

IOWA DEPARTMENT OF NATURAL RESOURCES
LAND & WATERS BUREAU
WALLACE STATE OFFICE BUILDING

ADDENDUM No. 2

EASTER LAKE
CONTRACT 3 - LAKE GRADING, FISH HABITAT, SHORELINE RESTORATION
POLK COUNTY, IOWA
PROJECT NUMBER: 14-06-77-08

November 9, 2017

This Addendum is issued to modify, explain or correct the original Drawings and Specifications, and is hereby made a part of the Contract Documents. Please attach this Addendum to the Project Manual in your possession. Insert the number and issue date of this Addendum in the blank space provided on the Proposal Form.

INFORMATION:

1. The drawdown valve for the lake is scheduled to be closed on February 28th, 2019.
2. Removal or restoration of haul and access roads, including any placed rock, below the lake normal water level is not required unless filled above existing grades.

PRE-BID MEETING NOTES:

1. Information
 - a. The pre-bid meeting minutes are attached
 - b. The pre-bid meeting attendance sheet is attached
 - c. Refer to pre-bid meeting minutes for information discussed.
2. Questions
 - a. Refer to pre-bid meeting minutes for questions and responses.

PROPOSAL:

1. The Schedule of Prices has been modified. Please discard the original proposal document and use the attached Proposal.
2. The following bid items have been added:
 - a. Bid Item #47, Borrow Excavation, Class 10 - This bid item has been added to the proposal as part of Alternate 1.
 - b. Bid Item #48, Borrow Excavation, Hauling - This bid item has been added to the proposal as part of Alternate 1.

SPECIFICATIONS:

1. 00003 Enumeration of Drawings - the Construction Drawings list shall be supplemented or modified with the following:
 - a. C.13 - Grading Details
 - b. F.06 - Fish Habitat Details
 - c. F.07 - Fish Habitat Details

- d. F.08 - Fish Habitat Details
 - e. F.09 - Fish Habitat Details
 - f. F.10 - Fish Habitat Details
 - g. F.11 - Fish Habitat Details
2. 00700 General Covenants and Provisions - Bid items #27, #28, and #29 shall not be subject to the provisions of section 1109.09, paragraphs A, B, and C.
3. 01000 General Requirements
- a. Section 1.02 SUMMARY OF WORK, paragraph A(1) shall be replaced with the following:
Name of the project is "Easter Lake - Lake Grading, Fish Habitat, Shoreline Restoration", Project Number 14-06-77-08. Drawings and Specifications are dated October 2017.
 - b. Section 1.02 SUMMARY OF WORK, paragraph A(2)a shall be replaced with the following:
This project consists of the mechanical removal of sediment, shoreline armoring, fish habitat construction and incidental work as required by the Plans and/or the DNR Construction Inspector.
4. 01030 Alternates/Alternatives - The Alternates/Alternatives specification chapter is attached to this addendum and shall supplement the Project Manual.
5. 01400 Quality Control
- a. Section 1.04 LABORATORY SERVICES AND TESTS REQUIRED, add the following paragraph D
D. *In-Place Density Tests*
 - 1. *One in-place density test per 750 cy of controlled fill for jetty construction with a minimum of two tests per jetty.*
 - 2. *Owner may waive any or all in-place density tests and replace with Type A compaction requirement based on satisfactory observation of controlled fill operations.*
6. 01560 Temporary Pollution Controls
- a. Section 1.04 QUALITY ASSURANCE, paragraph C shall be replaced with the following:
National Pollutant Discharge Elimination System (NPDES): Owner is responsible for application of a General Permit No. 2 for Storm Water Discharge Associated with Construction Activities for the project, including filing of all necessary forms and drawings, and payment of application fees.
Contractor is responsible for compliance with the terms of the General Permit No. 2, including, but not limited to, implementing, maintaining and updating the Storm Water Pollution Prevention Plan (SWPPP), weekly inspections, and filing of the Notice of Discontinuation upon final stabilization.
7. 31 35 20 Tied-Concrete Block Erosion Control Mat -
- a. Section 2.1 MATERIALS, paragraph C. Backing Material, shall be replaced with the following:
Backing material shall be adhered to Tied-Concrete Block Mat, and shall be, double-net excelsior blanket (Curlex II), or equal, to promote growth of vegetation, unless otherwise specified on the plans.

b. Section 2.1 MATERIALS, paragraph D. Polypropylene Geogrid shall be replaced with the following:

1. *The Tied-Concrete Block Mat shall be constructed of high tenacity polyester yarns crafted into a stable interlocked pattern. Grid shall be fire resistant and coated for protection from installation damage and short-term ultraviolet exposure. Grid to be Huesker's FR Grid 35/35-55 SU or approved equal.*
2. *Interlocking geogrid shall have the following physical properties:*

Mass/Unit Area ASTM D-5261 10.0 oz./yd²

Aperture Size Measured 2.2 x 2.2 inch

Wide Width Tensile Strength

Machine Direction (MD) ASTM D-6637 2,600 lb./ft.

Cross Machine Direction (CMD) ASTM D-6637 2,600 lb./ft.

Elongation at Break ASTM D-6637 12 %

Tensile Strength @ 2%

Machine Direction (MD) ASTM D-6637 822 lb./ft.

Cross Machine Direction (CMD) ASTM D-6637 822 lb./ft.

Tensile Strength @ 5%

Machine Direction (MD) ASTM D-6637 900 lb./ft.

Cross Machine Direction (CMD) ASTM D-6637 900 lb./ft.

Tensile Modulus @ 2%

Machine Direction (MD) ASTM D-6637 41,100 lb./ft.

Cross Machine Direction (CMD) ASTM D-6637 41,100 lb./ft.

Tensile Modulus @ 5%

Machine Direction (MD) ASTM D-6637 32,900 lb./ft.

Cross Machine Direction (CMD) ASTM D-6637 32,900 lb./ft.

PLANS:

1. Sheet A.02 has been revised to include an updated Estimated Project Quantities Table which includes Alternate #1. Replace the original with the attached sheet.
2. Sheet A.03 has been revised to include updates to Bid Item #38 in the Estimate Reference Notes. Replace the original with the attached sheet.
3. Sheet A.04 has been revised to include updates to Bid Items #40, 41, 43, and new Bid Items #47 and #48 in the Estimate Reference Notes. Replace the original with the attached sheet.
4. Sheet C.05 has been revised to include Alternate No. 1 Borrow Area. Replace the original with the attached sheet.
5. Sheet C.06 has been revised to include Alternate No. 1 Borrow Area. Replace the original with the attached sheet.
6. Sheet D.08 has been revised to update various call-out notes. Replace the original with the attached sheet.
7. Sheet D.13 has been revised to reflect changes to the flexamat installation, underlayment and geo-grid. Replace the original with the attached sheet.

PREBID CONFERENCE
EASTER LAKE RESTORATION
CONTRACT 3
POLK COUNTY CONSERVATION
S & A PROJECT NO. 114.0546
November 8, 2017, 9:00 AM

MINUTES

I. INTRODUCTION

- A. Snyder & Associates, Inc.
 - 1. Darin Jacobs, Project Manager
 - 2. Wes Farrand, Project Engineer

- B. Owner, Polk County Conservation
 - 1. Doug Romig, Deputy Director
 - 2. Loren Lown, Natural Areas and Parks Administrator
 - 3. Adam Fendrick, Park Planner (*not present*)
 - 4. Dean Bruscher, Easter Lake Ranger (*249-1543*)
 - 5. Chance Patrick, Easter Lake Park Staff (*975-1431*)
 - 6. Mike McGhee, Construction Observer

- C. Iowa Department of Natural Resources
 - 1. George Antoniou, Lake Restoration Program Coordinator (*not present*)
 - 2. Heath Delzell, Design Engineering Supervisor
 - 3. Jason Kruse, IDNR District Engineer (*project inspector*)
 - 4. Ben Dodd, Fisheries Management Biologist (*not present*)

II. PROPOSALS

- A. Time: Bids accepted until 11:00 a.m., November 16, 2017.
- B. Refer to Project Manual and bidder's notices for details on bid proposals and submittal requirements.

III. ADMINISTRATIVE

- A. Liquidated damages: \$1,000 per working day.
- B. Partial Payments – monthly based on Engineer's estimate of completed work and/or stored materials according to estimate reference notes.
- C. Retainage: 5%, with retained percentage payable after 30 days from date of final acceptance.
- D. Warranty: 1 year after project acceptance.
- E. Sales and Use Tax: Tax exemption certificates will be issued to the Contractor.
- F. This is NOT A PREVAILING WAGE PROJECT. There is no wage scale requirement.

- G. Permits:
 - 1. USACE clearances and Iowa DNR approvals obtained by the Owner.
 - 2. NPDES General Permit No. 2 – *Owner will publish, submit NOI, and obtain authorization*
 - 3. Other required construction and operation permits are the responsibility of the Contractor.
- H. Up to 5 sets of plans will be provided to the successful bidder.

IV. SCHEDULE

- A. Start Date: Anticipated Notice to Proceed January 1, 2018. *As soon as possible after finalization of contract through Iowa DNR.*
- B. Access across new bridge and trail site prohibited after June 30, 2018 without approval.
- C. Lake outlet structure anticipated to be closed starting lake re-fill March 31, 2019.
- D. Final completion by March 31, 2019.

V. CONSTRUCTION

- A. Construction staking will be provided by Owner.
- B. Sites are currently owned by or authorized for use through agreements obtained by Polk County Conservation.
- C. Utilities:
 - 1. All known utilities are shown on the drawings.
 - 2. The Contractor is responsible for one call and utility verification.
 - 3. No utility relocation is expected other than manhole adjustments noted on plans.
- D. The Contractor is responsible for maintaining, updating, and complying with the SWPPP, the NPDES General Permit No. 2, and Best Management Practices.
- E. Westside Bridge and Trail Crossing construction.
Concurrent construction will be ongoing across west arm off lake as noted on the plans. Cooperate and coordinate with other contractors for adjacent construction and access requirements. Anticipated completion of bridge is August 1, 2018.
- F. Lake Grading
 - 1. Intent is to remove additional material from lake bottom and relocate to offsite or lakeside fill areas as shown.
 - 2. Earthwork quantified based on bank cubic yards of material removed.
Quantities provided in the plans do not include a fill or shrinkage factor.
 - 3. Final quantity to be verified through post-construction survey and electronic take-off. Owner may opt to update pre-construction survey prior to starting construction in order to account for any additional consolidation of lake bottom material since post-wet dredging survey.
 - 4. Extent and location of removed material may be field adjusted but total quantity will attempt to be held consistent.
 - 5. Internal haul roads - responsibility of Contractor to construct and maintain as necessary. Removal of any rock used below water level is not required if grades are

not significantly raised.

6. Compaction – Type A for all areas except jetties which will require minimum M&D testing.
7. Ground and surface water – responsibility of Contractor to handle and accommodate potentially wet conditions. Lake has been drained since February 2017 but pockets of standing water have persisted in locations. Work staging, temporary culverts or channelization, floatation mats, etc. are incidental to the work as determined necessary by the Contractor. Locations of removed material may be altered, subject to Owner's approval, to accommodate excessively wet areas, but additional compensation will not be allowed.
8. Offsite fill areas.
Bidding documents include an offsite fill area shown as Ewing Park Site. This site may be switched with a closer site on the south side of the west arm of the lake, but bids should reflect the use of the Ewing Park Site.
Offsite fill areas will be used only if removed material is in excess of that needed for in-lake or near lake fill grading shown on the plans.

G. Shoreline Stabilization

1. Rip Rap / Flexamat / Fiber Log
Owner may elect to adjust quantities of shoreline treatments based on conditions, prices, or other factors.
2. Includes minor grading, geotextile, etc. Seeding paid separately.
4. Feature Stone
 - a. Stockpile location – Trailer court north across Evergreen below dam.
 - b. Haul and placement only.
5. Phasing
 - a. Rip Rap shoreline – no date restrictions.
 - b. Flexamat shoreline – native seed spring or dormant seeding only.
 - c. Fiber Log shoreline – no restrictions on log placement. Native seeding spring or dormant only.
 - d. Erosion control seeding – spring, fall or dormant.
6. Seeding
 - a. Native seed or cover crop seed.
 - b. Hydraulically applied erosion control product – Flexterra – all seeded areas except under flexamat.

H. Fish Habitat

1. Concrete Anchors – provided by Owner, placement only.
Donated reject and odd precast storm structures.
2. Stockpile locations
Concrete anchors will be delivered by Owner to various locations around the lake as shown on plan sheet F.01.
Recycled concrete rip rap is located at trailer park north across Evergreen and below the dam as shown on plan sheet F.01.
3. Spawn Tubes
Addendum will revise to be haul and placement of pipe provided by Owner.

4. Rock Piles
Addendum will revise to be haul and placement of recycled concrete rip rap provided by Owners.
Loose placement in general conformance to dimensions shown on plans. Open voids and gaps are preferred.
 5. Coordination and cooperation with Polk County Conservation
Owner intending to complete installation of fish habitat with staff and volunteer labor. Owner will need to install cables around any anchors that are buried in rock prior to rock placement.
- I. Probable Upcoming Addendum Items
- *Planned Addendum No. 2 to be issued in the next couple days.*
 - *Expected add/alternate of two additional bid items to load and haul additional material to City of Des Moines project site at Riverview Island.*
USE REVISED PROPOSAL FORM DUE TO CHANGE IN BID ITEMS.
 - *Other minor modifications to the documents.*
- J. Other
- *Potential project upcoming to reconstruct boat ramp near Staging Area D would also be concurrent with construction. Boat ramp construction will be staged to avoid conflict with lake work as much as possible.*
No need to protect boat ramp if used for access as it will be removed.
 - *Construction accesses shown on Sheet C.01 are provided with intent to avoid requiring access across central stream channels which have some base flow and will likely stay wet.*
 - *HMA overlay item included for repair of access and park roads damaged by construction access. Will be used in locations and to the extent necessary as determined by Owner.*

VI. QUESTIONS AND COMMENTS

- *Is moisture and density testing by the Contractor?*
Yes, M&D testing, where required, is the responsibility of the Contractor.
- *Why is the rip rap shoreline treatment measured and paid by LF instead of TON? Some would prefer to pay by TON.*
Lineal foot measurement has been used successfully on previous contracts and fits the intent of the project to stabilize a set length of shoreline. Detail notes that construction estimate is based on 1.25 ton/lf. Will consider altering bid item to be paid by weight.
- *Any requirements for handling existing lake vegetation?*
No, existing vegetation can be incorporated in minimal lifts into fill material with typical excavation.
- *Recycled concrete obtained from Owner's stockpiles will be measured and paid based on truck count and estimated load weight.*
- *Will the larger trees cleared be salvaged by the Owner for use in fish habitat?*
Yes, larger trees would be salvaged for fish structure as directed by Owner. Stockpile above shoreline for removal by Owner.
- *Is the clearing and grubbing subject to bat habitat protection dates?*

- Yes, all tree felling should be completed between October 1 – March 31.*

○ *Complete removal of chipped material from site or does the owner want to stockpile some on site?*

Okay to stockpile on site in selected locations. One potential location is point east of boat ramp or trailer park.
- *Engineer's Estimate?*

\$4,100,000
- *Fill operations during frozen conditions?*

Fill operations during frozen conditions acceptable for areas with Type A compaction with reasonable efforts made for uniform fill placement without major voids or clumping.
- *Clarify light-duty access roads?*

Typical vehicle or personnel traffic only. No heavy machinery or truck traffic.
- *Is it acceptable for contractors to drill some of their own geotechnical borings prior to bid?*

Yes, coordinate with Easer Lake staff.
- *Any additional geotechnical information available?*

Currently available geotechnical information included in the bidding documents. Some additional testing currently underway. Will attempt to provide to bidders but cannot guarantee availability before bid date.

VII. SITE VISIT

14-06-77-08 Easter Lake - Contract 3 - Lake Grading, Fish Habitat, Shoreline Restoration

Pre-Bid Meeting Attendance Sheet - 9:00 AM November 8, 2017

Name	Company
Leah Wilson	RW Excavating Solutions
Tony Barnett	Veit + Co, Inc.
STAVE MAUSDYARD	HENDRICKSON
Darin Hendrickson	Hendrickson
Loren Louw	PCC
Chance Patino	PCC
Mike M'Ghee	PCC
Jason Kruse	Iowa DNR
Heath Delzell	Iowa DNR
DARIN JACOBS	SNYDER & ASSOCIATES
MATT BOHLEN	PETERSON CONTRACTORS INC.
Laramie Ogden	J. Pettiecord, Inc.
Jeff Thais	Peterson Contractors Inc.
Dan Wilson	RW Excavating
Dean Bruscher	PCC
JIM Mackey	ELDER Corp
WES FARRAND	SNYDER & Assoc.

Time and Date of Letting **11:00 AM, November 16, 2017**

PROPOSAL

Project No. **14-06-77-08**

Project Description and Location

**CONTRACT 3 - LAKE GRADING, FISH HABITAT, SHORELINE
RESTORATION
EASTER LAKE
POLK COUNTY, Iowa**

Proposal of: _____
(Name of Bidder)
Located at: _____ () _____
(Address) (Area) (Telephone)

Amount of Proposal Guarantee	Specified completion date or Number of Working Days	Approx. or Specified Starting Date or Number of Working Days	Liquidated Damages Per Day
\$210,000.00	3/31/2019	1/1/2018	\$1,000.00

The undersigned hereby agrees, if awarded the contract, to execute the proposed contract and to furnish an approved performance bond in a amount not less than 100 percent of the contract award within 30 days after the date of approval of award of the contract, and to provide all labor, materials, and equipment required to complete the project designated above, for the price hereinafter set forth, in strict compliance with the contract documents prepared by the Iowa Department of Natural Resources.

The undersigned agrees, if awarded the contract, to commence the work within a reasonable time after the preconstruction conference or by the specific starting date, if so specified, and to complete the work within the contract period, or to pay liquidated damages in the amount stipulated herein for each calendar day the work remains uncompleted after the expiration of the contract period or any authorized reduction thereof.

A proposal guarantee in the amount stipulated herein is included with this proposal, to be forfeited to the Iowa Department of Natural Resources if the undersigned fails to execute the contract and furnish an approved performance bond, if awarded the contract.

By virtue of statutory authority, preference will be given to products and provisions grown and coal produced within the state of Iowa, and also, a resident bidder shall be allowed a preference against a nonresident bidder from a state or foreign country which gives or requires a preference to bidders from that state or foreign country on projects in which there are no federal funds involved.

BY

(Iowa Contractor Registration No.)

(Signed) _____
(Date)

(FID/EIN/SSN)

(Phone Number) _____
(Fax Number)

(Email Address)

By signing and submitting the proposal, the bidder:

1. Gives an unsworn declaration on behalf of each person, firm, association, partnership, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract, and is not under debarment currently by the Federal government for a criminal violation which is reasonably related to bidding and contracting procedures; and
2. Affirms to have examined the plans, specifications, and job site to become acquainted with the adjacent areas, means of approach to the site, conditions of the actual job site, and the facilities for delivering, storing, placing, and handling of materials and equipment.

SCHEDULE OF PRICES

Project Description and Location

CONTRACT 3 - LAKE GRADING, FISH HABITAT, SHORELINE RESTORATION, EASTER LAKE, POLK COUNTY

Name of Bidder

THE "UNIT PRICE" AND "AMOUNT" COLUMNS MUST BE FILLED IN FOR THIS PROPOSAL TO BE CONSIDERED COMPLETE. IF THERE IS A DISCREPANCY BETWEEN UNIT BID PRICES, EXTENSIONS, OR TOTAL AMOUNTS OF BID, THE UNIT PRICES SHALL GOVERN.

Item No.	Description	Estimated Quantity	Unit Price	Amount
1	Clearing and Grubbing	1 LS		
2	Excavation, Class 10	211,000 BCY		
3	Storm Sewer, Trenched, RCP, 18 in	224 LF		
4	Storm Sewer, Trenched, RCP, 24 in	216 LF		
5	Pipe Apron, RCP, 18 in	1 EA		
6	Pipe Apron, RCP, 24 in	1 EA		
7	Manhole Adjustment, Major	3 EA		
8	Overlay, HMA, 2 in	3,550 SY		
9	Removal of Shared Use Path	120 SY		
10	Shared Use Path, PCC, 6 in	120 SY		
11	Full Depth Patches	150 SY		
12	Seeding, Native Mix	3.0 AC		
13	Seeding, Erosion Control Mix	23.0 AC		
14	Seeding, Offsite	7.0 AC		
15	Relocate Tree	3 EA		
16	SWPPP Management	1 LS		
17	Filter Sock, Install	6,000 LF		
18	Filter Sock, Removal	6,000 LF		

19	Silt Fence, Install	2,000 LF		
20	Silt Fence, Removal	2,000 LF		
21	Temporary RECP, Type 2B	1,800 SY		
22	TRM, Type 2	120 SF		
23	Check Dam, Rock	90 TON		
24	Rip Rap, Class D	430 TON		
25	Rip Rap, Class E	55 TON		
26	Rip Rap, Recycled Concrete	50 TON		
27	Shoreline Treatment, Type 1, Rip Rap	10,230 LF		
28	Shoreline Treatment, Type 2, Flexamat	6,765 LF		
29	Shoreline Treatment, Type 3, Fiber Log	7,130 LF		
30	Repurposed Granite Stone Feature	8 EA		
31	Repurposed Sandstone Feature	25 EA		
32	Stabilized Construction Entrance	140 TON		
33	Stabilized Construction Entrance, Removal	4 EA		
34	Crushed Rock, Access Road	350 TON		
35	Access Road Removal	1 LS		
36	Mobilization	1 LS		
37	Type A Fish Habitat	2 EA		
38	Type B Fish Habitat	19 EA		
39	Type C Fish Habitat	17 EA		
40	Type E Fish Habitat	30 EA		
41	Type F Fish Habitat	9 EA		
42	Type G Fish Habitat	19 EA		
43	Type H Fish Habitat	14 EA		

44	Type J Fish Habitat	4 EA		
45	Impoundment Discharge	1 LS		
46	Offsite Waste Disposal	375 TON		
		BASE BID TOTAL		
ALTERNATE 1				
47	Borrow Excavation, Class 10	60,000 BCY		
48	Borrow Excavation, Hauling	60,000 BCY		
		ALT. 1 TOTAL		
		BASE + ALT 1		

Bidder Acknowledges Receipt of Any Issued Addenda Below (Number and Date)

Addendum #1 – 10/27/2017

Addendum #2 – 11/9/2017

PART 1 - GENERAL

1.01 SUMMARY:

- A. Section Includes: General requirements pertaining to:
 - 1. The Work specified for accepted alternate bids, the materials and methods referenced in other sections to achieve specified work, and the coordination and modification of related work and surrounding construction to complete the project under each accepted bid.
- B. Related Sections: Drawings and General Provisions of the contract, including the General Covenants and Provisions, Supplementary Covenants and Provisions and General Requirements.

1.02 DESCRIPTION OF ALTERNATE BIDS:

- A. Base Bid: In the event that the base bid is selected, the contractor shall complete bid items #1-46, and all incidental work associated with this project.
- B. Alternate Bid No. 1: In the event that Alternate Bid No. 1 is selected, in addition to the scope of work in the base bid, Bid Item #47, *Borrow Excavation, Class 10*, and Bid Item #48, *Borrow Excavation, Hauling*, shall be added to the contract.

1.03 ALTERNATE BID REQUIREMENTS:

- A. Bidder must submit alternate bids. Bids submitted without alternate bid will be rejected as unresponsive.
- B. Alternate bids, if awarded, will be considered as a basis for award. The low bid will be analyzed on the base bid and any combination of alternate bids. The Owner reserves the right to award the base bid and all alternates, that in the Owner's opinion, will provide the most cost-effective end product. The Owner's decision is final.
- C. Provide alternate bid for the cost of the service requested in each alternate, either as an addition or as a reduction in the total bid.
- D. The Owner may award any alternate bid or bids at the time of contract award. Any alternate bids awarded as part of the original contract will not extend the project completion time beyond that specified.

END OF SECTION 01030

GENERAL NOTES

1. ALL OF THE WORK TO BE DONE UNDER THIS CONTRACT SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS, THE GENERAL REQUIREMENTS OF DIVISION ONE, THE GENERAL CONDITIONS, THE SPECIFICATIONS, AND ANY ADDENDA THERETO.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ACQUAINT THEMSELVES AND ALL SUPERVISORY PERSONNEL WITH THE ABOVE-NAMED DRAWINGS AND DOCUMENTS.
3. THE LOCATION OF EXISTING UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES SHOWN ARE FROM AVAILABLE SURVEYS AND RECORDS. THESE LOCATIONS SHOULD BE CONSIDERED AS APPROXIMATE ONLY, WITH THE POSSIBILITY OF OTHER UTILITIES OR UNDERGROUND FEATURES EXISTING. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES WITHIN THE CONSTRUCTION LIMITS PRIOR TO BEGINNING CONSTRUCTION.
4. NOTIFY UTILITY COMPANIES PRIOR TO COMMENCING WORK. AVOID DAMAGE TO UTILITIES AND UNDERGROUND FEATURES DURING CONSTRUCTION. REPAIR ANY DAMAGE CAUSED BY THE CONTRACTOR'S CARELESSNESS AT THE CONTRACTOR'S EXPENSE.
5. COORDINATE THE CONSTRUCTION OPERATIONS AND COOPERATE WITH UTILITY COMPANIES WITH RESPECT TO RELOCATING ANY CONFLICTING FACILITIES, AS REQUIRED. THE COSTS FOR LOCATING EXISTING UTILITIES, COORDINATING RELOCATION WORK, PROVIDING TEMPORARY SUPPORTS, AND STAGING CONSTRUCTION TO ACCOMMODATE THE RELOCATION OF UTILITIES IS CONSIDERED INCIDENTAL TO CONSTRUCTION.
6. PROVIDE TEMPORARY SUPPORT FOR EXISTING UTILITY LINES THAT ARE ENCOUNTERED DURING CONSTRUCTION UNTIL BACKFILLING IS COMPLETED.
7. THE CONTRACTOR SHALL NOTIFY THE OWNER 48 HOURS BEFORE CONSTRUCTION BEGINS.
8. COORDINATE THE CONSTRUCTION WITH POLK COUNTY CONSERVATION TO MINIMIZE THE DISRUPTIONS TO DAILY OPERATIONS AT THE FACILITY.
9. ANY AREAS DISTURBED BY CONSTRUCTION OUTSIDE OF THE CONSTRUCTION LIMITS WILL BE REPAIRED AND RESTORED AT THE CONTRACTOR'S EXPENSE.
10. PROTECT ALL EXISTING DRAINAGE STRUCTURES. THE CONTRACTOR IS FULLY LIABLE FOR ALL DAMAGES TO PUBLIC OR PRIVATE PROPERTY CAUSED BY THEIR ACTION OR INACTION IN THE HANDLING OF STORM WATER FLOWS DURING CONSTRUCTION.
11. PROTECT EXISTING TREES, SHRUBS, FENCES, AND LANDSCAPING UNLESS SPECIFICALLY NOTED OR DESIGNATED OTHERWISE ON THE PLANS. REPLACEMENT OF ANY OF THESE ITEMS DAMAGED DURING CONSTRUCTION WILL BE AT THE CONTRACTOR'S EXPENSE.
12. PROTECT AND SAVE ALL PROPERTY CORNER MONUMENTS UNLESS OTHERWISE NOTED.
13. DIMENSIONS, PAVEMENT LOCATIONS, UTILITIES, AND GRADING ARE BASED ON AVAILABLE INFORMATION AT THE TIME OF DESIGN. DEVIATIONS MAY BE NECESSARY IN THE FIELD. ANY SUCH CHANGES OR CONFLICTS BETWEEN THE PLAN AND FIELD CONDITIONS ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
14. IN THE EVENT OF A DISCREPANCY BETWEEN THE QUANTITY ESTIMATES AND THE DETAILED PLANS, THE DETAILED PLANS SHALL GOVERN.
15. CONTRACTOR SHALL PROVIDE CONSTRUCTION FENCING AROUND ANY TRENCH LEFT OPEN OVERNIGHT. (INCIDENTAL TO CONSTRUCTION).
16. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS PRIOR TO COMMENCING CONSTRUCTION.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING THE SITE OF THE PROPOSED WORK TO SATISFY THEMSELVES AS TO THE EXISTING CONDITIONS RELATIVE TO THE CONTRACT.
18. IF CONFLICTS ARE FOUND BETWEEN DETAILS OR DIMENSIONS SHOWN ON STRUCTURAL PLANS OR OTHER DISCIPLINE'S PLANS, NOTIFY ENGINEER IMMEDIATELY FOR CLARIFICATION PRIOR TO PERFORMING WORK.
19. IN ANY CASE OF CONFLICT BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL MAKE NO DEVIATION FROM DESIGN DRAWINGS WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
20. CONSTRUCTION LIMITS ARE SHOWN ON THESE PLANS. CONFINE ALL CONSTRUCTION ACTIVITY TO WITHIN THE CONSTRUCTION LIMITS UNLESS OTHERWISE AUTHORIZED BY THE OWNER. ALL EASEMENT LIMITS SHALL BE CLEARLY MARKED IN THE FIELD AND PROTECTED BY THE CONTRACTOR.
21. IT IS THE OWNER'S INTENT TO PRESERVE AS MANY TREES AS POSSIBLE, ONLY CLEAR THE MINIMUM NUMBER OF TREES NEEDED TO COMPLETE THE CONSTRUCTION. TREE CLEARING IS INCIDENTAL IF NOT INCLUDED AS A SEPARATE BID ITEM.
22. DO NOT STORE EQUIPMENT AND/OR MATERIALS WITHIN PUBLIC RIGHT OF WAY ON STREETS OPEN TO TRAFFIC.
23. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL TO RETAIN ANY MATERIAL REMOVED FROM THE PROJECT AREA. IF DIRECTED, THE CONTRACTOR SHALL DELIVER THESE TO THE OWNER AT A LOCATION DESIGNATED. DISPOSE OF NON-SALVAGEABLE MATERIALS IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
24. LIMIT THE GRADING AND CONSTRUCTION OPERATIONS TO THE MINIMUM REQUIRED TO COMPLETE THE PROJECT.
25. COORDINATE THE CONSTRUCTION TO MINIMIZE THE DISRUPTIONS TO THE ADJACENT PROPERTIES. ANY AREAS DISTURBED BY CONSTRUCTION OUTSIDE OF THE CONSTRUCTION LIMITS WILL BE REPAIRED AND RESTORED AT THE CONTRACTOR'S EXPENSE.
26. DO NOT RESTRICT DRAINAGE CHANNELS AND PROTECT ALL EXISTING DRAINAGE STRUCTURES. THE CONTRACTOR IS FULLY LIABLE FOR ALL DAMAGES TO PUBLIC OR PRIVATE PROPERTY CAUSED BY THEIR ACTION OR INACTION IN THE HANDLING OF STORM WATER FLOWS DURING CONSTRUCTION. EXTRA GRADING WORK NEEDED TO MAINTAIN POSITIVE DRAINAGE WITHIN THE CONSTRUCTION LIMITS IS CONSIDERED INCIDENTAL TO CONSTRUCTION.
27. REPAIR ALL FIELD/DRAIN TILES THAT ARE ENCOUNTERED DURING CONSTRUCTION AS SPECIFIED. THE CONTRACTOR SHALL RECORD THE EXISTING TYPE, SIZE, LOCATION AND DEPTH OF ALL FIELD/DRAIN TILES ENCOUNTERED AND REPAIRED DURING CONSTRUCTION. THIS DATA WILL BE PROVIDED TO THE ENGINEER FOR INCORPORATION INTO THE RECORD DRAWINGS.
28. PROTECT AND KEEP DEBRIS DEPOSITED BY THE CONSTRUCTION OFF OF ADJACENT PROPERTIES OUTSIDE THE EASEMENT AREA AND STREETS. REMOVE AND REPAIR ANY DAMAGE WITHOUT ADDITIONAL COMPENSATION.
29. PROTECT EXISTING TREES, SHRUBS, FENCES, AND LANDSCAPING UNLESS SPECIFICALLY NOTED OR DESIGNATED OTHERWISE ON THE PLANS. REPLACEMENT OF ANY OF THESE ITEMS DAMAGED DURING CONSTRUCTION WILL BE AT THE CONTRACTOR'S EXPENSE.

30. COMPLETELY REMOVE AND DISPOSE OF THE TREES, SHRUBS AND VEGETATION DESIGNATED FOR REMOVAL ON THE PLANS. DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
31. CONTRACTORS SHALL SATISFY THEMSELVES PRIOR TO SUBMISSION OF BIDS AS TO THE SOIL CONDITIONS. NO ADDITIONAL COMPENSATION FOR UNSATISFACTORY SOIL CONDITIONS.
32. CONTRACTOR SHALL REMOVE AND REPLACE, OR REPAIR ALL ROAD SURFACES AND OTHER ITEMS DAMAGED BY CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, TO THE SATISFACTION OF THE OWNER AND ENGINEER.
33. STRIPPING OF TOPSOIL SHALL BE IN ACCORDANCE WITH SPECIFICATIONS. REFER TO DRAWINGS FOR LIMIT OF WORK.
34. PROTECT AND SAVE ALL PROPERTY CORNER MONUMENTS UNLESS OTHERWISE NOTED.
35. ASSIST THE ENGINEER'S FIELD REPRESENTATIVE WITH DAILY RECORD KEEPING INCLUDING ALL NECESSARY FIELD LOCATIONS AND MEASUREMENTS. THE CONTRACTOR WILL BE REQUIRED TO ATTEND FINAL AND INTERMEDIATE INSPECTIONS OF THE PROJECT, AND WILL BE RESPONSIBLE FOR OPENING ALL MANHOLES FOR INSPECTION.
36. ALL TRAFFIC CONTROL WILL BE IN ACCORDANCE WITH THE CURRENT STATE OF IOWA APPROVED MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
37. BLADING, SHAPING OR MAINTENANCE OF TEMPORARY CONNECTIONS, CROSSINGS, DETOURS OR TEMPORARY ACCESSES SHALL BE INCIDENTAL TO THE PROJECT.
38. CONSTRUCTION STAKING TO BE PROVIDED BY THE OWNER. REFER TO PROJECT SPECIFICATIONS FOR COORDINATION REQUIREMENTS UNLESS INCLUDED AS A SEPARATE BID ITEM.
39. EMERGENCY ACCESS NEEDS TO BE MAINTAINED ON ALL OF THE STREETS AND TO ALL AFFECTED PROPERTIES AT ALL TIMES.
40. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED.

ESTIMATED PROJECT QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITY	FINAL QUANTITY
1	CLEARING AND GRUBBING	LS	1	
2	EXCAVATION, CLASS 10	BCY	211,000	
3	STORM SEWER, TRENCHED, RCP, 18 IN	LF	224	
4	STORM SEWER, TRENCHED, RCP, 24 IN	LF	216	
5	PIPE APRON, RCP, 18 IN	EA	1	
6	PIPE APRON, RCP, 24 IN	EA	1	
7	MANHOLE ADJUSTMENT, MAJOR	EA	3	
8	OVERLAY, HMA, 2 IN	SY	3,550	
9	REMOVAL OF SHARED USE PATH	SY	120	
10	SHARED USE PATH, PCC, 6 IN	SY	120	
11	FULL DEPTH PATCHES	SY	150	
12	SEEDING, NATIVE MIX	AC	3.0	
13	SEEDING, EROSION CONTROL MIX	AC	23.0	
14	SEEDING, OFFSITE	AC	7.0	
15	RELOCATE TREE	EA	3	
16	SWPPP MANAGEMENT	LS	1	
17	FILTER SOCK, INSTALL	LF	6,000	
18	FILTER SOCK, REMOVAL	LF	6,000	
19	SILT FENCE, INSTALL	LF	2,000	
20	SILT FENCE, REMOVAL	LF	2,000	
21	TEMPORARY RECIP, TYPE 2B	SY	1,800	
22	TRM, TYPE 2	SF	120	
23	CHECK DAM, ROCK	TON	90	
24	RIP RAP, CLASS D	TON	430	
25	RIP RAP, CLASS E	TON	55	
26	RIP RAP, RECYCLED CONCRETE	TON	50	
27	SHORELINE TREATMENT, TYPE 1, RIP RAP	LF	10,230	
28	SHORELINE TREATMENT, TYPE 2, FLEXAMAT	LF	6,765	
29	SHORELINE TREATMENT, TYPE 3, FIBER LOG	LF	7,130	
30	REPURPOSED GRANITE STONE FEATURE	EA	8	
31	REPURPOSED SANDSTONE FEATURE	EA	25	
32	STABILIZED CONSTRUCTION ENTRANCE	TON	140	
33	STABILIZED CONSTRUCTION ENTRANCE, REMOVAL	EA	4	
34	CRUSHED ROCK, ACCESS ROAD	TON	350	
35	ACCESS ROAD REMOVAL	LS	1	
36	MOBILIZATION	LS	1	
37	TYPE A FISH HABITAT	EA	2	
38	TYPE B FISH HABITAT	EA	19	
39	TYPE C FISH HABITAT	EA	17	
40	TYPE E FISH HABITAT	EA	30	
41	TYPE F FISH HABITAT	EA	9	
42	TYPE G FISH HABITAT	EA	19	
43	TYPE H FISH HABITAT	EA	14	
44	TYPE J FISH HABITAT	EA	4	
45	IMPOUNDMENT DISCHARGE	LS	1	
46	OFFSITE WASTE DISPOSAL	TON	375	
ALTERNATE NO. 1				
47	BORROW EXCAVATION, CLASS 10	BCY	60,000	
48	BORROW EXCAVATION, HAULING	BCY	60,000	

UTILITY CONTACTS



UTILITY QUALITY SERVICE LEVELS

UTILITY LEVELS OF UTILITIES ARE SHOWN IN THE PARENTHESSES WITH THE UTILITY TYPE AND WHEN APPLICABLE, SIZE. THE QUALITY LEVELS ARE BASED ON THE C1/ ASCE 38-02 STANDARD.

UTILITY LEVEL (D) INFORMATION IS DERIVED FROM EXISTING UTILITY RECORDS OR ORAL RECOLLECTIONS.

UTILITY LEVEL (C) INFORMATION IS OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION WITH QUALITY D INFORMATION.

UTILITY LEVEL (B) INFORMATION IS OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES.

UTILITY LEVEL (A) IS HORIZONTAL AND VERTICAL POSITION OF UNDERGROUND UTILITIES OBTAINED BY ACTUAL EXPOSURE OR VERIFICATION OF PREVIOUSLY EXPOSED SUBSURFACE UTILITIES, AS WELL AS THE TYPE, SIZE, CONDITION, MATERIAL, AND OTHER CHARACTERISTICS.

UTILITY WARNING

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN COMPRISE ALL SUCH ITEMS IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN ARE IN THE EXACT LOCATION INDICATED EXCEPT WHERE NOTED AS QUALITY LEVEL A.

MARK	REVISION	DATE	BY
1	ADDENDUM NO. 2	11/10/17	DM
Engineer:	DJJ	Checked By:	ARB
Technician:	DFM	Date:	11/10/2017
Project No:	1140546	Field Bk:	
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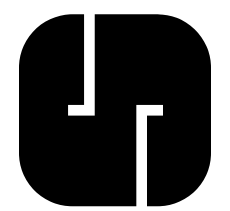
EASTER LAKE RESTORATION - CONTRACT 3

GENERAL NOTES AND QUANTITIES

SNYDER & ASSOCIATES, INC.

POLK COUNTY, IOWA

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Project No: 1140546

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ESTIMATED REFERENCE NOTES

Table with 2 columns: ITEM NO. and DESCRIPTION. Contains 19 items detailing construction and restoration work such as clearing, excavation, storm sewer installation, pipe aprons, manhole adjustments, overlays, and seeding.

ESTIMATED REFERENCE NOTES

Table with 2 columns: ITEM NO. and DESCRIPTION. Contains 19 items detailing construction and restoration work such as silt fence removal, temporary recp, turf reinforcement matting, check dams, rip rap, shoreline treatments, and fish habitat installation.

EASTER LAKE RESTORATION - CONTRACT 3

TABLATIONS & REFERENCE NOTES

POLK COUNTY, IOWA

MARK

1 ADDENDUM NO. 2

REVISION

11/10/17 DM

DATE BY

11/10/2017

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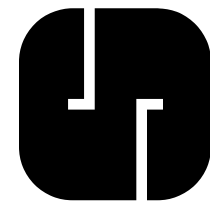
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Project No: 1140546

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1140546

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Project No: 1140546

Sheet A.03

SNYDER & ASSOCIATES, INC.

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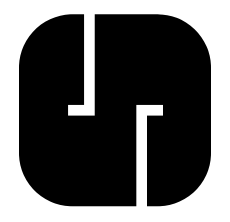
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ESTIMATED REFERENCE NOTES

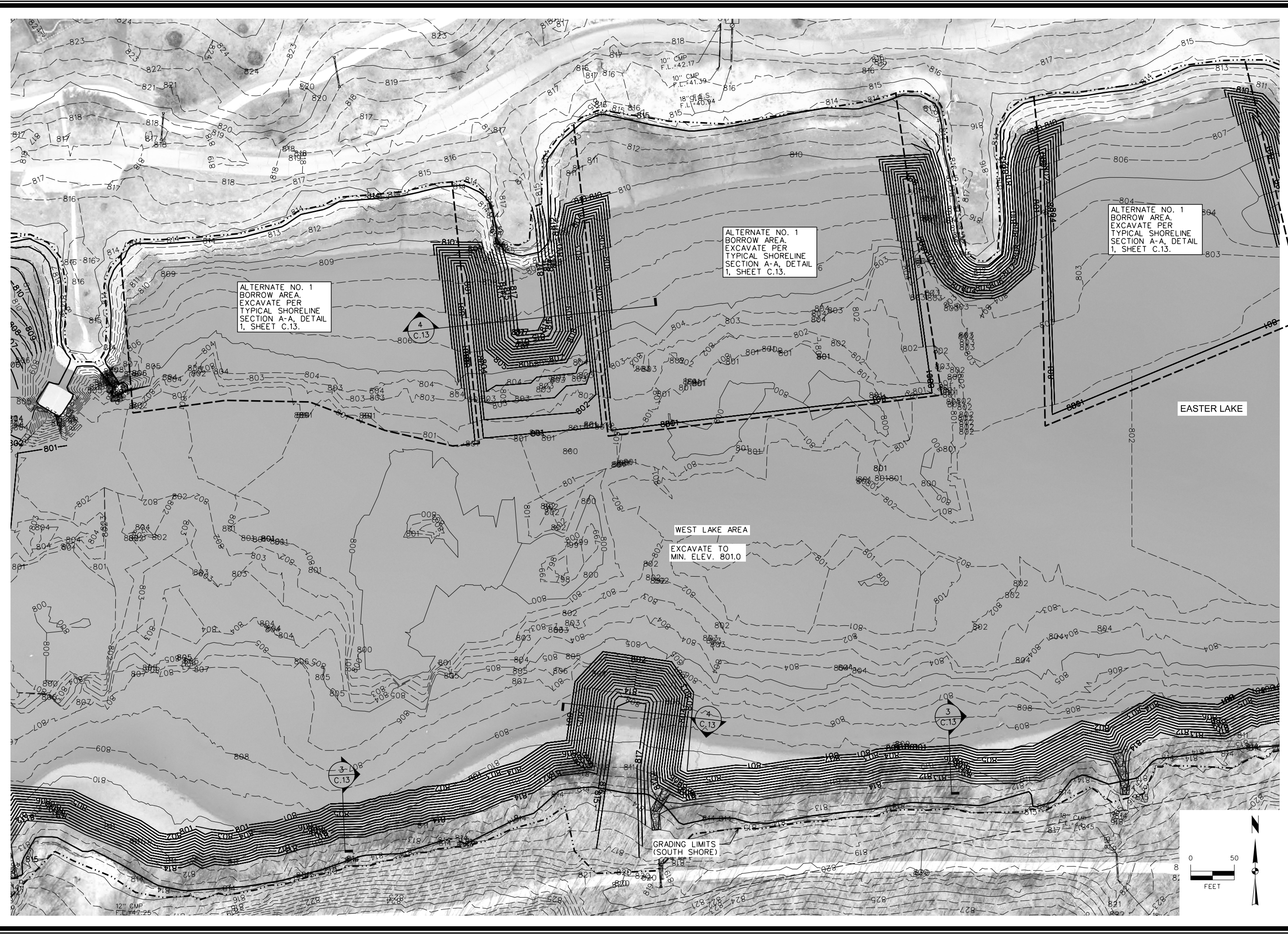
ITEM NO.	DESCRIPTION
40	TYPE E FISH HABITAT (EA) Unit price includes installation of fish habitat components as shown on the Plans, including, but not limited to hauling of catfish spawning tubes or small storm structures from stockpile locations around the lake, placement of spawning tubes or structures, and associated work. Payment will be made based on number of spawn tubes or structures properly installed as counted in the field.
41	TYPE F FISH HABITAT (EA) Unit price includes installation of fish habitat components as shown on the Plans, including, but not limited to geotextile underlayment, loading, hauling and placement of recycled concrete rip rap provided by Owner, and associated work. Payment will be made based on number of fish habitat locations with components properly installed as counted in the field.
42	TYPE G FISH HABITAT (EA) Unit price includes installation of fish habitat components as shown on the Plans, including, but not limited to hauling of concrete anchors from stockpile locations around the lake, placement of concrete anchors, and associated work. Payment will be made based on number of fish habitat locations with components properly installed as counted in the field.
43	TYPE H FISH HABITAT (EA) Unit price includes installation of fish habitat components as shown on the Plans, including, but not limited to geotextile underlayment, loading, hauling and placement of recycled concrete rip rap provided by Owner, and associated work. Payment will be made based on number of fish habitat locations with components properly installed as counted in the field.
44	TYPE J FISH HABITAT (EA) Unit price includes installation of fish habitat components as shown on the Plans, including, but not limited to excavation, geotextile underlayment, rip rap, pea gravel, and associated work. Payment will be made based on number of fish habitat locations with components properly installed as counted in the field.
45	IMPOUNDMENT DISCHARGE (LS) Unit price includes controlled discharge of Ewing Park pond for use as a fill site, including, but not limited to excavation, pumping, sediment control measures required to prevent discharge of sediment downstream, and associated work. Payment will be made based on percent completion of the work as estimated by the Engineer.
46	OFFSITE WASTE DISPOSAL (TON) Unit price includes removal and offsite disposal of all waste encountered during excavation work, including, but not limited to removing debris and trash, temporary stockpiling, loading, hauling, disposal, and associated work. Also includes efforts to clean debris of soil and sediment prior to disposal. Waste is required to be mostly clean of any soil and sediment prior to disposal. Payment will be made based on tons of debris properly disposed as measured by certified weigh tickets.
ALTERNATE No. 1	
47	BORROW EXCAVATION, CLASS 10 (BCY) Unit price includes excavation and loading of suitable material from Alternate No. 1 borrow locations as shown on the Plans, including, but not limited to site preparation, excavation, and loading into trucks for over road hauling. Bidders shall review quantities and satisfy themselves for all conditions of earthwork requirements in submittal of bid. Payment will be made based on bank cubic yards (undisturbed material) of volume moved and the percent completion of the excavation work as estimated by the Engineer. Final payment will be determined by post-construction survey and electronic measurement of cut volume.
48	BORROW EXCAVATION, HAULING (BCY) Unit price includes hauling of borrow material from Easter Lake site to offsite waste location, including, but not limited to haul route selection, obtaining necessary haul permits, hauling of Class 10 borrow material, and depositing borrow material at City of Des Moines' Riverview Park. Item does not include any placement or finish grading of hauled material at waste site beyond loose dumping in cooperation with grading work by others. Payment will be made based on bank cubic yards (undisturbed material) of volume hauled and the percent completion of the excavation work as estimated by the Engineer. No adjustment for swelling of material hauled will be made. Final payment will be determined by post-construction survey and electronic measurement of cut volume.

MARK	REVISION	DATE	BY
1	ADDENDUM NO. 2	11/10/17	DM
Engineer:	DJJ	Checked By:	ARB
Technician:	DFM	Date:	11/10/2017
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EASTER LAKE RESTORATION - CONTRACT 3
TABULATIONS & REFERENCE NOTES
SNYDER & ASSOCIATES, INC.
 POLK COUNTY, IOWA
 2727 S.W. SNYDER BLVD.
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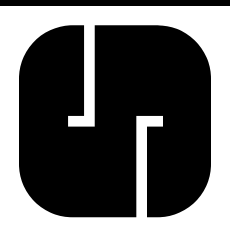
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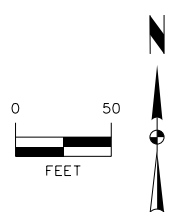
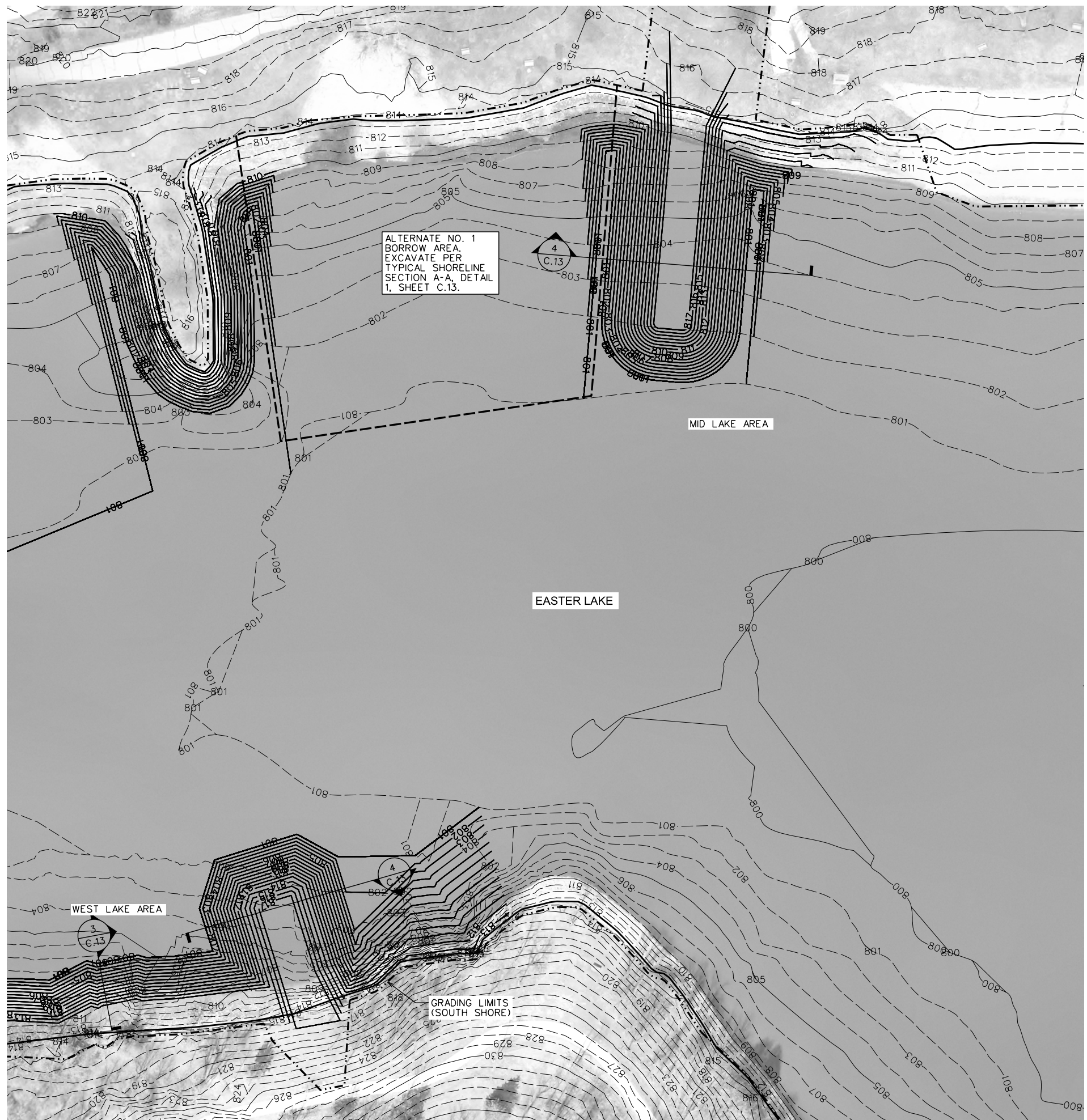
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EASTER LAKE RESTORATION - CONTRACT 3
GRADING SITE PLAN - WEST LAKE
SNYDER & ASSOCIATES, INC.
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Project No: 1140546
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EASTER LAKE RESTORATION - CONTRACT 3

GRADING SITE PLAN - WEST LAKE AND MID LAKE

POLK COUNTY, IOWA

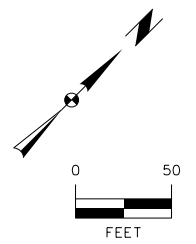
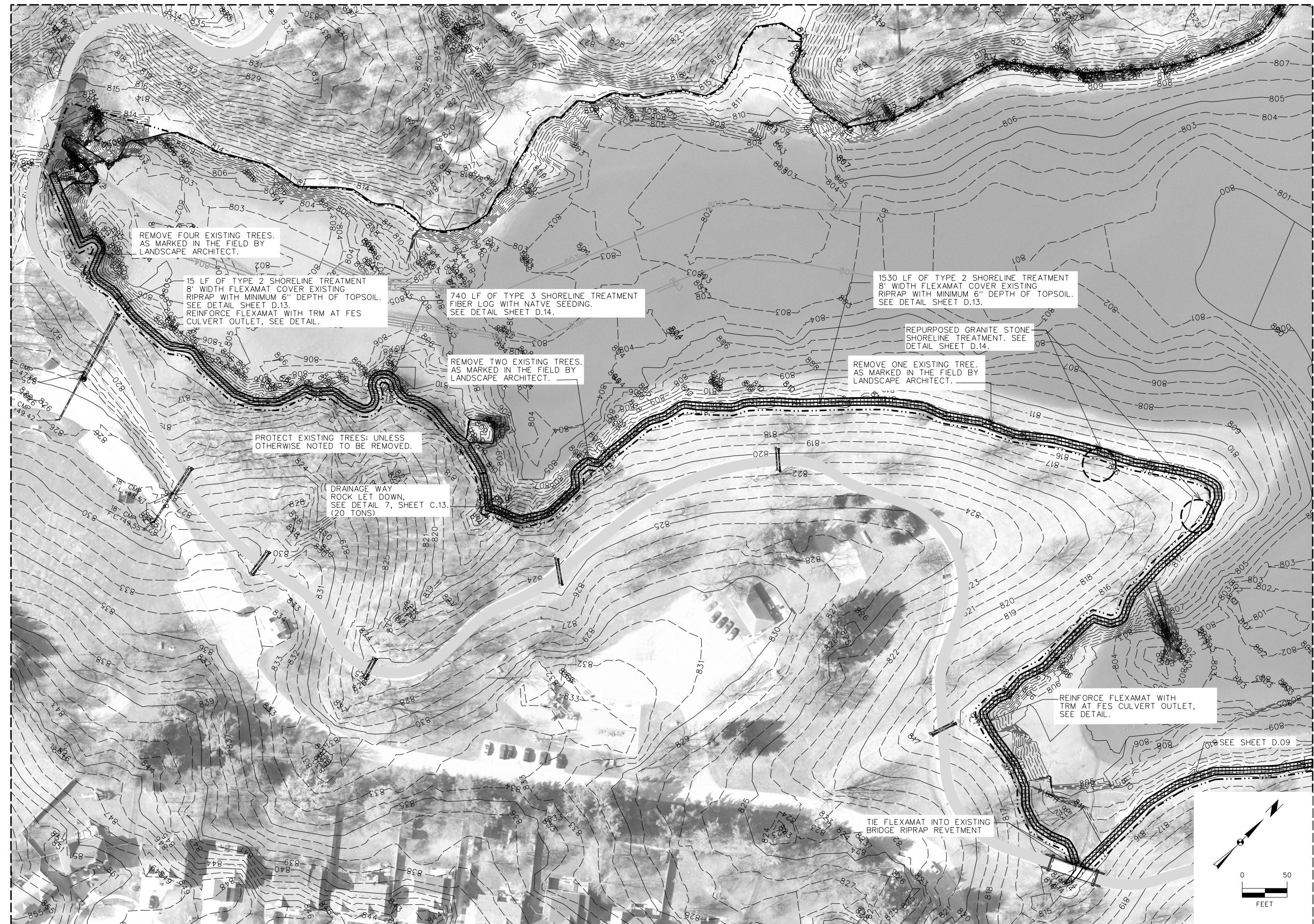
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Technician:	DFM	Date:	11/10/2017
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EASTER LAKE RESTORATION - CONTRACT 3

SHORELINE IMPROVEMENT SITE PLAN

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POLK COUNTY, IOWA

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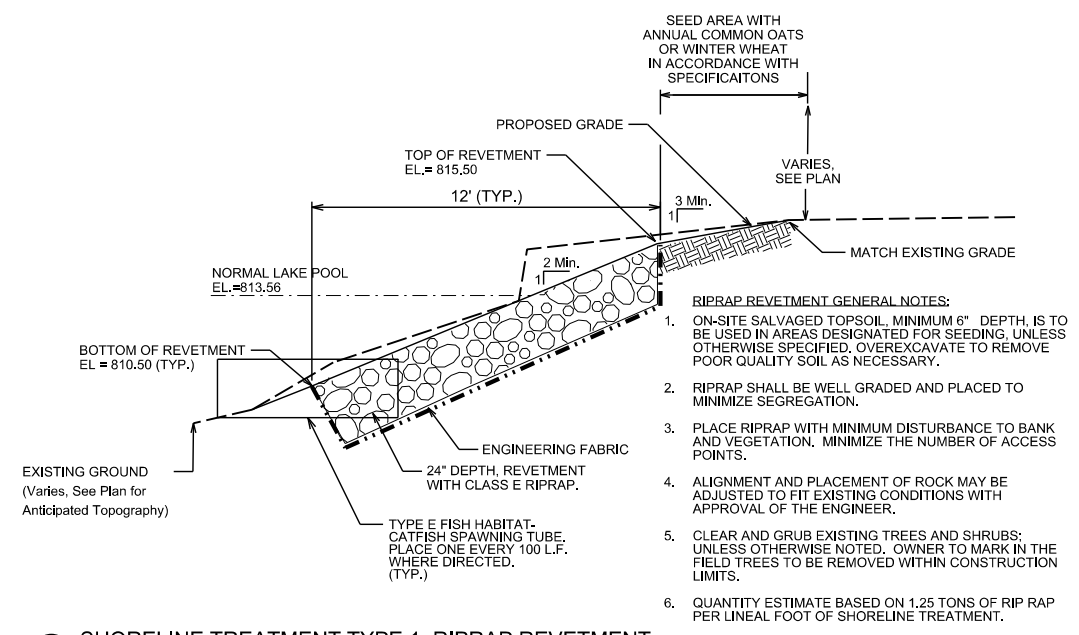
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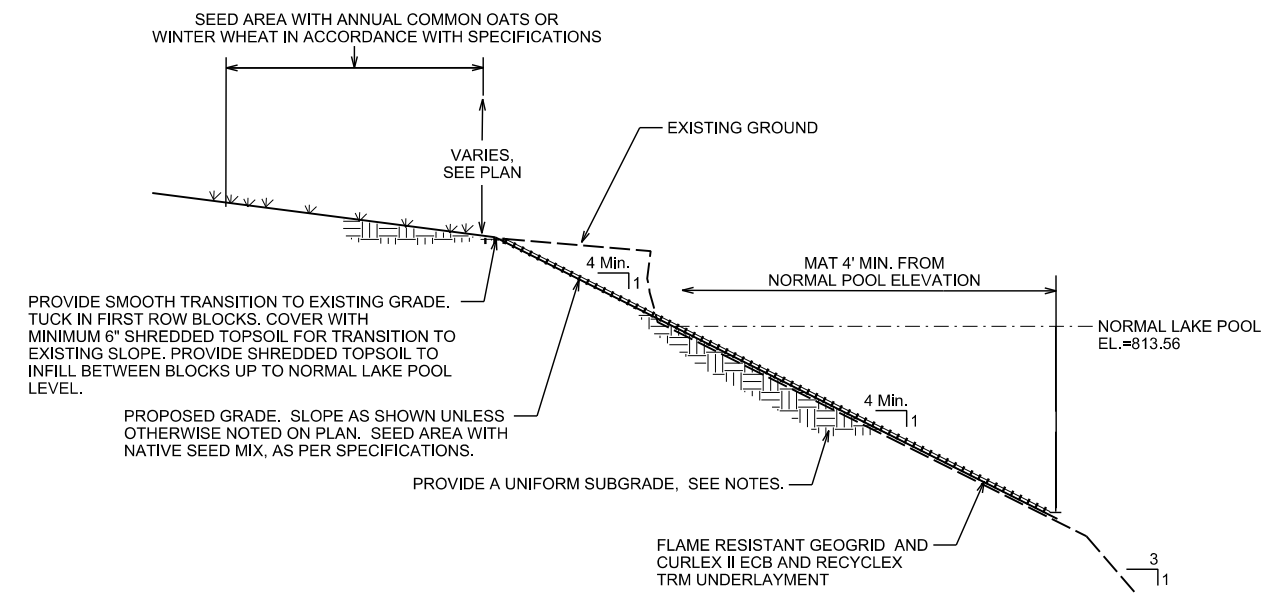
FLEXAMAT CONSTRUCTION GENERAL NOTES:

1. REMOVE EXISTING VEGETATION. CLEAR AND GRUB EXISTING TREES AND SHRUBS; UNLESS OTHERWISE NOTED. OWNER TO MARK IN THE FIELD TREES TO BE PROTECTED WITHIN CONSTRUCTION LIMITS.
2. PREPARE SURFACE IN ACCORDANCE WITH SPECIFICATIONS SECTIONS 31 23 99 AND 31 25 53. GRADE A UNIFORM SUBGRADE. SEE PLANS AND DETAILS FOR GRADING LIMITS. ALL SUBGRADE SURFACES PREPARED FOR PLACEMENT OF MATS SHALL BE SMOOTH AND FREE OF ALL ROCKS, STICKS, ROOTS, OTHER PROTRUSIONS, OR DEBRIS OF ANY KIND. THE PREPARED SURFACE SHALL PROVIDE A FIRM UNYIELDING FOUNDATION FOR THE MATS WITH NO SHARP OR ABRUPT BREAKS IN THE GRADE. TOP OF MAT SHALL BE BURIED IN A 24" ANCHOR TRENCH AT ALL CHANNEL CROSSINGS OR CULVERT OUTLETS. SEE DETAIL 1, SHEET H.07.
3. APPLY SEED SPECIFIED DIRECTLY TO THE PREPARED SOIL PRIOR TO INSTALLATION OF MATS. SEED ALL AREAS DISTURBED BY CONSTRUCTION. AFTER SEEDING APPLY EARTHGUARD FUSION TRM HYDRAULIC GROWTH MEDIUM AND MULCH, OR APPROVED EQUAL, IN ACCORDANCE WITH THE SPECIFICATIONS PRIOR TO INSTALLATION OF MATS.
4. INSTALL TIED CONCRETE BLOCK EROSION CONTROL MATTING TO THE WIDTH AND GRADE SHOWN ON THE PLANS. MAT TO BE FLEXAMAT, MANUFACTURED BY MOTZ ENTERPRISES, INC. OR APPROVED EQUAL. MATS SHALL BE INSTALLED SO THAT THE MAT EXTENDS 4'-0" BELOW NORMAL LAKE POOL WATER ELEVATION.
5. AT ANY SEAMS IN THE MAT, THE MAT SHALL BE MANUALLY FLIPPED BACK 3' THE LENGTH OF THE SEAM ON BOTH ADJACENT MATS. 4' SECTION OF THE FLAME RESISTANT GEOGRID AND CURLEX II ECB AND RECYCLEX TRM UNDERLAYMENT SHALL BE INSTALLED UNDER THE SEAM, WITH 2' OF THE FIRE PROOF UNDERLAYMENT UNDER EITHER SIDE OF THE SEAM. SEE DETAIL. MAT SHALL THEN BE MANUALLY FLIPPED BACK INTO PLACE SO THAT THE FLEXAMAT SECTIONS FIT TIGHTLY. A CONCRETE SAW SHALL BE USED TO CUT MAT TO FIT TIGHTLY TO ADJACENT SECTION OF MAT OR TO FIT AROUND CULVERTS, STRUCTURES OR TREES.

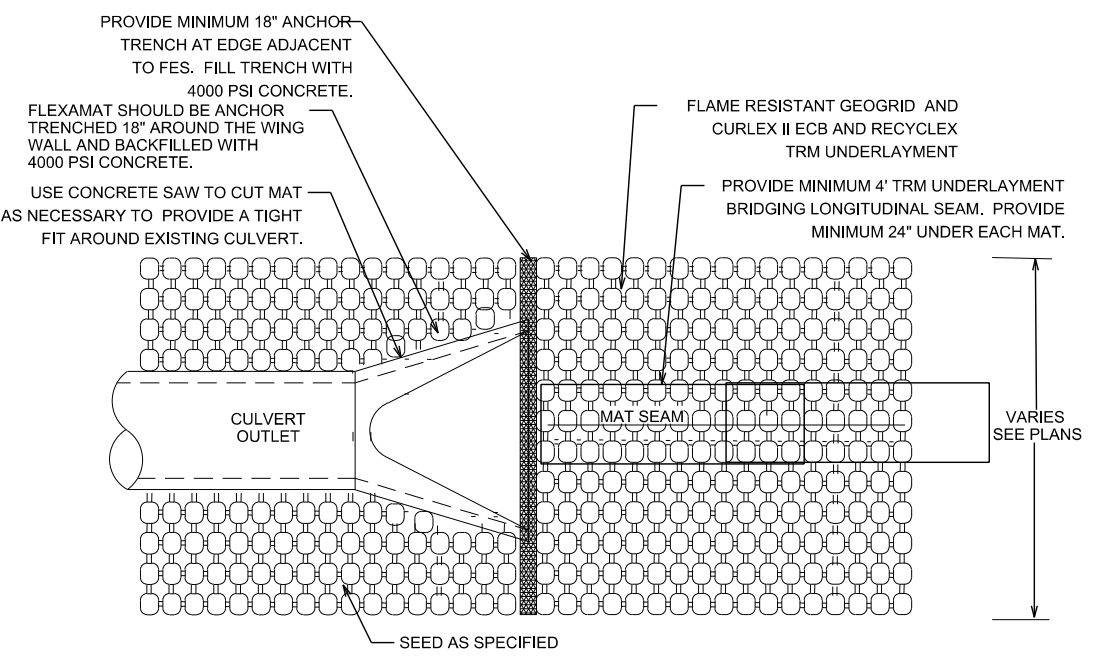


- RIPRAP REVETMENT GENERAL NOTES:**
1. ON-SITE SALVAGED TOPSOIL, MINIMUM 6" DEPTH, IS TO BE USED IN AREAS DESIGNATED FOR SEEDING, UNLESS OTHERWISE SPECIFIED. OVEREXCAVATE TO REMOVE POOR QUALITY SOIL AS NECESSARY.
 2. RIPRAP SHALL BE WELL GRADED AND PLACED TO MINIMIZE SEGREGATION.
 3. PLACE RIPRAP WITH MINIMUM DISTURBANCE TO BANK AND VEGETATION. MINIMIZE THE NUMBER OF ACCESS POINTS.
 4. ALIGNMENT AND PLACEMENT OF ROCK MAY BE ADJUSTED TO FIT EXISTING CONDITIONS WITH APPROVAL OF THE ENGINEER.
 5. CLEAR AND GRUB EXISTING TREES AND SHRUBS; UNLESS OTHERWISE NOTED. OWNER TO MARK IN THE FIELD TREES TO BE REMOVED WITHIN CONSTRUCTION LIMITS.
 6. QUANTITY ESTIMATE BASED ON 1.25 TONS OF RIP RAP PER LINEAL FOOT OF SHORELINE TREATMENT.

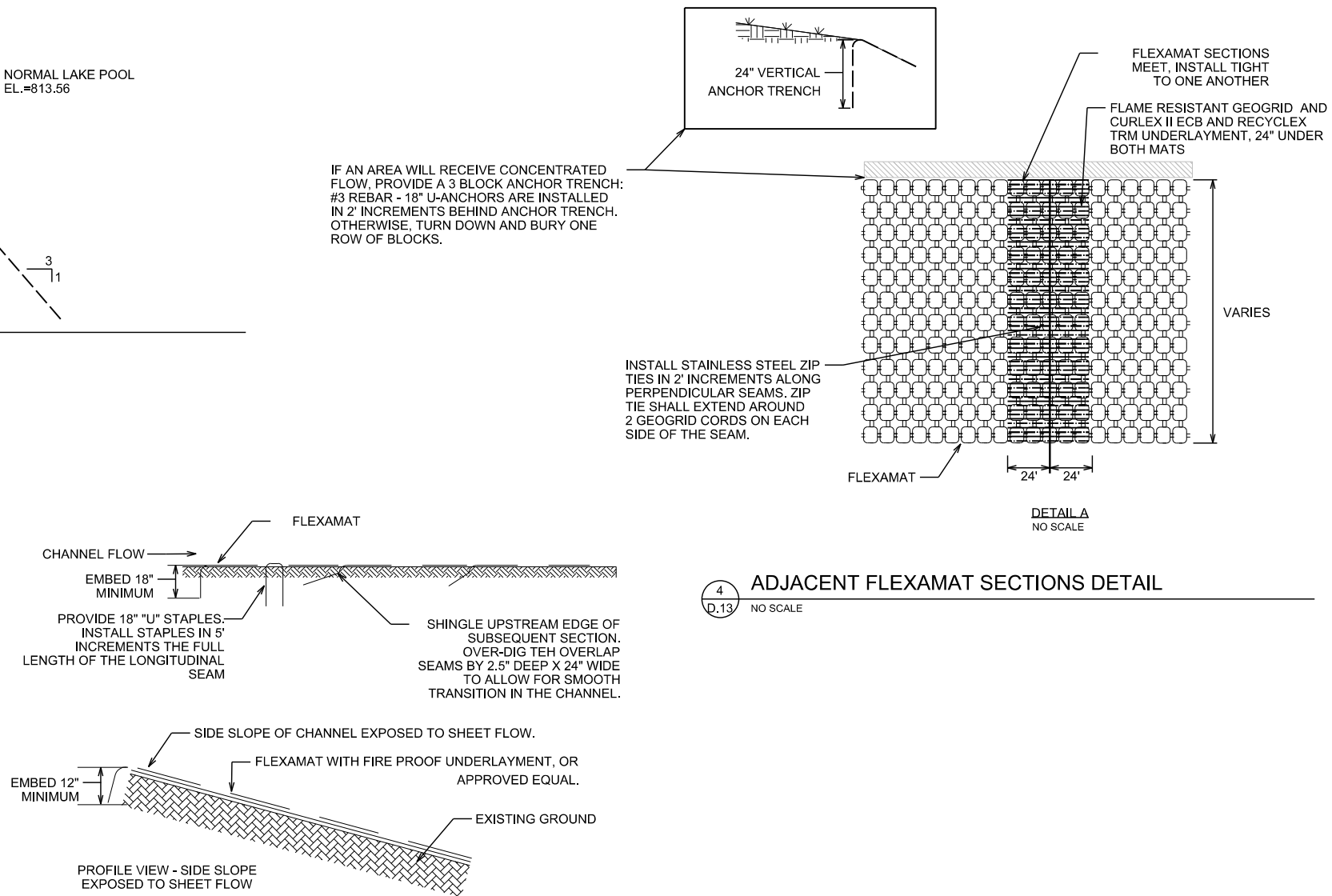
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1 SHORELINE TREATMENT TYPE 2: FLEXAMAT WITH NATIVE SEED MIX
NO SCALE



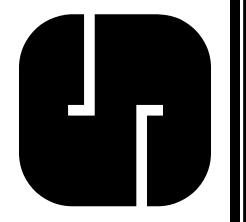
2 FLEXAMAT AT CULVERT OR CHANNEL CROSSING
NO SCALE

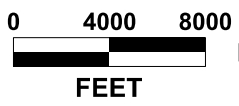
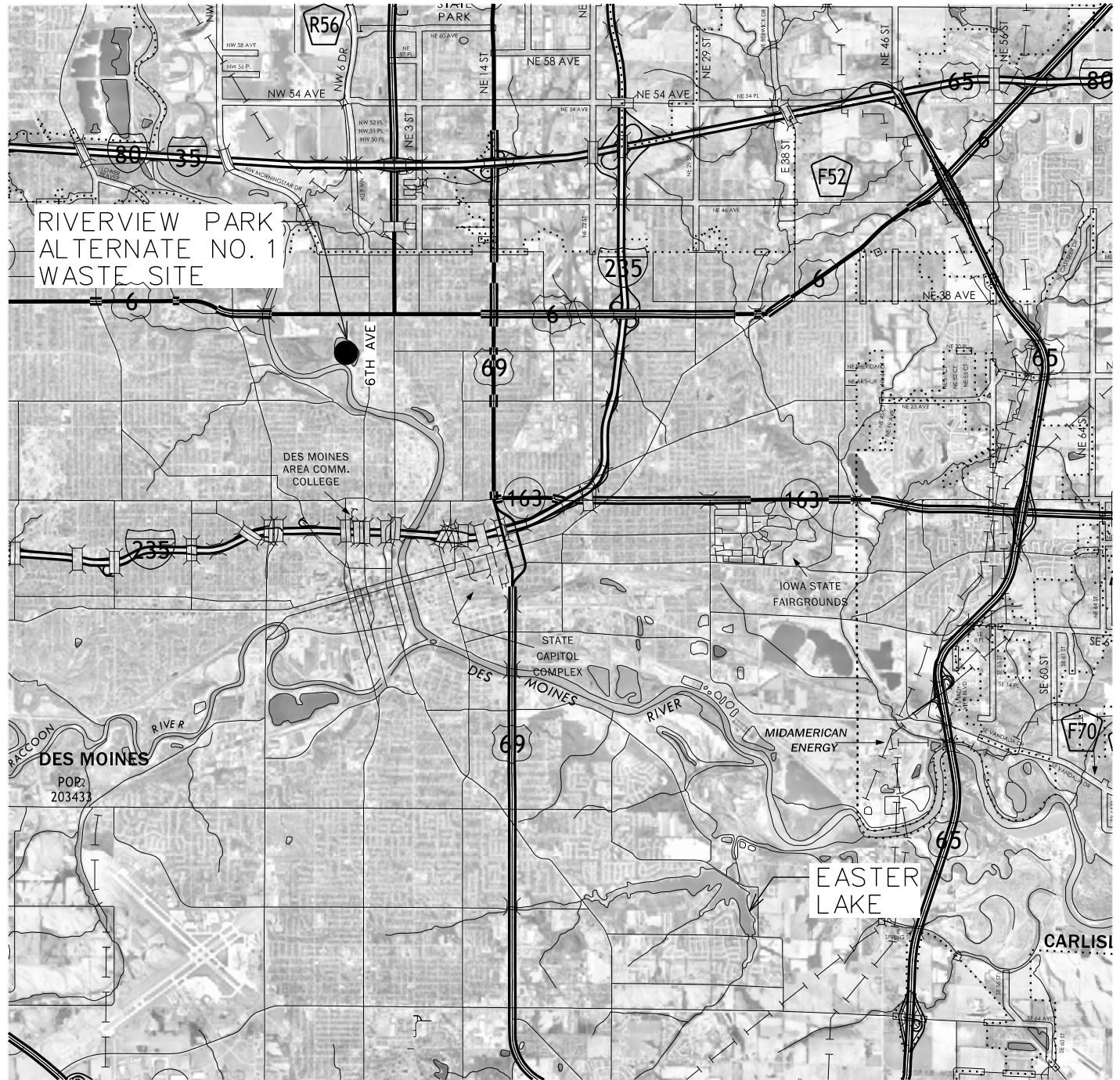


4 ADJACENT FLEXAMAT SECTIONS DETAIL
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APPENDIX NO. 2	REVISION	DATE	BY
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DJM	ARB	1" = 1'	1140546
Technician:	Date:	Project No:	Sheet
DFM	11/10/2017	1140546	D.13

EASTER LAKE RESTORATION - CONTRACT 3
SHORELINE IMPROVEMENTS DETAILS
SNYDER & ASSOCIATES, INC.
 POLK COUNTY, IOWA
 2727 S.W. SNYDER BLVD.
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ALTERNATE NO. 1 HAUL SITE