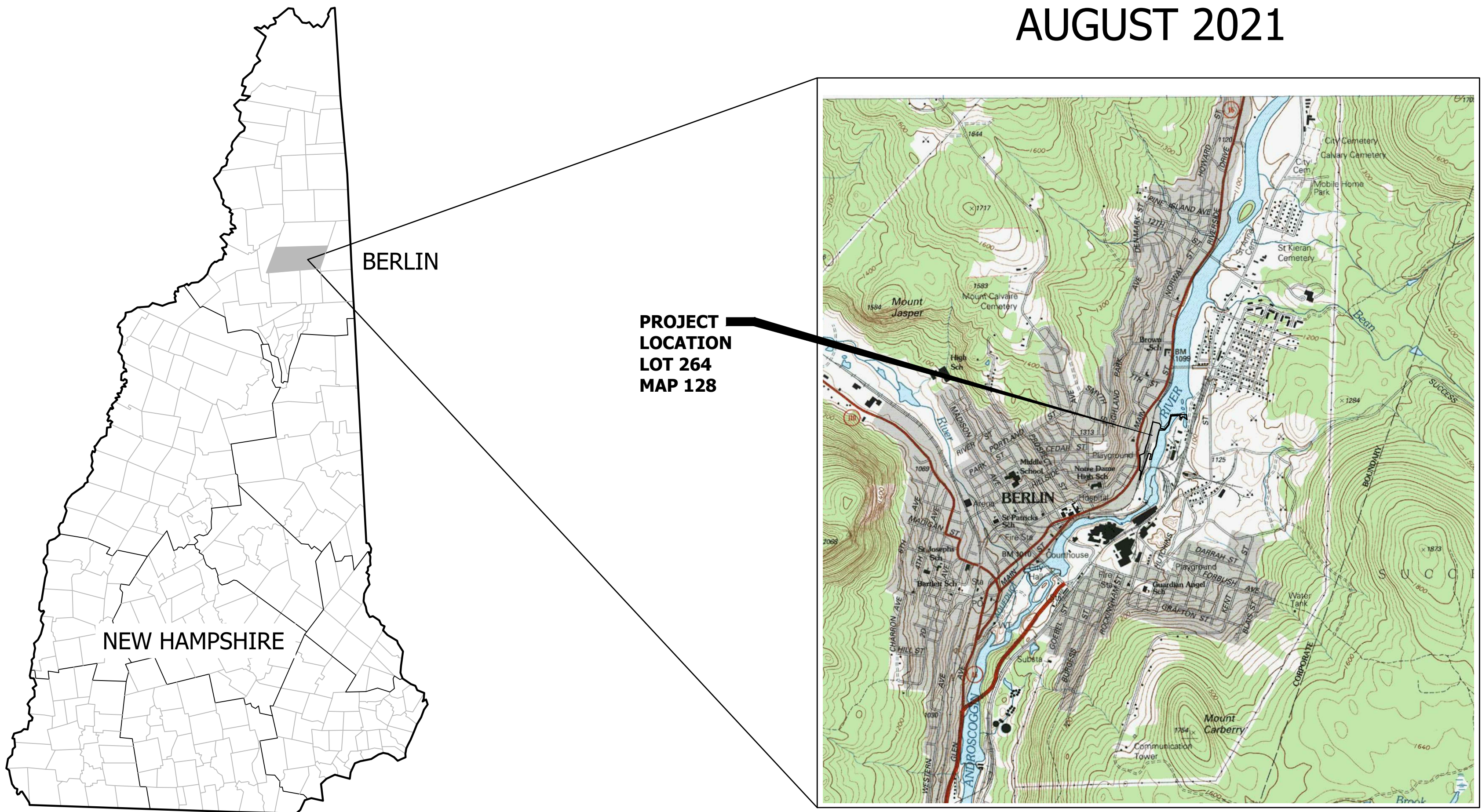


# BROOKFIELD RENEWABLE ENERGY GROUP PATRIOT STORAGE BATTERY SITE BERLIN SAW MILL HYDRO SITE

BERLIN, NEW HAMPSHIRE

AUGUST 2021



SCALE: 1" = 2000'

OWNER:

BROOKFIELD RENEWABLE ENERGY GROUP  
150 MAINE STREET  
LEWISTON, MAINE 04240  
(207) 629-1800

ENGINEER/SURVEYOR/WETLAND SCIENTIST:

**horizons**  
*Engineering*

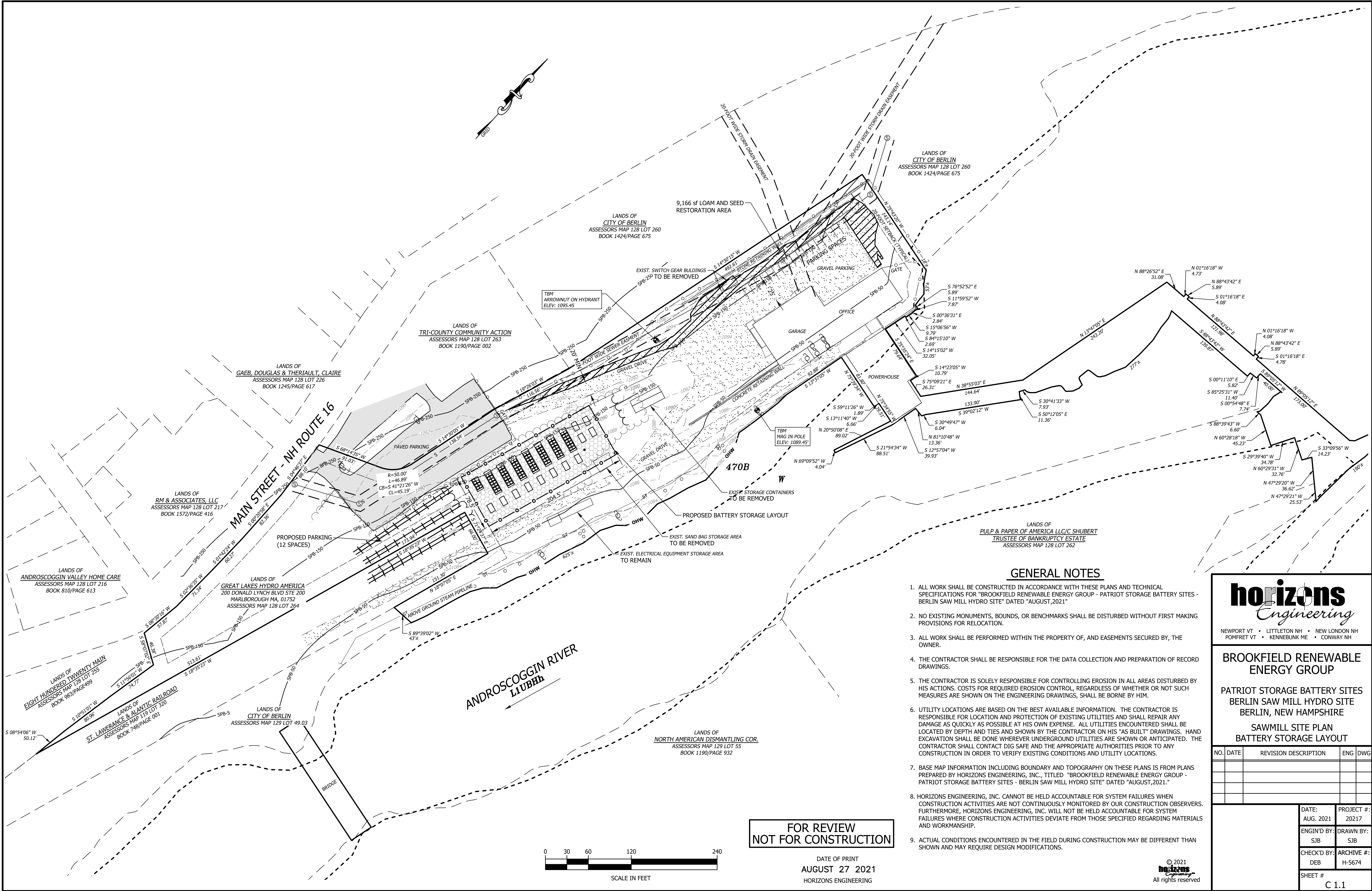
34 SCHOOL STREET  
LITTLETON, NH 03561  
(603) 444-4111

SHEET INDEX

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C 1.2	EXISTING SITE CONDITIONS
C 2.1	SAWMILL SITE PLAN
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DATE OF PRINT  
AUGUST 27 2021  
HORIZONS ENGINEERING





GENERAL NOTES

- ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS AND TECHNICAL SPECIFICATIONS FOR "BROOKFIELD RENEWABLE ENERGY GROUP - PATRIOT STORAGE BATTERY SITES - BERLIN SAW MILL HYDRO SITE" DATED "AUGUST,2021"
- NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.
- ALL WORK SHALL BE PERFORMED WITHIN THE PROPERTY OF, AND EASEMENTS SECURED BY, THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DATA COLLECTION AND PREPARATION OF RECORD DRAWINGS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONTROLLING EROSION IN ALL AREAS DISTURBED BY HIS ACTIONS. COSTS FOR REQUIRED EROSION CONTROL, REGARDLESS OF WHETHER OR NOT SUCH MEASURES ARE SHOWN ON THE ENGINEERING DRAWINGS, SHALL BE BORNE BY HIM.
- UTILITY LOCATIONS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR LOCATION AND PROTECTION OF EXISTING UTILITIES AND SHALL REPAIR ANY DAMAGE AS QUICKLY AS POSSIBLE AT HIS OWN EXPENSE. ALL UTILITIES ENCOUNTERED SHALL BE LOCATED BY DEPTH AND TIES AND SHOWN BY THE CONTRACTOR ON HIS "AS BUILT" DRAWINGS. HAND EXCAVATION SHALL BE DONE WHEREVER UNDERGROUND UTILITIES ARE SHOWN OR ANTICIPATED. THE CONTRACTOR SHALL CONTACT DIG SAFE AND THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION IN ORDER TO VERIFY EXISTING CONDITIONS AND UTILITY LOCATIONS.
- BASE MAP INFORMATION INCLUDING BOUNDARY AND TOPOGRAPHY ON THESE PLANS IS FROM PLANS PREPARED BY HORIZONS ENGINEERING, INC., TITLED "BROOKFIELD RENEWABLE ENERGY GROUP - PATRIOT STORAGE BATTERY SITES - BERLIN SAW MILL HYDRO SITE" DATED "AUGUST,2021."
- HORIZONS ENGINEERING, INC. CANNOT BE HELD ACCOUNTABLE FOR SYSTEM FAILURES WHEN CONSTRUCTION ACTIVITIES ARE NOT CONTINUOUSLY MONITORED BY OUR CONSTRUCTION OBSERVERS. FURTHERMORE, HORIZONS ENGINEERING, INC. WILL NOT BE HELD ACCOUNTABLE FOR SYSTEM FAILURES WHERE CONSTRUCTION ACTIVITIES DEVIATE FROM THOSE SPECIFIED REGARDING MATERIALS AND WORKMANSHIP.
- ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION MAY BE DIFFERENT THAN SHOWN AND MAY REQUIRE DESIGN MODIFICATIONS.



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BROOKFIELD RENEWABLE  
ENERGY GROUP

PATRIOT STORAGE BATTERY SITES  
BERLIN SAW MILL HYDRO SITE  
BERLIN, NEW HAMPSHIRE

SAWMILL SITE PLAN  
BATTERY STORAGE LAYOUT

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: AUG. 2021	PROJECT #: 20217
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CHECK'D BY: DEB	ARCHIVE #: H-5674
SHEET #	C 1.1

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GENERAL NOTES

1. SITE LOCATION:  
NH ROUTE 16, BERLIN, NEW HAMPSHIRE.
- OWNER OF RECORD
2. REFERENCE PLAN:  
A. "ALTA/ACSM LAND TITLE SURVEY AND MINOR SUBDIVISION OF GREAT LAKES HYDRO AMERICA, LLC & FRASER NH LLC, SAWMILL DAM PARCEL" DATED JULY 18, 2005 AND RECORDED IN THE COOS COUNTY REGISTRY OF DEEDS PLAN NO. 2687
3. THIS PLAN IS BASED ON A FIELD SURVEY CONDUCTED BY HORIZONS ENGINEERING, INC. IN AUGUST 2021 AND REFERENCE PLAN ABOVE AS NOTED.
4. WETLANDS WERE DELINEATED BY CERTIFIED WETLAND SCIENTIST CAITLIN BANASZAK OF HORIZONS ENGINEERING, INC. IN AUGUST 2021 ACCORDING TO THE DELINEATION STANDARDS IN THE REPORT "REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH CENTRAL AND NORTHEAST REGION (VERSION 2.0-1/12) AND NH WETLANDS BUREAU RULES AND REGULATIONS. WETLAND FLAGS WERE LOCATED AT THE TIME OF THE FIELD SURVEY IN AUGUST 2021.
5. THIS PLAN IS ORIENTATED TO THE NEW HAMPSHIRE COORDINATE SYSTEM, NAD 83, US SURVEY FEET(NH83-F). THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88). POSITIONS ARE BASED ON STATIC GPS OBSERVATIONS MADE ON THE DATE OF THE FIELD SURVEY.
6. BOUNDARY LINES DEPICTED AS CONTINUOUS/SOLID LINE TYPE WERE CALCULATED FROM REF. PLAN ABOVE AND NOT ON A BOUNDARY SURVEY COMPLETED BY HORIZONS ENGINEERING, INC. ABUTTING PROPERTY LINES ARE BASED ON THE CITY OF BERLIN TAX MAPS AT THE TIME THIS PLAN WAS PREPARED AND SHOULD BE CONSIDERED APPROXIMATE.
7. ZONE: INDUSTRIAL/BUSINESS ZONE (IB).

SOIL LEGEND (NRCS)

SYMBOL	NAME	HYDROLOGIC SOIL GROUP
470	TUNBRIDGE-PERU	B

INDICATES SOIL TYPE

INDICATES SLOPE OF LAND  
A = 0 TO 3 PERCENT SLOPE  
B = 3 TO 8 PERCENT SLOPE  
C = 8 TO 15 PERCENT SLOPE  
D = 15 TO 25 PERCENT SLOPE

(NOTE: THE ENTIRE SITE IS 470B - TUNBRIDGE-PERU SOIL.)

LEGEND

- APPROXIMATE BOUNDARY LINE (PER REF. PLAN)  
APPROXIMATE ABUTTER LINE FROM TAX MAPS  
MAJOR CONTOUR (10-FOOT INTERVAL)  
MINOR CONTOUR (2-FOOT INTERVAL)  
RAILROAD TRACKS  
CHAIN LINK FENCE  
TREELINE  
SEWER LINE (PER REF. PLAN)  
ABOVE GROUND STEAM PIPELINE (PER REF. PLAN)  
ORDINARY HIGH WATER (FIELD DELINEATED)  
NRCS SOIL BOUNDARY  
50-FOOT SHORELAND PROTECTION BUFFER  
150-FOOT SHORELAND PROTECTION BUFFER  
250-FOOT SHORELAND PROTECTION BUFFER  
SEWER MANHOLE (PER REF. PLAN)  
UTILITY POLE  
TABLE BENCHMARK



LANDS OF  
TRI-COUNTY COMMUNITY ACTION  
ASSESSORS MAP 128 LOT 263  
BOOK 1190/PAGE 002

LANDS OF  
CITY OF BERLIN  
ASSESSORS MAP 128 LOT 260  
BOOK 1424/PAGE 675

LANDS OF  
RM & ASSOCIATES, LLC  
ASSESSORS MAP 128 LOT 217  
BOOK 1572/PAGE 416

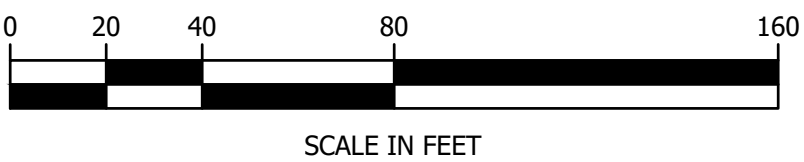
LANDS OF  
GREAT LAKES HYDRO AMERICA  
200 DONALD LYNCH BLVD STE 200  
MARLBOROUGH MA, 01752  
ASSESSORS MAP 128 LOT 264

LANDS OF  
ST. LAWRENCE & ATLANTIC RAILROAD  
ASSESSORS MAP 112 LOT 320  
BOOK 748/PAGE 001

LANDS OF  
CITY OF BERLIN  
ASSESSORS MAP 129 LOT 49.03

LANDS OF  
PULP & PAPER OF AMERICA LLC/C SHUBERT  
TRUSTEE OF BANKRUPTCY ESTATE  
ASSESSORS MAP 128 LOT 262

LANDS OF  
NORTH AMERICAN DISMANTLING COR.  
ASSESSORS MAP 129 LOT 55  
BOOK 1190/PAGE 932



CERTIFICATION:

I HEREBY CERTIFY THAT THIS PLAT IS BASED ON A TOTAL STATION SURVEY, PRECISION GPS SURVEY AND IS CLASSIFIED URBAN.

Andrew J. Naudeau  
ANDREW J. NADEAU, LLS 947

8/26/2021  
DATE

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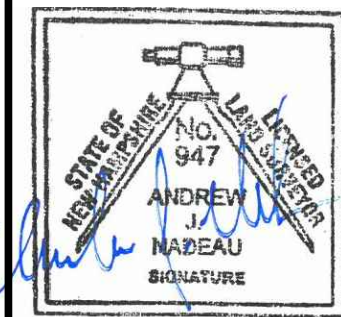
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BROOKFIELD RENEWABLE  
ENERGY GROUP

PATRIOT STORAGE BATTERY SITES  
BERLIN SAW MILL HYDRO SITE  
BERLIN, NEW HAMPSHIRE

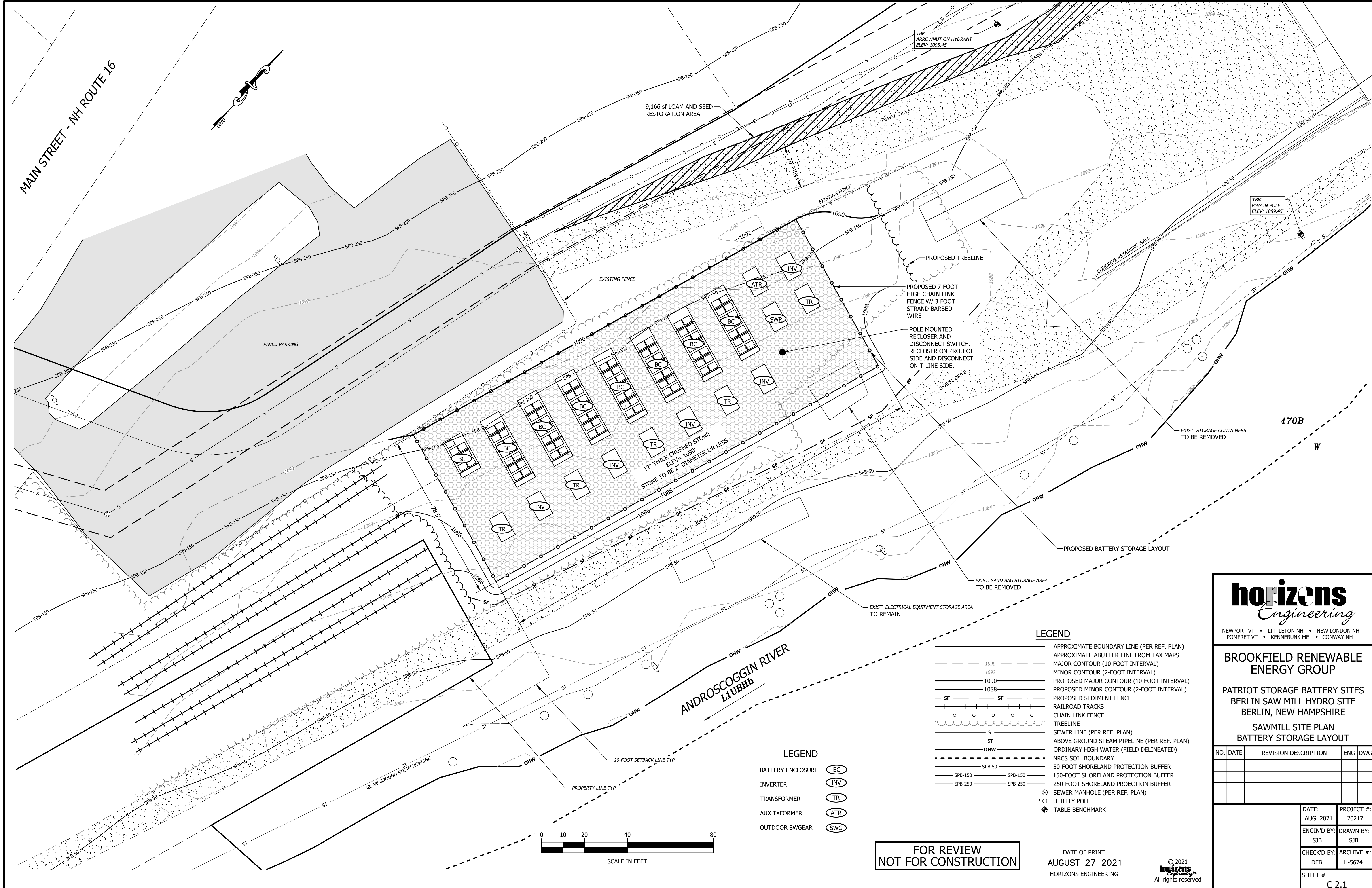
EXISTING CONDITIONS SITE PLAN

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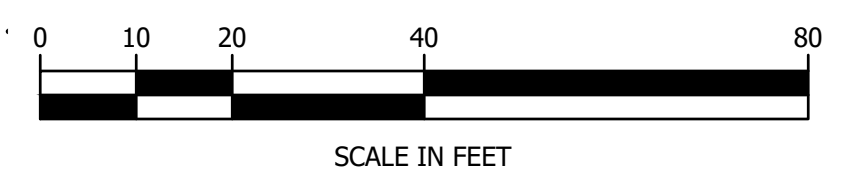


LEGEND

- BATTERY ENCLOSURE (BC)
- INVERTER (INV)
- TRANSFORMER (TR)
- AUX TXFORMER (ATR)
- OUTDOOR SWGEAR (SWG)

LEGEND

- APPROXIMATE BOUNDARY LINE (PER REF. PLAN)
- APPROXIMATE ABUTTER LINE FROM TAX MAPS
- MAJOR CONTOUR (10-FOOT INTERVAL)
- MINOR CONTOUR (2-FOOT INTERVAL)
- PROPOSED MAJOR CONTOUR (10-FOOT INTERVAL)
- PROPOSED MINOR CONTOUR (2-FOOT INTERVAL)
- PROPOSED SEDIMENT FENCE
- RAILROAD TRACKS
- CHAIN LINK FENCE
- TREELINE
- SEWER LINE (PER REF. PLAN)
- ABOVE GROUND STEAM PIPELINE (PER REF. PLAN)
- ORDINARY HIGH WATER (FIELD DELINEATED)
- NRCS SOIL BOUNDARY
- 50-FOOT SHORELAND PROTECTION BUFFER
- 150-FOOT SHORELAND PROTECTION BUFFER
- 250-FOOT SHORELAND PROTECTION BUFFER
- SEWER MANHOLE (PER REF. PLAN)
- UTILITY POLE
- TABLE BENCHMARK



FOR REVIEW  
NOT FOR CONSTRUCTION

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PATRIOT STORAGE BATTERY SITES  
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BERLIN, NEW HAMPSHIRE

SAWMILL SITE PLAN  
BATTERY STORAGE LAYOUT

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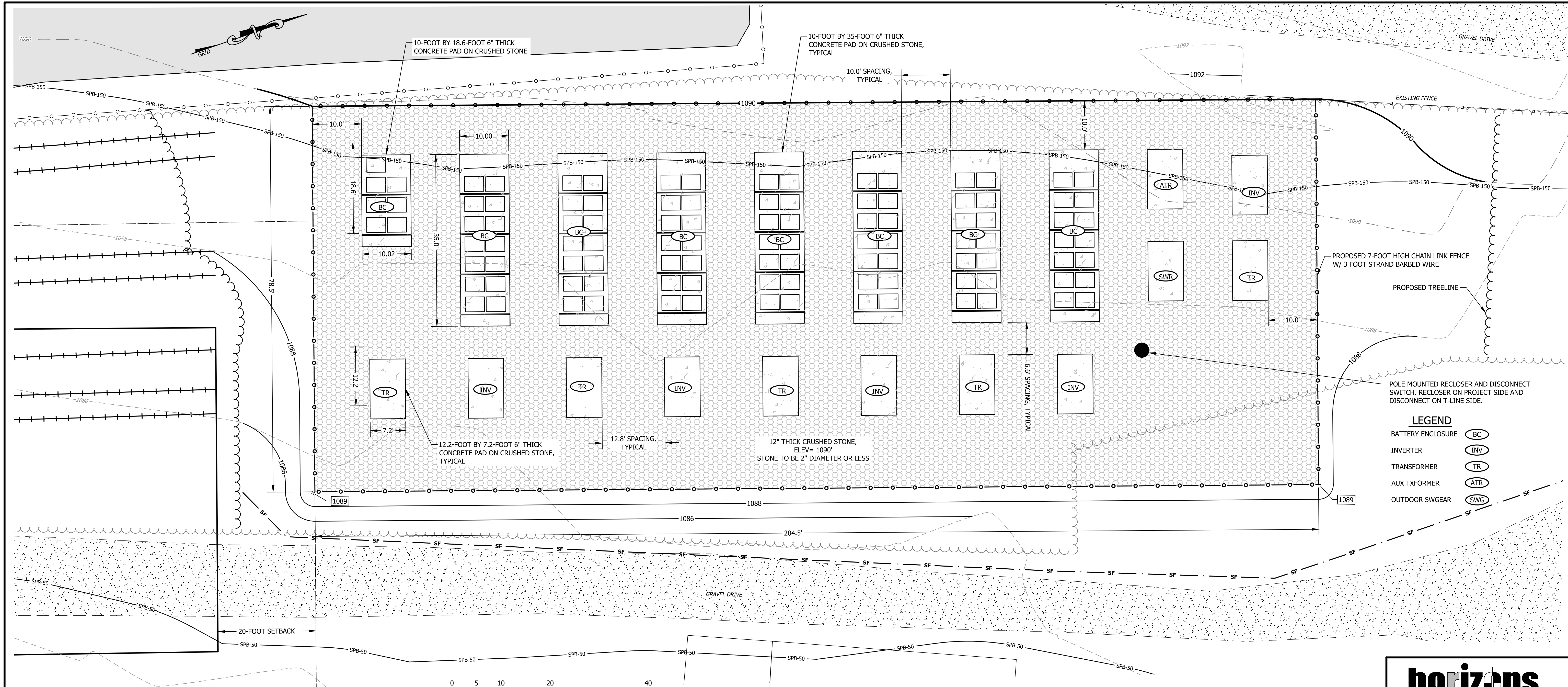
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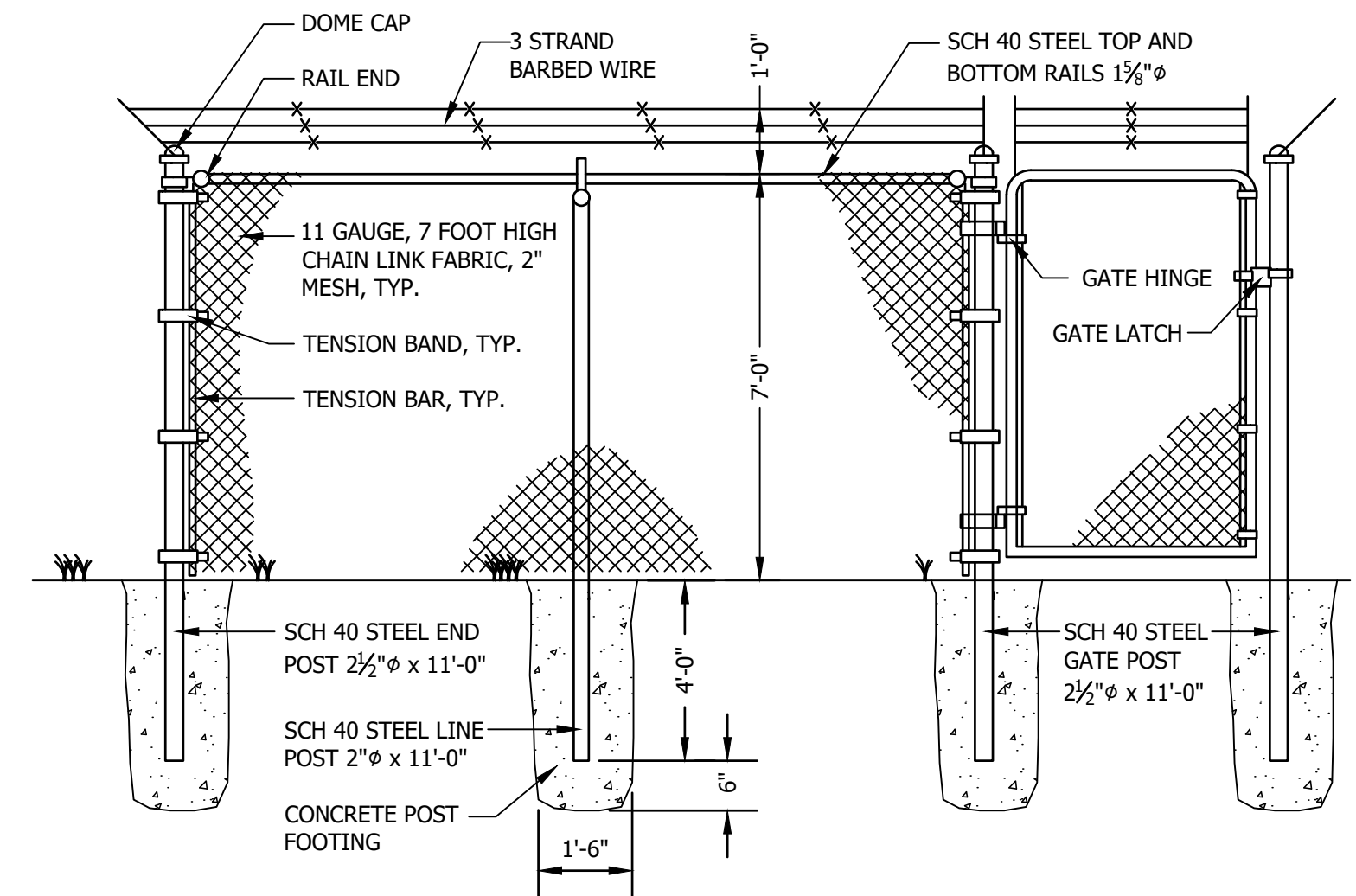
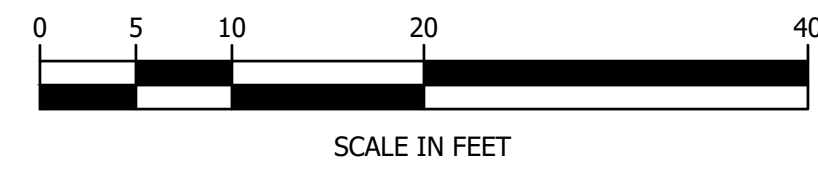


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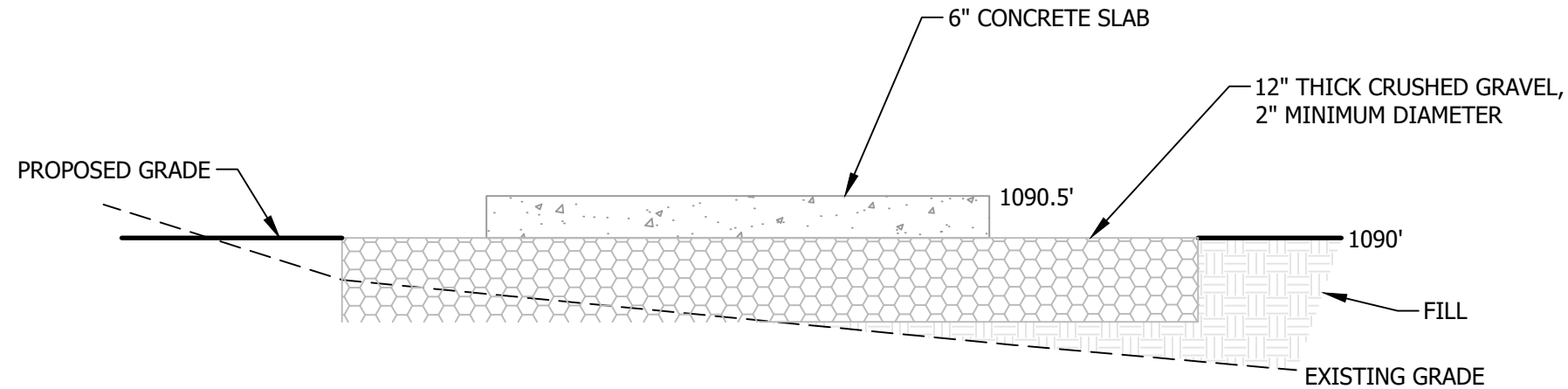
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- UTILITY POLE
- TABLE BENCHMARK



7' CHAIN LINK FENCE WITH 3 STRAND BARBED WIRE  
NOT TO SCALE



TYPICAL SITE SECTION  
NOT TO SCALE

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BROOKFIELD RENEWABLE ENERGY GROUP

PATRIOT STORAGE BATTERY SITES  
BERLIN SAW MILL HYDRO SITE  
BERLIN, NEW HAMPSHIRE

SAWMILL SITE PLAN  
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## SEEDING RECOMMENDATIONS

### 1. GRADING AND SHAPING

A. SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.

### 2. SEEDED PREPARATION

A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.

B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE AMENDED WITH ORGANIC MATTER AND TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME THOROUGHLY INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

### 3. ESTABLISHING VEGETATION

A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:

-AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ. FT.  
-NITROGEN (N), 50 LBS., PER ACRE OR 1.1 LBS. PER 1,000 SQ. FT.  
-PHOSPHATE (P<sub>2</sub>O<sub>5</sub>), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT.  
-POTASH (K<sub>2</sub>O), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT.

(NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10).

B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING, AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.

#### C. SEEDING GUIDE:

USE	SEEDING MIXTURE (SEE 3D)	SOIL TYPE			
		DROUGHTY	WELL DRAINED	MOD. WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	GOOD	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR

#### D. SEEDING RATES:

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.
A TALL FESCUE	20	0.45
CREeping RED FESCUE	20	0.45
REDTOP	2	0.05
TOTAL:	42	0.95
B TALL FESCUE	15	0.35
CREeping RED FESCUE	10	0.25
CROWN VETCH OR	15 OR	0.35 OR
FLATPEA	30	0.75
TOTAL:	40 OR 55	0.95 OR 1.35
C TALL FESCUE	20	0.45
FLATPEA	30	0.75
TOTAL:	50	1.20

E. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO SEPTEMBER 15. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 10 TO SEPTEMBER 1.

#### F. TEMPORARY SEEDING RATES:

SPECIES	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.	REMARKS
WINTER RYE	112	2.5	BEST FOR FALL SEEDING. SEED FROM AUGUST TO SEPTEMBER 5TH FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	80	2.0	BEST FOR SPRING SEEDING. SEED NO LATER THAN MAY 15TH FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYEGRASS	40	1.0	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE NOT IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15TH AND SEPTEMBER 15TH. COVER SEED WITH NO MORE THAN 0.25 INCH OF SOIL.
PERENNIAL RYEGRASS	30	0.7	GOOD COVER WHICH IS LONGER LASTING THAN ANNUAL RYEGRASS. SEED BETWEEN APRIL 1ST AND JUNE 1ST AND/OR BETWEEN AUGUST 15TH AND SEPTEMBER 15TH. MULCHING WILL ALLOW SEEDING THROUGHOUT THE GROWING SEASON. SEED TO A DEPTH OF APPROXIMATELY 0.5 INCH.

### 4. MULCH

A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.

B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING.

### 5. MAINTENANCE TO ESTABLISH A STAND

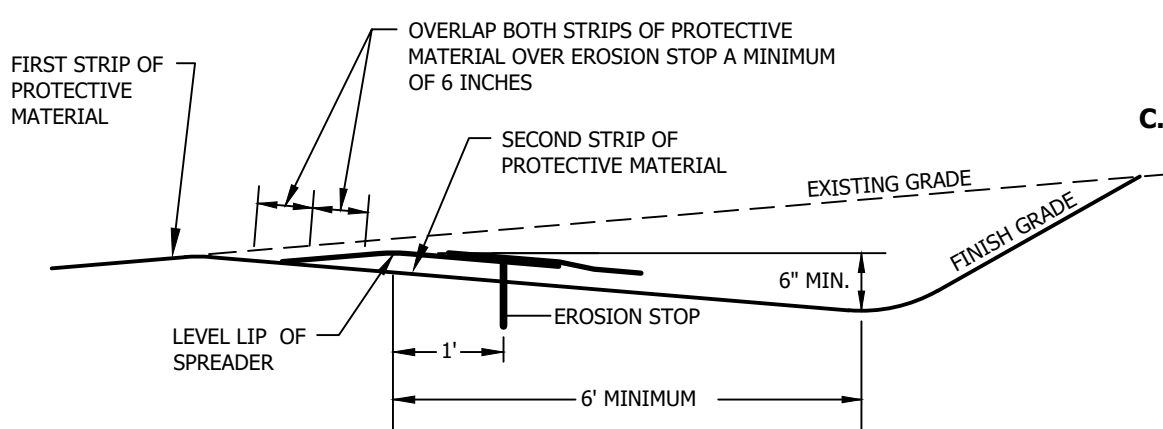
A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.

B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ON SITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME ESTABLISHED.

C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

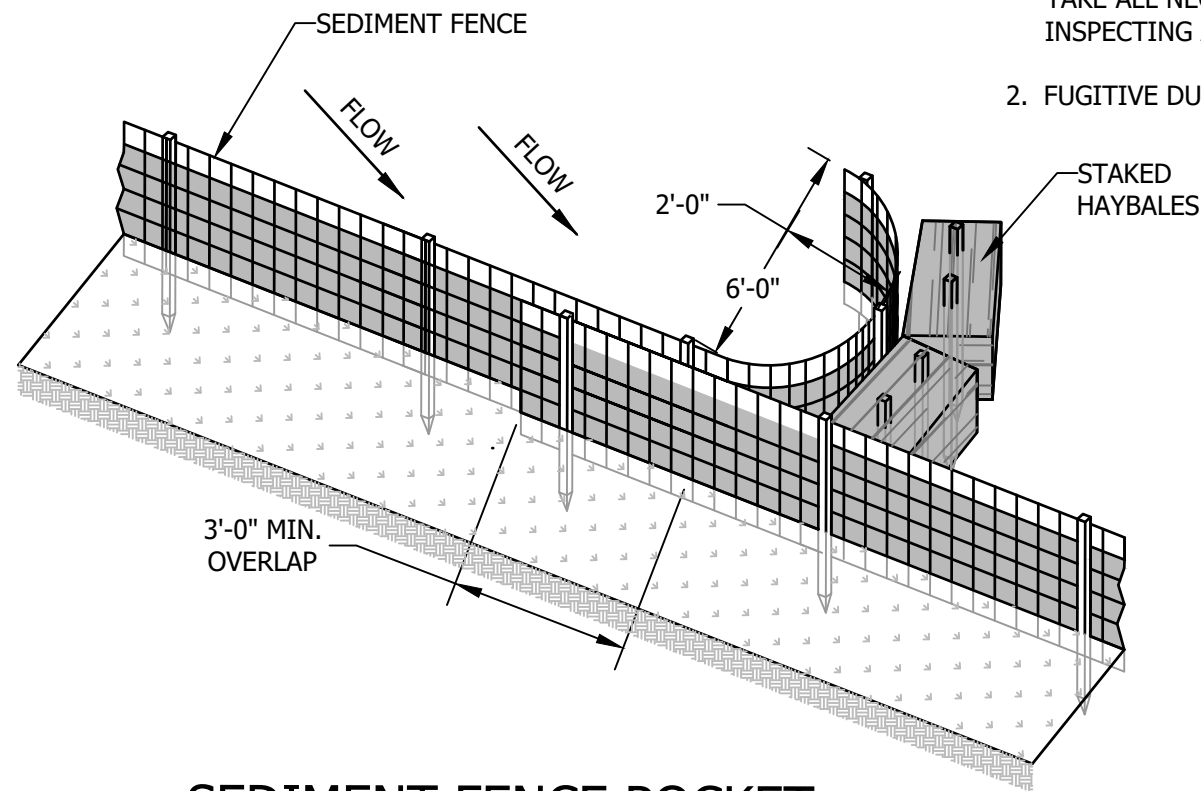
## LEVEL LIP SPREADER INSTALLATION

- CONSTRUCT THE LEVEL SPREADER LIP ON A ZERO PERCENT GRADE TO INSURE UNIFORM SPREADING OF RUNOFF.
- LEVEL SPREADER SHALL BE CONSTRUCTED ON UNDISTURBED SOIL AND NOT ON FILL.
- AN EROSION STOP SHALL BE PLACED VERTICALLY A MINIMUM OF SIX INCHES DEEP IN A SLIT TRENCH ONE FOOT BACK OF THE LEVEL LIP AND PARALLEL TO THE LIP. THE EROSION STOP SHALL EXTEND THE ENTIRE LENGTH OF THE LEVEL LIP.
- THE ENTIRE LEVEL LIP AREA SHALL BE PROTECTED BY PLACING TWO STRIPS OF JUTE OR EXCELSIOR MATTING ALONG THE LIP. EACH STRIP SHALL OVERLAP THE EROSION STOP BY AT LEAST SIX INCHES.
- THE ENTRANCE CHANNEL TO THE LEVEL SPREADER SHALL NOT EXCEED A 1 PERCENT GRADE FOR AT LEAST 50 FEET BEFORE ENTERING INTO THE SPREADER.
- THE FLOW FROM THE LEVEL SPREADER SHALL OUTLET ONTO STABILIZED AREAS. WATER SHOULD NOT RE-CONCENTRATE IMMEDIATELY BELOW THE SPREADER.
- PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PERFORMED.
- PROTECTIVE MATERIAL AND EROSION STOP SHALL BE NORTH AMERICAN GREEN C125 EROSION CONTROL BLANKET OR APPROVED EQUAL.



### LEVEL SPREADER DETAIL

NO SCALE  
SOURCE: ROCKINGHAM COUNTY CONSERVATION SERVICE

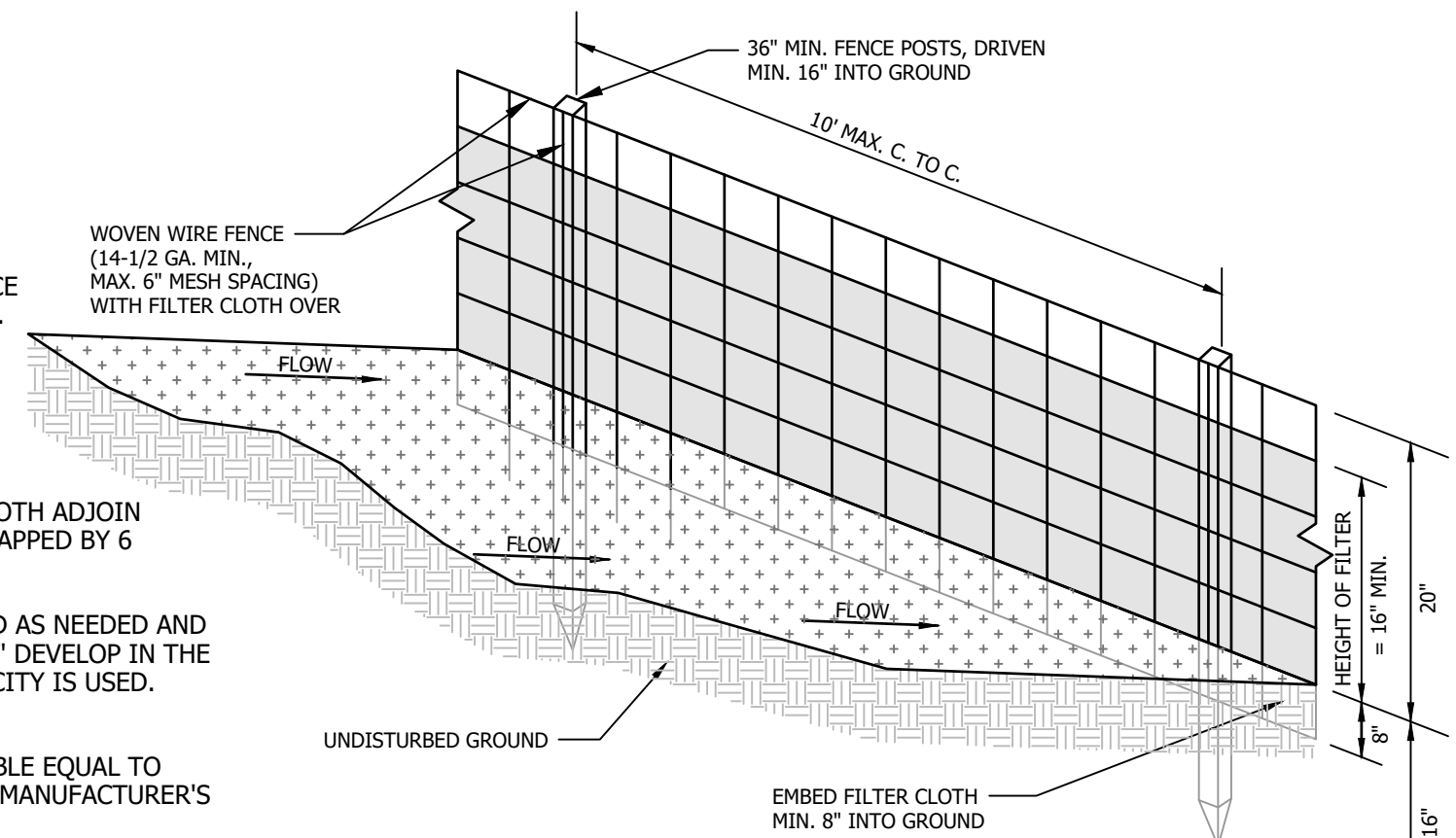


### SEDIMENT FENCE POCKET

NO SCALE

### CONSTRUCTION NOTES FOR SEDIMENT FENCE

- WOVEN WIRE FENCE, IF REQUIRED, TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
- FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP, MID SECTION, AND BOTTOM.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SEDIMENT FENCE, OR 50% OF CAPACITY IS USED.
- 12" DIAMETER FILTREXX SILTSOXX SHALL BE CONSIDERED AN ACCEPTABLE EQUAL TO SEDIMENT FENCE IF INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.



### SEDIMENT FENCE

NO SCALE

## EROSION CONTROL GENERAL NOTES

#### A. KEEP SITE MODIFICATION TO A MINIMUM

- CONSIDER FITTING THE BUILDINGS AND STREETS TO THE NATURAL TOPOGRAPHY. THIS REDUCES THE NEED FOR CUTS AND FILLS. AVOID EXTENSIVE GRADING THAT WOULD ALTER DRAINAGE PATTERNS OR CREATE VERY STEEP SLOPES.
- EXPPOSE AREAS OF BARE SOIL TO EROSION ELEMENTS FOR THE SHORTEST TIME POSSIBLE.
- SAVE AND PROTECT DESIRABLE EXISTING VEGETATION WHERE POSSIBLE. ERECT BARRIERS TO PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT.
- LIMIT THE GRADES OF SLOPES SO VEGETATION CAN BE EASILY ESTABLISHED AND MAINTAINED.
- AVOID SUBSTANTIAL INCREASE IN RUNOFF LEAVING THE SITE.

#### B. MINIMIZE POLLUTION OF WATER DURING CONSTRUCTION ACTIVITIES

- STOCKPILE TOPSOIL REMOVED FROM CONSTRUCTION AREA AND SPREAD OVER ANY DISTURBED AREAS PRIOR TO REVEGETATION. TOPSOIL STOCKPILES MUST BE PROTECTED FROM EROSION.
- PROTECT BARE SOIL AREAS EXPOSED BY GRADING ACTIVITIES WITH TEMPORARY VEGETATION OR MULCHES.
- USE SEDIMENT BASINS TO TRAP DEBRIS AND SEDIMENT WHICH WILL PREVENT THESE MATERIALS FROM MOVING OFF SITE.
- USE DIVERSIONS TO DIRECT WATER AROUND THE CONSTRUCTION AREA AND AWAY FROM EROSION PRONE AREAS TO POINTS OF SAFE DISPOSAL.
- USE TEMPORARY CULVERTS OR BRIDGES WHEN CROSSING STREAMS WITH EQUIPMENT.
- PLACE CONSTRUCTION FACILITIES, MATERIALS, AND EQUIPMENT STORAGE AND MAINTENANCE AREAS AWAY FROM DRAINAGE WAYS.

#### C. PROTECT AREA AFTER CONSTRUCTION.

- ESTABLISH GRASS OR OTHER SUITABLE VEGETATION ON ALL DISTURBED AREAS. SELECT SPECIES ADAPTED TO THE SITE CONDITIONS AND THE FUTURE USE OF THE AREA. FINAL GRADES SHALL BE SEEDED WITHIN 72 HOURS. STABILIZATION SHALL BE DEFINED AS 85% VEGETATIVE COVER.
- MAINTAIN VEGETATED AREAS USING PROPER VEGETATIVE 'BEST MANAGEMENT PRACTICES' DURING THE CONSTRUCTION PERIOD.
- MAINTAIN NEEDED STRUCTURAL 'BEST MANAGEMENT PRACTICES' AND REMOVE SEDIMENT FROM DETENTION PONDS AND SEDIMENT BASINS AS NEEDED.
- DETERMINE RESPONSIBILITY FOR LONG TERM MAINTENANCE OF PERMANENT 'BEST MANAGEMENT PRACTICES'.
- IF CONSTRUCTION IS ANTICIPATED DURING WINTER MONTHS, REFER TO 'COLD WEATHER SITE STABILIZATION REQUIREMENTS'.

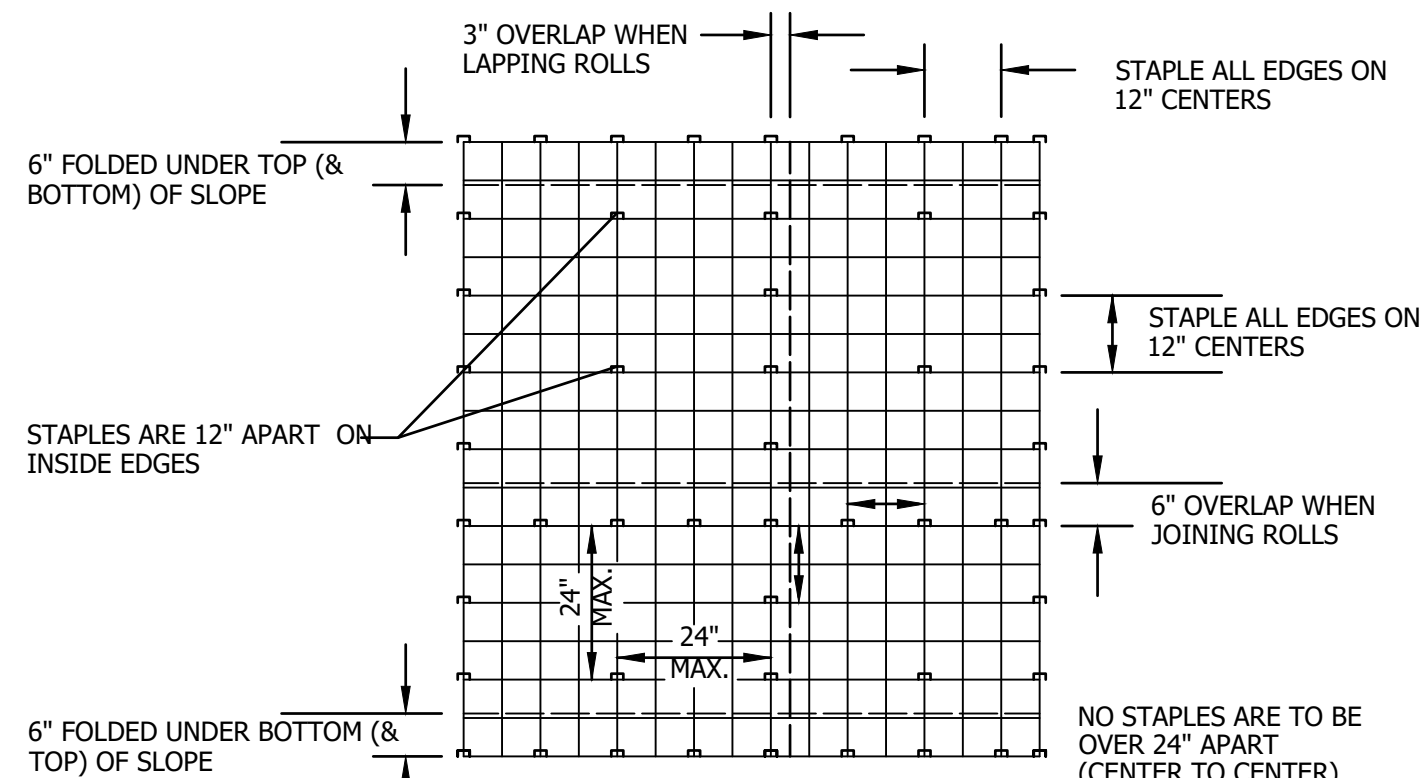
#### D. INVASIVE SPECIES AND FUGITIVE DUST

- THE PROJECT SHALL NOT CONTRIBUTE TO THE SPREAD OF INVASIVE SPECIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EVALUATE WORK AREAS FOR THE PRESENCE OF INVASIVE SPECIES, AND IF FOUND SHALL TAKE NECESSARY MEASURES TO PREVENT THEIR SPREAD IN ACCORDANCE WITH RSA 430:51-57 AND AGR 3800. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT THE INTRODUCTION OF INVASIVE SPECIES BY INSPECTING AND CLEANING ALL EQUIPMENT ARRIVING ON SITE.
- FUGITIVE DUST SHALL BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000.

## COLD WEATHER SITE STABILIZATION REQUIREMENTS

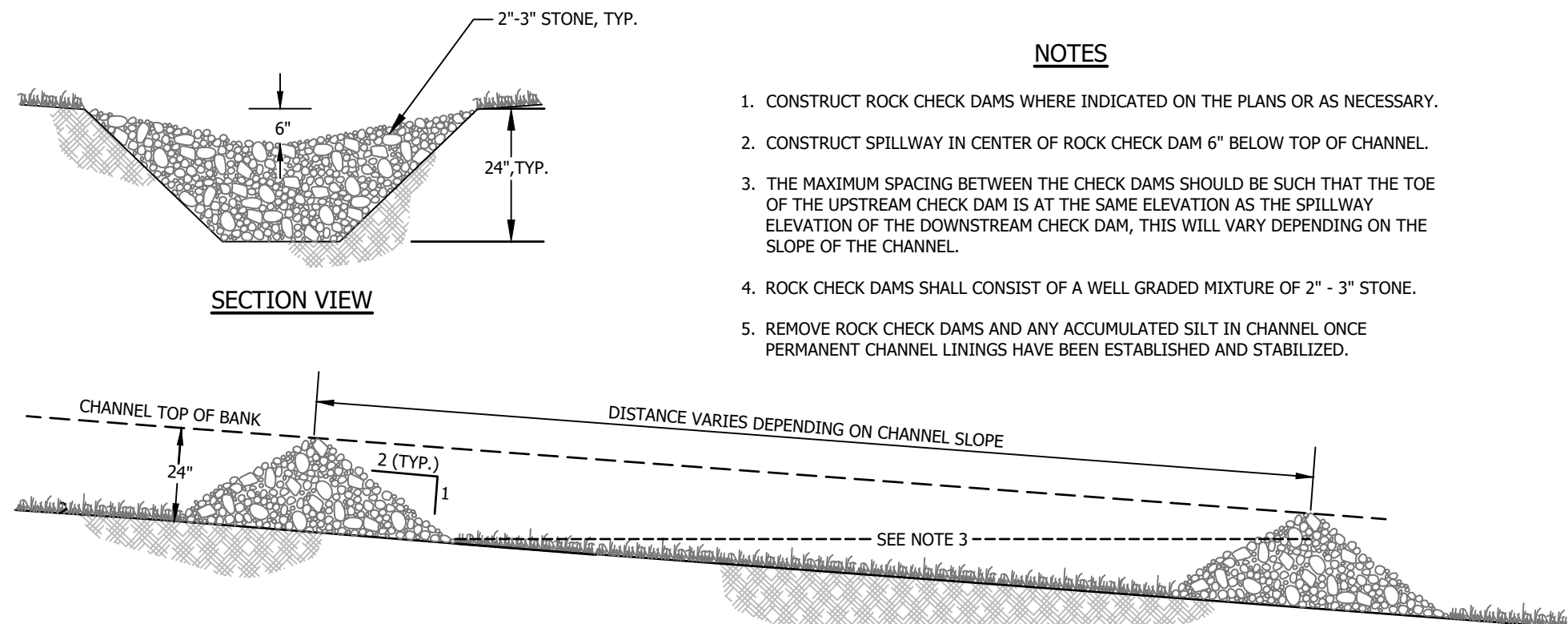
TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE FOLLOWING ADDITIONAL STABILIZATION TECHNIQUES SHALL BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 1:

- THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE LIMITED TO 1 ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY NHDES.
- ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDED AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRE, SECURED WITH ANCHORED NETTING OR TACKIFIER, OR 2 INCHES OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H).
- ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDED AND COVERED WITH PROPERLY INSTALLED AND ANCHORED EROSION CONTROL MATTING OR WITH A MINIMUM 4 INCH THICKNESS OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H).
- INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX, MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H), SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH.
- INSTALLATION OF EROSION CONTROL MATTING SHALL NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH.
- ALL PROPOSED STABILIZATION IN ACCORDANCE WITH NOTES 2 OR 3 ABOVE, SHALL BE COMPLETED WITHIN 1 DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.
- ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% 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, AS DETERMINED BY THE OWNER'S ENGINEERING CONSULTANT.
- AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION OF THE ROAD OR PARKING AREA HAS STOPPED FOR THE WINTER SEASON SHALL BE PROTECTED WITH A MINIMUM 3 INCH LAYER OF BASE COURSE GRAVELS MEETING THE GRADATION REQUIREMENTS OF NHDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM NO. 304.1 OR 304.2.



### MULCH NETTING DETAIL

SOURCE: USDA SOIL CONSERVATION SERVICE  
NO SCALE



### PROFILE VIEW

### ROCK CHECK DAM DETAIL

NO SCALE

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## CONSTRUCTION SEQUENCE

- PREPARE AN EROSION CONTROL PLAN OR A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
- INSTALL CONSTRUCTION ENTRANCE, SEE DETAIL.
- CUT AND CLEAR TREES WITHIN THE CLEARING LIMITS.
- INSTALL SEDIMENT FENCES, ROCK CHECK DAMS, AND OTHER APPROPRIATE EROSION CONTROL MEASURES AT LOCATIONS SHOWN ON THE PLANS AND AS NEEDED.
- GRUB SITE WITHIN GRADING LIMITS.
- STRIP AND STOCKPILE TOPSOIL AND INSTALL EROSION CONTROL MEASURES.
- INSTALL/ADJUST SEDIMENT FENCE, CHECK DAMS, AND HAYBALES, AS REQUIRED.
- CONSTRUCT PERMANENT STORMWATER CONTROLS AS SOON AS PRACTICAL. DO NOT DIRECT STORMWATER TOWARD TREATMENT BASINS, PONDS, SWALES, DITCHES AND LEVEL SPREADERS UNTIL THEY HAVE BEEN STABILIZED.
- PROCEED WITH WORK, LIMITING THE DURATION OF DISTURBANCE. THE MAXIMUM OF UNCOVERED DISTURBED EARTH AT ANY ONE TIME IS FIVE ACRES. THE MAXIMUM LENGTH OF TIME THAT DISTURBED EARTH MAY BE LEFT UNSTABILIZED IS 45 DAYS.  
  
AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:  
A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;  
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; OR  
D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- INSPECT ALL EROSION CONTROL MEASURES ON A DAILY BASIS AND AFTER EVERY 0.5 INCHES OF PRECIPITATION. MAINTAIN SEDIMENT FENCE, SEDIMENT TRAPS, HAY BALES, ETC., AS NECESSARY.
- PAVE ROADWAYS AND/OR PARKING AREAS.
- PLACE TOPSOIL, SEED AND MULCH.
- COMPLETE ALL REMAINING PERMANENT EROSION CONTROL STRUCTURES.
- MONITOR THE SITE AND MAINTAIN STRUCTURES AS NEEDED UNTIL FULL VEGETATION IS ESTABLISHED.

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### BROOKFIELD RENEWABLE ENERGY GROUP

PATRIOT STORAGE BATTERY SITES  
BERLIN SAW MILL HYDRO SITE  
BERLIN, NEW HAMPSHIRE

### CONSTRUCTION SEQUENCE, EROSION CONTROL NOTES AND DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE:  
AUG. 2021

PROJECT #:  
20217

ENGINE'D BY:  
SJB

DRAWN BY:  
SJB

CHECK'D BY:  
DEB

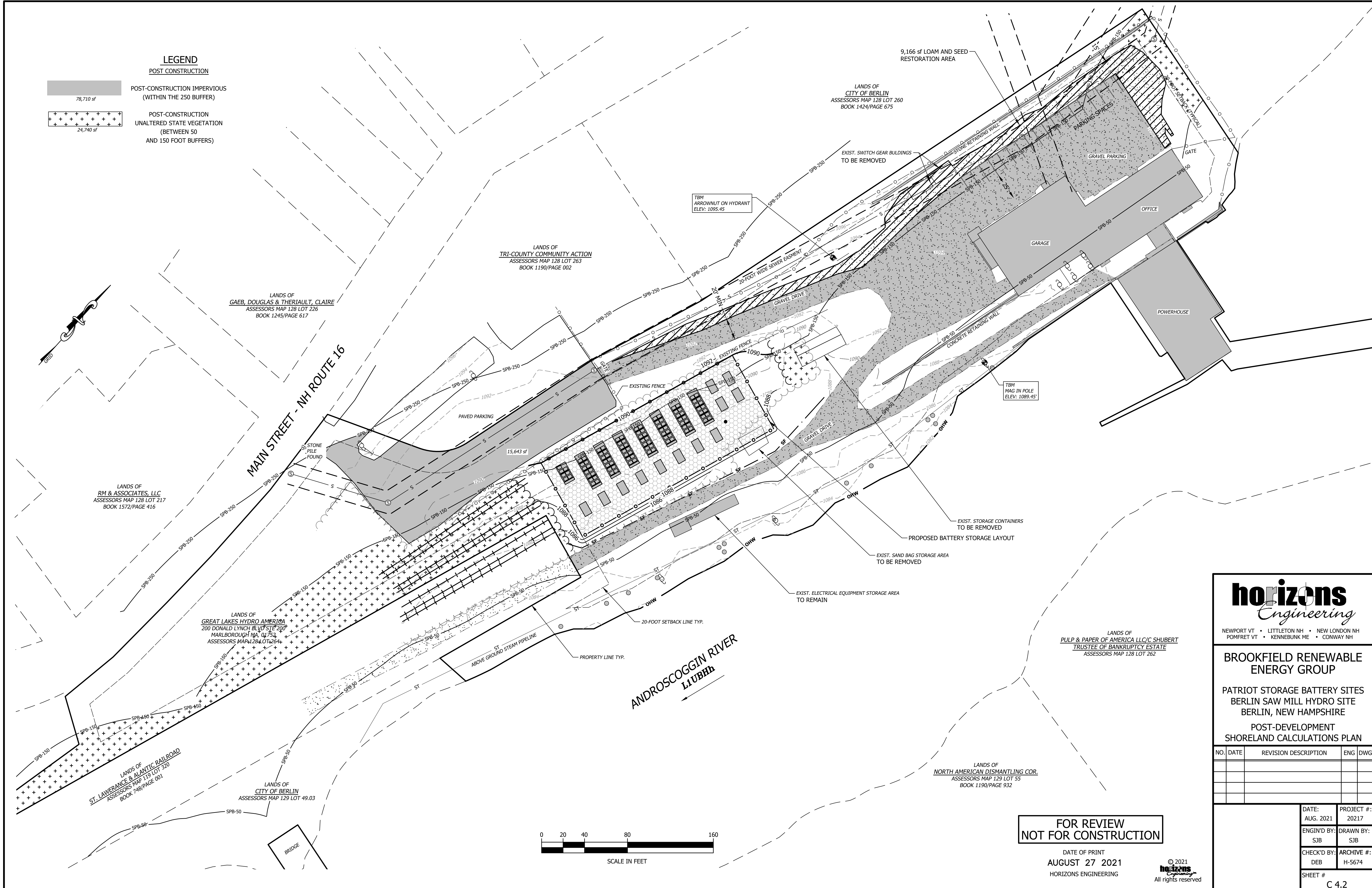
ARCHIVE #:  
H-5674

SHEET #

C 3.1







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ENERGY GROUP

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BERLIN SAW MILL HYDRO SITE  
BERLIN, NEW HAMPSHIRE

POST-DEVELOPMENT  
SHORELAND CALCULATIONS PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

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CHECK'D BY: DEB	ARCHIVE #: H-5674
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FOR REVIEW  
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