

PUBLIC NOTICE

APPLICATION FOR PERMIT

**U.S. ARMY
CORPS OF ENGINEERS
CHICAGO DISTRICT**

PUBLIC NOTICE/APPLICATION NUMBER: LRC-2024-00422

COMMENT PERIOD BEGINS: October 3, 2024

COMMENT PERIOD EXPIRES: November 2, 2024

PUBLIC NOTICE

U.S. Army Corps of Engineers

APPLICANT

Dan Repay
Little Cal River Basin Development Commission
900 Ridge Rd. Suite H
Munster, Indiana 46321

PROPOSED ACTION

Proposal to repair areas of eroded and damaged streambank of Hart Ditch with grading and installation of shoreline stabilization practices. (see attached drawings). A detailed description of this proposal is provided on page 2 of this notice.

LOCATION OF PROPOSED ACTION

Hart Ditch north of Fran-Lin Parkway in Munster, Lake County, Indiana, 46321 (Latitude 41.54505, Longitude -87.48707).

Interested parties are hereby notified that an application has been received for a Department of the Army permit for the activity described herein and as shown on the attached drawings. You are invited to provide your comments by **November 2, 2024**, on the proposed work, which will become part of the record and will be considered in the decision. A permit will be issued or denied under Section 404 of the Clean Water Act of 1972 (33 U.S.C. 1344).

Written comments shall be mailed to:

U.S. Army Corps of Engineers
Chicago District, Regulatory Branch
Attn: **LRC-2024-00422**, Mr. Aaron Spencer
231 South LaSalle Street, Suite 1500

Chicago, Illinois 60604-1437

It should be noted that ALL comments received by this office (via hard copy or electronic) will only be accepted with the full name and address, and email address, if available of the individual commenting, and must be received by the close of the public notice period. Electronic comments may be sent to the project manager at Aaron.D.Spencer@usace.army.mil.

PROJECT DESCRIPTION

The project purpose is to repair areas of eroded and damaged streambank with grading and installation of shoreline stabilization practices. The project stream length is approximately 950-feet and is proposed to have both toe stabilization and full bank stabilization. A 2:1 (H:V) slope will be designed in the project locations where feasible, however, a 1.5:1 (H:V) slope may need to be designed in certain locations to not disturb/excavate upland areas which consist of backyards or decrease the cross-sectional conveyance area of the channel at the lower bank while maintaining the waterway cross sectional opening. Within the 950 linear feet of stream channel, 1,900 feet of shoreline improvements will be installed discharging approximately 700 cubic yards of riprap stone impacting 0.25 acres. Native vegetation will be installed along the streambank above the riprap stone.

Hart Ditch has experienced flooding and erosion that has resulted in significant erosion of the stream bank and subsequent risk to homes and infrastructure. Due to the extreme risk of catastrophic slope failure, the Lake County Surveyors Office directed Hart Ditch be restored within this reach of channel.

AVOIDANCE & MINIMIZATION

The applicant has stated the following concerning avoidance and minimization of impacts to Waters of the United States:

“The stabilization project is only being completed where there is active erosion.”

MITIGATION

The applicant has stated the following concerning compensatory mitigation for unavoidable impacts to Waters of the United States:

“This project will not cause the loss of more than 0.1-acres of wetlands or streams. Significant erosion over the past several decades has degraded the streambank in the area. The proposed project will restore the streambanks to a more stable and natural side slope while maintaining the waterway cross sectional opening. Private property and infrastructure along the waterway is at future risk if no corrective action is taken. Only the lower few feet of the waterway is to be lined with stone riprap, which over the years will fill in with sediment and support vegetation, as has been seen at other nearby streambank stabilization projects. The remainder of the streambank will be enhanced with native plants. The project will result in a net water quality benefit due to

the significant reduction in sediment loading to the waterway. And the native plantings will help improve floristic diversity in the area.”

The Corps has not verified the adequacy of this mitigation proposal at this time and will make the final determination on whether the proposed mitigation is appropriate and practicable in accordance with 33 CFR Part 332.

REGULATORY AUTHORITY

This proposed action will be reviewed according to the provisions Section 404 of the Clean Water Act of 1972.

JURISDICTION

This application will be reviewed according to the provisions of Section 404 of the Clean Water Act of 1972 due to placement of fill below the Ordinary High Water Mark of Hart Ditch assumed by the applicant to be jurisdictional since the applicant has not requested an Approved Jurisdictional Determination.

EVALUATION FACTORS

The decision whether to issue a permit will be based on an evaluation of probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments.

All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people. In addition, if the proposed activity involves the discharge of dredged or fill material into waters of the United States, the evaluation of the impact on the public interest will include application of Section 404(b)(1) guidelines (40 CFR 230) promulgated by the U.S. Environmental Protection Agency.

The Corps of Engineers is also soliciting comments from the public, Federal, state and local agencies, Indian tribes, and other interested parties in order to consider and evaluate the potential impacts of the proposed activity. Once this office completes a review of the comments received, it will be determined whether to issue, modify, condition, or deny a permit for this proposal.

To prepare this decision, comments are taken into consideration to assess impacts on the public interest factors listed above, as well as endangered species, historic properties, water quality, and general environmental effects. Comments will be used in the preparation of an Environmental Assessment and/or Environmental Impact Statement pursuant to the National Environmental

Policy Act. A determination concerning the need for a public hearing will also be based on the comments received.

PRELIMINARY EVALUATION OF SELECTED FACTORS

WATER QUALITY:

A Department of the Army permit, if otherwise warranted, will not be issued for this project until a Section 401 Water Quality Certification (WQC) from the Indiana Department of Environmental Management (IDEM) is on file in this office or is considered waived. The applicant is responsible for obtaining the certification from IDEM. This public notice serves as the public notice for the application for a Clean Water Act (CWA) Section 401 Water Quality Certification. IDEM will review this proposal for compliance with the applicable provisions of Section 301, 302, 303, 306 and 307 of the CWA, including the state water quality standards currently set forth at 327 IAC 2. They will consider comments regarding this proposal postmarked by the closing date of this notice.

Comments to IDEM should be addressed to:

IDEM, Office of Water Quality,
Section 401 WQC Program
100 N. Senate Ave., IGCN 1255
Indianapolis, Indiana 46204-2251

ENDANGERED AND THREATENED SPECIES:

The Corps of Engineers has determined that the proposed activity would not affect any federally-listed endangered or threatened species or critical habitat for any endangered or threatened species, pursuant to the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). Therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act does not appear to be warranted at this time.

HISTORIC PROPERTIES/CULTURAL RESOURCES:

Preliminary review indicates that the proposed activity is not likely to adversely affect any historic property which is listed, or eligible for listing, on the National Register of Historic Places.

ENVIRONMENTAL IMPACT STATEMENT

A preliminary determination has been made that an environmental impact statement is not required for the proposed work.

PUBLIC HEARING

Any person may request in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearing shall state with particularity the reasons for holding a public hearing. A request for a hearing may be denied if

substantive reasons for holding a hearing are not provided or if there is otherwise no valid interest to be served.

It should be noted that materials submitted as part of the permit application become part of the public record and are thus available to the general public under the procedures of the Freedom of Information Act (FOIA). Individuals may submit a written request to obtain materials under FOIA or make an appointment to view the project file at the Chicago District Corps of Engineers Office of Counsel.

Interested parties wishing to comment on the proposed activity must do so in writing no later than November 2, 2024. It is presumed that all parties receiving this notice will wish to respond to this public notice; therefore, a lack of response will be interpreted as meaning that there is no objection to the project as described. This public notice is not a paid advertisement and is for public information only. Issuance of this notice does not imply Corps of Engineers endorsement of the project as described.

If you have any questions, please contact Mr. Aaron Spencer of my staff by telephone at (312) 846-5540, or email at Aaron.D.Spencer@usace.army.mil. **It should be noted that ALL comments received by this office will only be accepted with the full name and address of the individual commenting.** You can also visit our website at <http://www.lrc.usace.army.mil/Missions/Regulatory.aspx>

LITTLE CALUMET RIVER BASIN DEVELOPMENT COMMISSION

HART DITCH STABILIZATION NORTH OF FRAN LIN PARKWAY

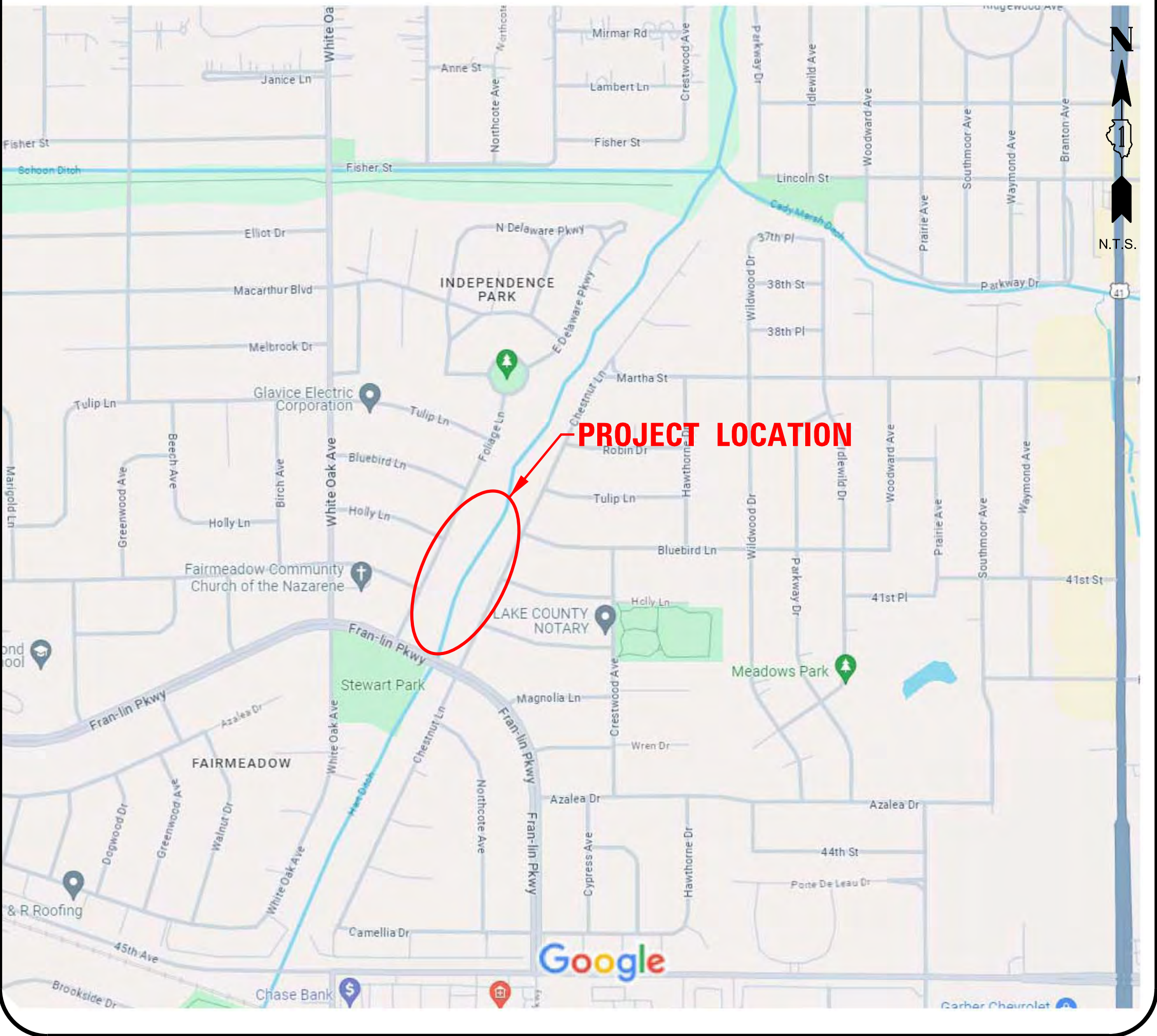
PHASE 1

MUNSTER, LAKE COUNTY, INDIANA

SHEET INDEX

- 1 COVER SHEET
- 2-3 GENERAL NOTES
- 4-5 EXISTING CONDITIONS/REMOVAL
- 6-7 PROPOSED CONDITIONS
- 8-9 SOIL EROSION/SEDIMENT CONTROL AND LANDSCAPING PLAN
- 10-13 CONSTRUCTION DETAILS

LOCATION / VICINITY MAP



STANDARDS

NOTE:
TOPOGRAPHY TAKEN FROM LAKE COUNTY, INDIANA
2018 LIDAR DATA.

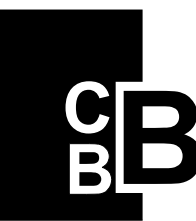


PREPARED FOR



**LITTLE CALUMET RIVER BASIN
DEVELOPMENT COMMISSION**
900 RIDGE ROAD
MUNSTER, INDIANA 46321
(219) 595-0599

PREPARED BY



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: 04/30/25

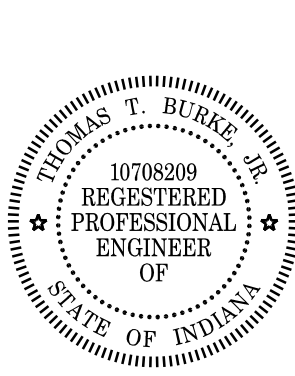
BENCHMARK

- SEE LAKE COUNTY SURVEYOR'S OFFICE BENCHMARK GUIDANCE, TOPOGRAPHY TAKEN FROM LAKE COUNTY, INDIANA 2018 LIDAR DATA.
- NAVD'88

LOCATION

PROJECT IS LOCATED IN TOWN OF MUNSTER, LAKE COUNTY, INDIANA.

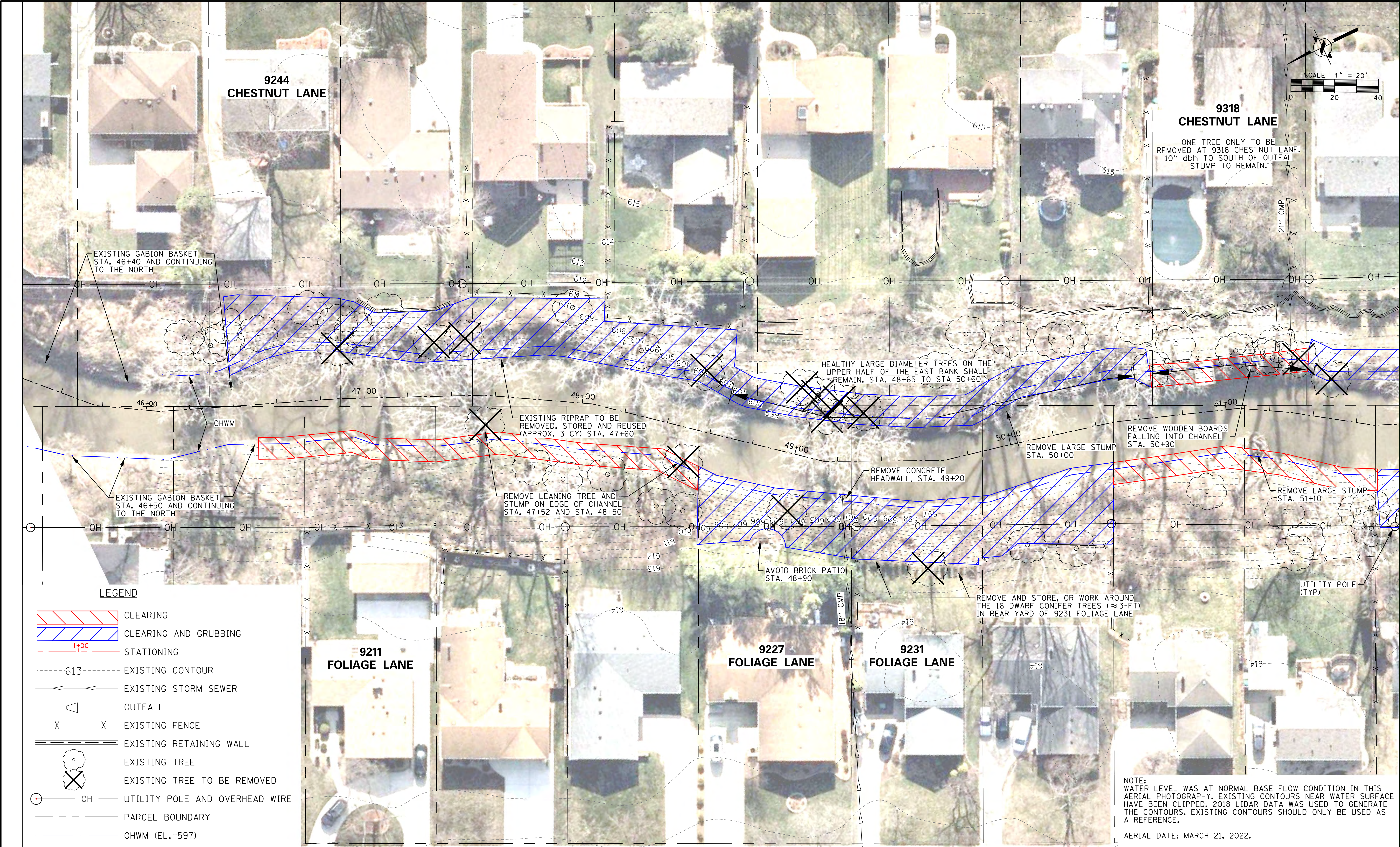
THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY AS WELL AS SUPERVISION/DIRECTION AND MEANS/METHODS OF CONSTRUCTION




ENGINEER _____ DATE 8/27/2024
THOMAS T. BURKE, JR., PH.D., P.E.
INDIANA REGISTRATION No. 10708209
EXPIRATION DATE: 7/31/24

THIS PLAN OR ANY PART THEREOF SHALL BE CONSIDERED VOID WITHOUT SIGNATURE, SEAL, AND EXPIRATION DATE OF SEAL OF THE ENGINEER.

**ISSUED FOR
PERMIT**



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

CLIENT:



**LITTLE CALUMET RIVER BASIN
DEVELOPMENT COMMISSION**

NO.	DATE	NATURE OF REVISION	CHKD.	MODEL:
1	8/28/2024	Initial Design	JLW	Default
2	8/28/2024	Revised Design	EAT	Default
3	8/28/2024	Final Design	TTB	Default
4	8/28/2024	As Built	TTB	Default
5	8/28/2024	As Built	TTB	Default
6	8/28/2024	As Built	TTB	Default
7	8/28/2024	As Built	TTB	Default
8	8/28/2024	As Built	TTB	Default
9	8/28/2024	As Built	TTB	Default
10	8/28/2024	As Built	TTB	Default

TITLE:

**EXISTING CONDITIONS
AND REMOVAL PLAN**

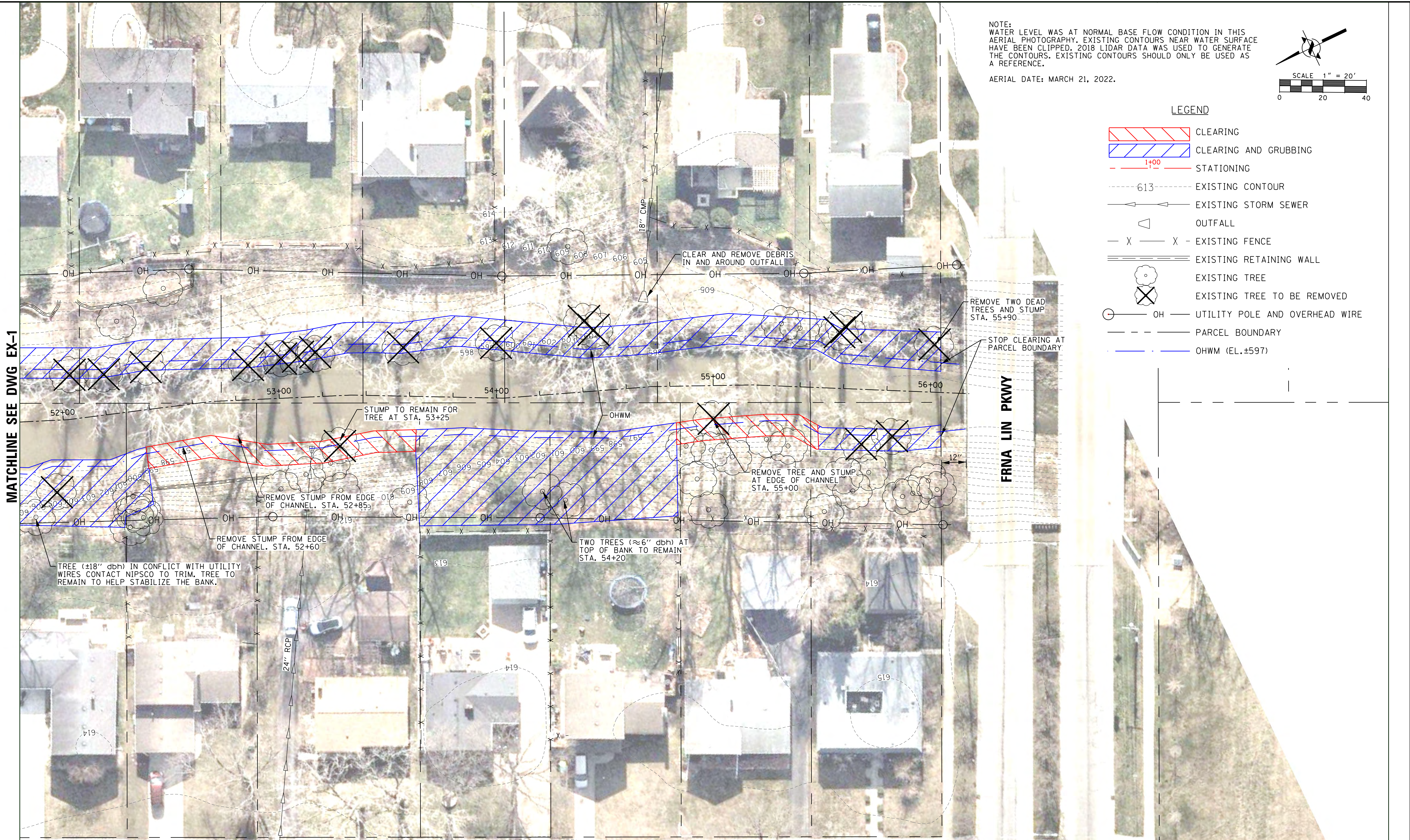
PROJ. # 930169.020240

DATE: 8/28/2024

SHEET 4 OF 13

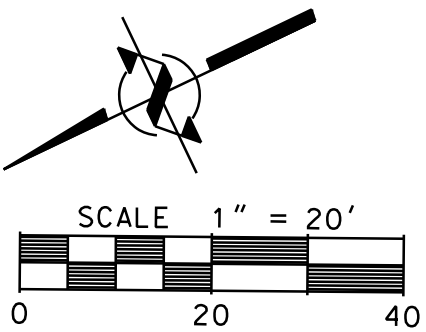
DRAWING NO.

EX-1



NOTE:
WATER LEVEL WAS AT NORMAL BASE FLOW CONDITION IN THIS
AERIAL PHOTOGRAPHY. EXISTING CONTOURS NEAR WATER SURFACE
HAVE BEEN CLIPPED. 2018 LIDAR DATA WAS USED TO GENERATE
THE CONTOURS. EXISTING CONTOURS SHOULD ONLY BE USED AS
A REFERENCE.

AERIAL DATE: MARCH 21, 2022.

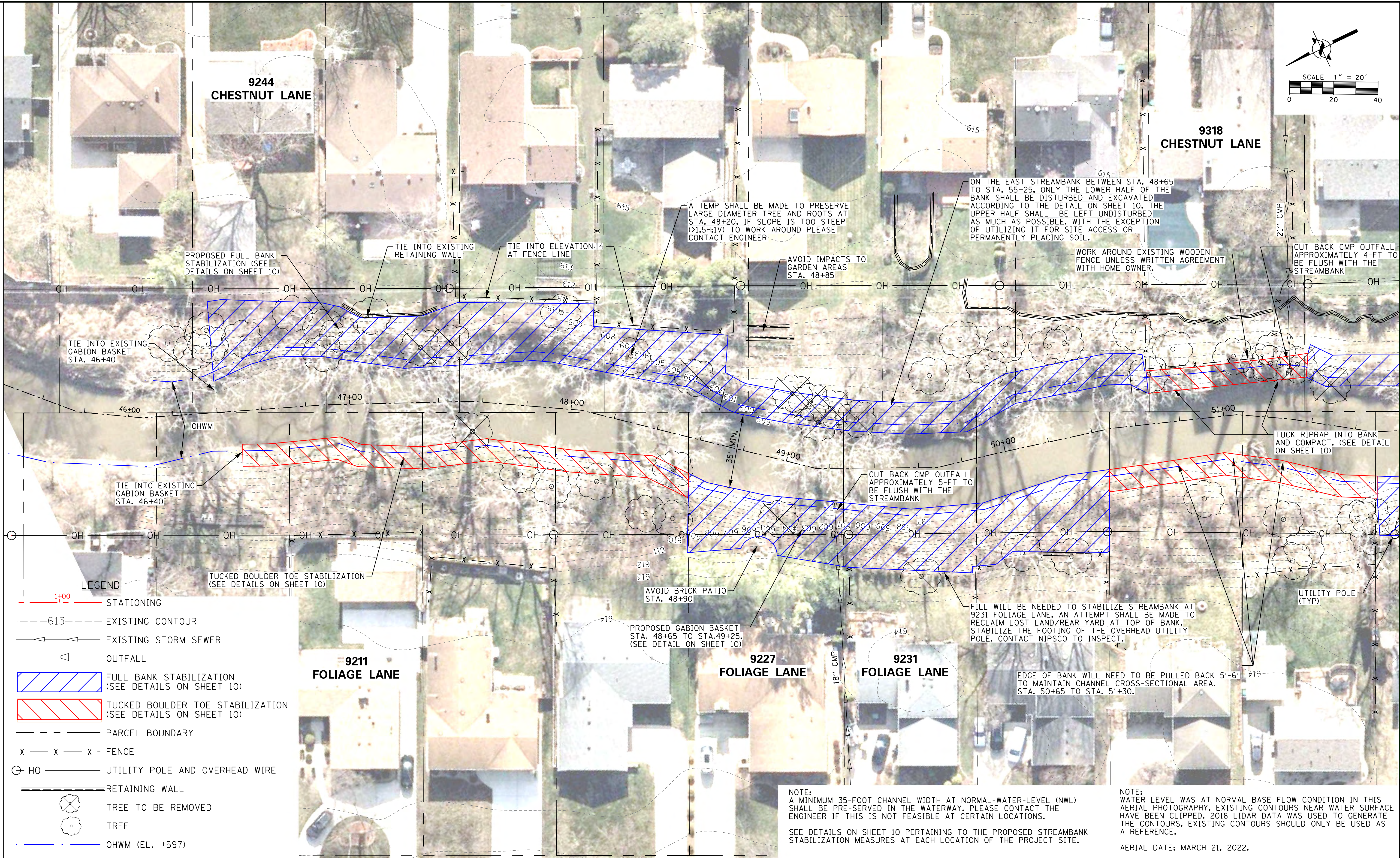


LEGEND

- CLEARING
- CLEARING AND GRUBBING
- STATIONING
- 613----- EXISTING CONTOUR
- EXISTING STORM SEWER
- OUTFALL
- X - EXISTING FENCE
- ===== EXISTING RETAINING WALL
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- OH ----- UTILITY POLE AND OVERHEAD WIRE
- PARCEL BOUNDARY
- OHWM (EL.±597)

MATCHLINE SEE DWG EX-1

FRNA LIN PKWY



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

CLIENT:



**LITTLE CALUMET RIVER BASIN
DEVELOPMENT COMMISSION**

NO.	DATE	NATURE OF REVISION	CHKD.	MODEL:
1	8/28/2024	Initial Design	JLW	Default
2			EAT	
3			TTB	
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5				
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10				

TITLE:

PROPOSED PLAN

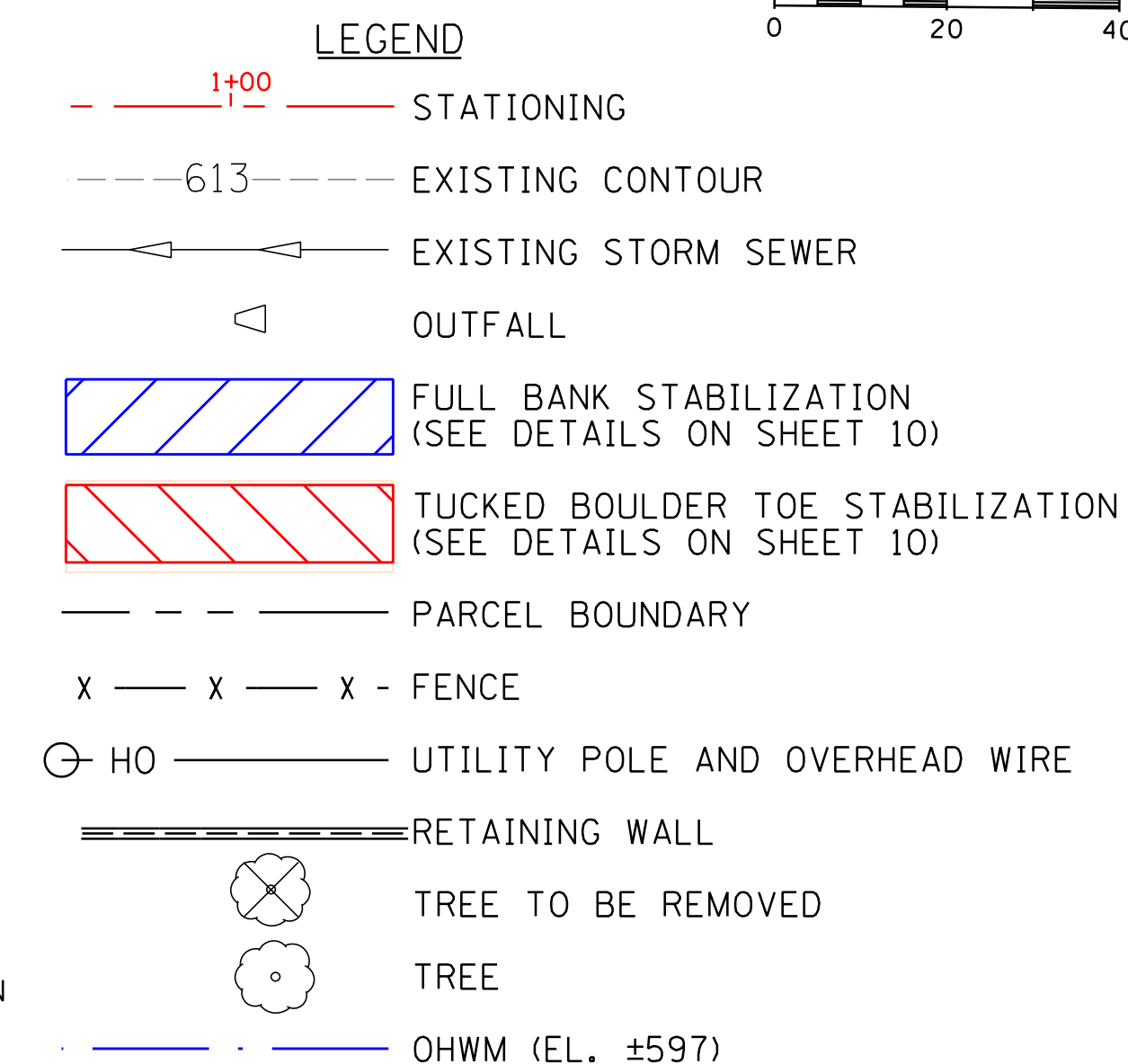
PROJ. # 930169.020240

DATE: 8/28/2024

SHEET 6 OF 13

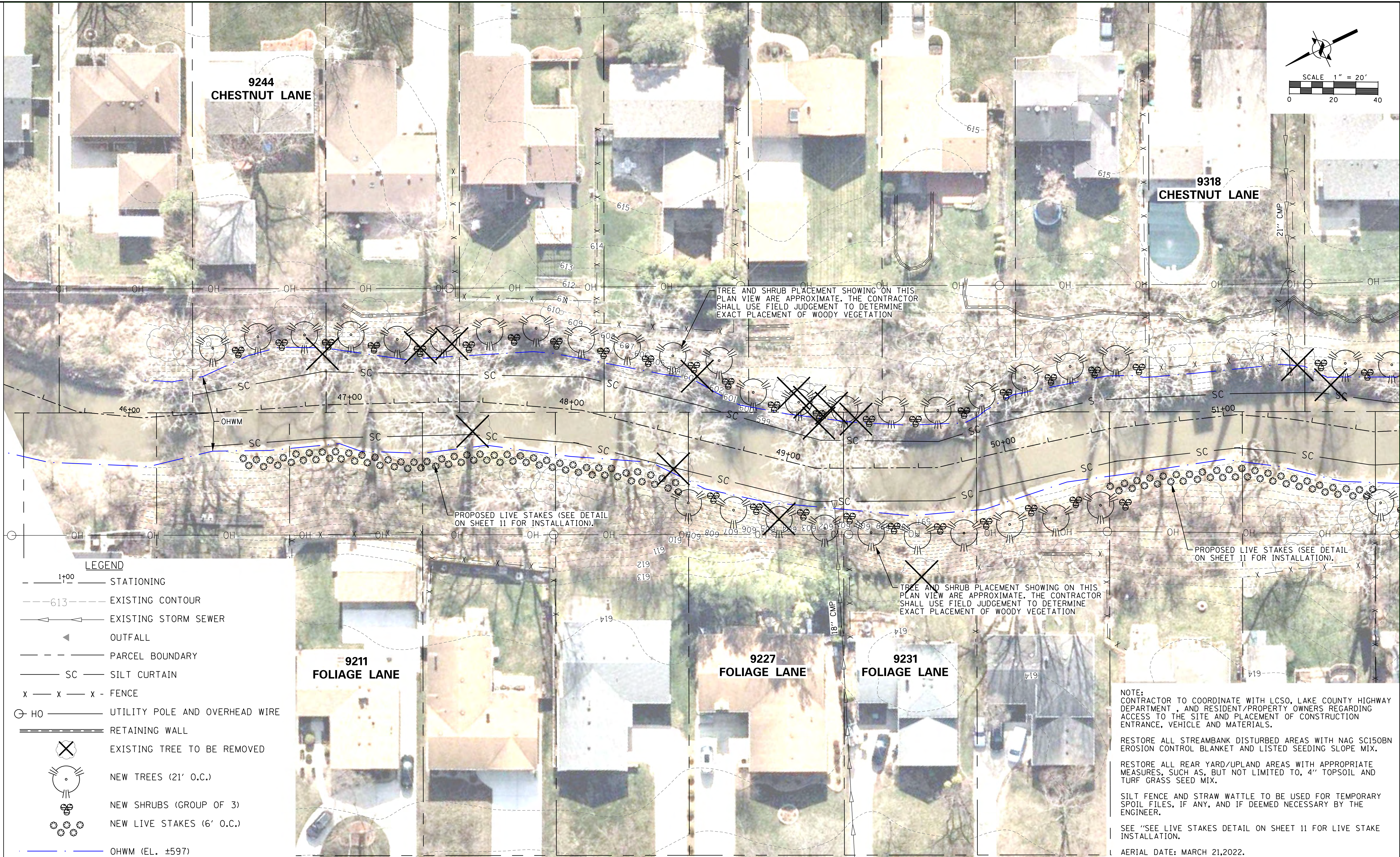
DRAWING NO.

PRO-1



AERIAL DATE: MARCH 21, 2022.

ERNA I IN PKWY



MATCHLINE SEE DWG SESC-2

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

CLIENT:



**LITTLE CALUMET RIVER BASIN
DEVELOPMENT COMMISSION**

NO.	DATE	NATURE OF REVISION	CHKD.
FILE NAME	N:\LCSO IN\930169.020240\Water\Plan Set\08_930169.020240_SESC-1.dgn		

DSGN.	JLW
DWN.	EAT
CHKD.	TTB
SCALE:	20'
PLOT DATE:	8/28/2024
CAD USER:	elmo toda
MODEL:	Default

TITLE:

**SOIL EROSION/SEDIMENT CONTROL
AND LANDSCAPING PLAN**

PROJ. # 930169.020240

DATE: 8/28/2024

SHEET 8 OF 13

DRAWING NO.

SESC-1

NOTE:
CONTRACTOR TO COORDINATE WITH LCSO, LAKE COUNTY HIGHWAY
DEPARTMENT, AND RESIDENT/PROPERTY OWNERS REGARDING
ACCESS TO THE SITE AND PLACEMENT OF CONSTRUCTION
ENTRANCE, VEHICLE AND MATERIALS.

RESTORE ALL STREAMBANK DISTURBED AREAS WITH NAG SC150BN
EROSION CONTROL BLANKET AND LISTED SEEDING SLOPE MIX.

RESTORE ALL REAR YARD/UPLAND AREAS WITH APPROPRIATE
MEASURES, SUCH AS, BUT NOT LIMITED TO, 4" TOPSOIL AND
TURF GRASS SEED MIX.

SILT FENCE AND STRAW WATTLE TO BE USED FOR TEMPORARY
SPOIL FILES, IF ANY, AND IF DEEMED NECESSARY BY THE
ENGINEER.

SEE "SEE LIVE STAKES DETAIL ON SHEET 11 FOR LIVE STAKE
INSTALLATION.

AERIAL DATE: MARCH 21, 2022.



1+00

STATIONING

613

EXISTING CONTOUR

EXISTING STORM SEWER

OUTFALL

PARCEL BOUNDARY

SC

SILT CURTAIN

FENCE

UTILITY POLE AND OVERHEAD WIRE

RETAINING WALL

EXISTING TREE TO BE REMOVED

NEW TREES (21' O.C.)

NEW SHRUBS (GROUP OF 3)

NEW LIVE STAKES (6' O.C.)

OHWM (EL. ±597)

1"

20'

40'

SCALE

1" = 20'

NOTE:
CONTRACTOR TO COORDINATE WITH LCSO, LAKE COUNTY HIGHWAY DEPARTMENT, AND RESIDENT/PROPERTY OWNERS REGARDING ACCESS TO THE SITE AND PLACEMENT OF CONSTRUCTION ENTRANCE, VEHICLE AND MATERIALS.

RESTORE ALL STREAMBANK DISTURBED AREAS WITH NAG SC150BN EROSION CONTROL BLANKET AND LISTED SEEDING SLOPE MIX.

RESTORE ALL REAR YARD/UPLAND AREAS WITH APPROPRIATE MEASURES, SUCH AS, BUT NOT LIMITED TO, 4" TOPSOIL AND TURF GRASS SEED MIX.

SILT FENCE AND STRAW WATTLE TO BE USED FOR TEMPORARY SPOIL FILES, IF ANY, AND IF DEEMED NECESSARY BY THE ENGINEER.

SEE "SEE LIVE STAKES DETAIL ON SHEET 11 FOR LIVE STAKE INSTALLATION.

AERIAL DATE: MARCH 21,2022.

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

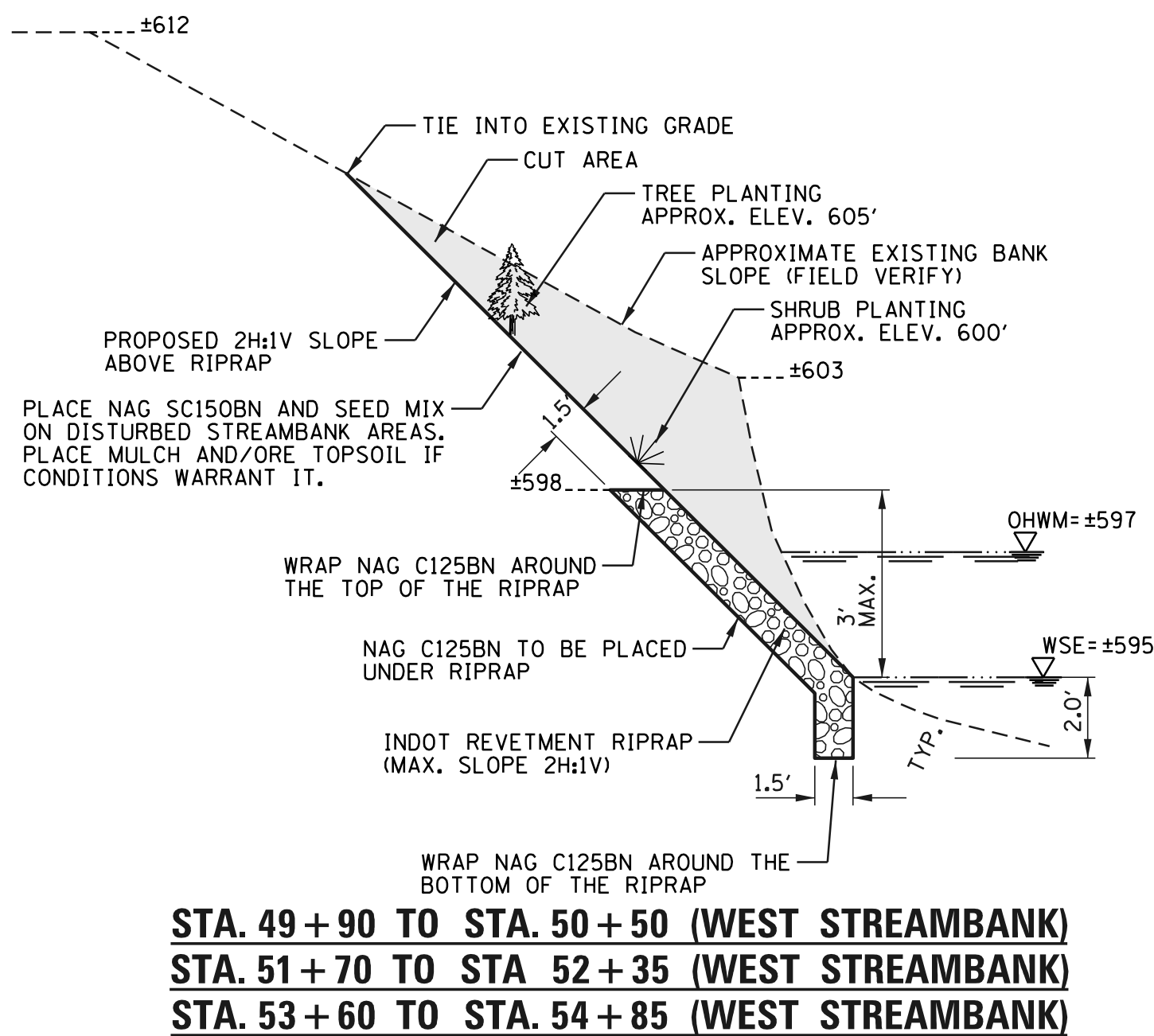
CLIENT:

**LITTLE CALUMET RIVER BASIN
DEVELOPMENT COMMISSION**

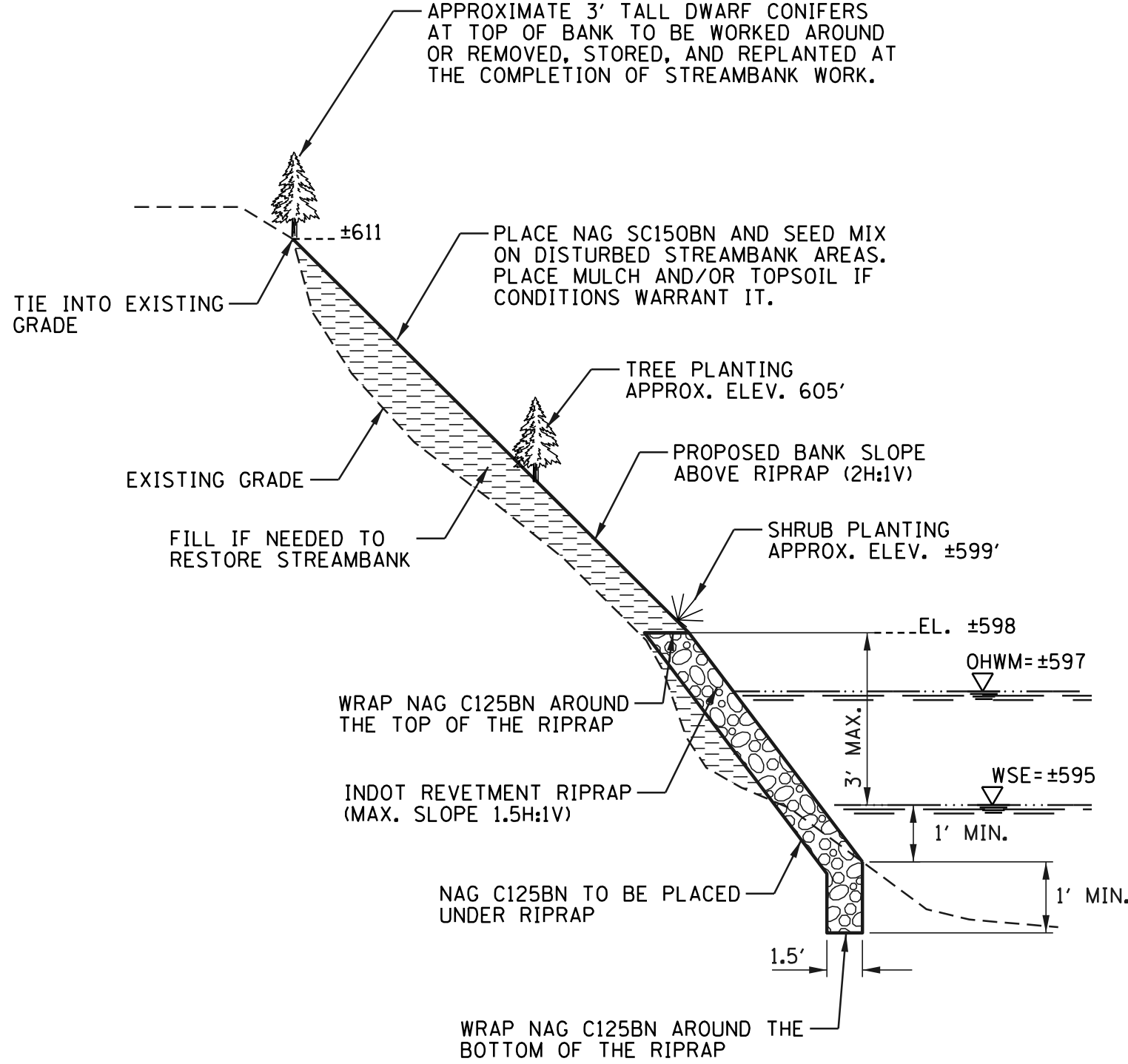
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NO.	DATE	NATURE OF REVISION			CHKD.	
FILE NAME	N:\LCSO IN\930169.020240\Water\Plan Set\09-930169.020240.SESC.2.dgn					

TITLE:
**SOIL EROSION/SEDIMENT CONTROL
AND LANDSCAPING PLAN**

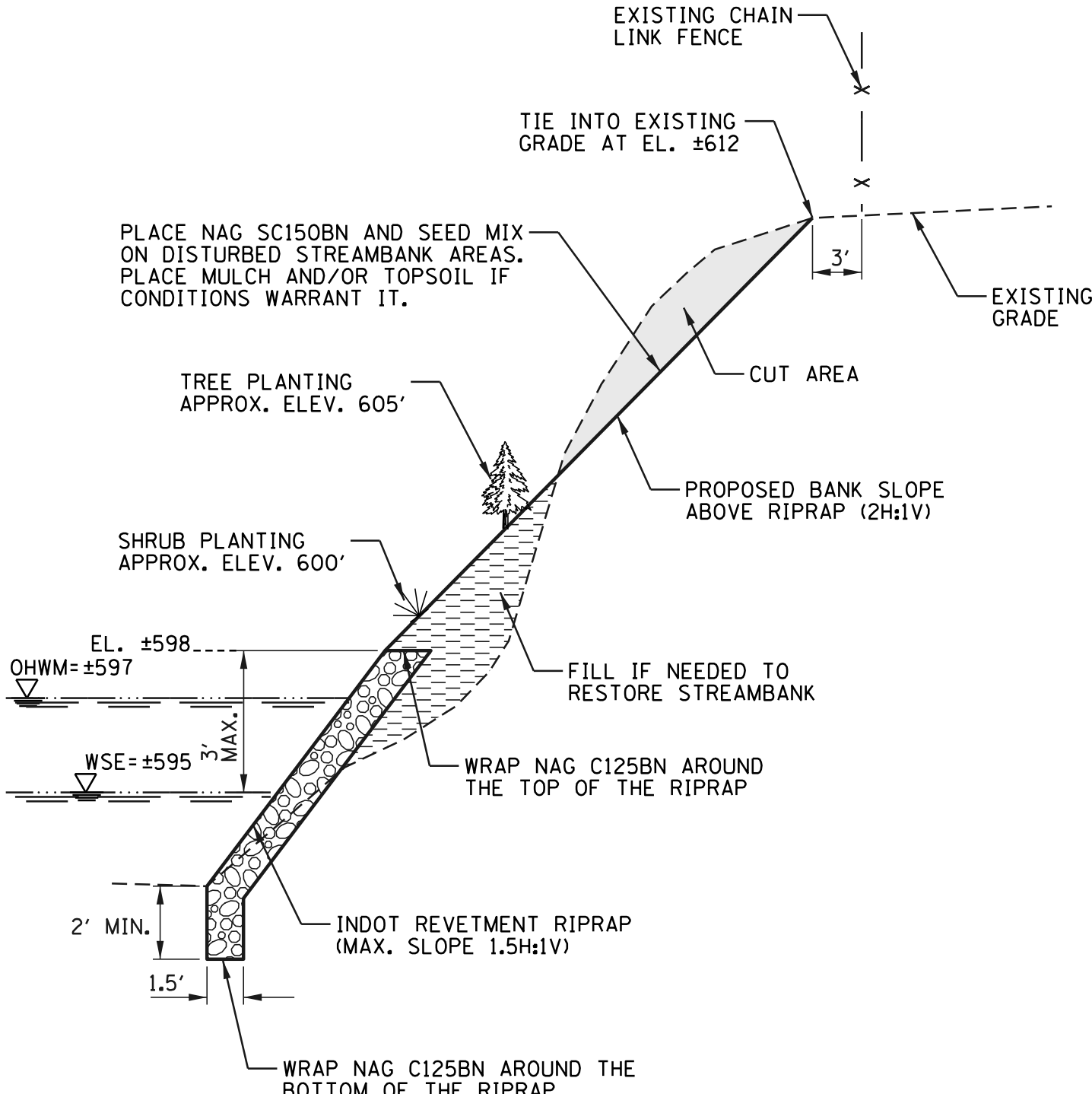
PROJ. # 930169.020240
DATE: 8/28/2024
SHEET 9 OF 13
DRAWING NO.
SESC-2



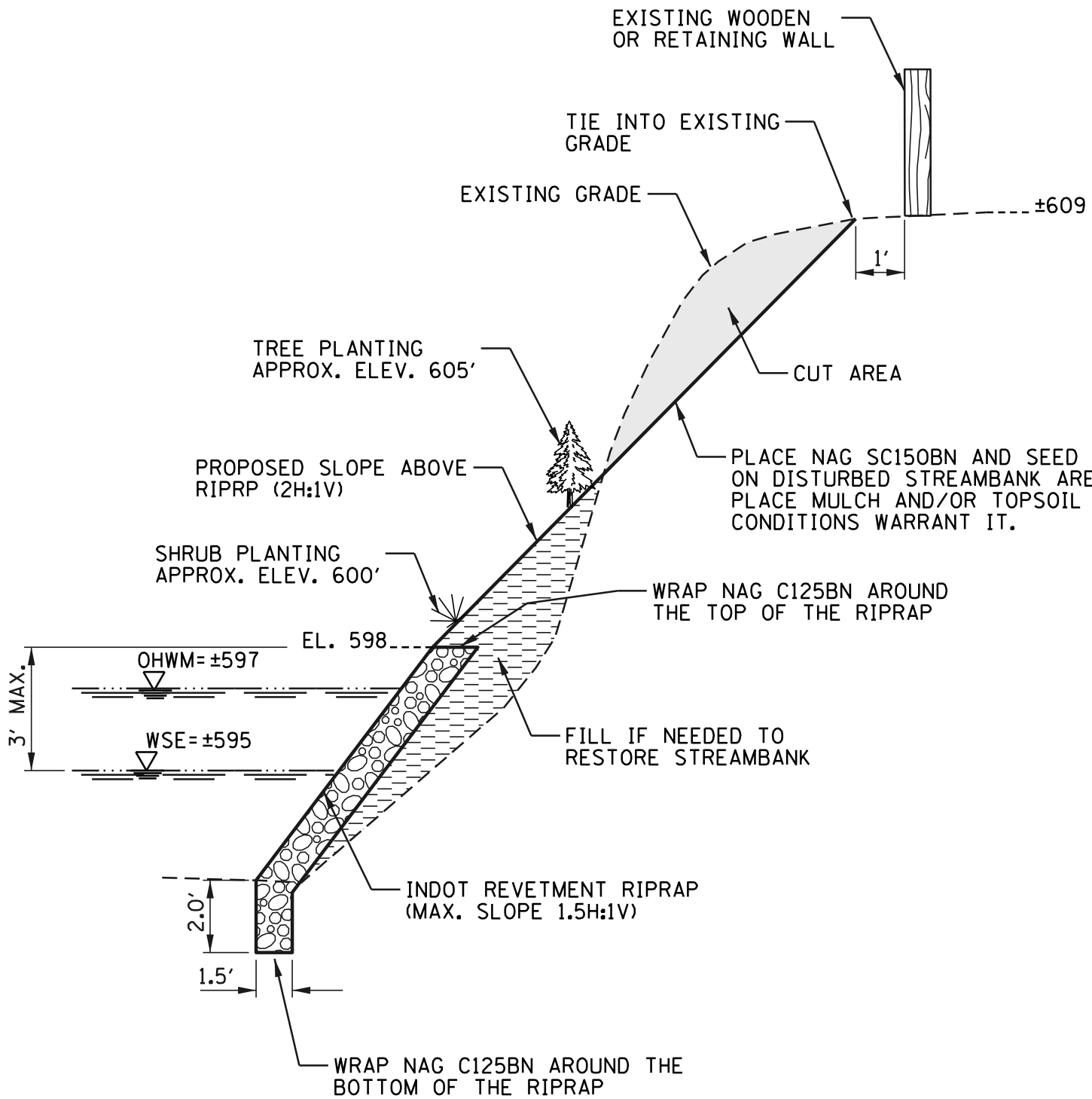
STA. 49+90 TO STA. 50+50 (WEST STREAMBANK)
STA. 51+70 TO STA. 52+35 (WEST STREAMBANK)
STA. 53+60 TO STA. 54+85 (WEST STREAMBANK)



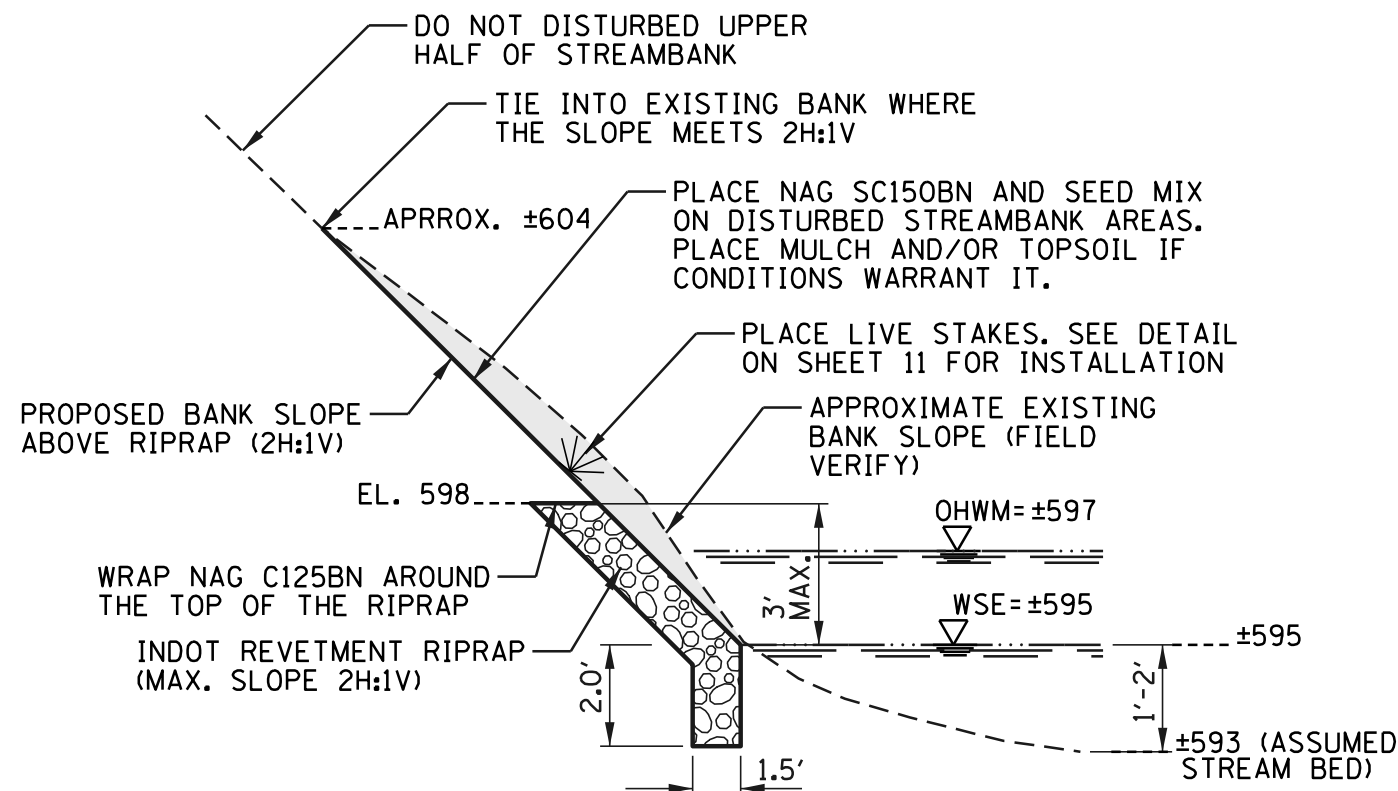
STA. 49+25 TO STA. 49+90 (WEST STREAMBANK)



STA. 47+50 TO STA. 48+05 (EAST STREAMBANK)

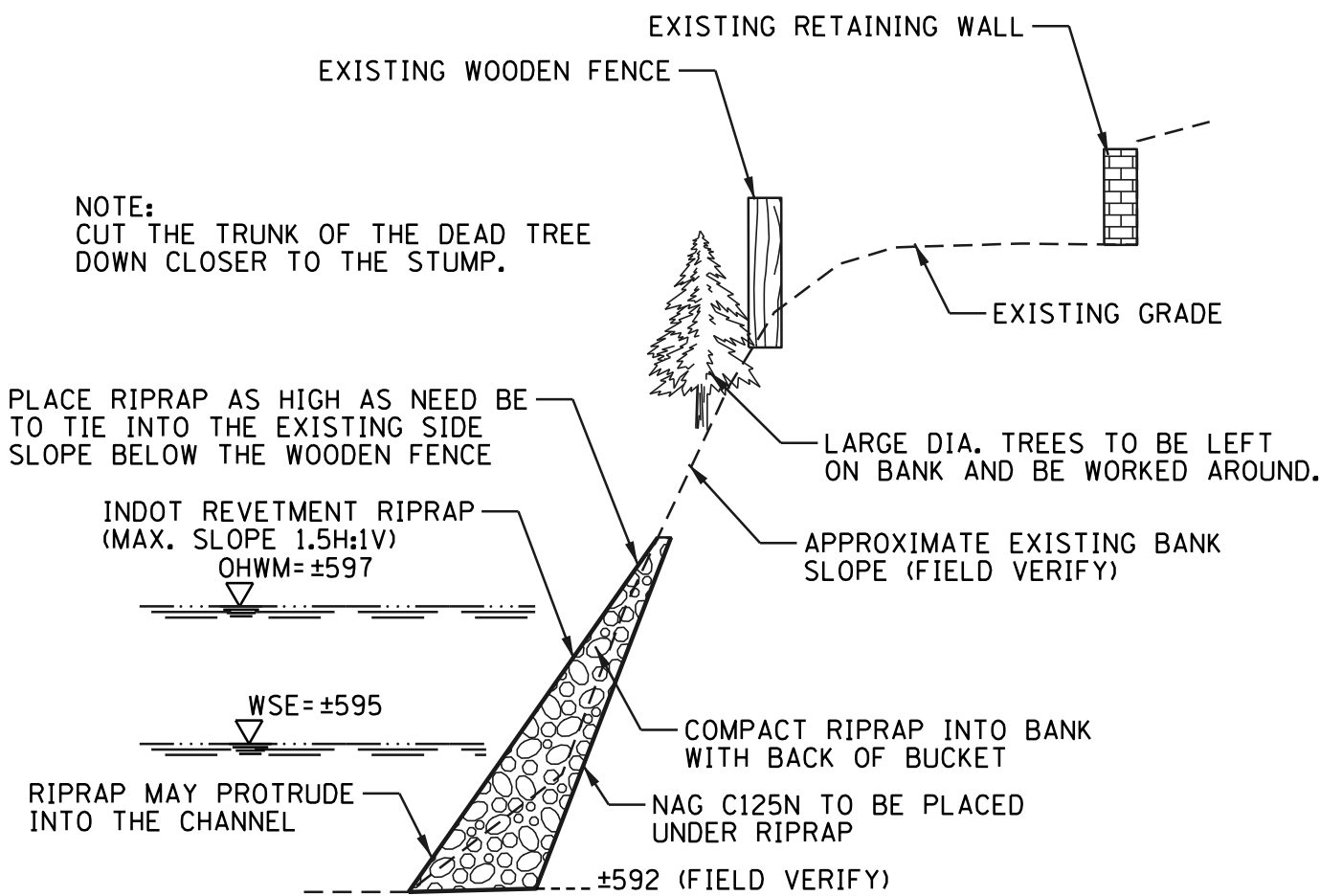


STA. 47+00 TO STA. 47+50 (EAST STREAMBANK)
STA. 48+05 TO STA. 48+65 (EAST STREAMBANK)

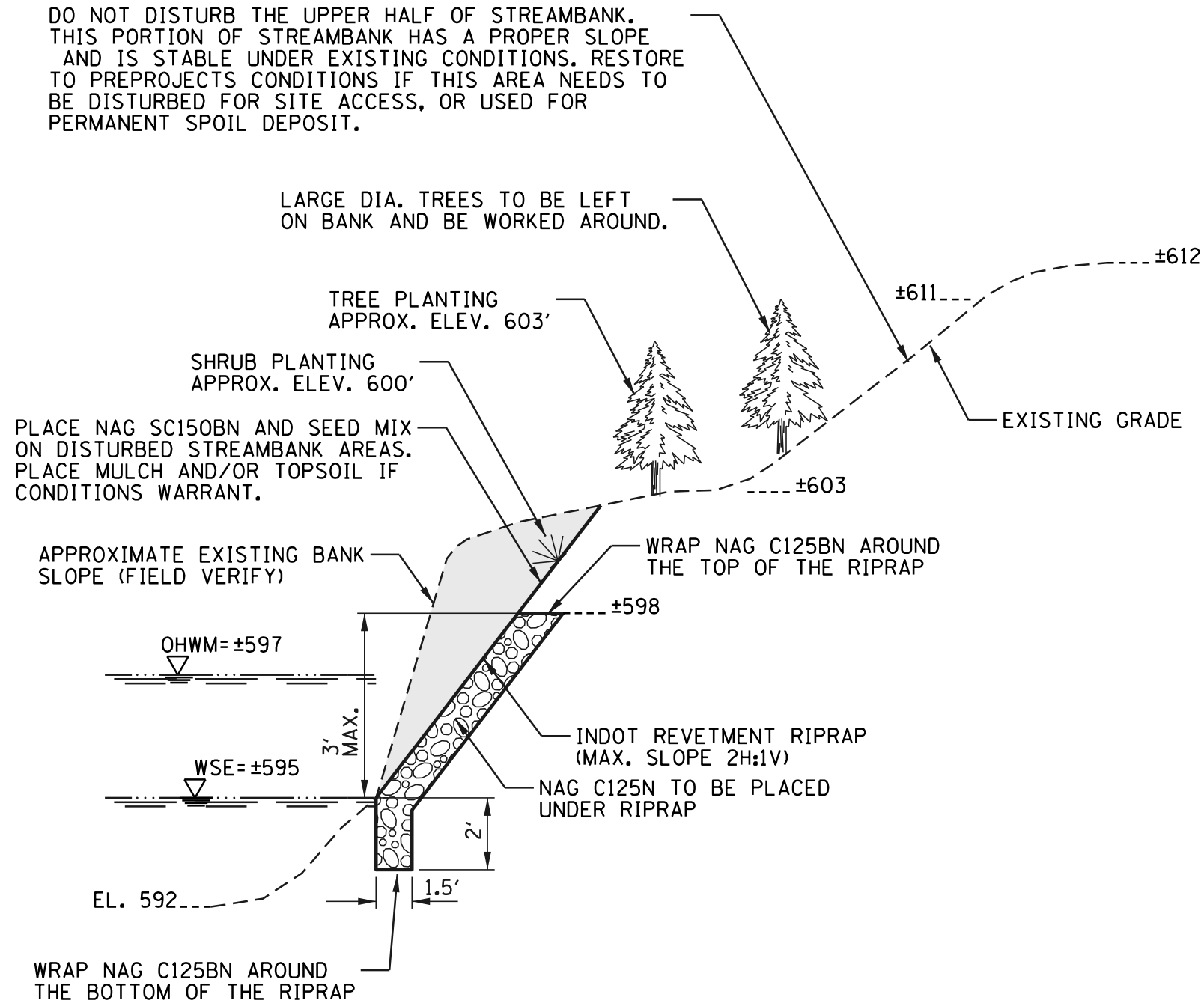


STA. 46+50 TO STA. 48+65 (WEST STREAMBANK)
STA. 50+50 TO STA. 51+70 (WEST STREAMBANK)
STA. 52+35 TO STA. 53+60 (WEST STREAMBANK)
STA. 54+85 TO STA. 55+45 (WEST STREAMBANK)

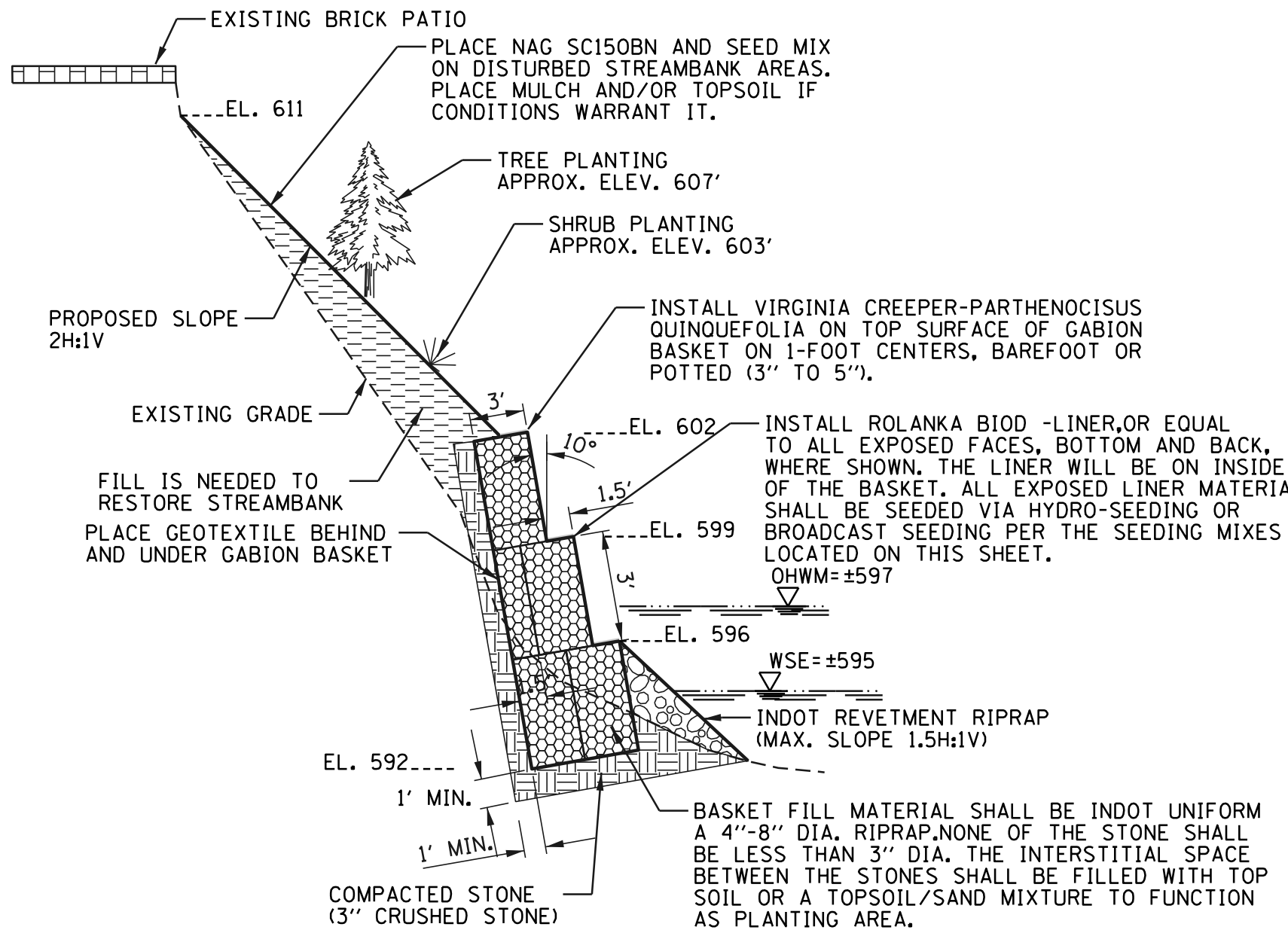
TUCKED BOULDER TOE



STA. 50+60 TO STA. 51+35 (EAST STREAMBANK)



STA. 48+65 TO STA. 50+60 (EAST STREAMBANK)
STA. 51+35 TO STA. 55+25 (EAST STREAMBANK)



STA. 48+65 TO STA. 49+25 (WEST STREAMBANK)
GABION BASKET RETAINING WALL

NOTE:
ALL CROSS-SECTIONS ARE DRAWN LOOKING DOWNSTREAM
(TO THE NORTH).



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



LITTLE CALUMET RIVER BASIN
DEVELOPMENT COMMISSION

				DSGN.	JLW	
				DWN.	EAT	
				CHKD.	TTB	
				SCALE:	N.T.S.	
				PLOT DATE:	8/27/2024	
				CAD USER:	elmo toda	
				CHKD.	MODEL:	Default
NO.	DATE	NATURE OF REVISION				
FILE NAME	N:\LCSO IN\930169.020240\Water\Plan Set\10_930169.020240_DET.Ldgn					

TITLE:

CONSTRUCTION DETAILS

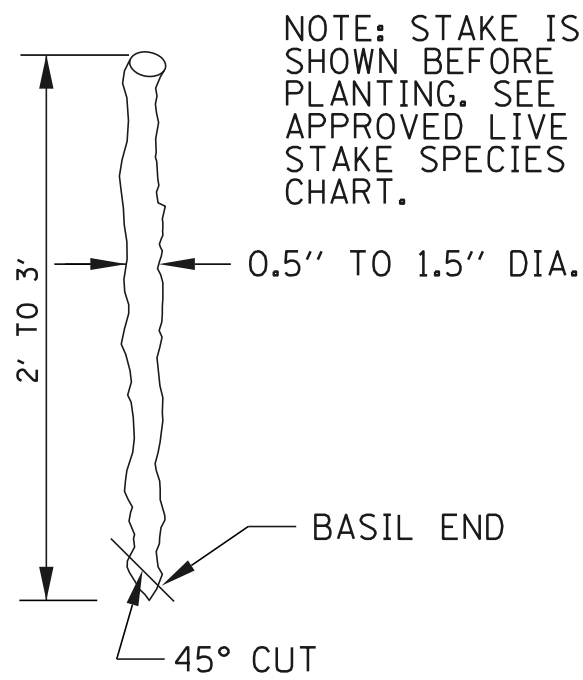
PROJ. # 930169.020240

DATE: 8/27/2024

SHEET 10 OF 13

DRAWING NO.

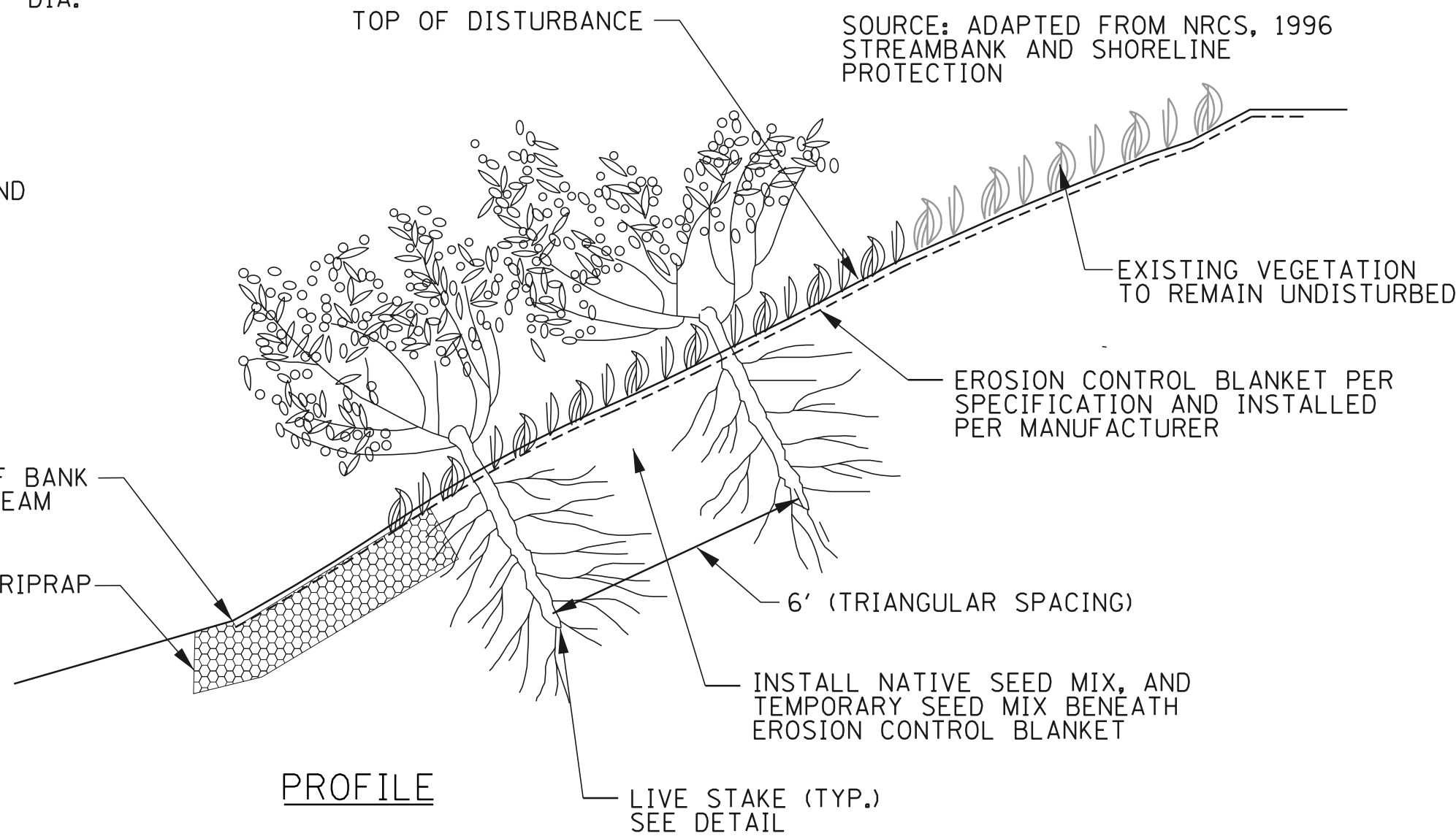
DET-1



DIMENSIONS

EXISTING TOE OF BANK OR EDGE OF STREAM IMPROVEMENTS

REVTMENT RIPRAP



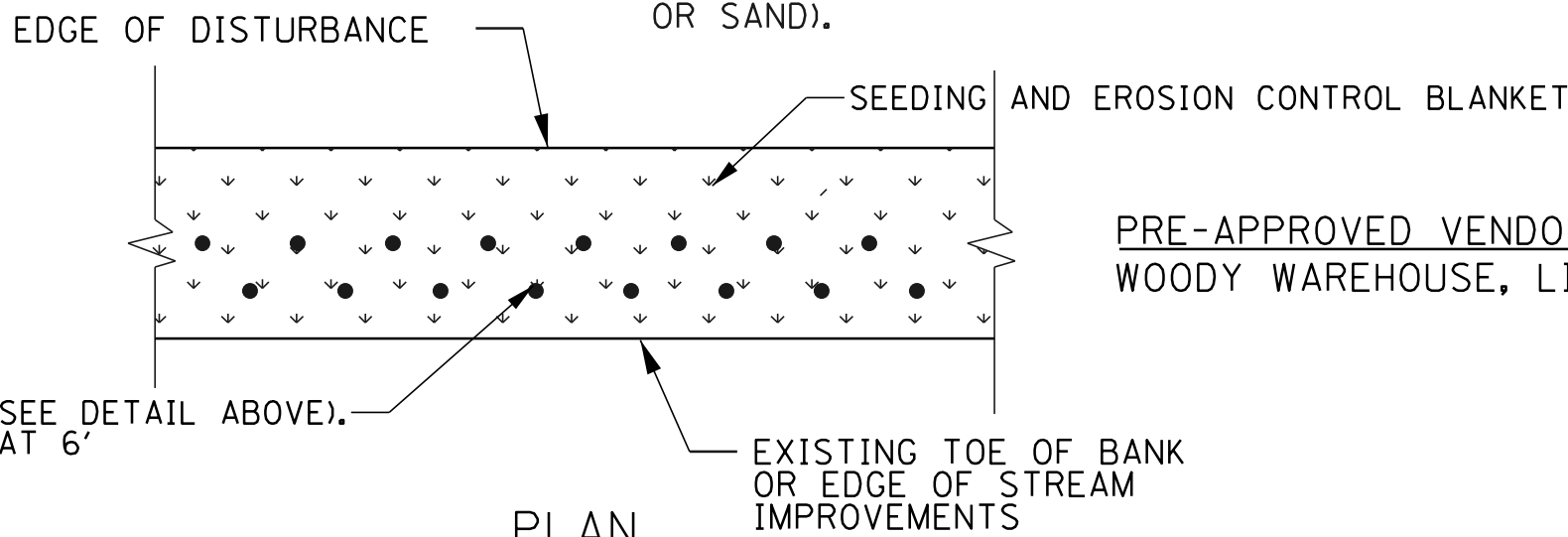
PROFILE

LIVE STAKE MATERIAL PREPARATION

1. THE MATERIALS MUST HAVE SIDE BRANCHES CLEANLY REMOVED WITH THE BARK INTACT.
2. THE BASIL ENDS SHOULD BE CUT AT AN ANGLE OR POINT FOR EASY INSERTION INTO THE SOIL. THE TOP SHOULD BE CUT SQUARE.
3. MATERIALS SHOULD BE SOAKED IN WATER BEFORE INSTALLATION FOR A MINIMUM OF 24-HOURS AND NOT GREATER THAN 7-DAYS AFTER HARVESTING.
4. MATERIALS SHOULD BE INSTALLED THE SAME DAY THAT THEY ARE PREPARED.
5. SOURCE OF MATERIALS TO BE PROCURED LOCALLY AND APPROVED BY ENGINEER OR CAN BE PURCHASED. ASSISTANCE IN LOCATING A LOCAL SOURCE WILL BE PROVIDED BY ENGINEER. SEE APPROVED LIST OF LIVE STAKE SPECIES.
6. MATERIAL TO BE COLLECTED AND INSTALLED WHILE DORMANT.

INSTALLATION OF LIVE STAKES

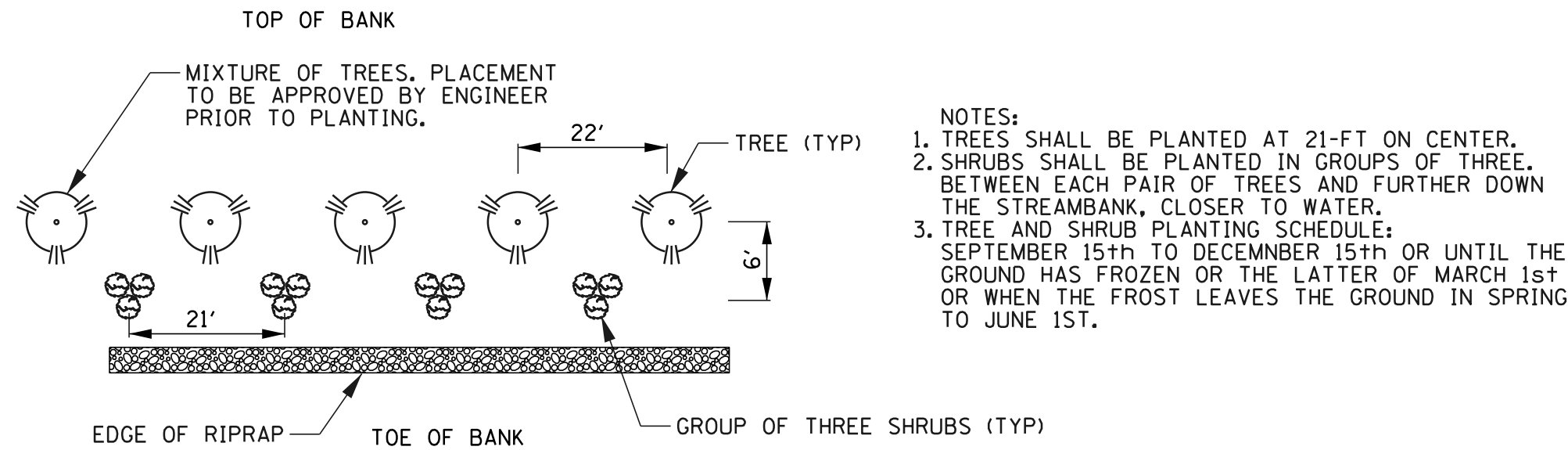
1. TAMP THE LIVE STAKE INTO THE GROUND AT RIGHT ANGLES TO THE SLOPE AND DIVERTED DOWNSTREAM. THE INSTALLATION MAY BE STARTED AT ANY POINT ON THE SLOPE FACE.
2. THE LIVE STAKES SHOULD BE INSTALLED 3-TO-4-FEET APART USING TRIANGULAR SPACING. THE DENSITY OF THE INSTALLATION WILL BE APPROXIMATELY ONE STAKE PER SQUARE YARD. PLACEMENT MAY VARY BY SPECIES.
3. THE BUDS SHOULD BE ORIENTED UP.
4. FOUR-FIFTHS OF THE LENGTH OF THE LIVE STAKE SHOULD BE INSTALLED INTO THE GROUND, AND SOIL SHOULD BE FIRMLY PACKED AROUND IT AFTER INSTALLATION.
5. DO NOT SPLIT THE STAKES DURING INSTALLATION. STAKES THAT SPLIT SHOULD BE REMOVED AND REPLACED.
6. A STINGER, DIBBLE, AUGER, OR DRILL MAY BE USED TO MAKE A PILOT HOLE. INSERT STAKE TO SPECIFIED DEPTH, BACKFILL HOLE, AND COMPACT.
7. TAMP THE STAKE INTO THE GROUND WITH A DEAD BLOW HAMMER (HAMMER HEAD FILLED WITH SHOT OR SAND).



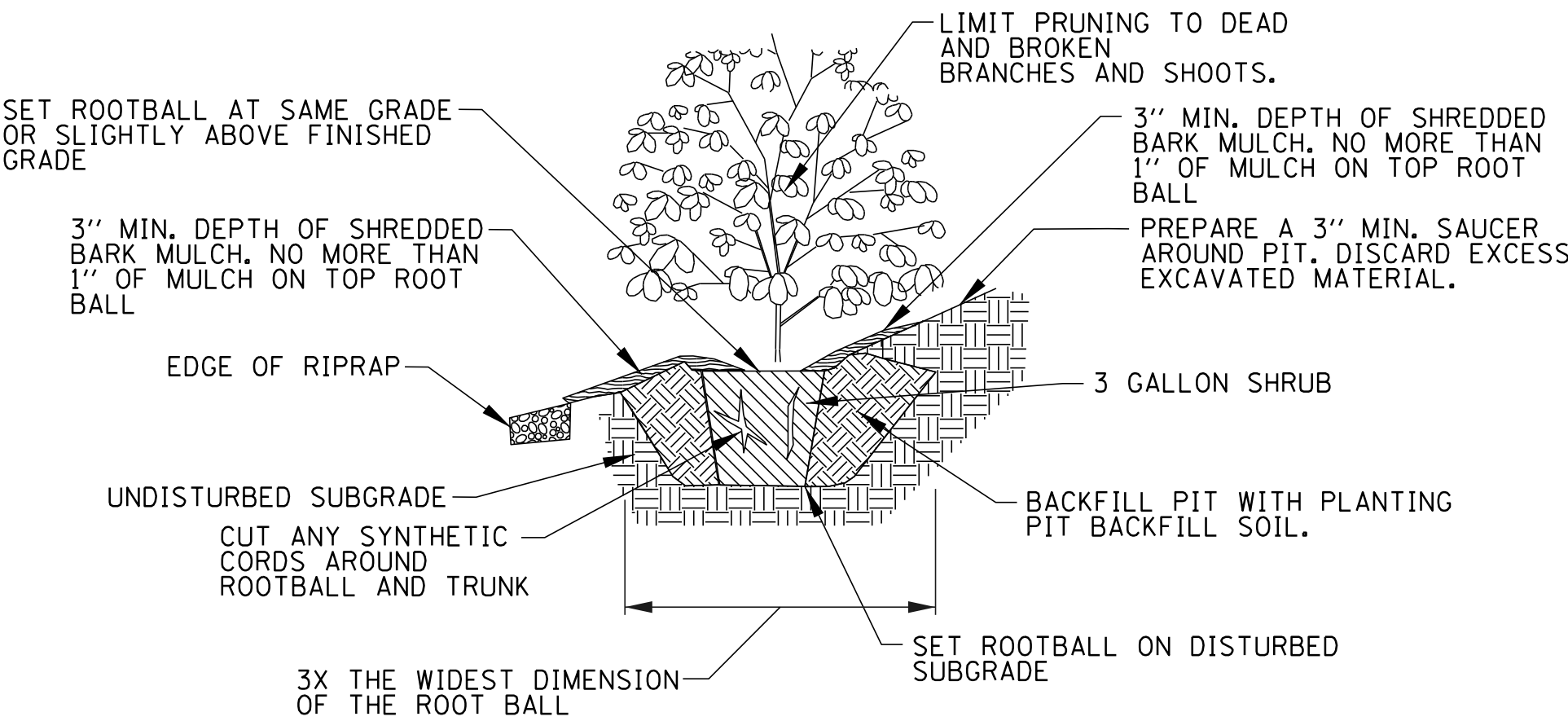
PLAN

LIVE STAKE DETAIL

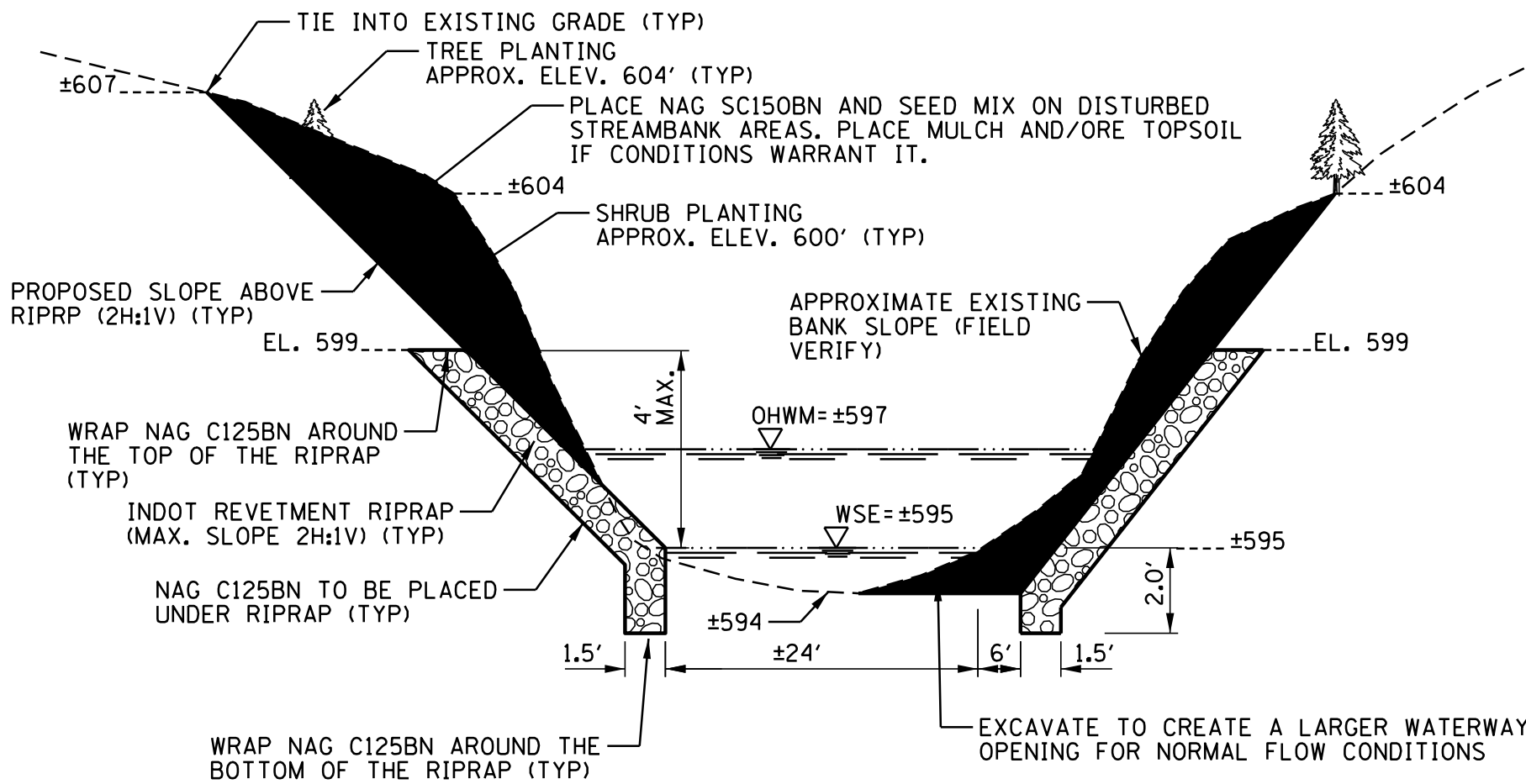
PRE-APPROVED VENDOR:
WOODY WAREHOUSE, LIZTON IN.



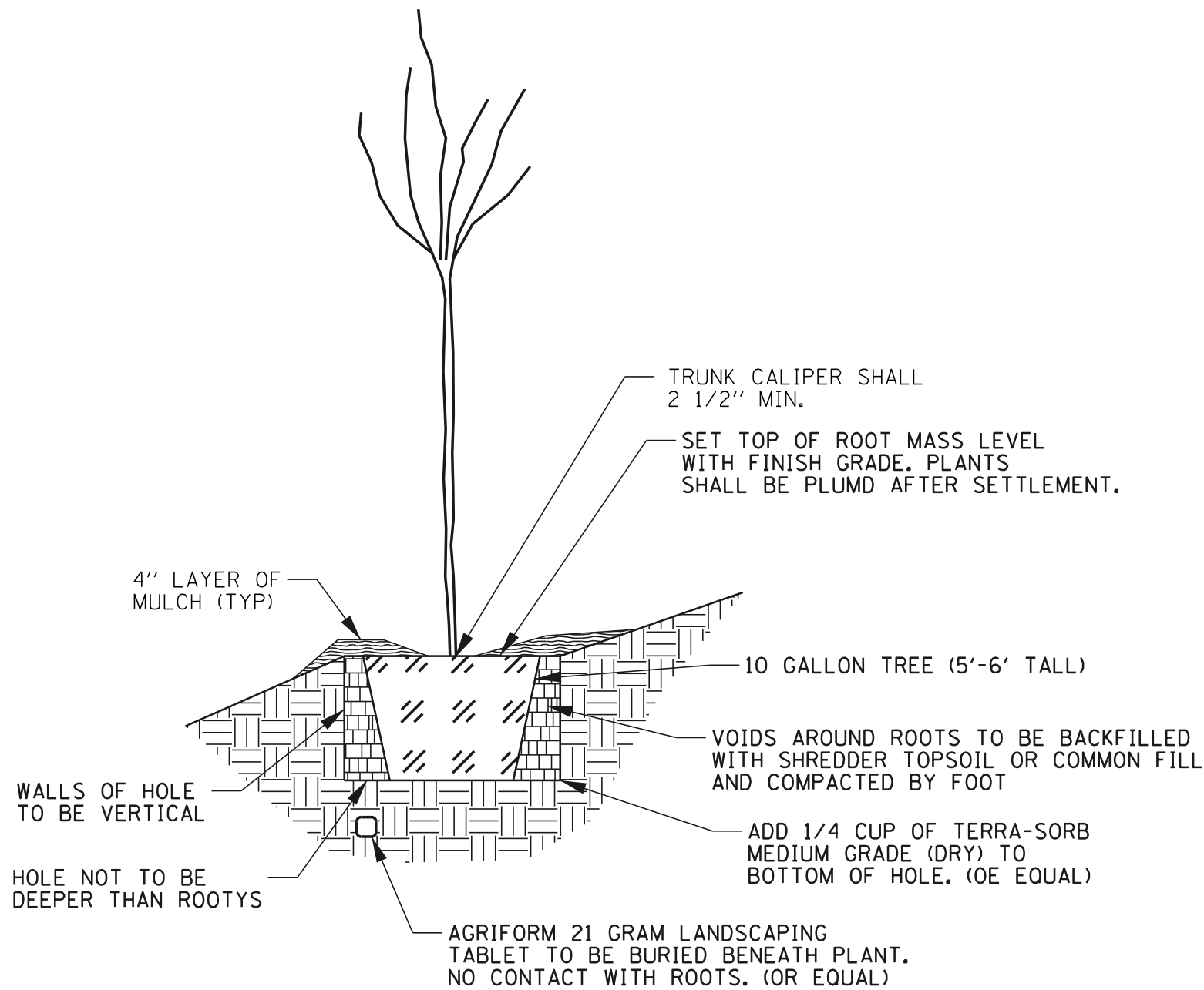
TREE AND SHRUB SPACING DETAIL



CONTAINER SHRUB PLANTING DETAIL



STA. 55 + 45 TO STA. 56 + 04



CONTAINER TREE PLANTING DETAIL



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9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500



**LITTLE CALUMET RIVER BASIN
DEVELOPMENT COMMISSION**

DSGN.	JLW	
DWN.	EAT	
CHKD.	TTB	
SCALE:	1'	
PLOT DATE:	8/27/2024	
CAD USER:	elmo+oda	
MODEL:	Default	
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CONSTRUCTION DETAILS

PROJ. # 930169.020240

DATE: 8/27/2024

SHEET 11 OF 13

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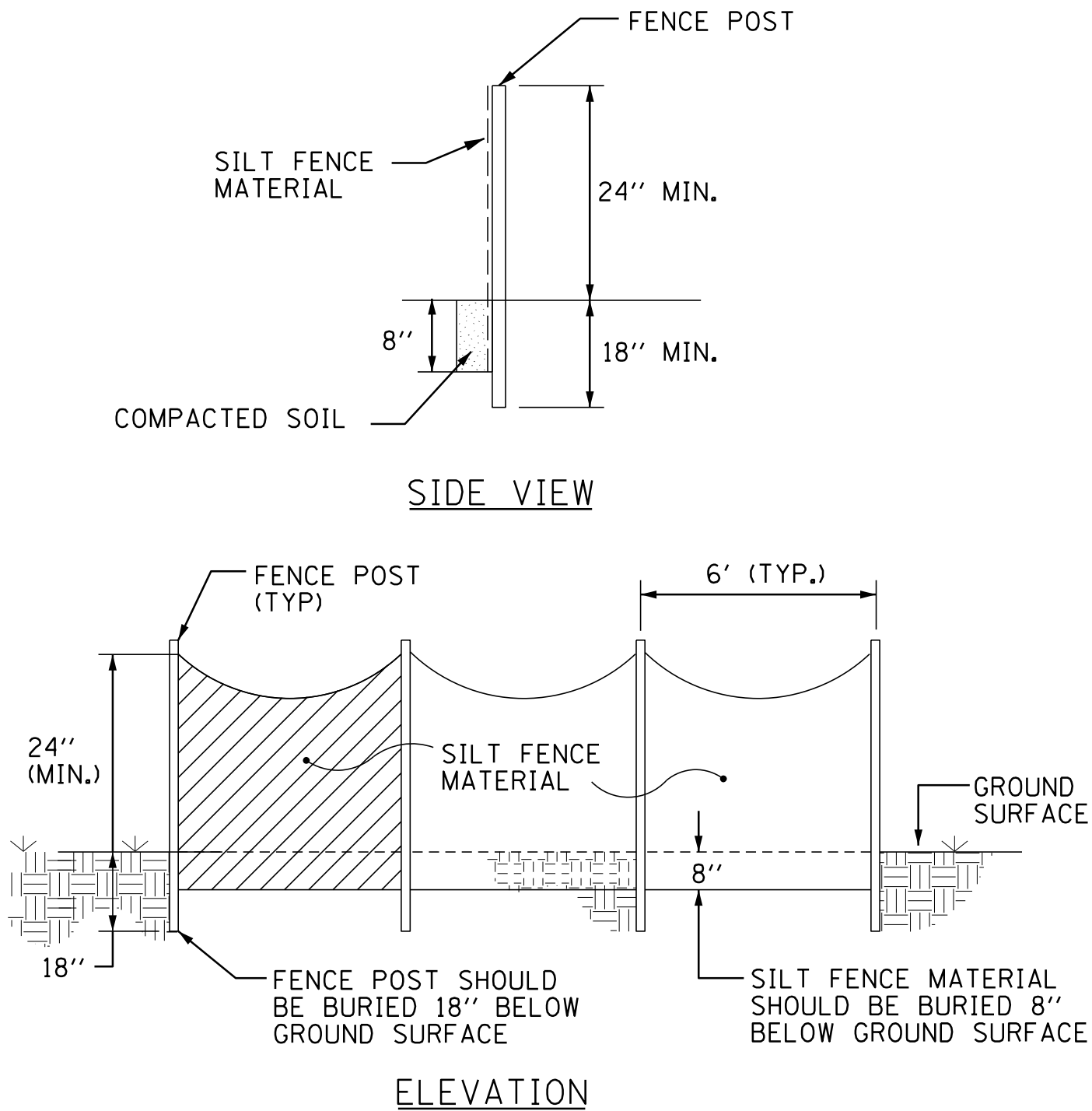
DET-2

EROSION CONTROL SEQUENCE

1. BEFORE CONSTRUCTION, STAKE THE PROJECT LIMITS.
2. INSTALL PERIMETER PROTECTION IN THE FORM OF SILT FENCE AND SILT CURTAIN.
3. INSTALL CONSTRUCTION ENTRANCE, IF NEEDED.
4. CONTRACTOR SHALL DEVELOP DEWATERING/WATER DIVERSION PLAN IN ACCORDANCE WITH THE INDIANA STORMWATER QUALITY MANUAL AND SUBMIT TO ENGINEER FIR REVIEW AND APPROVAL.
5. CONTRACTOR SHALL MINIMIZE SIZE, AREA OF DISTURBANCE, AND TIME OF EXPOSURE. DISTURBED SOIL SHALL BE SEEDED AND MULCHED AS WORK PROCEEDS.
6. PERFORM EXCAVATION AS REQUIRED TO INSTALL PROPOSED IMPROVEMENTS.
7. PLACE RIPRAP WITH EROSION CONTROL BLANKET AND OTHER IMPROVEMENTS AS SHOWN ON PLANS.
8. PLACE SEED, FERTILIZER AND MULCH/TOPSOIL, IF NEEDED, ON ALL DISTURBED AREAS WITH SLOPES FLATTER THAN (3(H):1(V) WITH SPECIFIED SEED MIX SEED, FERTILIZER AND EROSION CONTROL BLANKETS SHALL BE PALCED ON ALL DISTURBED AREAS WITH SLOPES 3(H):1(V) OR STEEPER.
9. MAINTAIN EROSION AND SEDIMENT PRACTICES THROUGHOUT THE DURATION OF THE PROJECT. CONTRACTOR SHALL CONTROL DUST ON THE PROJECT SITE WITH WATER TRUCKS. CONTRACTOR SHALL PERFORM STREET SWEEPING AS NECESSARY TO KEEP PUBLIC AND PRIVATE ROADWAYS BEING USED AS TRANSPORTATON ROUTED CLEAN OF DIRT, DUST AND INCIDENTAL CONSTRUCTION DEBRIS.
10. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES UPON OWNER’S APPROVAL AND VEGETATION ESTABLISHED AND APPROVED BY THE ENGINEER.

GENERAL NOTES FOR EROSION AND SEDIMENT CONTROL SEQUENCE

1. THE CONTRACTOR SHALL INSTALL, MONITOR, AND MAINTAIN ALL REQUIRED EROSION CONTROL MEASURES IN A ACCORDANCE WITH THE “INDIANA STORM WATER QUALITY MANUAL”.
2. TEMPORARY EROSION AND SEDIMENT CONTROL FEATURES TO PREVENT SEDIMENT FROM LEAVING THE SITE SHOWN ON THE PLANS ARE AT APPROXIMATE LOCATIONS. EROSION CONTROL FEATURES SHALL BE INSPECTED FOLLOWING EACH RAINFALL EVENT. ACCUMULATION SEDIMENT SHALL BE REMOVED IMMEDIATELY. DAMAGED EROSION AND SEDIMENT CONTROL FEATURES SHALL BE REPAIRED AND REPLACED IMMEDIATELY.
3. CONSTRUCTION DEBRIS AND WASTE, SUCH AS GARBAGE, DEBRIS, CLEANING WASTE, ETC., SHALL BE REMOVED FROM THE SITE AND KEPT OUT OF WATER COURSES. PROPER/LEGAL DISPOSAL AND MANAGEMENT OF ALL WASTE IS REQUIRED.
4. THE DURATION OF TIME WHICH AN AREA REMAINS EXPOSED SHALL BE KEPT TO A PRACTICAL MNIMUM DEPENDING ON THE WEATHER. IF CONSTRUCTION ACTIVITY IS TO CEASEFOR MORE THAN 14 DAYS, THE DISTURBED AREAS SHALL BE TEMPORARILY SEEDED.
5. TEMPORARY EROSION CONTROL FEATURES INCLUDE CONSTRUCTION ENTRANCE, SILT FENCE, INLET FILTERS, AND VEGETATION.
6. PERMANENT EROSION CONTROL/STABILIZATION INCLUDE RIPRAP, PERMANENTLY VEGETATION.
7. PERMANENTLY STABILIZE WITH SEED AND MULCH ALL DISBURBED AREAS THAT ARE COMPLETED. PLACE TEMPORARY SEED AND MULCH IN ALL DISTURBED AREAS THAT ARE UNABLE TO BE PERMANENTLY SEEDED.
8. THROUGHOUT CONSTRUCTION, MAINTAIN THE EROSION CONTROL MEASURES AS DESCRIBED ON THE PLANS.
9. REMOVE ALL SILT FROM THE PROJECT SITE AFTER PERMANENT VEGETATION IS ESTABLISHED; REDISTRIBUTE IN APPROPRIATE AREAS OR DISPOSE OFFSITE.



FILT FENCING

REQUIREMENTS:

1. FENCE POSTS SHALL BE BURIED 18-INCHES MINIMUM BELOW THE GROUND SURFACE.
2. FENCE POSTS SHALL BE SPARED AT A MAXIMUM OF 6-FEET LATERALLY.
3. SILT FENCE FABRIC SHALL BE BURIED 8-INCHES MINIMUM BELOW GROUND SURFACE.
4. FENCE POST SHALL BE HAVE A MINIMUM HEIGHT ABOVE THE GROUND SURFACE OF 24-INCHES.

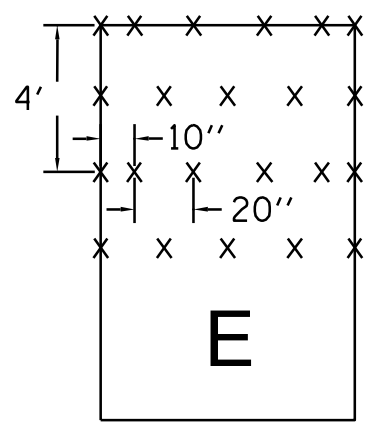
INSTALLATION:

1. DIG AN 8-INCHES DEEP TRENCH ALONG PROPOSED FENCE LINE (A TRENCHING MACHINE IS NEEDED ON LONG RUNS).
2. POUND STAKE IN TRENCH 18-INCHES MINIMUM. BE SURE TO STRETCH
3. FABRIC TAUT WHEN POUNDING STAKES. (NOTE: STAKE MUST BE ON THE DOWNHILL OR DOWNSTREAM SIDE OF THE FENCE.
4. BACKFILL AND COMPACT SOIL ON BOTH SIDES.

MAINTENANCE:

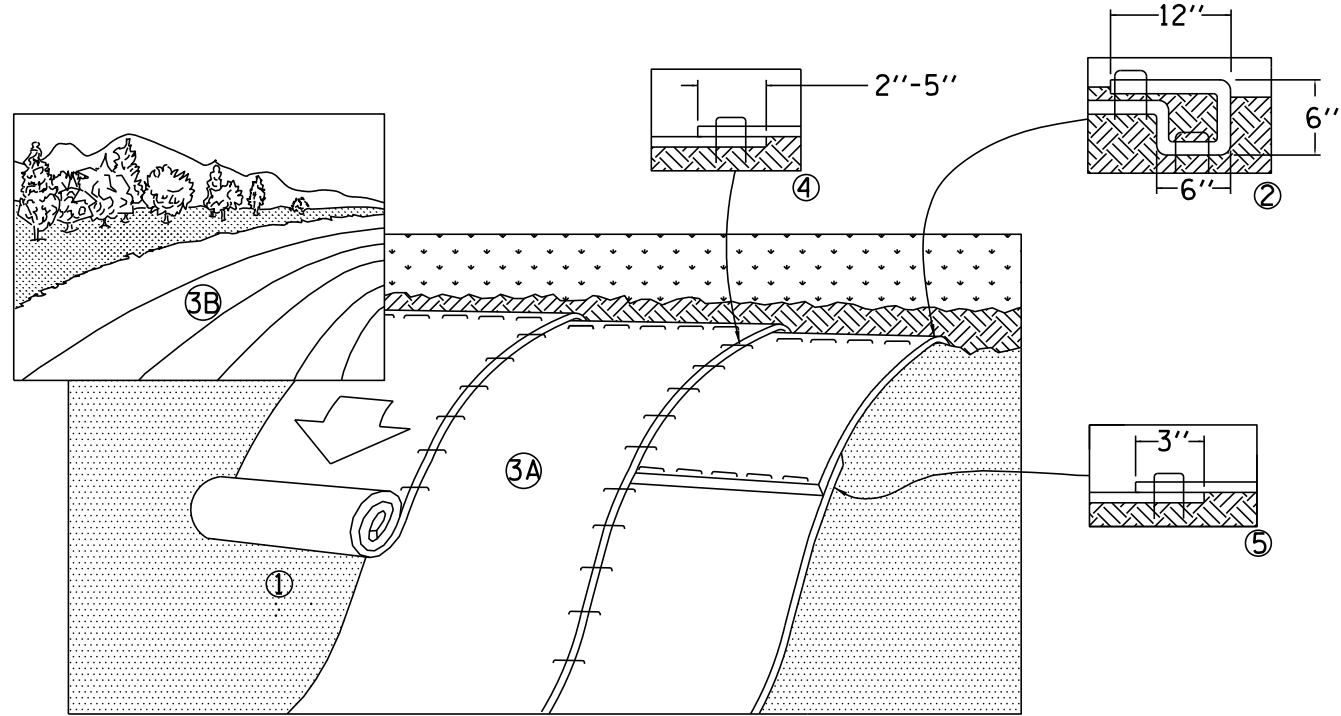
INSPECT THE SILT FENCE PERIODICALLY AND AFTER EACH STORM EVENT. IF FENCE FABRIC TEARS, STARTS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED PORTION IMMEDIATELY. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENE AT ITS LOWEST POINT OR IS CAUSING THE FABRI TO BULGE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND SEDIMENT DEPOSITS, BRING THE DISTURBED AREA TO GRADE AND STABILIZE.

SILT FENCE DETAIL



3.8 STAKES PER SQ YD
DETAIL SOURCE: NORTH AMERICAN GREEN

- NOTES:
1. SEE MANUFACTURER'S STAKES PATTERN GUIDES FOR ACTUAL RECOMMENDED PLACEMENTS.
 2. FOLLOW NORTH AMERICAN GREEN'S SC150BN SLOPE CONFIGURATION AND PROCEDURE FOR INSTALLATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.



SLOPE INSTALLATION

EROSION CONTROL BLANKET

REQUIREMENTS:

1. NORTH AMERICAN GREEN SC150BN EROSION CONTROL BLANKET OR APPROVED EQUIVALENT.
2. ALL EROSION CONTROL BLANKET USED SHALL BE 100% BIODEGRADABLE.
3. ALL STAKES USED FOR EROSION CONTROL BLANKET SHALL BE WOODEN OR BIODEGRADABLE NO METALS STAKES SHALL BE USED.
4. NORTH AMERICAN GREEN C125BN EROSION CONTROL BLANKET SHALL BE USED UNDER RIPRAP INSTALLATION TO HELP PREVENT SOIL FROM “PIPING” THROUGH THE LARGER STONE.

INSTALLATION

1. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6-INCH WIDE TRENCH WITH APPROXIMATELY 12-INCHES OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAKES APPROXIMATELY 12-INCHES APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAKING.
2. ROLL THE BLANKET DOWN THE SLOPE, BLANKETS WILL UNROLL WITH THE APPROPRIATE SIDE AGAINST THE ROLL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAKES IN APPROPRIATE LOCATIONS AS PER MANUFACTURER'S SPECIFICATIONS.
3. THE EDGE OF PARALLEL BLANKETS MUST BE STAKES WITH APPROXIMATELY 2- TO 5- INCHES OVERLAP. PLACE THE EDGES OF THE OVERLAPPING BLANKET EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
4. CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED AND OVER END (SHINGLE STYLE) WITH AN APPROPRIATE 3-INCHES OVERLAP. STAKES THROUGH OVERLLAPED AREA, APPROXIMATELY 12- INCHES APART ACROSS ENTIRE BLANKET WIDTH.
5. INSTALL SEEDING AS SPECIFIED BY MANUFACTURER.
6. INSTALL EROSION CONTROL BLANKET AT LOCATIONS SPECIFIED ON PLANS.

MAINTENANCE

DURING VEGETATIVE ESTABLISHMENT, INSPECT AFTER STORM EVENTS FOR EROSION BELOW THE BLANKET. IF ANY AREA SHOWS EROSION, PULL BACK THE PORTION OF THE BLANKET COVERING IT. ADD SOIL, RESEED THE AREA, AND RE-LAY AND STAKE THE BLANKET. AFTER VEGETATIVE ESTABLISHMENT, CHECK THE TREATED AREA PERIODICALLY. ADD ADDITIONAL STAKES AS NECESSARY TO SECURELY ANCHOR THE EROSION CONTROL LANKET.

EROSION CONTROL BLANKET DETAIL



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				SCALE:	1'	
				PLOT DATE:	8/27/2024	
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TITLE:

CONSTRUCTION DETAILS

PROJ. # 930169.020240

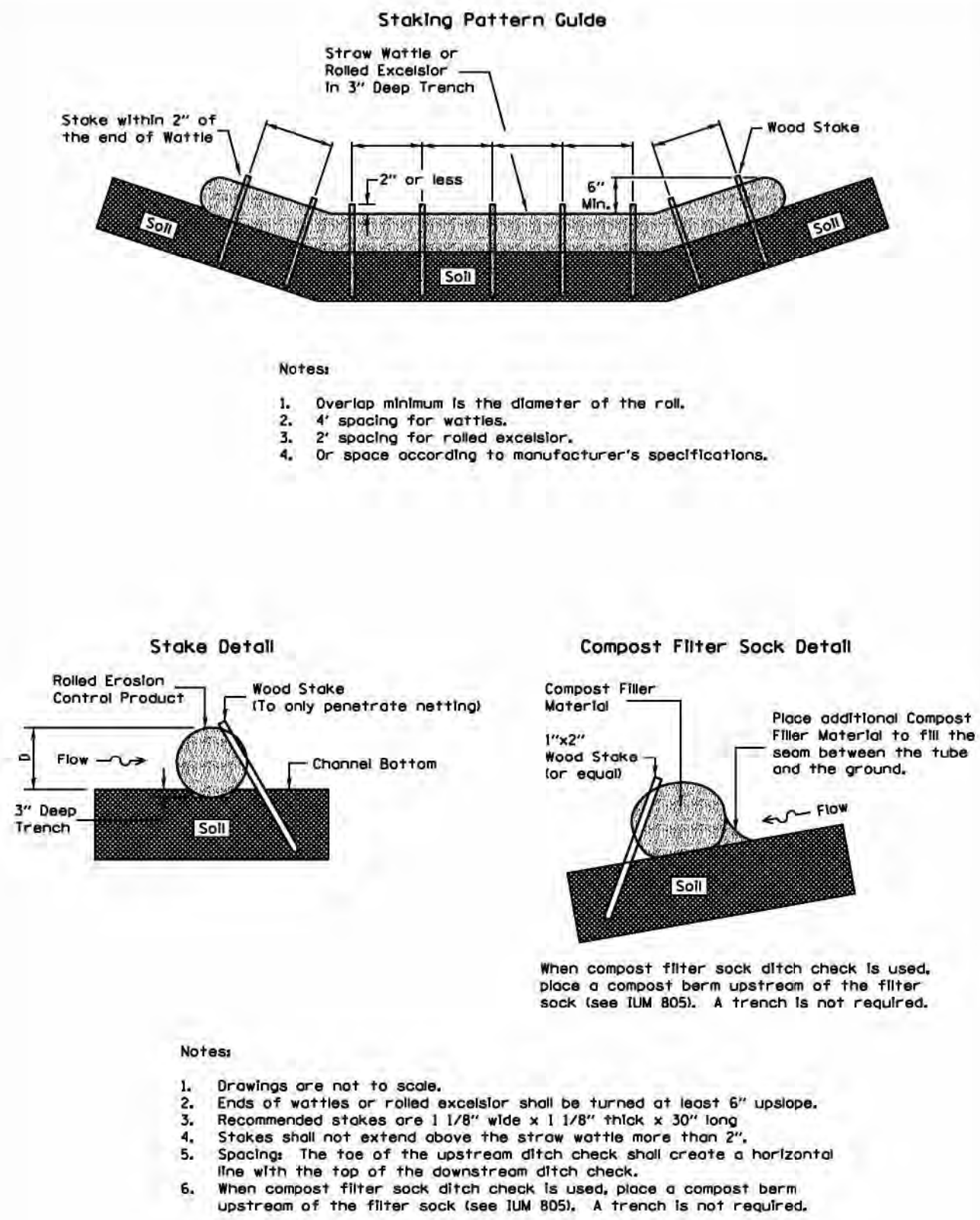
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SHEET 12 OF 13

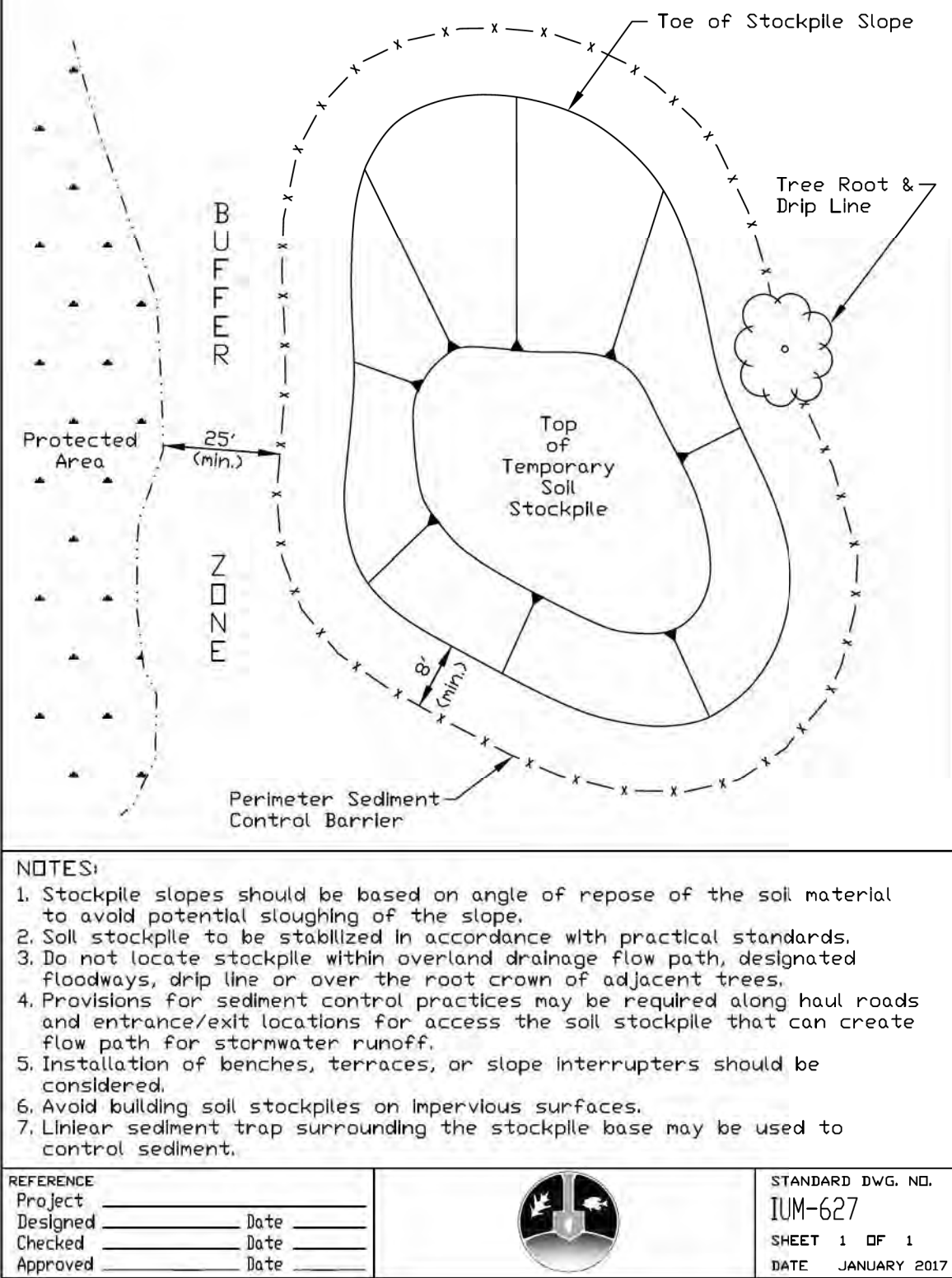
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DET-3

ROLLED EROSION CONTROL PRODUCTS



TEMPORARY SOIL STOCKPILE DETAIL



Hart Ditch Slope Mix

Permanent Grasses

Scientific Name	Common Name	PLS Oz/Acre	Plant Height
Andropogon gerardii	Big Blue Stem	16.00	4 - 8'
Bouteloua curtipendula	Side Oats Grama	16.00	2 - 4'
Elymus canadensis	Canada Wild Rye	22.00	3 - 6'
Panicum virgatum	Switch Grass	3.00	2 - 5'
Schizachyrium scoparium	Little Blue Stem	32.00	2 - 4'
Sorghastrum nutans	Indian Grass	32.00	4 - 9'
		121.00	

Forbs

Asclepias tuberosa	Butterfly Weed	2.00	1 - 3'
Aster novae-angliae	New England Aster	2.00	3 - 6'
Cassia fasciculata	Partridge Pea	3.00	2 - 4'
Coreopsis palmata	Prairie Coreopsis	2.00	1 - 2'
Echinacea purpurea	Purple Coneflower	4.00	3 - 5'
Liatis aspera	Rough Blazing Star	1.00	2 - 3'
Monarda fistulosa	Wild Bergamot	4.00	2 - 5'
Potentilla arguta	Prairie Cinquefoil	1.00	1 - 3'
Pycnanthemum virginianum	Virginia Mountain Mint	1.00	1 - 3'
Ratibida pinnata	Yellow Coneflower	4.00	3 - 6'
Rudbeckia hirta	Black-Eyed Susan	4.00	1 - 3'
Solidago juncea	Early Goldenrod	1.00	2 - 4'
Vernonia fasciculata	Common Ironweed	2.00	3 - 7'
Asclepias Syriaca	Common Milkweed	4.00	3 - 7'
		35.00	

Temporary Cover

Avena sativa	Seed Oats	1440.00	1 - 3'
Lolium multiflorum	Annual Rye	480.00	1 - 3'
		1920.00	

Mycorrhizal Inoculum

All native seed mixes shall be combined with an appropriate endomycorrhizal inoculant such as AM 120 Mycorrhizal Inoculum (or comparable). The inoculants shall contain a diverse mixture of glomales fungal species (*Glomus* spp.) in pelleted form. Application rate shall be as specified by the manufacturer. Seed shall be mixed with the granular form of endomycorrhizal inoculant at the rate specified by the manufacturer prior to installation.

Species Name	Common Name	Wetland Indicator	Quantity
Live Stake			
<i>Cephalanthus occidentalis</i>	Buttonbush	OBL	27
<i>Cornus amomum</i>	Silky Dogwood	FACW+	27
<i>Cornus sericea</i> (C. stolonifera)	Red Osier Dogwood	FACW+	27
<i>Salix exigua</i> ssp. interior	Sandbar Willow	OBL	27
<i>Salix nigra</i>	Black Willow	OBL	27
<i>Sambucus Canadensis</i>	Elderberry	FACW-	28
<i>Viburnum lentago</i>	Nannyberry	FAC+	29
3-Gallon Shrubs			
<i>Ilex verticillata</i>	Winterberry	FACW+	22
<i>Physocarpus opulifolius</i>	Ninebark	FACW-	22
<i>Prunus virginiana</i>	Chokecherry	FAC-	22
<i>Spiraea alba</i>	Meadowsweet	FACW+	22
<i>Aronia melanocarpa</i>	Black Chokeberry	FACW	22
<i>Lindera benzoin</i>	Spicebush	FACW-	22
<i>Viburnum trilobum</i>	American Cranberry	FACW	22
<i>Alnus rugosa</i>	Speckled Alder	FACW	22
<i>Staphylea trifolia</i>	Bladdernut	FAC	22

10-Gallon Tree (5'-6' Tall)

<i>Acer rubrum</i>	Red Maple	FAC	9
<i>Carpinus caroliniana</i>	Hornbeam	FAC	9
<i>Nyssa sylvatica</i>	Blackgum	FAC	8
<i>Quercus palustris</i>	Pin Oak	FACW	8
<i>Quercus bicolor</i>	Swamp White Oak	FACW+	8
<i>Quercus muehlenbergii</i>	Chinkapin Oak	FACU	8
<i>Quercus macrocarpa</i>	Bur Oak	FAC	8
<i>Carya laciniosa</i>	Shellbark Hickory	FACW	8
<i>Platanus occidentalis</i>	American Sycamore	FACW	8

Note:

Species with a facultative upland ("FACU") status are planted in the floodway farthest from the stream or within dryer areas. Species with a facultative ("FAC") or a facultative wetland ("FACW") status are placed in the floodway closest to the stream or within wetter areas. Species with an indicator status of obligate wetland ("OBL") are placed in the wettest areas of the floodway.

STREAMBANK SEED MIX AND WOODY VEGETATION SPECIES

PERMANENT VEGETATION:

Installation:

Optimum seeding dates are March 1 through May 10 and August 10 through September 30. Permanent seeding done between May 10 and August 10 may need to be irrigated. As an alternative, use temporary seeding until the preferred date for permanent seeding.

1. Verify that the area to be vegetated has been finish graded to the lines and grades indicated in the Drawings.
2. Use Seed Mix A as specified on plans. Apply seed uniformly with a drill or cultipacker-seeder, by broadcasting, or another method approved by the Engineer. Cover to a depth of 1/4- to 1/2-inches. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
3. Use hand tools to remove ruts or uneven surfaces in the slope, including tracks from the cultipacker and/or seed drill.
4. Install one (1) inch of clean (weed free) wheat straw on seeded areas. Cover straw with jute material and install wooden stakes per manufacturers recommendation for streams and slopes. No metal stakes will be accepted.

Maintenance:

Inspect periodically, especially after storm events, until the stand is successfully established (characteristics of a successful stand include: vigorous dark green or blue-ish green seedlings; uniform density with nurse plants and grasses well intermixed; and the perennials remaining green throughout the summer, at least at the plant base). Repair damaged, bare or sparse areas by filling any gullies, over- or reseeding and installation of mulch and woven coir. If plant cover is sparse or patchy, review the plant material chosen, soil fertility, moisture condition, and mulching; then repair the affected area either by over-seeding or reseeding and mulching after re-preparing the seedbed. If vegetation fails to grow, perform soil testing to determine acidity or nutrient deficiency problems. If fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.

STREAMBANK RIPARIAN SEEDING NOTES AND SCHEDULE

TURF GRASS SEEDING NOTES:

1. Install a minimum of 4" inches of topsoil in upland areas prior to seeding.
2. Tall Fescue may not be used.

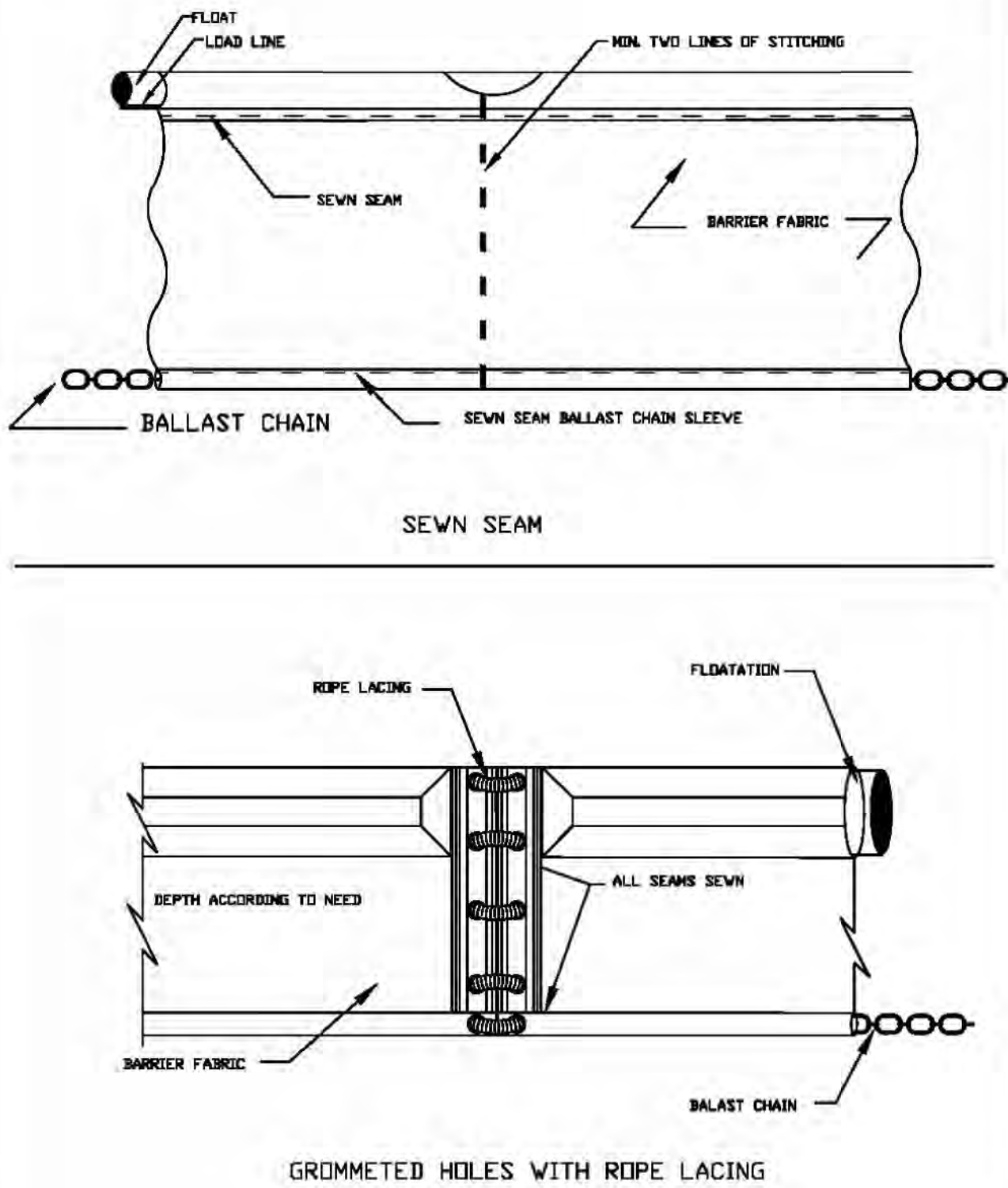
		Pounds/Acre			
Common Name	Scientific Name	A	B	C	D
Permanent Ground Cover:					
Kentucky Bluegrass	<i>Poa pratensis</i>	10	-	-	-
Perennial Rye Grass	<i>Lolium perenne</i>	6	-	-	-
Alsike Clover	<i>Trifolium hybridum</i>	5			
Temporary Cover:					
Annual Rye Grass	<i>Lolium multiflorum</i>	20	-	-	-
Fertilize at 43 lbs /acre with 3:1:2					

Irrigation needed during July, August and/or September

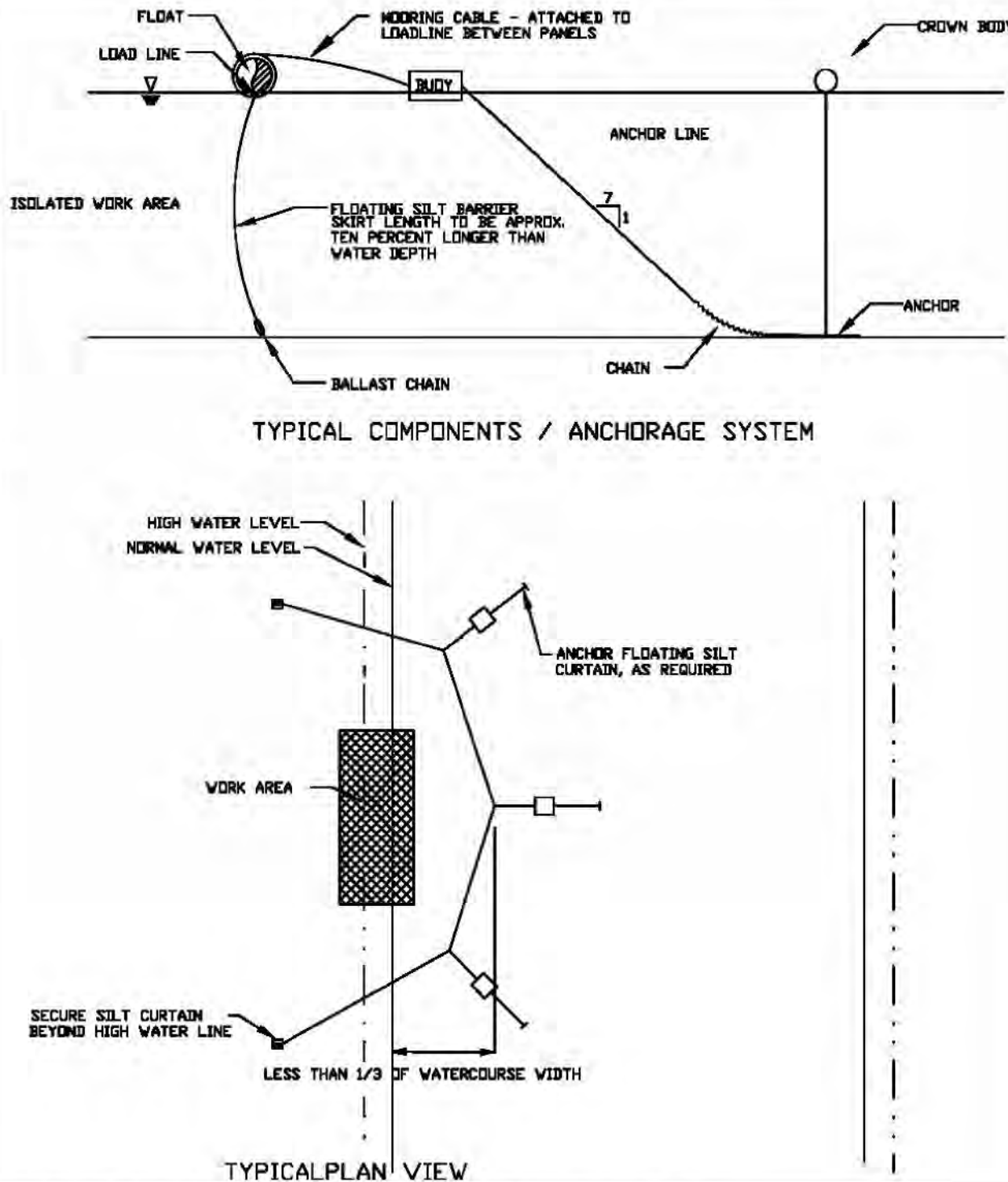
Irrigation needed for 2 to 3 weeks after applying seed.

UPLAND TURF GRASS SEEDING NOTES AND SCHEDULE

FLOATING SILT CURTAIN - PANEL CONNECTORS



FLOATING SILT CURTAIN - TYPICAL LAYOUT



Maximum flow for waterbody shall be less than 5fps.
Isolated work area shall not exceed more than 1/3 stream width.
Silt curtain shall be placed parallel to stream flow.

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DET-4