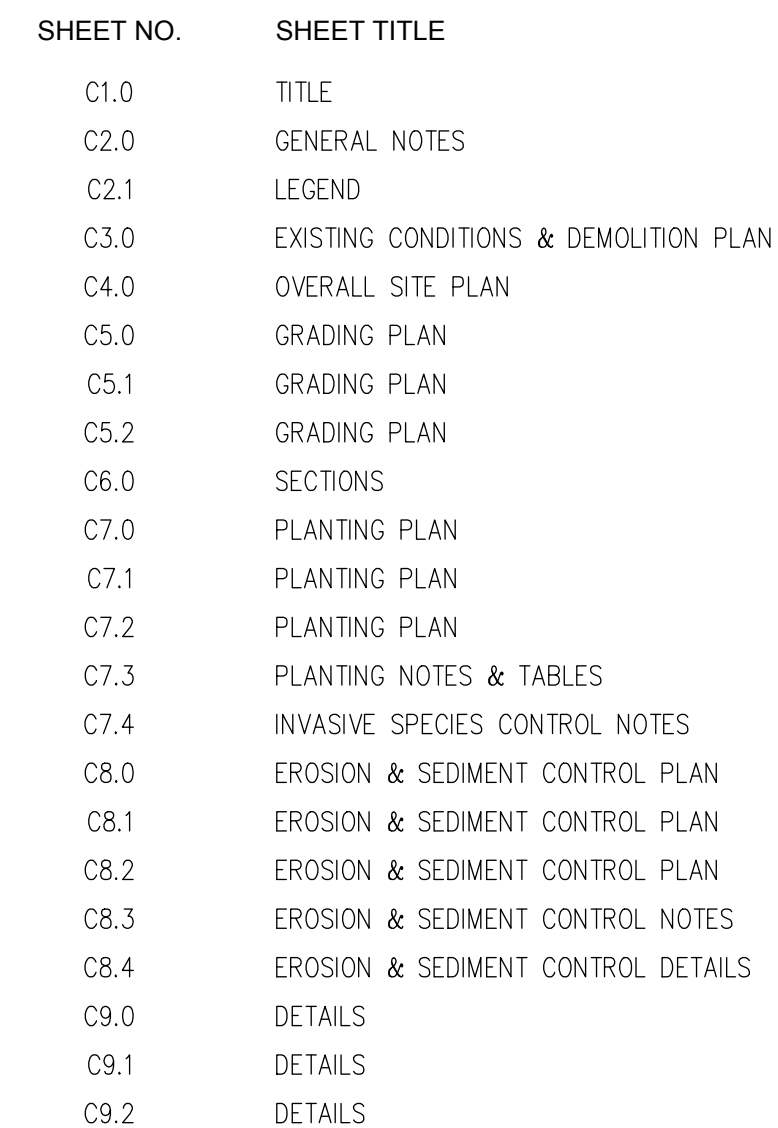
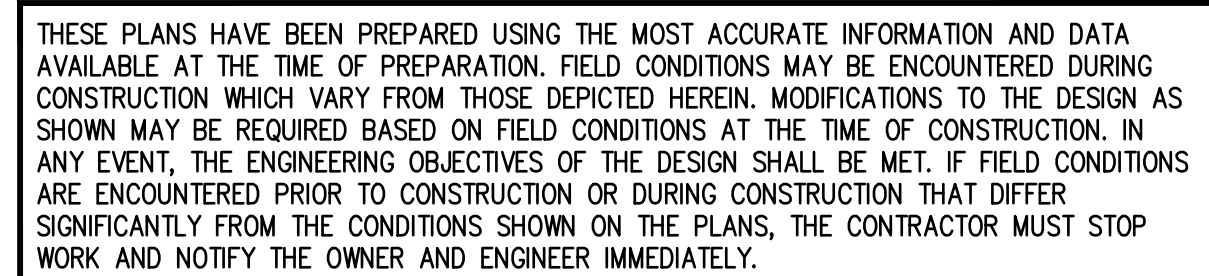
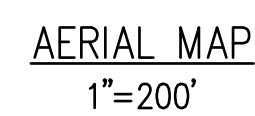
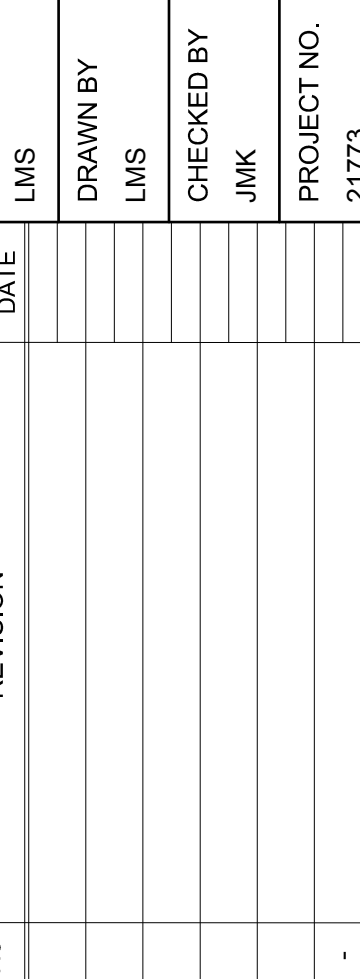


## CITY OF TOLEDO, LUCAS COUNTY, OHIO



TOLEDO, OHIO 43604-8607  
419.385.2018



**COLLINS PARK  
STREAM RESTORATION  
CONSTRUCTION PLANS  
TITLE**

DATE 03-03-2025

---

SCALE AS NOTED

---

SHEET C1.0

1. THE CONTRACTOR SHALL DEVELOP, IMPLEMENT AND MAINTAIN, A SITE-SPECIFIC DAILY JOB SAFETY ANALYSIS (JSA). THE CONTRACTOR'S JSA, WILL COMPLY WITH ALL OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (OHSA) REQUIREMENTS, AND WILL BE FILLED OUT DAILY BY THE CONTRACTOR FOR THE DURATION OF THE PROJECT. ANY VISITORS TO THE SITE SHALL SIGN THE CONTRACTOR'S JSA
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS, INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE PRECAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL ALSO BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES PER 29 CFR 1910.146 AND EXCAVATION REQUIREMENT PER CFR 1926.650 SUBPART P.

1. DLZ CONDUCTED TOPOGRAPHIC SURVEY IN APRIL 2023 WITHIN THE LIMITS IDENTIFIED. TOPOGRAPHY OUTSIDE OF THESE LIMITS WAS BASED ON 2020 OGIPR LIDAR DATA. CATCH BASINS, MANHOLES, IRRIGATION BOXES, AND OHWM INFORMATION WERE PROVIDED BY GARCIA (DATE OF SURVEY WAS JULY 2024). ALL OTHER UTILITY AND STRUCTURE INFORMATION WERE PROVIDED BY DLZ (DATE OF SURVEY WAS APRIL 2023).
2. OUTSIDE THE LIMITS OF THE FIELD RUN TOPOGRAPHIC SURVEY, EXISTING TOPOGRAPHY INFORMATION IS BASED ON OSIP BARE-EARTH DIGITAL ELEVATION MODEL (DEM) DERIVED FROM DIGITAL LIDAR DATA.
3. PARCEL INFORMATION OBTAINED FROM VERDANTAS, THE COUNTY AUDITOR TAX MAPS AND GIS DATA UNLESS OTHERWISE NOTED.
4. SECTION LINES TAKEN FROM USGS QUADS UNLESS OTHERWISE NOTED.
5. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE SURVEY OR THE ACCURACY OF THE EXISTING INFORMATION AND THE PROPERTY LINES SHOWN.

ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).

NAD 83 (2011)  
LATITUDE: 41.662252°  
LONGITUDE: -83.482332°



- ## CLEARING AND GRUBBING

- ## SITE SOIL EVALUATION

- ## EARTHWORK

- ### EARTHEN FILL

- CONTROLLED FILL

- ## AGGREGATES

ODOT ITEM NO. 703.19 ODOT TYPE D RIP-RAFF

ODOT ITEM NO. 703.19 ODOT TYPE C RIP-RAFF

### DUST CONTROL NOTES

1. BEST MANAGEMENT PRACTICES (BMP) SHALL BE UTILIZED TO MINIMIZE DUST DURING LAND CLEARING/GRADING OPERATIONS. IMPLEMENT DUST CONTROL MEASURES WHEN DUST IS OBSERVED.
2. THE CONTRACTOR SHALL APPLY WATER TO ROADWAYS AS NEEDED TO PREVENT BLOWING DUST.
3. LOW VEHICULAR SPEEDS SHALL BE MAINTAINED TO PREVENT DUST.
4. THE CONTRACTOR WILL CONDUCT PRE-CONSTRUCTION MEETINGS PRIOR TO THE START OF EACH CONSTRUCTION ACTIVITY TO ENSURE DUST CONTROL BMP'S ARE UTILIZED.
5. TEMPORARY VEGETATIVE STABILIZATION SHALL BE COMPLETED BY THE METHODS AND TIME SCHEDULES LISTED IN THE APPROVED PROJECT SWPPP.

### TRAFFIC CONTROL NOTES

- ### UTILITY NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION AND RESTORATION (UNLESS SPECIFIED ON THESE PLANS FOR DEMOLITION) OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL EXPOSE ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL EFFECT ON THE PROPOSED CONSTRUCTION. THE COST OF THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE RELATED ITEMS.
2. THE CONTRACTOR SHALL GIVE NOTICE OF INTENT TO CONSTRUCT TO OHIO UTILITIES PROTECTION SERVICE (TELEPHONE NUMBER 800-362-2764), AND TO THE OWNER OF THE UNDERGROUND UTILITIES THAT ARE NOT MEMBERS OF A REGISTERED UNDERGROUND PROTECTION SERVICE. NOTICE SHALL BE GIVEN AT LEAST 2 WORKING DAYS BEFORE START OF CONSTRUCTION.
3. THE LOCATION OF UTILITIES AND STRUCTURES ARE SHOWN FROM DATA PROVIDED BY THE SURVEYOR (BASED ON DATA AVAILABLE AT THE TIME OF SURVEY) AND ARE NOT NECESSARILY COMPLETE OR CORRECT. THE NOTIFICATION OF AFFECTED UTILITY OWNERS IN ADVANCE OF CONSTRUCTION AND THE EXACT LOCATION AND PROTECTION OF UTILITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR. IF DAMAGE IS CAUSED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF SAME AND FOR ANY RESULTING CONTINGENT DAMAGE OR COSTS. THE COUNTY, OWNER, AND/OR ENGINEER ASSUME NO RESPONSIBILITY AS TO THE ACCURACY OR DEPTHS OF THE UNDERGROUND FACILITIES SHOWN ON THE PLANS.

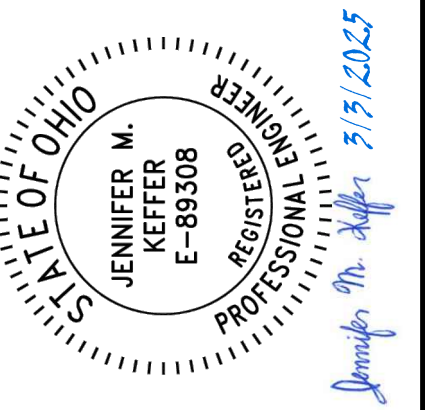
### RESTRICTED WORK PERIOD

- ## ESTIMATED MATERIAL QUANTITIES

NOTES:

1. THE ESTIMATED QUANTITIES SHOWN IN THE TABLE ARE NOT INTENDED TO BE A COMPREHENSIVE LIST OF ALL MATERIALS NEEDED. THESE QUANTITIES WERE DEVELOPED FOR THE PURPOSE OF BUDGET ESTIMATION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES AND PROVIDING ALL NECESSARY MATERIALS TO COMPLETE BID ITEMS.
2. EARTHWORK QUANTITIES DO NOT INCLUDE A SHRINK/SWELL FACTOR.
3. SEE PLANS FOR MATERIAL REQUIREMENTS.

**verdantas**



No.	REVISION	CHKD BY DATE	DESIGNED BY LMS
			DRAWN BY LMS
			CHECKED BY JMK
			PROJECT NO. 21773

**CITY OF TOLEDO-LUCAS COUNTY-OHIO**  
**COLLINS PARK**  
**STREAM RESTORATION**  
**CONSTRUCTION PLANS**  
**GENERAL NOTES**

DATE 03-03-2025

SCALE AS NOTED

SHEET

**C2.0**








ABBREVIATIONS	
EX	EXISTING
PR	PROPOSED
ODOT	OHIO DEPARTMENT OF TRANSPORTATION
ODNR	OHIO DEPARTMENT OF NATURAL RESOURCES
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
OGRIP	OHIO GEOGRAPHICALLY REFERENCED INFORMATION PROGRAM
LOD	LIMITS OF DISTURBANCE
STA	STATION
AC	ACRE
EA	EACH
CY	CUBIC YARD
SY	SQUARE YARD
SQ.FT.	SQUARE FEET
LF	LINEAR FEET
ELEV	ELEVATION
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
NAD83	NORTH AMERICAN DATUM OF 1983

EXISTING LEGEND	
	FLOOD BOUNDARY LINE
	ORDINARY HIGH WATER MARK (OHWM)
	TOP OF BANK
	BOTTOM OF BANK
	CONTOUR MAJOR
	CONTOUR MINOR
	PROPERTY LINE
	LIMITS OF DLZ SURVEY
	PALUSTRINE EMERGENT WETLAND (PEM)
	PALUSTRINE SCRUB-SHRUB WETLAND (PSS)
	PALUSTRINE FORESTED WETLAND (PFO)
	PERENNIAL STREAM
	EPHEMERAL STREAM
	STORM PIPE
	SANITARY PIPE
	ROAD CENTERLINE
	TREE
	BRIDGE
	CATCH BASIN
	SANITARY MANHOLE
	STORM MANHOLE
	UNKNOWN MANHOLE
	IRRIGATION BOX
	GOLF GREEN/TEE
	BUILDING

<hr/>		PROPOSED LEGEND
	CONTOUR MAJOR - 5'	
	CONTOUR MINOR - 1'	
	LIMITS OF DISTURBANCE	
	12" COMPOST FILTER SOCK	
	18" COMPOST FILTER SOCK	
	COMPOST FILTER SOCK TRAP	
	FLOODPLAIN AND WETLAND SEEDING AND PLANTING AREAS	
	STREAMBANK LIVE STAKE PLANTING	
	POND EDGE SEEDING AREA	
	POLLINATOR SEEDING AREAS	
	REFORESTATION SEEDING AND PLANTING AREAS	
	MAINTAINED LAWN AREAS	
	INVASIVE SPECIES REMOVAL AREA	
	CHANNEL	
	FLOODPLAIN	
	RIPARIAN WETLAND	
	BACKWATER WETLAND	
	REFORESTATION AREA	
	FILL/SPOIL AREA	
	POLLINATOR SPOIL AREA	
	IRRIGATION POND	
	DOWNSTREAM DREDGING	
	RIP-RAP	
	BRIDGE	
	REMOVE EXISTING CULVERT	
	CRUSH EXISTING CULVERT IN PLACE AND BACKFILL	
	REMOVE EXISTING CULVERT AND BACKFILL	
	EDDY ROCKS LOCATION	
	ROOTWADS	

**DETAIL LEGEND**

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	EXISTING GROUND
	EARTHEN FILL
	TOPSOIL
	RIP-RAP
	GEOTEXTILE FABRIC

No.	REVISION	CHK'D BY DATE	DESIGNED BY LMS
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			PROJECT NO. 21773

**CITY OF TOLEDO-LUCAS COUNTY-OHIO**

**COLLINS PARK**

**STREAM RESTORATION**

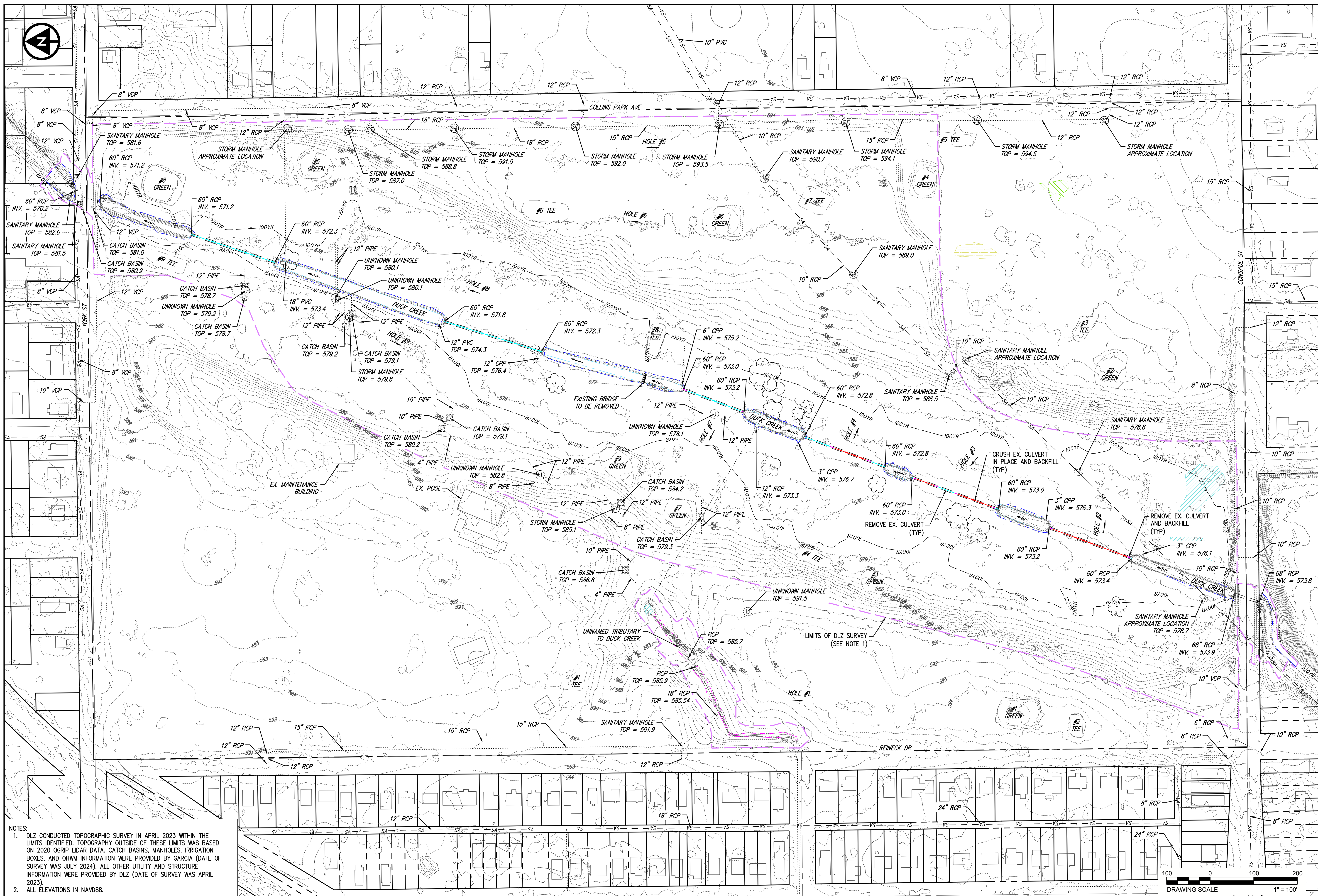
**CONSTRUCTION PLANS**

**LEGEND**


DATE	03-03-2025
SCALE	AS NOTED
SHEET	<b>C2.1</b>



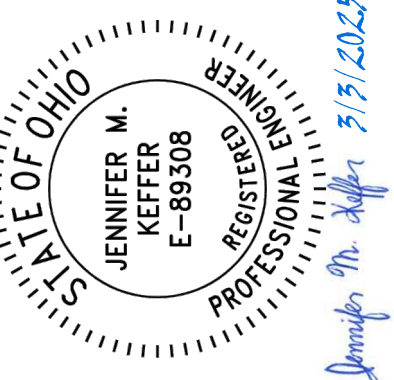
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2. ALL ELEVATIONS IN NAVD88.



219 SOUTH ERIE STREET  
TOLEDO, OH 43604-8607  
419.385.2018



REGISTERED PROFESSIONAL ENGINEER  
JENNIFER M. KEFFER  
E-89308  
3/3/2025

DESIGNED BY	DRAWN BY	CHECKED BY	PROJECT NO.
LMS	LMS	JMK	21773

CHKD BY	DATE	REVISION	No.

CITY OF TOLEDO-LUCAS COUNTY-OHIO

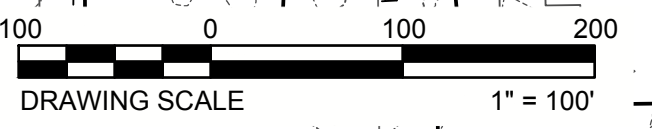
# COLLINS PARK

## STREAM RESTORATION

### CONSTRUCTION PLANS

### EXISTING CONDITIONS & DEMOLITION PLAN

DATE	03-03-2025
SCALE	AS NOTED
SHEET	C3.0



DRAWING SCALE 1" = 100'

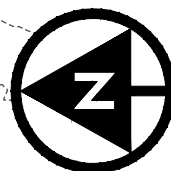
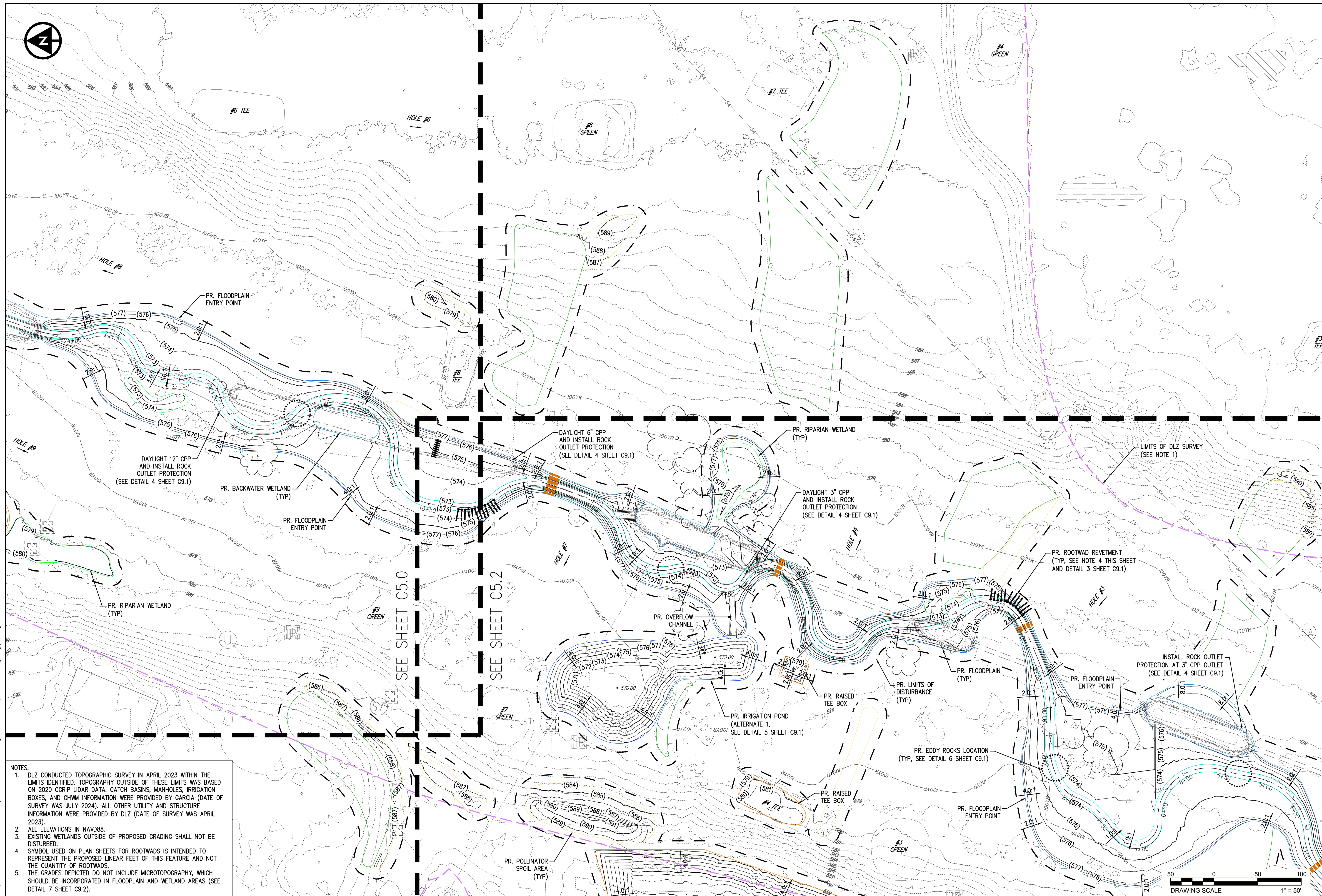










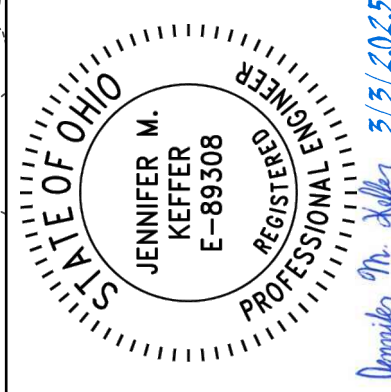


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2. ALL ELEVATIONS IN NAVD88.
3. EXISTING WETLANDS OUTSIDE OF PROPOSED GRADING SHALL NOT BE DISTURBED.
4. SYMBOL USED ON PLAN SHEETS FOR ROOTWADS IS INTENDED TO REPRESENT THE PROPOSED LINEAR FEET OF THIS FEATURE AND NOT THE QUANTITY OF ROOTWADS.
5. THE GRADES DEPICTED DO NOT INCLUDE MICROTOPOGRAPHY, WHICH SHOULD BE INCORPORATED IN FLOODPLAIN AND WETLAND AREAS (SEE DETAIL 7 SHEET C9.2).

**verdantas**

219 SOUTH ERIE STREET  
TOLEDO, OHIO 43604-8607  
419.385.2018



Annika M. Keller 3/3/2025

DESIGNED BY	LMS
DRAWN BY	LMS
CHECKED BY	JMK
PROJECT NO.	

CHK'D BY	
DATE	

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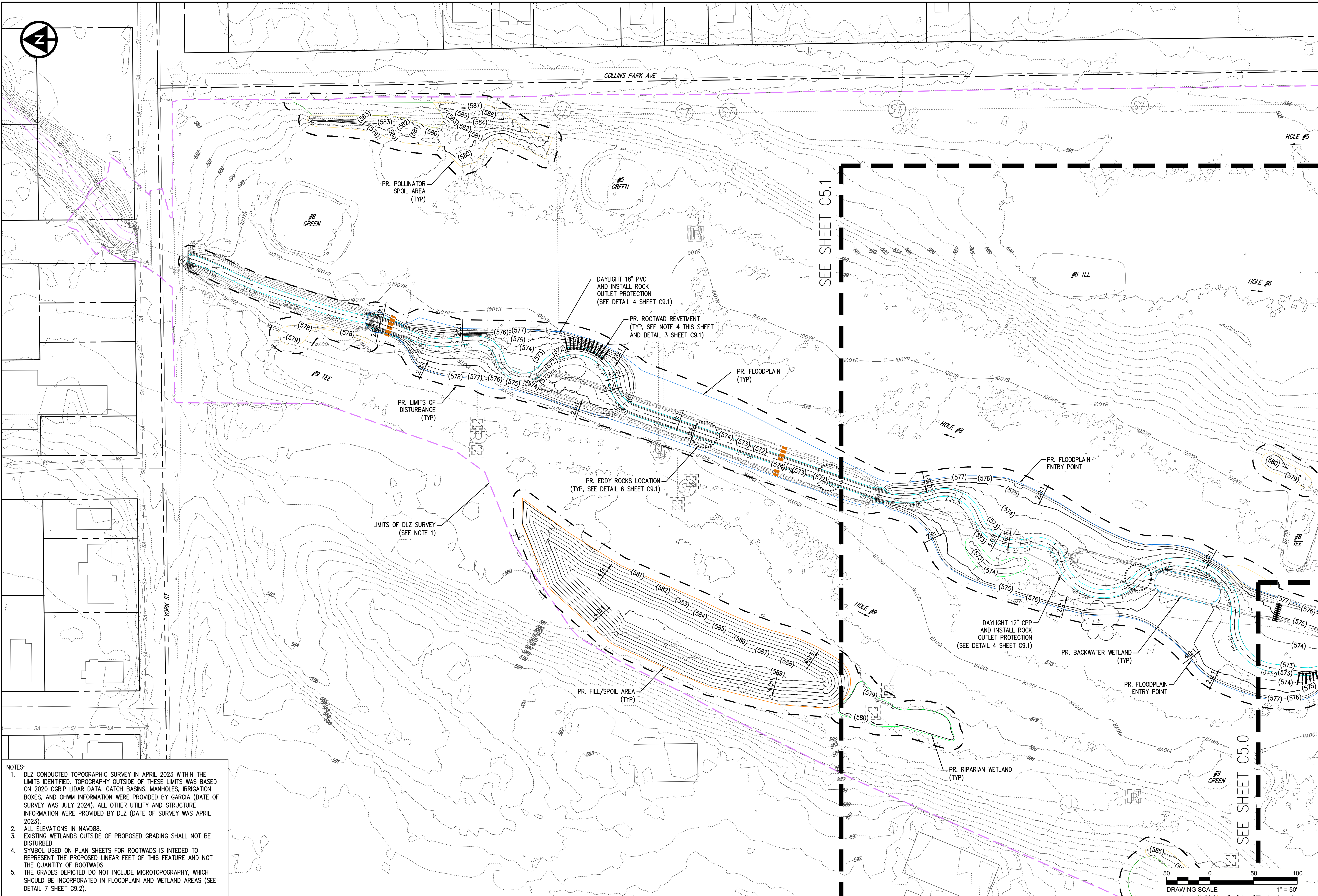
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SHEET

**C5.**



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NOTES:

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419.385.2018

STATE OF OHIO  
JENNIFER M. KEEFER  
E-89308  
PROFESSIONAL ENGINEER  
Jennifer M. Keefe 3/3/2025

DESIGNED BY  
LMS

DRAWN BY  
LMS

CHECKED BY  
JMK

PROJECT NO.  
21773

CITY OF TOLEDO-LUCAS COUNTY-OHIO

COLLINS PARK

STREAM RESTORATION

CONSTRUCTION PLANS

GRADING PLAN

DATE  
03-03-2025

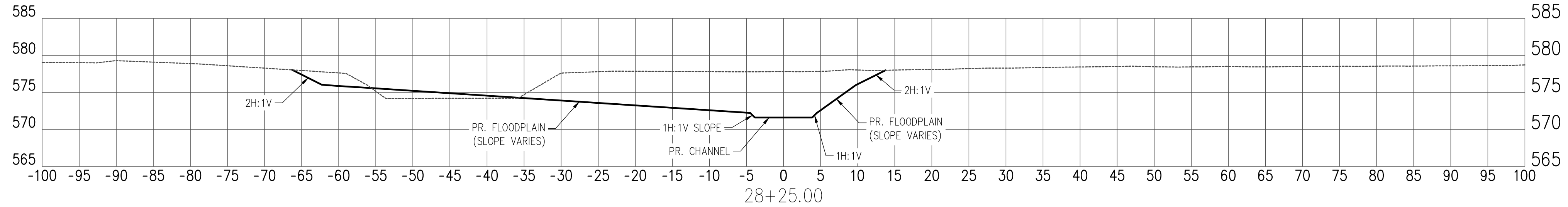
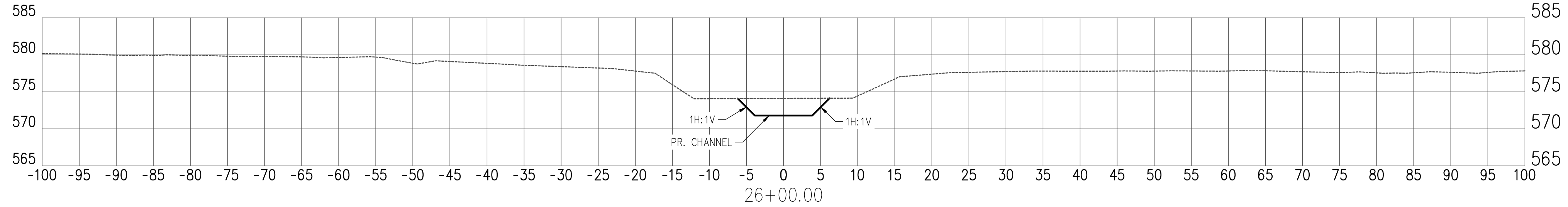
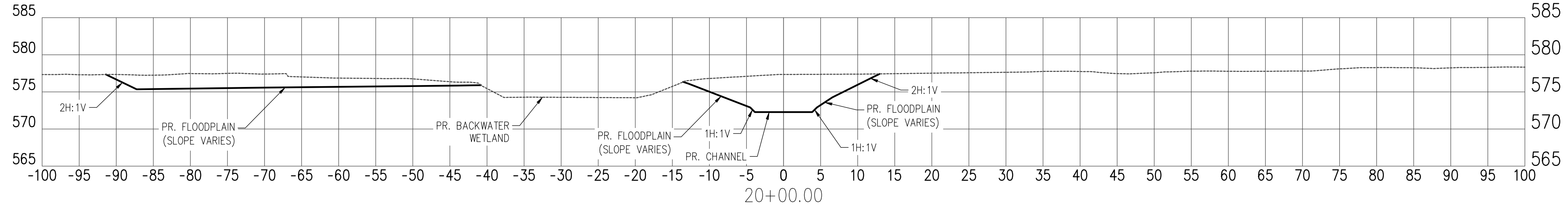
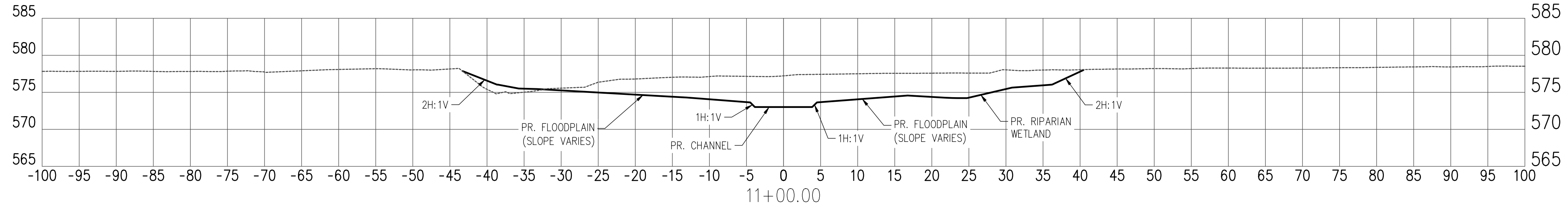
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C5.2

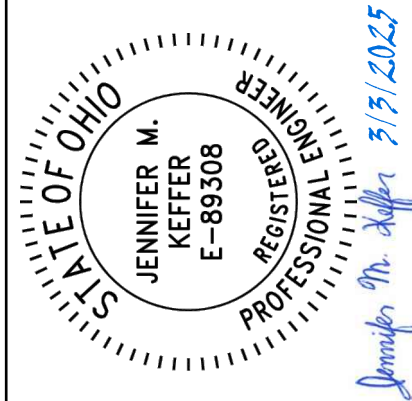


EX. GRADE
PR. GRADE

STA. 2+75 TO 28+25  
HORIZONTAL SCALE: 1" = 10'  
VERTICAL SCALE: 1" = 10'



NOTES:  
1. ALL ELEVATIONS IN NAVD88.



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CITY OF TOLEDO~LUCAS COUNTY~OHIO

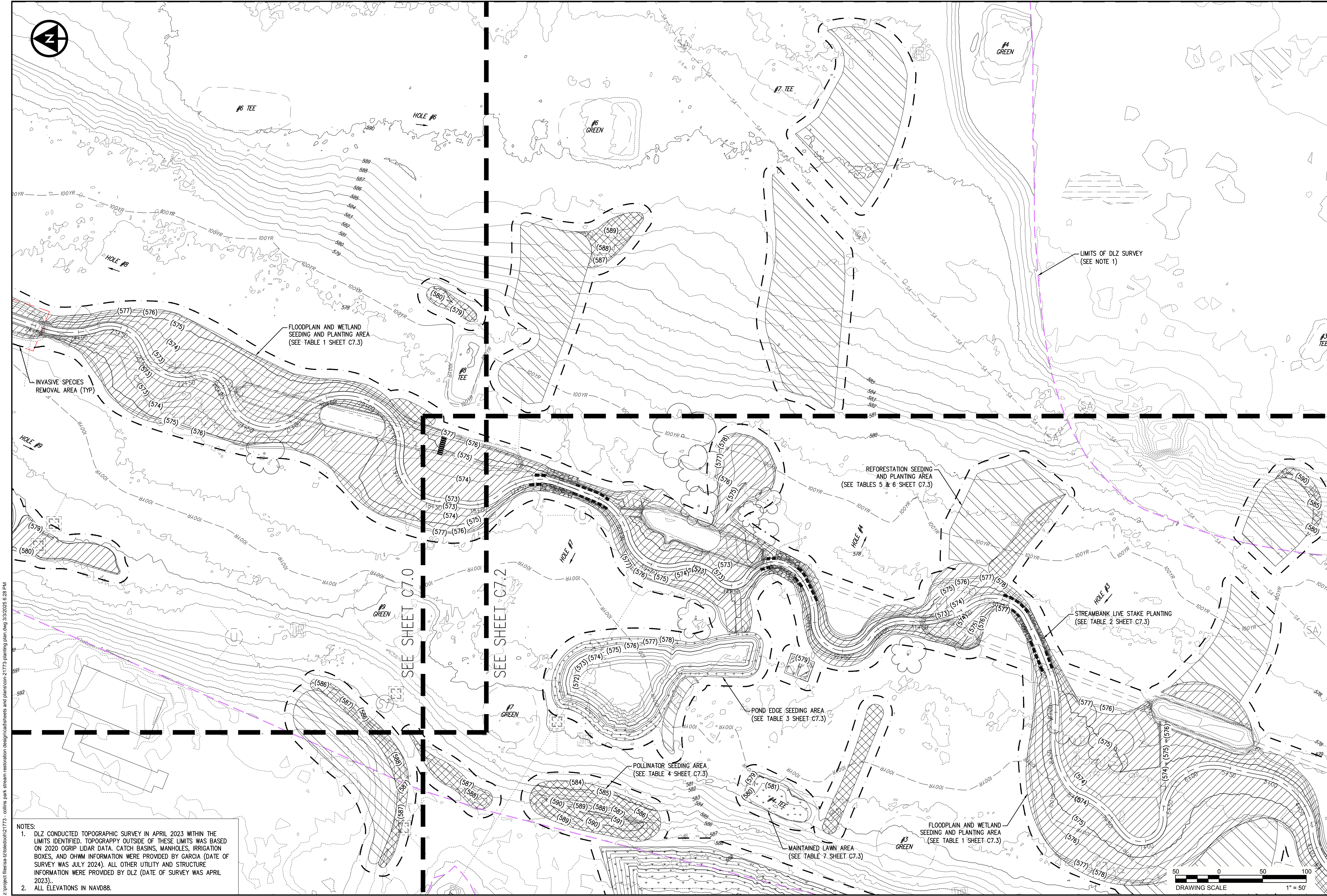
# COLLINS PARK STREAM RESTORATION CONSTRUCTION PLANS SECTIONS

DATE	03-03-2025
SCALE	AS NOTED
SHEET	<b>C6.0</b>









NOTES:  
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verdantas

219 SOUTH ERIE STREET  
TOLEDO, OHIO 43604-8607  
419.385.2018

STATE OF OHIO  
JENNIFER M. KEEFER  
E-89308  
REGISTERED PROFESSIONAL ENGINEER  
Jennifer M. Keefe 3/13/2025

DESIGNED BY	LMS
DRAWN BY	LMS
CHECKED BY	JMK
PROJECT NO.	21773

CITY OF TOLEDO-LUCAS COUNTY-OHIO

COLLINS PARK

STREAM RESTORATION

CONSTRUCTION PLANS

PLANTING PLAN

DATE	03-03-2025
SCALE	AS NOTED
SHEET	C7.1







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SEEDING AND MULCHING

1. SEEDING AND MULCHING SHALL BE PERFORMED WITHIN THE APPLICATION TIME FRAMES SPECIFIED IN ODNR RAINWATER AND LAND DEVELOPMENT MANUAL. SEED SCHEDULE SHALL BE AS FOLLOWS:

PERMANENT SEEDING EROSION CONTROL MIXTURE:  
REFER TO THE TABLES ON THIS SHEET AND THE PLANTING PLAN ON SHEETS C7.0, C7.1, AND C7.2.

TEMPORARY EROSION CONTROL MIXTURE:

MARCH 1 TO AUGUST 15  
OATS: 60% OF WEIGHT  
CANADIAN WILDRYE: 20% OF WEIGHT  
VIRGINIA WILDRYE: 20% OF WEIGHT  
APPLICATION RATE: 5 lbs. PER 1,000 SQ. FT.

AUGUST 16 TO NOVEMBER 1  
CEREAL RYEGRASS: 60% OF WEIGHT  
CANADIAN WILDRYE: 20% OF WEIGHT  
VIRGINIA WILDRYE: 20% OF WEIGHT  
APPLICATION RATE: 5 LBS. PER 1,000 SQ. FT.

NOVEMBER 2 TO FEBRUARY 28  
USE MULCH ONLY OR PERMANENT SEEDING

2. PERFORM THIS WORK IN ALL AREAS OF SOIL DISTURBANCE THAT WILL NOT HAVE SOME OTHER TYPE OF PERMANENT EROSION CONTROL BARRIER AS SHOWN ON THE PLANS (E.G., GRAVEL COVER, PAVEMENT, ETC.).
3. PERFORM THIS WORK IN THE TIMEFRAMES IDENTIFIED IN THE SWPPP AND WITHIN 7 DAYS OF OBTAINING FINAL GRADE. IF IT IS ANTICIPATED THAT FUTURE WORK MAY DISTURB AN AREA, PLACE TEMPORARY SEED AND MULCH.
4. MULCHING MATERIAL SHALL BE APPLIED AT A RATE OF 90 lbs. PER 2 TONS/ACRE. MULCHING SHALL CONSIST OF OAT OR WHEAT STRAW, HAY OR WOOD FIBER FREE FROM WEEDS AND FOREIGN MATTER DETRIMENTAL TO PLANT LIFE. TACKIFIER SHALL BE APPLIED TO WOOD MULCH. TACKIFIER APPLICATION RATE 3 LBS PER ACRE LAND TACK SCE-TAK OR ENGINEER APPROVED EQUAL. FOR AREAS LESS STEEP THAN 4:1 SLOPE, DIRECT DRILL OF SEEDS WITHOUT MULCH IS ACCEPTABLE AS LONG AS THE CONTRACTOR ENSURES THE SITE REACHES FINAL STABILIZATION.
5. APPLY WATER IN ACCORDANCE WITH ODOT ITEM 659. WATER SHALL BE CLEAN, FRESH AND FREE OF SUBSTANCES OR MATTER WHICH COULD INHIBIT VIGOROUS GROWTH OF GRASS.
6. SEEDED AREAS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE SITE REACHES FINAL STABILIZATION. FINAL STABILIZATION MEANS THE VEGETATION HAS ESTABLISHED UNIFORM PERENNIAL VEGETATIVE COVER (E.G., EVENLY DISTRIBUTED, WITHOUT LARGE BARE AREAS) WITH A DENSITY OF AT LEAST 70 PERCENT VEGETATIVE COVER FOR A PERIOD OF 1 YEAR FROM THE TIME OF PLANTING. IN ADDITION, ALL TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES ARE REMOVED AND DISPOSED OF AND ALL TRAPPED SEDIMENT IS PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION. CONTRACTOR SHALL WATER TO PREVENT GRASS AND SOIL FROM DRYING OUT.
7. SEEDED AREAS THAT DO NOT HAVE A UNIFORM DENSITY OF AT LEAST 70 PERCENT VEGETATIVE COVER, SHALL BE REPAIR SEEDED OR INTER-SEEDED AND MULCHED. COMPOST MAY NOT BE USED TO REPAIR AREAS.

GENERAL PLANTING NOTES

PLANTING PROCEDURE

1. THIS WORK SHALL BE DONE IN CONFORMANCE WITH THE REQUIREMENTS OF ODOT CMS 661. PLANTS SHALL BE PLANTED CAREFULLY AND FIRMLY IN PLACE AT THE SPECIFIED PLANTING DENSITIES TO THE MINIMUM DEPTH NECESSARY TO ANCHOR THEM IN THE SOIL.
2. REFER TO THIS SHEET FOR PLANTING SCHEDULES.

PLANTING MAINTENANCE

1. DURING THE LIFE OF THE CONTRACT AND PERIOD OF ESTABLISHMENT, THE CONTRACTOR WILL BE RESPONSIBLE TO MAINTAIN THE PLANTED AREAS AND KEEP THIS AREA FREE FROM WEEDS AND DEBRIS.

INSPECTIONS

1. PERIODIC INSPECTIONS OF THE PLANTING AREA SHALL OCCUR ON A MONTHLY BASIS DURING THE PERIOD OF ESTABLISHMENT TO ENSURE THAT THE SITE IS BEING MAINTAINED AS SPECIFIED. THE CONTRACTOR IS RESPONSIBLE TO MAKE ARRANGEMENTS WITH THE ENGINEER TO ESTABLISH A SCHEDULE FOR THESE INSPECTIONS.
2. THE PERIOD OF ESTABLISHMENT WILL BEGIN IMMEDIATELY UPON COMPLETION OF THE PLANTING OPERATIONS AND CONTINUE UNTIL OCTOBER 15. THE REQUIRED PERIOD OF ESTABLISHMENT SHALL BE EXTENDED TO COVER ONE FULL GROWING SEASON, BETWEEN APRIL 15 THROUGH OCTOBER 15 OF THE FOLLOWING YEAR.
3. THE NUMBER OF PERENNIALS, AS PER PLAN OF EACH SPECIES AND SIZE WILL BE THOSE PLANTED, COMPLETE IN PLACE AND ACCEPTED.

PLANTING LEGEND

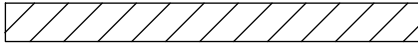

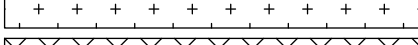

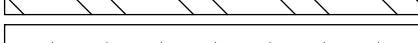
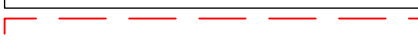

	FLOODPLAIN AND WETLAND SEEDING AND PLANTING AREAS - SEE TABLE 1
	STREAMBANK LIVE STAKE PLANTING - SEE TABLE 2
	POND EDGE SEEDING AREA - SEE TABLE 3
	POLLINATOR SEEDING AREAS - SEE TABLE 4
	REFORESTATION SEEDING AND PLANTING AREAS - SEE TABLES 5 & 6
	MAINTAINED LAWN AREAS - SEE TABLE 7
	INVASIVE SPECIES REMOVAL AREA

TABLE 1: FLOODPLAIN AND WETLAND SEEDING AND PLANTING AREAS					SEEDING AREA ACRES: 4.2	PLANTING AREA ACRES: 4.2
SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS*	DENSITY	LBS PER ACRE	QUANTITY (LBS)	QUANTITY (PLUGS)
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW	31.3%	4.688	19.7	389
<i>Elymus canadensis</i>	Nodding Wild Rye	FACU	23.3%	3.497	14.7	389
<i>Andropogon gerardii</i>	Big Bluestem	FACU	21.6%	3.234	13.6	389
<i>Elymus macgregorii</i>	Early Wild Rye	n/a	4.7%	0.704	3.0	389
<i>Panicum (Dichanthelium) clandestinum</i>	Deer-tongue Grass	FACW	4.5%	0.675	2.8	389
<i>Bidens aristosa</i>	Tickseed Sunflower	FACW	2.5%	0.375	1.6	389
<i>Carex vulpinoidea</i>	Brown Fox Sedge	OEL	1.7%	0.254	1.1	389
<i>Scirpus atrovirens</i>	Dark Green Bulrush	OEL	1.6%	0.234	1.0	389
<i>Senna hebecarpa</i>	Wild Senna	FACW	1.6%	0.234	1.0	389
<i>Verbena hastata</i>	Blue Vervain	FACW	1.3%	0.188	0.8	389
<i>Polygonum pensylvanicum</i>	Pinkweed/Smartweed	FACW	0.8%	0.113	0.5	389
<i>Spartina pectinata</i>	Prairie Cordgrass	FACW	0.6%	0.093	0.4	389
<i>Solidago speciosa</i>	Showy Goldenrod	n/a	0.6%	0.093	0.4	389
<i>Asclepias incarnata</i>	Rose Milkweed	OEL	0.6%	0.093	0.4	389
<i>Rudbeckia laciniata</i>	Green-headed Coneflower	FACW	0.6%	0.093	0.4	389
<i>Glyceria grandis</i>	Reed Manna Grass/ American Manna Grass	OEL	0.4%	0.066	0.3	389
<i>Helioopsis helianthoides</i>	Ox-Eye Sunflower	FACU	0.4%	0.066	0.3	389
<i>Carex hirsutella</i>	Fuzzy Wuzzy Sedge	n/a	0.3%	0.047	0.2	389
<i>Aster novae-angliae</i>	New England Aster	FACW	0.3%	0.047	0.2	389
<i>Vernonia altissima</i>	Tall Ironweed	n/a	0.3%	0.047	0.2	389
<i>Actinomeris alternifolia</i>	Wingstem	n/a	0.3%	0.047	0.2	389
<i>Eupatorium fistulosum</i>	Hollow Joe Pye	n/a	0.2%	0.029	0.1	389
<i>Mimulus ringens</i>	Monkey Flower	OEL	0.1%	0.018	0.1	389
<i>Lobelia cardinalis</i>	Cardinal Flower	OEL	0.1%	0.018	0.1	389
<i>Pycnanthemum tenuifolium</i>	Narrow Leaved Mountain Mint	FAC	0.1%	0.018	0.1	389
<i>Onoclea sensibilis</i>	Sensitive Fern/ Meadow Brake	FACW	0.1%	0.018	0.1	389
<i>Scirpus cyperinus</i>	Woolgrass	OEL	0.1%	0.009	0.0	389
TOTAL:					100.0%	15.0

\* Wetland indicator status based on the USACE National Wetland Plant List for the Northcentral and Northeast region.

- Seed mix based on Ohio Prairie Nursery Ohio Flood Plain Native Seed Mix (OFLPM02).

- Substitutions may be made based upon availability and coordination with engineer.

- Round total quantity up to nearest pound for estimating and purchasing purposes.

- Plugs based on target density of 2,500 per acre.

TABLE 2: STREAMBANK LIVE STAKE PLANTING			PLANTING AREA LINEAR FEET: 380
SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS*	QUANTITY (STEMS <sup>1</sup> )
<i>Salix discolor</i>	Pussy Willow	FACW	380
<i>Salix interior</i>	Sandbar Willow	FACW	380
TOTAL:			760

\* Wetland indicator status based on the USACE National Wetland Plant List for the Northcentral and Northeast region.

- Quantity based on 2 per lineal foot

- Substitutions may be made based upon availability and coordination with engineer.

TABLE 3: POND EDGE SEEDING AREAS					SEEDING AREA ACRES: 0.10
SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS*	DENSITY	LBS PER ACRE	QUANTITY (LBS)
<i>Elymus canadensis</i>	Nodding Wild Rye	FACU	14.1%	1.406	0.1
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW	12.5%	1.250	0.1
<i>Panicum (Dichanthelium) clandestinum</i>	Deer-tongue Grass	FACW	10.9%	1.094	0.1
<i>Echinacea purpurea</i>	Purple Coneflower	n/a	9.4%	0.937	0.1
<i>Rudbeckia hirta</i>	Black-eyed Susan	FACU	7.8%	0.781	0.1
<i>Tridens flavus</i>	Purple Top	UPL	6.3%	0.625	0.1
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU	6.3%	0.625	0.1
<i>Helioopsis helianthoides</i>	Ox-Eye Sunflower	FACU	6.3%	0.625	0.1
<i>Panicum virgatum</i>	Switch Grass	FAC	4.7%	0.469	0.0
<i>Gaillardia aristata</i>	Blanket Flower	n/a	4.5%	0.450	0.0
<i>Carex vulpinoidea</i>	Brown Fox Sedge	OEL	3.1%	0.312	0.0
<i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis	FACU	3.1%	0.312	0.0
<i>Vernonia altissima</i>	Tall Ironweed	n/a	1.9%	0.187	0.0
<i>Coreopsis tinctoria</i>	Plains Coreopsis	FACU	1.6%	0.156	0.0
<i>Monarda citriodora</i>	Lemon Mint	n/a	1.6%	0.156	0.0
<i>Monarda fistulosa</i>	Wild Bergamot	FACU	1.3%	0.125	0.0
<i>Ratibida pinnata</i>	Yellow Grey-Headed Coneflower	FACU	1.3%	0.125	0.0
<i>Carex comosa</i>	Bristly Sedge	OEL	0.6%	0.062	0.0
<i>Verbena hastata</i>	Blue Vervain	FACW	0.6%	0.062	0.0
<i>Asclepias incarnata</i>	Rose Milkweed	OEL	0.6%	0.062	0.0
<i>Solidago graminifolia</i>	Grass Leaved Goldenrod	n/a	0.3%	0.031	0.0
<i>Solidago nemoralis</i>	Dwarf Goldenrod	n/a	0.3%	0.031	0.0
<i>Aster novae-angliae</i>	New England Aster	FACW	0.3%	0.031	0.0
<i>Liriodendron tulipifera</i>	Common Rush	OEL	0.3%	0.031	0.0
<i>Scirpus cyperinus</i>	Woolgrass	OEL	0.3%	0.031	0.0
<i>Aster azureus</i>	Sky Blue Aster	n/a	0.2%	0.019	0.0
TOTAL:					100.0%

\* Wetland indicator status based on the USACE National Wetland Plant List for the Northcentral and Northeast region.

- Seed mix based on Ohio Prairie Nursery Pond Edge Native Seed Mix (OPNPEM02).

- Substitutions may be made based upon availability and coordination with engineer.

- Round total quantity up to nearest pound for estimating and purchasing purposes.

TABLE 4: POLLINATOR SEEDING AREAS					SEEDING AREA ACRES: 0.95
SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS*	DENSITY	LBS PER ACRE	QUANTITY (LBS)
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU	20.9%	3.141	3.0
<i>Elymus canadensis</i>	Nodding Wild Rye	FACU	16.6%	2.484	2.4
<i>Bouteloua curtipendula</i>	Side-oats Grama	n/a	10.9%	1.641	1.6
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW	10.9%	1.641	1.6
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU	6.3%	0.938	0.9
<i>Dalea purpurea</i>	Purple Prairie Clover	n/a	5.0%	0.750	0.7
<i>Helioopsis helianthoides</i>	Ox Eye Sunflower	FACU	4.7%	0.704	0.7
<i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis	FACU	3.4%	0.516	0.5
<i>Desmanthus illinoensis</i>	Illinois Bundleflower	FACU	3.4%	0.516	0.5
<i>Gaillardia pulchella</i>	Indian Blanket	UPL	3.4%	0.506	0.5
<i>Echinacea purpurea</i>	Purple Coneflower	n/a	2.6%	0.384	0.4
<i>Eryngium yuccifolium</i>	Rattlesnake Master	FAC	1.9%	0.281	0.3
<i>Dalea candida</i>	White Prairie Clover	n/a	1.6%	0.234	0.2
<i>Rudbeckia hirta</i>	Black-eyed Susan	FACU	1.6%	0.234	0.2
<i>Ratibida pinnata</i>	Yellow Grey-Headed Coneflower	FACU	1.3%	0.188	0.2
<i>Astragalus canadensis</i>	Canadian Milk Vetch	FAC	0.9%	0.141	0.1
<i>Asclepias tuberosa</i>	Butterfly Weed	n/a	0.6%	0.093	0.1
<i>Asclepias syriaca</i>	Common Milkweed	UPL	0.6%	0.093	0.1
<i>Monarda fistulosa</i>	Wild Bergamot	FACU	0.6%	0.093	0.1
<i>Penstemon digitalis</i>	Foxglove Beardtongue	FAC	0.6%	0.093	0.1
<i>Lespedeza capitata</i>	Roundheaded Bushclover	FACU	0.6%	0.093	0.1
<i>Coreopsis tinctoria</i>	Plains Coreopsis	FACU	0.6%	0.093	0.1
<i>Solidago rigida</i>	Stiff Goldenrod	FACU	0.6%	0.093	0.1
<i>Aster laevis</i>	Smooth Aster	FACU	0.3%	0.047	0.0
TOTAL:					100.0%

\* Wetland indicator status based on the USACE National Wetland Plant List for the Northcentral and Northeast region.

- Seed mix based on Ohio Prairie Nursery Native Short Grass and Wildflower Seed Mix (NSGM03).

- Substitutions may be made based upon availability and coordination with engineer.

- Round total quantity up to nearest pound for estimating and purchasing purposes.

TABLE 5: REFORESTATION SEEDING AREAS					SEEDING AREA ACRES: 2.30
SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS*	DENSITY	LBS PER ACRE	QUANTITY (LBS)
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU	37.5%	7.50	17.3
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW	22.2%	4.44	10.2
<i>Elymus canadensis</i>	Nodding Wild Rye	FACU	22.2%	4.44	10.2
<i>Bouteloua curtipendula</i>	Side-oats Grama	n/a	15.9%	3.19	7.3
<i>Tridens flavus</i>	Purple Top	UPL	1.3%	0.25	0.58
<i>Sporobolus heterolepis</i>	Prairie Dropseed	FACU	0.6%	0.13	0.29
<i>Agrostis perennans</i>	Autumn Bentgrass	FACU	0.3%	0.06	0.14
TOTAL:					100.0%

\* Wetland indicator status based on the USACE National Wetland Plant List for the Northcentral and Northeast region.

- Seed mix based on Ohio Prairie Nursery Native Short Grass Seed Mix (MSG03).

- Substitutions may be made based upon availability and coordination with engineer.

- Round total quantity up to nearest pound for estimating and purchasing purposes.

TABLE 6: WOODY STEM PLANTING FOR REFORESTATION AREAS			PLANTING AREA ACRES: 2.3
SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS*	QUANTITY (STEMS <sup>1</sup> )
<i>Quercus rubra</i>	Red Oak	FACU	46
<i>Quercus alba</i>	White Oak	FACU	46
<i>Liriodendron tulipifera</i>	Tuliptree	FACU	46
<i>Quercus macrocarpa</i>	Burr Oak	FACU	46
<i>Nyssa sylvatica</i>	Black Tupelo	FAC	46
TOTAL:			230

\* Wetland indicator status based on the USACE National Wetland Plant List for the Northcentral and Northeast region.

<sup>1</sup>Canopy trees shall be 1-inch calipers.

- Quantity based on 100 stems/ acre

- Substitutions may be made based upon availability and coordination with engineer.

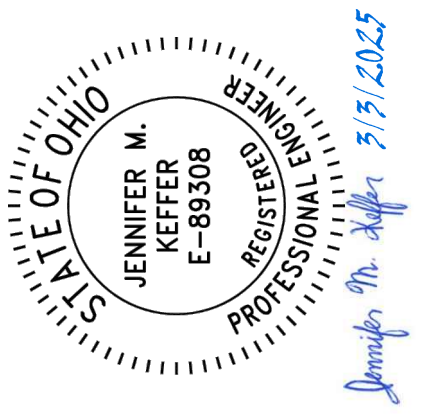
TABLE 7: MAINTAINED LAWN AREAS			TEEBOX ACRES <sup>1</sup> : 0.1	FILL/SPOIL AREAS ACRES <sup>1</sup> : 1.7
COMMON NAME	DENSITY	LBS PER ACRE	QUANTITY (LBS)	QUANTITY (LBS)
HGT® Kentucky Bluegrass	100.0%	110,000	11.0	0.0
Chewings Fescue	100.0%	390,000	0.0	663.0

\* Maintained lawn areas acreage is based on restoration feature planting areas. Total acreage may vary based on contractor ground disturbances.

Areas disturbed outside of restoration areas shall be restored using HGT® Kentucky Bluegrass.

verdantas

219 SOUTH LERIE STREET  
TOLEDO, OHIO 43604-8607  
419.385.2018



DESIGNED BY	CHK'D BY	REVISION	No.
LMS	DATE		
DRAWN BY			
LMS			
CHECKED BY			
JMK			
PROJECT NO.			
21773			

CITY OF TOLEDO-LUCAS COUNTY- OHIO  
COLLINS PARK  
STREAM RESTORATION  
CONSTRUCTION PLANS  
PLANTING NOTES & TABLES

DATE	03-03-2025
SCALE	AS NOTED
SHEET	C7.3



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INVASIVE SPECIES TREATMENT

1. INVASIVE SPECIES THAT ARE COMMON TO RESTORATION AREAS OR ARE KNOWN TO BE WITHIN THE VICINITY OF THE PROJECT AREA AND MAY TRANSLOCATE IN THE FUTURE, INCLUDE BUT ARE NOT LIMITED TO CATTAIL (TYPHA SPP.), COMMON REED (PHRAGMITES AUSTRALIS), REED CANARY GRASS (PHALARIS ARUNDINACEA), HONEYSUCKLE (LONICERA SPP), AUTUMN OLIVE (ELAEAGNUS UMBELLATA), RUSSIAN OLIVE (ELAEAGNUS ANGUSTIFOLIA), AND MULBERRY (MORUS SP.).
2. INVASIVE SPECIES ARE TO BE MONITORED AND CONTROLLED DURING CONSTRUCTION/RESTORATION ACTIVITIES SO THAT NO SINGLE SPECIES ACHIEVES GREATER THAN 5% COVERAGE OR ALTERS THE DESIRED COMMUNITY STRUCTURE OF THE SITE WITHIN THE LIMITS OF PROPOSED PLANTING AREAS AND INVASIVE SPECIES TREATMENT AREAS IDENTIFIED ON THESE PLANS. HERBICIDE APPLICATION CAN BE USED IN CONJUNCTION WITH MECHANICAL METHODS (CUTTING AND PULLING) TO REDUCE THE AMOUNT OF HERBICIDE APPLIED. ANY HERBICIDE APPLICATION MUST BE CONDUCTED BY A LICENSED APPLICATOR.
3. THE LOCATION OF INVASIVE SPECIES TREATMENT AREAS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE OWNER PRIOR TO TREATMENT.

INVASIVE SPECIES TREATMENT METHODS

NOTE: ALL TREATMENT METHODS DESCRIBED HEREIN ARE CONSIDERED APPROVED METHODS FOR THIS PROJECT. CONTRACTOR MAY PROPOSE AND UTILIZE ALTERNATE METHODS OF INVASIVE SPECIES TREATMENT SUBJECT TO OWNER APPROVAL PRIOR TO IMPLEMENTATION.

1. APPLY A GLYPHOSATE BASED/SYNTHETIC HERBICIDE TO THE EXISTING VEGETATION AT LABEL RATES FOR PLANT CONTROL. TREATMENT SHOULD OCCUR BETWEEN MAY AND OCTOBER.
2. APPLY HERBICIDES AT LEAST TWO TO THREE WEEKS BEFORE LAND DISTURBANCE.
3. THE UPPER THREE INCHES OF SOIL AND ASSOCIATED VEGETATIVE MASS WHERE LAND IS CLEARED FOR RESTORATION THAT DOES CONTAIN INVASIVE SPECIES SHOULD BE ISOLATED FROM STOCKPILES OF TOPSOIL PROPOSED FOR REUSE ON THE SITE. ANY SEQUESTERED TOPSOIL KNOWN TO CONTAIN SIGNIFICANT POPULATIONS OF INVASIVE SPECIES SHOULD BE BURIED AT LEAST ONE FOOT BELOW THE SURFACE OF PERMANENT SPOIL LOCATIONS.
4. REPEAT THE HERBICIDE APPLICATION PROCESS THROUGHOUT THE GROWING SEASON AS NECESSARY.
5. IMPORTANT TO PERFORM THIS PROCESS FOR A FULL GROWING SEASON SO THAT THERE IS CONTROL OF COOL AND WARM SEASON WEEDS.
6. INSTALL THE NATIVE SEED MIXES USING BROADCAST SEEDING OR ENGINEERING APPROVED ALTERNATE METHOD IN THE LATE FALL, EARLY WINTER OR LATE SPRING WHEN SOIL TEMPERATURES ARE BELOW 50 DEGREES FAHRENHEIT.

SPECIFIC TREATMENT FOR INVASIVE SPECIES INCLUDE:

CATTAIL (TYPHA SPP.)

CATTAIL SPECIES ARE VERY AGGRESSIVE COLONIZERS WITH AN EXTENSIVE RHIZOMATOUS ROOT SYSTEM THAT IF BECOMES ESTABLISHED CAN BE EXTREMELY DIFFICULT TO ELIMINATE. HAND PULLING OR DIGGING MAY BE EFFECTIVE ON SMALL OR VERY YOUNG PLANTS. THIS WILL BE VERY LABOR INTENSIVE PARTICULARLY IF THE PLANT BECOMES WELL ESTABLISHED. CARE SHOULD BE GIVEN TO REMOVING THE ENTIRE ROOT STRUCTURE OR REGROWTH FROM BROKEN ROOTS MAY OCCUR. HOWEVER, ONCE A STAND BECOMES ESTABLISHED, THE EXTENSIVE ROOT SYSTEM WILL MAKE HAND PULLING OR DIGGING VERY DIFFICULT AND POTENTIALLY INEFFECTIVE. SEED HEAD REMOVAL CAN BE CONDUCTED BUT TREATMENT SHOULD TAKE PLACE BEFORE SEED HEAD ESTABLISHMENT. SEED HEADS SHOULD BE BAGGED IMMEDIATELY AND REMOVED FROM SITE. MANY CONTROL MEASURES HAVE BEEN TRIED IN THE PAST INCLUDING MOWING, FLOODING, AND BURNING BUT THE MOST EFFECTIVE CONTROL METHOD HAS BEEN HERBICIDE APPLICATION. GLYPHOSATE HAS BEEN SHOWN TO BE AN EFFECTIVE CONTROL MEASURE BUT USUALLY TAKES TWO OR THREE SEASONS OF APPLICATIONS TO ELIMINATE DENSE STANDS. THE MOST EFFECTIVE MEANS OF CONTROL OF CATTAIL HAS BEEN APPLICATION OF HERBICIDES SUCH AS GLYPHOSATE THAT CAN BE SPRAYED OR APPLIED BY A WICKING DEVICE.

COMMON REED (PHRAGMITES AUSTRALIS)

COMMON REED IS A VERY AGGRESSIVE GRASS WITH AN EXTENSIVE RHIZOMATOUS ROOT SYSTEM THAT IF BECOMES ESTABLISHED CAN BE EXTREMELY DIFFICULT TO ELIMINATE. HAND PULLING OR DIGGING MAY BE EFFECTIVE ON SMALL OR VERY YOUNG PLANTS. THIS WILL BE VERY LABOR INTENSIVE PARTICULARLY IF THE PLANT BECOMES WELL ESTABLISHED. HOWEVER, ONCE A STAND BECOMES ESTABLISHED, THE EXTENSIVE ROOT SYSTEM WILL MAKE HAND PULLING OR DIGGING VERY DIFFICULT AND POTENTIALLY INEFFECTIVE.MANY CONTROL MEASURES HAVE BEEN TRIED IN THE PAST INCLUDING MOWING, FLOODING, BURNING, AND COVERING WITH BLACK PLASTIC BUT THE MOST EFFECTIVE CONTROL METHOD HAS BEEN HERBICIDE APPLICATION. GLYPHOSATE HAS BEEN SHOWN TO BE AN EFFECTIVE CONTROL MEASURE BUT USUALLY TAKES TWO OR THREE SEASONS OF APPLICATIONS TO ELIMINATE DENSE STANDS. THE MOST EFFECTIVE MEANS OF CONTROL OF COMMON REED HAS BEEN APPLICATION OF HERBICIDES SUCH AS GLYPHOSATE THAT CAN BE SPRAYED OR APPLIED BY A WICKING DEVICE. COMMON REED IS SHADE INTOLERANT AND ONCE THE PLANTED SHRUB AND FORESTED SPECIES PROVIDE A CANOPY THAT SHADES THE REPLACEMENT OR RESTORATION AREAS, COMMON REED SHOULD NOT BE A CONCERN IN MATURE FORESTED AREAS. PERIODIC MOWING MAY PROVIDE SOME CONTROL, BUT WILL LIKELY NOT ELIMINATE THE PLANTS. OTHER MEASURES WILL LIKELY BE NEEDED FOR LONG TERM CONTROL.

REED CANARY GRASS (PHALARIS ARUNDINACEA)

REED CANARY GRASS IS AN AGGRESSIVE WETLAND SPECIES THAT FORMS DENSE MONOTYPIC STANDS TO THE EXCLUSION OF OTHER WETLAND SPECIES. IT SPREADS BY RHIZOMATOUS GROWTH AND SEEDS. ONCE ESTABLISHED IT CAN BE DIFFICULT TO ADEQUATELY CONTROL DUE TO RESPROUTING FROM THE SOIL SEED BANK. HOWEVER, THIS HERBACEOUS SPECIES SHOULD NOT BE A PROBLEM ONCE THE SHADE CANOPY OF THE TREE AND SHRUB SPECIES BECOME ESTABLISHED IN THE REPLACEMENT WETLAND AREA. SEVERAL METHODS OF CONTROL ARE AVAILABLE EACH WITH MODERATE EFFECTIVENESS. NO ONE METHODOLOGY WILL BE FULLY EFFECTIVE IF THE REED CANARY GRASS IS WELL ESTABLISHED. CONTROL METHODS INCLUDE, HERBICIDES, BURNING, MOWING OR MECHANICAL REMOVAL. USE OF GLYPHOSATE HAS SHOWN TO HAVE SOME SUCCESS, BEING EFFECTIVE FOR UP TO TWO YEARS. AFTER TWO YEARS, REGROWTH FROM THE SEED BANK MAY REESTABLISH THE STAND. SPRAYING LARGE STANDS AND OR WICKING SMALL STANDS OR INDIVIDUAL PLANTS WILL PROVIDE THE BEST OPTIONS. REPEATED APPLICATION WILL LIKELY BE NEEDED. BURNING AND TWICE-YEARLY MOWING HAVE ALSO SHOWN SOME SUCCESS, BUT AGAIN RESPROUTING FROM THE SEED BANK WILL REQUIRE MANAGEMENT OVER MULTIPLE YEARS. REMOVAL USING HEAVY CONSTRUCTION EQUIPMENT HAS NOT SHOWN TO BE EFFECTIVE DUE TO RAPID REGROWTH FROM RHIZOMES AND SEEDS LEFT IN THE SOIL.

HONEYSUCKLE (LONICERA SPP.)

BUSH HONEYSUCKLES WHEN ESTABLISHED, EXCLUDE ALL OTHER GROUND COVERS AND SHRUBS. HONEYSUCKLE PRODUCES FRUITS THAT ARE EATEN BY BIRDS AND DISPERSE THE SEEDS. THEY HAVE A WIDE RANGE OF TOLERANCE FROM PARTIAL TO FULL SUN. THEY ARE EXTREMELY INVASIVE AND CAN EASILY DOMINATE A HABITAT.

REMOVAL OF SMALL PLANTS CAN BE ACCOMPLISHED BY PULLING THE SEEDLINGS AND ALLOW TO DESICCATE. THIS WILL LIKELY BE THE PREFERRED CONTROL METHOD, AS ANY LARGE SHRUBS SHOULD NOT BE PULLED. CONTROL OF LARGE SHRUBS WILL REQUIRE A COMBINATION OF MECHANICAL CUTTING AND HERBICIDE TREATMENT OF THE STUMP. SHRUBS SHOULD BE CUT WITH LOPPERS, HAND SAW OR CHAINSAW. A SMOOTH FLAT CUT OF THE STEM SHOULD BE LEFT. EACH STUMP SHOULD THEN BE TREATED WITH A DYED 20 PERCENT SOLUTION OF GLYPHOSATE. CUTTING AND TREATMENT CAN BE DONE ANY TIME OF YEAR. CUTTING AND HERBICIDE TREATMENT TO THE STUMP IS VERY EFFECTIVE AND THE STUMPS SHOULD NOT RESPROUT. HOWEVER, CUTTING SHOULD NOT BE DONE UNLESS HERBICIDE IS ALSO USED. CUTTING WITHOUT HERBICIDE WILL ONLY RESULT IN DENSE RESPROUTING. RESEEDING THE AREA AFTER REMOVAL OF THE HONEYSUCKLE WILL HELP TO REESTABLISH A NATIVE HERBACEOUS COMMUNITY.

AUTUMN OLIVE (ELAEAGNUS UMBELLATA)

AUTUMN OLIVE IS A DECIDUOUS SHRUB INDIGENOUS TO EASTERN ASIA. THESE SHRUBS READILY COLONIZE BARE AREAS DUE TO THEIR SIGNIFICANT SEED PRODUCTION, GERMINATION POTENTIAL, AND ABILITY TO FIX NITROGEN. AUTUMN OLIVE IS TYPICALLY ONE OF THE FIRST PLANTS TO LEAF OUT IN SPRING AND KEEPS ITS LEAVES UNTIL LATE IN THE FALL, CAUSING IT TO SHADE OUT OTHER NATIVE VEGETATION. WHEN CUT OR BURNED, AUTUMN OLIVE READILY RESPROUTS FROM THE ROOT CROWN, SO THE ENTIRE ROOT MASS MUST BE REMOVED IF EXTRACTION IS THE PREFERRED METHOD OF CONTROL. OTHERWISE, THE SHRUB SHOULD BE CUT WITH LOPPERS, A HAND SAW, OR A CHAIN SAW, AND THE STUMP SHOULD BE TREATED WITH A 20 PERCENT SOLUTION OF GLYPHOSATE TO PREVENT RESPROUTING.

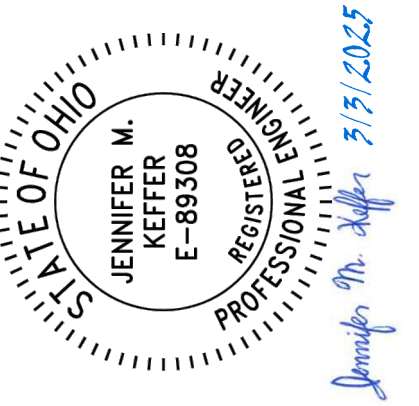
RUSSIAN OLIVE (ELAEAGNUS ANGUSTIFOLIA)

RUSSIAN OLIVE IS A DECIDUOUS SHRUB INDIGENOUS TO WESTERN AND CENTRAL ASIA AND SOUTHERN RUSSIA. THESE SHRUBS READILY COLONIZE BARE AREAS DUE TO THEIR SIGNIFICANT SEED PRODUCTION, GERMINATION POTENTIAL AND ABILITY TO FIX NITROGEN. RUSSIAN OLIVE IS TYPICALLY ONE OF THE FIRST PLANTS TO LEAF OUT IN SPRING AND KEEPS ITS LEAVES UNTIL LATE IN THE FALL, CAUSING IT TO SHADE OUT OTHER NATIVE VEGETATION. WHEN CUT OR BURNED, RUSSIAN OLIVE READILY RESPROUTS FROM THE ROOT CROWN, SO THE ENTIRE ROOT MASS MUST BE REMOVED IF EXTRACTION IS THE PREFERRED METHOD OF CONTROL. OTHERWISE, THE SHRUB SHOULD BE CUT WITH LOPPERS, A HAND SAW, OR A CHAIN SAW, AND THE STUMP SHOULD BE TREATED WITH A 20 PERCENT SOLUTION OF GLYPHOSATE TO PREVENT RESPROUTING.

MULBERRY (MORUS SP.)

MULBERRY TREES ARE VIGOROUS GROWERS WITH ROBUST ROOT SYSTEMS, AND THEY CAN BE CHALLENGING TO MANAGE ONCE ESTABLISHED. HAND PULLING OR DIGGING CAN BE EFFECTIVE FOR SMALL OR YOUNG MULBERRY SAPLINGS. HOWEVER, IT IS LABOR-INTENSIVE AND REQUIRES REMOVAL OF THE ENTIRE ROOT SYSTEM TO PREVENT REGROWTH. MORE ESTABLISHED TREES CAN BE CUT DOWN, AND THE STUMP SHOULD IMMEDIATELY BE TREATED BY APPLYING HERBICIDE TO PREVENT REGROWTH. MULTIPLE APPLICATIONS OF GLYPHOSATE OR TRICLOPYR MAY BE NECESSARY TO ENSURE COMPLETE CONTROL. FOLIAR APPLICATION OF HERBICIDES CAN BE EFFECTIVE DURING THE GROWING SEASON, BUT THIS WILL LIKELY REQUIRE MULTIPLE APPLICATIONS OVER MULTIPLE SEASONS. LARGER TREES MIGHT NEED TO BE REMOVED USING HEAVY EQUIPMENT TO ENSURE THE REMOVAL OF THE ENTIRE ROOT SYSTEM. REGULAR MONITORING IS NEEDED TO DETECT AND TREAT NEW GROWTH. SEEDLINGS SHOULD BE REMOVED AS SOON AS THEY ARE IDENTIFIED TO PREVENT THEM FROM BECOMING ESTABLISHED. TO PREVENT THE SPREAD OF MULBERRY TREES, REMOVE FRUITING TREES TO MINIMIZE SEED DISPERSAL.

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JMK			
PROJECT NO.			
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219 SOUTH ERIE STREET  
TOLEDO, OHIO 43604-8607  
419.385.2018

CITY OF TOLEDO-LUCAS COUNTY- OHIO  
**COLLINS PARK**  
**STREAM RESTORATION**  
**CONSTRUCTION PLANS**  
**INVASIVE SPECIES CONTROL NOTES**

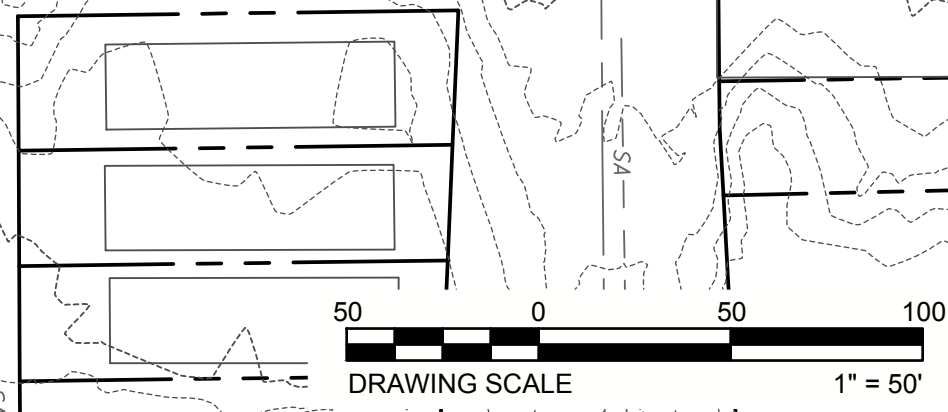
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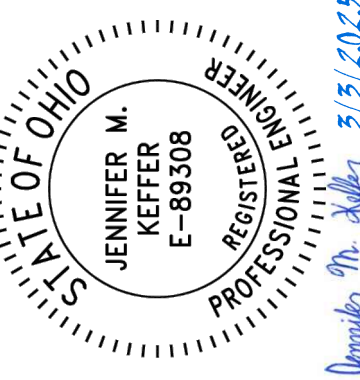


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NOTES:  
1. DLZ CONDUCTED TOPOGRAPHIC SURVEY IN APRIL 2023 WITHIN THE LIMITS IDENTIFIED. TOPOGRAPHY OUTSIDE OF THESE LIMITS WAS BASED ON 2020 OGRIP LIDAR DATA. CATCH BASINS, MANHOLES, IRRIGATION BOXES, AND OHWM INFORMATION WERE PROVIDED BY GARCIA (DATE OF SURVEY WAS JULY 2024). ALL OTHER UTILITY AND STRUCTURE INFORMATION WERE PROVIDED BY DLZ (DATE OF SURVEY WAS APRIL 2023).  
2. ALL ELEVATIONS IN NAVD88.



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PROJECT NO.	21773
CITY OF TOLEDO-LUCAS COUNTY-OHIO <b>COLLINS PARK</b> <b>STREAM RESTORATION</b> CONSTRUCTION PLANS EROSION & SEDIMENT CONTROL PLAN	
DATE	03-03-2025
SCALE	AS NOTED
SHEET	<b>C8.0</b>





NOTES:  
1. DLZ CONDUCTED TOPOGRAPHIC SURVEY IN APRIL 2023 WITHIN THE LIMITS IDENTIFIED. TOPOGRAPHY OUTSIDE OF THESE LIMITS WAS BASED ON 2020 OGRIP LIDAR DATA. CATCH BASINS, MANHOLES, IRRIGATION BOXES, AND OHWM INFORMATION WERE PROVIDED BY GARCIA (DATE OF SURVEY WAS JULY 2024). ALL OTHER UTILITY AND STRUCTURE INFORMATION WERE PROVIDED BY DLZ (DATE OF SURVEY WAS APRIL 2023).  
2. ALL ELEVATIONS IN NAVD88.

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219 SOUTH ERIE STREET  
TOLEDO, OHIO 43604-8607  
419.385.2018

STATE OF OHIO  
JENNIFER M. KEEFER  
E-89308  
REGISTERED PROFESSIONAL ENGINEER  
Jennifer M. Keefe 3/3/2025

DESIGNED BY  
LMS

DRAWN BY  
LMS

CHECKED BY  
JMK

PROJECT NO.  
21773

CITY OF TOLEDO-LUCAS COUNTY-OHIO  
COLLINS PARK  
STREAM RESTORATION  
CONSTRUCTION PLANS  
EROSION & SEDIMENT CONTROL PLAN

DATE  
03-03-2025

SCALE  
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GENERAL NOTES:

1. THE EROSION AND SEDIMENT CONTROL NOTES ON THIS SHEET ARE RECOMMENDATIONS ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING THE APPROVED PROJECT SWPPP.
2. FINAL GRADE MAY CONSIST OF PERMANENT CONTROLS SUCH AS VEGETATIVE COVER, ARMOR ROCK, OR SOIL. IF GRAVEL OR ERODIBLE FINES ARE PRESENT, A VEGETATIVE COVER SHALL BE INSTALLED.
3. FINAL GRADE SHALL CONSIST OF A MINIMUM OF 6 INCHES OF TOPSOIL ON ALL VEGETATIVE AREAS.
4. NO TOXIC OR HAZARDOUS WASTE SHALL BE DISPOSED INTO THE STREAM, STORM DRAINS, SEPTIC TANKS OR BY BURYING, BURNING OR MIXING THE WASTES. NO SOLID OR LIQUID WASTE SHALL BE DISCHARGED INTO THE STREAM OR STORMWATER RUNOFF (THIS INCLUDES WASHING OUT OF CEMENT TRUCKS). DESIGNATED WASH PIT AREAS SHALL BE USED FOR THIS PURPOSE. ALL WASTE MUST BE KEPT AWAY FROM THE STREAM OR AREAS OF STORMWATER RUNOFF.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF DEBRIS, TRASH, HAZARDOUS OR PETROLEUM WASTE INTO DUMPSTERS OR DRUMS FOR PROPER DISPOSAL OFF SITE. ALL CONTAINERS MUST BE COVERED AND LEAK PROOF.
6. ANY AND ALL WASTE MATERIALS (SOLID, HAZARDOUS, CONSTRUCTION & DEMOLITION, SANITARY, TOXIC, ETC.) GENERATED AT THE SITE SHALL BE PROPERLY DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL RULES/REGULATIONS.
7. IT IS PROHIBITED TO BURN, BURY OR POUR OUT ONTO THE GROUND OR INTO THE STREAM OR STORM SEWERS ANY SOLVENTS, PAINTS, GASOLINE, DIESEL FUEL, USED MOTOR OIL, HYDRAULIC FLUID, ANTIFREEZE, CEMENT CURING COMPOUNDS AND ANY OTHER SUCH TOXIC OR HAZARDOUS MATERIALS OR WASTES THAT MAY BE USED DURING CONSTRUCTION ACTIVITIES.
8. CONTRACTOR SHALL SUBMIT THE FOLLOWING TO THE OWNER PRIOR TO THE CONSTRUCTION AREA BEING SET UP:
  - a. LOCATION OF ANY WASTE DUMPSTERS
  - b. LOCATION OF DESIGNATED WASTE DRUMS OF OIL SOAKED ABSORBENT PADS/RAGS
  - c. SOLIDS, SLUDGE, OR OIL COLLECTED
  - d. LOCATION OF SANITARY FACILITIES SUCH AS PORTABLE TOILETS
  - e. LOCATIONS OF DIESEL AND GASOLINE STORAGE TANKS (SECONDARY CONTAINMENT PROVIDED)
  - f. LOCATION OF DEWATERING EQUIPMENT

GENERAL CONSTRUCTION SCHEDULE:

1. INSTALL TEMPORARY CONSTRUCTION ENTRANCES.
2. INSTALL TEMPORARY SEDIMENT CONTROL DEVICES, INCLUDING FILTER SOCKS AND ANY OTHER PRACTICES INTENDED TO TRAP SEDIMENT. TEMPORARY SEDIMENT CONTROLS SHALL BE IMPLEMENTED PRIOR TO ANY GRADING ACTIVITIES AND WITHIN (SEVEN) 7 DAYS FROM THE START OF ANY GRADING ACTIVITIES.
3. EXCAVATE PROPOSED STREAM CHANNEL, FLOODPLAIN AND WETLAND AREAS.
4. PERFORM BACKFILLING OF IDENTIFIED FILL AREAS.
5. INSTALL HABITAT IMPROVEMENTS.
6. PERFORM PERMANENT STABILIZATION FOR ALL VEGETATED AREAS.
7. AFTER THE SITE HAS BEEN PERMANENTLY STABILIZED (I.E., 70% VEGETATED GROWTH), REMOVE TEMPORARY SEDIMENT CONTROLS.
8. REMOVE TEMPORARY CONSTRUCTION ENTRANCES.

RUNOFF, SEDIMENTATION AND EROSION CONTROL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES ARE SUBJECT TO FIELD MODIFICATIONS AT THE DISCRETION OF THE OWNER, ENGINEER, AND GOVERNING AUTHORITY.
2. THE CONTRACTOR SHALL PROVIDE SEDIMENT CONTROL AT ALL POINTS WHERE PROJECT WATERS LEAVE THE LIMITS OF THE PROJECT. ALL POINTS WHERE PROJECT WATERS ENTER PORTIONS OF EXISTING UNDERGROUND PIPING, AND AROUND ANY AREA DESIGNATED FOR SOIL STOCKPILING OR MATERIAL STAGING.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY SEDIMENT DEVICES AT THE CONCLUSION OF CONSTRUCTION BUT NOT BEFORE STABILIZATION OF PERMANENT EROSION CONTROLS.
4. SEDIMENT CONTROL STRUCTURES AND SETTLING FACILITIES SHALL BE INSTALLED DURING CONSTRUCTION ACTIVITIES AS SHOWN IN THIS PLAN OR THE APPROVED PROJECT SWPPP AND AS NEEDED TO PREVENT THE TRANSPORT OF SEDIMENT LADEN STORMWATER OFF THE SITE. IN ACCORDANCE WITH THE GENERAL CONSTRUCTION SCHEDULE ON THIS SHEET OR THE APPROVED PROJECT SWPPP, THE SEDIMENT CONTROL STRUCTURES AND SETTLING FACILITIES SHALL REMAIN IN PLACE FOR THE DURATION OF THE PROJECT AND UNTIL FINAL STABILIZATION IS ACHIEVED. SEDIMENT BASINS/TRAPS AND PERIMETER SEDIMENT CONTROLS SHALL BE IMPLEMENTED AS THE FIRST STEP OF GRADING AND WITHIN SEVEN (7) DAYS FROM THE START OF GRUBBING. UPON COMPLETION OF CONSTRUCTION OF BASINS/TRAPS, SEEDING AND MULCHING SHALL IMMEDIATELY FOLLOW TO AID IN THE STABILIZATION AND MINIMIZE EROSION AND SEDIMENT TRANSPORT OF THE SOIL BEFORE WATER LEAVES THE BASINS/TRAPS. ALL EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED TO FUNCTION UNTIL UPLAND AREAS ARE PERMANENTLY STABILIZED.
5. WHERE NOT OTHERWISE NOTED OR SHOWN, ALL EROSION AND SEDIMENT CONTROL PRACTICES SPECIFIED ON THIS PLAN OR THE APPROVED PROJECT SWPPP SHALL CONFORM WITH DETAILS AND SPECIFICATIONS OUTLINED IN THE CURRENT VERSION OF THE RAINWATER AND LAND DEVELOPMENT MANUAL PREPARED BY THE ODNR DIVISION OF SOIL AND WATER CONSERVATION AND UPDATED/MAINTAINED BY OHIO EPA AND MANUFACTURER'S RECOMMENDATIONS, AS APPROPRIATE.
6. EROSION AND SEDIMENT CONTROL PRACTICES NOT ALREADY SPECIFIED ON THIS PLAN MAY BE NECESSARY DUE TO UNFORESEEN ENVIRONMENTAL CONDITIONS, CONSTRUCTION PHASING, AND/OR CHANGES IN DRAINAGE PATTERNS CAUSED BY EARTH-MOVING ACTIVITY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST RUNOFF, EROSION, AND SEDIMENT CONTROLS ACCORDINGLY.

INSPECTION & MAINTENANCE NOTES:

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR KEEPING ROADWAYS CLEAN BY REMOVING ALL SOIL FROM THE ROADWAY. TRACKING OF SEDIMENT ONTO ROADWAYS BY VEHICLES SHALL BE MINIMIZED BY UTILIZING A STABILIZED CONSTRUCTION ENTRANCE AS THE ONLY ENTRANCE FOR VEHICLES. THIS ENTRANCE SHALL BE MAINTAINED WITH STONE AS NEEDED TO PREVENT DIRT AND MUD FROM TRACKING ONTO THE ROADWAY.
2. THE CONTRACTOR SHALL INSPECT RUNOFF, EROSION, AND SEDIMENT CONTROLS DURING CONSTRUCTION OPERATIONS, AFTER RAIN EVENTS, AND ON A WEEKLY BASIS TO IDENTIFY MAINTENANCE ITEMS.
3. THE CONTRACTOR SHALL PERFORM PROPER MAINTENANCE AND INSPECTIONS OF RUNOFF, SEDIMENTATION AND EROSION CONTROLS PER THE PROCEDURES AND FREQUENCY OUTLINED ON THIS SHEET, THE PROJECT APPROVED SWPPP OR THE CURRENT VERSION OF THE ODNR RAINWATER AND LAND DEVELOPMENT MANUAL. REGULAR INSPECTIONS AND MAINTENANCE BY THE CONTRACTOR SHALL BE PROVIDED FOR ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL PRACTICES. PERMANENT RECORDS OF MAINTENANCE AND INSPECTION ACTIVITIES SHALL BE KEPT ON-SITE THROUGHOUT THE CONSTRUCTION PERIOD. INSPECTIONS MUST BE MADE AT A MINIMUM OF ONCE EVERY 7 DAYS AND IMMEDIATELY AFTER STORM EVENTS GREATER THAN 0.5 INCHES OF RAIN IN A 24-HOUR PERIOD. PROVIDE NAME OF INSPECTOR, DATE OF INSPECTION, MAJOR OBSERVATIONS (IDENTIFY TYPE AND LOCATION OF EACH SEPARATE BEST MANAGEMENT PRACTICE (BMP) REQUIRING ATTENTION, DESCRIBE CONDITION OF DAMAGED BMP, SPECIFY TYPE OF REMEDIAL ACTION REQUIRED, ETC.), AND SPECIFIC CORRECTIVE MEASURES TAKEN SINCE THE TIME OF THE PREVIOUS INSPECTION TO ACHIEVE COMPLIANCE WITH THE REQUIREMENTS OF THIS PLAN OR THE APPROVED PROJECT SWPPP. ALL CORRECTIVE MEASURES SHALL BE MADE TO PROTECT AGAINST FURTHER FAILURE AS SOON AS POSSIBLE.

MAINTENANCE AND/OR REPAIR SHALL OCCUR AS DETAILED BELOW:

CORRECTIVE MEASURES SHALL BE MADE TO PROTECT AGAINST FURTHER FAILURE AS SOON AS POSSIBLE.

- a. WHEN PRACTICES REQUIRE REPAIR OR MAINTENANCE, IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE IS IN NEED OF REPAIR OR MAINTENANCE, WITH THE EXCEPTION OF A SEDIMENT BASIN, IT MUST BE REPAIRED OR MAINTAINED WITHIN THREE (3) DAYS OF THE INSPECTION. SEDIMENT SETTLING PONDS MUST BE REPAIRED OR MAINTAINED WITHIN TEN (10) DAYS OF THE INSPECTION.
  - b. WHEN PRACTICES FAIL TO PROVIDE THEIR INTENDED FUNCTION, IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE FAILS TO PERFORM ITS INTENDED FUNCTION AND THAT ANOTHER, MORE APPROPRIATE CONTROL PRACTICE IS REQUIRED, THE APPROVED PROJECT SWPPP MUST BE AMENDED AND THE NEW CONTROL PRACTICE MUST BE INSTALLED WITHIN TEN (10) DAYS OF THE INSPECTION.
  - c. WHEN PRACTICES DEPICTED ON THIS PLAN OR THE APPROVED PROJECT SWPPP ARE NOT INSTALLED, IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE HAS NOT BEEN IMPLEMENTED IN ACCORDANCE WITH THE SCHEDULE, THE CONTROL PRACTICE MUST BE IMPLEMENTED WITHIN TEN (10) DAYS FROM THE DATE OF THE INSPECTION. IF THE INSPECTION REVEALS THAT THE PLANNED CONTROL PRACTICE IS NOT NEEDED, THE RECORD MUST CONTAIN A STATEMENT OF EXPLANATION AS TO WHY THE CONTROL PRACTICE IS NOT NEEDED.
5. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM ALL CONTROLS BEFORE SEDIMENT OVERTOPS THE BARRIER. IT SHOULD TYPICALLY BE REMOVED WHEN THE SEDIMENT REACHES ONE-HALF THE BARRIER HEIGHT OR WHEN IT CAUSES THE BARRIER TO BULGE.
  6. ROCK CHANNEL INLET/OUTLET PROTECTION SHALL BE INSPECTED AFTER STORM EVENTS FOR STONE DISPLACEMENT AND FOR EROSION AT THE SIDES AND ENDS. MAKE NEEDED REPAIRS AS SOON AS POSSIBLE FOLLOWING THE INSPECTION.
  7. SEEDED AREAS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE SITE REACHES FINAL STABILIZATION. FINAL STABILIZATION MEANS THE VEGETATION HAS ESTABLISHED UNIFORM PERENNIAL VEGETATIVE COVER (E.G., EVENLY DISTRIBUTED, WITHOUT LARGE BARE AREAS) WITH A DENSITY OF AT LEAST 70 PERCENT GRASS COVER FOR A PERIOD OF 1 YEAR FROM THE TIME OF PLANTING. ONCE FINAL STABILIZATION HAS BEEN ACHIEVED, THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES.

STOCKPILE NOTES:

1. STOCKPILED MATERIALS SHALL BE SPREAD IN HORIZONTAL, LOOSE LIFTS NOT EXCEEDING 12 INCHES.
2. STOCKPILED MATERIALS SHALL BE NOMINALLY COMPACTED USING A MINIMUM OF 2 ROLLER PASSES (4 CONTACTS) WITH A SMOOTH DRUM ROLLER FOR GRANULAR SOILS OR A SHEEPSFOOT ROLLER FOR COHESIVE SOILS, AS APPROPRIATE, HAVING A MINIMUM EFFECTIVE WEIGHT OF 10 TONS.
3. EXTERIOR STOCKPILE SLOPES SHALL BE TRACKED AND COMPACTED BY WEIGHT OF CONSTRUCTION EQUIPMENT.
4. THE EXTERIOR STOCKPILE SLOPES SHALL NOT BE STEEPER THAN 3H:1V, UNLESS APPROVED BY THE ENGINEER.
5. NECESSARY MEASURES SHALL BE TAKEN TO CONSTRUCT THE STOCKPILED MATERIAL (KEYWAYS, BENCHING, SLOPE DRAINS ETC.).
6. THE CONTRACTOR SHALL SEED AND MULCH THE EXTERIOR SLOPES OF THE STOCKPILES ONCE FINAL GRADES ARE ACHIEVED.
7. UPSTREAM DIVERSIONS SHALL BE PROVIDED TO DIRECT RUNOFF AROUND STOCKPILE AREAS.
8. TOPSOIL SHALL BE STOCKPILED IN THE AREAS APPROVED BY THE OWNER/ENGINEER FOR FUTURE USE. UPON COMPLETION OF THE CONSTRUCTION, THE STOCKPILED TOPSOIL SHALL BE EVENLY DISTRIBUTED ACROSS ALL DISTURBED AREAS AND SEEDED.

SEEDING, FERTILIZING, AND MULCHING NOTES:

1. THE CONTRACTOR SHALL INITIATE APPROPRIATE TEMPORARY AND PERMANENT STABILIZATION PRACTICES IN ACCORDANCE WITH OHIO EPA PERMIT NO.: OHC000006 (GENERAL PERMIT AUTHORIZATION FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NPDES) AND THE TIME FRAMES LISTED IN TABLES 1 AND 2 BELOW:

TABLE 1: PERMANENT STABILIZATION	
AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
OTHER AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

TABLE 2: TEMPORARY STABILIZATION	
AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND NOT AT FINAL GRADE	WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS
ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER OF THE STATE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S)
	PRIOR TO THE ONSET OF WINTER WEATHER

WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. PERMANENT AND TEMPORARY STABILIZATION ARE DEFINED IN PART VII OF OHIO EPA PERMIT NO.: OHC000006.

2. A TEMPORARY OR PERMANENT SEED MIX FROM THE SPECIES SELECTION TABLE ON SHEET C7.3 SHALL BE SELECTED USING THE DATE THE SEEDING WILL BE PERFORMED. AN ALTERNATIVE SEED MIX MAY BE USED IF SPECIFIED BY THE RESULTS OF A SOIL TEST. OTHER ENGINEER-APPROVED SEED MIXES MAY BE SUBSTITUTED, VERIFY WITH OWNER PRIOR TO ANY MODIFICATIONS.
3. MULCH SHALL BE APPLIED AFTER THE SEED. EROSION CONTROL BLANKET IS RECOMMENDED FOR SLOPES 4:1 OR STEEPER INSTEAD OF MULCH.
4. CONTRACTOR SHALL WATER TO PREVENT GRASS AND SOIL FROM DRYING OUT. WATER SHALL BE APPLIED TO RECENTLY SEEDED AREAS IN ACCORDANCE WITH ODOT ITEM 659. WATER SHALL BE CLEAN, FRESH AND FREE OF SUBSTANCES OR MATTER WHICH COULD INHIBIT GROWTH OF GRASS.
5. SEEDED AREAS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE SITE REACHES FINAL STABILIZATION. FINAL STABILIZATION MEANS THE VEGETATION HAS ESTABLISHED UNIFORM PERENNIAL VEGETATIVE COVER (E.G., EVENLY DISTRIBUTED, WITHOUT LARGE BARE AREAS) WITH A DENSITY OF AT LEAST 70 PERCENT GRASS COVER FOR A PERIOD OF 1 YEAR FROM THE TIME OF PLANTING. ONCE FINAL STABILIZATION HAS BEEN ACHIEVED, THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES.
6. SEEDED AREAS THAT DO NOT HAVE A UNIFORM DENSITY OF 70 PERCENT VEGETATIVE COVER SHALL BE REPAIRED BY REPAIRING EROSION AND REAPPLYING SEED, LIME, FERTILIZER, AND/OR MULCH AS NECESSARY TO ACHIEVE FINAL STABILIZATION.

TEMPORARY STABILIZATION:

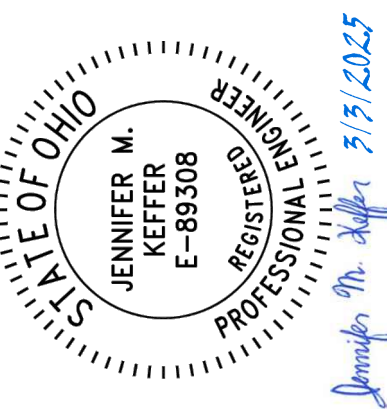
1. A TEMPORARY STABILIZATION SEED MIX SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE OWNER/ENGINEER.
2. TEMPORARY STABILIZATION SHALL BE PERFORMED ON ANY DISTURBED AREA MEETING CRITERIA SPECIFIED ON THIS SHEET. ALL TEMPORARY SEED SHALL NOT INCLUDE PERENNIAL SEED.
3. FERTILIZER SHALL BE 10-10-10 OR 12-12-12, AND APPLIED AT 250 LBS PER ACRE UNLESS OTHERWISE SPECIFIED BY THE RESULTS OF A SOIL TEST. FERTILIZER SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. MULCHING SHALL BE PERFORMED USING ANCHORED STRAW APPLIED AT 2 TONS PER ACRE UNLESS OTHERWISE SPECIFIED BY A SOIL TEST. ANCHORING METHODS INCLUDE CRIMPING SUCH AS WITH A DISK OR SIMILAR TOOL, MULCH NETTING, OR SYNTHETIC BINDER APPLIED AT THE MANUFACTURER'S SPECIFIED RATE.
5. WITHIN WETLAND AREAS NO FERTILIZING SHALL TAKE PLACE. ALL TEMPORARY SEED UTILIZED WITHIN WETLAND AREAS SHALL NOT INCLUDE TURF GRASS OR PERENNIAL RYE. ALL TEMPORARY SEED WITHIN WETLAND AREAS SHALL BE "ANNUAL" AS NOT TO PERSIST.

PERMANENT STABILIZATION:

1. A PERMANENT STABILIZATION SEED MIX SHALL BE PER PLANTING PLAN, SEE SHEET C7.3.
2. ANY CHANGES TO SEED MIXES SHALL BE VERIFIED WITH THE OWNER PRIOR TO ANY CHANGES.



219 SOUTH LERIE STREET  
TOLEDO, OHIO 43604-8607  
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COLLINS PARK  
STREAM RESTORATION  
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EROSION & SEDIMENT CONTROL NOTES

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SHEET	C8.3

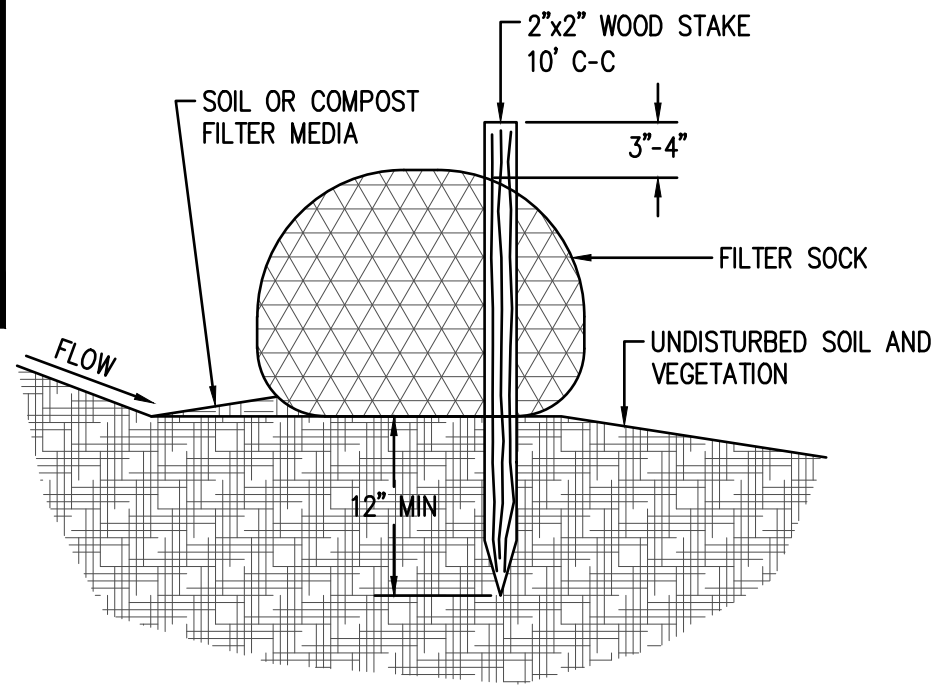


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GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- THE EROSION AND SEDIMENT CONTROL DETAILS SHOWN ON THIS SHEET ARE RECOMMENDATIONS ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING THE APPROVED PROJECT SWPPP.
- ALL EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE RAINWATER AND LAND DEVELOPMENT MANUAL PREPARED BY THE ODNR DIVISION OF SOIL AND WATER CONSERVATION AND UPDATED/MAINTAINED BY OHIO EPA AND MANUFACTURER'S RECOMMENDATIONS, AS APPROPRIATE.

MAXIMUM SLOPE LENGTHS AND RECOMMENDED FILTER SOCK DIAMETER				
SLOPE	12"	18"	24"	32"
0% - 2%	250'	300'	350'	400'
2% - 10%	125'	200'	250'	300'
10% - 20%	100'	150'	200'	250'
20% - 50%	50'	75'	100'	125'
>50%	25'	50'	75'	100'



1 FILTER SOCK  
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GENERAL NOTES:

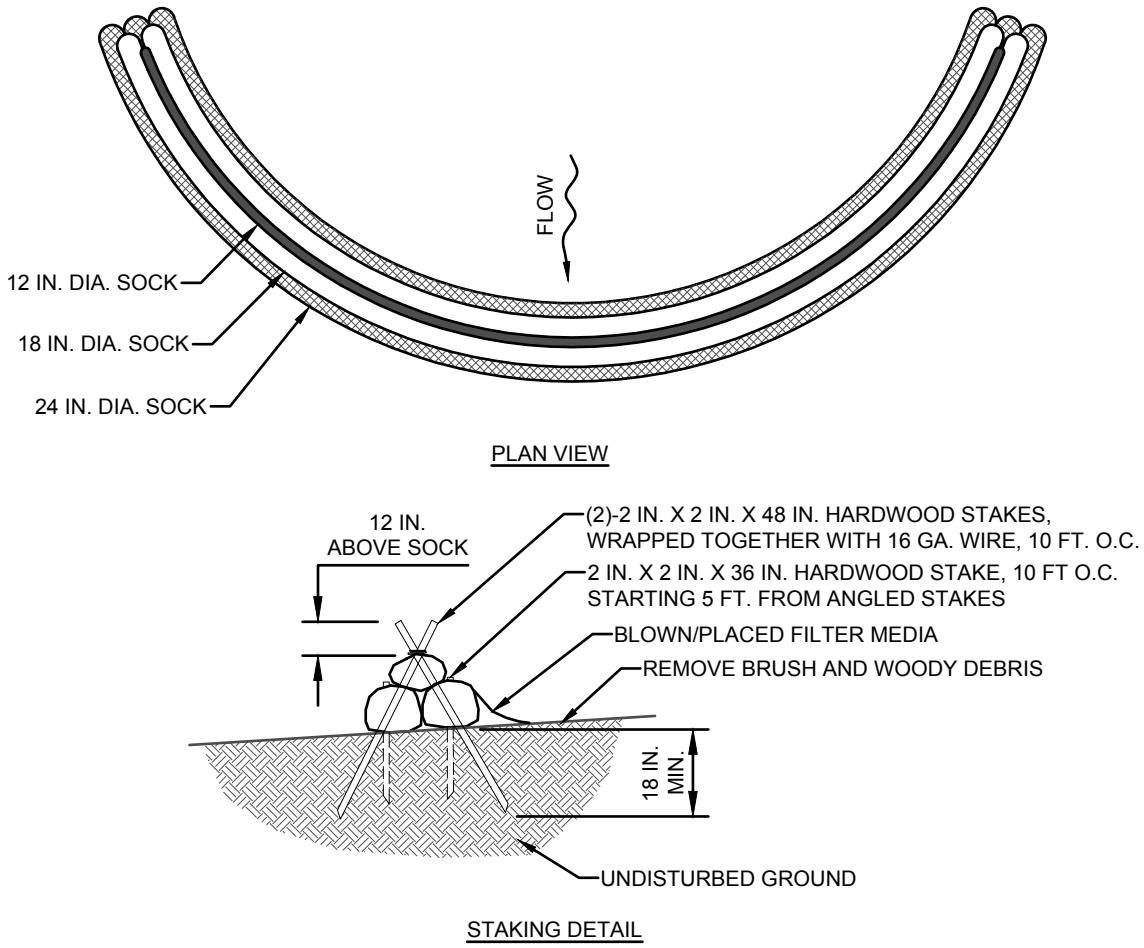
- INSTALL AND SIZE FILTER SOCKS IN ACCORDANCE WITH THE RECOMMENDATIONS OF CHAPTER 6.6 OF THE OHIO DEPARTMENT OF NATURAL RESOURCES RAINWATER AND LAND DEVELOPMENT MANUAL.
- MATERIALS - COMPOST USED FOR FILTER SOCKS SHALL BE WEED, PATHOGEN, AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS, OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF PARTICLES RANGING FROM 3/8" TO 2".
- FILTER SOCKS SHALL BE CONTINUOUS, TUBULAR, 3/8" BIODEGRADABLE NETTING MATERIAL, FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST MATERIAL OR APPROVED EQUIVALENT.

INSTALLATION:

- FILTER SOCKS SHALL BE PLACED ON A LEVEL LINE ACROSS SLOPES, GENERALLY PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREA. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MID-SLOPE. ENDS SHALL BE WINGED UPSLOPE FOR A MINIMUM OF 4 FEET TO PREVENT CIRCUMVENTION.
- FILTER SOCKS INTENDED TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE SHALL BE SEEDED AT THE TIME OF INSTALLATION FOR ESTABLISHMENT OF PERMANENT VEGETATION.
- WOODEN STAKES MAY BE PLACED EITHER THROUGH FILTER SOCKS OR ON THE DOWNHILL SIDE OF FILTER SOCKS. CONTRACTOR TO ENSURE STABILITY WITH EITHER PLACEMENT.

MAINTENANCE:

- ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
- REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCK WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE CONTROL.
- WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT SHALL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
- WHEN NO LONGER REQUIRED, COMPOST OR BIODEGRADABLE FILL MEDIA MAY BE DISPERSED ON SITE AND FILTER SOCK SHALL BE DISPOSED OF OFF SITE.



DESIGN NOTES:

- COMPOST SOCK SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2000 CUBIC FEET OF STORAGE CAPACITY FOR EACH ACRE TRIBUTARY TO THE TRAP.
- MINIMUM BASE WIDTH IS EQUAL TO THE HEIGHT.
- SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
- SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS SHOWN ON THE PLAN VIEW.
- ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID-SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.

NOTES:

SOCK MATERIAL AND COMPOST SHALL MEET THE STANDARDS OF CHAPTER 6 OF THE ODNR RAINWATER AND LAND DEVELOPMENT MANUAL AND DETAIL 1 ON THIS SHEET.

COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS ALONG THE LOWER SIDE OF THE TRAP.

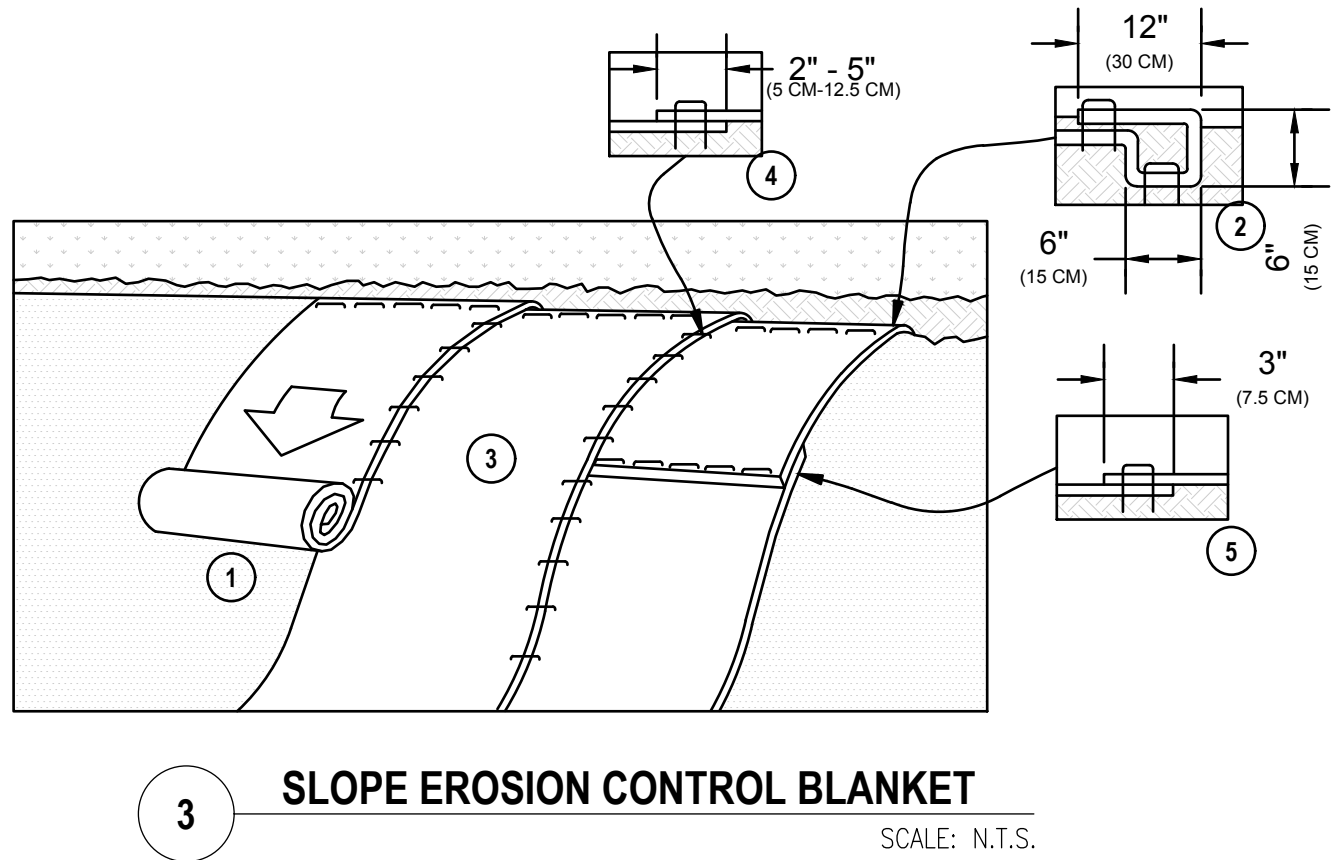
COMPOST SOCK SEDIMENT TRAPS SHALL PROVIDE 2,000 CUBIC FEET STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH TRIBUTARY DRAINAGE ACRE. (SEE MANUFACTURER FOR ANTICIPATED SETTLEMENT.)

THE MAXIMUM TRIBUTARY DRAINAGE AREA IS 5.0 ACRES. SINCE COMPOST SOCKS ARE "FLOW-THROUGH," NO SPILLWAY IS REQUIRED.

COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3 THE HEIGHT OF THE SOCKS.

BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 YEAR.

2 COMPOST FILTER SOCK TRAP  
SCALE: N.T.S.



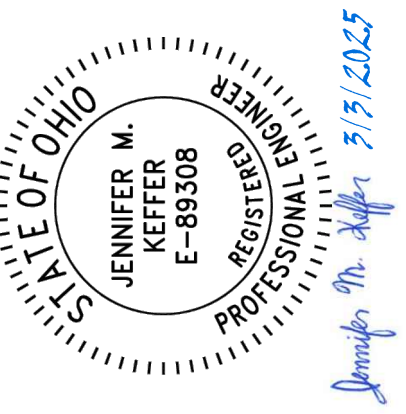
NOTES:

- PREPARE TOPSOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED GROWING MEDIUM AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED GROWING MEDIUM. SECURE BLANKET OVER COMPACTED GROWING MEDIUM WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
- ROLL THE BLANKETS DOWN THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE GROWING MEDIUM SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO GROWING MEDIUM SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING MANUFACTURER STAPLE PATTERN MARKING, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED MARKS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5 CM-12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE SEAM ON THE PREVIOUSLY INSTALLED BLANKET.
- CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE BLANKET WIDTH.
- EROSION CONTROL BLANKET TO BE COCONUT COIR EROSION MATTING WITH JUTE YARN OR APPROVED EQUIVALENT. NO PLASTIC NETTING SHALL BE USED.
- DETAIL PROVIDED BY NORTH AMERICAN GREEN ®

CITY OF TOLEDO-LUCAS COUNTY-OHIO  
COLLINS PARK  
STREAM RESTORATION  
CONSTRUCTION PLANS  
EROSION & SEDIMENT CONTROL DETAILS

DATE	03-03-2025
SCALE	AS NOTED
SHEET	C8.4

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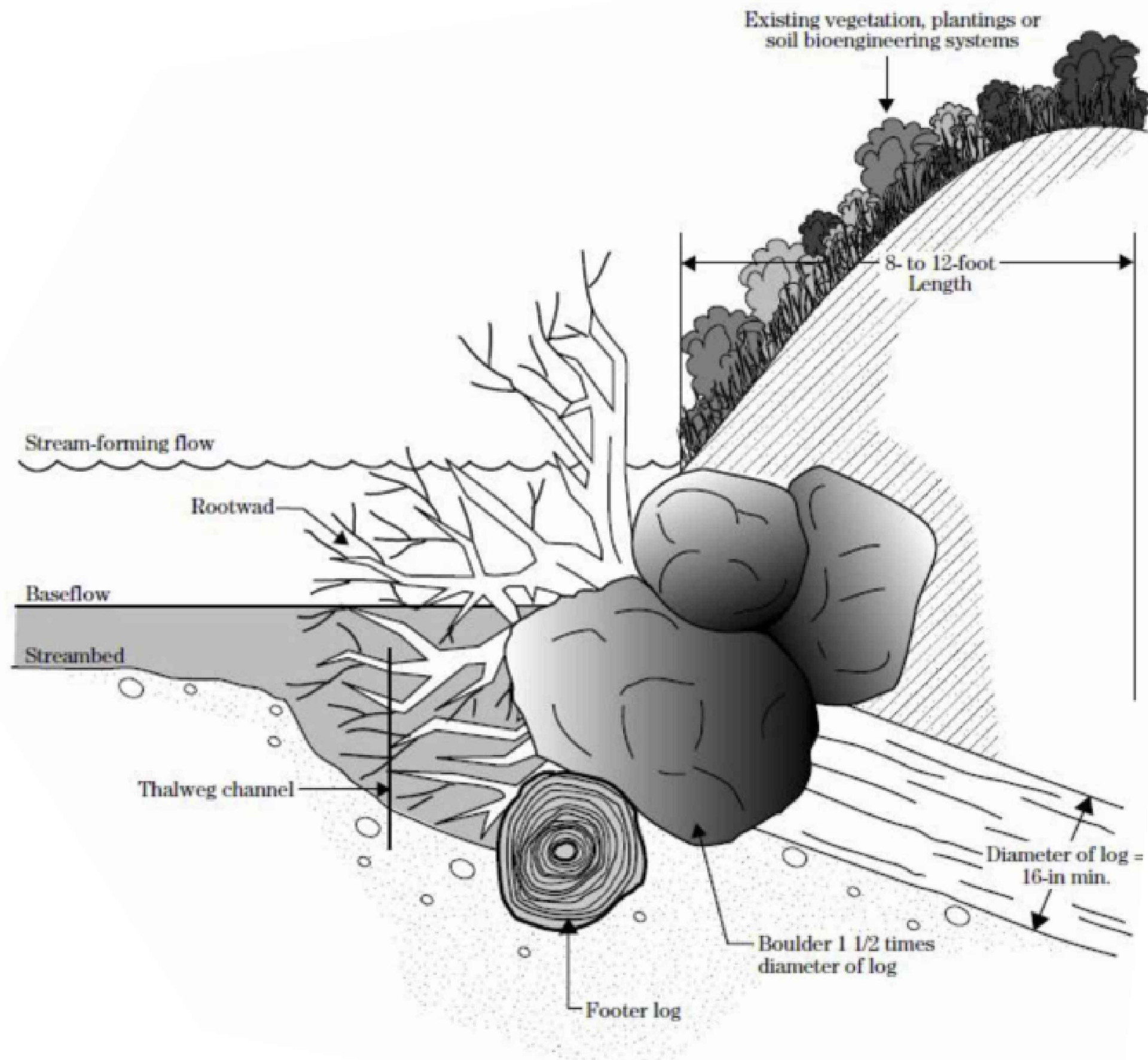
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TOLEDO, OHIO 43604-8607  
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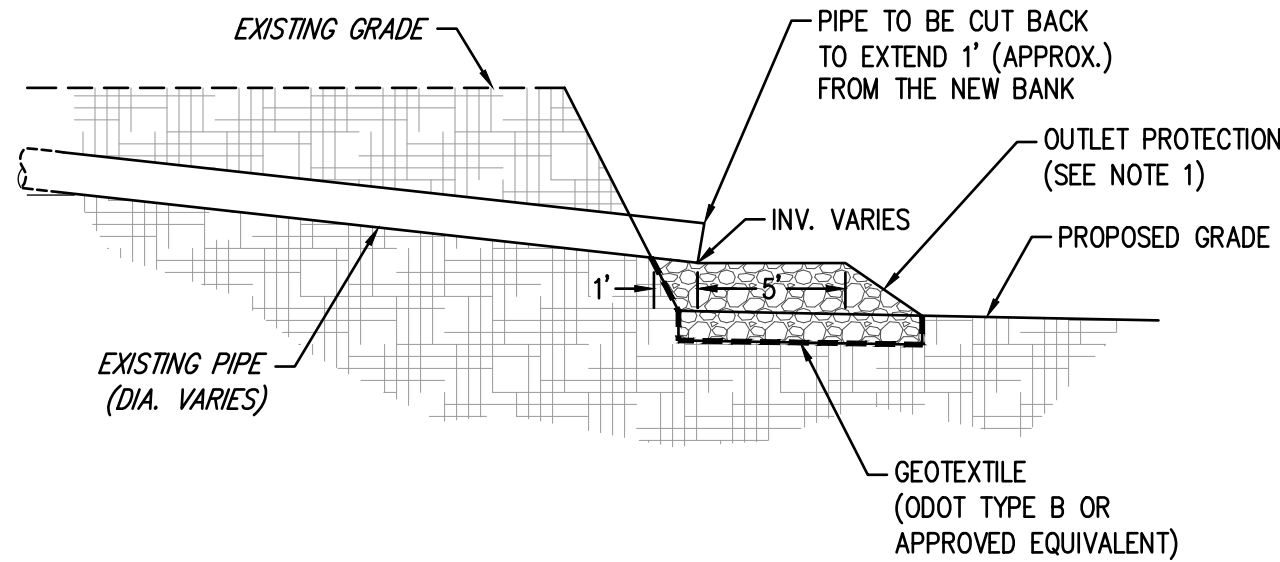


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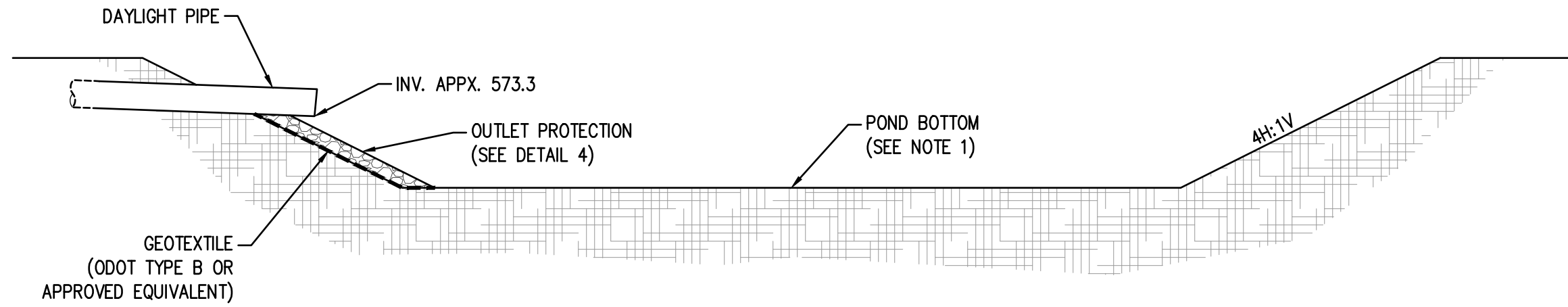
3 LOG, ROOTWAD REVETMENT  
SCALE: N.T.S.

- NOTES:
1. CONSIDER MULTIPLE ROOTWAD STRUCTURES AT LOCATIONS CURRENTLY PROPOSED ON THE PLANS. THE NUMBER OF STRUCTURES INSTALLED SHOULD WORK TO ACHIEVE THE GOAL TO DIRECT THE STREAM VELOCITY OFF THE STREAM BANK WITH THE FULL DISTANCE BETWEEN EACH STRUCTURE (TYPICALLY 3 TO 4 TIMES THE LENGTH OF EACH STRUCTURE).
  2. PLACE THE ROOTWAD FAN WITHIN 3 FEET OF THE STREAM BANK TO SUPPORT HABITAT DEVELOPMENT.
  3. DIRECT ROOTWAD FAN INTO STREAM FLOW AT 90° ANGLE OR SLIGHT VARIATION THEREOF (10-15°).
  4. ENSURE FOOTER LOGS ARE PROPERLY SIZED TO SUPPORT ROOTWAD STRUCTURE (I.E. APPROXIMATELY ¾ DIAMETER OF THE ROOTWAD) AND PLACED PARALLEL TO THE STREAM BANK; EXTEND BEYOND ROOTWAD FAN.
  5. ROOTWAD TRUNK SHOULD BE 3 TO 4 TIMES THE PROJECTED SCOUR DIMENSION UPSTREAM OF THE ROOTWAD.



4 OUTLET PROTECTION  
SCALE: N.T.S.

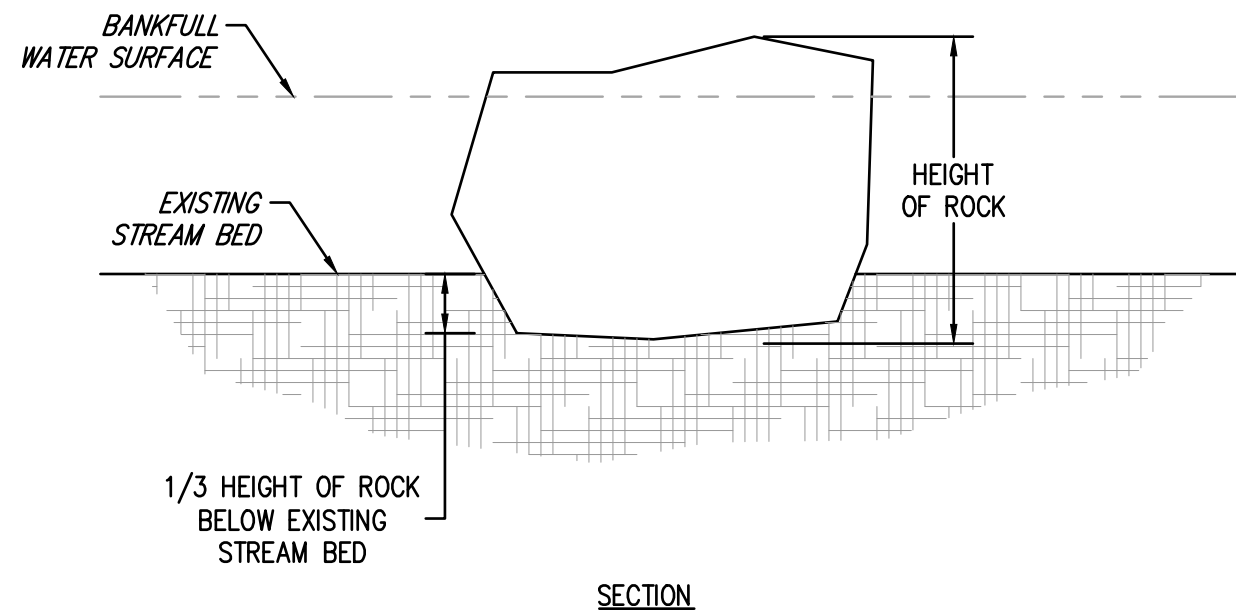
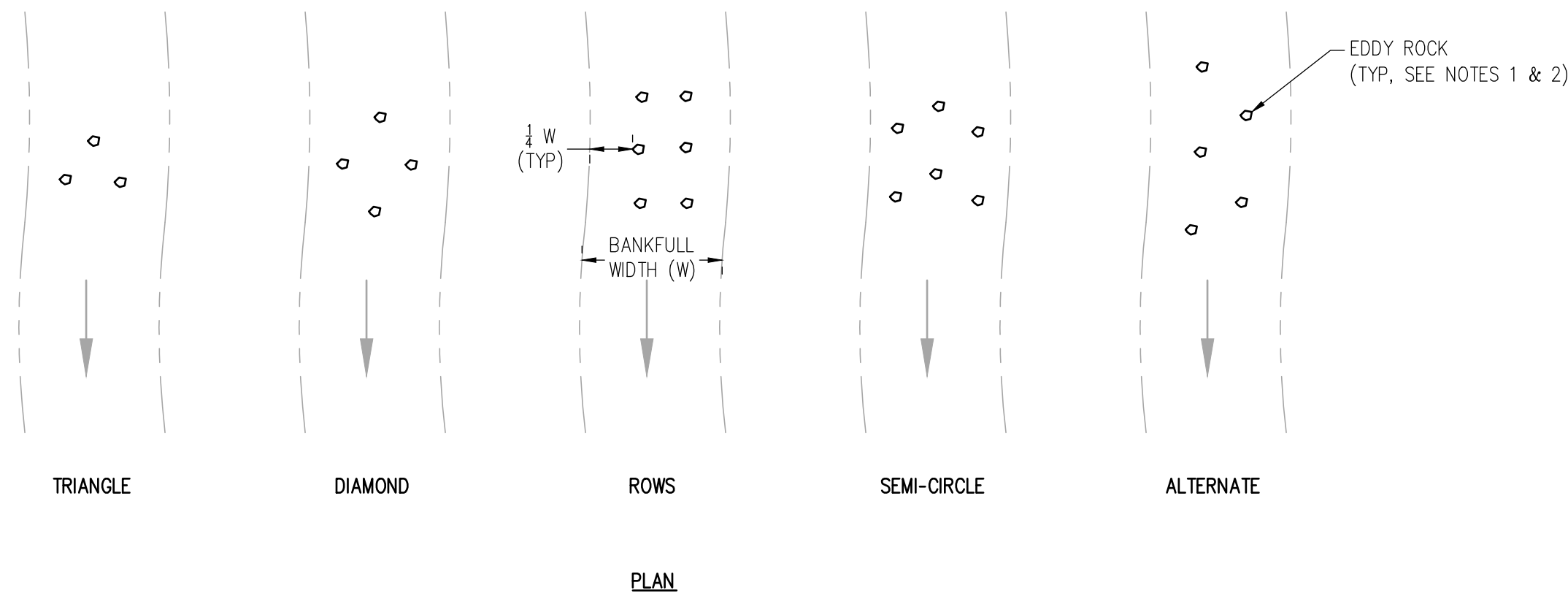
- NOTES:
1. OUTLET PROTECTION SHALL CONSIST OF ODOT TYPE C RIP-RAP FOR PIPES GREATER THAN OR EQUAL TO 12" IN DIAMETER OR ODOT TYPE D RIP-RAP FOR PIPES LESS THAN 12" IN DIAMETER. OUTLET PROTECTION SHALL EXTEND A MINIMUM OF 2' ON EITHER SIDE OF THE PIPE, BE A MINIMUM OF 5' LONG, AND 18" THICK (MIN).



5 TYPICAL POND DETAIL  
SCALE: N.T.S.

NOTES:

1. THE POND BOTTOM SHALL CONSIST OF COHESIVE SOILS (DEFINED AS LEAN CLAY OR SANDY CLAY BY THE UNITED SOIL CLASSIFICATION SYSTEM [USCS]). IF UNSUITABLE MATERIALS ARE PRESENT AT EXCAVATION GRADES, THESE MATERIALS SHALL BE OVEREXCAVATED BY A MINIMUM OF 1 FOOT AND REPLACED WITH CONTROLLED FILL FOR THE POND LINER.



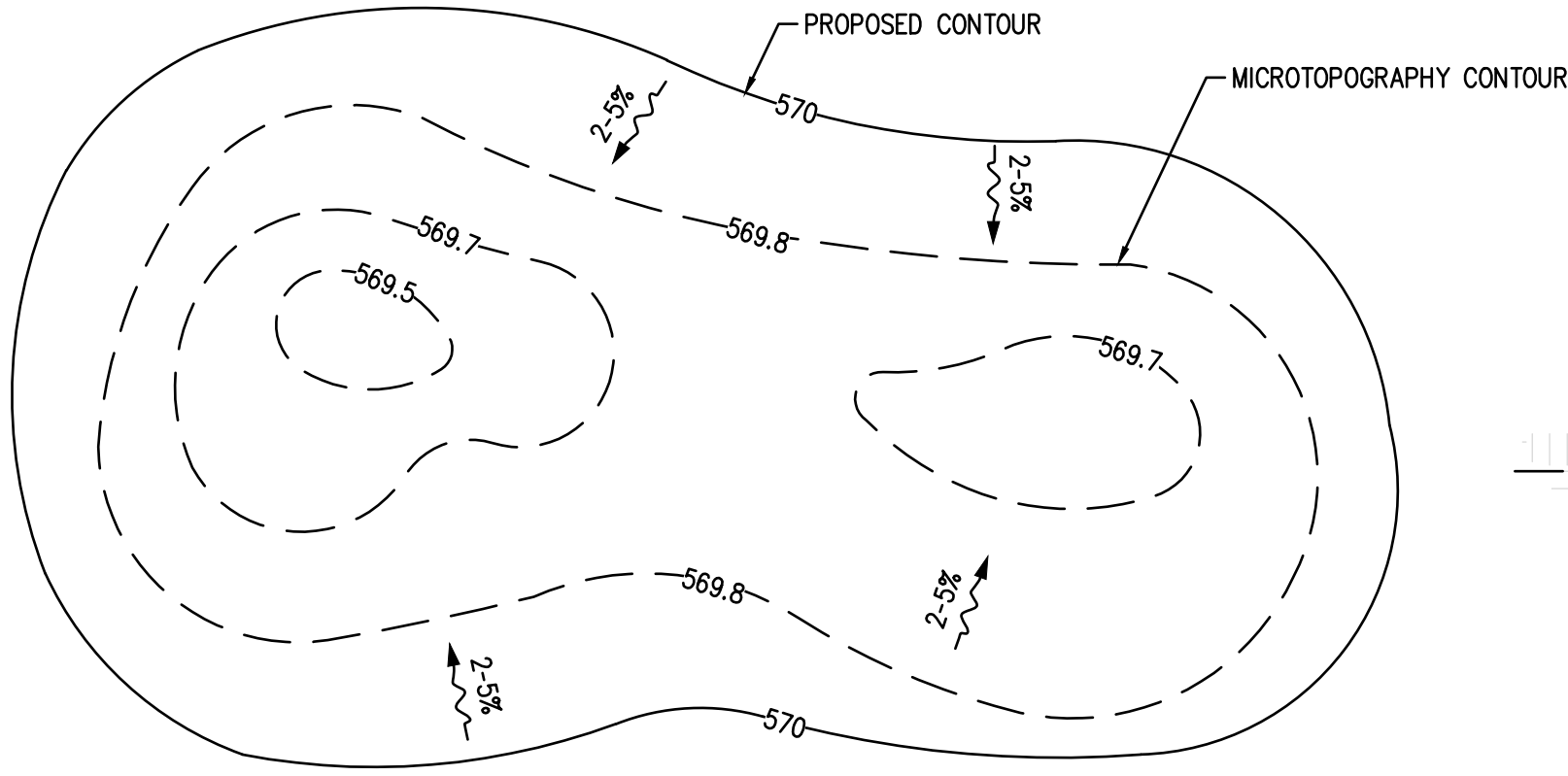
6 EDDY ROCKS  
SCALE: N.T.S.

NOTES:

1. THE EDDY ROCKS SHALL BE INSTALLED IN GENERAL ACCORDANCE WITH ODNR'S OHIO STREAM MANAGEMENT GUIDE: EDDY ROCKS AND THE IMPORTANCE OF IN-STREAM STRUCTURE (GUIDE NO. 20).
2. INDIVIDUAL ROCKS SHALL BE AT LEAST TWO FEET IN DIAMETER, BUT SHALL NOT EXCEED ONE-FIFTH OF THE WIDTH OF THE CHANNEL IN THE ROCK'S LARGEST DIMENSION. ROCKS SHALL BE PLACED SO THAT THEIR LONGEST DIMENSION IS PERPENDICULAR TO THE FLOW WITHIN THE CHANNEL.
3. ROCKS SHOULD BE PLACED IN AN EXCAVATION SO THAT THEY ARE AT LEAST ONE-THIRD BURIED IN THE CHANNEL BED. ROCKS SHOULD BE SET SO THAT THEY PROJECT ABOVE THE WATER SURFACE DURING LOW FLOWS AND ARE SUBMERGED DURING HIGH FLOWS.
4. ROCKS SHALL BE PLACED IN CLUSTERS OF THREE TO SIX AND ARRANGED IN SUCH A WAY THAT CURRENT DEFLECTED AROUND ONE ROCK FLOWS INTO ANOTHER.
5. ROCK CLUSTERS SHALL BE PLACED IN THE CENTER HALF OF THE CHANNEL, ADJACENT TO THE THALWEG, IN STRAIGHT RUNS. ROCKS SHALL NOT BE PLACED IN RIFFLES.
6. EDDY ROCKS SHALL BE INSTALLED AT THE APPROXIMATE LOCATIONS SHOWN ON SHEETS C5.0, C5.1, AND C5.2. THE EXACT LOCATION MAY VARY AS DIRECTED BY THE OWNER/ENGINEER AT THE TIME OF CONSTRUCTION. CONTRACTOR SHALL SUBMIT AN INSTALLATION PLAN DEPICTING LOCATIONS AND CONFIGURATIONS FOR REVIEW AND APPROVAL BY THE OWNER/ENGINEER PRIOR TO INSTALLATION.
7. EACH LOCATION SHALL INCORPORATE THREE TO SIX EDDY ROCKS IN CONFIGURATIONS SHOWN IN THIS DETAIL. THERE SHALL BE A MINIMUM OF 30 EDDY ROCKS TOTAL THROUGHOUT THE PROJECT.

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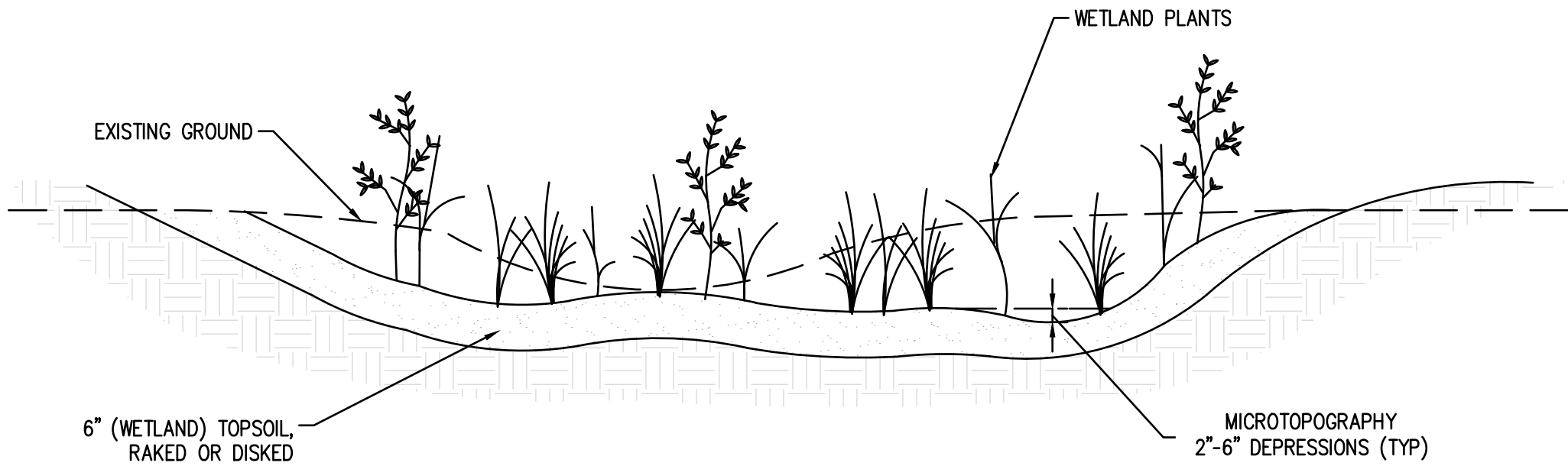


7 TYPICAL WETLAND MICROTOPOGRAPHY

SCALE: N.T.S.

NOTES:

1. WITHIN PROPOSED WETLAND AREAS, CONTRACTOR SHALL PERFORM MICROTOPOGRAPHY GRADING TO CREATE VARYING DEPTHS THROUGHOUT WETLANDS.
2. MICRO TOPOGRAPHY GRADING SHALL VARY BETWEEN 2 TO 6 INCHES IN DEPTH FROM SHOWN PROPOSED GRADES.
3. SLOPE OF MICRO TOPOGRAPHY SHALL VARY BETWEEN 2 AND 5 PERCENT.

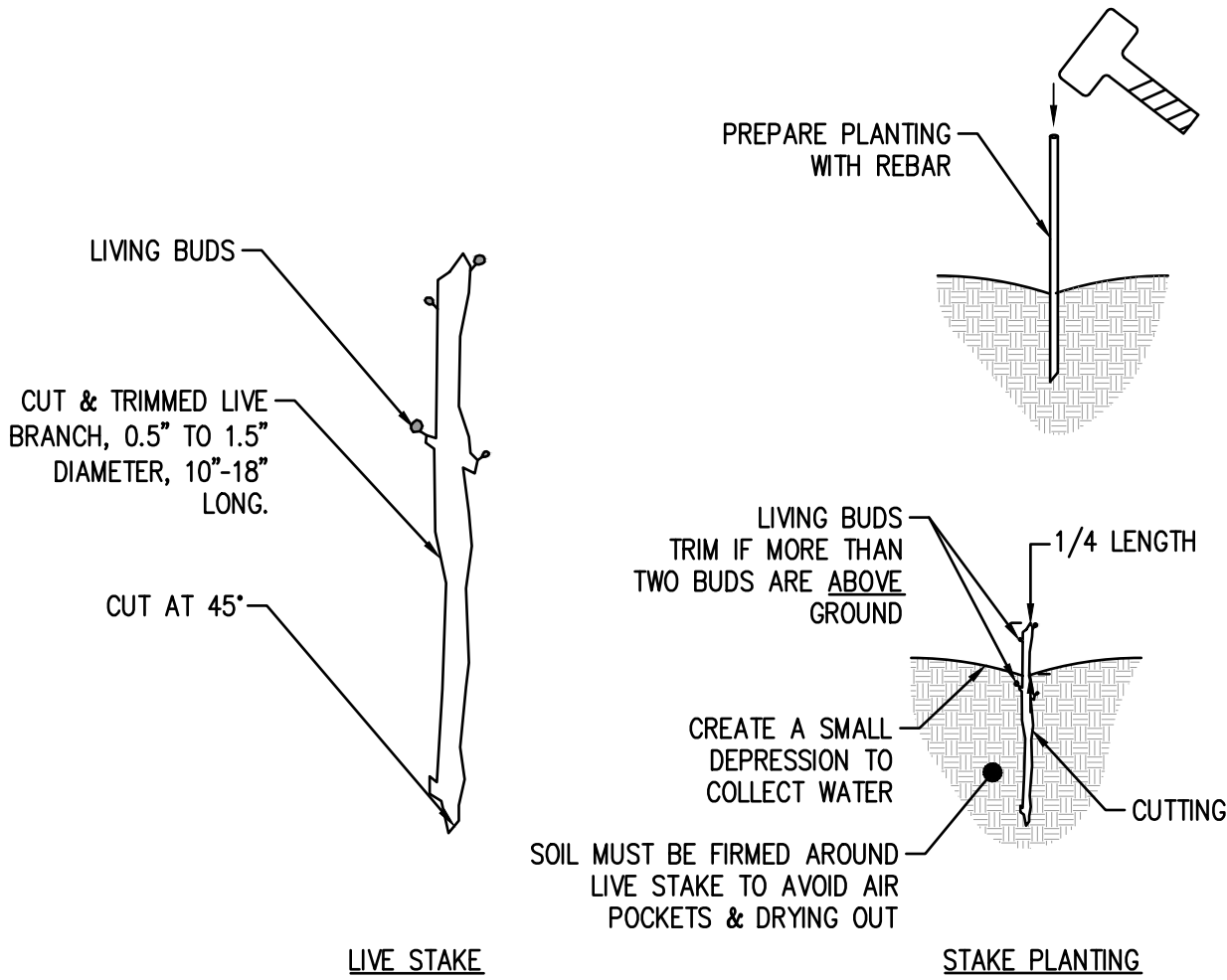


8 TYPICAL WETLAND RESTORATION SECTION

SCALE: N.T.S.

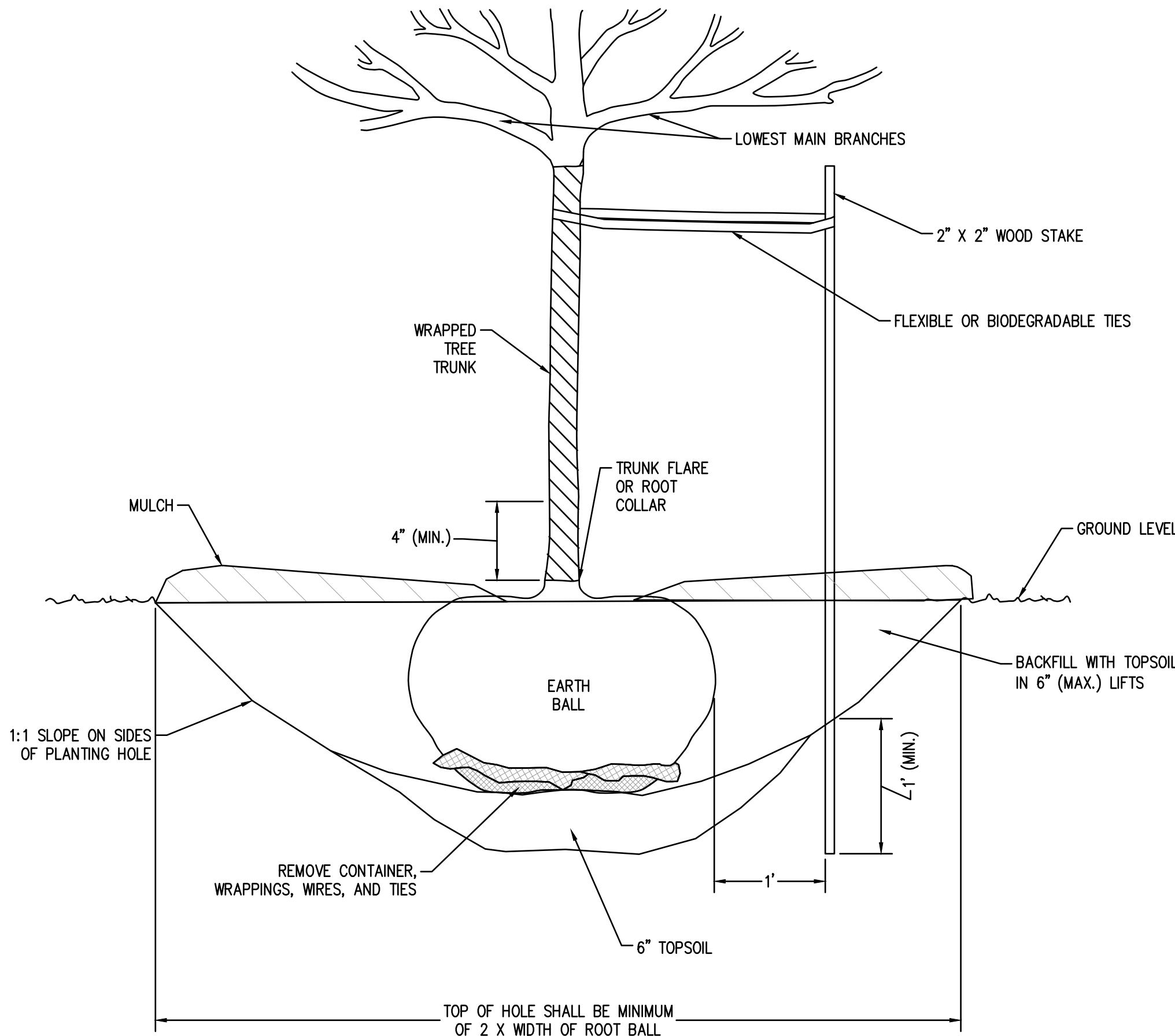
NOTES:

1. DURING EXCAVATION ACTIVITIES, THE CONTRACTOR SHALL SEGREGATE AND STOCKPILE EXISTING WETLAND HYDRIC TOPSOIL THAT IS FREE OF INVASIVE SPECIES. THIS TOPSOIL IS TO BE SPREAD OUT APPROX. 6 INCHES THICK OVER WETLAND AREA TO ACHIEVE FINAL GRADE. IF INSUFFICIENT TOPSOIL IS PRESENT TO SPREAD OUT AS SPECIFIED, MATERIAL EXCAVATED DURING WORK ACTIVITIES THAT IS FREE OF INVASIVE SPECIES MAY BE USED. TOPSOIL MAY BE IMPORTED IF THERE IS NOT SUFFICIENT MATERIAL AVAILABLE ON-SITE TO ACHIEVE THE REQUIRED THICKNESS.



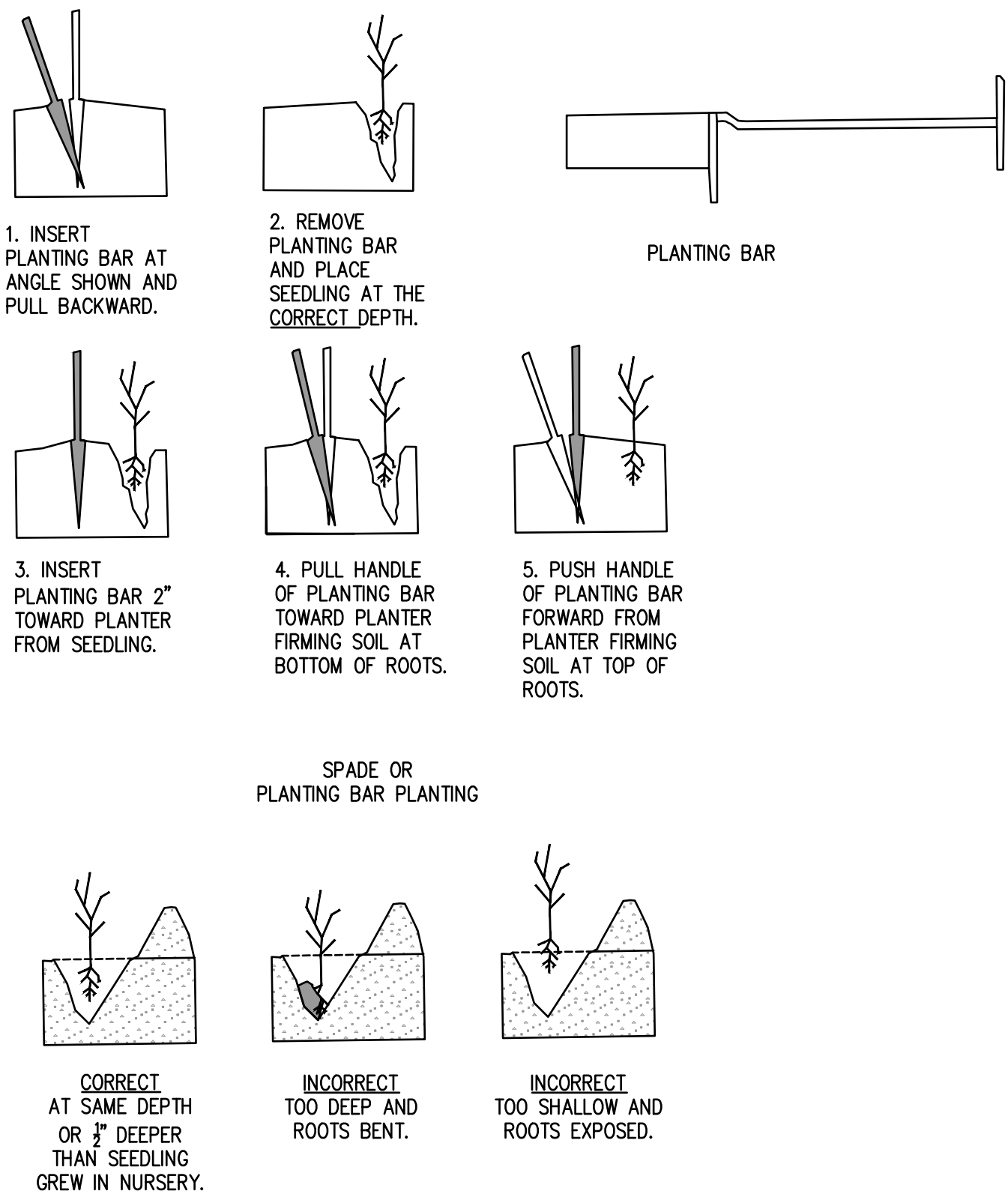
9 LIVE STAKE DETAIL

SCALE: N.T.S.



10 CALIPER TREE PLANTING DETAIL

SCALE: N.T.S.



11 BARE ROOTED PLANTING DETAIL

SCALE: N.T.S.