EXHIBIT 1
Received 6/13/16

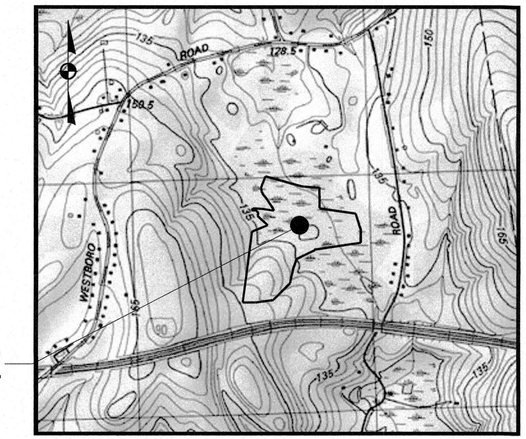
Definitive Conventional Subdivision Plans

June 10, 2016

Estates at Bull Meadow

North Grafton, Massachusetts 01536

PROJECT SITE



SCALE: 1"=1000'±
ZONING DISTRICT: R4

Applicant:
Bull Meadow, LLC.
2 Rachel Road
Boylston, MA 01505
(978)833-4747

Record Owner:
Bull Meadow, LLC.
Mr. Gordon Lewis, Manager
2 Rachel Road
Boylston, MA 01505
(978) 833-4747

Civil Engineer:
McCarty Engineering, Inc.
42 Jungle Road
Leominster, MA 01453
(978) 534-1318

Surveyor:
Whitman & Bingham Associates, LLC.
510 Mechanic Street
Leominster, MA 01453
(978) 537-5296

Wetland Consultant:
EcoTec, Inc.
102 Grove Street
Worcester, MA 01605
(508)752-9494

COMMONWEALTH OF MASSACHUSETTS
BRIAN R. MARCHETTI
CIVIL
NO. 46279
REGISTERED PROFESSIONAL ENGINEER

B. Marchetti 6/10/16

Sheet	Sheet Title				
	Cover Sheet				
1	Existing Conditions Survey (1 of 2)	9	Layout and Materials Plan (3 of 3)	17	Roadway and Utility Profiles (4 of 4)
2	Existing Conditions Survey (2 of 2)	10	Grading and Drainage Plan (1 of 2)	18	Water Main Extension Plan
3	Lotting Plan (1 of 4)	11	Grading and Drainage Plan (2 of 2)	19	Erosion Control Plan (1 of 2)
4	Lotting Plan (2 of 4)	12	Utility Plan (1 of 2)	20	Erosion Control Plan (2 of 2)
5	Lotting Plan (3 of 4)	13	Utility Plan (2 of 2)	21	Construction Details (1 of 4)
6	Lotting Plan (4 of 4)	14	Roadway and Utility Profiles (1 of 4)	22	Construction Details (2 of 4)
7	Overall Subdivision Plan (1 of 3)	15	Roadway and Utility Profiles (2 of 4)	23	Construction Details (3 of 4)
8	Layout and Materials Plan (2 of 3)	16	Roadway and Utility Profiles (3 of 4)	24	Construction Details (4 of 4)

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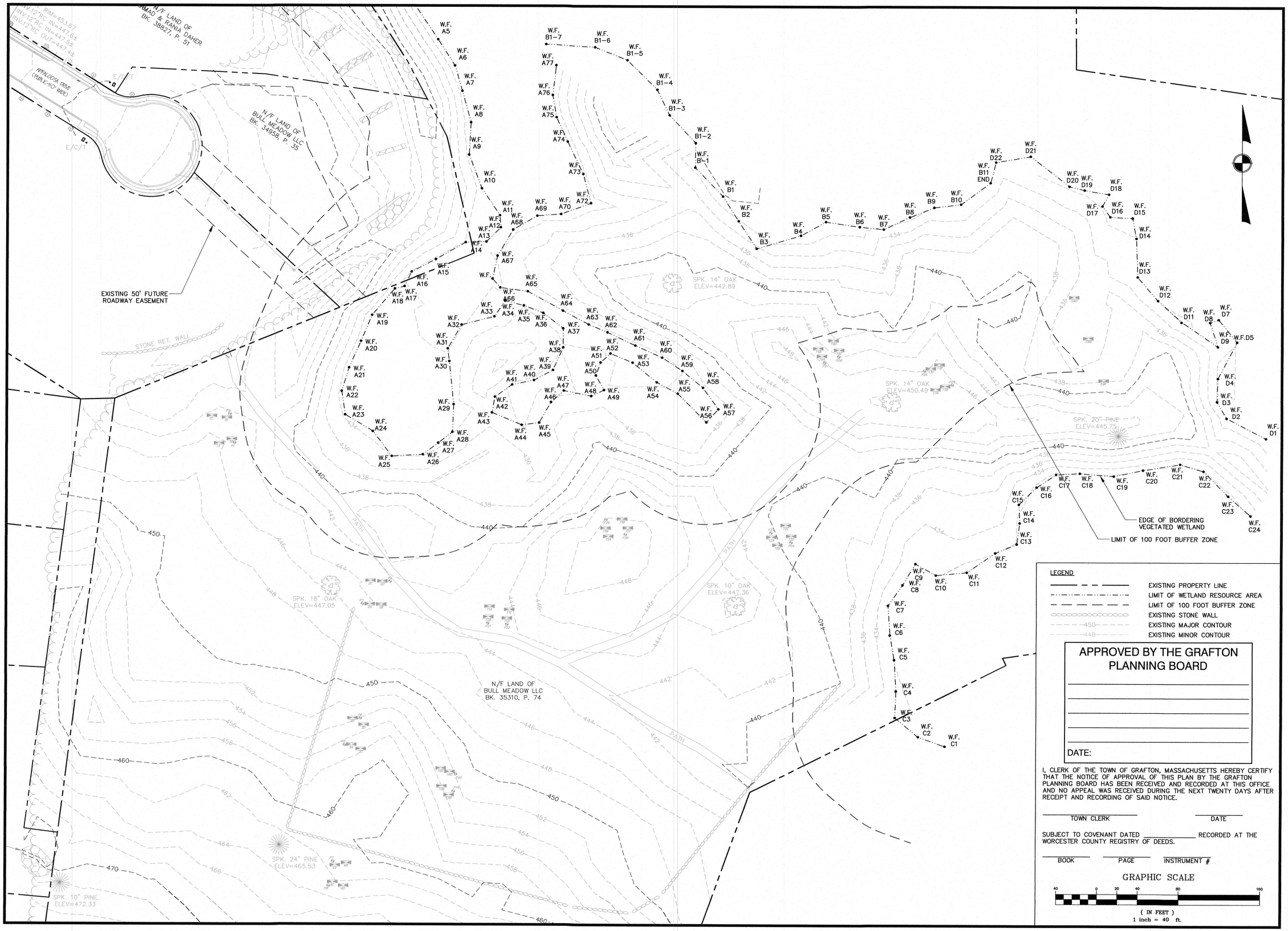

LEGEND

- EXISTING PROPERTY LINE
- LIMIT OF WETLAND RESOURCE AREA
- LIMIT OF 100 FOOT BUFFER ZONE
- EXISTING STONE WALL
- 450 EXISTING MAJOR CONTOUR
- 448 EXISTING MINOR CONTOUR

APPROVED BY THE GRAFTON PLANNING BOARD

DATE:

I, CLERK OF THE TOWN OF GRAFTON, MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE GRAFTON PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO APPEAL WAS RECEIVED DURING THE NEXT TWENTY DAYS AFTER RECEIPT AND RECORDING OF SAID NOTICE.

TOWN CLERK DATE

SUBJECT TO COVENANT DATED _____ RECORDED AT THE WORCESTER COUNTY REGISTRY OF DEEDS.

BOOK PAGE INSTRUMENT #

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NOT FOR CONSTRUCTION

THESE PLANS WERE PREPARED FOR THE PURPOSE OF OBTAINING STATE AND LOCAL PERMITS AND ARE NOT INTENDED TO BE USED AS CONSTRUCTION DOCUMENTS.

PREPARED FOR:
BULL MEADOW, LLC.
2 RACHEL ROAD
BOYLSTON, MA 01505

No.	Date	Revision

COMMONWEALTH OF MASSACHUSETTS
BRIAN R. MARCHETTI
CIVIL
NO. 46279
REGISTERED PROFESSIONAL ENGINEER

B. Marchetti 6/10/16

Drawn By:	Designed By:	Checked By:
BRM	BRM	BRM

McCarty Engineering, Inc.
Civil Engineers
42 Jungle Road, Leominster, MA 01453
phone:(978) 534-1318 fax: (978) 840-6907
www.mccartydb.com

Project Name

Estates at Bull Meadow Definitive Plan N. Grafton, MA 01536

Sheet Title

Existing Conditions Survey (1 of 2)

Job No: 066
File Name: 066P-CEC01
Date: June 10, 2016
Scale: 1"=40'

Sheet No. 1 OF 24

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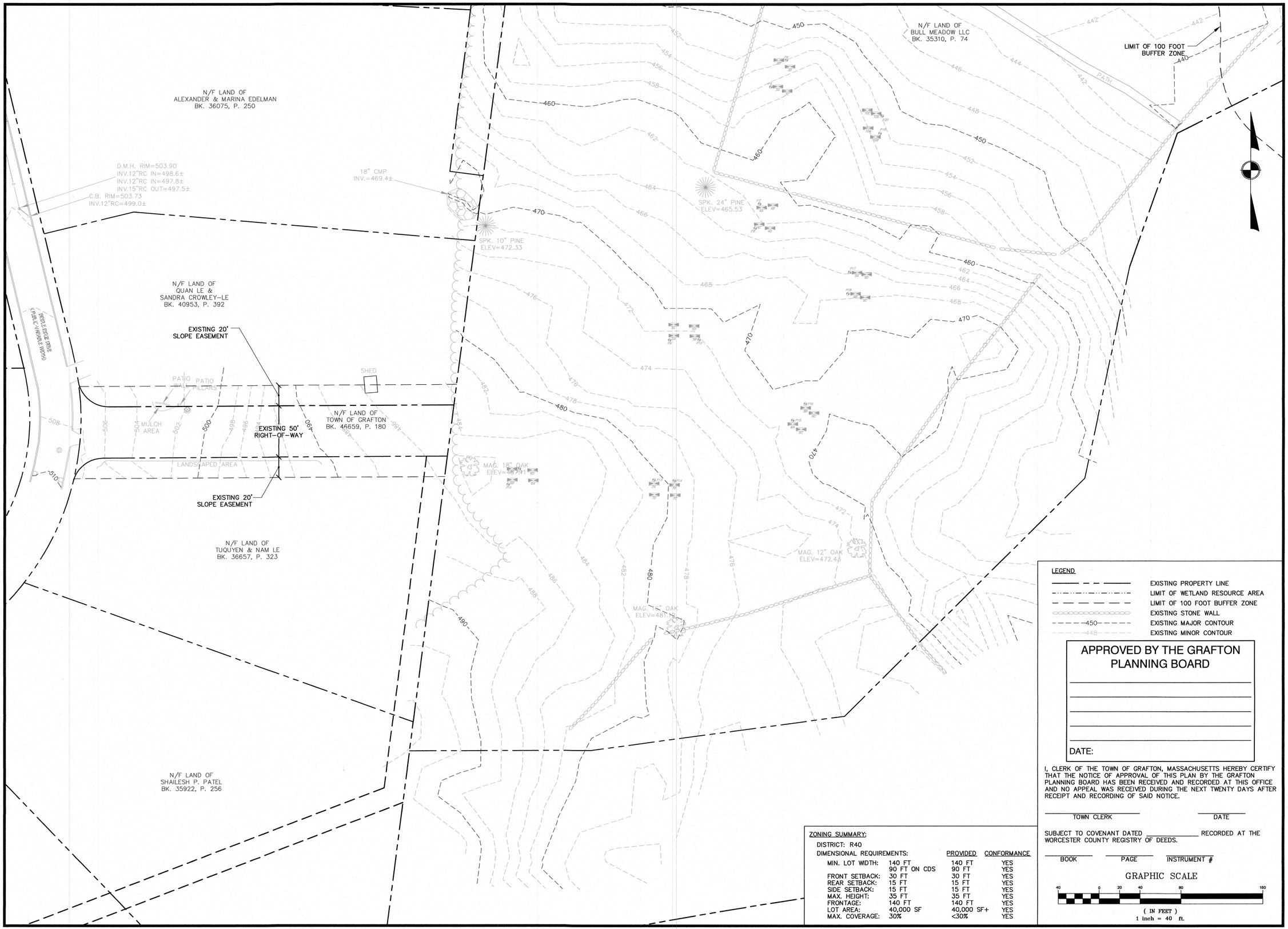

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- LIMIT OF WETLAND RESOURCE AREA
- LIMIT OF 100 FOOT BUFFER ZONE
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- 448 EXISTING MINOR CONTOUR

ZONING SUMMARY:

DISTRICT: R40

DIMENSIONAL REQUIREMENTS:		PROVIDED	CONFORMANCE
MIN. LOT WIDTH:	140 FT	140 FT	YES
	90 FT ON CDS	90 FT	YES
FRONT SETBACK:	30 FT	30 FT	YES
REAR SETBACK:	15 FT	15 FT	YES
SIDE SETBACK:	15 FT	15 FT	YES
MAX. HEIGHT:	35 FT	35 FT	YES
FRONTAGE:	140 FT	140 FT	YES
LOT AREA:	40,000 SF	40,000 SF+	YES
MAX. COVERAGE:	30%	<30%	YES

APPROVED BY THE GRAFTON
PLANNING BOARD

DATE:

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2 RACHEL ROAD
BOYLSTON, MA 01505

No.	Date	Revision

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BRIAN R. MARCHETTI
CIVIL
NO. 46279
REGISTERED PROFESSIONAL ENGINEER

6/10/16

Drawn By:	Designed By:	Checked By:
BRM	BRM	DKA

McCarty Engineering, Inc.
Civil Engineers
42 Jungle Road, Leominster, MA 01453
phone:(978) 534-1318 fax: (978) 840-6907
www.mccartydb.com

Project Name

Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title

Existing Conditions
Survey
(2 of 2)

Job No: 066
File Name: 066P-CEC02
Date: June 10, 2016
Scale: 1"=40'

Sheet No.
2
OF 24

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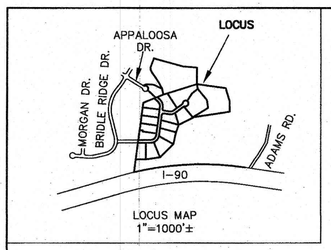

APPROVED BY THE GRAFTON PLANNING BOARD DATE:_____

NOTES:

1. OWNER/APPLICANT: BULL MEADOW, LLC
BK. 53605, P. 383
BK. 35310, P. 74
BK. 34958, P. 35

2. PLAN REFERENCES: P.B. 750, P. 55
P.B. 784, P. 109
P.B. 799, P. 108
P.B. 911, P. 97

3. THE SUBJECT PREMISES IS GRAPHICALLY SITUATED IN THE R-40 ZONING DISTRICT WITH THE FOLLOWING MIMINUM DIMENSIONAL REQUIREMENTS:
MINIMUM LOT AREA: 40,000 S.F.
MINIMUM LOT FRONTAGE: 140 FT.
MINIMUM FRONT SETBACK: 30 FT.
MINIMUM SIDE SETBACK: 15 FT.
MINIMUM REAR SETBACK: 15 FT.

4. THE SUBJECT PREMISES IS NOT GRAPHICALLY SITUATED IN THE 100-YEAR FLOOD HAZARD ZONE PER FLOOD INSURANCE RATE MAPS 25027C0831F AND 25027C0832F DATED JULY 16, 2014.

5. OPEN SPACE PARCELS A AND B ARE NOT TO BE CONSIDERED BUILDING LOTS, NO FURTHER BUILDING MAY OCCUR WITHOUT FURTHER APPROVAL BY THE PLANNING BOARD PURSUANT TO THE SUBDIVISION CONTROL LAW.

⊡ DENOTES GRANITE BOUND TO BE SET

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TOWN OF GRAFTON CLERK DATE

COMMONWEALTH OF MASSACHUSETTS
JAMES E. MARCAULT
37356
REGISTERED PROFESSIONAL LAND SURVEYOR

6/10/2016

I CERTIFY THAT THIS PLAN MEETS WITH REGULATIONS OF REGISTERS OF DEEDS

ESTATES AT BULL MEADOW

DEFINITIVE SUBDIVISION PLAN OF LAND

IN GRAFTON, MA

PREPARED FOR

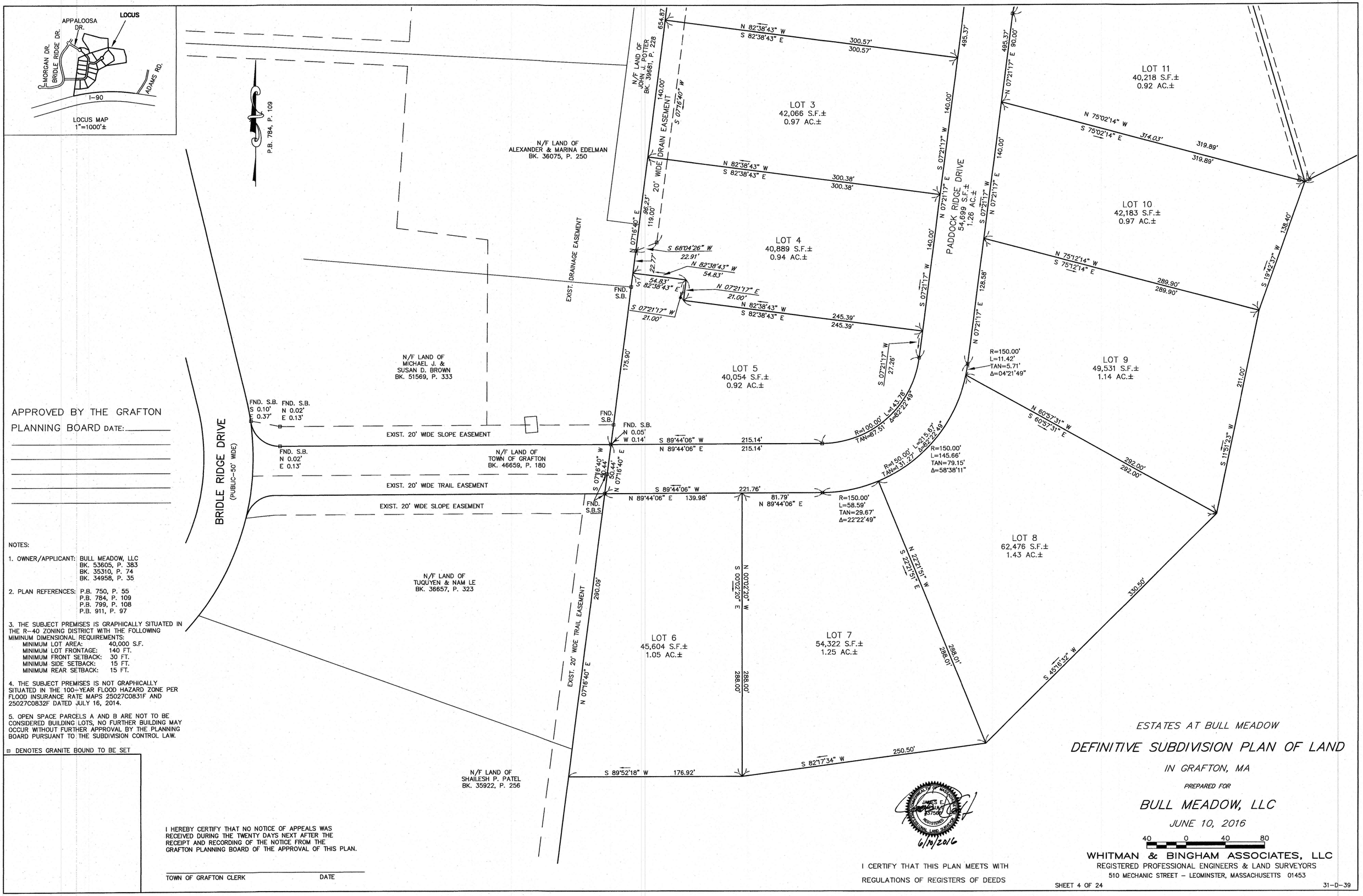
BULL MEADOW, LLC

JUNE 10, 2016

100 0 100 200

WHITMAN & BINGHAM ASSOCIATES, LLC
REGISTERED PROFESSIONAL ENGINEERS & LAND SURVEYORS
510 MECHANIC STREET – LEOMINSTER, MASSACHUSETTS 01453

31-D-39



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ESTATES AT BULL MEADOW

DEFINITIVE SUBDIVISION PLAN OF LAND

IN GRAFTON, MA

PREPARED FOR

BULL MEADOW, LLC

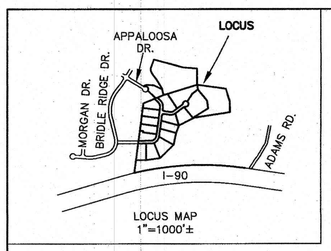
JUNE 10, 2016

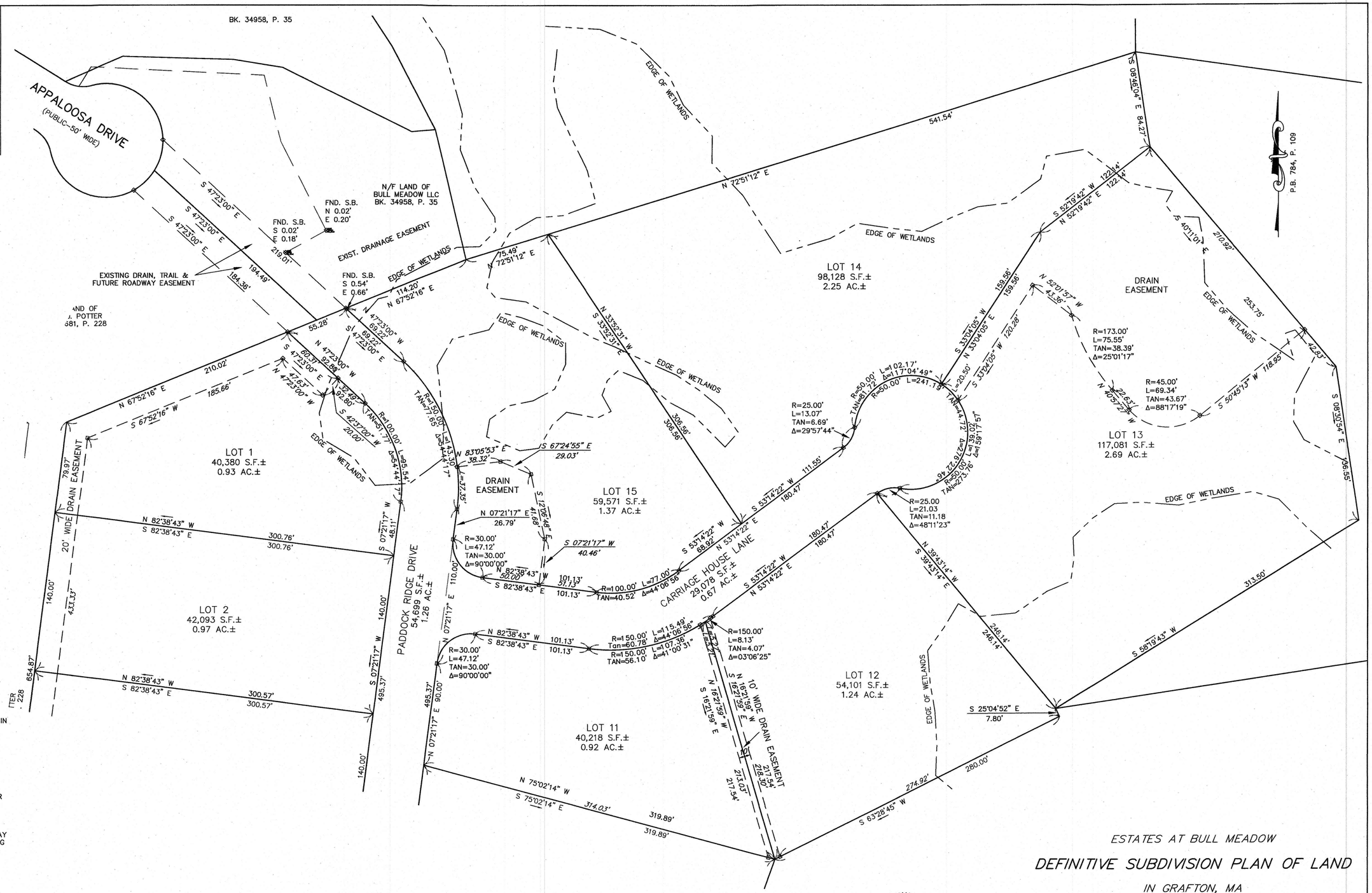
40 0 40 80

WHITMAN & BINGHAM ASSOCIATES, LLC
REGISTERED PROFESSIONAL ENGINEERS & LAND SURVEYORS
510 MECHANIC STREET – LEOMINSTER, MASSACHUSETTS 01453

SHEET 4 OF 24

31-D-39





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PLANNING BOARD DATE:_____

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TOWN OF GRAFTON CLERK DATE

6/10/2016

I CERTIFY THAT THIS PLAN MEETS WITH REGULATIONS OF REGISTERS OF DEEDS

ESTATES AT BULL MEADOW

DEFINITIVE SUBDIVISION PLAN OF LAND

IN GRAFTON, MA

PREPARED FOR

BULL MEADOW, LLC

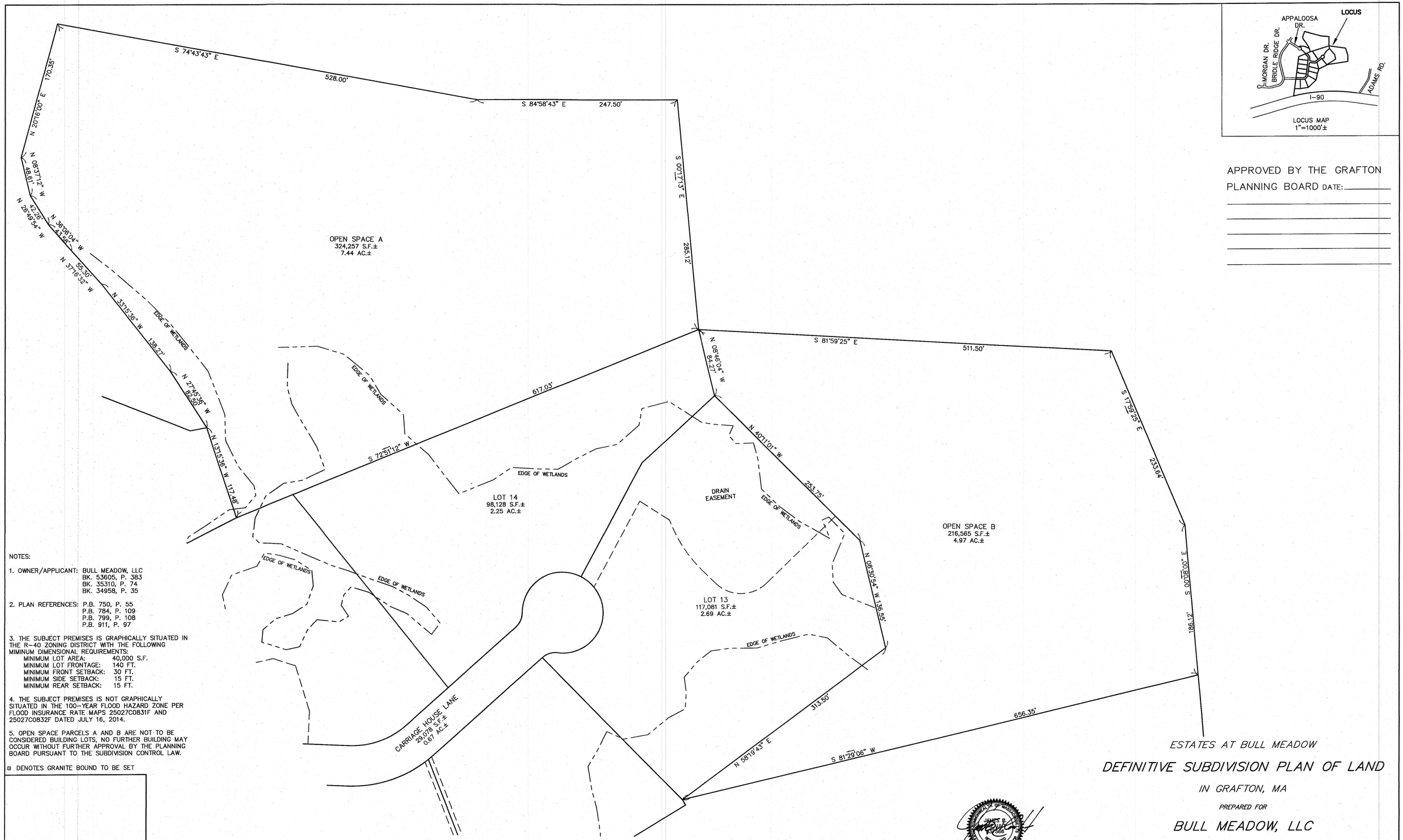
JUNE 10, 2016

40 0 40 80

WHITMAN & BINGHAM ASSOCIATES, LLC
REGISTERED PROFESSIONAL ENGINEERS & LAND SURVEYORS
510 MECHANIC STREET – LEOMINSTER, MASSACHUSETTS 01453

SHEET 5 OF 24

31-D-39



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TOWN OF GRAFTON CLERK DATE

COMMONWEALTH OF MASSACHUSETTS JAMES B. WHITMAN 22556 REGISTERED PROFESSIONAL LAND SURVEYOR

6/10/2016

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ESTATES AT BULL MEADOW

DEFINITIVE SUBDIVISION PLAN OF LAND

IN GRAFTON, MA

PREPARED FOR

BULL MEADOW, LLC

JUNE 10, 2016

50 0 50 100

WHITMAN & BINGHAM ASSOCIATES, LLC
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510 MECHANIC STREET – LEOMINSTER, MASSACHUSETTS 01453

SHEET 6 OF 24

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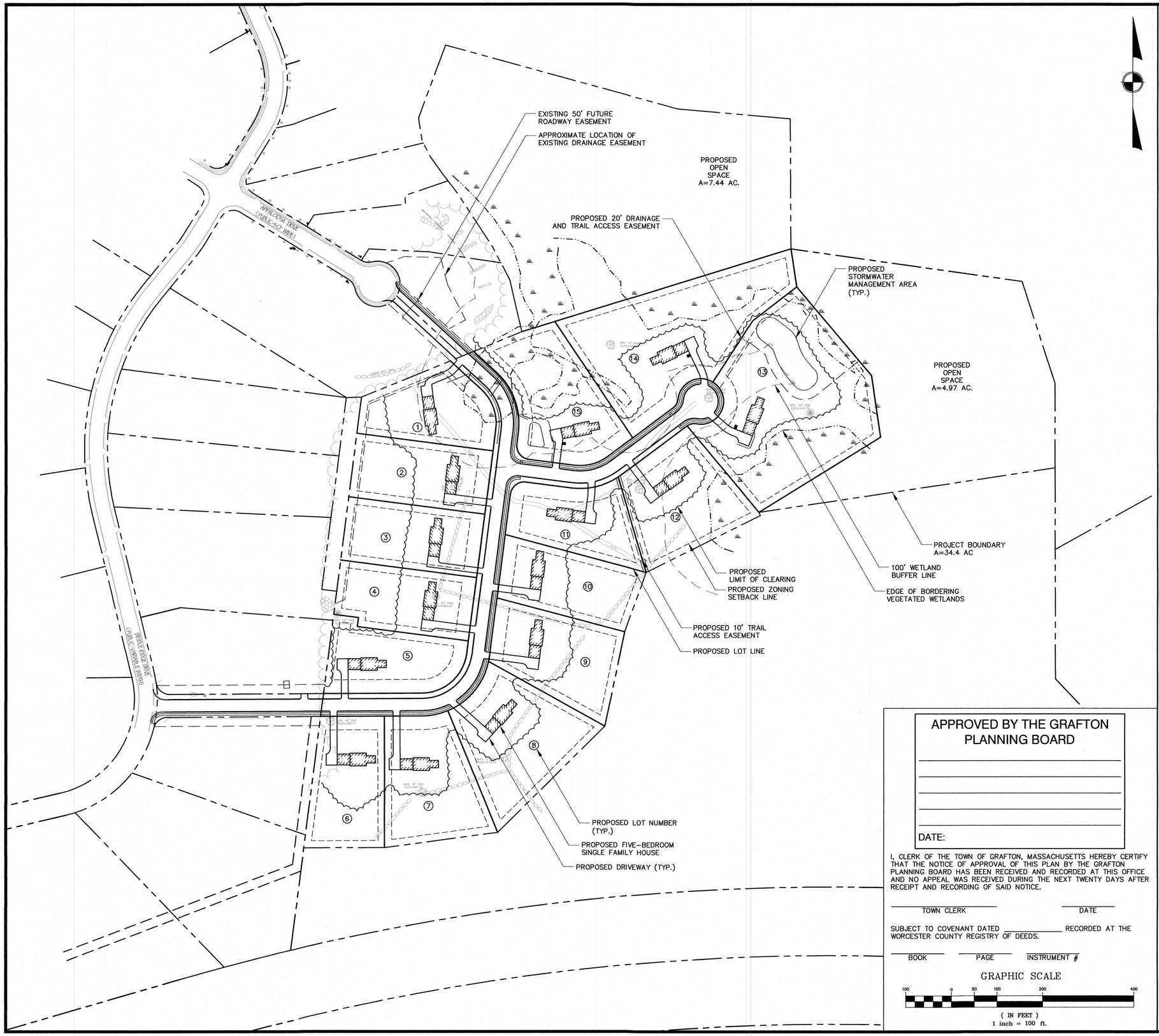

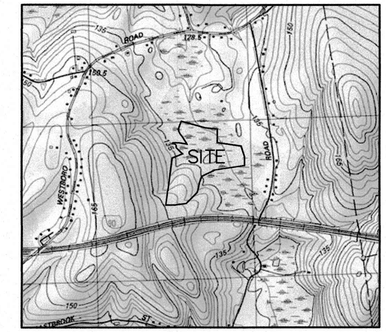

LOCUS PLAN

1"=1,500 FT.±

NOTES:

1. WETLAND DELINEATION SHOWN WAS COMPLETED BY ECOTEC, INC. ON NOVEMBER 13, 2013 AND WAS GPS LOCATED ON DECEMBER 12, 2013 BY WHITMAN & BINGHAM ASSOCIATES.
2. THE PROPOSED SUBDIVISION WILL BE SERVICED BY DOMESTIC WATER AND FIRE PROTECTION. A NEW DUCTILE IRON WATER SERVICE WILL BE EXTENDED FROM THE INTERSECTION OF OLD WESTBORO ROAD AND BRIDLE RIDGE DRIVE APPROXIMATELY 2,500 LF TO THE END OF THE CUL-DE-SAC ON APPALOOSA DRIVE.

LEGEND:

① PROPOSED LOT NUMBER

ZONING SUMMARY:

DISTRICT: R40

DIMENSIONAL REQUIREMENTS:		PROVIDED	CONFORMANCE
MIN. LOT WIDTH:	140 FT	140 FT	YES
	90 FT ON CDS	90 FT	YES
FRONT SETBACK:	30 FT	30 FT	YES
REAR SETBACK:	15 FT	15 FT	YES
SIDE SETBACK:	15 FT	15 FT	YES
MAX. HEIGHT:	35 FT	35 FT	YES
FRONTAGE:	140 FT	140 FT	YES
LOT AREA:	40,000 SF	40,000 SF+	YES
MAX. COVERAGE:	30%	<30%	YES

DESIGN FEATURES:

LENGTH OF ROADWAY: 2,125 FT.
ROAD A 1,660 FT.
ROAD B 465 FT.
NUMBER OF LOTS: 15
ON-SITE SEPTIC SYSTEMS: YES
TOWN WATER: YES

RECORD OWNERS:

BULL MEADOW, LLC.
2 RACHEL ROAD
BOYLSTON, MA 01505
PARCEL ID: 110/31.0-0000-0123.0
BOOK 34958, PAGE 35

BULL MEADOW, LLC.
2 RACHEL ROAD
BOYLSTON, MA 01505
PARCEL ID: 110/32.0-0000-0005.A
BOOK 35310, PAGE 74

MassDOT
10 PARK PLAZA
BOSTON, MA 02116
PARCEL ID: 110/31.0-0000-0100.0
BOOK 3919, PAGE 318

MassDOT
10 PARK PLAZA
BOSTON, MA 02116
PARCEL ID: 110/32.0-0000-0100.0
BOOK N/A, PAGE N/A

TOWN OF GRAFTON
30 PROVIDENCE ROAD
GRAFTON, MA 01519
PARCEL ID: 110/31.0-0000-0214.B
BOOK 46659, PAGE 180

APPROVED BY THE GRAFTON PLANNING BOARD

DATE:

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BULL MEADOW, LLC.
2 RACHEL ROAD
BOYLSTON, MA 01505

No.	Date	Revision

COMMONWEALTH OF MASSACHUSETTS
BRIAN R. MARCHETTI
CIVIL
NO. 46279
REGISTERED PROFESSIONAL ENGINEER

6/10/16

Drawn By:	Designed By:	Checked By:
BRM	BRM	BRM

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Civil Engineers
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phone:(978) 534-1318 fax: (978) 840-6907
www.mccartydb.com

Project Name

Estates at Bull Meadow Definitive Plan N. Grafton, MA 01536

Sheet Title

Overall Conventional Subdivision Plan (1 of 3)

Job No: 066
File Name: 066P-CSP01
Date: June 10, 2016
Scale: 1"=100'

Sheet No. 7 OF 24

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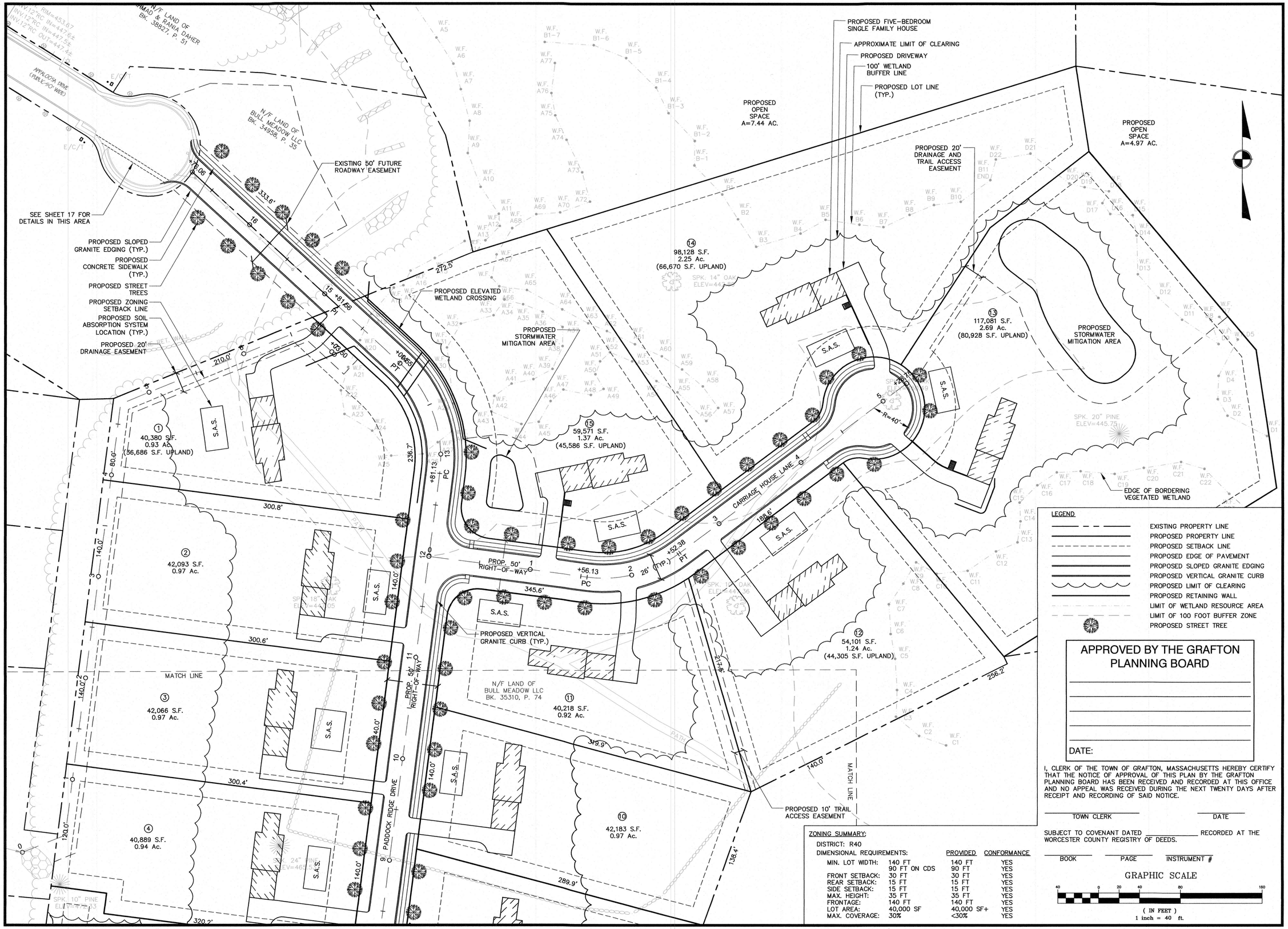

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- PROPOSED SETBACK LINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED SLOPED GRANITE EDGING
- PROPOSED VERTICAL GRANITE CURB
- PROPOSED LIMIT OF CLEARING
- PROPOSED RETAINING WALL
- LIMIT OF WETLAND RESOURCE AREA
- LIMIT OF 100 FOOT BUFFER ZONE
- PROPOSED STREET TREE

ZONING SUMMARY:

DISTRICT: R40

DIMENSIONAL REQUIREMENTS:		PROVIDED	CONFORMANCE
MIN. LOT WIDTH:	140 FT	140 FT	YES
	90 FT ON CDS	90 FT	YES
FRONT SETBACK:	30 FT	30 FT	YES
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MAX. HEIGHT:	35 FT	35 FT	YES
FRONTAGE:	140 FT	140 FT	YES
LOT AREA:	40,000 SF	40,000 SF+	YES
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PREPARED FOR:
BULL MEADOW, LLC.
2 RACHEL ROAD
BOYLSTON, MA 01505

No.	Date	Revision

COMMONWEALTH OF MASSACHUSETTS
BRIAN R. MARCHETTI
CIVIL
NO. 46279
REGISTERED PROFESSIONAL ENGINEER

6/10/16

Drawn By: BRM
Designed By: BRM
Checked By:

McCarty Engineering, Inc.
Civil Engineers
42 Jungle Road, Leominster, MA 01453
phone:(978) 534-1318 fax: (978) 840-6907
www.mccartydb.com

Project Name

Estates at Bull Meadow Definitive Plan N. Grafton, MA 01536

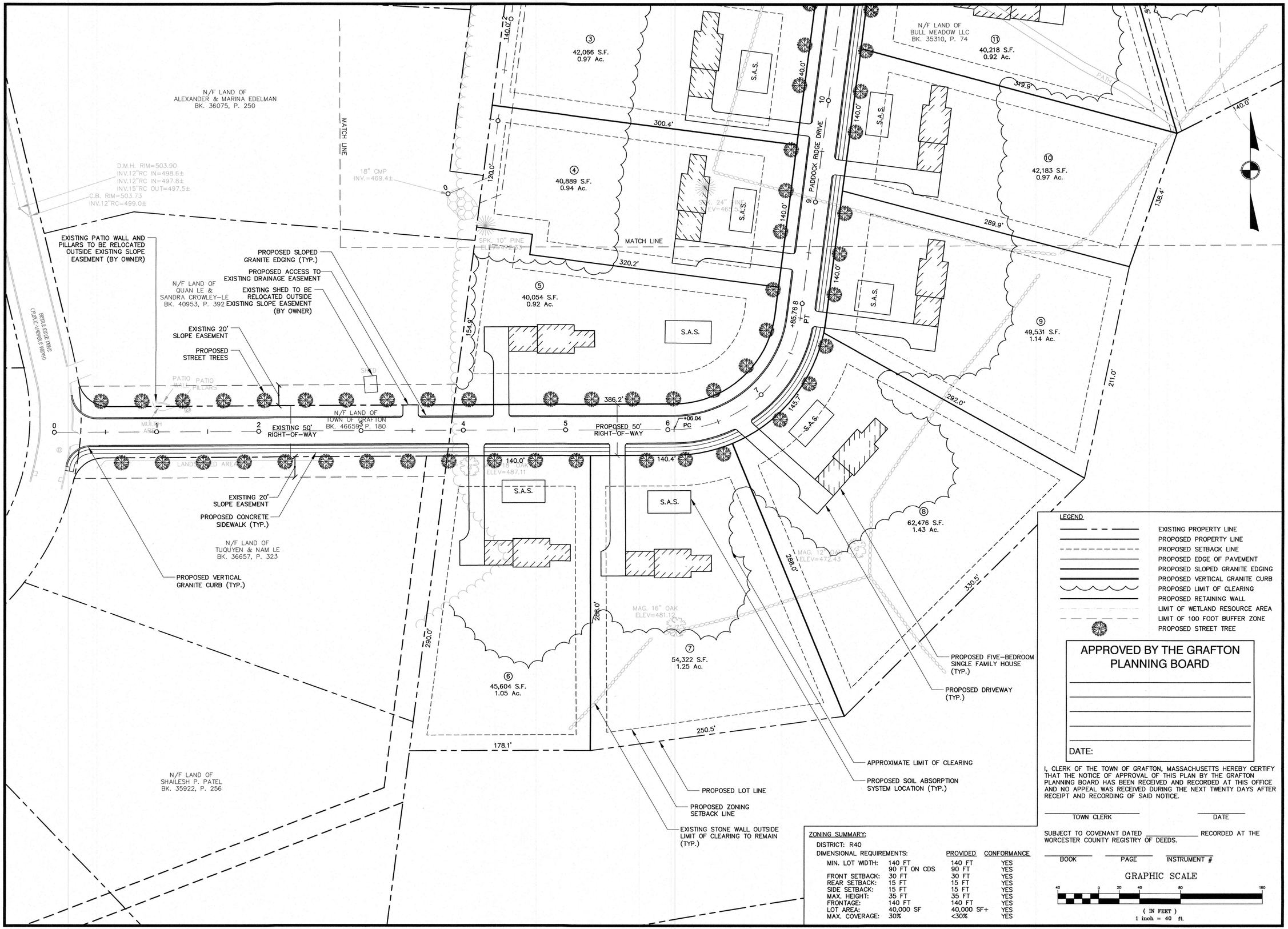
Sheet Title

Layout and Materials Plan (2 of 3)

Job No: 066
File Name: 066P-CMA01
Date: June 10, 2016
Scale: 1"=40'

Sheet No. 8 OF 24

F:\CAD\MEI\066-Lewis\Definitive\Plot\Definitive Plan\066P-CMA01.dwg \ 6/9/2016 4:52 PM \ by: Brian Marchetti



LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- PROPOSED SETBACK LINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED SLOPED GRANITE EDGING
- PROPOSED VERTICAL GRANITE CURB
- PROPOSED LIMIT OF CLEARING
- PROPOSED RETAINING WALL
- LIMIT OF WETLAND RESOURCE AREA
- LIMIT OF 100 FOOT BUFFER ZONE
- PROPOSED STREET TREE

ZONING SUMMARY:

DISTRICT: R40

DIMENSIONAL REQUIREMENTS:		PROVIDED	CONFORMANCE
MIN. LOT WIDTH:	140 FT	140 FT	YES
	90 FT ON CDS	90 FT	YES
FRONT SETBACK:	30 FT	30 FT	YES
REAR SETBACK:	15 FT	15 FT	YES
SIDE SETBACK:	15 FT	15 FT	YES
MAX. HEIGHT:	35 FT	35 FT	YES
FRONTAGE:	140 FT	140 FT	YES
LOT AREA:	40,000 SF	40,000 SF+	YES
MAX. COVERAGE:	30%	<30%	YES

APPROVED BY THE GRAFTON PLANNING BOARD

DATE:

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BOOK PAGE INSTRUMENT #

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
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Project Name

Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title

Layout and Materials Plan
(3 of 3)

Job No: 066
File Name: 066P-CMA02
Date: June 10, 2016
Scale: 1"=40'

Sheet No.
9
OF 24

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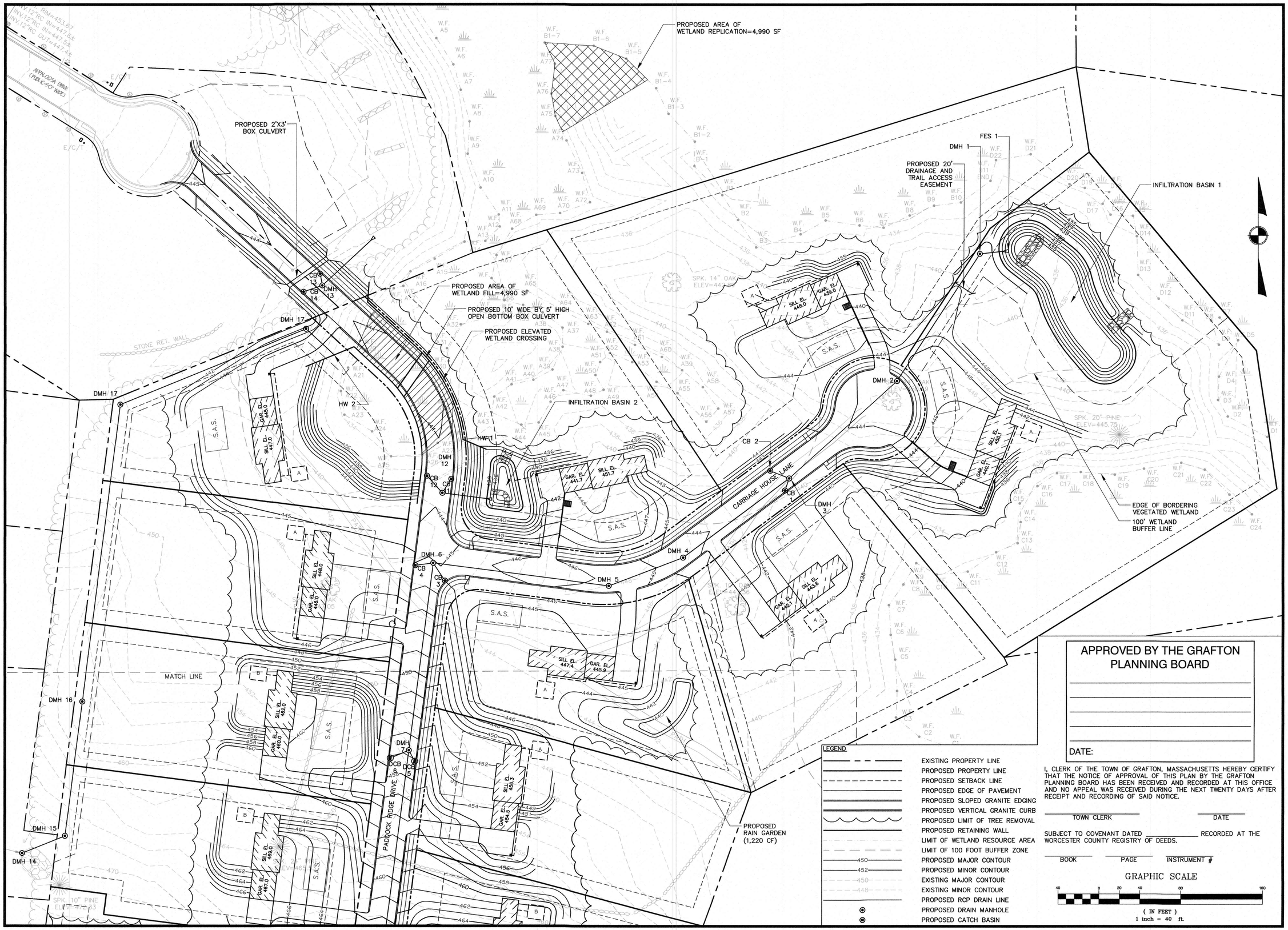

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- PROPOSED RETAINING WALL
- LIMIT OF WETLAND RESOURCE AREA
- LIMIT OF 100 FOOT BUFFER ZONE
- 450 PROPOSED MAJOR CONTOUR
- 452 PROPOSED MINOR CONTOUR
- 450 EXISTING MAJOR CONTOUR
- 448 EXISTING MINOR CONTOUR
- PROPOSED RCP DRAIN LINE
- PROPOSED DRAIN MANHOLE
- PROPOSED CATCH BASIN

APPROVED BY THE GRAFTON PLANNING BOARD

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Project Name

Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title

Grading and Drainage Plan
(1 of 2)

Job No: 066
File Name: 066P-CPG01
Date: June 10, 2016
Scale: 1"=40'

Sheet No. 10 OF 24

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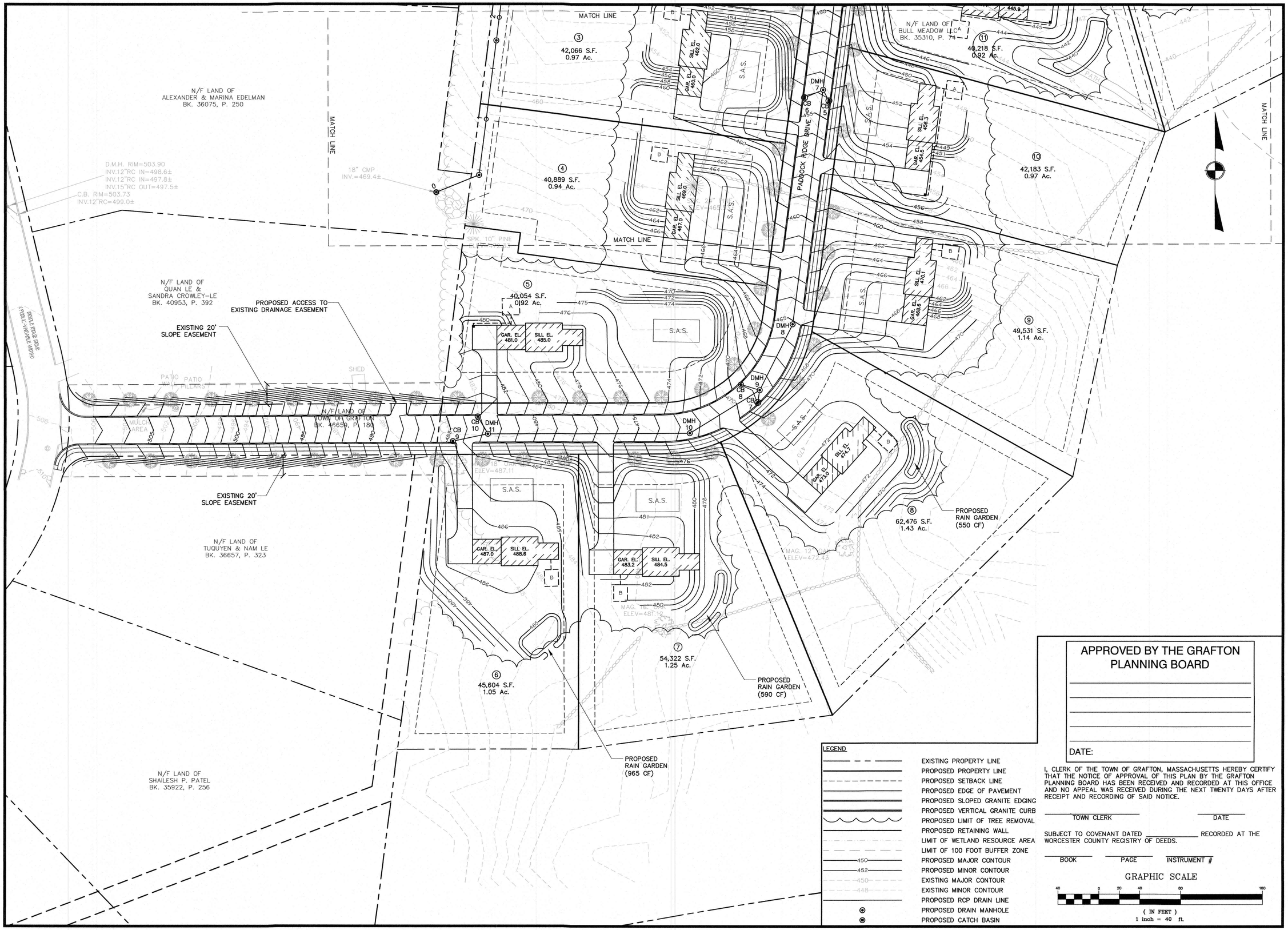

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2 RACHEL ROAD
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REGISTERED PROFESSIONAL ENGINEER

6/10/16

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Project Name

Estates at Bull Meadow Definitive Plan Grafton, MA 01519

Sheet Title

Grading and Drainage Plan (2 of 2)

Job No: 066
File Name: 066P-CPG02
Date: June 10, 2016
Scale: 1"=40'

Sheet No. 11 OF 24

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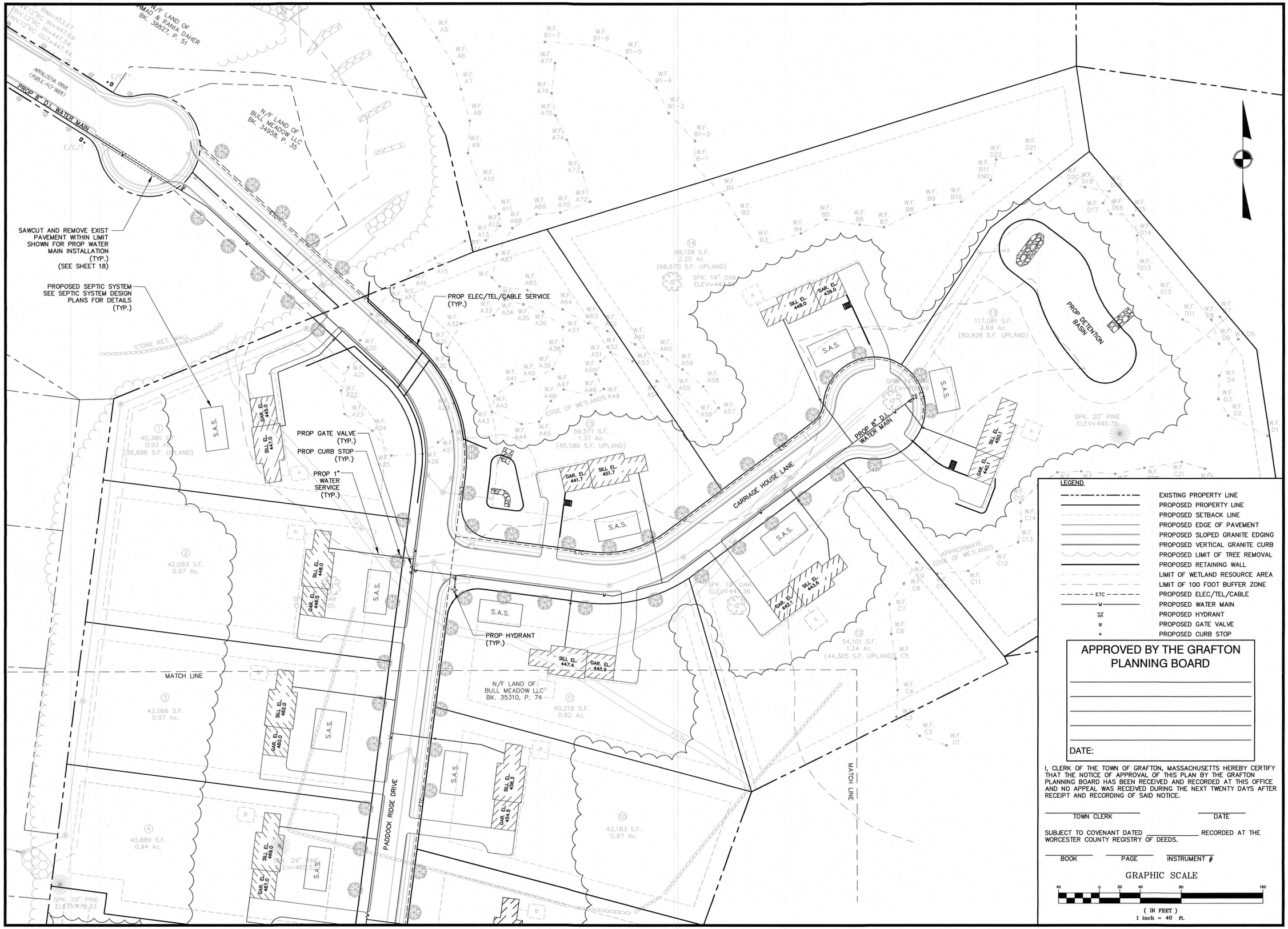

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- LIMIT OF 100 FOOT BUFFER ZONE
- ETC — PROPOSED ELEC/TEL/CABLE
- W — PROPOSED WATER MAIN
- PROPOSED HYDRANT
- PROPOSED GATE VALVE
- PROPOSED CURB STOP

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Project Name

Estates at Bull Meadow Definitive Plan
N. Grafton, MA 01536

Sheet Title

Utility Plan (1 of 2)

Job No: 066
File Name: 066P-CPU01
Date: June 10, 2016
Scale: 1"=40'

Sheet No. 12 OF 24

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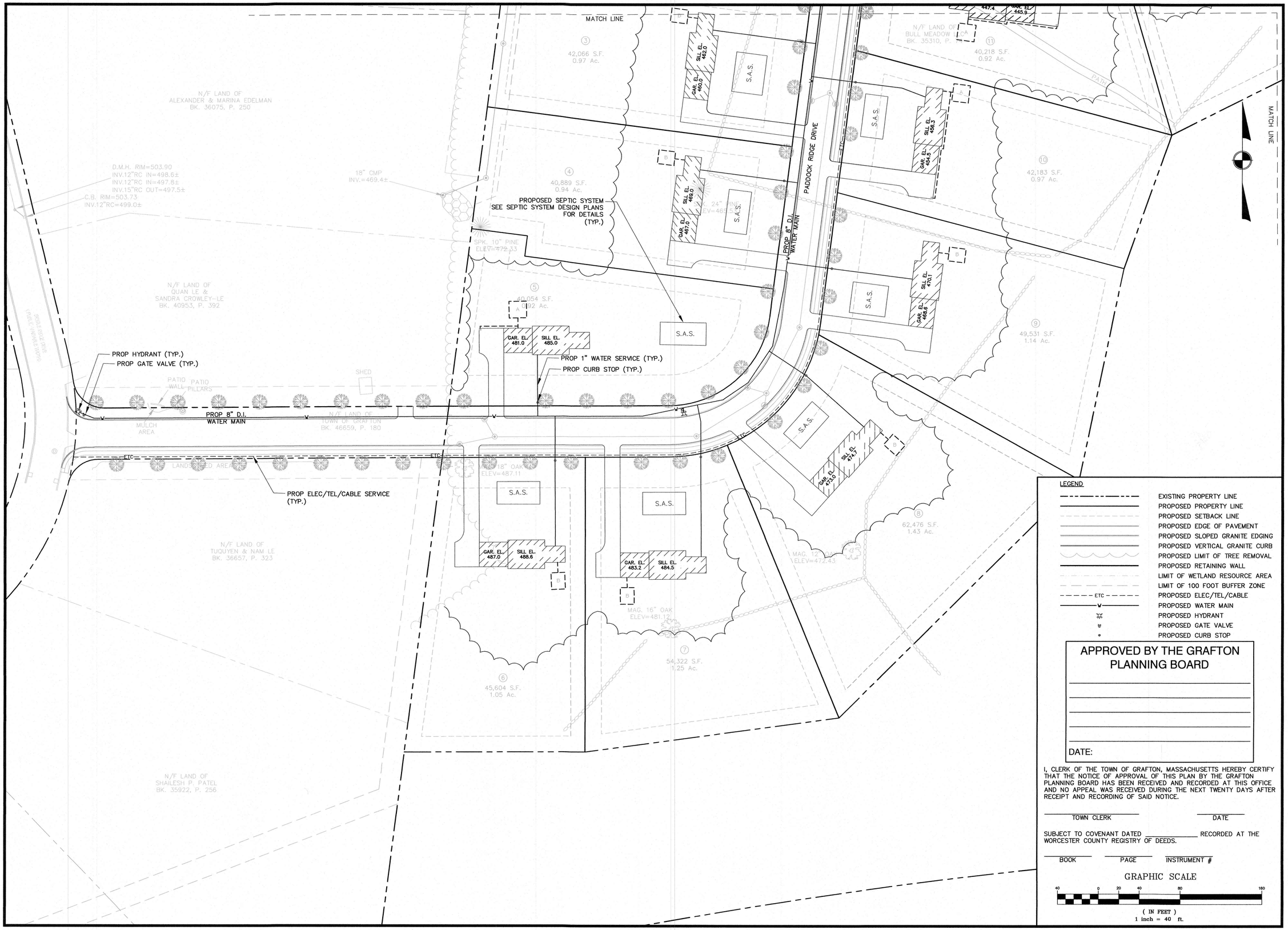

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2 RACHEL ROAD
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phone:(978) 534-1318 fax: (978) 840-6907
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Project Name

Estates at Bull Meadow Definitive Plan N. Grafton, MA 01536

Sheet Title

Utility Plan (2 of 2)

Job No: 066
File Name: 066P-CPU02
Date: June 10, 2016
Scale: 1"=40'

Sheet No. 13 OF 24

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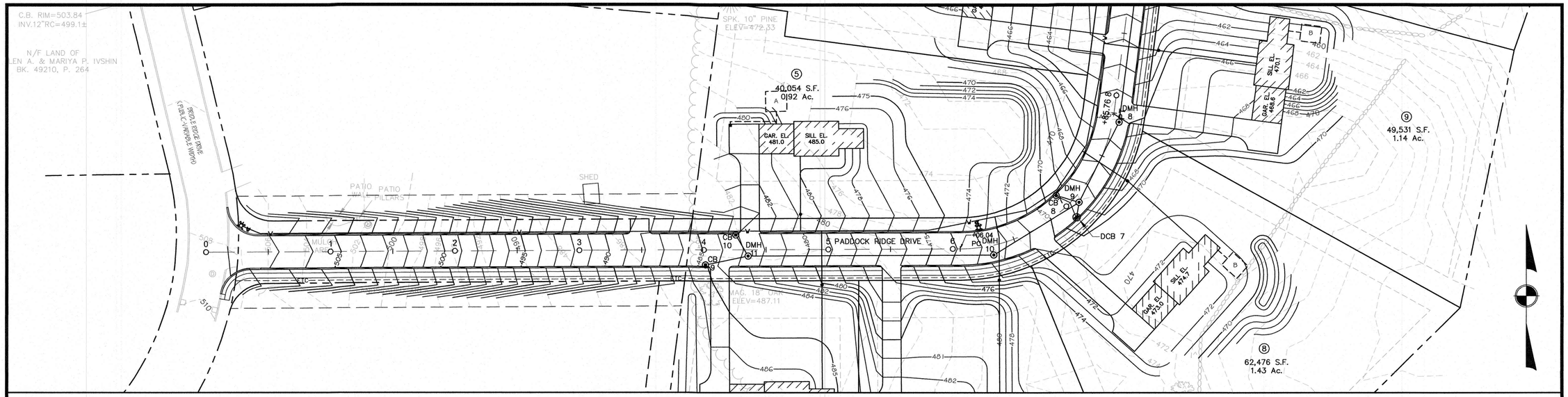
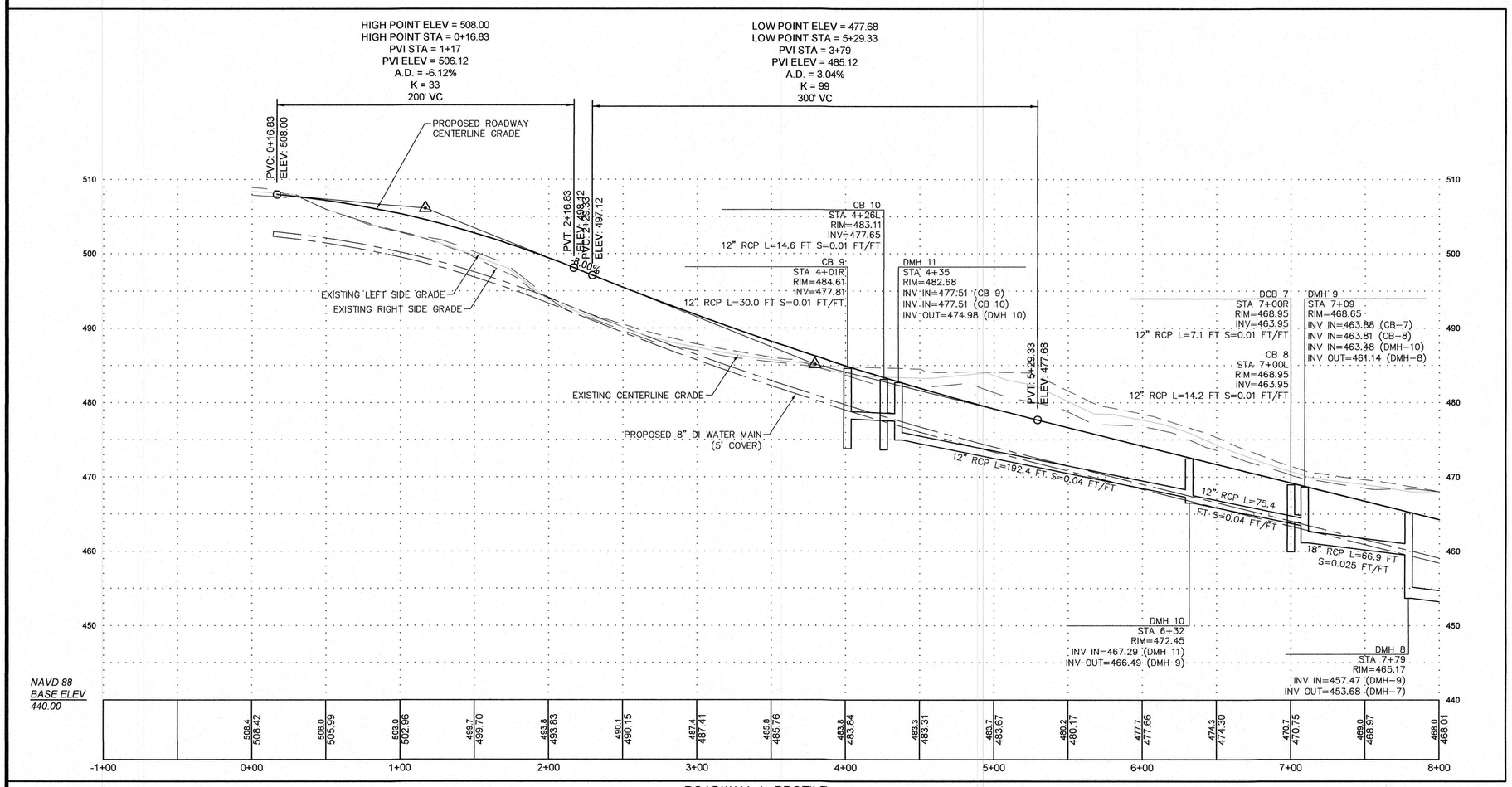


ROADWAY A PLAN
SCALE: 1"=40'



ROADWAY A PROFILE
VERT. SCALE: 1"=8'
HOR. SCALE: 1"=40'

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BULL MEADOW, LLC.
2 RACHEL ROAD
BOYLSTON, MA 01505

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COMMONWEALTH OF MASSACHUSETTS
BRIAN R. MARCHETTI
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Registered PROFESSIONAL ENGINEER

6/10/16

Drawn By:	Designed By:	Checked By:
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Project Name
Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title
Roadway and
Utility Profile
(1 of 4)

Job No: 066
File Name: 066P-CPF01
Date: June 10, 2016
Scale: 1"=40'

Sheet No.
14
OF 24

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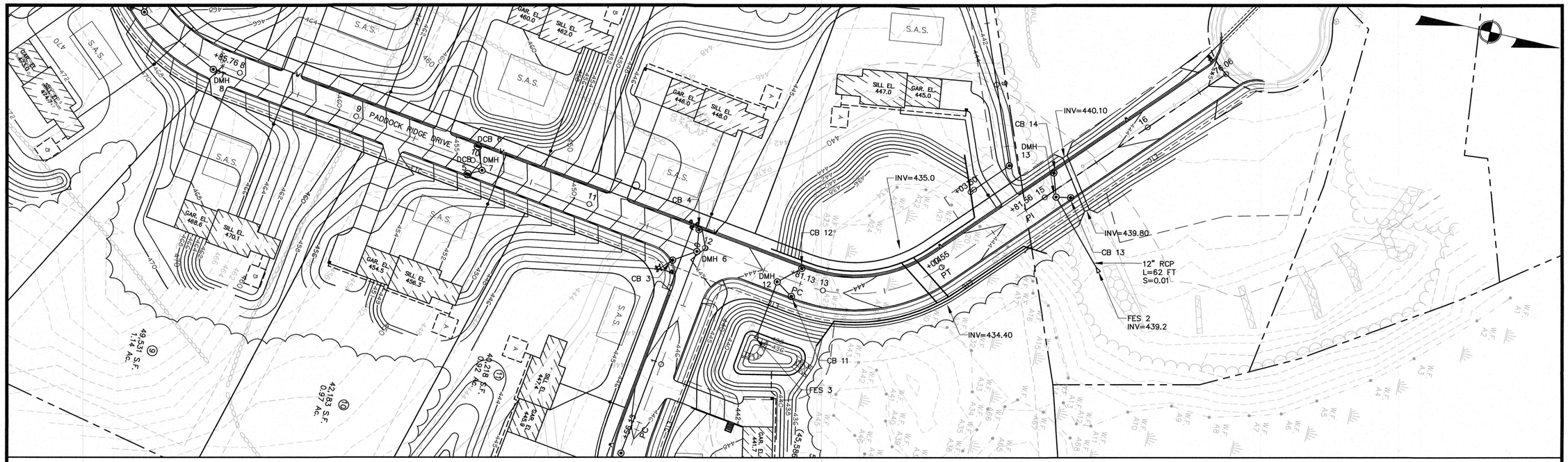
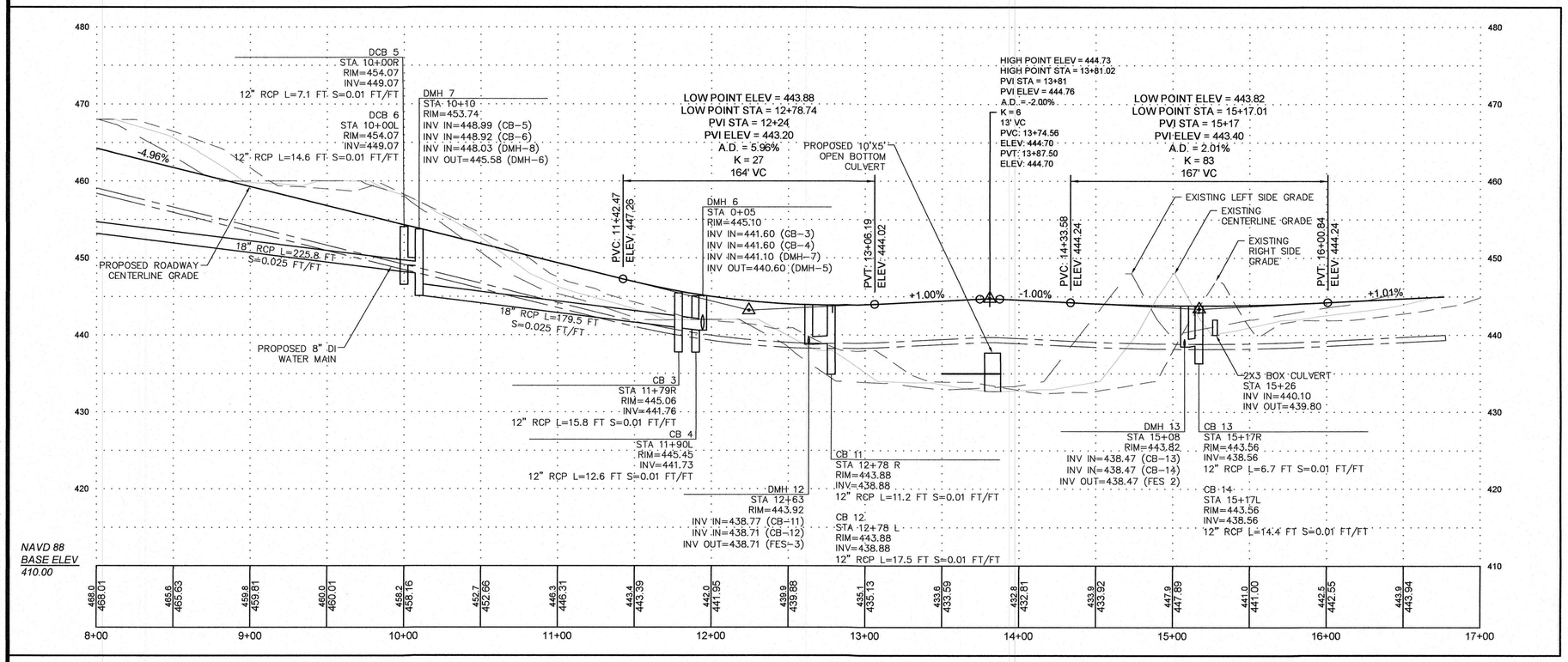


ROADWAY A PLAN
SCALE: 1"=40'



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Project Name
Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title
Roadway and
Utility Profile
(2 of 4)

Job No: 066
File Name: 066P-CPF02
Date: June 10, 2016
Scale: 1"=40'

Sheet No.
15
OF 24

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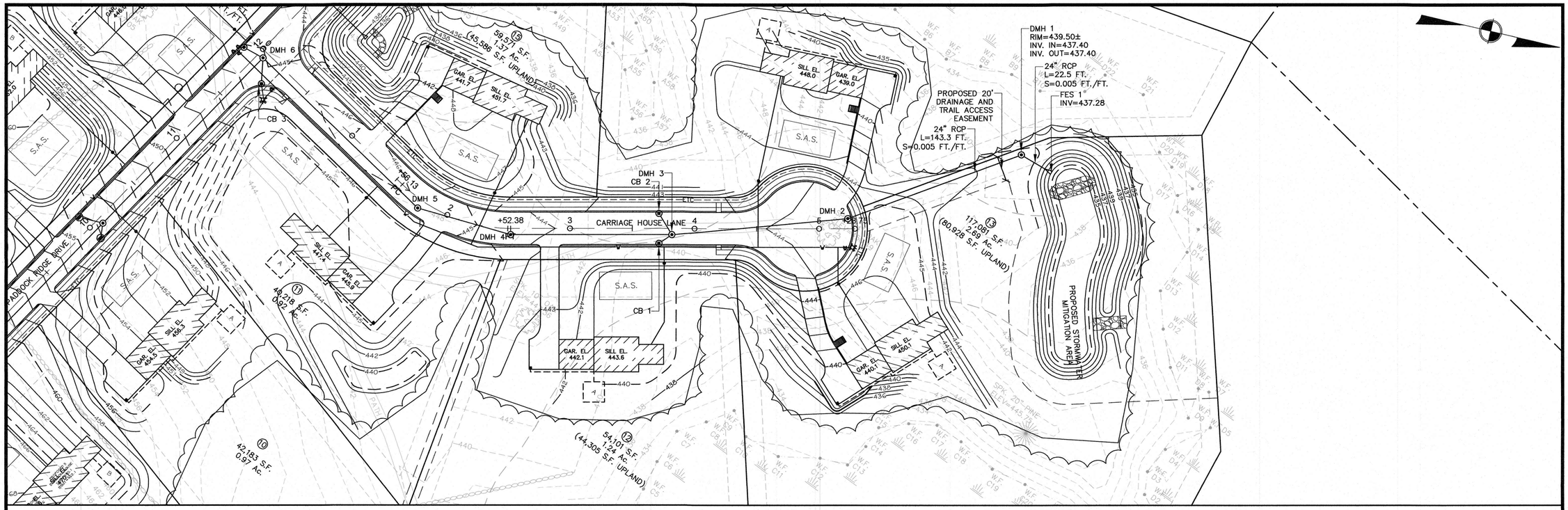
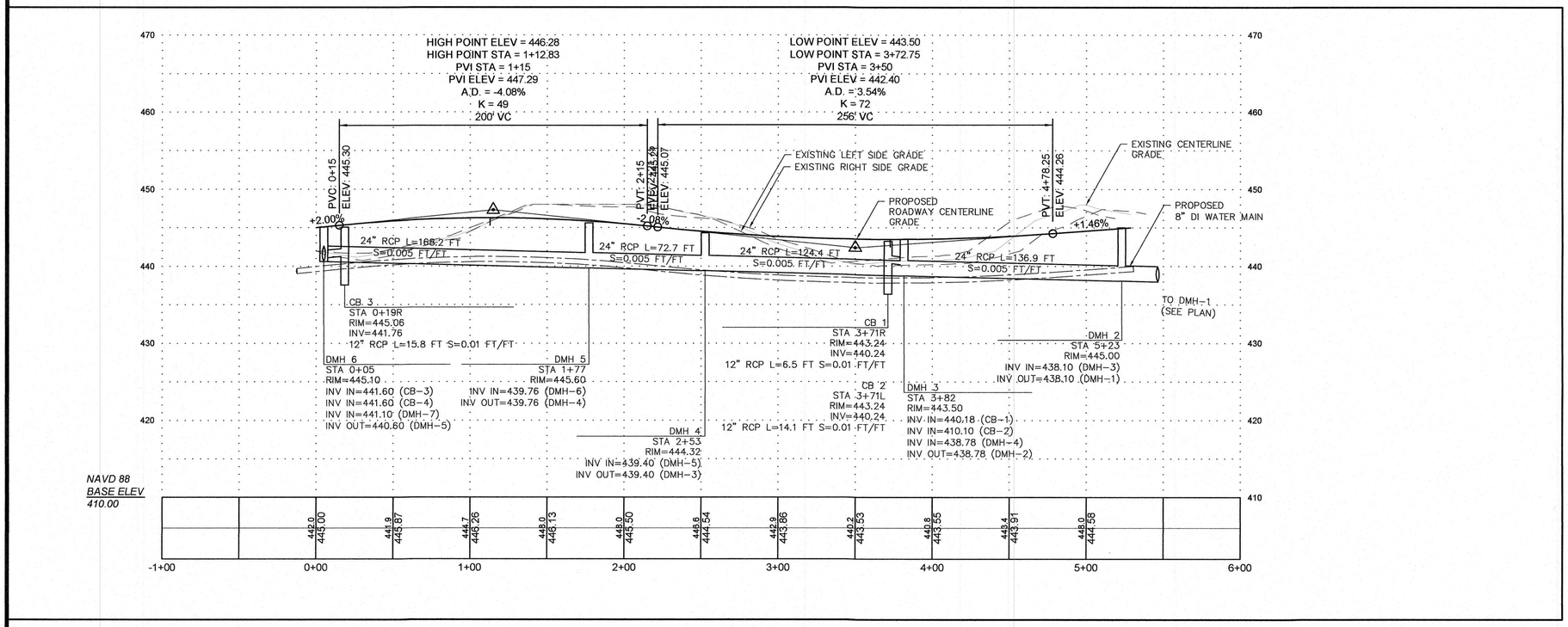


ROADWAY B PLAN
SCALE: 1"=40'



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Project Name
Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title
Roadway and Utility Profile
(3 of 4)

Job No: 066
File Name: 066P-CPF03
Date: June 10, 2016
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16
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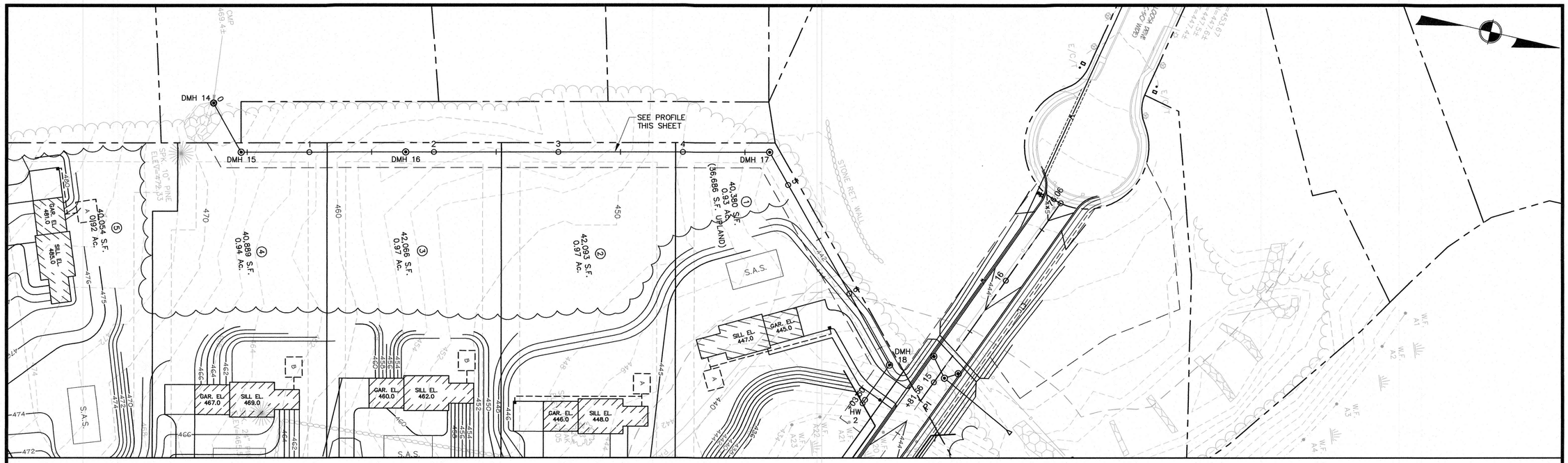

CROSS COUNTRY DRAIN PLAN
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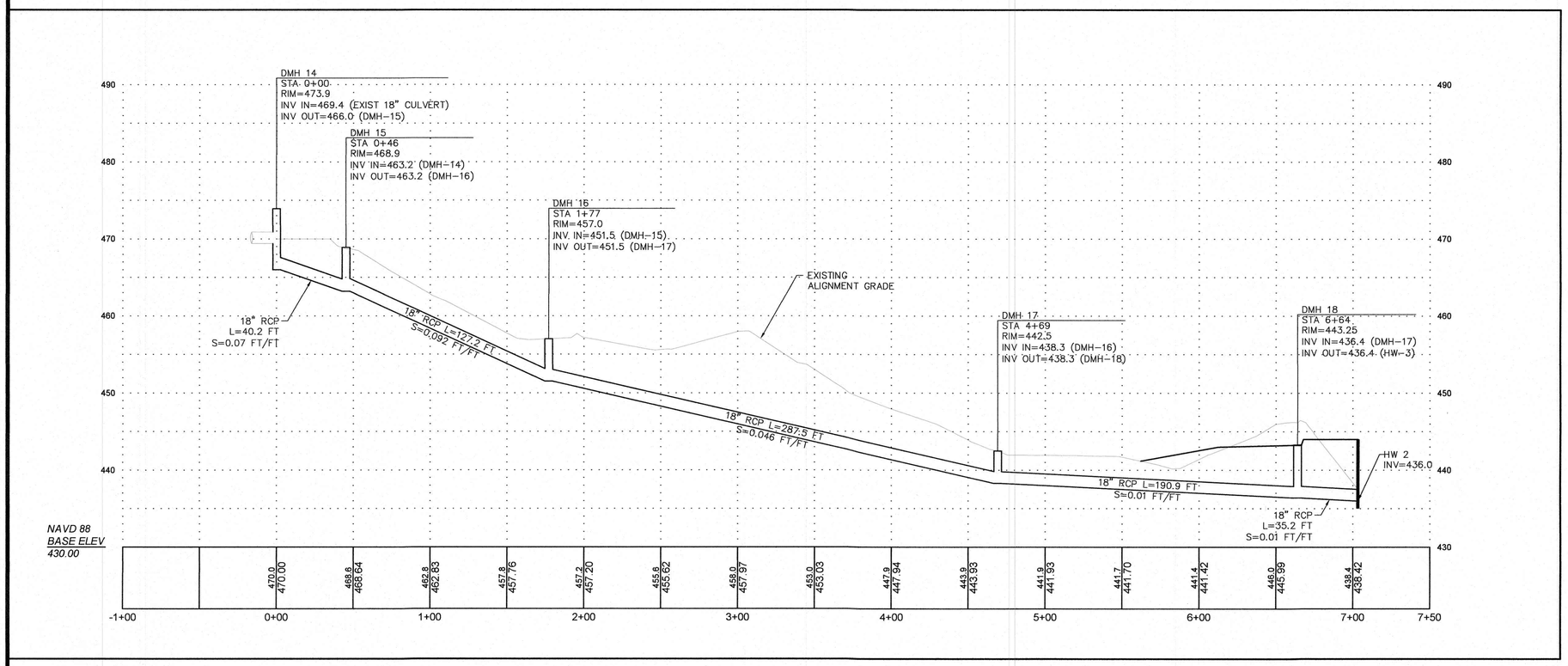

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6/10/16

Drawn By:	Designed By:	Checked By:
BRM	BRM	BRM

APPROVED BY THE GRAFTON PLANNING BOARD

DATE:

I, CLERK OF THE TOWN OF GRAFTON, MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE GRAFTON PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO APPEAL WAS RECEIVED DURING THE NEXT TWENTY DAYS AFTER RECEIPT AND RECORDING OF SAID NOTICE.

TOWN CLERK DATE

SUBJECT TO COVENANT DATED _____ RECORDED AT THE WORCESTER COUNTY REGISTRY OF DEEDS.

BOOK PAGE INSTRUMENT #

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

McCarty Engineering, Inc.
Civil Engineers
42 Jungle Road, Leominster, MA 01453
phone:(978) 534-1318 fax: (978) 840-6907
www.mccartydb.com

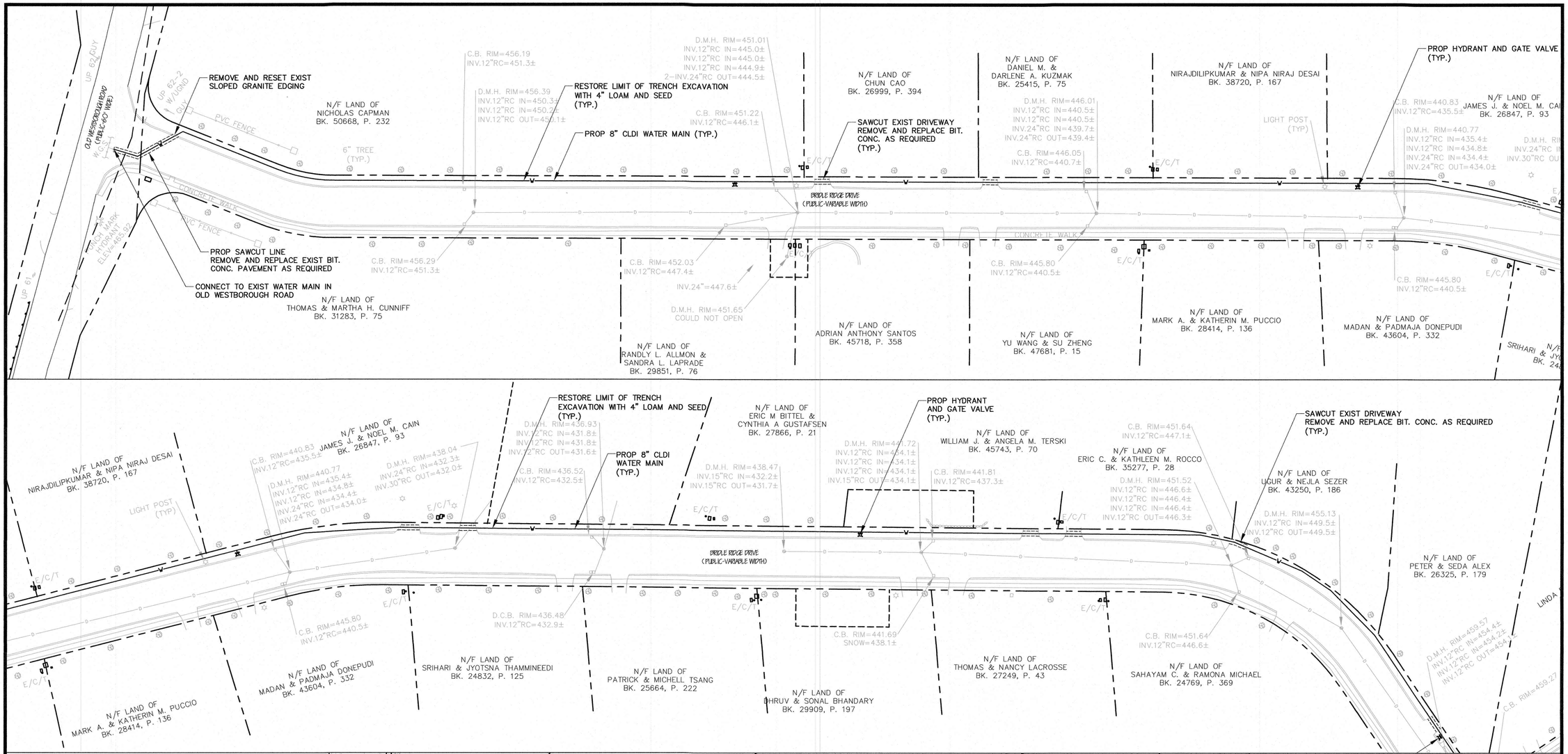
Project Name
Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

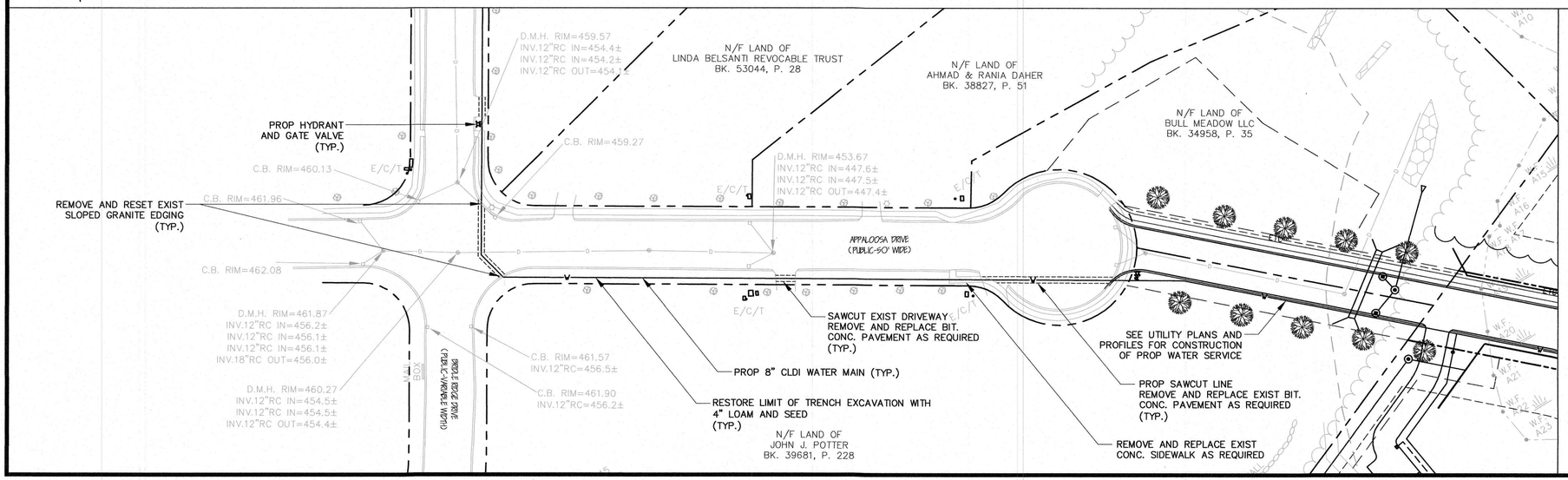
Sheet Title
Roadway and Utility Profile
(4 of 4)

Job No: 066
File Name: 066P-CPF04
Date: June 10, 2016
Scale: 1"=40'

Sheet No.
17
OF 24

F:\CADME\066-Lewis\Definitive\Port\Definitive Plan\066P-CPF04.dwg \ 6/9/2016 5:12 PM \ by: Brian Marchetti





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NOT FOR CONSTRUCTION

THESE PLANS WERE PREPARED FOR THE PURPOSE OF OBTAINING STATE AND LOCAL PERMITS AND ARE NOT INTENDED TO BE USED AS CONSTRUCTION DOCUMENTS.

PREPARED FOR:
BULL MEADOW, LLC.
2 RACHEL ROAD
BOYLSTON, MA 01505

No.	Date	Revision

COMMONWEALTH OF MASSACHUSETTS — BRIAN R. MARCHETTI — CIVIL — NO. 46279 — REGISTERED PROFESSIONAL ENGINEER

6/10/16

Drawn By:	Designed By:	Checked By:
PJM	PJM	BRM

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Project Name

Estates at Bull Meadow Definitive Plan N. Grafton, MA 01536

Sheet Title

Water Main Extension Plan

Job No: 066
File Name: 066P-CPU03
Date: June 10, 2016
Scale: 1"=120'

Sheet No. 18 OF 24

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CONSTRUCTION EROSION & SEDIMENTATION NOTES:

1. REFERENCE STORM WATER POLLUTION PREVENTION PLAN FOR CONSTRUCTION SEQUENCING/PHASING.
2. PRIOR TO ANY LAND DISTURBANCE ACTIVITIES COMMENCING ON THE SITE, THE APPLICANT/CONTRACTOR SHALL BE RESPONSIBLE FOR PHYSICALLY MARKING THE LIMITS OF CONSTRUCTION.
3. PERIMETER SEDIMENTATION AND SILTATION CONTROL SYSTEMS SHALL BE INSTALLED PRIOR TO SOIL DISTURBANCE. THESE SYSTEMS TO BE INSPECTED AND MAINTAINED ON A PERIODIC BASIS TO CONTROL SOILS ON SITE.
4. AREAS OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST NOT BE DISTURBED UNLESS THE APPLICANT HAS OBTAINED PRIOR APPROVAL FROM THE TOWN OF GRAFTON.
5. TEMPORARY CONSTRUCTION BERMS SHALL BE CONSTRUCTED AT ALL ENTRANCES/EXIT POINTS OF THE SITE TO REDUCE THE AMOUNT OF SOILS CARRIED ONTO ROADWAYS AND OFF SITE.
6. DUST SHALL ALSO BE CONTROLLED AT THE SITE AT ALL TIMES.
7. MONITORING AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE COURSE OF SITE CONSTRUCTION SHALL BE REQUIRED ON A DAILY BASIS. SEDIMENT SHALL BE REMOVED ONCE THE VOLUME REACHES ¼ TO ½ THE HEIGHT OF THE EROSION CONTROL DEVICE.
8. SOIL STOCKPILES MUST BE STABILIZED OR COVERED AT THE END OF EACH WORKDAY. STOCKPILE SIDE SLOPES SHALL NOT BE GREATER THAN 2:1. ALL STOCKPILES SHALL BE SURROUNDED BY A SEDIMENT CONTROL DEVICE.
9. DISTURBED AREA REMAINING IDLE FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED.
10. PERMANENT SEEDING SHALL BE UNDERTAKEN IN THE SPRING FROM MARCH THRU MAY, AND IN LATE SUMMER AND EARLY FALL FROM AUGUST THRU OCTOBER 15. DURING PEAK SUMMER MONTHS AND IN THE FALL AFTER OCTOBER 15 WHEN SEEDING IS FOUND TO BE IMPRACTICAL, AN APPROPRIATE TEMPORARY MULCH AND/OR NON-ASPHALTIC SOIL TACKIFIER WITH WINTER RYE SHALL BE APPLIED. PERMANENT SEEDING MAY BE UNDERTAKEN IN THE SUMMER IF PLANS PROVIDE FOR ADEQUATE MULCHING AND WATERING.
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13. THE CONTRACTOR SHALL REGULARLY INSPECT THE PERIMETER OF THE PROPERTY TO CLEANUP AND REMOVE LOOSE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE. ALL DEMOLITION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE SITE TO A LEGAL DUMP SITE. ALL TRUCKS LEAVING THE SITE SHALL BE COVERED.
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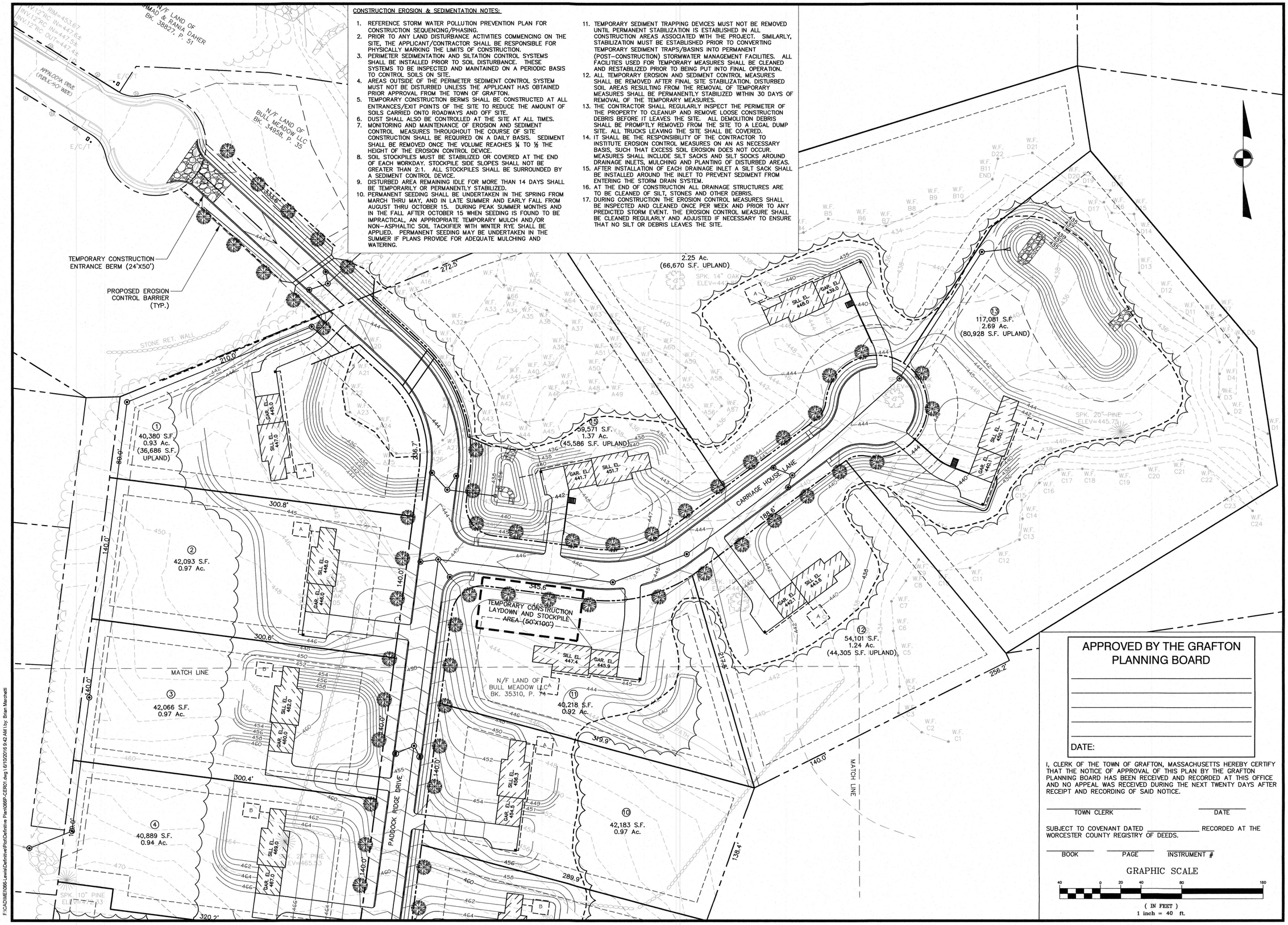
15. AFTER INSTALLATION OF EACH DRAINAGE INLET A SILT SACK SHALL BE INSTALLED AROUND THE INLET TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAIN SYSTEM.
16. AT THE END OF CONSTRUCTION ALL DRAINAGE STRUCTURES ARE TO BE CLEANED OF SILT, STONES AND OTHER DEBRIS.
17. DURING CONSTRUCTION THE EROSION CONTROL MEASURES SHALL BE INSPECTED AND CLEANED ONCE PER WEEK AND PRIOR TO ANY PREDICTED STORM EVENT. THE EROSION CONTROL MEASURE SHALL BE CLEANED REGULARLY AND ADJUSTED IF NECESSARY TO ENSURE THAT NO SILT OR DEBRIS LEAVES THE SITE.



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BOOK — PAGE — INSTRUMENT #

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PREPARED FOR:
BULL MEADOW, LLC.
2 RACHEL ROAD
BOYLSTON, MA 01505

No.	Date	Revision

COMMONWEALTH OF MASSACHUSETTS — BRIAN R. MARCHETTI — CIVIL — NO. 46279 — REGISTERED PROFESSIONAL ENGINEER

6/10/16

Drawn By:	Designed By:	Checked By:
BRM	BRM	BJKM

McCarty Engineering, Inc.
Civil Engineers
42 Jungle Road, Leominster, MA 01453
phone:(978) 534-1318 fax: (978) 840-6907
www.mccartydb.com

Project Name

Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title

Erosion Control Plan (1 of 2)

Job No: 066
File Name: 066P-CER01
Date: June 10, 2016
Scale: 1"=40'

Sheet No. 19 OF 24

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CONSTRUCTION EROSION & SEDIMENTATION NOTES:

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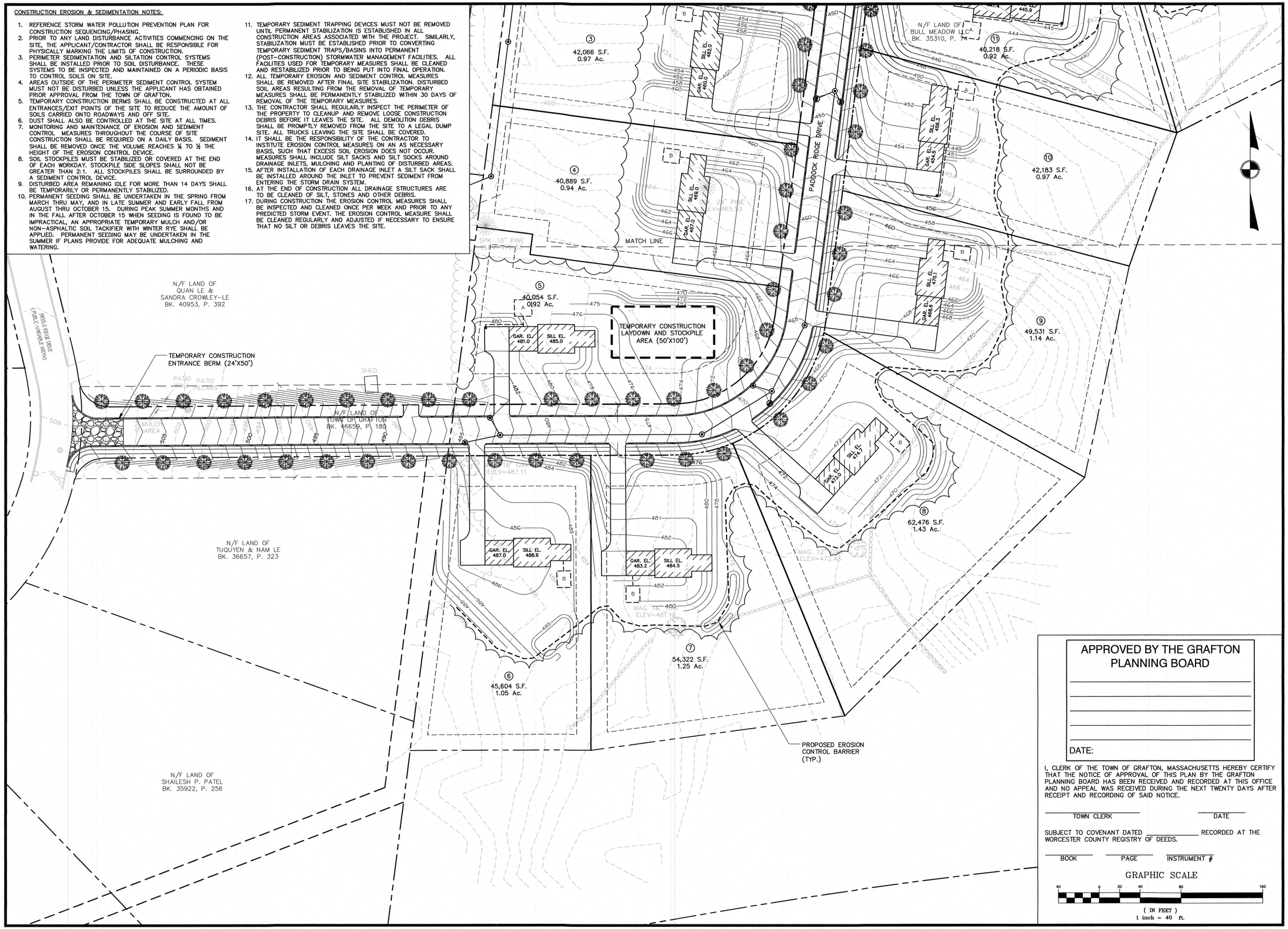

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PREPARED FOR:
BULL MEADOW, LLC.
2 RACHEL ROAD
BOYLSTON, MA 01505

No.	Date	Revision

COMMONWEALTH OF MASSACHUSETTS
BRIAN R. MARCHETTI
CIVIL
NO. 46279
Registered PROFESSIONAL ENGINEER

6/10/16

Drawn By:	Designed By:	Checked By:
BRM	BRM	BRM

APPROVED BY THE GRAFTON PLANNING BOARD

DATE:

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BOOK — PAGE — INSTRUMENT #

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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phone:(978) 534-1318 fax: (978) 840-6907
www.mccartydb.com

Project Name

Estates at Bull Meadow Definitive Plan N. Grafton, MA 01536

Sheet Title

Erosion Control Plan (2 of 2)

Job No: 066
File Name: 066P-CMA01
Date: June 10, 2016
Scale: 1"=40'

Sheet No. 20 OF 24

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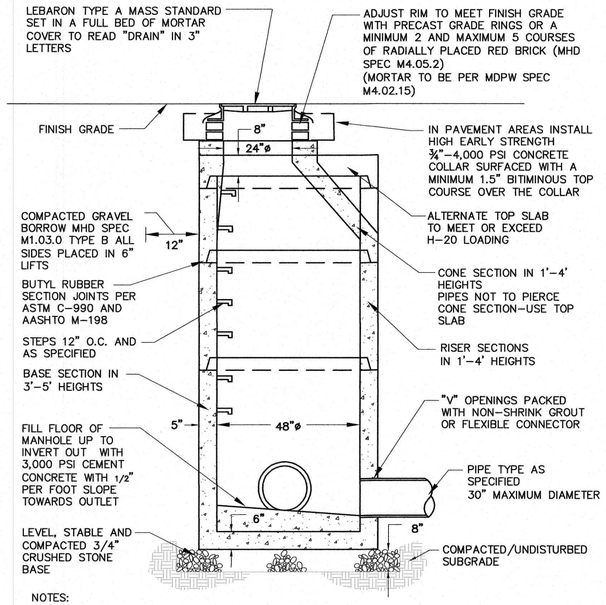
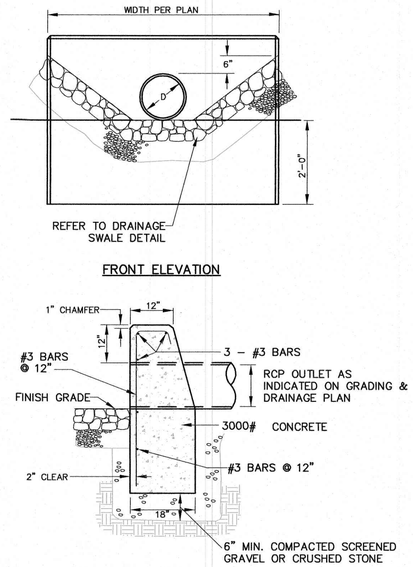


NOTES:

1. EXCAVATION TO ALLOW FOR FREE TRAVEL OF COMPACTION EQIPMENT
2. ALL COMPACTION TO A MINIMUM 95 PERCENT DRY DENSITY DETERMINED BY ASTM D1557
3. ALL PRECAST TO MEET OR EXCEED ASTM C-478 AND ASSHTO M 199 SPECIFICATIONS
4. REINFORCED STEEL TO MEET OR EXCEED ASTM A185 AND H-20 LOADING REQUIREMENTS
5. ALL PRECAST CONCRETE TO BE 4,000 PSI MIMIMUM AND MEET ASTM C-478 (6.1)
6. IF NO STEPS ARE SPECIFIED THAN AS THE LOCAL MUNICIPALITY REQUIRES OR IF NO MUNICIPLAITY REQUIREMENTS THEN COPOLYMER POLYPROPYLENE COATED REINFORCED PER ASTM C-478 AND OSHA (STD 1-1.9)
7. CONTRACTOR TO CONFIRM WITH CITY OR TOWN DPW THAT BRICK INVERTS ARE NOT A REQUIREMENT
8. FILL ALL INTERNAL AND EXTERNAL HOLES WITH NON-SHRINK GROUT

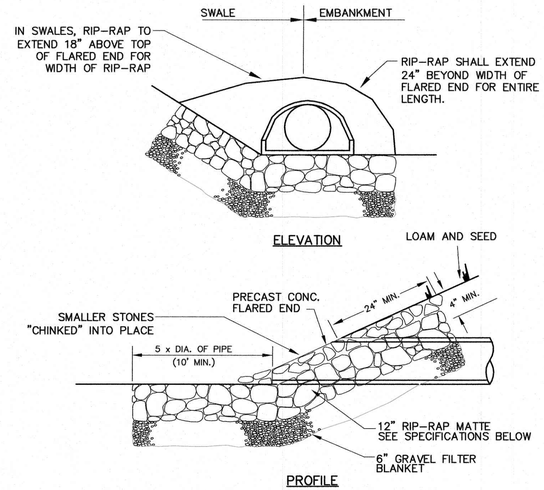
PRECAST CONCRETE DRAIN MANHOLE DETAIL

N.T.S.



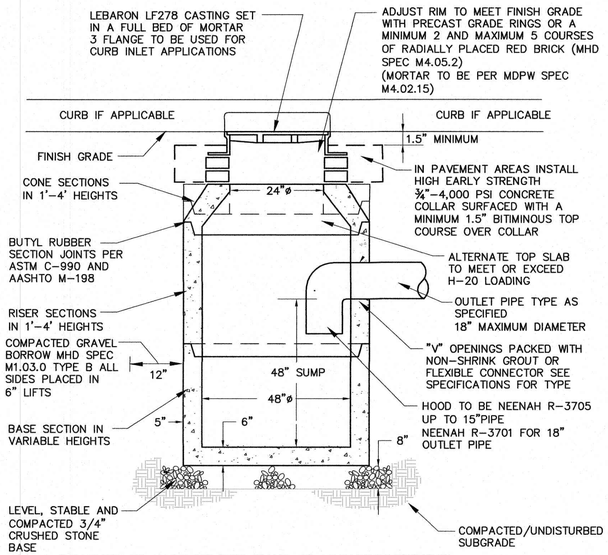
HEADWALL DETAIL

N.T.S.



FLARED END W/RIP-RAP DETAIL

N.T.S.



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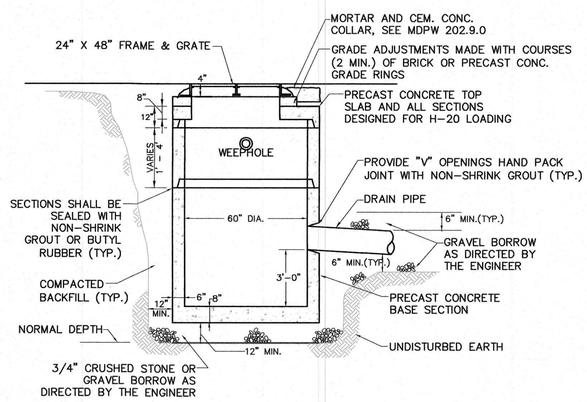
4. REINFORCED STEEL TO MEET OR EXCEED ASTM A185 AND H-20 LOADING REQUIREMENTS
5. ALL PRECAST CONCRETE TO BE 4,000 PSI MIMIMUM AND MEET ASTM C-478 (6.1)
6. ALL INTERIOR HOLES TO BE SEALED WITH NON-SHRINK GROUT
7. MIN. STRUCTURE DEPTH SHALL BE 7.5 FT.

PRECAST CONCRETE CATCH BASIN DETAIL

N.T.S.



NOTES:

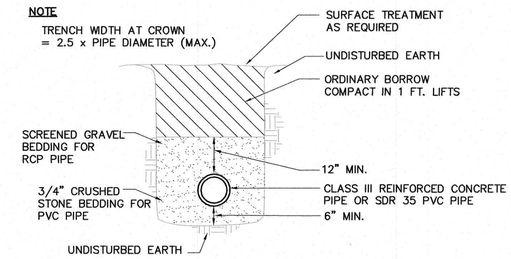
1. CATCH BASIN SHALL BE PRECAST CEMENT CONCRETE MANUFACTURED IN ACCORDANCE WITH ASTM C-478 DESIGNED FOR H-20 LOADING.
2. DRAIN PIPE FOR LATERAL CONNECTIONS SHALL BE INSTALLED AND TEMPORARILY PLUGGED AS REQUIRED OR DIRECTED.
3. SEE GENERAL PLANS FOR PIPE SIZE, LINE AND GRADE.
4. BACKFILL MATERIAL SHALL CONSIST OF SUITABLE EXCAVATED MATERIAL AND/OR GRAVEL BORROW AS DIRECTED BY THE ENGINEER.
5. INSTALL FRAME & GRATE WITH 24" SIDE ALONG CURB INLET.

PRECAST CONCRETE DOUBLE CATCH BASIN DETAIL

N.T.S.

NOTE

TRENCH WIDTH AT CROWN = 2.5 x PIPE DIAMETER (MAX.)



DRAIN PIPE TRENCH DETAIL

N.T.S.

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2 RACHEL ROAD
BOYLSTON, MA 01505

No.	Date	Revision

COMMONWEALTH OF MASSACHUSETTS — BRIAN R. MARCHETTI — CIVIL — NO. 46279 — REGISTERED PROFESSIONAL ENGINEER

6/10/16

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Project Name

Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title

Construction Details
(1 of 4)

Job No: 066
File Name: 066P-CDT01
Date: June 10, 2016
Scale: AS SHOWN

Sheet No. 21 OF 24

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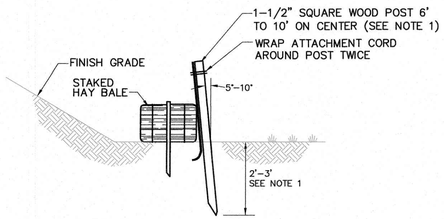
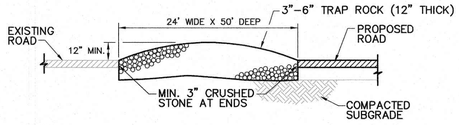
NOTES:
1. DEPTH MAY VARY WITH TRIBUTARY AREA: 2 FT. FOR 100 SF/LF FENCE; 3 FT. FOR 500 SF/LF FENCE, UNLESS POST IS TO BE SET IN PEAT THEN 3 FT. OR DEPTH POSSIBLE BY PUSHING BY HAND SHALL BE REQUIRED.
2. STRAW WATTLES MAY BE USED A SUBSTITUTE TO STAKED HAYBALES WITH PRIOR APPROVAL OF THE LOCAL CONSERVATION COMMISSION.

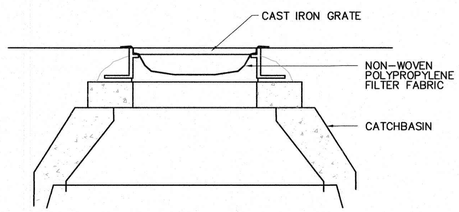


HAY BALE / SILT FENCE DETAIL
N.T.S.

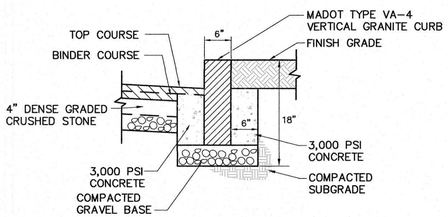


NOTES:
1. THE PURPOSE OF THIS TEMPORARY BERM IS TO REMOVE MUD FROM THE TIRES OF VEHICLES LEAVING THE SITE DURING CONSTRUCTION.
2. PROVIDE LEVEL AREA OF CRUSHED STONE 50 FEET IN FROM EDGE OF EXISTING ROAD.

TEMPORARY ENTRANCE BERM
N.T.S..

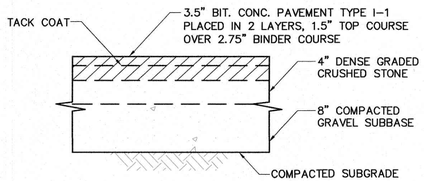


TEMPORARY CATCHBASIN FILTER
N.T.S.

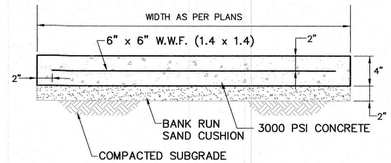


NOTE:
LEAVE VOID TO ALLOW CONCRETE TO FLOW UNDER AND AROUND CURB

VERTICAL GRANITE CURB DETAIL
N.T.S.

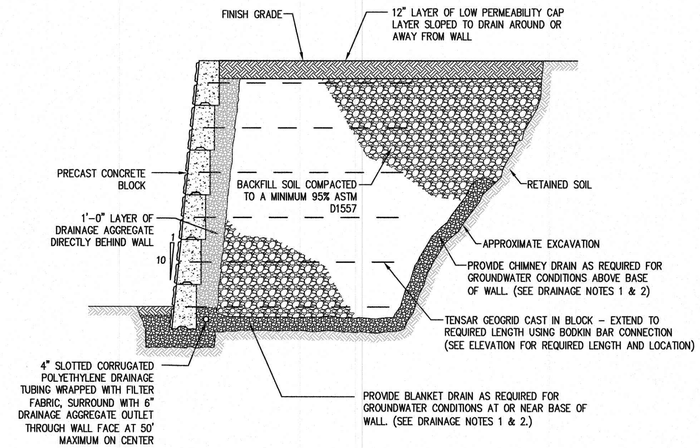


BITUMINOUS CONCRETE PAVEMENT DETAIL
N.T.S.

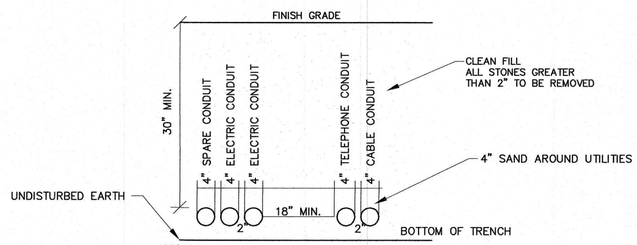


NOTE:
CONSTRUCTION JOINTS ARE TO BE AT 6' INTERVALS

CONCRETE SIDEWALK DETAIL
N.T.S.

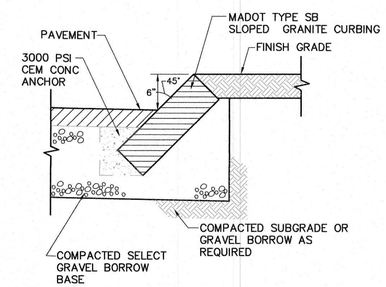


PRECAST CONCRETE RETAINING WALL DETAIL
N.T.S.

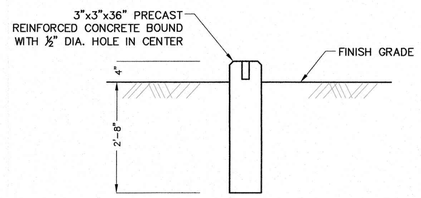


NOTE:
ELECTRIC CONDUITS SHALL BE CONCRETE ENCASED IF REQUIRED BY ELECTRICAL PROVIDER.

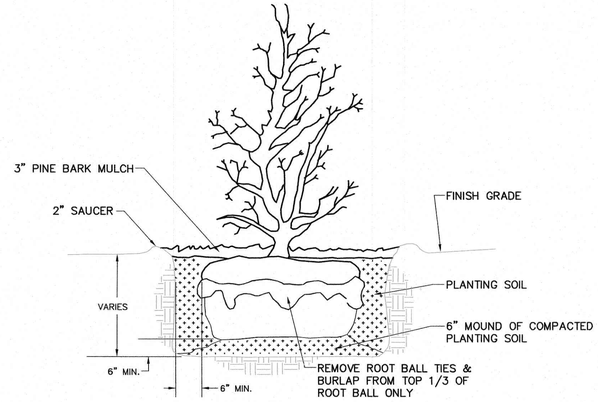
TYPICAL ELECTRIC UTILITY TRENCH DETAIL
N.T.S.



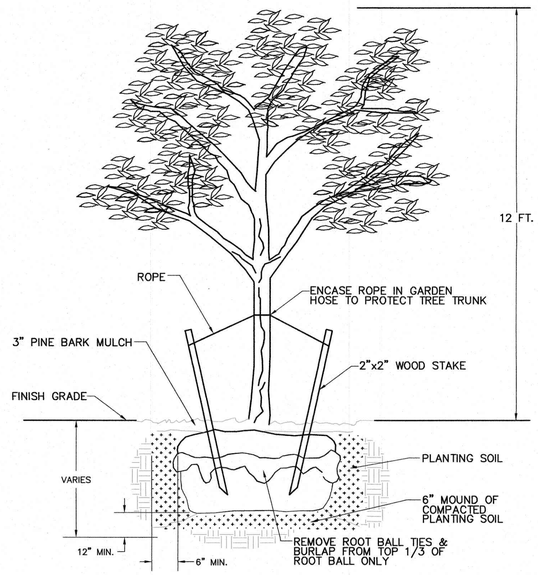
SLOPED GRANITE CURB DETAIL
N.T.S.



CONCRETE BOUND DETAIL
N.T.S.



TYPICAL SHRUB PLANTING DETAIL
N.T.S.



TYPICAL TREE PLANTING DETAIL
N.T.S.

APPROVED BY THE GRAFTON PLANNING BOARD

DATE:

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TOWN CLERK DATE

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BOOK PAGE INSTRUMENT #

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PREPARED FOR:
BULL MEADOW, LLC.
2 RACHEL ROAD
BOYLSTON, MA 01505

No.	Date	Revision

COMMONWEALTH OF MASSACHUSETTS
BRIAN R. MARCHETTI
CIVIL
NO. 46279
REGISTERED PROFESSIONAL ENGINEER
6/10/16

Drawn By:	Designed By:	Checked By:
BRM	BRM	BRM

McCarty Engineering, Inc.
Civil Engineers
42 Jungle Road, Leominster, MA 01453
phone:(978) 534-1318 fax: (978) 840-6907
www.mccartydb.com

Project Name
Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title
Construction Details
(2 of 4)

Job No: 066
File Name: 066P-CDT02
Date: June 10, 2016
Scale: AS SHOWN

Sheet No.
22
OF 24

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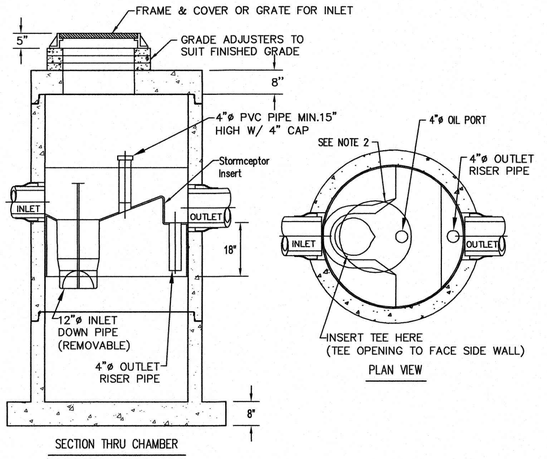


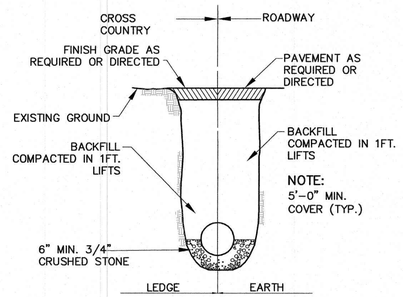
SECTION THRU CHAMBER

NOTES:

1. THE USE OF FLEXIBLE CONNECTION IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
2. THE COVER SHOULD BE POSITIONED OVER THE INLET DROP PIPE AND THE OIL PORT.
3. THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: #4985148, #5498331, #5725760, #5753115, #5849181, #6068765, #6371690.
4. CONTACT A CONCRETE PIPE DIVISION REPRESENTATIVE FOR FURTHER DETAILS NOT LISTED ON THIS DRAWING.

STC 450 WATER QUALITY UNIT

N.T.S.

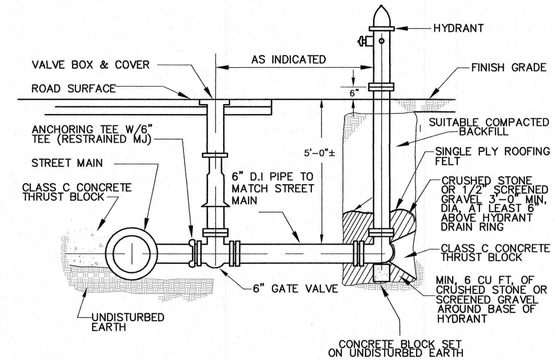


NOTE:

BACKFILL MATERIAL SHALL CONSIST OF EXCAVATED MATERIAL AND/OR GRAVEL BORROW AS DIRECTED BY THE ENGINEER.

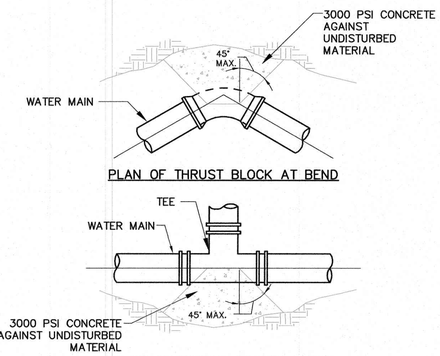
TYPICAL WATER MAIN TRENCH DETAIL

N.T.S.



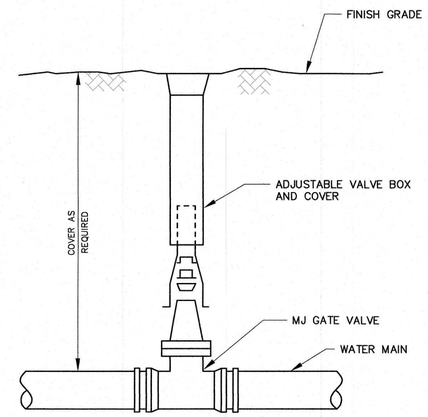
HYDRANT CONNECTION DETAIL

N.T.S.



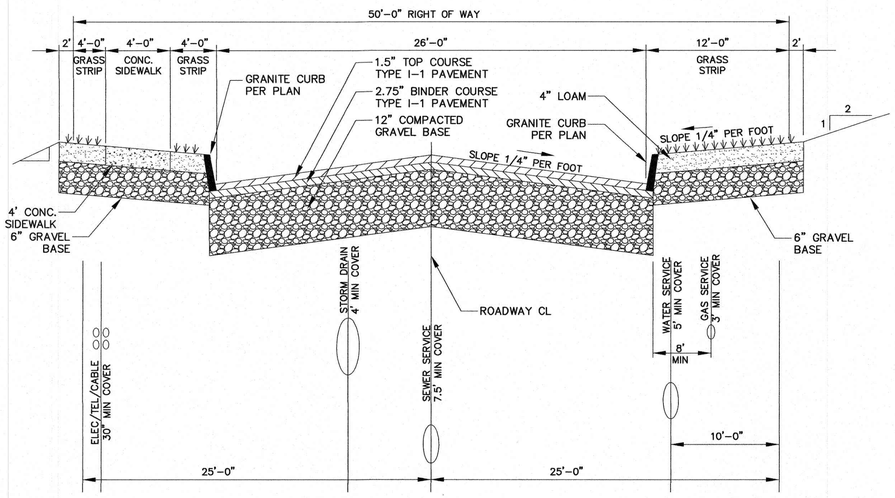
WATER MAIN THRUST BLOCK DETAIL

N.T.S.



BURIED GATE VALVE DETAIL

N.T.S.

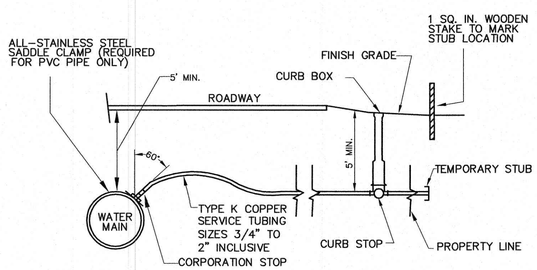


NOTES:

1. GAS SERVICE IS NOT INCORPORATED INTO THE DESIGN OF THIS SUBDIVISION.
2. SEWER SERVICE IS NOT INCORPORATED INTO THE DESIGN OF THIS SUBDIVISION. THE PROPOSED LOTS WILL BE SERVICED BY INDIVIDUAL SEPTIC SYSTEMS.

MINOR STREET B STANDARD CROSS-SECTION

N.T.S.



NOTE:

TUBING, CORPORATION COCK & CURB STOP SHALL BE AS REQUIRED.

WATER SERVICE DETAIL

N.T.S.

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2 RACHEL ROAD
BOYLSTON, MA 01505

No.	Date	Revision

COMMONWEALTH OF MASSACHUSETTS — BRIAN R. MARCHETTI — CIVIL — NO. 46279 — REGISTERED PROFESSIONAL ENGINEER

6/10/16

Drawn By:	Designed By:	Checked By:
BRM	BRM	BRM

McCarty Engineering, Inc.
Civil Engineers
42 Jungle Road, Leominster, MA 01453
phone:(978) 534-1318 fax: (978) 840-6907
www.mccartydb.com

Project Name

Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title

Construction Details
(3 of 4)

Job No: 066
File Name: 066P-CDT03
Date: June 10, 2016
Scale: AS SHOWN

Sheet No. 23 OF 24

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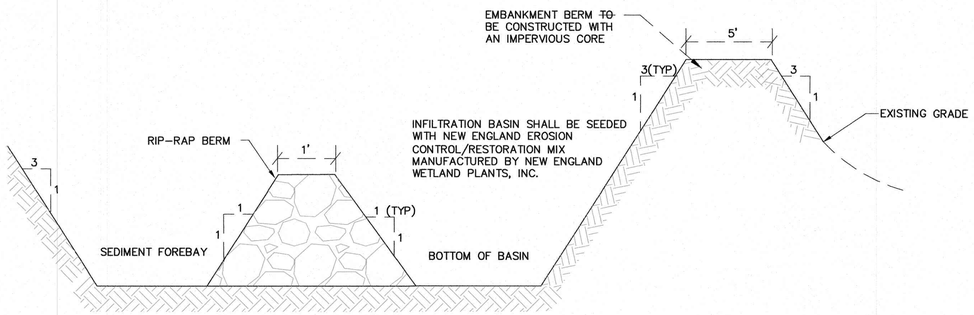
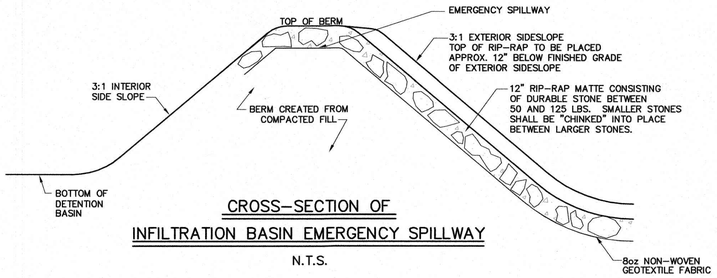


NOTE:
1. SEAL AROUND OUTLET PIPE WITH IMPERVIOUS BARRIER
2. A 6" PERFORATED UNDERDRAIN SHALL BE INSTALLED IN EACH INFILTRATION BASIN WITH A 6" VALVE THAT SHALL BE EASILY ACCESSIBLE AND SHALL REMAIN CLOSED DURING NORMAL OPERATION. THE UNDERDRAIN SHALL OUTLET IN THE RIP RAP MAT AS SHOWN ON THE GRADING AND DRAINAGE PLANS.

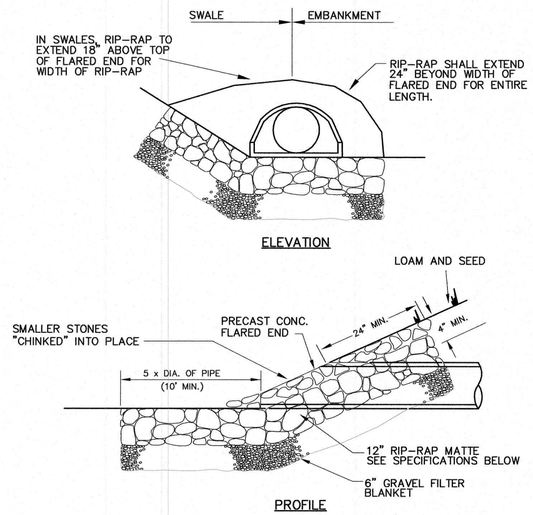
CROSS-SECTION OF TYPICAL INFILTRATION BASIN DETAIL

N.T.S.



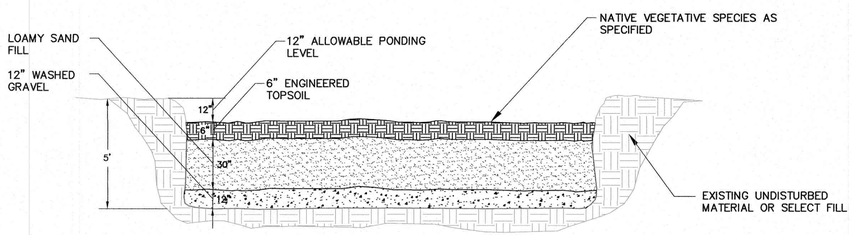
CROSS-SECTION OF INFILTRATION BASIN EMERGENCY SPILLWAY

N.T.S.



FLARED END W/RIP-RAP DETAIL

N.T.S.



NOTES:
1. ENGINEERED TOPSOIL SHALL BE COMPOSED OF 50% SAND, 30% LOAM AND 20% COMPOST.

2. VEGETATION WITHIN RAIN GARDENS AND BIORETENTION BASINS MUST BE ABLE TO TOLERATE EXPECTED POLLUTANT LOADINGS, HIGHLY VARIABLE MOISTURE CONDITIONS AND PONDING WATER FLUCTUATIONS.

THE FOLLOWING SPECIES ARE RECOMMENDED FOR USE IN RAINGARDENS. MIXTURE OF PLANTINGS SHOULD BE CHOSEN TO MIMIC APPEARANCE OF ADJACENT WETLAND AREAS. THE NUMBER OF PLANTS REQUIRED VARIES WITH THE SIZE OF THE RAIN GARDEN BEING PROPOSED. ONCE THE GRADING OF THE RAINGARDEN IS COMPLETE AND THE FILL IS PLACED WITHIN IT, A LANDSCAPE ARCHITECT SHALL MAKE A SITE INSPECTION TO ADVISE THE CONTRACTOR ON THE NUMBER, SIZE, AND PLACEMENT OF THE PLANTINGS.

TREES:

ACER RUBRUM	RED MAPLE
BETULA NIGRA	RIVER BIRCH
LARIX LARCINA	EASTERN LARCH
LIQUIDAMBAR STYRACIFLUA	SWEETGUM
NYSSA SYLVATICA	BLACK GUM
SAMBUCUS CANADENSIS	AMERICAN ELDERBERRY

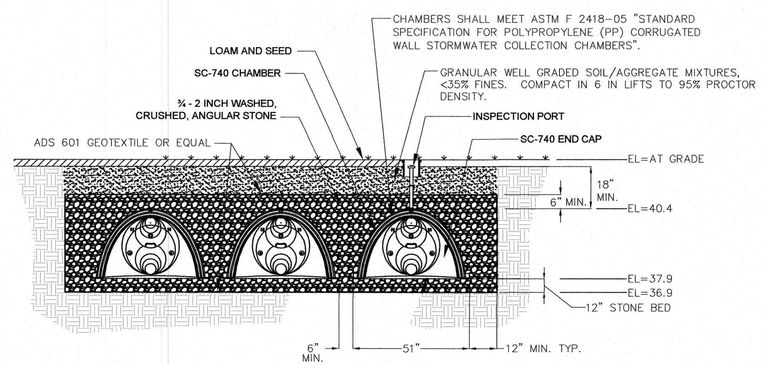
SHRUBS/GROUNDCOVER:

AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY
ARONIA ARBUTIFOLA	RED CHOKEBERRY
CORNUS SERICEA	RED TWIG DOGWOOD
HAMAMELIS VIRGINIANA	WITCH HAZEL
LLEX GLABRA	INKBERRY
LLEX VERTICULLATA	WINTERBERRY
KALMIA LATIFOLIA	MOUNTAIN LAUREL
VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY
VIBURNUM DENTATUM	ARROWWOOD

HERBACEOUS:

NEW ENGLAND WETLAND PLANTS –	WETLAND SEED MIX
ACORUS CALAMUS	SWEET FLAG
CAREX PENDULA	DROOPING SEDGE
EUPATORIUM MACULATUM	JOE PYE WEED
IRIS SIBERICA	SIBERIAN IRIS
IRIS VERSICOLOR	BLUE FLAG IRIS
LOBELIA CARDINALIS	CARDNIAL FLOWER
OSMUNDA REGALIS	ROYAL FERN
OSMUNDA CINNAMOMEA	CINNAMON FERN

RAINGARDEN DETAIL



NOTES:
TYPE A = 8 CHAMBERS
TYPE B = 6 CHAMBERS

SC-740 DRY WELL

N.T.S.

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N. Grafton, MA 01536

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Construction Details
(4 of 4)

Job No: 066
File Name: 066P-CDT04
Date: June 10, 2016
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Sheet No.
24
OF 24

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