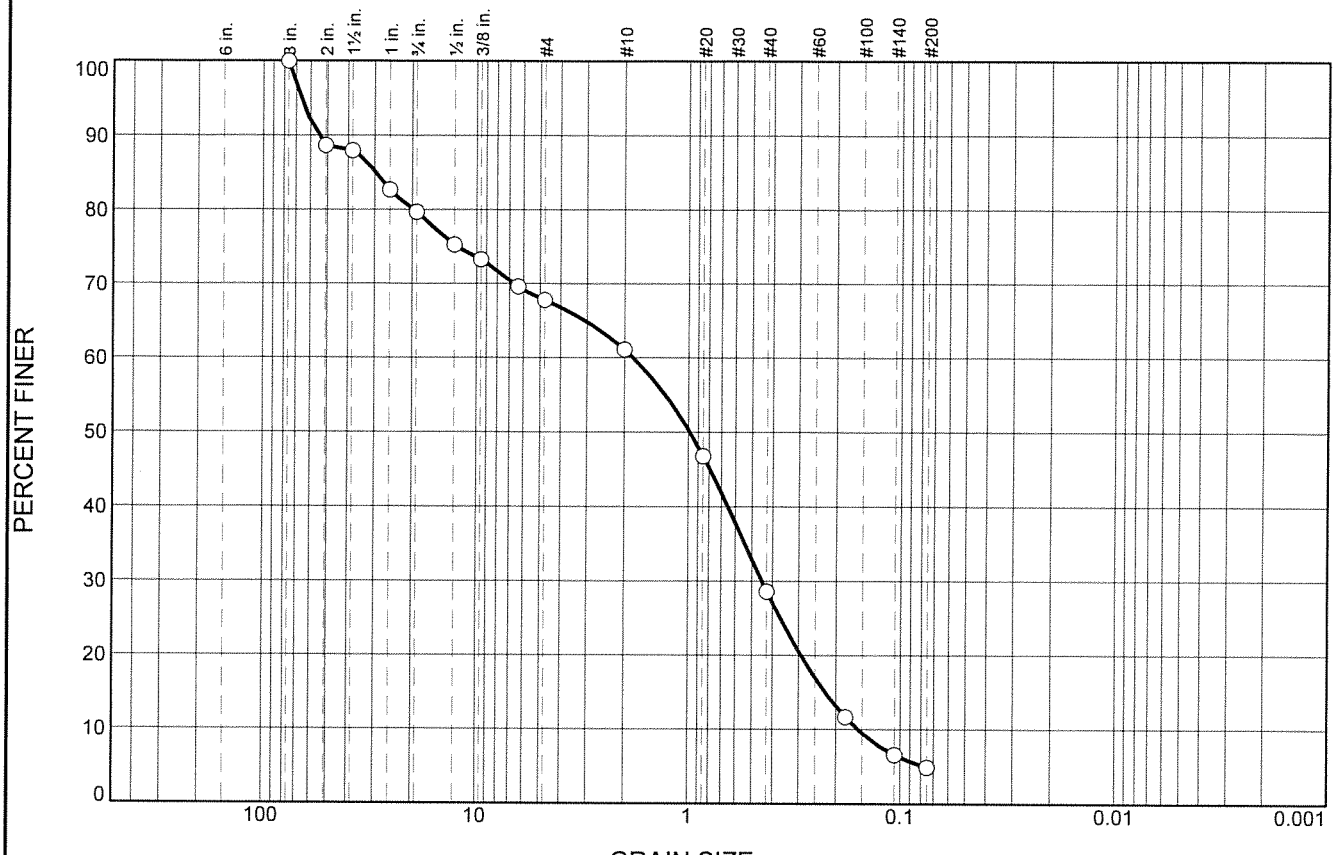
Sample No.: 13638 **Source of Sample:** TP-1/TP-2 **Date:** 7/14/2015
Location: York, ME **Elev./Depth:** 3-7'

R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: York School Department
Project: York High School Community Auditorium
Project No: 1017-005 **Lab No.** 13638

Tested By: ESE **Checked By:** JMB JMB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	20.3	11.9	6.7	32.5	23.7	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2"	88.6		
1 1/2"	87.9		
1"	82.6		
3/4"	79.7		
1/2"	75.3		
3/8"	73.3		
1/4"	69.6		
#4	67.8		
#10	61.1		
#20	46.7		
#40	28.6		
#80	11.7		
#140	6.6		
#200	4.9		

* (no specification provided)

Soil Description

Fill - poorly graded sand with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 29.6528 D_{60}= 1.8249 D_{50}= 0.9848
D_{30}= 0.4490 D_{15}= 0.2245 D_{10}= 0.1574
C_u= 11.60 C_c= 0.70

Classification

USCS= SP AASHTO= A-1-b

Remarks

Moisture Content: 1.2%

Sample No.: 13639 **Source of Sample:** TP-3 **Date:** 7/14/2015
Location: York, ME **Elev./Depth:** 3-7'

R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: York School Department
Project: York High School Community Auditorium
Project No: 1017-005 **Lab No.** 13639

Tested By: ESE **Checked By:** JMB SAB