IOWA DEPARTMENT OF NATURAL RESOURCES

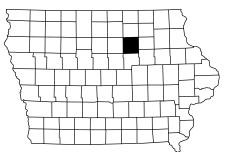
CONSTRUCTION DOCUMENTS FOR SHELL ROCK BEND WMA ROAD MAINTENANCE

BUTLER COUNTY, IOWA

DOT PROJECT #SP-00SP(3)--7C-00 DNR PROJECT #20-03-12-03



	ENGINEERING DOCUMENT WAS VISION AND THAT ENGINEERING
DECISIONS WITH REGARD TO	THE DESIGN WERE MADE BY ME
UNDER THE LAWS OF THE STA	TE OF IOWA.
Bruce L. Flippin	Digitally signed by Bruce L. Rippin DN: C-US, B-Bruce Ripping fore lows gov, C-lows DNR, OU-Land S Waters - Engineering Bureau, CN-Bruce L. Rippin
Didce L. I lippin	Date: 2023.08.23 (0.20.57-0500)
SIGNATURE	Date: 2023.00.23 10:20:57-0500*
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BRUCE L, FLIPPIN	Date: 2023.08.23 (0:28:57-0500)
BRUCE L, FLIPPIN PRINTED OR TYPED NAME	DATE
BRUCE L, FLIPPIN	DATE



PROJECT DESCRIPTION
project consists of granular roadway maintenance - blading/shaping, spreading new rock, cleaning, shoulder work, the replacement of one culvert and the installation of one new

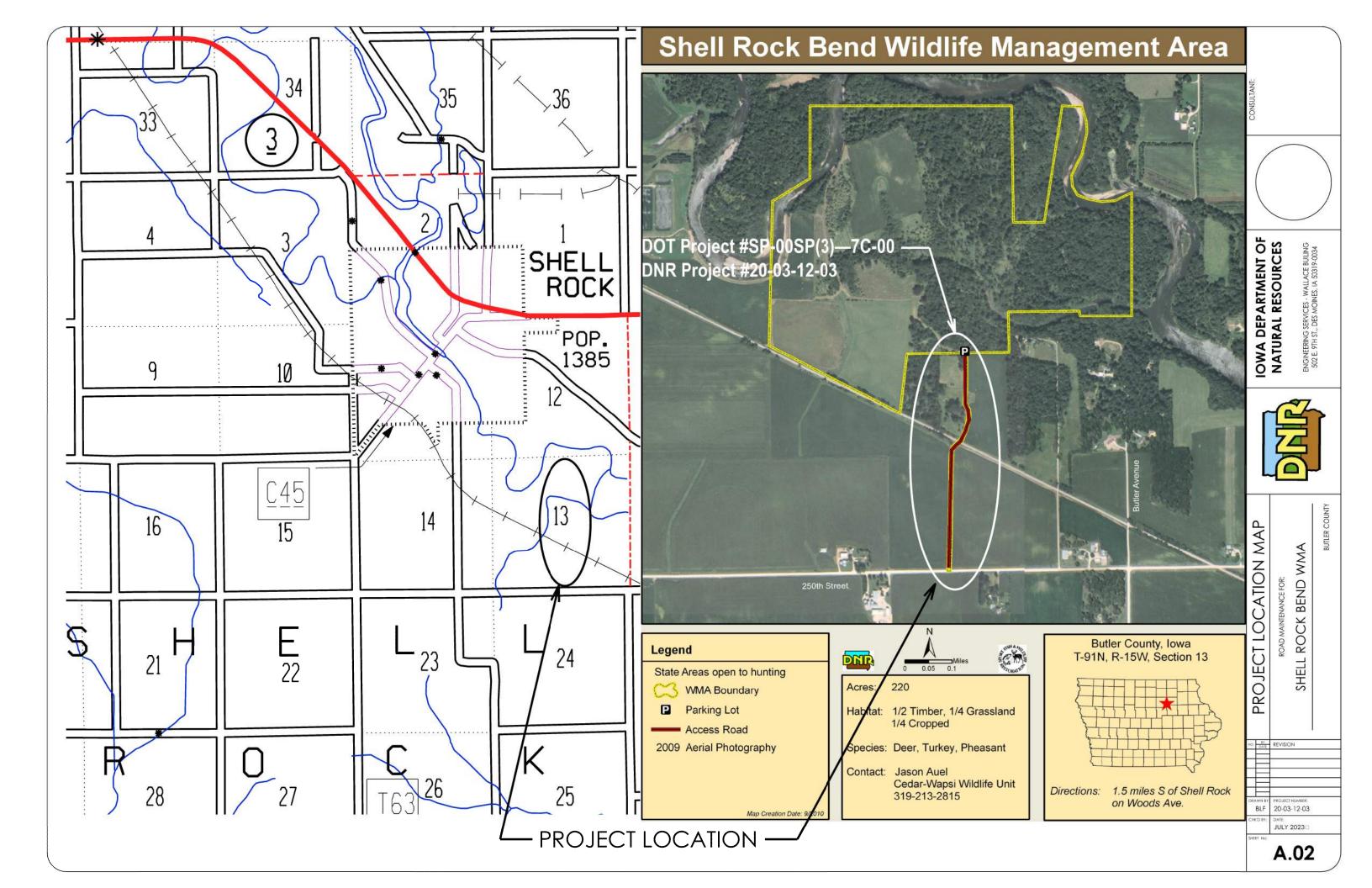


DIRECTORY PROJECT MANAGER CONSTRUCTION INSPECTOR IOWA DEPARTMENT OF NATURAL RESOURCES. IOWA DEPARTMENT OF NATURAL RESOURCES COMPANY ADDRESS 502 EAST 9TH STREET ADDRESS CITY,STATE,ZIP DES MOINES, IA, 50319 CITY,STATE,ZIF CONTACT BRUCE L. FLIPPIN CONTACT KEN HOWE TELEPHONE 515-689-8009 TELEPHONE 319-240-3553 EMAIL

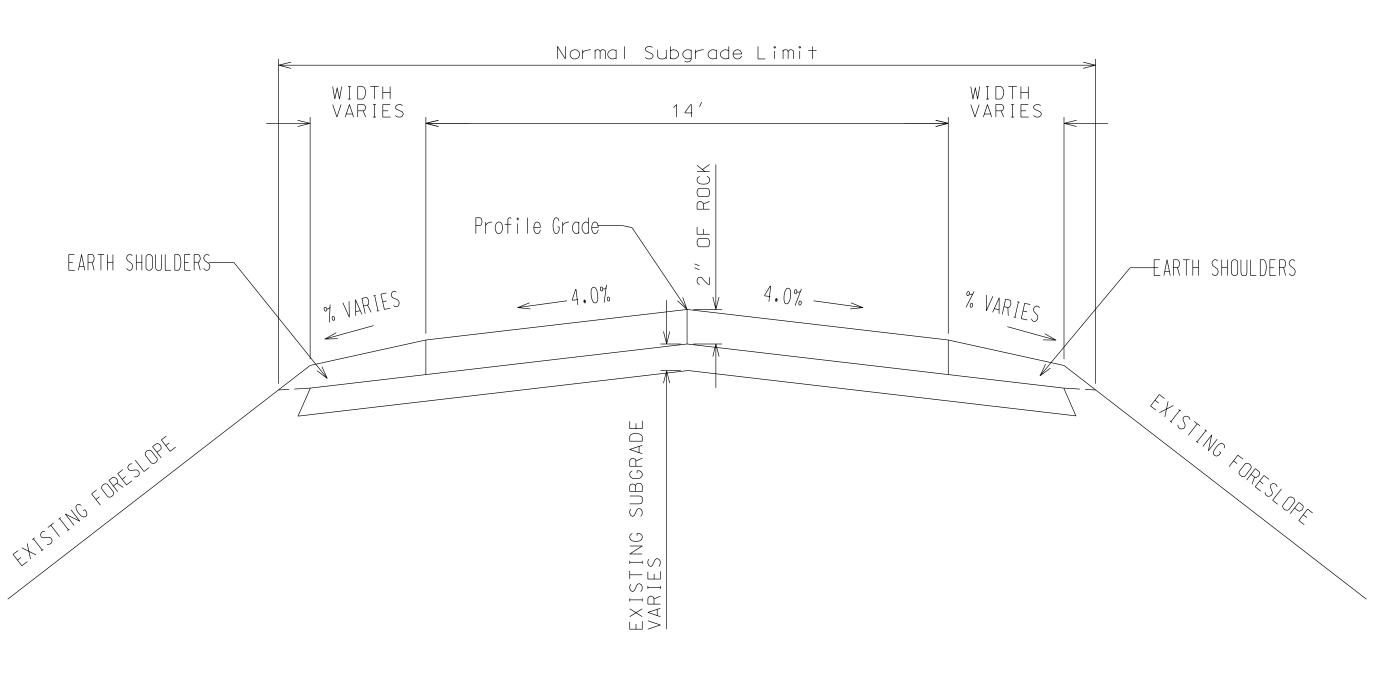
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k,	Kelsey Fleming Digitally signed by Kelsey Fleming Date: 2023.08.23 07:49:56 -05'00' AUTHORIZATION - PARKS WILDLIFE FISHERIES LAW ENFORCEMENT FORESTRY DATE
	Travis Baker Digitally signed by Travis Baker Date: 2023.08.23 09:21:15
] (ENGINEERING BUREAU CHIEF DATE

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A.02 A.03	LOCATION MAP				
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			CHK'D BY:	DATE: JULY :	2023
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SHEET INDEX







Note:

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

Typical Roadway Section - Center Crown

STATION	TO	STATION	LOCATION	WIDTH
0+00		25+84	HEADING NORTH	12′

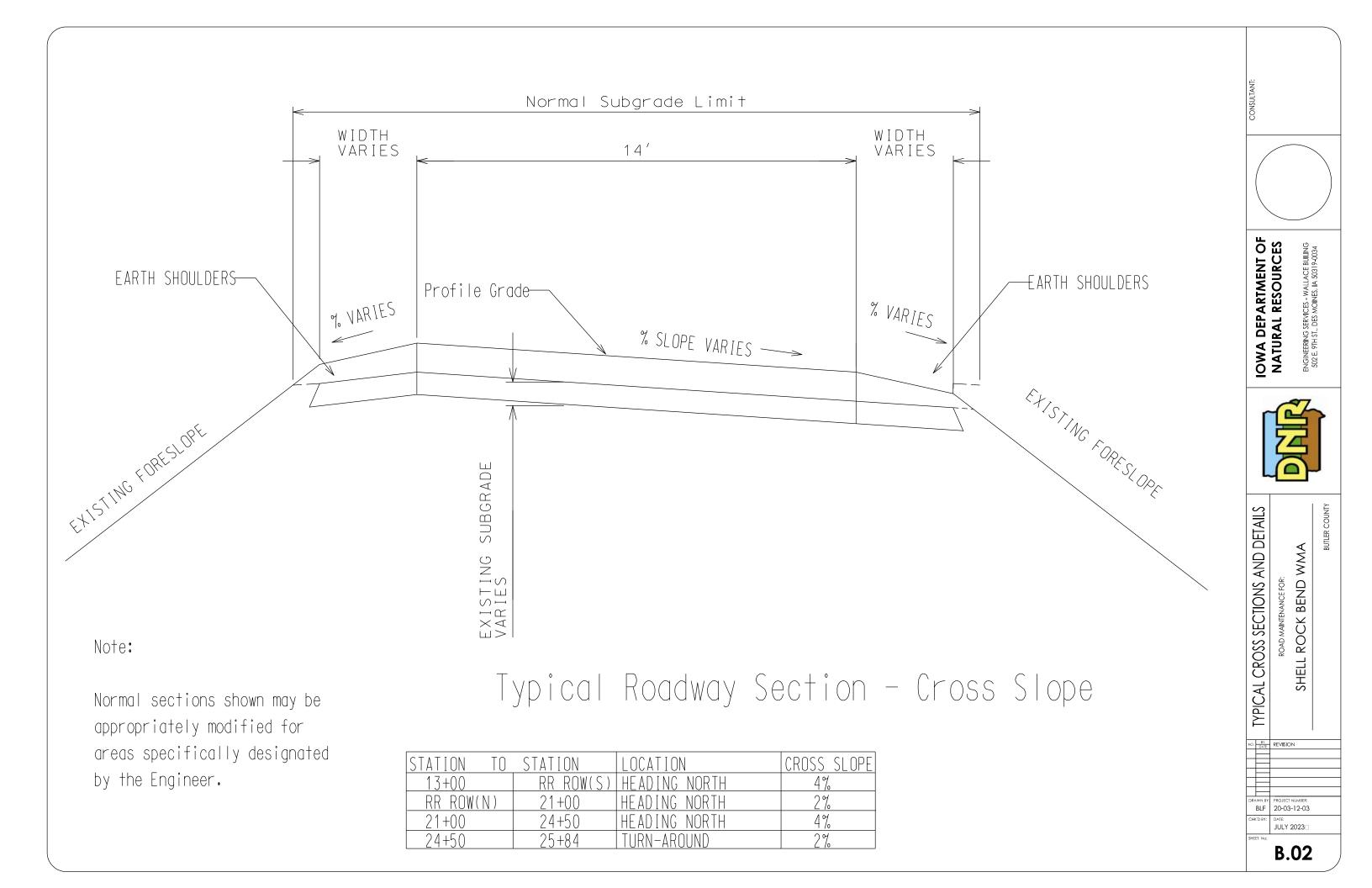
IOWA DEPARTMENT OF NATURAL RESOURCES ENGINEERING SERVICES - WALLACE BUILING 502 E. 9TH ST., DES MOINES, IA 50319-0034



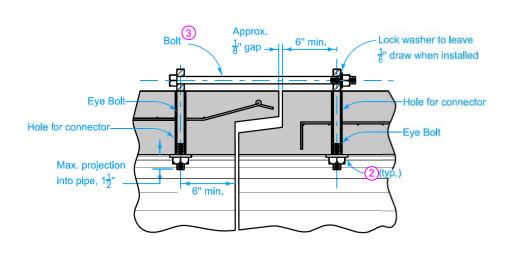
TYPICAL CROSS SECTIONS AND DETAILS ROAD MAINTENANCE FOR: SHELL ROCK BEND WMA

DRAWN BY: PROJECT NUMBER: BLF 20-03-12-03

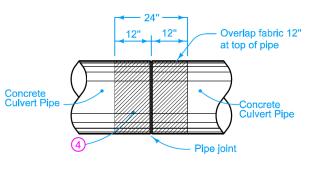
B.01



THREADED AT BOTH ENDS



SECTION OF PIPE CONNECTOR (Concrete Pipe to Concrete Pipe)



PIPE	JOINT	WRAI	PPING
	301141	AAIZ	

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

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)

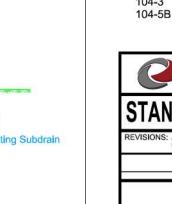
Two connectors near the top of the pipe section. For details of reinforcement, refer to AASHTO M 170 for the class of pipe required. Refer to Materials I.M. 491.09 for seal requirements.

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.

- 1 If holes are field drilled, place a ribbon of butyl sealant around bolts before placing 3 in. x 3 in. x $\frac{1}{4}$ in. plate on bolts through corrugated metal pipe and tightening nuts.
- 2 $1\frac{3}{4}$ inch round x $\frac{9}{64}$ inch thick washer or 3 in. x 3 in. x $\frac{1}{4}$ 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
- 4 Engineering fabric for embankment erosion control.

Possible Tabulations: 104-3



IOWADOT SHEET 1 of 2 REVISIONS: Added 104-5B to Possible Tabulations. Added Type 3 connection to stor sewer outlet.

Brian Smith

CONNECTED PIPE JOINTS

Top C of Pipe Double line reinforcing, - Connector as specified Horizontal Axis

OPTIONAL BOLTS/CONNECTORS

ONE BEND END

TYPICAL SECTION (Non-Sealed Joint)

or Dike Existing Subdrain Existing Subdrain

TYPICAL INSTALLATION

TYPE 1 CONNECTION

B.03

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

CROSS SECTIONS AND DETAILS BEND WMA ROCK

BY REVISION 20-03-12-03 JULY 2023 🗆

ESTIMATED PROJECT QUANTITIES ITEM NO. ITEM UNIT TOTAL 2102 - SPECIAL BACKFILL TON 2125 - RESHAPING DITCHES - CULVERTS STA 2125 - RESHAPING DITCHES - SWAIL STA 2.5 2127 - RECONSTRUCTION OF ROADBED - BLADING/SHAPING ROADWAY STA 25.9 2127 - RECONSTRUCTION OF ROADBED - BLADING/SHAPING SHOULDERS STA 25.9 2312 - GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE TON 725 2416 - CULV, CONC RDWY PIPE, 18" LF 42 2507 - ENGINEERING FABRIC 100 SY 2507 - EROSION STONE TON 40 2518 - SAFETY CLOSURE EACH 2528 - TRAFFIC CONTROL LS 11 2533 - MOBILIZATION LS 2601 - SEED+FERTILIZE (RURAL) ACRE 13

	ESTIMATE REFERENCE INFORMATION
ITEM NO.	DESCRIPTION
1	A. Use for pipe bedding B. Bed pipe halfway up with rock. C. Backfill each end of culvert with soil to prevent piping.
2	A. Clean ditches for positive flow towards nearest culvert. B. Locations will be marked by DNR Field Engineer. C. Remove spoil for project location. An available spoil location is shown on sheet A.02.
3	 A. Cut a swail, from edge of road to property line - approximately 12 feet wide by 1 foot deep. B. Approximate location is 13+00 to roailroad ROW - DNR Field Engineer will mark limits; length and depth. C. This is a field entrance - the intent is to drain water from the roadway while maintaining access for farm equipment/implements. D. Remove spoil for project location. An available spoil location is shown on sheet A.02.
4	 A. Repair all potholes by scarifying surrounding area to depth of pothole and recompacting. B. 0+00 - ~13+00: Re-establish roadway crown - 4% positive drainage each way from centerline; 4% across the width in banked sections. 13+00 - railroad ROW: 4% across roadway to east shoulder. Railroad ROW - 21+00: 2% across roadway to east shoulder. 21+00 - 24+50: 4% across roadway to east shoulder. 24+50 - 25+84: Blade turn-around 2% to the outside. C. Remove any high shoulder areas, before spreading new rock. Remove spoil for project location. An available spoil location is shown on sheet A.02.
5	 D. See sheef B.01 for typical roadway cross section. A. Station 0+00 - 13+00 - Both sides of roadway. B. Remove any material higher than the roadway: 2% from edge of roadway to where it daylights the ditch foreslope. C. DO NOT waste material in ditch. Blade/drag onto roadway and remove from project site. D. Remove any high shoulder areas, before spreading new rock. Remove spoil for project location. An available spoil location is shown on sheet A.02.
5	 E. Station 13+00 - railroad ROW. F. Remove any high shoulder material and blend roadway/shoulder into swail for smooth transition. G. Remove spoil for project location. An available spoil location is shown on sheet A.02.
5	 H. Railroad ROW - 24+50: EAST SIDE ONLY. I. Remove any material higher than the roadway: 2% from edge of roadway to fence line, or as directed by DNR Field Engineer. J. IT IS 10+ FEET FROM EDGE OF ROADWAY TO FENCE LINE. K. Remove spoil for project location. An available spoil location is shown on sheet A.02.
6.	A. Spread and roll rock after dumping.

B. DOT approved source.

ESTIMATE REFERENCE INFORMATION - CONTINUED				
ITEM NO.	DESCRIPTION			
7	A. Install new culvert at existing ditch flowline, or as determined by DNR Field Engineer. B. Center new pipe with centerline of roadway unless directed otherwise by DNR Field Engineer. C. One piece of RCP will be cut?			
8	A. Use at at culvert inlet/outlet - 25 SY each. B. Place at the direction of the DNR Field Engineer. C. DOT approved source.			
9	A. Use at at culvert inlet/outlet - 10 TON each. B. Place at the direction of the DNR Field Engineer. C. DOT approved source.			
10	A. Follow set-up details in IA DOT Specification 2528.			
13	A. Use Rural mix. B. Seed and fertilize all disturbed areas. C. DOT approved source.			



IOWA DEPARTMENT OF NATURAL RESOURCES

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



QUANTITIES AND GENERAL INFORMATION ROAD MAINTENANCE FOR: SHELL ROCK BEND WMA

NO. BY REVISION DRAWN BY: PROJECT NUMBER: BLF 20-03-12-03

JULY 2023

C.01

BLF 20-03-12-03

JULY 2023 🗆

C.02

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.

