Connecticut Department of Energy and Environmental Protection License*

Inland Wetlands & Watercourses Permit

Licensee(s):	University of Connecticut
Licensee Address(s):	3102 Horsebarn Hill Road Unit 4097 Storrs CT 06269
License Number(s):	202207129-IW
Municipality:	Mansfield
Project Description:	Hydraulic Dredging
Project Address/Location:	Mansfield Road
Waters:	Mirror Lake/Roberts Brook
Authorizing CT Statute(s) and/or Federal Law:	CGS Section 22a-36 to 45
Applicable Regulations of CT State Agencies:	22a-39-1 to 15
Agency Contact:	Land & Water Resources Division, Bureau of Water Protection & Land Reuse, 860-424-3019
License Expiration:	Five (5) years from the date of issuance of this license.
Project Site Plan Set:	6 plan sheets titled *Mirror Lake Hydraulic Dredging,* with the cover sheet and sheets D2-D5 dated June 8, 2022, and sheet D1 dated June 9, 2022 and prepared by GZA GeoEnvironmental INC.
License Enclosures:	LWRD General Conditions; Site Plan Set; LWRD Work Commencement Form; LWRD Compliance Certification Form

*Connecticut's Uniform Administrative Procedure Act defines License to include, "*the whole or part of any agency permit, certificate, approval, registration, charter or similar form of permission required by law . . .*"

Authorized Activities:

The Licensee is hereby authorized to conduct the following work as described in application # 202207129-IW and as depicted on any site plan sheets / sets cited herein:

1. Hydraulicly dredge the Mirror Lake impoundment impacting 194,997 square feet of watercourse and 22,803 square feet of wetlands associated with the impoundment.

Failure to comply with the terms and conditions of this license shall subject the Licensee and / or the Licensee's contractor(s) to enforcement actions and penalties as provided by law.

This license is subject to the following Terms and Conditions:

1. **License Enclosure(s) and Conditions.** The Licensee shall comply with all applicable terms and conditions as may be stipulated within the License Enclosure(s) listed above.
2. **Turbidity Curtain**. The Licensee shall install and maintain a turbidity curtain near the spillway of the impoundment at all times during the dredging activities.
3. **Dewatering License.** Prior to the commencement of the work authorized herein, the Licensee shall obtain any appropriate license for dewatering pursuant to CGS section 22a-430 or 22a-6k.
4. **Upland Disposal.** The Licensee shall dispose of the dredged sediments at a solid waste facility authorized to receive such waste.

Issued under the authority of the Commissioner of Energy and Environmental Protection on:

_____ _____

Date

Graham J. Stevens
Bureau Chief
Bureau of Water Protection & Land Reuse

LWRD General Conditions

1. **Land Record Filing (for *Structures Dredging & Fill*, *Tidal Wetlands*, *Certificate of Permission*, and *Long Island Sound General Permit* Licenses only).** The Licensee shall file the Land Record Filing on the land records of the municipality in which the subject property is located not later than thirty (30) days after license issuance pursuant to Connecticut General Statutes (CGS) Section 22a-363g. A copy of the Notice with a stamp or other such proof of filing with the municipality shall be submitted to DEEP.LWRDRegulatory@ct.gov no later than sixty (60) days after license issuance. If a Land Record Filing form is not enclosed and the work site is not associated with an upland property, no filing is required.

2. **Contractor Notification.** The Licensee shall give a copy of the license and its attachments to the contractor(s) who will be carrying out the authorized activities prior to the start of construction and shall receive a written receipt for such copy, signed and dated by such contractor(s). The Licensee's contractor(s) shall conduct all operations at the site in full compliance with the license and, to the extent provided by law, may be held liable for any violation of the terms and conditions of the license. At the work site, the contractor(s) shall, whenever work is being performed, have on site and make available for inspection a copy of the license and the authorized plans.

3. **Work Commencement[1].** Not later than two (2) weeks prior to the commencement of any work authorized herein, the Licensee shall submit to DEEP.LWRDRegulatory@ct.gov, on the Work Commencement Form attached hereto, the name(s) and address(es) of all contractor(s) employed to conduct such work and the expected date for commencement and completion of such work, if any.
   - For water diversion activities authorized pursuant to 22a-377(c)-1 of the Regulations of Connecticut State Agencies, the Licensee shall also notify the Commissioner in writing two weeks prior to initiating the authorized diversion.
   - For emergency activities authorized pursuant Connecticut General Statutes Section 22a-6k, the Licensee shall notify the Commissioner, in writing, of activity commencement at least one (1) day prior to construction and of activity completion no later than five (5) days after conclusion.

4. **For Coastal Licenses Only - License Notice.** The Licensee shall post the first page of the License in a conspicuous place at the work area while the work authorized therein is undertaken.

5. **Unauthorized Activities.** Except as specifically authorized, no equipment or material, including but not limited to, fill, construction materials, excavated material or debris, shall be

[1] The Work Commencement condition and the need for a Work Commencement Form is not applicable to Flood Management Certification approvals.

deposited, placed or stored in any wetland or watercourse on or off-site. The Licensee may not conduct work within wetlands or watercourses other than as specifically authorized, unless otherwise authorized in writing by the Commissioner. Tidal wetlands means "wetland" as defined by section 22a-29 and "freshwater wetlands and watercourses" means "wetlands" and "watercourses" as defined by section 22a-38.

6. **Management of Materials.** Any materials removed from the site shall be managed in accordance with all federal, state, and local requirements, including Chapter 446K Water Pollution Control, Chapter 445 Hazardous Waste, and Chapter 446d Solid Waste of the Connecticut General Statutes.

7. **Unconfined Instream Work.** Unless otherwise noted in a condition of the license, the following conditions apply to projects in non-coastal waters:
   - Unconfined instream work is limited to the period June 1 through September 30.
   - Confinement of a work area by cofferdam techniques using sand bag placement, sheet pile installation (vibratory method only), portadam, or similar confinement devices is allowed any time of the year. The removal of such confinement devices is allowed any time of the year.
   - Once a work area has been confined, in-water work within the confined area is allowed any time of the year.
   - The confinement technique used shall completely isolate and protect the confined area from all flowing water. The use of silt boom/curtain or similar technique as a means for confinement is prohibited.

8. **For State Actions Only - Material or Equipment Storage in the Floodplain.** Unless approved by a Flood Management Exemption, the storage of any materials at the site which are buoyant, hazardous, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal or plant life, below the elevation of the five-hundred (500) year flood is prohibited. Any other material or equipment stored at the site below said elevation by the Licensee or the Licensee's contractor must be firmly anchored, restrained or enclosed to prevent flotation. The quantity of fuel stored below such elevation for equipment used at the site shall not exceed the quantity of fuel that is expected to be used by such equipment in one day. In accordance with the licensee's Flood Contingency Plan, the Licensee shall remove equipment and materials from the floodplain during periods when flood warnings have been issued or are anticipated by a responsible federal, state or local agency. It shall be the Licensee's responsibility to obtain such warnings when flooding is anticipated.

9. **Temporary Hydraulic Facilities for Water Handling.** If not reviewed and approved as a part of the license application, temporary hydraulic facilities shall be designed by a qualified professional and in accordance with the *Connecticut Guidelines for Soil Erosion and Sediment Control*, the *2004 Connecticut Stormwater Quality Manual*, or the *Department of Transportation's ConnDOT Drainage Manual,* as applicable. Temporary hydraulic facilities may include channels, culverts or bridges which are required for haul roads, channel relocations, culvert installations, bridge construction, temporary roads, or detours.

10. **Excavated Materials.** Unless otherwise authorized, all excavated material shall be staged and managed in a manner which prevents additional impacts to wetlands and watercourses.

11. **Best Management Practices.** The Licensee shall not cause or allow pollution of any wetlands or watercourses, including pollution resulting from sedimentation and erosion. In constructing or maintaining any authorized structure or facility or conducting any authorized activity, or in removing any such structure or facility, the Licensee shall employ best management practices to control storm water discharges, to prevent erosion and sedimentation, and to otherwise prevent pollution of wetlands and other waters of the State. For purposes of the license, "pollution" means "pollution" as that term is defined by CGS section 22a-423. Best Management Practices include, but are not limited, to practices identified in the *Connecticut Guidelines for Soil Erosion and Sediment Control* as revised, *2004 Connecticut Stormwater Quality Manual*, Department of Transportation's *ConnDOT Drainage Manual* as revised, and the Department of Transportation Standard Specifications as revised.

12. **In-Water Work Vessel Staging and Storage. (for Structures Dredging & Fill, Tidal *Wetlands*, *Certificate of Permission*, and *Long Island Sound General Permit* Licenses only).** For any barge, vessel, skiff or floating work platform ("work vessels") utilized in the execution of the work authorized herein, the Licensee shall ensure that such work vessels:
    - do not rest on, or come in contact with, the substrate at any time, unless specifically authorized in the license.
    - are not stored over intertidal flats, submerged aquatic vegetation or tidal wetland vegetation or in a location that interferes with navigation. In the event any work vessel is grounded, no dragging or prop dredging shall occur to free it.

13. **Work Site Restoration.** Upon completion of any authorized work, the Licensee shall restore all areas impacted by construction, or used as a staging area or accessway in connection with such work, to their condition prior to the commencement of such work.

14. **Inspection.** The Licensee shall allow any representative of the Commissioner to inspect the project location at reasonable times to ensure that work is being or has been conducted in accordance with the terms and conditions of this license.

15. **Change of Use. (Applies only if a use is specified within the License "*Project Description*")**
    a. The work specified in the license is authorized solely for the purpose set forth in the license. No change in purpose or use of the authorized work or facilities as set forth in the license may occur without the prior written approval of the Commissioner. The Licensee shall, prior to undertaking or allowing any change in use or purpose from that which is authorized by this license, request permission from the Commissioner for such change. Said request shall be in writing and shall describe the proposed change and the reason for the change.

    b. A change in the form of ownership of any structure authorized herein from a rental/lease commercial marina to a wholly-owned common interest community or dockominium may constitute a change in purpose as specified in paragraph (a) above.

16. **De Minimis Alteration.** The Licensee shall not deviate from the authorized activity without

prior written approval from the Commissioner. The Licensee may request a de minimis change to any authorized structure, facility, or activity. A de minimis alteration means a change in the authorized design, construction or operation that individually and cumulatively has minimal additional environmental impact and does not substantively alter the project as authorized.

- For diversion activities authorized pursuant to 22a-377(c)-2 of the Regulations of Connecticut State Agencies, a de minimis alteration means an alteration which does not significantly increase the quantity of water diverted or significantly change the capacity to divert water.

17. **Extension Request.** The Licensee may request an extension of the license expiration date. Such request shall be in writing and shall be submitted to DEEP.LWRDRegulatory@ct.gov at least thirty (30) days prior to the license expiration. Such request shall describe the work done to date, what work still needs to be completed, and the reason for such extension. The Commissioner may extend the expiration date of this license for a period of up to one year, in order for the Licensee to complete the authorized activities. It shall be at the Commissioner's sole discretion to grant or deny such request. No more than three (3) one-year extensions will be granted under this license.

18. **Compliance Certification.** Not later than 90 days after completion of the authorized work, the Licensee shall prepare and submit to DEEP.LWRDRegulatory@ct.gov, the attached Compliance Certification Form. Such Compliance Certification shall be completed, signed, and sealed by the Licensee and a Connecticut Licensed Design Professional. If non-compliance is indicated on the form, or the Commissioner has reason to believe the activities and/or structures were conducted in non-compliance with the license, the Commissioner may require the Licensee to submit as-built plans as a condition of this license.

19. **Maintenance.** The Licensee shall maintain all authorized structures or work in optimal condition or shall remove such structures or facility and restore the affected waters to their pre-work condition. Any such maintenance or removal activity shall be conducted in accordance with applicable law and any additional approvals required by law.

20. **No Work After License Expiration.** Work conducted after the license expiration date is a violation of the license and may subject the licensee to enforcement action, including penalties, as provided by law.

21. **License Transfer.** The license is not transferable without prior written authorization of the Commissioner. A request to transfer a license shall be submitted in writing and shall describe the proposed transfer and the reason for such transfer. The Licensee's obligations under the license shall not be affected by the passage of title to the license site to any other person or municipality until such time as a transfer is approved by the Commissioner.

22. **Document Submission.** Any document required to be submitted to the Commissioner under the license or any contact required to be made with the Commissioner shall, unless otherwise specified in writing by the Commissioner, be directed to:

    DEEP.LWRDRegulatory@ct.gov or

Regulatory Section
Land & Water Resources Division
Department of Energy and Environmental Protection
79 Elm Street
Hartford, Connecticut 06106-5127
860-424-3019

23. **Date of Document Submission.** The date of submission to the Commissioner of any document required by the license shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under the license, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three (3) days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in the license, the word "day" as used in the license means calendar day. Any document or action which is required by the license to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or a Connecticut or federal holiday.

24. **Certification of Documents.** Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under the license shall be signed by the Licensee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense."

25. **Accuracy of Documentation.** In evaluating the application for the license, the Commissioner has relied on information and data provided by the Licensee and on the Licensee's representations concerning site conditions, design specifications and the proposed work, including but not limited to representations concerning the commercial, public or private nature of the work or structures, the water-dependency of said work or structures, its availability for access by the general public, and the ownership of regulated structures or filled areas. If such information proves to be false, deceptive, incomplete or inaccurate, the license may be modified, suspended or revoked, and any unauthorized activities may be subject to enforcement action.

26. **Limits of Liability.** In granting the license, the Commissioner has relied on all representations of the Licensee, including information and data provided in support of the Licensee's application. Neither the Licensee's representations nor the issuance of the license shall constitute an assurance by the Commissioner as to the structural integrity, the engineering feasibility or the efficacy of such design.

27. **Reporting of Violations.** In the event that the Licensee becomes aware that they did not or may not comply, or did not or may not comply on time, with any provision of this license or of any document incorporated into the license, the Licensee shall immediately notify the

agency contact specified within the license and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the agency contact, the Licensee shall provide, for the agency's review and written approval, a report including the following information:

a. the provision(s) of the license that has been violated;

b. the date and time the violation(s) was first observed and by whom;

c. the cause of the violation(s), if known;

d. if the violation(s) has ceased, the duration of the violation(s) and the exact date(s) and times(s) it was corrected;

e. if the violation(s) has not ceased, the anticipated date when it will be corrected;

f. steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented; and

g. the signatures of the Licensee and of the individual(s) responsible for actually preparing such report.

If the violation occurs outside of normal business hours, the Licensee shall contact the Department of Energy and Environmental Protection Emergency Dispatch at 860-424-3333. The Licensee shall comply with any dates which may be approved in writing by the Commissioner.

28. **Revocation/Suspension/Modification.** The license may be revoked, suspended, or modified in accordance with applicable law.

29. **Other Required Approvals.** License issuance does not relieve the Licensee of their obligations to obtain any other approvals required by applicable federal, state and local law.

30. **Rights.** The license is subject to and does not derogate any present or future property rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the property or activity affected hereby.

31. **Condition Conflicts.** In the case where a project specific special condition listed on the license differs from, or conflicts with, one of the general conditions listed herein, the project specific special condition language shall prevail. It is the licensee's responsibility to contact the agency contact person listed on the license for clarification if needed prior to conducting any further regulated activities.

STATE OF CONNECTICUT
UNIVERSITY OF CONNECTICUT

RADENKA MARIC
INTERIM PRESIDENT

MIRROR LAKE HYDRAULIC DREDGING
STORRS CAMPUS
MANSFIELD ROAD
STORRS, CT 06269

PERMIT DRAWINGS
NOT FOR CONSTRUCTION

PROJECT NO.: 300147

PREPARED FOR:

UNIVERSITY PLANNING DESIGN & CONSTRUCTION
31 LEDOYT RD. UNIT 3038
STORRS, CT 06269
860-486-2776

JUNE 8, 2022

PROJECT CONSULTANTS

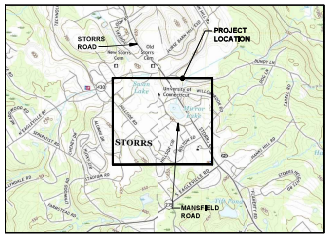
Civil, Site Utility and Structural Engineer:
BVH A SALAS O'BRIEN COMPANY
Salas O'Brien
206 West Newberry Road
Bloomfield, CT 06002

Landscape Architect:
TOWERS | GOLDE
Towers Golde LLC
85 Willow Street
New Haven, CT 06511

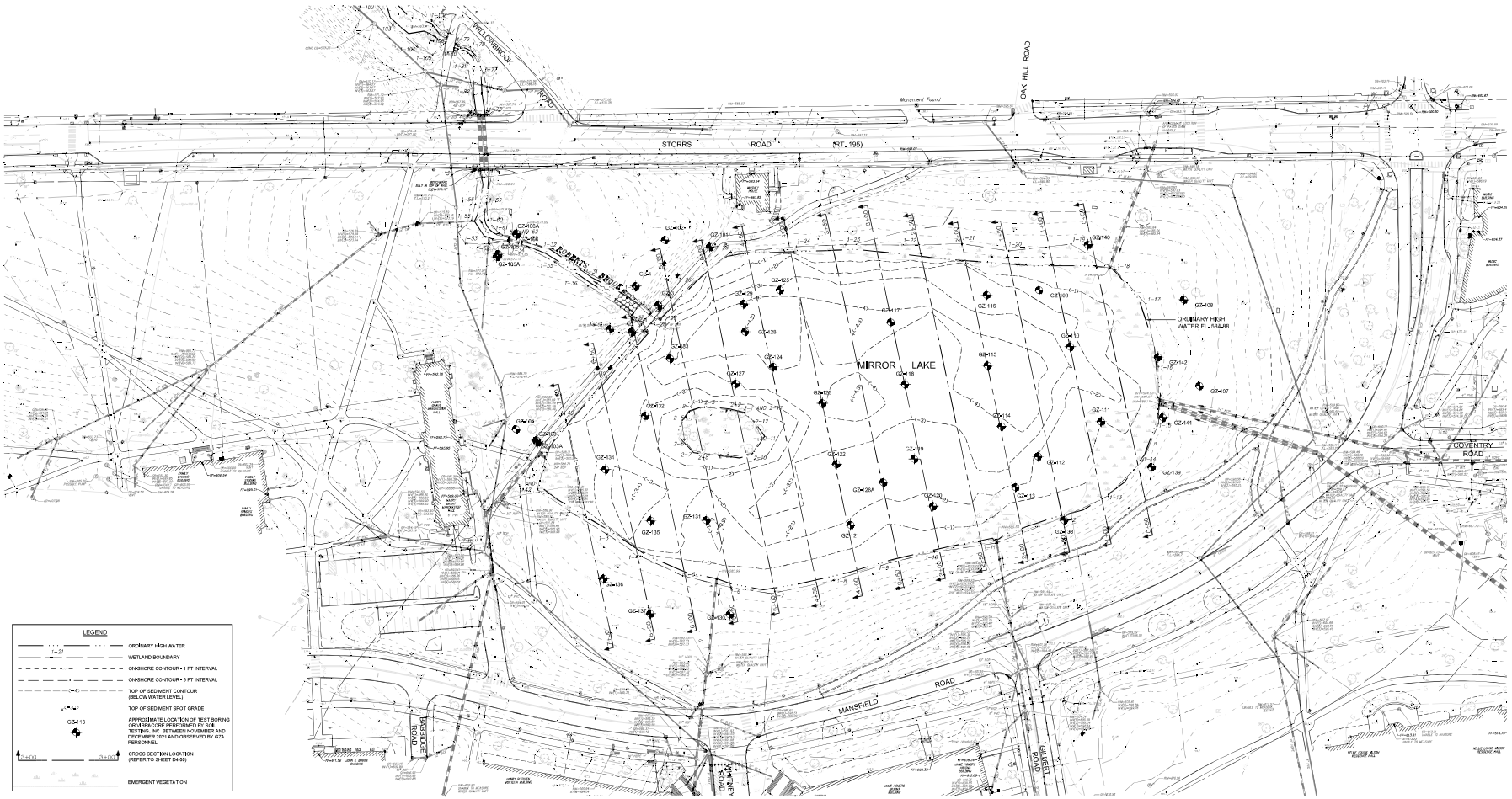
Geotechnical Engineer:
GZA
GZA GeoEnvironmental, Inc.
95 Glastonbury Boulevard
Glastonbury, CT 06033

DRAWING INDEX

SHEET NO.	TITLE
D1.00	EXISTING CONDITIONS PLAN
D2.00	SEDIMENT AND EROSION CONTROL, SITE PREPARATION, DEMOLITION, AND CONSTRUCTION ACCESS PLAN
D3.00	HYDRAULIC DREDGING PLAN
D4.00	HYDRAULIC DREDGING CROSS-SECTIONS
D5.00	DEWATERING SITES PLAN



PROJECT SITE LOCATION
NO SCALE



LEGEND

- ORDINARY HIGH WATER
- WETLAND BOUNDARY
- ONSHORE CONTOUR - 1 FT INTERVAL
- ONSHORE CONTOUR - 5 FT INTERVAL
- TOP OF SEDIMENT CONTOUR (BELOW WATER LEVEL)
- TOP OF SEDIMENT SPOT GRADE
- GZ-18 — APPROXIMATE LOCATION OF TEST BORING OR VIBRACORE PERFORMED BY SOIL TESTING, INC. BETWEEN NOVEMBER AND DECEMBER 2021 AND OBSERVED BY GZA PERSONNEL
- 3+00 — CROSS-SECTION LOCATION (REFER TO SHEET D4.00)
- EMERGENT VEGETATION

GENERAL NOTES:

1. BASE MAP FROM PLANIMETRIC AND TOPOGRAPHIC GROUND SURVEYS CONDUCTED BY LANGAN CT, INC., DURING THE MONTH OF DECEMBER 2021, AND UPDATED WITH SURVEY OF ADDITIONAL AREA ON FEBRUARY 19, 2022.
2. BATHYMETRIC SURVEY OF MIRROR LAKE BOTTOM AND SEDIMENT SAMPLING CONDUCTED BY GZA ON JANUARY 18, 2021.
3. PROBINGS AND SURVEY OF MIRROR LAKE BOTTOM OF SEDIMENT CONDUCTED BY BAYSTATE ENVIRONMENTAL CONSULTANTS, INC., A GZA COMPANY, JULY 2009.
4. EXISTING TOP OF SEDIMENT CONTOURS APPROXIMATE THE DEPTH (NEGATIVE FEET) TO THE EXISTING LAKE BOTTOM RELATIVE TO THE DAM SPILLWAY CREST (DEPTH = 0 FEET).
5. BOTTOM OF SEDIMENT CONTOURS APPROXIMATE THE DEPTH (NEGATIVE FEET) TO THE NATURAL HARD LAKE BOTTOM RELATIVE TO THE DAM SPILLWAY CREST (DEPTH = 0 FEET) AND REPRESENT THE PROPOSED LIMIT OF HYDRAULIC DREDGING.
6. ELEVATIONS DEPICTED REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
7. WETLAND DELINEATION BY ALL-POINTS TECHNOLOGY CORPORATION, P.C. DURING THE WEEK OF DECEMBER 3, 2021 AND SURVEY LOCATED BY LANGAN CT, INC. ON DECEMBER 3, 2021.

GRAPHIC SCALE

0 25 50 100 150

SCALE IN FEET

CERTIFICATION:

STATUS: PERMIT DRAWINGS

CONSULTANT:

GZA GeoEnvironmental, Inc.
95 Glastonbury Boulevard
Glastonbury, CT 06033

REVISIONS:

#	DATE	DESCRIPTION

UNIVERSITY OF CONNECTICUT
UNIVERSITY PLANNING DESIGN & CONSTRUCTION
31 LEDYOTT ROAD UNIT 3038
STORRS, CONNECTICUT 06269-3038
TELEPHONE: (860) 486-3127
FACSIMILE: (860) 486-3177

PROJECT:

MIRROR LAKE IMPROVEMENTS

Storrs CT, 06269-3038
Mansfield Road

PROJECT NO:	300174
AUTHOR:	GZA
DRAFTER:	GZA
SCALE:	1"=50'
PRINT DATE:	6/9/2022

SHEET TITLE:

EXISTING CONDITIONS PLAN

SHEET:

D1.00

6/13/22 - 11:34:12 AM J:\0 GZA INTERCOMPANY PROJECTS\05.0046161.00 BVH Mirror Lake Design Services\05.0046161.09 CAD\dwg\MAY 2022 - DESIGN DEVELOPMENT SET-PERMIT SET\05.0046161.09-DESIGN DEVELOPEMENT PLANS-PERMIT PLANS.dwg

PLAN

0 25 50 100 150
SCALE IN FEET

SEDIMENT AND EROSION CONTROL NOTES:

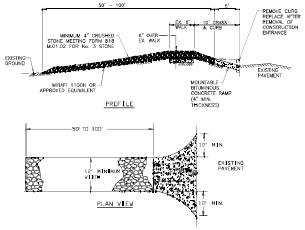
1. TEMPORARY EROSION CONTROLS SHALL BE INSTALLED IN ACCORDANCE WITH THE PLANS AND SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE DURATION OF THE PROJECT. SILT AND SEDIMENTATION SHALL BE REMOVED FROM THE CONTROLS AS NECESSARY. TEMPORARY CONTROLS SHALL REMAIN IN PLACE UNTIL PERMANENT CONTROLS HAVE BEEN ESTABLISHED.
2. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IF DEEMED NECESSARY BY THE ON SITE INSPECTIONS OF THE OWNER OR THEIR REPRESENTATIVES, OR BY FEDERAL/STATE/LOCAL GOVERNMENT INSPECTORS, AT NO ADDITIONAL COST TO THE OWNER.
3. COORDINATE ALL STARTUP WORK WITH OWNER.
4. ALL CATCH BASINS TO RECEIVE STORMWATER FROM DISTURBED AREAS SHALL BE PROVIDED WITH "DANDY BAG" CATCH BASIN PROTECTION BY MIRAFI OR APPROVED EQUAL AND A SINGLE ROW OF HAY BALES AROUND THE INLET GRATE BEFORE PAVING AND SHALL BE INSPECTED ON A DAILY BASIS.
5. THE FOLLOWING APPLIES TO AREAS OUTSIDE OF THE LAKE LIMITS: ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION THAT WILL NOT OTHERWISE BE SURFACED SHALL BE GRADED SMOOTH AND SIX INCHES (6") OF TOPSOIL APPLIED. THESE AREAS SHALL THEN BE SEEDED OR SODDED, MULCHED, WATERED, AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS SHALL BE GRASSED UNLESS OTHERWISE NOTED. CONTRACTOR SHALL APPLY AN EROSION CONTROL BLANKET, MODEL S150, BY NORTH AMERICAN GREEN OR APPROVED EQUAL TO ALL SLOPES 3:1, H:V OR STEEPER.
6. CONSTRUCTION ENTRANCE - TEMPORARY STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED ON THE PROJECT. THE PURPOSE OF THE CONSTRUCTION ENTRANCES IS TO REMOVE SEDIMENT ATTACHED TO VEHICLE TIRES AND MINIMIZE ITS TRANSPORT AND DEPOSITION ONTO PUBLIC ROAD SURFACES. THE CONSTRUCTION ENTRANCES SHALL BE COMPOSED OF A 8-INCH THICK (MINIMUM) BED OF CRUSHED STONE THAT EXTENDS A MINIMUM OF 50 FEET WITH A MINIMUM WIDTH OF 15 FEET. THE CRUSHED STONE BED SHALL BE REPLENISHED AS NECESSARY TO RETAIN PROPER FUNCTION AND SHALL BE REMOVED AT THE CONCLUSION OF THE PROJECT. IN ADDITION, CONTRACTOR SHALL PROVIDE ALL OTHER MEASURES NECESSARY TO PREVENT TRACKING OF MUD OR SEDIMENTS ONTO THE PUBLIC WAYS AFFECTED BY THIS PROJECT. REFER TO THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.
7. NO DREDGED SEDIMENT SHALL BE REMOVED FROM THE SITE UNTIL IT HAS DEWATERED IN PLACE SUFFICIENTLY TO PASS THE PAINT FILTER TEST.
8. MAINTAIN ALL EXISTING EROSION CONTROLS THROUGHOUT THE CONSTRUCTION PROCESS, AND ADD ADDITIONAL MEASURES AS CONDITIONS WARRANT.
9. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL CLEAN ALL STORM DRAINAGE STRUCTURES, FLUMES, PIPES, CULVERTS, ETC. PRIOR TO FINAL PAYMENT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
11. EROSION CONTROL BARRIERS SHALL BE INSPECTED PRIOR TO AND AFTER EVERY STORM.
12. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN THEY REACH ONE HALF THE HEIGHT OF THE EROSION CONTROL BARRIER.
13. ALL STOCK PILES SHALL BE SURROUNDED BY SILT FENCE AND TEMPORARILY STABILIZED BY CHEMICAL OR ONE OF THE FOLLOWING METHODS: TEMPORARY SEEDING, MULCHING OR GEOTEXTILES.
14. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE CTDEEP'S GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND ALL OTHER APPLICABLE PERMITS.
15. ALL DISTURBED AREAS TO BE RESTORED AND STABILIZED AS INDICATED ON THE PLANS.

MISCELLANEOUS OTHER CONTROLS:

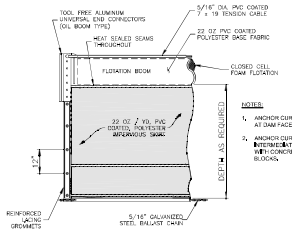
1. WASTE MATERIALS - ALL WASTE SHALL BE COLLECTED AND STORED IN A SECURELY COVERED METAL DUMPSTER AS PROVIDED FROM A LICENSED SOLID WASTE MANAGEMENT COMPANY. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE REGULATIONS. THE DUMPSTER SHALL BE EMPTIED AS NECESSARY. NO CONSTRUCTION WASTE MATERIALS SHALL BE PERMITTED TO BE BURIED ON-SITE.
2. HAZARDOUS WASTE - ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN A MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS OR BY THE MANUFACTURER.
3. SANITARY WASTE - ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS AS REQUIRED BY LOCAL REGULATIONS.

STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. LENGTH - MINIMUM OF 50' AGGREGATE PLUS 10' BITUMINOUS RAMP.
2. WIDTH - 12' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE.
4. STONE - DOT NO. 3 OR ASTM C-33 NO. 3 CRUSHED AGGREGATE OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
5. SURFACE WATER - ALL ROADWAY SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE CONVEYED PAST THE ENTRANCE BY MAINTAINING GUTTER AT RAMP OR BY PIPE BENEATH THE RAMP, MAINTAINING POSITIVE DRAINAGE. NO SURFACE WATER SHALL BE DISCHARGED ONTO THE PAVED ROADWAY FROM A CONSTRUCTION ENTRANCE.
6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.
7. RESTORATION - TEMPORARY STABILIZED CONSTRUCTION ENTRANCES SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT. AREA AT ROADWAY EDGE SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER, INCLUDING REPLACEMENT OF CURBING, CONCRETE SIDEWALKS, GRASSED OR LANDSCAPED AREAS, BITUMINOUS ROADWAY PAVEMENT, AND UTILITIES. ALL MATERIALS USED FOR TEMPORARY STABILIZED CONSTRUCTION ENTRANCES SHALL BE REMOVED FROM SITE.



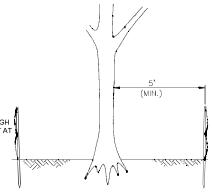
TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
NTS



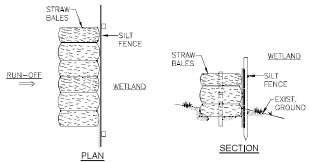
NOTES:
1. ANCHOR CURTAIN ENDS AT DAM FACE.
2. ANCHOR CURTAIN AT INTERMEDIATE POINTS WITH CONCRETE ANCHOR BLOCKS.

TURBIDITY CURTAIN
NTS

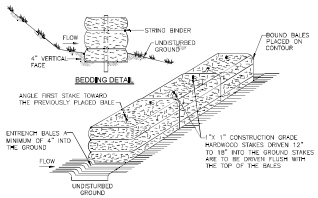
ENCIRCLE TREE WITH 4' HIGH PEDESTRIAN FENCING SET AT DRIPLINE, OR MIN. 5' FROM TRUNK.



TREE PROTECTION
NTS



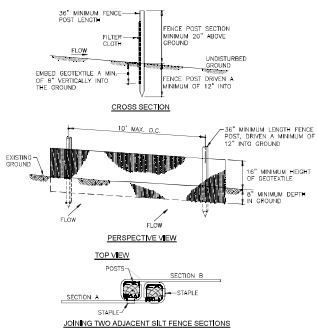
COMBINATION SILT FENCE/ STRAW BALE EROSION CONTROL BARRIER
NTS



STRAW BALE SILT FENCE BARRIER
NTS

GENERAL NOTES:

1. ALL SOILS WITHIN THE PROJECT AREA ARE CLASSIFIED AS "UDORTHENTS, URBAN LAND COMPLEX" (USDA, NRCS, 2005).
2. CONTRACTOR SHALL PROVIDE TEMPORARY STABILIZED CONSTRUCTION ENTRANCES AT ALL EQUIPMENT ENTRY POINTS TO WORK AREA.
3. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.



SILT FENCE
NTS

CERTIFICATION:

STATUS
PERMIT DRAWING
NOT FOR CONSTRUCTION

CONSULTANT:

GZA GeoEnvironmental, Inc.
95 Glastonbury Boulevard
Glastonbury, CT 06033

REVISIONS:

#	DATE	DESCRIPTION

UNIVERSITY OF CONNECTICUT
UNIVERSITY PLANNING DESIGN & CONSTRUCTION
31 LEDOYT ROAD UNIT 3038
STORRS, CONNECTICUT 06269-3038
TELEPHONE: (860) 486-3127
FACSIMILE: (860) 486-3177

PROJECT:

MIRROR LAKE
HYDRAULIC DREDGING

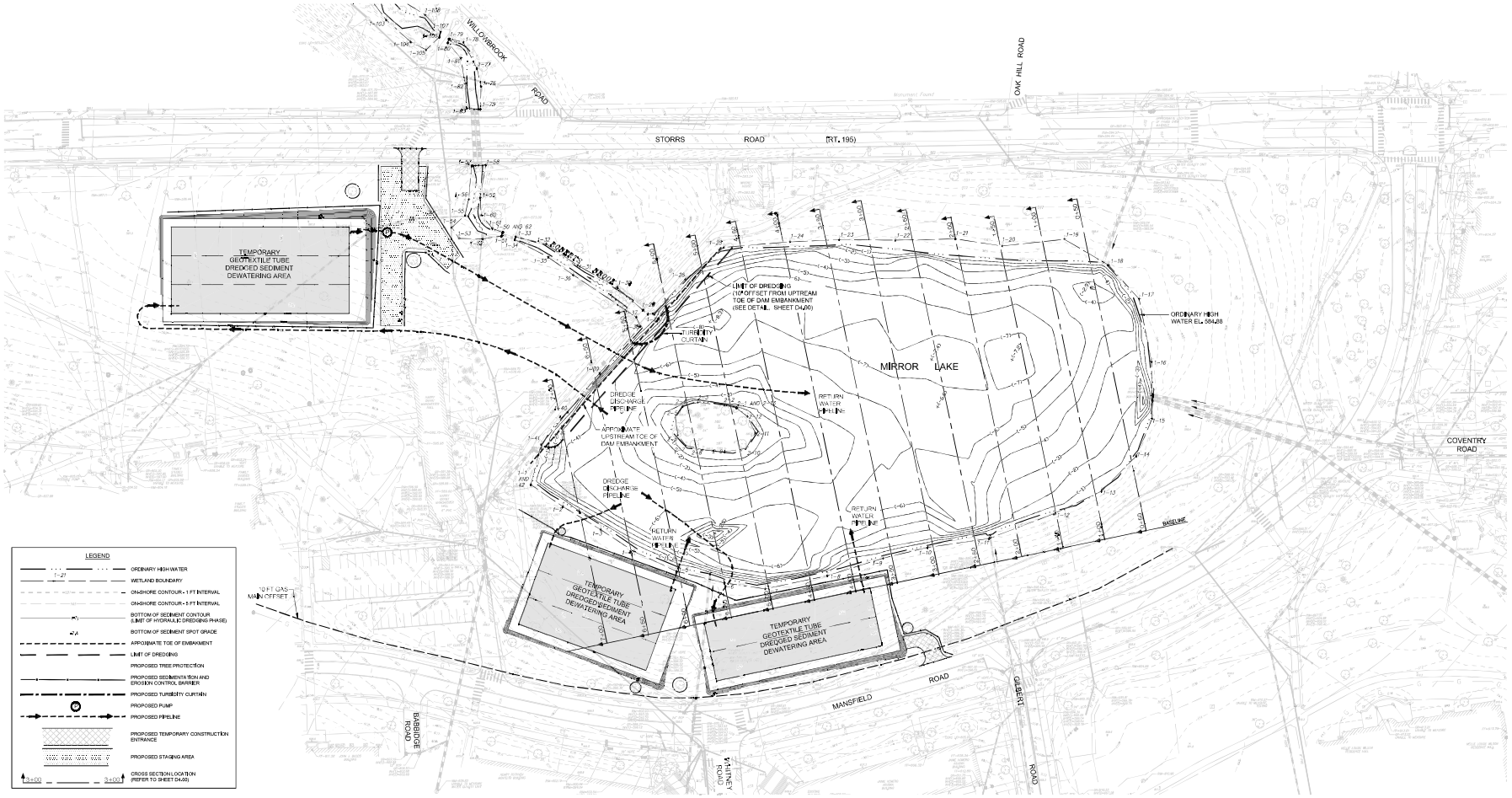
Storrs CT, 06269-3038
Mansfield Road

PROJECT NO:	30174
AUTHOR:	GZA
DRAFTER:	GZA
SCALE:	AS NOTED
PRINT DATE:	6/9/2022

SHEET TITLE:
SEDIMENT AND EROSION CONTROL, SITE PREPARATION, DEMOLITION, AND CONSTRUCTION ACCESS PLAN

SHEET:
D2.00

6/9/22 1:36:09 PM J:\G GZA INTERCOMPANY PROJECTS\05.0046161.09 B\Mirror Lake Design Services\05.0046161.09-DESIGN DEVELOPMENT SET-PERMIT SET\05.0046161.09-DESIGN DEVELOPMENT PLANS-PERMIT PLANS.dwg



LEGEND

- ORDINARY HIGH WATER
- WETLAND BOUNDARY
- ON-SHORE CONTOUR - 1 FT INTERVAL
- ON-SHORE CONTOUR - 5 FT INTERVAL
- BOTTOM OF SEDIMENT CONTOUR (LIMIT OF HYDRAULIC DREDGING PHASE)
- BOTTOM OF SEDIMENT SPOT GRADE
- APPROXIMATE TOE OF EMBANKMENT
- LIMIT OF DREDGING
- PROPOSED TREE PROTECTION
- PROPOSED SEDIMENTATION AND EROSION CONTROL BARRIER
- PROPOSED TURBIDITY CURTAIN
- PROPOSED PUMP
- PROPOSED PIPELINE
- PROPOSED TEMPORARY CONSTRUCTION ENTRANCE
- PROPOSED STAGING AREA
- 3+00 — 3+00 CROSS SECTION LOCATION (REFER TO SHEET D4.00)

WATER HANDLING NOTES:

MIRROR LAKE HAS A 16-ACRE WATERSHED THAT IS HIGHLY DEVELOPED AND IS ABOUT 50% IMPERVIOUS. THE WATERSHED IS INCAPABLE OF MAINTAINING A SIGNIFICANT DRY-WEATHER BASEFLOW, BUT IS CAPABLE OF GENERATING SIGNIFICANT RUNOFF THAT CONTRIBUTES DIRECT INFLOW TO THE POND DURING AND IMMEDIATELY FOLLOWING RAINFALL EVENTS. THUS, THE HANDLING OF WATER DURING THE PROJECT PERIOD WILL BE CHARACTERIZED BY PERIODS OF DRYNESS WITH LITTLE TO NO REQUIREMENT TO BYPASS FLOW, PUNCTUATED BY INTERMITTENT AND SOMEWHAT UNPREDICTABLE PERIODS OF RAPID INFLOWS REQUIRING STORAGE OR BYPASSING. THE SCHEMATICS OF THE PROJECT'S WATER HANDLING REQUIREMENTS ARE OUTLINED BELOW. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A PROJECT-SPECIFIC WATER HANDLING PLAN FOR APPROVAL PRIOR TO COMMENCING ANY OTHER WORK.

HYDRAULIC DREDGING WORK

1. THE HYDRAULIC DREDGING WILL BE COMPLETED WITHOUT LOWERING THE WATER LEVEL IN MIRROR LAKE AND WITHOUT ANY BYPASSING OF INFLOWS. DURING THIS PERIOD, THE LAKE'S PRIMARY SPILLWAY WILL OPERATE NORMALLY. THE HYDRAULIC DREDGE WILL AGITATE AND REMOVE SEDIMENTS BY SUCTION, ENTRAINING THE DISLODGED SEDIMENTS WITHIN A WATER-BASED SLURRY OF APPROXIMATELY 80% WATER AND 20% SOLIDS (BY VOLUME). THE HYDRAULIC DREDGE WILL PUMP THE SLURRY TO THE LAND-BASED DEWATERING SITES WHERE THE SEDIMENTS WILL BE DEWATERED USING GEOTEXTILE FABRIC TUBES OR A MECHANICAL PROCESS OR A COMBINATION OF BOTH. IT IS ANTICIPATED THAT A POLYMER FLOCCULENT WILL BE APPLIED TO CLARIFY THE FILTRATE.
2. FOR THE DEWATERING AREAS IN THE IMMEDIATE VICINITY OF MIRROR LAKE, THE RETURN WATERS WILL MOST LIKELY ENTER THE LAKE BY GRAVITY DISCHARGE, AS THE DEWATERING AREAS ARE HIGHER IN ELEVATION THAN THE LAKE'S NORMAL WATER SURFACE ELEVATION. FOR THE DEWATERING AREAS AT THE GREAT LAWN, THE CLARIFIED WATERS WILL NECESSARILY BE PUMPED BACK TO MIRROR LAKE, AS THESE AREAS ARE SLIGHTLY DOWNGRADIENT OF THE LAKE. BECAUSE THE MIRROR LAKE WATERSHED HAS LITTLE TO NO BASEFLOW, ALL CLARIFIED WATERS MUST BE RETURNED TO THE LAKE TO AVOID DEWATERING THE LAKE. CLARIFIED WATER SHALL NOT BE DISCHARGED DIRECTLY INTO ROBERTS BROOK.
3. DREDGING IN THE SHALLOW, LITTORAL AREAS OF THE POND MAY REQUIRE TEMPORARILY RAISING THE LAKE'S WATER LEVEL IN ORDER TO AVOID THE INTRODUCTION OF AIR INTO THE HYDRAULIC DREDGE'S SUCTION LINE. THE INCREASE IN WATER LEVEL WILL BE ACCOMPLISHED BY THE INSTALLATION OF TEMPORARY SAND BAGS OR OTHER APPROVED DEVICE AT THE PRIMARY SPILLWAY. THE DEVICE MUST BE CAPABLE OF BEING ~~IN THE~~ EVENT OF A SIGNIFICANT RAINFALL EVENT WHEN CONTRACTOR PERSONNEL ARE NOT ON SITE. THE TEMPORARY WATER LEVEL INCREASES WILL BE LIMITED TO A MAXIMUM OF 18 INCHES AND WILL NOT BE MAINTAINED FOR ANY CONTINUOUS PERIOD EXCEEDING THREE WEEKS.

GENERAL NOTES:

1. BATHYMETRIC SURVEY OF EXISTING MIRROR LAKE BOTTOM CONDUCTED BY GZA ON JANUARY 18, 2021.
2. SURVEY OF THE BOTTOM OF SEDIMENT WAS CONDUCTED BY BAYSTATE ENVIRONMENTAL CONSULTANTS, INC., A GZA COMPANY, IN JULY 2009.
3. BOTTOM OF SEDIMENT WAS DETERMINED BY PROBINGS THROUGH THE SOFT SEDIMENT.
4. IN GENERAL, DREDGING SHALL PROCEED TO A HARD GRANULAR BOTTOM OR TO THE MAXIMUM DEPTHS SHOWN ON THE PLANS, WHICHEVER IS FIRST OBTAINED. THE ENGINEER MAY REVISE THE EXTENT OF DREDGING BASED ON FIELD CONDITIONS INCLUDING, BUT NOT NECESSARILY LIMITED TO, THE COMPOSITION OF THE SOFT SEDIMENTS AND THE CAPACITY OF THE SEDIMENT DEWATERING PROCESS.
5. NO DREDGING TO BOTTOM SHALL BE PERFORMED WITHIN TEN FEET (10') OF THE UPSTREAM TOE OF SLOPE (SEE TYPICAL DETAIL) OF THE DAM. THE ENGINEER MAY ADD ADDITIONAL RESTRICTIONS TO DREDGING BASED ON FIELD CONDITIONS.
6. ESTIMATED IN-SITU VOLUME OF SEDIMENTS TO BE REMOVED = 19,600 CUBIC YARDS.
7. ALL DREDGED SEDIMENTS SHALL BE DISCHARGED TO THE DESIGNATED DEWATERING AREAS.
8. ALL DREDGE DISCHARGE LINES SHALL CONSIST OF WELDED, ONE PIECE HIGH DENSITY POLYETHYLENE (HDPE) TUBING OF APPROPRIATE STRENGTH AND DIAMETER.

GRAPHIC SCALE

0 25 50 100 150

SCALE IN FEET

CERTIFICATION:

STATUS: PERMIT DRAWING NOT FOR CONSTRUCTION

CONSULTANT:

GZA GeoEnvironmental, Inc.
95 Glastonbury Boulevard
Glastonbury, CT 06033

REVISIONS:

#	DATE	DESCRIPTION

UNIVERSITY OF CONNECTICUT
UNIVERSITY PLANNING DESIGN & CONSTRUCTION
31 LEDYOYT ROAD UNIT 3038
STORRS, CONNECTICUT 06269-3038
TELEPHONE: (860) 486-3127
FACSIMILE: (860) 486-3177

PROJECT:

MIRROR LAKE
HYDRAULIC DREDGING

Storrs CT, 06269-3038
Mansfield Road

PROJECT NO:	300174
AUTHOR:	GZA
DRAFTER:	GZA
SCALE:	1"=50'
PRINT DATE:	6/8/2022

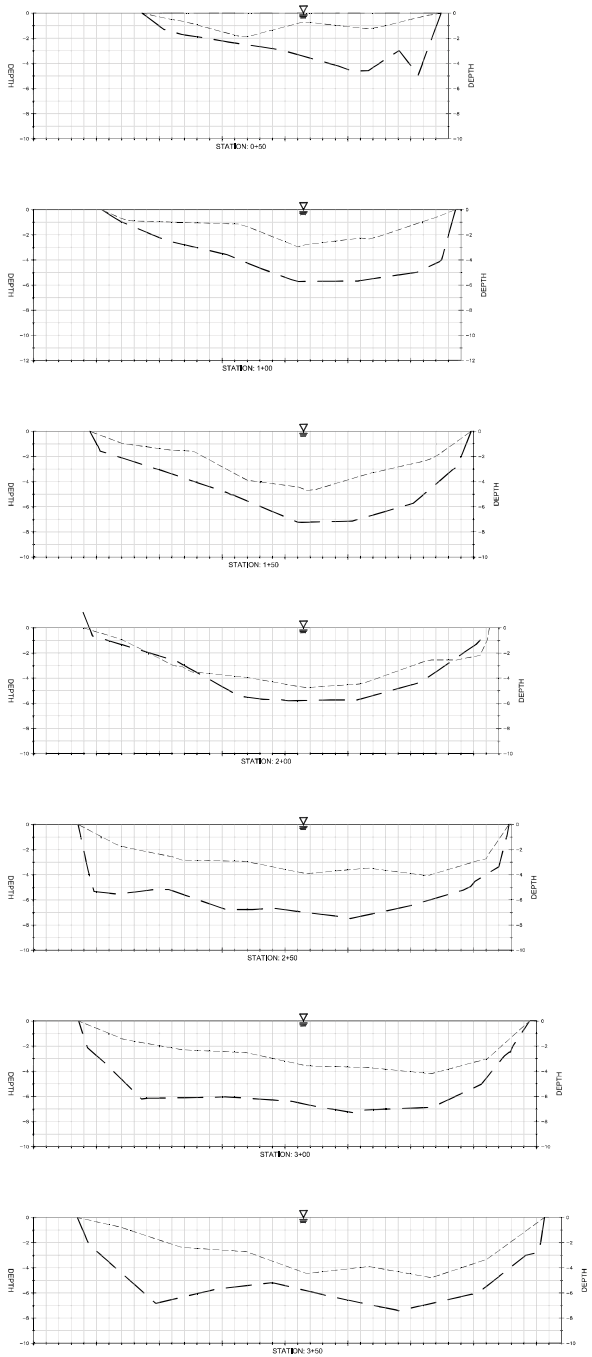
SHEET TITLE:

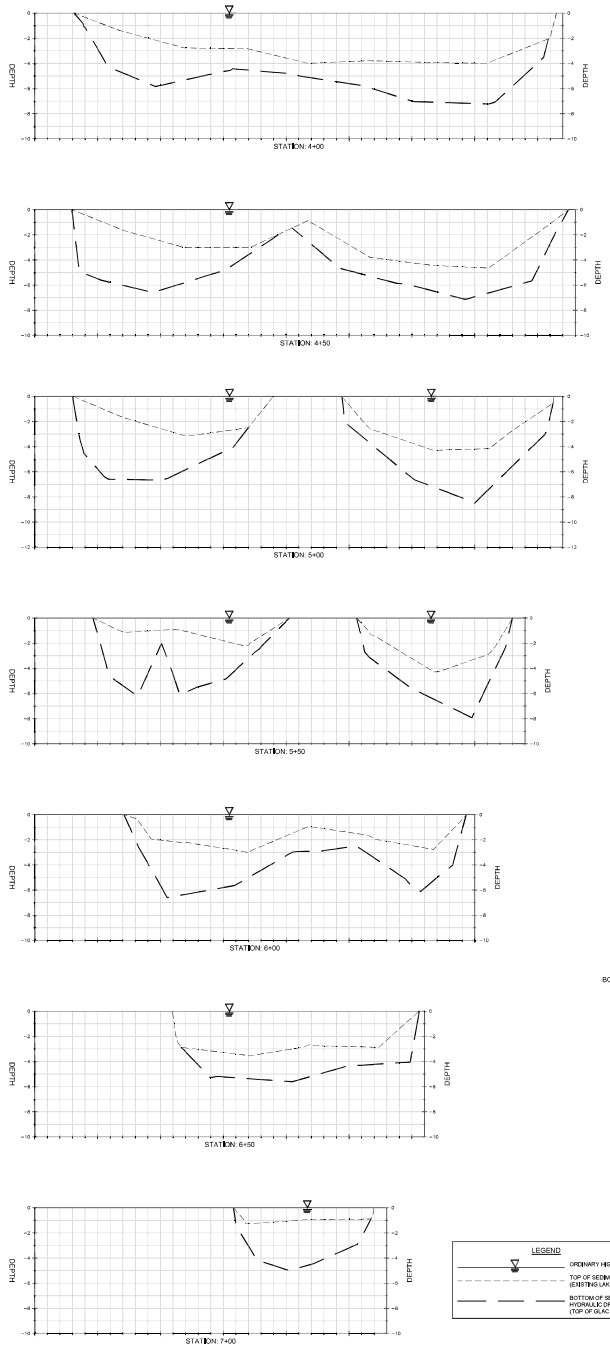
HYDRAULIC DREDGING PLAN

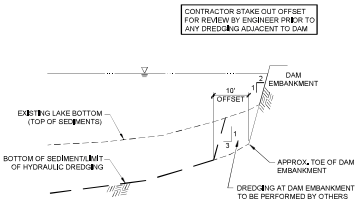
SHEET:

D3.00

6/8/22 1:46:38 PM J:\0 GZA INTERCOMPANY PROJECTS\05.0046161.09 BVH Mirror Lake Design Services\05.0046161.09 CAD\dwg\MAY 2022 - DESIGN DEVELOPMENT SET-PERMIT SET\05.0046161.09-DESIGN DEVELOPEMENT PLANS-PERMIT PLANS.dwg







TYPICAL DETAIL
LIMIT OF HYDRAULIC DREDGING ADJACENT TO MIRROR LAKE DAM
NTS

LEGEND
- ORDINARY HIGH WATER (EL.-594.38)
- TOP OF SEDIMENT (EXISTING LAKE BOTTOM)
- BOTTOM OF SEDIMENT/LIMIT OF HYDRAULIC DREDGING (TOP OF GLACIAL TILL)

VERTICAL SCALE IN FEET
0 2 4 6 8
0 25 50 HORIZONTAL SCALE IN FEET

CERTIFICATION:

STATUS
PERMIT DRAWING
NOT FOR CONSTRUCTION

CONSULTANT:

GZA GeoEnvironmental, Inc.
95 Glastonbury Boulevard
Glastonbury, CT 06033

REVISIONS:

#	DATE	DESCRIPTION

UNIVERSITY OF CONNECTICUT
UNIVERSITY PLANNING DESIGN & CONSTRUCTION
31 LEDOYT ROAD UNIT 3038
STORRS, CONNECTICUT 06269-3038
TELEPHONE: (860) 486-3127
FACSIMILE: (860) 486-3177

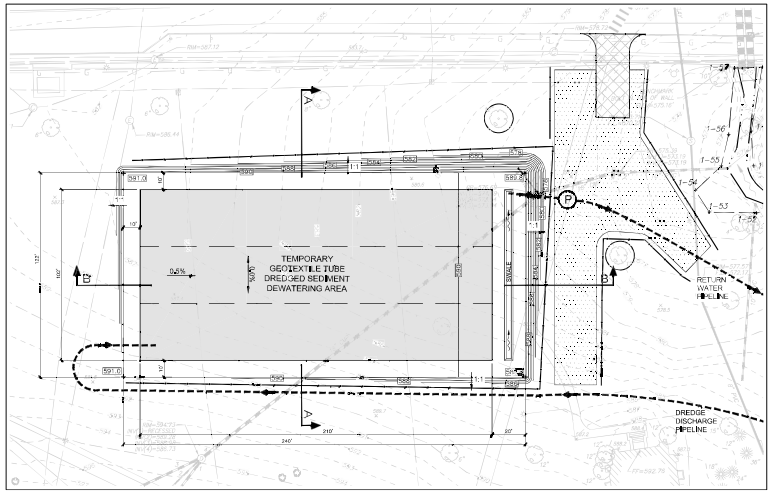
PROJECT:
MIRROR LAKE
HYDRAULIC DREDGING
Storrs CT. 06269-3038
Mansfield Road

PROJECT NO:	30174
AUTHOR:	GZA
DRAFTER:	GZA
SCALE:	AS NOTED
PRINT DATE:	6/8/2022

SHEET TITLE:
HYDRAULIC DREDGING CROSS-SECTIONS

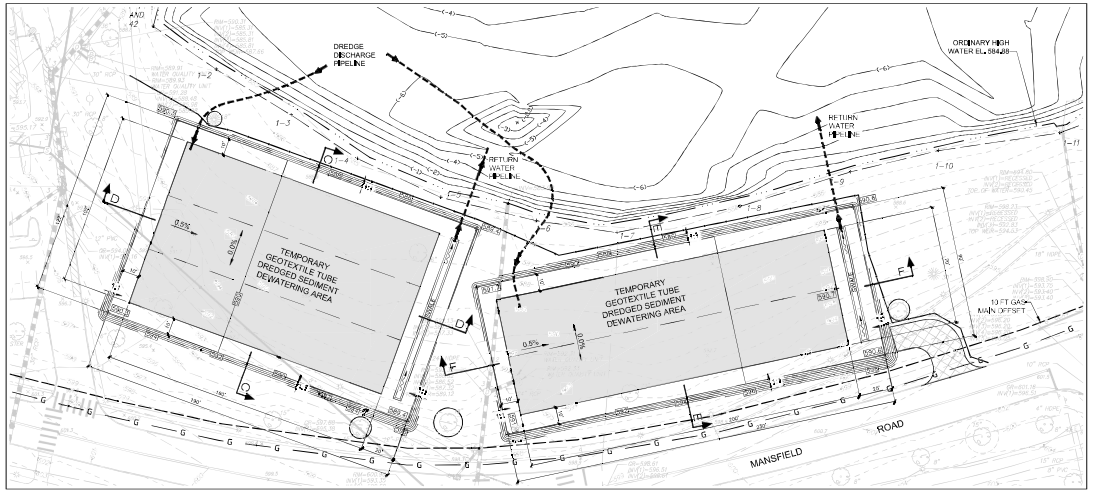
SHEET:
D4.00

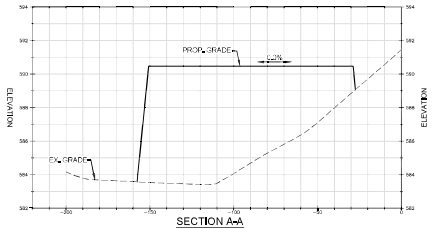
6/8/22 1:39:10 PM J:\0 GZA INTERCOMPANY PROJECTS\05.0046161.09 BVH Mirror Lake Design Services\05.0046161.09 CAD\dwg\MAY 2022 - DESIGN DEVELOPMENT SET-PERMIT SET\05.0046161.09-DESIGN DEVELOPEMENT PLANS-PERMIT PLANS.dwg



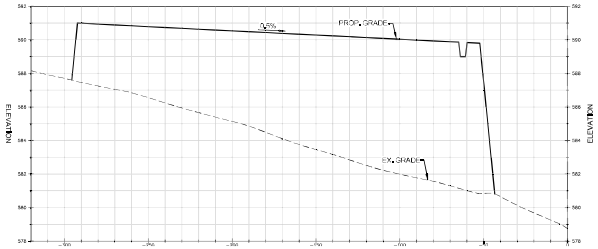
LEGEND

- ORDINARY HIGH WATER
- WETLAND BOUNDARY
- ON-SHORE CONTOUR - 1 FT INTERVAL
- ON-SHORE CONTOUR - 5 FT INTERVAL
- BOTTOM OF SEDIMENT CONTOUR (LIMIT OF HYDRAULIC DREDGING PHASE)
- BOTTOM OF SEDIMENT SPOT GRADE
- DEWATERING SITE PROPOSED CONTOUR
- PROPOSED TREE PROTECTION
- PROPOSED SEDIMENTATION AND EROSION CONTROL BARRIER
- PROPOSED PUMP
- PROPOSED PIPELINE
- PROPOSED TEMPORARY CONSTRUCTION ENTRANCE
- PROPOSED STAGING AREA

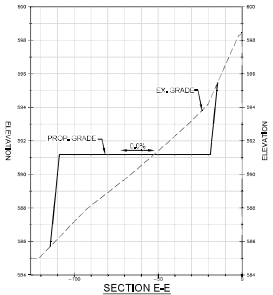




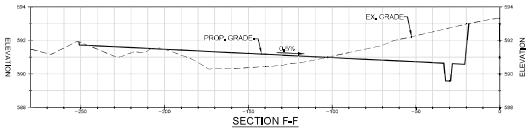
SECTION A-A



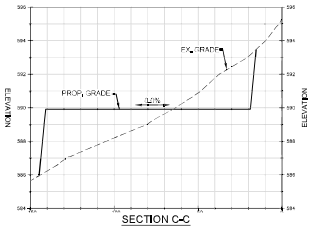
SECTION B-B



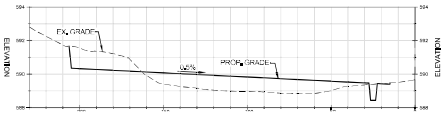
SECTION E-E



SECTION F-F



SECTION C-C



SECTION D-D

VERTICAL SCALE IN FEET

HORIZONTAL SCALE IN FEET

CERTIFICATION:

STATUS:
PERMIT DRAWING
NOT FOR CONSTRUCTION

CONSULTANT:

GZA GeoEnvironmental, Inc.
95 Glastonbury Boulevard
Glastonbury, CT 06033

REVISIONS:

#	DATE	DESCRIPTION

UNIVERSITY OF CONNECTICUT
UNIVERSITY PLANNING DESIGN & CONSTRUCTION
31 LEDYOYT ROAD UNIT 3038
STORRS, CONNECTICUT 06269-3038
TELEPHONE: (860) 486-3127
FACSIMILE: (860) 486-3177

PROJECT:

MIRROR LAKE
HYDRAULIC DREDGING

Storrs CT. 06269-3038
Mansfield Road

PROJECT NO:	30174
AUTHOR:	GZA
DRAFTER:	GZA
SCALE:	AS NOTED
PRINT DATE:	6/8/2022

SHEET TITLE:

DEWATERING SITES PLAN

SHEET:

D5.00

6/8/22 1:42:53 PM J:\0 GZA INTERCOMPANY PROJECTS\05.0046161.08 BVH Mirror Lake Design Services\05.0046161.08 CAD\dwg\MAY 2022 - DESIGN DEVELOPMENT SET-PERMIT SET\05.0046161.08-DESIGN DEVELOPEMENT PLANS-PERMIT PLANS.dwg

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

79 Elm Street • Hartford, CT 06106-5127 portal.ct.gov/DEEP Affirmative Action/Equal Opportunity Employer

Compliance Certification Form

The following certification must be signed by the licensee working in consultation with a Connecticut-licensed design professional and must be submitted to the address indicated at the end of this form within ninety (90) days of completion of the authorized work.

1. Licensee Name: _____

   DEEP License Number(s):_____

   Municipality in which project is occurring:_____

2. **Check one:**

   (a) ☐ "I certify that the final site conditions and / or structures are in general conformance with the approved site plans". Identify and describe any deviations and attach to this form.

   (b) ☐ "The final site conditions and / or structures are not in general conformance with the approved site plans. The enclosed "as-built" plans note the modifications".

3. "I understand that any false statement in this certification is punishable as a criminal offence under section 53a-157b of the General Statutes and under any other applicable law."

_____ _____
Signature of Licensee Date

_____
Name of Licensee (print or type)

_____ _____
Signature of CT-Licensed Design Professional Date

_____
Name of CT-Licensed Design Professional (print or type)

_____
Professional License Number (if applicable) Affix Stamp Here

- As-built plans shall include: elevations or tidal datums, as applicable, and structures, including any proposed elevation views and cross sections included in the approved license plans. Such as-built plans shall be the original ones and be signed and sealed by an engineer, surveyor or architect, as applicable, who is licensed in the State of Connecticut.
- The Licensee will be notified by staff of the Land and Water Resources Division (LWRD) if further compliance review is necessary. Lack of response by LWRD staff does not imply compliance.

Submit this completed form to :
DEEP.LWRDRegulatory@ct.gov or
Regulatory Section
Department of Energy and Environmental Protection
Land & Water Resources Division
79 Elm Street
Hartford, CT 06106-5127

LWRD Work Commencement Form

To: DEEP.LWRDRegulatory@ct.gov or
Regulatory Section
Department of Energy and Environmental Protection
Land & Water Resources Division
79 Elm Street
Hartford, CT 06106-5127

Licensee Name: _____
Municipality in which the project is occurring: _____
DEEP License No(s):_____

CONTRACTOR(s):

1 Name: _____
Address: _____
Telephone:_____
E-mail: _____

2 Name: _____
Address: _____
Telephone:_____
E-mail: _____

3 Name: _____
Address: _____
Telephone:_____
E-mail: _____

Date Contractor(s) received a copy
of the license and approved plans: _____

EXPECTED DATE OF COMMENCEMENT OF WORK: _____

EXPECTED DATE OF COMPLETION OF WORK: _____

LICENSEE: _____ _____
(Signature) (Date)