N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access park

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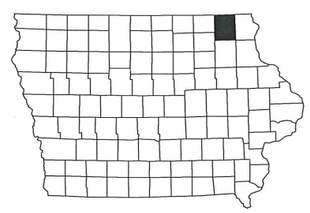
IOWA DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTS FOR BOWSTRING BRIDGE CANOE ACCESS CANOE ACCESS AND PARKING LOT

WINNESHIEK COUNTY

PROJECT # 16-03-96-01

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.



LICENSED PROFESSIONAL ENGINEER
MANDI LU ALDRICH PETERS
14439
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Mandi Lu Aldrich Peters 6-23-16
Mandi Lu Aldrich Peters, Iowa Reg. No. 14439 Date

My license renewal date is December 31, 2017

Pages or sheets covered by this seal: All

SHEET INDEX

A.01	COVER SHEET
A.02	PROJECT LOCATION MAPS
B.01	GENERAL DETAILS
B.02	GENERAL DETAILS
B.03	GENERAL DETAILS
B.04	GENERAL DETAILS
B.05	GENERAL DETAILS
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C.01	QUANTITIES & NOTES
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D.01	PLAN SHEET - MAIN ROAD
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D.05	PROFILE SHEET - MAIN ROAD
D.06	PLAN SHEET - BOAT RAMP
D.07	PROFILE SHEET - BOAT RAMP
D.08	PLAN SHEET - TRAIL
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G.01	SURVEY CONTROL
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P.01	PAVEMENT MARKING SHEET
P.02	PAVEMENT MARKING SHEET
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S.02	SIGN SHEET
T.01	STAKING SHEET
T.02	STAKING SHEET
X.01	ROADWAY CROSS SECTIONS
X.02	ROADWAY CROSS SECTIONS
X.03	ROADWAY CROSS SECTIONS
X.04	ROADWAY CROSS SECTIONS
X.05	ROADWAY CROSS SECTIONS
X.06	ROADWAY CROSS SECTIONS
X.07	CANOE RAMP CROSS SECTIONS
X.08	CANOE RAMP CROSS SECTIONS
X.09	TRAIL CROSS SECTIONS
X.10	TRAIL CROSS SECTIONS
X.11	TRAIL CROSS SECTIONS
X.12	TRAIL CROSS SECTIONS

DIRECTORY

PROJECT MANAGER		CONSTRUCTION INSPECTOR	
COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES	COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES
ADDRESS	502 EAST 9TH STREET	ADDRESS	502 EAST 9TH STREET
CITY,STATE,ZIP	DES MOINES, IA 50319	CITY,STATE,ZIP	DES MOINES, IA 50319
CONTACT	MANDI ALDRICH PETERS	CONTACT	MEL PACOVSKY
TELEPHONE	515-725-8468	TELEPHONE	319-240-3553
FAX		FAX	641-394-5105
EMAIL	Mandi.Aldrich-Peters@dnr.iowa.gov	EMAIL	Mel.Pacovsky@dnr.iowa.gov

PROJECT DESCRIPTION

THE PROJECT INVOLVES THE RECONSTRUCTION OF THE PARK ENTRANCE TO IMPROVE VISIBILITY FOR BOTH THE TRAFFIC ON IA HIGHWAY 9 AND THE VEHICLES USING THE ENTRANCE AND THE RECONSTRUCTION OF THE ROADWAY, PARKING LOT AND CANOE RAMP IN ORDER TO BETTER SERVE THE PUBLIC AND INCIDENTAL WORK AS REQUIRED BY THE DNR CONSTRUCTION INSPECTOR.

AUTHORIZATION TO BID

Nathan Hoogendoorn 6/24/16
AUTHORIZATION - PARKS | WILDLIFE | FISHERIES | LAW ENFORCEMENT | FORESTRY DATE

Kevin Baker 6/24/16
ENGINEERING BUREAU CHIEF DATE

CONSULTANT:

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

COVER SHEET

CANOE ACCESS AND PARKING LOT FOR:
BOWSTRING BRIDGE CANOE ACCESS
WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016
SHEET NO: A.01

VICINITY MAP

LOCATION MAP

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PROJECT LOCATION MAP

CANOE ACCESS AND PARKING LOT FOR:

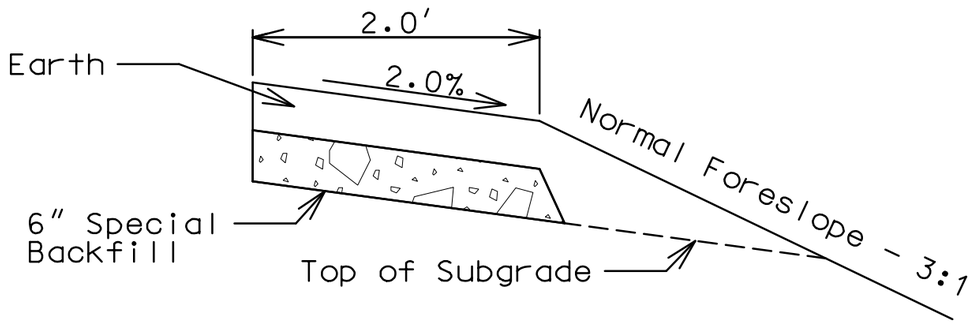
BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

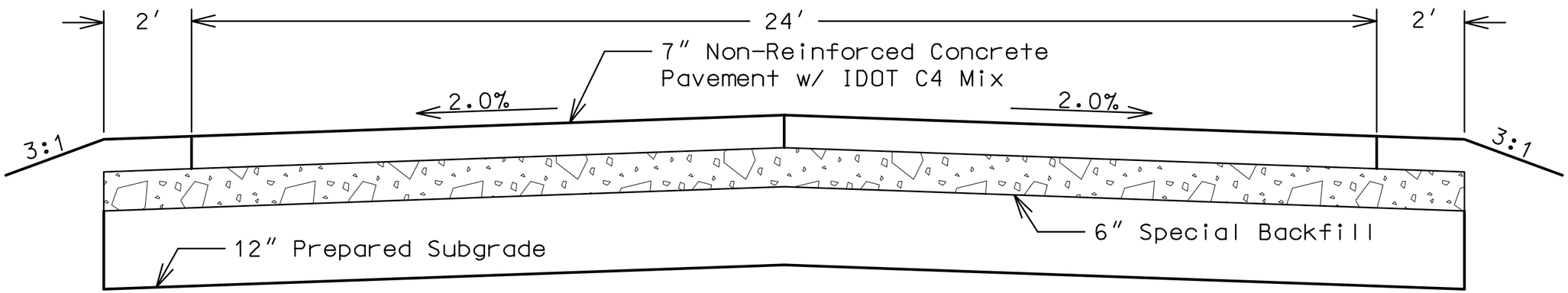
NO	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016
SHEET No: **A.02**

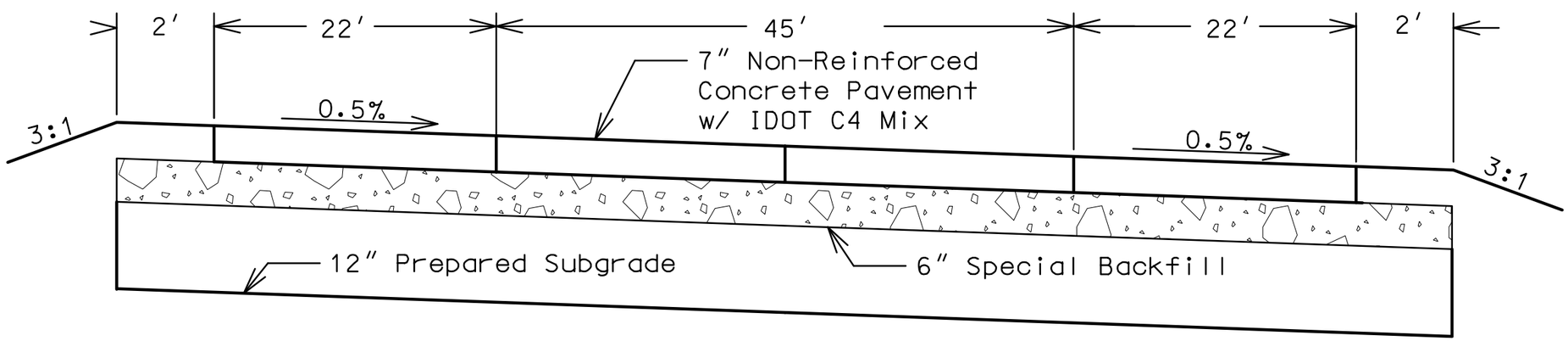
12:38:02 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking



Typical Earth Shoulder



Typical Roadway Pavement



Typical Cul-De-Sac

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

GENERAL DETAILS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016
SHEET No: B.01

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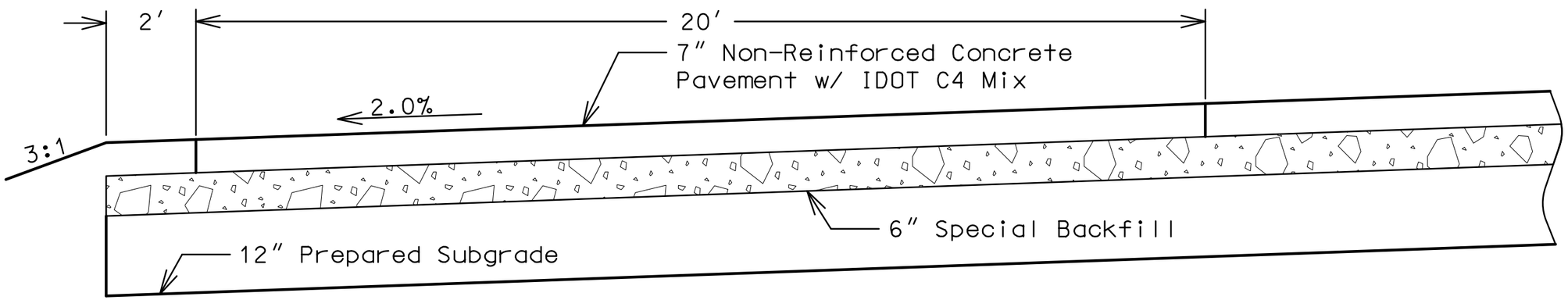
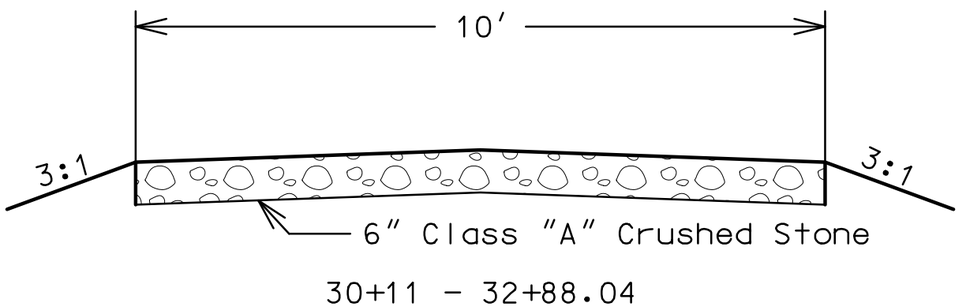
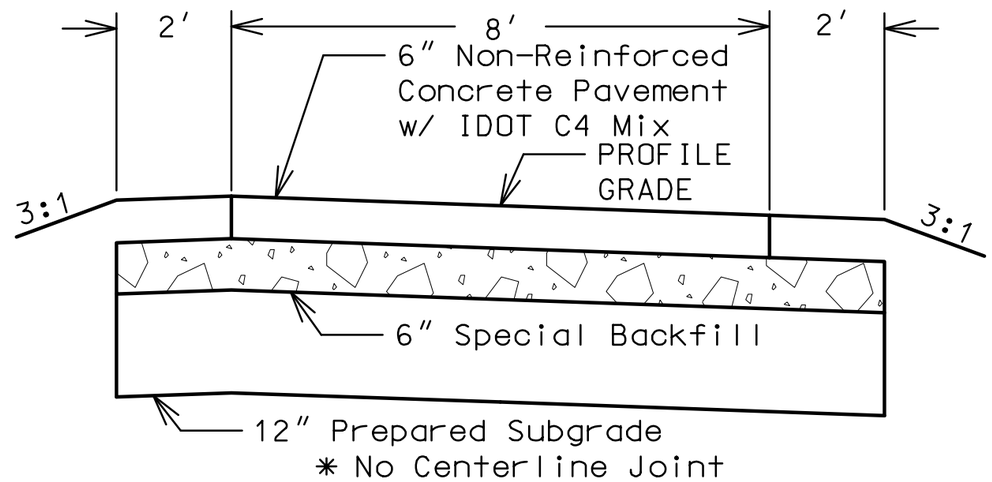


Typical Parking Pavement



Typical Gravel Roadway



Typical Trail Pavement

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

GENERAL DETAILS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016
SHEET No: **B.02**

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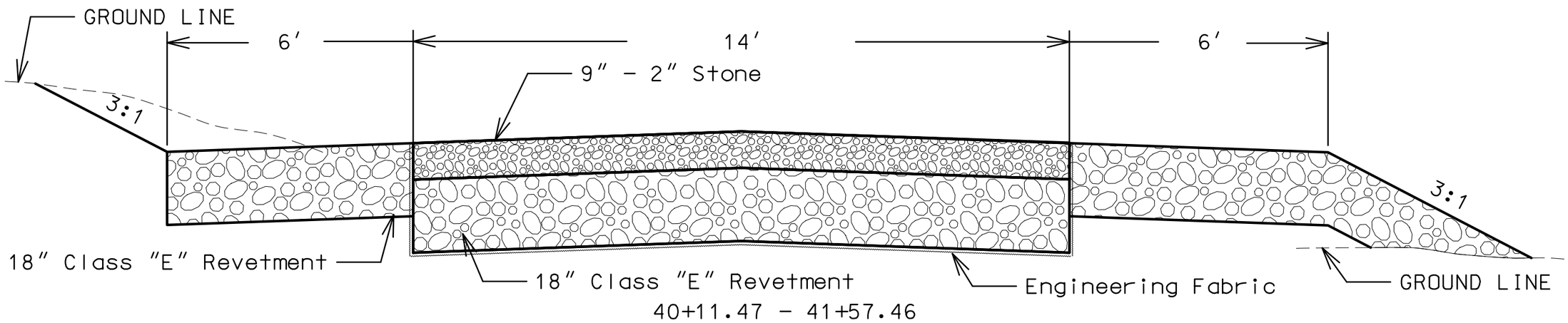

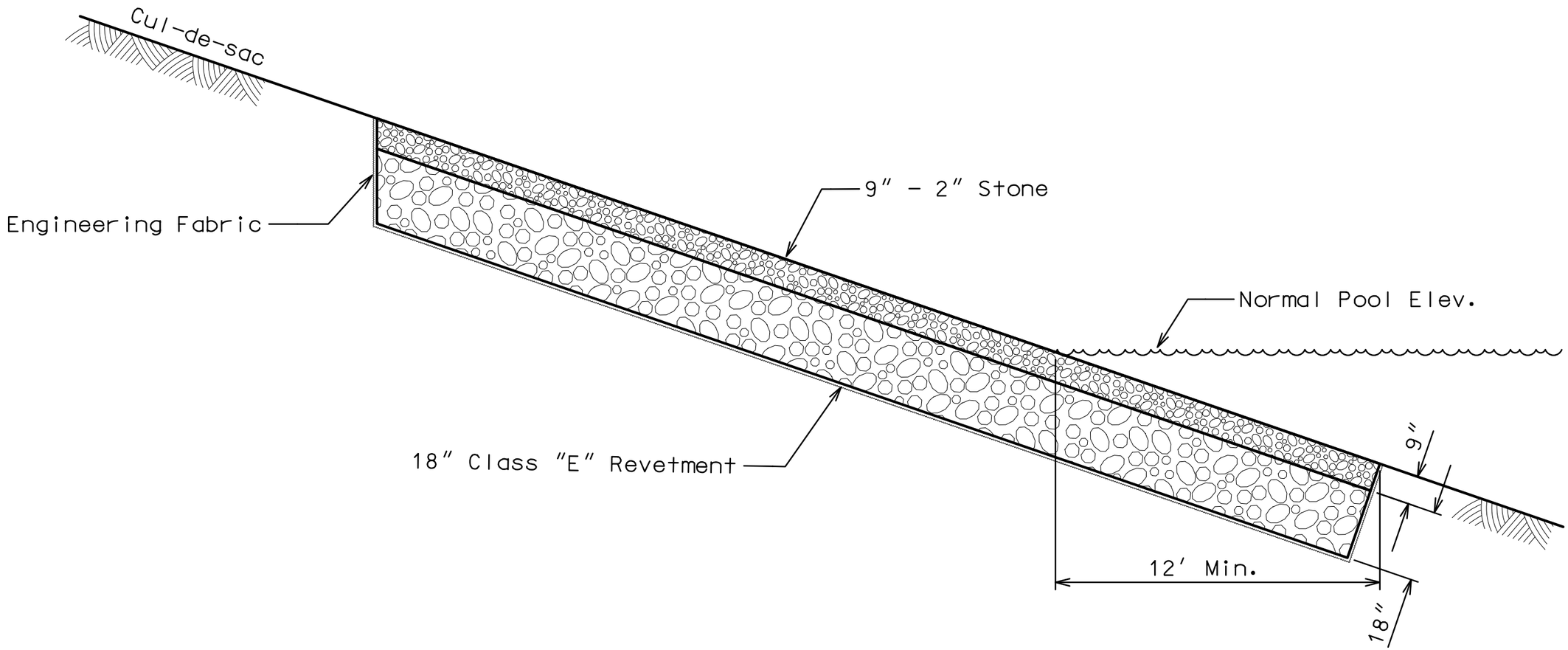

Canoe Access Detail

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

GENERAL DETAILS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016
SHEET No: **B.03**

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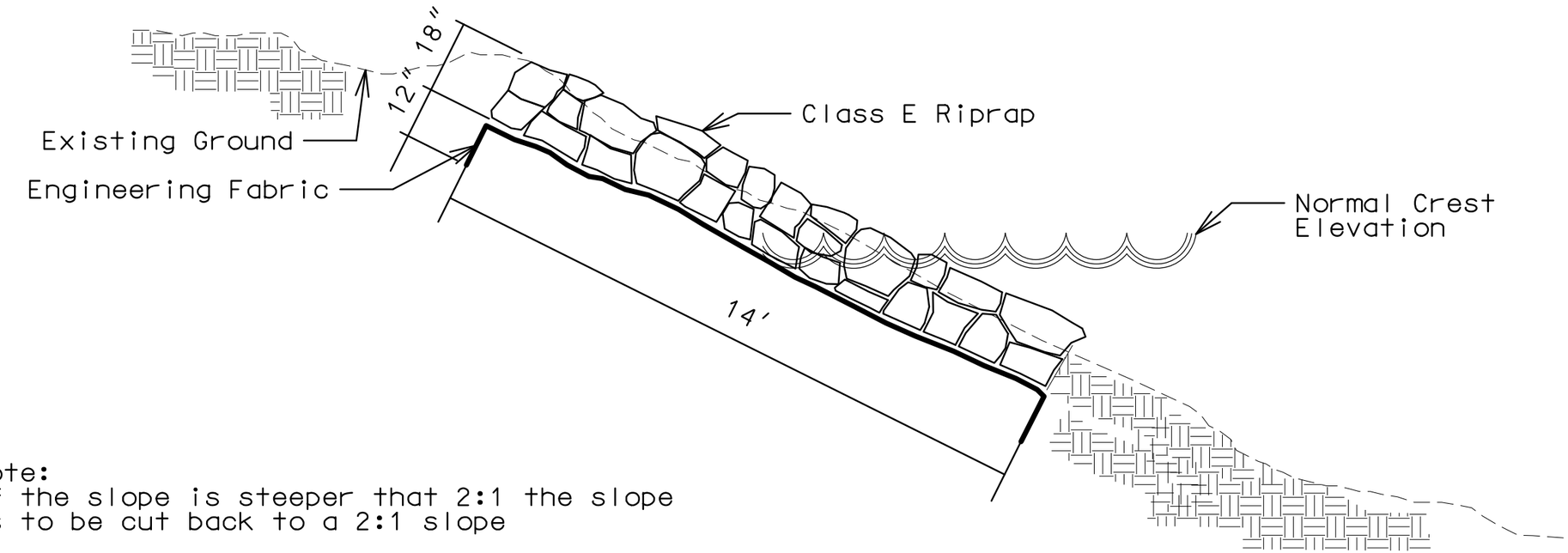
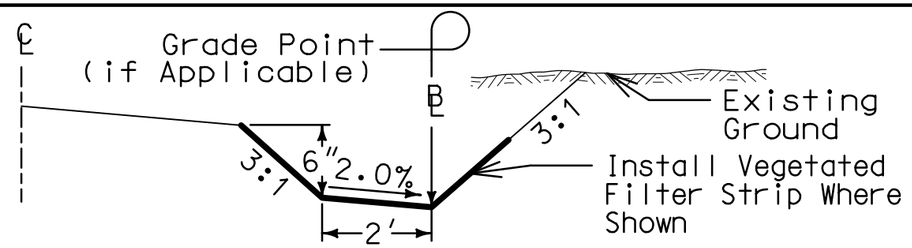


Note:
If the slope is steeper that 2:1 the slope is to be cut back to a 2:1 slope

TYPICAL SHORELINE REVETMENT SECTION



TYPICAL DITCH

Note: Detail shown is typical. Refer to table for special ditch grades.

STATION	TO STATION	SIDE	DITCH GRADE	VEGETATED STRIP
100+20	104+40	RT	No Ditch	
104+40	104+90	RT	2.0% Ahead	X
104+90	106+00	RT	0.2% Ahead	X
106+00	106+60	RT	0.2% Ahead	
106+60	107+90	RT	0.2% Ahead	X
100+20	104+50	LT	No Ditch	
104+50	104+90	LT	0.95% Ahead	X
104+90	105+40	LT	0.2% Ahead	X
105+40	107+00	LT	0.2% Back	X
107+00	108+25	LT	No Ditch	

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

GENERAL DETAILS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY: PROJECT NUMBER: 16-03-96-01
CHK'D BY: DATE: June 2016
SHEET No: B.04

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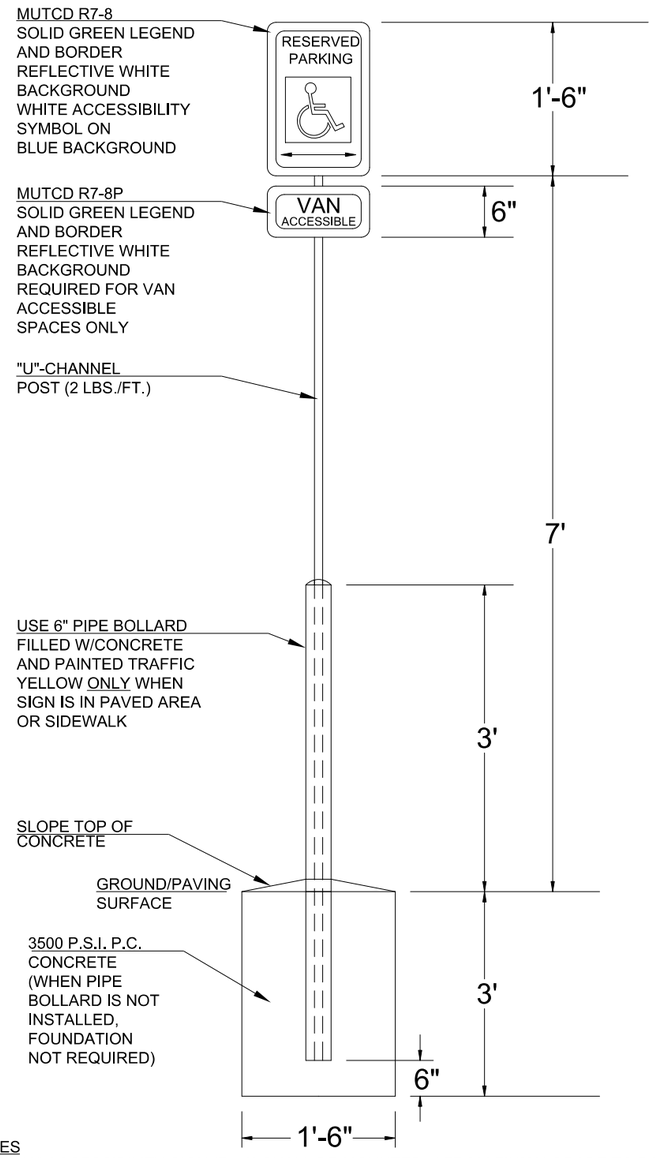
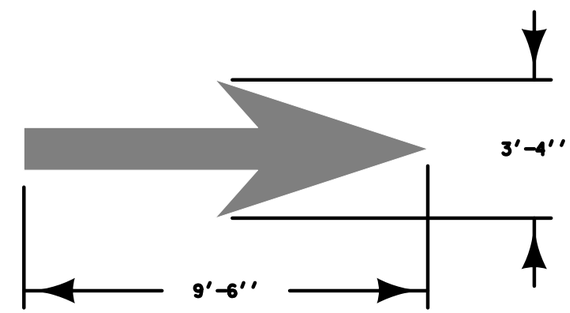


NOTES

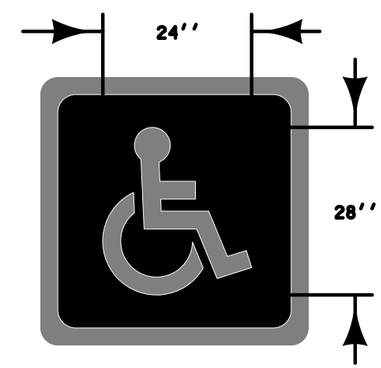
1. 12"x18" ACCESSIBILITY SIGN (R7-8) SHALL BE MOUNTED 7' FROM FINISH GRADE TO BOTTOM EDGE OF SIGN FACE. MOUNTING HEIGHT MAY BE REDUCED TO 5' IF PLACED IN A LANDSCAPE AREA IN WHICH PEDESTRIANS ARE NOT EXPECTED TO USE.
2. BOLLARD MAY BE OMITTED IF INSTALLED IN LANDSCAPE AREAS. WHEN INSTALLED IN LANDSCAPE AREAS, MOUNTING POST SHALL BE DRIVEN A MINIMUM OF 3' BELOW FINISHED GRADE. ALTERNATE MOUNTING POSTS MUST BE APPROVED BY THE FIELD INSPECTOR PRIOR TO CONSTRUCTION.
3. SIGNAGE SHALL BE INSTALLED IN FRONT OF EACH ACCESSIBLE SPACE, CENTERED ON THE WIDTH OF THE SPACE.
4. REFER TO AMERICANS WITH DISABILITIES ACT AND ARCHITECTURAL BARRIERS ACT ACCESSIBILITY GUIDELINES (ADAAG), LATEST EDITION, FOR REQUIRED NUMBER OF ACCESSIBLE SPACE. PER ADAAG, ONE VAN ACCESSIBLE SPACE SHALL BE PROVIDED, MINIMUM, WITH ADDITIONAL VAN ACCESSIBLE SPACES PER ADAAG REQUIREMENTS.
5. ALL SIGNAGE SHALL BE ENGINEER GRADE .080 ALUMINUM REFLECTIVE SIGN MEETING THE REQUIREMENTS OF THE MUTCD AND ADAAG.

HANDICAP SIGN DETAIL

NOT TO SCALE



STRAIGHT ARROW (White)



WHEELCHAIR PARKING
SYMBOL (Blue)

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

GENERAL DETAILS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016
SHEET No: B.05

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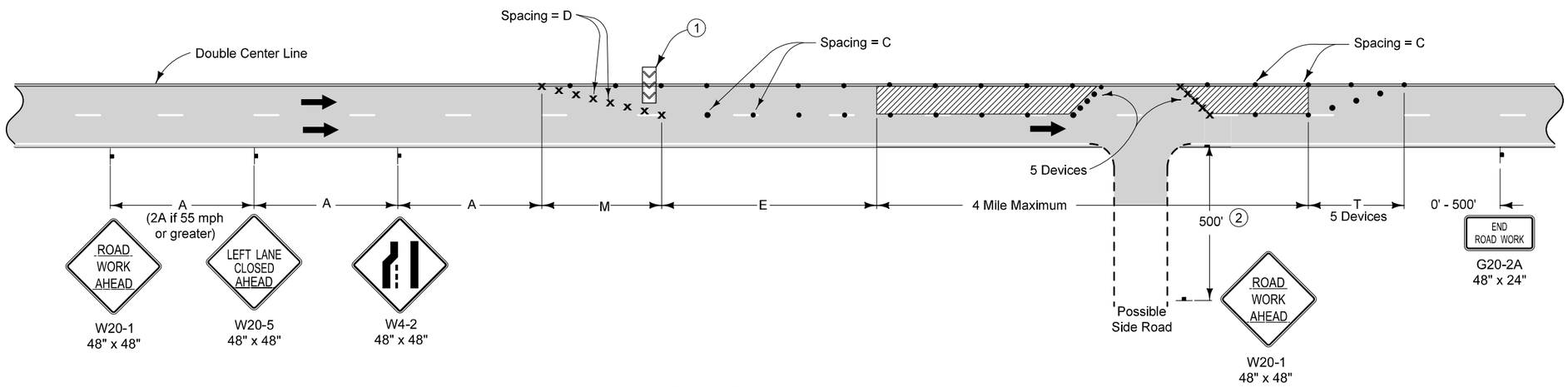
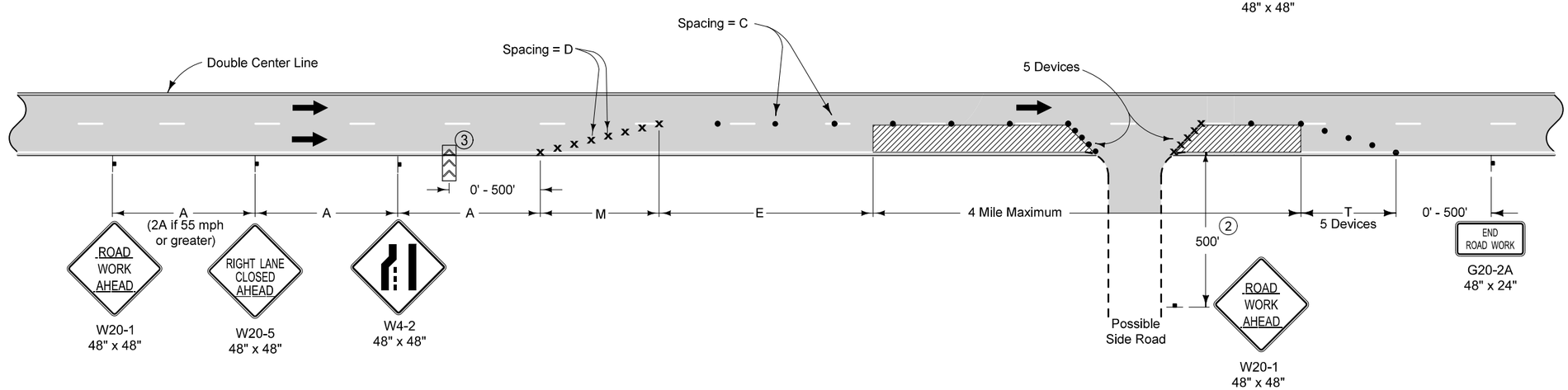
LEFT LANE CLOSURE



RIGHT LANE CLOSURE



LEGEND

- Traffic Sign
- Drum
- 42" Channelizer
- Arrow Board
- Work Area
- Direction of Traffic

SPEED LIMIT (mph)	A	C	D	E	M	T
35 or less	250'	40'	35'	0'-200'	245'	50'
40	500'	80'	40'	0'-300'	320'	50'
45	700'	80'	45'	0'-400'	630'	100'
50	700'	80'	45'	400'	630'	100'
55 - 60	1000'	100'	55'	600'	770'	100'

Where there is a lane line drop-off or rise, do not allow traffic to cross over the drop-off or rise, except for ramp locations where a BUMP (W8-1) sign is placed.

Lane line drop-offs greater than a nominal 4 inches are not allowed during non-working hours.

1. Place arrow board within the closed lane behind the drums and as close to the beginning of the taper as practical.
2. Where side road speed limit is 40 mph or less, a distance of 200 feet is allowed.
3. When there is no shoulder, place arrow board within the closed lane behind the drums and as close to the beginning of the taper as practical.

Possible Contract Item:

Traffic Control

REVISION 7 04-19-16

STANDARD ROAD PLAN

TC-419

SHEET 1 of 1

REVISIONS: Added circle note 3.

APPROVED BY DESIGN METHODS ENGINEER

LANE CLOSURE ON UNDIVIDED HIGHWAY

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

GENERAL DETAILS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY DATE	REVISION

DRAWN BY: PROJECT NUMBER: 16-03-96-01

CHK'D BY: DATE: June 2016

SHEET No: B.06

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
1	CLEARING AND GRUBBING	LS	1
2	REMOVAL OF PAVEMENT	SY	1546
3	REMOVAL OF EXISTING ROCK SURFACING	SY	863
4	PAVING, P.C. CONCRETE, 7"	SY	3317
5	GRANULAR SUBBASE	SY	4194
6	CLASS "A" CRUSHED STONE	TON	134
7	2" CRUSHED STONE	TON	107
8	ENGINEERING FABRIC	SY	1226
9	PAVING, P.C. CONCRETE TRAIL, 6"	SY	196
10	SIGNING	EACH	15
11	SITE WORK	LS	1
12	REVETMENT, CLASS E	TON	809
13	VEGETATED FILTER STRIP	ACRES	0.10
14	EROSION CONTROL	LF	1010
15	PAINTED PAVEMENT MARKINGS, WATERBORNE/SOLVENT	LS	1
16	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EACH	6
17	TEMPORARY TRAIL	LS	1
18	TRAFFIC CONTROL	LS	1
19	CONSTRUCTION STAKING	LS	1
20	MOBILIZATION	LS	1

TABULATION OF SPECIAL EVENTS

EVENT	LOCATION	DATE
Loop de Loop 5K and Half-Marathon	City of Decorah, Trout Run Trail at Bowstring Park	9/24/2016

CONSTRUCTION NOTES:

1) No construction that shall impede the use of the trail or endanger the public will be permitted until after Loop de Loop 5K and Half-Marathon on 9/24/2016.

2) Trail access shall be maintained via a temporary rock connection across the roadway grading or temporary mowed trail around the construction site.

3) No weekend work shall be allowed. A temporary rock trail across the roadway grading or a temporary mowed snow fence lined grass trail shall be groomed before 5 PM on Friday and remain open through the weekend.

4) All paving shall be completed before Thanksgiving.

5) The contractor shall contact Joel Monroe, IDOT Highway Maintenance Supervisor, at (563)880-0084 a minimum of 48 hours in advance of the lane closure on Hwy 9, per the IDOT Application to Perform Work Within the State Highway Right-Of-Way.

6) The contractor shall contact the IDOT Traffic Management Center (TMC) at (515)237-3300 and report the required information after contacting the IDOT Highway Maintenance Supervisor.

ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
1	CLEARING AND GRUBBING A. Includes the removal and disposal of trees as shown in the plans and as directed by the DNR Inspector. B. Disposal is the responsibility of the contractor.
2	REMOVAL OF PAVEMENT A. The contractor shall remove the existing pavement as indicated in the plan sheets. B. Disposal is the responsibility of the contractor. C. Overhaul shall be considered incidental.
3	REMOVAL OF EXISTING ROCK SURFACING A. The contractor shall remove the existing roadway rock and revetment in order to construct the new road, parking lot and boat ramp. B. Disposal is the responsibility of the contractor. C. Overhaul shall be considered incidental.
4	PAVING, P.C. CONCRETE, 7" A. Joints shall be sawcut at standard spacing. B. Excavation for road way and parking area construction is considered incidental.
9	PAVING, P.C. CONCRETE TRAIL, 6" A. Joints shall be sawcut at standard spacing. B. Excavation for trail construction is considered incidental.
10	SIGNING A. Signs shall be mounted 7' from finish grade to bottom edge of sign face. mounting height may be reduced to 5' if placed in a landscape area in which pedestrians are not expected to use. B. Bollard may be omitted if installed in landscape areas. when installed in landscape areas, mounting post shall be driven a minimum of 3' below finished grade. alternate mounting posts must be approved by the field inspector prior to construction. C. All signage shall be engineer grade .080 aluminum reflective sign meeting the requirements of the MUTCD.
11	SITE WORK A. Site work shall include seed, fertilizer and mulch on all disturbed areas with DOT Urban mixture. B. The contractor is to grade and shape the site to drain as directed by the DNR Inspector.
12	REVETMENT, CLASS E A. Includes 250 tons for the boat ramp, 36 tons for the boat ramp shoulders and 523 tons for the shoreline armoring,
13	VEGETATED FILTER STRIP A. Native plants suitable to wet soils.
14	EROSION CONTROL A. Filter sock shall be installed to prevent sediment from exiting the project site and shall remain in place and be maintained during construction. DNR Park staff will remove once the site is stabilized.
17	TEMPORARY TRAIL A. A temporary rock connection across roadway grading or temporary mowed trail around the construction site shall be maintained until the trail is reopened. B. Safety fence shall line both sides of the temporary rock and mowed trails. C. Rock for the temporay grading crossings is considered incidental. D. Mowing, safety fence and posts for the temporary moswed trail are considered incidental. E. Regular maintenance and adjustment of the temporary trail is considered incidental.

CONSULTANT:

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

QUANTITIES & NOTES

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
CHK'D BY:
PROJECT NUMBER: 16-03-96-01
DATE: June 2016
SHEET No: C.01

11:44:26 AM 6/30/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking

GENERAL NOTES

A. The contractor shall notify the following two weeks prior to demolition and/ or construction:
   a. District Inspector: Mel Pacovsky (319) 240-3553

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 preformed in accordance with all applicable codes and ordinances.

F. It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project. No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans or approved by the DNR Engineer.

G. All holes resulting from operations of the contractor, including removal of guardrail posts, fence posts, utility poles or piers, shall be filled and consolidated to finish grade as directed by the Engineer to prevent future settlement. The voids shall be filled as soon as practical - preferably the day created and not later than the following day. Any portion of the right of way or project limits (including borrow areas and operation sites) disturbed by any such operations shall be restored to an applicable condition. This operation shall be considered incidental to other bid items in the project.

H. 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, rock ditch checks, silt basins or silt dikes.

I. The contractor shall shape graded area to maintain surface drainage. All elevations shown are to finish grade.

J. Topsoil shall be spread to a minimum thickness of 6 inches on all disturbed unpaved areas.

K. The contractor shall seed, fertilize and mulch all disturbed areas. Use Class "C" seed mixture.

L. Backfill to the top of all rock or paved surfaces.

M. 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.

N. 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.

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILING
502 E. 9TH ST., DES MOINES, IA 50319-0034

QUANTITIES & NOTES

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

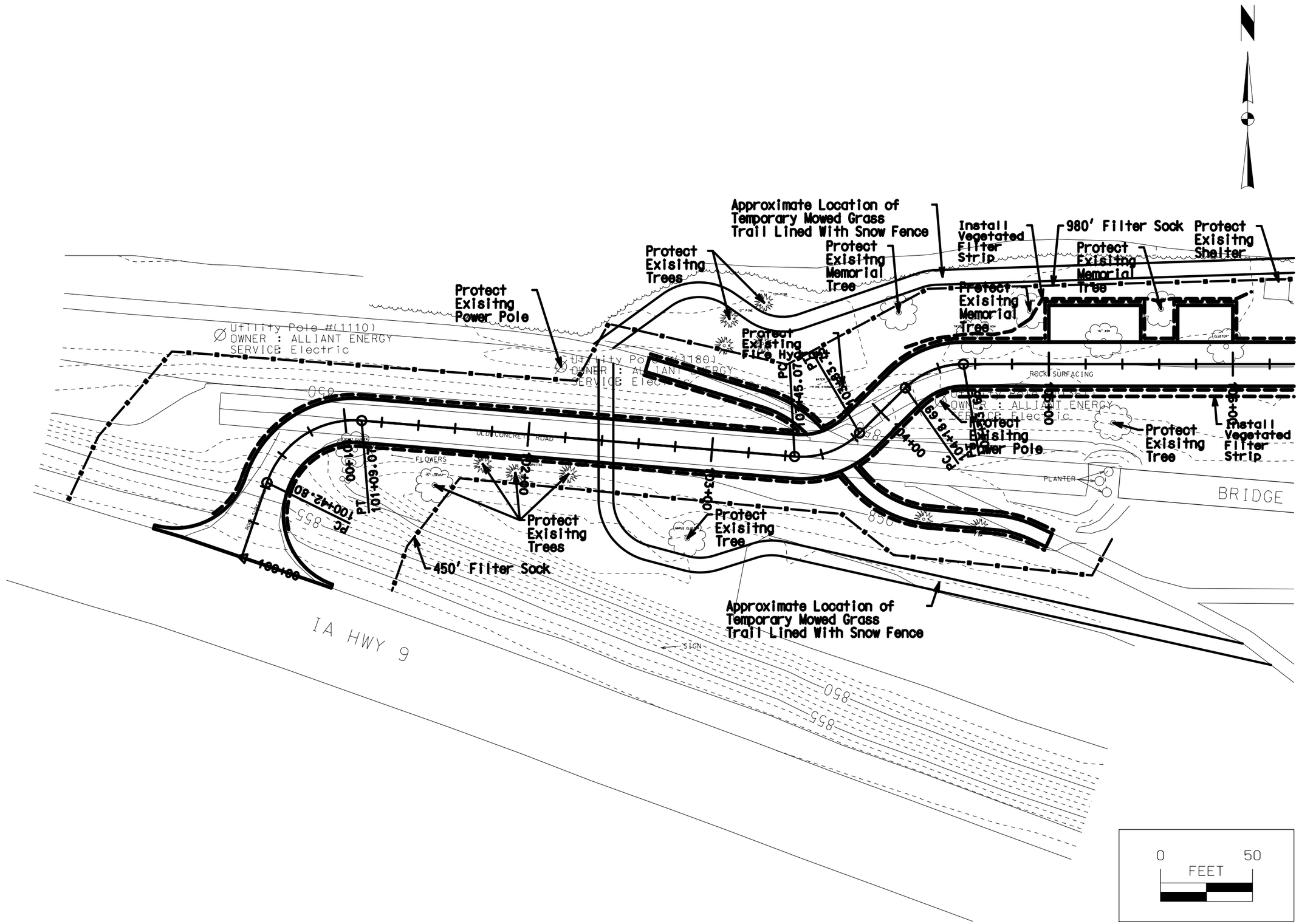
NO.	BY / DATE	REVISION

DRAWN BY: PROJECT NUMBER: 16-03-96-01

CHK'D BY: DATE: June 2016

SHEET No: C.02

2:36:57 PM 6/30/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PLAN SHEET - MAIN ROAD

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO	BY / DATE	REVISION

DRAWN BY:

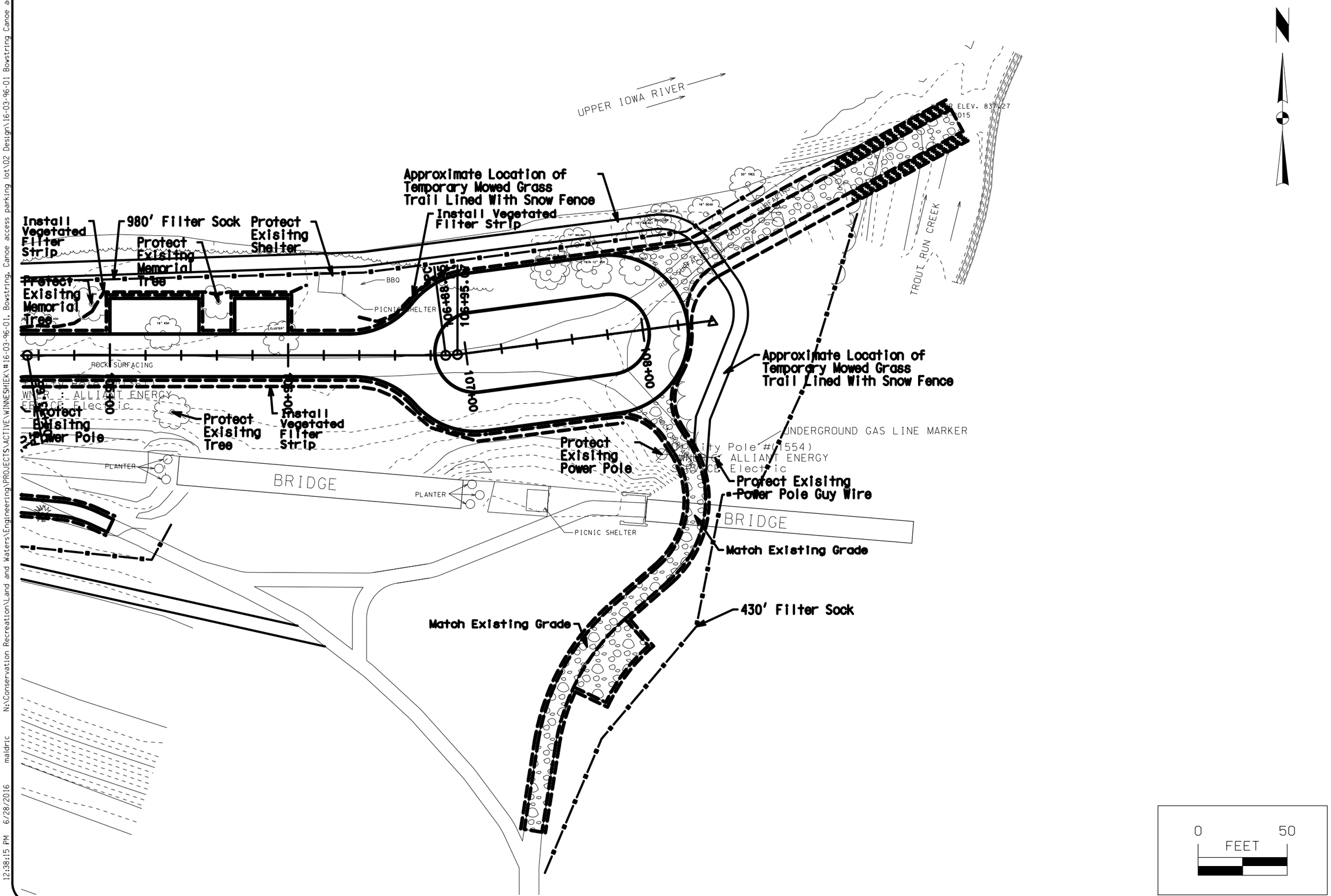
PROJECT NUMBER: 16-03-96-01

CHK'D BY:

DATE: June 2016

D.01

12:38:14 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PLAN SHEET - MAIN ROAD

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

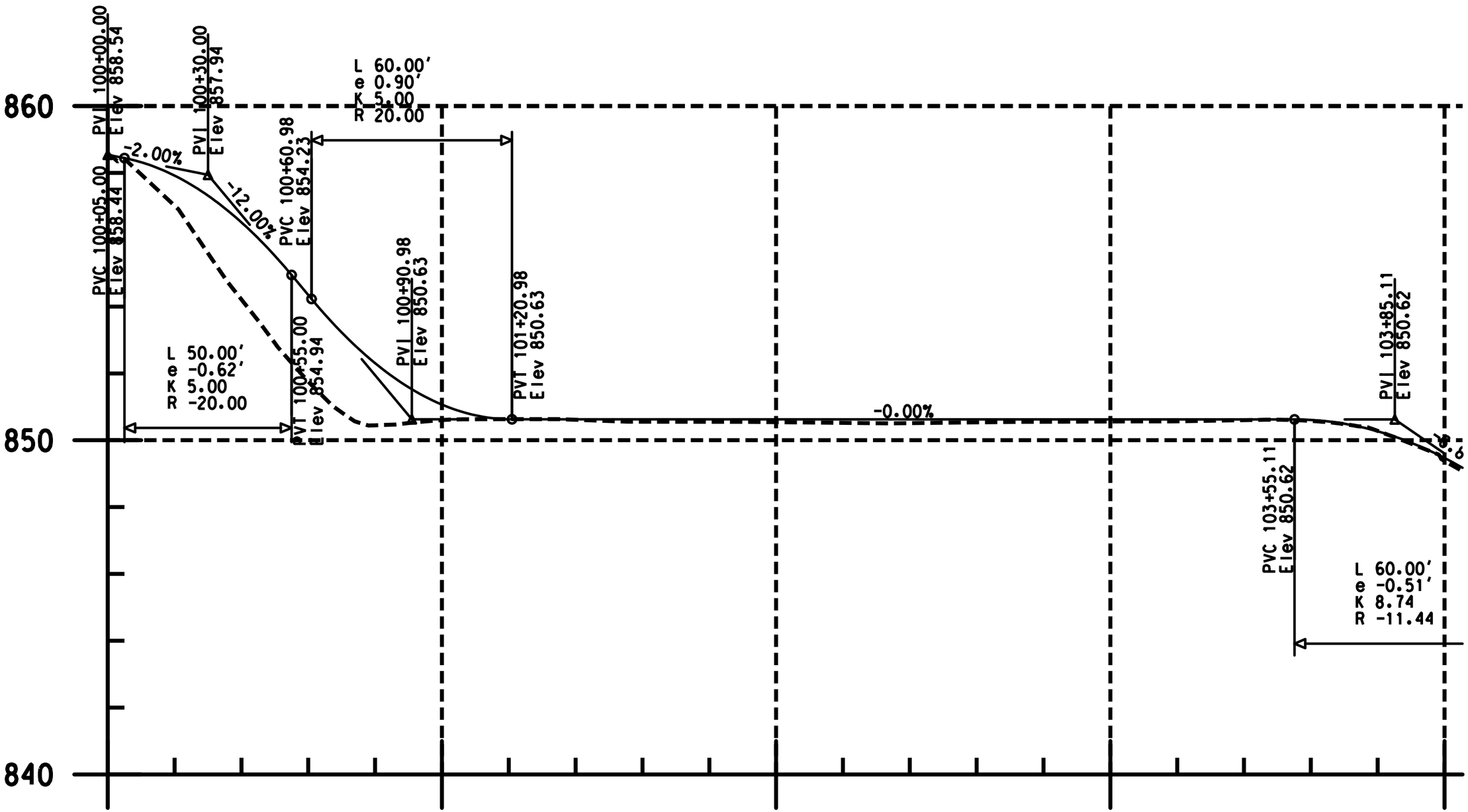
NO.	BY / DATE	REVISION

DRAWN BY: PROJECT NUMBER: 16-03-96-01

CHK'D BY: DATE: June 2016

D.02

12:38:15 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PROFILE SHEET - MAIN ROAD

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016

D.03

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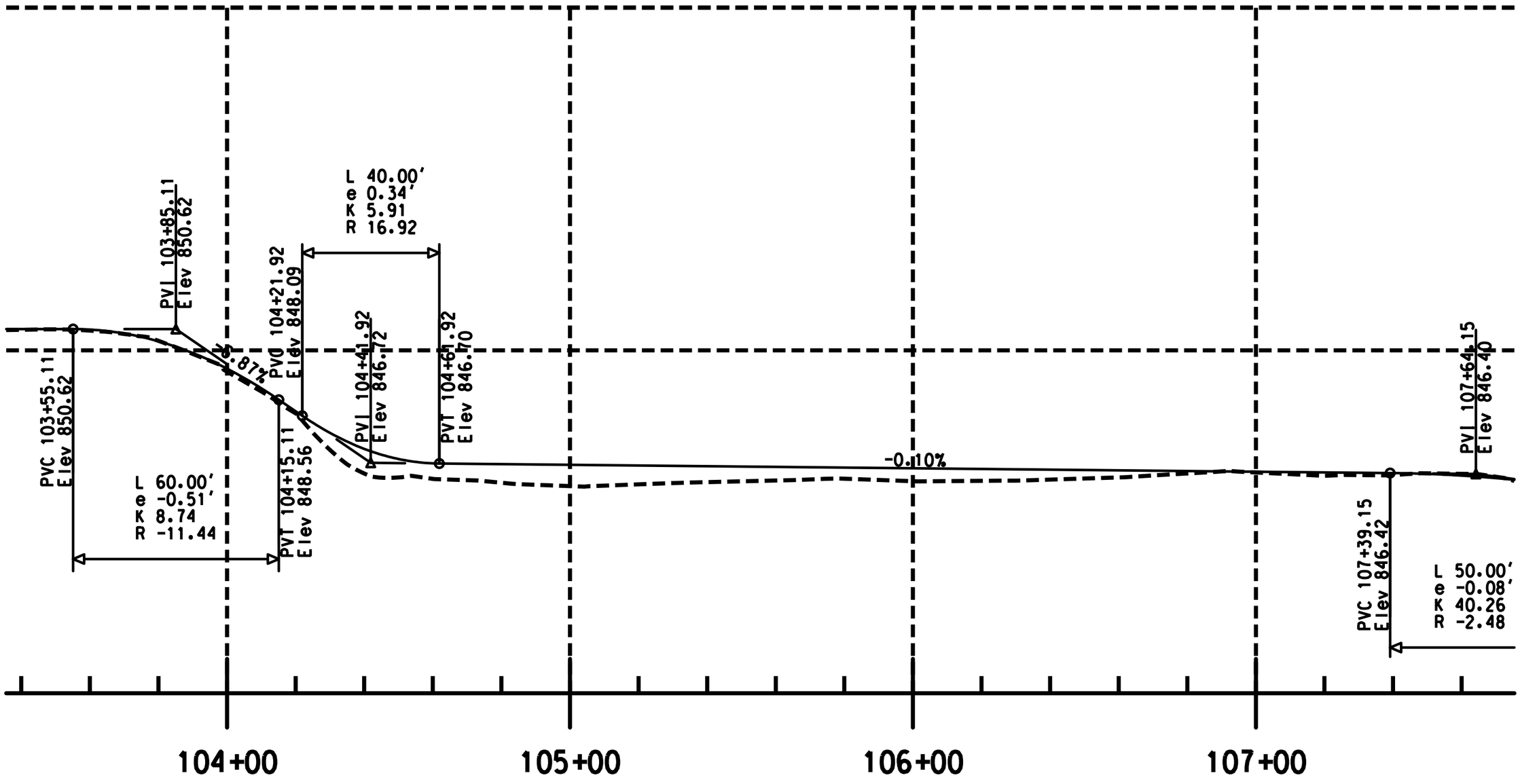

CONSULTANT:

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

DNR

PROFILE SHEET - MAIN ROAD

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

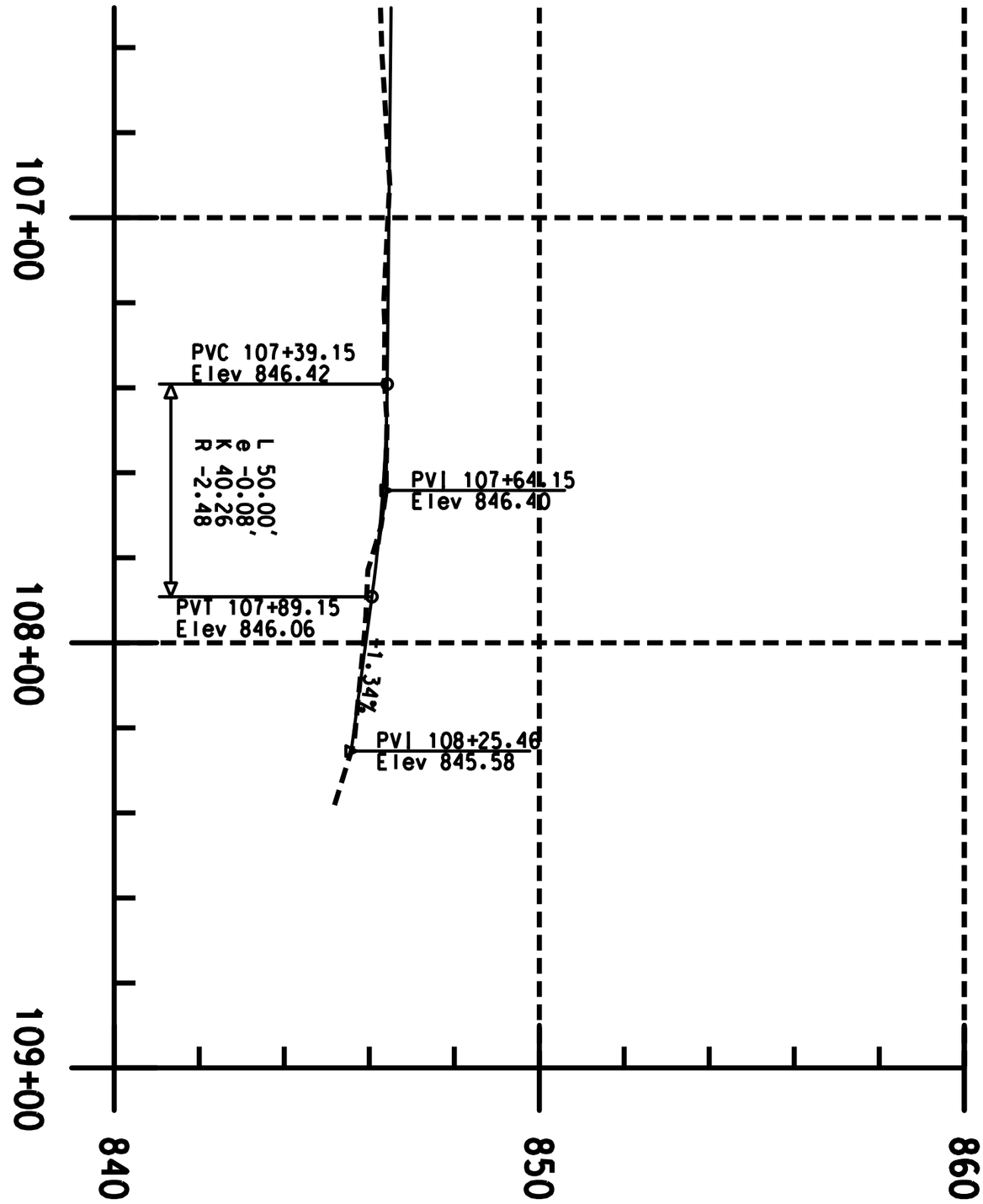
WINNESHIEK COUNTY, IOWA

NO	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016

D.04

12:38:32 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking



D.05

DRAWN BY:	
PROJECT NUMBER:	16-03-96-01
CHK'D BY:	
DATE:	June 2016

NO.	BY	DATE	REVISION

PROFILE SHEET - MAIN ROAD

CANOE ACCESS AND PARKING LOT FOR:

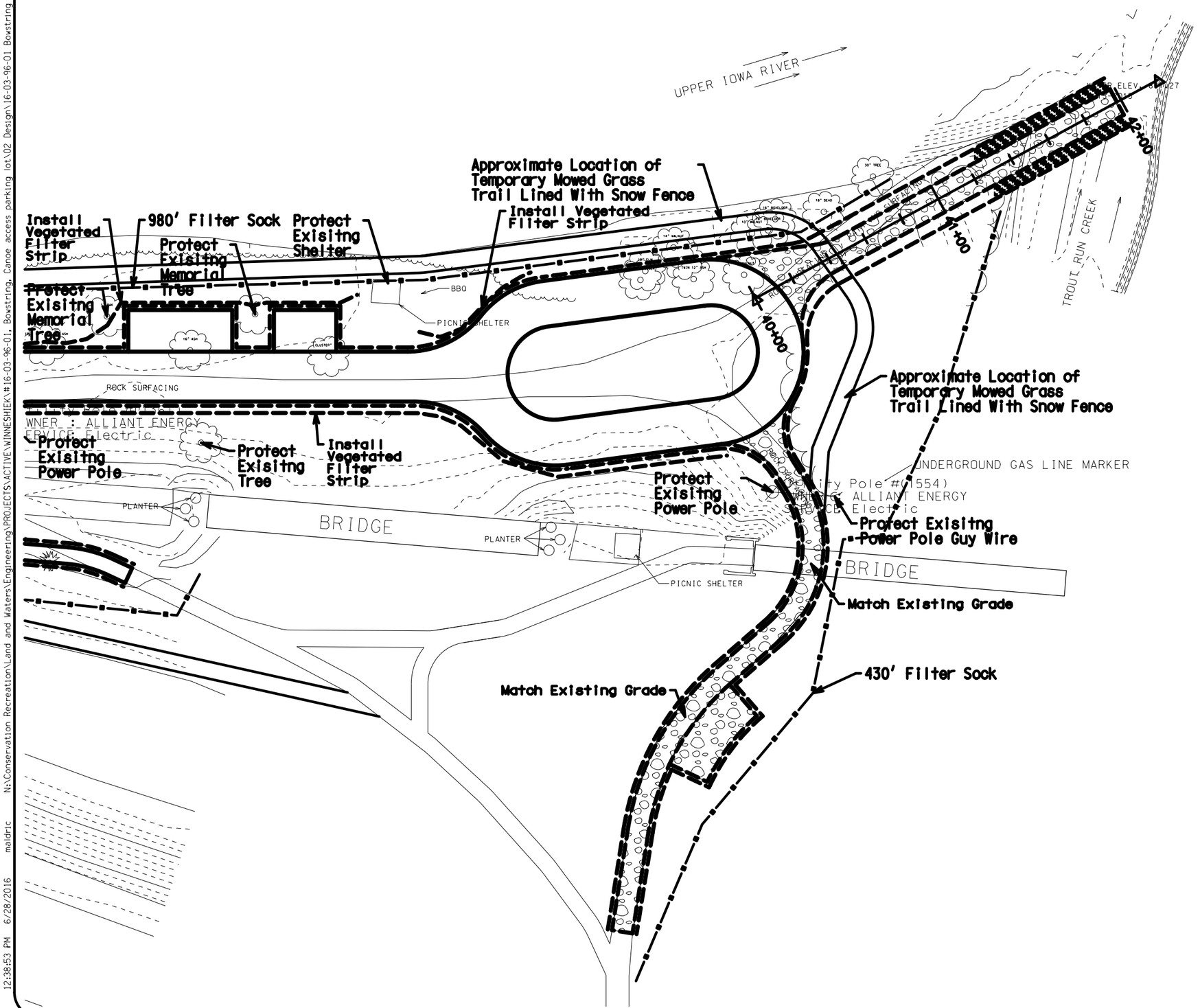
BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

IOWA DEPARTMENT OF NATURAL RESOURCES

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

CONSULTANT:



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PLAN SHEET - BOAT RAMP

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

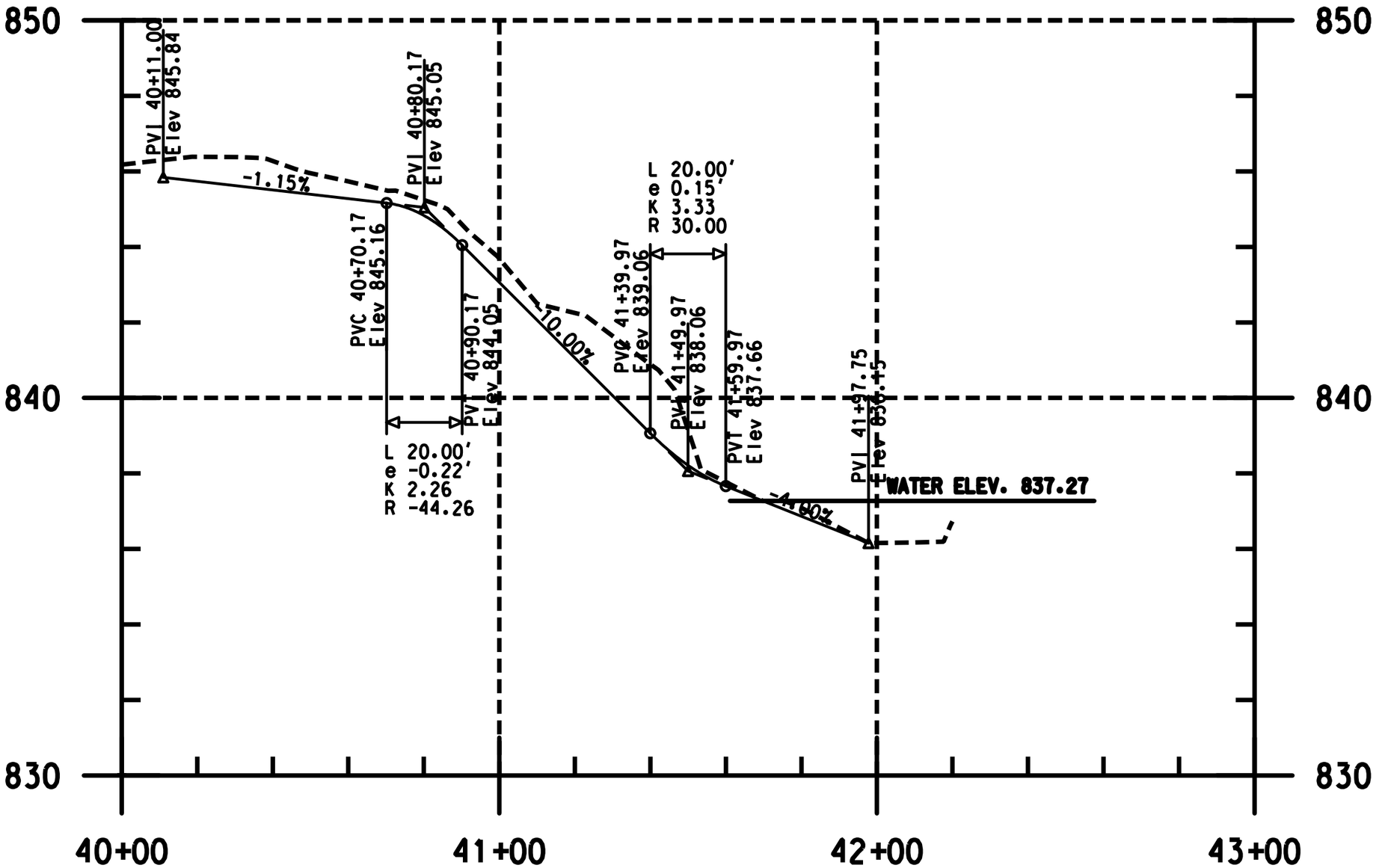
WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016

D.06

12:38:53 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

DNR

PROFILE SHEET - BOAT RAMP

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
CHK'D BY:
PROJECT NUMBER: 16-03-96-01
DATE: June 2016

D.07

12:38:56 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking

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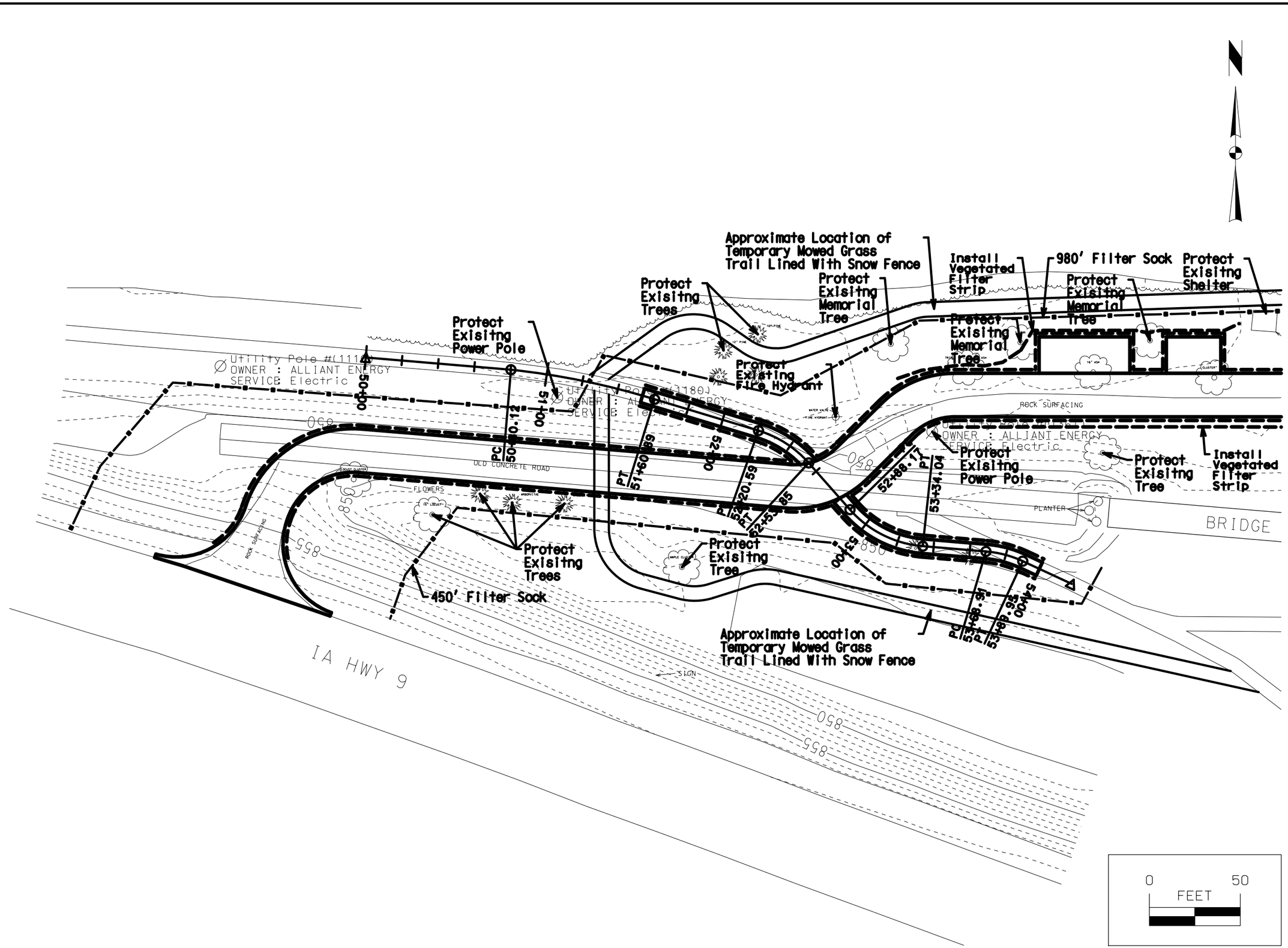


CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PLAN SHEET - TRAIL

CANOE ACCESS AND PARKING LOT FOR:

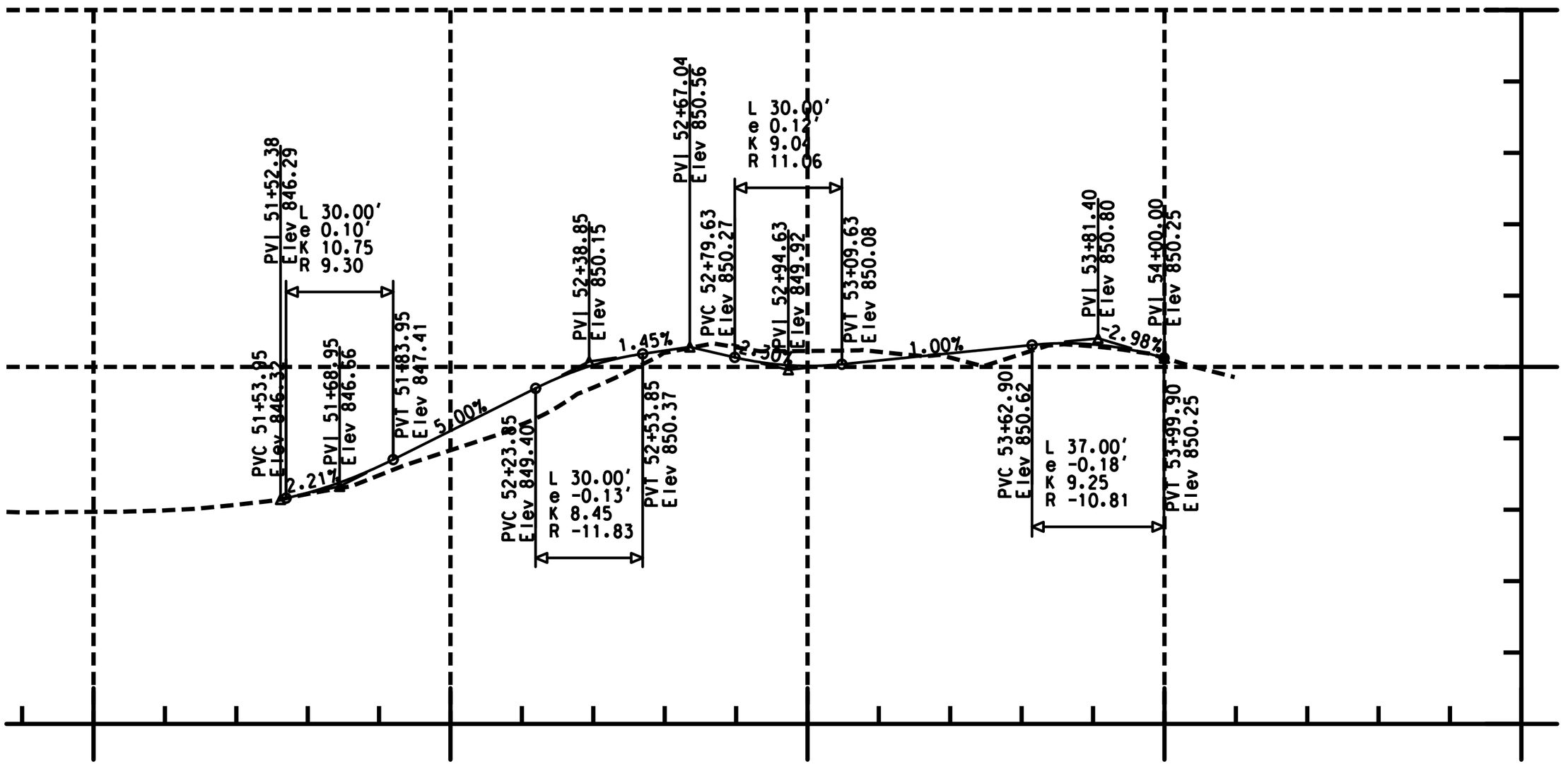
BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016

D.08



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PROFILE SHEET - TRAIL

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

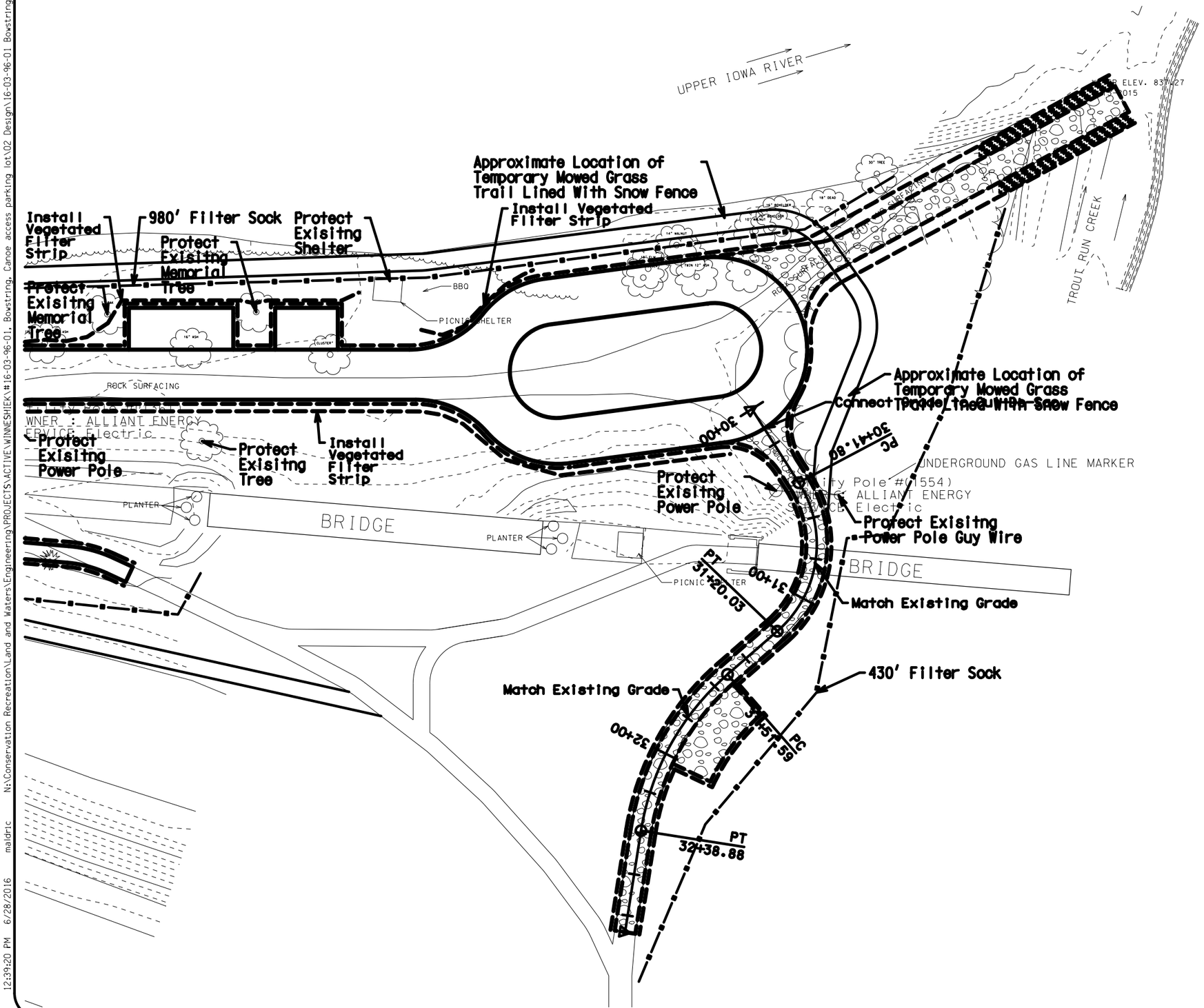
WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016

D.09

12:39:09 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PLAN SHEET - BRIDGE ROAD

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

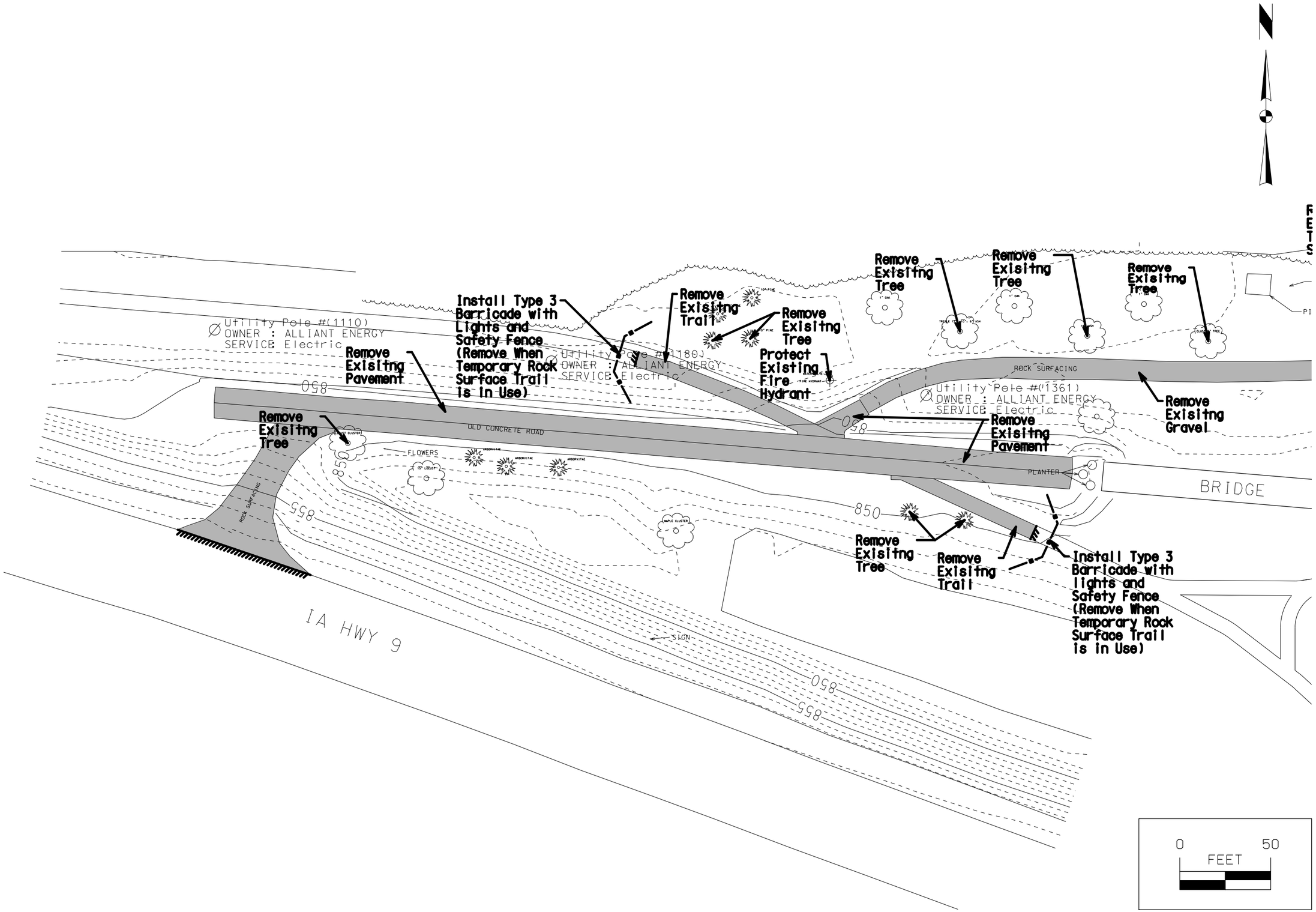
WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016

D.10

12:39:20 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

DNR

DEMOLITION SHEET

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:

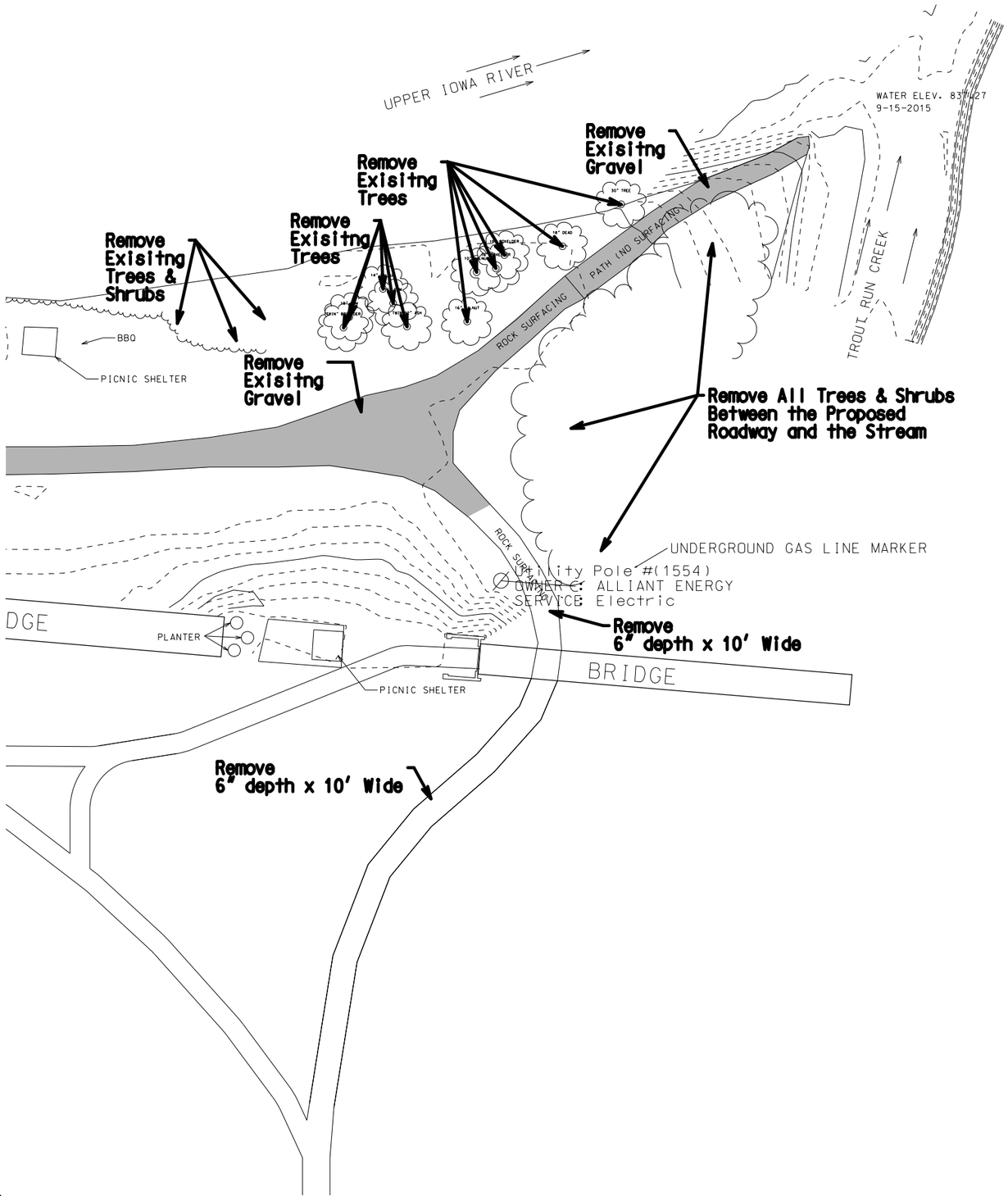
PROJECT NUMBER: 16-03-96-01

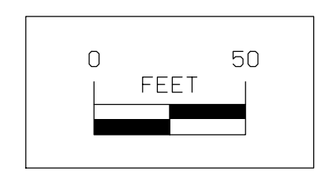
CHK'D BY:

DATE: June 2016

E.01

12:39:21 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking





CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

DEMOLITION SHEET

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

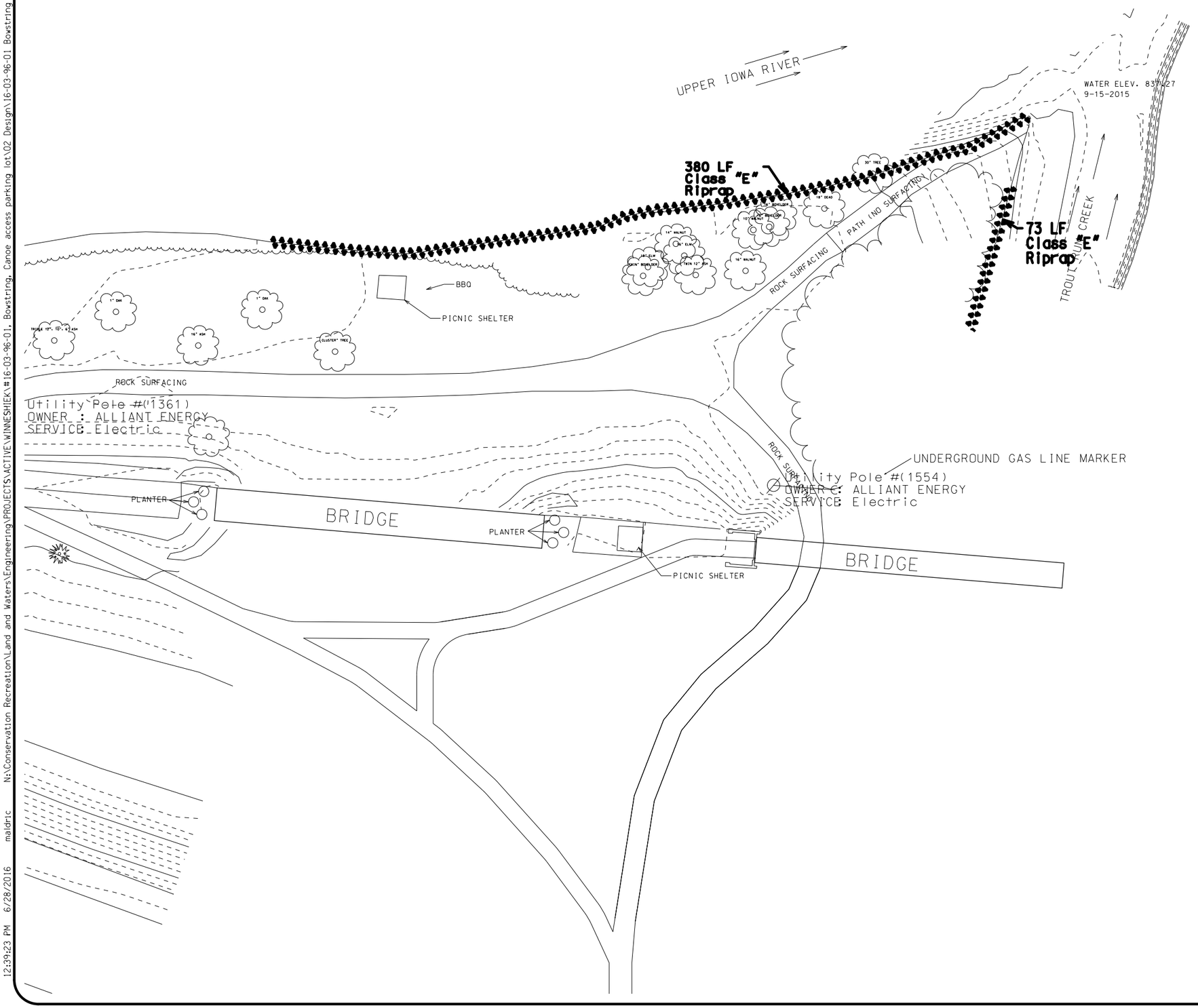
DRAWN BY: PROJECT NUMBER: 16-03-96-01

CHK'D BY: DATE: June 2016

E.02

12:39:22 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking

12:39:23 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

RIPRAP SHEET

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

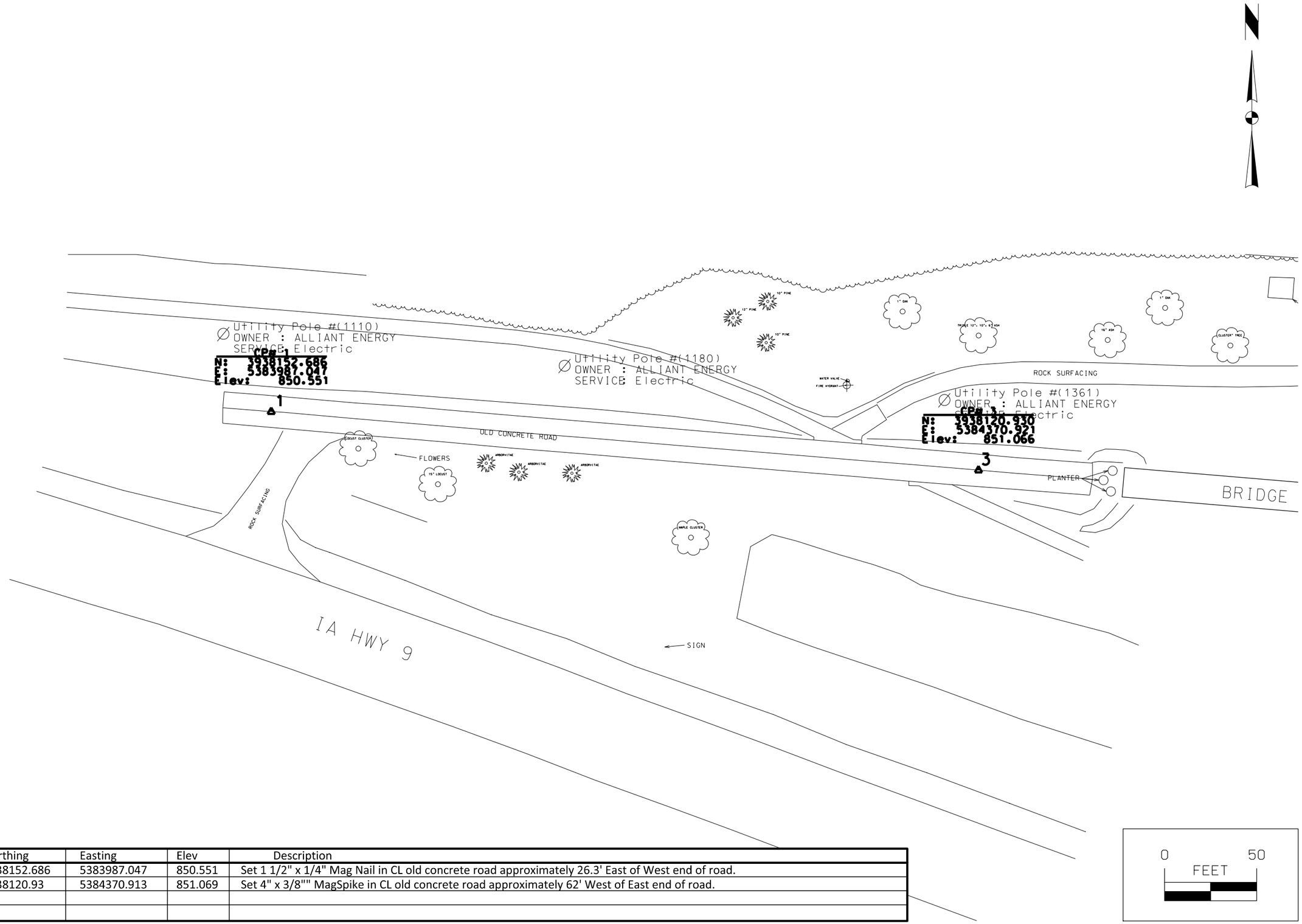
WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016

F.01

2:36:58 PM 6/30/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking



Point	Northing	Easting	Elev	Description
CP 1	3938152.686	5383987.047	850.551	Set 1 1/2" x 1/4" Mag Nail in CL old concrete road approximately 26.3' East of West end of road.
CP 3	3938120.93	5384370.913	851.069	Set 4" x 3/8"" MagSpike in CL old concrete road approximately 62' West of East end of road.

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

SURVEY CONTROL

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

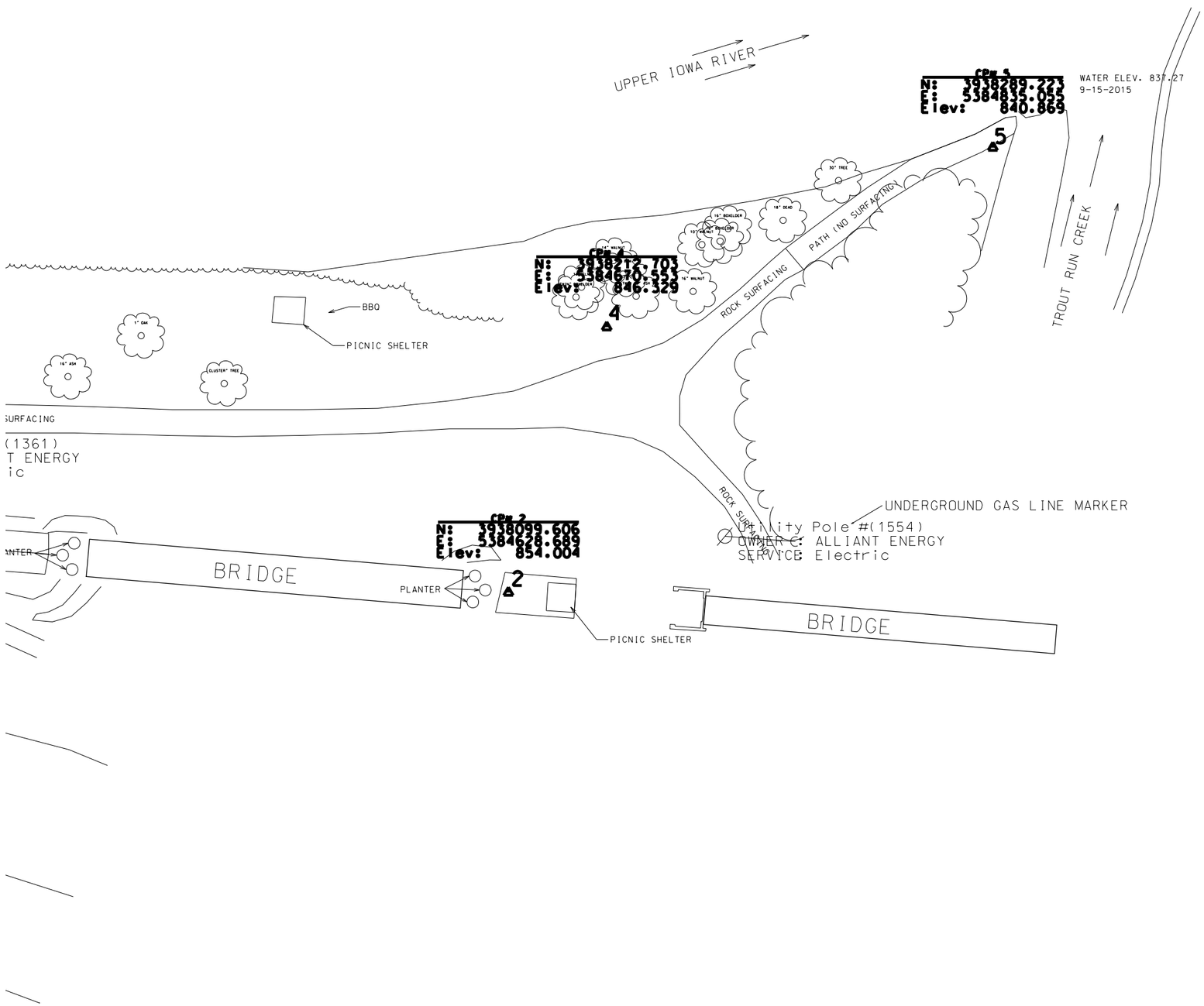
WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY: PROJECT NUMBER: 16-03-96-01

CHK'D BY: DATE: June 2016

G.01



Point	Northing	Easting	Elev	Description
CP 2	3938099.606	5384628.689	854.004	Set 1 1/2" x 1/4" Mag Nail in CL old concrete road East of Bowstring bridge approximately 19.9' West of East end of bridge.
CP 4	3938212.701	5384670.552	846.329	Set 12" x 3/8" nail w/washer just below ground 120.6' NNE of CP 2.
CP 5	3938289.22	5384835.052	840.869	Set 12" x 3/8" nail w/washer just below ground 181.4' NE of CP 4 on South side of path near top of bank at Trout Run Creek.

0 FEET 50

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

SURVEY CONTROL

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY: | PROJECT NUMBER: 16-03-96-01
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G.02

2:36:59 PM 6/30/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking

12:39:26 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking

Roadway

	STATION	NORTHING	EASTING
Element: Linear			
POB ( )	100+00.00	3938074.22	5383972.70
PC ( )	100+42.80	3938114.74	5383986.49
Tangent Direction:	N 18°47'26" E		
Tangent Length:	42.80		
Element: Circular			
PC ( )	100+42.80	3938114.74	5383986.49
PI ( )	100+81.82	3938151.68	5383999.06
CC ( )		3938098.63	5384033.82
PT ( )	101+09.07	3938148.46	5384037.95
Radius:	50.00		
Delta:	75°56'49" Right		
Degree of Curvature(Arc):	114°35'30"		
Length:	66.28		
Tangent:	39.03		
Chord:	61.53		
Middle Ordinate:	10.59		
External:	13.43		
Tangent Direction:	N 18°47'26" E		
Radial Direction:	S 71°12'34" E		
Chord Direction:	N 56°45'50" E		
Radial Direction:	S 4°44'15" W		
Tangent Direction:	S 85°15'45" E		
Element: Linear			
PT ( )	101+09.07	3938148.46	5384037.95
PC ( )	103+45.07	3938128.97	5384273.14
Tangent Direction:	S 85°15'45" E		
Tangent Length:	235.99		
Element: Circular			
PC ( )	103+45.07	3938128.97	5384273.14
PI ( )	103+65.69	3938127.27	5384293.70
CC ( )		3938173.82	5384276.86
PT ( )	103+83.75	3938141.73	5384308.41
Radius:	45.00		
Delta:	49°15'10" Left		
Degree of Curvature(Arc):	127°19'26"		
Length:	38.68		
Tangent:	20.63		
Chord:	37.50		
Middle Ordinate:	4.09		
External:	4.50		
Tangent Direction:	S 85°15'45" E		
Radial Direction:	S 4°44'15" W		
Chord Direction:	N 70°06'40" E		
Radial Direction:	S 44°30'55" E		
Tangent Direction:	N 45°29'05" E		
Element: Linear			
PT ( )	103+83.75	3938141.73	5384308.41
PC ( )	104+18.69	3938166.23	5384333.32
Tangent Direction:	N 45°29'05" E		
Tangent Length:	34.94		
Element: Circular			
PC ( )	104+18.69	3938166.23	5384333.32
PI ( )	104+37.11	3938179.14	5384346.46
CC ( )		3938134.14	5384364.87
PT ( )	104+53.65	3938179.14	5384364.87
Radius:	45.00		
Delta:	44°30'55" Right		
Degree of Curvature(Arc):	127°19'26"		
Length:	34.96		
Tangent:	18.42		
Chord:	34.09		
Middle Ordinate:	3.35		
External:	3.62		
Tangent Direction:	N 45°29'05" E		
Radial Direction:	S 44°30'55" E		
Chord Direction:	N 67°44'32" E		
Radial Direction:	S 0°00'00" E		
Tangent Direction:	N 90°00'00" E		
Element: Linear			
PT ( )	104+53.65	3938179.14	5384364.87
PC ( )	106+88.45	3938179.14	5384599.67
Tangent Direction:	N 90°00'00" E		
Tangent Length:	234.79		
Element: Circular			
PC ( )	106+88.45	3938179.14	5384599.67
PI ( )	106+91.77	3938179.14	5384602.98
CC ( )		3938229.14	5384599.67
PT ( )	106+95.07	3938179.58	5384606.27
Radius:	50.00		
Delta:	7°35'24" Left		
Degree of Curvature(Arc):	114°35'30"		
Length:	6.62		
Tangent:	3.32		
Chord:	6.62		
Middle Ordinate:	0.11		
External:	0.11		
Tangent Direction:	N 90°00'00" E		
Radial Direction:	S 0°00'00" E		
Chord Direction:	N 86°12'18" E		
Radial Direction:	S 7°35'24" E		
Tangent Direction:	N 82°24'36" E		
Element: Linear			
PT ( )	106+95.07	3938179.58	5384606.27
POE ( )	108+39.34	3938198.63	5384749.27
Tangent Direction:	N 82°24'36" E		
Tangent Length:	144.26		

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILING
502 E. 9TH ST., DES MOINES, IA 50319-0034

SURVEY CONTROL

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY: PROJECT NUMBER: 16-03-96-01

CHK'D BY: DATE: June 2016

G.03

12:39:28 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking

Trail

	STATION	NORTHING	EASTING
Element: Linear			
POB ( )	50+00.00	3938199.79	5384040.96
PC ( )	50+80.12	3938193.05	5384120.79
Tangent Direction:	S 85°10'34" E		
Tangent Length:	80.12		
Non-collinear			
Element: Circular			
PC ( )	50+80.12	3938193.05	5384120.79
PI ( )	51+20.63	3938188.79	5384161.08
CC ( )		3937780.26	5384077.17
PT ( )	51+60.89	3938176.82	5384199.79
Radius:	415.09		
Delta:	11°08'56" Right		
Degree of Curvature(Arc):	13°48'12"		
Length:	80.77		
Tangent:	40.51		
Chord:	80.64		
Middle Ordinate:	1.96		
External:	1.97		
Tangent Direction:	S 83°58'04" E		
Radial Direction:	S 6°01'56" W		
Chord Direction:	S 78°23'35" E		
Radial Direction:	S 17°10'53" W		
Tangent Direction:	S 72°49'07" E		
Non-collinear			
Element: Linear			
PT ( )	51+60.89	3938176.82	5384199.79
PC ( )	52+20.59	3938159.55	5384256.94
Tangent Direction:	S 73°11'04" E		
Tangent Length:	59.70		
Element: Circular			
PC ( )	52+20.59	3938159.55	5384256.94
PI ( )	52+37.66	3938154.61	5384273.28
CC ( )		3938102.12	5384239.58
PT ( )	52+53.85	3938141.82	5384284.57
Radius:	60.00		
Delta:	31°45'25" Right		
Degree of Curvature(Arc):	95°29'35"		
Length:	33.26		
Tangent:	17.07		
Chord:	32.83		
Middle Ordinate:	2.29		
External:	2.38		
Tangent Direction:	S 73°11'04" E		
Radial Direction:	S 16°48'56" W		
Chord Direction:	S 57°18'21" E		
Radial Direction:	S 48°34'22" W		
Tangent Direction:	S 41°25'38" E		
Element: Linear			
PT ( )	52+53.85	3938141.82	5384284.57
PC ( )	52+88.17	3938116.08	5384307.28
Tangent Direction:	S 41°25'38" E		
Tangent Length:	34.32		
Element: Circular			
PC ( )	52+88.17	3938116.08	5384307.28
PI ( )	53+12.29	3938098.00	5384323.24
CC ( )		3938155.78	5384352.26
PT ( )	53+34.04	3938095.99	5384347.28
Radius:	60.00		
Delta:	43°48'14" Left		
Degree of Curvature(Arc):	95°29'35"		
Length:	45.87		
Tangent:	24.12		
Chord:	44.76		
Middle Ordinate:	4.33		
External:	4.67		
Tangent Direction:	S 41°25'38" E		
Radial Direction:	S 48°34'22" W		
Chord Direction:	S 63°19'45" E		
Radial Direction:	S 4°46'08" W		
Tangent Direction:	S 85°13'52" E		
Element: Linear			
PT ( )	53+34.04	3938095.99	5384347.28
PC ( )	53+68.91	3938093.09	5384382.03
Tangent Direction:	S 85°13'52" E		
Tangent Length:	34.88		
Element: Circular			
PC ( )	53+68.91	3938093.09	5384382.03
PI ( )	53+79.54	3938092.21	5384392.62
CC ( )		3938033.30	5384377.04
PT ( )	53+89.95	3938087.74	5384402.27
Radius:	60.00		
Delta:	20°05'17" Right		
Degree of Curvature(Arc):	95°29'35"		
Length:	21.04		
Tangent:	10.63		
Chord:	20.93		
Middle Ordinate:	0.92		
External:	0.93		
Tangent Direction:	S 85°13'52" E		
Radial Direction:	S 4°46'08" W		
Chord Direction:	S 75°11'14" E		
Radial Direction:	S 24°51'25" W		
Tangent Direction:	S 65°08'35" E		
Element: Linear			
PT ( )	53+89.95	3938087.74	5384402.27
POE ( )	54+19.68	3938075.25	5384429.24
Tangent Direction:	S 65°08'35" E		
Tangent Length:	29.73		

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

SURVEY CONTROL

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY: PROJECT NUMBER: 16-03-96-01

CHK'D BY: DATE: June 2016

G.04

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	STATION	NORTHING	EASTING
Element: Linear			
POB ( )	30+00.00	3938162.67	5384709.42
PC ( )	30+41.80	3938127.43	5384731.88
Tangent Direction:	S 32°30'57" E		
Tangent Length:	41.80		
Element: Circular			
PC ( )	30+41.80	3938127.43	5384731.88
PI ( )	30+89.19	3938087.47	5384757.36
CC ( )		3938097.86	5384685.51
PT ( )	31+20.03	3938056.37	5384721.60
Radius:	55.00		
Delta:	81°29'44" Right		
Degree of Curvature(Arc):	104°10'27"		
Length:	78.23		
Tangent:	47.39		
Chord:	71.80		
Middle Ordinate:	13.33		
External:	17.60		
Tangent Direction:	S 32°30'57" E		
Radial Direction:	S 57°29'03" W		
Chord Direction:	S 8°13'55" W		
Radial Direction:	N 41°01'14" W		
Tangent Direction:	S 48°58'46" W		
Element: Linear			
PT ( )	31+20.03	3938056.37	5384721.60
PC ( )	31+51.59	3938035.65	5384697.79
Tangent Direction:	S 48°58'46" W		
Tangent Length:	31.56		
Element: Circular			
PC ( )	31+51.59	3938035.65	5384697.79
PI ( )	31+97.10	3938005.78	5384663.46
CC ( )		3937941.34	5384779.83
PT ( )	32+38.88	3937960.83	5384656.36
Radius:	125.00		
Delta:	40°00'38" Left		
Degree of Curvature(Arc):	45°50'12"		
Length:	87.29		
Tangent:	45.51		
Chord:	85.53		
Middle Ordinate:	7.54		
External:	8.03		
Tangent Direction:	S 48°58'46" W		
Radial Direction:	N 41°01'14" W		
Chord Direction:	S 28°58'27" W		
Radial Direction:	N 81°01'51" W		
Tangent Direction:	S 8°58'09" W		
Element: Linear			
PT ( )	32+38.88	3937960.83	5384656.36
POE ( )	32+88.05	3937912.26	5384648.70
Tangent Direction:	S 8°58'09" W		
Tangent Length:	49.17		

Boat Ramp

	STATION	NORTHING	EASTING
Element: Linear			
POB ( )	40+00.00	3938216.76	5384712.73
POE ( )	41+57.46	3938299.01	5384847.00
Tangent Direction:	N 58°30'28" E		
Tangent Length:	157.46		

CONSULTANT:

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

SURVEY CONTROL

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016

G.05

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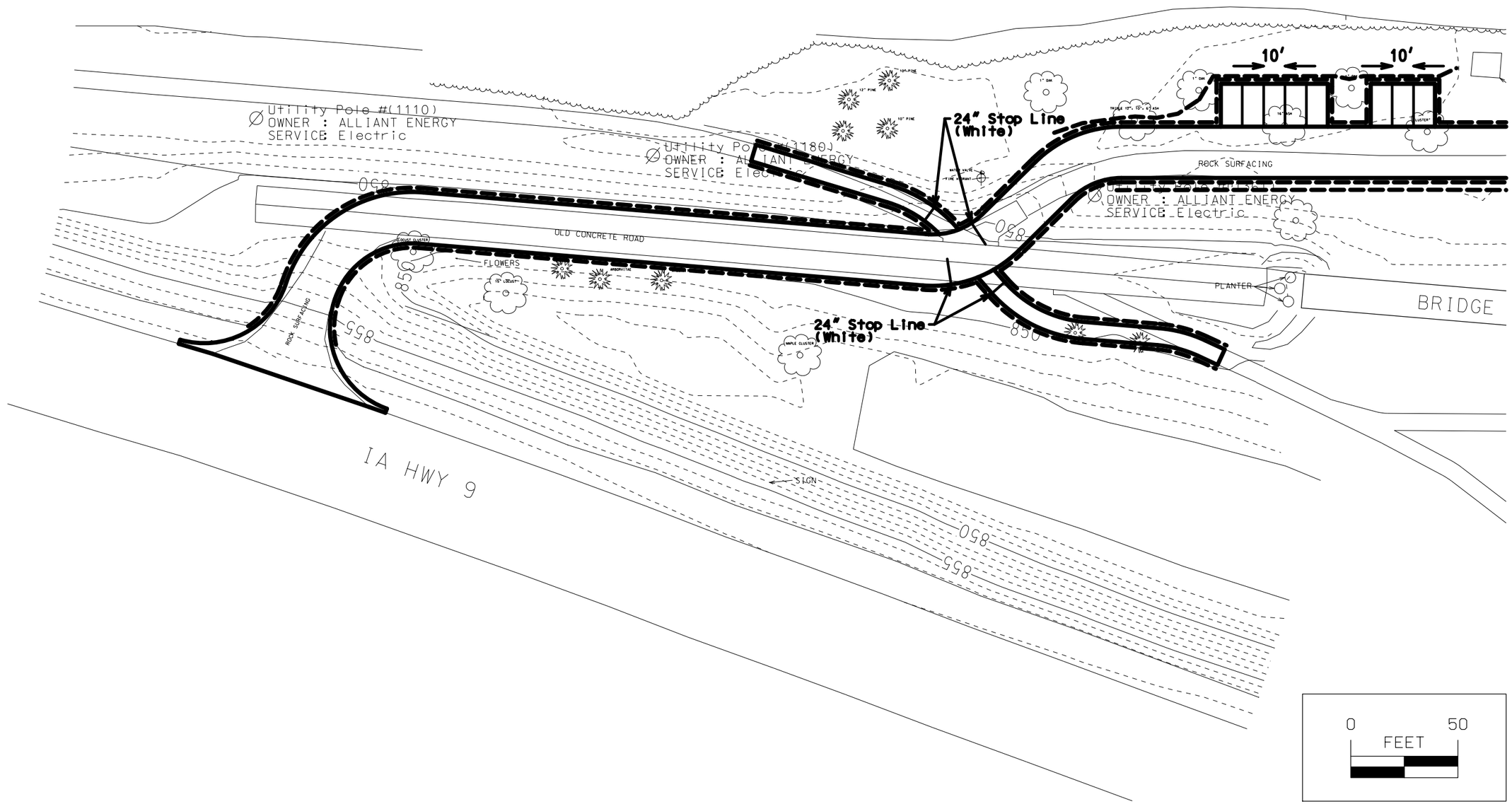

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PAVEMENT MARKING SHEET

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
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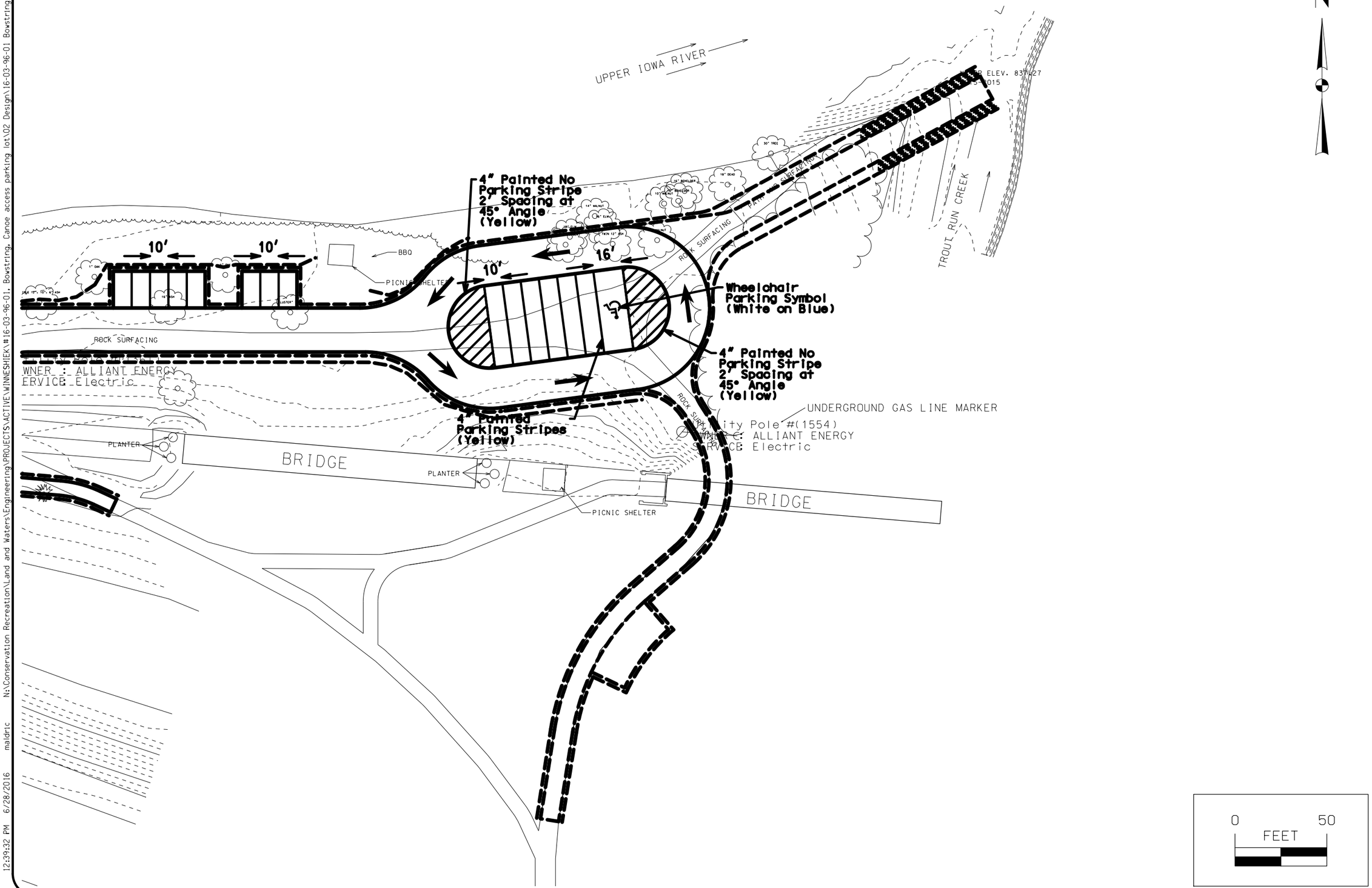


CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PAVEMENT MARKING SHEET

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

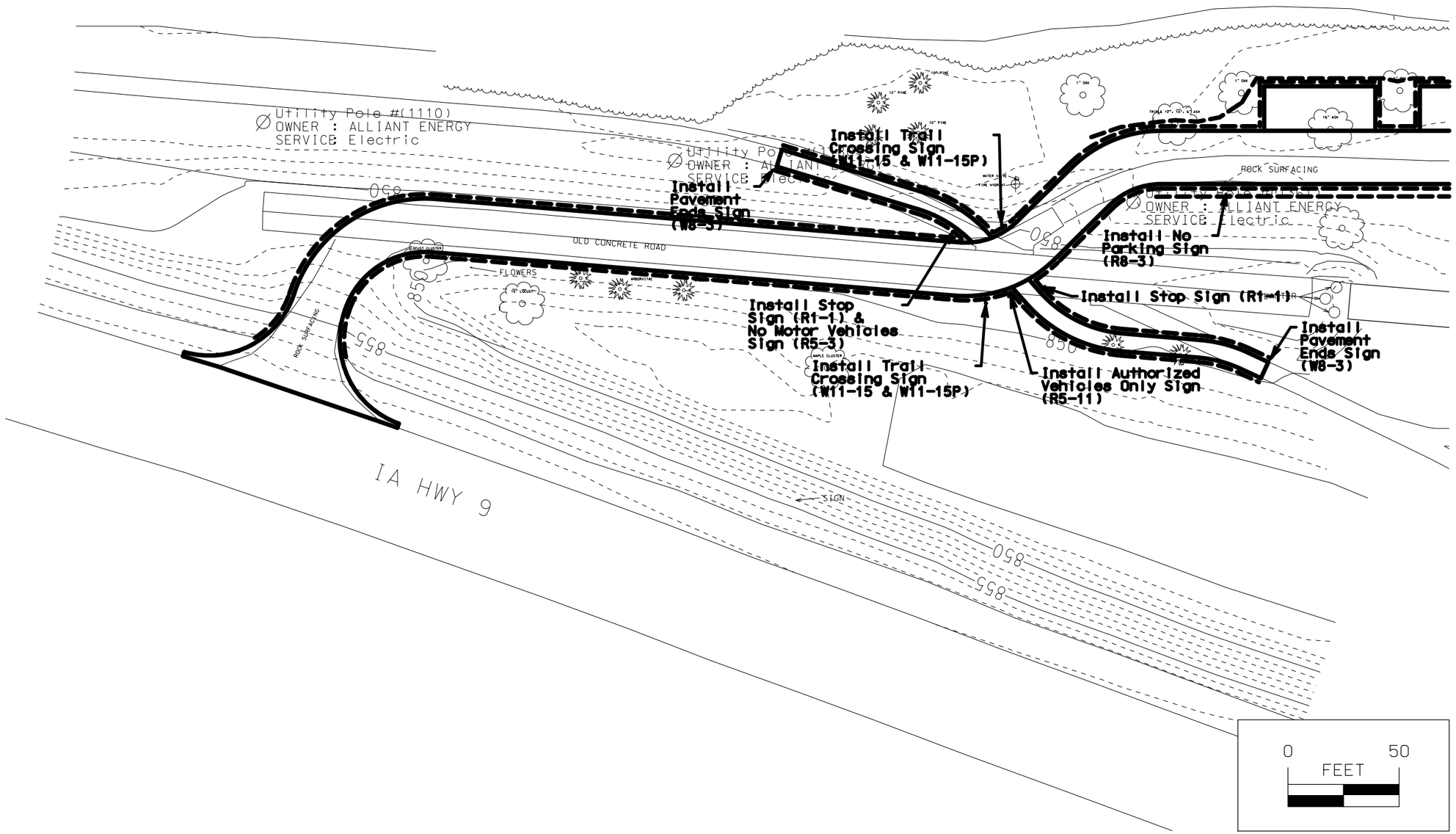
WINNESHIEK COUNTY, IOWA

NO	BY / DATE	REVISION

DRAWN BY: | PROJECT NUMBER: 16-03-96-01

CHK'D BY: | DATE: June 2016

P.02



CONSULTANT:

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

SIGN SHEET

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:

PROJECT NUMBER: 16-03-96-01

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DATE: June 2016

S.01

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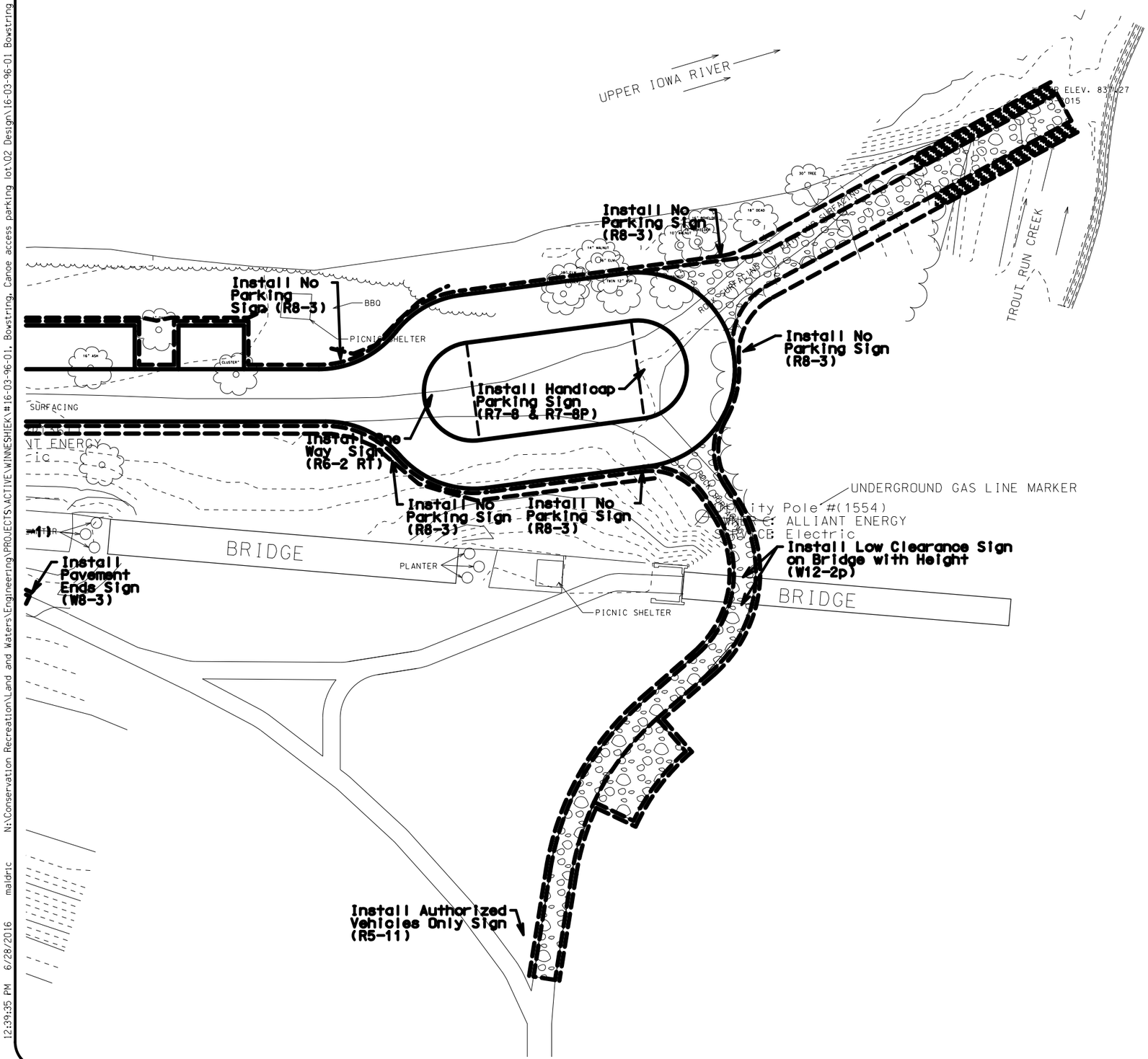

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FEET

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

SIGN SHEET

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
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S.02

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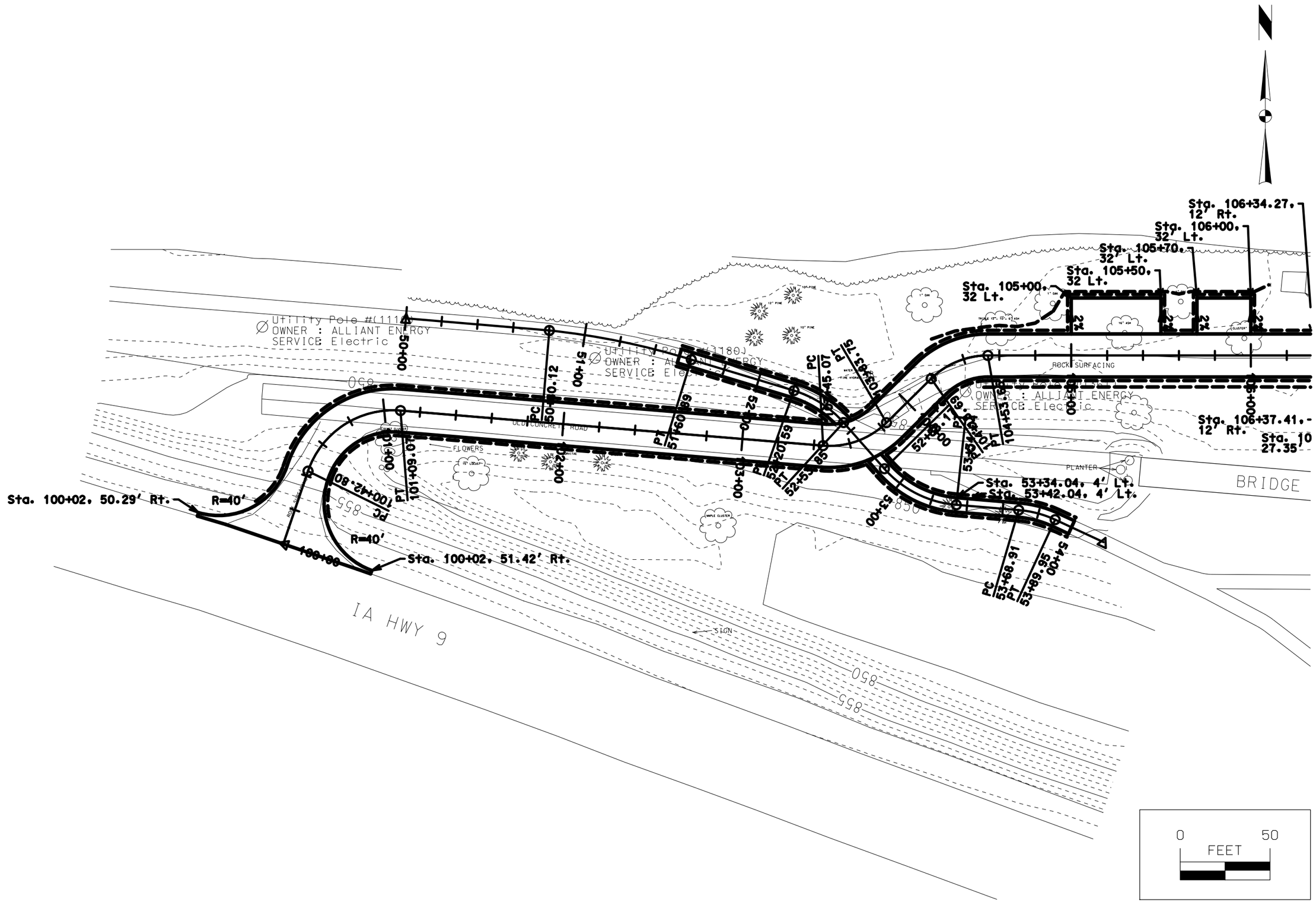

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

STAKING SHEET

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

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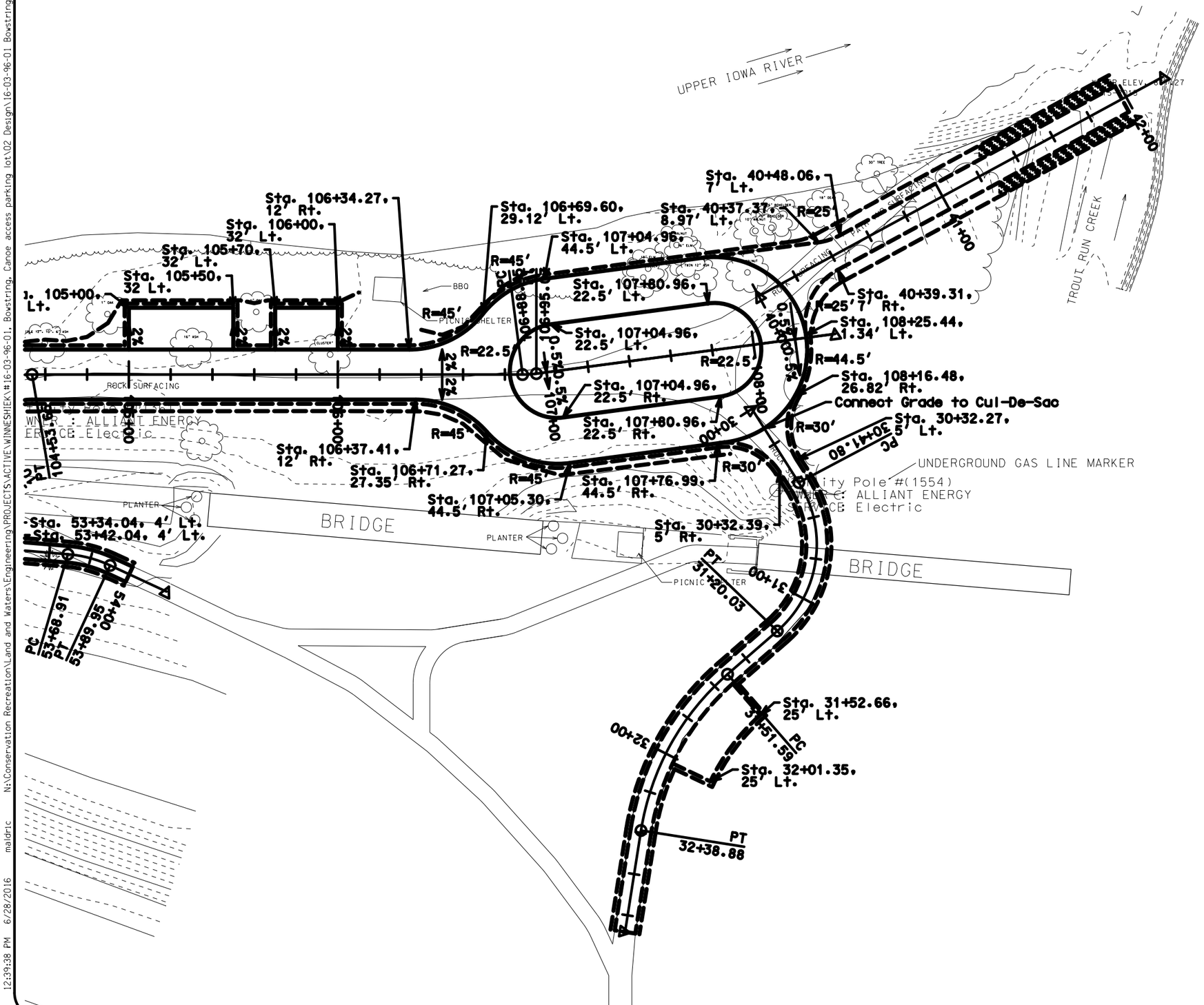

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

STAKING SHEET

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

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PROJECT NUMBER: 16-03-96-01
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T.02

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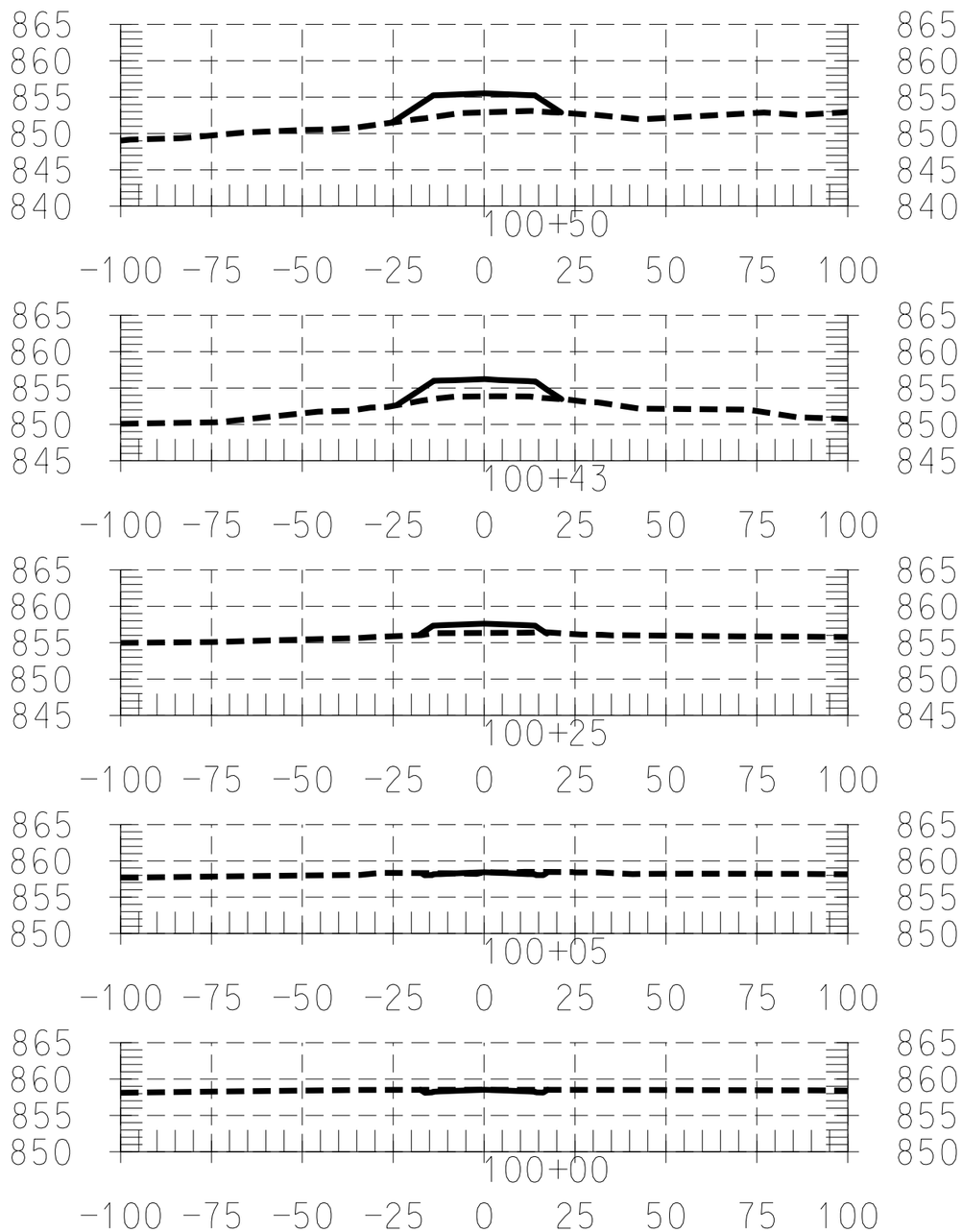

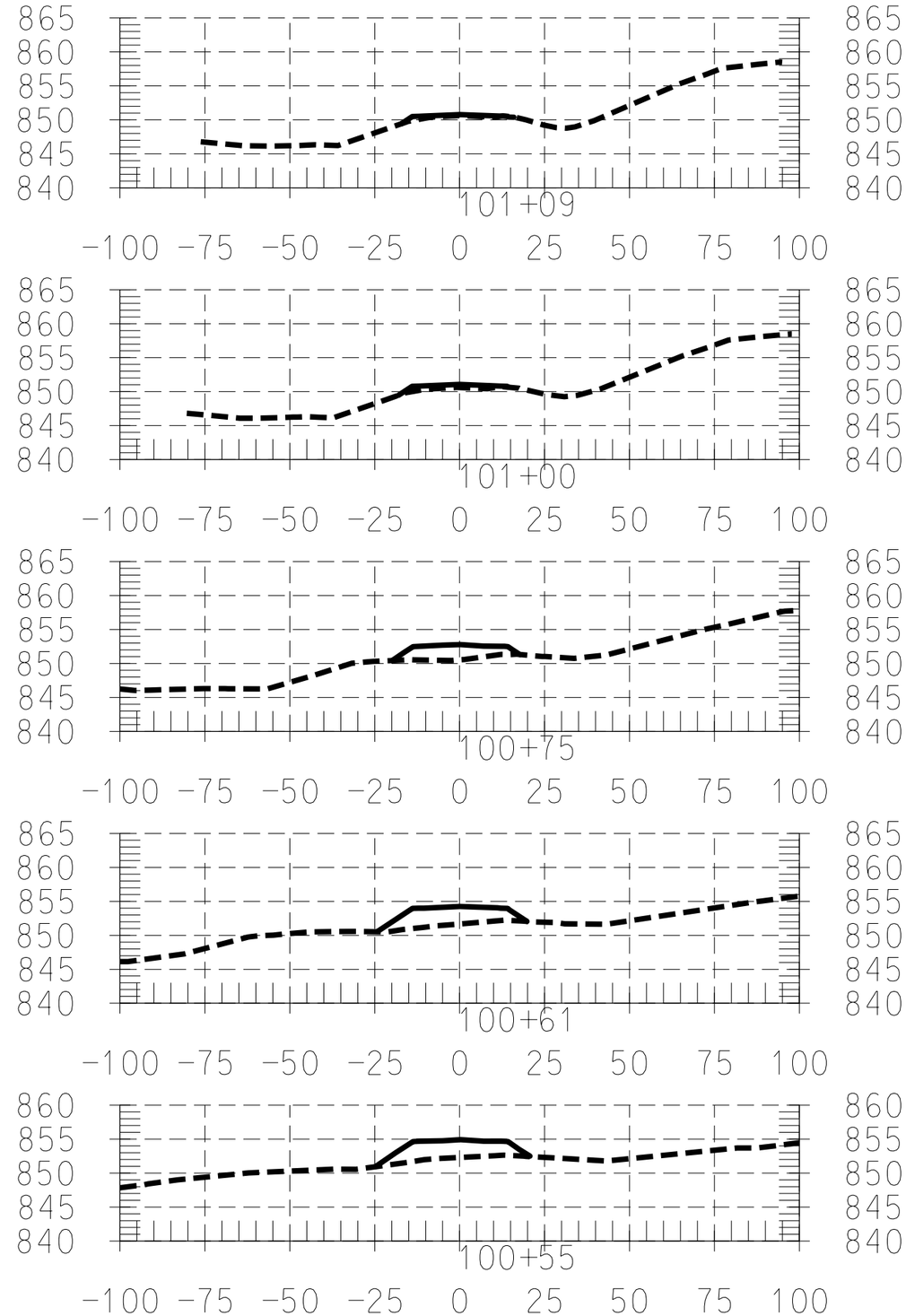

CONSULTANT:

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

ROADWAY CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
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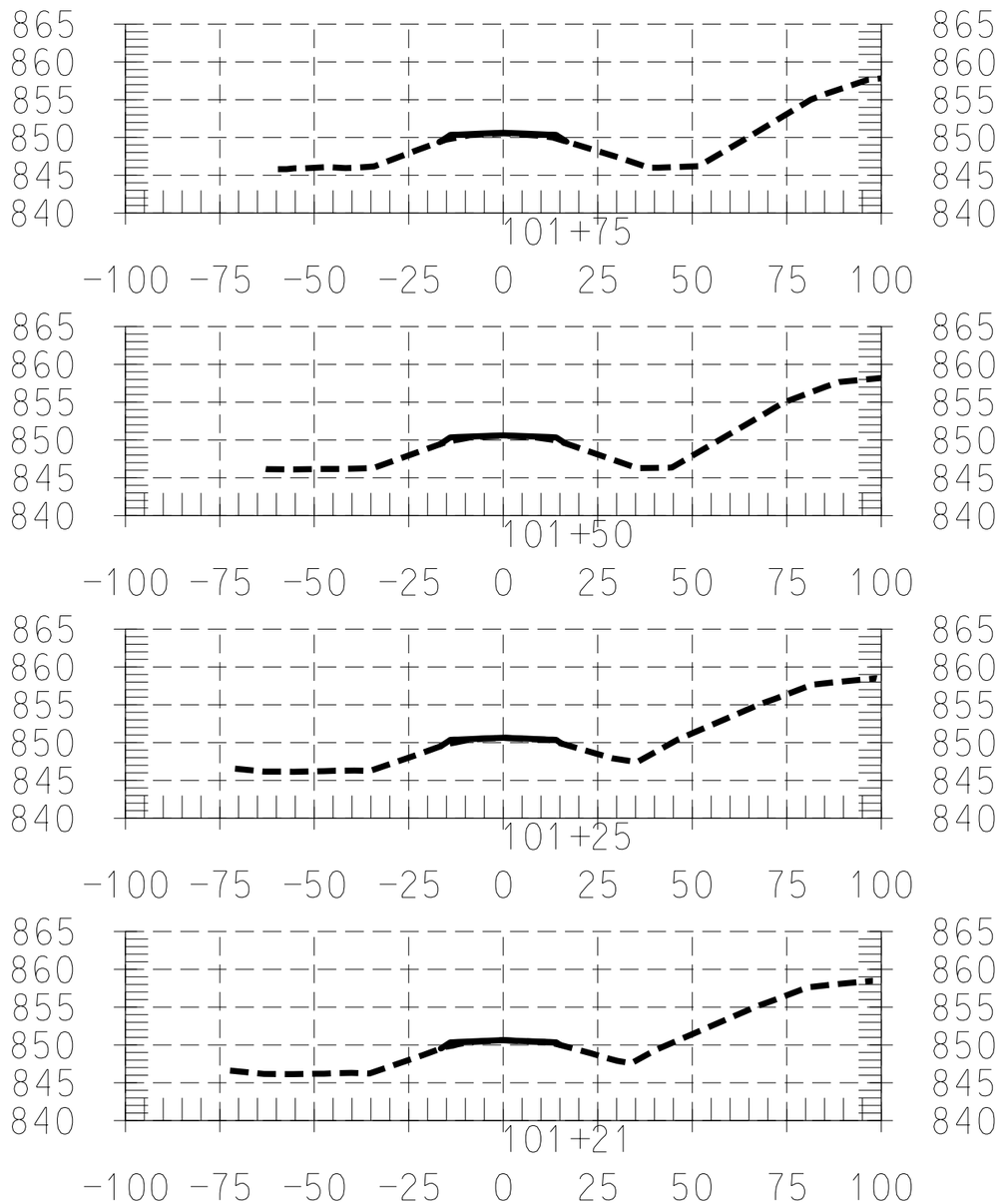

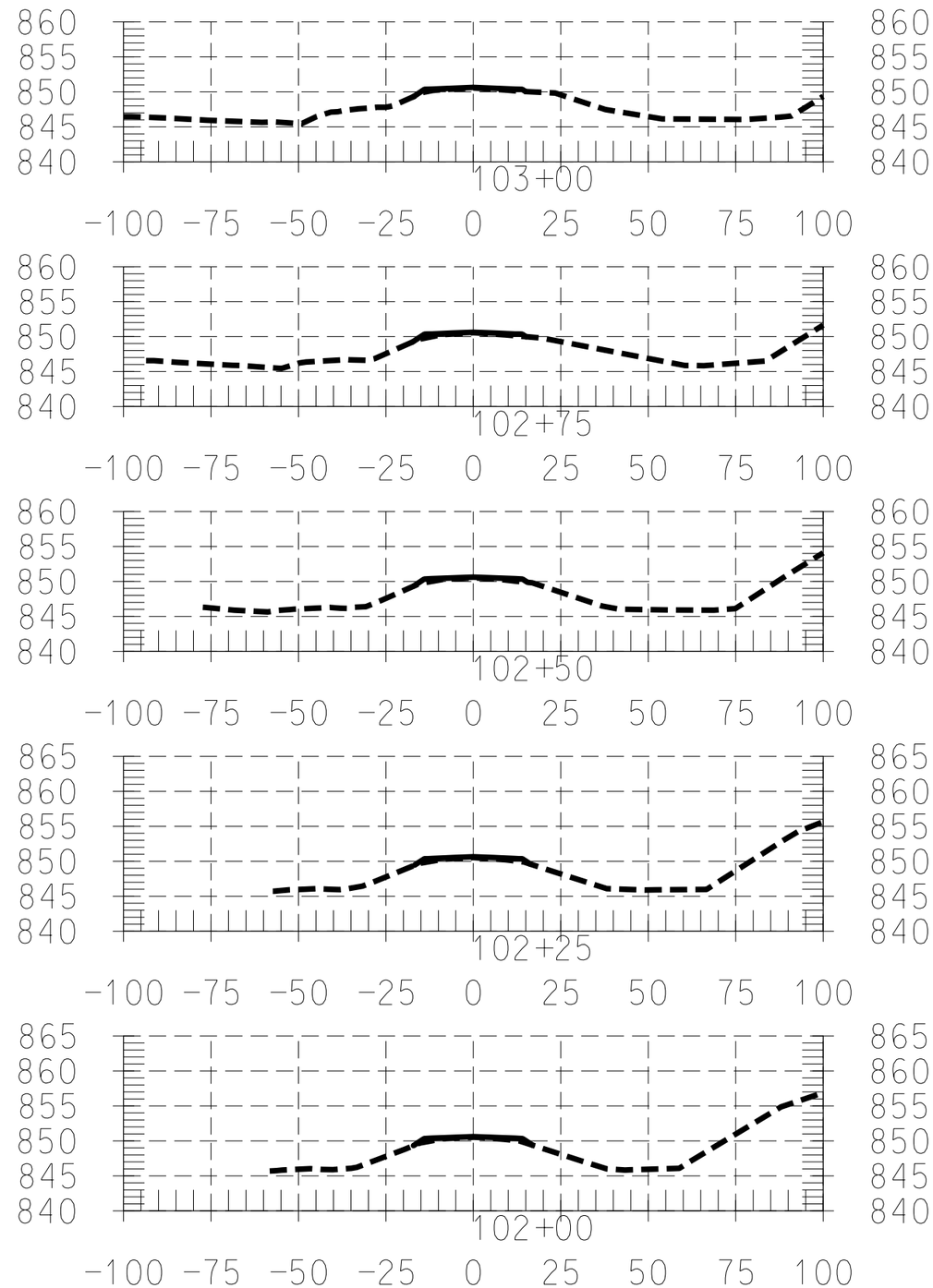

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

ROADWAY CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
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DATE: June 2016

X.02

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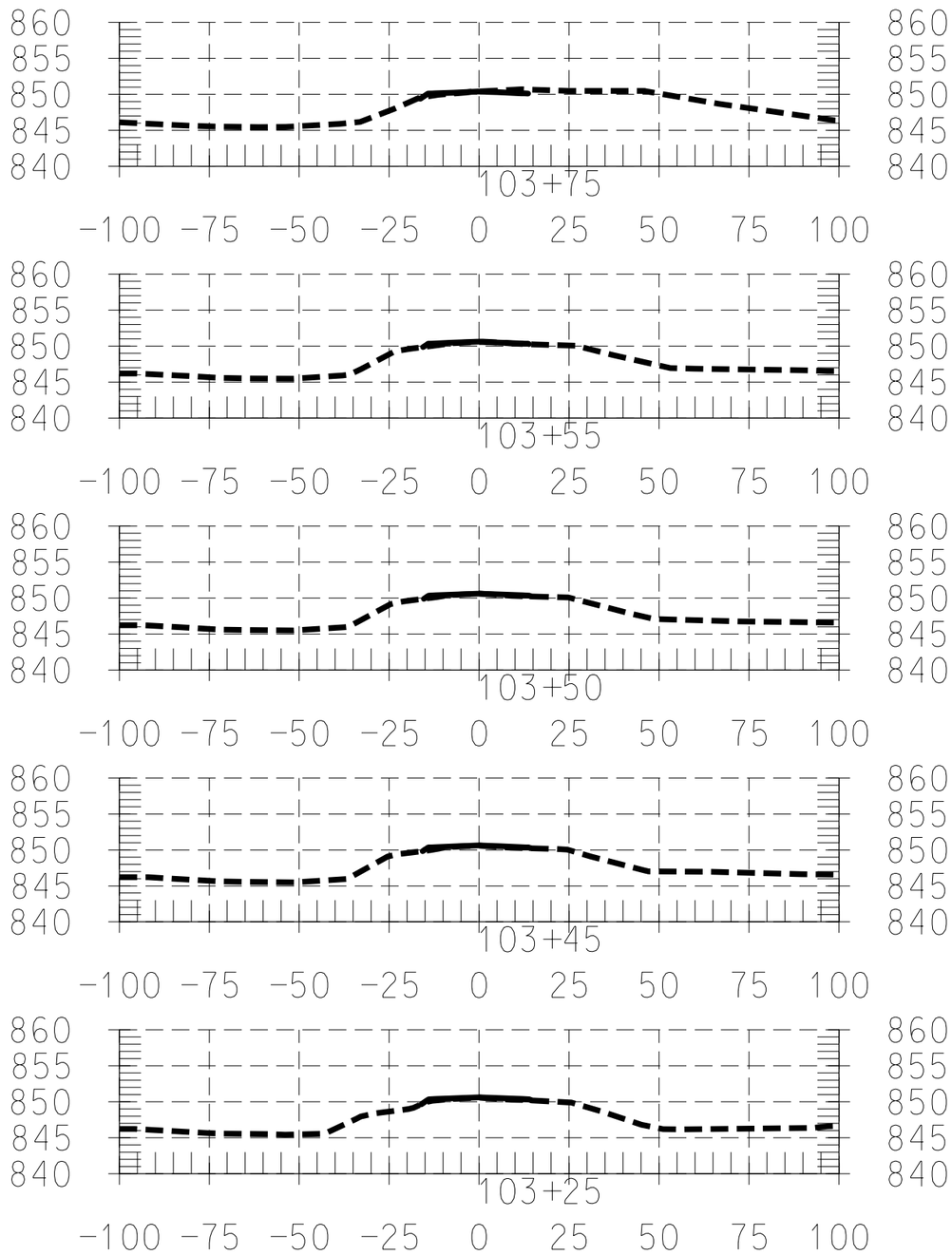

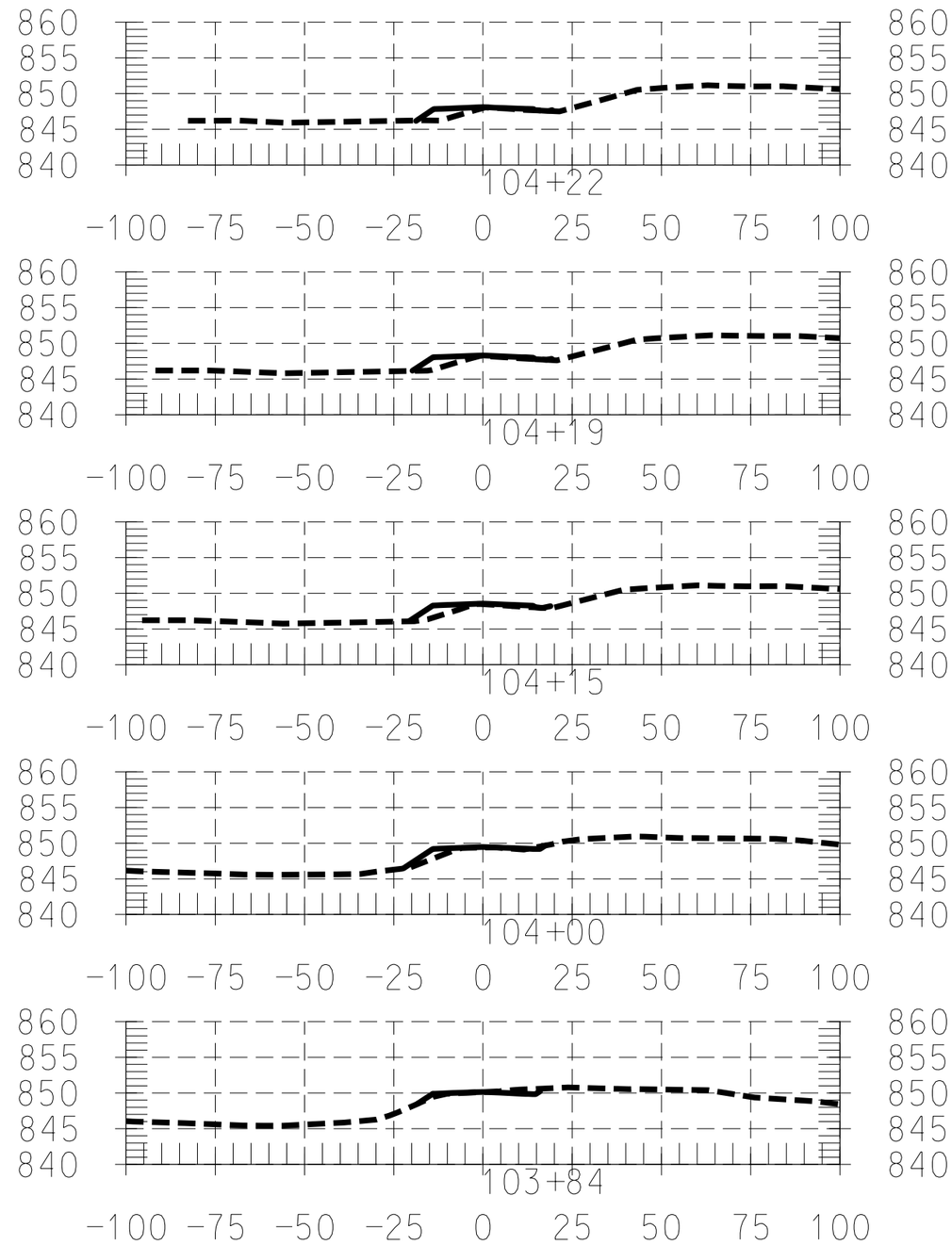

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

ROADWAY CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY: | PROJECT NUMBER: 16-03-96-01

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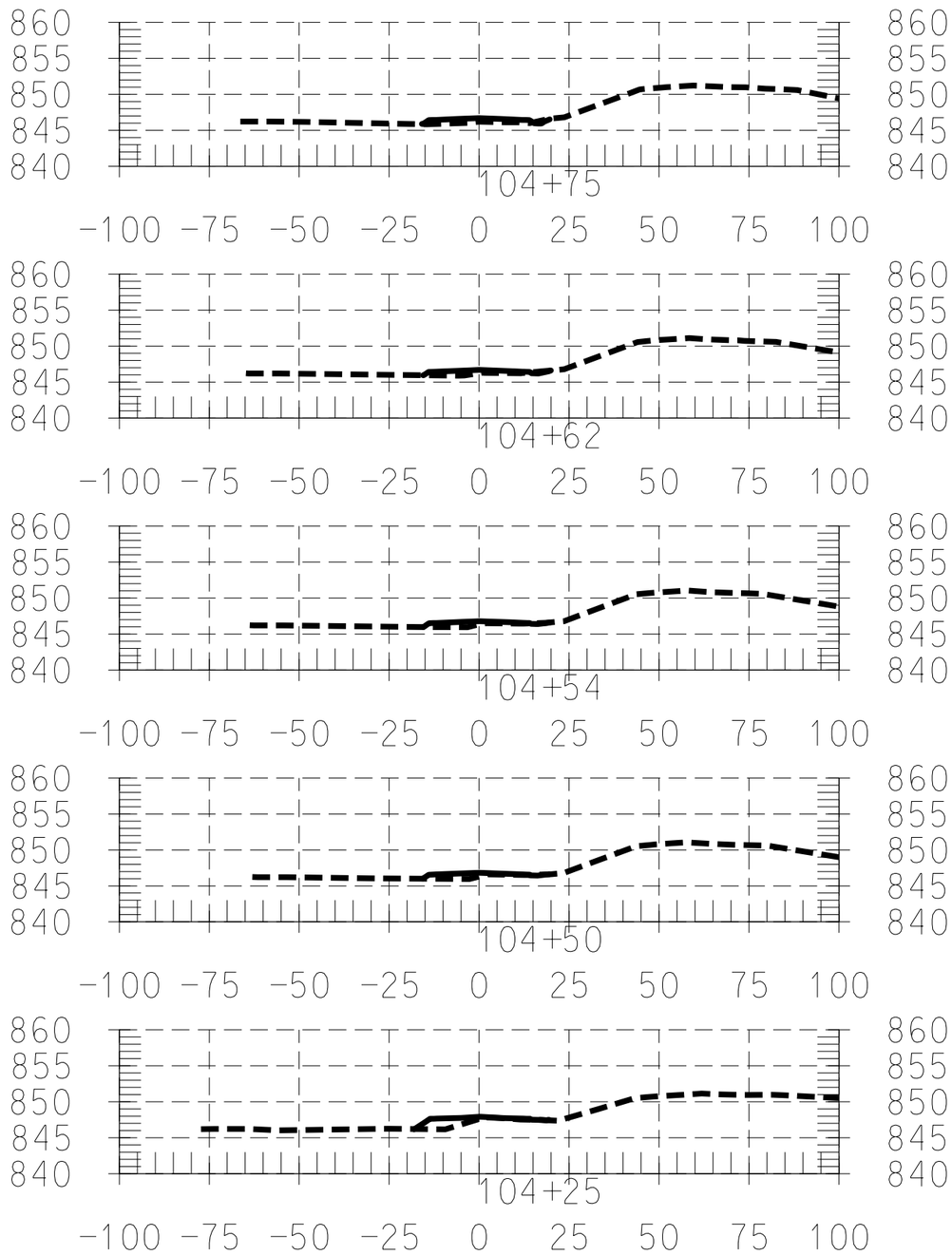

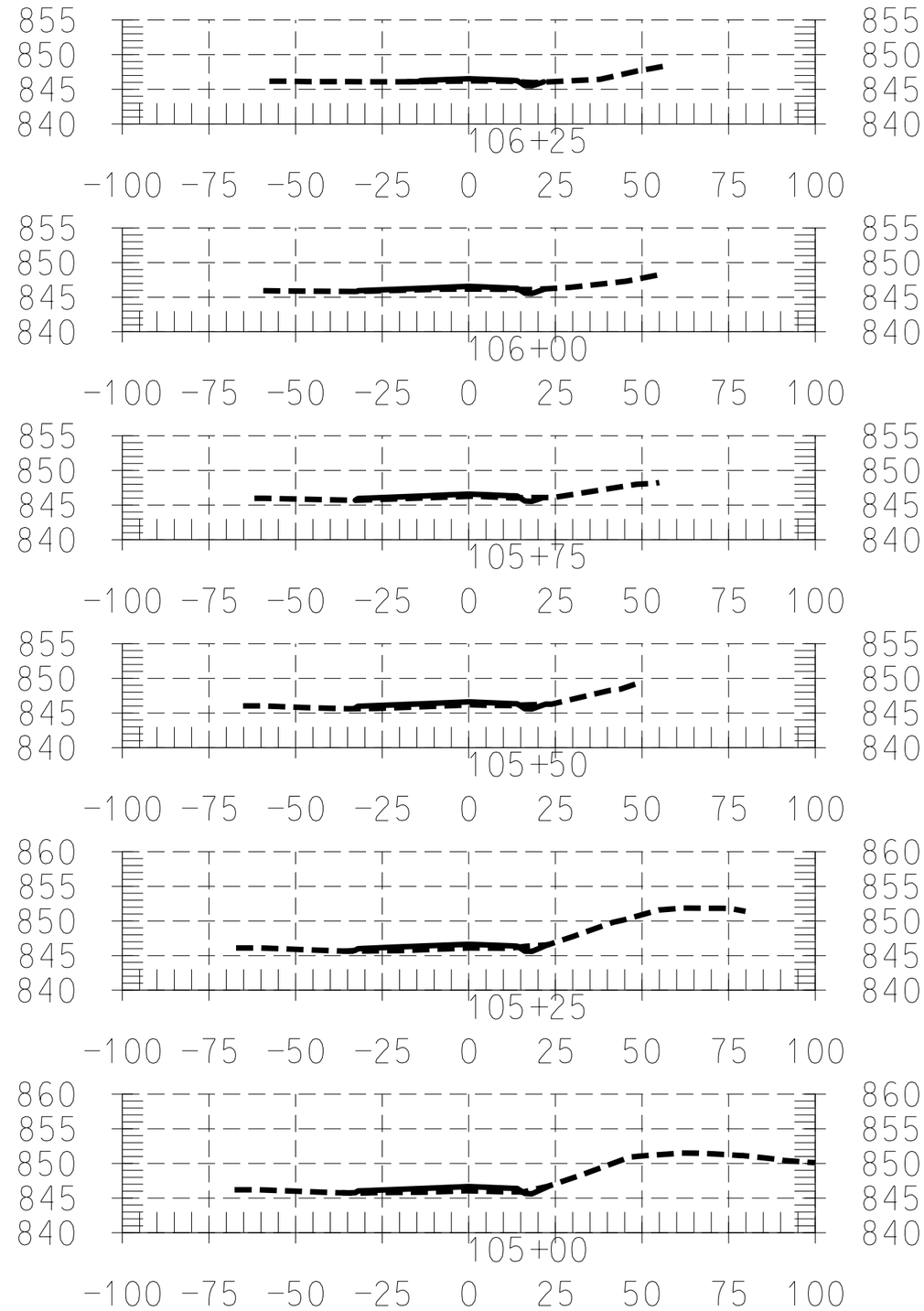

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

ROADWAY CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016

X.04

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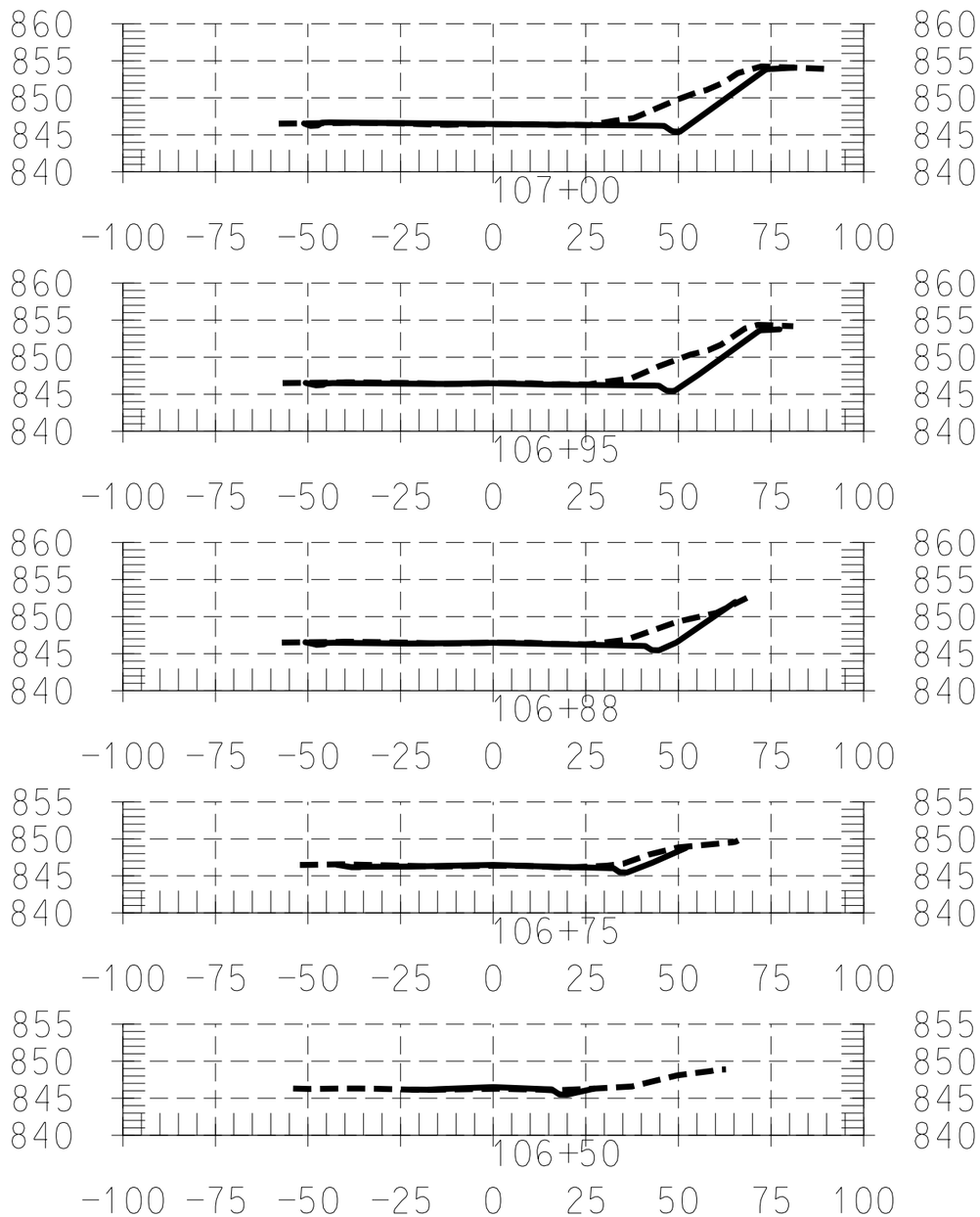
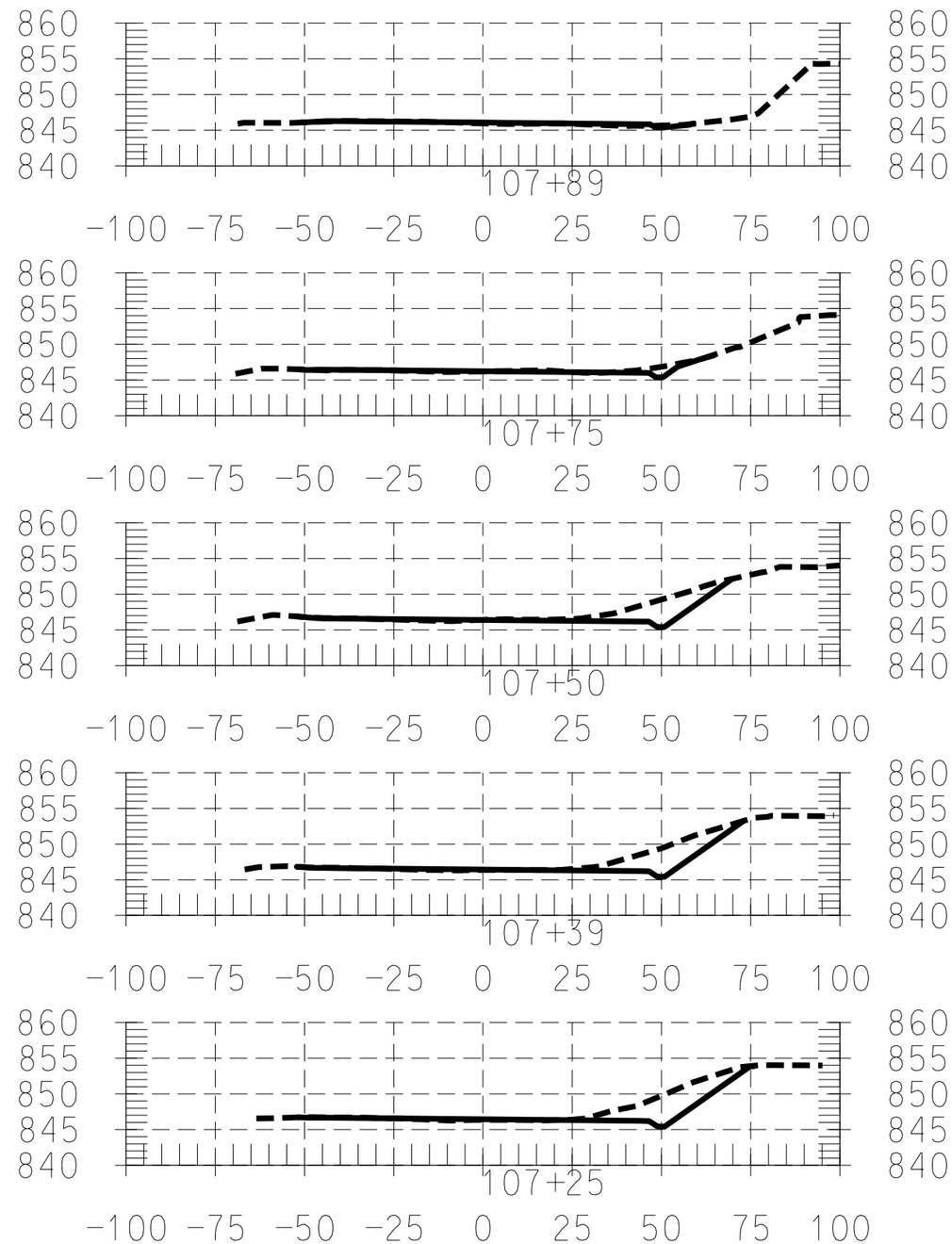




CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

ROADWAY CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

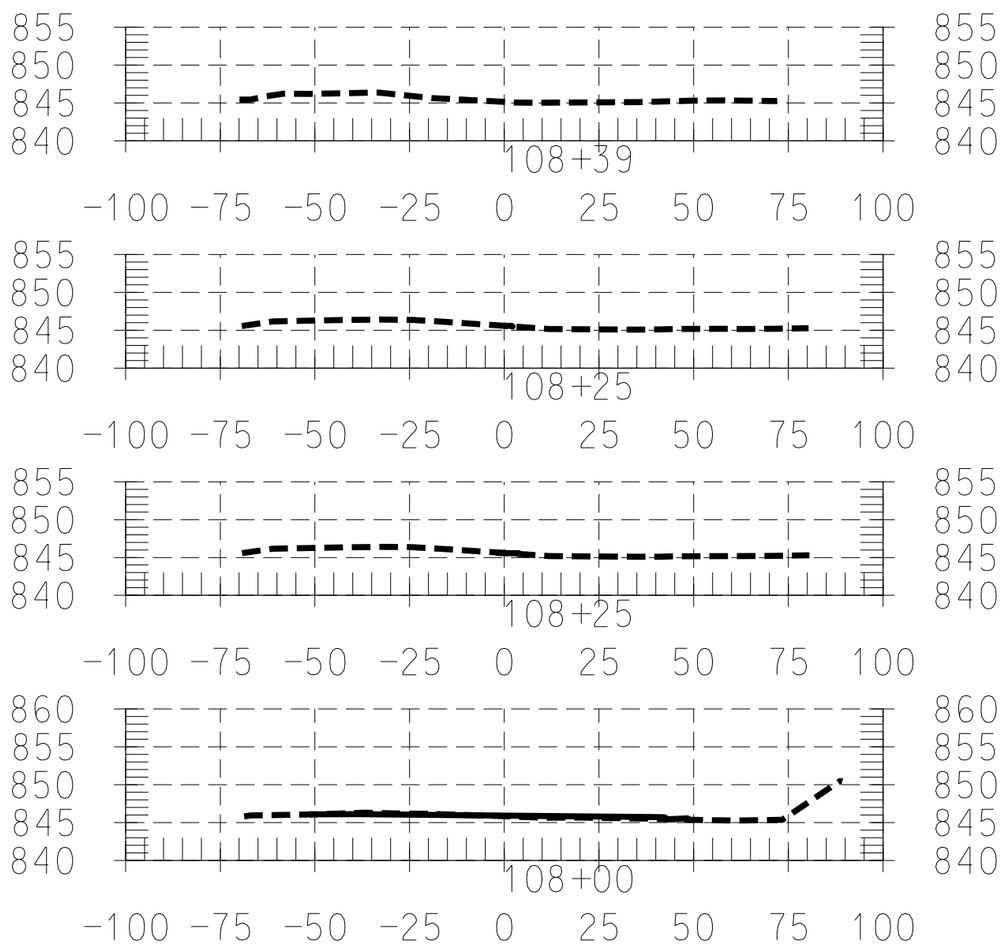
WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016

X.05

12:40:24 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

ROADWAY CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

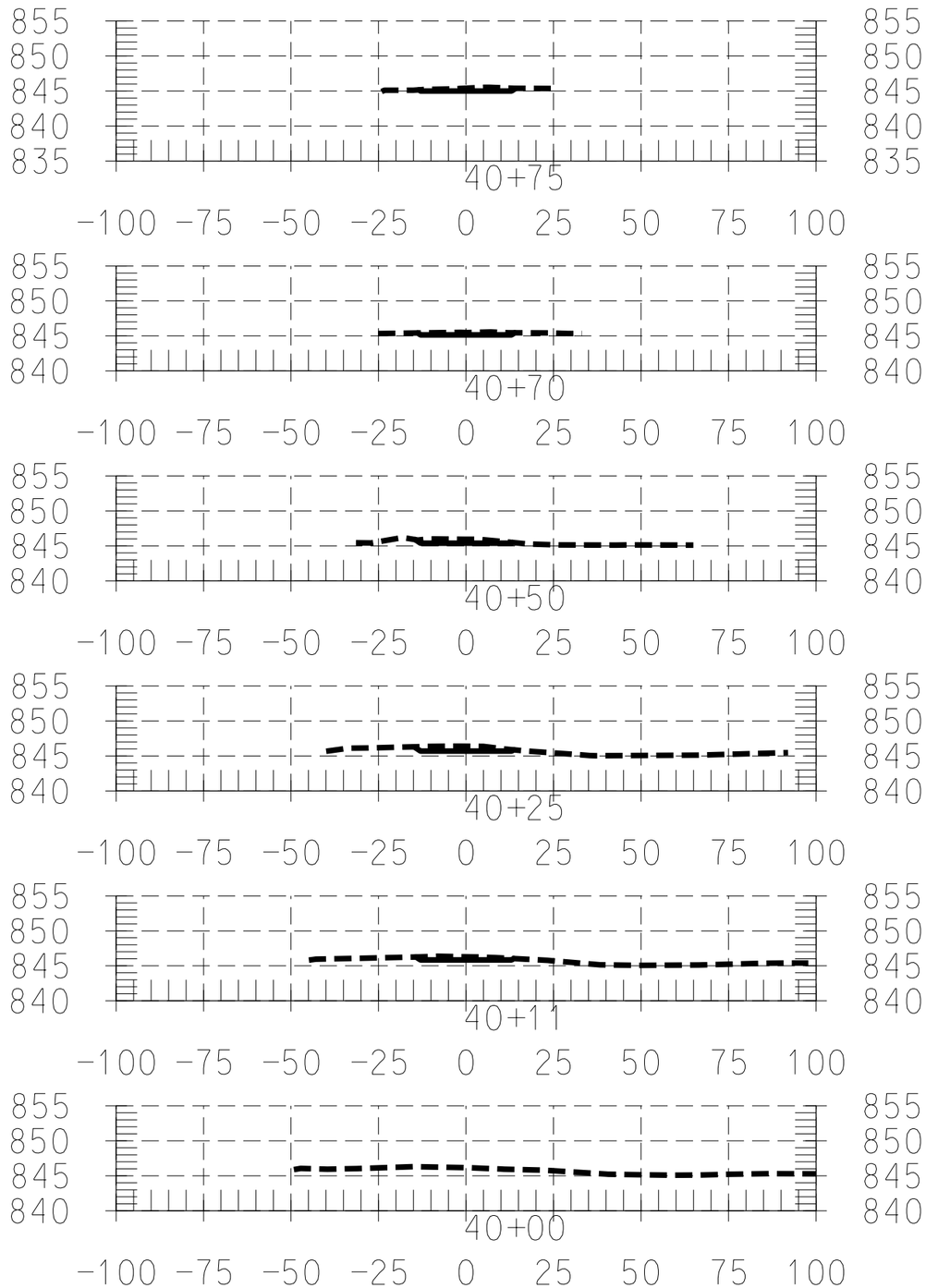
NO.	BY / DATE	REVISION

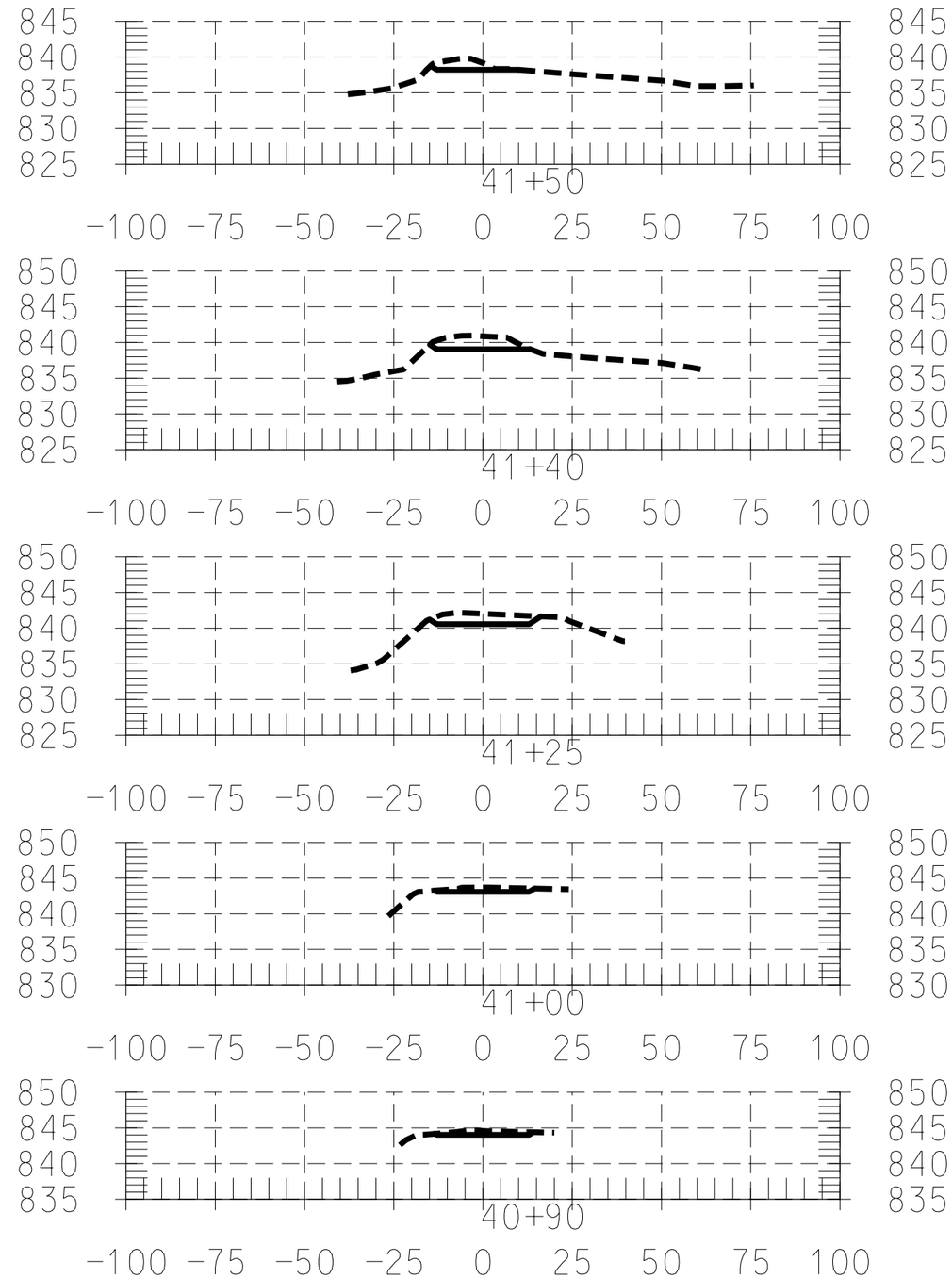
DRAWN BY: PROJECT NUMBER: 16-03-96-01

CHK'D BY: DATE: June 2016

X.06

12:40:35 PM 6/28/2016 maldric N:\Conservation Recreation\Land and Waters\Engineering\PROJECTS\ACTIVE\WINNESHIEK\#16-03-96-01, Bowstring, Canoe access parking lot\02 Design\16-03-96-01 Bowstring Canoe access parking





CONSULTANT:

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

CANOE RAMP CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY: | PROJECT NUMBER: 16-03-96-01

CHK'D BY: | DATE: June 2016

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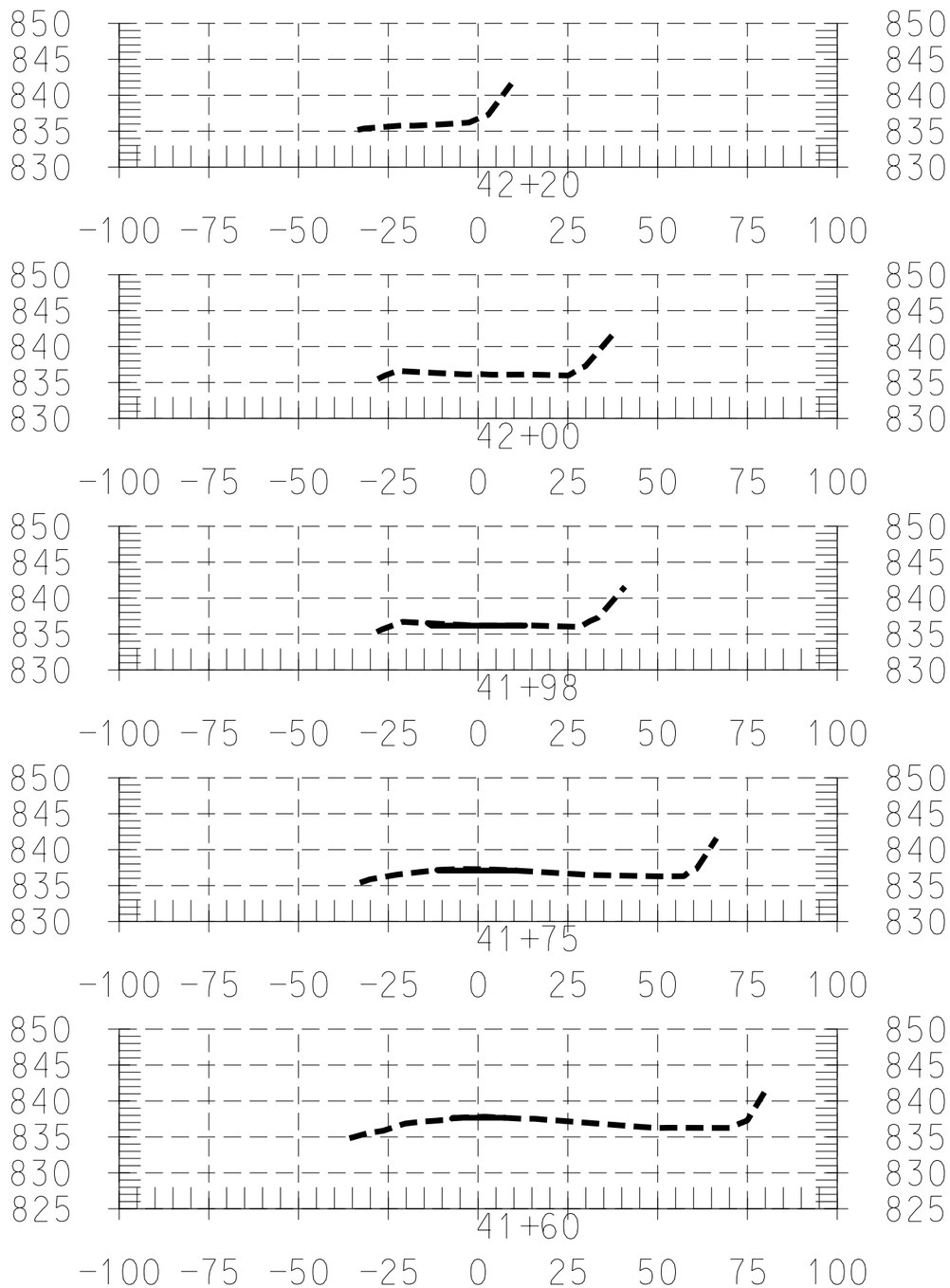

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

CANOE RAMP CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
CHK'D BY:
DATE: June 2016

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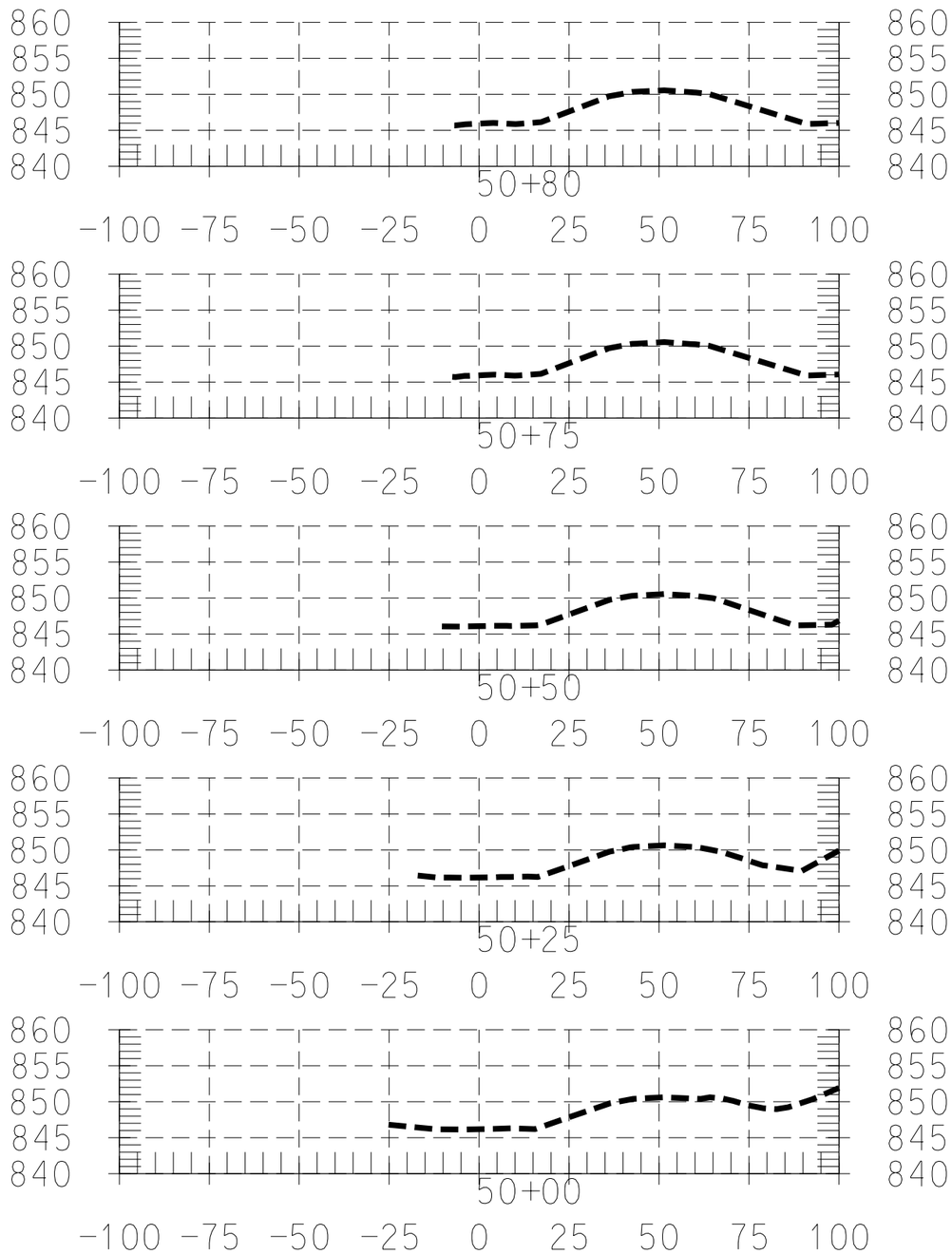

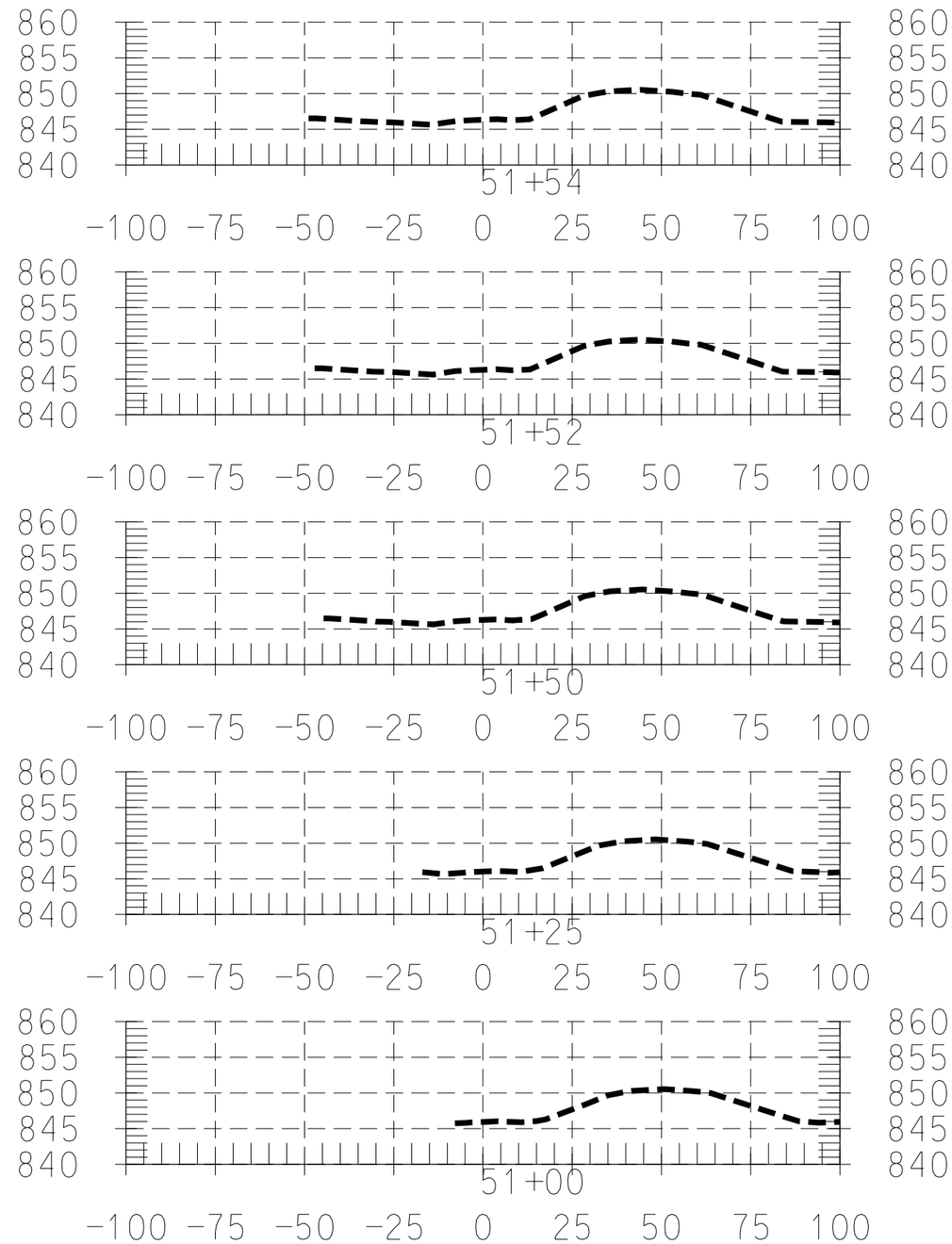

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

TRAIL CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 16-03-96-01
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DATE: June 2016

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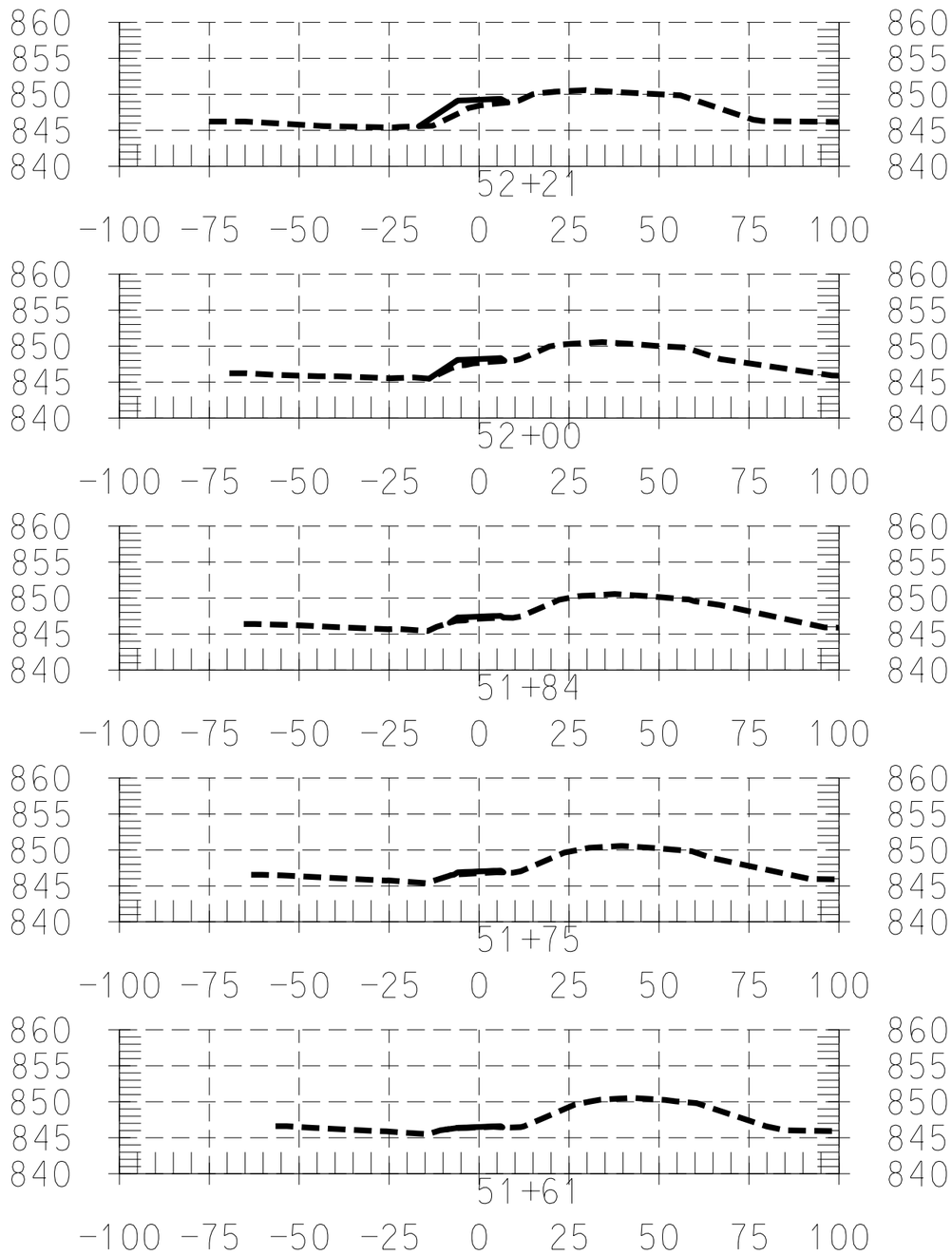

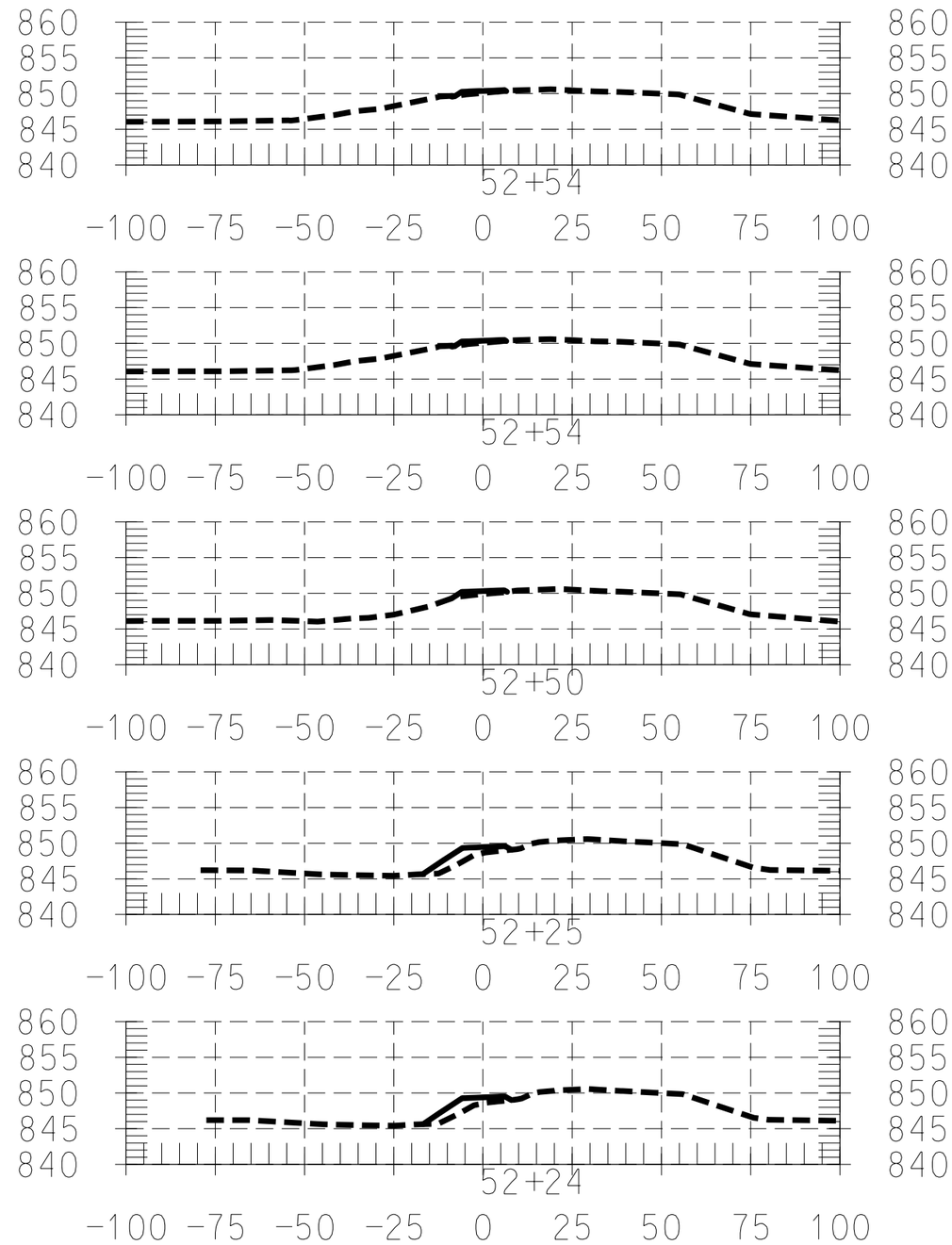

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502 E. 9TH ST., DES MOINES, IA 50319-0034

TRAIL CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

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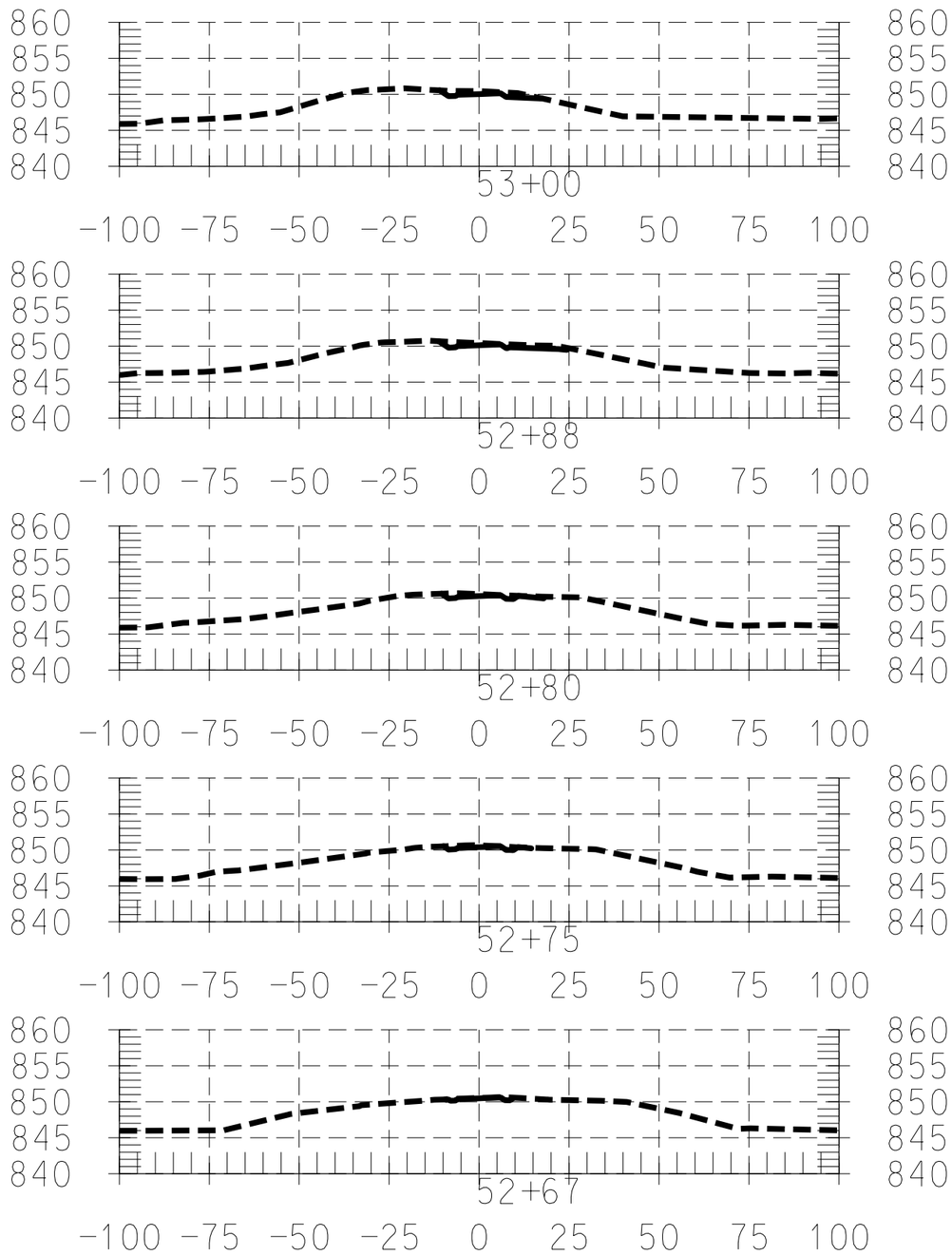

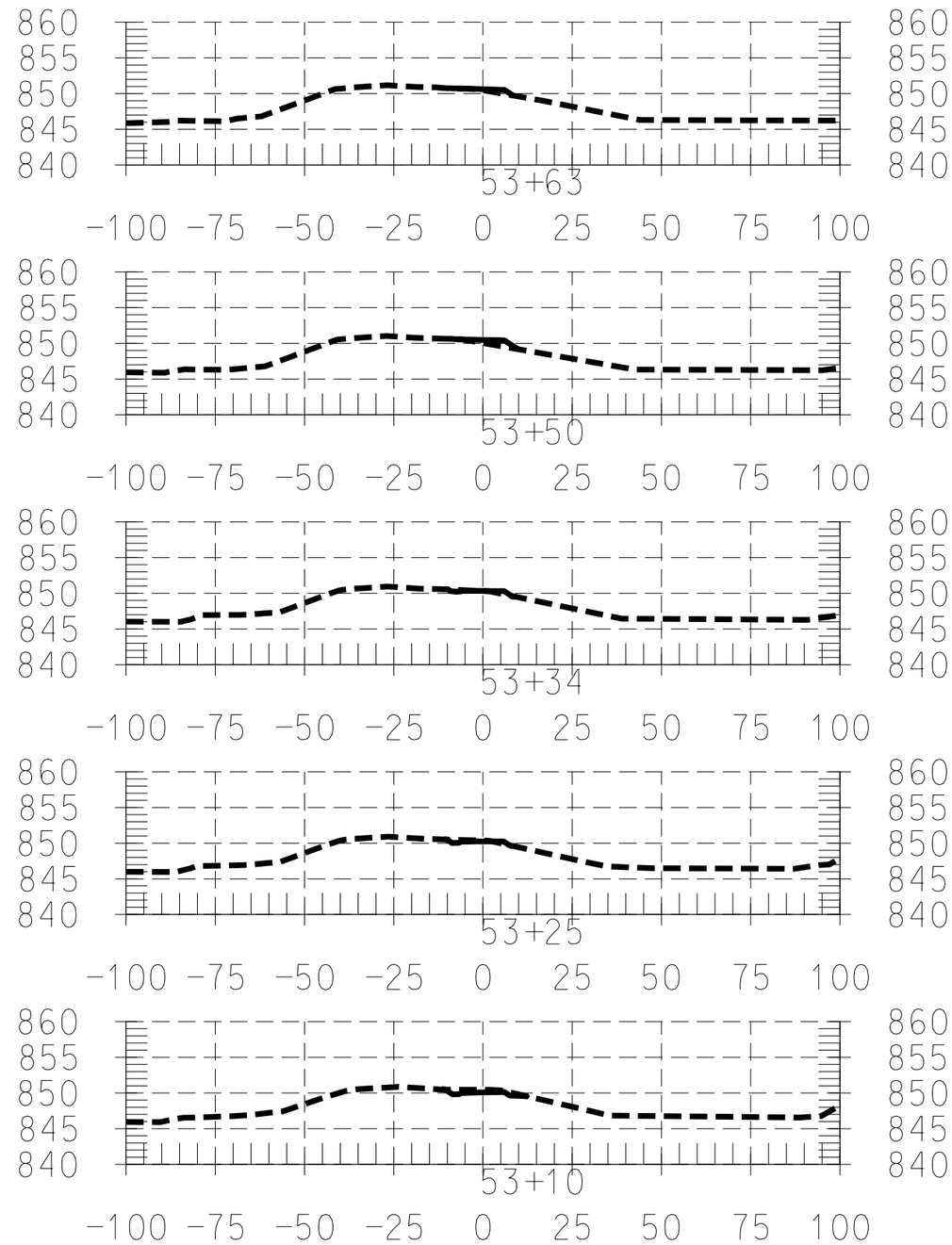

CONSULTANT:

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

TRAIL CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

BOWSTRING BRIDGE CANOE ACCESS

WINNESHIEK COUNTY, IOWA

NO.	BY / DATE	REVISION

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DATE: June 2016

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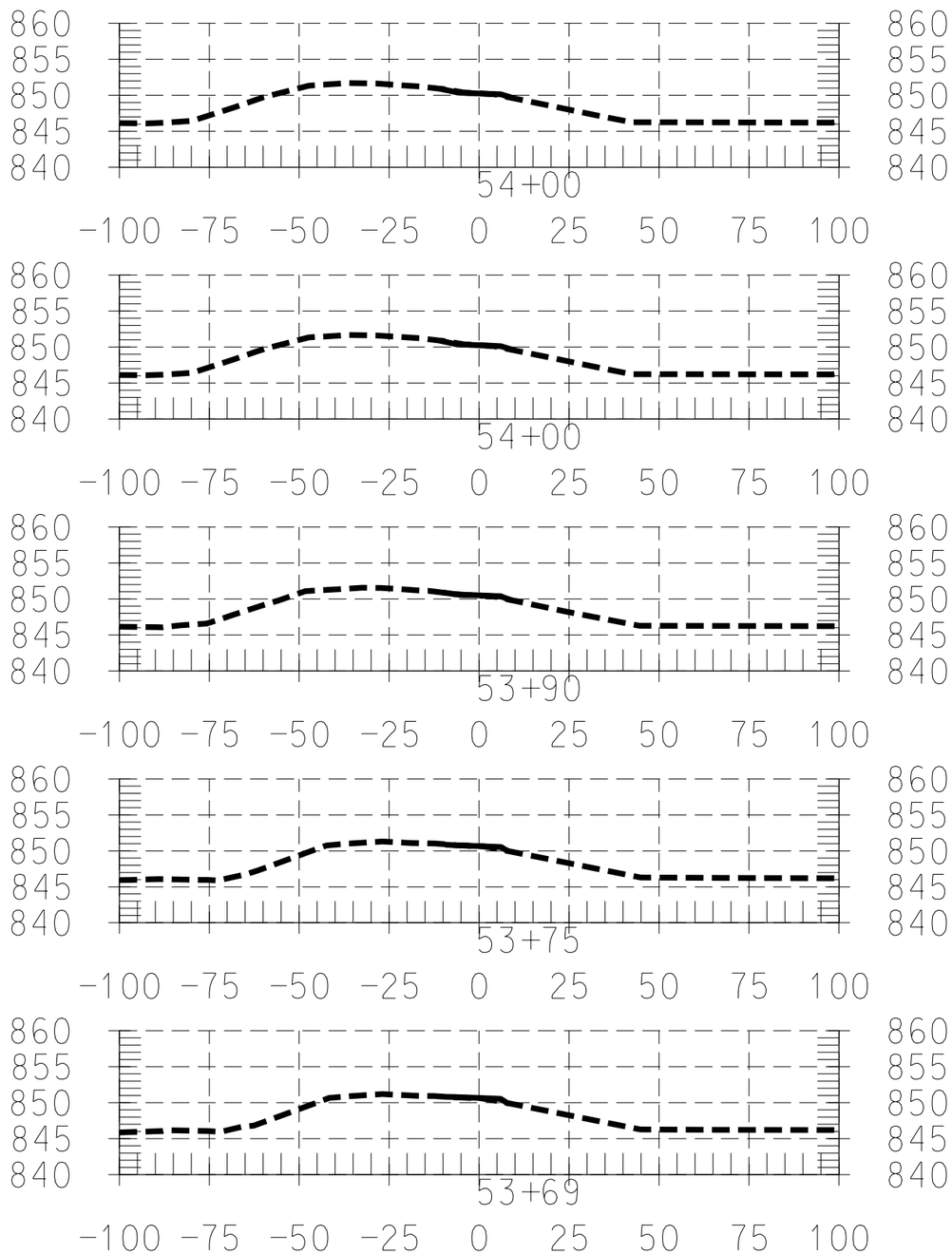

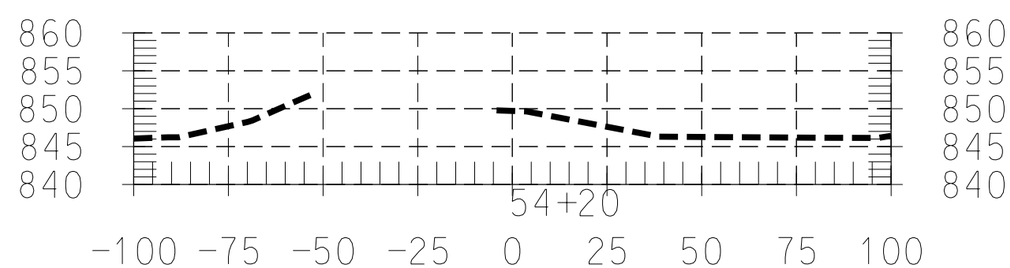

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502 E. 9TH ST., DES MOINES, IA 50319-0034

TRAIL CROSS SECTIONS

CANOE ACCESS AND PARKING LOT FOR:

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