

PROPOSED SITE PLAN DOCUMENTS

FOR

MAPLE STREET SOLAR, LLC

PROPOSED
SOLAR FARM - SOUTH

LOCATION OF SITE:
160 MAPLE STREET, TOWN OF BELLINGHAM & FRANKLIN
NORFOLK COUNTY, MASSACHUSETTS
LOTS INCLUDED (PARCEL #): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION
OF D 239-010, & 32-0009 (BELLINGHAM)

REFERENCES

EXISTING CONDITIONS SURVEY:
FELDMAN GEOSPATIAL
152 HAMPDEN STREET, BOSTON, MA 01608
DATE: 05/09/2022

ANR SURVEY:
FELDMAN GEOSPATIAL
152 HAMPDEN STREET, BOSTON, MA 01608
DATE: 08/05/2022

* THE ABOVE REFERENCED DOCUMENTS ARE INCORPORATED BY REFERENCE AS PART OF THESE PLANS. HOWEVER, BOHLER ENGINEERING DOES NOT CERTIFY THE ACCURACY OF THE WORK REFERENCED OR DERIVED FROM THESE DOCUMENTS, BY OTHERS.



REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL GD
2	02/16/2024	PER TOWN COMMENTS	SMK GD



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PROJECT No.: W201257
DRAWN BY: CMC / OCR
CHECKED BY: GD
DATE: 07/20/2023
CAD I.D.: W201257.02-SFPD-2A

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BOHLER

352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

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SHEET TITLE:

COVER SHEET

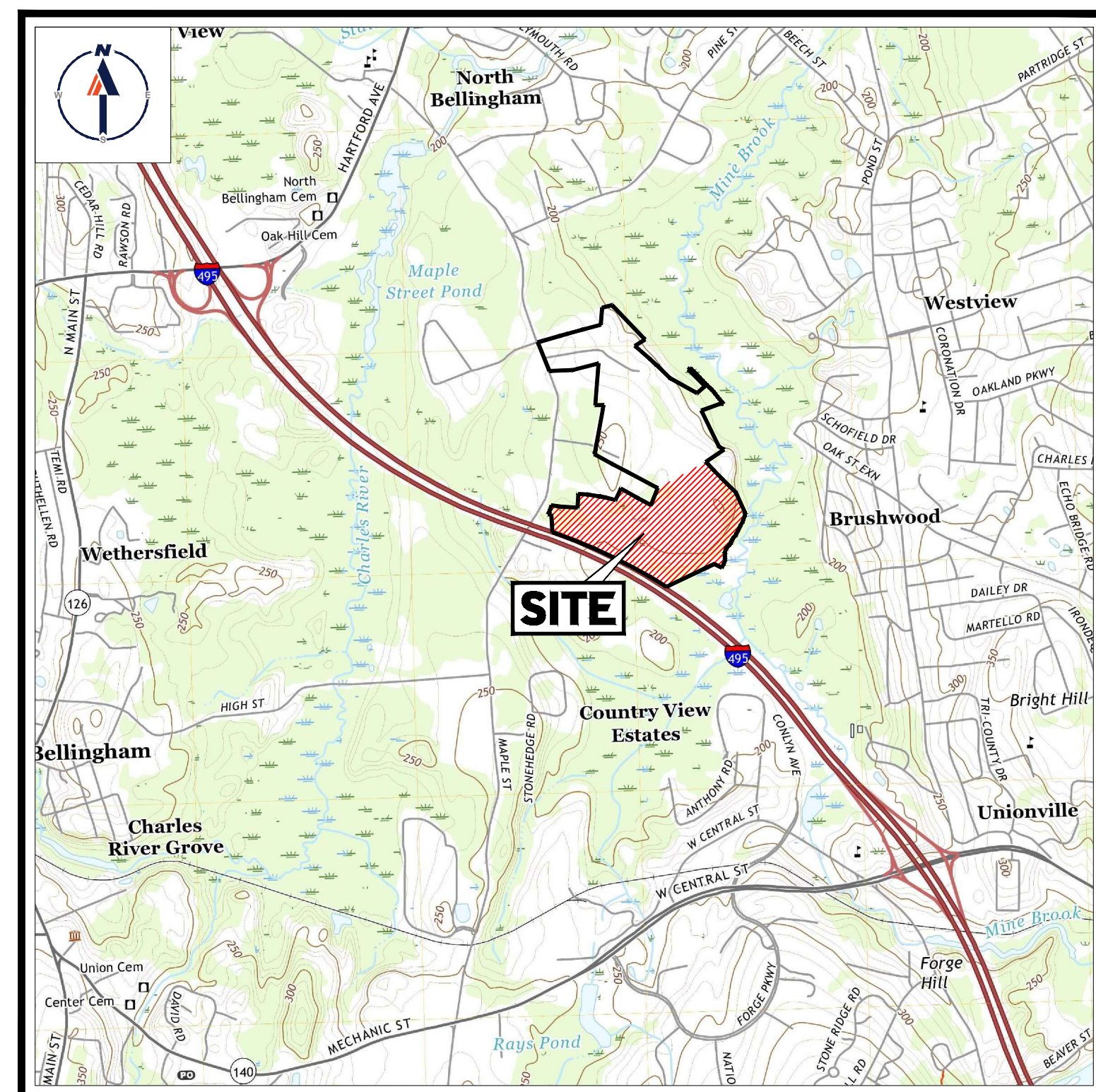
SHEET NUMBER:

C-101

REVISION 2 - 02/16/2024

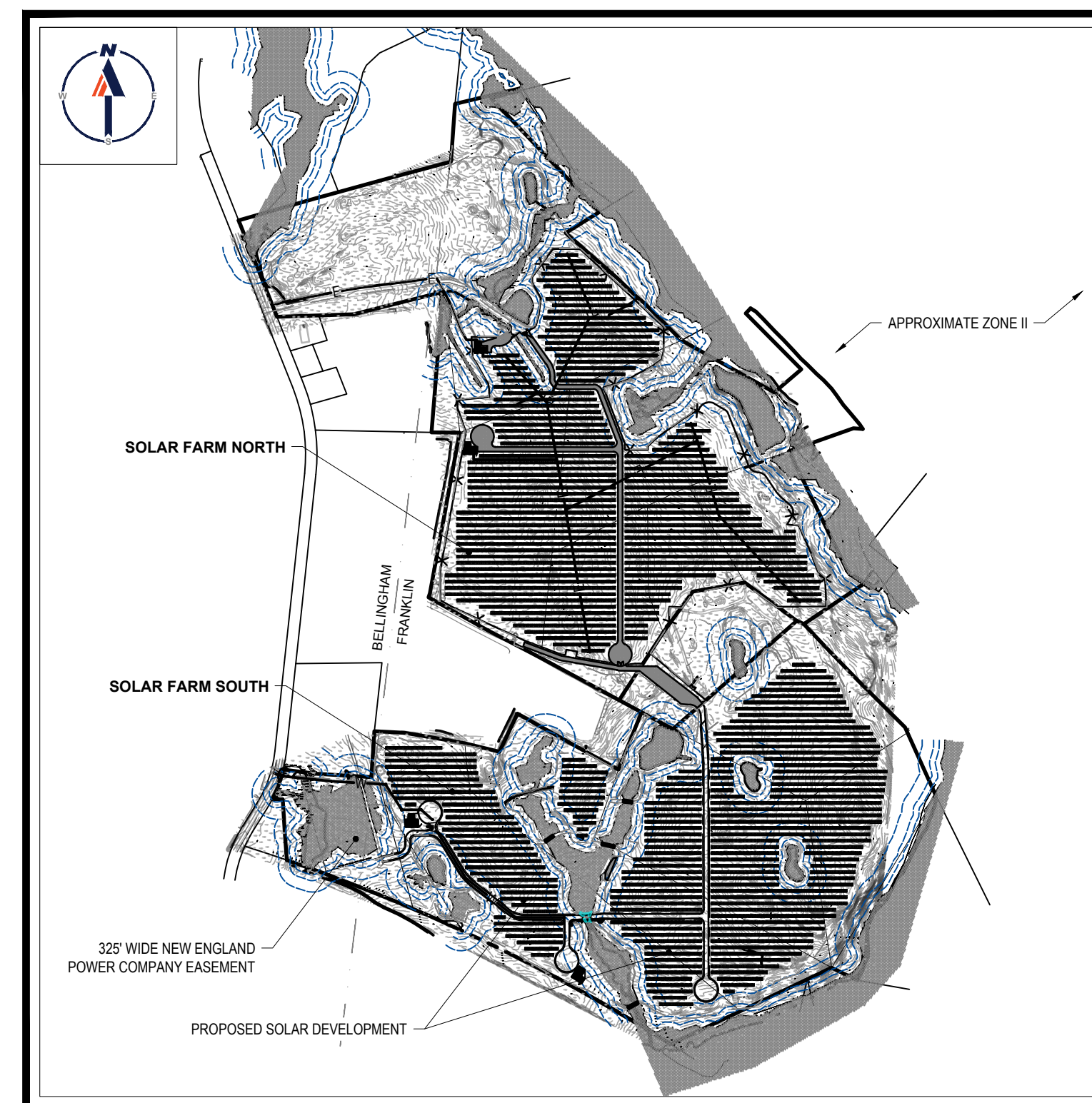
DRAWING SHEET INDEX

SHEET TITLE	SHEET NUMBER
COVER SHEET	C-101
GENERAL NOTES SHEET	C-102
OVERALL DEMOLITION PLAN	C-201
DEMOLITION PLAN (A-F)	C-202 - C-207
OVERALL SITE LAYOUT PLAN	C-301
SITE LAYOUT PLAN (A - F)	C-302 - C-307
OVERALL GRADING PLAN	C-401
GRADING PLAN (A - F)	C-402 - C-407
OVERALL EROSION & SEDIMENT CONTROL PLAN	C-601
EROSION & SEDIMENT CONTROL PLAN (A - F)	C-602 - C-607
EROSION & SEDIMENT CONTROL NOTES & DETAILS	C-608 - C-609
DETAIL SHEETS	C-901 - C-906
FIRE TRUCK CIRCULATION PLAN	1 OF 1
EXISTING CONDITIONS PLAN (BY FELDMAN GEOSPATIAL)	8 SHEETS



USGS MAP

SCALE: 1" = 2,000'
SOURCE: FRANKLIN MASSACHUSETTS USGS QUADRANGLE



SITE MAP

SCALE: 1" = 600'
SOURCE: GOOGLE AERIAL

PREPARED BY

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I:\BOHLER\NET\SHARES\BMA\PROJECTS\W201257.02\CD\DRAWINGS\PLAN\BET\CIVIL SITE PLAN\W201257.02-SFPD-2A-LAYOUT1.C-101-COVER



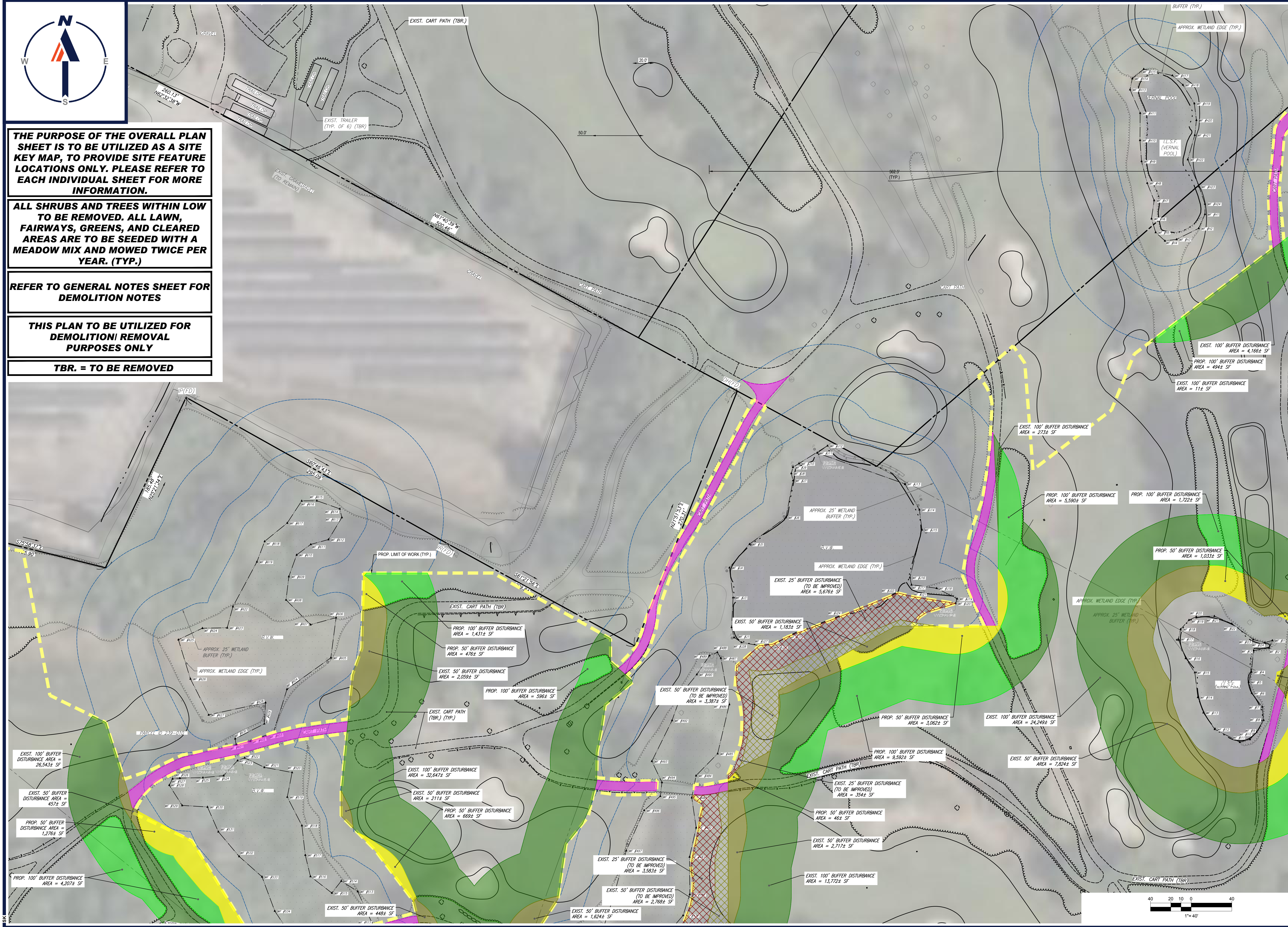
THE PURPOSE OF THE OVERALL PLAN SHEET IS TO BE UTILIZED AS A SITE KEY MAP, TO PROVIDE SITE FEATURE LOCATIONS ONLY. PLEASE REFER TO EACH INDIVIDUAL SHEET FOR MORE INFORMATION.

ALL SHRUBS AND TREES WITHIN LOW TO BE REMOVED. ALL LAWN, FAIRWAYS, GREENS, AND CLEARED AREAS ARE TO BE SEEDED WITH A MEADOW MIX AND MOWED TWICE PER YEAR. (TYP.)

REFER TO GENERAL NOTES SHEET FOR DEMOLITION NOTES

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TBR. = TO BE REMOVED



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PROJECT:

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FOR
MAPLE STREET SOLAR LLC

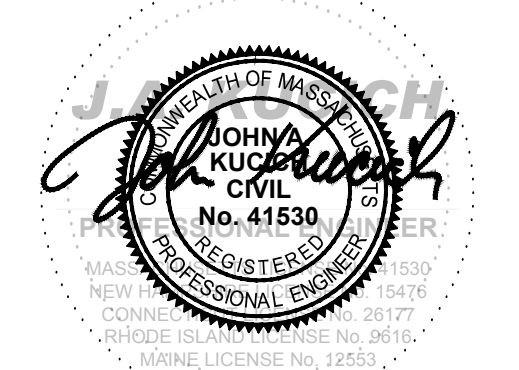
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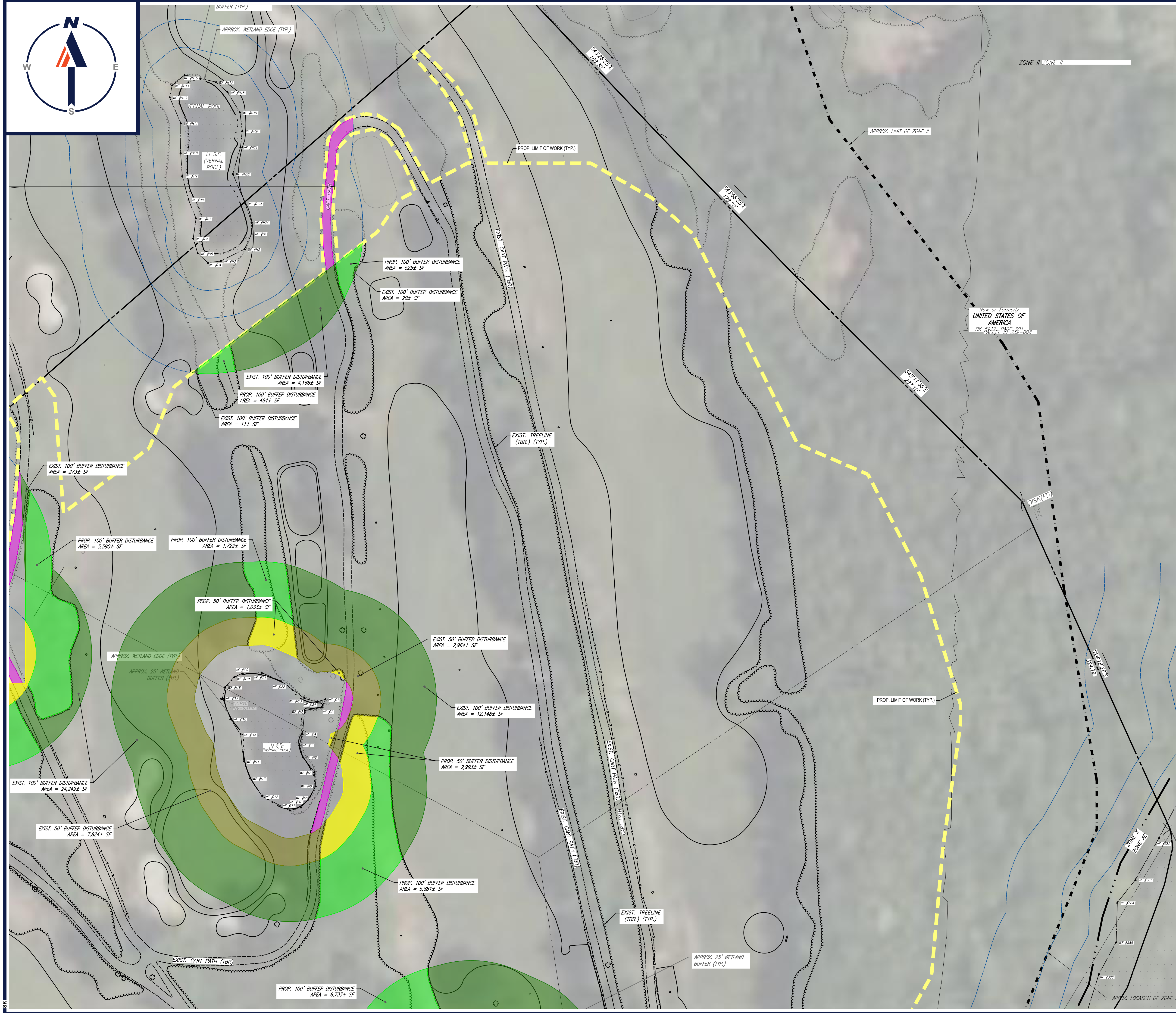
SHEET TITLE:

DEMOLITION PLAN B

SHEET NUMBER:
C-203

REVISION 2 - 02/16/2024

\BOHLER\NET\SHARED\BMAP\PROJECTS\W201257\22\22\CADD\DRAWINGS\PLAN SETS\CIVIL SITE PLAN\W201257.02-DEMO-2A-LAYOUT.C-203-DEMO.B



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MAPLE STREET SOLAR LLC

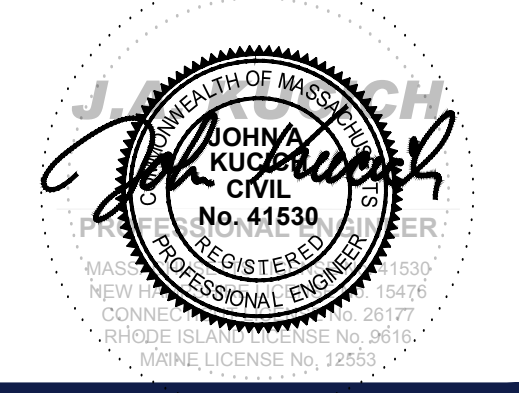
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SHEET TITLE:

DEMOLITION PLAN C

SHEET NUMBER:
C-204

REVISION 2 - 02/16/2024

TOTAL BUFFER DISTURBANCE CHART

AREA	HATCH	DESCRIPTION
593 ± sf	[Red Hatch]	25' Proposed Buffer Disturbance
8,601 ± sf	[Dark Red Hatch]	25' Existing Buffer Disturbance
20,594 ± sf	[Yellow Hatch]	50' Proposed Buffer Disturbance
51,416 ± sf	[Olive Hatch]	50' Existing Buffer Disturbance
47,641 ± sf	[Light Green Hatch]	100' Proposed Buffer Disturbance
248,513 ± sf	[Dark Green Hatch]	100' Existing Buffer Disturbance
854 ± sf	[Cyan Hatch]	Proposed Wetland Disturbance
16,774 ± sf	[Pink Hatch]	Existing Cart Path to be Removed and Restored
48,098 ± sf	[Cross-hatch]	25' Existing Buffer Disturbance (To Be Improved)
34,268 ± sf	[Diagonal-hatch]	50' Existing Buffer Disturbance (To Be Improved)
11,290 ± sf	[Grid-hatch]	100' Existing Buffer Disturbance (To Be Improved)
306,098 ± sf	N/A	Total Existing Disturbance
68,707 ± sf	N/A	Total Proposed Disturbance

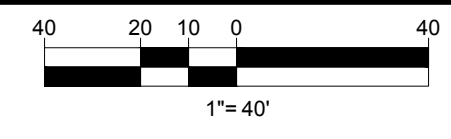
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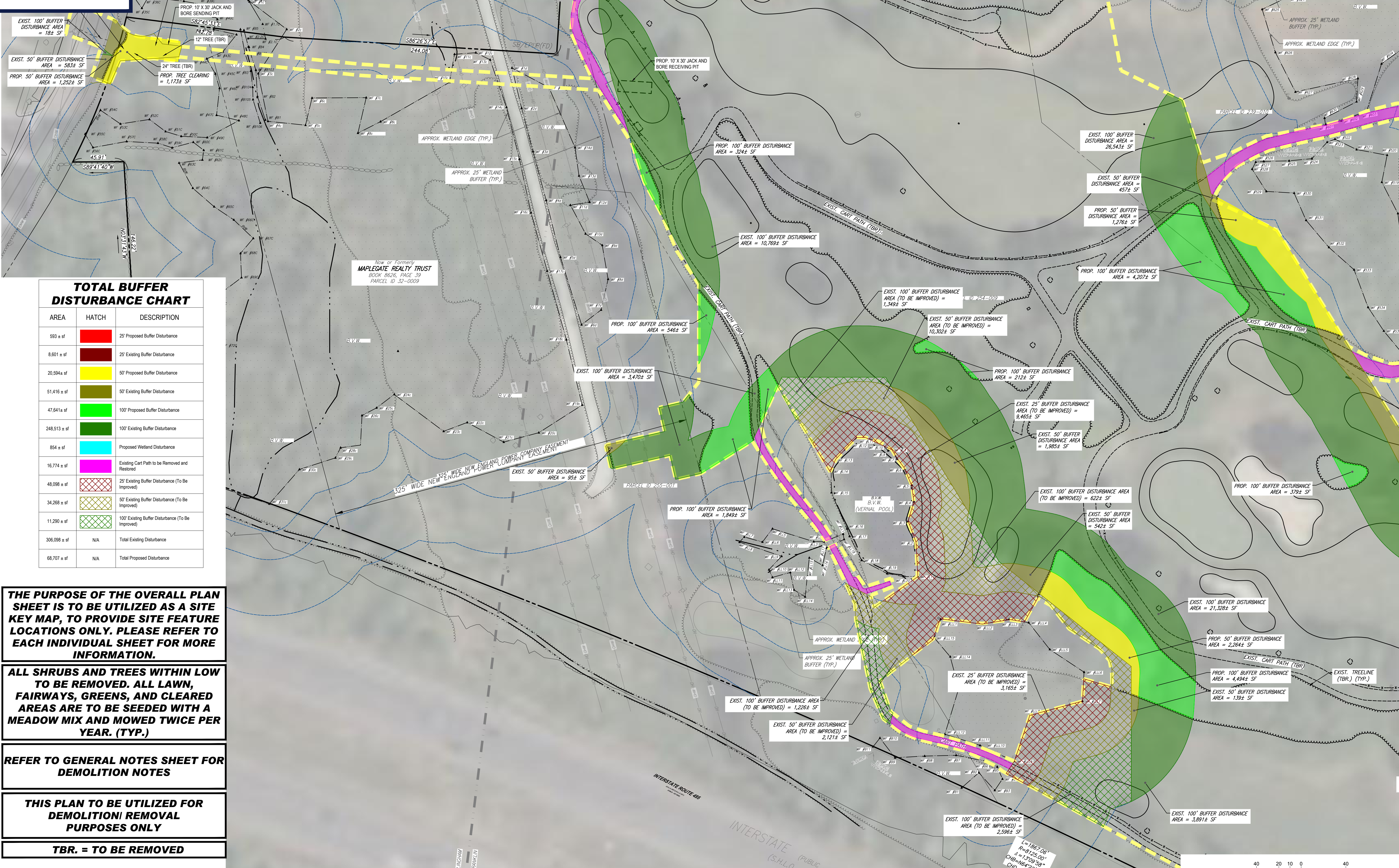
REFER TO GENERAL NOTES SHEET FOR DEMOLITION NOTES

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TBR. = TO BE REMOVED



I:\BOHLER\NET\SHARES\BMAP\PROJECTS\W201257\257\257\257\CADD\DRAWINGS\PLAN\BETS\CIVIL SITE PLAN\W201257_02-DEMO-2A-LAYOUT.C-204-DEMO.C



EXIST. 100' BUFFER DISTURBANCE AREA = 184 ± SF
 EXIST. 50' BUFFER DISTURBANCE AREA = 583 ± SF
 PROP. 50' BUFFER DISTURBANCE AREA = 1,252 ± SF

PROP. 10' X 30' JACK AND BORE RECEIVING PIT
 12' TREE (TBR.)
 PROP. TREE CLEARING = 1,173 ± SF

Map of Formerly MAPLEGATE REALTY TRUST BOOK 8626, PAGE 39 PARCEL ID 32-0009

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2	02/16/2024	PER TOWN COMMENTS	SMK	GD

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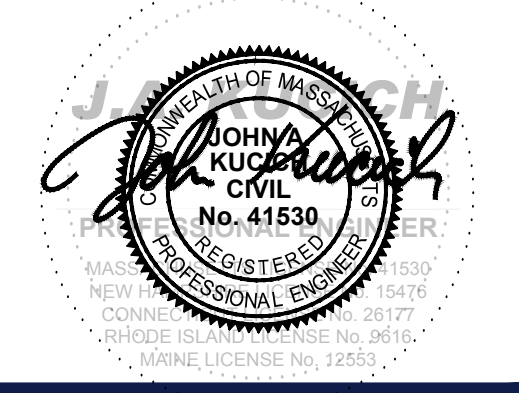
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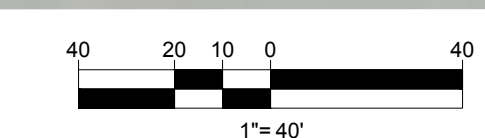
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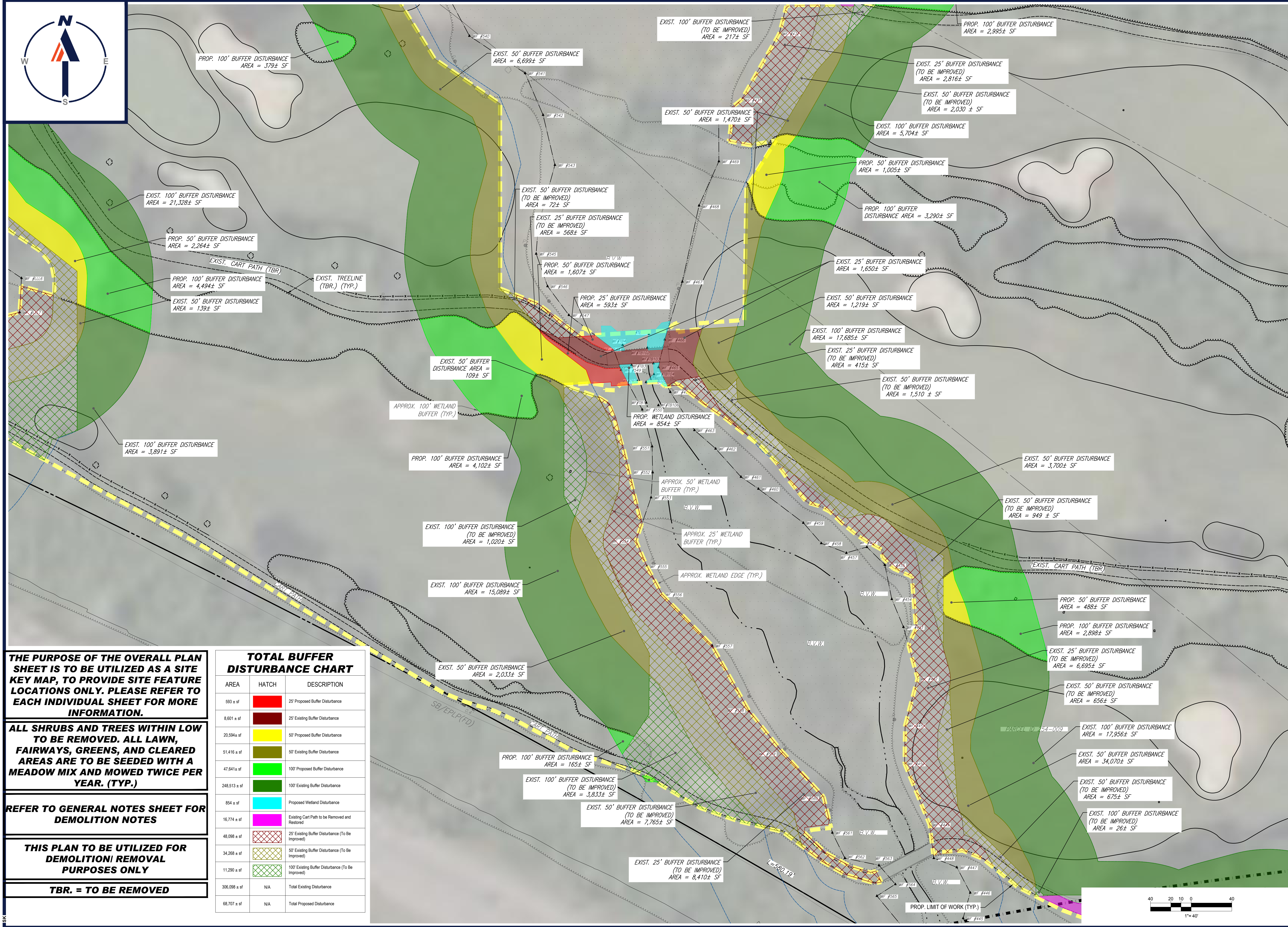
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SHEET TITLE:
DEMOLITION PLAN D
 SHEET NUMBER:
C-205
 REVISION 2 - 02/16/2024



BOHLER ENGINEERING\BMA\PROJECTS\2023\257\257-02-DEMOS\2A-LAYOUT-C-205-DEMO.DWG
 1/1/2024 10:00:00 AM
 JDL



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8,601 ± sf	[Dark Red Hatch]	25' Existing Buffer Disturbance
20,594 ± sf	[Yellow Hatch]	50' Proposed Buffer Disturbance
51,416 ± sf	[Olive Hatch]	50' Existing Buffer Disturbance
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PROJECT:

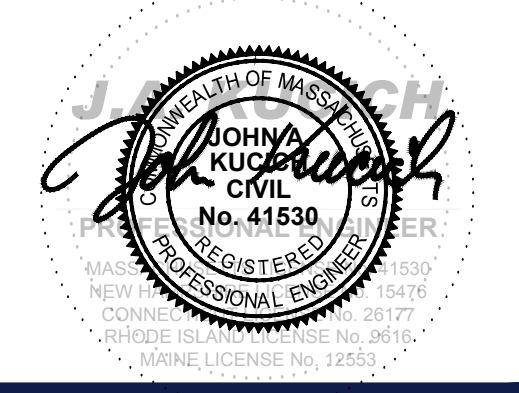
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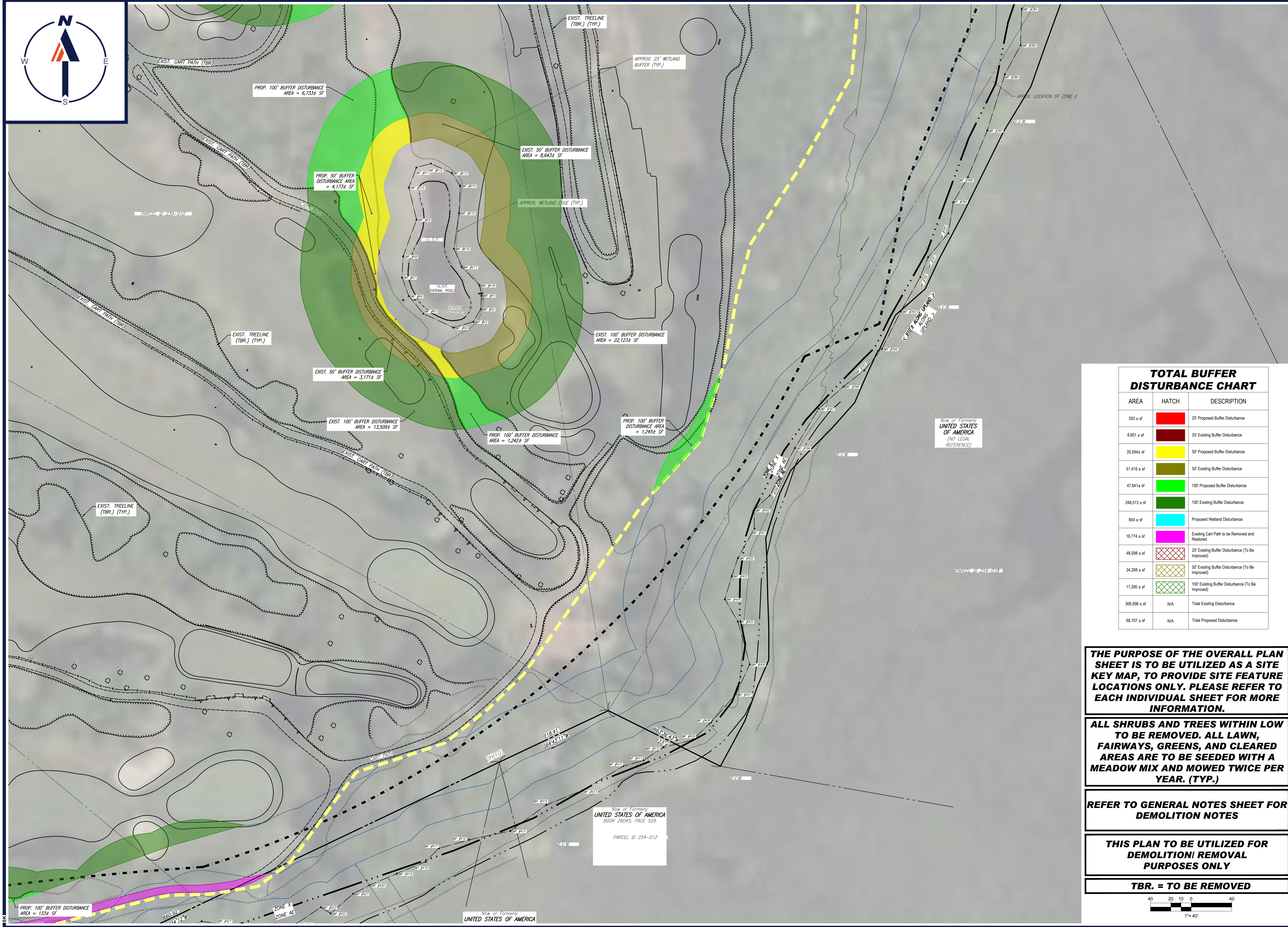
SHEET TITLE:

DEMOLITION PLAN E

SHEET NUMBER:
C-206

REVISION 2 - 02/16/2024

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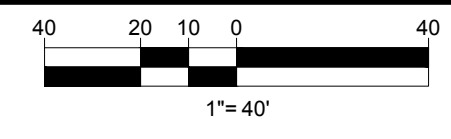
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SHEET TITLE:

DEMOLITION PLAN E

SHEET NUMBER:
C-207

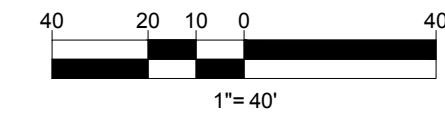
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I:\BOHLER\NET\SHARES\BMA\PROJECTS\2023\257\257-DEMO\DRAWINGS\PLAN BETS\CIVIL SITE PLANS\W201257.02-DEMO-2A-LAYOUT.C-207-DEMO.F



LOAM AND SEED SHALL BE PROPOSED IN AREAS WHERE GRAVEL OR PAVED CART PATHS, ROADWAYS, AND PARKING AREAS ARE TO BE REMOVED (TYP.). LOAM AND SEED SHALL BE PLACED ACCORDING TO THE MANUFACTURERS SPECIFICATIONS.

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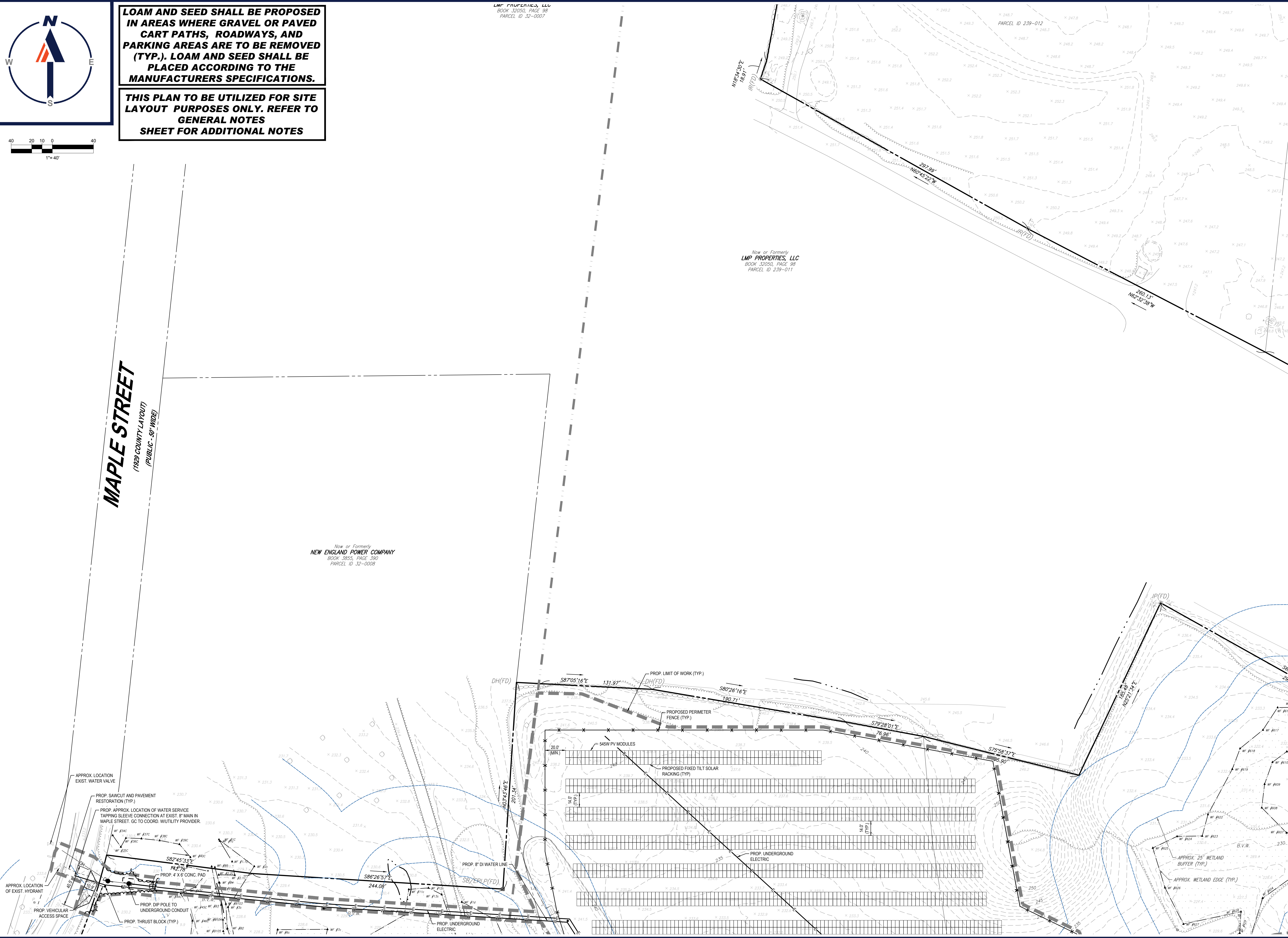


LMP PROPERTIES, LLC
BOOK 32050, PAGE 98
PARCEL ID 32-0007

Now or Formerly
LMP PROPERTIES, LLC
BOOK 32050, PAGE 98
PARCEL ID 239-011

Now or Formerly
NEW ENGLAND POWER COMPANY
BOOK 3855, PAGE 390
PARCEL ID 32-0008

MAPLE STREET
(1989 COUNTY LAYOUT)
(PUBLIC - 60' WIDE)



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CHECKED BY: GD
DATE: 07/20/2023
CAD ID: W201257.02-SPPD-2A

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET SOLAR LLC

PROPOSED
SOLAR FARM - SOUTH

LOTS INCLUDED (PARCEL #): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION OF D 239-010, & 32-0009
160 MAPLE STREET,
TOWN OF BELLINGHAM & FRANKLIN,
NORFOLK COUNTY, MASSACHUSETTS

BOHLER

352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

www.BohlerEngineering.com



SHEET TITLE:

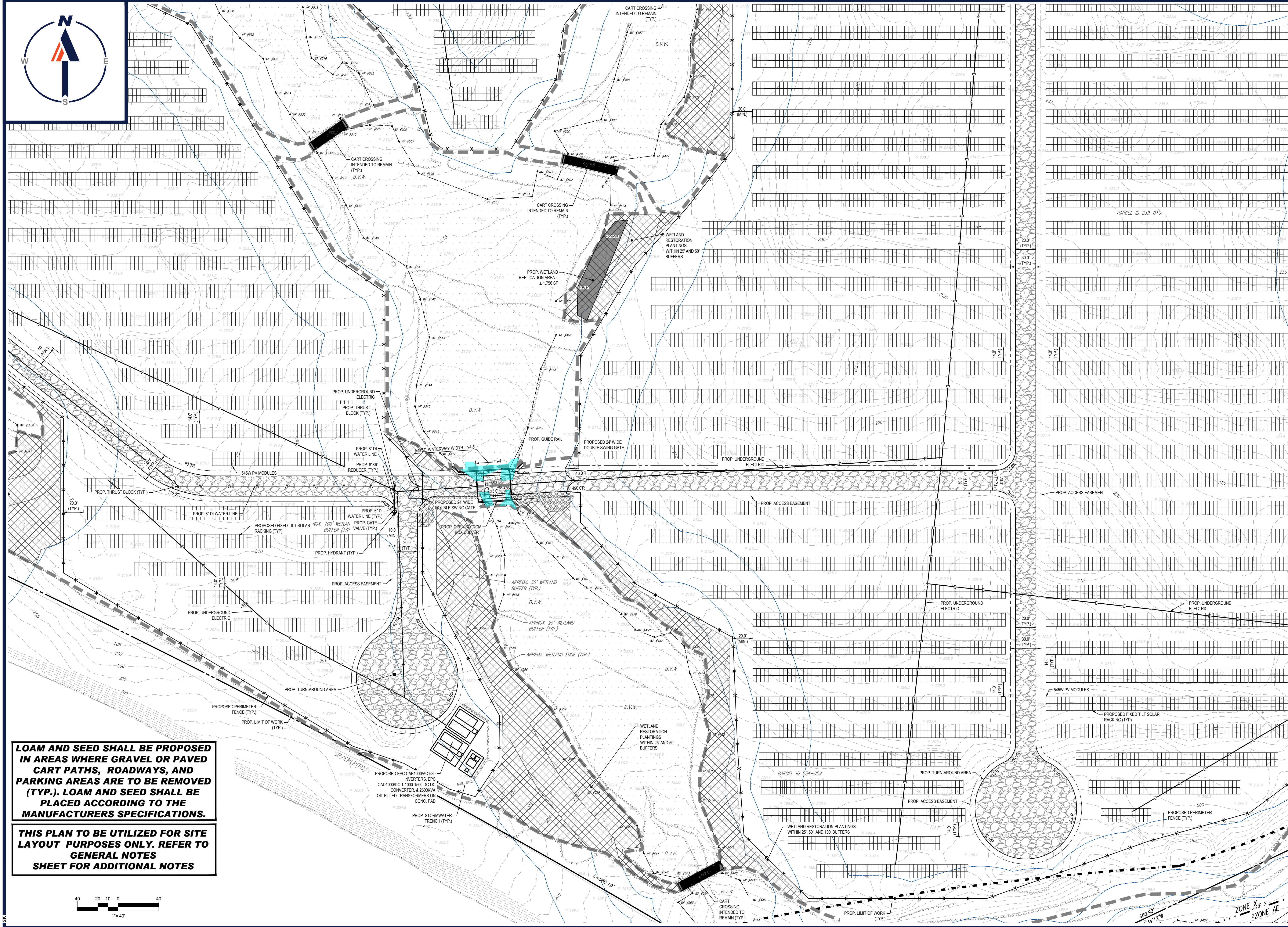
SITE LAYOUT PLAN A

SHEET NUMBER:

C-302

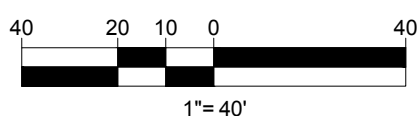
REVISION 2 - 02/16/2024

I:\BOHLER\NET\SHARES\MAPLE\PROJECTS\2023\2023-02\CADD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W201257.02-SPPD-2A-LAYOUT1-C-302-SITE A



LOAM AND SEED SHALL BE PROPOSED IN AREAS WHERE GRAVEL OR PAVED CART PATHS, ROADWAYS, AND PARKING AREAS ARE TO BE REMOVED (TYP.). LOAM AND SEED SHALL BE PLACED ACCORDING TO THE MANUFACTURERS SPECIFICATIONS.

THIS PLAN TO BE UTILIZED FOR SITE LAYOUT PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL NOTES



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 PROGRAM MANAGEMENT
 LANDSCAPE ARCHITECTURE
 SUSTAINABLE DESIGN
 TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL GD
2	02/16/2024	PER TOWN COMMENTS	SMK GD

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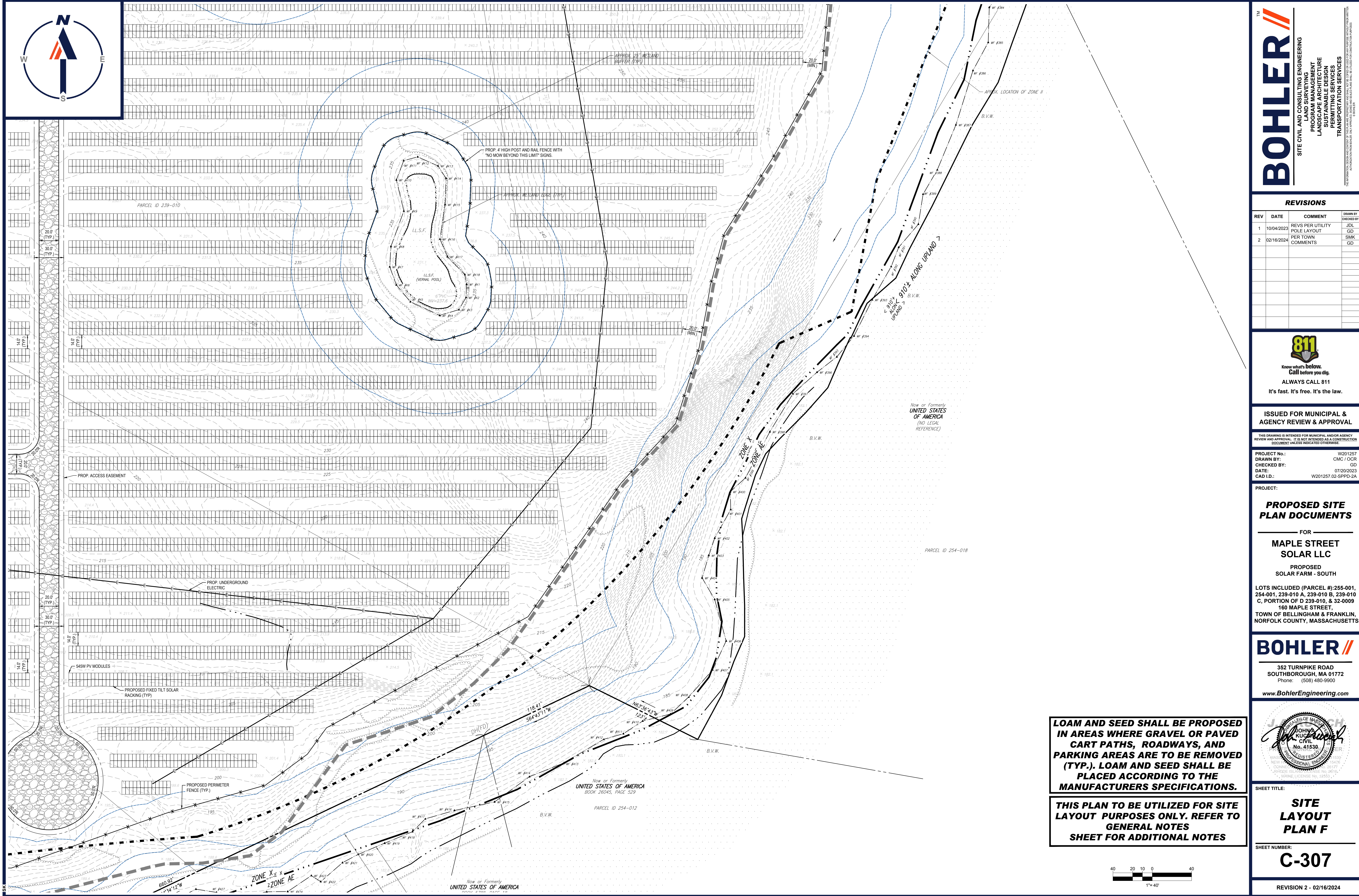
PROJECT No.: W201257
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PROPOSED SITE PLAN DOCUMENTS
 FOR
MAPLE STREET SOLAR LLC
 PROPOSED SOLAR FARM - SOUTH
 LOTS INCLUDED (PARCEL #): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION OF D 239-010, & 32-0009
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SHEET TITLE:
SITE LAYOUT PLAN E
 SHEET NUMBER:
C-306
 REVISION 2 - 02/16/2024



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REVISIONS

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PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET SOLAR LLC

PROPOSED SOLAR FARM - SOUTH

LOTS INCLUDED (PARCEL #): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION OF D 239-010, & 32-0009
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 NORFOLK COUNTY, MASSACHUSETTS

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 Phone: (508) 480-9900

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SHEET TITLE:

SITE LAYOUT PLAN F

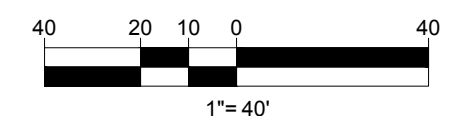
SHEET NUMBER:

C-307

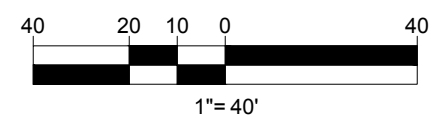
REVISION 2 - 02/16/2024

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I:\BOHLER\NET\SHARES\MAPLE\PROJECTS\2023\2023-07-20\23-07-20-SPDP-2A\LAYOUT\C-307-SITE F

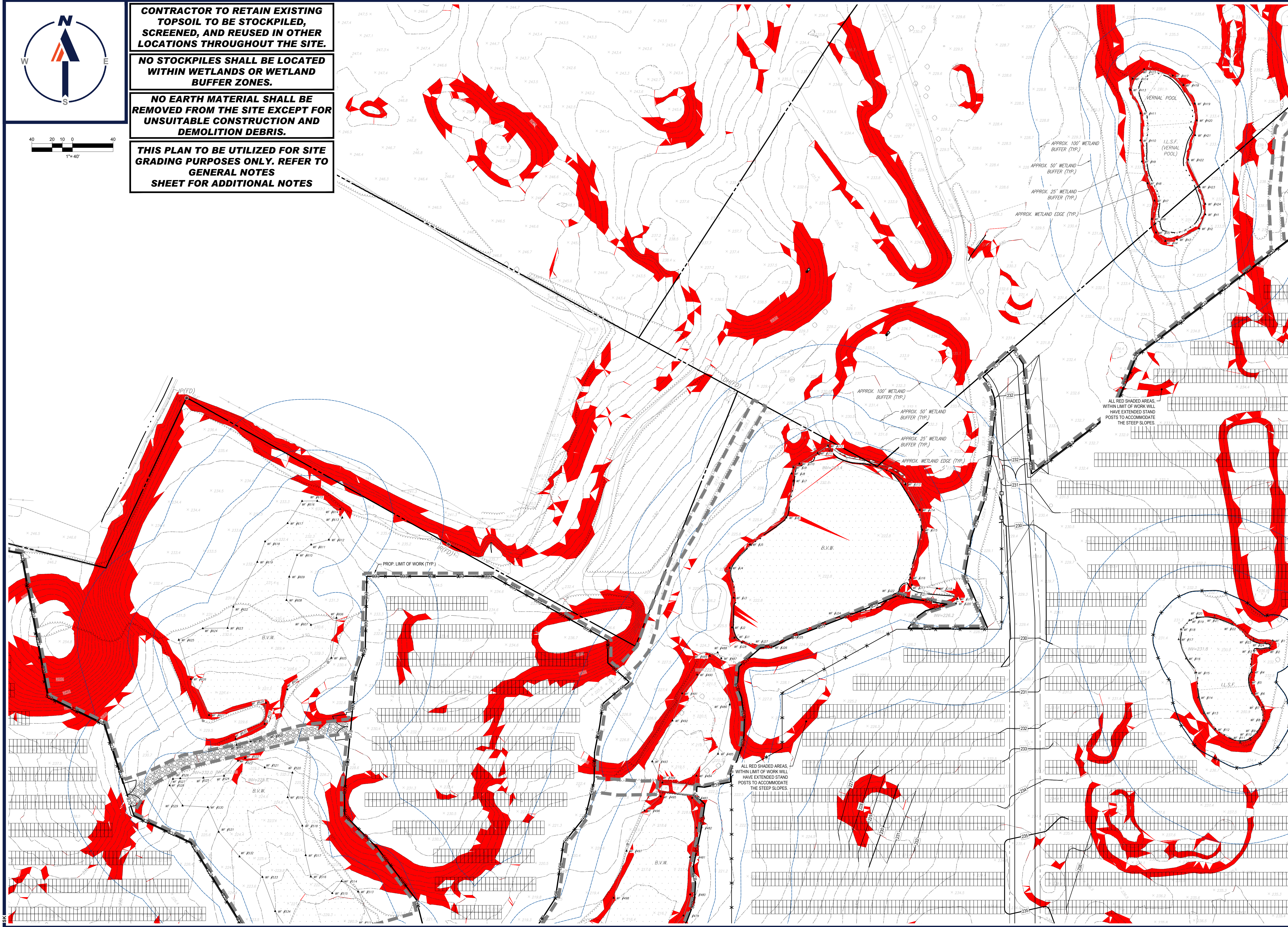


CONTRACTOR TO RETAIN EXISTING TOPSOIL TO BE STOCKPILED, SCREENED, AND REUSED IN OTHER LOCATIONS THROUGHOUT THE SITE.

NO STOCKPILES SHALL BE LOCATED WITHIN WETLANDS OR WETLAND BUFFER ZONES.

NO EARTH MATERIAL SHALL BE REMOVED FROM THE SITE EXCEPT FOR UNSUITABLE CONSTRUCTION AND DEMOLITION DEBRIS.

THIS PLAN TO BE UTILIZED FOR SITE GRADING PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL NOTES



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 TRANSPORTATION SERVICES

REVISIONS

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2	02/16/2024	PER TOWN COMMENTS	SMK	GD

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 DATE: 07/20/2023
 CAD ID.: W201257.02-GRAD-2A

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FOR
MAPLE STREET SOLAR LLC

PROPOSED
 SOLAR FARM - SOUTH

LOTS INCLUDED (PARCEL #): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION OF D 239-010, & 32-0009
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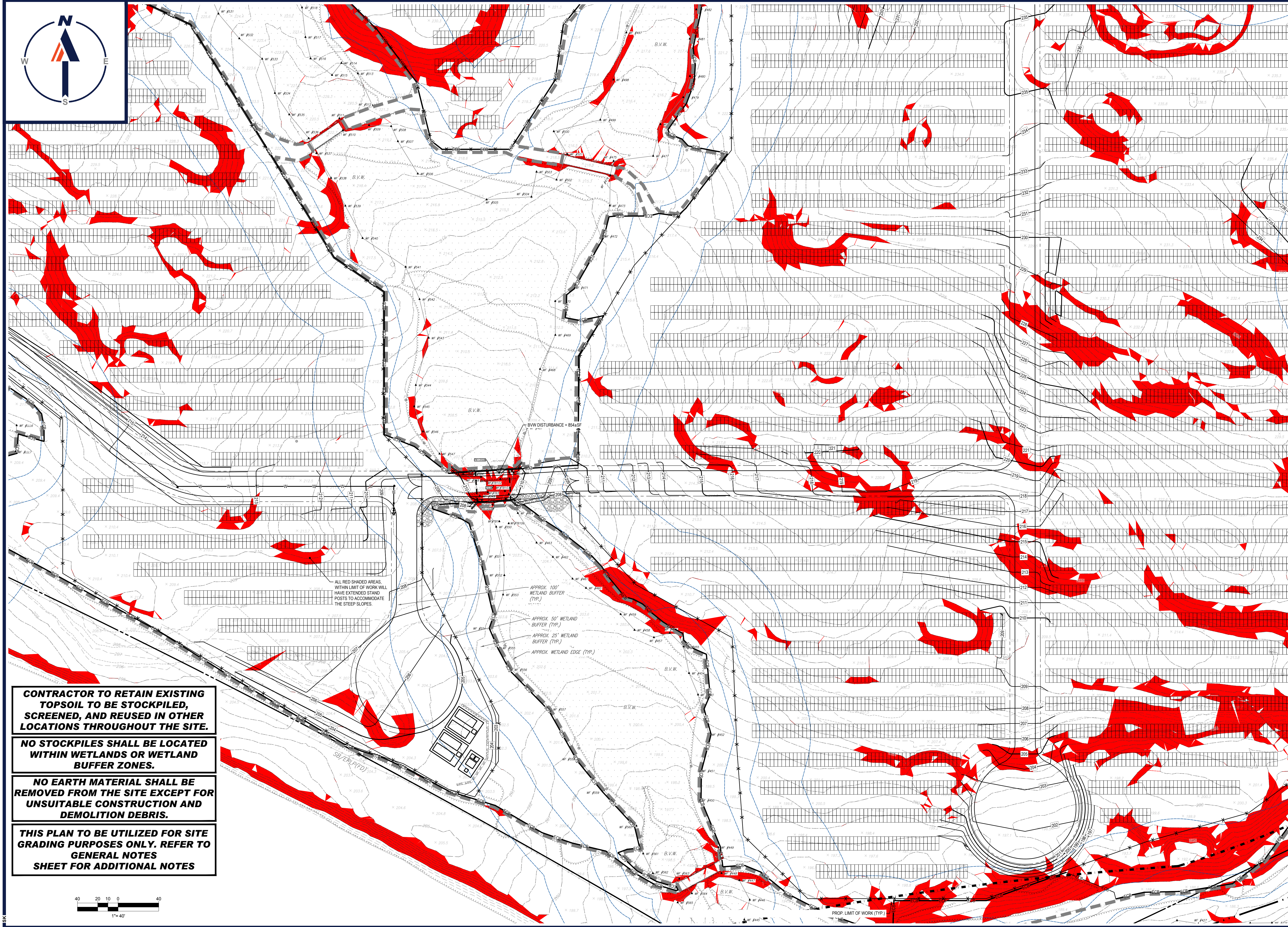
MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER
 JOHN A. BOHLER
 No. 41530
 MAINE LICENSE No. 12555

SHEET TITLE:
GRADING PLAN B

SHEET NUMBER:
C-403

REVISION 2 - 02/16/2024

I:\BOHLER\NET\SHARES\MA\PROJECTS\2023\257\257\257\257\CADD\DRAWINGS\PLAN SETS\CIVIL SITE PLAN\W201257.02-GRAD-2A-LAYOUT_C-403-GRAD.B



CONTRACTOR TO RETAIN EXISTING TOPSOIL TO BE STOCKPILED, SCREENED, AND REUSED IN OTHER LOCATIONS THROUGHOUT THE SITE.

NO STOCKPILES SHALL BE LOCATED WITHIN WETLANDS OR WETLAND BUFFER ZONES.

NO EARTH MATERIAL SHALL BE REMOVED FROM THE SITE EXCEPT FOR UNSUITABLE CONSTRUCTION AND DEMOLITION DEBRIS.

THIS PLAN TO BE UTILIZED FOR SITE GRADING PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL NOTES

I:\BOHLER\NET\SHARES\MAP\PROJECTS\2021\257\257\257\CADD\DRAWINGS\PLAN\BETS\CIVIL SITE PLAN\B01257.02\GRAD.2A - LAYOUT - C-406.GRAB.E

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2	02/16/2024	PER TOWN COMMENTS	SMK GD

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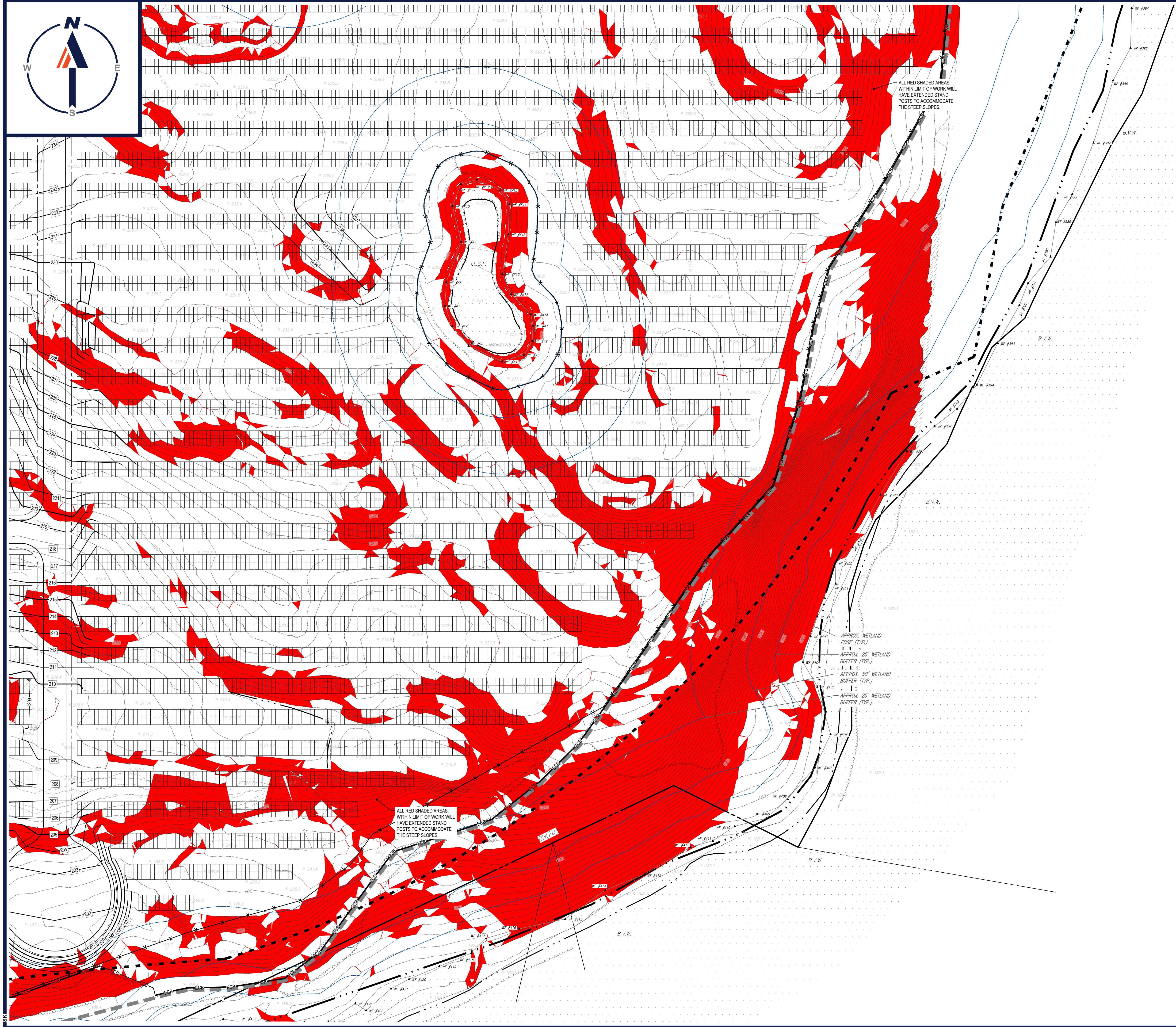
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SHEET TITLE:
GRADING PLAN E

SHEET NUMBER:
C-406

REVISION 2 - 02/16/2024



ALL RED SHADED AREAS
WITHIN LIMIT OF WORK WILL
HAVE EXTENDED STAND
POSTS TO ACCOMMODATE
THE STEEP SLOPES.

ALL RED SHADED AREAS
WITHIN LIMIT OF WORK WILL
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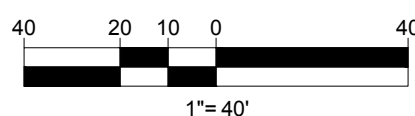
APPROX. WETLAND
EDGE (TYP.)
APPROX. 25' WETLAND
BUFFER (TYP.)
APPROX. 50' WETLAND
BUFFER (TYP.)
APPROX. 25' WETLAND
BUFFER (TYP.)

**CONTRACTOR TO RETAIN EXISTING
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SCREENED, AND REUSED IN OTHER
LOCATIONS THROUGHOUT THE SITE.**

**NO STOCKPILES SHALL BE LOCATED
WITHIN WETLANDS OR WETLAND
BUFFER ZONES.**

**NO EARTH MATERIAL SHALL BE
REMOVED FROM THE SITE EXCEPT FOR
UNSUITABLE CONSTRUCTION AND
DEMOLITION DEBRIS.**

**THIS PLAN TO BE UTILIZED FOR SITE
GRADING PURPOSES ONLY. REFER TO
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SHEET FOR ADDITIONAL NOTES**



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REVISIONS

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2	02/16/2024	PER TOWN COMMENTS	SMK GD

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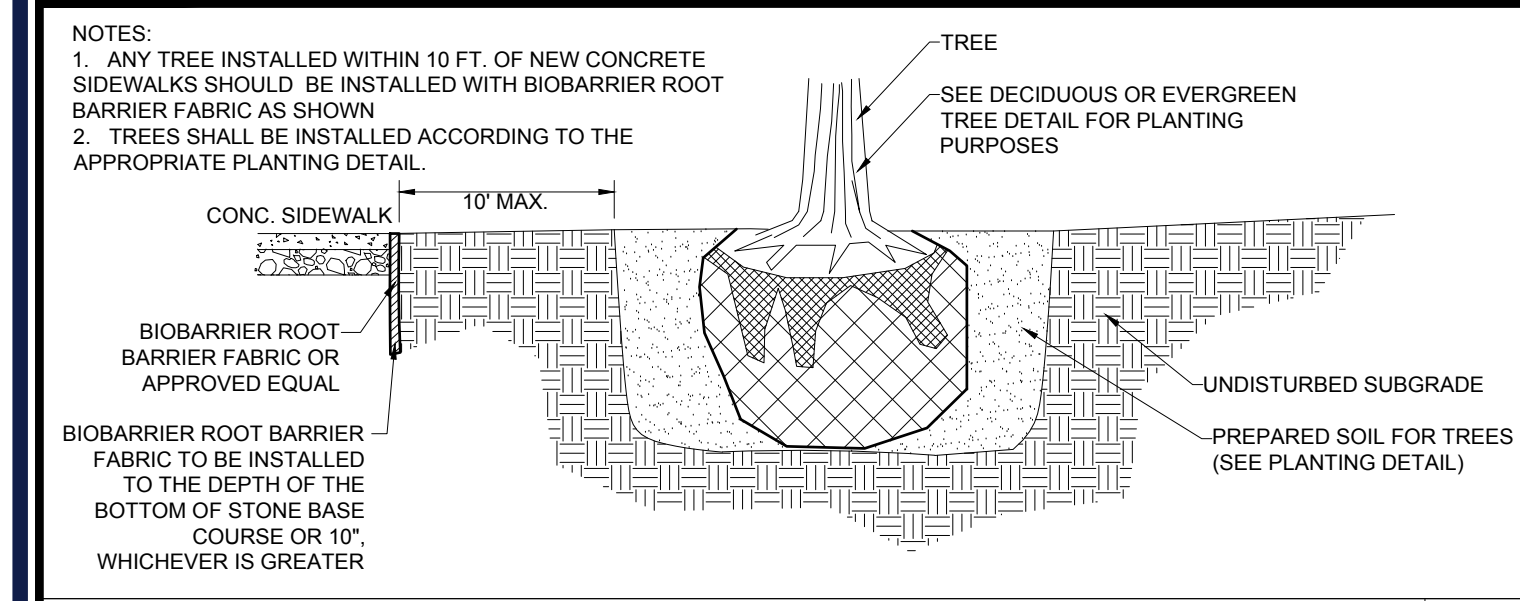
PROJECT:
**PROPOSED SITE
PLAN DOCUMENTS**
FOR
**MAPLE STREET
SOLAR LLC**
PROPOSED
SOLAR FARM - SOUTH
LOTS INCLUDED (PARCEL #): 255-001,
254-001, 239-010 A, 239-010 B, 239-010
C, PORTION OF D 239-010, & 32-0009
160 MAPLE STREET,
TOWN OF BELLINGHAM & FRANKLIN,
NORFOLK COUNTY, MASSACHUSETTS

BOHLER
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
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SHEET TITLE:
**GRADING
PLAN F**
SHEET NUMBER:
C-407
REVISION 2 - 02/16/2024

I:\BOHLER\NET\SHARES\MA\PROJECTS\W201257\257\257\257\CADDRAWINGS\PLAN BETS\CIVIL SITE PLAN\W201257.02-GRAD-2A-LAYOUT.C407-GRAD.F



BIOBARRIER ROOT BARRIER DETAIL

N.T.S.

NEW ENGLAND CONSERVATION/ WILDLIFE SEED MIX AS PREPARED BY:

NEW ENGLAND WETLAND PLANTS, INC
820 WEST STREET, AMHERST, MA 01002
PHONE: 413-548-8000
EMAIL: INFO@NEWP.COM
WEBSITE: WWW.NEWP.COM

APPLICATION RATE: 25 LBS/ACRE | 1750 SQ FT/LB
MINIMUM ORDER: 2 LBS

SPECIES: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), PANICLELEAF TICK TREFOLI (DESMODIUM PANICULATUM), INDIAN GRASS (SORGHASTRUM NUTANS), BLUE VERVAIN (VERBENA HASTATA), BUTTERFLY MILKWEED (ASCLEPIAS TUBEROSA), BLACK EYED SUSAN (RUDBECKIA HIRTA), COMMON SNEEZEWEED (HELENIUM AUTUNALE), HEATH ASTER (ASTER PILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO CONJUGATA), UPLAND BENTGRASS (AGROSTIS PERENNANS).

NEW ENGLAND CONSERVATION/ WILDLIFE SEED MIX SPECIFICATIONS

PLANT SCHEDULE					
ORNAMENTAL TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
AC	2	AMELANCHIER CANADENSIS	CANADIAN SERVICEBERRY	2.5" CAL	B&B
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CA	14	CLETHRA ALNIFOLIA	SUMMERSWEET	5 GAL.	CONTAINER
COAM	6	CORNUS AMOMUM	SILKY DOGWOOD	3-4"	CONTAINER
CS	11	CORNUS SERICEA	RED TWIG DOGWOOD	2-3"	B&B
IW	10	ILEX VERTICILLATA	WINTERBERRY	36-42"	CONTAINER
LB	8	LINDERA BENZOIN	SPICEBUSH	30-36"	CONTAINER
VC	9	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	18-24"	CONTAINER

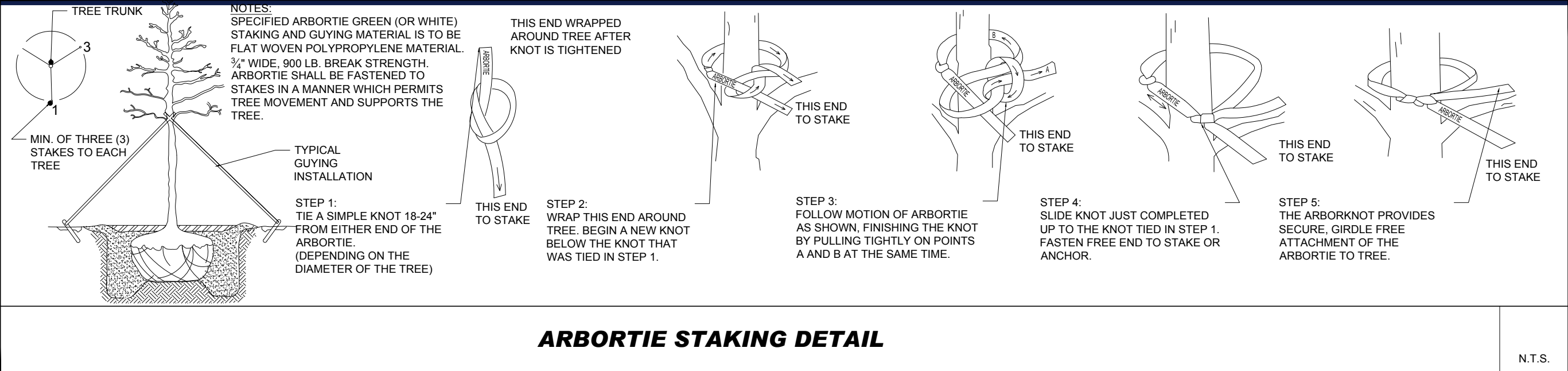
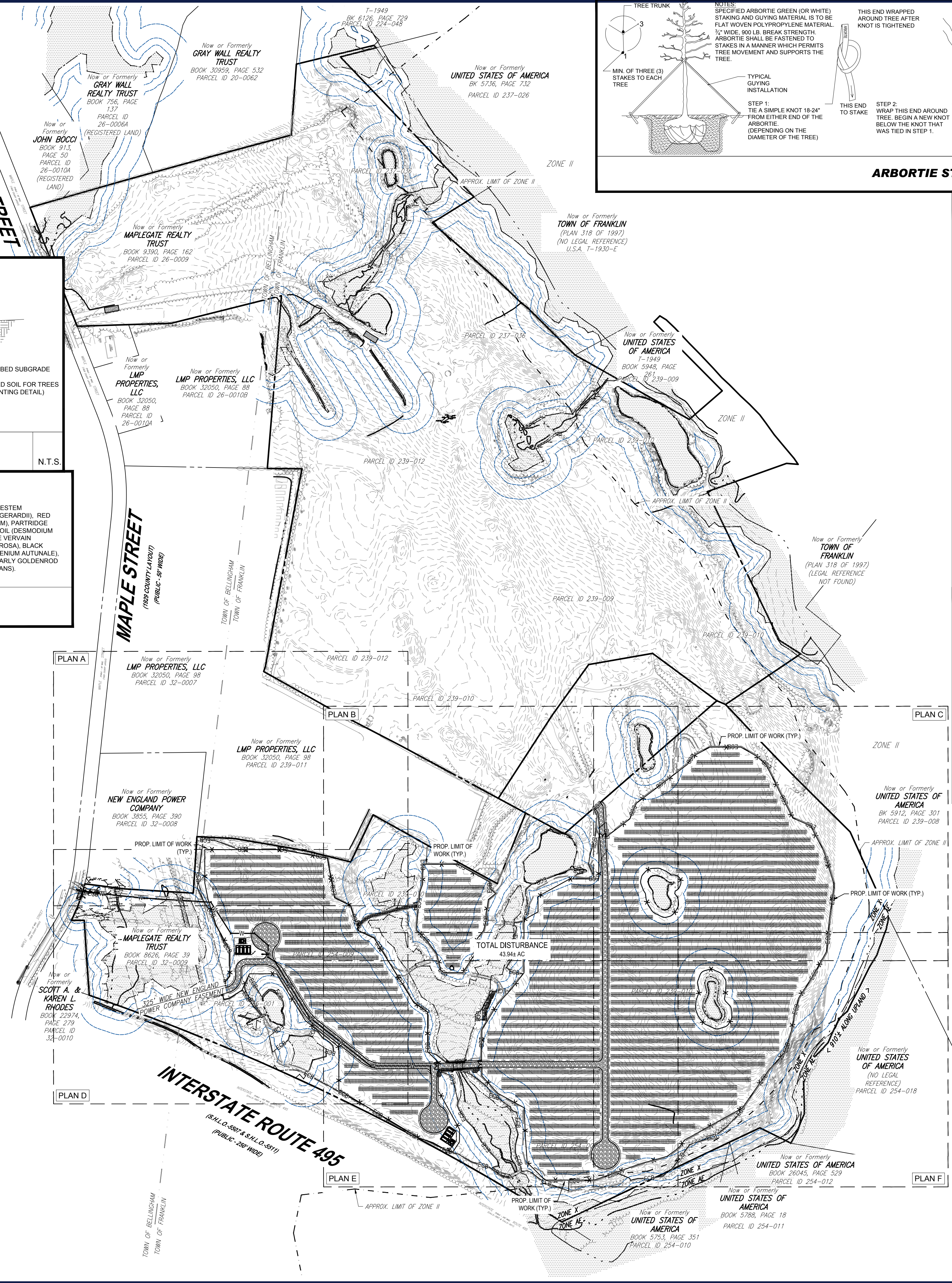
WETLAND BOUNDARIES AND RESTORATION AREAS SHALL BE SURROUNDED BY BIODEGRADABLE COMPOST WATTLES.

OWNER MAINTENANCE RESPONSIBILITIES

UPON OWNERS (OR OWNER CONTRACTORS) COMPLETION OF LANDSCAPING WORK, THE OWNER IS FULLY RESPONSIBLE FOR ALL FUTURE MAINTENANCE, CARE, WATERING, AND TRIMMING OF ALL INSTALLED VEGETATION PLANTS, TREES, BUSHES, SHRUBS, GRASSES, GRASS, ORNAMENTAL PLANTS AND FLOWERS, FLOWERS, GROUND COVER, AND LANDSCAPING, INCLUDING ALL LANDSCAPE ISLANDS AND AREAS ADJACENT OR PART OF THE LANDSCAPED AREAS. THIS RESPONSIBILITY INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

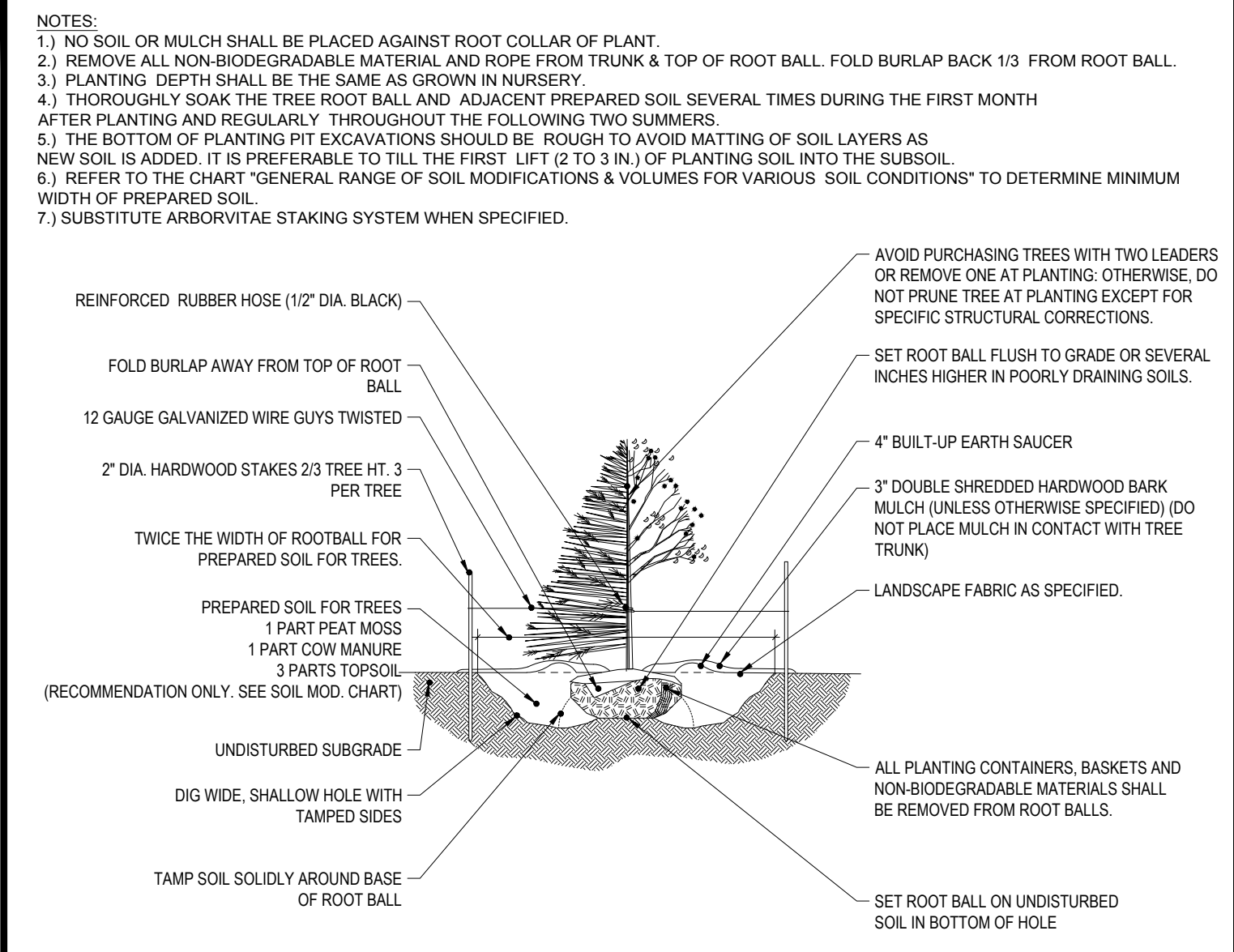
- TREES ADJACENT TO WALKWAYS AND AREAS OF PEDESTRIAN TRAFFIC MUST BE MAINTAINED TO ASSURE THAT ANY BRANCHES MUST BE LIMBED UP TO A CLEARANCE HEIGHT OF 7 FT. (FROM ALL PEDESTRIAN SURFACES) OR PRUNED BACK TO AVOID ANY INTERFERENCE WITH THE TYPICAL PATH OF TRAVEL.
- TREES WITHIN VEHICULAR SIGHT LINES, AS ILLUSTRATED ON THE LANDSCAPE PLAN, ARE TO BE TRIMMED TO A CLEARANCE HEIGHT OF 7 FT. (FROM ALL PAVED, TRAVELED SURFACES), OR AS OTHERWISE INDICATED ON THE PLANS.
- VEGETATIVE GROUND COVER, SHRUBS AND ORNAMENTAL PLANTS AND GRASSES MUST BE TRIMMED SO THAT NO PORTION OF THE PLANT EXCEEDS 30 INCHES ABOVE GRADE (OF ALL PAVED, TRAVELED SURFACES) ALONG AND WITHIN THE SIGHT LINES OF PARKING LOTS AND THROUGH-DRIVEWAYS.
- FALLEN PLANT FLOWERS, FRUIT, SEEDS AND DEBRIS DROPPINGS ARE TO BE REMOVED IMMEDIATELY FROM VEHICULAR AND PEDESTRIAN TRAFFIC AREAS TO PREVENT TRIPPING, SLIPPING OR ANY OTHER HAZARDS.

THESE REQUIREMENTS DO NOT AFFECT THE PLANT LIFE GUARANTEES THE LANDSCAPE CONTRACTOR IS REQUIRED TO PROVIDE.



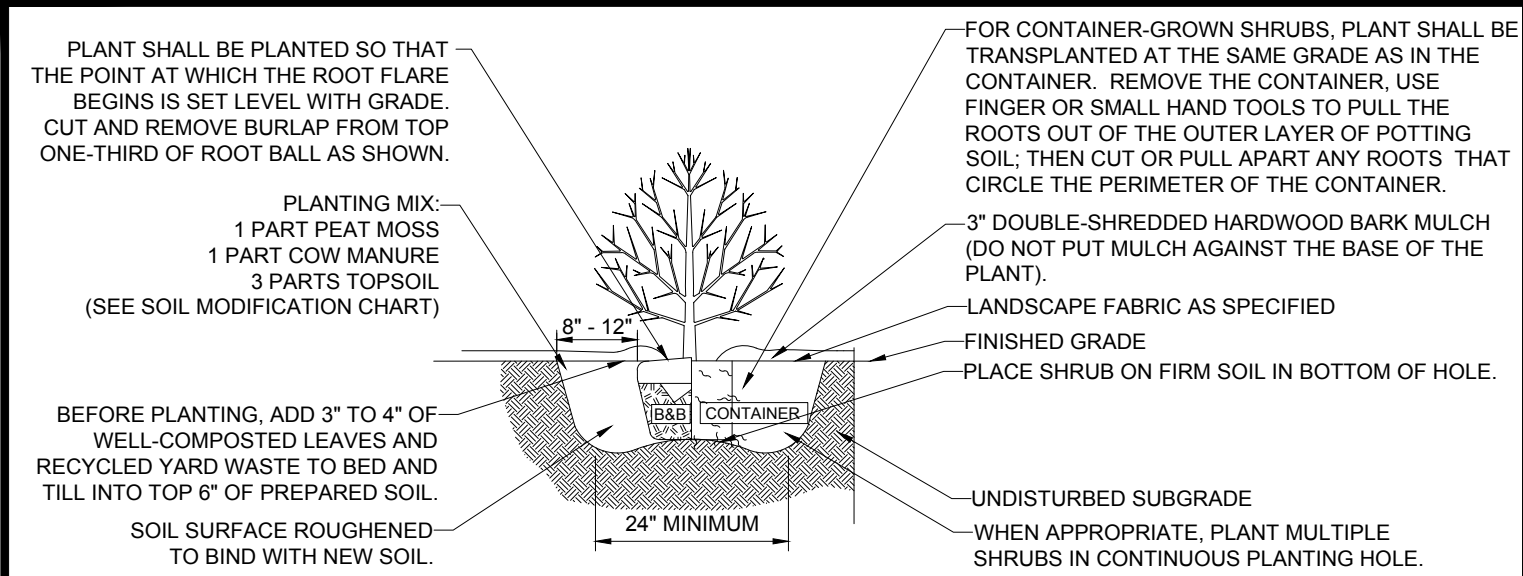
ARBORTIE STAKING DETAIL

N.T.S.



TREE PLANTING DETAIL

N.T.S.



SHRUB PLANTING DETAIL

N.T.S.

THE PURPOSE OF THE OVERALL PLAN SHEET IS TO BE UTILIZED AS A SITE KEY MAP, TO PROVIDE SITE FEATURE LOCATIONS ONLY. PLEASE REFER TO EACH INDIVIDUAL SHEET FOR MORE INFORMATION.

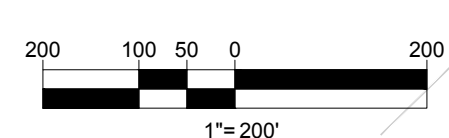
STOCKPILES SHALL BE LOCATED OUTSIDE OF THE 100-FOOT BUFFER ZONE TO RESOURCE AREAS.

THIS PLAN TO BE UTILIZED FOR SITE SOIL AND EROSION CONTROL PURPOSES ONLY

NEW ENGLAND CONSERVATION/WILDLIFE SEED MIX SHALL BE INSTALLED WITHIN ALL LANDSCAPE AREAS DELINEATED BY THE LIMIT OF WORK

REFER TO SOIL EROSION CONTROL NOTES & DETAIL SHEET FOR EROSION NOTES AND DETAILS

EROSION CONTROL BARRIER SHALL CONSIST OF BOTH COMPOST WATTLES AND SILT FENCE UNLESS OTHERWISE NOTED. SEE DETAILS FOR MORE INFORMATION.



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CAD LID:	W201257.02-EROS-2A

PROJECT:

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FOR
MAPLE STREET SOLAR LLC

PROPOSED
SOLAR FARM - SOUTH

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Phone: (508) 480-9900
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OVERALL EROSION & SEDIMENT CONTROL PLAN

SHEET NUMBER:
C-601

REVISION 2 - 02/16/2024

BOHLER ENGINEERING, INC. PROJECT: W201257.02-EROS-2A - LAYOUT: C-601 - OVERALL EROS



MAPLE STREET
(Public - 50' wide)
(1929 COUNTY LAYOUT)

LMP PROPERTIES, LLC
BOOK 32050, PAGE 98
PARCEL ID 32-0007

Now or Formerly
LMP PROPERTIES, LLC
BOOK 32050, PAGE 98
PARCEL ID 239-011

Now or Formerly
NEW ENGLAND POWER COMPANY
BOOK 3855, PAGE 390
PARCEL ID 32-0008

REFER TO SHEET C-601 FOR
LANDSCAPE SCHEDULE

STOCKPILES SHALL BE LOCATED
OUTSIDE OF THE 100-FOOT BUFFER
ZONE TO RESOURCE AREAS.

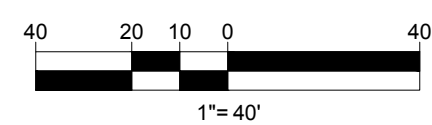
THIS PLAN TO BE UTILIZED FOR SITE
SOIL AND EROSION CONTROL
PURPOSES ONLY

NEW ENGLAND CONSERVATION/WILDLIFE
SEED MIX SHALL BE INSTALLED WITHIN
ALL LANDSCAPE AREAS DELINEATED BY
THE LIMIT OF WORK

REFER TO SOIL EROSION CONTROL
NOTES & DETAIL SHEET FOR EROSION
NOTES AND DETAILS

EROSION CONTROL BARRIER SHALL
CONSIST OF BOTH COMPOST WATTLES
AND SILT FENCE UNLESS OTHERWISE
NOTED. SEE DETAILS FOR MORE
INFORMATION.

WETLAND BOUNDARIES AND
RESTORATION AREAS SHALL BE
SURROUNDED BY BIODEGRADABLE
COMPOST WATTLES.



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CAD ID: W201257.02-EROS-2A

PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET SOLAR LLC
PROPOSED
SOLAR FARM - SOUTH

LOTS INCLUDED (PARCEL #): 255-001,
254-001, 239-010 A, 239-010 B, 239-010
C, PORTION OF D 239-010, & 32-0009
160 MAPLE STREET,
TOWN OF BELLINGHAM & FRANKLIN,
NORFOLK COUNTY, MASSACHUSETTS

BOHLER
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com



SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN A

SHEET NUMBER:
C-602

REVISION 2 - 02/16/2024

BOHLER ENGINEERING, INC. PROJECT: W201257.02-EROS-2A SITE PLAN: W201257.02-EROS-2A LAYOUT: C-602-EROS.A



REFER TO SHEET C-601 FOR
LANDSCAPE SCHEDULE

STOCKPILES SHALL BE LOCATED
OUTSIDE OF THE 100-FOOT BUFFER
ZONE TO RESOURCE AREAS.

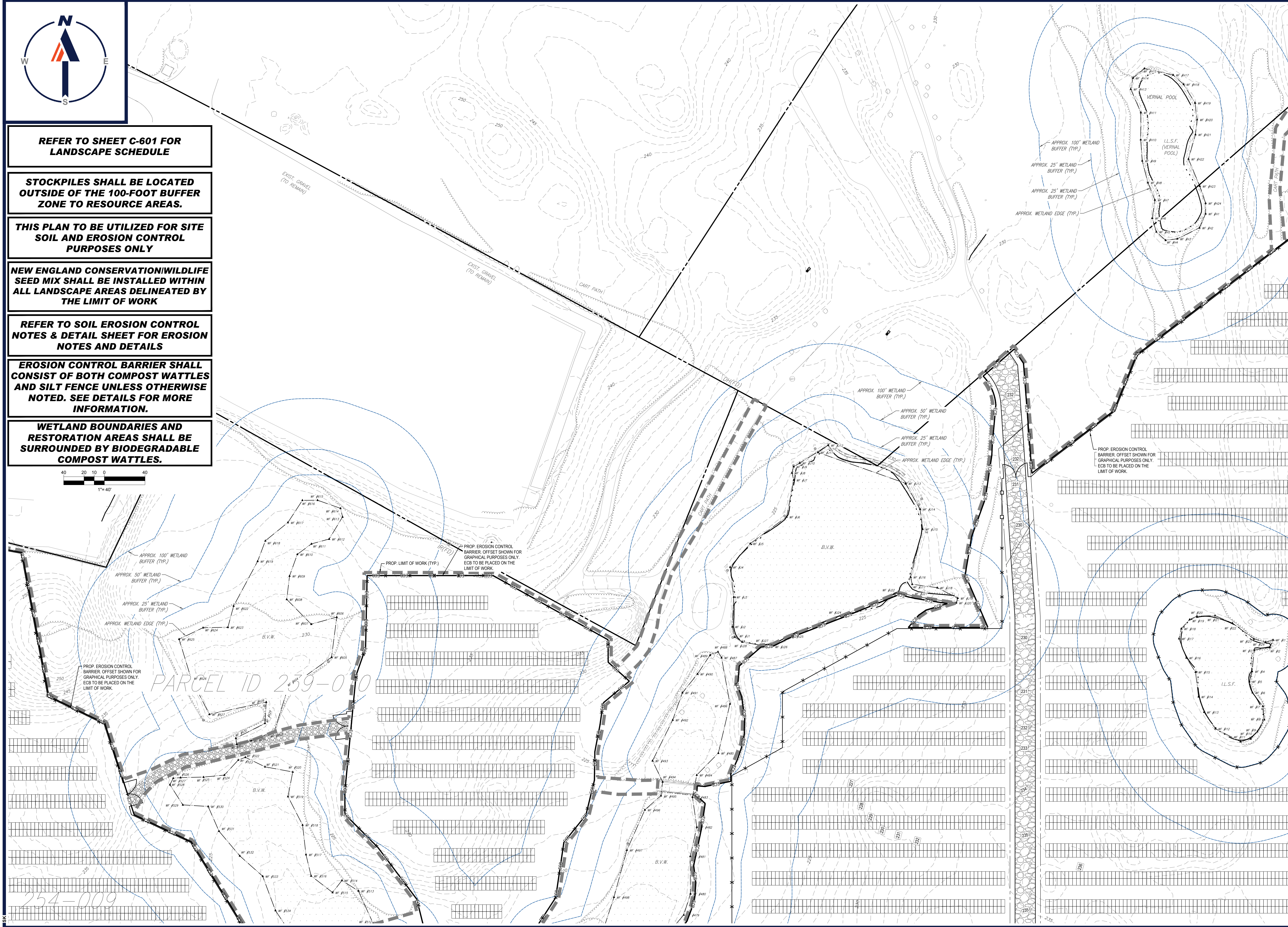
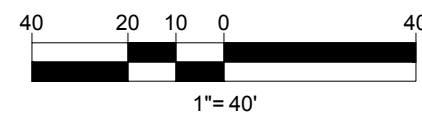
THIS PLAN TO BE UTILIZED FOR SITE
SOIL AND EROSION CONTROL
PURPOSES ONLY

NEW ENGLAND CONSERVATION WILDLIFE
SEED MIX SHALL BE INSTALLED WITHIN
ALL LANDSCAPE AREAS DELINEATED BY
THE LIMIT OF WORK

REFER TO SOIL EROSION CONTROL
NOTES & DETAIL SHEET FOR EROSION
NOTES AND DETAILS

EROSION CONTROL BARRIER SHALL
CONSIST OF BOTH COMPOST WATTLES
AND SILT FENCE UNLESS OTHERWISE
NOTED. SEE DETAILS FOR MORE
INFORMATION.

WETLAND BOUNDARIES AND
RESTORATION AREAS SHALL BE
SURROUNDED BY BIODEGRADABLE
COMPOST WATTLES.



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LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	CHECKED BY	DRAWN BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL	GD
2	02/16/2024	PER TOWN COMMENTS	SMK	GD

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PROJECT No.: W201257
DRAWN BY: CMC / OCR
DATE: 07/20/2023
CAD ID: W201257.02-EROS.2A

**PROPOSED SITE
PLAN DOCUMENTS**

FOR
**MAPLE STREET
SOLAR LLC**

PROPOSED
SOLAR FARM - SOUTH

LOTS INCLUDED (PARCEL #): 255-001,
254-001, 239-010 A, 239-010 B, 239-010
C, PORTION OF D 239-010, & 32-0009
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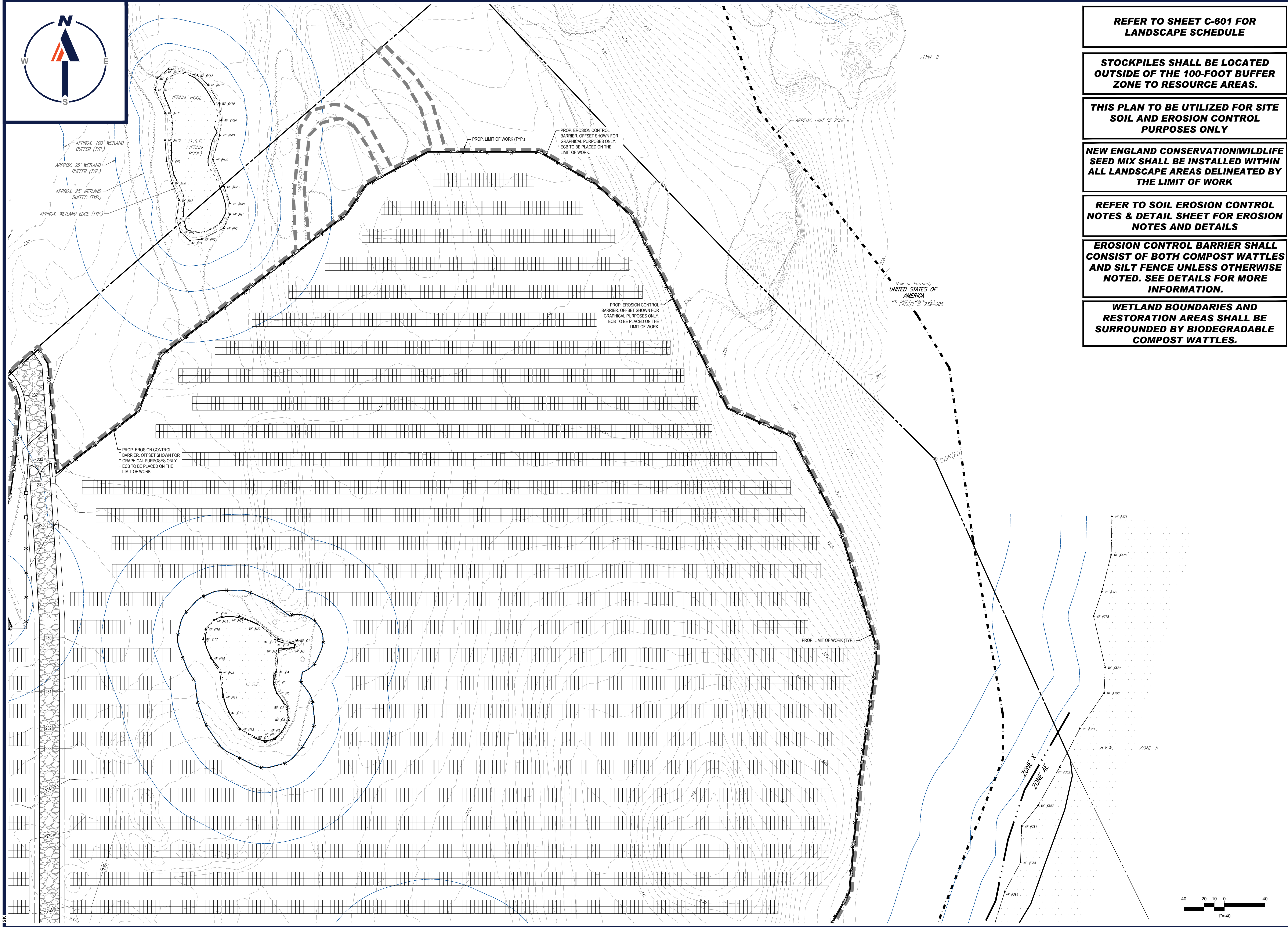


SHEET TITLE:
**EROSION &
SEDIMENT
CONTROL
PLAN B**

SHEET NUMBER:
C-603

REVISION 2 - 02/16/2024

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REFER TO SHEET C-601 FOR LANDSCAPE SCHEDULE

STOCKPILES SHALL BE LOCATED OUTSIDE OF THE 100-FOOT BUFFER ZONE TO RESOURCE AREAS.

THIS PLAN TO BE UTILIZED FOR SITE SOIL AND EROSION CONTROL PURPOSES ONLY

NEW ENGLAND CONSERVATION/WILDLIFE SEED MIX SHALL BE INSTALLED WITHIN ALL LANDSCAPE AREAS DELINEATED BY THE LIMIT OF WORK

REFER TO SOIL EROSION CONTROL NOTES & DETAIL SHEET FOR EROSION NOTES AND DETAILS

EROSION CONTROL BARRIER SHALL CONSIST OF BOTH COMPOST WATTLES AND SILT FENCE UNLESS OTHERWISE NOTED. SEE DETAILS FOR MORE INFORMATION.

WETLAND BOUNDARIES AND RESTORATION AREAS SHALL BE SURROUNDED BY BIODEGRADABLE COMPOST WATTLES.

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2	02/16/2024	PER TOWN COMMENTS	SMK	GD

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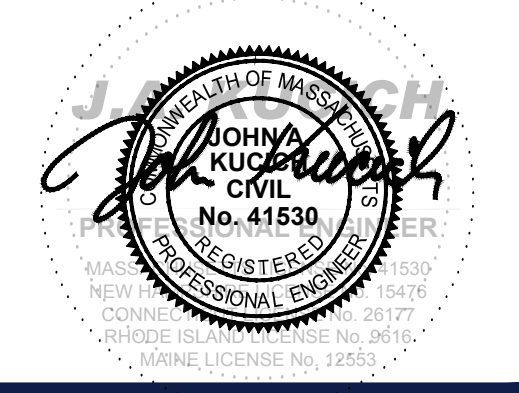
PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET SOLAR LLC

PROPOSED
 SOLAR FARM - SOUTH

LOTS INCLUDED (PARCEL #): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION OF D 239-010, & 32-0009
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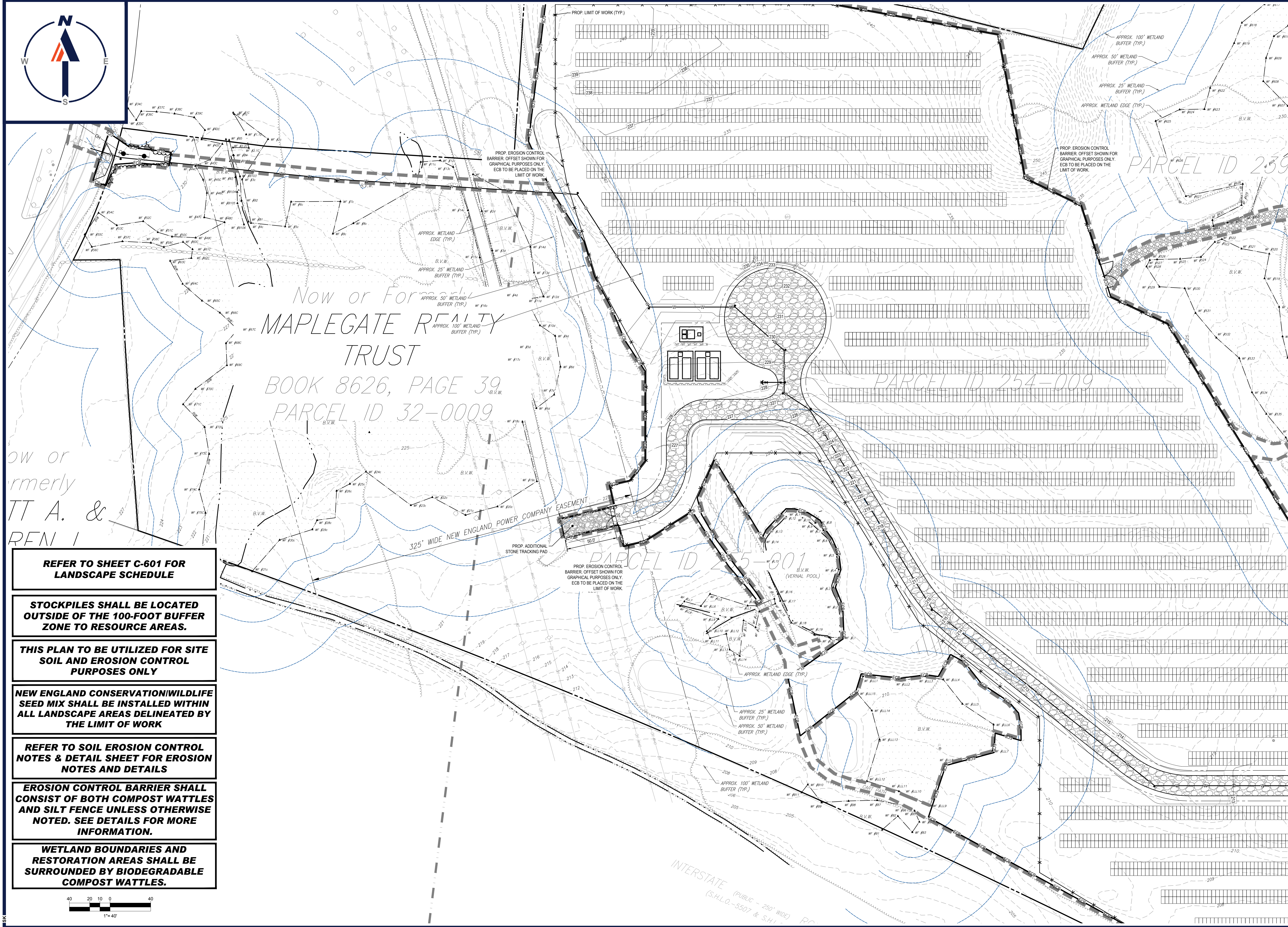


SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN C

SHEET NUMBER:
C-604

REVISION 2 - 02/16/2024

BOHLER ENGINEERING, INC. PROJECT: 202307201257.02-EROS.2A - LAYOUT: C-604-EROS.C



Now or Formerly
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**REFER TO SHEET C-601 FOR
LANDSCAPE SCHEDULE**

**STOCKPILES SHALL BE LOCATED
OUTSIDE OF THE 100-FOOT BUFFER
ZONE TO RESOURCE AREAS.**

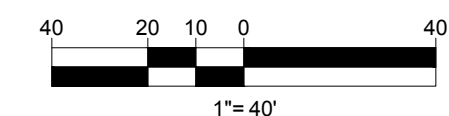
**THIS PLAN TO BE UTILIZED FOR SITE
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PURPOSES ONLY**

**NEW ENGLAND CONSERVATION/WILDLIFE
SEED MIX SHALL BE INSTALLED WITHIN
ALL LANDSCAPE AREAS DELINEATED BY
THE LIMIT OF WORK**

**REFER TO SOIL EROSION CONTROL
NOTES & DETAIL SHEET FOR EROSION
NOTES AND DETAILS**

**EROSION CONTROL BARRIER SHALL
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AND SILT FENCE UNLESS OTHERWISE
NOTED. SEE DETAILS FOR MORE
INFORMATION.**

**WETLAND BOUNDARIES AND
RESTORATION AREAS SHALL BE
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COMPOST WATTLES.**



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2	02/16/2024	PER TOWN COMMENTS	SMK

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MAPLE STREET SOLAR LLC

PROPOSED
SOLAR FARM - SOUTH

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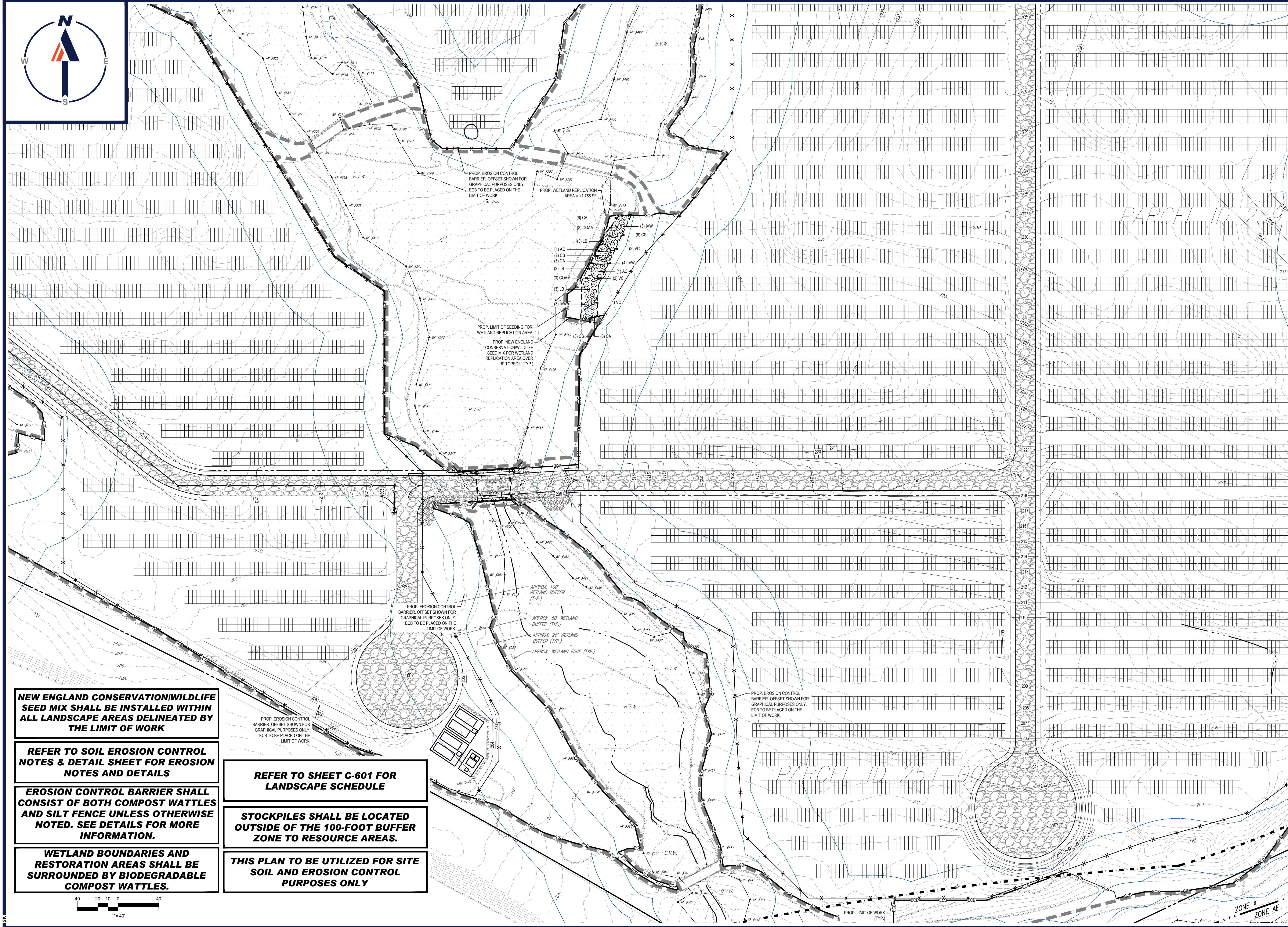


SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN D

SHEET NUMBER:
C-605

REVISION 2 - 02/16/2024

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NEW ENGLAND CONSERVATION WILDLIFE SEED MIX SHALL BE INSTALLED WITHIN ALL LANDSCAPE AREAS DELINEATED BY THE LIMIT OF WORK

REFER TO SOIL EROSION CONTROL NOTES & DETAIL SHEET FOR EROSION NOTES AND DETAILS

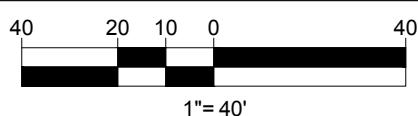
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WETLAND BOUNDARIES AND RESTORATION AREAS SHALL BE SURROUNDED BY BIODEGRADABLE COMPOST WATTLES.

REFER TO SHEET C-601 FOR LANDSCAPE SCHEDULE

STOCKPILES SHALL BE LOCATED OUTSIDE OF THE 100-FOOT BUFFER ZONE TO RESOURCE AREAS.

THIS PLAN TO BE UTILIZED FOR SITE SOIL AND EROSION CONTROL PURPOSES ONLY



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2	02/16/2024	PER TOWN COMMENTS	SMK GD

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CHECKED BY:	GD
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CAD ID:	W201257.02-EROS-2A

PROPOSED SITE PLAN DOCUMENTS

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MAPLE STREET SOLAR LLC

PROPOSED
 SOLAR FARM - SOUTH

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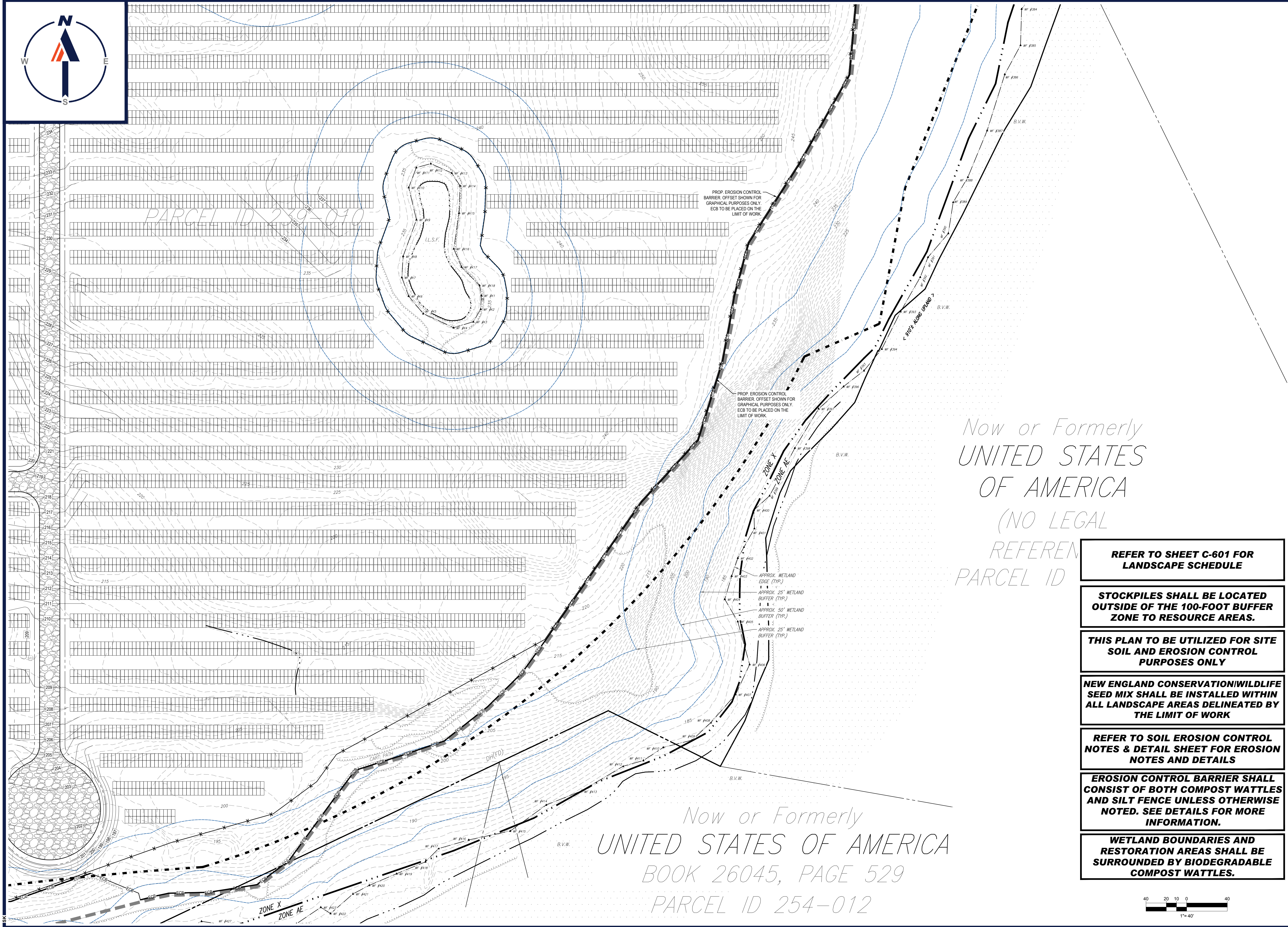


SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN E

SHEET NUMBER:
C-606

REVISION 2 - 02/16/2024

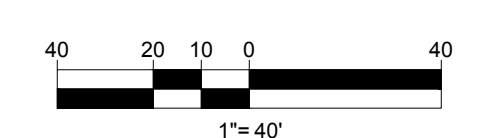
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PARCEL ID

Now or Formerly
UNITED STATES OF AMERICA
BOOK 26045, PAGE 529
PARCEL ID 254-012

- REFER TO SHEET C-601 FOR LANDSCAPE SCHEDULE**
- STOCKPILES SHALL BE LOCATED OUTSIDE OF THE 100-FOOT BUFFER ZONE TO RESOURCE AREAS.**
- THIS PLAN TO BE UTILIZED FOR SITE SOIL AND EROSION CONTROL PURPOSES ONLY**
- NEW ENGLAND CONSERVATION/WILDLIFE SEED MIX SHALL BE INSTALLED WITHIN ALL LANDSCAPE AREAS DELINEATED BY THE LIMIT OF WORK**
- REFER TO SOIL EROSION CONTROL NOTES & DETAIL SHEET FOR EROSION NOTES AND DETAILS**
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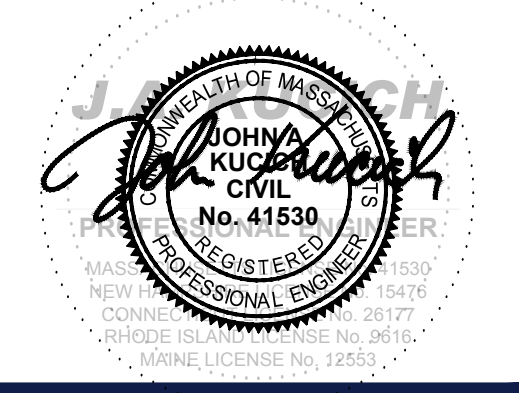
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SOLAR FARM - SOUTH

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SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN F

SHEET NUMBER:
C-607

REVISION 2 - 02/16/2024

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EROSION AND SEDIMENT CONTROL NOTES

- ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE AS SET FORTH IN THE MOST CURRENT STATE SEDIMENT AND EROSION CONTROL MANUAL.
- THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE LEFT IN AN UNTREATED OR UNVEGETATED CONDITION FOR A MINIMUM TIME. AREAS SHALL BE PERMANENTLY STABILIZED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. AT A MINIMUM, AREAS SHALL BE PERMANENTLY STABILIZED ACCORDING TO THE CURRENT EDITION OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP), OR IN THE ABSENCE OF A SWPPP, THEY SHALL BE PERMANENTLY STABILIZED WITHIN 14 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF THE SOIL. IF THE DISTURBANCE IS WITHIN 100 FEET OF A STREAM OR POND, THE AREA SHALL BE STABILIZED WITHIN 7 DAYS OR PRIOR TO ANY STORM EVENT (THIS WOULD INCLUDE WETLANDS).
- SEDIMENT BARRIERS (SILT FENCE, STRAW BARRIERS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 8%.
- INSTALL SILTATION BARRIER AT TOE OF SLOPE TO FILTER SILT FROM RUNOFF. SEE SILTATION BARRIER DETAILS FOR PROPER INSTALLATION. SILTATION BARRIER WILL REMAIN IN PLACE PER NOTE #5.
- ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSITION. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED. FOR SEDIMENT CONTROL DEVICES THAT ARE WITHIN AREAS SUBJECT TO CONSERVATION COMMISSION JURISDICTION, THE DEVICES SHALL REMAIN IN PLACE AND BE REMOVED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.
- NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO TO ONE (2:1) UNLESS OTHERWISE INDICATED ON THE PLANS. SLOPE PROTECTION FOR SLOPES GREATER THAN 2:1 SHALL BE DESIGNED BY A GEOTECHNICAL ENGINEER.
- IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST, USE TEMPORARY MULCH (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
- TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINAL GRADED SHALL BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST TO PROTECT FROM SPRING RUNOFF PROBLEMS.
- DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL STANDARDS.
- REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE SPECIFIED WILL BE GRADED, SMOOTHED, AND PREPARED FOR FINAL SEEDING AS FOLLOWS:
 - SIX INCHES, OR DEPTH SPECIFIED ON THE LANDSCAPE PLAN, OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.
 - APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 800 LB PER ACRE OR 18.4 LB PER 1,000 SF USING 10-20-20 OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (188 LB PER 1,000 SF).
 - FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEED TO A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEED TO A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUEGRASS, 44% CREEPING RED FESCUE, AND 12% PERENNIAL RYEGRASS. SEEDING RATE IS 1.03 LBS PER 1,000 SF LAWN. QUALITY SOO MAY BE SUBSTITUTED FOR SEED WHERE SLOPES DO NOT EXCEED 2:1. SOO ON SLOPES STEEPER THAN 3:1 SHOULD BE PEGGED.
 - STRAW MULCH AT THE RATE OF 70-90 LBS PER 1,000 SF. A HYDRO-APPLICATION OF WOOD OR PAPER FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE NON-TOXIC BINDER WILL BE USED ON STRAW MULCH FOR WIND CONTROL.

- ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS 70% STABILIZED. FOR EROSION CONTROL MEASURES THAT ARE WITHIN AREAS SUBJECT TO CONSERVATION COMMISSION JURISDICTION, THE MEASURES SHALL REMAIN IN PLACE AND BE REMOVED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.
- WETLANDS WILL BE PROTECTED WITH BARRIERS CONSISTING OF STRAW BALES, COMPOST TUBES, SILT FENCE OR A COMBINATION THEREOF.
- ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL HAVE AN EXPOSURE WINDOW OF NOT MORE THAN 7 DAYS.
- ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL FOLLOW APPROPRIATE EROSION CONTROL MEASURES PRIOR TO EACH STORM IF NOT BEING ACTIVELY WORKED:

LOCATION PROTECTED AREA	MULCH STRAW	MULCH RATE (1000 SF)
WINDY AREA	SHREDDED OR CHOPPED CORNSTALKS STRAW (ANCHORED)	185-275 POUNDS 100 POUNDS
MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES GREATER THAN 3:1	JUTE MESH OR EXCELSIOR MAT	AS REQUIRED
GREATER THAN 3:1	(REFER TO GEOTECHNICAL REPORT FOR FINAL DESIGN REQUIREMENT)	

* A HYDRO-APPLICATION OF WOOD OR PAPER FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE NON-TOXIC BINDER SHALL BE USED TO ADDITIONAL WIND CONTROL.

* MULCH ANCHORING: ANCHOR MULCH WITH PEG AND TWINE (1 SQ. YD/BLOCK); MULCH NETTING (AS PER MANUFACTURER); WOOD CELLULOSE FIBER (750 LBS/ACRE); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); USE OF A SERRATED STRAIGHT DISK, WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.

- PROPOSED LOCATIONS OF SURFACE STORMWATER MANAGEMENT BASINS CAN BE UTILIZED AS A TEMPORARY SEDIMENT TRAP DURING CONSTRUCTION. SEDIMENT TRAPS SHALL BE SIZED AND CONSTRUCTED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
 - TEMPORARY SEDIMENT TRAPS SHALL BE SIZED PER THE CURRENT EDITION OF THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS" AND PROVIDE A MINIMUM OF 1,800 CF PER ACRE OF TRIBUTARY AREA WITH A MAXIMUM TRIBUTARY AREA OF 5 ACRES. MAINTAIN A 2:1 LENGTH TO WIDTH RATIO, AND NOT EXCEED 5 FT IN HEIGHT. UPON SITE STABILIZATION, ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE TEMPORARY SEDIMENT TRAP EXCAVATED TO 1 FOOT BELOW THE TRAP. THE AREA SHALL THEN BE SCARIFIED TO PREVENT COMPACTION AND PROMOTE INFILTRATION, AND GRADED AND STABILIZED IN ACCORDANCE WITH THE GRADING AND LANDSCAPE PLANS.
- STOCKPILING OF MATERIALS (DIRT, WOOD, CONSTRUCTION MATERIALS, ETC.) MUST REMAIN COVERED AT ALL TIMES TO MINIMIZE ANY DUST PROBLEMS THAT MAY OCCUR WITH ADJACENT PROPERTIES AND TO PROVIDE MAXIMUM PROTECTION AGAINST EROSION RUNOFF.
- EXISTING CATCH BASIN STRUCTURES SHALL BE PROTECTED UNTIL SUCH TIME AS THEY ARE REMOVED.
- THE CONTRACTOR MUST PERFORM DEWATERING (IF REQUIRED), IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND PAY FOR THE COSTS ASSOCIATED WITH ANY AND ALL NECESSARY DISCHARGE PERMITS ASSOCIATED WITH SAME.
- THE CONTRACTOR MUST LOCATE CONSTRUCTION WASTE MATERIAL STORAGE AREAS TO MINIMIZE EXPOSURE TO STORMWATER. THE CONTRACTOR MUST IMMEDIATELY PLACE CONSTRUCTION WASTE IN ON-SITE STORAGE CONTAINERS UNTIL THAT CONSTRUCTION WASTE IS READY FOR OFF-SITE DISPOSAL. THE CONTRACTOR MUST MAINTAIN SPILL PREVENTION AND RESPONSE EQUIPMENT AND MAKE SAME CONTINUOUSLY AVAILABLE ON-SITE FOR USE BY THE CONTRACTOR'S EMPLOYEES WHO MUST BE PROPERLY TRAINED IN THE APPLICATION OF SPILL PREVENTION AND RESPONSE PROCEDURES.

- EROSION CONTROL NOTES DURING WINTER CONSTRUCTION
- WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
- WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT THE AMOUNT OF AREA OPEN AT ONE TIME IS MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE AND IN CONFORMANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN SUCH THAT ADEQUATE PROVISIONS ARE EMPLOYED TO CONTROL STORMWATER RUNOFF.
- CONTINUATION OF EARTHWORK OPERATION ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
- AN AREA SHALL BE CONSIDERED TO HAVE BEEN TEMPORARILY STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR STRAW AT A RATE OF 100 LB PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDING, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE.
- FOR AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR A PERIOD EXCEEDING 14 DAYS BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH, LOAM OR SEED WILL NOT BE REQUIRED. THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDING. IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED AND IS SMOOTH, THEN THE AREA MAY BE DORMANT SEEDING AT A RATE OF 200-300% HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED AS APPLICABLE. SLOPES SHALL NOT BE LEFT UNSTABILIZED OVER THE WINTER OR IN AREAS WHERE WASTE HAS CEASED FOR MORE THAN 14 DAYS UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF SEDIMENT BARRIERS OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.

- MULCHING REQUIREMENTS:
 - BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING OR WOOD CELLULOSE FIBER.
 - MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPE EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%.
 - MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1ST THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.

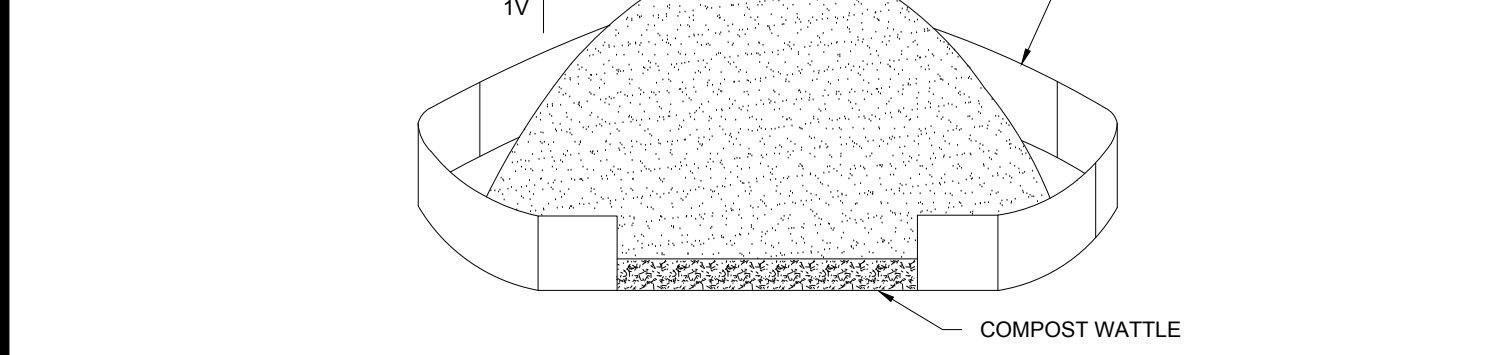
- ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE STORMWATER PREVENTION PLAN.
- DURING THE WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

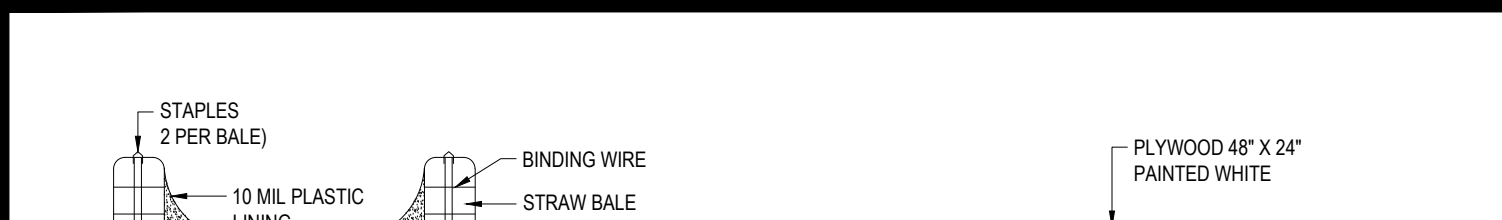
- THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
- EROSION CONTROL MEASURES MUST CONFORM TO THE STATE, LOCAL, AND FEDERAL GUIDELINES FOR URBAN EROSION AND SEDIMENT CONTROL, UNLESS OTHERWISE NOTED, OR UNLESS ENGINEER CLEARLY AND SPECIFICALLY, IN WRITING, DIRECTS OTHERWISE. INSTALLATION OF EROSION CONTROL, CLEARING, AND SITE WORK MUST BE PERFORMED EXACTLY AS INDICATED IN THE EROSION CONTROL CONSTRUCTION NOTES.
- THE DISTURBED LAND AREA OF THIS SITE IS APPROXIMATELY 44.133 ACRES.
- THE FOLLOWING EROSION CONTROL MEASURES ARE PROPOSED FOR THIS SITE:
 - STABILIZED CONSTRUCTION ENTRANCE/EXIT - A TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT IS TO BE INSTALLED AT THE DESIGNATED LOCATION SHOWN ON THE PLAN. THIS AREA MUST BE GRADED SO THAT RUNOFF WATER WILL BE RETAINED ON-SITE. SEDIMENT FENCE - INSTALL SILT FENCE(S) AND/OR SILT SOCK AROUND ALL OF THE DOWNSLOPE PERIMETERS OF THE SITE, TEMPORARY FILL AND SOIL STOCKPILES.
 - INSTALL FILTER FABRIC DROP INLET PROTECTION AROUND EACH DRAINAGE INLET AS DRAINAGE STRUCTURES ARE INSTALLED TO REDUCE THE QUANTITY OF SEDIMENT. INSTALL TEMPORARY INLET PROTECTION ON INLETS DOWNSLOPE FROM DISTURBANCE, WHICH MAY BE BEYOND THE LIMITS OF DISTURBED AREA.
- INSTALLATION OF EROSION CONTROL DEVICES MUST BE IN ACCORDANCE WITH ALL OF THE MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR MUST INSPECT EROSION CONTROL MEASURES WEEKLY. THE CONTRACTOR MUST REMOVE ANY SILT DEPOSITS GREATER THAN 6" OR HALF THE HEIGHT OF THE EROSION CONTROL BARRIER HEIGHT COLLECTED ON THE FILTER FABRIC AND/OR SILT SOCK BARRIERS AND EXCAVATE AND REMOVE ANY SILT FROM DROP INLET PROTECTION.
- THE CONTRACTOR MUST APPLY TEMPORARY SEED AND MULCH TO ALL DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINISHED GRADE AND VEGETATED WITHIN 7 DAYS. WHEN AREAS ARE DISTURBED AFTER THE GROWING SEASON, THE CONTRACTOR MUST STABILIZE SAME WITH GEOTEXTILE FABRIC AND MAINTAIN SAME IN STRICT ACCORDANCE WITH BEST MANAGEMENT PRACTICES.
- THE CONTRACTOR MUST INSTALL ADDITIONAL EROSION CONTROL MEASURES IF ENGINEER SO REQUIRES, TO PREVENT ANY, INCLUDING THE INCIDENTAL DISCHARGE OF SILT-LADEN RUNOFF FROM EXITING THE SITE.
- THE CONTRACTOR MUST BE RESPONSIBLE FOR INSPECTING AND MAINTAINING ALL EROSION CONTROL MEASURES ON THE SITE UNTIL PERMANENT PAVING AND TURFLANDSCAPING IS ESTABLISHED. THE COSTS OF INSTALLING AND MAINTAINING THE EROSION CONTROL MEASURES MUST BE INCLUDED IN THE BID PRICE FOR THE SITE WORK AND THE CONTRACTOR IS RESPONSIBLE FOR ALL SUCH COSTS.
- THE CONTRACTOR MUST CONTINUE TO MAINTAIN ALL EROSION CONTROL MEASURES UNTIL THE COMPLETION OF CONSTRUCTION AND THE ESTABLISHMENT OF VEGETATION.
- THE CONTRACTOR MUST REMOVE EROSION CONTROL MEASURES, SILT AND DEBRIS AFTER ESTABLISHING PERMANENT VEGETATION COVER OR OTHER INSTALLING A DIFFERENT, SPECIFIED METHOD OF STABILIZATION.
- THIS PLAN REPRESENTS THE MINIMUM LEVEL OF IMPLEMENTATION OF TEMPORARY EROSION CONTROL AND SEDIMENTATION CONTROL FACILITIES. MEASURES AND STRUCTURES ADDITIONAL FACILITIES, MEASURES AND STRUCTURES MUST BE INSTALLED WHERE NECESSARY TO COMPLY WITH ALL APPLICABLE CODES AND STANDARDS AND/OR TO PREVENT ANY, INCLUDING THE INCIDENTAL DISCHARGE OF SILT-LADEN RUNOFF FROM EXITING THE SITE.
- THE CONTRACTOR MUST PROTECT ALL EXISTING TREES AND SHRUBS. THE CONTRACTOR MUST REFER TO THE LANDSCAPE (AND/OR DEMOLITION PLAN) FOR TREE PROTECTION, FENCE LOCATIONS AND DETAILS.
- THE CONTRACTOR MUST REFER TO GRADING PLANS FOR ADDITIONAL INFORMATION.
- THE CONTRACTOR MUST CLEAN EXISTING AND PROPOSED DRAINAGE STRUCTURES AND INTERCONNECTING PIPES ON OR OFF-SITE AS THE JURISDICTIONAL AGENCY REQUIRES, BOTH AT THE TIME OF SITE STABILIZATION AND AT END OF PROJECT.
- SOIL EROSION CONTROL MEASURES MUST BE ADJUSTED OR RELOCATED BY THE CONTRACTOR AS IDENTIFIED DURING SITE OBSERVATION IN ORDER TO MAINTAIN THE COMPLETE EFFECTIVENESS OF ALL CONTROL MEASURES.
- THE CONTRACTOR MUST IDENTIFY, ON THE PLAN, THE LOCATION OF WASTE CONTAINERS, FUEL STORAGE TANKS, CONCRETE WASHOUT AREAS AND ANY OTHER LOCATIONS WHERE HAZARDOUS MATERIALS ARE STORED.



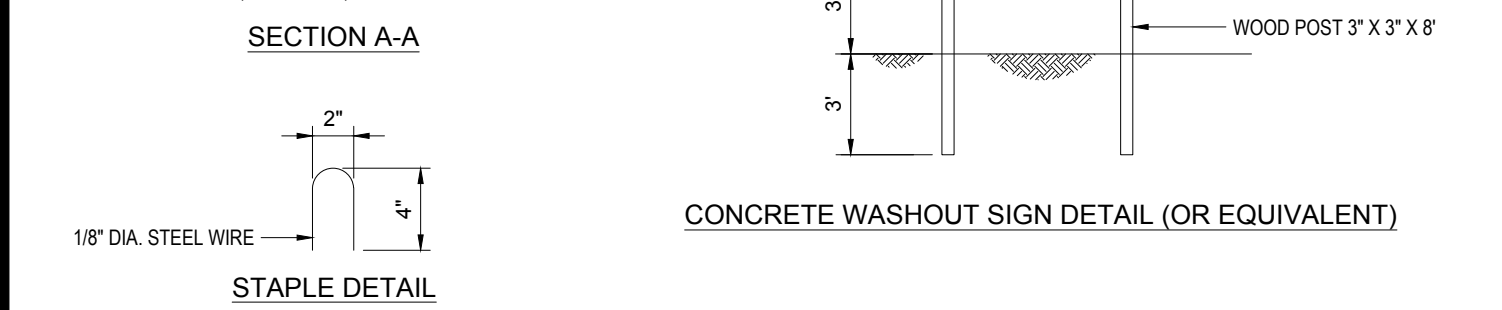
- NOTES:
- AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
 - MAXIMUM SLOPE OF STOCKPILE SHALL BE 3H:1V.
 - UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR COMPOST WATTLE, THEN STABILIZED WITH VEGETATION OR COVERED.



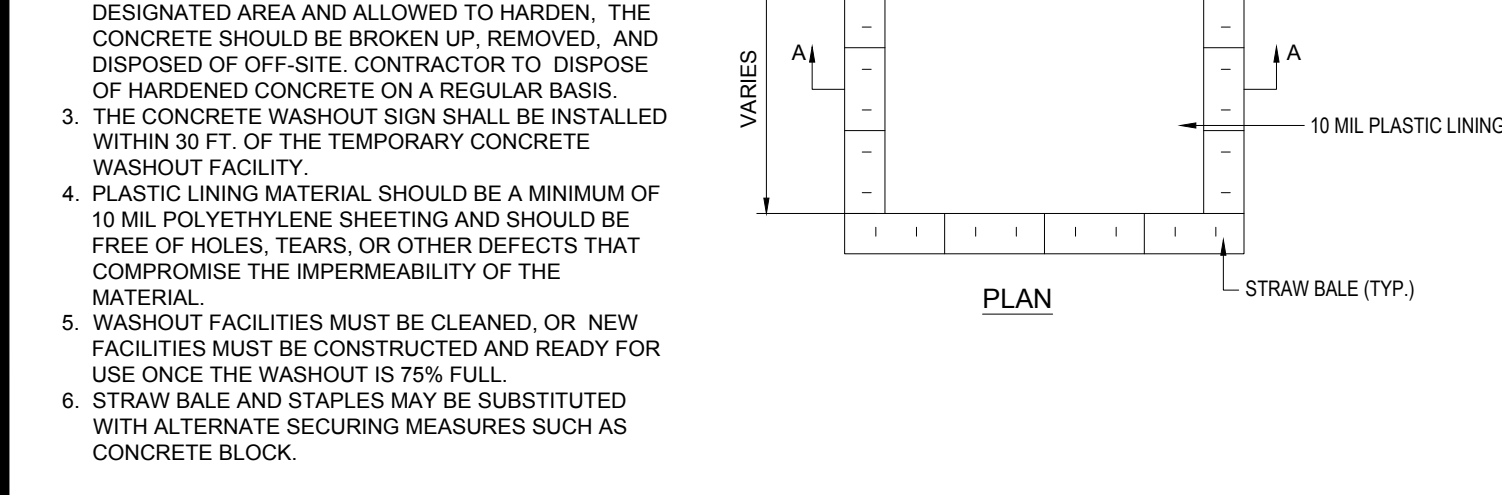
TEMPORARY STOCKPILE N.T.S.



STABILIZED CONSTRUCTION ENTRANCE N.T.S.



DEWATERING GEOTEXTILE FILTER BAG DETAIL N.T.S.



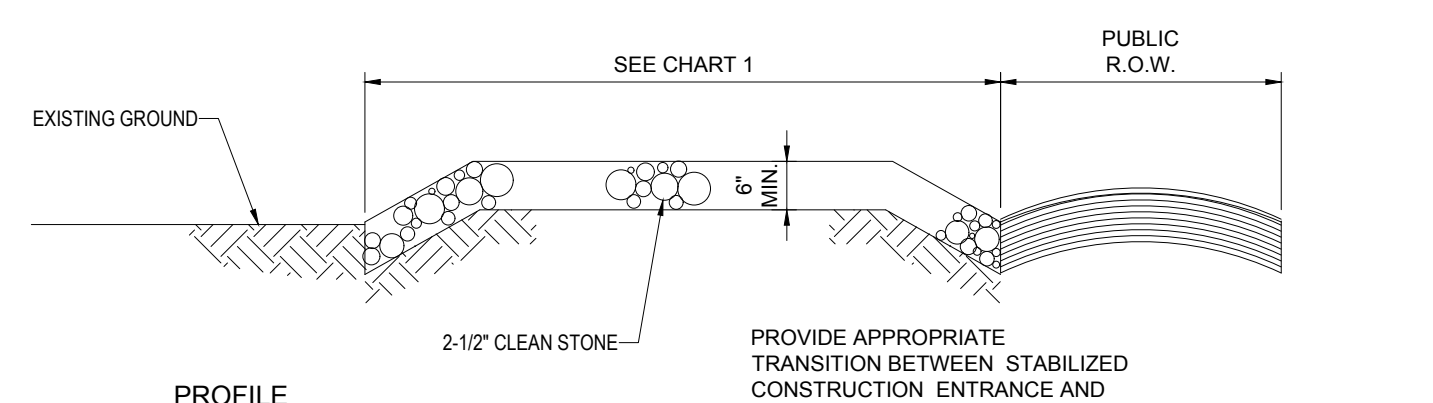
CONCRETE WASTE MANAGEMENT AREA N.T.S.



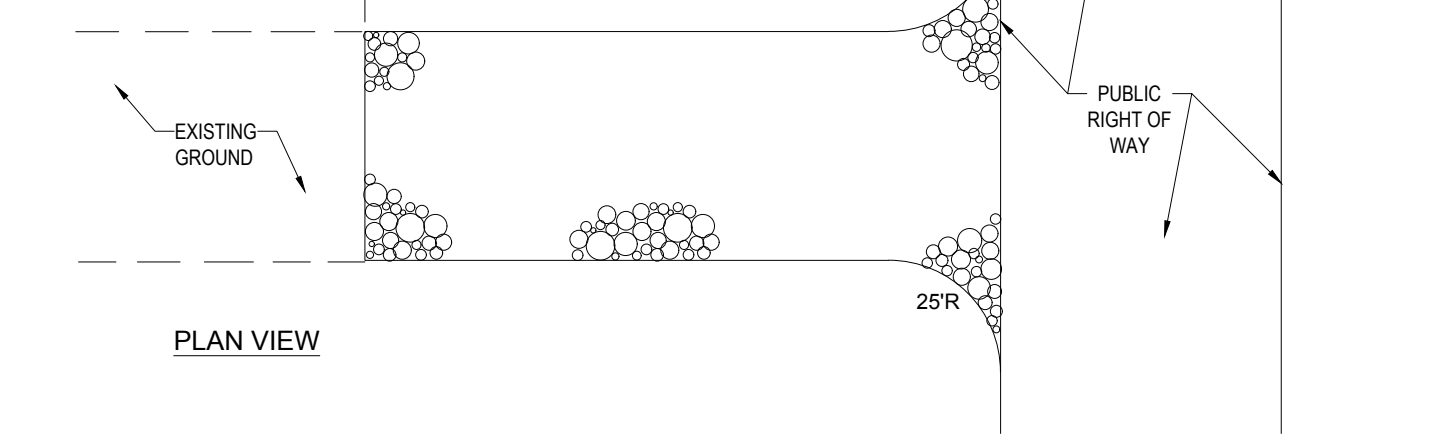
EROSION CONTROL BLANKET 2:1 SLOPES (SLOPE INSTALLATION) N.T.S.

- THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:
- INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCE/EXIT (AS SHOWN)
 - INSTALLATION OF EROSION CONTROL BARRIER (COMPOST WATTLE AND SILT FENCE) (AS SHOWN)
 - DEMOLITION OF EXISTING SITE STRUCTURES (SEE DEMOLITION PLAN)
 - DEMOLITION OF EXISTING SITE PAVEMENT AND AMENITIES (SEE DEMOLITION PLAN)
 - CLEARING AND GRUBBING
 - INSTALLATION OF TEMPORARY SWALES AND SEDIMENT BASINS
 - EARTHWORK AND EXCAVATION/FILLING AS NECESSARY
 - CONSTRUCTION OF UTILITIES
 - STABILIZE PERMANENT LAWN AREAS AND SLOPES WITH TEMPORARY SEEDING
 - INSTALLATION OF INLET PROTECTION OF ON-SITE UTILITIES (AS SHOWN)
 - CONSTRUCTION OF ALL CURBING AS INDICATED ON THE PLANS
 - SPREAD TOPSOIL ON SLOPED AREAS AND SEED AND MULCH
 - FINAL GRADING OF ALL SLOPED AREAS
 - PLACE 6" TOPSOIL ON SLOPES AFTER FINAL GRADING COMPLETED. FERTILIZE, SEED, AND MULCH SEED MIXTURE TO BE INSTALLED AS REQUIRED.
 - REMOVAL OF THE TEMPORARY SEDIMENT BASINS
 - LANDSCAPING PER LANDSCAPING PLAN
 - REMOVE EROSION CONTROLS AS DISTURBED AREAS BECOME STABILIZED TO 70% STABILIZATION OR GREATER

RECOMMENDED CONSTRUCTION SEQUENCE N.T.S.



PROPOSED SITE PLAN DOCUMENTS N.T.S.

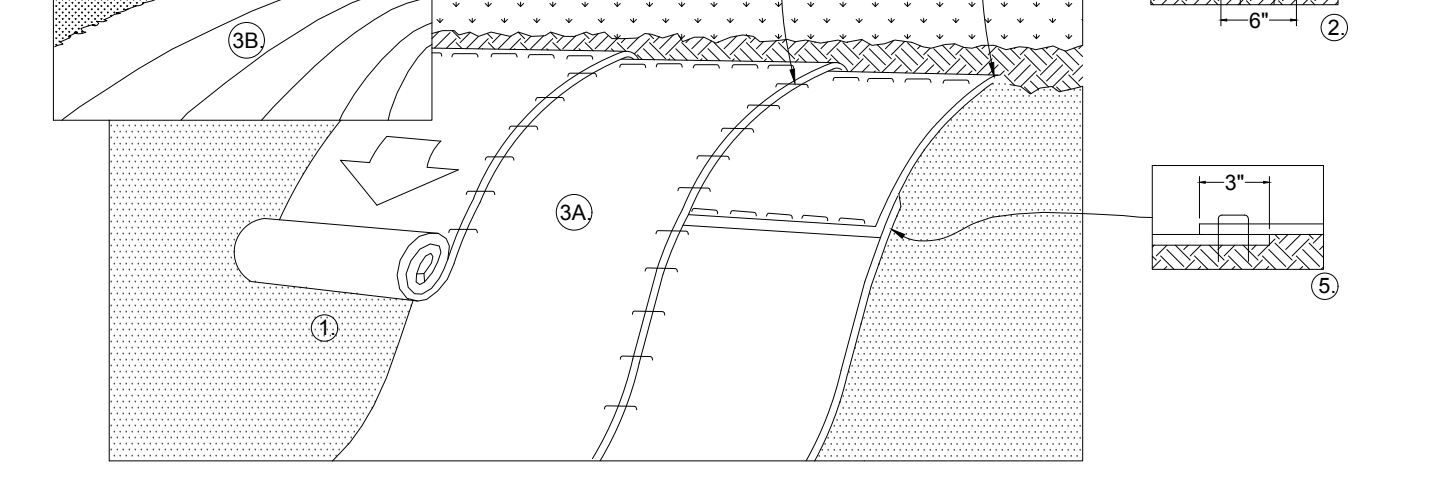


TREE PROTECTION DURING SITE CONSTRUCTION N.T.S.

PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT	100 FT
2% TO 5%	100 FT	200 FT
>5%	ENTIRE ENTRANCE STABILIZED WITH FABC BASE COURSE (1)	

(1) AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY.

CHART 1



FILTER SACS (GRADED INLETS) N.T.S.

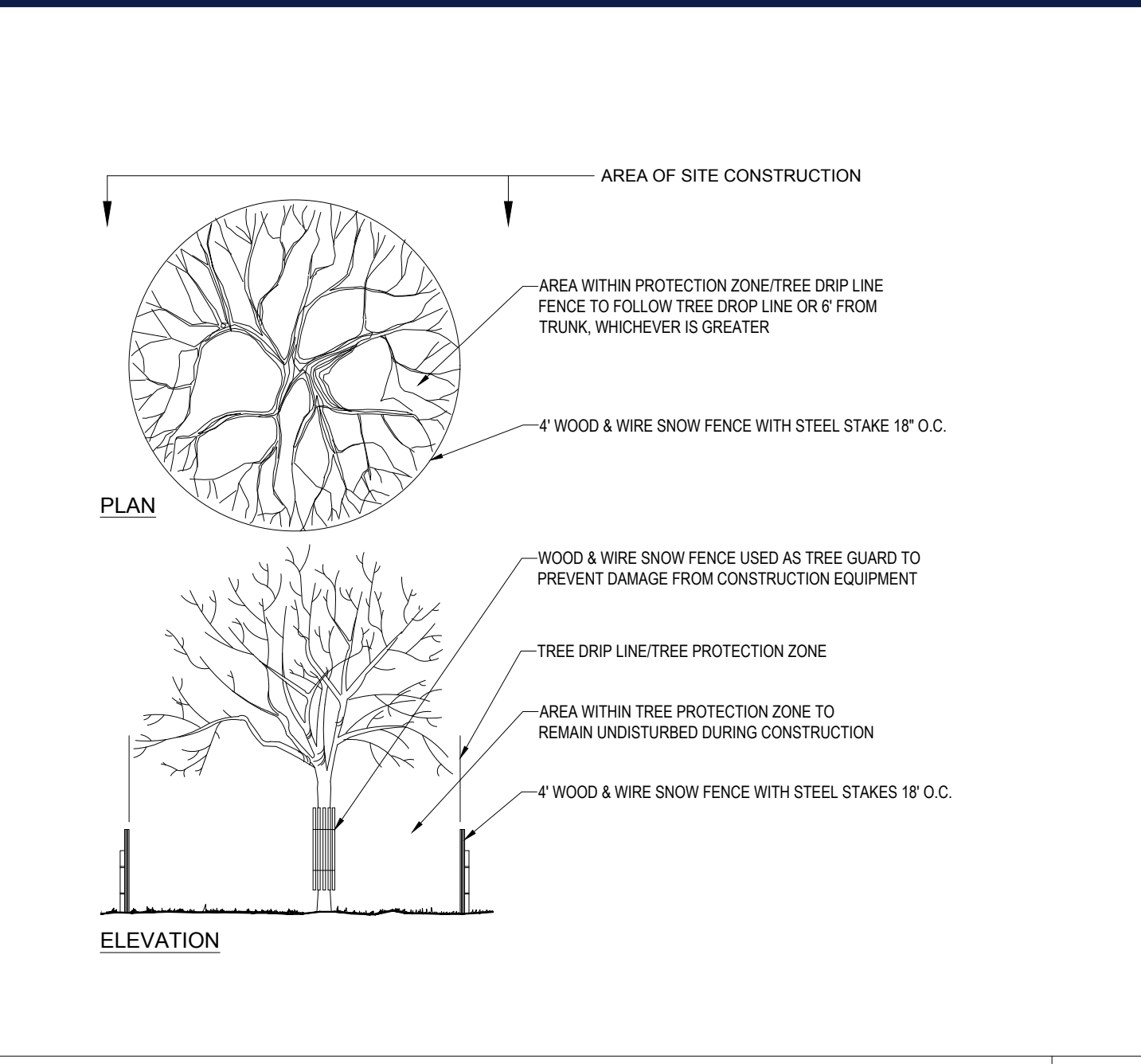
LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE	TEST METHOD	
	PROPERTIES	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4633	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.65 SEC ⁻¹

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE

MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE	TEST METHOD	
	PROPERTIES	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	205 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4633	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC ⁻¹

MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE

- NOTES:
- IN USUALLY SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.
 - FOLLOW EROSION CONTROL TECHNOLOGY COUNCIL SPECIFICATION FOR PRODUCT SELECTION.



TREE PROTECTION DURING SITE CONSTRUCTION N.T.S.



FILTER SACS (GRADED INLETS) N.T.S.

- REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
- GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
- PLACE AN OIL ADSORBENT PAD OR FILLOW OVER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
- INSPECT PER REGULATORY REQUIREMENTS.
- THE WIDTH, "W", OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRADED INLET BOX.
- THE DEPTH, "D", OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES.
- THE LENGTH, "L", OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRADED INLET BOX.

SECTION VIEW PROFILE VIEW OF INSTALLED FILTER SACK

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE	TEST METHOD	
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GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
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FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC ⁻¹

MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE

- NOTES:
- DO NOT USE IN PAVED AREAS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

SECTION VIEW PROFILE VIEW OF INSTALLED FILTER SACK

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 SITE CIVIL AND CONSULTING ENGINEERING
 PROGRAM MANAGEMENT
 LANDSCAPE ARCHITECTURE
 SUSTAINABLE DESIGN
 PERMITTING SERVICES
 TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	CHECKED BY	DRAWN BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL	GD
2	02/16/2024	PER TOWN COMMENTS	SMK	GD

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PROJECT No.: W201257
 DRAWN BY: CMC / OCR
 CHECKED BY: 07/20/2023
 DATE: 07/20/2023
 CAD ID: W201257.02-EROSION-2A

PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET SOLAR LLC

PROPOSED
SOLAR FARM - SOUTH

LOTS INCLUDED (PARCEL #): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION OF D 239-010, & 32-0009
 160 MAPLE STREET,
 TOWN OF BELLINGHAM & FRANKLIN,
 NORFOLK COUNTY, MASSACHUSETTS

BOHLER
 352 TURNPIKE ROAD
 SOUTHBOROUGH, MA 01772
 Phone: (508) 480-9900
 www.BohlerEngineering.com

Professional Engineer
 JOHN A. BOHLER
 No. 41530
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 MASSACHUSETTS
 LICENSE NO. 41530
 EXPIRES 06/30/2025

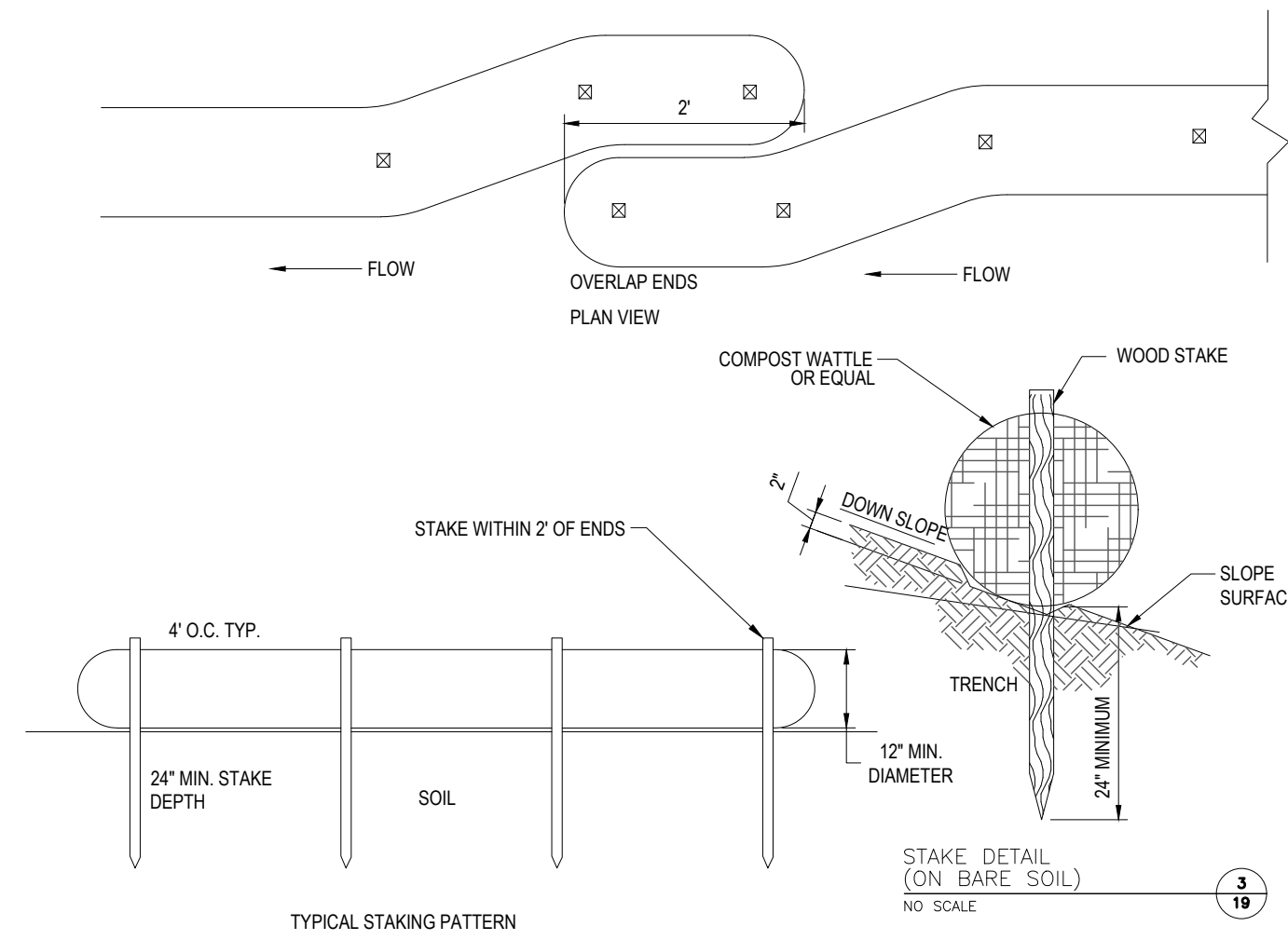
EROSION & SEDIMENT CONTROL NOTES & DETAILS

SHEET NUMBER:
C-607

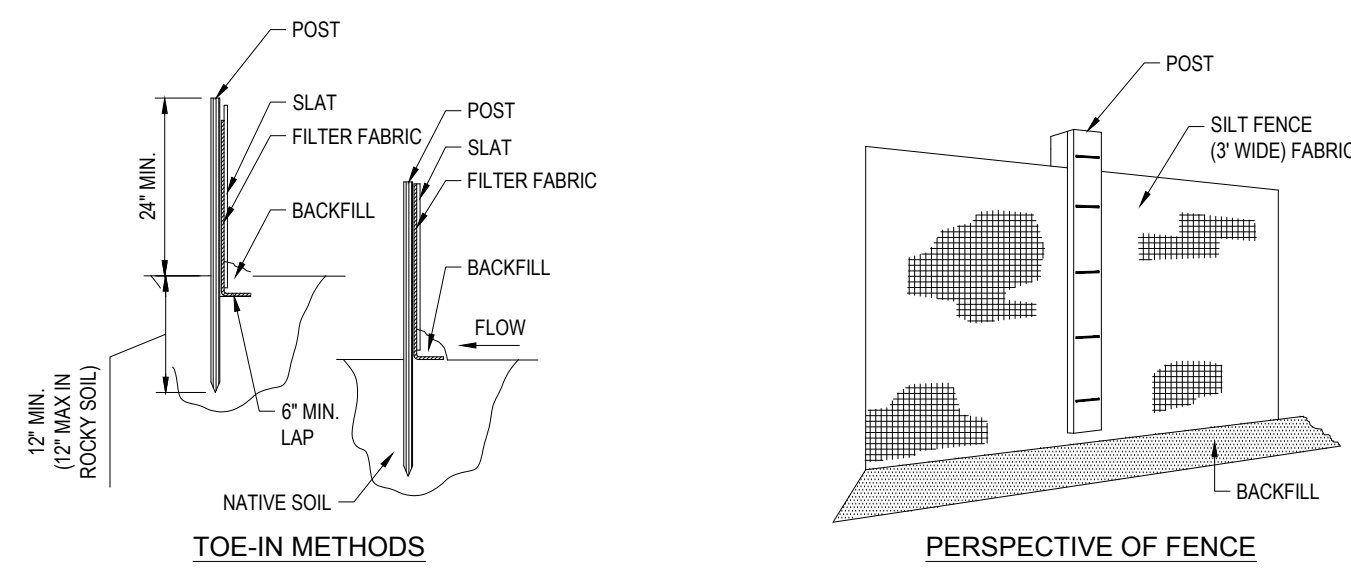
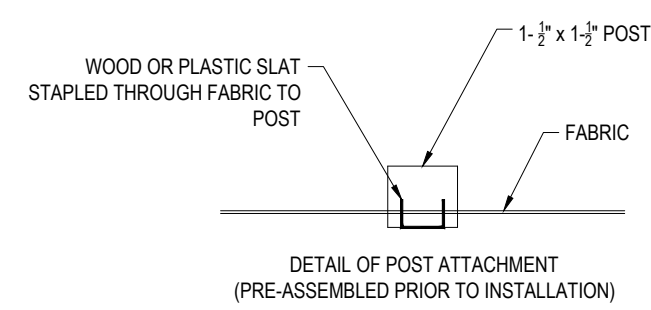
REVISION 2 - 02/16/2024

BOHLER ENGINEERING, INC. PROJECT NO. W201257.02-EROSION-2A - LAYOUT: C-607-ENOTE

EROSION CONTROL BARRIER SHALL CONSIST OF BOTH COMPOST WATTLE AND SILT FENCE UNLESS OTHERWISE NOTED



COMPOST WATTLE



SILT FENCE

- INSTALLATION:
1. EXCAVATE A 6" x 6" TRENCH ALONG THE LINE OF EROSION CONTROL OF THE SITE.
 2. UNROLL SILTATION FENCE AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH (NET SIDE AWAY FROM FLOW DIRECTION).
 3. DRIVE THE POST INTO THE GROUND UNTIL THE NETTING IS LAYING ACROSS THE TRENCH BOTTOM.
 4. LAY THE TOE-IN FLAP OF THE FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. TOE-IN CAN ALSO BE ACCOMPLISHED BY LAYING FABRIC FLAP ON UNDISTURBED GROUND AND PILING & TAMING FILL AT THE BASE.
 5. COMBINATION OF COMPOST WATTLE AND SILT FENCE SHALL BE USED AS NOTED ON THE PLAN.
 6. WIRE BACK SILT FENCE TO BE USED IN AREAS WITHIN 50 FOOT WETLAND BUTTER, SEE DETAIL (THIS SHEET).

EROSION CONTROL BARRIER (ECB) DETAIL

N.T.S.

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 SITE CIVIL AND CONSULTING ENGINEERING
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PROJECT:

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PROPOSED SOLAR FARM - SOUTH

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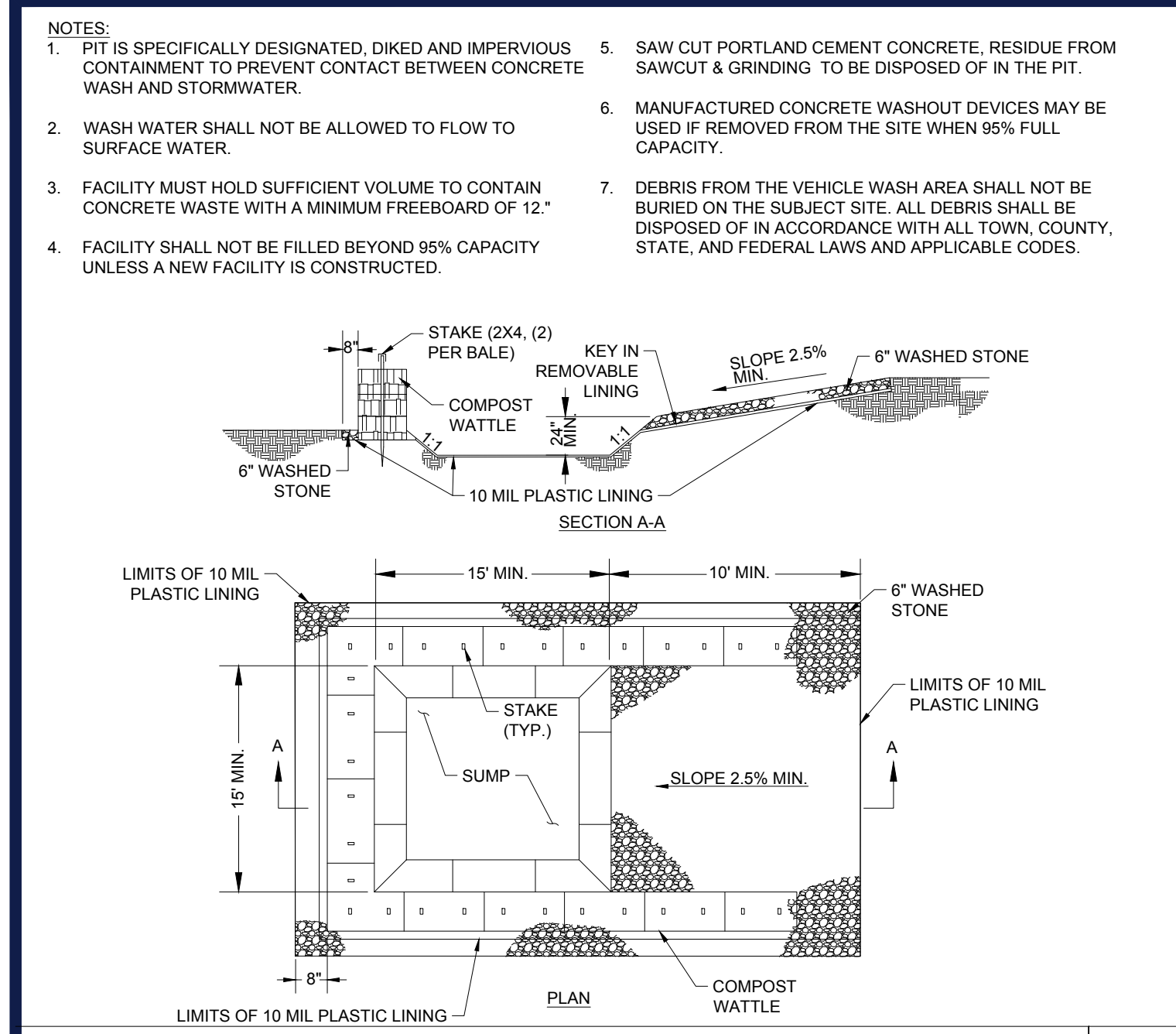
SHEET TITLE:
EROSION & SEDIMENT CONTROL NOTES & DETAILS

SHEET NUMBER:

C-609

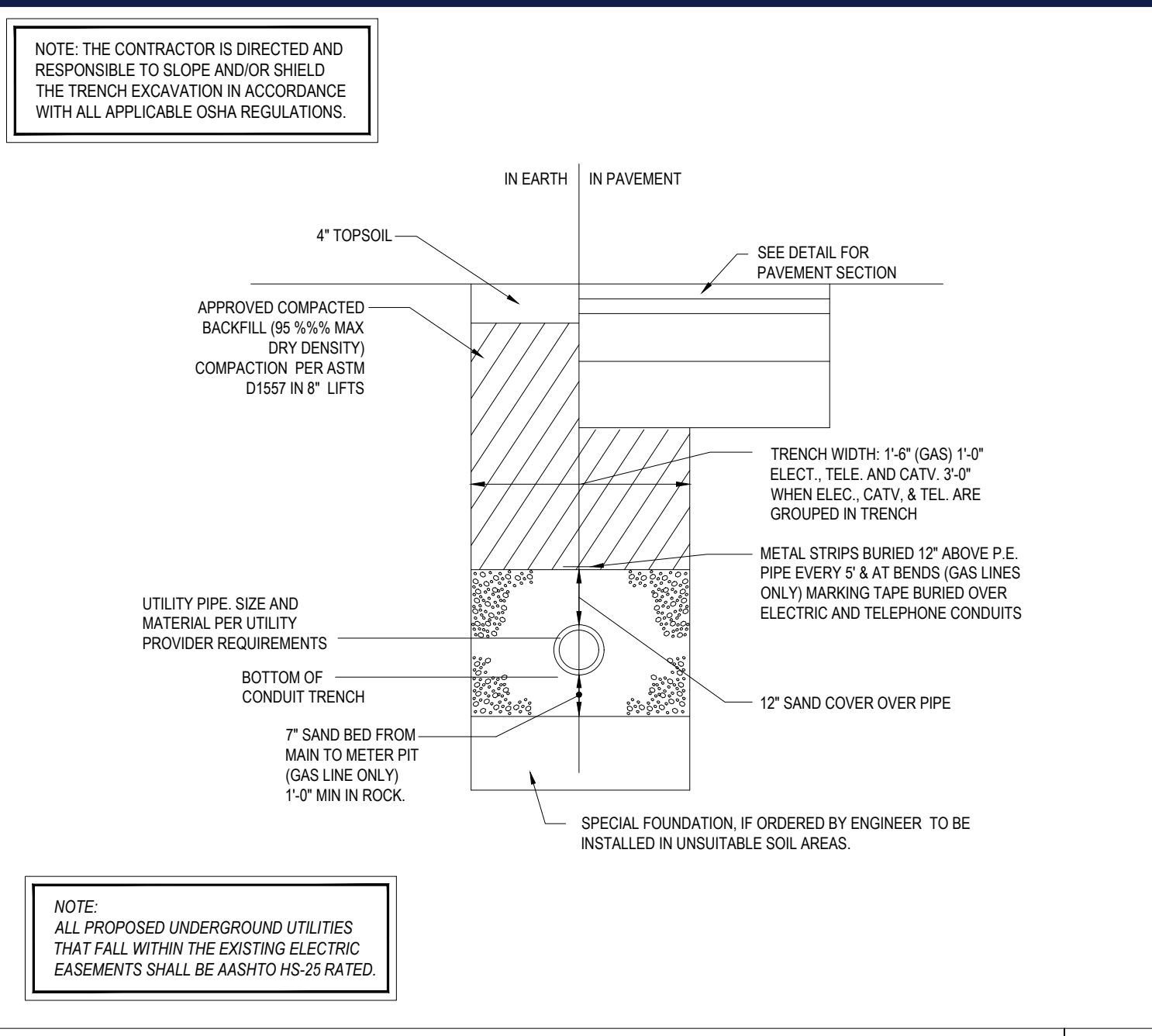
REVISION 2 - 02/16/2024

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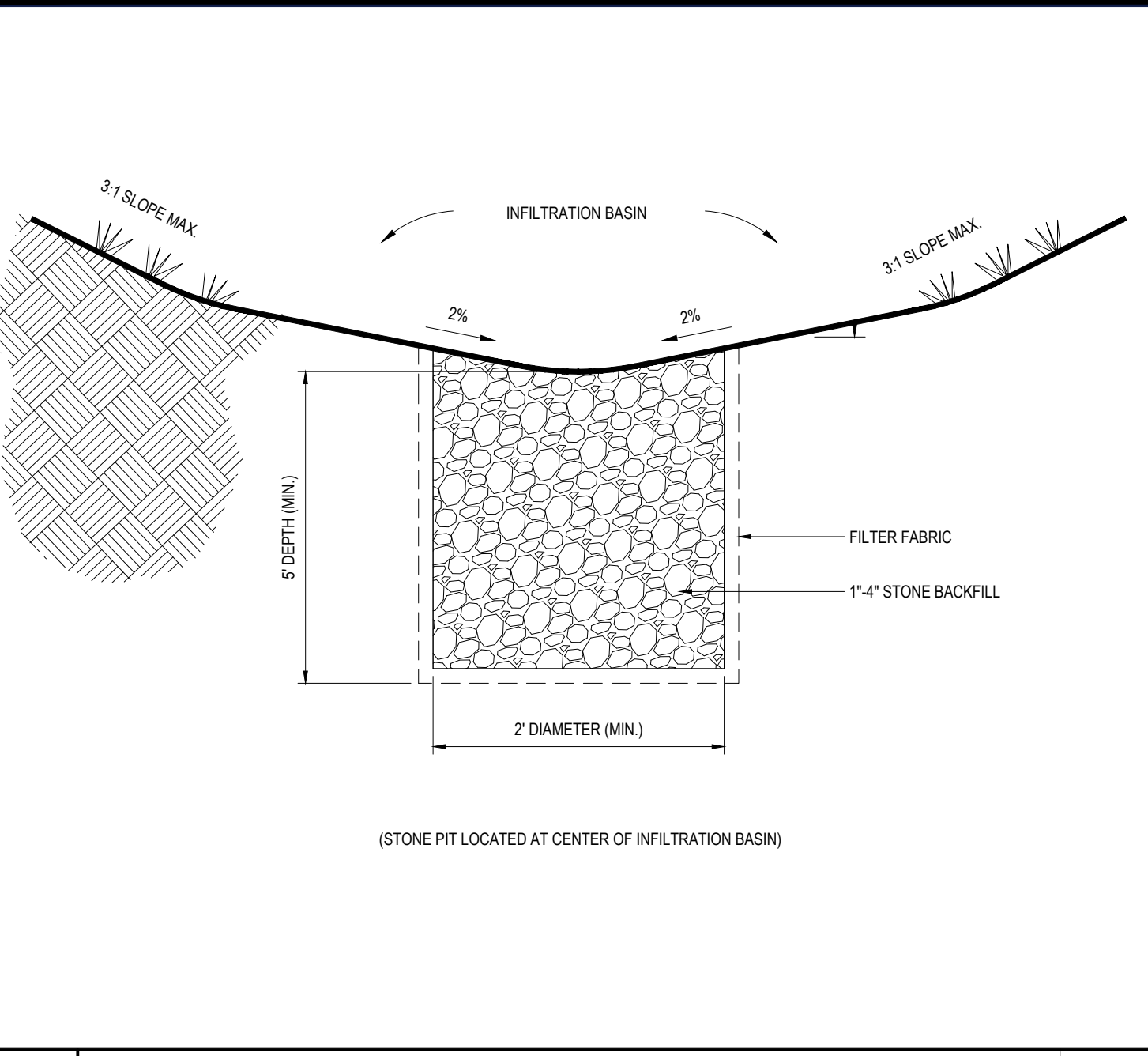
CONCRETE WASHOUT DETAIL

N.T.S.



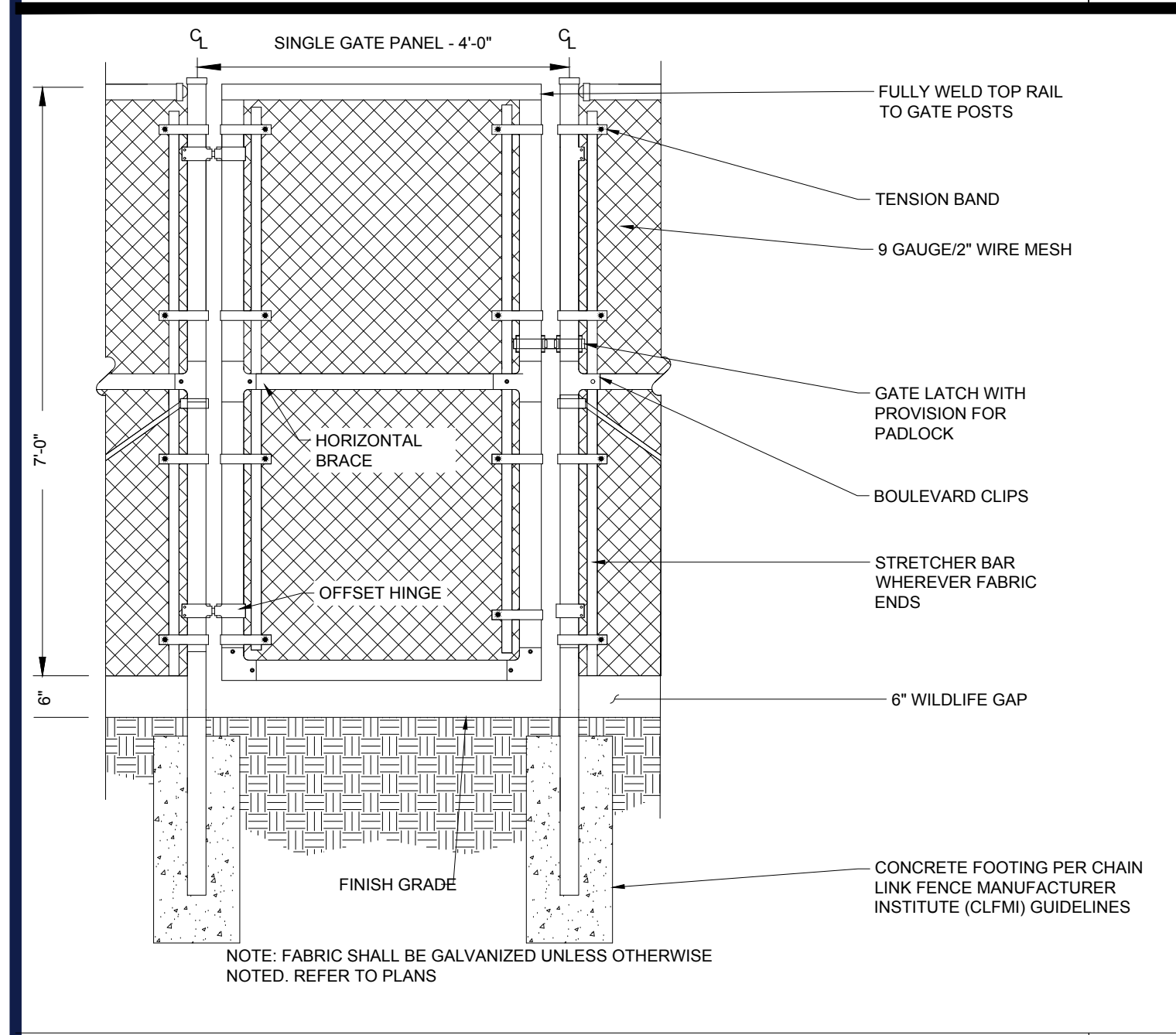
PRIMARY ELECTRICAL TRENCH DETAIL

N.T.S.



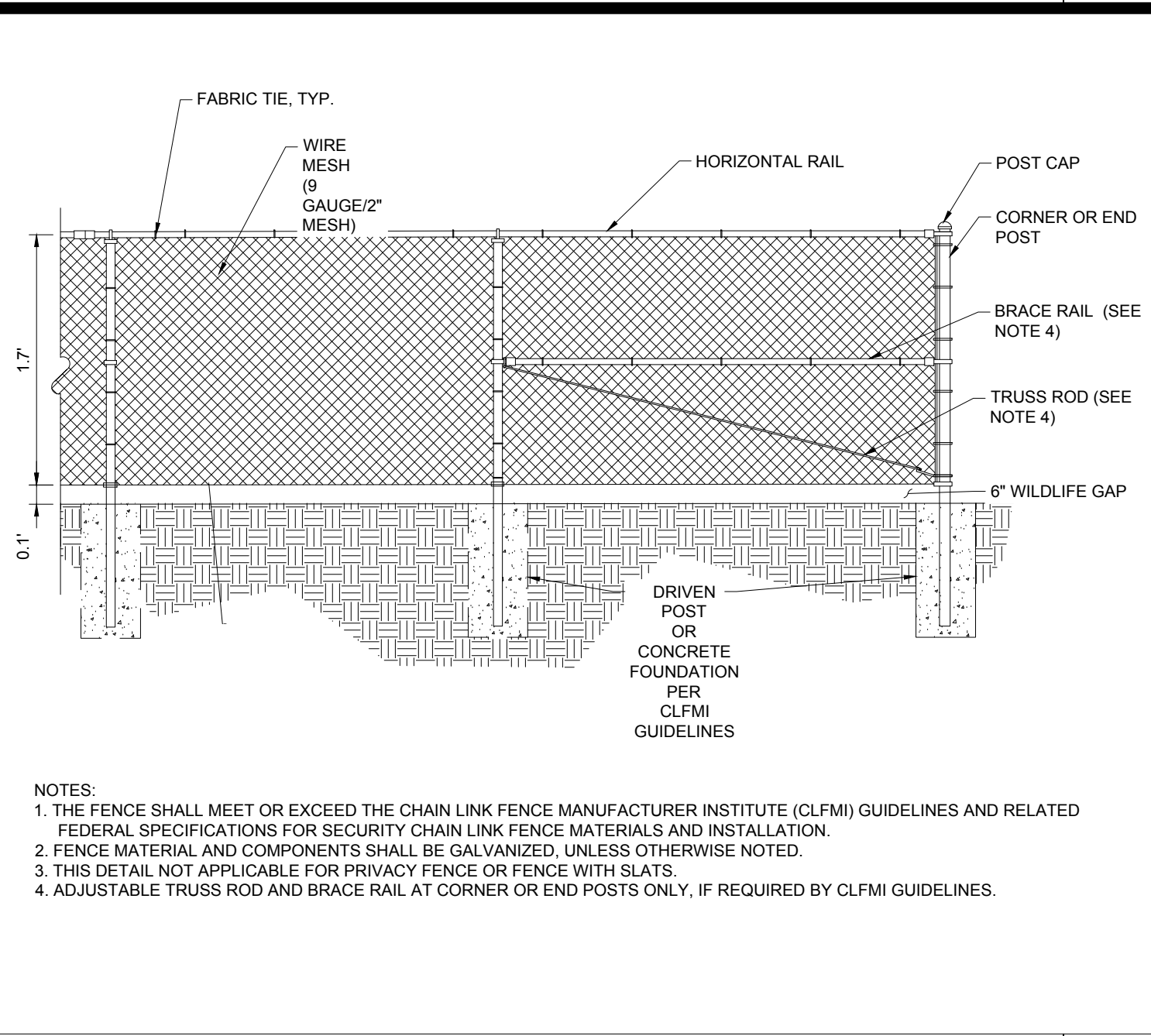
STORMWATER INFILTRATION TRENCH

NOT TO SCALE (S500.01xx_07/2022)



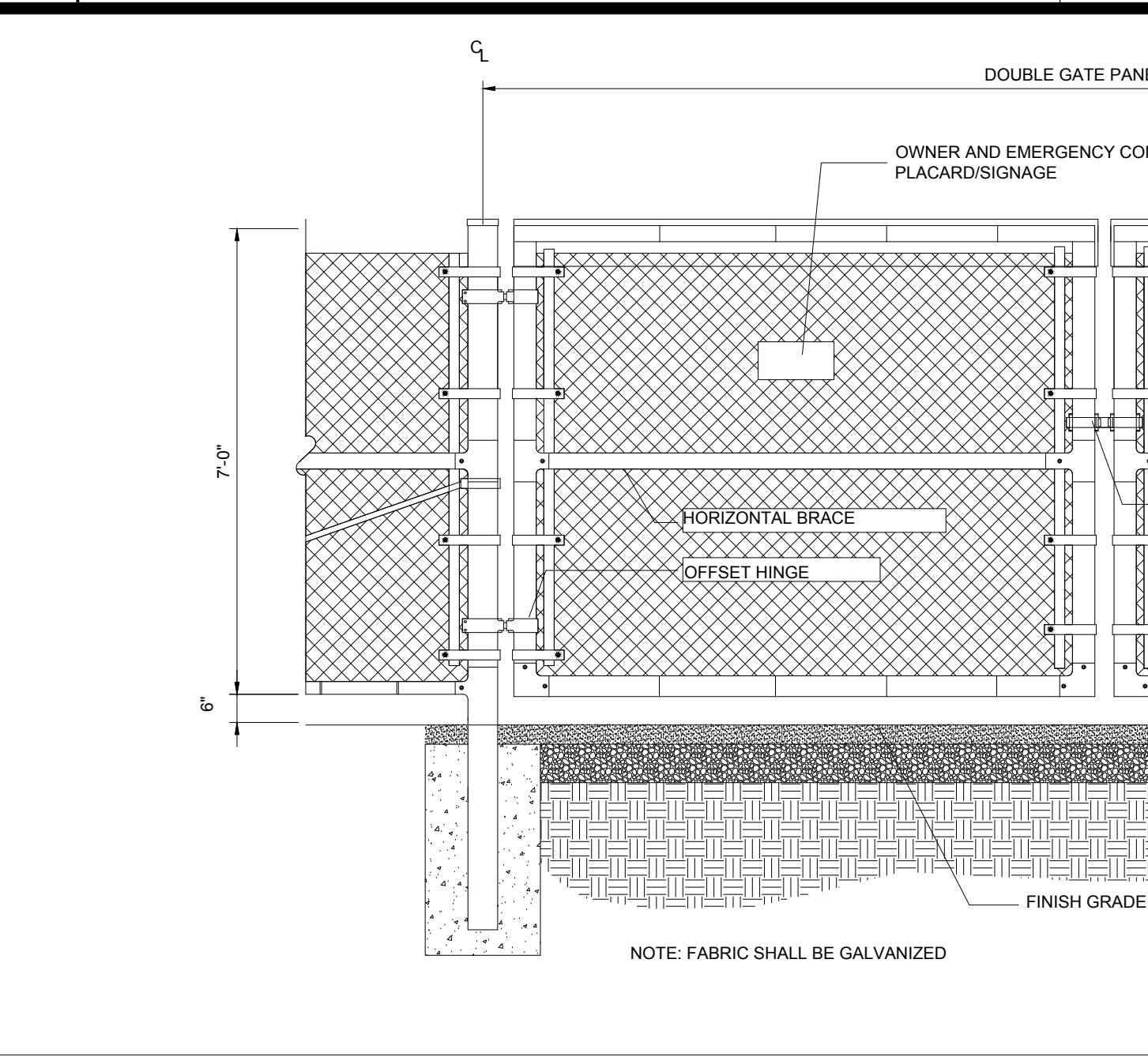
7' ACCESS GATE WITH WILDLIFE GAP

N.T.S.



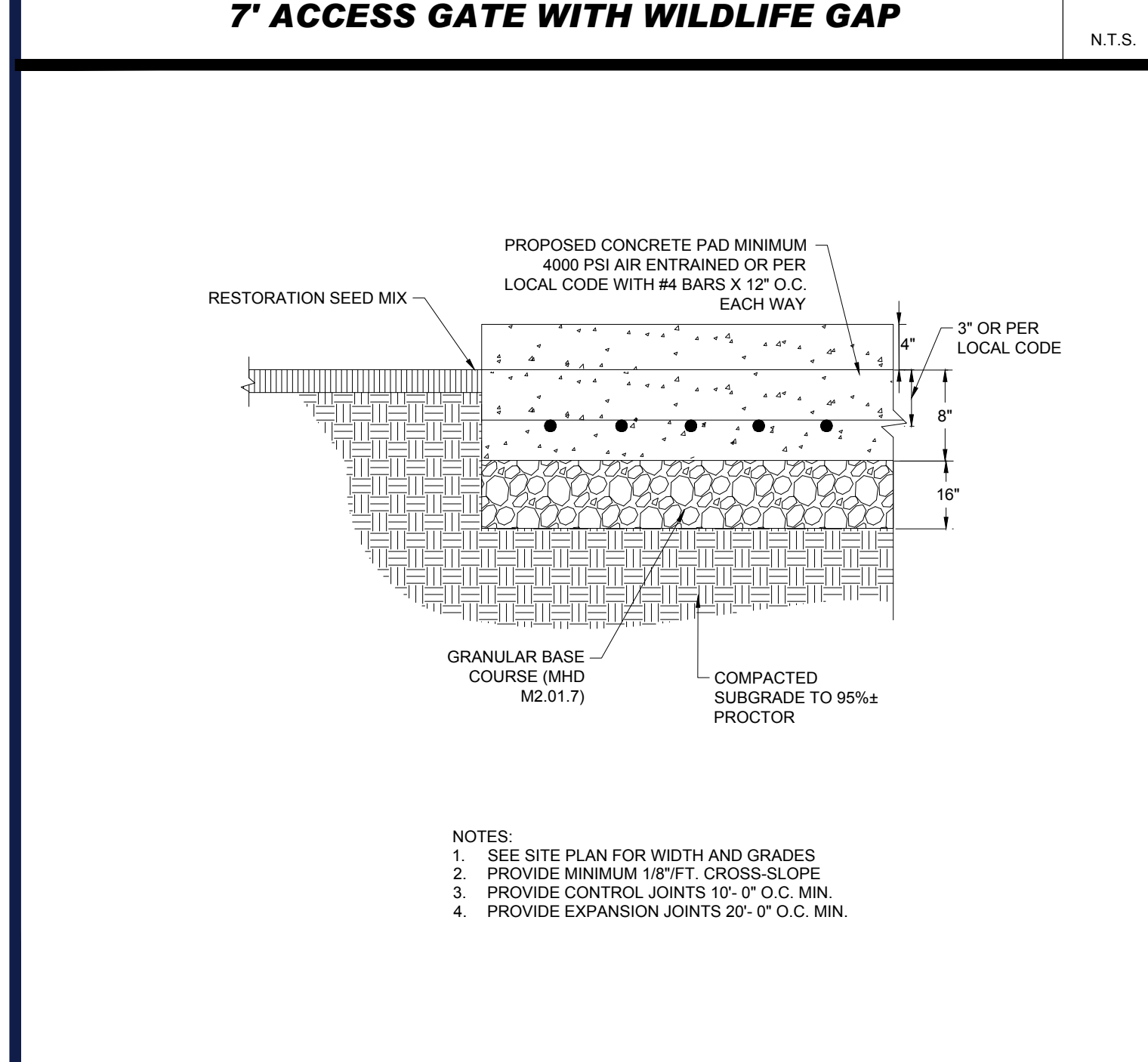
7' CHAIN LINK FENCE WITH WILDLIFE GAP

N.T.S.



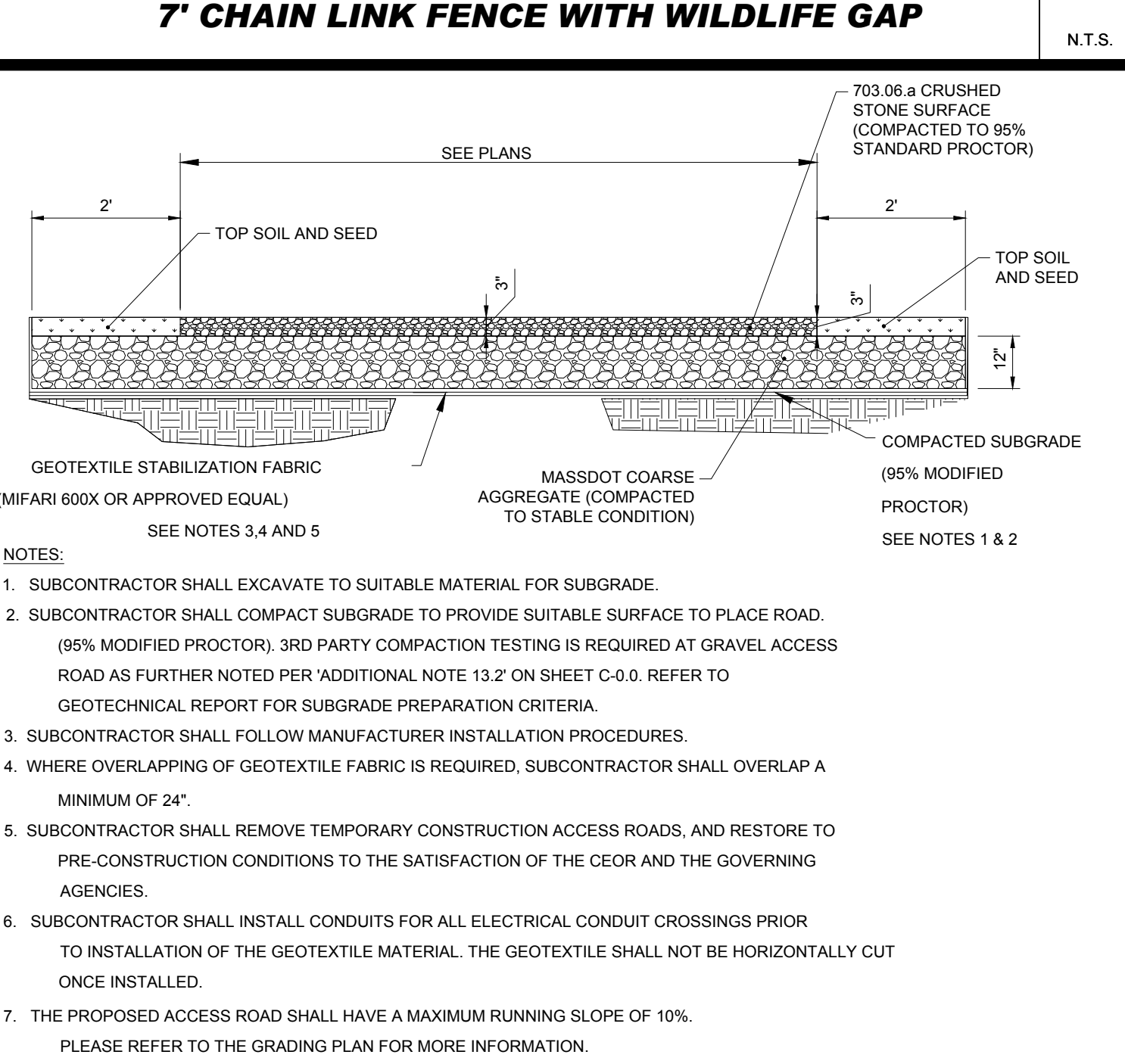
24' WIDE DOUBLE SWING GATE WITH WILDLIFE GAP

N.T.S.



CONCRETE PAD FOR EQUIPMENT

N.T.S.



ACCESS GRAVEL ROAD

N.T.S.

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PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET SOLAR LLC

PROPOSED
 SOLAR FARM - SOUTH

LOTS INCLUDED (PARCEL #): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION OF D 239-010, & 32-0009
 160 MAPLE STREET,
 TOWN OF BELLINGHAM & FRANKLIN,
 NORFOLK COUNTY, MASSACHUSETTS

BOHLER

352 TURNPIKE ROAD
 SOUTHBOROUGH, MA 01772
 Phone: (508) 480-9900
 www.BohlerEngineering.com

SHEET TITLE:
DETAIL SHEET

SHEET NUMBER:
C-901

REVISION 2 - 02/16/2024

I:\BOHLER\NET\SHARES\MAP\PROJECTS\2023\257\257-02-DET-2A\257-02-DET-2A.dwg - LAYOUT - C-901-DET1

Three-Phase Transformers
CA202003EN

Effective April 2016
Supersedes 210-12 July 2015

COOPER POWER SERIES

Three-phase pad-mounted compartmental type transformer



General

At Eaton, we are constantly striving to introduce new innovations to the transformer industry, bringing you the highest quality, most reliable transformers. Eaton's Cooper Power series Transformer Products are ISO 9001 compliant, emphasizing process improvement in all phases of design, manufacture, and testing. In order to drive this innovation, we have invested both time and money in the Thomas A. Edison Technical Center, our premier research facility in Franksville, Wisconsin. Such revolutionary products as distribution-class UltraSIL™ Polymer-Housed Evolution™ surge arresters and Envirotemp™ FR3™ fluid have been developed at our Franksville lab.

With transformer sizes ranging from 45 kVA to 12 MVA and high voltages ranging from 2400 V to 48 kV, Eaton has you covered. From fabrication of the tanks and cabinets to winding of the cores and coils, to production of arresters, switches, tap changers, expulsion fuses, current limit fuses, bushings (live and dead) and molded rubber goods, Eaton does it all. Eaton's Cooper Power series transformers are available with electrical grade mineral oil or Envirotemp™ FR3™ fluid, a less-flammable and bio-degradable fluid. Electrical codes recognize the advantages of using Envirotemp™ FR3™ fluid both indoors and outdoors for fire sensitive applications. The bio-based fluid meets Occupational Safety and Health Administration (OSHA) and Section 450.23 NEC Requirements.



Catalog Data CA202003EN
Effective April 2016

Three-phase pad-mounted compartmental type transformer

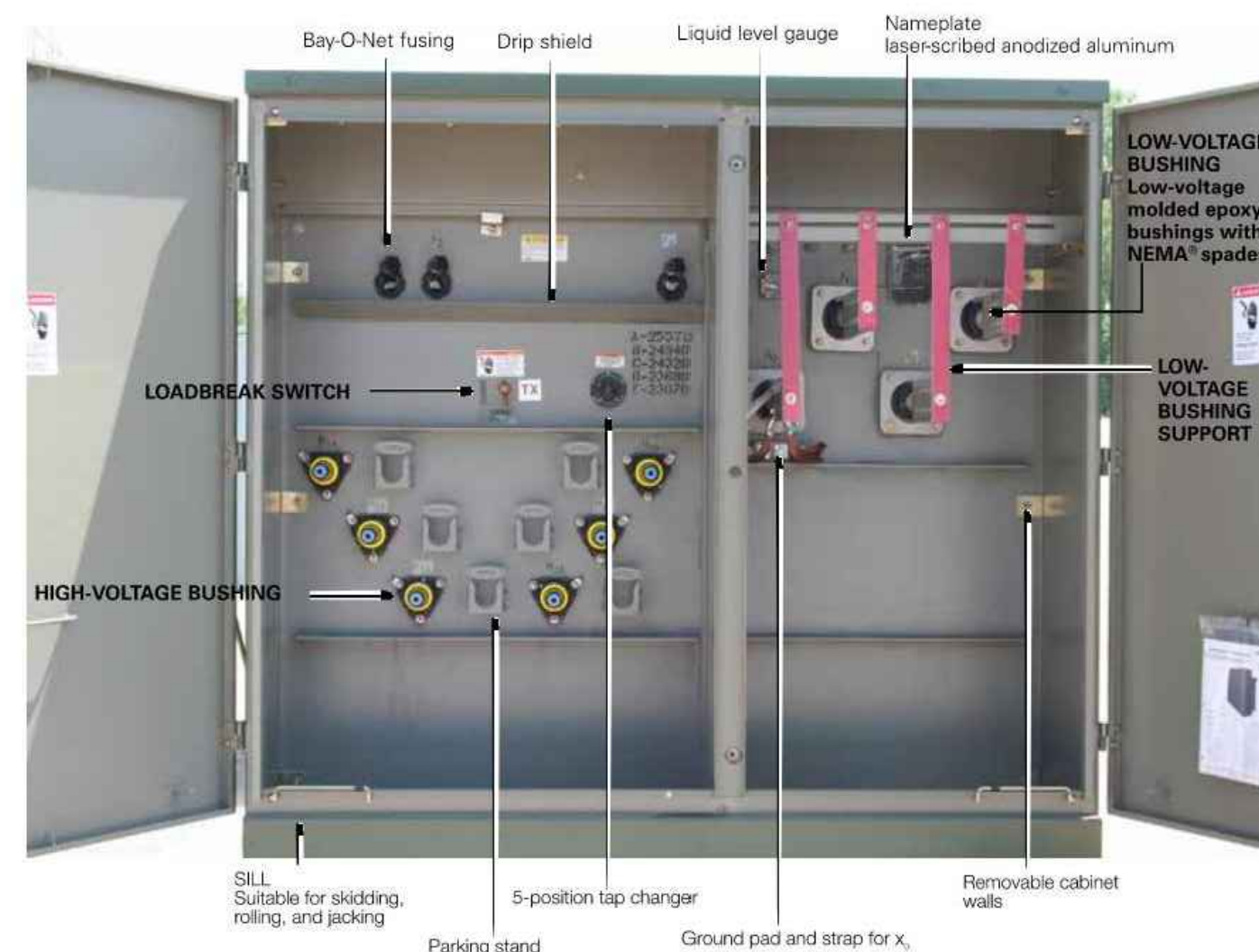


Figure 1. Three-phase pad-mounted compartmental type transformer.

Table 1. Product Scope

Type	Three Phase, 50 or 60 Hz, 65 C Rise 155 C, 55/65 C, 65/75 C, 75 C
Fluid Type	Mineral oil or Envirotemp™ FR3™ fluid
Coil Configuration	2-winding or 4-winding or 3-winding (Low-Low-Low, 3-winding (Low-Low-High))
Size	45 – 10,000 kVA
Primary Voltage	2,400 – 48,000 V
Secondary Voltage	208Y/120 V to 14,400 V
Specialty Designs	Inverter/Rectifier Bridge K-Factor (up to K-18) Vacuum Fault Interrupter (VFI) UL® Listed & Labeled and Classified Factory Mutual (FM) Approved® Solar/Wind Designs Differential Protection Seismic Applications (including OSHPO) Hardened Data Center

2 www.eaton.com/cooperpowerseries

Three-phase pad-mounted compartmental type transformer

Catalog Data CA202003EN
Effective April 2016

Table 2. Three-Phase Ratings

Three-Phase 50 or 60 Hz	
kVA Available	45, 75, 112.5, 150, 225, 300, 500, 750, 1000, 1500, 2000, 2500, 3000, 3750, 5000, 7500, 10000

*Transformers are available in the standard ratings and configurations shown or can be customized to meet specific needs.

Table 3. Impedance Voltage

Rating (kVA)	Low-voltage rating ≤ 600 V	2400 Δ through 4800 Δ	6900 Δ through 13800GV/7970 or 13800 Δ
45-75	2.75-5.75	2.75-5.75	2.75-5.75
112.5-300	3.10-5.75	3.10-5.75	3.10-5.75
500	4.35-5.75	4.35-5.75	4.35-5.75
750-2500	5.75	5.75	5.75
3750	5.75	5.75	6.00
5000	6.00	6.00	6.50

Note: The standard tolerance is ± 75%.

Table 4. Audible Sound Levels

Self-Cooled, Two Winding kVA Rating	NEMA™ TR-1 Average Decibels (dB)
45-500	56
501-700	57
701-1000	58
1001-1500	60
1501-2000	61
2001-2500	62
2501-3000	63
3001-4000	64
4001-5000	65
5001-6000	66
6001-7500	67
7501-10000	68

Table 5. Insulation Test Levels

kV Class	Induced Test 180 or 400 Hz 7200 Cycles	kV BIL Distribution	Applied Test 60 Hz (kV)
1.2		30	10
2.5		45	15
5		60	19
8.7	Twice Rated Voltage	75	26
15		95	34
25		125	40
34.5		150	50

Table 6. Temperature Rise Ratings 0-3300 Feet (0-1000 meters)

Unit Rating (Temperature Rise Winding)	Standard	Optional
65 C	55 C, 55/65 C, 75 C	
Ambient Temperature Max	40 C	50 C
Ambient Temperature 24 Hour Average	30 C	40 C
Temperature Rise Hotspot	80 C	65 C

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THREE-PHASE PAD-MOUNTED COMPARTMENTAL TYPE TRANSFORMER

Catalog Data CA202003EN
Effective April 2016

Three-phase pad-mounted compartmental type transformer

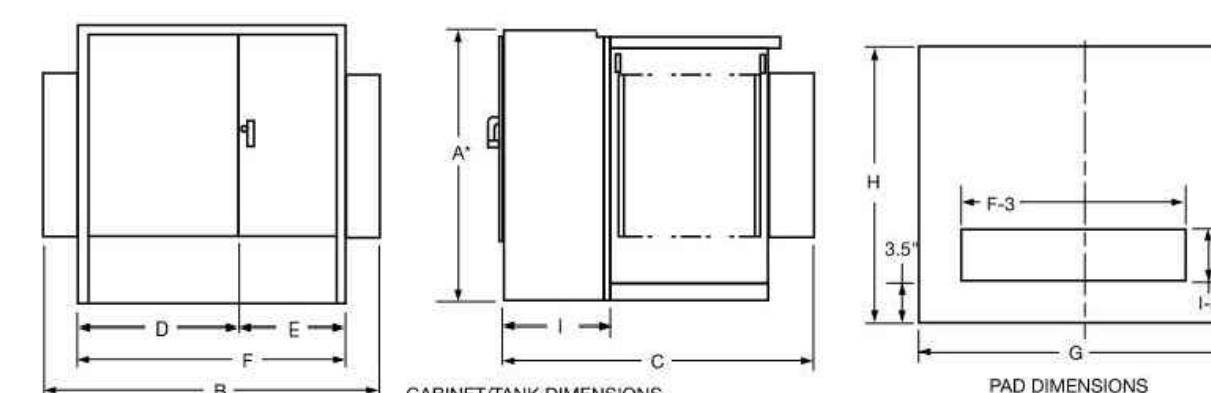


Figure 2. Transformer and pad dimensions.

* Add 9" for Bay-O-Net fusing.

Table 7. Fluid-filled – aluminum windings 55/65 °C Rise¹

kVA Rating	OUTLINE DIMENSIONS (in.)									Gallons of Fluid	Approx. Total Weight (lbs.)
	A*	B	C	D	E	F	G	H	I		
45	50	68	39	42	26	68	72	43	20	110	2,100
75	50	68	39	42	26	68	72	43	20	115	2,250
112.5	50	68	48	42	26	68	72	53	20	120	2,350
150	50	68	48	42	26	68	72	53	20	125	2,700
225	50	72	51	42	30	72	78	55	20	140	3,150
300	50	72	51	42	30	72	78	55	20	160	3,650
500	50	85	53	42	30	72	83	57	20	190	4,650
750	64	89	57	42	30	72	93	61	20	270	6,500
1000	64	89	59	42	30	72	93	61	20	320	8,200
1500	73	89	66	42	30	72	93	61	24	410	10,300
2000	73	72	87	42	30	72	78	91	24	480	12,500
2500	73	72	89	42	30	72	78	103	24	530	14,500
3000	73	84	99	46	37	84	88	103	24	620	16,700
3750	84	85	108	47	38	85	88	112	24	660	19,300
5000	84	96	108	48	48	96	100	112	24	830	25,000
7500	94	102	122	54	48	102	100	126	24	1,580	41,500

¹ Weights, gallons of fluid, and dimensions are for reference only and not for construction. Please contact Eaton for exact dimensions.

* Add 9" for Bay-O-Net fusing.

Table 8. Fluid-Filled – Copper Windings 55/65 °C Rise¹

kVA Rating	OUTLINE DIMENSIONS (in.)									Gallons of Fluid	Approx. Total Weight (lbs.)
	A*	B	C	D	E	F	G	H	I		
45	50	64	38	34	30	64	69	43	20	110	2,100
75	50	64	39	34	30	64	69	43	20	115	2,250
112.5	50	64	49	34	30	64	69	53	20	115	2,500
150	50	64	49	34	30	64	69	53	20	120	2,700
225	50	64	51	34	30	64	75	55	20	140	3,250
300	50	64	51	34	30	64	75	55	20	160	3,650
500	50	81	53	34	30	64	85	57	20	200	4,800
750	64	89	57	42	30	72	93	61	20	255	6,500
1000	64	89	59	42	30	72	93	61	20	300	7,800
1500	73	89	66	42	30	72	93	61	24	410	10,300
2000	73	72	87	42	30	72	78	91	24	420	11,600
2500	73	72	89	42	30	72	78	103	24	500	14,000
3000	73	84	99	46	37	84	88	103	24	720	18,700
3750	84	85	108	47	38	85	88	112	24	800	20,500
5000	84	96	108	48	48	96	100	112	24	850	25,000
7500	94	102	122	54	48	102	100	126	24	1,620	46,800

¹ Weights, gallons of fluid, and dimensions are for reference only and not for construction. Please contact Eaton for exact dimensions.

* Add 9" for Bay-O-Net fusing.

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REVISIONS

REV	DATE	COMMENT	DRAWN BY	CHECKED BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL	GD
2	02/16/2024	PER TOWN COMMENTS	SMK	GD



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PROJECT No.: W201257
DRAWN BY: CMC / OCR
CHECKED BY: GD
DATE: 07/20/2023
CAD I.D.: W201257.02-DET-2A

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET
SOLAR LLC

PROPOSED
SOLAR FARM - SOUTH

LOTS INCLUDED (PARCEL #): 255-001,
254-001, 239-010 A, 239-010 B, 239-010
C, PORTION OF D 239-011, & 32-0009
160 MAPLE STREET,
TOWN OF BELLINGHAM & FRANKLIN,
NORFOLK COUNTY, MASSACHUSETTS



352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

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SHEET TITLE:

DETAIL
SHEET

SHEET NUMBER:

C-904

REVISION 2 - 02/16/2024

N.T.S.

Switches and Disconnects
CA008004EN

Effective January 2016
Supersedes June 2015

COOPER POWER SERIES

M-Force™ three-phase switch



Description

Eaton's Cooper Power™ series M-Force™ switch is a distribution-class, gang-operated, factory unitized three phase overhead loadbreak switch. The M-Force switch is offered in distribution voltage classifications of 15.5 kV, 27 kV, and 38 kV. The M-Force switch may be used for line sectionalizing, separating, bypassing, or isolating. M-Force stands for "Magnetic Force". Eaton has the only reverse loop contacts found on distribution-class loadbreak switches; a contact usually reserved for higher priced transmission switches. The reverse loop contacts utilize high current magnetic forces for added reliability. The reverse loop design allows for high contact pressure to be maintained during fault conditions. This feature prevents pitting and distorting of the switch blade and contacts even under severe momentary overload.

Catalog Data CA008004EN
Effective January 2016

Basic concept

Current-carrying conductors that are parallel to each other and have current flowing in the same direction, attract each other due to the magnetic forces acting on them (See Figure 1A). Current-carrying conductors that are parallel to each other and have current flowing in the opposite direction, repel due to the magnetic forces acting on them (See Figure 1B).

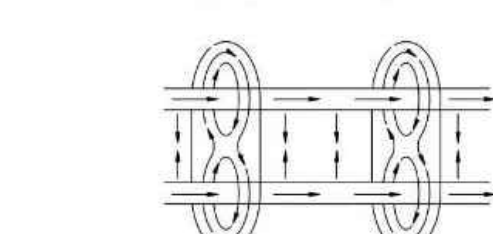


Figure 1A. Current flowing in same direction.

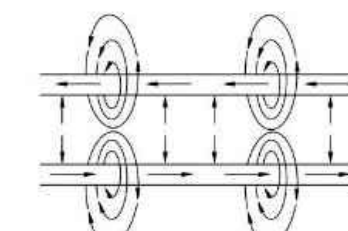


Figure 1B. Current flowing in opposite direction.

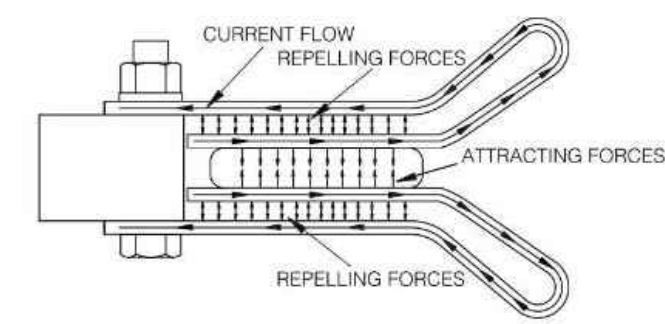


Figure 2. Magnetic forces acting on contacts.

Design features

Reverse loop contacts
The reverse loop contacts utilize high current magnetic forces for added reliability. The reverse loop contacts were adapted from Eaton's Cooper Power series KFL™ Line Tension Switch and have been field-proven for over 80 years. The reverse loop design allows for high contact pressure to be maintained during fault conditions. This feature prevents pitting and distorting of the switch blade and contacts even under severe momentary overload. These contacts are originally designed for high voltage transmission switches also maintain extremely cool temperatures even under the rated full load. The maximum temperature rise allowed per IEEE Std 1247™-2005 standard for the blade and contact area is 65 °C. The maximum temperature rise observed on the reverse loop contact area was 38 °C, less than half of the allowed temperature. These types of test results, along with the proven field performance, undoubtedly make the Reverse Loop Contacts found in the M-Force switch the premiere choice in the industry.

Insulators

The M-Force switch comes standard with polymer (silicone rubber) insulators. These non-porcelain insulators offer exceptional dielectric and mechanical characteristics adding to the reliability of the M-Force switch, while lowering the weight. The M-Force switch can be provided in cycloaliphatic epoxy and porcelain housings. Insulators come standard with 2.25" bolt circles at 15 and 25 kV. Insulators require a 3.00" bolt circle at 38 kV.

Extended bearing assembly

The stainless steel shaft on the rotating insulator bearing assembly has been extended to four inches. This extra length will prevent horizontal movement of the rotating insulator during operation which ensures proper blade/contact alignment which is essential for smooth operation. Another feature of the bearing assembly is the oil-impregnated bushings that provide maintenance-free operation for the life of the switch.

Insulated Reliabreak™ arm

The Reliabreak™ Pick-up Arm on the M-Force switch is insulated on one side, which isolates the interrupter from the current path during a close operation. This feature allows for a wide range of adjustments between the Reliabreak™ and the blade catch finger. This increased tolerance removes the possibility of misalignment during operation which ensures proper load interruption.

Positive locking dead-end brackets

The dead-end brackets on the M-Force switch are of a positive locking design. This design allows for dead-ending at an angle without any distortion of the brackets. This allows for a more flexible switch that can be used in a wider variety of installation requirements.

New inter-phase clamps

The inter-phase control rod clamps on the M-Force switch are designed with a jam nut through the side of the casting which locks the clamps after factory alignment. This feature eliminates any possibility of accidental slippage of the control mechanism which ensures proper operation even under icy conditions.

Optional ice shields

The standard M-Force switch is capable of operating under a 3/8" ice build up. With the optional ice shields the M-Force switch is capable of opening and closing with a 3/4" ice build up.

The unique shields are designed to prevent ice from building up between the contact clips as well as removing the ice from the blade during the closing operation. Per IEEE Std C3734™-1994, a chopping action is allowed during the close operation to break the ice. Due to the shearing action of the M-Force Ice Shields, the closing operation can be accomplished with one motion. No chopping is needed.

Catalog Data CA008004EN
Effective January 2016

M-Force three-phase switch

Table 7. M-Force Three-Phase Switch Catalog Number Configuration

M H 1 T R 2

Voltage Class
1 - 15.5kV/10 kV BIL
2 - 27/150 kV BIL
3 - 38 kV/200 kV BIL

Mounting Configuration
A - Horizontal Pole Top
P - Phase over Phase
R - Vertical Riser
G - Horizontal Upright (G095 Spacing)
S - Vertical Riser (G095 Spacing)
T - Triangular
U - Underhung (G095 Spacing)

Control Rod and Mechanism
Reciprocating Mechanism
11 - 28 Round Pipe, 1.0" O.D. (Standard Option)
21 - 28 Round Fiberglass
41 - 28 1" Pipe w/Fiberglass Top Section
51 - 28 Pipe w/Cycloaliphatic Insulator

Torsional Mechanism
62 - 28 Pipe (Steel Universal Section)
82 - 28 Pipe (Fiberglass Universal Section)
C2 - 28 1.5" Pipe (Cycloaliphatic Insulator)

Insulator Bolt Pattern
None
05 - Hookstick operated (no control rod)

Crossarm Options
T - Steel with Single Point Lift (Standard Option)
C - Steel with Two Point Lift
G - Fiberglass with Single Point Lift
F - Fiberglass with Two Point Lift

Insulator Material
B - Polymer (Standard Option)
C - Cycloaliphatic Epoxy
P - Porcelain

Options (See Page 9 for details)
Note: More than one may be chosen. Append codes in alphanumeric order.
D - Provision for Crossarm Support Bracket
E - Protective Hardware on Terminal Post (Incompatible with Option U below)
L - Locking Latches
F - Bonded Reciprocating Control Handle (Standard on Torsional Controls)
G - Reciprocating Handle with Interlocks
H - Light Ring Adapter Bracket
I - Steel Interphase Rod
J - Provisions for Neutral Wire
K - Provisions for Sensors
L - Additional Nameplate on Handle
S - Ice Shields (3/4" Ice Break on Open or Close Operation)
M - Grounding Connector on Crossarm Mounting Bracket
N - Terminal Copper #2-500 MCM (Incompatible with Option C above)
O - Pole Mounting Base
P - Extra 1" of Control Rod
Q - Extra 1" of Control Rod

Consult factory for other bolt circle options.

EATON
Powering Business Worldwide

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Viper-5T

Solid-Dielectric, Independent Pole Option Recloser
Providing electronic overcurrent protection for single or three phase operation on systems rated through 38kV, 800A continuous current, 12.5kA or 16kA interrupting current

- Interrupting rating up to 16kA through 27kV
- Overhead, substation and dead-front padmount designs
- Operator safety with mechanical block and triple redundancy on trip handle
- Smart Grid/Lazer™ solutions
- Ease of installation with site-ready design
- Reliable performance
- Maintenance-free recloser
- High accuracy Accusense voltage sensors
- Up to six internal voltage sensors
- Works directly with SEL-651R, ABB RER620, Beckwith M-7679, and GE R650 controls
- RUS accepted

Catalog O-vst18

Typical Specifications

DESIGN RATINGS AND STANDARDS
Reclosers shall be designed, tested and built per IEEE C37.60 and IEC 62271-111 standards. Certified test reports shall be provided. The recloser shall be rated (select column):

Max System Voltage (kV)	15.5	27	38
Rated Voltage (kV)	15	25	35**
Interrupting Rating RMS (kA)	16*	16*	12.5
BIL (kV)	110	125	150
Continuous Current (A)	800/1000**	800/1000**	800
8 Hr. Overload, at 20° C	960	960	960
Making Current, RMS, asym, kA	25*	25*	20
Peak, asym (kA)	42*	42*	32
Short Circuit Current, kA sym, 3 seconds	16*	16*	12.5
60Hz Withstand, kV rms Dry, 1 minute	50	60	60
60Hz Withstand, kV rms Wet, 10 seconds	45	50	50
Operating Temperature	-60°C to +65°C		
Mechanical Operations	10K	10K	10K

* 29.3kV system voltages are available
** Consult factory for higher continuous current up to 1000A
** 12.5kA interrupting current rating available

Voltage Class	Catalog Number
15.5kV	VIP378ER (12 or 16)*-1-ST
27kV	VIP388ER (12 or 16)*-1-ST
38kV	VIP398ER (12)*-1-ST

*12-12.5kA sym. fault interrupting or 16-16kA sym. fault interrupting

Approximate weight (for single-phase module less frame) is 100lbs. (45kg)

G&W ELECTRIC | PAGE 10

Visit gwelc.com/specs.html for electronic versions of typical specifications.



• NEMA 4-hole, 2-hole and clamp style aerial lugs.

Options*

- The following options shall be supplied: (Check as necessary)
- NEMA 2-hole aerial lugs
 - NEMA 4-hole aerial lugs
 - Clamp style aerial lugs (#2 - 500 kcmil)
 - Clamp style aerial lugs (250 - 750 kcmil)
 - 4/0 brass eyebolt ground lug
 - Polemount site-ready assembly
 - Lightning arresters
 - Dead-front padmounted design with stainless steel enclosure
 - External Accusense Voltage Sensors (0.5 class accuracy)
 - External 1.0 KVA oil potential transformer (3% accuracy) for 120 VAC supply power with hardware to mount on standard aluminum frame
 - External 0.75 KVA solid-dielectric voltage transformer (0.3% accuracy) for 120 VAC supply power with hardware to mount on standard aluminum frame
 - High impact, UV stable wildlife protectors for source and load insulators
 - External CTs for current monitoring
 - Six internal voltage sensors
 - Junction box with all twist lock connections
 - 42 pin interface with additional 52b auxiliary contact (Form C type) and cable-disconnected alarm
 - 3-phase ganged manual trip handle

* Additional Cost
Contact factory for additional options or customization.

SEL-651R

Advanced Recloser Control

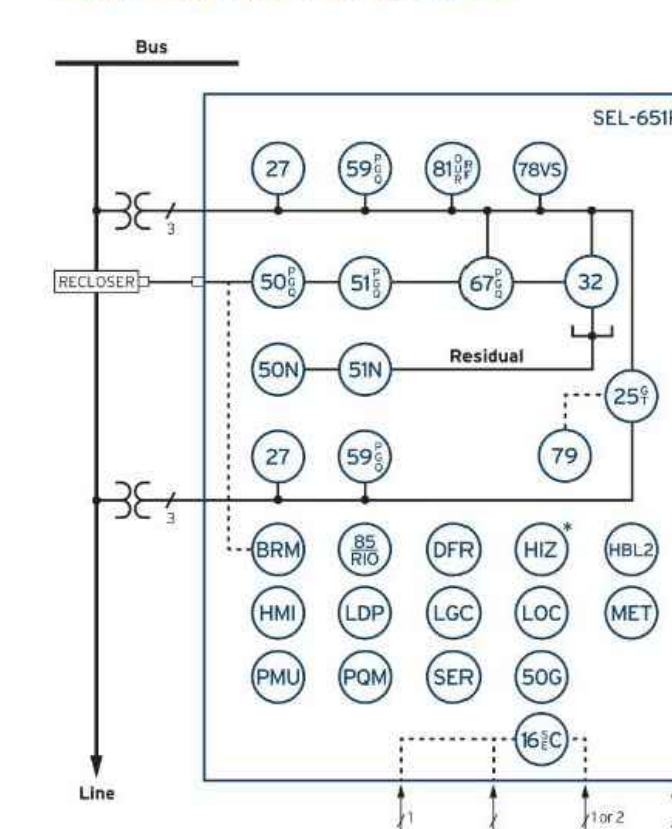


The industry's gold standard for recloser control

- Advanced recloser protection capabilities support coordinated high-speed fault isolation and restoration.
- Three- or single-phase tripping minimizes customer outages and improves reliability metrics.
- Arc Sense™ technology improves public safety and minimizes fire dangers caused by downed conductors.
- Fast islanding detection, precise synchronization, and IEEE 1547-2018 tripping let you safely interconnect distributed energy resources (DERs).
- Second-harmonic blocking secures overcurrent elements from transformer inrush.



Functional Overview



ANSI NUMBERS/ACRONYMS AND FUNCTIONS

16 SEC	Access Security (Serial, Ethernet)
25 (G,T)	Generator/Intertie Synchronization Check
27	Undervoltage
32	Directional Power
50G	Best Choice Ground
50N	Neutral Overcurrent
50 (P,G,Q)	Overcurrent (Phase, Ground, Negative Sequence)
51 (P,G,Q)	Time Overcurrent (Phase, Ground, Negative Sequence)
51N	Neutral Time Overcurrent
59 (P,G,Q)	Overvoltage (Phase, Ground, Negative Sequence)
67 (P,G,Q)	Directional Overcurrent (Phase, Ground, Negative Sequence)
78VS	Vector Shift
79	Autoreclosing
81 (O,U,R)	Frequency (Over, Under, Rate)
81RF	Fast Rate-of-Change of Frequency
85 RIO	SEL Memory Bts™ Communications
DIR	Event Reports
HIZ	SEL Arc Sense™ Technology (AST)*
HMI	Operator Interface
LGC	SELogic™ Control Equations
MET	High-Accuracy Metering
PMU	Synchphasors
PQM	Voltage Sag, Swell, and Interruption
SER	Sequential Events Recorder

ADDITIONAL FUNCTIONS

BRM	Breaker Wear Monitor
HBL2	Second-Harmonic Blocking
LDP	Load Data Profiling
LOC	Fault Locator

*Optional feature • Copper or fiber-optic

Compatible With Popular Reclosers

The SEL-651R Advanced Recloser Control works with a wide range of reclosers for complete plug-and-work capability. All interfaces are designed and tested to exceed the IEEE C37.60 standard. Certificates are available at selinc.com/SEL-651R.

G&W

Control Power Viper-S
Viper-LT
Viper-S
Viper-SP
Viper-ST
Viper-G

Other Reclosers

Elastimold Molded Vacuum Recloser (MVR)	RE
Joshyn TriMod 300R	RVE
Joshyn TriMod 500R	RXE
OVR-3 (15 and 27 kV only)	VSA
Gridshield 32-Pin (15, 27, and 38 kV)	VNE
VWVE 27	VWVE 27
Gridshield 42-Pin (15, 27, and 38 kV)	VWVE 38X
WE	WE
VR-3S (15 and 27 kV only)	WVE 27
CXE	WVE 38X
NOVA Auxiliary Powered	GVR*
NOVA Control Powered	SDR Triple-Single
NOVA NX-T	SDR Three-Phase
NOVA Triple-Single	OSM_150

*When equipped with interface module

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	DRAWN BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL GD
2	02/16/2024	PER TOWN COMMENTS	SMK GD

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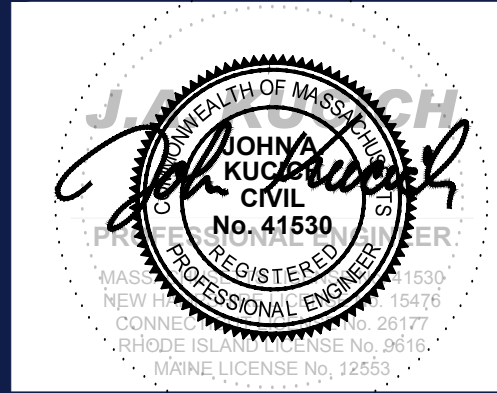
PROJECT No.: W201257
DRAWN BY: CMC / OCR
CHECKED BY: GD
DATE: 07/20/2023
CAD ID: W201257.02-DET-2A

PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET SOLAR LLC
PROPOSED
SOLAR FARM - SOUTH
LOTS INCLUDED (PARCEL ID): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION OF D 239-010, & 32-0009
160 MAPLE STREET,
TOWN OF BELLINGHAM & FRANKLIN,
NORFOLK COUNTY, MASSACHUSETTS

BOHLER

352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com



SHEET TITLE:

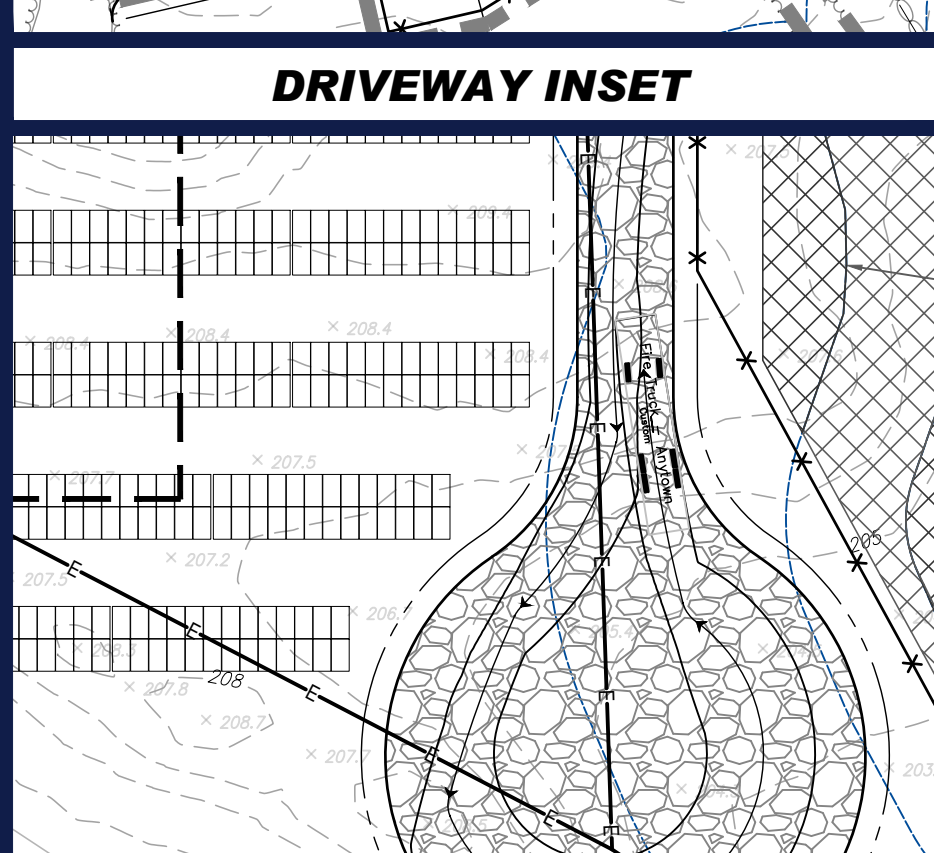
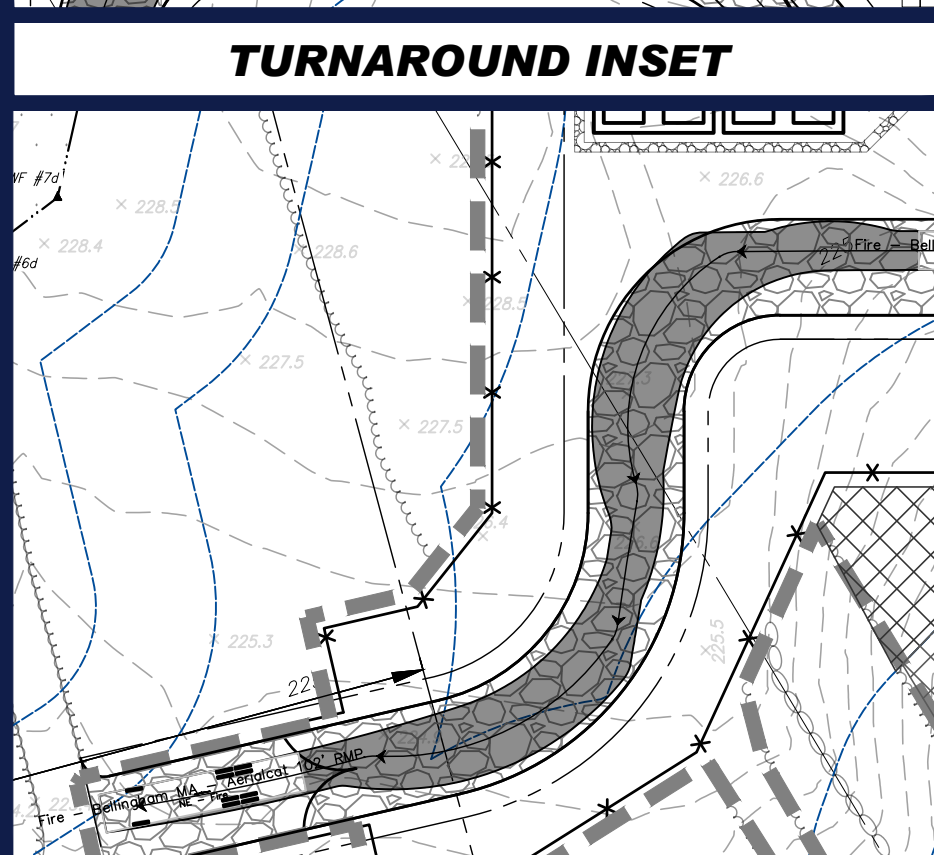
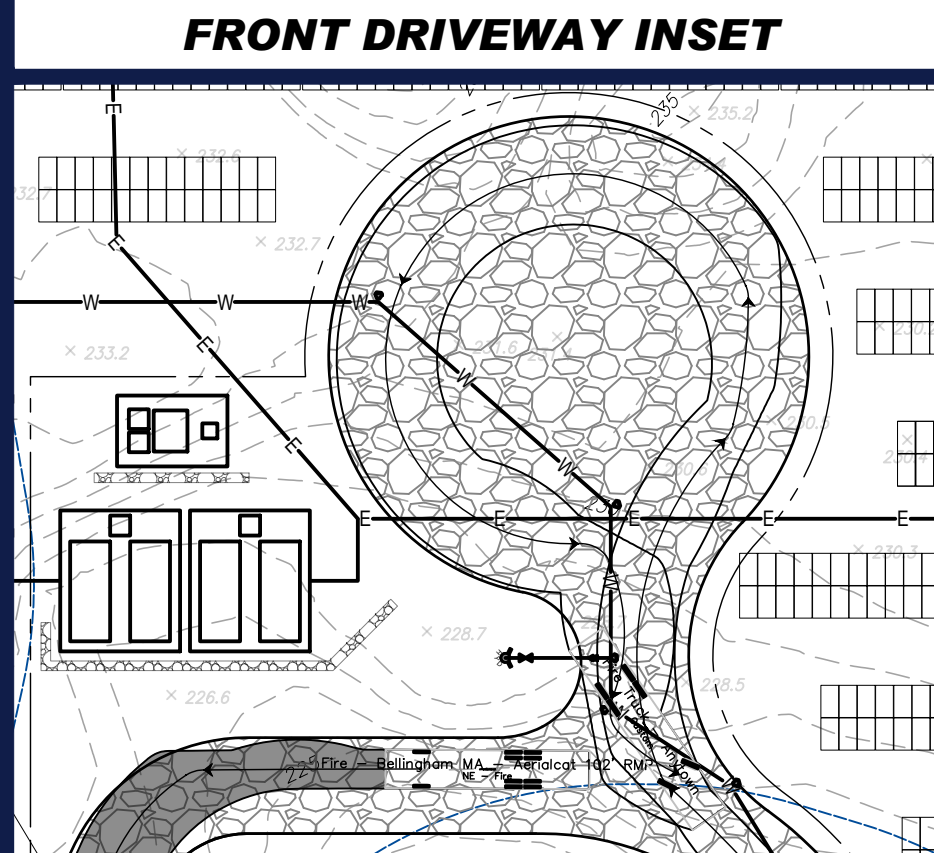
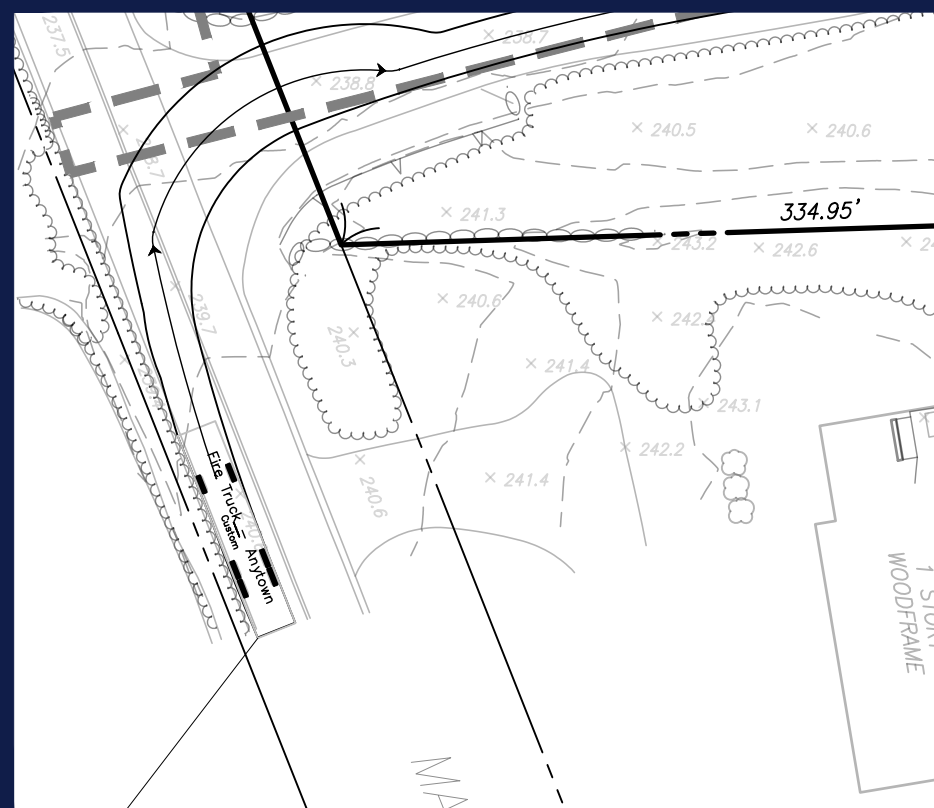
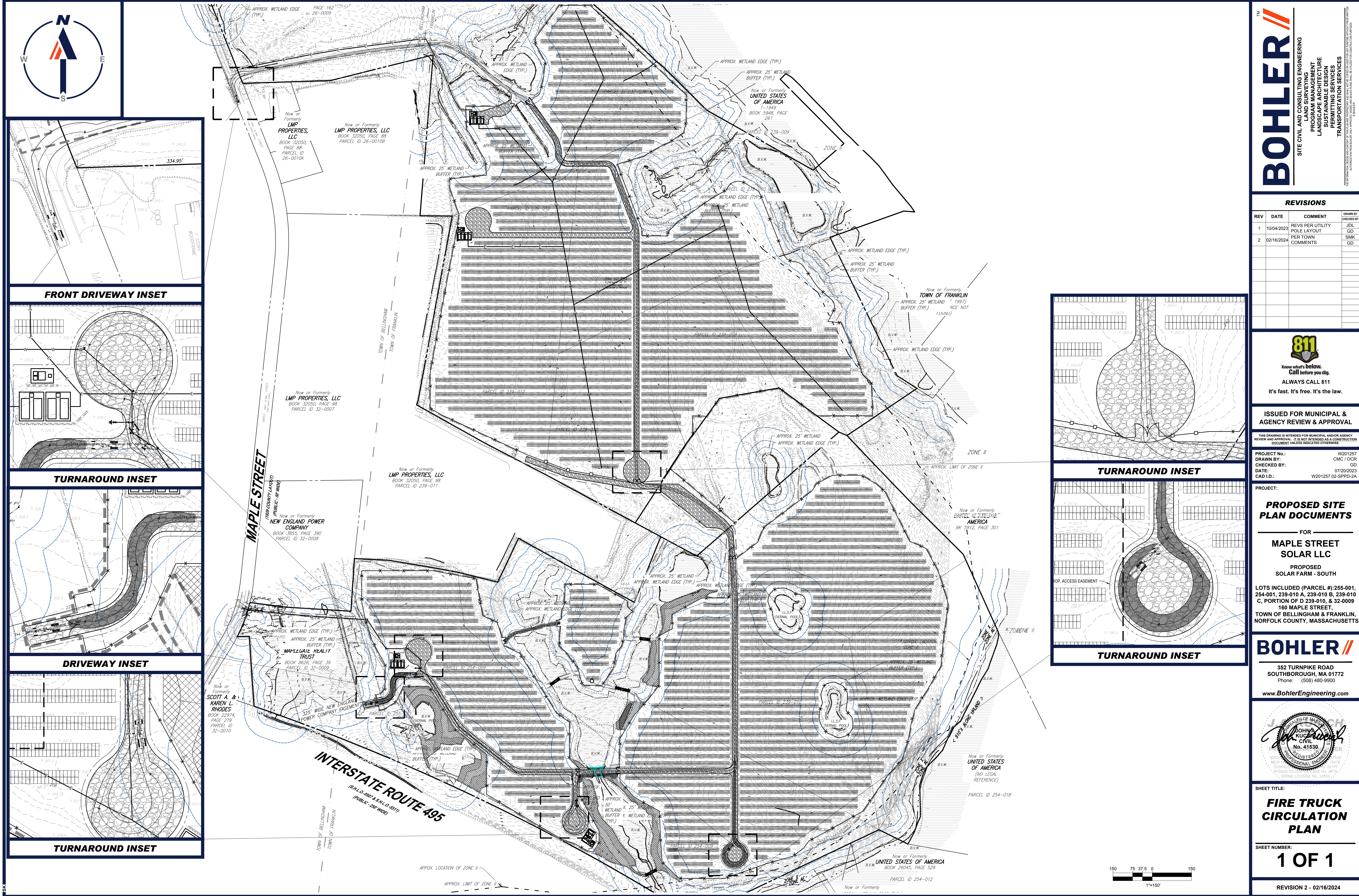
DETAIL SHEET

SHEET NUMBER:
C-906

REVISION 2 - 02/16/2024

PHOTOVOLTAIC PANEL SPECIFICATIONS

N.T.S.



BOHLER
 SITE CIVIL AND CONSULTING ENGINEERING
 PROGRAM MANAGEMENT
 LANDSCAPE ARCHITECTURE
 SUSTAINABLE DESIGN
 TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL GD
2	02/16/2024	PER TOWN COMMENTS	SMK GD

811
 Know what's below.
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ISSUED FOR MUNICIPAL & AGENCY REVIEW & APPROVAL

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.: W201257
 DRAWN BY: CMC / OCR
 CHECKED BY: GD
 DATE: 07/20/2023
 CAD ID.: W201257.02-SPPD-2A

PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET SOLAR LLC

PROPOSED
 SOLAR FARM - SOUTH

LOTS INCLUDED (PARCEL #): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION OF D 239-010, & 32-0009
 160 MAPLE STREET,
 TOWN OF BELLINGHAM & FRANKLIN,
 NORFOLK COUNTY, MASSACHUSETTS

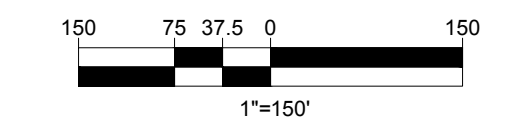
BOHLER

352 TURNPIKE ROAD
 SOUTHBOROUGH, MA 01772
 Phone: (508) 480-9900
www.BohlerEngineering.com

SHEET TITLE:
FIRE TRUCK CIRCULATION PLAN

SHEET NUMBER:
1 OF 1

REVISION 2 - 02/16/2024



BOHLER ENGINEERING, INC. PROJECT: W201257.02-SPPD-2A - LAYOUT: TRUCK TURN EXHIBIT