

February 16, 2024

Ms. Landis Hershey
Conservation Agent
Walpole Conservation Commission
135 School Street
Walpole, MA 02081

Re: **Land Disturbance Permit Application**
Norfolk County Agricultural School Solar Development Project
1377 North Street

Dear Ms. Hershey:

Weston & Sampson Engineers, Inc. (Weston & Sampson), on behalf of the Applicant, Kearsarge Walpole LLC, is submitting the following revised documents associated with the original December 20, 2023 submission of the Land Disturbance Permit Application for the proposed solar PV array at Norfolk County Agricultural School located at 1377 North Street, Walpole, MA 02081.

- Revised Plan Set,
- Revised Stormwater Report,
- Stormwater Pollution Prevention Plan (SWPPP).

The revisions to the Plan Set and the Stormwater Report are based on test pits performed on site on January 31, 2024.

Should you have any questions, please do not hesitate to contact me by phone at (978) 532-1900 or by email at bukowski.rob@wseinc.com.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.



Robert J. Bukowski, P.E.
Practice Leader

List of Attachments:

Attachment A – Revised Plan Set
Attachment B – Revised Stormwater Report
Attachment C – Stormwater Pollution Prevention Plan

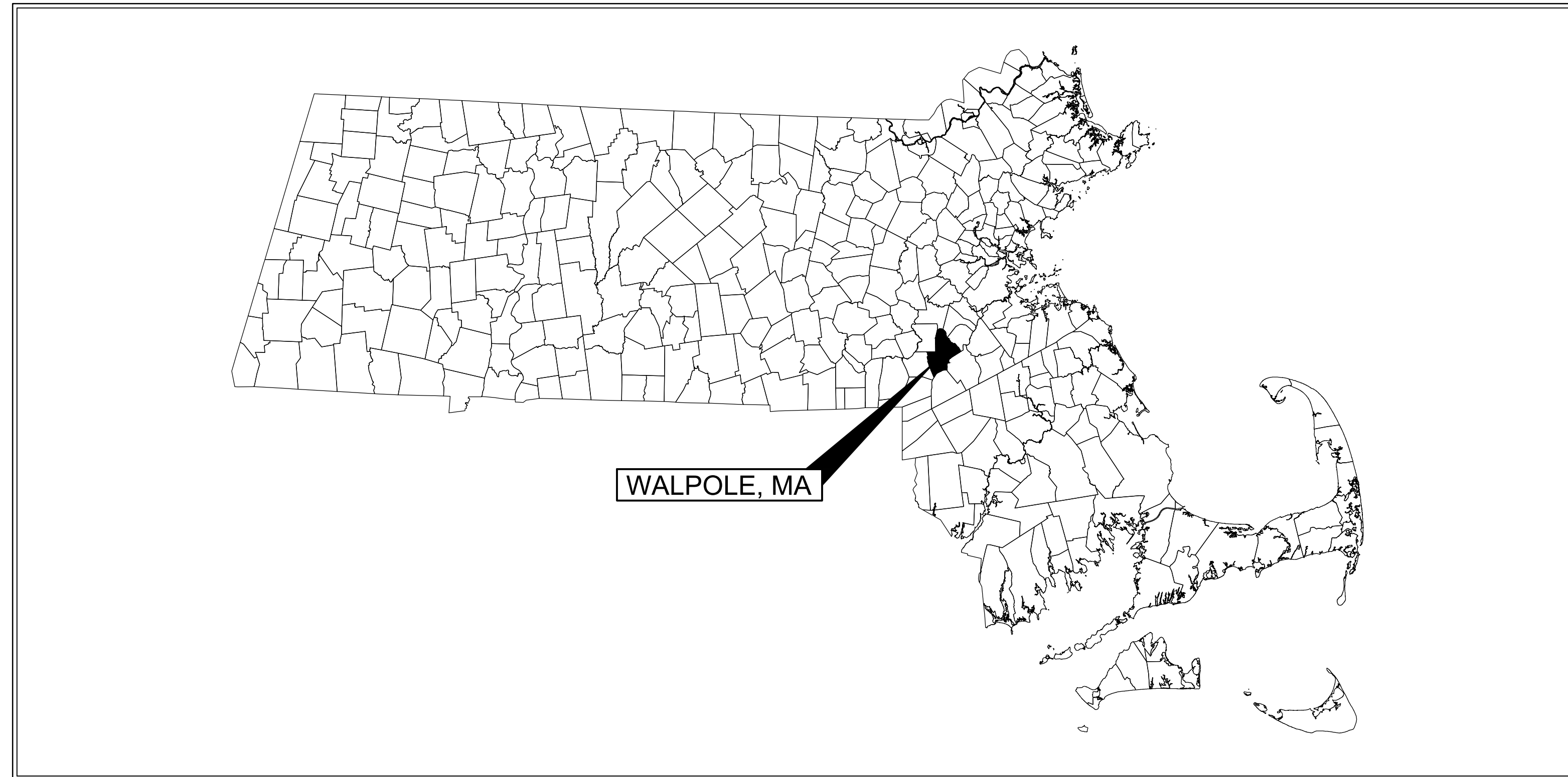
cc: Dan Voss, Kearsarge Walpole LLC

ATTACHMENT A – Revised Plan Set

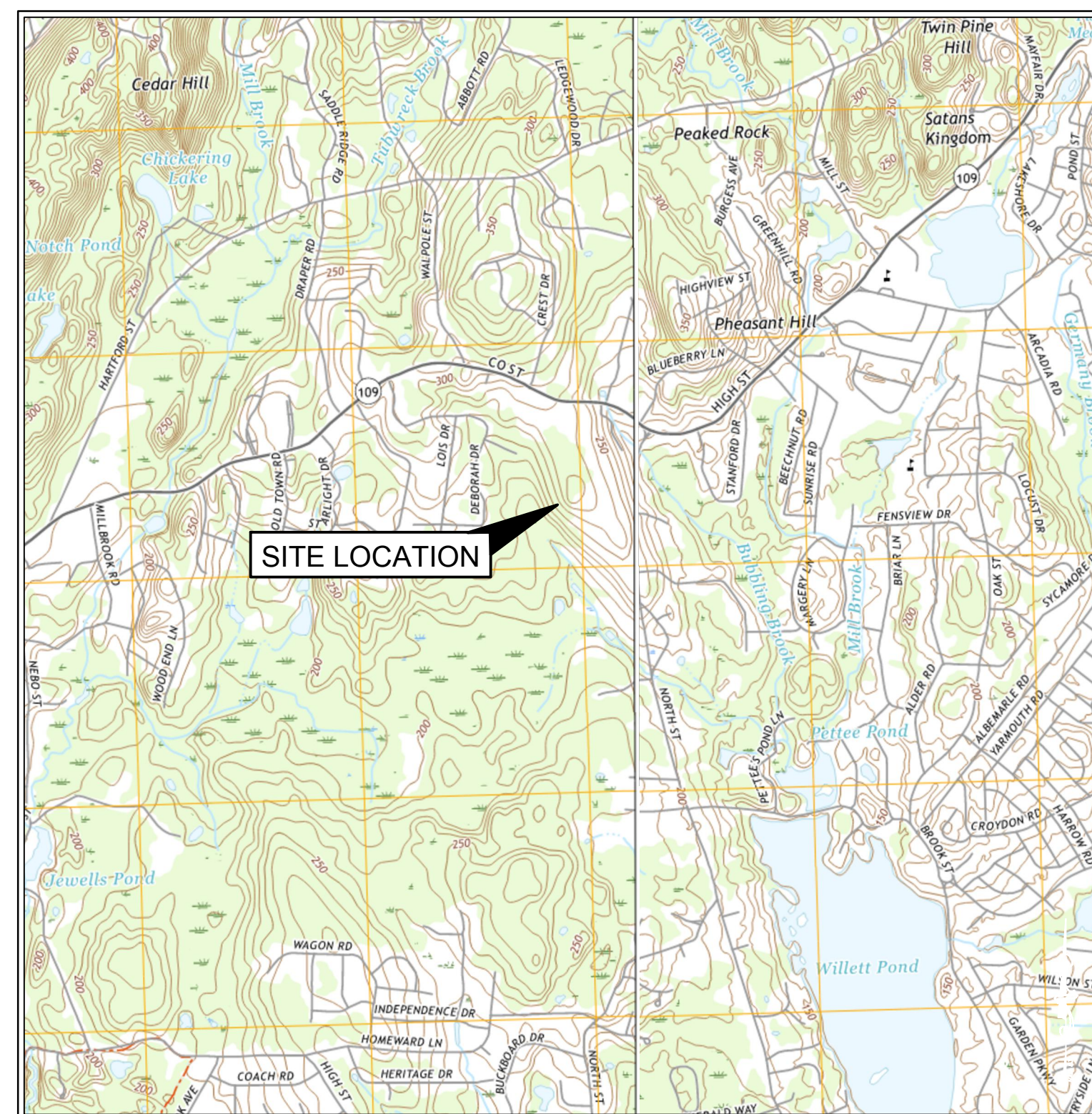
NORFOLK COUNTY AGRICULTURAL SCHOOL SOLAR PROJECT

PROPOSED 5.0 MW AC MAX SOLAR PHOTOVOLTAIC (PV) PROJECT WITH BATTERY STORAGE

1377 NORTH STREET, WALPOLE, MASSACHUSETTS



MASSACHUSETTS MUNICIPAL MAP
NOT TO SCALE



SITE LOCUS MAP
1" = 2,000'



SITE AERIAL MAP
1" = 500'

DRAWING INDEX	
SHEET	TITLE
GENERAL	
G000	COVER SHEET
SURVEY	
V101	EXISTING CONDITIONS
CIVIL	
C001	CIVIL NOTES AND SPECIFICATIONS
C101	DEMOLITION AND EROSION AND SEDIMENTATION CONTROL PLAN
C102	PROPOSED SITE PLAN
C103	LANDSCAPING PLAN
C104	SIGHT DISTANCE PLAN
C201	GRADING PLAN I
C202	GRADING PLAN II
C501	TYPICAL CIVIL DETAILS I
C502	TYPICAL CIVIL DETAILS II
C503	TYPICAL CIVIL DETAILS III

ZONING INFORMATION			
REQUIREMENTS	REQUIRED ¹	SOLAR ⁴	PROPOSED ²
MINIMUM FRONTAGE ³	200 FT	N/A	± 2,219 FT
MINIMUM FRONT YARD SETBACK	30 FT	50 FT	+95 FT (MIN)
MINIMUM REAR YARD SETBACK	30 FT	50 FT	+99 FT (MIN)
MINIMUM SIDE YARD SETBACK	25 FT	50 FT	+54 FT (MIN)
MINIMUM LOT AREA ⁵	40,000 SF	--	±2,360,952 SF
MAXIMUM IMPERVIOUS AREA (% LOT AREA)	40%	--	2% (MAX)
MAXIMUM BUILDING HEIGHT	35 FT	--	15 FT
MAXIMUM BUILDING COVERAGE	25%	N/A	N/A
ZONE		RURAL	

NOTES:
 1. FRONTAGE AND SETBACKS LISTED IN TABLE 6-B.1 OF THE BY-LAWS. QUANTITIES PER THE TOWN OF WALPOLE ZONING BY-LAWS DATED MAY 6, 2019.
 2. PROPOSED SETBACKS MEASURED FROM THE PROPERTY LINE TO THE NEAREST FENCE LINE.
 3. FRONTAGE MAY BE ZERO, PROVIDED THAT NECESSARY AND PERMANENT RIGHTS OF WAY ARE RECORDED PER SECTION 15.9.B IN THE BY-LAWS.
 4. FOR LARGE-SCALE GROUND MOUNTED SOLAR PV DEVELOPMENTS, SETBACK REQUIREMENTS SHALL NOT BE LESS THAN 50 FT WHEN IN OR ADJUTTER RESIDENTIAL DISTRICTS PER SECTION 15.9.A IN THE BY-LAWS.
 5. PROJECT LEASE AREA COMPRISES 17.5 ACRES ACROSS THE THREE PARCELS NOTED ABOVE.

SITE INFORMATION	
LAND OWNER:	NORFOLK COUNTY AGRICULTURAL SCHOOL
TAX MAP / LOT:	5 / 33
BOOK / PAGE:	1394 / 568-570
PARCEL AREA:	±17.31 ACRES
ZONING:	RURAL
LAND OWNER:	NORFOLK COUNTY AGRICULTURAL SCHOOL
TAX MAP / LOT:	5 / 35
BOOK / PAGE:	1394 / 568-570
PARCEL AREA:	±2.44 ACRES
ZONING:	RURAL
LAND OWNER:	NORFOLK COUNTY AGRICULTURAL SCHOOL
TAX MAP / LOT:	5 / 36
BOOK / PAGE:	1394 / 568-570
PARCEL AREA:	±34.45 ACRES
ZONING:	RURAL

Project Developer:
KEARSARGE ENERGY
 Kearsarge Walpole LLC
 1380 Soldiers Field Road, Suite 3900
 Boston, MA 02135
 Tel: (855) 277-6217
 www.kearsargeenergy.com

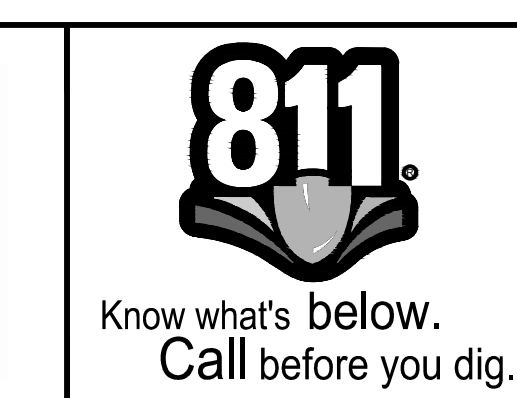
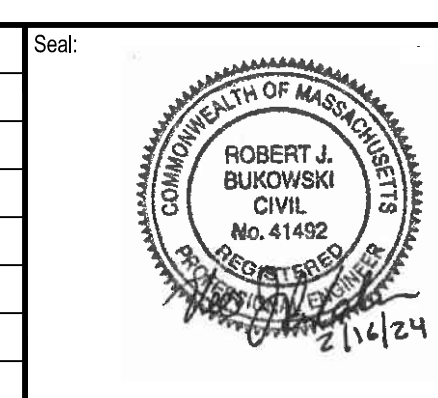
Consultants:
Weston & Sampson
 Weston & Sampson Engineers, Inc.
 55 Walkers Brook Drive, Suite 100
 Reading, MA 01867
 978.532.1900 800.SAMPSON
 www.westonandsampson.com

- NOTES:
 1. PLANS ARE BEING FILED UNDER SECTION 13 & 15 OF THE TOWN OF WALPOLE ZONING BYLAWS FOR SITE PLAN REVIEW AND LARGE-SCALE GROUND MOUNTED SOLAR PHOTOVOLTAIC OVERLAY, IN ACCORDANCE WITH THE LAND COURT'S ORDER DATED MARCH 29, 2023.

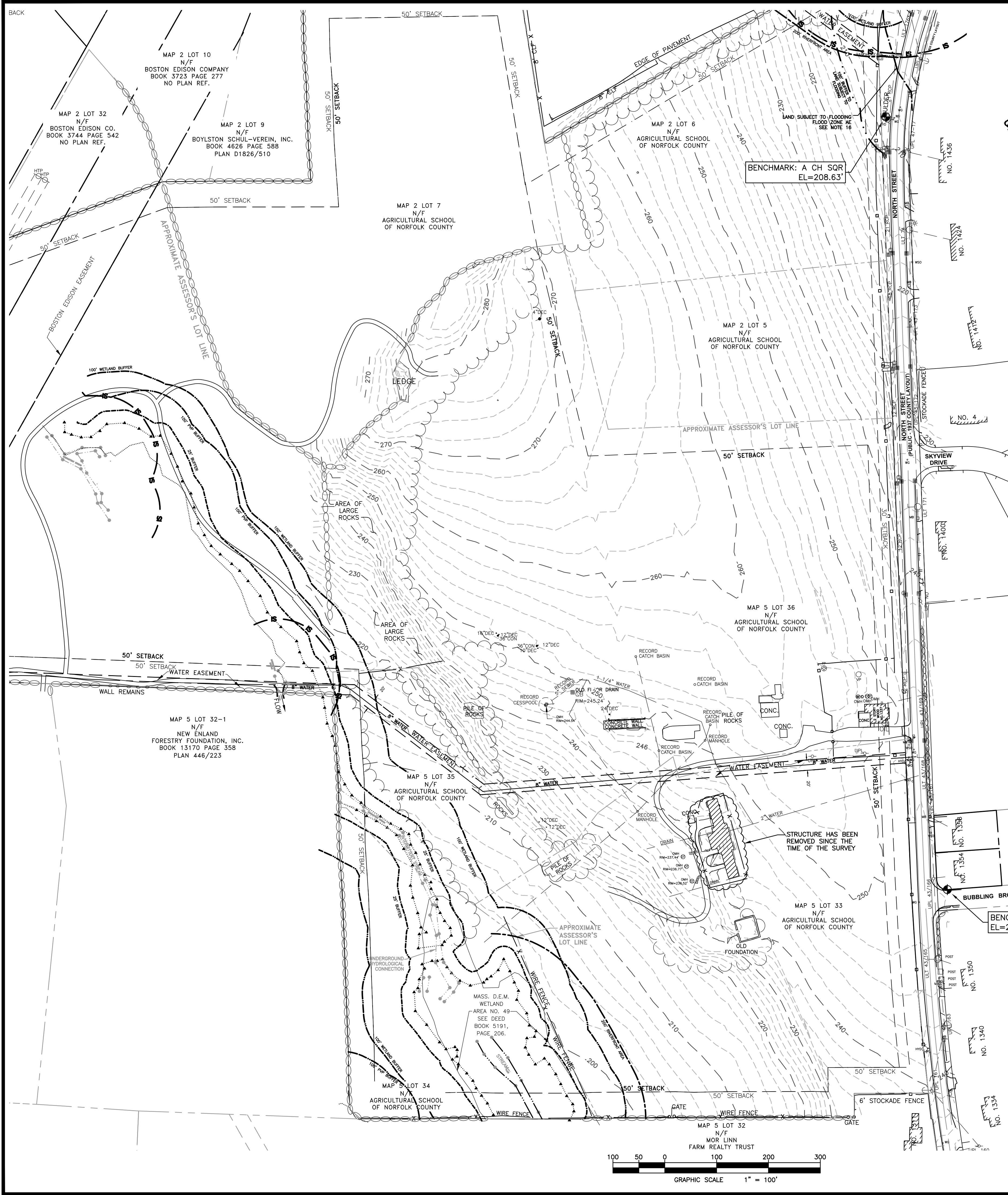
DATE APPROVED: _____
 DATE ENDORSED: _____

 WALPOLE PLANNING BOARD

REV #	DESCRIPTION	DATE
6	REVISED BASIN GRADING	02/16/2024
5	ISSUED FOR PLANNING BOARD ENDORSEMENT	12/20/2023
4	EXTENSION OF SITE ENTRY	10/05/2023
3	EXTENDED ASPHALT ACCESS ROAD	10/04/2023
2	REVISED PER FIRE DEPARTMENT COMMENTS	10/02/2023
1	REVISED PER TOWN COMMENTS	09/07/2023
0	ISSUED FOR PERMITTING / NOT FOR CONSTRUCTION	01/27/2023



Issued For:	PERMITTING	Drawn By:	VLB
Issued Date:	01/27/2023	Reviewed By:	MRC / JMU
Approved By:	RJB	Job No.:	ENG22-1200
Drawing Title:	COVER SHEET	Sheet Number:	G000



GENERAL NOTES:

1. ORIGINAL BASE PLAN DEVELOPED BY NORFOLK COUNTY ENGINEERING DEPARTMENT, TITLED "EXISTING CONDITIONS PLAN" DATED JANUARY 06, 2022 AND REVISED APRIL 06, 2022.
2. THIS PLAN IS NOT THE RESULT OF A BOUNDARY SURVEY. IT IS BASED ON LOCUS DEEDS AND PLANS OF RECORD INCLUDING A FIELD REVIEW AND LOCATIONS OF EXISTING MONUMENTATION AS NOTED ON PLAN.
3. HORIZONTAL DATUM IS BASED ON MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD83 (2011) MAINLAND ZONE. VERTICAL DATUM IS REFERENCED TO NAVD 88.
4. THIS PLAN WAS PREPARED FOR PERMITTING AND IS NOT SUITABLE FOR CONSTRUCTION.
5. THE TITLE REFERENCE FOR THE WATER EASEMENT IS SHOWN IN THE DEED RECORDED IN THE NORFOLK COUNTY REGISTRY OF DEEDS BOOK 6056, PAGE 447, PLAN 298/741. SEE NORFOLK COUNTY ENGINEERING EXISTING CONDITIONS PLAN REVISED 04/06/2022 REFERENCE NOTES #21 FOR MORE INFORMATION.
6. THE WATER EASEMENT IS TO THE BENEFIT OF THE TOWN OF WALPOLE.

**NORFOLK COUNTY ENGINEERING EXISTING CONDITIONS PLAN
REVISED 04/06/2022 REFERENCE NOTES:**

1. UTILITIES SHOWN HEREON WERE TAKEN FROM AVAILABLE FIELD AND RECORD LOCATIONS AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL NOTIFY DIF SAFE AND DETERMINE THE EXACT LOCATIONS IN THE FIELD PRIOR TO ANY WORK PER MASSACHUSETTS GENERAL LAW CHAPTER 82 SECTIONS 40A - 40E, AS AMENDED. THIS PLAN MAY OR MAY NOT SHOW ALL THE UTILITIES SERVICING OR EXISTING ON THIS SITE, ABOVE GROUND OR BELOW, IN SERVICE OR ABANDONED, UNRECORDED OR OF RECORD. ANY LABEL IDENTIFYING A UTILITY STRUCTURE IS BASED ON FIELD INSPECTION AND/OR AVAILABLE PLANS AND SHOULD NOT BE CONSIDERED AS A DEFINITIVE DESCRIPTION OF EITHER THE UTILITY OR USAGE OF THE STRUCTURE.
2. WE CANNOT ASSUME RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES THAT ARE OMITTED OR INACCURATELY SHOWN ON SAID PLANS, AS SUB-SURFACE UTILITIES CANNOT BE VERIFIED.
3. CERTAIN UTILITY INFORMATION MAY NOT BE DISCLOSED ON THIS PLAN AS THESE UTILITIES COMPANIES PROHIBIT DISCLOSURE OF UTILITY INFORMATION OR LOCATIONS TO THIRD PARTIES THAT HAVE NOT AGREED TO THAT UTILITY COMPANIES DISCLOSURE AGREEMENT.
4. THE CERTIFICATION(S) SHOWN HEREON ARE INTENDED TO MEET REGISTRY OF DEEDS AND/OR MUNICIPAL REQUIREMENTS AND ARE NOT A CERTIFICATION AS TO TITLE OR OWNERSHIP OF PROPERTY SHOWN, OWNERS OF LOCUS AND ADJOINING PROPERTIES ARE ACCORDING TO CURRENT ASSESSOR'S RECORDS.
5. THIS PLAN DOES NOT SHOW ANY UNRECORDED OR UNWRITTEN EASEMENTS THAT MAY EXIST. A REASONABLE AND DILIGENT ATTEMPT HAS BEEN MADE TO OBSERVE ANY APPARENT VISIBLE USE OF THE LAND; HOWEVER, THIS DOES NOT CONSTITUTE A GUARANTEE THAT NO SUCH EASEMENTS EXIST.
6. THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT SHOW ANY UNKNOWN OR UNRECORDED CLAIMS, ENCUMBRANCES, OR CONVEYANCES OR CONDITIONS THAT A TITLE REPORT WOULD DISCLOSE.
7. THIS PLAN WAS PREPARED IN ACCORDANCE WITH 250 CMR 6.00 LAND SURVEYING PROCEDURES AND STANDARDS.
8. THIS PLAN WAS PREPARED USING THE FOLLOWING SURVEYING METHODS, TOTAL STATION (LEICA TS06, LEICA TS16), DIFFERENTIAL LEVELING (LEICA DMO43), RTK NETWORK GPS (LEICA GS12, GS16 WITH CELLULAR NETWORK CORRECTION, MAINE TECHNICAL SOURCE).
9. HORIZONTAL DATUM: MA MAINLAND NAD 83 GRID NORTH, US SURVEY FEET.
10. GRID COORDINATES HAVE BEEN SCALED BY AVERAGE COMBINED SCALE FACTOR TO GROUND COORDINATES AS DERIVED TO US SURVEY FEET.
AVERAGE COMBINED SCALE FACTOR = 0.999958663
4 HOUR OPUS STATIC SOLUTIONS, 11/02/2017 AND 11/03/2017
GRID (U.S. SURVEY FEET) GROUND (U.S. SURVEY FEET)
PT NORTH EAST NORTH EAST
1 2897899.0973 723417.7460 2898018.8362 723447.6370
2 2897459.9065 723148.1620 2897579.6272 723178.0419
4 2896460.7157 723180.0392 2896600.4560 723218.9308
5 2896198.6304 723789.2742 2896318.2990 723819.1806
11. VERTICAL DATUM: ELEVATIONS ARE BASED ON NAVD88, US SURVEY FEET.
BENCHMARK MASS DOT #7059 ELEVATION = 198.849'
12. THIS PLAN WAS PREPARED FOR THE COUNTY OF NORFOLK UNDER THE AGREED UPON SCOPE OF SERVICES. ANY USE OR REUSE OF THIS WORK PRODUCT BY ANY ENTITY UNRELATED TO THE ORIGINAL SCOPE OF SERVICES SHALL BE AT THE ENTITY'S SOLE AND EXCLUSIVE RISK AND LIABILITY.
13. THIS PLAN IS AN ORIGINAL WORK OF THE NORFOLK COUNTY ENGINEERING DEPARTMENT. IT IS A VIOLATION OF LAW FOR ANYONE TO REPRESENT THIS PLAN AS THEIR OWN ORIGINAL WORK, WITH OR WITHOUT EDITING. IT IS A VIOLATION OF LAW TO EDIT THIS PLAN AND CONTINUE TO REPRESENT IT AS THE ORIGINAL WORK OF THE NORFOLK COUNTY ENGINEERING DEPARTMENT.
14. THIS ORIGINAL PLAN HAS A BLACK SEAL AND A BLUE SIGNATURE OF THE PROFESSIONAL LAND SURVEYOR. ANY PLAN NOT BEARING THIS ORIGINAL GREEN SEAL AND BLUE SIGNATURE SHALL BE CONSIDERED A COPY THAT MAY OR MAY NOT HAVE BEEN EDITED.
15. FIELD SURVEY WAS PERFORMED BETWEEN NOVEMBER 2017 AND DECEMBER 2021. WITH ADDITIONAL FIELD SURVEY PERFORMED FOR REVISIONS THROUGH APRIL 2022.
16. FLOOD DATA OBTAINED FROM THE NATIONAL FLOOD INSURANCE PROGRAM ADMINISTERED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA). SEE FLOOD INSURANCE RATE MAP (FIRM) NUMBER 25021C0159E WITH AN EFFECTIVE DATE OF JULY 17, 2012 AND SEE FLOOD ZONE AE AND CROSS SECTION "FF" DEPICTED ON THE FIRM. SEE FEMA FLOOD INSURANCE STUDY NUMBER 25021C0202, VERSION 2.6.3.F FOR FLOODWAY DATA WITHIN NORFOLK COUNTY MASSACHUSETTS. SEE FLOOD INSURANCE STUDY REPORT NUMBER 250254 FOR THE TOWN OF WALPOLE, MA. SEE BUBBLING BROOK CROSS SECTION "F" IN DATA TABLE. FLOOD ZONE AE BASE FLOOD ELEVATION FOR CROSS SECTION "FF" IN THE TABLE 5.205.5 (NAV088). TO BE CONSERVATIVE IN DEPICTION OF THE DETERMINED BASE FLOOD ELEVATION ZONE AE OF THE 100-YEAR STORM ON THIS SITE, THE LOCATION OF CONTOUR ELEVATION 206 HAS BEEN HIGHLIGHTED, AND A 100 FOOT BUFFER LINE CREATED LATERALLY FROM CONTOUR 206 HAS BEEN DEPICTED TO REPRESENT THE PROTECTED RESOURCE AREA OF LAND SUBJECT TO FLOODING AS PER TOWN OF WALPOLE GEN. BYLAW WETLAND PROTECTION, CHAPTER 561.
17. AVERAGE FINISHED GRADE FOR HEIGHT OF BUILDING CALCULATION DETERMINED FROM THE AVERAGE FINISHED GRADE OF THE ADJACENT GROUND AT BUILDING SIDE FACING THE STREET.
18. BORDERING VEGETATED WETLANDS (B/W) DELINEATION PERFORMED BY O'DRISCOLL LAND SURVEYING, INC. IN 2017 AND 2018. ON DECEMBER 10, 2021, LEC ENVIRONMENTAL CONSULTANTS, INC. CONDUCTED A SITE EVALUATION AND DETERMINED THAT THE 2017/2018 B/W FLAGGING WAS ACCURATE AS DELINEATED BY MR. O'DRISCOLL. LEC ENVIRONMENTAL CONSULTANTS, INC. ALSO DELINEATED THE BANK ASSOCIATED WITH AN INTERMITTENT STREAM LOCATED WITHIN THE B/W AND BANK ASSOCIATED WITH BUBBLING BROOK, A PERENNIAL STREAM. THE B/W AND BANK FLAGS ARE DEPICTED ON SHEETS 2-5.
19. THE RESOURCE AREAS DEPICTED HEREON ARE FROM FIELD LOCATIONS PERFORMED IN 2017/2018 AND 2021/2022. THE TOPOGRAPHIC DETAIL PLANS HAVE BEEN PREPARED FOR FILING OF AN ABBREVIATED NOTICE OF RESOURCE AREA DELINEATION (ANRAD) WITH THE TOWN OF WALPOLE CONSERVATION COMMISSION AND THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION TO HAVE THE DEPICTED DELINEATIONS CONFIRMED, NAMELY: BORDERING VEGETATED WETLANDS (B/W), INTERMITTENT STREAM BANKS, AND PERENNIAL STREAM BANK (NEAR SOUTHERN BOUNDARY LINE & BUBBLING BROOK). LAND SUBJECT TO FLOODING (ZONE AE NEAR BUBBLING BROOK). THE ANRAD FILING IS LIMITED TO THE RESOURCE AREAS SHOWN HEREON. IF IT IS BEYOND THE SCOPE OF THIS FILING, OTHER RESOURCE AREAS THAT MAY EXIST ON THE SITE OF THE HILLTOP FARM HAVE NOT BEEN DELINEATED.
20. SUBJECT PARCELS ARE LOCATED IN THE RURAL RESIDENCE DISTRICT.
21. SEE DEED RECORDED IN THE NORFOLK COUNTY REGISTRY OF DEEDS IN BOOK 1304, PAGE 568, AND PLAN BOOK 63, PLAN 293. ALSO SEE DEED IN BOOK 2985, PAGE 401, WITH PLAN SEE EASEMENTS RECORDED IN DEED BOOK 6056, PAGE 447, WITH PLAN BOOK 298, PLAN 741, AND DEED BOOK 8424, PAGE 44, WITH PLAN BOOK 385, PLAN 852, AND DEED BOOK 5191, PAGE 206, WITH PLAN, AND DEED BOOK 4058, PAGE 76, WITH PLAN, AND DEED BOOK 4439, PAGE 106, WITH PLAN BOOK 223 PLAN 635-645.
22. THE NORTH STREET BITUMINOUS ASPHALT PAVEMENT SURFACE HAS BEEN RESURFACED SINCE THE SURVEY WAS PERFORMED. ANY DESIGN RELATED TO THE NORTH STREET ROADWAY SURFACE AND STRUCTURES LOCATED WITHIN THE LIMITS OF THE PAVEMENT WOULD REQUIRE THAT THE TOPOGRAPHIC DETAIL WITHIN THE ROADWAY BE UPDATED.
23. FOR INFORMATIONAL PURPOSES, THE EASTERN LIMITS OF A POTENTIAL VERNAL POOL LOCATED WITHIN THE "A" SERIES B/W IS DEPICTED BETWEEN THE INTERMITTENT STREAM BANK FLAGS LOCATED AT THE TOWN OF WALPOLE WATER MAIN EASEMENT AND THE INTERMITTENT STREAM BANK FLAGS DEPICTED TO THE NORTHERLY EXTENT OF THE "A" SERIES B/W. FOR INFORMATIONAL PURPOSES, THE NORTHEASTERN LIMITS OF THE MASSGIS POTENTIAL VERNAL POOL NUMBER 26439 LOCATED OFF SITE DIRECTLY TO THE SOUTHWEST CORNER OF THE HILLTOP FARM ON ADJACENT ADJOINING PROPERTY HAS LOCATED. A 100 FOOT BUFFER LINE CREATED LATERALLY FROM EACH POTENTIAL VERNAL POOL HAS BEEN DEPICTED TO REPRESENT THE PROTECTED RESOURCE AREA AS PER TOWN OF WALPOLE GEN. BYLAW WETLAND PROTECTION, CHAPTER 561.
24. THE LOCATIONS OF LEC, INC. DEP FIELD DATA FORM TEST PLOT TRANSECT 1, PLOT 1 & 2, AND TRANSECT 2, PLOT 1 & 2, WERE LOCATED IN THE FIELD ON MARCH 29, 2022, AND ARE DEPICTED AND LABELED ACCORDINGLY HEREON.
25. CROSS SECTION A IS A SERIES OF SPOT GRADES THAT WERE TAKEN ACROSS THE B SERIES B/W AND THE B/A AND B SERIES.

- LEGEND:**
- | | | | |
|-----------------|----------------------------------|-------|---------------------------|
| — 300 — | MAJOR CONTOUR | — ○ — | STONE WALL |
| - - - 300 - - - | MINOR CONTOUR | — — — | WALL REMAINS |
| — — — | ZONING SETBACKS | — — — | PERENNIAL STREAM |
| — — — | PROPERTY LINE | — — — | INTERMITTENT STREAM |
| — — — | ABUTTER'S PROPERTY LINE | — — — | 200-FOOT RIVER FRONT AREA |
| — — — | BORDERING VEGETATED WETLAND LINE | — — — | 100-FOOT RIVER FRONT AREA |
| — — — | POTENTIAL VERNAL POOL LINE | — — — | WETLAND FLAG |
| — — — | BLOCK WALL | — — — | SIGN |
| — — — | EDGE OF GRAVEL | — — — | BOLLARD |
| — — — | EDGE OF ASPHALT | — — — | HYDRANT |
| — — — | GRAVEL PATH | — — — | GUY WIRE |
| — — — | WOOD FENCE | — — — | STRUCTURE |
| — — — | CHAIN LINK FENCE | | |
| — — — | OVERHEAD WIRES | | |
| — — — | TREE LINE | | |

DATE APPROVED: _____

DATE ENDORSED: _____

WALPOLE PLANNING BOARD

Project:
**NORFOLK COUNTY
 AGRICULTURAL SCHOOL
 SOLAR**
 1377 NORTH STREET
 WALPOLE, MA 02081

Weston & Sampson
 Weston & Sampson Engineers, Inc.
 55 Walkers Brook Drive, Suite 100
 Reading, MA 01867
 978.532.1900 800.SAMPSON
 www.westonandsampson.com

Applicant:
**KEARSARGE
 ENERGY**
 Kearsarge Walpole LLC
 1380 Soldiers Field Road, Suite 3900
 Boston, MA 02135
 Tel: (855) 277-6217
 www.kearsargeenergy.com

Revisions:

No.	Date	Description
6	02/16/2024	REVISED BASIN GRADING
5	12/20/2023	ISSUED FOR PLANNING BOARD ENDORSEMENT
4	10/05/2023	EXTENSION OF SITE ENTRY
3	10/04/2023	EXTENDED ASPHALT ACCESS ROAD
2	10/02/2023	REV PER FIRE DEPT COMMENTS
1	09/07/2023	REVISED PER TOWN COMMENTS
0	01/27/2023	ISSUED FOR PERMITTING

Seal:

Issued For:
**PERMITTING / NOT
 FOR CONSTRUCTION**

Scale: AS SHOWN
 Date: 01/27/2023
 Drawn By: VLB
 Reviewed By: MRC / JMJ
 Approved By: RJB
 W&S Project No.: ENG22-1200
 W&S File No.: Kearsarge Norfolk

Drawing Title:
**EXISTING
 CONDITIONS**
 Sheet Number:
V101
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CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL CALL, DIG SAFE AT 811 OR 1-888-DIG-SAFE AT LEAST 72 HOURS, SATURDAYS, SUNDAYS, AND HOLIDAYS EXCLUDED, PRIOR TO EXCAVATING AT ANY LOCATION. A COPY OF THE DIG SAFE PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE OWNER PRIOR TO EXCAVATION.
2. LOCATIONS OF EXISTING PIPES, CONDUITS, UTILITIES, FOUNDATIONS AND OTHER UNDERGROUND OBJECTS ARE NOT WARRANTED TO BE CORRECT AND THE CONTRACTOR SHALL HAVE NO CLAIM ON THAT ACCOUNT SHOULD THEY BE OTHER THAN SHOWN.
3. STONE WALLS, FENCES, CURBS, ETC., SHALL BE REMOVED AND REPLACED AS NECESSARY TO PERFORM THE WORK, UNLESS OTHERWISE INDICATED. ALL SUCH WORK SHALL BE INCIDENTAL TO CONSTRUCTION OF THE PROJECT.
4. ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND THE PROJECT AREA SHALL BE RESTORED TO NO ADDITIONAL COST TO THE OWNER.
5. HORIZONTAL CONTROLS REFER TO MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (MAINLAND ZONE) (1983 NORTH AMERICAN DATUM).
6. ELEVATIONS REFER TO THE 1988 NORTH AMERICAN VERTICAL DATUM (NAVD 88).
7. NOTHING SHOWN OR OMITTED FROM THE DOCUMENTS PROVIDED SHALL RELIEVE THE CONTRACTOR FROM FULL COMPLIANCE WITH ALL APPLICABLE CODES, REGULATIONS, BYLAWS, AND ORDINANCES.

FROST PROTECTION AND SNOW REMOVAL:

1. THE CONTRACTOR SHALL, AT ITS OWN EXPENSE, KEEP EARTHWORK OPERATIONS CLEAR AND FREE OF ACCUMULATIONS OF SNOW AS REQUIRED TO CARRY OUT THE WORK.
2. THE CONTRACTOR SHALL PROTECT THE SUBGRADE BENEATH NEW STRUCTURES AND PIPES FROM FROST PENETRATION WHEN FREEZING TEMPERATURES ARE EXPECTED.

MATERIAL SPECIFICATIONS:

GEOSYNTHETICS:

1. GENERAL: INSTALLATION OF GEOTEXTILE FABRICS SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND SPECIFIC LAYOUT PLANS AND DETAILS REVIEWED BY ENGINEER.
2. WOVEN GEOTEXTILE: THE WOVEN GEOTEXTILE SHALL BE MIRAFI HP 770 FABRIC, BY MIRAFI INC., OR APPROVED EQUIVALENT. THE WOVEN GEOTEXTILE SHALL BE COMPOSED OF POLYPROPYLENE STABILIZED WITH CARBON BLACK TO RESIST ULTRAVIOLET DEGRADATION AND BE RESISTANT TO BIOLOGICAL AND CHEMICAL DEGRADATION OF NATURALLY OCCURRING ORGANISMS OR REAGENTS NORMALLY ENCOUNTERED IN NATURAL SOIL ENVIRONMENTS.

EARTHWORK MATERIALS:

1. MODIFIED ROCK FILL: MODIFIED ROCK FILL SHALL BE USED FOR THE CONSTRUCTION ENTRANCE/EXIT AS SHOWN ON THE DRAWINGS, AND SHALL MEET THE REQUIREMENTS LISTED IN MASSDOT SPECIFICATION SECTION M2.02.4.

U.S. STANDARD SIEVE	PERCENT PASSING
8 INCH	95-100
4 INCH	0-25
NO. 4	0-5
2 1/2 INCH	
2. GRAVEL BORROW: GRAVEL BORROW SHALL SATISFY THE REQUIREMENTS LISTED IN MASSDOT SPECIFICATION SECTION M1.03.0, TYPE B.

U.S. STANDARD SIEVE	PERCENT PASSING
1/2 INCH	50-85
NO. 4	40-75
NO. 50	8-28
NO. 200	0-10

 WITH NO STONE GREATER THAN 3 INCHES.
3. DENSE GRADED SUBGRADE: CRUSHED STONE SHALL SATISFY THE REQUIREMENTS LISTED IN MASSDOT SPECIFICATION SECTION M2.01.7.

U.S. STANDARD SIEVE	PERCENT PASSING
2 INCH	100
1 1/2 INCH	70-100
3/4 INCH	50-85
NO. 4	30-55
NO. 50	8-24
NO. 200	3-10

- BACKFILL MATERIALS:
1. ORDINARY BORROW: ORDINARY BORROW SHALL BE GRANULAR, WELL GRADED FRIABLE SOIL, FREE OF DEBRIS, RUBBISH, ICE, SNOW, TREE STUMPS, ROOTS, CLAY AND ORGANIC MATTER, WITH 30 PERCENT OR LESS PASSING THE NO. 200 SIEVE; NO STONE GREATER THAN TWO-THIRD (2/3) LOOSE LIFT THICKNESS, OR SIX INCHES, WHICHEVER IS SMALLER.

- BACKFILL PLACEMENT AND COMPACTION:
1. PRIOR TO BACKFILLING, THE CONTRACTOR SHALL COMPACT THE EXPOSED NATURAL SUBGRADE TO THE DENSITIES AS SPECIFIED HEREIN.
 2. AFTER APPROVAL OF SUBGRADE BY THE ENGINEER, THE CONTRACTOR SHALL BACKFILL AREAS TO REQUIRED CONTOURS AND ELEVATIONS WITH SPECIFIED MATERIALS.
 3. THE CONTRACTOR SHALL PLACE AND COMPACT 10 TO 12 INCHES OF CONTINUOUS HORIZONTAL LAYERS UNTIL FIRM. LIFT THICKNESS SHALL NOT EXCEED THE FOLLOWING THICKNESS:
 - GRAVEL ACCESS ROADS - 8 INCHES
 - EQUIPMENT PADS - 6 INCHES
 4. THE MATERIAL REMOVED FROM THE EXCAVATION IS SUITABLE FOR BACKFILL WITH THE EXCEPTION THAT IT CONTAINS STONES LARGER THAN PERMITTED, THE CONTRACTOR HAS THE OPTION TO REMOVE THE OVERSIZED STONES AND USE THE MATERIAL FOR BACKFILL OR TO PROVIDE REPLACEMENT BACKFILL AT NO ADDITIONAL COST TO THE OWNER.

- CLEARING NOTES:
1. INSTALL EROSION AND SEDIMENT CONTROLS PRIOR TO CLEARING.
 2. ALL TREES, SAPLINGS, BRUSH, LOGS AND DEAD TREES WITHIN THE LIMITS OF CLEARING SHALL BE REMOVED BY THE CONTRACTOR AND PROPERLY DISPOSED OF OFF SITE AT A LOCATION APPROVED TO RECEIVE SUCH MATERIALS.
 3. CONTRACTOR SHALL REMOVE ALL STUMPS AND ROOTS WITHIN FENCED AREAS AND LIMITS OF PROPOSED GRADING.
 4. CONTRACTOR TO BACKFILL DEPRESSIONS FROM STUMP REMOVAL OR GRINDING.
 5. STUMPS SHALL BE LEFT IN PLACE IN AREAS OUTSIDE OF THE PROPOSED SOLAR ARRAY AND GRADING LIMITS.
 6. CONTRACTOR SHALL LIMIT THE AREA OF LAND WHICH IS EXPOSED AND FREE FROM VEGETATION DURING CONSTRUCTION. IN AREAS WHERE THE PERIOD OF EXPOSURE WILL BE GREATER THIRTY (30) DAYS, MULCHING, EROSION CONTROL, BLANKETS, TEMPORARY SEEDING, OR OTHER PROTECTIVE MEASURES SHALL BE PROVIDED WITHIN 2 WEEKS OF INITIAL SOIL DISTURBANCE. THE CONTRACTOR SHALL TAKE ACCOUNT OF THE CONDITIONS OF THE SOIL WHERE EROSION CONTROL SEEDING WILL TAKE PLACE TO INSURE THAT MATERIALS USED FOR RE-VEGETATION ARE ADAPTIVE TO THE SEDIMENT CONTROL.

- SOIL STABILIZATION NOTES:
1. THE MAXIMUM ALLOWABLE SLOPE IS 4:1 (25%) FOR DISTURBED AREAS. ALL 4:1 SLOPES SHALL BE STABILIZED WITH A TEMPORARY EROSION CONTROL BLANKET ONCE PROPOSED GRADE HAS BEEN ACHIEVED (SEE SHEET C502).
 2. ALL DISTURBED AREAS SHALL BE STABILIZED WITH LOAM AND SEED.
 3. IF SUFFICIENT STABILIZATION CANNOT BE ACCOMPLISHED AFTER SEEDING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDING THE NECESSARY SOIL AMENDMENTS AND/OR LOAM UNTIL STABILIZATION IS ACHIEVED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).

TYPICAL SEQUENCE OF CONSTRUCTION:

- PRIOR TO THE DEVELOPMENT OF THE SITE, EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS. SITE DEVELOPMENT SCHEDULING SHALL TAKE INTO CONSIDERATION THE GROWING SEASON, SUCH THAT BULK OF THE EARTHWORK IS NOT INITIATED DURING A PERIOD WHEN VEGETATIVE STABILIZATION CANNOT BE ACHIEVED WITHIN 14 DAYS OF COMPLETING THE EARTHWORK IN A GIVEN AREA. A TYPICAL SEQUENCE OF CONSTRUCTION IS:
1. PRIOR TO STARTING ANY WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL OBTAIN ALL PERMITS, NOTIFY APPROPRIATE OFFICIALS OF CONSTRUCTION COMMENCEMENT, AND SUBMIT CONSTRUCTION TIMETABLE.
 2. ON-SITE CONSTRUCTION SHALL START WITH THE MINIMUM AMOUNT OF CLEARING REQUIRED TO INSTALL EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON SHEET C101. THIS INCLUDES STRAW WATTLES, CONSTRUCTION ENTRANCE/EXIT, AND OTHER MEASURES NOTED ON THE PLAN. NO WORK SHALL TAKE PLACE UNTIL THE ENGINEER HAS INSPECTED AND APPROVED INSTALLED MEASURES.
 3. CUT TREES WITHIN THE DEFINED CLEARING LIMITS AND REMOVE CUT WOOD. STUMPS SHALL BE REMOVED OR GROUND IN-PLACE. WOOD CHIPS MAY BE LEFT ON-SITE IF DIRECTED BY OWNER.
 4. REMOVE AND STOCKPILE TOPSOIL AS REQUIRED TO CONSTRUCT GRAVEL ACCESS ROADS AND STORMWATER MANAGEMENT FEATURES. STOCKPILED TOPSOIL SHALL BE SEEDED AND MULCHED WHEN IT IS TO BE STORED MORE THAN 30 DAYS FROM TIME OF STOCKPILING. STOCKPILES SHALL NOT BE PLACED WITHIN THE 100' WETLAND BUFFER ZONE. SEE SHEET C502 FOR A TYPICAL TEMPORARY STOCKPILE DETAIL.
 5. CONSTRUCT ACCESS ROAD AND STORMWATER MANAGEMENT FEATURES. INSTALL ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED TO PREVENT EROSION OF GRAVEL SURFACE AND STORMWATER MANAGEMENT FEATURES.
 6. REMOVE AND STOCKPILE TOPSOIL IN AREAS OF PROPOSED GRADING TO ACHIEVE REQUIRED RACKING SYSTEM SLOPES. LOAM AND SEED DISTURBED AREAS AND INSTALL INTERMEDIATE EROSION CONTROL MEASURES PARALLEL TO THE SLOPES IMMEDIATELY FOLLOWING COMPLETION OF GRADING.
 7. PROCEED WITH SOLAR PHOTOVOLTAIC (PV) SYSTEM INSTALLATION/CONSTRUCTION WORK.
 8. REPAIR ALL DISTURBED AREAS WITH STOCKPILED LOAM, AND REAPPY LOAM AND SEED WHERE NECESSARY.

- EROSION AND SEDIMENTATION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL AFTER THE SITE IS STABILIZED IN ACCORDANCE WITH THE SWPPP, AND FINAL ACCEPTANCE IS GIVEN BY THE ENGINEER.
- DUST CONTROL:
1. CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED TO MINIMIZE AREAS OF DISTURBED SOIL EXPOSED AT ONE TIME.
 2. DUST SHALL BE CONTROLLED ON CONSTRUCTION ROUTES AND OTHER DISTURBED AREAS SUBJECT TO SURFACE DUST MOVEMENT AND DUST BLOWING.
 3. MAINTAIN DUST CONTROL MEASURES PROPERLY THROUGHOUT DRY WEATHER PERIODS UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
 4. DUST CONTROL METHODS SHALL INCLUDE VEGETATIVE COVER, MULCH (INCLUDING GRAVEL MULCH), WATER SPRINKLING, STONE, AND BARRIERS.

- GENERAL MAINTENANCE PLAN (DURING CONSTRUCTION):
1. ALL EROSION AND SEDIMENTATION CONTROL PRACTICES SHALL BE INSPECTED AT LEAST ONCE EVERY 7 CALENDAR DAYS, OR EVERY 14 CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.25 INCHES OR GREATER, IN ACCORDANCE WITH THE SWPPP.
 2. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM BEHIND STRAW WATTLES WHEN IT BECOMES 4 INCHES DEEP OR WHEN ACCUMULATIONS HAVE ADVERSELY AFFECTED ITS FUNCTION. STRAW WATTLES SHALL BE REPAIRED BY REMOVING SILT AND SEDIMENTS AND THEN TAMPING LOOSE SOIL ALONG BASE, REPLACING DAMAGED OR WEAKENED POSTS AND STAKES, OR AS NECESSARY TO MAINTAIN A BARRIER.
 3. ALL DISTURBED AREAS SHALL BE STABILIZED PER THESE SPECIFICATIONS TO MAINTAIN VIGOROUS, DENSE VEGETATION. REPAIR ANY ERODED SLOPES, REAPPY TOPSOIL, RESEED AND STABILIZE REPAIR AREA AS REQUIRED FOR PERMANENT OR TEMPORARY MEANS. REPAIR SOIL AREAS DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
 4. IMMEDIATELY REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION EQUIPMENT, MAINTENANCE OR OTHER ACTIVITY TO ANY EROSION AND SEDIMENTATION CONTROL MEASURE, OR BEST MANAGEMENT PRACTICE (BMP) OR DEVICE.
 5. THE PRIME CONTRACTOR IS RESPONSIBLE FOR THE PERFORMANCE AND COMPLIANCE OF ITS SUBCONTRACTORS' ACTIVITIES RELATING TO THE SWPPP. THEY SHALL MAKE FREQUENT INSPECTIONS OF THEIR WORK AND COORDINATE APPROPRIATE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL AND WATER QUALITY DEVICES.
 6. EMPLOY POLLUTION PREVENTION MEASURES TO CONTROL LITTER, CONSTRUCTION CHEMICALS, SEDIMENT, AND CONSTRUCTION DEBRIS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING: SALVAGE AND REUSE OF MATERIALS, MINIMIZING PACKAGING WASTE, RECYCLING, PROPER DISPOSAL AT FREQUENT INTERVALS IN ACCORDANCE WITH PREVAILING LAWS, ON-SITE INSTRUCTION REGARDING APPROPRIATE SEPARATION/HANDLING/RECYCLING, AND DEBRIS REMOVAL AT DRAINAGE STRUCTURES (GRATES AND SUMP/SEDIMENT TRAPS) FOREYARD AND OTHER BMPS, PROPER MAINTENANCE OF SEDIMENT/ EROSION CONTROL SYSTEMS, ROUTINE AND EVENT RELATED INSPECTIONS OF DRAINAGE AND BMP SYSTEMS PER PERMIT REQUIREMENTS, PROVIDE APPROPRIATE SANITARY FACILITIES FOR CONTRACTOR PERSONNEL, PICK UP TRASH AND DEBRIS FREQUENTLY AND USE WATER MIST, CALCIUM CHLORIDE, OR OTHER LEGAL MEANS TO LIMIT THE SPREAD OF DUST AND SOIL PARTICLES.

- GENERAL SWPPP NOTES:
1. THE FOLLOWING NOTES ARE PROVIDED AS A SUMMARY REFERENCE FOR THE CONTRACTOR ONLY. THE REQUIREMENTS IN THE FULL SWPPP FOR THE PROJECT SHALL BE FOLLOWED BY THE CONTRACTOR. IN THE EVENT OF A CONFLICT BETWEEN THE DRAWINGS AND THE SWPPP, THE ENGINEER SHALL DETERMINE THE CORRECT REQUIREMENTS.
 2. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PERFORMED IN ACCORDANCE WITH THE MASSACHUSETTS EROSION AND SEDIMENTATION CONTROL GUIDELINES. THE CONTRACTOR SHALL OWN AND MAINTAIN A COPY OF THE GUIDELINES ON-SITE DURING CONSTRUCTION.
 3. ALL DISTURBED AREAS SHALL BE KEPT TO A MINIMUM. FINAL GRADING AND RESTORATION SHALL BE ACCOMPLISHED AS SOON AS PRACTICAL.
 4. EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE INSTALLED PRIOR TO SITE WORK.
 5. ALL CONTROL STRUCTURES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND REMOVED WHEN STABILIZATION HAS BEEN ATTAINED. IF THE PROPOSED CONTROL MEASURES ARE NOT SATISFACTORY TO THE ENGINEER, ADDITIONAL CONTROL MEASURES SHALL BE TAKEN.
 6. ALL RUNOFF FROM THE DISTURBED AREA SHALL BE CONTROLLED AND FILTERED. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS.
 7. NPDES CONSTRUCTION GENERAL PERMIT WILL BE REQUIRED FOR THE PROPOSED PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION AND COMPLIANCE WITH THE APPROVED NPDES NOTICE OF INTENT (NOI) AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
 8. THE CONTRACTOR MUST OBTAIN COPIES OF THE PLANNING BOARD, WETLANDS, AND STORMWATER PERMITS PRIOR TO THE START OF WORK.
 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF EROSION AND SEDIMENTATION CONTROL MEASURES. THIS RESPONSIBILITY INCLUDES THE ACQUISITION OF MATERIALS, INSTALLATION, AND MAINTENANCE OF EROSION AND SEDIMENTATION STRUCTURES, THE COMMUNICATION AND DETAILED EXPLANATION TO ALL PEOPLE INVOLVED IN THE SITE WORK OF THE REQUIREMENTS AND OBJECTIVE OF THE EROSION AND SEDIMENTATION CONTROL MEASURES.
 10. TWO (2) WEEKS PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL PROVIDE THE NAME AND PHONE NUMBER OF THE INDIVIDUAL RESPONSIBLE FOR IMPLEMENTATION OF THE EROSION & SEDIMENTATION CONTROL PLAN.
 11. THE ENGINEER SHALL BE NOTIFIED OF ANY PROPOSED ALTERATION TO THE EROSION AND SEDIMENTATION CONTROL PLAN, PRIOR TO ALTERING, IN ORDER TO ENSURE THE FEASIBILITY OF THE ADDITION, SUBTRACTION, OR CHANGE IN THE PLAN.

SEEDING (AREAS OUTSIDE OF PV DEVELOPMENT):

AREAS OF BARE SOIL SHALL BE RESTORED WITH LOAM PRIOR TO SEEDING. ALL DISTURBED AREAS OUTSIDE OF PV DEVELOPMENT AREAS SHALL BE RESTORED WITH A VEGETATIVE STABILIZATION MATERIAL (GRASS). THE SOIL SHALL BE ADJUSTED TO A PH OF 5.70 OR HIGHER. THIS CAN BE DONE BY USING THE APPROPRIATE AMOUNT OF GROUND LIMESTONE OR FERTILIZER, AS REQUIRED BY A SOIL TEST. IF A TEST IS NOT PERFORMED, THE AREA SHALL BE FERTILIZED WITH 10-10-10 U.F. OR EQUAL AT A RATE OF 300 POUNDS PER ACRE (11 POUNDS PER 1000 SQUARE FEET). THE LIME OR FERTILIZER SHALL BE WORKED INTO THE TOPSOIL AND UNIFORMLY BLENDED. ALL STONES TWO INCHES OR LARGER IN DIAMETER SHALL BE APPROPRIATELY REMOVED ALONG WITH ALL DELETERIOUS MATERIAL (SUCH AS BUILDING MATERIAL WASTE, ETC.). THE SEED SHALL BE APPLIED EITHER HAND, CYCLONE SEEDER, CULTIVATOR, TYPICAL SEEDER OR HYDROSEEDER (SLURRY INCLUDING BOTH SEED AND FERTILIZER), HYDROSEEDING, WHICH SHALL BE MULCHED, MAY BE LEFT ON SOIL SURFACE. SEED MIX SHALL BE CONSERVATION SHADE MIX (ERMM-129) CONSISTING OF THE FOLLOWING SEEDS, OR APPROVED EQUAL.

COMMON NAME	WEIGHT
CREeping REd FESCUE	30%
CHEWINGS FESCUE	30%
ANNUAL RYEGRASS	20%
KENTUCKY BLUEGRASS, APPALACHIAN	10%
ROUGH BLUEGRASS	10%

SEEDING SHALL BE APPLIED AT A RATE OF 100-200 LB PER ACRE, OR 3-5 LB PER 1,000 SQFT. SEEDING SHALL BE COMPLETED BETWEEN APRIL 15, AND MAY 15 OR AUGUST 15 AND OCTOBER 15. ALL SEEDED AREAS SHALL BE MAINTAINED TO ENSURE PROPER GROWTH AND TO MINIMIZE EROSION.

SHADE MIX SEEDING (WITHIN PV DEVELOPMENT AREAS):

ALL DISTURBED AREAS WITHIN THE PHOTOVOLTAIC DEVELOPMENT AREA SHALL BE SEEDED WITH A POLLINATOR SEED MIX.

MAINTENANCE OF SEEDED AREAS:

1. CONTRACTOR SHALL MAINTAIN THE ENTIRE SEEDED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE PROJECT OR FOR 90 DAYS, WHICHEVER IS LONGER. MAINTENANCE SHALL INCLUDE WATERING AS SPECIFIED, WEEDING, REMOVAL OF STONES WHICH MAY APPEAR AND REGULAR CUTTINGS OF THE GRASS NO CLOSER THAN 10 DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2-1/2 TO 3 INCHES HIGH. WEEKLY WATERING SHALL PROVIDE THE SEEDED AREAS WITH THE EQUIVALENT OF 1 INCH OF RAINFALL PER WEEK. IF THE SEEDED AREAS ARE WATERED BY NORMAL RAINFALL, OR THE NORMAL WATERING IS INADEQUATE DUE TO WEATHER, THE CONTRACTOR MAY AT HIS/HER DISCRETION ELIMINATE OR INCREASE RESPECTIVELY, THE WATERING DURING A GIVEN WEEK. HOWEVER, SUCH ACTION BY THE CONTRACTOR SHALL IN NO WAY WAIVE THE CONTRACTOR'S RESPONSIBILITY FOR THE GROWTH AND HEALTH OF THE GRASS UNTIL FINAL ACCEPTANCE. CONTRACTOR SHALL FURNISH ALL TEMPORARY PIPE AND CONNECTIONS FOR SPRINKLING. CONTRACTOR SHALL FURNISH ALL REQUIRED WATER AT NO EXPENSE TO THE OWNER. GARDEN HOSE AND HAND SPRINKLING SHALL BE PERMITTED ONLY IN SPECIAL INSTANCES BY THE ENGINEER OR LANDSCAPE ARCHITECT.
2. ALL BARE SPOTS, WHICH BECOME APPARENT AS THE GRASS GERMINATES, SHALL BE RESEED BY THE CONTRACTOR AT HIS/HER OWN EXPENSE AS MANY TIMES AS NECESSARY TO SECURE AN ADEQUATE GROWTH, AND THE ENTIRE AREA SHALL BE MAINTAINED AND CUT UNTIL ALL WORK HAS BEEN COMPLETED AND FINAL ACCEPTANCE HAS OCCURRED. RESEEDING MAY BE ACCOMPLISHED BY HYDROMULCHING OR BY MECHANICAL MEANS AS DETERMINED BY THE AREA OF RESEEDING TO BE ACCOMPLISHED.
3. AT ALL AREAS TO BE SEEDED WHERE HYDROMULCHING CANNOT BE ACCOMPLISHED, I.E., ADJACENT TO NARROW OR IRREGULARLY SHAPED AREAS, PERFORM THE WORK MANUALLY AND PROTECT THE SEEDED AREAS WITH STRAW, OR WOOD FIBER MULCH SPRINKLED TO COVER THE AREA.
4. CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS GERMINATING. THESE MEASURES SHALL INCLUDE FURNISHING OF WARNING SIGNS, BARRIERS, TEMPORARY FENCE OR ANY OTHER NECESSARY MEASURES OF PROTECTION.
5. CONTRACTOR SHALL FURNISH, PROTECT, AND MAINTAIN ALL TEMPORARY BARRIERS UNTIL FINAL ACCEPTANCE OF THE SEEDED AREAS BY THE OWNER AND SHALL REMOVE THEM UPON SUCH FINAL ACCEPTANCE. THE BARRIERS SHALL REMAIN THE PROPERTY OF CONTRACTOR AT ALL TIMES.

PLANNING BOARD STANDARD CONDITIONS OF APPROVAL:

1. ENDORSEMENT OF THE APPROVED SITE PLAN SHALL BE SOUGHT WITHIN SIXTY (60) DAYS OF THE EXPIRATION OF THE TWENTY (20) DAY APPEAL PERIOD OR WITHIN SIXTY (60) DAYS OF THE EXPIRATION OF THE FINAL APPEAL PERIOD (20) DAY APPEAL PERIOD AFTER FINAL ACTION BY THE BOARD OF APPEALS IF APPEAL HAS BEEN TAKEN OR WITHIN SIXTY (60) DAYS AFTER THE ENTRY OF A FINAL DECREE BY THE COURT SUSTAINING THE APPROVAL OF THE PLAN IF APPEAL OF THE ACTION OF THE ZONING BOARD OF APPEALS HAS BEEN TAKEN.
2. ALL LANDSCAPING SHALL BE DONE IN ACCORDANCE WITH THE APPROVED SITE PLAN. THE APPLICANT SHALL MAINTAIN ALL REQUIRED PLANT MATERIALS IN A HEALTHY CONDITION AND WHENEVER NECESSARY REPLACE WITH NEW PLANT MATERIALS TO INSURE CONTINUED COMPLIANCE WITH LANDSCAPING AND SCREENING REQUIREMENTS.
3. IF A FENCE IS USED, THE APPLICANT SHALL PERMANENTLY MAINTAIN IT IN GOOD REPAIR AND IN A PRESENTABLE APPEARANCE. ALL EXISTING FENCES SHALL BE REPAIRED BEFORE THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, AND SHALL BE MAINTAINED IN THE MANNER AS PRESCRIBED IN THE ZONING BYLAW AND/OR IN ANY PREVIOUS CONDITIONS OF APPROVAL FOR THE SITE PLAN AS THEY REMAIN APPLICABLE, FOR THE LIFE OF THE SITE THEREAFTER.
4. ALL REQUIREMENTS OF THE TOWN'S BOARD OF HEALTH SHALL BE MET AS RELATED TO THE SITE PLAN.
5. ALL REQUIRED PARKING SPACES, MANEUVERING AISLES AND DRIVEWAYS SHALL BE WELL MAINTAINED.
6. ALL PARKING SPACES, AISLES, DRIVEWAYS, LOADING SPACES, AND FIRE LANES SHALL BE CLEARLY MARKED AND DELINEATED.
7. THE APPLICANT SHALL FURTHER PROVIDE ALL TENANTS WITH A COPY OF THIS DECISION, AS APPLICABLE.
8. ALL ARTIFICIAL LIGHTING USED TO ILLUMINATE PARKING OR STORAGE AREAS, MANEUVERING SPACE OR DRIVEWAY SHALL BE ARRANGED AND SHIELDED TO PREVENT DIRECT GLARE FROM THE LIGHT SOURCE INTO ANY PUBLIC STREET OR PRIVATE WAY OR ONTO ADJACENT PROPERTY.
9. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPROVED PLANS ON FILE WITH THE PLANNING BOARD.
10. ALL DESIGN AND CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES.
11. ALL REQUIREMENTS OF THE WALPOLE FIRE DEPARTMENT SHALL BE MET AS RELATED TO THE SITE PLAN.
12. ALL REQUIREMENTS OF THE WALPOLE DEPARTMENT OF PUBLIC WORKS (DPW) SHALL BE MET, INCLUDING BUT NOT LIMITED TO THE REQUIREMENT THAT WATER AND ELECTRIC CONNECTIONS, TOGETHER WITH DRAINAGE CONNECTIONS, SHALL BE MADE IN ACCORDANCE WITH DPW STANDARDS.
13. UPON COMPLETION OF THIS PROJECT, A COMPLETE SET OF THE AS-BUILT SITE PLAN SHALL BE SUBMITTED TO THE ENGINEERING DEPARTMENT. SAID AS-BUILT PLAN SHALL SHOW ALL OF THE DETAILS REPORTED ON THE APPROVED SITE PLAN AND AS REQUIRED PER SECTION 13 OF THE ZONING BYLAW. THE APPLICANT SHALL PROVIDE THE ENGINEERING DEPARTMENT WITH AS-BUILT PLANS THAT SHOW UTILITY LOCATIONS, INCLUDING SEWER MANHOLES AND WATER GATES, AND INCLUDING FIELD DETERMINED AS-BUILT DATA AND SWING TIES, BOTH IN PAPER AND DIGITAL FORMAT (AUTOCAD AND PDF), FOR THE DEPARTMENT'S PERMANENT FILES.
14. ALL THE CONDITIONS LISTED HEREIN ARE AN INTEGRAL PART OF THE SITE PLAN AND SHALL BE NOTED ON THE SITE PLAN BEFORE ENDORSEMENT BY THE PLANNING BOARD.
15. ALL FUTURE REVISIONS, AMENDMENTS AND/OR MODIFICATIONS TO THIS PLAN SHALL BE SUBMITTED TO THE BUILDING COMMISSIONER AND/OR PLANNING BOARD, WHERE APT, WHOM SHALL RENDER THEIR DECISION PER THE PROVISIONS OF SECTION 13, SITE PLAN REVIEW OF THE TOWN'S ZONING BYLAW.
16. THE APPLICANT SHALL COMPLETE ALL THE PROPOSED WORK WITHIN TWO (2) YEARS FROM THE DATE OF ENDORSEMENT OF THE SITE PLAN UNLESS AN EXTENSION OF TIME IS GRANTED BY THE BOARD.
17. THE APPLICANT IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL (TO INCLUDE, BUT NOT LIMITED TO, THE WALPOLE ZONING BYLAW), STATE, AND FEDERAL RULES AND REGULATIONS AS THEY APPLY TO THIS SITE PLAN. THE APPLICANT HAS THE RESPONSIBILITY OF THE APPLICANT TO SEEK AND OBTAIN ALL NECESSARY APPROVALS FROM OTHER TOWN BOARDS, COMMISSIONS, AND DEPARTMENTS AS APPLICABLE, AND FROM ANY STATE AND FEDERAL AGENCIES AS APPLICABLE, TO CONSTRUCT THE SITE AS DEPICTED ON THE SITE PLAN.
18. THE APPLICANT WILL BE HELD RESPONSIBLE FOR ANY REGULATORY TRAFFIC WARNING SIGNS THAT MAY BE REQUIRED AFTER THE DEVELOPMENT BECOMES OCCUPIED AS REQUIRED BY THE POLICE DEPARTMENT.
19. ALTERATIONS TO EXISTING ROADWAYS AND RELATED IMPROVEMENTS WITHIN ROADWAY LAYOUTS SUCH AS SIDEWALKS AND CURBING OR INSTALLATION OF NEW TRAFFIC CONTROL SIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE BOARD OF SELECTMEN IN THEIR CAPACITY AS ROAD COMMISSIONERS FOR ROADWAYS THAT ARE UNDER THE CONTROL OF THE TOWN OF WALPOLE. IF REQUIRED, AND SHALL BE SUBJECT TO THE APPROVAL OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION FOR ROADWAYS OR HIGHWAYS THAT ARE UNDER THE CONTROL OF THE COMMONWEALTH OF MASSACHUSETTS, IF REQUIRED.
20. CONSTRUCTION HOURS, TRASH COLLECTION AND PARKING LOT SWEEPING SHALL BE DONE AT REASONABLE HOURS TO AVOID EXCESS NOISE DURING THE MIDDLE OF THE NIGHT, AS FOLLOWS:
 - DURING CONSTRUCTION, NO EXTERIOR WORK ON THE SITE SHALL BEGIN BEFORE 7:00 A.M. OR EXTEND LATER THAN 8:00 P.M.
 - NO MECHANICAL SWEEPING OF THE PARKING LOT OR TRASH PICK-UP IS TO BE PERMITTED ON THE SITE FROM 10:00 P.M. THROUGH 7:00 A.M. MONDAY THROUGH FRIDAY OR FROM 9:00 P.M. THROUGH 9:00 A.M. ON SATURDAY AND SUNDAY.
 - NOISE LEVELS DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
21. ADEQUATE SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE BOTH DURING AND AFTER CONSTRUCTION PURSUANT TO REQUIREMENTS, IF ANY, OF THE CONSERVATION COMMISSION.
22. DUST CONTROL DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS AS APPLICABLE.
23. NO OVERNIGHT RUNNING OF TRUCK MOTORS IS TO BE PERMITTED ON THE SITE. THE SITE SHALL BE POSTED ACCORDINGLY. THIS CONDITION SHALL NOT PERTAIN TO TRUCKS THAT ARE MAKING DELIVERIES TO THE ON-SITE BUILDINGS AS LONG AS THE ACTIVITY DOES NOT ADVERSELY AFFECT THE AREA.
24. ALL ON AND OFF-SITE IMPROVEMENTS SPECIFIED IN THIS DECISION AND ITS ACCOMPANYING SITE PLAN SHALL BE COMPLETED AND FULLY OPERATIONAL BEFORE THE GRANTING OF ANY FINAL CERTIFICATE OF OCCUPANCY FOR THE BUILDING(S) THAT IS (ARE) SHOWN ON THE SITE PLAN, UNLESS OTHERWISE SPECIFIED IN SPECIAL CONDITIONS.
25. THE APPLICANT AND ANY SUBSEQUENT OWNERS OF THE PROPERTY SHALL BE RESPONSIBLE TO ADHERE TO STANDARD DRAINAGE SYSTEM MAINTENANCE PROCEDURES IN PERPETUITY. THIS MAINTENANCE MAY INCLUDE, BUT IS NOT LIMITED TO PERIODIC SWEEPING OF THE PARKING LOT AND CATCH BASIN, AND MANHOLE CLEANING. ANY CHANGES OR MODIFICATIONS TO THE DRAINAGE SYSTEM SHALL BE APPROVED BY THE PLANNING BOARD AND THE TOWN ENGINEER.
26. ON-SITE SNOW STORAGE SHALL BE ONLY WITHIN THE DESIGNATED SNOW STORAGE AREAS SHOWN ON THE SITE PLAN. IF THE AMOUNT OF SNOW NEEDS TO BE REMOVED FROM PARKING AND DRIVEWAY AREAS SHOWN ON THE SITE PLAN EXCEEDS THE CAPACITY OF SAID SNOW STORAGE AREAS, THIS EXCESS SNOW SHALL BE REMOVED FROM THE SITE.
27. THE PARKING LOT SHALL BE SCREENED FROM THE STREET WITH SUITABLE LANDSCAPING, SHRUBBERIES, AND/OR OTHER PLANTINGS. SAID PLANTINGS SHALL NOT INHIBIT MOTORISTS' LINE OF SIGHT VISIBILITY AT DRIVEWAYS(S).
28. THE APPLICANT AND/OR HIS/HERS/ITS AGENT(S) SHALL HAVE A COPY OF THIS LETTER, THE ENDORSED SITE PLAN IN ITS ENTIRETY, AND A COPY OF THE WALPOLE ZONING BYLAW ON SITE AT ALL TIMES WHEN PERFORMING CONSTRUCTION ACTIVITIES AUTHORIZED PURSUANT TO THIS SITE PLAN DECISION.
29. THE APPLICANT SHALL PROVIDE CONTACT NAMES AND PHONE NUMBERS FOR THE ENTITIES RESPONSIBLE FOR SITE AND DRAINAGE MAINTENANCE, IN CASE ABUTTERS HAVE PROBLEMS, OR IN CASE THE TOWN HAS REPORTS OF SUCH PROBLEMS, WHICH NAMES AND PHONE NUMBERS SHALL BE AFFIXED TO THE SITE PLAN PRIOR TO ENDORSEMENT.
30. THE APPLICANT SHALL PROVIDE A SIGNATURE BLOCK FOR THE ENDORSEMENT OF THE SITE PLAN BY THE PLANNING BOARD ON EACH PLAN SHEET.
31. ALL ISSUES, PROBLEMS, AND/OR COMPLAINTS RELATIVE TO THIS DECISION WILL BE HANDLED BY:
 - ANDREW J. BERNSTEIN
MANAGING PARTNER
KEARSARGE ENERGY
1380 SOLDIERS FIELD ROAD, SUITE 3900
BOSTON, MA 02135
617-393-4222

PLANNING BOARD SPECIAL CONDITIONS OF APPROVAL:

1. ALL COMMENTS PROVIDED BY THE WALPOLE FIRE CHIEF ARE TO BE PART OF THE FINAL SITE PLAN, INCLUDING THOSE DATED NOVEMBER 2, 2023.
2. ALL OFF-SITE WORK AND IMPROVEMENTS AS PROPOSED TO THE BOARD OF SEWER & WATER COMMISSIONERS AND APPROVED BY THEM WILL BE PART OF THIS APPROVAL.
3. ALL COMMENTS PROVIDED BY THE WATER AND SEWER COMMISSION INCLUDING THOSE DATED NOVEMBER 1, 2023 ARE TO BE PART OF THIS APPROVAL.
4. ANY AND ALL COMMENTS PROVIDED BY THE CONSERVATION COMMISSION ARE TO BECOME PART OF THIS DECISION.

DATE APPROVED: _____

DATE ENDORSED: _____

WALPOLE PLANNING BOARD

Project

**NORFOLK COUNTY
AGRICULTURAL SCHOOL
SOLAR**

1377 NORTH STREET
WALPOLE, MA 02081

Weston & Sampson

Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100
Reading, MA 01867
978.532.1900 800.SAMPSON
www.westonandsampson.com

Applicant

KEARSARGE ENERGY

Kearsarge Walpole LLC
1380 Soldiers Field Road, Suite 3900
Boston, MA 02135
Tel: (655) 277-6217
www.kearsargeenergy.com

Revisions:

No.	Date	Description
6	02/18/2024	REVISED BASIN GRADING
5	12/20/2023	SSJEO FOR PLANNING BOARD ENDORSEMENT
4	10/05/2023	EXTENSION OF SITE ENTRY
3	10/04/2023	EXTENDED ASPHALT ACCESS ROAD
2	10/02/2023	REV PER FIRE DEPT COMMENTS
1	09/07/2023	REVISED PER TOWN COMMENTS
0	01/27/2023	ISSUED FOR PERMITTING

Seal:

Issued For:

PERMITTING / NOT FOR CONSTRUCTION

Scale: AS SHOWN

Date: 01/27/2023

Drawn By: VLB

Reviewed By: MRC / JMJ

Approved By: RUB

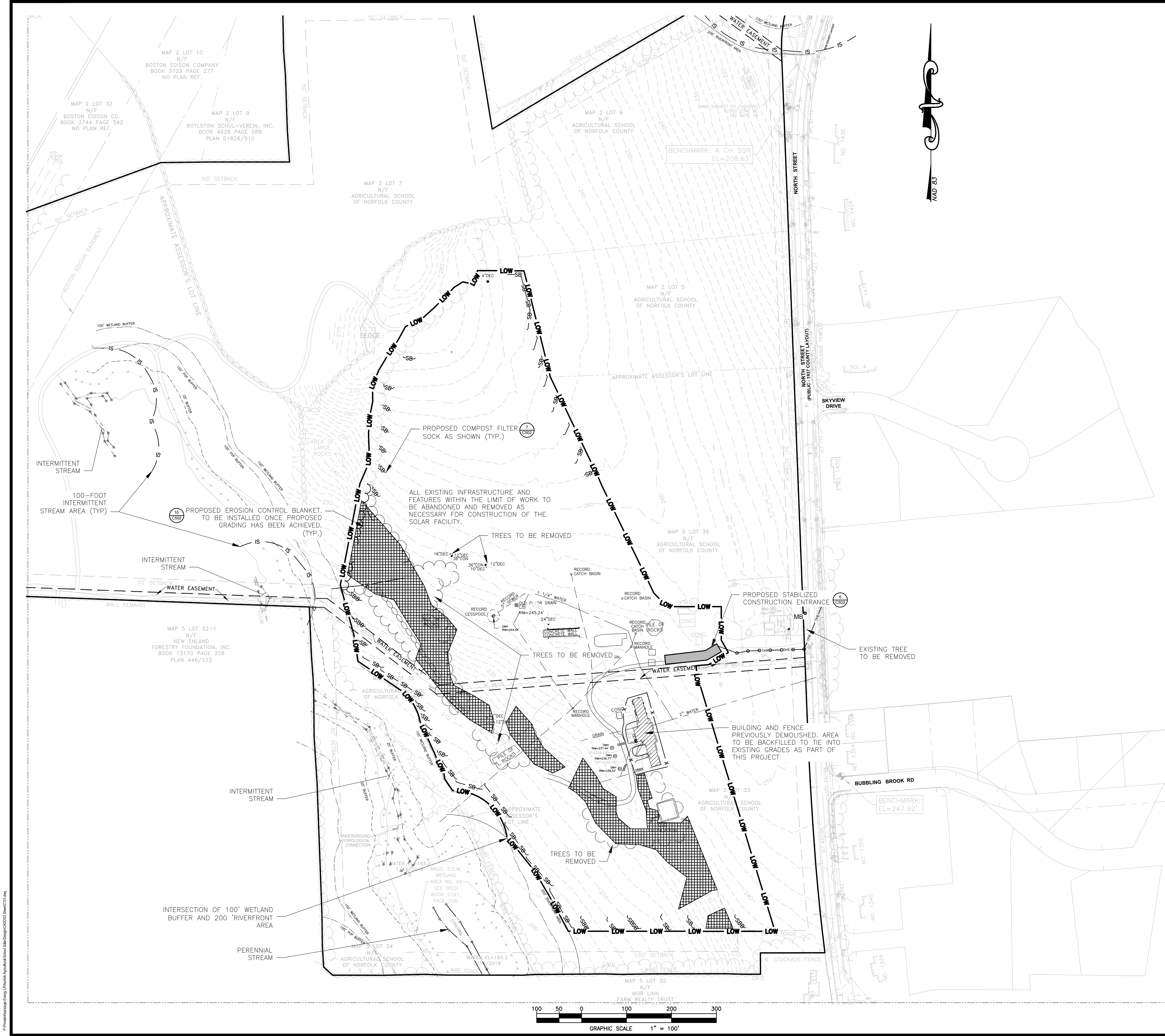
W&S Project No.: ENG22-1200
W&S File No.: Kearsarge Norfolk

Drawing Title:

CIVIL NOTES AND SPECIFICATIONS

Sheet Number:

C001



- GENERAL NOTES:**
1. EROSION CONTROL BLANKET TO BE INSTALLED ON ALL SLOPES GREATER THAN 20%.

LEGEND:

EXISTING:

- 300- MAJOR CONTOUR
- MINOR CONTOUR
- - - ZONING SETBACKS
- - - PROPERTY LINE
- - - ABUTTER'S PROPERTY LINE
- - - BORDERING VEGETATED WETLAND LINE
- - - POTENTIAL VERNAL POOL LINE
- - - BLOCK WALL
- - - EDGE OF GRAVEL
- - - EDGE OF ASPHALT
- - - GRAVEL PATH
- - - WOOD FENCE
- - - CHAIN LINK FENCE
- - - EXTENDED ASPHALT ACCESS ROAD
- - - OVERHEAD WIRES
- - - TREE LINE
- - - STONE WALL
- - - WALL REMAINS
- - - PERENNIAL STREAM
- - - INTERMITTENT STREAM
- - - 200-FOOT RIVER FRONT AREA
- - - 100-FOOT RIVER FRONT AREA
- IS - WETLAND FLAG
- WF-1 - SIGN
- BOLLARD
- HYDRANT
- GUY WIRE
- STRUCTURE

PROPOSED:

- LOW - LIMIT OF WORK
- TREE LINE
- SB - SEDIMENT BARRIER
- ROCK CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET

NORFOLK COUNTY
 AGRICULTURAL SCHOOL
 SOLAR

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 WALPOLE, MA 02081

Weston & Sampson

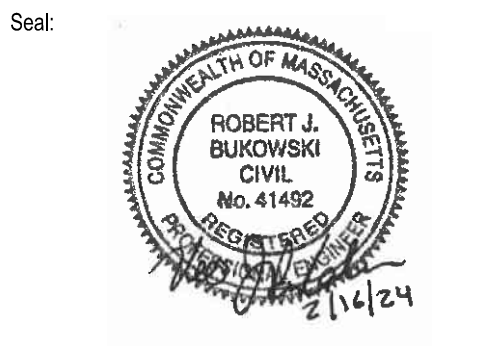
Weston & Sampson Engineers, Inc.
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 978.532.1900 800.SAMPSON
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Applicant:

KEARSARGE ENERGY

Kearsarge Walpole LLC
 1380 Soldiers Field Road, Suite 3900
 Boston, MA 02135
 Tel: (855) 277-6217
 www.kearsargeenergy.com

No.	Date	Description
6	02/16/2024	REVISED BASIN GRADING
5	12/20/2023	ISSUED FOR PLANNING BOARD ENDORSEMENT
4	10/05/2023	EXTENSION OF SITE ENTRY
3	10/04/2023	EXTENDED ASPHALT ACCESS ROAD
2	10/02/2023	REV PER FIRE DEPT COMMENTS
1	09/07/2023	REVISED PER TOWN COMMENTS
0	01/27/2023	ISSUED FOR PERMITTING



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Scale: AS SHOWN

Date: 01/27/2023

Drawn By: VLB

Reviewed By: MRC / JMJ

Approved By: RJB

W&S Project No.: ENG22-1200

W&S File No.: Kearsarge Norfolk

Drawing Title:

DEMOLITION AND EROSION AND SEDIMENTATION CONTROL PLAN

Sheet Number:

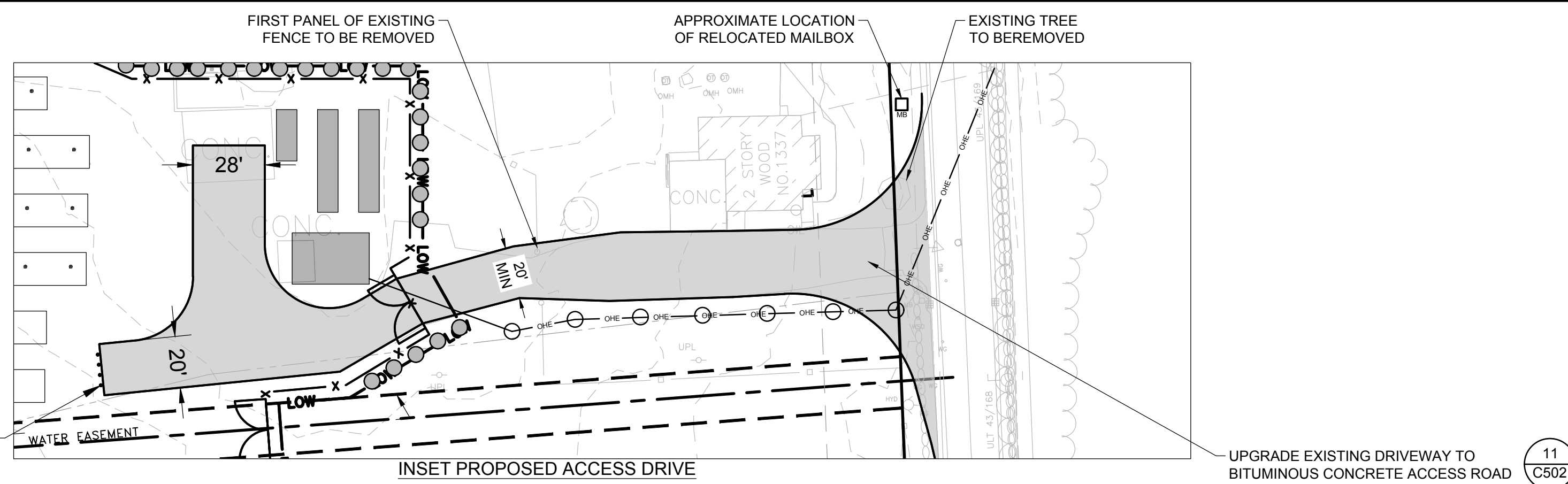
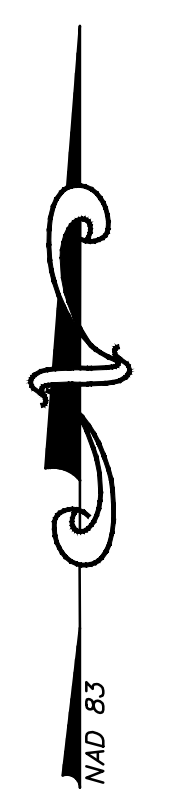
C101

DATE APPROVED: _____

DATE ENDORSED: _____

WALPOLE PLANNING BOARD

P:\Projects\Kearsarge Energy\230623\Kearsarge Energy\230623\230623.dwg



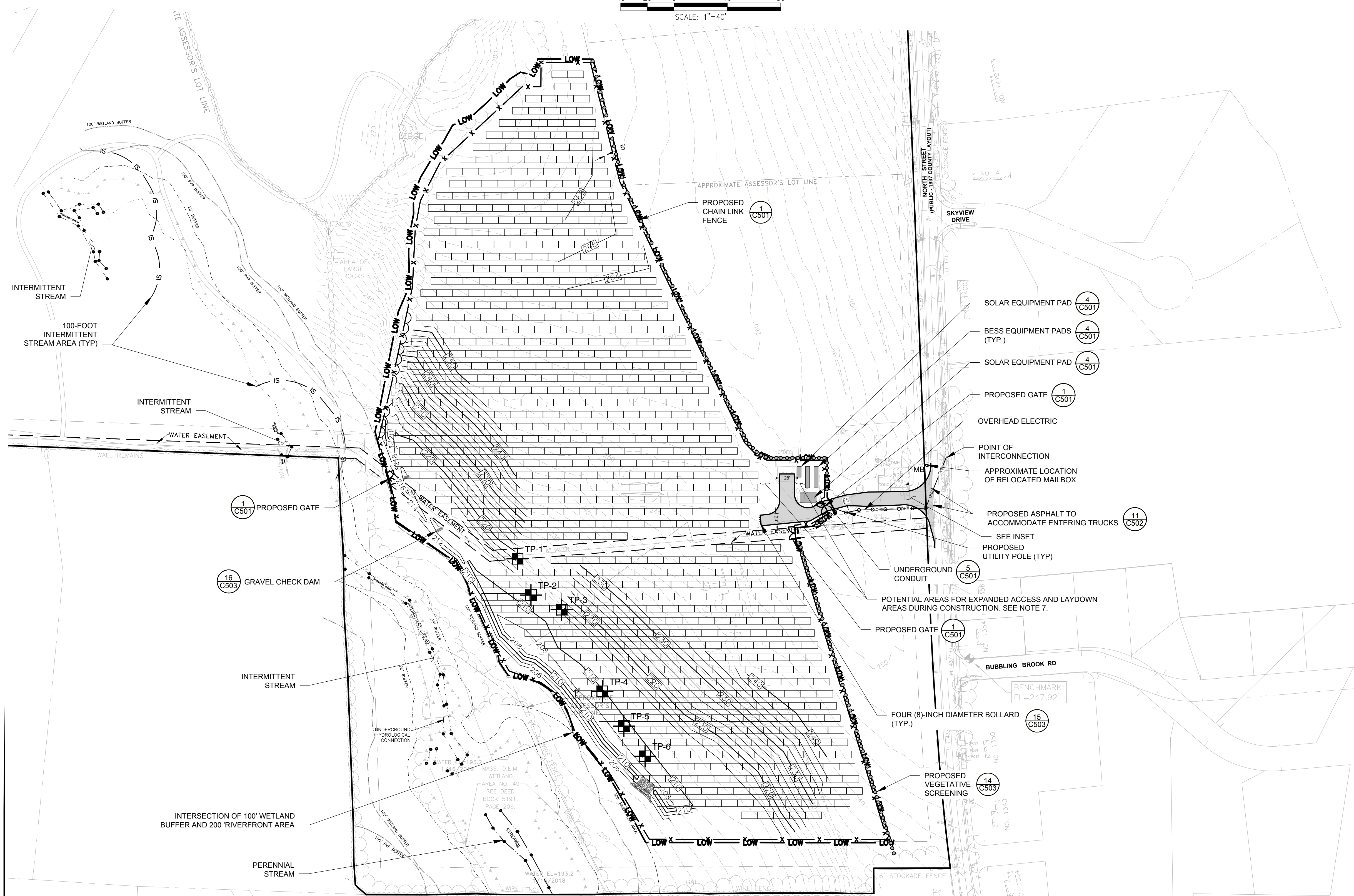
GENERAL NOTES:

1. SEE SHEETS C201 AND C202 FOR GRADING PLANS.
2. ELECTRICAL DESIGN, INCLUDING UTILITY POLES, PERFORMED BY OTHERS. ELECTRICAL EQUIPMENT AND COMPONENTS SHOWN TO ILLUSTRATE LOCATIONS ONLY. REFER TO ELECTRICAL DRAWINGS FOR DETAILED ELECTRICAL SYSTEM INFORMATION.
3. SOLAR ARRAY LAYOUT DESIGN BY OTHERS. THE LAYOUT IS SUBJECT TO FINAL DESIGN BUT WILL REMAIN WITHIN THE PROPOSED LIMITS OF WORK.
4. MINIMUM DISTANCE FROM THE PANELS TO THE SOUTHERN PROPERTY LINE WILL BE AT LEAST 120 FEET.
5. PROPOSED GATES AT THE EASTERN AND WESTERN INTERSECTIONS OF THE PROPOSED FENCE AND THE WATER EASEMENT SHALL BE EQUIPPED WITH TOWN PADLOCKS.
6. NO SITE LIGHTING IS PROPOSED.
7. LIMITS OF PROPOSED ACCESS ROAD TO BE EXPANDED AS NEEDED TO ACCOMMODATE FOR DELIVERY TRUCKS AND LAYDOWN AREAS DURING CONSTRUCTION. ALL ADDED GRAVEL AREAS WILL BE RETURNED TO EXISTING/MEADOW CONDITIONS AFTER CONSTRUCTION PHASE.
8. FOUR (4) BOLLARDS TO BE INSTALLED ONE (1) FEET ON CENTER FROM THE EDGE OF THE ACCESS ROAD AS SHOWN ON PLANS.
9. PANELS TO BE INSTALLED AT A MINIMUM OF FIFTEEN (15) FEET FROM BOLLARDS.

Project:
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 SOLAR**
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- LEGEND:**
- EXISTING:**
- 300 MAJOR CONTOUR
 - MINOR CONTOUR
 - ZONING SETBACKS
 - PROPERTY LINE
 - ABUTTER'S PROPERTY LINE
 - BORDERING VEGETATED WETLAND LINE
 - POTENTIAL VERNAL POOL LINE
 - EDGE OF GRAVEL
 - EDGE OF ASPHALT
 - GRAVEL PATH
 - WOOD FENCE
 - CHAIN LINK FENCE
 - OVERHEAD WIRES
 - TREE LINE
 - STONE WALL
 - WALL REMAINS
 - PERENNIAL STREAM
 - INTERMITTENT STREAM
 - 200-FOOT RIVER FRONT AREA
 - 100-FOOT RIVER FRONT AREA
 - WF-1 WETLAND FLAG
 - SIGN
 - BOLLARD
 - HYDRANT
 - GUY WIRE
 - STRUCTURE
- PROPOSED:**
- 425 MAJOR CONTOUR
 - MINOR CONTOUR
 - CONSTRUCTION ENTRANCE / EXIT
 - OHE OVERHEAD ELECTRIC LINE
 - EC ELECTRIC CONDUIT
 - X CHAIN LINK FENCE
 - TREE CLEARING LINE
 - VEGETATIVE SCREENING
 - SB-SEB SEDIMENT BARRIER
 - LOW LIMIT OF WORK
 - BITUMINOUS CONCRETE ACCESS ROAD
 - SOLAR PV RACK
 - EQUIPMENT PAD
 - TEST PIT LOCATION

INSET PROPOSED ACCESS DRIVE
 SCALE: 1"=40'

GRAPHIC SCALE 1"=100'

Revisions:

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No. Date Description

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Drawn By: VLB

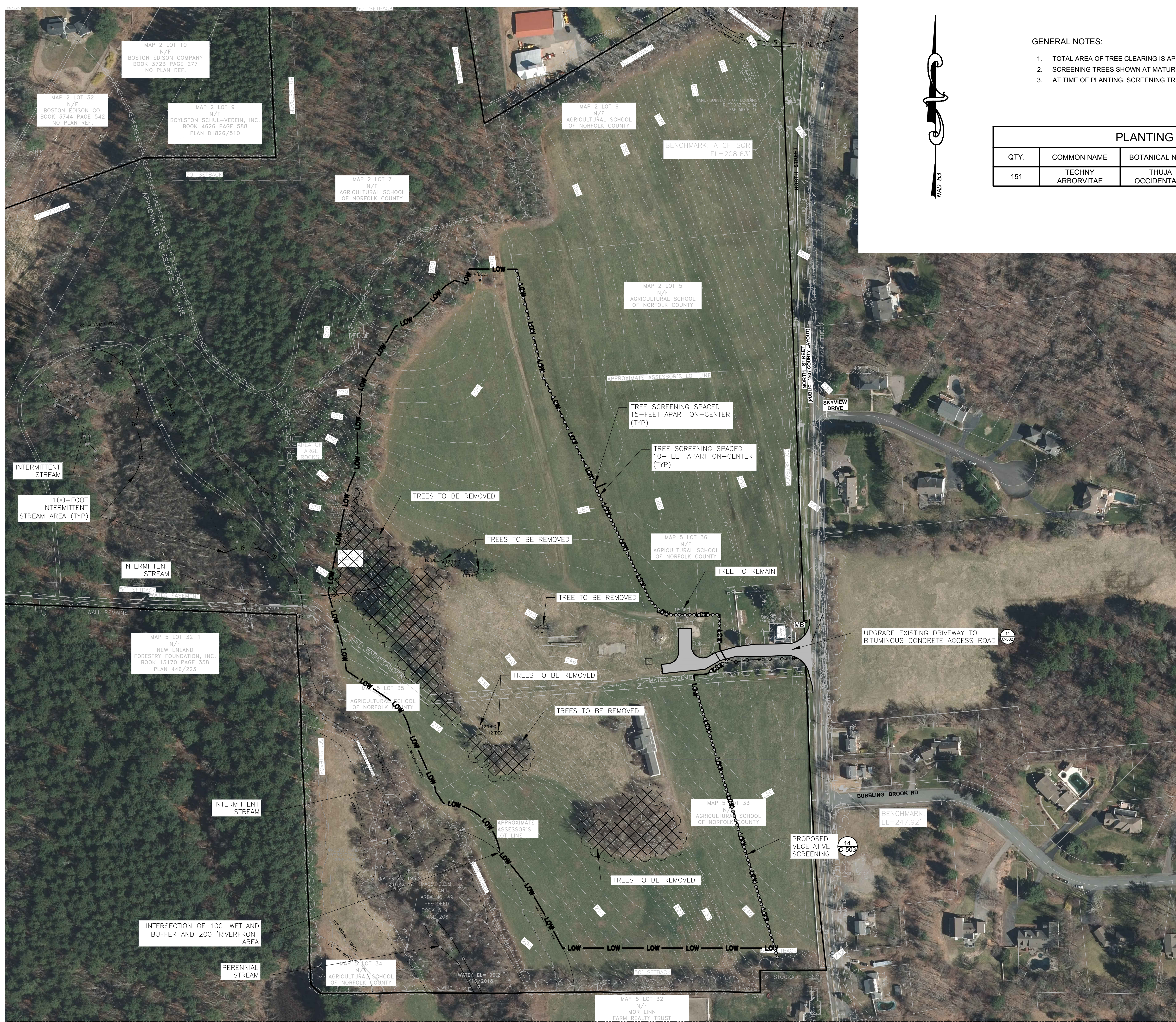
Reviewed By: MRC / JMU

Approved By: RJB

W&S Project No.: ENG22-1200
 W&S File No.: Kearsarge Norfolk

Drawing Title:
**PROPOSED SITE
 PLAN**

Sheet Number:
C102



GENERAL NOTES:

1. TOTAL AREA OF TREE CLEARING IS APPROXIMATELY 1.5 ACRES.
2. SCREENING TREES SHOWN AT MATURE DIAMETER.
3. AT TIME OF PLANTING, SCREENING TREES WILL BE EARLY GROWTH NURSERY STAGE.

PLANTING SCHEDULE

QTY.	COMMON NAME	BOTANICAL NAME	MATURE HEIGHT	MATURE WIDTH	SPACING
151	TECHNY ARBORVITAE	THUJA OCCIDENTALIS	10-15 FT	5-7 FT	VARIES

LEGEND:

EXISTING:

- MAJOR CONTOUR
- MINOR CONTOUR
- ZONING SETBACKS
- PROPERTY LINE
- ABUTTER'S PROPERTY LINE
- BORDERING VEGETATED WETLAND LINE
- POTENTIAL VERNAL POOL LINE
- BLOCK WALL
- EDGE OF GRAVEL
- EDGE OF ASPHALT
- GRAVEL PATH
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD WIRES
- TREE LINE
- STONE WALL
- WALL REMAINS
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- 100-FOOT RIVER FRONT AREA
- IS - WETLAND FLAG
- WF-1 - WETLAND FLAG
- SIGN
- BOLLARD
- HYDRANT
- GUY WIRE
- STRUCTURE

PROPOSED:

- LOW - LIMIT OF WORK
- TREE LINE
- BITUMINOUS CONCRETE ACCESS ROAD
- LIMITS OF TREE CLEARING
- MATURE DIAMETER ARBORVITAE

NORFOLK COUNTY AGRICULTURAL SCHOOL SOLAR

1377 NORTH STREET
WALPOLE, MA 02081



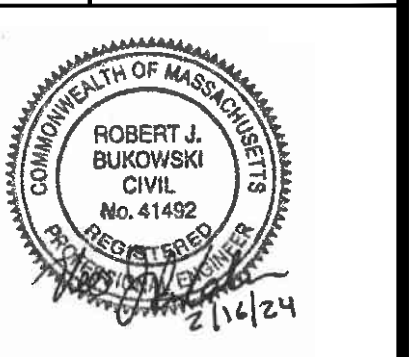
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W&S Project No.: ENG22-1200
W&S File No.: Kearsarge Norfolk

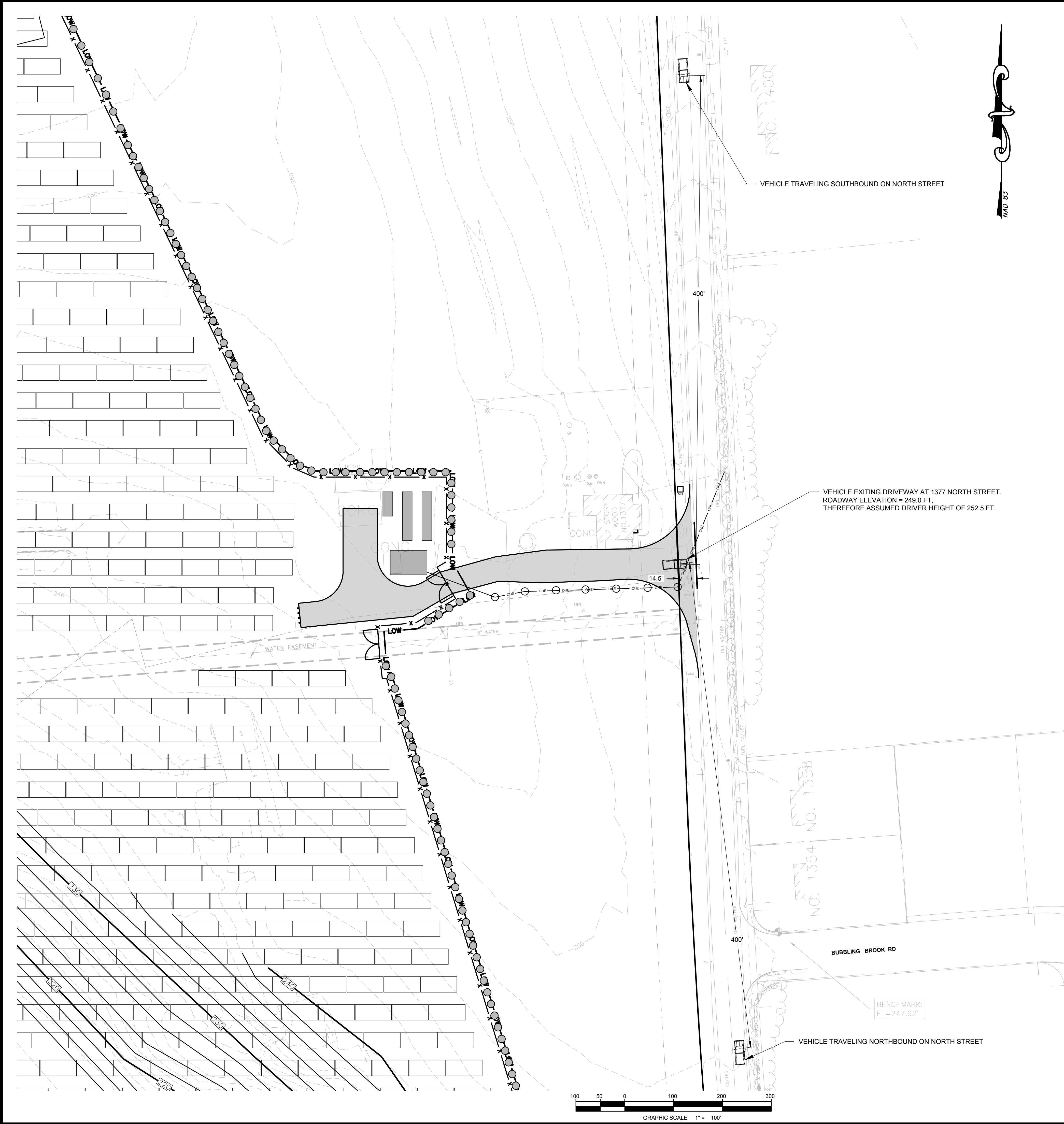
Drawing Title:
LANDSCAPING PLAN

Sheet Number:
C103

DATE APPROVED: _____

DATE ENDORSED: _____

WALPOLE PLANNING BOARD



GENERAL NOTES:

- SIGHT DISTANCE TAKEN FROM THE VEHICLE EXITING THE DRIVEWAY AT 1377 NORTH STREET (DRIVEWAY) ENTERING NORTH STREET (MAJOR ROAD) AT A DISTANCE OF 14.5 FT FROM THE WHITE PAINTED LINE ALONG THE EDGE OF NORTH STREET.
- STOPPING SIGHT DISTANCES BASED ON EXHIBIT 3-8: MOTOR VEHICLE STOPPING SIGHT DISTANCES FROM THE MASSACHUSETTS HIGHWAY DEPARTMENT PROJECT DEVELOPMENT & DESIGN GUIDE (2006) (SEE BELOW).
- THE POSTED SPEED ON NORTH STREET IS 40 MPH. A DESIGN SPEED OF 45 MPH WAS USED.
- THE AVERAGE SLOPE ALONG NORTH STREET IN THE SIGHT DISTANCE ANALYSIS AREA IS ~3%.
- AS THE DRIVEWAY AT 1377 NORTH STREET IS AT THE TOP OF THE HILL OF NORTH STREET, SIGHT DISTANCES FOLLOWING NORTH STREET IN THE NORTHERN AND SOUTHERN DIRECTION ARE BOTH DOWNHILL. THEREFORE, THE UPGRADE STOPPING DISTANCE IS USED FOR BOTH THE NORTHERN AND SOUTHERN SIGHT DISTANCES.
- AS SHOWN, THE SIGHT DISTANCE FOR BOTH THE NORTHERN AND SOUTHERN DIRECTIONS ALONG NORTH STREET AS THE VEHICLE IS EXITING THE DRIVEWAY IS GREATER THAN 400 FT WHICH IS GREATER THAN THE MINIMUM STOPPING DISTANCES LISTED IN THE MASSACHUSETTS HIGHWAY DEPARTMENT PROJECT DEVELOPMENT & DESIGN GUIDE (2006).

**Exhibit 3-8
Motor Vehicle Stopping Sight Distances**

Design Speed	Stopping Sight Distance (ft) by Percent Grade (%)							
	Downgrade				Upgrade			
	0	3	6	9	3	6	9	
20	115	116	120	126	109	107	104	
25	155	158	165	173	147	143	140	
30	200	205	215	227	200	184	179	
35	250	257	271	287	237	229	222	
40	305	315	333	354	289	278	269	
45	360	378	400	427	344	331	320	
50	425	446	474	507	405	388	375	
55	495	520	553	593	469	450	433	
60	570	598	638	686	538	515	495	
65	645	682	728	785	612	584	561	
70	730	771	825	891	690	658	631	
75	820	866	927	1003	772	736	704	

Source: A Policy on Geometric Design of Streets and Highways, AASHTO, Washington DC, 2004, Chapter 3 Elements of Design

LEGEND:

EXISTING:

- MAJOR CONTOUR
- MINOR CONTOUR
- ZONING SETBACKS
- PROPERTY LINE
- ADJUTANT'S PROPERTY LINE
- BORDERING VEGETATED WETLAND LINE
- POTENTIAL VERNAL POOL LINE
- BLOCK WALL
- EDGE OF GRAVEL
- EDGE OF ASPHALT
- GRAVEL PATH
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD WIRES
- TREE LINE
- STONE WALL
- WALL REMAINS
- PERENNIAL STREAM
- INTERMITTENT STREAM
- 200-FOOT RIVER FRONT AREA
- 100-FOOT RIVER FRONT AREA
- WF-1 WETLAND FLAG
- SIGN
- BOLLARD
- HYDRANT
- GUY WIRE
- STRUCTURE

PROPOSED:

- MAJOR CONTOUR
- MINOR CONTOUR
- CONSTRUCTION ENTRANCE / EXIT
- OHE OVERHEAD ELECTRIC LINE
- EC ELECTRIC CONDUIT
- CHAIN LINK FENCE
- TREE CLEARING LINE
- VEGETATIVE SCREENING
- LOW LIMIT OF WORK
- BITUMINOUS CONCRETE ACCESS ROAD
- SOLAR PV RACK
- EQUIPMENT PAD

Project:
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WALPOLE, MA 02081

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Seal:
ROBERT J. BUKOWSKI
CIVIL
No. 41492
EXPIRES 12/31/24

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Reviewed By: MRC / JMJ
Approved By: RJB
W&S Project No.: ENG22-1200
W&S File No.: Kearsarge Norfolk

Drawing Title:
**SIGHT DISTANCE
PLAN**
Sheet Number:
C104

DATE APPROVED: _____
DATE ENDORSED: _____

WALPOLE PLANNING BOARD

C202 - MATCHLINE - C202

GENERAL NOTES:

1. PROPOSED SITE GRADING DESIGNED TO A MAXIMUM SLOPE OF 20%.
2. BASIN SIDE SLOPE DESIGNED TO A MAXIMUM SLOPE OF 33.33%
3. TEST PIT LOCATIONS SHOWN ARE APPROXIMATE.

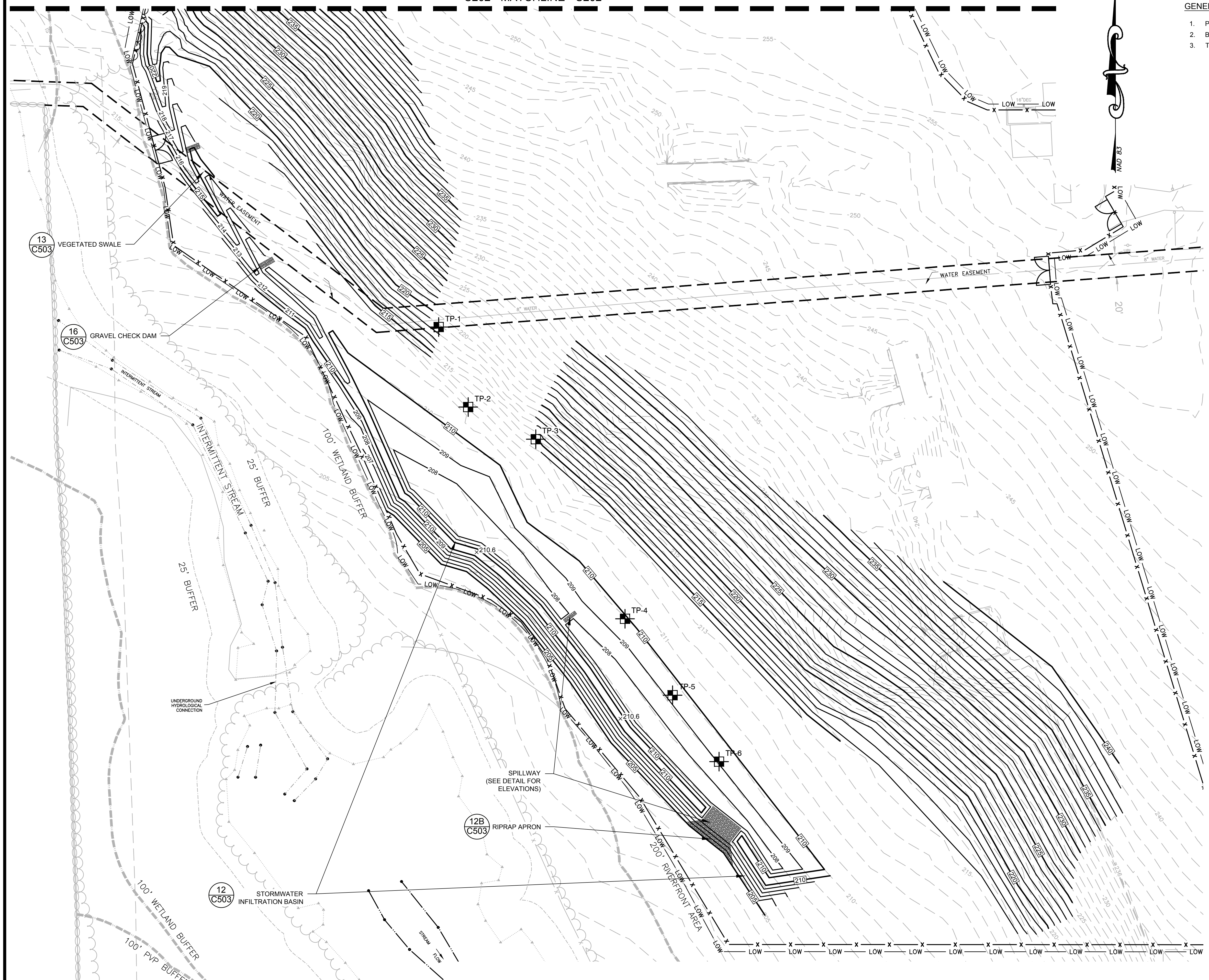
LEGEND:

EXISTING:

- 300 --- MAJOR CONTOUR
- MINOR CONTOUR
- ZONING SETBACKS
- PROPERTY LINE
- ABUTTER'S PROPERTY LINE
- BORDERING VEGETATED WETLAND LINE
- POTENTIAL VERNAL POOL LINE
- BLOCK WALL
- EDGE OF GRAVEL
- EDGE OF ASPHALT
- GRAVEL PATH
- WOOD FENCE
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- WALL REMAINS
- PERENNIAL STREAM
- INTERMITTENT STREAM
- 200-FOOT RIVER FRONT AREA
- 100-FOOT RIVER FRONT AREA
- △ WF-1 WETLAND FLAG
- SIGN
- BOLLARD
- HYDRANT
- GUY WIRE
- STRUCTURE

PROPOSED:

- 425 --- MAJOR CONTOUR
- MINOR CONTOUR
- x CHAIN LINK FENCE
- TREE LINE
- LIMIT OF WORK
- TP-# TEST PIT LOCATION



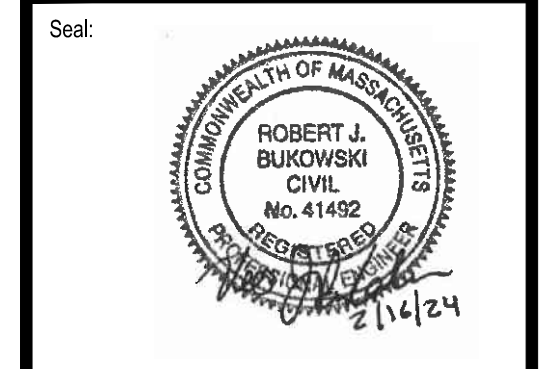
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Drawn By: VLB

Reviewed By: MRC / JMJ

Approved By: RJB

W&S Project No.: ENG22-1200
 W&S File No.: Kearsarge Norfolk

Drawing Title:
GRADING PLAN I

Sheet Number:
C201

DATE APPROVED: _____

DATE ENDORSED: _____

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No.	Date	Description
6	02/18/2024	REVISED BASIN GRADING
5	12/20/2023	ISSUED FOR PLANNING BOARD DISCUSSION
4	10/05/2023	EXTENSION OF SITE ENTRY
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0	01/27/2023	ISSUED FOR PERMITTING

Seal:

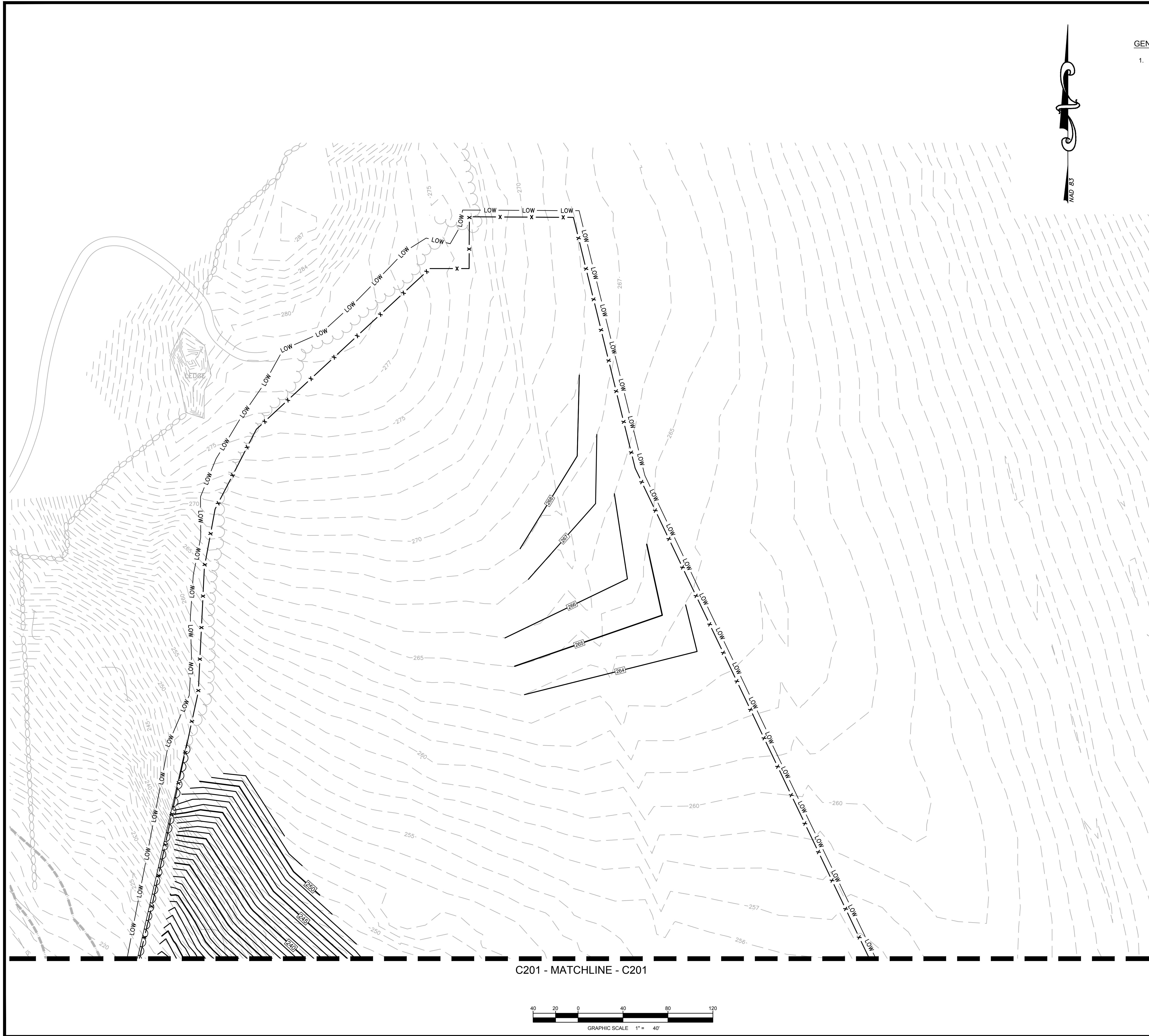
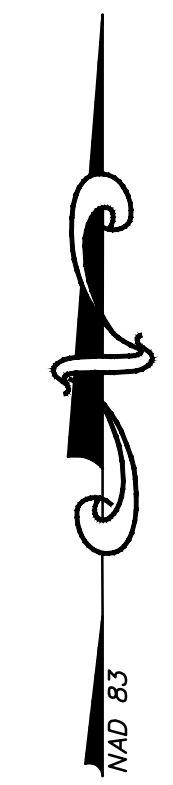
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 Date: 01/27/2023
 Drawn By: VLB
 Reviewed By: MRC / JMJ
 Approved By: RJB
 W&S Project No.: ENG22-1200
 W&S File No.: Kearsarge Norfolk

Drawing Title:
GRADING PLAN II
 Sheet Number:
C202

GENERAL NOTES:

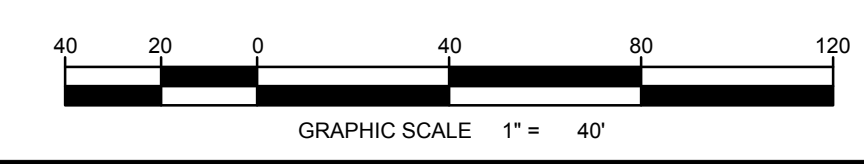
- 1. PROPOSED SITE GRADING DESIGNED TO A MAXIMUM SLOPE OF 20%.



LEGEND:

	300	MAJOR CONTOUR
		MINOR CONTOUR
		ZONING SETBACKS
		PROPERTY LINE
		ABUTTER'S PROPERTY LINE
		BORDERING VEGETATED WETLAND LINE
		POTENTIAL VERNAL POOL LINE
		BLOCK WALL
		EDGE OF GRAVEL
		EDGE OF ASPHALT
		GRAVEL PATH
		WOOD FENCE
		CHAIN LINK FENCE
		OVERHEAD WIRES
		TREE LINE
		STONE WALL
		WALL REMAINS
		PERENNIAL STREAM
		INTERMITTENT STREAM
		200-FOOT RIVER FRONT AREA
		100-FOOT RIVER FRONT AREA
	WF-1	WETLAND FLAG
		SIGN
		BOLLARD
		HYDRANT
		GUY WIRE
		STRUCTURE
	425	MAJOR CONTOUR
		MINOR CONTOUR
		CHAIN LINK FENCE
		TREE LINE
		LIMIT OF WORK
	TP-#	TEST PIT LOCATION

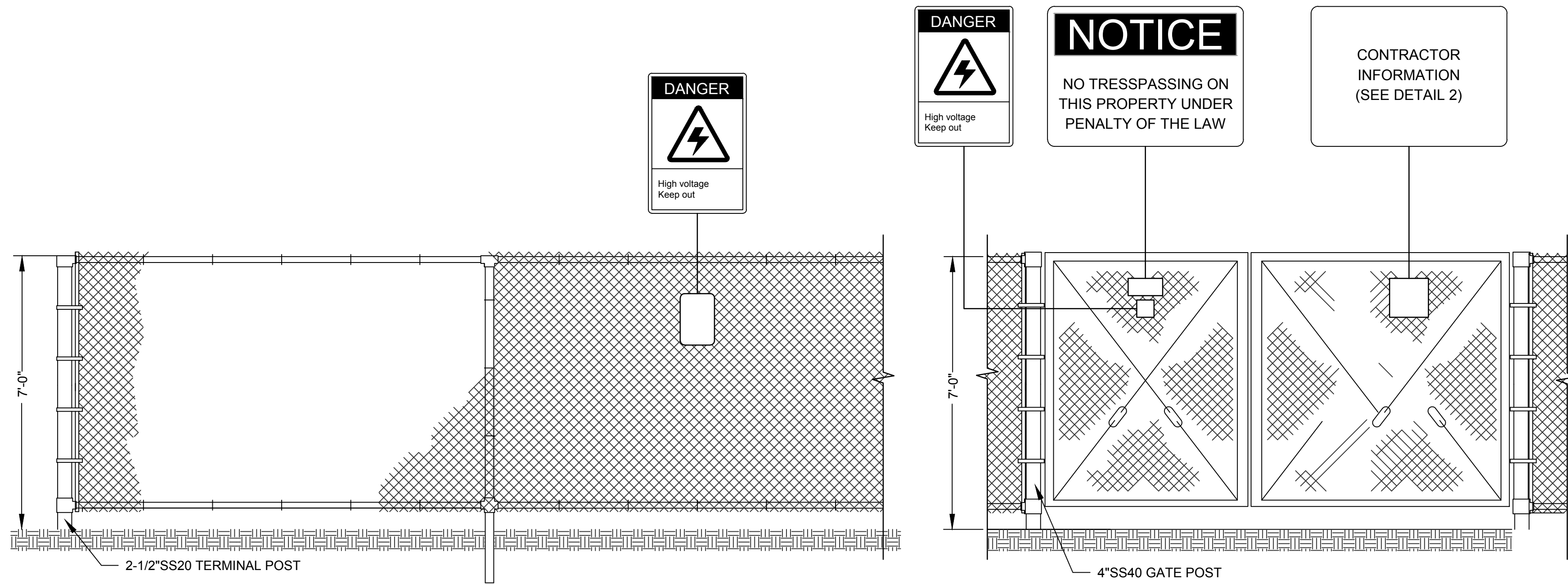
C201 - MATCHLINE - C201



DATE APPROVED: _____
 DATE ENDORSED: _____

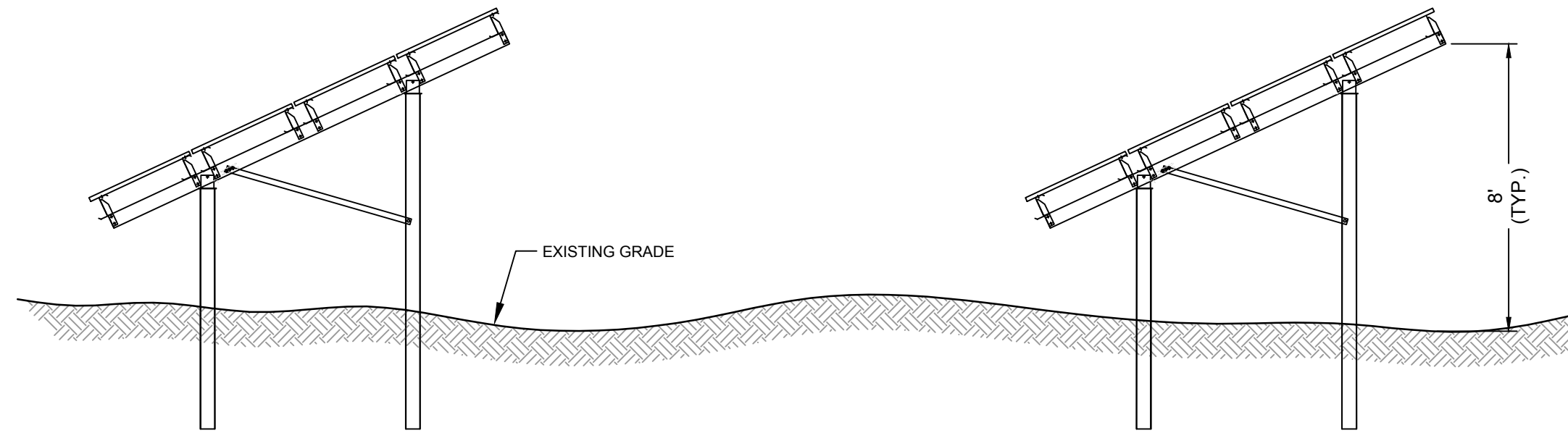
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- NOTES:
- FENCE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. FINAL POST AND FOUNDATION DESIGN TO BE PROVIDED PRIOR TO CONSTRUCTION.
 - SECURITY FENCE AROUND THE SITE SHALL BE CONTINUOUS AND 7'-0" (MINIMUM) PER THE NEC 110.31.
 - THE SECURITY FENCE SHALL BE GROUNDED IN ALL AREAS WHERE THE PV MODULES ARE LOCATED LESS THAN 10'-0" FROM THE FENCE TO LIMIT THE RISE OF HAZARDOUS VOLTAGE (IF APPLICABLE).

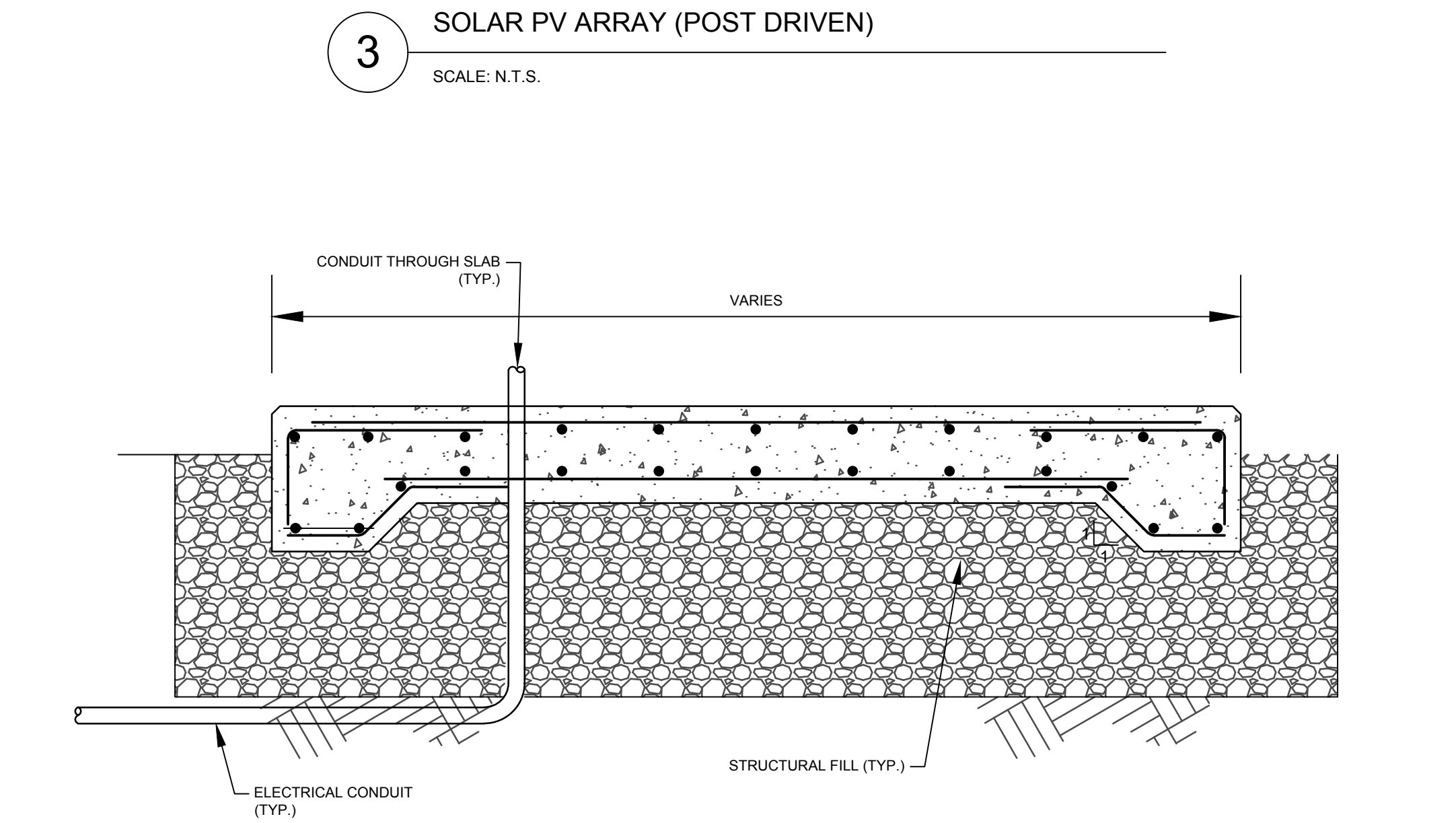
1 TYPICAL POST DRIVEN CHAIN LINK FENCE AND GATE DETAIL
SCALE: N.T.S.



2 CONTRACTOR INFORMATION SIGN DETAIL
SCALE: N.T.S.

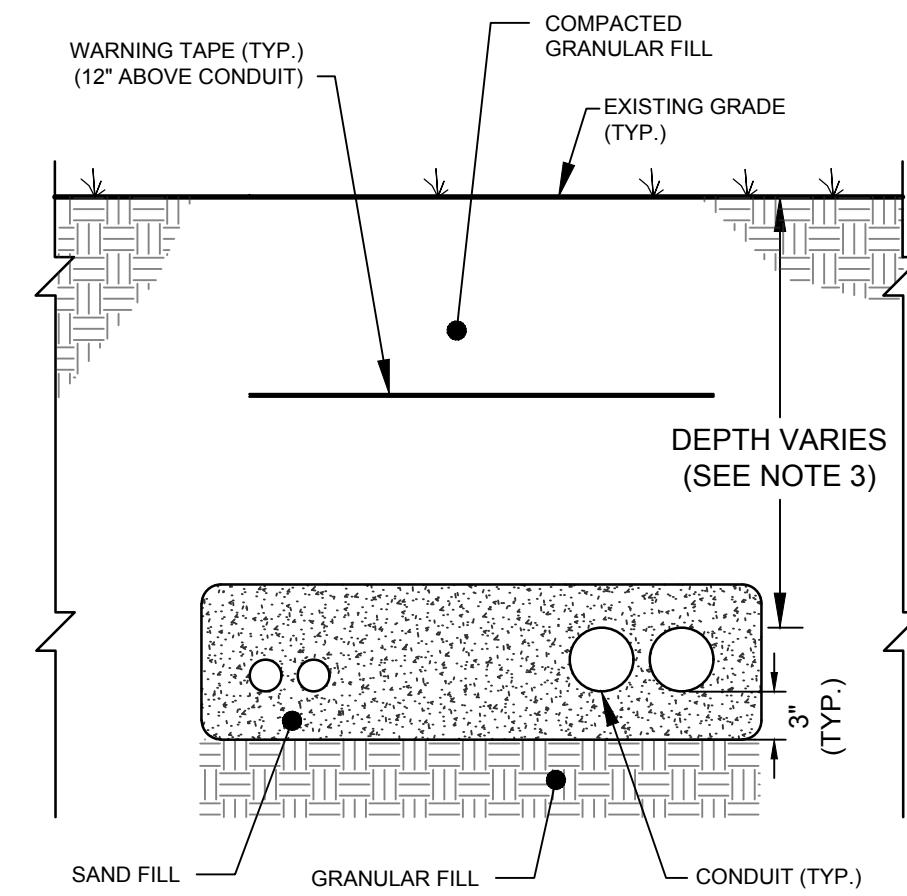
- NOTE:
- DESIGN FOR FOUNDATIONS, RACKING, AND MODULES BY OTHERS. DETAIL SHOWN FOR ILLUSTRATION PURPOSES ONLY.

3 SOLAR PV ARRAY (POST DRIVEN)
SCALE: N.T.S.



- NOTES:
- DETAIL IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. FINAL FOUNDATION DESIGN TO BE PROVIDED PRIOR TO CONSTRUCTION.

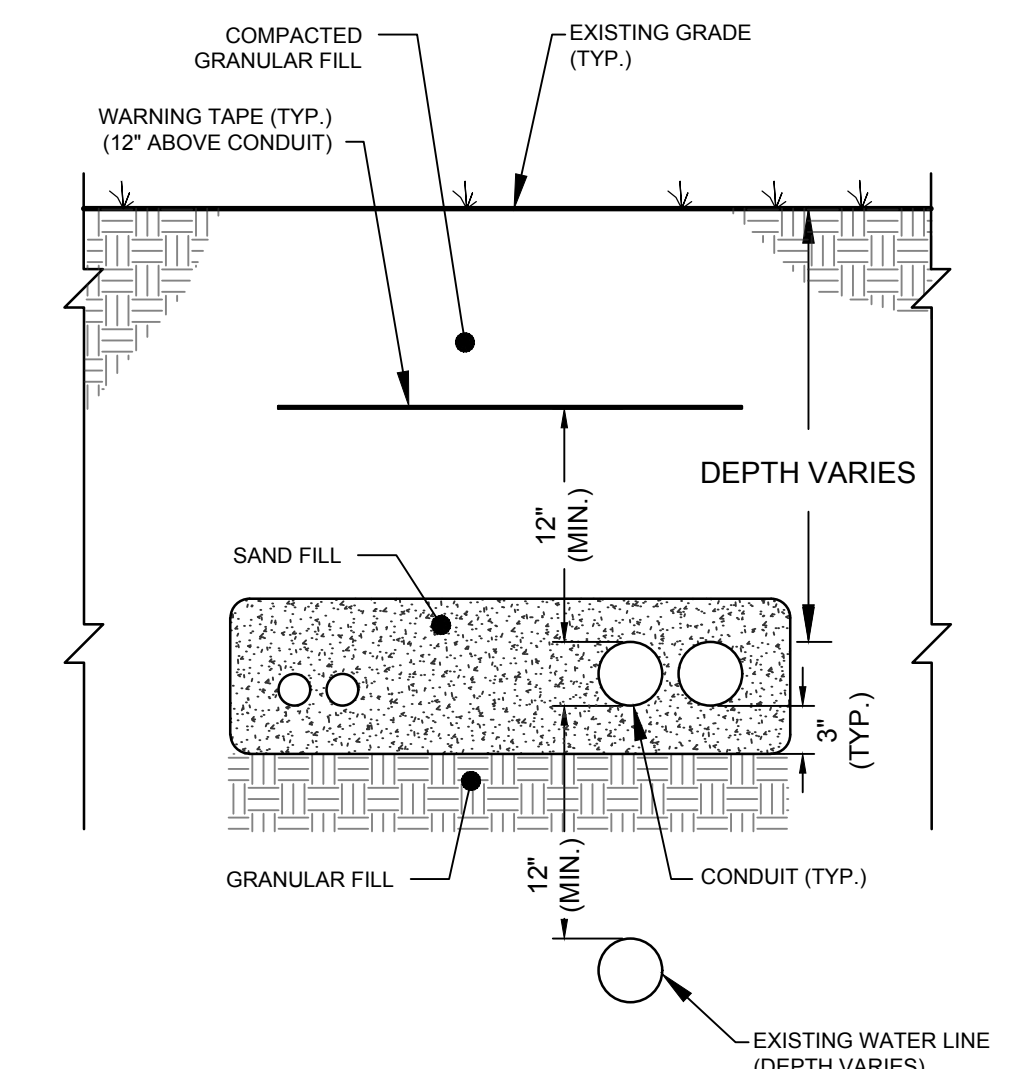
4 TYPICAL CONCRETE EQUIPMENT PAD SECTION
SCALE: N.T.S.



- NOTES:
- TRENCH SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. ELECTRICAL DESIGN AND CONFORMANCE WITH ELECTRICAL CODE REQUIREMENTS BY OTHERS.
 - CONDUIT DEPTH TABLE:

CONDUIT DEPTH TABLE		
SURFACE CONDITIONS	VOLTAGE (VOLTS)	DEPTH (INCHES)
ROADWAY	> 2,000	36.0
GRADE	> 2,000	36.0
ROADWAY	≤ 2,000	24.0
GRADE	≤ 2,000	18.0

5 TYPICAL BELOW GRADE CONDUIT DETAIL
SCALE: N.T.S.



- NOTES:
- TRENCH SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. ELECTRICAL DESIGN AND CONFORMANCE WITH ELECTRICAL CODE REQUIREMENTS BY OTHERS.
 - PROPOSED CONDUITS TO BE A MINIMUM OF 12 INCHES ABOVE EXISTING WATER LINE WITHIN WATER LINE EASEMENT.

6 TYPICAL CONDUIT ABOVE WATER EASEMENT DETAIL
SCALE: N.T.S.

DATE APPROVED: _____

DATE ENDORSED: _____

WALPOLE PLANNING BOARD

Project:
NORFOLK COUNTY
AGRICULTURAL SCHOOL
SOLAR

1377 NORTH STREET
WALPOLE, MA 02081

Weston & Sampson

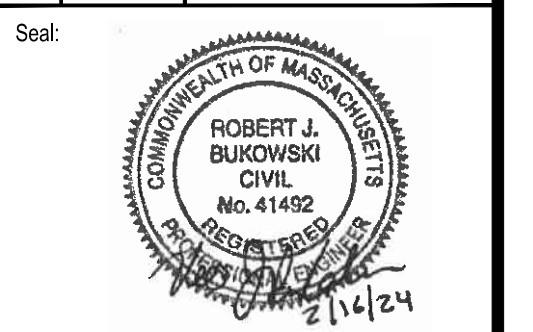
Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100
Reading, MA 01867
978.532.1900 800.SAMPSON
www.westonandsampson.com

Applicant:

Kearsarge
ENERGY

Kearsarge Walpole LLC
1380 Soldiers Field Road, Suite 3900
Boston, MA 02135
Tel: (855) 277-6217
www.kearsargeenergy.com

No.	Date	Description
6	02/18/2024	REVISED BASIN GRADING
5	12/29/2023	ISSUED FOR PLANNING BOARD ENDORSEMENT
4	10/05/2023	EXTENSION OF SITE ENTRY
3	10/04/2023	EXTENDED ASPHALT ACCESS ROAD
2	10/02/2023	REV PER FIRE DEPT COMMENTS
1	09/07/2023	REVISED PER TOWN COMMENTS
0	01/27/2023	ISSUED FOR PERMITTING



Issued For:
PERMITTING / NOT FOR CONSTRUCTION

Scale: AS SHOWN

Date: 01/27/2023

Drawn By: VLB

Reviewed By: MRC / JMJ

Approved By: RJB

W&S Project No.: ENG22-1200

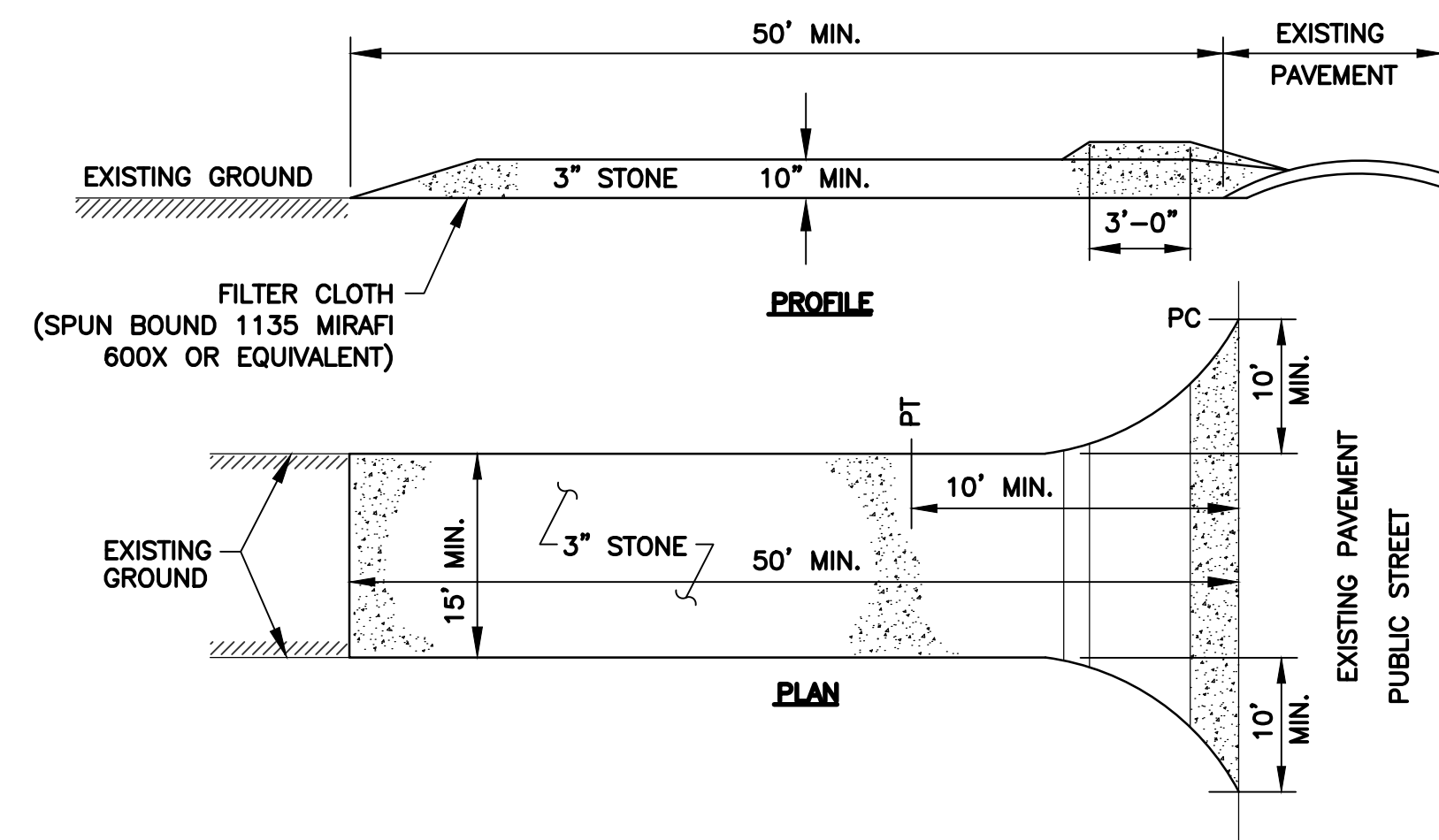
W&S File No.: Kearsarge Norfolk

Drawing Title:

TYPICAL CIVIL
DETAILS I

Sheet Number:

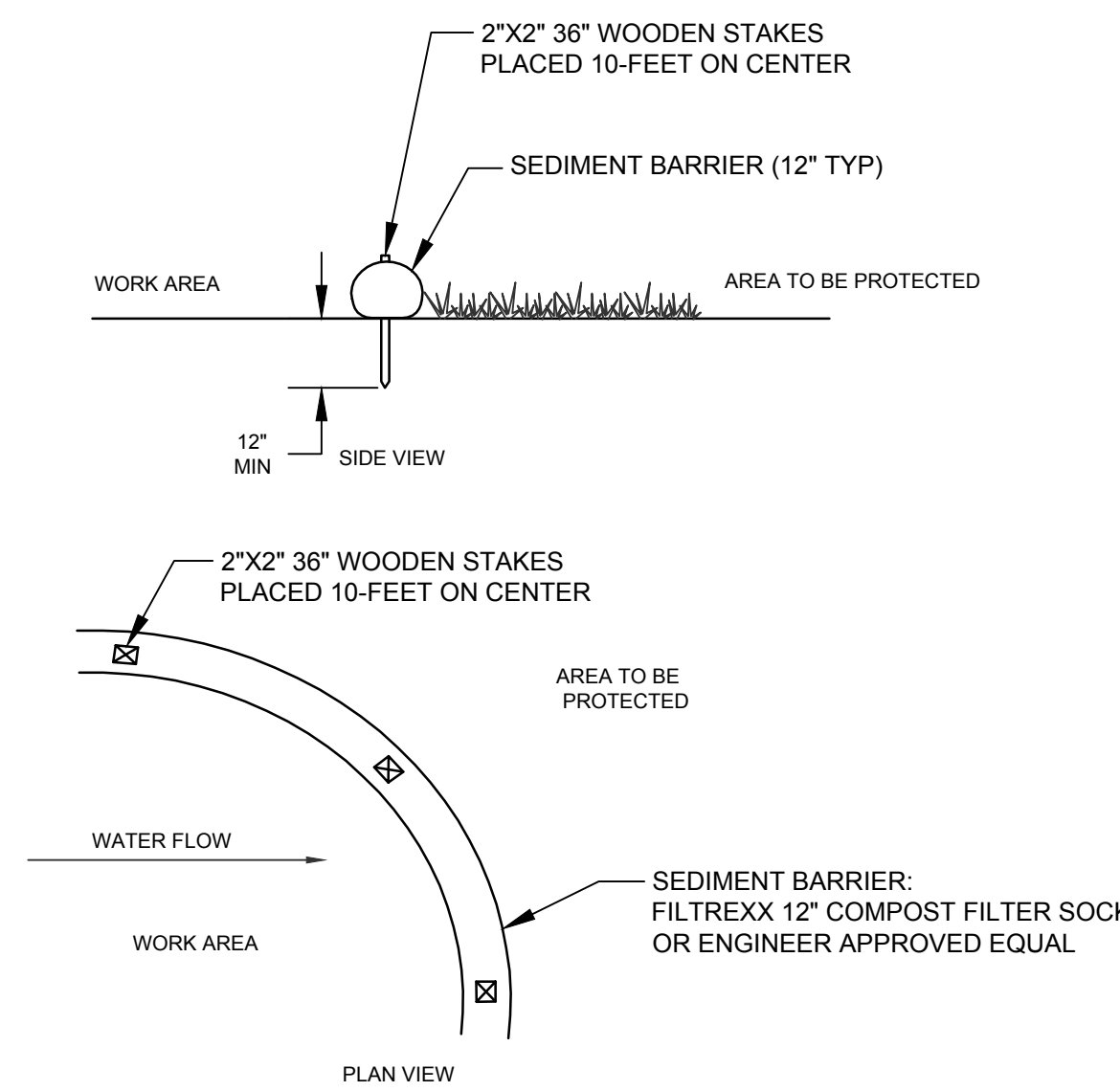
C501



STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
2. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
3. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
4. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAYS PER THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.
6. STONE SHALL BE REMOVED AT THE CONCLUSION OF PROJECT AND ACCUMULATED SEDIMENT DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS. REMOVAL OF STONE SHALL BE AT NO ADDITIONAL COST TO THE OWNER.
7. P.C. = POINT OF CURVATURE
8. P.T. = POINT OF TANGENCY

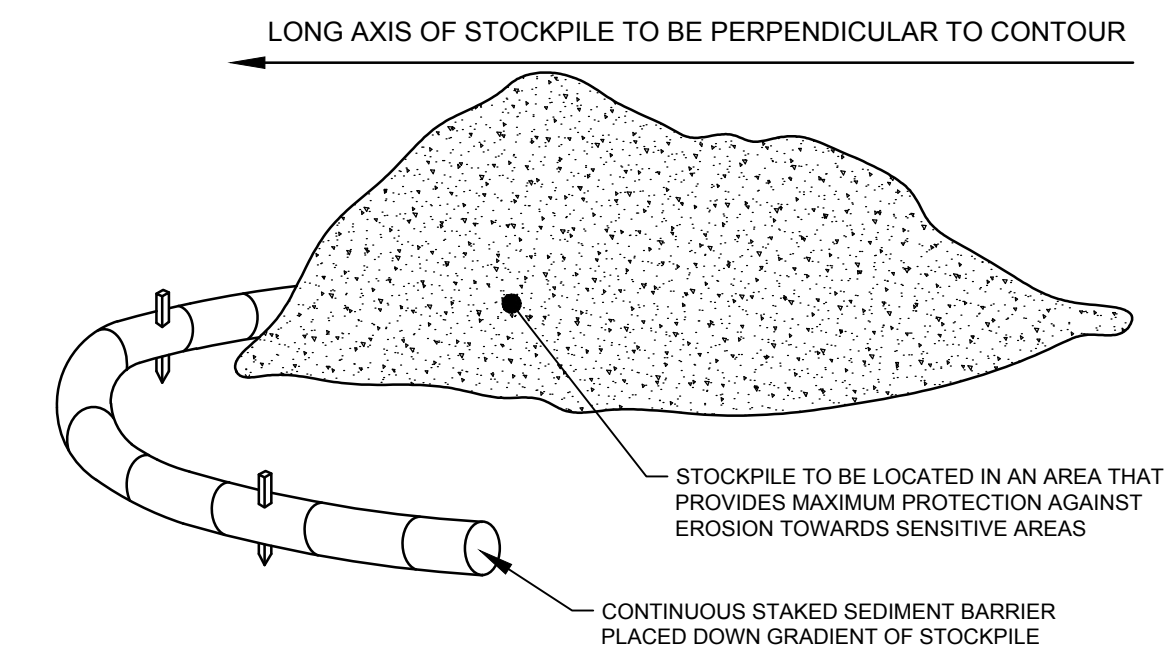
6 STABILIZED CONSTRUCTION ENTRANCE / EXIT
SCALE: N.T.S.



NOTES:

1. SEDIMENT BARRIER SHALL BE FILTREXX 12" COMPOST FILTER SOCK OR ENGINEER APPROVED EQUAL.
2. SEDIMENT BARRIER SHALL BE PLACED AROUND THE PERIMETER OF THE LIMIT OF WORK AS SHOWN ON THE PLANS AND INSTALLED PARALLEL TO EXISTING GROUND CONTOURS.
3. SEDIMENT BARRIER SHALL NOT BE PLACED UP SLOPE, OR IN A MANNER THAT WILL CREATE CHANNELIZED FLOW.
4. SEDIMENT BARRIERS SHALL BE INSPECTED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND IN ACCORDANCE WITH THE SITE STORMWATER POLLUTION PROTECTION PLAN (SWPPP).

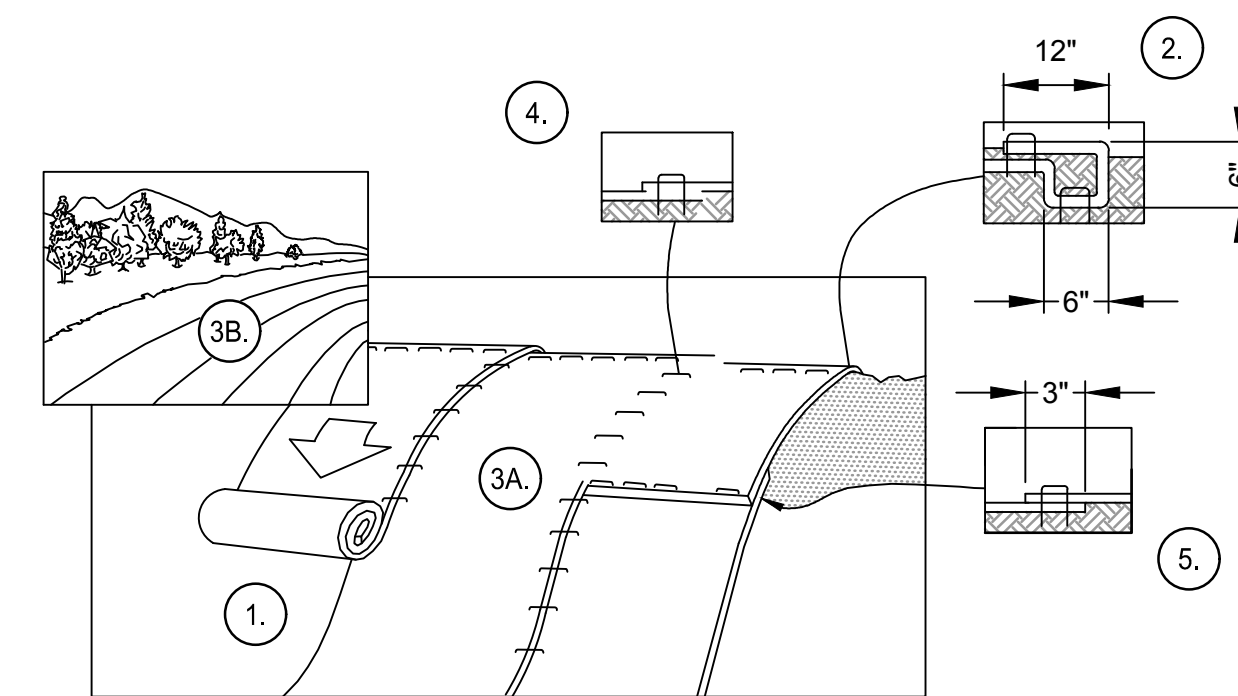
7 SEDIMENT BARRIER - COMPOST FILTER SOCK
SCALE: N.T.S.



NOTES:

1. STOCKPILE AREAS SHALL BE LOCATED OUTSIDE OF WETLANDS AND 100FT WETLAND BUFFERS.

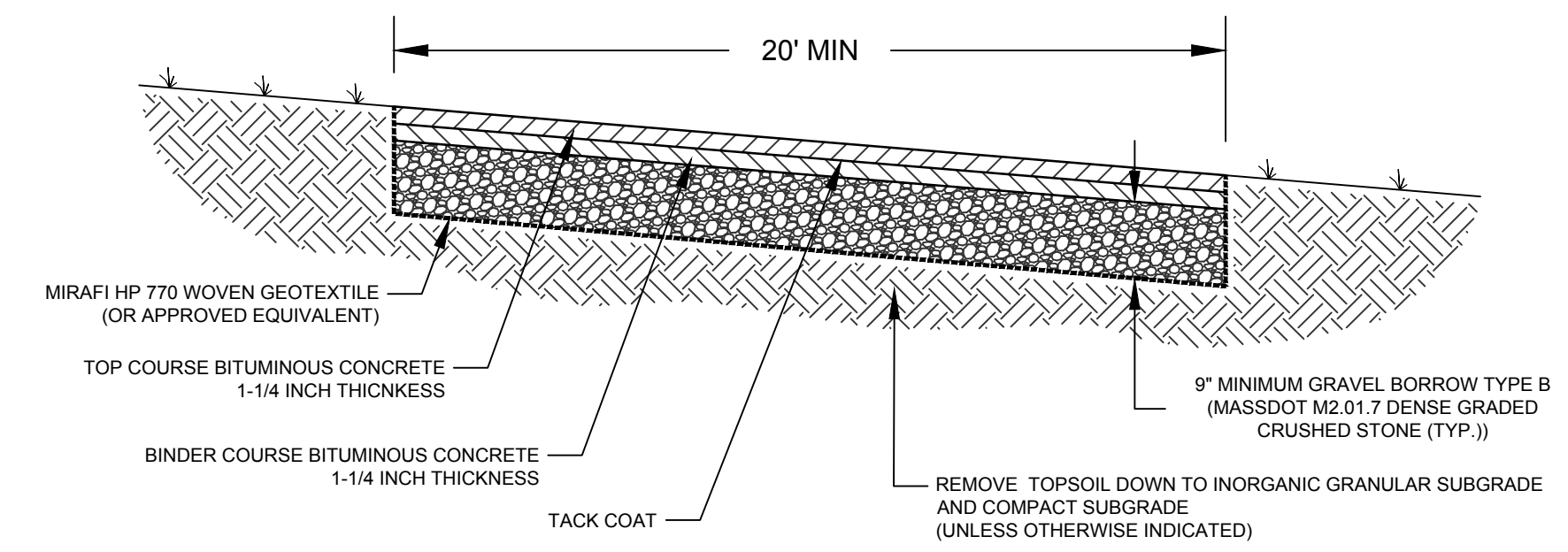
8 TEMPORARY STOCKPILE DETAIL
SCALE: N.T.S.



NOTE:

1. EXISTING LOAM TO BE STOCKPILED AND REUSED TO RESTORE DISTURBED AREAS.

9 LOAM AND SEED DETAIL
SCALE: N.T.S.



NOTES:

1. GRADE ROAD SURFACE TO ENSURE NO PONDING OCCURS WITHIN THE LIMITS OF THE ROAD SURFACE.
2. ACCESS ROAD DESIGN TO COMPLY WITH LOCAL EMERGENCY SERVICE REQUIREMENTS.

11 BITUMINOUS CONCRETE ACCESS ROAD (FLUSH)
SCALE: N.T.S.

NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2'-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
6. ALL 4H:1V SLOPES (25%) SHALL BE STABILIZED WITH EROSION CONTROL BLANKETING. BLANKETING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

10 EROSION CONTROL BLANKET INSTALLATION
SCALE: N.T.S.

DATE APPROVED: _____

DATE ENDORSED: _____

WALPOLE PLANNING BOARD

Project:
**NORFOLK COUNTY
AGRICULTURAL SCHOOL
SOLAR**

1377 NORTH STREET
WALPOLE, MA 02081

Weston & Sampson

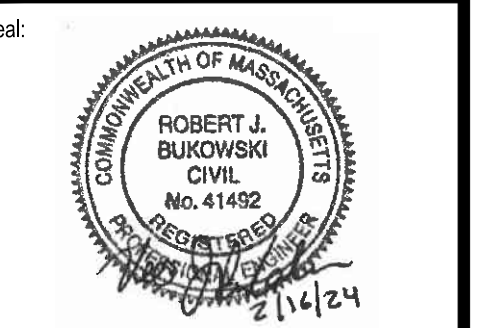
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Approved By: RJB

W&S Project No.: ENG22-1200

W&S File No.: Kearsarge Norfolk

Drawing Title:

**TYPICAL CIVIL
DETAILS II**

Sheet Number:

C502

ATTACHMENT B – Revised Stormwater Report



westonandsampson.com

55 Walkers Brook Drive, Suite 100
Reading, MA 01867
tel: 978.532.1900

REPORT

Stormwater Report

Kearsarge Walpole, LLC

Norfolk County Agricultural School
Solar PV Development

1377 North Street,
Walpole, Massachusetts 02081

November 2022
Revised February 2024

TABLE OF CONTENTS

Stormwater Checklist and Report Summary

Attachment A - Locus Map

Attachment B - NRCS Web Soil Survey Maps & Reports: Hydrologic Soils Group, Depth to Water Table, Depth to Bedrock, FEMA FIRMettes, NOAA Atlas 14 Rainfall Data, Test Pit Logs

Attachment C - Hydrologic Maps & HydroCAD Reports

Attachment D - Supporting Calculations

Attachment E - Long Term Pollution Prevention Plan

Attachment F - Operations & Maintenance Plan

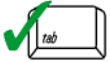
Attachment G - Construction Period Pollution and Erosion and Sedimentation Control Plan



Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

¹ The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

² For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



02/16/2024

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment



Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
 - Credit 1
 - Credit 2
 - Credit 3
- Use of “country drainage” versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): Vegetated Filter Strip, Infiltration Basin

Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - Static
 - Simple Dynamic
 - Dynamic Field¹
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
 - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - involves runoff from land uses with higher potential pollutant loads.
 - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
 - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
 - The ½" or 1" Water Quality Volume or
 - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does **not** cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
 - Limited Project
 - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
 - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
 - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
 - Bike Path and/or Foot Path
 - Redevelopment Project
 - Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas;
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

Applicant/Project Name: Kearsarge Walpole LLC
Norfolk County Agricultural School Solar Project

Project Location: 1377 North Street, Walpole, MA

Application Prepared by:
Firm: Weston & Sampson Engineers, Inc.
Registered PE: Rob Bukowski, P.E.

Below is an explanation describing Standards 1-10 as they apply to the Norfolk County Agriculture School Solar Project:

Revision Purpose

The stormwater report and design have been revised based on test pit excavations performed on site by Weston & Sampson Engineers, Inc. on January 31, 2024. Chris Johnson, of the Walpole Engineering Division, was present during the test pit excavations.

General

The proposed project is located at 1377 North Street in Walpole, Massachusetts. The site predominantly consists of open fields with minimal wooded areas and some old building foundations. The site slopes up to the west from North Street to the peak of a hill and then slopes west/southwest toward wetland areas in the west and southwest sections of the property. An existing water easement runs through the middle portion of the property. The properties involved with this project are all owned by Norfolk County Agricultural School with a combined total land area of 67.46 acres and includes the parcels with Map#/Parcel# based on the Walpole Assessors Office records of 5/33, 5/35, and 5/36.

The proposed development is approximately 17 acres for the installation of a 5.0 MW AC (max) solar photovoltaic (PV) array and battery energy storage system. The existing gravel driveway from North Street will be improved to a bituminous concrete access drive allowing access to the electrical equipment and battery storage pad areas for maintenance. No work is proposed with the 100-ft buffer zone to the wetlands on the west side of the site. Grading is proposed, predominantly on the western slopes, in order to flatten the terrain to be within the slope tolerances of the racking equipment. Outside the areas of grading, the vegetative cover is expected to remain. Any areas requiring revegetation will be seeded with a low-growth meadow seed mix and will be mowed, as necessary. The solar PV array will be surrounded by a chain link fence and accessed through double-swing gates. A 16-ft gap between the fence and solar PV panels has been provided for access around the site.

A Locus Map is included in **Attachment A**.

According to USDA NRCS soil mapping data, the site is comprised of HSG-B soils (Newport silt loam) and C-D soils (Woodbridge fine sandy loam). NRCS Web Soil Survey maps and reports for hydrologic soil group, depth to water table, and depth to bedrock are included as **Attachment B**. The development area is within the HSG-B mapped areas according to the NRCS data.

Weston & Sampson Engineers, Inc. observed test pit excavations on January 31, 2024 and recorded the soil analysis. The soil strata determined shows a general soil description of sandy-loam with the shallowest depth to seasonal high groundwater (SHGW) observed at 14-inches below grade. More information on the six test pit excavations performed can be found in the Test Pit logs in **Attachment B**. Test pit locations are shown on the site plans.

There are wetlands on-site in the western and southwest sections of the site and the proposed project does not encroach upon the associated 100-ft buffer zone.

Bubbling Brook runs west to east across North Street and is to the north of the site. The 200-ft riverfront area, 100-ft wetland buffer zone, and FEMA 100-year flood zone are within the northeast corner of the site. The 200-ft riverfront area associated with Bubbling Brook is over 650-ft from the proposed project's limit of work. No impacts to the buffer zones associated with Bubbling Brook will occur. The two FEMA FIRMettes associated with the site are included in **Attachment B**.

A hydrologic model was prepared using HydroCAD modeling software to compare pre- and post-development stormwater rates. Rainfall data is referenced from NOAA Atlas 14, Volume 10, Version 3 for Walpole, Massachusetts and included in **Attachment B**. The full HydroCAD stormwater reports for pre- and post-development conditions with associated site hydrologic maps are included in **Attachment C**.

Standard 1: No New Untreated Discharges

Compared to pre-construction conditions, the proposed conditions will have an increase in lawn coverage due to tree clearing and a decreased amount of impervious coverage from removing old foundations. The increase in lawn coverage and decrease in woodland coverage will increase both peak runoff rate and runoff volume. To mitigate offsite downstream impacts, two infiltration basins are proposed with riprap outlet aprons to treat runoff prior to discharging runoff downstream.

All impervious coverage from the site will be treated by the infiltration basins. Therefore, no new untreated discharges are created.

Standard 2: Peak Rate Attenuation

The two infiltration basins will decrease post-development peak discharge rates compared to pre-development discharge rates to any offsite locations up to and including the 100-yr storm. A summary of the pre- and post-development peak flow rates is included in **Attachment D**. Both stormwater BMPs use an infiltration rate based on the Rawls Rates Table (Table 2.3.3. in Volume 3 Chapter 1 of the Massachusetts Stormwater Handbook) for HSG-B soils of 1.02 inches/hour.

The Test Pit logs show a general soil description of sandy-loam soils matching the description of HSG-B soils as described by the NRCS. Therefore, the infiltration rate of 1.02 inches/hour is a valid assumption.

Standard 3: Recharge

The groundwater recharge time for both infiltration basins was calculated. The drawdown time for infiltration basin XB-1 is 9.4 hours and the drawdown time for infiltration basin XB-2 is 7.6 hours. Both are lower than the required 72 hours maximum. SHGW elevations were determined from the test pit excavations performed on site. The shallowest depth to SHGW of 14-inches below existing grade was used as the design restrictive layer for both infiltration basins.

The existing grade at the interior of each infiltration basin is approximately 207.0-feet and the proposed bottom of the infiltration basins is approximately 208.0-feet. Therefore, the observed SHGW will be approximately 26-inches below the bottom of the proposed infiltration basin which meets the required separation to SHGW.

A mounding analysis has been completed, and is required as the bottom of the proposed infiltration basin is within 4-feet of SHGW and attenuates the design storms greater than the 24-hour 10-year storm event. The analysis shows a maximum mounding of groundwater to be 2.26-feet above the existing elevation of the SHGW. As the existing SHGW elevation is 205.83-feet, that results in a maximum groundwater mounding elevation of 208.09-feet or approximately 0.1-feet above the bottom of the proposed infiltration basin. With the consistent reduction in peak flows, the results of the mounding analysis associated with the infiltration basins is considered de minimis. The mounding analysis is included in **Attachment D**.

Standard 4: Water Quality

Source control and pollution prevention measures are identified in the Long Term Pollution Prevention Plan (**Attachment E**) and BMPs will be maintained in accordance with the site specific Operation and Maintenance Plan (**Attachment F**).

The water quality volume (WQV) was calculated for each drainage area associated with each infiltration basin. For infiltration basin XB-1, the required WQV is 32.9 cubic feet (cf) and 2,930 cf is provided below the riprap spillway from infiltration basin XB-1. For infiltration basin XB-2, the required WQV is 0.3 cf and 2,321 cf is provided below the riprap spillway for infiltration basin XB-2. WQV calculations are included in **Attachment D**.

A minimum of 82% TSS removal is proposed for both stormwater BMPs. Calculations for TSS removal are included in **Attachment D**.

All other coverage of the site, not including woodlands and access roads, will be seeded to provide vegetated cover, functioning as long vegetated filter strips across the site.

Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

Not Applicable. There are no LUHPPLs in the work area.

Standard 6: Critical Areas

There will be no new discharges to critical areas.

Standard 7: Redevelopments and Other Projects Subject to the Standards Only to the Maximum Extent Practicable

Not applicable. This project is not a redevelopment project.

Standard 8: Construction Period Pollution Prevention and Erosion and Sediment Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan is included in **Attachment G**. To ensure that the work incorporates the performance standards recommended in MassDEP's Stormwater Management Policy, necessary erosion and sedimentation control measures will be utilized during construction as shown on the site plans.

The project will be covered by the NPDES Construction General Permit during construction. A copy of the site specific Stormwater Pollution Prevention Plan (SWPPP) for the project is also included in **Attachment G**.

Construction timeframes and dates referenced in the SWPPP are approximate.

Standard 9: Operation and Maintenance Plan

An Operation and Maintenance Plan for the proposed stormwater basins is provided with this report in **Attachment F**. Stormwater basins and their outlet structures will be maintained during and following construction in accordance with this plan.

Standard 10: Prohibition of Illicit Discharges

Not applicable - there are no illicit discharges associated with the proposed project.

Attachment A - Locus Map

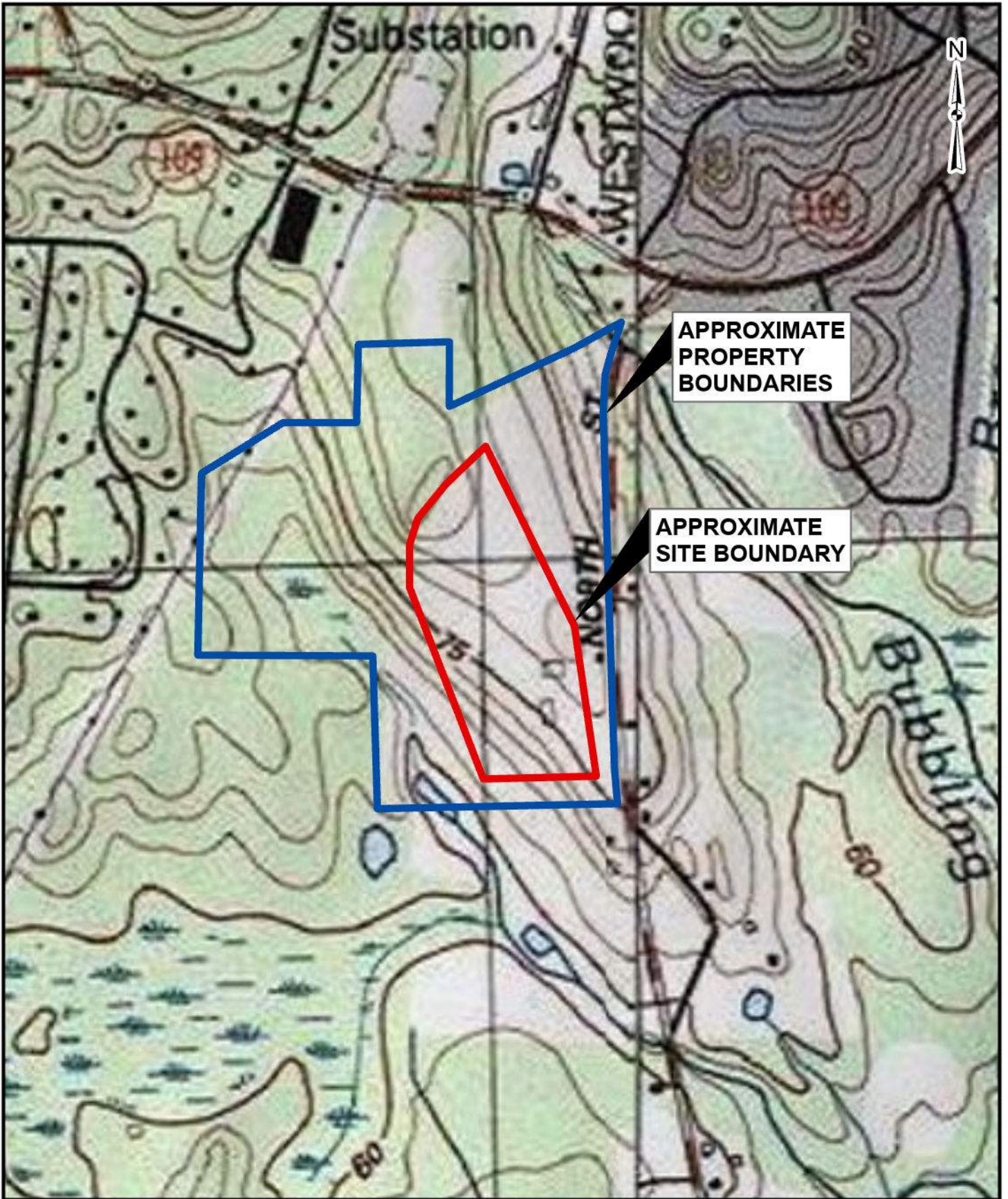
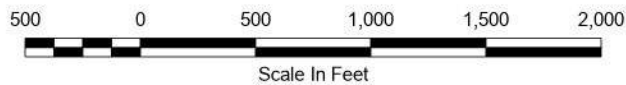


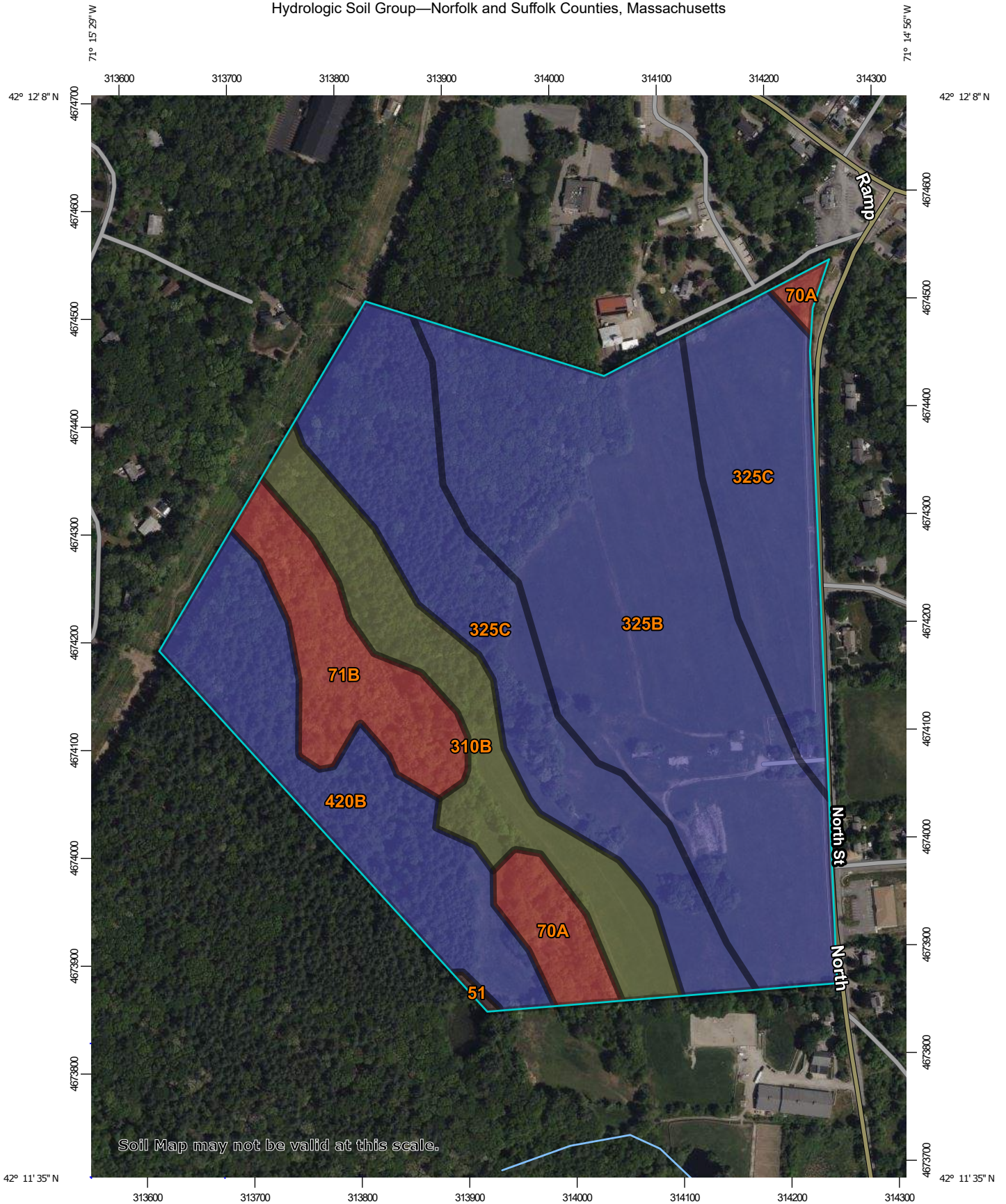
FIGURE 1
NORFOLK COUNTY AGRICULTURE SCHOOL SOLAR PROJECT
1377 NORTH STREET, WALPOLE, MA

LOCUS MAP

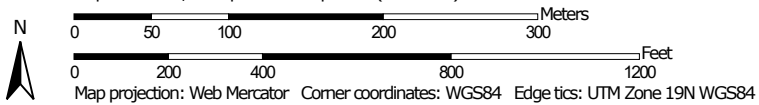


Attachment B - NRCS Web Soil Survey Maps & Reports:
Hydrologic Soils Group, Depth to Water Table, Depth to Bedrock,
FEMA FIRMettes,
NOAA Atlas 14 Rainfall Data,
Test Pit Logs

































Hydrologic Soil Group—Norfolk and Suffolk Counties, Massachusetts



Map Scale: 1:4,890 if printed on A portrait (8.5" x 11") sheet.



MAP LEGEND

Area of Interest (AOI)		 C	
 Area of Interest (AOI)		 C/D	
Soils		 D	
Soil Rating Polygons		 Not rated or not available	
 A		Water Features	
 A/D		 Streams and Canals	
 B		Transportation	
 B/D		 Rails	
 C		 Interstate Highways	
 C/D		 US Routes	
 D		 Major Roads	
 Not rated or not available		 Local Roads	
Soil Rating Lines		Background	
 A		 Aerial Photography	
 A/D			
 B			
 B/D			
 C			
 C/D			
 D			
 Not rated or not available			
Soil Rating Points			
 A			
 A/D			
 B			
 B/D			

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
 Survey Area Data: Version 18, Sep 9, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
51	Swansea muck, 0 to 1 percent slopes	B/D	0.1	0.2%
70A	Ridgebury fine sandy loam, 0 to 3 percent slopes	D	2.7	3.5%
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	D	5.8	7.5%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	8.4	11.0%
325B	Newport silt loam, 3 to 8 percent slopes	B	27.4	35.7%
325C	Newport silt loam, 8 to 15 percent slopes	B	22.2	28.9%
420B	Canton fine sandy loam, 3 to 8 percent slopes	B	10.2	13.2%
Totals for Area of Interest			76.8	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

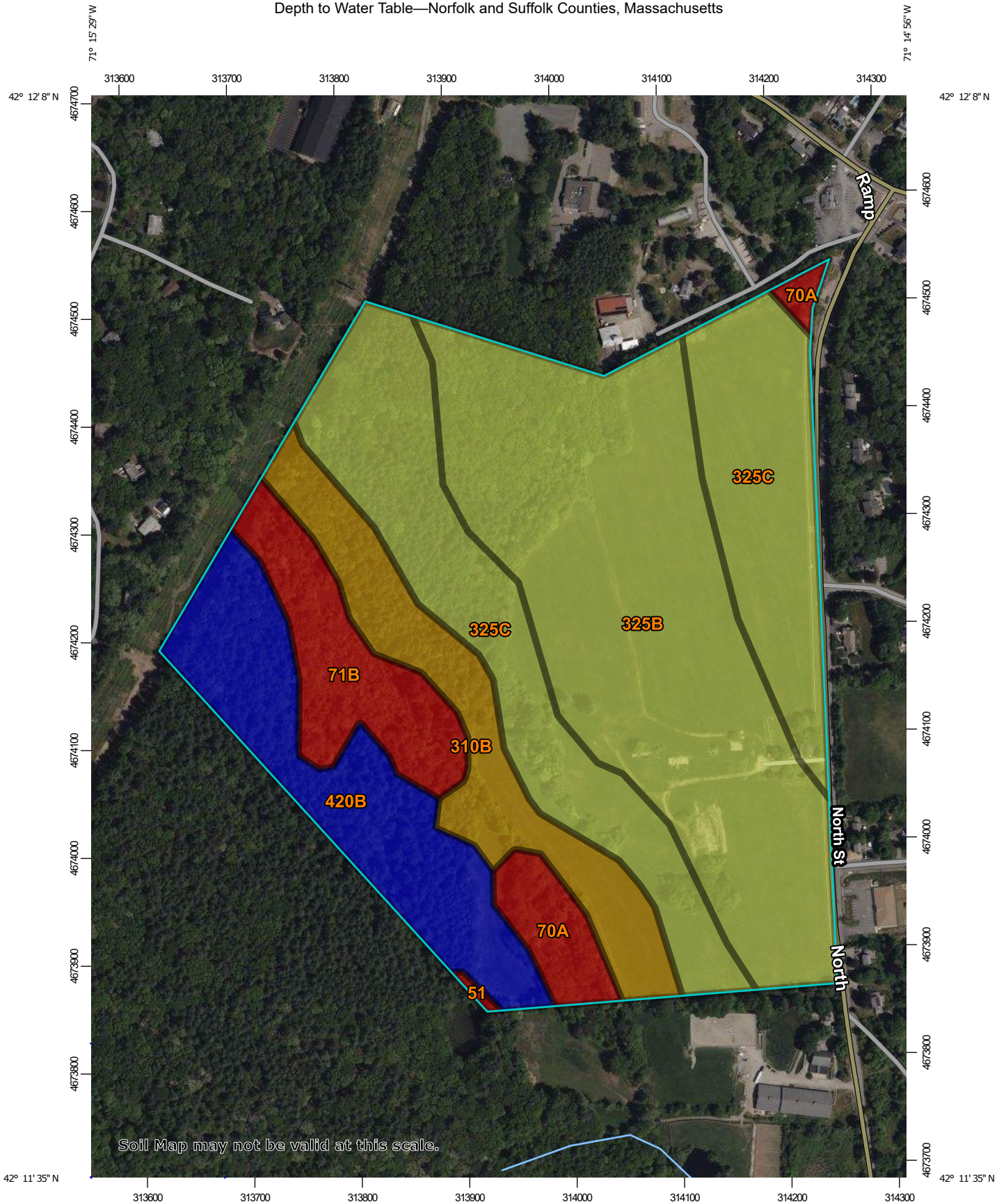
Rating Options

Aggregation Method: Dominant Condition

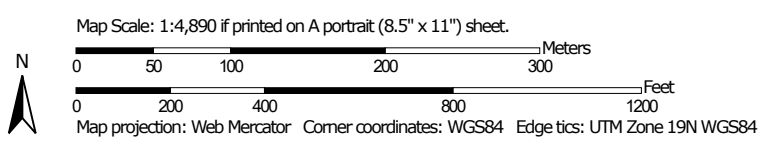
Component Percent Cutoff: None Specified

Tie-break Rule: Higher





























Depth to Water Table—Norfolk and Suffolk Counties, Massachusetts



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)	 Not rated or not available
Area of Interest (AOI)	
Soils	Water Features
Soil Rating Polygons	 Streams and Canals
 0 - 25	Transportation
 25 - 50	 Rails
 50 - 100	 Interstate Highways
 100 - 150	 US Routes
 150 - 200	 Major Roads
 > 200	 Local Roads
 Not rated or not available	Background
	 Aerial Photography
Soil Rating Lines	
 0 - 25	
 25 - 50	
 50 - 100	
 100 - 150	
 150 - 200	
 > 200	
 Not rated or not available	
Soil Rating Points	
 0 - 25	
 25 - 50	
 50 - 100	
 100 - 150	
 150 - 200	
 > 200	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
 Survey Area Data: Version 18, Sep 9, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
51	Swansea muck, 0 to 1 percent slopes	0	0.1	0.2%
70A	Ridgebury fine sandy loam, 0 to 3 percent slopes	8	2.7	3.5%
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	8	5.8	7.5%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	46	8.4	11.0%
325B	Newport silt loam, 3 to 8 percent slopes	61	27.4	35.7%
325C	Newport silt loam, 8 to 15 percent slopes	61	22.2	28.9%
420B	Canton fine sandy loam, 3 to 8 percent slopes	>200	10.2	13.2%
Totals for Area of Interest			76.8	100.0%

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

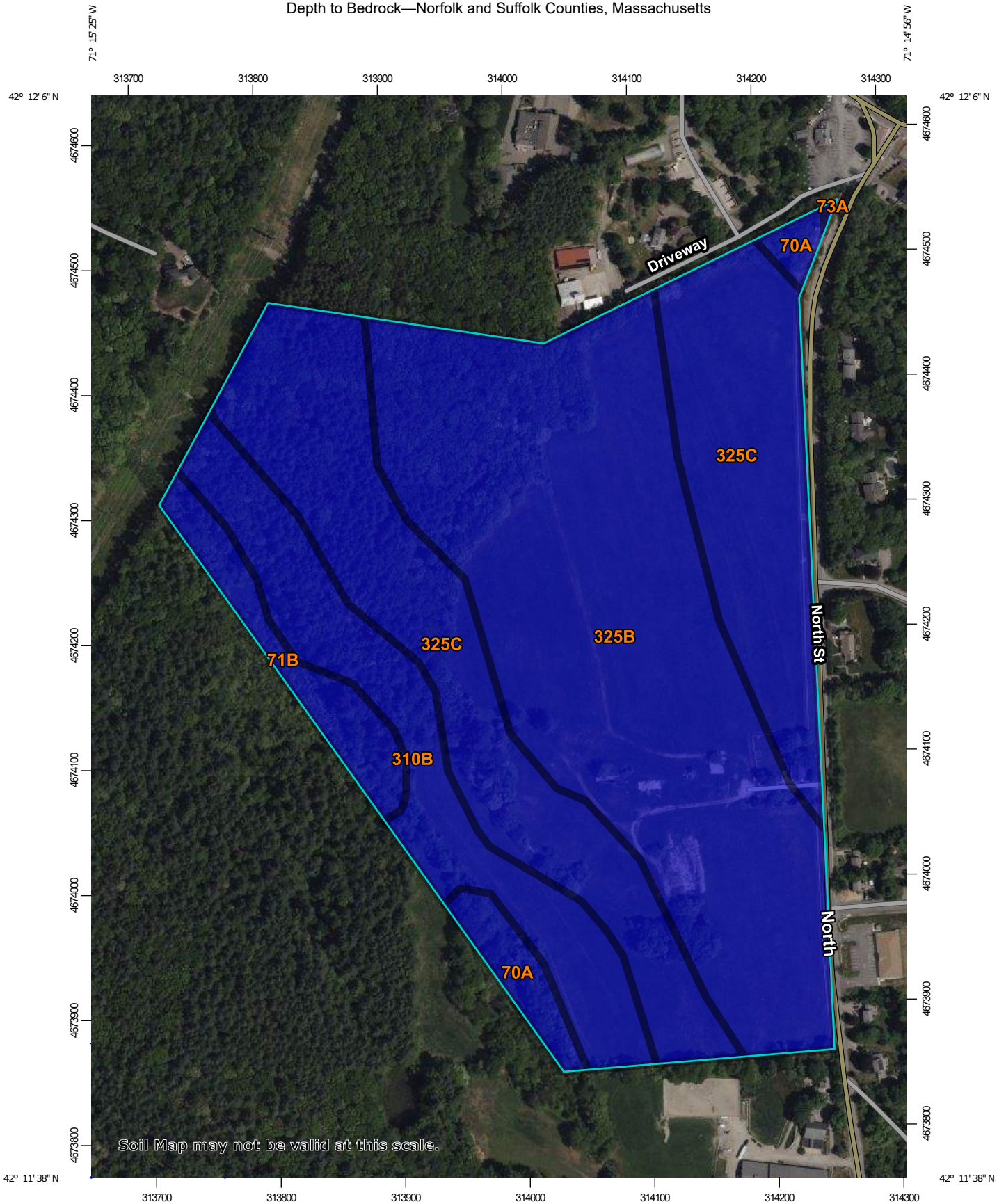
Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

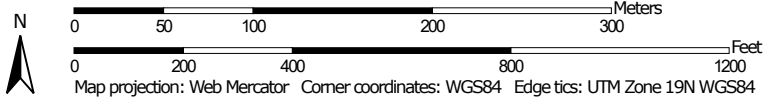
Ending Month: December

Depth to Bedrock—Norfolk and Suffolk Counties, Massachusetts



Soil Map may not be valid at this scale.





























Map Scale: 1:4,220 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge ticks: UTM Zone 19N WGS84



MAP LEGEND

Area of Interest (AOI)	 Not rated or not available
Area of Interest (AOI)	
Soils	Water Features
Soil Rating Polygons	 Streams and Canals
 0 - 25	Transportation
 25 - 50	 Rails
 50 - 100	 Interstate Highways
 100 - 150	 US Routes
 150 - 200	 Major Roads
 > 200	 Local Roads
 Not rated or not available	Background
	 Aerial Photography
Soil Rating Lines	
 0 - 25	
 25 - 50	
 50 - 100	
 100 - 150	
 150 - 200	
 > 200	
 Not rated or not available	
Soil Rating Points	
 0 - 25	
 25 - 50	
 50 - 100	
 100 - 150	
 150 - 200	
 > 200	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
 Survey Area Data: Version 18, Sep 9, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Depth to Bedrock

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
70A	Ridgebury fine sandy loam, 0 to 3 percent slopes	>200	1.8	3.0%
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	>200	2.5	4.2%
73A	Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony	>200	0.0	0.0%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	>200	8.0	13.2%
325B	Newport silt loam, 3 to 8 percent slopes	>200	26.8	44.3%
325C	Newport silt loam, 8 to 15 percent slopes	>200	21.3	35.3%
Totals for Area of Interest			60.4	100.0%

Description

The term bedrock in soil survey refers to a continuous root and water restrictive layer of rock that occurs within the soil profile.

There are many types of restrictions that can occur within the soil profile but this theme only includes the three restrictions that use the term bedrock. These are:

- 1) Lithic Bedrock
- 2) Paralithic Bedrock
- 3) Densic Bedrock

Lithic bedrock and paralithic bedrock are comprised of igneous, metamorphic, and sedimentary rocks, which are coherent and consolidated into rock through pressure, heat, cementation, or fusion. Lithic bedrock represents the hardest type of bedrock, with a hardness of strongly coherent to indurated. Paralithic bedrock has a hardness of extremely weakly coherent to moderately coherent. It can occur as a thin layer of weathered bedrock above harder lithic bedrock. Paralithic bedrock can also be much thicker, extending well below the soil profile.

Densic bedrock represents a unique kind of bedrock recognized within the soil survey. It is non-coherent and consolidated, dense root restrictive material, formed by pressure, heat, and dewatering of earth materials or sediments. Densic bedrock differs from densic materials, which formed under the compaction of glaciers, mudflows, and or human-caused compaction.

If more than one type of bedrock is described for an individual soil type, the depth to the shallowest one is given. If no bedrock is described in a map unit, it is represented by the "greater than 200" depth class.

Depth to bedrock is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

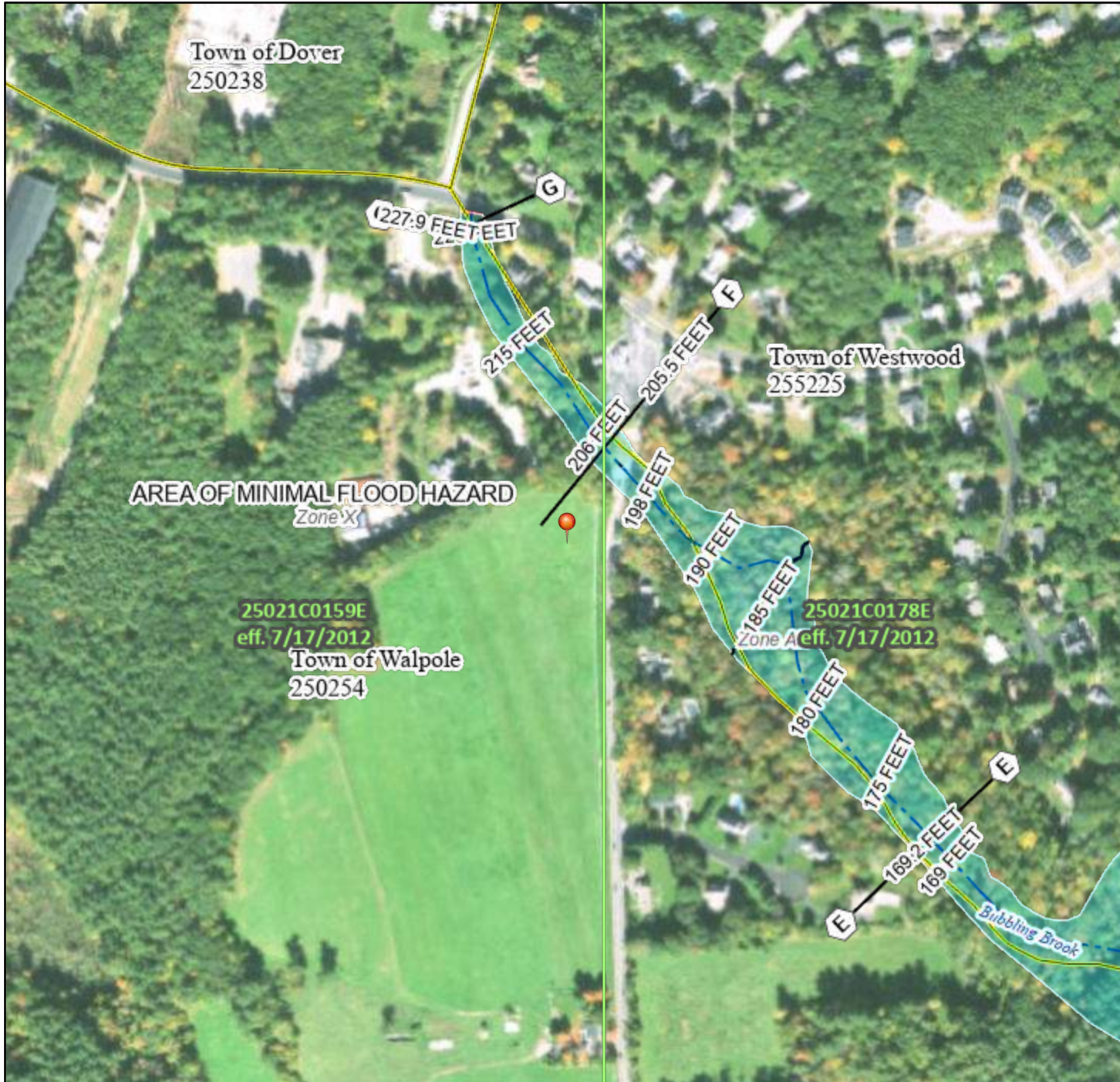
Interpret Nulls as Zero: No

DVLRQQD QRRG-EPUGDHU)SUVWH



FIG

Figure 1: Flood Hazard Map



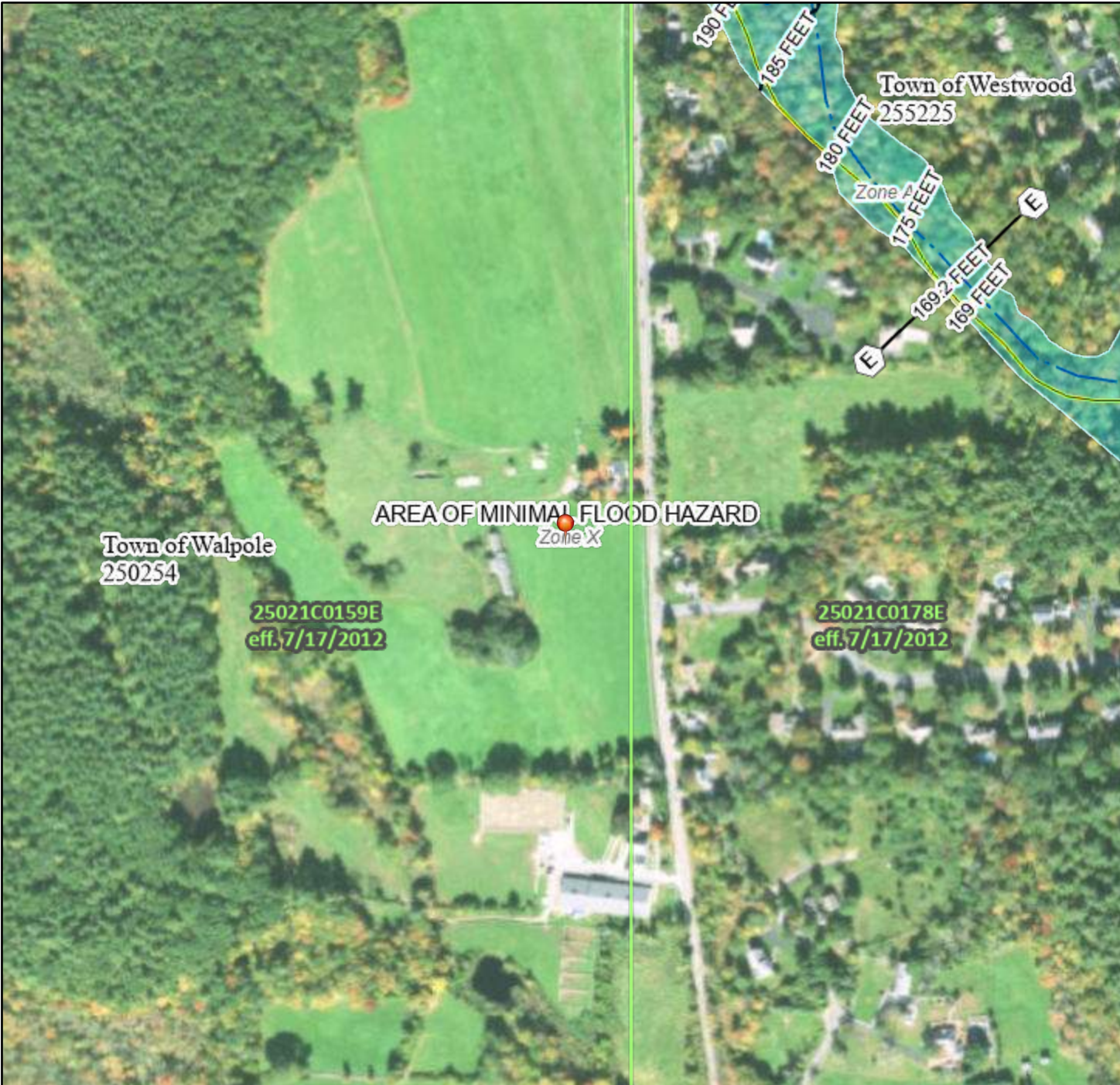
<p>25021C0159E eff. 7/17/2012</p> <p>25021C0178E Zone A eff. 7/17/2012</p>	<p>227.9 FEET</p> <p>215 FEET</p> <p>206 FEET</p> <p>198 FEET</p> <p>190 FEET</p> <p>185 FEET</p> <p>180 FEET</p> <p>175 FEET</p> <p>169.2 FEET</p> <p>169 FEET</p>	<p>G</p> <p>F</p> <p>E</p>	<p>Town of Dover 250238</p> <p>Town of Westwood 255225</p> <p>Town of Walpole 250254</p>	<p>AREA OF MINIMAL FLOOD HAZARD Zone X</p>	<p>Bubbling Brook</p>
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74LV BSBFBDLHV ZWKJVV WDDQDUGV IRU WKHXHR
 GJLWDD IOFRGEB/LI LW LV QRW YRLGDV GVFULBGBORZ
 7KHEDVBSVFRQFFBOLHV ZWKJVV EDVBS
 DFXUR WDDQDUGV

7KHIOFRGKQJGLQRUBMLRQLV GULYHGGLUHFWOUIRPAWK
 DVWKULWDLVYHJZEVHUYLHV SURLGGB 74LV BS
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 UHOFRW FRQJHV RU DFRQVWV VXBHXQV WR WKLVDGWHDDG
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 UHKDWRUJSURVH

11.1



FHOG

1) 6 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

68.52 68.55	LWRW %DVHJRRGHYDVLQ % -FCH\$ 9 \$ LWK%RUFBWK -FCH\$ 9 \$ 9 \$ \$HODWRAJRRG
26.52 26.55	\$DQD &OOFHJRRG EPUG \$JHD/ R DQDQ FROFHJRRG ZWKDHUDH G-SWKOHV WKOQRCHIRW RU ZWKDULD DJHD/R OHV WKOQRCHV DUEOHFCH; XWXUH&QJ VLQR/\$DQD &OOFHJRRG EPUG -FCH; \$JHZWK&GHGJRRG L VNGHWR HYH GH RVH -FCH; \$JHZWKJRRG L VNGHWRHYH -FCH
26.55	\$JHD QLEO JRRG EPUG -FCH; (HFWLYH)
26.55 68.55	\$JHD &GHWHUEGJRRG EPUG -FCH; &OQD &OYUW RU &VRURZU HYH LNH RU JRRGDO
26 68	&JRW &FVLRQ/ ZWKSDQD &OOFH DVHU &UIDFH OHYDVLQ &DWD 7UDQFW %DVHJRRGHYDVLQQLQ % LEW R &VX -XULVL FVLRQ%&QJUA &DWD 7UDQFW %DHLQ &JROH%DHLQ &JURD&LFJ DVXUH
68.55	LJV DQD DQD \$D QLEO RLJV DQD DQD \$D QLEO &DSSG
68.55	7HSLQQL VSDHGRQWKHESLV DQDSSURLQVH SRLQV VHOHFWHGEVWHXHU DQDGRV GRW UHSH DQDVKRULWDLV YHSURSUW OREDVLQ

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 QLV DQD IO RRGES/LI LW LV GRW YRLGDV GHVULHG BDRZ
 7HEDVSVKQDFFBOLHV ZWKJVV EDVBS
 DFXUR WDDQJG/

7HIORRGKQJGLQRUBMLRQLV GHULYHGGLUHFVOIURVWK
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 UHOHFW FROQV RU DQDQV V&HIXQV VRWKLVDVH DQD
 WLF 7H% DQD HIFWL YHLQRUBMLRQB FROQRU
 BFRVSHUVHGE QZGDVDRYU WLF

7LV ESLEHLV YRLGLI WKHQHURU RHHR WKHIROORZ QJES
 HOHQRV GR GRW DSSDU EDVBSLEHU IO RRGJRODDEHV
 OHHGE VDDHEDV BSRUHWLQDQVH FFRQWALGQVLLHV
)SSQD QEHU DQD)SHIFWLYHGDMH DQDLEHU IRU
 X&DSSG DQD XQJGLJG DJHDV FROQRV BHXVHGRU
 UHODWRAJRRVH



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.319 (0.246-0.407)	0.389 (0.301-0.498)	0.504 (0.389-0.647)	0.601 (0.460-0.776)	0.733 (0.546-0.997)	0.831 (0.607-1.16)	0.936 (0.668-1.36)	1.06 (0.713-1.57)	1.25 (0.808-1.92)	1.41 (0.890-2.21)
10-min	0.451 (0.349-0.577)	0.551 (0.426-0.705)	0.715 (0.551-0.918)	0.851 (0.652-1.10)	1.04 (0.773-1.41)	1.18 (0.861-1.64)	1.33 (0.946-1.93)	1.50 (1.01-2.23)	1.77 (1.14-2.72)	1.99 (1.26-3.13)
15-min	0.531 (0.411-0.678)	0.649 (0.501-0.830)	0.842 (0.648-1.08)	1.00 (0.767-1.29)	1.22 (0.909-1.66)	1.38 (1.01-1.93)	1.56 (1.11-2.27)	1.77 (1.19-2.62)	2.08 (1.35-3.20)	2.34 (1.48-3.68)
30-min	0.727 (0.562-0.928)	0.891 (0.689-1.14)	1.16 (0.893-1.49)	1.38 (1.06-1.79)	1.69 (1.26-2.30)	1.92 (1.40-2.68)	2.17 (1.55-3.16)	2.46 (1.65-3.64)	2.90 (1.87-4.45)	3.27 (2.07-5.13)
60-min	0.922 (0.713-1.18)	1.13 (0.877-1.45)	1.48 (1.14-1.90)	1.77 (1.35-2.28)	2.16 (1.61-2.94)	2.46 (1.80-3.43)	2.77 (1.98-4.04)	3.15 (2.11-4.66)	3.71 (2.40-5.71)	4.19 (2.65-6.58)
2-hr	1.17 (0.912-1.49)	1.47 (1.14-1.86)	1.95 (1.51-2.48)	2.34 (1.81-3.01)	2.89 (2.17-3.92)	3.30 (2.43-4.58)	3.74 (2.69-5.42)	4.27 (2.88-6.27)	5.09 (3.30-7.75)	5.79 (3.67-8.99)
3-hr	1.36 (1.06-1.72)	1.70 (1.33-2.16)	2.27 (1.76-2.88)	2.73 (2.11-3.50)	3.38 (2.54-4.56)	3.85 (2.84-5.33)	4.37 (3.15-6.32)	5.00 (3.38-7.31)	5.97 (3.88-9.05)	6.80 (4.33-10.5)
6-hr	1.77 (1.39-2.22)	2.20 (1.72-2.76)	2.90 (2.27-3.66)	3.49 (2.71-4.43)	4.29 (3.24-5.74)	4.88 (3.62-6.70)	5.53 (4.00-7.92)	6.31 (4.28-9.14)	7.51 (4.90-11.3)	8.54 (5.44-13.1)
12-hr	2.29 (1.81-2.86)	2.80 (2.21-3.51)	3.64 (2.87-4.57)	4.34 (3.39-5.48)	5.30 (4.02-7.03)	6.01 (4.48-8.16)	6.78 (4.92-9.60)	7.70 (5.24-11.0)	9.09 (5.95-13.5)	10.3 (6.58-15.6)
24-hr	2.79 (2.22-3.47)	3.43 (2.72-4.26)	4.47 (3.53-5.57)	5.33 (4.19-6.68)	6.51 (4.97-8.58)	7.39 (5.54-9.97)	8.34 (6.10-11.8)	9.50 (6.49-13.5)	11.3 (7.41-16.6)	12.8 (8.23-19.3)
2-day	3.20 (2.56-3.94)	4.00 (3.20-4.94)	5.32 (4.23-6.58)	6.41 (5.07-7.97)	7.91 (6.08-10.4)	9.01 (6.80-12.1)	10.2 (7.55-14.4)	11.8 (8.06-16.6)	14.2 (9.35-20.7)	16.3 (10.5-24.3)
3-day	3.50 (2.81-4.30)	4.37 (3.50-5.37)	5.79 (4.62-7.14)	6.97 (5.53-8.64)	8.60 (6.63-11.2)	9.78 (7.42-13.1)	11.1 (8.23-15.6)	12.8 (8.77-17.9)	15.5 (10.2-22.5)	17.8 (11.5-26.4)
4-day	3.78 (3.04-4.63)	4.68 (3.76-5.74)	6.15 (4.92-7.56)	7.37 (5.86-9.11)	9.05 (7.00-11.8)	10.3 (7.81-13.7)	11.6 (8.64-16.3)	13.4 (9.20-18.7)	16.2 (10.7-23.4)	18.6 (12.0-27.4)
7-day	4.57 (3.69-5.56)	5.50 (4.44-6.71)	7.04 (5.66-8.60)	8.31 (6.64-10.2)	10.1 (7.80-13.0)	11.3 (8.64-15.0)	12.8 (9.48-17.6)	14.5 (10.0-20.2)	17.4 (11.5-24.9)	19.9 (12.9-29.0)
10-day	5.30 (4.29-6.43)	6.26 (5.06-7.60)	7.83 (6.31-9.54)	9.13 (7.32-11.2)	10.9 (8.49-14.0)	12.2 (9.34-16.1)	13.7 (10.2-18.7)	15.5 (10.7-21.4)	18.3 (12.1-26.0)	20.7 (13.4-30.0)
20-day	7.42 (6.05-8.95)	8.46 (6.89-10.2)	10.1 (8.23-12.3)	11.5 (9.31-14.0)	13.5 (10.5-17.0)	14.9 (11.4-19.3)	16.4 (12.1-22.0)	18.2 (12.7-24.8)	20.6 (13.8-29.1)	22.7 (14.8-32.6)
30-day	9.17 (7.50-11.0)	10.3 (8.38-12.3)	12.0 (9.80-14.5)	13.5 (10.9-16.4)	15.5 (12.1-19.5)	17.1 (13.0-21.8)	18.7 (13.7-24.6)	20.3 (14.2-27.5)	22.5 (15.1-31.6)	24.3 (15.8-34.7)
45-day	11.3 (9.31-13.6)	12.5 (10.2-14.9)	14.3 (11.7-17.2)	15.9 (12.9-19.2)	18.0 (14.1-22.4)	19.7 (15.0-24.9)	21.3 (15.6-27.7)	22.9 (16.0-30.8)	24.8 (16.7-34.5)	26.2 (17.1-37.3)
60-day	13.2 (10.8-15.7)	14.3 (11.8-17.1)	16.3 (13.3-19.5)	17.9 (14.5-21.5)	20.1 (15.7-24.8)	21.8 (16.6-27.4)	23.5 (17.1-30.2)	24.9 (17.5-33.4)	26.7 (18.0-37.0)	27.9 (18.2-39.4)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

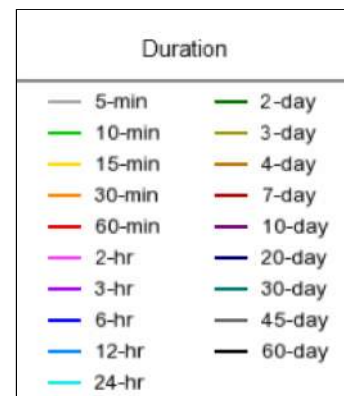
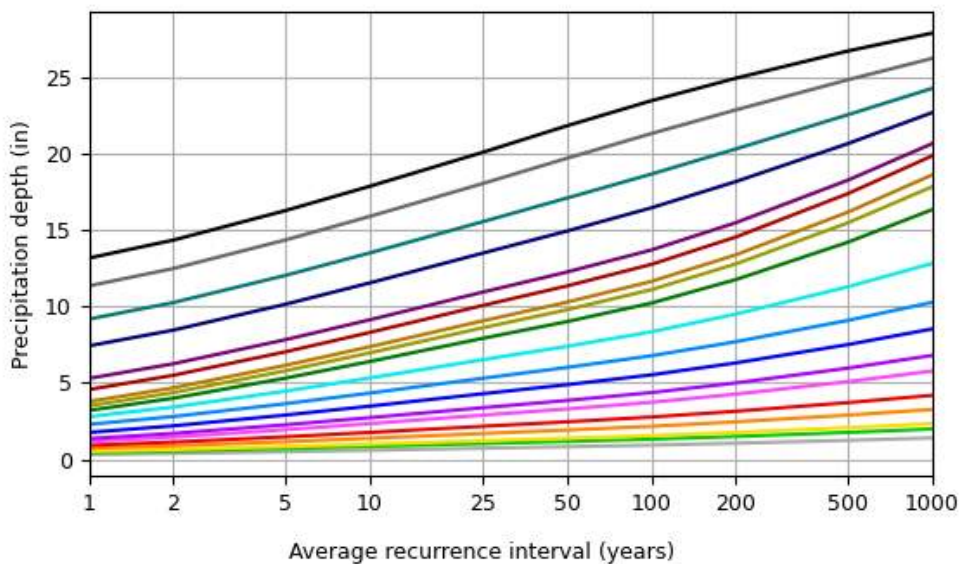
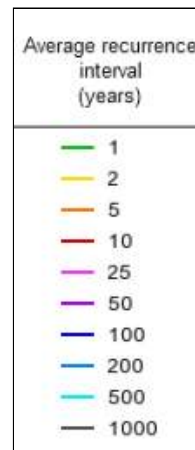
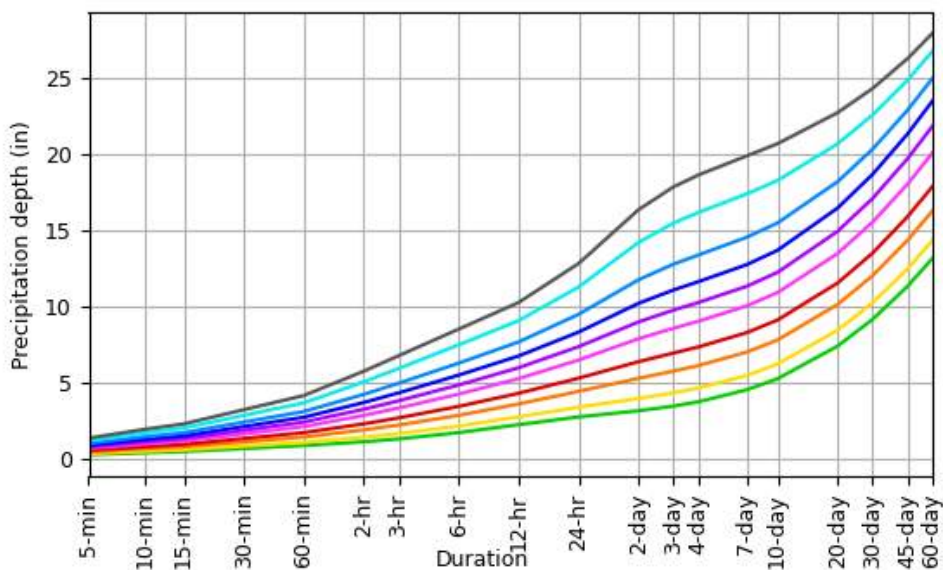
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical

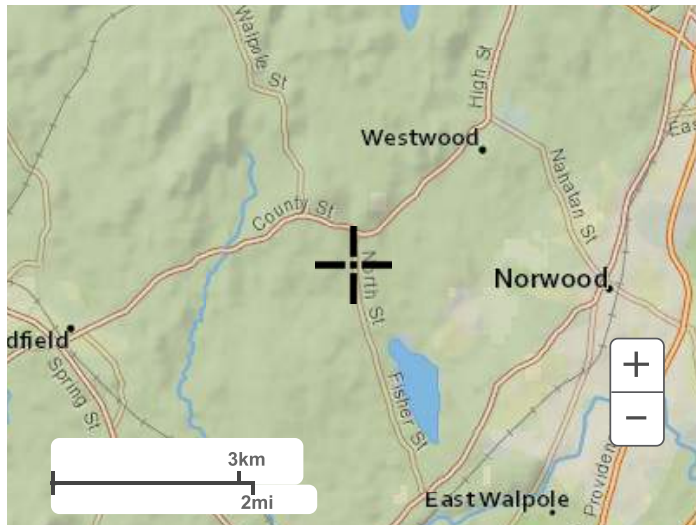
PDS-based depth-duration-frequency (DDF) curves
Latitude: 42.1969°, Longitude: -71.2501°



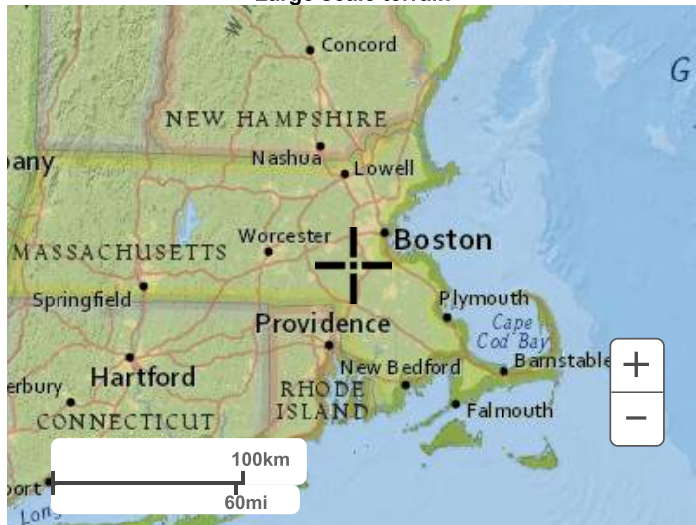
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Maps & aerials

Small scale terrain



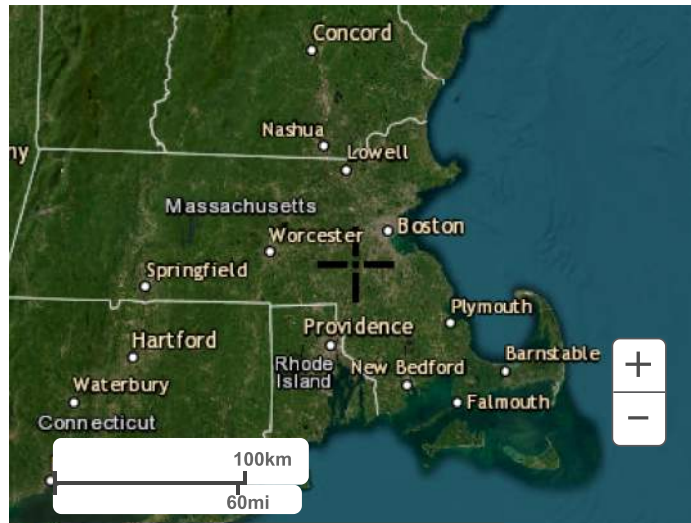
Large scale terrain



Large scale map



Large scale aerial



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[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

TEST PIT LOG

PROJECT NAME/NO. Walpole County Agricultural School Solar
 LOCATION 1377 North Street, Walpole MA
 CLIENT Kearsarge Energy
 CONTRACTOR Kenny Jones Corp. FOREMAN: KJ
 EQUIPMENT Takeuchi Excavator BUCKET 24" - 30"
 OBSERVED BY Lee Koska, PE DATE 1/31/24

TEST PIT NUMBER
 TP-1
 PLAN DIMENSIONS Approx. 5' x 8'
 SEEPAGE / GROUNDWATER N/A
 CAVING N/A

DEPTH BELOW GROUND SURFACE (IN)	STRATA DESCRIPTION AND GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS (CAVING, GROUNDWATER/SEEPAGE, UTILITY LOCATIONS/DESCRIPTIONS, ETC)
	O Hor.	0" - 7": Dark Brown LOAM, friable, massive, moist.	Color: 2.5 Y 3/3. Agricultural field topsoil, grass at surface.
12	A Hor.	7" - 15": Light brown SANDY LOAM, friable to firm, massive, moist. 10 - 20% cobbles/gravel at 12" BGS.	Color: 10 YR 4/6.
24	B Hor.	15" - 90": Light brown to gray LOAMY SAND, firm, massive, moist. End of test pit at 90" BGS. 20% gravel, 10% cobbles throughout. Mottling (common, faint to distinct) at 20 - 24" BGS.	Color: 2.5Y 5/3. Mottles 10YR 5/6. Groundwater not encountered.
36			
48			
60			
72			
84			

TEST PIT PHOTOS AND ADDITIONAL FIELD OBSERVATIONS:



GENERAL NOTES:

Test pit observed by Chris Johnson, Walpole Engineering Department.
 SHGW recorded at 20" BGS. No weeping, standing groundwater encountered to maximum depth of excavation.

TEST PIT NUMBER: TP-1

TEST PIT LOG

PROJECT NAME/NO.	Walpole County Agricultural School Solar		TEST PIT NUMBER	
LOCATION	1377 North Street, Walpole MA		TP-2	
CLIENT	Kearsarge Energy		PLAN DIMENSIONS	Approx. 5' x 8'
CONTRACTOR	Kenny Jones Corp.	FOREMAN: KJ	SEEPAGE / GROUNDWATER	51" / 53".
EQUIPMENT	Takeuchi Excavator	BUCKET 24" - 30"	CAVING	N/A
OBSERVED BY	Lee Koska, PE	DATE 1/31/24		

DEPTH BELOW GROUND SURFACE (IN)	STRATA DESCRIPTION AND GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS (CAVING, GROUNDWATER/SEEPAGE, UTILITY LOCATIONS/DESCRIPTIONS, ETC)
12	O Hor.	0" - 13": Dark Brown LOAM, massive, moist.	Color: 10YR 3/2. Agricultural field topsoil, grass at surface.
24	O / A / B (Disturb.)	13" - 35": Light brown to grey SANDY LOAM, massive, moist. 20 - 50% gravel, cobbles (Reworked soil/ Fill).	Color varies. Reworked soil / fill.
36	B Hor.	35" - 53": Light brown to gray SANDY LOAM, firm, massive, moist to wet. End of test pit at 53" BGS.	Color: 2.5Y 5/3. Weeping at approx. 51", standing GW at approx. 53".
48			
60			
72			
84			

TEST PIT PHOTOS AND ADDITIONAL FIELD OBSERVATIONS:



GENERAL NOTES:

Test pit observed by Chris Johnson, Walpole Engineering Department.
 SHGW could not be determined, soil disturbed to approx. 35" BGS.

TEST PIT NUMBER:	TP-2
-------------------------	------

TEST PIT LOG

PROJECT NAME/NO. Walpole County Agricultural School Solar
 LOCATION 1377 North Street, Walpole MA
 CLIENT Kearsarge Energy
 CONTRACTOR Kenny Jones Corp. FOREMAN: KJ
 EQUIPMENT Takeuchi Excavator BUCKET 24" - 30"
 OBSERVED BY Lee Koska, PE DATE 1/31/24

TEST PIT NUMBER
 TP-3
 PLAN DIMENSIONS Approx. 5' x 8'
 SEEPAGE / GROUNDWATER 56" / 58"
 CAVING N/A

DEPTH BELOW GROUND SURFACE (IN)	STRATA DESCRIPTION AND GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS (CAVING, GROUNDWATER/SEEPAGE, UTILITY LOCATIONS/DESCRIPTIONS, ETC)
	O Hor.	0" - 8": Dark Brown LOAM, friable, massive, moist.	Color: 2.5 Y 3/3. Agricultural field topsoil, grass at surface.
12	A Hor.	8" - 20": Light brown SANDY LOAM, friable to firm, massive, moist. Mottling (common, distinct) at 22" 10% gravel / cobbles throughout	Color: 10 YR 5/6. Mottles 7.5YR 5/8.
24	B Hor.	20" - 58": Light brown to gray SANDY LOAM to LOAM with depth, firm, massive, moist to wet. End of test pit at 58" BGS. 10% gravel / cobbles throughout.	Color: 2.5Y 5/5. Weeping at 56", standing water at 58".
36			
48			
60			
72			
84			

TEST PIT PHOTOS AND ADDITIONAL FIELD OBSERVATIONS:



GENERAL NOTES:

Test pit observed by Chris Johnson, Walpole Engineering Department.
 SHGW at 22" BGS.

TEST PIT NUMBER: TP-3

PROJECT NAME/NO.	Walpole County Agricultural School Solar		TEST PIT NUMBER	
LOCATION	1377 North Street, Walpole MA		TP-4	
CLIENT	Kearsarge Energy		PLAN DIMENSIONS	Approx. 5' x 8'
CONTRACTOR	Kenny Jones Corp.	FOREMAN: KJ	SEEPAGE / GROUNDWATER	18" / 45"
EQUIPMENT	Takeuchi Excavator	BUCKET 24" - 30"	CAVING	N/A
OBSERVED BY	Lee Koska, PE	DATE 1/31/24		

DEPTH BELOW GROUND SURFACE (IN)	STRATA DESCRIPTION AND GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS (CAVING, GROUNDWATER/SEEPAGE, UTILITY LOCATIONS/DESCRIPTIONS, ETC)
12	O Hor.	0" - 16": Dark Brown LOAM, friable, massive, wet.	Color: 2.5 Y 3/3. Agricultural field topsoil, grass at surface.
24	A Hor.	16 - 18": Light brown LOAM, friable to firm, massive, moist to wet. Mottling (common, distinct) at 17" 10% gravel / cobbles throughout	Color: 10 YR 5/6. Mottles 7.5YR 5/8.
36	B Hor.	18" - 45": Light brown to gray LOAM, wet, firm. 1-% gravel, cobbles throughout.	Color: 2.5Y 6/2. Weeping at 18", standing water at 45".
48			
60			
72			
84			

TEST PIT PHOTOS AND ADDITIONAL FIELD OBSERVATIONS:



GENERAL NOTES:

Test pit observed by Chris Johnson, Walpole Engineering Department.
 SHGW at 17" BGS.

TEST PIT NUMBER: TP-4

TEST PIT LOG

PROJECT NAME/NO. Walpole County Agricultural School Solar
 LOCATION 1377 North Street, Walpole MA
 CLIENT Kearsarge Energy
 CONTRACTOR Kenny Jones Corp. FOREMAN: KJ
 EQUIPMENT Takeuchi Excavator BUCKET 24" - 30"
 OBSERVED BY Lee Koska, PE DATE 1/31/24

TEST PIT NUMBER
 TP-5
 PLAN DIMENSIONS Approx. 5' x 8'
 SEEPAGE / GROUNDWATER 17" / 46"
 CAVING N/A

DEPTH BELOW GROUND SURFACE (IN)	STRATA DESCRIPTION AND GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS (CAVING, GROUNDWATER/SEEPAGE, UTILITY LOCATIONS/DESCRIPTIONS, ETC)
12	O Hor.	0" - 17": Dark Brown LOAM, friable, massive, wet.	Color: 2.5Y 3/3. Agricultural field topsoil, grass at surface.
24	B Hor.	17" - 46": Light brown to gray LOAM, wet, firm. 10% gravel / cobbles throughout. Weeping at 17". Mottling at 20" (common, prominent).	Color: 2.5Y 6/2, mottles 5YR 5/6. Weeping at 17", standing water at 46".
36	B Hor.		
48			
60			
72			
84			

TEST PIT PHOTOS AND ADDITIONAL FIELD OBSERVATIONS:



GENERAL NOTES:

Test pit observed by Chris Johnson, Walpole Engineering Department.
 SHGW at 17" BGS.

TEST PIT NUMBER: TP-5

PROJECT NAME/NO.	Walpole County Agricultural School Solar		TEST PIT NUMBER	
LOCATION	1377 North Street, Walpole MA		TP-6	
CLIENT	Kearsarge Energy		PLAN DIMENSIONS	Approx. 5' x 8'
CONTRACTOR	Kenny Jones Corp.	FOREMAN: KJ	SEEPAGE / GROUNDWATER	14" / 51"
EQUIPMENT	Takeuchi Excavator	BUCKET 24" - 30"	CAVING	N/A
OBSERVED BY	Lee Koska, PE	DATE 1/31/24		

DEPTH BELOW GROUND SURFACE (IN)	STRATA DESCRIPTION AND GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS (CAVING, GROUNDWATER/SEEPAGE, UTILITY LOCATIONS/DESCRIPTIONS, ETC)
12	O Hor.	0" - 14": Dark Brown LOAM, friable, massive, wet.	Color: 2.5Y 3/3. Agricultural field topsoil, grass at surface.
24	B Hor.	14" - 51": Light brown to gray LOAM, wet, firm. 30 - 50% gravel / cobbles throughout. Weeping at 14". Mottling at 14" (common, prominent).	Color: 2.5Y 6/2, mottles 5YR 5/6. Weeping at 14", standing water at 51".
36	B Hor.		
48			
60			
72			
84			

TEST PIT PHOTOS AND ADDITIONAL FIELD OBSERVATIONS:

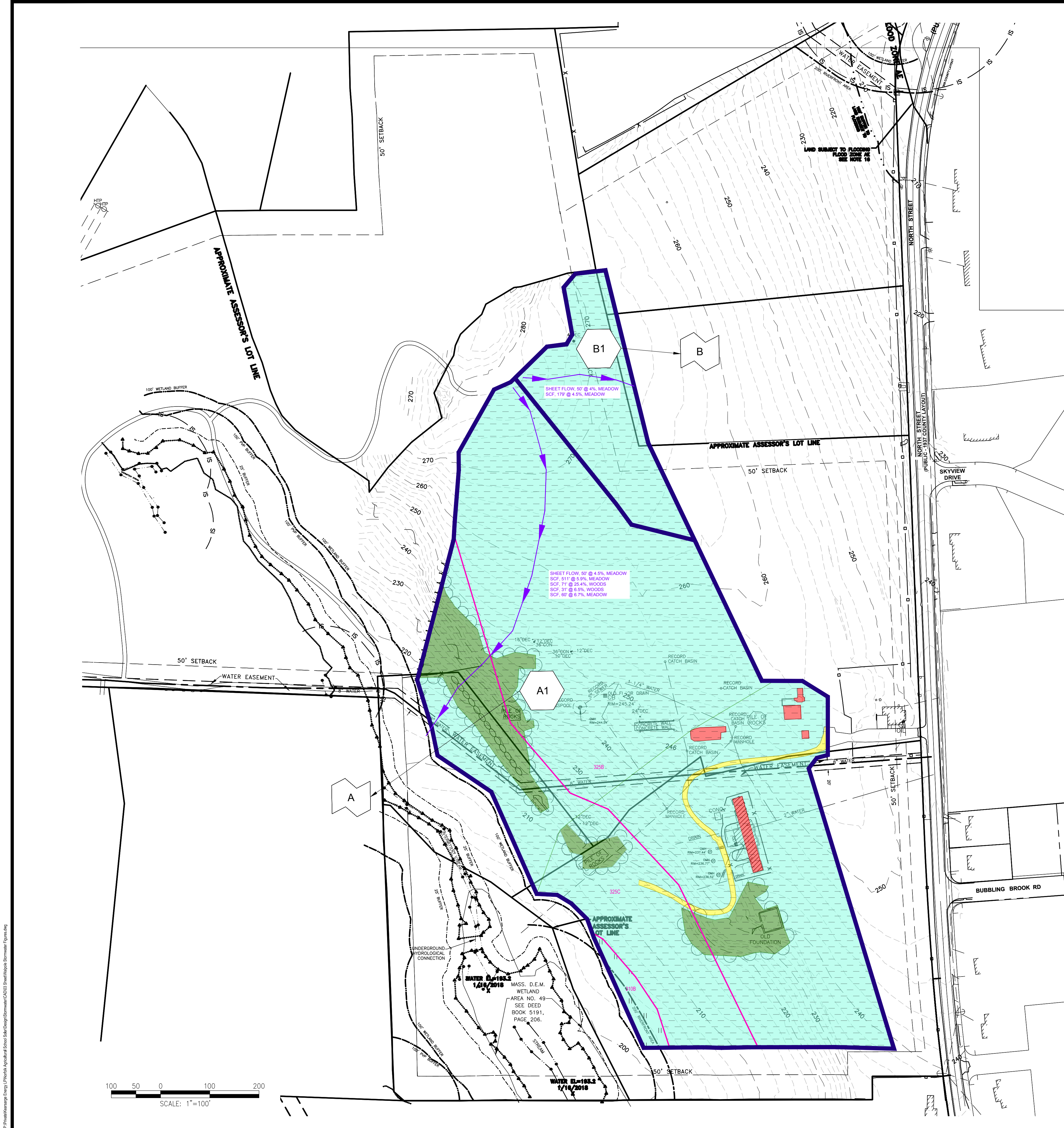


GENERAL NOTES:

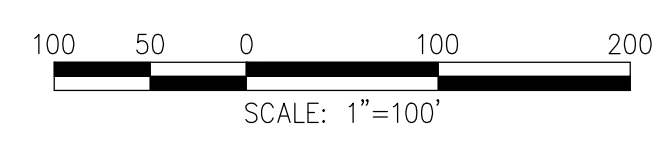
Test pit observed by Chris Johnson, Walpole Engineering Department.
 SHGW at 14" BGS.

TEST PIT NUMBER: TP-6

Attachment C - Hydrologic Maps & HydroCAD Reports



- LEGEND**
- HYDROLOGY:**
- FLOW PATH
 - AX SUBBASIN LABEL
 - B-X STORMWATER BASIN LABEL
 - A ANALYSIS POINT/POINT OF INTEREST
 - MEADOW
 - WOODLAND
 - GRAVEL
 - IMPERVIOUS
 - NRCS MAP UNITS
 - WATERSHED BOUNDARY
 - HYDROLOGIC SOIL GROUP B
 - HYDROLOGIC SOIL GROUP C
- LEGEND:**
- EXISTING:**
- MAJOR CONTOUR
 - MINOR CONTOUR
 - ZONING SETBACKS
 - PROPERTY LINE
 - ADJUTTER'S PROPERTY LINE
 - BORDERING VEGETATED WETLAND LINE
 - POTENTIAL VERNAL POOL LINE
 - EDGE OF GRAVEL
 - EDGE OF ASPHALT
 - GRAVEL PATH
 - WOOD FENCE
 - CHAIN LINK FENCE
 - OVERHEAD WIRES
 - TREE LINE
 - STONE WALL
 - WALL REMAINS
 - PERENNIAL STREAM
 - INTERMITTENT STREAM
 - 200-FOOT RIVER FRONT AREA
 - 100-FOOT RIVER FRONT AREA
 - WF-1 WETLAND FLAG
 - SIGN
 - BOLLARD
 - HYDRANT
 - GUY WIRE
 - STRUCTURE



Project:
**NORFOLK COUNTY
 AGRICULTURAL SCHOOL
 SOLAR PROJECT**

1377 NORTH STREET
 WALPOLE, MA 02081

Weston & Sampson

Weston & Sampson Engineers, Inc.
 55 Walkers Brook Drive, Suite 100
 Reading, MA 01867
 978.532.1900 800.SAMPSON
 www.westonandsampson.com

Applicant:
**KEARSARGE
 ENERGY**

Kearsarge Solar LLC
 1380 Soldiers Field Road, Suite 3900
 Boston, MA 02135
 Tel: (855) 277-6217
 www.kearsargeenergy.com

Revisions:

No.	Date	Description
1	02/08/2024	REVISED BASIN GRADING
0	11/11/2022	ISSUED FOR PERMITTING

Issued For:
PERMITTING

Scale: AS SHOWN

Date: 11/11/2022

Drawn By: PSY

Reviewed By: MRC

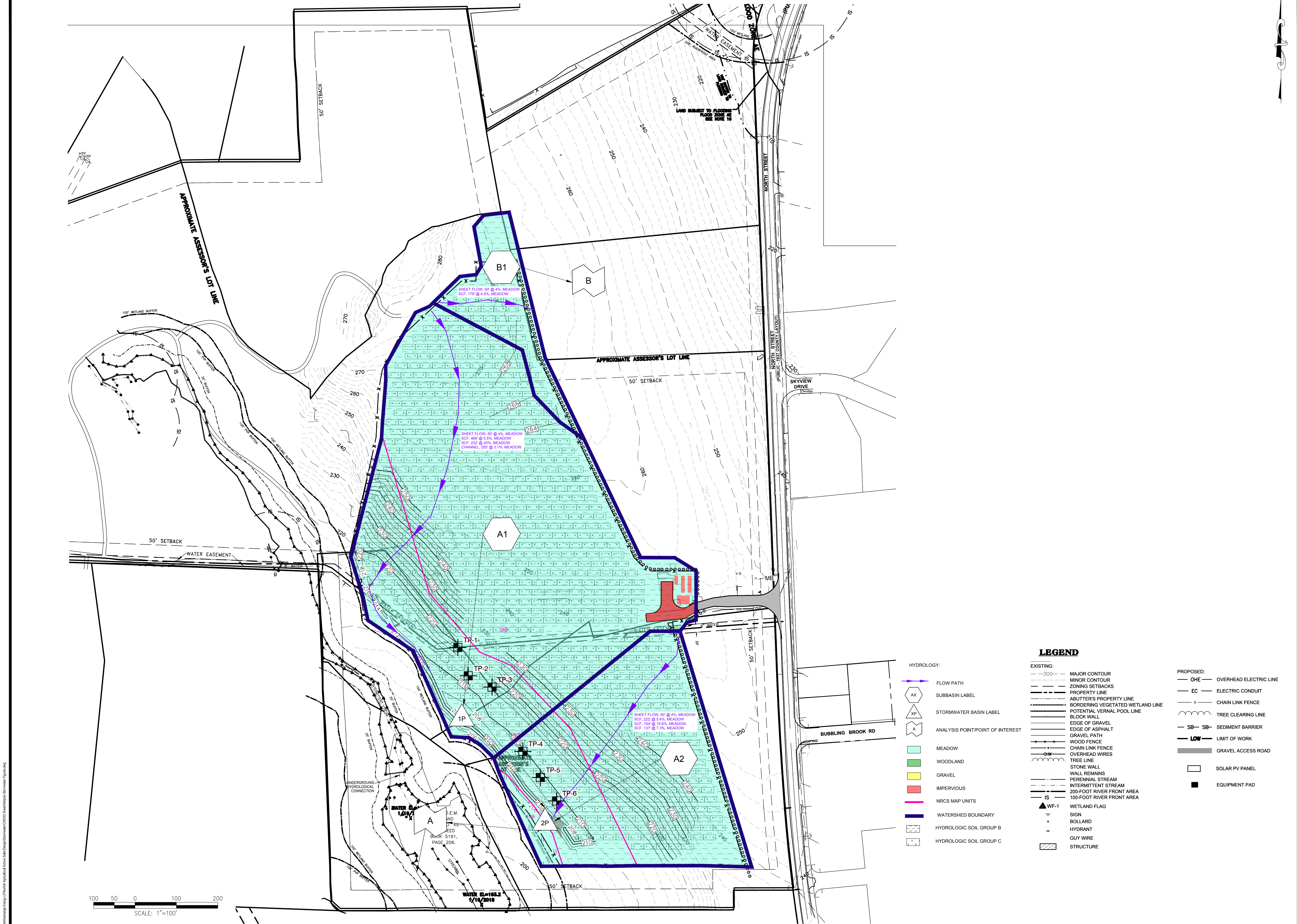
Approved By: RJB

W&S Project No.: ENG21-0190

W&S File No.: Kearsarge Walpole

Drawing Title:
**EXISTING
 HYDROLOGIC MAP**

Sheet Number:
FIG-2



Revisions:

No.	Date	Description
1	02/08/2024	REVISED BASIN GRADING
0	11/11/2022	ISSUED FOR PERMITTING

Seal:

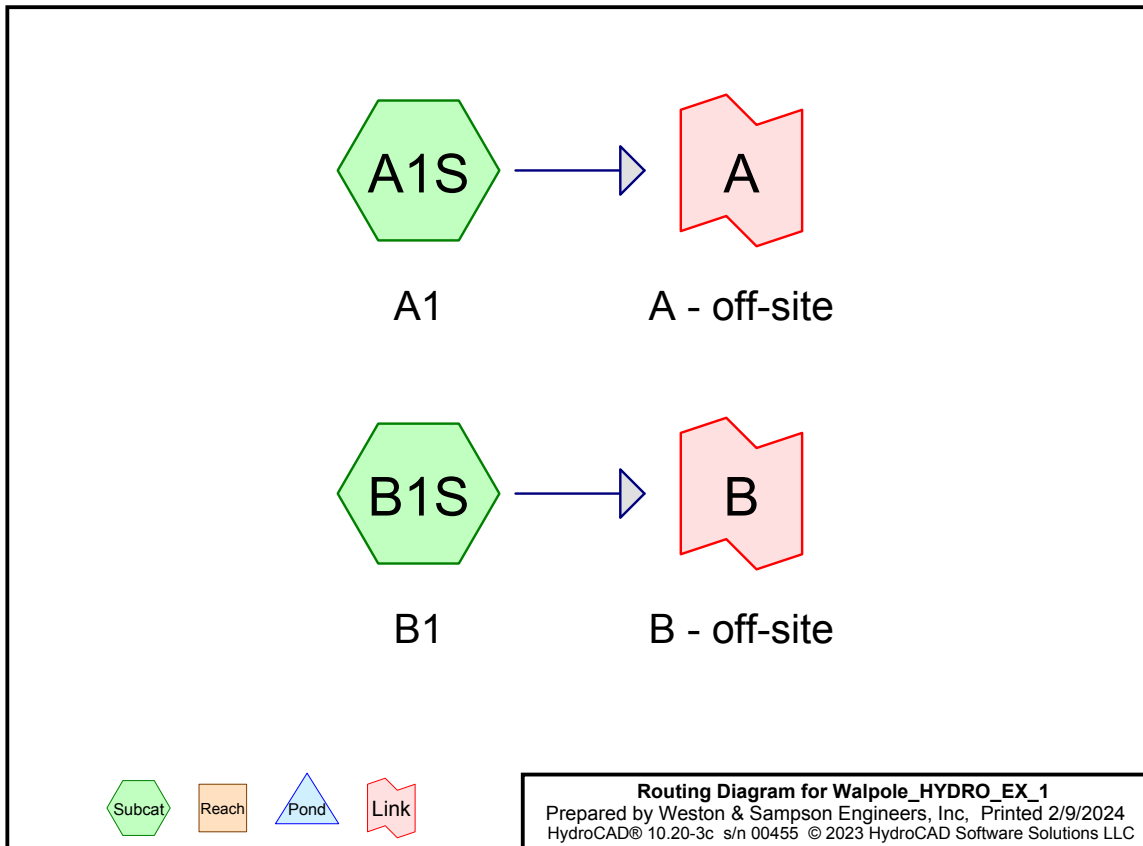
Issued For:

PERMITTING

Scale: AS SHOWN
 Date: 11/11/2022
 Drawn By: PSY
 Reviewed By: MRC
 Approved By: RJB
 W&S Project No.: ENG21-0190
 W&S File No.: Kearsarge Walpole

Drawing Title:
**PROPOSED
 HYDROLOGIC MAP**

Sheet Number:
FIG-3



Walpole_HYDRO_EX_1

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Page 2

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.43	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.33	2
3	100-yr	Type III 24-hr		Default	24.00	1	8.34	2

Walpole_HYDRO_EX_1

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Page 3

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.178	96	Gravel surface, HSG B (A1S)
16.246	58	Meadow, non-grazed, HSG B (A1S, B1S)
0.249	71	Meadow, non-grazed, HSG C (A1S)
0.147	98	Unconnected pavement, HSG B (A1S)
1.542	55	Woods, Good, HSG B (A1S)
18.361	59	TOTAL AREA

Walpole_HYDRO_EX_1

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Page 4

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
18.112	HSG B	A1S, B1S
0.249	HSG C	A1S
0.000	HSG D	
0.000	Other	
18.361		TOTAL AREA

Walpole_HYDRO_EX_1

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.178	0.000	0.000	0.000	0.178	Gravel surface	A1S
0.000	16.246	0.249	0.000	0.000	16.495	Meadow, non-grazed	A1S, B1S
0.000	0.147	0.000	0.000	0.000	0.147	Unconnected pavement	A1S
0.000	1.542	0.000	0.000	0.000	1.542	Woods, Good	A1S
0.000	18.112	0.249	0.000	0.000	18.361	TOTAL AREA	

Walpole_HYDRO_EX_1

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Type III 24-hr 2-yr Rainfall=3.43"

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Time span=6.00-30.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentA1S: A1

Runoff Area=721,476 sf 0.89% Impervious Runoff Depth=0.46"
Flow Length=723' Tc=10.3 min CN=59 Runoff=4.67 cfs 0.639 af

SubcatchmentB1S: B1

Runoff Area=78,345 sf 0.00% Impervious Runoff Depth=0.43"
Flow Length=229' Tc=6.0 min CN=58 Runoff=0.49 cfs 0.064 af

Link A: A - off-site

Inflow=4.67 cfs 0.639 af
Primary=4.67 cfs 0.639 af

Link B: B - off-site

Inflow=0.49 cfs 0.064 af
Primary=0.49 cfs 0.064 af

Total Runoff Area = 18.361 ac Runoff Volume = 0.703 af Average Runoff Depth = 0.46"
99.20% Pervious = 18.214 ac 0.80% Impervious = 0.147 ac

Walpole_HYDRO_EX_1

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Type III 24-hr 2-yr Rainfall=3.43"

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Summary for Subcatchment A1S: A1

Runoff = 4.67 cfs @ 12.21 hrs, Volume= 0.639 af, Depth= 0.46"
Routed to Link A : A - off-site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.43"

Area (sf)	CN	Description
629,326	58	Meadow, non-grazed, HSG B
67,168	55	Woods, Good, HSG B
7,736	96	Gravel surface, HSG B
6,405	98	Unconnected pavement, HSG B
10,841	71	Meadow, non-grazed, HSG C
721,476	59	Weighted Average
715,071		99.11% Pervious Area
6,405		0.89% Impervious Area
6,405		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0448	0.22		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
5.0	511	0.0587	1.70		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
0.5	71	0.2535	2.52		Shallow Concentrated Flow, C->D Woodland Kv= 5.0 fps
0.4	31	0.0645	1.27		Shallow Concentrated Flow, D->E Woodland Kv= 5.0 fps
0.6	60	0.0667	1.81		Shallow Concentrated Flow, E->F Short Grass Pasture Kv= 7.0 fps
10.3	723	Total			

Walpole_HYDRO_EX_1

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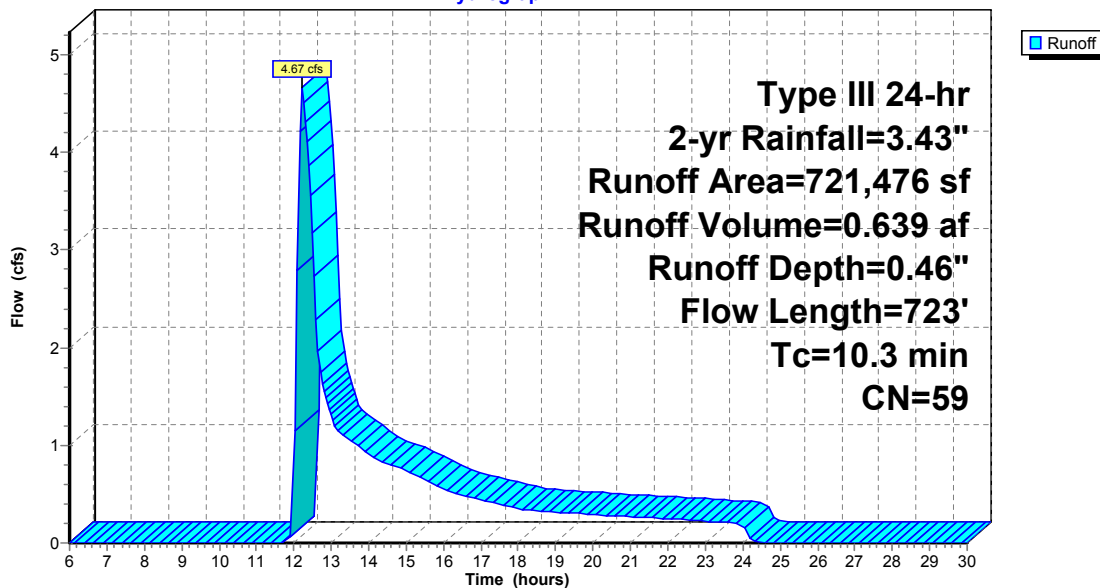
Type III 24-hr 2-yr Rainfall=3.43"

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Subcatchment A1S: A1

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.43"

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Summary for Subcatchment B1S: B1

Runoff = 0.49 cfs @ 12.14 hrs, Volume= 0.064 af, Depth= 0.43"
Routed to Link B : B - off-site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.43"

Area (sf)	CN	Description
78,345	58	Meadow, non-grazed, HSG B
78,345		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	50	0.0398	0.21		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
2.0	179	0.0447	1.48		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
5.9	229	Total, Increased to minimum Tc = 6.0 min			

Walpole_HYDRO_EX_1

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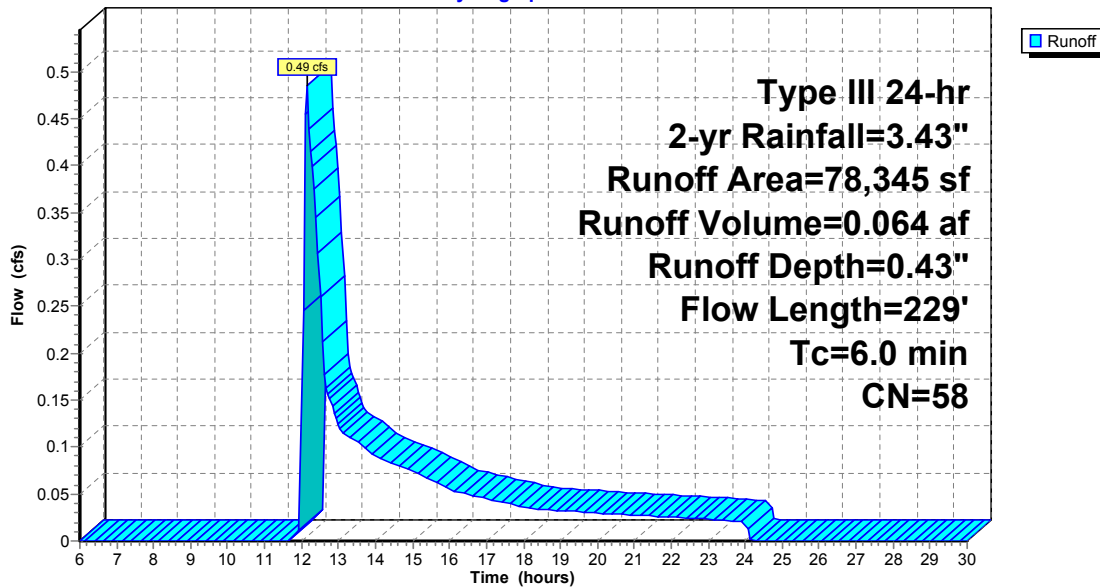
Type III 24-hr 2-yr Rainfall=3.43"

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Subcatchment B1S: B1

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.43"

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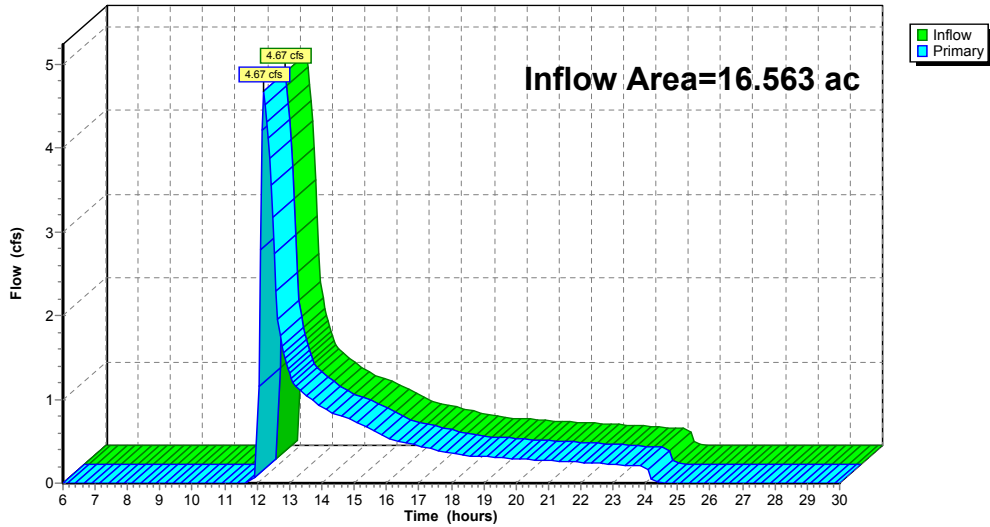
Summary for Link A: A - off-site

Inflow Area = 16.563 ac, 0.89% Impervious, Inflow Depth = 0.46" for 2-yr event
Inflow = 4.67 cfs @ 12.21 hrs, Volume= 0.639 af
Primary = 4.67 cfs @ 12.21 hrs, Volume= 0.639 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link A: A - off-site

Hydrograph



Walpole_HYDRO_EX_1

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Type III 24-hr 2-yr Rainfall=3.43"

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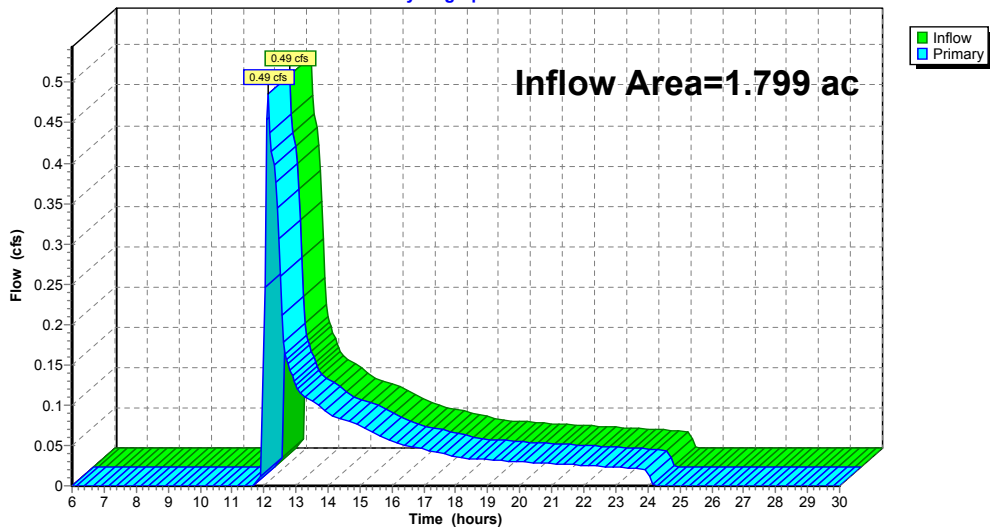
Summary for Link B: B - off-site

Inflow Area = 1.799 ac, 0.00% Impervious, Inflow Depth = 0.43" for 2-yr event
Inflow = 0.49 cfs @ 12.14 hrs, Volume= 0.064 af
Primary = 0.49 cfs @ 12.14 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link B: B - off-site

Hydrograph



Walpole_HYDRO_EX_1

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Type III 24-hr 10-yr Rainfall=5.33"

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Time span=6.00-30.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentA1S: A1

Runoff Area=721,476 sf 0.89% Impervious Runoff Depth=1.43"
Flow Length=723' Tc=10.3 min CN=59 Runoff=21.35 cfs 1.968 af

SubcatchmentB1S: B1

Runoff Area=78,345 sf 0.00% Impervious Runoff Depth=1.35"
Flow Length=229' Tc=6.0 min CN=58 Runoff=2.51 cfs 0.203 af

Link A: A - off-site

Inflow=21.35 cfs 1.968 af
Primary=21.35 cfs 1.968 af

Link B: B - off-site

Inflow=2.51 cfs 0.203 af
Primary=2.51 cfs 0.203 af

Total Runoff Area = 18.361 ac Runoff Volume = 2.171 af Average Runoff Depth = 1.42"
99.20% Pervious = 18.214 ac 0.80% Impervious = 0.147 ac

Walpole_HYDRO_EX_1

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Type III 24-hr 10-yr Rainfall=5.33"

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Summary for Subcatchment A1S: A1

Runoff = 21.35 cfs @ 12.16 hrs, Volume= 1.968 af, Depth= 1.43"
Routed to Link A : A - off-site

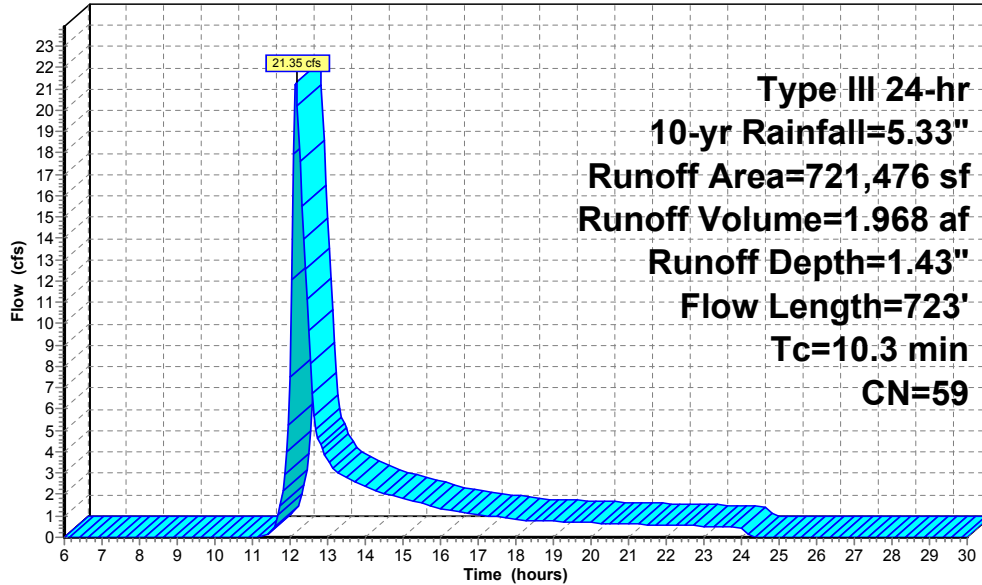
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

Area (sf)	CN	Description
629,326	58	Meadow, non-grazed, HSG B
67,168	55	Woods, Good, HSG B
7,736	96	Gravel surface, HSG B
6,405	98	Unconnected pavement, HSG B
10,841	71	Meadow, non-grazed, HSG C
721,476	59	Weighted Average
715,071		99.11% Pervious Area
6,405		0.89% Impervious Area
6,405		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0448	0.22		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
5.0	511	0.0587	1.70		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
0.5	71	0.2535	2.52		Shallow Concentrated Flow, C->D Woodland Kv= 5.0 fps
0.4	31	0.0645	1.27		Shallow Concentrated Flow, D->E Woodland Kv= 5.0 fps
0.6	60	0.0667	1.81		Shallow Concentrated Flow, E->F Short Grass Pasture Kv= 7.0 fps
10.3	723	Total			

Subcatchment A1S: A1

Hydrograph



Summary for Subcatchment B1S: B1

Runoff = 2.51 cfs @ 12.10 hrs, Volume= 0.203 af, Depth= 1.35"
Routed to Link B : B - off-site

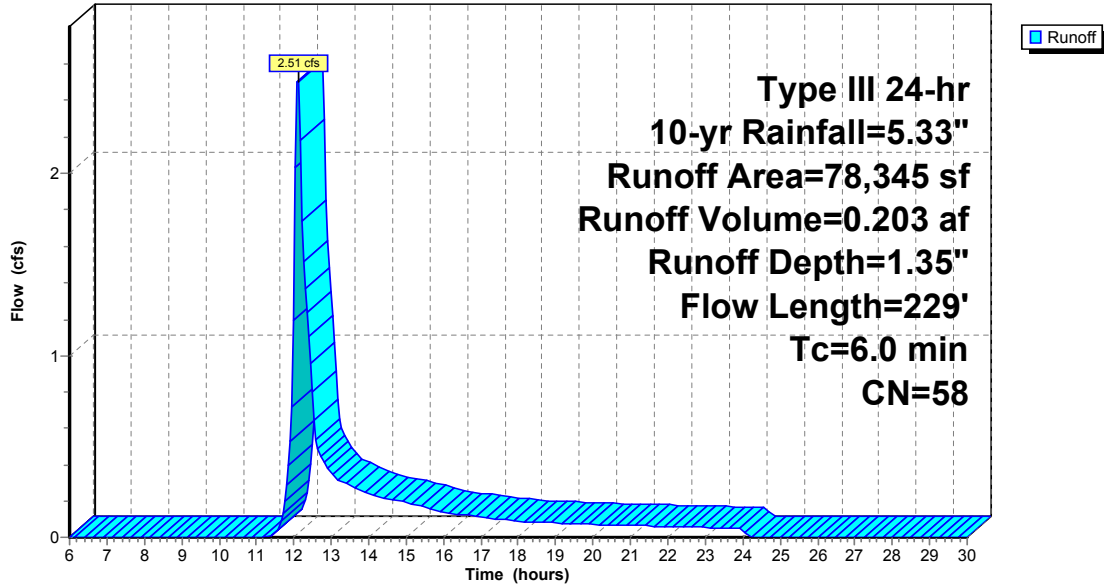
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

Area (sf)	CN	Description
78,345	58	Meadow, non-grazed, HSG B
78,345		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	50	0.0398	0.21		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
2.0	179	0.0447	1.48		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
5.9	229	Total, Increased to minimum Tc = 6.0 min			

Subcatchment B1S: B1

Hydrograph



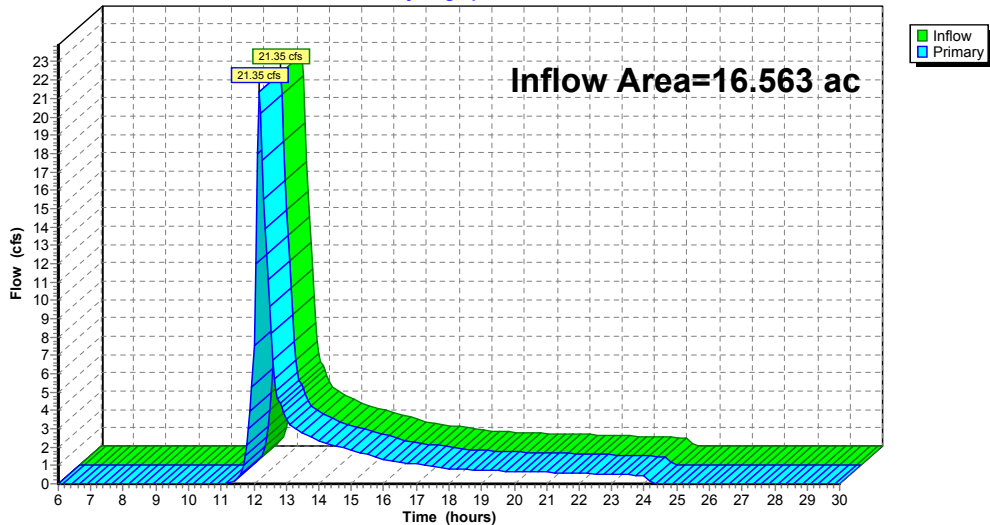
Summary for Link A: A - off-site

Inflow Area = 16.563 ac, 0.89% Impervious, Inflow Depth = 1.43" for 10-yr event
 Inflow = 21.35 cfs @ 12.16 hrs, Volume= 1.968 af
 Primary = 21.35 cfs @ 12.16 hrs, Volume= 1.968 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link A: A - off-site

Hydrograph



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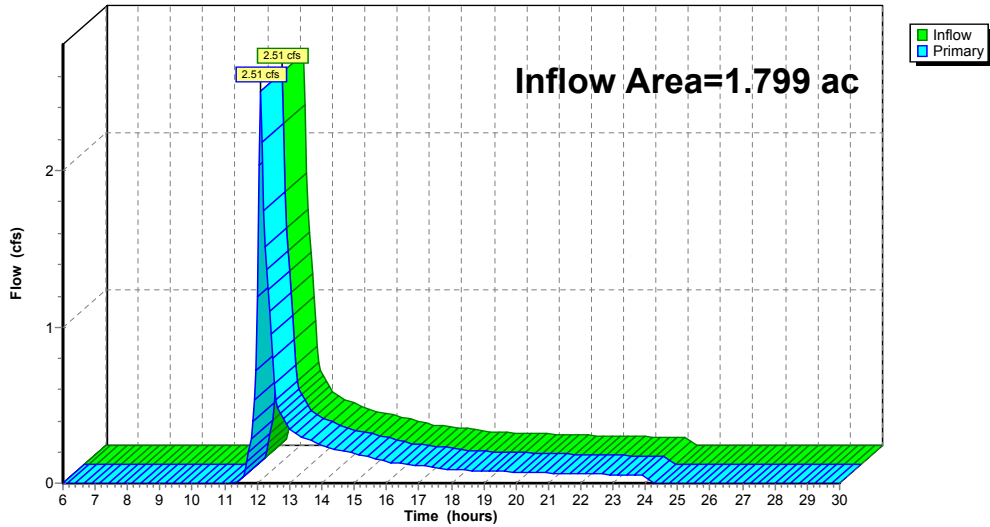
Summary for Link B: B - off-site

Inflow Area = 1.799 ac, 0.00% Impervious, Inflow Depth = 1.35" for 10-yr event
Inflow = 2.51 cfs @ 12.10 hrs, Volume= 0.203 af
Primary = 2.51 cfs @ 12.10 hrs, Volume= 0.203 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link B: B - off-site

Hydrograph



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Type III 24-hr 100-yr Rainfall=8.34"

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Time span=6.00-30.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentA1S: A1

Runoff Area=721,476 sf 0.89% Impervious Runoff Depth=3.48"
Flow Length=723' Tc=10.3 min CN=59 Runoff=56.86 cfs 4.797 af

SubcatchmentB1S: B1

Runoff Area=78,345 sf 0.00% Impervious Runoff Depth=3.36"
Flow Length=229' Tc=6.0 min CN=58 Runoff=6.83 cfs 0.504 af

Link A: A - off-site

Inflow=56.86 cfs 4.797 af
Primary=56.86 cfs 4.797 af

Link B: B - off-site

Inflow=6.83 cfs 0.504 af
Primary=6.83 cfs 0.504 af

Total Runoff Area = 18.361 ac Runoff Volume = 5,300 af Average Runoff Depth = 3.46"
99.20% Pervious = 18.214 ac 0.80% Impervious = 0.147 ac

Walpole_HYDRO_EX_1

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Type III 24-hr 100-yr Rainfall=8.34"

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Summary for Subcatchment A1S: A1

Runoff = 56.86 cfs @ 12.15 hrs, Volume= 4.797 af, Depth= 3.48"
 Routed to Link A : A - off-site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=8.34"

Area (sf)	CN	Description
629,326	58	Meadow, non-grazed, HSG B
67,168	55	Woods, Good, HSG B
7,736	96	Gravel surface, HSG B
6,405	98	Unconnected pavement, HSG B
10,841	71	Meadow, non-grazed, HSG C
721,476	59	Weighted Average
715,071		99.11% Pervious Area
6,405		0.89% Impervious Area
6,405		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0448	0.22		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
5.0	511	0.0587	1.70		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
0.5	71	0.2535	2.52		Shallow Concentrated Flow, C->D Woodland Kv= 5.0 fps
0.4	31	0.0645	1.27		Shallow Concentrated Flow, D->E Woodland Kv= 5.0 fps
0.6	60	0.0667	1.81		Shallow Concentrated Flow, E->F Short Grass Pasture Kv= 7.0 fps
10.3	723	Total			

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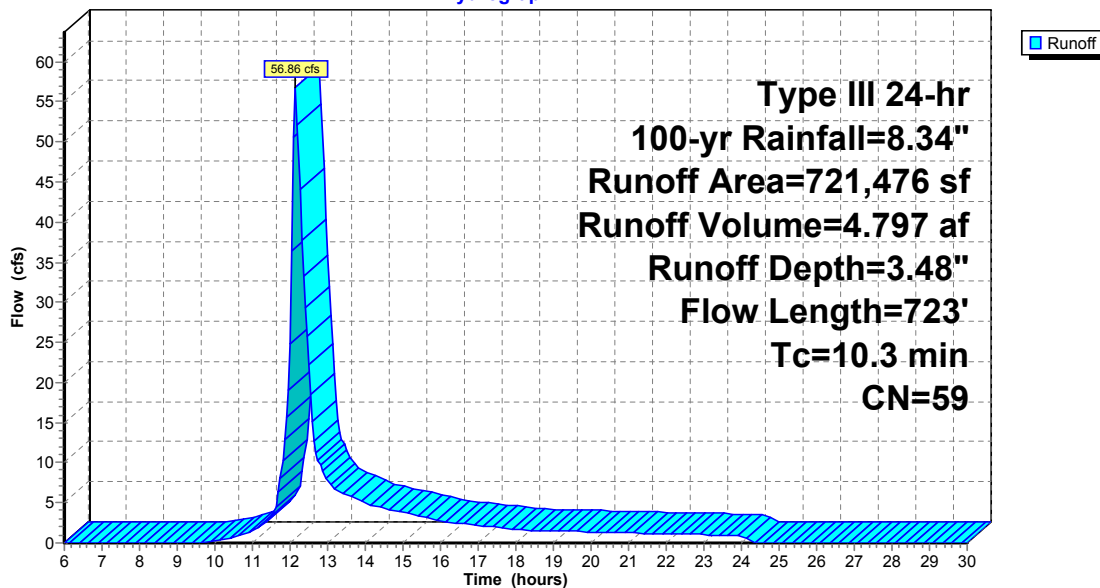
Type III 24-hr 100-yr Rainfall=8.34"

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Subcatchment A1S: A1

Hydrograph



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Type III 24-hr 100-yr Rainfall=8.34"

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Summary for Subcatchment B1S: B1

Runoff = 6.83 cfs @ 12.10 hrs, Volume= 0.504 af, Depth= 3.36"
Routed to Link B : B - off-site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.34"

Area (sf)	CN	Description
78,345	58	Meadow, non-grazed, HSG B
78,345		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	50	0.0398	0.21		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
2.0	179	0.0447	1.48		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
5.9	229	Total, Increased to minimum Tc = 6.0 min			

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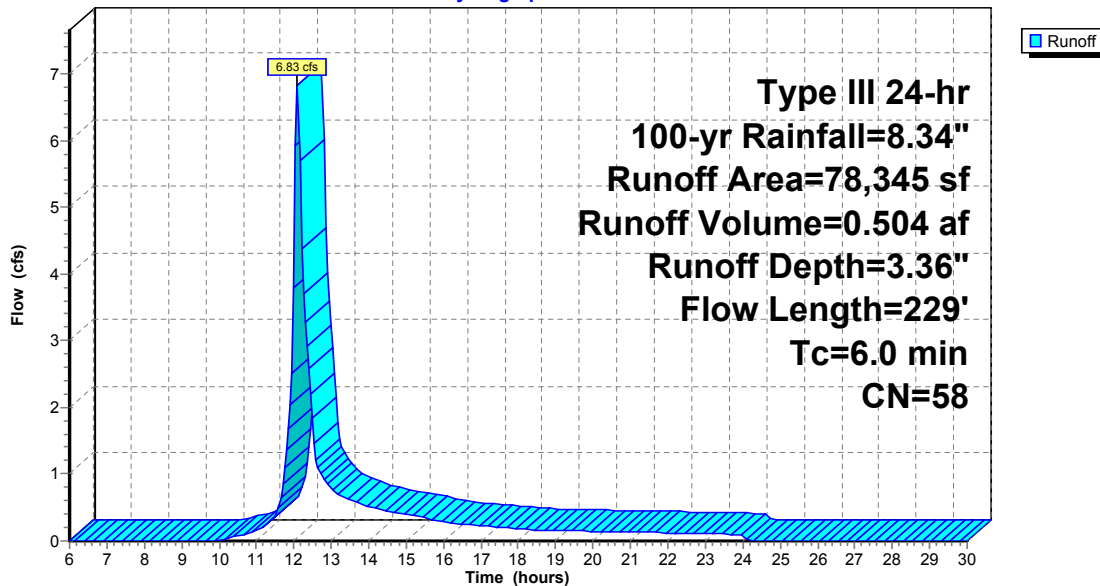
Type III 24-hr 100-yr Rainfall=8.34"

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Subcatchment B1S: B1

Hydrograph



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Type III 24-hr 100-yr Rainfall=8.34"

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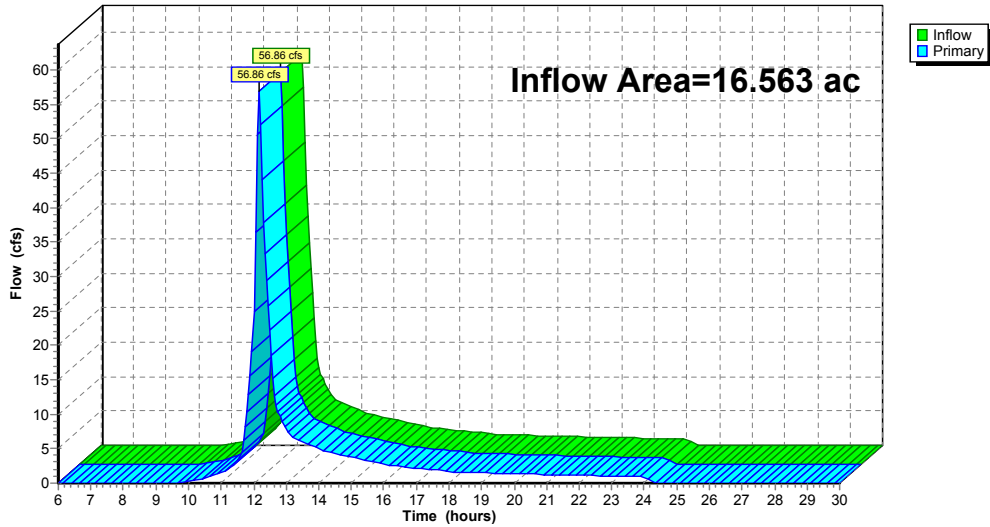
Summary for Link A: A - off-site

Inflow Area = 16.563 ac, 0.89% Impervious, Inflow Depth = 3.48" for 100-yr event
Inflow = 56.86 cfs @ 12.15 hrs, Volume= 4.797 af
Primary = 56.86 cfs @ 12.15 hrs, Volume= 4.797 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link A: A - off-site

Hydrograph



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Type III 24-hr 100-yr Rainfall=8.34"

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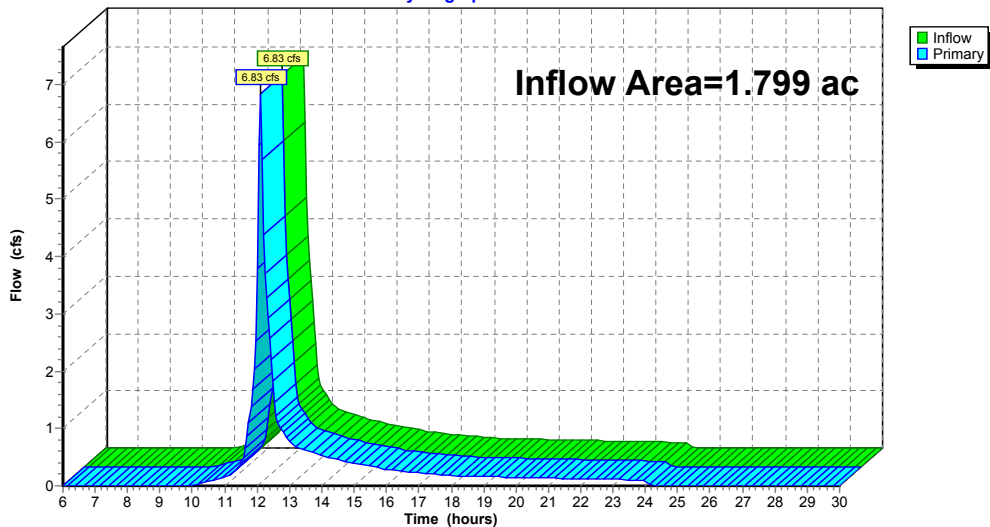
Summary for Link B: B - off-site

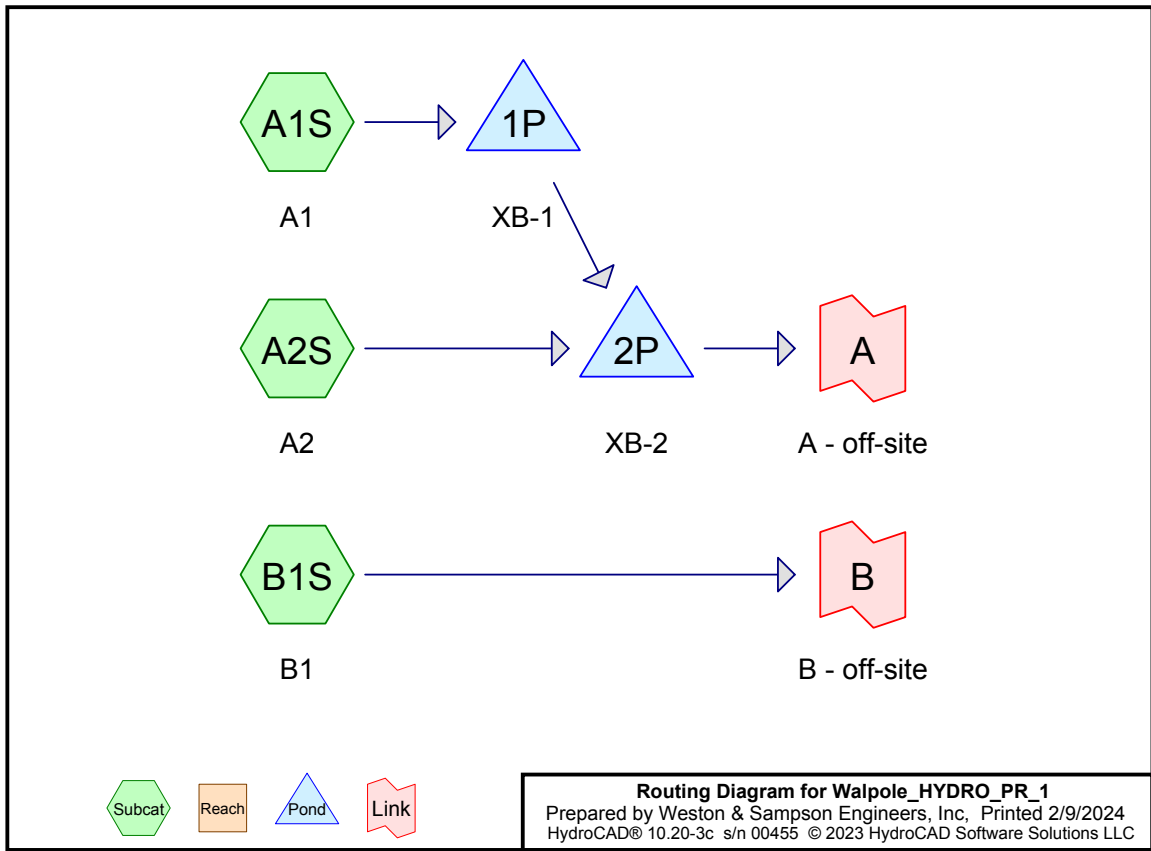
Inflow Area = 1.799 ac, 0.00% Impervious, Inflow Depth = 3.36" for 100-yr event
Inflow = 6.83 cfs @ 12.10 hrs, Volume= 0.504 af
Primary = 6.83 cfs @ 12.10 hrs, Volume= 0.504 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link B: B - off-site

Hydrograph





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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.43	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.33	2
3	100-yr	Type III 24-hr		Default	24.00	1	8.34	2

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
17.963	58	Meadow, non-grazed, HSG B (A1S, A2S, B1S)
0.249	71	Meadow, non-grazed, HSG C (A2S)
0.113	98	Paved parking, HSG B (A1S)
0.004	98	Unconnected pavement, HSG B (A1S, A2S, B1S)
0.032	98	Unconnected pavement, HSG C (A1S, A2S)
18.361	59	TOTAL AREA

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Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
18.080	HSG B	A1S, A2S, B1S
0.281	HSG C	A1S, A2S
0.000	HSG D	
0.000	Other	
18.361		TOTAL AREA

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	17.963	0.249	0.000	0.000	18.212	Meadow, non-grazed	A1S, A2S, B1S
0.000	0.113	0.000	0.000	0.000	0.113	Paved parking	A1S
0.000	0.004	0.032	0.000	0.000	0.036	Unconnected pavement	A1S, A2S, B1S
0.000	18.080	0.281	0.000	0.000	18.361	TOTAL AREA	

Walpole_HYDRO_PR_1

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Type III 24-hr 2-yr Rainfall=3.43"

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Time span=6.00-30.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentA1S: A1 Runoff Area=513,868 sf 1.25% Impervious Runoff Depth=0.43"
Flow Length=1,006' Tc=10.6 min UI Adjusted CN=58 Runoff=2.78 cfs 0.419 af

SubcatchmentA2S: A2 Runoff Area=231,741 sf 0.03% Impervious Runoff Depth=0.46"
Flow Length=563' Tc=8.3 min CN=59 Runoff=1.61 cfs 0.205 af

SubcatchmentB1S: B1 Runoff Area=54,212 sf 0.02% Impervious Runoff Depth=0.43"
Flow Length=229' Tc=6.0 min CN=58 Runoff=0.34 cfs 0.044 af

Pond 1P: XB-1 Peak Elev=208.62' Storage=3,653 cf Inflow=2.78 cfs 0.419 af
Discarded=0.19 cfs 0.231 af Primary=1.27 cfs 0.183 af Outflow=1.46 cfs 0.414 af

Pond 2P: XB-2 Peak Elev=208.57' Storage=2,739 cf Inflow=1.94 cfs 0.389 af
Discarded=0.17 cfs 0.188 af Primary=1.50 cfs 0.201 af Outflow=1.67 cfs 0.389 af

Link A: A - off-site Inflow=1.50 cfs 0.201 af
Primary=1.50 cfs 0.201 af

Link B: B - off-site Inflow=0.34 cfs 0.044 af
Primary=0.34 cfs 0.044 af

Total Runoff Area = 18.361 ac Runoff Volume = 0.668 af Average Runoff Depth = 0.44"
99.18% Pervious = 18.212 ac 0.82% Impervious = 0.150 ac

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Type III 24-hr 2-yr Rainfall=3.43"

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Summary for Subcatchment A1S: A1

Runoff = 2.78 cfs @ 12.23 hrs, Volume= 0.419 af, Depth= 0.43"
 Routed to Pond 1P : XB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.43"

Area (sf)	CN	Adj	Description
507,427	58		Meadow, non-grazed, HSG B
4,942	98		Paved parking, HSG B
99	98		Unconnected pavement, HSG B
1,400	98		Unconnected pavement, HSG C
513,868	59	58	Weighted Average, UI Adjusted
507,427			98.75% Pervious Area
6,441			1.25% Impervious Area
1,499			23.27% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0351	0.20		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
4.7	469	0.0554	1.65		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
1.2	232	0.2000	3.13		Shallow Concentrated Flow, C->D Short Grass Pasture Kv= 7.0 fps
0.6	255	0.0314	6.72	55.09	Channel Flow, D->E Area= 8.2 sf Perim= 19.5' r= 0.42' n= 0.022 Earth, clean & straight
10.6	1,006	Total			

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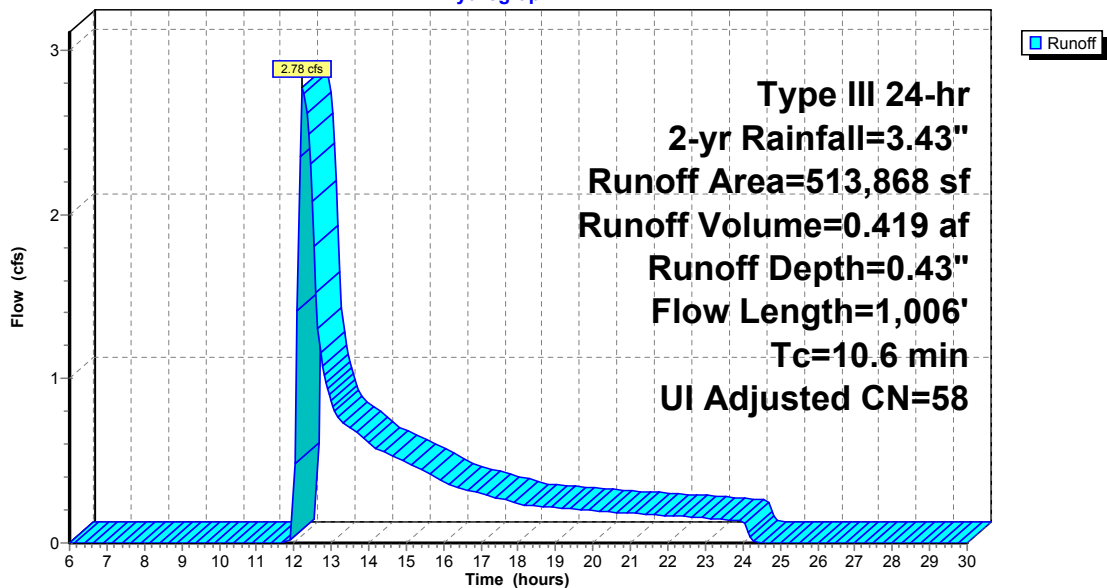
Type III 24-hr 2-yr Rainfall=3.43"

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Subcatchment A1S: A1

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.43"

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Summary for Subcatchment A2S: A2

Runoff = 1.61 cfs @ 12.17 hrs, Volume= 0.205 af, Depth= 0.46"
 Routed to Pond 2P : XB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.43"

Area (sf)	CN	Description
220,827	58	Meadow, non-grazed, HSG B
73	98	Unconnected pavement, HSG B
10,840	71	Meadow, non-grazed, HSG C
1	98	Unconnected pavement, HSG C
231,741	59	Weighted Average
231,667		99.97% Pervious Area
74		0.03% Impervious Area
74		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	50	0.0400	0.21		Sheet Flow, A->B
					Range n= 0.130 P2= 3.00"
2.3	222	0.0541	1.63		Shallow Concentrated Flow, B->C
					Short Grass Pasture Kv= 7.0 fps
0.9	154	0.1558	2.76		Shallow Concentrated Flow, C->D
					Short Grass Pasture Kv= 7.0 fps
1.2	137	0.0730	1.89		Shallow Concentrated Flow, D->E
					Short Grass Pasture Kv= 7.0 fps
8.3	563	Total			

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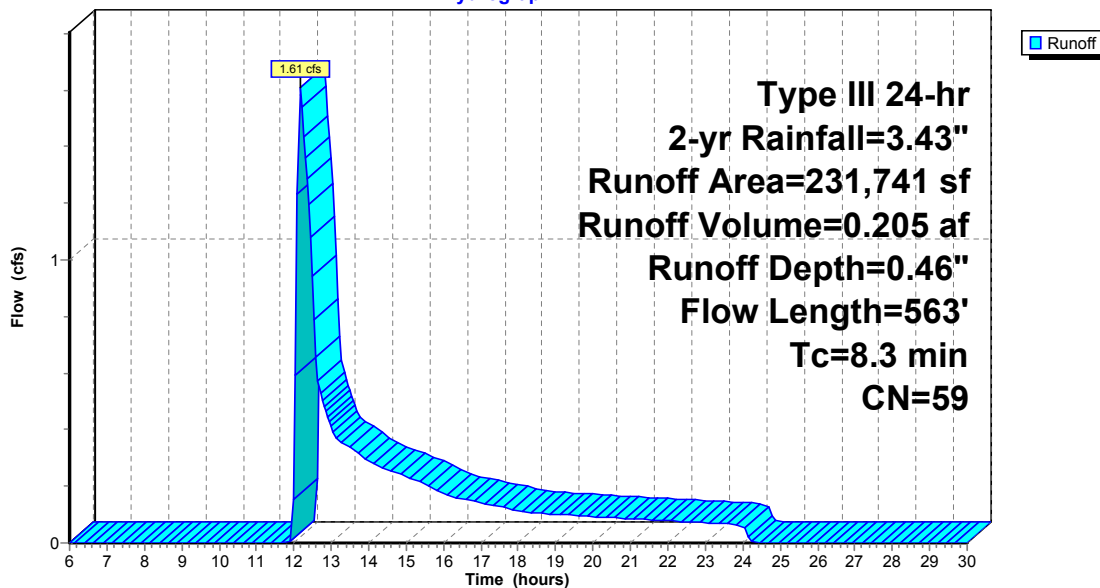
Type III 24-hr 2-yr Rainfall=3.43"

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Subcatchment A2S: A2

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.43"

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Summary for Subcatchment B1S: B1

Runoff = 0.34 cfs @ 12.14 hrs, Volume= 0.044 af, Depth= 0.43"
 Routed to Link B : B - off-site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.43"

Area (sf)	CN	Description
* 54,203	58	Meadow, non-grazed, HSG B
9	98	Unconnected pavement, HSG B
54,212	58	Weighted Average
54,203		99.98% Pervious Area
9		0.02% Impervious Area
9		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	50	0.0398	0.21		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
2.0	179	0.0448	1.48		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
5.9	229	Total, Increased to minimum Tc = 6.0 min			

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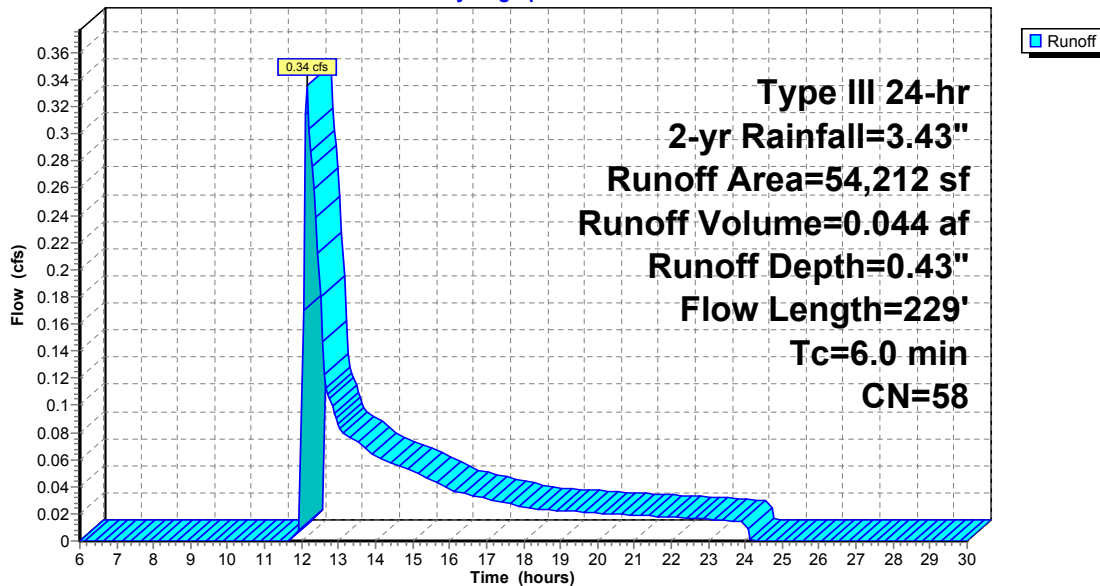
Type III 24-hr 2-yr Rainfall=3.43"

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Subcatchment B1S: B1

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.43"

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Summary for Pond 1P: XB-1

Inflow Area = 11.797 ac, 1.25% Impervious, Inflow Depth = 0.43" for 2-yr event
 Inflow = 2.78 cfs @ 12.23 hrs, Volume= 0.419 af
 Outflow = 1.46 cfs @ 12.62 hrs, Volume= 0.414 af, Atten= 48%, Lag= 23.2 min
 Discarded = 0.19 cfs @ 12.62 hrs, Volume= 0.231 af
 Primary = 1.27 cfs @ 12.62 hrs, Volume= 0.183 af
 Routed to Pond 2P : XB-2

Routing by Stor-Ind method, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 208.62' @ 12.62 hrs Surf.Area= 6,599 sf Storage= 3,653 cf

Plug-Flow detention time= 144.9 min calculated for 0.414 af (99% of inflow)
 Center-of-Mass det. time= 139.3 min (1,065.8 - 926.5)

Volume	Invert	Avail.Storage	Storage Description
#1	208.00'	26,762 cf	Surface Storage (Irregular) Listed below
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)
208.00	3,669	424.0	0
209.00	8,369	549.0	5,860
210.00	14,404	707.0	11,251
210.60	17,828	731.0	9,651
			Cum.Store (cubic-feet)
			0
			5,860
			17,111
			26,762
			Wet.Area (sq-ft)
			3,669
			13,360
			29,164
			31,944

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.00'	1.020 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 205.83'
#2	Primary	208.50'	12.0' long x 3.0' breadth Spillway (internal)
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50
			Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.19 cfs @ 12.62 hrs HW=208.62' (Free Discharge)
 ↳ **1=Exfiltration** (Controls 0.19 cfs)

Primary OutFlow Max=1.25 cfs @ 12.62 hrs HW=208.62' (Free Discharge)
 ↳ **2=Spillway (internal)** (Weir Controls 1.25 cfs @ 0.85 fps)

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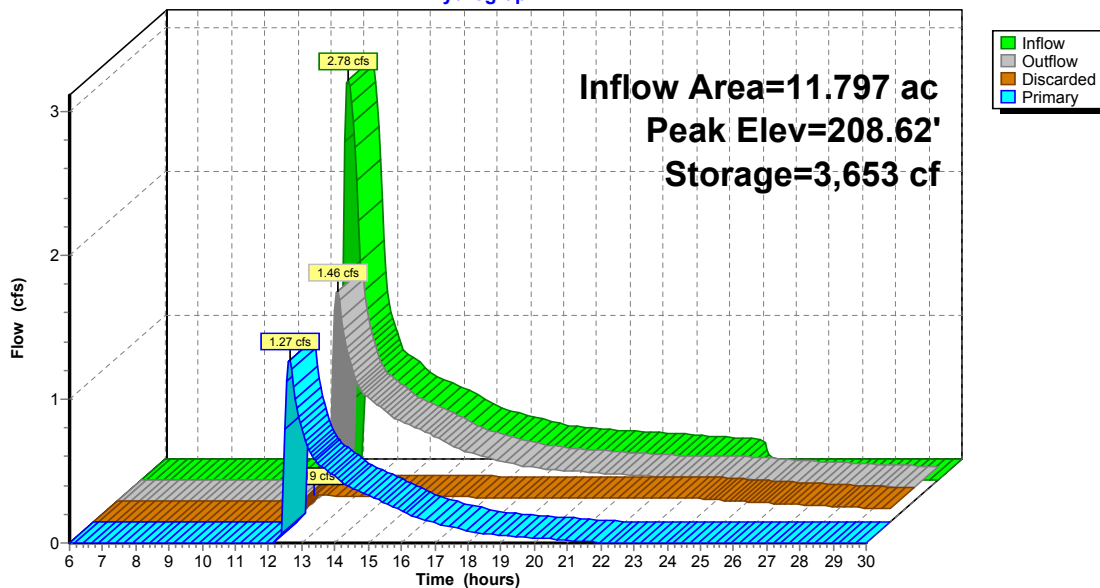
Type III 24-hr 2-yr Rainfall=3.43"

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Pond 1P: XB-1

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.43"

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Summary for Pond 2P: XB-2

Inflow Area = 17.117 ac, 0.87% Impervious, Inflow Depth = 0.27" for 2-yr event
 Inflow = 1.94 cfs @ 12.57 hrs, Volume= 0.389 af
 Outflow = 1.67 cfs @ 12.72 hrs, Volume= 0.389 af, Atten= 14%, Lag= 8.9 min
 Discarded = 0.17 cfs @ 12.72 hrs, Volume= 0.188 af
 Primary = 1.50 cfs @ 12.72 hrs, Volume= 0.201 af
 Routed to Link A : A - off-site

Routing by Stor-Ind method, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 208.57' @ 12.72 hrs Surf.Area= 6,133 sf Storage= 2,739 cf

Plug-Flow detention time= 101.2 min calculated for 0.388 af (100% of inflow)
 Center-of-Mass det. time= 101.5 min (998.0 - 896.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	208.00'	26,542 cf	Surface Storage (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
208.00	3,586	571.0	0	0	3,586
209.00	8,503	626.0	5,870	5,870	8,859
210.00	14,238	683.0	11,248	17,118	14,833
210.60	17,223	715.0	9,424	26,542	18,417

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.00'	1.020 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 205.83'
#2	Primary	208.50'	30.0' long x 15.0' breadth Spillway- discharge Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.17 cfs @ 12.72 hrs HW=208.57' (Free Discharge)
 ↳1=Exfiltration (Controls 0.17 cfs)

Primary OutFlow Max=1.47 cfs @ 12.72 hrs HW=208.57' (Free Discharge)
 ↳2=Spillway- discharge (Weir Controls 1.47 cfs @ 0.71 fps)

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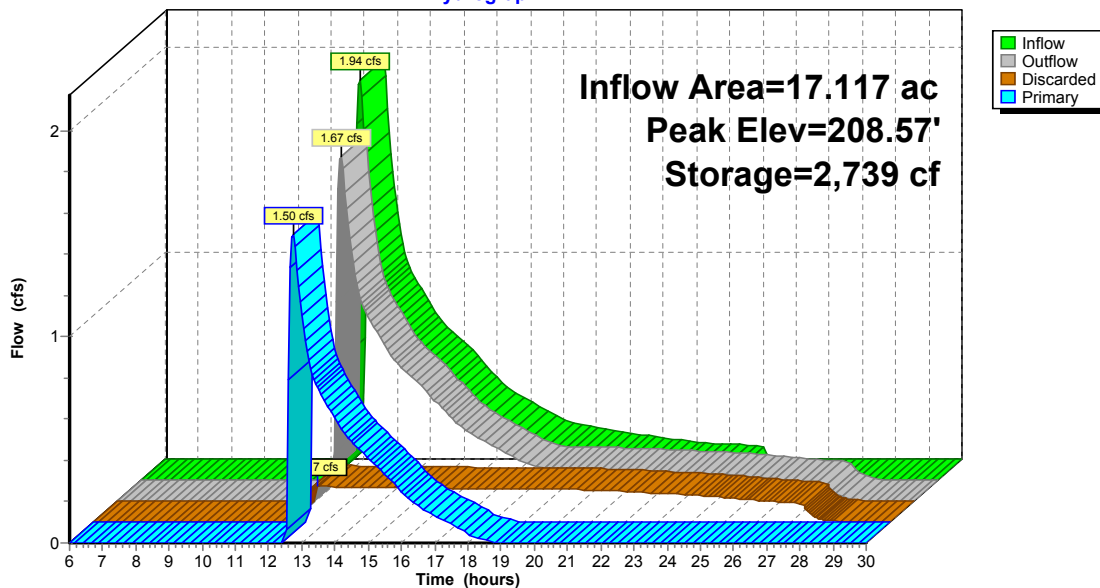
Type III 24-hr 2-yr Rainfall=3.43"

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Pond 2P: XB-2

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.43"

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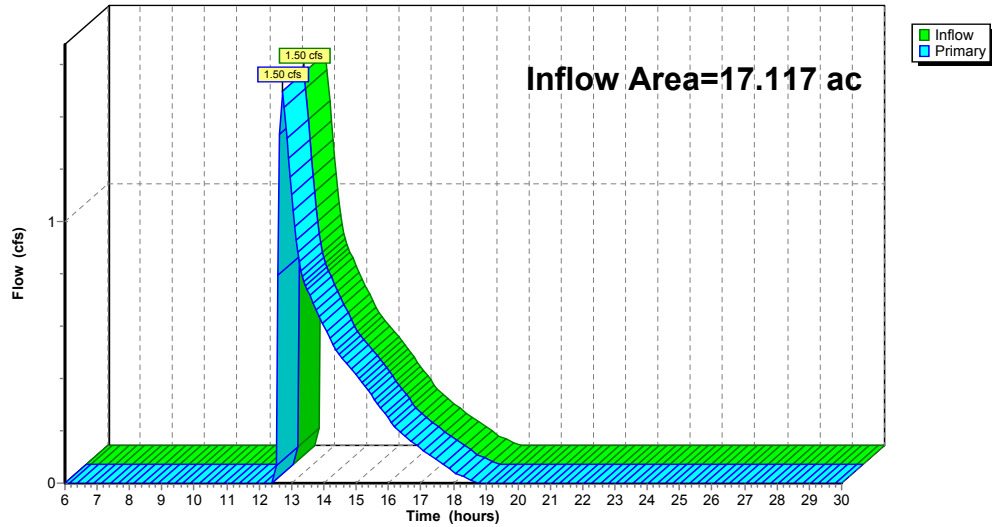
Summary for Link A: A - off-site

Inflow Area = 17.117 ac, 0.87% Impervious, Inflow Depth = 0.14" for 2-yr event
Inflow = 1.50 cfs @ 12.72 hrs, Volume= 0.201 af
Primary = 1.50 cfs @ 12.72 hrs, Volume= 0.201 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link A: A - off-site

Hydrograph



Walpole_HYDRO_PR_1

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Type III 24-hr 2-yr Rainfall=3.43"

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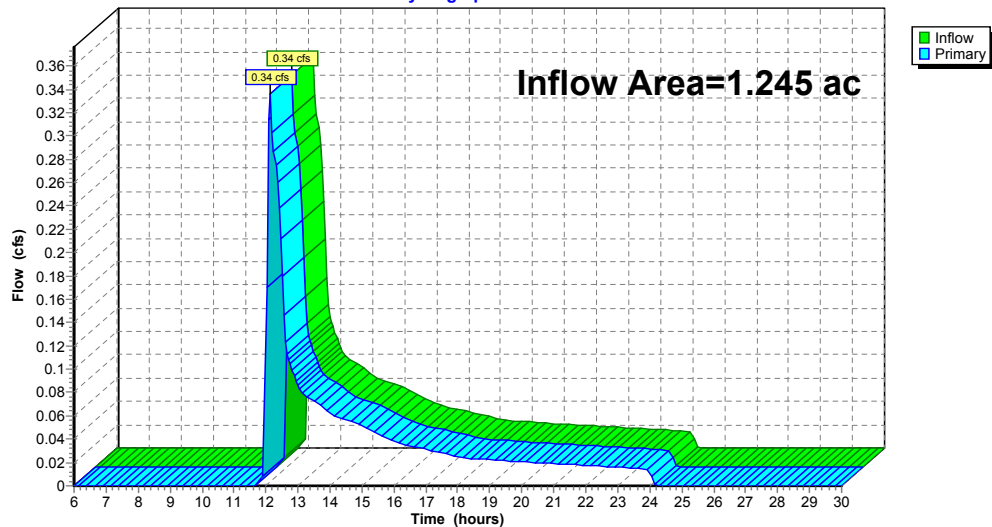
Summary for Link B: B - off-site

Inflow Area = 1.245 ac, 0.02% Impervious, Inflow Depth = 0.43" for 2-yr event
Inflow = 0.34 cfs @ 12.14 hrs, Volume= 0.044 af
Primary = 0.34 cfs @ 12.14 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link B: B - off-site

Hydrograph



Walpole_HYDRO_PR_1

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Type III 24-hr 10-yr Rainfall=5.33"

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Time span=6.00-30.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentA1S: A1 Runoff Area=513,868 sf 1.25% Impervious Runoff Depth=1.35"
 Flow Length=1,006' Tc=10.6 min UI Adjusted CN=58 Runoff=14.08 cfs 1.332 af

SubcatchmentA2S: A2 Runoff Area=231,741 sf 0.03% Impervious Runoff Depth=1.43"
 Flow Length=563' Tc=8.3 min CN=59 Runoff=7.23 cfs 0.632 af

SubcatchmentB1S: B1 Runoff Area=54,212 sf 0.02% Impervious Runoff Depth=1.35"
 Flow Length=229' Tc=6.0 min CN=58 Runoff=1.73 cfs 0.140 af

Pond 1P: XB-1 Peak Elev=209.03' Storage=6,156 cf Inflow=14.08 cfs 1.332 af
 Discarded=0.27 cfs 0.251 af Primary=12.11 cfs 1.073 af Outflow=12.38 cfs 1.324 af

Pond 2P: XB-2 Peak Elev=208.86' Storage=4,726 cf Inflow=18.02 cfs 1.705 af
 Discarded=0.23 cfs 0.231 af Primary=17.36 cfs 1.474 af Outflow=17.59 cfs 1.705 af

Link A: A - off-site Inflow=17.36 cfs 1.474 af
 Primary=17.36 cfs 1.474 af

Link B: B - off-site Inflow=1.73 cfs 0.140 af
 Primary=1.73 cfs 0.140 af

Total Runoff Area = 18.361 ac Runoff Volume = 2.104 af Average Runoff Depth = 1.38"
99.18% Pervious = 18.212 ac 0.82% Impervious = 0.150 ac

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Type III 24-hr 10-yr Rainfall=5.33"

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Summary for Subcatchment A1S: A1

Runoff = 14.08 cfs @ 12.17 hrs, Volume= 1.332 af, Depth= 1.35"
 Routed to Pond 1P : XB-1

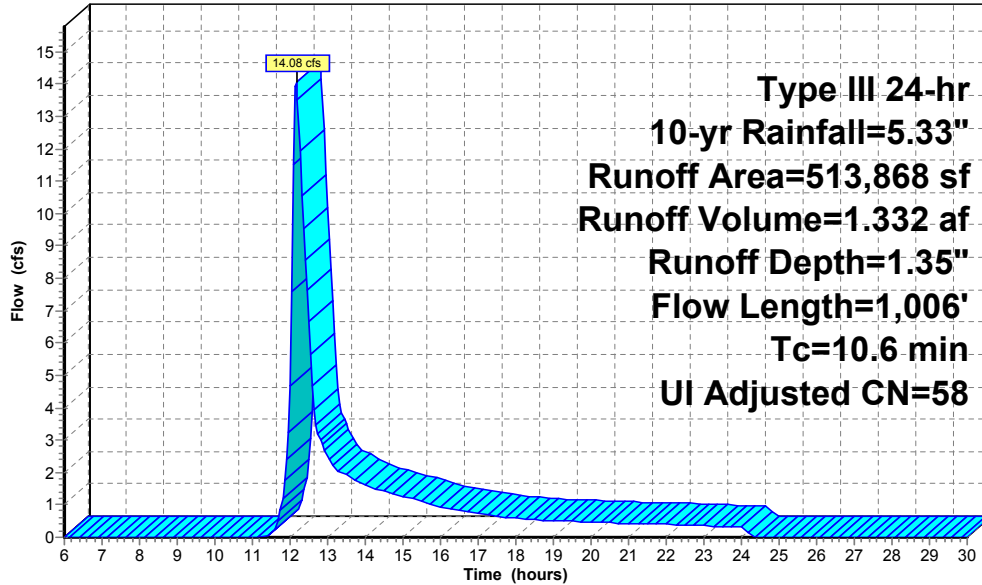
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=5.33"

Area (sf)	CN	Adj	Description
507,427	58		Meadow, non-grazed, HSG B
4,942	98		Paved parking, HSG B
99	98		Unconnected pavement, HSG B
1,400	98		Unconnected pavement, HSG C
513,868	59	58	Weighted Average, UI Adjusted
507,427			98.75% Pervious Area
6,441			1.25% Impervious Area
1,499			23.27% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0351	0.20		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
4.7	469	0.0554	1.65		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
1.2	232	0.2000	3.13		Shallow Concentrated Flow, C->D Short Grass Pasture Kv= 7.0 fps
0.6	255	0.0314	6.72	55.09	Channel Flow, D->E Area= 8.2 sf Perim= 19.5' r= 0.42' n= 0.022 Earth, clean & straight
10.6	1,006	Total			

Subcatchment A1S: A1

Hydrograph



Summary for Subcatchment A2S: A2

Runoff = 7.23 cfs @ 12.14 hrs, Volume= 0.632 af, Depth= 1.43"
 Routed to Pond 2P : XB-2

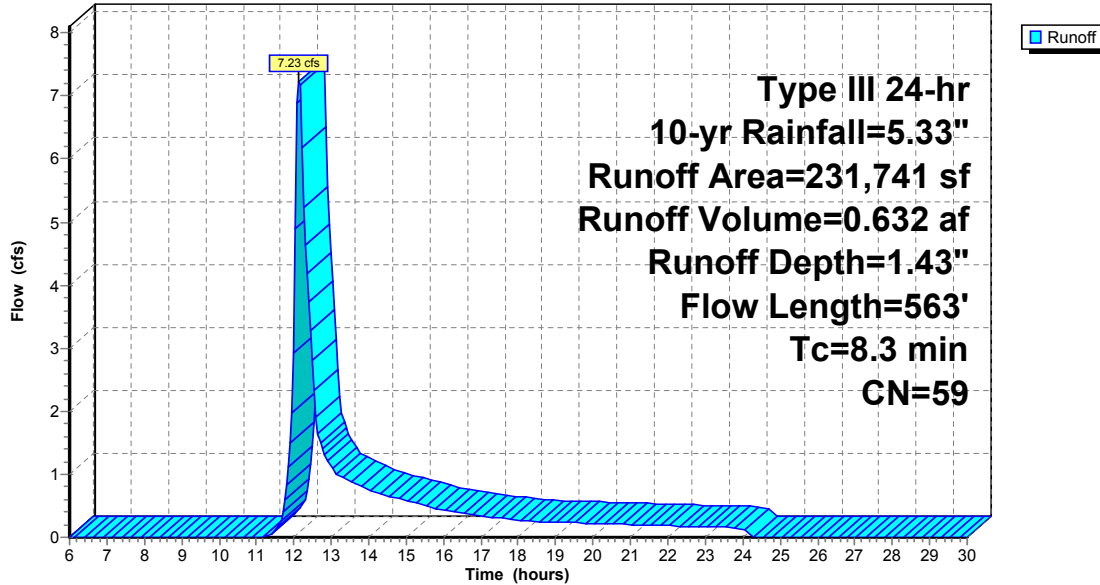
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=5.33"

Area (sf)	CN	Description
220,827	58	Meadow, non-grazed, HSG B
73	98	Unconnected pavement, HSG B
10,840	71	Meadow, non-grazed, HSG C
1	98	Unconnected pavement, HSG C
231,741	59	Weighted Average
231,667		99.97% Pervious Area
74		0.03% Impervious Area
74		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	50	0.0400	0.21		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
2.3	222	0.0541	1.63		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
0.9	154	0.1558	2.76		Shallow Concentrated Flow, C->D Short Grass Pasture Kv= 7.0 fps
1.2	137	0.0730	1.89		Shallow Concentrated Flow, D->E Short Grass Pasture Kv= 7.0 fps
8.3	563	Total			

Subcatchment A2S: A2

Hydrograph



Summary for Subcatchment B1S: B1

Runoff = 1.73 cfs @ 12.10 hrs, Volume= 0.140 af, Depth= 1.35"
 Routed to Link B : B - off-site

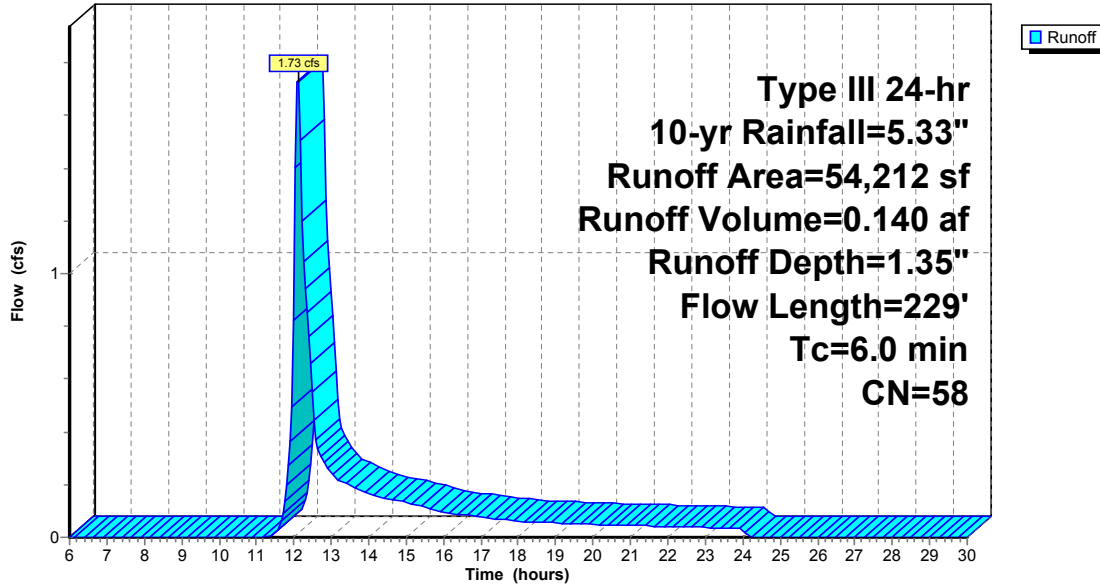
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=5.33"

Area (sf)	CN	Description
* 54,203	58	Meadow, non-grazed, HSG B
9	98	Unconnected pavement, HSG B
54,212	58	Weighted Average
54,203		99.98% Pervious Area
9		0.02% Impervious Area
9		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	50	0.0398	0.21		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
2.0	179	0.0448	1.48		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
5.9	229	Total, Increased to minimum Tc = 6.0 min			

Subcatchment B1S: B1

Hydrograph



Summary for Pond 1P: XB-1

Inflow Area = 11.797 ac, 1.25% Impervious, Inflow Depth = 1.35" for 10-yr event
 Inflow = 14.08 cfs @ 12.17 hrs, Volume= 1.332 af
 Outflow = 12.38 cfs @ 12.24 hrs, Volume= 1.324 af, Atten= 12%, Lag= 4.5 min
 Discarded = 0.27 cfs @ 12.24 hrs, Volume= 0.251 af
 Primary = 12.11 cfs @ 12.24 hrs, Volume= 1.073 af

Routed to Pond 2P : XB-2

Routing by Stor-Ind method, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 209.03' @ 12.24 hrs Surf.Area= 8,528 sf Storage= 6,156 cf

Plug-Flow detention time= 50.9 min calculated for 1.321 af (99% of inflow)
 Center-of-Mass det. time= 48.3 min (929.4 - 881.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	208.00'	26,762 cf	Surface Storage (Irregular) listed below		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
208.00	3,669	424.0	0	0	3,669
209.00	8,369	549.0	5,860	5,860	13,360
210.00	14,404	707.0	11,251	17,111	29,164
210.60	17,828	731.0	9,651	26,762	31,944

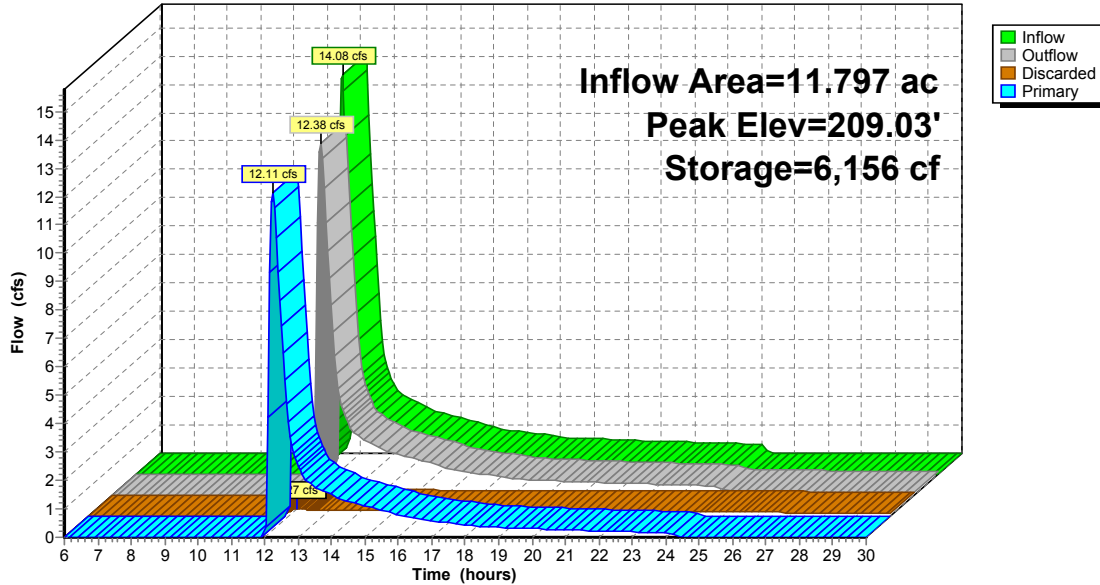
Device	Routing	Invert	Outlet Devices
#1	Discarded	208.00'	1.020 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 205.83'
#2	Primary	208.50'	12.0' long x 3.0' breadth Spillway (internal) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.26 cfs @ 12.24 hrs HW=209.02' (Free Discharge)
 ↳1=Exfiltration (Controls 0.26 cfs)

Primary OutFlow Max=12.06 cfs @ 12.24 hrs HW=209.02' (Free Discharge)
 ↳2=Spillway (internal) (Weir Controls 12.06 cfs @ 1.91 fps)

Pond 1P: XB-1

Hydrograph



Summary for Pond 2P: XB-2

Inflow Area = 17.117 ac, 0.87% Impervious, Inflow Depth = 1.20" for 10-yr event
 Inflow = 18.02 cfs @ 12.21 hrs, Volume= 1.705 af
 Outflow = 17.59 cfs @ 12.25 hrs, Volume= 1.705 af, Atten= 2%, Lag= 2.5 min
 Discarded = 0.23 cfs @ 12.25 hrs, Volume= 0.231 af
 Primary = 17.36 cfs @ 12.25 hrs, Volume= 1.474 af
 Routed to Link A : A - off-site

Routing by Stor-Ind method, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 208.86' @ 12.25 hrs Surf.Area= 7,680 sf Storage= 4,726 cf

Plug-Flow detention time=30.4 min calculated for 1.701 af (100% of inflow)
 Center-of-Mass det. time= 30.9 min (900.6 - 869.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	208.00'	26,542 cf	Surface Storage (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
208.00	3,586	571.0	0	0	3,586
209.00	8,503	626.0	5,870	5,870	8,859
210.00	14,238	683.0	11,248	17,118	14,833
210.60	17,223	715.0	9,424	26,542	18,417

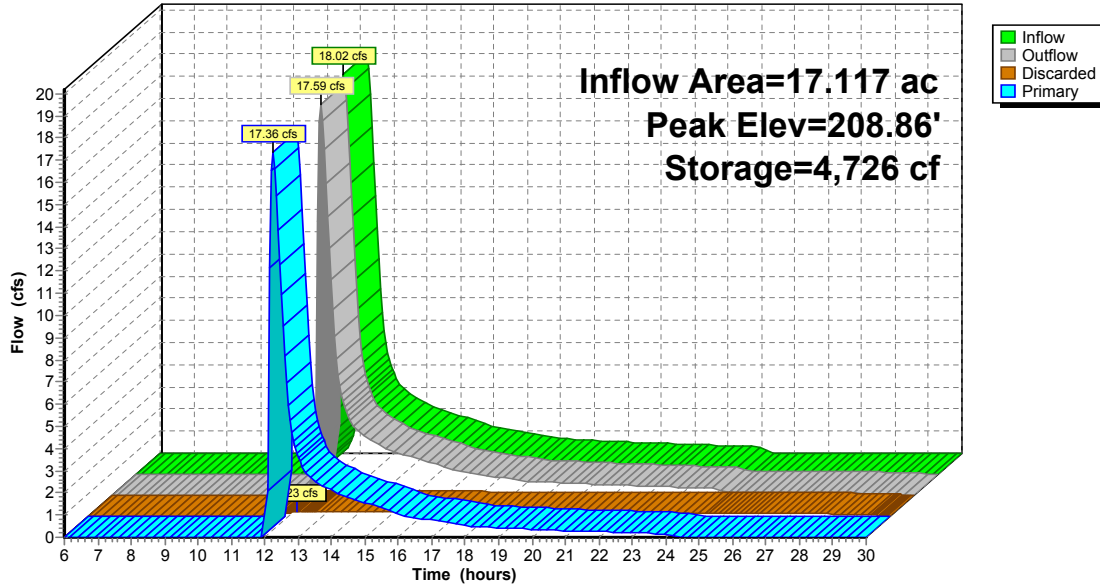
Device	Routing	Invert	Outlet Devices
#1	Discarded	208.00'	1.020 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 205.83'
#2	Primary	208.50'	30.0' long x 15.0' breadth Spillway- discharge Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.23 cfs @ 12.25 hrs HW=208.86' (Free Discharge)
 ↳1=Exfiltration (Controls 0.23 cfs)

Primary OutFlow Max=17.35 cfs @ 12.25 hrs HW=208.86' (Free Discharge)
 ↳2=Spillway- discharge (Weir Controls 17.35 cfs @ 1.61 fps)

Pond 2P: XB-2

Hydrograph



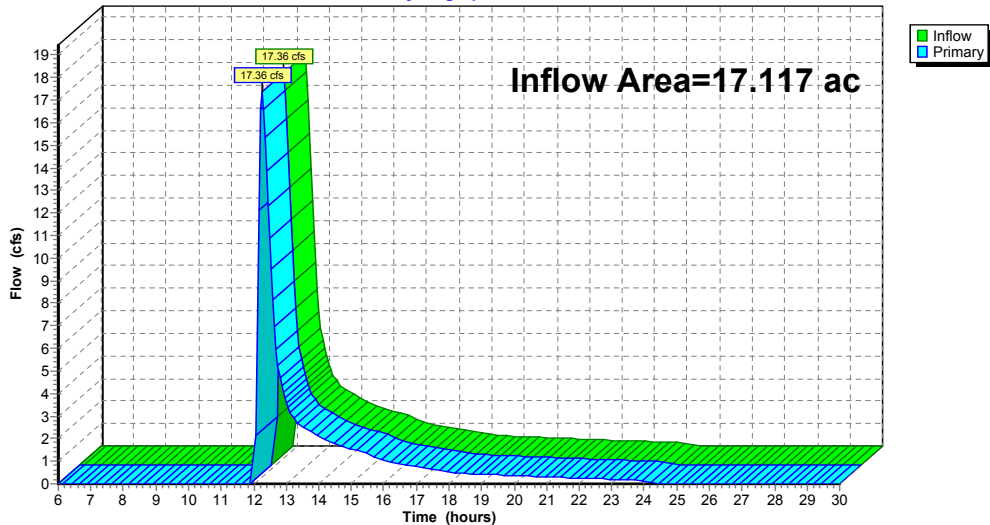
Summary for Link A: A - off-site

Inflow Area = 17.117 ac, 0.87% Impervious, Inflow Depth = 1.03" for 10-yr event
 Inflow = 17.36 cfs @ 12.25 hrs, Volume= 1.474 af
 Primary = 17.36 cfs @ 12.25 hrs, Volume= 1.474 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link A: A - off-site

Hydrograph



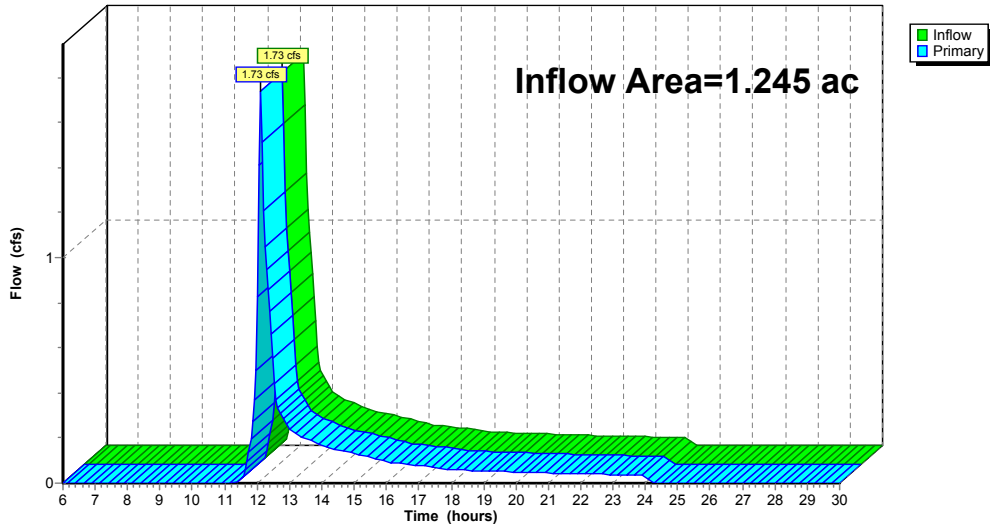
Summary for Link B: B - off-site

Inflow Area = 1.245 ac, 0.02% Impervious, Inflow Depth = 1.35" for 10-yr event
 Inflow = 1.73 cfs @ 12.10 hrs, Volume= 0.140 af
 Primary = 1.73 cfs @ 12.10 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link B: B - off-site

Hydrograph



Time span=6.00-30.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentA1S: A1	Runoff Area=513,868 sf 1.25% Impervious Runoff Depth=3.36" Flow Length=1,006' Tc=10.6 min UI Adjusted CN=58 Runoff=38.67 cfs 3.304 af
SubcatchmentA2S: A2	Runoff Area=231,741 sf 0.03% Impervious Runoff Depth=3.48" Flow Length=563' Tc=8.3 min CN=59 Runoff=19.40 cfs 1.541 af
SubcatchmentB1S: B1	Runoff Area=54,212 sf 0.02% Impervious Runoff Depth=3.36" Flow Length=229' Tc=6.0 min CN=58 Runoff=4.73 cfs 0.349 af
Pond 1P: XB-1	Peak Elev=209.54' Storage=11,970 cf Inflow=38.67 cfs 3.304 af Discarded=0.39 cfs 0.286 af Primary=33.83 cfs 3.009 af Outflow=34.22 cfs 3.295 af
Pond 2P: XB-2	Peak Elev=209.21' Storage=7,806 cf Inflow=49.08 cfs 4.550 af Discarded=0.31 cfs 0.260 af Primary=48.24 cfs 4.290 af Outflow=48.55 cfs 4.550 af
Link A: A - off-site	Inflow=48.24 cfs 4.290 af Primary=48.24 cfs 4.290 af
Link B: B - off-site	Inflow=4.73 cfs 0.349 af Primary=4.73 cfs 0.349 af

Total Runoff Area = 18.361 ac Runoff Volume = 5.193 af Average Runoff Depth = 3.39"
99.18% Pervious = 18.212 ac 0.82% Impervious = 0.150 ac

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Type III 24-hr 100-yr Rainfall=8.34"

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Summary for Subcatchment A1S: A1

Runoff = 38.67 cfs @ 12.16 hrs, Volume= 3.304 af, Depth= 3.36"
 Routed to Pond 1P : XB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=8.34"

Area (sf)	CN	Adj	Description
507,427	58		Meadow, non-grazed, HSG B
4,942	98		Paved parking, HSG B
99	98		Unconnected pavement, HSG B
1,400	98		Unconnected pavement, HSG C
513,868	59	58	Weighted Average, UI Adjusted
507,427			98.75% Pervious Area
6,441			1.25% Impervious Area
1,499			23.27% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0351	0.20		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
4.7	469	0.0554	1.65		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
1.2	232	0.2000	3.13		Shallow Concentrated Flow, C->D Short Grass Pasture Kv= 7.0 fps
0.6	255	0.0314	6.72	55.09	Channel Flow, D->E Area= 8.2 sf Perim= 19.5' r= 0.42' n= 0.022 Earth, clean & straight
10.6	1,006	Total			

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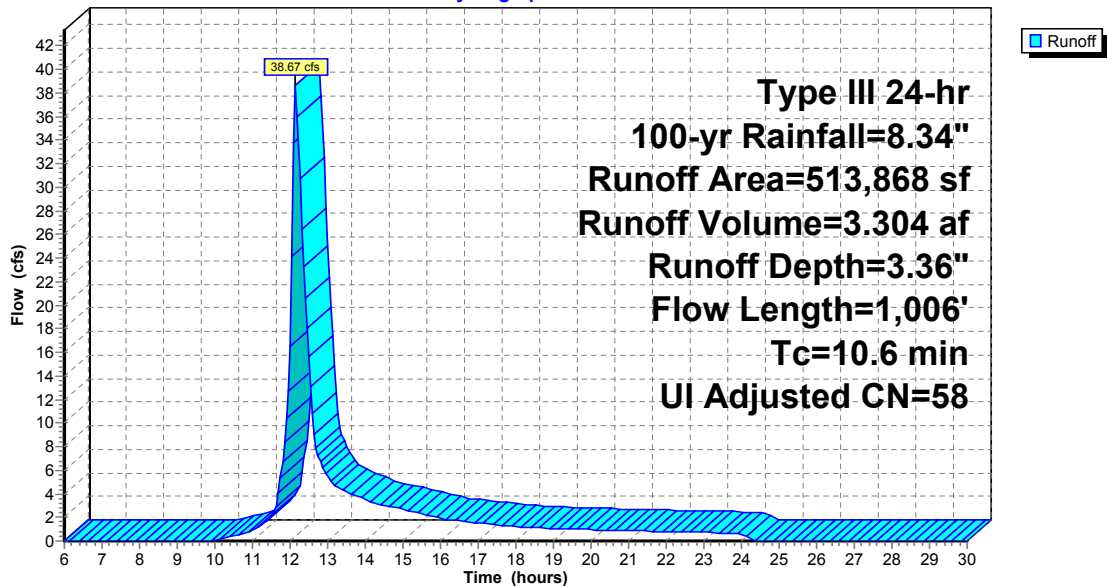
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Subcatchment A1S: A1

Hydrograph



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Summary for Subcatchment A2S: A2

Runoff = 19.40 cfs @ 12.12 hrs, Volume= 1.541 af, Depth= 3.48"
Routed to Pond 2P : XB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.34"

Area (sf)	CN	Description
220,827	58	Meadow, non-grazed, HSG B
73	98	Unconnected pavement, HSG B
10,840	71	Meadow, non-grazed, HSG C
1	98	Unconnected pavement, HSG C
231,741	59	Weighted Average
231,667		99.97% Pervious Area
74		0.03% Impervious Area
74		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	50	0.0400	0.21		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
2.3	222	0.0541	1.63		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
0.9	154	0.1558	2.76		Shallow Concentrated Flow, C->D Short Grass Pasture Kv= 7.0 fps
1.2	137	0.0730	1.89		Shallow Concentrated Flow, D->E Short Grass Pasture Kv= 7.0 fps
8.3	563	Total			

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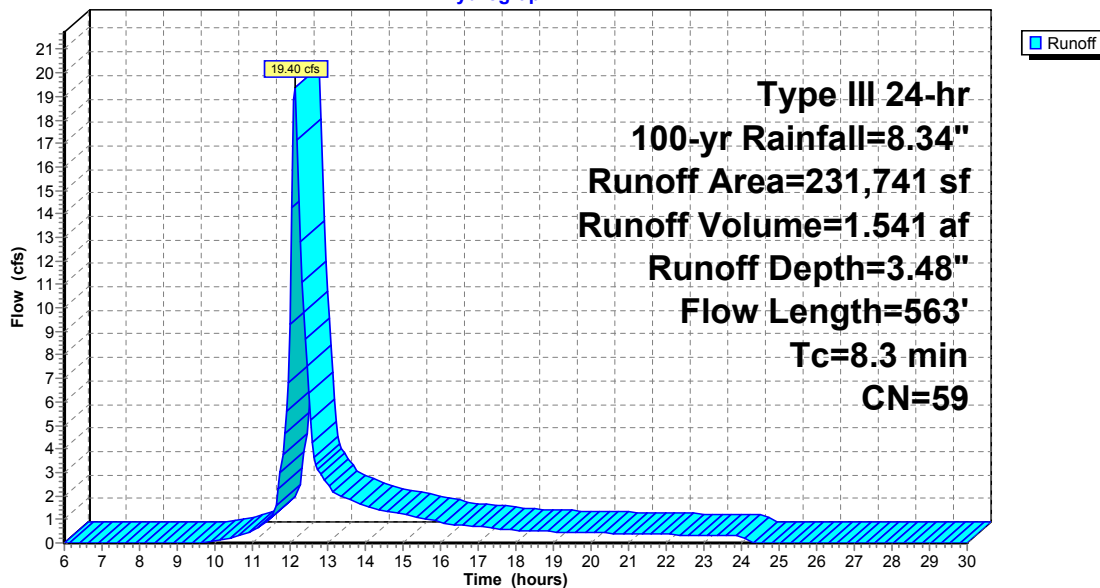
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Subcatchment A2S: A2

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Summary for Subcatchment B1S: B1

Runoff = 4.73 cfs @ 12.10 hrs, Volume= 0.349 af, Depth= 3.36"
 Routed to Link B : B - off-site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=8.34"

Area (sf)	CN	Description
* 54,203	58	Meadow, non-grazed, HSG B
9	98	Unconnected pavement, HSG B
54,212	58	Weighted Average
54,203		99.98% Pervious Area
9		0.02% Impervious Area
9		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	50	0.0398	0.21		Sheet Flow, A->B Range n= 0.130 P2= 3.00"
2.0	179	0.0448	1.48		Shallow Concentrated Flow, B->C Short Grass Pasture Kv= 7.0 fps
5.9	229	Total, Increased to minimum Tc = 6.0 min			

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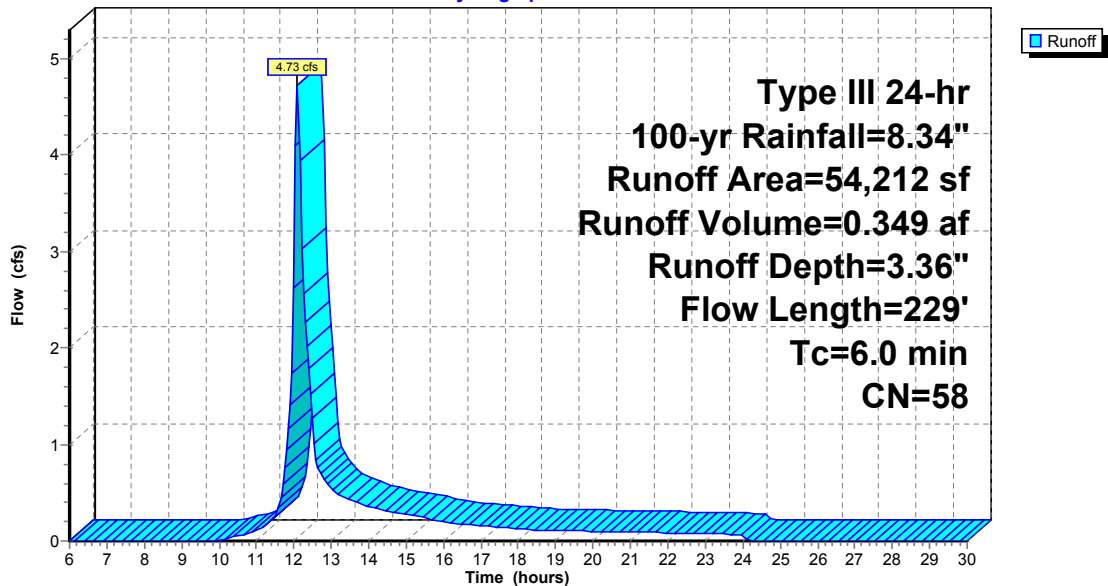
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Subcatchment B1S: B1

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Summary for Pond 1P: XB-1

Inflow Area = 11.797 ac, 1.25% Impervious, Inflow Depth = 3.36" for 100-yr event
 Inflow = 38.67 cfs @ 12.16 hrs, Volume= 3,304 af
 Outflow = 34.22 cfs @ 12.22 hrs, Volume= 3,295 af, Atten= 12%, Lag= 3.9 min
 Discarded = 0.39 cfs @ 12.22 hrs, Volume= 0.286 af
 Primary = 33.83 cfs @ 12.22 hrs, Volume= 3,009 af
 Routed to Pond 2P : XB-2

Routing by Stor-Ind method, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 209.54' @ 12.22 hrs Surf.Area= 11,646 sf Storage= 11,970 cf

Plug-Flow detention time= 24.4 min calculated for 3.288 af (100% of inflow)
 Center-of-Mass det. time= 23.5 min (876.1 - 852.6)

Volume	Invert	Avail.Storage	Storage Description
#1	208.00'	26,762 cf	Surface Storage (Irregular) Listed below
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)
208.00	3,669	424.0	0
209.00	8,369	549.0	5,860
210.00	14,404	707.0	11,251
210.60	17,828	731.0	9,651
			Cum.Store (cubic-feet)
			0
			5,860
			17,111
			26,762
			Wet.Area (sq-ft)
			3,669
			13,360
			29,164
			31,944

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.00'	1.020 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 205.83'
#2	Primary	208.50'	12.0' long x 3.0' breadth Spillway (internal)
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50
			Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.38 cfs @ 12.22 hrs HW=209.53' (Free Discharge)
 ↳ **1=Exfiltration** (Controls 0.38 cfs)

Primary OutFlow Max=33.29 cfs @ 12.22 hrs HW=209.53' (Free Discharge)
 ↳ **2=Spillway (internal)** (Weir Controls 33.29 cfs @ 2.69 fps)

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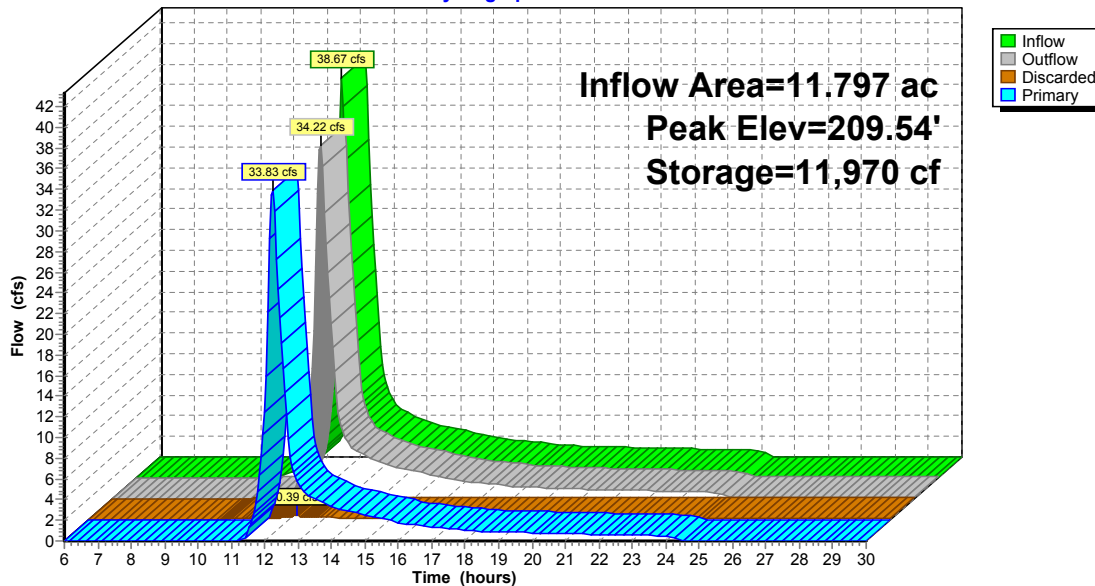
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Pond 1P: XB-1

Hydrograph



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Summary for Pond 2P: XB-2

Inflow Area = 17.117 ac, 0.87% Impervious, Inflow Depth = 3.19" for 100-yr event
 Inflow = 49.08 cfs @ 12.19 hrs, Volume= 4.550 af
 Outflow = 48.55 cfs @ 12.22 hrs, Volume= 4.550 af, Atten= 1%, Lag= 1.8 min
 Discarded = 0.31 cfs @ 12.22 hrs, Volume= 0.260 af
 Primary = 48.24 cfs @ 12.22 hrs, Volume= 4.290 af
 Routed to Link A : A - off-site

Routing by Stor-Ind method, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 209.21' @ 12.22 hrs Surf.Area= 9,606 sf Storage= 7,806 cf

Plug-Flow detention time= 13.2 min calculated for 4.540 af (100% of inflow)
 Center-of-Mass det. time= 13.8 min (863.1 - 849.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	208.00'	26,542 cf	Surface Storage (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
208.00	3,586	571.0	0	0	3,586
209.00	8,503	626.0	5,870	5,870	8,859
210.00	14,238	683.0	11,248	17,118	14,833
210.60	17,223	715.0	9,424	26,542	18,417

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.00'	1.020 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 205.83'
#2	Primary	208.50'	30.0' long x 15.0' breadth Spillway- discharge Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.30 cfs @ 12.22 hrs HW=209.21' (Free Discharge)
 ↳ **1=Exfiltration** (Controls 0.30 cfs)

Primary OutFlow Max=47.68 cfs @ 12.22 hrs HW=209.21' (Free Discharge)
 ↳ **2=Spillway- discharge** (Weir Controls 47.68 cfs @ 2.24 fps)

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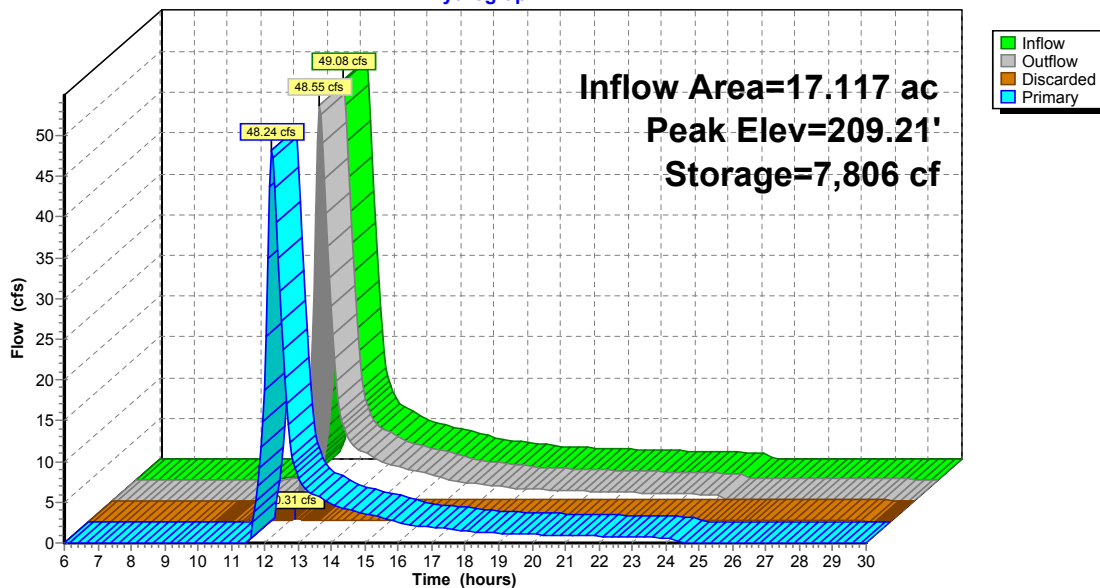
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Pond 2P: XB-2

Hydrograph



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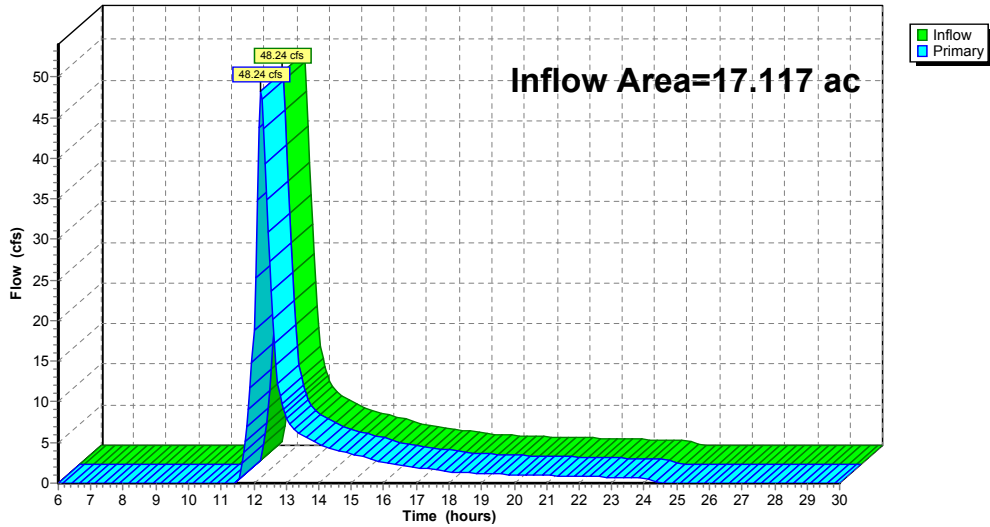
Summary for Link A: A - off-site

Inflow Area = 17.117 ac, 0.87% Impervious, Inflow Depth = 3.01" for 100-yr event
Inflow = 48.24 cfs @ 12.22 hrs, Volume= 4.290 af
Primary = 48.24 cfs @ 12.22 hrs, Volume= 4.290 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link A: A - off-site

Hydrograph



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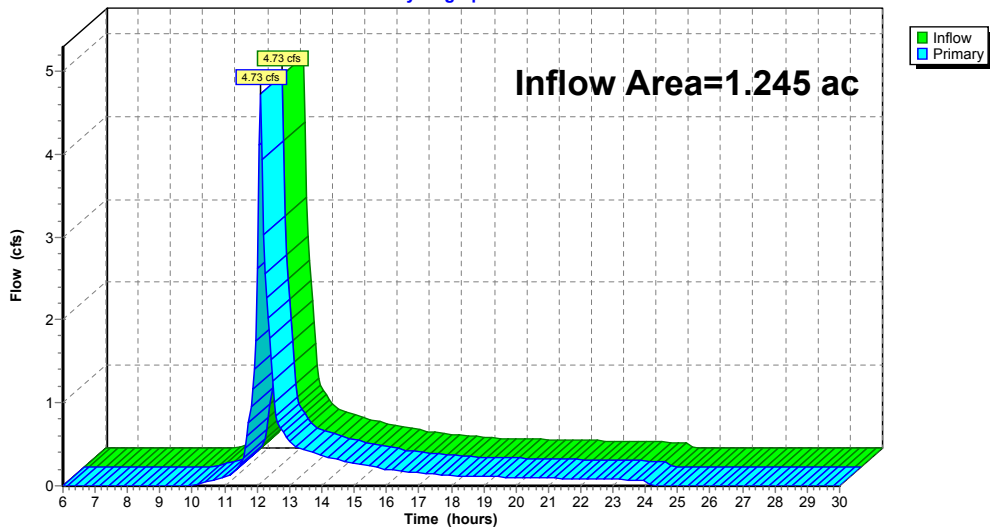
Summary for Link B: B - off-site

Inflow Area = 1.245 ac, 0.02% Impervious, Inflow Depth = 3.36" for 100-yr event
Inflow = 4.73 cfs @ 12.10 hrs, Volume= 0.349 af
Primary = 4.73 cfs @ 12.10 hrs, Volume= 0.349 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 6.00-30.00 hrs, dt= 0.05 hrs

Link B: B - off-site

Hydrograph



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Page 1

Stage-Area-Storage for Pond 1P: XB-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
208.00	3,669	0	208.36	5,361	2,110	208.72	7,053	4,219
208.01	3,716	59	208.37	5,408	2,168	208.73	7,100	4,278
208.02	3,763	117	208.38	5,455	2,227	208.74	7,147	4,336
208.03	3,810	176	208.39	5,502	2,285	208.75	7,194	4,395
208.04	3,857	234	208.40	5,549	2,344	208.76	7,241	4,453
208.05	3,904	293	208.41	5,596	2,403	208.77	7,288	4,512
208.06	3,951	352	208.42	5,643	2,461	208.78	7,335	4,571
208.07	3,998	410	208.43	5,690	2,520	208.79	7,382	4,629
208.08	4,045	469	208.44	5,737	2,578	208.80	7,429	4,688
208.09	4,092	527	208.45	5,784	2,637	208.81	7,476	4,746
208.10	4,139	586	208.46	5,831	2,695	208.82	7,523	4,805
208.11	4,186	645	208.47	5,878	2,754	208.83	7,570	4,864
208.12	4,233	703	208.48	5,925	2,813	208.84	7,617	4,922
208.13	4,280	762	208.49	5,972	2,871	208.85	7,664	4,981
208.14	4,327	820	208.50	6,019	2,930	208.86	7,711	5,039
208.15	4,374	879	208.51	6,066	2,988	208.87	7,758	5,098
208.16	4,421	938	208.52	6,113	3,047	208.88	7,805	5,157
208.17	4,468	996	208.53	6,160	3,106	208.89	7,852	5,215
208.18	4,515	1,055	208.54	6,207	3,164	208.90	7,899	5,274
208.19	4,562	1,113	208.55	6,254	3,223	208.91	7,946	5,332
208.20	4,609	1,172	208.56	6,301	3,281	208.92	7,993	5,391
208.21	4,656	1,231	208.57	6,348	3,340	208.93	8,040	5,450
208.22	4,703	1,289	208.58	6,395	3,399	208.94	8,087	5,508
208.23	4,750	1,348	208.59	6,442	3,457	208.95	8,134	5,567
208.24	4,797	1,406	208.60	6,489	3,516	208.96	8,181	5,625
208.25	4,844	1,465	208.61	6,536	3,574	208.97	8,228	5,684
208.26	4,891	1,524	208.62	6,583	3,633	208.98	8,275	5,743
208.27	4,938	1,582	208.63	6,630	3,692	208.99	8,322	5,801
208.28	4,985	1,641	208.64	6,677	3,750	209.00	8,369	5,860
208.29	5,032	1,699	208.65	6,724	3,809	209.01	8,429	5,922
208.30	5,079	1,758	208.66	6,771	3,867	209.02	8,490	6,085
208.31	5,126	1,817	208.67	6,818	3,926	209.03	8,550	6,197
208.32	5,173	1,875	208.68	6,865	3,985	209.04	8,610	6,310
208.33	5,220	1,934	208.69	6,912	4,043	209.05	8,671	6,422
208.34	5,267	1,992	208.70	6,959	4,102	209.06	8,731	6,535
208.35	5,314	2,051	208.71	7,006	4,160	209.07	8,791	6,647

volume retained below lowest outlet

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Stage-Area-Storage for Pond 1P: XB-1 (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
209.08	8,852	6,760	209.44	11,024	10,810	209.80	13,197	14,860
209.09	8,912	6,872	209.45	11,085	10,923	209.81	13,257	14,973
209.10	8,972	6,985	209.46	11,145	11,035	209.82	13,318	15,085
209.11	9,033	7,097	209.47	11,205	11,148	209.83	13,378	15,198
209.12	9,093	7,210	209.48	11,266	11,260	209.84	13,438	15,310
209.13	9,154	7,322	209.49	11,326	11,373	209.85	13,499	15,423
209.14	9,214	7,435	209.50	11,387	11,485	209.86	13,559	15,535
209.15	9,274	7,547	209.51	11,447	11,598	209.87	13,619	15,648
209.16	9,335	7,660	209.52	11,507	11,710	209.88	13,680	15,760
209.17	9,395	7,772	209.53	11,568	11,823	209.89	13,740	15,873
209.18	9,455	7,885	209.54	11,628	11,935	209.90	13,801	15,985
209.19	9,516	7,997	209.55	11,688	12,048	209.91	13,861	16,098
209.20	9,576	8,110	209.56	11,749	12,160	209.92	13,921	16,210
209.21	9,636	8,222	209.57	11,809	12,273	209.93	13,982	16,323
209.22	9,697	8,335	209.58	11,869	12,385	209.94	14,042	16,436
209.23	9,757	8,447	209.59	11,930	12,498	209.95	14,102	16,548
209.24	9,817	8,560	209.60	11,990	12,610	209.96	14,163	16,661
209.25	9,878	8,672	209.61	12,050	12,723	209.97	14,223	16,773
209.26	9,938	8,785	209.62	12,111	12,835	209.98	14,283	16,886
209.27	9,998	8,897	209.63	12,171	12,948	209.99	14,344	16,998
209.28	10,059	9,010	209.64	12,231	13,060	210.00	14,404	17,111
209.29	10,119	9,122	209.65	12,292	13,173	210.01	14,461	17,271
209.30	10,180	9,235	209.66	12,352	13,285	210.02	14,518	17,432
209.31	10,240	9,348	209.67	12,412	13,398	210.03	14,575	17,593
209.32	10,300	9,460	209.68	12,473	13,510	210.04	14,632	17,754
209.33	10,361	9,573	209.69	12,533	13,623	210.05	14,689	17,915
209.34	10,421	9,685	209.70	12,593	13,735	210.06	14,746	18,076
209.35	10,481	9,798	209.71	12,654	13,848	210.07	14,803	18,237
209.36	10,542	9,910	209.72	12,714	13,960	210.08	14,861	18,397
209.37	10,602	10,023	209.73	12,775	14,073	210.09	14,918	18,558
209.38	10,662	10,135	209.74	12,835	14,185	210.10	14,975	18,719
209.39	10,723	10,248	209.75	12,895	14,298	210.11	15,032	18,880
209.40	10,783	10,360	209.76	12,956	14,410	210.12	15,089	19,041
209.41	10,843	10,473	209.77	13,016	14,523	210.13	15,146	19,202
209.42	10,904	10,585	209.78	13,076	14,635	210.14	15,203	19,363
209.43	10,964	10,698	209.79	13,137	14,748	210.15	15,260	19,523

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Stage-Area-Storage for Pond 1P: XB-1 (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
210.16	15,317	19,684	210.52	17,371	25,475
210.17	15,374	19,845	210.53	17,429	25,636
210.18	15,431	20,006	210.54	17,486	25,797
210.19	15,488	20,167	210.55	17,543	25,958
210.20	15,545	20,328	210.56	17,600	26,118
210.21	15,602	20,489	210.57	17,657	26,279
210.22	15,659	20,649	210.58	17,714	26,440
210.23	15,717	20,810	210.59	17,771	26,601
210.24	15,774	20,971	210.60	17,828	26,762
210.25	15,831	21,132			
210.26	15,888	21,293			
210.27	15,945	21,454			
210.28	16,002	21,615			
210.29	16,059	21,775			
210.30	16,116	21,936			
210.31	16,173	22,097			
210.32	16,230	22,258			
210.33	16,287	22,419			
210.34	16,344	22,580			
210.35	16,401	22,741			
210.36	16,458	22,901			
210.37	16,515	23,062			
210.38	16,573	23,223			
210.39	16,630	23,384			
210.40	16,687	23,545			
210.41	16,744	23,706			
210.42	16,801	23,867			
210.43	16,858	24,027			
210.44	16,915	24,188			
210.45	16,972	24,349			
210.46	17,029	24,510			
210.47	17,086	24,671			
210.48	17,143	24,832			
210.49	17,200	24,993			
210.50	17,257	25,153			
210.51	17,314	25,314			

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Stage-Area-Storage for Pond 2P: XB-2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
208.00	3,586	0	208.36	5,115	1,558	208.72	6,916	3,716
208.01	3,625	36	208.37	5,162	1,609	208.73	6,969	3,785
208.02	3,664	72	208.38	5,208	1,661	208.74	7,023	3,855
208.03	3,703	109	208.39	5,255	1,714	208.75	7,078	3,925
208.04	3,743	147	208.40	5,302	1,766	208.76	7,132	3,996
208.05	3,782	184	208.41	5,349	1,820	208.77	7,187	4,068
208.06	3,822	222	208.42	5,397	1,873	208.78	7,242	4,140
208.07	3,862	261	208.43	5,444	1,928	208.79	7,297	4,213
208.08	3,902	299	208.44	5,492	1,982	208.80	7,352	4,286
208.09	3,943	339	208.45	5,540	2,037	208.81	7,408	4,360
208.10	3,984	378	208.46	5,588	2,093	208.82	7,464	4,434
208.11	4,025	418	208.47	5,637	2,149	208.83	7,520	4,509
208.12	4,066	459	208.48	5,685	2,206	208.84	7,576	4,585
208.13	4,107	500	208.49	5,734	2,263	208.85	7,632	4,661
208.14	4,149	541	208.50	5,783	2,321	208.86	7,689	4,737
208.15	4,190	583	208.51	5,832	2,379	208.87	7,746	4,815
208.16	4,232	625	208.52	5,882	2,437	208.88	7,803	4,892
208.17	4,274	667	208.53	5,932	2,496	208.89	7,860	4,971
208.18	4,317	710	208.54	5,982	2,556	208.90	7,917	5,049
208.19	4,359	754	208.55	6,032	2,616	208.91	7,975	5,129
208.20	4,402	797	208.56	6,082	2,676	208.92	8,033	5,209
208.21	4,445	842	208.57	6,133	2,738	208.93	8,091	5,290
208.22	4,488	886	208.58	6,183	2,799	208.94	8,149	5,371
208.23	4,532	931	208.59	6,234	2,861	208.95	8,208	5,453
208.24	4,575	977	208.60	6,285	2,924	208.96	8,266	5,535
208.25	4,619	1,023	208.61	6,337	2,987	208.97	8,325	5,618
208.26	4,663	1,069	208.62	6,388	3,051	208.98	8,384	5,701
208.27	4,708	1,116	208.63	6,440	3,115	208.99	8,443	5,786
208.28	4,752	1,164	208.64	6,492	3,179	209.00	8,503	5,870
208.29	4,797	1,211	208.65	6,544	3,245	209.01	8,563	5,956
208.30	4,842	1,259	208.66	6,597	3,310	209.02	8,623	6,041
208.31	4,887	1,308	208.67	6,649	3,376	209.03	8,684	6,128
208.32	4,932	1,357	208.68	6,702	3,443	209.04	8,745	6,214
208.33	4,978	1,407	208.69	6,755	3,510	209.05	8,806	6,302
208.34	5,023	1,457	208.70	6,808	3,578	209.06	8,867	6,390
208.35	5,069	1,507	208.71	6,862	3,647	209.07	8,928	6,478

volume retained below lowest outlet

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Stage-Area-Storage for Pond 2P: XB-2 (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
209.08	8,908	6,567	209.44	10,845	10,116	209.80	12,973	14,398
209.09	8,959	6,656	209.45	10,902	10,225	209.81	13,035	14,528
209.10	9,010	6,746	209.46	10,959	10,335	209.82	13,097	14,659
209.11	9,062	6,836	209.47	11,015	10,444	209.83	13,159	14,790
209.12	9,114	6,927	209.48	11,072	10,555	209.84	13,222	14,922
209.13	9,165	7,018	209.49	11,129	10,666	209.85	13,284	15,055
209.14	9,217	7,110	209.50	11,187	10,777	209.86	13,347	15,188
209.15	9,270	7,203	209.51	11,244	10,890	209.87	13,409	15,322
209.16	9,322	7,296	209.52	11,302	11,002	209.88	13,472	15,456
209.17	9,374	7,389	209.53	11,359	11,116	209.89	13,535	15,591
209.18	9,427	7,483	209.54	11,417	11,230	209.90	13,598	15,727
209.19	9,480	7,578	209.55	11,475	11,344	209.91	13,662	15,863
209.20	9,532	7,673	209.56	11,533	11,459	209.92	13,725	16,000
209.21	9,585	7,768	209.57	11,592	11,575	209.93	13,789	16,137
209.22	9,639	7,865	209.58	11,650	11,691	209.94	13,852	16,276
209.23	9,692	7,961	209.59	11,709	11,808	209.95	13,916	16,414
209.24	9,745	8,058	209.60	11,768	11,925	209.96	13,980	16,554
209.25	9,799	8,156	209.61	11,826	12,043	209.97	14,045	16,694
209.26	9,853	8,254	209.62	11,886	12,162	209.98	14,109	16,835
209.27	9,907	8,353	209.63	11,945	12,281	209.99	14,173	16,976
209.28	9,961	8,453	209.64	12,004	12,400	210.00	14,238	17,118
209.29	10,015	8,552	209.65	12,064	12,521	210.01	14,285	17,261
209.30	10,069	8,653	209.66	12,123	12,642	210.02	14,333	17,404
209.31	10,124	8,754	209.67	12,183	12,763	210.03	14,381	17,548
209.32	10,178	8,855	209.68	12,243	12,885	210.04	14,428	17,692
209.33	10,233	8,957	209.69	12,303	13,008	210.05	14,476	17,836
209.34	10,288	9,060	209.70	12,363	13,131	210.06	14,524	17,981
209.35	10,343	9,163	209.71	12,424	13,255	210.07	14,572	18,127
209.36	10,398	9,267	209.72	12,484	13,380	210.08	14,620	18,273
209.37	10,454	9,371	209.73	12,545	13,505	210.09	14,668	18,419
209.38	10,509	9,476	209.74	12,605	13,631	210.10	14,716	18,566
209.39	10,565	9,581	209.75	12,666	13,757	210.11	14,764	18,713
209.40	10,621	9,687	209.76	12,728	13,884	210.12	14,812	18,861
209.41	10,677	9,794	209.77	12,789	14,012	210.13	14,861	19,010
209.42	10,733	9,901	209.78	12,850	14,140	210.14	14,909	19,158
209.43	10,789	10,008	209.79	12,912	14,269	210.15	14,958	19,308

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Stage-Area-Storage for Pond 2P: XB-2 (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
210.16	15,006	19,458	210.52	16,809	25,181
210.17	15,055	19,608	210.53	16,860	25,350
210.18	15,104	19,759	210.54	16,912	25,518
210.19	15,153	19,910	210.55	16,963	25,688
210.20	15,201	20,062	210.56	17,015	25,858
210.21	15,250	20,214	210.57	17,067	26,028
210.22	15,300	20,367	210.58	17,119	26,199
210.23	15,349	20,520	210.59	17,171	26,370
210.24	15,398	20,674	210.60	17,223	26,542
210.25	15,447	20,828			
210.26	15,497	20,983			
210.27	15,546	21,138			
210.28	15,596	21,294			
210.29	15,645	21,450			
210.30	15,695	21,606			
210.31	15,745	21,764			
210.32	15,795	21,921			
210.33	15,845	22,080			
210.34	15,895	22,238			
210.35	15,945	22,397			
210.36	15,995	22,557			
210.37	16,045	22,717			
210.38	16,096	22,878			
210.39	16,146	23,039			
210.40	16,196	23,201			
210.41	16,247	23,363			
210.42	16,298	23,526			
210.43	16,348	23,689			
210.44	16,399	23,853			
210.45	16,450	24,017			
210.46	16,501	24,182			
210.47	16,552	24,347			
210.48	16,603	24,513			
210.49	16,655	24,679			
210.50	16,706	24,846			
210.51	16,757	25,013			

Attachment D - Supporting Calculations

KEARSARGE - NORFOLK COUNTY AGRICULTURAL SCHOOL SOLAR

Walpole, MA

Revision 1

Standard 1: No New Untreated Discharges

Subcatchment	2-yr 24-hr Discharge Velocity (fps)	Discharge Location	Analysis Point	Permissible Velocity (fps)
A (Wetland)	0.71	Infiltration Basin 2P riprap spillway to riprap apron, sheet flow to vegetated wetland	WETLAND	4
B (Off-Site East)	1.48	Shallow flow offsite to the east.	OFFSITE (EAST)	4

Notes:

1. Velocities calculated using HydroCAD modeling software.
2. Permissible Velocities referenced from the Massachusetts Stormwater Handbook Volume 3 Table 2.3.1 Example of Permissible Velocity Table for slopes between 5-10%.

KEARSARGE - NORFOLK COUNTY AGRICULTURAL SCHOOL SOLAR
 Walpole, MA
 Revision 1

Standard 2: Peak Rate Attenuation

OFF-SITE SUMMARY		FLOW	REVISED DESIGN		VOLUME		
Sub-basin / Wetland	24-hour Storm Event	Existing Peak Runoff (cfs)	Proposed Peak Runoff (cfs)	Difference in Peak Runoff (cfs)	Existing Discharge Volume (af)	Proposed Discharge Volume (af)	Difference in Volume (af)
A WETLAND A	2	4.67	1.50	-3.17			
	10	21.35	17.36	-3.99			
	100	56.86	48.24	-8.62	4.797	4.290	-0.507
B OFF-SITE EAST	2	0.49	0.34	-0.15			
	10	2.51	1.73	-0.78			
	100	6.83	4.73	-2.10	0.504	0.349	-0.155

KEARSARGE - NORFOLK COUNTY AGRICULTURAL SCHOOL SOLAR
 Walpole, MA
 Revision 1

Standard 3: Recharge Calculations (Static Method)

Drainage Area A1

Hydrologic Soils Group:	A	B	C	D	
Total Proposed Impervious Area:	0.00	0.09	0.00	0.00	0.09 AC
Target Factor:	0.60	0.35	0.25	0.10	
<i>DA-A1 Required Recharge Volume:</i>	0	120	0	0	<i>120 CF</i>

Volume Below Lowest Outlet Basin 1P / XB-1: 2,930 CF
 Elevation of Lowest Invert Basin 1P / XB-1: 208.50

DA-A1 Total Recarge Volume Provided: 2,930 CF

Determine Drawdown Time

Saturated Hydraulic Conductivity (Rawls Rate): 1.02 IN/HR
 Bottom Area of Infiltration Basin 1P / XB-1 3,669 SF
Drawdown Time 1P / XB-1: 9.4 HRS

Drainage Area A2

Hydrologic Soils Group:	A	B	C	D	
Total Proposed Impervious Area:	0.00	0.002	0.00	0.00	0.00 AC
Target Factor:	0.60	0.35	0.25	0.10	
<i>DA-A2 Required Recharge Volume:</i>	0	2	0	0	<i>2 CF</i>

Volume Below Lowest Outlet Basin 2P / XB-2: 2,321 CF
 Elevation of Lowest Invert Basin 2P / XB-2: 208.50

DA-A2 Total Recarge Volume Provided: 2,321 CF

Determine Drawdown Time

Saturated Hydraulic Conductivity (Rawls Rate): 1.02 IN/HR
 Bottom Area of Infiltration Basin 2P / XB-2 3,586 SF
Drawdown Time 2P / XB-2: 7.6 HRS

Norfolk Agriculture School Solar Mounding Analysis

Revision 1

Analyzed with NRCS Web Soil Survey Data						BMP Design Feature								Hantush (1967) Equation Inputs ⁶							Calculated		
Infiltration Basin ID	NRCS Soil Group / Texture	Depth to SHGW (ft bgs)	DTB ¹ (ft bgs)	Existing Ground Surface EI (ft AMSL)	SHGW at Location (ft AMSL)	Infiltration Basin ID	HydroCAD ID	Top EI (ft AMSL)	Bottom EI (ft AMSL)	Surface Area (ft ²)	Length, x (ft)	Width, y (ft)	Depth to SHGW at BMP Bottom (ft bgs)	x/2 (ft)	y/2 (ft)	hi (ft)	Kh ^{note 2} (ft/day)	Kv ^{note 3} (ft/day)	R (ft/day)	Sy ^{note 4}	Mounding Height Above hi (ft)	GW Mounding Height (ft bgs)	GW Mounding Elevation (ft)
XB-1	B, Silty Loam	1.2	20.0	207.0	205.8	XB-1	1P	210.6	208.0	3669	200	20	2.2	100	10.0	18.8	20.4	2.04	2.04	0.2	2.26	-1.09	208.09
XB-2	B, Silty Loam	1.2	20.0	207.0	205.8	XB-2	2P	210.6	208.0	3586	275	10	2.2	138	5.0	18.8	20.4	2.04	2.04	0.2	2.26	-1.09	208.09

Notes:

1. Approximate Depth to Bedrock information based on drilling performed at a nearby project (approx. 4 miles away).
2. Hydraulic conductivities estimated based on the Rawls Rates on Table 2.3.3. of the Massachusetts Stormwater Handbook for the Hydrologic Soil Group Class on site. HSG-B soils observed on site with a Rawls Rate of 1.02 in/hr.
3. Vertical hydraulic conductivity (Kv) assumed to be 1/10 of horizontal hydraulic conductivity (Kh).
4. Specific yields estimated based on 1697 Morris and Johnson table with specific yield for various geologic materials.
5. Hantush Calculator used to calculate mounding height at each BMP, mounding analysis calculated for time period of 1 day. See mounding report for individual calculation outputs.

Acronyms:

AMSL = above mean sea level
 bgs = below ground surface
 BMP = Best Management Practice
 dtb = depth to bedrock
 dtgw = depth to seasonal high groundwater table
 ft = feet
 ft² = square feet
 hi = initial thickness of saturated zone (dtb - dtgw)
 Kh = horizontal hydraulic conductivity
 Kv = vertical hydraulic conductivity
 R = infiltration / recharge rate
 SHGW = seasonal high groundwater
 Sy = specific yield (effective porosity)

Mounding Analysis: XB-1

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0)), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.

Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. **The user MUST click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed** otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

Input Values		use consistent units (e.g. feet & days or inches & hours)	Conversion Table	
			inch/hour	feet/day
2.0400	R	Recharge (infiltration) rate (feet/day)	0.67	1.33
0.200	Sy	Specific yield, Sy (dimensionless, between 0 and 1)		
20.40	K	Horizontal hydraulic conductivity, Kh (feet/day)*	2.00	4.00
100.000	x	1/2 length of basin (x direction, in feet)		
10.000	y	1/2 width of basin (y direction, in feet)	hours	days
1.000	t	duration of infiltration period (days)	36	1.50
18.800	hi(0)	initial thickness of saturated zone (feet)		

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

21.056	h(max)	maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.256	Δh(max)	maximum groundwater mounding (beneath center of basin at end of infiltration period)

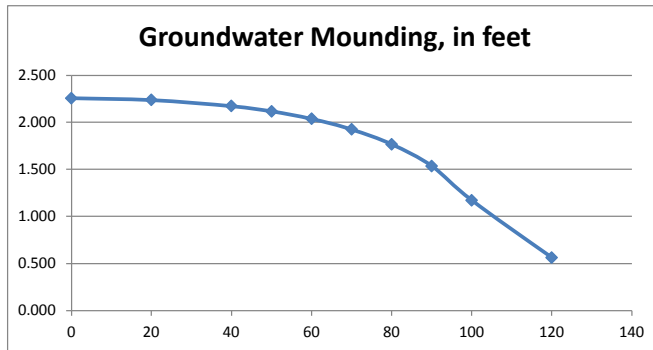
Ground-water Mounding, in feet

Distance from center of basin in x direction, in feet

2.256	0
2.237	20
2.173	40
2.117	50
2.037	60
1.925	70
1.767	80
1.535	90
1.172	100
0.564	120



Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

Mounding Analysis: XB-2

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0)), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.

Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. The user **MUST** click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

Input Values		use consistent units (e.g. feet & days or inches & hours)	Conversion Table		
			inch/hour	feet/day	
2.0400	R	Recharge (infiltration) rate (feet/day)	0.67	1.33	
0.200	Sy	Specific yield, Sy (dimensionless, between 0 and 1)			
20.40	K	Horizontal hydraulic conductivity, Kh (feet/day)*	2.00	4.00	In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).
138.000	x	1/2 length of basin (x direction, in feet)			
5.000	y	1/2 width of basin (y direction, in feet)	hours	days	
1.000	t	duration of infiltration period (days)	36	1.50	
18.800	hi(0)	initial thickness of saturated zone (feet)			

21.056	h(max)	maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.256	Δh(max)	maximum groundwater mounding (beneath center of basin at end of infiltration period)

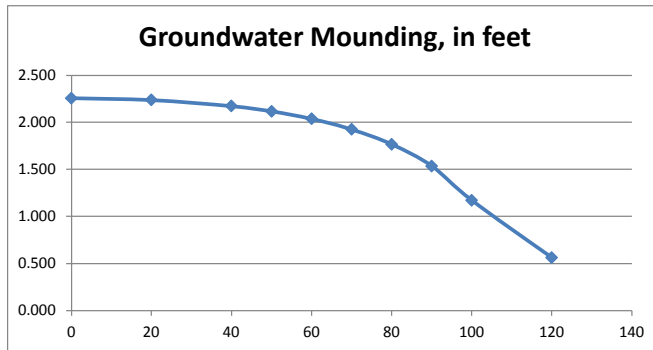
Ground-water Mounding, in feet

Distance from center of basin in x direction, in feet

2.256	0
2.237	20
2.173	40
2.117	50
2.037	60
1.925	70
1.767	80
1.535	90
1.172	100
0.564	120



Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

KEARSARGE - NORFOLK COUNTY AGRICULTURAL SCHOOL SOLAR

Walpole, MA

Revision 1

Standard 4: Water Quality Volume

Required Water Quality Storage

Water Quality Volume = 1 in x R_{wqv} x Impervious Area (sqft) x 1 ft / 12 in

R_{wqv} = 0.05 + 0.009 I ; I = % Impervious Area

Drainage Area	Drainage Area (sqft)	Proposed Impervious Area (sqft)	I %	R _{wqv}	Required WQ Volume (cf)	Provided WQ Volume (cf)
A1 (Treated w/ Infiltration Basin 1P / XB-1)	510,241	6,441	1.26	0.061	32.9	2,930
A2 (Treated w/ Infiltration basin 2P / XB-2)	231,741	74	0.03	0.050	0.3	2,321

Notes:

1. Provided water quality volume is calculated in the HydroCAD model based on the total storage volume available in the basin, below the first discharge outlet.

INSTRUCTIONS:

Version 1, Automated: Mar. 4, 2008

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Location:

	B	C	D	E	F
	BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
TSS Removal Calculation Worksheet	Vegetated Filter Strip >25 feet	0.10	1.00	0.10	0.90
	Infiltration Basin	0.80	0.90	0.72	0.18
		0.00	0.18	0.00	0.18
		0.00	0.18	0.00	0.18
		0.00	0.18	0.00	0.18

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Agricultural School Solar
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP

INSTRUCTIONS:

Version 1, Automated: Mar. 4, 2008

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Location:

	B BMP ¹	C TSS Removal Rate ¹	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
TSS Removal Calculation Worksheet	Vegetated Filter Strip >25 feet	0.10	1.00	0.10	0.90
	Infiltration Basin	0.80	0.90	0.72	0.18
		0.00	0.18	0.00	0.18
		0.00	0.18	0.00	0.18
		0.00	0.18	0.00	0.18

Total TSS Removal =

**Separate Form Needs to
be Completed for Each
Outlet or BMP Train**

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E)
which enters the BMP

Attachment E - Long Term Pollution Prevention Plan

To meet the requirements of Standard 4 of the Massachusetts Stormwater Handbook, this Long Term Pollution Prevention Plan is provided to identify the proper procedures and practices for source control and pollution prevention.

Storage and Handling of Oil and other Hazardous Materials

There will be no hazardous materials stored or handled onsite with the exception of fuel for construction equipment. Fuel will be stored in approved storage containers, outside of wetland resource areas and associated buffer zones.

Operation and Maintenance of Stormwater Control Structures

Included in **Attachment F** is the Operation and Maintenance Plan for this site, which includes maintenance requirements of the stormwater BMP's. Kearsarge Walpole LLC, or their Contractor, will be responsible for the implementation of the plan.

Landscaping

The landscaped areas will be maintained by Kearsarge Walpole LLC maintenance staff.

Septic System

There will be no septic system or wastewater produced on site.

Non-Hazardous Waste Management/Good Housekeeping Practices

All non-hazardous waste is to be stored in designated trash or recycling containers onsite for periodic collection by the local trash collector or Contractor during construction. Following construction, all non-hazardous waste should not be stored onsite. Kearsarge Walpole LLC maintenance staff should inspect the site during maintenance visits and if trash is observed, it should be collected and removed from the site.

Prohibition of Illicit Discharges

Illicit discharges to the on-site stormwater management system are strictly prohibited. Illicit discharges are defined as any direct or indirect non-stormwater discharge to the on-site stormwater system. There are no existing illicit discharges associated with the project.

Attachment F - Stormwater Operation & Maintenance Plan

1.0 Introduction

The following document has been written to comply with the stormwater guidelines set forth by the Massachusetts Department of Environmental Protection (MassDEP) and the Town of Walpole Stormwater Management and Erosion Control Bylaw. The intent of these guidelines is to encourage Low Impact Development techniques to improve the quality of the stormwater runoff. These techniques, also known as Best Management Practices (BMPs) collect, store, and treat the runoff before discharging to adjacent environmental resources.

2.0 Purpose

This Stormwater Operation and Maintenance Plan (O&M Plan) is intended to provide a mechanism for the consistent inspection and maintenance of each BMP installed on the project site. Included in this O&M Plan is a description and an inspection form for each BMP type.

Kearsarge Walpole LLC is the owner and operator of the system and is responsible for its upkeep and maintenance. This work will be funded on an annual basis through the owner's operating budget.

3.0 BMP Descriptions and Locations

3.1 Infiltration Basins

There are two (2) new infiltration basins on the site that will receive stormwater. These basins provide infiltration and detention to treat stormwater and to attenuate stormwater runoff rates from the site.

3.2 Outlet Control Structures

There is a rip-rap apron located at each infiltration basin. The purpose of the rip-rap aprons is to control erosion and reduce stormwater velocity at the outlet of each infiltration basin.

3.3 Grassed Channel

There is a proposed grassed channel along the northwest border of the site which will direct runoff from the site to the infiltration basins.

4.0 Inspection, Maintenance Checklist and Schedule

All inspection and maintenance of stormwater BMPs should be in accordance with Volume 2 Chapter 2: Structural BMP Specifications for the Massachusetts Stormwater Handbook.

4.1 Infiltration Basins

Stormwater infiltration basins are to be inspected every three months during the first year, and twice per year thereafter. Basins are also to be inspected following a major storm event that is greater than the 2-year, 24-hour storm (3 inches per 24-hour period). Inspections are to include all items noted below.

- Signs of differential settlement,
- Cracking,
- Erosion,
- Leakage in the embankments,
- Condition of riprap,
- Sediment accumulation, and
- The health of the turf.

All accumulated sediment and debris in the stormwater basins will be removed and disposed of in accordance with local, state, and federal regulations. Sediment should not be removed from the basin until the floor of the basin is thoroughly dry and care should be taken when removing sediment so that the underlying soil is not compacted. Vegetation in basin bottoms will be inspected for degradation and any accumulated sediment will be removed and bare spots will be re-seeded as needed.

Any vegetation, soil, or debris that forms a barrier to flow will be removed. If any soil erosion is noted, erosion will be repaired, and bare spots will be armored with stone riprap. Embankments, spillways, and swales will likewise be inspected for blockage or damage. Any accumulated debris that may impede stormwater flow will be removed, and any noted erosion will be repaired with stone riprap.

4.2 Vegetated Filter Strips

Vegetated Filter strips are to be inspected semi-annually during the first year, and annually thereafter. The filter strips should be inspected for sediment buildup, signs of erosion, bare spots, and overall health. Sediment should be removed from the toe of the slope, and bare spots should be reseeded as necessary. Mowing should be conducted as needed during routine mowing events scheduled for the site.

4.3 Grassed Channel

Grassed Channels are to be inspected semi-annually during the first year and annually thereafter. Inspect the grass for growth and the side slopes for signs of erosion and formation of rills and gullies. Inspect on a annually for sediment buildup and use hand methods when cleaning to minimize disturbance to vegetation and underlying soils. Bare spots should be reseeded as necessary. Remove accumulated trash and debris prior to mowing. Mowing should be conducted as needed during the routine mowing events scheduled for the site. Mow so that the grass height does not exceed 6 inches.

4.4 Inspections and Record Keeping

- An inspection form must be filled out every time maintenance work is performed.
- A binder is to be kept that contains all of the completed inspection forms and any other related materials.
- A review of Operation & Maintenance actions should take place annually such that the Stormwater BMPs and vegetative cover are being maintained in accordance with this Operation & Maintenance Plan.
- Operation & Maintenance log forms for the last three years, at a minimum, should be maintained.
- The inspection and maintenance schedule may be refined in the future based on the findings and results of this Operation & Maintenance program or policy.

5.0 Owner Certification

The owner acknowledges that the Conservation Commission will be notified if there is a change in ownership or change in assignment of financial responsibility of the project. The owner acknowledges that any amendments to the O&M agreement shall be made in writing to the Conservation Commission and shall be signed by the responsible parties.

The owner/applicant shall be responsible for the operation and maintenance.

The owner/applicant shall be responsible for financing maintenance and any emergency repairs.

Owner/Applicant Name: Kearsarge Walpole LLC

Owner/Applicant Address: 1380 Soldiers Field Road,
Suite 3900
Boston, MA 02135

Owner/Applicant Phone: 617-331-2659

Owner/Applicant Email: dvoss@kearsargeenergy.com

Stormwater Operation and Maintenance Plan

INSPECTION CHECKLIST SHEETS

Stormwater Infiltration Basin

Frequency: The stormwater basins should be inspected every three months during the first year and twice a year thereafter. Basins are also to be inspected following a major storm event that is greater than the 2-year, 24-hour storm (3 inches per 24-hour period).

Structure No.: _____

Inspected By: _____ Date: _____

Observations: _____

Actions Taken: _____

Instructions: Inspect grassed area. Mow grass as needed in basins. Remove accumulated trash and debris. Remove sediment and re-seed bare spots as needed, including in basin bottom. Inspect embankments, spillways, and swales for erosion or blockage. Repair erosion with riprap, remove blockage as needed. All trash, debris, and sediments should be disposed of in accordance with local, state, and federal regulations.

INSPECTION CHECKLIST SHEETS

Vegetated Filter Strip

Frequency: Inspect semi-annually during the first year, and annually thereafter.

Structure No: _____

Inspected By: _____ Date: _____

Observations: _____

Actions Taken: _____

Instructions: The vegetated filter strips should be inspected for sediment buildup, signs of erosion, bare spots, and overall health. Sediment should be removed from the toe of the slope, and bare spots should be reseeded as necessary. Mowing should be conducted as needed during routine mowing events scheduled for the site.

Attachment G - Construction Period Pollution and Erosion and Sedimentation Plan

SECTION 1: Introduction

The proposed project is located at 1377 North Street in Walpole, Massachusetts. The site predominantly consists of open fields with minimal wooded areas and some old building foundations. The site slopes up to the west from North Street to the peak of a hill and then slopes west/southwest toward wetland areas along the southwest border of the property. An existing water easement runs through the middle portion of the property. The properties involved with this project are all owned by Norfolk County Agricultural School with a combined total land area of approximately 67.5 acres and include the parcels with Map#/Parcel# based on the Walpole Assessors Office records of 5/33, 5/35, and 5/36.

The proposed development is approximately 17.5 acres for the installation of a 5 MW (AC) solar photovoltaic (PV) array and battery energy storage system.

As part of this project, this "Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan" has been created to minimize erosion and sedimentation during the implementation of the project.

SECTION 2: Construction Period Pollution Prevention Measures

Best Management Practices (BMPs) will be utilized as Construction Period Pollution Prevention Measures to minimize erosion and sedimentation. The objectives of the BMPs for construction activity are to minimize the disturbed areas, stabilize any disturbed areas, control the site perimeter, and retain sediment. Both erosion and sedimentation controls and non-stormwater best management measures will be used to minimize site disturbance and ensure compliance with the performance standards of the Wetlands Protection Act and Stormwater Standards. Measures will be taken to minimize the area disturbed by construction activities to reduce the potential for soil erosion and stormwater pollution problems. In addition, good housekeeping measures will be followed for the day-to-day operation of the construction site under the control of the contractor to minimize the impact of construction. This section describes the control practices that will be in place during construction activities. Recommended control practices will comply with the standards set in the MassDEP Stormwater Policy Handbook.

2.1 Minimize Disturbed Area and Protect Natural Features and Soil

In order to minimize disturbed areas, work will be completed within well-defined work limits. These work limits are shown on the construction plans. The Contractor will not disturb native vegetation in the undisturbed wetland area. The Contractor will be responsible to make sure that their workers and any subcontractors know the proper work limits and do not extend their work into the undisturbed areas. The protective measures are described in more detail in the following sections.

2.2 Control Stormwater Flowing onto and through the Project

Construction areas adjacent to wetland resources 100 ft buffer zone will be lined with straw wattle sediment barriers. The barriers will be inspected at least once every 7 calendar days, or every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater, and accumulated silt will be removed as needed.

2.3 Stabilize Soils

The Contractor should limit the area of land which is exposed and unvegetated during construction. In areas where the period of exposure will be greater than two (2) months, mulching, the use of erosion control mats, or other protective measures will be provided as specified on the plans.

The Contractor should follow the seeding requirements outlined on the plans and will be responsible for maintaining the seeded areas until final acceptance is received. Final acceptance after 90 days following construction, or until the site reaches 70% stabilization, whichever is longer.

2.4 Proper Storage and Cover of Any Stockpiles

The location of the Contractor's storage areas for equipment and/or materials should be upon cleared portions of the job site or areas to be cleared as a part of this project, outside of wetlands and wetland buffer areas.

Adequate measures for erosion and sediment control such as the placement of straw wattle sediment barriers around the downstream perimeter of stockpiles will be employed to protect any downstream areas from siltation.

There will be no storage of equipment or materials in areas designated as wetlands.

2.5 Perimeter Controls and Sediment Barriers

Straw wattle as described in Section 5 will be utilized to ensure that sedimentation does not occur outside the perimeter of the work area.

2.6 Storm Drain Inlet Protection

There are no storm drains in the work area.

2.7 Retain Sediment On-Site

The Contractor will be responsible to monitor erosion control measures. Whenever necessary, the Contractor will clear sediment from the straw wattle sediment barriers that have been silted up during construction. Inspections must be documented using the attached Monitoring Form.

2.8 Material Handling and Waste Management

Materials stored on-site will be stored in a neat, orderly manner in appropriate containers. Materials will be kept in their original containers with the original manufacturer's label. Substances will not be mixed with one another unless recommended by the manufacturer.

Waste materials will be collected and stored in a securely lidded metal container from a licensed management company. The waste and any construction debris from the site will be hauled off-site and disposed of properly. The contractor will be responsible for waste removal. Manufacturer's recommendations for proper use and disposal will be followed for materials. If portable sanitary waste facilities will be used on-site, sanitary waste will be collected from the units a minimum of once a week, by a licensed sanitary waste management contractor.

2.9 Designated Washout Areas

The Contractor should use washout facilities at their own facilities.

2.10 Proper Equipment/Vehicle Fueling and Maintenance Practices

On-site vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the risk of leakage. To ensure that leaks from stored equipment do not contaminate the site, oil-absorbing mats will be placed under oil-containing equipment during storage. Regular fueling and service of the equipment may be performed using approved methods and with care taken to minimize chance of spills. Repair of equipment or machinery within the 100 ft water resources area is not allowed. Any petroleum products will be stored in tightly sealed containers that are clearly labeled with spill control pads/socks placed under/around their perimeters.

2.11 Equipment/Vehicle Washing

The Contractor will be responsible to ensure that no equipment is washed on-site.

SECTION 3: Spill Prevention and Control Plan

The Contractor will be responsible for preventing spills in accordance with the project drawings and applicable federal, state, and local regulations. The Contractor will identify a properly trained site employee, involved with the day-to-day site operations to be the spill prevention and cleanup coordinator. The name(s) of the responsible spill personnel will be posted on-site. Each employee will be instructed that all spills are to be reported to the spill prevention and cleanup coordinator.

3.1 Spill Control Equipment

Spill control/containment equipment will be kept in the work area. Materials and equipment necessary for spill cleanup will be kept either in the work area or in an otherwise accessible on-site location. Equipment and materials will include, but not be limited to, absorbent booms/mats, brooms, dust pans, mops, rags, gloves, goggles, sand, plastic and metal containers specifically for this purpose. It is the responsibility of the Contractor to ensure the inventory will be readily accessible and maintained.

3.2 Notification

Workers will be directed to inform the on-site supervisor of a spill event. The supervisor will assess the incident and initiate proper containment and response procedures immediately upon notification. Workers should avoid direct contact with spilled materials during the containment procedures. Primary notification of a spill should be made to the local Fire Department and Police Departments. Secondary Notification will be to the certified cleanup contractor if deemed necessary by Fire and/or Police personnel. The third level of notification (within 1 hour), if required, is to the DEP or municipality's Licensed Site Professional (LSP) if the spill exceeds the reportable quantity for the material spilt. The specific cleanup contractor to be used will be identified by the Contractor prior to commencement of construction activities.

3.3 Spill Containment and Clean-Up Measures

Spills will be contained with granular sorbent material, sand, sorbent pads, booms or all of the above to prevent spreading. Certified cleanup contractors should complete spill cleanup. The material manufacturer's recommended methods for spill cleanup will be clearly posted and on-site personnel will be made aware of the procedures and the location of the information and cleanup supplies.

3.4 Hazardous Materials Spill Report

The Contractor will report and record any spill. The spill report will present a description of the release, including the quantity and type of material, date of the spill, circumstances leading to the release, location of spill, response actions and personnel, documentation of notifications and corrective measures implemented to prevent reoccurrence.

This document does not relieve the Contractor of the Federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117, 40 CFR Part 302 and the State requirements specified under the Massachusetts Contingency Plan (M.C.P) relating to spills or other releases of oils or hazardous substances. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a twenty-four (24) hour period, the Contractor is required to comply with the response requirements of the above mentioned regulations. Spills of oil or hazardous material in excess of the reportable quantity will be reported to the National Response Center (NRC).

SECTION 4: Contact Information/Responsible Parties**Owner/Operator:**

Kearsarge Walpole LLC
Daniel Voss
1380 Soldiers Field Road, Suite 3900
Boston, Massachusetts 02135
617-331-2659
Dvoss@kearsargeenergy.com

Engineer:

Rob Bukowski, PE
Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100
Reading, MA 01867
978-532-1900
Bukowski.rob@wseinc.com

Site Inspector:

TBD

Contractor:

TBD

SECTION 5: Erosion and Sedimentation Control

Erosion and Sedimentation Control Drawings can be found in the attached project plans which include technical specifications for installation and monitoring control devices.

SECTION 6: Site Development Plan

The proposed site development plan is included in the attached plans.

SECTION 7: Operation and Maintenance of Erosion Control

The erosion control measures will be installed as detailed in project plans. If there is a failure of the controls, the Contractor is required to stop work until the failure is repaired.

Periodically throughout the work, the sediment that has been deposited against the controls will be removed to ensure that the controls are working properly.

SECTION 8: Inspection Schedule

During construction, the erosion and sedimentation controls will be inspected at least once every 7 calendar days, or every 14 calendar days and within 24 hours of the end of a storm event of 0.25 inches or greater. Once the Contractor is selected, an on-site inspector will be identified to ensure that erosion and sedimentation controls are in place and working properly. A Monitoring Form is included for use by the on-site inspector.

CONSTRUCTION PERIOD POLLUTION PREVENTION AND
EROSION AND SEDIMENTATION CONTROL PLAN

Monitoring Form

Inspected By: _____ Date: _____ Time: _____

YES	NO	DOES NOT APPLY	ITEM
			Do any erosion/sedimentation control measures require repair or clean out to maintain adequate function?
			Is there any evidence that sediment is leaving the site and entering the wetlands?
			Are any temporary soil stockpiles or construction materials located in non-approved areas?
			Are on-site construction traffic routes, parking, and storage of equipment and supplies located in areas not specifically designed for them?
			Are fuel storage areas located outside of resource areas and associated buffer zones? Are fuels stored in proper storage containers?

Specific location, current weather conditions, and action to be taken:

Other Comments:

Pending the actions noted above I certify that the erosion and sedimentation controls at the site are in compliance with the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan.

Signature: _____ Date: _____

.....

ATTACHMENT C – Stormwater Pollution Prevention Plan

Stormwater Pollution Prevention Plan (SWPPP)

For Construction Activities At:

Norfolk County Agricultural School
1377 North Street
Walpole, Massachusetts 02081

SWPPP Prepared For:

Kearsarge Walpole LLC
1380 Soldiers Field Road, Suite 3900
Boston, MA 02135
(617) 331-2659

SWPPP Prepared By:

Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100
Reading, MA 01867
(978) 532-1900

SWPPP Preparation Date:

02/16/2024

Estimated Project Dates:

Project Start Date: 09/01/2024

Project Completion Date: 05/15/2025

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SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES

1.1 Operator(s) / Subcontractor(s)

Operator(s):

Kearsarge Walpole LLC
Daniel Voss
1380 Soldiers Field Road, Suite 3900
Boston, MA 02135
(617) 331-2659

Subcontractor(s):

TBD

Emergency 24-Hour Contact:

Kearsarge Walpole LLC
1380 Soldiers Field Road, Suite 3900
(617) 331-2659

Walpole Fire Department
20 Stone Street, Walpole, MA 02081
(508) 668-0260

Walpole Police Department
50 South Street, Walpole, MA 02081
(508) 668-1212

Department of Environmental Protection
Southeast Regional Office
20 Riverside Drive, Lakeville, MA 02347
(508) 946-2700

Department of Environmental Protection
Emergency Response
1-888-304-1133

Natural Response Center (NRC)
1-800-424-8802

1.2 Stormwater Team

Stormwater Team

Name and/or Position, and Contact	Responsibilities	I Have Completed Training Required by CGP Part 6.2	I Have Read the CGP and Understand the Applicable Requirements
TBD	Engineering Oversight	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes Date: Click here to enter a date.
TBD	Design Engineer/Project Manager	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes
TBD	Engineer of Record	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes

Stormwater Team Members Who Conduct Inspections Pursuant to CGP Part 4

Name and/or Position and Contact	Training(s) Received	Date Training(s) Completed	If Training is a Non-EPA Training, confirm that it Satisfies the Minimum Elements of CGP Part 6.3.b
TBD	EPA Construction General Permit(CGP) Site Inspector Training Course	Date: Click here to enter a date.	
TBD	Qualified Compliance Inspector of Stormwater	Date: Click here to enter a date.	<input type="checkbox"/> Principles and practices of erosion and sediment control and pollution prevention practices at construction sites <input type="checkbox"/> Proper installation and maintenance of erosion and sediment controls and pollution prevention practices used at construction sites <input type="checkbox"/> Performance of inspections, including the proper completion of required reports and documentation, consistent with the requirements of Part 4

SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

2.1 Project/Site Information

Project Name and Address

Project/Site Name: 5 MW AC Solar Photovoltaic Development

Street/Location: 1377 North Street

City: Walpole

State: Massachusetts

ZIP Code: 02081

County or Similar Government Division: Norfolk County

Project Latitude/Longitude

Latitude: 42°11'48.53" N

Longitude: 71°15'0.60" W

(decimal degrees)

(decimal degrees)

Latitude/longitude data source: Map GPS Other (please specify): _Google Earth_

Horizontal Reference Datum: NAD 27 NAD 83 WGS 84

Additional Site Information

Is your site located on Indian country lands, or on a property of religious or cultural significance to an Indian Tribe? Yes No

If yes, provide the name of the Indian Tribe associated with the area of Indian country (including the name of Indian reservation if applicable), or if not in Indian country, provide the name of the Indian Tribe associated with the property: N/A

2.2 Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? Yes No

Are there any waters of the U.S. within 50 feet of your project's earth disturbances? Yes No

For each point of discharge, provide a point of discharge ID (a unique 3-digit ID, e.g., 001, 002), the name of the first receiving water that receives stormwater directly from the point of discharge and/or from the MS4 that the point of discharge discharges to, and the following receiving water information, if applicable:

Point of Discharge ID	Name of receiving water that receives stormwater discharge:	Is the receiving water impaired (on the CWA 303(d) list)?	If yes, list the pollutants that are causing the impairment:	Has a TMDL been completed for this receiving waterbody?	If yes, list TMDL Name and ID:	Pollutant(s) for which there is a TMDL:	Is this receiving water designated as a Tier 2, Tier 2.5, or Tier 3 water?	If yes, specify which Tier (2, 2.5, or 3)?
001	Unnamed Intermittent Stream Southwest of the Site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

2.3 Nature of the Construction Activities

General Description of Project

Provide a general description of the nature of your construction activities, including the age or dates of past renovations for structures that are undergoing demolition:

The proposed project will construct a ground mounted solar photovoltaic (PV) and associated battery energy storage system (BESS) located at 1377 North Street, Walpole, Massachusetts. The site includes vegetated fields with wooded and wetlands areas, and a single family dwelling structure. The wetland resource areas are along the southwest corner of the site. An existing paved driveway exists at 1377 North Street. The proposed project consists of an approximately 5.0 MW AC solar array with associated battery storage and covers an area of approximately 17.5 acres. The project will require clearing. Work will include the following components:

- Installation of perimeter E&S Controls;
- Installation of temporary sedimentation controls;
- Installation of a concrete access road;
- Installation of long-term stormwater control measures;
- Installation of PV modules;
- Installation of an equipment pad(s) for secondary power generation equipment;
- Installation of fence;
- Permanent seeding

Site plans for the proposed work outlined above are included in Appendix B.

Size of Construction Site

Size of Property	~54.2 acres
Total Area Expected to be Disturbed by Construction Activities	~17.5 acres
Maximum Area Expected to be Disturbed at Any One Time, Including On-site and Off-site Construction Support Areas	~17.5 acres

Type of Construction Site (check all that apply):

- Single-Family Residential
 Multi-Family Residential
 Commercial
 Industrial
 Institutional
 Highway or Road
 Utility
 Other: Solar Array

Will you be discharging dewatering water from your site? Yes No

If yes, will you be discharging dewatering water from a current or former Federal or State remediation site? Yes No

Pollutant-Generating Activities

List and describe all pollutant-generating activities and indicate for each activity the associated pollutants or pollutant constituents that could be discharged in stormwater from your construction site. Take into account where potential spills and leaks could occur that contribute pollutants to stormwater discharges, and any known hazardous or toxic substances, such as PCBs and asbestos, that will be disturbed during construction.

Pollutant-Generating Activity (e.g., paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering operations)	Pollutants or Pollutant Constituents (e.g., sediment, fertilizers, pesticides, paints, caulks, sealants, fluorescent light ballasts, contaminated substrates, solvents, fuels)
Disturbance of soil on slopes	Soil Erosion/Sediment
Material Delivery and Storage	Sediment, nutrients, heavy metals, pH, oil & grease, trash/debris/solids
Material use during building process	Heavy metals, pH, oil & grease trash/debris/solids
Solid Waste (trash and debris)	Construction demolition, trash/debris/solids
Construction areas	Vehicle fluids, solvents
Portable toilets	Sewage, liquid deodorizer
Vehicle/Equipment Use and Storage & Fuel tanks	Fuel oil, gasoline, and other fuels
Staging areas	Soil erosion, fuels, gasoline, vehicle fluids, antifreeze/coolant, hydraulic oil, fluids, etc.

Construction Support Activities *(only provide if applicable)*

Describe any construction support activities for the project (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas):

All supported activities will be within the defined limits of work as shown in the plans in **Appendix B** of this SWPPP.

Contact information for construction support activity:

TBD

2.4 Sequence and Estimated Dates of Construction Activities

Phase I

Mobilization, temporary facilities, temporary E&S controls	
Estimated Start Date of Construction Activities for this# Phase	9/1/2024
Estimated End Date of Construction Activities for this #Phase	9/15/2024
Estimated Date(s) of Application of Stabilization Measures for Areas of the Site Required to be #Stabilized	N/A
Estimated Date(s) when Stormwater Controls will be #Removed	5/15/2025 (temporary measures)

Phase II

Earth disturbing activities	
Estimated Start Date of Construction Activities for this #Phase	9/17/2024
Estimated End Date of Construction Activities for this #Phase	12/18/2024
Estimated Date(s) of Application of Stabilization #Measures for Areas of the Site Required to be Stabilized	9/17/2024
Estimated Date(s) when Stormwater Controls will be #Removed	5/15/2025 (temporary measures)

Phase III

Solar PV equipment construction	
Estimated Start Date of Construction Activities for this# Phase	12/5/2024
Estimated End Date of Construction Activities for this #Phase	3/5/2025
Estimated Date(s) of Application of Stabilization #Measures for Areas of the Site Required to be Stabilized	N/A
Estimated Date(s) when Stormwater Controls will be #Removed	5/15/2025 (temporary measures)

Phase IV

Final Site Restoration	
Estimated Start Date of Construction Activities for this# Phase	4/15/2025
Estimated End Date of Construction Activities for this #Phase	5/15/2025
Estimated Date(s) of Application of Stabilization #Measures for Areas of the Site Required to be Stabilized	N/A
Estimated Date(s) when Stormwater Controls will be #Removed	5/15/2025 (temporary measures)

2.5 Authorized Non-Stormwater Discharges

List of Authorized Non-Stormwater Discharges Present at the Site

Authorized Non-Stormwater Discharge	Will or May Occur at Your Site?
Discharges from emergency fire-fighting activities	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Fire hydrant flushings	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Landscape irrigation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Water used to wash vehicles and equipment*	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Water used to control dust	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Potable water including uncontaminated water line flushings	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
External building washdown (soaps/solvents are not used and external surfaces do not contain hazardous substances)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Pavement wash waters	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Uncontaminated air conditioning or compressor condensate	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Uncontaminated, non-turbid discharges of ground water or spring water	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foundation or footing drains	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Uncontaminated construction dewatering water	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

2.6 Site Maps

Site maps can be found in **Appendix B**

SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS

3.1 Endangered Species Protection

Eligibility Criterion

Following the process outlined in Appendix D, under which criterion are you eligible for coverage under this permit?

- Criterion D: Coordination with USFWS and/or NMFS has successfully concluded.**
Coordination between you and the USFWS and/or NMFS has concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat under the jurisdiction of USFWS and/or NMFS, and resulted in a written confirmation from USFWS and/or NMFS that the effects of your site's discharges and discharge-related activities are not likely to result in any short- or long-term adverse effects. By certifying eligibility under this criterion, you agree to comply with any conditions you must meet for your site's discharges and discharge-related activities to not likely result in any short- or long-term adverse effects. You must include copies of the correspondence with the participating agencies in your SWPPP and this NOI.
- Check to confirm you have provided documentation in your SWPPP as required by CGP Appendix D.

Documentation: See Appendix K for Consistency Letter from USFWS

3.2 Historic Property Screening Process

Appendix E, Step 1

Do you plan on installing any stormwater controls that require subsurface earth disturbance, including, but not limited to, any of the following stormwater controls at your site? Check all that apply below, and proceed to Appendix E, Step 2.

- Dike
- Berm
- Catch Basin
- Pond
- Constructed Site Drainage Feature (e.g., ditch, trench, perimeter drain, swale, etc.)
- Culvert
- Channel
- Other type of ground-disturbing stormwater control: Infiltration Basins

Appendix E, Step 2

If you answered yes in Step 1, have prior professional cultural resource surveys or other evaluations determined that historic properties do not exist, or have prior disturbances at the site have precluded the existence of historic properties? YES NO

- If yes, no further documentation is required for Section 3.2 of the Template and you may provide the prior documentation in your SWPPP.
 - See **Appendix L** for further documentation.

- If no, proceed to Appendix E, Step 3.

3.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls? Check all that apply below.

- Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)
- Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow
- Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

None of the above are proposed for this project.

SECTION 4: EROSION AND SEDIMENT CONTROLS AND DEWATERING PRACTICES

4.1 Natural Buffers or Equivalent Sediment Controls

Buffer Compliance Alternatives

Are there any receiving waters within 50 feet of your project's earth disturbances? YES NO

(Note: If no, no further documentation is required for Section 4.1 in the SWPPP Template.
Continue to Section 4.2.)

Check the compliance alternative that you have chosen:

- (i) I will provide and maintain a 50-foot undisturbed natural buffer.

(Note 1: You must show the 50-foot boundary line of the natural buffer on your site map.)

(Note 2: You must show on your site map how all discharges from your construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.)

- (ii) I will provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls that achieve, in combination, the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

(Note 1: You must show the boundary line of the natural buffer on your site map.)

(Note 2: You must show on your site map how all discharges from your construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.)

- (iii) It is infeasible to provide and maintain an undisturbed natural buffer of any size, therefore I will implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

- I qualify for one of the exceptions in Part 2.2.1.b. (If you have checked this box, provide information on the applicable buffer exception that applies, below.)

Buffer Exceptions

Which of the following exceptions to the buffer requirements applies to your site?

- There is no discharge of stormwater to waters of the U.S. through the area between the disturbed portions of the site and any waters of the U.S. located within 50 feet of your site.
- No natural buffer exists due to preexisting development disturbances (e.g., structures, impervious surfaces) that occurred prior to the initiation of planning for this project.
- For "linear construction sites" (defined in Appendix A), site constraints (e.g., limited right-of-way) make it infeasible to meet any of the CGP Part 2.2.1.a compliance alternatives,

provided that, to the extent feasible, you limit disturbances within 50 feet of the receiving water.

- The project qualifies as “small residential lot” construction (defined in Appendix A as “a lot being developed for residential purposes that will disturb less than 1 acre of land, but is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre”) (see Appendix F, Part F.3.2).

- Buffer disturbances are authorized under a CWA Section 404 permit.

- Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail).

4.2 Perimeter Controls

General

- In accordance with CGP Part 2.2.3, sediment controls shall be installed and maintained along those perimeter areas of the site that shall receive stormwater from earth-disturbing activities.

Specific Perimeter Controls

Straw Wattle	
Description: Compost filter sock will be placed downslope around the western and southern limits of work and shall be installed parallel to existing ground contours.	
Installation	Prior to land disturbing activities
Maintenance Requirements	<p>Inspection either once every 7 calendar days, or once every 14 calendar days and within 24 hours after every major rainfall runoff event which totals over ¼ inches of precipitation.</p> <p>Sediment shall be removed when it becomes 4 inches deep or when accumulations have adversely affected perimeter controls. After a storm event, if there is evidence of stormwater circumventing or undercutting the erosion control, repair or replace the control as needed to fix the problem.</p> <p>If the material tears, decomposes, or in any way becomes ineffective, replace it immediately.</p>
Design Specifications	Design specifications are in the plan drawings in Appendix B.

4.3 Sediment Track-Out

General

- In accordance with the CGP, vehicle use shall be restricted to properly designated entrance/exit points. If needed, additional track-out controls (e.g., wheel washing rumble strips, or rattle plates) shall be installed to promote sediment removal prior to vehicle exit.
- It is prohibited to hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet, or water of the U.S.

Specific Track-Out Controls

Stone Tracking Pad/Construction Entrance	
Description: A temporary stone tracking pad at least 50 feet in length will be located at a point of vehicular ingress and egress to provide a stable entrance and exit and keep mud and sediment off of public roads. The construction entrance is to be located at the beginning of the existing driveway off North Street. The construction entrance/exit is to be at the full width of site entrance and a minimum of 15 feet wide, made of 3" clear or washed/reclaimed stone of a minimum thickness of 10" and underlain by filter cloth.	
Installation	Prior to earth disturbing activities
Maintenance Requirements	<p>Where sediment has been tracked-out from the site onto paved roads, sidewalks, or other paved areas outside of the site, deposited sediment shall be removed by the end of the same business day in which the track-out occurs or by the end of the next business day if track-out occurs on a non-business day. The track-out shall be removed by sweeping, shoveling, or vacuuming these surfaces or by using other similarly effective means of sediment removal. It is prohibited to hose or sweep tracked-out sediment into any stormwater conveyance, storm drain inlet or water of the U.S.</p> <p>The construction entrance/exit shall be inspected weekly and after heavy rains or heavy use. If clogging of gravel pad voids occurs, the pad shall be top dressed with new stone or completely replaced. The pad shall be shaped as needed for drainage and runoff control. Any broken road pavement shall be immediately repaired.</p>
Design Specifications	Design specifications are in the plan drawings in Appendix B .

4.4 Stockpiles or Land Clearing Debris Piles Comprised of Sediment or Soil

General

- In accordance with CGP Part 2.2.5 stockpiles shall be located outside of any natural buffers and away from any stormwater conveyances, drain inlets, and areas where stormwater flow is concentrated. Perimeter controls shall be installed along all downgradient perimeter areas. If stockpiles are to be unused for 14 or more days, cover or appropriate stabilization shall be required. It is prohibited to hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet, or water of the U.S.

4.5 Minimize Dust

General

- In accordance with CGP Part 22.2.6, dust shall be minimized through the appropriate application of water or other dust suppression techniques.

Specific Dust Controls

Water Sprinkling	
Description: Water is sprinkled until the surface is wet. This method is effective for haul roads and other traffic routes.	
Installation	As needed.
Maintenance Requirements	Maintained by sprinkler or water truck as necessary during grading operations to minimize sediment transport and to maintain acceptable air quality conditions.
Design Specifications	Repetitive treatment will be done as needed until soils are stabilized.

Vegetative Cover - Grass	
Description: Minimize areas of disturbance as reasonably practicable. Apply seed following disturbance to vegetated areas for permanent stabilization. Most practical method for disturbed areas not subject to traffic.	
Installation	As needed.
Maintenance Requirements	
Design Specifications	Design specifications are in the plan drawings in Appendix B.

Vegetative Cover - Mulch	
Description: Mulch, including Gravel Mulch, can be applied to areas for temporary stabilization. Fast and effective.	
Installation	As needed.
Maintenance Requirements	
Design Specifications	Design specifications are in the plan drawings in Appendix B.

Vegetative Cover - Stone	
Description: Placement of stones.	
Installation	As needed.
Maintenance Requirements	
Design Specifications	Design specifications are in the plan drawings in Appendix B.

4.6 **Minimize Steep Slope Disturbances**

General

- Site grading is not proposed for this project, with the exception of localized grading required for stormwater BMPs. The project will be developed on existing grades/topography.

Erosion Control Blanket	
Description: Erosion control blankets are to be installed on any disturbed slopes 5:1 or greater to prevent erosion during construction and facilitate revegetation after placement of topsoil and seed.	
Installation	During grading activities, following soil disturbance, prior to stabilization.
Maintenance Requirements	Erosion control blankets/matting shall be inspected either once every 7 calendar days, or ever 14 calendar days and within 24 hours after every major rainfall runoff event which totals over ¼ inches of precipitation, to determine if cracks, tears, or breaches have formed in the fabric; if so, the blanket shall be repaired or replaced immediately. Good contact with the soil shall be maintained and erosion shall not occur under the blanket. Any areas where the blanket is not in close contact with the ground shall be repaired or replaced.
Design Specifications	Design specifications are in the plan drawings in Appendix B .

4.7 **Topsoil**

General

- Native topsoil will be preserved and reused to the extent practical. If topsoil stripped from the Project Area requires temporarily stockpiling, stockpiling will be conducted in accordance with CGP Part 2.2.8.

4.8 **Soil Compaction**

General

- In accordance with CGP Part 2.2.9, vehicles and equipment shall only be used in required areas to minimize soil compaction. The topsoil at the site shall be prepped in accordance with the seeding requirements outlined on the plans.

4.9 **Storm Drain Inlets**

General

- Because there are no storm drain inlets on the site that carry stormwater from the site directly to a surface water body, Part 2.2.10 of the CGP does not apply.

4.10 Temporary Sedimentation Basin

General

- Sedimentation Basins will be constructed at the site prior to earth disturbing activities to be used during construction, prior to site stabilization.

Sedimentation Basin	
Description: At the location of the proposed infiltration basins, temporary sedimentation basins will be used to intercept sediment-laden runoff from disturbed areas of the site.	
Installation	Refer to construction phasing in section 2.4.
Maintenance Requirements	Sedimentation basins are to be inspected after each significant rainfall event. Sediment must be removed and properly disposed of when it accumulates to one-half the design volume. If sediment pool does not drain properly, gravel is to be cleaned or replaced. If any erosion, settlement, seepage, or slumping along toe or around pipe occurs, repairs must be made immediately.
Design Specifications	<p>Temporary sedimentation basins shall be installed in the field in accordance with the design recommendations included in the Massachusetts Erosion and Sedimentation Control Guidelines for Urban and Suburban Areas dated March 1997, last updated May 2003 and as listed below.</p> <p>Sediment Storage: Volume shall be 1800 cubic feet per acre.</p> <p>https://www.mass.gov/doc/complete-erosion-and-sedimentation-control-guidelines-a-guide-for-planners-designers-and/download</p>

4.11 Infiltration Basins

General

- A grass swale will be installed at the perimeter of the site leading to the northmost infiltration basin.
- Two infiltration basins with riprap outlet aprons are proposed to treat and control stormwater runoff rates prior to discharging runoff downstream.

Infiltration Basins	
Description: There are two (2) proposed infiltration basins onsite that will receive stormwater. The locations of the basins are shown on the site plan. These basins provide infiltration to treat stormwater and to attenuate stormwater runoff rates from the site.	
Installation	Refer to construction phasing in section 2.4.
Maintenance Requirements	<p>Stormwater infiltration basins are to be inspected semi-annually during the first year, and annually thereafter. Basins are also to be inspected following a major storm event that is greater than the 2-year, 24-hour storm (approximately 3 inches per 24-hour period). Inspections are to include the following items: signs of differential settlement, cracking, erosion, leakage in the embankments, condition of riprap, sediment accumulation, and the health of the turf.</p> <p>Remove sediment and debris from the stormwater basin as necessary but at least once every five (5) years. All accumulated sediment and debris in the stormwater basins will be removed and disposed of in accordance with local, state, and federal regulations. Sediment should not be removed from the basin until the floor of the basin is thoroughly dry and care should be taken when removing sediment so that the underlying soil is not compacted. Vegetation in basin bottoms will be inspected for degradation and any accumulated sediment will be removed and bare spots will be re-seeded as needed.</p> <p>Any vegetation, soil, or debris that forms a barrier to flow will be removed. If any soil erosion is noted, erosion will be repaired, and bare spots will be armored with stone riprap. Embankments, spillways, and swales will likewise be inspected for blockage or damage. Any accumulated debris that may impede stormwater flow will be removed, and any noted erosion will be repaired with stone riprap.</p> <p>Mow the upper-stage, side-slopes, and embankments at least twice per year.</p>
Design Specifications	Design specifications are in the plan drawings in Appendix B .

4.12 Rip-Rap Apron

Rip-Rap Apron	
Description: At the outlet of each infiltration basin will be a rip-rap apron to control erosion and reduce stormwater velocity.	
Installation	Refer to construction phasing in section 2.4.
Maintenance Requirements	During any and all infiltration basin inspections, examine the rip-rap apron of evidence of clogging and/or outflow velocities greater than design flow.
Design Specifications	Design specifications are in the plan drawings in Appendix B.

4.13 Vegetated Filter Strips

Vegetated Filter Strips	
Description: The grassed areas uphill from the infiltration basins are considered vegetated filter strips.	
Installation	Refer to construction phasing in section 2.4.
Maintenance Requirements	Vegetated filter strips are to be inspected semi-annually during the first year, and annually thereafter. The filter strips should be inspected for sediment buildup, signs of erosion, bare spots, and overall health. Sediment should be removed from the toe of the slope, and bare spots should be reseeded as necessary. Mowing should be conducted as needed during routine mowing events scheduled for the site.
Design Specifications	Design specifications are in the plan drawings in Appendix B.

4.14 Vegetated Swales

Vegetated Swales	
Description: There is a proposed swale along the northwest border of the site which will direct runoff from the site to the infiltration basins.	
Installation	Refer to construction phasing in section 2.4.
Maintenance Requirements	Vegetated Swales are to be inspected once every three months during the first year and semi-annually thereafter. Inspect the grass for growth and the side slopes for signs of erosion and formation of rills and gullies. Inspect for sediment buildup and use hand methods when cleaning to minimize disturbance to vegetation and underlying soils. Bare spots should be reseeded as necessary. Remove accumulated trash and debris prior to mowing. Mowing should be conducted as needed during the routine mowing events scheduled for the site. Mow so that the grass height does not exceed six (6) inches and ensure mower blades are set no lower than three to four (3-4) inches.
Design Specifications	Design specifications are in the plan drawings in Appendix B.

4.15 Chemical Treatment

Treatment chemicals will not be used at the site.

4.16 Dewatering Practices

Dewatering practices are not expected to be implemented.

4.17 Other Stormwater Controls

No other stormwater controls will be utilized during this project.

4.18 Site Stabilization

Total Amount of Land Disturbance Occurring at Any One Time

- Five Acres or less
- More than Five Acres

Seeding	
<input type="checkbox"/> Vegetative <input type="checkbox"/> Non-Vegetative <input checked="" type="checkbox"/> Temporary <input type="checkbox"/> Permanent	
Description: <ul style="list-style-type: none"> ▪ Temporary seeding or stabilization shall be provided within two weeks of the end of initial soil disturbance. 	
Installation	9/18/2024
Completion	4/14/2025
Maintenance Requirements	Maintenance shall include watering as specified, weeding, removal of stones which may appear and regular cutting of the grass no closer than 10 days apart, further maintenance requirements are in the plan drawings in Appendix B .
Design Specifications	Design specifications are in the plan drawings in Appendix B .

Permanent Seeding	
<input checked="" type="checkbox"/> Vegetative <input type="checkbox"/> Non-Vegetative <input type="checkbox"/> Temporary <input checked="" type="checkbox"/> Permanent	
Description: Uniform, perennial vegetation (i.e., evenly distributed, without large bare areas) that provides 70 percent or more of the cover that is provided by vegetation native to local undisturbed areas. All disturbed areas shall have a minimum of 4-inches of loam and seed.	
Installation	4/15/2025
Completion	5/15/2025
Maintenance Requirements	Seeding shall be maintained until final acceptance at the completion of the project or for 90 days, whichever is longer. Maintenance shall include watering as specified, weeding, removal of stones which may appear and regular cuttings of the grass no closer than 10 days apart. Further maintenance requirements are in the plan drawings in Appendix B .
Design Specifications	Design specifications are in the plan drawings in Appendix B .

SECTION 5: POLLUTION PREVENTION CONTROLS

5.1 Potential Sources of Pollution

Construction Site Pollutants

Pollutant-Generating Activity	Pollutants or Pollutant Constituents (that could be discharged if exposed to stormwater)	Location on Site (or reference SWPPP site map where this is shown)
Cleared areas	Soil erosion	Within limits of disturbance
Construction area	Vehicle fluids, solvents	Within limits of disturbance
Portable Toilets	Sewage, liquid deodorizer	Portable toilet location TBD
Fuel Tanks	Fuel oil, gasoline, and other fuels	Within limits of disturbance
Staging Areas	Soil erosion, fuel oil, gasoline, vehicle fluids, antifreeze/coolant, hydraulic oil/fluids, etc.	Staging areas TBD
Waste storage in Containers	Construction demolition debris, trash	Waste storage location TBD

5.2 Spill Prevention and Response

In accordance with Parts 2.3 and 7.2.6.vii of the CGP, this section describes procedures to prevent and respond to leaks, spills, and other releases.

The following good housekeeping and material management practices will be followed to reduce the risk of spills or other accidental exposure of hazardous materials to storm water runoff:

- Store quantities of materials required for the project and not more,
- Store materials onsite in a neat, orderly manner in appropriate labeled containers,
- Store materials indoors or under cover,
- Follow manufacturers' recommendations for proper use and disposal of materials,
- Monitor all onsite vehicles for leaks and perform preventive maintenance to reduce the potential for leaks,
- Conduct vehicle fueling and maintenance activities in a controlled or covered area or off-site, when possible,
- Use drip pans or absorbents under or around leaky vehicles.
- Manufacturers' recommended methods for spill cleanup shall be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Adequate supplies of spill kit materials and equipment shall be kept in the hazardous material storage area and any on-site fueling and maintenance areas on-site. Spill kit equipment and materials shall include but not be limited to: spill pads, absorbent booms, brooms, dust pans, mops, rags, gloves, goggles, speedy-dry, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.

If an emergency spill or release occurs, site personnel will report the spill or release to the Contractor's Site Health and Safety Officer (SHSO), the Resident Engineer, and/or site management and, as needed, evacuate the area.

Only employees trained at the First Responder Operations Level of 29 CFR 1910.120(q) will be authorized to respond in a defensive manner to emergency spills or releases of fuel and other materials.

If a spill occurs, the SHSO and/or site management shall be contacted and the SHSO and/or site management with assistance from appropriately trained personnel will contain the spill. If necessary, the SHSO and/or site management will contact an emergency response contractor and will also notify the Engineer and all other authorities and agencies in accordance with state and local regulations. Absorptive materials and other supplies will be used as needed to clean up and prevent the spill from spreading. The source of the spill shall be eliminated immediately. Water shall not be used to wash the spill down. Recycled oil and oily wastes shall be disposed of in accordance with all applicable federal, state, tribal, and local requirements.

In the event that an accident or some other incident, such as an explosion, a release to groundwater or the environment, or an exposure to toxic chemical levels as described in 310 CMR 40.1600, Revised Massachusetts Contingency Plan, occurs during the course of the project, notify the Massachusetts Department of Environmental Protection, (Southeast Region) in Lakeville **(508) 946-2700** and all other appropriate federal, state, and local authorities and agencies in accordance with 310 CMR 40.0333.

The local Fire Department should be notified of any releases or incidents at **911** for emergencies.

5.3 Fueling and Maintenance of Equipment or Vehicles

In accordance with Part 2.3.1 of the CGP, discharge of spilled or leaked chemicals, including fuels and oils, used for equipment and vehicle fueling and maintenance are prohibited.

If vehicle fueling and maintenance activities are completed onsite, an effective means of eliminating the discharge of spilled or leaked chemicals, including fuel, must be provided. Examples of effective controls include, but are not limited to, locating activities away from surface waters and stormwater inlets or conveyances, providing secondary containment (*e.g., spill berms, decks, spill containment pallets*) and cover where appropriate, and/or having spill kits readily available.

- Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;
- Use drip pans and absorbents under or around leaky vehicles;
- Dispose of or recycle oil and oily wastes in accordance with other federal, state, tribal, or local requirements;
- Clean up spills or contaminated surfaces immediately, using dry clean up measures where possible, and eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge; and
- Do not clean surfaces by hosing the area down.
- If applicable, the Operator shall comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR 112 and Section 311 of the Clean Water Act.

5.4 Washing of Equipment and Vehicles

The Contractor will be responsible to ensure that no equipment is washed on-site and; therefore, Part 2.3.2 of the CGP does not apply.

5.5 Storage, Handling, and Disposal of Building Products, Materials, and Wastes

5.5.1 Building Products

Building products, such as asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures, etc., will not be used as part of this project and; therefore, Part 2.3.3 a of the CGP does not apply.

5.5.2 Pesticides, Herbicides, Insecticides, Fertilizers, and Landscape Materials

General

Pesticides, herbicides, insecticides, and landscape materials shall be stored in designated storage areas and provided with either (1) a cover (plastic sheeting, temporary roofs) to minimize the exposure of these chemicals to stormwater **OR** (2) a similarly effective means to minimize the discharge of pollutants from these areas. These chemicals should also be applied and disposed of according to the instructions on the respective labels. These products should be used in accordance with Part 2.3.3.b of the CGP.

5.5.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals

General

In accordance with Part 2.3.3.c of the CGP, chemicals will be stored in water-tight containers, which be covered by plastic sheeting, temporary roofs, or other suitable means to minimize exposure of these containers to precipitation and stormwater. If cover is not provided, then secondary containment (e.g., spill berms, decks, and spill containment pallets) shall be used, and spill kits shall be readily accessible.

Spills shall be cleaned up immediately in accordance with the Spill Prevention and Response Plan in Section 5.2 of this SWPPP.

5.5.4 Hazardous or Toxic Waste

(Note: Examples include paints, caulks, sealants, fluorescent light ballasts, solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids.)

General

In accordance with Part 2.3.3.d of the CGP, hazardous or toxic waste will be separated from construction and domestic waste. These materials will be stored in sealed and labelled suitable containers to prevent leakage and corrosion. These materials will be stored with secondary containment or other effective means of preventing discharge of pollutants if stored outdoors. These materials will be disposed of in accordance with the manufacturers recommended methods of disposal. Spills will be cleaned up immediately using dry clean-up methods and materials will be disposed of properly. These materials will be stored in compliance with and will follow all applicable RCRA and all other applicable Feder, State, Tribal or local requirements.

5.5.5 Construction and Domestic Waste

(Note: Examples include packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, demolition debris, and other trash or discarded materials.)

General

In accordance with Part 2.3.3.e of the CGP, waste containers of sufficient size and number to contain construction and domestic wastes shall be provided. Waste container lids shall be closed when not in use and at the end of the business day. Cover (e.g., a tarp, plastic sheeting, temporary roof) or a similarly effective means to minimize the discharge of pollutants shall be required for waste containers without lids. Waste shall be cleaned up and disposed of in designated waste containers on business days. If waste containers overflow, waste shall be cleaned up immediately.

5.5.6 Sanitary Waste

General

In accordance with Part 2.3.3.f of the CGP, portable toilets will be positioned so that they are secure and will not be tipped or knocked over. Portable toilets will be located away from receiving waters, storm drain inlets, and constructed or natural site drainage features.

5.6 Washing of Applicators and Containers used for Stucco, Paint, Concrete, Form Release Oils, Cutting Compounds, or Other Materials

General

In accordance with Part 2.3.4 of the CGP, if water from the washout and cleanout of paint, concrete, form release oils, curing compounds, and other construction materials will be discharged, these discharges shall be eliminated, at a minimum through the following practices:

- Directing all wash water into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation.
- Handling washout or cleanout wastes as follows:
 - Do not dump liquid wastes in storm sewers (drainage system) or allow disposal through infiltration;
 - Dispose of liquid wastes properly; and
 - Remove and dispose of hardened concrete waste consistent with handling of other construction wastes;
- Locate any washout or cleanout activities as far away as possible from surface waters and stormwater inlets or conveyances, and, to the extent practicable, designate areas to be used for these activities and conduct such activities only in these areas.

5.7 Application of Fertilizer

General

Hydroseeding and/or manually spread seeding methods will be used as part of this solar installation. The operator is to ensure that:

- a. Apply at a rate and in amounts consistent with manufacturer's specifications, or document in the SWPPP departures from the manufacturer specifications where appropriate in accordance with Part 7.2.6.b.ix;
- b. Apply at the appropriate time of year for your location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth;
- c. Avoid applying before heavy rains that could cause excess nutrients to be discharged;
- d. Never apply to frozen ground;
- e. Never apply to stormwater conveyance channels; and
- f. Follow all other federal, state, tribal, and local requirements regarding fertilizer application.

5.8 Other Pollution Prevention Practices

General

No other practices will be used at this site.

SECTION 6: INSPECTION, MAINTENANCE, AND CORRECTIVE ACTION

6.1 Inspection Personnel and Procedures

Site Inspection Schedule

Select the inspection frequency(ies) that applies, based on CGP Parts 4.2, 4.3, or 4.4

(Note: you may be subject to different inspection frequencies in different areas of the site. Check all that apply and indicate which portion(s) of the site it applies to.)

Standard Frequency:
<input checked="" type="checkbox"/> Every 7 calendar days or: <input type="checkbox"/> Every 14 calendar days and within 24 hours of either: <ul style="list-style-type: none">▪ A storm event that produces 0.25 inches or more of rain within a 24-hour period (including when there are multiple, smaller storms that alone produce less than 0.25 inches but together produce 0.25 inches or more in 24 hours), or▪ A storm event that produces 0.25 inches or more of rain within a 24-hour period on the first day of a storm and continues to produce 0.25 inches or more of rain on subsequent days (you conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.25 inches or more of rain (i.e., only two inspections would be required for such a storm event)), or▪ A discharge caused by snowmelt from a storm event that produces 3.25 inches or more of snow within a 24-hour period.
Increased Frequency (if applicable):
For areas of sites discharging to sediment or nutrient-impaired waters or to waters designated as Tier 2, Tier 2.5, or Tier 3 <input type="checkbox"/> Every 7 days and within 24 hours of either: <ul style="list-style-type: none">▪ A storm event that produces 0.25 inches or more of rain within a 24-hour period, or▪ A discharge caused by snowmelt from a storm event that produces 3.25 inches or more of snow within a 24-hour period.
Reduced Frequency (if applicable)
For stabilized areas <input type="checkbox"/> Twice during the first month, no more than 14 calendar days apart; then once per month after first month until permit coverage is terminated consistent with Part 9 in any area of your site where the stabilization steps in 2.2.14.a have been completed. <ul style="list-style-type: none">▪ Specify locations where stabilization steps have been completed▪ Insert date that they were completed <p>(Note: It is likely that you will not be able to include this in your initial SWPPP. If you qualify for this reduction (see CGP Part 4.4.1), you will need to modify your SWPPP to include this information. If construction activity resumes in this portion of the site at a later date, the inspection frequency immediately increases to that required in Parts 4.2 and 4.3, as applicable.)</p>

For stabilized areas on “linear construction sites” (as defined in Appendix A)

- Twice during first month, no more than 14 calendar days apart; then once more within 24 hours of a storm event that produces 0.25 inches or more of rain within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period
 - Specify locations where stabilization steps have been completed
 - Insert date that they were completed(Note: It is likely that you will not be able to include this in your initial SWPPP. If you qualify for this reduction (see CGP Part 4.4.1), you will need to modify your SWPPP to include this information.)

For arid, semi-arid, or drought-stricken areas during seasonally dry periods or during drought

- Once per month and within 24 hours of either:
 - A storm event that produces 0.25 inches or more of rain within a 24-hour period, or
 - A snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period.

Insert beginning and ending month identified as the seasonally dry period for your area or the valid period of drought:

- Beginning month of the seasonally dry period: Insert approximate date
- Ending month of the seasonally dry period: Insert approximate date

For frozen conditions where construction activities are being conducted

- Once per month

Insert beginning and ending dates of frozen conditions on your site:

- Beginning date of frozen conditions: Insert approximate date
- Ending date of frozen conditions: Insert approximate date

For frozen conditions where construction activities are suspended

- Inspections are temporarily suspended

Insert beginning and ending dates of frozen conditions on your site:

- Beginning date of frozen conditions: Insert approximate date
- Ending date of frozen conditions: Insert approximate date

Dewatering Inspection Schedule

Select the inspection frequency that applies based on CGP Part 4.3.2

Dewatering is not expected at this project.

Dewatering Inspection

- Once per day on which the discharge of dewatering water occurs.

Rain Gauge Location (if applicable)

For determining whether a rain event of 0.25 inches or greater has occurred, the weather at Clearwater Drive, Westwood, MA will be used (**Station ID KMAWESTW19**). Data is available online: <https://www.wunderground.com/weather/us/ma/westwood/KMAWESTW19>

Inspection Report Forms

A copy of the inspection report can be found in **Appendix D**

(Note: EPA has developed a sample inspection form that CGP operators can use. The form is available at <https://www.epa.gov/npdes/stormwater-discharges-construction-activities#resources>)

6.2 Corrective Action

Personnel Responsible for Corrective Actions

TBD

Corrective Action Logs

A copy of the corrective action form can be found in **Appendix E**.

(Note: EPA has developed a sample corrective action log that CGP operators can use. The form is available at <https://www.epa.gov/npdes/stormwater-discharges-construction-activities#resources>)

6.3 Delegation of Authority

Appendix J includes the delegation of authority and the names of the duly authorized representatives/positions.

SECTION 7: TURBIDITY BENCHMARK MONITORING FOR DEWATERING DISCHARGES

No dewatering is anticipated at this site.

SECTION 8: CERTIFICATION AND NOTIFICATION

Instructions (CGP Appendix G, Part G.11.2):

- The following certification statement must be signed and dated by a person who meets the requirements of Appendix G, Part G.11.2.
- This certification must be re-signed in the event of a SWPPP Modification.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

[Repeat as needed for multiple construction operators at the site.]

SWPPP APPENDICES

Attach the following documentation to the SWPPP:

Appendix A – Copy of 2022 CGP

Appendix B – Site Maps

Appendix C – NOI and EPA Authorization Email

Appendix D – Site Inspection Form

Appendix E – Corrective Action Log

Appendix F – SWPPP Amendment Log

Appendix G – Subcontractor Certifications/Agreements

Appendix H – Grading and Stabilization Activities Log

Appendix I – Training Documentation

Appendix J – Delegation of Authority

Appendix K – Endangered Species Documentation

Appendix L – Historic Preservation Documentation

Appendix M – Rain Gauge Log

Appendix A – Copy of 2022 CGP

**National Pollutant Discharge Elimination System (NPDES)
Construction General Permit (CGP) for Stormwater Discharges from
Construction Activities**

In compliance with the provisions of the Clean Water Act, 33 U.S.C. § 1251 et. seq., (hereafter CWA), as amended by the Water Quality Act of 1987, P.L. 100-4, "operators" of construction activities (defined in Appendix A) that meet the requirements of Part 1.1 of this National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP), are authorized to discharge pollutants in accordance with the effluent limitations and conditions set forth herein. Permit coverage is required from the "commencement of construction activities" (see Appendix A) until one of the conditions for terminating CGP coverage has been met (see Part 8.2).

This permit becomes effective on 12:00 am, February 17, 2022.

This permit and the authorization to discharge expire at 11:59pm, February 16, 2027.

Signed and issued this 18 day of January 2022

DEBORAH SZARO Digitally signed by DEBORAH SZARO
Date: 2022.01.18 08:31:14 -05'00'

Deborah Szaro,
Acting Regional Administrator, EPA Region 1.

Signed and issued this 18 day of January 2022

JAVIER LAUREANO Digitally signed by JAVIER LAUREANO
Date: 2022.01.18 11:21:16 -05'00'

Javier Laureano,
Director, Water Division, EPA Region 2.

Signed and issued this 18 day of January 2022

CARMEN GUERRERO PEREZ Digitally signed by CARMEN GUERRERO PEREZ
Date: 2022.01.18 10:19:51 -04'00'

Carmen Guerrero-Perez,
Director, Caribbean Environmental Protection Division, EPA Region 2.

Signed and issued this 18 day of January 2022

CATHERINE LIBERTZ Digitally signed by CATHERINE LIBERTZ
Date: 2022.01.18 12:05:24 -05'00'

Catherine A. Libertz,
Director, Water Division, EPA Region 3.

Signed and issued this 18 day of January 2022

JEANEANNE GETTLE Digitally signed by JEANEANNE GETTLE
Date: 2022.01.18 13:09:48 -05'00'

Jeaneanne Gettle,
Director, Water Division, EPA Region 4.

Signed and issued this 18 day of January 2022

 Digitally signed by TERA FONG
Date: 2022.01.18 13:03:49 -06'00'

Tera Fong,
Director, Water Division, EPA Region 5.

Signed and issued this 18 day of January 2022

CHARLES MAGUIRE Digitally signed by CHARLES MAGUIRE
DN: cn=US, o=U.S. Government, ou=Environmental Protection Agency, cn=CHARLES MAGUIRE, o.9.2342.19200300.100.1.1#68001003650036
Date: 2022.01.18 14:06:55 -06'00'

Charles W. Maguire,
Director, Water Division, EPA Region 6.

Signed and issued this 18 day of January 2022

JEFFERY ROBICHAUD Digitally signed by JEFFERY ROBICHAUD
Date: 2022.01.18 14:41:37 -06'00'

Jeffery Robichaud,
Director, Water Division, EPA Region 7.

Signed and issued this 18 day of January 2022

DARCY OCONNOR Digitally signed by DARCY OCONNOR
Date: 2022.01.18 14:00:05 -07'00'

Darcy O'Connor,
Director, Water Division, EPA Region 8.

Signed and issued this 18 day of January 2022

TOMAS TORRES Digitally signed by TOMAS TORRES
Date: 2022.01.18 13:30:16 -08'00'

Tomás Torres,
Director, Water Division, EPA Region 9.

Signed and issued this 18 day of January 2022

DANIEL OPALSKI Digitally signed by DANIEL OPALSKI
Date: 2022.01.18 15:10:20 -08'00'

Daniel D. Opalski,
Director, Water Division, EPA Region 10.

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1 HOW TO OBTAIN COVERAGE UNDER THE CONSTRUCTION GENERAL PERMIT (CGP)

To be covered under this permit, you must meet the eligibility conditions and follow the requirements for obtaining permit coverage in this Part.

1.1 ELIGIBILITY CONDITIONS

1.1.1 You are an “operator” of a construction site for which discharges will be covered under this permit. For the purposes of this permit and in the context of stormwater discharges associated with construction activity, an “operator” is any party associated with a construction project that meets either of the following two criteria:

- a.** The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- b.** The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Where there are multiple operators associated with the same project, all operators must obtain permit coverage.¹ Subcontractors generally are not considered operators for the purposes of this permit.

1.1.2 Your site’s construction activities:

- a.** Will disturb one or more acres of land, or will disturb less than one acre of land but are part of a common plan of development or sale (as defined in Appendix A) that will ultimately disturb one or more acres of land; or
- b.** Have been designated by EPA as needing permit coverage under 40 CFR § 122.26(a)(1)(v) or 40 CFR § 122.26(b)(15)(ii);

1.1.3 Your site is located in an area where EPA is the permitting authority and where coverage under this permit is available (see Appendix B);

1.1.4 Discharges from your site are not:

- a.** Already covered by a different NPDES permit for the same discharge; or
- b.** In the process of having coverage under a different NPDES permit for the same discharge denied, terminated, or revoked.^{2, 3}

1.1.5 You can demonstrate you meet one of the criteria in the Endangered Species Protection section of the Notice of Intent (NOI) that you submit for coverage under this permit, per Part 1.4, with respect to the protection of Federally listed endangered or threatened species and Federally designated critical habitat under the Endangered Species Act

¹ If the operator of a “construction support activity” (see Part 1.2.1c) is different than the operator of the main site, that operator must also obtain permit coverage. See Part 7.1 for clarification on the sharing of permit-related functions between and among operators on the same site and for conditions that apply to developing a SWPPP for multiple operators associated with the same site.

² Parts 1.1.4a and 1.1.4b do not include sites currently covered under the 2017 CGP that are in the process of obtaining coverage under this permit, nor sites covered under this permit that are transferring coverage to a different operator.

³ Notwithstanding a site being made ineligible for coverage under this permit because it falls under the description of Parts 1.1.4a or 1.1.4b, above, EPA may waive the applicable eligibility requirement after specific review if it determines that coverage under this permit is appropriate.

(ESA). If the EPA Regional Office grants you a waiver from electronic reporting per Part 1.4.2, you must complete the ESA worksheet in Appendix D to demonstrate you meet one of the criteria and submit it with your paper NOI (Appendix I).

- 1.1.6** You have completed the screening process in Appendix E relating to the protection of historic properties; and
- 1.1.7** You have complied with all requirements in Part 9 imposed by the applicable State, Indian Tribe, or Territory in which your construction activities and/or discharge will occur.
- 1.1.8** For "new sources" (as defined in Appendix A) only:
 - a.** EPA has not, prior to authorization under this permit, determined that discharges from your site will not meet applicable water quality standards. Where such a determination is made prior to authorization, EPA may notify you that an individual permit application is necessary. However, EPA may authorize your coverage under this permit after you have included appropriate controls and implementation procedures designed to bring your discharge into compliance with this permit, specifically the requirement to meet water quality standards. In the absence of information demonstrating otherwise, EPA expects that compliance with the requirements of this permit, including the requirements applicable to such discharges in Part 3, will result in discharges that meet applicable water quality standards.
 - b.** Discharges from your site to a Tier 2, Tier 2.5, or Tier 3 water⁴ will not lower the water quality of the applicable water. In the absence of information demonstrating otherwise, EPA expects that compliance with the requirements of this permit, including the requirements applicable to such discharges in Part 3.2, will result in discharges that will not lower the water quality of such waters.
- 1.1.9** If you plan to add "cationic treatment chemicals" (as defined in Appendix A) to stormwater and/or authorized non-stormwater prior to discharge, you may not submit your NOI until you notify your applicable EPA Regional Office (see Appendix J) in advance and the EPA Regional Office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will result in discharges that meet applicable water quality standards.

⁴ Note: Your site will be considered to discharge to a Tier 2, Tier 2.5, or Tier 3 water if the first receiving water to which you discharge is identified by a State, Tribe, or EPA as a Tier 2, Tier 2.5, or Tier 3 water. For discharges that enter a storm sewer system prior to discharge, the first receiving water to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system. The current list of Tier 2, Tier 2.5, and Tier 3 waters located in the areas eligible for coverage under this permit can be found at <https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates>. You can also use EPA's Discharge Mapping Tool (<https://www.epa.gov/npdes/epas-stormwater-discharge-mapping-tools>) to assist you in identifying whether any receiving waters to which you discharge are listed as impaired (and the pollutant for which it is impaired) and whether an approved total maximum daily load (TMDL) exists for that waterbody.

1.2 TYPES OF DISCHARGES AUTHORIZED⁵

1.2.1 The following stormwater discharges are authorized under this permit provided that appropriate stormwater controls are designed, installed, and maintained (see Parts 2 and 3):

- a.** Stormwater discharges, including stormwater runoff, snowmelt runoff, and surface runoff and drainage, associated with construction activity under 40 CFR § 122.26(b)(14) or § 122.26(b)(15)(i);
- b.** Stormwater discharges designated by EPA as needing a permit under 40 CFR § 122.26(a)(1)(v) or § 122.26(b)(15)(ii);
- c.** Stormwater discharges from on or off-site construction support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided that:
 - i.** The support activity is directly related to the construction site required to have permit coverage for stormwater discharges;
 - ii.** The support activity is not a commercial operation, nor does it serve multiple unrelated construction sites;
 - iii.** The support activity does not continue to operate beyond the completion of the construction activity at the site it supports; and
 - iv.** Stormwater controls are implemented in accordance with Part 2 and Part 3 for discharges from the support activity areas; and
- d.** Stormwater discharges from earth-disturbing activities associated with the construction of staging areas and the construction of access roads conducted prior to active mining.

1.2.2 The following non-stormwater discharges associated with your construction activity are authorized under this permit provided that, with the exception of water used to control dust and to irrigate vegetation in stabilized areas, these discharges are not routed to areas of exposed soil on your site and you comply with any applicable requirements for these discharges in Parts 2 and 3:

- a.** Discharges from emergency fire-fighting activities;
- b.** Fire hydrant flushings;
- c.** Landscape irrigation;
- d.** Water used to wash vehicles and equipment, provided that there is no discharge of soaps, solvents, or detergents used for such purposes;
- e.** Water used to control dust;
- f.** Potable water including uncontaminated water line flushings;

⁵ See "Discharge" as defined in Appendix A. Note: Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA Section 402(k) by disclosure to EPA, State, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the SWPPP, or during an inspection.

- g.** External building washdown, provided soaps, solvents, and detergents are not used, and external surfaces do not contain hazardous substances (as defined in Appendix A) (e.g., paint or caulk containing polychlorinated biphenyls (PCBs));
 - h.** Pavement wash waters, provided spills or leaks of toxic or hazardous substances have not occurred (unless all spill material has been removed) and where soaps, solvents, and detergents are not used. You are prohibited from directing pavement wash waters directly into any receiving water, storm drain inlet, or constructed or natural site drainage features, unless the feature is connected to a sediment basin, sediment trap, or similarly effective control;
 - i.** Uncontaminated air conditioning or compressor condensate;
 - j.** Uncontaminated, non-turbid discharges of ground water or spring water;
 - k.** Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated ground water; and
 - l.** Uncontaminated construction dewatering water⁶ discharged in accordance with Part 2.4.
- 1.2.3** Also authorized under this permit are discharges of stormwater listed above in Part 1.2.1, or authorized non-stormwater discharges listed above in Part 1.2.2, commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

1.3 PROHIBITED DISCHARGES⁷

The discharges listed in this Part are prohibited outright or authorized only under the identified conditions. To prevent the discharges in Parts 1.3.1 through 1.3.5, operators must comply with the applicable pollution prevention requirements in Part 2.3 or ensure the discharge is authorized by another NPDES permit consistent with Part 1.2.3 for commingled discharges.

- 1.3.1** Wastewater from washout of concrete, unless managed by an appropriate control as described in Part 2.3.4;
- 1.3.2** Wastewater from washout and/or cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;
- 1.3.3** Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
- 1.3.4** Soaps, solvents, or detergents used in vehicle and equipment washing or external building washdown; and
- 1.3.5** Toxic or hazardous substances from a spill or other release.

⁶ EPA notes that operators may need to comply with additional procedures to verify that the dewatering discharge is uncontaminated. Operators should review Part 9 to determine if any of these requirements apply to their discharge and should ensure that they have complied with any State, Tribal, or local dewatering requirements that apply.

⁷ EPA includes these prohibited non-stormwater discharges here as a reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2. Any unauthorized non-stormwater discharges must be covered under an individual permit or alternative general permit.

1.4 SUBMITTING YOUR NOTICE OF INTENT (NOI)

All “operators” (as defined in Appendix A) associated with your construction site who meet the Part 1.1 eligibility conditions, and who seek coverage under this permit, must submit to EPA a complete and accurate NOI in accordance with the deadlines in Table 1 prior to commencement of construction activities (as defined in Appendix A).

Exception: If you are conducting construction activities in response to a public emergency (e.g., mud slides, earthquake, extreme flooding conditions, widespread disruption in essential public services), and the related work requires immediate authorization to avoid imminent endangerment to human health, public safety, or the environment, or to reestablish essential public services, you may discharge on the condition that a complete and accurate NOI is submitted within 30 calendar days after commencing construction activities (see Table 1) establishing that you are eligible for coverage under this permit. You must also provide documentation in your Stormwater Pollution Prevention Plan (SWPPP) to substantiate the occurrence of the public emergency pursuant to Part 7.2.3i.

1.4.1 Prerequisite for Submitting Your NOI

You must develop a SWPPP consistent with Part 7 before submitting your NOI for coverage under this permit.

1.4.2 How to Submit Your NOI

You must use EPA’s NPDES eReporting Tool (NeT) to electronically prepare and submit your NOI for coverage under the 2022 CGP unless you received a waiver from your applicable EPA Regional Office.

To access NeT, go to <https://cdx.epa.gov/cdx>.

Waivers from electronic reporting may be granted based on one of the following conditions:

- a. If your operational headquarters is physically located in a geographic area (i.e., ZIP code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission; or
- b. If you have limitations regarding available computer access or computer capability.

If the EPA Regional Office grants you approval to use a paper NOI, and you elect to use it, you must complete the form in Appendix H.

1.4.3 Deadlines for Submitting Your NOI and Your Official Date of Permit Coverage

Table 1 provides the deadlines for submitting your NOI and the official start date of your permit coverage, which differ depending on when you commence construction activities.

Table 1 NOI Submittal Deadlines and Official Start Date for Permit Coverage.

Type of Operator	NOI Submittal Deadline ⁸	Permit Authorization Date ⁹
Operator of a new site (i.e., a site where construction activities commence on or after February 17, 2022)	At least 14 calendar days before commencing construction activities.	14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied.
Operator of an existing site (i.e., a site with 2017 CGP coverage where construction activities commenced prior to February 17, 2022)	No later than May 18, 2022.	14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied. Provided you submit your NOI no later than May 18, 2022, your authorization under the 2017 CGP is automatically continued until you have been granted coverage under this permit or an alternative NPDES permit, or coverage is otherwise terminated.
New operator of a permitted site (i.e., an operator that through transfer of ownership and/or operation replaces the operator of an already permitted construction site that is either a "new site" or an "existing site")	At least 14 calendar days before the date the transfer to the new operator will take place.	14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied.
Operator of an "emergency-related project" (i.e., a project initiated in response to a public emergency (e.g., mud slides, earthquake, extreme flooding conditions, disruption in essential public services), for which the related work requires immediate authorization to avoid imminent endangerment to human health or the environment, or to reestablish essential public services)	No later than 30 calendar days after commencing construction activities.	You are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied.

⁸ If you miss the deadline to submit your NOI, any and all discharges from your construction activities will continue to be unauthorized under the CWA until they are covered by this or a different NPDES permit. EPA may take enforcement action for any unpermitted discharges that occur between the commencement of construction activities and discharge authorization.

⁹ Discharges are not authorized if your NOI is incomplete or inaccurate or if you are not eligible for permit coverage.

1.4.4 Modifying your NOI

If after submitting your NOI you need to correct or update any fields, you may do so by submitting a "Change NOI" form using NeT. Waivers from electronic reporting may be granted as specified in Part 1.4.2. If the EPA Regional Office has granted you approval to submit a paper NOI modification, you may indicate any NOI changes on the same NOI form in Appendix H.

When there is a change to the site's operator, the new operator must submit a new NOI, and the previous operator must submit a Notice of Termination (NOT) form as specified in Part 8.3.

The following modifications to an NOI form will result in a 14-day review process:

- Changes to the name of the operator;
- Changes to the project or site name;
- Changes to the estimated area to be disturbed;
- Changes to the name of the receiving water¹⁰, or additions to the applicable receiving waters;
- Changes to eligibility information related to endangered species protection or historic preservation;
- Changes to information provided related to the use of chemical treatment at your site; and
- Changes to answers provided regarding the demolition of structures over 10,000 square feet of floor space built or renovated before January 1, 1980.

During the 14-day review process, you may continue to operate based on the information provided in your original NOI, but you must wait until the review period has ended before you may commence or continue activities on any portion of your site that would be affected by any of the above modifications, unless EPA notifies you that the authorization is delayed or denied.

1.4.5 Your Official End Date of Permit Coverage

Once covered under this permit, your coverage will last until the date that:

- a. You terminate permit coverage consistent with Part 8; or
- b. You receive permit coverage under a different NPDES permit or a reissued or replacement version of this permit after expiring on February 16, 2027; or
- c. You fail to submit an NOI for coverage under a reissued or replacement version of this permit before the deadline for existing construction sites where construction activities continue after this permit has expired.

1.5 REQUIREMENT TO POST A NOTICE OF YOUR PERMIT COVERAGE

You must post a sign or other notice of your permit coverage at a safe, publicly accessible location in close proximity to the construction site. The notice must be located so it is visible from the public road that is nearest to the active part of the construction

¹⁰ As defined in Appendix A, a "receiving water" is "a "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

site, and it must use a font large enough to be readily viewed from a public right-of-way.¹¹ At a minimum, the notice must include:

- a. The NPDES ID (i.e., permit tracking number assigned to your NOI and the EPA webpage where a copy of the NOI can be found (<https://permitsearch.epa.gov/epermit-search/ui/search>));
- b. A contact name and phone number for obtaining additional construction site information;
- c. The Uniform Resource Locator (URL) for the SWPPP (if available), or the following statement: "If you would like to obtain a copy of the Stormwater Pollution Prevention Plan (SWPPP) for this site, contact the EPA Regional Office at [include the appropriate CGP Regional Office contact information found at <https://www.epa.gov/npdes/contact-us-stormwater#regional>];" and
- d. The following statement "If you observe indicators of stormwater pollutants in the discharge or in the receiving water, contact the EPA through the following website: <https://www.epa.gov/enforcement/report-environmental-violations>."

2 TECHNOLOGY-BASED EFFLUENT LIMITATIONS

You must comply with the following technology-based effluent limitations in this Part for all authorized discharges.¹²

2.1 GENERAL STORMWATER CONTROL DESIGN, INSTALLATION, AND MAINTENANCE REQUIREMENTS

You must design, install, and maintain stormwater controls required in Parts 2.2, 2.3, and 2.4 to minimize the discharge of pollutants in stormwater from construction activities.¹³ To meet this requirement, you must:

2.1.1 Account for the following factors in designing your stormwater controls:

- a. The expected amount, frequency, intensity, and duration of precipitation;¹⁴
- b. The nature of stormwater runoff (i.e., flow) and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features. You must design stormwater controls to control stormwater volume, velocity, and peak flow rates to minimize discharges of pollutants in stormwater and to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points; and
- c. The soil type and range of soil particle sizes expected to be present on the site.

¹¹ If the active part of the construction site is not visible from a public road, then place the notice of permit coverage in a position that is visible from the nearest public road and as close as possible to the construction site.

¹² For each of the effluent limits in Part 2, as applicable to your site, you must include in your SWPPP (1) a description of the specific control(s) to be implemented to meet the effluent limit; (2) any applicable design specifications; (3) routine maintenance specifications; and (4) the projected schedule for installation/implementation. See Part 7.2.6.

¹³ The permit does not recommend or endorse specific products or vendors.

¹⁴ Stormwater controls must be designed using the most recent data available to account for recent precipitation patterns and trends.

If your site is exposed to or has previously experienced major storms, such as hurricanes, storm surge, extreme/heavy precipitation, and flood events, you should also include consideration of and contingencies for whether implementing structural improvements, enhanced/resilient stormwater controls, and other mitigation measures may help minimize impacts from stormwater discharges from such major storm events.

2.1.2 Design and install all stormwater controls in accordance with good engineering practices, including applicable design specifications.¹⁵

2.1.3 Complete installation of stormwater controls by the time each phase of construction activities has begun.

- a. By the time construction activity in any given portion of the site begins, install and make operational any downgradient sediment controls (e.g., buffers, perimeter controls, exit point controls, storm drain inlet protection) that control discharges from the initial site clearing, grading, excavating, and other earth-disturbing activities.¹⁶
- b. Following the installation of these initial controls, install and make operational all stormwater controls needed to control discharges prior to subsequent earth-disturbing activities.

2.1.4 Ensure all stormwater controls are maintained and remain in effective operating condition during permit coverage and are protected from activities that would reduce their effectiveness.

- a. Comply with any specific maintenance requirements for the stormwater controls listed in this permit, as well as any recommended by the manufacturer.¹⁷
- b. If at any time you find that a stormwater control needs routine maintenance (i.e., minor repairs or other upkeep performed to ensure the site's stormwater controls remain in effective operating condition, not including significant repairs or the need to install a new or replacement control), you must immediately initiate the needed work, and complete such work by the close of the next business day. If it is infeasible to complete the routine maintenance by the close of the next business day, you must document why this is the case and why the repair or other upkeep to be performed should still be considered routine maintenance in your inspection report under Part 4.7.1c and complete such work no later than seven (7) calendar days from the time of discovery of the condition requiring maintenance.
- c. If you must repeatedly (i.e., three (3) or more times) make the same routine maintenance fixes to the same control at the same location, even if the fix can be completed by the close of the next business day, you must either:
 - i. Complete work to fix any subsequent repeat occurrences of this same problem under the corrective action procedures in Part 5, including keeping any records

¹⁵ Design specifications may be found in manufacturer specifications and/or in applicable erosion and sediment control manuals or ordinances. Any departures from such specifications must reflect good engineering practices and must be explained in your SWPPP. You must also comply with any additional design and installation requirements specified for the effluent limits in Parts 2.2, 2.3, and 2.4.

¹⁶ Note that the requirement to install stormwater controls prior to each phase of construction activities for the site does not apply to the earth disturbance associated with the actual installation of these controls. Operators should take all reasonable actions to minimize the discharges of pollutants during the installation of stormwater controls.

¹⁷ Any departures from such maintenance recommendations made by the manufacturer must reflect good engineering practices and must be explained in your SWPPP.

of the condition and how it was corrected under Part 5.4; or

- ii. Document in your inspection report under Part 4.7.1c why the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under this Part.¹⁸
- d. If at any time you find that a stormwater control needs a significant repair or that a new or replacement control is needed, you must comply with the corrective action deadlines for completing such work in in Part 5.2.1c.

2.2 EROSION AND SEDIMENT CONTROL REQUIREMENTS

You must implement erosion and sediment controls in accordance with the following requirements to minimize the discharge of pollutants in stormwater from construction activities.

2.2.1 Provide and maintain natural buffers and/or equivalent erosion and sediment controls for discharges to any receiving waters that is located within 50 feet of the site's earth disturbances.

- a. **Compliance Alternatives.** For any discharges to receiving waters located within 50 feet of your site's earth disturbances, you must comply with one of the following alternatives:
 - i. Provide and maintain a 50-foot undisturbed natural buffer; or
 - ii. Provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by erosion and sediment controls that achieve, in combination, the sediment load reduction equivalent to a 50-foot undisturbed natural buffer; or
 - iii. If infeasible to provide and maintain an undisturbed natural buffer of any size, implement erosion and sediment controls to achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

See Appendix F, Part F.2 for additional conditions applicable to each compliance alternative.

- b. **Exceptions.** See Appendix F, Part F.2 for exceptions to the compliance alternatives.

2.2.2 Direct stormwater to vegetated areas and maximize stormwater infiltration and filtering to reduce pollutant discharges, unless infiltration would be inadvisable due to the underlying geology (e.g., karst topography) and ground water contamination concerns, or infeasible due to site conditions.¹⁹

¹⁸ Such documentation could include, for example, that minor repairs completed within the required timeframe are all that is necessary to ensure that the stormwater control continues to operate as designed and installed and that the stormwater control remains appropriate for the flow reaching it.

¹⁹ Operators should consider whether factors such as specific contaminant concerns from the construction site, the underlying soils or geology, hydrology, depth to the ground water table, or proximity to source water or wellhead protection area(s) make the site unsuitable for infiltrating construction stormwater. Site conditions that may be of particular concern include proximity to: a current or future drinking water aquifer; a drinking water well or spring (including private/household wells); highly conductive geology such as karst; known pollutant hot spots, such as hazardous waste sites, landfills, gas stations, brownfields; an on-site sewage system or underground storage tank; or soils that do not allow for infiltration. Operators may find it helpful to consult EPA's [Drinking Water Mapping Application to Protect Source Waters \(DWMAPS\)](#). DWMAPS is an online mapping tool that can be used to locate drinking water providers, potential sources of contamination, polluted waterways, and information on protection initiatives in the site area.

2.2.3 Install sediment controls along any perimeter areas of the site that are downslope from any exposed soil or other disturbed areas.²⁰

- a. The perimeter control must be installed upgradient of any natural buffers established under Part 2.2.1, unless the control is being implemented pursuant to Part 2.2.1a.ii-iii;
- b. To prevent stormwater from circumventing the edge of the perimeter control, install the perimeter control on the contour of the slope and extend both ends of the control up slope (e.g., at 45 degrees) forming a crescent rather than a straight line;
- c. After installation, to ensure that perimeter controls continue to work effectively:
 - i. Remove sediment before it has accumulated to one-half of the above-ground height of any perimeter control; and
 - ii. After a storm event, if there is evidence of stormwater circumventing or undercutting the perimeter control, extend controls and/or repair undercut areas to fix the problem.
- d. **Exception.** For areas at “linear construction sites” (as defined in Appendix A) where perimeter controls are infeasible (e.g., due to a limited or restricted right-of-way), implement other practices as necessary to minimize pollutant discharges to perimeter areas of the site.

2.2.4 Minimize sediment track-out.

- a. Restrict vehicle use to properly designated exit points;
- b. Use appropriate stabilization techniques²¹ at all points that exit onto paved roads;
 - i. **Exception:** Stabilization is not required for exit points at linear utility construction sites that are used only episodically and for very short durations over the life of the project, provided other exit point controls²² are implemented to minimize sediment track-out;
- c. Implement additional track-out controls²³ as necessary to ensure that sediment removal occurs prior to vehicle exit; and
- d. Where sediment has been tracked-out from your site onto paved roads, sidewalks, or other paved areas outside of your site, remove the deposited sediment by the end of the same business day in which the track-out occurs or by the end of the next business day if track-out occurs on a non-business day. Remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. You are prohibited from hosing or sweeping tracked-out

²⁰ Examples of perimeter controls include filter berms; different types of silt fence such as wire-backed silt fence, super silt fence, or multi-layer geotextile silt fence; compost filter socks; gravel barriers; and temporary diversion dikes.

²¹ Examples of appropriate stabilization techniques include the use of aggregate stone with an underlying geotextile or non-woven filter fabric, and turf mats.

²² Examples of other exit point controls include preventing the use of exit points during wet periods; minimizing exit point use by keeping vehicles on site to the extent possible; limiting exit point size to the width needed for vehicle and equipment usage; using scarifying and compaction techniques on the soil; and avoiding establishing exit points in environmentally sensitive areas (e.g., karst areas; steep slopes).

²³ Examples of additional track-out controls include the use of wheel washing, rumble strips, and rattle plates.

sediment into any constructed or natural site drainage feature, storm drain inlet, or receiving water.²⁴

2.2.5 Manage stockpiles or land clearing debris piles composed, in whole or in part, of sediment and/or soil:²⁵

- a. Locate the piles outside of any natural buffers established under Part 2.2.1 and away from any constructed or natural site drainage features, storm drain inlets, and areas where stormwater flow is concentrated;
- b. Install a sediment barrier along all downgradient perimeter areas of stockpiled soil or land clearing debris piles;²⁶
- c. For piles that will be unused for 14 or more days, provide cover²⁷ or appropriate temporary stabilization (consistent with Part 2.2.14);
- d. You are prohibited from hosing down or sweeping soil or sediment accumulated on pavement or other impervious surfaces into any constructed or natural site drainage feature, storm drain inlet, or receiving water.

2.2.6 Minimize dust. On areas of exposed soil, minimize dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged in stormwater from the site.

2.2.7 Minimize steep slope disturbances. Minimize the disturbance of "steep slopes" (as defined in Appendix A).²⁸

2.2.8 Preserve native topsoil, unless infeasible.²⁹

2.2.9 Minimize soil compaction.³⁰ In areas of your site where final vegetative stabilization will occur or where infiltration practices will be installed:

²⁴ Fine grains that remain visible (e.g., staining) on the surfaces of off-site streets, other paved areas, and sidewalks after you have implemented sediment removal practices are not a violation of Part 2.2.4.

²⁵ The requirements in Part 2.2.5 do not apply to the storage of rock, such as rip rap, landscape rock, pipe bedding gravel, and boulders. Refer to Part 2.3.3a for the requirements that apply to these types of materials.

²⁶ Examples of sediment barriers include berms, dikes, fiber rolls, silt fences, sandbags, gravel bags, or straw bale.

²⁷ Examples of cover include tarps, blown straw and hydroseeding.

²⁸ Where disturbance to steep slopes cannot be avoided, operators should consider implementing controls suitable for steep slope disturbances that are effective at minimizing erosion and sediment discharge (e.g., preservation of existing vegetation, hydraulic mulch, geotextiles and mats, compost blankets, earth dikes or drainage swales, terraces, velocity dissipation devices). To identify slopes and soil types that are of comparatively higher risk for sediment discharge in areas of the country where the CGP is in effect, operators can use the tables in Appendix F (see Tables F-2 thru F-6).

²⁹ Stockpiling topsoil at off-site locations, or transferring topsoil to other locations, is an example of a practice that is consistent with the requirements in Part 2.2.8. Preserving native topsoil is not required where the intended function of a specific area of the site dictates that the topsoil be disturbed or removed. For example, some sites may be designed to be highly impervious after construction, and therefore little or no vegetation is intended to remain, or may not have space to stockpile native topsoil on site for later use, in which case it may not be feasible to preserve topsoil.

³⁰ Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted.

- a. Restrict vehicle and equipment use in these locations to avoid soil compaction; and
- b. Before seeding or planting areas of exposed soil that have been compacted, use techniques that rehabilitate and condition the soils as necessary to support vegetative growth.

2.2.10 Protect storm drain inlets.

- a. Install inlet protection measures that remove sediment from discharges prior to entry into any storm drain inlet that carries stormwater from your site to a receiving water, provided you have authority to access the storm drain inlet.³¹ Inlet protection measures are not required for storm drain inlets that are conveyed to a sediment basin, sediment trap, or similarly effective control; and
- b. Clean, or remove and replace, the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which it is found or by the end of the following business day if removal by the same business day is not feasible.

2.2.11 Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.³²

2.2.12 If you install a sediment basin or similar impoundment:

- a. Situate the basin or impoundment outside of any receiving water, and any natural buffers established under Part 2.2.1;
- b. Design the basin or impoundment to avoid collecting water from wetlands;
- c. Design the basin or impoundment to provide storage for either:
 - i. The calculated volume of runoff from a 2-year, 24-hour storm;³³ or
 - ii. 3,600 cubic feet per acre drained.
- d. Utilize outlet structures that withdraw water from the surface of the sediment basin or similar impoundment, unless infeasible;³⁴
- e. Use erosion controls and velocity dissipation devices to prevent erosion at inlets and outlets; and

³¹ Inlet protection measures can be removed in the event of flood conditions or to prevent erosion.

³² Examples of stormwater controls that can be used to comply with this requirement include the use of erosion controls and/or velocity dissipation devices (e.g., check dams, sediment traps), within and along the length of a constructed site drainage feature and at the outfall to slow down stormwater.

³³ Operators may refer to <https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates> for guidance on determining the volume of precipitation associated with their site's local 2-year, 24-hour storm event.

³⁴ The circumstances in which it is infeasible to design outlet structures in this manner are rare. Exceptions may include areas with extended cold weather, where using surface outlets may not be feasible during certain time periods (although they must be used during other periods). If you determine that it is infeasible to meet this requirement, you must provide documentation in your SWPPP to support your determination, including the specific conditions or time periods when this exception will apply.

- f. Remove accumulated sediment to maintain at least one-half of the design capacity and conduct all other appropriate maintenance to ensure the basin or impoundment remains in effective operating condition.

2.2.13 If using treatment chemicals (e.g., polymers, flocculants, coagulants):

- a. **Use conventional erosion and sediment controls before and after the application of treatment chemicals.** Chemicals may only be applied where treated stormwater is directed to a sediment control (e.g., *sediment basin, perimeter control*) before discharge.
- b. **Select appropriate treatment chemicals.** Chemicals must be appropriately suited to the types of soils likely to be exposed during construction and present in the discharges being treated (i.e., *the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or area*).
- c. **Minimize discharge risk from stored chemicals.** Store all treatment chemicals in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures (e.g., *spill berms, dikes, spill containment pallets*), or provide equivalent measures designed and maintained to minimize the potential discharge of treatment chemicals in stormwater or by any other means (e.g., *storing chemicals in a covered area, having a spill kit available on site and ensuring personnel are available to respond expeditiously in the event of a leak or spill*).
- d. **Comply with State/local requirements.** Comply with applicable State and local requirements regarding the use of treatment chemicals.
- e. **Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier.** Use treatment chemicals and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the provider/supplier of the applicable chemicals, or document in your SWPPP specific departures from these specifications and how they reflect good engineering practice.
- f. **Ensure proper training.** Ensure all persons who handle and use treatment chemicals at the construction site are provided with appropriate, product-specific training prior to beginning application of treatment chemicals. Among other things, the training must cover proper dosing requirements.
- g. **Perform additional measures specified by the EPA Regional Office for the authorized use of cationic chemicals.** If you have been authorized to use cationic chemicals at your site pursuant to Part 1.1.9, you must perform all additional measures as conditioned by your authorization to ensure the use of such chemicals will not result in discharges that do not meet water quality standards.

2.2.14 Stabilize exposed portions of the site. Implement and maintain stabilization measures (e.g., *seeding protected by erosion controls until vegetation is established*,³⁵ *sodding, mulching, erosion control blankets, hydromulch, gravel*) that minimize erosion from any areas of exposed soil on the site in accordance with Part.

³⁵ If you will be evaluating the use of some type of erosion control netting to the site as part of your site stabilization, EPA encourages you to consider employing products that have been shown to minimize

a. Stabilization Deadlines:³⁶**Table 2 Deadlines for Initiating and Completing Site Stabilization.**

Total Amount of Land Disturbance Occurring At Any One Time ³⁷	Deadline
<p>i. Five acres or less (≤5.0)</p> <p>Note: this includes sites disturbing more than five acres (>5.0) total over the course of a project, but that limit disturbance at any one time (i.e., phase the disturbance) to five acres or less (≤5.0)</p>	<ul style="list-style-type: none"> Initiate the installation of stabilization measures immediately³⁸ in any areas of exposed soil where construction activities have permanently ceased or will be temporarily inactive for 14 or more calendar days;³⁹ and Complete the installation of stabilization measures as soon as practicable, but no later than 14 calendar days

impacts on wildlife. For instance, the U.S. Fish & Wildlife Service provides recommendations on the type of netting practices that are considered “wildlife friendly,” including those that use natural fiber or 100 percent biodegradable materials and that use a loose weave with a non-welded, movable jointed netting, as well as those products that are not wildlife friendly including square plastic netting that are degradable (e.g., photodegradable, UV-degradable, oxo-degradable), netting made from polypropylene, nylon, polyethylene, or polyester. Other recommendations include removing the netting product when it is no longer needed. See https://www.fws.gov/midwest/eastlansing/library/pdf/WildlifeFriendlyErosionControlProducts_revised.pdf for further information. There also may be State, Tribal, or local requirements about using wildlife friendly erosion control products.

³⁶ EPA may determine, based on an inspection carried out under Part 4.8 and corrective actions required under Part 5.3, that the level of sediment discharge on the site makes it necessary to require a faster schedule for completing stabilization. For instance, if sediment discharges from an area of exposed soil that is required to be stabilized are compromising the performance of existing stormwater controls, EPA may require stabilization to correct this problem.

³⁷ Limiting disturbances to five (5) acres or less at any one time means that at no time during the project do the cumulative earth disturbances exceed five (5) acres. The following examples would qualify as limiting disturbances at any one time to five (5) acres or less:

1. The total area of disturbance for a project is five (5) acres or less.
2. The total area of disturbance for a project will exceed five (5) acres, but the operator ensures that no more than five (5) acres will be disturbed at any one time through implementation of stabilization measures. In this way, site stabilization can be used to “free up” land that can be disturbed without exceeding the five (5)-acre cap to qualify for the 14-day stabilization deadline. For instance, if an operator completes stabilization of two (2) acres of land on a five (5)-acre disturbance, then two (2) additional acres could be disturbed while still qualifying for the longer 14-day stabilization deadline.

³⁸ The following are examples of activities that would constitute the immediate initiation of stabilization:

1. Prepping the soil for vegetative or non-vegetative stabilization as long as seeding, planting, and/or installation of non-vegetative stabilization products takes place as soon as practicable, but no later than one (1) calendar day of completing soil preparation;
2. Applying mulch or other non-vegetative product to the exposed area;
3. Seeding or planting the exposed area;
4. Starting any of the activities in # 1 – 3 on a portion of the entire area that will be stabilized; and
5. Finalizing arrangements to have stabilization product fully installed in compliance with the deadlines for completing stabilization.

³⁹ The requirement to initiate stabilization immediately is triggered as soon as you know that construction work on a portion of the site is temporarily ceased and will not resume for 14 or more days, or as soon as you know that construction work is permanently ceased. In the context of this provision, “immediately” means as soon as practicable, but no later than the end of the next business day, following the day when the construction activities have temporarily or permanently ceased.

Total Amount of Land Disturbance Occurring At Any One Time ³⁷	Deadline
	after stabilization has been initiated. ⁴⁰
ii. More than five acres (>5.0)	<ul style="list-style-type: none"> • Initiate the installation of stabilization measures immediately⁴¹ in any areas of exposed soil where construction activities have permanently ceased or will be temporarily inactive for 14 or more calendar days;⁴² and • Complete the installation of stabilization measures as soon as practicable, but no later than seven (7) calendar days after stabilization has been initiated.⁴³

b. Exceptions:

i. Arid, semi-arid, and drought-stricken areas (as defined in Appendix A). If it is the seasonally dry period (as defined in Appendix A)⁴⁴ or a period in which drought is occurring, and vegetative stabilization measures are being used:

- (a) Immediately initiate and, within 14 calendar days of temporary or permanent cessation of work in any portion of your site, complete the installation of temporary non-vegetative stabilization measures to the extent necessary to prevent erosion;
- (b) As soon as practicable, given conditions or circumstances on the site, complete all activities necessary to seed or plant the area to be stabilized; and
- (c) If construction is occurring during the seasonally dry period, indicate in your SWPPP the beginning and ending dates of the seasonally dry period and your site conditions. Also include the schedule you will follow for initiating and completing vegetative stabilization.

ii. Unforeseen circumstances. Operators that are affected by unforeseen circumstances⁴⁵ that delay the initiation and/or completion of vegetative stabilization:

⁴⁰ If vegetative stabilization measures are being implemented, stabilization is considered "installed" when all activities necessary to seed or plant the area are completed, including the application of any non-vegetative protective cover (e.g., mulch, erosion control blanket), if applicable. If non-vegetative stabilization measures are being implemented, stabilization is considered "installed" when all such measures are implemented or applied.

⁴¹ See footnote 38.

⁴² See footnote 39.

⁴³ See footnote 40.

⁴⁴ The term "seasonally dry period" as defined in Appendix A refers to a month in which the long-term average total precipitation is less than or equal to 0.5 inches. Refer to EPA's Seasonally Dry Period Locator Tool at <https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates> and supporting maps for assistance in determining whether a site is operating during a seasonally dry period for the area.

⁴⁵ Examples include problems with the supply of seed stock or with the availability of specialized equipment and unsuitability of soil conditions due to excessive precipitation and/or flooding.

- (a) Immediately initiate and, within 14 calendar days, complete the installation of temporary non-vegetative stabilization measures to prevent erosion;
 - (b) Complete all soil conditioning, seeding, watering or irrigation installation, mulching, and other required activities related to the planting and initial establishment of vegetation as soon as conditions or circumstances allow it on your site; and
 - (c) Document in the SWPPP the circumstances that prevent you from meeting the deadlines in Part 2.2.14a and the schedule you will follow for initiating and completing stabilization.
- iii. Discharges to a sediment- or nutrient-impaired water or to a water that is identified by your State, Tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes.** Complete stabilization as soon as practicable, but no later than seven (7) calendar days after stabilization has been initiated.
- c. Final Stabilization Criteria** (for any areas not covered by permanent structures):
- i.** Establish uniform, perennial vegetation (*i.e., evenly distributed, without large bare areas*) to provide 70 percent or more of the vegetative cover native to local undisturbed areas; and/or
 - ii.** Implement permanent non-vegetative stabilization measures⁴⁶ to provide effective cover of any areas of exposed soil.
 - iii. Exceptions:**
 - (a) **Arid, semi-arid, and drought-stricken areas** (as defined in Appendix A). Final stabilization is met if the area has been seeded or planted to establish vegetation that provides 70 percent or more of the vegetative cover native to local undisturbed areas within three (3) years and, to the extent necessary to prevent erosion on the seeded or planted area, non-vegetative erosion controls have been applied to provide cover for at least three years without active maintenance.
 - (b) **Disturbed areas on agricultural land that are restored to their preconstruction agricultural use.** The Part 2.2.14c final stabilization criteria do not apply.
 - (c) **Areas that need to remain disturbed.** In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed, and only the minimum area needed remains disturbed (*e.g., dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, materials*).

2.3 POLLUTION PREVENTION REQUIREMENTS⁴⁷

You must implement pollution prevention controls in accordance with the following requirements to minimize the discharge of pollutants in stormwater and to prevent the discharge of pollutants from spilled or leaked materials from construction activities.

⁴⁶ Examples of permanent non-vegetative stabilization measures include riprap, gravel, gabions, and geotextiles.

⁴⁷ Under this permit, you are not required to minimize exposure for any products or materials where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

2.3.1 For equipment and vehicle fueling and maintenance:

- a. Provide an effective means of eliminating the discharge of spilled or leaked chemicals, including fuels and oils, from these activities;⁴⁸
- b. If applicable, comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR part 112 and Section 311 of the CWA;
- c. Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;
- d. Use drip pans and absorbents under or around leaky vehicles;
- e. Dispose of or recycle oil and oily wastes in accordance with other Federal, State, Tribal, or local requirements; and
- f. Clean up spills or contaminated surfaces immediately, using dry clean up measures (do not clean contaminated surfaces by hosing the area down), and eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.

2.3.2 For equipment and vehicle washing:

- a. Provide an effective means of minimizing the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other types of wash waters;⁴⁹
- b. Ensure there is no discharge of soaps, solvents, or detergents in equipment and vehicle wash water; and
- c. For storage of soaps, detergents, or solvents, provide either (1) cover (e.g., *plastic sheeting, temporary roofs*) to minimize the exposure of these detergents to precipitation and to stormwater, or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas.

2.3.3 For storage, handling, and disposal of building products, materials, and wastes:⁵⁰

- a. For building materials and building products,⁵¹ provide either (1) cover (e.g., *plastic sheeting, temporary roofs*) to minimize the exposure of these products to

⁴⁸ Examples of effective means include:

- Locating activities away from receiving waters, storm drain inlets, and constructed or natural site drainage feature so that stormwater coming into contact with these activities cannot reach waters of the U.S.;
- Providing secondary containment (e.g., *spill berms, dikes, spill containment pallets*) and cover where appropriate; and
- Having a spill kit available on site and ensuring personnel are available to respond expeditiously in the event of a leak or spill.

⁴⁹ Examples of effective means include locating activities away from receiving waters and storm drain inlets or constructed or natural site drainage features and directing wash waters to a sediment basin or sediment trap, using filtration devices, such as filter bags or sand filters, or using other similarly effective controls.

⁵⁰ Compliance with the requirements of this permit does not relieve compliance requirements with respect to Federal, State, or local laws and regulations governing the storage, handling, and disposal of solid, hazardous, or toxic wastes and materials.

⁵¹ Examples of building materials and building products typically present at construction sites include asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures, and gravel and mulch stockpiles.

precipitation and to stormwater, or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas.

Exception: Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

- b.** *For pesticides, herbicides, insecticides, fertilizers, and landscape materials:*
- i.** In storage areas, provide either (1) cover (e.g., *plastic sheeting, temporary roofs*) to minimize the exposure of these chemicals to precipitation and to stormwater, or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas; and
 - ii.** Comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label (see also Part 2.3.5).
- c.** *For diesel fuel, oil, hydraulic fluids, other petroleum products, and other chemicals:*
The following requirements apply to the storage and handling of chemicals on your site. If you are already implementing controls as part of an SPCC or other spill prevention plan that meet or exceed the requirements of this Part, you may continue to do so and be considered in compliance with these provisions provided you reference the applicable parts of the SPCC or other plans in your SWPPP as required in Part 7.2.6b.viii.
- i.** If any chemical container has a storage capacity of less than 55 gallons:
 - (a) The containers must be water-tight, and must be kept closed, sealed, and secured when not being actively used;
 - (b) If stored outside, use a spill containment pallet or similar device to capture small leaks or spills; and
 - (c) Have a spill kit available on site that is in good working condition (i.e., not damaged, expired, or used up) and ensure personnel are available to respond immediately in the event of a leak or spill.
 - ii.** If any chemical container has a storage capacity of 55 gallons or more:
 - (a) The containers must be water-tight, and must be kept closed, sealed, and secured when not being actively used;
 - (b) Store containers a minimum of 50 feet from receiving waters, constructed or natural site drainage features, and storm drain inlets. If infeasible due to site constraints, store containers as far away from these features as the site permits. If site constraints prevent you from storing containers 50 feet away from receiving waters or the other features identified, you must document in your SWPPP the specific reasons why the 50-foot setback is infeasible, and how you will store containers as far away as the site permits;
 - (c) Provide either (1) cover (e.g., *temporary roofs*) to minimize the exposure of these containers to precipitation and to stormwater, or (2) secondary containment (e.g., *curbing, spill berms, dikes, spill containment pallets, double-wall, above-ground storage tank*); and
 - (d) Have a spill kit available on site that is in good working condition (i.e., not

damaged, expired, or used up) and ensure personnel are available to respond immediately in the event of a leak or spill. Additional secondary containment measures are listed at 40 CFR § 112.7(c)(1).

- iii. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. You are prohibited from hosing the area down to clean surfaces or spills. Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.
- d. *For hazardous or toxic wastes:*⁵²
 - i. Separate hazardous or toxic waste from construction and domestic waste;
 - ii. Store waste in sealed containers, constructed of suitable materials to prevent leakage and corrosion, and labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable Federal, State, Tribal, or local requirements;
 - iii. Store all outside containers within appropriately-sized secondary containment (e.g., *spill berms, dikes, spill containment pallets*) to prevent spills from being discharged, or provide a similarly effective means designed to prevent the discharge of pollutants from these areas (e.g., *storing chemicals in a covered area, having a spill kit available on site*);
 - iv. Dispose of hazardous or toxic waste in accordance with the manufacturer's recommended method of disposal and in compliance with Federal, State, Tribal, and local requirements;
 - v. Clean up spills immediately, using dry clean-up methods, and dispose of used materials properly. You are prohibited from hosing the area down to clean surfaces or spills. Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge; and
 - vi. Follow all other Federal, State, Tribal, and local requirements regarding hazardous or toxic waste.
- e. *For construction and domestic wastes:*⁵³
 - i. Provide waste containers (e.g., *dumpster, trash receptacle*) of sufficient size and number to contain construction and domestic wastes;
 - (a) For waste containers with lids, keep waste container lids closed when not in use, and close lids at the end of the business day and during storm events. For waste containers without lids, provide either (1) cover (e.g., *a tarp, plastic sheeting, temporary roof*) to minimize exposure of wastes to precipitation, or (2) a similarly effective means designed to minimize the discharge of pollutants (e.g., *secondary containment*);
 - (b) On business days, clean up and dispose of waste in designated waste

⁵² Examples of hazardous or toxic waste that may be present at construction sites include paints, caulks, sealants, fluorescent light ballasts, solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids.

⁵³ Examples of construction and domestic wastes include packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, demolition debris; and other trash or discarded materials.

containers; and

(c) Clean up immediately if containers overflow, and if there is litter elsewhere on the site from escaped trash.

ii. Waste containers are not required for the waste remnant or unused portions of construction materials or final products that are covered by the exception in Part 2.2.3a provided that:

(a) These wastes are stored separately from other construction or domestic wastes addressed by Part 2.3.3e.i (i.e., wastes not covered by the exception in Part 2.3.3a). If the wastes are mixed, they must be stored in waste containers as required in Part 2.3.3e.i; and

(b) These wastes are stored in designated areas of the site, the wastes are described in the SWPPP (see Part 7.2.6b.ix), and identified in the site plan (see Part 7.2.4i).

f. *For sanitary waste*, position portable toilets so they are secure and will not be tipped or knocked over, and are located away from receiving waters, storm drain inlets, and constructed or natural site drainage features.

2.3.4 For washing applicators and containers used for stucco, paint, concrete, form release oils, curing compounds, or other materials:

a. Direct wash water into a leak-proof container or leak-proof and lined pit designed so no overflows can occur due to inadequate sizing or precipitation;

b. Handle washout or cleanout wastes as follows:

i. For liquid wastes:

(a) Do not dump liquid wastes or allow them to enter into constructed or natural site drainage features, storm inlets, or receiving waters;

(b) Do not allow liquid wastes to be disposed of through infiltration or to otherwise be disposed of on the ground;

(c) Comply with applicable State, Tribal, or local requirements for disposal

ii. Remove and dispose of hardened concrete waste consistent with your handling of other construction wastes in Part 2.3.3e; and

c. Locate any washout or cleanout activities as far away as possible from receiving waters, constructed or natural site drainage features, and storm drain inlets, and, to the extent feasible, designate areas to be used for these activities and conduct such activities only in these areas.

2.3.5 For the application of fertilizers:

a. Apply at a rate and in amounts consistent with manufacturer's specifications, or document in the SWPPP departures from the manufacturer specifications where appropriate in accordance with Part 7.2.6b.x;

b. Apply at the appropriate time of year for your location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth;

- c. Avoid applying before heavy rains that could cause excess nutrients to be discharged;
- d. Never apply to frozen ground;
- e. Never apply to constructed or natural site drainage features; and
- f. Follow all other Federal, State, Tribal, and local requirements regarding fertilizer application.

2.3.6 Emergency Spill Notification Requirements

Discharges of toxic or hazardous substances from a spill or other release are prohibited, consistent with Part 1.3.5. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR part 110, 40 CFR part 117, or 40 CFR part 302 occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC metropolitan area, call (202) 267-2675 in accordance with the requirements of 40 CFR part 110, 40 CFR part 117, and 40 CFR part 302 as soon as you have knowledge of the release. You must also, within seven (7) calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release. State, Tribal, or local requirements may necessitate additional reporting of spills or discharges to local emergency response, public health, or drinking water supply agencies.

2.4 CONSTRUCTION DEWATERING REQUIREMENTS

Comply with the following requirements to minimize the discharge of pollutants from dewatering⁵⁴ operations.

- 2.4.1** Route dewatering water through a sediment control (e.g., sediment trap or basin, pumped water filter bag) designed to prevent discharges with visual turbidity;⁵⁵
- 2.4.2** Do not discharge visible floating solids or foam;
- 2.4.3** The discharge must not cause the formation of a visible sheen on the water surface, or visible oily deposits on the bottom or shoreline of the receiving water. Use an oil-water separator or suitable filtration device (such as a cartridge filter) designed to remove oil, grease, or other products if dewatering water is found to or expected to contain these materials;
- 2.4.4** To the extent feasible, use well-vegetated (e.g., grassy or wooded), upland areas of the site to infiltrate dewatering water before discharge.⁵⁶ You are prohibited from using receiving waters as part of the treatment area;
- 2.4.5** To prevent dewatering-related erosion and related sediment discharges:
 - a. Use stable, erosion-resistant surfaces (e.g., well-vegetated grassy areas, clean filter stone, geotextile underlayment) to discharge from dewatering controls;

⁵⁴ "Dewatering" is defined in Appendix A as "the act of draining accumulated stormwater and/or ground water from building foundations, vaults, and trenches, or other similar points of accumulation."

⁵⁵ For the purposes of this permit, visual turbidity is present where there is a sediment plume in the discharge or the discharge appears cloudy, or opaque, or has a visible contrast that can be identified by an observer.

⁵⁶ See footnote 19.

- b. Do not place dewatering controls, such as pumped water filter bags, on steep slopes (as defined in Appendix A); and
 - c. At all points where dewatering water is discharged, comply with the velocity dissipation requirements of Part 2.2.11.
- 2.4.6** For backwash water, either haul it away for disposal or return it to the beginning of the treatment process;
- 2.4.7** Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications; and
- 2.4.8** Comply with dewatering-specific inspection requirements in Part 4.

3 WATER QUALITY-BASED EFFLUENT LIMITATIONS

3.1 GENERAL EFFLUENT LIMITATION TO MEET APPLICABLE WATER QUALITY STANDARDS

Discharges must be controlled as necessary to meet applicable water quality standards. Discharges must also comply with any additional State or Tribal requirements that are in Part 9.

In the absence of information demonstrating otherwise, EPA expects that compliance with the conditions in this permit will result in stormwater discharges being controlled as necessary to meet applicable water quality standards. If at any time you become aware, or EPA determines, that discharges are not being controlled as necessary to meet applicable water quality standards, you must take corrective action as required in Parts 5.1 and 5.2, and document the corrective actions as required in Part 5.4.

EPA may insist that you install additional controls (to meet the narrative water quality-based effluent limit above) on a site-specific basis, or require you to obtain coverage under an individual permit, if information in your NOI or from other sources indicates that your discharges are not controlled as necessary to meet applicable water quality standards. This includes situations where additional controls are necessary to comply with a wasteload allocation in an EPA-established or approved TMDL.

If during your coverage under a previous permit, you were required to install and maintain stormwater controls specifically to meet the assumptions and requirements of an EPA-approved or established TMDL (for any parameter) or to otherwise control your discharge to meet water quality standards, you must continue to implement such controls as part of your coverage under this permit.

3.2 WATER QUALITY-BASED CONDITIONS FOR SITES DISCHARGING TO CERTAIN IMPAIRED AND HIGH QUALITY RECEIVING WATERS

For any portion of the site that discharges to a sediment or nutrient-impaired water or to a water that is identified by your State, Tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes,⁵⁷ you must comply with the inspection frequency specified in Part 4.3 and you must comply with the stabilization deadline specified in Part 2.2.14b.iii.⁵⁸

⁵⁷ Refer to Appendix A for definitions of "impaired water" and "Tier 2," "Tier 2.5," and "Tier 3" waters. For assistance in determining whether your site discharges to impaired waters, EPA has developed a tool that is available at <https://www.epa.gov/npdes/epas-stormwater-discharge-mapping-tools>. For assistance in determining whether your site discharges to a Tier 2, 2.5, or 3 water, refer to the list of such waters at <https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates>.

⁵⁸ If you qualify for any of the reduced inspection frequencies in Part 4.4, you may conduct inspections in

If you discharge to a water that is impaired for a parameter other than a sediment-related parameter or nutrients, EPA will inform you if any additional controls are necessary for your discharge to be controlled as necessary to meet water quality standards. These controls might include those necessary for your discharge to be consistent with the assumptions of any available wasteload allocation in any applicable TMDL. In addition, EPA may require you to apply for and obtain coverage under an individual NPDES permit.

In addition, on a case-by-case basis, EPA may notify operators of new sites or operators of existing sites with increased discharges that additional analyses, stormwater controls, and/or other measures are necessary to comply with the applicable antidegradation requirements, or notify you that an individual permit application is necessary.

If you discharge to a water that is impaired for polychlorinated biphenyls (PCBs) and are engaging in demolition of any structure with at least 10,000 square feet of floor space built or renovated before January 1, 1980, you must:

- a. Implement controls⁵⁹ to minimize the exposure of PCB-containing building materials, including paint, caulk, and pre-1980 fluorescent lighting fixtures, to precipitation and to stormwater; and
- b. Ensure that disposal of such materials is performed in compliance with applicable State, Federal, and local laws.

3.3 TURBIDITY BENCHMARK MONITORING FOR SITES DISCHARGING DEWATERING WATER TO PROTECT THE WATER QUALITY OF SENSITIVE WATERS

For sites discharging dewatering water to “sensitive waters” (i.e., receiving waters listed as impaired for sediment or a sediment-related parameter (as defined in Appendix A), or receiving waters designated as a Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes) you are required to comply with the benchmark monitoring requirements in this Part and document the procedures you will use at your site in your SWPPP pursuant to Part 7.2.8. A summary of these requirements is included in Table 1.

EPA notes that the benchmark threshold is not an effluent limitation, rather it is an indicator that the dewatering controls may not be working to protect water quality, which the operator must investigate and correct as appropriate. A benchmark exceedance is not a permit violation. However, if a benchmark exceedance triggers corrective action in Part 5.1.5a, failure to conduct any required action is a permit violation.

Where there are multiple operators associated with the same site, the operators may coordinate with one another to carry out the monitoring requirements of this Part in order to avoid duplicating efforts. Such coordinating arrangements must be described in the SWPPP consistent with Part 7.2.8. Regardless of how the operators divide the

accordance with Part 4.4 for any portion of your site that discharges to a sensitive water.

⁵⁹ Examples of controls to minimize exposure of PCBs to precipitation and stormwater include separating work areas from non-work areas and selecting appropriate personal protective equipment and tools, constructing a containment area so that all dust or debris generated by the work remains within the protected area, and using tools that minimize dust and heat (<212°F). For additional information, refer to Part 2.3.3 of the CGP Fact Sheet.

responsibilities for monitoring and reporting, each operator remains responsible for compliance with these requirements.⁶⁰

3.3.1 Turbidity monitoring requirements⁶¹

- a. **Sampling frequency.** You must collect at least one turbidity sample from your dewatering discharge each day a discharge occurs.
- b. **Sampling location.** Samples must be taken at all points where dewatering water is discharged. Samples must be taken after the dewatering water has been treated by installed treatment devices pursuant to Parts 2.4.1 and 2.4.3 and prior to its discharge off site into a receiving water, constructed or natural site drainage feature, or storm drain inlet.
- c. **Representative samples.** Samples taken must be representative of the dewatering discharge for any given day as required in Appendix G (standard permit conditions), Part G.10.2.
- d. **Test methods.** Samples must be measured using a turbidity meter that reports results in nephelometric turbidity units (NTUs) and conforms with a Part 136-approved method (e.g., methods 180.1 and 2130). You are required to use the meter, and conduct a calibration verification prior to each day's use, consistent with the manufacturer's instructions.

3.3.2 Turbidity benchmark

- a. The benchmark threshold for turbidity for this permit is 50 NTUs (referred to elsewhere in this permit as the "standard 50 NTU benchmark") unless EPA has authorized the use of an alternate benchmark in accordance with Part 3.3.2b.
- b. **Request for alternate benchmark threshold.**
 - i. At any time prior to or during your coverage under this permit, you may request that EPA approve a benchmark for your site that is higher than 50 NTUs if you have information demonstrating the higher number is the same as your receiving water's water quality standard for turbidity. Unless EPA approves an alternate benchmark, you will be required to use the standard 50 NTU benchmark. To request approval of an alternate benchmark, you must submit the following information to your applicable EPA Regional Office (see Appendix K):
 - (a) The current turbidity water quality standard that applies to your receiving

⁶⁰ For instance, if Operator A relies on Operator B to meet the Part 3.3.1 turbidity monitoring requirements, the Part 3.3.4 reporting and recordkeeping requirements, and the Part 5.2.2 corrective action provisions when applicable, Operator A does not have to duplicate these same functions if Operator B is implementing them for both operators to be in compliance with the permit. However, Operator A remains responsible for complying with these permit requirements if Operator B fails to take actions that were necessary for Operator A to comply with the permit. See also footnote 83. EPA notes that both Operator A and B are required to submit turbidity monitoring reports as required under Part 3.3.4, however, Operator A's report does not need to include the data collected by Operator B as long as Operator B submits the required data and Operator A's report indicates that it is relying on Operator B to report the data. See Part 3.3.4a.

⁶¹ Operators may find it useful to consult EPA's *Monitoring and Inspection Guide for Construction Dewatering*, available at <https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates>, which provides guidelines on how to correctly monitor for turbidity, determine if the weekly average exceeds the benchmark, and, if so, how to proceed with corrective action.

water and the source/citation.⁶²

(b) If the applicable turbidity water quality standard requires information on natural or background turbidity levels (e.g., “no more than 10 NTU above natural turbidity levels”) to determine the specific standard for the receiving water, include available data that can be used to establish the natural turbidity levels of your receiving water (including literature studies or Federal, State, Tribal, or local government data). Data must be representative of the natural turbidity levels of your specific receiving water. Identify the source(s) of all data provided, including if the data are from samples you collected of the receiving water.

- ii. EPA will inform you of its decision on whether to approve the requested alternate benchmark within 30 days. EPA may approve your request, request additional time (e.g., if additional information is needed to substantiate the data you provided), or deny your request. Unless and until EPA approves your request to use an alternate benchmark, you are required to use the standard benchmark of 50 NTUs and take any required corrective actions if an exceedance occurs.

3.3.3 Comparison of turbidity samples to benchmark. Compare the weekly average⁶³ of your turbidity monitoring results to the standard 50 NTU benchmark, or alternate benchmark if approved by EPA.

- a. If the weekly average of your turbidity monitoring results exceeds the standard benchmark (or your approved alternate benchmark), you are required to conduct follow-up corrective action in accordance with Part 5.2.2 and document any corrective action taken in your corrective action log in accordance with Part 5.4.
- b. For averaging purposes, a “monitoring week” starts with a Monday and ends on Sunday. Once a new monitoring week starts, you will need to calculate a new average for that week of turbidity monitoring results.⁶⁴ A weekly average may consist of one or more turbidity monitoring results.
- c. Although you are not required to collect and analyze more than one turbidity sample per day from your dewatering discharge, if you do collect and analyze more than one sample on any given day, you must include any additional results in the

⁶² For instance, if your site is located in Washington, DC, and you are discharging to a Class B water, for which the water quality standard is that turbidity may not increase above ambient levels by more than 20 percent, you would reference “Water Quality Standards for the District of Columbia, Chapter 11, Section 1104.8.”

⁶³ A “weekly average” is defined as the sum of all of the turbidity samples taken during a “monitoring week” divided by the number of samples measured during that week. Average values should be calculated to the nearest whole number.

⁶⁴ For example, if turbidity samples from your dewatering discharge in week 1 result in values of 30 NTU on Tuesday, 40 NTU on Wednesday, and 45 NTU on Thursday, your weekly average turbidity value would be 38.33 NTU $((30+40+45) \div 3 = 38 \text{ NTU})$. If in week 2, your turbidity samples resulted in values of 45 NTU on Monday, 30 NTU on Tuesday, 25 NTU on Wednesday, and 15 NTU on Thursday, you would calculate a new average for that week, which would yield an average turbidity value of 28.75 NTU $((45+30+25+15) \div 4 = 29 \text{ NTU})$. By comparison, if your samples on consecutive days from Friday to Monday were 60 NTU, 45 NTU, 40 NTU, and 43 NTU, respectively, and there are no other dewatering discharges for the remainder of the week, you would calculate one weekly average for the Friday to Sunday to be 48 NTU $((60+45+40) \div 3 = 48 \text{ NTU})$, and a separate weekly average for the one Monday to be 43 NTU $(43 \div 1 = 43 \text{ NTU})$.

calculation of your weekly average (i.e., add all individual results for that monitoring week and divide by the total number of samples).⁶⁵

- d. If you are conducting turbidity monitoring for more than one dewatering discharge point, you must calculate a weekly average turbidity value for each discharge point and compare each to the turbidity benchmark.

3.3.4 Reporting and recordkeeping.

- a. You must submit reports of your weekly average turbidity data to EPA no later than 30 days following the end of each monitoring quarter. If there are monitoring weeks in which there was no dewatering discharge, or if there is a monitoring quarter with no dewatering discharge, indicate this in your turbidity monitoring report. If another operator associated with your same site is conducting turbidity monitoring on your behalf pursuant to Part 3.3, indicate this in your turbidity monitoring report.
- b. For the purposes of this permit, the following monitoring quarters and reporting deadlines apply:

Table 3. Monitoring Quarters and Deadlines for Reporting Turbidity Benchmark Monitoring Data.

Monitoring Quarter #	Months	Reporting Deadline (no later than 30 days after end of the monitoring quarter)
1	January 1 – March 31	April 30
2	April 1 – June 30	July 30
3	July 1 – September 30	October 30
4	October 1 – December 31	January 30

- c. You must use EPA's NPDES eReporting Tool (NeT) to electronically submit your quarterly turbidity data, unless, consistent with Part 1.4.2, you received a waiver from your applicable EPA Regional Office. If the EPA Regional Office grants you approval to use a paper turbidity monitoring report form, and you elect to use it, you must complete the form in Appendix K. If EPA approves of your request to use an alternate turbidity benchmark pursuant to Part 3.3.2b, EPA will substitute the alternate benchmark in your NeT account.
- d. For each day in which you are required to monitor, you must record the monitoring information required by Appendix G, Parts G.10.2 and G.10.3 and retain all such information for a period of at least three years from the date this permit expires or from the date your authorization is terminated.

⁶⁵ For example, if during a monitoring week you take two turbidity samples on Tuesday with a value of 30 NTU and 35 NTU, three samples on Wednesday with a value of 40 NTU, 45 NTU, and 48 NTU, and one sample on Thursday with a value of 45 NTU, your weekly average turbidity value for this week would be 41 NTU ((30+35+40+45+48+45) ÷ 6 = 41 NTU).

Table 4. Summary of Turbidity Benchmark Monitoring Requirements.

Applicability	Sampling Requirement	Turbidity Benchmark	Corrective Action	Reporting
Sites discharging dewatering water to a sediment-impaired water or to a water designated as a Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes.	Collect at least one turbidity sample per day, from each discharge point, on any day there is a dewatering discharge. Use turbidity sampling procedures specified in Part 3.3.1.	Compare the weekly average of your turbidity monitoring results to the 50 NTU benchmark (or alternate benchmark if approved by EPA).	If the weekly average of turbidity monitoring results exceeds the 50 NTU turbidity benchmark (or alternate benchmark if approved by EPA), you are required to take follow-up corrective action in accordance with Part 5.2.2.	Report all weekly average turbidity monitoring results on a quarterly basis via NeT-CGP (unless use of the paper monitoring form in Appendix K is approved by EPA) no later than 30 days following the end of each monitoring quarter.

4 INSPECTION REQUIREMENTS

4.1 PERSON(S) RESPONSIBLE FOR CONDUCTING SITE AND DEWATERING INSPECTIONS

The person(s) inspecting your site may be a person on your staff or a third party you hire to conduct such inspections. You are responsible for ensuring that any person conducting inspections pursuant to this Part is a “qualified person.” A qualified person is someone who has completed the training required by Part 6.3.

4.2 FREQUENCY OF INSPECTIONS.⁶⁶

At a minimum, you must conduct a site inspection in accordance with one of the two schedules listed below, unless you are subject to the Part 4.3 site inspection frequency for discharges to sediment or nutrient-impaired or high quality waters, or qualify for a Part 4.4 reduction in the inspection frequency:

4.2.1 At least once every seven (7) calendar days; or

4.2.2 Once every 14 calendar days *and* within 24 hours⁶⁷ of the occurrence of:

- a.** A storm event that produces 0.25 inches or more of rain within a 24-hour period.
 - i.** If a storm event produces 0.25 inches or more of rain within a 24-hour period (including when there are multiple, smaller storms that alone produce less than 0.25 inches but together produce 0.25 inches or more in 24 hours), you are required to conduct one inspection within 24 hours of when 0.25 inches of rain or more has fallen.

⁶⁶ Inspections are only required during the site’s normal working hours.

⁶⁷ For the purposes of the inspection requirements in this Part, conducting an inspection “within 24 hours” means that once either of the two conditions in Parts 4.2.2a or 4.2.2b are met you have 24 hours from that time to conduct an inspection. For clarification, the 24 hours is counted as a continuous passage of time, and not counted by business hours (e.g., 3 business days of 8 hours each). When the 24-hour inspection time frame occurs entirely outside of normal working hours, you must conduct an inspection by no later than the end of the next business day.

- ii. If a storm event produces 0.25 inches or more of rain within a 24-hour period on the first day of a storm and continues to produce 0.25 inches or more of rain on subsequent days, you must conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.25 inches or more of rain (i.e., only two inspections would be required for such a storm event).⁶⁸
 - b. A discharge caused by snowmelt from a storm event that produces 3.25 inches⁶⁹ or more of snow within a 24-hour period. You are required to conduct one inspection once the discharge of snowmelt from a 3.25-inch or more snow accumulation occurs. Additional snowmelt inspections are only required if following the discharge from the first snowmelt, there is a discharge from a separate storm event that produces 3.25 inches or more of snow.
- 4.2.3** To determine whether a storm event meets either of the thresholds in Parts 4.2.2a or 4.2.2b:
- a. For rain, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any 24-hour period during which there is 0.25 inches or more of rainfall, you must record the total rainfall measured for that day in accordance with Part 4.7.1d.
 - b. For snow, you must either take measurements of snowfall at your site,⁷⁰ or rely on similar information from a local weather forecasting provider that is representative of your location.

4.3 INCREASE IN INSPECTION FREQUENCY FOR CERTAIN SITES.

The increased inspection frequencies established in this Part take the place of the Part 4.2 inspection frequencies for the portion of the site affected.

- 4.3.1 For any portion of the site that discharges to a sediment or nutrient-impaired water or to a water that is identified by your State, Tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see Part 3.2),** you must conduct an once every seven (7) calendar days *and* within 24 hours of the occurrence of a storm event that produces 0.25 inches or more of rain within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period.

⁶⁸ For example, if 0.30 inches of rain falls on Day 1, 0.25 inches of rain falls on Day 2, and 0.10 inches of rain fall on Day 3, you would be required to conduct a first inspection within 24 hours of the Day 1 rainfall and a second inspection within 24 hours of the Day 2 rainfall, but a third inspection would not be required within 24 hours of the Day 3 rainfall.

⁶⁹ This is the amount of snow that is equivalent to 0.25 inches of rain, based on information from the National Oceanic and Atmospheric Administration (NOAA) indicating that 13 inches of snow is, on average, equivalent to 1 inch of rain. See <https://www.nssl.noaa.gov/education/svrwx101/winter/faq/>.

⁷⁰ For snowfall measurements, EPA suggests use of NOAA's National Weather Service guidelines at https://www.weather.gov/jkl/snow_measurement. These guidelines recommend use of a "snowboard" (a piece of wood about 16 inches by 16 inches) that is placed in an unobstructed part of the site on a hard surface.

Refer to Parts 4.2.3a and 4.2.3b for the requirements to determine if a storm event produces enough rain or snow to trigger the inspection requirement.

4.3.2 For sites discharging dewatering water, you must conduct an inspection in accordance with Part 4.6.3 during the discharge once per day on which the discharge occurs. The Part 4.2 inspection frequency still applies to all other portions of the site, unless the site is affected by either the increased frequency in Part 4.3.1 or the reduced frequency in Part 4.4.

4.4 REDUCTIONS IN INSPECTION FREQUENCY

4.4.1 Stabilized areas.

a. You may reduce the frequency of inspections to twice per month for the first month, no more than 14 calendar days apart, then once per month until permit coverage is terminated consistent with Part 8 in any area of your site where the stabilization steps in Part 2.2.14a have been completed. If construction activity resumes in this portion of the site at a later date, the inspection frequency immediately increases to that required in Parts 4.2 and 4.3, as applicable. You must document the beginning and ending dates of this period in your SWPPP.

b. Exception. For “linear construction sites” (as defined in Appendix A) where disturbed portions have undergone final stabilization at the same time active construction continues on others, you may reduce the frequency of inspections to twice per month for the first month, no more than 14 calendar days apart, in any area of your site where the stabilization steps in Part 2.2.14a have been completed. After the first month, inspect once more within 24 hours of the occurrence of a storm event that produces 0.25 inches of rain or more within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period. If there are no issues or evidence of stabilization problems, you may suspend further inspections. If “wash-out” of stabilization materials and/or sediment is observed, following re-stabilization, inspections must resume at the inspection frequency required in Part 4.4.1a. Inspections must continue until final stabilization is visually confirmed following a storm event that produces 0.25 inches of rain or more within a 24-hour period.

4.4.2 Arid, semi-arid, or drought-stricken areas (as defined in Appendix A). If it is the seasonally dry period⁷¹ or a period in which drought is occurring, you may reduce the frequency of inspections to once per month and within 24 hours of the occurrence of a storm event that produces 0.25 inches of rain or more within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period. You must document that you are using this reduced schedule and the beginning and ending dates of the seasonally dry period in your SWPPP. Follow the procedures in Part 4.2.3a and 4.2.3b, accordingly, to determine if a storm event occurs that produces 0.25 inches or more of rain or 3.25 inches or more of snow within a 24-hour period. For any 24-hour period during which there is 0.25 inches or more of rainfall, or 3.25 inches or more of snow, you must record the total rainfall or snow measured for that day in accordance with Part 4.7.1d.

⁷¹ See footnote 44.

4.4.3 Frozen conditions:

- a.** If you are suspending construction activities due to frozen conditions, you may temporarily suspend inspections on your site until thawing conditions (as defined in Appendix A) begin to occur if:
 - i.** Discharges are unlikely due to continuous frozen conditions that are likely to continue at your site for at least three (3) months based on historic seasonal averages.⁷² If unexpected weather conditions (such as above freezing temperatures or rain events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.2 and 4.3, as applicable;
 - ii.** Land disturbances have been suspended; and
 - iii.** All disturbed areas of the site have been stabilized in accordance with Part 2.2.14a.
- b.** If you are still conducting construction activities during frozen conditions, you may reduce your inspection frequency to once per month if:
 - i.** Discharges are unlikely due to continuous frozen conditions that are likely to continue at your site for at least three (3) months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.2 and 4.3, as applicable; and
 - ii.** Except for areas in which you are actively conducting construction activities, disturbed areas of the site have been stabilized in accordance with Part 2.2.14a.

You must document the beginning and ending dates of this period in your SWPPP.

4.5 AREAS THAT MUST BE INSPECTED

During your site inspection, you must at a minimum inspect the following areas of your site:

- 4.5.1** All areas that have been cleared, graded, or excavated and that have not yet completed stabilization consistent with Part 2.2.14a;
- 4.5.2** All stormwater controls, including pollution prevention controls, installed at the site to comply with this permit;⁷³
- 4.5.3** Material, waste, borrow, and equipment storage and maintenance areas that are covered by this permit;
- 4.5.4** All areas where stormwater typically flows within the site, including constructed or natural site drainage features designed to divert, convey, and/or treat stormwater;
- 4.5.5** All areas where construction dewatering is taking place, including controls to treat the dewatering discharge and any channelized flow of water to and from those controls;

⁷² Use data sets that include the most recent data available to account for recent precipitation patterns and trends.

⁷³ This includes the requirement to inspect for sediment that has been tracked out from the site onto paved roads, sidewalks, or other paved areas consistent with Part 2.2.4.

4.5.6 All points of discharge from the site; and

4.5.7 All locations where stabilization measures have been implemented.

You are not required to inspect areas that, at the time of the inspection, are considered unsafe to your inspection personnel.

4.6 REQUIREMENTS FOR INSPECTIONS

4.6.1 During each site inspection, you must at a minimum:

- a.** Check whether all stormwater controls (*i.e., erosion and sediment controls and pollution prevention controls*) are properly installed, appear to be operational, and are working as intended to minimize pollutant discharges.
- b.** Check for the presence of conditions that could lead to spills, leaks, or other accumulations of pollutants on the site.
- c.** Identify any locations where new or modified stormwater controls are necessary to meet the requirements of Parts 2 and/or 3.
- d.** Check for signs of visible erosion and sedimentation (*i.e., sediment deposits*) that have occurred and are attributable to your discharge at points of discharge and, if applicable, on the banks of any receiving waters flowing within or immediately adjacent to the site;
- e.** Check for signs of sediment deposition that are visible from your site and attributable to your discharge (e.g., sand bars with no vegetation growing on top in receiving waters or in other constructed or natural site drainage features, or the buildup of sediment deposits on nearby streets, curbs, or open conveyance channels).
- f.** Identify any incidents of noncompliance observed.

4.6.2 If a discharge is occurring during your inspection:

- a.** Identify all discharge points at the site; and
- b.** Observe and document the visual quality of the discharge, and take note of the characteristics of the stormwater discharge, including color; odor; floating, settled, or suspended solids; foam; oil sheen; and other indicators of stormwater pollutants. Check also for signs of these same pollutant characteristics that are visible from your site and attributable to your discharge in receiving waters or in other constructed or natural site drainage features.

4.6.3 For dewatering inspections conducted pursuant to Parts 4.3.2, record the following in a report within 24 hours of completing the inspection:

- a.** The inspection date;
- b.** Names and titles of personnel making the inspection;
- c.** Approximate times that the dewatering discharge began and ended on the day of inspection;⁷⁴
- d.** Estimates of the rate (in gallons per day) of discharge on the day of inspection;

⁷⁴ If the dewatering discharge is a continuous discharge that continues after normal business hours, indicate that the discharge is continuous.

- e. Whether or not any of the following indications of pollutant discharge were observed at the point of discharge to any receiving waters flowing through or immediately adjacent to the site and/or to constructed or natural site drainage features or storm drain inlets:⁷⁵
 - i. a sediment plume, suspended solids, unusual color, presence of odor, decreased clarity, or presence of foam; and/or
 - ii. a visible sheen on the water surface or visible oily deposits on the bottom or shoreline of the receiving water; and
- f. Photographs of (1) the dewatering water prior to treatment by a dewatering control(s) and the final discharge after treatment; (2) the dewatering control(s); and (3) the point of discharge to any receiving waters flowing through or immediately adjacent to the site and/or to constructed or natural site drainage features, storm drain inlets, and other conveyances to receiving waters.

You must also comply with the Part 4.7.2, 4.7.3, and 4.7.4 requirements for signing the reports, keeping them available on site, and retaining copies.

4.6.4 Based on the results of your inspection:

- a. Complete any necessary maintenance repairs or replacements under Part 2.1.4 or under Part 5, whichever applies; and
- b. Modify your SWPPP site map in accordance with Part 7.4.1 to reflect changes to your stormwater controls that are no longer accurately reflected on the current site map.

4.7 INSPECTION REPORT

4.7.1 You must complete an inspection report within 24 hours of completing any site inspection. Each inspection report (except for dewatering inspection reports, which are covered in Part 4.6.3) must include the following:

- a. The inspection date;
- b. Names and titles of personnel making the inspection;
- c. A summary of your inspection findings, covering at a minimum the observations you made in accordance with Part 4.6, including any problems found during your inspection that make it necessary to perform routine maintenance pursuant to Part 2.1.4b or corrective action pursuant to Part 5. Include also any documentation as to why the corrective action procedures under Part 5 are unnecessary to fix a problem that repeatedly occurs as described in Part 2.1.4c;
- d. If you are inspecting your site at the frequency specified in Part 4.2.2, Part 4.3, or Part 4.4.1b, and you conducted an inspection because of a storm event that produced rainfall measuring 0.25 inches or more within a 24-hour period, you must include the applicable rain gauge or weather station readings that triggered the inspection. Similarly, if you conducted an inspection because of a snowmelt discharge from a storm event that produced 3.25 inches or more of snow within a 24-hour period, you must include any measurements taken of snowfall at your site, or weather station information you relied on; and

⁷⁵ If the operator observes any of these indicators of pollutant discharge, corrective action is required consistent with Parts 5.1.5b and 5.2.2.

- e. If you determined that it is unsafe to inspect a portion of your site, you must describe the reason you found it to be unsafe and specify the locations to which this condition applies.

4.7.2 Each inspection report must be signed by the operator's signatory in accordance with Appendix G, Part G.11 of this permit.

4.7.3 You must keep a copy of all inspection reports at the site or at an easily accessible location, so that it can be made immediately available at the time of an on-site inspection or upon request by EPA.⁷⁶

4.7.4 You must retain all inspection reports completed for this Part for at least three (3) years from the date that your permit coverage expires or is terminated.

4.8 INSPECTIONS BY EPA

You must allow EPA, or an authorized representative of EPA, to conduct the following activities at reasonable times. To the extent that you are utilizing shared controls, that are not on site, to comply with this permit, you must make arrangements for EPA to have access at all reasonable times to those areas where the shared controls are located.

4.8.1 Enter onto all areas of the site, including any construction support activity areas covered by this permit, any off-site areas where shared controls are utilized to comply with this permit, discharge locations, adjoining waterbodies, and locations where records are kept under the conditions of this permit;

4.8.2 Access and copy any records that must be kept under the conditions of this permit;

4.8.3 Inspect your construction site, including any construction support activity areas covered by this permit (see Part 1.2.1c), any stormwater controls installed and maintained at the site, and any off-site shared controls utilized to comply with this permit; and

4.8.4 Sample or monitor for the purpose of ensuring compliance.

5 CORRECTIVE ACTIONS

5.1 CONDITIONS TRIGGERING CORRECTIVE ACTION.

You must take corrective action to address any of the following conditions identified at your site:

5.1.1 A stormwater control needs a significant repair or a new or replacement control is needed, or, in accordance with Part 2.1.4c, you find it necessary to repeatedly (i.e., three (3) or more times) conduct the same routine maintenance fix to the same control at the same location (unless you document in your inspection report under Part 4.7.1c that the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under Part 2.1.4); or

5.1.2 A stormwater control necessary to comply with the requirements of this permit was never installed, or was installed incorrectly; or

⁷⁶ Inspection reports may be prepared, signed, and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally dependable with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form. For additional guidance on the proper practices to follow for the electronic retention of inspection report records, refer to the Fact Sheet discussion related to Part 4.7.3.

- 5.1.3** Your discharges are not meeting applicable water quality standards;
- 5.1.4** A prohibited discharge has occurred (see Part 1.3); or
- 5.1.5** During discharge from site dewatering activities:
 - a.** The weekly average of your turbidity monitoring results exceeds the 50 NTU benchmark (or alternate benchmark if approved by EPA pursuant to Part 3.3.2b); or
 - b.** You observe or you are informed by EPA, State, or local authorities of the presence of the conditions specified in Part 4.6.3e.

5.2 CORRECTIVE ACTION DEADLINES

- 5.2.1** If responding to any of the Part 5.1.1, 5.1.2, 5.1.3, or 5.1.4 triggering conditions, you must:
 - a.** Immediately take all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events; and
 - b.** When the problem does not require a new or replacement control or significant repair, the corrective action must be completed by the close of the next business day; or
 - c.** When the problem requires a new or replacement control or significant repair, install the new or modified control and make it operational, or complete the repair, by no later than seven (7) calendar days from the time of discovery. If it is infeasible to complete the installation or repair within seven (7) calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7-day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as feasible after the 7-day timeframe. Where these actions result in changes to any of the stormwater controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within seven (7) calendar days of completing this work.
- 5.2.2** If responding to either of the Part 5.1.5 triggering conditions related to site dewatering activities, you must:
 - a.** Immediately take all reasonable steps to minimize or prevent the discharge of pollutants until you can implement a solution, including shutting off the dewatering discharge as soon as possible depending on the severity of the condition⁷⁷ taking safety considerations into account;
 - b.** Determine whether the dewatering controls are operating effectively and whether they are causing the conditions; and
 - c.** Make any necessary adjustments, repairs, or replacements to the dewatering controls to lower the turbidity levels below the benchmark or remove the visible plume or sheen.

⁷⁷ For instance, if the weekly average of your turbidity monitoring results or a single sample is extremely high (e.g., a single turbidity sample results in 355 NTUs or higher), you should take action to safely shut off the discharge so that you can evaluate the cause of the high turbidity. Note: A single turbidity sample of 355 NTUs or higher means that the weekly average turbidity value will exceed 50 NTU regardless of the turbidity values the other days during the week.

When you have completed these steps and made any changes deemed necessary, you may resume discharging from your dewatering activities.

5.3 CORRECTIVE ACTION REQUIRED BY EPA

You must comply with any corrective actions required by EPA as a result of permit violations found during an inspection carried out under Part 4.8.

5.4 CORRECTIVE ACTION LOG

5.4.1 For each corrective action taken in accordance with this Part, you must record the following in a corrective action log:

- a.** Within 24 hours of identifying the corrective action condition, document the specific condition and the date and time it was identified.
- b.** Within 24 hours of completing the corrective action (in accordance with the deadlines in Part 5.2), document the actions taken to address the condition, including whether any SWPPP modifications are required.

5.4.2 Each entry into the corrective action log, consisting of the information required by both Parts 5.4.1a and 5.4.1b, must be signed by the operator's signatory in accordance with Appendix G, Part G.11.2 of this permit.

5.4.3 You must keep a copy of the corrective action log at the site or at an easily accessible location, so that it can be made immediately available at the time of an on-site inspection or upon request by EPA.⁷⁸

5.4.4 You must retain the corrective action log for at least three (3) years from the date that your permit coverage expires or is terminated.

6 STORMWATER TEAM FORMATION/STAFF TRAINING REQUIREMENTS

6.1 STORMWATER TEAM

Each operator, or group of multiple operators, must assemble a "stormwater team" that will be responsible for carrying out activities necessary to comply with this permit. The stormwater team must include the following people:

- a.** Personnel who are responsible for the design, installation, maintenance, and/or repair of stormwater controls (including pollution prevention controls);
- b.** Personnel responsible for the application and storage of treatment chemicals (if applicable);
- c.** Personnel who are responsible for conducting inspections as required in Part 4.1; and
- d.** Personnel who are responsible for taking corrective actions as required in Part 5.

Members of the stormwater team must be identified in the SWPPP pursuant to Part 7.2.2.

⁷⁸ The corrective action log may be prepared, signed, and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally dependable with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form. For additional guidance on the proper practices to follow for the electronic retention of corrective action log records, refer to the Fact Sheet discussion related to Part 4.7.3.

6.2 GENERAL TRAINING REQUIREMENTS FOR STORMWATER TEAM MEMBERS

Prior to the commencement of construction activities, you must ensure that all persons⁷⁹ assigned to the stormwater team understand the requirements of this permit and their specific responsibilities with respect to those requirements, including the following related to the scope of their job duties:

- a. The permit requirements and deadlines associated with installation, maintenance, and removal of stormwater controls, as well as site stabilization;
- b. The location of all stormwater controls on the site required by this permit and how they are to be maintained;
- c. The proper procedures to follow with respect to the permit's pollution prevention requirements; and
- d. When and how to conduct inspections, record applicable findings, and take corrective actions. Specific training requirements for persons conducting site inspections are included in Part 6.3.

You are responsible for ensuring that all activities on the site comply with the requirements of this permit. You are not required to provide or document formal training for subcontractors or other outside service providers (unless the subcontractors or outside service providers are responsible for conducting the inspections required in Part 4, in which case you must provide such documentation consistent with Part 7.2.2), but you must ensure that such personnel understand any requirements of this permit that may be affected by the work they are subcontracted to perform.

6.3 TRAINING REQUIREMENTS FOR PERSONS CONDUCTING INSPECTIONS

For projects that receive coverage under this permit on or after February 17, 2023, to be considered a qualified person under Part 4.1 for conducting inspections under Part 4, you must, at a minimum, either:

- a. Have completed the EPA construction inspection course developed for this permit and have passed the exam; or
- b. Hold a current valid construction inspection certification or license from a program that, at a minimum, covers the following:⁸⁰
 - i. Principles and practices of erosion and sediment control and pollution prevention practices at construction sites;
 - ii. Proper installation and maintenance of erosion and sediment controls and pollution prevention practices used at construction sites; and
 - iii. Performance of inspections, including the proper completion of required reports and documentation, consistent with the requirements of Part 4.

⁷⁹ If the person requiring training is a new employee who starts after you commence construction activities, you must ensure that this person has the proper understanding as required above prior to assuming particular responsibilities related to compliance with this permit. For emergency-related projects, the requirement to train personnel prior to commencement of construction activities does not apply, however, such personnel must have the required training prior to NOI submission.

⁸⁰ If one of the following topics (e.g., installation and maintenance of pollution prevention practices) is not covered by the non-EPA training program, you may consider supplementing the training with the analogous module of the EPA course (e.g., Module 4) that covers the missing topic.

For projects that receive coverage under this permit prior to February 17, 2023, any personnel conducting site inspections pursuant to Part 4 on your site must, at a minimum, be a person knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention, who possesses the appropriate skills and training to assess conditions at the construction site that could impact stormwater quality, and the appropriate skills and training to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.⁸¹

6.4 STORMWATER TEAM'S ACCESS TO PERMIT DOCUMENTS

Each member of the stormwater team must have easy access to an electronic or paper copy of applicable portions of this permit, the most updated copy of your SWPPP, and other relevant documents or information that must be kept with the SWPPP.

7 STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

7.1 GENERAL REQUIREMENTS

All operators associated with a construction site under this permit must develop a SWPPP consistent with the requirements in Part 7 prior to their submittal of the NOI.^{82, 83, 84} The SWPPP must be kept up-to-date throughout coverage under this permit.

If a SWPPP was prepared under a previous version of this permit, the operator must review and update the SWPPP to ensure that this permit's requirements are addressed prior to submitting an NOI for coverage under this permit.

7.2 SWPPP CONTENTS

At a minimum, the SWPPP must include the information specified in this Part and as specified in other parts of this permit.

7.2.1 All Site Operators. Include a list of all other operators who will be engaged in construction activities at the site, and the areas of the site over which each operator has control.

⁸¹ If you receive coverage for a project prior to February 17, 2023, and construction activities for the same project will continue after February 17, 2023, the personnel conducting inspections do not need to take the additional training specified in Parts 6.3a and 6.3b for inspections conducted on the project site. If the same operator obtains coverage for a different project on or after February 17, 2023, personnel conducting inspections would be required to meet the requirements for a qualified person by completing the training in either Part 6.3a or Part 6.3b.

⁸² The SWPPP does not establish the effluent limits and/or other permit terms and conditions that apply to your site's discharges; these limits, terms, and conditions are established in this permit.

⁸³ Where there are multiple operators associated with the same site, they may develop a group SWPPP instead of multiple individual SWPPPs. Regardless of whether there is a group SWPPP or multiple individual SWPPPs, each operator is responsible for compliance with the permit's terms and conditions. In other words, if Operator A relies on Operator B to satisfy its permit obligations, Operator A does not have to duplicate those permit-related functions if Operator B is implementing them such that both operators are in compliance with the permit. However, Operator A remains responsible for permit compliance if Operator B fails to take actions necessary for Operator A to comply with the permit. In addition, all operators must ensure, either directly or through coordination with other operators, that their activities do not cause a violation or compromise any other operators' controls and/or any shared controls. See also footnote 60.

⁸⁴ There are a number of commercially available products to assist operators in developing the SWPPP, as well as companies that can be hired to help develop a site-specific SWPPP. The permit does not state which are recommended, nor does EPA endorse any specific products or vendors. Where operators choose to rely on these products or services, the choice of which ones to use to comply with the requirements of this Part is a decision for the operator alone.

7.2.2 Stormwater Team. Identify the personnel (by name and position) that you have made part of the stormwater team pursuant to Part 6.1, as well as their individual responsibilities, including which members are responsible for conducting inspections.

Include verification that each member of the stormwater team has received the training required by Part 6.2. Include documentation that members of the stormwater team responsible for conducting inspections pursuant to Part 4 have received the training required by Part 6.3. If personnel on your team elect to complete the EPA inspector training program pursuant to Part 6.3a, you must include copies of the certificate showing that the relevant personnel have completed the training and passed the exam. If personnel on your team elect to complete a non-EPA inspector training program pursuant to Part 6.3b, you must include documentation showing that these persons have successfully completed the program and their certification or license is still current. You must also confirm that the non-EPA inspector training program satisfies the minimum elements for such programs in Part 6.3b.

7.2.3 Nature of Construction Activities. Include the following:

- a. A description of the nature of your construction activities, including the age or dates of past renovations for structures that are undergoing demolition;
- b. The size of the property (in acres or length in miles if a linear construction site);
- c. The total area expected to be disturbed by the construction activities (to the nearest quarter acre or nearest quarter mile if a linear construction site);
- d. A description of any on-site and off-site construction support activity areas covered by this permit (see Part 1.2.1c);
- e. The maximum area expected to be disturbed at any one time, including on-site and off-site construction support activity areas;
- f. A description and projected schedule for the following:⁸⁵
 - i. Commencement of construction activities in each portion of the site, including clearing and grubbing, mass grading, demolition activities, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil and vegetation stockpiles requiring stabilization;
 - ii. Temporary or permanent cessation of construction activities in each portion of the site;
 - iii. Temporary or final stabilization of exposed areas for each portion of the site; and
 - iv. Removal of temporary stormwater controls and construction equipment or vehicles, and the cessation of construction-related pollutant-generating activities.

⁸⁵ If plans change due to unforeseen circumstances or for other reasons, the requirement to describe the sequence and estimated dates of construction activities is not meant to "lock in" the operator to meeting these dates. When departures from initial projections are necessary, this should be documented in the SWPPP itself, or in associated records, as appropriate.

- g.** A list and description of all pollutant-generating activities⁸⁶ on the site. For each pollutant-generating activity, include an inventory of pollutants or pollutant constituents (e.g., *sediment, fertilizers, pesticides, paints, caulks, sealants, fluorescent light ballasts, contaminated substrates, solvents, fuels*) associated with that activity, which could be discharged in stormwater from your construction site. You must take into account where potential spills and leaks could occur that contribute pollutants to stormwater discharges, and any known hazardous or toxic substances, such as PCBs and asbestos, that will be disturbed or removed during construction;
- h.** Business days and hours for the project;
- i.** If you are conducting construction activities in response to a public emergency (see Part 1.4), a description of the cause of the public emergency (e.g., *mud slides, earthquake, extreme flooding conditions, widespread disruption in essential public services*), information substantiating its occurrence (e.g., *State disaster declaration or similar State or local declaration*), and a description of the construction necessary to reestablish affected public services.

7.2.4 Site Map. Include a legible map, or series of maps, showing the following features of the site:

- a.** Boundaries of the property;
- b.** Locations where construction activities will occur, including:
 - i.** Locations where earth-disturbing activities will occur (note any phasing), including any demolition activities;
 - ii.** Approximate slopes before and after major grading activities (note any steep slopes (as defined in Appendix A));
 - iii.** Locations where sediment, soil, or other construction materials will be stockpiled;
 - iv.** Any receiving water crossings;
 - v.** Designated points where vehicles will exit onto paved roads;
 - vi.** Locations of structures and other impervious surfaces upon completion of construction; and
 - vii.** Locations of on-site and off-site construction support activity areas covered by this permit (see Part 1.2.1c).
- c.** Locations of any receiving waters within the site and all receiving waters within one mile downstream of the site's discharge point(s). Also identify if any of these receiving waters are listed as impaired or are identified as a Tier 2, Tier 2.5, or Tier 3 water;
- d.** Any areas of Federally listed critical habitat within the action area of the site as defined in Appendix A;
- e.** Type and extent of pre-construction cover on the site (e.g., vegetative cover, forest, pasture, pavement, structures);
- f.** Drainage patterns of stormwater and authorized non-stormwater before and after major grading activities;

⁸⁶ Examples of pollutant-generating activities include paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering activities.

- g.** Stormwater and authorized non-stormwater discharge locations, including:
 - i.** Locations where stormwater and/or authorized non-stormwater will be discharged to storm drain inlets, including a notation of whether the inlet conveys stormwater to a sediment basin, sediment trap, or similarly effective control;⁸⁷
 - ii.** Locations where stormwater or authorized non-stormwater will be discharged directly to receiving waters (i.e., not via a storm drain inlet); and
 - iii.** Locations where turbidity benchmark monitoring will take place to comply with Part 3.3, if applicable to your site.
- h.** Locations of all potential pollutant-generating activities identified in Part 7.2.3g;
- i.** Designated areas where construction wastes that are covered by the exception in Part 2.3.3e.ii because they are not pollutant-generating will be stored;
- j.** Locations of stormwater controls, including natural buffer areas and any shared controls utilized to comply with this permit; and
- k.** Locations where polymers, flocculants, or other treatment chemicals will be used and stored.

7.2.5 Non-Stormwater Discharges. Identify all authorized non-stormwater discharges in Part 1.2.2 that will or may occur.

7.2.6 Description of Stormwater Controls.

- a.** For each of the Part 2.2 erosion and sediment control requirements, Part 2.3 pollution prevention requirements, and Part 2.4 construction dewatering requirements, as applicable to your site, you must include the following:
 - i.** A description of the specific control(s) to be implemented to meet these requirements;
 - ii.** The design specifications for controls described in Part 7.2.6a.i (including references to any manufacturer specifications and/or erosion and sediment control manuals/ordinances relied upon);⁸⁸
 - iii.** Routine stormwater control maintenance specifications; and
 - iv.** The projected schedule for stormwater control installation/implementation.
- b.** You must also include any of the following additional information as applicable.
 - i. Natural buffers and/or equivalent sediment controls** (see Part 2.2.1 and Appendix F). You must include the following:
 - (a) The compliance alternative to be implemented;
 - (b) If complying with alternative 2, the width of natural buffer retained;

⁸⁷ The requirement to show storm drain inlets in the immediate vicinity of the site on your site map only applies to those inlets that are easily identifiable from your site or from a publicly accessible area immediately adjacent to your site.

⁸⁸ Design specifications may be found in manufacturer specifications and/or in applicable erosion and sediment control manuals or ordinances. Any departures from such specifications must reflect good engineering practice and must be explained in the SWPPP.

- (c) If complying with alternative 2 or 3, the erosion and sediment control(s) you will use to achieve an equivalent sediment reduction, and any information you relied upon to demonstrate the equivalency;
 - (d) If complying with alternative 3, a description of why it is infeasible for you to provide and maintain an undisturbed natural buffer of any size;
 - (e) For "linear construction sites" where it is infeasible to implement compliance alternative 1, 2, or 3, a rationale for this determination, and a description of any buffer width retained and/or supplemental erosion and sediment controls installed; and
 - (f) A description of any disturbances that are exempt under Part 2.2.1 that occur within 50 feet of a receiving water.
- ii. Perimeter controls for a "linear construction site"** (see Part 2.2.3d). For areas where perimeter controls are not feasible, include documentation to support this determination and a description of the other practices that will be implemented to minimize discharges of pollutants in stormwater associated with construction activities.
- Note: Routine maintenance specifications for perimeter controls documented in the SWPPP must include the Part 2.2.3c.i requirement that sediment be removed before it has accumulated to one-half of the above-ground height of any perimeter control.
- iii. Sediment track-out controls** (see Parts 2.2.4b and 2.2.4c). Document the specific stabilization techniques and/or controls that will be implemented to remove sediment prior to vehicle exit.
- iv. Inlet protection measures** (see Part 2.2.10a). Where inlet protection measures are not required because the storm drain inlets to which your site discharges are conveyed to a sediment basin, sediment trap, or similarly effective control, include a short description of the control that receives the stormwater flow from the site.
- v. Sediment basins** (see Part 2.2.12). In circumstances where it is infeasible to utilize outlet structures that withdraw water from the surface, include documentation to support this determination, including the specific conditions or time periods when this exception will apply.
- vi. Treatment chemicals** (see Part 2.2.13), you must include the following:
- (a) A listing of the soil types that are expected to be exposed during construction in areas of the project that will drain to chemical treatment systems. Also include a listing of soil types expected to be found in fill material to be used in these same areas, to the extent you have this information prior to construction;
 - (b) A listing of all treatment chemicals to be used at the site and why the selection of these chemicals is suited to the soil characteristics of your site;
 - (c) If the applicable EPA Regional Office authorized you to use cationic treatment chemicals for sediment control, include the specific controls and implementation procedures designed to ensure that your use of cationic

treatment chemicals will not lead to a discharge that does not meet water quality standards;

- (d) The dosage of all treatment chemicals to be used at the site or the methodology to be used to determine dosage;
- (e) Information from any applicable Safety Data Sheet (SDS);
- (f) Schematic drawings of any chemically enhanced stormwater controls or chemical treatment systems to be used for application of the treatment chemicals;
- (g) A description of how chemicals will be stored consistent with Part 2.2.13c;
- (h) References to applicable State or local requirements affecting the use of treatment chemicals, and copies of applicable manufacturer's specifications regarding the use of your specific treatment chemicals and/or chemical treatment systems; and
- (i) A description of the training that personnel who handle and apply chemicals have received prior to permit coverage, or will receive prior to use of the treatment chemicals at your site.

vii. Stabilization measures (see Part 2.2.14). You must include the following:

- (a) The specific vegetative and/or non-vegetative practices that will be used;
- (b) The stabilization deadline that will be met in accordance with Part 2.2.14;
- (c) If complying with the deadlines for sites in arid, semi-arid, or drought-stricken areas, the beginning and ending dates of the seasonally dry period (as defined in Appendix A)⁸⁹ and the schedule you will follow for initiating and completing vegetative stabilization; and
- (d) If complying with deadlines for sites affected by unforeseen circumstances that delay the initiation and/or completion of vegetative stabilization, document the circumstances and the schedule for initiating and completing stabilization.

viii. Spill prevention and response procedures (see Parts 1.3.5, 2.3.3c, 2.3.3d, and 2.3.6). You must include the following:

- (a) Procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases. Identify the name or position of the employee(s) responsible for detection and response of spills or leaks; and
- (b) Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity consistent with Part 2.3.6 and established under either 40 CFR part 110, 40 CFR part 117, or 40 CFR part 302, occurs

⁸⁹ See footnote 44.

during a 24-hour period. Contact information must be in locations that are readily accessible and available to all employees.

You may also reference the existence of SPCC plans developed for the construction activity under Section 311 of the CWA, or spill control programs otherwise required by an NPDES permit for the construction activity, provided that you keep a copy of that other plan on site.⁹⁰

- ix. Waste management procedures** (see Part 2.3.3). Describe the procedures you will follow for handling, storing, and disposing of all wastes generated at your site consistent with all applicable Federal, State, Tribal, and local requirements, including clearing and demolition debris, sediment removed from the site, construction and domestic waste, hazardous or toxic waste, and sanitary waste. You must also include the following additional information:

 - (a) If site constraints prevent you from storing chemical containers 50 feet away from receiving waters or the other site drainage features as required in Part 2.3.3c.ii(b), document in your SWPPP the specific reasons why the 50-foot setback is not feasible, and how you will store containers as far away as the site permits; and
 - (b) If there are construction wastes that are subject to the exception in Part 2.3.3e.ii, describe the specific wastes that will be stored on your site.
 - x. Application of fertilizers** (see Part 2.3.5). Document any departures from the manufacturer specifications where appropriate.
- 7.2.7 Procedures for Inspection, Maintenance, and Corrective Action.** Describe the procedures you will follow for maintaining your stormwater controls, conducting site inspections, and, where necessary, taking corrective actions, in accordance with Part 2.1.4, Part 4, and Part 5 of this permit, accordingly. Also include:
- a.** The inspection schedule you will follow, which is based on whether your site is subject to Part 4.2 or Part 4.3, or whether your site qualifies for any of the reduced inspection frequencies in Part 4.4;
 - b.** If you will be conducting inspections in accordance with the inspection schedule in Part 4.2.2, Part 4.3, or Part 4.4.1b, the location of the rain gauge or the address of the weather station you will be using to obtain rainfall data;
 - c.** If you will be reducing your inspection frequency in accordance with Part 4.4.1b, the beginning and ending dates of the seasonally defined arid period for your area or the valid period of drought;
 - d.** If you will be reducing your inspection frequency in accordance with Part 4.4.3, the beginning and ending dates of frozen conditions on your site; and
 - e.** Any maintenance or inspection checklists or other forms that will be used.
- 7.2.8 Procedures for Turbidity Benchmark Monitoring from Dewatering Discharges (if applicable).** If you are required to comply with the Part 3.3 turbidity benchmark

⁹⁰ Even if you already have an SPCC or other spill prevention plan in existence, your plans will only be considered adequate if they meet all of the requirements of this Part, either as part of your existing plan or supplemented as part of the SWPPP.

monitoring requirements, describe the procedures you will follow to collect and evaluate samples, report results to EPA and keep records of monitoring information, and take corrective action when necessary. Include the specific type of turbidity meter you will use for monitoring, as well as any manuals or manufacturer instructions on how to operate and calibrate the meter. Describe any coordinating arrangement you may have with any other permitted operators on the same site with respect to compliance with the turbidity monitoring requirements, including which parties are tasked with specific responsibilities. If EPA has approved of an alternate turbidity benchmark pursuant to Part 3.3.2b, include any data and other documentation you relied on to request use of the specific alternative benchmark.

7.2.9 Compliance with Other Requirements.

- a. Threatened and Endangered Species Protection.** Include documentation required in the Endangered Species Protection section of the NOI in NeT, or the ESA worksheet in Appendix D, supporting your eligibility with regard to the protection of threatened and endangered species and designated critical habitat.
- b. Historic Properties.** Include documentation required in Appendix E supporting your eligibility with regard to the protection of historic properties.
- c. Safe Drinking Water Act Underground Injection Control (UIC) Requirements for Certain Subsurface Stormwater Controls.** If you are using any of the following stormwater controls at your site, document any contact you have had with the applicable State agency⁹¹ or EPA Regional Office responsible for implementing the requirements for underground injection wells in the Safe Drinking Water Act and EPA's implementing regulations at 40 CFR § 144 -147. Such controls would generally be considered Class V UIC wells:
 - i.** Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system);
 - ii.** Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow; and
 - iii.** Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system).

7.2.10 SWPPP Certification. Your signatory must sign and date your SWPPP in accordance with Appendix G, Part G.11.

7.2.11 Post-Authorization Additions to the SWPPP. Once you are authorized for coverage under this permit, you must include the following documents as part of your SWPPP:

- a.** A copy of your NOI submitted to EPA along with any correspondence exchanged between you and EPA related to coverage under this permit;
- b.** A copy of the acknowledgment letter you receive from NeT assigning your NPDES ID (i.e., *permit tracking number*);

⁹¹ For State UIC program contacts, refer to the following EPA website: <https://www.epa.gov/uic>.

- c. A copy of this permit (an electronic copy easily available to the stormwater team is also acceptable).

7.3 ON-SITE AVAILABILITY OF YOUR SWPPP

You must keep a current copy of your SWPPP at the site or at an easily accessible location so that it can be made available at the time of an on-site inspection or upon request by EPA; a State, Tribal, or local agency approving stormwater management plans; the operator of a storm sewer system receiving discharges from the site; or representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).⁹²

EPA may provide access to portions of your SWPPP to a member of the public upon request. Confidential Business Information (CBI) will be withheld from the public, but may not be withheld from EPA, USFWS, or NMFS.⁹³

If an on-site location is unavailable to keep the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance of your construction site.

7.4 SWPPP MODIFICATIONS

7.4.1 You must modify your SWPPP, including the site map(s), within seven (7) days of any of the following conditions:

- a. Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater controls, or other activities at your site that are no longer accurately reflected in your SWPPP. This includes changes made in response to corrective actions triggered under Part 5. You do not need to modify your SWPPP if the estimated dates in Part 7.2.3f change during the course of construction;
- b. To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;
- c. If inspections or investigations by EPA or its authorized representatives determine that SWPPP modifications are necessary for compliance with this permit;
- d. Where EPA determines it is necessary to install and/or implement additional controls at your site in order to meet the requirements of this permit, the following must be included in your SWPPP:
 - i. A copy of any correspondence describing such measures and requirements; and

⁹² The SWPPP may be prepared, signed, and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally dependable with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form. For additional guidance on the proper practices to follow for the electronic retention of the SWPPP, refer to the Fact Sheet discussion related to Part 4.7.3.

⁹³ Information covered by a claim of confidentiality will be disclosed by EPA only to the extent of, and by means of, the procedures set forth in 40 CFR part 2, Subpart B. In general, submitted information protected by a business confidentiality claim may be disclosed to other employees, officers, or authorized representatives of the United States concerned with implementing the CWA. The authorized representatives, including employees of other executive branch agencies, may review CBI during the course of reviewing draft regulations.

- ii. A description of the controls that will be used to meet such requirements.
 - e. To reflect any revisions to applicable Federal, State, Tribal, or local requirements that affect the stormwater controls implemented at the site; and
 - f. If applicable, if a change in chemical treatment systems or chemically enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.
- 7.4.2** You must maintain records showing the dates of all SWPPP modifications. The records must include the name of the person authorizing each change (see Part 7.2.9 above) and a brief summary of all changes.
- 7.4.3** All modifications made to the SWPPP consistent with Part 7.4 must be authorized by a person identified in Appendix G, Part G.11.b.
- 7.4.4** Upon determining that a modification to your SWPPP is required, if there are multiple operators covered under this permit, you must immediately notify any operators who may be impacted by the change to the SWPPP.

8 HOW TO TERMINATE COVERAGE

Until you terminate coverage under this permit, you must comply with all conditions and effluent limitations in the permit. To terminate permit coverage, you must submit to EPA a complete and accurate Notice of Termination (NOT), which certifies that you have met the requirements for terminating in Part 8.

8.1 MINIMUM INFORMATION REQUIRED IN NOT

- 8.1.1** NPDES ID (i.e., *permit tracking number*) provided by EPA when you received coverage under this permit;
- 8.1.2** Basis for submission of the NOT (see Part 8.2);
- 8.1.3** Operator contact information;
- 8.1.4** Name of site and address (or a description of location if no street address is available); and
- 8.1.5** NOT certification.

8.2 CONDITIONS FOR TERMINATING CGP COVERAGE

You may terminate CGP coverage only if one or more of the conditions in Parts 8.2.1, 8.2.2, or 8.2.3 has occurred. Until your termination is effective consistent with Part 8.5, you must continue to comply with the conditions of this permit.

- 8.2.1** You have completed all construction activities at your site and, if applicable, construction support activities covered by this permit (see Part 1.2.1c), and you have met all of the following requirements:
- a. For any areas that (1) were disturbed during construction, (2) are not covered by permanent structures, and (3) over which you had control during the construction activities, you have met the requirements for final vegetative or non-vegetative stabilization in Part 2.2.14c.

To document that you have met these stabilization requirements, you must take either ground or aerial photographs that show your site's compliance with the Part 2.2.14 stabilization requirements and submit them with your NOT. If any portion of your

site is covered by one of the exceptions in Part 2.2.14c.iii, indicate which exception applies and include a supplementary explanation with your photographs that provides the necessary context for why this portion of the site is in compliance with the final stabilization criteria even though it appears to be unstabilized. You are not required to take photographs of every distinct part of your site that is being stabilized, however, the conditions of the site portrayed in any photographs that are submitted must be substantially similar⁹⁴ to those of the areas that are not photographed. You must also comply with the following related to these photographs:

- i. Take photographs both before and after the site has met the final stabilization criteria in Part 2.2.14c;
 - ii. All photographs must be clear and in focus, and in the original format and resolution; and
 - iii. Include the date each photograph was taken, and a brief description of the area of the site captured by the photograph (e.g., photo shows application of seed and erosion control mats to remaining exposed surfaces on northeast corner of site).
- b. You have removed and properly disposed of all construction materials, waste and waste handling devices, and have removed all equipment and vehicles that were used during construction, unless intended for long-term use following your termination of permit coverage;
 - c. You have removed all stormwater controls that were installed and maintained during construction, except those that are intended for long-term use following your termination of permit coverage or those that are biodegradable (as defined in Appendix A); and
 - d. You have removed all potential pollutants and pollutant-generating activities associated with construction, unless needed for long-term use following your termination of permit coverage; or
- 8.2.2** You have transferred control of all areas of the site for which you are responsible under this permit to another operator, and that operator has submitted an NOI and obtained coverage under this permit; or
- 8.2.3** Coverage under an individual or alternative general NPDES permit has been obtained.
- 8.3 HOW TO SUBMIT YOUR NOT**

You must use EPA's NPDES eReporting Tool (NeT) to electronically prepare and submit an NOT for the 2022 CGP.

To access NeT, go to <https://cdx.epa.gov/cdx>.

Waivers from electronic reporting may be granted as specified in Part 1.4.2. If the EPA Regional Office grants you approval to use a paper NOT, and you elect to use it, you must complete the form in Appendix I.

⁹⁴ Stabilization conditions that are substantially similar would include areas that are using the same type of stabilization measures and that have similar slopes, soils, and topography, and have achieved the same level of stabilization.

8.4 DEADLINE FOR SUBMITTING THE NOT

You must submit an NOT within 30 calendar days after any one of the conditions in Part 8.2 occurs.

8.5 EFFECTIVE DATE OF TERMINATION OF COVERAGE

Your authorization to discharge under this permit terminates at midnight of the calendar day that a complete NOT is submitted to EPA.

9 PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY LANDS, OR TERRITORIES

The provisions in this Part provide additions to the applicable conditions of this permit to reflect specific additional conditions required as part of the State or Tribal CWA Section 401 certification process, or the Coastal Zone Management Act (CZMA) certification process, or as otherwise established by the permitting authority. The specific additional revisions and requirements only apply to activities in those specific States, Indian country, and areas in certain States with Federal Facilities or areas subject to construction projects by Federal Operators. States, Indian country, and other areas not included in this Part do not have any additions to the applicable conditions of this permit.

9.1 EPA REGION 1**9.1.1 NHR100000 State of New Hampshire**

- a.** Should the permit coverage for an individual applicant be insufficient to achieve water quality standards, the New Hampshire Department of Environmental Services (NHDES) may prepare additional 401 certification conditions for that applicant. Any additional 401 certification conditions will follow all required NHDES public participation requirements.
- b.** If you disturb 100,000 square feet or more of contiguous area, you must also comply with RSA 485-A:17 and Env-Wq 1500, and, unless exempt, apply for an Alteration of Terrain (AoT) permit from NHDES. This requirement also applies to a lower disturbance threshold of 50,000 square feet or more when construction occurs within the protected shoreline under the Shoreland Water Quality Protection Act (see RSA 483-B and Env-Wq 1400). A permit application must also be filed if your project disturbs an area of greater than 2,500 square feet, is within 50 feet of any surface water, and has a flow path of 50 feet or longer disturbing a grade of 25 percent or greater. Project sites with disturbances smaller than those discussed above, that have the potential to adversely affect state surface waters, are subject to the conditions of an AoT General Permit by Rule (Env-Wq 1503.03).
- c.** You must determine that any excavation dewatering discharges are not contaminated before they will be authorized as an allowable non-stormwater discharge under this permit (see Part 1.2.2 of the Construction General Permit or CGP). In the absence of information demonstrating otherwise, the water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of the groundwater dewatering location. Information on groundwater contamination can be generated over the Internet via the NHDES web site <http://des.nh.gov/> by using the One Stop Data Mapper. For a toxic substance included in the New Hampshire surface water quality standards, see Env-Wq 1703.21 (see <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/Env-Wg>

1700.pdf). If it is determined that the groundwater to be dewatered is near a remediation or other waste site, you must apply for the Remediation General Permit (see <https://www3.epa.gov/region1/npdes/rgp.html>)

- d.** As a minimum, you must treat any uncontaminated excavation "dewatering" discharges and "stormwater" discharges, as those terms are defined in Appendix A of the CGP, as necessary, to remove suspended solids and turbidity so that the surface waters receiving the construction discharges⁹⁵ meet New Hampshire surface water quality standards for turbidity (Env-Wq 1703.11 and Env-Wq 1703.03(c)(1)c), benthic deposits (Env-Wq 1703.03(c)(1)a), and Env-Wq 1703.08) and foam, debris, scum or other visible substances (i.e., plumes or visual turbidity)⁹⁶ (Env-Wq 1703.03(c)(1)b).
- i.** For all Construction Activities covered under this CGP, the following shall apply to ensure compliance with the aforementioned regulations for turbidity, benthic deposits and visible substances:
- Unless otherwise specified, site inspection requirements shall comply with Part 4 of the CGP. As a minimum site inspection frequency shall be in accordance with Part 4.2.2 of the CGP (and Part 4.3.2 of the CGP for sites discharging dewatering water). Site inspection frequency may be reduced in accordance with Part 4.4 of the CGP (Reductions in Inspection Frequency). Monitoring of the receiving water for visible turbidity and benthic sediment deposits shall be conducted each site inspection and results reported in the Inspection Report required in Part 4.7 of the CGP. Should visible turbidity or benthic sediment deposits attributable or partly attributable to your construction activities be present in the receiving water, the "Corrective Actions" specified in Part 5 shall be immediately implemented to correct the water quality standard violations. In addition, daily monitoring (including photographs) of the receiving water shall be conducted until there is no visible turbidity or benthic deposits. Inspection Reports required in Part 4.7 of the CGP shall include, but not be limited to, the distance downstream and the percent of the river width⁹⁷ where visible turbidity was observed, and the period of time that the visible turbidity persisted. A copy of the Inspection Report(s) shall be made available to NHDES within 24 hours of receiving a written request from NHDES.
- ii.** For Construction Activities, disturbing 5 acres or more of land at any one time (excluding areas that have been completely stabilized in accordance with the final stabilization criteria specified in Part 2.2.14.c of the CGP), the following shall

⁹⁵ Construction Discharges include uncontaminated "dewatering" and "stormwater" discharges as those terms are defined in Appendix A of the CGP. Controlled construction discharges are construction discharges where the rate of flow can be regulated such as from a construction settling basin or NHDES approved flocculation system.

⁹⁶ For the definition of visual turbidity, see the definition for "Non-Turbid" in Appendix A of the CGP, which states the following: "Non-Turbid" - a discharge that is free from visual turbidity. For the purposes of this permit, visual turbidity refers to a sediment plume or other cloudiness in the water caused by sediment that can be identified by an observer." [EPA interprets the text of this footnote as intending to reference the Appendix A definitions of "visual turbidity" and "non-turbid" in the final permit.]

⁹⁷ The distance downstream and the percent of river width where visible turbidity (i.e., plume) is observed is required to determine the extent of the river affected and to determine if there was a "zone of passage" (i.e., a portion of the receiving water where there was no visible turbidity where mobile organisms could pass without being adversely impacted). The percent of river width affected is equal 100 multiplied by the width of the plume (in feet) divided by the width of the receiving water (in feet).

apply to ensure compliance with the aforementioned regulations for turbidity, benthic deposits and visible substances.

Item 9.1.1.d.i) above shall apply to all construction discharges and the minimum site inspection frequency shall comply with Part 4.3.1 of the CGP (and Part 4.3.2 of the CGP for sites discharging dewatering water). Site inspection frequency may be reduced in accordance with Part 4.4 of the CGP (Reductions in Inspection Frequency).

With regards to controlled construction discharges, if there is no visible turbidity (i.e., plumes) or benthic deposits, and, in the absence of information demonstrating otherwise, turbidity measurements of less than or equal to 50 nephelometric turbidity units (NTU) in the controlled construction discharges at the outlet prior to mixing with the receiving surface waters, shall be presumed to meet New Hampshire surface water quality standards for the parameters listed above. As a minimum, the controlled construction discharges must be sampled at each site inspection.

If any controlled construction discharge exceeds 50 NTU, or if visible turbidity or benthic sediment deposits attributable or partly attributable to any construction discharge are observed in the receiving water, then the "Corrective Actions" specified in Part 5 of the CGP shall be immediately implemented.

In addition, should such violation occur, and, in order to determine compliance with surface water quality standards for turbidity (Env-Wq 1703.11 and Env-Wq 1703.03(c)(1)c), benthic deposits (Env-Wq 1703.03(c)(1)a), and Env-Wq 1703.08) and foam, debris, scum or other visible substances (Env-Wq 1703.03(c)(1)b)), turbidity monitoring shall be immediately implemented as specified below:

Turbidity samples of the receiving water shall be immediately taken in the receiving water upstream and beyond the influence of the construction activity, and, unless a mixing zone⁹⁸ is approved by NHDES, no more than 75 feet downstream of each controlled construction discharge that exceeded 50 NTU and no more than 75 feet downstream of each construction discharge that caused visible turbidity.

Downstream samples shall be taken at locations in the receiving water that are most likely influenced by the discharge (e.g., if visible turbidity (i.e., a plume) is present, the sample shall be taken in the plume). Samples shall be collected a minimum of 2 times per day during the daylight hours at times when construction activities are most likely to cause turbidity in the receiving water and shall continue until the turbidity water quality standards are met in the receiving water (i.e., the difference between the upstream and downstream turbidity level is no greater than 10 NTU).

⁹⁸ Permittees may request a distance greater than 75 feet downstream of a construction discharge for determining compliance with turbidity standards in Class B surface waters, by submitting a mixing zone request to NHDES that complies with Env-Wq 1707.02. If a mixing zone is approved, NHDES is required to include conditions to ensure that the criteria on which the approval is based are met (Env-Wq 1707.03).

If water quality standards are not met during daylight hours on any day, sampling shall resume the next day and continue no fewer than 2 times per day until water quality standards are met. The date, time, location and results of turbidity measurements, as well as a summary identifying the cause of the violations, corrective actions that were implemented, the period of time that the receiving water exceeded turbidity standards and the distance downstream and the percent of the river width where visible turbidity was observed, and the period of time that the visible turbidity persisted, shall be recorded and included in the Inspection Report required in Part 4.7 of the CGP. Turbidity measurements shall be conducted via a field meter in accordance with the requirements for turbidity specified in Table 1B in 40 CFR 136.3 (see 40 CFR § 136.3 Identification of test procedures - Code of Federal Regulations ecfrio). Field meters shall be calibrated every day sampling is conducted and prior to the first sample.

- e. Construction site owners and operators are encouraged to consider opportunities for post- construction groundwater recharge using infiltration best management practices (BMPs) during site design and preparation of the SWPPP in order to assure compliance with Env-Wq 1703.03 and Env-Wq 1703.11. If your construction site is in a town that is required to obtain coverage under the NPDES General Permit for discharges from Municipal Separate Storm Sewer Systems (MS4) you may be required to use such practices. The SWPPP must include a description of any on-site infiltration that will be installed as a post-construction stormwater management measure or reasons for not employing such measures such as 1) The facility is located in a wellhead protection area as defined in RSA 485- C:2; or 2) The facility is located in an area where groundwater has been reclassified to GAA, GA1 or GA2 pursuant to RSA 485-C and Env-DW 901; or 3) Any areas that would be exempt from the groundwater recharge requirements contained in Env-Wq 1507.04, including all land uses or activities considered to be a "High-load Area" (see Env-Wq 1502.30). For design considerations for infiltration measures see Env-Wq 1508.06. Note that there may be additional local requirements that fall under the NH MS4 permittee's Authorization to Discharge Permit for those regulated areas.
- f. Appendix F of the CGP contains information regarding Tier 2, or high quality waters in the various states. **[EPA notes that this information has now been moved to <https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates>]** Although there is no official list of tier 2 waters for New Hampshire, it can be assumed that all New Hampshire surface waters are tier 2 for turbidity unless 1) the surface water that you are proposing to discharge into is listed as impaired for turbidity in the states listing of impaired waters (see <https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/>) or 2) sampling upstream of the proposed discharge location shows turbidity values greater than 10 NTU (Env-Wq 1703.11). A single grab sample collected during dry weather (no precipitation within 48 hours) is acceptable.
- g. To ensure compliance with RSA 485-C, RSA 485-A, RSA 485-A:13, I(a), Env-Wq 1700 and Env-Wq 302, the following information may be requested by NHDES. This information must be kept on site unless you receive a written request from NHDES that it be sent to the address shown below in 9.1.1.h.

- i. A list of all non-stormwater discharges that occur at the facility, including their source locations and the control measures being used (see Part 1.2.2 of the CGP).
 - ii. Records of sampling and analysis required for construction dewatering and stormwater discharges (see 9.1.1.d above).
- h.** All required or requested documents must be sent to: NH Department of Environmental Services, Watershed Management Bureau, P.O. Box 95 Concord, NH 03302-0095.

9.1.2 MAR100000 Commonwealth of Massachusetts (except Indian country)

- a.** All discharges covered by the Construction General Permit shall comply with the provisions pursuant to 314 CMR 3.00, 314 CMR 4.00, 314 CMR 9.00, including applicable construction stormwater standards and 310 CMR 10.00.
- b.** Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, permittees are prohibited from discharging dewatering water under the CGP from sites that are designated as Superfund/CERCLA or RCRA, and must make accommodations to dispose of the dewatering discharges appropriately, such as coverage under the Remediation General Permit (RGP).
- c.** Pursuant to 314 CMR 3.11 (2)(a), and in accordance with MassDEP's obligation to protect Outstanding Resource Waters under 314 CMR 4.04(3), applicants seeking coverage under the 2022 CGP that propose to carry out construction activities near Outstanding Resource Waters as identified in 314 CMR 4.06, shall submit to MassDEP for review:
- i. a copy of the Stormwater Pollution Prevention Plan (SWPPP),
 - ii. a copy of the EPA NOI, and
 - iii. MassDEP's Stormwater BMP Checklist.

For purposes of this review, the permittee shall submit these documents to MassDEP at the same time they are submitted to EPA. Instructions on how to submit these documents to MassDEP and where to find the MassDEP Stormwater BMP Checklist and obtain authorization to discharge can be found here: <https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of-intent>.

- d.** Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, applicants that propose to dewater under the 2022 CGP and plan to discharge to certain waters as described below, shall determine that any dewatering discharges are not contaminated by testing the proposed discharge as described below as part of the application for WM15 authorization. Unless otherwise specified, testing described in this section should be conducted using the methods in 40 CFR 136.
- i. Applicants for sites that plan to discharge to Outstanding Resource Waters as identified in 314 CMR 4.06 shall test one sample of the proposed dewatering discharge water for pH, E. Coli (for discharges to freshwater), fecal coliform (for

discharges to salt water), Enterococci (for discharges to salt water), total suspended solids, oil and grease, total nitrogen, total phosphorus, and all parameters with numeric criteria listed in the Massachusetts Surface Water Quality Standards at 314 CMR 4.05(e). Results shall be reported to MassDEP as part of the WM15 application. To determine if the dewatering discharge could be covered under the 2022 CGP, the effluent at zero dilution must meet numeric water quality criteria. If the effluent does not meet numeric water quality criteria, the applicant shall contact EPA Region 1 to discuss coverage under the Remediation General Permit.

- ii. Applicants for sites that propose to discharge to Public Water Supplies (314 CMR 4.06(1)(d)1) shall also test one sample of the proposed dewatering discharge water for per- and polyfluoroalkyl substances (PFAS), as outlined in the table below. Results shall be reported to MassDEP as part of the WM15 application. If any PFAS compounds are detected, the applicant shall apply for coverage under the NPDES Remediation General Permit for Massachusetts if required.

PFAS Testing Parameters for Discharges to Public Drinking Water Supplies⁹⁹	
Perfluorohexanesulfonic acid (PFHxS), grab	Report ng/L
Perfluoroheptanoic acid (PFHpA), grab	Report ng/L
Perfluorononanoic acid (PFNA), grab	Report ng/L
Perfluorooctanesulfonic acid (PFOS), grab	Report ng/L
Perfluorooctanoic acid (PFOA), grab	Report ng/L
Perfluorodecanoic acid (PFDA), grab	Report ng/L

- iii. Applicants for sites that propose to discharge to an impaired water as identified in the most recent final Massachusetts Integrated List of Waters, shall test one sample of the proposed dewatering discharge water for the parameter(s) for which the waterbody is impaired. To determine if the dewatering discharge could be covered under the 2022 CGP, the effluent at zero dilution must meet numeric water quality criteria. If the effluent does not meet numeric water quality criteria, the applicant shall contact EPA Region 1 to discuss coverage under the Remediation General Permit and shall apply for RGP coverage if required.
- iv. For dewatering discharges to all other waters, if any pollutants are known or believed present in the proposed dewatering discharge water, the applicant shall apply for coverage under the NPDES Remediation General Permit for Massachusetts if required. For the purposes of this condition, a pollutant is "known present" if measured above the analytical detection limit using a sufficiently sensitive test method in an environmental sample, and "believed present" if a pollutant has not been measured in an environmental sample but will be added or generated prior to discharge, such as through a treatment process. Consequently, a pollutant is "known absent" if measured as non-detect relative to the analytical detection limit using a sufficiently sensitive test method in an environmental sample, and "believed absent" if a pollutant has not been measured in an environmental sample but will not be added or generated prior to discharge and is not a parameter that applies to the applicable activity category for a site. If any pollutants are known or believed present in the

⁹⁹ PFAS testing shall follow established EPA methods 537 or 537.1 for drinking water until EPA Method 3512 for non-potable water becomes available.

proposed dewatering discharge water, the applicant shall test one sample of the proposed dewatering discharge water for the pollutants known or believed to be present. To determine if the dewatering discharge could be covered under the 2022 CGP, the effluent at zero dilution must meet numeric water quality criteria. If the effluent does not meet numeric water quality criteria, the applicant shall contact EPA Region 1 to discuss coverage under the Remediation General Permit.

- e. Pursuant to 314 CMR 3.11 (2)(a), and in accordance with MassDEP's obligation to protect Outstanding Resource Waters under 314 CMR 4.04(3), applicants that propose to dewater under the 2022 CGP and discharge to Outstanding Resource Waters as identified in 314 CMR 4.06, shall submit the SWPPP and associated documents to MassDEP to review. MassDEP shall complete review within 30 days of receipt.
- f. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05 to maintain surface waters free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to the waterbody, permittees that have been authorized to dewater under the 2022 CGP and that discharge to Outstanding Resource Waters as identified in 314 CMR 4.06 shall carry out daily benchmark monitoring for turbidity¹⁰⁰ for the duration of dewatering. Permittees shall compare the weekly average of the turbidity monitoring results with the established benchmark turbidity value of 25 Nephelometric Turbidity Units (NTU). If a permittee's weekly average turbidity results exceed the benchmark, the operator shall conduct follow-up corrective action to determine the source of the problem and to make any necessary repairs or upgrades to the dewatering controls to lower the turbidity levels. The permittee shall document any corrective action taken in its corrective action log. Furthermore, permittees at these sites shall carry out inspections at higher frequency, specifically, daily inspections of the dewatering discharge treatment for the duration of the discharge. The permittee shall inspect the site for sediment plume or whether a hydrocarbon sheen is visible at the point of discharge, estimate the flow rate at the point of discharge, and inspect the site downstream to assess whether sedimentation is attributable to the dewatering discharges.
- g. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05 to maintain surface waters free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to the waterbody, permittees shall store materials outside the Base Flood Elevation¹⁰¹ when feasible to prevent displacing runoff and erosion.
- h. Pursuant to 314 CMR 3.11 (2)(a), and in accordance with MassDEP's obligation to maintain surface waters free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses under 314 CMR 4.05(5)(c), all applicants who apply for coverage under the 2022 CGP shall follow guidelines on fertilizer application, including use of fertilizer containing no phosphorus, in accordance with 330 CMR 31.00 Plant Nutrient Application Requirements for

¹⁰⁰ Applicants shall follow EPA Method 180.1 to monitor for turbidity

¹⁰¹ Base Flood Elevation (BFE) is the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year. The BFE is shown on the Flood Insurance Rate Map (FIRM) for zones AE, AH, A1-A30, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO, V1-V30 and VE. (Source: <https://www.fema.gov/node/404233>).

Agricultural Land and Non-Agricultural Turf and Lawns. Further, fertilizer shall never be applied to a site when a rain event greater than 0.5 inches is forecast in the next 48 hours.

- i. Pursuant to 314 CMR 3.11 (2)(a), all applicants who apply for coverage under the 2022 CGP and elect to carry out site inspections every 14 days shall also inspect sites within 24 hours of 0.25 inches of precipitation events or greater over 24 hours, or within 24 hours of a discharge that occurred due to snowmelt from 3.25 inches or greater of snow accumulation.¹⁰² During the high flow periods in spring (i.e., months of April to June), inspection frequency shall be increased to once per week for all sites.
 - i. To determine whether 3.25 inches or greater of snow accumulation has occurred at a site, snowfall measurements can be taken at the site,¹⁰³ or the operator can rely on similar information from a local weather forecast.
- j. Implementing structural improvements, enhanced/resilient pollution prevention measures, and other mitigation measures can help to minimize impacts from stormwater discharges from major storm events such as hurricanes, storm surge, extreme/heavy precipitation,¹⁰⁴ and flood events. Pursuant to 314 CMR 3.11 (2)(a), if such stormwater control measures are already in place due to existing requirements mandated by other state, local or federal agencies, the SWPPP shall include a brief description of the controls and a reference to the existing requirement(s). If the site may be exposed to or has previously experienced such major storm events¹⁰⁵, additional stormwater control measures that may be considered, and implemented as necessary, include, but are not limited to:
 - i. Reinforce materials storage structures to withstand flooding and additional exertion of force;
 - ii. Prevent floating of semi-stationary structures by elevating to the Base Flood Elevation (BFE) level or securing with non-corrosive device;
 - iii. When a delivery of exposed materials is expected, and a storm is anticipated within 48 hours, delay delivery until after the storm or store materials as appropriate (refer to emergency procedures);

¹⁰² This is the amount of snow that is equivalent to 0.25 inches of rain, based on information from the National Oceanic and Atmospheric Administration (NOAA) indicating that 13 inches of snow is, on average, equivalent to 1 inch of rain. See <https://www.nssl.noaa.gov/education/svrwx101/winter/faq/>.

¹⁰³ NOAA's National Weather Service has guidelines on snowfall measurements at https://www.weather.gov/jkl/snow_measurement. These guidelines recommend use of a "snowboard" (a piece of wood about 16 inches by 16 inches) that is placed in an unobstructed part of the site on a hard surface.

¹⁰⁴ Heavy precipitation refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. Heavy precipitation does not necessarily mean the total amount of precipitation at a location has increased— just that precipitation is occurring in more intense or more frequent events.

¹⁰⁵ To determine if your facility is susceptible to an increased frequency of major storm events that could impact the discharge of pollutants in stormwater, you may reference FEMA, NOAA, or USGS flood map products at https://www.usgs.gov/faqs/where-can-i-find-flood-maps?qt-news_science_products=0#qtnews_science_products.

- iv. Temporarily store materials and waste above the Base Flood Elevation **[EPA notes that it has deleted a footnote reference to the term “Base Flood Elevation” since the same footnote is already included in Part 9.1.2.g, above.]** level;
 - v. Temporarily reduce or eliminate outdoor storage;
 - vi. Temporarily relocate any mobile vehicles and equipment to higher ground;
 - vii. Develop scenario-based emergency procedures for major storms that are complementary to regular stormwater pollution prevention planning and identify emergency contacts for staff and contractors; and
 - viii. Conduct staff training for implementing your emergency procedures at regular intervals.
- k. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, permittees who seek coverage under the 2022 CGP and anticipate to carry out dust control shall limit their dust control methodology to using water only and specifically avoid using other techniques, such as solutions containing calcium chloride.
 - l. If MassDEP requests a copy of the Stormwater Pollution Prevention Plan (SWPPP) for any construction site at any time, the permittee shall submit the SWPPP to MassDEP within 14 days of such a request. MassDEP may conduct an inspection of any site covered by this permit to ensure compliance with state law requirements, including state water quality standards.

9.1.3 MTR10F000 Areas in the State of Vermont located at a federal facility

- a. Earth disturbance at any one time is limited to five acres.
- b. All areas of earth disturbance must have temporary or final stabilization within 14 days of the initial disturbance. After this time, disturbed areas must be temporarily or permanently stabilized in advance of any runoff producing event. A runoff producing event is an event that produces runoff from the construction site. Temporary stabilization is not required if precipitation is not forecast and work is to continue in the next 24-hours or if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of two feet or greater (e.g. house foundation excavation, utility trenches). Areas of a construction site that drain to sediment basins are not considered eligible for this exemption, and the exemption applies only to the excavated area itself.
- c. Site inspections on active construction sites shall be conducted daily during the period from October 15 through April 15.
- d. The use of chemical treatments (e.g. polymers, flocculants, and coagulants) for the settling and/or removal of sediment from stormwater runoff associated with construction and construction-related activities requires prior written approval and an approved site and project-specific plan, from the Vermont Agency of Natural Resources. In addition, the use of cationic polymers is prohibited unless approved by the Vermont Agency of Natural Resources under a site and project-specific plan.
- e. Any applicant under EPA's CGP shall allow authorized Vermont Agency of Natural Resources representatives, at reasonable times and upon presentation of credentials, to enter upon the project site for purposes of inspecting the project and determining

compliance with this Certification.

- f. The Vermont Agency of Natural Resources may reopen and alter or amend the conditions of this Certification over the life of the EPA 2022 Construction General Permit when such action is necessary to assure compliance with the VWQS.

9.2 EPA REGION 2

9.2.1 NYR10I000 Indian country within the State of New York

a. Saint Regis Mohawk Tribe

- i. Any Responsible-Person/Decision-Maker required under the CGP to submit a Notice of Intent (NOI) to EPA for coverage under the CGP, must concurrently submit an electronic copy of the NOI to the SRMT Environmental Division, Water Resource Program Manager. Additionally, an electronic copy of the Notice of Termination (NOT) must be provided within three business days after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT must be electronically provided to the following addresses:

Mr. Tieman W. Smith

Water Resources Program Manager Saint Regis Mohawk Tribe

449 Frogtown Road

Akwesasne, NY 13655 Tieman.Smith@srmt-nsn.gov 518.358.2272 ext. 5073

- ii. Any Responsible-Person/Decision-Maker that is required as part of the CGP to prepare a Discharge Management Plan (OMP) or Storm Water Management Plan (SWMP) and/or Storm Water Pollution Prevention Plan (SWPPP) must submit an electronic copy of the DMP, SWMP and/or SWPPP to the SRMT Environment Division, Water Resources Program Manager IO business days prior to the start of construction of any work to be conducted under the CGP. The applicable documents must be provided to the electronic address listed above.
- iii. Any Responsible-Person/Decision-Maker that is required under the CGP to submit an annual report to EPA must submit an electronic copy of the annual report concurrently to the SRMT Water Resource Program. Additionally, any correspondences between the applicant and EPA related to analytical data, written reports, corrective action, enforcement, monitoring, or an adverse incident must likewise be routed to the SRMT Water Resources Program at the above electronic address.
- iv. An "Authorization to Proceed Letter" with site-specific mitigation requirements may be sent out to the permittee when a review of the NOI and OMP, SWMP and /or SWPPP on a case-by-case basis, is completed by the SRMT Environment Division, Water Resource Program. This approval will allow the application to proceed if all mitigation requirements are met.

b. Seneca Nation

- i. Under Part 1.1.5 of the CGP, the Seneca Nation requests that an applicant must demonstrate that they meet the eligibility criteria listed in Appendix D (certify in your Notice of Intent (NOI) that you meet one of the eligibility criteria [Criterion A-F]) as well as species and critical habitats that are listed under the Seneca Nation's "Fishing and Conservation Laws" and the "Seneca Nation of Indians Comprehensive Conservation Law".

- ii. The Tribal Historic Preservation Office (THPO) was established in 2000 after the Seneca Nation received a recognition letter from the National Park Service (NPS); therefore under Part 1.1.6 of the CGP (Appendix E) and prior to submitting a Notice of Intent (NOI) operators must complete the Nation's THPO, Project Review Form (<https://sni.org/media/246603/sni-thpo-project-review-form.pdf>) and submit the completed form with associated information to the Tribal Historic Preservation Officer at 90 Ohi:yo' Way, Salamanca, NY 14779. Federal agencies engaging in construction activities must provide for construction review by a certified construction reviewer in accordance with 7 Del. C. §§4010 & 4013 and 7 DE Admin. Code 5101, subsection 6.1.6.
- iii. Under Part 1.2 of the CGP, discharges must also follow the Section 13 of the Guide for Construction (Seneca Nation of Indians Source Water Code) and respectively, Council Resolution, dated April 13, 2013 (CN: R-04-13-13-11) to ensure that the health, safety and welfare of the citizens of the Seneca Nation, and all other within the Lands and Territories of the Seneca Nation of Indians, and to facilitate the adequate provisions of water through the elimination or prevention of ground water contamination in the vicinity of wells that supply drinking water for the Nation. The area is known as the Source Water Protection Area (SWPA) and specified activities are regulated within this SWPA, as cited in Section 13 of the Guide for Construction and Section VI, of CN: R-04-13-13-11.
- iv. Under Part 1.4, any operator who seeks coverage of the CGP, and is required to submit a notice of intent NOI and Notice of Termination (NOT) (as necessary) to the EPA for coverage, under Part 1.4.2 must also submit a copy of the NOI to the Seneca Nation's Environmental Protection Department (EPD) within three business days of submittal to the EPA, (address shown below). Respectively, a copy of the NOT (as described under Part 8.3 of the CGP), which certifies that you have met the requirements of Part 8, must be provided within three business days after electronic confirmation is received from the EPA that the NOT has been accepted. In addition to a NOI and NOT, the Seneca Nation (Environmental Protection Department [EPD]) would require an Environmental Impact Assessment (EA) (Long Form), as shown in Section 2 of the Seneca Nation of Indians Laws, Ordinances & Policies (Guide for Construction), to be completed and submitted to the EPD prior to any project to determine whether the impacts from a project would create significant and detrimental effects to the Nation's lands, water (violate WQS), and environment. The NOI, NOT, and EA must be submitted electronically to epd@sni.org and provided to the following address:
Seneca Nation
Environmental Protection Department (EPD) Attn: Director of EPD
12837 Route 438
Irving, NY 14081
- v. Under Part 3.0 of the CGP, discharges must be controlled as necessary to meet applicable WQS. The Seneca Nation is working actively towards finalizing and implementing the; therefore, the EPD would require an applicant to submit or grant access to the permit to obtain information on the impact of effluents on receiving waters, including the capability of receiving waters to support future designated uses and achieve the WQS of the Nation; and to advise prospective dischargers of discharge requirements, and coordinate with the appropriate

permitting agencies. As stated in the Decision Document, under Section 303(c) of the CWA, 33 U.S.C. § 1313(c), states develop, review, and revise (as appropriate) water quality standards for surface waters of the United States. At a minimum, such standards are to include designated water uses, water quality criteria to protect such uses, and an antidegradation policy. 40 C.F.R. § 131.6. In addition, under Section 401 of the CWA states may grant, condition, or deny "certification" for federally permitted or licensed activities that may result in a discharge to the waters of the United States 33 U.S.C. § 1341.

- vi. Under Part 7.2.8(a)(b)(c) and for Part 9 of the CGP, the following Sections of the Seneca Nation's Guide for Construction shall be considered, in conjunction with the CGP:
 - (a) Section 1. Executive Order - To Establish a Policy for Governing Access to Nation Territories and Facilities by Officials of Foreign Government, dated March 31, 2011
 - (b) Section 3. Natural Resources Committee, Sand and Gravel Law (CN: R-06-24-05-08)
 - (c) Section 4. Fishing and Conservation Laws - Part 1.1.5 of the CGP
 - (d) Section 5. Seneca Nation of Indians Comprehensive Conservation Law, adopted January 14, 2012
 - (e) Section 9. Food is Our Medicine (FIOM) Program/Native Planting Policy (CN: R-03-08-14-14)
 - (f) Section 10. Forestry Management Plan (CN: R-08-14-10-23)
 - (g) Section 11. Timber Ordinance #411-092, dated May 8, 1982
 - (h) Section 14. Flood Damage Prevention Local Law, dated September 27, 1988
 - (i) Section 16. Utilities Ordinance No. 87-100
 - (j) Authorizing Emergency Action and Contingency Plan to Restrain Pollution of Nations Waters, (Council Resolution: R-03-01-18-10), dated March 10, 2018
Seneca Nation of Indians Permit Application for Construction within Waterways Permit, Form NR98-01.00

9.3 EPA REGION 3

9.3.1 DCR100000 District of Columbia

- a. Discharges authorized by this permit shall comply with the District of Columbia Water Pollution Control Act of 1984, as amended (DC Official Code § 8-103.01 and § 8-103.06, et seq.) to ensure that District of Columbia waters, waters in adjacent and downstream states, and the beneficial uses of these waters will not be harmed or degraded by the discharges.
- b. Discharges authorized by this permit must comply with §§ 1104.1 and 1104.8 of Chapter 11 and the provisions of Chapter 19 of Title 21 of District of Columbia Municipal Regulations in order to attain and maintain designated uses of the District of Columbia waters.

- c. The permittee shall comply with the District of Columbia Stormwater Management and Soil Erosion and Sediment Control regulations in Chapter 5 of Title 21 of the District of Columbia Municipal Regulations.
- d. The permittee shall comply with the District of Columbia Flood Management Control regulations in Chapter 31 of Title 20 of the District of Columbia Municipal Regulations.
- e. The permittee shall submit a copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Regulatory Review Division, Department of Energy & Environment, Government of the District of Columbia, 1200 First Street, NE, 5th Floor, Washington, DC 20002, during the review and approval of the permittee's DOEE Erosion and Sediment Control Plan in accordance with the provisions of Chapter 542 of Title 21 of the District of Columbia Municipal Regulations.
- f. Upon request, the permittee shall submit all inspection and monitoring reports as required by this permit and 40 CFR § 122.41 to the Associate Director, Inspection and Enforcement Division, Department of Energy & Environment, Government of the District of Columbia, 1200 First Street, NE, 5th Floor, Washington, DC 20002; telephone (202) 535-2226, or by email at Joshua.Rodriguez@dc.gov.
- g. In the event the permittee intends to discharge dewatering water, groundwater, or groundwater comingled with stormwater from a known contaminated site, the permittee shall contact the Regulatory Review Division, Department of Energy & Environment, Government of the District of Columbia, 1200 First Street, NE, 5th Floor, Washington, DC 20002; telephone (202) 535-2600, or by email at MS4DischargeAuthorization@dc.gov to request authorization to discharge dewatering water, groundwater, or groundwater comingled with stormwater to the District's Municipal Separate Storm Sewer System (MS4) or to a surface water body pursuant to §§ 8-103.02, 8-103.06, and 8-103.07 of the District of Columbia Water Pollution Control Act of 1984, as amended.

9.3.2 DER10F000 Areas in the State of Delaware located at a federal facility (as defined in Appendix A)

- a. Federal agencies must submit a sediment and stormwater management plan (SSMP) and receive Department approval prior to undertaking any land clearing, soil movement or construction activity unless conducting an exempt activity.
- b. Federal construction activities are required to have a third-party Certified Construction Reviewer (CCR) perform weekly reviews to ensure the adequacy of construction activities pursuant to the approved SSMP and regulations. Implementation of approved SSMPs requires the daily oversight of construction activity by certified responsible personnel.
- c. Implementation of approved SSMPs requires the daily oversight of construction activity by certified responsible personnel.
- d. A current copy of the SSMP must be maintained at the construction site.
- e. Unless authorized by the Department, not more than 20 acres may be disturbed at any one time.

9.4 EPA REGION 4

No additional conditions

9.5 EPA REGION 5**9.5.1 MIR101000 Indian country within the State of Minnesota****a. Fond du Lac Reservation**

- i. New dischargers wishing to discharge to an Outstanding Reservation Resource Water (ORRW)¹⁰⁶ must obtain an individual permit from EPA for storm water discharges from large and small construction activities.
- ii. A copy of the Storm Water Pollution Prevention Plan (SWPPP) must be submitted to the Office of Water Protection at least fifteen (15) days in advance of sending the Notice of Intent to EPA. The SWPPP can be submitted electronically to richardgitar@FDLREZ.com or by hardcopy sent to:
 - Fond du Lac Reservation
 - Office of Water Protection
 - 1720 Big Lake Road
 - Cloquet, MN 55720
- iii. Copies of the Notice of Intent (NOI) and the Notice of Termination (NOT) must be sent to the Fond du Lac Office of Water Protection at the same time they are submitted to EPA. [The condition helps the Office of Water Protection keep track of when a project is about to start and when it has ended. FDL Water Quality Certification Ordinance, Section 204 (a) (2)].
- iv. If the project will entail a discharge to any watercourse or open water body, the turbidity limit shall NOT exceed 10% of natural background within the receiving water(s) as determined by Office of Water Protection staff. For such discharges, turbidity sampling must take place within 24 hours of a ½-inch or greater rainfall event. The results of the sampling must be reported to the Office of Water Protection within 7 days of the sample collection. All sample reporting must include the date and time, location (GPS: UTM/Zone 15), and NTU. CGP applicants are encouraged to work with the Office of Water Protection in determining the most appropriate location(s) for sampling. [This condition helps both the Office of Water Protection and the project proponent in knowing whether or not their erosion control efforts are effective. FDL Water Quality Certification, Section 204 (b) (1)].
- v. Receiving waters with open water must be sampled for turbidity prior to any authorized discharge as determined by Office of Water Protection staff. This requirement only applies to receiving waters which no ambient turbidity data exists. [This condition allows the Office of Water Protection to obtain a baseline turbidity sample in which to compare to other samples. FDL Water Quality Certification Ordinance, Section 204 (b) (2)].
- vi. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Fond du Lac Reservation, Ordinance #12/98, as amended. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Fond du Lac

¹⁰⁶ Although additional waters may be designated in the future, currently Perch Lake, Rice Portage Lake, Miller Lake, Deadfish Lake, and Jaskari Lake are designated as ORRWs.

Reservation for any of the uses designated in the Water Quality Standards of the Fond du Lac Reservation. These uses include wildlife, aquatic life, warm water fisheries, cold water fisheries, subsistence fishing (netting), primary contact recreation, secondary contact recreation, cultural, wild rice areas, aesthetic waters, agriculture, navigation, commercial and wetlands. It also includes the designated uses of wetlands including, but not limited to, baseflow discharge, cultural opportunities, flood flow attenuation, groundwater recharge, indigenous floral and fauna) diversity and abundance, nutrient cycling, organic carbon export/cycling, protection of downstream water quality, recreation, resilience against climactic effects, sediment/shoreline stabilization, surface water storage, wild rice, and water dependent wildlife. [In addition to listing the designated uses of waters of the Fond du Lac Reservation, this condition also limits the project proponent to discharges that will not violate our Water Quality Standards. FDL Water Quality Certification Ordinance, Section 204 (a) (7)].

- vii.** Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the Fond du Lac Reservation. All spills must be reported to the appropriate emergency management Agency (National Response Center AND the State Duty Officer), and measures shall be taken immediately to prevent the pollution of waters of the Fond du Lac Reservation, including groundwater. The Fond du Lac Office of Water Protection must also be notified immediately of any spill regardless of size. [This condition helps protect water quality and also reminds project proponents of their responsibility in reporting spill events. FDL Water Quality Certification Ordinance, Section 204 (b) (3)].
- viii.** All seed mixes, whether used for temporary stabilization or permanent seeding, shall NOT contain any annual ryegrass (*Lolium* species). Wild rye (*Elymus* species) or Oats (*Avena* species) may be used as a replacement in seed mixes. [This condition prevents the use of annual ryegrass on the Reservation. Annual ryegrass is allelopathic, which means it produces biochemical in its roots that inhibit the growth of native plants. If used in seed mixes, annual ryegrass could contribute to erosion, especially on slopes. However, the condition also specifies substitute grasses that germinate almost as fast as annual ryegrass for use as a cover crop to help prevent erosion. FDL Water Quality Certification Ordinance, Section 204 (t) (1)].
- ix.** To prevent the introduction of invasive species, ALL contractors and subcontractors MUST disclose information stating prior equipment location(s) and ALL known invasive species potentially being transported from said location(s). All equipment MUST undergo a high pressure wash (including any equipment mats) BEFORE ENTERING the Fond du Lac Reservation. Personal equipment such as work boots, gloves, vest, etc. MUST be clean of debris, dirt and plant and animal material BEFORE ENTERING the Fond du Lac Reservation. Equipment being transported from known infested areas MUST undergo a high pressure wash as soon as possible after leaving the infested site and again BEFORE ENTERING the Fond du Lac Reservation, to avoid transport of invasive species into areas surrounding the Reservation. Written certification of equipment cleaning MUST be provided to the Fond du Lac Office of Water Protection. Upon arrival, ALL contractor and subcontractor equipment will be inspected by appointed Fond du Lac staff. If equipment is deemed unsatisfactory, the equipment MUST

undergo a high pressure washing until the equipment is cleared by the inspector, until such time, minimal travel will be allowed through the Reservation. The contractor shall be held responsible for the control of any invasive species introduced as a result of their project. [This condition requires the project proponent to prevent the inadvertent introduction of invasive species by taking an active role in cleaning all vehicles, equipment, and equipment mats before entering the Reservation. This condition has been placed in certifications since 2012, due to the introduction of Wild Parsnip in 2011 from a pipeline contractor. It is much easier to prevent the introduction of an invasive species than it is to eradicate it once it has been introduced. Many invasive plant species form monocultures, preventing native plants from growing. This situation often leads to cases of erosion, which in turn effects water quality. FOL Water Quality Certification Ordinance, Section 204 (g) (1)].

- x. A copy of this certification MUST be kept by the contractor on-site at all times and be available for viewing by all personnel, including inspectors. [This condition ensures that the information contained in the certification, especially the conditions, is readily available onsite for reference. FOL Water Quality Certification Ordinance, Section 204 (a) (9)].

b. The Grand Portage Band of Lake Superior Chippewa

- i. The CGP authorization is for construction activities that may occur within the exterior boundaries of the Grand Portage Reservation in accordance to the Grand Portage Land Use Ordinance. The CGP regulates stormwater discharges associated with construction sites of one acre or more in size. Only those activities specifically authorized by the CGP are authorized by this certification (the "Certification").
- ii. All construction stormwater discharges authorized by the CGP must comply with the Water Quality Standards and Water Resources Ordinance, as well as Applicable Federal Standards (as defined in the Water Resources Ordinance).
- iii. All appropriate steps must be taken to ensure that petroleum products or other chemical pollutants are prevented from entering the Waters of the Reservation. All spills must be reported to the appropriate emergency-management agency, and measures must be taken to prevent the pollution of the Waters of the Reservation, including groundwater.
- iv. The 2022 CGP requires inspections and monitoring reports of the construction site stormwater discharges by a qualified person. Monitoring and inspection reports must comply with the minimum requirements contained in the 2022 CGP. The monitoring plan must be prepared and incorporated into the Storm Water Pollution Prevention Plan (the "SWPP"). A copy of the SWPP must be submitted to the Board at least 30 days in advance of sending the requisite Notice of Intent to EPA. The SWPP should be sent to:

Grand Portage Environmental Resources Board
P.O. Box 428
Grand Portage, MN 55605

Copies of the Notice of Intent and Notice of Termination required under the General Permit must be submitted to the Board at the address above at the same time they are submitted to the EPA.

- v. If requested by the Grand Portage Environmental Department, the permittee must provide additional information necessary for a case-by-case eligibility determination to assure compliance with the Water Quality Standards and any Applicable Federal Standards. The burden is on the applicant to demonstrate compliance with the Water Quality Standards, the Water Resources Ordinance, and Applicable Federal Standards whether or not the application is ultimately eligible for the CGP.
 - vi. CGP discharges must not cause nuisance conditions as defined in Grand Portage Water Quality Standards.
 - vii. The Board retains full authority to ensure compliance with and to enforce the provisions of the Water Resource Ordinance and Water Quality Standards, Applicable Federal Standards, and these Certification conditions. Nothing herein affects the scope or applicability of other controlling tribal or federal requirements, including but not limited to impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for listing on the National Register of Historic Places under the National Historic Preservation Act, 54 U.S.C. §§ 300101 et seq.
 - viii. Appeals related to Board actions taken in accordance with any of the preceding conditions may be heard by the Grand Portage Tribal Court.
- c. Leech Lake Band of Ojibwe**
- i. The water quality standards that apply to the construction site are the standards at the time the operator submits its Notice of Intent (NOI) to EPA and the LLBO WRP (see conditions # 2 and # 3).
 - ii. A copy of the Stormwater Pollution Prevention Plan (SWPPP) must be submitted to the LLBO WRP at least 30 days in advance of sending the NOI for the project to EPA. See attached LLBO 401 Water Quality Certification Ordinance. Section 304(a)(1). The SWPPP should be submitted electronically to Jeff.Harper@llojibwe.net and by hardcopy sent to:
Leech Lake Band of Ojibwe
ATTN: Water Resources Program - 401 Cert
Division of Resource Management
190 Sailstar Drive NW
Cass Lake, Minnesota 56633
 - iii. Copies of the NOI and the Notice of Termination (NOT) must be submitted to the LLBO WRP at the same time they are submitted to EPA. See attached LLBO 401 Water Quality Certification Ordinance, Section 304(a)(2). The NOI and NOT should be submitted electronically to Jeff.Harper@llojibwe.net and sent by hardcopy to the address cited in condition # 2.
 - iv. Any and all other conditions listed in Section 304 of the attached LLBO 401 Water Quality Certification Ordinance shall be observed unless the LLBO WRP deems that certain conditions therein are not applicable to the project in need of a permit under this certification.
 - v. A copy of this certification MUST be kept by the contractor on-site at all times and be available for viewing by all personnel, including inspectors.

- vi. Upon consideration of the NOI, if the LLBO WRP finds that the discharge will not be controlled as necessary to meet applicable water quality standards, the LLBO WRP may insist, consistent with Part 3.1 of the CGP, that additional controls are installed to meet applicable water quality standards, or recommend to EPA that the operator obtain coverage under an individual permit.

9.5.2 WIR10I000 Indian country within the State of Wisconsin

a. Bad River Band of Lake Superior Tribe of Chippewa Indians

- i. Only those activities specifically authorized by the CGP are authorized by this Certification. This Certification does not authorize impacts to cultural properties, or historical sites, or properties that may be eligible for listing as such.
- ii. All projects which are eligible for coverage under the CGP and are located within the exterior boundaries of the Bad River Reservation shall be implemented in such a manner that is consistent with the Tribe's Water Quality Standards (WQS). The Tribe's WQS can be viewed at: http://www.badriver-nsn.gov/wp-content/uploads/2020/01/NRD_WaterQualityStandards_2011.pdf
- iii. Operators are not eligible to obtain authorization under the CGP for all new discharges to an Outstanding Tribal Resource Water (OTRW or Tier 3 water). OTRWs, or Tier 3 waters, include the following: Kakagon Slough and the lower wetland reaches of its tributaries that support wild rice, Kakagon River, Bad River Slough, Honest John Lake, Bog Lake, a portion of Bad River, from where it enters the Reservation through the confluence with the White River, and Potato River. OTRWs can be viewed at: <https://www.arcgis.com/apps/View/index.html?appid=6f44c371217e4ee8b5f1c2c705c7c7c5>
- iv. An operator proposing to discharge to an Outstanding Resource Water (ORW or Tier 2.5 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. ORWs, or Tier 2.5 waters, include the following: a portion of Bad River, from downstream the confluence with the White River to Lake Superior, White River, Marengo River, Graveyard Creek, Bear Trap Creek, Wood Creek, Brunsweller River, Tyler Forks, Bell Creek, and Vaughn Creek. ORWs can be viewed at: <https://www.arcgis.com/apps/View/index.html?appid=6f44c371217e4ee8b5f1c2c705c7c7c5>. The antidegradation demonstration materials described in provision E.4.iii., and included on the antidegradation demonstration template found at: <https://www.badriver-nsn.gov/natural-resources/projectreviews/>, must be submitted to the following address:
 Bad River Tribe's Natural Resources Department
 Attn: Water Regulatory Specialist
 P.O. Box 39 Odanah, WI 54861
 WaterReg@badriver-nsn.gov
- v. An operator proposing to discharge to an Exceptional Resource Water (ERW or Tier 2 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. ERWs, or Tier 2 waters, include the following: any surface water within the exterior boundaries of the Reservation that is not specifically classified as an Outstanding Resource Water (Tier 2.5 water) or an Outstanding Tribal Resource Water (Tier 3 water). ERWs can be viewed at:

<https://www.arcgis.com/apps/View/index.html?appid=6f44c371217e4ee8b5f1c2c705c7c7c5>. The antidegradation demonstration materials described in provision E.4.ii., and included on the antidegradation demonstration template found at: <https://www.badriver-nsn.gov/natural-resources/projectreviews/>, must be submitted to the following address:

Bad River Tribe's Natural Resources Department
Attn: Water Regulatory Specialist
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

- vi.** Projects utilizing cationic treatment chemicals within the Bad River Reservation boundaries are not eligible for coverage under the CGP.
- vii.** A discharge to a surface water within the Bad River Reservation boundaries shall not cause or contribute to an exceedance of the turbidity criterion included in the Tribe's WQS, which states: Turbidity shall not exceed 5 NTU over natural background turbidity when the background turbidity is 50 NTU or less, or turbidity shall not increase more than 10% when the background turbidity is more than 50 NTU.
- viii.** All projects which are eligible for coverage under the CGP within the exterior boundaries of the Bad River Reservation must comply with the Bad River Reservation Wetland and Watercourse Protection Ordinance, or Chapter 323 of the Bad River Tribal Ordinances, including the erosion and sedimentation control, natural buffer, and stabilization requirements. Questions regarding Chapter 323 and requests for permit applications can be directed to the Wetlands Specialist in the Tribe's Natural Resources Department at (715) 682-7123 or wetlands@badriver-nsn.gov.
- ix.** An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must notify the Tribe prior to the commencing earth-disturbing activities. The operator must submit a copy of the Notice of Intent (NOI) to the following addresses at the same time it is submitted to the U.S. EPA:

Bad River Tribe's Natural Resources Department
Attn: Water Regulatory Specialist
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

Bad River Tribe's Natural Resources Department
Attn: Tribal Historic Preservation Officer (THPO)
P.O. Box 39 Odanah, WI 54861
THPO@badriver-nsn.gov

The operator must also submit a copy of the Notice of Termination (NOT) to the above addresses at the same time it is submitted to the U.S. EPA. Photographs showing the current site conditions must be included as part of the NOT to document the stabilization requirements have been met.

- x.** The THPO must be provided 30 days to comment on the project.

- xi.** The operator must obtain THPO concurrence in writing. This written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties. For more information regarding the specifics of the cultural resources process, see 36 CFR Part 800. A best practice for an operator is to consult with the THPO during the planning stages of an undertaking.
- xii.** An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must submit a copy of the Stormwater Pollution Prevention Plan (SWPPP) to the following address at the same time as submitting the NOI:
 - Bad River Tribe's Natural Resources Department
 - Attn: Water Regulatory Specialist
 - P.O. Box 39 Odanah, WI 54861
 - WaterReg@badriver-nsn.gov
- xiii.** Any corrective action reports that are required under the CGP must be submitted to the following address within one (1) working day of the report completion:
 - Bad River Tribe's Natural Resources Department
 - P.O. Box 39 Odanah, WI 54861
 - WaterReg@badriver-nsn.gov
- xiv.** An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must submit a copies of the inspection reports (including photographs) to the following address within 24 hours of completing any site inspection required:
 - Bad River Tribe's Natural Resources Department Attn: Water Regulatory Specialist
 - P.O. Box 39 Odanah, WI 54861
 - WaterReg@badriver-nsn.gov
- xv.** An operator shall be responsible for meeting any additional permit requirements imposed by the U.S. EPA necessary to comply with the Tribe's antidegradation policies if the discharge point is located upstream of waters designated by the Tribe.

9.6 EPA REGION 6

9.6.1 NMR100000 State of New Mexico, except Indian country

- a.** In Outstanding National Resource Waters (ONRWs) in New Mexico, no degradation is permitted except in limited, specifically defined instances. Therefore, Operators are not eligible to obtain authorization under this general permit for stormwater discharges to waters classified as ONRWs listed in Paragraph D of 20.6.4.9 New Mexico Administrative Code (NMAC), also referred to as "Tier 3 waters" as defined in Appendix A of this permit. Exception: When construction activities are in response to a public emergency (e.g., wildfire, extreme flooding, etc.) and the related work requires immediate authorization to avoid a threat to public health or safety.
 - i.** Operators who conduct construction activities in response to a public emergency to mitigate an immediate threat to public health or safety shall

adhere to the requirements in 20.6.4.8(A)(3)(c) NMAC, including notifying the New Mexico Environment Department (NMED) within seven days of initiation of the emergency action and providing NMED with a summary of the action taken within 30 days of initiation of the emergency action.

- ii. For all other scenarios, Operators with proposed discharges to ONRWs in New Mexico shall obtain coverage from EPA under an NPDES Individual Permit and will comply with the additional standards and regulations related to discharges to ONRWs in 20.6.4.8(A) NMAC. Additional information is available from:
 - New Mexico Environment Department Surface Water Quality Bureau
 - P.O. Box 5469
 - Santa Fe, NM 87502-5469 Telephone: 505-827-0187
 - <https://www.env.nm.gov/surface-water-quality/wqs/>
 - <https://gis.web.env.nm.gov/oem/?map=swqb>
- b. If construction dewatering activities are anticipated at a construction site and non-stormwater discharges of groundwater, subsurface water, spring water, and/or other dewatering water are anticipated, the Operators/Permittees must complete the following steps:
 1. Review the state's Ground Water Quality Bureau Mapper (<https://gis.web.env.nm.gov/GWQB/>) and Petroleum Storage Tank Bureau Mapper (<https://gis.web.env.nm.gov/GWQB/>).

Check if the following sources are located within the noted distance from the anticipated construction dewatering activity. At a minimum, a list of the following potential sources of contaminants and pollutants at the noted distance is to be kept in the SWPPP.

Source of Potential Contamination or Pollutants*	Constituents likely to be required for testing*
Within 0.5 mile of an open Leaking Underground Storage Tank (LUST) site	BTEX (Benzene, Toluene, Ethylbenzene, and Xylene) plus additional parameters depending on site conditions**
Within 0.5 mile of an open Voluntary Remediation site	All applicable parameters or pollutants listed in 20.6.4.13, 20.6.4.52, 20.6.4.54, 20.6.4.97 thru 20.6.4.99, 20.6.4.101 through 20.6.4.899, and 20.6.4.900 NMAC (or an alternate list approved by the NMED-SWQB)*
Within 0.5 mile of an open RCRA Corrective Action Site	
Within 0.5 mile of an open Abatement Site	
Within 0.5 mile of an open Brownfield Site	
Within 1.0 mile or more of a Superfund site or National Priorities List (NPL) site with associated groundwater contamination.	
Construction activity contaminants and/or natural water pollutants	Additional parameters depending on site activities and conditions (Contact NMED- SWQB for an alternate list)*

*For further assistance determining whether dewatering may encounter contaminated sources, please contact the NMED Ground Water Quality Bureau at 505-827-2965 or NMED Surface Water Quality Bureau (SWQB) at 505-827-0187.

** EPA approved sufficiently sensitive methods must be used. For known PCB sources and analysis, EPA Method 1668C must be used (see <https://www.epa.gov/cwa-methods>).

2. If dewatering activities are anticipated, information on the flow rate and potential to encounter contaminated groundwater, subsurface water, spring water, or dewatering water must be provided directly to NMED at the following address:

NMED Surface Water Quality Bureau
 Program Manager, Point Source Regulation
 Section PO Box 5469, Santa Fe, NM 87502

Please call the SWQB to obtain the appropriate email address (505-827-0187).

3. In addition, the Operator/Permittee must characterize the quality of the groundwater and subsurface water, spring water, or dewatering water being considered for discharge according to the table above and including dissolved hardness and pH. Considering the contaminant sources listed in the table above, water quality data may already be available. For further assistance, contact the

NMED Surface Water Quality Bureau (505-827-0187), Ground Water Quality Bureau (505-827- 2965), Petroleum Storage Tank Bureau (505-476-4397), or Hazardous Waste Bureau (505-476- 6000).

- i. The Operator/Permittee must submit recent analytical test results (i.e., within the past 5 years) according to the table above, and including dissolved hardness and pH, to the EPA Region 6 Stormwater Permit Contact and the NMED Surface Water Quality Bureau (see contact information in #2 above). If the test data exceed applicable water quality standards, then the groundwater, subsurface water, spring water, or dewatering water cannot be discharged into surface waters under this general permit. Operators/Permittees may submit an NPDES Individual Permit application to treat and discharge to waters of the U.S. or find alternative disposal measures. No discharges to surface waters are allowed until authorized.
 - ii. If the discharge has the potential to affect groundwater (e.g., land application), the Operator/Permittee must submit an NOI to the NMED Ground Water Quality Bureau (see 20.6.2.1201 NMAC – Notice of Intent to Discharge).
 4. The Operator/Permittee must document any findings and all correspondence with NMED and EPA in the SWPPP.
- c.** Operators who intend to obtain authorization under this permit for new and existing storm water discharges from construction sites must satisfy the following condition:
- i. The SWPPP must include site-specific interim and permanent stabilization, managerial, and structural solids, erosion and sediment control best management practices (BMPs) and/or other controls that are designed to prevent to the maximum extent practicable an increase in the sediment yield and flow velocity from pre-construction, pre-development conditions to assure that applicable standards in 20.6.4 NMAC, including the antidegradation policy, and TMDL waste load allocations (WLAs) are met. This requirement applies to discharges both during construction and after construction operations have been completed. The SWPPP must identify and document the rationale for selecting these BMPs and/or other controls. The SWPPP must also describe design specifications, construction specifications, maintenance schedules (including a long-term maintenance plan), criteria for inspections, and expected performance and longevity of these BMPs. For sites greater than 5 acres in size, BMP selection must be made based on the use of appropriate soil loss prediction models (i.e. SEDCAD, RUSLE, SEDIMOT, MULTISED, etc.) OR equivalent generally accepted (by professional erosion control specialists) soil loss prediction tools.
 - ii. For all sites, the Operator(s) must demonstrate, and include documentation in the SWPPP, that implementation of the site-specific practices will ensure that the applicable standards and TMDL WLAs are met, and will result in sediment yields and flow velocities that, to the maximum extent practicable, will not be greater than the sediment yield levels and flow velocities from preconstruction, pre-development conditions.
 - iii. All SWPPPs must be prepared in accordance with good engineering practices by qualified (e.g., CPESC certified, engineers with appropriate training) erosion control specialists familiar with the use of soil loss prediction models and design of erosion and sediment control systems based on these models (or equivalent soil

loss prediction tools). Qualifications of the preparer (e.g., professional certifications, description of appropriate training) must be documented in the SWPPP. The Operator(s) must design, implement, and maintain BMPs in the manner specified in the SWPPP.

NMED supports the use of EPA's small residential lot template if a site qualifies to use it as explained in the permit, as long as it is consistent with the above requirements. NMED's requirement does not preclude small residential sites from using the template, but it may require an additional short paragraph to justify the selection of specific BMPs for the site.

- d. Operators must notify NMED when discharges of toxic or hazardous substances or oil from a spill or other release occurs - see Emergency Spill Notification Requirements, Part 2.3.6 of the permit. For emergencies, Operators can call 505-827-9329 at any time. For non-emergencies, Operators can call 866-428-6535 (voice mail 24-hours per day) or 505-476-6000 during business hours from 8am-5pm, Monday through Friday. Operators can also call the NMED Surface Water Quality Bureau directly at 505-827-0187.
- e. Operators of small construction activities (i.e., 1-5 acres) are not eligible to qualify for a waiver in lieu of needing to obtain coverage under this general permit based on Item C.3 of Appendix C (Equivalent Analysis Waiver) in the State of New Mexico.

9.6.2 NMR10I000 Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I.

a. Nambe Pueblo

- i. The operator must provide a copy of the Notice of Intent (NOI) and Notice of Termination (NOT) to the Nambe Pueblo Governor's Office at the same time it is provided to the US Environmental Protection Agency. The NOI and NOT should be provided to the following address:
 - Office of the Governor Nambe Pueblo
 - ISA NPI02 WEST
 - Nambe Pueblo, New Mexico 87506
- ii. The operator must provide a copy of the Storm Water Pollution Prevention Plan (SWPPP) to Nambe Pueblo at the same time it is submitted to the EPA, either by email to governor@nambepueblo.org or mailed to the above address.
- iii. The operator must provide copies of inspection reports, a copy of the corrective action log, and modifications made to the SWPPP as a result of inspection findings, upon request by the Nambe Pueblo Department of Environmental and Natural Resources or Nam be Governor.

b. Ohkay Owingeh Tribe

- i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Ohkay Owingeh Office of Environmental Affairs, a copy of NOI modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be provided to the following address:

Naomi L. Archuleta - Environmental Programs Manager Ohkay Owingeh
Office of Environmental Affairs
P.O. Box 717
Ohkay Owingeh, NM 87566
naomi.archuleta@ohkay.org

Noah Kaniatobe - Environmental Specialist Ohkay Owingeh, Office of
Environmental Affairs
P.O. Box 717
Ohkay Owingeh, NM 87566
noah.kaniatohe@ohkay.org

- ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Storm Water Pollution Prevention Plan (SWPPP) to Ohkay Owingeh Office of Environmental Affairs at the same time that the NOI is submitted to the tribe (see contact information listed above).
- iii. Following each incident where the operator takes a corrective action the operator must provide the corrective action log to the Ohkay Owingeh Office of Environmental Affairs.
- iv. The operator must notify Ohkay Owingeh Office of Environmental Affairs within 24 hours, in the event of an emergency spill in addition to the notification requirements at Part 2.3.6 of the CGP. Please contact: Ohkay Owingeh Tribal Police Department at 505.852.2757.

*Please contact:
Ohkay Owingeh
Tribal Police Department
505.852.2757*

c. Pueblo of Isleta

- i. All operators obtaining permit coverage under the EPA CGP must submit a copy of the certified Notice of Intent (NOI) to the Pueblo of Isleta at the same time it is submitted to EPA for projects occurring within the exterior boundaries of the Pueblo of Isleta. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The Notices must be provided to the following address:
Water Quality Control Officer Pueblo of Isleta
Environment Department PO Box 1270
Isleta NM 87022
505-869-7565
WQCO@isletapueblo.com
- ii. The operator must notify the Pueblo of Isleta's Dispatch at 505-869-3030 as soon as possible and the Pueblo of Isleta Water Quality Control Officer within 10 hours, in the event of a spill of hazardous or toxic substances or if health or the

environment become endangered in addition to the notification requirements at Part 2.3.6 and at I.12.6.1 of the CGP.

- iii. All operators obtaining permit coverage under the EPA CGP must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Pueblo of Isleta Water Quality Control Officer at the above address, 30 days prior to submitting the certified NOI to EPA. If the electronic file is too large to send through e-mail, a zip file or flash drive may be submitted.
 - iv. All operators obtaining permit coverage under the EPA CGP must give 2 days advance notice to the Pueblo of Isleta Water Quality Control Officer of any planned changes in the permitted activity which may result in noncompliance with permit requirements.
 - v. All operators obtaining permit coverage under the EPA CGP must post a sign or other notice of permit coverage at a safe, publicly accessible location in close proximity to the construction site. The notice must be located so that it is visible from the public road or tribal road that is nearest to the active part of the construction site. The sign must be maintained on-site from the time construction activities begin until final stabilization is met.
 - vi. Erosion and sediment controls shall be designed to retain sediment on-site and project-generated waste materials that have the potential to discharge pollutants shall not be placed on open soil or on a surface that is not stabilized. Volumes of sediment over five (5) cubic yards must be removed from the active construction site; additionally, if sediment is placed for disposal within the exterior boundaries of the Pueblo of Isleta, disposal must be within a tribally approved sediment disposal site.
- d. Pueblo of Laguna**
- i. All operators obtaining permit coverage under the EPA CGP must submit an electronic copy of the certified (signed) Notice of Intent (NOI) to the Pueblo of Laguna's Environmental & Natural Resources Department (ENRD) within three business days of submittal to the EPA. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be provided within three business days after the EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be electronically submitted to info.environmental@pol-nsn.gov.
 - ii. All operators obtaining permit coverage under the EPA CGP must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Pueblo of Laguna's ENRD 14 days prior to the submittal of the NOI (see contact information listed above).
 - iii. The operator must provide copies of corrective actions logs and modifications made to the SWPPP as a result of inspection findings to the Pueblo of Laguna ENRD (see contact information above).
 - iv. In addition to the notification requirements of Part 2.3.6 of the CPG **[EPA interprets this intending to refer to the CGP]**, the operator must notify the Pueblo of Laguna ENRD at 505-552-7512 in the event of an emergency spill as soon as possible.
- e. Pueblo of Sandia. The following conditions apply only to discharges on the Pueblo of Sandia Reservation:**

- i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Pueblo of Sandia Environment Department concurrently with submittal to the EPA. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be provided concurrently with submittal to the EPA. The NOI and NOT must be provided electronically to the following addresses:
Electronic Addresses:

Amy Rosebrough (Water Quality Manager): rosebrough@sanidapueblo.nsn.us
Greg Kaufman (Environment Director): gkaufman@sandiapueblo.nsn.us
 - ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Pueblo of Sandia Environment Department at least 14 days prior to submittal of the NOI to the Pueblo (see contact information listed above).
 - iii. If requested by the Pueblo of Sandia Environment Department, the permittee must provide additional information necessary on a case-by-case basis to assure compliance with the Pueblo of Sandia Water Quality Standards and/or applicable Federal Standards.
 - iv. An "Authorization to Proceed Letter" with site specific mitigation requirements may be sent out to the permittee when a review of the NOI and SWPPP, on a case-by-case basis, is completed by the Pueblo of Sandia Environment Department. This approval will allow the application to proceed if all mitigation requirements are met.
 - v. The Pueblo of Sandia will not allow Small Construction Waivers (Appendix C) to be granted for any small construction activities.
 - vi. The operator must provide copies of inspection reports, a copy of the corrective action log, and modifications made to the SWPPP as a result of inspection findings to the Pueblo of Sandia Environment Department upon request. An inspection report and corrective action log must be submitted to the Pueblo within 3 days of any inspection that results in corrective action (see contact information listed above).
 - vii. The operator must notify the Pueblo of Sandia within 24 hours in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the COP (see contact information listed above).
 - viii. Before submitting a Notice of Termination (NOT) to the EPA, permittees must clearly demonstrate to the Pueblo of Sandia Environment Department through a site visit or documentation that requirements for site stabilization have been met and any temporary erosion control structures have been removed. A short letter stating that the NOT is acceptable and all requirements have been met will be sent to the permittee to add to the permittee's NOT submission to the EPA.
- f. Pueblo of Santa Ana. The following conditions apply only to discharges on the Pueblo of Santa Ana Reservation:**
- i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Pueblo's Department of Natural Resources within three business days of submittal to EPA. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be

provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be provided to the following address:

Regular U.S. Delivery Mail:

Pueblo of Santa Ana
Department of Natural Resources Water Resources Division
Attn: Andrew Sweetman 02 Dove Rd
Santa Ana Pueblo, NM 87004

Electronically:

Andrew Sweetman
Water Resources Division Manager Andrew.Sweetman@santaana-nsn.gov
Tammy Montoya Hydrologist
Tammy.Montoya@santaana-nsn.gov

- ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Pueblo's Department of Natural Resources at the same time that the NOI is submitted to the tribe (see contact information listed above).
- iii. The operator must provide copies of inspection reports, a copy of the corrective action log, and modifications made to the SWPPP as a result of inspection findings, upon request by the Pueblo's Department of Natural Resources.
- iv. The operator must notify the Pueblo's Department of Natural Resources within 24 hours in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the CGP.

g. Pueblo of Taos

- i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Taos Pueblo Environmental Office and Taos Pueblo Governor's Office within three business days of submittal to EPA. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be provided to the following addresses:

Honorable Governor of Taos Pueblo PO Box 1846
Taos, New Mexico 87571

Taos Pueblo Environmental Office PO Box 1846
Taos, New Mexico 87571
- ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Taos Pueblo Environmental Office when the NOI is submitted to the tribe. Electronic copy of SWPPP downloaded on flash drive may be sent to the above address for the Taos Pueblo Environmental Office.
- iii. The operator must provide a copy of the corrective action log following each corrective action undertaken and modifications made to the SWPPP as a result of

a corrective action to the Taos Pueblo Environmental Office at address listed above.

h. Pueblo of Tesuque.

- i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Pueblo of Tesuque Department of Environment and Natural Resources (DENR) and the Pueblo's Governor within three business days of submittal to EPA. Additionally, a copy of any NOI modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be provided to the following address:

Governor Mark Mitchell Pueblo of Tesuque
20 TP 828
Santa Fe, NM 87506 governor@pueblooftesuque.org

Sage Mountain.flower Pueblo of Tesuque
Department of Environment and Natural Resources Director
20 TP 828

- ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to Pueblo of Tesuque DENR and the Pueblo's Governor at the same time that the NOI is submitted to the EPA (see contact information listed above).
- iii. The operator must provide a copy of the corrective action log, and any modifications made to the SWPPP as a result of inspection findings, or upon request by the Pueblo of Tesuque DENR.
- iv. The operator must notify the Pueblo of Tesuque DENR within 24 hours in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the CGP (see contact information listed above).

i. Santa Clara Indian Pueblo.

- i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Santa Clara Pueblo Office of Environmental Affairs at the same time the NOI is submitted to the U.S. EPA. Additionally, a copy of the NOI modifications and the Notice of Termination (NOT), must be provided at the same time after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT shall be provided to the following address in electronic format:

Dino Chavarria,
Santa Clara Pueblo
Office of Environmental Affairs
dinoc@santaclarapueblo.org

- ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Stormwater Pollution Prevention Plan to the Santa Clara Pueblo Office of Environmental Affairs at the same time the NOI is submitted to the U.S. EPA (see contact information listed above).

- iii. The operator must notify the Santa Clara Pueblo Office of Environmental Affairs at the address above within 24 hours, in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the CGP

9.6.3 OKR10I000 Indian country within the State of Oklahoma, except areas of Indian country covered by an extension of state program authority pursuant to Section 10211 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA).

a. Pawnee Nation. The following conditions apply only to discharges within Pawnee Indian country:

- i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pawnee Nation at the same time it is submitted to the Environmental Protection Agency to the following address:
 Pawnee Nation Department of Environmental Conservation and Safety
 P.O. Box 470
 Pawnee, OK 74058
 Or email to dners@pawneenation.org
- ii. An electronic copy of the Storm Water Pollution Prevention Plan (SWPPP) must be submitted to the Pawnee Nation Department of Environmental Conservation and Safety at the same time the NOI is submitted.
- iii. The operator must provide access to the site for inspections and for copies of inspection reports, copy of the corrective action log and modifications, made to the SWPPP because of inspection findings, upon request by the Pawnee Nation DECS.
- iv. The Pawnee Nation Department of Environmental Conservation and Safety must be notified at 918.762.3655 immediately upon discovery of any noncompliance with any provision of the permit conditions.

9.6.4 OKR10F000 Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, or the Oklahoma Department of Agriculture and Forestry including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).

- a. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Lee Creek or any water or watershed designated "ORW" in Oklahoma's Water Quality Standards, this permit may only be used to authorize discharges from temporary construction activities. Certification is denied for any on-going activities such as sand and gravel mining or any other mineral mining.
- b. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Lee Creek or any water or watershed designated "ORW" in Oklahoma's Water Quality Standards, certification is denied for any discharges originating from support activities, including, but not limited to, concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas.

- c. Dewatering discharges into sediment or nutrient-impaired waters, and waters identified as Tier 2, Tier 2.5, or Tier 3 (OAC 785:46-13) shall be controlled to meet water quality standards for turbidity in those waters as follows:
 - i. Cool Water Aquatic Community/Trout Fisheries: 10 NTUs (OAC 785: 45-5-12(f)(7)(A)(i))
 - ii. Lakes: 25 NTUs (OAC 785: 45-5-12(f)(7)(A)(ii))
 - iii. In waters where background turbidity exceeds these values, turbidity from dewatering discharges should be restricted to not exceed ambient levels (OAC 785: 45-5-12(f)(7)(B))

9.7 EPA REGION 7

No additional conditions.

9.8 EPA REGION 8

9.8.1 MTR10I000 Indian country within the State of Montana

a. Blackfeet Nation.

- i. The Applicant and applicants for projects authorized under the NWP should obtain all other permits, licenses, and certifications that may be required by federal, state, or tribal authority. Primary relevant tribal permit will be ALPO (Ordinance 117). Others may apply. It is the applicant's responsibility to know the tribal and local ordinances and complete all necessary permissions before they can commence work.
- ii. If a project is unable to meet the enclosed conditions, or if certification is denied for an applicable NWP, the Applicant may request an individual certification from Blackfeet. An individual certification request must follow the requirements outlined in 40 CFR 121.5 of EPA's CWA § 401 Certification Rule, effective September 11, 2020.
- iii. Copies of this certification should be kept on the job site and readily available for reference.
- iv. If the project is constructed and/or operated in a manner not consistent with the applicable NWP, general conditions, or regional conditions, the permittee may be in violation of this certification.
- v. Blackfeet and EPA representatives may inspect the authorized activity and any mitigation areas to determine compliance with the terms and conditions of the NWP.
- vi. This NWP Reissuance does not reduce Tribal authority under any other rule.
- vii. The project, including any stream relocations and restoration, must be built as shown and as otherwise described in the application, the construction plans, cross sections, mitigation plans and other supporting documents submitted to this office. Impacts to aquatic systems and restoration efforts will be monitored by an appropriate aquatic resource professional to ensure that disturbed areas are restored to at least their original condition.
- viii. All existing water uses will be fully maintained during and after the completion of the project. (If applicable)

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- ix.** Where practicable, perform all in-channel and wetland work during periods of low flow or drawn—down or when dry
 - x.** Equipment staging areas must be located out of all delineated wetlands
 - xi.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during and immediately after construction, and all exposed soil and other fills, as well as any work below the ordinary high-water mark or in a wetland, must be permanently stabilized as soon as possible
 - xii.** Materials such as piling, culverts, sandbags, fabric, mats, timbers used for temporary facilities in wetlands or below the high- water mark of Waters of the US must be free from oil, gas, excess dirt, loose paint and other pollutants.
 - xiii.** Equipment staging areas in wetlands or in stream or river channels must be placed on mats, or other measures must be taken to minimize soil disturbance and compaction.
 - xiv.** Clearing of riparian or wetland vegetation for the sole purpose of constructing work bridges, detours, staging areas or other temporary facilities must be limited to the absolute minimum necessary. When temporary impacts to native riparian or wetland vegetation are unavoidable, it must be mowed or cut above ground with the topsoil and root mass left intact.
 - xv.** Remove all temporary fills and structures in the entirety when they are no longer needed. Restore affected areas to the appropriate original and planned contours where possible. Re-vegetate disturbed areas with appropriate native species when native species are impacted.
 - xvi.** Construction methods and best management practices (BMPs) must minimize aquatic resource impacts to the maximum extent possible. Any BMPs described in the Joint Application must be followed. BMPs should include installation and maintenance of sediment control measures; separation, storage and reuse of any topsoil; and recovery of all disturbed areas where possible. All best management practices must in place prior to the onset of construction or as soon as practicable during the construction process.
 - xvii.** Best available technology and/or best management practices must be utilized to protect existing water uses and maintain turbidity and sedimentation at the lowest practical level.
 - xviii.** Applicant/contractor should manage disturbed streambank topsoil in a manner that optimizes plant establishment for the site.
 - xix.** When operating equipment or otherwise undertaking construction in wetlands and water bodies the following conditions apply:
 - (a) Work should be done in dry conditions if possible.
 - (b) All equipment is to be inspected for oil, gas, diesel, anti-freeze, hydraulic fluid or other petroleum leaks. All such leaks will be properly repaired and equipment cleaned prior to being allowed on the project site. Leaks that occur after the equipment is moved to the project site will be fixed the same day or the next day or removed from the project area. The equipment is not allowed to continue operation once a leak is discovered.

- (c) All equipment is to be inspected and cleaned before and after use to minimize the spread or introduction of invasive or undesirable species.
- (d) Construction equipment shall not operate below the existing water surface except as follows:
- Impacts from construction should be minimized through the use of best management practices submitted in the permit application.
 - Essential work below the waterline shall be done in a manner to minimize impacts to aquatic system and water quality.
- (e) Containment booms and/or absorbent material must be available onsite. Any spills of petroleum products must be reported to the Army Corps, Blackfeet Nation BEO Office and the US EPA within 24 hours.
- xx.** Upland, riparian and in-stream vegetation should be protected except where its removal is necessary for completion of work. Revegetation should be completed as soon as possible. Applicant/contractor should revegetate disturbed soil in a manner that optimizes plant establishment for the site. Revegetation must include topsoil replacement, planting, seeding, fertilization, liming and weed-free mulching as necessary. Applicant must use native plant material and soils where appropriate and feasible. This certification does not allow for the introduction of non-native flora and fauna. All disturbed surface areas must be restored to pre-construction contours and elevation.
- xxi.** Spoils piles should not be placed or stored within the delineated wetlands or streams unless protected by a temporary structure designed to divert and handle high flows that can be anticipated during permit activity. Spoils piles should be placed on landscaping fabric or some other material to separate spoils material and allow retrieval of spoils material with minimal impact.
- xxii.** Impacts to wetlands shall not exceed 4.92 acres.
- xxiii.** Any unexpected and additional impacts to waters of the US should be reported to the
- xxiv.** Army Corps, Blackfeet Environmental Office Water Quality Coordinator and the US EPA.
- xxv.** All instream and stream channel reconstruction work must be completed before the stream is diverted into the new channel.
- xxvi.** Any temporary crossings, bridge supports, cofferdams, or other structures that are necessary during permit activity should be designed to handle high flows that can be anticipated during permit activity. All temporary structures should be completely removed from the water body at the conclusion of the permitted activity and the area restored to a natural function and appearance.
- xxvii.** The certification does not authorize any unconfined discharge of liquid cement into the waters of the United States. Grouting riprap must occur under dry conditions with no exposure of wet concrete to the water body.
- xxviii.** BMPs shall include application of certified weed-free straw or hay across all disturbed wetland areas that are temporarily impacted; installation and maintenance of sediment control measures during construction and if necessary, after construction is completed; use of heavy mud mats if necessary; separation,

storage and reuse of all streambank topsoil and wetland topsoil, as appropriate; and recovery of all disturbed wetland and streambank areas where possible. All conditions set by the Blackfeet Tribe and US Army Corps must be followed.

- xxix.** All applicants, including federal agencies, must notify EPA and the Blackfeet Environmental Office of the use of all NWPs for which certification has been granted prior to commencing work on the project. Notifications must include:
- (a) project location (lat. Long., exact point on map);
 - (b) NWP that will be used and the specific activity that will be authorized under the NWP;
 - (c) amount of permanent and temporary fills;
 - (d) a short summary of the proposed activity, and all other federal, state, tribal or local permits or licenses required for the project;
 - (e) complete contact information of both the applicant and contractor (name, name of the company or property if applicable, telephone, mobile, and email); and,
 - (f) Summary of best management practices that will be used.
 - (g) A summary of communications with the affected Tribe's water quality staff regarding the project, including any concerns or issues.
 - (h) Notify Blackfeet and EPA at least 7 days before the completion of construction and operations begin.
- xxx.** Point source discharges may not occur: (1) in fens, bogs or other peatlands; (2) within 100 feet of the point of discharge of a known natural spring source; or (3) hanging gardens.
- xxxi.** Except as specified in the application, no debris, silt, sand, cement, concrete, oil or petroleum, organic material, or other construction related materials or wastes shall be allowed to enter into or be stored where it may enter into waters of the U.S.
- xxxii.** Silt fences, straw wattles, and other techniques shall be employed as appropriate to protect waters of the U.S. from sedimentation and other pollutants.
- xxxiii.** Water used in dust suppression shall not contain contaminants that could violate water quality standards.
- xxxiv.** Erosion control matting that is either biodegradable blankets or loose-weave mesh must be used to the maximum extent practicable.
- xxxv.** All equipment used in waters of the U.S. must be inspected for fluid leaks and invasive species prior to use on a project. All fluid leaks shall be repaired and cleaned prior to use or when discovered, or if the fluid leak can't be repaired, the equipment shall not be used on site. Equipment used in waters with the possibility of aquatic nuisance species infestation must be thoroughly cleaned and effectively decontaminated before they are used on the project.

- xxxvi.** Vegetation should be protected except where its removal is necessary for completion of the work. Locations disturbed by construction activities should be revegetated with appropriate native vegetation in a manner that optimizes plant establishment for the specific site.
- xxxvii.** Revegetation may include topsoil replacement, planting, seeding, fertilization, liming, and weed-free mulching, as necessary. Where practical, stockpile weed- seed-free topsoil and replace it on disturbed areas. All revegetation materials, including plants and plant seed shall be on site or scheduled for delivery prior to or upon completion of the earth moving activities.
- xxxviii.** Activities may not result in any unconfined discharge of liquid cement into waters of the U.S. Grouting riprap must occur under dry conditions with no exposure of wet concrete to the waterbody.
- xxxix.** Activities that may result in a point source discharge shall occur during seasonal low flow or no flow periods to the extent practicable.
- xl.** The placement of material (discharge) for the construction of new dams is not certified, except for stream restoration projects.
- xli.** Any decision-maker that is required under 7.0 of the CGP to prepare a Stormwater Pollution Prevention Plan (SWPPP), must submit an electronic copy of the SWPPP to the Blackfeet Environmental Office at least 30 days before construction starts for review and approval. Any modifications to the SWPPP should be submitted to the Blackfeet Environmental Office.
- xlii.** Any Decision-maker required under Part 1.4 of the CGP to submit a Notice of Intent (NOI) to EPA for coverage under the CGP, must submit a copy of the NOI to the Blackfeet Environmental Office within three business days of submittal to EPA. Additionally, a copy of the Notice of Termination (NOT) must be provided within three business days after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT must be provided to the following address Gerald Wagner, Blackfeet Environmental Office Director.
62 Hospital Drive, Browning, MT 59417
beo.director@gmail.com
- b. Fort Peck Tribes.**
- i.** Any Decision-maker required under Part 1.4 of the CGP to submit a Notice of Intent (NOI) to EPA for coverage under the CGP, must submit a copy of the NOI to the Fort Peck Tribes Office of Environmental Protection within three business days of submittal to EPA. Additionally, a copy of the Notice of Termination (NOT) must be provided within three business days after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT must be provided to the following address:
Martina Wilson, Office of Environmental Protection Director
501 Medicine Bear Rd Poplar, MT 59255
martinawilson@fortpecktribes.net
- ii.** Any Decision-maker that is required under Part 7.0 of the CGP to prepare a Stormwater Pollution Prevention Plan (SWPPP), must submit an electronic copy of the SWPPP to the Fort Peck Tribes Office of Environmental Protection at least 30 days before construction starts for review and approval. Any modifications to the

SWPPP should be submitted to the Fort Peck Tribes Office of Environmental Protection.

- iii. Any Decision-maker that is required under Part 8.0 of the CGP to submit a weekly, bi-weekly, and/or annual report to EPA, must submit an electronic copy of the annual report to the Fort Peck Tribes Office of Environmental Protection within three business days after submittal to EPA.

9.9 EPA REGION 9

9.9.1 CAR10I000 Indian country within the State of California

a. Morongo Band of Mission Indians

- i. A copy of the Stormwater Pollution Prevention Plan (SWPPP) must be submitted (either mailed or electronically) to the MEPD no less than thirty (30) days before commencing construction activities:
 - Morongo Band of Mission Indians
 - Environmental Protection Department
 - 12700 Pumarra Road
 - Banning, CA 92220
 - Email: epd@morongo-nsn.gov
- ii. Copies of the Notice of Intent (NOI) and the Notice of Termination (NOT) must be sent to the MEPD at the same time they are submitted to EPA.
- iii. Operators of an "emergency-related project" must submit notice to the MEPD within twenty- four (24) hours after commencing construction activities.
- iv. Spills, leaks, or unpermitted discharges must be reported to the MEPD within twenty-four (24) hours of the incident, in addition to the reporting requirements of the CGP.
- v. Projects utilizing cationic treatment chemicals (as defined in Appendix A of the CGP) within the Morongo Reservation are not eligible for coverage under this certification of the CGP.
- vi. Facilities covered under the CGP will be subject to compliance inspections by MEPD staff, including compliance with final site stabilization criteria prior to submitting an NOI **[EPA assumes this intended to refer to an NOT]**.

9.9.2 GUR100000 Island of Guam

- a. For purposes of this Order, the term "Project Proponent" shall mean U.S. Environmental Protection Agency, and its agents, assignees, and contractors.
- b. For purposes of this Order, the permit "Operator" shall mean any party associated with a construction project that meets either of the following two criteria:
 - i. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications (e.g. in most cases this is the owner of the site); or
 - ii. The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the permit; in most cases this is the general contractor of the project).

Subcontractors generally are not considered operators for the purposes of this permit.

- c. The Project Proponent shall enforce the proposed 2022 CGP and ensure that the Operator complies with the conditions of the permit at all times.¹⁰⁷ (40 CFR §121.11(c))
- d. All submittals required by this Order shall be sent to the Guam Environmental Protection Agency Attn: 401 Federal Permit Manager, Non-Point Source Program, EMAS Division, 3304 Mariner Avenue, Bldg. 17-3304, Barrigada, Guam 96913, AND via email to jesse.cruz@epa.guam.gov. The submittals shall be identified with WQC Order #2021- 04 and include the COP Permit Number, certifying representative's name, title, mailing address and phone number. (§51060)(4) 2017 GWQS)
- e. A copy of the Operator's signed Stormwater Pollution Prevention Plan (SWPPP) and signed Notice of Intent (NOI) and Notice of Termination (NOT) submitted to EPA for review and approval, shall concurrently be submitted to Guam EPA, consistent with condition A4. Coordination with Guam EPA is encouraged when the receiving water(s) for the proposed discharge is/are being identified. (§10105.B.5.d.) GSESCR; (§51060)(4) 2017 GWQS)
- f. The Operator must comply with the conditions and requirements set forth in 22 GAR 10, Guam Soil Erosion and Sediment Control Regulations (GSESCR).
- g. Before submitting the NOT to EPA, Operators shall comply with GSESCR regulations at §10105.B10. (Stabilization of Affected Areas) and §10107.B. (Final Inspection and Approval)
- h. All operators/owners shall comply with the general design criteria for best management practices (BMPs) acceptable for meeting the Construction and Post-construction stormwater criteria in the 2006 CNMI and Guam Stormwater Management Manual. (E.O. 2012-02)
- i. Operating reports and monitoring and analytical data (e.g. Discharge Monitoring Reports (DMRs), follow-up monitoring reports, Exceedance Reports for Numerical Effluent Limits, etc.) submitted to EPA shall be concurrently submitted to Guam EPA, consistent with condition A4. §51060)(4) 2017 GWQS
- j. The Operators who install a sediment basin or similar impoundment shall maintain the storage capacity of five thousand cubic feet {5,000 cu. ft.) per acre of project area tributary to the basin. (§10105.B.5.i.) GSESCR
- k. (1) This Order does not authorize EPA to qualify Rainfall Erosivity Waivers to stormwater discharges associated with small construction activities (i.e. 1-5 acres). Operators are required to apply for an NOI for those projects eligible for coverage under the proposed 2022 CGP. An Erosion and Sediment Control Plan is required for every site that would be covered by the proposed 2022 CGP. (22 GAR §10104) The average annual rainfall for Guam and the CNMI exceeds 100 inches per year in many locations. These climatic conditions combined with the region's unique limestone, volcanic geologic formations, sensitive water resources and significant land

¹⁰⁷ By incorporating this condition into the permit, EPA acknowledges receipt of Guam's certification conditions.

development forces make stormwater discharges a very significant environmental and economic issue. (2006 CNMJ/Guam Stormwater Management Manual) E.O. 2012-02

(2) This Order does not authorize EPA to approve a Sediment TMDL Waiver for the Ugum River. Operators of construction activities eligible for a TMDL Waiver in lieu of coverage under the proposed 2022 CGP, shall submit a complete and accurate waiver certification as described in C.2., Appendix C - (Small Construction Waivers) to Guam EPA per condition A4., prior to notifying EPA of its intention to obtain a waiver. §51060)(4) 2017 GWQS

- l.** The Project Proponent shall submit to Guam EPA a signed Statement of Understanding of Water Quality Certification Conditions.¹⁰⁸ (see Attachment A for an example) per condition A4. §51060)(4) 2017 GWQS
- m.** The Operator shall comply with applicable provisions of the Guam Pesticides Act of 2007 (10 GCA Chapter 50) and implementing regulations at Title 22 GAR Chapter 15 for any use and application of pesticides.
- n.** Point source discharge(s) to waterbodies under the jurisdiction of Guam EPA must be consistent with the antidegradation policy in 22 GAR §5101(b).
- o.** The operator shall carry out construction activities in such a manner that will not violate Guam Water Quality Standards (GWQS). Proposed 2022 CGP discharges are prohibited as follows:
 - i.** In Marine Waters, Category M-1 Excellent 22 GAR Chapter 5 §5102(b)(I); and
 - ii.** In Surface Waters, Category S-1 High 22 GAR Chapter 5 §5102(c)(I)
- p.** In addition to complying with construction dewatering requirements in Part 2.4 and site inspection requirements for all areas where construction dewatering is taking place in Part 4 of the proposed 2022 CGP, Operators shall comply with all dewatering conditions and requirements set forth in 22 GAR 7, Water Resources Development and Operating Regulations, to include securing Guam EPA permits prior to any dewatering activities.
- q.** The Operator shall develop and implement a Spill Prevention and Containment Plan.
- r.** The Operator shall have adequate and appropriate spill response materials on hand to respond to emergency release of oil, petroleum or any other material into waters of the territory.
- s.** Any unpermitted discharge into territorial waters or onto land with a potential for entry into territorial waters, is prohibited. If this occurs, the Operator shall immediately take the following actions:
 - i.** Cease operations at the location of the violation or spill.
 - ii.** Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.
 - iii.** Notify Guam EPA of the failure to comply. All petroleum spills shall be reported immediately to:

¹⁰⁸ By incorporating this condition into the permit, EPA acknowledges receipt of Guam's certification conditions.

- (a) Guam's Emergency 911 system
 - (b) Guam EPA's 24-Hour Spill Response Team at (671) 888-6488 or during working hours (671) 300-4751
 - (c) US Coast Guard Sector Guam (671) 355-4824
 - (d) National Response Center 1-800-424-8802
- iv.** Submit a detailed written report to Guam EPA within five days of noncompliance that describes the nature of the event corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.
- f.** Compliance with this condition does not relieve the Operator from responsibility to maintain continuous compliance with the terms and conditions of this Order or the resulting liability from failure to comply.
- u.** Submittal or reporting of any of this information does not provide relief from any subsequent enforcement actions for unpermitted discharges to waters of the United States.
- v.** This Order is valid for five (5) Years from Date of Certification, unless otherwise approved by the Guam EPA Administrator.
- w.** The Operator shall be required to adhere to the current Guam Coral Spawning Moratorium dates for both hard and soft corals where in-water activities and/or construction activity in close proximity with marine waters may impair water quality. These dates can be obtained from the Guam Department of Agriculture, Division of Aquatic and Wildlife Resources, or the NOAA NMFS Pacific Islands Regional Office Habitat Conservation Division.
- x.** The Operator shall provide notice to Guam EPA consistent with Condition A4:
- (a) Immediately upon discovery of noncompliance with the provisions of this Order.
- y.** A Notice of Violation/Work Stop Order will be issued if certification conditions are not adhered to or when significant or sustained water quality degradation occurs. Work or discharge shall be suspended or halted until the Operator addresses environmental problems/concerns to Guam EPA's satisfaction. Guam EPA may also levy penalties and fines (10 GCA §47111). Invalidity or enforceability of one or more provisions of this certification shall not affect any other provision of this certification.

9.10 EPA REGION 10

9.10.1 IDR10I000 Indian country within the State of Idaho, except Duck Valley Reservation lands (see Region 9)

a. Shoshone-Bannock Tribes

- i.** Copies of the following information must be sent to the SBT-WRD:
 - (a) Notice of Intents (NOI)

The Notice of Intent shall be forwarded to the SBT-WRD within thirty (30) days of receipt of submitting NOI to the USEPA.

Shoshone-Bannock Tribes Water Resources Department
 PO Box 306 Pima Drive
 Fort Hall, ID 83203 Phone: (208) 239-4582
 Fax: (208) 239-4592
 Or Email ctanaka@sbtribes.com

- b. If requested by the SBT-WRD, the permittee must submit a copy of the SWPPP to SBT-WRD within fourteen (14) days of the request.

9.10.2 ORR10I000 Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9)

a. Confederated Tribes of Coos, Lower Umpqua, and Siuslaw

- i. No activities allowed under the CGP shall result in the degradation of any Tribal waters or affect resident aquatic communities or resident or migratory wildlife species at any life stage.
- ii. The operator shall be responsible for achieving compliance with CTCLUSI Water Quality Standards and all other tribal codes, regulations, and laws as they exist at the time that the permit is submitted.
- iii. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTCLUSI Water Quality Program before, or at the same time as, it is submitted to EPA.
- iv. The operator shall be responsible for submitting all Stormwater Pollution Prevention Plans (SWPPP) required under this general permit to the CTCLUSI Water Quality Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards, prior to the beginning of any discharge activities taking place.
- v. The operator shall be responsible for reporting an exceedance to Tribal Water Quality Standards to the CTCLUSI Water Quality Program at the same time it is reported to EPA.
- vi. The THPO will be provided 30 days to comment on the APE as defined in the permit application.
- vii. If the project is an undertaking, a cultural resource assessment must occur. All fieldwork must be permitted by the THPO (as appropriate), conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_O.htm) and documented according to Oregon Reporting Standards (Reporting_Guidelines.pdf) (oregon.gov). The resulting report must be submitted to the THPO and the THPO must concur with the finding of effect and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.
- viii. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate adverse effects to historic properties.

b. Confederated Tribes of the Umatilla Indian Reservation

- i. The operator shall be responsible for achieving compliance with the

Confederated Tribes of the Umatilla Indian Reservation's (CTUIR) Water Quality Standards.

- ii. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTUIR Water Resources Program at the address below, at the same time it is submitted to EPA.
- iii. The operator shall be responsible for submitting all Stormwater Pollution Prevention Plans (SWPPP) required under this general permit to the CTUIR Water Resources Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards, prior to the beginning of any discharge activities taking place.
- iv. The operator shall be responsible for reporting an exceedance to Tribal Water Quality Standards to the CTUIR Water Resources Program at the same time it is reported to EPA.

Confederated Tribes of the Umatilla Indian Reservation
Water Resources Program
46411 Timíne Way
Pendleton, OR 97801
(541) 429-7200

- v. The THPO will be provided 30 days to comment on the APE as defined in the permit application.
- vi. If the project is an undertaking, a cultural resource assessment must occur. All fieldwork must be permitted by the Tribal Historic Preservation Office (as appropriate), conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_0.htm) and documented according to Oregon Reporting Standards (Reporting_Guidelines.pdf (oregon.gov)). The resulting report must be submitted to the THPO and the THPO must concur with the finding of effect and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.
- vii. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate adverse effects to historic properties.

9.10.3 WAR10F000 Areas in the State of Washington, except those located on Indian country, subject to construction activity by a Federal Operator

- a. For purposes of this Order, the term "Project Proponent" shall mean those that are seeking coverage under this permit, and its agents, assignees and contractors.
- b. The Federal Agency shall mean the US Environmental Protection Agency. The Federal Agency shall enforce the permit and ensure that the Project Proponent complies with the conditions of the permits at all times.
- c. Failure of any person or entity to comply with this Certification may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Certification.
- d. The Certification conditions within this Order must be incorporated into EPA's final NPDES permit. Per 40 CFR 121.10(a), all certification conditions herein that satisfy the

requirements of 40 CFR 121.7(d) must be incorporated into the permit. Per 40 CFR 121.10(b), the permit must clearly identify all certification conditions.

- e. This Certification does not authorize exceedances of water quality standards established in chapter 173-201A WAC.
- f. Discharges from construction activity must not cause or contribute to violations of the Water Quality Standards for Surface Water of the State of Washington (chapter 173-201A WAC), Ground Water Quality Standards (chapter 173-200 WAC), Sediment Management Standards (chapter 173-204 WAC), and standards in the EPA's Revision of certain Federal water quality criteria applicable to Washington (40 CFR 131.45). Discharges that do not comply with these standards are prohibited.
- g. Prior to discharge of stormwater and non-stormwater to waters of the State, the Permittee must apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate Best Management Practices (BMPs) installed and maintained in accordance with the SWPPP and the terms and conditions of the permit.
 - i. BMPs must be consistent with:
 - (a) The Stormwater Management Manual for Western Washington (most current approved edition at the time this permit was issued), for sites west of the crest of the Cascade Mountains; or
 - (b) The Stormwater Management Manual for Eastern Washington (most current approved edition at the time this permit was issued), for sites east of the crest of the Cascade Mountains; or
 - (c) Revisions to either manual, or other stormwater management guidance documents or manuals which provide equivalent level of pollution prevention, that are approved by Ecology and incorporated into this permit in accordance with the permit modification requirements of WAC 173-226-230. (For purposes of this section, the stormwater manuals listed in Appendix 10 of the Phase I Municipal Stormwater Permit are approved by Ecology); or
 - (d) Documentation in the SWPPP that the BMPs selected provided an equivalent level of pollution prevention, compared to the applicable stormwater management manuals, including:
 - The technical basis for the selection of all stormwater BMPs (scientific, technical studies, and/or modeling) that support the performance claims for the BMPs being selected.
 - An assessment of how the selected BMP will satisfy AKART requirements and the applicable federal technology-based treatment requirements under 40 CFR part 125.3.

The Stormwater Management Manuals for Eastern and Western Washington can be found at: <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals>.
 - ii. An adequate SWPPP must include a narrative and drawings. All BMPs must be clearly referenced in the narrative and marked on the drawings. The SWPPP

narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:
 (a) Information about existing site conditions (topography, drainage, soils, vegetation, etc.).

(b) Potential erosion problem areas.

(c) The 13 elements of a SWPPP, including BMPs used to address each element. Unless site conditions render the element unnecessary and the exemption is clearly justified in the SWPPP, the 13 elements are as follows:

- Preserve Vegetation/Mark Clearing Limits
- Establish Construction Access
- Control Flow Rates
- Install Sediment Controls
- Stabilize Soils
- Protect Slopes
- Protect Drain Inlets
- Stabilize Channels and Outlets
- Control Pollutants
- Control Dewatering
- Maintain BMPs
- Manage the Project
- Protect Low Impact Development (LID) BMPs

h. Discharges of stormwater and authorized non-stormwater must be monitored for turbidity (or transparency) and, in the event of significant concrete work or engineered soils, pH must also be monitored. As applicable based on project specifics, monitoring, benchmarks, and reporting requirements contained in Condition S.4. (pp.10-16) of the Washington State Construction Stormwater General Permit, effective January 1, 2021, shall apply.

i. Discharges to segments of waterbodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, phosphorus, or pH must comply with the following numeric effluent limits:

Parameter identified in 303(d) listing	Parameter Sampled	Unit	Analytical Method	Numeric Effluent Limit
<ul style="list-style-type: none"> • Turbidity • Fine Sediment • Phosphorus 	Turbidity	NTU	SM2130	25 NTUs at the point where the stormwater is discharged from the site.
High pH	pH	su	pH meter	In the range of 6.5 – 8.5

All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current EPA-approved listing of impaired waters that exists on the

effective date of the permit, or the date when the operator's complete permit application is received by EPA, whichever is later.

The EPA approved WQ Assessment can be found at: <https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Assessment-of-state-waters-303d>

- j.** Discharges to a waterbody that is subject to a Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus must be consistent with the TMDL.
 - i.** Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges shall be consistent with any specific waste load allocations or requirements established by the applicable TMDL.
 - ii.** Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but no specific requirements have been identified, compliance with this permit will be assumed to be consistent with the approved TMDL.
 - iii.** Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with this permit will be assumed to be consistent with the approved TMDL.
 - iv.** Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus which has been completed and approved by EPA as of the effective date of the permit, or prior to the date of the operator's complete application for permit coverage is received by EPA, whichever is later.

- k.** Discharges to waters of the state from the following activities are prohibited:
 - i.** Concrete wastewater.
 - ii.** Wastewater from washout and clean-up of stucco, paint, form release oils, curing compounds and other construction materials.
 - iii.** Process wastewater as defined by 40 Code of Federal Regulations (CFR) 122.2.
 - iv.** Slurry materials and waste from shaft drilling, including process wastewater from shaft drilling for construction of building, road, and bridge foundations unless managed to prevent discharge to surface water.
 - v.** Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
 - vi.** Soaps or solvents used in vehicle and equipment washing.
 - vii.** Wheel wash wastewater, unless managed to prevent discharge to surface water.
 - viii.** Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to appropriate controls described within the permit.
- l.** This Certification is valid until the expiration date including any administrative extension or termination date of the NPDES 2022 Construction General Permit. (40 CFR § 122.46)

- m. The Federal Agency shall enforce and the Project Proponent must comply with all the reporting and notification conditions of the NPDES 2022 Construction General Permit in order to comply with this Order and the certification conditions herein (40 CFR § 121.11).
- n. You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
<p>Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503</p> <p>Pollution Control Hearings Board 1111 Israel RD SW STE 301 Tumwater, WA 98501</p>	<p>Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608</p> <p>Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903</p>

CONTACT INFORMATION

Please direct all questions about this Order to:

Noel Tamboer
 Department of Ecology
 P.O. Box 47600
 Olympia, WA 98503-7600
 (360) 701-6171
noel.tamboer@ecy.wa.gov

9.10.4 WAR10I000 Indian country within the State of Washington

a. Lummi Nation

- i. This certification does not exempt and is provisional upon compliance with other applicable statutes and codes administered by federal and Lummi tribal agencies. Pursuant to Lummi Code of Laws (LCL) 17.05.020(a), the operator must also obtain a land use permit from the Lummi Planning Department as provided in Title 15 of the Lummi Code of Laws and regulations adopted thereunder.
 - ii. Pursuant to LCL 17.05.020(a), each operator shall develop and submit a Storm Water Pollution Prevention Plan to the Lummi Water Resources Division for review and approval by the Water Resources Manager prior to beginning any discharge activities.
 - iii. Pursuant to LCL Title 17, each operator shall be responsible for achieving compliance with the Water Quality Standards for Surface Waters of the Lummi
 - iv. Indian Reservation (Lummi Administrative Regulations [LAR] 17 LAR 07.010 through 17 LAR 07.210 together with supplements and amendments thereto).
 - v. Each operator shall submit a signed copy of the Notice of Intent (NOI) to the Lummi Water Resources Division at the same time it is submitted electronically to the Environmental Protection Agency (EPA) and shall provide the Lummi Water Resources Division the acknowledgement of receipt of the NOI from the EPA and the associated NPDES tracking number provided by the EPA within 7 calendar days of receipt from the EPA.
 - vi. Each operator shall submit a signed copy of the Notice of Termination (NOT) to the Lummi Water Resources Division at the same time it is submitted electronically to the EPA and shall provide the Lummi Water Resources Division the EPA acknowledgement of receipt of the NOT.
 - vii. Storm Water Pollution Prevention Plans, Notice of Intent, Notice of Termination and associated correspondence with the EPA shall be submitted to:
 - Lummi Natural Resources Department
 - ATTN: Water Resources Manager 2665 Kwina Road
 - Bellingham, WA 98226-9298
- b. Port Gamble S'Klallam Tribe**
- i. No discharge from the project site shall cause exceedances of Port Gamble S'Klallam Surface Water Quality Standards narrative or numeric criteria in Tribal waters. This includes activities outside of Tribal lands that occur upstream of Tribal waters.
 - (a) If any exceedance of these water quality standards occurred, the Natural Resources Department shall be notified immediately.
 - The Department shall additionally be provided a complete draft of the proposed corrective action within a reasonable timeframe and its approval will be required before any corrective action may be taken.
 - ii. Operators performing activities under the CGP that may affect Tribal waters will require a permit and shall submit their plans to the Port Gamble S'Klallam Natural Resources Department for review.
 - The Department has the right to require conditions outside of this Water Quality Certification prior to permit approval.

- iii. No activities allowed under the CGP shall result in the degradation of any Tribal waters or change in designated uses.
- iv. No activities allowed under the CGP shall affect resident aquatic communities or resident/migratory wildlife species at any life stage.
 - Biological assessment methods used to determine the effect of an activity allowed under the CGP shall be approved by the PGST Natural Resources Department.
- v. No activities allowed under the CGP shall be conducted within wetland and stream buffer zones, nor shall said activities affect in any way wetland or stream buffers, as defined by *PGST Law and Order Code 24.08.01(c)*.
- vi. Concentrations for substances listed within the table in *Water Quality Standards for Surface Waters* sec. 7(7) shall not be exceeded by activities allowed under the CGP.

c. Spokane Tribe of Indians

- i. Pursuant to Tribal Law and Order Code (TLOC) Chapter 30 each operator shall be responsible for achieving compliance with the Surface Water Quality Standards of the Spokane Tribe. The operator shall notify the Spokane Tribe, Water Control Board (WCB) of any spills of hazardous material and;
 - ii. Each operator shall submit a signed hard copy of the Notice of Intent (NOI) to the WCB at the same time it is submitted to EPA.
 - iii. The permittee shall allow the Tribal Water Control Board or its designee to inspect and sample at the construction site as needed.
 - iv. Each operator shall submit a signed copy of the Notice of Termination (NOT) to the WCB at the same time it is submitted to EPA
- The correspondence address for the Spokane Tribe Water Control Board is:

Water Control Board c/o Brian Crossley PO Box 480
Wellpinit WA 99040
(509) 626-4409
crossley@spokanetribe.com

d. Swinomish Tribe

- i. Owners and operators seeking coverage under this permit must submit a copy of the Notice of Intent (NOI) to the DEP at the same time the NOI is submitted to EPA.
- ii. Owners and operators must also submit to the DEP changes in NOI and/or Notices of Termination at the same time they are submitted to EPA.
- iii. Owners and operators seeking coverage under this permit must also submit a Stormwater Pollution Prevention Plan to the DEP for review and approval by DEP prior to beginning any discharge activities.

e. Tulalip Tribes

- i. Submission of NOI: Copies of the Notice of Intent (NOI), Certification shall be submitted to the Tribe's Natural Resources Department to notify the Tribes of the

pending project and in order for the Tribes to review the projects potential impacts to endangered or threatened species.

- ii.** Submission of SWPPP: A copy of the Stormwater Pollution Plans (SWPPPs) shall be submitted to the Tribe's Natural Resources Department along with the NOI during the 30 day waiting period.
- iii.** Submission of Monitoring Data and Reports: The results of any monitoring required by this permit and reports must be sent to the Tribe's Natural Resources Department,
- iv.** The Tulalip Tribes are federally recognized successors in the interest to the Snohomish, Snoqualmie, Skykomish, and other allied tribes and bands signatory to the Treaty of Point Elliott.
- v.** including a description of the corrective actions required and undertaken to meet effluent limits or benchmarks (as applicable).
- vi.** Authorization to Inspect: The Tribe's Natural Resources Department may conduct an inspection of any facility covered by this permit to ensure compliance with tribal water quality standards. The Department may enforce its certification conditions.
- vii.** Submission of Inspection Reports: Inspection reports must be sent to the Tribe's Natural Resources Department, including a description of the corrective actions required and undertaken to meet effluent limits or benchmarks (as applicable).
- viii.** Permits on-site: A copy of the permit shall be kept on the job site and readily available for reference by the construction supervisor, construction managers and foreman, and Tribal inspectors.
- ix.** Project Management: The applicant shall ensure that project managers, construction managers and foreman, and other responsible parties have read and understand conditions of the permit, this certification, and other relevant documents, to avoid violations or noncompliance with this certification.
- x.** Emergency Spill Notification Requirements: In the event of a spill or the contractor shall immediately take action to stop the violation and correct the problem, and immediately report spill to the Tulalip Tribes Police Department (425) 508-1565. Compliance with this condition does not relieve the applicant from responsibility to maintain continuous compliance with the terms and conditions of this certification or the resulting liability from failure to comply.
- xi.** Discharges to CERCLA Sites: This permit does not authorize direct stormwater discharges to certain sites undergoing remedial cleanup actions pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) unless first approved by the appropriate EPA Regional office. In the case of the Tulalip Landfill site (WAD980639256), the Tulalip Tribes also requests notification by the facility and consultation with EPA prior to discharge. Contaminants at this site may include but are not limited to: dioxins, furans, arsenic, copper, lead, zinc, 4- methyl-phenol, Hex-CB, HPAHs, PCBs, PCE, cadmium, mercury, and LPAHs.
- xii.** Discharge-related Activities that have Potential to Cause an Adverse Effect on Historic Properties: Installation of stormwater controls that involve subsurface disturbances may potentially have an adverse impact on historic properties.

- xiii.** Procedures detailed in the permit shall be completed. Richard Young, of the Tulalip Tribe's Cultural Resources Department shall be contacted prior to initiating discharge-related activities that may have an impact on historic properties. His contact information is (360) 716-2652, ryoung@tulaliptribes-nsn.gov.
 - xiv.** Invalidation: This certification will cease to be valid if the project is constructed and/or operated in a manner not consistent with the project description contained in
 - xv.** the permit. This certification will also cease to be valid and the applicant must reapply with an updated application if information contained in the permit is voided by subsequent submittals.
 - xvi.** Modification: Nothing in this certification waives the Tulalip Tribes of Washington's authority to issue modifications to this certification if additional impacts due to operational changes are identified, or if additional conditions are necessary to protect water quality or further protect the Tribal Communities interest.
 - xvii.** incorporation by reference: This certification does not exempt the applicant from compliance with other statutes and codes administered by the Tribes, county, state and federal agencies.
 - xviii.** Compliance with Tribe's 1996 Water Quality Standards: Each permittee shall be responsible for controlling discharges and achieving compliance with the Tribe's Water Quality Standards.
 - xix.** Compliant with Tulalip Tribes Tidelands Management Policy: Permittee shall be responsible for achieving compliance with applicable sections of the Tulalip Tribe's Tidelands Management Policy. (Tulalip Tribal Code Title 8 Chapter 8.30).
 - xx.** Compliant with Tulalip Tribes Environmental Infractions: Permittee shall be responsible for achieving compliance with applicable sections of the Tulalip Tribe's Environmental Infractions. (Tulalip Tribal Code Title 8 Chapter 8.20).
 - xxi.** Where to Submit information and for further Coordination: All requested documents should be sent to the: Tulalip Tribes Natural Resources Environmental Department c/o Kurt Nelson and Valerie Streeter, 6704 Marine Drive, Tulalip, Washington 98271. For further 401 Certification coordination with the Tulalip Tribes Natural Resources Department, please contact Mr. Kurt Nelson (360) 716-4617 knelson@tulaliptribes-nsn.gov. 6406 Marine Dr., Tulalip WA 98271.
- f. Makah Tribe**
- i.** The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Makah Tribe's Water Quality Standards if the discharge point is located within the Makah's U&A treaty reserved areas.
 - ii.** Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to Makah Fisheries Management, Water Quality Department at the address listed below at the same time it is submitted to the EPA.
 - Makah Water Quality
 - Makah Fisheries Management (MFM)
 - ray.colby@makah.com

PO Box 115
Neah bay, WA 98357

- iii. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to the Tribe's Habitat programs for their review.
 - iv. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to Assistant Fisheries Director, ray.colby@makah.com.
 - v. The permittee shall submit all Stormwater Pollution Prevention plan (SWPP) to MFM for review and approval prior to beginning any activities resulting in a discharge to Makah tribal waters.
 - vi. The permittee shall notify Ray Colby, ray.colby@makah.com (360) 645-3150 prior to conducting inspections at construction sites generating stormwater discharges to tribal waters.
 - vii. The operator shall treat dewatering discharges with controls necessary to minimize discharges of pollutants to surface waters, or ground waters, and from stormwater runoff onsite from excavations, trenches, foundations, or storage areas. To the extent feasible, at all points where dewatering is discharged, comply with the velocity dissipation using check dams, sediment traps, and grouted outlets.
- g. Puyallup Tribe of Indians**
- i. The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Puyallup Tribe's antidegradation procedures.
 - ii. Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to Char Naylor, Tribal Water Quality Manager at the following e-mail address: (char.naylor@puyalluptribe-nsn.gov) at the same time it is submitted to EPA.
 - iii. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to Char Naylor, Tribal Water Quality Manager/Assistant Fisheries Director (char.naylor@puyalluptribe-nsn.gov) for review.
 - iv. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to Char Naylor at the email address listed above.
 - v. The permittee shall submit all stormwater pollution prevention plans to Char Naylor for review and approval prior to beginning any activities resulting in a discharge to Puyallup tribal waters.
 - vi. The permittee shall contact Brandon Reynon (Brandon.reynon@puyalluptribe-nsn.gov), Tribe's Historic Preservation Officer or Jennifer Keating (Jennifer.keating@puyalluptribe-nsn.gov), Tribe's Assistant Historic Preservation Officer regarding historic properties and cultural resources.
 - vii. To minimize the discharge of pollutants to groundwater or surface waters from stormwater that is removed from excavations, trenches, foundations, vaults, or

other storage areas, treat dewatering discharges with controls necessary to minimize discharges of pollutants. Examples of appropriate controls include sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, and filtration systems (e.g., bag or sand filters) that are designed to remove sediment.

To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. At all points where dewatering water is discharged, utilize velocity dissipation controls. Examples of velocity dissipation devices include check dams, sediment traps, riprap, and grouted riprap at outlets.

- viii.** The permittee shall provide and maintain natural buffers to the maximum extent possible (and/or equivalent erosion and sediment controls) when tribal waters are located within 100 feet of the boundaries. If infeasible to provide and maintain an undisturbed 100 foot natural buffer, erosion and sediment controls to achieve the sediment load reduction equivalent to a 100-foot undisturbed natural buffer shall be required.

Appendix B – Site Maps

Appendix C – eNOI Authorization

Appendix D – Inspection Form

SWPPP Inspection Report
 Kearsarge Walpole LLC – 1380 Soldiers Field Road, Suite 3900, Boston, MA 02135
 NPDES Tracking Number: _____ SWPPP Inspection Number: _____

General Information			
Project Name:		Location:	
Date of Inspection:		Start/End Time:	
Inspector's Name (s):			
Inspector's Title:			
Contact Information:			
Describe present phase of construction:			
Type of Inspection:	<input type="checkbox"/> Regular <input type="checkbox"/> Pre-Storm Event <input type="checkbox"/> During Storm Event <input type="checkbox"/> Post-Storm Event		

Weather Information			
Has a storm event occurred since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, provide: Storm Start Date: _____ Storm Duration (hrs): _____ Approx. Amount of Precipitation (in.): _____			
Weather at time of this inspection: <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds <input type="checkbox"/> Other: Temperature (°F): _____			
Have any discharges occurred since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, describe: _____			

Site-Specific BMPs:

- Number the structural and non-structural BMPs identified in your SWPPP on your site maps and list them below. Always carry a copy of your site map with you during your inspections to ensure proper inspection of all require BMPs.
- Describe corrective actions needed, date completed, and person who completed the task in the Corrective Action Log.

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes:
1	Compost Filter Sock	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Stockpile Protection	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	Stabilized Construction Entrance	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	Vegetated Swale	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	Temporary Sediment Trap(s)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	Infiltration Basins	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7	Vegetated Filter Strip	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Inspection Number:

Inspection Date:

	BMP/Activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes:
1	Are all slopes and disturbed areas not actively being worked on installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2	Are perimeter controls and sediment barriers adequately installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	Are discharge points and receiving waters free of sediment deposits?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	Are storm drain inlets properly protected?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	Is the construction exit preventing sediment track-out?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	Is trash/litter from work areas collected and placed into covered dumpsters?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7	Are vehicle and equipment cleaning, and maintenance areas free of spills, leaks or other deleterious material?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8	Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9	Are non-stormwater discharges (wash water, dewatering, other) properly controlled?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10	(Other):	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Inspection Number:

Inspection Date:

Inspector Notes

Describe any general noted or incidents of non-compliance not described above:

TO BE REPLACED WITH PHOTO KEY

Inspection Number:

Inspection Date:

REPLACE TEXT WITH PHOTO HERE

1.) **Observation:**

Inspection Number:

Inspection Date:

CERTIFICATION STATEMENT

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personal properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.”

Print Name and Title: _____

Signature: _____

Appendix E – Corrective Action Form

2022 CGP Corrective Action Log

Project Name: _____

NPDES ID Number: _____

Section A – Individual Completing this Log

Name:	Title:
Company Name:	Email:
Address:	Phone Number:

Section B – Details of the Problem (CGP Part 5.4.1.a)
Complete this section within 24 hours of discovering the condition that triggered corrective action.

Date problem was first identified:	Time problem was first identified:
---	---

What site conditions triggered this corrective action? *(Check the box that applies. See instructions for a description of each triggering condition (1 thru 6).)*

1
 2
 3
 4
 5a
 5b
 6

Specific location where problem identified:

Provide a description of the specific condition that triggered the need for corrective action and the cause (if identifiable):

Section C – Corrective Action Completion (CGP Part 5.4.1.b)
Complete this section within 24 hours after completing the corrective action.

For site condition # 1, 2, 3, 4, or 6 (those not related to a dewatering discharge) confirm that you met the following deadlines (CGP Part 5.2.1):

Immediately took all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events. **AND**

Completed corrective action by the close of the next business day, unless a new or replacement control, or significant repair, was required. **OR**

Completed corrective action within seven (7) calendar days from the time of discovery because a new or replacement control, or significant repair, was necessary to complete the installation of the new or modified control or complete the repair. **OR**

It was infeasible to complete the installation or repair within 7 calendar days from the time of discovery. Provide the following additional information:

Explain why 7 calendar days was infeasible to complete the installation or repair:

Provide your schedule for installing the stormwater control and making it operational as soon as feasible after the 7 calendar days:

For site condition # 5a, 5b, or 6 (those related to a dewatering discharge), confirm that you met the following deadlines:

- Immediately took all reasonable steps to minimize or prevent the discharge of pollutants until a solution could be implemented, including shutting off the dewatering discharge as soon as possible depending on the severity of the condition taking safety considerations into account.
- Determined whether the dewatering controls were operating effectively and whether they were causing the conditions.
- Made any necessary adjustments, repairs, or replacements to the dewatering controls to lower the turbidity levels below the benchmark or remove the visible plume or sheen.

Describe any modification(s) made as part of corrective action: (Insert additional rows below if applicable)	Date of completion:	SWPPP update necessary?	If yes, date SWPPP was updated:
1.		<input type="checkbox"/> Yes <input type="checkbox"/> No	
2.		<input type="checkbox"/> Yes <input type="checkbox"/> No	

Section D - Signature and Certification (CGP Part 5.4.2)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

MANDATORY: Signature of Operator or "Duly Authorized Representative:"

Signature:	Date:
Printed Name:	Affiliation:

OPTIONAL: Signature of Contractor or Subcontractor

Signature:	Date:
Printed Name:	Affiliation:

General Instructions

This Corrective Action Log Template is provided to assist you creating a corrective action log that complies with the minimum reporting requirements of Part 5.4 of the EPA's Construction General Permit (CGP). For each triggering condition on your site, you will need to fill out a separate corrective action log.

The entire form must be completed to be compliant with the requirements of the permit. (Note: In Section C, if you do not need the number of rows provided in the corrective action log, you may delete these or cross them off. Alternatively, if you need more space to describe any modifications, you may insert additional rows in the electronic version of this form or use the bottom of the page in the field version of this form.)

If you are covered under a State CGP, this template may be helpful in developing a log that can be used for that permit; however, you will likely need to modify this form to meet the specific requirements of any State-issued permit. If your permitting authority requires you to use a specific corrective action log, you should not use this template.

Instructions for Section A

Individual completing this form Enter the name of the person completing this log. Include the person's contact information (title, affiliated company name, address, email, and phone number).

Instructions for Section B

You must complete Section B within 24 hours of discovering the condition that triggered corrective action. (CGP Part 5.4)

When was the problem first discovered?

Specify the date and time when the triggering condition was first discovered.

What site conditions triggered this corrective action? (CGP Parts 5.1 and 5.3)

Check the box corresponding to the numbered triggering condition below that applies to your site.

1. A stormwater control needs a significant repair or a new or replacement control is needed, or, in accordance with Part Error! Reference source not found., you find it necessary to repeatedly (i.e., 3 or more times) conduct the same routine maintenance fix to the same control at the same location (unless you document in your inspection report under Part Error! Reference source not found. that the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under Part Error! Reference source not found.);
2. A stormwater control necessary to comply with the requirements of this permit was never installed, or was installed incorrectly;
3. Your discharges are not meeting applicable water quality standards;
4. A prohibited discharge has occurred (see Part 1.3);
5. During discharge from site dewatering activities:
 - a. The weekly average of your turbidity monitoring results exceeds the 50 NTU benchmark (or alternate benchmark if approved by EPA pursuant to Part **Error! Reference source not found.**); or
 - b. You observe or you are informed by EPA, State, or local authorities of the presence of any of the following at the point of discharge to a receiving water flowing through or immediately adjacent to your site and/or to constructed or natural site drainage features or storm drain inlets:
 - sediment plume
 - suspended solids
 - unusual color
 - presence of odor
 - decreased clarity
 - presence of foam
 - visible sheen on the water surface or visible oily deposits on the bottom or shoreline of the receiving water
6. EPA requires corrective action as a result of permit violations found during an inspection carried out under Part 4.8.

Provide a description of the problem (CGP Part 5.4.1.a)

Provide a summary description of the condition you found that triggered corrective action, the cause of the problem (if identifiable), and the specific location where it was found. Be as specific as possible about the location; it is recommended that you refer to a precise point on your site map.

Instructions for Section C

You must complete Section C within 24 hours after completing the correction action. (CGP Part 5.4)

Deadlines for completing corrective action for condition # 1, 2, 3, 4, or 6 (if not relating to a dewatering discharge) (CGP Part 5.2.1)

Check the box to confirm that you met the deadlines that apply to each triggering condition. You are always required to check the first box (i.e., Immediately took all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events.). Only one of the next three boxes should be checked depending on the situation that applies to this corrective action.

Check the second box if the corrective action for this particular triggering condition does not require a new or replacement control, or a significant repair. These actions must be completed by the close of the next business day from the time of discovery of the condition.

Check the third box if the corrective action for this particular triggering condition requires a new or replacement control, or a significant repair. These actions must be completed by no later than seven calendar days from the time of discover of the condition.

Check the fourth box if the corrective action for this particular triggering condition requires a new or replacement control, or a significant repair, and if it is infeasible to complete the work within seven calendar days. Additionally, you will need to fill out the table below the checkbox that requires:

1. An explanation as to why it was infeasible to complete the installation or repair within seven calendar days of discovering the condition.
2. Provide the schedule you will adhere to for installing the stormwater control and making it operational as soon as feasible after the seventh day following discovery.

Note: Per Part 5.2.1.c, where these actions result in changes to any of the stormwater controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within seven calendar days of completing this work.

Deadlines for completing corrective action for condition # 5a, 5b, or 6 related to a dewatering discharge (CGP Part 5.2.2)

These deadlines apply to conditions relating to construction dewatering activities. Check the box to confirm that you met the deadlines that apply to each triggering condition. You are required to check all of the boxes in this section to indicate your compliance with the corrective action deadlines.

List of modification(s) to correct problem

Provide a list of modifications you completed to correct the problem.

Date of completion

Enter the date you completed the modification. The work must be completed by the deadline you indicated above.

SWPPP update necessary?

Check "Yes" or "No" to indicate if a SWPPP update is necessary consistent with Part 7.4.1.a in order to reflect changes implemented at your site. If "Yes," then enter the date you updated your SWPPP. The SWPPP updates must be made within seven calendar days of completing a corrective action. (CGP Part 5.2.1.c)

Instructions for Section D

Each corrective action log entry must be signed and certified following completion of Section D to be considered complete. (CGP Part 5.4.2)

Operator or "Duly Authorized Representative" – MANDATORY (CGP Appendix G Part G.11.2 and CGP Appendix H Section X)

At a minimum, the corrective action log must be signed by either (1) the person who signed the NOI, or (2) a duly authorized representative of that person. The following requirements apply:

If the signatory will be the person who signed the NOI for permit coverage, as a reminder, that person must be one of the following types of individuals:

- *For a corporation:* By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- *For a partnership or sole proprietorship:* By a general partner or the proprietor, respectively.
- *For a municipality, State, Federal, or other public agency:* By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a Federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

If the signatory will be a duly authorized representative, the following requirements must be met:

- The authorization is made in writing by the person who signed the NOI (see above);
- The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
- The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

Sign, date and print your name and affiliation.

Contractor or Subcontractor - OPTIONAL

Where you rely on a contractor or subcontractor to complete this log and the associated corrective action, you should consider requiring the individual(s) to sign and certify each log entry. Note that this does not relieve you, the permitted operator, of the requirement to sign and certify the log as well. If applicable, sign, date, and print your name and affiliation.

Recordkeeping

Logs must be retained for at least 3 years from the date your permit coverage expires or is terminated. (CGP Part 5.4.4)

Keep copies of your signed corrective action log entries at the site or at an easily accessible location so that it can be made immediately available at the time of an on-site inspection or upon request by EPA. (CGP Part 5.4.3) Include a copy of the corrective action log in your SWPPP. (CGP Part 7.2.7.e)

Note

While EPA has made every effort to ensure the accuracy of all instructions contained in this template, it is the permit, not this template, that determines the actual obligations of regulated construction stormwater discharges. In the event of a conflict between this template and any corresponding provision of the CGP, you must abide by the requirements in the permit. EPA welcomes comments on this Corrective Action Log Template at any time and will consider those comments in any future revision. You may contact EPA for CGP-related inquiries at cgp@epa.gov

Appendix F – SWPPP Amendment Log

SWPPP AMENDMENT LOG

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

Make additional copies of this form as needed.

Appendix G – Subcontractor Certifications

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

Signature: _____

Title: _____

Date: _____

Appendix H – Grading and Stabilization Log

Grading and Stabilization Activities Log

Date Grading Activity Initiated	Description of Grading Activity	Description of Stabilization Measure and Location	Date Grading Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures Initiated
			<input type="checkbox"/> Temporary <input type="checkbox"/> Permanent	
			<input type="checkbox"/> Temporary <input type="checkbox"/> Permanent	
			<input type="checkbox"/> Temporary <input type="checkbox"/> Permanent	
			<input type="checkbox"/> Temporary <input type="checkbox"/> Permanent	
			<input type="checkbox"/> Temporary <input type="checkbox"/> Permanent	
			<input type="checkbox"/> Temporary <input type="checkbox"/> Permanent	
			<input type="checkbox"/> Temporary <input type="checkbox"/> Permanent	
			<input type="checkbox"/> Temporary <input type="checkbox"/> Permanent	

Appendix I – Training Log

SWPPP Training Log

Stormwater Pollution Prevention Training Log

Project Name:

Project Location:

Instructor's Name(s):

Instructor's Title(s):

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: *(check as appropriate)*

- | | |
|--|---|
| <input type="checkbox"/> Sediment and Erosion Controls | <input type="checkbox"/> Emergency Procedures |
| <input type="checkbox"/> Stabilization Controls | <input type="checkbox"/> Inspections/Corrective Actions |
| <input type="checkbox"/> Pollution Prevention Measures | |

Specific Training Objective: _____

Attendee Roster: *(attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		

Appendix J – Delegation of Authority

Delegation of Authority Form

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit (CGP), at the 740 Belchertown Road, Amherst construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

_____ (name of person or position)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's CGP, and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Company: _____

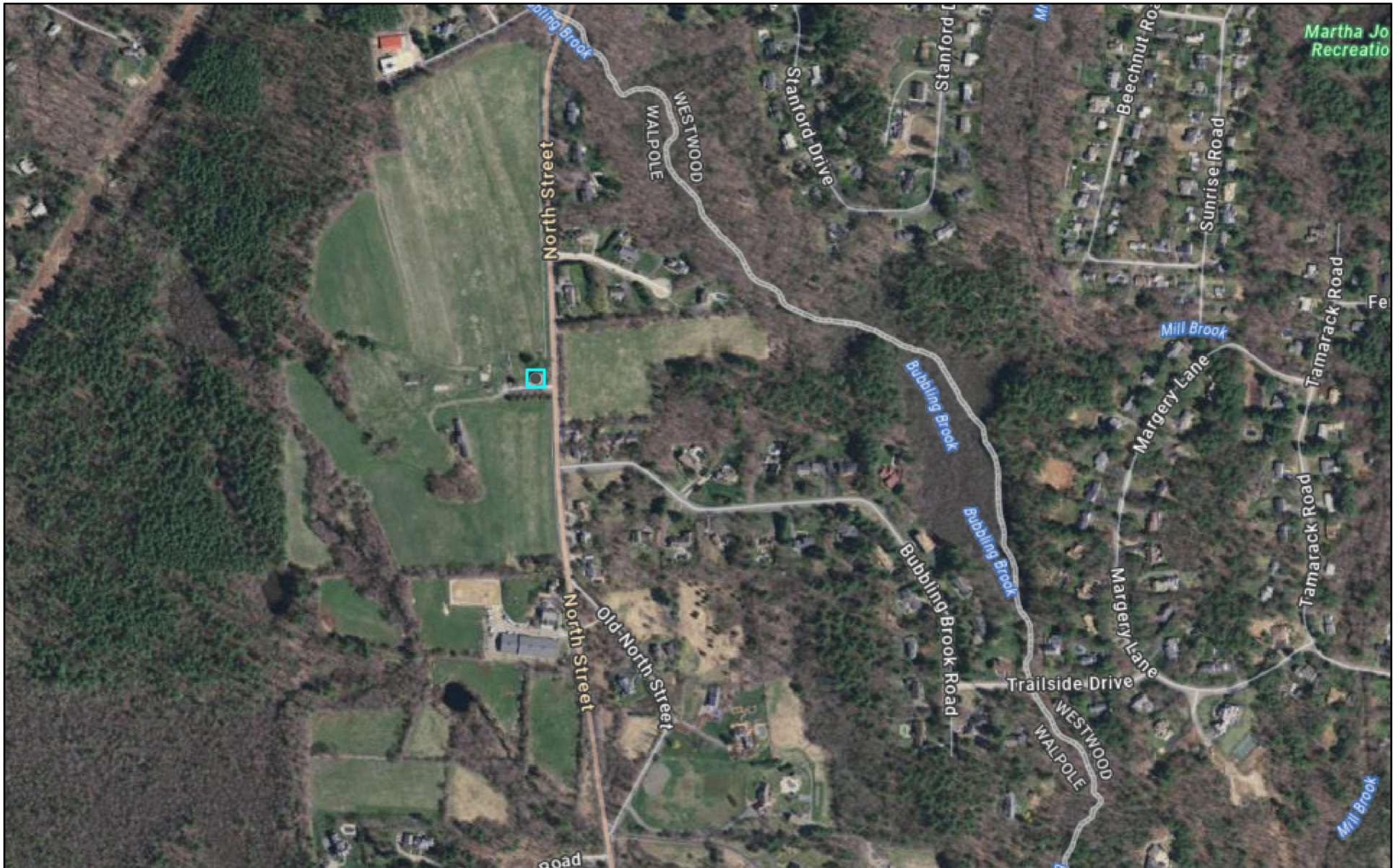
Title: _____

Signature: _____

Date: _____

Appendix K – Endangered Species Documentation

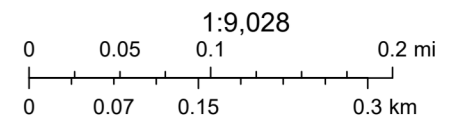
ArcGIS Long Eared Bat Map



January 24, 2024

MassGIS_Map_Features_for_Imagery

- Red: Band_1
- Green: Band_2
- Blue: Band_3



MassGIS, Esri, NASA, NGA, USGS, FEMA, Esri Community Maps Contributors, MassGIS, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin,



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:

January 24, 2024

Project code: 2024-0040210

Project Name: 1377 North Street, Walpole, MA - Solar Photovoltaic Development

Federal Nexus: no

Federal Action Agency (if applicable):

Subject: Technical assistance for '1377 North Street, Walpole, MA - Solar Photovoltaic Development'

Dear Tara Garani:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on January 24, 2024, for '1377 North Street, Walpole, MA - Solar Photovoltaic Development' (here forward, Project). This project has been assigned Project Code 2024-0040210 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

We are uncertain where the northern long-eared bat occurs on the landscape outside of known locations. Because of the steep declines in the species and vast amount of available and suitable forest habitat, the presence of suitable forest habitat alone is a far less reliable predictor of their presence. Based on the best available information, most suitable habitat is now expected to be unoccupied. During the interim period, while we are working on potential methods to address this uncertainty, we conclude take is not reasonably certain to occur in areas of suitable habitat where presence has not been documented.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the New England Ecological Services Field Office and reference Project Code 2024-0040210 associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

1377 North Street, Walpole, MA - Solar Photovoltaic Development

2. Description

The following description was provided for the project '1377 North Street, Walpole, MA - Solar Photovoltaic Development':

The proposed project will construct a 5.0 MW AC ground mounted solar photovoltaic (PV) array and associated battery storage system. The site will take up approximately 17.5 acres of the 54.2 acre property.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.197089500000004,-71.25205899769884,14z>



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. The proposed action does not intersect an area where the northern long-eared bat is likely to occur, based on the information available to U.S. Fish and Wildlife Service as of the most recent update of this key. If you have data that indicates that northern long-eared bats are likely to be present in the action area, answer "NO" and continue through the key.

Do you want to make a no effect determination?

No

3. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

No

4. Does any component of the action involve construction or operation of wind turbines?

Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Weston & Sampson

Name: Tara Garani

Address: 55 Walkers Brook Drive Suite 100

City: Reading

State: MA

Zip: 01867

Email: garani.tara@wseinc.com

Phone: 9785321900



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:

January 24, 2024

Project Code: 2024-0040210

Project Name: 1377 North Street, Walpole, MA - Solar Photovoltaic Development

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: <https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see [Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service \(fws.gov\)](#).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

PROJECT SUMMARY

Project Code: 2024-0040210
Project Name: 1377 North Street, Walpole, MA - Solar Photovoltaic Development
Project Type: Power Gen - Solar
Project Description: The proposed project will construct a 5.0 MW AC ground mounted solar photovoltaic (PV) array and associated battery storage system. The site will take up approximately 17.5 acres of the 54.2 acre property.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.197089500000004,-71.25205899769884,14z>



Counties: Norfolk County, Massachusetts

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Weston & Sampson

Name: Tara Garani

Address: 55 Walkers Brook Drive Suite 100

City: Reading

State: MA

Zip: 01867

Email: garani.tara@wseinc.com

Phone: 9785321900

Appendix L – Massachusetts Historical Commission Documentation

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Date: 1/24/2024
Search Criteria: Town(s): Walpole;

Inv. No.	Property Name	Street	Town	Year	Designations
WLP.161	Boston and Providence Coach Company Stable	4 Neponset St	Walpole	R 1810	
WLP.183		31 Neponset St	Walpole	1946	
WLP.184		35-37 Neponset St	Walpole	1932	
WLP.54	Mann, Col. Timothy House	40 Neponset St	Walpole	C 1770	
WLP.185	Clarke, Truman Barn	59 Neponset St	Walpole	C 1829	
WLP.9	Walpole Manufacturing Company Worker Housing	61-67 Neponset St	Walpole	C 1814	
WLP.923	Norfolk County Railroad Bridge	Norfolk Railroad	Walpole	1899	
WLP.39	Ellis, J. House	North St	Walpole	C 1832	
WLP.21	Ellis, P. House	North St	Walpole	R 1780	
WLP.38	Smith House	North St	Walpole	C 1832	
WLP.59	Day, Jeremiah - Goss, J. Dan House	309 North St	Walpole	1712	
WLP.154	Day, Jeremiah House	389 North St	Walpole	C 1770	
WLP.26	Gould, J. A. House	411 North St	Walpole	C 1800	
WLP.25	Gay, E. House	425 North St	Walpole	C 1820	
WLP.24	Gay, N. House	654 North St	Walpole	R 1720	
WLP.22	Ellis, W. House	962 North St	Walpole	C 1780	
WLP.40	Ellis, J. House	1018 North St	Walpole	C 1823	
WLP.20	Ellis, E. House	1270 North St	Walpole	C 1750	
WLP.37	Smith, L. House	1326 North St	Walpole	C 1832	
WLP.19	Smith House	1350 North St	Walpole	C 1740	
WLP.805	Guild Cemetery	Old Post Rd	Walpole	1793	
WLP.155	Allen, Abel - Allen, Catherine Cottage	1 Peach St	Walpole	C 1780	
WLP.29	Allen, Samuel House	2 Peach St	Walpole	R 1865	
WLP.219		14 Peach St	Walpole	C 1947	
WLP.220		19 Peach St	Walpole	C 1960	
WLP.33	Allen, Samuel Barn	24 Peach St	Walpole	C 1850	
WLP.34	Allen, J. - Harkness, Capt. Edward W. House	38 Peach St	Walpole	C 1840	
WLP.35	Piper, Nathaniel G. House	54 Peach St	Walpole	C 1840	
WLP.221		58 Peach St	Walpole	C 1948	
WLP.222		88 Peach St	Walpole	C 1950	
WLP.223		110 Peach St	Walpole	C 1937	
WLP.224		111 Peach St	Walpole	C 1926	
WLP.225		115 Peach St	Walpole	C 1938	
WLP.226		126 Peach St	Walpole	C 1927	
WLP.227		135 Peach St	Walpole	C 1936	
WLP.105	Allen, L. House	136 Peach St	Walpole	C 1825	
WLP.228		140 Peach St	Walpole	C 1951	
WLP.104	Myers - Goss, G. Daniel - Thomas, Daniel W. House	166 Peach St	Walpole	1878	

Project Address:
1377 North St

Appendix M – Rain Gauge Log

Use the table below to record the rainfall gauge readings at the beginning and end of each work day. An example table follows.

Month/Year			Month/Year			Month/Year		
Day	Start	End time	Day	Start	End time	Day	Start time	End time
1			1			1		
2			2			2		
3			3			3		
4			4			4		
5			5			5		
6			6			6		
7			7			7		
8			8			8		
9			9			9		
10			10			10		
11			11			11		
12			12			12		
13			13			13		
14			14			14		
15			15			15		
16			16			16		
17			17			17		
18			18			18		
19			19			19		
20			20			20		
21			21			21		
22			22			22		
23			23			23		
24			24			24		
25			25			25		
26			26			26		
27			27			27		
28			28			28		
29			29			29		
30			30			30		
31			31			31		

Example Rainfall Gauge Recording

April 2022			May 2022			June 2022		
Day	7:00 am	4:400	Day	7:00 am	4:00 pm	Day	7:00 am	4:00 pm
1	--	--	1	0.2	0	1	0	0.4
2	--	--	2	0	0	2	0	0
3	0	0	3	0.1	0.3	3	--	--
4	0	0.3	4	0	0	4	--	--
5	0	0	5	0	0	5	0	0

In this example (for only partial months), 0.25-inch rainfall inspections would have been conducted on April 4 and June 1.