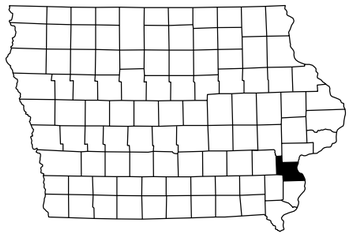
IOWA DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTS FOR ODESSA WMA ROAD MAINTENANCE

LOUISA COUNTY, IOWA

DOT PROJECT #SP-00SP(5)--7C-00
DNR PROJECT #21-06-58-03



LICENSED PROFESSIONAL ENGINEER
BRUCE L. FLIPPIN
19513
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED UNDER MY SUPERVISION AND THAT ENGINEERING DECISIONS WITH REGARD TO THE DESIGN WERE MADE BY ME UNDER THE LAWS OF THE STATE OF IOWA.

Bruce L. Flippin
Digitally signed by Bruce L. Flippin
DN: cn=Bruce L. Flippin, o=Iowa DNR, ou=Engineering Bureau, email=bruce.flippin@dnr.iowa.gov, c=Iowa DNR, OU=Land & Waters - Date: 2022.07.18 09:06:05-05'00'

SIGNATURE DATE

BRUCE L. FLIPPIN
PRINTED OR TYPED NAME

MY LICENCE RENEWAL DATE IS DECEMBER 31, 20 22
PAGES COVERED BY THIS SEAL:

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

DIRECTORY

PROJECT MANAGER		CONSTRUCTION INSPECTOR	
COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES	COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES
ADDRESS	502 EAST 9TH STREET	ADDRESS	
CITY,STATE,ZIP	DES MOINES, IA, 50319	CITY,STATE,ZIP	
CONTACT	BRUCE L. FLIPPIN	CONTACT	MIKE DUFOE
TELEPHONE	515-689-8009	TELEPHONE	515-985-9196
FAX	515-281-8685	FAX	
EMAIL	bruce.flippin@dnr.iowa.gov	EMAIL	michael.dufoe@dnr.iowa.gov

PROJECT DESCRIPTION

This projects consists of granular roadway maintenance - blading/shaping, spreading new rock and the replacement of 5 culverts; 24-inch, 30-inch and 36-inch. All new culverts are RCP.

There is currently a project in place to repair the Odessa levees which will have significant truck traffic. The Contractor shall not start work until after the levee work is completed, anticipated to be September 30, 2022.

No work may occur between October 28, 2022 and March 14, 2023 due to hunting seasons.

Due to fluctuating river and lake levees there may be sitting water in culverts. These are typically dry from August to October. If the contractor chooses to replace the culverts during high water levels, de-watering shall be required and incidental to the culvert installation.

AUTHORIZATION TO BID

Karen Kinkead
Digitally signed by Karen Kinkead
Date: 2022.07.19 14:51:08 -05'00'

AUTHORIZATION - PARKS | WILDLIFE | FISHERIES | LAW ENFORCEMENT | FORESTRY DATE

Travis Baker
Digitally signed by Travis Baker
Date: 2022.07.19 14:57:56 -05'00'

ENGINEERING BUREAU CHIEF DATE

SHEET INDEX

CONSULTANT:

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

COVER SHEET

ROAD MAINTENANCE FOR: ODESSA WMA

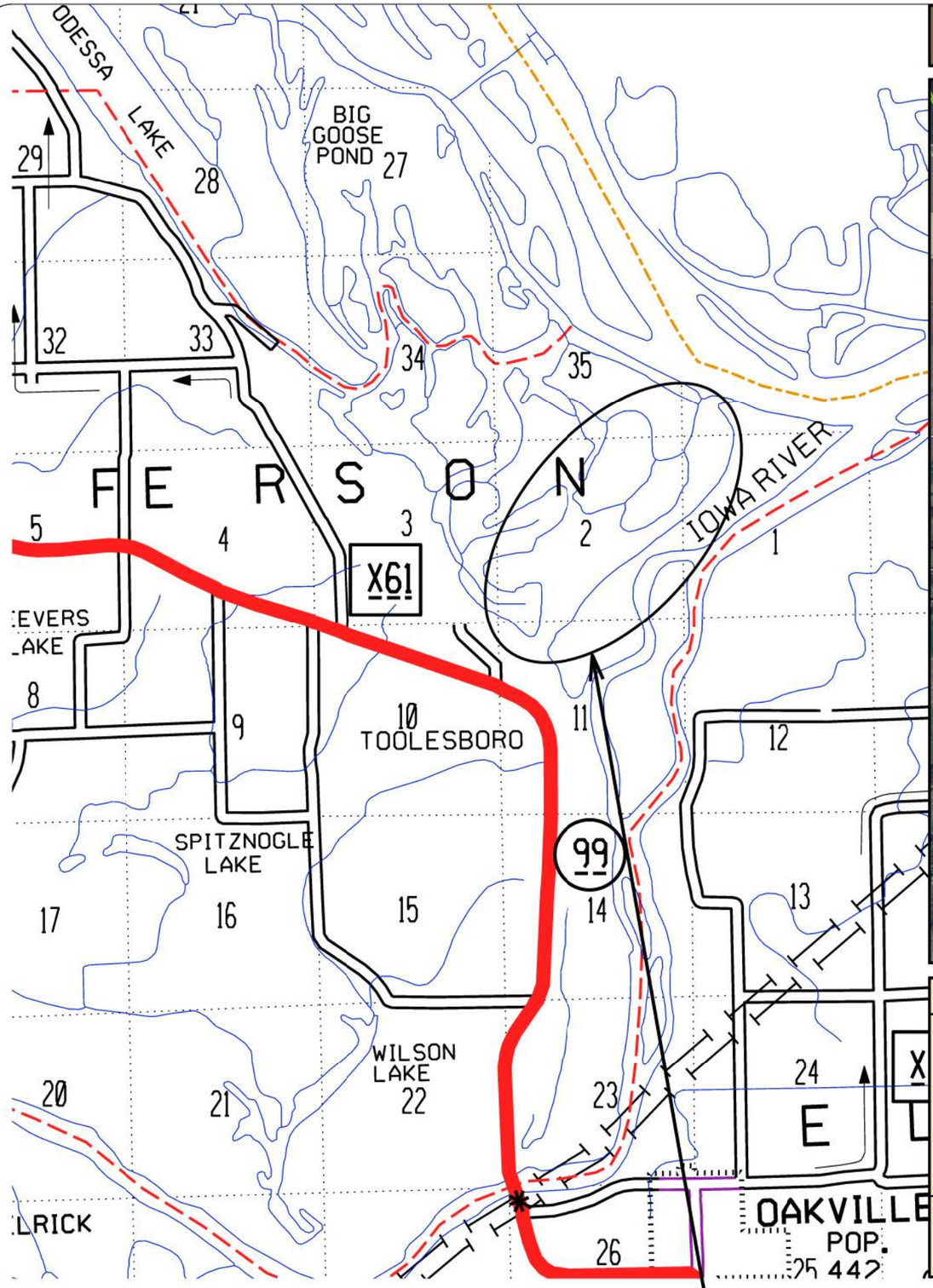
LOUISA COUNTY

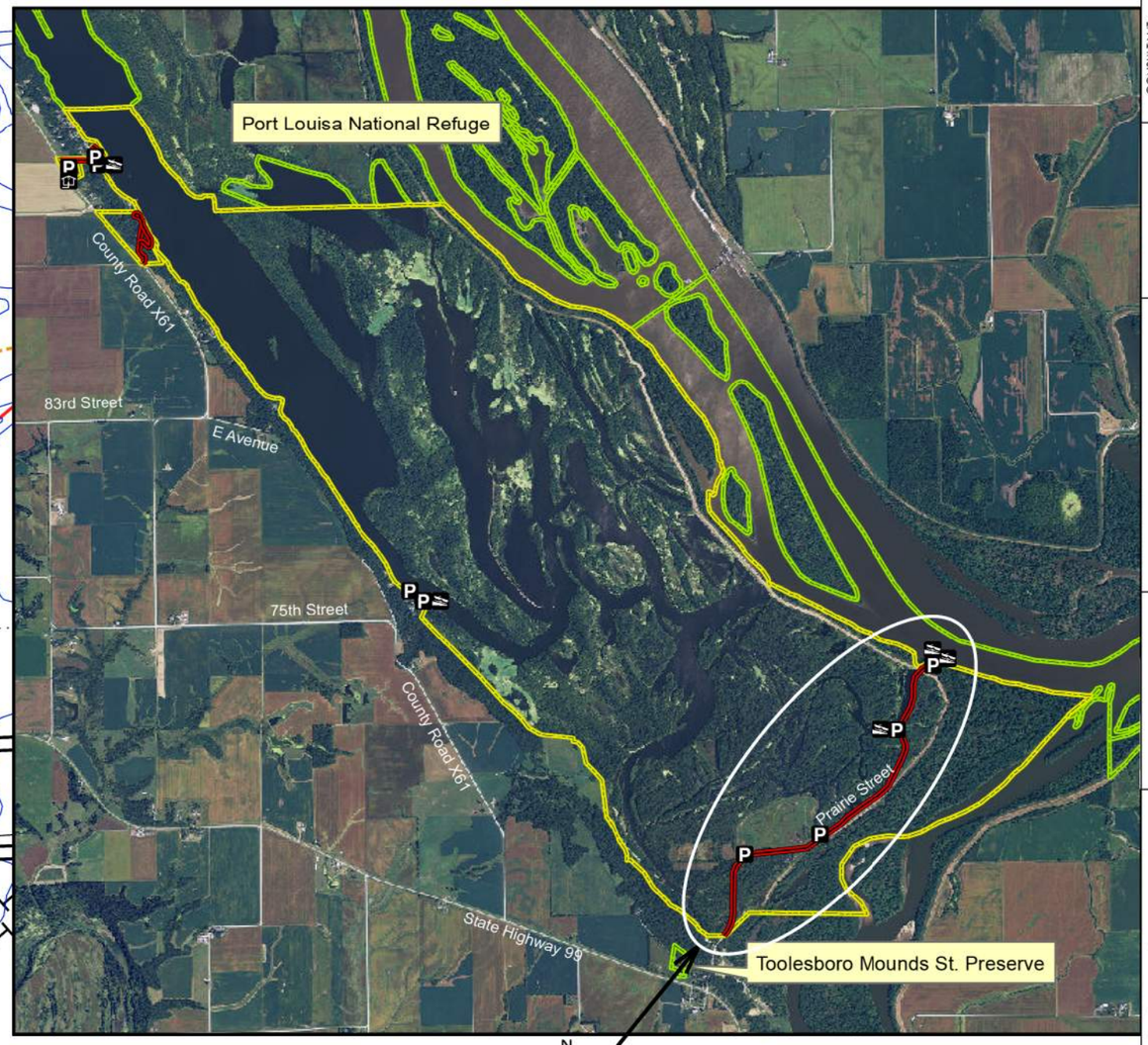
NO.	BY	DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHK'D BY:
DATE: JULY 2022

SHEET No: A.01

Odessa Wildlife Management Area





Legend

State Areas open to hunting
- WMA Boundary
- Unit Headquarters
- Parking Lot
- Boat Ramp
- Access Road
- Other Public Land

2010 Aerial Photography

Map Creation Date: 5/2012

N

Miles 0 0.25 0.5

Acres: 4,139

Habitat: 1/2 Timber, 1/4 Lake, 1/4 Marsh

Species: Deer, Turkey, Squirrel, Waterfowl

Contact: Andy Robbins
Odessa Wildlife Unit
319-551-8459

Louisa County, Iowa
T-73&74N, R-02W,
Sections 1-3,20-22,26-29,33-36

Directions: 0.5 mile E of Wapello on Hwy 99. 3.5 miles NE on G62. 0.25 mile N on X61.

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PROJECT LOCATION MAP

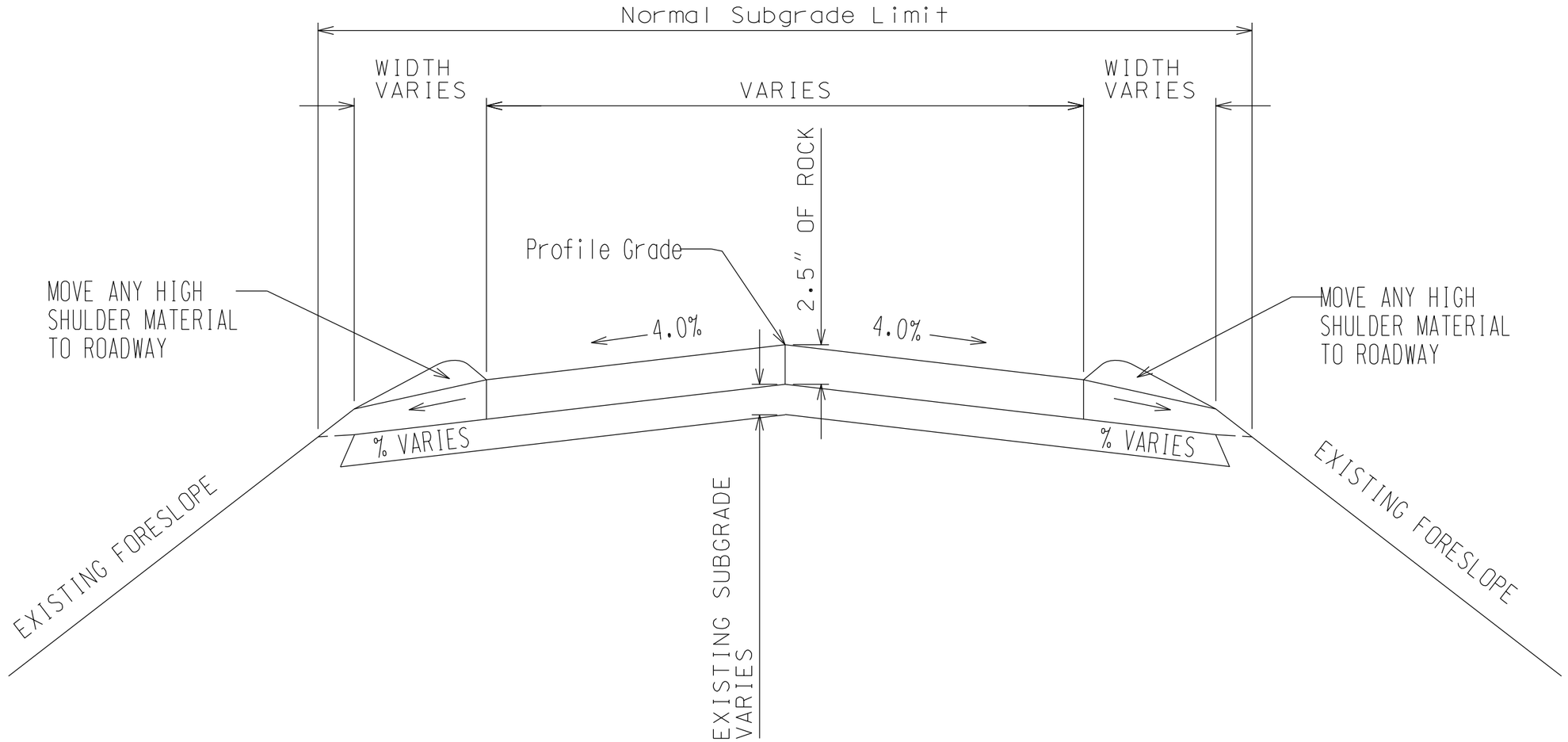
ROAD MAINTENANCE FOR: ODESSA WMA

LOUISA COUNTY

NO.	BY	DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHKD BY:
DATE: JULY 2022

SHEET No: **A.02**



Typical Roadway Section - Center Crown

Note:

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer.

STATION	TO STATION	LOCATION	WIDTH
0+00	95+35	HEADING NE	16'

CONSULTANT:

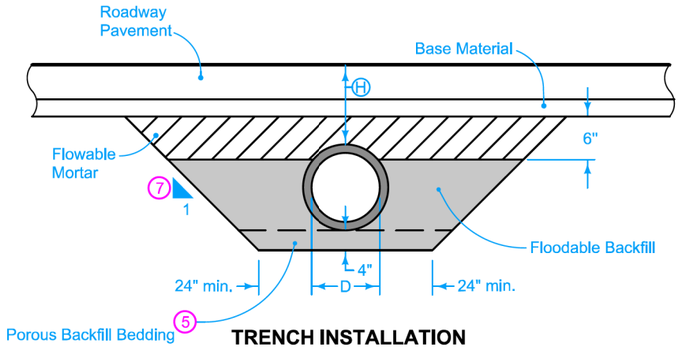
IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

TYPICAL CROSS SECTIONS AND DETAILS

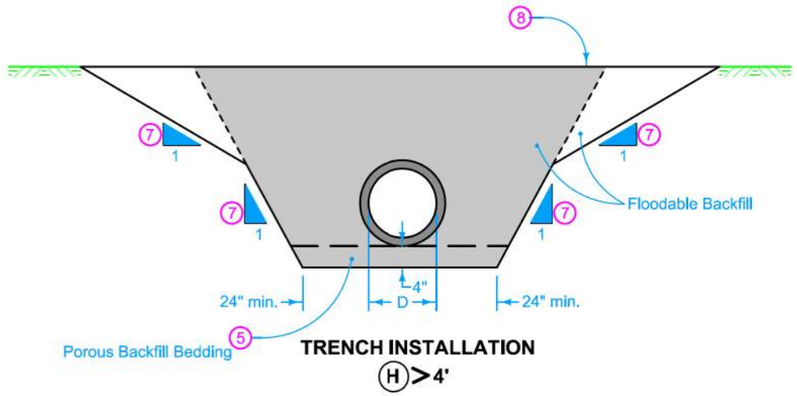
ROAD MAINTENANCE FOR:
ODESSA WMA
LOUISA COUNTY

NO.	BY / DATE	REVISION

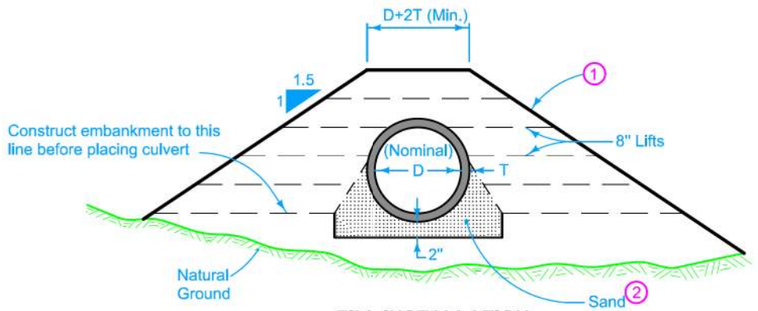
DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHK'D BY:
DATE: JULY 2022
SHEET No:
B.01



TRENCH INSTALLATION
Ⓗ≤4'



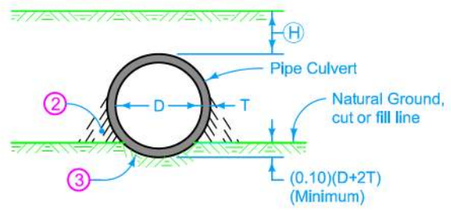
TRENCH INSTALLATION
Ⓗ>4'



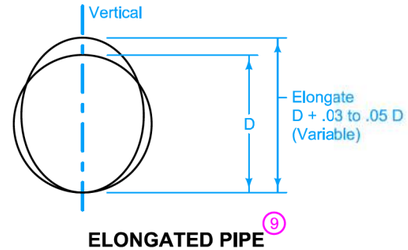
FILL INSTALLATION
(FOR RIGID PIPES ONLY)

CLASS 'B' BEDDING & BACKFILL (4)

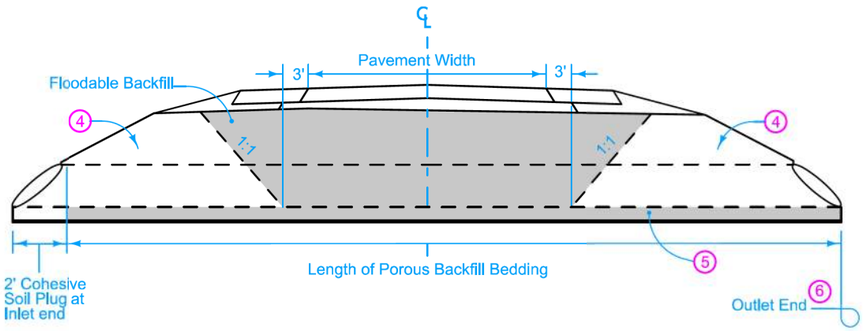
Denotes pay limits for flooded backfill



CLASS 'C' BEDDING & BACKFILL



ELONGATED PIPE (9)



TYPICAL SECTION - SOIL PLUG

Refer to DR-104 for minimum and maximum allowable cover Ⓗ for the particular kind of pipe culvert.

1. The backfill adjacent to and above the pipe culvert may be placed in conjunction with normal embankment construction. Thoroughly tamp the embankment within the limits shown.
2. Take extra care to ensure complete and satisfactory tamping of backfill material in the area immediately adjacent to the lower portion of pipe.
3. Carefully shape excavation below groundline either using a template conforming to actual dimension and shape of the pipe or using other means. If using other means, check with a template conforming to the actual dimension and shape of the pipe.
4. For culverts backfilled by flooding, place a cohesive soil plug at the inlet, outlet, and, when necessary, sides, prior to flooding.
5. 4-inch Porous Backfill bedding. 2-inch Floodable Backfill bedding may be used under unsealed rigid pipe.
6. Extend Porous Backfill through the outlet end soil plug when used for bedding.
7. Quantity calculations are based upon a 1:1 slope and minimum trench dimension. Actual slope of trench may vary based upon Contractor's operations.
8. Ground Line at time of pipe installation. When existing ground exceeds 5 feet depth over pipe, backfill and compaction by flooding is not required more than 5 feet above the pipe.
9. Where a corrugated metal pipe culvert requiring elongation is to be installed (to counteract deformation caused by backfill), complete elongation using a means approved by the Engineer. Elongation may be developed either as part of shop fabrication or field installation. Install with elongated axis vertical.

Possible Contract Items:
Flowable Mortar
Flooded Backfill
Excavation, Class 20

Possible Tabulations:
104-3
104-4

IOWA DOT

REVISION 2 04-18-17

STANDARD ROAD PLAN

DR-101

SHEET 1 of 1

REVISIONS: Changed "Porous Backfill" to "Porous Backfill Bedding" for clarity. Modified trench installation detail for H>4' to clarify pay limits.

Brian Smith
APPROVED BY DESIGN METHODS ENGINEER

PIPE CULVERT (BEDDING AND BACKFILL)

CONSULTANT:

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

TYPICAL CROSS SECTIONS AND DETAILS

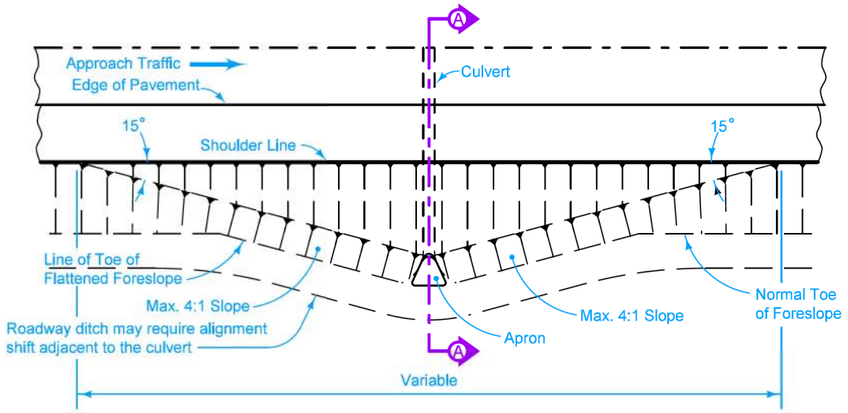
ROAD MAINTENANCE FOR: ODESSA WMA

LOUISA COUNTY

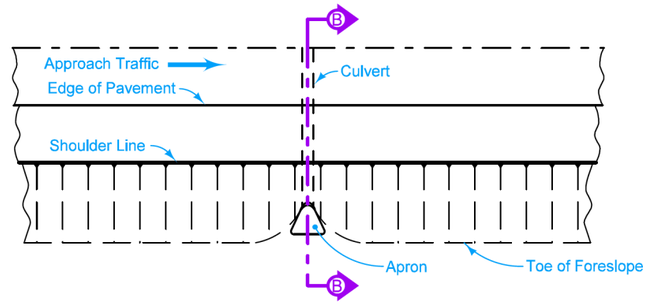
NO.	BY / DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHK'D BY:
DATE: JULY 2022

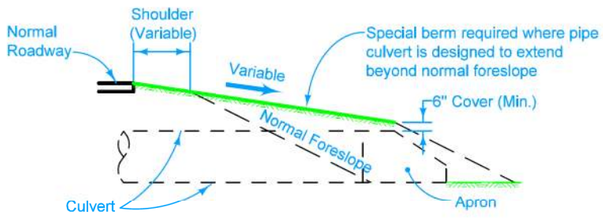
SHEET No: **B.02**



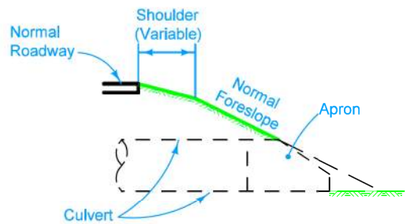
TYPICAL INSTALLATION PLAN
WHERE SPECIAL BERM IS REQUIRED



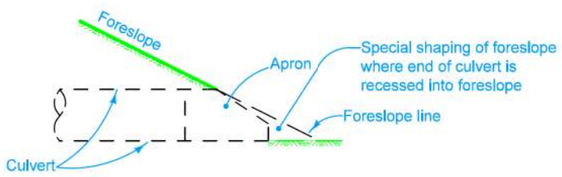
TYPICAL INSTALLATION PLAN
WHERE CULVERT MATCHES NORMAL FORESLOPE



SECTION A-A



SECTION B-B



DETAIL OF SHAPING EARTH FORESLOPE
AT CULVERT END

IOWA DOT

STANDARD ROAD PLAN

REVISION: New 04-21-15

DR-103

SHEET 1 of 1

REVISIONS: New. Replaces RF-30C.

Brian Smith
APPROVED BY DESIGN METHODS ENGINEER

PIPE CULVERT
(INSTALLATION DETAILS)

CONSULTANT:

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

DNR

TYPICAL CROSS SECTIONS AND DETAILS

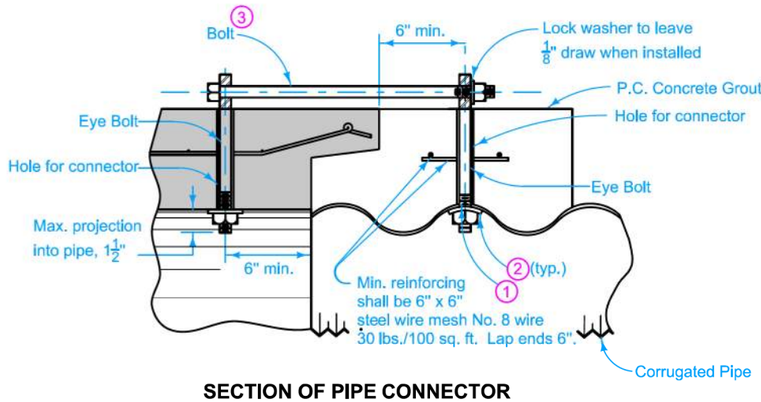
ROAD MAINTENANCE FOR:
ODESSA WMA

LOUISA COUNTY

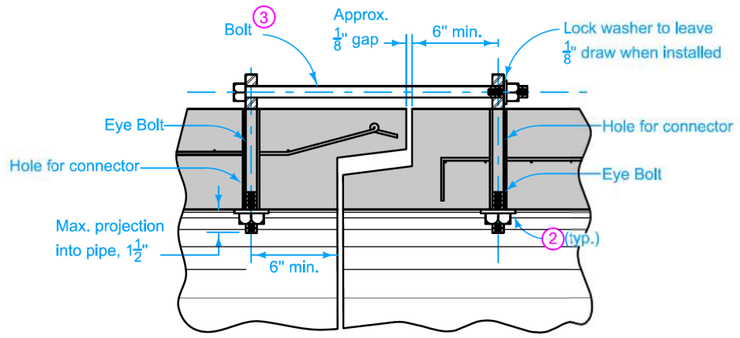
NO.	BY / DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHK'D BY:
DATE: JULY 2022

SHEET No:
B.03



SECTION OF PIPE CONNECTOR
(Concrete Pipe to Corrugated Pipe)



SECTION OF PIPE CONNECTOR
(Concrete Pipe to Concrete Pipe)

Wrap all joints on concrete roadway pipe culverts.

Use Type 3 Connections on all culvert pipes, unless specified otherwise. Refer to Materials I.M. 445.01 for Connector requirements.

Minimum 2 threads showing at all threaded ends.

Connections not required on pipe sections installed by trenchless methods.

For belled concrete pipe joints, connectors may be installed on the inside of the pipe.

TYPE 1

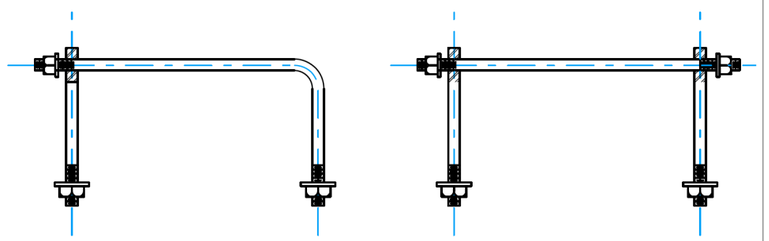
One connector at the top of the pipe section.

TYPE 2 (Sealed Joint)

Two connectors near the top of the pipe section. For details of reinforcement, refer to AASHTO M 170 for the class of pipe required. Refer to Materials I.M. 491.09 for seal requirements.

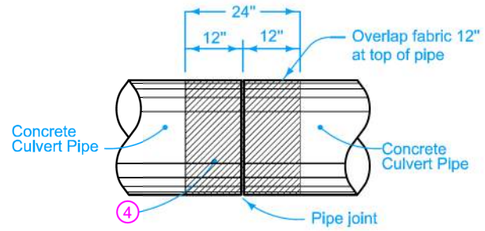
TYPE 3 (Non - Sealed Joint)

Two connectors near the top of the pipe section. For details of reinforcement, refer to AASHTO M 170 for the class of pipe required.



ONE BEND END **THREADED AT BOTH ENDS**

OPTIONAL BOLTS/CONNECTORS

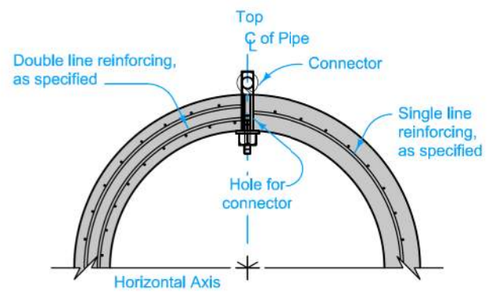


PIPE JOINT WRAPPING

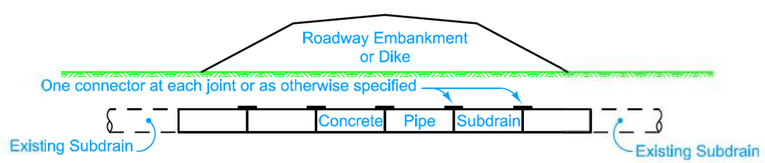
PIPE SIZE (in)	CONNECTOR AND BOLT SIZE (in.)	HOLE FOR CONNECTOR (in.)
12 to 27	5/8	7/8
30 to 60	3/4	1.0
66 to 132	1.0	1 1/4

1. If holes are field drilled, place a ribbon of butyl sealant around bolts before placing 3 in. x 3 in. x 1/4 in. plate on bolts through corrugated metal pipe and tightening nuts.
2. 1 3/4 inch round x 9/64 inch thick washer or 3 in. x 3 in. x 1/4 in. square plate (shaped to pipe radius).
3. Connectors with One Bend End and Bell End spacers allowed per Materials I.M. 451. Refer to Optional Bolts detail.
4. Engineering fabric for embankment erosion control.

Possible Tabulations:
104-3
104-5B



TYPICAL SECTION
(Non-Sealed Joint)



TYPICAL INSTALLATION

TYPE 1 CONNECTION

IOWADOT

STANDARD ROAD PLAN

REVISION 3 10-17-17

DR-121

SHEET 1 of 2

REVISIONS: Added 104-5B to Possible Tabulations. Added Type 3 connection to storm sewer outlet.

Brian Smith
APPROVED BY DESIGN METHODS ENGINEER

CONNECTED PIPE JOINTS

CONSULTANT:

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

DNR

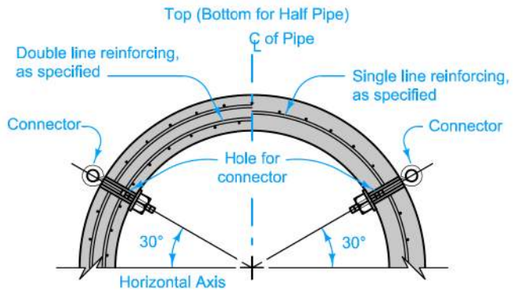
TYPICAL CROSS SECTIONS AND DETAILS

ROAD MAINTENANCE FOR:
ODESSA WMA
LOUISA COUNTY

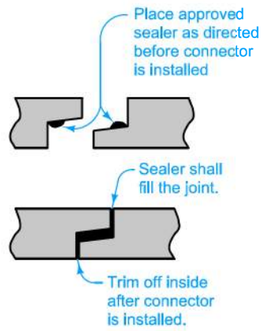
NO.	BY DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHK'D BY:
DATE: JULY 2022

SHEET No:
B.04

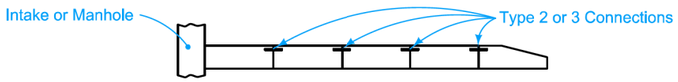


TYPICAL SECTION
TYPE 2 CONNECTION
TYPE 3 CONNECTION

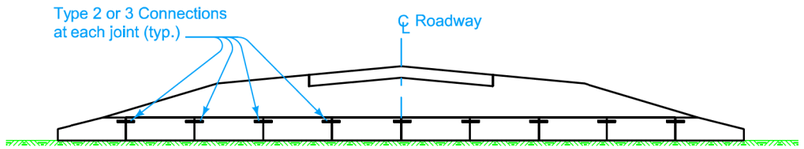


SEALED JOINT
TYPE 2 CONNECTION

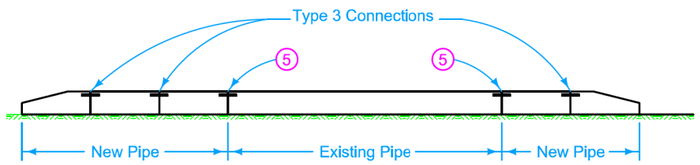
(5) On culvert extensions, connect all new joints including the joint between the old and new culvert pipe. Holes may need to be drilled into existing pipes.



TYPICAL INSTALLATION
STORM SEWER OUTLET - TYPE 2 OR TYPE 3 CONNECTION



TYPICAL INSTALLATION
NEW CONSTRUCTION - TYPE 2 or 3 CONNECTION



TYPICAL INSTALLATION
PIPE EXTENSION - TYPE 3 CONNECTION

TYPE 2 AND TYPE 3 CONNECTIONS

IOWA DOT
STANDARD ROAD PLAN

REVISION
3 | 10-17-17

DR-121
SHEET 2 of 2

REVISIONS: Added 104-5B to Possible Tabulations. Added Type 3 connection to storm sewer outlet.

Brian Smith
APPROVED BY DESIGN METHODS ENGINEER

CONNECTED PIPE JOINTS

CONSULTANT:

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

TYPICAL CROSS SECTIONS AND DETAILS

ROAD MAINTENANCE FOR:
ODESSA WMA

LOUISA COUNTY

NO.	BY DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHK'D BY:
DATE: JULY 2022

SHEET No:
B.05

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
1	2101 - CLEARING	LS	1
2	2102 - SPECIAL BACKFILL	TON	128
3	2125 - RESHAPING DITCHES	STA	23
4	2127 - RECONSTRUCTION OF ROADBED - BLADING/SHAPING	STA	95.4
5	2312 - GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	TON	2225
6	2416 - APRON, CONC, 24"	EACH	2
7	2416 - APRON, CONC, 30"	EACH	4
8	2416 - APRON, CONC, 36"	EACH	4
9	2416 - CULV, CONC RDWY PIPE, 24"	LF	32
10	2416 - CULV, CONC RDWY PIPE, 30"	LF	64
11	2416 - CULV, CONC RDWY PIPE, 36"	LF	48
12	2507 - ENGINEERING FABRIC	SY	450
13	2507 - REVETMENT, CLASS E	TON	15
14	2507 - EROSION STONE	TON	100
15	2518 - SAFETY CLOSURE	EACH	1
16	2528 - TRAFFIC CONTROL	LS	1
17	2533 - MOBILIZATION	LS	1

ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
1	A. This item is for the removal of any trees/brush encountered at the culvert inlet/outlet locations. B. Remove any trees/brush from project location.
2	A. Use for pipe bedding. B. Plug each end of RCP with soil to prevent piping.
3	A. Clean indicated ditch for positive flow towards nearest culvert. B. New ditch may be from 1-3 feet deep, and 2-4 feet wide. C. Remove spoil for project location. D. Actual limits will be marked by DNR Field Engineer.
4	A. Repair all potholes by scarifying surrounding area to depth of pothole and recompacting. B. Re-establish roadway crown - 4% positive drainage each way from centerline; 4% across the width in banked sections. C. Remove any high shoulder areas, before spreading new rock. D. See sheet B.01 for typical roadway cross section.
5.	A. Spread and roll rock after dumping. B. DOT approved source.
6-11	A. DOT approved source.
12-14	A. Install new RCP at existing flowline. B. Center new pipe with centerline of roadway unless directed otherwise by DNR Field Engineer. C. Use Type 3 connections - double pin and wrap. D. DOT approved source. E. Remove existing pipe from project location.
15	A. Use at at RCP inle/outlet - 45 SY each. B. DOT approved source.
16	A. Place at the direction of DNR Field Engineer. B. RCP locations.
17	A. Use at at RCP inle/outlet - 10 TON each. B. DOT approved source.
18	A. Follow set-up details in IA DOT Specification 2528.

GENERAL NOTES

Verify actual locations and elevations with DNR Engineer.

All work shall conform to and be performed in accordance with all applicable codes and ordinances.

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.

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.

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.

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.

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.

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

The contractor is expected to have materials, equipment, and labor available on a daily basis to install and maintain erosion control features on the project. This may involve seeding, silt fence, rock ditch checks, silt basins or silt dikes.

NO WORK FROM 12 NOON FRIDAYS, UNTIL THE FOLLOWING MONDAY.

There is currently a project in place to repair the Odessa levees which will have significant truck traffic. The Contractor shall not start work until after the levee work is completed, anticipated to be September 30, 2022.

No work may occur between October 28, 2022 and March 14, 2023 due to hunting seasons.

Due to fluctuating river and lake levees there may be sitting water in culverts. These are typically dry from August to October. If the contractor chooses to replace the culverts during high water levels, de-watering shall be required and incidental to the culvert installation.

IMPORTANT SITE CONDITIONS AND DATES

CONSULTANT:

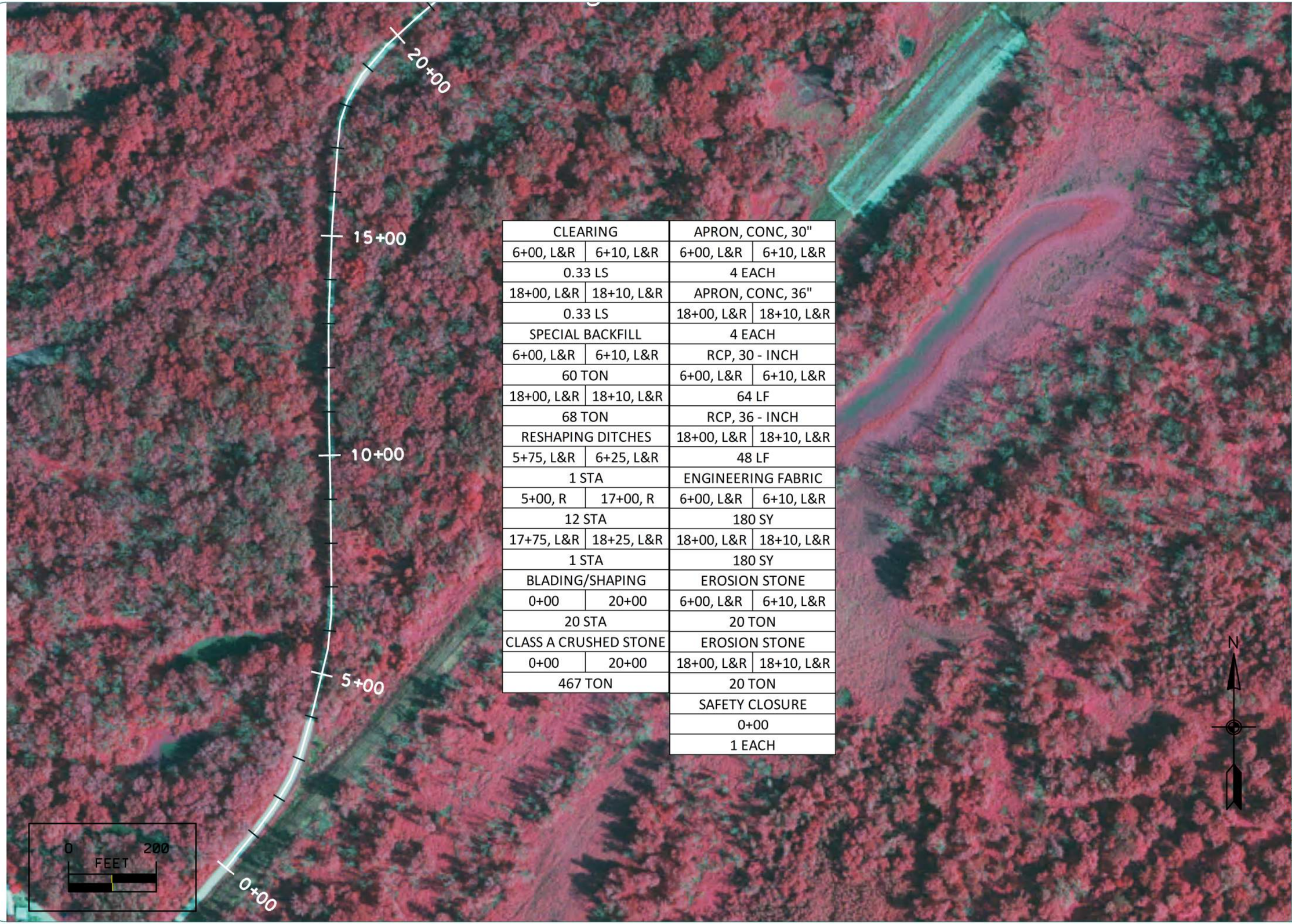
IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

QUANTITIES AND GENERAL INFORMATION

ROAD MAINTENANCE FOR:
ODESSA WMA
LOUISA COUNTY

NO.	BY / DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHK'D BY:
DATE: JULY 2022
SHEET No: C.01



CLEARING	
6+00, L&R	6+10, L&R
0.33 LS	
18+00, L&R	18+10, L&R
0.33 LS	
SPECIAL BACKFILL	
6+00, L&R	6+10, L&R
60 TON	
18+00, L&R	18+10, L&R
68 TON	
RESHAPING DITCHES	
5+75, L&R	6+25, L&R
1 STA	
5+00, R	17+00, R
12 STA	
17+75, L&R	18+25, L&R
1 STA	
BLADING/SHAPING	
0+00	20+00
20 STA	
CLASS A CRUSHED STONE	
0+00	20+00
467 TON	

APRON, CONC, 30"	
6+00, L&R	6+10, L&R
4 EACH	
APRON, CONC, 36"	
18+00, L&R	18+10, L&R
4 EACH	
RCP, 30 - INCH	
6+00, L&R	6+10, L&R
64 LF	
RCP, 36 - INCH	
18+00, L&R	18+10, L&R
48 LF	
ENGINEERING FABRIC	
6+00, L&R	6+10, L&R
180 SY	
18+00, L&R	18+10, L&R
180 SY	
EROSION STONE	
6+00, L&R	6+10, L&R
20 TON	
EROSION STONE	
18+00, L&R	18+10, L&R
20 TON	
SAFETY CLOSURE	
0+00	
1 EACH	

CONSULTANT:

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

SITE PLAN

ROAD MAINTENANCE FOR:
ODESSA WMA

LOUISA COUNTY

NO	BY / DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHKD BY:
DATE: JULY 2022
SHEET No:
D.01

RESHAPING DITCHES	
36+00, R	41+00, R
5 STA	
BLADING/SHAPING	
20+00	45+00
25 STA	
CLASS A CRUSHED STONE	
20+00	45+00
583 TON	

20+00
25+00
30+00
35+00
40+00
45+00

N

0 200
FEET

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

SITE PLAN

ROAD MAINTENANCE FOR:
ODESSA WMA

LOUISA COUNTY

NO.	BY DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHK'D BY:
DATE: JULY 2022
SHEET No: D.02

BLADING/SHAPING	
45+00	70+00
25 STA	
CLASS A CRUSHED STONE	
20+00	45+00
583 TON	

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

DNR

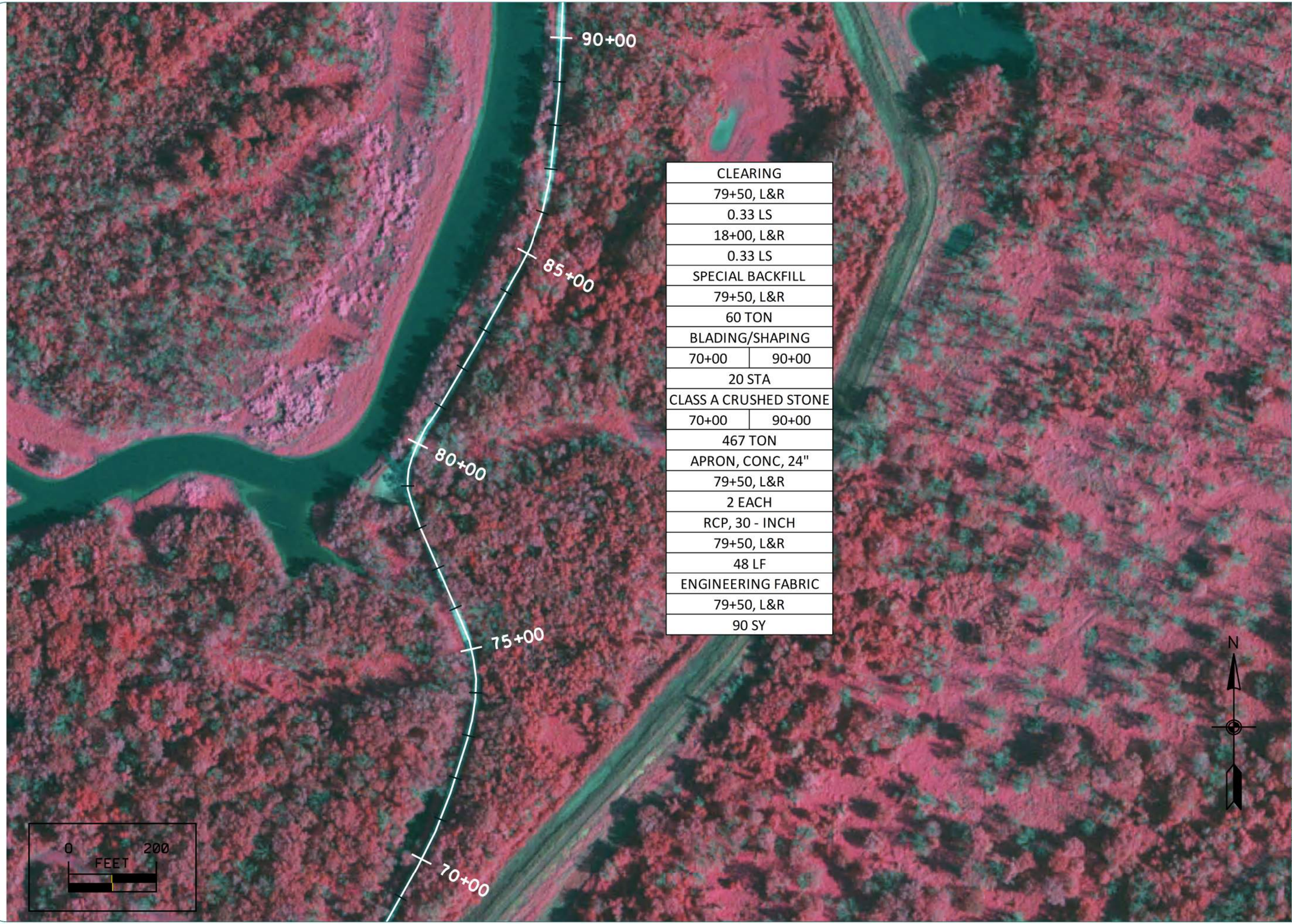
SITE PLAN

ROAD MAINTENANCE FOR:
ODESSA WMA

LOUISA COUNTY

NO	BY / DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHK'D BY:
DATE: JULY 2022
SHEET No: D.03



CLEARING	
79+50, L&R	
0.33 LS	
18+00, L&R	
0.33 LS	
SPECIAL BACKFILL	
79+50, L&R	
60 TON	
BLADING/SHAPING	
70+00	90+00
20 STA	
CLASS A CRUSHED STONE	
70+00	90+00
467 TON	
APRON, CONC, 24"	
79+50, L&R	
2 EACH	
RCP, 30 - INCH	
79+50, L&R	
48 LF	
ENGINEERING FABRIC	
79+50, L&R	
90 SY	

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

SITE PLAN

ROAD MAINTENANCE FOR:
ODESSA WMA

LOUISA COUNTY

NO.	BY DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHK'D BY:
DATE: JULY 2022
SHEET No:

D.04

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

SITE PLAN

ROAD MAINTENANCE FOR:
ODESSA WMA

LOUISA COUNTY

NO	BY / DATE	REVISION

DRAWN BY: BLF
PROJECT NUMBER: 21-06-58-03
CHK'D BY:
DATE: JULY 2022
SHEET No:

D.05