



SITE PLAN AND STORM WATER PERMIT PRESENTATION

Raymond E. Shaw Elementary School Project

Millbury, MA | Millbury Public Schools
June 22, 2020



DESIGN TEAM

Turowski2 Architecture, Inc.

- Peter Turowski, AIA

Green International, Inc.

- Corinne Tobias, PE, PTOE

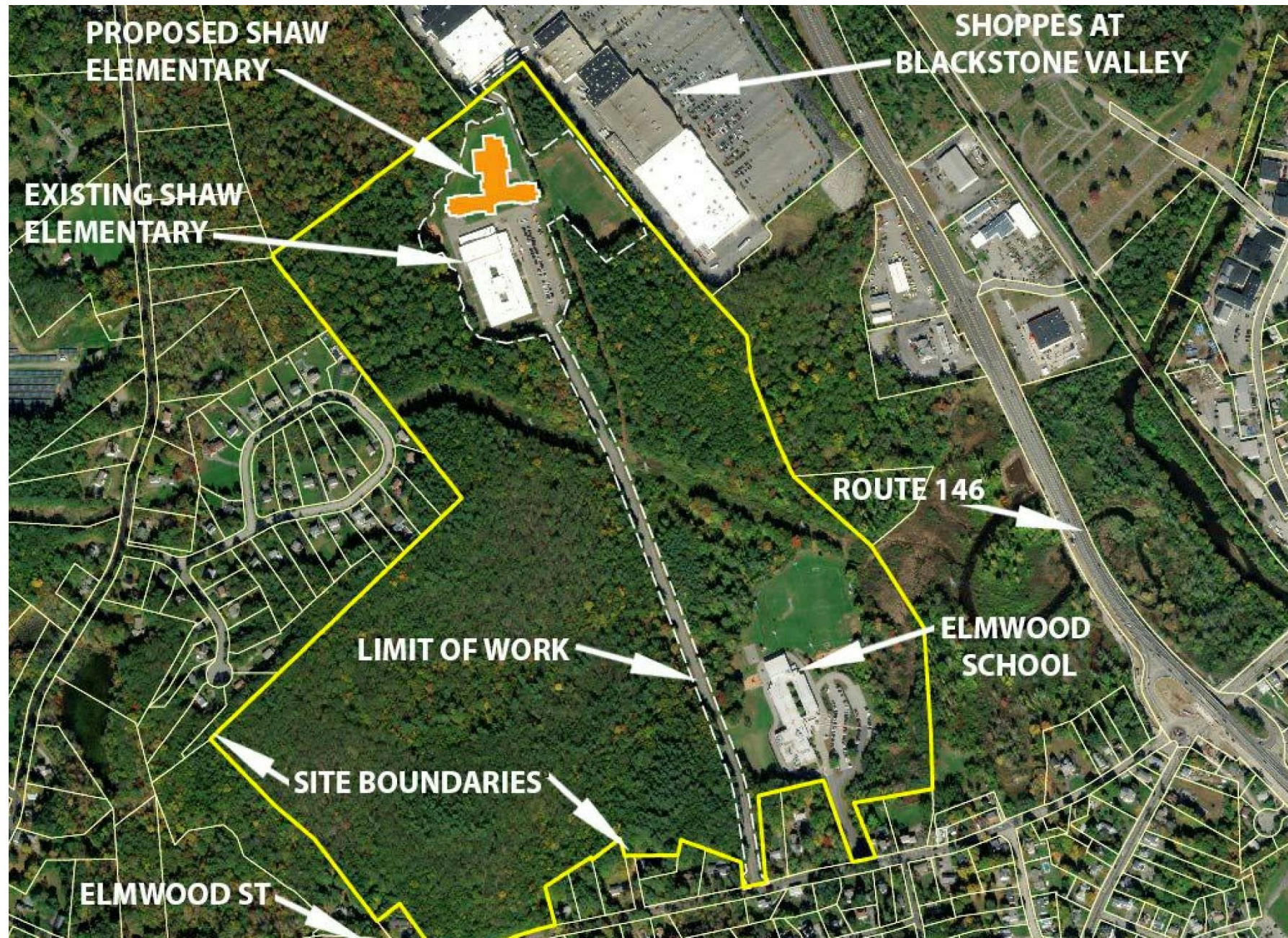
Dodson Flinker Landscape Architects, LLC

- Peter Flinker, RLA

Nitsch Engineering, Inc.

- Sandra Brock, PE

SITE CONTEXT



- Existing Conditions
- 2 School Driveways
- Rear Entrance to School through Shopping Center – Construction Only
- No Crashes at Study Area Intersections since 2015

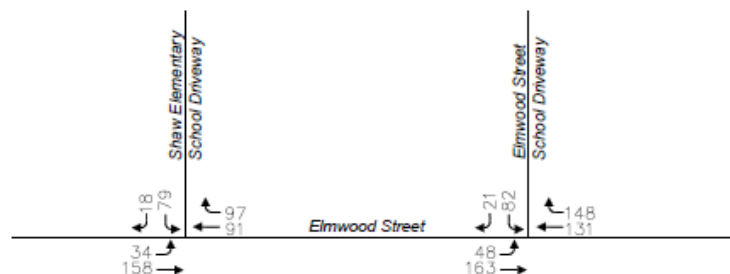


TRAFFIC | EXISTING CONDITIONS

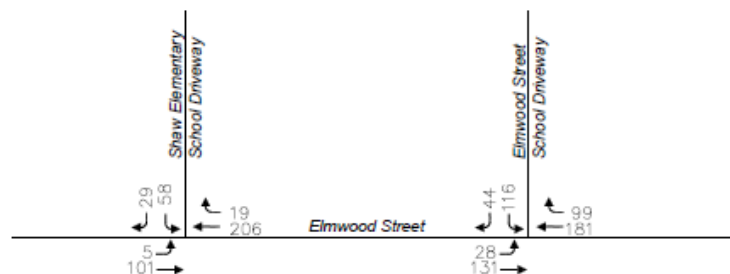
- Existing AM (7:15 – 8:15):
 - Shaw Drive LOS B
 - Elmwood Drive LOS C
 - Elmwood St LOS A

- Existing PM (2:30 – 3:30):
 - Shaw Drive LOS B
 - Elmwood Drive LOS C
 - Elmwood St LOS A

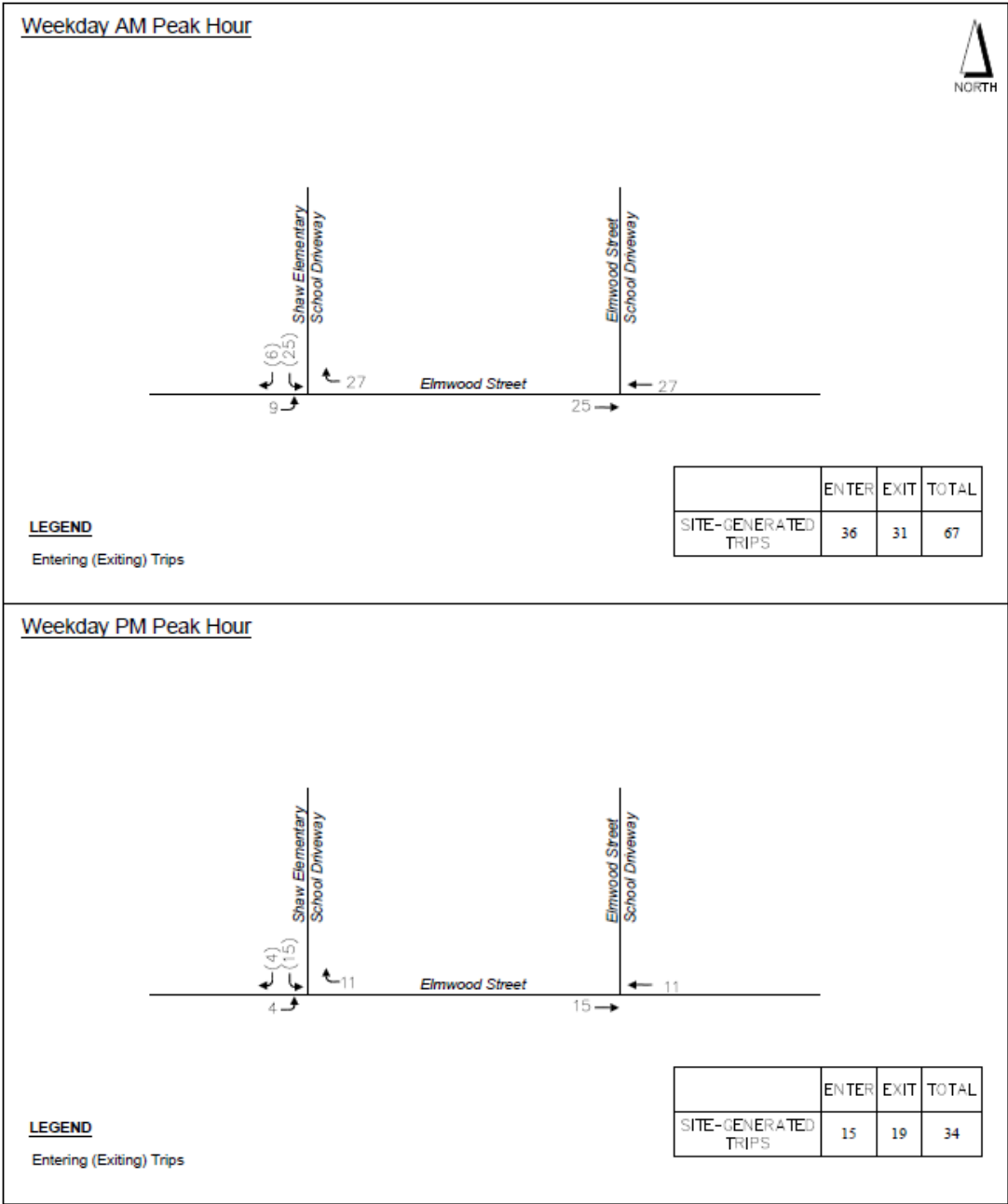
Weekday AM Peak Hour



Weekday PM Peak Hour

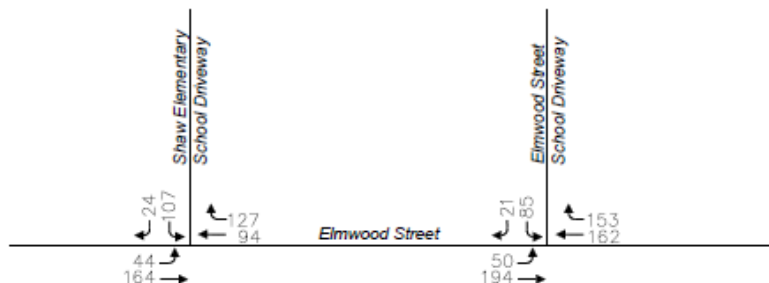


Land Use	Weekday						
	AM Peak Hour			PM Peak Hour			Daily
	Enter	Exit	Total	Enter	Exit	Total	
LUC 520 - Elementary School (100 Students)	36	31	67	15	19	34	190



- Future AM:
 - Shaw Drive LOS C
 - Elmwood Drive LOS C
 - Elmwood St LOS A
- Future PM:
 - Shaw Drive LOS C
 - Elmwood Drive LOS D
 - Elmwood St LOS A

Weekday AM Peak Hour



Weekday PM Peak Hour



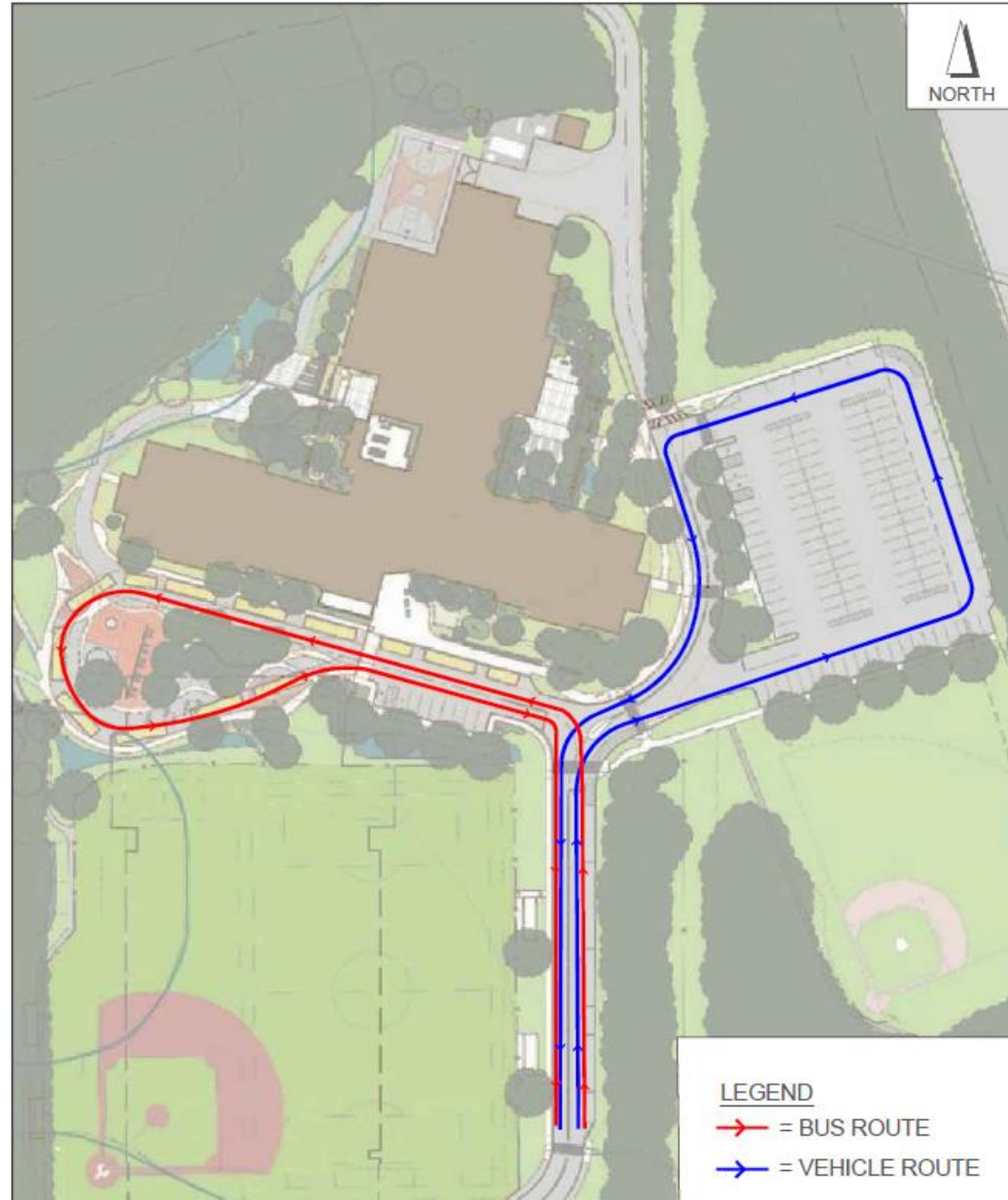
TRAFFIC | EXISTING CIRCULATION

- Buses and vehicles overlap
- Confusing for vehicles
- Pick-up takes place in lot
- Passengers must cross vehicles



TRAFFIC | FUTURE CIRCULATION

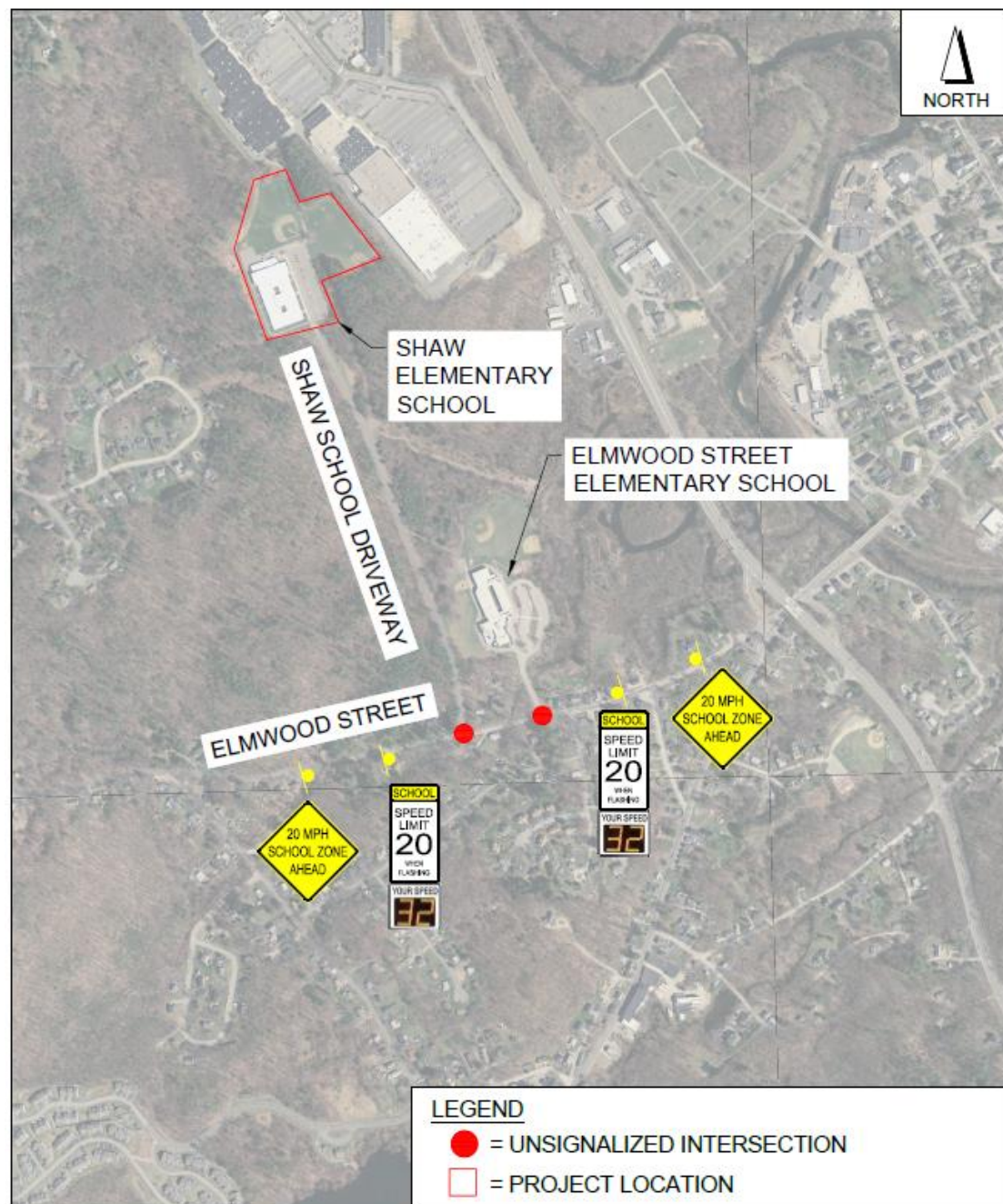
- Buses and vehicles separate
- Vehicle route clear
- Curbside pick-up/drop-off
- Additional surface space in bus loop during school hours



Location	Sight Distance				
	Available	Posted Speed Limit: 20 MPH		85th %-ile Speed: 40 MPH	
	Measured (ft)	Minimum Required (ft)	Desirable (ft)	Minimum Required (ft)	Desirable (ft)
Stopping Sight Distance					
Shaw School Driveway, Approaching from west	754	115	-	305	-
Shaw School Driveway, Approaching from east	310	115	-	305	-
Elmwood Street School, Approaching from west	484	155	-	305	-
Elmwood Street School, Approaching from east	680	155	-	305	-
Intersection Sight Distance					
Shaw School Driveway, Approaching from west	125	115	255	305	445
Shaw School Driveway, Approaching from east	218	115	255	305	445
Elmwood Street School, Approaching from west	432	115	255	305	445
Elmwood Street School, Approaching from east	680	115	255	305	445

TRAFFIC | PROPOSED IMPROVEMENTS

- Replace Existing School Zone signs.
- Move signs so that advance warning provides sufficient space to reduce speed.
 - 500' spacing
- Enforce School Zone Speed Limits.
- Clear vegetation within ROW.



SITE ALTERNATES



existing tree to remain



proposed tree



100' wetland buffer



flagged
wetland boundary



fire lane / emergency equipment access

Site Bid Alternates:

1. 99 KW PV Array
2. Sports Lighting
3. Comfort Station
4. Maintenance Shed



MILL HISTORY

Mills are an important part of the town’s culture, both past and present. Like many other New England towns, Millbury was settled by workers of a thriving textile industry powered by the Blackstone River, and the town’s mills are the source of its name.

The S&D Spinning Mill is still in operation, and is one of the longest-operating mills in the US. Yarn from the S&D is currently used for the red stitching in Rawlings baseballs.



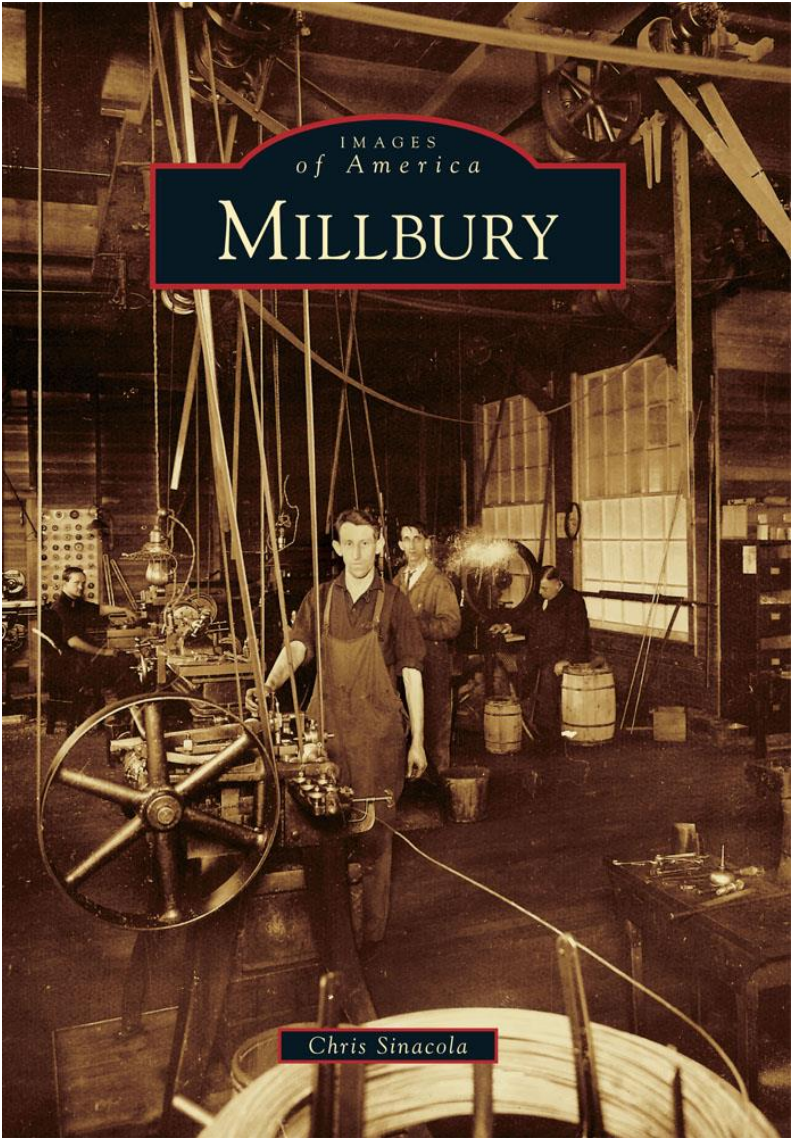
The S&D Mill Building on the Blackstone River, built in the 1790s



A textile mill employee in Fall River, MA, 1916



Jessica Booth works the “doubler” machine in 2017



AGRICULTURAL HISTORY



Witter Family
Farm
c. 1938



NATIVE PLANT COMMUNITIES



Wetland

Oak-Hickory Woodland

Oak - Hemlock - White Pine Forest

OVERVIEW



DROP-OFF, PARKING, SERVICE AND EMERGENCY ACCESS



SITE ENTRY



BUILDING ENTRY



BUILDING ENTRY



PARENT DROP-OFF & PICKUP





BALLFIELD CHANGES



BALLFIELD CHANGES

PLAYGROUND



BUS LOOP



PLAYGROUND



WETLAND OUTDOOR CLASSROOM



ROOFTOP CLASSROOM



O.T./P.T.



GYM AREA



EASTERN OUTDOOR CLASSROOM



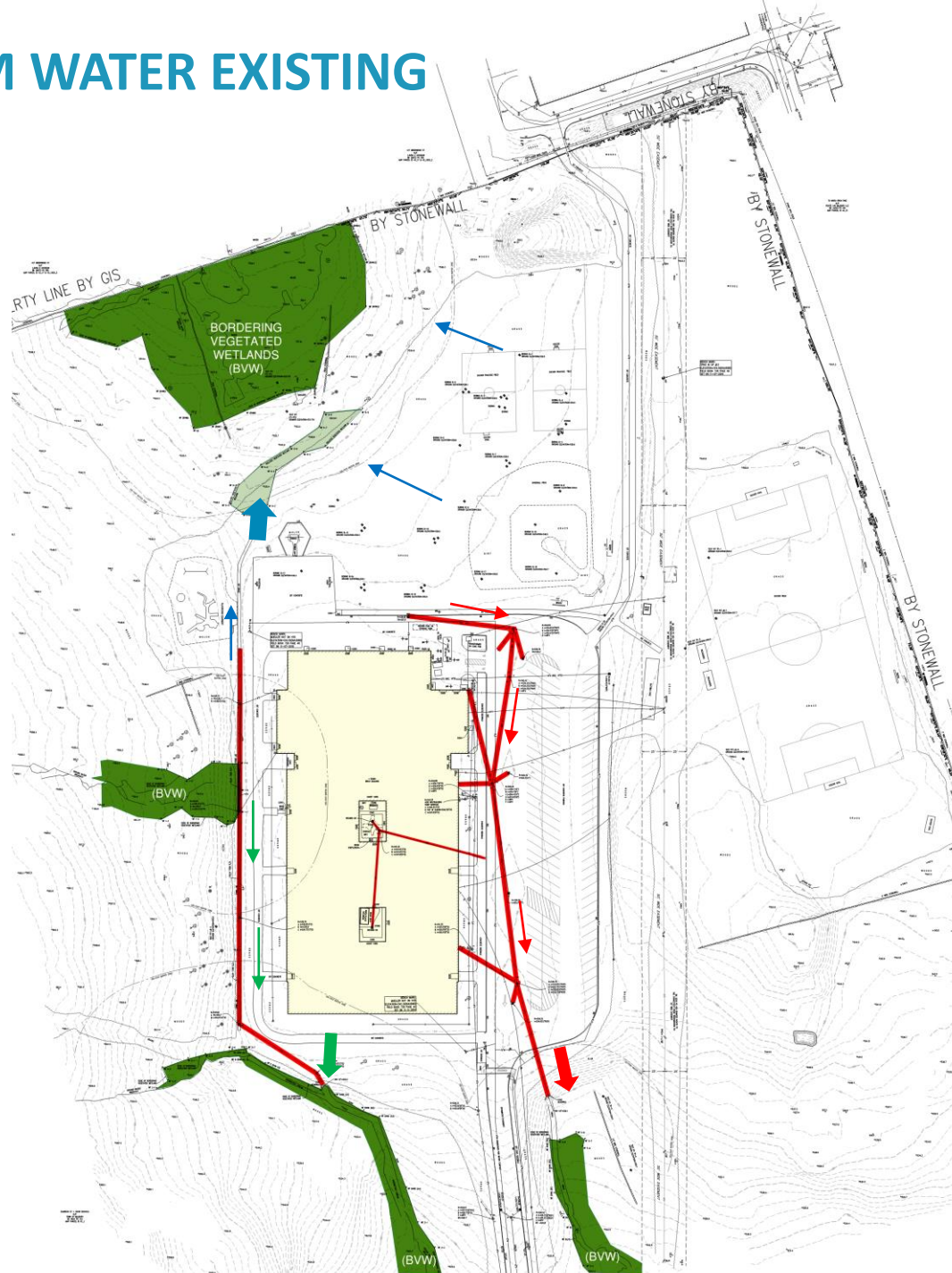
CAFETERIA VIEW



WOODLAND CLASSROOM

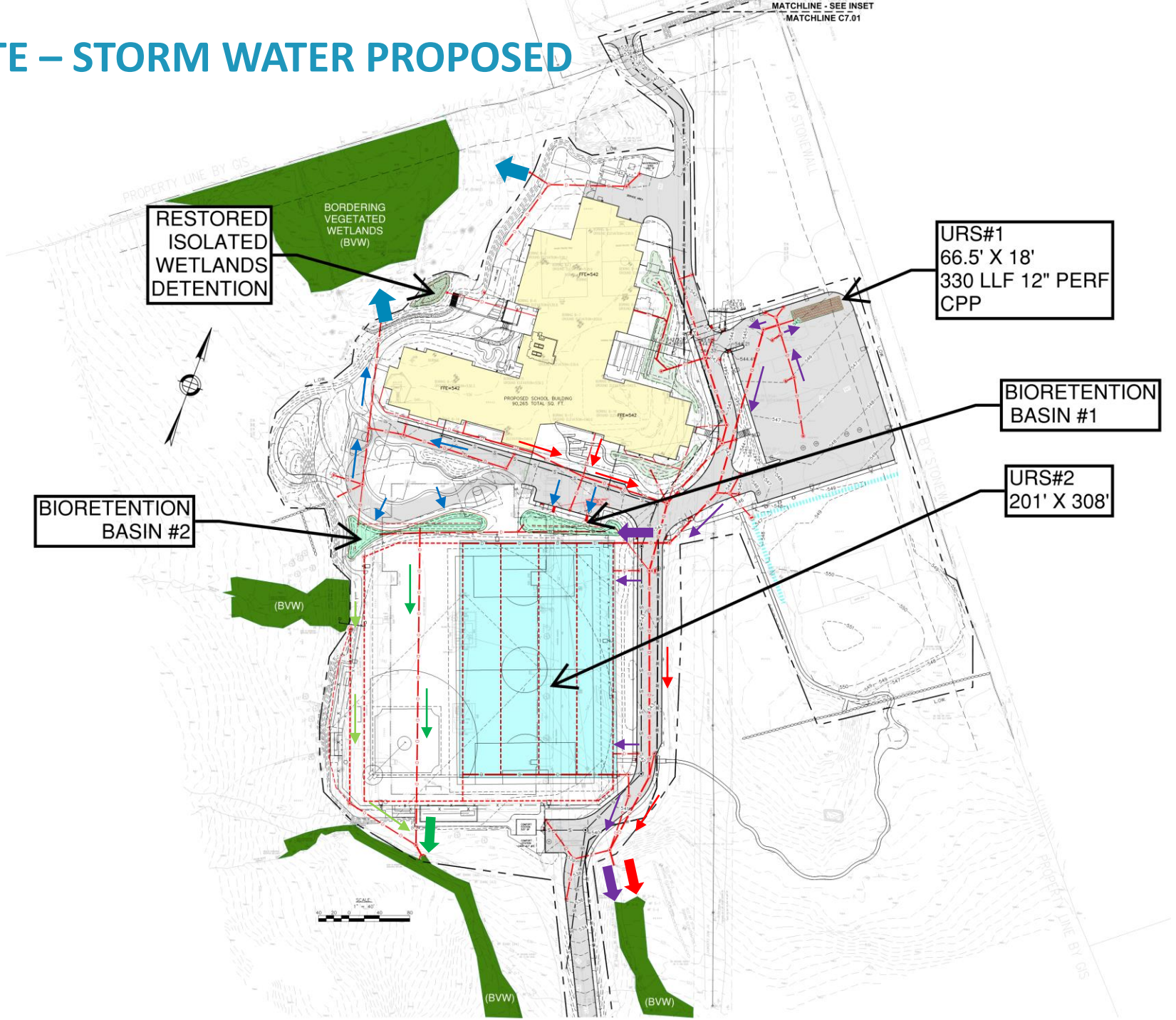


SITE – STORM WATER EXISTING



SITE – STORM WATER PROPOSED

MATCHLINE - SEE INSET
MATCHLINE C7.01



SITE – INFORMATION

417 GREENWOOD ST
N/F
LAURA E GOSSELIN
BK 28072 PG 309
MAP PARCEL ID 43_17 & 43_1920_2

RESTORED
ISOLATED
WETLANDS
DETENTION

BORDERING
VEGETATED
WETLANDS
(BVW)

725'

NO SNOW STORAGE
IN BIORETENTION
BASINS

(BVW)

ASSESSOR'S INFORMATION
151.2 ACRES
MAP 61 PARCEL A
BOOK 4654 PG 143

BORDERING
VEGETATED
WETLANDS



3,095'

147'

251'

267'

MAIN PARKING LOT
118 SPACES

VISITOR
PARKING
9 SPACES

FIELD
PARKING
15 SPACES

PARKING TABLE

DESCRIPTION OF LOT	TOTAL SPACES	9'X18' SPACES	HC SPACES	CHARGING SPACES	ELEC VEHICLES
MAIN PARKING LOT 9'X18' PERPENDICULAR	105	101	4	7	7
VISITOR PARKING LOT	9	7	2	0	0
FIELD PARKING LOT	4	4	1	0	0
MAIN DRIVE PARALLEL SPACES	11	11	0	0	0
MAIN PARKING LOT PARALLEL SPACES	13	13	0	0	0
TOTALS	142	135	7	7	7

70 WORC-PROV PIKE
N/F
ROUTE 148 MILLBURY LLC
BK 24293 PG 105
MAP PARCEL ID 44_31

ZONING TABLE – SETBACKS

BUILDING SETBACKS FOR R-2 ZONING	FRONT	SIDE (WEST)	SIDE (EAST)	REAR
ZONING REQUIREMENTS	25'	10'	10'	10'
PROPOSED SCHOOL BUILDING	3,000+*	725±*	251±*	147±*
	ZONING* REQUIREMENTS		EXISTING SITE	
MINIMUM AREA	40,000		152 ACRES	
FRONTAGE	100'		OVER 500'	
BUILDING HEIGHT	30'		40'*	

* PARCEL IS LOCATED IN R-2 ZONE
** SEE SITE PLAN APPLICATION FOR
ADDITION INFORMATION



SNOW STORAGE

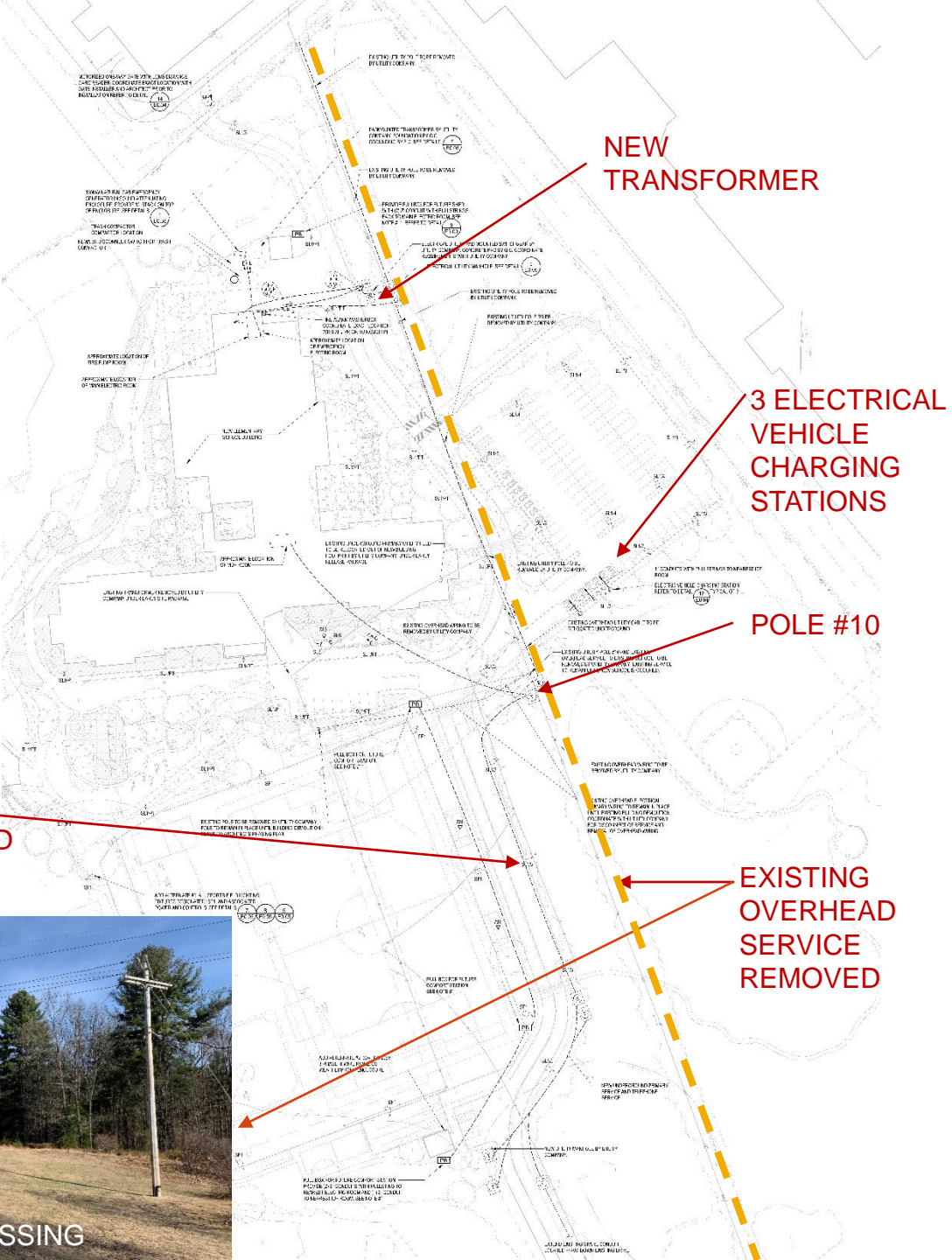
ELECTRICAL SERVICE

Construction Project Cost:

- Remove existing pole line and bury electrical service from pole #10 to property line at Mall.

Ngrid Cost:

- Remove existing pole line and bury electrical service west side of driveway from driveway crossing to existing pole #10.

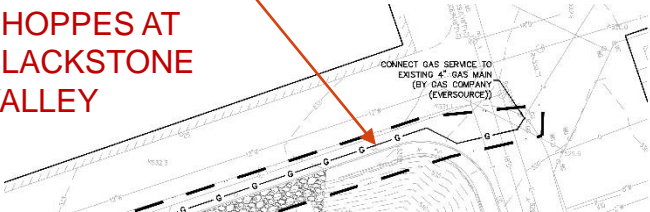


DRIVEWAY CROSSING

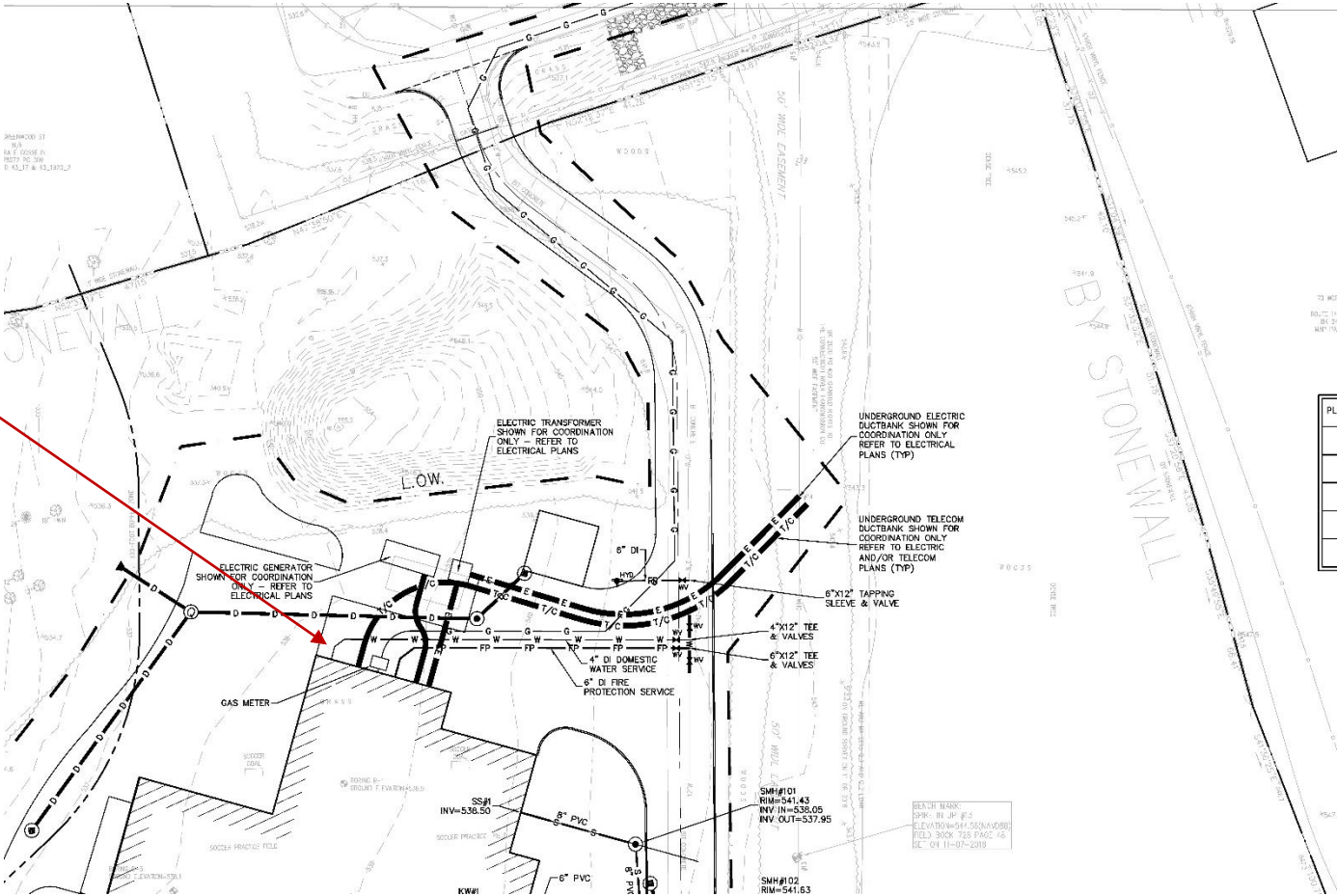
NATURAL GAS SERVICE

AGREEMENT / EASEMENT WITH EVERSOURCE
AND ABUTTER BEING FORMALIZED

NEW GAS
SERVICE FROM
SHOPPES AT
BLACKSTONE
VALLEY



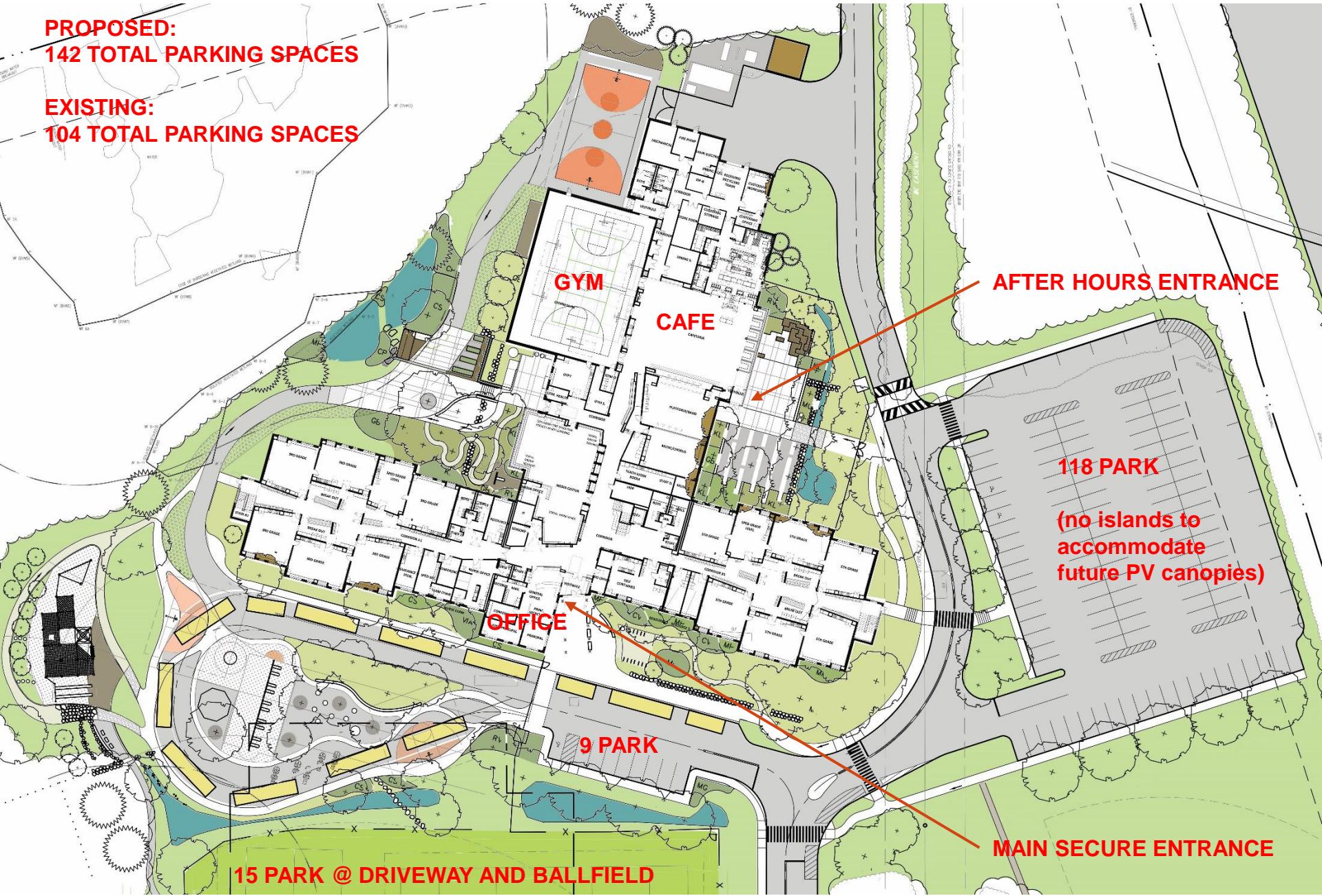
NEW GAS
SERVICE METER



OVERVIEW

PROPOSED:
142 TOTAL PARKING SPACES

EXISTING:
104 TOTAL PARKING SPACES



AFTER HOURS ENTRANCE

118 PARK

**(no islands to
accommodate
future PV canopies)**

9 PARK

MAIN SECURE ENTRANCE

15 PARK @ DRIVEWAY AND BALLFIELD

EXTERIOR PRECEDENTS



EXTERIOR BIRDS EYE VIEW FROM SOUTH



ROOF PREDOMINATELY $\leq 30'$
THREE SLOPED ROOF PV SECTIONS
AND STAIR ACCESS TOWERS $\leq 40'$

EXTERIOR MATERIALS

metal panel



wood infill



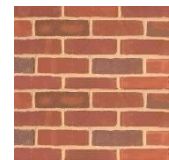
metal clad wood windows



large brick pattern



solid red brick





LEED v4 for BD+C: Schools

Project Checklist

Project Name: Raymond E. Shaw School - Preferred Schematic Report
6/5/2019

Y ? N

1 1 1

Credit Integrative Process

1

2 7 21 Location and Transportation 15

15	Credit	LEED for Neighborhood Development Location	15
1	Credit	Sensitive Land Protection	1
2	Credit	High Priority Site	2
2 3	Credit	Surrounding Density and Diverse Uses	5
1 3	Credit	Access to Quality Transit	4
1	Credit	Bicycle Facilities	1
1	Credit	Reduced Parking Footprint	1
1	Credit	Green Vehicles	1

7 3 2 Sustainable Sites 12

Y	Prereq	Construction Activity Pollution Prevention	Required
Y	Prereq	Environmental Site Assessment	Required
1	Credit	Site Assessment	1
2	Credit	Site Development - Protect or Restore Habitat	2
1	Credit	Open Space	1
2 1	Credit	Rainwater Management	3
2	Credit	Heat Island Reduction	2
1	Credit	Light Pollution Reduction	1
1	Credit	Site Master Plan	1
1	Credit	Joint Use of Facilities	1

5 3 4 Water Efficiency 12

Y	Prereq	Outdoor Water Use Reduction	Required
Y	Prereq	Indoor Water Use Reduction	Required
Y	Prereq	Building-Level Water Metering	Required
2	Credit	Outdoor Water Use Reduction	2
2 3 2	Credit	Indoor Water Use Reduction	7
2	Credit	Cooling Tower Water Use	2
1	Credit	Water Metering	1

21 8 2 Energy and Atmosphere 31

Y	Prereq	Fundamental Commissioning and Verification	Required
Y	Prereq	Minimum Energy Performance	Required
Y	Prereq	Building-Level Energy Metering	Required
Y	Prereq	Fundamental Refrigerant Management	Required
5 1	Credit	Enhanced Commissioning	6
13 1 2	Credit	Optimize Energy Performance	16
1	Credit	Advanced Energy Metering	1
2	Credit	Demand Response	2
3	Credit	Renewable Energy Production	3
1	Credit	Enhanced Refrigerant Management	1
1 1	Credit	Green Power and Carbon Offsets	2

11 0 2 Materials and Resources 13

Y	Prereq	Storage and Collection of Recyclables	Required
Y	Prereq	Construction and Demolition Waste Management Planning	Required
3 2	Credit	Building Life-Cycle Impact Reduction	5
2	Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
2	Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
2	Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2	Credit	Construction and Demolition Waste Management	2

10 5 1 Indoor Environmental Quality 16

Y	Prereq	Minimum Indoor Air Quality Performance	Required
Y	Prereq	Environmental Tobacco Smoke Control	Required
Y	Prereq	Minimum Acoustic Performance	Required
2	Credit	Enhanced Indoor Air Quality Strategies	2
3	Credit	Low-Emitting Materials	3
1	Credit	Construction Indoor Air Quality Management Plan	1
1 1	Credit	Indoor Air Quality Assessment	2
1	Credit	Thermal Comfort	1
2	Credit	Interior Lighting	2
1 2	Credit	Daylight	3
1	Credit	Quality Views	1
1	Credit	Acoustic Performance	1

3 3 0 Innovation 6

2 3	Credit	Innovation	5
1	Credit	LEED Accredited Professional	1

2 2 0 Regional Priority 4

1	Credit	Regional Priority: Optimize Energy Performance 8 points or above	1
1	Credit	Regional Priority: Renewable energy production 2 points or above	1
1	Credit	Regional Priority: high priority site	1
1	Credit	Regional Priority: Outdoor Water Use Reduction	1

62 31 32 TOTALS Possible Points: 110

Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

62 POINTS YES – LEED® GOLD

- 35.2% ENERGY COST SAVINGS W/O PV
- 47.8% ENERGY COST SAVINGS W/ PV

SITE PLAN WAIVERS REQUESTED

Fees:

Waiver from Site Plan Review Application Fee (\$500 + \$20/parking space) and Stormwater Management Permit Application Fee (\$200).

Survey:

Waiver from Zoning Bylaw, Section 12.44(a) requirement that **all property corners be pinned** and that at least three property boundary markers be indicated with Massachusetts Grid Plane Coordinates (both elevation and coordinates).

12.44c:

Waiver to allow submission of an unscaled birds eye view rendering in lieu of an **isometric line drawing at the same scale as the site plan**.

12.44e:

Waiver to allow submission of **1/8" scale** exterior elevation plans **in lieu of the 1/4" scale** required by this section, due to the large size of the building.

12.45q:

Waiver for relief from **interior landscaping within parking areas** over nineteen (19) spaces with alternative approach described below under *Design Standards*.

SITE PLAN WAIVERS REQUESTED

22.3:

Pursuant to MGL c 40A § 3, the so called Dover Amendment, and the location of the project within Millbury's Route 146 Highway Corridor Overlay District, request **for waiver from height limitation of thirty feet (30')**, or confirmation that the Overlay District height limitation of one hundred feet (100') applies to the project. The predominate height of the proposed building is under twenty-nine Feet (29'), however there are three sloped roof sections designed to support photovoltaic arrays that exceed thirty feet (30') at the high end and two (2) sloped roofs at stair towers which provide access to the roof – these are just under forty feet (40') at their high end. Please refer to the drawings set for exterior building elevations with vertical heights noted.

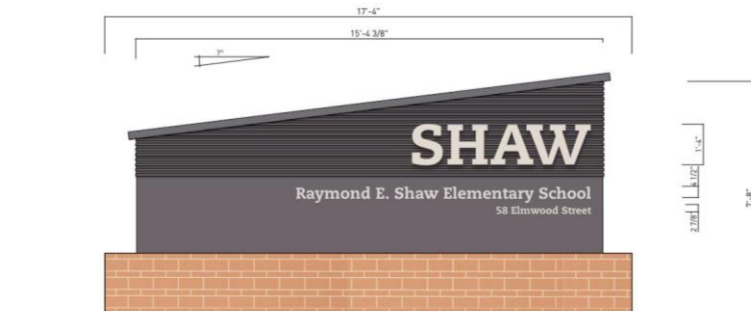
SITE PLAN WAIVERS REQUESTED

34.6.01:

Waiver from **sign size limitations of 4SF for wall signs and 6'H/6SF** for freestanding signs.

Freestanding Sign: There is one monumental free-standing sign proposed at the base of the entrance driveway on Elmwood Street. Please refer to the drawing set, sheet #W0.02 for a rendering. This sign is designed to emulate the building construction in form and material with a brick base and metal panel background to the lettering. The total height of the sign including the base is seven feet eight inches (7'-8"). The total square footage of the sign panel itself (excluding the base) is seventy-six square feet (76 SF).

Building Sign: There is one building mounted sign (free standing letters mounted to the building façade). Please refer to the drawing set, sheet #W0.02 for rendering. The sign is at the main entrance. The proposed size (boundary of the lettering) is fifty-five (55) square feet. Letters are 12" tall.





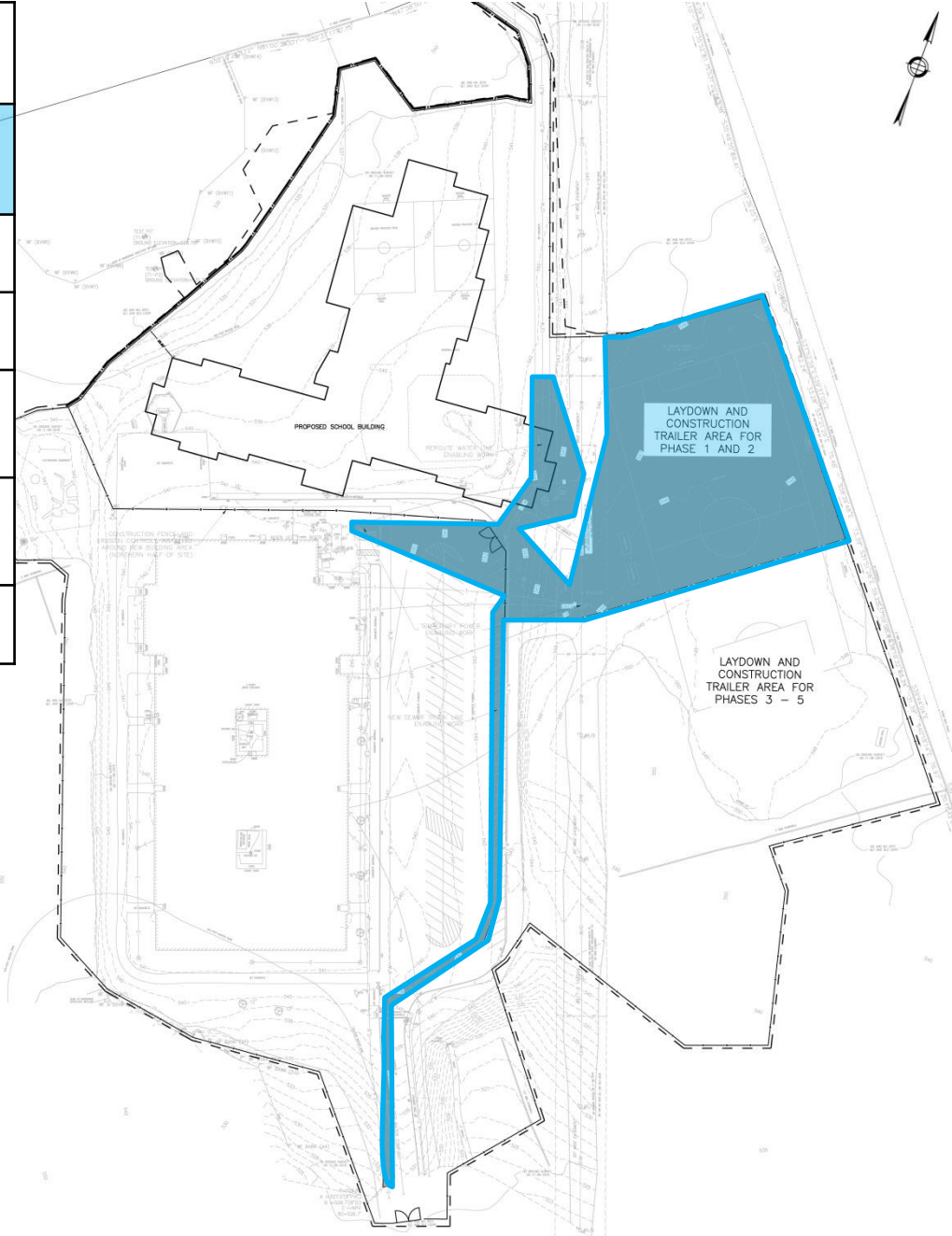
THANK YOU

Millbury, MA | Millbury Public Schools
June 22, 2020



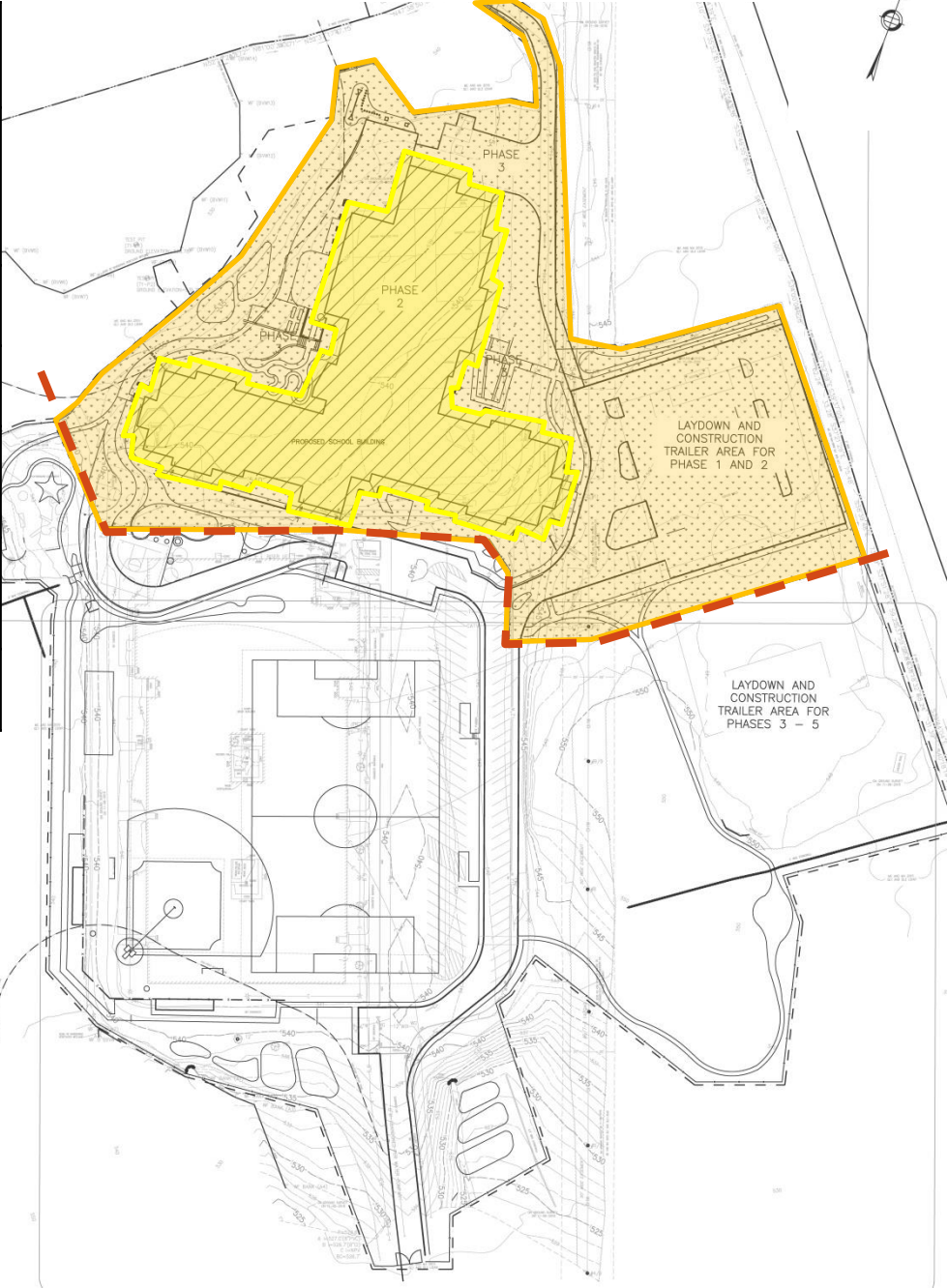
PHASING PLANS I PHASE 1

PHASE	PHASE DESCRIPTION	NOTES	DATES
1	EARLY SITE PACKAGE <ul style="list-style-type: none">RELOCATION OF EXISTING BUILDING ELECTRICAL SERVICE		JUNE 2020 – AUGUST 2020
2	NEW BUILDING		FEB. 2021 – JULY 2022
3	SITE AND PARKING FOR NEW BUILDING		MARCH 2022 – AUGUST 2022
4	DEMO OF EXISTING BUILDING & REMAINING SITE	ROADWAY IMPROVEMENTS	JUNE 2022 – SEPTEMBER 2022
		DEMO OF EXISTING BUILDING	JUNE 2022 – AUGUST 2022
		REMAINING SITE	JUNE 2022 – NOVEMBER 2022



PHASING PLANS I PHASE 2 & 3

PHASE	PHASE DESCRIPTION	NOTES	DATES
1	EARLY SITE PACKAGE <ul style="list-style-type: none">RELOCATION OF EXISTING SITE WATER AND BUILDING ELECTRICAL SERVICEENABLING UTILITIES: SEWER TANK LINE	EXACT SCOPE TBD	JUNE 2020 – AUGUST 2020
2	NEW BUILDING		FEB. 2021 – JULY 2022
3	SITE AND PARKING FOR NEW BUILDING		MARCH 2022 – AUGUST 2022
4	DEMO OF EXISTING BUILDING & REMAINING SITE	ROADWAY IMPROVEMENTS	JUNE 2022 – SEPTEMBER 2022
		DEMO OF EXISTING BUILDING	JUNE 2022 – AUGUST 2022
		REMAINING SITE	JUNE 2022 – NOVEMBER 2022



PHASING PLANS I PHASE 4

PHASE	PHASE DESCRIPTION	NOTES	DATES
1	EARLY SITE PACKAGE <ul style="list-style-type: none">RELOCATION OF EXISTING SITE WATER AND BUILDING ELECTRICAL SERVICEENABLING UTILITIES: SEWER TANK LINE	EXACT SCOPE TBD	JUNE 2020 – AUGUST 2020
2	NEW BUILDING		FEB. 2021 – JULY 2022
3	SITE AND PARKING FOR NEW BUILDING		MARCH 2022 – AUGUST 2022
4	DEMO OF EXISTING BUILDING & REMAINING SITE	ROADWAY IMPROVEMENTS	JUNE 2022 – SEPTEMBER 2022
		DEMO OF EXISTING BUILDING	JUNE 2022 – AUGUST 2022
		REMAINING SITE	JUNE 2022 – NOVEMBER 2022

