

**APPENDIX 8A:
CIVIL DESIGN DRAWINGS**

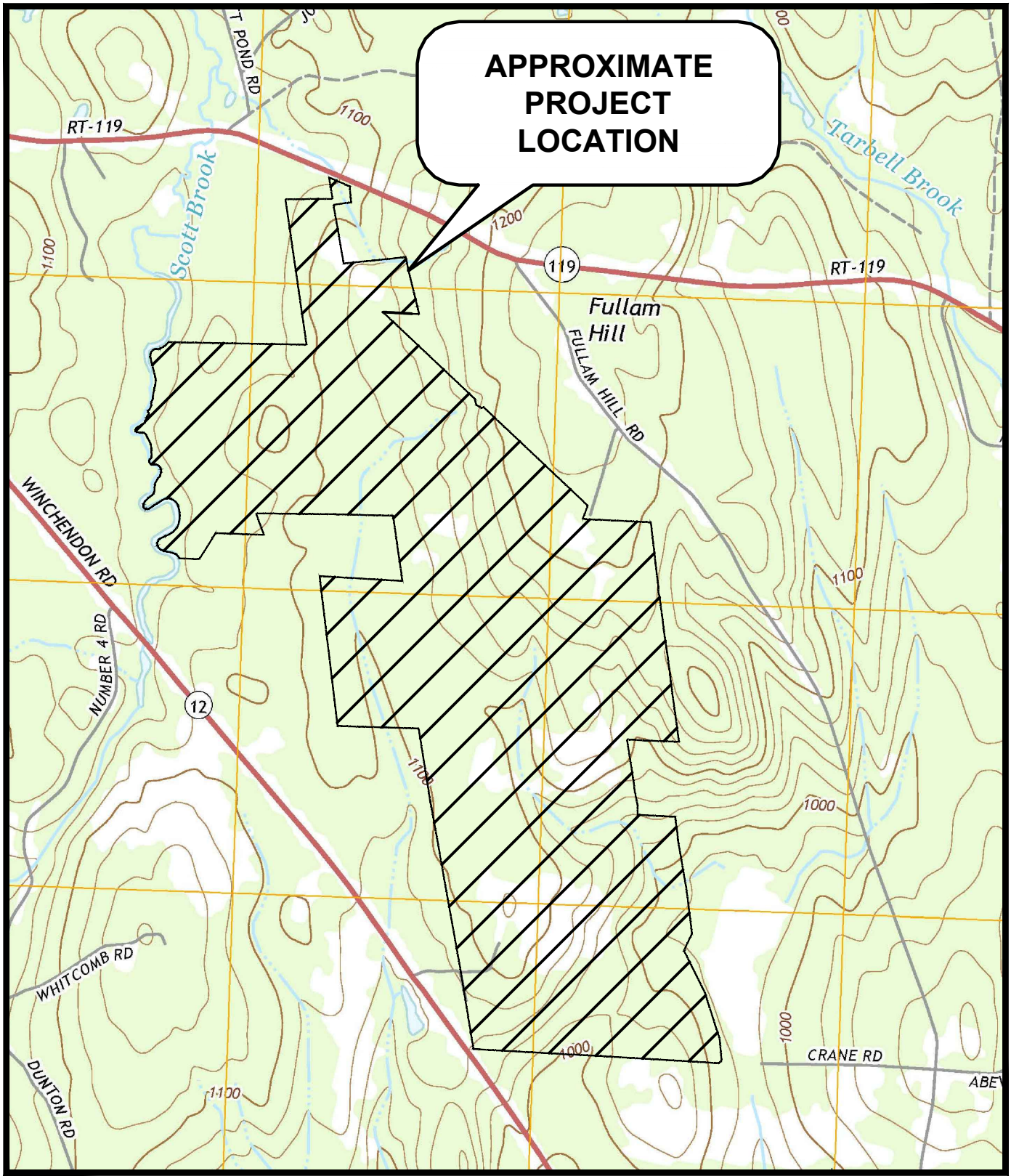
CHINOOK SOLAR PROJECT

SITE PLANS

FITZWILLIAM, NH

OCTOBER 2, 2019

| SHEET NO. | SHEET TITLE | LAST REVISED |
|---------------|--|--------------|
| - | COVER SHEET | 9/18/2019 |
| C.101 | NOTES & LEGEND SHEET | 9/18/2019 |
| C.200 | OVERALL EXISTING CONDITIONS PLAN | 9/18/2019 |
| C.201 - C.210 | EXISTING CONDITIONS AND DEMOLITION PLANS | 9/18/2019 |
| C.300 | OVERALL SITE PLAN | 9/18/2019 |
| C.301 - C.310 | SITE PLANS | 9/18/2019 |
| C.501 | EROSION CONTROL NOTES & DETAILS SHEET | 9/18/2019 |
| C.502 - C.504 | CIVIL DETAILS SHEET | 9/18/2019 |



SCALE: 1" = 1,500'

PREPARED BY:
Tighe&Bond
Engineers | Environmental Specialists

CIVIL ENGINEER
TIGHE & BOND, INC.
177 CORPORATE DRIVE
PORTSMOUTH, NH 03801



DEVELOPER
NEXTERA ENERGY RESOURCES, LLC
700 UNIVERSE BOULEVARD,
JUNO BEACH, FL 33408

ENVIRONMENTAL CONSULTANT
TRC COMPAINES, INC.
6 ASHLEY DRIVE,
SCARBOROUGH, ME 04074



Last Saved: 9/26/2019 20:19:44:2pm By: DGM
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File: N:\NWD\28 Nextera\N-0758-017 Chinook\Drawings Figures\AutoCAD\CHINOOK SITE\1\Sheet\N-0758-017-SITE.dwg

- EXISTING CONDITIONS PLAN NOTES:**
- "EXISTING CONDITIONS PLAN" PREPARED BY MHF DESIGN CONSULTANTS DATED JUNE 29, 2018.
 - EXISTING CONDITIONS ARE BASED ON A FIELD SURVEY BY MHF DESIGN CONSULTANTS, PERFORMED BETWEEN JANUARY 2018 AND JUNE 2018.
 - WETLAND RESOURCE INFORMATION WAS PROVIDED ELECTRONICALLY TO TIGHE & BOND, INC. BY TRC SOLUTIONS, INC. ON DECEMBER 18, 2018 AND UPDATED ON JUNE 17, 2019.
 - APPROXIMATE 100 YEAR FLOODPLAIN ELEVATIONS WERE PROVIDED FROM FEMA FIRM MAP #33005C0465E, EFFECTIVE DATE MAY 23, 2006.
 - BORING LOCATIONS PROVIDED BY TERRACON ON APRIL 19, 2019

- GENERAL NOTES:**
- THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
 - COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAYS WITH THE TOWN OF FITZWILLIAM.
 - THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED LAND SURVEYOR TO DETERMINE ALL LINES AND GRADES.
 - THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES. CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH AND COMPLY WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
 - THE CONTRACTOR SHALL OBTAIN AND PAY FOR AND COMPLY WITH ADDITIONAL PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
 - THE CONTRACTOR SHALL PHASE DEMOLITION AND CONSTRUCTION AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO EXISTING BUSINESSES AND HOMES THROUGHOUT THE CONSTRUCTION PERIOD. TEMPORARY SERVICES, IF REQUIRED, SHALL COMPLY WITH ALL FEDERAL, STATE, LOCAL AND UTILITY COMPANY STANDARDS. CONTRACTOR SHALL PROVIDE DETAILED CONSTRUCTION SCHEDULE TO OWNER PRIOR TO ANY DEMOLITION/CONSTRUCTION ACTIVITIES AND SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
 - ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE TOWN OF FITZWILLIAM HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS AND WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
 - CONTRACTOR TO SUBMIT AS-BUILT DRAWING SETS ON REPRODUCIBLE MYLARS AND IN DIGITAL FORMAT (.DWG FILE) ON DISK TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR.

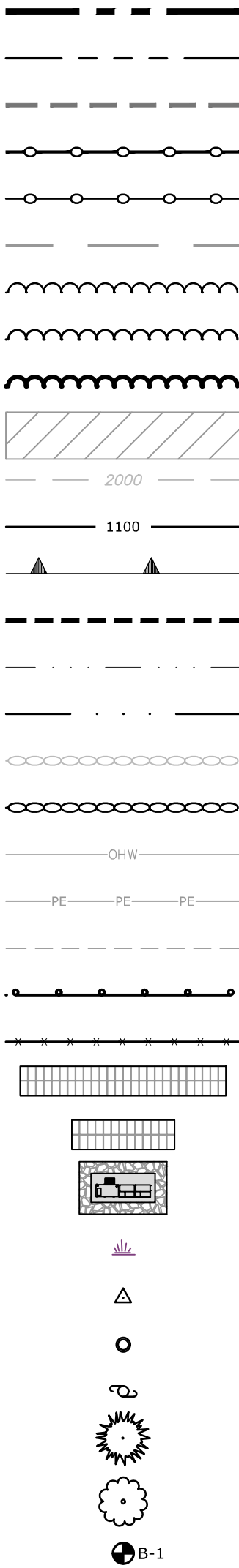
- DEMOLITION NOTES:**
- EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES. REFER TO DETAILED PROJECT PHASING PLAN PREPARED BY TIGHE & BOND, INC. FOR ADDITIONAL DETAILS.
 - ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES.
 - COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
 - ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
 - REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
 - CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED BY THE CONTRACTOR, THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED SURVEYOR TO REPLACE DISTURBED MONUMENTS.

- GRADING AND DRAINAGE NOTES:**
- COMPACTION REQUIREMENTS:
BELOW PAVED OR CONCRETE AREAS 95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL 95%
BELOW LOAM AND SEED AREAS 90%
- *ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.
- ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 4" LOAM, SEED FERTILIZER AND MULCH.
 - ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.

- EROSION CONTROL NOTES:**
- SEE SHEET C-501.

- UTILITY NOTES:**
- COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
 - ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
 - THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE ELECTRICAL DRAWINGS PREPARED BY OTHERS AND THE APPLICABLE UTILITY COMPANIES.
 - THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.

LEGEND:



- PROPERTY BOUNDARY
- LIMIT OF EXISTING RIGHT OF WAY
- PROPOSED LIMIT OF WORK
- PROPOSED SILT SOCK OR EROSION CONTROL BERM
- PROPOSED TEMPORARY SILT SOCK
- YARD SETBACK (LOCAL, TOWN OF FITZWILLIAM)
- LIMIT OF EXISTING TREE LINE
- LIMIT OF TREE LINE TO BE REMOVED
- PROPOSED LIMIT OF TREE LINE
- PROPOSED CLEARING
- EXISTING 2' CONTOURS
- PROPOSED 2' CONTOURS
- LIMIT OF DELINEATED WETLAND
- 75' STREAM & WETLAND BUFFER (LOCAL, TOWN OF FITZWILLIAM)
- STREAM CENTERLINE
- RIVER
- EXISTING STONE WALL
- EXISTING STONE WALL TO BE REMOVED
- OVERHEAD WIRES
- PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- EXISTING TRAIL
- PROPOSED GUARDRAIL
- PROPOSED CHAIN LINK FENCE
- PROPOSED 2X26 SOLAR MODULE RACK
- PROPOSED 2X13 SOLAR MODULE RACK
- PROPOSED INVERTER AND CONCRETE EQUIPMENT PAD
- EXISTING WETLAND
- SURVEY BASELINE DISK
- EXISTING IRON PIPE OR IRON ROD
- EXISTING UTILITY POLE
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- EXISTING APPROXIMATE SUBSURFACE BORING LOCATION

Tighe&Bond
Engineers | Environmental Specialists



**PERMIT DRAWINGS
NOT FOR CONSTRUCTION**

**Chinook Solar
Project**

**Chinook Solar,
LLC**

Fitzwilliam, NH

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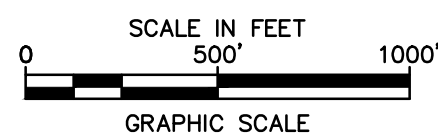
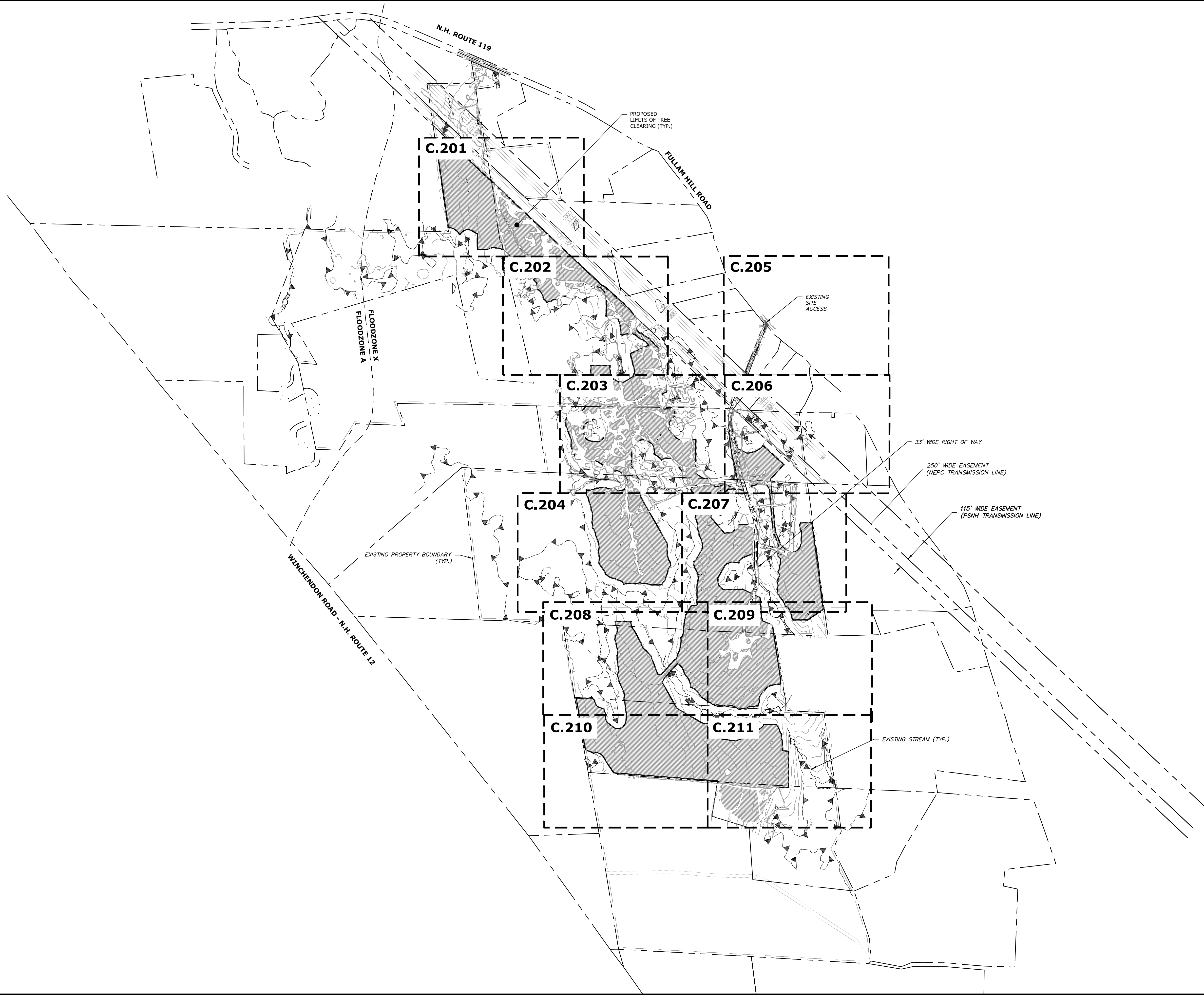
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**NOTES & LEGEND
SHEET**

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C.101

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**OVERALL EXISTING
CONDITIONS &
DEMOLITION PLAN**

SCALE: AS SHOWN

C.200



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NEXtera
ENERGY

MAP 12 LOT 34
N/F RANDOLPH BURT
129 BEAN HILL ROAD
RINDGE, NH 03461
BOOK 2927 PAGE 922

MAP 12 LOT 28
N/F TOWN OF FITZWILLIAM
PO BOX 725
FITZWILLIAM, NH 03447
BOOK 1538 PAGE 470
PLAN C5-D0-65

MAP 12 LOT 28
N/F TOWN OF FITZWILLIAM
PO BOX 725
FITZWILLIAM, NH 03447
BOOK 1538 PAGE 470
PLAN C5-D0-65

BRADLEE MEDCALFA
No. 06633
LICENSED PROFESSIONAL ENGINEER

JOSEPH M. PERSECHINO
No. 12289
LICENSED PROFESSIONAL ENGINEER

N

SCALE IN FEET
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GRAPHIC SCALE

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Chinook Solar, LLC

Fitzwilliam, NH

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**EXISTING CONDITIONS
& DEMOLITION PLAN**

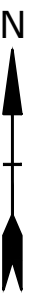
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EXISTING CONDITIONS & DEMOLITION PLAN

SCALE: AS SHOWN

C.202



CONST. SILT SOCK ON SLOPES
GREATER THAN 5%.
SPACE EVERY 200' (MAX.)
RUNNING PARALLEL WITH
CONTOURS.
CONTRACTOR MAY ADJUST
LOCATIONS BASED ON ACTUAL
CONDITIONS IN FIELD DURING
CONSTRUCTION. (TYP.)

OVERHEAD
TRANSMISSION
WIRES (TYP.)

EXISTING PROPERTY
BOUNDARY (TYP.)

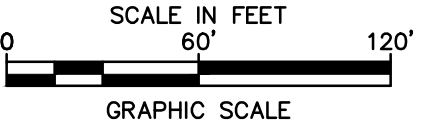
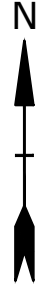
MAP 12 LOT 6
DAVID A. & MARY J.
16 JACKSON STREET
AYER, MA 01435
BOOK 2530 PAGE 2
2,014,499 Sq. Ft.
46.247 Ac. ±

33' WIDE RIGHT OF WAY
BENEFIT OF MAP 12 LOT 6
MAP 12 LOT 6 AS RESERVED
BOOK 2530 PAGE 2

APPROXIMATE EXTENT
OF EXISTING TREE
LINE (TYP.)

STONE WALL
(TBR) (TYP.)

DELINEATED
WETLAND (TYP.)



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Fitzwilliam, NH

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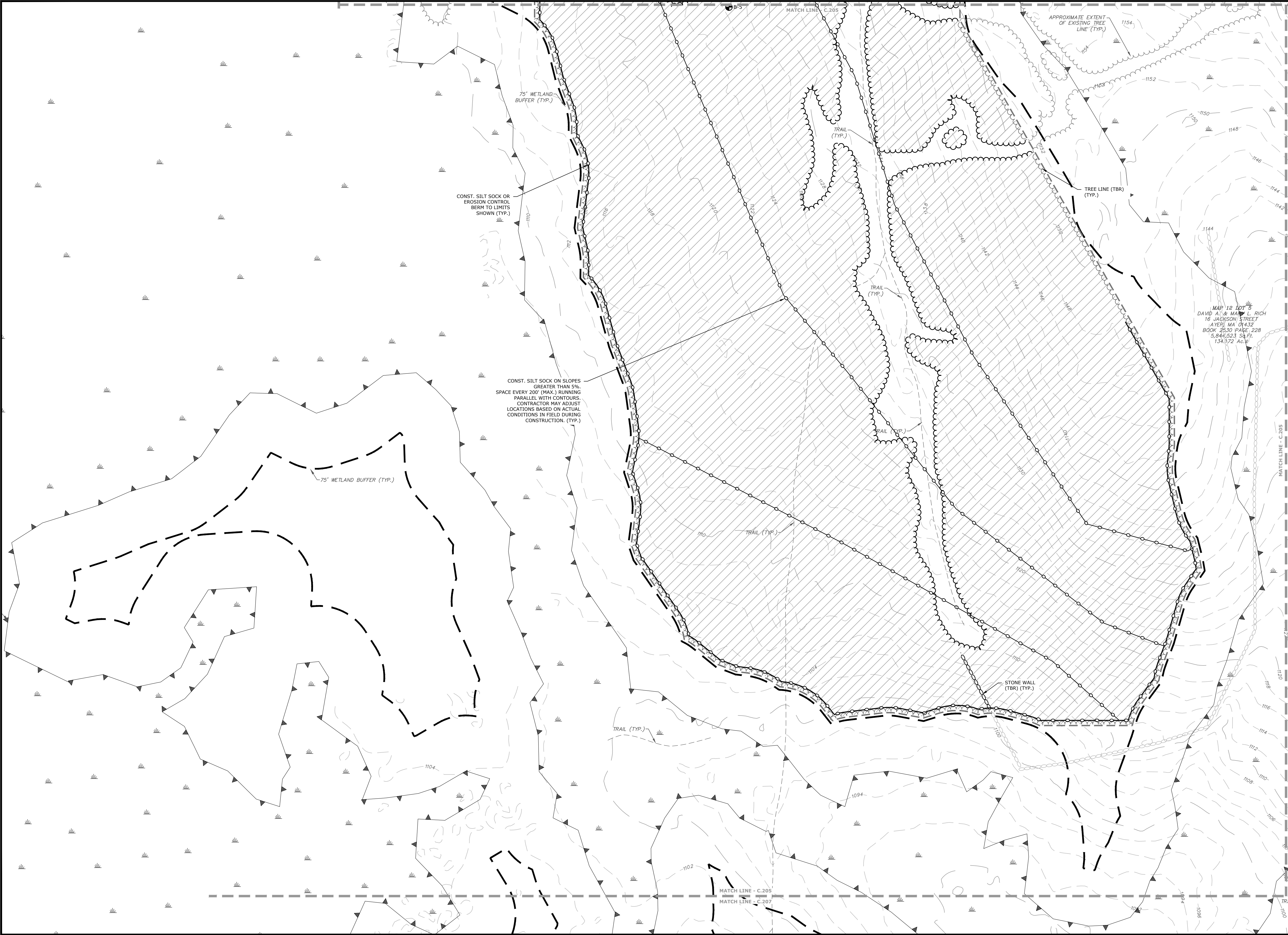
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EXISTING CONDITIONS & DEMOLITION PLAN

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C.203

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Engineers | Environmental Specialists

NEXtera
ENERGY

STATE OF NEW HAMPSHIRE
BRADLEE MEDCALFA
No. 06633
LICENSED PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE
JOSEPH M. PERSECHINO
No. 12280
LICENSED PROFESSIONAL ENGINEER

N

0 60 120'
SCALE IN FEET
GRAPHIC SCALE

PERMIT DRAWINGS
NOT FOR CONSTRUCTION

Chinook Solar Project

Chinook Solar, LLC

Fitzwilliam, NH

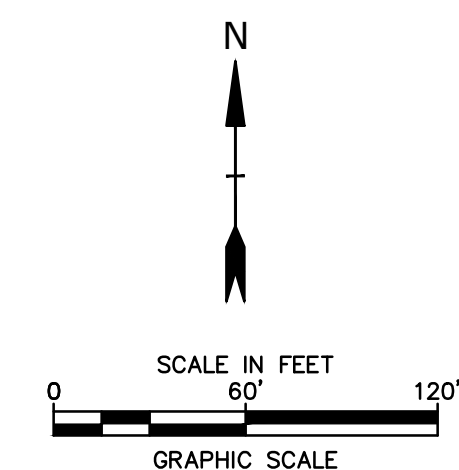
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EXISTING CONDITIONS & DEMOLITION PLAN

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Fitzwilliam, NH

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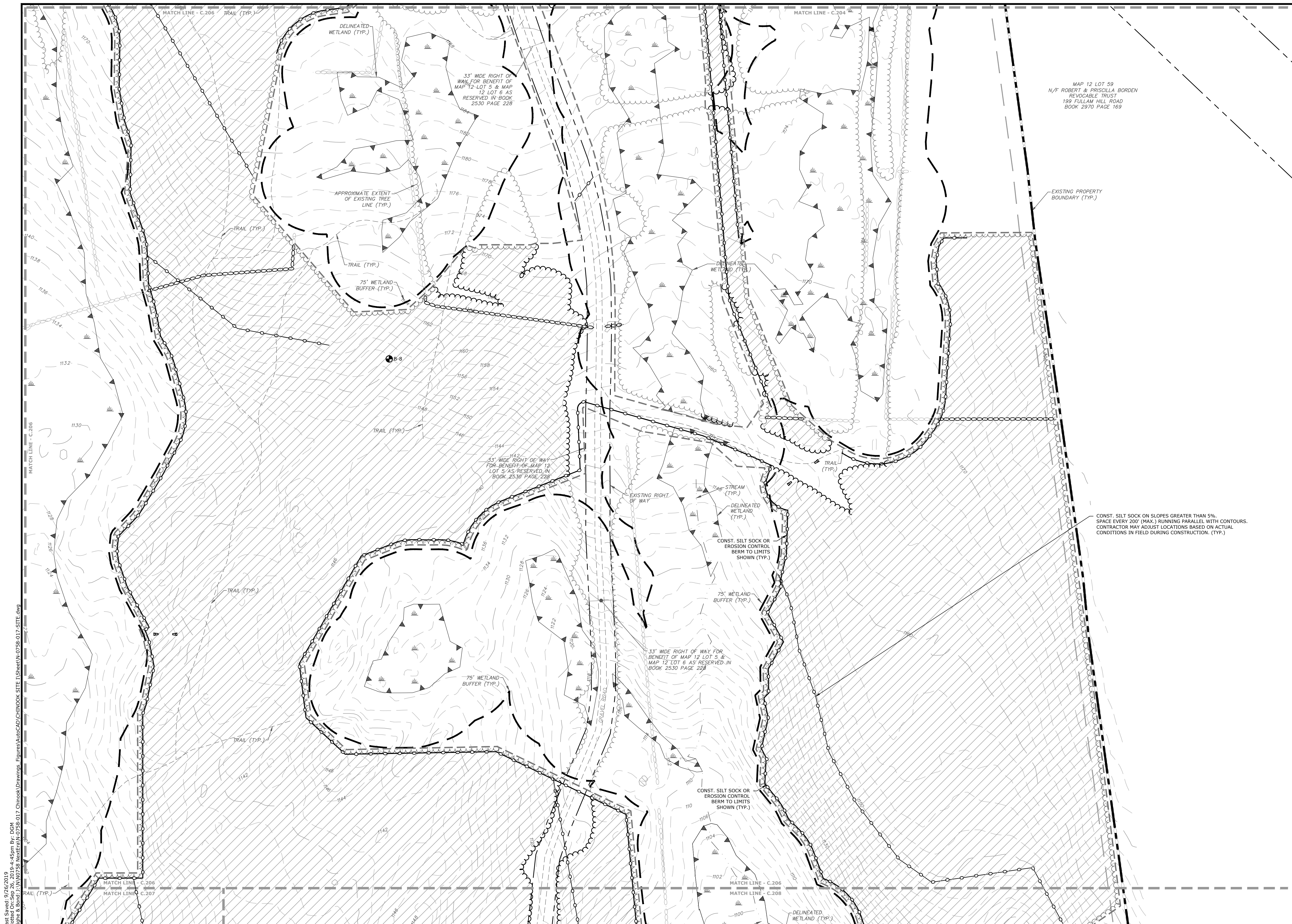
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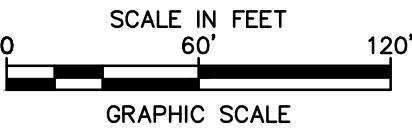
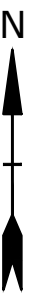
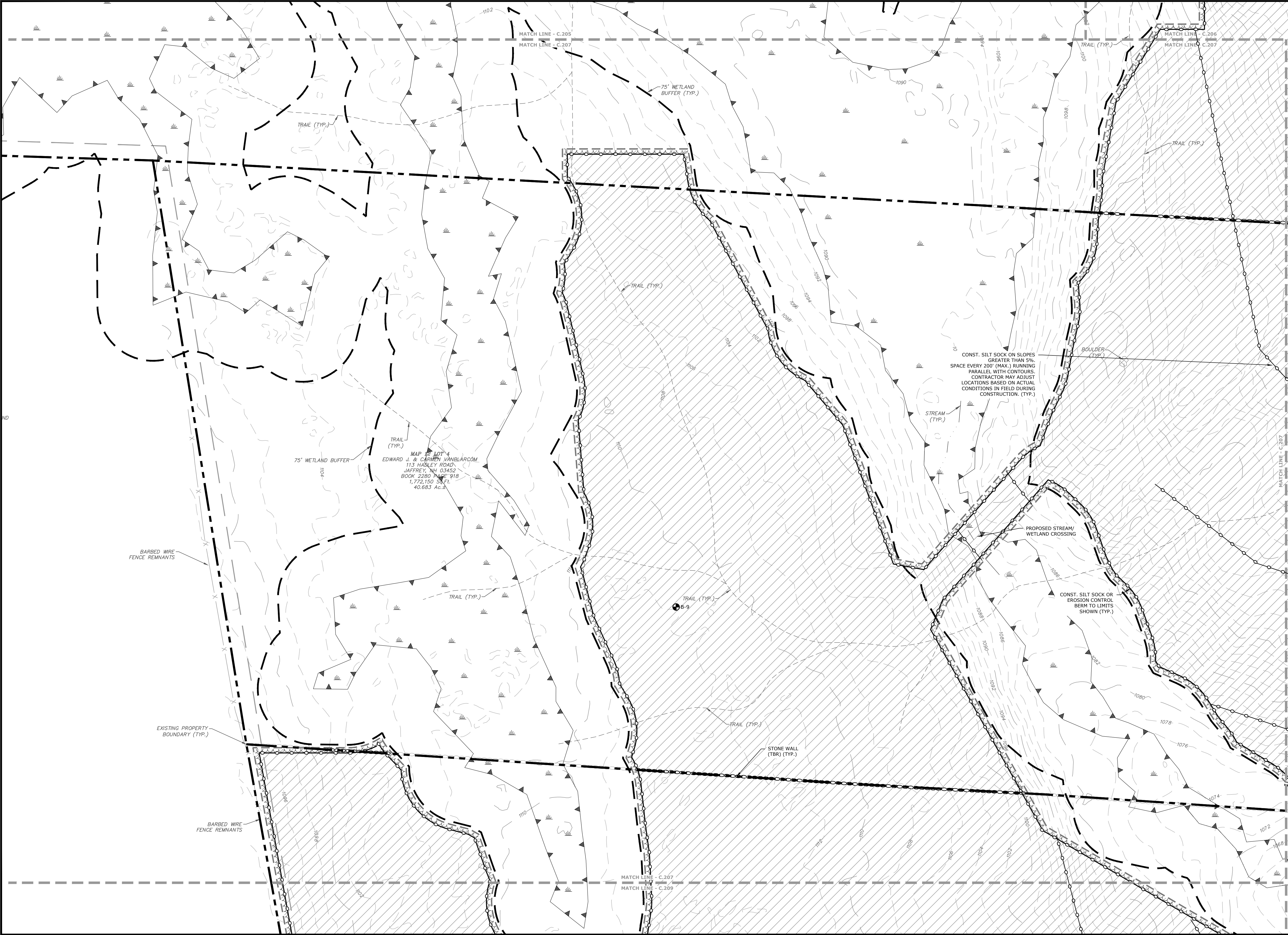
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EXISTING CONDITIONS & DEMOLITION PLAN

SCALE: AS SHOWN

C.206





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Chinook Solar Project

Chinook Solar, LLC

Fitzwilliam, NH

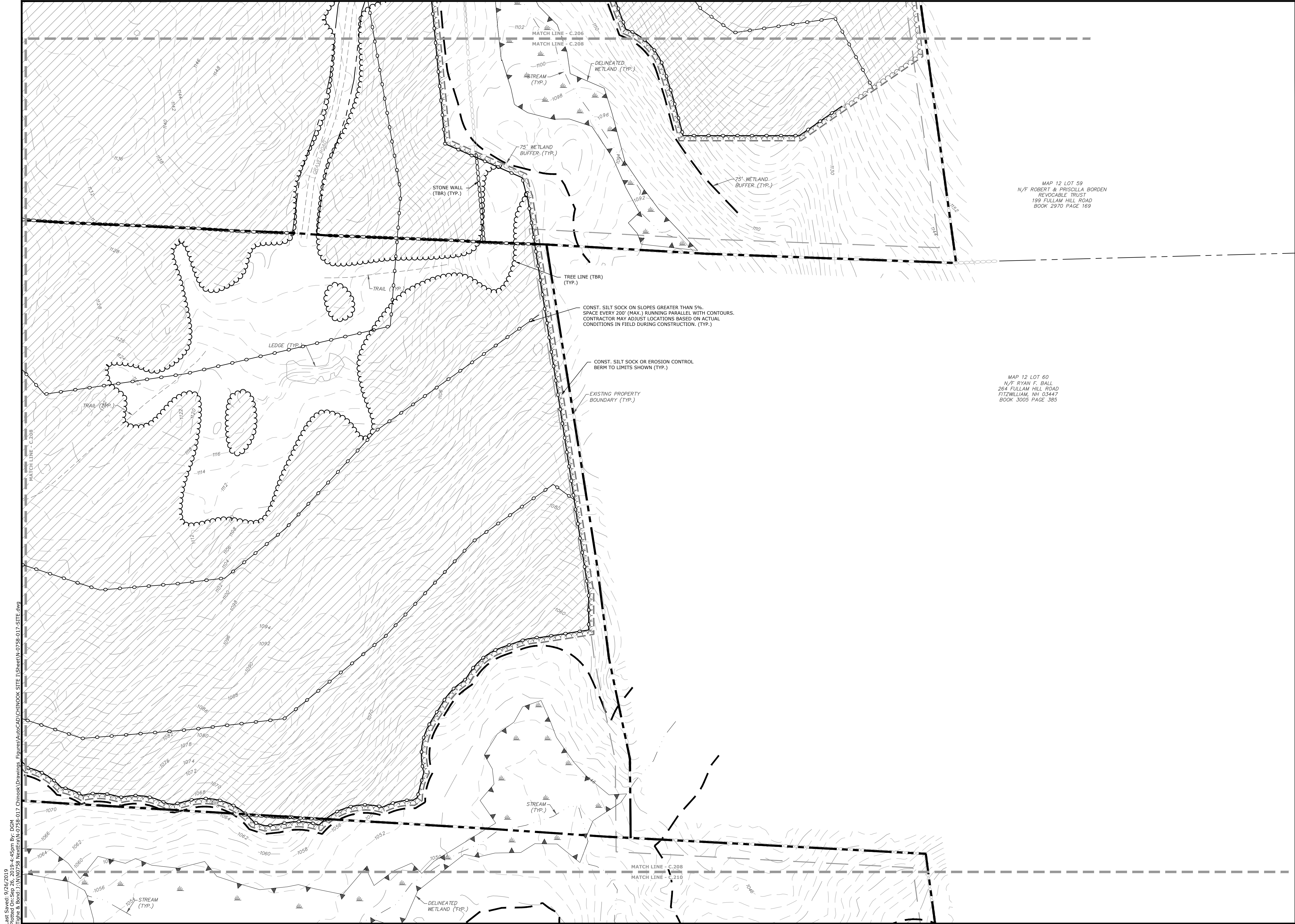
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EXISTING CONDITIONS & DEMOLITION PLAN

SCALE: AS SHOWN

C.207



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Engineers | Environmental Specialists

NEXtera
ENERGY

STATE OF NEW HAMPSHIRE
BRADLEE MEDCALFA
No. 06639
LICENSED
PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE
JOSEPH M. PERSECHINO
No. 12280
LICENSED
PROFESSIONAL ENGINEER

N

SCALE IN FEET
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GRAPHIC SCALE

PERMIT DRAWINGS
NOT FOR CONSTRUCTION

Chinook Solar Project

Chinook Solar, LLC

Fitzwilliam, NH

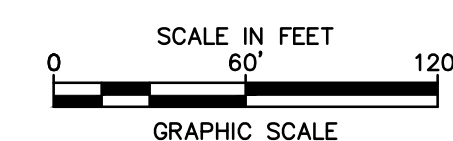
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EXISTING CONDITIONS & DEMOLITION PLAN

SCALE: AS SHOWN

C.208




PERMIT DRAWINGS
NOT FOR CONSTRUCTION

Chinook Solar Project

Chinook Solar,
LLC

Fitzwilliam, NH

VERIFY SCALE

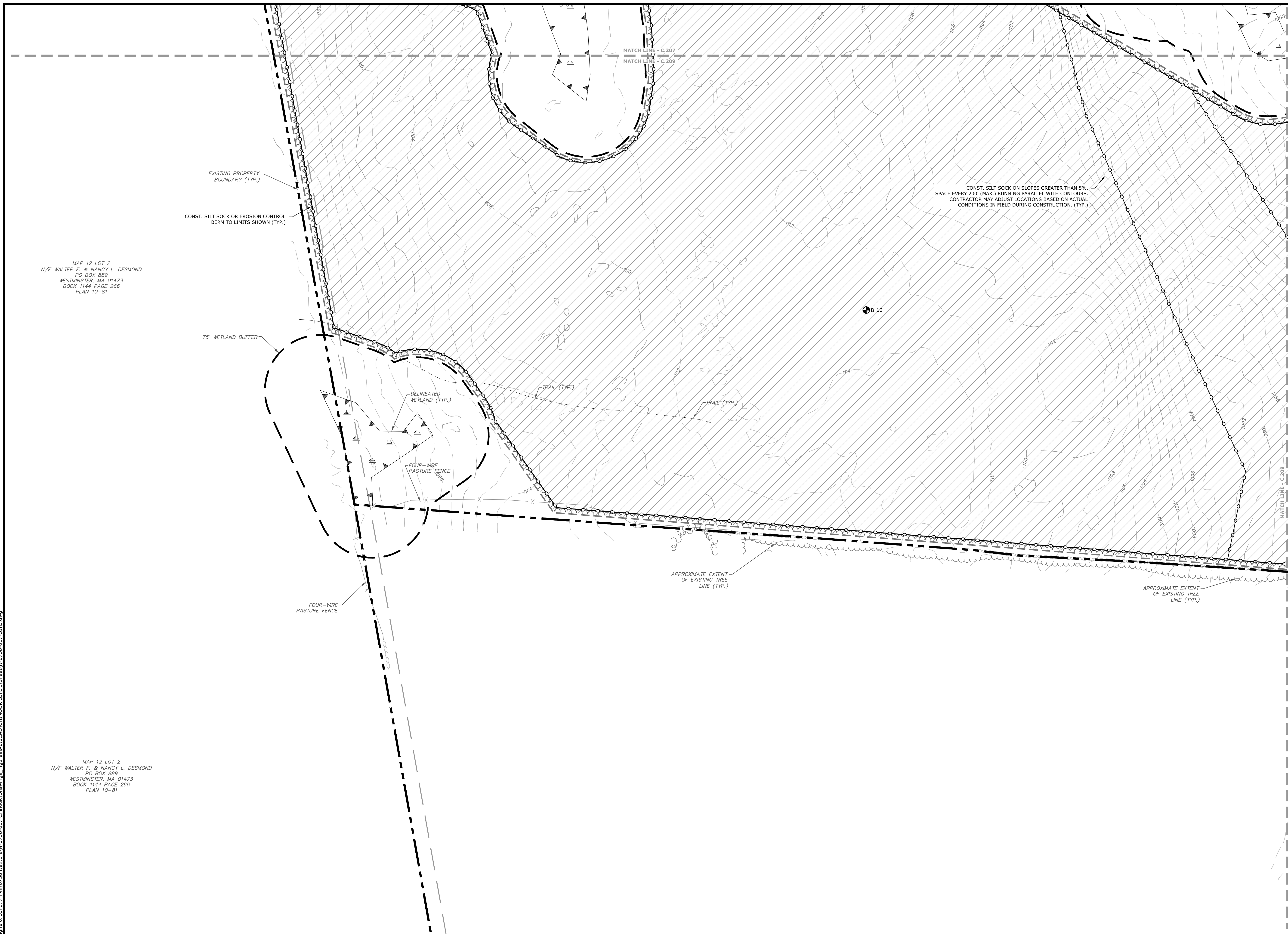
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EXISTING CONDITIONS & DEMOLITION PLAN

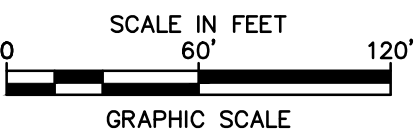
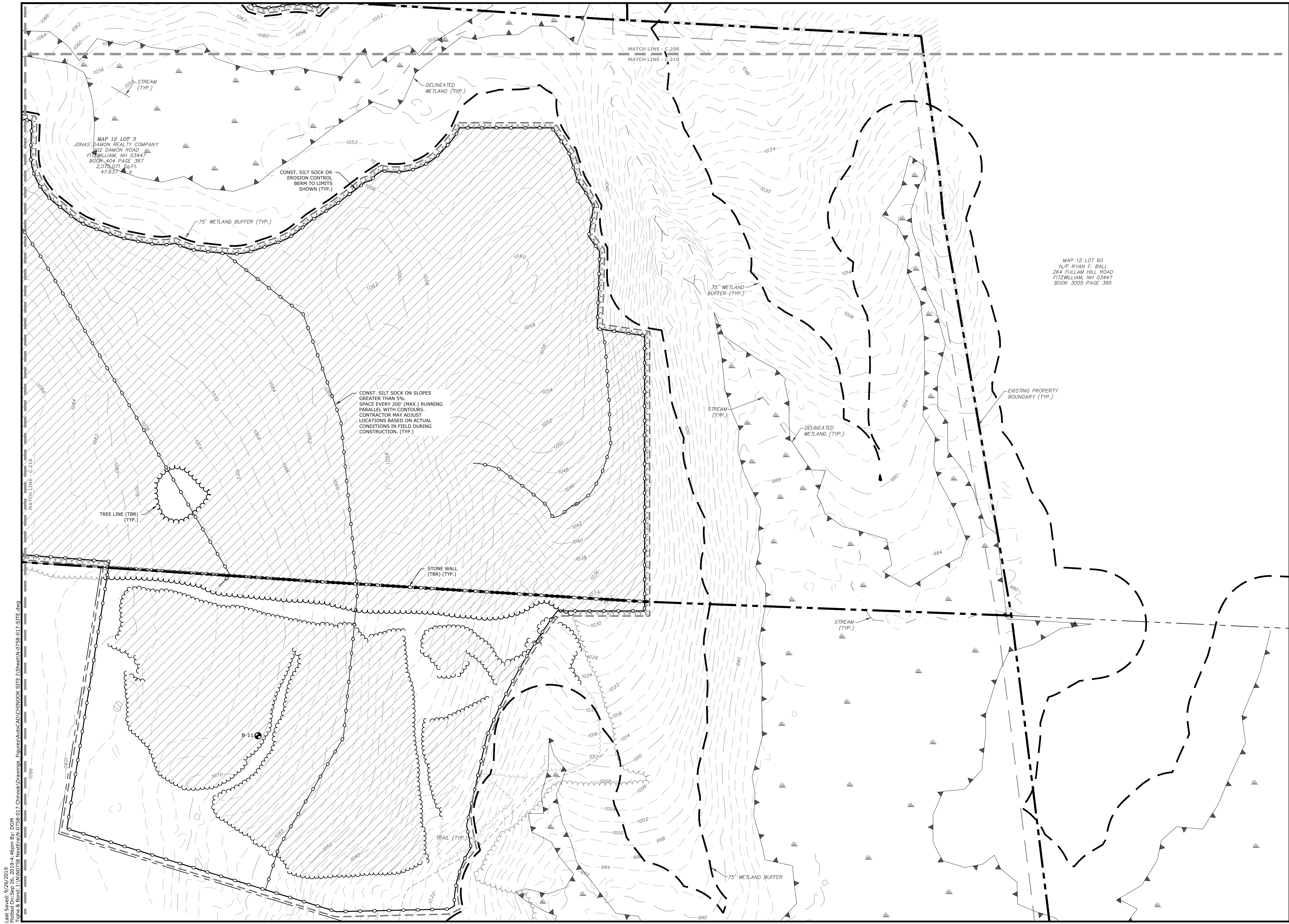
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C.209



MAP 12 LOT 2
N/F WALTER F. & NANCY L. DESMOND
PO BOX 889
WESTMINSTER, MA 01473
BOOK 1144 PAGE 266
PLAN 10-81

MAP 12 LOT 2
N/F WALTER F. & NANCY L. DESMOND
PO BOX 889
WESTMINSTER, MA 01473
BOOK 1144 PAGE 266
PLAN 10-81



**PERMIT DRAWINGS
NOT FOR CONSTRUCTION**

Chinook Solar Project

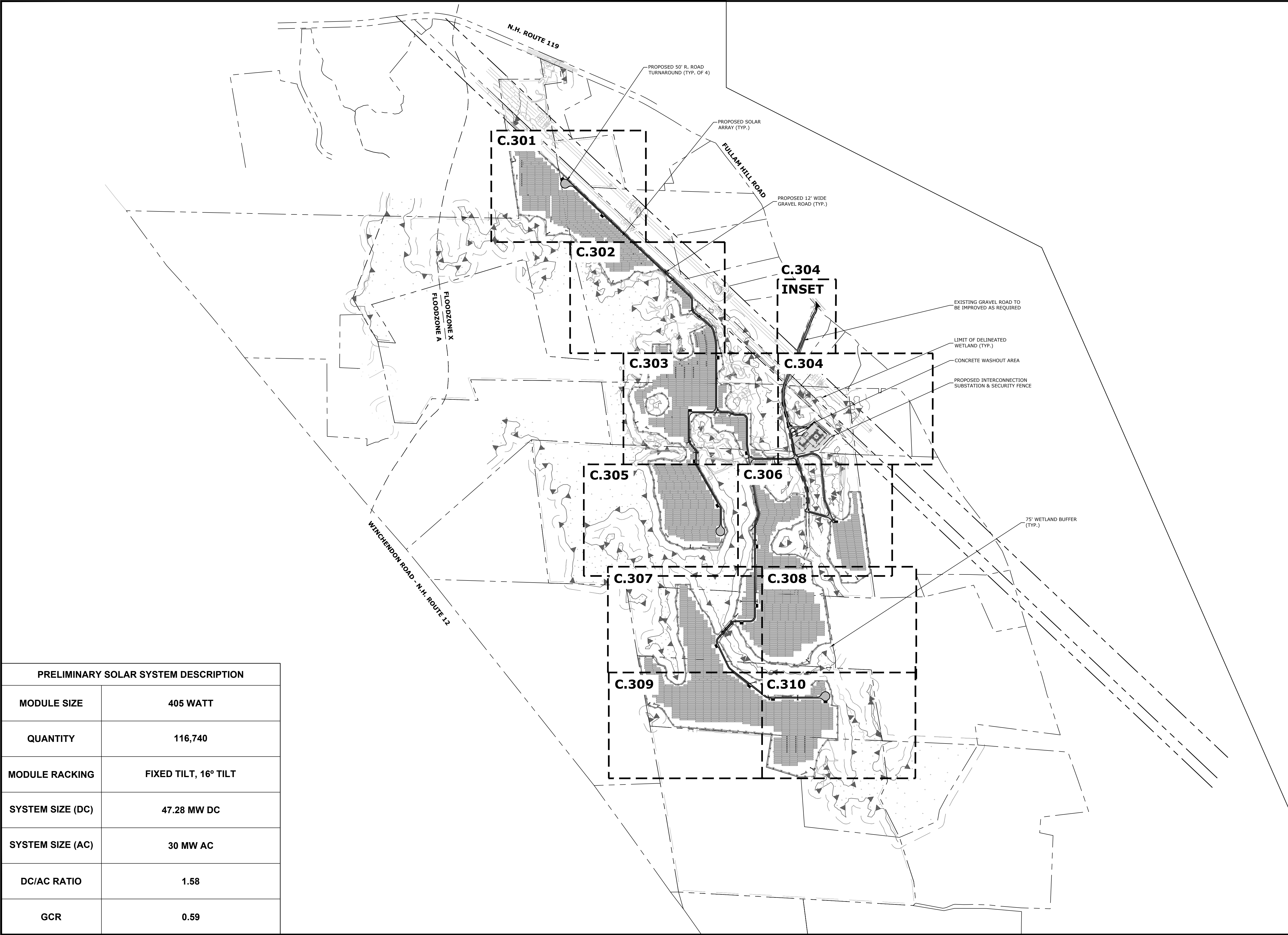
Chinook Solar,
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Fitzwilliam, NH

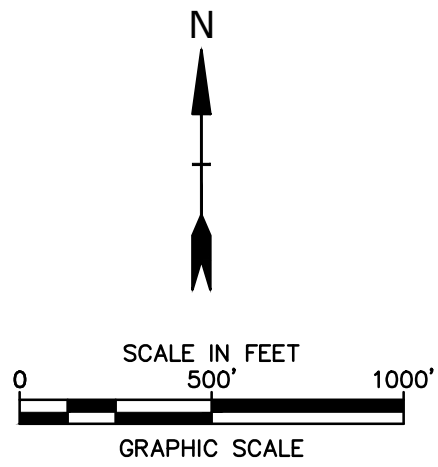
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| DRAWN BY: | EGD/NSC | |
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| APPROVED: | BLM | |
| EXISTING CONDITIONS & DEMOLITION PLAN | | |
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| C.210 | | |

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| PRELIMINARY SOLAR SYSTEM DESCRIPTION | |
|--------------------------------------|----------------------|
| MODULE SIZE | 405 WATT |
| QUANTITY | 116,740 |
| MODULE RACKING | FIXED TILT, 16° TILT |
| SYSTEM SIZE (DC) | 47.28 MW DC |
| SYSTEM SIZE (AC) | 30 MW AC |
| DC/AC RATIO | 1.58 |
| GCR | 0.59 |



**PERMIT DRAWINGS
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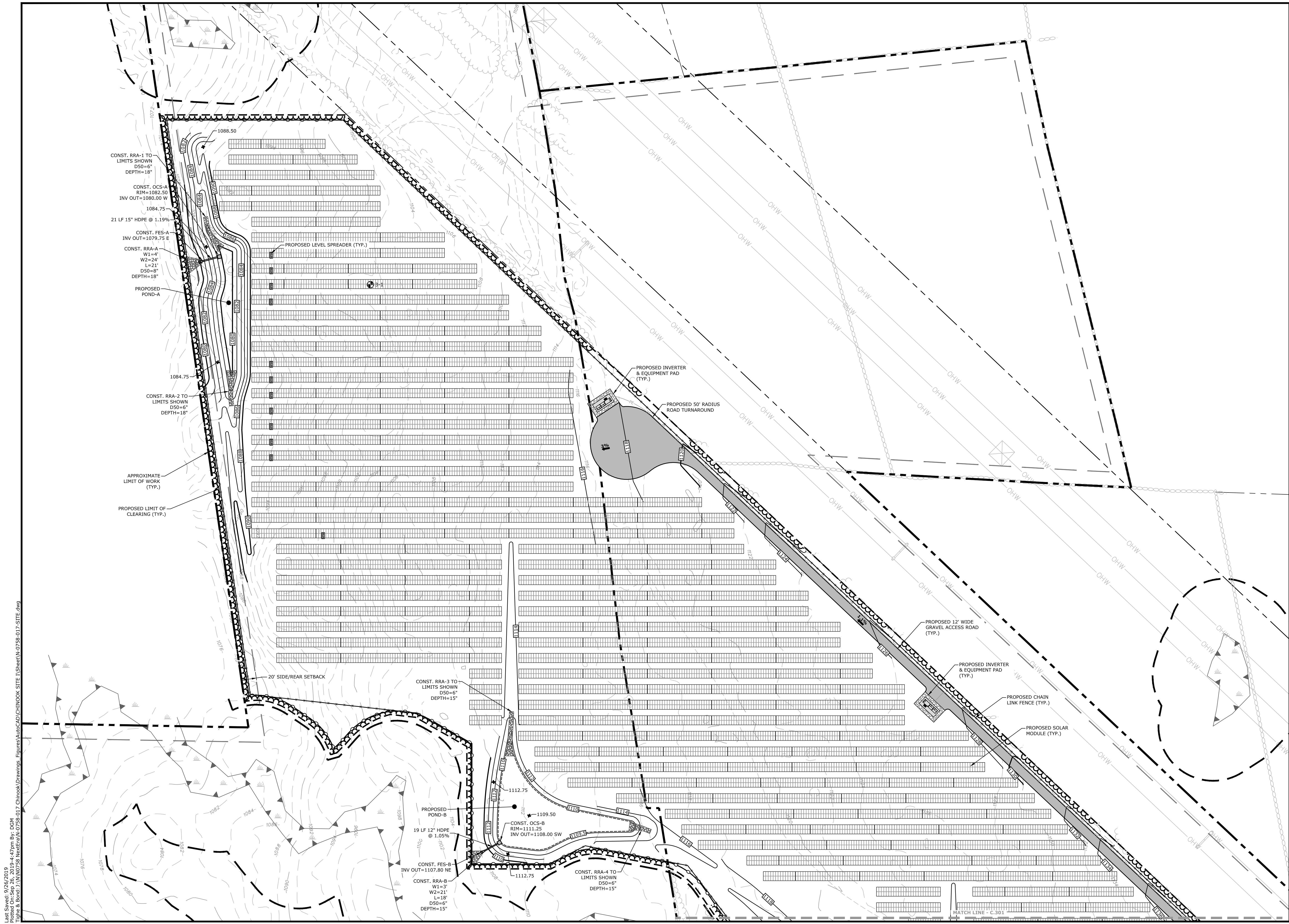
Chinook Solar Project

Chinook Solar, LLC

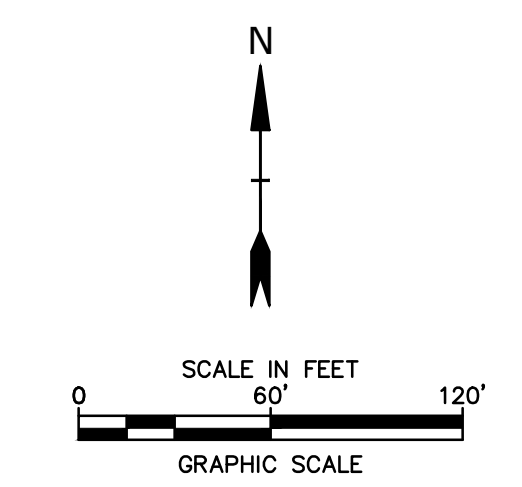
Fitzwilliam, NH

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| OVERALL SITE PLAN | | |
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| C.300 | | |



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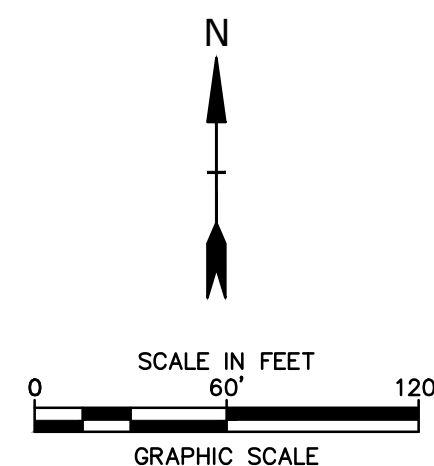
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SITE PLAN

SCALE: AS SHOWN

C.301




PERMIT DRAWINGS
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VERIFY SCALE

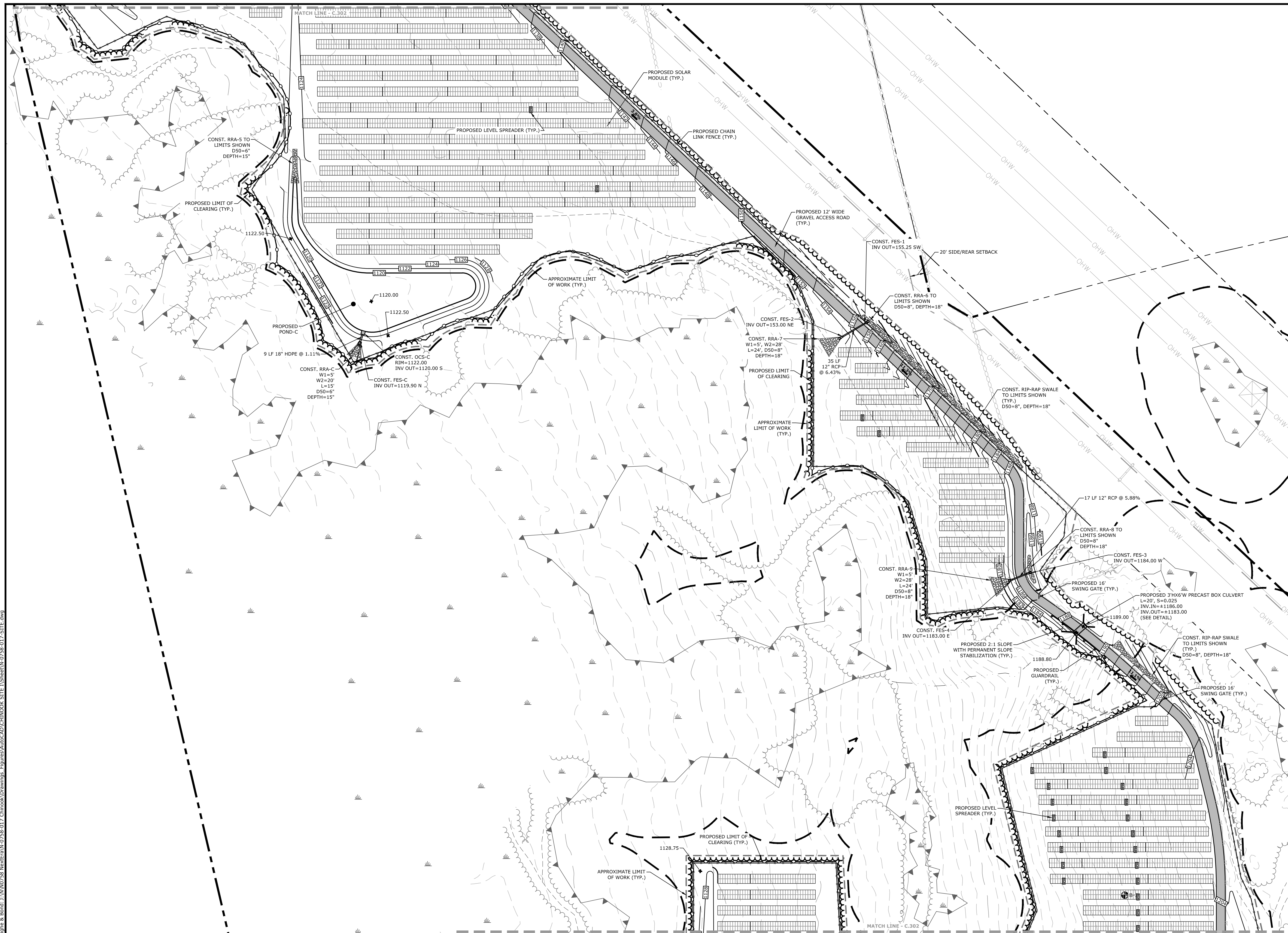
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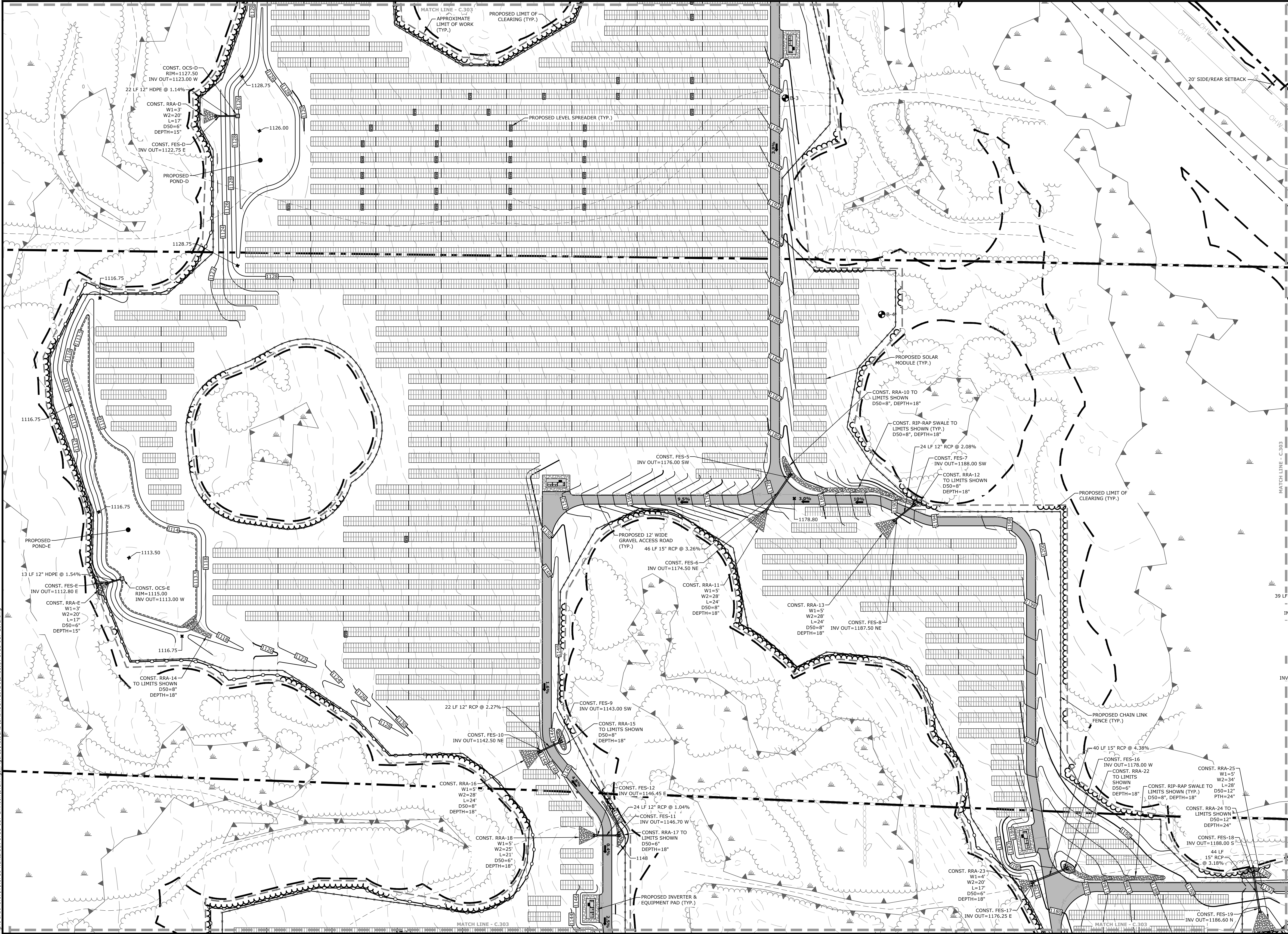
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SITE PLAN

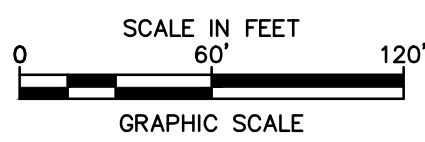
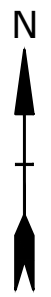
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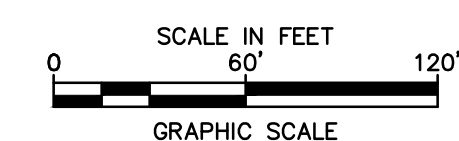
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SITE PLAN

SCALE: AS SHOWN

C.303



PERMIT DRAWINGS
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VERIFY SCALE

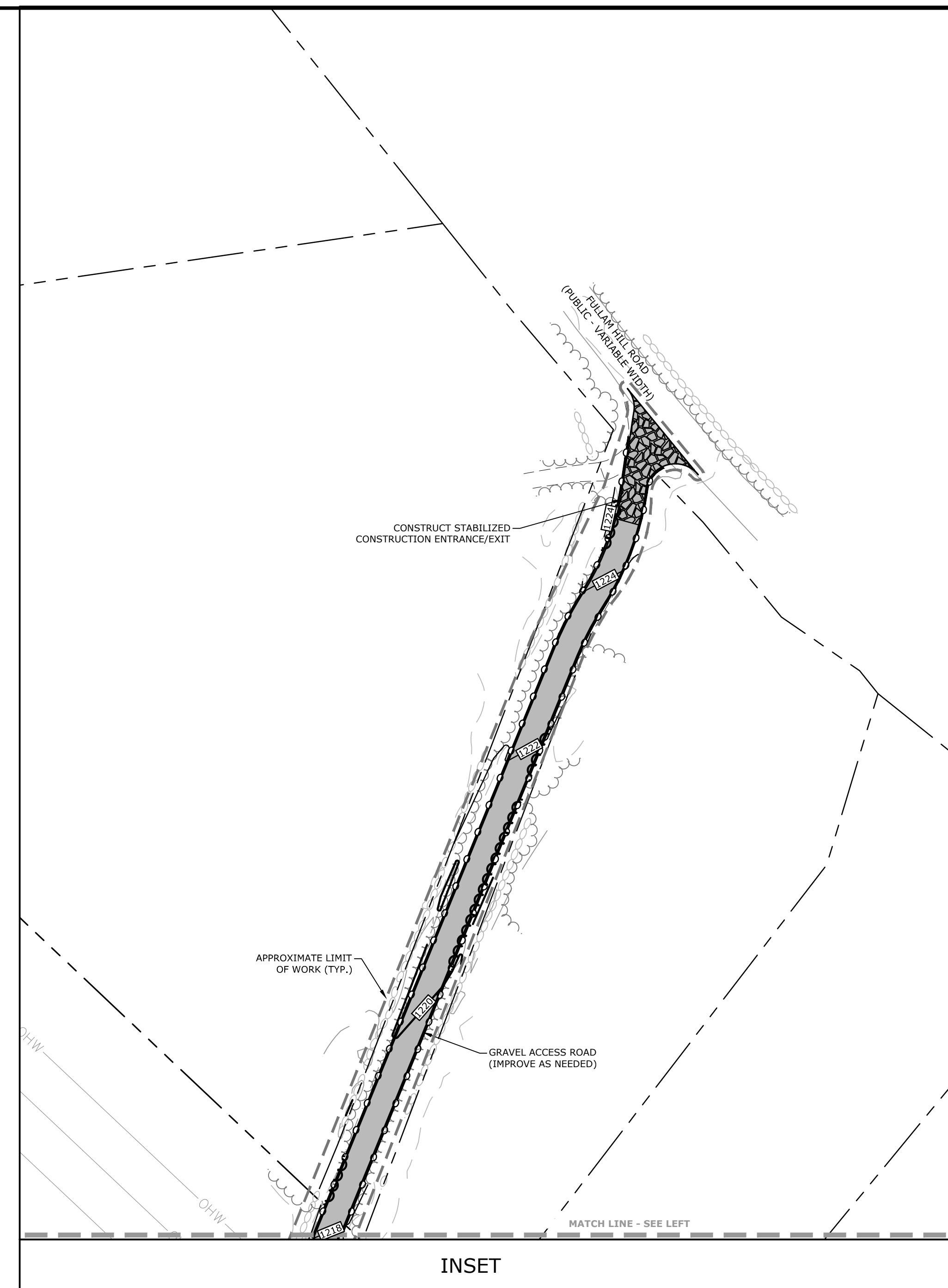
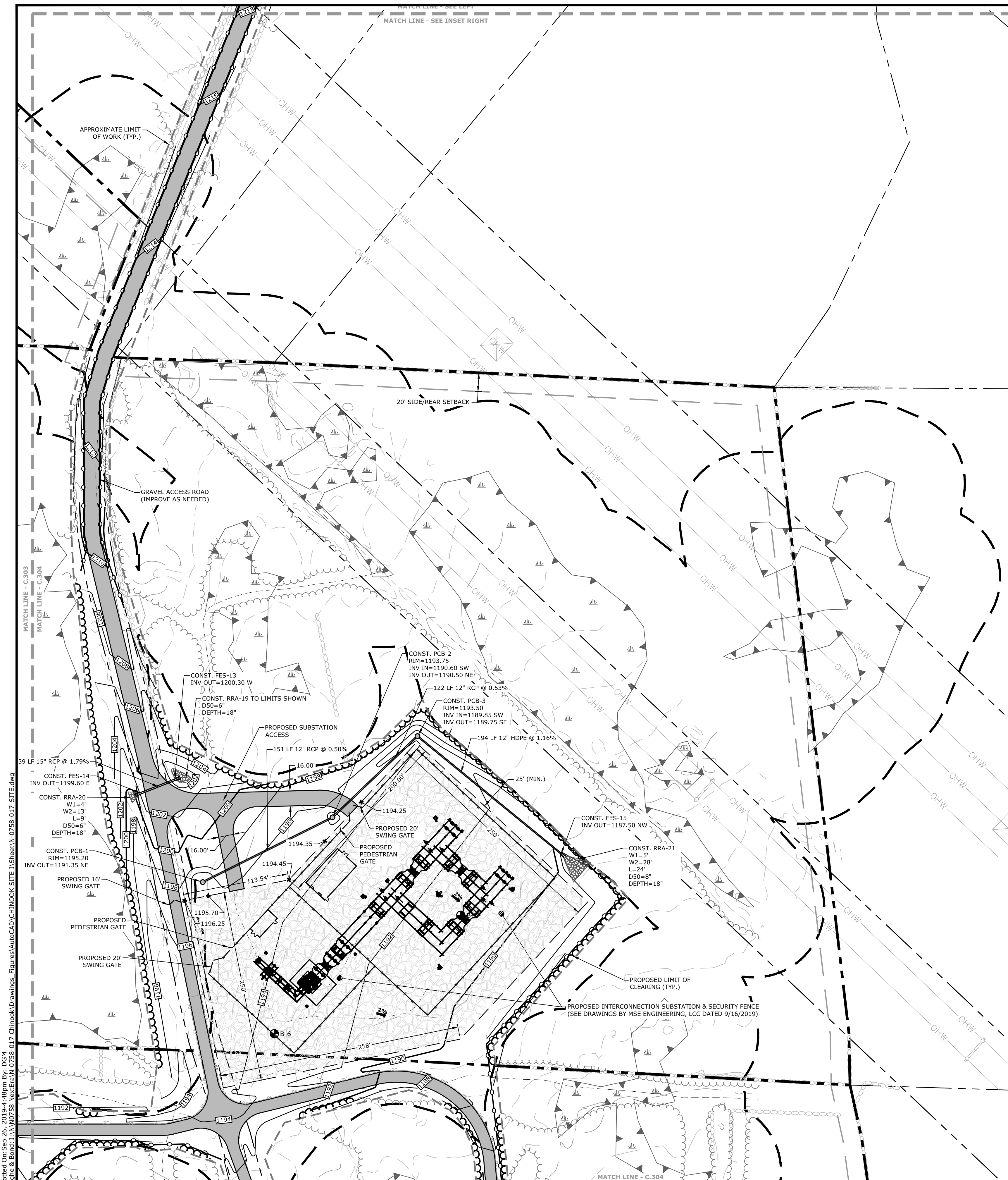
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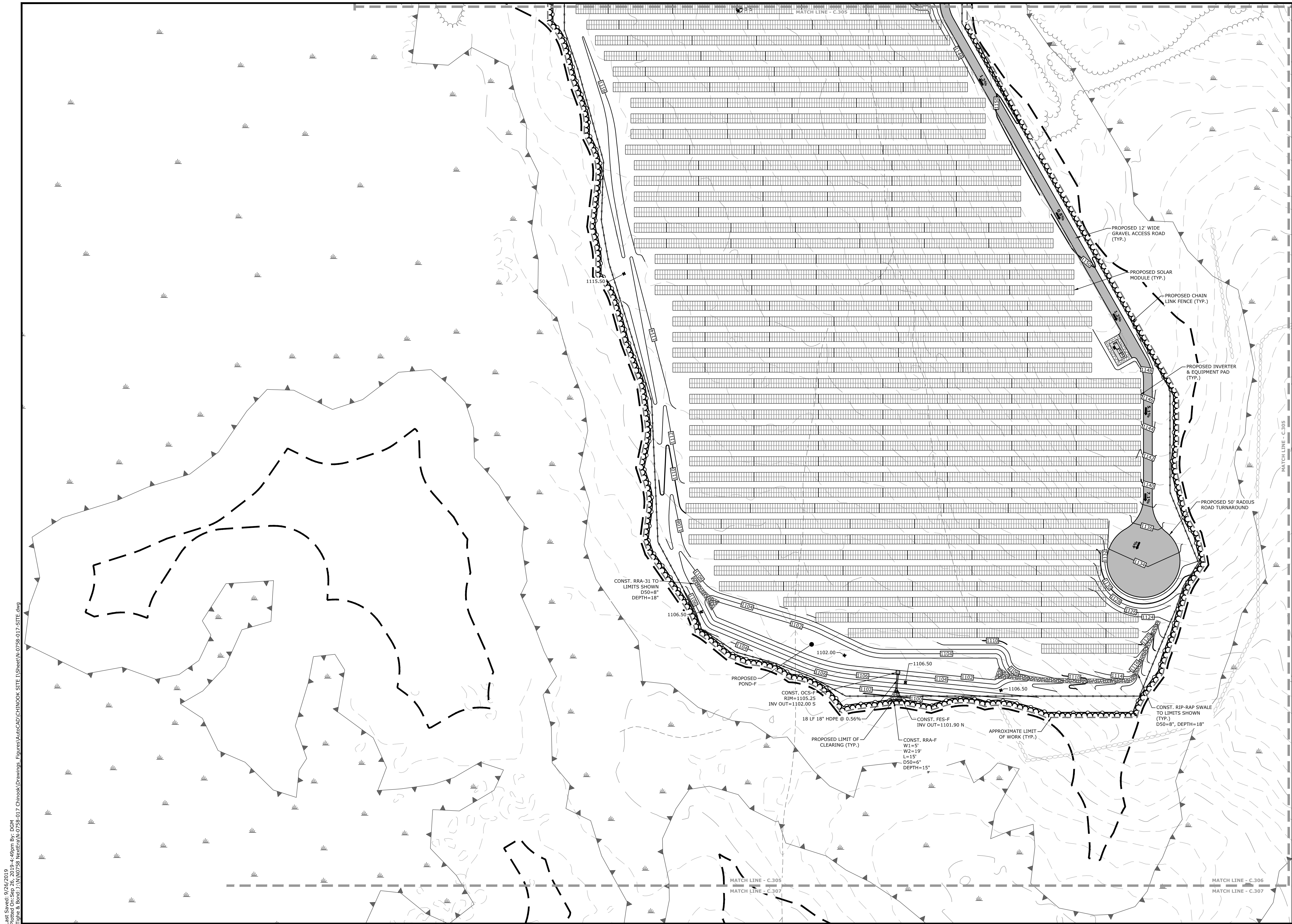
SITE PLAN

SCALE: AS SHOWN

C.304



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STATE OF NEW HAMPSHIRE
BRADLEE
MECHANICAL
No. 06639
LICENSED
PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE
JOSEPH M. PERSECHINO
No. 12280
LICENSED
PROFESSIONAL ENGINEER

N

SCALE IN FEET
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GRAPHIC SCALE

PERMIT DRAWINGS
NOT FOR CONSTRUCTION

Chinook Solar Project

Chinook Solar, LLC

Fitzwilliam, NH

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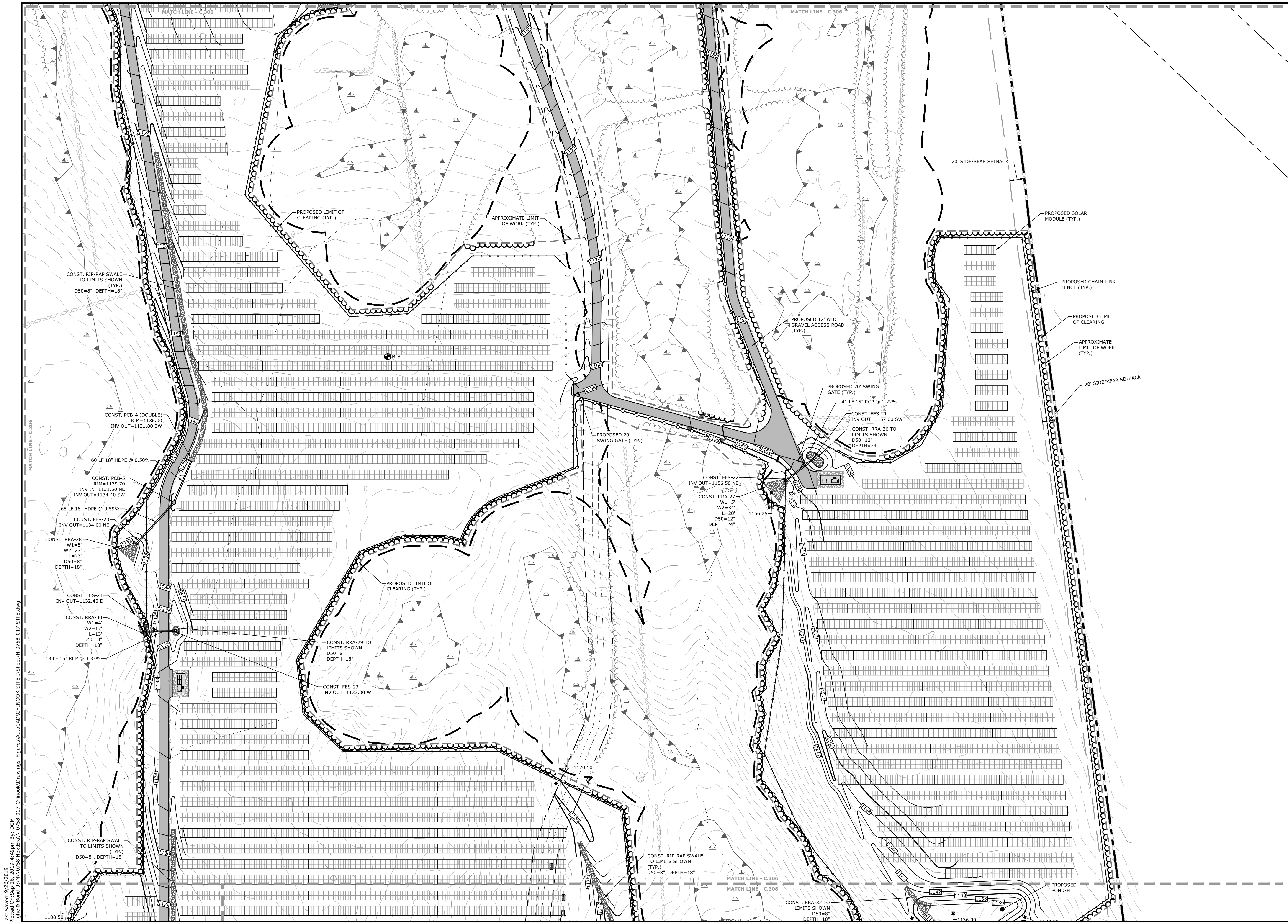
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SITE PLAN

SCALE: AS SHOWN

C.305

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SCALE IN FEET
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GRAPHIC SCALE

PERMIT DRAWINGS
NOT FOR CONSTRUCTION

Chinook Solar Project

Chinook Solar, LLC

Fitzwilliam, NH

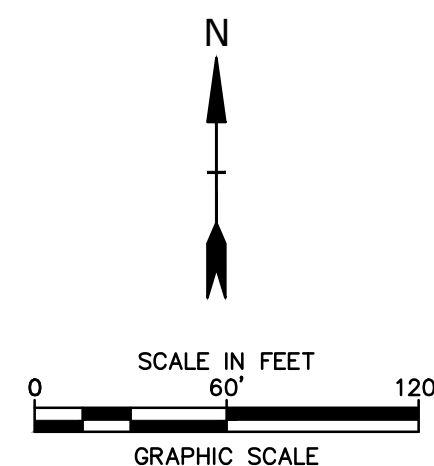
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SITE PLAN

SCALE: AS SHOWN

C.306




PERMIT DRAWINGS
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VERIFY SCALE

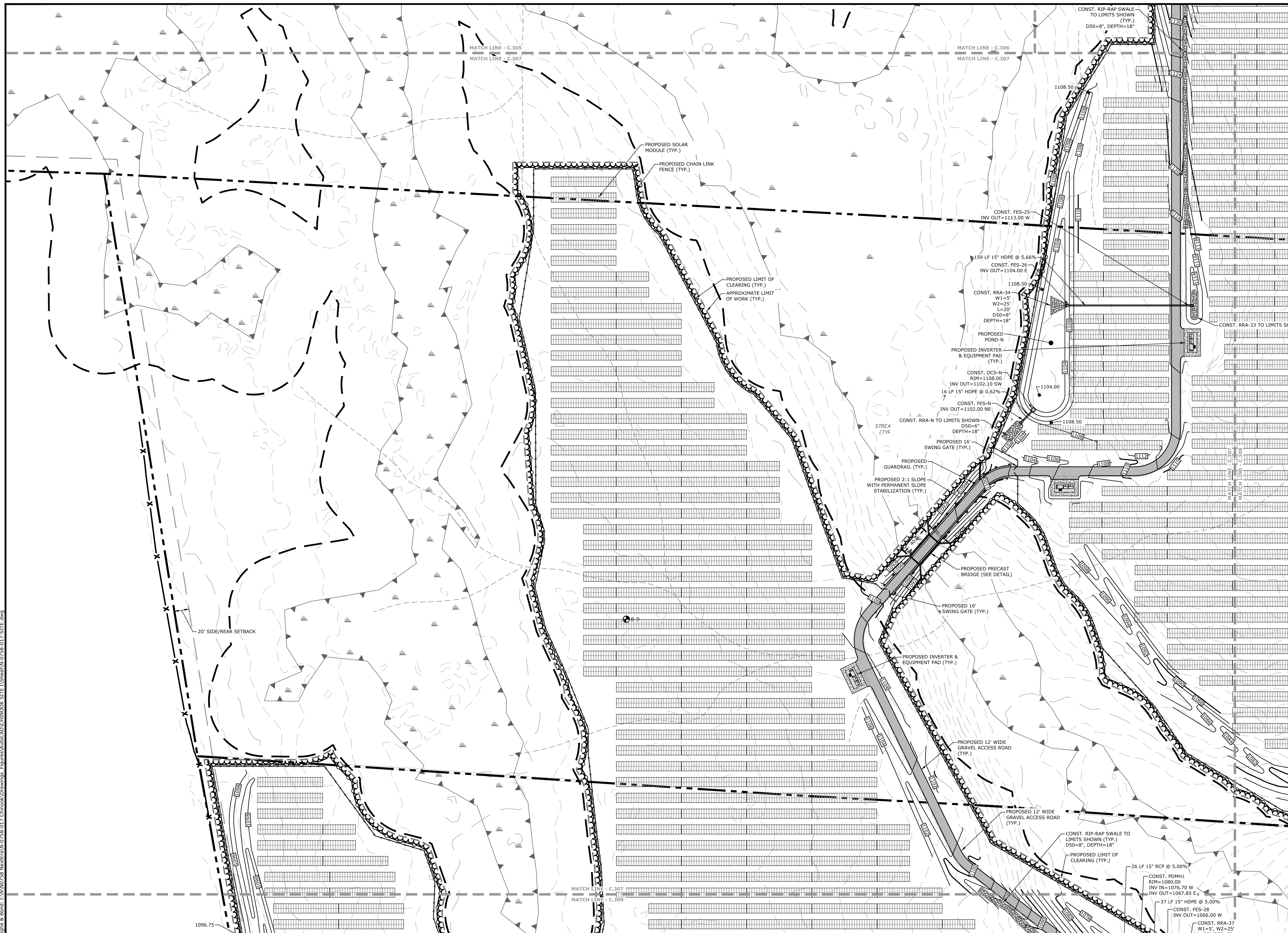
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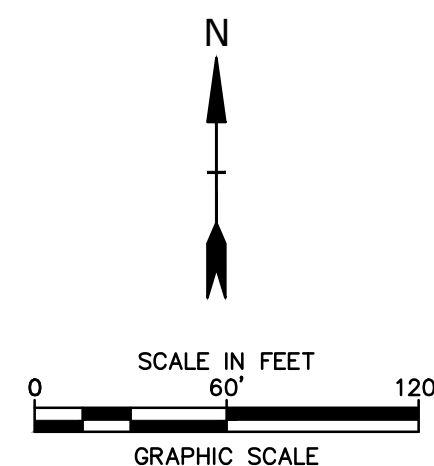
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SITE PLAN

SCALE: AS SHOWN

C.307





PERMIT DRAWINGS
NOT FOR CONSTRUCTION

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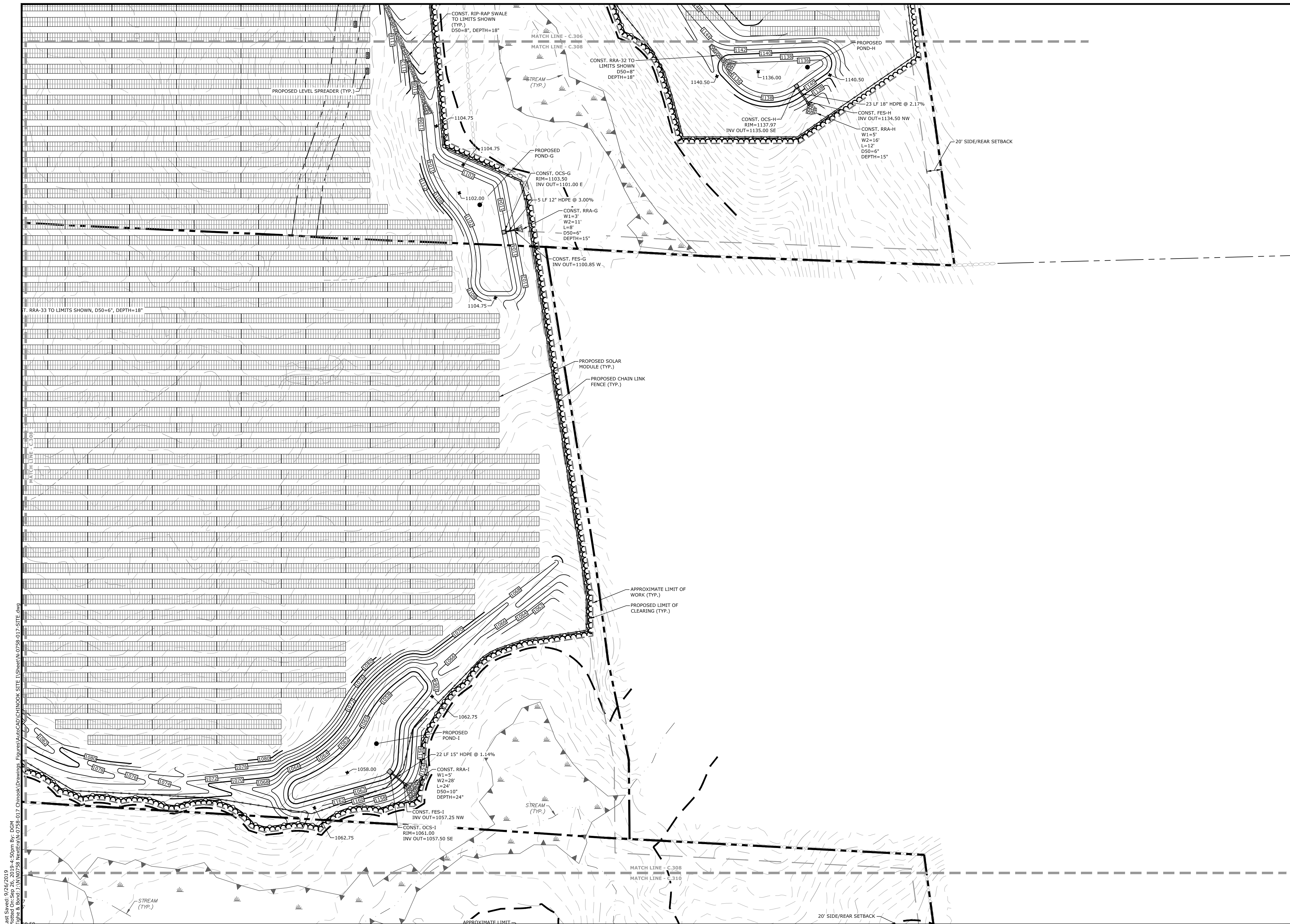
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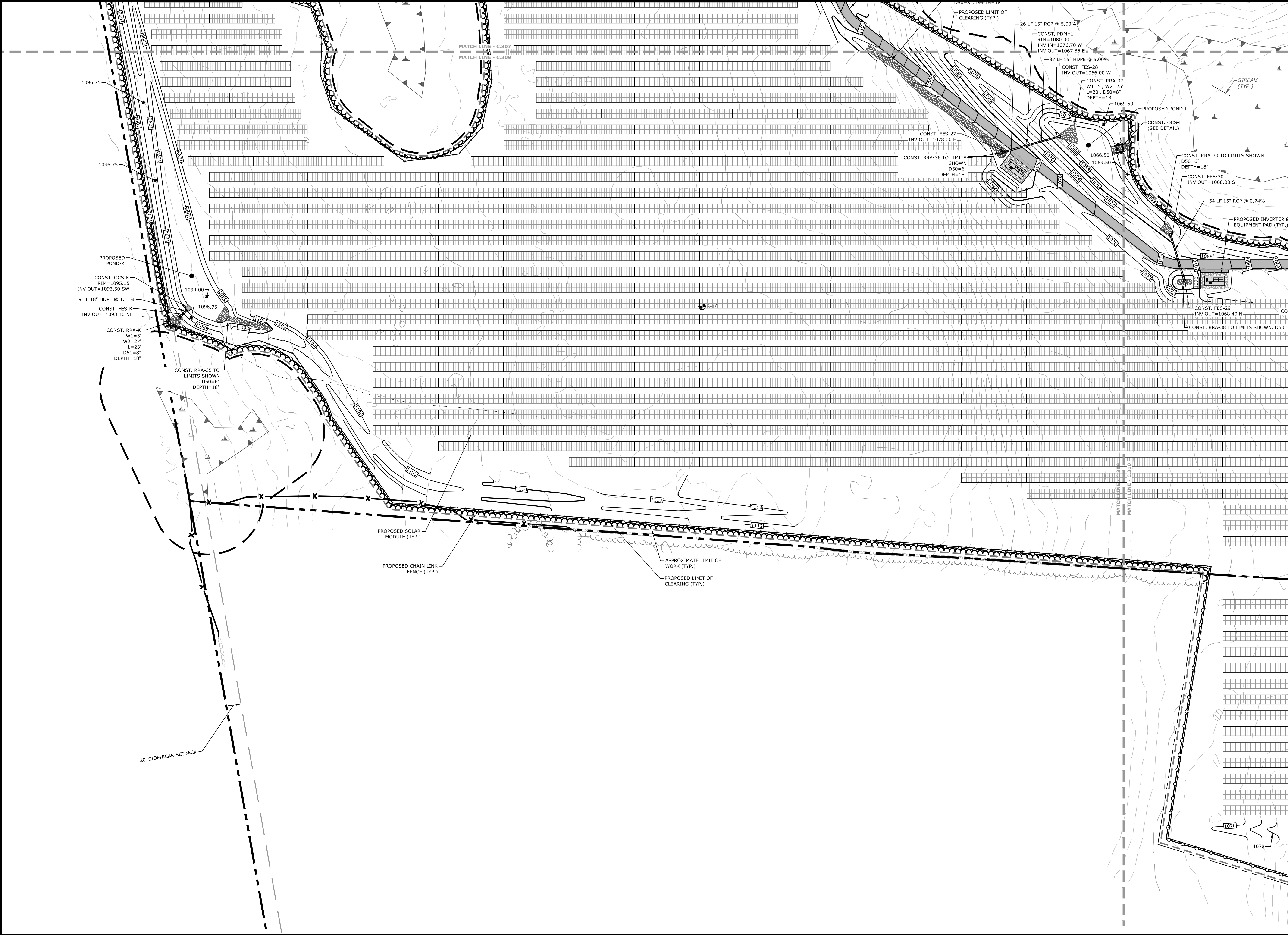
SITE PLAN

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C.308



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SCALE IN FEET
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GRAPHIC SCALE

**PERMIT DRAWINGS
NOT FOR CONSTRUCTION**

**Chinook Solar
Project**

**Chinook Solar,
LLC**

Fitzwilliam, NH

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SITE PLAN

SCALE: AS SHOWN

C.309



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STATE OF NEW HAMPSHIRE
BRADLEE
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No. 06633
LICENSED
PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE
JOSEPH M. PERSECHINO
No. 12288
LICENSED
PROFESSIONAL ENGINEER

N

0 60 120'

SCALE IN FEET

GRAPHIC SCALE

PERMIT DRAWINGS
NOT FOR CONSTRUCTION

Chinook Solar Project

Chinook Solar, LLC

Fitzwilliam, NH

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SITE PLAN

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C.310

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GENERAL PROJECT INFORMATION
PROJECT OWNER: CHINOOK SOLAR, LLC
C/O NEXTERA ENERGY RESOURCES, LLC
700 UNIVERSE BOULEVARD
JUNO BEACH, FLORIDA 33408
PROJECT NAME: CHINOOK SOLAR PROJECT
PROJECT ADDRESS: FULLAM HILL ROAD
FITZWILLIAM, NEW HAMPSHIRE 03447

PROJECT DESCRIPTION
THE PROJECT CONSISTS OF SOLAR ENERGY SYSTEM DEVELOPMENT. THE WORK IS ANTICIPATED TO START IN SPRING OF 2020, AND BE COMPLETED BY WINTER OF 2021.

DISTURBED AREA
THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY +/-157 ACRES.

NAME OF RECEIVING WATERS
THE STORMWATER RUNOFF FROM THE SITE WILL BE DISCHARGED VIA OVERLAND FLOW TO SCOTT BROOK OR SIP POND AND MILLER RIVER.

CONSTRUCTION SEQUENCE OF MAJOR ACTIVITIES:

1. CONSTRUCT TEMPORARY SEDIMENT AND EROSION CONTROL FACILITIES. REFER TO DETAILED PROJECT PHASING PLAN PREPARED BY TIGHE & BOND, INC. FOR ADDITIONAL DETAILS.
2. EROSION AND SEDIMENT MEASURES SHALL BE INSTALLED PRIOR TO ANY TREE CLEARING OR EARTH MOVING OPERATIONS THAT WILL INFLUENCE STORMWATER RUNOFF.
3. CUT AND CLEAR TREES.
4. CLEAR AND DISPOSE OF DEBRIS. STUMP GRINDINGS MAY BE USED FOR EROSION CONTROL BERMS IN COMBINATION WITH SILT FENCE. THE USE OF THESE TYPES OF BERMS IS PREFERRED TO ENHANCE THE EROSION CONTROL BARRIERS ADJACENT TO WETLANDS.
5. CONSTRUCT TEMPORARY CULVERTS AND DIVERSION CHANNELS AS REQUIRED.
6. GRADE AND GRAVEL ROADWAYS - ALL ROADS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
7. CONSTRUCT SOLAR ARRAY, FENCING, AND EQUIPMENT PADS.
8. BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
9. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, PERIMETER EROSION CONTROL MEASURES, SEDIMENT TRAPS, ETC., MULCH AND SEED AS REQUIRED.
10. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES.
11. COMPLETE PERMANENT SEEDING.
12. REMOVE TRAPPED SEDIMENTS FROM EROSION CONTROL BARRIERS AS APPROPRIATE AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES.

SPECIAL CONSTRUCTION NOTES:

1. THE CONSTRUCTION SEQUENCE SHALL LIMIT THE DURATION AND AREA OF DISTURBANCE.
2. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF NHDES REGULATIONS

EROSION CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES AND PRACTICES SHALL CONFORM TO THE "NH DES STORMWATER MANUAL VOLUME 2 AND NHDES SOLAR GUIDANCE."
2. PRIOR TO ANY WORK OR SOIL DISTURBANCE, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EROSION CONTROL MEASURES.
3. CONTRACTOR SHALL INSTALL TEMPORARY EROSION CONTROL BARRIERS, INCLUDING SILT FENCES, MULCH BERMS, AND SILT SOCKS AS SHOWN IN THESE DRAWINGS AS THE FIRST ORDER OF WORK.
4. PERIMETER CONTROLS INCLUDING SILT FENCES, MULCH BERM, AND/OR SILT SOCKS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL ALL AREAS HAVE BEEN STABILIZED.
5. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
6. ALL DISTURBED AREAS NOT OTHERWISE BEING TREATED SHALL RECEIVE 4" LOAM, SEED AND FERTILIZER.
7. INSPECT ALL INLET PROTECTION AND PERIMETER CONTROL WEEKLY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
8. CONSTRUCT EROSION CONTROL BLANKETS ON ALL SLOPES STEEPER THAN 3:1.

STABILIZATION:

1. AN AREA SHALL BE CONSIDERED STABLE WHEN ONE OF THE FOLLOWING HAS OCCURRED:
 - A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN GRAVEL ROAD AREAS;
 - B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED;
 - D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
2. WINTER STABILIZATION PRACTICES:
 - A. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE, THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS;
 - B. ALL DITCHES DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
 - C. AFTER NOVEMBER 15, INCOMPLETE ROAD SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT;
3. STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES, AND DISTURBED AREAS, WHERE CONSTRUCTION ACTIVITY SHALL NOT OCCUR FOR MORE THAN TWENTY-ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. STABILIZATION MEASURES TO BE USED INCLUDE:
 - A. TEMPORARY SEEDING;
 - B. MULCHING.
4. WHEN CONSTRUCTION ACTIVITY PERMANENTLY OR TEMPORARILY CEASES WITHIN 100 FEET OF NEARBY SURFACE WATERS OR DELINEATED WETLANDS, THE AREA SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OR PRIOR TO A RAIN EVENT. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN THESE AREAS, SILT FENCES, MULCH BERMS, HAY BALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.
5. DURING CONSTRUCTION, RUNOFF SHALL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. WINTER RUNOFF FROM THE SITE SHALL BE FILTERED THROUGH SILT FENCES, MULCH BERMS, OR SILT SOCKS.
6. THE SITE SHALL BE STABILIZED FOR THE WINTER BY NOVEMBER 15.

DUST CONTROL:

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD.
2. DUST CONTROL METHODS SHALL INCLUDE, BUT BE NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING.
3. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ADJUTING AREAS.

STOCKPILES:

1. LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CATCH BASINS, SWALES, CULVERTS, DELINEATED WETLANDS, AND VERNAL POOLS.
2. ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY EROSION CONTROL MEASURES PRIOR TO THE ONSET OF PRECIPITATION.
3. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
4. PROTECT ALL STOCKPILES FROM STORMWATER RUN-OFF USING TEMPORARY EROSION CONTROL MEASURES SUCH AS BERMS, SILT SOCK, OR OTHER APPROVED PRACTICE TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.

OFF SITE VEHICLE TRACKING:

1. THE CONTRACTOR SHALL CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO ANY EXCAVATION ACTIVITIES.

CONCRETE WASHOUT AREA:

1. THE CONCRETE DELIVERY TRUCKS SHALL, WHENEVER POSSIBLE, USE WASHOUT FACILITIES AT THEIR OWN PLANT OR DISPATCH FACILITY;
2. IF IT IS NECESSARY, SITE CONTRACTOR SHALL DESIGNATE SPECIFIC WASHOUT AREAS AND DESIGN FACILITIES TO HANDLE ANTICIPATED WASHOUT WATER;
3. CONTRACTOR SHALL LOCATE WASHOUT AREAS AT LEAST 150 FEET AWAY FROM STORM DRAINS, SWALES AND SURFACE WATERS OR DELINEATED WETLANDS & VERNAL POOLS;
4. INSPECT WASHOUT FACILITIES DAILY TO DETECT LEAKS OR TEARS AND TO IDENTIFY WHEN MATERIALS NEED TO BE REMOVED.

EROSION CONTROL OBSERVATIONS AND MAINTENANCE PRACTICES

THE CONTRACTOR SHALL PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR SHALL BE FAMILIAR WITH THE SWPPP AND KEEP AN UPDATED COPY OF THE SWPPP ONSITE AT ALL TIMES.

THE FOLLOWING REPRESENTS THE GENERAL OBSERVATION AND REPORTING PRACTICES THAT SHALL BE FOLLOWED AS PART OF THIS PROJECT:

1. OBSERVATIONS OF THE PROJECT FOR COMPLIANCE WITH THE SWPPP SHALL BE MADE BY THE CONTRACTOR AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF A STORM 0.25 INCHES OR GREATER.
2. AN OBSERVATION REPORT SHALL BE MADE AFTER EACH OBSERVATION AND DISTRIBUTED TO THE ENGINEER, THE OWNER, AND THE CONTRACTOR;
3. A REPRESENTATIVE OF THE SITE CONTRACTOR, SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES;
4. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF REPORT.

VEGETATION

- A. TEMPORARY GRASS COVER
 1. SEEDBED PREPARATION:
 1. APPLY FERTILIZER AT THE RATE OF 600 POUNDS PER ACRE OF 10-10-10. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF THREE (3) TONS PER ACRE.
 2. SEEDING
 1. UTILIZE ANNUAL RYE GRASS AT A RATE OF 40 LBS/ACRE.
 2. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF TWO (2) INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
 3. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). HYDROSEEDINGS, WHICH INCLUDE MULCH, MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING.
 3. MAINTENANCE
 1. TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED. AT A MINIMUM, 95% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER BARRIERS, CHECK DAMS, ETC.).
 4. VEGETATIVE PRACTICES
 1. FOR PERMANENT MEASURES AND PLANTINGS.
 1. LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF THREE (3) TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5.
 2. FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 800 POUNDS PER ACRE OF 10-20-20 FERTILIZER.
 3. SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4-1/2 POUNDS AND 5-1/2 POUNDS PER INCH OF WIDTH.
 4. SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH.
 5. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AS INDICATED ABOVE.
 6. THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.
 7. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED.
 8. A SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE APPLIED AT THE INDICATED RATE:

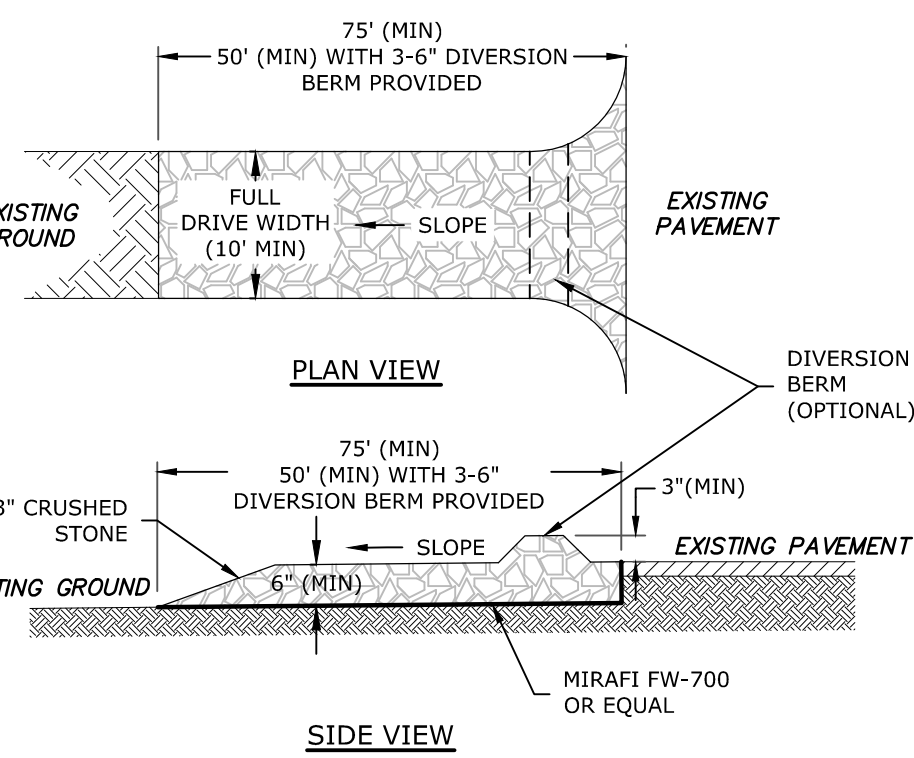
| | |
|---|-------------|
| NORTHEASTERN WILDFLOWER MIX* | 9 LBS/ACRE |
| SHEEP FESCUE | 25 LBS/ACRE |
| *NORTHEASTERN WILDFLOWER MIX BY ALLEN, STERLING & LOTHROP IN FALMOUTH, MAINE OR EQUAL | |
 9. IN NO CASE SHALL THE WEED CONTENT EXCEED ONE (1) PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS. SEEDING SHALL BE DONE NO LATER THAN SEPTEMBER 15. IN NO CASE SHALL SEEDING TAKE PLACE OVER SNOW.
 2. DORMANT SEEDING (SEPTEMBER 15 TO FIRST SNOWFALL)
 1. FOLLOW PERMANENT MEASURES SLOPE, LIME, FERTILIZER AND GRADING REQUIREMENTS. APPLY SEED MIXTURE AT TWICE THE INDICATED RATE. APPLY MULCH AS INDICATED FOR PERMANENT MEASURES.

- A. ALLOWABLE NON-STORMWATER DISCHARGES
 1. DISCHARGES FROM FIRE-FIGHTING ACTIVITIES
 2. FIRE HYDRANT FLUSHINGS
 3. WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED
 4. WATER USED TO CONTROL DUST
 5. POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHINGS
 6. ROUTINE EXTERNAL EQUIPMENT WASH DOWN- NO DETERGENTS
 7. UNCONTAMINATED AIR CONDITIONING/COMPRESSOR CONDENSATE
 8. UNCONTAMINATED GROUND WATER OR SPRING WATER
 9. FOUNDATION OR FOOTING DRAINS - NOT CONTAMINATED
 10. UNCONTAMINATED EXCAVATION DEWATERING
 11. LANDSCAPE IRRIGATION

SPILL PREVENTION

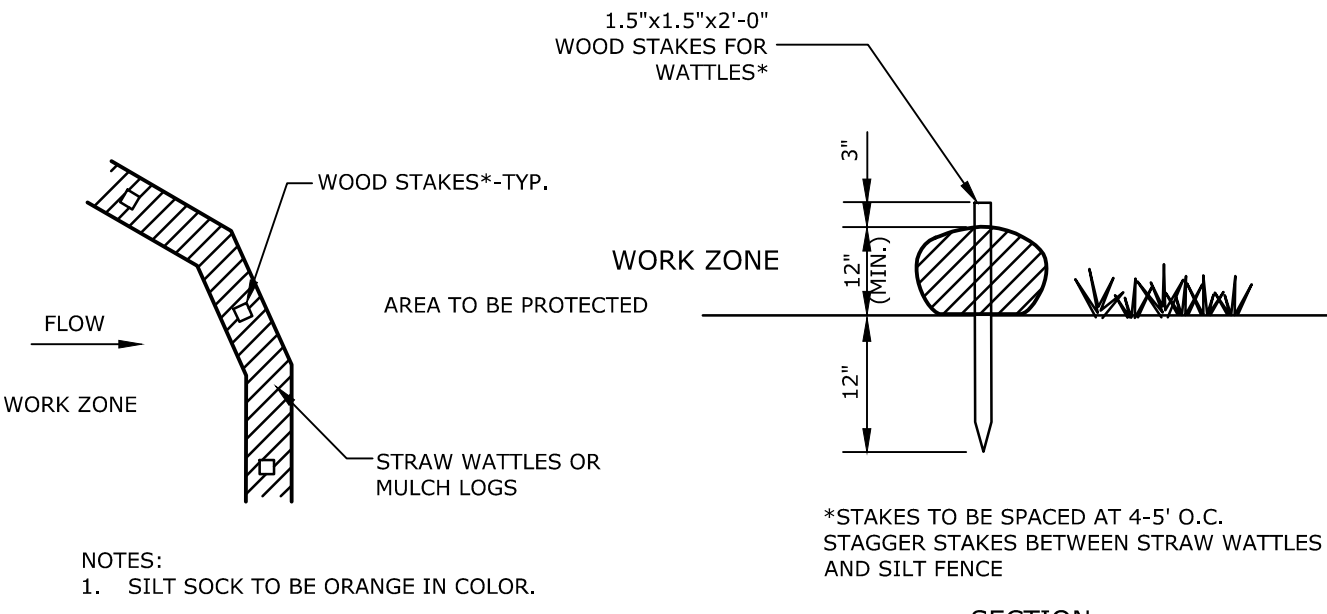
1. CONTRACTOR SHALL BE FAMILIAR WITH SPILL PREVENTION MEASURES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES. AT A MINIMUM, CONTRACTOR SHALL FOLLOW THE BEST MANAGEMENT SPILL PREVENTION PRACTICES OUTLINED BELOW.
2. THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
 - A. GOOD HOUSEKEEPING
 1. THE FOLLOWING GOOD HOUSEKEEPING PRACTICES SHALL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:
 1. ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB SHALL BE STORED ON SITE.
 2. ALL MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
 3. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
 4. THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
 5. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
 6. WHENEVER POSSIBLE ALL OF A PRODUCT SHALL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
 - B. HAZARDOUS PRODUCTS
 1. THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
 1. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
 2. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
 3. SURPLUS PRODUCT THAT MUST BE DISPOSED OF SHALL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
 - C. PRODUCT SPECIFICATION PRACTICES
 1. THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ON SITE:
 - a. PETROLEUM PRODUCTS
 1. ALL ON SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE.
 2. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
 2. FERTILIZERS
 1. FERTILIZERS USED SHALL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS.
 2. ONCE APPLIED FERTILIZER SHALL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER.
 3. STORAGE SHALL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
 3. PAINTS:
 - a. ALL CONTAINERS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE.
 - b. EXCESS PAINT SHALL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
 - D. SPILL CONTROL PRACTICES
 1. IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
 1. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
 2. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS SHALL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
 3. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
 4. THE SPILL AREA SHALL BE KEPT WELL VENTILATED AND PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
 5. SPILLS OF TOXIC OR HAZARDOUS MATERIAL SHALL BE REPORTED TO THE APPROPRIATE LOCAL, STATE OR FEDERAL AGENCIES AS REQUIRED.
 6. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.
 - E. VEHICLE FUELING AND MAINTENANCE PRACTICES:
 1. CONTRACTOR SHALL MAKE AN EFFORT TO PERFORM EQUIPMENT/VEHICLE FUELING AND MAINTENANCE AT AN OFF-SITE FACILITY.
 2. CONTRACTOR SHALL PROVIDE AN ON-SITE FUELING AND MAINTENANCE AREA THAT IS CLEAN AND DRY.
 3. IF POSSIBLE, THE CONSTRUCTION AREA SHOULD BE COVERED.
 4. CONTRACTOR SHALL KEEP A SPILL KIT AT THE FUELING AND MAINTENANCE AREA.
 5. CONTRACTOR SHALL VEHICLES SHALL BE INSPECTED REGULARLY FOR LEAKS AND DAMAGE.
 6. CONTRACTOR SHALL USE DRIP PANS, DRIP CLOTHS, OR ABSORBENT PADS WHEN REPLACING SPENT FLUID.

1. EROSION CONTROL BLANKET SHALL BE INSTALLED VERTICALLY DOWNSLOPE.
2. STAKES/STAPLES SHALL BE PLACED NO MORE THAN 3 FT. APART VERTICALLY, AND 1 FT. APART HORIZONTALLY.
3. SLOPE SURFACE SHALL BE FREE OF STICKS, ROCKS, AND OTHER OBSTRUCTIONS.
4. BLANKETS SHALL BE ROLLED OUT LOOSELY WITH 3-4 STAPLES PER SQUARE YARD TO MAINTAIN DIRECT SOIL CONTACT. DO NOT STRETCH THE BLANKETS.



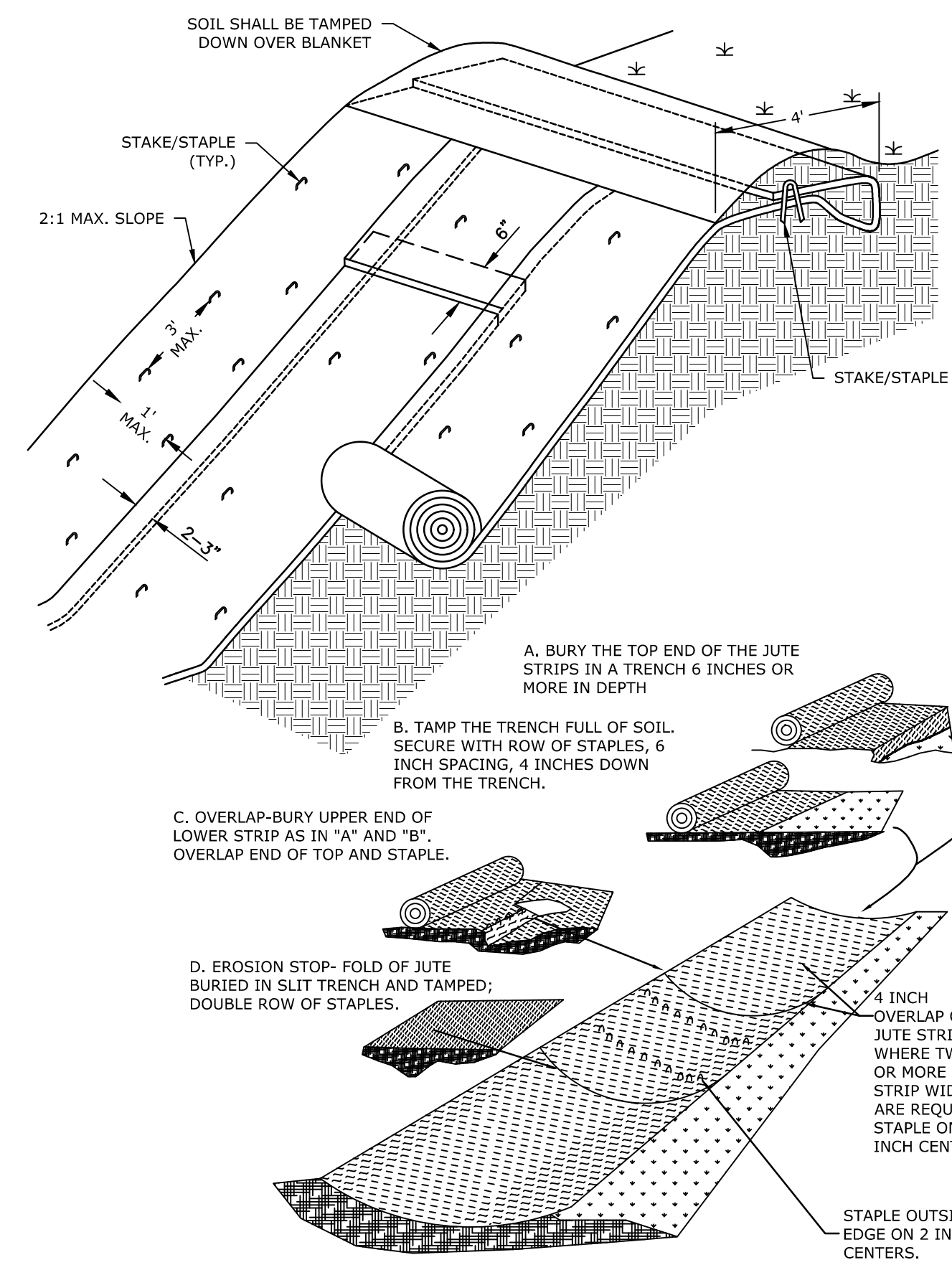
- NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT FROM THE SITE. WHEN WASHING IS REQUIRED, IT SHALL BE DONE SO RUNOFF DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS

STABILIZED CONSTRUCTION EXIT
NO SCALE



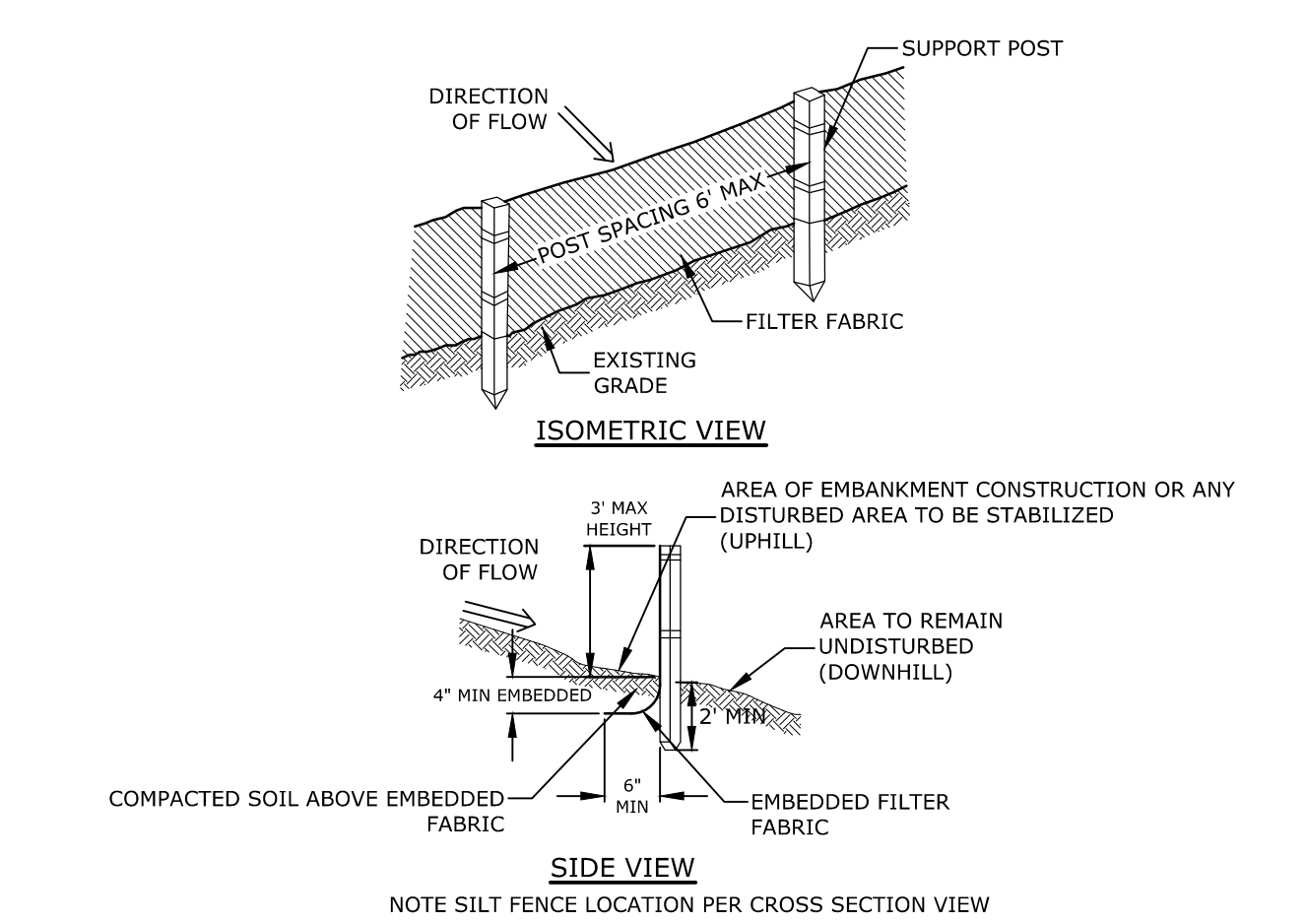
- NOTES:
1. SILT SOCK TO BE ORANGE IN COLOR.

SILT SOCK
NO SCALE



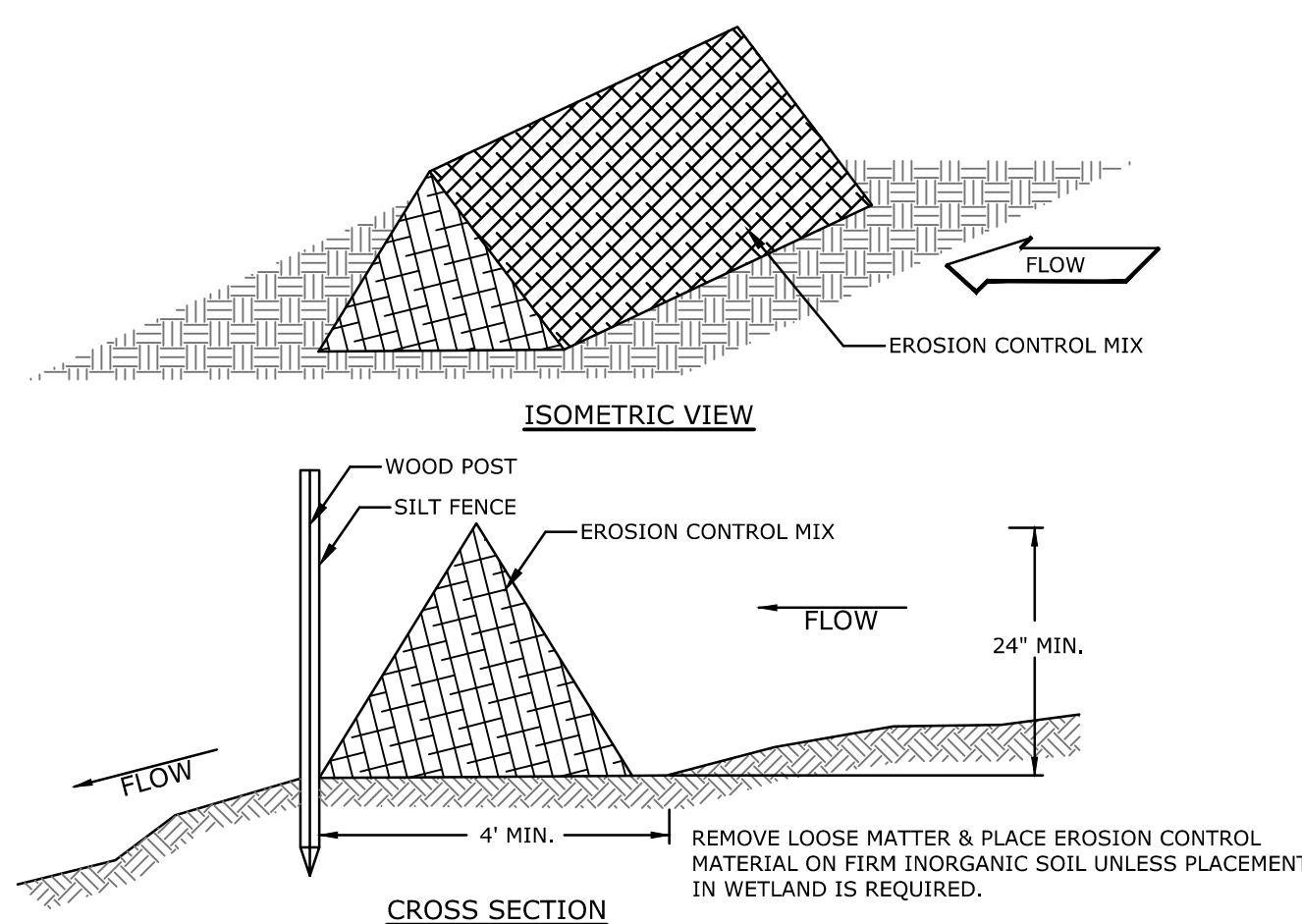
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 3. SLOPE SURFACE SHALL BE FREE OF STICKS, ROCKS, AND OTHER OBSTRUCTIONS.
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TYPICAL EROSION CONTROL BLANKET
NO SCALE



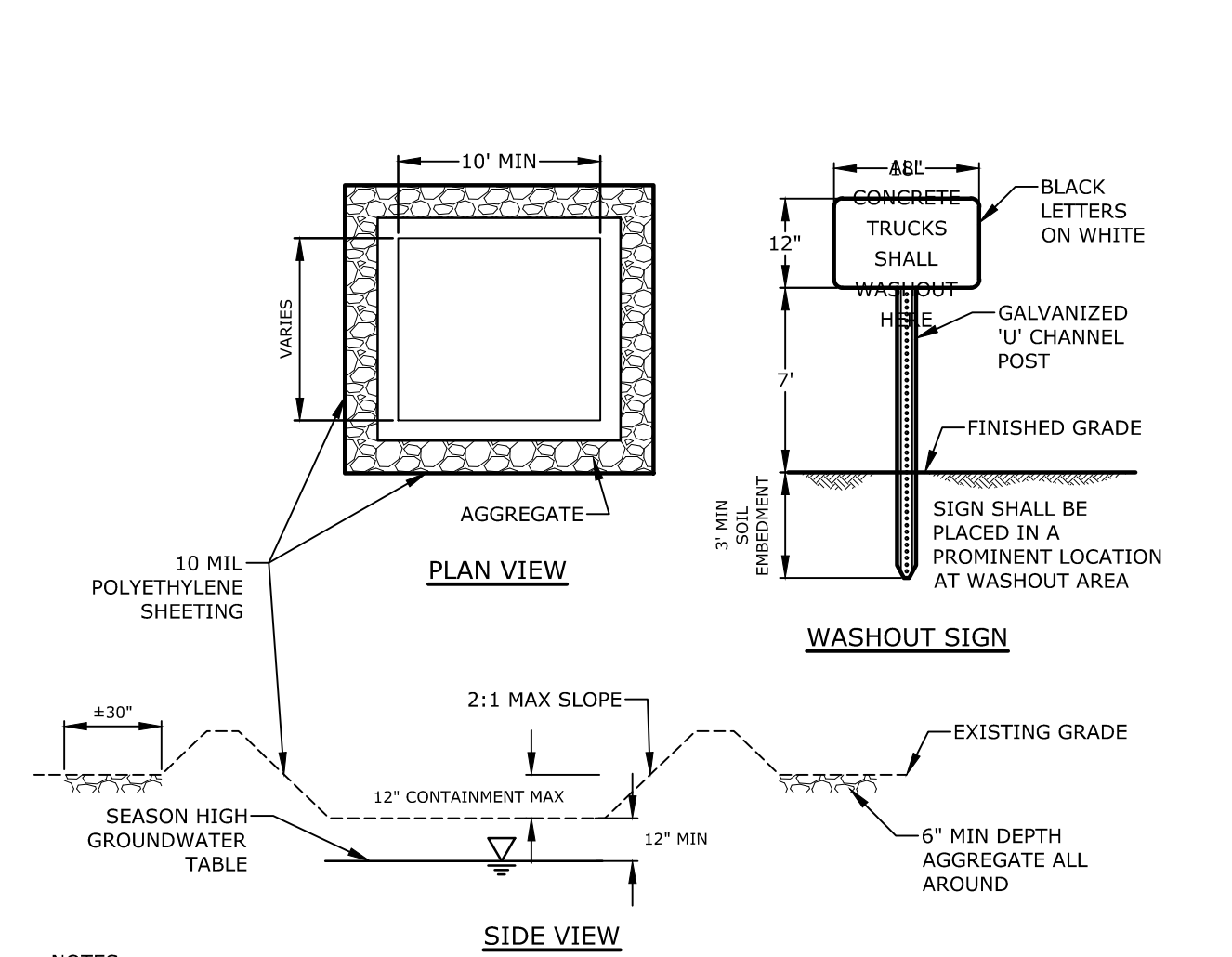
- NOTES:
1. SILT FENCE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
 2. ADJOINING SECTIONS OF THE FENCE SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED TO A SUPPORT POST.
 3. SILT FENCE TO BE ORANGE IN COLOR.

SILT FENCE
NO SCALE



- NOTES:
1. SEE SILT FENCE DETAIL FOR INSTALLATION DETAIL.
 2. EROSION CONTROL MIX MATERIAL TO BE FREE OF INVASIVE SPECIES SEED OR MATTER. DO NOT PLACE EROSION CONTROL MIX BERMS IN WETLANDS BEYOND THE LIMIT OF WORK. MIX MAY CONSIST OF STUMP GRINDINGS AND/OR MULCH.
 3. EROSION CONTROL MIX MATERIAL MAY BE COVERED WITH CRUSHED STONE TO IMPROVE STABILITY.
 4. SILT FENCE AND EROSION CONTROL BERM COMBINATION MAY BE SUBSTITUTED FOR SILT SOCK.

EROSION CONTROL BERM
NO SCALE



- NOTES:
1. CONTAINMENT SHALL BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
 2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
 3. WASHOUT SHALL BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
 4. WASHOUT AREAS SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS
 5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
 6. AT LEAST WEEKLY, REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

CONCRETE WASHOUT AREA
NO SCALE

Tighe&Bond
Engineers | Environmental Specialists

NEXTERA
ENERGY



PERMIT DRAWINGS
NOT FOR CONSTRUCTION

Chinook Solar
Project

Chinook Solar,
LLC

Fitzwilliam, NH

VERIFY SCALE
BAR IS 1 INCH ON
ORIGINAL DRAWING
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IF NOT ONE INCH ON
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SCALES ACCORDINGLY

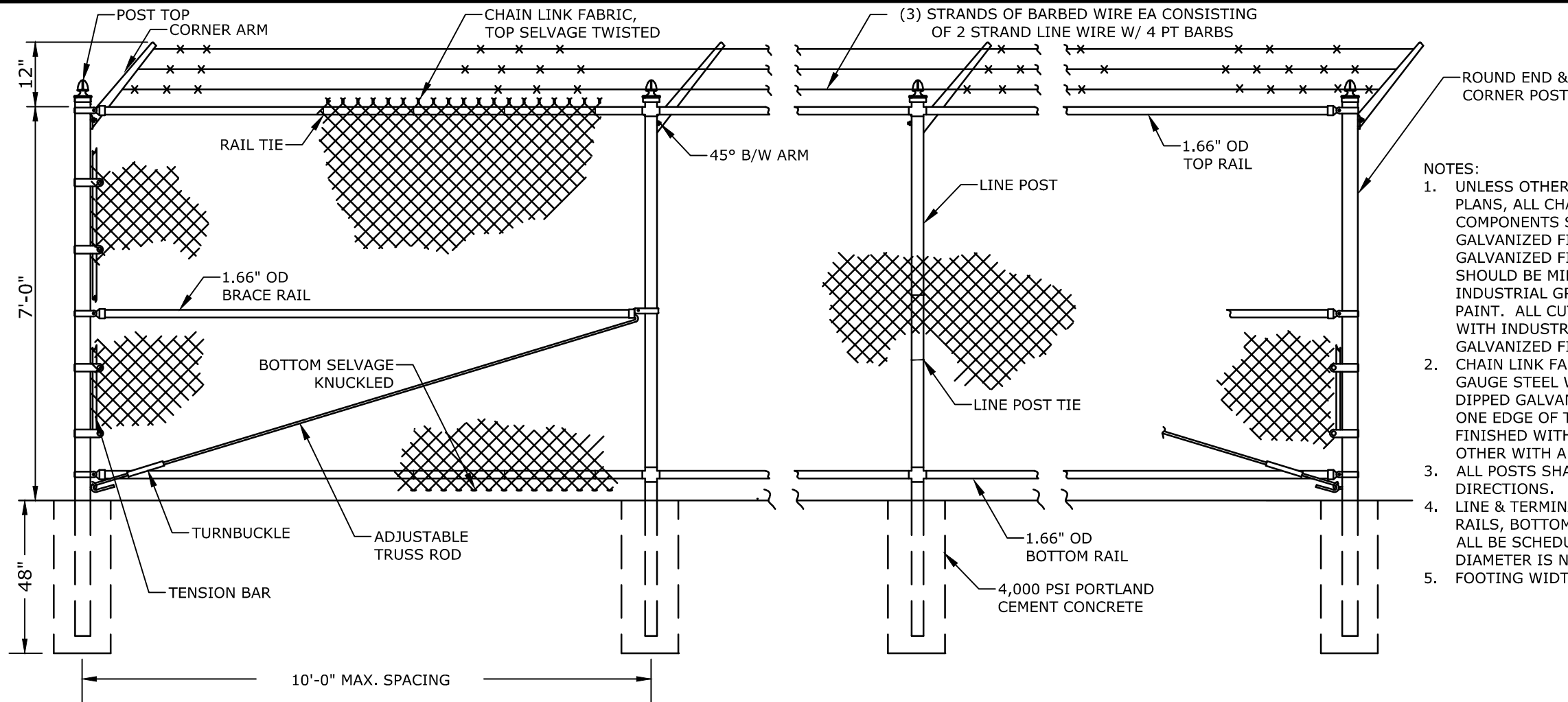
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| DRAWN BY: | EGD/NSC | |
| CHECKED: | JMP | |
| APPROVED: | BLM | |

EROSION CONTROL
DETAILS & NOTES

SCALE: AS SHOWN

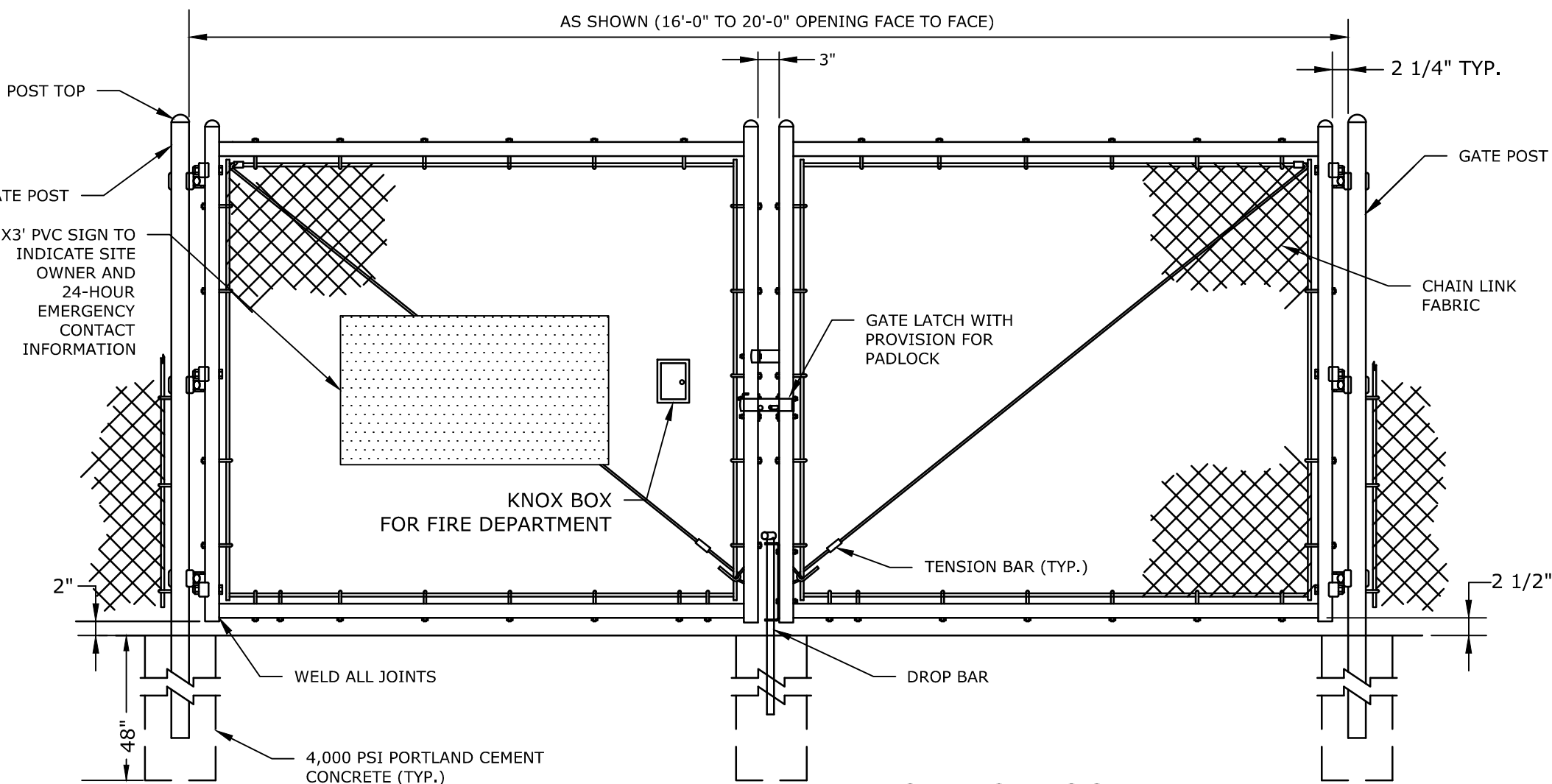
C.501

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Figure AutoCAD: Chinook Solar Site 11 Sheet 0758-017.DTL.dwg



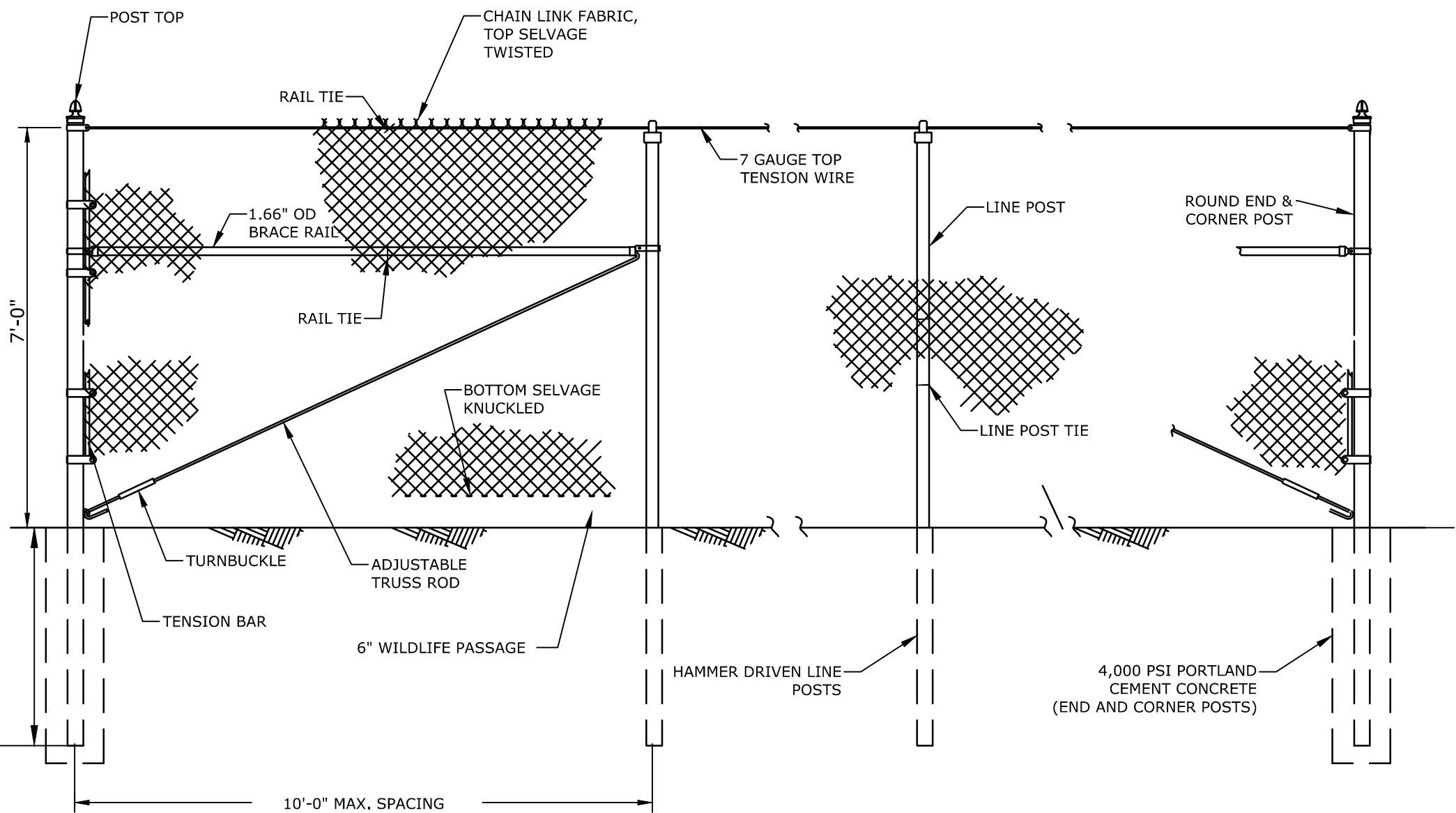
SUBSTATION CHAIN LINK FENCE
NO SCALE

- NOTES:
1. UNLESS OTHERWISE NOTED ON THE SITE PLANS, ALL CHAIN LINK FENCING COMPONENTS SHALL HAVE A HOT DIPPED GALVANIZED FINISH. ANY CHIPS IN THE GALVANIZED FINISH DUE SITE INSTALLATION SHOULD BE MINIMIZED AND REPAIRED WITH INDUSTRIAL GRADE PAINT. ALL CUT ENDS ARE TO BE FINISHED WITH INDUSTRIAL GRADE PAINT ON GALVANIZED FINISH.
 2. CHAIN LINK FABRIC SHALL BE MADE OF 9 GAUGE STEEL WIRE, 2" MESH SIZE, AND HOT DIPPED GALVANIZED PRIOR TO WEAVING. ONE EDGE OF THE FABRIC SHALL BE FINISHED WITH A SELVAGE TWIST AND THE OTHER WITH A SELVAGE KNUCKLE.
 3. ALL POSTS SHALL BE PLUMB IN ALL DIRECTIONS.
 4. LINE & TERMINAL POSTS, BRACE TUBES, TOP RAILS, BOTTOM RAILS, & GATE POSTS SHALL ALL BE SCHEDULE 40 PIPE. REFERENCED DIAMETER IS NOMINAL.
 5. FOOTING WIDTH TO BE (4)X POST WIDTH.



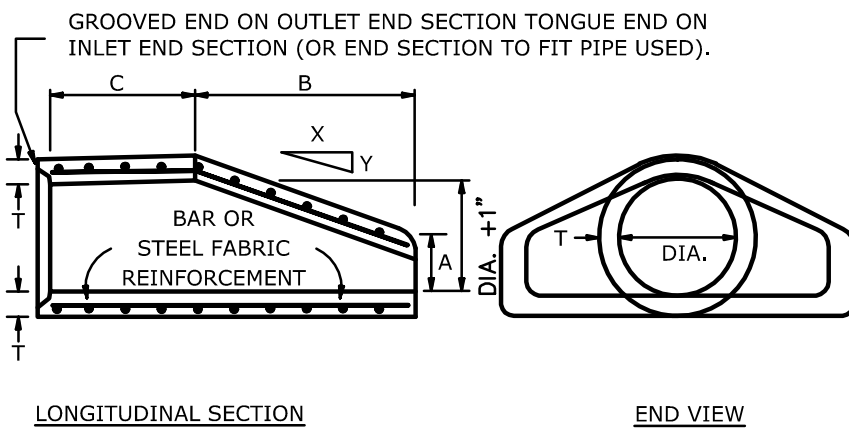
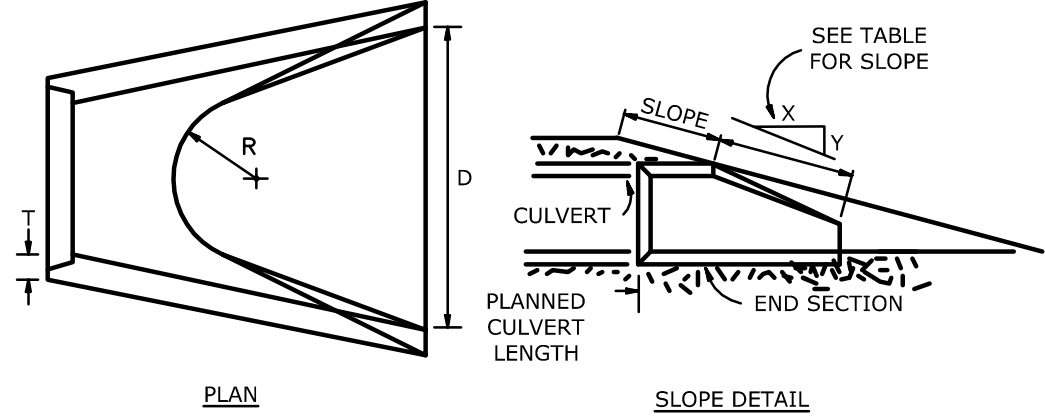
DOUBLE SWING GATE
NO SCALE

- NOTES:
1. UNLESS OTHERWISE NOTED ON THE SITE PLANS, ALL CHAIN LINK FENCING COMPONENTS SHALL HAVE A HOT DIPPED GALVANIZED FINISH. ANY CHIPS IN THE GALVANIZED FINISH DUE SITE INSTALLATION SHOULD BE MINIMIZED AND REPAIRED WITH INDUSTRIAL GRADE PAINT ON GALVANIZED FINISH.
 2. CHAIN LINK FABRIC SHALL BE MADE OF 9 GAUGE STEEL WIRE, 2" MESH SIZE, AND HOT DIPPED GALVANIZED PRIOR TO WEAVING. ONE EDGE OF THE FABRIC SHALL BE FINISHED WITH A SELVAGE TWIST AND THE OTHER WITH A SELVAGE KNUCKLE.
 3. ALL POSTS SHALL BE PLUMB IN ALL DIRECTIONS.
 4. LINE & TERMINAL POSTS, BRACE TUBES, TOP RAILS, BOTTOM RAILS, & GATE POSTS SHALL ALL BE SCHEDULE 40 PIPE. REFERENCED DIAMETER IS NOMINAL.
 5. FOOTING WIDTH TO BE (4)X POST WIDTH.



CHAIN LINK FENCE
NO SCALE

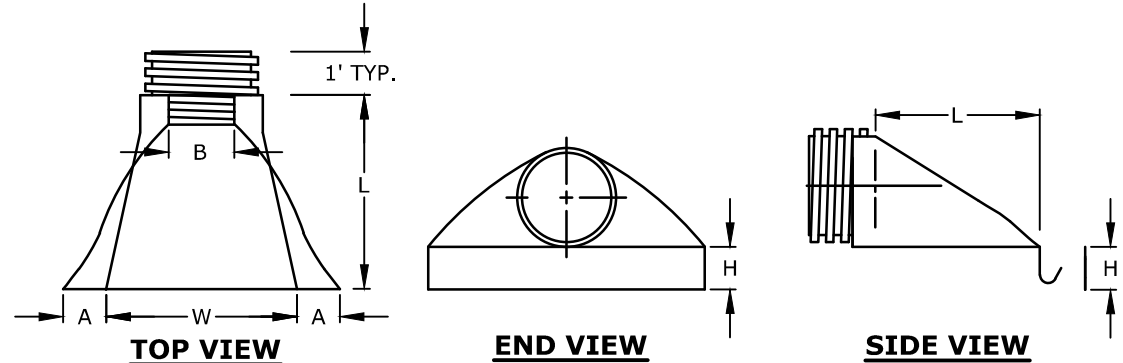
- NOTES:
1. UNLESS OTHERWISE NOTED ON THE SITE PLANS, ALL CHAIN LINK FENCING COMPONENTS SHALL HAVE A HOT DIPPED GALVANIZED FINISH. ANY CHIPS IN THE GALVANIZED FINISH DUE SITE INSTALLATION SHOULD BE MINIMIZED AND REPAIRED WITH INDUSTRIAL GRADE PAINT ON GALVANIZED FINISH.
 2. CHAIN LINK FABRIC SHALL BE MADE OF 9 GAUGE STEEL WIRE, 2" MESH SIZE, AND HOT DIPPED GALVANIZED PRIOR TO WEAVING. ONE EDGE OF THE FABRIC SHALL BE FINISHED WITH A SELVAGE TWIST AND THE OTHER WITH A SELVAGE KNUCKLE.
 3. ALL POSTS SHALL BE PLUMB IN ALL DIRECTIONS.
 4. LINE POSTS MAY BE HAMMER DRIVEN. IF HAMMER DRIVEN, POST END MUST BE CUT TO FINAL HEIGHT AFTER DRIVING IS COMPLETE. CUT END IS TO BE CUT SQUARE AND FREE OF BENDS, MUSHROOMING, AND BURRS. CUT END TO BE TREATED AS PER NOTE #1.
 5. LINE & TERMINAL POSTS, BRACE TUBES, TOP RAILS, & GATE POSTS SHALL ALL BE SCHEDULE 40 PIPE. REFERENCED DIAMETER IS NOMINAL.
 6. FOOTING WIDTH TO BE (4)X POST WIDTH.



| PIPE DIA. | APPROX. SLOPE X to Y | A | B | C | D | R | T |
|-----------|----------------------|-----|-----|-----|-----|-----|----|
| 12" | 3 TO 1 | 4" | 24" | 48" | 24" | 9" | 2" |
| 15" | 3 TO 1 | 6" | 27" | 46" | 30" | 11" | 2" |
| 18" | 3 TO 1 | 9" | 27" | 46" | 36" | 12" | 2" |
| 24" | 3 TO 1 | 9" | 43" | 30" | 48" | 14" | 3" |
| 30" | 3 TO 1 | 12" | 54" | 19" | 60" | 15" | 3" |
| 36" | 3 TO 1 | 15" | 63" | 33" | 72" | 20" | 4" |
| 42" | 3 TO 1 | 21" | 63" | 33" | 78" | 22" | 4" |
| 48" | 3 TO 1 | 24" | 72" | 24" | 84" | 22" | 5" |

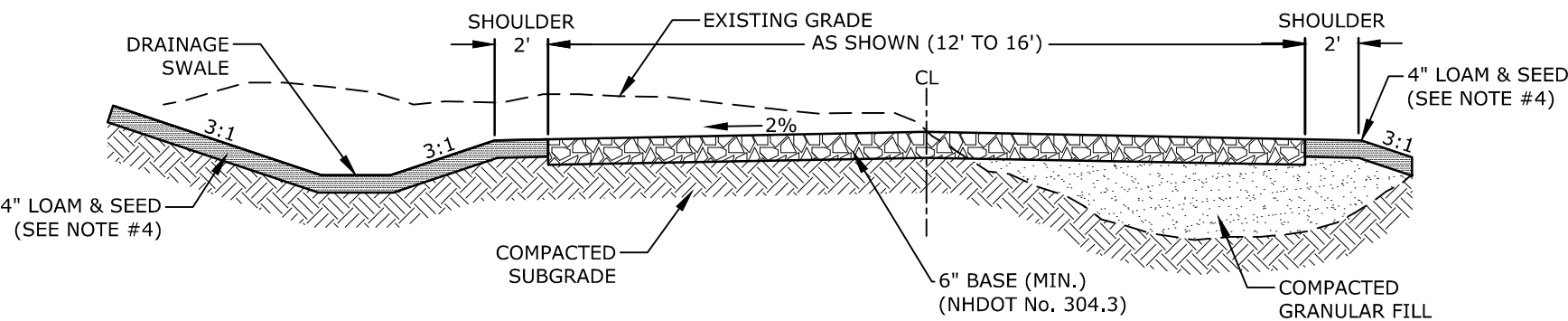
- NOTES:
1. DESIGN OF END SECTION SHALL CONFORM TO STANDARD REINFORCED CONCRETE PIPE.

REINFORCED CONCRETE END SECTION
NO SCALE



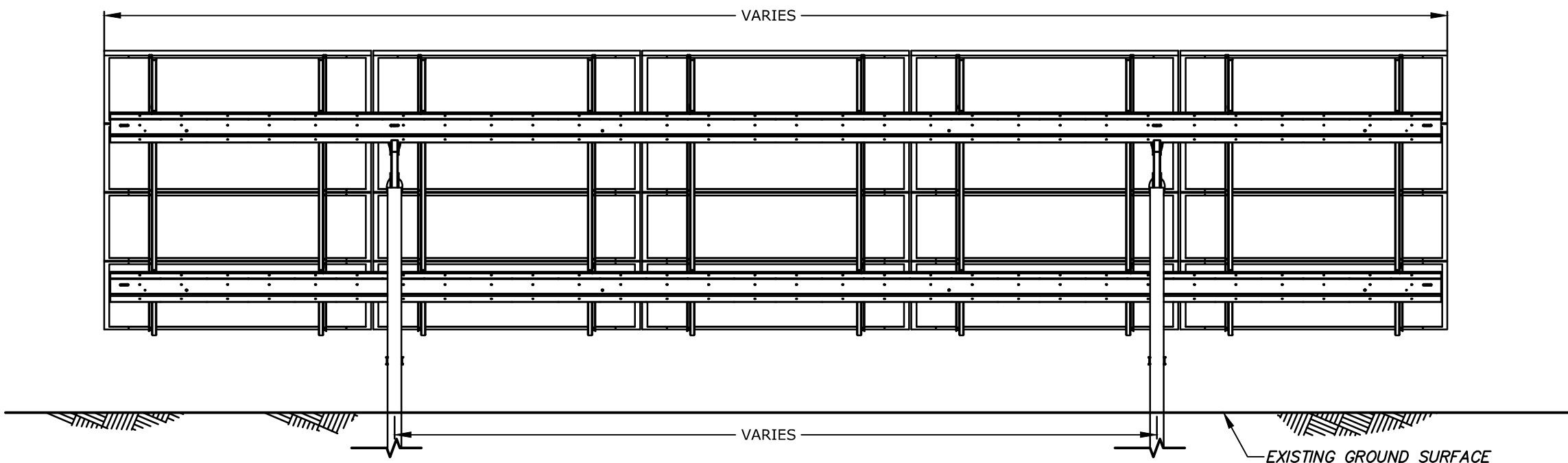
| PIPE Ø | DIMENSION (INCHES) | | | | | |
|-----------|--------------------|-------|-------|-------|---------|-------|
| | PART NO. | A(1±) | B MAX | H(1±) | L(1/2±) | W(2±) |
| 12" & 15" | 1210 NP | 6.5 | 10 | 6.5 | 25 | 29 |
| 18" | 1810 NP | 7.5 | 15 | 6.5 | 32 | 35 |
| 24" | 2410 NP | 7.5 | 18 | 6.5 | 36 | 45 |
| 36" | 3610 NP | 10.5 | NA | 7.0 | 53 | 68 |

HDPE END SECTION DIMENSIONS
NO SCALE



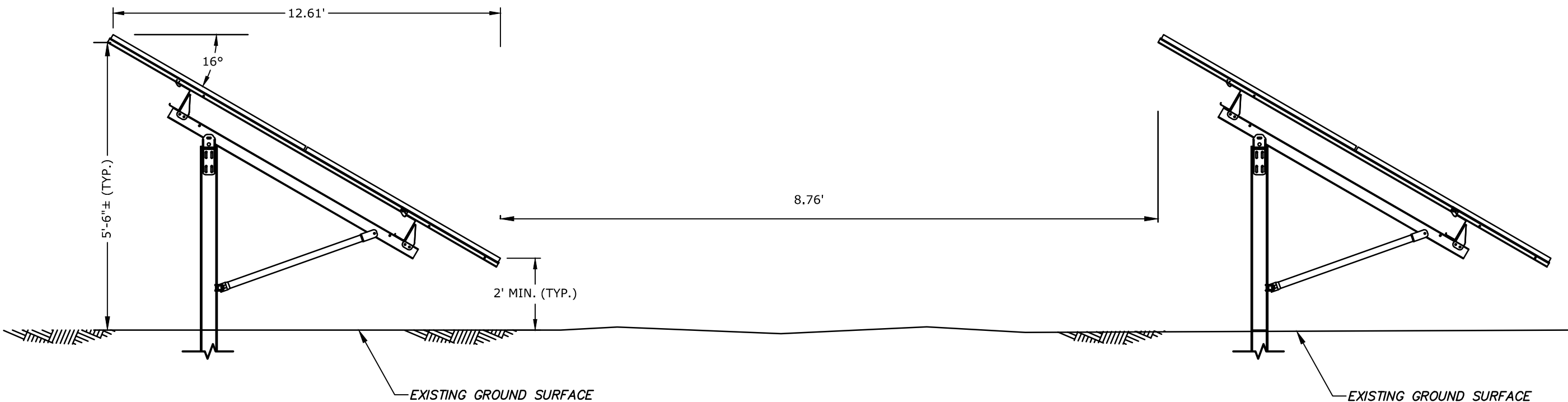
- NOTES:
1. SEE SITE PLAN FOR ROAD WIDTH AND LOCATION.
 2. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR ROAD SLOPES AND CROSS-SLOPES.
 3. ADDITIONAL SUBBASE MATERIAL AND GEOTEXTILE MAY BE REQUIRED AS NEEDED DEPENDING ON SITE CONDITIONS. ROADWAY TO BE GRADED/AMENDED THROUGHOUT CONSTRUCTION TO ENSURE ROADWAY REMAINS PASSABLE.
 4. ON SITE TOPSOIL MAY BE SUBSTITUTED FOR LOAM PENDING ENGINEERS APPROVAL.

GRAVEL ROAD CROSS SECTION
NO SCALE



- NOTES:
1. THIS DETAIL IS FOR SCHEMATIC PURPOSES ONLY.
 2. FINAL PANEL LAYOUT, RACKING DESIGN, AND PILE DESIGN TO BE DETERMINED PRIOR TO CONSTRUCTION.
 3. SOLAR RACKING AND PILE DESIGN PER MANUFACTURERS PLANS.

SOLAR RACKING SYSTEM (TYP.)
NO SCALE

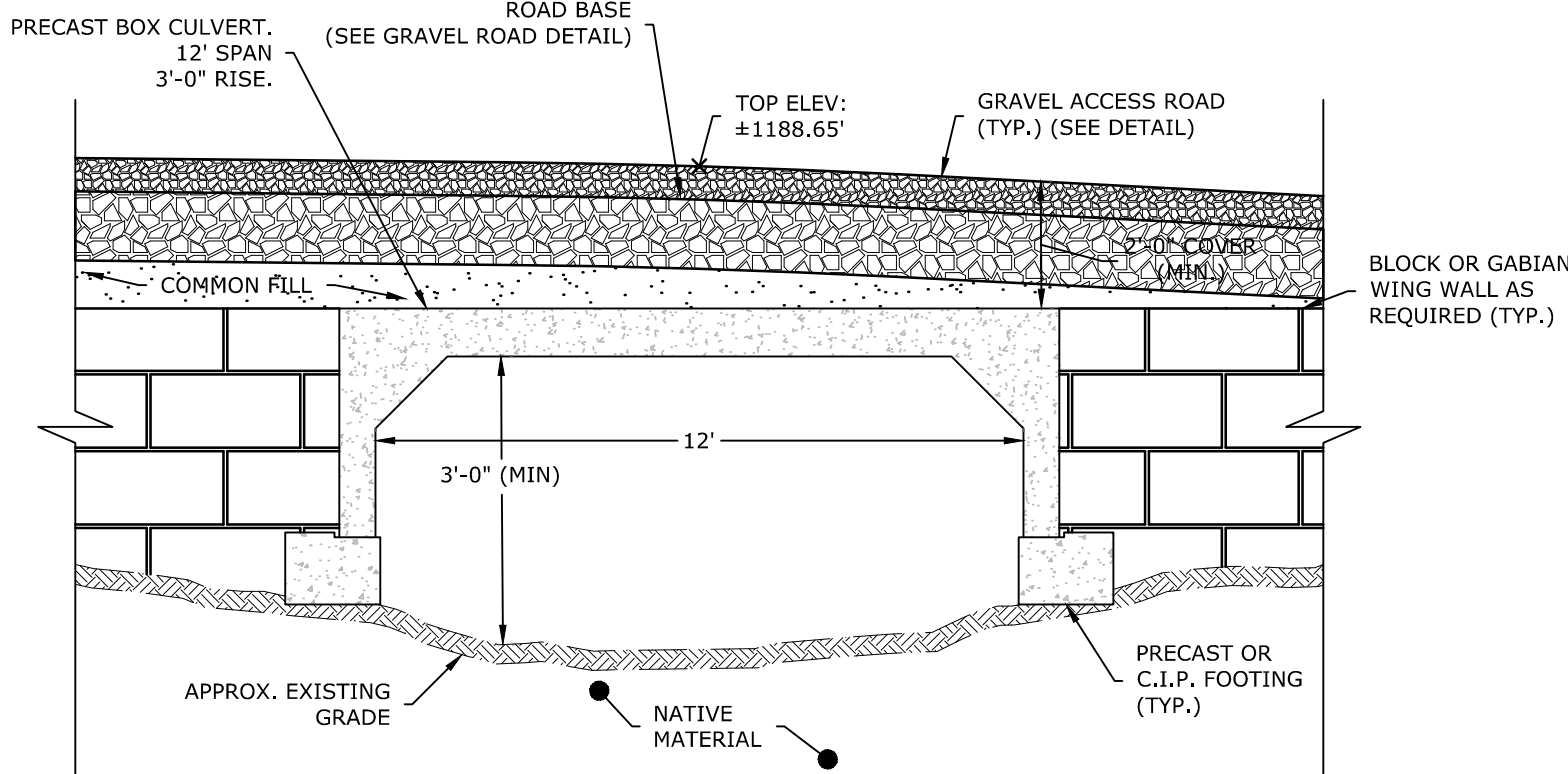


VERIFY SCALE

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| CHECKED: | JMP | |
| APPROVED: | BLM | |

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CULVERT NOTES

- THE DESIGN OF THE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" 17TH EDITION, ADOPTED BY THE AMERICAN ASSOCIATION OF STATE TRANSPORTATION OFFICIALS (AASHTO), 2002, THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AS SPECIFIED BY THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT), AND THE MANUFACTURER'S SPECIFICATIONS.
- THE STRUCTURE SHALL BE DESIGNED AND CONSTRUCTED TO WITHSTAND AASHTO HS-20-44 LOADING.
- THE DESIGN OF THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. THE DESIGN AND SUBMITTAL SHALL INCLUDE THE FOLLOWING REQUIREMENTS:
 - THE DESIGN SHALL INCLUDE DETAILED COMPUTATIONS AND ALL DETAILS, DIMENSIONS, QUANTITIES AND CROSS SECTIONS NECESSARY TO CONSTRUCT THE STRUCTURE.
 - THE DESIGN SHALL CONFORM TO ALL OF THE REQUIREMENTS NOTED ABOVE. IN THE EVENT THAT TWO OR MORE SPECIFICATIONS APPLY TO THE WORK, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.
 - THE DESIGN DRAWINGS SHALL BE ON 22"x34" PLANS WITH THE PROJECT NAME, NUMBER AND DESIGN FIRM NOTED.
 - THE DESIGN SHALL INCLUDE A SCOUR ANALYSIS AS PART OF THE FOUNDATION DESIGN.
 - ALL PLANS AND COMPUTATIONS SHALL BE PREPARED, STAMPED AND SIGNED BY A NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER.
- THE DESIGN ENGINEER FOR THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL PERFORM SUFFICIENT INSPECTIONS DURING CONSTRUCTION TO CERTIFY THAT THE INSTALLATION IS IN ACCORDANCE WITH THE DESIGN DRAWINGS AND SPECIFICATIONS.

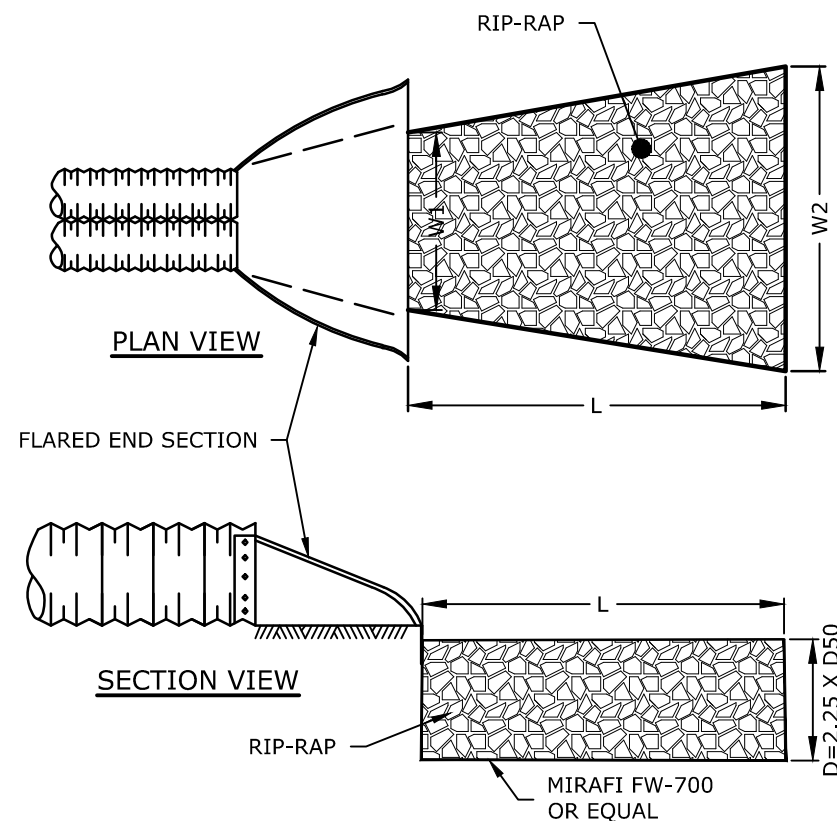
TEMPORARY WATER CONTROL AND DEWATERING NOTES

- THE CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN ADEQUATE PUMPING, DIVERSION AND DRAINAGE FACILITIES TO MAINTAIN THE EXCAVATED AREA SUFFICIENTLY DRY FROM GROUNDWATER AND/OR SURFACE RUNOFF SO AS NOT TO ADVERSELY AFFECT CONSTRUCTION PROCEDURES NOR CAUSE EXCESSIVE DISTURBANCE OF UNDERLYING OR SURROUNDING NATURAL GROUND.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED FOR DEWATERING ACTIVITIES AND TAKE ACTIONS NECESSARY TO ENSURE THAT DEWATERING DISCHARGES COMPLY WITH PERMITS APPLICABLE TO THE PROJECT. THE CONTRACTOR SHALL DISPOSE OF WATER FROM THE TRENCHES AND EXCAVATIONS IN SUCH A MANNER AS TO AVOID PUBLIC NUISANCE, INJURY TO PUBLIC HEALTH OR THE ENVIRONMENT, DAMAGE TO PUBLIC OR PRIVATE PROPERTY, OR DAMAGE TO THE WORK COMPLETED OR IN PROGRESS.
- THE CONTRACTOR SHALL BRACE OR OTHERWISE PROTECT PIPELINES AND STRUCTURES NOT STABLE AGAINST UPLIFT DURING CONSTRUCTION.
- THE CONTRACTOR SHALL NOT EXCAVATE UNTIL THE DEWATERING SYSTEM IS OPERATIONAL AND THE EXCAVATION MAY PROCEED WITHOUT DISTURBANCE TO THE FINAL SUBGRADE OR SURROUNDING AREAS.
- THE CONTRACTOR SHALL CONTINUE DEWATERING UNINTERRUPTED UNTIL THE STRUCTURES, PIPES AND APPURTENANCES TO BE INSTALLED HAVE BEEN COMPLETED SUCH THAT THEY WILL NOT FLOAT OR BE OTHERWISE DAMAGED BY AN INCREASE IN GROUNDWATER ELEVATION.
- DEWATERING DISCHARGE:
 - INSTALL SAND AND GRAVEL, OR CRUSHED STONE, FILTERS IN CONJUNCTION WITH SUMPS, WELL POINTS, AND/OR DEEPWELLS TO PREVENT THE MIGRATION OF FINES FROM THE EXISTING SOIL DURING THE DEWATERING OPERATION.
 - WATER PUMPED FROM EXCAVATIONS MUST BE PASSED THROUGH A SILT FILTER BAG OR OTHER SUCH BEST MANAGEMENT PRACTICE (BMP) FEATURE PRIOR TO BEING DISCHARGE BACK TO A SURFACE WATER BODY.
 - DO NOT DISCHARGE WATER INTO ANY SANITARY SEWER SYSTEM.
 - ALL DEWATERING DISCHARGES SHALL BE OUTSIDE OF ANY WETLAND SYSTEMS.
 - FOLLOWING TREATMENT IN AN APPROPRIATE BMP, WATER PUMPED FROM EXCAVATION SHOULD GENERALLY DISCHARGED ON THE DOWNSTREAM SIDE OF THE WORK AREA.
 - THE DISCHARGE AREA FOR THE PUMP OR SIPHON OUTLET MUST BE PROPERLY PROTECTED TO PREVENT EROSION BY HIGH VELOCITY FLOW.
 - DISCHARGE FLOW VELOCITY FROM PUMPS OR SIPHONS OVER UNPROTECTED, VEGETATED GROUND MUST NOT EXCEED A MAXIMUM OF 1 FOOT PER SECOND. DISCHARGE FLOW VELOCITY FROM PUMPS OR SIPHONS WITHIN THE UNPROTECTED NATURAL STREAM CHANNEL SHALL NOT EXCEED A MAXIMUM OF 3 FEET PER SECOND. IN THE EVENT EROSION RESULTS FROM VELOCITIES OF THE MAGNITUDES, THE CONTRACTOR SHALL TAKE STEPS TO MITIGATE THE EROSION OR SHALL REDUCE DISCHARGE FLOW VELOCITY.
- THE CONTRACTOR SHALL INSTALL TEMPORARY COFFERDAMS, IF REQUIRED, OUTSIDE THE LIMITS OF THE STREAM. NO IN-STREAM WORK SHALL OCCUR. THE EXACT CONSTRUCTION DETAILS OF THE COFFERDAM SHALL BE DETERMINED BY THE CONTRACTOR PERFORMING THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY WATER CONTROL, SURFACE WATER AND GROUNDWATER, NECESSARY TO EXECUTE AND COMPLETE THE WORK, SUBJECT TO THE RESTRICTIONS CONTAINED IN THE PROJECT PERMITS.
- ALL TEMPORARY WATER CONTROL MEASURES SHALL BE IMPLEMENTED IN CONJUNCTION WITH APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES SO AS TO MITIGATE TO THE GREATEST EXTENT POSSIBLE RELEASE OF SEDIMENT INTO WATER BODIES AND POTENTIAL EROSION OF SOIL.
- PUMPS OR GENERATORS WHICH UTILIZE LIQUID FUEL MUST BE PLACED WITHIN AN IMPERMEABLE SECONDARY CONTAINMENT AREA WITH SUFFICIENT CAPACITY TO CONTAIN THE FULL VOLUME OF THE FUEL TANK.
- PUMP OR SIPHON INTAKES SHALL BE PLACED SUCH THAT SEDIMENT AND DEBRIS ENTRAINMENT IS MINIMIZED.
- THE COFFERDAM SHALL NOT BE CONSTRUCTED ON UNCONTAINED FILL (SOIL, ROCK, OR ANY OTHER LOOSE MATERIAL). THESE TYPES OF COFFERDAMS ARE SPECIFICALLY DISALLOWED FOR ENVIRONMENTAL PROTECTION REASONS.
-

CONSTRUCTION SEQUENCE FOR STREAM CROSSINGS

- IF PRACTICAL, ALL STREAM CROSSING WORK SHALL OCCUR DURING DRY CONDITIONS.
- INSTALL ALL EROSION AND SEDIMENT CONTROL BARRIERS AS FIRST ORDER OF WORK.
- CONSTRUCT ANY REQUIRED COFFERDAMS AND/OR DEWATERING PRACTICES REQUIRED FOR THE CONSTRUCTION OF THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION.
- CONSTRUCT THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION AND REMOVE ANY COFFERDAMS AND/OR DEWATERING MEASURES.
- CONSTRUCT THE FINAL GRADING ABOVE AND ADJACENT TO THE WETLANDS CROSSING OR LOW POINT.
- WHEN THE AREA IS COMPLETELY STABILIZED, REMOVE THE EROSION AND SEDIMENT CONTROL BARRIERS.

BOX CULVERT DETAIL NOT TO SCALE



NOTES:

- STONE SIZE AND MAT DIMENSIONS DETAILED ON PLANS.
- STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. FLAT OR ROUND ROCKS ARE NOT ACCEPTABLE. THE STONE SHALL BE HARD AND OF SUCH QUALITY THAT IT WILL NOT DISINTEGRATE ON EXPOSURE TO WATER OR WEATHERING, BE CHEMICALLY STABLE AND IT SHALL BE SUITABLE IN ALL OTHER RESPECTS FOR THE PURPOSE INTENDED. THE BULK SPECIFIC GRAVITY (SATURATED SURFACE-DRY BASIS) OF THE INDIVIDUAL STONES SHALL BE AT LEAST 2.5.
- THE STONE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE DOWN TO THE ONE-INCH SIZE PARTICLE SUCH THAT 50 PERCENT OF THE MIXTURE BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE SPECIFIED. A WELL-GRADED MIXTURE IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF THE LARGER STONE SIZE BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE PROGRESSIVELY SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE SIZE IN SUCH A MIXTURE SHALL BE 1.5 TIMES THE D50 SIZE.

RIP-RAP APRON NO SCALE

CULVERT NOTES

- THE DESIGN OF THE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" 17TH EDITION, ADOPTED BY THE AMERICAN ASSOCIATION OF STATE TRANSPORTATION OFFICIALS (AASHTO), 2002, THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AS SPECIFIED BY THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT), AND THE MANUFACTURER'S SPECIFICATIONS.
- THE STRUCTURE SHALL BE DESIGNED AND CONSTRUCTED TO WITHSTAND AASHTO HS-20-44 LOADING.
- THE DESIGN OF THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. THE DESIGN AND SUBMITTAL SHALL INCLUDE THE FOLLOWING REQUIREMENTS:
 - THE DESIGN SHALL INCLUDE DETAILED COMPUTATIONS AND ALL DETAILS, DIMENSIONS, QUANTITIES AND CROSS SECTIONS NECESSARY TO CONSTRUCT THE STRUCTURE.
 - THE DESIGN SHALL CONFORM TO ALL OF THE REQUIREMENTS NOTED ABOVE. IN THE EVENT THAT TWO OR MORE SPECIFICATIONS APPLY TO THE WORK, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.
 - THE DESIGN DRAWINGS SHALL BE ON 22"x34" PLANS WITH THE PROJECT NAME, NUMBER AND DESIGN FIRM NOTED.
 - THE DESIGN SHALL INCLUDE ALL BEDDING, BACKFILL AND INSTALLATION PROCEDURES.
 - THE DESIGN SHALL INCLUDE A SCOUR ANALYSIS AS PART OF THE FOUNDATION DESIGN.
 - ALL PLANS AND COMPUTATIONS SHALL BE PREPARED, STAMPED AND SIGNED BY A NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER.
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TEMPORARY WATER CONTROL AND DEWATERING NOTES

- THE CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN ADEQUATE PUMPING, DIVERSION AND DRAINAGE FACILITIES TO MAINTAIN THE EXCAVATED AREA SUFFICIENTLY DRY FROM GROUNDWATER AND/OR SURFACE RUNOFF SO AS NOT TO ADVERSELY AFFECT CONSTRUCTION PROCEDURES NOR CAUSE EXCESSIVE DISTURBANCE OF UNDERLYING OR SURROUNDING NATURAL GROUND.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED FOR DEWATERING ACTIVITIES AND TAKE ACTIONS NECESSARY TO ENSURE THAT DEWATERING DISCHARGES COMPLY WITH PERMITS APPLICABLE TO THE PROJECT. THE CONTRACTOR SHALL DISPOSE OF WATER FROM THE TRENCHES AND EXCAVATIONS IN SUCH A MANNER AS TO AVOID PUBLIC NUISANCE, INJURY TO PUBLIC HEALTH OR THE ENVIRONMENT, DAMAGE TO PUBLIC OR PRIVATE PROPERTY, OR DAMAGE TO THE WORK COMPLETED OR IN PROGRESS.
- THE CONTRACTOR SHALL BRACE OR OTHERWISE PROTECT PIPELINES AND STRUCTURES NOT STABLE AGAINST UPLIFT DURING CONSTRUCTION.
- THE CONTRACTOR SHALL NOT EXCAVATE UNTIL THE DEWATERING SYSTEM IS OPERATIONAL AND THE EXCAVATION MAY PROCEED WITHOUT DISTURBANCE TO THE FINAL SUBGRADE OR SURROUNDING AREAS.
- THE CONTRACTOR SHALL CONTINUE DEWATERING UNINTERRUPTED UNTIL THE STRUCTURES, PIPES AND APPURTENANCES TO BE INSTALLED HAVE BEEN COMPLETED SUCH THAT THEY WILL NOT FLOAT OR BE OTHERWISE DAMAGED BY AN INCREASE IN GROUNDWATER ELEVATION.
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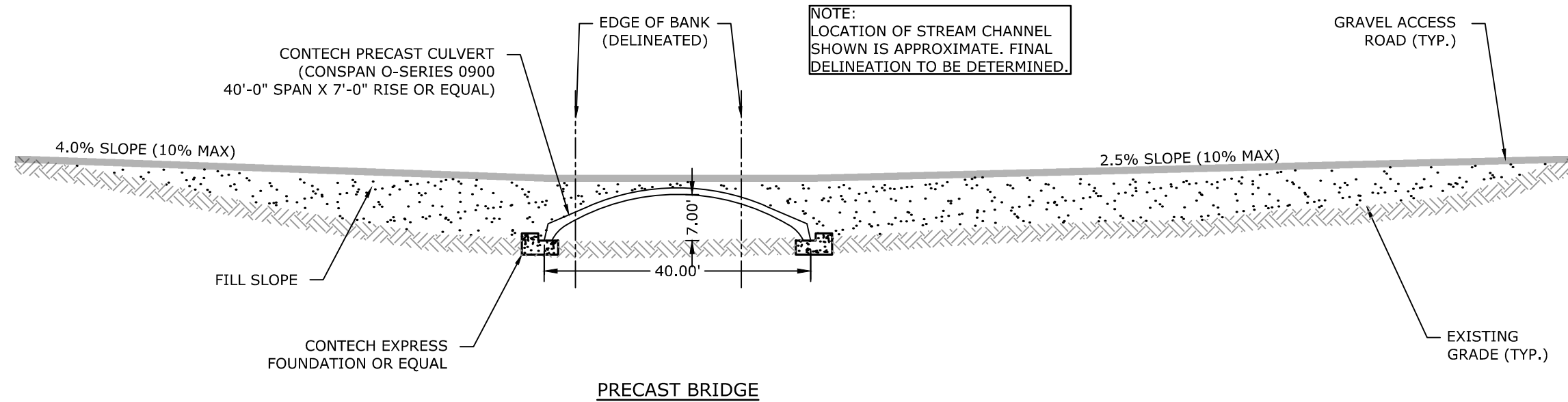
NOTES:

- CONSTRUCT AT GRADE LEVEL SPREADER ON ZERO PERCENT GRADE TO INSURE UNIFORM SPREADING OF RUNOFF (CONVERTING CHANNEL FLOW TO SHEET FLOW).
- AT GRADE LEVEL SPREADER SHALL BE CONSTRUCTED ON UNDISTURBED SOIL (NOT ON FILL).
- STORM RUNOFF CONVERTED TO SHEET FLOW SHALL OUTLET ONTO STABILIZED AREAS. WATER SHALL NOT BE RECONCENTRATED IMMEDIATELY BELOW THE POINT OF DISCHARGE.

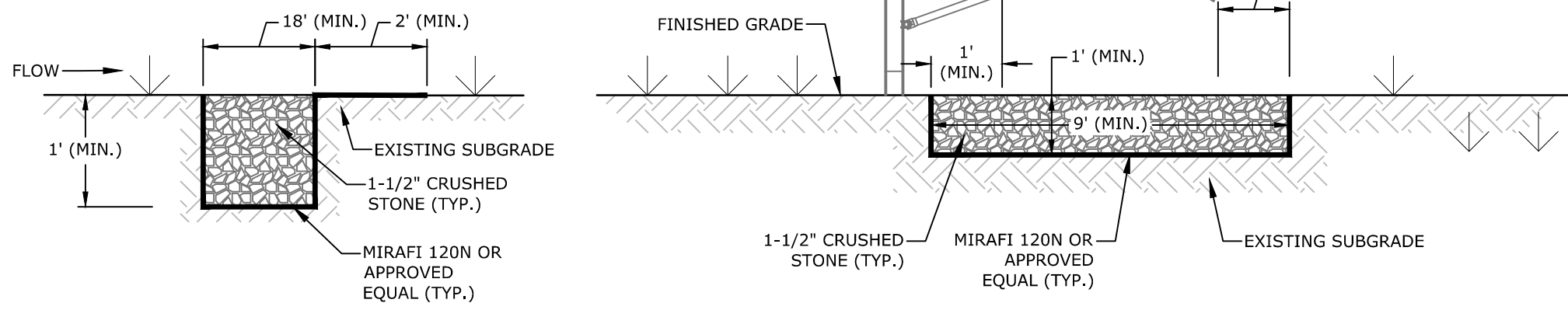
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- THE COFFERDAM SHALL NOT BE CONSTRUCTED ON UNCONTAINED FILL (SOIL, ROCK, OR ANY OTHER LOOSE MATERIAL). THESE TYPES OF COFFERDAMS ARE SPECIFICALLY DISALLOWED FOR ENVIRONMENTAL PROTECTION REASONS.

CONSTRUCTION SEQUENCE FOR WETLAND CROSSINGS

- IF PRACTICAL, ALL WETLAND CROSSING WORK SHALL OCCUR DURING DRY CONDITIONS.
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- CONSTRUCT THE FINAL GRADING ABOVE AND ADJACENT TO THE WETLANDS CROSSING OR LOW POINT.
- WHEN THE AREA IS COMPLETELY STABILIZED, REMOVE THE EROSION AND SEDIMENT CONTROL BARRIERS.



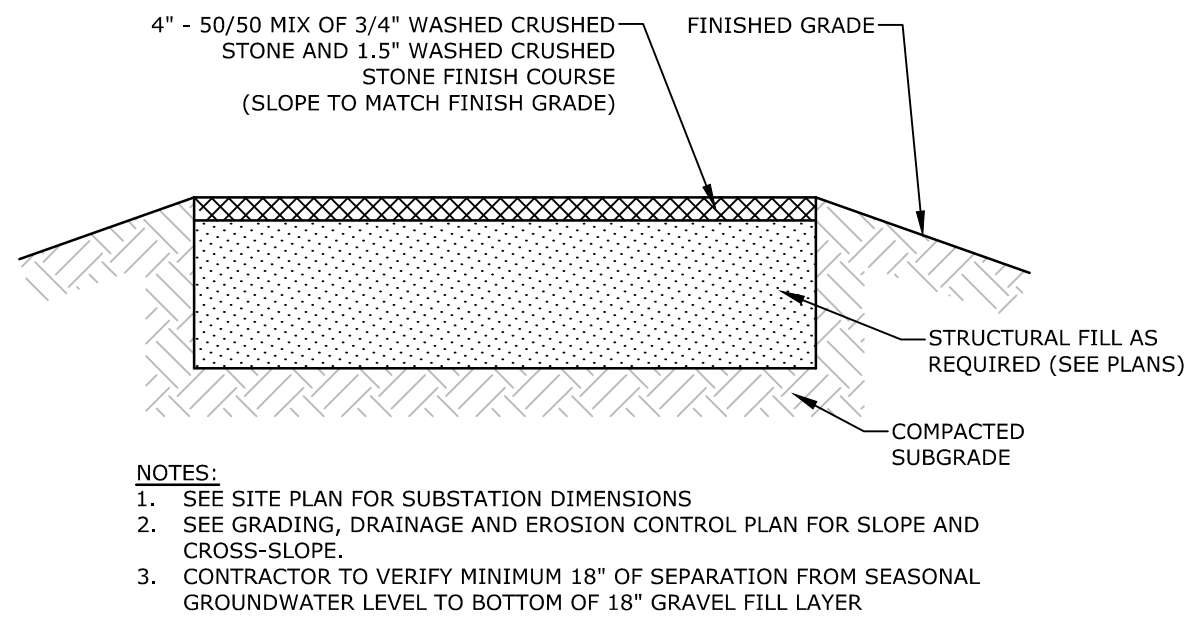
PRECAST BRIDGE NO SCALE



PROFILE VIEW

AT GRADE LEVEL SPREADER NO SCALE

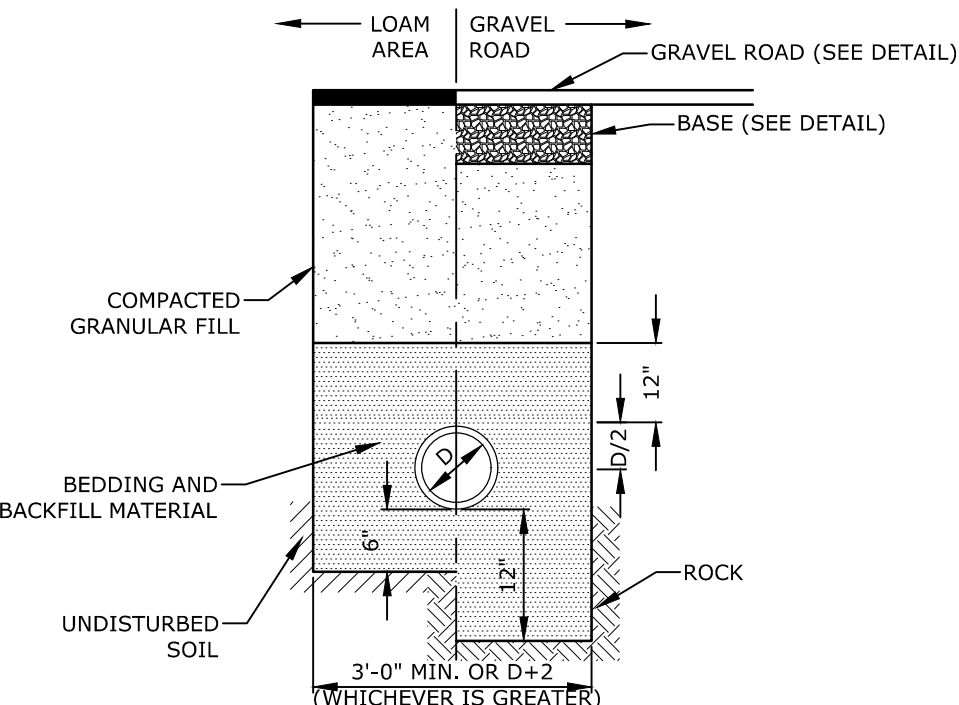
SECTION VIEW



NOTES:

- SEE SITE PLAN FOR SUBSTATION DIMENSIONS
- SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR SLOPE AND CROSS-SLOPE
- CONTRACTOR TO VERIFY MINIMUM 18" OF SEPARATION FROM SEASONAL GROUNDWATER LEVEL TO BOTTOM OF 18" GRAVEL FILL LAYER

SUBSTATION AREA SECTION NO SCALE



DRAINAGE TRENCH NO SCALE

NOTE: FOUNDATION DETAIL SHOWN IS CONSIDERED "TYPICAL" AND REPRESENTS MINIMUM DIMENSIONS. FINAL DESIGN SHALL BE COMPLETED BY CULVERT DESIGNER PRIOR TO CONSTRUCTION, AND STAMPED BY A NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER.

FOUNDATION DETAIL

Tighe&Bond
Engineers | Environmental Specialists

NEXtera
ENERGY



**PERMIT DRAWINGS
NOT FOR CONSTRUCTION**

**Chinook Solar
Project**

**Chinook Solar,
LLC**

Fitzwilliam, NH

VERIFY SCALE

BAR IS 1 INCH ON
ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

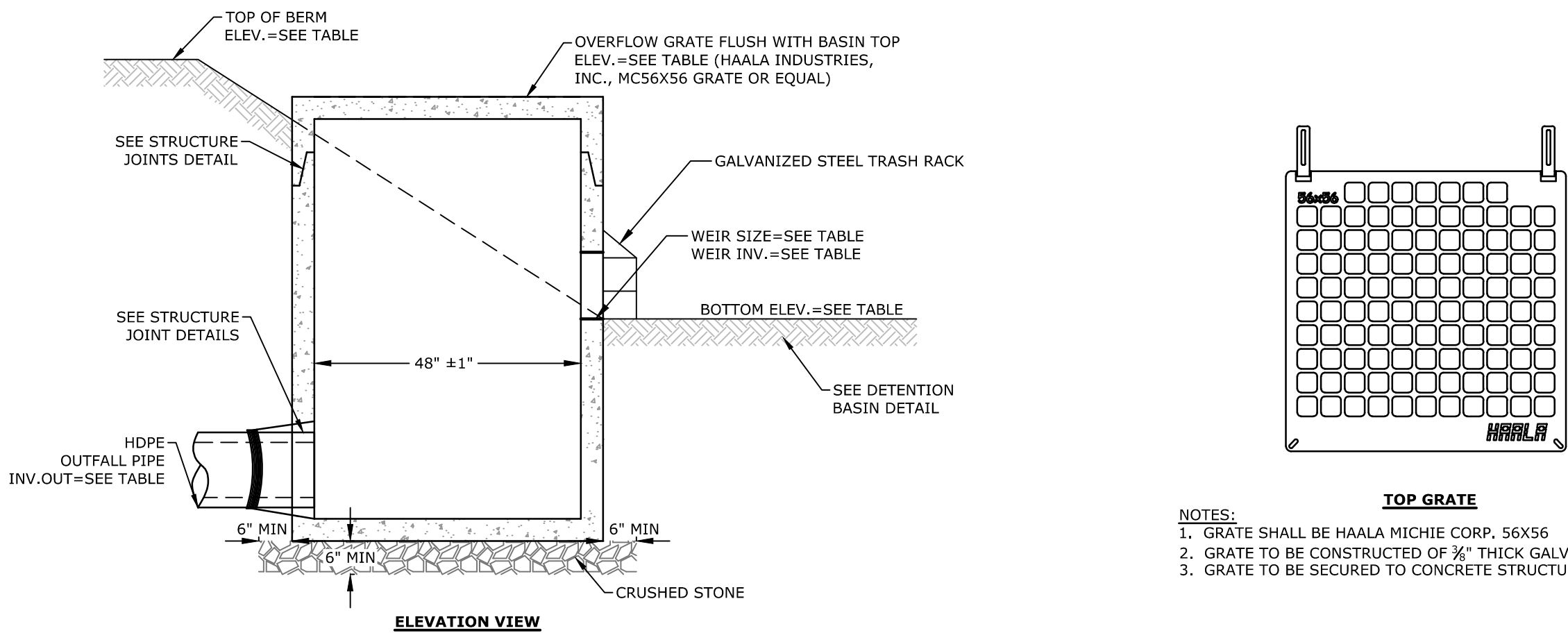
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| DATE: | 10/2/2019 | |
| FILE: | N0758-017_DTLS.dwg | |
| DRAWN BY: | EGD/NSC | |
| CHECKED: | JMP | |
| APPROVED: | BLM | |

CIVIL DETAILS SHEET

SCALE: AS SHOWN

C.503

Last Saved: 9/26/2019
Plotted On: Sep 26, 2019 3:58pm By: DGM
Tighe & Bond 3:11:00 PM 28 Nextera Energy
Figures AutoCAD CHINOOK SITE 1 Sheet W0758-017 DTLS.dwg

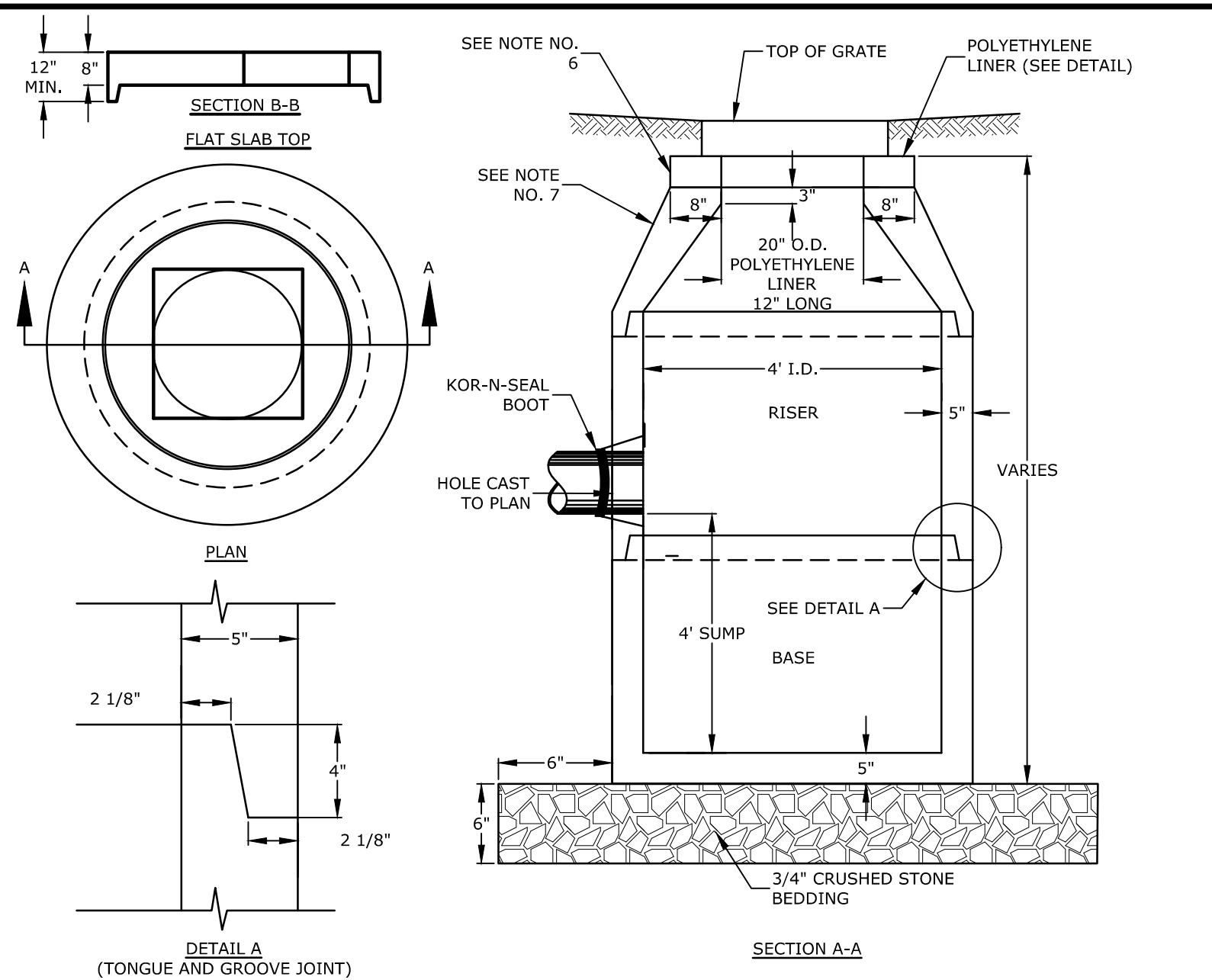


| BASIN & OUTLET STRUCTURE TABLE | | | | | | | | | | |
|--------------------------------|----------------------------|----------------------------------|---------------------|------------------------|--|----------------------------|--|----------------------------|----------------------------|------------------------------|
| POND NAME | TOP OF BERM ELEV. (FT.) | BOTTOM OF POND ELEV. (FT.) | OUTLET STRUCTURE | OCS RIM ELEV. (FT.) | ORIFICE #1 SIZE (IN.) (WIDTH X HEIGHT OR DIA.) | ORIFICE #1 INVERT (FT.) | ORIFICE #2 SIZE (IN.) (WIDTH X HEIGHT OR DIA.) | ORIFICE #2 INVERT (FT.) | OUTFALL PIPE SIZE (IN.) | OUTFALL PIPE INVERT (FT.) |
| POND-A | 1084.75 | 1080.00 | OCS-A | 1082.50 | 6 DIA. | 1080.50 | - | - | 15.00 | 1080.00 |
| POND-B | 1112.75 | 1109.50 | OCS-B | 1111.25 | 24W X 8H | 1110.00 | - | - | 12.00 | 1108.00 |
| POND-C | 1122.75 | 1120.00 | OCS-C | 1122.00 | 36W X 12H | 1120.50 | - | - | 18.00 | 1120.00 |
| POND-D | 1128.75 | 1126.00 | OCS-D | 1127.50 | 36W X 6H | 1126.50 | - | - | 12.00 | 1123.00 |
| POND-E | 1116.75 | 1113.50 | OCS-E | 1115.00 | 24W X 6H | 1114.00 | - | - | 12.00 | 1113.00 |
| POND-F | 1106.50 | 1102.00 | OCS-F | 1105.25 | 6 DIA. | 1102.50 | - | - | 18.00 | 1102.00 |
| POND-G | 1104.75 | 1102.00 | OCS-G | 1103.50 | 6 DIA. | 1102.50 | - | - | 12.00 | 1101.00 |
| POND-H | 1140.50 | 1136.00 | OCS-H | 1139.50 | 6 DIA. | 1136.50 | - | - | 18.00 | 1135.00 |
| POND-I | 1062.75 | 1058.00 | OCS-I | 1061.00 | 4 DIA. | 1058.50 | 36W X 12H | 1059.50 | 15.00 | 1057.50 |
| POND-J | 1028.50 | 1024.00 | OCS-J | 1028.00 | 4 DIA. | 1024.50 | - | - | 24.00 | 1023.00 |
| POND-K | 1096.75 | 1094.00 | OCS-K | 1095.15 | 6 DIA. | 1094.50 | - | - | 18.00 | 1092.50 |
| POND-N | 1108.50 | 1104.00 | OCS-N | 1108.00 | 4 DIA. | 1104.50 | 7 DIA. | 1106.50 | 15.00 | 1102.10 |

- NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE (TYPE II CEMENT).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER OF THE THIRD WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.
4. THE STRUCTURES SHALL BE DESIGNED FOR H2O LOADING.
5. ALL JOINTS ON THE STRUCTURE AND PIPING SHALL BE WATERTIGHT.

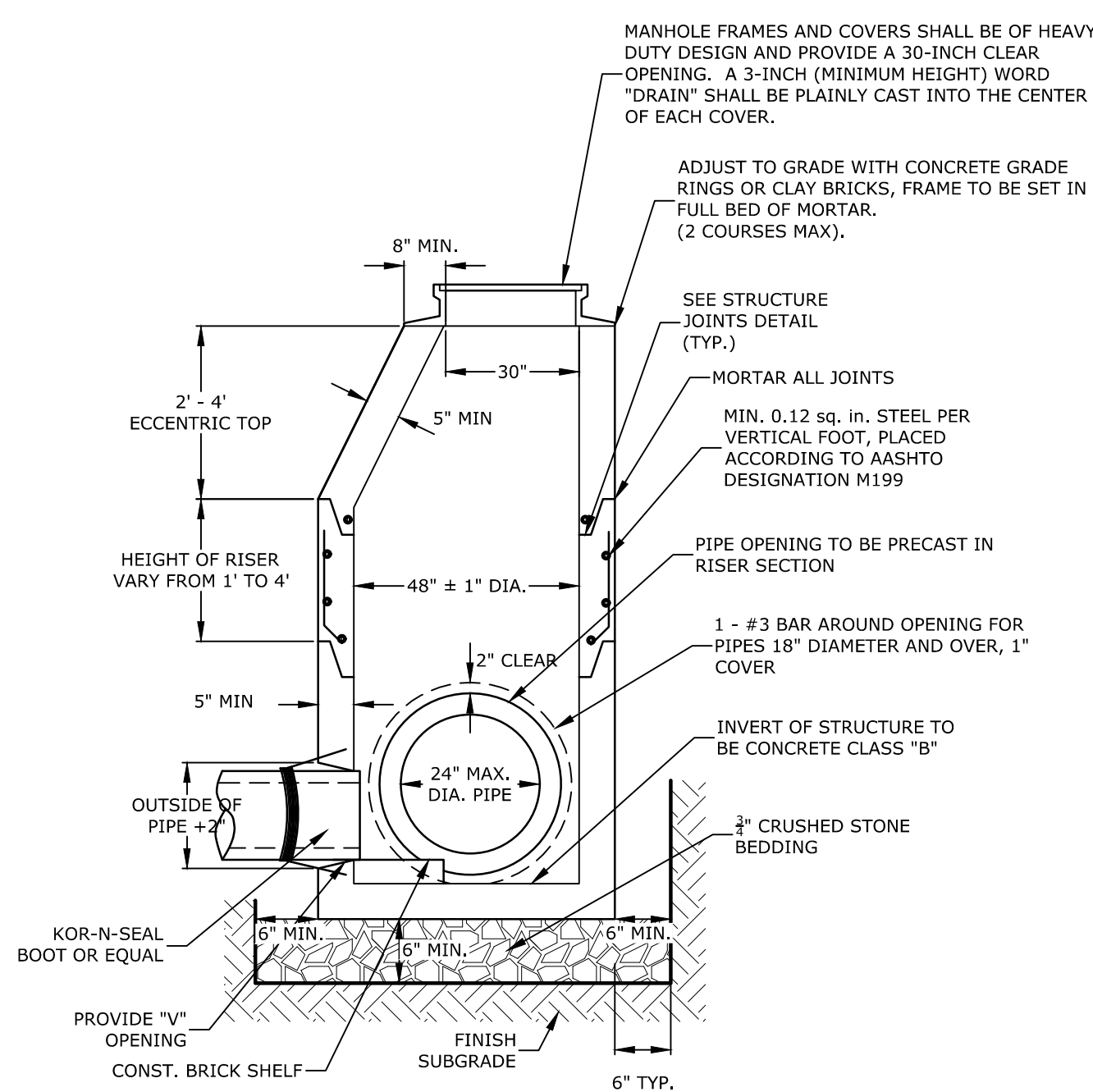
PROPOSED OUTLET STRUCTURES

NO SCALE



4" DIAMETER CATCHBASIN

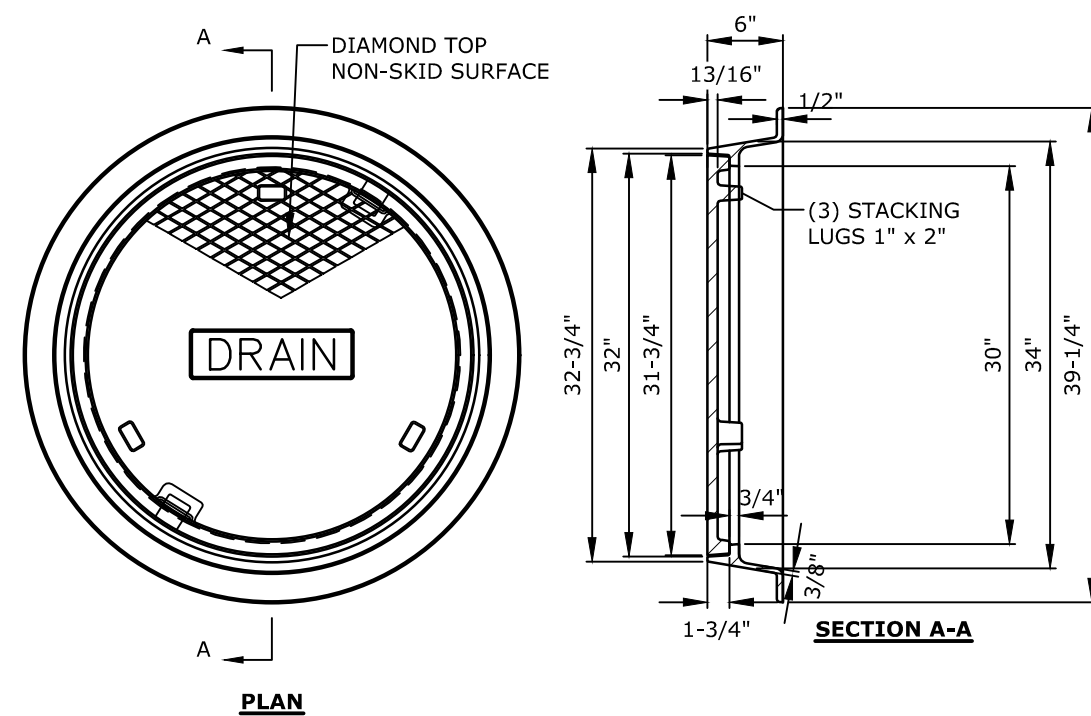
NO SCALE



- NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE AND THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.
4. THE STRUCTURES SHALL BE DESIGNED FOR H2O LOADING.
5. CONSTRUCT CRUSHED STONE BEDDING AND BACKFILL UNDER (6" MINIMUM THICKNESS)
6. THE TONGUE AND GROOVE JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.
7. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
8. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
9. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
10. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES, NO MORE THAN 75% OF A HORIZONTAL CROSS SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.

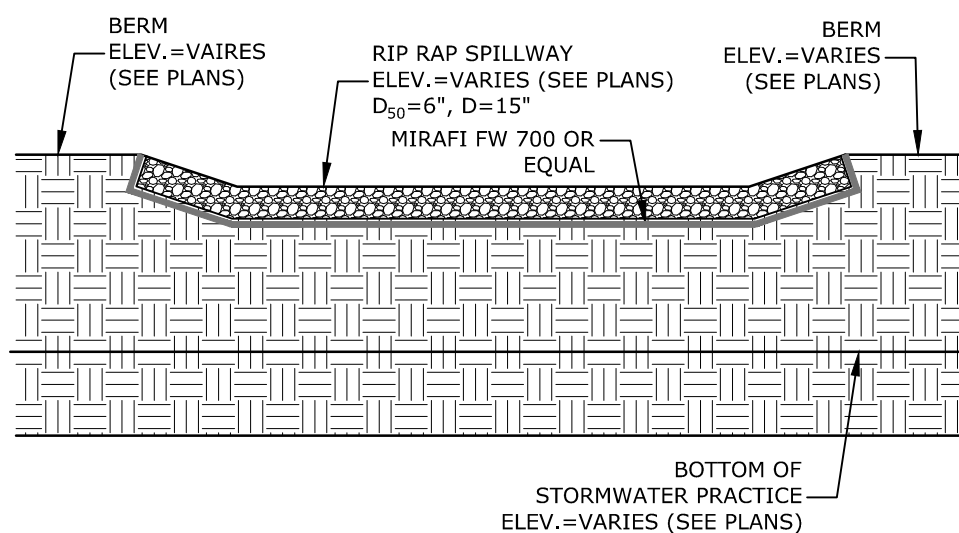
4" DIAMETER DRAIN MANHOLE

NO SCALE



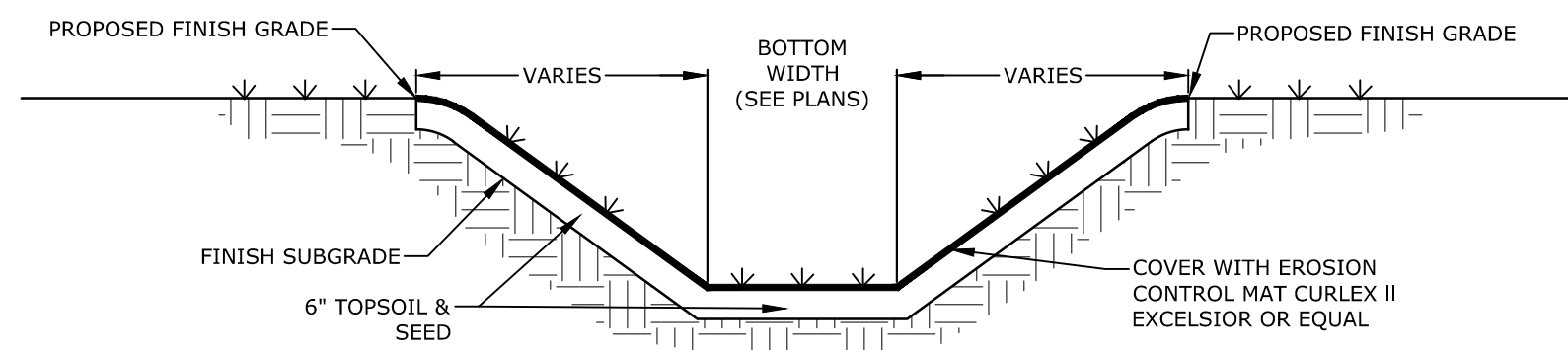
DRAIN MANHOLE AND COVER

NO SCALE



RIP-RAP SPILLWAY

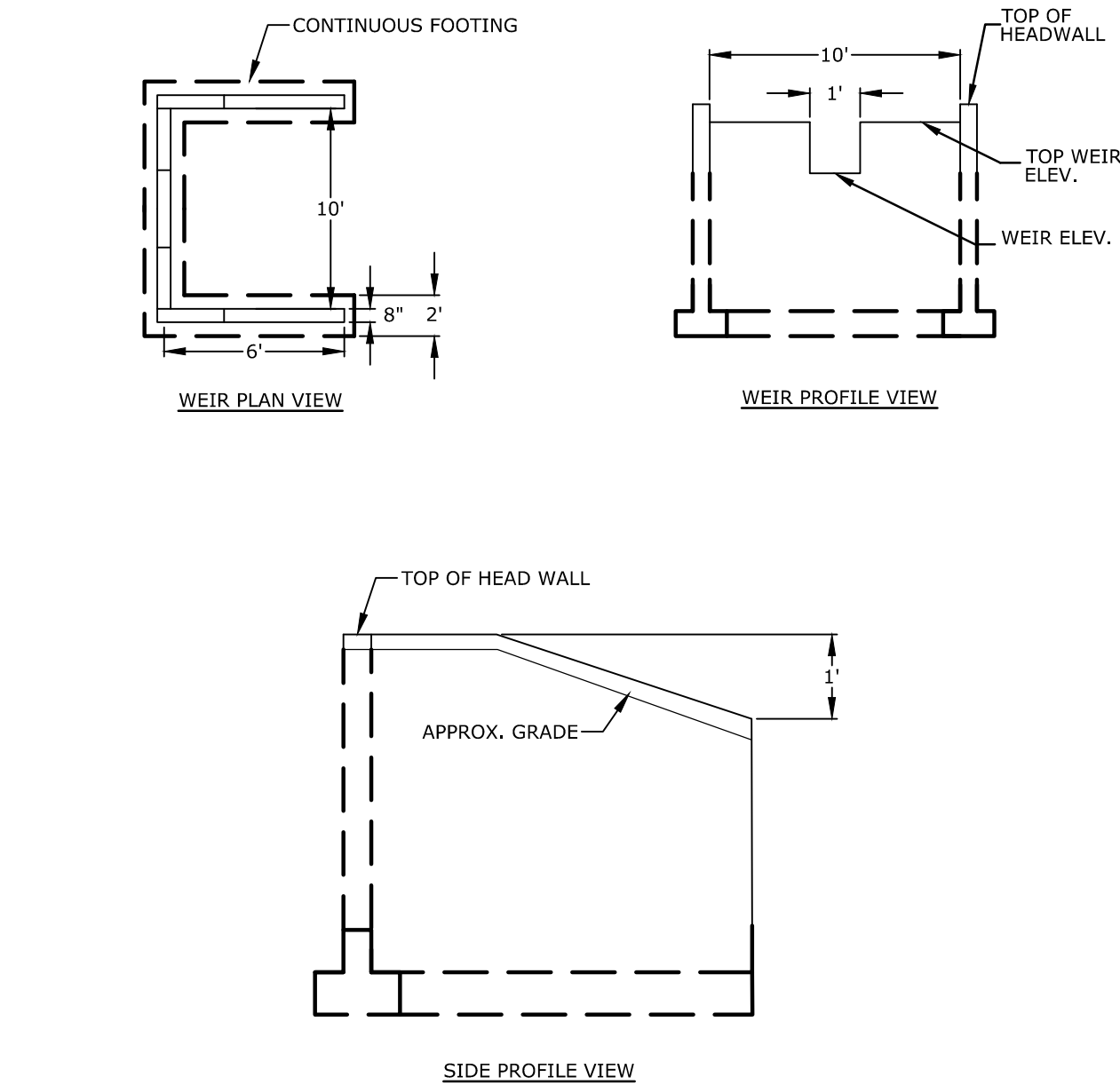
NO SCALE



- NOTES:
1. THE FOUNDATION AREA OF THE WATERWAY SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL. MATERIALS REMOVED SHALL BE DISPOSED OF SO THEY WILL NOT INTERFERE WITH THE CONSTRUCTION OR PROPER FUNCTIONING OF THE WATERWAY.
2. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS-SECTION AS REQUIRED TO MEET THE DESIGN CRITERIA. THE WATERWAY SHALL BE FREE OF IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED WATERWAY. EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.
4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE EROSION AND AIR AND WATER POLLUTION. ALL APPROPRIATE STATE AND LOCAL LAWS AND REGULATIONS SHALL BE COMPLIED WITH FOR INSTALLATION.
5. VEGETATION SHALL BE ESTABLISHED IN THE SWALE PRIOR TO ALLOWING STORMWATER RUNOFF TO FLOW THROUGH THE SWALE.
6. MAINTENANCE OF THE VEGETATION IN THE GRASSED WATERWAY IS EXTREMELY IMPORTANT IN ORDER TO PREVENT RILLING, EROSION, AND FAILURE OF THE WATERWAY. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION AND TO KEEP THE GRASSES IN A VIGOROUS CONDITION. THE VEGETATION SHOULD NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE EROSION RESISTANCE IN THE WATERWAY.
7. THE WATERWAY SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE WATERWAY. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.
8. PERIODIC APPLICATIONS OF LIME AND FERTILIZER MAY BE NEEDED TO MAINTAIN VIGOROUS GROWTH.

GRASSED LINED SWALE

NO SCALE

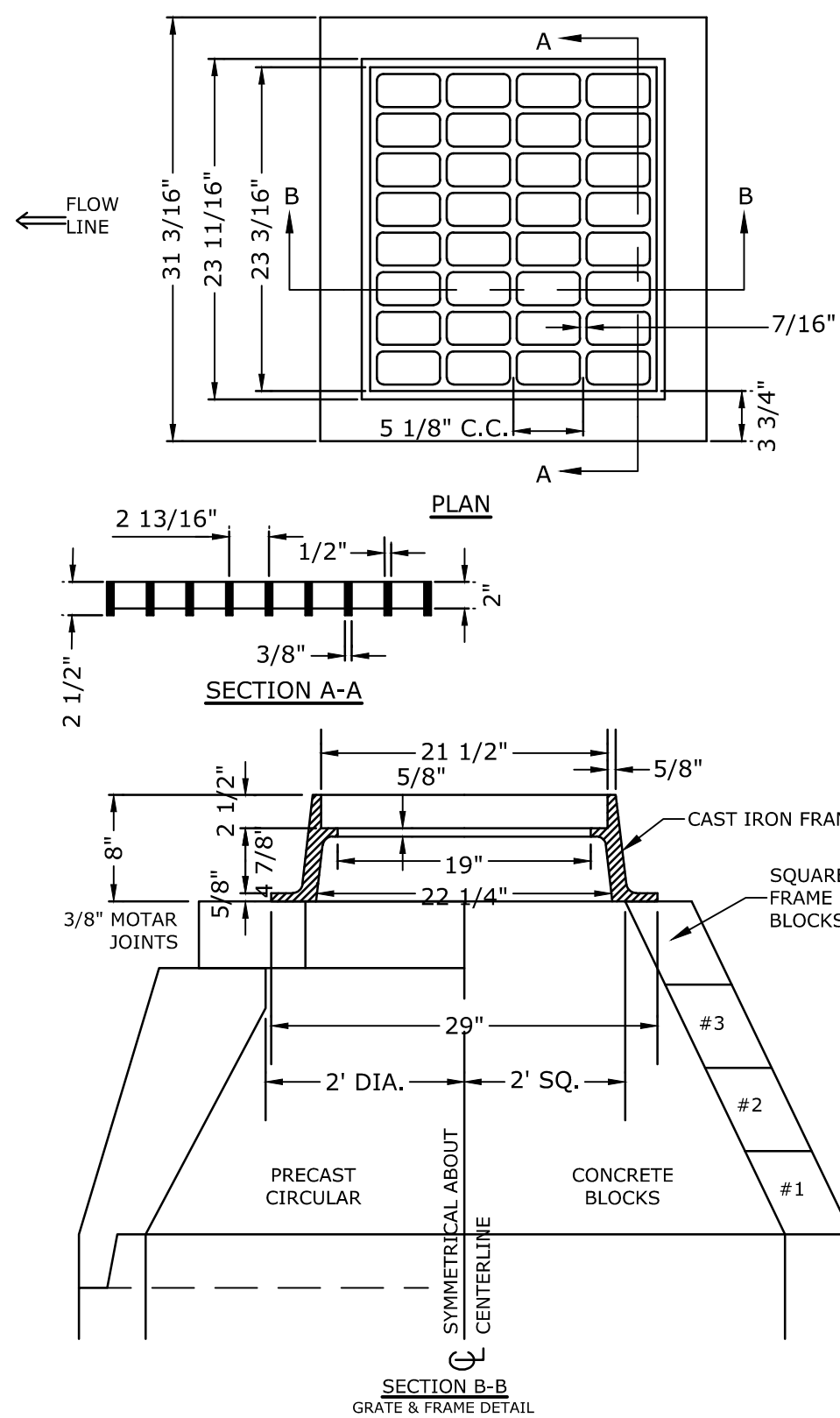


| BASIN & OUTLET STRUCTURE TABLE | | | | | | |
|--------------------------------|------------------------------------|---|-----------------------------|---------------------------|-------------------------------|----------------------------|
| <u>POND NAME</u> | <u>TOP OF BERM ELEV. (FT.)</u> | <u>BOTTOM OF POND ELEV. (FT.)</u> | <u>OUTLET STRUCTURE</u> | <u>WEIR ELEVATION</u> | <u>TOP WEIR ELEVATION</u> | <u>TOP OF HEADWALL</u> |
| POND-L | 1069.50 | 1066.00 | OCS-L | 1066.50 | 1067.50 | 1069.50 |
| POND-M | 1058.50 | 1056.00 | OCS-M | 1056.50 | 1057.50 | 1058.50 |

- NOTE:
1. CONTRACTOR SHALL SUBMIT FINAL STRUCTURAL DESIGN TO THE ENGINEER WITH ALL CALCULATIONS AND PLANS. STRUCTURAL DESIGN TO BE COMPLETED AND STAMPED BY A MASSACHUSETTS LICENSED STRUCTURAL ENGINEER. DESIGN ENGINEER SHALL INSPECT WALL DURING CONSTRUCTION AND CERTIFY THAT IT HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS. AN AS-BUILT PLAN SHOWING THE STRUCTURE LOCATION AND DIMENSIONS SHALL BE SUBMITTED TO THE CITY UPON COMPLETION.

PROPOSED OUTLET STRUCTURES OCS-L & OCS-M

NO SCALE



CATCH BASIN FRAME & GRATE

NO SCALE

Tighe&Bond
Engineers | Environmental Specialists

NEXtera
ENERGY



PERMIT DRAWINGS
NOT FOR CONSTRUCTION

Chinook Solar Project

Chinook Solar, LLC

Fitzwilliam, NH

VERIFY SCALE

BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

| MARK | DATE | DESCRIPTION |
|-------------|--------------------|-------------|
| PROJECT NO: | N0758-019 | |
| DATE: | 10/2/2019 | |
| FILE: | N0758-017_DTLS.dwg | |
| DRAWN BY: | EGD/NSC | |
| CHECKED: | JMP | |
| APPROVED: | BLM | |

CIVIL DETAILS SHEET

SCALE: AS SHOWN

C.504