

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: 12/23/2023

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
2	02/16/2024	PER TOWN COMMENTS	SMK
3	02/21/2024	PER CONS COM COMMENTS	SMK



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PROJECT No.: W201257
 DRAWN BY: CMC / OCR
 CHECKED BY: GD
 DATE: 07/20/2023
 CAD ID: W201257.02-SFPD-3A

PROJECT:

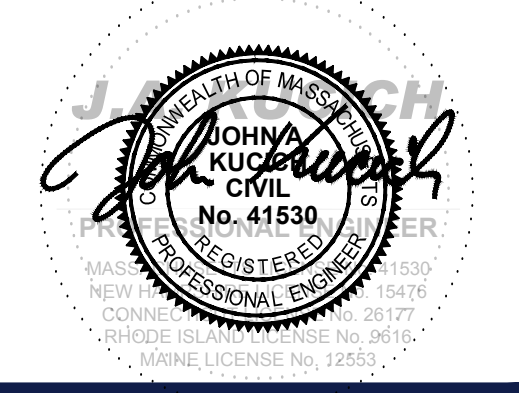
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352 TURNPIKE ROAD
 SOUTHBOROUGH, MA 01772
 Phone: (508) 480-9900
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SHEET TITLE:

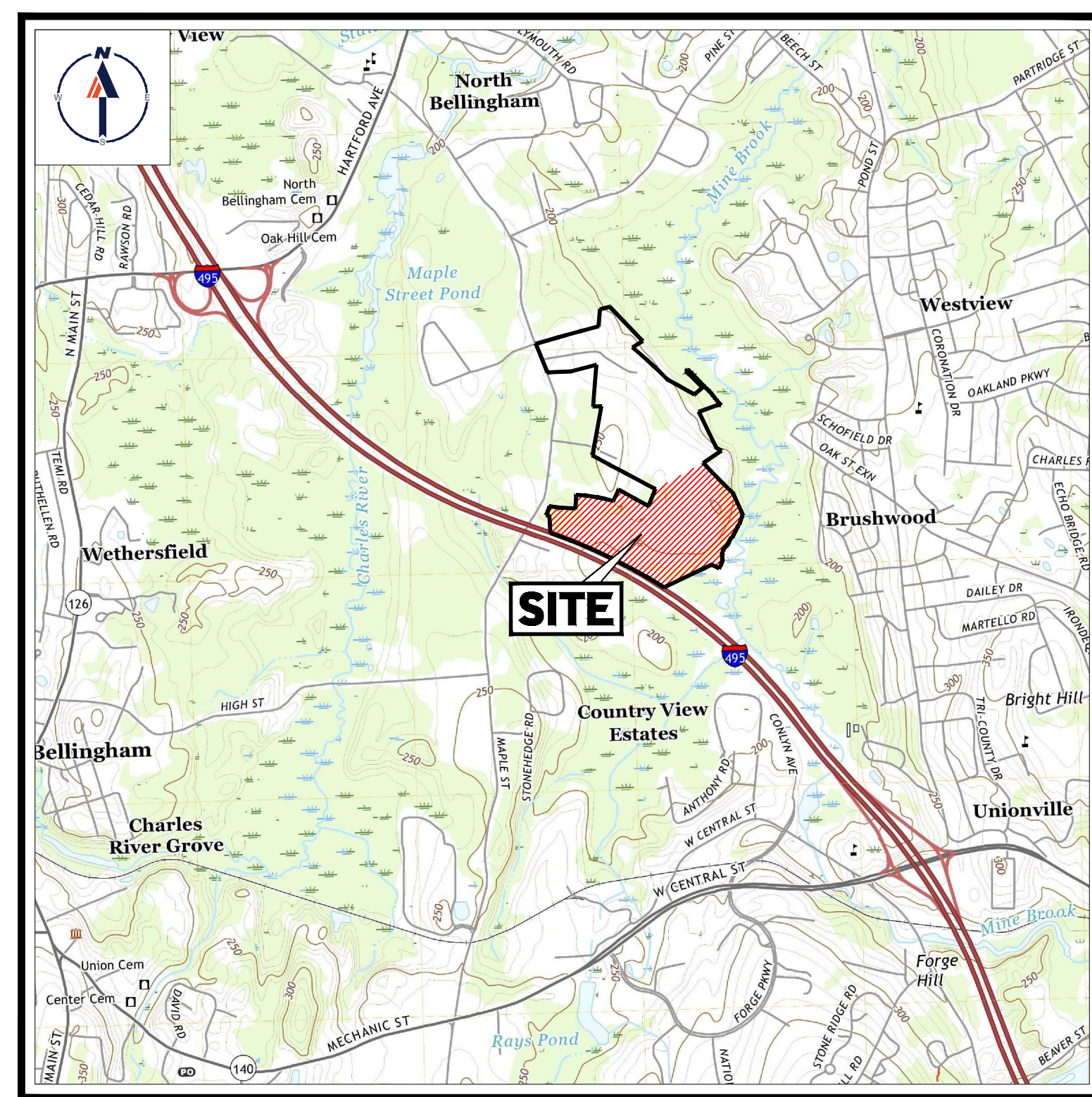
COVER SHEET

SHEET NUMBER:
C-101

REVISION 3 - 02/21/2024

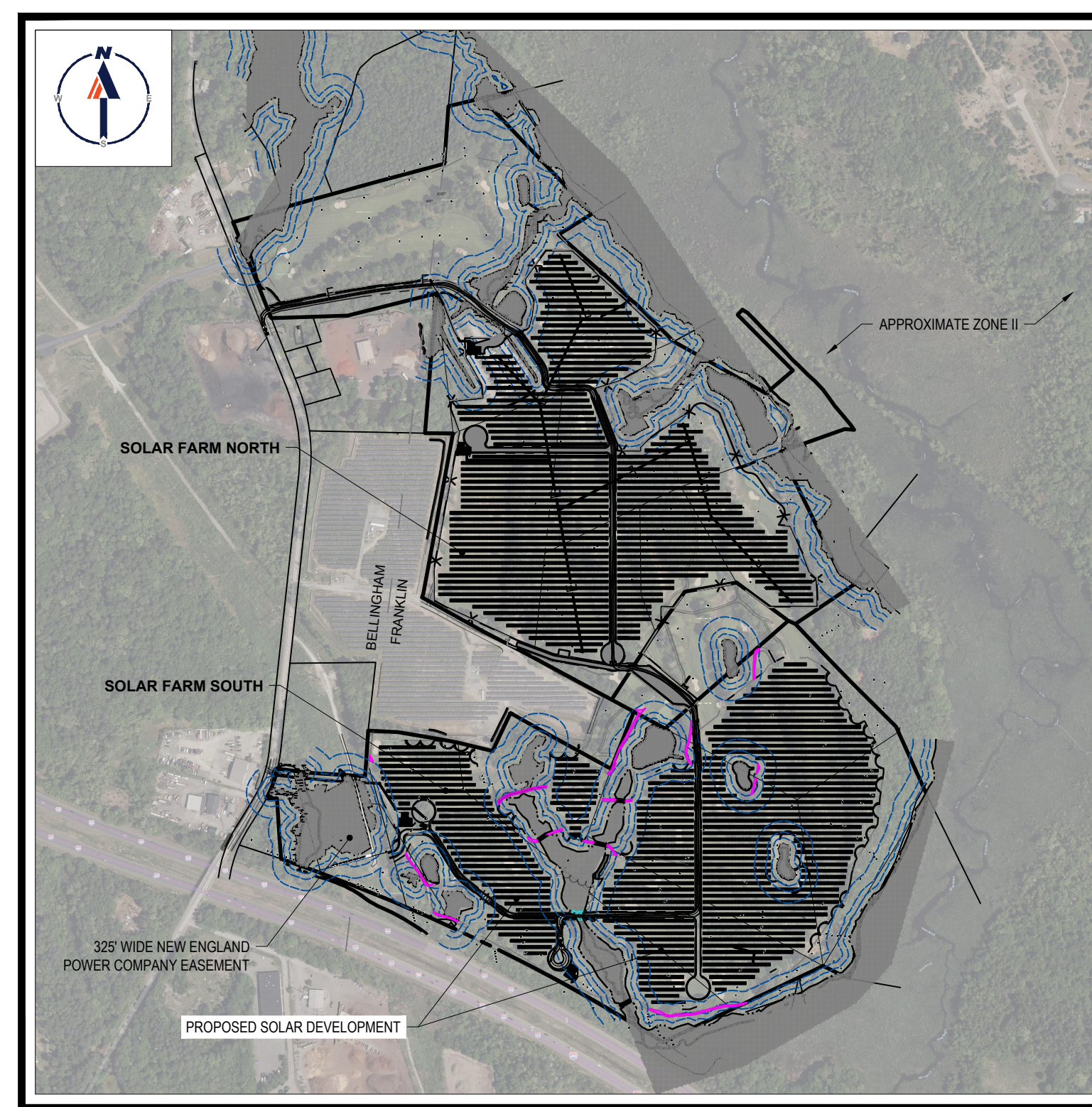
DRAWING SHEET INDEX

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
OVERALL LANDSCAPE PLAN	C-701
LANDSCAPE PLAN (A-F)	C-702 - C-707
LANDSCAPE NOTES & DETAILS	C-708
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



I:\BOHLER\NET\SHARES\BMA\PROJECTS\2023\257\257-257-02-SFPD-3A\LAYOUT\C-101-COVER



TOTAL BUFFER DISTURBANCE CHART

AREA	HATCH	DESCRIPTION
635 ± sf	[Red Hatch]	25' Proposed Buffer Disturbance
6,995 ± sf	[Dark Red Hatch]	25' Existing Buffer Disturbance
20,584 ± sf	[Yellow Hatch]	50' Proposed Buffer Disturbance
51,321 ± sf	[Green Hatch]	50' Existing Buffer Disturbance
47,641 ± sf	[Light Green Hatch]	100' Proposed Buffer Disturbance
247,410 ± sf	[Dark Green Hatch]	100' Existing Buffer Disturbance
854 ± sf	[Cyan Hatch]	Proposed Wetland Disturbance
15,293 ± sf	[Magenta Hatch]	Existing Cart Path to be Removed and Restored
49,205 ± sf	[Cross-hatch]	25' Existing Buffer Disturbance (To Be Improved)
36,975 ± sf	[Diagonal-hatch]	50' Existing Buffer Disturbance (To Be Improved)
13,080 ± sf	[Grid-hatch]	100' Existing Buffer Disturbance (To Be Improved)
312,301 ± sf	N/A	Total Existing Disturbance
84,640 ± sf	N/A	Total Proposed Disturbance

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

THIS PLAN TO BE UTILIZED FOR DEMOLITION/REMOVAL PURPOSES ONLY

CONTRACTOR TO CONDUCT SOIL TESTS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND PREPARE A MEANS AND METHODS PLAN TO ADDRESS JACK AND BORE TIMING, IMPACTS TO SOIL, AND CLEARANCE UNDER THE STREAM AND WETLANDS. PLAN TO BE PROVIDED TO BELLINGHAM CONSERVATION COMMISSION FOR REVIEW PRIOR TO CONSTRUCTION.

TBR. = TO BE REMOVED

LMP PROPERTIES, LLC
BOOK 32050, PAGE 99
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

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Phone: (508) 480-9900
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JOHN A. KLUG
REGISTERED PROFESSIONAL ENGINEER
No. 41530
MAINE LICENSE NO. 12553

SHEET TITLE:

DEMOLITION PLAN A

SHEET NUMBER:
C-202

REVISION 3 - 02/21/2024

I:\BOHLER\NET\SHARES\MAPLE\PROJECTS\2023\2302\CAD\DRAWINGS\PLAN BETS\CIVIL SITE PLAN\W201257.02-DEMO-3A-LAYOUT.C-202-DEMO.A

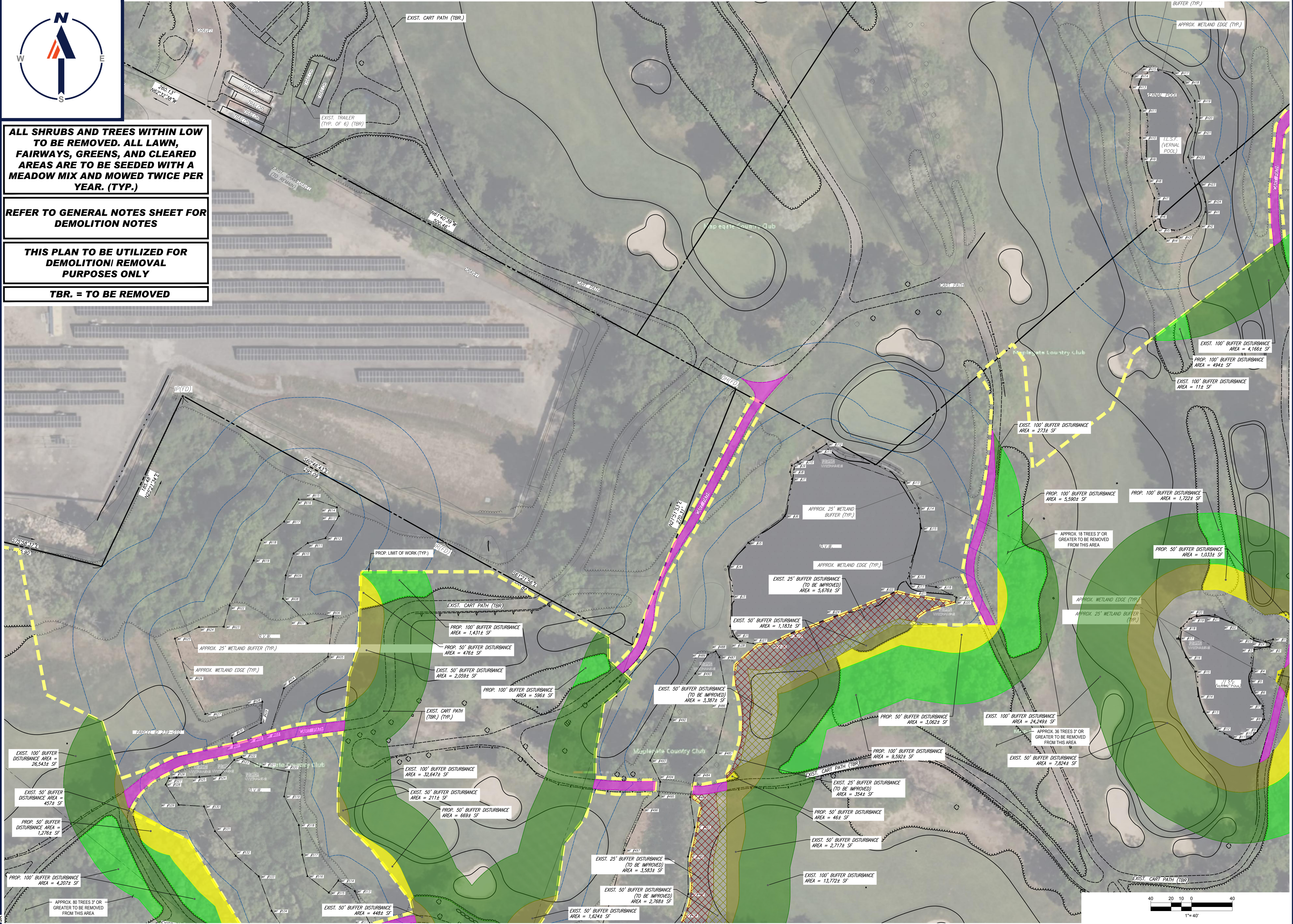


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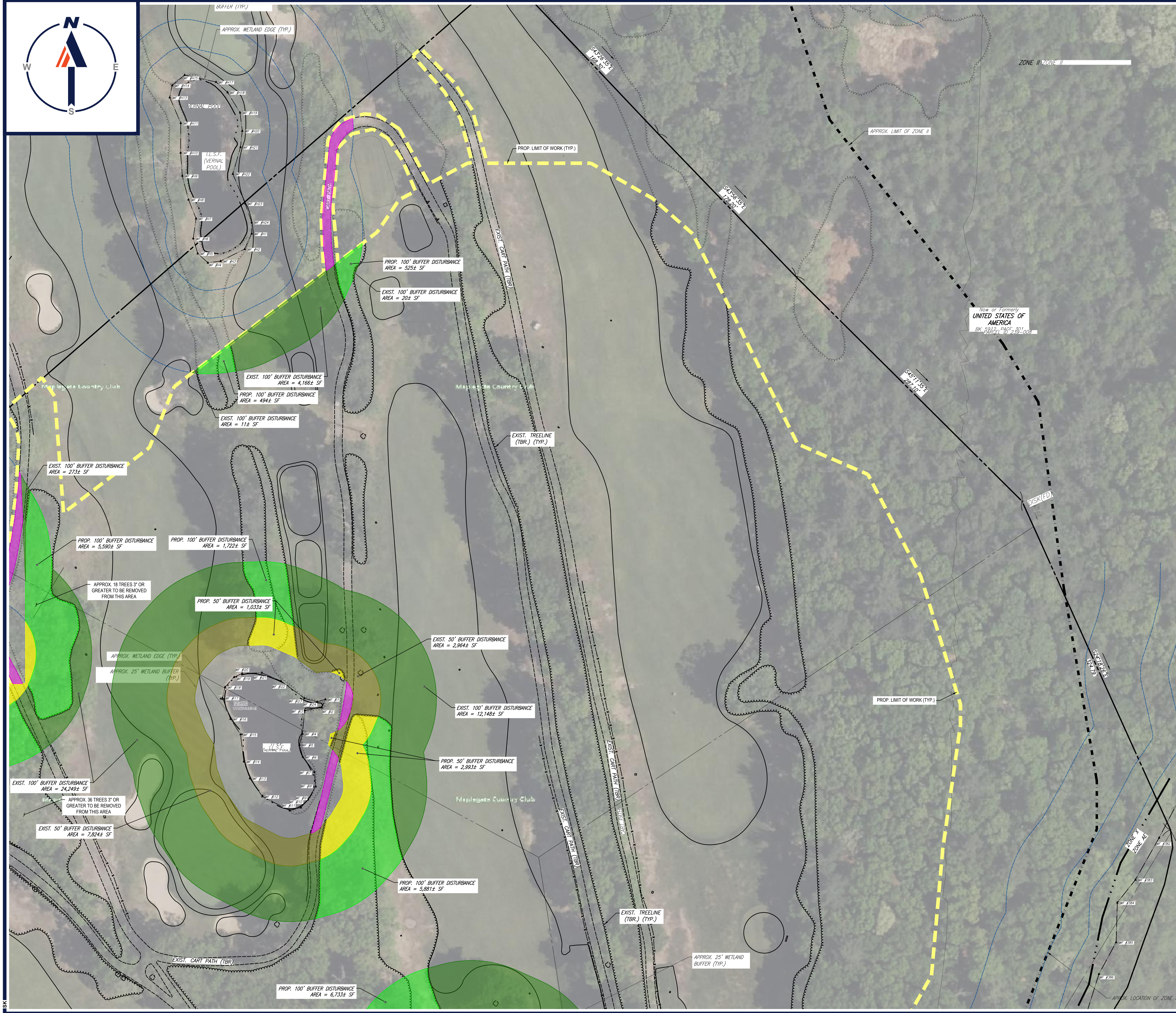


SHEET TITLE:
DEMOLITION PLAN B

SHEET NUMBER:
C-203

REVISION 3 - 02/21/2024

BOHLER ENGINEERING, INC. PROJECT: W201257.02-DEMO-3A...LA DOUT. C-203-DEMO B



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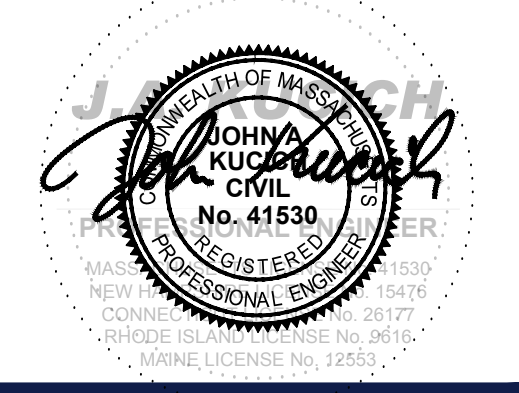
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SHEET TITLE:
DEMOLITION PLAN C
 SHEET NUMBER:
C-204
 REVISION 3 - 02/21/2024

TOTAL BUFFER DISTURBANCE CHART

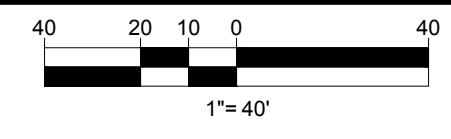
AREA	HATCH	DESCRIPTION
635 ± sf	[Red Hatch]	25' Proposed Buffer Disturbance
8,995 ± sf	[Dark Red Hatch]	25' Existing Buffer Disturbance
20,594 ± sf	[Yellow Hatch]	50' Proposed Buffer Disturbance
51,321 ± sf	[Olive Hatch]	50' Existing Buffer Disturbance
47,641 ± sf	[Light Green Hatch]	100' Proposed Buffer Disturbance
247,410 ± sf	[Dark Green Hatch]	100' Existing Buffer Disturbance
854 ± sf	[Cyan Hatch]	Proposed Wetland Disturbance
15,293 ± sf	[Pink Hatch]	Existing Cart Path to be Removed and Restored
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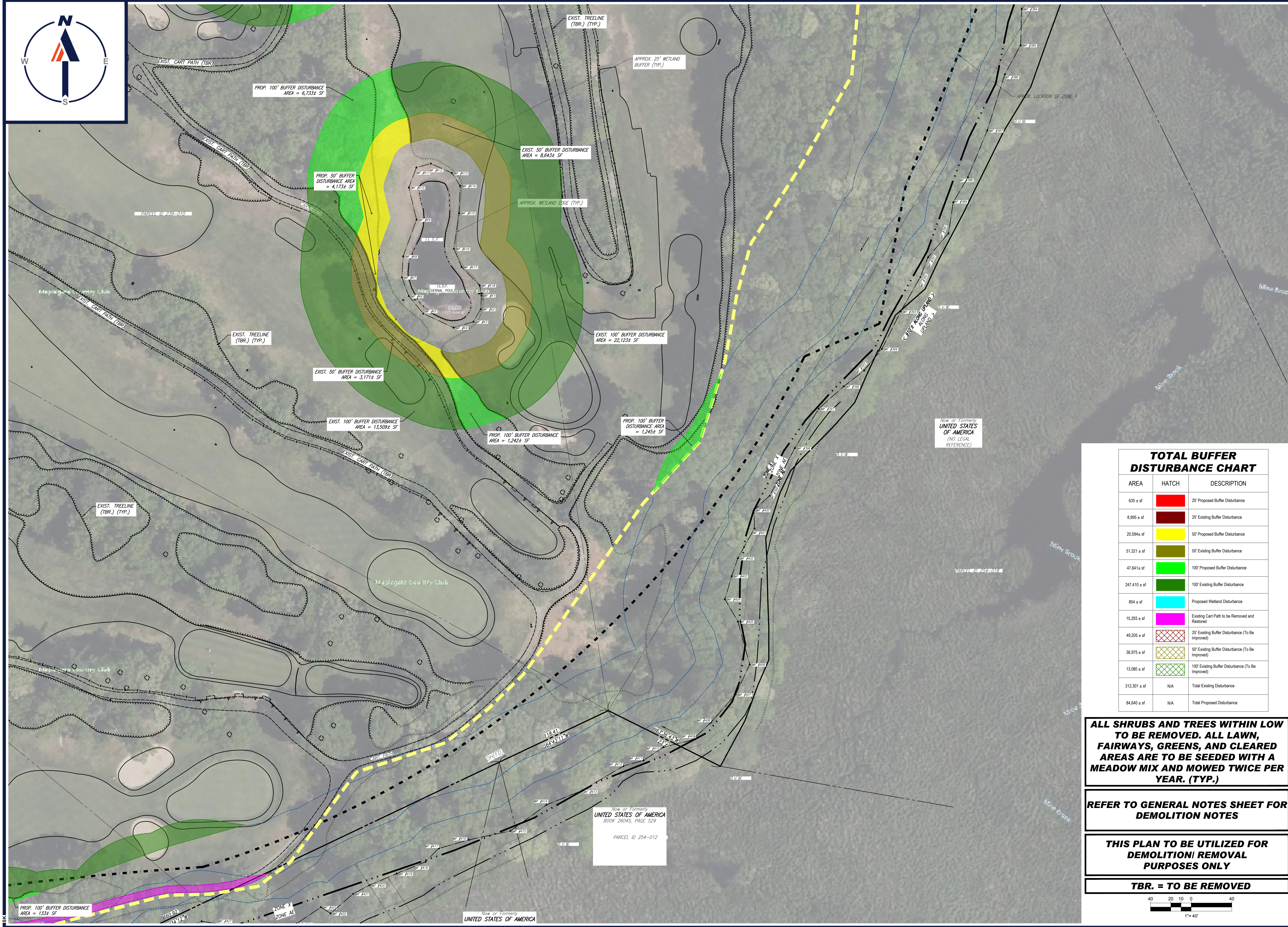
REFER TO GENERAL NOTES SHEET FOR DEMOLITION NOTES

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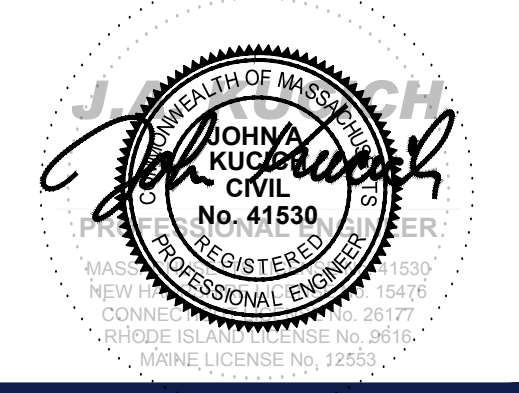
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SHEET TITLE:
DEMOLITION PLAN E
 SHEET NUMBER:
C-207
 REVISION 3 - 02/21/2024

TOTAL BUFFER DISTURBANCE CHART

AREA	HATCH	DESCRIPTION
635 ± sf	[Red Hatch]	25' Proposed Buffer Disturbance
8,995 ± sf	[Dark Red Hatch]	25' Existing Buffer Disturbance
20,594 ± sf	[Yellow Hatch]	50' Proposed Buffer Disturbance
51,321 ± sf	[Olive Hatch]	50' Existing Buffer Disturbance
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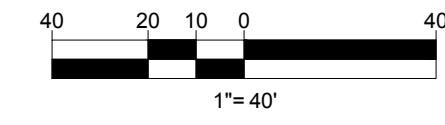
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BOHLER ENGINEERING, INC. PROJECT: W201257.02-DEMO-3A...LAYOUT: C-207-DEMO-F



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.

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



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

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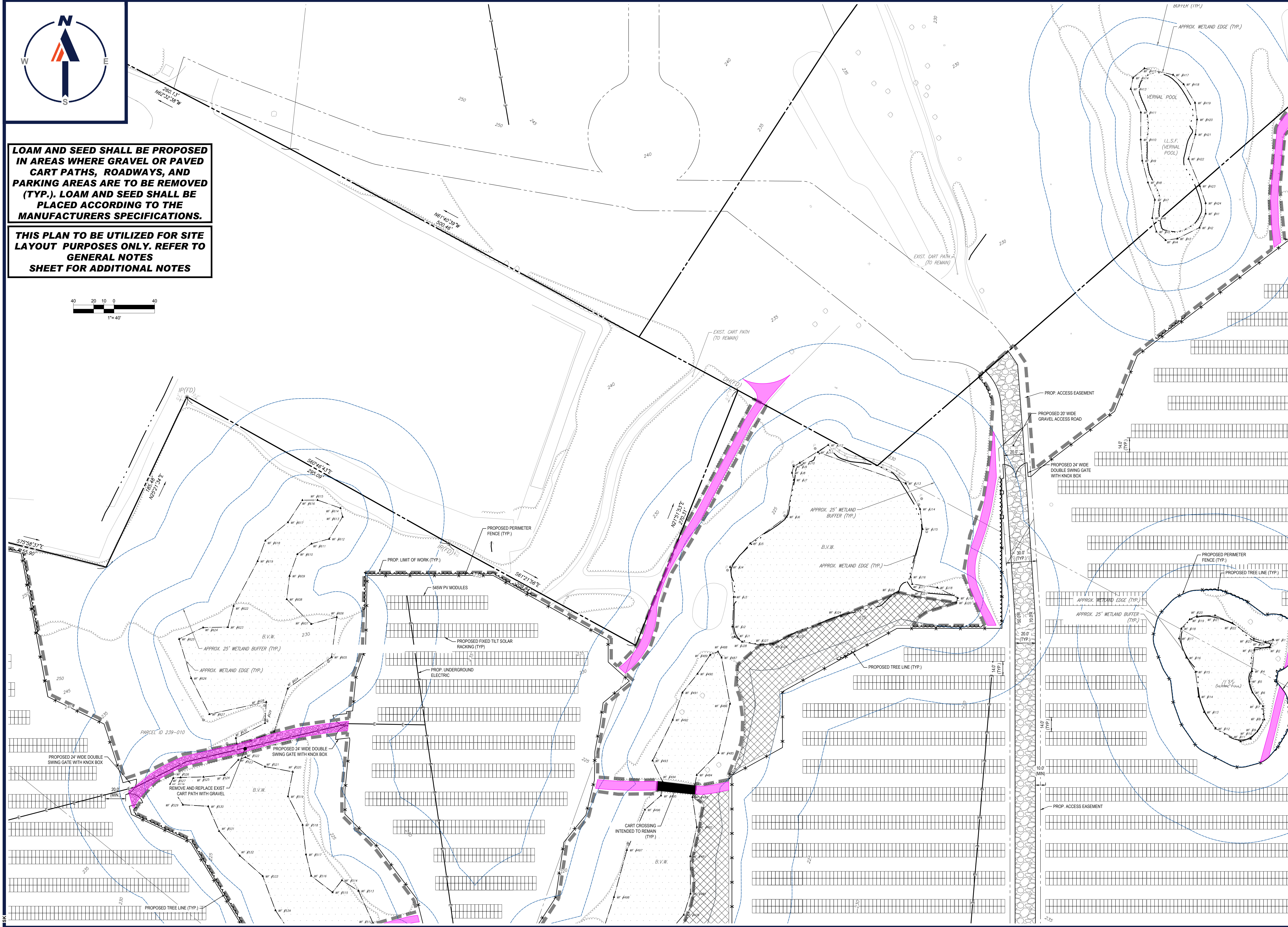
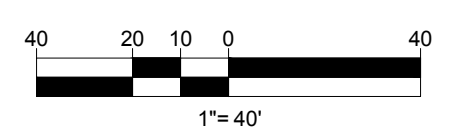
SHEET TITLE:
SITE LAYOUT PLAN A
SHEET NUMBER:
C-302
REVISION 3 - 02/21/2024

I:\BOHLER\NET\SHARES\MAPLE\PROJECTS\2023\232\CADD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W201257.02-SFPD-3A-LAYOUT\C-302-SITE A



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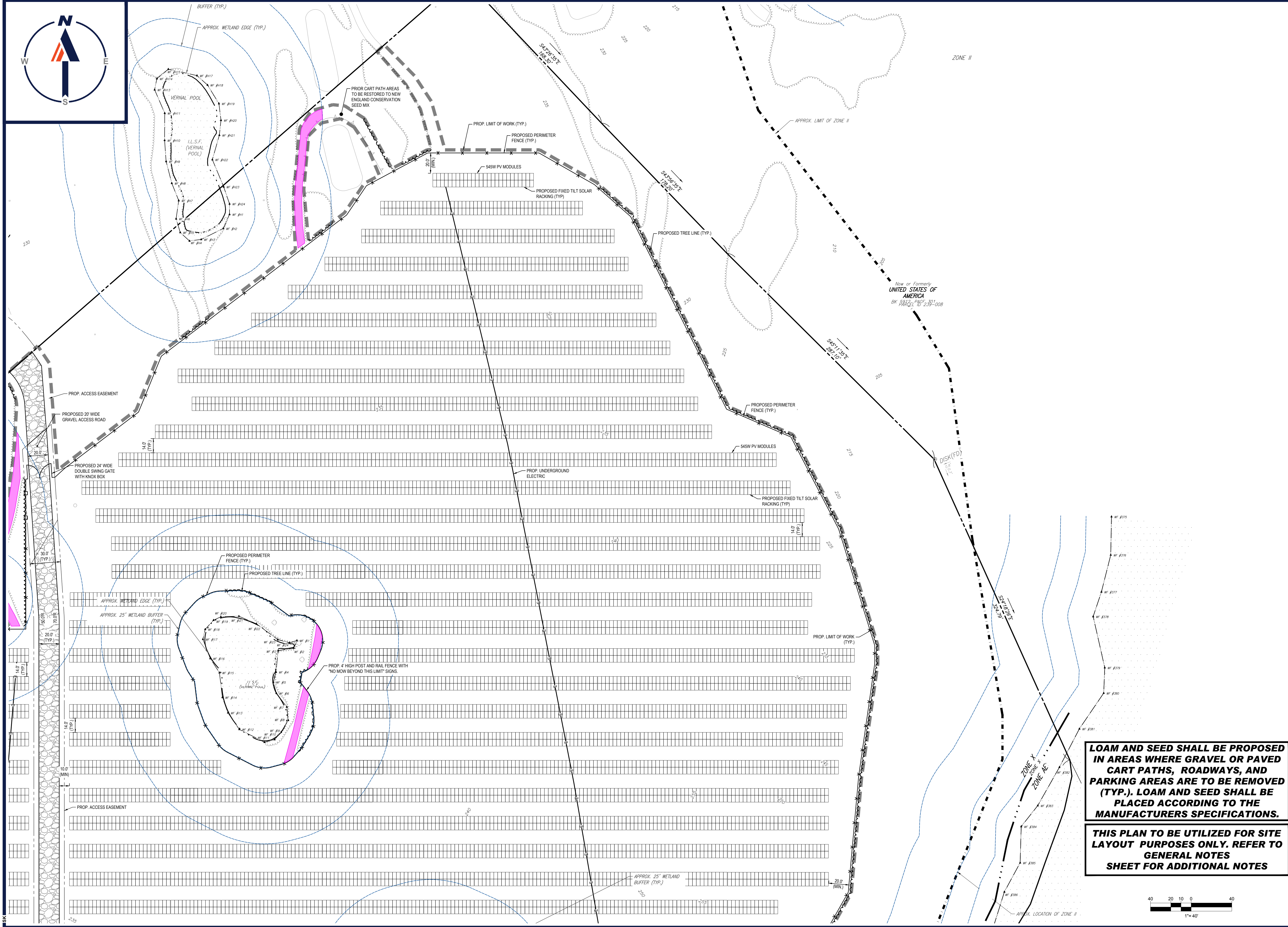
SHEET TITLE:

SITE LAYOUT PLAN B

SHEET NUMBER:
C-303

REVISION 3 - 02/21/2024

\BOHLER\NET\SHARES\MA\PROJECTS\2023\257\257-02-SPPD-3A-...LAYOUT-C-303-SITE B



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 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

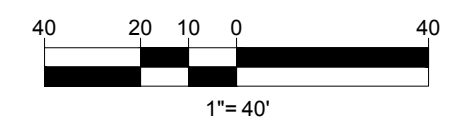


LOAM AND SEED SHALL BE PROPOSED IN AREAS WHERE GRAVEL OR PAVED CART PATHS, ROADWAYS, AND PARKING AREAS ARE TO BE REMOVED (TYP.). LOAM AND SEED SHALL BE PLACED ACCORDING TO THE MANUFACTURERS SPECIFICATIONS.

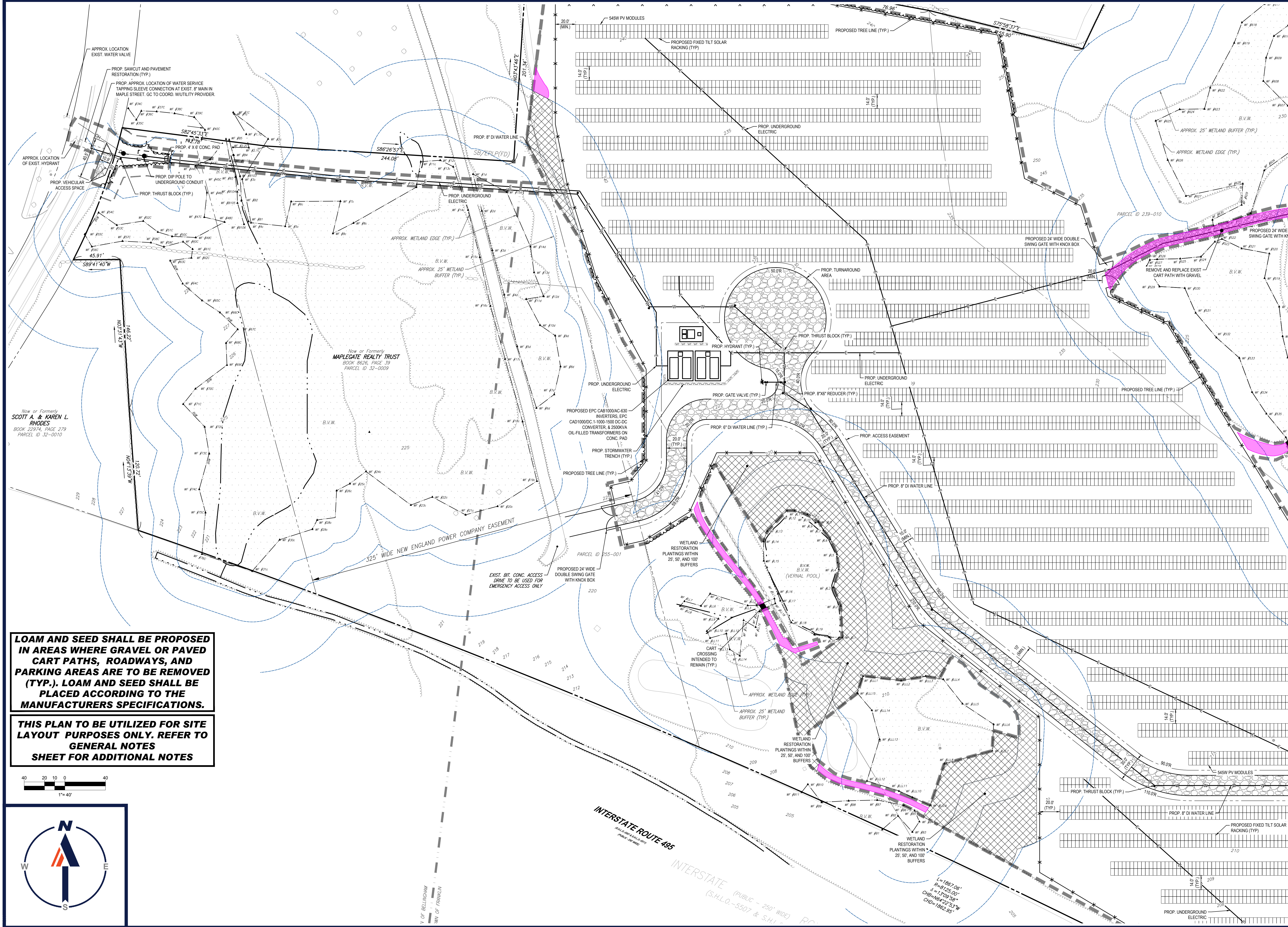
THIS PLAN TO BE UTILIZED FOR SITE LAYOUT PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL NOTES

SHEET TITLE:
SITE LAYOUT PLAN C

SHEET NUMBER:
C-304



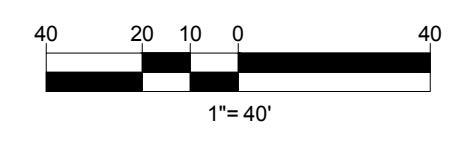
I:\BOHLER\NET\SHARES\BMAP\PROJECTS\2023\257.02-SPPD\3A-LAYOUT\1-C-304-BITE.C



Now or Formerly
SCOTT A. & KAREN L.
RHODES
BOOK 22974, PAGE 279
PARCEL ID 32-0010

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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PERMITTING SERVICES
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL
2	02/16/2024	PER TOWN COMMENTS	SMK
3	02/21/2024	PER CONS COM COMMENTS	SMK

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PROJECT No.: W201257
DRAWN BY: CMC / OCR
CHECKED BY: GD
DATE: 07/20/2023
CAD ID: W201257.02-SPPD-3A

PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET SOLAR LLC
PROPOSED
SOLAR FARM - SOUTH

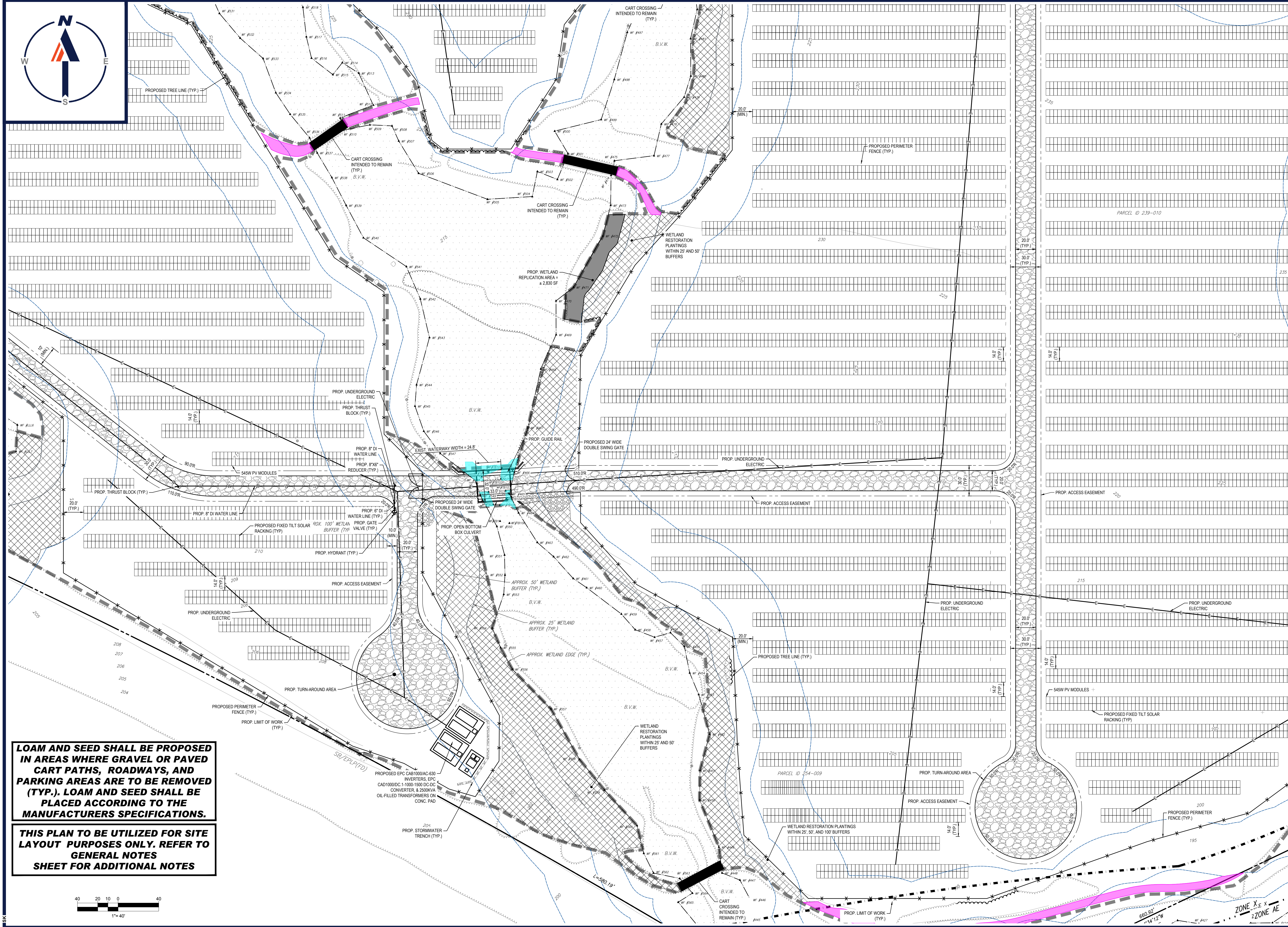
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160 MAPLE STREET,
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NORFOLK COUNTY, MASSACHUSETTS

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SHEET TITLE:
SITE LAYOUT PLAN D

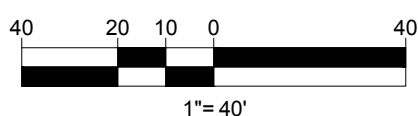
SHEET NUMBER:
C-305

REVISION 3 - 02/21/2024



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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 SUSTAINABLE DESIGN
 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
3	02/21/2024	PER CONS COM 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-SPFD-3A

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

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SHEET TITLE:

SITE LAYOUT PLAN E

SHEET NUMBER:
C-306

REVISION 3 - 02/21/2024



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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
3	02/21/2024	PER CONS COM 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-GRAD-3A

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,
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SHEET TITLE:
OVERALL GRADING PLAN

SHEET NUMBER:
C-401

REVISION 3 - 02/21/2024

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

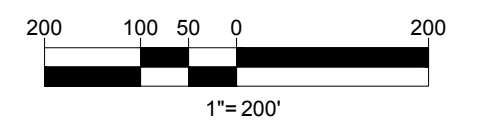
THE PURPOSE OF THE OVERALL PLAN SHEET IS TO BE UTILIZED AS A SITE KEY MAP, TO PROVIDE SITE FEATURE LOCATIONS ONLY. PLEASE REFER TO EACH INDIVIDUAL SHEET FOR MORE INFORMATION.

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

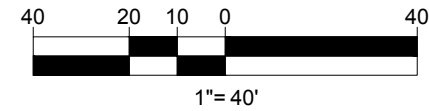
NO STOCKPILES SHALL BE LOCATED WITHIN WETLANDS OR WETLAND BUFFER ZONES.

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 GRADING & UTILITY NOTES



I:\BOHLER\NET\SHARES\MA\PROJECTS\2023\257\257-02-GRAD-3A-LAYOUT-C-401-GRAD-OVERALL



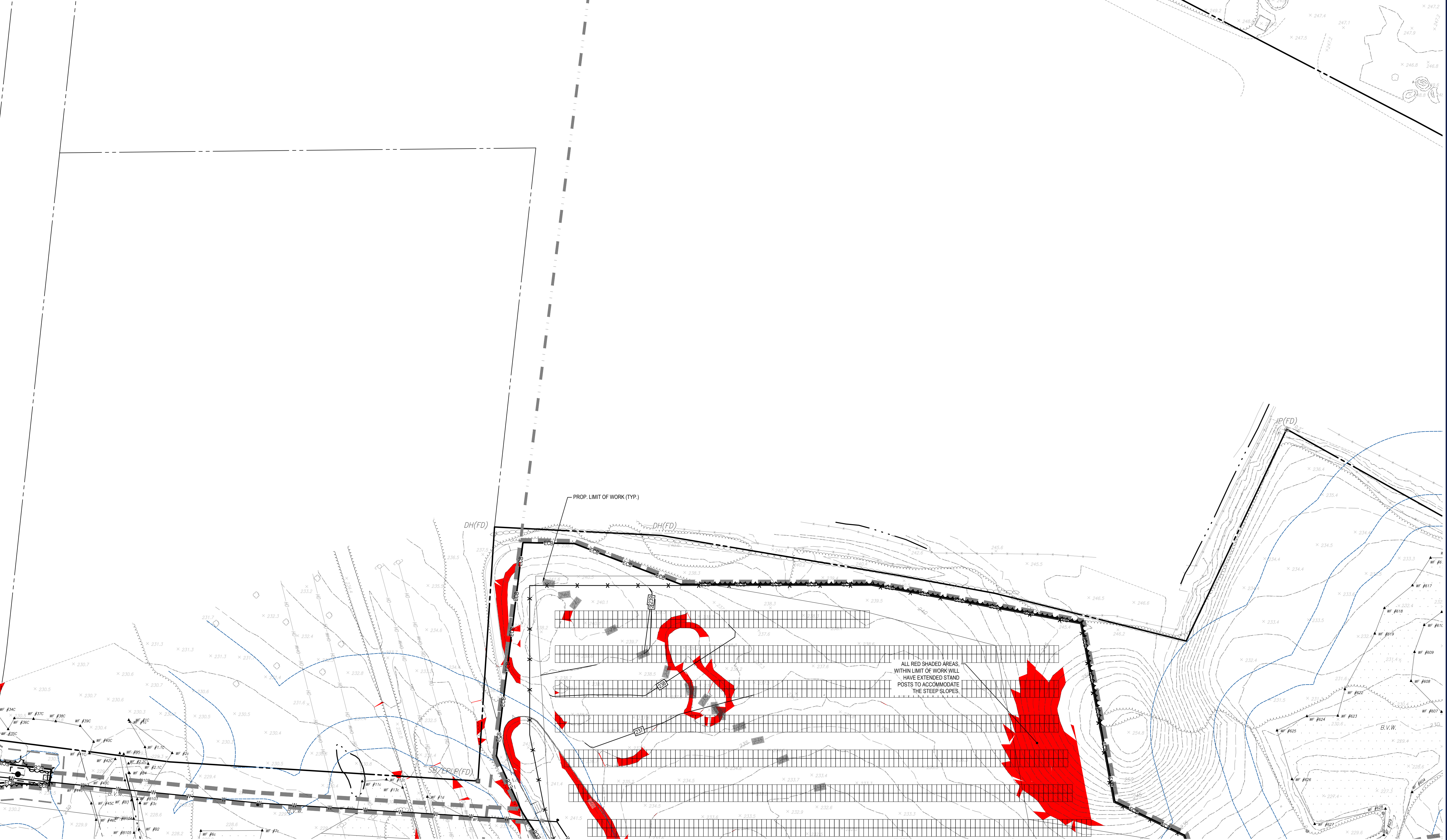
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REVISIONS				
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1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL	GD
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3	02/21/2024	PER CONS COM COMMENTS	SMK	GD



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PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET SOLAR LLC

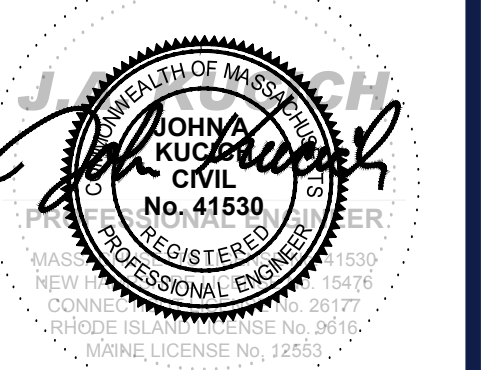
PROPOSED
SOLAR FARM - SOUTH

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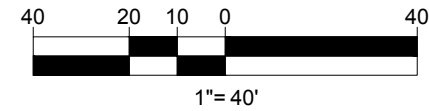
GRADING PLAN A

SHEET NUMBER:

C-402

REVISION 3 - 02/21/2024

I:\BOHLER\NET\SHARES\MA\PROJECTS\2023\257\257-02-GRAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W201257.02-GRAD-3A-LAYOUT_C-402-GRAD_A



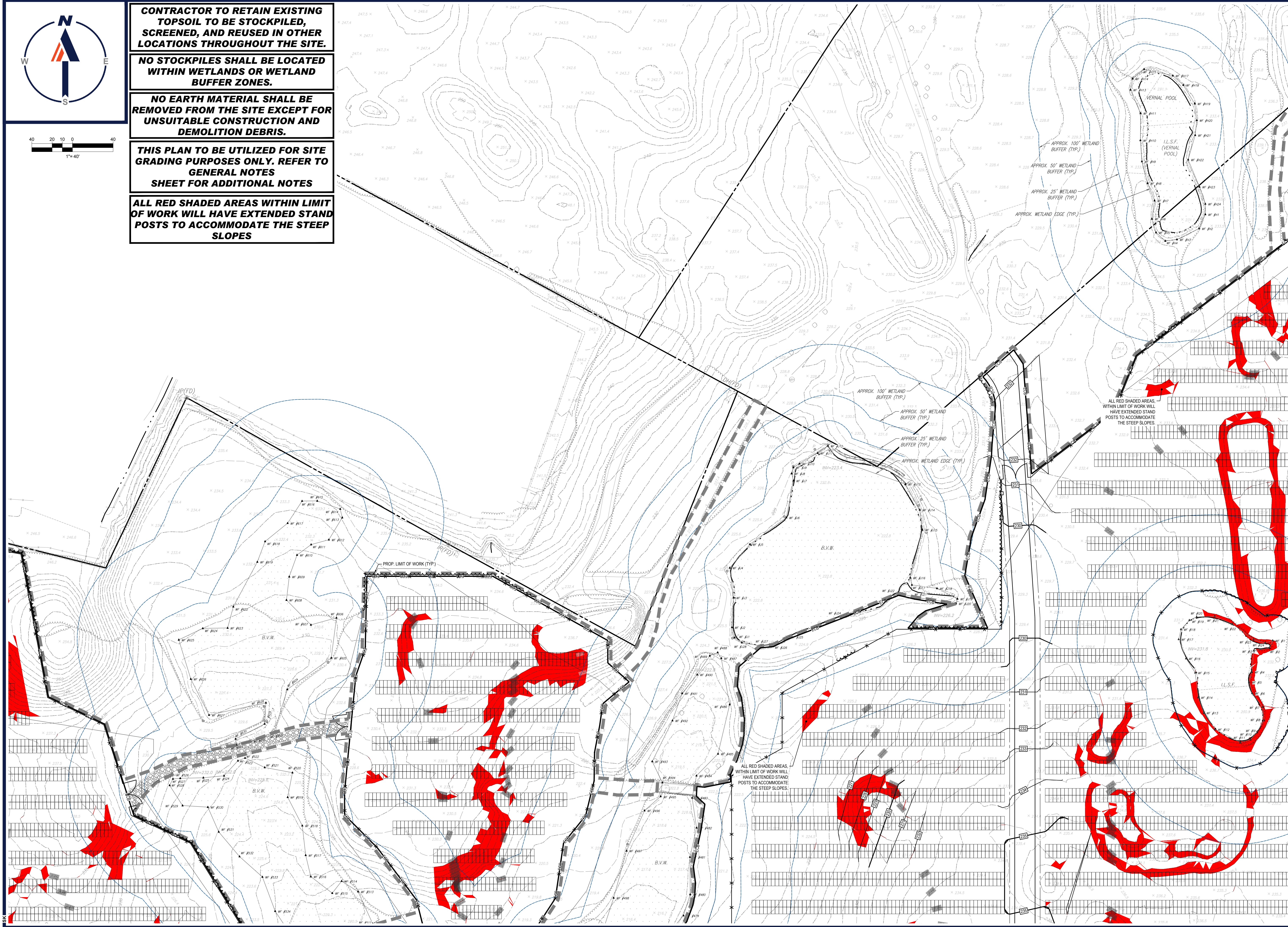
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ALL RED SHADED AREAS WITHIN LIMIT OF WORK WILL HAVE EXTENDED STAND POSTS TO ACCOMMODATE THE STEEP SLOPES



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REVISIONS

REV	DATE	COMMENT	CHECKED BY	DRAWN BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL	JDL
2	02/16/2024	PER TOWN COMMENTS	SMK	GD
3	02/21/2024	PER CONS COM COMMENTS	SMK	GD

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MAPLE STREET SOLAR LLC
PROPOSED
SOLAR FARM - SOUTH

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160 MAPLE STREET,
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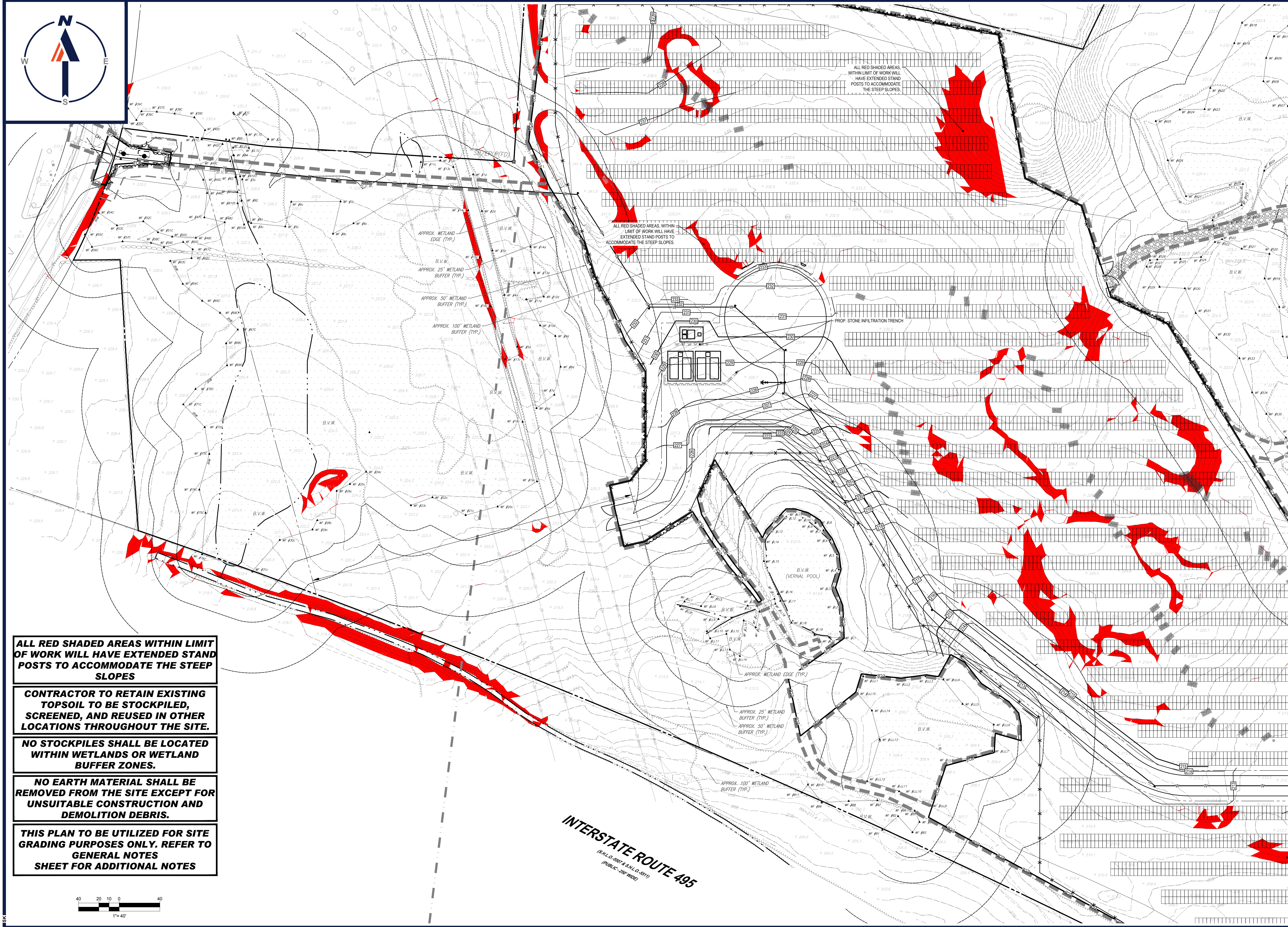


SHEET TITLE:
GRADING PLAN B

SHEET NUMBER:
C-403

REVISION 3 - 02/21/2024

I:\BOHLER\NET\SHARED\MA\PROJECTS\W201257\232\CADD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W201257_02-GRAD-3A-LAYOUT_C-403-GRAD.B



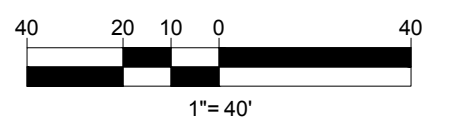
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REVISIONS

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 DRAWN BY: CMC / OCR
 CHECKED BY: GD
 DATE: 07/20/2023
 CAD ID: W201257.02-GRAD-3A

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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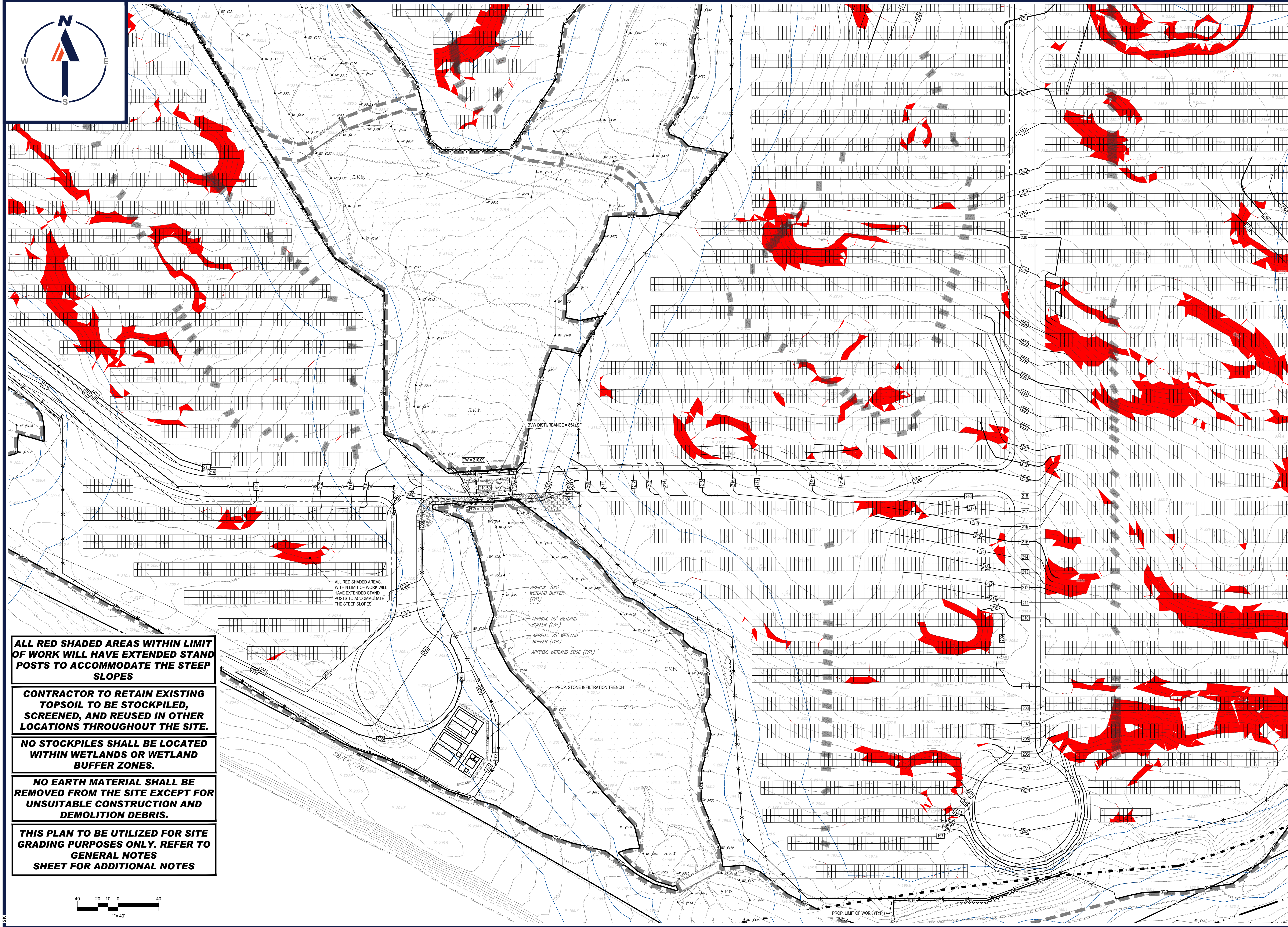


SHEET TITLE:
GRADING PLAN D

SHEET NUMBER:
C-405

REVISION 3 - 02/21/2024

I:\BOHLER\NET\SHARES\MAPLE\PROJECTS\2023\257\257-02-GRAD-3A\LA\OUT\ C-405-GRAD.D



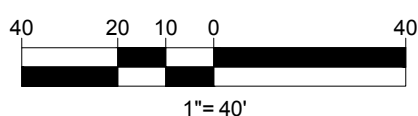
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3	02/21/2024	PER CONS COM COMMENTS	GD

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 CAD ID: W201257.02-GRAD-3A

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,
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BOHLER

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 SOUTHBOROUGH, MA 01772
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SHEET TITLE:

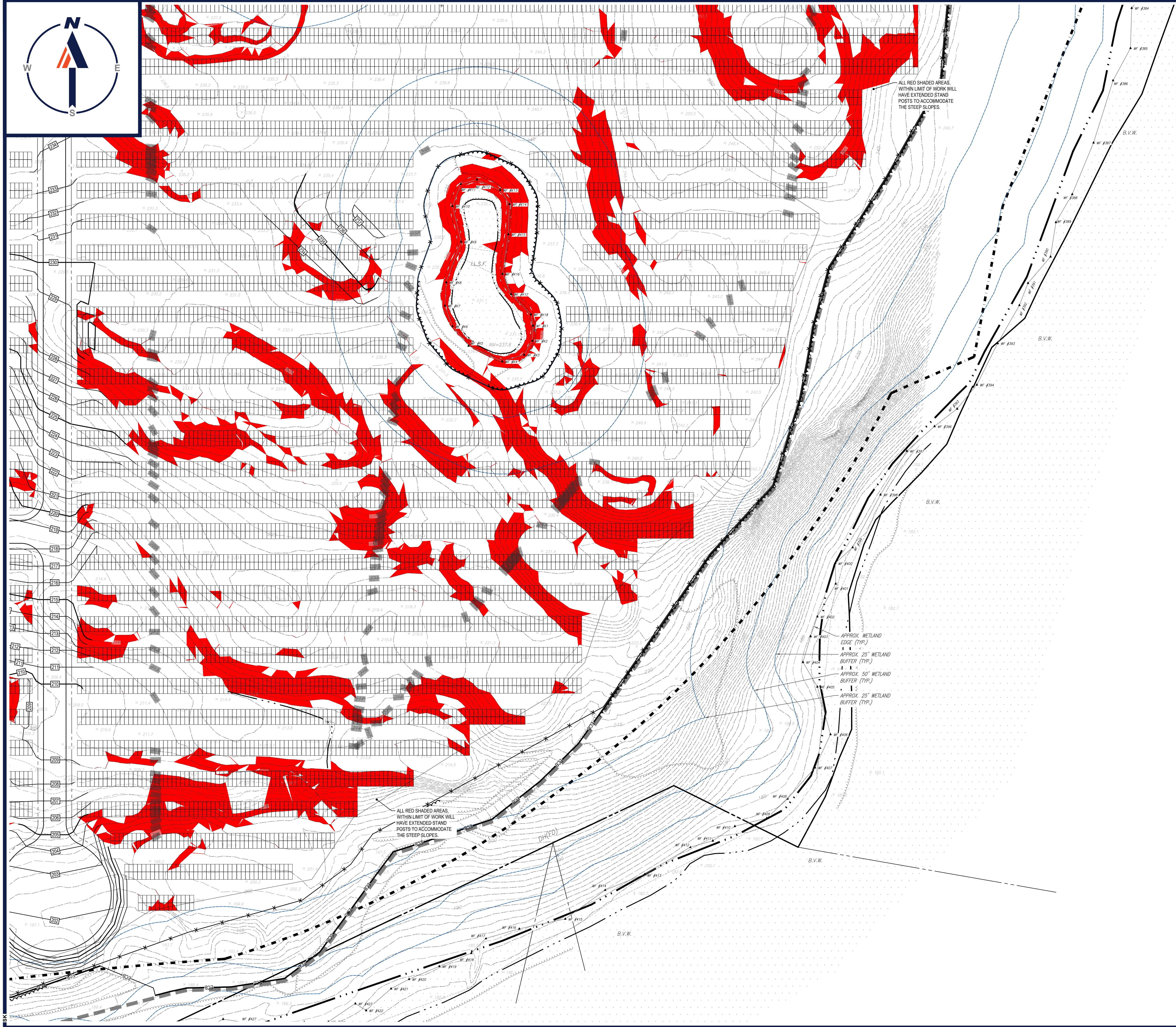
GRADING PLAN E

SHEET NUMBER:

C-406

REVISION 3 - 02/21/2024

I:\BOHLER\NET\SHARES\MA\PROJECTS\W201257\23\CADD\DRAWINGS\PLAN BETS\CIVIL SITE PLAN\W201257.02-GRAD-3A.dwg - LAYOUT: C-406-GRAD E



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 HAVE EXTENDED STAND POSTS TO ACCOMMODATE THE STEEP SLOPES.

APPROX. WETLAND EDGE (TYP.)
APPROX. 25' WETLAND BUFFER (TYP.)
APPROX. 50' WETLAND BUFFER (TYP.)
APPROX. 25' WETLAND BUFFER (TYP.)

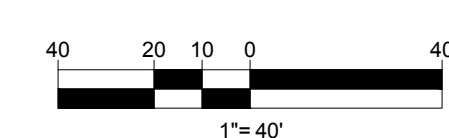
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3	02/21/2024	PER CONS COM COMMENTS	SMK GD

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PROJECT No.: W201257
DRAWN BY: CMC / OCR
CHECKED BY: GD
DATE: 07/20/2023
CAD ID: W201257.02-GRAD-3A

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,
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NORFOLK COUNTY, MASSACHUSETTS

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SHEET TITLE:

GRADING PLAN F

SHEET NUMBER:
C-407

REVISION 3 - 02/21/2024

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LMP FIVE LOTS, LLC
BOOK 32050, PAGE 99
PARCEL ID 32-0007

PARCEL ID 239-012

116'4.30'±
18.91'
IP(FD)

Now or Formerly
LMP PROPERTIES, LLC
BOOK 32050, PAGE 99
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.**

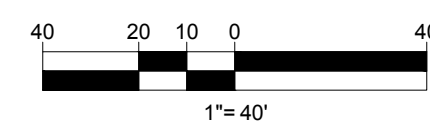
**THIS PLAN TO BE UTILIZED FOR SITE
SOIL AND EROSION CONTROL
PURPOSES ONLY**

**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.**



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

REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL
2	02/16/2024	PER TOWN COMMENTS	SMK
3	02/21/2024	PER CONS COM COMMENTS	GD

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PROJECT No.: W201257
DRAWN BY: CMC / OCR
CHECKED BY: GD
DATE: 07/20/2023
CAD ID: W201257.02-EROS.3A

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

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352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
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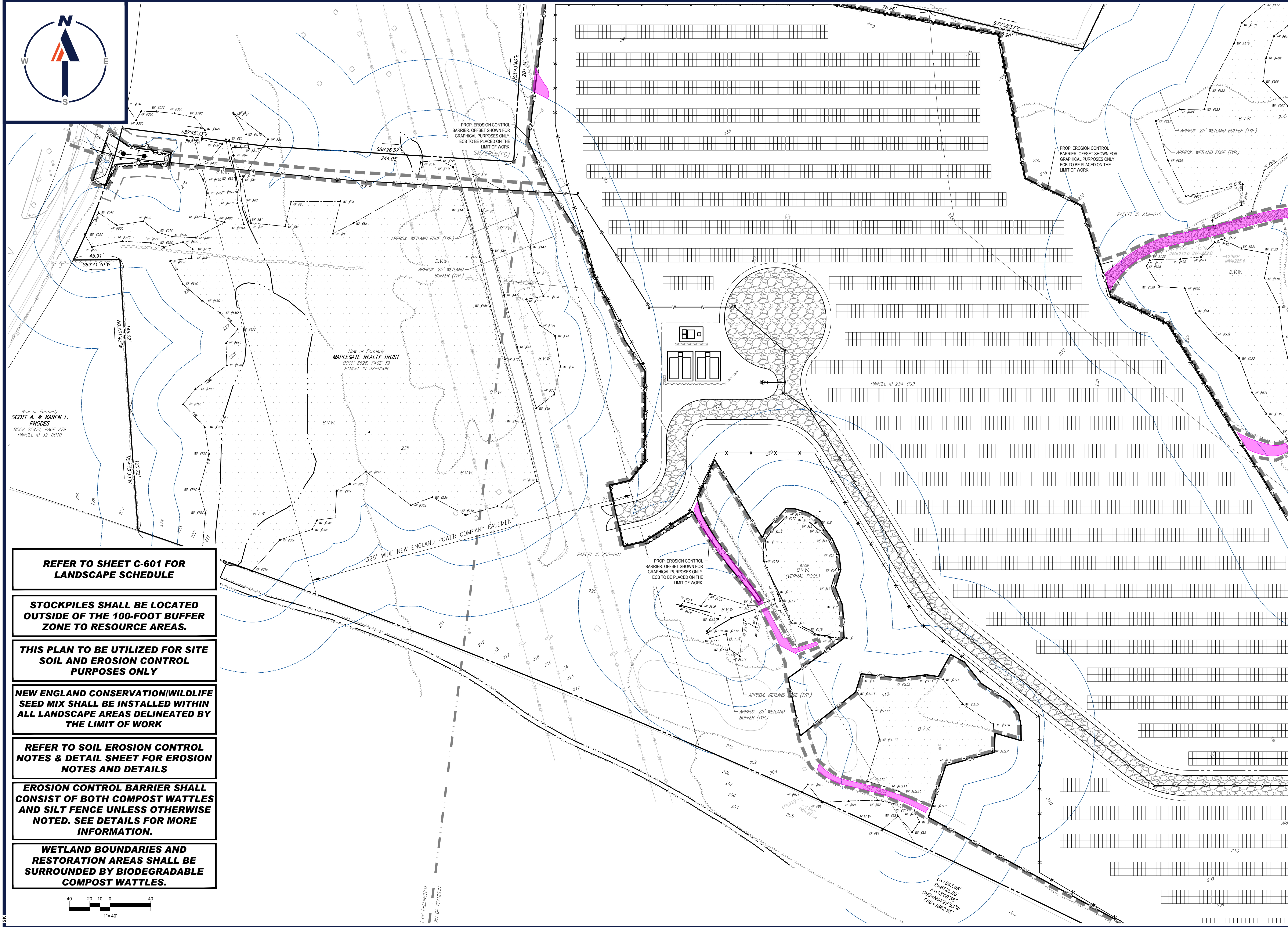


SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN A

SHEET NUMBER:
C-602

REVISION 3 - 02/21/2024

BOHLER ENGINEERING, INC. PROJECT: W201257.02-EROS.3A SITE PLAN: W201257.02-EROS.3A LAYOUT: C-602-EROS.3A



- 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.**

Now or Formerly
SCOTT A. & KAREN L. RHODES
BOOK 22974, PAGE 279
PARCEL ID 32-0010

Now or Formerly
MAPLECAT REALT TRUST
BOOK 8626, PAGE 39
PARCEL ID 32-0009

325' WIDE NEW ENGLAND POWER COMPANY EASEMENT

PROP. EROSION CONTROL BARRIER, OFFSET SHOWN FOR GRAPHICAL PURPOSES ONLY. ECB TO BE PLACED ON THE LIMIT OF WORK.

PROP. EROSION CONTROL BARRIER, OFFSET SHOWN FOR GRAPHICAL PURPOSES ONLY. ECB TO BE PLACED ON THE LIMIT OF WORK.

APPROX. WETLAND EDGE (TYP.)

APPROX. 25' WETLAND BUFFER (TYP.)

APPROX. WETLAND EDGE (TYP.)

APPROX. 25' WETLAND BUFFER (TYP.)

L=1807.08'
R=8125.00'
Δ=13°09'28"
CH=14922.53'
CD=1062.85'

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PROPOSED
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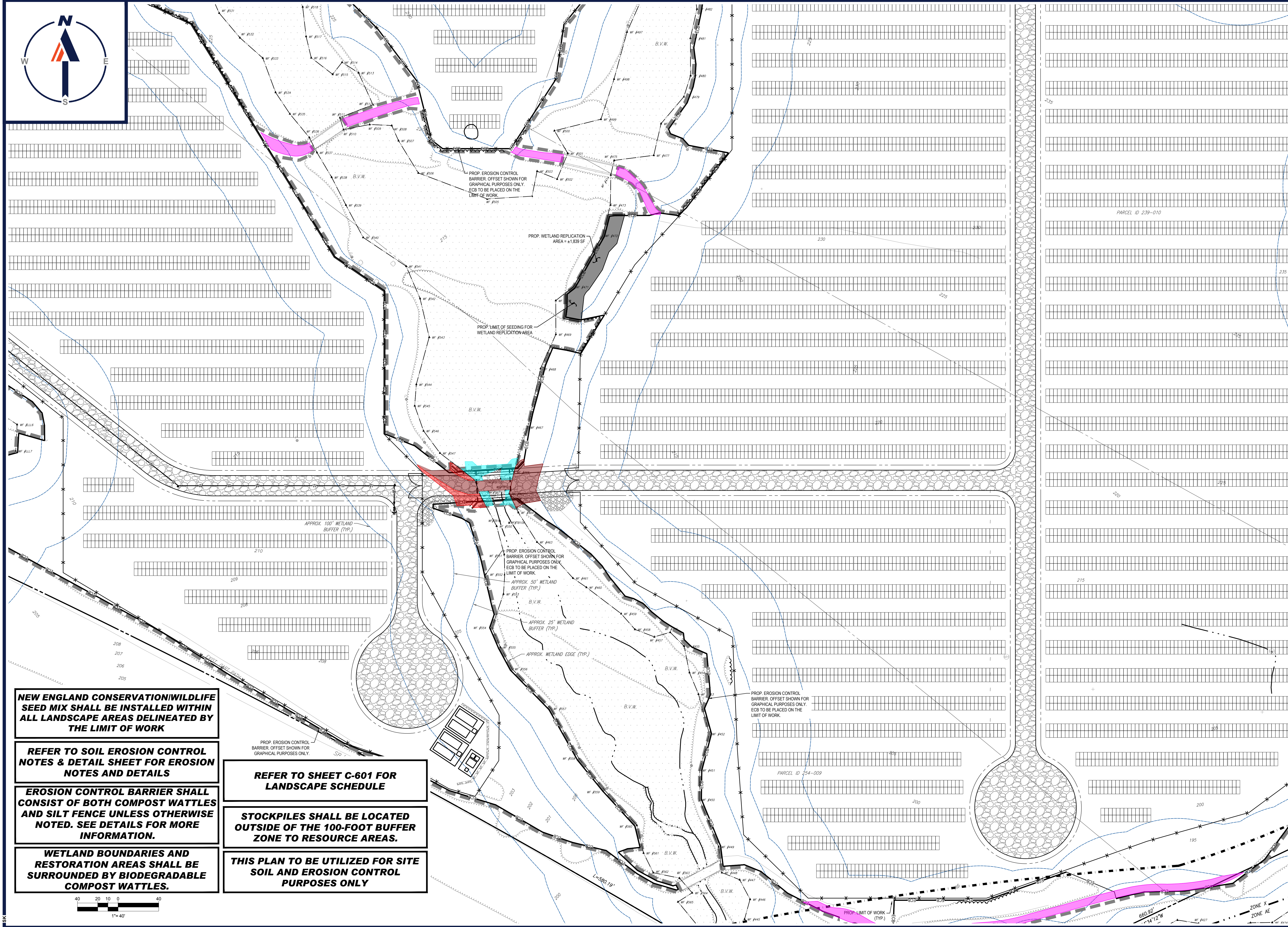


SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN D

SHEET NUMBER:
C-605

REVISION 3 - 02/21/2024

I:\BOHLER\NET\SHARES\MAP\PROJECTS\2023\2372\2372\CADD\DRAWINGS\PLAN SET\3\CIVIL SITE PLAN\W201257.02-EROS-3A-LAYOUT-1-C-605-EROS.D



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

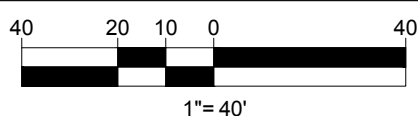
EROSION CONTROL BARRIER SHALL CONSIST OF BOTH COMPOST WATTLES AND SILT FENCE UNLESS OTHERWISE NOTED. SEE DETAILS FOR MORE INFORMATION.

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

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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FOR
MAPLE STREET SOLAR LLC
 PROPOSED
 SOLAR FARM - SOUTH

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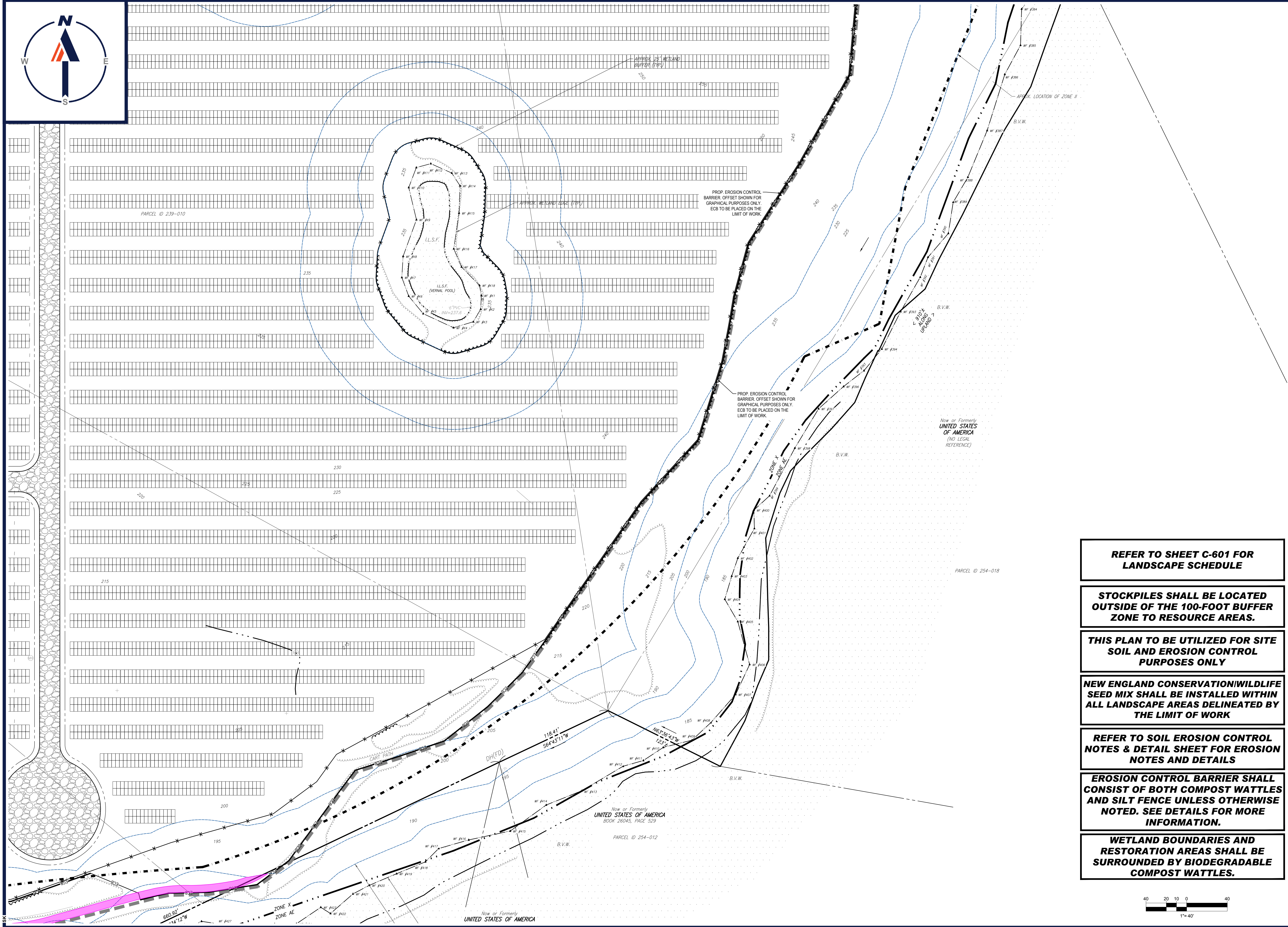


SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN E

SHEET NUMBER:
C-606

REVISION 3 - 02/21/2024

I:\BOHLER\NET\SHARES\MAP\PROJECTS\2023\23722\CADD\DRAWINGS\PLAN\BETS\CIVIL SITE PLAN\W201257.02-EROS.3A\---LAYOUT.C-606-EROS.E



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 CAD ID: W201257.02-EROS.3A

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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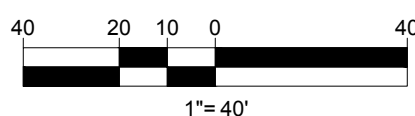


SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN F

SHEET NUMBER:
C-607

REVISION 3 - 02/21/2024

- 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.**



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 STABILIZED 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 WOOD 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.

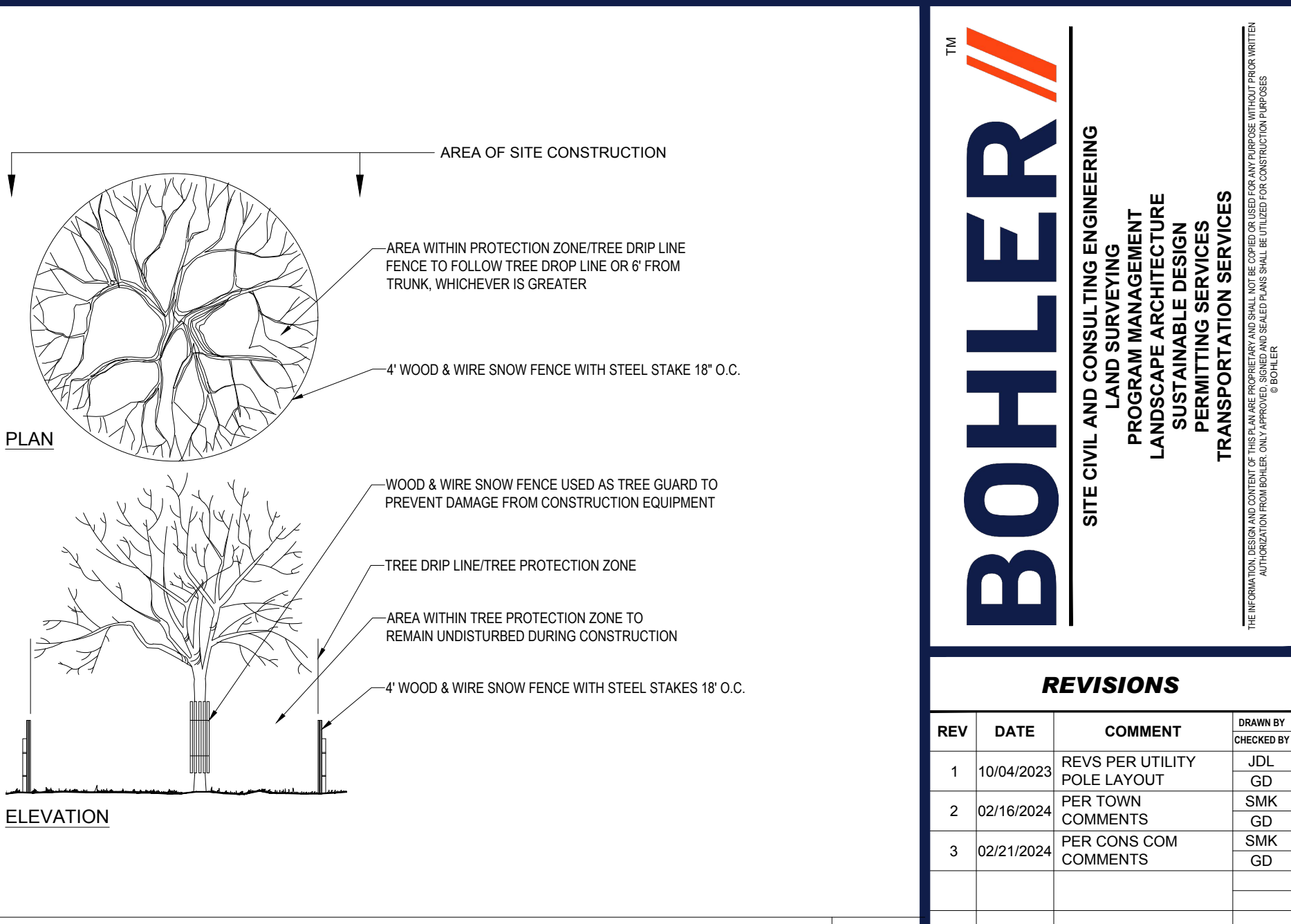
GENERAL EROSION AND SEDIMENT CONTROL NOTES

- 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 44.576 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 PLANS) 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.

- 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

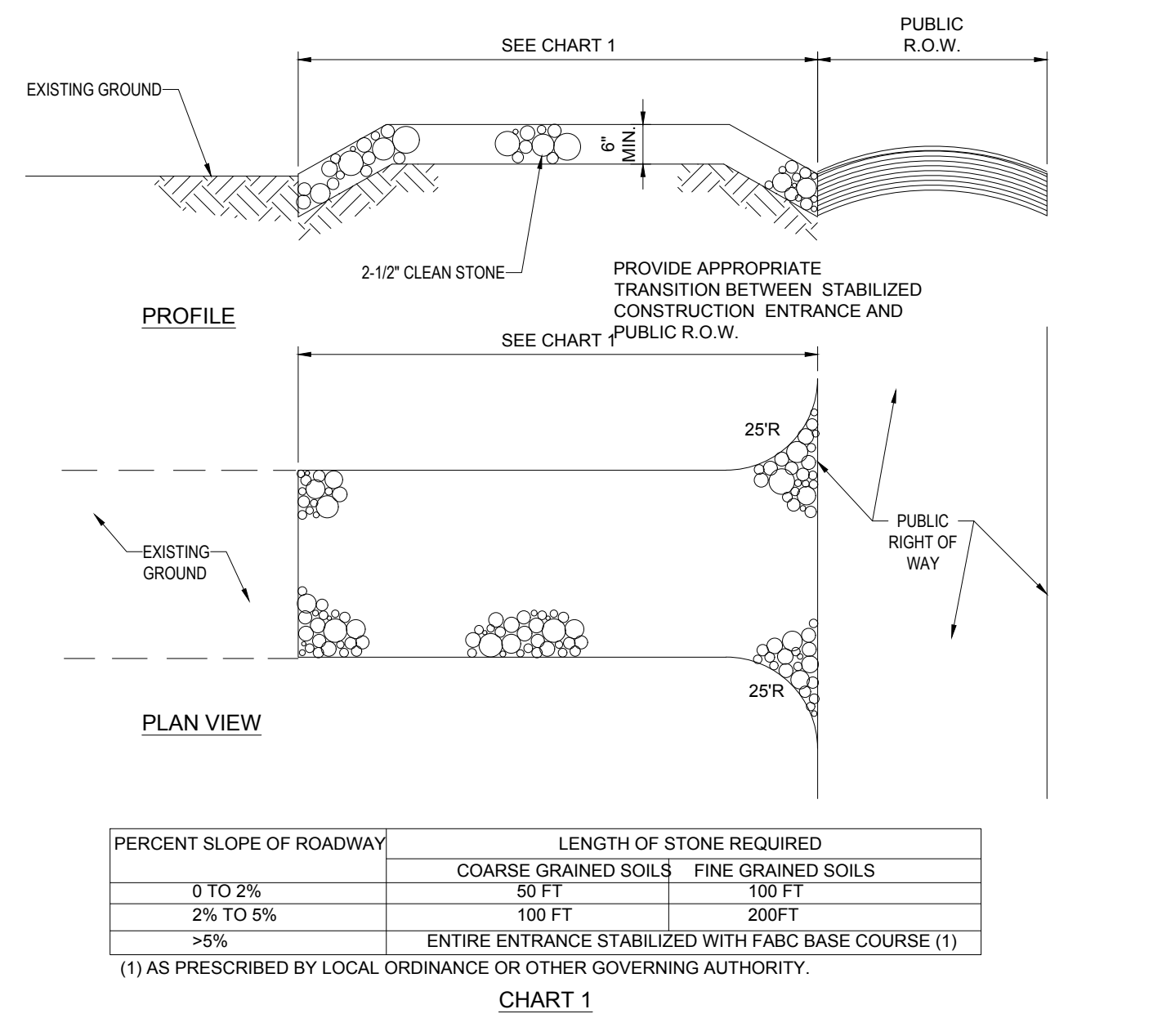
RECOMMENDED CONSTRUCTION SEQUENCE

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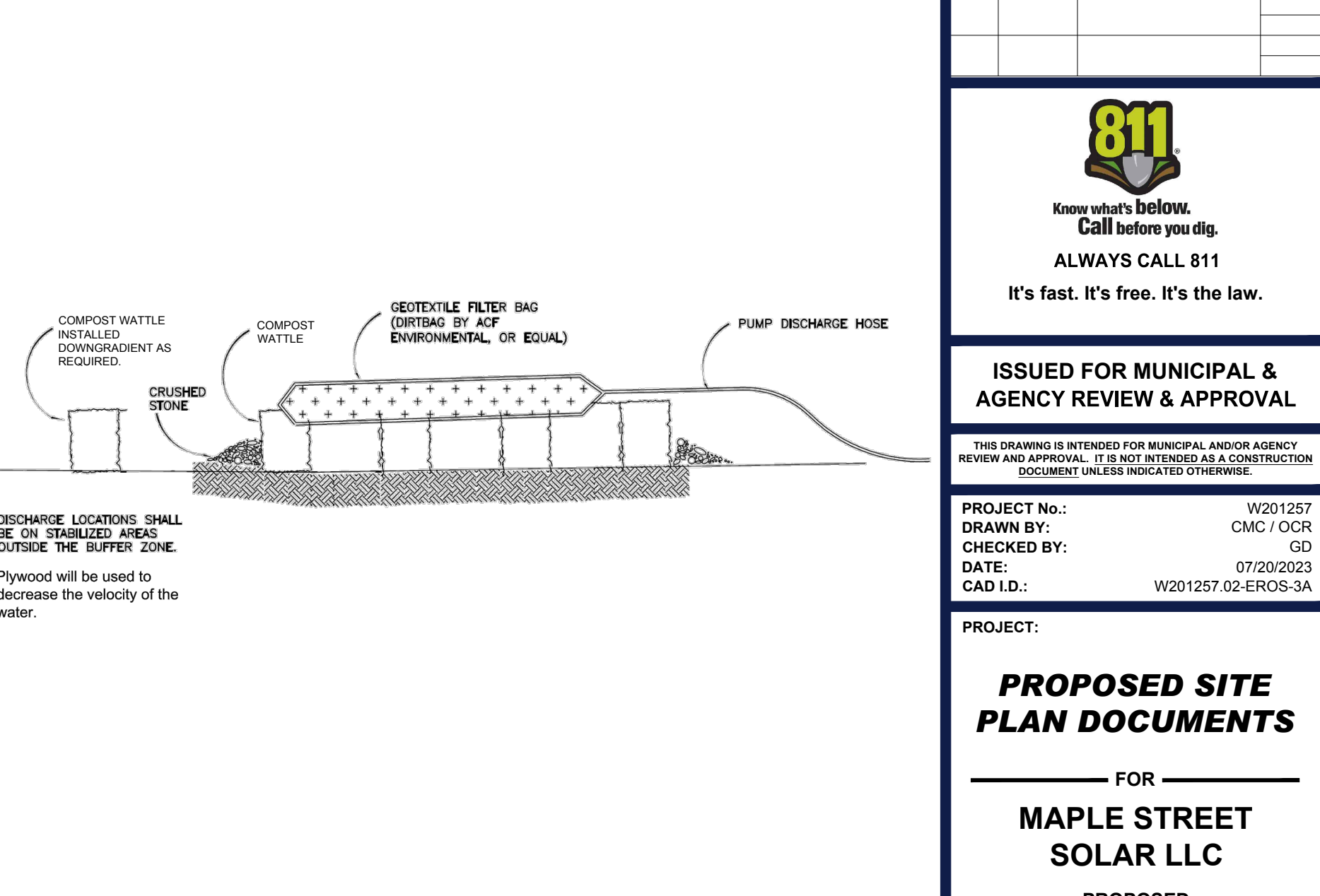
TREE PROTECTION DURING SITE CONSTRUCTION

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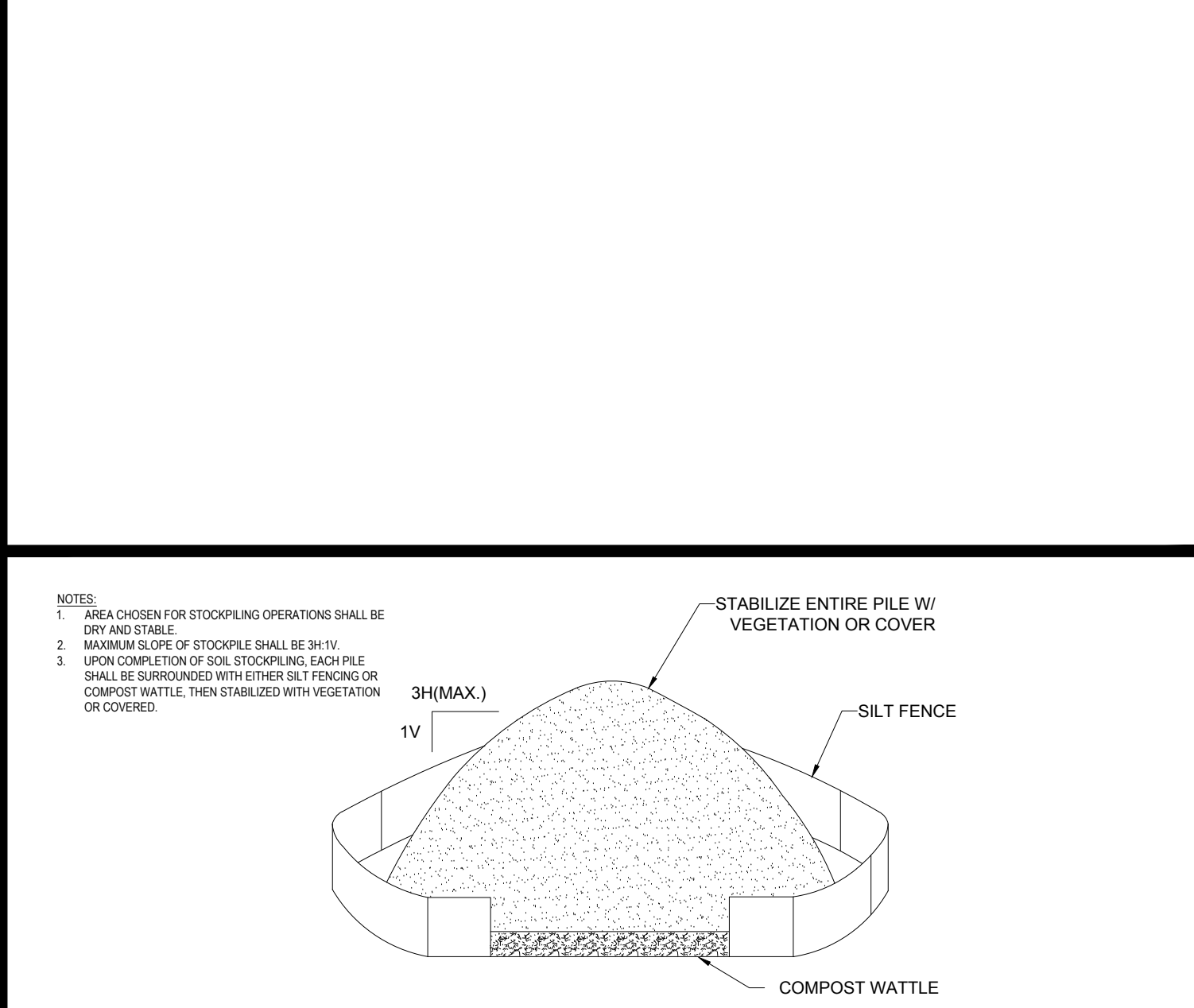
STABILIZED CONSTRUCTION ENTRANCE

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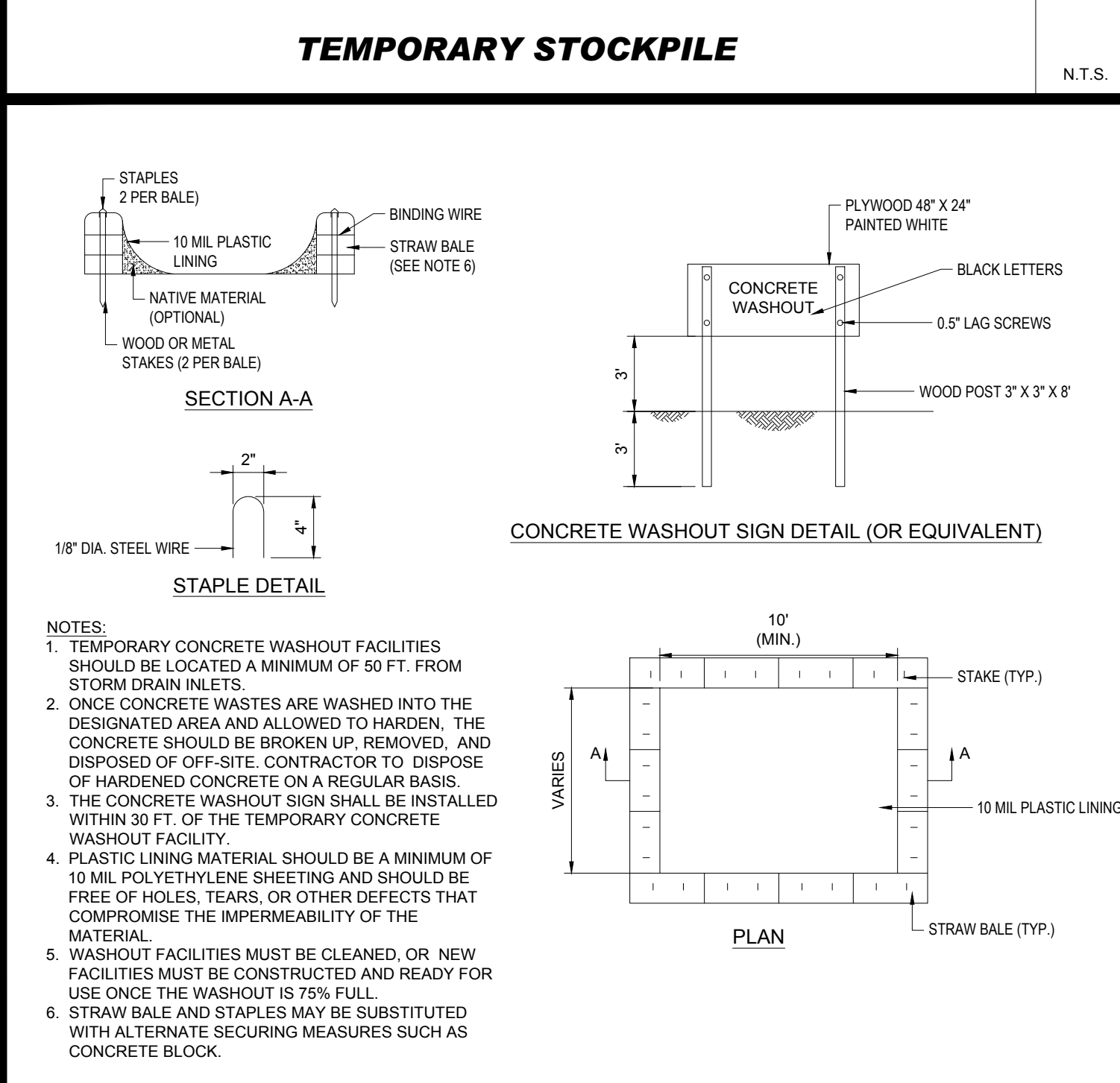
DEWATERING GEOTEXTILE FILTER BAG DETAIL

N.T.S.



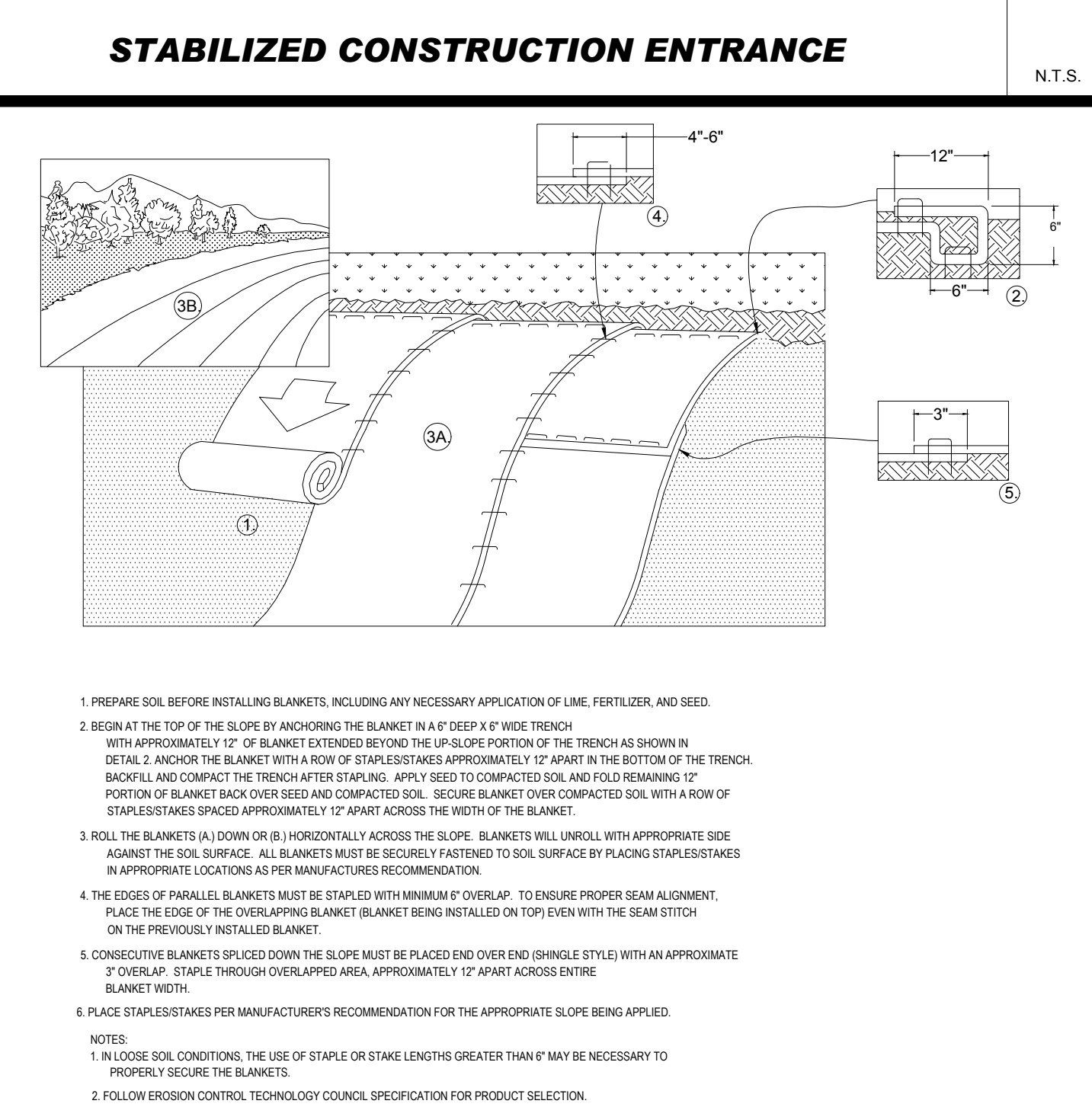
TEMPORARY STOCKPILE

N.T.S.



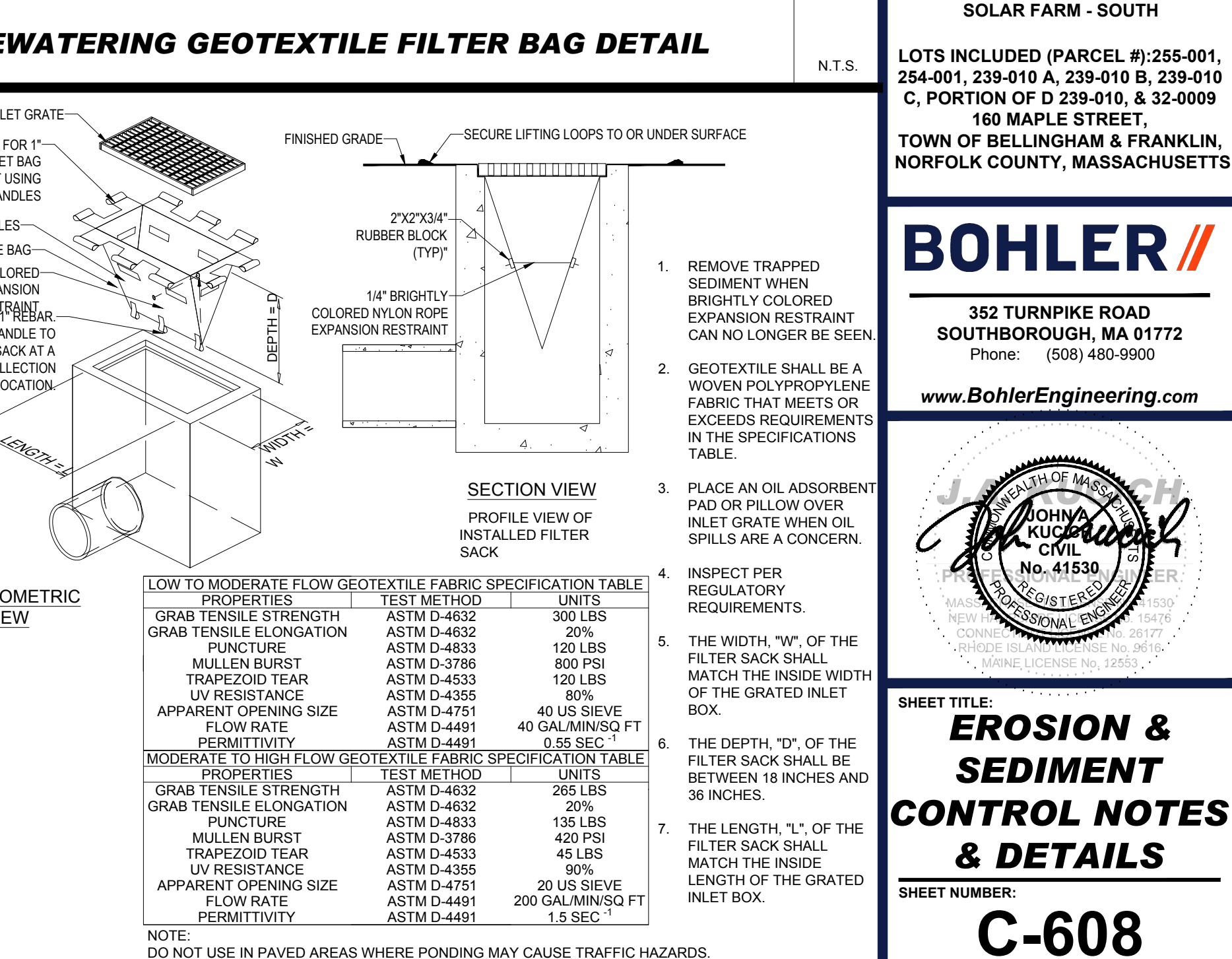
CONCRETE WASTE MANAGEMENT AREA

N.T.S.



EROSION CONTROL BLANKET 2:1 SLOPES (SLOPE INSTALLATION)

N.T.S.



FILTER SACS (GRADED INLETS)

N.T.S.

BOHLER ENGINEERING, INC. PROJECT: 20210223-02-EROSION CONTROL NOTES - LAYOUT - C-608-ENOTE

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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

PROPOSED SITE PLAN DOCUMENTS

FOR
MAPLE STREET SOLAR LLC

PROPOSED
SOLAR FARM - SOUTH

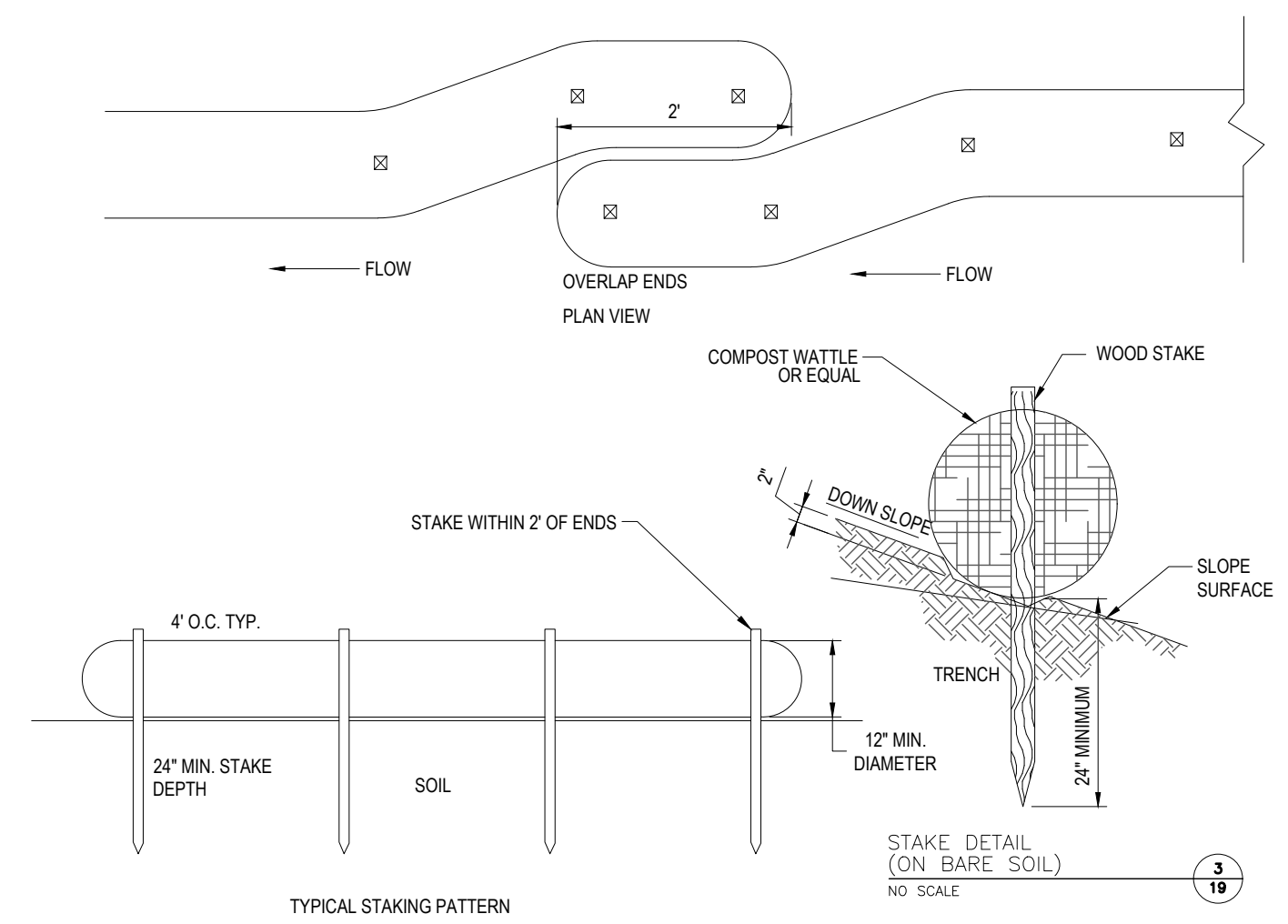
LOTS INCLUDED (PARCEL #): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION OF D 239-010, & 32-0009
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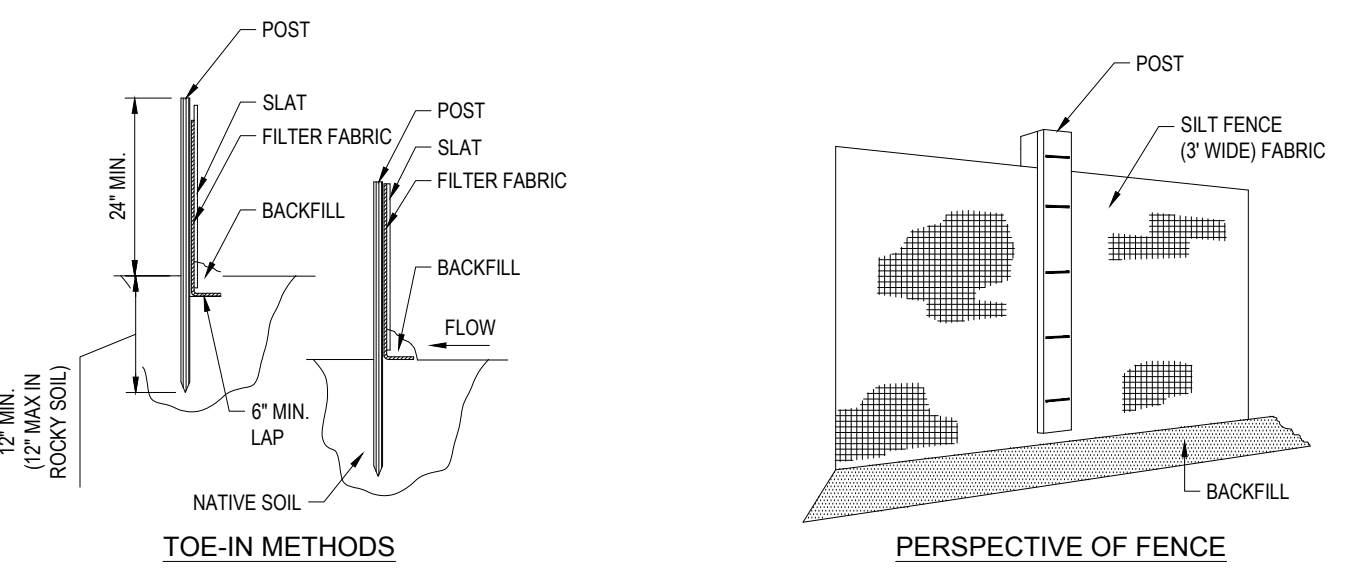
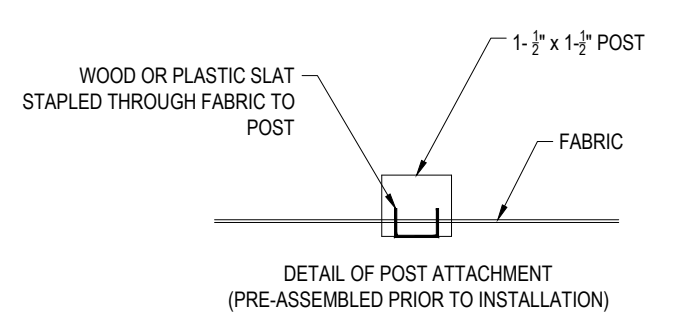
EROSION & SEDIMENT CONTROL NOTES & DETAILS

SHEET NUMBER:
C-608
REVISION 3 - 02/21/2024

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 & TAMPING 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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 CAD ID: W201257.02-EROS.3A

PROJECT:

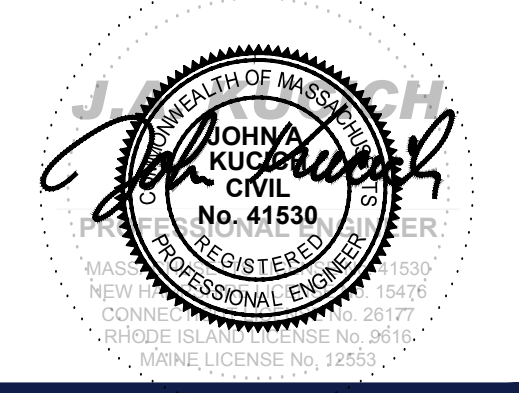
PROPOSED SITE PLAN DOCUMENTS

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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SHEET TITLE:
EROSION & SEDIMENT CONTROL NOTES & DETAILS

SHEET NUMBER:
C-609

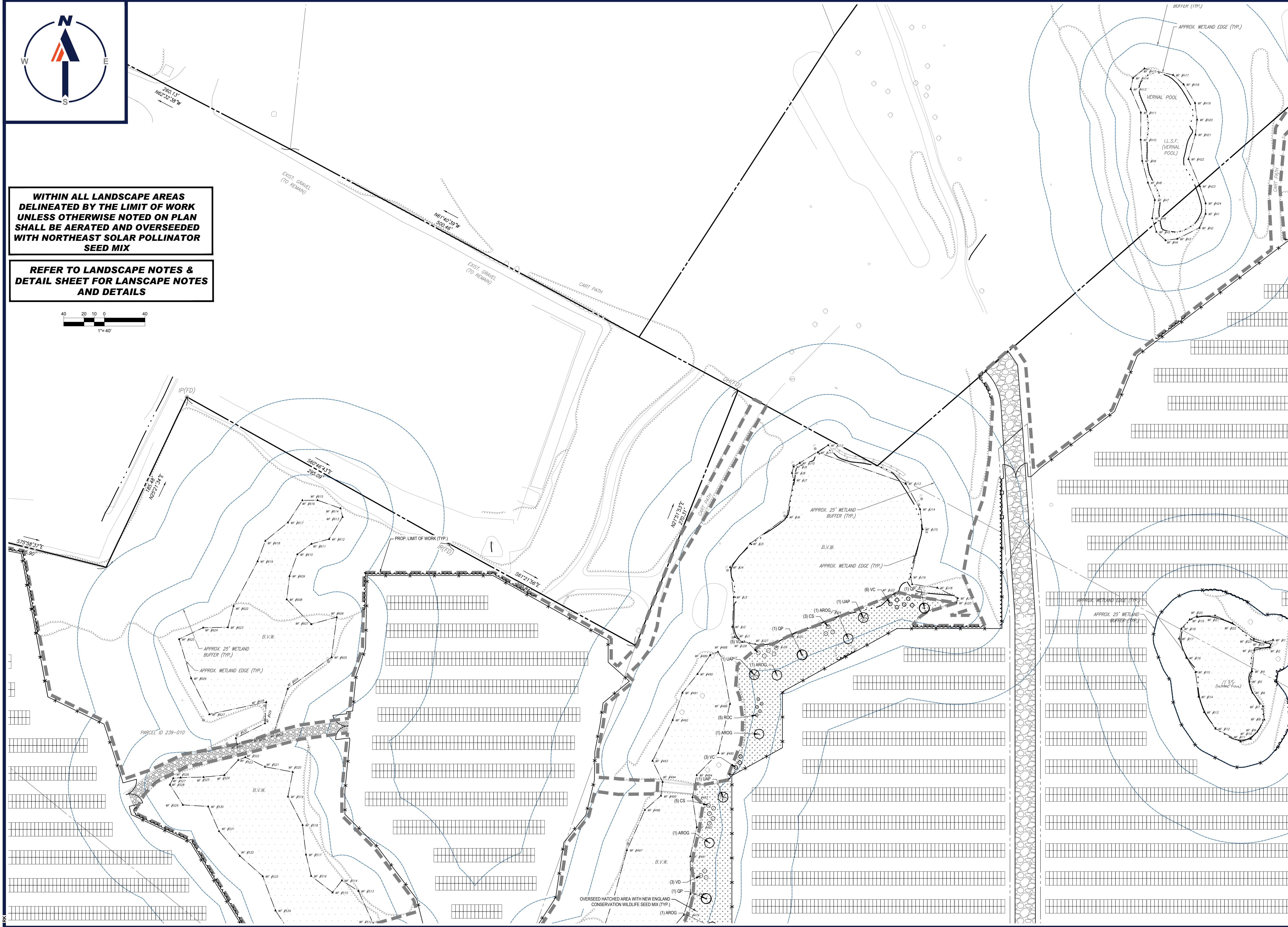
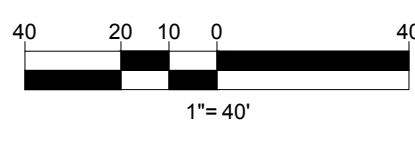
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**REFER TO LANDSCAPE NOTES &
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DRAWN BY: CMC / OCR
DATE: 07/20/2023
CAD ID: W201257.02-LCSP-3A

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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SHEET TITLE:

**LANDSCAPE
PLAN B**

SHEET NUMBER:
C-703

REVISION 3 - 02/21/2024

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CAD ID: W201257.02-LCSP-3A

**PROPOSED SITE
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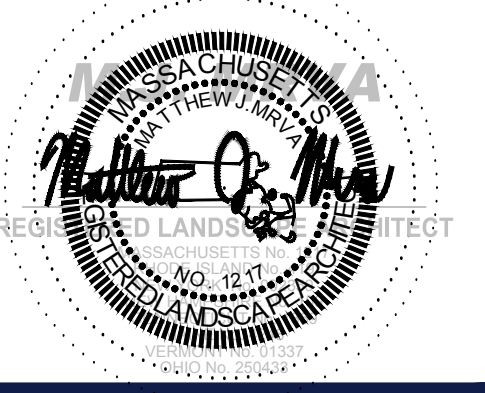
FOR
**MAPLE STREET
SOLAR LLC**

PROPOSED
SOLAR FARM - SOUTH

LOTS INCLUDED (PARCEL #): 255-001,
254-001, 239-010 A, 239-010 B, 239-010
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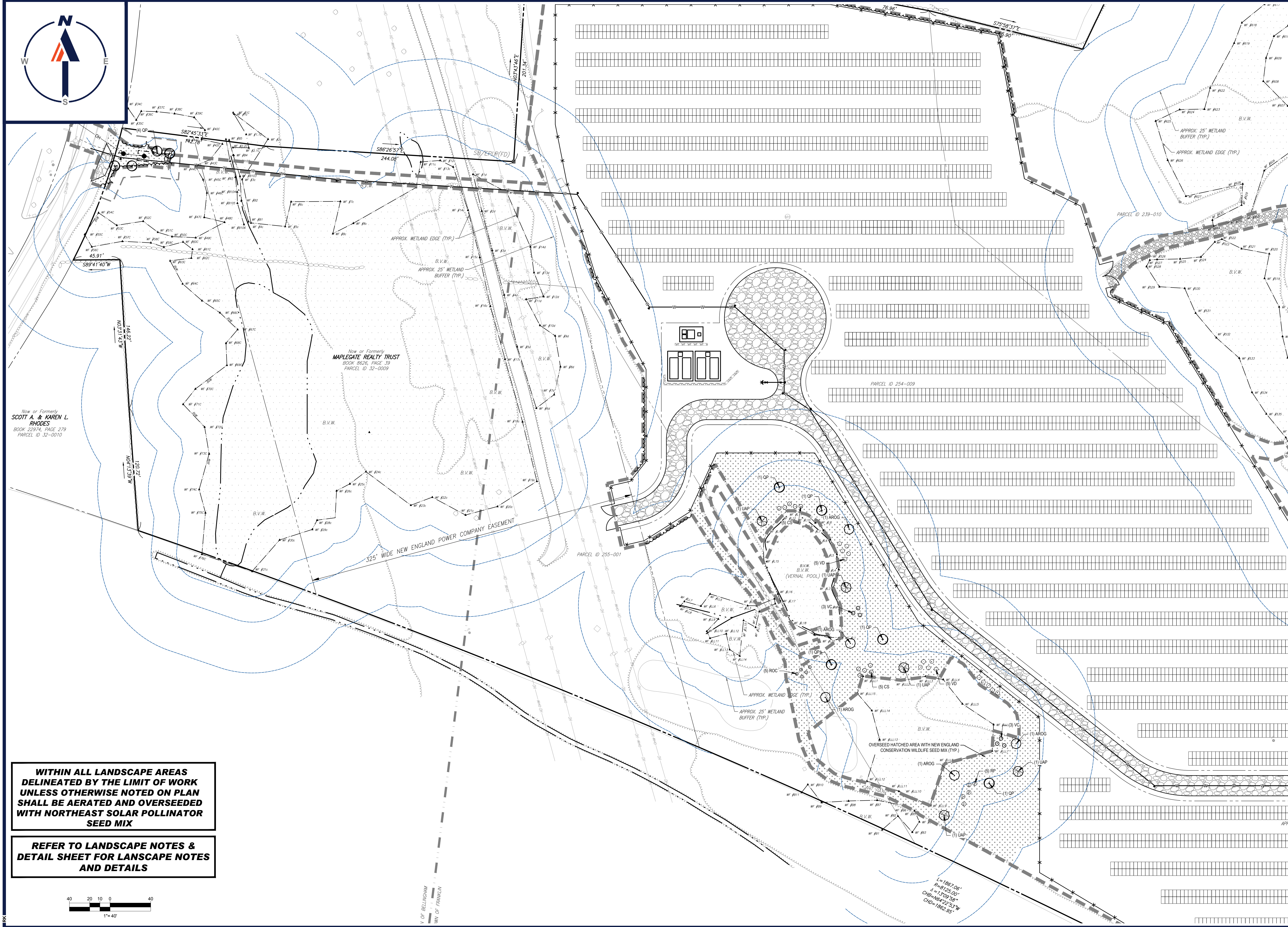


SHEET TITLE:
**LANDSCAPE
PLAN C**

SHEET NUMBER:
C-704

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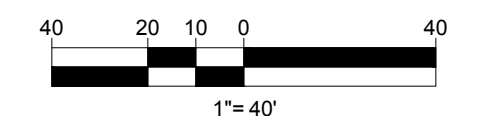


Now or Formerly
SCOTT A. & KAREN L.
RHODES
BOOK 22974, PAGE 279
PARCEL ID 32-0010

Now or Formerly
MAPLECAT REALETY TRUST
BOOK 8626, PAGE 39
PARCEL ID 32-0009

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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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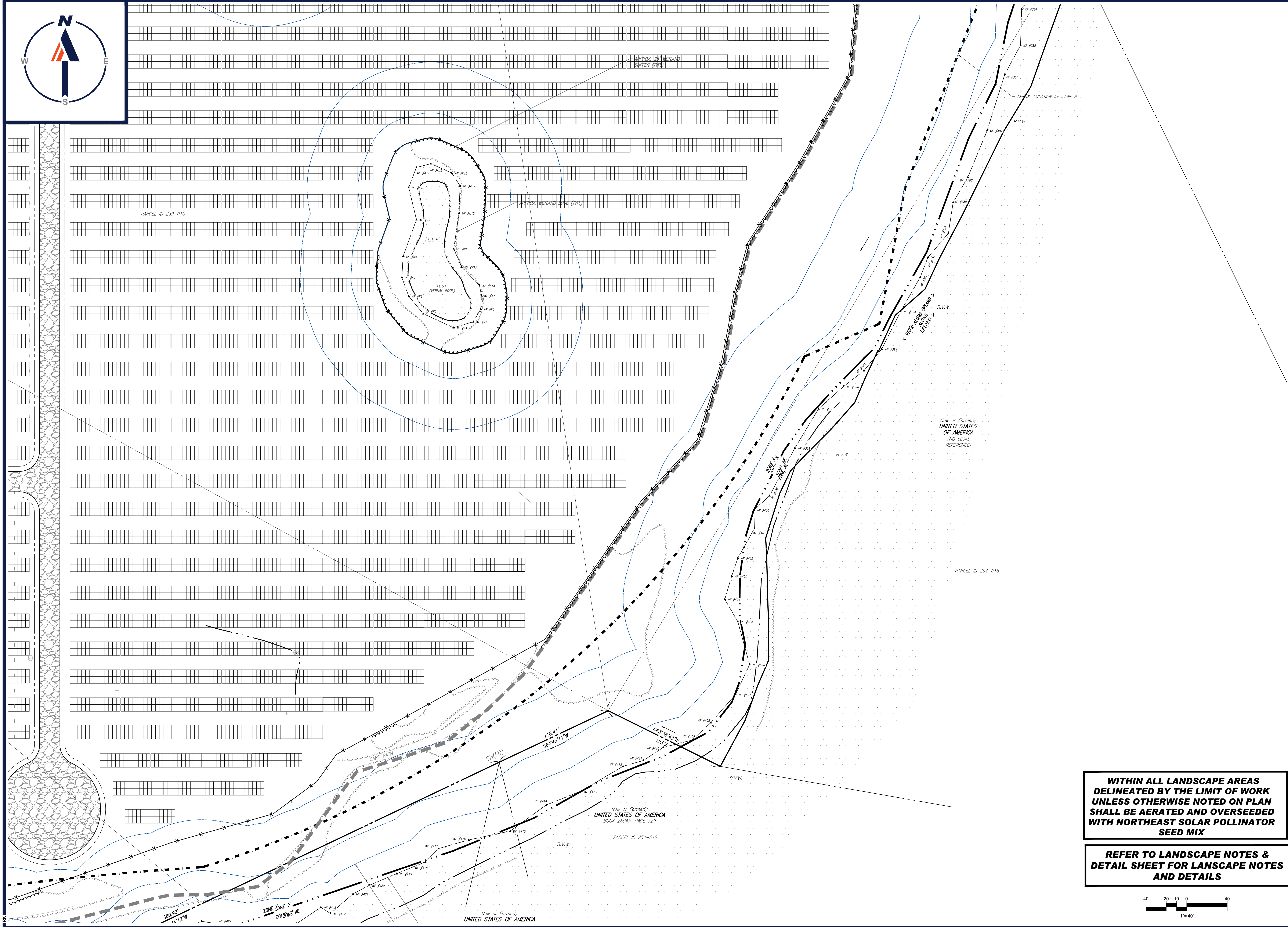


SHEET TITLE:
LANDSCAPE PLAN D

SHEET NUMBER:
C-705

REVISION 3 - 02/21/2024

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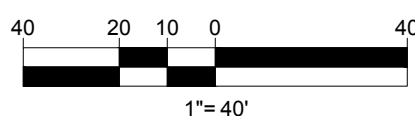
PROPOSED SITE PLAN DOCUMENTS
 FOR
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 PROPOSED SOLAR FARM - SOUTH
 LOTS INCLUDED (PARCEL #): 255-001, 254-001, 239-010 A, 239-010 B, 239-010 C, PORTION OF D 239-010, & 32-0009
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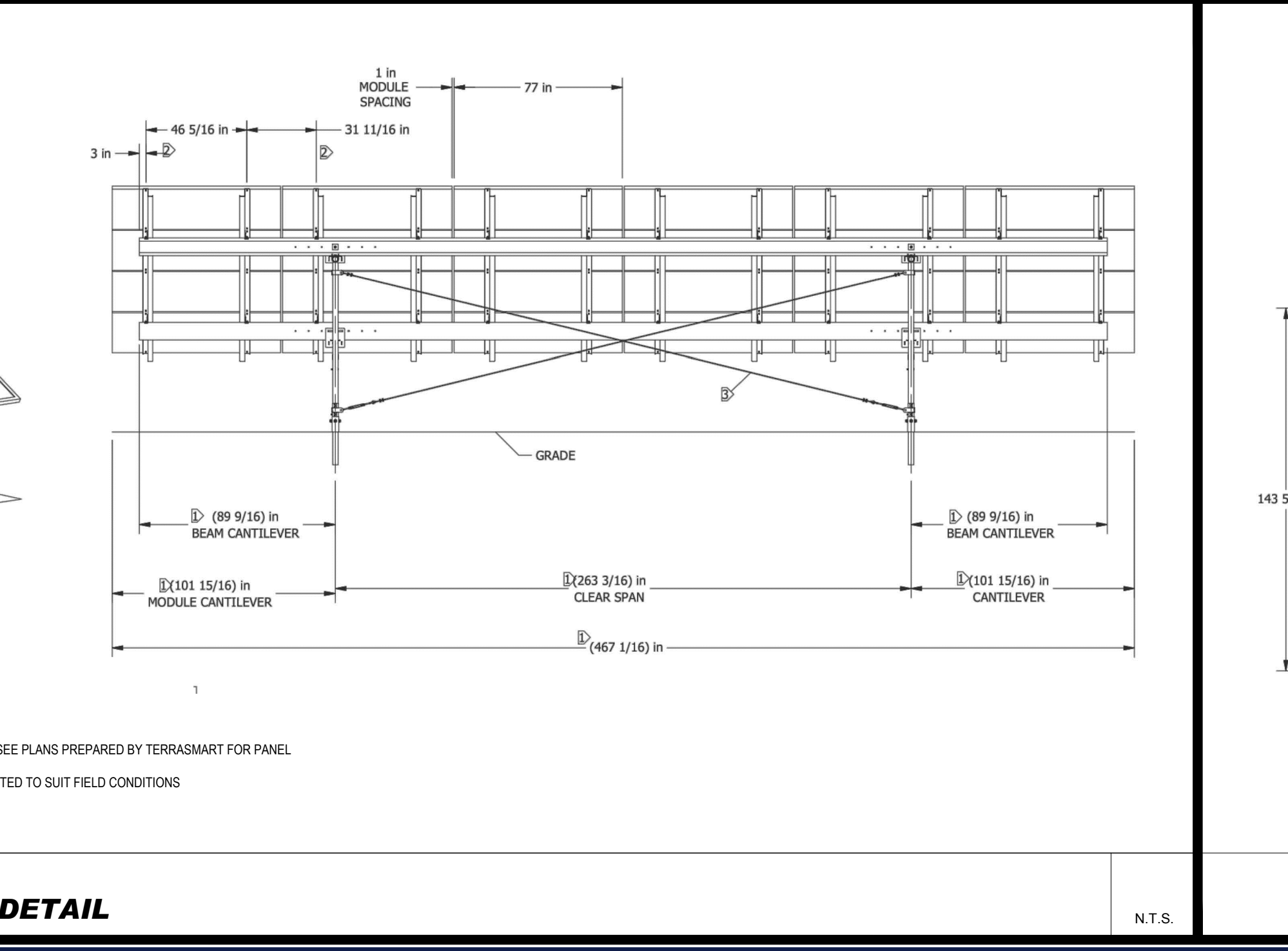
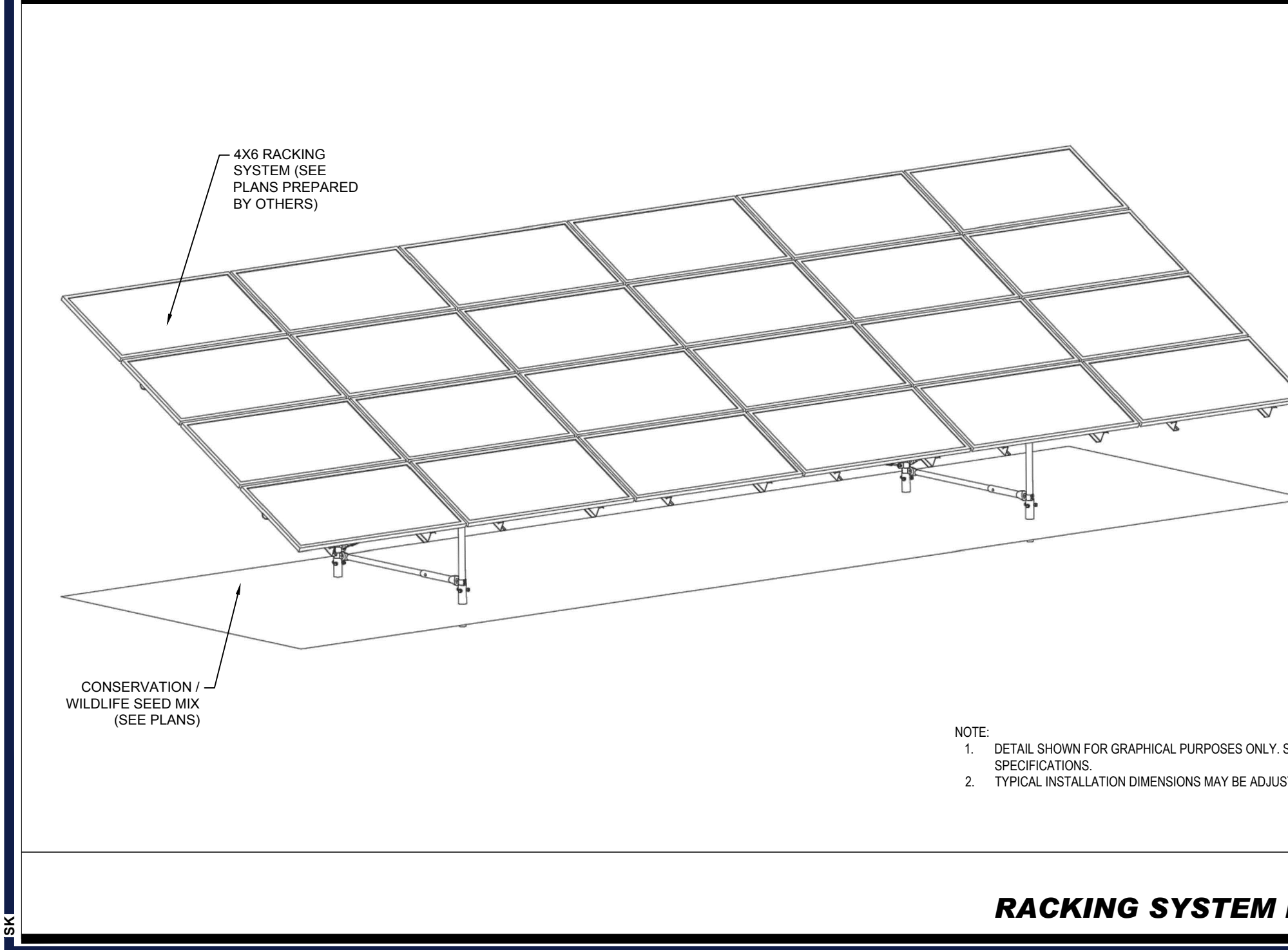
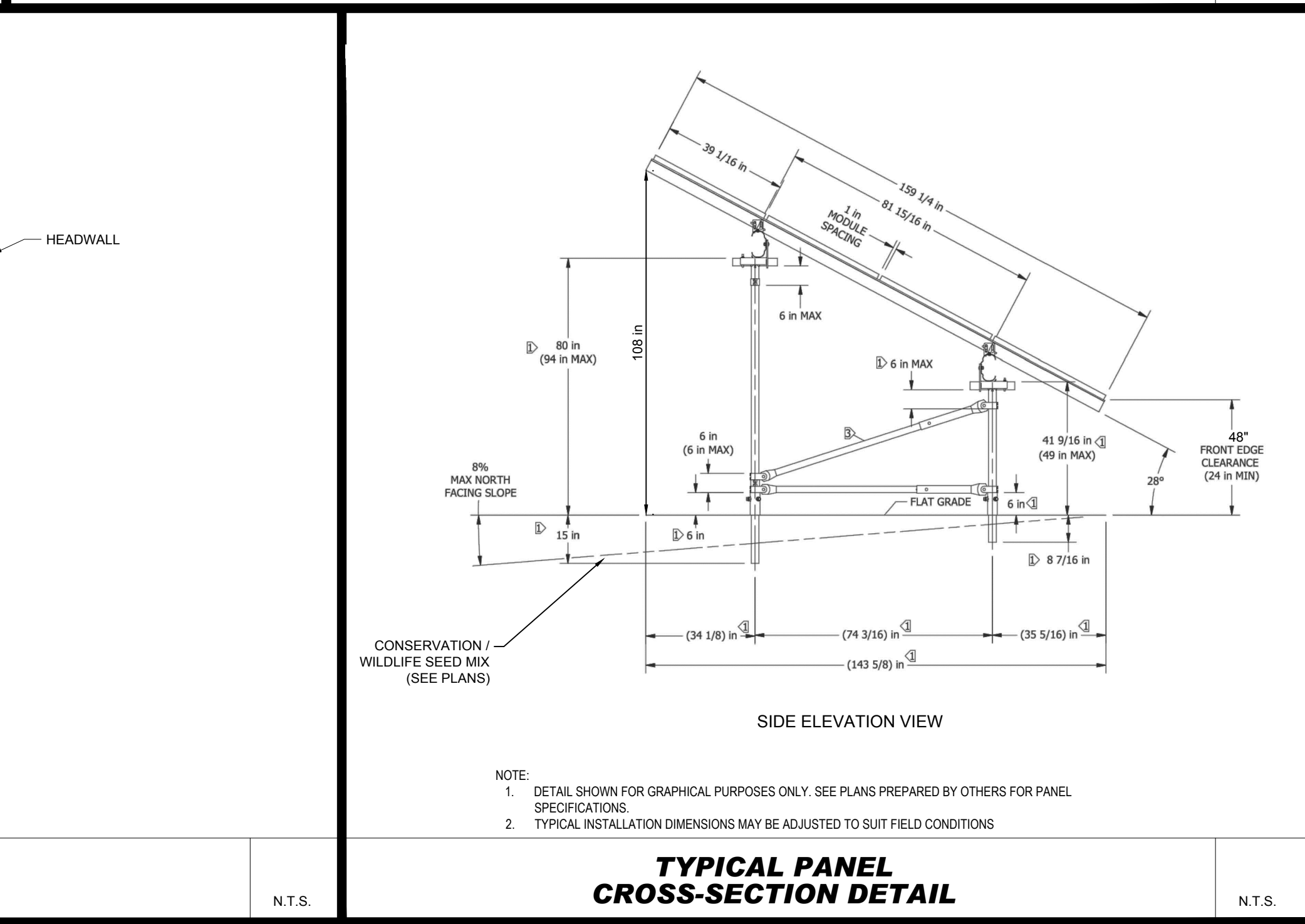
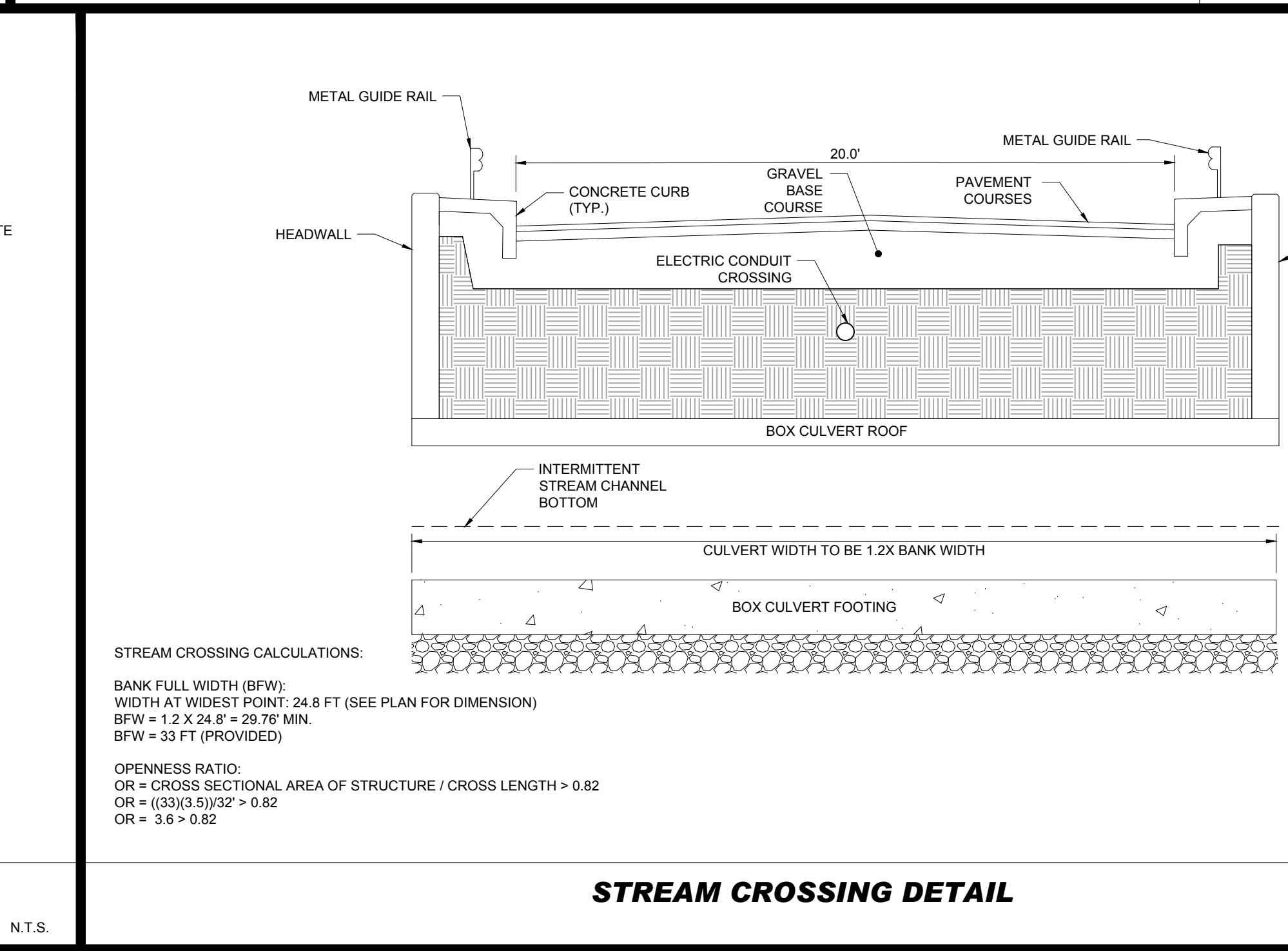
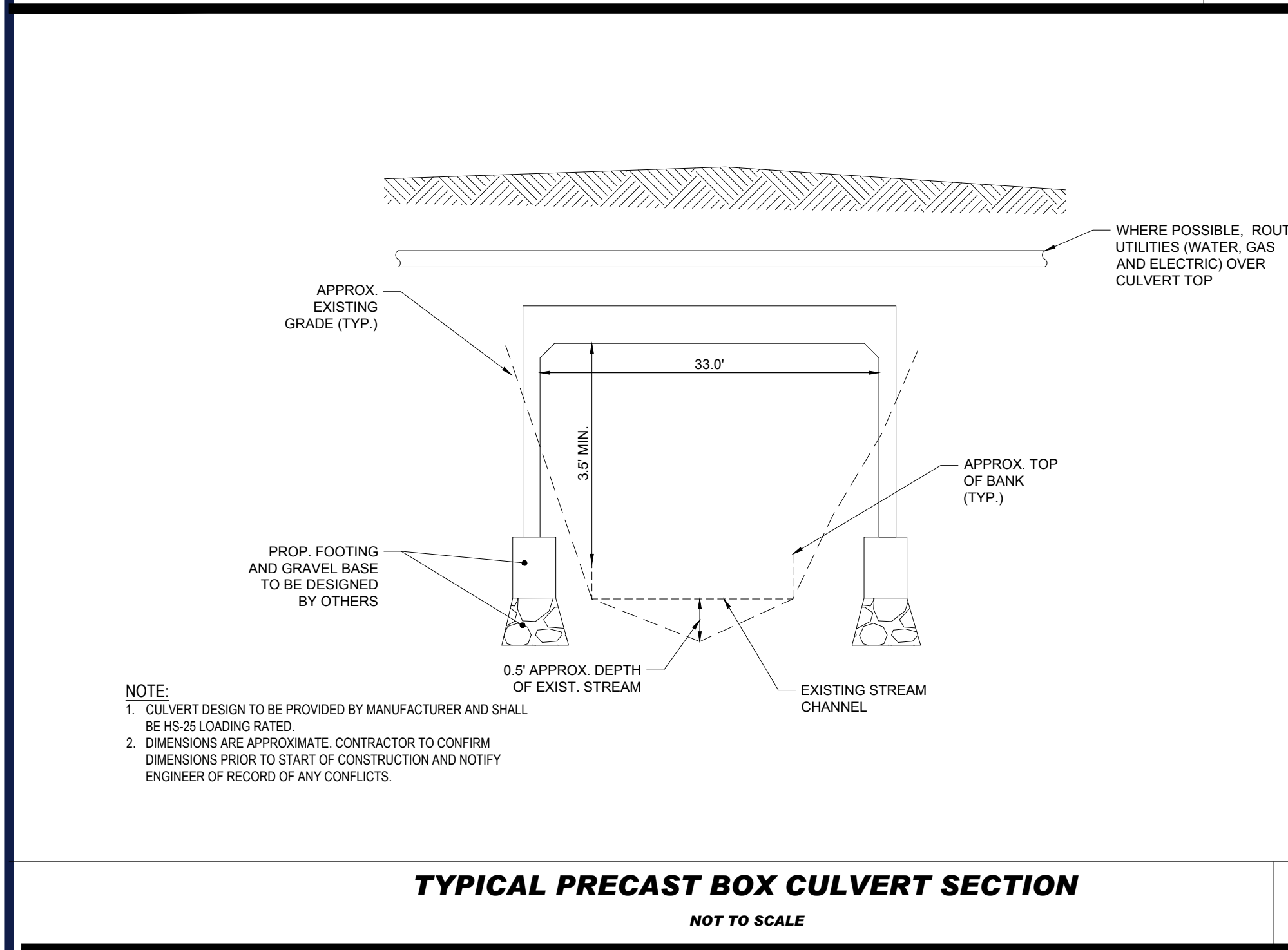
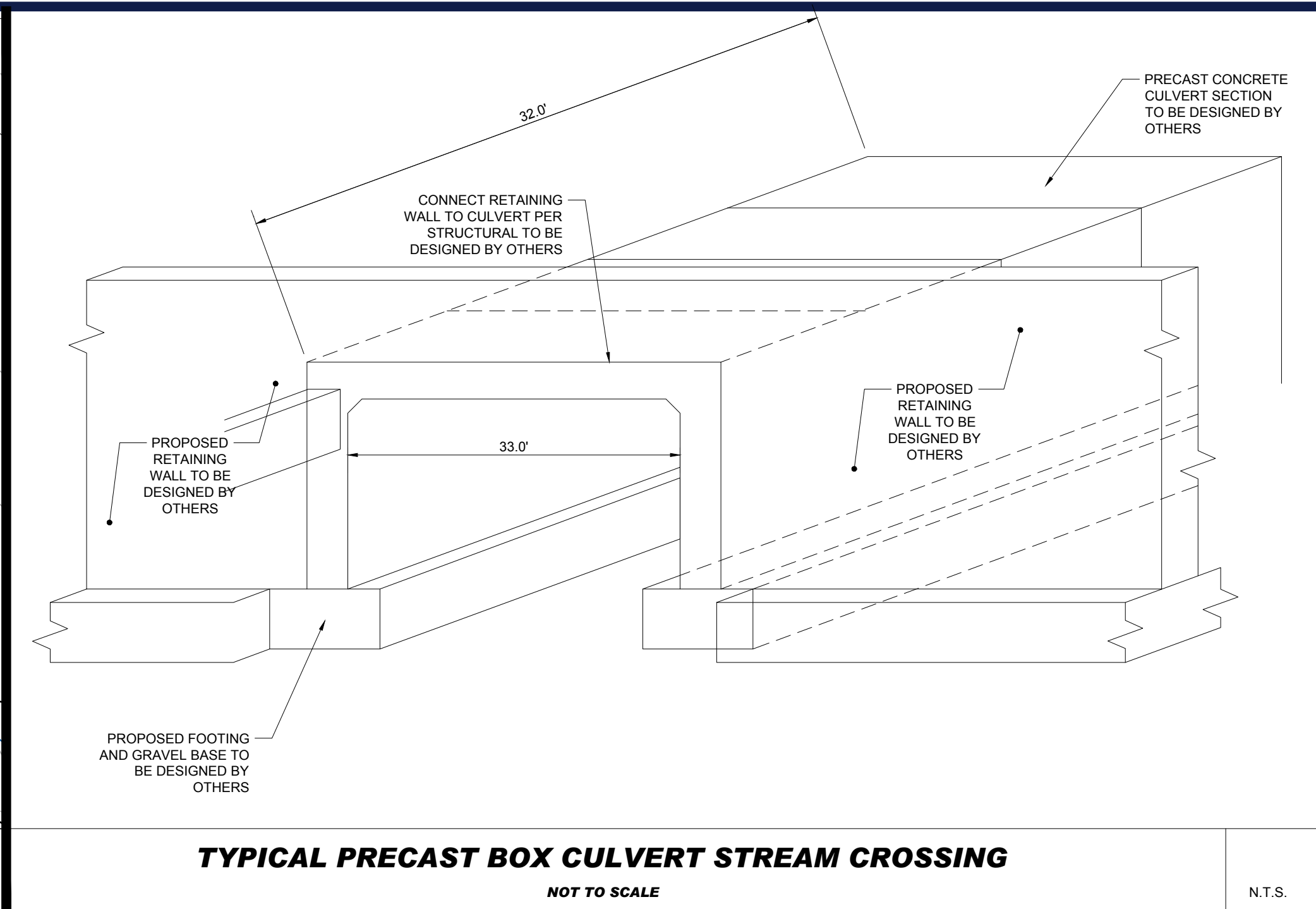
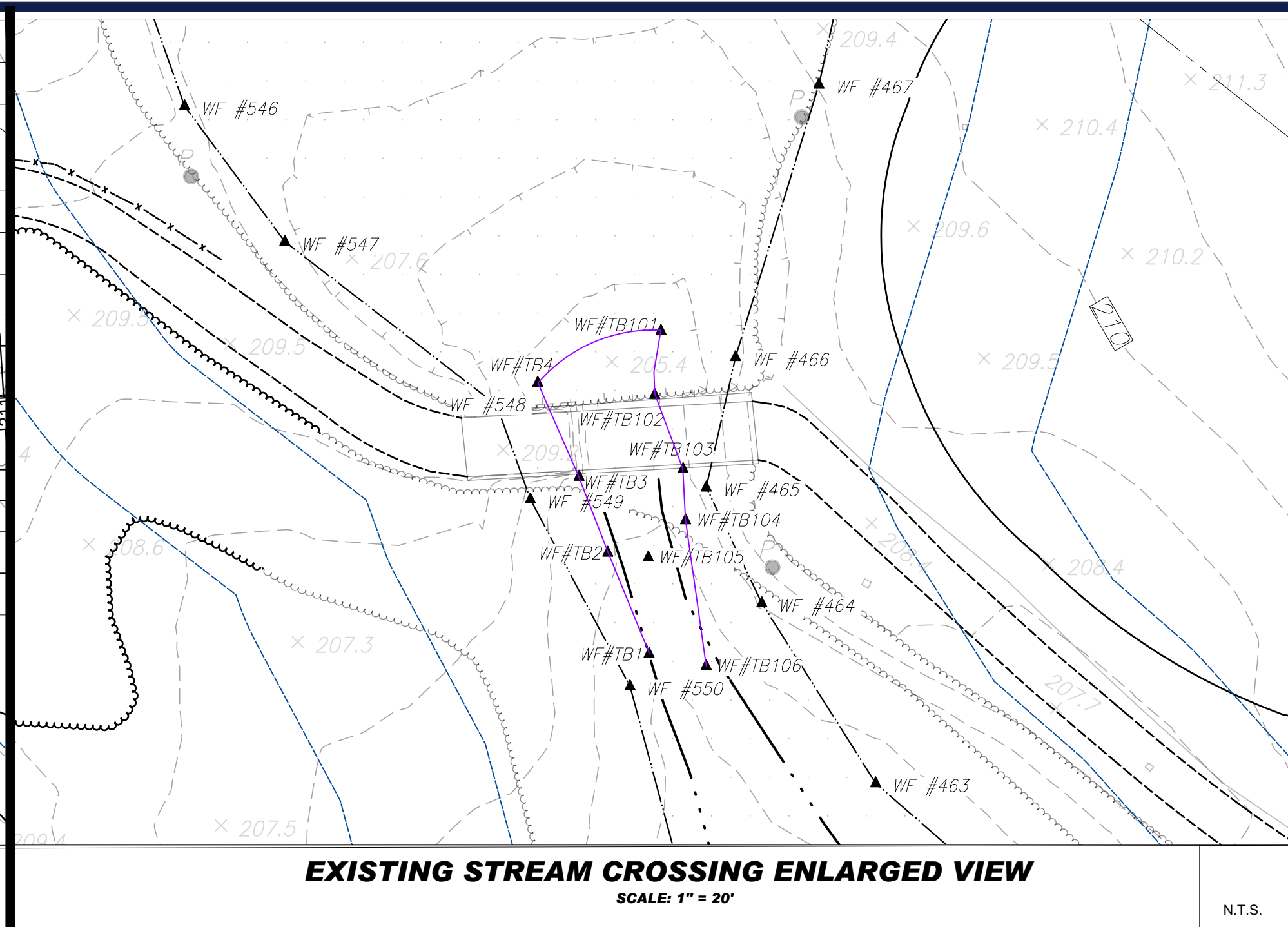
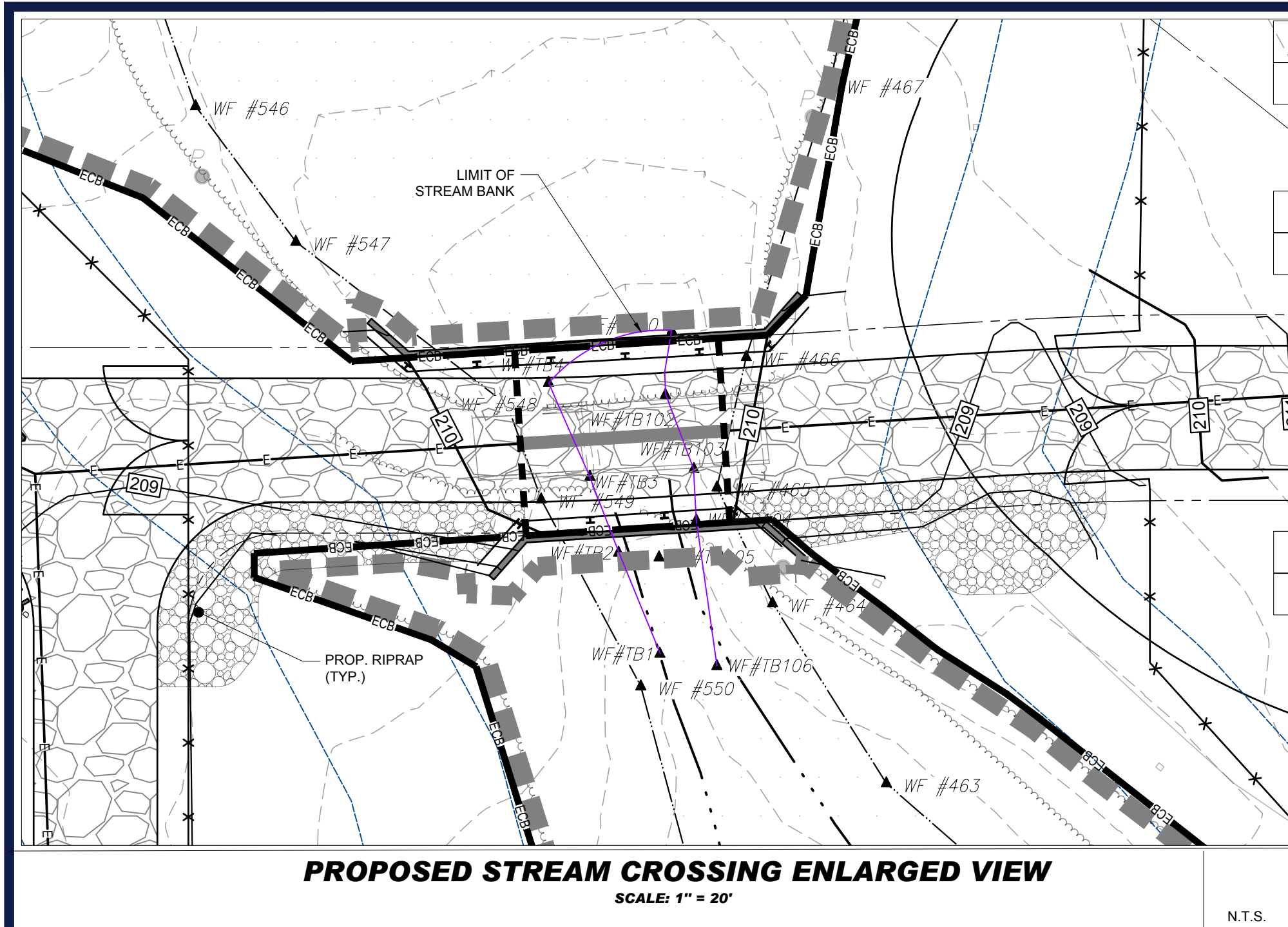
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SHEET TITLE:
LANDSCAPE PLAN F
 SHEET NUMBER:
C-707
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REVISIONS

REV	DATE	COMMENT	DRAWN BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL
2	02/16/2024	PER TOWN COMMENTS	SMK
3	02/21/2024	PER CONS COM COMMENTS	GD

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ISSUED FOR MUNICIPAL & AGENCY REVIEW & APPROVAL

PROJECT No.: W201257
DRAWN BY: CMC / OCR
CHECKED BY: GD
DATE: 07/20/2023
CAD ID: W201257.02-DET-3A

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-902
REVISION 3 - 02/21/2024

I:\BOHLER\NET\SHARES\MA\PROJECTS\W201257\257\CADD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W201257.02-DET-3A-LAYOUT-C-902-DET-3A

REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	10/04/2023	REVS PER UTILITY POLE LAYOUT	JDL
2	02/16/2024	PER TOWN COMMENTS	SMK
3	02/21/2024	PER CONS COM COMMENTS	GD



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PROJECT No.: W201257
 DRAWN BY: CMC / OCR
 CHECKED BY: GD
 DATE: 07/20/2023
 CAD ID: W201257.02-DET-3A

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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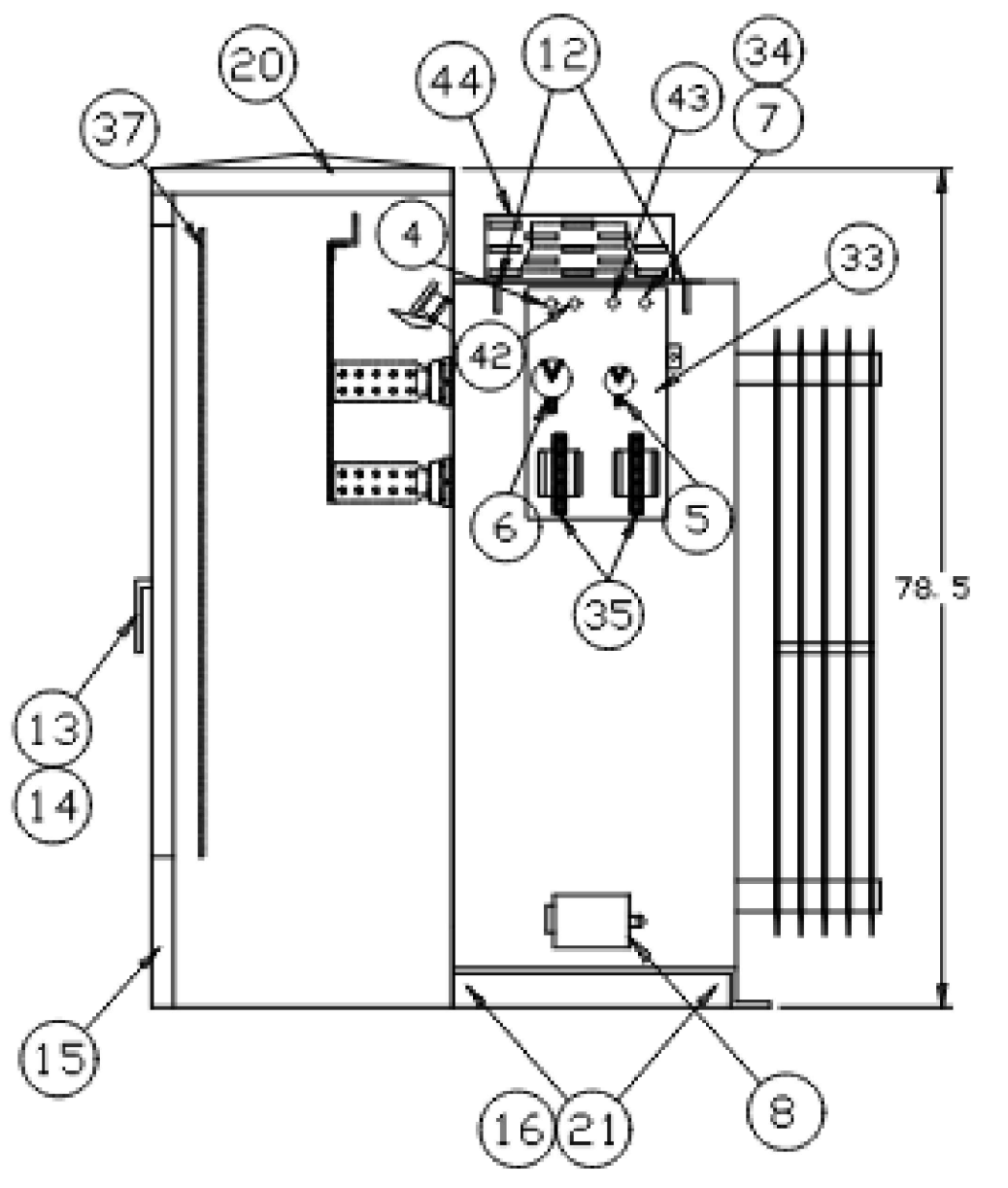
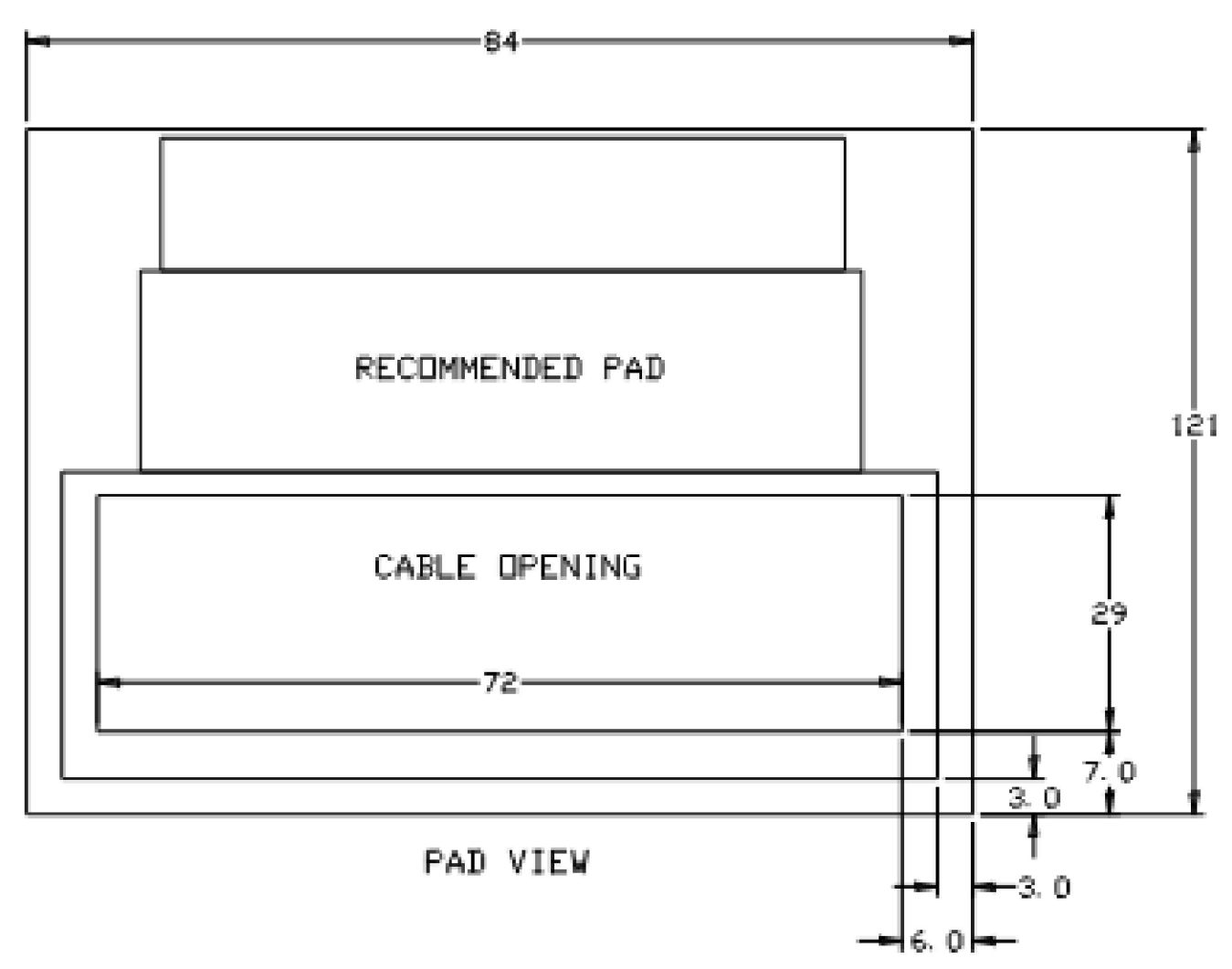
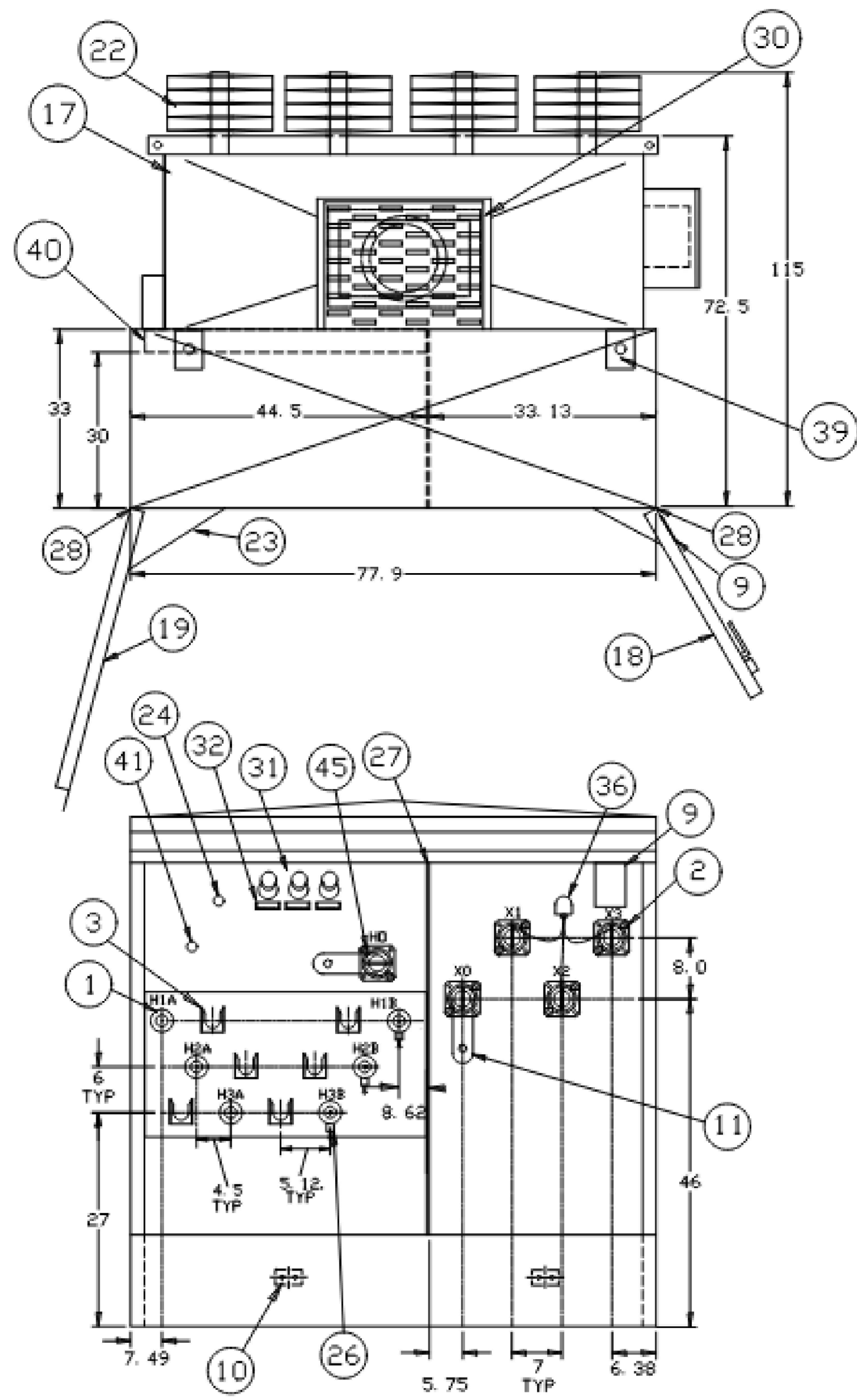
SHEET TITLE:

DETAIL SHEET

SHEET NUMBER:

C-903

REVISION 3 - 02/21/2024



THIS OUTLINE IS FOR ERECTION OR MOUNTING PURPOSES. IT IS NOT TO SCALE AND SHOULD NOT BE REGARDED AS INDICATING THE EXACT DETAILS OF CONSTRUCTION.

- 01 HIGH VOLTAGE BUSHING NON-LOADBREAK 600AMP 125KV BIL (EATON DB625B125)
- 02 LOW VOLTAGE INTEGRAL EPOXY BUSHING WITH 10 HOLE IEEE BRASS SPADE, SUPPORTED.
- 03 PARKING STAND
- 04 PRESSURE RELIEF VALVE (VIAT 302-060-01N)
- 05 LIQUID LEVEL GAUGE W/CONTACTS (2 SETS) VIAT
- 06 OIL TEMPERATURE GAUGE W/CONTACTS (2 SETS) QUALITROL
- 07 OIL FILL - 1" NPT
- 08 OIL DRAIN VALVE WITH SAMPLER IN PADLOCKABLE BOX
- 09 NAMEPLATES
- 10 2 HOLE SST. GROUND PADS
- 11 LV GROUND STRAP
- 12 LIFTING LUGS
- 13 PADLOCK FACILITY AND DOOR BOLT WITH PENTAHEAD BOLTS
- 14 LV DOOR HANDLE
- 15 REMOVEABLE FRONT LOWER SILL
- 16 BASE ARRANGEMENT FOR ROLLING IN 2 DIRECTIONS
- 17 TRANSFORMER TANK
- 18 LOW VOLTAGE COMPARTMENT DOOR
- 19 HIGH VOLTAGE COMPARTMENT DOOR
- 20 DOMED & RAISED AIR COMPARTMENT TOP
- 21 JACKING PROVISIONS
- 22 COOLING RADIATORS
- 23 DOOR HOLDING BARS IN 120° OPEN POSITION
- 24 TAPCHANGER 'B' TAPS +5%, +2.5%, -2.5%, -5%
- 25 200KV BIL 150 AMP SILVER PLATED (CAPT 099-04. 87. 31SRFM-AH)
- 26 DISTRIBUTION CLASS ELBOW ARRESTER 10KV 8.4 MCOV 25CL 600AMP (SHIPPED DETAIL ON PALLET) (T&B K655ESA-10)
- 27 HIGH-LOW BARRIER
- 28 STAINLESS STEEL HINGES
- 29 ALL BUSHINGS ARE EXTERNALLY CLAMPED
- 30 14"X24" HANDHOLE
- 31 BAYONET FUSEHOLDER W/FLAPPER VALVE AG PLATED BAYONET FUSE HI-AMP 125A (EATON 4038361C05CB)
- 32 PLASTIC DRIPSHIELD
- 33 PADLOCK-ABLE GAUGE BOX
- 34 PRESSURE VACUUM GAUGE WITH SCHRADER VALVE (VIAT 131)
- 35 TERMINAL BLOCKS FOR CONTACT TERMINATION 2-18 TERMINAL
- 36 SECONDARY ARRESTER 400MCOV (EATON ASZH480C301)
- 37 LEXAN LOW VOLTAGE FRONT BARRIER
- 38 PARTIAL RANGE CURRENT LIMITING FUSES 8.3KV 150A HITECH 2X (HTSS232150)
- 39 HOLD-DOWN BRACKETS WITH HOLES.
- 40 3" HIGH VOLTAGE BUSHING BOX
- 41 2-POSITION LOAD-BREAK SWITCH (C. H. 703436-60)
- 42 GEM PRESSURE SWITCH FACTORY SET TO +7PSI
- 43 GEM VACUUM SWITCH FACTORY SET TO -5PSI
- 44 COVER MOUNTED PRD 10PSI
- 45 PORCELAIN 'HD' BUSHING WITH GROUND STRAP SHIPPED WITH NITROGEN BLANKET.

2000/2240 KVA
 12470GrdY/7200
 600Y/347

* PER IEEE, LV LEXAN/FIBERGLASS BARRIER REQUIRED, @ IS INCLUDED

2000kVA 12470Y TRANSFORMER DETAILS

N.T.S.

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

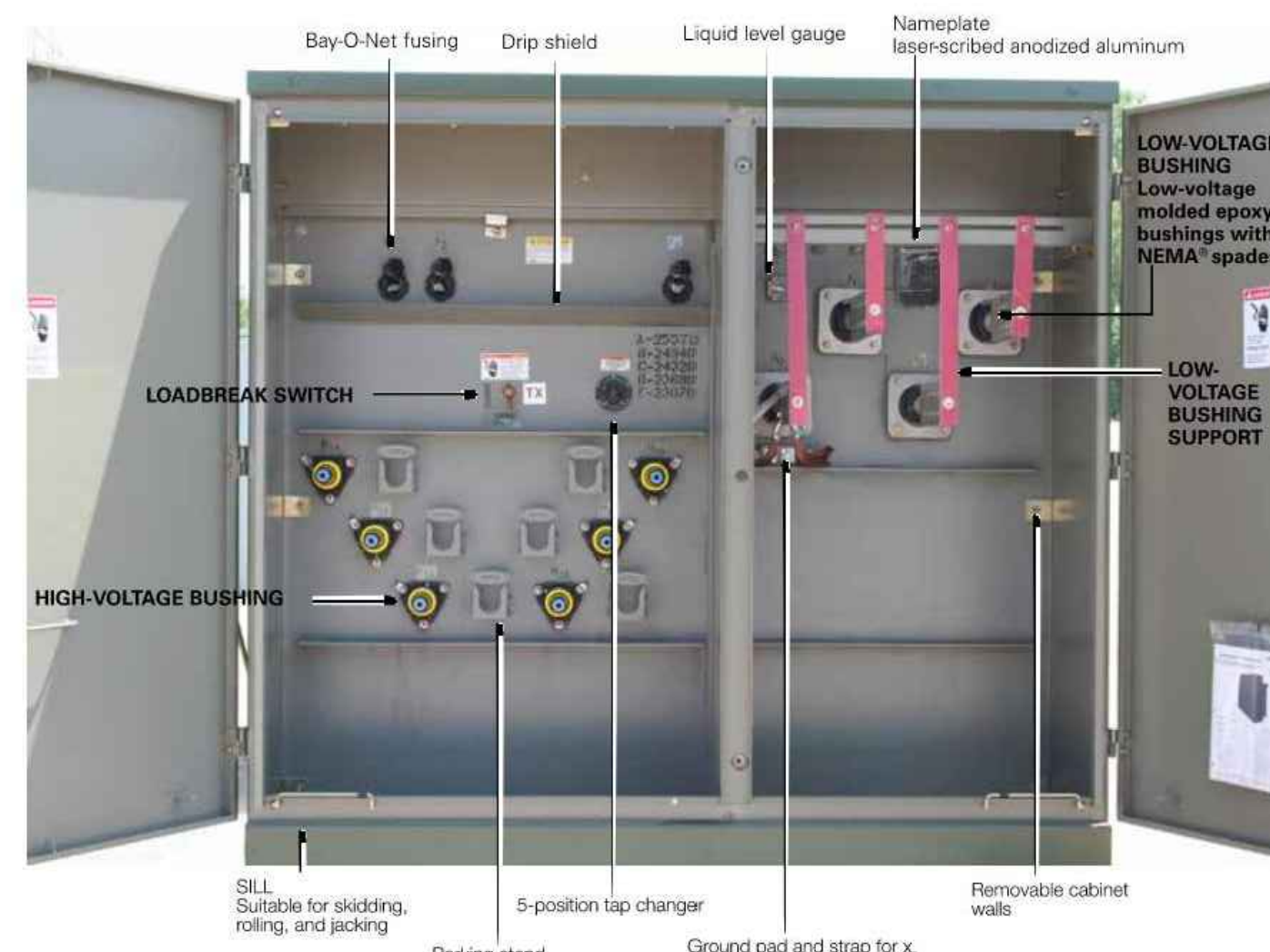


Figure 1. Three-phase pad-mounted compartmental type transformer.

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-19) 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
45-75	2.75-5.75	2.75-5.75
112.5-300	3.10-5.75	3.10-5.75
500	4.35-5.75	4.35-5.75
750-2500	5.75	5.75
3750	5.75	6.00
5000	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	50 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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3

Catalog Data CA202003EN
Effective April 2016

Three-phase pad-mounted compartmental type transformer

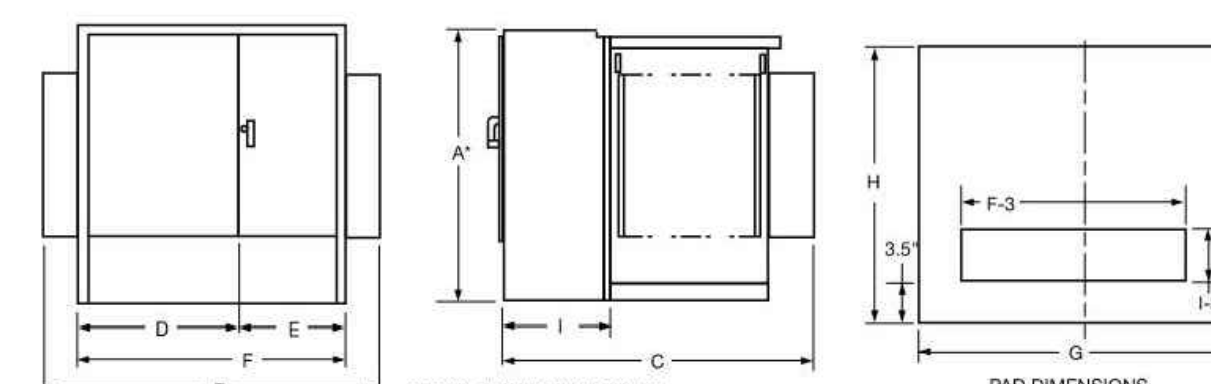


Figure 2. Transformer and pad dimensions.

* 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	99	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	820	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.

4 www.eaton.com/cooperpowerseries

THREE-PHASE PAD-MOUNTED COMPARTMENTAL TYPE TRANSFORMER

N.T.S.

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PROJECT No.: W201257
DRAWN BY: CMC / OCR
CHECKED BY: GD
DATE: 07/20/2023
CAD ID.: W201257.02-DET-3A

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR
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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
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SHEET TITLE:

DETAIL SHEET

SHEET NUMBER:

C-904

REVISION 3 - 02/21/2024

AstroTwins™

Enjoy the Energy of the Universe

400W~415W

P-type Monocrystalline PV Module
CHSM72M(DG)/F-BH Series (158.75)

CHSM72M(DG)/F-BH is bifacial module with white glazed glass

Tier 1 **No.1** **PHOTON** **DNV GL**

12-year Warranty for Materials and Processing
30-year Warranty for Extra Linear Power Output
(1st year 4.20%, 2nd-30th years 4.45% / year)

84.95%

KEY FEATURES

- 5W OUTPUT POSITIVE TOLERANCE**
Guaranteed 0~+5W positive tolerance ensures power output reliability.
- EXCELLENT WEATHER RESISTANCE**
Reduces the cell micro-crack and extended product warranty.
- BIFACIAL POWER**
The backside makes use of the reflected and scattered light from the surroundings, the modules can yield up to 5%~30% power more, depending on the albedo.
- REDUCE INTERNAL MISMATCH LOSS**
Reduces mismatch loss and improves output.
- APPLICABLE FOR MULTI DIFFERENT ENVIRONMENTS**
The wide range of applications, such as BIPV, vertical installation, snow area, high humidity area and strong sandstorm area, etc.
- SNAIL TRAIL RESISTANCE**
Reduces the probability of snail trails with zero water vapor transmittance.

COMPREHENSIVE CERTIFICATES

First solar company which passed the TÜV Nord IEC TS 62941 certification audit.

For Global Market

ASTROENERGY
A CHINT COMPANY

ELECTRICAL SPECIFICATIONS

Power rating (front)	400 Wp	405 Wp	410 Wp	415 Wp
Testing Condition	Front	Back	Front	Back
STC rated output (P _{max} Wp)*	400	282	405	285
Rated voltage (V _{MPP}) at STC	40.67	40.88	40.89	41.10
Rated current (I _{MPP}) at STC	9.84	6.99	9.91	6.94
Open circuit voltage (V _{OC}) at STC	48.24	48.82	48.42	48.90
Short circuit current (I _{SC}) at STC	10.30	7.22	10.38	7.28
Module efficiency	19.4%	13.7%	19.7%	13.8%
Temperature coefficient (P _{max})	-0.35%/°C			
Temperature coefficient (V _{OC})	+0.56%/°C			
Temperature coefficient (I _{SC})	-0.28%/°C			
Nominal module operating temperature (NMOT)	44±2°C			
Maximum system voltage (IECUL)	1500V _{DC}			
Number of diodes	3			
Junction box IP rating	IP 68			
Maximum series fuse rating	20A			

STC: irradiance 1000W/m², Cell Temperature 25°C, AM=1.5

ELECTRICAL SPECIFICATIONS (integrated power)

P _{max} gain	P _{max}	V _{MPP}	I _{MPP}	V _{OC}	I _{SC}
5%	431 Wp	41.10 V	10.47 A	48.60 V	10.98 A
10%	451 Wp	41.10 V	10.97 A	48.60 V	11.51 A
15%	472 Wp	41.00 V	11.55 A	48.70 V	12.03 A
20%	492 Wp	41.00 V	12.00 A	48.70 V	12.55 A
25%	513 Wp	41.00 V	12.50 A	48.70 V	13.08 A

Electrical characteristics with different rear power gain (reference to 410W)

MECHANICAL SPECIFICATIONS

Outer dimensions (L x W x H) 2038 x 1010 x 30 mm
Frame technology Aluminum, silver anodized
Glass thickness 2.0 mm
Cable length (IECUL) Portrait: 350 mm
Cable diameter (IECUL) Landscape: 1200 mm
Maximum mechanical test load 5400 Pa (front) / 2400 Pa (back)
Connector type (IECUL) MC4 compatible

PACKING SPECIFICATIONS

Weight (module only) 26.3 kg
Packing unit 36 pcs / box
Weight of packing unit (for 40 HQ container) 994 kg
Number of modules per 40HQ container 792 pcs
Tolerance ±1.5kg
Subject to sales contract

MODULE DIMENSION DETAILS

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http://energy.chint.com Astroenergy 05-2020

CONNECTPV

Simplifying Solar PV

1500V Disconnect Combiners

CONNECTPV Disconnect Combiner products are based on a core product architecture optimized for commercial and utility scale solar projects, simplifying design and specification. Options and accessories allow the designer to optimize the products for each project - reducing installation labor costs.

CONNECTPV products incorporate "best-in-class" components combined with rugged mechanical designs to maximize reliability over the projected life of the project.

Compatible with grounded systems - negatively or positively grounded with fuses on the ungrounded string input conductors, or ungrounded systems with fuses on both string input conductors.

Standard Product Features

- 250A, 320A, and 400A UL98B Certified Manual Disconnects
- Lock-Out/Tag-Out on Disconnect Handle
- 8-32 Fused Inputs, #14-#6 AWG Wire Range
- Touch Safe Fuse-holders
- 15A Fuse Typical, 30A Maximum - user specified
- M10 or M12 Studs provided for single or double hole lugs
- Accommodates 90C Cu/Al Mechanical or Compression Lugs
- Internal Safety Cover over all live components
- NEMA 3R, 4, and 4X Enclosures
- Padlock Latch for Door
- Unique Serial number per unit
- Labeling to meet NEC Requirements
- 5 Year Warranty

Product Options

- Class 2 40kA Surge Protective Device
- Mechanical Lugs installed or Compression Lugs included
- Breather Vents for High Humidity Locations
- H4 or MC4 Bulkhead or Whip Connectors installed
- Upsized Enclosures for Larger Output Wires
- Mounting Brackets installed
- Extended Warranty

Contact Toll Free: (844)-246-6140
Local: (858) 246-6140

www.connectpv.com
sales@connectpv.com

San Diego, CA
CBX15 Rev. 3.0

CONNECTPV

Simplifying Solar PV

ConnectPV reduces electrical BOS project costs by simplifying:

Configuration

Design Engineers easily configure our products to meet the project's requirements - Simplifying design and specification

Installation

Field installers quickly install our products because they provide ample wiring room - Reducing installation time and labor cost

Regulation

AHJ Inspectors quickly review and approve our products because we have designed for 100% compliance with the NEC and UL Standards - Reducing project inspection and approval time

Operation

O&M Personnel reduce field service time because our products use high quality component and are designed for a 20 year life expectancy - Maximizing system revenue generation

Typical Input Characteristics		Grounded Systems		Floating Systems	
Input Circuits	Standard Disconnect Ampacity	Input Wire Size	Output Type	NEMA 4X Steel (inches)	NEMA 4X Fiberglass (inches)
16	250	#14-#4 Copper	M10 Stud	24x24x8	24x24x8
20	250		24x24x8	24x30x8	24x30x8
24	320	M12 Stud	30x24x8	30x24x8	30x30x8
28	400		30x30x8	36x30x8	36x36x8*
32	400	30x30x8	36x30x8	36x36x8	36x36x8*

* Painted Stainless Steel NEMA 4X
Standard Disconnects sized at 1.25x Sum(Isc) per UL1741.
Upsize Disconnect available at 1.56x Sum(Isc) for OCPD coordination.

High Ampacity Input Versions available:
e.g., 12 input, 400A with 30A fuses
Specifications Subject to Change

Model Numbers are derived from the following template: CBXVVT-###(D)-FFAA-EE

VV	T	###	FF	AA	EE
Voltage	Topology	Disconnect Rating	String Count	Fuse Rating	Enclosure Type
15 = 1500V	G=Grounded F= Floating	250A, 320A, or 400A	08-32 2 string increments	02-30 15A Typical	N4 = Carbon Steel 4X = Fiberglass*

Additional Options and Accessories Available: Stainless Steel Available

ABOUT CONNECTPV INC.

Based in San Diego, CA, ConnectPV Inc. delivers expertise and experience. We bring over 10 years of Solar PV industry experience in electrical Balance of System products coupled with more than 25 years of high quality, ISO9001:2008 certified, manufacturing expertise. We actively work with our customers to deliver innovative, high quality, and cost effective solutions.

Contact Toll Free: (844)-246-6140
Local: (858) 246-6140

www.connectpv.com
sales@connectpv.com

San Diego, CA
CBX15 Rev. 3.0

CAB1000/AC

Up to 1500 VDC
Utility-grade energy storage inverter
Scalable to 4 MW

Return on Investment

- 98% max efficiency
- Low shipping & installation cost
- Modular 1 MW blocks
- Monetizable dynamic performance

Easily Transportable

- Standardized freight = low transportation cost
- Movable with pallet jack or standard forklift
- No crane required
- Separable building blocks

Modular / flexible configuration

- 1 MW blocks, up to 1500 VDC
- Configurable up to 4 MW
- Individual AC connections or combined throat
- Able to mix inverters & DC-DC in a single lineup

Advanced Technology

- Parallel UPS functionality
- Fully parameterizable grid support
- Certified to standards UL1741 / IEC
- ZVRT / LVRT / 4-quadrant high bandwidth control

Simple O&M

- Easily maintainable
- Modular design with low component count
- Extended warranty available

The CAB1000 scalable platform was specifically designed to offer a straightforward and simple solution to developers of Utility-grade energy storage systems. In ~1 MW blocks, the CAB1000 platform offers a single modular system which is tailored to Utility systems of all sizes. The scalable power conversion system also boasts high-performance controls and system redundancy.

With world-class power density and an easy to install design, your energy storage system will be commissioned quickly and easily. The energy storage PCS has never been more flexible or straightforward.

PRELIMINARY - EPC Power Corporation 70-100032 August, 2019

epcpower
excellence in power conversion

CAB1000/DC

DC coupled solar + storage

MODEL	CAB1000/AC-630	
LINEUP QTY	1	4
AC	AC port configuration AC voltage range AC export capacity @ 25°C AC export capacity @ 45°C AC import capacity @ 25°C AC import capacity @ 45°C Inverter type Minimum grid SCCR (2) Nominal frequency range Harmonic distortion Power factor / reactive power Maximum aux. power consumption Efficiency: Max I CEC / I Euro DC voltage range (3)	3-wire (3P3W) 530 VRMS 10% / -12% 1250 kVA 1146 ARMS 1125 kVA 1031 ARMS 1004 kVA 920 ARMS 886 kVA 812 ARMS 3-Level VSC 2 50 - 60 Hz (field settable) UL1741 / IEEE 1547, <2% TDDI per IEEE 519 0 leading - 0 lagging (Full 4-quadrant operation) 950 W 3800 W 98.6% (est.) >98% (est.)
DC	Typical Lithium battery voltage range Maximum DC current Battery technology Number of DC inputs	925 - 1500 VDC 1403 ADC all battery types, fuel cells, other DC sources, etc. 4
Environmental	Ambient temperature (operation) Ambient temperature (storage) Protection degree Relative humidity Max elevation Airborne noise Temperature de-rating	-20°C to 50°C -20°C to 60°C NEMA 3R / IP54 5% - 100% condensing 2,000 m (6,500 ft.) <75 dBA @ 5m automatic, see charts
Cabinet	Maximum dimensions (H x W x D) Weight (est.) Mounting Cooling Cooling fluid Certifications (pending)	mm: [2275 x 1004 x 1200] in: [89.6 x 39.5 x 47.2] 1043 kg [2300 lb.] Flat mount Hybrid liquid / air 30% - 50% EWG or PWG UL 1741 C22.2 No. 107.1-16 IEEE 1547-2005 CA Rule 21 No. 16-06-052 Hawaii Rule 18 No. 2016-0192
Protections	AC protection DC protection Humidity Safety features Ground fault detection	internal cabinet heating overvoltage, overcurrent, overtemperature integrated fuses (optional) Yes; requires external control power
Control	Control interface Command latency Response time, (time to new setpoint) On-off grid transitions Black-start capable Grid-tied control modes Grid-support functions Islanded control modes Island overload avoidance Control power options	CAN, Modbus RS485, or Modbus TCP 1 ms 8 ms; adjustable longer via parameters Yes; I UPS mode available Voltage mode PQ (power) DQ (current) cos phi (pf) Vok/Watt Hv/Watt Vok/Watt Inertia V&T droop control Inertia Ok to parallel with other sources active inrush limiting for starting large loads 308 - 240 VAC, 1 DC 24 VDC

(1) Power ratings at nominal line voltage.
(2) Minimum SCCR operation requires inverter to be in "spinning reserve" mode. Contact EPC Power for details.
(3) Minimum DC voltage at nominal AC line voltage.

PRELIMINARY - EPC Power Corporation 70-100032 August, 2019

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CAB1000/DC

Bidirectional 1500 V DC-DC conversion

With a power rating of up to 3000 kW, EPC's DC-DC outdoor cabinet is designed to seamlessly integrate energy storage into 1000 V or 1500 V PV systems.

Our DC-DC converters are compatible with a wide range of DC sources. Whether you have 1000 V class lithium battery banks, DC generators, ultra-capacitors, other battery chemistries (lead-acid, flow, etc.), or even fuel cells, our DC-DC converters have your needs covered. By connecting a wide range of DC voltage levels, EPC's DC-DC solutions enable highly scalable power conversion in your application.

The CAB1000/DC is designed from the ground up with simplicity, reliability and scalability in mind.

Key benefits:

- 4-quadrant (bidirectional buck or boost)
- DC coupled solar
- Power flow in either direction regardless of voltages
- Wide DC range
- Optimized for energy storage

1500 V DC-DC Any DC source Wide DC voltage range

- NEMA 3R rated
- Peak efficiency >98%
- Connects directly between PV & storage
- Refit or new installations
- MPPT capable
- Bidirectional buck/boost

Proven products. Limitless possibilities.

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CAB1000/DC

Bidirectional DC-DC

Use Case 1: DC to PV inverter

Use Case 2: PV inverter to DC

MODEL	CAB1000/DC-1500-1500	CAB1000/DC-2-2000-1500	CAB1000/DC-3-3000-1500	
LINEUP	1	2	3	
DC	DC import capacity @ 50°C Convert topology Maximum aux. power consumption Efficiency: Max I CEC / I Euro PV DC voltage range Maximum PV input voltage Battery DC voltage range Suggested battery voltage range Maximum DC current DC voltage ripple Battery technology Number of DC connections	1000 kW 1500 ADC 3-Level 750 W 98.5% (est.) 98.5% (est.) 98.5% (est.) 900 - 1500 VDC 1600 VDC 1000 - 1500 VDC 720 - 1300 VDC 1350 ADC 2700 ADC 4050 ADC ±2%	2000 kW 2700 ADC 3-Level 1500 W 98.5% (est.) 98.5% (est.) 98.5% (est.) 900 - 1500 VDC 1600 VDC 1000 - 1500 VDC 720 - 1300 VDC 1350 ADC 2700 ADC 4050 ADC ±2%	3000 kW 4050 ADC 3-Level 2250 W 98.5% (est.) 98.5% (est.) 98.5% (est.) 900 - 1500 VDC 1600 VDC 1000 - 1500 VDC 720 - 1300 VDC 1350 ADC 2700 ADC 4050 ADC ±2%
Environmental	Ambient temperature (operation) Ambient temperature (storage) Protection degree Relative humidity Max elevation Airborne noise Temperature de-rating	-20°C to 50°C -20°C to 60°C NEMA 3R / IP54 5% - 100% condensing 2,000 m (6,500 ft.) <75 dBA @ 5m automatic, see charts	-20°C to 50°C -20°C to 60°C NEMA 3R / IP54 5% - 100% condensing 2,000 m (6,500 ft.) <75 dBA @ 5m automatic, see charts	-20°C to 50°C -20°C to 60°C NEMA 3R / IP54 5% - 100% condensing 2,000 m (6,500 ft.) <75 dBA @ 5m automatic, see charts
Cabinet	Maximum dimensions (H x W x D) Weight (est.) Mounting Cooling Cooling fluid Certifications (pending)	mm: [2760 x 2000 x 1500] in: [108.6" x 78.7" x 47.2"] 907 kg [2000 lb.] Flat mount Hybrid liquid / air 30% - 50% EWG or PWG UL 1741 pending	mm: [2760 x 2000 x 1500] in: [108.6" x 78.7" x 47.2"] 184 kg [4000 lb.] Flat mount Hybrid liquid / air 30% - 50% EWG or PWG UL 1741 pending	mm: [2760 x 3000 x 1500] in: [108.6" x 118.2" x 47.2"] 273 kg [6000 lb.] Flat mount Hybrid liquid / air 30% - 50% EWG or PWG UL 1741 pending
Protections	AC protection DC protection Humidity Safety features Ground fault detection	DC disconnect (battery); DC disconnect (PV); DC fuses (optional) internal cabinet heating overvoltage, overcurrent, overtemperature integrated	DC disconnect (battery); DC disconnect (PV); DC fuses (optional) internal cabinet heating overvoltage, overcurrent, overtemperature integrated	DC disconnect (battery); DC disconnect (PV); DC fuses (optional) internal cabinet heating overvoltage, overcurrent, overtemperature integrated
Control	Control interface Command latency Response time, (time to new setpoint) Black-start capable Control power options	CAN, Modbus RS485, or Modbus TCP 1 ms 10 ms; adjustable longer via parameters Yes; requires external control power 208 - 240 VAC, 1 DC 24 VDC	CAN, Modbus RS485, or Modbus TCP 1 ms 10 ms; adjustable longer via parameters Yes; requires external control power 208 - 240 VAC, 1 DC 24 VDC	CAN, Modbus RS485, or Modbus TCP 1 ms 10 ms; adjustable longer via parameters Yes; requires external control power 208 - 240 VAC, 1 DC 24 VDC

PRELIMINARY - EPC Power Corporation 70-100032 August, 2019

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PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
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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
160 MAPLE STREET,
TOWN OF BELLINGHAM & FRANKLIN,
NORFOLK COUNTY, MASSACHUSETTS

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SHEET TITLE:
DETAIL SHEET

SHEET NUMBER:
C-905

REVISION 3 - 02/21/2024

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).

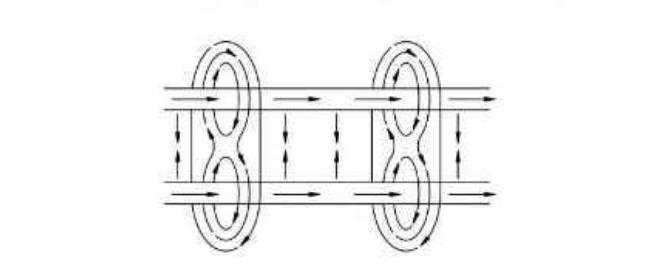


Figure 1A. Current flowing in same direction.

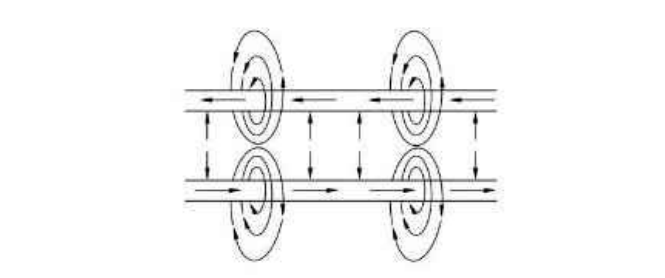


Figure 1B. Current flowing in opposite direction.

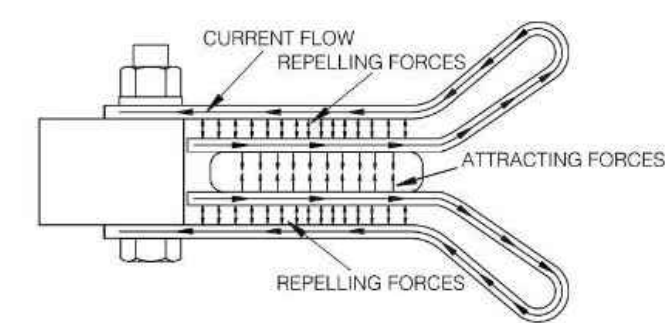


Figure 2. Magnetic forces acting on contacts.

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 KLF™ 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

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)

None
05 - Hookstick (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 - Terminals, 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

Insulator Bolt Pattern
1 - 2.25" Bolt Circle for 15 and 27 kV switches
3 - 3.00" Bolt Circle for 38 kV switches

Contact factory for other bolt circle options.

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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 gwelec.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.

G&W Engineered to order. Built to last.

SEL-651R

Advanced Recloser Control

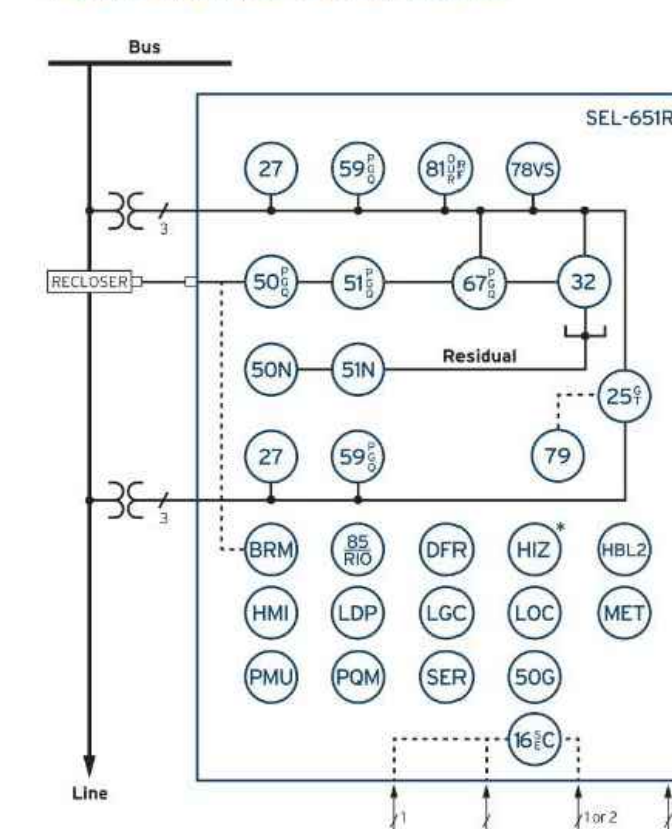


The industry's gold standard for recloser control

- 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 Memorized Bits Communications
DIR	Event Reports
HIZ	SEL Arc Sense™ Technology (AST)*
HMI	Operator Interface
LGC	SELogic™ Control Equations
MET	High-Accuracy Metering
PMU	Synchphasors
POM	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

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3	02/21/2024	PER CONS COM COMMENTS	SMK GD



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DRAWN BY: CMC / OCR
CHECKED BY: GD
DATE: 07/20/2023
CAD ID.: W201257.02-DET-3A

PROJECT:

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
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TOWN OF BELLINGHAM & FRANKLIN,
NORFOLK COUNTY, MASSACHUSETTS

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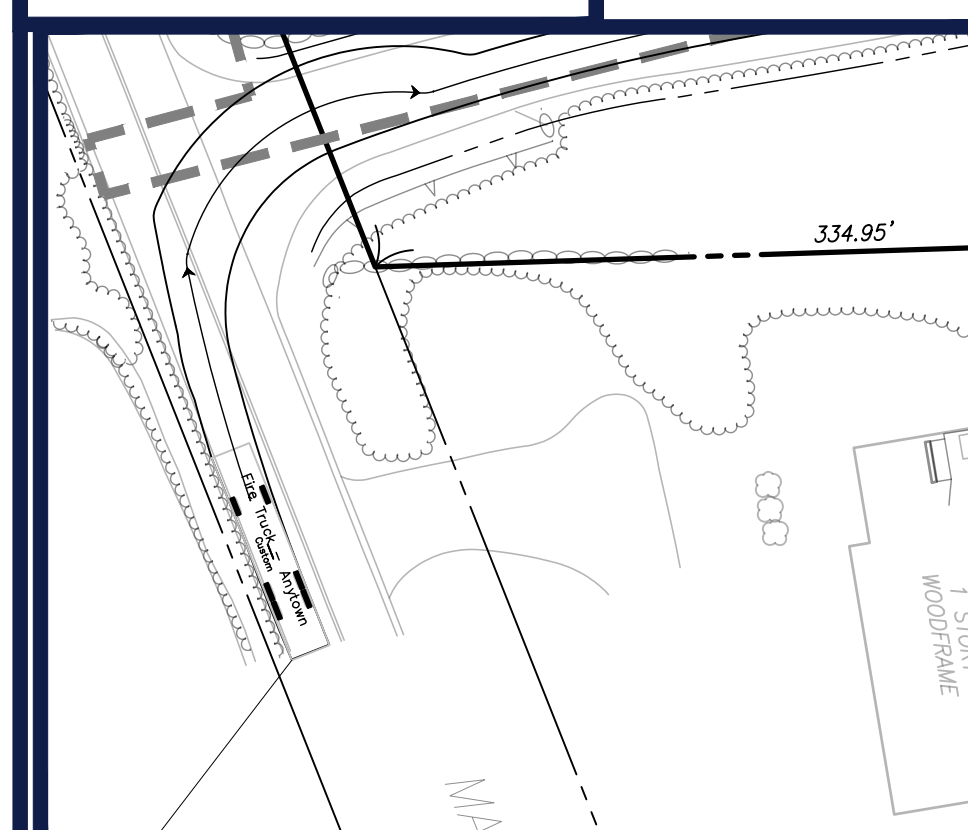
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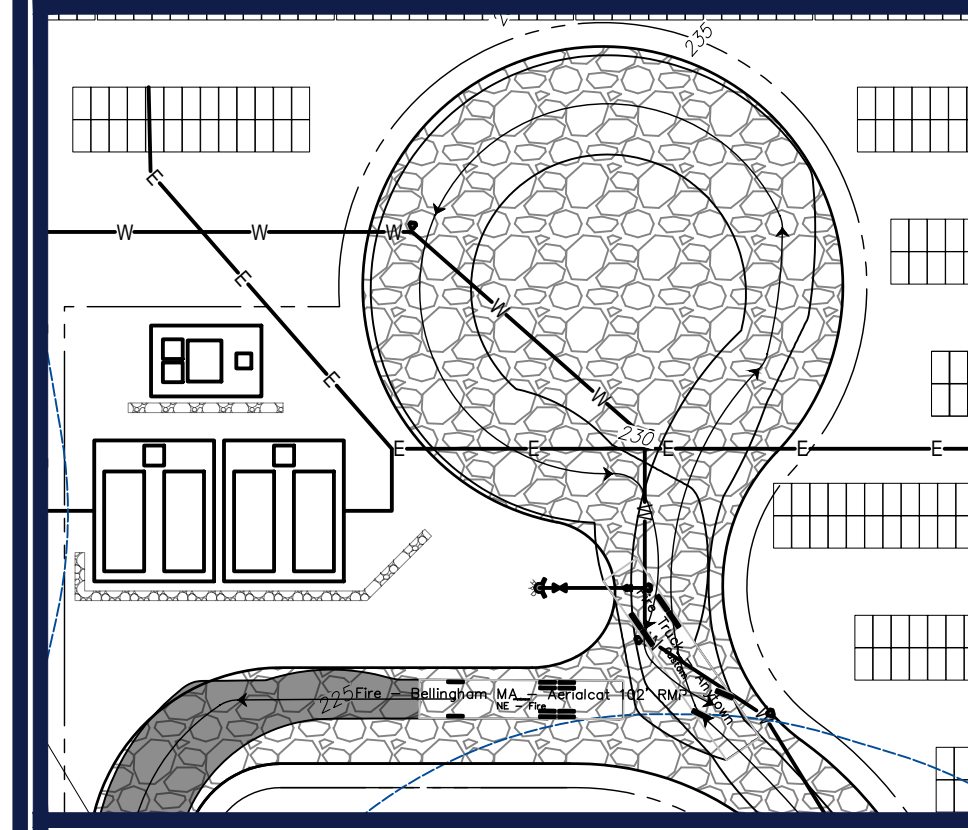
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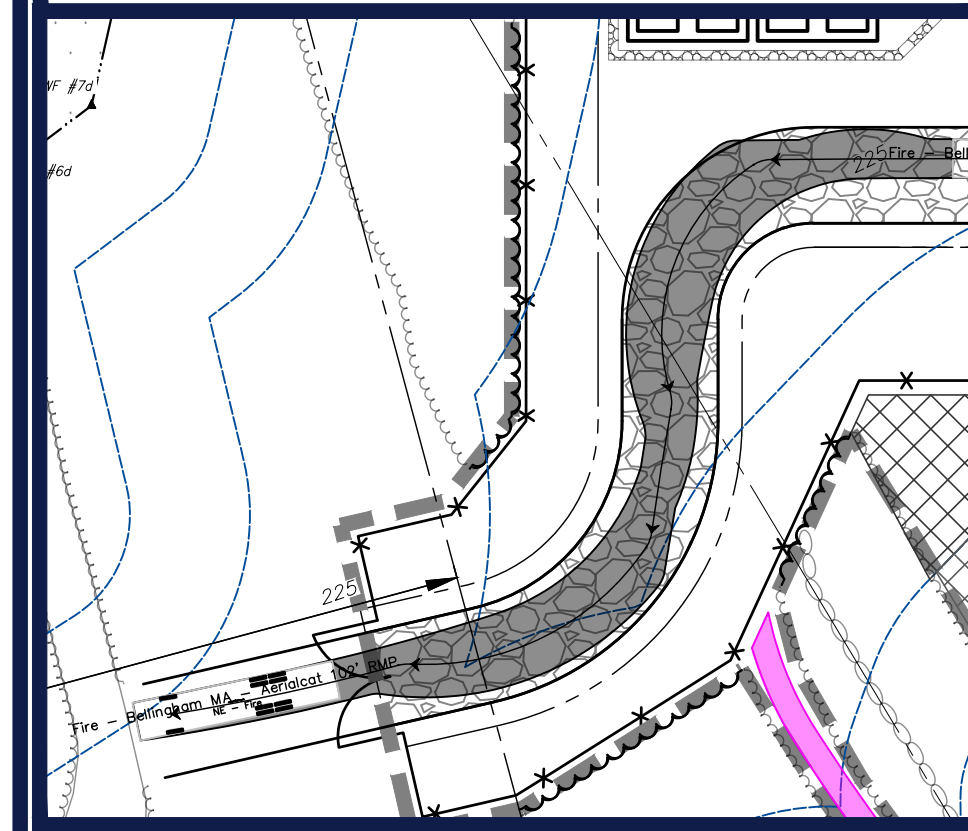
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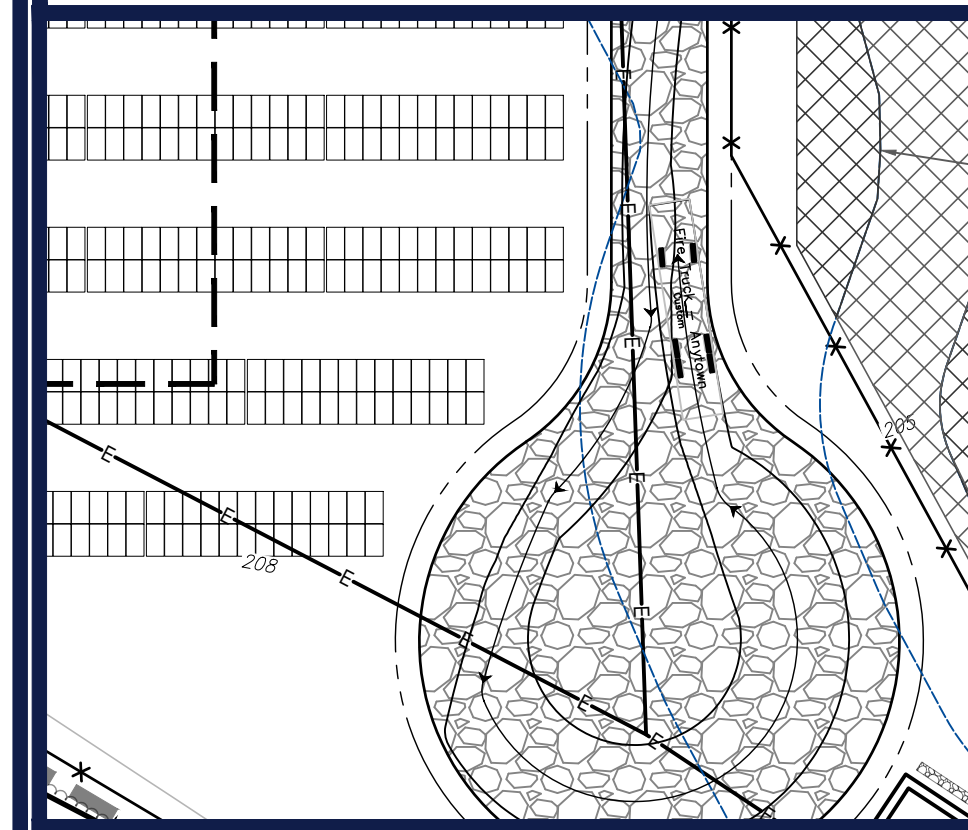
FRONT DRIVEWAY INSET



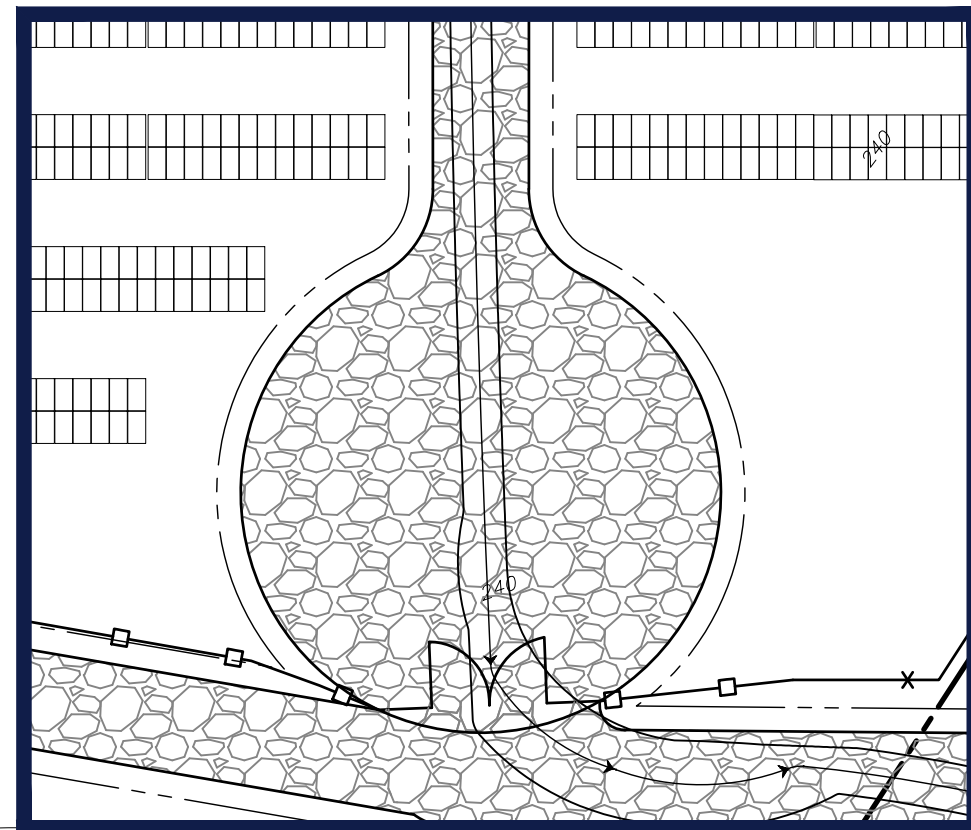
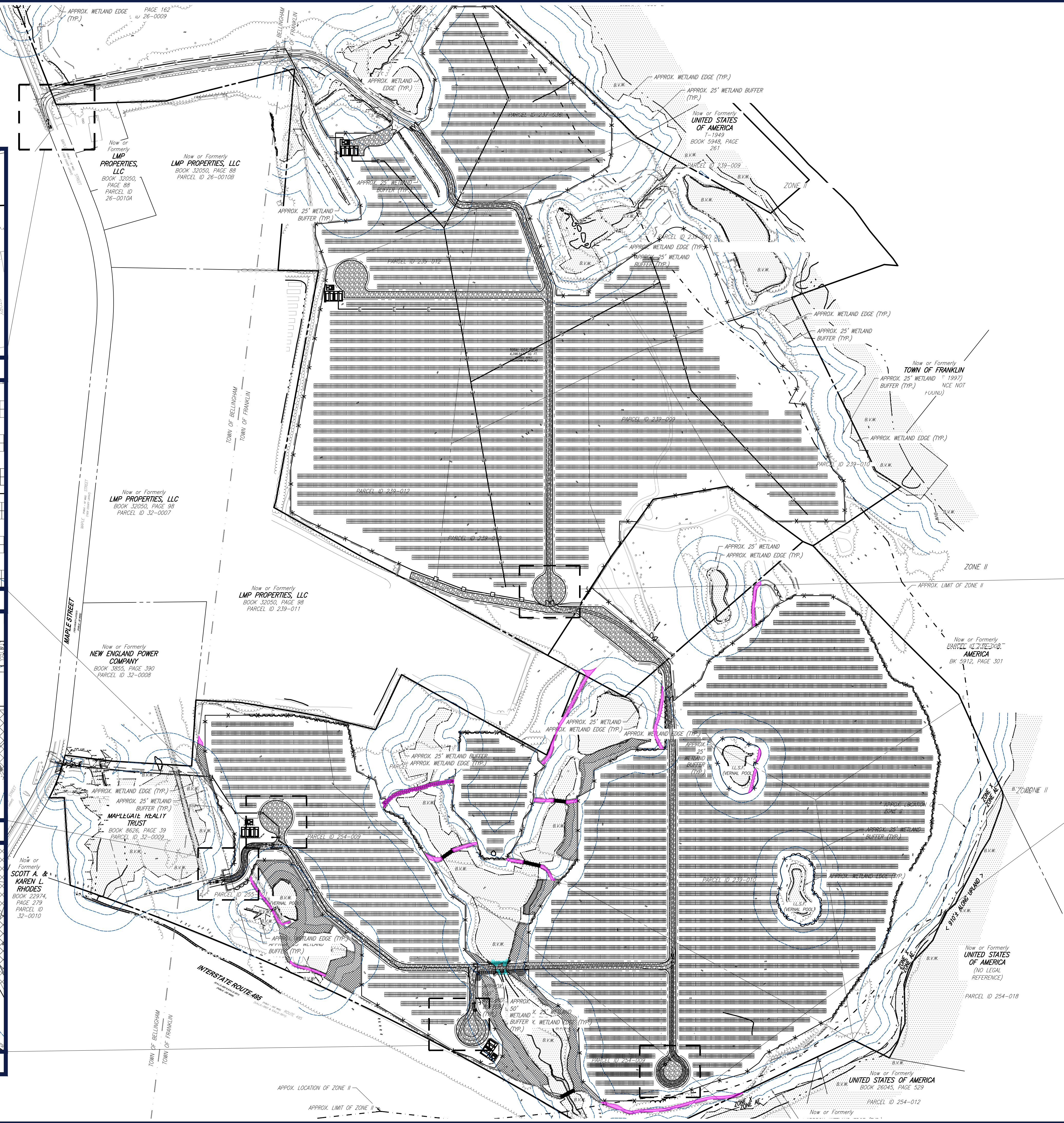
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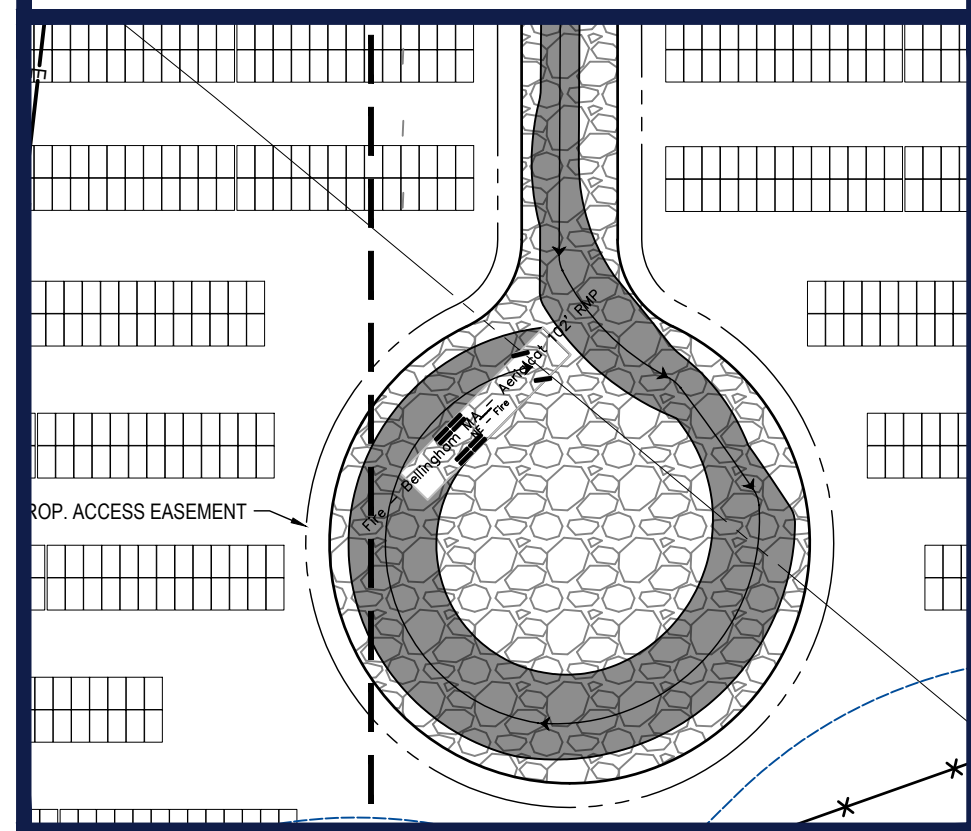
DRIVEWAY INSET



TURNAROUND INSET



TURNAROUND INSET



TURNAROUND INSET

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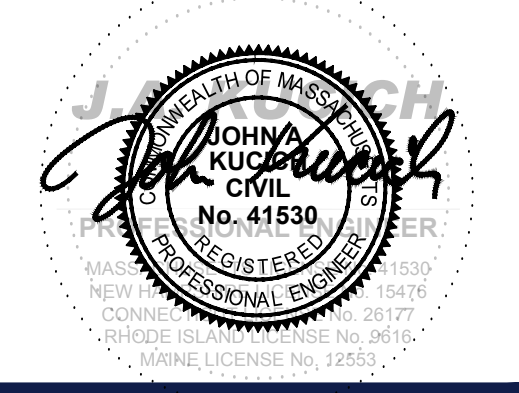
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MAPLE STREET SOLAR LLC
 PROPOSED
 SOLAR FARM - SOUTH

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

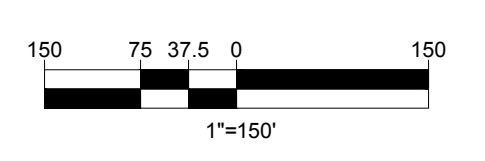
BOHLER
 352 TURNPIKE ROAD
 SOUTHBOROUGH, MA 01772
 Phone: (508) 480-9900
www.BohlerEngineering.com



SHEET TITLE:
FIRE TRUCK CIRCULATION PLAN

SHEET NUMBER:
1 OF 1

REVISION 3 - 02/21/2024



BOHLER ENGINEERING, INC. PROJECT: W201257.02-SFPD-3A LAYOUT: TRUCK TURN EXHIBIT