

Stormwater Infrastructure Repair Fund Eligibility Authorization Form

Disclaimer: Approval of the project described herein is an acknowledgement of potential program eligibility only and in no way authorizes payment of funds, reimbursement of expenses incurred for the project and does not guarantee any future funding for the project. Funding may be available once the project has met all the eligibility requirements and a project agreement has been approved and executed by the Commission.

Applicant Jurisdiction (s) (Community, Township, HOA)	Village of Beach Park		
Brief Project Title	Ravine and Streambank Site Restoration		
General Location	9950 and 9968 Marguerite Lane in Beach Park Illinois		
Contact Person	Ernesto Huaracha		
Address	500 W. Winchester Rd, Ste. 201		
City, State Zip	Libertyville, IL 60048	Phone	847-377-7700
Resource Request			
<input type="checkbox"/> SIRF Funds <input type="checkbox"/> SMC Staff Capacity <input checked="" type="checkbox"/> Combination Funds and Staff			
<p>Project Description (use additional sheets if necessary):</p> <p>The Lake County Stormwater Management Commission (SMC) is applying for SIRF funds for this project. SMC will receive funds from the Village of Beach Park for this project as a part of, and has also been awarded funds associated with FEMA's Hazard Mitigation Assistance Program to acquire flood-prone properties at 9950 and 9968 Marguerite Lane in Beach Park, IL to demolish and clear any remaining structures, converting the subject properties to permanent "green space".</p> <p>This section of the Bull Creek ravine is experiencing severe erosion which jeopardized the safety of the two identified properties. The properties at 9950 and 9968 Marguerite Lane have been acquired and the demolition of the properties will be completed under a separate contract, to allow for restoration of the ravine side slope to minimize the risk of future bank failure and to protect the adjoining residences from a similar fate. The project includes the stabilization of approximately 235 linear feet of streambank and the restoration of approximately 7,755 face feet of ravine bluff. Based on the recently completed topographic survey, the Bull Creek water surface elevation was at approximately elevation of 594, and the "top of bank" is at approximately 595. The top of the ravine was found to be elevation 632. There is 38 feet of fall from top to bottom. Currently this project is the final stages of the engineering design and permitting process. Field data and survey reconnaissance has been completed for this project. The remaining project schedule expects to have a public bid release and opening for this project in March/April 2021, with construction expected to start in April/May 2021. The bidding and construction schedule will be dictated by the permit schedule from the respective permitting agencies.</p>			

Cost Estimate	\$422,234.25	Applicant Share	\$347,234.25	SIRF Share	\$75,000.00
In-Kind Service Person Hours	Applicant	SMC Staff	SMC	200	
In-Kind Service Description	For project implementation, SMC staff will be providing contract management, project management and field construction oversight.				
Project Timing	Start Date	4/1/2021	Completion Date	7/1/2021	
Summary of Project Area Damages (Quantify Below # and type of damages incurred or threatened to occur)					
<u>Damage Priority</u>	<u>Flood Damage Type</u>	<u>Number of Occurrences</u>	<u>Frequency of Occurrences (e.g. Every Year, every two years)</u>		
1	Structural Damage	Annually	Annually Every rainfall		
2	Flooded Building				
3	Health and Safety	Annually	Annually Every rainfall		
4	Road Flooding				
5	Disruption of Revenue				
6	Parking Lot Flooding				
7	Nuisance Flooding				
Summary of Project Benefits (how much of the quantified damage is to be relieved and to what extent)					

Flood Hazard Reduction Benefits:

This project will have flood hazard reduction benefits as stormwater, flooding and stream volume and velocity have contributed to the instability of the bluff system for this project. The bluff was assessed in 2008 Dead River Watershed-Based Plan as having a High level of streambank erosion, (Lateral Recession Rates of Severe to Very Severe have an estimated loss of 0.3-0.5+ ft/ year of soil). The streambank is void of herbaceous vegetation with severe vegetative overhang from trees on the top of the slope. Many fallen trees, erosion and changes in cultural features have caused massive slips and washouts. The watershed is 88% urbanized land use, and urban development has increased steadily since the mid-20th century, but the rate of land conversion from agriculture to urban (mainly residential) land use was likely greatest during the last 40 years.

Nuisance Flood Reduction Benefits:

This project is not impacted by nuisance flooding, nor does it experience blocked transportation access due to flooding. This project may alleviate major nuisance flooding in the creek system if downstream sedimentation can be attributed to this project.

Structural Damage:

Previous work in the immediate vicinity of our project section of Bull Creek in 2003 and 2004, required the installation of protection measures for sanitary sewer lines that were installed 2.5 feet underground crossing under Bull Creek. The lines became exposed due to creek erosion and were exposed by 12-18 inches, before the stabilization work was done by the North Shore Sanitary District and US Army Corps of Engineers. Stream bed erosion is an ongoing problem that requires attention in the Dead River watershed, downstream sedimentation buildup has the capacity to impact water flow as a recurrent concern. Additional infrastructure structural concerns from erosion sedimentation and debris jams is downstream of the project area, Bull Creek passes through a culvert system under the Union Pacific Railroad.

Other structural impacts include the protection of past stabilization and restoration projects implemented in this reach of Bull Creek. Restoration has occurred in multiple phases from 2002-2018.

Phase 1: The first project phase included a survey of the stream reach, development of a stream restoration plan, tree and shrub removal, and installation of four riffles in the downstream area of the project reach.

Phase 2: The second project phase included the implementation of additional bioengineering practices in 1,500 linear feet of stream corridor as called for in the stream restoration design completed in phase 1. These practices included: grade stabilization using artificial riffles, the excavation and stabilization of floodplain terraces; streambank reshaping and stabilization using rock toe protection and coir products; and bluff stabilization using a-jacks and vegetated geogrid lifts. Native vegetation was included in all practices.

Phase 3: The third project phase included the removal of a large debris jam located just upstream of the phase 2 restoration work.

Phase 4: Over 1,500 linear feet of riparian corridor buffer was improved during 2016-2018 utilizing bioengineering practices: streambank stabilization stone toes were installed; artificial riffle installation and repairs were completed to stabilize the stream bed

Statement of Local Commitment (assurance that applicant has sufficient matching funds and staff capacity)

SMC does have sufficient matching funds and staff capacity to accomplish the task.



Signature of Authorized Representative of the Cost Sharing Entity

Ernesto Huaracha

Spell Name Above

Requested Attachments:

1. Location Map
2. Detailed project Description
3. Detailed (per criteria) Statement on Benefits, including quantifiable benefits.
4. Statement of compliance with SMC policies, local plans and Ordinance
5. Other comments or supporting documents.

LAKE COUNTY STORMWATER MANAGEMENT COMMISSION

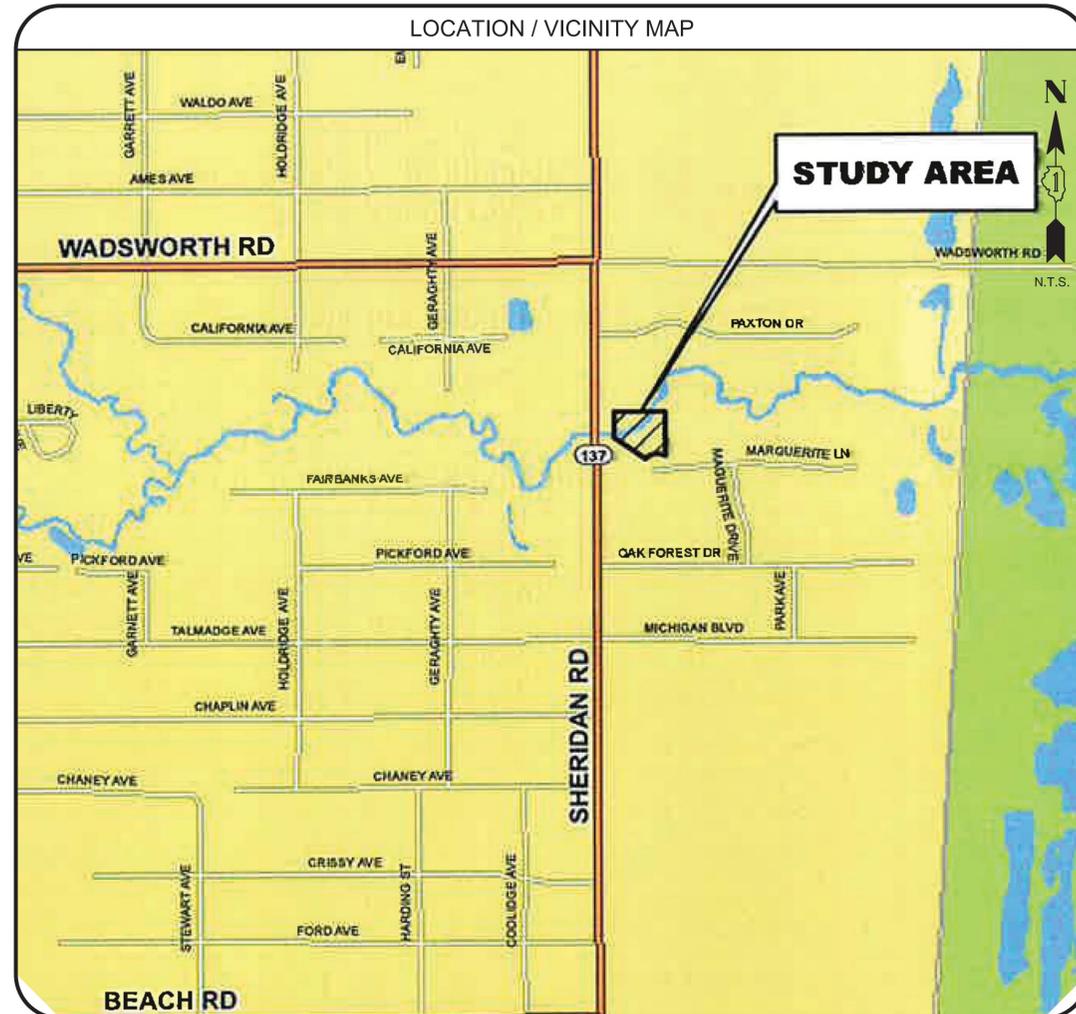
BULL CREEK STABILIZATION PROJECT

9950 AND 9968 MARGUERITE LANE BEACH PARK, LAKE COUNTY, ILLINOIS

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LOCATION / VICINITY MAP



IDOT STANDARDS

IDOT "SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED APRIL 1, 2016.

IDOT "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JANUARY 1, 2021.

BENCHMARK

ELEVATION BENCHMARKS DATUM: NAVD '88 (GPS OBSERVED)		
NO.	DESCRIPTION	ELEV.
OSBM	SOUTH FLANGE BOLT OF HYDRANT BETWEEN ADDRESSES *9949 & *9967 MARGUERITE LN.	630.01
OSBM	NORTH RIM OF BOLTED SANITARY MANHOLE 608.13	
Z0-2	SOUTH OF THE CREEK EAST OF CULVERT	

LOCATION

CALL JULIE 811
WITH THE FOLLOWING:

COUNTY _____
CITY-TOWNSHIP _____

48 HOURS BEFORE YOU DIG.
EXCLUDING SAT., SUN., & HOLIDAYS

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY AS WELL AS SUPERVISION/DIRECTION AND MEANS/METHODS OF CONSTRUCTION



James Scott Griffith 12/2/2020
ENGINEER DATE

ILLINOIS REGISTRATION No. -
EXPIRATION DATE: /

CLIENT: **LAKE COUNTY STORMWATER MANAGEMENT COMMISSION**
500 W. WINCHESTER ROAD, SUITE 201
LIBERTYVILLE, ILLINOIS 60045



CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

PROFESSIONAL DESIGN FIRM NO. 184-001175
EXPIRATION DATE: 04/30/21

GENERAL NOTES

DEFINITION OF TERMS

1. LAKE COUNTY STORMWATER MANAGEMENT COMMISSION (OWNER): THE OWNER IS THE INDIVIDUAL, FIRM PARTNERSHIP, OR CORPORATION HAVING THE AUTHORITY TO AWARD THE CONTRACT FOR THE PRESCRIBED WORK.

2. CONTRACTOR: THE CONTRACTOR IS THE INDIVIDUAL, FIRM, PARTNERSHIP, OR CORPORATION CONTRACTING WITH THE OWNER FOR PERFORMANCE OF THE PRESCRIBED WORK.

3. ENGINEER: THE ENGINEER SHALL BE THE OWNER'S REPRESENTATIVE.

4. ALL CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE IDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED APRIL 1, 2016 AND THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS", ADOPTED JANUARY 1, 2021.

5. ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED AS THE LATEST IDOT STANDARD. ALL TRAFFIC CONTROL AND OTHER ADVISORY SIGNS NEEDED FOR CONSTRUCTION ARE TO BE FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OR SUPPLEMENT SPECIFICATIONS.

GENERAL NOTES - MISCELLANEOUS

1. THE CONTRACTOR'S OPERATIONS AND TEMPORARY STORAGE ACTIVITIES SHALL BE LIMITED TO THE WORK AREA AND/OR CONSTRUCTION LIMITS.

2. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE RESIDENT ENGINEER SHALL BE NOTIFIED BEFORE THE MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE RESIDENT ENGINEER, AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

3. THE CONTRACTOR WILL BE REQUIRED TO RELOCATE OR REMOVE AND REPLACE SIGNS WHICH INTERFERE WITH HIS CONSTRUCTION OPERATIONS, AND TO TEMPORARILY RESET ALL SUCH SIGNS DURING CONSTRUCTION OPERATIONS. THIS WORK WILL BE CONSIDERED AS INCLUDED IN THE CONTRACT.

4. THE CONTRACTOR SHALL USE CARE IN GRADING OR EXCAVATING NEAR ANY AND ALL EXISTING ITEMS WHICH WILL NOT BE REMOVED. ANY DAMAGE DONE TO EXISTING ITEMS BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE.

5. THE CONTRACTOR MUST COORDINATE WITH THE RESIDENT ENGINEER AND PROVIDE 72 HOURS ADVANCE NOTICE PRIOR TO CONSTRUCTION.

6. GENERAL SAFETY PROVISIONS: TO PROVIDE LOCAL MOTORISTS SAFE TRAVEL CONDITIONS DURING THIS CONSTRUCTION PROJECT, AND TO PROVIDE SAFE WORKING CONDITIONS, THE RULES, REGULATIONS, AND CONDITIONS STATED BELOW WILL PREVAIL FOR THE DURATION OF THIS CONTRACT:

A. THE CONTRACTOR SHALL TAKE ALL NECESSARY SAFETY PRECAUTIONS TO PROTECT AND PROVIDE ACCESS TO THE ABUTTING PROPERTY, UTILITIES, PEDESTRIANS AND VEHICULAR TRAFFIC.

B. ALL CONSTRUCTION PERSONNEL WILL BE REQUIRED TO WEAR PROJECT APPROPRIATE PERSONAL PROTECTION EQUIPMENT (PPE) IN ACCORDANCE WITH OSHA STANDARDS.

C. PROVIDING SAFE AND HEALTHFUL WORKING CONDITIONS THROUGHOUT THE COMPLETION OF THE WORK. THIS SHALL INCLUDE BUT IS NOT LIMITED TO THE REMOVAL OF DEBRIS, THE PROTECTING OF CONSTRUCTION HAZARDS WITH BARRICADES, AND THE KEEPING OF PUBLIC AND PRIVATE ROADWAY PAVEMENTS CLEAN OF CONSTRUCTION DEBRIS.

7. ANY RIGHT OF WAY OR PROPERTY CORNER MARKERS DISTURBED BY THE CONTRACTOR'S OPERATION SHOULD BE REESTABLISHED BY A REGISTERED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

8. CONTRACTOR SHALL RESTRICT TO THE EXTENT PRACTICABLE UNAUTHORIZED ACCESS TO THE PROPERTY AT ALL TIMES AT ACCESS POINTS VIA SIGNAGE TEMPORARY FENCING, OR OTHER METHODS AS REVIEWED BY THE ENGINEER. THIS WORK SHALL BE INCLUDED IN THE COST OF MOBILIZATION.

9. THE SCALE SHOWN ON THE DRAWINGS APPLIES ONLY TO FULL SIZE PLANS AND NOT TO THE REVIEWED REDUCED SIZE PLANS.

10. ALL ELEVATIONS REFER TO NAV 88 DATUM.

11. VERIFICATIONS OF DIMENSIONS: IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING MATERIALS.

12. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS CONSTRUCTION OPERATIONS WITHIN THE PROJECT LIMITS, ALSO WITH PUBLIC AND PRIVATE UTILITIES, AND OTHER CONTRACTORS WORKING WITHIN OR ADJACENT TO THE PROJECT.

13. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS AND WRITTEN AUTHORIZATION FROM ALL GOVERNING AGENCIES FOR CONSTRUCTION ABOVE, ADJACENT TO AND ON ROADWAYS UNDER THEIR JURISDICTION.

14. ELEVATIONS ARE SUBJECT TO ROUTINE VARIATIONS AND ACCURACY. SUCH VARIATIONS BETWEEN THE AERIAL SURVEY AND ACTUAL GROUND CONDITIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN SCOPE OF WORK. ELEVATIONS ARE PROVIDED FOR GUIDANCE IN APPLICATION OF TYPICAL SECTIONS.

15. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION OPERATIONS TO INSURE TRAFFIC MAINTENANCE, SURFACE DRAINAGE, ETC. THROUGHOUT THE DURATION OF THE CONSTRUCTION PERIOD IN ACCORDANCE WITH THE REQUIREMENTS OF ANY GOVERNING AGENCIES.

16. LANE CLOSURES: THE CONTRACTOR SHALL WORK EXPEDITIOUSLY TO OPEN TRAFFIC LANES CLOSED DUE TO ROADWORK. THE RESIDENT ENGINEER WILL BE THE SOLE JUDGE OF WHEN A LANE IS READY TO BE OPENED TO TRAFFIC.

17. THE CONTRACTOR SHALL TAKE ALL NECESSARY SAFETY PRECAUTIONS TO PROTECT AND PROVIDE ACCESS TO ABUTTING PROPERTY, UTILITIES, PEDESTRIANS AND VEHICULAR TRAFFIC.

18. NO BURNING OR INCINERATION OF RUBBISH OR CONSTRUCTION DEBRIS WILL BE PERMITTED

19. CONTRACTOR SHALL ACCESS SITE AT LOCATIONS SHOWN IN THE OVERALL PLAN. NO OTHER POINTS OF ENTRY ARE ALLOWED.

20. DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ADJACENT TRAFFIC LANES FROM DEBRIS BLOWN OR OTHERWISE REMOVED FROM CONSTRUCTION AREAS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR KEEPING DEBRIS OFF THE TRAVELED LANE SURFACES. THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT.

21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO STREETS, ROADWAYS OR CURBS SIDE WALKS OR ASSOCIATED STRUCTURES, AND SHALL MAKE REPAIRS AS NECESSARY TO CORRECT DAMAGE AT HIS OWN EXPENSE

22. POLLUTION CONTROL: THE CONTRACTOR WILL BE REQUIRED TO COMPLY WITH THE STATE REGULATIONS REGARDING AIR, WATER AND NOISE POLLUTION. CONSTRUCTION OPERATIONS SHALL BE CONFINED TO THE PERIOD BEGINNING AT 7:00 A.M. AND ENDING AT 5:00 P.M. MONDAY THROUGH FRIDAY. NO WORK SHALL BE PERFORMED ON SATURDAY, SUNDAYS, HOLIDAYS, OR PER COUNTY ORDINANCE. NO HEAVY EQUIPMENT DEPLOYMENT/DROP OFF MAY OCCUR PRIOR TO THE 7:00 A.M. DAILY START TIME.

23. CALLING ATTENTION TO THE OWNER OF ANY ERRORS OR DISCREPANCIES WHICH MAY BE SUSPECTED IN LINES AND GRADES WHICH ARE ESTABLISHED BY THE OWNER. THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK UNTIL THE LINES AND GRADES WHICH ARE BELIEVED TO BE IN ERROR HAVE BEEN VERIFIED OR CORRECTED BY THE OWNER. ADDITIONAL STAKING THAT MAY BE REQUIRED DUE TO CONTRACTOR NEGLIGENCE SHALL BE PAID FOR BY THE CONTRACTOR.

GENERAL NOTES - UTILITIES

1. THE APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE NOT SHOWN ON THE DRAWINGS THERE IS NO GUARANTEE TO THE COMPLETENESS OR ACCURACY OF THE INFORMATION REGARDING UTILITIES, EITHER PUBLIC OR PRIVATE SUCH AS SEWERS, GAS AND WATERMANS, TELEPHONE AND ELECTRICAL DUCT LINES, MANHOLES, CATCH BASINS, AND SIMILAR STRUCTURES. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION OPERATIONS AND REPORT TO THE RESIDENT ENGINEER. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH ARE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE RESIDENT ENGINEER AND THE UTILITY OWNER. THIS WORK SHALL BE SOLELY AT THE CONTRACTORS EXPENSE

2. THE CONTRACTOR SHALL USE ALL NECESSARY PRECAUTIONS AND PROTECTIVE MEASURES REQUIRED TO MAINTAIN EXISTING UTILITIES, SEWERS AND APPURTENANCES THAT MUST BE KEPT IN OPERATION. IN PARTICULAR, THE CONTRACTOR WILL TAKE ADEQUATE MEASURES TO PREVENT THE UNDERMINING OF UTILITIES AND SEWERS WHICH ARE STILL IN SERVICE.

3. CALL J.U.L.I.E. 800-892-0123 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE, CABLE AND GAS FACILITIES.

4. THE CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST 5 DAYS IN ADVANCE OF ANY CONSTRUCTION NEAR (ELECTRICAL, COMMUNICATION CABLES, FIBER OPTIC CABLE, TRAFFIC CONTROL, CAMERAS, ETC.). ANY BURIED FACILITY WITHIN 2 FEET OF AN EXCAVATION LOCATION SHALL FIRST BE EXPOSED BY THE CONTRACTOR BY HAND DIGGING. ONCE EXPOSED, THE CONTRACTOR SHALL PROTECT THE FACILITY. IF CONTRACTOR CUTS OR DAMAGES A UTILITY, EITHER THROUGH CARELESSNESS OR FAILURE TO FOLLOW THE ABOVE PROCEDURE, HE/SHE SHALL BE HELD RESPONSIBLE FOR THE REPAIR OF THE DAMAGE AT HIS/HER EXPENSE, AND TO THE SATISFACTION OF THE OWNER.

5. THE CONTRACTOR SHALL NOTIFY THE LAKE COUNTY PUBLIC WATER DISTRICT, ILLINOIS BEACH STATE PARK (IDNR), THE CITY OF ZION AND UTILITIES AT LEAST 10 DAYS PRIOR TO ANY CONSTRUCTION IN THE AREA AND SHALL COMPLY WITH ALL RESTRICTIONS FOR EQUIPMENT MOVEMENTS AND CLEARANCES IN REGARD TO THEIR FACILITIES.

GENERAL NOTES - WILDLIFE PROTECTION

1. REPTILES AND AMPHIBIANS FOUND SHALL BE RELOCATED. CONTACT BIOLOGIST IN THE STATE PARK FOR ASSISTANCE.

GENERAL NOTES - WATER, STORM SEWER AND SANITARY SEWER

1. WHENEVER DURING CONSTRUCTION OPERATIONS ANY LOOSE MATERIAL IS DEPOSITED IN THE FLOW LINE OF DRAINAGE STRUCTURES SUCH THAT THE NATURAL FLOW OF WATER IS OBSTRUCTED, IT SHALL BE REMOVED AT THE CLOSE OF EACH WORKING DAY. AT THE CONCLUSION OF CONSTRUCTION OPERATIONS, ALL UTILITY STRUCTURES SHALL BE FREE FROM DIRT AND DEBRIS. THE WORK SPECIFIED ABOVE WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE PROPOSED PATH.

2. ANY SEWER DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

GENERAL NOTES - EARTHWORK

1. REMOVAL OR EXCAVATION ITEMS BEING DISPOSED OF AT AN UNCONTAMINATED SOIL FILL OPERATION OR CLEAN CONSTRUCTION AND DEMOLITION DEBRIS (CDD) FILL SITE SHALL MEET THE REQUIREMENTS OF PUBLIC ACT 96-1416. ALL COSTS ASSOCIATED WITH MEETING THESE REQUIREMENTS SHALL BE INCLUDED IN THE LUMP SUM COST FOR THE ASSOCIATED REMOVAL OR EXCAVATION ITEMS IN THE CONTRACT. THESE COSTS SHALL INCLUDE BUT ARE NOT LIMITED TO ALL REQUIRED TESTING, LAB ANALYSIS, CERTIFICATION BY A LICENSED PROFESSIONAL RESIDENT ENGINEER, AND STATE AND LOCAL TIPPING FEES.

2. REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES, INCLUDING EXCAVATED SOILS SHALL FOLLOW THE REQUIREMENTS OF ILLINOIS DEPARTMENT OF TRANSPORTATION "REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE) REQUIREMENTS PUBLISHED JANUARY 1, 2019 WHICH REVISES SECTION 669.07 OF THE STANDARD SPECIFICATIONS, WITH THE FOLLOWING EXCEPTIONS. DELETE SECTION 669.07 - TEMPORARY STAGING WILL NOT BE ALLOWED, DELETE SECTION 669.08 - THERE ARE NO UNDERGROUND STORAGE TANKS WITHIN THE PROJECT AREA. DELETE SECTIONS 669.10 AND 669.11 - THIS PROJECT WILL BE BILLED LUMP SUM, AND THE CONTRACTOR SHOULD ASSUME ALL EXCAVATED MATERIAL ARE CONTAMINATED AND BUDGET ACCORDINGLY. IF THE MATERIAL IS NOT CONTAMINATED, CONTRACTOR SHALL WORK WITH VILLAGE TO CREDIT THE REDUCED COST OF DISPOSAL FOR THE PROJECT.

GENERAL NOTES - SOIL EROSION AND SEDIMENTATION CONTROL NOTES

1. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. EROSION AND SEDIMENT CONTROL (SE/SC) MEASURES SHALL BE AS SHOWN ON THE

PLANS, DETAILED IN THE SPECIAL PROVISIONS AND STANDARD SPECIFICATIONS, DIRECTED BY THE ENGINEER, AS REQUIRED BY STORM WATER POLLUTION PREVENTION PLAN, GOVERNING AGENCY (LAKE COUNTY STORMWATER MANAGEMENT COMMISSION), AND AS REQUIRED BY THE LAKE COUNTY STORMWATER MANAGEMENT COMMISSION, USACE, AND CITY PERMITS.

2. SOIL EROSION AND SEDIMENT CONTROL (SE/SC) FEATURES MUST BE CONSTRUCTED PRIOR TO THE COMMENCEMENT OF UPLAND DISTURBANCE. SOIL DISTURBANCE MUST BE PHASED OR ENACTED IN SUCH A MANNER AS TO MINIMIZE EROSION. SOIL STABILIZATION MEASURES MUST CONSIDER THE TIME OF YEAR, SITE CONDITIONS AND THE USE OF TEMPORARY AND/OR PERMANENT MEASURES.

3. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED AT MINIMUM ACCORDING TO THE STANDARDS AND SPECIFICATIONS IN THE ILLINOIS URBAN MANUAL, REVISED TO LATEST VERSION AS AMENDED. A COPY OF THE APPROVED SOIL EROSION AND SEDIMENT CONTROL (SE/SC) PLAN MUST BE MAINTAINED ON THE SITE AT ALL TIMES.

4. THE EROSION AND SEDIMENT CONTROLS SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED AS DIRECTED BY THE CITY, OR THEIR AUTHORIZED REPRESENTATIVE. ALL ADDITIONAL MEASURES MUST BE IN PLACE WITHIN 3 DAYS OF DISTURBANCE AND ANY EMERGENCY SE/SC MEASURES MUST BE INSTALLED IMMEDIATELY.

5. THE CONTRACTOR MUST CLEAN UP, GRADE THE WORK AREAS AS THE PROJECT PROGRESSES, AND INSTALL EROSION PROTECTION TO ELIMINATE THE CONCENTRATION OF RUNOFF, OR MUST INSTALL APPROPRIATE SEDIMENT CONTROL DEVICES TO TRAP SEDIMENT. PAVEMENT MUST BE CLEANED DAILY OR AS NECESSARY TO REMOVE TRACK-OUT MATERIAL.

6. AFTER ALL PERIMETER EROSION BARRIER IS REMOVED, THE AREAS DAMAGED BY THE PERIMETER EROSION BARRIER MUST BE RESTORED.

7. CONSTRUCTION ACTIVITIES MUST BE SCHEDULED TO MINIMIZE THE TIME SOIL IS EXPOSED AND UNPROTECTED. IN NO CASE WILL THE EXISTING VEGETATION BE DESTROYED, REMOVED, OR DISTURBED MORE THAN FOURTEEN (14) DAYS PRIOR TO THE INITIATION OF IMPROVEMENTS.

8. TEMPORARY CONSTRUCTION ENTRANCES WITH SEDIMENT CONTROL BMPs WILL BE CONSTRUCTED AT ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES THE SITE. GRAVELED ROADS, ACCESS DRIVES, PARKING AREAS OF SUFFICIENT WIDTH AND LENGTH, AND VEHICLE WASH DOWN FACILITIES IF NECESSARY, MUST BE PROVIDED TO PREVENT THE DEPOSIT OF SOIL FROM BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS. ANY SOIL REACHING PUBLIC OR PRIVATE ROADWAY MUST BE REMOVED IMMEDIATELY.

9. SOIL STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RETURN FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA.



STORMWATER MANAGEMENT COMMISSION

TYPICAL CONSTRUCTION SEQUENCING

- 1.) Installation of soil erosion and sediment control SE/SC measures
 - a.) Selective vegetation removal for silt fence installation
 - b.) Silt fence installation
 - c.) Construction fencing around areas not to be disturbed
 - d.) Stabilized construction entrance
 - 2.) Tree removal where necessary (clear & grub)
 - 3.) Construct sediment trapping devices (sediment traps, basins...)
 - 4.) Construct detention facilities and outlet control structure with restrictor & temporary perforated riser
 - 5.) Strip topsoil, stockpile topsoil and grade site
 - 6.) Temporarily stabilize topsoil stockpiles (seed and silt fence around toe of slope)
 - 7.) Install storm sewer, sanitary sewer, water and associated inlet & outlet protection
 - 8.) Permanently stabilize detention basins with seed and erosion control blanket
 - 9.) Temporarily stabilize all areas including lots that have reached temporary grade
 - 10.) Install roadways
 - 11.) Permanently stabilize all outlot areas
 - 12.) Install structures and grade individual lots
 - 13.) Permanently stabilize lots
 - 14.) Remove all temporary SE/SC measures after the site is stabilized with vegetation
- * Soil erosion and sediment control maintenance must occur every two weeks and after every 1/2 or greater rainfall event

10. STOCKPILES OR SOIL SHALL NOT BE LOCATED IN FLOOD PLAINS, RIPARIAN AREAS (VEGETATED FLOOD PLAINS), WETLANDS, BUFFERS DEFINED BY COUNTY ORDINANCE, AND WATERS OF THE U.S., UNLESS OTHERWISE AUTHORIZED BY THE LAKE COUNTY STORMWATER MANAGEMENT COMMISSION. IF A STOCKPILE IS TO REMAIN IN PLACE FOR MORE THAN THREE DAYS, PERIMETER EROSION BARRIER MUST BE PROVIDED. IF THE STOCKPILE IS INACTIVE FOR MORE THAN 14 DAYS, SOIL STABILIZATION MUST BE PROVIDED BY THE 7TH DAY AFTER ACTIVITY HAS STOPPED.

11. CONTRACTOR MUST INSTALL PERIMETER EROSION BARRIER AT ANY LOCATION IN WHICH SHEET FLOWS MAY RESULT IN SEDIMENT RUNOFF OUTSIDE THE CONSTRUCTION LIMITS. THE CONTRACTOR MAY USE OTHER METHODS TO CONTROL RUNOFF, INCLUDING, BUT NOT LIMITED TO, TEMPORARY DIVERSION SWALES, TEMPORARY SEDIMENT TRAPS, SHAPED DITCHES TO CONVEY WATER, ETC.

12. THE CONTRACTOR SHALL PROVIDE A QUALIFIED PERSON WHO WILL BE RESPONSIBLE FOR CONDUCTING SITE INSPECTIONS IN COMPLIANCE WITH THE ILR10 NPDES PERMIT. AFTER EACH INSPECTION, A REPORT SHALL BE PREPARED BY THE PERSON WHO PERFORMED THE INSPECTION AND SUBMITTED TO THE CITY IN A TIMELY MANNER. INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM, OR BY THE END OF THE FOLLOWING BUSINESS DAY, THAT IS 0.5 INCHES OR GREATER. INSPECTIONS MAY BE REDUCED TO ONCE PER MONTH WHEN CONSTRUCTION ACTIVITIES HAVE CEASED DUE TO FROZEN CONDITIONS. INSPECTIONS MUST COMMENCE WHEN CONSTRUCTION ACTIVITIES ARE CONDUCTED, OR IF THERE IS A 0.5" OR GREATER RAIN EVENT, OR DISCHARGE DUE TO SNOWMELT OCCURS.

13. STREET SWEEPING SHALL OCCUR AT THE DISCRETION OF THE ENGINEER OR THE AUTHORIZED REPRESENTATIVE.

14. THE MEANS, METHODS, AND LOCATIONS FOR DEWATERING SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.

15. ALL AREAS DISTURBED DURING THE CONSTRUCTION OPERATIONS SHALL BE SEEDED AND PROTECTED FROM EROSION IN ACCORDANCE WITH THESE PLANS AND SPECIAL PROVISIONS.

**LAKE COUNTY STORMWATER MANAGEMENT COMMISSION
SOIL EROSION AND SEDIMENT CONTROL CONSTRUCTION NOTES**

- A. SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.
- B. FOR THOSE DEVELOPMENTS THAT REQUIRE A DESIGNATED EROSION CONTROL INSPECTOR (DECI), INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM:
 - UPON COMPLETION OF SEDIMENT AND RUNOFF CONTROL MEASURES (INCLUDING PERIMETER CONTROLS AND DIVERSIONS), PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
 - AFTER EVERY SEVEN (7) CALENDAR DAYS OR STORM EVENT WITH GREATER THAN 0.5 INCH OF RAINFALL OR LIQUID EQUIVALENT PRECIPITATION.
- C. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. IF STRIPPING, CLEARING, GRADING, OR LANDSCAPING ARE TO BE DONE IN PHASES, THE PERMITTEE SHALL PLAN FOR APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL MEASURES.
- D. A STABILIZED MAT OF CRUSHED STONE MEETING IDOT GRADATION CA-1 UNDERLAIN WITH FILTER FABRIC AND IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL, OR OTHER APPROPRIATE MEASURE(S) AS APPROVED BY THE ENFORCEMENT OFFICER, SHALL BE INSTALLED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE. SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
- E. TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED AS NECESSARY TO DIRECT ALL RUNOFF FROM HYDROLOGICALLY DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAP OR BASIN.
- F. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE END OF ACTIVE HYDROLOGIC DISTURBANCE OR REDISTURBANCE.
- G. ALL STOCKPILES SHALL HAVE APPROPRIATE MEASURES TO PREVENT EROSION. STOCKPILES SHALL NOT BE PLACED IN FLOOD PRONE AREAS OR WETLANDS AND DESIGNATED BUFFERS.
- H. SLOPES STEEPER THAN 3H:1V SHALL BE STABILIZED WITH APPROPRIATE MEASURES AS APPROVED BY THE ENFORCEMENT OFFICER.
- I. APPROPRIATE EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL INTERIOR DETENTION BASIN SIDE SLOPES BETWEEN THE NORMAL WATER LEVEL AND HIGH WATER LEVEL.
- J. STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
- K. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DISCHARGES SHALL BE ROUTED THROUGH AN APPROVED ANIONIC POLYMER DEWATERING SYSTEM OR A SIMILAR MEASURE AS APPROVED BY THE ENFORCEMENT OFFICER. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE ENFORCEMENT OFFICER, OR APPROVED REPRESENTATIVE, MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.
- L. IF INSTALLED SOIL EROSION AND SEDIMENT CONTROL MEASURES DO NOT MINIMIZE SEDIMENT LEAVING THE DEVELOPMENT SITE, ADDITIONAL MEASURES SUCH AS ANIONIC POLYMERS OR FILTRATION SYSTEMS MAY BE REQUIRED BY THE ENFORCEMENT OFFICER.
- M. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE PROPERTY OWNER SHALL BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE AND REPAIR.
- N. ALL TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.
- O. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, ENFORCEMENT OFFICER, OR OTHER GOVERNING AGENCY.

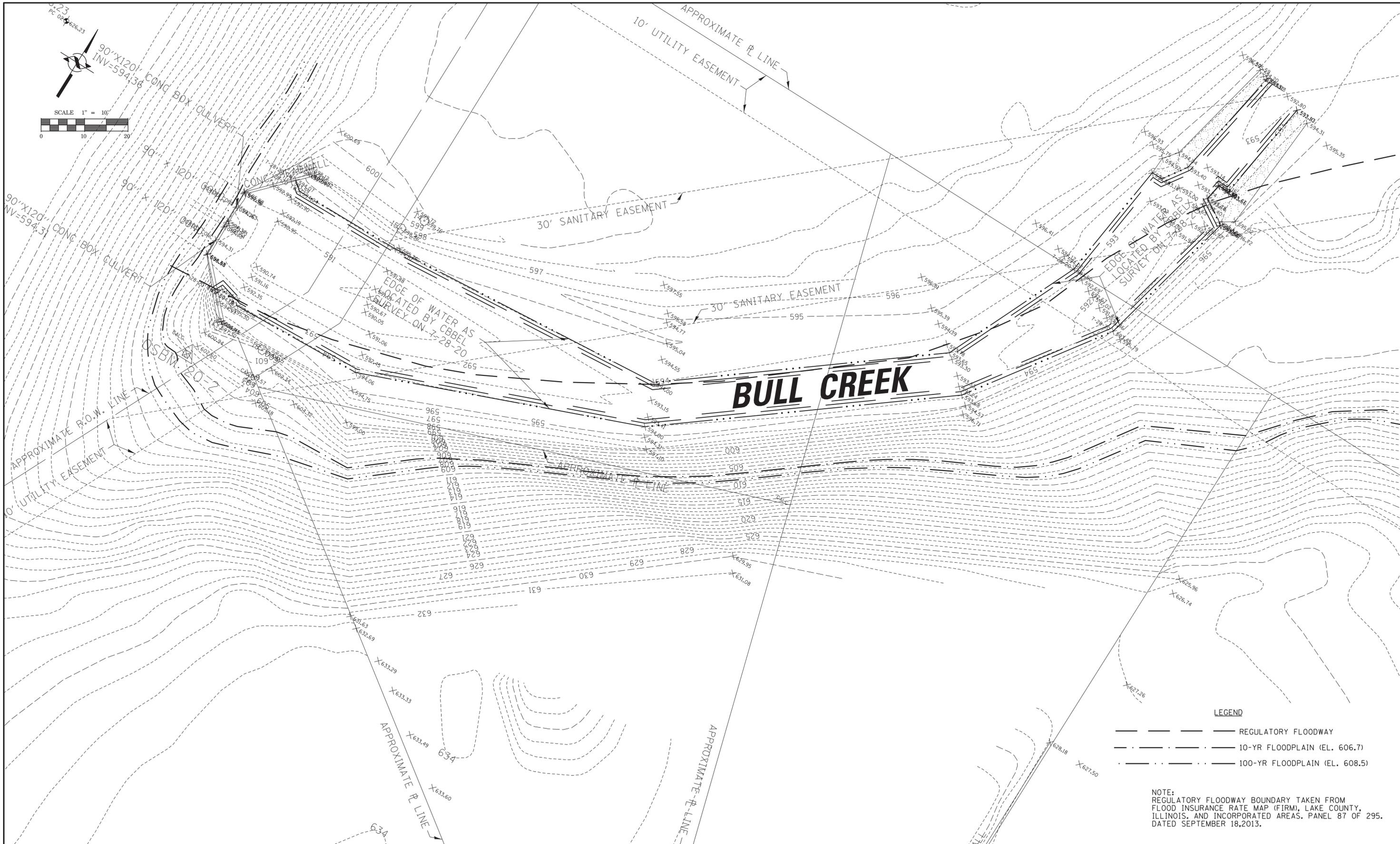
CB
CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

CLIENT:
**LAKE COUNTY STORMWATER
MANAGEMENT COMMISSION**
500 W. WINCHESTER ROAD, STE 201
LIBERTYVILLE, ILLINOIS 60048

				DSGN.	JMA
				DWN.	EAT
				CHKD.	
				SCALE:	N.T.S.
				PLOT DATE:	11/18/2020
				CAD USER:	
				MODEL:	
NO.	DATE	NATURE OF REVISION		CHKD.	
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TITLE:
GENERAL NOTES

PROJ. NO.	200248
DATE:	11/18/2020
SHEET	2 OF 9
DRAWING NO.	GN



LEGEND

	REGULATORY FLOODWAY
	10-YR FLOODPLAIN (EL. 606.7)
	100-YR FLOODPLAIN (EL. 608.5)

NOTE:
 REGULATORY FLOODWAY BOUNDARY TAKEN FROM
 FLOOD INSURANCE RATE MAP (FIRM), LAKE COUNTY,
 ILLINOIS, AND INCORPORATED AREAS, PANEL 87 OF 295,
 DATED SEPTEMBER 18, 2013.

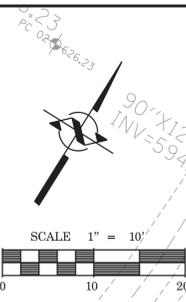
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 Rosemont, Illinois 60018
 (847) 823-0500

CLIENT:
**LAKE COUNTY STORMWATER
 MANAGEMENT COMMISSION**
 500 W. WINCHESTER ROAD, STE 201
 LIBERTYVILLE, ILLINOIS 60048

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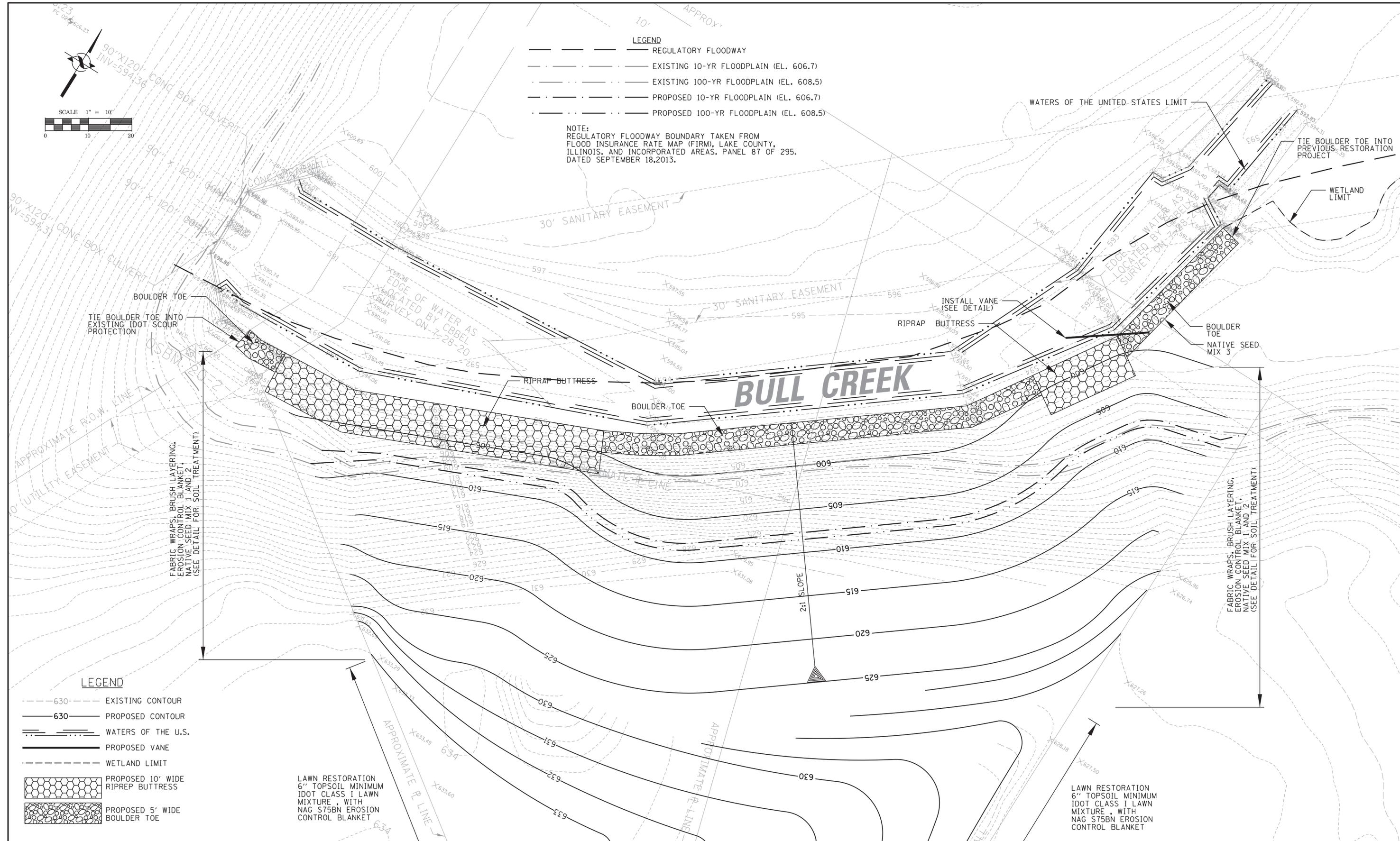
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DWN.	EAT		DATE: 11/18/2020
CHKD.			SHEET 3 OF 9
SCALE:	10'		DRAWING NO.
PLOT DATE:	11/18/2020		EX
CAD USER:			
MODEL:			

EXISTING CONDITIONS



- LEGEND**
- REGULATORY FLOODWAY
 - - - EXISTING 10-YR FLOODPLAIN (EL. 606.7)
 - - - EXISTING 100-YR FLOODPLAIN (EL. 608.5)
 - - - PROPOSED 10-YR FLOODPLAIN (EL. 606.7)
 - - - PROPOSED 100-YR FLOODPLAIN (EL. 608.5)

NOTE:
REGULATORY FLOODWAY BOUNDARY TAKEN FROM
FLOOD INSURANCE RATE MAP (FIRM), LAKE COUNTY,
ILLINOIS, AND INCORPORATED AREAS. PANEL 87 OF 295.
DATED SEPTEMBER 18, 2013.



LEGEND

- - - 630 --- EXISTING CONTOUR
- - - 630 --- PROPOSED CONTOUR
- WATERS OF THE U.S.
- PROPOSED VANE
- - - WETLAND LIMIT
- [Pattern] PROPOSED 10' WIDE RIPRAP BUTTRESS
- [Pattern] PROPOSED 5' WIDE BOULDER TOE

LAWN RESTORATION
6" TOPSOIL MINIMUM
IDOT CLASS I LAWN
MIXTURE, WITH
NAG S75BN EROSION
CONTROL BLANKET

LAWN RESTORATION
6" TOPSOIL MINIMUM
IDOT CLASS I LAWN
MIXTURE, WITH
NAG S75BN EROSION
CONTROL BLANKET

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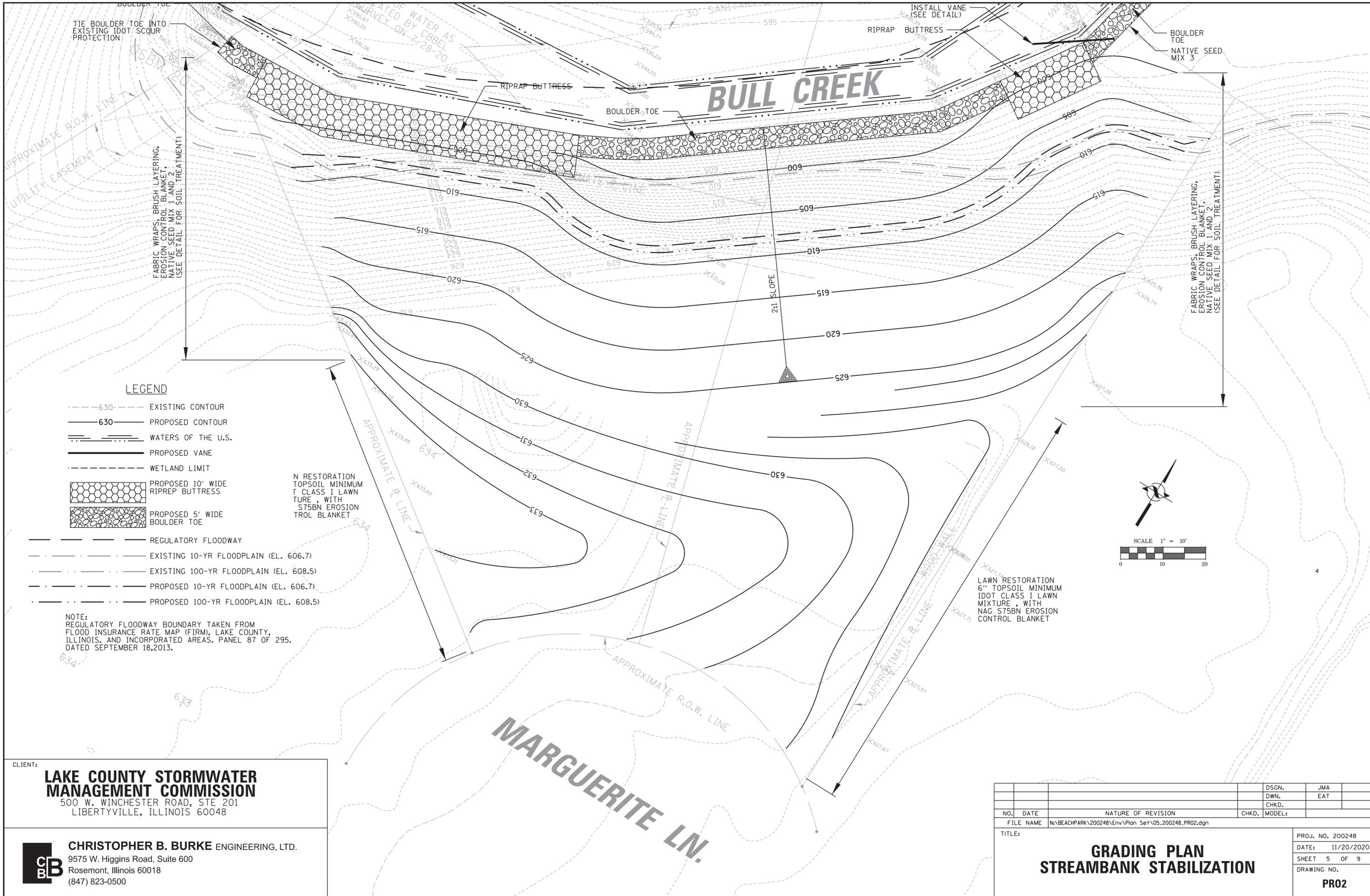
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NO.	DATE	NATURE OF REVISION	CHKD.
FILE NAME	N:\BEACHPARK\200248\Env\Plan Set\04.200248_PR01.dgn		

DSGN.	JMA
DWN.	EAT
CHKD.	
SCALE:	10'
PLOT DATE:	11/20/2020
CAD USER:	
MODEL:	

TITLE:
**GRADING PLAN
STREAMBANK STABILIZATION**

PROJ. NO. 200248
DATE: 11/20/2020
SHEET 4 OF 9
DRAWING NO.
PR01



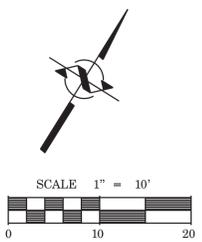
LEGEND

- 630 --- EXISTING CONTOUR
- 630 — PROPOSED CONTOUR
- — — — — WATERS OF THE U.S.
- — — — — PROPOSED VANE
- - - - - WETLAND LIMIT
- [Riprap pattern] PROPOSED 10' WIDE RIPRAP BUTTRESS
- [Boulder toe pattern] PROPOSED 5' WIDE BOULDER TOE
- — — — — REGULATORY FLOODWAY
- - - - - EXISTING 10-YR FLOODPLAIN (EL. 606.7)
- - - - - EXISTING 100-YR FLOODPLAIN (EL. 608.5)
- - - - - PROPOSED 10-YR FLOODPLAIN (EL. 606.7)
- - - - - PROPOSED 100-YR FLOODPLAIN (EL. 608.5)

NOTE:
REGULATORY FLOODWAY BOUNDARY TAKEN FROM FLOOD INSURANCE RATE MAP (FIRM), LAKE COUNTY, ILLINOIS, AND INCORPORATED AREAS, PANEL 87 OF 295, DATED SEPTEMBER 18, 2013.

N RESTORATION
TOPSOIL MINIMUM
CLASS I LAWN
MIXTURE, WITH
S75BN EROSION
CONTROL BLANKET

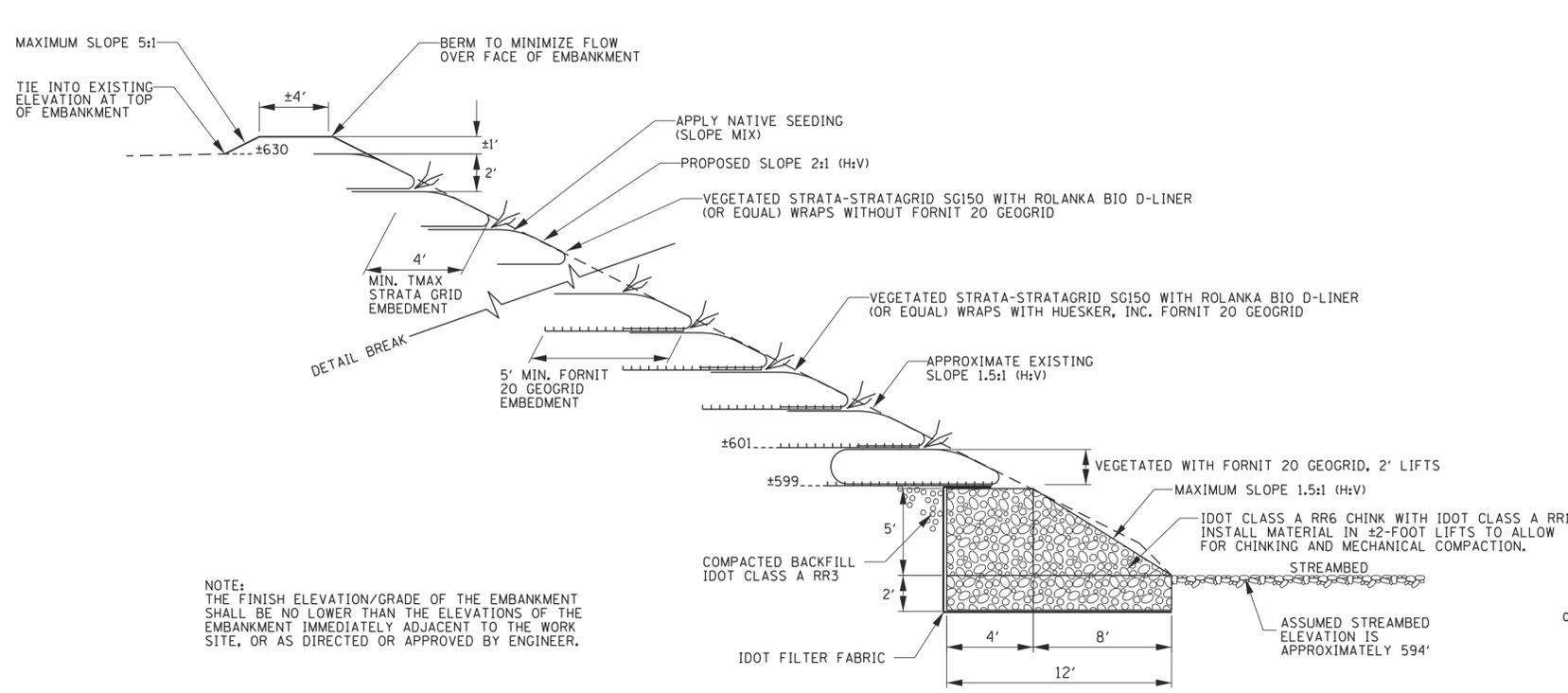
LAWN RESTORATION
6" TOPSOIL MINIMUM
IDOT CLASS I LAWN
MIXTURE, WITH
NAG S75BN EROSION
CONTROL BLANKET



CLIENT:
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MANAGEMENT COMMISSION**
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LIBERTYVILLE, ILLINOIS 60048

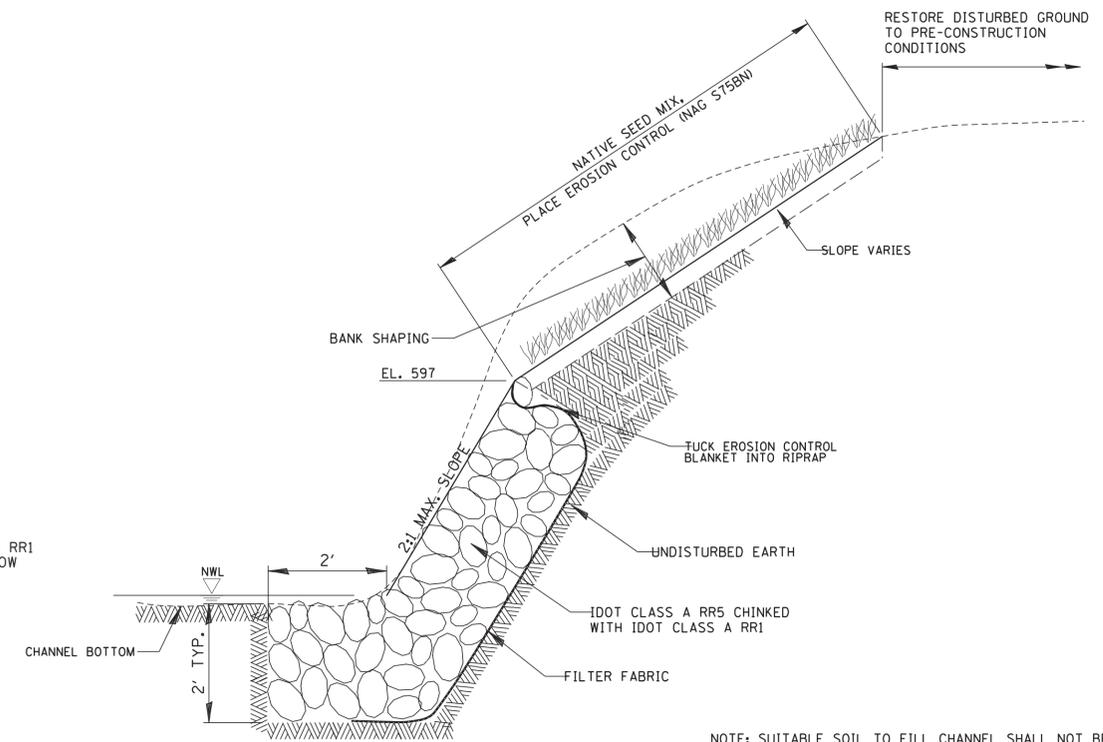
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		DSGN.	JMA
		DWN.	EAT
		CHKD.	
NO.	DATE	NATURE OF REVISION	CHKD. MODEL:
FILE NAME: N:\BEACHPARK\200248\Env\Plan_Set\05_200248.PR02.dgn			
TITLE:			PROJ. NO. 200248
GRADING PLAN STREAMBANK STABILIZATION			DATE: 11/20/2020
			SHEET 5 OF 9
			DRAWING NO. PR02



NOTE:
THE FINISH ELEVATION/GRADE OF THE EMBANKMENT SHALL BE NO LOWER THAN THE ELEVATIONS OF THE EMBANKMENT IMMEDIATELY ADJACENT TO THE WORK SITE, OR AS DIRECTED OR APPROVED BY ENGINEER.

RIPRAP BUTTRESS



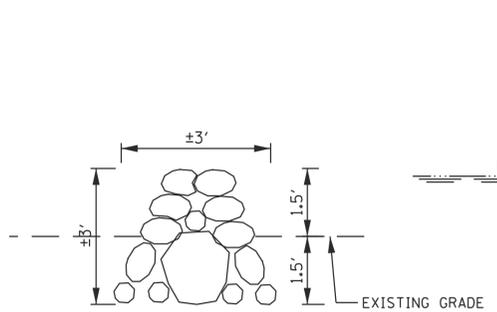
NOTE: SUITABLE SOIL TO FILL CHANNEL SHALL NOT BE MEASURED FOR PAYMENT AND WILL BE CONSIDERED INCIDENTAL TO CHANNEL EXCAVATION, FILL (EMBANKMENT) SHALL BE IN ACCORDANCE WITH SECTION 205 OF IDOT'S STANDARD SPECIFICATIONS.

BOULDER TOE

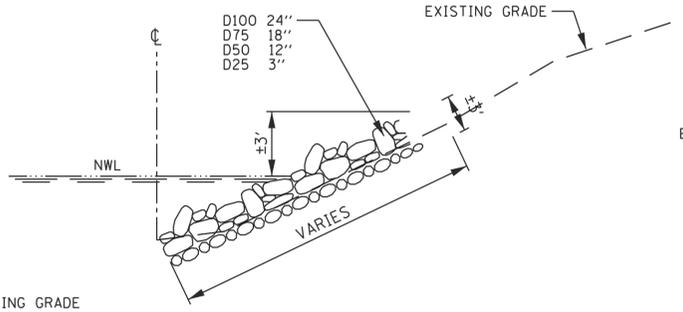
Work within a waterway must meet the following standards:

1. Work in the waterway should be timed to take place during low or no-flow conditions. Low flow conditions are flow at or below the normal water elevation.
2. Water shall be isolated from the in-stream work area using a cofferdam constructed of non-erodible materials (steel sheets, aqua barriers, rip rap and geotextile fabric, etc.). Earthen cofferdams are not permissible.
3. Work may not be performed in the water, except for the placement of the materials necessary for the construction of the cofferdam. The cofferdam must be constructed from the upland area and no equipment may enter the water at any time. If the installation of the cofferdam cannot be completed from shore and access is needed to reach the area to be coffered, other measures, such as the construction of a causeway, will be necessary to ensure that equipment does not enter the water. Once the cofferdam is in place and the isolated area is dewatered, equipment may enter the coffered area to perform the required work.

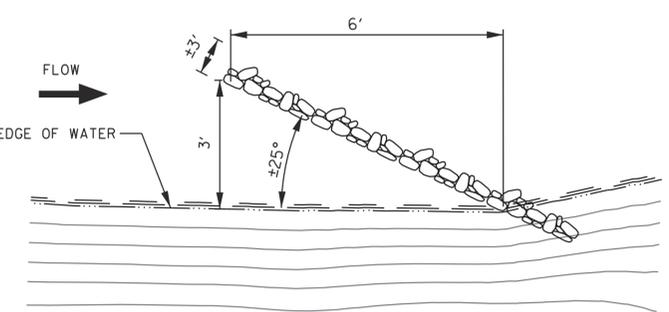
NOTES:
ALL VANES SHALL DIMENSIONALLY MATCH VANE 1 CONSTRUCTION AS SHOWN ABOVE, IN THE DETAILS AND DESCRIBED BELOW.
1. THE VANE HEAD SHALL BE PLACED 3 FEET FROM THE TOE OF THE SLOPE.
2. THE VANE FROM THE HEAD TO THE TOE OF THE SLOPE SHALL BE 6 FEET AS MEASURED ALONG THE BANK.
3. THE VANE SHOULD EXTEND AND BE BURIED IN TO THE TOP OF THE BANK.
4. VANE SPACING IS PER PLAN.
5. SEE VANE DETAIL FOR CONSTRUCTION REQUIREMENTS.



VANE - CROSS-SECTION



VANE DETAIL - SIDE VIEW



VANE DETAIL - PLAN VIEW

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NO.	DATE	NATURE OF REVISION	CHKD.	MODEL:
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TITLE:
CONSTRUCTION DETAILS

PROJ. NO. 200248
DATE: 11/23/2020
SHEET 8 OF 9
DRAWING NO.
DET

CLIENT:

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 MANAGEMENT COMMISSION**
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NO.	DATE	NATURE OF REVISION	CHKD.	MODEL:
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DSGN.	JMA
DWN.	EAT
CHKD.	
SCALE:	N.T.S.
PLOT DATE:	11/18/2020
CAD USER:	

TITLE:

**SEED MIXES
 PLANTING INSTRUCTIONS**

PROJ. NO.	200248
DATE:	11/18/2020
SHEET	9 OF 9
DRAWING NO.	
SM	

SEED MIX 1

Dry Slope Mix
 Native species per mix 8
 Seeds per square foot 15.56
 Native FQI NE Illinois 14.50
 Native FQI Illinois 5.50
 Native Mean C Value NE Illinois 5.13
 Native Mean C Value Illinois 1.25
 Mean W Value NE Illinois 1.25

SEED MIX 2

ACRONYMS

S&W	ILL	USDA	vPlants	scientific name	common name	family	type	C	index	acro	C	index	acro	height	color	M	A	M	J	A	S	O	N	seeds/oz	seeds/lb	lb/acre	seeds/acre	seeds/ftsq	% by weight	% by count		
ANDGER	ANDGER	ANGE	ANGP	<i>Andropogon gerardii</i>	Big Bluestem	Gramineae	Ni P-Grass	5	1	FAC-	4	1	FAC-	4.0-8.0+ (6.0)	na								9,375	150,000	3,000	450,000	10.33	12.77%	11.47%			
BOUCUR	BOUCUR	BOCU	BOCU	<i>Bouteloua curtipendula</i>	Side Oats Gramma	Gramineae	Ni P-Grass	8	5	UPL	7	5	UPL	1.5-3.0 (2.3)	na								6,563	105,000	4,000	420,000	9.64	17.02%	10.70%			
EYCAN	EYCAN	ELCA4	ELCA4	<i>Elymus canadensis</i>	Canada Wild Rye	Gramineae	Ni P-Grass	4	1	FAC-	4	1	FAC-	2.0-4.0 (3.0)	na								7,500	120,000	2,500	300,000	6.89	10.64%	7.64%			
AGTRIT	AGTRIT	ELTRT	ELTRT	<i>Elymus trachycaulis</i>	Slender Wheatgrass	Gramineae	Ni P-Grass	8	0	PXC	8	0	PXC	2.0-3.0 (2.5)	na								9,375	150,000	2,500	375,000	8.61	10.64%	9.55%			
EYVIR	EYVIR	ELV3	ELV3	<i>Elymus virginicus</i>	Virginia Wild Rye	Gramineae	Ni P-Grass	4	-2	FACW-	4	-2	FACW-	1.5-3.0 (2.3)	na								5,750	92,000	2,500	230,000	5.28	10.64%	5.86%			
PANVIR	PANVIR	PAV2	PAV2	<i>Panicum virgatum</i>	Prairie Switch Grass	Gramineae	Ni P-Grass	5	-1	FAC+	4	-1	FAC+	2.5-6.0 (3.0)	na								19,813	317,000	1,000	317,000	7.28	4.26%	8.07%			
ANDSCO	SCHSCO	SCSCS	SCSCS	<i>Schizachyrium scoparium</i>	Little Bluestem	Gramineae	Ni P-Grass	5	4	FACU-	5	4	FACU-	1.5-3.5 (2.0)	na								15,625	250,000	5,000	1,250,000	28.70	21.28%	31.83%			
SORNUT	SORNUT	SONU2	SONU2	<i>Sorghastrum nutans</i>	Indian Grass	Gramineae	Ni P-Grass	5	2	FACU+	4	2	FACU+	4.0-6.0 (5.0)	na								12,188	195,000	3,000	585,000	13.43	12.77%	14.90%			
Graminoid totals																												23,500	3,927,000	90	100.00%	100.00%

ACRONYMS

S&W	ILL	USDA	vPlants	scientific name	common name	family	type	C	index	acro	C	index	acro	height	color	M	A	M	J	A	S	O	N	seeds/oz	seeds/lb	lb/acre	seeds/acre	seeds/ftsq	% by weight	% by count		
AVESAT	AVESAT	AVSA	AVSA	<i>Avena sativa</i>	Oats	Gramineae	Ad A-Grass	*	5	UPL	*	5	UPL	2.0-3.0 (2.5)	na								938	15,000	32,000	480,000	11.02					
LOLMUL	LOLMUL	LOPEM2	LOMU	<i>Lolium multiflorum</i>	Italian Rye	Gramineae	Ad A-Grass	*	5	UPL	*	5	UPL	2.0-3.0 (2.5)	na								14,188	227,000	10,000	2,270,000	52.11					
Graminoid totals																												42,000	2,750,000	63	100.00%	100.00%

SEED MIX 3

ACRONYMS

S&W	ILL	USDA	vPlants	scientific name	common name	family	type	C	index	acro	C	index	acro	height	color	M	A	M	J	A	S	O	N	seeds/oz	seeds/lb	lb/acre	seeds/acre	seeds/ftsq	% by weight	% by count		
AGRPER	AGRPER	AGPE	AGPE	<i>Agrostis perennis</i>	Upland Bent Grass	Gramineae	Ni P-Grass	3	1	FAC-	4	1	FAC-	1.0-3.5 (2.3)	na								500,000	8,000,000	0.125	1,000,000	22.96	2.39%	11.47%			
BROLAT	BROPUR	BRLA4	BRLA4	<i>Bromus laetiflorus (B. altissimus)</i>	Earliest Brome	Gramineae	Ni P-Grass	5	-2	FACW-	7	-2	FACW-	4.0-6.0 (5.0)	na								7,000	112,000	0.015	1,680	0.04	0.29%	0.02%			
CXBREV	CXBREV	CABR10	CABR10	<i>Carex brevior</i>	Shorer Sedge	Cyperaceae	Ni P-Sedge	4	3	FACU	7	0	FAC	1.0-3.0 (2.0)	na								26,875	430,000	0.500	215,000	4.94	9.55%	2.47%			
DIAME	DIAME	DIAM	DIAM	<i>Diarrhena americana</i>	Beak Grass	Gramineae	Ni P-Sedge	10	3	[FACU]	7	-3	FACW	1.5-2.0 (1.8)	na								7,188	115,000	0.063	7,245	0.17	0.08%	0.08%			
EYCAN	EYCAN	ELCA4	ELCA4	<i>Elymus canadensis</i>	Canada Wild Rye	Gramineae	Ni P-Grass	4	1	FAC-	4	1	FAC-	2.0-4.0 (3.0)	na								3,000	48,000	0.031	1,488	0.03	0.59%	0.02%			
HYSPAT	EYVIR	ELV3	ELV3	<i>Elymus hystrix (Hystrix patina)</i>	Bottlebrush Rye	Gramineae	Ni P-Grass	5	1	UPL	5	1	UPL	2.0-3.0 (2.5)	na								7,500	120,000	1,000	120,000	2.75	19.10%	1.38%			
EYVIR	EYVIR	ELV3	ELV3	<i>Elymus virginicus</i>	Silky Wild Rye	Gramineae	Ni P-Grass	5	3	FACU	4	3	FACU	3.0-5.0 (4.0)	na								5,625	90,000	0.063	5,670	0.13	1.20%	0.07%			
FESOBT	FESOBT	FESU3	FESU3	<i>Festuca subverticillata (F. obtusa)</i>	Nodding Fescue	Gramineae	Ni P-Grass	4	-2	FACW-	4	-2	FACW-	1.5-3.0 (2.3)	na								5,750	92,000	2,000	220,000	5.05	38.20%	2.52%			
GLYSTR	GLYSTR	GLST	GLST	<i>Glyceria striata</i>	Fowl Mann Grass	Gramineae	Ni P-Grass	5	2	FACU+	5	2	FACU+	1.0-1.5 (1.3)	na								24,375	245,000	0.063	154,350	2.24	4.77%	1.12%			
JUNDUD	JUNDUD	JUDU2	JUDU2	<i>Juncus dallii</i>	Dudleys Rush	Juncaceae	Ni P-Rush	4	-3	[FACW]	4	-3	[FACW]	1.0-2.0 (1.3)	na								153,125	2,450,000	0.063	3,780,000	86.78	1.20%	1.77%			
JUNTEN	JUNTEN	JUTE	JUTE	<i>Juncus tenuis</i>	Slender Rush	Juncaceae	Ni P-Rush	0	2	[FACU+]	0	2	[FACU+]	0.72-1.3 (1.0)	green								3,000,000	48,000,000	0.063	3,024,000	69.42	1.20%	34.68%			
Graminoid totals																												5,236	8,718,933	200	100.00%	100.00%

SEED MIX 4

ACRONYMS

S&W	ILL	USDA	vPlants	scientific name	common name	family	type	C	index	acro	C	index	acro	height	color	M	A	M	J	A	S	O	N	seeds/oz	seeds/lb	lb/acre	seeds/acre	seeds/ftsq	% by weight	% by count		
AGRPER	AGRPER	AGPE	AGPE	<i>Agrostis perennis</i>	Upland Bent Grass	Gramineae	Ni P-Grass	3	1	FAC-	4	1	FAC-	1.0-3.5 (2.3)	na								500,000	8,000,000	0.125	1,000,000	22.96	2.39%	11.47%			
BROLAT	BROPUR	BRLA4	BRLA4	<i>Bromus laetiflorus (B. altissimus)</i>	Earliest Brome	Gramineae	Ni P-Grass	5	-2	FACW-	7	-2	FACW-	4.0-6.0 (5.0)	na								7,000	112,000	0.015	1,680	0.04	0.29%	0.02%			
CXBREV	CXBREV	CABR10	CABR10	<i>Carex brevior</i>	Shorer Sedge	Cyperaceae	Ni P-Sedge	4	3	FACU	7	0	FAC	1.0-3.0 (2.0)	na								26,875	430,000	0.500	215,000	4.94	9.55%	2.47%			
DIAME	DIAME	DIAM	DIAM	<i>Diarrhena americana</i>	Beak Grass	Gramineae	Ni P-Sedge	10	3	[FACU]	7	-3	FACW	1.5-2.0 (1.8)	na								7,188	115,000	0.063	7,245	0.17	0.08%	0.08%			
EYCAN	EYCAN	ELCA4	ELCA4	<i>Elymus canadensis</i>	Canada Wild Rye	Gramineae	Ni P-Grass	4	1	FAC-	4	1	FAC-	2.0-4.0 (3.0)	na								3,000	48,000	0.031	1,488	0.03	0.59%	0.02%			
HYSPAT	EYVIR	ELV3	ELV3	<i>Elymus hystrix (Hystrix patina)</i>	Bottlebrush Rye	Gramineae	Ni P-Grass	5	1	UPL	5	1	UPL	2.0-3.0 (2.5)	na								7,500	120,000	1,000	120,000	2.75	19.10%	1.38%			
EYVIR	EYVIR	ELV3	ELV3	<i>Elymus virginicus</i>	Silky Wild Rye	Gramineae	Ni P-Grass	5	3	FACU	4	3	FACU	3.0-5.0 (4.0)	na								5,625	90,000	0.063	5,670	0.13	1.20%	0.07%			
FESOBT	FESOBT	FESU3	FESU3	<i>Festuca subverticillata (F. obtusa)</i>	Nodding Fescue	Gramineae	Ni P-Grass	4	-2	FACW-	4	-2	FACW-	1.5-3.0 (2.3)	na								5,750	92,000	2,000	220,000	5.05	38.20%	2.52%			
GLYSTR	GLYSTR	GLST	GLST	<i>Glyceria striata</i>	Fowl Mann Grass	Gramineae	Ni P-Grass	5	2	FACU+	5	2	FACU+	1.0-1.5 (1.3)	na								24,375	245,000	0.063	154,350	2.24	4.77%	1.12%			
JUNDUD	JUNDUD	JUDU2	JUDU2	<i>Juncus dallii</i>	Dudleys Rush	Juncaceae	Ni P-Rush	4	0	[FACU]	4	0	[FACU]	1.0-2.0 (1.5)	green								3,750,000	60,000,000	0.063	3,780,000	86.78	1.20%	1.77%			
JUNTEN	JUNTEN	JUTE	JUTE	<i>Juncus tenuis</i>	Slender Rush	Juncaceae	Ni P-Rush	0	2	[FACU+]	0	2	[FACU+]	0.72-1.3 (1.0)	green								3,000,000	48,000,000	0.063	3,024,000	69.42	1.20%	34.68%			
Graminoid totals																												5,236	8,718,933	200	100.00%	100.00%

SEED MIX 5

ACRONYMS

S&W	ILL	USDA	vPlants	scientific name	common name	family	type	C	index	acro	C	index	acro	height	color	M	A	M	J	A	S	O	N	seeds/oz	seeds/lb	lb/acre	seeds/acre	seeds/ftsq	% by weight	% by count
AGRPER	AGRPER	AGPE	AGPE	<i>Agrostis perennis</i>	Upland Bent Grass	Gramineae	Ni P-Grass	3	1	FAC-	4	1	FAC-	1.0-3.5 (2.3)	na								500,000	8,000,000	0.125	1,000,000	22.96	2.39%	11.47%	
BROLAT	BROPUR	BRLA4	BRLA4	<i>Bromus laetiflorus (B. altissimus)</i>	Earliest Brome	Gramineae	Ni P-Grass	5	-2	FACW-	7	-2	FACW-	4.0-6.0 (5.0)	na								7,000	112,000	0.015	1,680	0.04	0.29%	0.02%	
CXBREV	CXBREV	CABR10	CABR10	<i>Carex brevior</i>	Shorer Sedge	Cyperaceae	Ni P-Sedge	4	3	FACU	7	0	FAC	1.0-3.0 (2.0)	na								26,875	430,000	0.500	215,000	4.94	9.55%	2.47%	

Ms. Kelcey Traynoff
Lake County Stormwater Management Commission
500 W. Winchester Road, Suite 201
Libertyville, IL 60048



Re: Stormwater Infrastructure Repair Fund
Beach Park Ravine and Streambank Site Restoration Project Proposal

Dear Ms. Traynoff,

Pursuant to the attached Stormwater Infrastructure Repair Fund Eligibility Authorization Form, this document shall serve as the detailed project description, Statement of Benefits, and Statement of Compliance for the Beach Park Ravine and Streambank Site Restoration project.

Statement on Benefits, including Quantifiable Benefits

Below is discussion of the project benefits based on the various Project Area Damages listed in the SIRF Eligibility Authorization Form.

1. Structural Damage

SMC will receive funds from the Village of Beach Park for this project as a part of , and has also been awarded funds associated with FEMA's Hazard Mitigation Assistance Program to acquire flood-prone properties at 9950 and 9968 Marguerite Lane in Beach Park, IL to demolish and clear any remaining structures, converting the subject properties to permanent "green space".

This section of the Bull Creek ravine is experiencing severe erosion which jeopardized the safety of the two identified properties. The properties at 9950 and 9968 Marguerite Lane have been acquired and the demolition of the properties will be completed under a separate contract, to allow for restoration of the ravine side slope to minimize the risk of future bank failure and to protect the adjoining residences from a similar fate.

The project includes the stabilization of approximately 235 linear feet of streambank and the restoration of approximately 7,755 face feet of ravine bluff. Based on the recently completed topographic survey, the Bull Creek water surface elevation was at approximately elevation of 594, and the "top of bank" is at approximately 595. The top of the ravine was found to be elevation 632. There is 38 feet of fall from top to bottom.

Structural Damage: Previous work in the immediate vicinity of our project section of Bull Creek in 2003 and 2004, required the installation of protection measures for sanitary sewer lines that were installed 2.5 feet underground crossing under Bull Creek. The lines became exposed due to creek erosion and were exposed by 12-18 inches, before the stabilization work was done by the North Shore Sanitary District and US Army Corps of Engineers. Stream bed erosion is an ongoing problem that requires attention in the Dead River watershed, downstream sedimentation buildup has the capacity to impact water flow as a recurrent concern. Additional infrastructure structural concerns from erosion

sedimentation and debris jams is downstream of the project area, Bull Creek passes through a culvert system under the Union Pacific Railroad.

Other structural impacts include the protection of past stabilization and restoration projects implemented in this reach of Bull Creek. Restoration has occurred in multiple phases from 2002-2018.

Phase 1: The first project phase included a survey of the stream reach, development of a stream restoration plan, tree and shrub removal, and installation of four riffles in the downstream area of the project reach.

Phase 2: The second project phase included the implementation of additional bioengineering practices in 1,500 linear feet of stream corridor as called for in the stream restoration design completed in phase 1. These practices included: grade stabilization using artificial riffles, the excavation and stabilization of floodplain terraces; streambank reshaping and stabilization using rock toe protection and coir products; and bluff stabilization using a-jacks and vegetated geogrid lifts. Native vegetation was included in all practices.

Phase 3: The third project phase included the removal of a large debris jam located just upstream of the phase 2 restoration work.

Phase 4: Over 1,500 linear feet of riparian corridor buffer was improved during 2016-2018 utilizing bioengineering practices: streambank stabilization stone toes were installed; artificial riffle installation and repairs were completed to stabilize the stream bed

2. Flooded Buildings

Buildings are not directly flooded. The buildings on the subject properties are perched above the creek, but the **Flood Hazard Reduction Benefits** of this project will benefit the structural integrity of the ravine bluffs and adjacent residential buildings. Stormwater, flooding and stream volume and velocity have contributed to the instability of the bluff system for this project. The bluff was assessed in 2008 Dead River Watershed- Based Plan as having a High level of streambank erosion, (Lateral Recession Rates of Severe to Very Severe have an estimated loss of 0.3-0.5+ ft/ year of soil). The streambank is void of herbaceous vegetation with severe vegetative overhang from trees on the top of the slope. Many fallen trees, erosion and changes in cultural features have caused massive slips and washouts. The watershed is 88% urbanized land use, and urban development has increased steadily since the mid-20th century, but the rate of land conversion from agriculture to urban (mainly residential) land use was likely greatest during the last 40 years.

3. Health & Safety

Based on the identified streambank and ravine structural pressures discussed in Item 2 and the Structural damage discussed in Item 1, the Village of Beach Park issued a determination on January 20, 2020 that this building is an unsafe structure (Beach Park Municipal Code Title 15 Chapter 15.21 Property Maintenance Code, 15.21.010 Administration, H Unsafe Structures and Equipment, 1 General, 1a Unsafe Structures and 1c Structure Unfit for Human Occupancy).

15.21 .010 H 1. General- When a structure or equipment is found by the code official to be unsafe, or when a structure is found unfit for human occupancy, or is found unlawful, such structure shall be condemned pursuant to the provisions of this chapter

15.21.010 H1a. Unsafe Structures- An unsafe structure is one that is found to be dangerous to the life, health, property or safety of the public or the occupants of the structure by not providing minimum safeguards to protect or warn occupants in the event of fire, or because such structure contains unsafe

equipment or is so damaged, decayed, dilapidated, structurally unsafe or of such a faulty construction or unstable foundation, that a partial or complete collapse is possible.

15.21.010 H1c. Structure Unfit For Human Occupancy- A structure is unfit for human occupancy whenever the code official finds that such structure is unsafe, unlawful or, because of the degree to which the structure is in disrepair or lacks maintenance, is unsanitary, vermin or rat infested, contains filth and contamination, or lacks ventilation, illumination, sanitary or heating facilities or other essential equipment required by this chapter, or because the location of the structure constitutes a hazard to the occupants of the structure or to the public.

The structure was also placarded with wording indicating that "This Structure is Unsafe and Its Occupancy Has Been Prohibited by The Code Official"

4. Road Flooding

No road impacts

5. Disruption of Revenue

The affected area are residential properties, no commercial areas are affected.

6. Parking Lot Flooding

No parking lot areas are within the affected areas.

7. Nuisance Flooding

This project is not impacted by nuisance flooding, nor does it experience blocked transportation access due to flooding. This project may alleviate major nuisance flooding in the creek system if downstream sedimentation can be attributed to this project.

Statement of Compliance with SMC Policies, Local Plans & Ordinance

Conceptual plans have been prepared outlining the proposed structural stabilization improvements at the project location. During the engineering design phase, detailed plans will be prepared in accordance with the Lake County Watershed Development Ordinance and submitted for review.

The conceptual plans have been submitted to the Army Corp of Engineers and have been approved under the Regional Permit 5 (Aquatic Habitat Restoration, Establishment, and Enhancement) and the General Conditions for all activities authorized under the Regional Permit Program.

Please review the attached information and call if you have any questions.

Sincerely,
Lake County Stormwater Management Commission



Ernesto Huaracha
Water Resource Professional

Applicant: Lake County Stormwater Management Commission

Project Title: Beach Park Ravine and Streambank Site Restoration Project

Statement of Compliance

This project will comply with all Lake County Stormwater Management Commission policies, local plans and ordinances, and applicable state and federal regulations.

Signature:  _____

Printed Name: Ernesto Huaracha

Position: Water Resource Professional

Date: 12/19/2020
