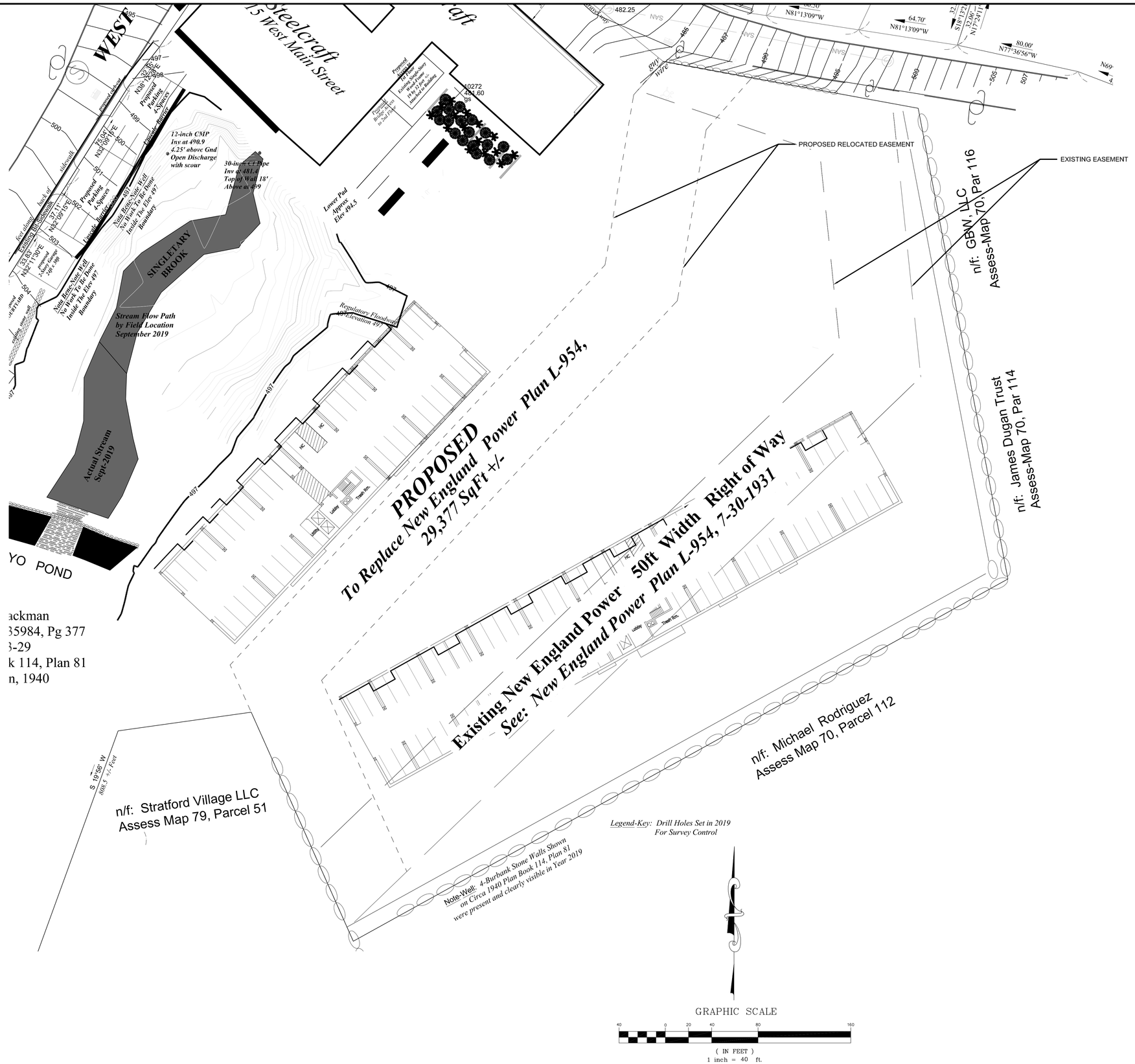


## LEGEND

- RIGHT OF WAY LINE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOURS MAJOR
- PROPOSED CONTOURS MINOR
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- THRUST BLOCK

Project Name and Address

SINGLETARY ARMS

MILLBURY, MA

Sheet Title

EASEMENT RELOCATION PLAN

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
ENGINEER
35647
REGISTERED
PROFESSIONAL ENGINEER

8/22/2020

Date

| No. | Revision/Issue | Date |
|---|---|---|

Project No. ***

Date 08/06/2020

Scale AS NOTED

Sheet C-11

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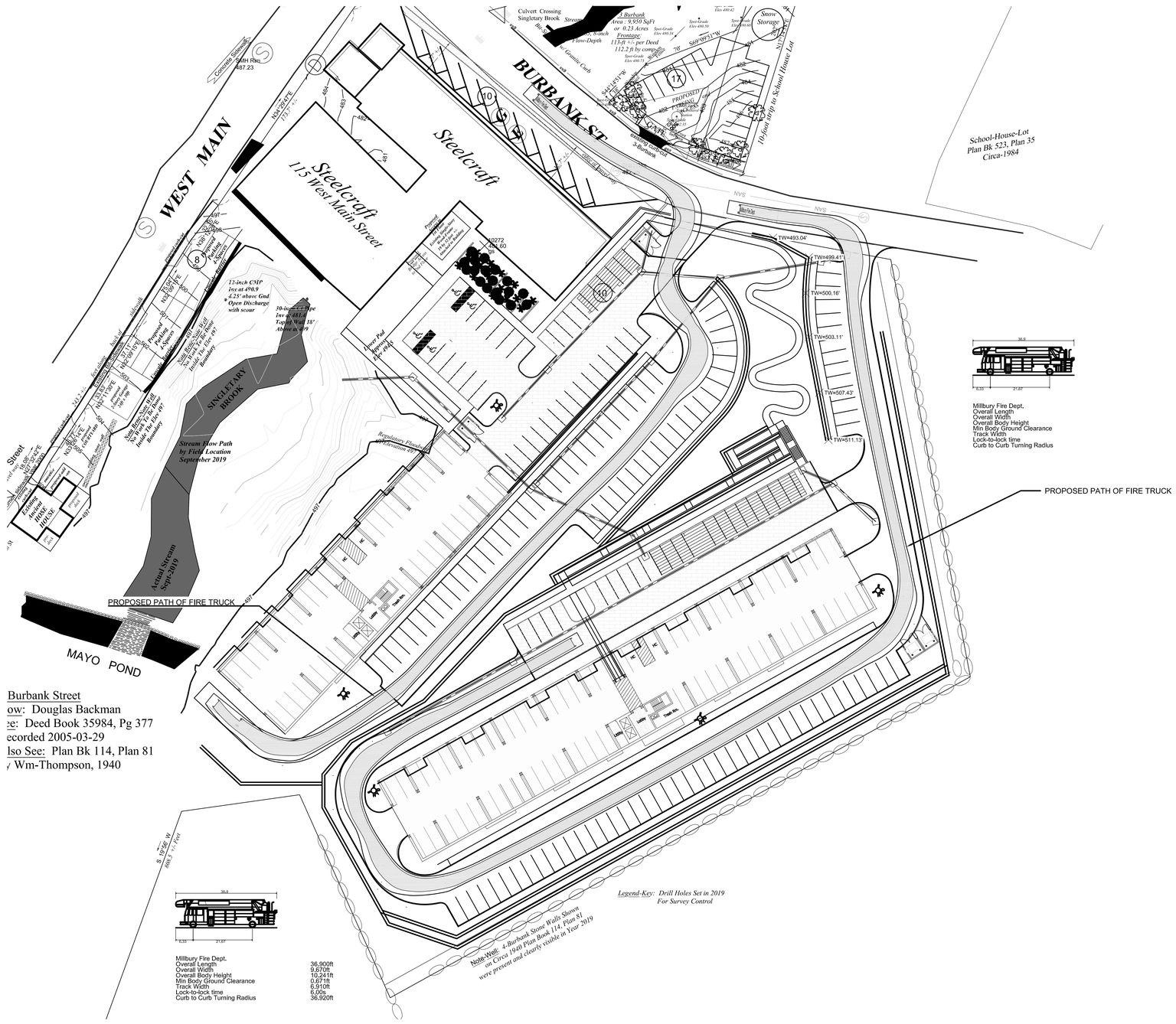


GRAPHIC SCALE

40 0 20 40 80 160

( IN FEET )
1 inch = 40 ft.

## LEGEND

| | |
|---|---|
| R/W | RIGHT OF WAY LINE |
| W | EXISTING WATER LINE |
| SAN | EXISTING SANITARY SEWER LINE |
| ST | EXISTING STORM SEWER LINE |
| W | WATER LINE |
| | SANITARY SEWER LINE |
| | STORM SEWER LINE |
| 1234 | EXISTING CONTOURS MAJOR |
| 1234 | EXISTING CONTOURS MINOR |
| 1234 | PROPOSED CONTOURS MAJOR |
| 1234 | PROPOSED CONTOURS MINOR |
| S | SANITARY SEWER MANHOLE |
| D | STORM SEWER MANHOLE |
| WM | WATER METER |
| W | WATER VALVE |
| | FIRE HYDRANT |
| | THRUST BLOCK |

Project Name and Address

SINGLETARY ARMS
MILLBURY, MA

Sheet Title

FIRE TRUCK DRIVE PATH PLAN

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
ENGINEER
25647
REGISTERED
PROFESSIONAL ENGINEER

8/22/2020
Date

| No. | Revision/Issue | Date |
|---|---|---|
| | | |

Project No. ***

Date 05/06/2020

Scale AS NOTED

Sheet C-12

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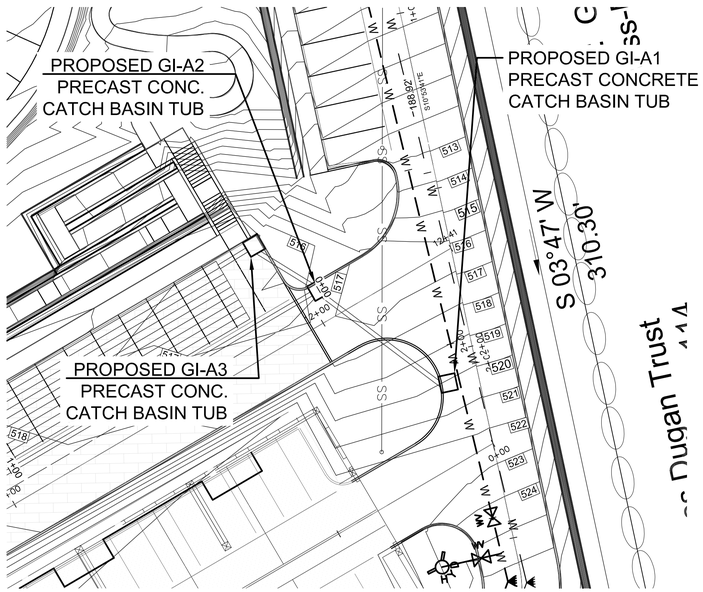
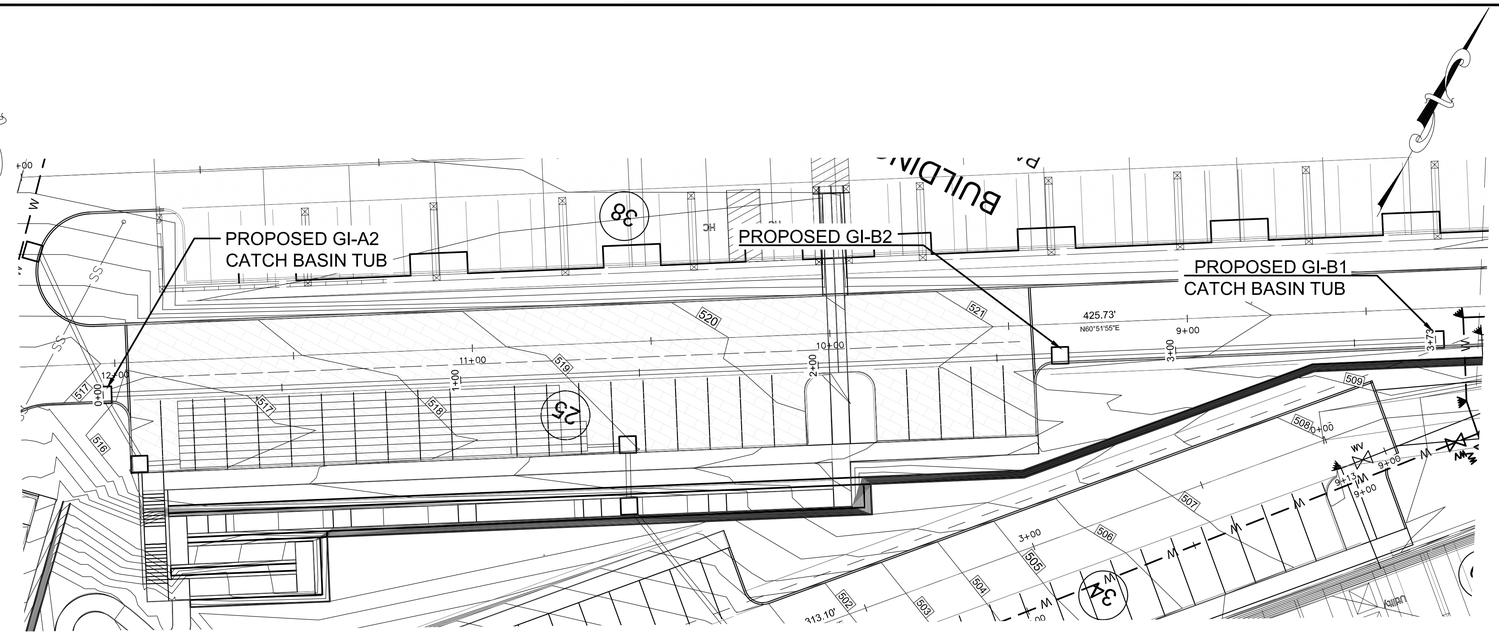



HORIZONTAL SCALE: 1"=20'

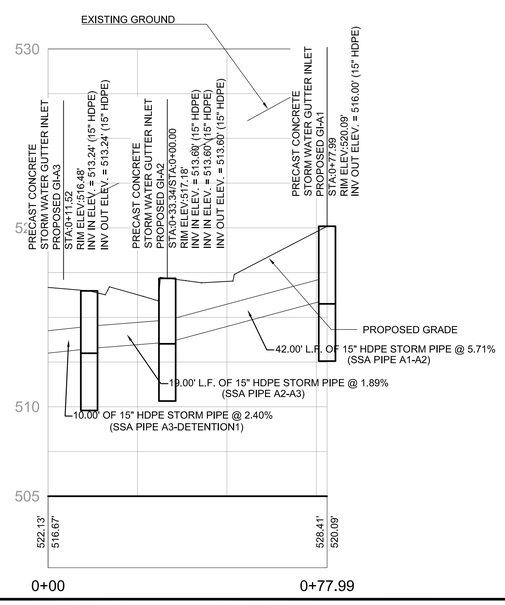



HORIZONTAL SCALE: 1"=20'

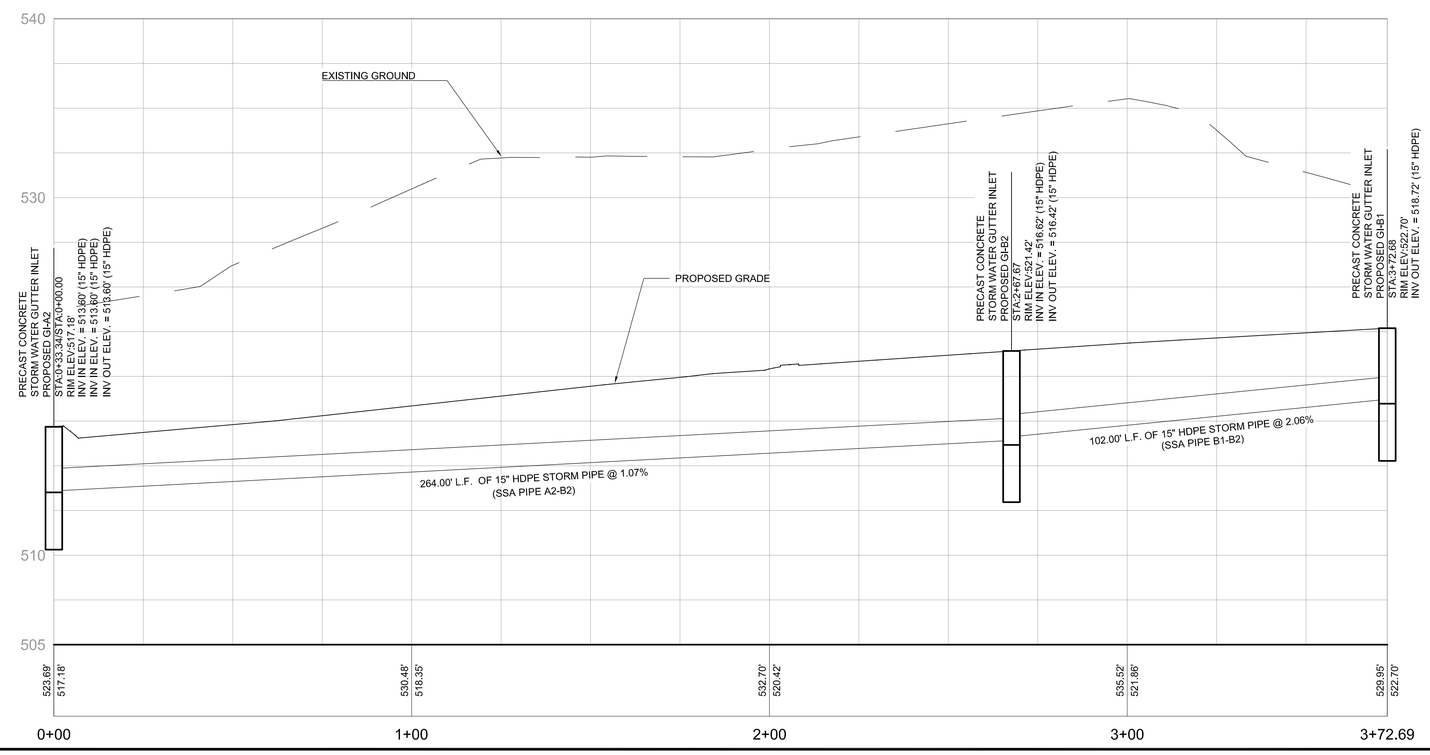
## LEGEND

- RIGHT OF WAY LINE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOURS MAJOR
- PROPOSED CONTOURS MINOR
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- THRUST BLOCK

STORM LINE "A"
STA 0+00 TO STA 0+77.99
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'




STORM LINE "B"
STA 0+00 TO STA 3+72.69
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'




Project Name and Address
SINGLETARY ARMS
MILLBURY, MA

Sheet Title
STORM LINES "A" & "B"

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
ENGINEER
55661
REGISTERED
Professional Engineer

8/22/2020
Date

| No. | Revision/Issue | Date |
|---|---|---|

Project No. ***
Date 08/06/2020
Scale AS NOTED
Sheet C-13

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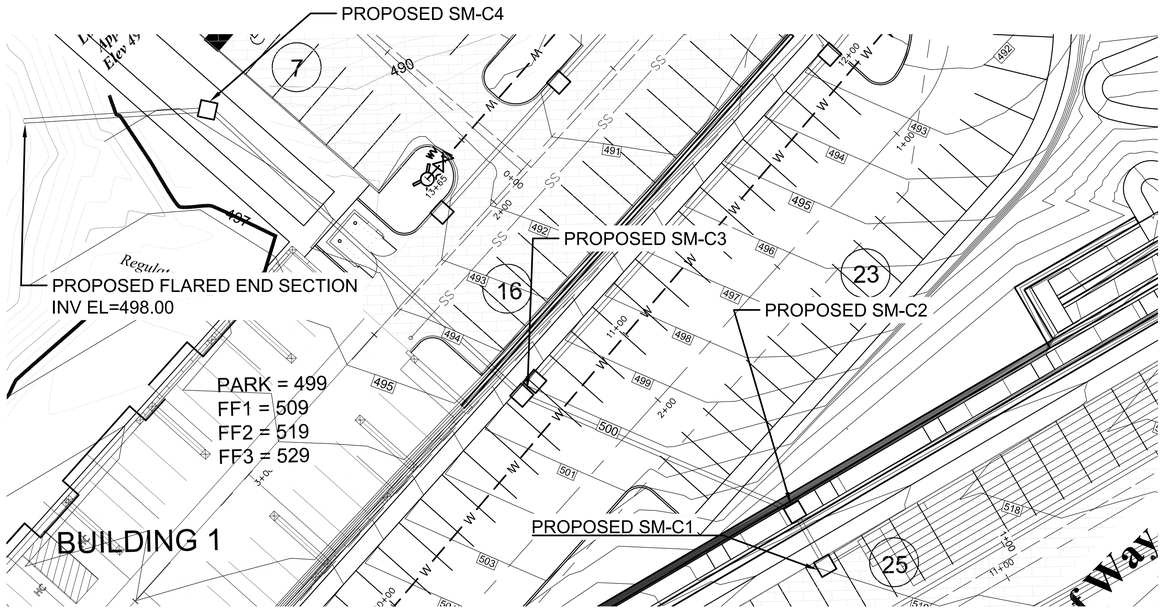
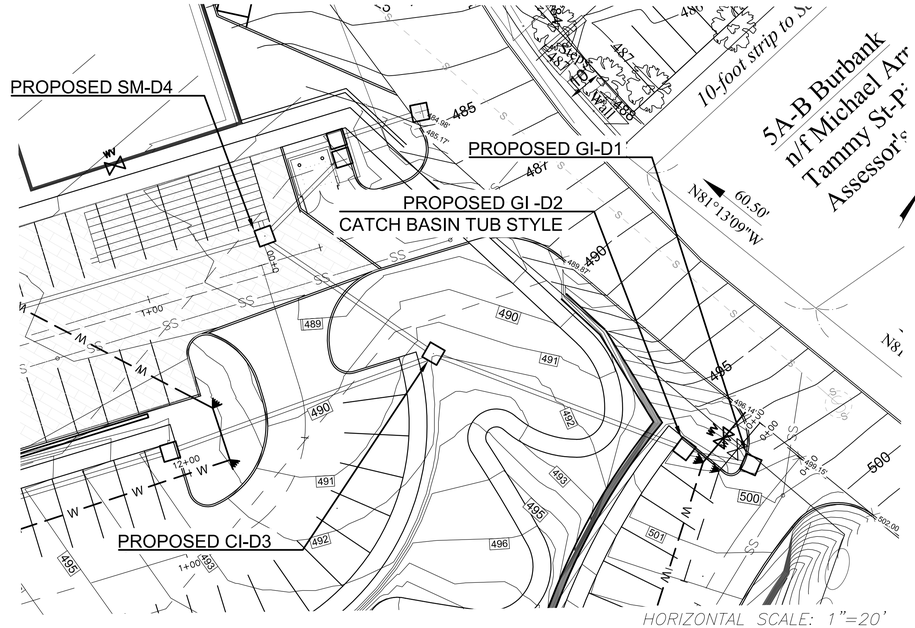
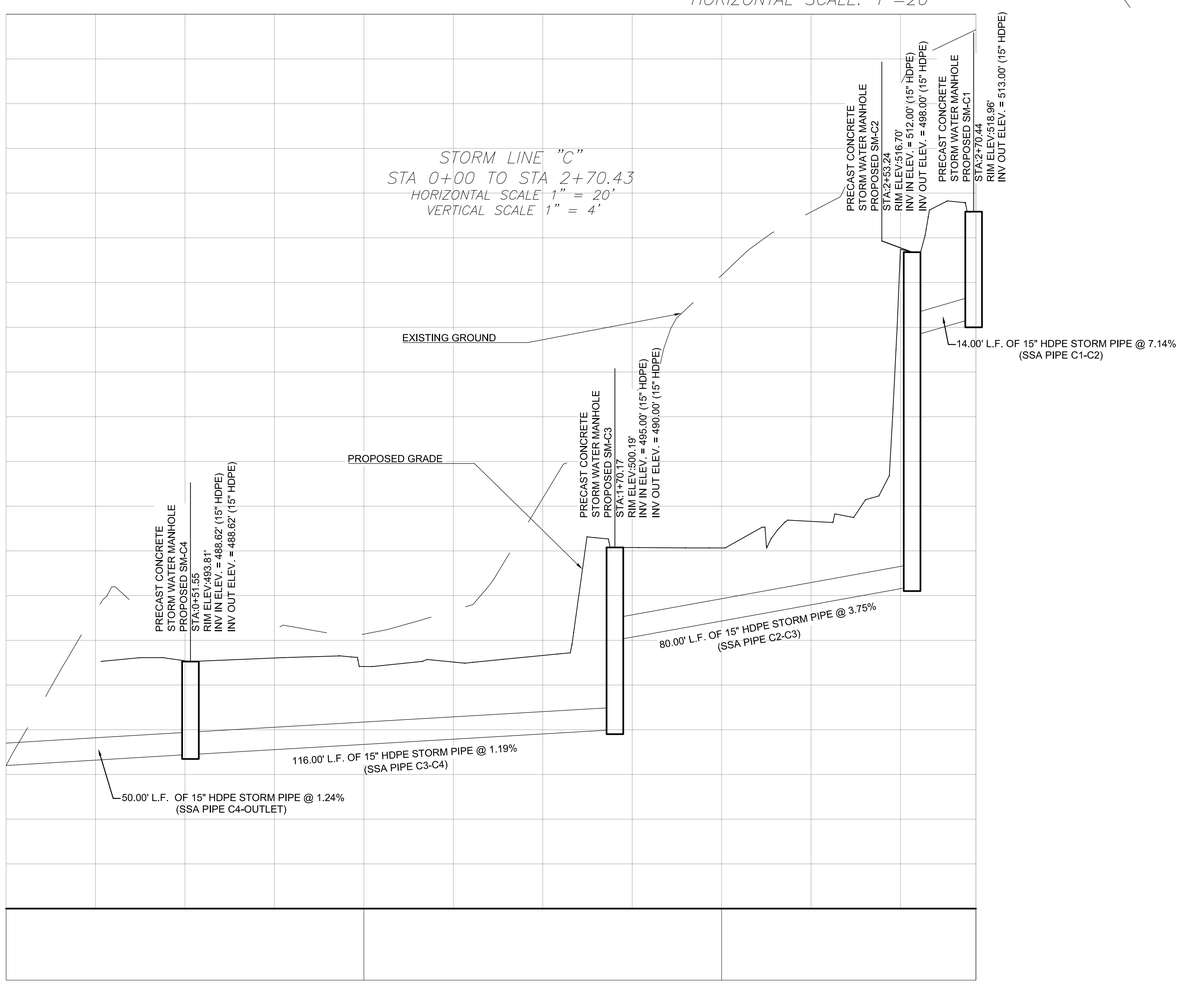
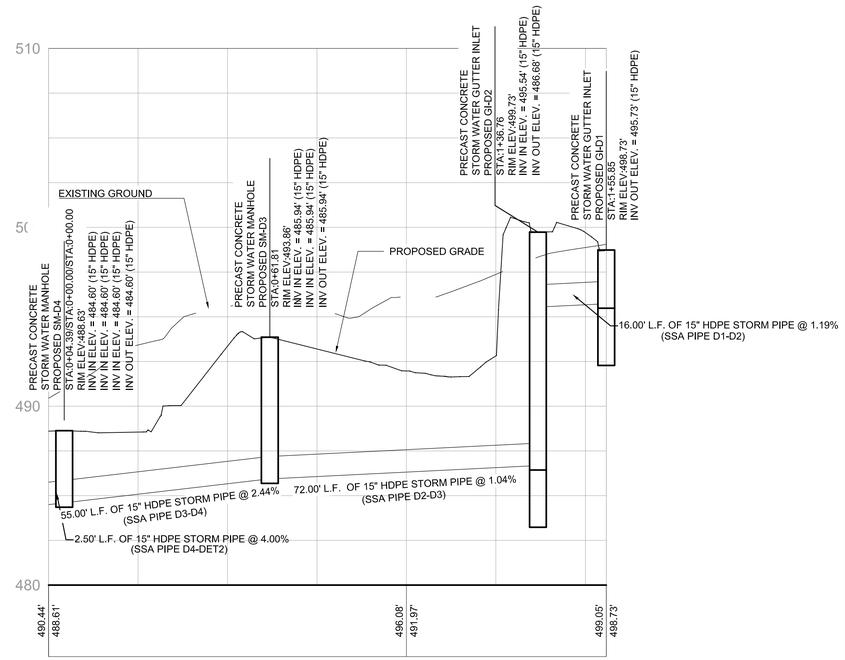



HORIZONTAL SCALE: 1"=20'




HORIZONTAL SCALE: 1"=20'




Project Name and Address

SINGLETARY ARMS
MILLBURY, MA

Sheet Title

STORM LINES "C" & "D"

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL ENGINEER
No. 55647
REGISTERED PROFESSIONAL ENGINEER

8/22/2020
Date

| No. | Revision/Issue | Date |
|---|---|---|

Project No. ***
Date 08/06/2020
Scale AS NOTED
Sheet C-14

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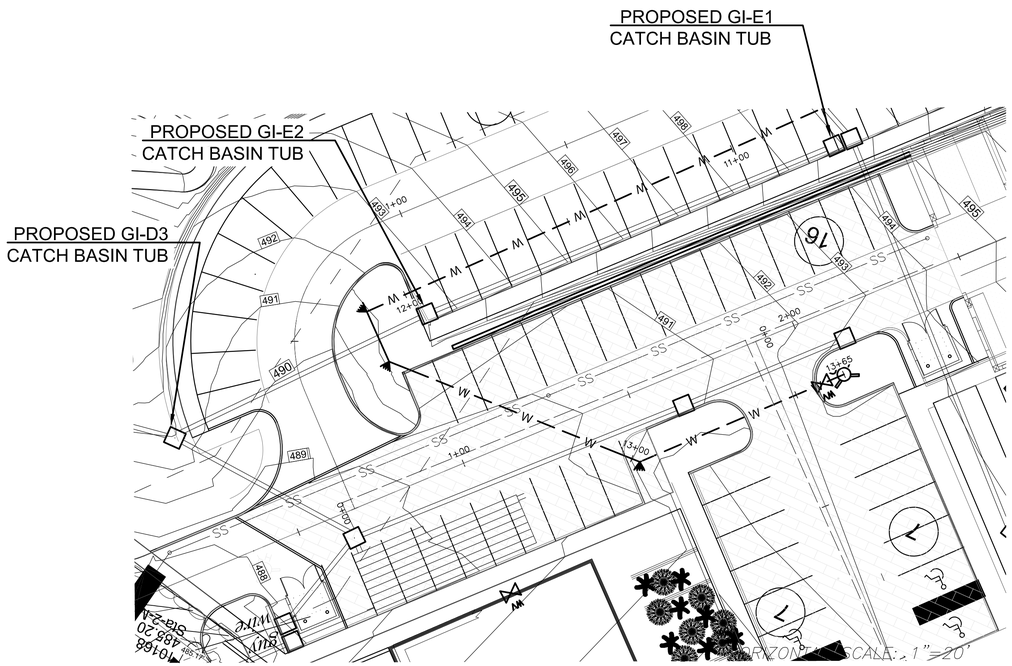
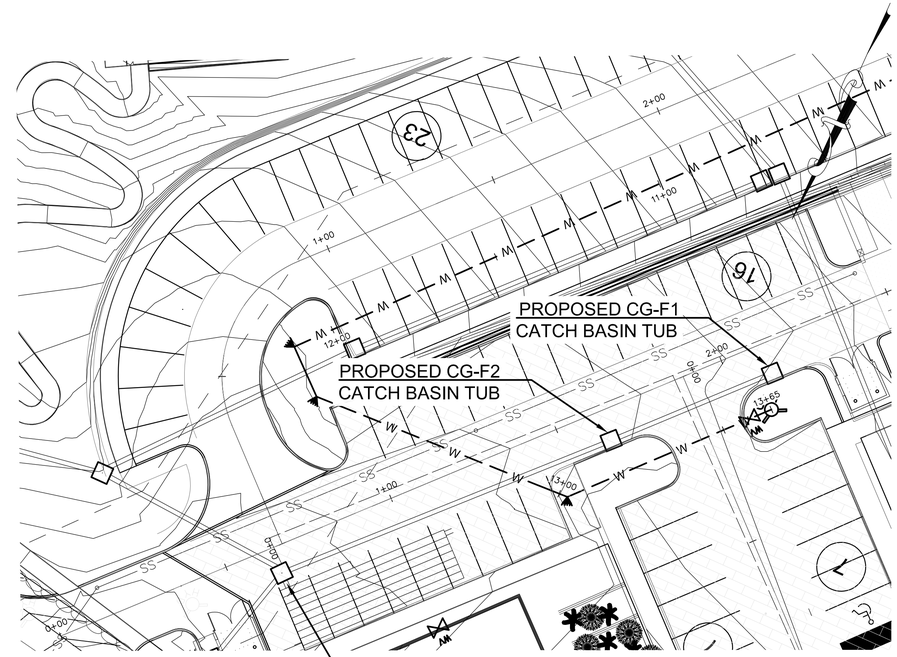
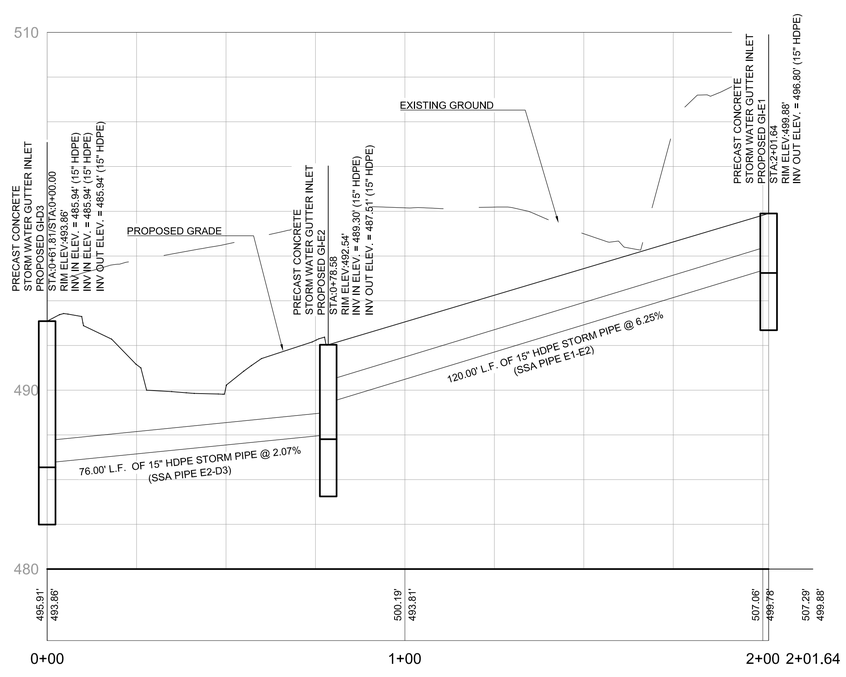


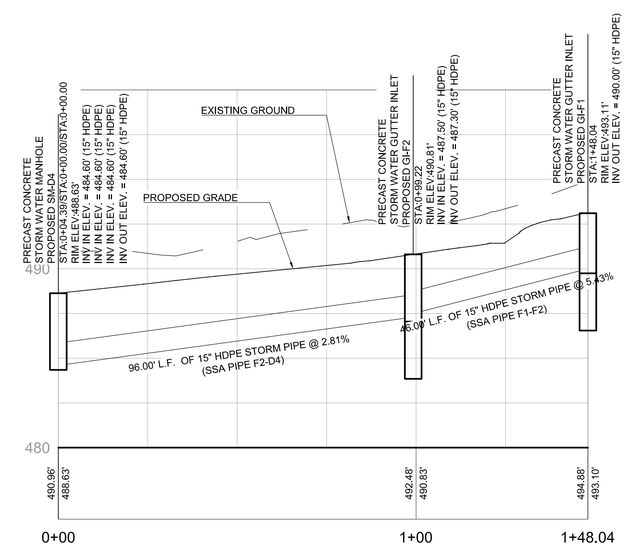

## LEGEND

- R/W — RIGHT OF WAY LINE
- W — EXISTING WATER LINE
- SAN — EXISTING SANITARY SEWER LINE
- ST — EXISTING STORM SEWER LINE
- W — WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- 1234 — EXISTING CONTOURS MAJOR
- 1234 — EXISTING CONTOURS MINOR
- 1234M — PROPOSED CONTOURS MAJOR
- 1234M — PROPOSED CONTOURS MINOR
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- WM — WATER METER
- WATER VALVE
- FIRE HYDRANT
- THRUST BLOCK

STORM LINE "E"
STA 0+00 TO STA 2+01.64
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'




STORM LINE "F"
STA 0+00 TO STA 1+48.04
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'




Project Name and Address
SINGLETARY ARMS
MILLBURY, MA

Sheet Title
STORM LINES "E" & "F"

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
ENGINEER
NO. 35564
REGISTERED PROFESSIONAL ENGINEER

8/22/2020
Date

| No. | Revision/Issue | Date |
|---|---|---|

Project No. ***
Date 08/06/2020
Scale AS NOTED
Sheet C-15

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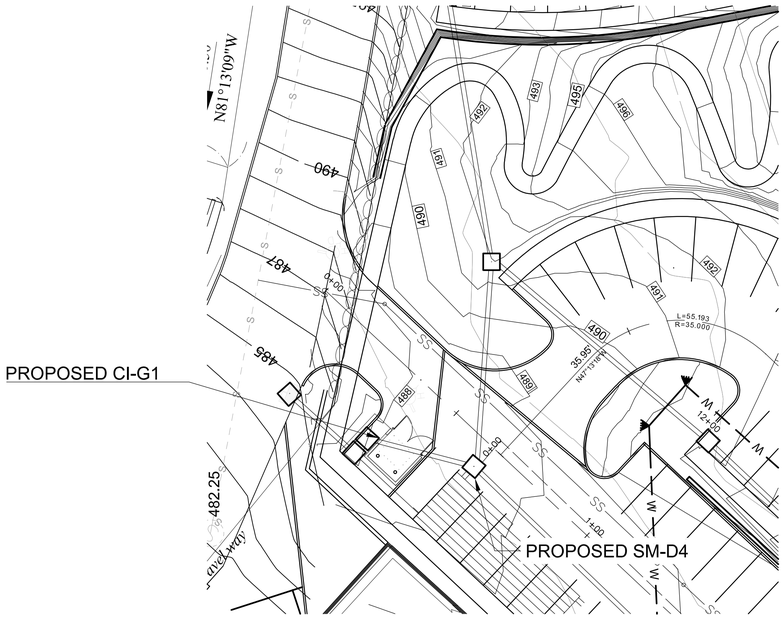
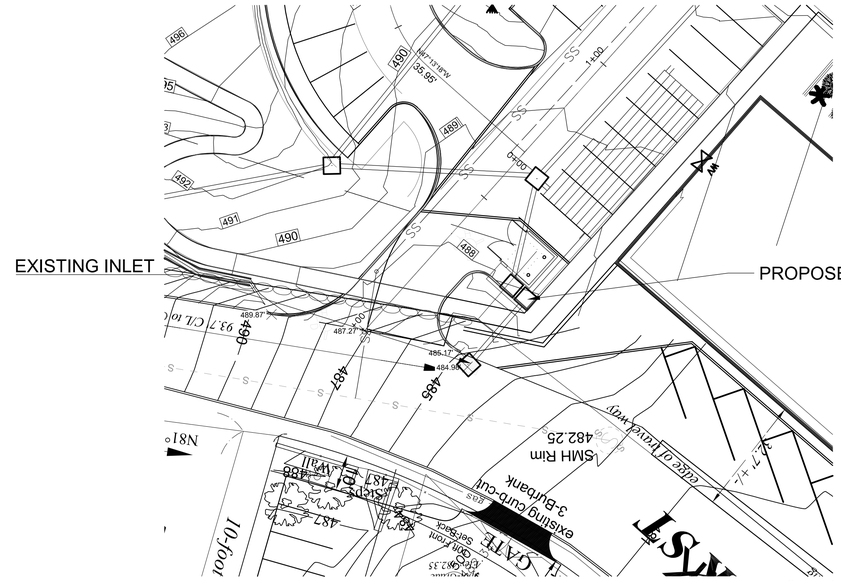



HORIZONTAL SCALE: 1"=20'

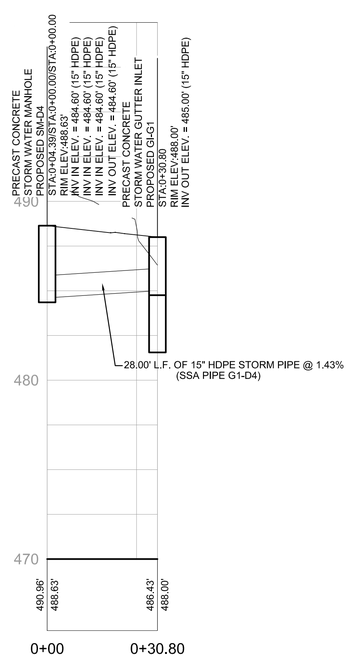



HORIZONTAL SCALE: 1"=20'

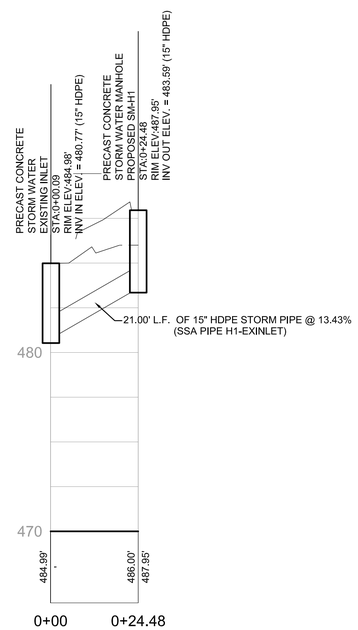
## LEGEND

- RIGHT OF WAY LINE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOURS MAJOR
- PROPOSED CONTOURS MINOR
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- THRUST BLOCK

STORM LINE "G"
STA 0+00 TO STA 0+30.80
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'




STORM LINE "H"
STA 0+00 TO STA 0+24.48
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'




Project Name and Address
SINGLETARY ARMS
MILLBURY, MA

Sheet Title
STORM LINES "G" & "H"

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
ENGINEER
35647
REGISTERED PROFESSIONAL ENGINEER

8/22/2020
Date

| No. | Revision/Issue | Date |
|---|---|---|
| | | |

Project No. ***
Date 08/06/2020
Scale AS NOTED
Sheet C-16

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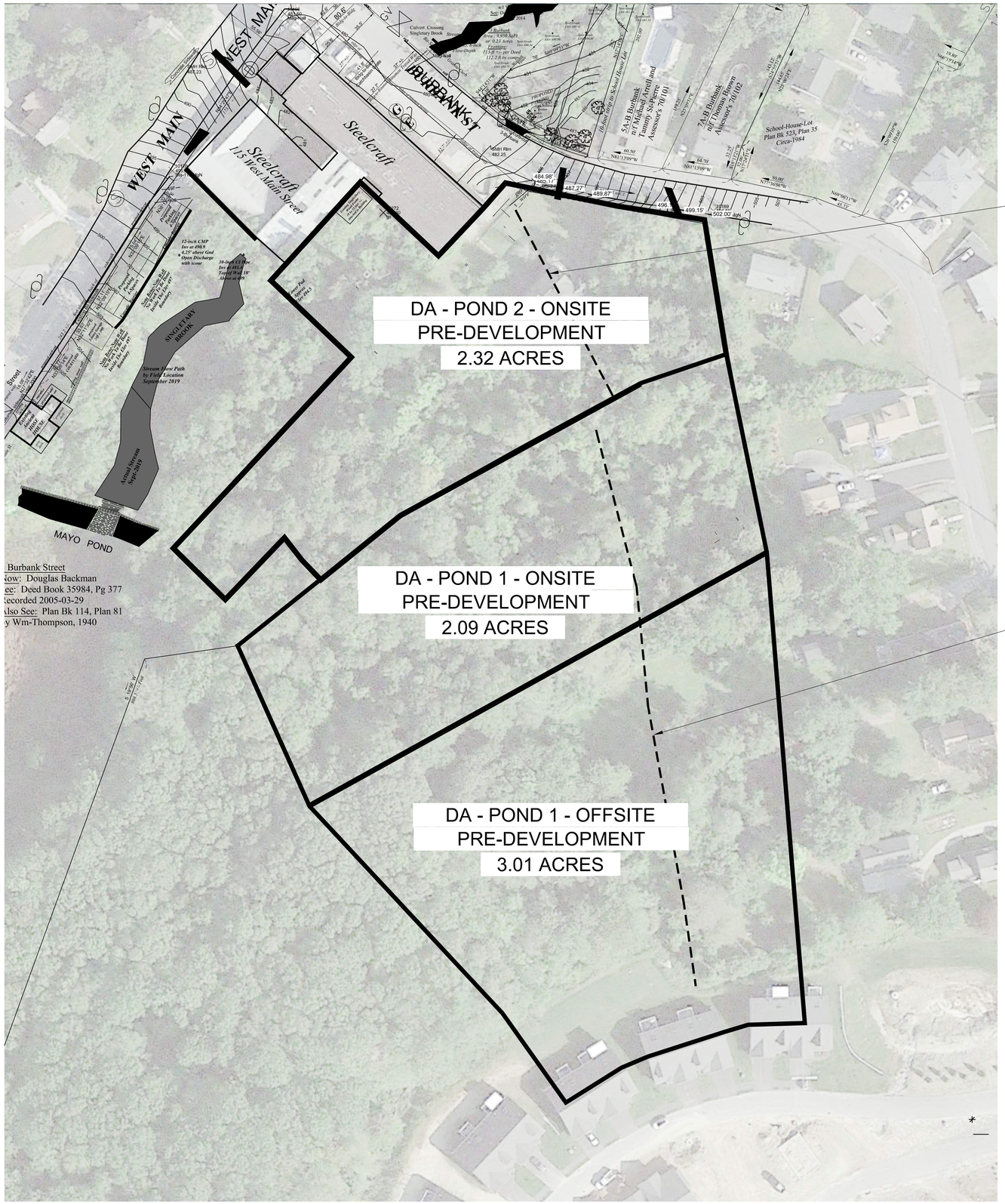



## LEGEND

- RIGHT OF WAY LINE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOURS MAJOR
- PROPOSED CONTOURS MINOR
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- THRUST BLOCK

# PRE-DEVELOPMENT DRAINAGE AREA MAP

SCALE: 1"=50'

Project Name and Address
SINGLETARY ARMS
MILLBURY, MA

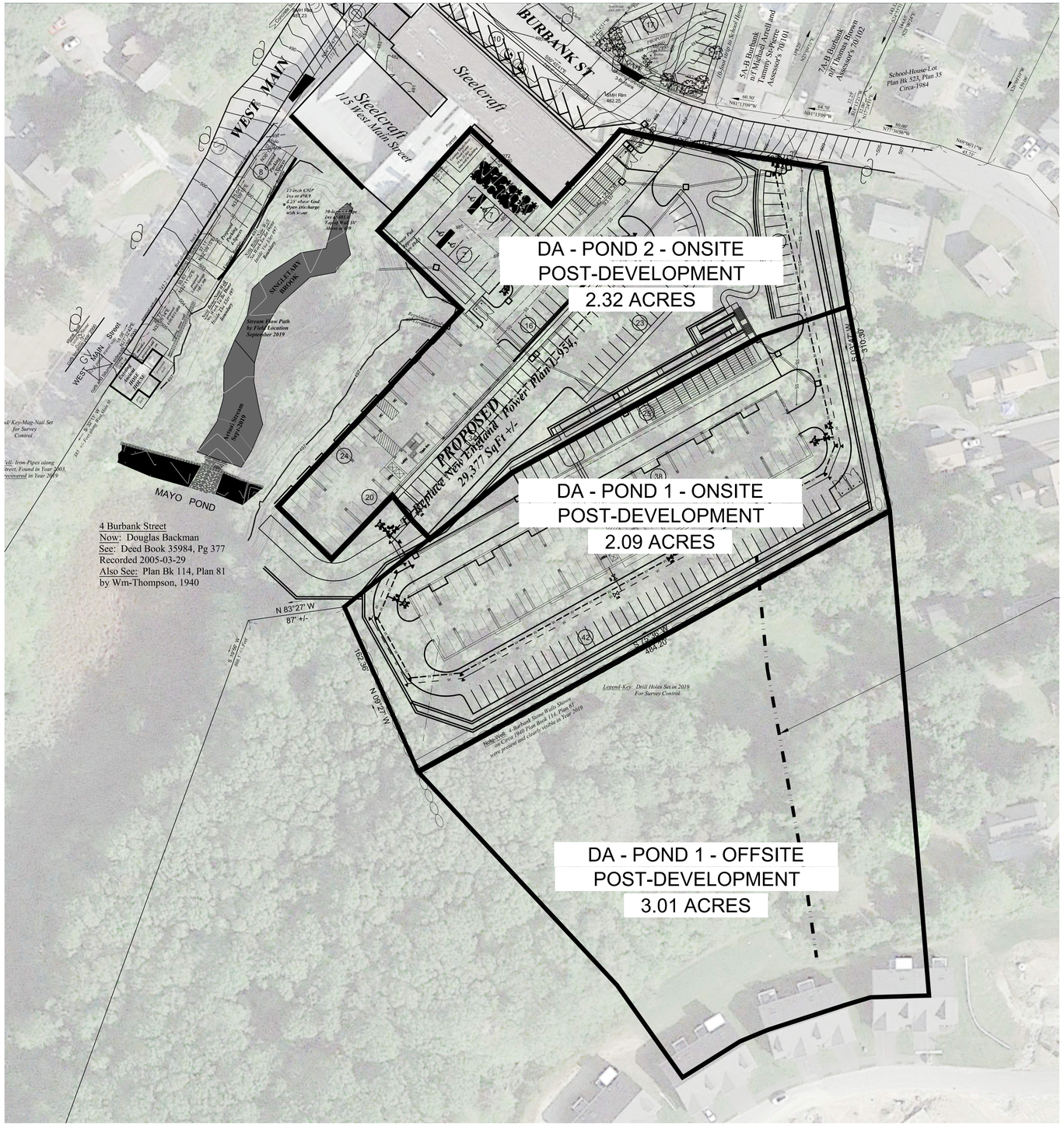
Sheet Title
PRE-DEVELOPMENT DRAINAGE AREA MAP

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
No. 35247
REGISTERED PROFESSIONAL ENGINEER

8/22/2020
Date

| No. | Revision/Issue | Date |
|---|---|---|

Project No. ***
Date 08/06/2020
Scale AS NOTED
Sheet C-17




POST-DEVELOPMENT TC LINE DETENTION POND 1

## LEGEND

- RIGHT OF WAY LINE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOURS MAJOR
- PROPOSED CONTOURS MINOR
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- THRUST BLOCK

Project Name and Address

SINGLETARY ARMS

MILLBURY, MA

Sheet Title

POST-DEVELOPMENT DRAINAGE AREA MAP

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL ENGINEER
No. 53647
REGISTERED PROFESSIONAL ENGINEER

8/22/2020

Date

| No. | Revision/Issue | Date |
|---|---|---|

Project No. ***

Date 08/06/2020

Scale AS NOTED

Sheet C-18

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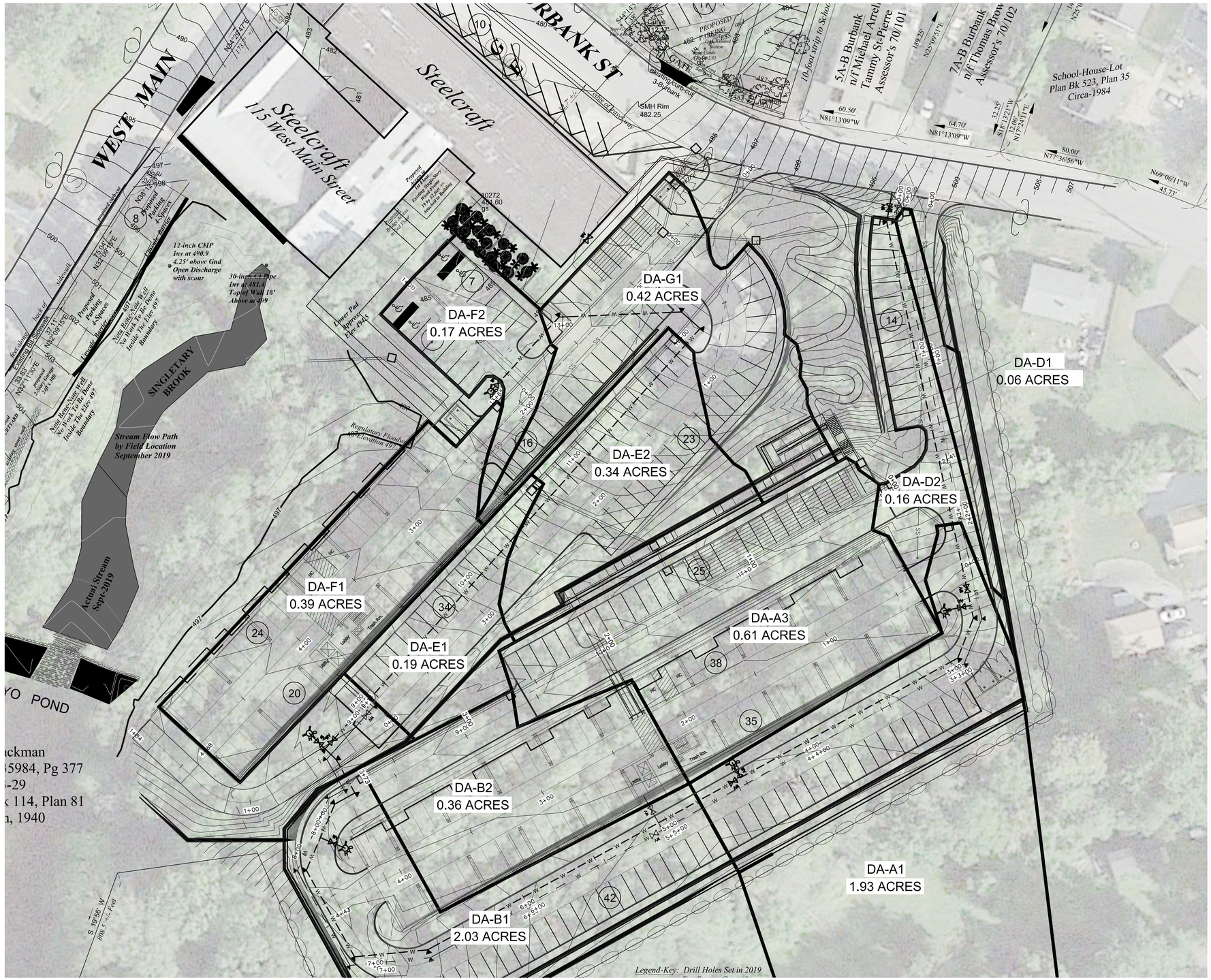


## LEGEND

- RIGHT OF WAY LINE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOURS MAJOR
- PROPOSED CONTOURS MINOR
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- THRUST BLOCK

# POST-DEVELOPMENT DRAINAGE AREA MAP (INLETS)

SCALE: 1"=30'

Project Name and Address
SINGLETARY ARMS
MILLBURY, MA

Sheet Title
POST DEVELOPMENT DRAINAGE AREA MAP (INLETS)

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
No. 35644
REGISTERED PROFESSIONAL ENGINEER

8/22/2020
Date

| No. | Revision/Issue | Date |
|---|---|---|

Project No. ***
Date 08/06/2020
Scale AS NOTED
Sheet C-19

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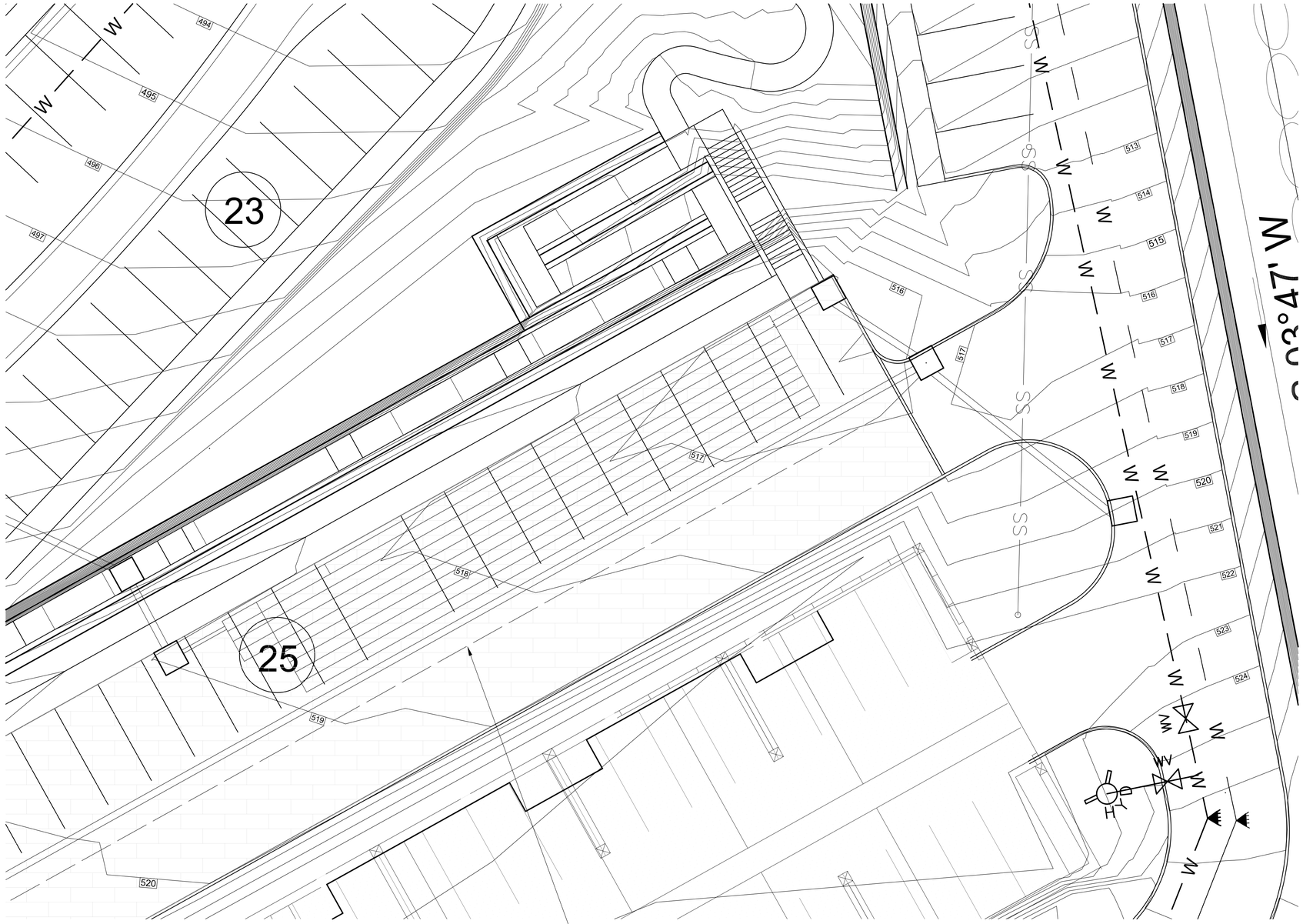


## LEGEND

- RIGHT OF WAY LINE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOURS MAJOR
- PROPOSED CONTOURS MINOR
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- THRUST BLOCK

**PRE-DEVELOPMENT ALLOWABLE RELEASE RATES & ACTUAL ROUTED RELEASE RATES**

* = FROM PRE-DEV. HYDROGRAPH
** = FROM RATING TABLE

| STORM EVENT | *PRE-DEVELOPMENT RELEASE RATE (CFS) | **ROUTED RELEASE RATE (CFS) | ELEVATION IN FEET | VOLUME PROVIDED |
|---|---|---|---|---|
| 2 | 2.75 | 2.03 | 514.16 | 6260 CUFT |
| 10 | 3.33 | 2.68 | 514.46 | 7058 CUFT |
| 25 | 4.44 | 3.46 | 515.15 | 8903 CUFT |
| 50 | 5.16 | 3.91 | 515.64 | 10190 CUFT |
| 100 | 5.56 | 4.14 | 515.90 | 10903 CUFT |

# PROPOSED DETENTION POND 1 PLAN

SCALE: 1"=10'

Project Name and Address
SINGLETARY ARMS
MILLBURY, MA

Sheet Title
PROPOSED DETENTION POND 1 PLAN

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL ENGINEER
No. 55647
REGISTERED PROFESSIONAL ENGINEER

8/22/2020
Date

| No. | Revision/Issue | Date |
|---|---|---|

Project No. ***
Date 08/06/2020
Scale AS NOTED
Sheet C-20

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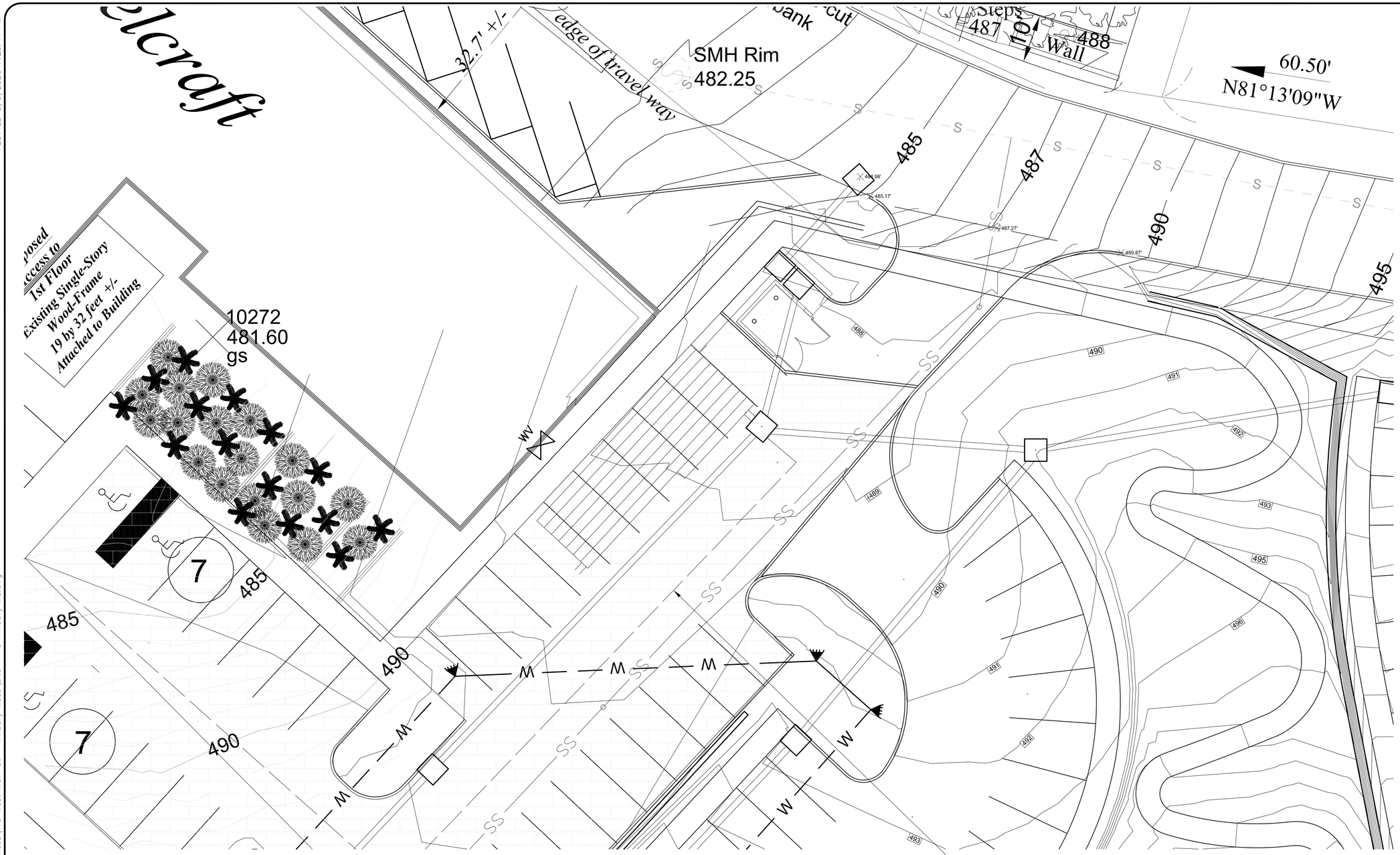


PRE-DEVELOPMENT ALLOWABLE RELEASE RATES
& ACTUAL ROUTED RELEASE RATES

* = FROM PRE-DEV. HYDROGRAPH
** = FROM RATING TABLE

| STORM EVENT | *PRE-DEVELOPMENT RELEASE RATE (CFS) | **ROUTED RELEASE RATE (CFS) | ELEVATION IN FEET | VOLUME PROVIDED |
|---|---|---|---|---|
| 2 | 1.79 | 1.55 | 485.69 | 2473 CUFT |
| 10 | 2.13 | 1.78 | 485.96 | 2752 CUFT |
| 25 | 2.78 | 2.29 | 486.69 | 3508 CUFT |
| 50 | 3.20 | 2.49 | 487.04 | 3867 CUFT |
| 100 | 3.44 | 2.72 | 487.44 | 4288 CUFT |

## LEGEND

- RIGHT OF WAY LINE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOURS MAJOR
- PROPOSED CONTOURS MINOR
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- THRUST BLOCK

# PROPOSED DETENTION POND 2 PLAN

SCALE: 1"=10'

Project Name and Address
SINGLETARY ARMS
MILLBURY, MA

Sheet Title
PROPOSED DETENTION POND 2
PLAN

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
ENGINEER
35647
REGISTERED PROFESSIONAL ENGINEER

8/22/2020
Date

| No. | Revision/Issue | Date |
|---|---|---|

Project No. ***
Date 08/06/2020
Scale AS NOTED
Sheet C-21

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## General Water Notes

1. WATER SYSTEM COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND REGULATIONS, CLEANED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE.
2. ALL PIPING SHALL BEAR THE "NSF" SEAL FOR POTABLE WATER.
3. WATER MAINS SHALL BE PVC CONFORMING TO AWWA C-900, DR 18 FOR PIPE SIZES 4"-12", PIPES 14" OR LARGER SHALL BE AWWA C-905, DR 18. ALL COUPLINGS, CLEANING COMPOUNDS, SOLVENTS, LUBRICANTS, AND PIPE PREPARATION, FOR LAYING, SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS LATEST RECOMMENDATIONS.
4. DEPTH OF WATER LINES TO BE 48" MINIMUM COVER FROM FINISH GRADE.
5. WATER MAINS TO BE LOCATED 6.00' FROM BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. ALL SLEEVES UNDER PAVEMENT SHALL EXTEND 5' BEYOND THE BACK OF CURB.
7. DISINFECTING: FOLLOWING THE PRESSURE TESTING, THE CONTRACTOR SHALL DISINFECT ALL SECTIONS OF THE WATER DISTRIBUTION SYSTEM. DISINFECTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF AWWA STANDARD C651 "DISINFECTING WATER MAINS", AND ALL APPROPRIATE AGENCY APPROVAL.
8. ALL HYDROSTATIC TEST SHALL BE IN ACCORDANCE WITH AWWA C600 FOR DUCTILE IRON PIPE AND C605/M23 FOR PVC PIPE.
9. ALL WATER MAINS SHALL BE INSTALLED, PRESSURE AND LEAK TESTED IN ACCORDANCE WITH AWWA C600, (62-555.320(21)(b)1 ALL INSTALLATION, TESTING AND FIELD PROCEDURES MUST BE PROVIDED AND MUST CONFORM TO THE APPLICABLE AWWA STANDARDS.
10. ALL PIPING MATERIALS AND SPECIFICATIONS COVERING PIPES, JOINTS AND PACKING MATERIALS, INTERNAL COATING AND LININGS, FITTINGS, SPECIALS AND APPURTENANCES SHALL ALL BE IN ACCORDANCE WITH THE CORRESPONDING AWWA STANDARDS AND BE CONFORMING TO NSF REQUIREMENTS.

## Utility Construction Notes

Location of Public Water System Mains:
For the purpose of this section, the phrase "Water Mains" shall mean Mains, including treatment Plant process piping, conveying either raw, partially treated, or finished drinking water; Fire Hydrant leads; and service lines that are under the control of a Public Water System and that have an inside diameter of three (3") inches or greater.

(1) Horizontal Separation Between Underground Water Mains and Sanitary or Storm Sewers, Wastewater or Storm water Force Mains, and On-site Sewage Treatment and Disposal Systems:

(a) New or relocated, underground WATER MAINS shall be laid to provide a horizontal distance of at least (3) Three Feet between the outside of the WATER MAIN and the outside of any existing or proposed Storm Sewer, Storm water AND Force Main

(b) New or relocated, underground WATER MAINS shall be laid to provide a horizontal distance of at least (3) three feet, and preferably (10) Ten Feet, between the outside of the WATER MAIN and the outside of any existing or proposed vacuum-type Sanitary Sewer.

(c) New or relocated, underground WATER MAINS shall be laid to provide a horizontal distance of at least (6) Six Feet, and preferably (10) Ten Feet, between the outside of the WATER MAIN and the outside of any existing or proposed Gravity- or Pressure-type Sanitary Sewer, and Wastewater Force Main.

The Minimum Horizontal Separation distance between WATER MAINS and Gravity-type Sanitary Sewers shall be reduced to (3) Three Feet where the BOTTOM of the WATER MAIN is laid at least (6) Six Inches above the Top of the Sewer.

(d) New or relocated, underground WATER MAINS shall be laid to provide a horizontal distance of at least (10) Ten Feet between the outside of the WATER MAIN.

(2) Vertical Separation Between Underground WATER MAINS and Sanitary or Storm Sewers, Wastewater or Storm water Force Mains:

(a) New or relocated underground WATER MAINS crossing any existing or proposed gravity- or vacuum-type sanitary sewer or storm sewer shall be laid so the outside of the WATER MAIN is at least (6) Six inches, and preferably 12 inches above, or at least 12 Inches below the outside of the other pipeline. However, it is preferable to lay the WATER MAIN "ABOVE" the other pipeline.

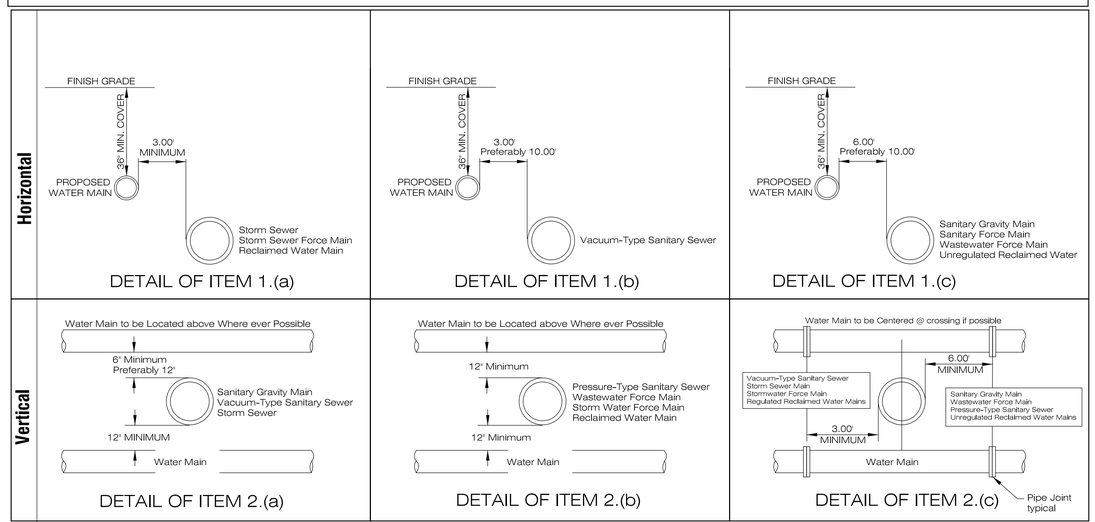
(b) New or relocated, Underground WATER MAINS crossing any existing or proposed pressure-type sanitary sewer, wastewater or stormwater Force Main, shall be laid so the outside of the WATER MAIN is at least (12) inches ABOVE or BELOW the Outside of the other pipeline. However, it is preferable to lay the WATER MAIN above the other pipeline.

(c) At the Utility crossings described in paragraphs (a) & (b) Above, one full length of Water Main Pipe shall be centered above or below the other pipeline so the WATER MAIN Joints will be as far as possible from the other pipeline. Alternatively, at such crossings, the pipes shall be arranged so that all WATER MAIN Joints are at least (3) Three feet from all joints in Vacuum-type Sanitary Sewers, Storm Sewers, Stormwater Force Mains, and at least (6) Six Feet from all Joints in Gravity- or Pressure-type Sanitary Sewers, Wastewater force mains.

(3) Separation Between WATER MAINS and Sanitary or Storm Sewer Manholes:
(a) No WATER MAIN shall pass thru, or come into contact with any part of a Sanitary Manhole or a Storm Sewer Manhole.

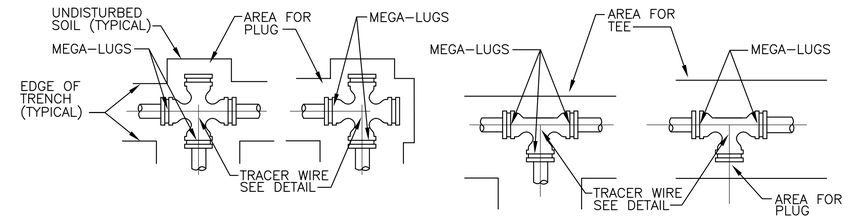
(4) Separation Between Fire Hydrant Drains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, reclaimed Water Pipelines
New or relocated Fire Hydrants with underground Drains shall be located so that the drains are at least (3) Three Feet from any existing or proposed storm sewer, Stormwater force main, at least (3) Three Feet, and preferably (10) Ten Feet, from any existing or proposed gravity- or Pressure-type Sanitary Sewer, Wastewater force main.

(5) Exceptions/Mitigation:
Adherence to the above Constraints and Separations in Items 1 through 4 shall be Complied to, "WITHOUT EXCEPTION". If for some reason where it is not technically feasible or Economically Sensible that Items 1 through 4 cannot be complied with, Contractor will Stop Work and Notify the Engineer of record for the appropriate solution, which will be submitted to "The Department of Environmental Protection" for APPROVAL, prior to work commencement.

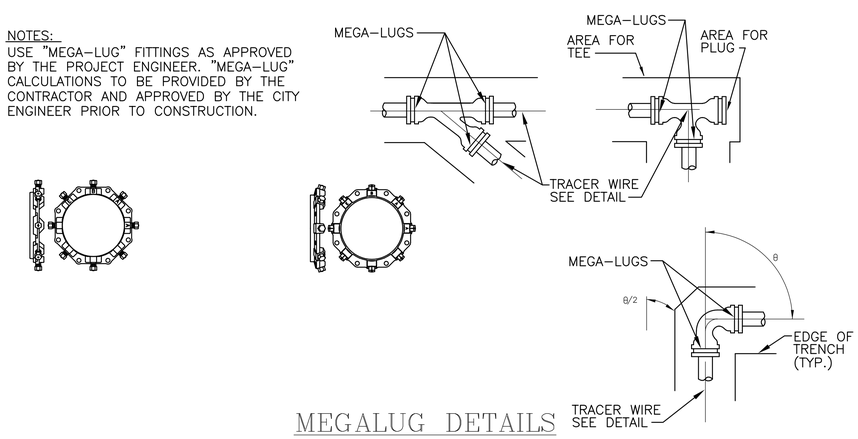



**UTILITY SEPARATIONS**

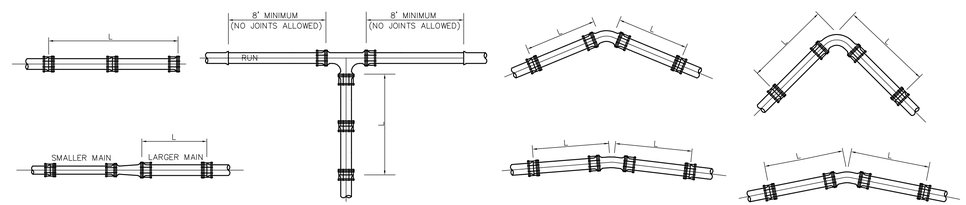
PIPING CLEARANCES
NOT TO SCALE




NOTES:
USE "MEGA-LUG" FITTINGS AS APPROVED BY THE PROJECT ENGINEER. "MEGA-LUG" CALCULATIONS TO BE PROVIDED BY THE CONTRACTOR AND APPROVED BY THE CITY ENGINEER PRIOR TO CONSTRUCTION.




MEGALUG DETAILS




Project Name and Address
SINGLETARY ARMS
MILLBURY, MA

Sheet Title
UTILITY CONSTRUCTION DETAILS

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
ENGINEER
55640
REGISTERED PROFESSIONAL ENGINEER

8/22/2020
Date

| No. | Revision/Issue | Date |
|---|---|---|

Project No. ***
Date 08/06/2020
Scale AS NOTED
Sheet C-22

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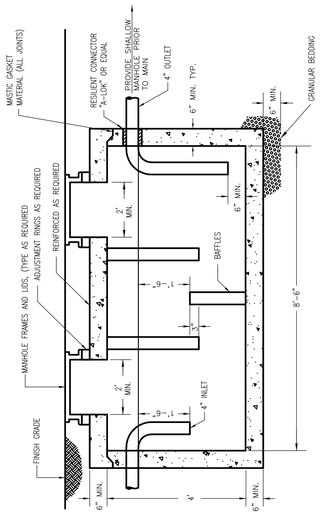
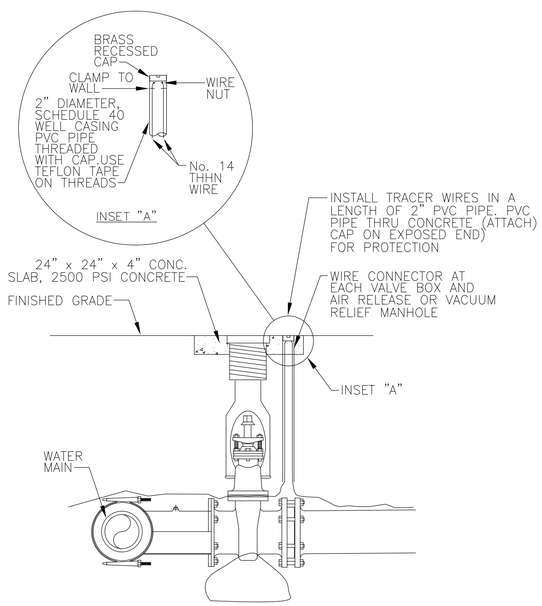
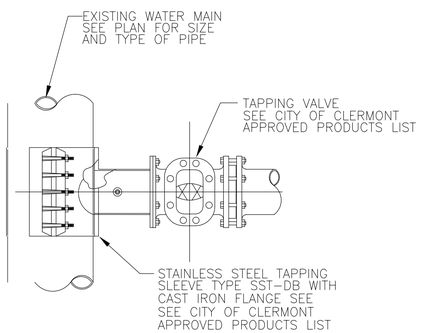



GREASE TRAP DETAIL

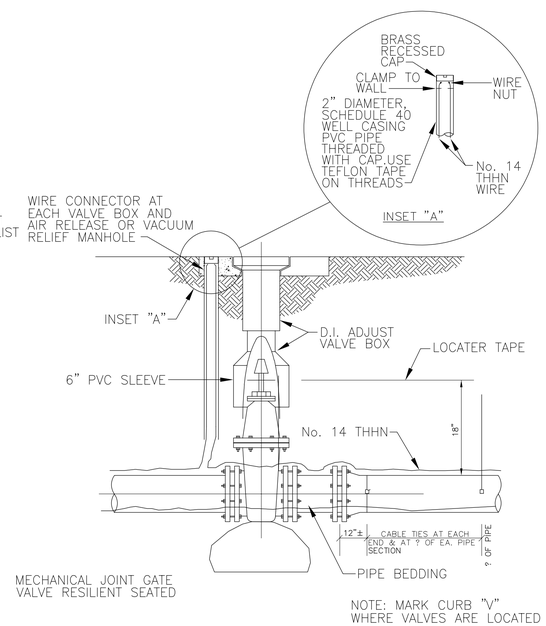
NTS




TAPPING SLEEVE DETAIL
ELEVATION VIEW
NOT TO SCALE

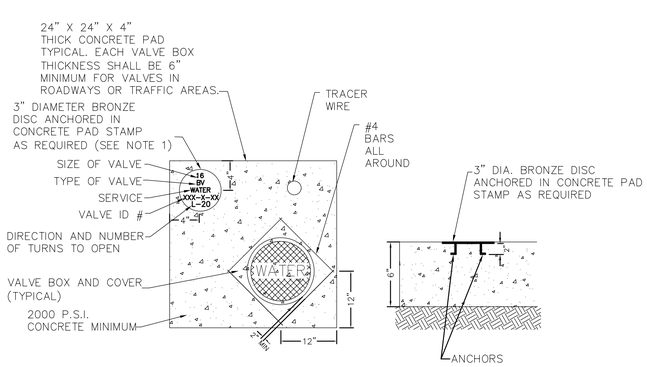



TAPPING SLEEVE DETAIL
PLAN VIEW
NOT TO SCALE

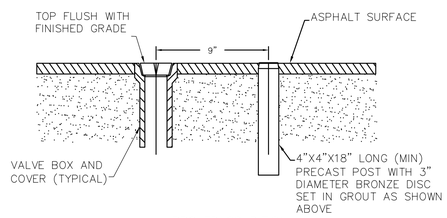



NOTE: MARK CURB "V" WHERE VALVES ARE LOCATED

PIPE DETECTOR WIRE MARKER
TAPE INSTALLATION
NOT TO SCALE




UNIMPROVED CONDITION




IMPROVED CONDITION

NOTES:
1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES
2. REUSE VALVES TO HAVE SQUARE VALVE BOX TOP

VALVE COLLAR

Project Name and Address

SINGLETARY ARMS
MILLBURY, MA

Sheet Title

UTILITY CONSTRUCTION DETAILS

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
ENGINEER
No. 39647
REGISTERED PROFESSIONAL ENGINEER

8/22/2020
Date

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|---|---|---|

Project No. ***
Date 08/06/2020
Scale AS NOTED
Sheet C-23

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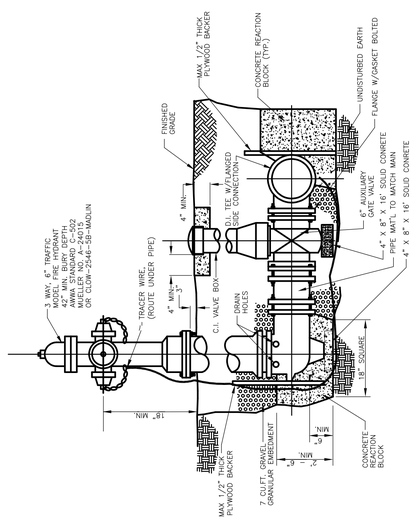
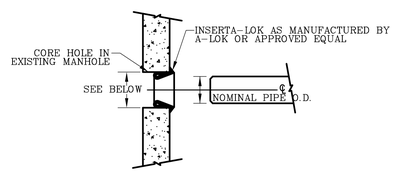


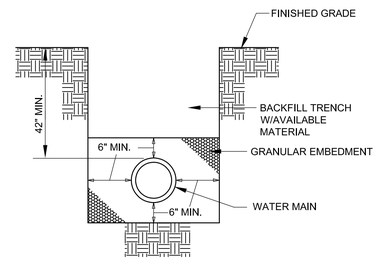

FIRE HYDRANT DETAILS

NTS



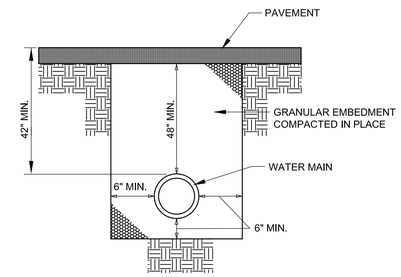

CONNECTION TO EXIST MH DETAIL

NTS




TYPICAL TRENCH DETAIL

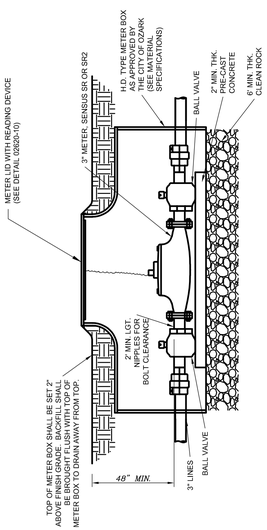
NOT TO SCALE




TYPICAL TRENCH DETAIL UNDER ASPHALT

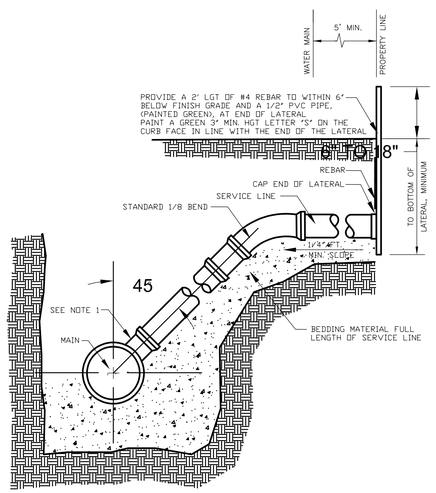
NOT TO SCALE

NOTE:
MAINS IN AREAS OF PROPOSED STREETS SHALL BE BACKFILLED IN THIS MANNER.




3" COMMERCIAL METER DETAIL

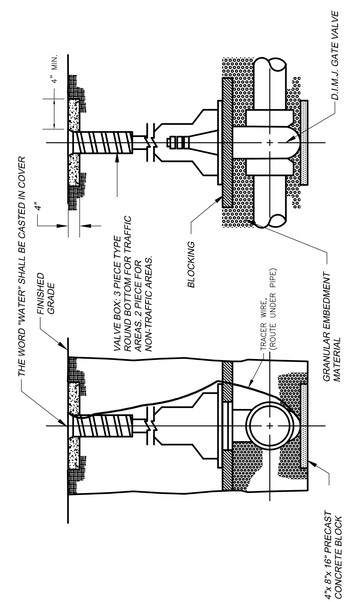
NTS




STANDARD SEWER SERVICE DETAIL

NTS

4. EXTENSION STEMS SHALL BE PROVIDED FOR BURIED VALVES WHEN THE OPERATING NUT IS MORE THAN THREE FEET BELOW FINISHED GRADE. EACH EXTENSION STEM FOR A BURIED VALVE SHALL EXTEND TO WITHIN THREE FEET OF THE GROUND SURFACE, SHALL BE PROVIDED WITH SPACERS WHICH WILL CENTER THE STEM IN THE VALVE BOX, AND SHALL BE EQUIPPED WITH A WRENCH NUT.




VALVE DETAILS

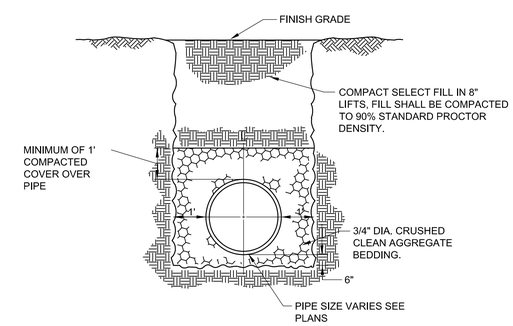
NTS

NOTES:

1. EXTEND GRANULAR BEDDING TO SUBGRADE UNDER IMPROVED SURFACES. WHERE PIPE PASSES UNDER RETAINING WALLS, EXTEND BEDDING TO BOTTOM OF WALL FOOTING.

2. ALL CPP STORMPIPE SHALL BE SMOOTH WALL HDPE PIPE EQUIVALENT TO ADS N-12, OR APPROVED EQUAL. (UNLESS OTHERWISE NOTED).

3. ALL CSP STORMPIPE SHALL BE 14 GAUGE PIPE. (UNLESS OTHERWISE NOTED).




STORMWATER PIPE BEDDING DETAIL

NOT TO SCALE

Project Name and Address

SINGLETARY ARMS

MILLBURY, MA

Sheet Title

UTILITY CONSTRUCTION DETAILS

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
No. 35647
REGISTERED PROFESSIONAL ENGINEER

8/22/2020

Date

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Project No. ***

Date 08/06/2020

Scale AS NOTED

Sheet C-24

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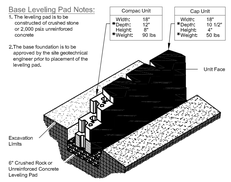
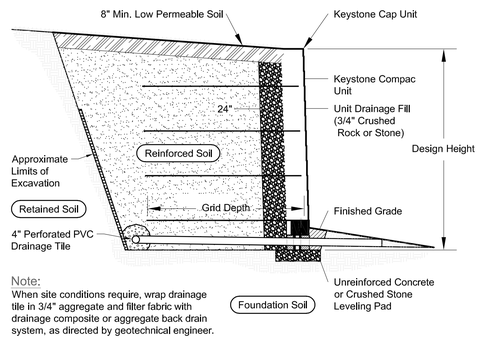



Compac Unit/Base Pad Isometric Section View

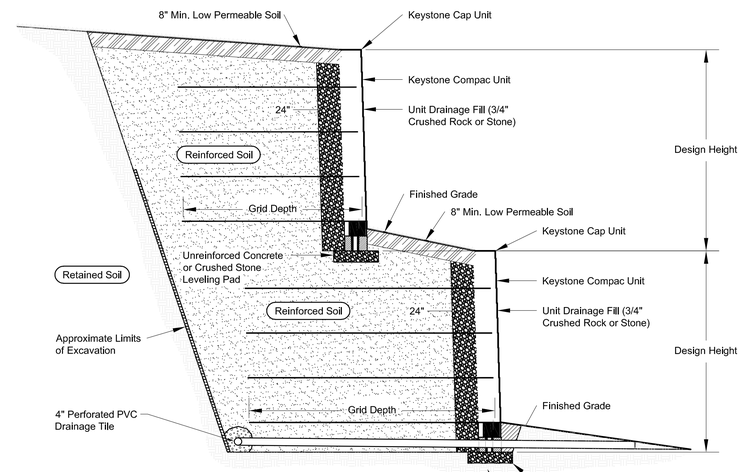
* Dimensions & Weight May Vary by Region




Note:
When site conditions require, wrap drainage tile in 3/4" aggregate and filter fabric with drainage composite or aggregate back drain system, as directed by geotechnical engineer.

Typical Reinforced Wall Section

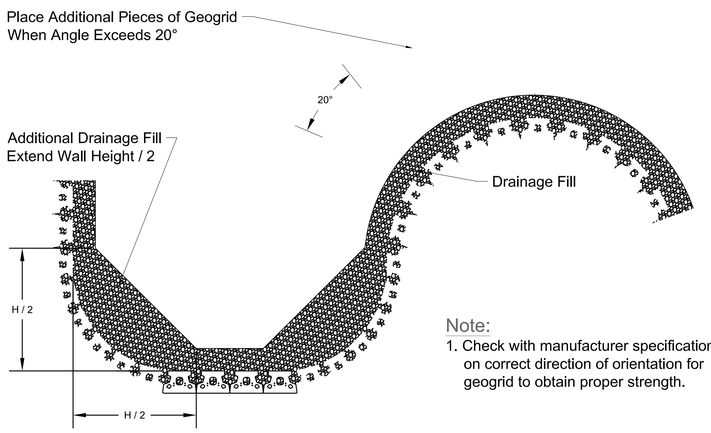
Compac Unit - Near Vertical Setback




Note:
When site conditions require, wrap drainage tile in 3/4" aggregate and filter fabric with drainage composite or aggregate back drain system, as directed by geotechnical engineer.

Typical Reinforced Tiered Wall Section

Compac Unit - Near Vertical Setback



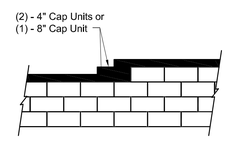

Note:
1. Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.

Geogrid Installation on Curves

NOTES:

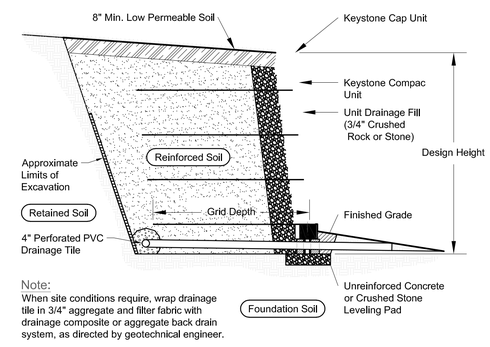
1. THE CONTRACTOR SHALL PROVIDE RETAINING WALL SHOP DRAWINGS THAT HAVE BEEN SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER FOR APPROVAL TO THE THE ENGINEER OF RECORD PRIOR TO ORDERING MATERIAL FOR THE RETAINING WALL.

2. THESE DETAILS ARE PROVIDED FOR BASIS OF DESIGN ONLY AND CONTRACTOR SHALL PROVIDE RETAINING WALL DESIGN THAT HAS BEEN SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER.




Note:
1. Secure all cap units with Keystone Kapseal or equal.

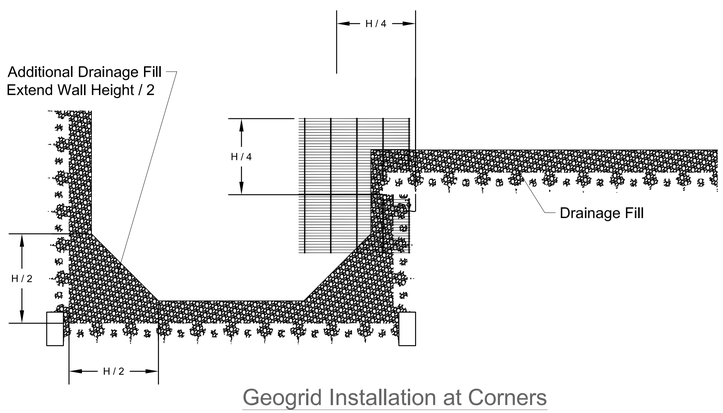
Top of Wall Steps



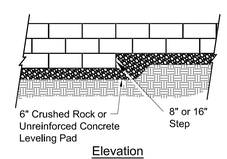

Note:
When site conditions require, wrap drainage tile in 3/4" aggregate and filter fabric with drainage composite or aggregate back drain system, as directed by geotechnical engineer.

Typical Reinforced Wall Section

Compac Unit - 1" Setback

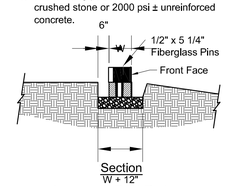



Geogrid Installation at Corners



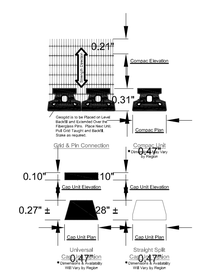

Elevation

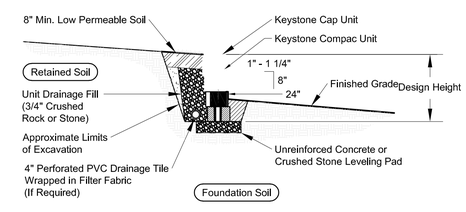
Note:
1. The leveling pad is to be constructed of crushed stone or 2000 psi ± unreinforced concrete.




Section

Leveling Pad Detail




Typical Gravity Wall Section

Compac Unit - 1" Setback

Project Name and Address

SINGLETARY ARMS

MILLBURY, MA

Sheet Title

RETAINING WALL DETAILS

COMMONWEALTH OF MASSACHUSETTS
TODD M. CHANDLER
CIVIL
No. 49567
REGISTERED PROFESSIONAL ENGINEER

8/22/2020

Date

| No. | Revision/Issue | Date |
|---|---|---|

Project No. ***

Date 08/06/2020

Scale AS NOTED

Sheet C-25