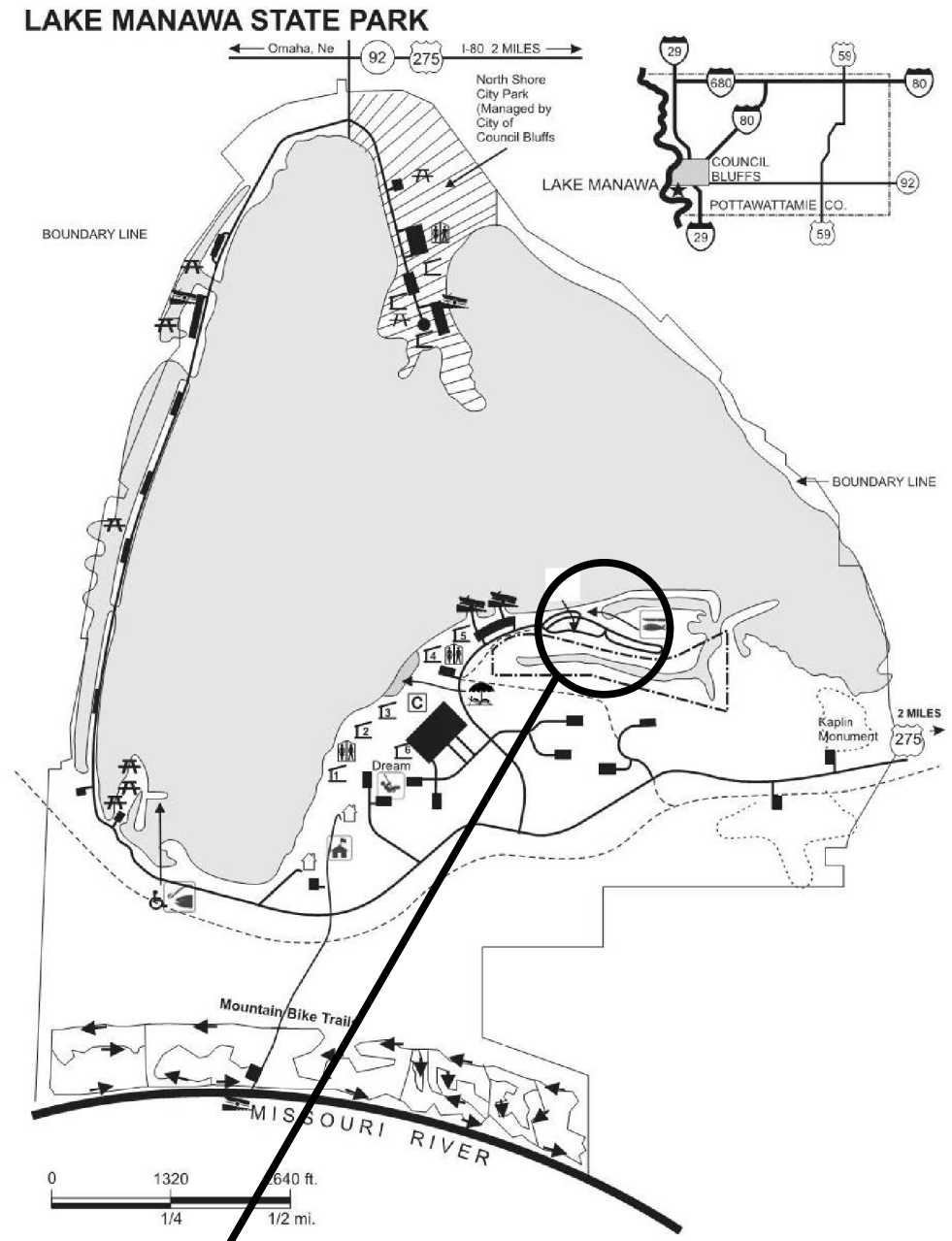


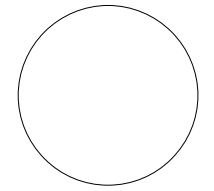
VICINITY MAP

PROJECT LOCATION



LOCATION MAP

CONSULTANT:



IOWA DEPARTMENT OF  
NATURAL RESOURCES

ENGINEERING SERVICES • WALLACE BUILDING  
502 E. 9TH ST., DES MOINES, IA 50319-0034



PROJECT LOCATION MAP

PICNIC AREA - VEGETATIVE BARRIER FOR:

LAKE MANAWA STATE PARK

POTTAWATTAMIE COUNTY, IOWA

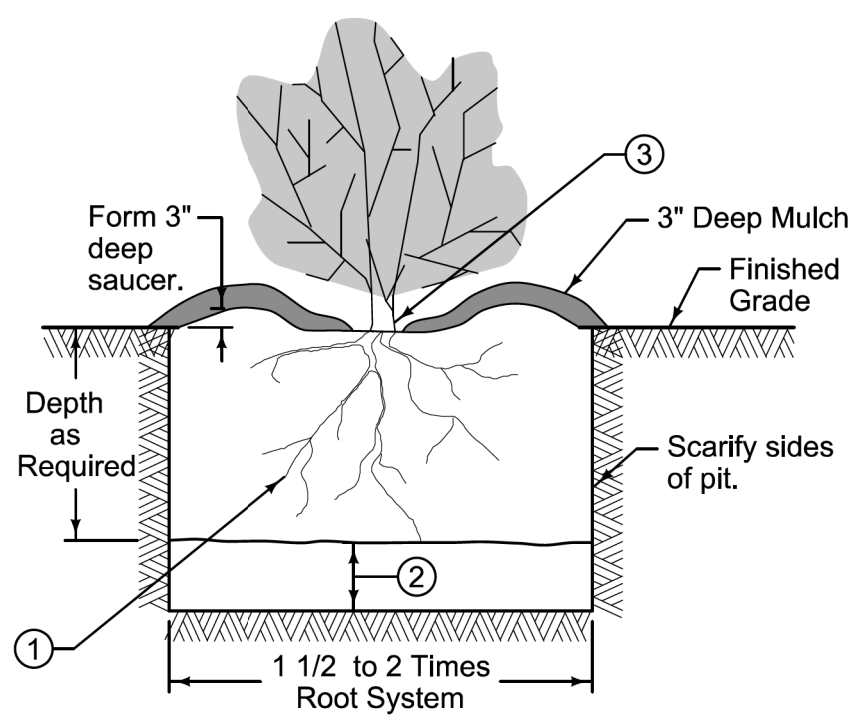
NO.	BY DATE	REVISION

DRAWN BY: PROJECT NUMBER:  
16-04-78-03

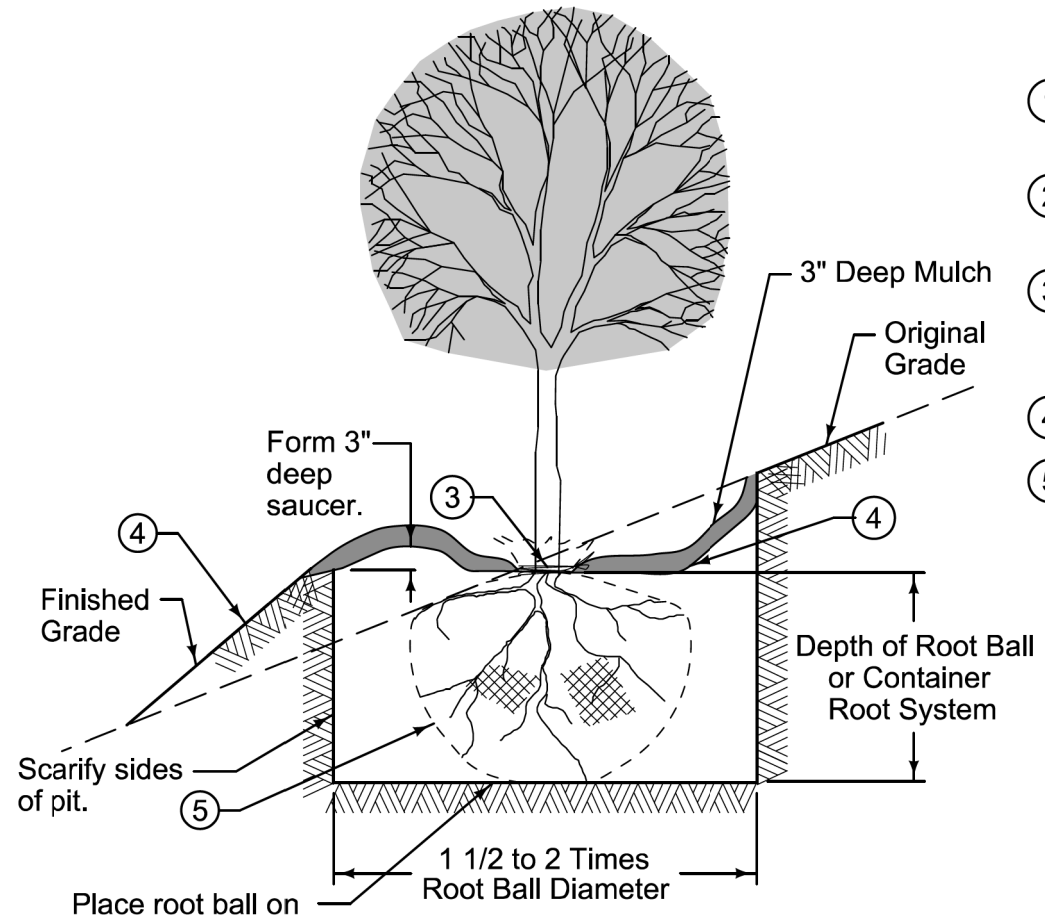
CHK'D BY: DATE:  
April 2018

SHEET No:

A.02

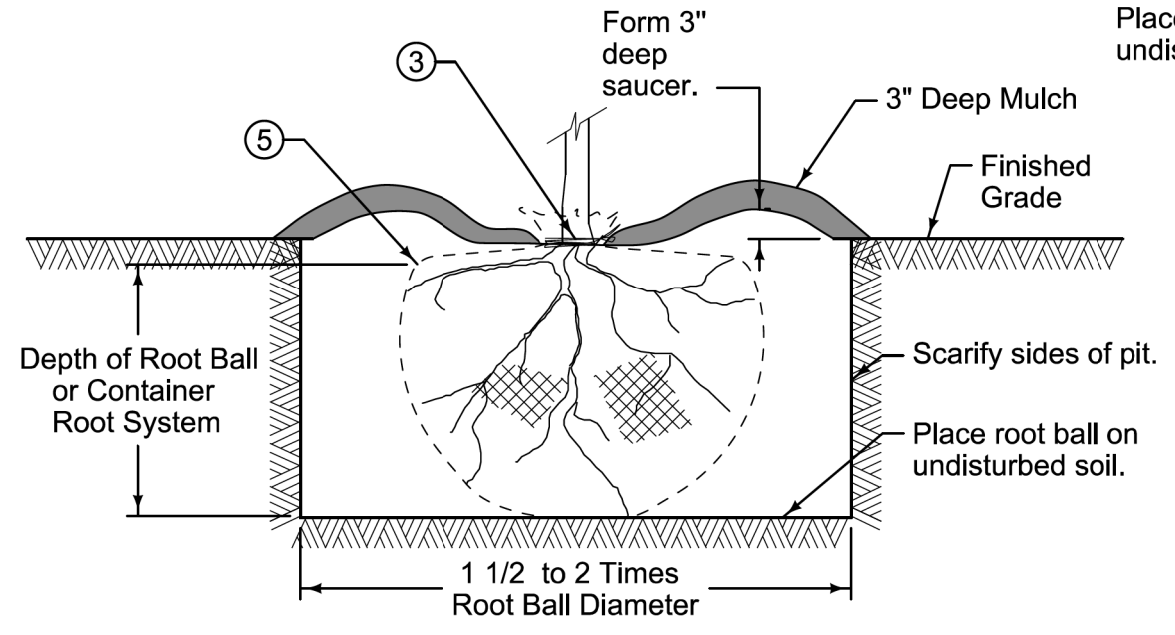


**PLANTING PIT  
(Bare Root Plants)**



**PLANTING PIT  
(On Slopes)**

- ① Spread root system in natural position with soil excavated from pit.
- ② Over-excavate 6 inches. Place 6 inches of loose soil in pit prior to planting.
- ③ Install with root collar at or slightly above grade. Do not place mulch within 2 inches of trunk.
- ④ Begin transition at edge of root ball.
- ⑤ Cut and completely remove all twine, burlap, and wire baskets from root ball prior to placing backfill material.

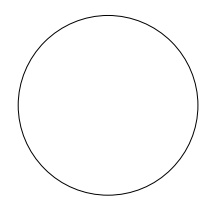


**PLANTING PIT  
(Balled and Burlapped Plants)**

FIGURE 9030.101 SHEET 1 OF 1

	REVISION	
	New	10-18-11
	<b>9030.101</b>	
SHEET 1 of 1		
SUDAS Standard Specifications		
PLANTING PIT		

CONSULTANT:



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NATURAL RESOURCES**

ENGINEERING SERVICES • WALLACE BUILDING  
502 E. 9TH ST., DES MOINES, IA 50319-0034



**QUANTITIES & NOTES**

PICNIC AREA - VEGETATIVE BARRIER FOR:  
**LAKE MANAWA STATE PARK**  
POTIATAMIE COUNTY, IOWA

NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:  
16-04-78-03  
CHK'D BY: DATE:  
April 2018  
SHEET NO:

**B.01**





7:48:18 AM 6/1/2018 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\POTAWATTAMIE\#16-04-78-03 Lake Manawa Picnic Area - Vegetative Barrier\02\_Design\16-04-78-03 Lake Manawa Veg

### ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
1	Tree Planting, Conifers, By Count, with Warranty	EACH	53
2	Tree Planting, Shrubs, By Count, with Warranty	EACH	107
3	Mulch	ACRE	0.26
4	Site Work	LS	1
5	Mobilization	LS	1

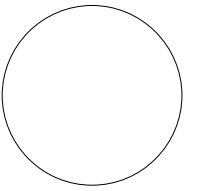
### ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
1	<p>Tree Planting, Conifers, By Count, with Warranty</p> <p>A. Eastern Red Cedar (<i>Juniperus Virginiana</i>) shall be 5 foot to 6 foot tall with root balls in burlap.</p> <p>B. Includes transport, labor, site preparation, equipment, watering and miscellaneous supplies.</p>
2	<p>Tree Planting, Shrubs, By Count, with Warranty</p> <p>A. Red-Osier Dogwood (<i>Cornus Stolonifera</i>) shall be in a 5 gallon pots.</p> <p>B. Includes transport, labor, site preparation, equipment, watering and miscellaneous supplies.</p>
4	<p>Site Work</p> <p>A. The contractor is to grade and shape the site as directed by the DNR Inspector.</p> <p>B. All urban seeding, fertilizing and mulching shall be incidental.</p> <p>C. All urban seeding shall be completed per Statewide Urban Standard Design Specifications for Public Improvements (SUDAS) Section 9010.</p> <p>D. Urban seeding mix per Statewide Urban Standard Design Specifications for Public Improvements (SUDAS) Table 9010.06: Type 1 Seed Mixture.</p> <p>E. All rural seeding, fertilizing and mulching shall be incidental.</p> <p>F. All rural seeding shall be completed per Statewide Urban Standard Design Specifications for Public Improvements (SUDAS) Section 9010.</p> <p>G. Rural grass seeding mix per Statewide Urban Standard Design Specifications for Public Improvements (SUDAS) Table 9010.07: Type 2 Seed Mixture.</p>

### GENERAL NOTES

- A. The contractor shall notify the following two weeks prior to demolition and/ or construction:
  - a. District Inspector: Mark Johnson (515) 250-3713
- B. The contractor shall visit the site and inspect the project area and thoroughly familiarize themselves with the actual job conditions prior to bidding and the start of work. Failure to visit the project site shall not relieve the contractor from performing the work in accordance to the plans, specification, special provisions and contract.
- C. The contractor shall verify, at the site, all dimensions and conditions shown on the plans and shall notify the DNR Engineer of any discrepancies, omissions, and/or conflicts prior to proceeding with the work.
- D. The contractor shall be responsible for any damage to existing facilities resulting from their negligence, or that of a subcontractor, and said repairs shall be approved by the owner.
- E. All work shall conform to and be performed in accordance with all applicable codes and ordinances.
- F. The contractor is expected to have materials, equipment, and labor available on a daily basis to install and maintain erosion control features of the project. This may involve seeding, silt fence, filter socks, rock ditch checks, silt basins or silt dikes.
- G. Where utilities and fixtures are shown as existing on the plans or encountered within the construction area, it shall be the responsibility of the contractor to notify the DNR Engineer of those utilities prior to the beginning of any construction. The contractor shall be afforded access to these facilities for necessary modification of services. Underground facilities, structures and utilities have been plotted from available surveys and records and therefore their locations must be considered approximate only. It is possible there may be others, the existence of which is presently not known or shown. It is the contractor's responsibility to determine their existence and exact location and to avoid damage thereto. No claims for additional compensation will be allowed to the contractor for any interference or delay caused by such work.
- H. The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service areas will be subject to the approval of the DNR Engineer.
- I. The contractor shall seed, fertilize and mulch all disturbed areas. From the beginning of the project to Station 6+50 use Urban seeding mix per Statewide Urban Standard Design Specifications for Public Improvements (SUDAS) Table 9010.06: Type 1 Seed Mixture. From Station 6+50 to the end of the project use Native grass seeding mix per Statewide Urban Standard Design Specifications for Public Improvements (SUDAS) Table 9010.13: Native Grass and Forbs (Wildflower) Seeding Mixture.

CONSULTANT:



**IOWA DEPARTMENT OF  
NATURAL RESOURCES**

ENGINEERING SERVICES - WALLACE BUILDING  
502 E. 9TH ST., DES MOINES, IA 50319-0034



### QUANTITIES & NOTES

PICNIC AREA - TREE CLEARING FOR:  
**LAKE MANAWA STATE PARK**

POTAWATTAMIE COUNTY, IOWA

NO.	BY DATE	REVISION

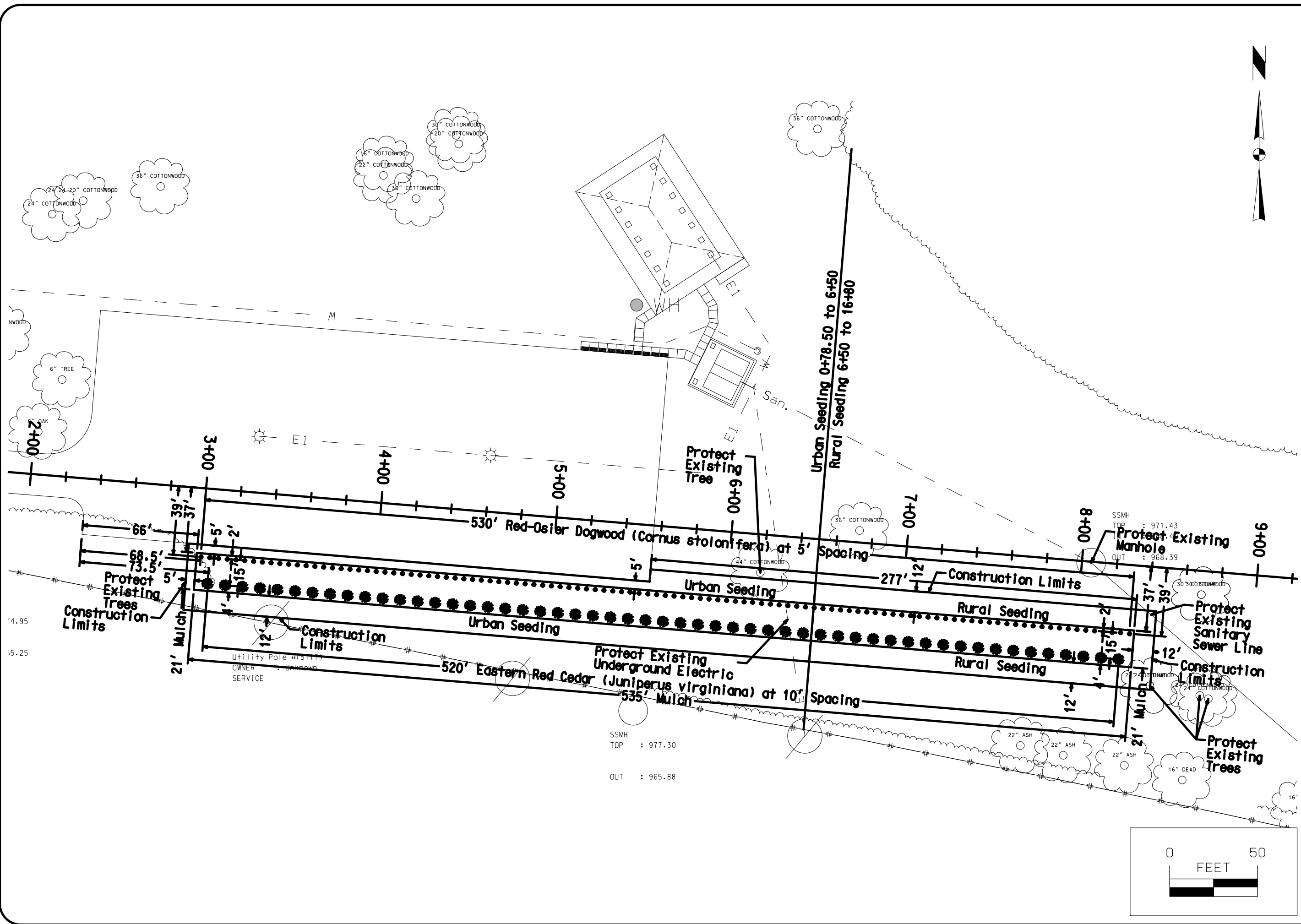
DRAWN BY: PROJECT NUMBER:  
16-04-78-02

CHK'D BY: DATE:  
Feb 2017

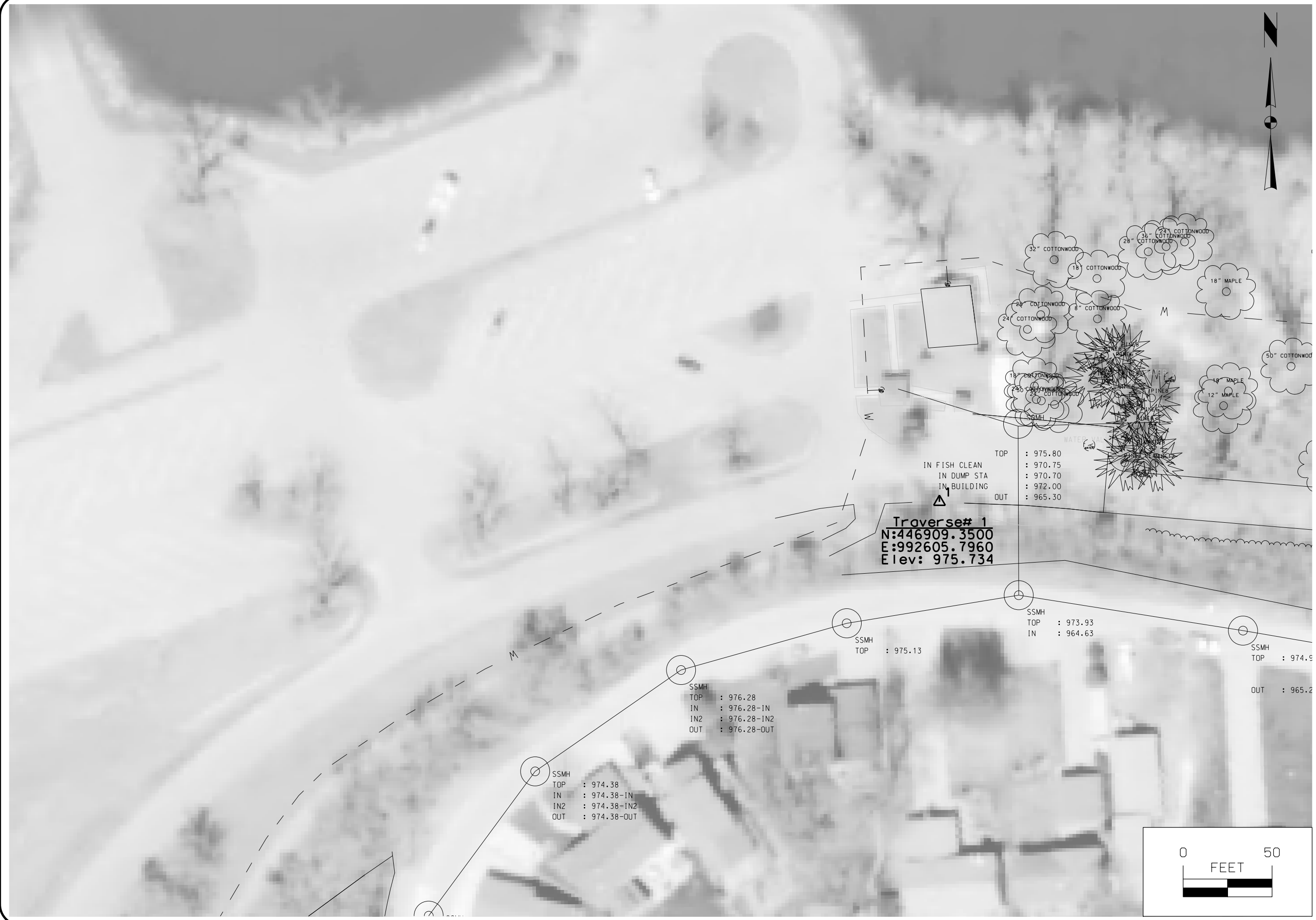
SHEET No:

C.01

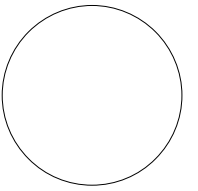
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CONSULTANT:	
<b>IOWA DEPARTMENT OF NATURAL RESOURCES</b> ENGINEERING SERVICES - WALLACE BUILDING 502 E. 9TH ST., DES MOINES, IA 50319-0034	
<b>PLAN SHEET</b> PICNIC AREA - VEGETATIVE BARRIER FOR: <b>LAKE MANAWA STATE PARK</b> POTAWATOMIE COUNTY, IOWA	
DRAWN BY: PROJECT NUMBER: 16-04-78-03	REVISION:
CHK'D BY: DATE: April 2018	PROJECT NUMBER: 16-04-78-03
<b>D.01</b>	



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NATURAL RESOURCES**

ENGINEERING SERVICES - WALLACE BUILDING  
502 E. 9TH ST., DES MOINES, IA 50319-0034



**SURVEY CONTROL SHEET**

PICNIC AREA - VEGETATIVE BARRIER FOR:  
**LAKE MANAWA STATE PARK**  
POTTAWATTAMIE COUNTY, IOWA

NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:  
16-04-78-03  
CHK'D BY: DATE:  
April 2018

**G.01**

TOP : 975.80  
IN FISH CLEAN : 970.75  
IN DUMP STA : 970.70  
IN BUILDING : 972.00  
OUT : 965.30

**Traverse# 1**  
N:446909.3500  
E:992605.7960  
Elev: 975.734

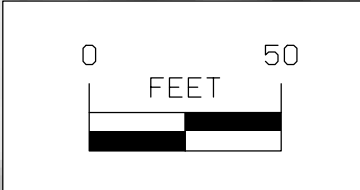
SSMH  
TOP : 975.13

SSMH  
TOP : 973.93  
IN : 964.63

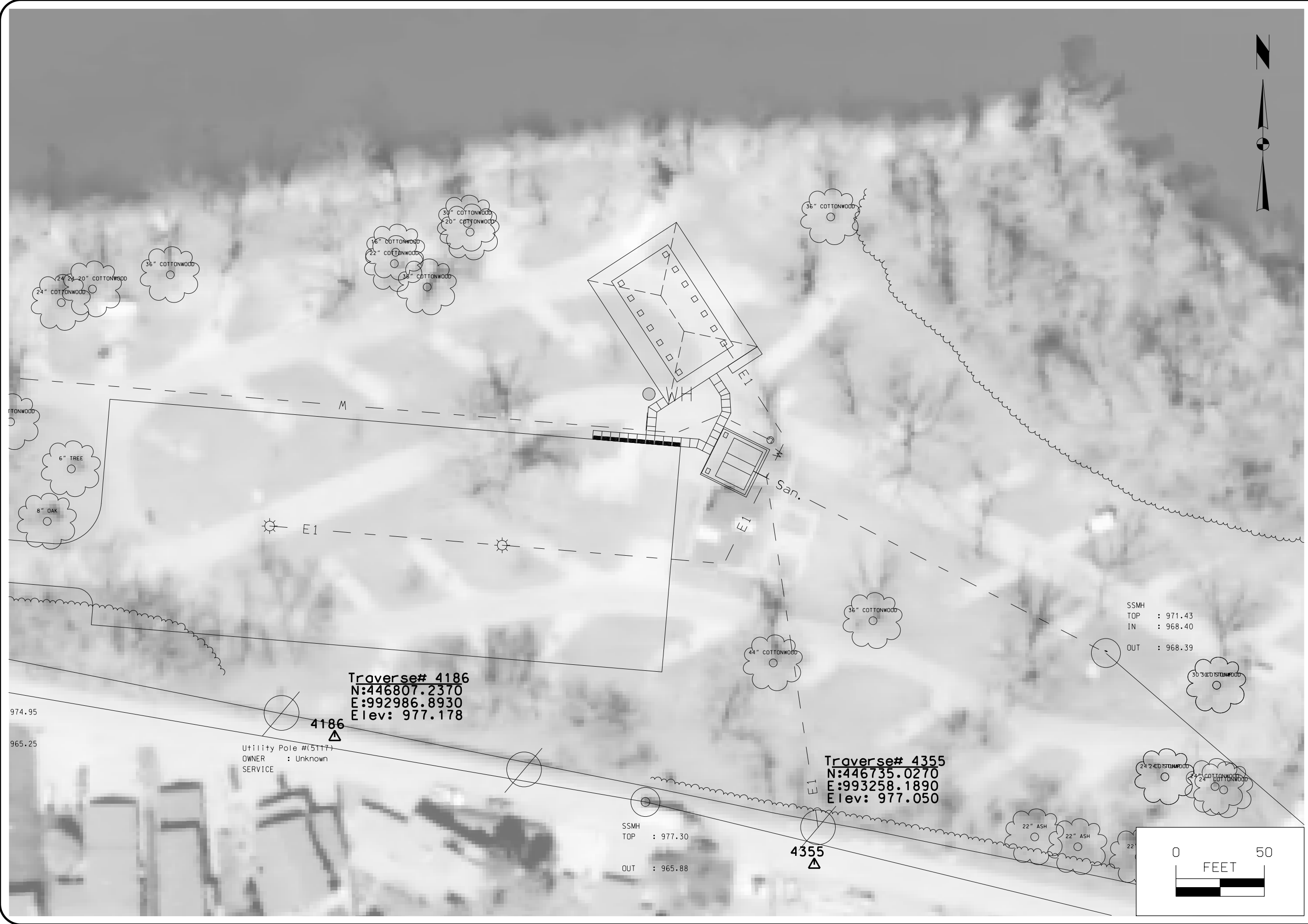
SSMH  
TOP : 974.63  
OUT : 965.2

SSMH  
TOP : 976.28  
IN : 976.28-IN  
IN2 : 976.28-IN2  
OUT : 976.28-OUT

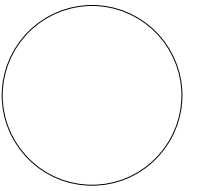
SSMH  
TOP : 974.38  
IN : 974.38-IN  
IN2 : 974.38-IN2  
OUT : 974.38-OUT



8:29:15 AM 5/22/2018 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\POITAWATAMIE\#16-04-78-03 Lake Manawa Picnic Area - Vegetative Barrier\02 Design\16-04-78-03 Lake Manawa Veg



CONSULTANT:



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502 E. 9TH ST., DES MOINES, IA 50319-0034



**SURVEY CONTROL SHEET**

PICNIC AREA - VEGETATIVE BARRIER FOR:  
**LAKE MANAWA STATE PARK**

POITAWATAMIE COUNTY, IOWA

NO.	BY	REVISION

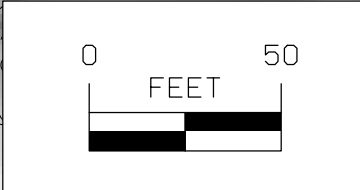
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16-04-78-03

CHK'D BY: DATE:  
April 2018

**G.02**

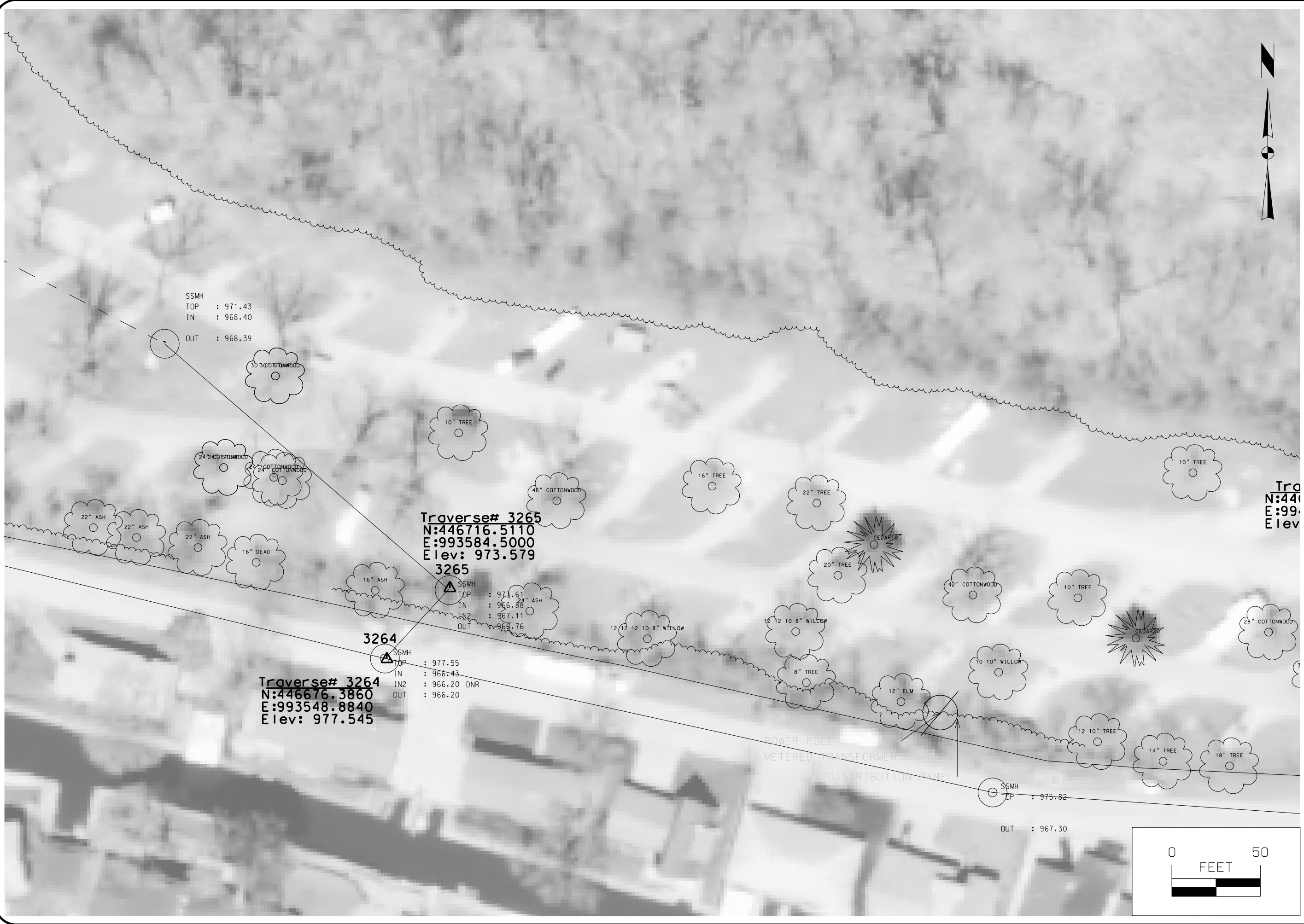
SSMH  
TOP : 971.43  
IN : 968.40  
OUT : 968.39

SSMH  
TOP : 977.30  
OUT : 965.88





8:29:29 AM 5/22/2018 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\POITAWATTAMIE\#16-04-78-03 Lake Manawa Picnic Area - Vegetative Barrier\02 Design\16-04-78-03 Lake Manawa Picnic Area - Vegetative Barrier.mxd



SSMH  
TOP : 971.43  
IN : 968.40  
OUT : 968.39

30" COTTONWOOD

24" COTTONWOOD  
24" COTTONWOOD

22" ASH  
22" ASH  
22" ASH  
16" DEAD

**Traverse# 3265**  
N:446716.5110  
E:993584.5000  
Elev: 973.579

SSMH  
TOP : 974.61  
IN : 966.88  
IN2 : 967.11  
OUT : 968.76

**3264**  
SSMH  
TOP : 977.55  
IN : 966.43  
IN2 : 966.20 DNR  
OUT : 966.20

**Traverse# 3264**  
N:446676.3860  
E:993548.8840  
Elev: 977.545

12 12 12 10 8" WILLOW

12 12 10 8" WILLOW

8" TREE

12" ELM

10 10" WILLOW

12 10" TREE

14" TREE

18" TREE

Traverse  
N:446716.5110  
E:993584.5000  
Elev: 973.579

28" COTTONWOOD

30" COTTONWOOD

10" TREE

10" TREE

10" TREE

10" TREE

10" TREE

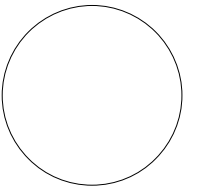
POWER POLE  
METERED TRANSFORMER  
DISTRIBUTION PANEL

SSMH  
TOP : 975.82

OUT : 967.30



CONSULTANT:



**IOWA DEPARTMENT OF  
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ENGINEERING SERVICES - WALLACE BUILDING  
502 E. 9TH ST., DES MOINES, IA 50319-0034



**SURVEY CONTROL SHEET**

PICNIC AREA - VEGETATIVE BARRIER FOR:  
**LAKE MANAWA STATE PARK**  
POTIOWATTAMIE COUNTY, IOWA

NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:  
 16-04-78-03  
 CHK'D BY: DATE:  
 April 2018

**G.03**

Main

	STATION	NORTHING	EASTING
Element: Linear			
POB ( )	0+00.00	446921.85	992620.73
POE ( )	18+50.00	446769.18	994464.42
Tangent Direction:	S 85° 15' 59" E		
Tangent Length:	1850.00		

NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:  
16-04-78-03

CHK'D BY: DATE:  
April 2018

**SURVEY CONTROL SHEET**

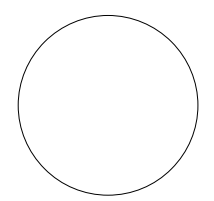
PICNIC AREA - VEGETATIVE BARRIER FOR:  
**LAKE MANAWA STATE PARK**

POTIATAMIE COUNTY, IOWA



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