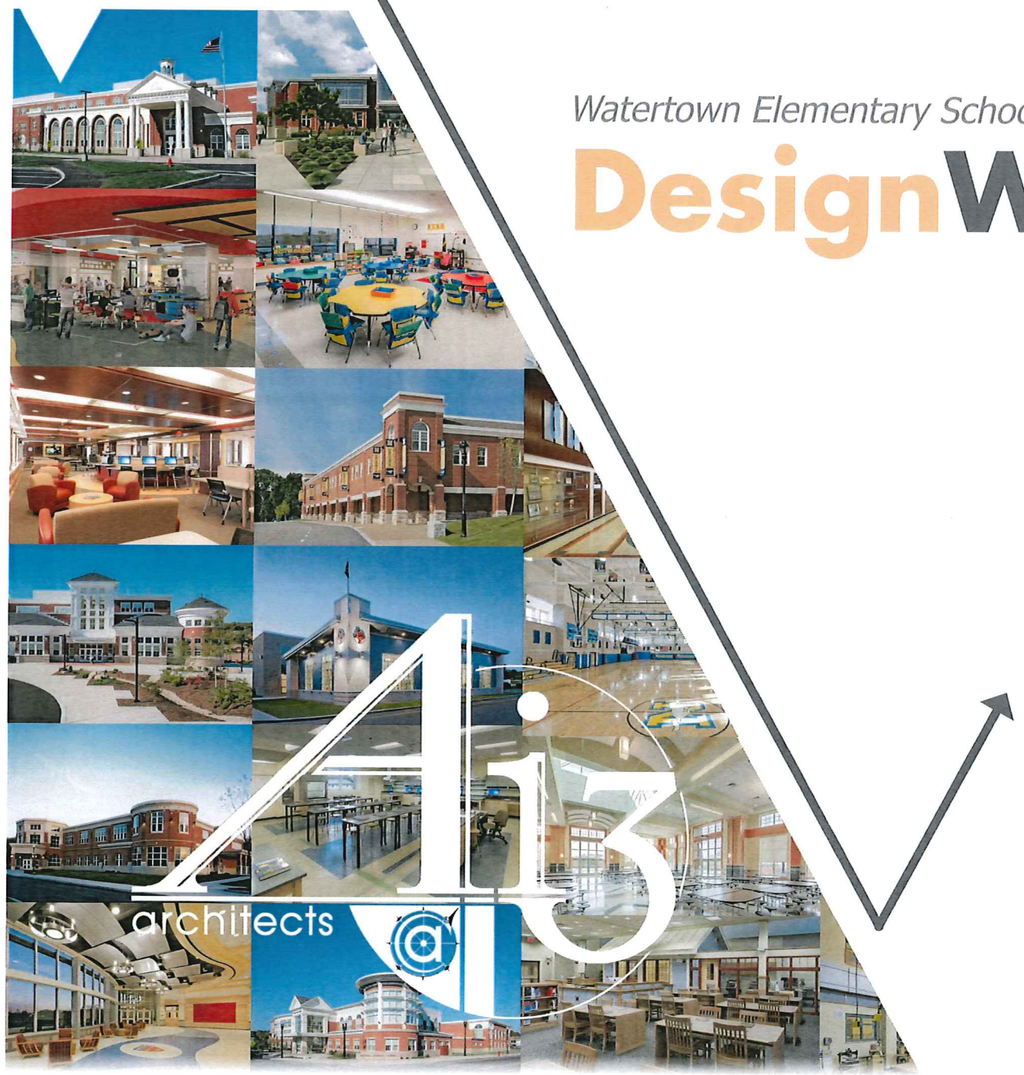


Watertown Elementary Schools Building Project

DesignWatertown

WPS Building Committee

Ai3 Architects, LLC
Hill International, Inc
August 21, 2019

Schools Project Website: www.watertownschoolsproject.com

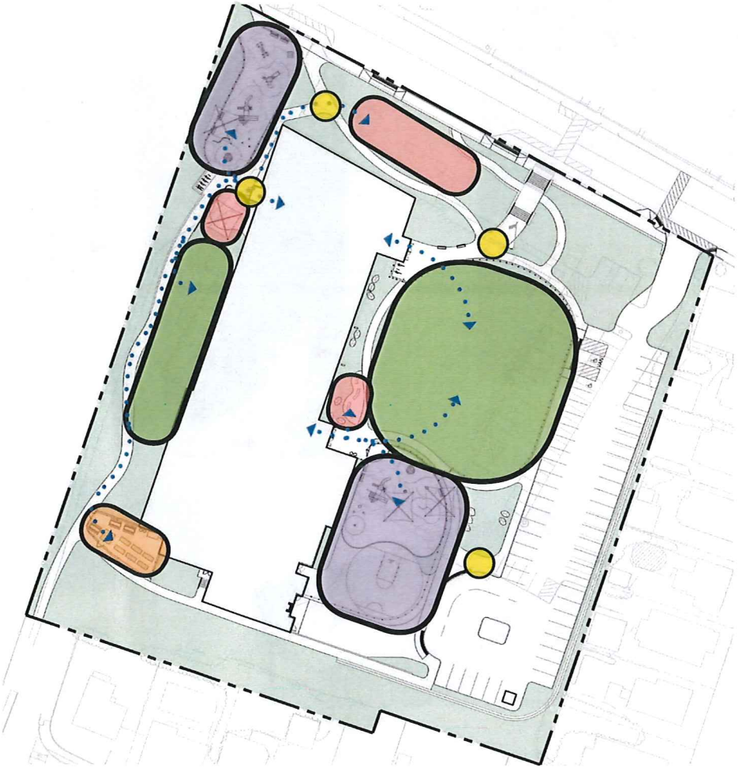
Watertown Elementary Schools Building Project

SiteReview

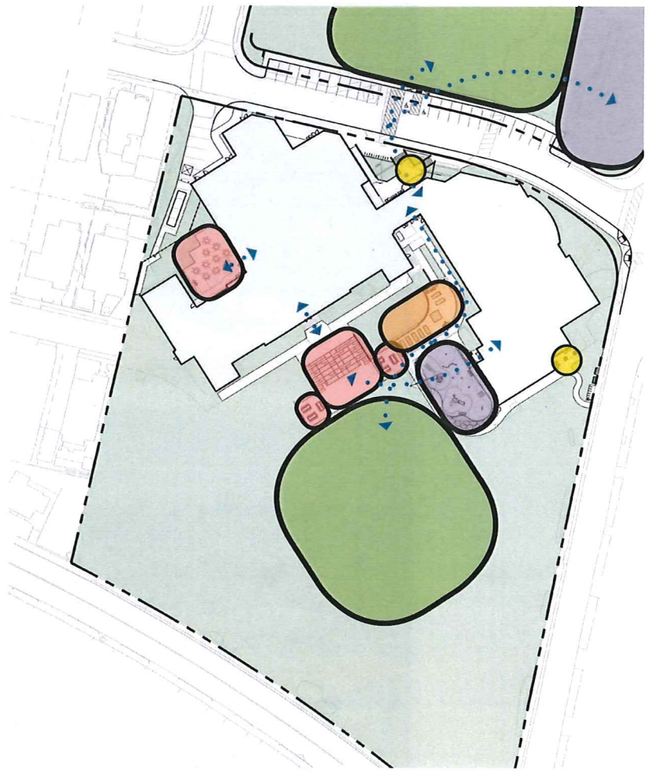
Site Organization: Watertown Elementary Schools

Hosmer

Cunniff



Lowell



OUTDOOR PLAY SPACE

OUTDOOR LEARNING AREA

SCHOOL GARDEN

PEDESTRIAN CIRCULATION

OPEN PLAY SPACE

DISMISSAL AREA

Site Furniture

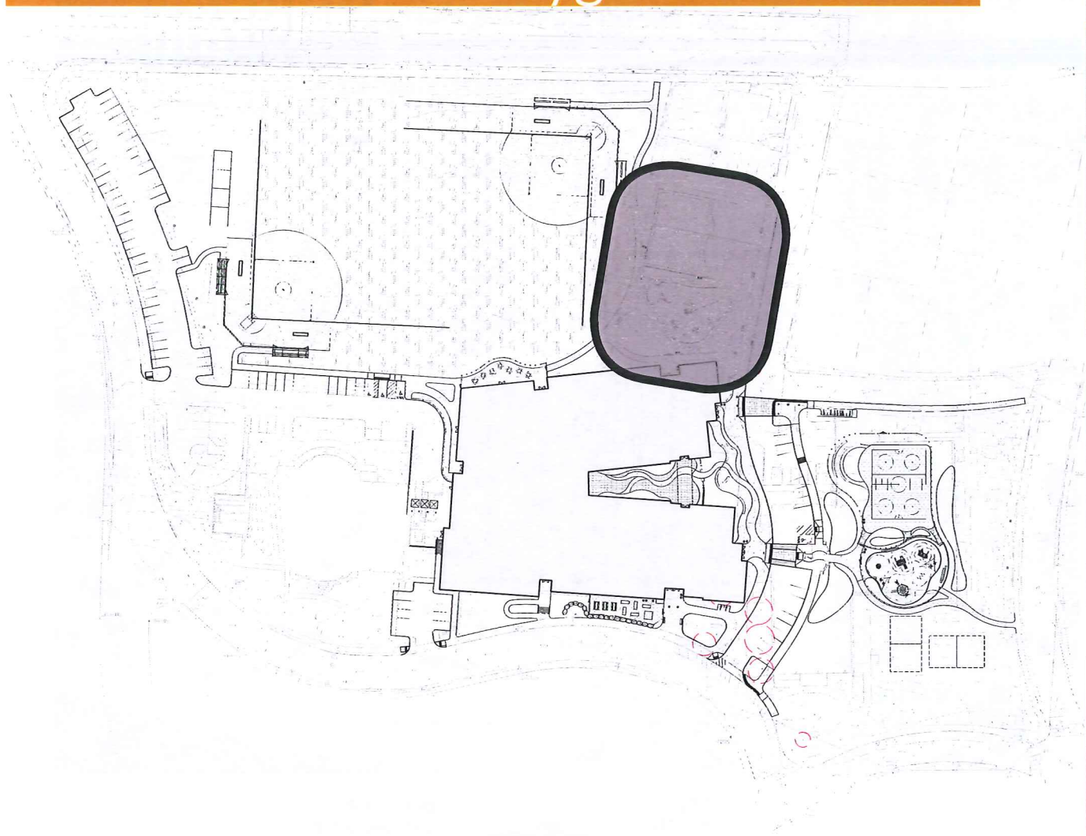
Watertown Building Committee Presentation

TRAVERSE
landscape architects

Garden Equipment

TRAVERSE
landscape architects

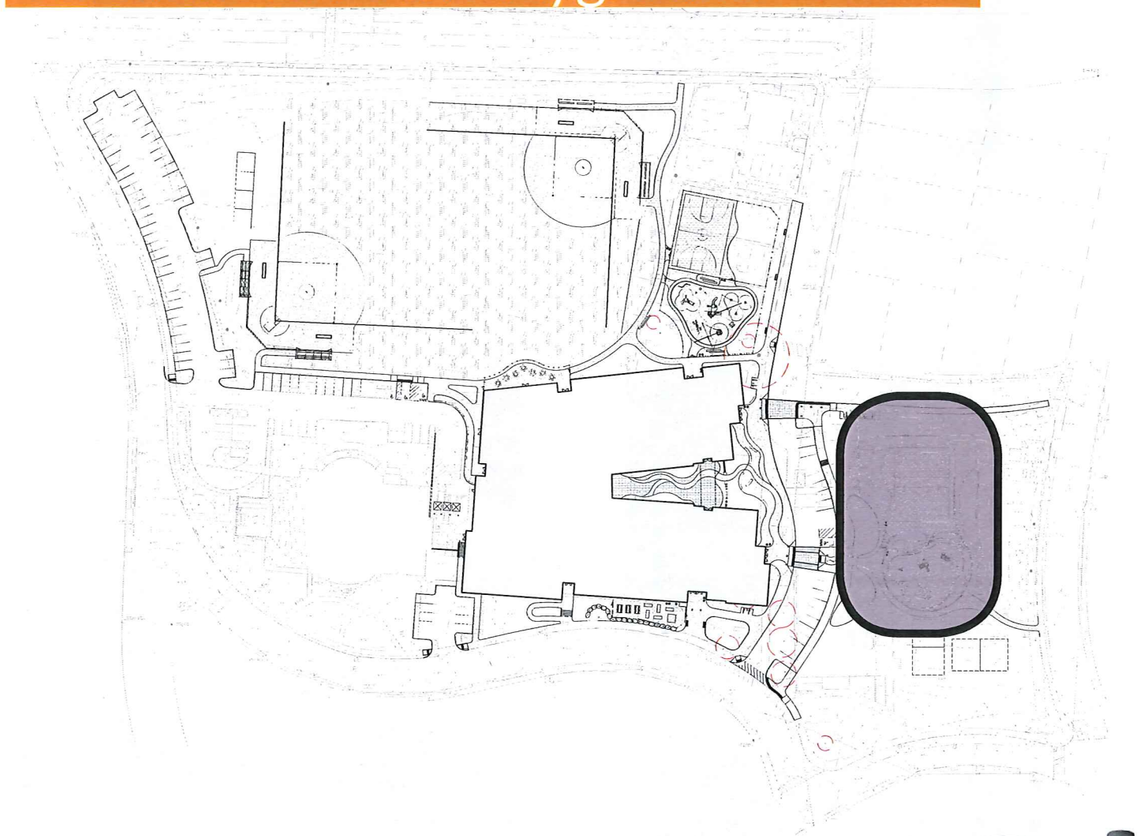
Hosmer: PreK-K Playground



Watertown Building Committee Presentation

TRAVERSE
landscape architects

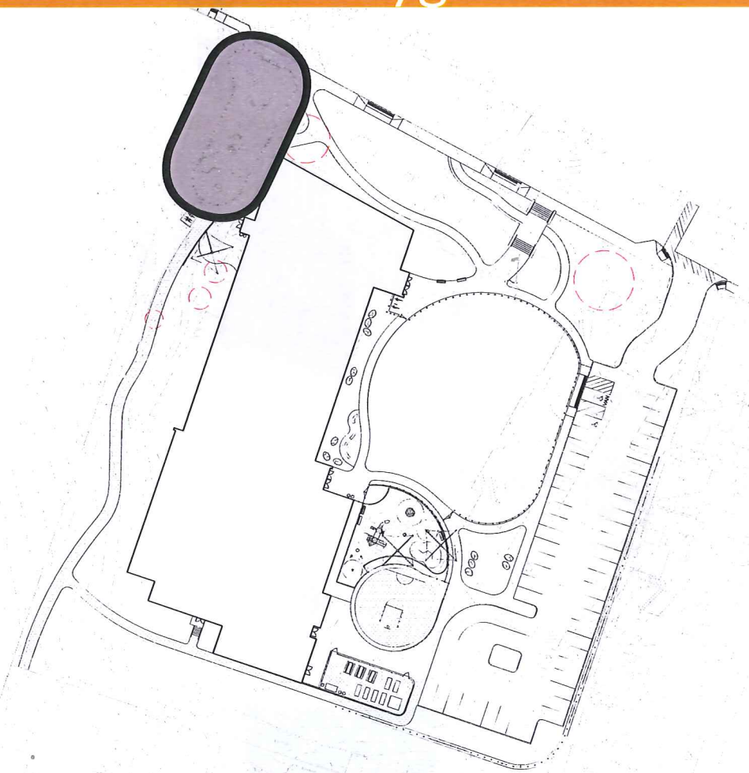
Hosmer: 1st-5th Playground

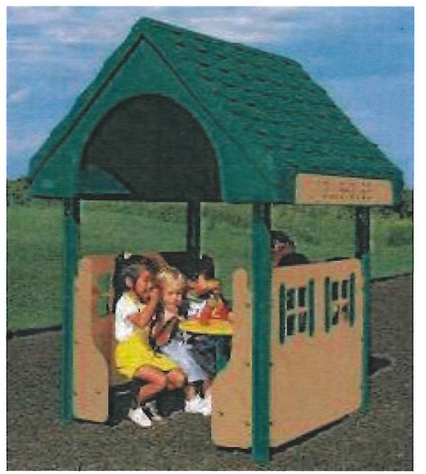


Watertown Building Committee Presentation

TRAVERSE
landscape architects

Cunniff: K-1st Playground

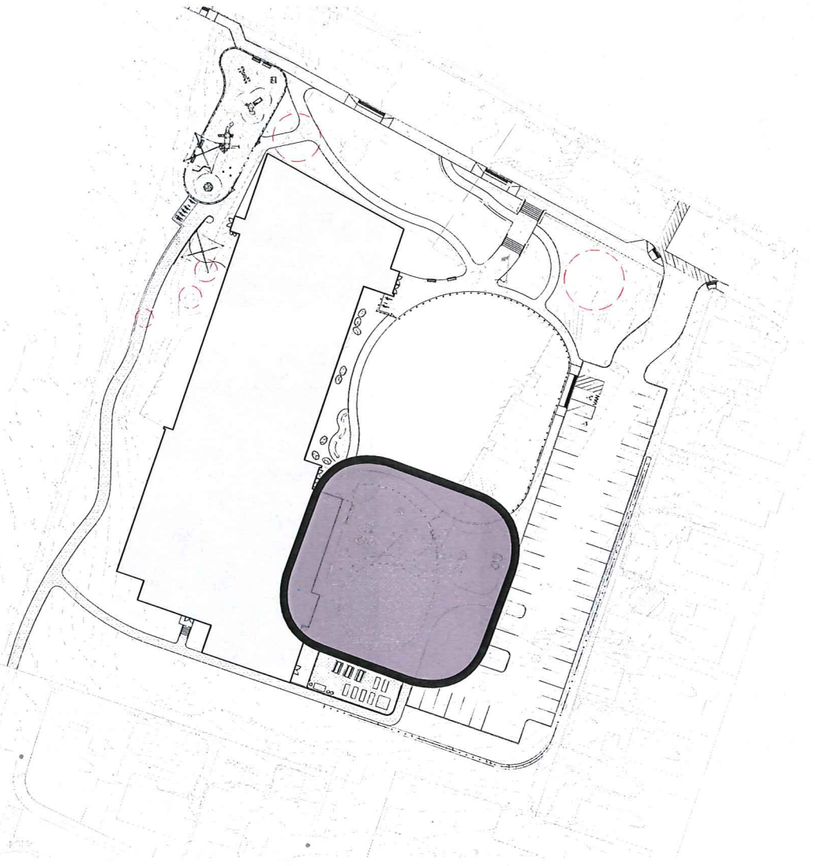




Watertown Building Committee Presentation

TRAVERSE
landscape architects

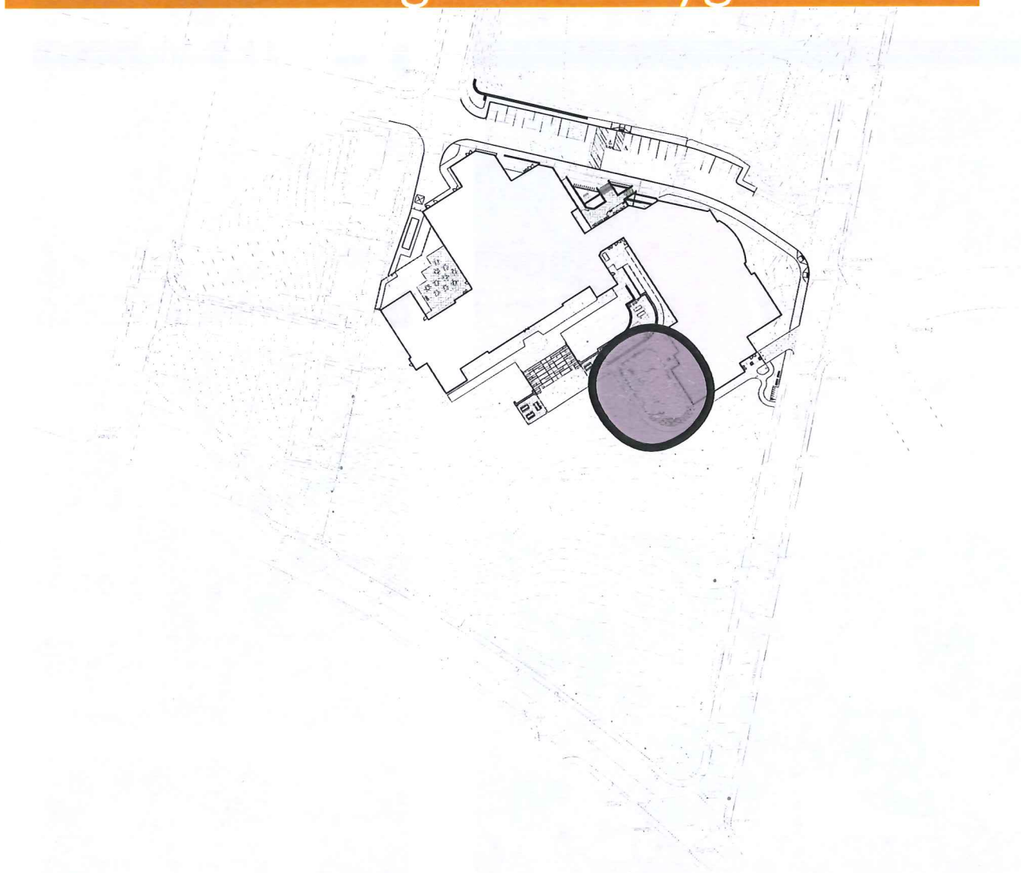
Cunniff: 2nd-5th Playground

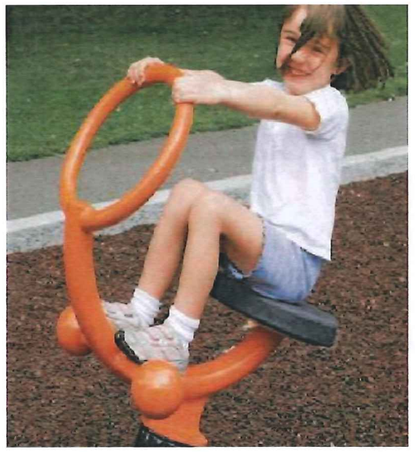


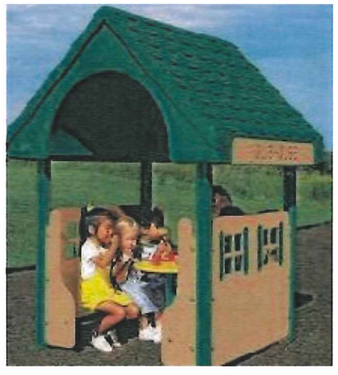
Watertown Building Committee Presentation

TRAVERSE
landscape architects

Lowell: Kindergarten Playground







Watertown Building Committee Presentation

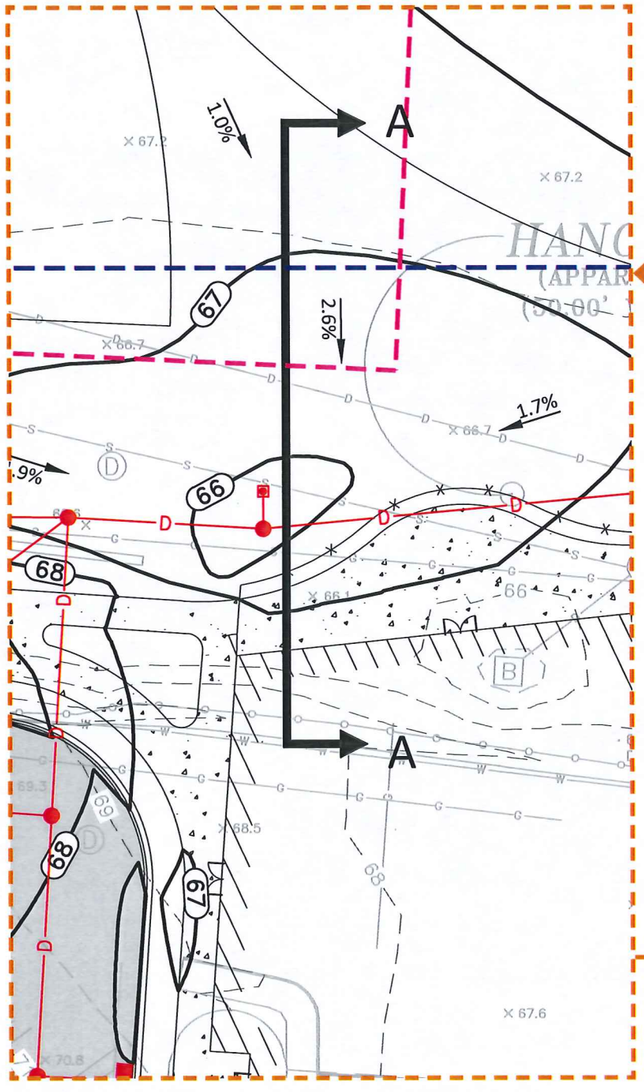
TRAVERSE
landscape architects

Hosmer

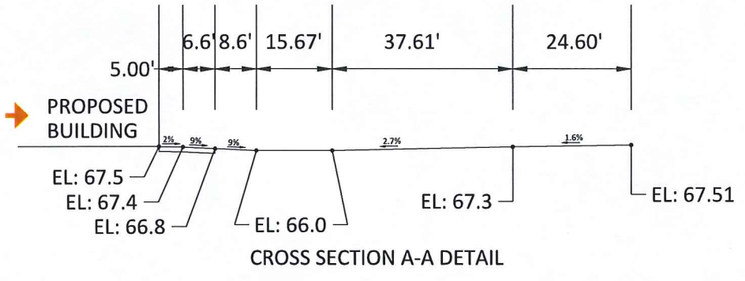
Existing Site

Site Review

Proposed Grading 8/21: Hosmer Elementary School



Revised grading at field edge



CROSS SECTION A-A DETAIL

Includes grading at bioswales

Site Review

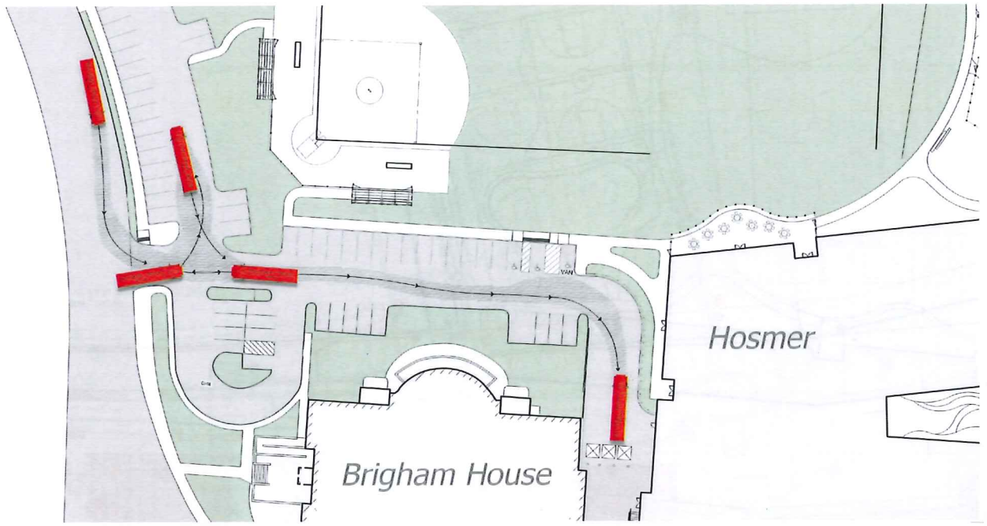
Existing Utilities: Hosmer Elementary School

Legend

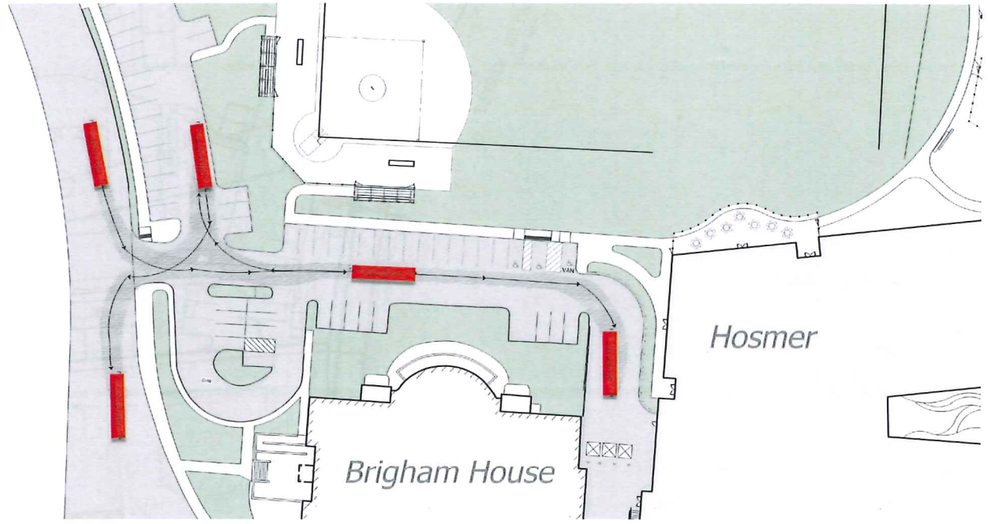
- Drainage Line
- Sanitary Line
- Water Line
- Gas Line
- Electric Line

Service Access: Hosmer Elementary School

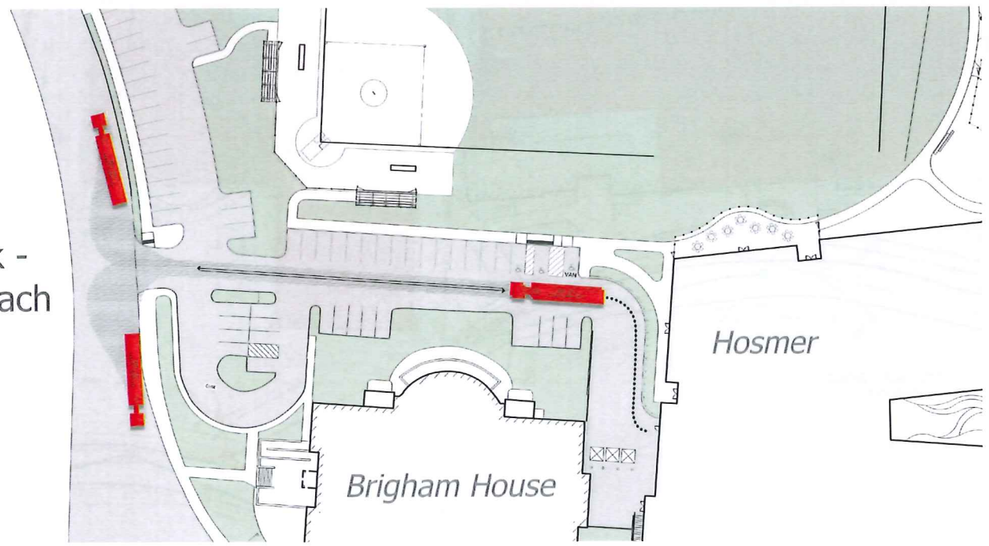
A) Typical Delivery Truck



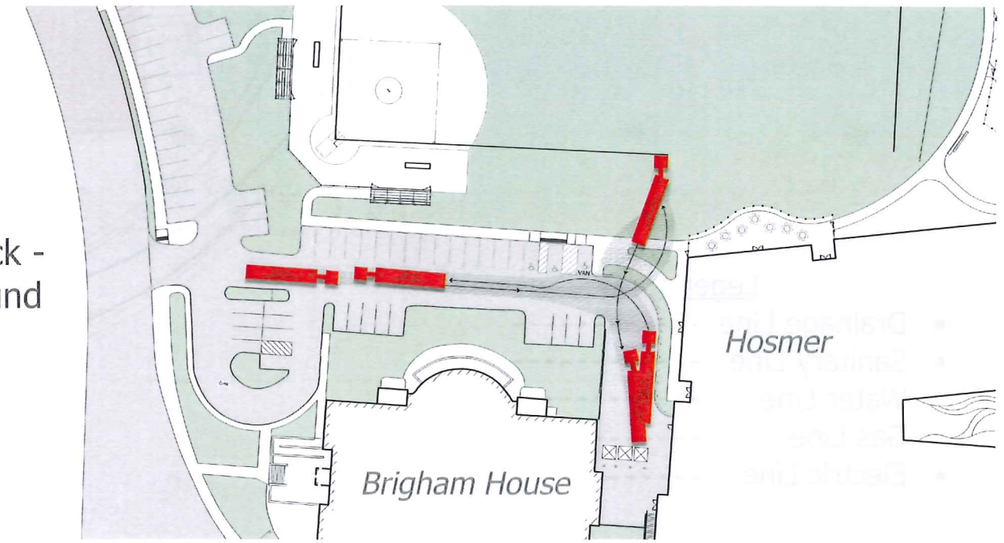
B) Typical Garbage Truck



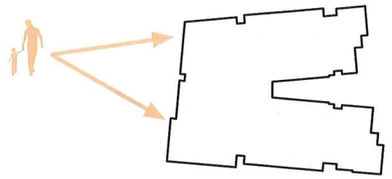
C) WB50 Truck - Straight Approach



D) WB50 Truck - with Turnaround

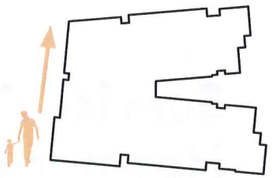


Service Access: Hosmer Elementary School



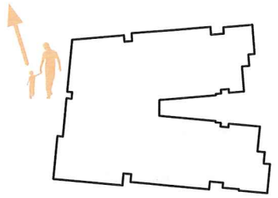
Site Review

Service Access:
Hosmer Elementary School



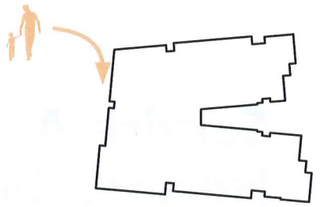
Site Review

Service Access:
Hosmer Elementary School



Site Review

Service Access:
Hosmer Elementary School

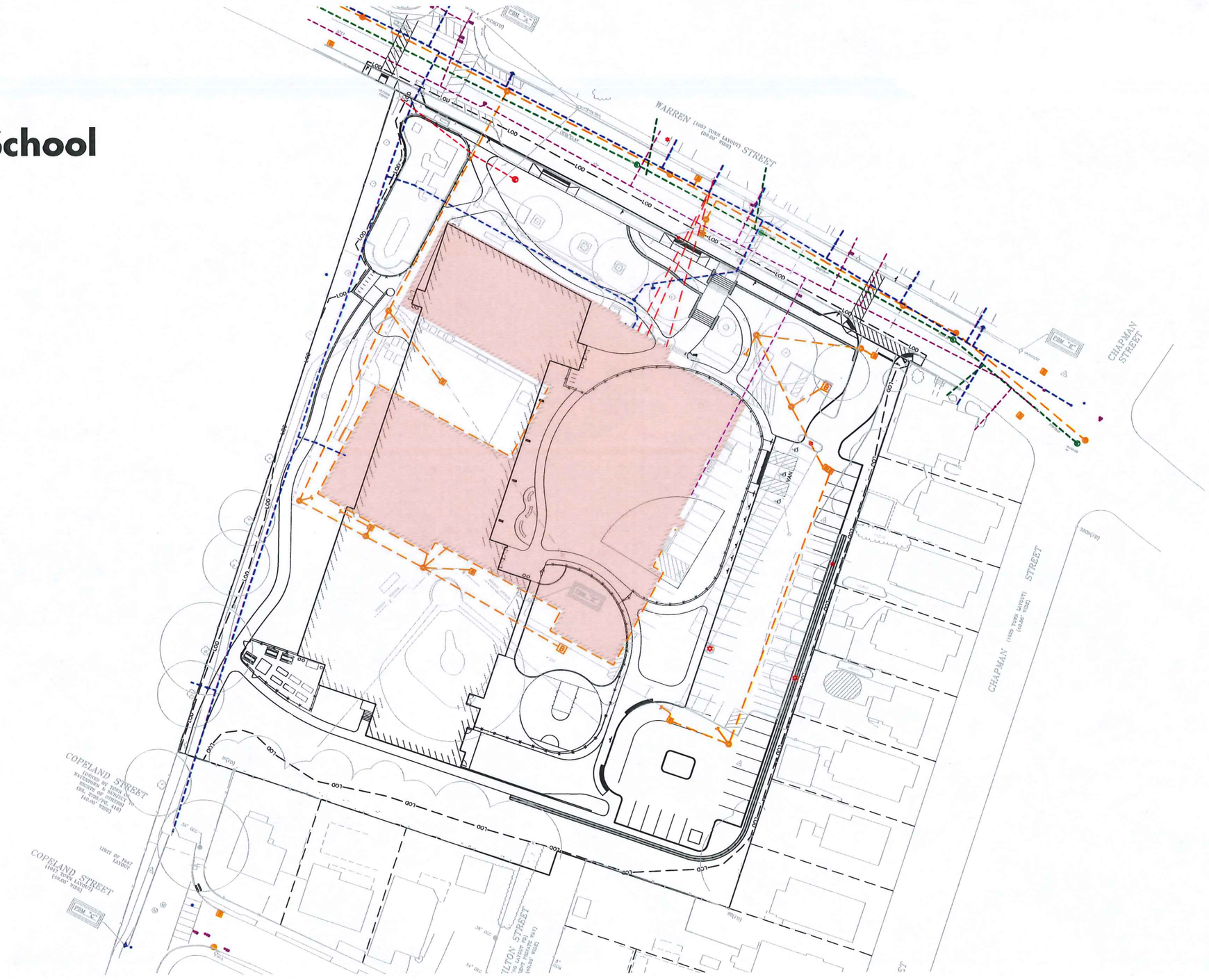


Cunniff

Existing Site

Site Review

Existing Utilities: Cunniff Elementary School

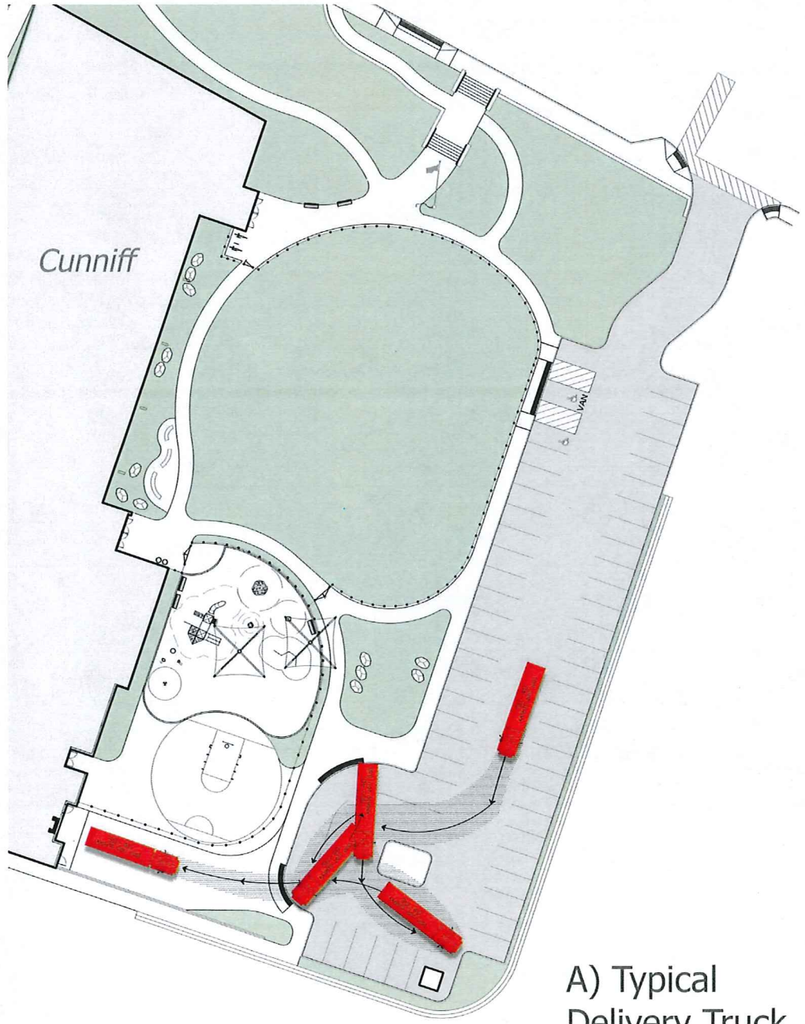


Legend

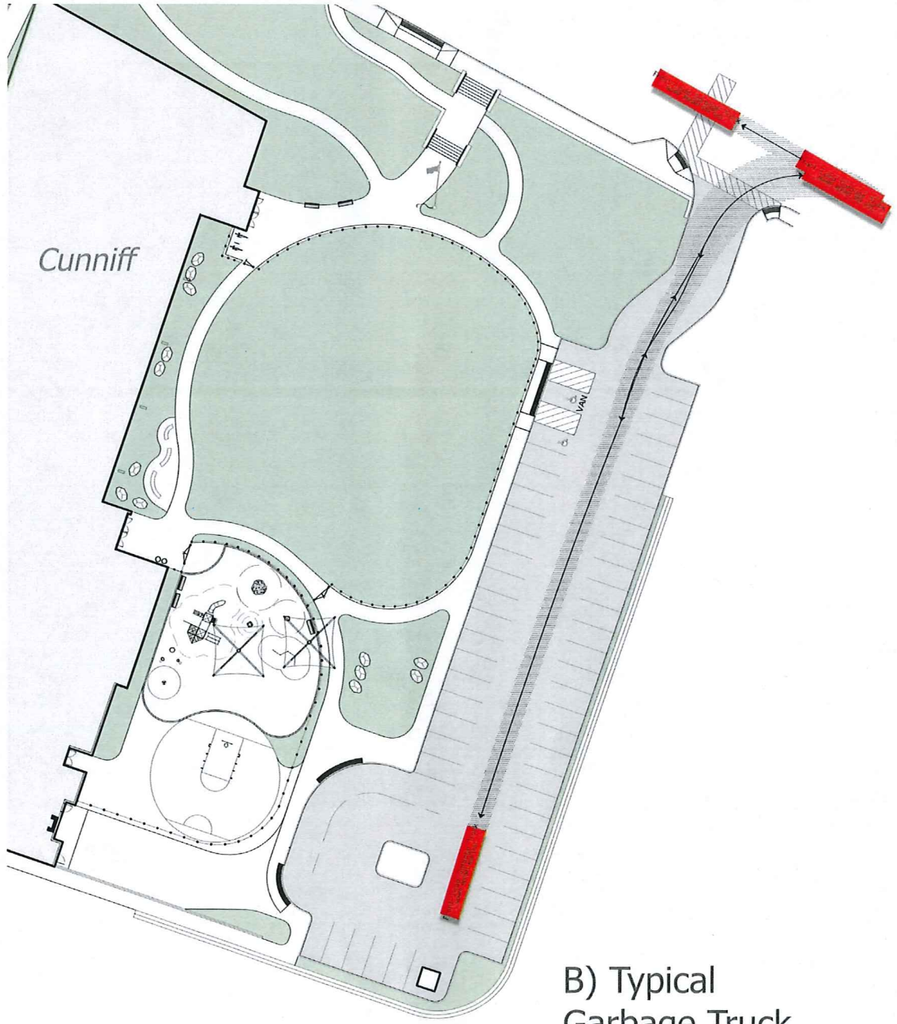
- Drainage Line
- Sanitary Line
- Water Line
- Gas Line
- Electric Line

Site Review

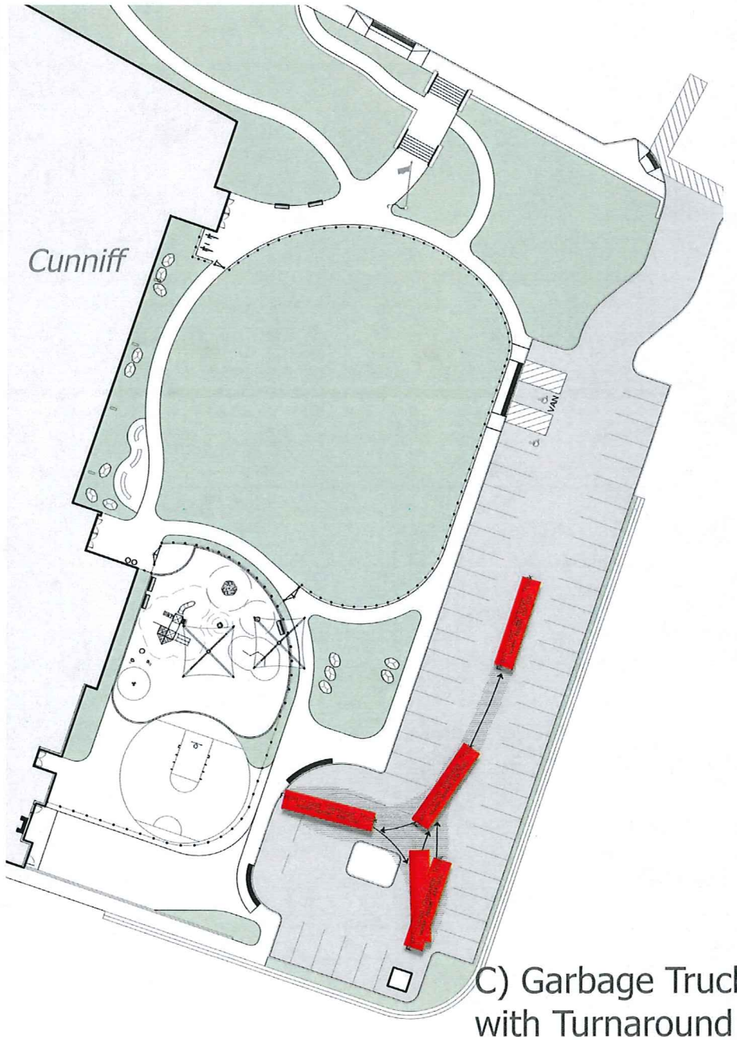
Service Access: Cunniff Elementary School



A) Typical Delivery Truck



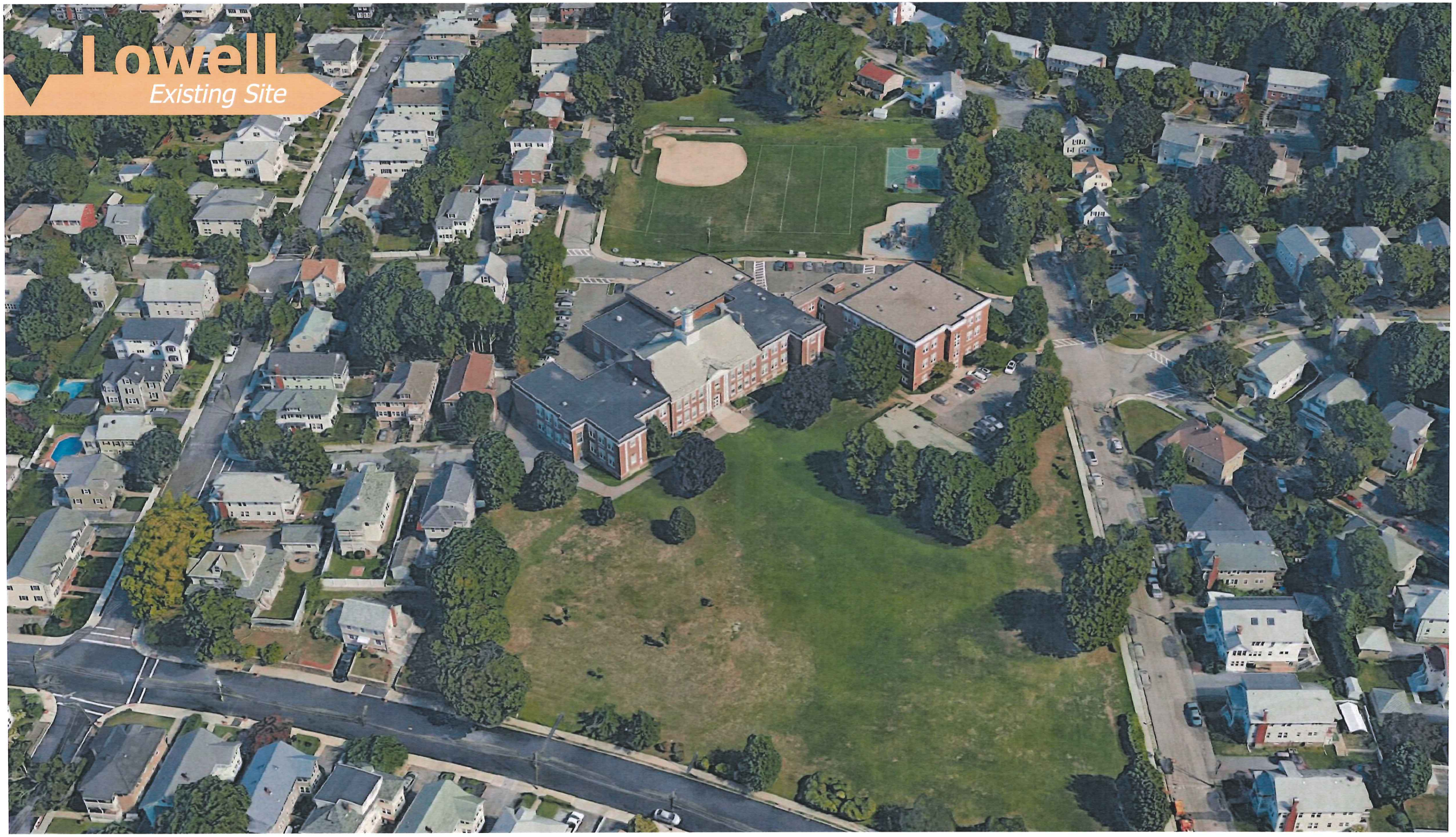
B) Typical Garbage Truck



C) Garbage Truck with Turnaround

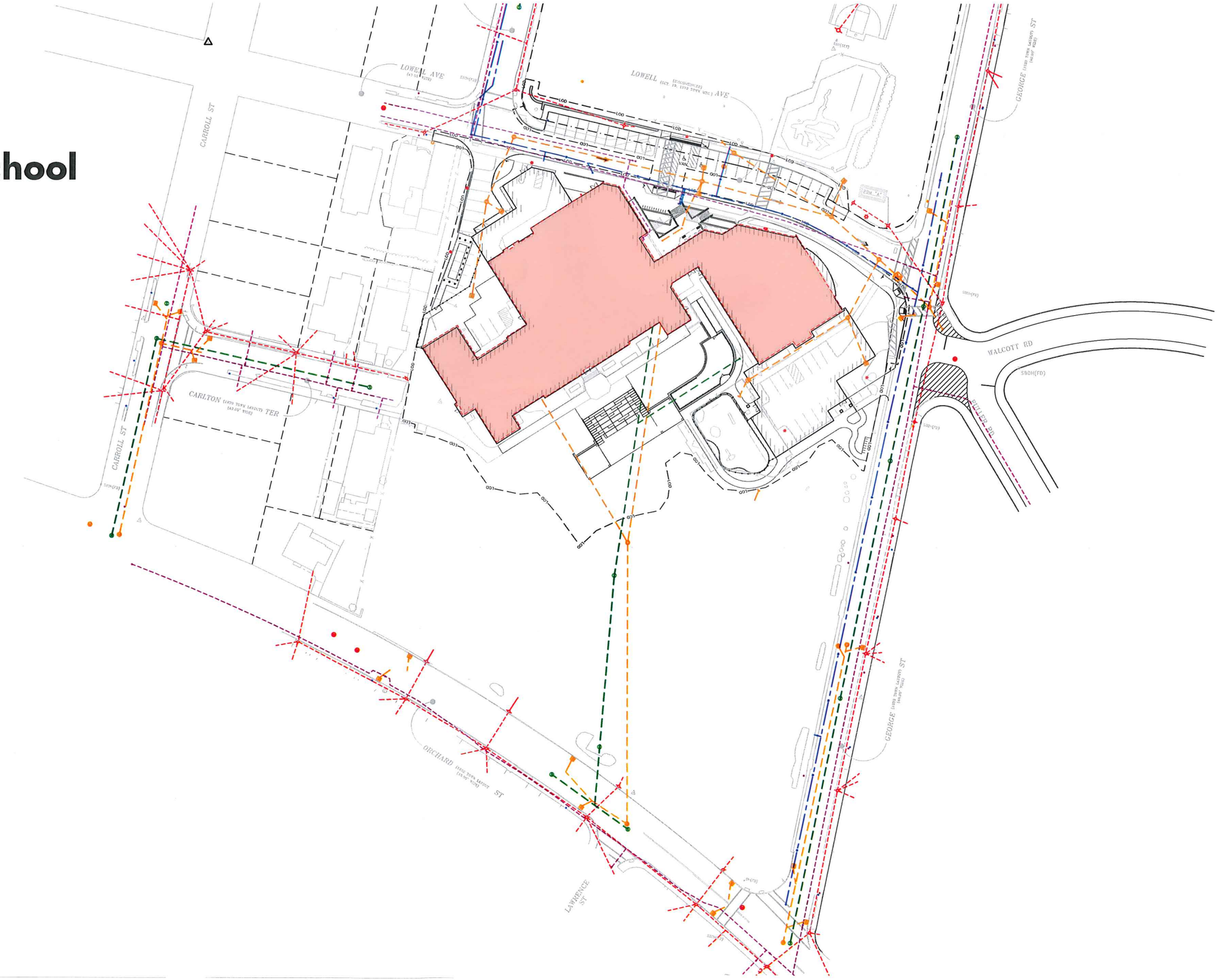
Lowell

Existing Site



Site Review

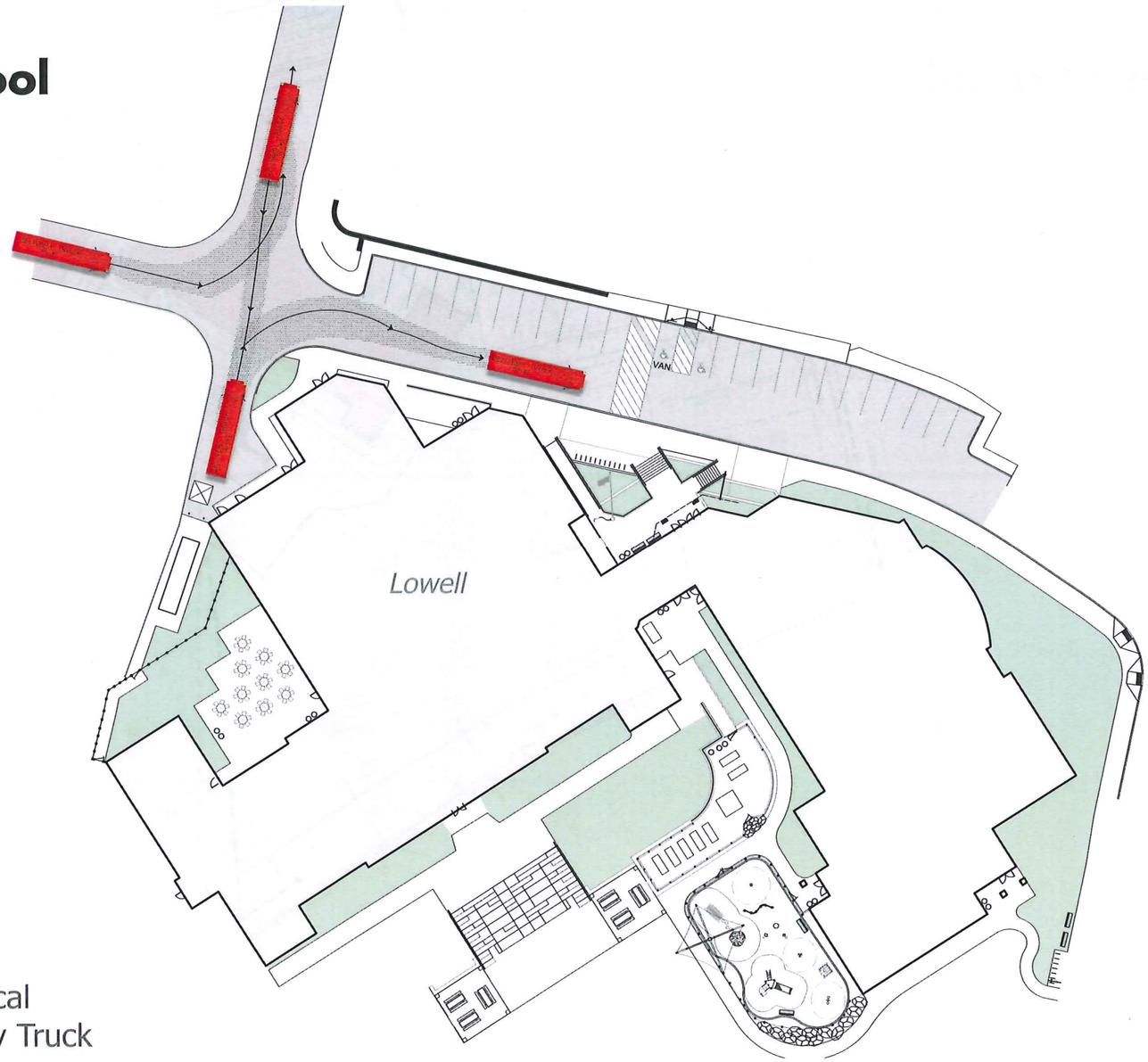
Existing Utilities: Lowell Elementary School



Legend

- Drainage Line
- Sanitary Line
- Water Line
- Gas Line
- Electric Line

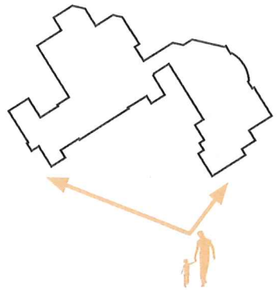
Service Access: Lowell Elementary School



A) Typical
Delivery Truck

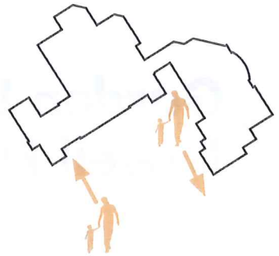
Site Review

Garden Landscape: Lowell Elementary School



Site Review

Garden Landscape: Lowell Elementary School



Watertown Elementary Schools Building Project

DesignProgress

Design Progress

Hazardous Materials Investigations: Results

Services Conducted:

- Asbestos Containing Materials (ACM) inspection & [representative] sampling
- Polychlorinated Biphenyls (PCB's)
  - Electrical Equipment and Light Fixtures inspection
  - Caulking inspection
- Lead Based Paint (LBP) inspection

Hosmer

Asbestos Containing Materials (ACM)

- 159 samples tested, 27 contain asbestos
- ACM in good condition does not present a health issue unless it is disturbed; not necessary to remediate

Polychlorinated Biphenyls (PCBs)

- 0 PCBs were found
- Tubes in light fixtures, thermostats, signs and switches were assumed to contain mercury; should be disposed in an EPA approved landfill
- Caulking was assumed to contain PCBs; EPA requires that all be disposed if level exceeds 50 mg/kg (ppm)

Lead Based Paint (LBP)

- LBP was assumed to exist on painted surfaces; according to OSHA, any amount of LBP triggers compliance

Cunniff

Asbestos Containing Materials (ACM)

- 108 samples tested, 13 contain asbestos
- ACM in good condition does not present a health issue unless it is disturbed; not necessary to remediate

Polychlorinated Biphenyls (PCBs)

- 0 PCBs were found
- Tubes in light fixtures, thermostats, signs and switches were assumed to contain mercury; should be disposed in an EPA approved landfill
- Caulking was assumed to contain PCBs; EPA requires that all be disposed if level exceeds 50 mg/kg (ppm)

Lead Based Paint (LBP)

- LBP was assumed to exist on painted surfaces; according to OSHA, any amount of LBP triggers compliance

Lowell

Asbestos Containing Materials (ACM)

- 70 samples tested, 10 contain asbestos
- ACM in good condition does not present a health issue unless it is disturbed by renovation

Polychlorinated Biphenyls (PCBs)

- 0 PCBs were found
- Tubes in light fixtures, thermostats, signs and switches were assumed to contain mercury; should be disposed in an EPA approved landfill
- Caulking was assumed to contain PCBs; EPA requires that all be disposed if level exceeds 50 mg/kg (ppm)

Lead Based Paint (LBP)

- LBP was assumed to exist on painted surfaces; according to OSHA, any amount of LBP triggers compliance

Hosmer

Asbestos Containing Materials (ACM)

Black damproofing on CMU walls at auditorium building	15%
Caulking at pipe stack	5%
Mastic on cork floor under hardwood at library	5%
Particles on slab under hardwood floor at gymnasium	3%
Older adhesive for vinyl baseboard at gymnasium	2%
Glue daub for 1' x 1' acoustical wall tile at classroom 53	2%
Adhesive for 1' x 1' acoustical wall tile at classroom 53	2%
Generator exhaust insulation at basement	30%-50%
Glazing caulking for mesh window over door by room 208	2%
Glazing caulking for mesh window at double door assembly at stairwell by guidance	2%
Glazing caulking for mesh window in wood door at classroom 52	3%
Glue daub for former 1' x 1' acoustical wall tile at nurse heating room	2%
Coating in speaker box at receiving room	5%
9" x 9" Vinyl floor tile at custodian office storage	2%
Mastic for 9" x 9" vinyl floor tile at cust. office storage	5%
Residue black mastic under new vinyl floor tile	2%-3%
Black mastic for 12" x 12" vinyl floor tile at cust. room by classroom 235	3%
Black mastic for white/blue 12" x 12" vinyl floor tile at hallway	3%
Residue black mastic under rubber floor at stairwell	2%
Glue tab on fiberglass insulated duct at mechanical room	10%
Transite pegboard at auditorium lobby custodian closet	10%
Hard joint elbows off fiberglass pipe insulation at hall outside cafeteria from tunnel	5%
Layered paper pipe insulation at physical education office pipe chase	30%
Exterior residue white caulking on concrete at cafeteria window	2%
Exterior door framing caulking at door 17	2%
Exterior horizontal caulking on steel beam over window	2%
Exterior vertical caulking on steel beam over windows at boy's locker	2%

Cunniff

Asbestos Containing Materials (ACM)

Mastic/caulking at stack pipe	5%
Glazing caulking for wood entrance door at classroom 24	2%
Interior glazing caulking for metal framed window at stairwell	2%
Interior glazing caulking for metal framed window at hallway	2%
Pipe insulation at first floor girl's room pipe chase	10%
Hard joint insulation at first floor girl's room pipe chase	50%
Mastic for chocolate 12" x 12" vinyl floor tile at basement storage room	5%
Mastic for chocolate 12" x 12" vinyl floor tile at basement storage room	5%
Black glazing caulking for mesh metal door at stairwell	2%
Black glazing caulking for mesh metal door at basement	2%
Exterior old window framing caulking under new caulking	3%
Pipe insulation debris in soil at crawl space	20%
9" x 9" Vinyl floor tile under rubber flooring at stairwell	2%

Lowell

Asbestos Containg Materials (ACM)

1927 Roof Core	3%
9" x 9" vinyl floor tile under stairwell rubber flooring	3%
Mastic for 9" x 9" vinyl floor tile under stairwell rubber	5%
Exterior residue caulking behind new window frame caulking	5%
Exterior caulking for boarded up basement window	2%
Exterior caulking for exterior door assembly	2%
Exterior horizontal caulking on lintel over exterior door	2%
Exterior old unit ventilator grille caulking	3%
Exterior grey caulking at red canopy at exterior exit door from west stair	2%
Exterior grey caulking at red canopy at exterior exit door from west stair	2%
No asbestos was found in the 1996 addition	

Design Progress

Hazardous Materials Investigations: Costs

Cost Estimates

- The cost includes removal and disposal of all accessible ACM, other hazardous material and an allowance for removal of inaccessible or hidden ACM that may be found during the demolition project.

Hosmer

Z-Shaped Building

Location	*Approx. Quantity*	*Cost*
Throughout	Itemized total	$56,100.00
Library	Floor - 4,000 sf Ceiling - 4,000 sf	$32,000.00 $32,000.00
Stage	(1) Curtain	$4,500.00
Kitchen	(1) Refrigerator	$4,500.00
Tunnel	Pipe Ins. - 1,500 lf	$30,000.00
Small Gym	Floor - 5,200 sf	$35,400.00
Exterior	Caulking/Damp.	$257,500.00

Dining/Gymnasium Wing

Location	*Approx. Quantity*	*Cost*
Throughout	Itemized total	$301,000.00
Various	Floor/Flex. Conn.	$4,500.00
Large Gym	Floor - 4,000 sf	$32,000.00
Basement	Exhaust Ins.	$4,500.00

Total = $794,000

Cunniff

Original Building

Location	*Approx. Quantity*	*Cost*
Throughout	(125) Interior Windows/ Doors	$25,000.00
	(100) Chalkboards	**$20,000.00**
	Insulation - Chases	**$5,000.00**
	Insulation - Hidden	**$15,000.00**
	Misc. - Unknown Tot.	**$25,000.00**
Crawl Spaces	Insulation	**$52,500.00**
	Soil - 11,000 SF	**$33,000.00**
Various	Floor - 500 SF	$3000.00

Exterior/ Gymnasium

Location	*Approx. Quantity*	*Cost*
Exterior	(250) Exterior Windows/ Doors	$62,500.00
	Roof Caulk - 50 LF	$1,000.00
	Sewer - Unknown tot.	$25,000.00
Gymnasium	Floor - 2,800 SF	$19,600.00

Total = $286,600

Lowell

Original Building

Location	*Approx. Quantity*	*Cost*
Throughout	Floor - 7,000 SF	$28,000.00
	Joint/ Pipe Insul. - 1,000 LF	$30,000.00
	Misc. - Unknown Tot.	$15,000.00
Exterior	(112) 1927 Windows	$28,000.00
	(1) UV Grille	$300.00
	(7) Doors	$2,200.00
	Caulking - 50 LF	$1,500.00
Gymnasium	Floor - Not Tested	$TBD
Site	Sewer - Unknown tot.	$25,000

Total = $130,000

Design Progress

Geotechnical Investigations: Results

Services Conducted:

- Performed subsurface investigations, with soil samples, to provide foundation design and construction recommendations
- Coordinated and conducted borings at each elementary school site
- Prepared Geotechnical Reports for each elementary school

Hosmer

Recommendations

- The existing fill and natural soil are very silty; Silty soils are very susceptible to disturbance when exposed to moisture - keep dry
- Remove the surficial organic soil, existing fill, and buried organic soil from within the proposed building footprint
- Slab-on-grade bearing on Structural Fill placed directly on top of the natural sand; thickness of the Structural Fill should be at least 12 inches
- Exterior footings and footings in unheated areas should be placed at a minimum depth of 4 feet to provide adequate frost protection
- Wall footings should be designed/constructed with continuous, longitudinal steel reinforcement for greater bending strength
- Total settlement will be about 1 inch and the differential settlement of the footings will be 3/4 inch or less over a distance of 25 feet
- Under-slab drainage system not required

Cunniff

Recommendations

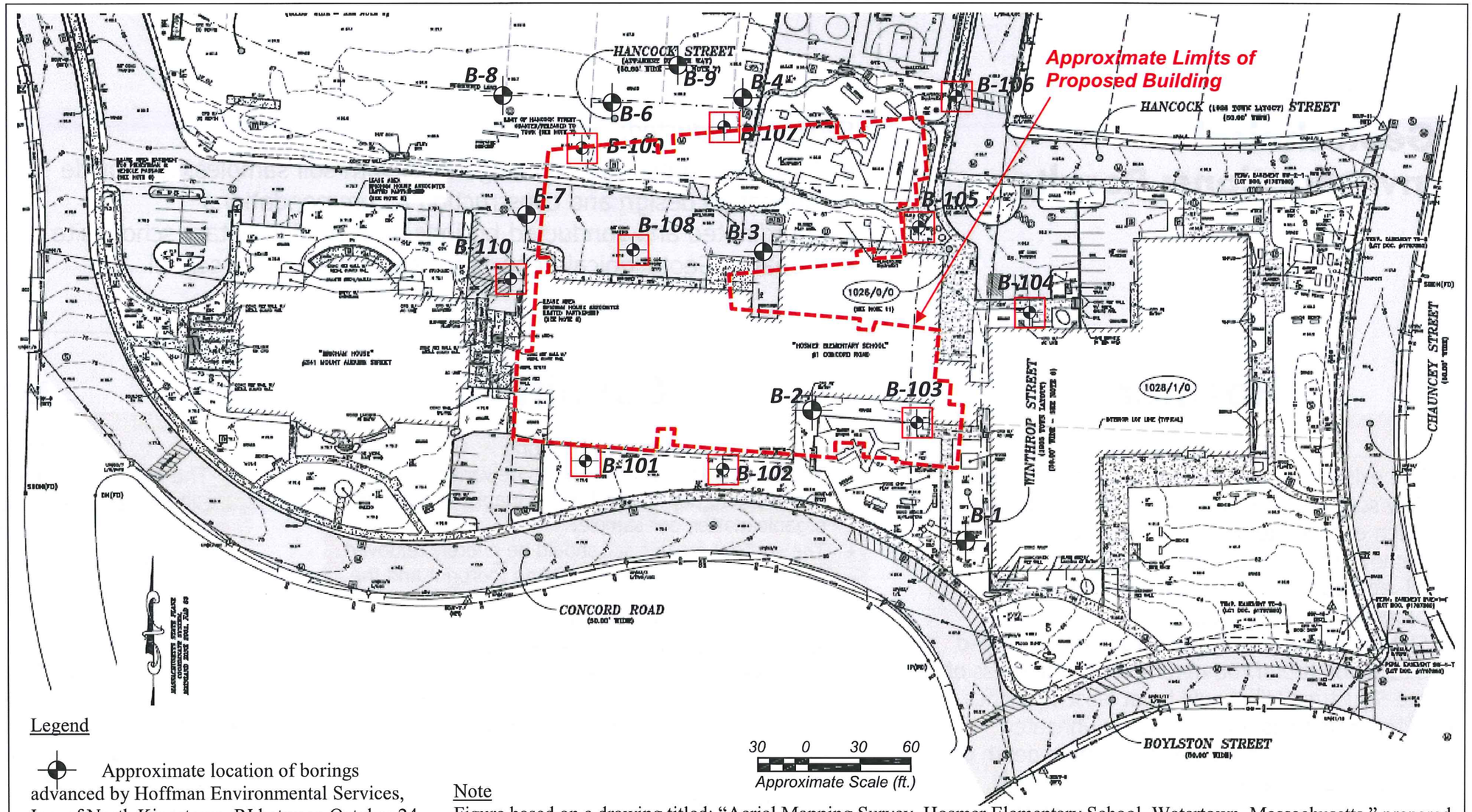
- The existing fill was observed to be variable in composition, density, and with variable amounts of organic matter, per sample.
- The surficial organic soil should be entirely removed from within the proposed building footprint and the proposed parking lots.
- Existing fill presents risks of unpredictable settlement that may result in poor performance of floor slabs and foundations.
- Existing fill should be entirely removed from within the proposed building footprint and replaced with Structural Fill
- Exterior footings and footings in unheated areas should be placed at a minimum depth of 4 feet below the final exterior grade to provide adequate frost protection.
- The proposed floor slab can be constructed as a slab-on-grade, placed directly on natural sand. The thickness of the Structural Fill should be at least 12".
- Under-slab drainage system is needed on the southern third of the proposed building footprint.

Lowell

Recommendations

- The existing fill and natural soil are very silty; Silty soils are very susceptible to disturbance when exposed to moisture - keep dry
- Remove the surficial organic soil, existing fill, and buried organic soil from within the proposed building footprint
- Slab-on-grade bearing on Structural Fill placed directly on top of the natural sand; thickness of the Structural Fill should be at least 12 inches
- Exterior footings and footings in unheated areas should be placed at a minimum depth of 4 feet to provide adequate frost protection
- Wall footings should be designed/constructed with continuous, longitudinal steel reinforcement for greater bending strength
- Total settlement will be about 1 inch and the differential settlement of the footings will be 3/4 inch or less over a distance of 25 feet
- Under-slab drainage system not required

Boring Location Plan
Hosmer Elem. School



Legend

Approximate location of borings advanced by Hoffman Environmental Services, Inc. of North Kingstown, RI between October 24 and 25, 2018 and observed by LGCI.

Approximate location of borings advanced by Hoffman Environmental Services, Inc. of North Kingstown, RI between July 1 and 15, 2019 and observed by LGCI.

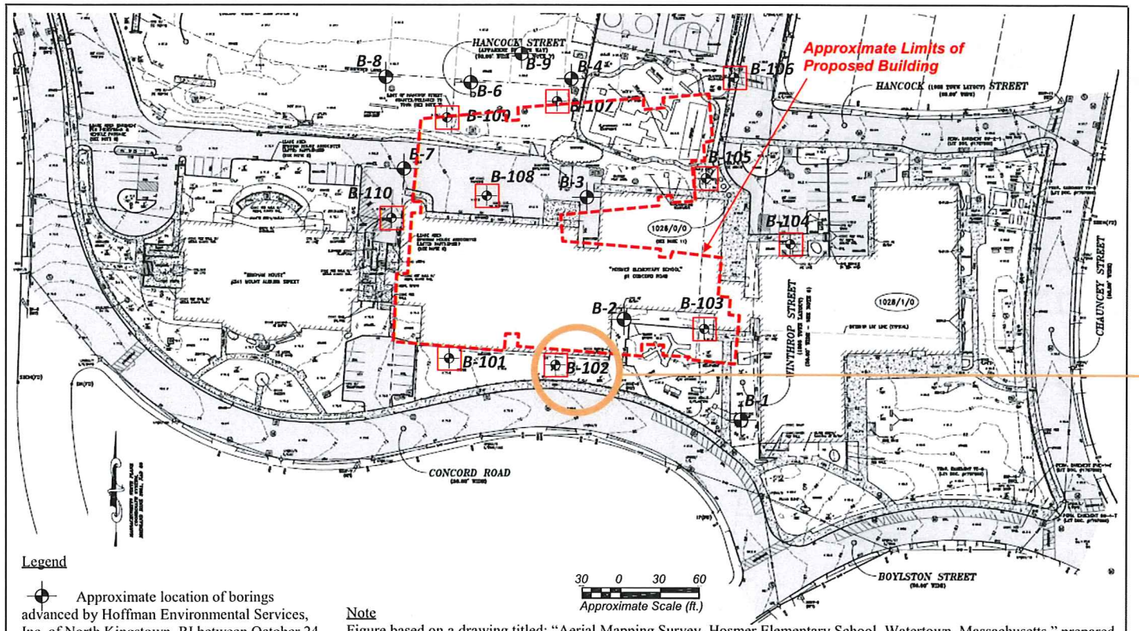
Note

Figure based on a drawing titled: "Aerial Mapping Survey, Hosmer Elementary School, Watertown, Massachusetts," prepared by Welch Associates Land Surveyors, Inc. and dated on July 12, 2018, and on a progress drawing titled "Hosmer Plan," dated May 21, 2019 and e-mailed to LGCI by Ai3 Architects LLC on June 3, 2019.

Client:	Project:	Figure 3 – Boring Location Plan	
Ai3 Architects LLC	Proposed Hosmer Elementary School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Watertown, MA	LGCI Project No.: 1849	Date: Aug. 2019

Design Progress

Geotechnical Investigations: Sample



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Approximate location of borings advanced by Hoffman Environmental Services, Inc. of North Kingstown, RI between July 1 and 15, 2019 and observed by LGCI.

Note

Figure based on a drawing titled: "Aerial Mapping Survey, Hosmer Elementary School, Watertown, Massachusetts," prepared by Welch Associates Land Surveyors, Inc. and dated on July 12, 2018, and on a progress drawing titled "Hosmer Plan," dated May 21, 2019 and e-mailed to LGCI by Ai3 Architects LLC on June 3, 2019.

Client:	Project:	Figure 3 – Boring Location Plan	
Ai3 Architects LLC	Proposed Hosmer Elementary School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Watertown, MA	LGCI Project No.: 1849	Date: Aug. 2019

LGCI Lahlaf Geotechnical Consulting, Inc.

BORING LOG

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CLIENT: Ai3 Architects LLC
PROJECT NAME: Proposed Hosmer Elementary School
LGCI PROJECT NUMBER: 1849
PROJECT LOCATION: Watertown, Massachusetts

DATE STARTED: 7/10/19 **DATE COMPLETED:** 7/10/19
BORING LOCATION: Southern side of proposed building
COORDINATES: NA
SURFACE El.: 70 ft. (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 12.5 ft. / El. 57.5 ft.
OTHER: -

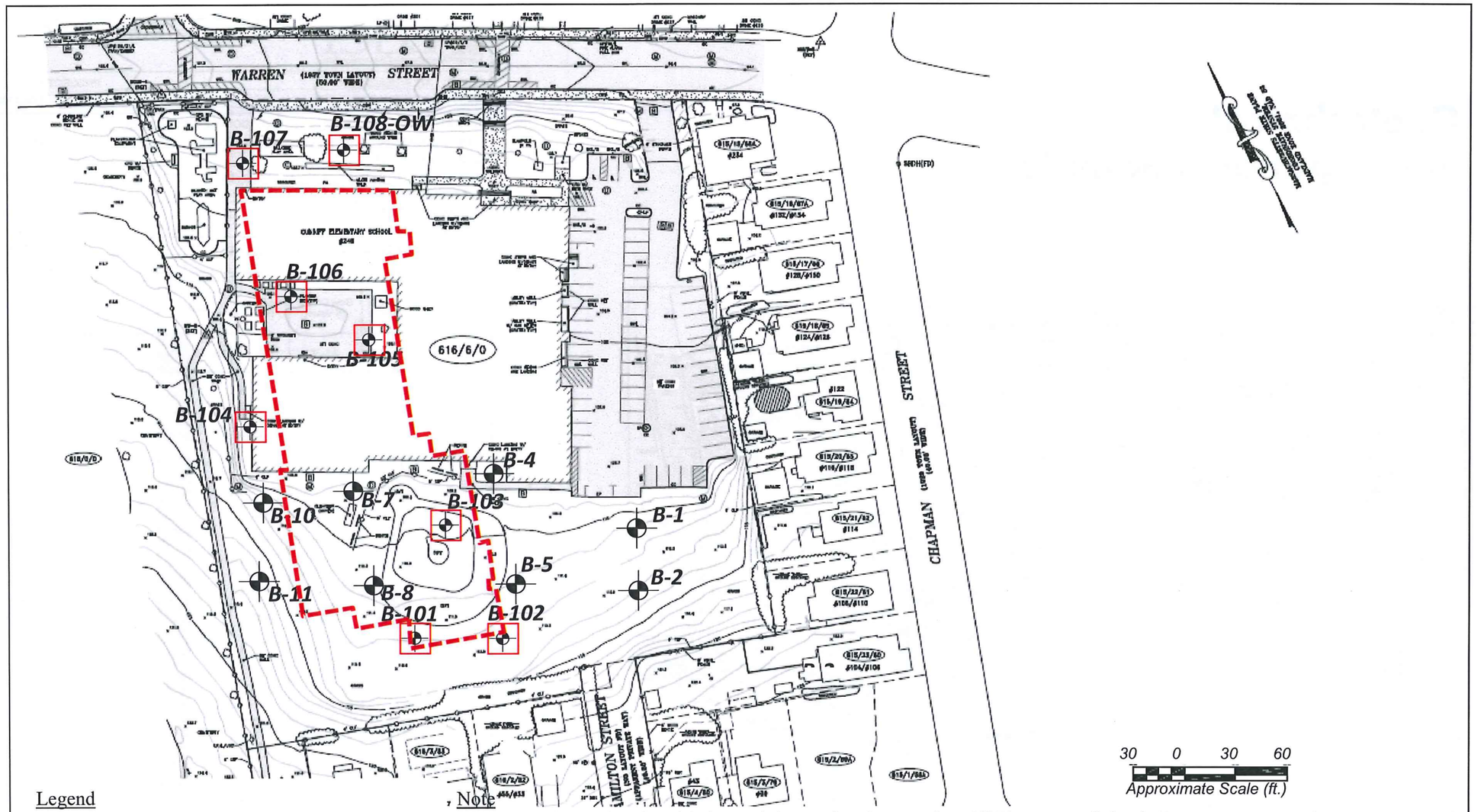
DRILLING SUBCONTRACTOR: Hoffman Environmental Services, Inc.
DRILLING FOREMAN: Kyle Hoffman
DRILLING METHOD: Hollow Stem Auger (2-1/4" I.D.)
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: HA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0							
			S1	2-5-27	18/6		Topsoil		S1 - Silty SAND (SM), fine, trace medium, ~25% fines, trace fine gravel, trace organic soil, roots, dark brown, moist (topsoil)
		1.5				1		1.5 / 68.5	REMARK 1: Auger chattering from ~1.5' to 3.2', advanced to 4' for next sample.
		4							
5	65.0		S2	10-9-9-11 (18)	24/24				S2 - Silty SAND (SM), fine, trace medium, 25-30% fines, 10-15% fine to coarse subrounded to angular gravel, piece of wood, brown, moist
		6	S3	8-10-11-10 (21)	24/24				S3 - Silty SAND (SM), fine, 25-30% fines, 20-25% fine to coarse subrounded gravel, brown, moist
		8							
10	60.0	10	S4	7-13-21-24 (34)	24/20		Glacial Till		S4 - Silty SAND with Gravel (SM), fine, 25-30% fines, 25-30% fine to coarse subrounded to angular gravel, brown, moist
		12							
15	55.0	15	S5	24-14-52-65 (66)	24/12				S5 - Silty GRAVEL with Sand (GM), fine to coarse, subangular to angular, 20-25% fines, 15-20% fine to medium sand, gray, wet
		17							
20	50.0	20	S6	19-30-40-56 (70)	24/24				S6 - Sandy SILT with Gravel (ML), slightly plastic, ~25% fine sand, 15-20% fine subrounded gravel, gray, wet
		22						22.0	Bottom of borehole at 22.0 feet. Backfilled borehole with drill cuttings.
25	45.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest 1/2 foot using drawing titled: "Aerial Mapping Survey, Hosmer Elementary School, Watertown, Massachusetts," prepared by Welch Associates Land Surveyors, Inc. and dated on July 12, 2018.

Boring Location Plan
Cunniff Elem. School



Legend

Approximate location of borings advanced by Hoffman Environmental Services, Inc. of North Kingstown, RI on October 22 and 23, 2018 and observed by LGCI.

Approximate location of borings advanced by Hoffman Environmental Services, Inc. of North Kingstown, RI between July 7 and 24, 2019 and observed by LGCI

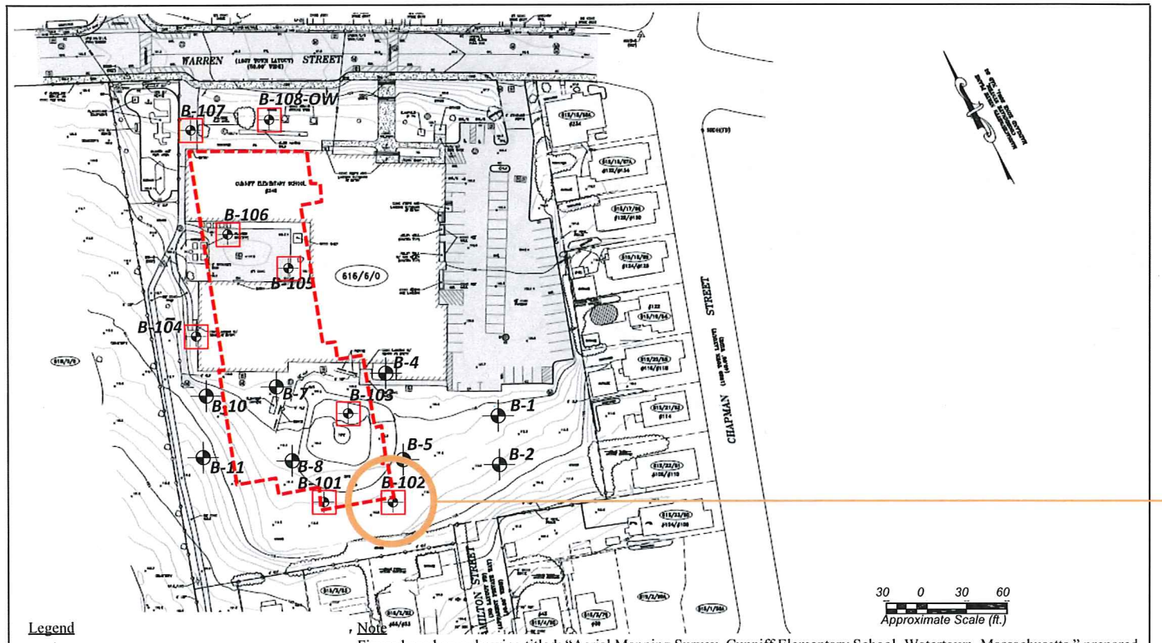
Note

Figure based on a drawing titled: "Aerial Mapping Survey, Cunniff Elementary School, Watertown, Massachusetts," prepared by Welch Associates Land Surveyors, Inc. and dated on April 2, 2018, and dated on April 2, 2018, and on a progress drawing titled "Cunniff Plan," e-mailed to LGCI by Ai3 Architects LLC on June 3, 2019.

Client: Ai3 Architects LLC	Project: Proposed Cunniff Elementary School	Figure 3 –Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Watertown, MA	LGCI Project No.: 1849	Date: Aug. 2019

Design Progress

Geotechnical Investigations: Sample



Legend

Approximate location of borings advanced by Hoffman Environmental Services, Inc. of North Kingstown, RI on October 22 and 23, 2018 and observed by LGCI.

Approximate location of borings advanced by Hoffman Environmental Services, Inc. of North Kingstown, RI between July 7 and 24, 2019 and observed by LGCI

Note

Figure based on a drawing titled: "Aerial Mapping Survey, Cunniff Elementary School, Watertown, Massachusetts," prepared by Welch Associates Land Surveyors, Inc. and dated on April 2, 2018, and dated on April 2, 2018, and on a progress drawing titled "Cunniff Plan," e-mailed to LGCI by Ai3 Architects LLC on June 3, 2019.

Client:	Project:	Figure 3 –Boring Location Plan	
Ai3 Architects LLC	Proposed Cunniff Elementary School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Watertown, MA	LGCI Project No.: 1849	Date: Aug. 2019

LGCI Lahlaf Geotechnical Consulting, Inc.

BORING LOG

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CLIENT: Ai3 Architects LLC
PROJECT NAME: Prop. Cunniff Elementary School
LGCI PROJECT NUMBER: 1849
PROJECT LOCATION: Watertown, Massachusetts

DATE STARTED: 7/11/19 **DATE COMPLETED:** 7/11/19
BORING LOCATION: Southeast corner of proposed building
COORDINATES: NA
SURFACE El.: 112.5 ft. (see note 1) **TOTAL DEPTH:** 15 ft.
WEATHER: 80's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: 6.0 ft. / El. 106.5 ft. Based on soil samples.
AT END OF DRILLING: -
OTHER: -

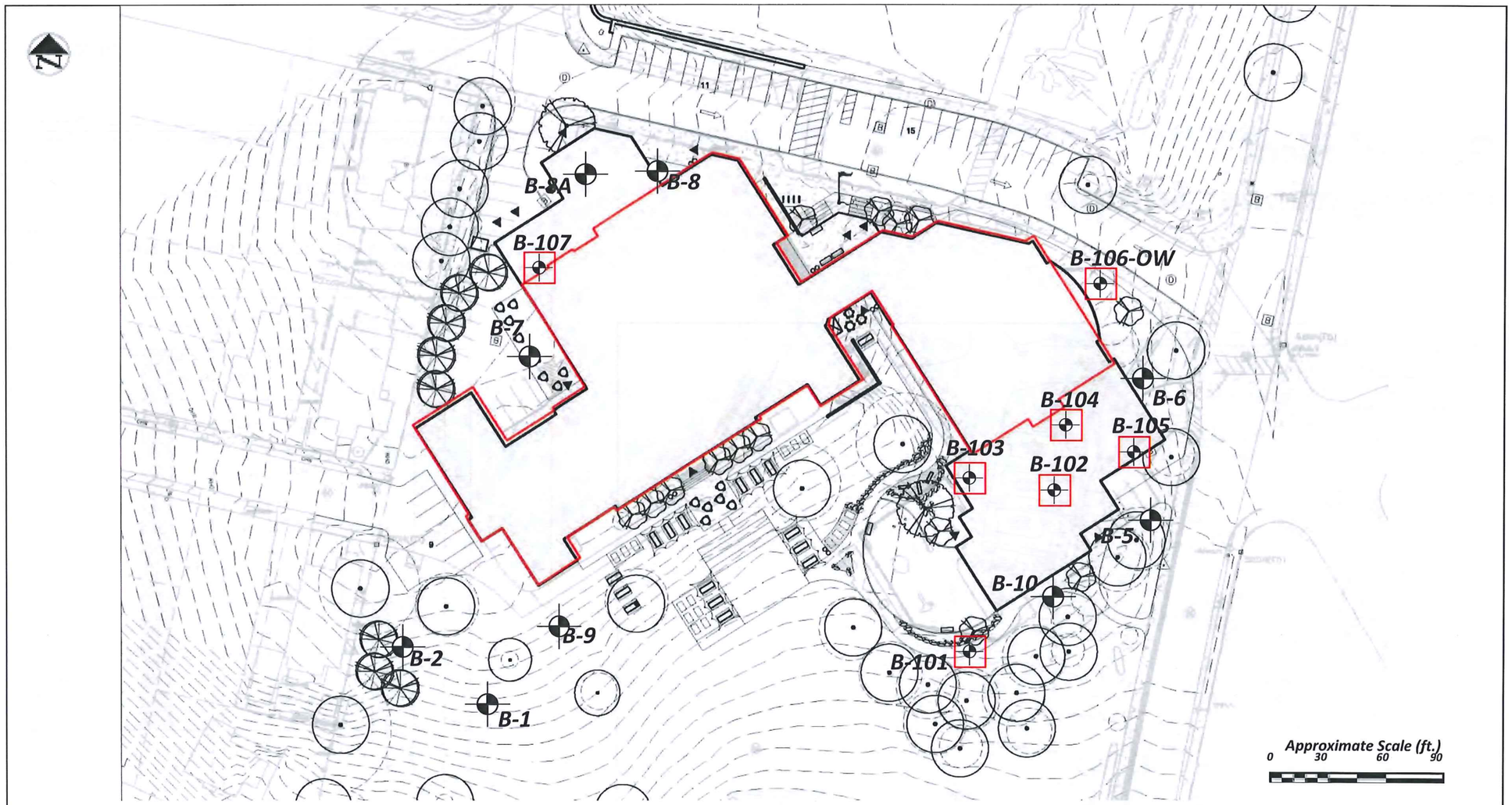
DRILLING SUBCONTRACTOR: Hoffman Environmental Services, Inc.
DRILLING FOREMAN: Kyle Hoffman
DRILLING METHOD: Hollow Stem Auger (2-1/4" I.D.)
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: HA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5 112.3	S1 - Top 3": Silty SAND (SM), fine, trace medium, ~25% fines, trace fine gravel, trace organic fines, roots, dark brown, moist (topsoil)
			S1	3-3-3-3 (6)	24/8		Subsoil		Bot. 5": Silty SAND (SM), fine to medium, trace coarse, 20-25% organic fines, roots, brown, moist
	110.0	2						2.0 110.5	S2 - Silty SAND with Gravel (SM), fine to coarse, 35-40% fines, 20% fine subrounded gravel, brown, moist
		4	S2	5-13-13-27 (26)	24/5				
5			S3	12-13-22-14 (35)	24/15				S3 - Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, ~15% coarse subrounded to angular gravel, brown, moist
		6							▽ S4 - Silty SAND (SM), fine, trace medium, 20-25% fines, 10-15% fine to coarse subrounded gravel, brown, wet
	105.0	8	S4	24-30-20-16 (50)	24/2				
10							Glacial Till		
		10	S5	7-23-27-45 (50)	24/24				S5 - Silty SAND (SM), fine, trace medium, 20-25% fines, ~5% fine subrounded gravel, brown, wet
	100.0	12							
		13	S6	23-19-27-49 (46)	24/24	1			REMARK 1: Auger chattering at ~13'. S6 - Similar to S5
15		15						15.0	
	95.0								Bottom of borehole at 15.0 feet. Backfilled borehole with drill cuttings.
20									
	90.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest 1/2 foot based on a drawing titled: "Aerial Mapping Survey, Cunniff Elementary School, Watertown, Massachusetts," prepared by Welch Associates Land Surveyors, Inc. and dated on April 2, 2018.

Boring Location Plan
Lowell Elem. School



Legend

Approximate location of borings advanced by Hoffman Environmental Services, Inc. of North Kingstown, RI between October 26 and 29, 2018 and observed by LGCI.

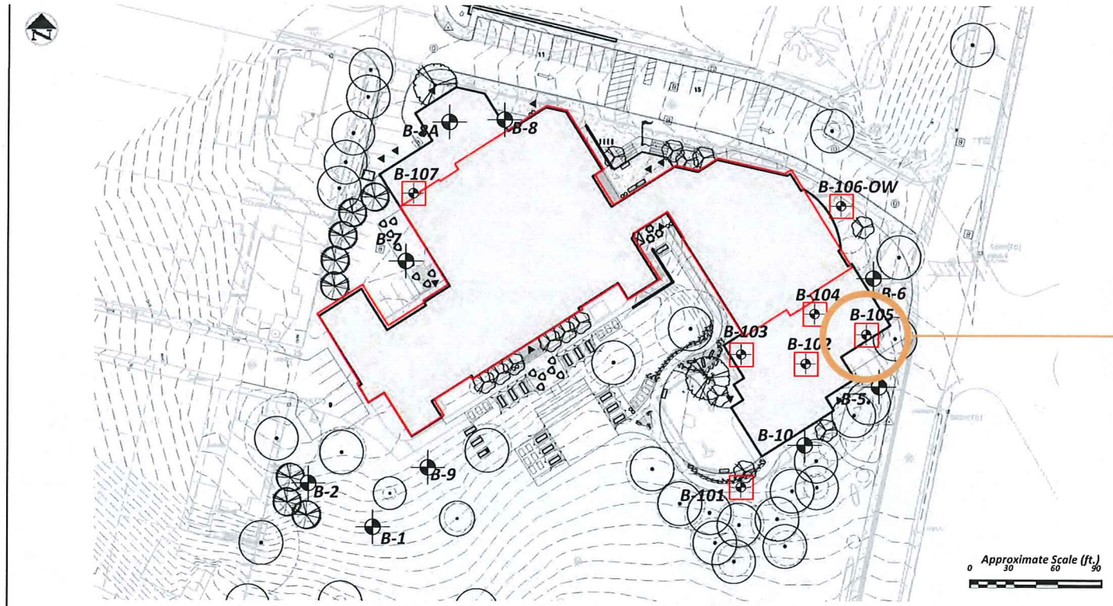
Approximate location of borings advanced by Hoffman Environmental Services, Inc. of North Kingstown, RI between July 8 and 15, 2019 and observed by LGCI.

Note
Figure based on and on a progress drawing titled "Lowell Plan," dated May 21, 2019 and e-mailed to LGCI by Ai3 Architects LLC on June 3, 2019.

Client:	Project:	Figure 3 – Boring Location Plan	
Ai3 Architects LLC	Proposed Lowell Elementary School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Watertown, MA	LGCI Project No.: 1849	Date: Aug. 2019

Design Progress

Geotechnical Investigations: Sample



Legend

Approximate location of borings advanced by Hoffman Environmental Services, Inc. of North Kingstown, RI between October 26 and 29, 2018 and observed by LGCI.

Approximate location of borings advanced by Hoffman Environmental Services, Inc. of North Kingstown, RI between July 8 and 15, 2019 and observed by LGCI.

Note

Figure based on and on a progress drawing titled "Lowell Plan," dated May 21, 2019 and e-mailed to LGCI by Ai3 Architects LLC on June 3, 2019.

Client:	Project:	Figure 3 – Boring Location Plan	
Ai3 Architects LLC	Proposed Lowell Elementary School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Watertown, MA	LGCI Project No.: 1849	Date: Aug. 2019

LGCI Lahlaf Geotechnical Consulting, Inc.
100 Chelamsford Road, Suite 2
Billerica, MA 01862
Telephone: (978) 330-5912
Fax: (978) 330-5056

BORING LOG

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CLIENT: Ai3 Architects LLC
PROJECT NAME: Prop. Lowell Elementary School
LGCI PROJECT NUMBER: 1849
PROJECT LOCATION: Watertown, Massachusetts

DATE STARTED: 7/12/19 **DATE COMPLETED:** 7/12/19
BORING LOCATION: Southeast corner of proposed building footprint
COORDINATES: NA
SURFACE El.: 85.5 ft. (see note 1) **TOTAL DEPTH:** 10.3 ft.
WEATHER:
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: N/E
OTHER: -

DRILLING SUBCONTRACTOR: Hoffman Environmental Services, Inc.
DRILLING FOREMAN: Kyle Hoffman
DRILLING METHOD: Hollow Stem Auger (2-1/4" I.D.)
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JV / HA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	85.0	0.5					Asphalt	0.5 / 85.0	
			S1	7-6-5	18/11		Fill		S1 - Top 7": Poorly Graded GRAVEL with Silt (GP-GM), fine, trace coarse, subrounded to angular, 10-15% fines, 35-40% fine to coarse sand, asphalt, brown, moist Bot. 4": Silty SAND with Gravel (SM-SW), fine to coarse, 15-20% fines, 15-20% subrounded to angular gravel, brown, moist
		2	S2	7-4-5-4 (9)	24/5				S2 - Silty GRAVEL with Sand (GM), medium to coarse, 20-25% fines, 15-20% subrounded to angular gravel, brown, moist
5		4	S3	3-2-2-12 (4)	24/3				S3 - Silty SAND with Gravel (SM), fine to medium, trace coarse, 20-25% fines, 15-20% subrounded to angular gravel, brown, moist
	80.0	6	S4	39-74-100/5"	17/17			6.0 / 79.5	
		7.4					Weathered Rock		S4 - Silty GRAVEL with Sand (GM), fine to coarse, 25-30% fines, 20-25% fine to coarse sand, light gray, moist (possible weathered rock)
10	75.0	10 / 10.3	S5	100/3"	3/3			10.3	S5 - Silty SAND with Gravel (SM), fine to medium, trace coarse, 25-30% subrounded to angular gravel, light gray, moist (possible weathered rock) Bottom of borehole at 10.3 feet. Backfilled borehole with drill cuttings.
15	70.0								
20	65.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest 1/2 foot based on drawing C1 titled: "Grading Plan, Lowell Elementary School, 175 Orchard Street, Watertown, Massachusetts," prepared by The Vertex Companies, Inc. dated on July 5, 2019 and provided to LGCI by Ai3 Architects LLC via email on July 8, 2019.

Questions?

Thank you

Ai3
architects