PROPOSED IMPROVEMENTS WITH ESTIMATES OF PROBABLE COST

Brunswick Junior High School

Coffin Elementary School

BRUNSWICK SCHOOL DEPARTMENT

Brunswick, Maine

June 2015

PREPARED BY

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Portland, Maine

PDT ARCHITECTS

Architecture ▪ Interior Design ▪ Planning

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS
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Table of Contents:

I. Brunswick Junior High School
- Report with Descriptions of Proposed Improvements
- Architectural Floor Plans Locating Proposed Improvements
- Geotechnical Report on Exploration in Areas of Floor Settlement
- Spreadsheet of Estimated Probable Costs of Proposed Improvements

II. Coffin Elementary School
- Report with Descriptions of Proposed Improvements
- Architectural Floor Plans Locating Proposed Improvements
- Spreadsheet of Estimated Probable Costs of Proposed Improvements

III. Total Project Cost Summaries

IV. Structural Engineer's Report

V. Site Improvements and Modular Classroom
- Existing Conditions with Observations of Deficient Site Issues
- Site Improvements Schematic
- Playground Improvements Schematic
- Modular Classroom Addition – Concept 1A

Existing Building Overview:

The Brunswick Junior High School consists of numerous additions to the original single story school constructed in the late 1950s. As a result, the current building contains a variety of systems and materials from many different eras of construction that are at different points in their useful life spans. This has made operation and maintenance of the building challenging for the school department.

PDT Architects has developed the following list of proposed repairs, improvements and replacements of building systems with the goals of maintaining and improving safety, comfort, and accessibility over the next decade of building operation. Systems and materials found to be near or beyond their expected service lifespans have been identified for replacement.

BUILDING-WIDE WORK:

BJHS-1.1/1.2 FIRE PROTECTION The BJHS is partially protected by an automatic sprinkler system. Extending the coverage area and integrating the existing system to provide a complete, supervised automatic sprinkler system would dramatically increase the level of protection for occupants and property in the event to of a fire. Existing heads in protected areas should be replaced to assure functionality. Total building area: 94,000 sf +- Area currently protected: 41, 800 sf +- Full sprinkler coverage also reduces the requirement for corridor separation from 1-hour fire-separation to smoke tight separation and eliminates the requirement for exterior doors and emergency escape windows from classrooms.	

BJHS-1.3 DOOR HARDWARE There is a wide variety of door hardware in use at the school. Barrier-free compliant lever handles have been installed in the 1959/1983 100/200 wing, but knobs are installed in the majority of other locations. Doors appear to be lockable from the corridor side. Replacing locksets that allow classrooms to be locked from the inside would add a layer of security.	
BJHS-1.4 WIRED GLASS A significant number of doors lites, side lites, transom lites and borrowed lites are glazed with wired glass. Building Codes now consider wired glass to be a safety hazard and prohibit its installation in new educational occupancies. Existing wire glass is allowed to remain, but replacing it in doors, sidelights and borrowed lites at levels of potential student impact would increase safety.	
BJHS-1.5/1.6/1.7/.1.8 REMOVE HAZARDOUS BUILDING MATERIALS The School Department has kept current with hazardous material monitoring requirements. Surveys on file with the School Department indicate the presence of asbestos in transite boards, floor tile, tile adhesives and pipe insulation and fittings. Lead paint has been documented in a few locations. As long as its condition is monitored and documented, immediate abatement of asbestos and lead is not required, but it may be considered desirable by the facilities staff or by the community. PCBs, identified in exterior sealants, must be removed immediately.	

BJHS-1.9 ADA SIGNAGE ADA-compliant room identification signage is not present at most locations. Room signage is not required, but where room signage is provided it must be ADA-compliant.	
BJHS-1.10 EXTERIOR ROOM & DOOR NUMBERS Provide large-format exterior classroom and exit door numbering for security and to aid emergency responders.	
BJHS-1.11 REPAIR/REPLACE FAILING WINDOWS Repair windows to address observed air and water infiltration and failed seals. Insulated glass panels can be replaced and new seals provided at glass perimeters. Existing sealant can be removed from frame perimeters and new sealant installed. This work can be done with existing frames can be left in place. This is a cost-effective economical alternative to replacing entire window units.	

BJHS-1.12 ACCESSIBLE STUDENT TOILET ROOMS None of the student toilet rooms meet current Maine Human Rights Act/ADAAG standards for accessibility. Re-configuring all multi-user toilet rooms will reduce the fixture count dramatically. To avoid creating a shortage of toilet facilities, new accessible toilet rooms could be constructed elsewhere in the building	
BJHS-1.13 WINDOW TREATMENTS Provide new window shades or woven blinds at classrooms for light control, to reduce glare and improve visibility of teaching boards and video displays.	
BJHS-1.14 MODIFY ROOF EDGES Modify flat roof edges at the Gym & classroom wings to prevent water from running down the face of the exterior walls. At the Gym, this may lead to premature failure of exterior walls and translucent wall panels caused by from run-off that is intended to be received by interior roof drains. The existing flush roof edge can be modified to create a small parapet that would prevent water from spilling over the side. See also BJHS-1.15	

BJHS-1.15 REPOINT BRICK Repoint brick veneer in areas damaged by roof run-off.	
BJHS-2.1 REPLACE UNDERGROUND PIPING FROM BOILER PLANT AND REPLACE BOILER PLANT STACK The existing underground hot water piping between the Central Boiler Plant and school is past its useful life. Existing and possible future leaks could result in the need to perform an emergency replacement which is likely to result in excessive costs and potential downtime. One of the existing boiler stacks is original and should be replaced to match the other stacks that have already been replaced. Existing oil piping was abandoned in place when the system was converted to natural gas. The existing oil pumps and piping should be removed.	
BJHS-2.2 REPLACE ABATED PIPE INSULATION Provide new pipe insulation for piping that has asbestos insulation abated. See also BJHS-1.5.	

BJHS-2.3 SCIENCE ROOM GAS SYSTEM Provide new emergency gas shut-off in (1) science room, eliminate gas to other science classrooms.	
BJHS-2.4 EMERGENCY EYEWASH STATIONS Provide ADA-compliant emergency eyewashes in science and art rooms.	
BJHS-3.1/3.2 CENTRAL CLOCK and PHONE SYSTEMS The clock system is not up to date and does not cover all sections of the building. Replace phone system.	

BJHS-3.3 PUBLIC ADDRESS SYSTEM The existing PA is not up to date and does not cover all sections of the building. Replace the public address system.	
BJHS-3.4 FIRE ALARM SYSTEM Provide new fire alarm system and emergency evacuation system. The existing fire alarm system should be updated with a newer addressable system.	
BJHS-3.5 CCTV SYSTEM Provide new CCTV Security System.	

BJHS-3.6 REPLACE EXIT SIGNS Replace illuminated exit signs throughout the building.	
BJHS-3.7 CEILING MOUNTED PROJECTORS Provide data and power outlets for ceiling mounted projectors in the classrooms.	
BJHS-3.8 FIBER OPTIC WIRING Provide fiber optic wiring to data switches located throughout the building.	
BJHS-3.9 GENERATOR Provide Generator for data closet - (Assumed 100KW)	
BJHS-3.10 SITE LIGHTING Provide site lighting to enhance campus safety and security.	

BJHS-3.11 DOOR STATUS SWITCHES Install door status switches at all exterior door and monitoring system for increased security.	

WORK IN MAIN ENTRANCE AREA:

BJHS-4.1/4.2 REPLACE METAL CEILING & LIGHTS Replace metal slat ceiling system and lights at the main entrance. At the main entrance corridor, main circulation node and Gym Lobby, the linear metal ceiling has become damaged and delicate from age and modification. Abandoned light fixtures have been left in place. Addition of sprinkler system will further damage this ceiling system.	
BJHS-4.3 SECURITY VESTIBULE Add/reconfigure a secure entry vestibule near the main office to control entry access.	
BJHS-4.4 SEAL TOP OF WALL Stabilize or replace top of wall insulation above exterior aluminum storefront at main entrance lobby. Loose fiberglass batt insulation observed above linear metal ceiling system.	

BJHS-4.5 SEAL TOPS OF PARTITIONS The open stair at the main circulation node carries half of the occupant load from the second floor of the 1983/200 wing, and loads from several other corridors discharge into this space. The stair vertical opening appears to be enclosed by fire-rated construction at the second floor level but not at the first floor level. In its current configuration, this node must be separated from adjacent areas of the building by 1-hour fire rated construction. On the first floor, one of two marked exit paths passes through an adjacent non-sprinklered space. Of the 13 door leaves that open into this space, only two are labelled as fire-rated. Since this condition contains several life-safety and fire-separation issues, any work should be reviewed and approved by the State Fire Marshal's office and local code enforcement and fire departments.	
BJHS-4.6 FIRE_RATED GLAZING Install a fire-rated hollow metal frame and glazing at borrowed lite between the Main Office and the adjacent corridor.	
BJHS-4.7 FALL PROTECTION Guard rails at the stair at the north end of the main corridors are too open and too low to comply with standards for fall protection in new construction. Existing handrails also do not meet current standards for graspability. Removing the current rail assembly back to the steel stringer and replacing it with a new guard and handrail system would increase safety and accessibility. A similar condition exists at the Library stair.	

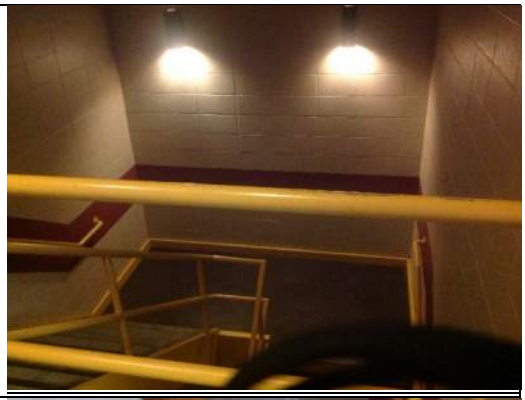
BJHS-4.8 INTERIOR GLAZING REPLACEMENT Install tempered safety glazing at main stair enclosure partition. Existing glass is not marked as tempered.	
BJHS-4.9 RENOVATE STUDENT TOILET ROOMS Gypsum board ceilings in student toilet room would eliminate the opportunity for contraband to be stored in toilet rooms. Existing suspended ceilings are nearing the end of their service life. Provide new toilet compartments, accessories, lighting and HVAC. Patch and repair floors.	

WORK IN 1980s WING:

BJHS-5.1/5.2 CARPET REPLACEMENT Corridors and non-science classrooms are carpeted. Carpet is stained and ripped at multiple locations and transitions at corridor doors are secured with duct tape at many locations creating potential trip hazards. Carpet will reach the end of its service life within the next few years.	
BJHS-5.3 SCIENCE ROOM GAS SYSTEM Reconfigure or eliminate gas system, including shut-off (see BJHS-2.3).	
BJHS-5.4 EMERGENCY EYE WASH AND SHOWER Upgrade emergency shower or convert to ADA eyewash units (see BJHS-2.4)	

BJHS-5.5/5.6/5.8 REPAIR CLASSROOM WINDOWS Interior and exterior perimeter gaskets between glass and frames have pulled away from the frame at numerous locations. This allows water and air infiltration that can damage building materials and create condition for mold growth. Replace Insulated glazing units and seals, leaving frames in place. Remove failed sealant and provide new sealant at window frame perimeters.	
BJHS-5.7 REPLACE WOOD WINDOWS Replace failing wood window units at Library and Special Ed areas with aluminum windows.	
BJHS-5.9 RENOVATE STUDENT TOILET RMS Gypsum board ceilings in student toilet room would eliminate the opportunity for contraband to be stored in toilet rooms. Existing suspended ceilings are nearing the end of their service life. Provide new toilet compartments, accessories, lighting and HVAC. Patch and repair floors.	

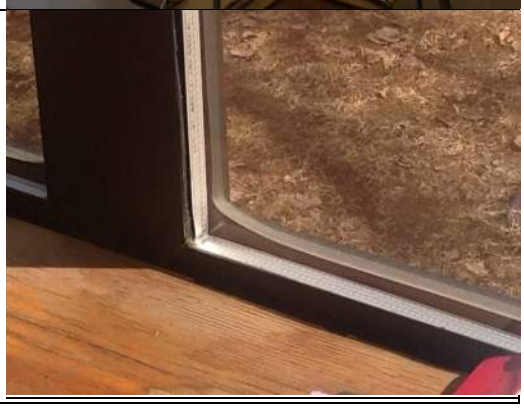
BJHS-5.10 REMOVE ACORDIAN PARTITIONS FROM CLASSROOMS Several classrooms are separated by accordion partitions. Replacing these with fixed partitions would increase acoustical separation between adjacent classrooms and provide more locations for installation of electrical and data receptacles. This would increase safety by reducing use of extension cords.	
BJHS-5.11/5.12 IMPROVE ACCESSIBILITY AT TEACHERS LOUNGE Casework at teacher's lounge does not meet barrier-free standards. Replace with accessible base cabinets and sink. Upgrade toilet room to current ADA standard.	
BJHS-5.13 FALL PROTECTION AT LIBRARY STAIR Guard rails at the Library stair are too open and too low to comply with current standards for fall protection. Removing the current rail assembly back to the steel stringer and replacing it with a new guard and handrail system would increase safety and accessibility.	

BJHS-5.14 LIGHT LEVELS AT LIBRARY STAIR Light levels are below current standards. Replace existing light fixtures to increase safety for users of the stair.	
BJHS-5.15 REPLACE STAIR DOORS Existing doors are not labelled as fire-rated doors, as required by current codes.	

WORK IN 1960s WING:

BJHS-6.1/6.2 REPLACE CLASSROOM CEILINGS AND LIGHT FIXTURES At all seven classrooms, the condition of suspended ceiling tiles is poor, and many have been replaced with non-matching tiles. Grids have also been stressed by floor/partition settlement at several locations. Light fixtures appear to be approaching the end of their service life.	
BJHD-6.3 SEAL TOP OF CORRIDOR PARTITIONS Codes require corridor partition in sprinklered educational occupancies to resist the passage of smoke. Not all parts of existing corridor partitions extend to the roof deck.	
BJHS-6.4 ACCESSIBILE STAFF TOILET ROOMS The two staff toilet rooms do not meet current Maine Human Rights Act/ADAAG standards for accessibility. Re-configure to provide one barrier-free water closet and one barrier-free lavatory. Additional work to include replacement of existing suspended ceilings, toilet compartments, accessories, lighting and HVAC. Patch and repair floors.	

<u>BJHS-6.5 FOAM GROUT UNDER CORRIDOR SLAB - OPTION 1A</u> Core samples show a void under the corridor floor slab. Grouting this space solid would decrease the likelihood of sudden failure of the corridor slab. See also BJHS-6.6 and Becker Structural Engineering report.	
<u>BJHS-6.6 FOAM GROUT UNDER CLASSROOM FLOOR SLABS - OPTION 1B</u> Several classrooms that have experienced extreme differential floor slab settlement. It may be possible to raise existing classroom floor slabs in place by injecting foam grouting. Further investigation is required to confirm if this is a viable given the large quantity of organic material identified under the slabs by core sampling. Slabs may continue to settle.	
<u>BJHS-6.7 USE FOAM GROUT TO COMPACT AND STABILIZE SOIL UNDER CLASSROOM FLOORS - OPTION 1C</u> To reduce the likelihood of further settlement over time, foam grout can also be used to compact the existing soil below floor slabs. This would be in addition to the slab-raising work described in BJHS-6.6	

BJHS-6.8 REPLACE EXISTING SOILS AND SLABS AT CLASSROOMS AND CORRIDORS Remove slabs, soils and organic materials down to stable soils and replace with compressed, stable fill. Replace slabs. Remove and replace existing framed partitions between classrooms that are constructed on the existing slab. See also report from Becker Structural Engineering and geotechnical report from SW Cole.	
BJHS-6.9 LEVEL FLOOR FROM ABOVE Overlay existing failed classroom floor slabs with light-weight concrete to level surfaces. Slabs may continue to settle.	
BJHS 6.10 REPAIR WINDOWS Interior and exterior perimeter gaskets between glass and frames has pulled away from the frame at several locations. This allows water and air infiltration that can damage building materials and create condition for mold growth. Replace Insulated glazing units and seals, leaving frames in place. Remove failed sealant and provide new sealant at window frame perimeters.	

BJHS-6.11 REPLACE CARPET Carpet at corridors, Music Room and small rooms is stained and ripped at multiple locations and transitions at corridor doors are secured with duct tape at many locations creating potential trip hazards. Carpet will reach the end of its service life within the next few years.	
BJHS-6.12 EXHAUST COPIERS IN WORK ROOM Current standards call for a dedicated exhaust system to remove airborne toxins generated by large copiers.	

WORK IN 1976 WINGS:

BJHS-7.1 CORRIDOR/CLASSROOM SEPARATION Classrooms are separated from the corridor by operable partitions. Replacing these with fixed partitions would increase acoustical separation, address code compliance issues and provide an opportunity to add power and data receptacles in classrooms.	

BJHS-7.2 INFILL EXTERIOR DOORS If sprinkler system is added, exterior doors from classrooms will no longer be required. These doors are not wide enough to accommodate wheelchair passage and frames and transoms have been damaged by run-off from the roof. Remove doors, weld in hm sills and an intermediate hm rail, and infill with insulated metal panels.	
BJHS-7.3 REPAIR WINDOWS Interior and exterior perimeter gaskets between glass and frames has pulled away from the frame at several locations. This allows water and air infiltration that can damage building materials and create condition for mold growth. Replace Insulated glazing units and seals, leaving frames in place. Remove failed sealant and provide new sealant at window frame perimeters.	
BJHS-7.4 ROOF DRAINAGE Water from the existing sloped roof runs over a metal fascia with a minimal drip edge. This means that most of the run-off runs directly down the face of the building. Extending the eave or the drip edge to direct water away from the wall/window surface and providing a gravel strip below the drop area would increase the life expectancy of the wall and windows at this location.	

BJHS-7.5 ENCLOSE KILN AREA The State Fire Marshal's office has historically considered kiln areas in schools to have a significantly higher hazard than adjacent educational areas and has required them to be located in fire-rated enclosures, even in schools protected by sprinkler systems.	
BJHS-7.6/7.7 UPGRADE BAND ROOM CEILING Current space is very acoustically live with painted concrete floor, cmu and gwb wall surfaces and exposed metal roof deck. An acoustical ceiling and new lighting would improve the environment and cover peeling paint.	
BJHS-7.8 REPLACE HM DOOR FRAMES Water infiltration and condensation have caused extensive rust at the bottom of hollow metal exterior door frames at corridor.	

WORK IN 1959 WINGS:

BJHS-8.1 REPAIR WINDOWS Repair existing aluminum windows that are no longer weather-tight.	
BJHS-8.2 ACCESSIBLE LOCKER ROOMS Provide barrier-free plumbing fixtures and lockers at Boys and Girls locker rooms as required by ADA standards.	

STRUCTURAL IMPROVEMENTS:

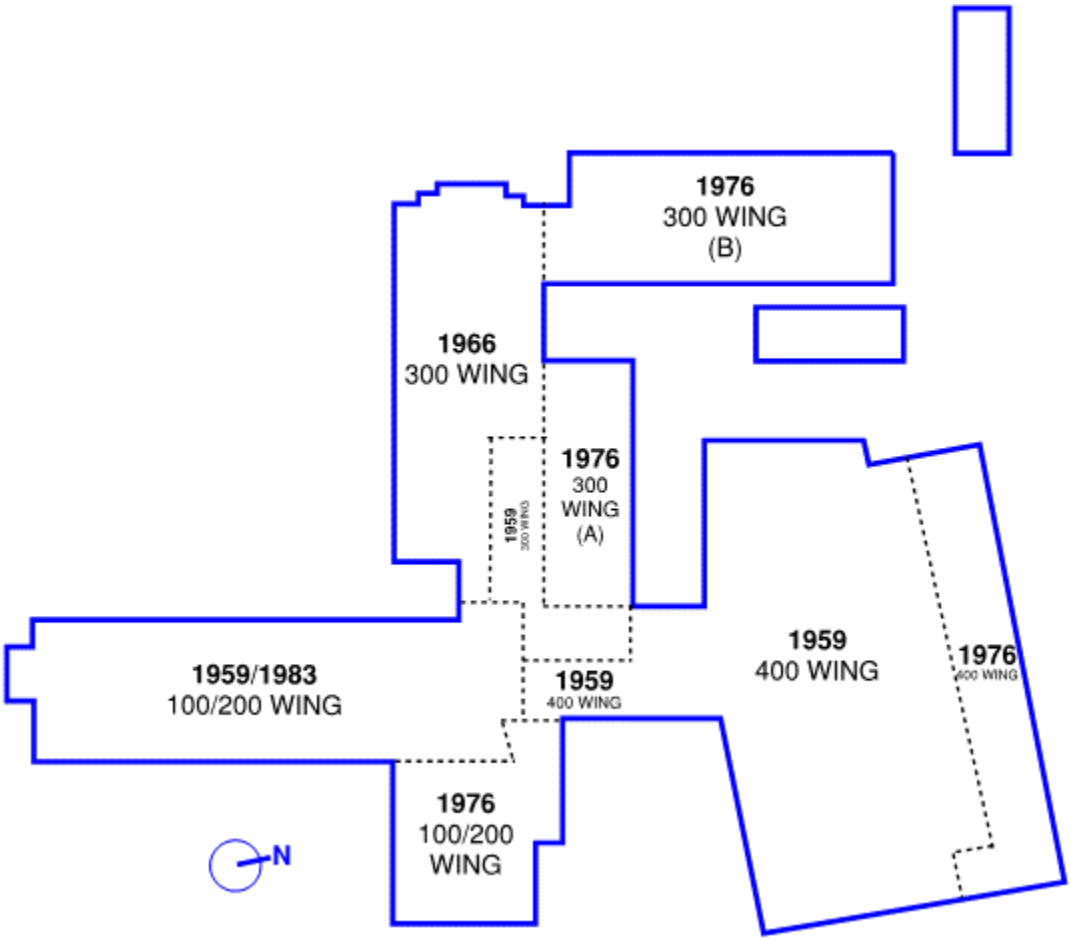
BJHS-9.1 UPGRADE ROOF STRUCTURE Make structural improvements to roof areas as described in the attached structural engineering analysis and recommendations by Becker Structural Engineers.	

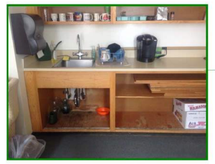
IMPROVEMENTS TO SITE AND ATHLETIC FIELDS:

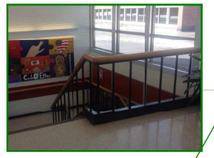
BJHS-10.1 Turf playfield improvements (FS&T item A-1)	
BJHS-10.2 Repair pavement ponding areas (FS&T items A-2 & 4)	
BJHS-10.3 Storm drainage repair (FS&T items B-1 &2)	

BJHS-10.4 Additional storm drainage investigation (FST&T item B-3)	
BJHS-10.5 Pavement repair (FS&T items C-1, 2 & 4)	
BJHS-10.6 Playground improvements (FS&T item D-1)	

BJHS-10.7 Additional Site Lighting Provide site lighting to enhance campus safety and security.	



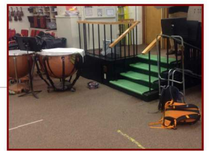




BJHS-5.11/5.12 ADA Upgrades at Teacher Lounge:
Replace counter, cabinets and sink.
Modify toilet room to comply w/ ADAAG.

BJHS-4.7 Upgrade Stair Rails:
Provide infill to upgrade fall protection at egress stair guard rail. Provide handrails per ADAAG.

BJHS-1.1/1.2 Add Sprinkler System:
No sprinkler system is in place in this wing. Emergency escape windows and doors have been provided, but corridors do not appear to be fire-rated.



Areas colored BLUE on floor plans are protected with an automatic sprinkler system. See BJHS-1.1/1.2

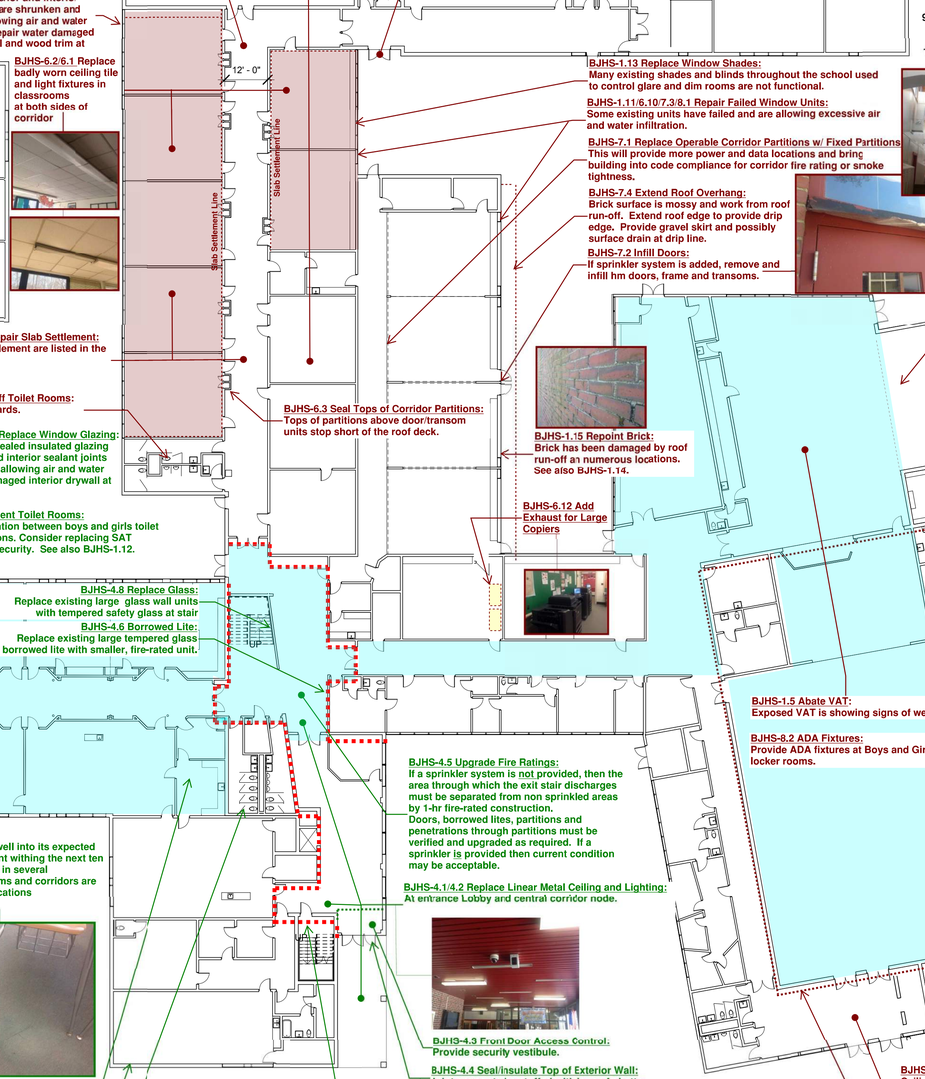
BJHS-7.5 Enclose Kiln Area

BJHS-7.6/7.7 Improve Acoustics and lighting in band rehearsal Area

BJHS-6.11 Replace Carpet:
Replace carpet at Band Room and all other classrooms in the 1959 wing

BJHS 6.7 Repair Insulated Alum Windows:
Numerous exterior and interior sealant joints are shrunken and dislocated allowing air and water infiltration. Repair water damaged interior drywall and wood trim at windows.

BJHS-6.2/6.1 Replace badly worn ceiling tile and light fixtures in classrooms at both sides of corridor



2 SECOND FLOOR PLAN
1" = 20'-0"

BJHS-7.8 REPLACE HM FRAME:
Extensive rust at the bottom of hollow metal exterior door frames at corridor.

BJHS-1.13 Replace Window Shades:
Many existing shades and blinds throughout the school used to control glare and dim rooms are not functional.

BJHS-1.11/6.10/7.3/8.1 Repair Failed Window Units:
Some existing units have failed and are allowing excessive air and water infiltration.

BJHS-7.1 Replace Operable Corridor Partitions w/ Fixed Partitions
This will provide more power and data locations and bring building into code compliance for corridor fire rating or smoke tightness.

BJHS-7.4 Extend Roof Overhang:
Brick surface is mossy and work from roof run-off. Extend roof edge to provide drip edge. Provide gravel skirt and possibly surface drain at drip line.

BJHS-7.2 Infill Doors:
If sprinkler system is added, remove and infill hm doors, frame and transoms.

BJHS-1.2/1.2 Extend Sprinkler System:
Sprinkler coverage is currently limited to main seating area. Tectum ceiling tiles very dated.

BJHS-1.9 Provide ADA Room Signage
Room identification is not consistent throughout the building and is generally not compliant with ADA standards.

BJHS-1.12/5.9 Renovate Student Toilet Rooms:
Replace toilet partitions. Consider replacing SAT ceiling with hard ceiling for security. See also BJHS-1.12.

BJHS-5.15 Replace Stair Doors:
Provide labeled, fire-rated doors at egress stair.

BJHS-5.13/5.14 Upgrade Stair Rails and Light Levels:
Provide infill to upgrade fall protection at egress stair guard rail. Provide handrails per ADAAG.

BJHS-6.5/6.6/6.7/6.8/6.9 Repair Slab Settlement:
Option to correct slab settlement are listed in the report and estimate.

BJHS-1.3 Upgrade Classroom Door Hardware:
Replace with classroom lock set to provide the ability to lock down classrooms from within.

BJHS-6.4 Reconfigure Staff Toilet Rooms:
Upgrade to ADAAG standards.

BJHS-6.3 Seal Tops of Corridor Partitions:
Tops of partitions above door/transom units stop short of the roof deck.

BJHS-1.15 Repoint Brick:
Brick has been damaged by roof run-off an numerous locations. See also BJHS-1.14.

BJHS-5.10 Replace Accordion Partitions:
Replacing accordion partitions with fixed partitions would increase acoustical separation between classrooms and allow for additional power and data location.

BJHS-1.11/5.5/5.6/5.8 Repair Replace Window Glazing:
Condensation at numerous sealed insulated glazing units. Numerous exterior and interior sealant joints are shrunken and dislocated allowing air and water infiltration. Repair water damaged interior drywall at windows.

BJHS-3.1 Replace Central Clock System:
Original synchronized system has been replace by free-standing clocks at several locations.

BJHS-1.12/5.9 Renovate Student Toilet Rooms:
Provide better privacy separation between boys and girls toilet rooms. Replace toilet partitions. Consider replacing SAT ceiling with hard ceiling for security. See also BJHS-1.12.

BJHS-6.12 Add Exhaust for Large Copiers

BJHS-4.8 Replace Glass:
Replace existing large glass wall units with tempered safety glass at stair

BJHS-4.6 Borrowed Lite:
Replace existing large tempered glass borrowed lite with smaller, fire-rated unit.

BJHS-1.5 Abate VAT:
Exposed VAT is showing signs of wear.

BJHS-8.2 ADA Fixtures:
Provide ADA fixtures at Boys and Girls locker rooms.

BJHS-4.5 Upgrade Fire Ratings:
If a sprinkler system is not provided, then the area through which the exit stair discharges must be separated from non sprinkled areas by 1-hr fire-rated construction.
Doors, borrowed lites, partitions and penetrations through partitions must be verified and upgraded as required. If a sprinkler is provided then current condition may be acceptable.

BJHS-5.1/5.2 Replace Carpet:
Carpet at classrooms and corridor is well into its expected service life and will require replacement withing the next ten years. Tearing and staining is evident in several classrooms. Transitions between rooms and corridors are stabilized with duct tape at several locations

BJHS-1.10 Exterior Classroom and Door Numbering:
New schools in Maire typically include large format numbers on doors and classroom windows to facilitate response to safety and security threats.

BJHS 3.11 Door Status Monitoring Switches:
Provide capability to monitor status of exterior doors.

1 EXISTING FIRST FLOOR PLAN
1" = 20'-0"

BJHS-4.1/4.2 Replace Linear Metal Ceiling and Lighting:
At entrance Lobby and central corridor node.

BJHS-4.3 Front Door Access Control:
Provide security vestibule.

BJHS-4.4 Seal/insulate Top of Exterior Wall:
Joint appear to be stuffed with loose fg batts

BJHS-4.2 Replace Linear Metals Ceiling:
Ceiling has been repeatedly modified and abandoned light fixtures left in place.

BJHS-1.14 Modify Roof Edge Perimeter:
Consider adding vertical kick at fascia and/or raising parapet to prevent sheet drainage over face of building. Structural analysis of adjacent drift areas is required.

THROUGHOUT BUILDING

- BJHS-3.3 Replace Public Address System
- BJHS-3.4 Replace Fire Alarm System
- BJHS-3.5 Provide CCTV Security System
- BJHS-3.6 Replace Exit Signs
- BJHS-3.7 Wiring for Ceiling-mounted Projectors in Classrooms
- BJHS-3.8 Add Fiber Optic Wiring
- BJHS-3.9 Add Generator for Data Closet

BJHS-1.4 Replace wired Glass with Tempered Glass:
Wired glass is now considered a safety hazard and is not allowed in new school construction. Wired glass is installed at all interior door, and borrowed lite.

BJHS-2.3/2.4/5.3,5.4Modify Science Classroom Safety Systems:
Gas shut-off and safety shower are make-shift configurations. Replace/reconfigure or eliminate gas system. Add eye-wash stations.

BJHS-5.7 Replace Large Wood Windows:
Replace large wood windows at Library/Special Ed areas with aluminum units

BJHS-1.12/4.9 Reconfigure Student Toilet Rooms:
Replace toilet partitions. Consider replacing SAT ceiling with hard ceiling for security. See also BJHS-1.12.

BJHS-4.5 Modify Egress from Stair
If sprinkler system is not installed, then space between stair doors and exit door must be separated from the rest of the building by 1-hr construction.

General Observations:

1. The largest value in terms of both life safety and property protection may be to expand the sprinkler system to protect the entire facility. See BJHS-1.2/1.2
2. Sprinklered and non-sprinklered parts of the building should be separated with fire-rated construction.
3. In non-sprinklered areas, corridor partitions should have a 1/2-hr fire-rating, including penetrations, top of partition joints and opening protectives. This is waived if exterior doors from spaces provide direct access to the exterior. In un-sprinklered areas, corridor partitions should have a 1-hr fire rating. In sprinklered areas, corridor partitions should perform as NFPA smoke partitions and should be designed to resist the passage of smoke, including penetrations, top of partition joints and opening protectives.
4. More toilet rooms that comply with current barrier-free (2010 ADAAG) standards should be provided. A practical alternative to reconfiguring existing toilet rooms, that would not reduce building-wide toilet fixture count, may be to construct new barrier-free toilet rooms at new locations. See BJHS-1.12.
5. In all parts of the school, the central clock system has been replaced with separate, battery-operated clocks.
6. Provide new flooring (carpet or VCT) at flooring abatement locations. See BJHS-1.6.
7. Results of surveys documenting the extent of hazardous building materials such as asbestos, PCBs and lead have been performed and maintained by AQM. Cost estimates for abatement included in these surveys have been included in this report, along with cost estimates for replacement and repair at abatement locations. See BJHS-1.6/1.7/1.8.
8. See attached spreadsheet and report for additional recommended repair/replacements and further information on the item listed on this drawing.
9. See attached structural engineering evaluation from Becker Structural Engineers for more information about existing roof framing capacities and floor settlement repair. See BJHS-9.1.
10. See FST Site crawings, estimates and reports for work outside of the building enclosure, including playgrounds and boiler plant.

PDT ARCHITECTS
49 DARTMOUTH STREET
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Brunswick Junior High School
Proposed Improvements

JOB NO.
XXXX

DRWN. CHK
Checker

SCALE:
1" = 20'-0"

ISSUE
JUNE 16, 2015

TITLE
EXISTING CONDITION FLOOR PLAN

SHEET
A100

R E P O R T

June 10, 2015
15-0349 S

Report of Finding

Existing Floor Slab Distress
Brunswick Jr. High School
65 Columbia Ave
Brunswick, Maine

PREPARED FOR:
Brunswick School Department
Attention: Paul Caron
Director of Facilities and Transportation
46 Federal Street
Brunswick, Maine 04011

PREPARED BY:
S. W. Cole Engineering, Inc.
Paul F. Kohler, P.E.
Sr. Vice President
286 Portland Road
Gray, Maine 04039
(207) 657-2866

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing*
- *GeoEnvironmental Services*
- *Ecological Services*

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TABLE OF CONTENTS

1.0 INTRODUCTION **2**
1.1 Scope and Purpose 2
1.2 Site Conditions 3
2.0 EXPLORATION AND TESTING **3**
2.1 Explorations 3
2.2 Testing 4
3.0 SITE AND SUBSURFACE CONDITIONS **4**
3.1 Surficial 4
3.2 Soil and Groundwater 4
4.0 GENERAL COMMENTS **5**
4.1 COMMENTS **5**
5.0 CLOSURE **6**

Attachment A	Limitations
Sheets 1 & 1A	Exploration Location Plan
Sheets 2-6	Exploration Logs
Sheet 7	Keys to the Notes & Symbols
Sheet 8	Subsurface Soil Cross Section
Sheets 9 & 10	Laboratory Gradation Reports

15-0349

June 10, 2015

Brunswick School Department
Attention: Paul Caron – Director of Facilities and Transportation
46 Federal Street
Brunswick, Maine 04011

Subject: Report of Findings
Existing Floor Slab Distress
Brunswick Jr. High School
65 Columbia Avenue
Brunswick, Maine

Dear Paul:

In accordance with our Proposal dated May 7, 2015, we have performed subsurface explorations for the subject project. This report summarizes our findings and its contents are subject to the limitations set forth in Attachment A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to obtain subsurface information in the area of the slab distress in order to obtain slab, foundation and soils information. Our scope of services included:

- A review of existing drawings of the site and foundations provided by others
- An initial site visit
- Coordination of subsurface exploration work
- Laboratory soils testing
- Attending a project meeting at PDT Architects
- Preparation of this report

1.2 Site Conditions

Based on the existing foundation drawings dated July 26, 1965 provided by Becker Structural Engineers, and observations during our site visit on April 30, 2015, we understand that the concrete slabs located in the existing westerly classroom wing have settled up to about 5 inches since construction in the late-1960s. The subject classroom wing is approximately 160 ft. by 66 ft. in plan dimensions and is connected to the existing school building on the easterly end. This wing is one-story, high bay with masonry exterior walls and masonry corridor walls. The perimeter and corridor walls are reportedly supported on spread footings. Foundation plans indicate the classroom and corridor slabs were cast at elevation 76.0 ft. (project datum). The westerly end of this wing (existing music room) has a floor slab cast about 2 feet lower than the classroom/corridor slabs. We understand that the classroom slabs on both sides of the corridor have settled progressively greater from east to west, while the corridor slab and music room slabs do not show obvious evidence of settlement. Additionally, the existing masonry walls do not show obvious evidence of settlement.

Existing site features are shown on the “Exploration Location Plans” attached as Sheets 1 and 1A.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Three hand borings (HB-1 through HB-3) and one hand probe (P-1) were made inside the building on May 5, 2015. Additionally, two backhoe-dug test pits (TP-1 and TP-2) were made on the same day adjacent to the exterior foundation wall on the southerly side of the subject wing of the building. The hand borings were made by S. W. Cole Engineering, Inc. (S.W.COLE). The test pits were made by Ray Labbe & Sons, Inc. of Brunswick, Maine working under subcontract to S.W.COLE. Locations of the explorations were selected by S.W.COLE based on discussions with PDT Architects during our site visit on April 30, 2015 and available locations to perform the explorations. The approximate exploration locations are shown on the “Exploration Location Plans”, attached as Sheets 1 and 1A.

Logs of the hand borings and hand probe explorations are attached as Sheets 2 through 5. Logs of the test pit explorations are shown on sheet 6. A key to the notes and symbols used on the log sheets is attached as Sheet 7. The approximate ground

surface elevations shown on the logs were estimated based on topographic information shown on the drawings provided by PDT Architects.

2.2 Testing

Hand borings HB-1 through HB-3 and hand probe P-1 were made using hand operated equipment. Soils were generally sampled continuously using a split spoon sampler and a non-standard 70 pound drop hammer. The split spoon blow counts shown on the log sheets were adjusted to approximate a standard 140 pound drop hammer. The test pits were made using a small rubber-tired backhoe.

Soil samples obtained during drilling were returned to our laboratory for classification and testing. The results of soil moisture content and organic content are noted on the logs. Results of two soil gradation tests are attached as Sheets 9 and 10.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Surficial

The existing ground surface around the subject classroom wing is approximately elevation 75 feet. Based on available drawings, it appears that there may have been a low drainage swale that existed beneath the westerly end of this wing in the general area of the hand borings. A drainage swale currently exists on the southerly side of this wing with an elevation of about 68 feet which drains to the south.

3.2 Soil and Groundwater

In general, the hand borings encountered a 4 to 5 inch thick slab overlying loose granular fill. Voids were encountered beneath the slabs at HB-2 and HB-3. A practical refusal surface was encountered at a depth of about 4.3 feet below the slab surface at HB-1, which may be a cobble, boulder or possibly a utility pipe. HB-2 and HB-3 encountered about 5 to 6 feet of fill overlying what appears to be native loose sand and organics. The organic thickness appears to be about 2.5 to 3 feet thick at these two borings. What appears to be sandy soils were encountered with a rod probe beneath the organics. HB-2 and HB-3 were terminated at depths of about 11.3 and 8.3 feet, respectively below the slab surface. Hand probe P-1 encountered what appears to be the top of the corridor wall footing at a depth of about 7 feet below the slab surface.

Test pits TP-1 and TP-2 encountered a mix of sand with roots and organics (foundation backfill) extending to approximately the bottom of footing depth. What appears to be loose native sand was observed at the bottom of footing depth. A rod probe was pushed by hand approximately 3 feet below the bottom of footing elevation through loose soil. At a depth of about 3 feet below the bottom of footing, the soil appears to be denser.

Wet to saturated soils were encountered at depths of about 4 to 6 feet below the ground surface at the explorations.

Refer to the attached logs for more detailed descriptions of the subsurface findings. An approximate soil cross section through the westerly classroom wing is attached as Sheet 8.

4.0 GENERAL COMMENTS

4.1 COMMENTS

Based on the findings at the explorations and information shown on the foundation drawings provided, it appears likely, that a low drainage swale with several feet of organics at or near the ground surface existed beneath this wing. It appears that the foundations for this wing are spread footings that are founded on native sands. The organics were likely removed from beneath the footings, but not the floor slab areas. Sandy fill was used to raise the grade beneath the slab areas, loading the organics remaining below the slabs. Over the years, the loose fill and organics have likely consolidated, leaving a void beneath the corridor slab and causing settlement of the classroom slabs.

We understand that several options are being considered to mitigate the slab settlement and sub-slab voids, including removal of the slabs, loose fill and organics and replacement with compacted structural fill and new slabs. Another option that is being considered is grouting beneath the slabs to stabilize the loose soils and organics as well as to jack up the slabs, where needed.

It should be understood that this has been a preliminary investigation for informational purposes. We recommend additional exploration work be performed, likely including borings inside and outside of the classroom wing to help better define the subsurface conditions prior to selecting and performing any mitigation measures.

5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.

Paul F. Kohler, P.E.
Sr. Vice President

c: Jim Harford (PDT Architects)

PFK/jlw

Attachment A
Limitations

This report has been prepared for the exclusive use of Brunswick School Department for specific application to the exiting westerly classroom wing of the Junior High School located at 65 Columbia Avenue in Brunswick, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct the work in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

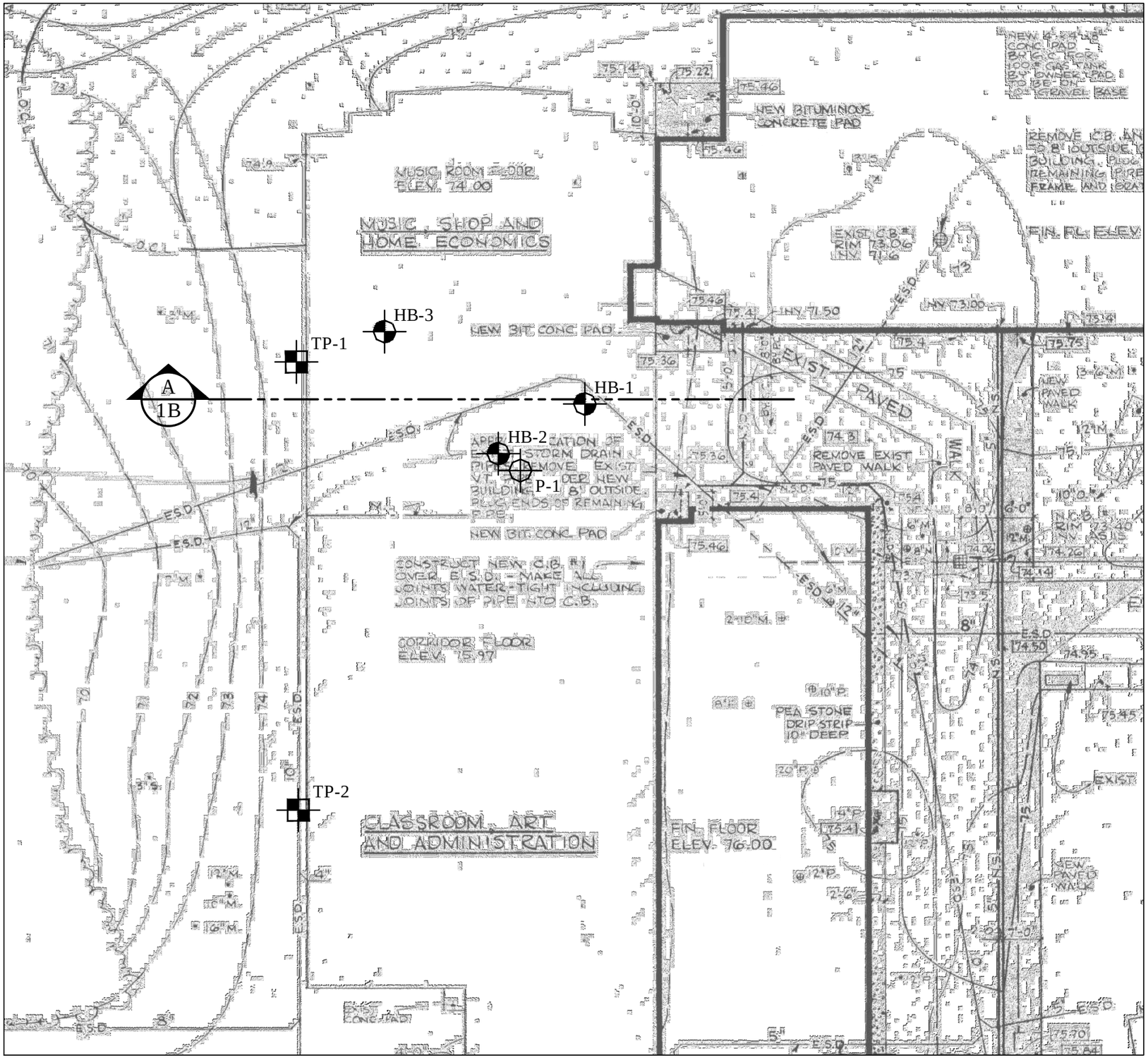
The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of work has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.



LEGEND:

- APPROXIMATE HAND BORING LOCATION
- APPROXIMATE TEST PIT LOCATION
- APPROXIMATE HAND PROBE LOCATION

NOTES:

1. OVERALL SITE PLAN WAS PREPARED FROM A SCANNED IMAGE FILE OF A SCALE PLAN OF THE BUILDING PROVIDED BY PDT ARCHITECTS.
2. THE EXPLORATIONS WERE LOCATED IN THE FIELD BY TAPED MEASUREMENTS FROM EXISTING SITE FEATURES.
3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 20 40 Feet

NO.	DATE	DESCRIPTION	BY
2	06/10/2015	FINAL REPORT SUBMISSION	CEM
1	05/27/2015	DRAFT REPORT SUBMISSION	CEM
0	05/20/2015	DRAFT SUBMISSION	CEM

S.W.COLE ENGINEERING, INC.

BRUNSWICK SCHOOL DEPARTMENT

OVERALL SITE PLAN

BRUNSWICK JUNIOR HIGH SCHOOL
EXISTING SLAB SETTLEMENT
65 COLUMBIA AVENUE
BRUNSWICK, MAINE

Job No.: 15-0349 Scale: 1" = 20'Ñ
Date : 05/20/2015 Sheet: 1

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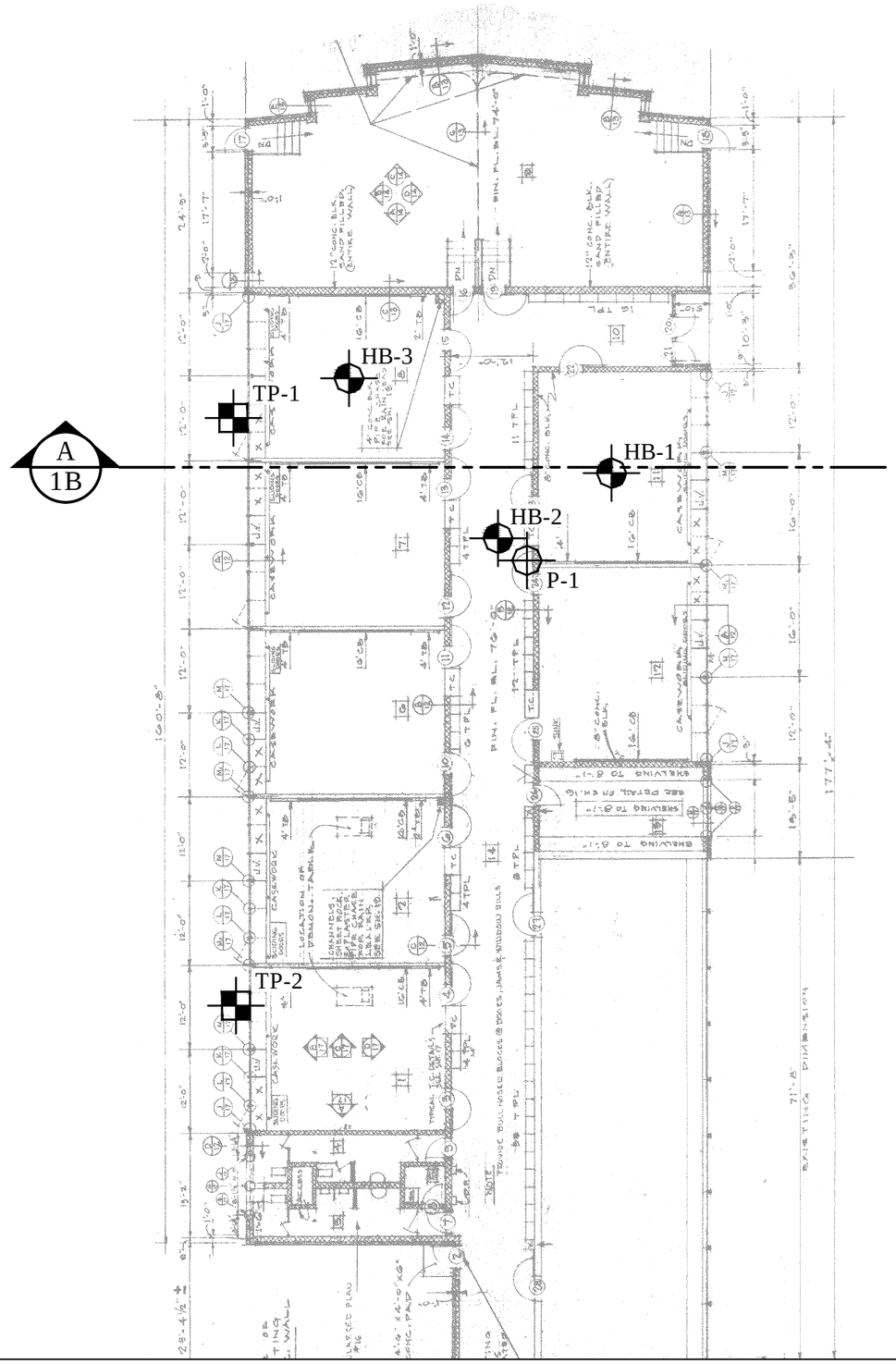

LEGEND:

APPROXIMATE HAND BORING LOCATION

APPROXIMATE TEST PIT LOCATION

APPROXIMATE HAND PROBE LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A SCANNED IMAGE FILE OF A SCALE PLAN OF THE BUILDING PROVIDED BY PDT ARCHITECTS.
2. THE EXPLORATIONS WERE LOCATED IN THE FIELD BY TAPED MEASUREMENTS FROM EXISTING SITE FEATURES.
3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 20 40 Feet

NO.	DATE	DESCRIPTION	BY
2	06/10/2015	FINAL REPORT SUBMISSION	CEM
1	05/21/2015	DRAFT REPORT SUBMISSION	CEM
0	05/20/2015	DRAFT SUBMISSION	CEM

S.W.COLE ENGINEERING, INC.

BRUNSWICK SCHOOL DEPARTMENT

EXPLORATION LOCATION PLAN

BRUNSWICK JUNIOR HIGH SCHOOL
EXISTING SLAB SETTLEMENT
65 COLUMBIA AVENUE
BRUNSWICK, MAINE

Job No.: 15-0349 Scale: 1" = 20'Ñ
Date : 05/19/2015 Sheet: 1A

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S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.:	**HB-1**
SHEET:	1 OF 1
PROJECT NO.:	15-0349
DATE START:	5/15/2015
DATE FINISH:	5/15/2015
ELEVATION:	76' +/-
SWC REP.:	MAS / EMW

PROJECT: EXISTING FLOOR SLAB DISTRESS
CLIENT : BRUNSWICK SCHOOL DEPARTMENT
LOCATION: BRUNSWICK JR. HIGH SCHOOL, COLUMBIA AVE., BRUNSWICK, ME
DRILLING FIRM: S.W. COLE ENGINEERING, INC. DRILLER: MAS / EMW

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	OPEN HOLE			
SAMPLER:	SS	1 3/8"	70 LBS	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS DAMP BELOW SLAB
SOILS WET BELOW 4' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									4"	CONCRETE SLAB WITH WIRE MESH AND POLY VAPOR BARRIER
									1.6'	BROWN SAND, SOME SILT, SOME FINE GRAVEL (FILL) ~ LOOSE ~ W = 7.7%
	1D	24"	20"	2.3'	3	3	2	3		
	2D	24"	18"	4.3'	5	7	4	3	4.3'	DARK BROWN SAND, SOME SILT, TRACE GRAVEL WITH BRICK FRAGMENTS, WOOD PIECES, AND ORGANICS (FILL) ~ LOOSE TO MEDIUM DENSE ~
										PRACTICAL REFUSAL AT 4.3' +/- PROBABLE COBBLE, BOULDER, OR PIPE

NOTE: SAMPLING WAS PERFORMED USING A 70 LB. HAMMER INSTEAD OF A TYPICAL 140 LB. HAMMER. BLOW COUNTS SHOWN ON LOGS HAVE BEEN ADJUSTED TO REPRESENT APPROXIMATE CORRESPONDING 140 LB. HAMMER COUNTS

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[X] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **HB-1**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.:	**HB-2**
SHEET:	1 OF 1
PROJECT NO.:	15-0349
DATE START:	5/15/2015
DATE FINISH:	5/15/2015
ELEVATION:	76' +/-
SWC REP.:	MAS / EMW

PROJECT: EXISTING FLOOR SLAB DISTRESS
CLIENT : BRUNSWICK SCHOOL DEPARTMENT
LOCATION: BRUNSWICK JR. HIGH SCHOOL, COLUMBIA AVE., BRUNSWICK, ME
DRILLING FIRM: S.W. COLE ENGINEERING, INC. DRILLER: MAS / EMW

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	OPEN HOLE			
SAMPLER:	SS	1 3/8"	70 LBS	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS DAMP BELOW SLAB
SOILS SATURATED BELOW 6' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									5"	CONCRETE SLAB WITH WIRE MESH AND POLY VAPOR BARRIER
									6.5"	1-1/2-INCH VOID BELOW SLAB
										W = 5.5% BROWN SAND, SOME GRAVEL, SOME SILT WITH 1/2" THICK GRAY CLAYEY SILT AT 2.3' +/- (FILL) ~ LOOSE ~
	1D	24"	18"	2.5'	4	5	4	3		
									4.0'	1" THICK GRAY CLAYEY SILT AT 3.3'
										(PROBABLE FILL) NOTE: SAMPLER DROPPED FROM 4' TO 6.3' +/- UNDER WEIGHT OF HAMMER
									6.0'	~ VERY LOOSE ~
	2D	45"	18"	6.3'	2	1	1	1/27"		BROWN SAND, SOME SILT
									6.8'	~VERY LOOSE ~
										DARK GRAY AND BLACK ORGANICS, SOME SAND, SOME SILT
	3D	24"	18"	8.3'	1	2	2	1	8.3'	~ VERY LOOSE ~
										HAND PUSHED TILE PROBE 8.3' TO 9.3'
									9.3'	PROBABLE ORGANICS
										ADVANCED TILE PROBE BY SLIDE HAMMER 9.3' TO 11.3' POSSIBLE SAND
									11.3'	
										BOTTOM OF EXPLORATION AT 11.3'
										NOTE: SAMPLING WAS PERFORMED USING A 70 LB. HAMMER INSTEAD OF A TYPICAL 140 LB. HAMMER. BLOW COUNTS SHOWN ON LOGS HAVE BEEN ADJUSTED TO REPRESENT APPROXIMATE CORRESPONDING 140 LB. HAMMER COUNTS

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:

	DRILLER - VISUALLY
X	SOIL TECH. - VISUALLY
X	LABORATORY TEST

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **HB-2**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.:	**HB-3**
SHEET:	1 OF 1
PROJECT NO.:	15-0349
DATE START:	5/15/2015
DATE FINISH:	5/15/2015
ELEVATION:	76' +/-
SWC REP.:	MAS / EMW

PROJECT: EXISTING FLOOR SLAB DISTRESS
CLIENT : BRUNSWICK SCHOOL DEPARTMENT
LOCATION: BRUNSWICK JR. HIGH SCHOOL, COLUMBIA AVE., BRUNSWICK, ME
DRILLING FIRM: S.W. COLE ENGINEERING, INC. DRILLER: MAS / EMW

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	OPEN HOLE			
SAMPLER:	SS	1 3/8"	70 LBS	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS DAMP BELOW SLAB
SOILS MOIST TO WET BELOW 4.5' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									4"	COCNRETE SLAB WITH WIRE MESH
									4.25"	1/4-INCH VOID BELOW SLAB
									1.1'	BROWN SAND, SOME SILT, TRACE GRAVEL (FILL)
	1D	24"	18"	2.3'	4	5	8	10		DARK BROWN SILTY SAND, SOME GRAVEL (FILL) ~ LOOSE TO MEDIUM DENSE ~
	2D	24"	16"	4.3'	9	8	6	7	4.3'	4-INCHES BLACK ASPHALT OR ASH AT BOTTOM OF SAMPLE 2D
									5.0'	DARK GRAY SILTY SAND WITH ORGANIC SEAMS , TRACE BRICK ~LOOSE~ (FILL)
	3D	24"	20"	6.3'	2	1	1	3	6.3'	W = 388% O = 79% BLACK ORGANICS, SOME SAND, SOME SILT ~ VERY LOOSE ~
										HAND PUSHED TILE PROBE 6.3' TO 8' +/- PROBABLE ORGANICS
									8.0'	
									8.3'	ADVANCED TILE PROBE BY SLIDE HAMMER 8' TO 8.3' +/- POSSIBLE SAND
										BOTTOM OF EXPLORATION AT 8.3'

NOTE: SAMPLING WAS PERFORMED USING A 70 LB. HAMMER INSTEAD OF A TYPICAL 140 LB. HAMMER. BLOW COUNTS SHOWN ON LOGS HAVE BEEN ADJUSTED TO REPRESENT APPROXIMATE CORRESPONDING 140 LB. HAMMER COUNTS

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[X] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **HB-3**

S.W.COLE ENGINEERING, INC.

PROBE LOG

BORING NO.:	**P-1**
SHEET:	1 OF 1
PROJECT NO.:	15-0349
DATE START:	5/15/2015
DATE FINISH:	5/15/2015
ELEVATION:	76' +/-
SWC REP.:	MAS / EMW

PROJECT: EXISTING FLOOR SLAB DISTRESS
CLIENT : BRUNSWICK SCHOOL DEPARTMENT
LOCATION: BRUNSWICK JR. HIGH SCHOOL, COLUMBIA AVE., BRUNSWICK, ME
DRILLING FIRM: S.W. COLE ENGINEERING, INC. DRILLER: MAS / EMW

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	TILE PROBE			
SAMPLER:				
CORE BARREL:				

WATER LEVEL INFORMATION

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									4.5"	CONCRETE SLAB
									6.5"	2-INCH VOID BELOW SLAB
										HAND PUSH TILE PROBE TO 7.0'
									7.0'	ATTEMPT TO ADVANCE TILE PROBE BY SLIDE HAMMER AT 7.0' - REFUSAL
										REFUSAL @ 7.0' PROBABLE OBSTRUCTION OR TOP OF FOOTING
										NOTE: P-1 MADE WITH A TILE PROBE ADJACENT TO CORRIDOR WALL IN ATTEMPT TO OBTAIN DEPTH TO TOP OF WALL FOOTING

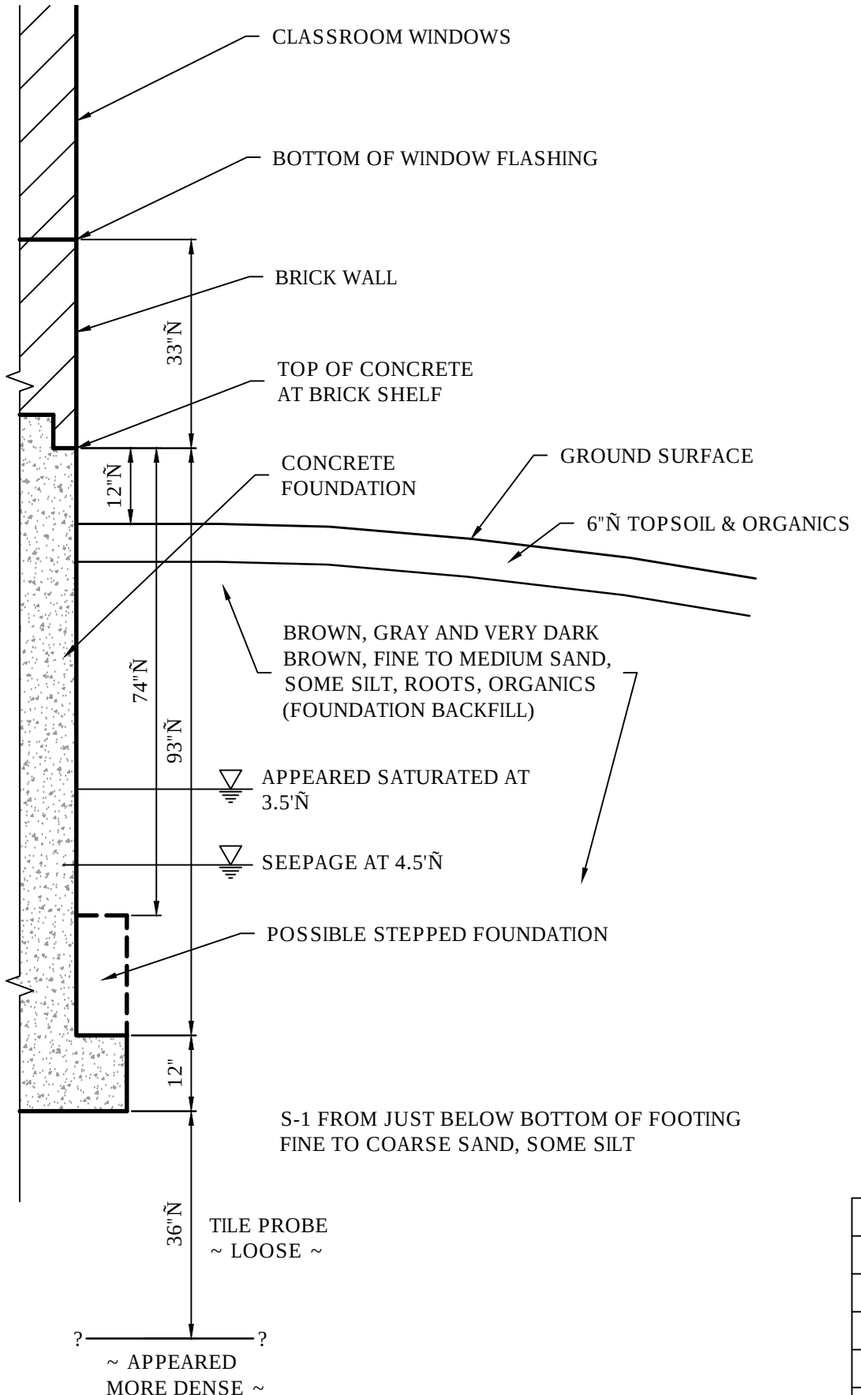
SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

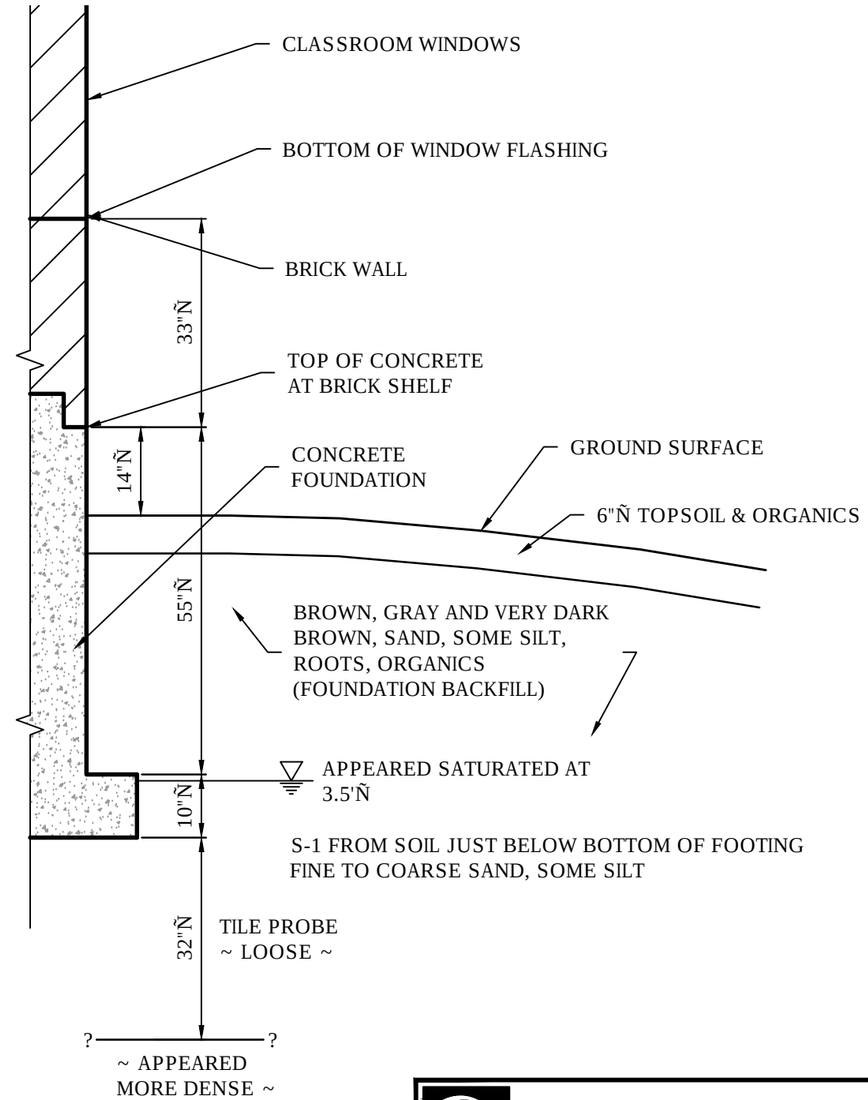
REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **P-1**

TEST PIT LOG TP-1



TEST PIT LOG TP-2



S.W.COLE
ENGINEERING, INC.

NO.	DATE	DESCRIPTION	BY
2	06/10/2015	FINAL REPORT SUBMISSION	CEM
1	05/27/2015	DRAFT REPORT SUBMISSION	CEM
0	05/20/2015	DRAFT SUBMISSION	CEM

BRUNSWICK SCHOOL DEPARTMENT

TEST PIT LOGS

BRUNSWICK JUNIOR HIGH SCHOOL
EXISTING SLAB SETTLEMENT
65 COLUMBIA AVENUE
BRUNSWICK, MAINE

Job No.:	15-0349	Scale:	Not to Scale
Date :	05/20/2015	Sheet:	6

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KEY TO THE NOTES & SYMBOLS
Test Boring and Test Pit Explorations

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - based on laboratory unconfined compressive test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. based on pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass. RQD is computed from recovered core samples.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

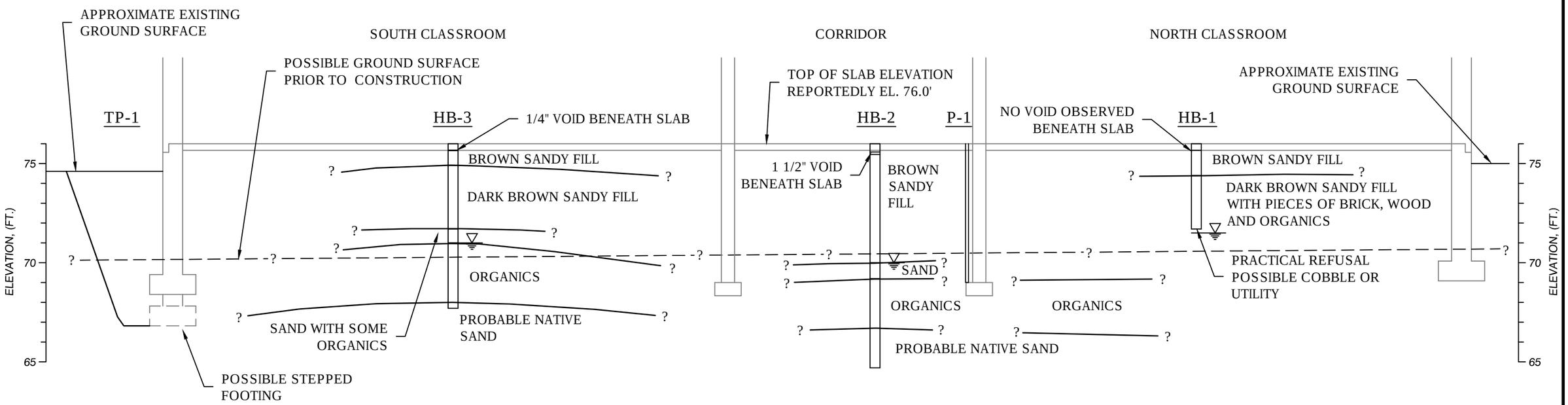
Description of Proportions:

0 to 5% TRACE
5 to 12% SOME
12 to 35% "Y"
35+% AND

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.



NOTES:

1. FOUNDATION/BUILDING INFORMATION FROM PLANS PROVIDED BY PDT ARCHITECTS.

2. SEE EXPLORATION LOGS FOR MORE DETAILED INFORMATION.

NO.	DATE	DESCRIPTION	BY
2	06/10/2015	FINAL REPORT SUBMISSION	CEM
1	05/27/2015	DRAFT REPORT SUBMISSION	CEM
0	05/20/2015	DRAFT SUBMISSION	CEM

S.W.COLE ENGINEERING, INC.

BRUNSWICK SCHOOL DEPARTMENT

SECTION

BRUNSWICK JUNIOR HIGH SCHOOL
EXISTING SLAB SETTLEMENT
65 COLUMBIA AVENUE
BRUNSWICK, MAINE

Job No.: 15-0349 Scale: 1" = 5'
Date : 05/20/2015 Sheet: 8

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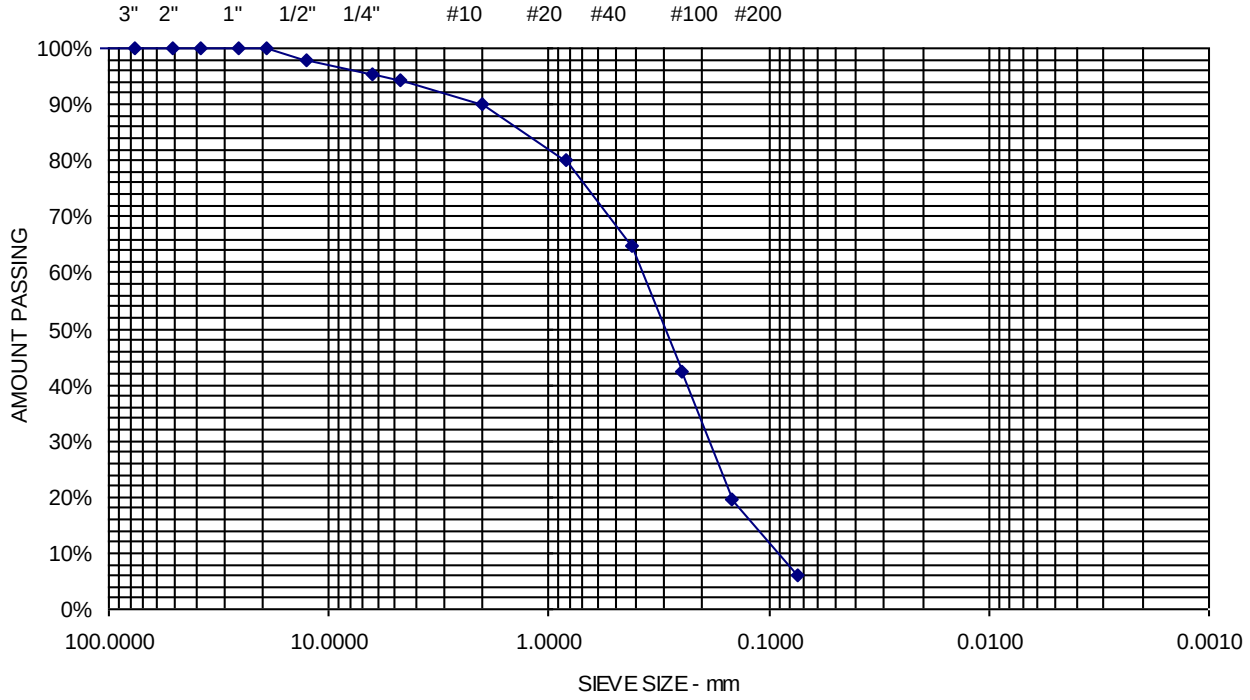
Report of Gradation

ASTM C-117 & C-136

Project Name	BRUNSWICK ME - BRUNSWICK ME - BRUNSWICK JR. HIGH SCHOOL SLAB SETTLEMENT - GEOTECHNICAL CONSULTATION	Project Number	15-0349
Client	BRUNSWICK SCHOOL DEPARTMENT	Lab ID	19352G
		Date Received	5/20/2015
		Date Completed	5/21/2015
Material Source	**HB-1 1D 0.3-2.3**	Tested By	JUSTIN BISSON

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**98**	
6.3 mm	**1/4"**	**95**	
4.75 mm	**No. 4**	**94**	5.8% Gravel
2.00 mm	**No. 10**	**90**	
850 um	**No. 20**	**80**	
425 um	**No. 40**	**65**	88.2% Sand
250 um	**No. 60**	**42**	
150 um	**No. 100**	**20**	
75 um	**No. 200**	**6.0**	6% Fines

SAND, SOME SILT AND GRAVEL



Comments: w = 7.7%

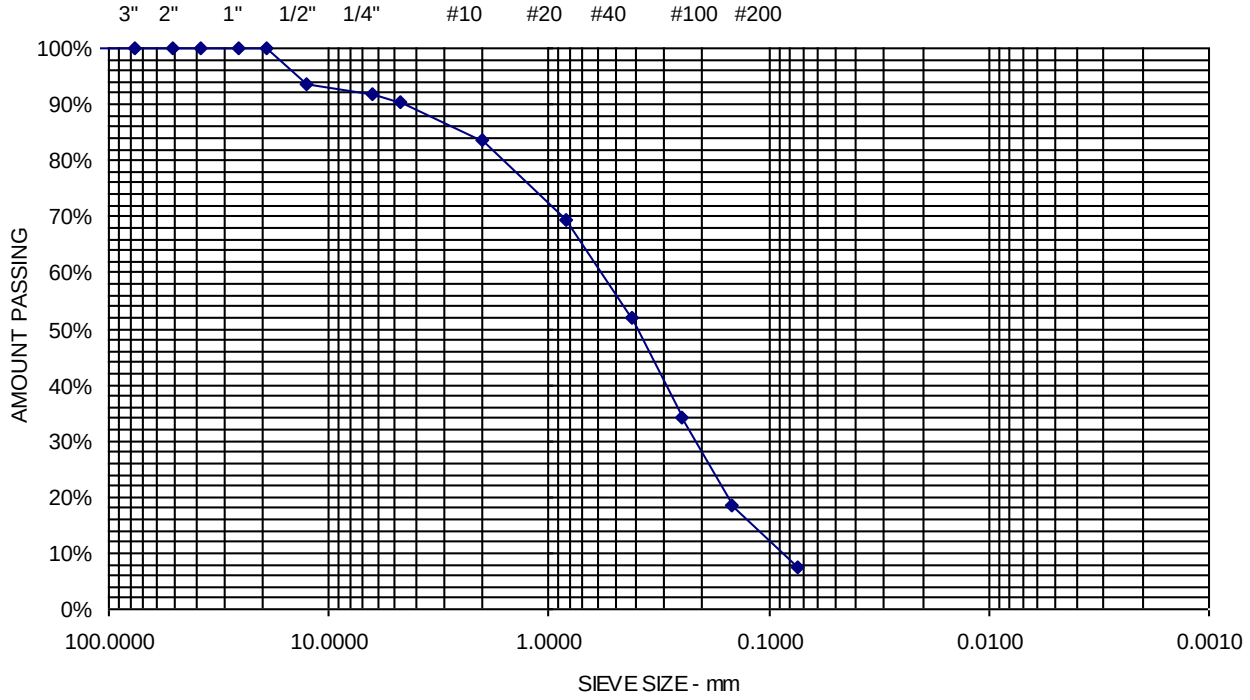
Report of Gradation

ASTM C-117 & C-136

Project Name	BRUNSWICK ME - BRUNSWICK ME - BRUNSWICK JR. HIGH SCHOOL SLAB SETTLEMENT - GEOTECHNICAL CONSULTATION	Project Number	15-0349
Client	BRUNSWICK SCHOOL DEPARTMENT	Lab ID	19351G
		Date Received	5/20/2015
		Date Completed	5/21/2015
Material Source	**HB-2 1D 0.5-2.5**	Tested By	JUSTIN BISSON

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**94**	
6.3 mm	**1/4"**	**92**	
4.75 mm	**No. 4**	**90**	9.6% Gravel
2.00 mm	**No. 10**	**84**	
850 um	**No. 20**	**69**	
425 um	**No. 40**	**52**	82.9% Sand
250 um	**No. 60**	**34**	
150 um	**No. 100**	**18**	
75 um	**No. 200**	**7.5**	7.5% Fines

SAND, SOME GRAVEL, SOME SILT



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Sheet **10**

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
BJHS-1.1	**Entire Building - Architectural**	Provide full NFPA-complaint sprinkler coverage at unprotected areas.	$3.25/sf	51930	$168,800	
BJHS-1.2		Replace existing sprinkler heads at areas that are currently protected by a sprinkler system.	$0.25/sf	41800	$10,500	Replacement required within next 10 years.
BJHS-1.3		Upgrade classroom door hardware to security function	$350/door	77	$27,000	
BJHS-1.4		Replace wire glass at doors and borrowed lites	$50/sf	1080 sf	$54,000	Optional
BJHS-1.5		Remove asbestos flooring/pipe covers/pipe fitting		1	$170,000	Abatement cost per AQM report + 1966 wing
BJHS-1.6		Provide new flooring at abatement locations	$4.00/sf	9000	$36,000	At floor tile abatement areas per AQM report.
BJHS-1.7		Remove lead paint and repaint ($60,000 Abatement + $5000 for repairs)		1	$65,000	Optional - Abatement cost per AQM report.
BJHS-1.8		Remove PCB's and recaulk ($220,000 Abatement + $25,000 to recaulk)		1	$245,000	Abatement cost per AQM report.
BJHS-1.9		Add ADA signage throughout	$50/sign	200	$10,000	
BJHS-1.10		Provide exterior classroom and exit door numbering for security	$50/sign	60	$3,000	
BJHS-1.11		Miscellaneous repair of window seals, glazing and screens, and replace glazing in 1980's wing, repair glazing in all other wings as required.				See line items in specific building areas.
BJHS-1.12		Add 1 each ADA-compliant Boys' & Girls' Toilet Rooms. See also BJHS-5.9.	$350/sf	600 sf	$210,000	
BJHS-1.13		Provide new window shades in classrooms	$600/clrm	50	$30,000	Optional
BJHS-1.14		Modify roof edges at the Gym & classroom wing flat roof areas to prevent water from running down the face of the exterior walls.	$25/lf	2200 lf	$55,000	
BJHS-1.15		Repoint brick veneer in areas damaged by roof run-off.	$10/sf	2000	$20,000	
BJHS-2.1	**Entire Building - Mechanical**	Replace underground hot water supply and return piping to the Central Boiler Plant		1	$58,000	Siemen's quote
BJHS-2.2		Provide new pipe insulation for piping that has asbestos insulation abated.		1	$5,000	
BJHS-2.3		Provide new emergency gas shut-off in (1) science room, eliminate gas to other science classrooms			$10,000	Verify with Owner if gas is used in all science classrooms
BJHS-2.4		Provide ADA accessible emergency eyewashes in science and art rooms	$4000/each	8	$32,000	Science and art rooms and kitchen
BJHS-3.1	**Entire Building - Electrical**	Replace clock system throughout	$0.74/sf	94000 sf	$70,000	Optional
BJHS-3.2		Replace the phone system			$30,000	Avaya phone system serves the School District
BJHS-3.3		Replace the public address system	$0.89	94000 sf	$84,000	
BJHS-3.4		Install new fire alarm system and emergency evacuation system.	$1.15	94000 sf	$108,000	
BJHS-3.5		Install new CCTV Security System.	$1.00/sf	94000 sf	$94,000	
BJHS-3.6		Replace illuminated exit signs throughout the building.	$180 each	50	$9,000	
		Technology Upgrades:				
BJHS-3.7		1. Provide data and power outlets for ceiling mounted projectors in the classrooms	$600/clrm	25	$15,000	
BJHS-3.8		2. Provide fiber optic wiring to data switches located throughout the building		1	$18,400	
BJHS-3.9		3. Provide Generator for data closet - (Assumed 100KW)		1	$45,000	
BJHS-3.10		Site Lighting upgrades -Entire Campus				Included in Coffin School sitework item CES-8.5
BJHS-3.11		Install door status switches at all exterior door and monitoring system	$500/door	17	$8,600	

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
BJHS-4.1	**Main Entrance Area**	Replace exterior metal slat ceiling system and lights at the main entrance		400 sf	$8,000	$15/sf + $500/ light
BJHS-4.2		Replace metal slat ceiling system and lights at main entrance interior entry lobby & gym lobby		2950 sf	$59,000	$15/sf + $500/ light
BJHS-4.3		Add/reconfigure a secure entry vestibule near the main office.		1	$75,000	
BJHS-4.4		Seal top of exterior wall to roof deck at main entrance doors		1	$500	
BJHS-4.5		Upgrade perimeter partitions around main lobby to 1-hour fire-rating, including doors, fire stopping, etc.	$150/lf	200	$30,000	
BJHS-4.6		Install a 1-hour rated HM frame and glazing at borrowed lite between the Main Office and corridor		1	$5,000	Allowance
BJHS-4.7		Upgrade stair guard rails for fall protection and handrails for accessibility	$100/lf	60	$6,000	
BJHS-4.8		Install tempered safety glazing at main stair enclosure	$25/sf	120 sf	$3,000	
BJHS-4.9		Renovate Boys' and Girls' toilet rooms 1st floor (2 rooms):	$250/sf	500	$125,000	
		1. New gwb ceilings in toilet rooms				
		2. New toilet partitions and accessories				
		3. Patch ct flooring at existing toilet partition mounting locations				
		4. Paint walls				
		5. Replace finned tube, provide new heat and ventilation				
		6. Replace doors				
BJHS-5.1	**1980s wing**	Replace carpet in all non-science classrooms and staff rooms	$5.50/sf	11177 sf	$61,500	
BJHS-5.2		Replace carpet in corridors	$5.50/sf	4750 sf	$26,000	
BJHS-5.3		Reconfigure or eliminate gas system, including shut-off (see BJHS-2.3)				
BJHS-5.4		Upgrade emergency shower in science classroom or convert to ADA eyewash unit.				Included under mechanical items
BJHS-5.5		Windows throughout the wing are failing. Replace all window glazing and seals.			$26,000	Price #2 CCG estimate
BJHS-5.6		Caulk the perimeter of all windows and doors			$20,000	Price #3 CCG estimate
BJHS-5.7		Replace wood windows and louvers in the Library/Special Ed wing.			$69,000	Price #1 & 4 CCG estimate
BJHS-5.8		Occasional damage to drywall at window perimeter-repair and paint			$5,000	Allowance
BJHS-5.9		Renovate Boys' and Girls' toilet rooms at First and Second Floors (4 rooms).	$250/sf	600	$150,000	
		1. New gwb ceilings in toilet rooms				
		2. New toilet partitions and accessories				
		3. Patch ct flooring at existing toilet partition mounting locations				
		4. Paint walls				
		5. Replace finned tube, provide new heat and ventilation				
		6. Replace doors				
BJHS-5.10		Replace accordion partitions with fixed partitions.	$10/sf	1575 sf	$15,800	
BJHS-5.11		Upgrade teachers lounge casework and sink to ADA standard		1	$4,000	
BJHS-5.12		Upgrade teachers lounge toilet room to ADA standard		1	$10,000	

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
BJHS-5.13		Upgrade guardrails and handrails at the library stair to comply with building code and ADA requirements	$100/lf	30	$3,000	
BJHS-5.14		Upgrade library stair lighting levels	$500/fixture	6	$3,000	
BJHS-5.15		Replace stair door with labelled fire-doors	$2000/door	2	$4,000	
BJHS-6.1	**1966 Wing**	Replace classroom SAT ceilings	$4/sf	6000 sf	$24,000	
BJHS-6.2		Replace existing classroom light fixtures with LED fixtures (poor light levels)	$180/fixture	80	$14,400	
BJHS-6.3		Verify smoke/fire rating at top of corridor partitions	$500/door	16	$8,000	
BJHS-6.4		Upgrade faculty toilet rooms to ADA standard	$7000/room	2	$14,000	
BJHS-6.5		Option 1A - Foam grout the void under the corridor slab		1	$20,000	(EFT quote from SW Cole)
BJHS-6.6		Option 1B - Foam grout voids and jack slabs in classrooms		1	$130,000	The slabs will still settle over time.
BJHS-6.7		Option 1C - Foam grout to stabilize soils, fill voids and jack classroom & corridor slabs				$175,000 to reduce the risk of settlement over time.
BJHS-6.8		Option 2-Replace poor soils and settling slabs in classrooms & corridor = $570,000 + flooring				Remove and replace existing slabs and poor soils. Includes $40,000 for new partitions between classrooms
BJHS-6.9		Option 3 - Lightweight concrete fill to level the slabs in 7 classrooms	$6.50/sf	5500 sf		$35,000 estimate. Slabs will continue to settle.
BJHS-6.10		Repair windows		1	$5,000	
BJHS-6.11		Replace carpet at corridors, band room, interior classrooms and offices	$5.50/sf	5300 sf	$29,200	
BJHS-6.12		Add ventilation at teachers room copiers		1	$4,000	
				1		
BJHS-7.1	**1976 Wing**	Replace operable partitions with smoke/fire rated partitions at corridor	$20/sf + doors	1000 sf	$26,000	
BJHS-7.2		If sprinkler is added, eliminate exterior doors and modify frames with insulated panel (low) and window (above).	$1750/door	4	$7,000	
BJHS-7.3		Repair windows		1	$5,000	
BJHS-7.4		Modify roof edge with extension/drip to keep water off brick. Add 'drip strip" and drainage.	$25/lf	1000 ft	$25,000	
BJHS-7.5		Enclose the kiln area with 1-hour rated partitions and one 45-minute door @ $1,665	448 sf	$8.80/sf	$5,600	
BJHS-7.6		Provide SAT ceiling at Music Classroom (peeling paint at roof deck)	$4/sf	1400 sf	$5,600	
BJHS-7.7		Replace lights in Music Classroom	$180/fixture	16	$2,900	
BJHS-7.8		Replace the HM door frame from the corridor to the courtyard			$4,500	
BJHS-8.1	**1959 Wing**	Repair windows			$5,000	
BJHS-8.2		Provide ADA fixtures in the boys' and girls' locker rooms			$20,000	
BJHS-9.1	**Structural Upgrades to Roof**	Reinforce existing roof framing to comply with current IBC the requirements for new construction = $193,000				Optional - See report from Becker Structural Engineers.

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
BJHS-10.1	**Site and Athletic Fields**	Turf playfield improvements (FS&T item A-1)			$96,800	Optional
BJHS-10.2		Repair pavement ponding areas (FS&T items A-2 & 4)			$15,300	
BJHS-10.3		Storm drainage repair (FS&T items B-1 &2)			$64,000	
BJHS-10.4		Additional storm drainage investigation (FST&T item B-3)			$36,400	
BJHS-10.5		Pavement repair (FS&T items C-1, 2 & 4)			$163,800	
BJHS-10.6		Playground improvements (FS&T item D-1)			$57,400	
BJHS-10.7		Site lighting improvements (Included under Coffin School item CES-8.5)			$0	
			SUB-TOTAL		**$3,189,000**	
			10% Div 1 Conditions		$318,900	
			10% GenCon O&P		$318,900	
			10% Contingency		$318,900	
			1% Bond		$31,890	
			TOTAL		**$4,177,590**	
			3%/year Escal	1 year	**$4,303,000**	
				2 years	**$4,432,000**	

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS BY CATEGORY - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
	Structural Repairs					
BJHS-1.14		Modify roof edges at the Gym & classroom wing flat roof areas to prevent water from running down the face of the exterior walls.	$25/lf	2200 lf	$55,000	
BJHS-1.15		Repoint brick veneer in areas damaged by roof run-off.	$10/sf	2000	$20,000	
BJHS-6.5		Option 1A - Foam grout the void under the corridor slab		1	$20,000	(EFT quote from SW Cole)
BJHS-6.6		Option 1B - Foam grout voids and jack slabs in classrooms		1	$130,000	The slabs will still settle over time.
BJHS-6.7		Option 1C - Foam grout to stabilize soils, fill voids and jack classroom & corridor slabs				$175,000 to reduce the risk of settlement over time.
BJHS-6.8		Option 2-Replace poor soils and settling slabs in classrooms & corridor = $570,000 + flooring				Remove and replace existing slabs and poor soils. Includes $40,000 for new partitions between classrooms
BJHS-6.9		Option 3 - Lightweight concrete fill to level the slabs in 7 classrooms	$6.50/sf	5500 sf		$35,000 estimate. Slabs will continue to settle.
BJHS-7.4		Modify roof edge with extension/drip to keep water off brick. Add 'drip strip" and drainage.	$25/lf	1000 ft	$25,000	
BJHS-9.1		Reinforce existing roof framing to comply with current IBC the requirements for new construction = $193,000				Optional - See report from Becker Structural Engineers.
			SUBTOTAL		**$250,000**	
	Security					
BJHS-1.3		Upgrade classroom door hardware to security function	$350/door	77	$27,000	
BJHS-1.10		Provide exterior classroom and exit door numbering for security	$50/sign	60	$3,000	
BJHS-3.2		Replace the phone system			$30,000	Avaya phone system serves the School District
BJHS-3.3		Replace the public address system	$0.89	94000 sf	$84,000	
BJHS-3.5		Install new CCTV Security System.	$1.00/sf	94000 sf	$94,000	
BJHS-3.10		Site Lighting upgrades -Entire Campus				Included in Coffin School sitework item CES-8.4
BJHS-3.11		Install door status switches at all exterior door and monitoring system	$500/door	17	$8,600	
BJHS-4.3		Add/reconfigure a secure entry vestibule near the main office.		1	$75,000	
BJHS-7.2		If sprinkler is added, eliminate exterior doors and modify frames with insulated panel (low) and window (above).	$1750/door	4	$7,000	
BJHS-10.7		Site lighting improvements (Included under Coffin School item CES-8.5)			$0	
			SUBTOTAL		**$328,600**	
	Safety & Building Code Requirements					
BJHS-1.1		Provide full NFPA-complaint sprinkler coverage at unprotected areas.	$3.25/sf	51930	$168,800	
BJHS-1.2		Replace existing sprinkler heads at areas that are currently protected by a sprinkler system.	$0.25/sf	41800	$10,500	Replacement required within next 10 years.
BJHS-1.4		Replace wire glass at doors and borrowed lites	$50/sf	1080 sf	$54,000	Optional

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS BY CATEGORY - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
BJHS-1.5		Remove asbestos flooring/pipe covers/pipe fitting		1	$170,000	Abatement cost per AQM report + 1966 wing
BJHS-1.6		Provide new flooring at abatement locations	$4.00/sf	9000	$36,000	At floor tile abatement areas per AQM report.
BJHS-1.7		Remove lead paint and repaint ($60,000 Abatement + $5000 for repairs)		1	$65,000	Optional - Abatement cost per AQM report.
BJHS-1.8		Remove PCB's and recaulk ($220,000 Abatement + $25,000 to recaulk)		1	$245,000	Abatement cost per AQM report.
BJHS-1.9		Add ADA signage throughout	$50/sign	200	$10,000	
BJHS-1.12		Add 1 each ADA-compliant Boys' & Girls' Toilet Rooms. See also BJHS-5.9.	$350/sf	600 sf	$210,000	
BJHS-2.3		Provide new emergency gas shut-off in (1) science room, eliminate gas to other science classrooms			$10,000	Verify with Owner if gas is used in all science classrooms
BJHS-2.4		Provide ADA accessible emergency eyewashes in science and art rooms	$4000/each	8	$32,000	Science and art rooms and kitchen
BJHS-3.4		Install new fire alarm system and emergency evacuation system.	$1.15	94000 sf	$108,000	
BJHS-3.6		Replace illuminated exit signs throughout the building.	$180 each	50	$9,000	
BJHS-4.4		Seal top of exterior wall to roof deck at main entrance doors		1	$500	
BJHS-4.5		Upgrade perimeter partitions around main lobby to 1-hour fire-rating, including doors,	$150/lf	200	$30,000	
BJHS-4.6		Install a 1-hour rated HM frame and glazing at borrowed lite between the Main Office and corridor		1	$5,000	Allowance
BJHS-4.7		Upgrade stair guard rails for fall protection and handrails for accessibility	$100/lf	60	$6,000	
BJHS-4.8		Install tempered safety glazing at main stair enclosure	$25/sf	120 sf	$3,000	
BJHS-4.9		Renovate Boys' and Girls' toilet rooms 1st floor (2 rooms):	$175/sf	500	$87,500	
		2. New toilet partitions and accessories				
		3. Patch ct flooring at existing toilet partition mounting locations				
		4. Paint walls				
BJHS-5.3		Reconfigure or eliminate gas system, including shut-off (see BJHS-2.3)				
BJHS-5.4		Upgrade emergency shower in science classroom or convert to ADA eyewash unit.				Included under mechanical items
BJHS-5.9		Renovate Boys' and Girls' toilet rooms at First and Second Floors (4 rooms).	$175/sf	600	$105,000	
		2. New toilet partitions and accessories				
		3. Patch ct flooring at existing toilet partition mounting locations				
		4. Paint walls				
BJHS-5.11		Upgrade teachers lounge casework and sink to ADA standard		1	$4,000	
BJHS-5.12		Upgrade teachers lounge toilet room to ADA standard		1	$10,000	
BJHS-5.13		Upgrade guardrails and handrails at the library stair to comply with building code and ADA requirements	$100/lf	30	$3,000	
BJHS-5.14		Upgrade library stair lighting levels	$500/fixture	6	$3,000	
BJHS-5.15		Replace stair door with labelled fire-doors	$2000/door	2	$4,000	
BJHS-6.3		Verify smoke/fire rating at top of corridor partitions	$500/door	16	$8,000	
BJHS-6.4		Upgrade faculty toilet rooms to ADA standard	$7000/room	2	$14,000	
BJHS-6.12		Add ventilation at teachers room copiers		1	$4,000	
BJHS-7.1		Replace operable partitions with smoke/fire rated partitions at corridor	$20/sf + doors	1000 sf	$26,000	
BJHS-7.5		Enclose the kiln area with 1-hour rated partitions and one 45-minute door @ $1,665	448 sf	$8.80/sf	$5,600	
BJHS-8.2		Provide ADA fixtures in the boys' and girls' locker rooms			$20,000	

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS BY CATEGORY - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
BJHS-10.3		Storm drainage repair (FS&T items B-1 &2)			$64,000	
BJHS-10.4		Additional storm drainage investigation (FST&T item B-3)			$36,400	
BJHS-10.6		Playground improvements (FS&T item D-1)			$57,400	
			SUBTOTAL		**$1,624,700**	
	Repairs/Other for Additional 10 Year Occupancy					
BJHS-1.11		Miscellaneous repair of window seals, glazing and screens, and replace glazing in 1980's wing, repair glazing in all other wings as required.				See line items in specific building areas.
BJHS-1.13		Provide new window shades in classrooms	$600/clrm	50	$30,000	Optional
BJHS-2.1		Replace underground hot water supply and return piping to the Central Boiler Plant		1	$58,000	Siemen's quote
BJHS-2.2		Provide new pipe insulation for piping that has asbestos insulation abated.		1	$5,000	
BJHS-3.1		Replace clock system throughout	$0.74/sf	94000 sf	$70,000	Optional
		Technology Upgrades:				
BJHS-3.7		1. Provide data and power outlets for ceiling mounted projectors in the classrooms	$600/clrm	25	$15,000	
BJHS-3.8		2. Provide fiber optic wiring to data switches located throughout the building		1	$18,400	
BJHS-3.9		3. Provide Generator for data closet - (Assumed 100KW)		1	$45,000	
BJHS-4.1		Replace exterior metal slat ceiling system and lights at the main entrance		400 sf	$8,000	$15/sf + $500/ light
BJHS-4.2		Replace metal slat ceiling system and lights at main entrance interior entry lobby & gym lobby		2950 sf	$59,000	$15/sf + $500/ light
BJHS-4.9		Renovate Boys' and Girls' toilet rooms 1st floor (2 rooms):	$75/sf	500	$37,500	
		1. New gwb ceilings in toilet rooms				
		5. Replace finned tube, provide new heat and ventilation				
		6. Replace doors				
BJHS-5.1		Replace carpet in all non-science classrooms and staff rooms	$5.50/sf	11177 sf	$61,500	
BJHS-5.2		Replace carpet in corridors	$5.50/sf	4750 sf	$26,000	
BJHS-5.5		Windows throughout the wing are failing. Replace all window glazing and seals.			$26,000	Price #2 CCG estimate
BJHS-5.6		Caulk the perimeter of all windows and doors			$20,000	Price #3 CCG estimate
BJHS-5.7		Replace wood windows and louvers in the Library/Special Ed wing.			$69,000	Price #1 & 4 CCG estimate
BJHS-5.8		Occasional damage to drywall at window perimeter-repair and paint			$5,000	Allowance
BJHS-5.9		Renovate Boys' and Girls' toilet rooms at First and Second Floors (4 rooms).	$75/sf	600	$45,000	
		1. New gwb ceilings in toilet rooms				
		5. Replace finned tube, provide new heat and ventilation				
		6. Replace doors				
BJHS-5.10		Replace accordion partitions with fixed partitions.	$10/sf	1575 sf	$15,800	
BJHS-6.1		Replace classroom SAT ceilings	$4/sf	6000 sf	$24,000	
BJHS-6.2		Replace existing classroom light fixtures with LED fixtures (poor light levels)	$180/fixture	80	$14,400	
BJHS-6.10		Repair windows		1	$5,000	
BJHS-6.11		Replace carpet at corridors, band room, interior classrooms and offices	$5.50/sf	5300 sf	$29,200	

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS BY CATEGORY - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
BJHS-7.3		Repair windows		1	$5,000	
BJHS-7.6		Provide SAT ceiling at Music Classroom (peeling paint at roof deck)	$4/sf	1400 sf	$5,600	
BJHS-7.7		Replace lights in Music Classroom	$180/fixture	16	$2,900	
BJHS-7.8		Replace the HM door frame from the corridor to the courtyard			$4,500	
BJHS-8.1		Repair windows			$5,000	
BJHS-10.1		Turf playfield improvements (FS&T item A-1)			$96,800	Optional
BJHS-10.2		Repair pavement ponding areas (FS&T items A-2 & 4)			$15,300	
BJHS-10.5		Pavement repair (FS&T items C-1, 2 & 4)			$163,800	
			SUBTOTAL		**$985,700**	

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS BY CATEGORY - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
	Structural Repairs					
BJHS-1.14		Modify roof edges at the Gym & classroom wing flat roof areas to prevent water from running down the face of the exterior walls.	$25/lf	2200 lf	$55,000	
BJHS-1.15		Repoint brick veneer in areas damaged by roof run-off.	$10/sf	2000	$20,000	
BJHS-6.5		Option 1A - Foam grout the void under the corridor slab		1	$20,000	(EFT quote from SW Cole)
BJHS-6.6		Option 1B - Foam grout voids and jack slabs in classrooms		1	$130,000	The slabs will still settle over time.
BJHS-6.7		Option 1C - Foam grout to stabilize soils, fill voids and jack classroom & corridor slabs				$175,000 to reduce the risk of settlement over time.
BJHS-6.8		Option 2-Replace poor soils and settling slabs in classrooms & corridor = $570,000 + flooring				Remove and replace existing slabs and poor soils. Includes $40,000 for new partitions between classrooms
BJHS-6.9		Option 3 - Lightweight concrete fill to level the slabs in 7 classrooms	$6.50/sf	5500 sf		$35,000 estimate. Slabs will continue to settle.
BJHS-7.4		Modify roof edge with extension/drip to keep water off brick. Add 'drip strip" and drainage.	$25/lf	1000 ft	$25,000	
BJHS-9.1		Reinforce existing roof framing to comply with current IBC the requirements for new construction = $193,000				Optional - See report from Becker Structural Engineers.
			SUBTOTAL		**$250,000**	
	Security					
BJHS-1.3		Upgrade classroom door hardware to security function	$350/door	77	$27,000	
BJHS-1.10		Provide exterior classroom and exit door numbering for security	$50/sign	60	$3,000	
BJHS-3.2		Replace the phone system			$30,000	Avaya phone system serves the School District
BJHS-3.3		Replace the public address system	$0.89	94000 sf	$84,000	
BJHS-3.5		Install new CCTV Security System.	$1.00/sf	94000 sf	$94,000	
BJHS-3.10		Site Lighting upgrades -Entire Campus				Included in Coffin School sitework item CES-8.4
BJHS-3.11		Install door status switches at all exterior door and monitoring system	$500/door	17	$8,600	
BJHS-4.3		Add/reconfigure a secure entry vestibule near the main office.		1	$75,000	
BJHS-7.2		If sprinkler is added, eliminate exterior doors and modify frames with insulated panel (low) and window (above).	$1750/door	4	$7,000	
BJHS-10.7		Site lighting improvements (Included under Coffin School item CES-8.5)			$0	
			SUBTOTAL		**$328,600**	
	Safety & Building Code Requirements					
BJHS-1.1		Provide full NFPA-complaint sprinkler coverage at unprotected areas.	$3.25/sf	51930	$168,800	
BJHS-1.2		Replace existing sprinkler heads at areas that are currently protected by a sprinkler system.	$0.25/sf	41800	$10,500	Replacement required within next 10 years.
BJHS-1.4		Replace wire glass at doors and borrowed lites	$50/sf	1080 sf	$54,000	Optional

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS BY CATEGORY - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
BJHS-1.5		Remove asbestos flooring/pipe covers/pipe fitting		1	$170,000	Abatement cost per AQM report + 1966 wing
BJHS-1.6		Provide new flooring at abatement locations	$4.00/sf	9000	$36,000	At floor tile abatement areas per AQM report.
BJHS-1.7		Remove lead paint and repaint ($60,000 Abatement + $5000 for repairs)		1	$65,000	Optional - Abatement cost per AQM report.
BJHS-1.8		Remove PCB's and recaulk ($220,000 Abatement + $25,000 to recaulk)		1	$245,000	Abatement cost per AQM report.
BJHS-1.9		Add ADA signage throughout	$50/sign	200	$10,000	
BJHS-1.12		Add 1 each ADA-compliant Boys' & Girls' Toilet Rooms. See also BJHS-5.9.	$350/sf	600 sf	$210,000	
BJHS-2.3		Provide new emergency gas shut-off in (1) science room, eliminate gas to other science classrooms			$10,000	Verify with Owner if gas is used in all science classrooms
BJHS-2.4		Provide ADA accessible emergency eyewashes in science and art rooms	$4000/each	8	$32,000	Science and art rooms and kitchen
BJHS-3.4		Install new fire alarm system and emergency evacuation system.	$1.15	94000 sf	$108,000	
BJHS-3.6		Replace illuminated exit signs throughout the building.	$180 each	50	$9,000	
BJHS-4.4		Seal top of exterior wall to roof deck at main entrance doors		1	$500	
BJHS-4.5		Upgrade perimeter partitions around main lobby to 1-hour fire-rating, including doors,	$150/lf	200	$30,000	
BJHS-4.6		Install a 1-hour rated HM frame and glazing at borrowed lite between the Main Office and corridor		1	$5,000	Allowance
BJHS-4.7		Upgrade stair guard rails for fall protection and handrails for accessibility	$100/lf	60	$6,000	
BJHS-4.8		Install tempered safety glazing at main stair enclosure	$25/sf	120 sf	$3,000	
BJHS-4.9		Renovate Boys' and Girls' toilet rooms 1st floor (2 rooms):	$175/sf	500	$87,500	
		2. New toilet partitions and accessories				
		3. Patch ct flooring at existing toilet partition mounting locations				
		4. Paint walls				
BJHS-5.3		Reconfigure or eliminate gas system, including shut-off (see BJHS-2.3)				
BJHS-5.4		Upgrade emergency shower in science classroom or convert to ADA eyewash unit.				Included under mechanical items
BJHS-5.9		Renovate Boys' and Girls' toilet rooms at First and Second Floors (4 rooms).	$175/sf	600	$105,000	
		2. New toilet partitions and accessories				
		3. Patch ct flooring at existing toilet partition mounting locations				
		4. Paint walls				
BJHS-5.11		Upgrade teachers lounge casework and sink to ADA standard		1	$4,000	
BJHS-5.12		Upgrade teachers lounge toilet room to ADA standard		1	$10,000	
BJHS-5.13		Upgrade guardrails and handrails at the library stair to comply with building code and ADA requirements	$100/lf	30	$3,000	
BJHS-5.14		Upgrade library stair lighting levels	$500/fixture	6	$3,000	
BJHS-5.15		Replace stair door with labelled fire-doors	$2000/door	2	$4,000	
BJHS-6.3		Verify smoke/fire rating at top of corridor partitions	$500/door	16	$8,000	
BJHS-6.4		Upgrade faculty toilet rooms to ADA standard	$7000/room	2	$14,000	
BJHS-6.12		Add ventilation at teachers room copiers		1	$4,000	
BJHS-7.1		Replace operable partitions with smoke/fire rated partitions at corridor	$20/sf + doors	1000 sf	$26,000	
BJHS-7.5		Enclose the kiln area with 1-hour rated partitions and one 45-minute door @ $1,665	448 sf	$8.80/sf	$5,600	
BJHS-8.2		Provide ADA fixtures in the boys' and girls' locker rooms			$20,000	

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS BY CATEGORY - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
BJHS-10.3		Storm drainage repair (FS&T items B-1 &2)			$64,000	
BJHS-10.4		Additional storm drainage investigation (FST&T item B-3)			$36,400	
BJHS-10.6		Playground improvements (FS&T item D-1)			$57,400	
			SUBTOTAL		**$1,624,700**	
	Repairs/Other for Additional 10 Year Occupancy					
BJHS-1.11		Miscellaneous repair of window seals, glazing and screens, and replace glazing in 1980's wing, repair glazing in all other wings as required.				See line items in specific building areas.
BJHS-1.13		Provide new window shades in classrooms	$600/clrm	50	$30,000	Optional
BJHS-2.1		Replace underground hot water supply and return piping to the Central Boiler Plant		1	$58,000	Siemen's quote
BJHS-2.2		Provide new pipe insulation for piping that has asbestos insulation abated.		1	$5,000	
BJHS-3.1		Replace clock system throughout	$0.74/sf	94000 sf	$70,000	Optional
		Technology Upgrades:				
BJHS-3.7		1. Provide data and power outlets for ceiling mounted projectors in the classrooms	$600/clrm	25	$15,000	
BJHS-3.8		2. Provide fiber optic wiring to data switches located throughout the building		1	$18,400	
BJHS-3.9		3. Provide Generator for data closet - (Assumed 100KW)		1	$45,000	
BJHS-4.1		Replace exterior metal slat ceiling system and lights at the main entrance		400 sf	$8,000	$15/sf + $500/ light
BJHS-4.2		Replace metal slat ceiling system and lights at main entrance interior entry lobby & gym lobby		2950 sf	$59,000	$15/sf + $500/ light
BJHS-4.9		Renovate Boys' and Girls' toilet rooms 1st floor (2 rooms):	$75/sf	500	$37,500	
		1. New gwb ceilings in toilet rooms				
		5. Replace finned tube, provide new heat and ventilation				
		6. Replace doors				
BJHS-5.1		Replace carpet in all non-science classrooms and staff rooms	$5.50/sf	11177 sf	$61,500	
BJHS-5.2		Replace carpet in corridors	$5.50/sf	4750 sf	$26,000	
BJHS-5.5		Windows throughout the wing are failing. Replace all window glazing and seals.			$26,000	Price #2 CCG estimate
BJHS-5.6		Caulk the perimeter of all windows and doors			$20,000	Price #3 CCG estimate
BJHS-5.7		Replace wood windows and louvers in the Library/Special Ed wing.			$69,000	Price #1 & 4 CCG estimate
BJHS-5.8		Occasional damage to drywall at window perimeter-repair and paint			$5,000	Allowance
BJHS-5.9		Renovate Boys' and Girls' toilet rooms at First and Second Floors (4 rooms).	$75/sf	600	$45,000	
		1. New gwb ceilings in toilet rooms				
		5. Replace finned tube, provide new heat and ventilation				
		6. Replace doors				
BJHS-5.10		Replace accordion partitions with fixed partitions.	$10/sf	1575 sf	$15,800	
BJHS-6.1		Replace classroom SAT ceilings	$4/sf	6000 sf	$24,000	
BJHS-6.2		Replace existing classroom light fixtures with LED fixtures (poor light levels)	$180/fixture	80	$14,400	
BJHS-6.10		Repair windows		1	$5,000	
BJHS-6.11		Replace carpet at corridors, band room, interior classrooms and offices	$5.50/sf	5300 sf	$29,200	

Brunswick Junior High School - Brunswick, Maine
PROPOSED IMPROVEMENTS BY CATEGORY - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
BJHS-7.3		Repair windows		1	$5,000	
BJHS-7.6		Provide SAT ceiling at Music Classroom (peeling paint at roof deck)	$4/sf	1400 sf	$5,600	
BJHS-7.7		Replace lights in Music Classroom	$180/fixture	16	$2,900	
BJHS-7.8		Replace the HM door frame from the corridor to the courtyard			$4,500	
BJHS-8.1		Repair windows			$5,000	
BJHS-10.1		Turf playfield improvements (FS&T item A-1)			$96,800	Optional
BJHS-10.2		Repair pavement ponding areas (FS&T items A-2 & 4)			$15,300	
BJHS-10.5		Pavement repair (FS&T items C-1, 2 & 4)			$163,800	
			SUBTOTAL		**$985,700**	

Existing Building Overview:

The Coffin Elementary School appear to be largely in its original configuration with no significant renovations or additions other than a small expansion of the kitchen storage area. Recent improvements to the HVAC system are evident in the form of exposed ductwork adjacent to classroom clerestory windows. Windows and exterior doors opening off of corridors have been replaced with aluminum storefront and entrance systems.

The predominant structural system of the building is unprotected wood framing and decking, which bears on steel beams, wood-framed bearing walls and cmu bearing walls. The gym roof is framed with long span, open web steel joists and wood deck.

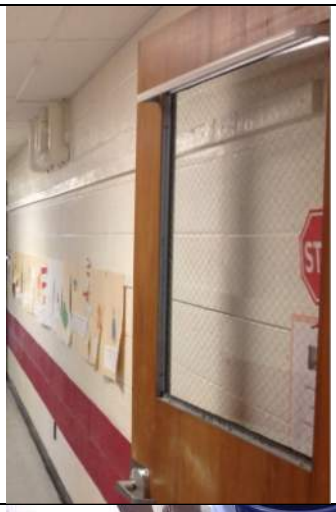
A fire suppression system is present, but it only protects corridors, thy gym, the cafeteria and the kitchen.

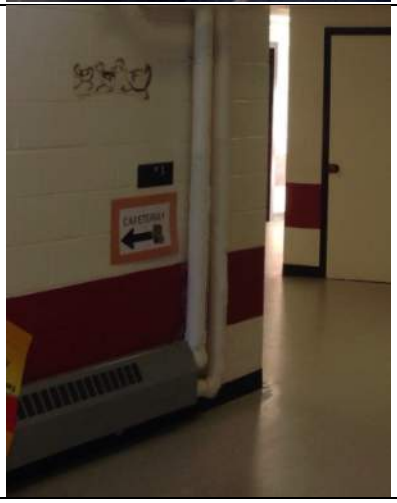
A few improvements have been made to improve accessibility, such as the installation of a lift to the stage and the improvement of a bathroom that opens into the gym, but others toilet rooms to not appear to meet current accessibility standards.

PDT Architects has developed the following list of proposed repairs, improvements and replacements of building systems with the goals of maintaining and improving safety, comfort, and accessibility over the next decade of building operation. Systems and materials found to be near or beyond their expected service lifespans have been identified for replacement.

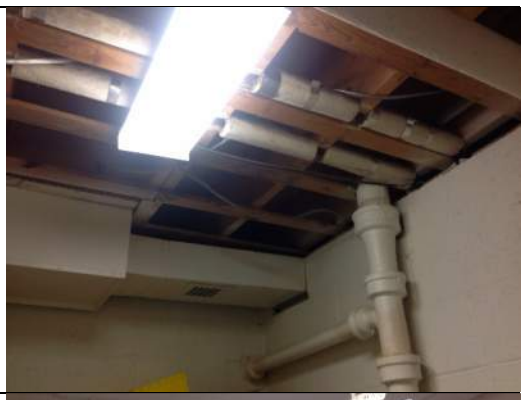
BUILDING-WIDE WORK:

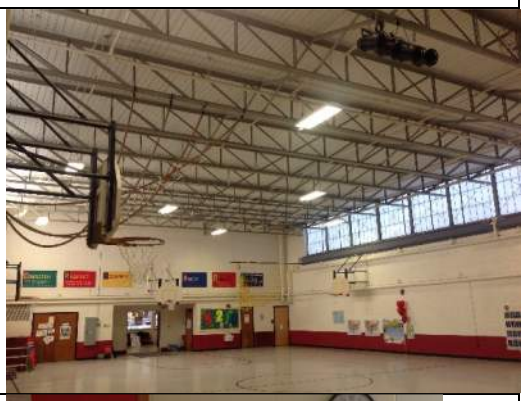
CES-1.1/1.2 FIRE PROTECTION The Coffin School is partially protected by an automatic sprinkler system. Expending the coverage area and integrating the existing system to provide a complete, supervised automatic sprinkler system would dramatically increase the level of protection for occupants and property in the even to of a fire. Existing heads in protected areas should be replaced to assure functionality. Total building area: 53,000 sf +- Area currently protected: 22,000 sf +- Full sprinkler coverage also reduces the requirement for corridor separation from 1-hour fire-separation to smoke tight separation and eliminate the requirement for exterior doors and emergency escape windows from classrooms.	

CES-1.3 DOOR HARDWARE Most doors are equipped with what appear to be original door knob hardware, which does not meet current standards for graspability. Replacing knobs with lever handles would address this concern, and replacing locksets that allow classrooms to be locked from the inside would add a layer of security. Given the degree of skilled modification work to replace glazing and hardware, it may be more cost effective to replace existing door slabs with new slabs.	
CES-1.4 WIRED GLASS A significant number of doors lites, side lites, transom lites and borrowed lites are glazed with wired glass. Building Codes now consider wired glass to be a safety hazard and prohibit its installation in new educational occupancies. Existing wire glass is allowed to remain, but replacing it in doors, sidelights and borrowed lites at levels of potential student impact would increase safety. Many wood doors appear to have been modified by the facilities staff to accommodate glazing, which is held in place by light-gage metal angles.	
CES-1.5/1.6/1.7/1.8 REMOVE HAZARDOUS BUILDING MATERIALS The School Department has kept current with hazardous material monitoring requirements. Surveys on file with the School Department indicate the presence of asbestos in transite boards, floor tile, tile adhesives and pipe insulation and fittings. Lead paint has been documented in a few locations. As long as its condition is monitored and documented, immediate abatement of asbestos and lead is not required, but it may be considered desirable by the facilities staff or by the community. PCBs, identified in exterior sealants, must be removed immediately.	

CES-1.9 ROOF DRAINAGE Water from sloped roofs currently runs off low roof edge into a system of gutters and leaders that are hard-piped to a sub-surface drain line. Snow bars have been added, but the gutters appear to be vulnerable to damage and freeze-up. Construct an extended roof overhang that would allow run-off to drop outboard of the face of the exterior wall and installing a continuous trench drain to carry the run-off to existing catch basins.	
CES-1.10 ADA-COMPLIANT ROOM SIGNAGE ADAAG-compliant room identification signage is not present at most locations.	

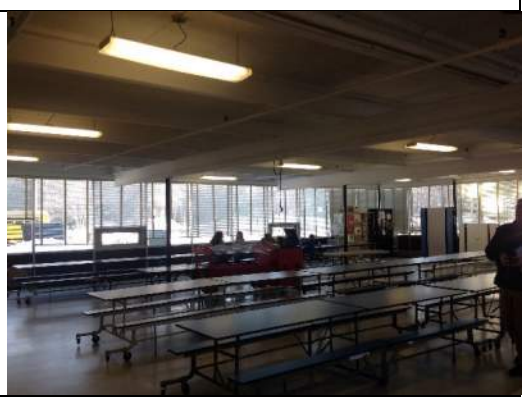
CES-1.11 EXTERIOR ROOM & DOOR NUMBERS Provide large-format exterior classroom and exit door numbering for security and to aid emergency responders.	
CES-1.12 REPLACE WINDOW TREATMENTS Lighting control is limited with existing drapes. Provide new window shades or woven blinds at classrooms for light control, to reduce glare and improve visibility of teaching boards and video displays.	
CES-1.13 EXTERIOR WINDOWS Replace selected sealed, insulated glazing units and replace seals at glazed panel perimeters at approximately 15% of window units.	

CES-1.14 SEAL MECH ROOM WALLS TO DECK The local fire department has requested that partitions around mechanical rooms be sealed to the deck to prevent the passage of smoke.	
CES-1.15 SEAL TOPS OF CORRIDOR WALLS Extend and seal tops of corridor partitions to resist the passage of smoke to comply with the life safety standard for new school construction.	
CES-1.16 REPOINT AREAS OF BRICK Repoint brick veneer in areas damaged by roof run-off.	

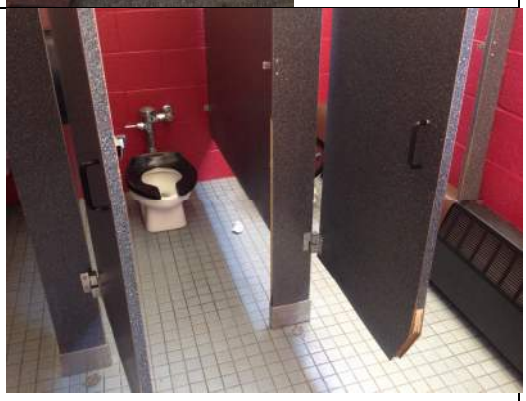
CES-2.1/2.2 REPLACE UNDERGROUND PIPING FROM BOILER PLANT AND REPLACE BOILER PLANT STACK The existing underground hot water piping between the Central Boiler Plant and school is past its useful life. Existing and possible future leaks could result in the need to perform an emergency replacement which is likely to result in excessive costs and potential downtime. One of the existing boiler stacks is original and should be replaced to match the other stacks that have already been replaced. Existing oil piping was abandoned in place when the system was converted to natural gas. The existing oil pumps and piping should be removed.	
CES 2.3 PROVIDE VENTILATION TO GYM No ventilation is currently provided to the Gym.	
CES-2.4 PROVIDE EXHAUST AT COPY MACHINES Provide dedicated exhaust for copier at teacher work room and other locations.	
CES-2.5 COOLING AT SERVER CLOSET Provide a/c at server closet and computer classroom to preserve longevity of equipment,	

CES-2.6 PROVIDE AUTO CONTROLS AT STUDENT TOILET ROOMS This would increase building-wide water use efficiency.	
CES-2.7 PROVIDE AUTO CONTROLS AT STAFF TOILET ROOMS and CLASSROOM SINKS This would increase building-wide water use efficiency.	
CES-3.1 REPLACE CENTRAL CLOCK SYSTEM System is antiquated and should be replaced.	
CES-3.2 REPLACE PHONE SYSTEM System is antiquated and should be replaced.	

CES-3.3 REPLACE PUBLIC ADDRESS SYSTEM System is antiquated and should be replaced.	
CES-3.4 NEW FIRE ALARM SYSTEM System is antiquated and should be replaced.	
CES-3.5 NEW CCTV SECURITY SYSTEM System is antiquated and should be replaced.	
CES-3.6 SITE LIGHTING UPGRADES Replace exterior, building-mounted light fixtures with high cut-off LED fixtures. Add pole-mounted pedestrian LED fixtures to increase site safety and security.	
CES-3.7 PROVIDE DOOR STATUS SWITCHES The ability to monitor the status of exterior doors increases safety and security.	

CES-3.8 DATA AND POWER FOR CEILING-MOUNTED PROJECTORS Provide infrastructure for ceiling-mounted projectors at classrooms.	
CES-3.9 FIBER OPTIC WIRING Upgrade building-wide data system.	
CES-4.1 REINFORCE KITCHEN STORAGE ROOF Report by Becker Structural Engineers indicates that the capacity of the roof framing at this area in not adequate for expected roof loading. See attached structural engineering report.	
CES-4.2 REINFORCE ROOF AT ERV INSTALLATION Provide additional structural support for the mechanical unit to be installed at the Gym.	
CES-4.3/4.5 BRACE ROOF BEAMS AT CAFETERIA Becker Structural recommends providing additional lateral support for cafeteria roof framing. See attached structural engineering report. Repair finishes at areas of structural work.	

CES-4.4 REINFORCE ROOF ADJACENT TO GYM Wood framing at low roof areas adjacent to Gym do not meet current IBC loading standards.	
CES-5.1 NEW ADA TOILET ROOMS None of the multi-user student toilet rooms meet current Maine Human Rights Act/ADAAG standards for accessibility. Existing multi-user toilet room are too small to accommodate new side-transfer water closets. The construction of from 2 to 4 new, barrier-free single user toilet rooms dispersed throughout the school would provide accessibility without dramatically reducing fixture count.	
CES-5.2 ADA DRINKING FOUNTAINS AT GYM Multiple drinking fountains do not appear to meet accessibility requirement for height, controls or cane detection.	

CES-5.3 INFILL CLASSROOM EXTERIOR DOORS If sprinkler system is added, exterior doors from classrooms will no longer be required and can be infilled. Replace existing water-damaged exterior trim.	
CES-5.4 ADA TOILET RM AND CLASSROOM SINK AT LIFE SKILLS ROOM None of the multi-user student toilet rooms meet current Maine Human Rights Act/ADAAG standards for accessibility. Existing multi-user toilet room are too small to accommodate new side-transfer water closets. The construction of a new barrier-free single-user toilet room and classroom sink at the Life Skills classroom would increase accessibility without dramatically reducing fixture count.	
CES-6.1 KITCHEN EXHAUST HOOD Kitchen hood does not have integral fire suppression, and cannot be used for open flame cooking.	

CES-6.2 PROVIDE 3-BAY STAINLESS SINK Users say that Health Inspectors have requested a three-bay stainless sink at the kitchen.	
CES-6.3 REPLACE LIGHTS AT CAFETERIA AND KITCHEN AND ADD ACOUSTICAL PANELS AT CAFETERIA Wiring is not code compliant and fixtures are nearing the end of their service life. Installing areas of suspended ceiling tile would improve acoustics in the cafeteria.	
CES-7.1 REMOVE OLD PORTABLES	
CES-7.2 ADD ADA RAMPS TO NEW PORTABLES Library and education space on second portable are currently accessed by stairs only.	
CES-7.3/7.4/7.5/7.6/7.7 INSTALL NEW 12-CLASSROOM MODULAR COMPLEX AND PROVIDE REQUIRED SITE RECONFIGURATION, BUILDING INFRASTRUCTURE, UTILITY CONNECTIONS AND FIRE SUPRESSION SYSTEM See schematic site plans in FST report.	

CES-8.1 PLAY AREA DRAINAGE IMPROVEMENTS Poor drainage and heavy use have damaged existing play areas. See FHS report Item A-3.	
CES-8.2 SANITARY SEWER INVESTIGATION AT EXISTING PORTABLES See FST report Item B-4.	
CES-8.3 PAVEMENT REPAIR Repair damaged pavement at bus drop-off, parking and play areas. See FST report items C-3A, 3B, 3C and 5C.	
CES-8.4 PLAYGROUND IMPROVEMENTS See FST Items D2, D3, D4, D5.	
CES-8.5 SITE LIGHTING IMPROVEMENTS LED site fixtures provide highly efficient lighting that will improve site safety and security. See FST report Item E-1.	

General Observations:
1. See reports and estimates for additional proposed improvements to the site, playgrounds and boiler plant.

CES:1.10 Upgrade Room and Directional Signage:
Provide barrier-free signage.

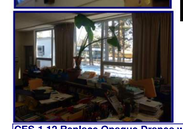
CES-4.1 Roof Framing:
Roof framing appears to be inadequate to support expected loads. See attached report from Becker Structural Engineers.

CES-6.1/6.2 Replace Kitchen Hood and Sink:
Kitchen hood does not have integral fire suppression so open flame appliances can't currently be used. Health Department has requested a 3-bay stainless sink.

CES-6.3Replace Light Fixtures and Add I Panels

CES-4.3/4.5 Roof Framing:
Brace roof beams and repair finish.

CES-1.1/1.2 Fire Suppression:
Blue shaded areas are currently protected with a fire sprinkler system. White areas are unprotected.



CES-3.8 Data and Power Outlets:
For ceiling mounted projectors in the classrooms - typical.

CES-1.12 Replace Opaque Drapes w/ Woven Blinds:
Light control is all or nothing.

CES-5.3 Infill Existing Openings
Replace weather damaged wood door frames and trim.

CES-1.15 Corridor/Classroom Separation:
Corridor partitions must be smoke-tight in a sprinklered building.

CES-1.9 Reconfigure Roof Drainage:
Current sloped roof drains into a pvc gutter/downspout. This condition could be improved by increasing the roof overhang and adding a significant drip edge. Drop area may also need gravel skirt to prevent splash back onto building.

CES:1.16 Repoint Brick
Repair water damaged brick exterior walls.

CES-1.5 Hazardous Materials:
Remove VAT, asbestos pipe coverings, and lead paint and from student occupied areas.

CES-5.2 Replace Drinking Fountains:
Replace w/ barrier-free fixtures.

CES-7.2 Improve Accessibility:
Provide accessible route to Library.

CES-1.13 Replace and Seal Existing Window Units:
Approximately 15% of window units.

CES-2.7 Acd Automatic Controls to Classroom Sinks:

CES-5.3 Infill Existing Openings
Replace weather damaged wood door frames and trim.

CES-3.1 Central Clock System:
All rooms do not appear to have a centralized, synchronized clock system.

CES-1.3 Replace Door Hardware:
Door handles are not typically ADA compliant.

CES-4.4 Reinforce Roof Structure:
Does not meet current code.

CES-2.3/4.2 Add Ventilation to Gym:
No ventilation currently installed.

CES-1.9 Reconfigure Roof Drainage:
Current sloped roof drains into a pvc gutter/downspout. This condition could be improved by increasing the roof overhang and adding a significant drip edge. Drop area may also need gravel skirt to prevent splash back onto building.

CES-1.15 Corridor/Classroom Separation:
Corridor partitions must be smoke-tight in a sprinklered building.

THROUGHOUT BUILDING

CES-3.2 Replace Phone System

CES-3.4 Replace Fire Alarm System

CES-3.5 Provide CCTV Security System

CES-3.9 Provide Fiber optic Wiring to Data Switches Located Throughout the Building

CES-2.5 Provide Cooling for Data Rooms
Provide AC at server closet and computer classroom

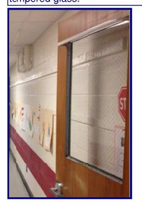
CES-1.13 Replace and Seal Existing Window Units:
Approximately 15% of window units.

CES-3.7 Access Control:
Provide position switches at all exterior doors.

CES-1.11 Door/Room Numbering:
Add exterior classroom and exit door number signage for security

1 FIRST FLOOR PLAN
1" = 20'-0"

CES-1.4 Replace Wire Glass:
Remove existing wire glass at doors and replace with tempered glass.



CES-5.1/2.6 Student Toilet Rooms:
Toilet rooms are not typically ADA compliant. Add new accessible student toilet rooms. Provide automatic controls for fixtures.

CES-2.4 Exhaust Copier:
Provide exhaust for copiers.

CES-5.1/2.7 Staff Toilet Rooms:
Toilet rooms are not typically ADA compliant. Provide automatic controls for fixtures.

CES-3.3 Communication System::
System is antiquated and should be replaced.

CES-1.14 Seal Mechanical Room Partitions:
Per local fire department request, seal tops of mechanical room partitions to roof deck - typical.

CES-5.4 ADA Fixtures:
Construct barrier-free toilet room in Life Skills room and provide barrier-free classroom sink.

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Coffin Elementary School
Proposed Improvements

JOB NO.
XXXX

DRWN. CHK
Checker

SCALE:
1" = 20'-0"

ISSUE
JUNE 16, 2015

TITLE
FLOOR PLAN

SHEET
A100

Coffin Elementary School - Brunswick, Maine
PROPOSED IMPROVEMENTS - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
CES-1.1	**Entire Building - Architectural**	Provide full NFPA-complaint sprinkler coverage at unprotected areas.	$3.25/sf	31000	$100,750	
CES-1.2		Replace existing sprinkler heads at areas that are currently protected by a sprinkler system.	$50/200sf	22000	$5,500	Replacement required within next 10 years.
CES-1.3		Upgrade classroom door hardware to security lock function & ADA compliance	$500/door	87	$43,500	
CES-1.4		Replace wire glass at doors and borrowed lites	$350/door	45	$15,750	Optional
CES-1.5		Remove asbestos Tansite trim and asbestos flooring ($255,000). Install new trim (2100 l.f. x 1.33 s.f./l.f. x $5.50/s.f. = $15,500)			$270,500	From AQM report 6/2013
CES-1.6		Install new VCT flooring at abatement locations.	$3.50	33000	$115,500	
CES -1.7		Remove existing lead paint ($75,000 Abatement + $5000 for repairs)			$80,000	Optional - From AQM report 6/2013
CES-1.8		Remove existing PCB containing materials ($185,000 Abatement + $25,000 to recaulk)			$210,000	From AQM report 6/2013
CES-1.9		Provide eave overhang at all sloped roofs to eliminate water running down the face of the building and existing gutter system	$50/lf	700 lf	$35,000	Heavy duty gutter option = $17,500
CES-1.10		Add ADA interior room signage throughout	$50/door	100	$5,000	
CES-1.11		Add exterior classroom and exit door number signage for security	$50/sign	40	$2,000	
CES 1-12		Provide new window shades in classrooms	$5/sf	7760 sf	$38,800	Optional
CES-1.13		Miscellaneous repair of window seals, glazing and screens	$1000/clrm	30	$30,000	
CES-1.14		Provide fire rated top of wall enclosures at all mechanical closets	$500/room	6	$3,000	
CES-1.15		Seal all corridor partitions against the passage of smoke per current codes	$20/lf high walls	700	$14,000	
			$40/lf low walls	450	$18,000	
CES-1.16		Repoint areas of brick veneer damage by roof run-off	$10/sf	2000 sf	$20,000	
CES-2.1	**Entire Building - Mechanical**	Replace underground hot water supply and return piping to the Central Boiler Plant		1	$161,000	Siemen's Quote (Includes sitework)
CES-2.2		Replace two (2) metal chimneys & remove all existing abandoned fuel oil pumps and piping at the Central Boiler Plant		1	$17,500	
CES-2.3		Provide a mechanical ventilation system (ERV) for the Gymnasium		1	$75,000	Plus structural costs item CES-4.2
CES-2.4		Provide local mechanical exhaust ventilation at all copying machines	$4000/room	4	$16,000	
CES-2.5		Provide A/C system in the main data server closet and in the Computer Lab classroom		1	$16,000	
CES-2.6		Retro fix automatic electronic faucets/flush valves at student toilet rooms	$350/fixture	38	$13,300	Optional
CES-2.7		Retro fit automatic electronic faucets/flush valves at staff toilets and classroom sinks	$350/fixture	28	$9,800	Optional
CES-3.1	**Entire Building - Electrical**	Replace clock system throughout	$0.74	53000	$39,000	Optional
CES-3.2		Replace phone system throughout		1	$50,000	Based in the district phone system which is Avaya
CES-3.3		Replace public address system throughout	$0.89	53000	$47,000	

Coffin Elementary School - Brunswick, Maine
PROPOSED IMPROVEMENTS - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
CES-3.4		Install new fire alarm system and emergency evacuation system	$1.15/sf	53000	$61,000	
CES-3.5		Install new CCTV Security System	$1.00/sf	53000	$53,000	
CES-3.6		Site Lighting upgrades -Entire Campus				Included in Coffin School sitework item CES-8.5
CES-3.7		Install door status switches and monitoring system at all exterior doors	$500/door	30	$15,000	
		Technology Upgrades:				
CES-3.8		1. Provide data and power outlets for ceiling mounted projectors in the classrooms	$600/clrm	22	$13,200	
CES-3.9		2. Provide fiber optic wiring to data switches located throughout the building			$10,500	
CES-4.1	**Structural**	Reinforce existing kitchen storage room roof structure	$3,500	3	$10,500	
CES-4.2		Reinforce the existing roof structure for the new ERV serving the Gym	$10,500	1	$10,500	
CES-4.3		Brace beams at cafeteria roof	$225	20	$4,500	
CES-4.4		Reinforce the existing roof structure immediately adjacent to the Gym	$210	100	$21,000	
CES-4.5		Paint & Finishes for structural repairs			$20,000	
CES-5.1	**Classroom Wings**	Provide (1) ADA accessible toilet room in each wing for student and staff use	$12,500/room	2	$25,000	
CES-5.2		Provide new ADA compliant drinking fountains in the Gym	$3,500	1	$3,500	
CES-5.3		If a full sprinkler system is provided, eliminate doors to courtyards from the classrooms	$1000/door	20	$20,000	
CES-5.4		Provided an ADA toilet room and classroom sink in the Life Skills Room		1	$15,000	
CES-6.1	**Kitchen/Cafeteria**	Provide new kitchen exhaust hood		1	$40,000	
CES-6.2		Provide 3-bay stainless steel sink		1	$7,500	
CES-6.3		Add acoustic panels and new light fixtures in the kitchen and cafeteria	$7.50/sf	5450 sf	$41,000	
CES-7.1	**Portable Classrooms**	Remove all older portable classrooms on the west side of the site (by Owner)	$8,000/portable	4	$32,000	
CES-7.2		Provided ADA accessible ramps to the two newer portables classrooms in the courtyards	2	$7,500 ea	$15,000	
CES-7.3		Install new 4-classroom modular unit (10-year lease)			$365,500	
CES-7.4		Pad and foundation preparations for modular classrooms			$16,000	
CES-7.5		Utility connections for modular classrooms			$12,000	
CES-7.6		Install sprinkler system in modular classrooms	$3.25/sf	4340 sf	$14,100	

Coffin Elementary School - Brunswick, Maine
PROPOSED IMPROVEMENTS - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
CES-8.1	**Site Improvements**	Play area drainage improvements (FS&T item A-3)			$13,500	
CES-8.2		Sanitary sewer investigation at existing portables (FS&T item B-4)			$23,900	
CES-8.3		Pavement repair at bus drop-off, parking & play areas (FS&T items C-3A,3B, 3C & 5C)			$186,000	
CES-8.4		Playground improvements (FS&T items D2, D3, D4, D5)			$184,100	
CES-8.5		Site Lighting (FS&T item E-1)			$138,400	
			SUB-TOTAL		**$2,823,600**	
			10% Div 1 Conditions		$282,360	
			10% GenCon O&P		$282,360	
			10% Contingency		$282,360	
			1% Bond		$2,824	
			TOTAL		**$3,673,504**	
			3%/year Escal	1 year	**$3,784,000**	
				2 years	**$3,898,000**	

Coffin Elementary School - Brunswick, Maine
PROPOSED IMPROVEDMENTS BY CATEGORY - ESTIMATE OF PROBABLE COST
REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
CES-1.9	**Structural**	Provide eave overhang at all sloped roofs to eliminate water running down the face of the building and existing gutter system	$50/lf	700 lf	$35,000	Heavy duty gutter option = $17,500
CES-1.16		Repoint areas of brick veneer damage by roof run-off	$10/sf	2000 sf	$20,000	
CES-4.1		Reinforce existing kitchen storage room roof structure	$3,500	3	$10,500	
CES-4.2		Reinforce the existing roof structure for the new ERV serving the Gym	$10,500	1	$10,500	
CES-4.3		Brace beams at cafeteria roof	$225	20	$4,500	
CES-4.4		Reinforce the existing roof structure immediately adjacent to the Gym	$210	100	$21,000	
CES-4.5		Paint & Finishes for structural repairs			$20,000	
			SUBTOTAL		**$121,500**	
CES-1.3	**Security**	Upgrade classroom door hardware to security lock function & ADA compliance	$500/door	87	$43,500	
CES-1.11		Add exterior classroom and exit door number signage for security	$50/sign	40	$2,000	
CES-3.2		Replace phone system throughout		1	$50,000	Based in the district phone system which is Avaya
CES-3.3		Replace public address system throughout	$0.89	53000	$47,000	
CES-3.5		Install new CCTV Security System	$1.00/sf	53000	$53,000	
CES-3.6		Site Lighting upgrades -Entire Campus				Included in Coffin School sitework item CES-8.5
CES-3.7		Install door status switches and monitoring system at all exterior doors	$500/door	30	$15,000	
			SUBTOTAL		**$210,500**	
	Safety & Building Code					
CES-1.1		Provide full NFPA-complaint sprinkler coverage at unprotected areas.	$3.25/sf	31000	$100,750	
CES-1.2		Replace existing sprinkler heads at areas that are currently protected by a sprinkler system.	$50/200sf	22000	$5,500	Replacement required within next 10 years.
CES-1.4		Replace wire glass at doors and borrowed lites	$350/door	45	$15,750	Optional
CES-1.5		Remove asbestos Tansite trim and asbestos flooring ($255,000). Install new trim (2100 l.f. x 1.33 s.f./l.f. x $5.50/s.f. = $15,500)			$270,500	From AQM report 6/2013
CES-1.6		Install new VCT flooring at abatement locations.	$3.50	33000	$115,500	
CES -1.7		Remove existing lead paint ($75,000 Abatement + $5000 for repairs)			$80,000	Optional - From AQM report 6/2013
CES-1.8		Remove existing PCB containing materials ($185,000 Abatement + $25,000 to recaulk)			$210,000	From AQM report 6/2013
CES-1.10		Add ADA interior room signage throughout	$50/door	100	$5,000	
CES-1.14		Provide fire rated top of wall enclosures at all mechanical closets	$500/room	6	$3,000	
CES-1.15		Seal all corridor partitions against the passage of smoke per current codes	$20/lf high walls	700	$14,000	
			$40/lf low walls	450	$18,000	

Coffin Elementary School - Brunswick, Maine

PROPOSED IMPROVEDMENTS BY CATEGORY - ESTIMATE OF PROBABLE COST

REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
CES-3.4		Install new fire alarm system and emergency evacuation system	$1.15/sf	53000	$61,000	
CES-5.1		Provide (1) ADA accessible toilet room in each wing for student and staff use	$12,500/room	2	$25,000	
CES-5.2		Provide new ADA compliant drinking fountains in the Gym	$3,500	1	$3,500	
CES-5.3		If a full sprinkler system is provided, eliminate doors to courtyards from the classrooms	$1000/door	20	$20,000	
CES-5.4		Provided an ADA toilet room and classroom sink in the Life Skills Room		1	$15,000	
CES-6.1		Provide new kitchen exhaust hood		1	$40,000	
CES-6.2		Provide 3-bay stainless steel sink		1	$7,500	
CES-7.1		Remove all older portable classrooms on the west side of the site (by Owner)	$8,000/portable	4	$32,000	
CES-7.2		Provided ADA accessible ramps to the two newer portables classrooms in the courtyards	2	$7,500 ea	$15,000	
CES-7.3		Install new 4-classroom modular unit (10-year lease)			$365,500	
CES-7.4		Pad and foundation preparations for modular classrooms			$16,000	
CES-7.5		Utility connections for modular classrooms			$12,000	
CES-7.6		Install sprinkler system in modular classrooms	$3.25/sf	4340 sf	$14,100	
CES-8.1		Play area drainage improvements (FS&T item A-3)			$13,500	
CES-8.4		Playground improvements (FS&T items D2, D3, D4, D5)			$184,100	
CES-8.5		Site Lighting (FS&T item E-1)			$138,400	
			SUB-TOTAL		**$1,800,600**	
	Repair/Other Items - 10 years					
CES 1-12		Provide new window shades in classrooms	$5/sf	7760 sf	$38,800	Optional
CES-1.13		Miscellaneous repair of window seals, glazing and screens	$1000/clrm	30	$30,000	
CES-2.1		Replace underground hot water supply and return piping to the Central Boiler Plant		1	$161,000	Siemen's Quote (Includes sitework)
CES-2.2		Replace two (2) metal chimneys & remove all existing abandoned fuel oil pumps and piping at the Central Boiler Plant		1	$17,500	
CES-2.3		Provide a mechanical ventilation system (ERV) for the Gymnasium		1	$75,000	Plus structural costs item CES-4.2
CES-2.4		Provide local mechanical exhaust ventilation at all copying machines	$4000/room	4	$16,000	
CES-2.5		Provide A/C system in the main data server closet and in the Computer Lab classroom		1	$16,000	
CES-2.6		Retro fix automatic electronic faucets/flush valves at student toilet rooms	$350/fixture	38	$13,300	Optional
CES-2.7		Retro fit automatic electronic faucets/flush valves at staff toilets and classroom sinks	$350/fixture	28	$9,800	Optional
CES-3.1		Replace clock system throughout	$0.74	53000	$39,000	Optional

Coffin Elementary School - Brunswick, Maine

PROPOSED IMPROVEDMENTS BY CATEGORY - ESTIMATE OF PROBABLE COST

REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
CES-3.8		1. Provide data and power outlets for ceiling mounted projectors in the classrooms	$600/clrm	22	$13,200	
CES-3.9		2. Provide fiber optic wiring to data switches located throughout the building			$10,500	
CES-6.3		Add acoustic panels and new light fixtures in the kitchen and cafeteria	$7.50/sf	5450 sf	$41,000	
CES-8.2		Sanitary sewer investigation at existing portables (FS&T item B-4)			$23,900	
CES-8.3		Pavement repair at bus drop-off, parking & play areas (FS&T items C-3A,3B, 3C & 5C)			$186,000	
			SUB-TOTAL		**$691,000**	

Coffin Elementary School - Brunswick, Maine

12 NEW MODULAR CLASSROOMS - ESTIMATE OF PROBABLE COST

REV 6/16/2015

Item #	Location	Description	Unit Cost	Quantity	Probable Cost	Remarks
CES-7.1	**Portable Classrooms**	Install new 12-classroom modular complex (68' x 208' = 14,144 sf)			$1,100,000	Schiavi quote + 2 year escalation
CES-7.2		Site circulation modifications for new modular complex (Option 1A)			$613,200	F,S & T estimate
CES-7.3		Pad & foundation prepartions for modular classrooms			$65,000	
CES-7.4		Utility connections for modular classrooms			$50,000	
CES-7.5		Install sprinkler system in modular classrooms	$3.25/sf	14,144 sf	$46,000	
			SUB-TOTAL		**$1,874,200**	
			5% Div 1 Conditions		$93,710	
			5% GenCon O&P		$93,710	
			5% Contingency		$93,710	
			1% Bond		$937	
			TOTAL		**$2,156,267**	

15 June 2015

Project Budget
Repairs Only

Coffin Elementary School 1955

Brunswick School Dep

Grades PK-2

396 Students 54,718 sf (138 sf/stud.)

Brunswick Junior High School 1959

Grades 6-8

600 Students 98,834 sf (165 sf/stud.)

Item 1: Construction				
1.1 Repairs @ Coffin			$3,784,000	
1.2 Repairs @ Junior High			$4,239,000	
1.3 New 12 classroom modular			$0	
Subtotal			**$8,023,000**	**$8,023,000**
Item 2: Admin. Costs and Reserves				
2.1 Site Purchase			$0	
2.2 Furnishings & Moveable Equipment 6%			$0	
2.3 Technology 3%			$0	
2.4 Advertising, Insurance, Legal, Printing			$10,000	
2.5 Contingency (5 % of Item 1)			$401,150	
2.6 % for Art			$0	
Subtotal			**$411,150**	**$411,150**
Item 3: Fees and Services				
Basic Services				
3.1 Architect New (Item 1 x State of ME Fee)	$8,023,000 @	7.3 %	$585,679	
3.2 Architect Reno(Allocatted Reno 1.2 above)			$0	
3.3 Reimbursables & Permits			$30,000	
Special Services				
3.4 Environmental Permitting			$20,000	
3.5 Survey, Soils and Wetlands			$0	
3.6 Construction Testing			$40,000	
3.7 Special Inspections			$10,000	
3.8 Clerk			$75,000	
3.9 Commissioning			$0	
3.10 Owner's Representative			$0	
			$0	
Subtotal			**$760,679**	**$760,679**

Total Project Cost **$9,194,829**

PDT ARCHITECTS

15 June 2015

Project Budget
12 Classroom Modular w/ Site Work

Coffin Elementary School 1955

Brunswick School Dep

12 Classroom Modular 14,076 sf

Item 1: Construction				
1.3 New 12 classroom modular			$2,156,267	
Subtotal			**$2,156,267**	**$2,156,267**
Item 2: Admin. Costs and Reserves				
2.1 Site Purchase			$0	
2.2 Furnishings & Moveable Equipment 6%			$129,376	
2.3 Technology 3%			$0	
2.4 Advertising, Insurance, Legal, Printing			$10,000	
2.5 Contingency (5 % of Item 1)			$107,813	
2.6 % for Art			$0	
Subtotal			**$247,189**	**$247,189**
Item 3: Fees and Services				
Basic Services				
3.1 Ecivil Engineering	$774,200 @	7.3 %	$56,517	
3.3 Reimbursables & Permits			$15,000	
Special Services				
3.4 Environmental Permitting			$20,000	
3.5 Survey, Soils and Wetlands			$0	
3.6 Construction Testing			$10,000	
3.7 Special Inspections			$10,000	
3.8 Clerk			$0	
3.9 Commissioning			$0	
3.10 Owner's Representative			$0	
			$0	
Subtotal			**$111,517**	**$111,517**
Total Project Cost				**$2,514,973**

PDT ARCHITECTS

BECKER
STRUCTURAL ENGINEERS

June 9, 2015

Mr. Lyndon Keck
Principal
PDT Architects
49 Dartmouth Street
Portland, ME 04101

RE: Upgrades to Coffin Elementary & Brunswick Junior High School

Dear Lyndon,

We offer this report to summarize our findings and opinions regarding the structural condition of Coffin Elementary School and Brunswick Junior High School, located in Brunswick, Maine. Our intent is to identify a schematic level design and opinion of probable costs in order to provide a roof structure for each school that meets all of the structural requirements of the current state building code. We have also provided repair recommendations and associated costs for floor slabs that have settled at one wing of Brunswick Junior High School.

Our findings are based on observations of structural elements that were readily visible, made during a site visit on April 21, 2015. Additionally, a previous evaluation of the existing structure was performed by Becker Structural Engineers (BSE) in 2012. The findings and opinions discussed herein reference and provide further elaboration on the 2012 evaluation. We have enclosed these evaluation documents in our report, as well as key drawings SKS1- SKS8, representing the existing roof framing plans for both schools, as well as suggested reinforcement where applicable.

Our opinion of the probable costs necessary to reinforce the existing roofs to meet current code standards is $36,000 for Coffin Elementary School and $193,000 for Brunswick Junior High School. A detailed breakdown of these costs is provided in table 1 of this report. Cost estimates to repair or replace the settled slabs located in the 1965 addition to Brunswick Junior High can be found on pages 3-4 of this report. We have summarized the repair work in both schools in an itemized list below. These items are grouped into two priority levels. High level priority items are those that present a risk to public safety and should be addressed in the near future. Low priority items are those that do not currently present an imminent human safety risk or are not required by code to be addressed at this time. Further description of each item below is provided in this report.

<u>High Priority:</u>

- Install new posts and foundations to support steel beam in kitchen storage room (Coffin Elementary, Item 1).
- Install steel braces from columns to roof deck in cafeteria and kitchen (Coffin Elementary, Item 2).
- Fill voids below corridor slabs in 1965 addition of Brunswick Junior High (item 8B).

<u>Low Priority:</u>

- Replace wood beams at low roofs surrounding gymnasium, and install LVL beams for new ERV support (Coffin Elementary, Items 3&4).
- Reinforce existing steel roof joists (Brunswick Junior High School, Items 5).
- Replace existing cementitious fiber deck with metal roof deck at 1965 classroom/music wing and Cafeteria (Brunswick Junior High, Item 6).
- Sister glulam beams with LVL reinforcement it 1976 addition (Brunswick Junior High, item 7)
- Replace settled slabs and fills (item 8), or stabilize existing soils (item 8A) in 1965 addition to Brunswick Junior High School.

DESIGN CRITERIA AND BUILDING CODES

Coffin Elementary School is a single story building of approximately 57,000 square feet that was constructed circa 1954. The roof framing consists of wood plank decking spanning between wood joists, wood beams, open web steel joists, or structural steel beams. This secondary support framing is typically supported by wide flange steel girders spanning between steel pipe columns and/or concrete masonry bearing walls. In 1995, some low roof areas subject to drifting snow were reinforced.

Brunswick Junior High School was originally constructed circa 1959 and has undergone a number of alterations and additions throughout the years. The current building is approximately 75,000 gross square feet and is predominately one-story with two-stories in some areas of the structure. The original structure and the additions are constructed with metal roof deck on open web steel joists, supported by steel beams and a combination of steel columns or masonry walls. The exception to this is two areas constructed in 1976, which consist of glue laminated wood beam construction with a cementitious fiber roof deck. The 1965 wing addition also has a cementitious fiber roof deck.

Our evaluation is based on the 2009 editions of the International Building Code (IBC) and the International Existing Building Code (IEBC). Design dead loads for the building are based on the existing materials observed during our site visits. Given our understanding of the existing roof insulation, the design snow load for the buildings is 46 pounds per square foot (psf). It should be noted that, according to IEBC, the roof structures of both buildings are currently “grandfathered” as built, and are not required to be brought up to current code. If any funding for future renovations is provided by the State of Maine, the state will likely require the roof structures to meet current code if the roofing is repaired or replaced. This would require items 3-7 in this report to be completed. These items would also be required by IEBC if the roofs’ insulation is increased to an R-value beyond 25. The higher R-value corresponds to a lower rate of snow melt on the roof surface, creating a subsequent increase to the design snow load.

OPINIONS OF MODIFICATIONS AND PROBABLE COSTS

We are providing you with a summary of our observations for each building, along with the associated reinforcements required to meet current building codes. The opinions identified in this section correspond to the drawings SKS1-SKS8, and also reference 2012 evaluation documents that have been attached. Please refer to those documents for additional information. Also, attached is Table 1 which provides our opinions of the probable costs associated with each repair item.

Coffin Elementary Roof Framing:

Item 1: As discussed in the 2012 report by BSE, it is recommended that areas of the kitchen and cafeteria be reinforced. One area is the shed roof storage room located east of the kitchen, shown on SKS2. Some of the roof framing was not accessible for review, but appears to consist of two bays of wood joists spanning from the original exterior wall of the kitchen to an interior bearing line of exposed steel beams and pipe columns. Our analysis found the exposed steel beam to be significantly inadequate for current prescribed snow loads. One reinforcement method could be to add lally columns and footings at mid-span locations of the existing beams. Decreasing the beam spans will serve to reduce stresses and support the design snow loads. Due to the high overstress levels found in the steel beam, we recommend the reinforcement be installed in the near future.

Item 2: The cantilevered steel girders that support the roof structure in the kitchen and cafeteria also require modifications. Although these girders were reinforced in 1995 and appear to have an adequate snow load capacity, the bottoms of the beams and tops of the columns are not adequately braced to the roof structure and could roll or buckle when loaded. We recommend that diagonal braces be installed from the bottom flanges to the underside of the roof deck at all column locations, as shown on SKS2. To avoid a potential sudden failure, we recommend that the diagonal bracing be installed in the near future. Adequate lateral bracing of beams and columns for buckling is of critical importance to improving the integrity of the structure.

Item 3: There are low roof areas surrounding the gymnasium which are subject to drifting snow from the gymnasium roof. These areas appear to be adequate for the balanced roof snow load, but the 4x8 wood beams at the exterior west wall are overstressed under drifting snow loads. We recommend that these beams be replaced with 3 ½"x9 1/2" LVL beams, as shown on SKS3. In addition, at low roof over the front entrance lobby, there are similar drift loading conditions. Some of the supporting beams are overstressed under the drifting snow, and we recommend that these beams be replaced with 5 1/4x11 7/8 LVL beams (refer to SKS3).

Item 4: At the same low roof area around the gym described in item 3, a new mechanical unit has been proposed to serve the gymnasium. This unit has been estimated at this time to weigh 8000 lbs. To support the new unit, LVL beams will be required at its perimeter, which in turn would be connected to the existing structural framing. Some of the surrounding existing framing would need to be cut away and supported by the new LVL beams, or removed entirely and replaced with new framing.

Brunswick Junior High School Roof Framing:

Item 5: As discussed in the 2012 evaluation, and shown on drawings SKS5-SKS8, many of the steel roof joists are overstressed and require reinforcement. Due to the different roof elevations, there are many low roof areas that accumulate drifting snow from the upper roofs. Some of these areas were reinforced in 1995, but this reinforcement was found to be inadequate for current snow loads. Most of the low roof joists, as well as some of the high roof joists, will require top and bottom chord reinforcement. Select web members may also require reinforcement.

Item 6: Some areas of this building were constructed with a cementitous fiber roof deck, which appears to be 2" thick. The deck will need to be replaced with metal decking to support flat roof and drifting snow loads in several locations, as shown on SKS6-SKS7. Replacing the deck will also improve the stability of the joists, and decrease the amount of reinforcement required at the joist top chords.

Item 7: Parts of the 1976 addition were constructed with wood laminated beams. The majority of these members are adequate for the current snow load. The exceptions to this are the beams in the drift zone to the north side of the gymnasium. New LVL members will need to be sistered to the existing laminated beams, as shown on drawing SKS7.

Items 8, 8A and 8B: The floor slabs in the 1965 classroom addition to Brunswick Junior High we observed to have significant amounts of settlement. The classrooms have settled up to 7 inches in some locations, while the corridors were observed with no settlement. Testing and sampling of the soils beneath the slabs were performed by S.W. Cole Engineering, Inc. on May 15, 2015. These tests determined that the fill beneath the slabs is very loose and of poor quality, indicating that the fill is not suitable for support of a floor slab. The tests also found voids beneath the corridor slabs of up to 1.5 inches. The building footings, which are founded on native soils, have not shown any signs of settlement or distress, indicating that the native soils are suitable for support of the building superstructure. We have no concerns with the building foundations or superstructure at this time.

After discussion between BSE and S.W. Cole, three options have been proposed for the settled slabs:

1. Item 8: In this option, the settled slabs are removed and replaced in their entirety. Once the slabs are removed, the existing fill materials would be removed down to the native soils and replaced with suitable, compacted structural fill. This method will require selective demolition of partitions, casework and finishes inside the building. Due to the constraints of working within an existing structure, the earthwork will likely need to be done by hand, which is very costly. We estimate that this work will approximately total $530,000. Our opinion is that this option is time consuming and extremely costly. However, it serves to provide the owner with the best performing floor slab and should eliminate concerns of future settlement.

2. Item 8A: The slab and existing soils will be stabilized by installing grouted, vertical piers at several locations throughout the building. These piers are drilled through the slab and down into the existing soils in an approximate 6 foot x 6 foot grid. The piers serve to compress the surrounding soils and improve soil capacity so as to limit further settlement. S.W. Cole has indicated that they will need to perform further geotechnical investigations before this option can be confirmed as viable, and the loose condition of the existing soils may negate the use of this option. After further investigation, it would be determined at that time whether or not the existing slabs can be returned to their previous elevations by jacking or adding floor leveling materials. We estimate the cost to install the piers is approximately $400,000.
3. Item 8B: Due to the high costs associated with items 8 and 8A, we have offered this option as a more economical approach. This option will address the safety concerns associated with the voids found below the corridor slab, while the slabs in the classrooms will remain in their current state. The voids beneath the corridor slabs will be pressure injected with grout, providing them temporary support on the existing soil. The support condition is temporary because the soils could settle further under the weight of the grout. We recommend that settlement be monitored every 1 to 2 years by drilling through the slab in select locations to determine if any voids are present. Those voids could be grouted at that time. Our opinion is that the costs associated with the pressure grouting is approximately $25,000

CLOSING:

We trust that this information addresses your concerns at this time and will be helpful in planning for the future renovations of Coffin Elementary School and Brunswick Junior High School. This letter report should be understood in the context it is provided. It is based upon our site observations and preliminary analysis of existing conditions. It has been prepared to provide an overview of the building's structural condition, and to identify the scope and nature of structural issues, which may impact future renovation conditions. As there have been some assumptions made regarding the existing framing and proposed scope of future work, it is important to review, whenever possible, the building for conformance with the assumptions made. We would be happy to discuss this further, so please contact us if you have any questions.

Sincerely,
BECKER STRUCTURAL ENGINEERS, Inc.

Christopher G. Williams, P.E., S.E.
Project Engineer

STATE OF MAINE
CHRISTOPHER G. WILLIAMS
No. 12854
LICENSED
PROFESSIONAL ENGINEER

TABLES & REPORT DRAWINGS

Table 1 - Opinion of Probable Repair/Reinforcement Costs

Coffin Elementary School

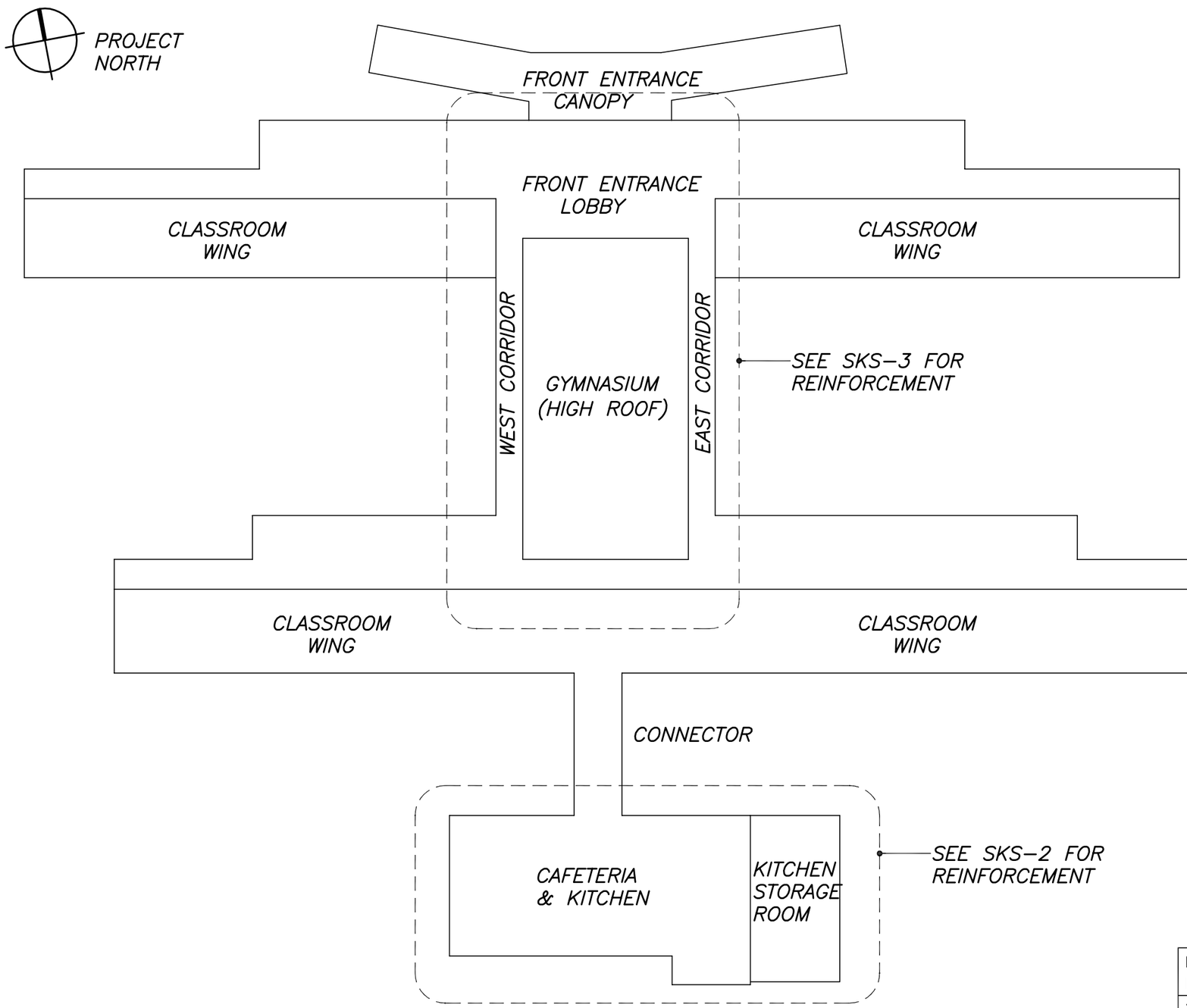
Item	Description	Quantity	Unit Cost	Unit	Total Cost
1	Install Lally Cols and Ftgs to Beam in Kitchen Storage	3	$3,500.00	ea	$10,500
2	Add Angle Braces to Columns in Kitchen/Cafeteria	20	$225.00	ea	$4,500
3	Install new LVL beams at Low Roofs	100	$210.00	lf	$21,000
4	Install Framing for new ERV	1	$10,500	ls	$10,500
				Roof Structure Subtotal	**$46,500**

Brunswick Junior High School

Item	Description	Quantity	Unit Cost	Unit	Total Cost
5	Reinforce Short-Span Roof Joists	157	$1,000.00	ea	$157,000
	Reinforce Long-Span Roof Joists at Cafeteria	2	$1,500.00	ea	$3,000
6	Replace Tectum Deck w/ Metal Roof Deck	9200	$2.50	sf	$23,000
7	Sister Exist Glulams w/ LVL	200	$50.00	lf	$10,000
				Roof Structure Subtotal	**$193,000**
	Settled Slab Repairs				
8	Remove and Replace Existing Slab	7500	$20.00	sf	$150,000
	Hand-Remove and Replace Slab Fill Mat'l	1500	$250.00	cy	$375,000
	Remove and Replace Exterior Wall Fill	150	$30.00	cy	$4,500
				Item 8 Subtotal	$529,500
8A	Grouted Piers for Soil Stabilization Alternate	1	N/A	ls	$400,000
8B	Slab Grouting In Corridor Alternate	2500	$10.00	sf	$25,000

Roof Structure Repair Costs	***$239,500***
Total Repair Costs (w/ item 8)	***$769,000***
Total Repair Costs (w/ item 8A)	***$639,500***
Total Repair Costs (w/ item 8B)	***$264,500***

Notes: This table includes the costs associated with structural items only. Other items including, but not limited to, demolition and replacement of non structural materials, protection of existing elements during construction, removal of hazardous materials, and relocation of the existing mechanical and electrical component systems.



COFFIN ELEMENTARY KEY PLAN

NOT TO SCALE

NOT FOR CONSTRUCTION
PRELIMINARY SET 05/29/15

THESE DWGS ARE NOT COMPLETE. DESIGN IS STILL IN PROGRESS. CONTRACTOR SHALL CARRY APPROPRIATE CONTINGENCY.

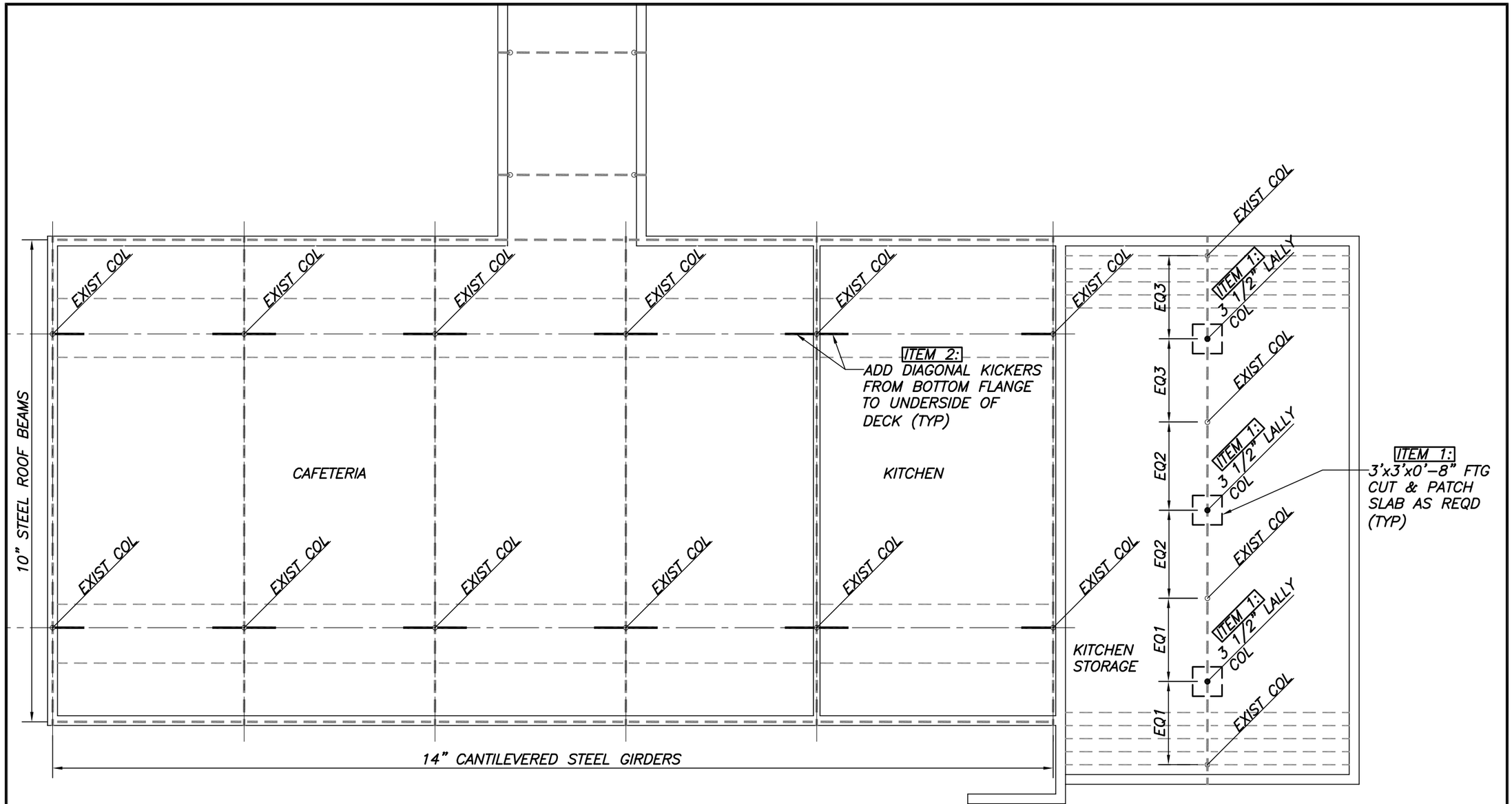
BECKER STRUCTURAL ENGINEERS
75 York Street, Portland, Maine 04101
207.879.1838 ■ beckerstructural.com

COFFIN ELEMENTARY SCHOOL
BRUINSWICK, ME

KEY PLAN

Designed PCH	Scale NOTED
Drawn MSK	Date 05/29/15
Checked CGW	Becker Job Number 3560

SKS-1



CAFETERIA & KITCHEN REINFORCEMENT PLAN

3/32"=1'-0"

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PRELIMINARY SET 05/29/15

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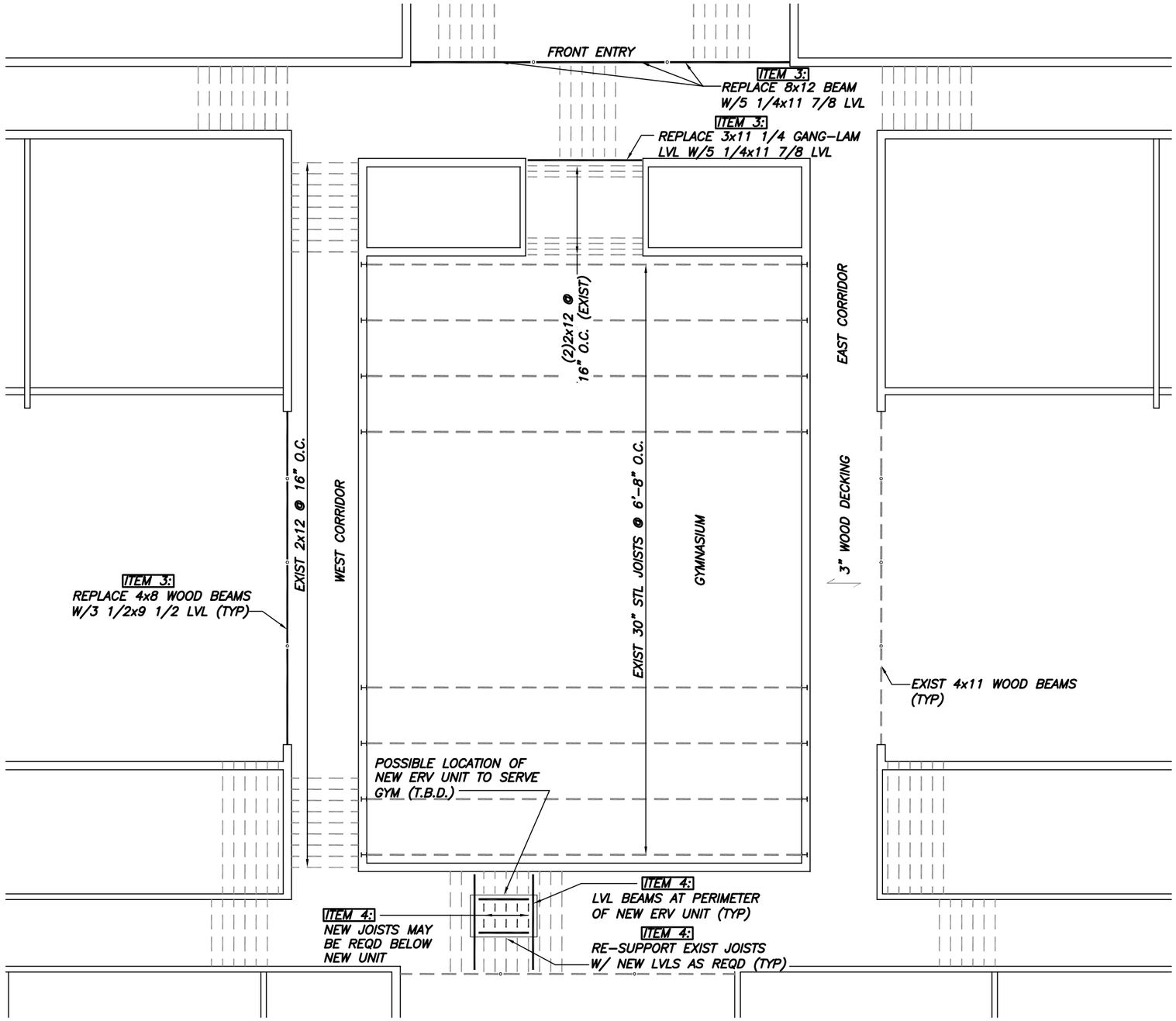
COFFIN ELEMENTARY SCHOOL
BRUNSWICK, ME

REINFORCEMENT PLANS

Designed PCH	Scale NOTED
Drawn MSK	Date 05/29/15
Checked CGW	Becker Job Number 3560

SKS-2



FRONT ENTRY & CORRDIOR PLAN

N.T.S.

NOT FOR CONSTRUCTION
PRELIMINARY SET 05/29/15

THESE DWGS ARE NOT COMPLETE.
DESIGN IS STILL IN PROGRESS.
CONTRACTOR SHALL CARRY
APPROPRIATE CONTINGENCY.

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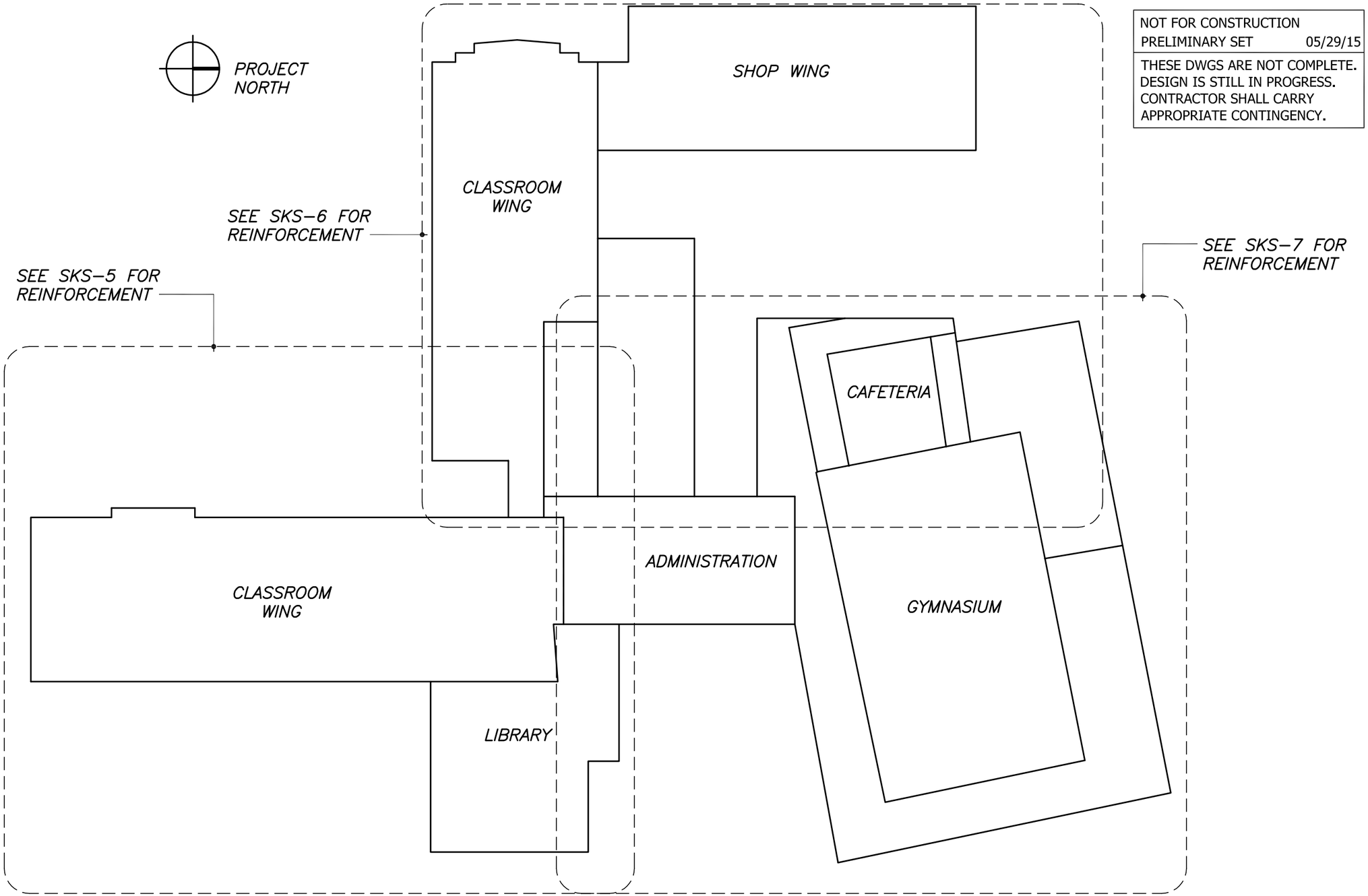
COFFIN ELEMENTARY SCHOOL
BRUINSWICK, ME

REINFORCEMENT PLANS

Designed PCH	Scale NOTED
Drawn MSK	Date 05/29/15
Checked CGW	Becker Job Number 3560

SKS-3



NOT FOR CONSTRUCTION
PRELIMINARY SET 05/29/15

THESE DWGS ARE NOT COMPLETE. DESIGN IS STILL IN PROGRESS. CONTRACTOR SHALL CARRY APPROPRIATE CONTINGENCY.

BRUNSWICK JUNIOR H.S. KEY PLAN

NOT TO SCALE

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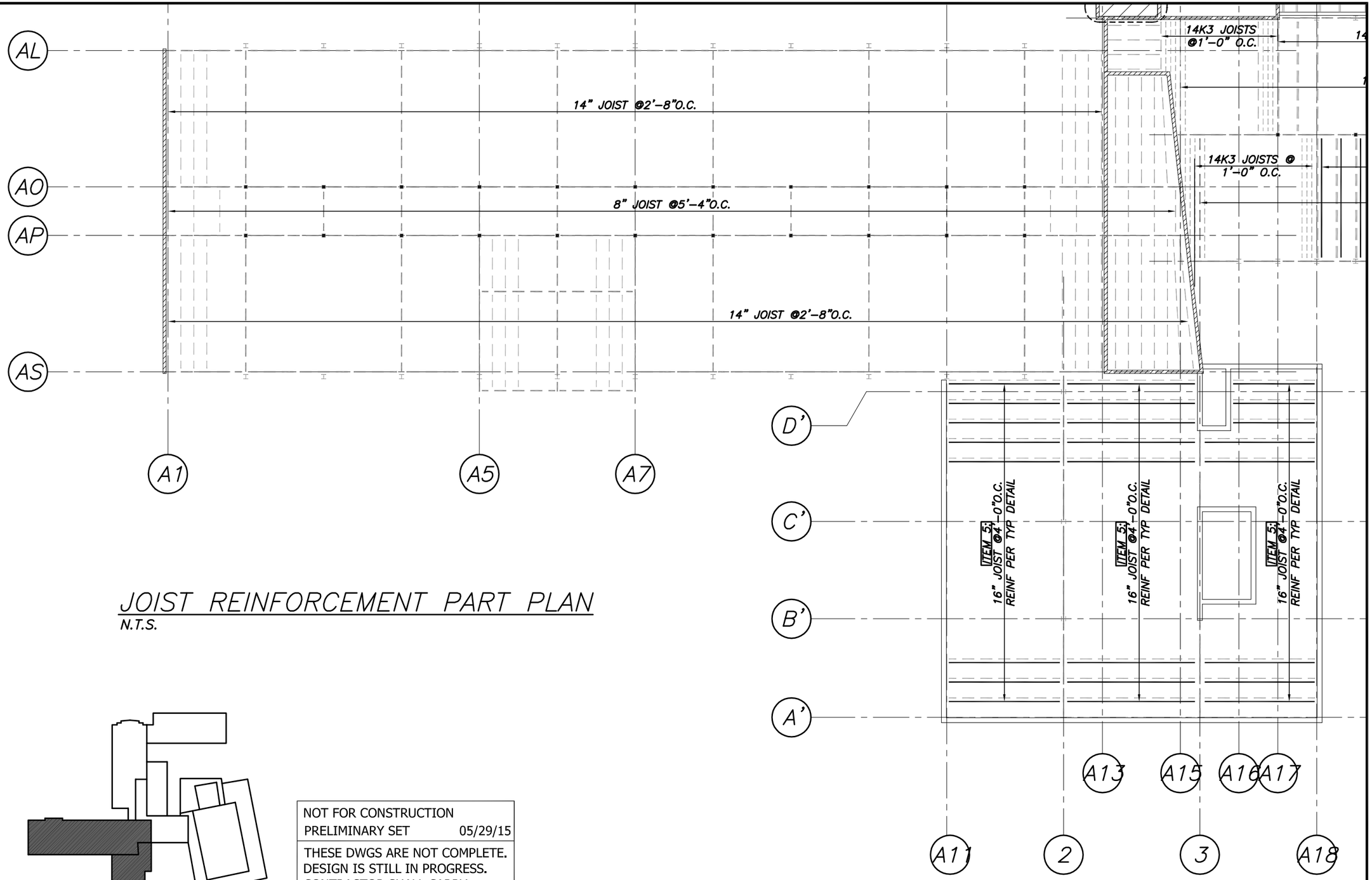
75 York Street, Portland, Maine 04101
207.879.1838 ■ beckerstructural.com

JUNIOR HIGH SCHOOL
BRUNSWICK, MAINE

ROOF SNOW LOADS

Designed PCH	Scale NOTED
Drawn MSK	Date 05/29/15
Checked CGW	Becker Job Number 3560

SKS-4



JOIST REINFORCEMENT PART PLAN

N.T.S.

NOT FOR CONSTRUCTION
PRELIMINARY SET 05/29/15

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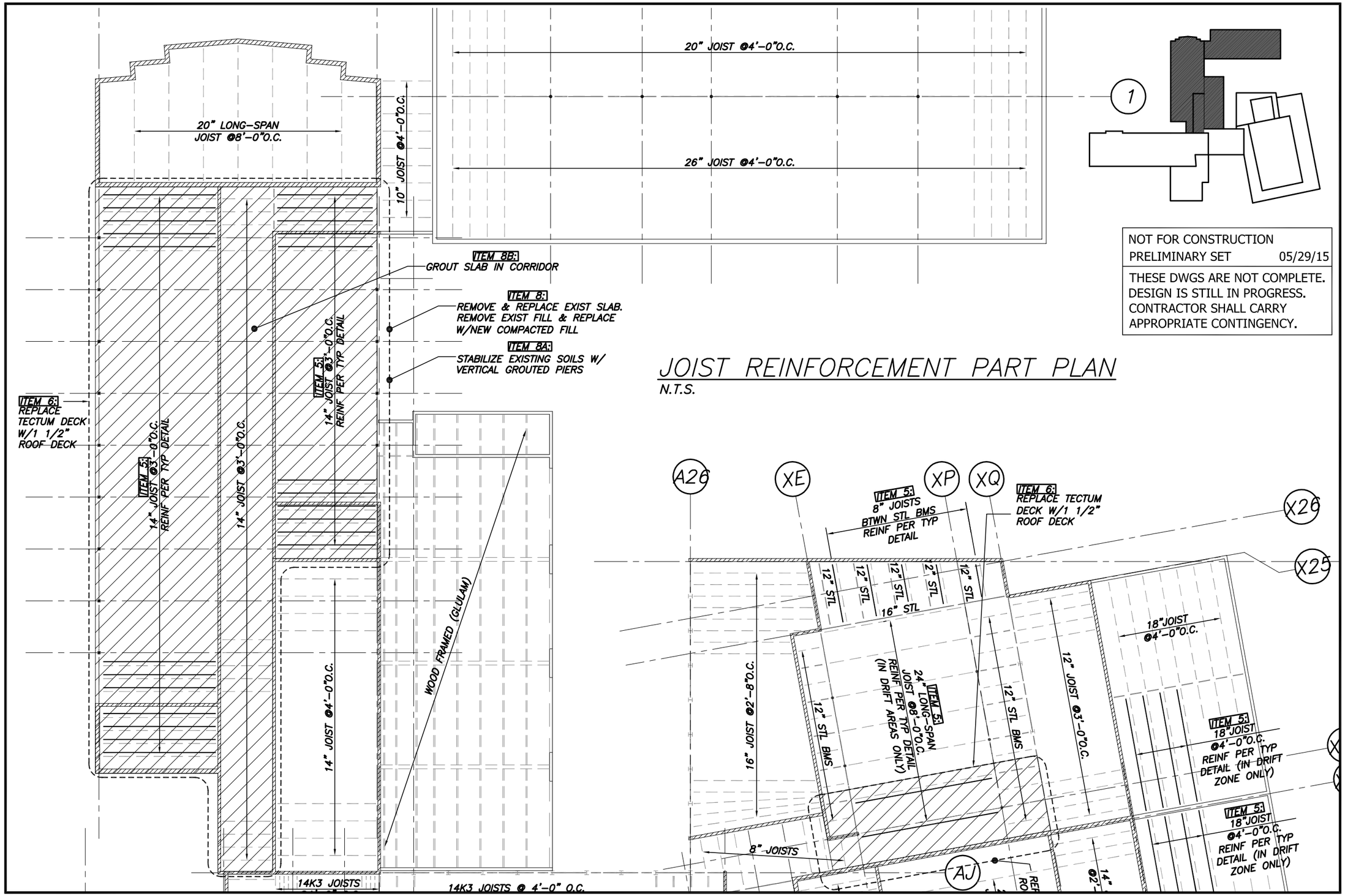
JUNIOR HIGH SCHOOL
BRUNSWICK, MAINE

ROOF REINFORCING PART PLAN

Designed PCH	Scale N.T.S.
Drawn MSK	Date 05/29/15
Checked CGW	Becker Job Number 3560

SKS-5



JOIST REINFORCEMENT PART PLAN

N.T.S.

NOT FOR CONSTRUCTION
PRELIMINARY SET 05/29/15

THESE DWGS ARE NOT COMPLETE. DESIGN IS STILL IN PROGRESS. CONTRACTOR SHALL CARRY APPROPRIATE CONTINGENCY.

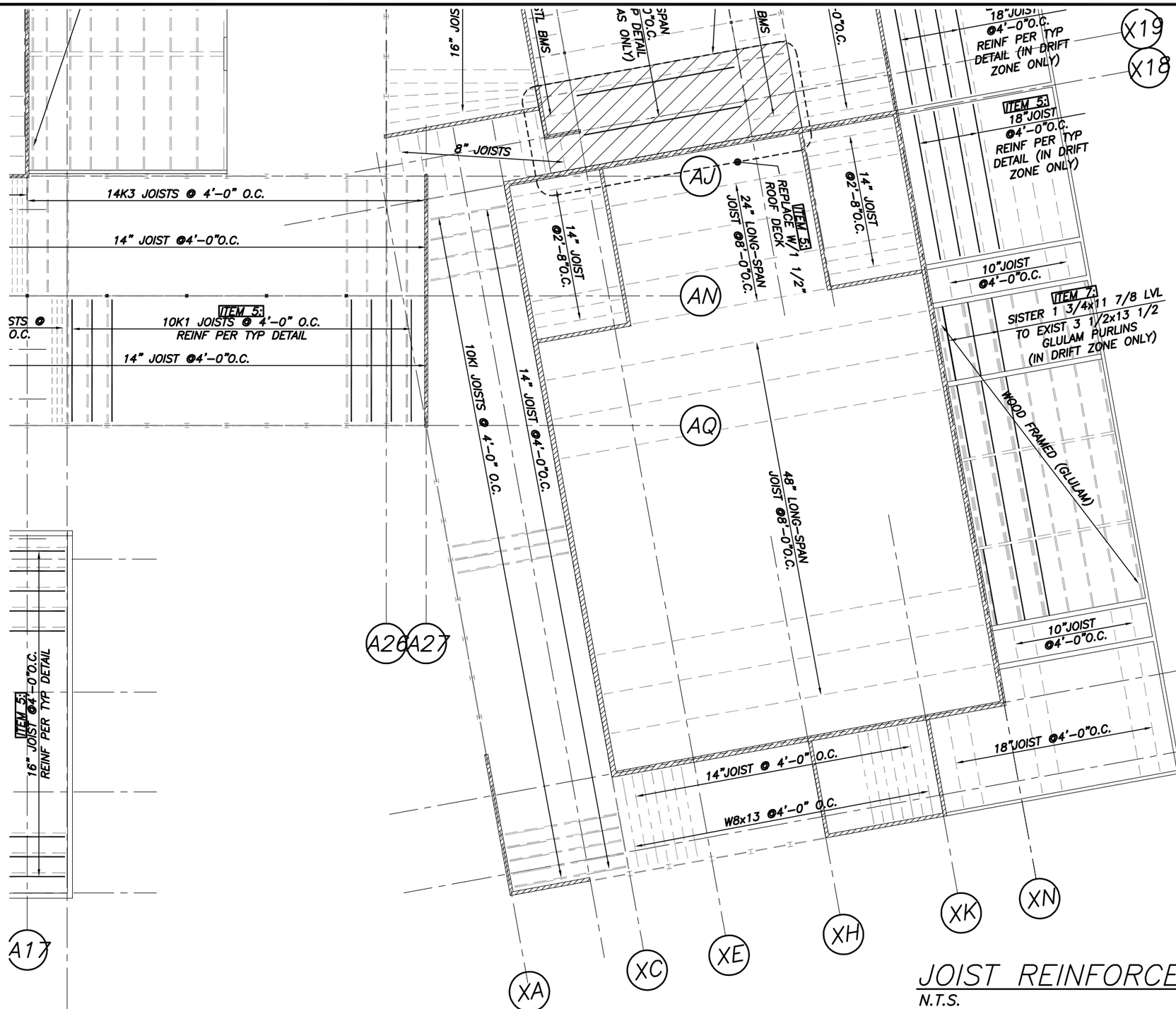
BECKER STRUCTURAL ENGINEERS
75 York Street, Portland, Maine 04101
207.879.1838 ■ beckerstructural.com

JUNIOR HIGH SCHOOL
BRUNSWICK, MAINE

ROOF REINFORCING PART PLAN

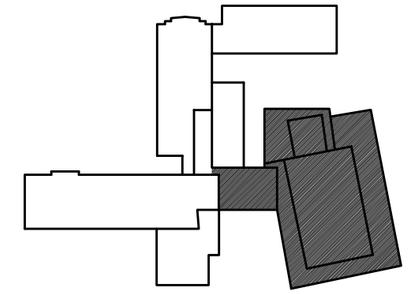
Designed PCH	Scale N.T.S.
Drawn MSK	Date 05/29/15
Checked CGW	Becker Job Number 3560

SKS-6



JOIST REINFORCEMENT PART PLAN

N.T.S.



NOT FOR CONSTRUCTION
PRELIMINARY SET 05/29/15

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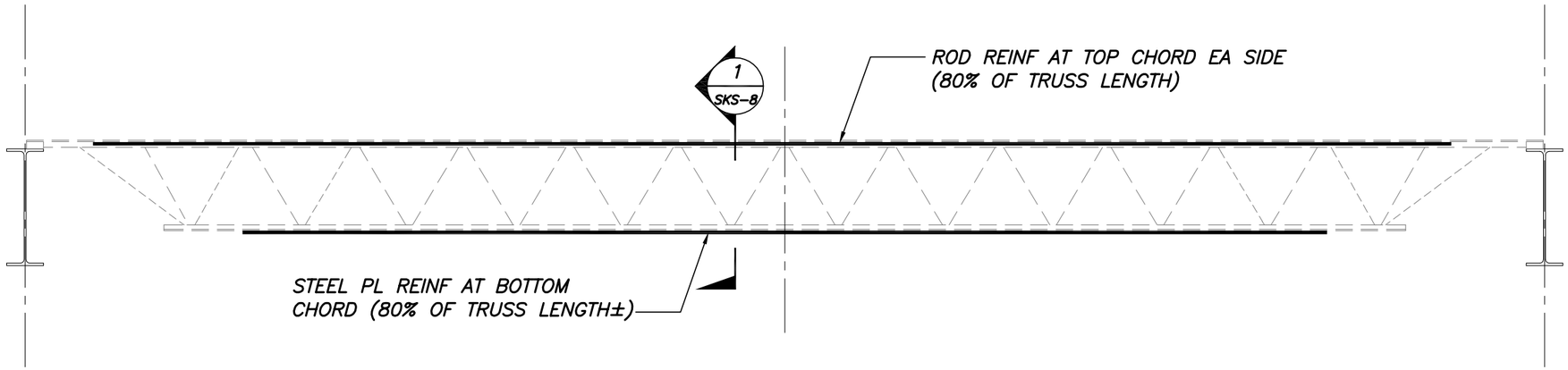
JUNIOR HIGH SCHOOL
BRUNSWICK, MAINE

ROOF REINFORCING PART PLAN

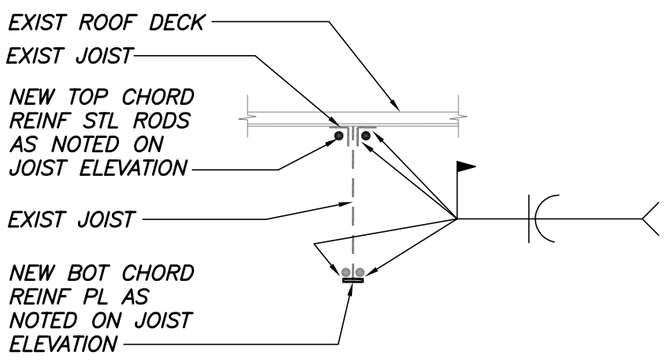
Designed PCH	Scale N.T.S.
Drawn MSK	Date 05/29/15
Checked CGW	Becker Job Number 3560

SKS-7



TYP EXISTING JOIST ELEVATION

N.T.S.



SECTION

3/4"=1'-0"

1
SKS-8

NOT FOR CONSTRUCTION
PRELIMINARY SET 05/29/15

THESE DWGS ARE NOT COMPLETE.
DESIGN IS STILL IN PROGRESS.
CONTRACTOR SHALL CARRY
APPROPRIATE CONTINGENCY.

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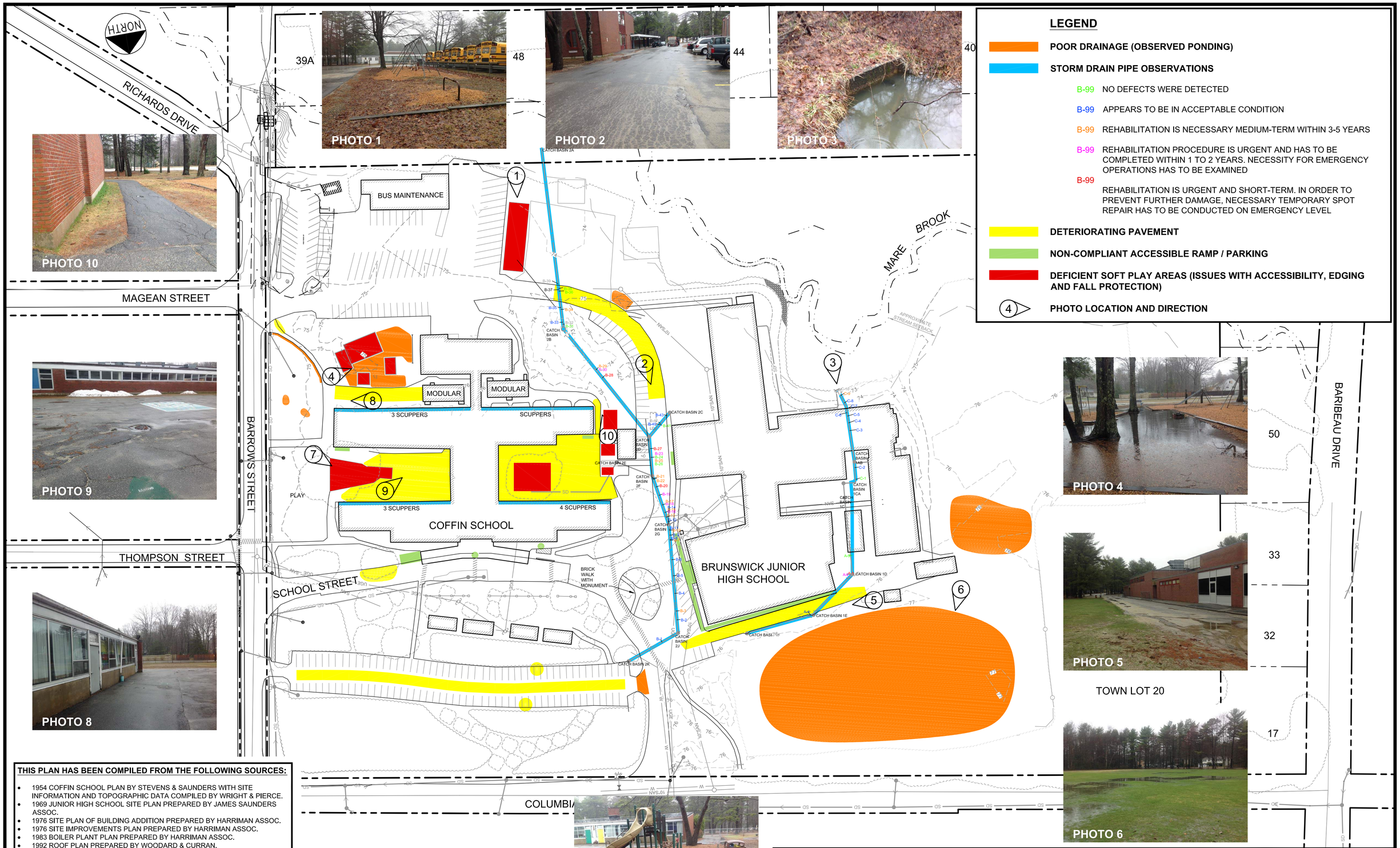
JUNIOR HIGH SCHOOL
BRUNSWICK, MAINE

ROOF REINFORCING DETAILS

Designed PCH	Scale N.T.S.
Drawn MSK	Date 05/29/15
Checked CGW	Becker Job Number 3560

SKS-8



LEGEND

- POOR DRAINAGE (OBSERVED PONDING)
- STORM DRAIN PIPE OBSERVATIONS
  - B-99 NO DEFECTS WERE DETECTED
  - B-99 APPEARS TO BE IN ACCEPTABLE CONDITION
  - B-99 REHABILITATION IS NECESSARY MEDIUM-TERM WITHIN 3-5 YEARS
  - B-99 REHABILITATION PROCEDURE IS URGENT AND HAS TO BE COMPLETED WITHIN 1 TO 2 YEARS. NECESSITY FOR EMERGENCY OPERATIONS HAS TO BE EXAMINED
  - B-99 REHABILITATION IS URGENT AND SHORT-TERM. IN ORDER TO PREVENT FURTHER DAMAGE, NECESSARY TEMPORARY SPOT REPAIR HAS TO BE CONDUCTED ON EMERGENCY LEVEL
- DETERIORATING PAVEMENT
- NON-COMPLIANT ACCESSIBLE RAMP / PARKING
- DEFICIENT SOFT PLAY AREAS (ISSUES WITH ACCESSIBILITY, EDGING AND FALL PROTECTION)
- (4) PHOTO LOCATION AND DIRECTION

THIS PLAN HAS BEEN COMPILED FROM THE FOLLOWING SOURCES:

- 1954 COFFIN SCHOOL PLAN BY STEVENS & SAUNDERS WITH SITE INFORMATION AND TOPOGRAPHIC DATA COMPILED BY WRIGHT & PIERCE.
- 1969 JUNIOR HIGH SCHOOL SITE PLAN PREPARED BY JAMES SAUNDERS ASSOC.
- 1976 SITE PLAN OF BUILDING ADDITION PREPARED BY HARRIMAN ASSOC.
- 1976 SITE IMPROVEMENTS PLAN PREPARED BY HARRIMAN ASSOC.
- 1983 BOILER PLANT PLAN PREPARED BY HARRIMAN ASSOC.
- 1992 ROOF PLAN PREPARED BY WOODARD & CURRAN.
- 2009 FILTERRA UNIT & ISOLATER ROW PLAN ON BARROWS STREET PREPARED FOR FOR PDT ARCHITECTS, PREPARED BY DELUCA-HOFFMAN ASSOC. INC. AND OWEN HASKELL SURVEYORS.
- 2009 CRIMMONS FIELD IMPROVEMENTS NORTH OF COLUMBIA STREET PREPARED FOR FOR FOR PDT ARCHITECTS BY DELUCA-HOFFMAN ASSOC. INC. AND OWEN HASKELL SURVEYORS.
- APRIL 21, 2015 FST FIELD OBSERVATIONS.

60 0 30 60 120
(IN FEET)
1 inch = 60 ft.

PRELIMINARY NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	06,05,15	SUBMITTED TO PDT

REVISIONS

P.E.
LIC. #

PROJECT
COFFIN ELEMENTARY AND BRUNSWICK JR. HIGH SCHOOL

SHEET TITLE
EXISTING CONDITIONS WITH OBSERVATIONS OF DEFICIENT SITE ISSUES

CLIENT
PDT ARCHITECTS

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	DED	DATE:	MAY 2015
DESIGNED:	BEK	SCALE:	1" = 60'
CHECKED:	BEK	JOB NO.	SB-M131
FILE NAME:	SB-M131 COFFIN - JRHS		
SHEET	1		

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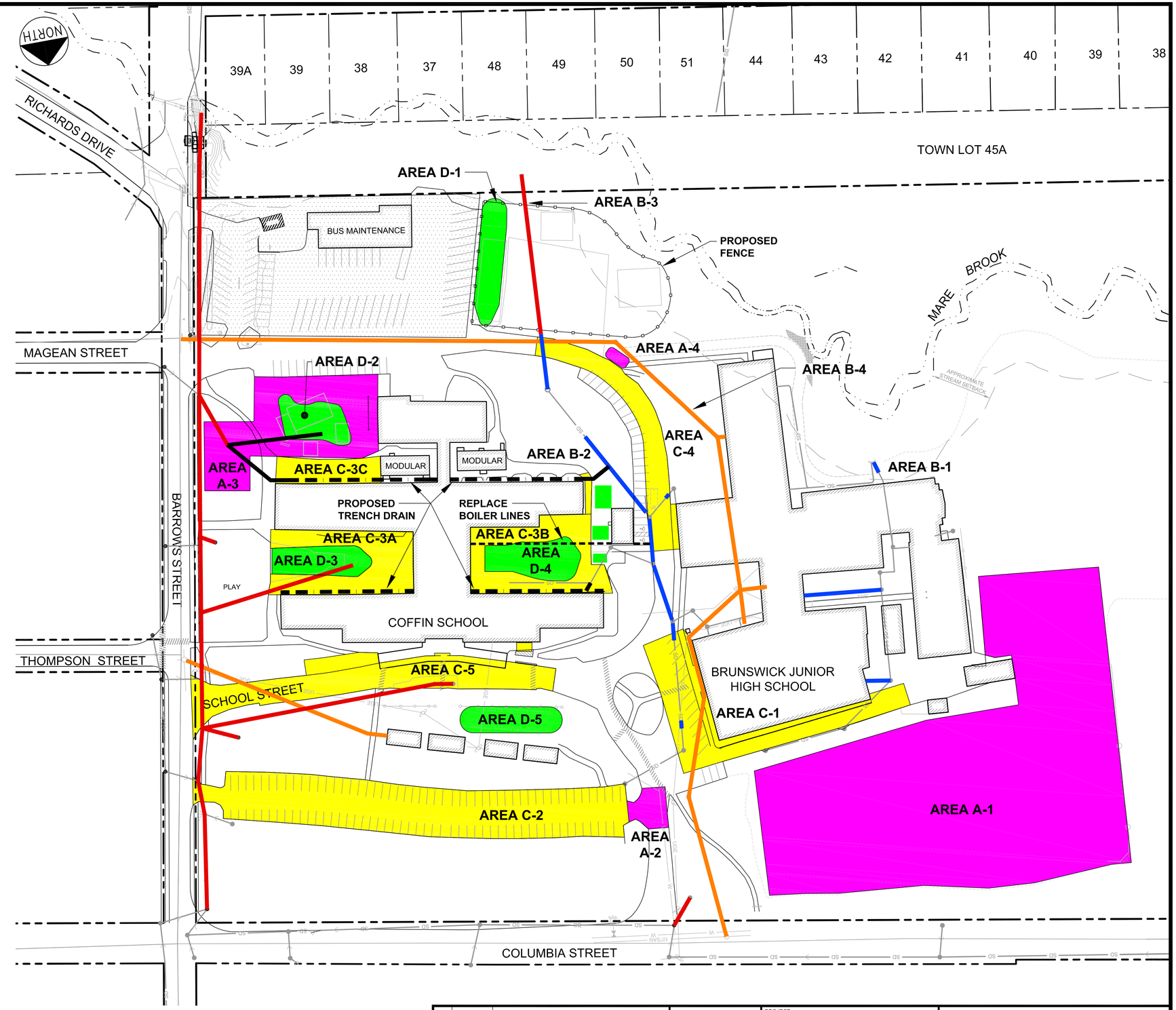
IMPROVEMENT ID	DESCRIPTION	APPROXIMATE AREA OR LENGTH	ENGINEERS OPINION OF APPROX. CONSTRUCTION COST
AREA A-1	**TURF FIELD IMPROVEMENTS** ROTOTILL EXISTING TURF ADD LOAM REGRADE TURF AREAS WITH 1% CROSS SLOPE ESTABLISH NEW TURF	111,500 S.F. (2.56 AC)	$96,800
AREA A-2	**PAVEMENT PONDING** INSTALL TYPE D CATCH BASIN PAVEMENT REPAIR	500 S.F. (0.01 AC)	$11,200
AREA A-3	**PLAY AREA DRAINAGE IMPROVEMENTS** SELECT TREE CUTTING RAISE GRADE WITH LOAM AND SEED INSTALL NEW STORM DRAIN LINE TREE WELLS AT SELECT LOCATIONS	20,400 S.F. (0.47 AC)	$ 13,500
AREA A-4	**PONDING**	350 S.F.(0.008 AC)	$ 2,000
AREA B-1	**STORM DRAINAGE REPAIR** CLEAN / REPLACE OUTFALL PIPE AND HEADER WALL	15 L.F.	$ 4,200
AREA B-2	**STORM DRAINAGE REPAIR** REMOVE AND DISPOSE ASBESTOS PIPE INSTALL NEW HDPE PIPE SELECT TREE CUTTING	494 L.F.	$ 32,000
AREA B-3	**STORM DRAIN INVESTIGATION** CLEAN AND TELEVISE STORM DRAINAGE LINE REPAIR AND REPLACE EXISTING DETERIORATING PIPE	2,182 L.F.	$ 36,400
AREA B-4	**SANITARY SEWER INVESTIGATION** TELEVISE SANITARY SEWER LINE REPAIR / REPLACE EXISTING DETERIORATING PIPE	1,675 L.F.	$ 24,000
AREA C-1	**PAVEMENT REPAIR** RECLAIM EXISTING PAVEMENT RAISE GRADE AT DOORWAYS NEW PAVEMENT - DRIVEWAY AND SIDEWALKS NEW PEDESTRIAN BARRIER	15,315 S.F. (0.35AC)	$ 78,400
AREA C-2	**PAVEMENT REPAIR** CRACK SEAL 2" PAVEMENT OVERLAY PAVEMENT FABRIC REPAIR ISOLATED SINK HOLES	31,088 S.F. (0.71 AC)	$ 52,000
AREA C-3	**PAVEMENT REPAIR** ACCESSIBILITY UPGRADES SHIM FINE GRADE AND REPAVE AROUND PLAYGROUND EQUIPMENT INSTALL TRENCH DRAIN ALONG BUILDING EDGE	29,582 S.F. (0.68AC)	$123,500
AREA C-4	**PAVEMENT REPAIR** RECLAIM EXISTING PAVEMENT FINE GRADE AND REPLACE PAVEMENT REMOVE EXCESS GRAVEL	9,187 S.F.(0.21 AC)	$33,500
AREA C-5	**PAVEMENT REPAIR** ACCESSIBILITY UPGRADES FULL DEPTH BOX CUT PAVEMENT REPAIR SELECT RECLAIM; FINE GRADE AND REPLACE PAVEMENT	9,900 S.F.(0.23 AC)	$62,500
AREA D-1	**PLAYGROUND IMPROVEMENTS** NEW SWINGS AND CLIMBING EQUIPMENT * NEW FENCE ENCLOSURE AROUND SOFT AND HARD PLAY AREAS NEW SOFT PLAY SURFACE	4,600 S.F. (0.11 AC)	$57,400
AREA D-2	**PLAYGROUND IMPROVEMENTS** NEW PLAYGROUND EQUIPMENT * TREE CUTTING NEW SOFT PLAY SURFACE	3,900 S.F. (0.09 AC)	$ 43,900
AREA D-3	**PLAYGROUND IMPROVEMENTS** FILL SAND BOXES TREE CUTTING NEW PLAYGROUND EQUIPMENT * BENCH PADS	4,100 S.F.(0.09 AC)	$ 62,000
AREA D-4	**PLAYGROUND IMPROVEMENTS** FILL SAND BOXES TREE CUTTING NEW PLAYGROUND EQUIPMENT * BENCH PADS	4800 S.F. (0.11 AC)	$39,600
AREA D-5	**PLAYGROUND IMPROVEMENTS** NEW PLAYGROUND EQUIPMENT * TREE CUTTING NEW SOFT PLAY SURFACE	3,900 S.F.(0.09AC)	$ 38,600
AREA E-5	**NEW LIGHTING**	22 EA	$ 138,400

* SEE SHEET 3 FOR PLAYGROUND EQUIPMENT SCHEMATIC



60 0 30 60 120
(IN FEET)
1 inch = 60 ft.

REV	DATE	DESCRIPTION
1	06.05.15	SUBMITTED TO PDT

REVISIONS

P.E.
LIC. #

PROJECT
COFFIN ELEMENTARY AND BRUNSWICK JR. HIGH SCHOOL

SHEET TITLE
SITE IMPROVEMENTS SCHEMATIC

CLIENT
PDT ARCHITECTS

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	DED	DATE:	MAY 2015
DESIGNED:	BEK	SCALE:	1" = 60'
CHECKED:	BEK	JOB NO.	SB-M131
FILE NAME:	SB-M131 COFFIN - JRHS		
SHEET	2		

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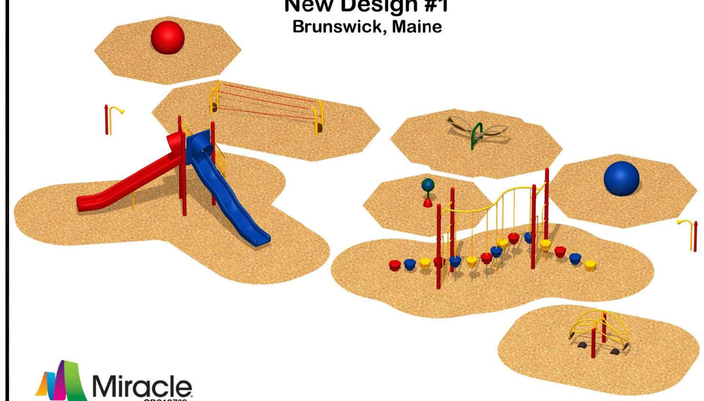
SEE SHEET 2 - SITE IMPROVEMENTS SCHEMATIC FOR LOCATION ON SITE

Coffin School Swing Row
New Design #1
Brunswick, Maine

Miracle CD212727

AREA D-1

Coffin School Oak Tree Area
New Design #1
Brunswick, Maine



Miracle CD212729

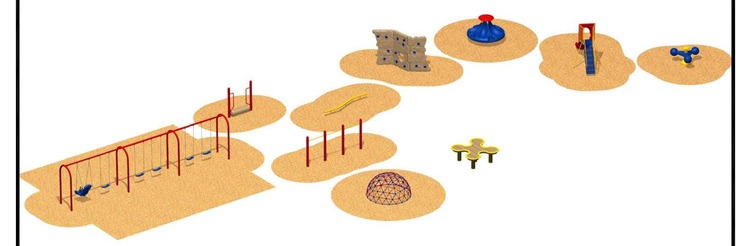
AREA D-2

Coffin School Gym Area
New Design #1
Brunswick, Maine

Miracle CD212725

AREA D-3

Coffin School Junior High Area
Brunswick, Maine



Miracle CD212404

AREA D-4

Coffin School Portables
Brunswick, Maine

Miracle CD212401

AREA D-5

REFERENCE:
PLAYGROUND DESIGNS PREPARED BY MAINE RECREATION AND DESIGN, BRUNSWICK, MAINE DATED 4.14.15

PRELIMINARY NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	06.05.15	SUBMITTED TO PDT

REVISIONS

P.E.
LIC. #

PROJECT
COFFIN ELEMENTARY AND BRUNSWICK JR. HIGH SCHOOL

SHEET TITLE
PLAYGROUND IMPROVEMENTS SCHEMATIC

CLIENT
PDT ARCHITECTS

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	DED	DATE:	MAY 2015
DESIGNED:	BEK	SCALE:	N.T.S.
CHECKED:	BEK	JOB NO.	SB-M131
FILE NAME:	SB-M131 COFFIN - JRHS		
SHEET	3		

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MAGEAN STREET

NORTH

BARROWS STREET

THOMPSON STREET

SCHOOL STREET

COLUMBIA STREET

COFFIN SCHOOL

BRUNSWICK JUNIOR HIGH SCHOOL

20 SPACES

PARENT DROP OFF (5 SPACES)

RAISED CROSSWALK

PARENT DROP OFF (6 SPACES)

BUS DROP OFF (3 SPACES)

RAISED ISLAND WITH PEDESTRIAN BARRIER

COFFIN SCHOOL BUS LOOP (6 SPACES)

MODULAR CLASSROOMS (68' x 207')

22 SPACES

OPTIONAL PARKING AREA (18 SPACES)

64 SPACES

WALKWAY

7 SPACES

RELOCATE EXISTING UTILITY POLE

PARKING TURNAROUND

PLAYGROUND

(IN FEET)
1 inch = 40 ft.

PRELIMINARY NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	06.08.15	ADDED PARKING SPACES PER OWNER COMMENT
1	06.05.15	SUBMITTED TO PDT

REVISIONS

P.E.
LIC. #

PROJECT
COFFIN ELEMENTARY AND BRUNSWICK JR. HIGH SCHOOL

SHEET TITLE
MODULAR CLASSROOM ADDITION CONCEPT 1A

CLIENT
PDT ARCHITECTS

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	DED	DATE:	MAY 2015
DESIGNED:	BEK	SCALE:	1" = 40'
CHECKED:	BEK	JOB NO.	SB-M131
FILE NAME:	SB-M131 CONCEPT		
SHEET	1A		

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