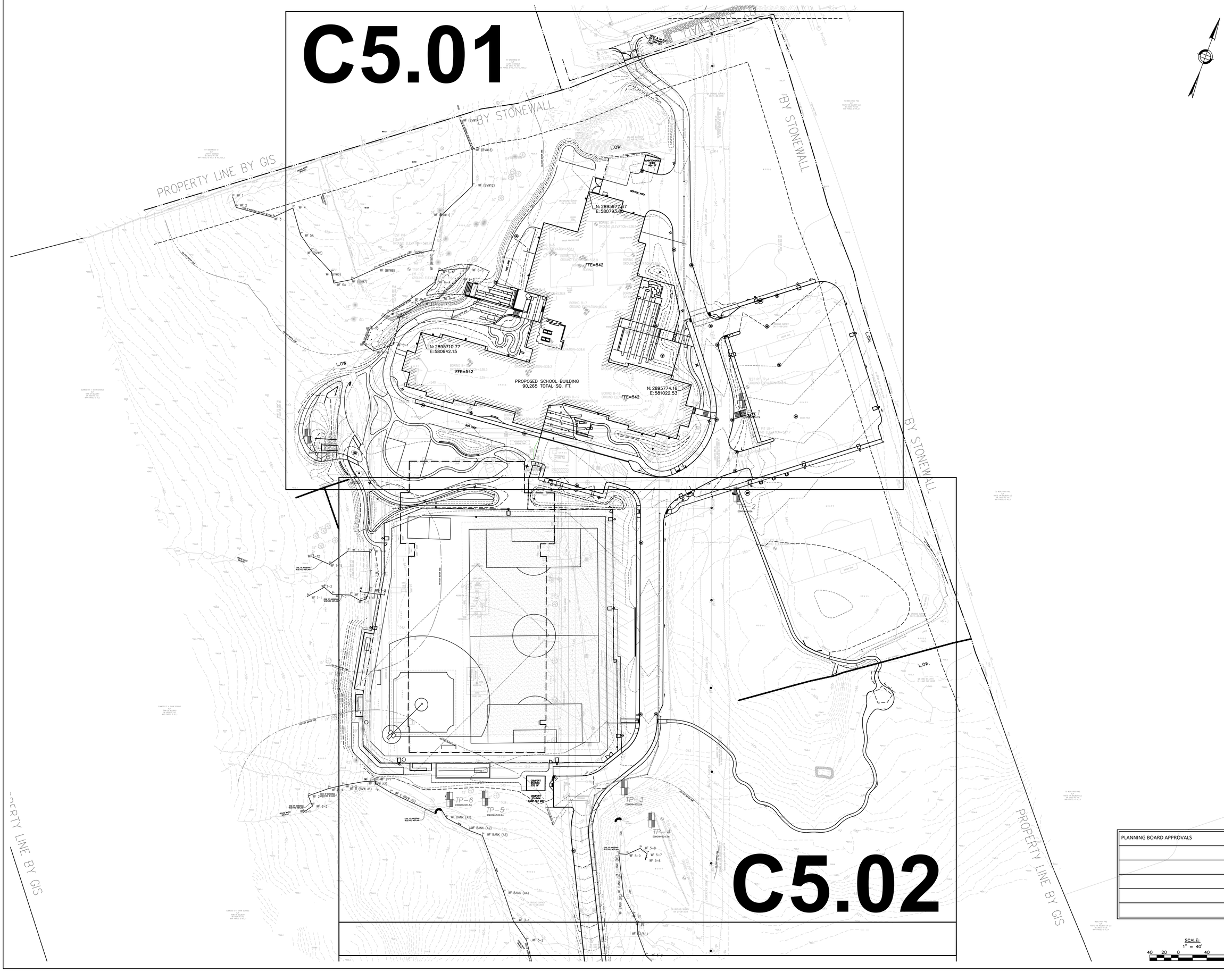
C5.01



C5.02

Turowskiz Architecture

P.O. Box 1290
313 Wareham Road
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CONSULTANT:

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F: (617) 338-6472

STAMP:

COMMONWEALTH OF MASSACHUSETTS
SANDRA A. BROCK
CIVIL
No. 39417
REGISTERED PROFESSIONAL ENGINEER
7/31/2020

REVISIONS:

No.	Description	Date

PLANNING BOARD APPROVALS

SCALE:
1" = 40'
40 20 0 40 80

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
OVERALL SITE GRADING PLAN

JOB NUMBER: 18-08

DRAWN BY:

CHECKED BY:

DATE: 8/5/2020

SCALE: 1"=40'

SHEET NO: C5.00

NITSCH PROJECT #12936

PLANNING BOARD APPROVALS

BORDERING VEGETATED WETLANDS WF#1 TO WF#14

PROPOSED SCHOOL BUILDING
90,265 TOTAL SQ. FT.

MAINTENANCE SHED 414 SF

SERVICE AREA

FFE=542

L.O.W.

100-FOOT BUFFER

2:1 SLOPE TO MAINTAIN TREE LINE

RESTORE PORTION OF ISOLATED WETLANDS SEE LANDSCAPE PLAN FOR PLANTINGS

REMOVE, STOCKPILE, AND REUSE HYDRIC SOIL IN ISOLATED WETLANDS TO RESTORE ISOLATED WETLANDS FOR EDUCATIONAL USE

GRADING TO ACCOMADATE A FUTURE TRAIL

MAINTAIN ISOLATED WETLANDS TO THE GREATEST EXTENT FEASIBLE DURING CONSTRUCTION

ACCESS - NEW OF RESTORED ISOLATED WETLANDS FOR EDUCATIONAL USE

RAINWATER REUSE TANK AND RUNNEL FOR EDUCATIONAL USE

VEGETATED SWALE TO RAIN GARDEN

RAIN GARDEN SEE LANDSCAPE PLANS FOR PLANTINGS

CURB BREAK/INLET STRUCTURE TO BIORETENTION BASIN

MATCHLINE C5.01
MATCHLINE C5.02

SCALE:
1" = 20'
20 10 0 20 40

Turowski2 Architecture
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7/31/2020

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:
SITE GRADING PLAN

JOB NUMBER: 18-08
DRAWN BY:
CHECKED BY:
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C5.01

NITSCH PROJECT #12936

MATCHLINE C5.01
MATCHLINE C5.02

CURB BREAK/INLET STRUCTURE TO BIORETENTION BASIN

3:1 SLOPES

100-FOOT BUFFER

100-FOOT BUFFER ZONE

COMFORT STATION 537 SF

COMFORT STATION (ADD-ALT #3)

TP-6 ESHGW=531.8±

TP-5 ESHGW=534.2±

TP-3 ESHGW=532.5±

TP-4 ESHGW=524.7±

TP-2 ESHGW=542±

L.O.W.

EDGE OF BORDERING VEGETATED WETLAND

BANK

ON GROUND SURVEY ON 11-08-2018

ME AND MA 2015 QL1 AND QL2 LIDAR

50' WIDE EASEMENT

PLANNING BOARD APPROVALS

SCALE: 1" = 20'
20 10 0 20 40

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COMMONWEALTH OF MASSACHUSETTS
SANDRA A. BROCK
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No. 39417
REGISTERED PROFESSIONAL ENGINEER
7/15/2020

REVISIONS:

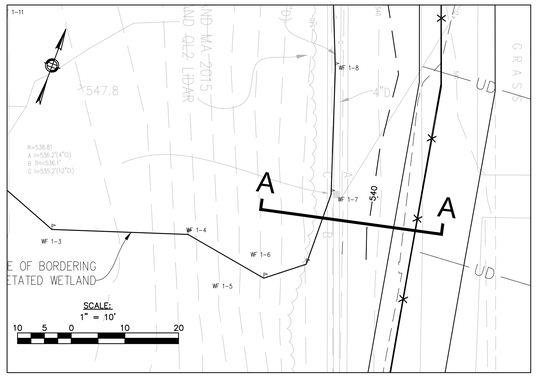
No.	Description	Date
1	Field Change	7/15/20

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
SITE GRADING PLAN

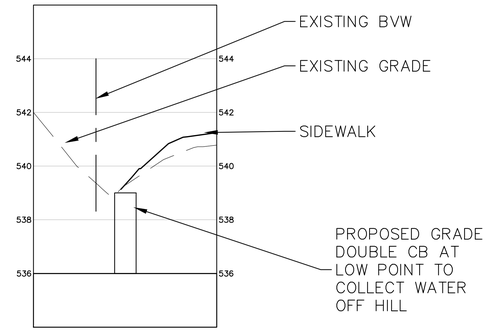
JOB NUMBER: 18-08
DRAWN BY:
CHECKED BY:
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C5.02

NITSCH PROJECT #12936



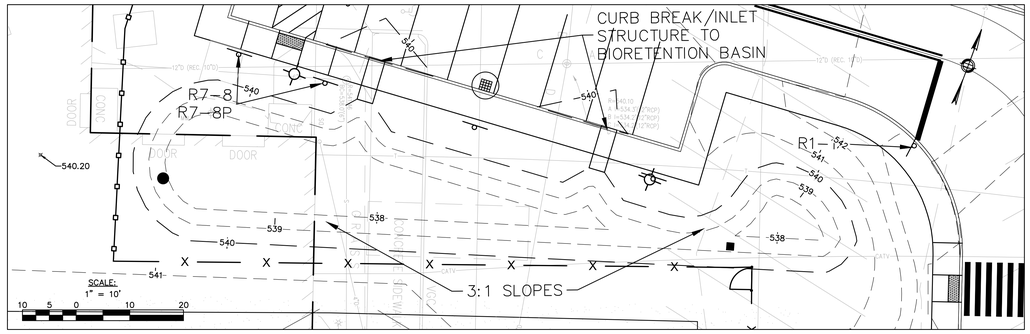
PLAN VIEW OF SECTION A-A

SCALE HORZ: 1"=10' VERT; 1"=2.5'



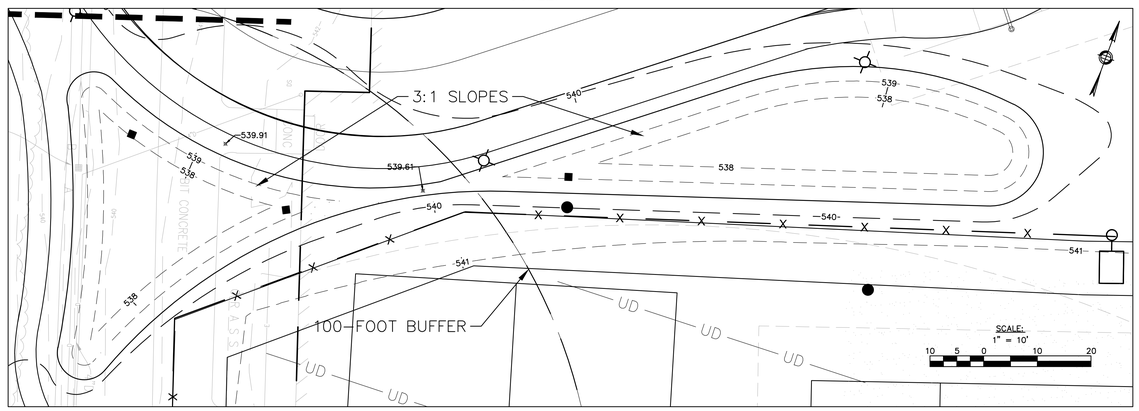
SECTION A-A

SCALE HORZ: 1"=10' VERT; 1"=2.5'



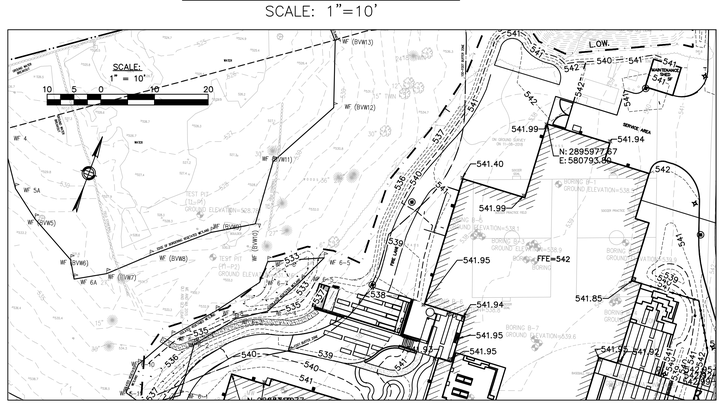
BIORETENTION BASIN #1

SCALE: 1"=10'



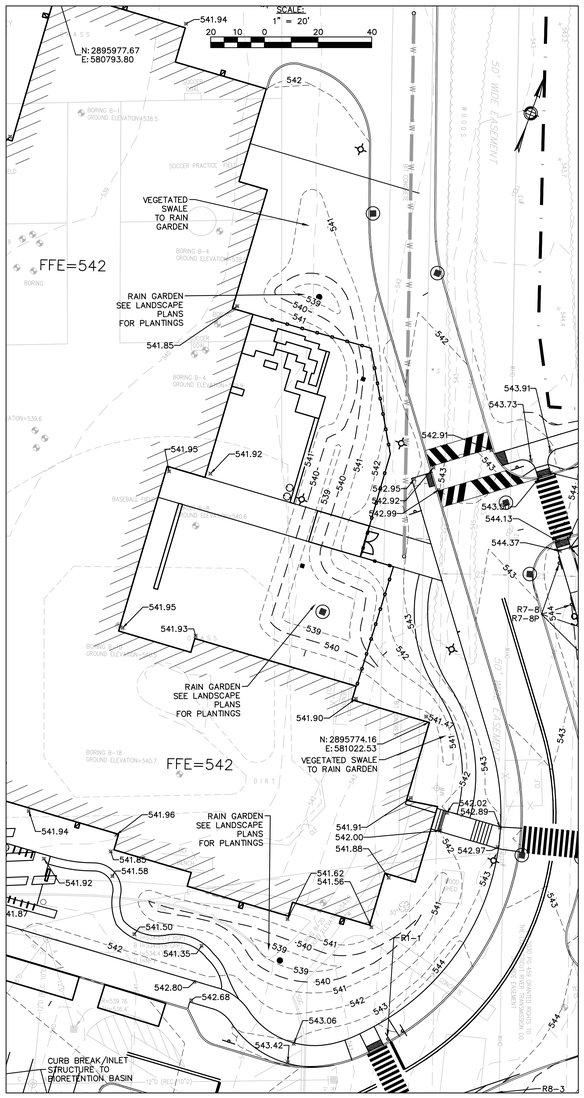
BIORETENTION BASIN #2

SCALE: 1"=10'



ISOLATED WETLAND RESTORATION - EDUCATION AREA

SCALE: 1"=10'



RAIN GARDEN AND SWALE SYSTEM

SCALE: 1"=20'

PLANNING BOARD APPROVALS

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REGISTERED PROFESSIONAL ENGINEER
7/31/2020

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:

GRADING
DETAILS
STORMWATER

JOB NUMBER: 18-08

DRAWN BY:

CHECKED BY:

DATE: 8/5/2020

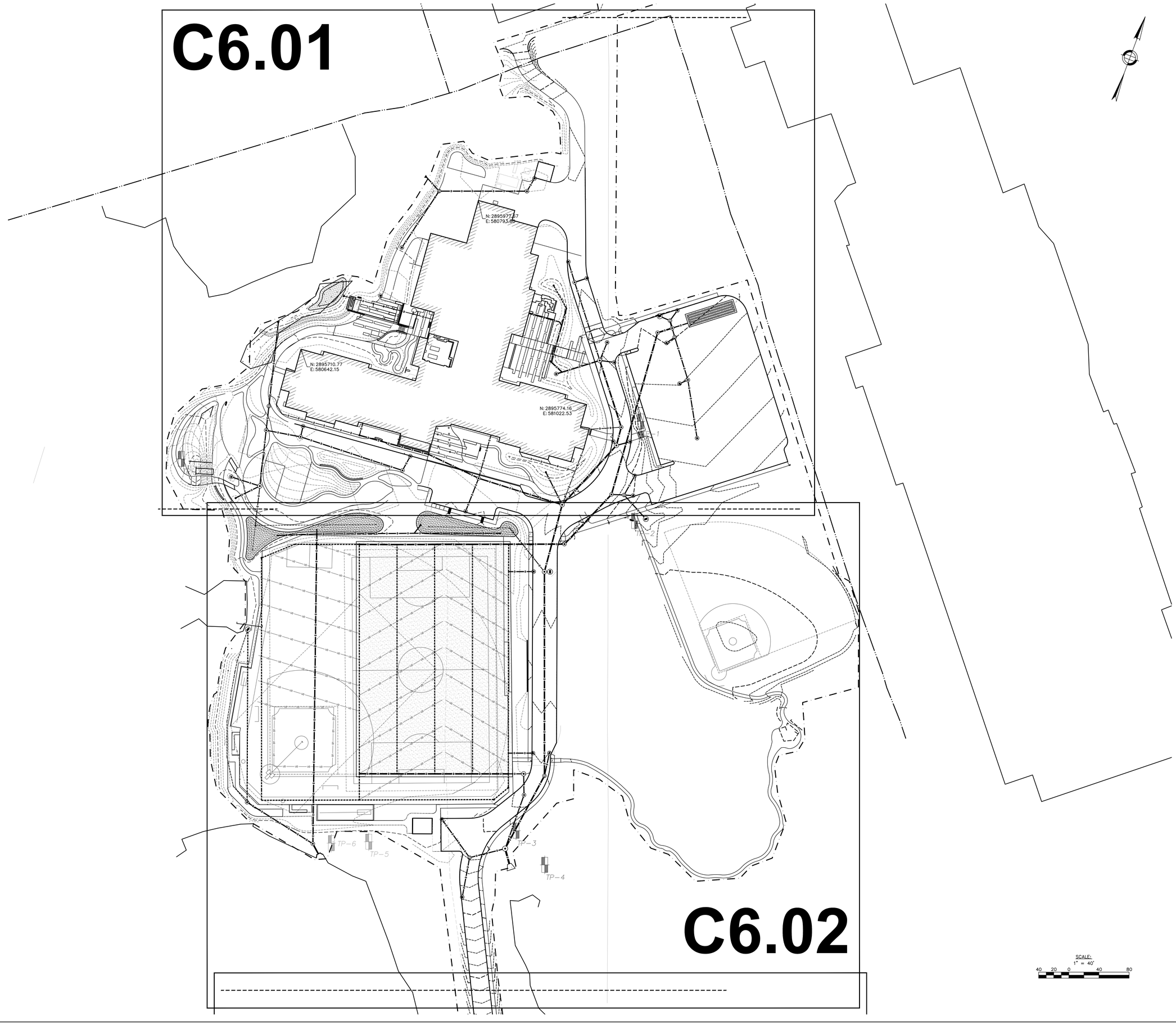
SCALE: 1"=20'

SHEET NO: C5.03

NITSCH PROJECT #12936

PLANNING BOARD APPROVALS

C6.01



C6.02

SCALE:
1" = 40'
40 20 0 40 80

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7/15/2020

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:
SITE DRAINAGE KEY PLAN

JOB NUMBER: 18-08

DRAWN BY: JCZ, RL

CHECKED BY: SAB

DATE: 8/5/2020

SCALE: 1"=40'

SHEET NO: C6.00

NITSCH PROJECT #12936

PLANNING BOARD APPROVALS

MEET & MATCH EX. PAVEMENT AT SAW CUT (TYP.)

SCALE:
1" = 20'
20 10 0 20 40

L.OW.

4' LONG X 1.5' DEEP STONE FOR PIPE ENDS 4' WIDE AT HEADWALL 6' WIDE AT END OF APRON
FES#1 INV=535.30
12" CPP
WQS#408 RIM=541.44 INV IN(DMH#316)=535.80 INV IN(CB#216)=535.70 INV OUT=535.60
12" CPP
CB#215 RIM=540.75 INV=537.25
DMH#316 RIM=540.99 INV IN=537.00 INV OUT=536.90
HYD
WV
N: 2895977.67 E: 580793.80
CB#216 RIM=540.15 INV=536.65
CB#213 RIM=541.41 INV=537.90
12" CPP
CB#220 RIM=541.66 INV=538.15
DMH#301(4'ø) RIM=541.77 INV IN(CB#213)=537.60 INV IN(CB#220)=537.60 INV OUT=537.50
CB#209 RIM=544.25 INV=540.78
URS#1 66.5' X 18' UNDERGROUND STORMWATER RECHARGE SYSTEM 330 LF 12" PERF CPP SURROUNDED BY CRUSHED STONE PIPE INV=538.75 STONE INV=538.25
RG TURRET#3 RIM=537.55
FES#2 INV=536.00
FFE=542
AD#259 (24"ø) RIM=539.00 INV=536.75
AD#264 (15"ø) RIM=540.00 INV=536.40
RD#3 INV=538.00
CISTERN INV=536.00
AB#263(15"ø) RIM=541.883 INV IN(RD#4)=537.70 INV OUT(FES#2)=537.60 INV OUT(CISTERN)=537.10
RD#4 INV=538.00
WQS#402 RIM=544.62 INV IN(CB#206 (DCB))=540.76 INV IN(CB#209)=540.70 INV OUT=540.60
CB#206 (DCB) RIM=544.43 INV=540.91
4' LONG X 1.5' DEEP STONE FOR PIPE ENDS 4' WIDE AT HEADWALL 6' WIDE AT END OF APRON
FES#3 INV=532.35
WYE#1 INV(15")=536.75 INV(12")=536.28
AD#265 (15"ø) RIM=539.00 INV=535.65
WYE#2 INV=535.63
WYE#3 INV=535.42
DMH#310 RIM=544.84 INV IN=540.35 INV OUT=540.35
DMH#309 (BYPASS MH)(4'ø) RIM=544.77 INV IN(WQS#402)=540.55 INV IN(WQS#401)=541.05 INV OUT(URS#1)=538.45 INV OUT(DMH#310)=540.45
CB#212 RIM=542.63 INV=539.10
CB#203 RIM=542.80 INV=539.30
CB#205 RIM=544.97 INV=541.45
WQS#401 RIM=544.96 INV IN(CB#205)=541.30 INV IN(DMH#308)=541.50 INV OUT=541.20
N: 2895710.77 E: 580642.15
CB#260 RIM=539.00 INV=535.50
DMH#308 RIM=546.06 INV IN(CB#202)=542.35 INV IN(CB#204)=542.35 INV OUT=542.25
CB#204 RIM=545.97 INV=542.45
DMH#303(4'ø) RIM=542.83 INV IN(DMH#302)=534.17 INV IN(TD#1)=539.75 INV OUT=534.12
CB#202 RIM=547.31 INV=543.80
DMH#302(5'ø) RIM=542.94 INV IN(WYE#3)=534.99 N: 2895774.16 INV IN(CB#203)=539.10 E: 581022.53 INV IN(CB#212)=538.80 INV IN(DMH#301)=536.40 INV OUT=534.80
DMH#305(4'ø) RIM=541.38 INV IN(RD#2)=537.40 INV IN(AB#268)=536.03 INV IN(CB#225)=4.56 INV OUT=535.93
AB#268(24"ø) RIM=541.56 INV IN(TEE WYE#4)=536.82 INV IN(DS#4)=539.50 INV OUT=536.72
RD#1 INV=538.00
AB#267(24"ø) RIM=541.91 INV IN(RD#1)=537.83 INV IN(TEE-WYE#6)=539.29 INV OUT=537.70
DS#5 INV=540.00
TEE WYE#4 INV=537.22
DS#8 INV=540.00
DCO#6 INV=539.82
DS#7 INV=540.00
TEE WYE#7 INV=539.67
DS#6 INV=540.00
WQS#409 RIM=540.70 INV IN=533.02 INV OUT=532.92
CB#214 RIM=540.69 INV=537.15
TEE-WYE#6 INV=539.47
FFE=542
L.OW.
RD#2 INV=538.00
DS#4 INV=540.00
TD#1 RIM=541.75 INV=540.50
CB#221 RIM=542.60 INV=539.10
DS#3 INV=540.00
DS#1 INV=539.75
DCO#1 INV=539.96
DS#2 INV=540.00
CB#217 RIM=542.55 INV=537.00
DMH#304(5'ø) RIM=542.78 INV IN(CB#217)=536.80 INV IN(CB#221)=539.00 INV IN(DMH#303)=533.95 INV OUT=533.90
CB#267 RIM=544.91 INV=540.50
WQS#403 RIM=544.33 INV IN(CB#201 (DCB))=540.70 INV IN(CB#207)=540.15 INV IN(CB#222)=540.70 INV OUT=540.05
CB#222 RIM=544.97 INV=541.45
DMH#320(4'ø) RIM=541.30 INV IN(DMH#318)=536.30 INV IN(DMH#319)=533.28 INV OUT=533.18
CB#211 RIM=538.50 INV=535.00
DMH#319 RIM=540.70 INV IN(AB#254)=535.70 INV IN(CB#211)=534.75 INV IN(AB#258)=533.75 INV OUT=533.65
DMH#318(4'ø) RIM=540.91 INV IN(DMH#317)=536.00 INV IN(CB#214)=537.00 INV OUT=536.90
AD#254 (24"ø) RIM=539.00 INV=536.00
CB#210 RIM=541.12 INV=537.60
DMH#317 RIM=541.55 INV IN=537.50 INV OUT=537.70
CB#225 RIM=540.11 INV=536.60
RG FOXHOLE #1 INV IN=539.88 INV OUT=539.13
WYE#4 INV=539.77
TEE-WYE#5 INV=539.60
AD#251 (24"ø) RIM=539.60 INV=537.40
DMH#311(4'ø) RIM=543.84 INV IN(DMH#310)=539.15 INV IN(WQS#403)=539.80 INV OUT=539.10
RG FOXHOLE#2 INV IN=539.87 INV OUT=539.12
BIORETENTION BASIN#2 BOTTOM ELEV=538.00
BIORETENTION BASIN#1 BOTTOM ELEV=538.00
AD#255 (15"ø) RIM=538.75 DOMED GRATE
DCO#4 INV=534.00
DCO#2 INV=534.50
L.OW.

MATCHLINE C6.01
MATCHLINE C6.02

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STAMP:
COMMONWEALTH OF MASSACHUSETTS
SANDRA A. BROCK
CIVIL
No. 39417
REGISTERED PROFESSIONAL ENGINEER
7/31/2020

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
SITE DRAINAGE PLAN

JOB NUMBER: 18-08
DRAWN BY: JCZ, RL
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C6.01

NITSCH PROJECT #12936

MATCHLINE C6.01
MATCHLINE C6.02

MATCHLINE C6.01
MATCHLINE C6.02

BIORETENTION BASIN#2
BOTTOM ELEV=538.00

BIORETENTION BASIN#1
BOTTOM ELEV=538.00

INV OUT=537.70

RG FOXHOLE#2
INV IN=539.87
INV OUT=539.12

DCO#2
INV=534.50

INV IN(DMH#310)=539.15
INV IN(WQS#403)=539.80
INV OUT=539.10

AD#255 (15"ø)
RIM=538.75
DOMED GRATE
INV=536.25

DCO#4
INV=534.00

AD#253 (24"ø)
RIM=538.70
DOMED GRATE
INV=536.60

INV=536.43

DMH#306(5'ø)
RIM=543.24
INV IN(DMH#305)=534.85
INV IN(AD#251)=536.90
INV IN(DMH#304)=533.15
INV IN(TEE-WYE#5)=539.36
INV OUT=533.10

TP-2
ESHGW=542±

CB#201 (DCB)
RIM=546.59
INV=543.00

AD#257 (15"ø)
RIM=538.50
DOMED GRATE
INV=536.25

AB#256(2'ø)
RIM=538.52
INV IN(AD#255)=536.00
INV IN(AD#257)=536.00
INV IN(AD#252)=535.78
INV OUT=535.68

DCO#3
INV=534.50

AD#252 (15"ø)
RIM=539.00
DOMED GRATE
INV=537.00

DCO#5
INV=534.00

AB#258(15"ø)
RIM=535.37
INV IN(DCO#4)=534.00
INV IN(DCO#5)=534.00
INV OUT=534.00

DMH#312
RIM=543.43
INV IN(DMH#311)=538.60
INV OUT(URS#2)=538.50

CB#223 (DCB)
RIM=542.30
INV=538.80

AB#270(2'ø)
RIM=543.37
INV IN=539.50
INV OUT=539.50

DMH#307
RIM=542.50
INV IN(DCO#2)=534.00
INV IN(CB#223 (DCB))=538.70
INV IN(DMH#306)=532.45
INV OUT=532.40

WQI#404
RIM=542.29
INV=538.80

CB#226 (DCB)
RIM=539.00
INV IN()=537.90
INV OUT=537.40

URS#2
201' X 308'
UNDERGROUND STORMWATER
RECHARGE SYSTEM
PIPE INV=538.50
STONE INV=538.00

DCO#7

DCO#8
INV=543.92
INV=543.60

WQI#405
RIM=541.98
INV=538.50

CB#224
RIM=541.98
INV=538.45

DMH#321(4'ø)
RIM=541.85
INV IN(CB#226 (DCB))=534.90
INV IN(DCO#8)=538.80
INV OUT=534.80

CONNECT PANEL DRAINS
TO 12" PERF COLLECTOR
PIPE (TYP)
INV=538.50

AB#269
ACCESS MH
RIM=540.36
INV=539.16

WQS#406
RIM=541.93
INV IN(DMH#307)=530.64
INV IN(CB#224)=538.15
INV OUT=530.59

OCS#313(5'ø)
RIM=542.00
INV IN=538.50
INV OUT=538.40

DMH#314(4'ø)
RIM=541.29
INV IN(OCS#313)=537.30
INV OUT=537.20

CB#218
RIM=540.09
INV=536.50

COMFORT
STATION
(ADD ALT #3)

TP-6
ESHGW=531.8±

TP-5
ESHGW=534.2±

TP-3
ESHGW=532.5±

DMH#322(4'ø)
RIM=539.43
INV IN(DMH#321)=533.75
INV IN(AB#256)=533.60
INV OUT=533.50

NEW CONCRETE HEADWALL
INV=533.30

6' LONG X 1.5' DEEP
STONE FOR PIPE ENDS
4' WIDE AT HEADWALL
8.5' WIDE AT END OF
APRON

DMH#315(6'ø)
RIM=538.59
INV IN(WQS#402)=531.50
INV IN(DMH#314)=534.60
INV IN(WQS#405)=529.45
INV OUT=529.40

8' LONG X 2.75' DEEP RIP RAP APRON
5' WIDE AT HEADWALL
11.5' WIDE AT END OF APRON
MEDIAN ROCK SIZE=13"

4

ESHGW=524.7±

WQS#407
RIM=539.10
INV IN=532.10
INV IN=535.85
INV OUT=532.00

CB#219
RIM=536.15
INV=532.65

L.OW.

L.OW.

PLANNING BOARD APPROVALS

SCALE:
1" = 20'
20 10 0 20 40

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SANDRA A. BROCK
CIVIL
No. 39417
REGISTERED PROFESSIONAL ENGINEER
7/31/2020

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

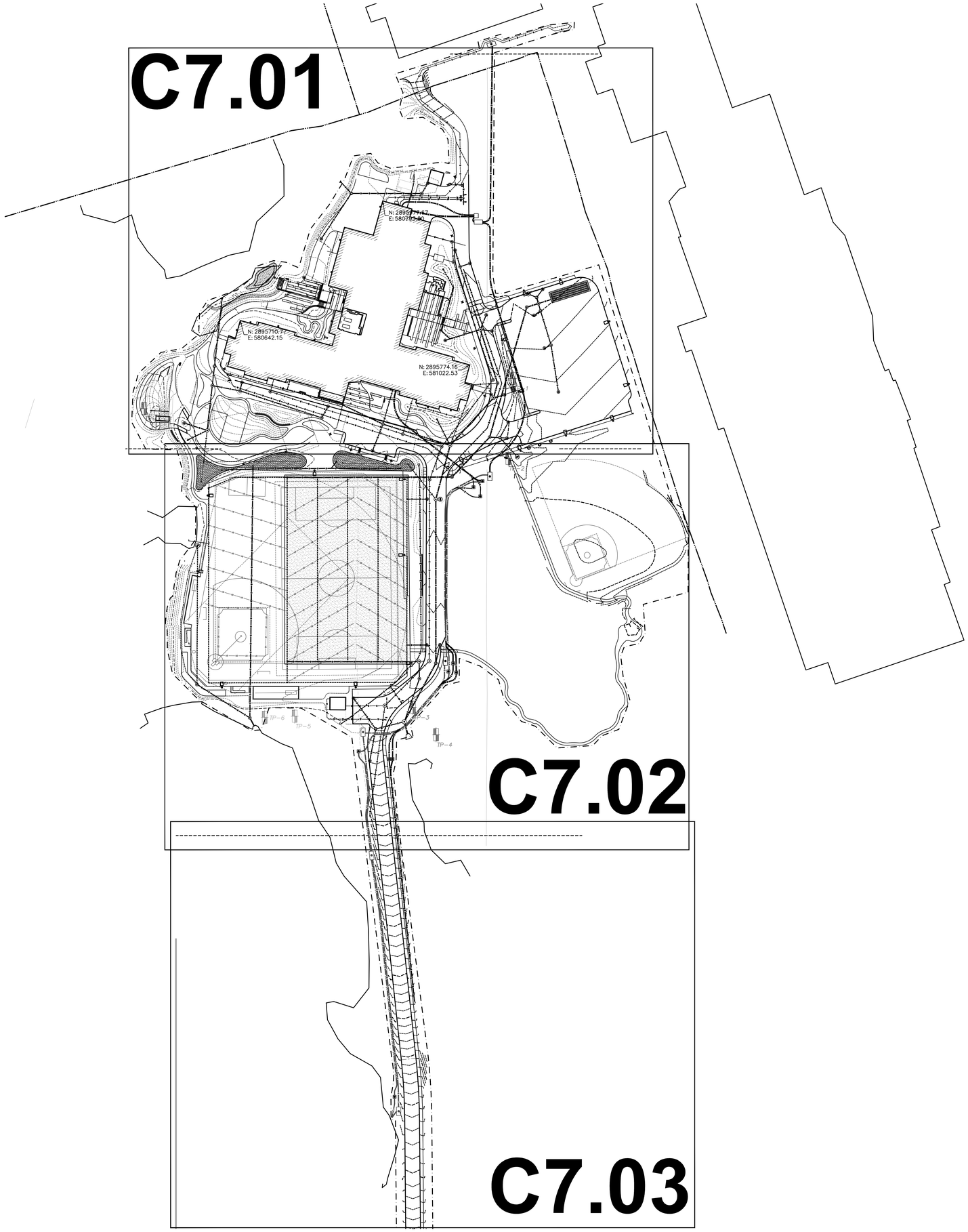
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
SITE
DRAINAGE
PLAN

JOB NUMBER: 18-08
DRAWN BY: JCZ, RL
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C6.02

NITSCH PROJECT #12936

PLANNING BOARD APPROVALS



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STAMP:

COMMONWEALTH OF MASSACHUSETTS
SANDRA A. BROCK
CIVIL
No. 39417
REGISTERED PROFESSIONAL ENGINEER
7/31/2020

REVISIONS:

No.	Description	Date

SCALE:
1" = 60'
60 30 0 60 120

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
SITE UTILITY
KEY PLAN

JOB NUMBER: 18-08

DRAWN BY: JCZ, RL

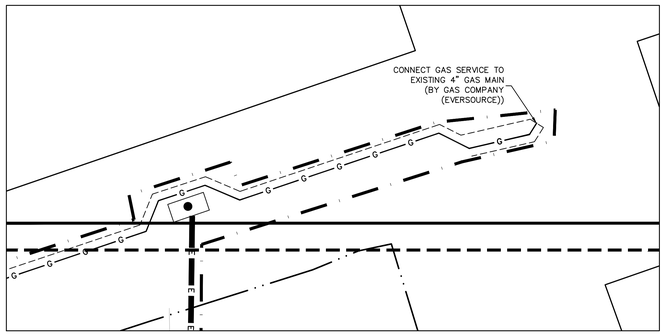
CHECKED BY: SAB

DATE: 8/5/2020

SCALE: 1"=60'

SHEET NO: C7.00

NITSCH PROJECT #12936



INSET

MATCHLINE - SEE INSET
MATCHLINE C7.01

MEET & MATCH EX. PAVEMENT AT SAW CUT (TYP)

ELECTRIC DUCT BANK SEE ELECTRICAL PLANS (TYP)

SCALE:
1" = 20'
20 10 0 20 40

PULLBOXES (2) FOR FUTURE SHED – SEE ELECTRICAL PLANS

ELECTRIC GENERATOR SEE ELECTRICAL PLANS

L.O.W.

4' LONG X 1.5' DEEP STONE FOR PIPE ENDS 4' WIDE AT HEADWALL 6' WIDE AT END OF APRON

6" DI

HYD

6"X12" TEE & VALVE

4" DI DOMESTIC WATER SERVICE

4"X12" TEE & VALVES

6"X12" TEE & VALVES

6" DI FIRE PROTECTION SERVICE

4" DOMESTIC WATER BLDG SERVICE CONNECTION

GAS METER – SEE PLUMBING PLANS

6" FIRE PROTECTION BLDG SERVICE CONNECTION

BLDG ELECTRIC SERVICE SEE ELECTRICAL PLANS

N: 2898977.67
E: 580793.60

PAD-MOUNTED ELECTRICAL TRANSFORMER. SHOWN FOR COORDINATION ONLY. SEE ELECTRICAL PLANS.

PAD-MOUNTED ELECTRICAL SWITCHGEAR. SHOWN FOR COORDINATION ONLY. SEE ELECTRICAL PLANS.

SS#1
INV=538.50

8" PVC

SMH#101
RIM=541.43
INV IN=538.05
INV OUT=537.95

SMH#102
RIM=541.63
INV IN(SMH#101)=537.60
INV IN(3500 GAL GT)=538.00
INV OUT=537.50

6" PVC

KW#1
INV=538.50

3,500 GALLON GREASE TRAP
INV IN=538.40
INV OUT=538.20

CONNECT REROUTED 12" DI WATER MAIN TO EX 12" MAIN

FFE=542

SITE LIGHTING – SEE ELECTRICAL PLANS (TYP)

4' LONG X 1.5' DEEP STONE FOR PIPE ENDS 4' WIDE AT HEADWALL 6' WIDE AT END OF APRON

SS#5

8" PVC

N: 2895710.77
E: 580642.15

L.O.W.

L.O.W.

FFE=542

SMH#105 (DROP MH)
RIM=541.64
INV IN(SS#3 TOP)=537.40
INV IN(SS#3 BOTTOM)=535.00
INV IN(SMH#104)=535.00
INV OUT=534.85

SS#2
INV=538.00

TELECOM BLDG SERVICE SEE ELECTRICAL PLANS (TYP)

FFE=542

N: 2895774.16
E: 581022.60

SMH#103
RIM=542.75
INV IN=535.45
INV OUT=535.35

ELECTRICAL DUCT BANK SEE ELECTRICAL PLANS (TYP)

6" DI

6" PVC

8" PVC REDUCER

6" PVC

SS#3
INV=538.00

12" DI WATER LINE REROUTED AROUND PROPOSED BUILDING

SMH#104
RIM=541.55
INV IN=537.50
INV OUT=537.30

8" PVC

6" PVC

TELECOM DUCT BANK SEE ELECTRICAL PLANS (TYP)

ESHGW=544.2±

ESHGW=544.7±

BIORETENTION BASIN#2
BOTTOM ELEV=538.00

BIORETENTION BASIN#1
BOTTOM ELEV=538.00

MATCHLINE C7.01
MATCHLINE C7.02

MATCHLINE C7.01
MATCHLINE C7.02

NOTES:
1. TELECOM AND ELECTRIC UTILITIES (INCLUDING SITE LIGHTING) ARE SHOWN FOR SITE UTILITY LAYOUT COORDINATION ONLY. REFER TO THE ELECTRICAL PLANS AND SPECIFICATIONS FOR DESIGN INFORMATION.
2. GAS UTILITIES ARE SHOWN FOR SITE UTILITY LAYOUT COORDINATION ONLY. SEE PLUMBING PLANS IN COORDINATION WITH GAS COMPANY DESIGN.

PLANNING BOARD APPROVALS

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No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE: SITE UTILITY PLAN

JOB NUMBER: 18-08
DRAWN BY: JCZ, RL
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C7.01

NITSCH PROJECT #12936

MATCHLINE C7.01
MATCHLINE C7.02

MATCHLINE C7.01
MATCHLINE C7.02

SMH#106
RIM=543.10
INV IN(SMH#103)=533.65
INV IN(SMH#105)=533.65
INV OUT=533.55

TP-2
ESHGW=542±

ELECTRICAL MANHOLE
SEE ELECTRICAL PLANS

TELECOM HANDHOLE
SEE ELECTRICAL PLANS

UTILITY HANDHOLES
SEE ELECTRICAL PLANS

SMH#107
RIM=542.68
INV IN=532.90
INV OUT=532.80

SITE LIGHTING – SEE
ELECTRICAL PLANS (TYP)

ELECTRIC AND TELECOM DUCT
BANK BY UTILITY COMPANY
SEE ELECTRICAL PLANS

ELECTRIC MANHOLE
BY UTILITY COMPANY
SEE ELECTRICAL PLANS

UTILITY HANDHOLE
SEE ELECTRICAL PLANS

TELECOM HANDHOLE
SEE ELECTRICAL PLANS

UTILITY HANDHOLE
SEE ELECTRICAL PLANS

SMH#108(5'ø)
RIM=541.70
INV IN=529.81
INV OUT=529.71

ELECTRIC AND TELECOM DUCT
BANK BY UTILITY COMPANY
SEE ELECTRICAL PLANS

WATER AND SEWER SERVICE
FOR THE COMFORT STATION IS
PART OF ADD ALTERNATE #3

4" PVC

2" CORP
STOP

6"X12" TAPPING
SLEEVE & VALVE

SS#4
INV=COMFORT
STATION
(AW) ALT #3

2" TYPE K COPPER

TP-3
ESHGW=532.5±

SMH#109(5'ø)
RIM=539.91
INV IN(SMH#108)=528.67
INV IN(SS#4)=528.73
INV OUT=528.57

TP-6
ESHGW=531.8±

TP-5
ESHGW=534.2±

TP-4
ESHGW=524.7±

2" DOMESTIC WATER SERVICE
FOR THE COMFORT STATION
SEE PLUMBING PLANS

PULLBOX FOR FUTURE SHED
SEE ELECTRICAL PLANS

ELECTRIC MANHOLE
BY UTILITY COMPANY
SEE ELECTRICAL PLANS

TELECOM HANDHOLE
SEE ELECTRICAL PLANS

UTILITY MANHOLES
SEE ELECTRICAL PLANS

ELECTRIC AND TELECOM DUCT
BANK BY UTILITY COMPANY
SEE ELECTRICAL PLANS

EXTEND EX SPARE
CONDUIT 400' ±
SEE ELECTRICAL PLANS

EX SMH
RIM=(529.60)
INV IN(SMH#109)=526.70

L.O.W.

L.O.W.

PLANNING BOARD APPROVALS

MATCHLINE C7.02
MATCHLINE C7.03

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SCALE:
1" = 20'
20 10 0 20 40

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RAYMOND E. SHAW ELEMENTARY SCHOOL
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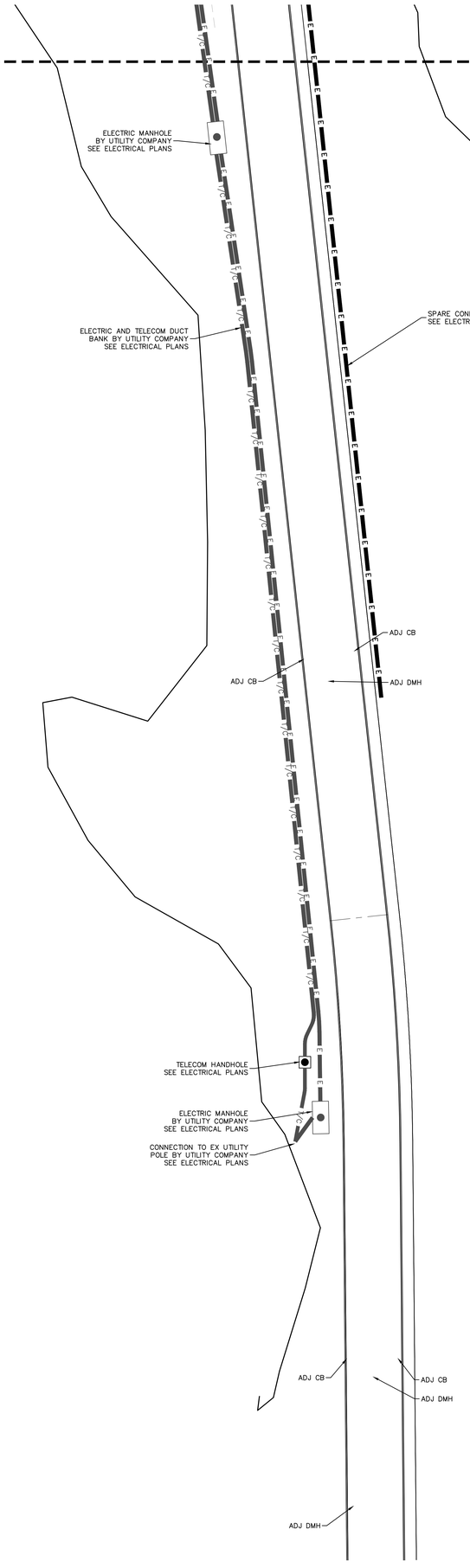
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
SITE UTILITY PLAN

JOB NUMBER: 18-08
DRAWN BY: JCZ, RL
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C7.02

NITSCH PROJECT #12936

MATCHLINE C7.02
MATCHLINE C7.03



PLANNING BOARD APPROVALS

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SCALE:
1" = 20'
20 10 0 20 40

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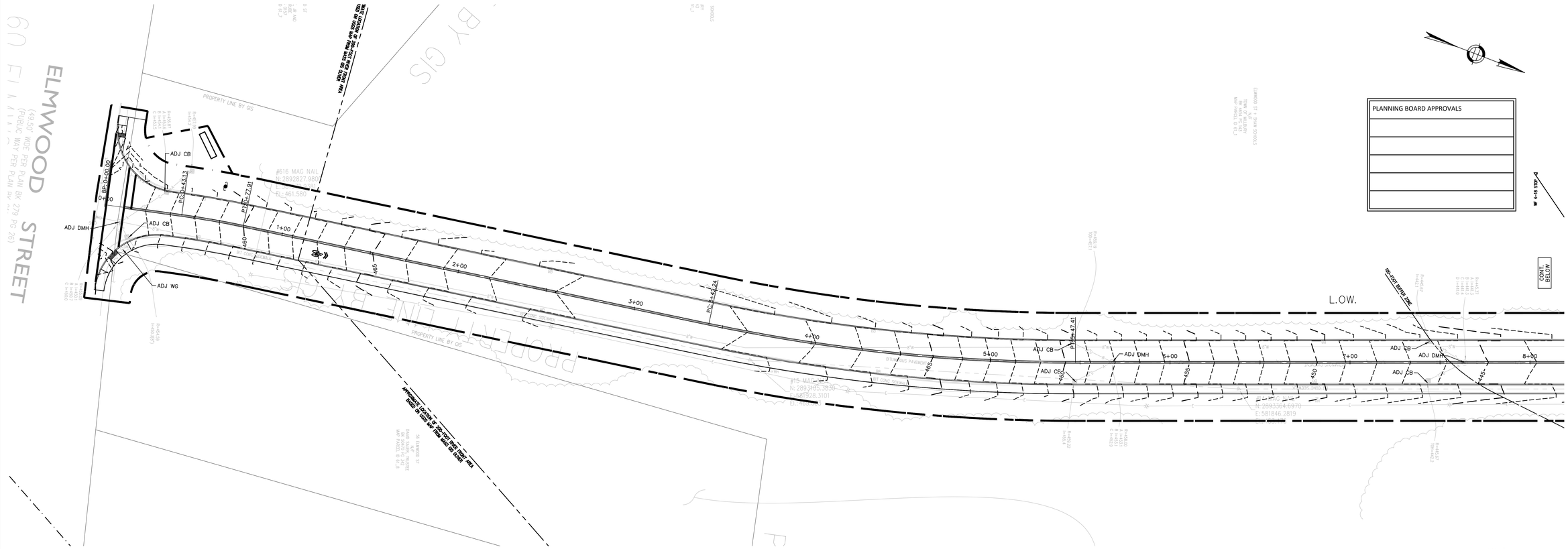
PLANNING BOARD SUBMISSION - UPDATE

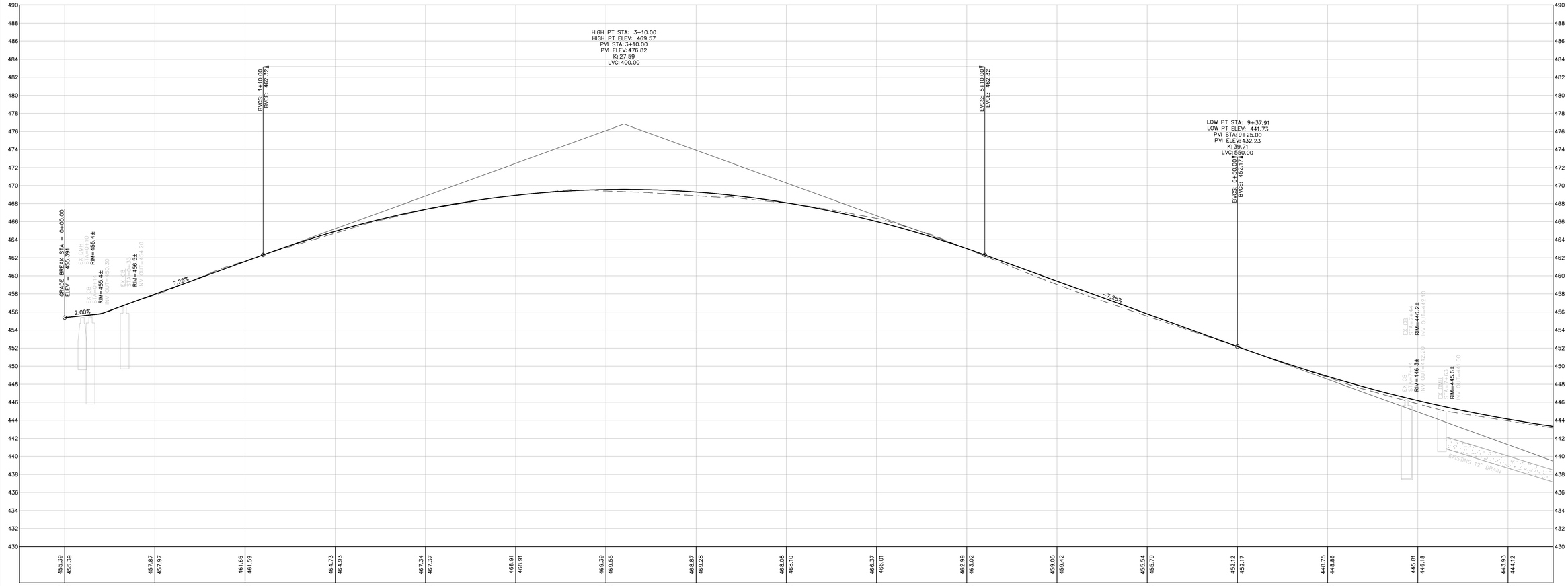
TITLE:
SITE UTILITY PLAN

JOB NUMBER: 18-08
DRAWN BY: JCZ, RL
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C7.03

NITSCH PROJECT #12936



PLAN VIEW
SCALE: 1"=20'-0"



DRIVEWAY CENTERLINE PROFILE STA 0+00.00 TO 8+00.00
HORIZONTAL SCALE: 1"=20'-0"
VERTICAL SCALE: 1"=4'-0"

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7/15/2020

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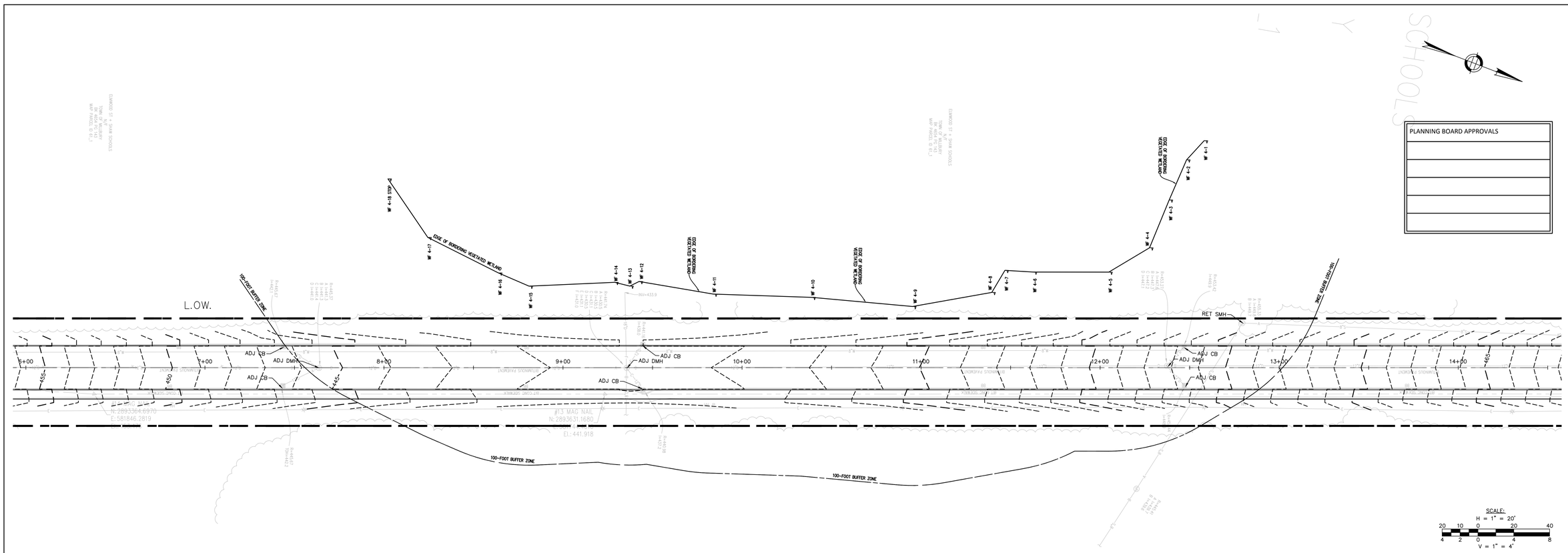
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

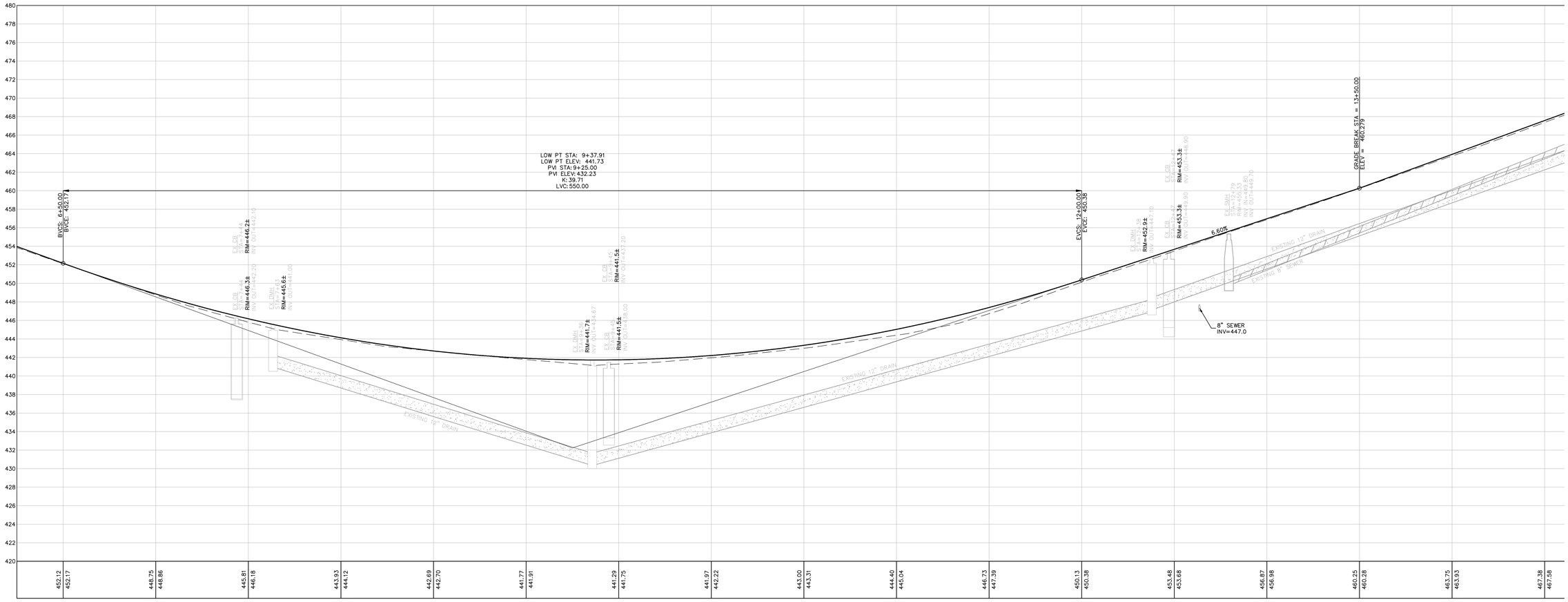
TITLE:
CENTERLINE PROFILE

JOB NUMBER: 18-08
DRAWN BY: JCZ, RL
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C9.00

NITSCH PROJECT #12936



PLAN VIEW
SCALE: 1"=20'-0"



DRIVEWAY CENTERLINE PROFILE STA 7+00.00 TO 14+00.00
HORIZONTAL SCALE: 1"=20'-0"
VERTICAL SCALE: 1"=4'-0"

PLANNING BOARD APPROVALS

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7/15/2020

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RAYMOND E. SHAW ELEMENTARY SCHOOL
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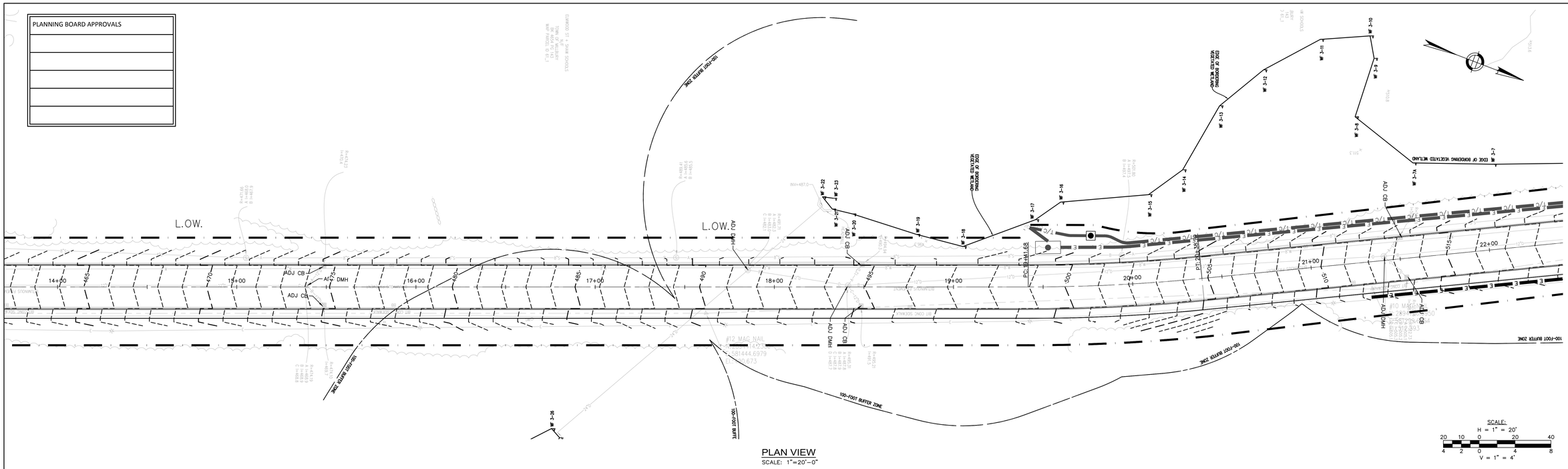
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
DRIVEWAY CENTERLINE PROFILE

JOB NUMBER: 18-08
DRAWN BY: JCZ, RL
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C9.01

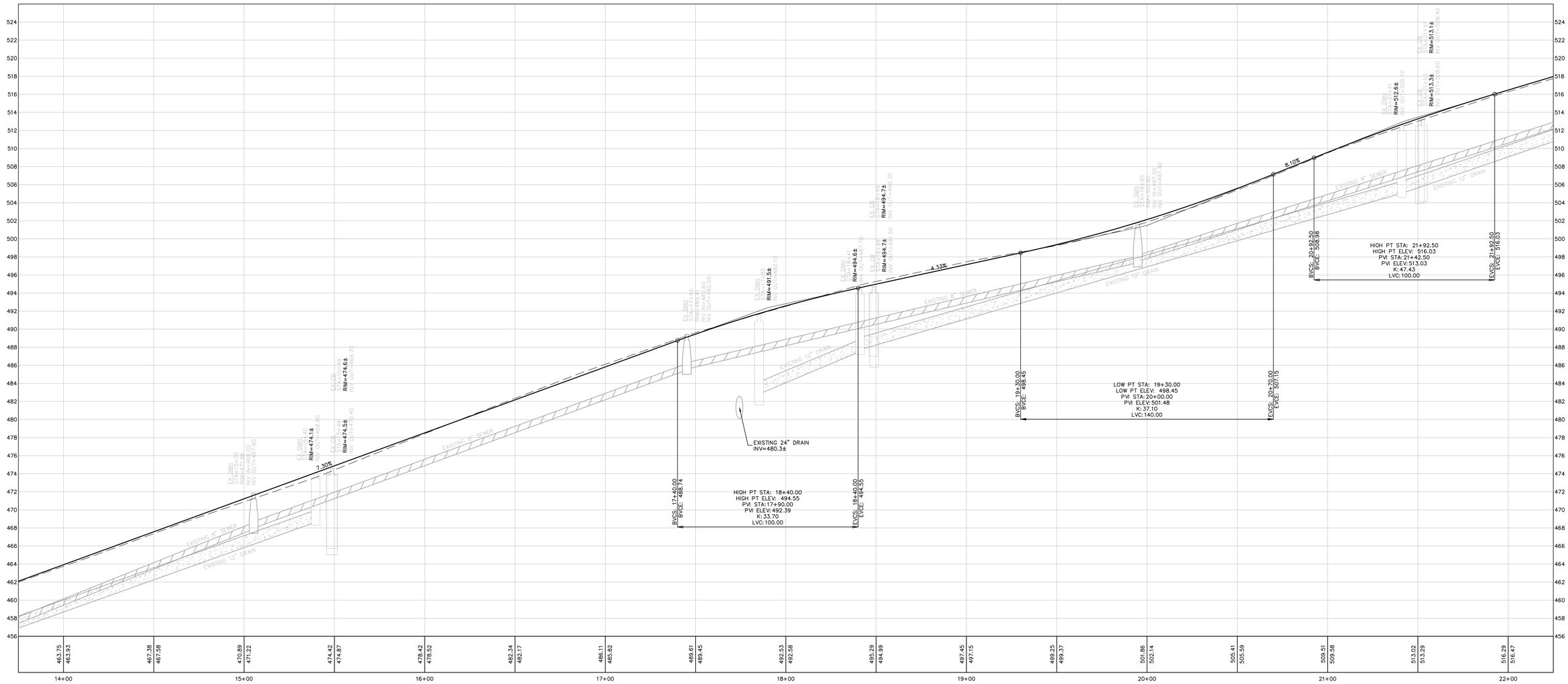
NITSCH PROJECT #12936

PLANNING BOARD APPROVALS



PLAN VIEW
SCALE: 1"=20'-0"

SCALE:
H = 1" = 20'
20 10 0 0 20 40
4 2 0 4 8
V = 1" = 4'



DRIVEWAY CENTERLINE PROFILE STA 14+00.00 TO STA 22+00.00
HORIZONTAL SCALE: 1"=20'-0"
VERTICAL SCALE: 1"=4'-0"

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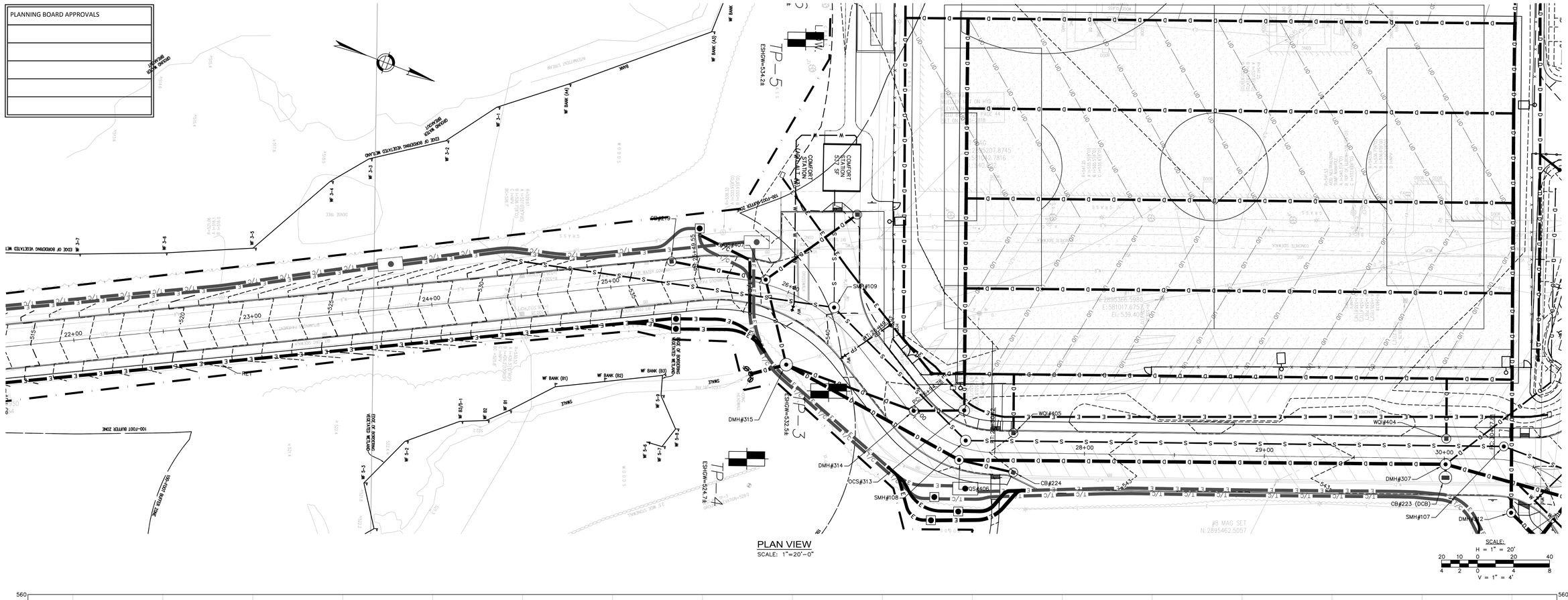
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
DRIVEWAY CENTERLINE PROFILE

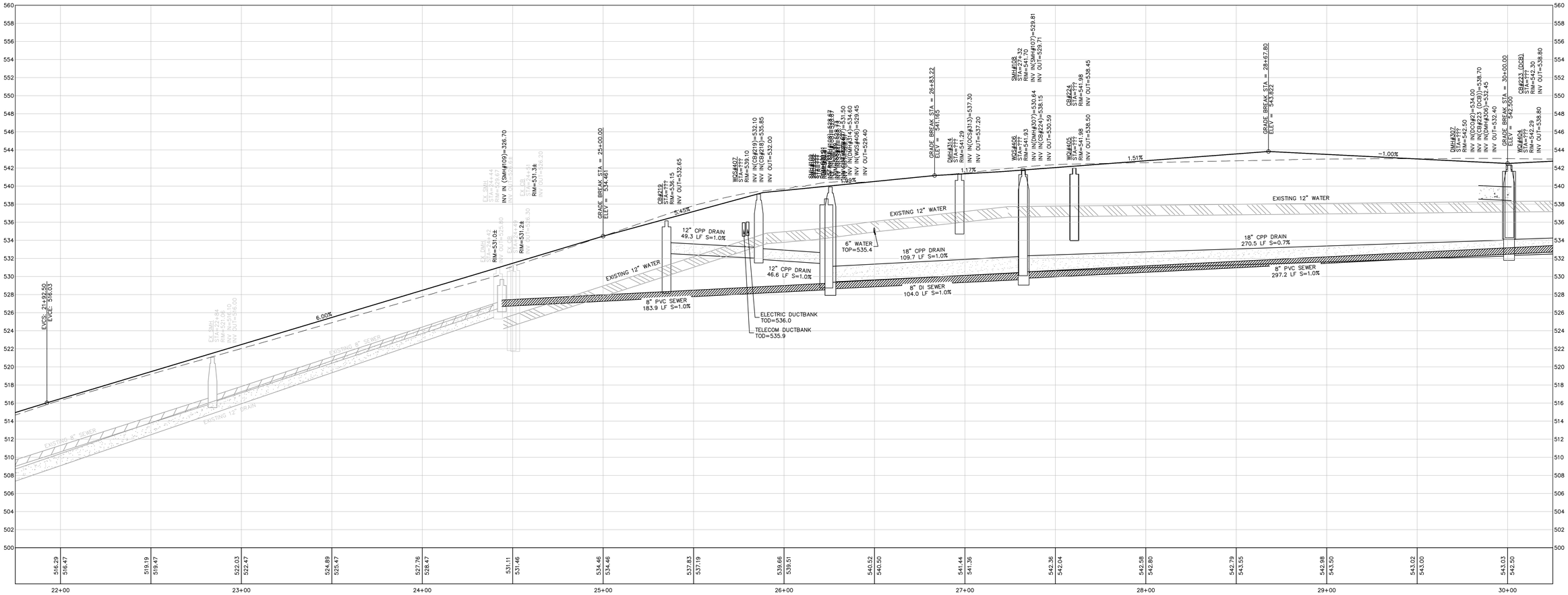
JOB NUMBER: 18-08
DRAWN BY: JCZ, RL
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C9.02

NITSCH PROJECT #12936

PLANNING BOARD APPROVALS



PLAN VIEW
SCALE: 1"=20'-0"



DRIVEWAY CENTERLINE PROFILE STA 22+00.00 TO 30+00.00

HORIZONTAL SCALE: 1"=20'-0"
VERTICAL SCALE: 1"=4'-0"

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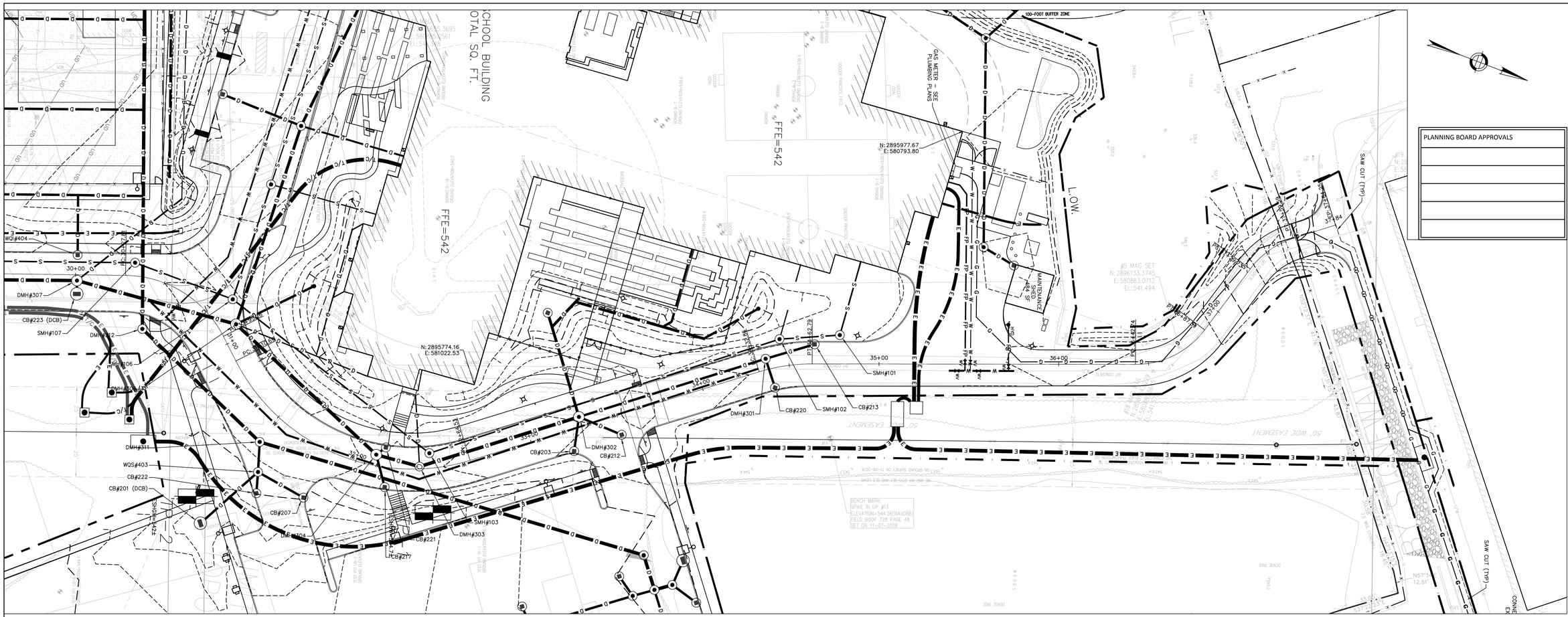
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
DRIVEWAY CENTERLINE PROFILE

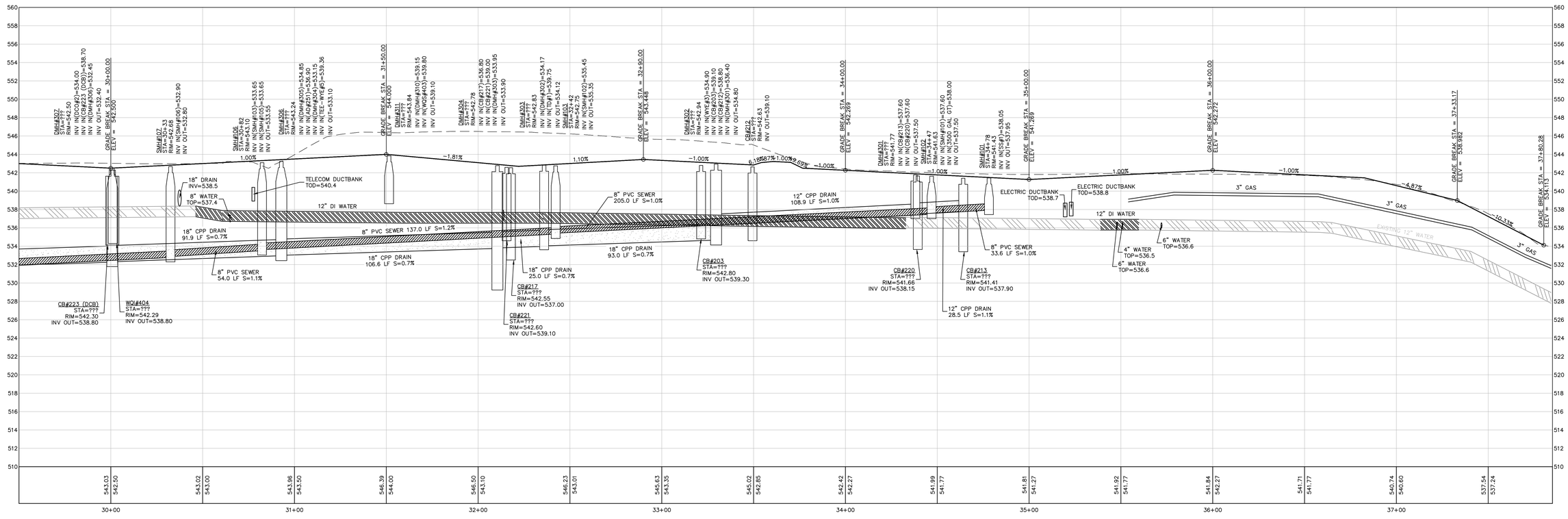
JOB NUMBER: 18-08
DRAWN BY: JCZ, RL
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C9.03

NITSCH PROJECT #12936



PLAN VIEW
SCALE: 1"=20'-0"

PLANNING BOARD APPROVALS



DRIVEWAY CENTERLINE PROFILE STA 29+50.00 TO 37+85.00
HORIZONTAL SCALE: 1"=20'-0"
VERTICAL SCALE: 1"=4'-0"

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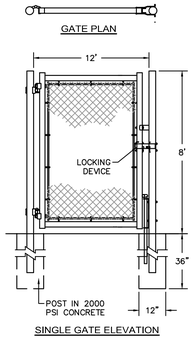
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
DRIVEWAY CENTERLINE PROFILE

JOB NUMBER: 18-08
DRAWN BY: JCZ, RL
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: 1"=20'
SHEET NO: C9.04

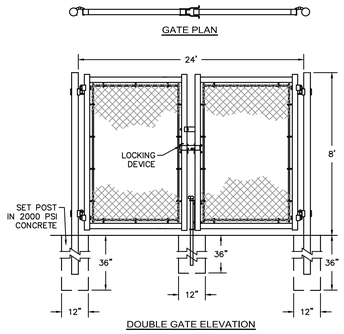
NITSCH PROJECT #12936

PLANNING BOARD APPROVALS



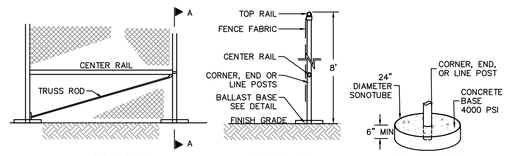
12' WIDE EMERGENCY GATE

NOT TO SCALE



24' WIDE DOUBLE GATE

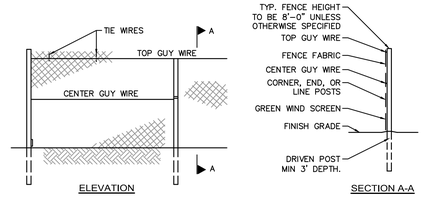
NOT TO SCALE



NOTES:
1. END, GATE AND CORNER POSTS SHALL BE BRACED TO ADJACENT LINE POSTS. (MORE THAN 30° CHANGE IN DIRECTION CONSTITUTES A CORNER)
2. FABRIC SHALL BE 0.148" GAUGE MIN. WIRE, WOVEN INTO APPROXIMATELY 2" DIAMOND MESH.
3. ZINC-COATED STEEL FABRIC BASE METAL SHALL BE COATED WITH PRIME WESTERN SPELTER OR EQUAL.
4. ALUMINUM COATED STEEL FABRIC BASE METAL SHALL BE COATED WITH ALUMINUM ALLOY.
5. LINE POSTS SHALL BE 2½" O.D. END OR CORNER POSTS SHALL BE 3" O.D.
6. THE CONTRACTOR IS RESPONSIBLE FOR SURFACE RESTORATION ONCE THE FENCE IS REMOVED.
7. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE TEMPORARY CONSTRUCTION FENCE AT THE CONCLUSION OF THE PROJECT.

TEMPORARY CHAIN LINK CONSTRUCTION FENCE WITH BALLAST BASE

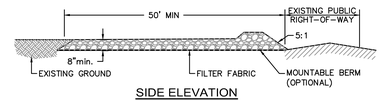
NOT TO SCALE



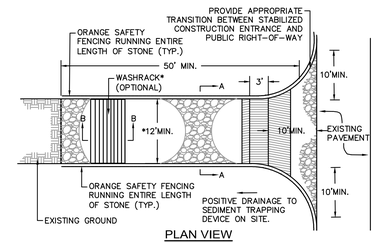
CONSTRUCTION FENCE AND GATE NOTES:
1. FABRIC SHALL BE 0.148" WIRE, WOVEN INTO APPROXIMATELY 2" DIAMOND MESH.
2. THE FENCE FABRIC SHALL BE ZINC COATED STEEL OR ALUMINUM COATED STEEL.
3. FENCE POSTS SHALL RECEIVE THE SAME COATING AND TREATMENT AS THE FENCE FABRIC (DESCRIBED ABOVE).
4. THE CONTRACTOR SHALL ADD A GREEN WIND SCREEN
5. LINE POSTS SHALL BE 2½" O.D. END OR CORNER POSTS SHALL BE 3" O.D.
6. THE CONTRACTOR IS RESPONSIBLE FOR SURFACE RESTORATION ONCE THE FENCE IS REMOVED.
7. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE TEMPORARY CONSTRUCTION FENCE AT THE CONCLUSION OF THE PROJECT.

CHAIN LINK CONSTRUCTION FENCE

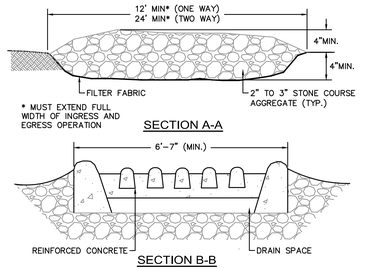
NOT TO SCALE



SIDE ELEVATION



PLAN VIEW

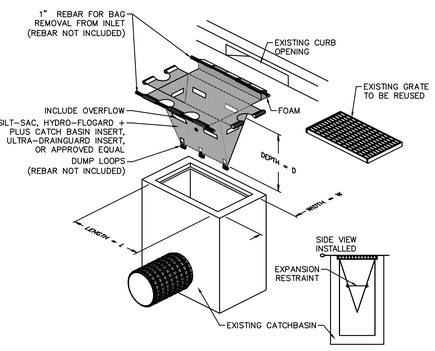


SECTION B-B

CONSTRUCTION SPECIFICATIONS
1. LENGTH – GREATER THAN OR EQUAL TO 50 FEET
2. WIDTH – TWELVE FOOT MINIMUM (ONE WAY), TWENTY FOUR FOOT MINIMUM (TWO WAY), BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
3. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM SHALL BE PERMITTED.
4. THICKNESS – 8"
5. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
6. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED.

STABILIZED CONSTRUCTION ENTRANCE

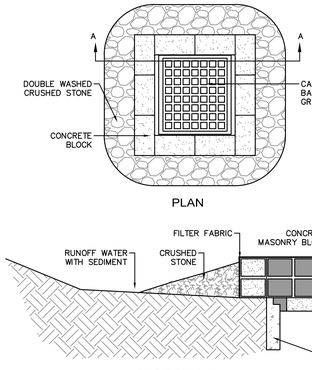
NOT TO SCALE



THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS SHEET, OVERLAND OR CONCENTRATED FLOWS (NOT GREATER THAN 1 CFS). THE METHOD CAN DRAIN FLAT AREA TO STEEP SLOPES. INLET CAPACITY WILL BE DECREASED WITH THIS METHOD AND THE CONTRACTOR SHALL EXPECT PONDING DURING HIGH FLOW EVENTS.

INLET PROTECTION - OPTION 1 CATCH BASIN WITH SILTATION SACK

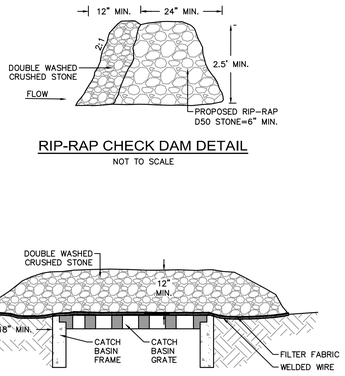
NOT TO SCALE



THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND STRUCTURE.

INLET PROTECTION - OPTION 2 CATCH BASIN W/ BLOCK AND GRAVEL

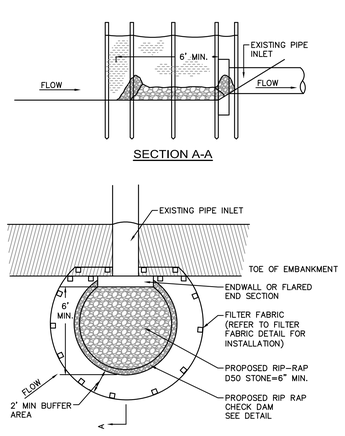
NOT TO SCALE



THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS. THIS METHOD NOT ACCEPTABLE IN ACTIVE TRAFFIC AREAS.

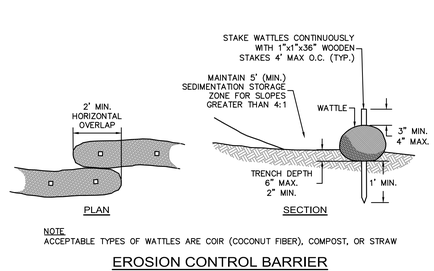
INLET PROTECTION - OPTION 3 CATCH BASIN WITH GRAVEL

NOT TO SCALE



CULVERT INLET PROTECTION WITH SILT FENCE

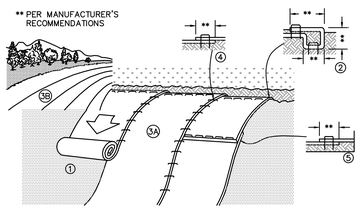
NOT TO SCALE



NOTE
ACCEPTABLE TYPES OF WATTLES ARE COIR (COCONUT FIBER), COMPOST, OR STRAW

EROSION CONTROL BARRIER WATTLES FOR SLOPES LESS THAN 10:1

NOT TO SCALE



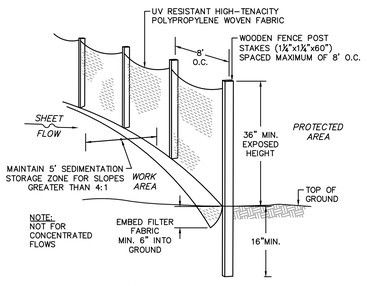
SLOPE INSTALLATION

NOTES:

1. PREPARE SOIL BEFORE INSTALLING EROSION CONTROL BLANKETS (ECB's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE ECB's IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING PORTION OF ECB's BACK OVER SEED AND COMPACTED SOIL. SECURE ECB's OVER COMPACTED SOIL WITH A ROW OF STAKES/STAPLES SPACED ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATIONS ACROSS THE WIDTH OF THE ECB's.
3. ROLL THE ECB's DOWN (A) OR HORIZONTALLY (B) ACROSS THE SLOPE. ECB's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL ECB's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAKES/STAPLES IN APPROPRIATE LOCATIONS AS SHOWN ON THE STAKE/STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL ECB's MUST BE STAKED/STAPLED WITH OVERLAP DEPENDING ON ECB's TYPE. SEE THE MANUFACTURER'S RECOMMENDATIONS.
5. CONSECUTIVE ECB's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN OVERLAP (SEE THE MANUFACTURER'S RECOMMENDATIONS). STAKE/STAPLE THROUGH OVERLAPPED AREA, ACROSS ENTIRE ECB's WIDTH PER MANUFACTURER'S RECOMMENDATIONS.
6. IN LOOSE SOIL CONDITIONS, THE USE OF STAKE OR STAPLE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE ECB's.
7. THE CONTRACTOR SHALL FOLLOW ALL INSTALLATION INSTRUCTIONS AS RECOMMENDED BY THE MANUFACTURER.

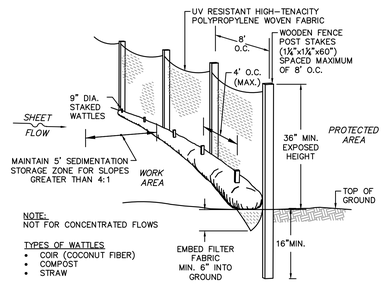
TEMPORARY EROSION CONTROL BLANKET FOR STEEP SLOPES DETAIL

NOT TO SCALE



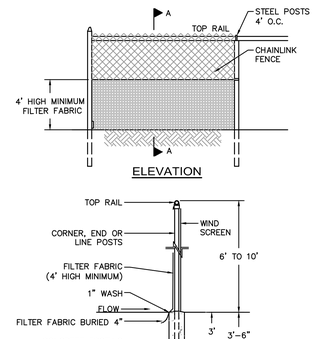
PERIMETER EROSION CONTROL BARRIER OPTION A - SILT FENCE DETAIL

NOT TO SCALE



PERIMETER EROSION CONTROL BARRIER OPTION B - SILT FENCE DETAIL WITH WATTLES

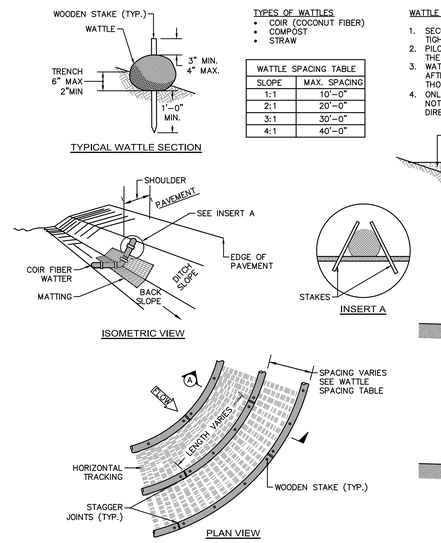
NOT TO SCALE



NOTES:
1. CHAINLINK FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES.
2. FILTER FABRIC SHALL BE FASTENED SECURELY TO CHAINLINK FENCE WITH TIES SPACED HORIZONTALLY 24" AS THE TOP AND MIDSECTION.
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6"
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL SHALL BE REMOVED WHEN SEDIMENT BUILD-UP REACHES 50% OF THE HEIGHT OF THE FILTER FABRIC.
5. MAINTENANCE OF SILT FENCE SHALL BE RECORDED TO IN THE SWPPP

PERIMETER EROSION CONTROL BARRIER OPTION C - SUPER SILT FENCE

NOT TO SCALE



EROSION CONTROL BARRIER - WATTLES FOR STEEP SLOPES

NOT TO SCALE

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STAMP:
COMMONWEALTH OF MASSACHUSETTS
SANDRA A. BROCK
CIVIL
No. 39417
REGISTERED PROFESSIONAL ENGINEER
7/31/2020

REVISIONS:

No.	Description	Date

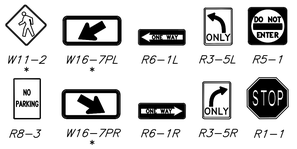
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

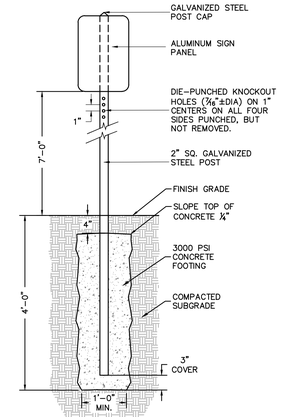
TITLE:
CIVIL DETAILS

JOB NUMBER: 18-08
DRAWN BY: JCZ
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: N/A
SHEET NO: C11.00

NITSCH PROJECT #12936

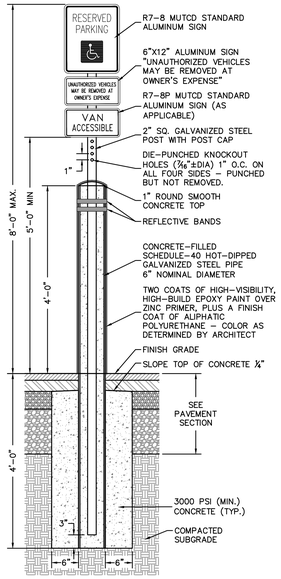
PLANNING BOARD APPROVALS





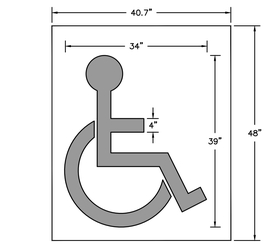
TYPICAL SIGN POST SETTING DETAIL

NOT TO SCALE



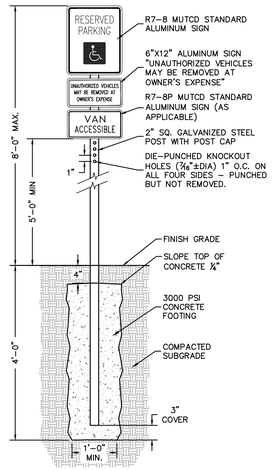
ACCESSIBLE PARKING SIGN DETAIL
POST SET IN BOLLARD

NOT TO SCALE



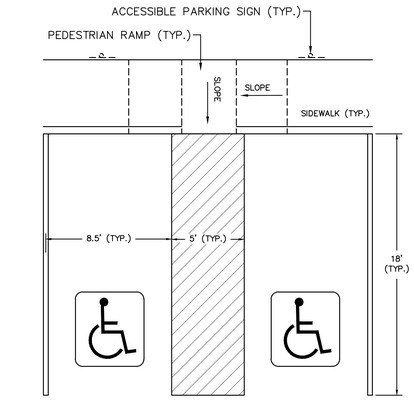
ACCESSIBLE PARKING STENCIL DETAIL

NOT TO SCALE



ACCESSIBLE PARKING SIGN POST
SETTING TYPICAL DETAIL

NOT TO SCALE



ACCESSIBLE PARKING DETAIL

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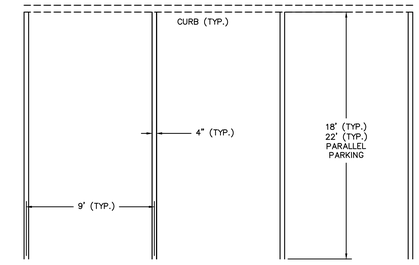
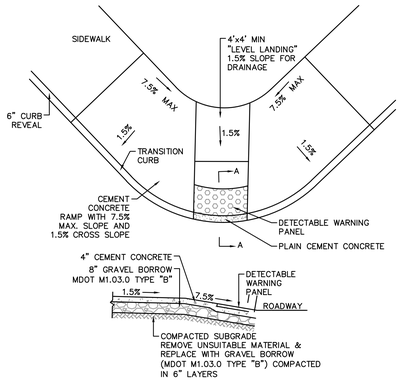


NOTE:
STRIPING SHALL BE INSTALLED PER SPECIFICATIONS

TYPICAL PARKING STRIPING DETAIL

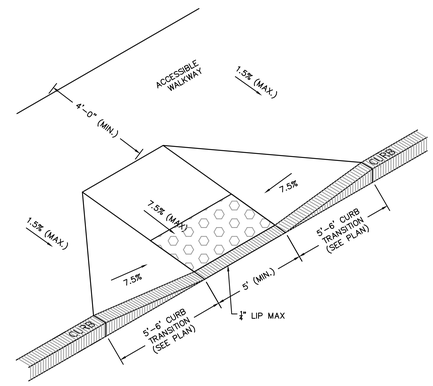
NOT TO SCALE



SECTION A-A

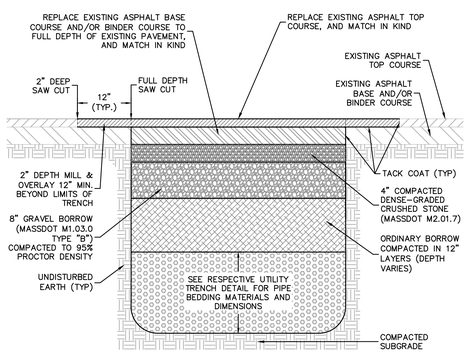
PEDESTRIAN RAMP AT CORNER DETAIL

NOT TO SCALE



ACCESSIBLE RAMPS WITH GREATER THAN 12'-6" SIDEWALK DETAIL

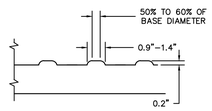
NOT TO SCALE



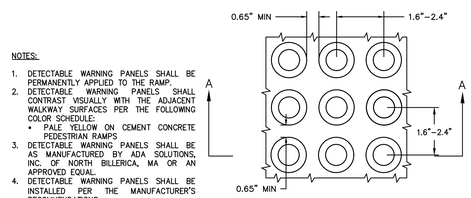
NOTES:
1. IF TWO PARALLEL TRENCHES ARE LESS THAN 20 FEET APART, THEN ALL PAVEMENT BETWEEN TRENCHES SHALL BE MILLED & OVERLAYED TO A TWO INCH DEPTH.
2. IN PUBLIC STREETS, IF EXISTING PAVEMENT IS LESS THAN 5 YEARS OLD, THEN FLOWABLE FILL SHALL BE USED FOR ALL TRENCH BACKFILL, AND THE FINISHED PAVEMENT SHALL BE INFRARED TREATED IN ACCORDANCE WITH DPW STANDARDS.

PAVEMENT RESTORATION OVER TRENCH DETAIL

NOT TO SCALE



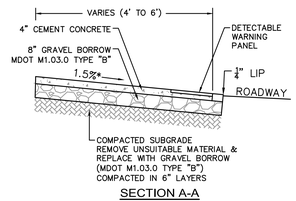
SECTION A-A



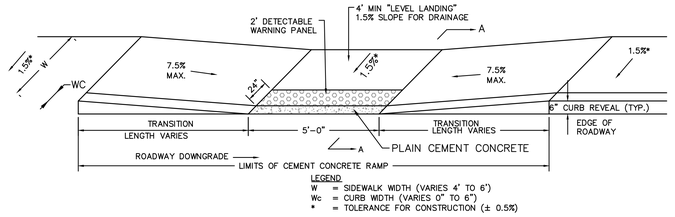
DETECTABLE WARNING PANEL

DETECTABLE WARNING PANEL FOR PEDESTRIAN RAMPS DETAIL

NOT TO SCALE



SECTION A-A



LEGEND
W = SIDEWALK WIDTH (VARIES 4' TO 6')
Wc = CURB WIDTH (VARIES 0" TO 6")
* = TOLERANCE FOR CONSTRUCTION (± 0.5%)

PEDESTRIAN RAMP DETAIL (4' TO 6' WIDE)

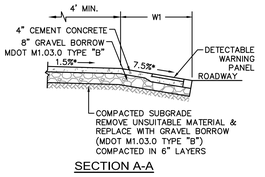
NOT TO SCALE

ROADWAY PROFILE GRADE	HIGH SIDE TRANSITION LENGTH
ROADWAY PROFILE GRADE %	HIGH SIDE TRANSITION LENGTH (FEET)
0	6'-6"
0-1	7'-8"
1-2	9'-0"
2-3	11'-0"
3-4	14'-0"
>4	15' (MAX.)

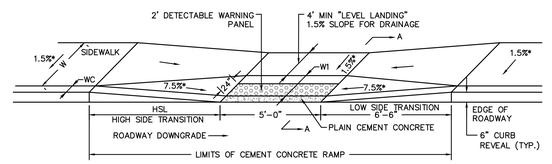
NOTE-BASED ON A DESIGN SLOPE OF 7.5% & A REVEAL OF 6"

LEGEND:

HSL = HIGH SIDE TRANSITION LENGTH (VARIES-SEE CHART)
W = SIDEWALK WIDTH (USABLE WIDTH)
W1 = PERPENDICULAR RAMP LENGTH (W-4')
Wc = CURB WIDTH (VARIES 0"-6")
* = TOLERANCE FOR CONSTRUCTION (±0.5%)



SECTION A-A



PEDESTRIAN RAMP DETAIL
(6'-0" TO 12'-6" WIDE)

NOT TO SCALE

HOT MIX ASPHALT PAVING (TWO COURSES) DETAIL

NOT TO SCALE

MOUNTABLE GRANITE CURB SETTING DETAIL

NOT TO SCALE

SLOPED GRANITE EDGING DETAIL

NOT TO SCALE

FLUSH GRANITE CURB SETTING DETAIL

NOT TO SCALE

VERTICAL GRANITE CURB SETTING DETAIL

NOT TO SCALE

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STAMP:
COMMONWEALTH OF MASSACHUSETTS
SANDRA A. BROCK
CIVIL
No. 39417
REGISTERED PROFESSIONAL ENGINEER
7/31/2020

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

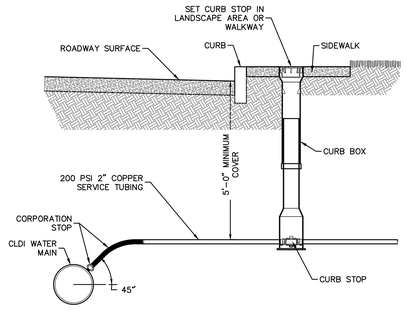
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
CIVIL DETAILS

JOB NUMBER: 18-08
DRAWN BY: JCZ
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: N/A
SHEET NO: C11.01

NITSCH PROJECT #12936

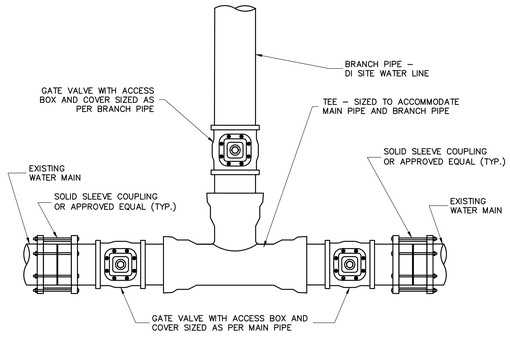
PLANNING BOARD APPROVALS



NOTES:
1. SERVICES TO BE ONE CONTINUOUS LENGTH OF TUBING FROM THE WATER MAIN TO CURB STOP (NO UNIONS ALLOWED).

CORPORATION STOP AND CURB STOP DETAIL FOR 2" SERVICE PIPES

NOT TO SCALE



TEE CONNECTION TO EXISTING WATER SERVICE DETAIL

NOT TO SCALE

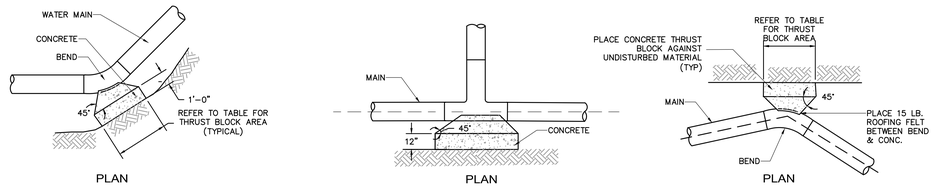


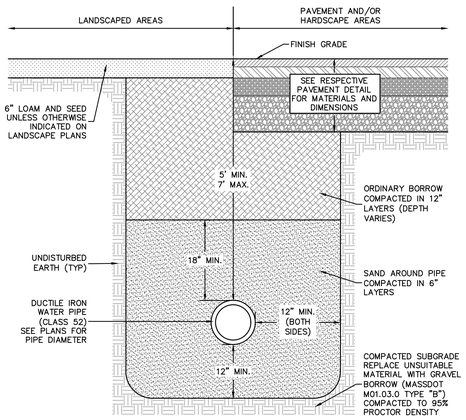
TABLE OF BEARING AREAS (IN SQUARE FEET) AGAINST UNDISTURBED MATERIAL FOR FITTING. *

SIZE OF MAIN (INCHES)	90° BEND (S.F.)	45° BEND (S.F.)	DEAD END (S.F.)
2 & 4	2.3	1.3	1.6
6	4.7	2.5	3.3
8	8.0	4.5	6.0
12	17.0	9.5	12.0

NOTES:
1. THRUST BLOCKS TO BE USED ON ALL PRESSURE PIPES AT HORIZONTAL AND VERTICAL BENDS GREATER OR EQUAL TO 45°, TEES AND DEAD ENDS.
2. FOR FITTINGS WITH LESS THAN 45° DEFLECTION USE BEARING AREAS FOR 45° BEND.
3. BEARING AREAS BASED ON HORIZONTAL PASSIVE SOIL PRESSURE OF 2000 PSF AND A MINIMUM INTERNAL WATER PRESSURE OF 175 PSIG. JOINTS SHALL NOT BE ENCASED IN CONCRETE, BEARING AREAS MAY BE DISREGARDED FOR TRENCHES IN ROCK WHERE THE TOP OF THE ROCK FACE IS AT OR ABOVE THE CROWN OF THE PIPE. HOWEVER, CONCRETE BACKING SHALL BE PLACED BETWEEN THE PIPE AND ROCK FACE.

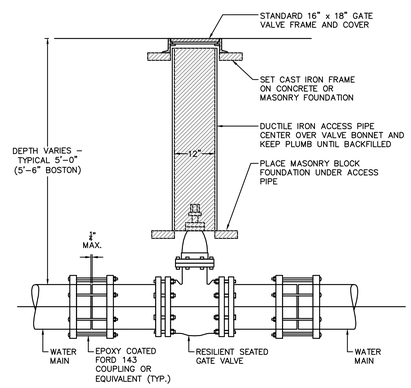
THRUST BLOCK DETAILS

NOT TO SCALE



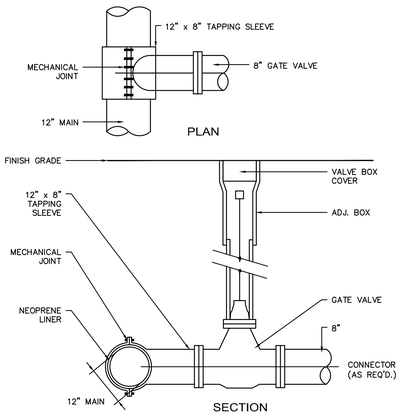
WATER TRENCH DETAIL

NOT TO SCALE



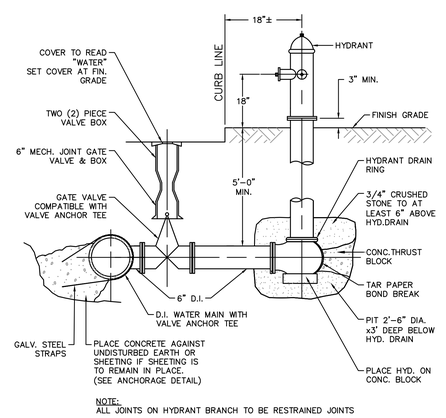
GATE VALVE DETAIL

NOT TO SCALE



TAPPING SLEEVE, VALVE & BOX DETAIL

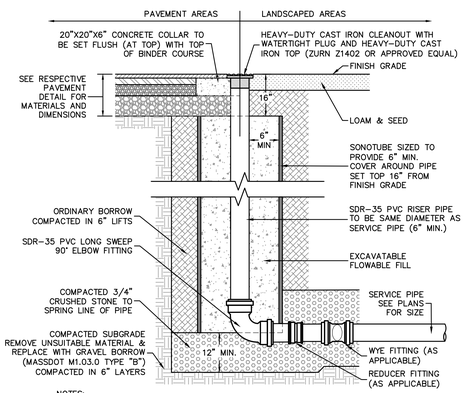
NOT TO SCALE



NOTE:
ALL JOINTS ON HYDRANT BRANCH TO BE RESTRAINED JOINTS

FIRE HYDRANT DETAIL

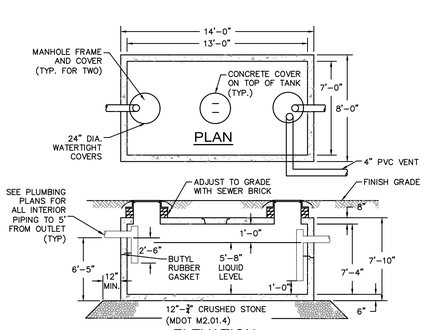
NOT TO SCALE



NOTES:
1. REFER TO THE PAVEMENT SECTION DETAIL AND/OR LANDSCAPE SECTION DETAIL FOR SURFACE MATERIALS AND DIMENSIONS

CLEANOUT DETAIL

NOT TO SCALE

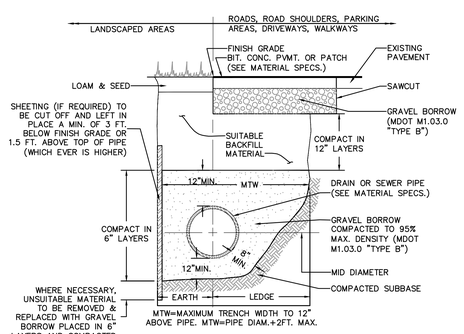


SPECIFICATIONS:

1. CONCRETE MINIMUM STRENGTH – 5,000 PSI @ 28 DAYS
2. STEEL REINFORCEMENT – ASTM A615 GR. 60, A185 OR A497 – 1" MIN. COVER
3. DESIGN LOADING – AASHTO HS20-44 – EARTH COVER 0 TO 5 FEET
4. WATER TABLE – 0 FEET
5. CONSTRUCTION JOINT – SEALED WITH 1" DIA. BUTYL RUBBER OR EQUIVALENT
6. TOTAL CAPACITY – 3,500 GALLONS

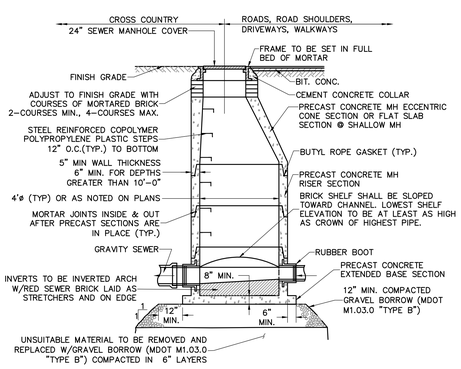
3,500 GALLON GREASE TRAP DETAIL

NOT TO SCALE



STANDARD TRENCH DETAIL FOR DRAIN AND SEWER PIPE

NOT TO SCALE



TYPICAL SEWER MANHOLE DETAIL

NOT TO SCALE

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F: (617) 338-6472

STAMP:

COMMONWEALTH OF MASSACHUSETTS
SANDRA A. BROCK
CIVIL
No. 39417
REGISTERED PROFESSIONAL ENGINEER
7/31/2020

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

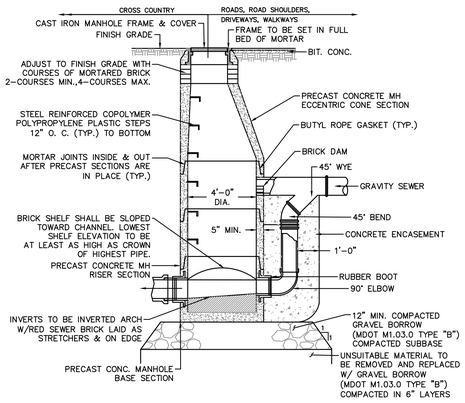
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
CIVIL DETAILS

JOB NUMBER: 18-08
DRAWN BY: JCZ
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: N/A
SHEET NO: C11.02

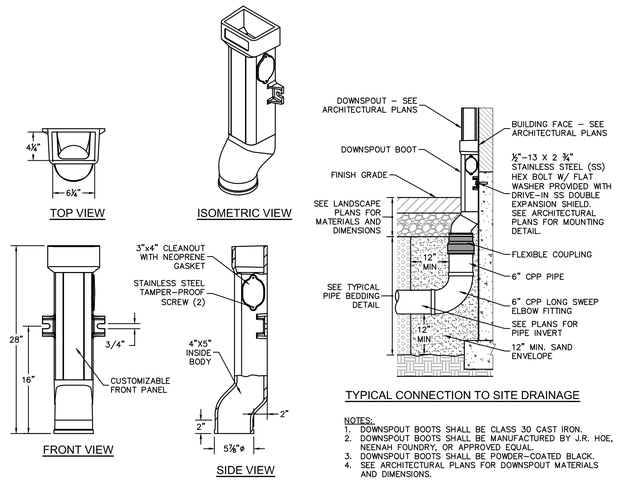
NITSCH PROJECT #12936

PLANNING BOARD APPROVALS



DROP MANHOLE DETAIL

NOT TO SCALE



TYPICAL DOWNSPOUT BOOT DETAIL

NOT TO SCALE

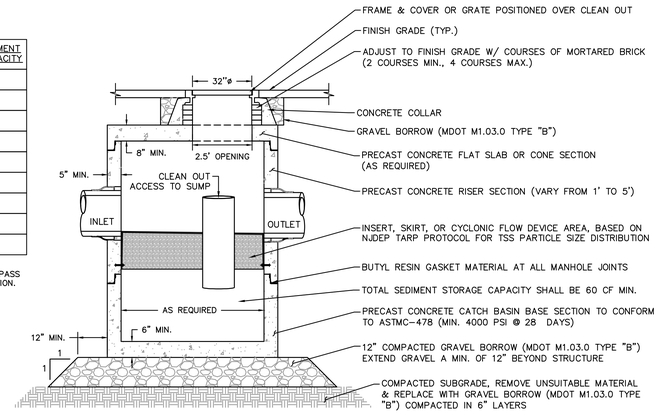
TYPICAL CONNECTION TO SITE DRAINAGE

NOTES:
1. DOWNSPOUT BOOTS SHALL BE CLASS 30 CAST IRON.
2. DOWNSPOUT BOOTS SHALL BE MANUFACTURED BY J.R. HOE, NEENAH FOUNDRY, OR APPROVED EQUAL.
3. DOWNSPOUT BOOTS SHALL BE POWDER–COATED BLACK.
4. SEE ARCHITECTURAL PLANS FOR DOWNSPOUT MATERIALS AND DIMENSIONS.

STRUCTURE NAME	MINIMUM WQF	PEAK FLOW RATE*	MINIMUM SEDIMENT STORAGE CAPACITY
WQS#401	0.49 CFS	2.27 CFS	30 CF
WQS#402	0.61 CFS	3.04 CFS	30 CF
WQS#403	0.08 CFS	2.37 CFS	30 CF
WQI#404	0.15 CFS	0.72 CFS	30 CF
WQI#405	0.05 CFS	0.26 CFS	30 CF
WQS#406	0.66 CFS	9.93 CFS	30 CF
WQS#407	0.30 CFS	1.77 CFS	30 CF
WQS#408	0.35 CFS	1.80 CFS	30 CF
WQS#409	0.38 CFS	2.43 CFS	30 CF

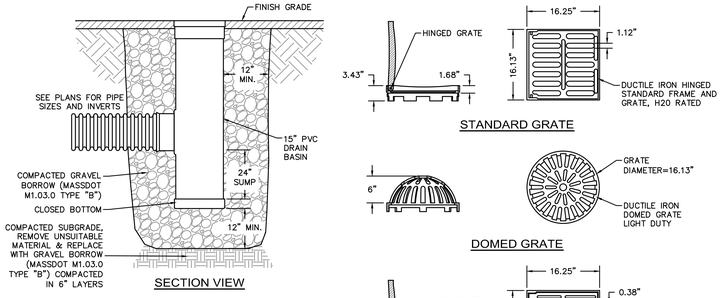
* PEAK FLOW RATE BASED ON RATIONAL ANALYSIS FOR A 25–YEAR STORM EVENT. STRUCTURE SHALL BE ABLE TO PASS PEAK FLOW RATE WITHOUT CAUSING A BACKWATER CONDITION.

NOTES:
1. THE USE OF FLEXIBLE CONNECTIONS IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
2. THE COVER SHOULD BE POSITIONED OVER THE OUTLET DROP PIPE AND THE OIL CLEANOUT PIPE.
3. STRUCTURE DESIGNED FOR H20 LOADING



WATER QUALITY STRUCTURE DETAIL

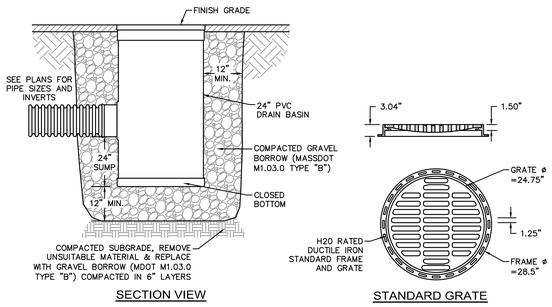
NOT TO SCALE



NOTES:
1. FRAME AND GRATE SHALL BE DUCTILE IRON CONFORMING TO ASTM A536 GRADE 70–50–05.
2. 15" AREA DRAINS SHALL BE NYLOPLAST MODEL 2815 AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC., OR APPROVED EQUAL.
3. AREA DRAINS SHALL BE CUSTOM MANUFACTURED ACCORDING TO THE PLANS AND DETAIL.
4. CASTINGS SHALL BE FURNISHED WITH A BLACK PAINT.
5. SEE PLANS FOR LAYOUT AND ELEVATIONS OF DRAIN PIPES TO AREA DRAINS.

15" AREA DRAIN DETAIL

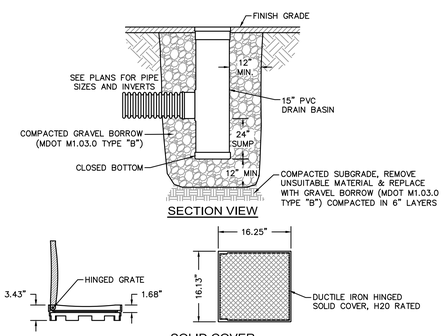
NOT TO SCALE



NOTES:
1. FRAME AND GRATE SHALL BE DUCTILE IRON CONFORMING TO ASTM A536 GRADE 70–50–05.
2. 24" AREA DRAINS SHALL BE NYLOPLAST MODEL 2824 AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC., OR APPROVED EQUAL.
3. AREA DRAINS SHALL BE CUSTOM MANUFACTURED ACCORDING TO THE PLANS AND DETAIL.
4. CASTINGS SHALL BE FURNISHED WITH A BLACK PAINT.
5. SEE PLANS FOR LAYOUT AND ELEVATIONS OF DRAIN PIPES TO AREA DRAINS.

24" AREA DRAIN DETAIL

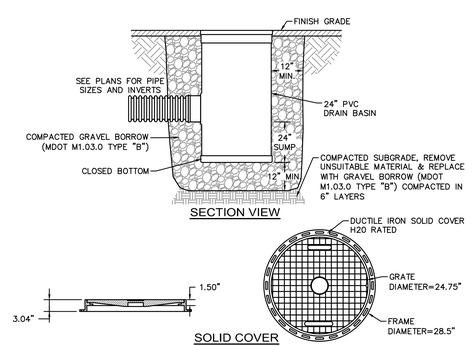
NOT TO SCALE



NOTES:
1. FRAME AND COVER SHALL BE DUCTILE IRON CONFORMING TO ASTM A536 GRADE 70–50–05.
2. 15" ACCESS BASINS SHALL BE NYLOPLAST MODEL 2815 AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC., OR APPROVED EQUAL.
3. ACCESS BASINS SHALL BE CUSTOM MANUFACTURED ACCORDING TO THE PLANS AND DETAIL.
4. CASTINGS SHALL BE FURNISHED WITH A BLACK PAINT.
5. SEE PLANS FOR LAYOUT AND ELEVATIONS OF DRAIN PIPES TO ACCESS BASINS.

15" ACCESS BASIN DETAIL

NOT TO SCALE



NOTES:
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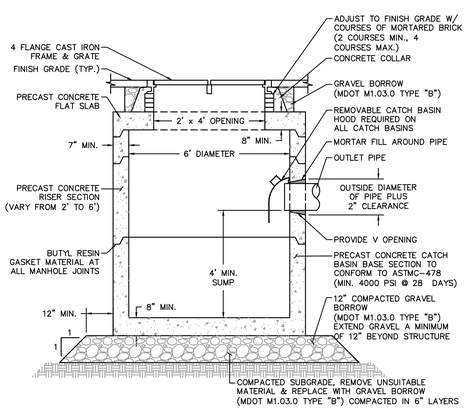
3. ACCESS BASINS SHALL BE CUSTOM MANUFACTURED ACCORDING TO THE PLANS AND DETAIL.
4. CASTINGS SHALL BE FURNISHED WITH A BLACK PAINT.
5. SEE PLANS FOR LAYOUT AND ELEVATIONS OF DRAIN PIPES TO ACCESS BASINS.

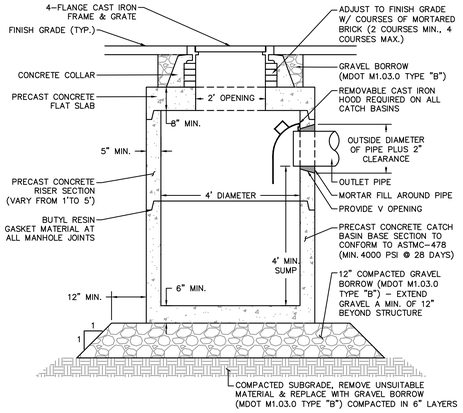
24" ACCESS BASIN DETAIL

NOT TO SCALE



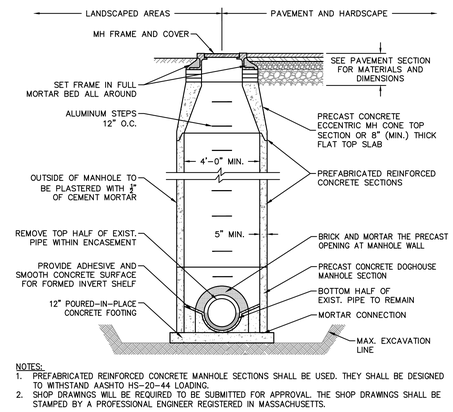
TYPICAL DOUBLE CATCH BASIN DETAIL

NOT TO SCALE



TYPICAL CATCH BASIN DETAIL

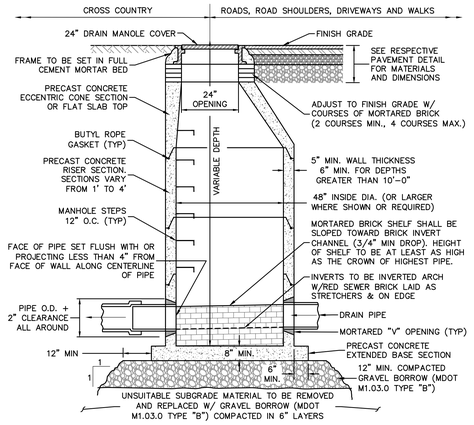
NOT TO SCALE



NOTES:
1. PREFABRICATED REINFORCED CONCRETE MANHOLE SECTIONS SHALL BE USED. THEY SHALL BE DESIGNED TO WITHSTAND AASHTO HS–20–44 LOADING.
2. SHOP DRAWINGS WILL BE REQUIRED TO BE SUBMITTED FOR APPROVAL. THE SHOP DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN MASSACHUSETTS.

DOGHOUSE MANHOLE DETAIL

NOT TO SCALE



TYPICAL DRAIN MANHOLE DETAIL

NOT TO SCALE

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STAMP:
COMMONWEALTH OF MASSACHUSETTS
SANDRA A. BROCK
CIVIL
No. 39417
REGISTERED PROFESSIONAL ENGINEER
7/31/2020

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

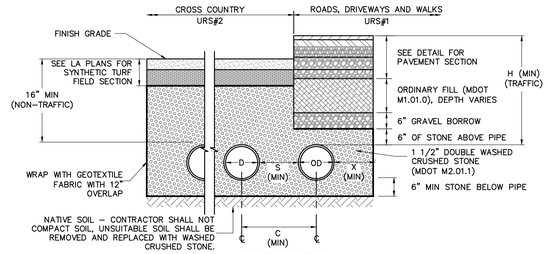
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
CIVIL DETAILS

JOB NUMBER: 18-08
DRAWN BY: JCZ
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: N/A
SHEET NO: C11.03

NITSCH PROJECT #12936

PLANNING BOARD APPROVALS



SECTION VIEW

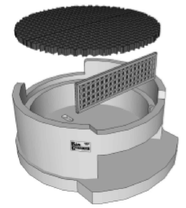
	NO. ROWS	PIPES PER ROW	NOMINAL DIAMETER (D)	OUTSIDE DIAMETER (OD)	MIN. SPACING C	S	X	H
URS#1	5	3	12"	14.5"	38.5"	24"	24"	42"
URS#2	5	15	12"	14.5"	48"-8.5"	47"-6"	30"	16"

NOTES:
1. ALL 5 ROWS OF PIPE AT URS#1 SHALL BE CONNECTED BY A 12" MANIFOLD PIPE AT EACH END WITH 24" END STONE BEYOND THE MANIFOLD.
2. ALL 5 ROWS OF PIPE AT URS#2 SHALL BE CONNECTED BY AN 18" MANIFOLD PIPE AT EACH END WITH 30" END STONE BEYOND THE MANIFOLD.

UNDERGROUND STORMWATER RECHARGE SYSTEM DETAIL

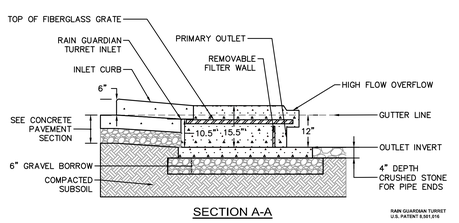
NOT TO SCALE

PLAN

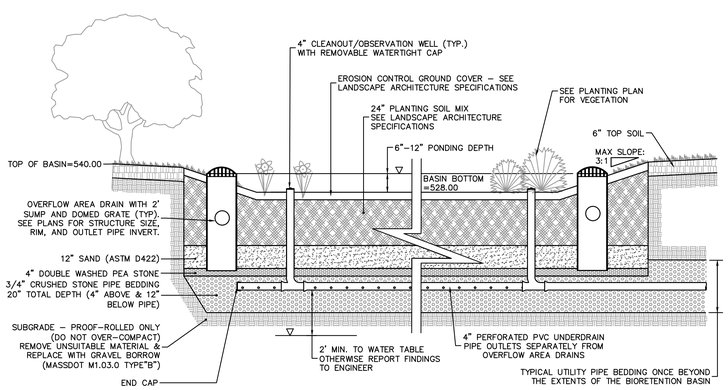


RAIN GUARDIAN TURRET DETAIL

NOT TO SCALE

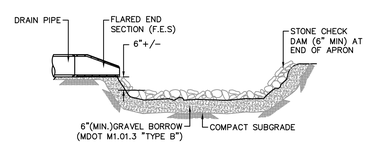


SECTION A-A

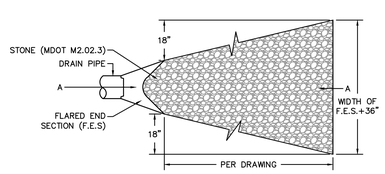


BIORETENTION BASIN

NOT TO SCALE



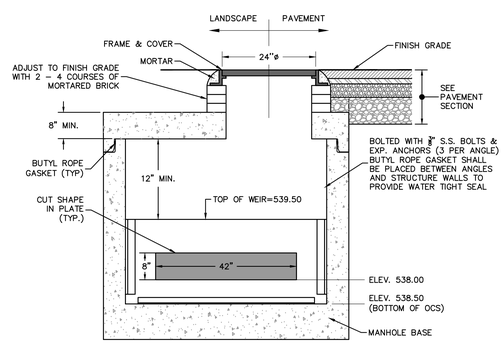
SECTION A-A



NOTE:
STONE SHALL BE DUMPED AND MACHINE GRADED (HAND GRADE AS NEEDED)

STONE APRON DETAIL

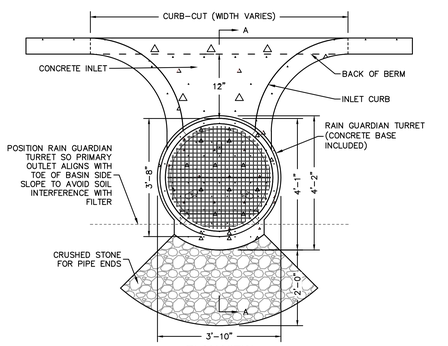
NOT TO SCALE



SECTION A-A

URS#2 OUTLET CONTROL STRUCTURE

NOT TO SCALE



PLAN VIEW

BIORETENTION BASIN #2 INLET DETAIL

NOT TO SCALE

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STAMP:

COMMONWEALTH OF MASSACHUSETTS
SANDRA A. BROCK
CIVIL
No. 39417
REGISTERED PROFESSIONAL ENGINEER
7/15/2020

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:
CIVIL DETAILS

JOB NUMBER: 18-08
DRAWN BY: JCZ
CHECKED BY: SAB
DATE: 8/5/2020
SCALE: N/A
SHEET NO: C11.04

NITSCH PROJECT #12936

PLANNING BOARD APPROVALS

DP-3

DP-1

DP-2

DP-6

SEE INSET

DESIGN POINT 1
IMPERVIOUS AREA = 153,106 SF

DESIGN POINT 1
PERVIOUS AREA = 134,698 SF

DESIGN POINT 2
IMPERVIOUS AREA = 17,407 SF

DESIGN POINT 2
PERVIOUS AREA = 64,336 SF

DESIGN POINT 3
IMPERVIOUS AREA = 13,627 SF

DESIGN POINT 3
PERVIOUS AREA = 223,944 SF

DESIGN POINT 4
IMPERVIOUS AREA = 70,731 SF

DESIGN POINT 4
PERVIOUS AREA = 21,594 SF

DESIGN POINT 5
IMPERVIOUS AREA = 8,935 SF

DESIGN POINT 5
PERVIOUS AREA = 2,863 SF

DESIGN POINT 6
IMPERVIOUS AREA = 0 SF

DESIGN POINT 6
PERVIOUS AREA = 82,198 SF

SCALE:
1" = 40'
40 20 0 40 80

DP-4

DP-5

INSET

SCALE:
1" = 80'
80 40 0 80 160

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COMMONWEALTH OF MASSACHUSETTS
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REGISTERED PROFESSIONAL ENGINEER
7/31/2020

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
EXISTING DRAINAGE AREA PLAN

JOB NUMBER: 18-08

DRAWN BY: JCZ, RL

CHECKED BY: SAB

DATE: 8/5/2020

SCALE: AS NOTED

SHEET NO: DA-EX

NITSCH PROJECT #12936

PLANNING BOARD APPROVALS

DP-3

DP-1

DP-2

DP-6

DP-4

DP-5

SEE INSET

INSET

DESIGN POINT 1
IMPERVIOUS AREA = 148,934 SF

DESIGN POINT 1
PERVIOUS AREA = 311,477 SF

DESIGN POINT 2
IMPERVIOUS AREA = 34,388 SF

DESIGN POINT 2
PERVIOUS AREA = 48,670 SF

DESIGN POINT 3
IMPERVIOUS AREA = 41,613 SF

DESIGN POINT 3
PERVIOUS AREA = 59,798 SF

DESIGN POINT 4
IMPERVIOUS AREA = 68,218 SF

DESIGN POINT 4
PERVIOUS AREA = 22,750 SF

DESIGN POINT 5
IMPERVIOUS AREA = 8,898 SF

DESIGN POINT 5
PERVIOUS AREA = 2,859 SF

DESIGN POINT 6
IMPERVIOUS AREA = 2,682 SF

DESIGN POINT 6
PERVIOUS AREA = 43,202 SF

SCALE:
1" = 40'
40 20 0 40 80

SCALE:
1" = 80'
80 40 0 80 160

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F: (617) 338-6472

STAMP:

COMMONWEALTH OF MASSACHUSETTS
SANDRA A. BROCK
CIVIL
No. 39417
REGISTERED PROFESSIONAL ENGINEER
7/31/2020

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
PROPOSED DRAINAGE AREA PLAN

JOB NUMBER: 18-08

DRAWN BY: JCZ, RL

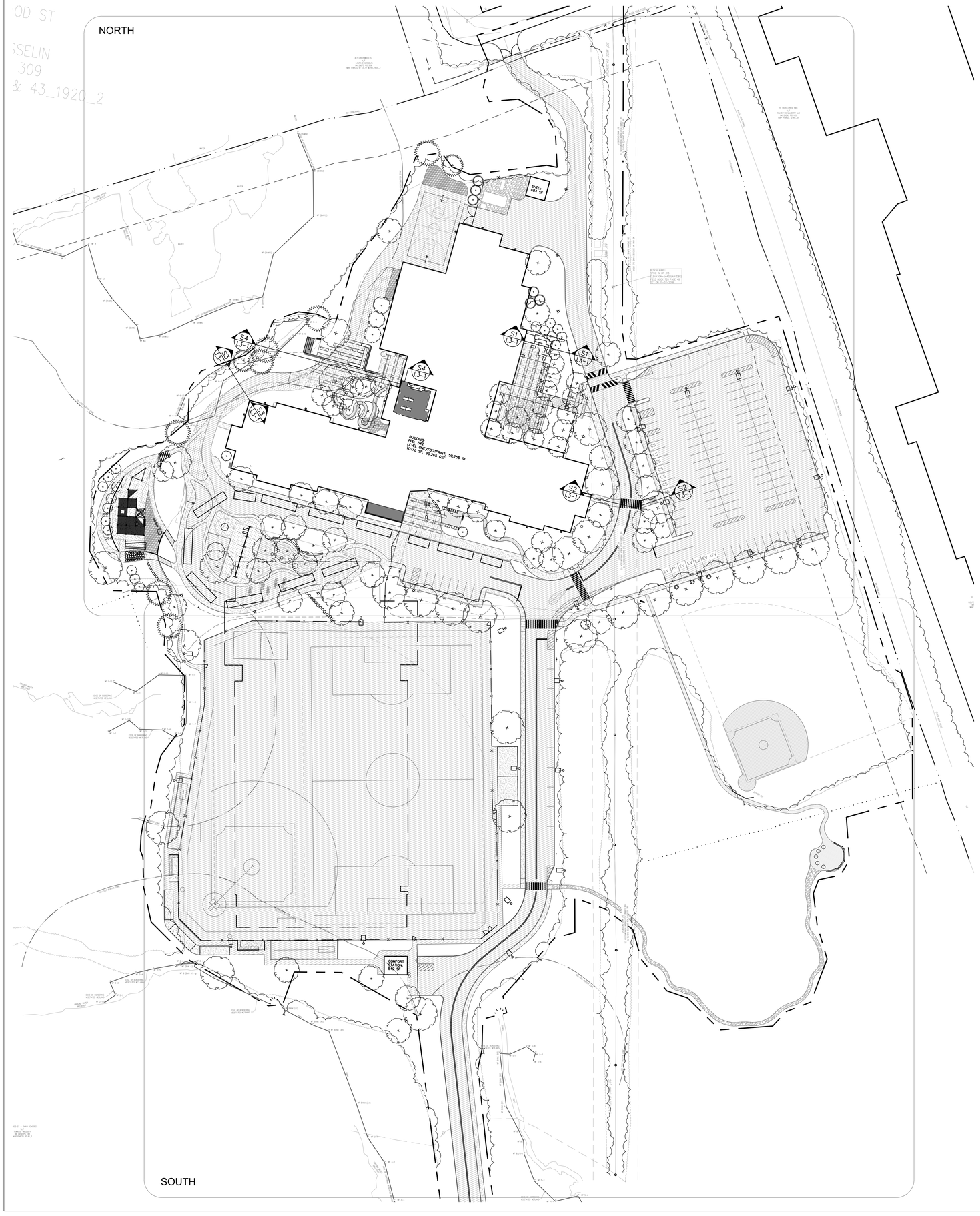
CHECKED BY: SAB

DATE: 8/5/2020

SCALE: AS NOTED

SHEET NO: DA-PR

NITSCH PROJECT #12936



LEGEND

- BLACK LOCUST DECKING
- POURED IN PLACE RUBBER PLAY SURFACING
- RAIN GARDEN
- ENGINEERED WOOD FIBER PLAY SURFACING
- STABILIZED STONE DUST
- SKINNED INFIELD
- VEHICULAR LAWN
- ASPHALT PAVING
- CIP CONCRETE PAVING
- INTEGRALLY COLORED CIP CONCRETE PAVING
- GRAVEL
- ARTIFICIAL TURF

- PICKET FENCE
- CHAIN LINK FENCE
- LOGS
- STEPPING STUMPS
- BENCH
- RECEPTACLES
- BIKE RACK
- PROPOSED TREE
- EXISTING TREE TO REMAIN
- LIMIT OF WORK
- SITE LIGHTING

NOTES

1. PRIOR TO CLEARING THE SITE FOR CONSTRUCTION, GENERAL CONTRACTOR TO HOST A PRE-CONSTRUCTION CONFERENCE TO REVIEW LAYOUT.

2. LAYOUT OF PATHS, WALKS, GRADES, SLOPES, AND PLAY STRUCTURES MUST BE IN STRICT CONFORMANCE WITH SITE PLANS. NO DEVIATIONS FROM CONTRACT GEOMETRIES WILL BE ACCEPTED UNLESS APPROVED BY LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE IN WRITING. LAYOUTS SHOULD BE BASED UPON CAD DOCUMENTS PROVIDED BY LANDSCAPE ARCHITECT AND CIVIL ENGINEER.

3. ALL LAYOUTS, MATERIALS, SITE FURNISHINGS, AND GRADES MUST COMPLY WITH THE U.S. ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD'S GUIDE TO ADA ACCESSIBILITY GUIDELINES FOR PLAY AREAS AND THE U.S. CONSUMER PRODUCT SAFETY COMMISSION'S PUBLIC PLAYGROUND SAFETY HANDBOOK.

4. ALL CENTERLINES OF PAVED AREAS, GRADE BREAKS TO BE STAKED IN THE FIELD WITH GRADE STAKES AND STRING LINES FOR APPROVAL PRIOR TO CONSTRUCTION. ALL LAYOUT AND STAKINGS SHALL BE PERFORMED BY A LICENSED SURVEYOR.

5. INSTALL CENTERLINES OF ALL PATHS USING A DIGITAL LAYOUT PROGRAM IN THE FIELD

6. INSTALL ALL GRADE BREAKS AND RIDGE LINES USING A DIGITAL LAYOUT PROGRAM IN THE FIELD

7. PROVIDE CURB CUTS AT ALL CROSS WALKS

8. REFER TO LANDSCAPE LEGEND FOR CLARIFICATION OF COMPONENTS AND LABELS.

9. PROVIDE EDGE RESTRAINTS FOR ALL LOOSE HARDSCAPE MATERIALS AND RUBBERIZED SURFACES

10. PROVIDE EXPANSION JOINTS AT THE INTERSECTION OF PAVING AND OTHER STRUCTURES, WALLS, OR FOUNDATIONS. PROVIDE EXPANSION JOINTS AT REGULAR INTERVALS NO MORE THAN 20' APART

12. UNLESS OTHERWISE NOTED, ALL AREA DISTURBED BY CONSTRUCTION SHALL RECEIVE HYDROSEED LAWN MIX ON PREPARED TOPSOIL OF A DEPTH AND QUALITY INDICATED BY DRAWINGS AND SPECIFICATIONS.

13. THIS PLAN WAS DEVELOPED BASED ON A SURVEY PREPARED BY NITSCH ENGINEERING IN 2020 AND PROVIDED TO T2 ARCHITECTURE FOR USE IN THIS PROJECT.

EDUCATIONAL SIGNAGE SCHEDULE ON L1.1. SEE CIVIL PLANS AND DETAILS FOR ROAD AND PARKING.

PLANNING BOARD APPROVALS

Turowski2 Architecture

P.O. Box 1290
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508.758.9777 phone
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CONSULTANT:
DODSON & FLINKER
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Florence, MA 01062
www.dodsonflinker.com

STAMP:

NOT FOR CONSTRUCTION

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:

LANDSCAPE KEY PLAN

JOB NUMBER: 18-08

DRAWN BY: NB, AG, DS

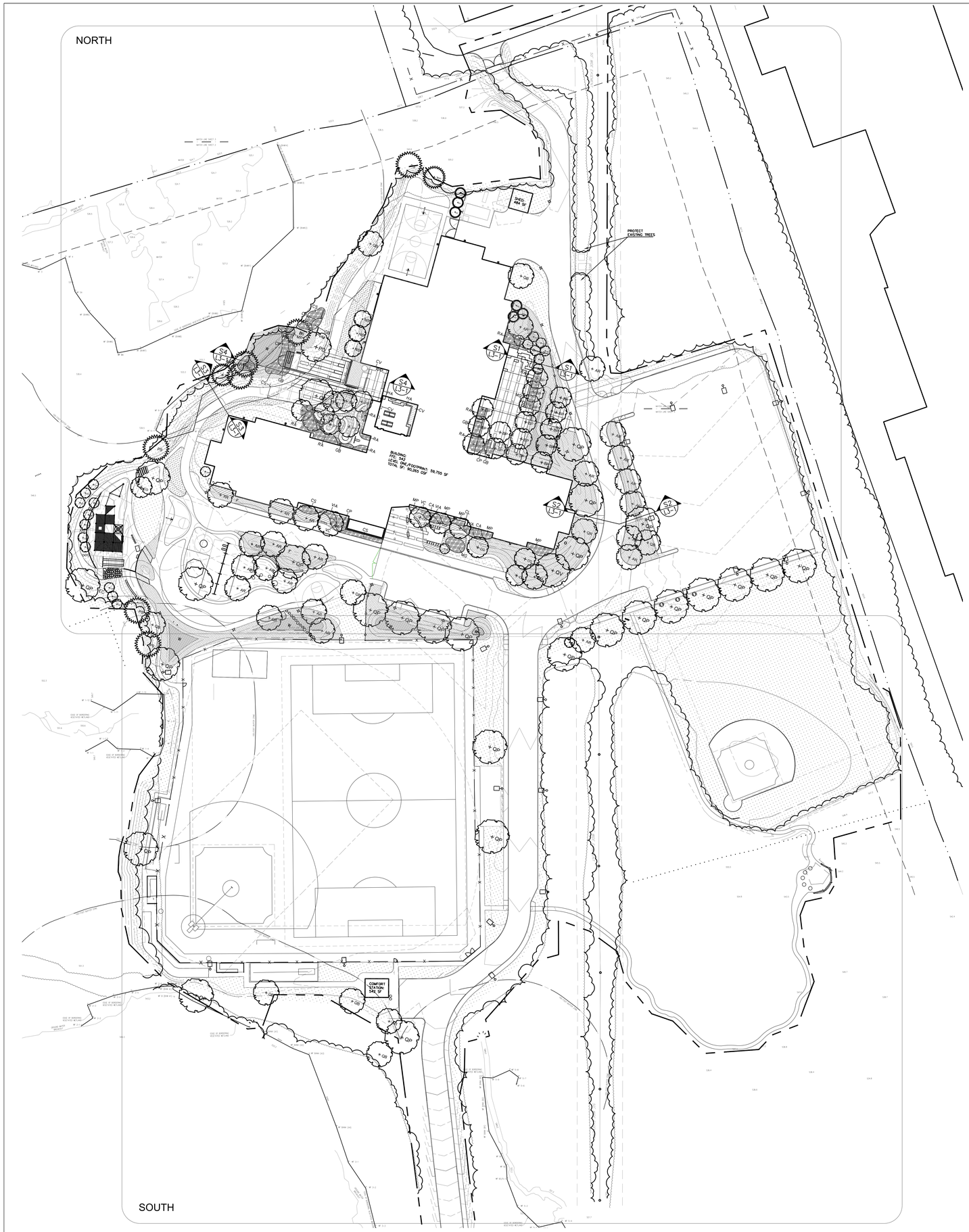
CHECKED BY: NB

DATE: 08/05/2020

SCALE: 1" = 40'

0" 1"

SHEET NO: L0.0



PLANTING SCHEDULE

TREES

QUANTITY	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	SPACING
16	BP	Betula populifolia 'white spire'	Whitespire gray birch	2–3" cal.	B & B	AS SHOWN
7	JV	Juniperus virginiana	Eastern red cedar	1.5" cal.	B & B	AS SHOWN
3	NS	Nyssa sylvatica	Black gum	3"–3.5" cal.	B & B	AS SHOWN
7	PS	Pinus strobus	Eastern white pine	2"–3" cal.	B & B	AS SHOWN
11	CF	Cornus florida 'Cloud 9'	Cloud 9 dogwood	2–3" cal.	B & B	AS SHOWN
25	AR	Acer rubrum	Red maple	3"–3.5" cal.	B & B	AS SHOWN
13	AA	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	1.5" cal.	B & B	AS SHOWN
27	QP	Quercus palustris	Pin oak	3"–3.5" cal.	B & B	AS SHOWN
9	QB	Quercus bicolor	Swamp white oak	2–3" cal.	B & B	AS SHOWN
1	QM	Quercus montana	Chestnut oak	2–3" cal.	B & B	AS SHOWN
1	QR	Quercus rubra	Northern red oak	3"–3.5" cal.	B & B	AS SHOWN
1	QV	Quercus velutina	Black oak	3"–3.5" cal.	B & B	AS SHOWN
2	TC	Tsuga canadensis	Eastern hemlock	2"–3" cal.	B & B	AS SHOWN
8	PT	Populus tremuloides 'NE–Arb'	Prairie Gold aspen	2–3" cal.	B & B	AS SHOWN
1	PD	Populus deltoides	Cottonwood	2"–3" cal.	B & B	AS SHOWN
4	CO	Carya ovata	Shagbark hickory	2"–3" cal.	B & B	AS SHOWN
3	CG	Carya glabra	Pignut hickory	2"–3" cal.	B & B	AS SHOWN

SHRUB & GROUNDCOVER (5337 SF)

QUANTITY	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	SPACING
115	CP	Comptonia peregrina	Sweet fern	1 gal.	Container	36" O.C.
3	CL	Callicarpa americana	Beautyberry	2 gal.	Container	36" O.C.
23	CA	Clethra alnifolia	Sweet pepperbush	2 gal.	Container	36" O.C.
7	HV	Hamamelis virginiana	Common witch hazel	5 gal.	Container	As shown
68	CS	Cornus sericea 'Kelseyi'	Kelsey's Dwarf Red Osier Dogwood	2 gal.	Container	36" O.C.
51	CS–L	Cornus sericea	Red Osier Dogwood	–	LIVESTAKE	24" O.C.
82	RA	Rhus aromatica 'Grow Low'	'Grow Low' Fragrant Sumac	2 gal.	Container	48" O.C.
66	MR	Mitchella repens	Partridgeberry	1 gal.	Container	24" O.C.
32	MG	Myrica gale	Sweet Gale	5 gal.	Container	48" O.C.
58	MP	Myrica pennsylvanica	Bayberry	5 gal.	Container	48" O.C.
20	HM	Hibiscus moscheutos	Swamp rose mallow	5 gal.	Container	36" O.C.
13	VC	Vaccinium corymbosum	Highbush blueberry	2 gal.	Container	36" O.C.
27	VA	Vaccinium angustifolium	Lowbush blueberry	2 gal.	Container	24" O.C.
135	GB	Gaylussia baccata	Black huckleberry	2 gal.	Container	24" O.C.
20	VIA	Viburnum acerifolium	Maple–leaved viburnum	2 gal.	Container	36" O.C.

GRASSES AND PERENNIALS – SUN MIX (1520 SF)

%	QUANTITY	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	SPACING
10	75	–	Sorghastrum nutans	Indian grass	1 gal.	Container	18" O.C.
10	169	–	Eragrostis spectabilis	Purple love grass	1 gal.	Container	12" O.C.
10	169	–	Schizachyrium scoparium	Little bluestem	1 gal.	Container	12" O.C.
10	169	–	Aralia nudicalis	Wild sarsaparilla	1 gal.	Container	12" O.C.
5	84	–	Asclepias quadrifolia	Four–leaved milkweed	1 gal.	Container	12" O.C.
5	84	–	Anemone americana	Blunt–lobed hepatica	1 gal.	Container	12" O.C.
5	84	–	Lupinus perennis	Sundial lupine	1 gal.	Container	12" O.C.
10	169	–	Liatris spicata	Common blazing–star	1 gal.	Container	18" O.C.
5	38	–	Gaillardia aristata	Blanketflower	1 gal.	Container	18" O.C.
10	75	–	Echinacea purpurea	Purple coneflower	1 gal.	Container	18" O.C.
5	21	–	Achillea millefollium 'paprika'	Yarrow	1 gal.	Container	24" O.C.
5	21	–	Solidago speciosa	Showy goldenrod	1 gal.	Container	24" O.C.
5	21	–	Baptisia sphaerocarpa	Yellow wild indigo	1 gal.	Container	24" O.C.
5	11	–	Vernonia fasciculata	Iron weed	1 gal.	Container	36" O.C.

GRASSES AND PERENNIALS – SHADE MIX (1750 SF)

%	QUANTITY	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	SPACING
10	194	–	Carex pensylvanica	Pennsylvania sedge	1 gal.	Container	12" O.C.
10	194	–	Carex vulpinoidea	Fox sedge	1 gal.	Container	12" O.C.
10	194	–	Carex lurida	Lurid sedge	1 gal.	Container	12" O.C.
10	194	–	Uvularia perfoliata	Perfoliate bellwort	1 gal.	Container	12" O.C.
5	97	–	Lobelia cardinalis	Cardinal flower	1 gal.	Container	12" O.C.
10	49	–	Onoclea sensibilis	Sensitive fern	1 gal.	Container	24" O.C.
10	194	–	Dryopteris marginalis	Marginal wood fern	1 gal.	Container	12" O.C.
10	49	–	Pteridum aquilinum	Bracken fern	1 gal.	Container	24" O.C.
10	49	–	Digitalis purpurea	Common foxglove	1 gal.	Container	24" O.C.
5	97	–	Dennstaedtia punctilobula	Hay scented fern	1 gal.	Container	12" O.C.

ROOF GARDEN VINES

QUANTITY	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	SPACING
16	CV	Clematis virginiana	Virgin's bower	2 GAL	CONTAINER	As shown
7	Ha	Hydrangea anomala	Climbing hydrangea	2 GAL	CONTAINER	As shown

W WETLAND HYDROSEED MIX (3,616 SF):
- FOX SEDGE (CAREX VULPINOIDEA)
- LURID SEDGE (CAREX LURIDA)
- BLUNT BROOM SEDGE (CAREX SCOPARIA)
- BLUE VERVAIN (VERBENA HASTATA)
- FOWL BLUEGRASS (POA PALUSTRIS)
- HOP SEDGE (CAREX LUPULINA)
- GREEN BULRUSH (SCIRPUS ATROVIRENS)
- CREEPING SPIKE RUSH (ELEOCHARIS PALUSTRIS)
- FRINGED SEDGE (CAREX CRINITA)
- SOFT RUSH (JUNCUS EFFUSUS)
- SPOTTED JOE PYE WEED (EUPATORIUM MACULATUM)
- RATTLESNAKE GRASS (GLYCERIA CANADENSIS)
- SWAMP ASTER (ASTER PUNICEUS)
- BLUEFLAG (IRIS VERSICOLOR)
- SWAMP MILKWEED (ASCLEPIAS INCARNATA)
- SQUARE STEMMED MONKEY FLOWER (MIMULUS RINGENS).

LAWN HYNDROSEED MIX SPECIES (120,000 SF, DOES NOT INCLUDE RESEEDING ALONG ENTRY RD):
- TALL FESCUE (FESTUCA ARUNDINACEA)
- PERENNIAL RYE (LOLIUM PERENNE)
- KENTUCKY BLUEGRASS (POA PRATENSIS).
- INTERMEDIATE RYE (PANTERRA RYE) IF INSTALLED IN SUMMER

FLOWER MEADOW SEED MIX (28,640 SF):
- LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM)
- RED FESCUE (FESTUCA RUBRA)
- INDIAN GRASS (SORGHASTRUM NUTANS)
- PARTRIDGE PEA (CHAMAECRISTA FASCICULATA)
- CANADA WILD RYE (ELYMUS CANADENSIS)
- RIVERBANK WILD RYE (ELYMUS RIPARIUS)
- BUTTERFLY MILKWEED (ASCLEPIAS TUBEROSA)
- BLACK EYED SUSAN (RUDBECKIA HIRTA)
- LANCE LEAVED COREOPSIS (COREOPSIS LANCEOLATA)
- OX EYE SUNFLOWER (HELIOPSIS HELIANTHOIDES)
- COMMON SNEEZEWEED (HELENIUM AUTUMNALE)
- MARSH BLAZING STAR (LIATRIS SPICATA)
- BLUE VERVAIN (VERBENA HASTATA)
- NEW ENGLAND ASTER (ASTER NOVAE–ANGLIAE)
- WILD BLUE FALSE INDIGO (BAPTISIA AUSTRALIS)
- HOLLOWSTEM JOE PYE WEED (EUPATORIUM FISTULOSUM/ EUTROCHIUM FISTULOSUM)
- EARLY GOLDENROD (SOLIDAGO JUNCEA).

VEHICULAR LAWN: SEE LAWN FOR SPECIES

GRASSES AND PERENNIALS – SUN MIX

GRASSES AND PERENNIALS – SHADE MIX

SHRUB & GROUNDCOVER

PLANNING BOARD APPROVALS

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STAMP:

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REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
PLANTING KEY PLAN & SCHEDULE

JOB NUMBER: 18-08
DRAWN BY: NB, AG, DS
CHECKED BY: PF
DATE: 08/05/2020
SCALE: 1" = 40'
0" 1" N

SHEET NO: L0.1

LEGEND

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- POURED IN PLACE RUBBER PLAY SURFACING
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EDUCATIONAL SIGNAGE SCHEDULE

SIGN ID	SIGN NAME	LOCATION	MATERIAL	W	H
C1	WONDERFUL WETLANDS	WETLAND CLASSROOM	PHENOLIC	44	22
C2	MARVELOUS MEADOWS	POLLINATOR GARDEN	PHENOLIC	44	22
C3	THE PHYSICS OF PLAY	PLAYGROUND	PHENOLIC	44	22
C4	FANTASTIC FORESTS	TRAILHEAD TO FOREST CLASSROOM	PHENOLIC	48	60
C5	PUTTING THE "MILL" IN MILLBURY	RUNNEL	PHENOLIC	44	22
C6	TAKING MEASURE OF WEATHER	WEATHER STATION	PHENOLIC	44	22

NOTE: SEE CIVIL PLANS AND DETAILS FOR ROAD AND PARKING SIGNAGE SCHEDULE AND DETAILS.

NOTES

NOTES:

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13. THIS PLAN WAS DEVELOPED BASED ON A SURVEY PREPARED BY NITSCH ENGINEERING IN 2020 AND PROVIDED TO T2 ARCHITECTURE FOR USE IN THIS PROJECT.

NOTES

6'HX20'W MOTORIZED DOUBLE SWING GATE W/ KEY CARD ACCESS (9 L43)
ENGINEERED WOOD FIBER SAFETY SURFACING (7 L42)
PLANTINGS TO SCREEN UTILITIES, SEE PLANTING PLAN
GENERATOR
ALT. #4: SHED SEE ARCH.
SHED: 484 SF
10'H CHAIN LINK W/ PRIVACY SLATS (8 L43)
10'HX20'W CHAIN LINK DOUBLE SWING GATE W/ PRIVACY SLATS (8 L43)
TRASH COMPACTOR & DISCONNECT SWITCH
PROTECT EXISTING TREES
TRANSFORMER
ENGINEERED WOOD FIBER SAFETY SURFACING (7 L42)
ASPHALT PAVING SEE CIVIL
BUILDING: FFE: 542 LEVEL ONE/FOOTPRINT: 59,755 SF TOTAL SF: 90,265 GSF
GRAVEL WETLAND SEE CIVIL
CIP VEHICULAR CONCRETE PAVING (1 L42)
8'H X 32'L EXTERIOR WALL MOUNTED CLIMBING WALL (2 L45)
EDUCATIONAL SIGNAGE C3 (5 L45)
WETLAND CLASSROOM DECK & PERGOLA (4 L47)
EDUCATIONAL PLANTERS
EDUCATIONAL SIGNAGE C5 (5 L45)
CISTERN AND RUNNEL (7 L48)
WIRE TRELLIS (3 L47)
CONCRETE STAIR (6 L44)
RECESSED ENTRY MAT
CONCRETE ROOF PAVERS, SEE ARCH.
WIRE TRELLIS (6) (3 L45)
EDUCATIONAL SIGNAGE C6 (5 L45)
ROOF PLANTERS (3 L46)
PICNIC TABLES (4) (1 L46)
WIRE TRELLIS (2) (3 L45)
WEATHER STATION (3) (4 L46)
BENCH (7 L44)
AMPHITHEATER SEATING (3 L44)
WOOD DECK (2 L44)
BENCH (7 L44)
TRASH AND RECYCLING (5 L44)
CIP CONCRETE PAVING (2 L42)
STABILIZED STONE DUST (4 L42)
RECESSED ENTRY MAT
EXISTING FOREST EDGE
PROPOSED FOREST EDGE
CIP CONCRETE PAVING
GRANITE CURB
4'H STEEL PICKET FENCE
ASPHALT PAVING SEE CIVIL
VEHICULAR LAWN (3 L49)
CIP CONCRETE PAVING (2 L42)
LOGS SET IN SLOPE
EDUCATIONAL SIGNAGE C3 (5 L45)
COMPOSITE NET CLIMBER (5 L47)
EMBANKMENT SLIDES (2) (6 L47)
PIP PLAY SURFACING ON SLOPE (10 L42)
BBALL GOAL (1 L47)
GAGA BALL PIT
ASPHALT PAVING SEE CIVIL
ACCESSIBLE SPINNER (4 L47)
PIP PLAY SAFETY SURFACING
RECESSED ENTRY MAT
BENCH ON SEATWALL (7 L44)
STABILIZED STONE DUST PAVING (4 L42)
RIVERSTONE DRIPSTRIP (1 L45)
CIP CONCRETE (2 L42)
BENCH ON SEATWALL (7 L44)
BENCH (7 L44)
CONCRETE ROOF PAVERS SEE ARCH.
MULTIBAY SWINGS (2 L47, 3 L47)
STEEL TUBULAR SWING GATE (1 L43)
CIP CONCRETE (2 L42)
BENCH (7 L44)
TRASH & RECYCLING (5 L44)
BIKE RACKS (8 L44)
EDUCATIONAL SIGNAGE C2 (5 L45)
FLAG POLE (1 L44)
STABILIZED STONE DUST (4 L42)
RECESSED ENTRY MAT
CONCRETE STAIR (6 L44)
MUSICAL INSTRUMENTS (7 L47)
BUS DROP-OFF
ENGINEERED WOOD FIBER SAFETY SURF. (7 L42)
BENCH (7 L44)
BBALL GOAL (1 L47)
ADA DROP CURBS
PAINTED CROSSWALK
CIP CONCRETE PAVING
EDUCATIONAL SIGNAGE C4 (5 L45)
EXISTING FOREST EDGE
PROPOSED FOREST EDGE
BENCH MARK: SPIKE IN UP #13 ELEVATION=544.56(NAVD88) FIELD BOOK 728 PAGE 48 SET ON 11-07-2018
70 WORC-PROV PIKE N/F ROUTE 146 MILLBURY LLC BK 24293, PG 105 MAP PARCEL ID 44_31
50' WIDE R.O.W. PUBLIC ACCESS AND UTILITY EASEMENT TO BE CONVEYED TO THE TOWN OF MILLBURY
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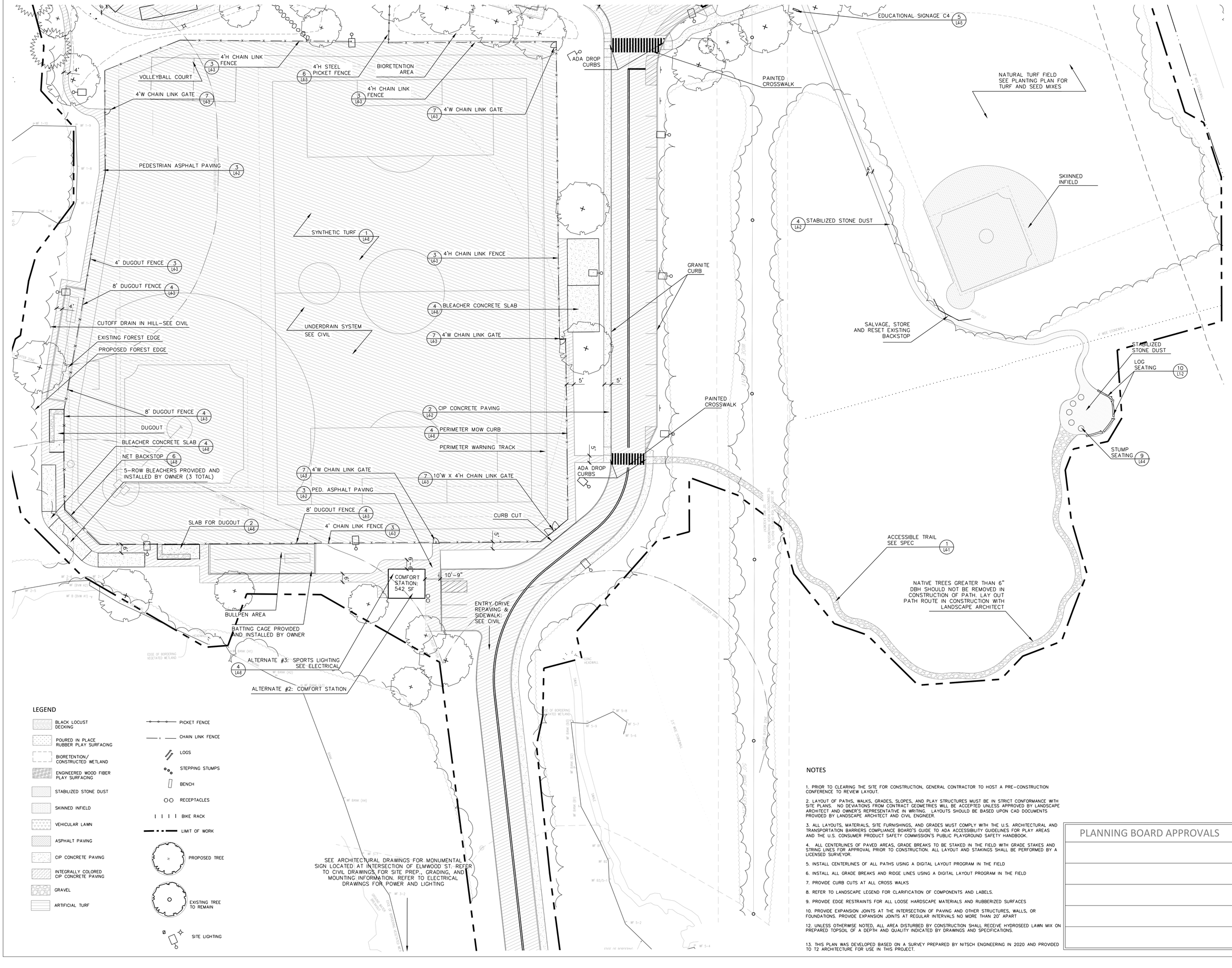
No.	Description	Date

TITLE:
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

LANDSCAPE LAYOUT (NORTH)

JOB NUMBER: 18-08
DRAWN BY: NB, AG, DS
CHECKED BY: NB
DATE: 08/05/2020
SCALE: 1" = 20'
SHEET NO: L1.1



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NOTES

1. PRIOR TO CLEARING THE SITE FOR CONSTRUCTION, GENERAL CONTRACTOR TO HOST A PRE-CONSTRUCTION CONFERENCE TO REVIEW LAYOUT.
2. LAYOUT OF PATHS, WALKS, GRADES, SLOPES, AND PLAY STRUCTURES MUST BE IN STRICT CONFORMANCE WITH SITE PLANS. NO DEVIATIONS FROM CONTRACT GEOMETRIES WILL BE ACCEPTED UNLESS APPROVED BY LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE IN WRITING. LAYOUTS SHOULD BE BASED UPON CAD DOCUMENTS PROVIDED BY LANDSCAPE ARCHITECT AND CIVIL ENGINEER.
3. ALL LAYOUTS, MATERIALS, SITE FURNISHINGS, AND GRADES MUST COMPLY WITH THE U.S. ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD'S GUIDE TO ADA ACCESSIBILITY GUIDELINES FOR PLAY AREAS AND THE U.S. CONSUMER PRODUCT SAFETY COMMISSION'S PUBLIC PLAYGROUND SAFETY HANDBOOK.
4. ALL CENTERLINES OF PAVED AREAS, GRADE BREAKS TO BE STAKED IN THE FIELD WITH GRADE STAKES AND STRING LINES FOR APPROVAL PRIOR TO CONSTRUCTION. ALL LAYOUT AND STAKINGS SHALL BE PERFORMED BY A LICENSED SURVEYOR.
5. INSTALL CENTERLINES OF ALL PATHS USING A DIGITAL LAYOUT PROGRAM IN THE FIELD
6. INSTALL ALL GRADE BREAKS AND RIDGE LINES USING A DIGITAL LAYOUT PROGRAM IN THE FIELD
7. PROVIDE CURB CUTS AT ALL CROSS WALKS
8. REFER TO LANDSCAPE LEGEND FOR CLARIFICATION OF COMPONENTS AND LABELS.
9. PROVIDE EDGE RESTRAINTS FOR ALL LOOSE HARDSCAPE MATERIALS AND RUBBERIZED SURFACES
10. PROVIDE EXPANSION JOINTS AT THE INTERSECTION OF PAVING AND OTHER STRUCTURES, WALLS, OR FOUNDATIONS. PROVIDE EXPANSION JOINTS AT REGULAR INTERVALS NO MORE THAN 20' APART
12. UNLESS OTHERWISE NOTED, ALL AREA DISTURBED BY CONSTRUCTION SHALL RECEIVE HYDROSEED LAWN MIX ON PREPARED TOPSOIL OF A DEPTH AND QUALITY INDICATED BY DRAWINGS AND SPECIFICATIONS.
13. THIS PLAN WAS DEVELOPED BASED ON A SURVEY PREPARED BY NITSCH ENGINEERING IN 2020 AND PROVIDED TO T2 ARCHITECTURE FOR USE IN THIS PROJECT.

PLANNING BOARD APPROVALS

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DODSON & FLINKER
Landscape Architecture and Planning
40 Main St. Suite 101
Florence, MA 01062
www.dodsonflinker.com

STAMP:

NOT FOR CONSTRUCTION

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:

LANDSCAPE LAYOUT (SOUTH)

JOB NUMBER: 18-08
DRAWN BY: NB, AG, DS
CHECKED BY: NB
DATE: 08/05/2020
SCALE: 1" = 20'
SHEET NO: L1.2

NORTH

LEGEND

SEE L1.3 FOR PLANT SCHEDULE

- WETLAND HYDROSEED MIX
- LAWN HYNDROSEED MIX
- FLOWER MEADOW SEED MIX
- SHRUB AND GROUNDCOVER PLANTING AREA
- GRASSES AND PERENNIALS CONTAINER PLANTS – SUN MIX
- GRASSES AND PERENNIALS CONTAINER PLANTS – SHADE MIX
- PROPOSED TREE, TYP.
- SHRUB, TYP.

PROTECT EXISTING TREES

MATCH LINE SHEET 3

MATCH LINE SHEET 2

50' WIDE EASEMENT

25' NO-DISTURBANCE BUFFER ZONE

PLANNING BOARD APPROVALS

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REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
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MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:

PLANTING PLAN (NORTH)

JOB NUMBER: 18-08

DRAWN BY: NB, AG

CHECKED BY: PF

DATE: 08/05/2020

SCALE: 1" = 20'

SHEET NO: L1.3

COMFORT STATION: 542 SF

LEGEND

SEE L1.3 FOR PLANT SCHEDULE

- WETLAND HYDROSEED MIX
- LAWN HYNDROSEED MIX
- FLOWER MEADOW SEED MIX
- SHRUB AND GROUNDCOVER PLANTING AREA
- GRASSES AND PERENNIALS CONTAINER PLANTS – SUN MIX
- GRASSES AND PERENNIALS CONTAINER PLANTS – SHADE MIX
- PROPOSED TREE, TYP.
- SHRUB, TYP.

SOUTH

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REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
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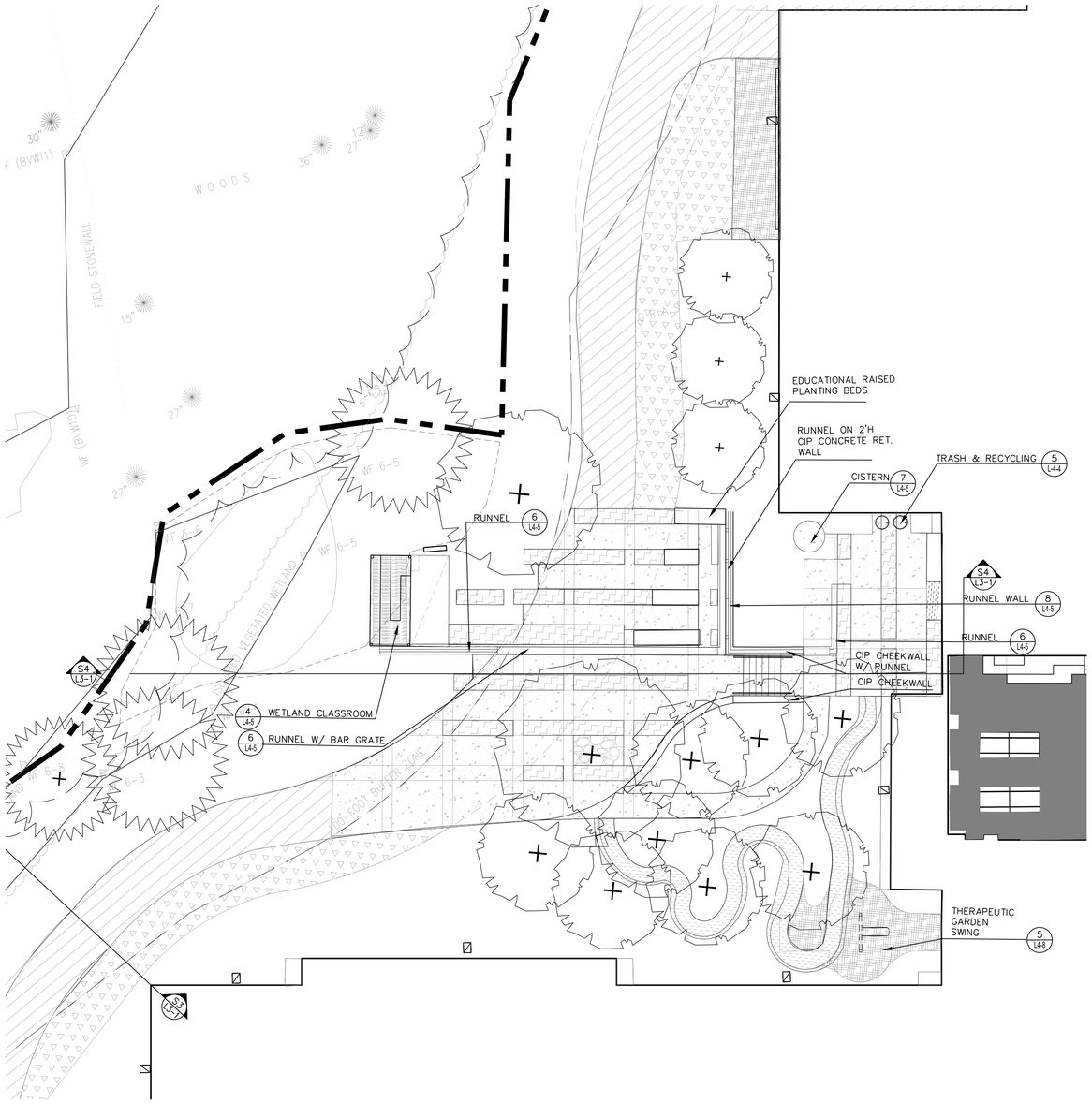
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

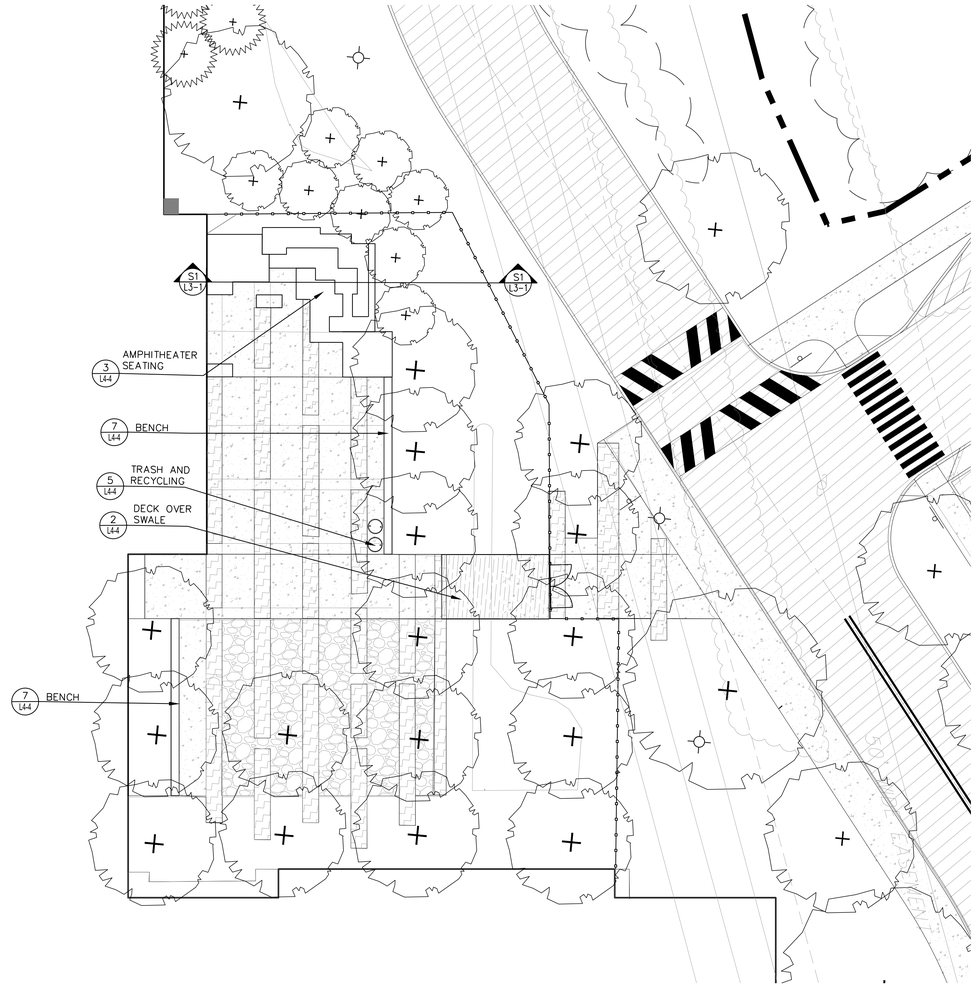
TITLE:

PLANTING PLAN (SOUTH)

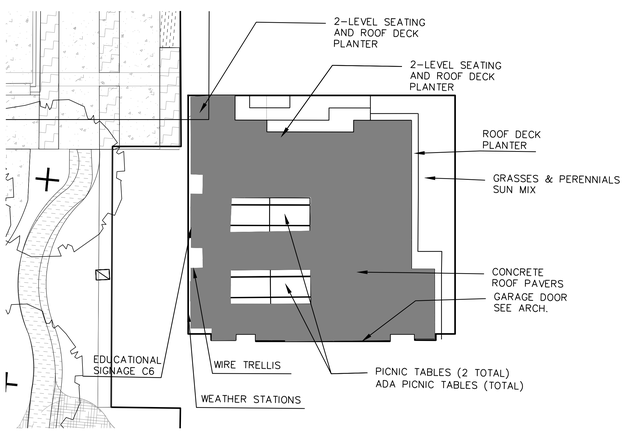
JOB NUMBER: 18-08
DRAWN BY: NB, AG
CHECKED BY: PF
DATE: 08/05/2020
SCALE: 1" = 20'
SHEET NO: L1.4



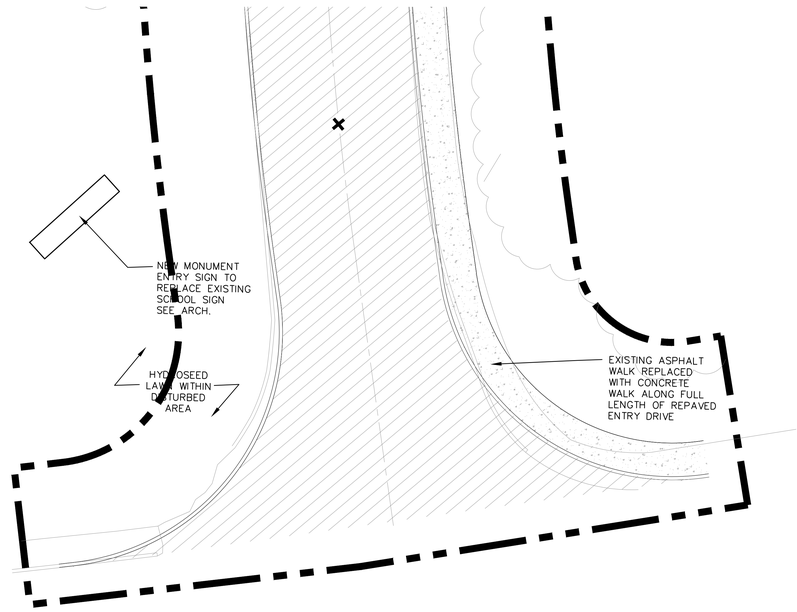
1 DETAIL PLAN: OUTDOOR CLASSROOM WEST
SCALE: 1" = 10'-0"



2 DETAIL PLAN: OUTDOOR CLASSROOM EAST
SCALE: 1" = 10'-0"



3 DETAIL PLAN: ROOFTOP CLASSROOM
SCALE: 1/8" = 1'



4 DETAIL PLAN: SITE ENTRY
SCALE: 1/8" = 1'

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REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:
LANDSCAPE LAYOUT DETAIL PLANS

JOB NUMBER: 18-08
DRAWN BY: NB, AG, DS
CHECKED BY: NB
DATE: 08/05/2020
SCALE: 1" = 10'
0" 1" N

SHEET NO: L2.1

1 DETAIL PLAN: PLAYGROUND
SCALE: 1" = 10'-0"

N

PLANNING BOARD APPROVALS

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REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
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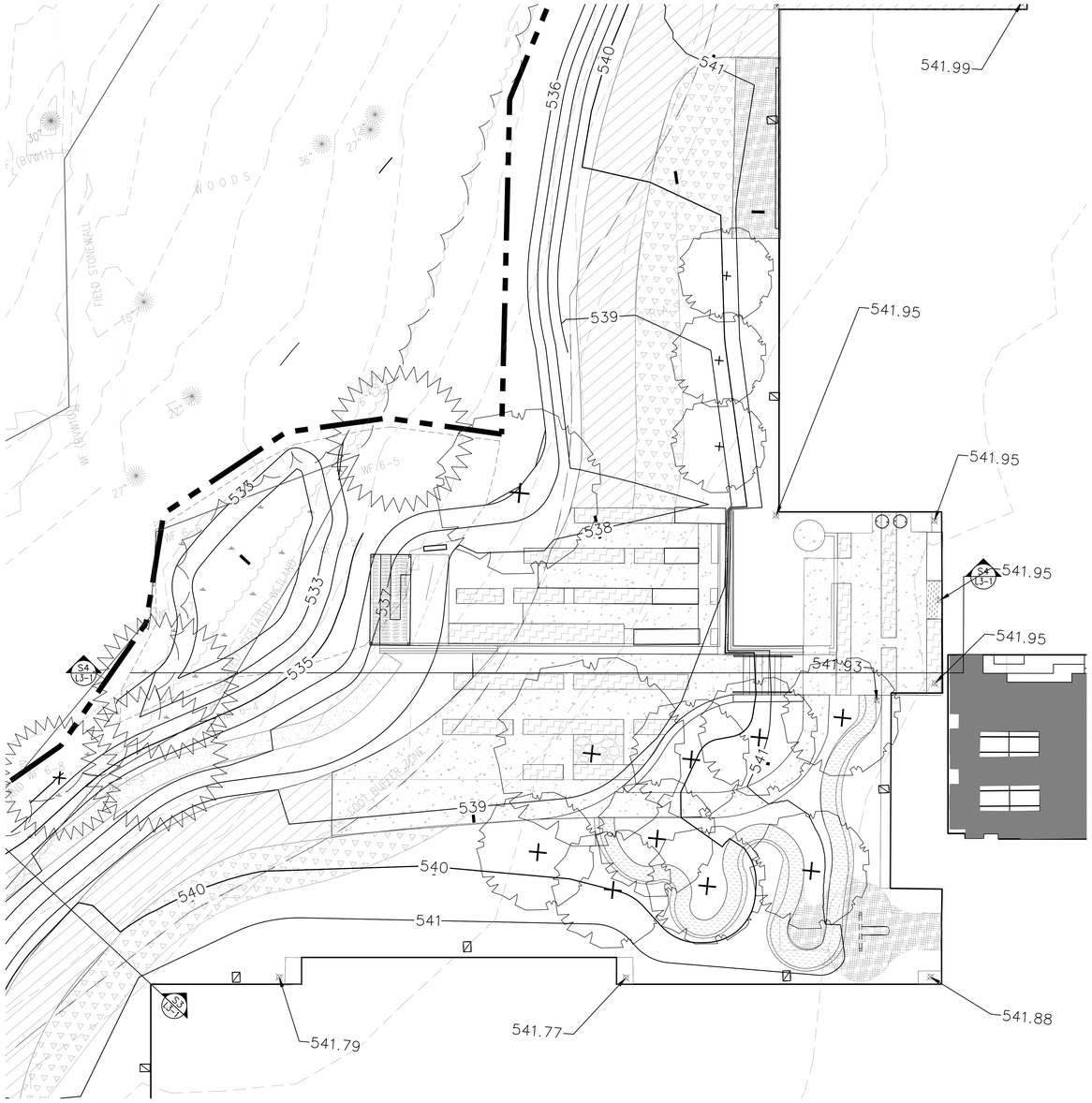
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:

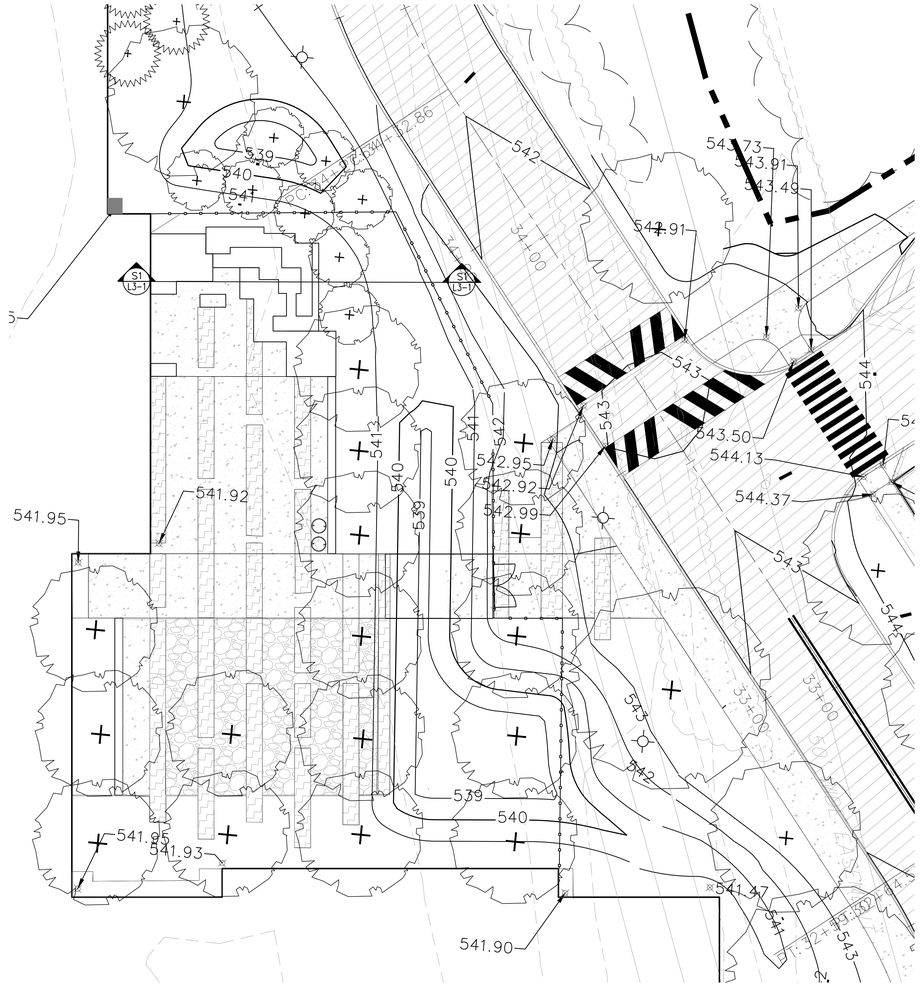
LANDSCAPE
LAYOUT
DETAIL PLANS

JOB NUMBER: 18-08
DRAWN BY: NB, AG, DS
CHECKED BY: NB
DATE: 08/05/2020
SCALE: 1" = 10'
0" 1"
SHEET NO: L2.2



1 DETAIL PLAN: OUTDOOR CLASSROOM WEST
SCALE: 1" = 10'-0"

N



2 DETAIL PLAN: OUTDOOR CLASSROOM EAST
SCALE: 1" = 10'-0"

N

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No.	Description	Date

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PLANNING BOARD SUBMISSION - UPDATE

TITLE:

LANDSCAPE
GRADING
DETAIL PLANS

JOB NUMBER: 18-08

DRAWN BY: NB, AG, DS

CHECKED BY: NB

DATE: 08/05/2020

SCALE: 1" = 10'
0" 1"
N

SHEET NO:

L2.3

1 DETAIL PLAN: PLAYGROUND
SCALE: 1" = 10'-0"

N

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PLANNING BOARD SUBMISSION - UPDATE

TITLE:

LANDSCAPE
GRADING
DETAIL PLANS

JOB NUMBER: 18-08

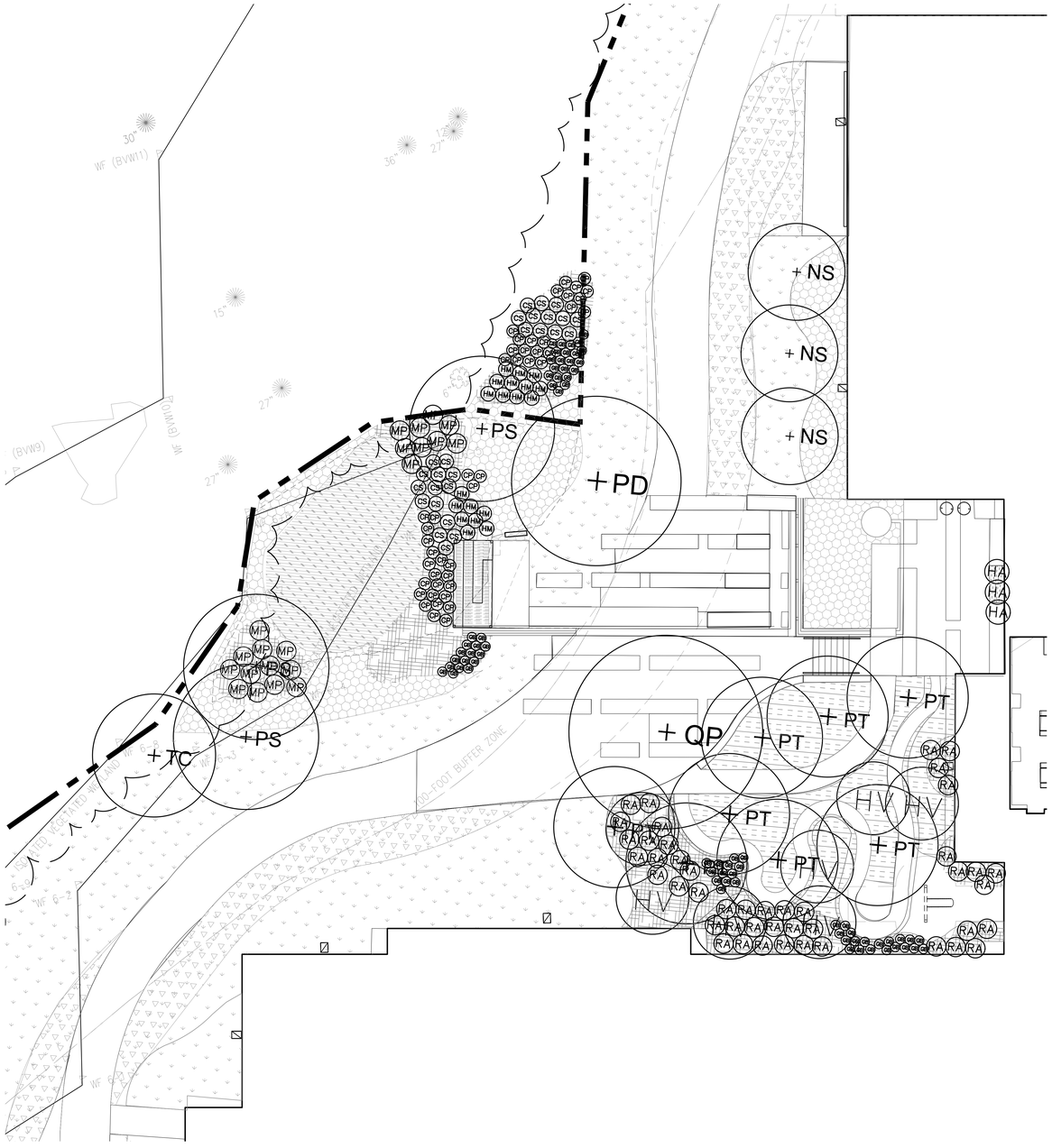
DRAWN BY: NB, AG, DS

CHECKED BY: NB

DATE: 08/05/2020

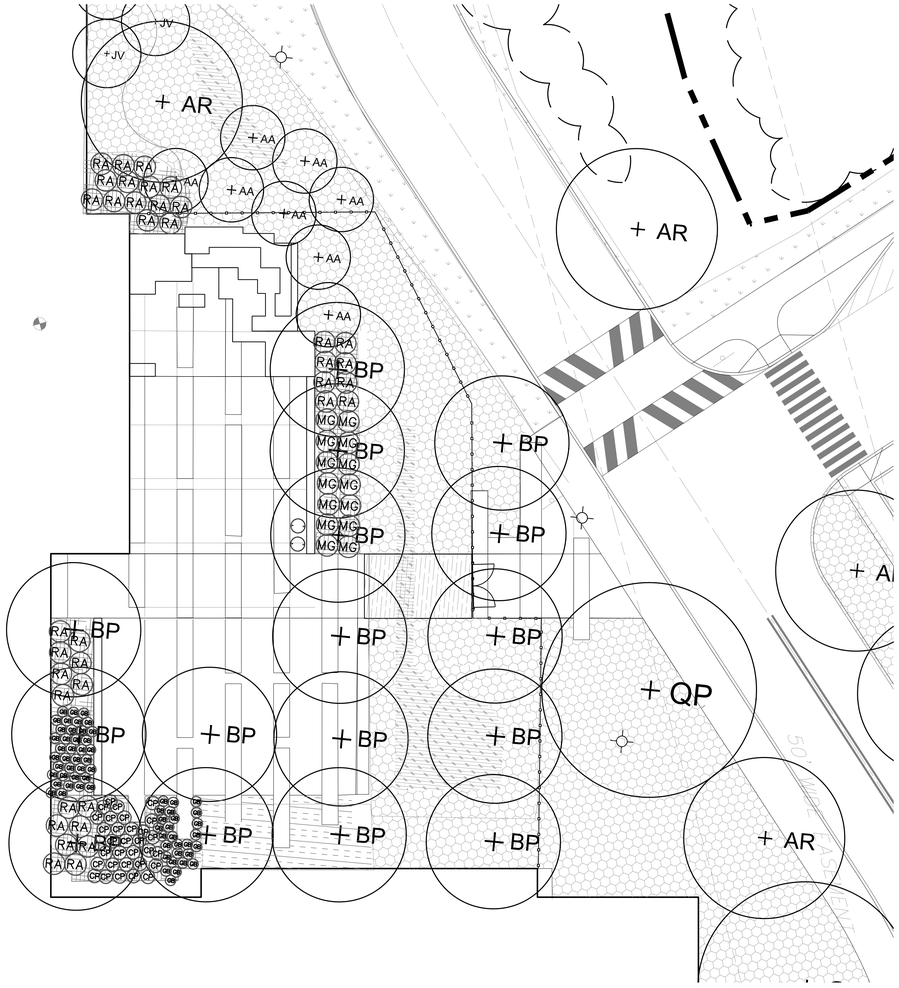
SCALE: 1" = 10'
0" 1"

SHEET NO: L2.4



1 DETAIL PLAN: RESTORATION AREA AND OUTDOOR CLASSROOM
SCALE: 1" = 10'-0"

N



2 DETAIL PLAN: OUTDOOR CLASSROOM EAST AND RAIN GARDEN
SCALE: 1" = 10'-0"

N

LEGEND

SEE L1.3 FOR PLANT SCHEDULE

- WETLAND HYDROSEED MIX
- LAWN HYNDROSEED MIX
- FLOWER MEADOW SEED MIX
- SHRUB AND GROUNDCOVER PLANTING AREA
- GRASSES AND PERENNIALS CONTAINER PLANTS – SUN MIX
- GRASSES AND PERENNIALS CONTAINER PLANTS – SHADE MIX
- PROPOSED TREE, TYP.
- SHRUB, TYP.

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PLANNING BOARD SUBMISSION - UPDATE

TITLE:

PLANTING PLAN
DETAIL PLANS

JOB NUMBER: 18-08

DRAWN BY: NB, AG

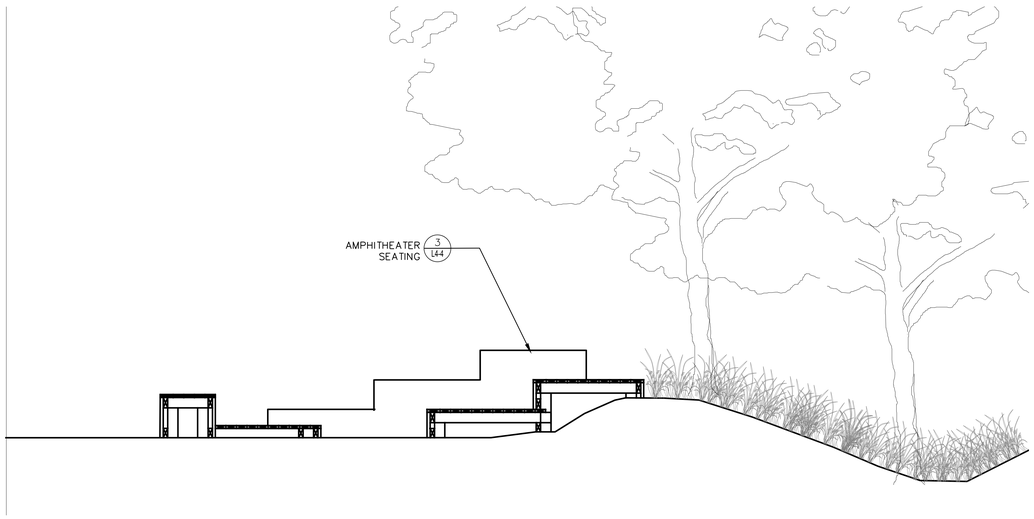
CHECKED BY: NB

DATE: 08/05/2020

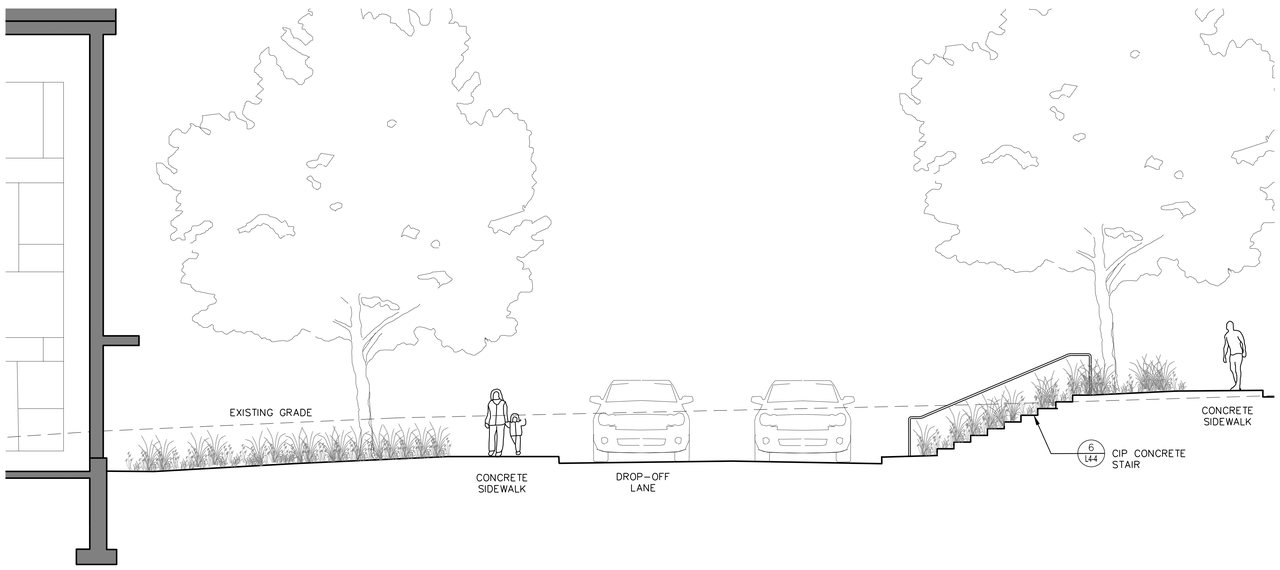
SCALE: 1" = 10'
0" 1"

SHEET NO: L2.5

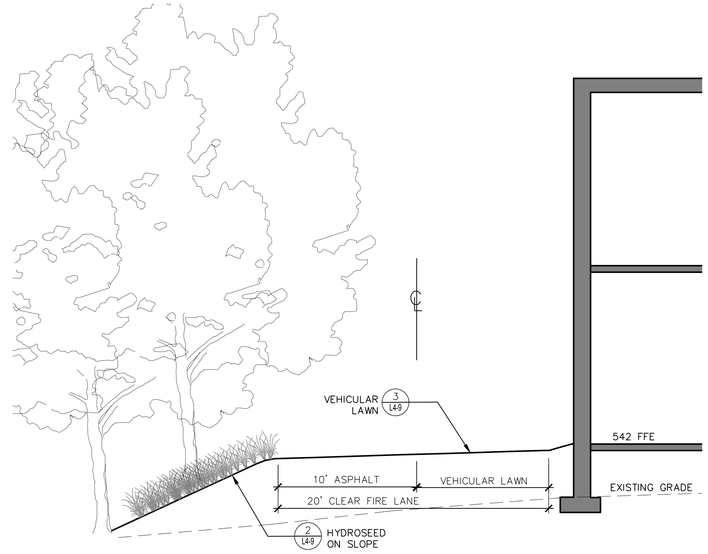
+ PS
+ QP
+ CO
+ AA
+ AR
+ CF
+ QB
540
540
540



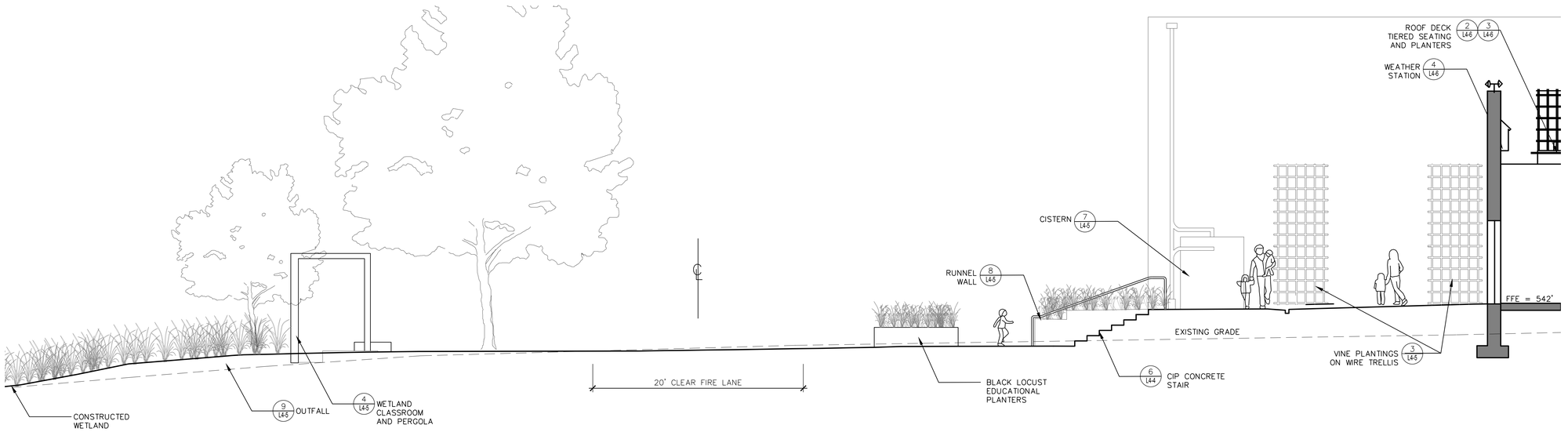
S1 SECTION THROUGH EASTERN OUTDOOR CLASSROOM
SCALE: NTS



S2 SECTION FROM SOUTHEASTERN ENTRANCE THROUGH PARKING LOT
SCALE: 1/4"=1'



S3 SECTION THROUGH NW CORNER OF 3RD GRADE WING
SCALE: 1/4"=1'



S4 SECTION WEST OF SCHOOL THROUGH OUTDOOR CLASSROOM
SCALE: 1/4"=1'

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REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
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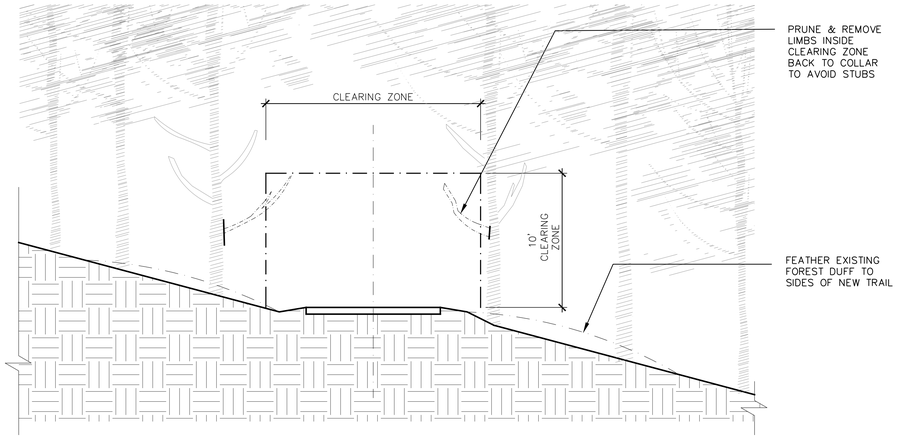
PLANNING BOARD SUBMISSION - UPDATE

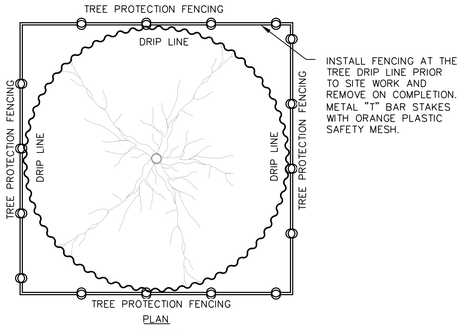
TITLE:
LANDSCAPE SECTIONS

JOB NUMBER: 18-08
DRAWN BY: NB, AG
CHECKED BY: NB
DATE: 08/05/2020
SCALE: AS SHOWN
0" 1"
N

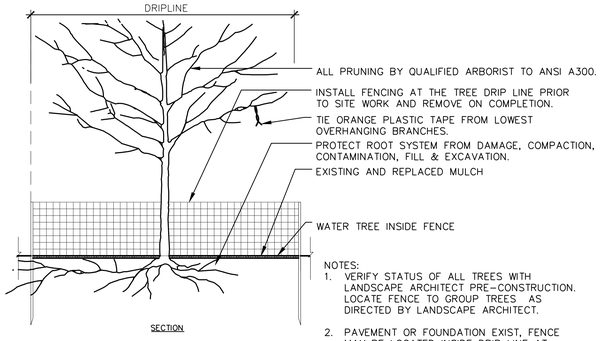
SHEET NO: L3.1



1 TRAIL CLEARING, TYP.
SCALE: 1" = 1'-0"



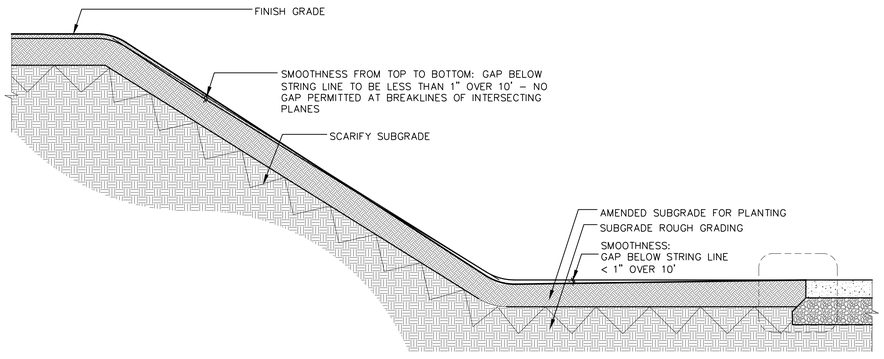
PLAN



SECTION

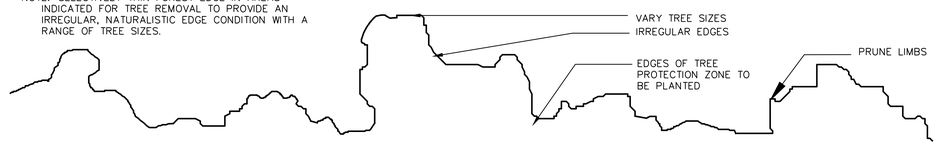
NOTES:
1. VERIFY STATUS OF ALL TREES WITH LANDSCAPE ARCHITECT PRE-CONSTRUCTION. LOCATE FENCE TO GROUP TREES AS DIRECTED BY LANDSCAPE ARCHITECT.
2. PAVEMENT OR FOUNDATION EXIST, FENCE MAY BE LOCATED INSIDE DRIP LINE AT EDGE OF PAVEMENT.

2 TREE PROTECTION, TYP.
SCALE: NTS

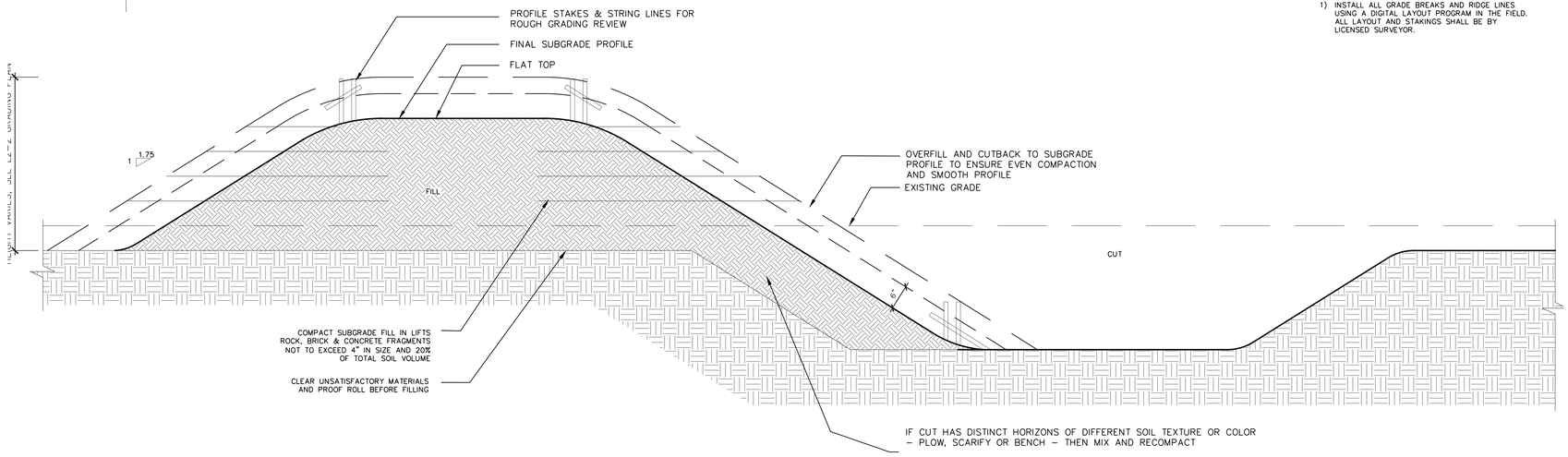


3 FINISH LANDSCAPE GRADING, TYPICAL
SCALE: 1" = 1'-0"

NOTE: SELECTIVELY THIN FOREST EDGE IN AREAS INDICATED FOR TREE REMOVAL TO PROVIDE AN IRREGULAR, NATURALISTIC EDGE CONDITION WITH A RANGE OF TREE SIZES.

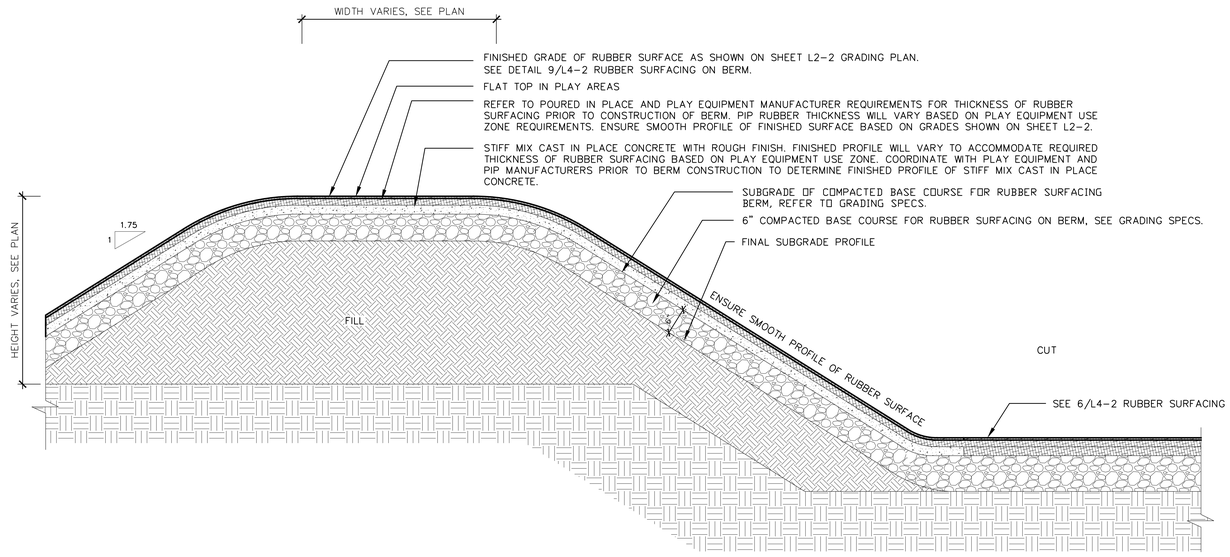


4 FOREST EDGE PROTECTION
SCALE: 1" = 1'-0"



NOTE:
1) INSTALL ALL GRADE BREAKS AND RIDGE LINES USING A DIGITAL LAYOUT PROGRAM IN THE FIELD. ALL LAYOUT AND STAKINGS SHALL BE BY LICENSED SURVEYOR.

5 ROUGH GRADING BERM - TYPICAL
SCALE: 1" = 1'-0"



6 FINISH GRADING BERM - PIP RUBBER, TYPICAL
SCALE: 1" = 1'-0"

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REVISIONS:

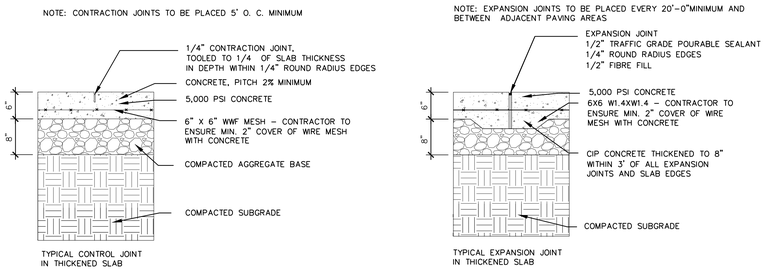
No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

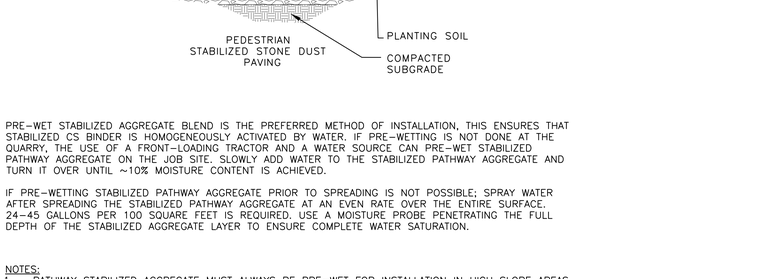
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
LANDSCAPE DETAILS: GRADING & TREE PROTECTION

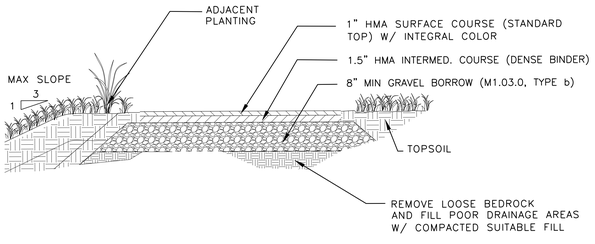
JOB NUMBER: 18-08
DRAWN BY: NB, AG
CHECKED BY: NB
DATE: 08/05/2020
SCALE: AS NOTED
SHEET NO: L4.1



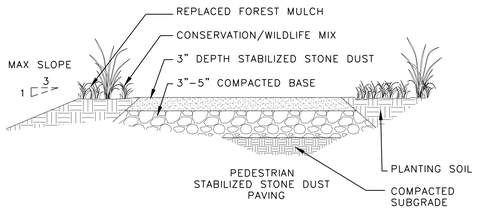
1 CIP VEHICULAR CONCRETE PAVING
SCALE: 1" = 1'-0"



2 CIP CONCRETE PAVING
SCALE: 1" = 1'-0"



3 PEDESTRIAN ASPHALT PAVING
SCALE: 1" = 1'-0"

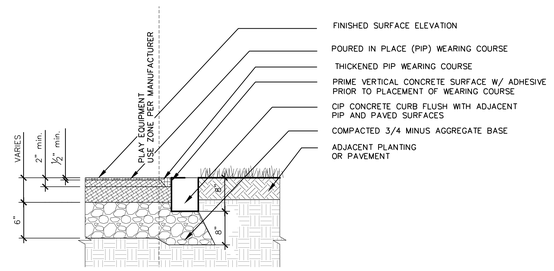


PRE-WET STABILIZED AGGREGATE BLEND IS THE PREFERRED METHOD OF INSTALLATION, THIS ENSURES THAT STABILIZED CS BINDER IS HOMOGENEOUSLY ACTIVATED BY WATER. IF PRE-WETTING IS NOT DONE AT THE QUARRY, THE USE OF A FRONT-LOADING TRACTOR AND A WATER SOURCE CAN PRE-WET STABILIZED PATHWAY AGGREGATE ON THE JOB SITE. SLOWLY ADD WATER TO THE STABILIZED PATHWAY AGGREGATE AND TURN IT OVER UNTIL ~10% MOISTURE CONTENT IS ACHIEVED.

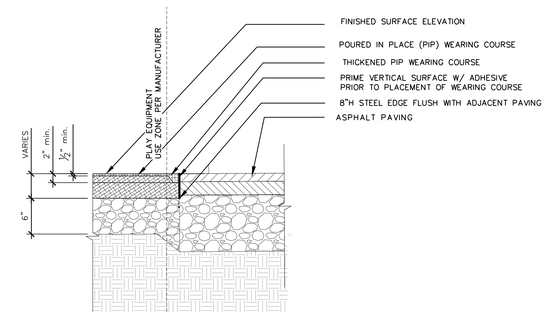
IF PRE-WETTING STABILIZED PATHWAY AGGREGATE PRIOR TO SPREADING IS NOT POSSIBLE; SPRAY WATER AFTER SPREADING THE STABILIZED PATHWAY AGGREGATE AT AN EVEN RATE OVER THE ENTIRE SURFACE. 24-45 GALLONS PER 100 SQUARE FEET IS REQUIRED. USE A MOISTURE PROBE PENETRATING THE FULL DEPTH OF THE STABILIZED AGGREGATE LAYER TO ENSURE COMPLETE WATER SATURATION.

NOTES:
1. PATHWAY STABILIZED AGGREGATE MUST ALWAYS BE PRE-WET FOR INSTALLATION IN HIGH SLOPE AREAS.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. THIS DETAIL IS FOR INFORMATION PURPOSES ONLY. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT, BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

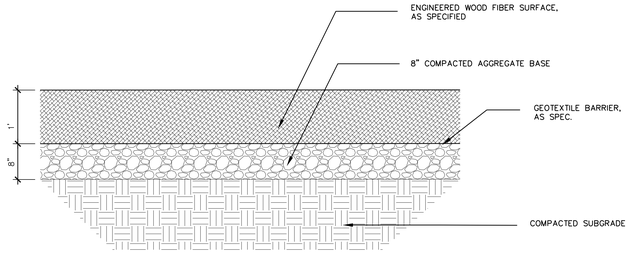
4 STABILIZED STONE DUST PAVING
SCALE: NTS



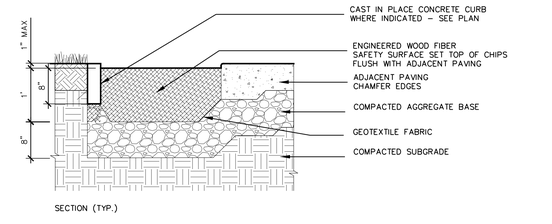
5 CIP CONCRETE FLUSH CURB, TYP.
SCALE: 1"= 1'-0"

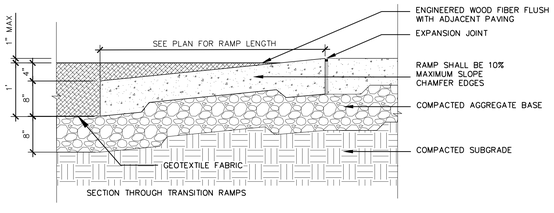


6 RUBBER SURFACING TO ASPHALT TRANSITION, TYP.
SCALE: 1" = 1'-0"

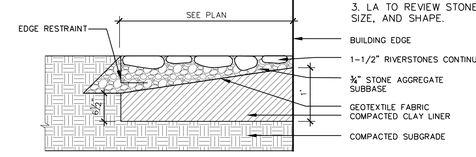


7 ENGINEERED WOOD FIBER SAFETY SURFACING, TYP.
SCALE: 1" = 1'-0"

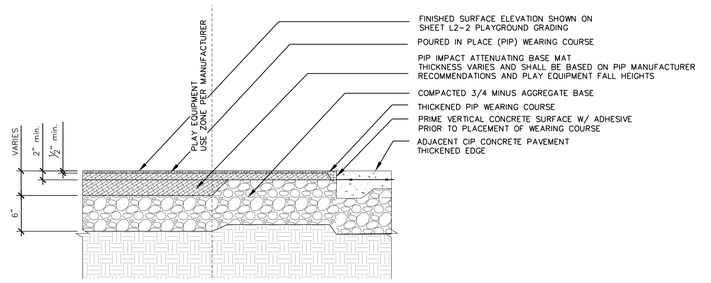




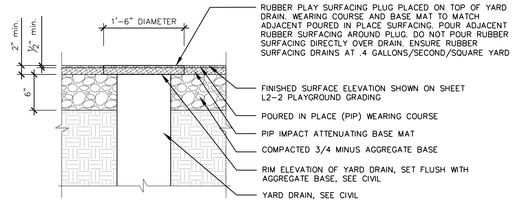
8 ENGINEERED WOOD FIBER PLAY SURFACING TRANSITIONS
SCALE: 1"= 1'-0"



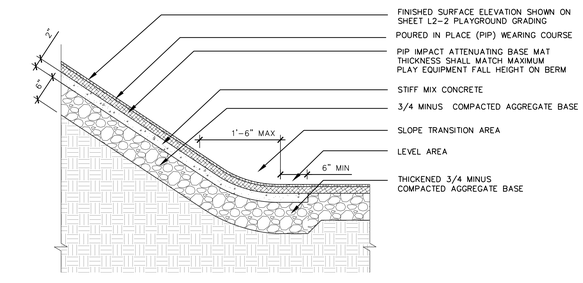
9 RIVERSTONE DRIP STRIP
SCALE: 1"= 1'-0"



10 RUBBER SURFACING TYP.
SCALE: 1"= 1'-0"



11 RUBBER SURFACING OVER DRAIN
SCALE: 1"= 1'-0"



12 RUBBER SURFACING ON BERM
SCALE: 1"= 1'-0"

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Florence, MA 01062
www.dodsonflinker.com

STAMP:

NOT FOR CONSTRUCTION

REVISIONS:

No.	Description	Date

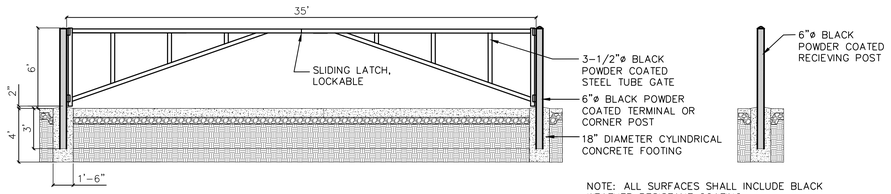
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

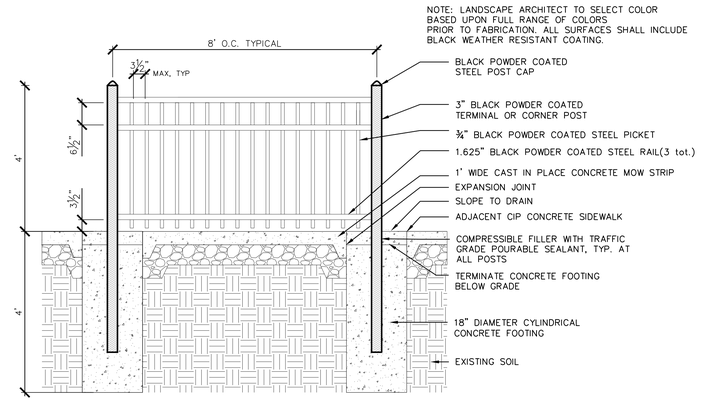
TITLE:
LANDSCAPE DETAILS: HARDSCAPE & SAFETY SURFACING

JOB NUMBER: 18-08
DRAWN BY: NB, AG, DS,TN
CHECKED BY: NB
DATE: 08/05/2020
SCALE: AS NOTED
0" 1"
N

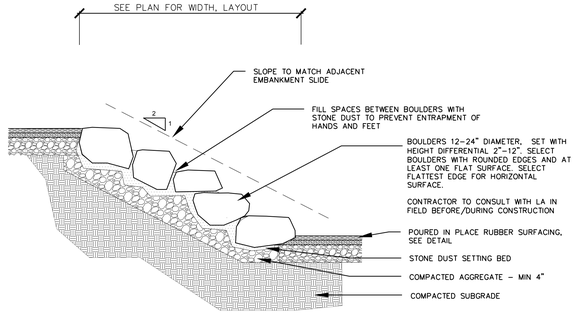
SHEET NO: L4.2



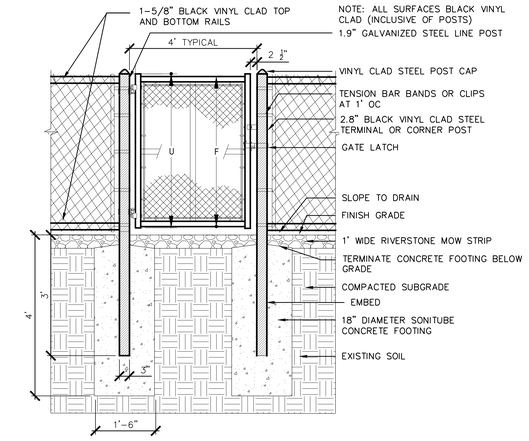
1 STEEL TUBE SWING GATE
SCALE: NTS



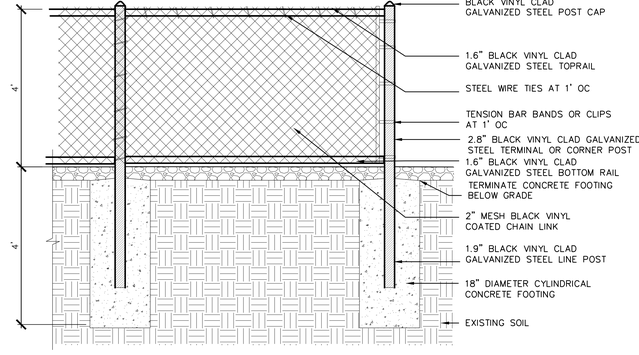
2 4' DECORATIVE FENCE, TYP.
SCALE: 3/4" = 1'-0"



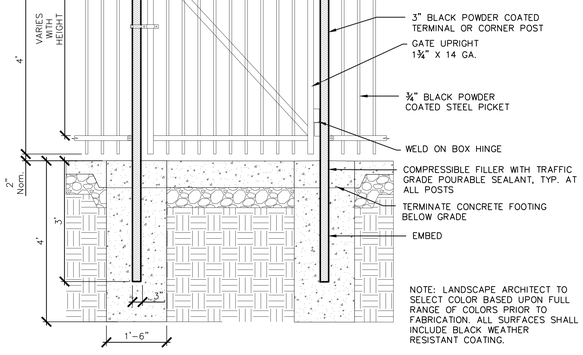
5 BOULDER SCRAMBLE, TYP.
SCALE: NTS



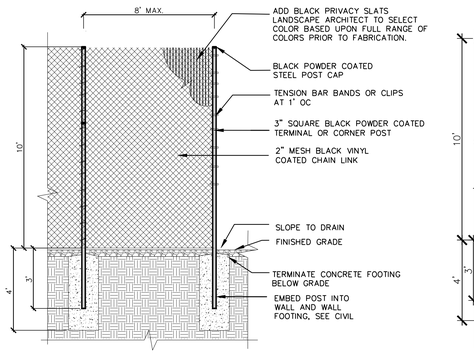
7 4' CHAIN LINK FENCE GATE, TYP.
SCALE: NTS



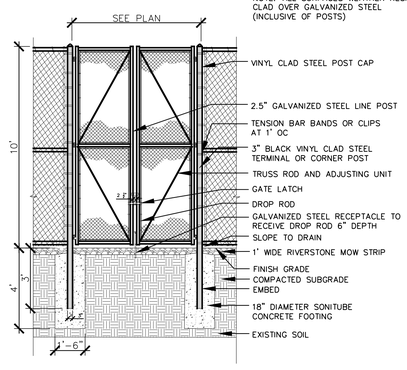
3 4' CHAIN LINK FENCE, TYP.
SCALE: 3/4" = 1'-0"

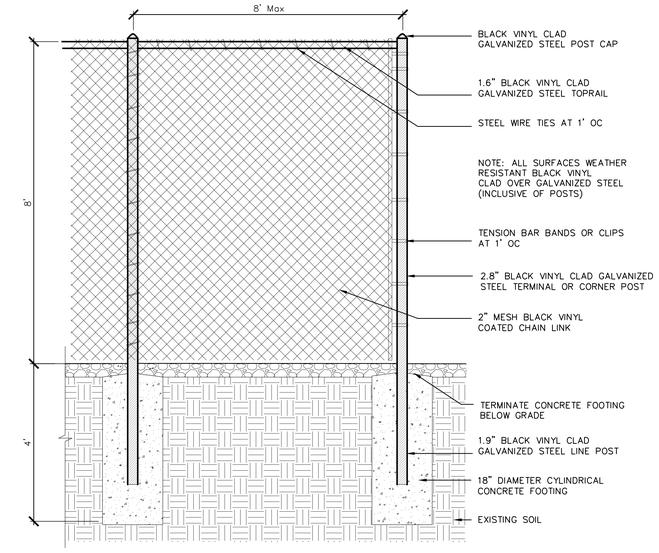


6 4' DECORATIVE FENCE GATE, TYP.
SCALE: NTS

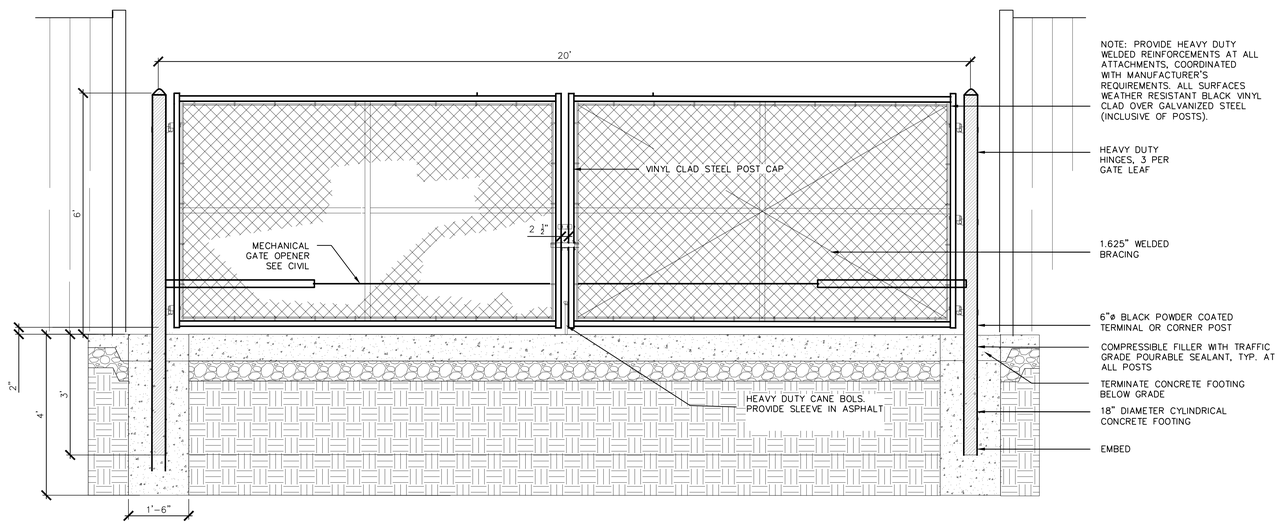


8 UTILITY AREA FENCE & GATE
SCALE: 3/8" = 1'-0"





4 8' DUGOUT FENCE
SCALE: NTS



9 GATE AT MALL ENTRANCE
SCALE: 3/4" = 1'-0"

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Florence, MA 01062
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REVISIONS:

No.	Description	Date

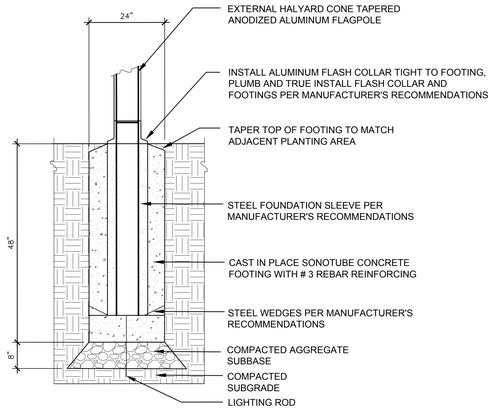
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

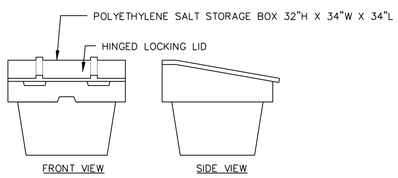
TITLE:
LANDSCAPE DETAILS: SITE FURNISHINGS

JOB NUMBER: 18-08
DRAWN BY: NB, AG
CHECKED BY: NB
DATE: 08/05/2020
SCALE: AS NOTED
0" 1"

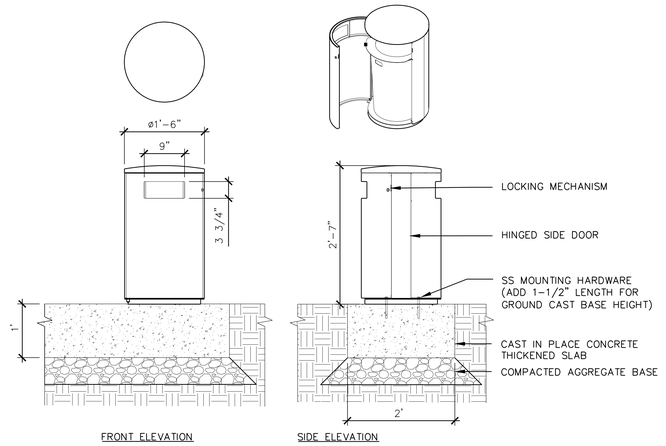
SHEET NO: L4.3



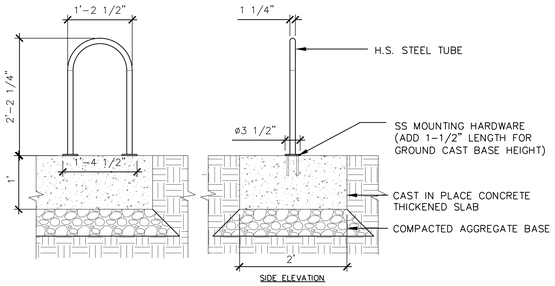
1 FLAGPOLE
SCALE: 3/4" = 1'-0"



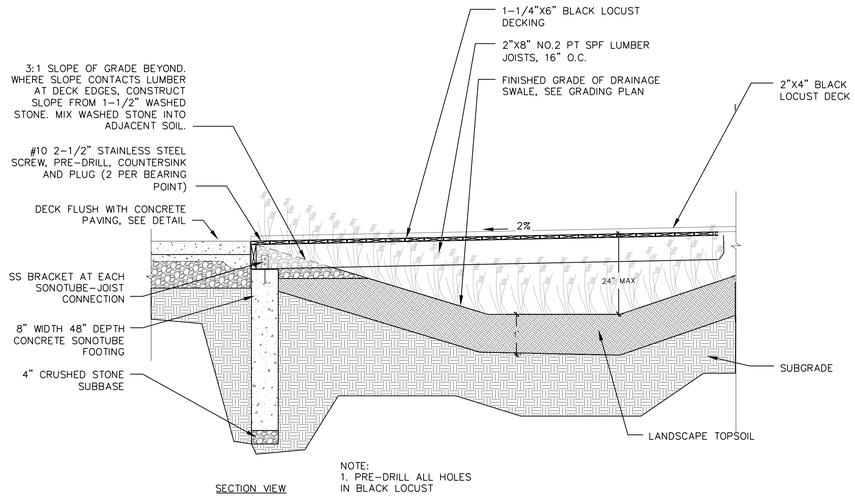
4 ROAD SALT STORAGE BOX
SCALE: 3/4" = 1'-0"



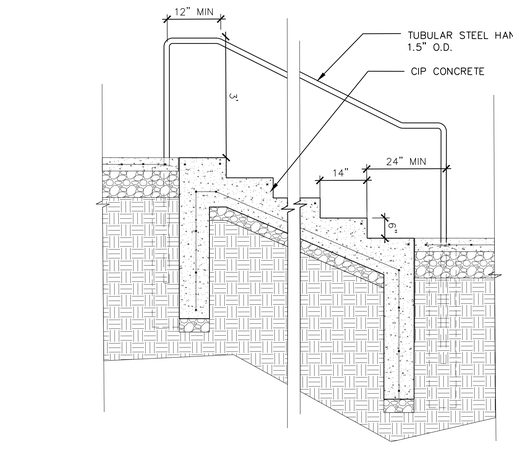
5 TRASH AND RECYCLING RECEPTACLES, TYP.
1" = 1'-0"



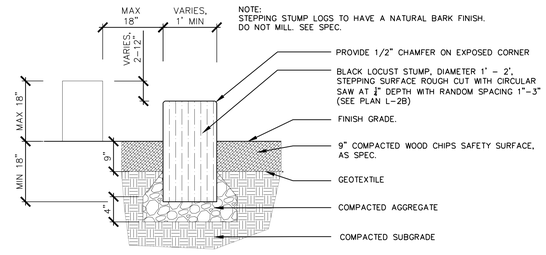
8 BIKE RACKS, TYP.
SCALE: 1" = 1'-0"



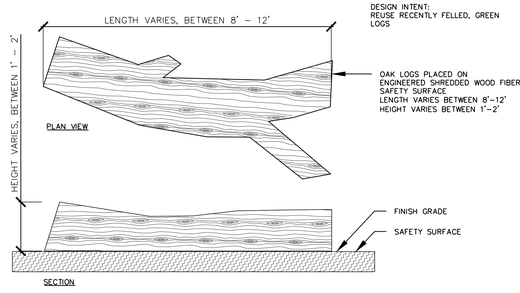
2 DECK OVER SWALE, TYP.
SCALE: 3/4" = 1'-0"



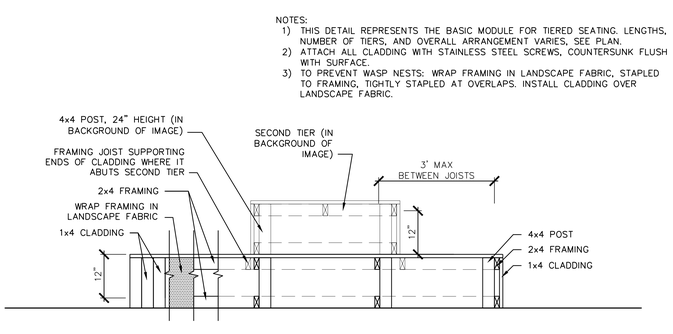
6 CONCRETE STEPS, TYP.
SCALE: 3/4" = 1'-0"



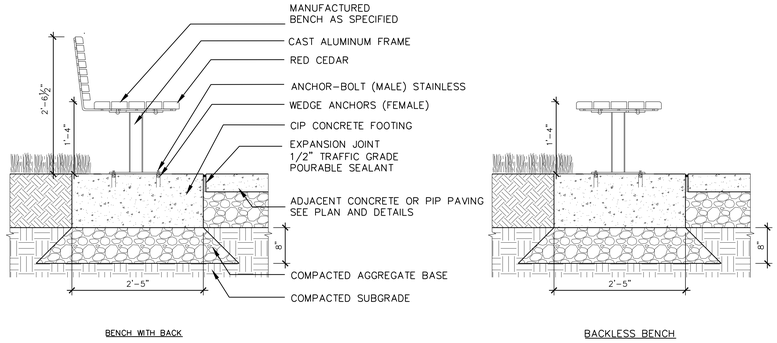
9 STEPPING/SEATING STUMPS, TYP.
SCALE: 3/4" = 1'-0"



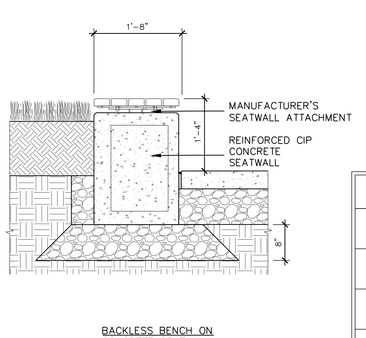
10 FALLEN LOG, TYP.
SCALE: 1/2" = 1'-0"



3 AMPHITHEATER SEATING
SCALE: 3/4" = 1'-0"



7 BENCH, TYP.
SCALE: 1" = 1'-0"



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STAMP:
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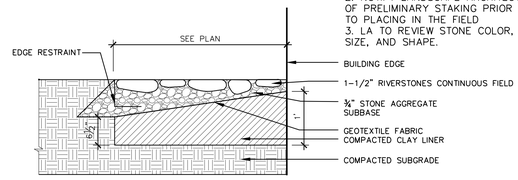
REVISIONS:

No.	Description	Date

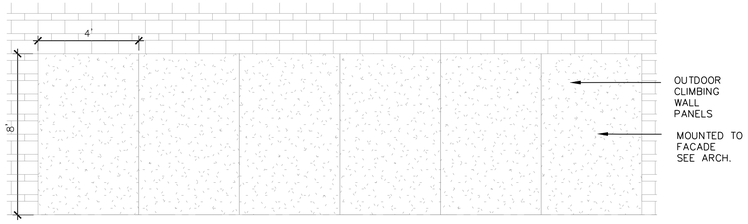
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
LANDSCAPE DETAILS: SITE FURNISHINGS

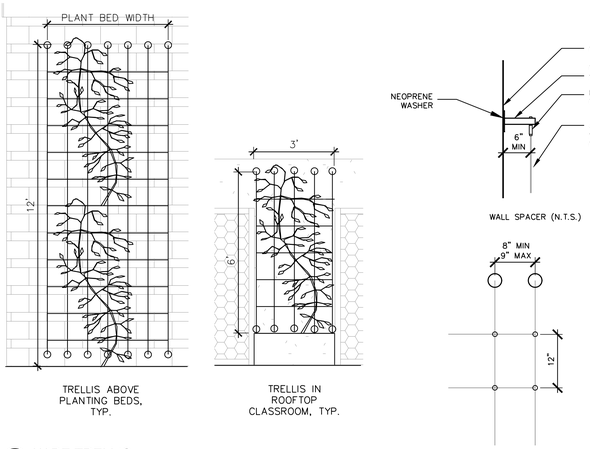
JOB NUMBER: 18-08
DRAWN BY: NB, AG, DS, TN
CHECKED BY: NB
DATE: 08/05/2020
SCALE: AS NOTED
SHEET NO: L4.4

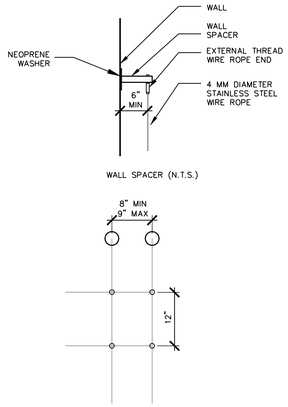


1 RIVERSTONE DRIP STRIP
SCALE: NTS

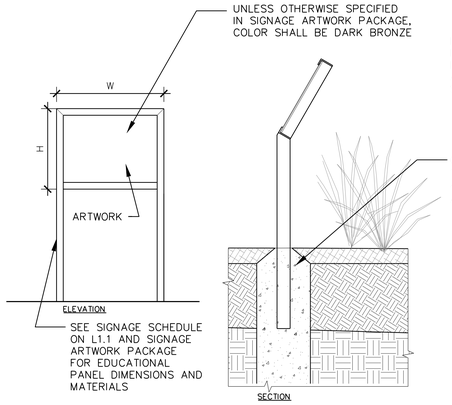


2 EXTERIOR WALL MOUNTED CLIMBING WALL
SCALE: 3/8"=1'



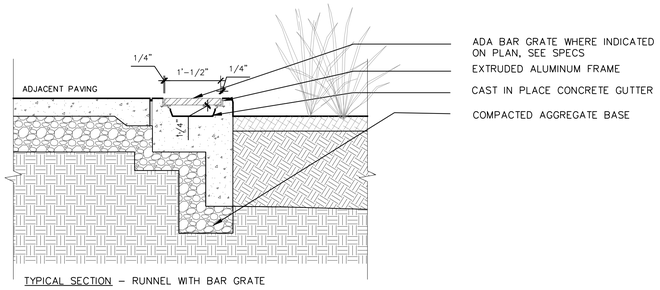


3 WIRE TRELLIS
SCALE: NTS

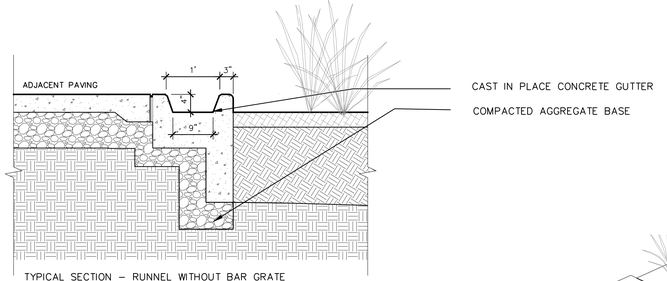


NOTE: THIS DETAIL SHALL BE USED FOR EDUCATIONAL SIGNAGE LISTED ON L1.1. SEE CIVIL SIGNAGE SCHEDULE AND DETAILS FOR ROAD AND PARKING SIGNAGE.

5 EDUCATIONAL SIGNAGE
SCALE: NTS

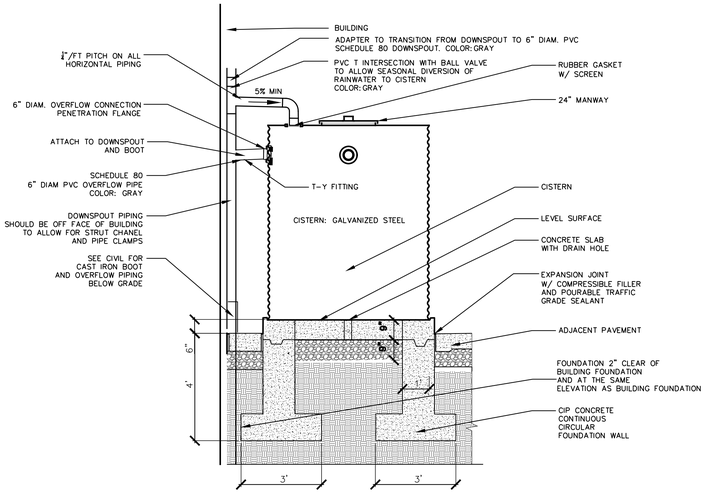


TYPICAL SECTION – RUNNEL WITH BAR GRATE

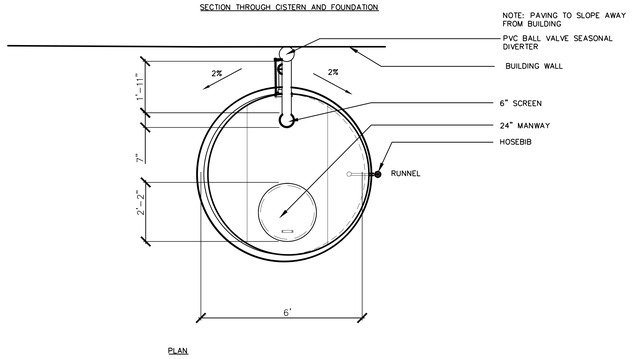


TYPICAL SECTION – RUNNEL WITHOUT BAR GRATE

6 RUNNEL, TYP.
SCALE: NTS

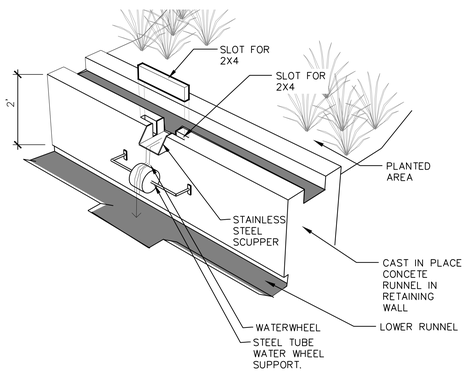


SECTION THROUGH CISTERN AND FOUNDATION

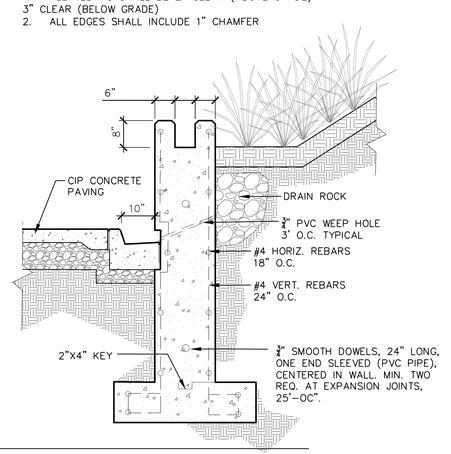


PLAN

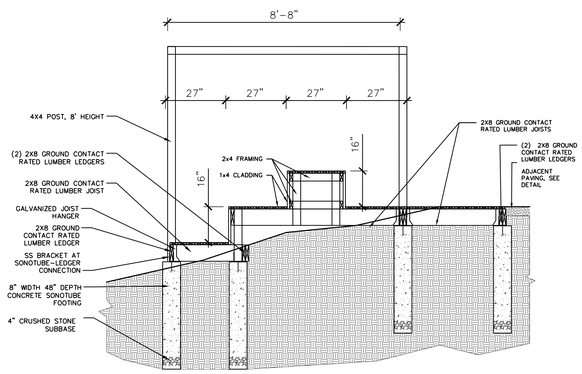
7 CISTERN
SCALE: NTS



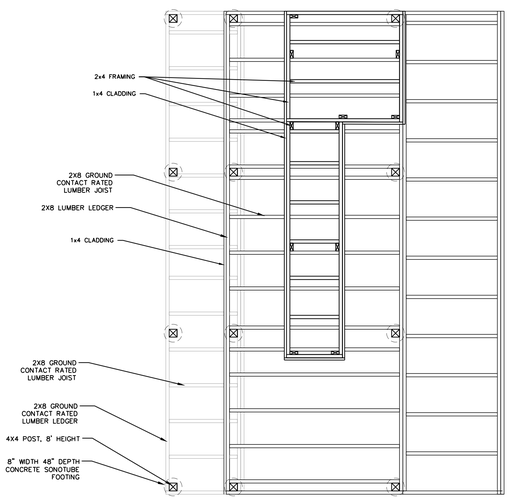
NOTES:
1. ALL REBARS SHALL BE 2" CLEAR (ABOVE GRADE) 3" CLEAR (BELOW GRADE)
2. ALL EDGES SHALL INCLUDE 1" CHAMFER



8 RUNNEL WALL
SCALE: NTS

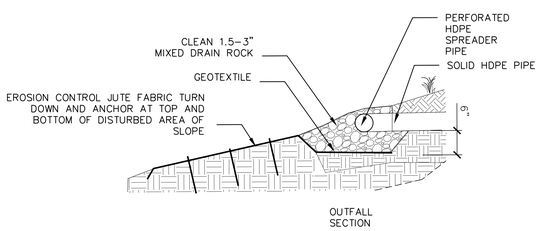


SECTION



FRAMING PLAN

4 WETLAND CLASSROOM
SCALE: NTS



OUTFALL SECTION

9 OUTFALL AT CONSTRUCTED WETLAND
SCALE: NTS

PLANNING BOARD APPROVALS

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313 Wareham Road
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DODSON & FLINKER
Landscape Architecture and Planning
40 Main St. Suite 101
Florence, MA 01062
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STAMP:

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REVISIONS:

No.	Description	Date

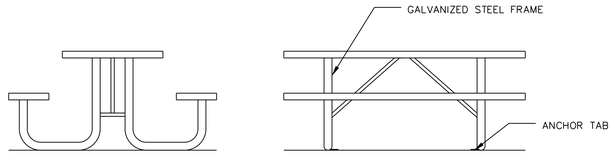
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

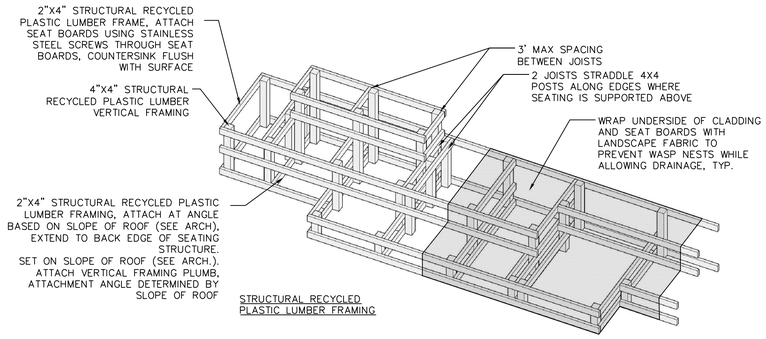
TITLE:
LANDSCAPE DETAILS: SITE FURNISHINGS

JOB NUMBER: 18-08
DRAWN BY: NB, AG
CHECKED BY: NB
DATE: 08/05/2020
SCALE: AS NOTED
0" 1"

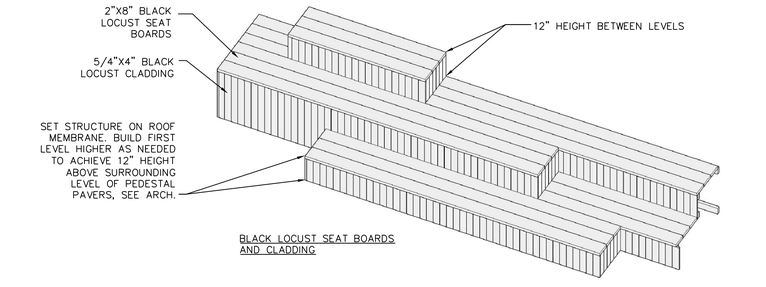
SHEET NO: L4.5



1 ROOF DECK PICNIC TABLE
SCALE: 3/4" = 1'



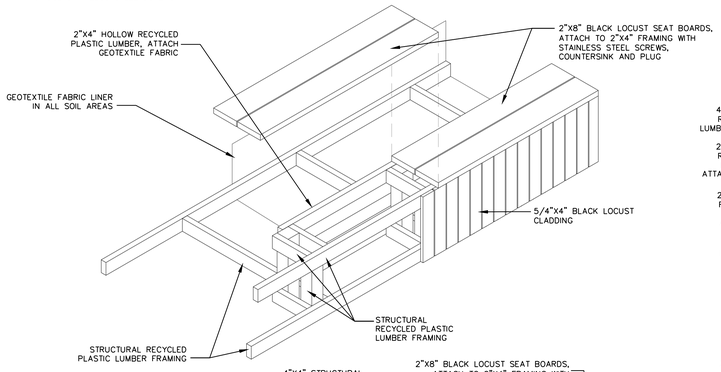
STRUCTURAL RECYCLED PLASTIC LUMBER FRAMING

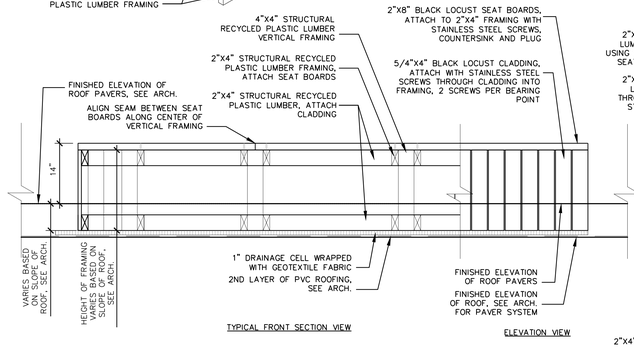


BLACK LOCUST SEAT BOARDS AND CLADDING

2 ROOF DECK TIERED SEATING
SCALE: NTS

NOTE:
1. USE LUMBER FIRE-RATED PER ASTM E108 CLASS C
2. PRE-DRILL ALL HOLES FOR SCREWS IN BLACK LOCUST
3. COUNTERSINK FLUSH ALL VISIBLE EXTERIOR SCREWS
4. USE STAINLESS STEEL SCREWS

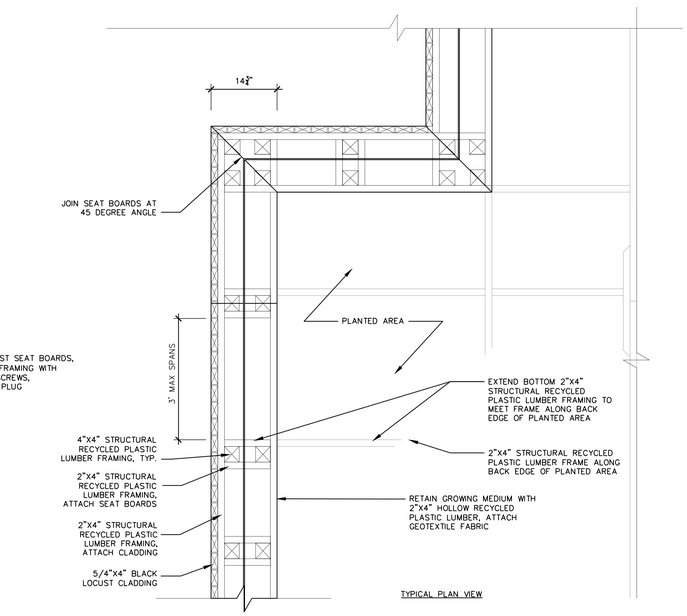




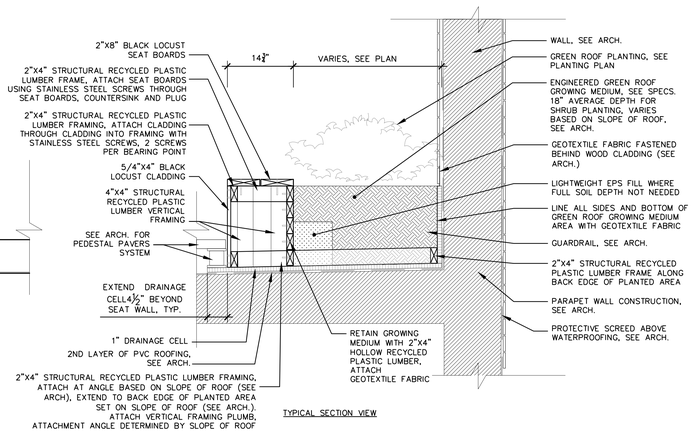
TYPICAL FRONT SECTION VIEW

ELEVATION VIEW

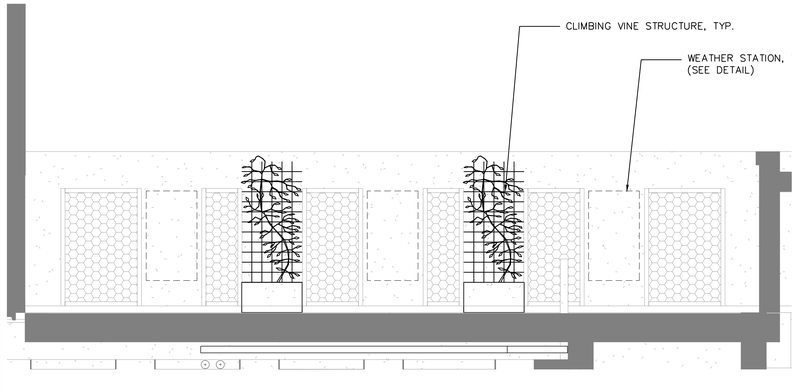
3 ROOF DECK PLANTERS, TYP.
SCALE: 1" = 1'-0"



TYPICAL PLAN VIEW



TYPICAL SECTION VIEW

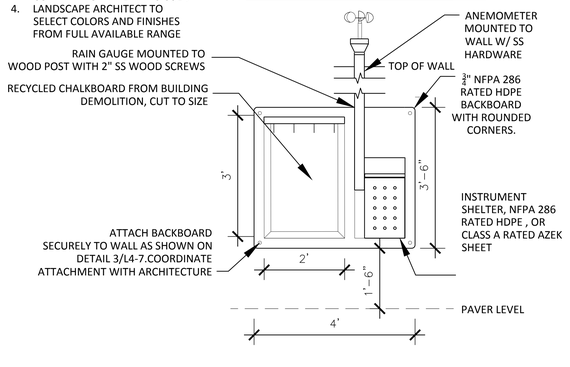


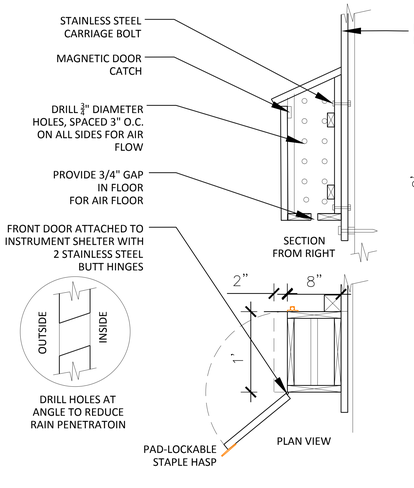
4 WEATHER STATION, TYP.
SCALE: 3/8" = 1'

NOTE:
1. ATTACH ALL WEATHER STATION ELEMENTS USING STAINLESS STEEL SCREWS AND WASHERS.
2. ATTACH WIND SOCK TO PERIMETER FENCE POST AS SHOWN IN PLAN
3. VERIFY NO ASBESTOS CONTAINING MATERIAL IS USED
4. LANDSCAPE ARCHITECT TO SELECT COLORS AND FINISHES FROM FULL AVAILABLE RANGE

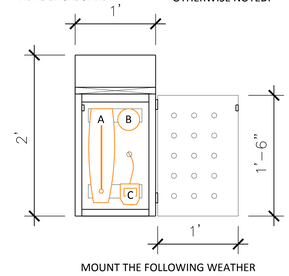
PROVIDE THE FOLLOWING WEATHER STATION COMPONENTS FOR EACH STATION

WEATHER TYPE	MEASUREMENT TOOL
1. Wind	Anemometer
2. Temp.	Thermometer
3. Pressure	Barometer
4. Rainfall	Rain Gauge





NOTES:
1. INSTRUMENT SHELTER TO BE CONSTRUCTED BY CONTRACTOR FROM NFPA 286 RATED HDPE.
2. ATTACH ALL ELEMENTS WITH STAINLESS STEEL SCREWS, UNLESS OTHERWISE NOTED.



MOUNT THE FOLLOWING WEATHER INSTRUMENTS INSIDE SHELTER:
A.THERMOMETER
B. BAROMETER -Ø3.25"
C. ANEMOMETER DISPLAY

FRONT ELEVATION (DOOR OPEN)

PLANNING BOARD APPROVALS

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REVISIONS:

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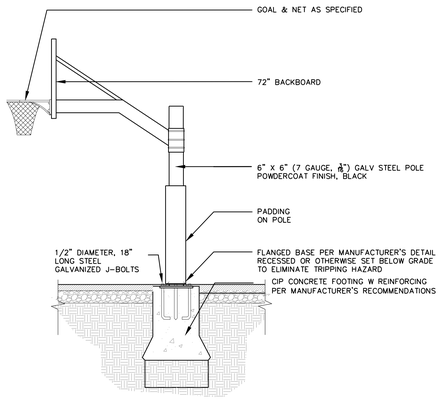
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

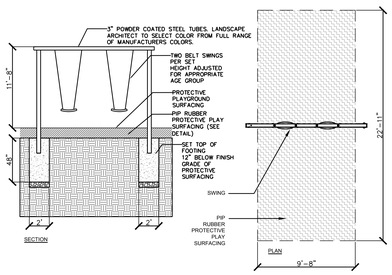
TITLE:
LANDSCAPE DETAILS: ROOF DECK

JOB NUMBER: 18-08
DRAWN BY: NB, DS
CHECKED BY: NB
DATE: 08/05/2020
SCALE: AS NOTED
0" 1"
N

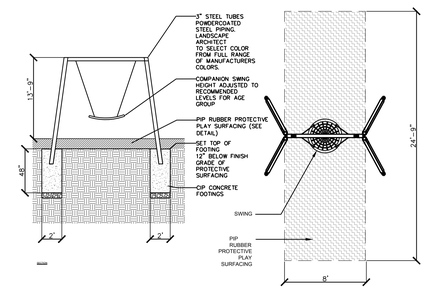
SHEET NO: L4.6



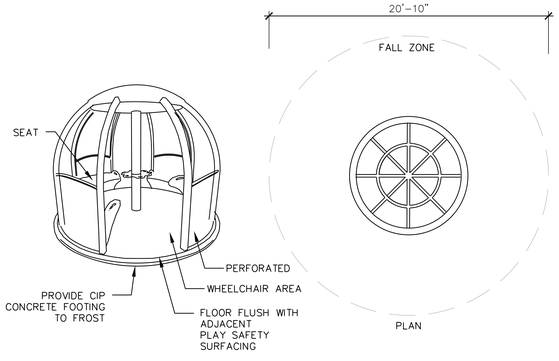
1 BASKETBALL GOAL, TYP.
SCALE: 1/4" = 1'



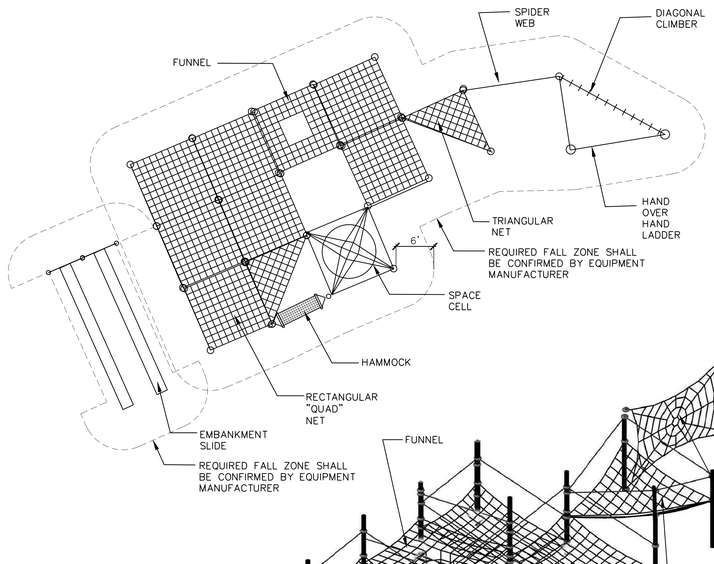
2 BELT SWING, TYP.
SCALE: NTS

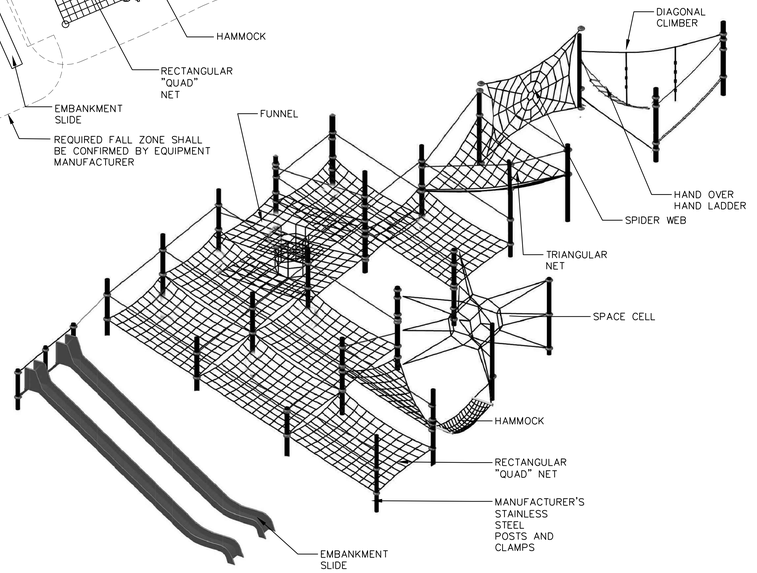


3 BASKET SWING, TYP.
SCALE: NTS

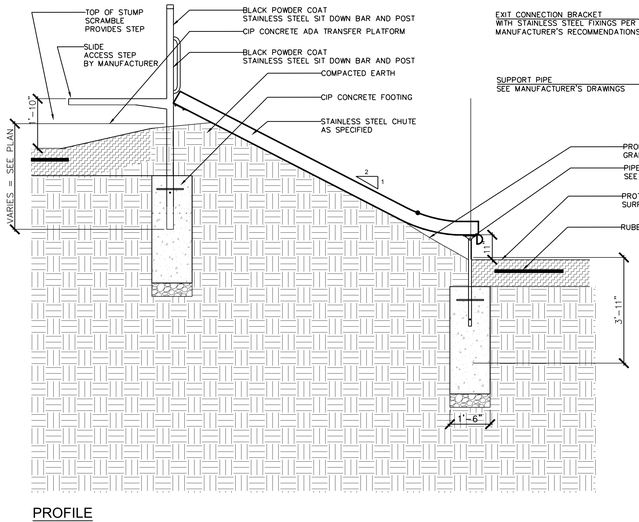


4 ACCESSIBLE SPINNER
SCALE: NTS



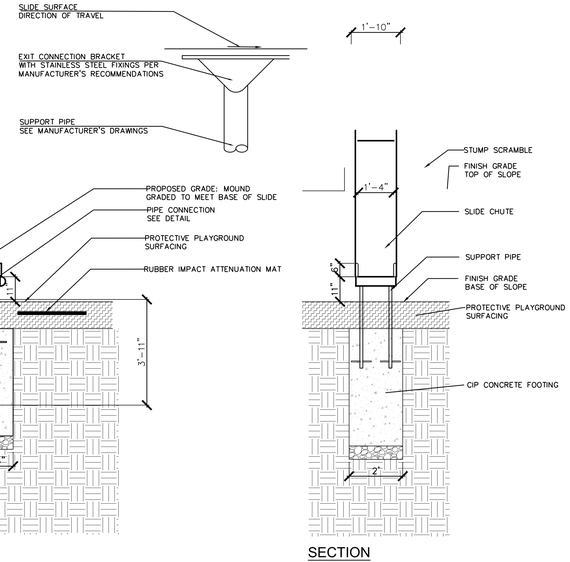


5 COMPOSITE NET CLIMBER
SCALE: NTS

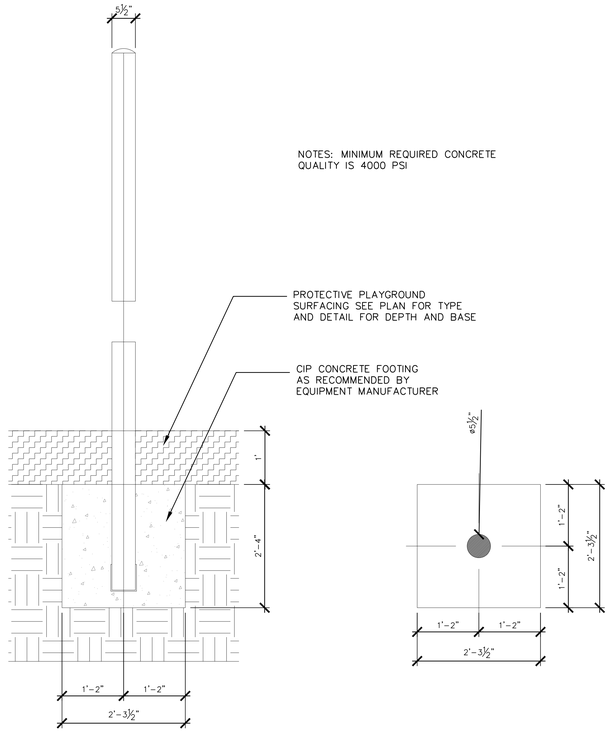


PROFILE

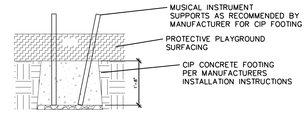
6 EMBANKMENT SLIDE, TYP.
SCALE: NTS



SECTION



8 COMPOSITE NET CLIMBER FOOTING
SCALE: NTS



7 OUTDOOR MUSICAL INSTRUMENTS FOOTING, TYP.
SCALE: NTS

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REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
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MILLBURY, MA 01527

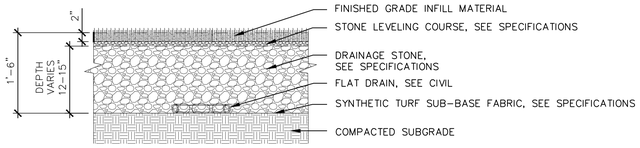
PLANNING BOARD SUBMISSION - UPDATE

TITLE:

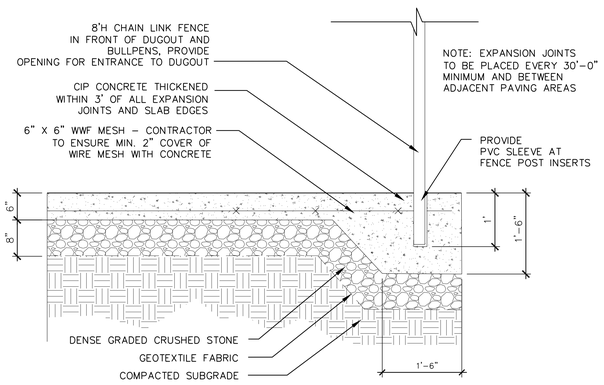
LANDSCAPE DETAILS: PLAYGROUND EQUIPMENT & STRUCTURES

JOB NUMBER: 18-08
DRAWN BY: NB, AG
CHECKED BY: NB
DATE: 08/05/2020
SCALE: AS NOTED
0" 1"
N

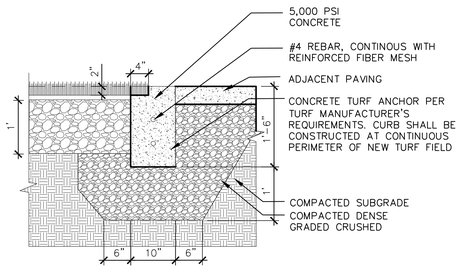
SHEET NO: L4.7



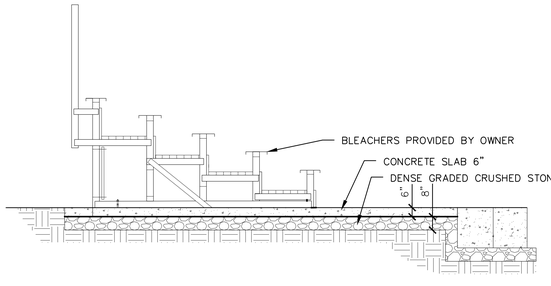
1 SYNTHETIC TURF, TYP.
SCALE: 1" = 1'0"



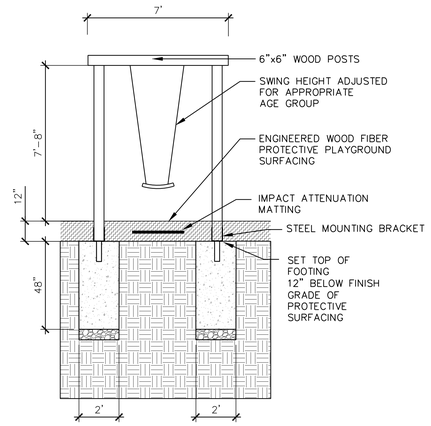
2 SLAB FOR FUTURE DUGOUT, TYP,
SCALE: 1" = 1'0"



3 SYNTHETIC TURF MOW CURB TYP.
SCALE: 1" = 1'0"

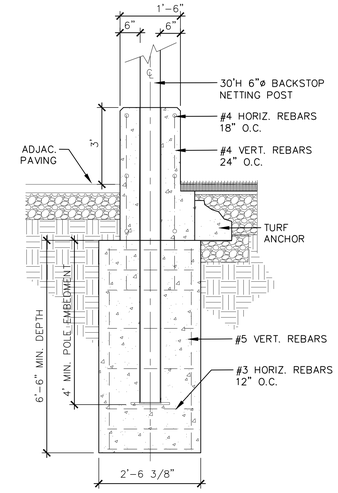


4 MOVABLE BLEACHER SLAB AND MOW CURB, TYP.
SCALE: NTS

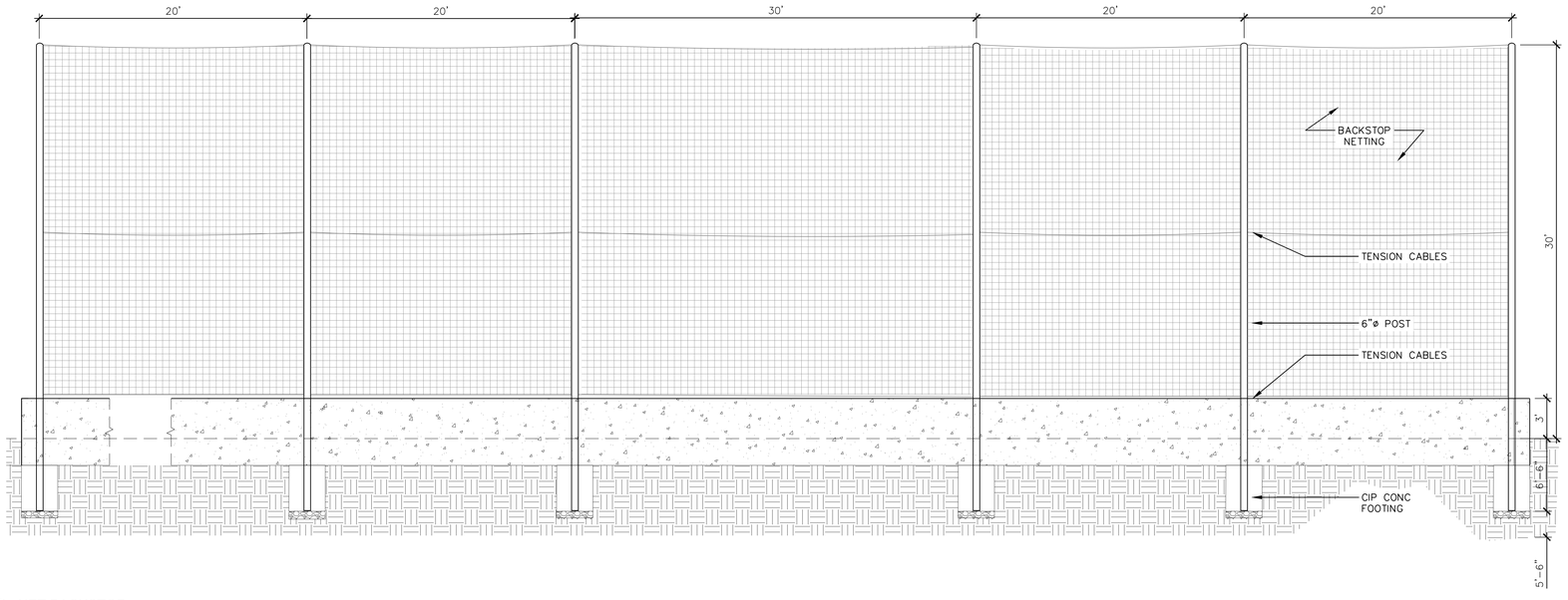


SECTION

5 SWING - THERAPEUTIC GARDEN
SCALE: NTS



BACKSTOP NET POST FOOTING, TYP.



6 NET BACKSTOP
SCALE: NTS

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REVISIONS:

No.	Description	Date

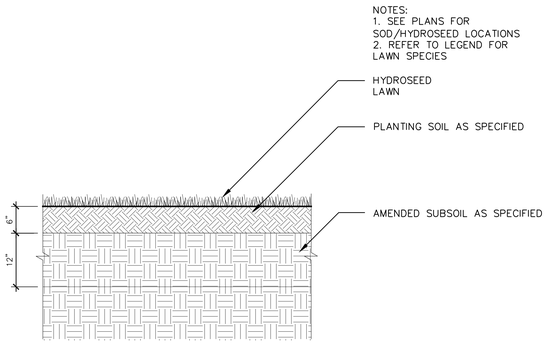
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

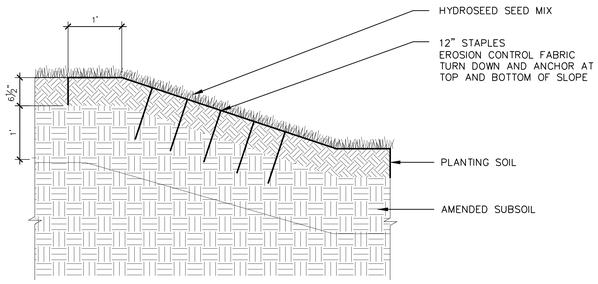
TITLE:
LANDSCAPE DETAILS: ATHLETIC FIELDS & COURTS

JOB NUMBER: 18-08
DRAWN BY: NB, AG
CHECKED BY: NB
DATE: 08/05/2020
SCALE: AS NOTED
0" 1"
N

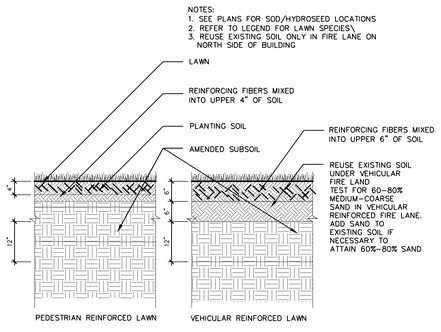
SHEET NO: L4.8



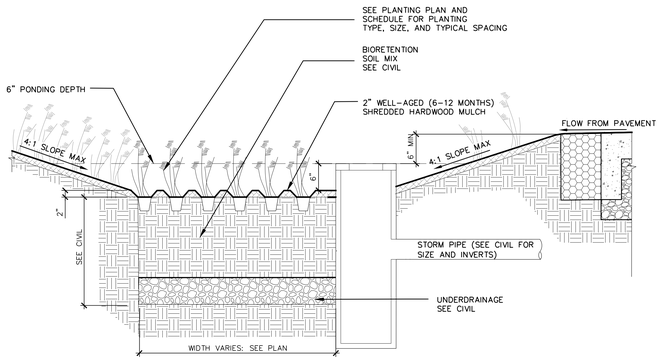
1 LAWN PLANTING, TYP.
SCALE: 1" = 1'-0"



2 HYDROSEED ON SLOPE, TYP.
SCALE: 1" = 1'-0"

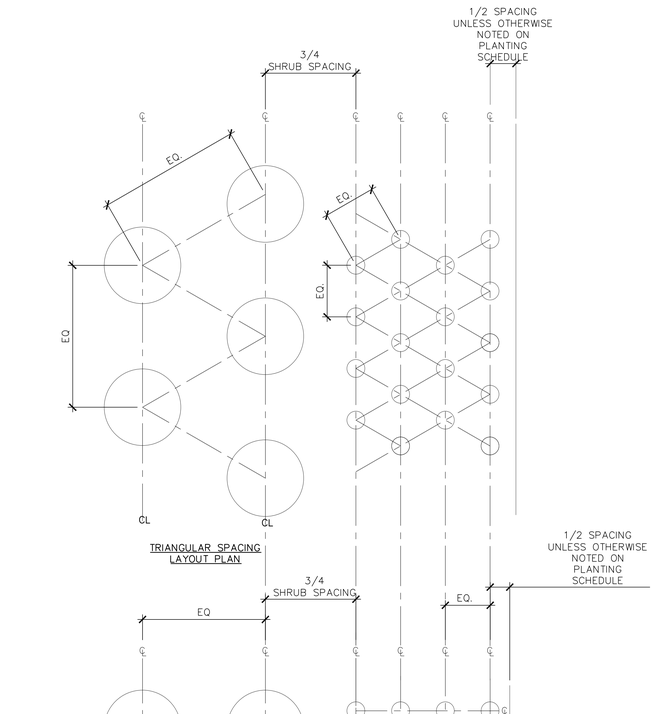


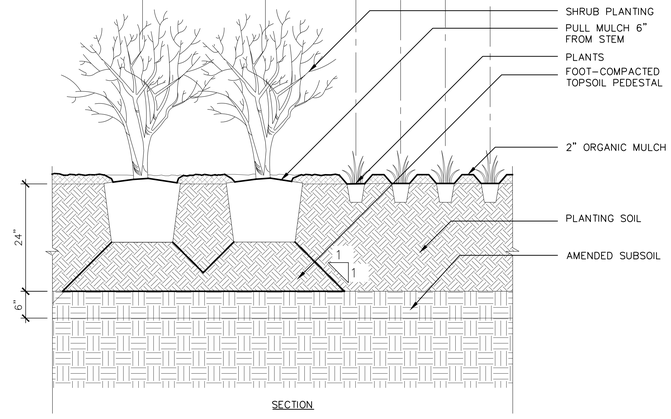
3 VEHICULAR LAWN, TYP.
SCALE: 3/4" = 1'-0"



4 BIORETENTION AREA PLANTING, TYP.
SCALE: 3/4" = 1'-0"

NOTES:
LAY OUT PLANTS USING TRIANGULAR SPACING UNLESS OTHERWISE SHOWN ON L1-2 PLANTING PLAN



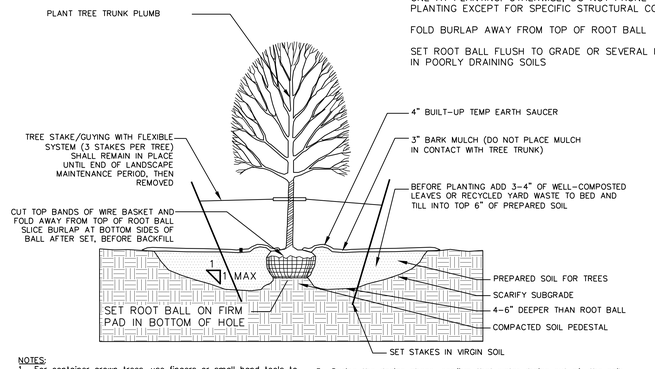


5 MASSED SHRUB & GROUNDCOVER PLANTING
SCALE: 1" = 1'-0"

AVOID PURCHASING TREES WITH TWO LEADERS, OR REMOVE ONE AT PLANTING. OTHERWISE, DO NOT PRUNE TREE AT PLANTING EXCEPT FOR SPECIFIC STRUCTURAL CORRECTIONS

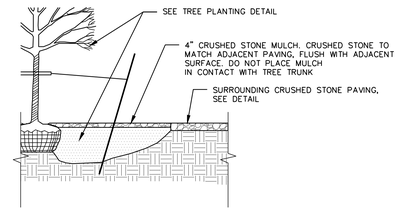
FOLD BURLAP AWAY FROM TOP OF ROOT BALL

SET ROOT BALL FLUSH TO GRADE OR SEVERAL INCHES HIGHER IN POORLY DRAINING SOILS

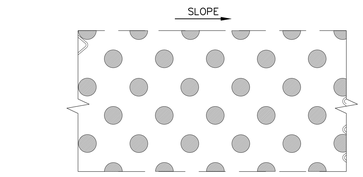


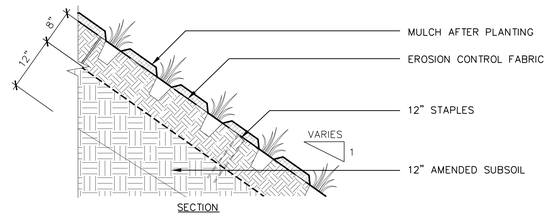
NOTES:
1. For container grown trees, use fingers or small hand tools to pull the roots out of the outer layer of potting soil; then cut or pull apart any roots circling the perimeter of the container.
2. Incorporate commercially prepared mycorrhiza spores in the soil immediately around the root ball at rates specified by the manufacturer
3. During the design phase, confirm that water drains out of the soil; design alternative drainage systems as required.
4. Thoroughly soak the tree root ball and adjacent prepared soil several times during the first month after planting and regularly throughout the following two summers.
5. The planting process is similar for deciduous and evergreen trees.

6 TREE PLANTING, TYP.
SCALE: 1" = 1'-0"

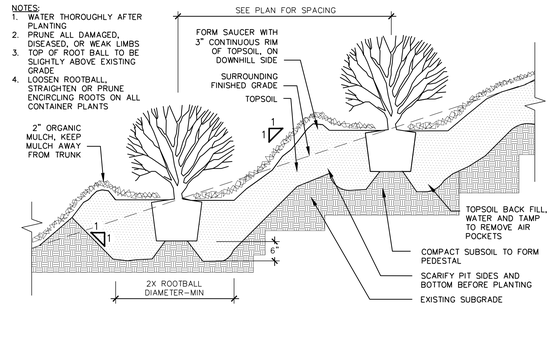


7 TREE PLANTING IN GRAVEL
SCALE: 1" = 1'-0"





8 GROUNDCOVER ON SLOPE, TYP.
SCALE: 1" = 1'-0"



9 SHRUB PLANTING ON SLOPE, TYP.
SCALE: 1" = 1'-0"

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REVISIONS:

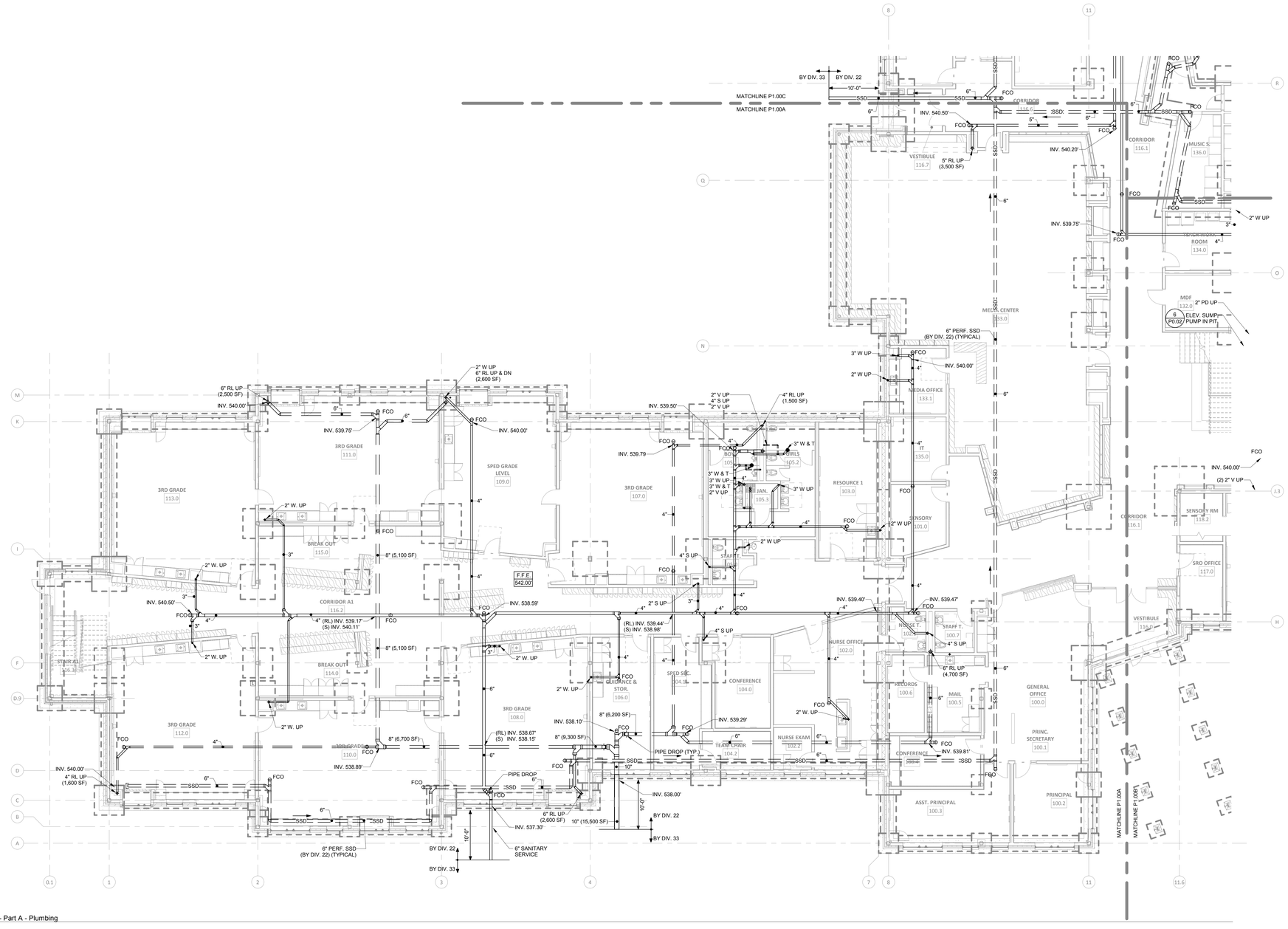
No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
PLANNING BOARD SUBMISSION - UPDATE

TITLE:
LANDSCAPE DETAILS: PLANTING

JOB NUMBER: 18-08
DRAWN BY: NB, AG, DS
CHECKED BY: NB
DATE: 08/05/2020
SCALE: AS NOTED
0" 1"
N

SHEET NO: L4.9



1 P1.00A Level 1 Below Slab - Part A - Plumbing
1/8" = 1'-0"

PLANNING BOARD APPROVALS

Turowski2 Architecture

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313 Wareham Road
Marion, MA 02738

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www.t2architecture.com

CONSULTANT:

GARCIA-GALUSKA-DESOUSA
CONSULTING ENGINEERS, INC.
60 Temple Place, Boston, MA 02111-1101
617.350.0450 • FAX 617.350.9520 • www.ggdengineering.com

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REVISIONS:

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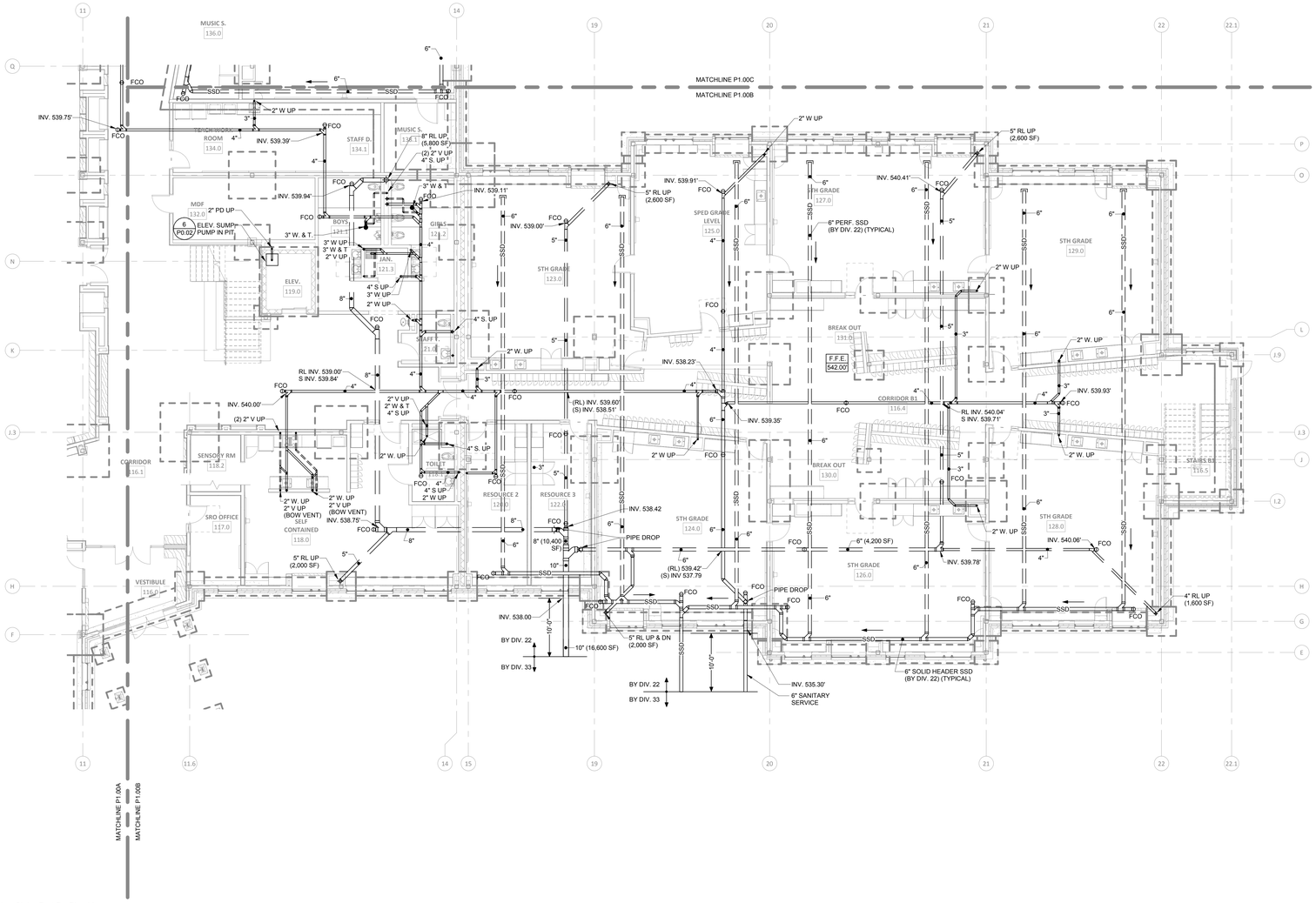
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST, MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:
LEVEL 1
BELOW SLAB
- PART A -
PLUMBING

JOB NUMBER: 18-08
DRAWN BY: GGD
CHECKED BY: CMG
DATE: 08/05/2020
SCALE: 1/8" = 1'-0"
SHEET NO: P1.00A

7/28/2020 11:17 PM



1 P1.00B Level 1 Below Slab - Part B - Plumbing
1/8" = 1'-0"

PLANNING BOARD APPROVALS

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STAMP:

REVISIONS:

No.	Description	Date

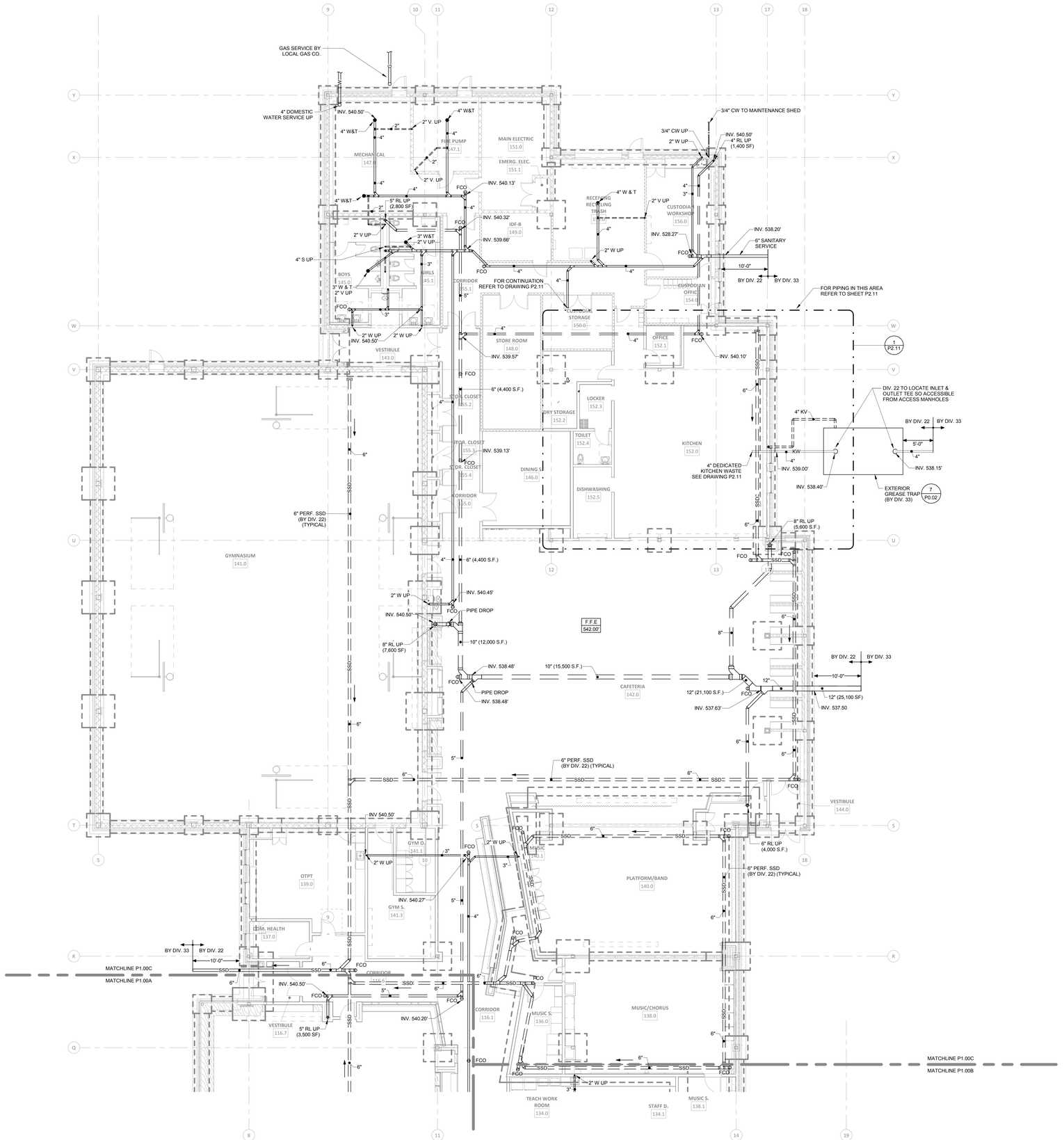
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST, MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:
LEVEL 1
BELOW SLAB
- PART B -
PLUMBING

JOB NUMBER: 18-08
DRAWN BY: GGD
CHECKED BY: CMG
DATE: 08/05/2020
SCALE: 1/8" = 1'-0"
SHEET NO: P1.00B

7/29/2020 5:11:23 PM



1 P1.00C Level 1 Below Slab - Part C - Plumbing
1/8" = 1'-0"

PLANNING BOARD APPROVALS

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STAMP:

REVISIONS:

No.	Description	Date

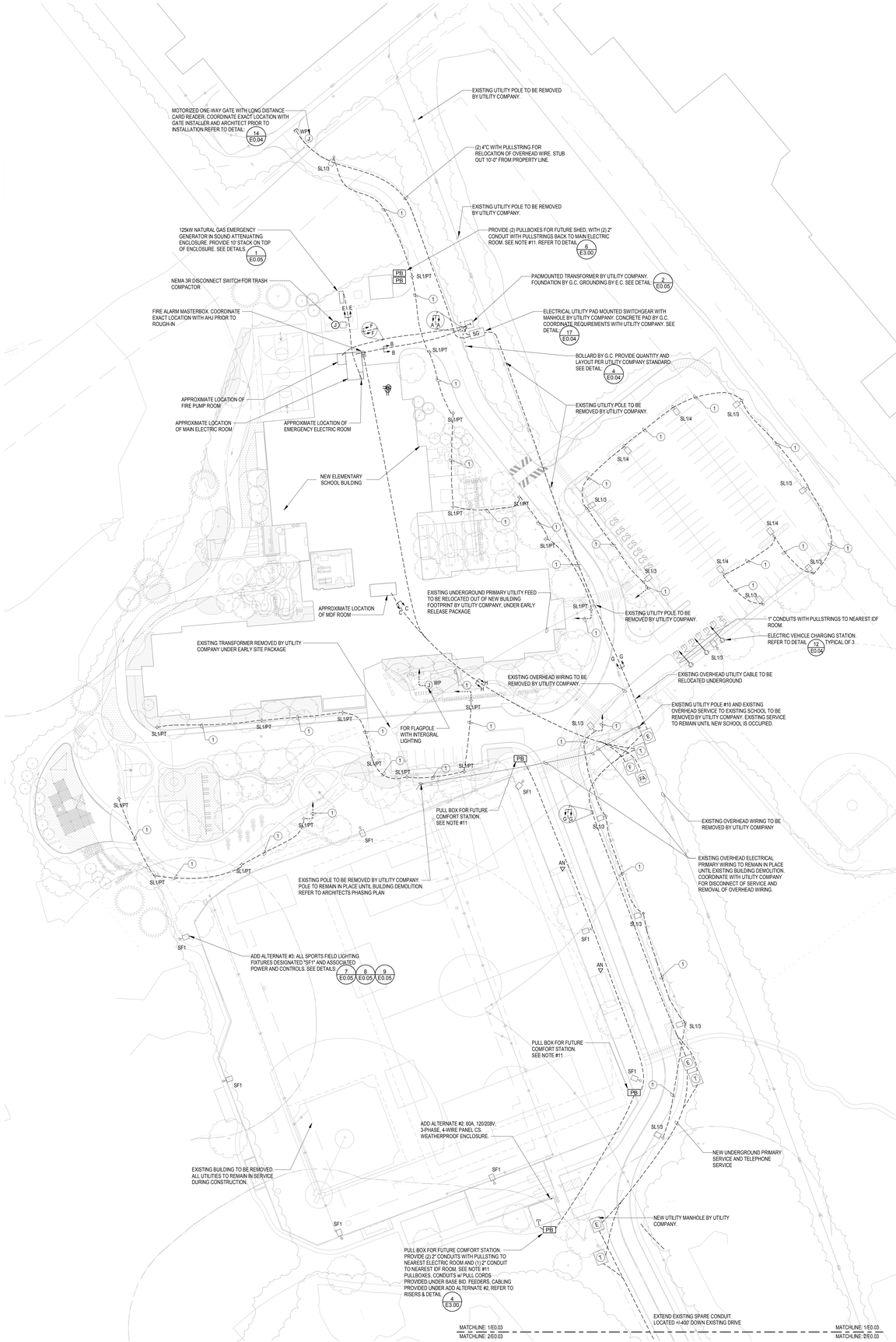
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST, MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

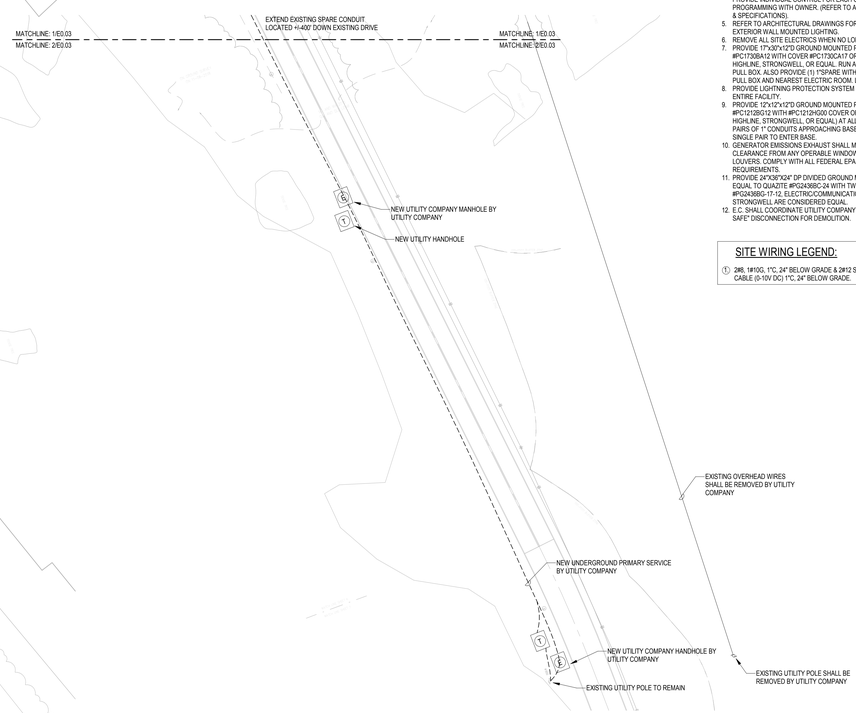
TITLE:
LEVEL 1 BELOW SLAB - PART C - PLUMBING

JOB NUMBER: 18-08
DRAWN BY: GGD
CHECKED BY: CMG
DATE: 08/05/2020
SCALE: 1/8" = 1'-0"
SHEET NO: P1.00C

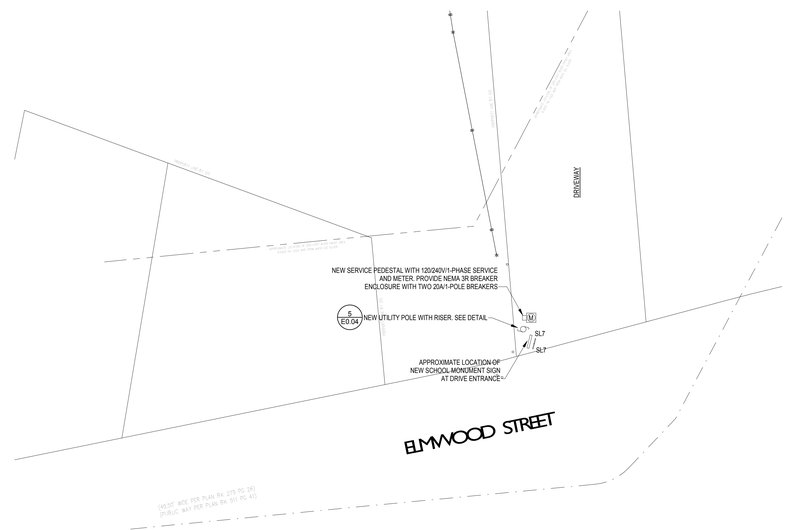
7/29/2020 5:11:17 PM



1 E0.03 ELECTRICAL SITE PLAN
SCALE: 1" = 40'-0"



2 E0.03 ELECTRICAL SITE PLAN UTILITY CORRIDOR
SCALE: 1" = 40'-0"



3 E0.03 ELECTRICAL SITE PLAN - DRIVE ENTRANCE
SCALE: 1" = 40'-0"

ELECTRICAL SITE NOTES:

1. DO NOT RUN ANY UNDERGROUND RACEWAYS WITHIN PLANTING AREAS OR LEACHING FIELDS. REFER TO DRAWINGS FOR LOCATIONS. COORDINATE ROUTING WITH LANDSCAPE ARCHITECT.
2. REFER TO CIVIL DRAWINGS FOR EXACT ROUTING OF UTILITIES. REFER TO LANDSCAPE DRAWINGS FOR EXACT LOCATION OF 'SITE' FIXTURES.
3. ALL SITE WIRING SHALL BE 2#6&#10G,1"C MINIMUM UNLESS SHOWN OTHERWISE.
4. ALL EXTERIOR LIGHTING TO BE PROGRAMMED FOR PHOTOCELL "ON", TIMED "OFF" AND DIMMED LEVELS (VIA 0-10V SIGNAL) PROVIDE INDIVIDUAL CONTROL FOR EACH CIRCUIT. COORDINATE PROGRAMMING WITH OWNER. (REFER TO ALCS ONE-LINE DIAGRAM & SPECIFICATIONS)
5. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF EXTERIOR WALL MOUNTED LIGHTING.
6. REMOVE ALL SITE ELECTRICS WHEN NO LONGER REQUIRED.
7. PROVIDE 17"x30"x12"D GROUND MOUNTED PULL BOX (QUAZITE #PC17302BA12 WITH COVER #PC1730CA17 OR SAME BY CARSON, HIGHLINE, STRONGWELL, OR EQUAL. RUN ALL SITE LIGHTING VIA PULL BOX. ALSO PROVIDE (1) 1"SPARE WITH PULL LINE BETWEEN PULL BOX AND NEAREST ELECTRIC ROOM. LABEL @ EACH END.
8. PROVIDE LIGHTNING PROTECTION SYSTEM FOR COVERAGE OF ENTIRE FACILITY.
9. PROVIDE 12"x12"x12"D GROUND MOUNTED PULL BOX (QUAZITE #PC1212BC12 WITH #PC1212HG00 COVER OR SAME BY CARSON, HIGHLINE, STRONGWELL, OR EQUAL) AT ALL POLES WITH THREE PAIRS OF 1" CONDUITS APPROACHING BASE TO ALLOW FOR SINGLE PAIR TO ENTER BASE.
10. GENERATOR EMISSIONS EXHAUST SHALL MAINTAIN 25 FEET CLEARANCE FROM ANY OPERABLE WINDOWS OR INTAKE LOUVERS. COMPLY WITH ALL FEDERAL EPA AND STATE DEP REQUIREMENTS.
11. PROVIDE 24"X36"X24" DP DIVIDED GROUND MOUNTED PULL BOX EQUAL TO QUAZITE #PG2436BC-24 WITH TWO PIECE COVER #PG2436BG-17-12, ELECTRICOMMUNICATIONS, CARSON HIGHLINE, STRONGWELL ARE CONSIDERED EQUAL.
12. E.C. SHALL COORDINATE UTILITY COMPANY SHUTDOWN FOR "MAKE SAFE" DISCONNECTION FOR DEMOLITION.

SITE WIRING LEGEND:

① 2#8, 1#10G, 1"C, 24" BELOW GRADE & 2#12 SHIELDED CABLE (0-10V DC) 1"C, 24" BELOW GRADE

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CONSULTANT:
GARCIA GALUSKA DESOUSA
CIVIL

STAMP:

REVISIONS:

No.	Description	Date

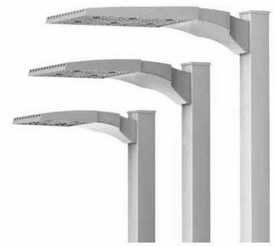
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527
60% CONSTRUCTION DOCUMENTS - MSBA SUBMISSION

TITLE:
ELECTRICAL SITE PLAN

JOB NUMBER: 18-08
DRAWN BY: JR
CHECKED BY: DMP
DATE: 8/3/2020
SCALE: As indicated
SHEET NO: E0.03

7/31/2020 12:11:36 PM

1 LC1.0 SITE LIGHTING CALCULATION PLAN
SCALE: 1" = 40'-0"



2 LC1.0 FIXTURE TYPE "SL1/3" & "SL1/4HS"
SCALE: NONE

3 LC1.0 FIXTURE TYPE "SL1/PT"
SCALE: NONE

4 LC1.0 FIXTURE TYPES "SL4" & "SL5"
SCALE: NONE

5 LC1.0 FIXTURE TYPE "SL7"
SCALE: NONE

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	MODEL / SERIES	MTG.	VOLTAGE	LIGHTING SOURCE			DESCRIPTION
					LUMENS	WATTS	SOURCE/CCT	
SL1/3	US ARCHITECTURAL	RZR-PLED-II-M-40LED-350MA-NW-277-*-TPR7	POLE	277 VOLT	6408	42	LED/4000K	POLE FIXTURE W/ TYPE III DISTRIBUTION MOUNTED ON 17.5' ROUND ALUMINUM TAPERED POLE RATED FOR 110MPH WIND CONDITIONS, *=COLOR BY ARCH. PROVIDE WITH 7 PIN RECEPTACLE
SL1/4HS	US ARCHITECTURAL	RZR-PLED-IV-FT-40LED-350MA-NW-277-*-TPR7	POLE	277 VOLT	6408	42	LED/4000K	POLE FIXTURE W/ TYPE IV FORWARD DISTRIBUTION MOUNTED ON 17.5' ROUND ALUMINUM TAPERED POLE RATED FOR 110MPH WIND CONDITIONS, *=COLOR BY ARCH. PROVIDE WITH 7 PIN RECEPTACLE
SL1/PT	US ARCHITECTURAL	RZR-PTY-PLED-V-SQ-W-40LED-350MA-NW-277-*-TPR7	POLE	277 VOLT	6408	45	LED/4000K	POLE FIXTURE W/ TYPE V WIDE DISTRIBUTION MOUNTED ON 12' ROUND ALUMINUM TAPERED POLE RATED FOR 110MPH WIND CONDITIONS, *=COLOR BY ARCH. PROVIDE WITH 7 PIN RECEPTACLE
SL4	US ARCHITECTURAL	RZR-WM1-PLED-IV-20LED-350MA-NW-277-*	W	277 VOLT	2900	22	LED/4000K	LED WALL MOUNTED FIXTURE WITH TYPE IV DISTRIBUTION AND 0-10V DIMMING CAPABILITY IP65 RATED FOR USE IN WET LOCATION. *=COLOR BY ARCH.
SL5	US ARCHITECTURAL	RZR-WM1-PLED-III-20LED-350MA-NW-277-*	W	277 VOLT	2900	22	LED/4000K	LED WALL MOUNTED FIXTURE WITH TYPE III DISTRIBUTION AND 0-10V DIMMING CAPABILITY IP65 RATED FOR USE IN WET LOCATION. *=COLOR BY ARCH.
SL7	i2SYSTEMS	V4295-A-4-6-BBD-*	S	UNIVERSAL	451/W	5W/FT	LED/4000K	IP-65, SLIM PROFILE, LED ARCHITECTURAL STRIP FIXTURE WITH REMOTE DRIVER WITH ADJUSTABLE BRACKET

PLANNING BOARD APPROVALS

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STAMP:

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST,
MILLBURY, MA 01527

PLANNING BOARD SUBMISSION

TITLE:
SITE LIGHTING CALCULATION

JOB NUMBER: 18-08
DRAWN BY: JR
CHECKED BY: DMP
DATE: 8/3/2020
SCALE: 1" = 40'-0"
SHEET NO: LC1.0

7/31/2020 12:27:38 PM

TECHNOLOGY:

AUDIO	T:	A - AUDIBILE ALARM
BADGE CAMERA	T:	B - BADGE
BUTTON	T:	D - DURESS L - LOCKDOWN R - DOOR RELEASE
CARD READER	T:	P - PROXIMITY
CPU TOWER	T:	M - MULTIPLE SYSTEMS
ELECTRIC LOCK	T:	M - ELECTROMAGNETIC MO - MORTISE MORX - MORTISE WITH REQUEST TO EXIT
EXIT DEVICE	T:	ERX - ELECTRIFIED WITH REQUEST TO EXIT RX - REQUEST TO EXIT
PANEL	T:	C - CARD ACCESS I - INTRUSION NVR - NETWORK VIDEO RECORDER PP - PATCH PANEL S - SWITCH ZE - ZONE EXPANDER
FIXED CAMERA	T:	D - DOME FE - FISHEYE
INTERCOM	T:	MV - MASTER VIDEO VD - VIDEO DOOR
KEYPAD	T:	I - INTRUSION
MONITOR	T:	M - MULTIPLE SYSTEMS
MOTION SENSOR	T:	M - MOTION
MULTIPLE LENS CAMERA	T:	360 - 360 DEGREES
POWER SUPPLY	T:	P - POWER
PRINTER	T:	B - BADGE
RACK (BY OTHER)	T:	K - RACK
CONTACT	T:	B - BALANCED MAG I - INDUSTRIAL
HINGE	T:	EH - ELECTRIFIED
PEDESTAL	T:	PE - PEDESTAL

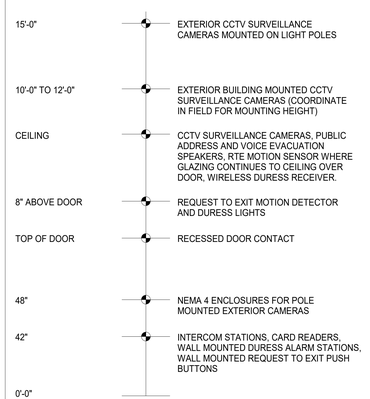
GENERAL NOTES:

1. PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS FOR ALL WORK INDICATED AS NECESSARY TO PROVIDE A COMPLETE AND USABLE SYSTEM. ALL ITEMS SHOWN AND SPECIFIED ARE TO BE NEW AND SHALL BE PROVIDED BY THE SECURITY CONTRACTOR UNLESS SPECIFICALLY STATED OTHERWISE.
2. IN CASES WHERE THE TERM 'PROVIDE' IS USED THROUGHOUT THE CONTRACT DOCUMENTATION, IT SHALL MEAN FURNISH, INSTALL AND SERVICE.
3. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING REQUIREMENTS: NATIONAL ELECTRICAL CODE (NEC) (NFPA 70), THE NATIONAL LIFE SAFETY CODE (NFPA101), THE APPLICABLE STATE BUILDING CODE AND ALL STATE AND LOCAL ORDINANCES THAT MAY SUPPLEMENT OR SUPERCEDE NATIONAL CODES.
4. THE SECURITY CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONAL AND PERMITTING FEES AS REQUIRED BY LAW.
5. THE SECURITY CONTRACTOR SHALL VISIT THE SITE AND REVIEW ALL DRAWINGS AND SPECIFICATIONS TO ESTABLISH EXISTING SITE CONDITIONS AND COORDINATE REQUIREMENTS AND POINTS OF INTERFERENCE WITH OTHER TRADES AND WORK AS NECESSARY. NO SUBSEQUENT COST CLAIMS SHALL BE ALLOWED FOR DIFFERING SITE CONDITIONS NOR FOR INCREASED COST DUE TO COORDINATION REQUIREMENTS WITH OTHER TRADES.
6. THE SECURITY CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL TRADES PRIOR TO ROUGH-IN.
7. THE SECURITY CONTRACTOR SHALL VERIFY ALL EQUIPMENT CHARACTERISTICS AND MOUNTING REQUIREMENTS PRIOR TO DEVICE AND CABLE ROUGH IN.
8. THE SECURITY CONTRACTOR SHALL COORDINATE ALL REQUEST TO EXIT AND CCTV CAMERA TRIM AND ACCESSORIES WITH THE WALL/CEILING PROVIDED. PROVIDE ALL FITTINGS, TRIM, ETC FOR A COMPLETE INSTALLATION AT EACH CONTROL POINT.
9. THE SECURITY CONTRACTOR SHALL PROVIDE A WRITTEN WARRANTY STATING THAT ALL MATERIALS AND WORKMANSHIP ARE FREE FROM DEFECTS FOR A PERIOD OF TWELVE (12) MONTHS FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER. IN ADDITION, DELIVER TO THE OWNER ALL WARRANTY AGREEMENTS FROM THE EQUIPMENT MANUFACTURERS.
10. WHERE APPLICABLE, COORDINATE PLACEMENT OF DURESS SWITCHES WITH OWNER'S REPRESENTATIVE. THE DEVICE SHOULD BE PLACED IN AN INCONSPICUOUS LOCATION WITHIN REACH OF PERSONNEL INTENDED TO UTILIZE THE DEVICE, UNOBSTRUCTED BY FURNITURE OR OTHER EQUIPMENT.
11. POWER SUPPLIES FOR ALL SECURITY DEVICES SHALL BE BACKED UP FROM UNINTERRUPTIBLE POWER SUPPLIES (UPS). THIS MAY BE ACCOMPLISHED BY MEANS OF INDIVIDUAL UPS UNITS SEGMENTED BY GROUPED SECURITY EQUIPMENT, UPS BACKUP ON PRIMARY 120/208/240VAC BRANCH CIRCUITS SUPPLYING SECURITY EQUIPMENT OR GENERATOR BACKED PRIMARY 120/208/240VAC BRANCH CIRCUITS SUPPLYING SECURITY EQUIPMENT AS LONG AS POWER SUPPLIES FED FROM SAID BRANCH CIRCUITS HAVE SUFFICIENT ON BOARD BATTERY SUPPORT TO MAINTAIN SYSTEM OPERATION DURING GENERATOR FAIL OVER TIME. IN NO CASE SHALL UPS RUNTIME BE LESS THAN ONE HOUR; THIS TIME MAY BE SUPERCEDED BY ADDITIONAL REQUIREMENTS WITHIN THE SPECIFICATION.
12. WHERE BACKUP POWER IS ACCOMPLISHED BY MEANS OF INDIVIDUAL UPS UNITS SEGMENTED BY GROUPED SECURITY EQUIPMENT, THE SECURITY CONTRACTOR SHALL PROVIDE THE UPS.
13. BRANCH CIRCUITS SUPPLYING POWER TO SECURITY DEVICES SHALL BE DEDICATED TO AND ONLY POWER SECURITY RELATED DEVICES. NO NON-SECURITY RELATED EQUIPMENT SHALL BE POWERED BY BRANCH CIRCUITS SUPPLYING POWER TO SECURITY DEVICES UNLESS THE ELECTRICAL CONTRACTOR IS GRANTED PERMISSION BY THE SECURITY SYSTEM DESIGN ENGINEER.
14. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL POWER, CONDUITS, BACK BOXES AND RACEWAYS, WHETHER SHOWN ON THE PLANS OR NOT, REQUIRED FOR THE SECURITY SYSTEM.
15. ALL PENETRATIONS OF FIRE RATED FLOOR SLABS, FIRE RATED WALLS AND FIRE RATED ENCLOSURES SHALL BE SLEEVED IN APPROPRIATELY SIZED RIGID STEEL CONDUIT AND FIRESTOPPED IN ACCORDANCE WITH THE ELECTRICAL SPECIFICATION, THE NATIONAL ELECTRICAL CODE AND ALL APPLICABLE FIRE CODES. SLEEVING AND FIRESTOPPING SHALL BE PROVIDED BY THE INDIVIDUAL PENETRATING SAID SLAB OR WALL. FIRESTOPPING SYSTEMS SHALL BE HILTI BRAND AND INSTALLED AS APPROPRIATE FOR THE PENETRATION AND IN ACCORDANCE WITH THIS SECTION AND THE HILTI INSTALLATION INSTRUCTIONS.
16. ALL OTHER PENETRATIONS NOT ADDRESSED ABOVE AND DISRUPTIONS TO SURFACES SHALL BE PATCHED AND PAINTED TO MATCH EXISTING PLASTER, WALLPAPER OR OTHER FINISHED SURFACES.
17. ALL ROOF PENETRATIONS SHALL BE COORDINATED WITH THE ROOFING CONTRACTOR PRIOR TO THE FINAL WATERPROOFING OF THE ROOFING MATERIALS AND IT SHALL BE THE RESPONSIBILITY OF THE ROOFING CONTRACTOR TO MAKE THE PENETRATION. PENETRATIONS SHALL BE SLEEVED IN APPROPRIATELY SIZED RIGID STEEL CONDUIT BUT SHALL NOT BE LESS THAN 3/4" TRADE SIZE AND PROPERLY AND SUFFICIENTLY SUPPORTED TO PREVENT DAMAGE TO THE STRUCTURE OR THE CONDUIT. IN NO CASE SHALL THE CONDUIT EXTENDING THROUGH THE ROOF HAVE LESS THAN TWO (2) SUPPORTS SECURING THE CONDUIT TO THE STRUCTURE. IN NO CASE SHALL THE ROOF DECKING MATERIAL, FLASHING OR SEALANTS BE CONSIDERED ONE OR BOTH OF THE SUPPORTS REQUIRED. THE ROOFING CONTRACTOR IS ALSO RESPONSIBLE TO PROVIDE PROPER FLASHING AND SEALANTS TO MAKE A WATERTIGHT SEAL AROUND THE CONDUIT AND PENETRATION. FAILURE TO PROPERLY COORDINATE THESE PENETRATIONS WITH THE ROOFING CONTRACTOR THAT RESULT IN ADDITIONAL COSTS BY THE ROOFING CONTRACTOR WILL BE ABSORBED BY THE PARTY RESPONSIBLE FOR THE COORDINATION DEFICIENCY.
18. WHERE INSTALLED OUTDOORS OR IN DAMP OR HUMID ENVIRONMENTS, ENCLOSURES UTILIZED TO HOUSE SECURITY EQUIPMENT, USED AS PULL BOXES FOR SECURITY CABLING OR USED TO CONTAIN SPLICES FOR SECURITY CABLING SHALL BE OF A FIBERGLASS NEMA 4X RATING OR BETTER UNLESS APPROVED OTHERWISE BY THE SECURITY SYSTEM DESIGN ENGINEER.
19. WHERE INSTALLED OUTDOORS OR IN DAMP OR HUMID ENVIRONMENTS, ENCLOSURES UTILIZED TO HOUSE SECURITY EQUIPMENT, USED AS PULL BOXES FOR SECURITY CABLING OR USED TO CONTAIN SPLICES FOR SECURITY CABLING SHALL NOT BE PENETRATED ON THE TOP OF THE ENCLOSURE.
20. THE DOOR HARDWARE VENDOR IS RESPONSIBLE FOR PROVIDING THE DOOR HARDWARE, INCLUDING ELECTRIFIED CRASHBARS, CRASHBAR POWER SUPPLIES, TRANSFER HINGES AND ELECTRIC LOCKING DEVICES INCLUDING MAGNETIC LOCKS, ELECTRIC STRIKES, ELECTRIC MORTISE LOCKS AND ELECTRIC LEVERSETS.
21. THE DOOR HARDWARE VENDOR IS RESPONSIBLE FOR PREPPING THE APPROPRIATE DOOR FRAMES TO RECEIVE THE DOOR CONTACT(S), TRANSFER HINGE(S) AND ANY OTHER ELECTRIC LOCKING DEVICE(S) THAT ARE REQUIRED BY THE SECURITY SYSTEM.
22. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL OF THE LOW VOLTAGE WIRING AND FIBER OPTIC CABLE FOR THE SECURITY DEVICES. THE SECURITY CONTRACTOR SHALL FURNISH THE LOW VOLTAGE CABLE FOR INSTALLATION BY THE ELECTRICAL CONTRACTOR.
23. ALL LOW VOLTAGE CABLING SHALL HAVE JACKETING APPROPRIATE FOR THE ENVIRONMENT IN WHICH IT IS INSTALLED. DIRECT BURIAL CABLE IS REQUIRED FOR INSTALLATION IN ANY UNDERGROUND OR EXTERIOR MOUNTED RACEWAY.
24. ALL LOW VOLTAGE CABLING, WHERE INSTALLED IN AN UNDERGROUND ENVIRONMENT MUST BE INSTALLED INSIDE A RACEWAY SUITABLE FOR THE ENVIRONMENT IN WHICH IS INSTALLED AND AT A DEPTH IN ACCORDANCE WITH NEC TABLE 300.5.
25. NO LOW VOLTAGE CABLING SHALL BE LESS THAN #22AWG WITH THE EXCEPTION OF CATEGORY (CAT) CABLING FOR NETWORKED DEVICES AND FACTORY MANUFACTURED AND ASSEMBLED CABLE ASSEMBLIES.
26. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR TERMINATING ANY AND ALL FIELD CABLING THAT TERMINATES AT FIELD DEVICES AND PATCH PANEL DEMARCATION POINTS REGARDLESS OF LOCATION, INCLUDING FIBER OPTIC TERMINATIONS.
27. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND TERMINATING LOW VOLTAGE FIELD DEVICES AND INSTALLING HEAD END PANELS AND POWER SUPPLIES. THE SECURITY CONTRACTOR IS RESPONSIBLE TO PROVIDE HEAD END TERMINATIONS, PROGRAMMING AND TESTING OF THE SECURITY SYSTEM.

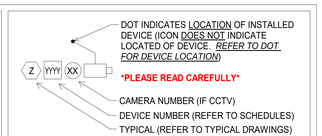
Sheet List

Sheet Number	Sheet Name
SE-000	SECURITY DEVICE SYSTEM COVER
SE-100	SITE - PART A
SE-101	SITE - PART B
SE-102	LEVEL 1 PART A
SE-103	LEVEL 1 PART B
SE-104	LEVEL 1 PART C
SE-105	LEVEL 2 PART A
SE-106	LEVEL 2 PART B
SE-107	LEVEL 2 PART C
SE-108	LEVEL 3 - PART A
SE-109	LEVEL 3 - PART B
SE-110	SITE ALTERNATES 2 & 4
SE-200	RCP - LEVEL 1
SE-201	RCP - LEVEL 2
SE-300	SECURITY DEVICE SCHEDULE
SE-301	SECURITY DEVICE SCHEDULE
SE-302	SECURITY DEVICE SCHEDULE
SE-400	SECURITY DEVICE RISER
SE-401	SECURITY DEVICE RISER
SE-500	SECURITY DEVICE TYPICAL
SE-501	SECURITY DEVICE TYPICAL
SE-502	SECURITY DEVICE TYPICAL

TYPICAL MOUNTING



1. INSTALL IN ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE, PROVINCIAL, REGIONAL, AND LOCAL CODES, STANDARDS AND LAWS.
2. IN MASONRY CONSTRUCTION THE MOUNTING HEIGHTS SHALL BE USED FOR REFERENCE TO THE NEAREST BLOCK OR BRICK COURSING.
3. THE ABOVE MOUNTING ELEVATIONS ARE TO CENTER OF DEVICE AND SHALL BE ADHERED UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE ON THE DRAWINGS AND/OR SPECIFICATIONS.
4. COORDINATE THE INSTALLATION AND MOUNTING ELEVATIONS OF ALL EQUIPMENT, DEVICES, CONTROLS AND APPURTENANCES WITH PROFESSIONAL AND ALL AFFECTED TRADES PRIOR TO INSTALLATION, DOCUMENT ALL MOUNTING ELEVATIONS FOR ALL EQUIPMENT , DEVICES, AND APPURTENANCES AT THE TIME OF SHOP DRAWINGS SUBMISSION.
5. FOR EXPOSED IN FINISHED SPACES REFER TO ARCHITECTURAL DRAWINGS. IF NOT SHOWN, CONFIRM LOCATION WITH ARCHITECT PRIOR TO ROUGH IN.



M:	P	- POLE	H	- HIDDEN	
	PE	- PEDESTAL	RF	- ROOF	
	T	- TURNSTILE	PP	- PARAPET	
	S	- SURFACE	PN	- PENDANT	
	F	- FLUSH	K	- RACK	
	R	- RECESSED	N C:	- NETWORKIP BASED	
	M	- MULLION	W	- WIRELESS	
	D	- DESK	H	- HARDWARE	
	W	- WALL	S	- STAND ALONE	
	C	- CEILING	L	- LASER	
	CO	- CORNER	U	- UTP	
	G	- GATE	FO	- FIBER OPTIC	
	B	- BURIED	MO	- MOBILE	
	AC	- ABOVE CEILING	VCC	- VANDAL RESISTANT CEILING CORNER	

CABLE LEGEND W/BELDEN

A	22Awg	4 cond SH	A 6502FE
B	22Awg	4 cond	B 6502UE
C	18Awg	2 cond	C 6300UE
D	22Awg	6 cond SH	D 6504FE
E	12Awg	2 cond	E 6000UE
F	22Awg	12 cond	F 6509UE
G	RG-59U	Coax	G 643948
H	18Awg	2 cond SH	H 6306FE
J	18Awg	4 cond	J 6302UE
K	18Awg	6 cond SH	K 6304FE
L	RG-6	Coax	L 633948
M	22Awg	6 cond	M 6504UE
N	16Awg	2 cond	N 6200UE
P	Cat 5e		P 1701A
P6	Cat 6A		P6 7852A
R	24Awg	1pr. Low Cap	R 82841
S	24Awg	2pr. Low Cap	S 82842
T	16Awg	1pr. cond SH	T 6200FE
U	20Awg	2pr. SH/Un	(WP 25359)
V	BB Composite		X 5439WS
Z	Multi Composite-Access		Z 658AFS
QC	Quick Connect		

PLANNING BOARD APPROVALS

Turowski2 Architecture

P.O. Box 1290
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508.758.9777 phone
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CONSULTANT:

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SECURITY THROUGH A NEW DIMENSION IN TECHNOLOGY

17 Accord Park Drive, Suite 201
Norwell, MA 02061

781.871.6555 phone
www.ghtechmark.com

STAMP:

REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST., MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:
SECURITY DEVICE SYSTEM COVER

JOB NUMBER: 18-08

DRAWN BY: TJP

CHECKED BY: MJA

DATE: 08/05/2020

SCALE:

SHEET NO: SE-000

7/29/2020 1:46:43 PM

1 SITE - PART A
1/32" = 1'-0"

PLANNING BOARD APPROVALS

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STAMP:

REGISTERED ARCHITECT
MATTHEW J. ALLEN
No. 50748
NORWELL
MA
COMMONWEALTH OF MASSACHUSETTS

REVISIONS:

No.	Description	Date

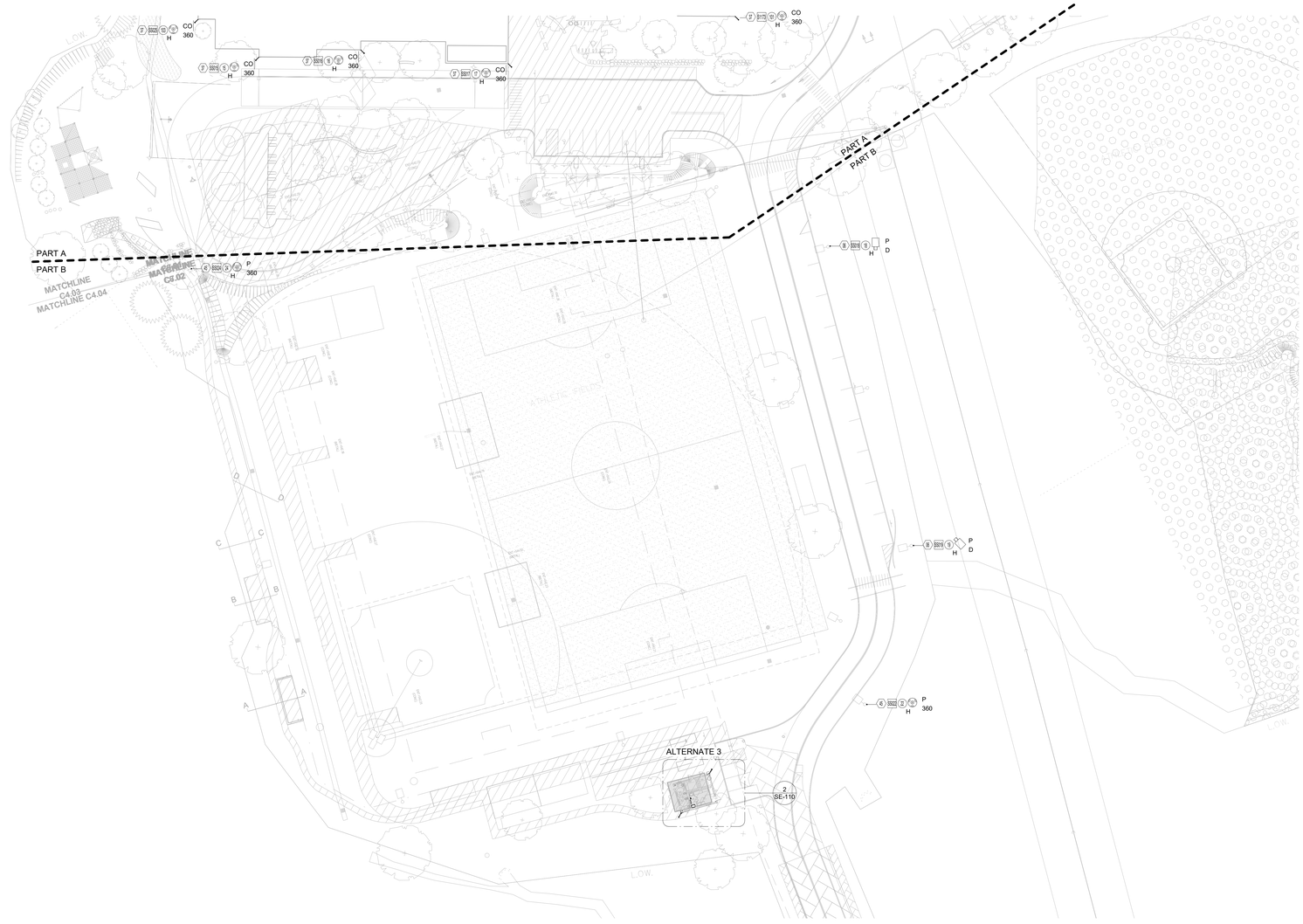
RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST., MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:
SITE - PART A

JOB NUMBER: 18-08
DRAWN BY: TJP
CHECKED BY: MJA
DATE: 08/05/2020
SCALE: 1/32" = 1'-0"
SHEET NO: SE-100

7/29/2020 3:47:03 PM



1 SITE - PART B
1/32" = 1'-0"

PLANNING BOARD APPROVALS

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STAMP:

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REVISIONS:

No.	Description	Date

RAYMOND E. SHAW ELEMENTARY SCHOOL
58 ELMWOOD ST., MILLBURY, MA 01527

PLANNING BOARD SUBMISSION - UPDATE

TITLE:
SITE - PART B

JOB NUMBER: 18-08
DRAWN BY: TJP
CHECKED BY: MJA
DATE: 08/05/2020
SCALE: 1/32" = 1'-0"
SHEET NO: SE-101

7/29/2020 1:47:13 PM