

MAY ADAM

— Since 1881 —

WWW.MAGT.COM

ROBERT B. ANDERSON
TIMOTHY M. ENGEL
MICHAEL F. SHAW
BRETT KOENECKE
CHRISTINA L. KLINGER
JUSTIN L. BELL
DOUGLAS A. ABRAHAM
KARA C. SEMMLER
A.J. FRANKEN

September 28, 2015

Writer's E-mail: brett@mayadam.net

OF COUNSEL
DAVID A. GERDES
CHARLES M. THOMPSON
GLENN W. MARTENS 1881-1968
KARL GOLDSMITH 1885-1966
BRENT A. WILBUR 1949-2006
TELEPHONE
605 224-8803
FAX
605 224-6289

Patricia Van Gerpen
Executive Director
Public Utilities Commission
500 East Capitol Avenue
Pierre, South Dakota 57501

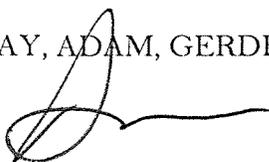
**RE: In the Matter of the Application of Dakota Access, LLC for an Energy
Facility Permit to Construct the Dakota Access Pipeline; HP14-002
Our file: 0300**

Dear Ms. Van Gerpen:

Attached for filing, please find a revised Direct Testimony of John H. (Jack) Edwards, dated of even date. Herewith and also attached are drawings as referenced in his testimony. In hearing prep, we identified areas of his testimony which needed revising for the benefit of everybody during the hearings. The revisions are intended to clarify his testimony and remove inconsistencies with other filed documents.

Very truly yours,

MAY, ADAM, GERDES & THOMPSON LLP



BRETT KOENECKE

BK/mnf

Enclosure

MAY, ADAM, GERDES & THOMPSON LLP
503 SOUTH PIERRE STREET • P.O. BOX 160
PIERRE, SOUTH DAKOTA 57501-0160

006656

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE)
APPLICATION OF DAKOTA)
ACCESS, LLC FOR AN ENERGY)
FACILITY PERMIT TO CONSTRUCT)
THE DAKOTA ACCESS PIPELINE)
PROJECT)

HP14-002

**DIRECT TESTIMONY OF
(Revised)**

JOHN H. "JACK" EDWARDS

ON BEHALF OF

DAKOTA ACCESS, LLC

DAKOTA ACCESS EXHIBIT 5

Sept 28, 2015

006657

TABLE OF CONTENTS

I. Witness Introduction1

II. Purpose and Coverage of Testimony1

III. Construction Process.....1

IV. Typical Right of Way Configurations.....2

V. Temporary Work Space4

VI. Water use5

VII. Affect on homes and surrounding land including agricultural land6

VIII. Impact on transportation, land use and rural water7

IX. Local Land Use Controls9

1 **Q. Please state your name and business address for the record.**

2 A. John H. "Jack" Edwards, 4401 S. Technology Dr., South Suite, Sioux Falls, South
3 Dakota, 57106

4 **Q. Can you briefly describe your education and experience?**

5 A. I graduated High School, with college engineering courses. I have over 35 years of work
6 experience in the pipeline industry and held positions in both operations/maintenance and new
7 pipeline and facility construction. Some of the positions I held are Construction Manager, on
8 maintenance and new pipeline construction projects and Project Manager, on new pipeline
9 projects.

10 **Q. Did you attached a resume or CV.**

11 A. Yes.

12 **Q. Which sections of the application are you responsible for?**

13 A. I am responsible for construction related sections of the application included in sections:
14 19. Local Land Use Controls; 22. Time Schedule; 23.5. Forecast of Impact on Transportation;
15 24. Employment Estimates; 25. Future Additions and Modifications;

16 **Q. Can you briefly describe construction of the pipeline facilities?**

17 A. Construction of the new pipeline will require a typical construction ROW width of 125
18 feet in uplands, 100 feet in non-forested wetlands, 85 feet in forested areas (wetlands and
19 uplands), and up to 150 feet in agricultural areas. Following construction, a 50-foot wide
20 permanent easement will be retained along the pipeline. There will be one full Pipeline Spread in
21 South Dakota and two partial Spreads. Each pipeline construction Spread will have
22 approximately 900 personnel including sub-contractors and approximately 100 Inspection staff
23 which includes Right of Way representatives and administration staff. The typical pipeline

24 construction sequence is: (i) Survey and staking of workspace; (ii) Clearing and Grading,
25 construction crews will clear trees, install temporary bridges to cross small water bodies, and
26 install temporary gates in existing fences; (iii) Right of Way grading, workspace will be leveled
27 to make a safe work area, top soils will be separated as per DAPL Agricultural Impact Mitigation
28 Plan; (iv) Stringing of pipe, pipe is trucked from the pipe storage yards and laid adjacent to
29 pipeline ditch area; (v) Bending of pipe, using a bending machine pipe is bent so pipe can be
30 installed at different elevation as required; (vi) Welding, pipe is welded into long sections; (vii)
31 Non Destructive Examination (NDE), all welds are inspected to ensure their integrity; (viii)
32 Trenching, pipe ditch is dug to required depth; (ix) Pipe Lowering, pipe is lowered into ditch in
33 long sections; (x) Backfill, pipe ditch is backfilled; (xi) Rough Grade, the remaining subsoil and
34 top soils are placed over workspace; (xii) Hydro Testing, pipe sections will be filled with water
35 and pressure test to 1.25 times maximum operating pressure (MOP); (xiii) Final Clean-up, (xiv)
36 Full Restoration, workspace is leveled to preconstruction condition, grasses planted, fences
37 repaired, pipeline warning signs placed along easement.

38 **Q. What is the construction and operating timeline?**

39 A. Dakota Access anticipates starting construction within South Dakota in the Spring of
40 2016. Commissioning of the facilities should occur in November 2016 for in-service in
41 December 2016. Restoration activities will continue as necessary to ensure proper restoration of
42 the disturbed areas.

43 **Q. Can you describe the typical drawings included in Exhibit B?**

44 A. DAPL filed five Typical Right of Way Configurations for construction of the pipeline.
45 During construction of the pipeline, the contractor will prepare work space following these
46 Typical Right of Way Configurations. Each typical is designed to ensure topsoil is protected

47 from mixing with subsoil. These are typical drawings and may not be reflective of actual work
48 based on other factors such as topography or landowner preference, to name two possibilities. As
49 found in the AIMP, our contractors Key and Duraroot will be training operators on soil
50 segregation. The AIMP specified 12 inches of topsoil segregation. My earlier written testimony
51 saying 18 inches was incorrect.

52 Those five typical configurations are as follows:

53 1. Agricultural-Full top Soil Segregation w/ Drain Tiles (P12-54-SD) illustrates
54 topsoil to be stripped and segregated for the entire width of work space, 125 feet wide, with an
55 additional 25 feet for top soil storage. Also, illustrates pipeline being installed with 2 feet
56 separation from drain tiles. Depth of topsoil segregation is maximum 12 inches or minimum
57 actual depth.

58 2. Upland Construction Full Top Soil Segregation (P12-55-SD) illustrates top soil to
59 be stripped and segregated for the entire width of work space, 125 feet wide, with an additional
60 25 feet for top soil storage. Topsoil could be stored on either side of the workspace. Depth of
61 topsoil segregation is maximum 12 inches or minimum actual depth.

62 3. Upland Construction Ditch Line Only Soil Segregation (P12-56-SD) illustrates
63 topsoil segregation ditch line and ditch spoils storage, 125 feet wide work area. Depth of top soil
64 segregation is maximum 12 inches or minimum actual depth.

65 4. Heavily Forested and Forested Wetlands (P12-57-SD), illustrates topsoil to be
66 stripped and segregated for ditch line and ditch spoil storage area, 85 feet work wide. Depth of
67 topsoil segregation is maximum 12 inches or minimum actual depth.

68 5. Scrub Shrub Saturated Wetlands (P12-58_SD), illustrates topsoil segregation
69 ditch line and ditch spoils storage, , 100 feet wide of work area. Although not illustrated on

70 typical drawing, the contractor may choose to place timber mat in working area instead of
71 stripping top soil. Timber mat will allow equipment to travel work area without mixing of
72 topsoil with subsoil.

73 **Q. Are there plans for the valve sites?**

74 A. Typical Piping and Plan Elevation, 30 inch Mainline Valve Pipeline (P12-48) illustrates
75 the 50 feet by 75 feet area required for the Mainline Block Valves. Block Valves will be
76 installed aboveground and the valve area will be fenced with a 6 feet chainlink fence.

77 **Q. Are there pump station plans?**

78 A. The Pump Station Site Typical illustrates the 9 plus acres purchased in fee by DAPL,
79 with the pipeline launcher/receiver with pump station tie-in piping. Additionally, this Typical
80 illustrates a basic pump station layout.

81 **Q. Please describe the temporary workspace and additional temporary work space
82 requirements of the pipeline?**

83 A. Temporary work space (TWS) or construction right of way is required for the construction
84 activities of a spread. TWS allows space along the permanent pipeline right of way for the
85 segregated storage of topsoil and spoil, and for the machinery and workers to perform their tasks.
86 TWS is only required during construction. Where necessary, Dakota Access will utilize
87 additional temporary workspace (ATWS) outside of the construction ROW to facilitate
88 specialized construction procedures, such as horizontal directional drills (HDDs); railroad, road,
89 wetland, waterbody, and foreign utility line crossings; tie-ins with existing pipeline facilities;
90 areas with steep side slopes; and pipeline crossovers. These TWS and ATWS will be allowed to
91 revert to pre-existing uses and conditions following construction activities, so there will be no
92 permanent impacts on these areas. Dakota Access will restore these areas as necessary in

93 accordance with the Agricultural Mitigation Plan, landowner preferences and permit
94 requirements.

95 **Q. Will restoration be required?**

96 A. Yes. Final restoration of pipeline easement and temporary work space shall be completed
97 once pipeline is installed. All restoration shall be completed in accordance with the Agricultural
98 Mitigation Plan, landowner preferences and Permit requirements.

99 **Q. Where will the project store pipe and other equipment necessary for construction?**

100 A. During construction of the pipeline, the contractor will require off ROW areas for the
101 storage of pipe and equipment necessary for the construction of the Project facilities. These
102 staging/contractor yards will be located near the Project at locations with convenient and safe
103 access to the Project areas. Efforts will be made to select contractor yards that have been
104 previously disturbed by human activity but do not have an ongoing land use that will preclude
105 Project usage. These areas will also be restored to preconstruction conditions or as otherwise
106 directed by the landowner.

107 **Q. How will the project access work space to construct the pipeline?**

108 A. Dakota Access will utilize existing public and private roads to access the pipeline ROW
109 and aboveground facilities to the extent practicable. Existing roads utilized will include paved,
110 gravel, or pasture roads, and other conveyances. Some roads will require modification or
111 improvement to facilitate safe access for construction equipment and personnel. The Project may
112 require construction of new temporary and permanent roads to provide access to the new pipeline
113 both during construction and for future pipeline maintenance activities. Access roads have not
114 been thoroughly defined during this early design phase. Dakota Access will seek and enter into
115 road use agreements with all affected units of government and private landowners

116 **Q. Will the pipeline require the use of water during construction?**

117 A. Yes, there are two types of water uses required for the construction of the pipeline.

118 Water is necessary for horizontal directional drilling (HDD) and hydrostatic testing the pipeline
119 to insure the integrity of the pipeline.

120 Water for the HDD operation is used to mix with bentonite for drilling operation lubrication,
121 hole stability and to remove drill cuttings from the hole.

122 Water required for hydrostatic testing is only temporarily used. Hydrostatic testing shall be
123 conducted to verify the integrity of the newly installed pipeline, and will be conducted in

124 accordance with the requirements of PHMSA pipeline safety regulations (49 Code of Federal
125 Regulations [CFR] Part 195), Dakota Access testing specifications, and applicable permits.

126 Dakota Access will develop a hydrostatic test plan, following completion of survey and design,
127 and in coordination with the selected contractor.

128 All applicable laws, rules and permits will be followed throughout this process.

129 **Q. Will water be discharged after its use?**

130 A. Yes, water will be discharged as a result. HDD mud will be disposed of in accordance
131 with applicable rules and regulations. Hydrostatic testing discharge water is filtered through

132 straw bales and discharged back to water sources in accordance with Landowner preferences and

133 permit requirements, utilizing applicable BMPs (SWPPP, Exhibit D to the Application) to reduce
134 the rate of water flow and prevent scouring from runoff. Based on the implementation of these

135 measures, no impacts to local hydrology are anticipated and all applicable laws, rules and
136 permits to do so will be obtained and followed.

137 **Q. How else will hydrology be affected?**

138 A. In addition, trench dewatering will likely occur on an intermittent basis along the Project

139 ROW dependent on site conditions and weather during the construction period. During
140 construction, open trenches may accumulate water from groundwater seepage or precipitation.
141 Under these circumstances, trench dewatering will be used to pump accumulated water from the
142 trench, away from nearby waterbodies, and into vegetated upland areas. Water pumped out of
143 trenches will be discharged in strict compliance with DAPL Agricultural Impact Mitigation Plan
144 and Landowner preferences and requirements, utilizing applicable BMPs to reduce the rate of
145 water flow and prevent scouring from runoff.

146 **Q. Will the pipeline utilize deep well injection?**

147 A. Dakota Access does not anticipate utilization of deep well injection for this Project.

148 **Q. Are any homes displaced along the project route?**

149 A. The Project does not displace any homes. At its nearest point, the project comes within
150 approximately 200' of a home, which is not atypical for such a project.

151 **Q. What effects are anticipated on surrounding land from operation or construction of
152 the pipeline?**

153 A. Permanent effects on surrounding land uses are not anticipated since the pipeline is
154 primarily a below ground structure with little land use conversion. There are very few
155 limitations beyond not erecting permanent structures or planting trees over the pipeline. All
156 normal agricultural activities are compatible with the pipeline.

157 **Q. Did the project prepare an agricultural impact mitigation document?**

158 A. Yes. It was attached as Exhibit D. It was revised in 2015 after data requests from the
159 Public Utilities Commission staff asked for clarification and revisions.

160 **Q. Please describe the agricultural impact mitigation document.**

161 A. Construction activities will temporarily disturb the land uses within both the construction

162 and permanent ROW. Following construction, these areas will be re-contoured to previous
163 conditions, reseeded and/or return to previous agricultural uses. Drainage systems such as
164 roadway ditches or drainage tile crossed and disturbed by the pipeline during construction will be
165 restored in accordance with permits and landowner agreements. Dakota Access will take
166 appropriate measures, listed in the document, to protect land uses used for livestock production
167 (pastureland/rangeland, undisturbed native prairie, row-crop agriculture) during construction.
168 Project contractors will coordinate with landowners to provide passage for livestock and will
169 provide temporary fencing and gates where required to protect livestock from construction-
170 related hazards. Following construction, fences and gates are rebuilt to original conditions or
171 better. Direct impacts to the public, and to commercial, and institutional land uses will be
172 minimized through construction design measures.

173 **Q. What are the impacts to roads?**

174 A. Most roadways will be bored underneath during construction eliminating direct
175 disturbance to the roadway and vegetation. Indirect impacts include temporary road closures or
176 traffic delays, of approximately 5-15 minutes, during construction for equipment crossing. After
177 construction, roadways will resume normal traffic conditions in the Project ROW. Potential
178 traffic impacts are discussed further within Community Impact Section 23.1– Forecast of Impact
179 on Community.

180 **Q. What are the permanent impacts to land use?**

181 A. There are a few locations where land doesn't go back to its prior use. Permanent impacts
182 to land use will occur at the aboveground facilities associated with the Project. The frequency of
183 aboveground facilities is low (40 MLVs, two L/Rs, and one pump station with L/R) and the
184 majority of these sites are small in size; permanent impacts to the surrounding land use will be

185 minimal (0.2 percent of the Project footprint).

186 **Q Does the project cross South Dakota Rural Water Systems?**

187 A. Yes, see the chart below.

188

| South Dakota Rural Water Systems Crossed by the Project | |
|--|----------------------------------|
| Name | Approximate Miles Crossed |
| WEB | 114.5 |
| Mid Dakota | 47.0 |
| Kingbrook | 50.0 |
| Minnehaha | 25.7 |
| Lincoln | 12.3 |
| South Lincoln | 12.8 |
| Lewis and Clark | 70.1 |
| Source: South Dakota Rural Water Systems, 2014 | |

189 DAPL negotiated with all Rural Water Systems to lower any waterlines affected by the crude oil
190 pipeline. All such agreements are in place with rural water systems, except Lewis and Clark,
191 which was brought to our attention only very recently. We are working diligently with Lewis and
192 Clark to resolve issues.

193 **Q. How does Dakota Access address local land use controls?**

194 A. DAPL will design, construct, operate, and maintain the pipeline, pump stations, and valve
195 stations in compliance with applicable zoning and county permit requirements. DAPL may
196 request variances and/or special use permits, as necessary. DAPL recognizes the existence of
197 South Dakota Codified Law (SDCL) 49-41B-28, regarding local ordinances and their application

198 to the project, and reserves the right to request the Commission to invoke its provisions during
199 the proceedings in this application should the need present itself.

200

201 Dated this 28 day of September, 2015

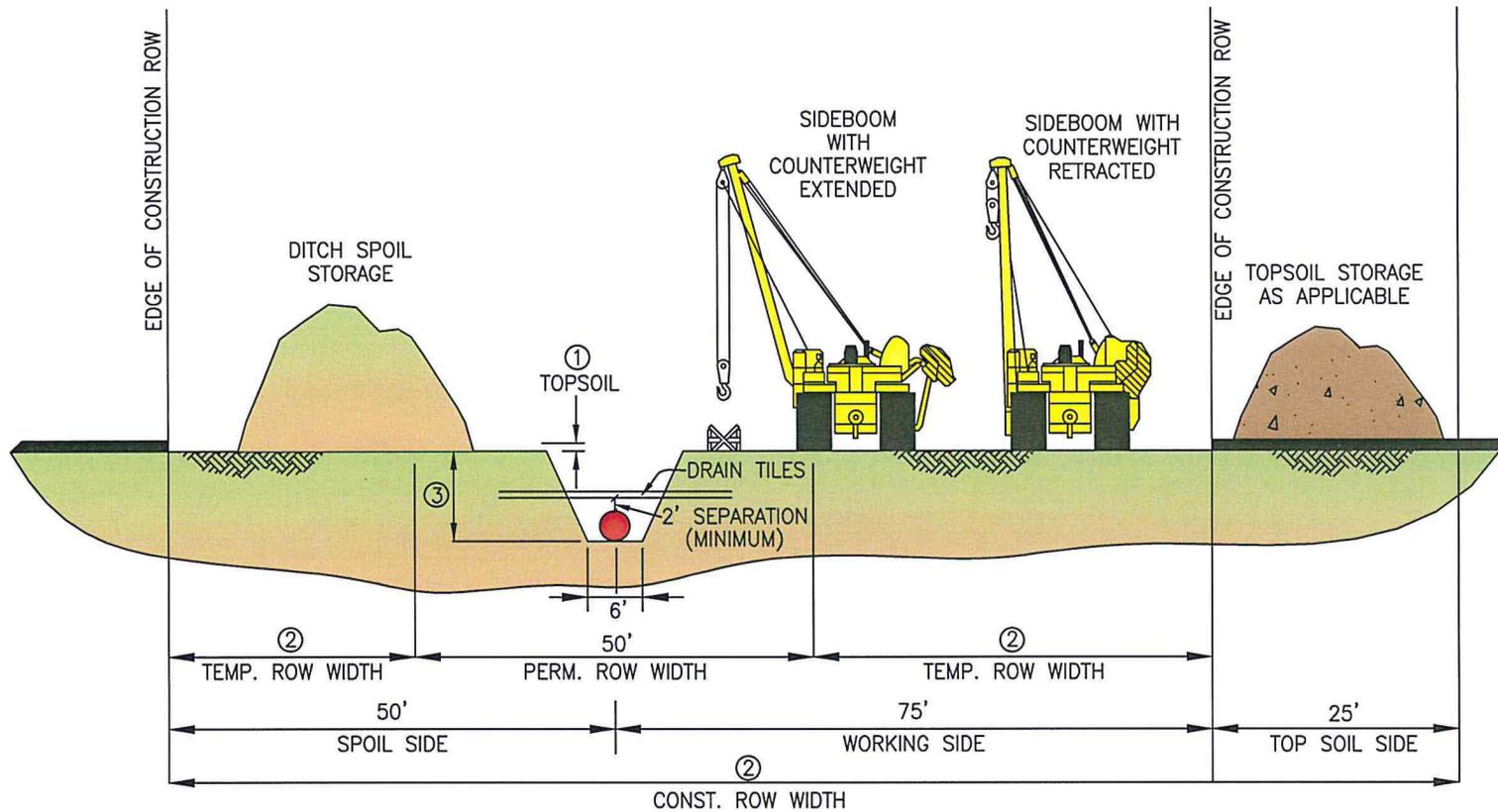
202

203



204 Jack Edwards

205



NOTES:

- ① DEPTH OF TOP SOIL SEGREGATED BASED UPON SITE-SPECIFIC CONDITIONS; MAX 12" INCHES, MIN-ACTUAL DEPTH OF TOP SOIL.
- ② ACTUAL WIDTH OF ROW WILL VARY DEPENDING UPON DEPTH OF TOP SOIL TO BE SEGREGATED.
- ③ DEPTH OF COVER BASED UPON LANDOWNER OR STATE SPECIFIC REQUIREMENTS.

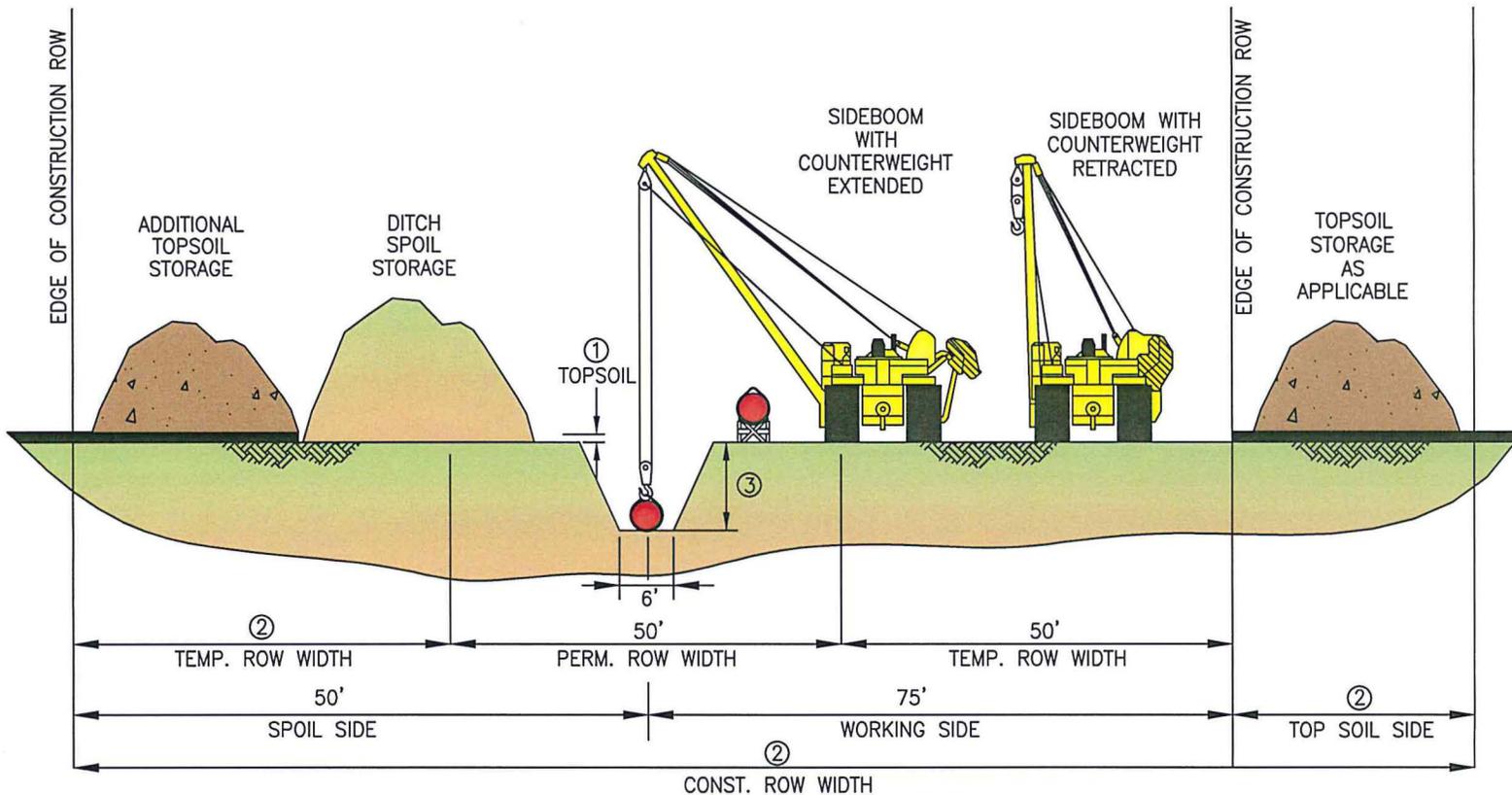
TYPICAL RIGHT-OF-WAY CONFIGURATION FOR SOUTH DAKOTA

AGRICULTURAL- FULL TOP SOIL SEGREGATION W/DRAIN TILES

| REV. | DATE | BY | DESCRIPTION | CHK. |
|------|---------|----|-------------------|------|
| B | 9/28/15 | JL | ISSUED FOR REVIEW | |
| A | 12/9/14 | JL | ISSUED FOR REVIEW | |

PROJECT NO. **10395700**

| | | | |
|-----------------|----------------|------------------|----------|
| DRAWN BY: DAH | DATE: 08/18/14 | DWG. NO. | REV. |
| CHECKED BY: DAH | DATE: 08/18/14 | P12-54-SD | B |
| SCALE: N.T.S. | APP.: | | |



NOTES:

- ① DEPTH OF TOP SOIL SEGREGATED BASED UPON SITE-SPECIFIC CONDITIONS; MAX 12" INCHES, MIN-ACTUAL DEPTH OF TOP SOIL.
- ② ACTUAL WIDTH OF ROW WILL VARY DEPENDING UPON DEPTH OF TOP SOIL TO BE SEGREGATED.
- ③ DEPTH OF COVER BASED UPON LANDOWNER OR STATE SPECIFIC REQUIREMENTS.

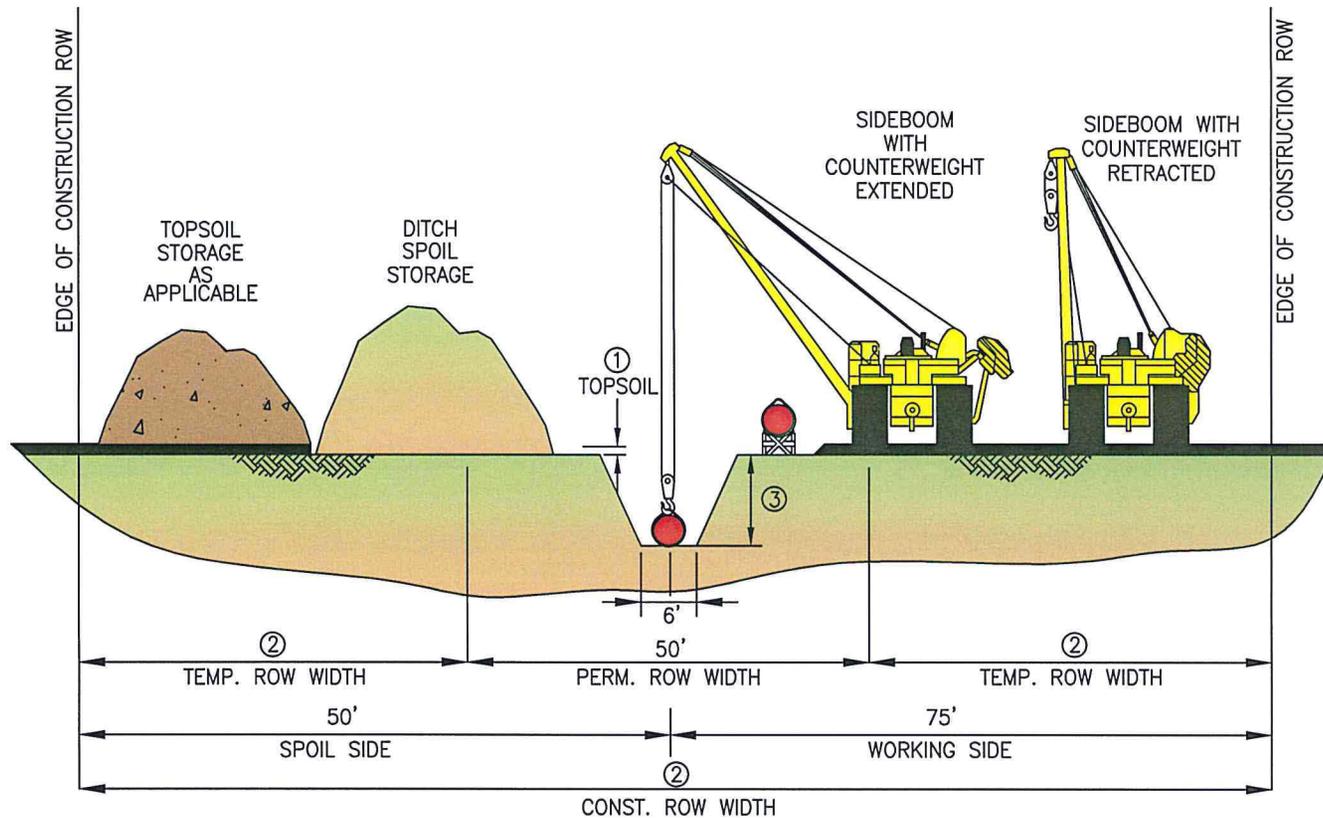
TYPICAL RIGHT-OF-WAY CONFIGURATION FOR SOUTH DAKOTA

UPLAND CONSTRUCTION FULL TOP SOIL SEGREGATION

| REV. | DATE | BY | DESCRIPTION | CHK. |
|------|---------|-----|-------------------|------|
| B | 9/28/15 | JL | ISSUED FOR REVIEW | |
| A | 12/9/14 | LBJ | ISSUED FOR REVIEW | |

PROJECT NO. **10395700**

| | | | |
|----------------|----------------|------------------|----------|
| DRAWN BY: MR | DATE: 09/15/14 | DWG. NO. | REV. |
| CHECKED BY: RL | DATE: 09/15/14 | P12-55-SD | B |
| SCALE: N.T.S. | APP.: | | |



NOTES:

- ① DEPTH OF TOP SOIL SEGREGATED BASED UPON SITE-SPECIFIC CONDITIONS; MAX 12" INCHES, MIN-ACTUAL DEPTH OF TOP SOIL.
- ② ACTUAL WIDTH OF ROW WILL VARY DEPENDING UPON DEPTH OF TOP SOIL TO BE SEGREGATED.
- ③ DEPTH OF COVER BASED UPON LANDOWNER OR STATE SPECIFIC REQUIREMENTS.

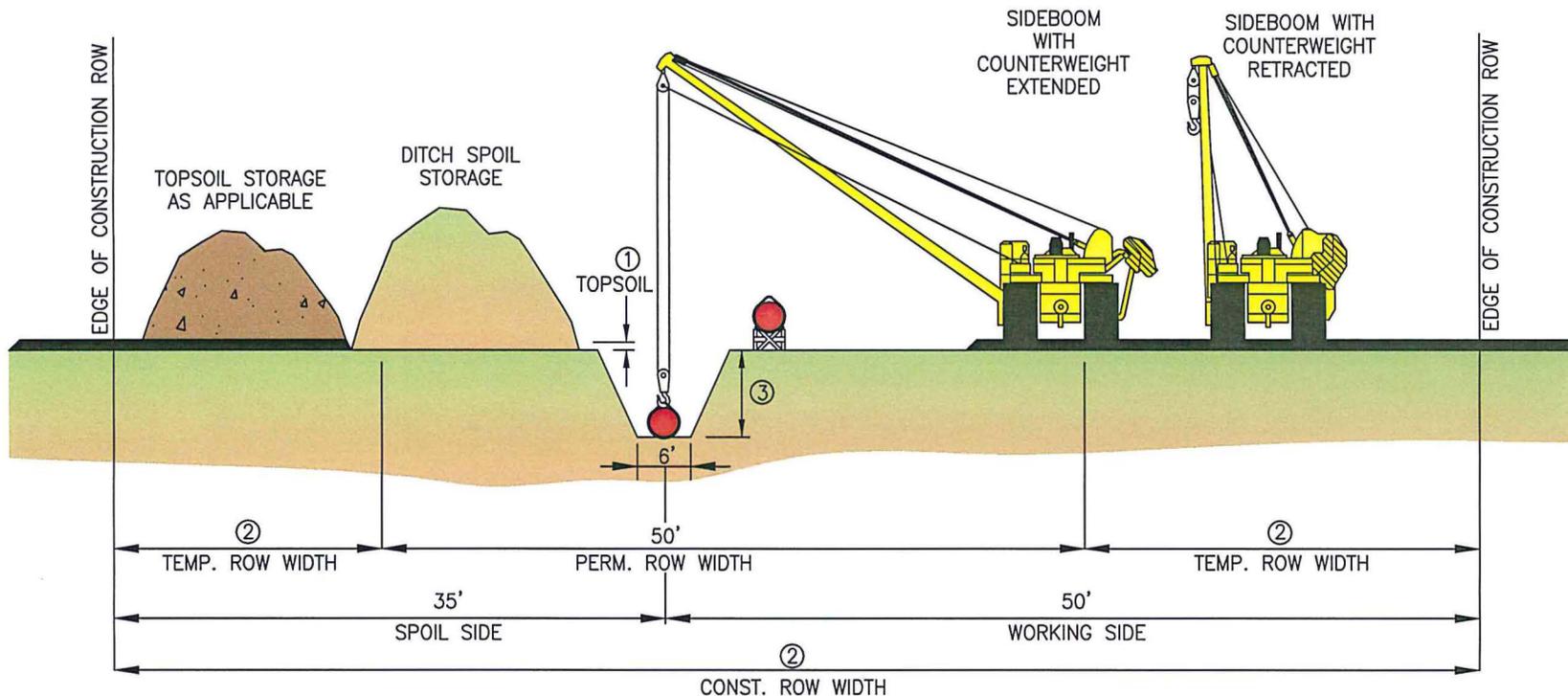
TYPICAL RIGHT-OF-WAY CONFIGURATION FOR SOUTH DAKOTA

| REV. | DATE | BY | DESCRIPTION | CHK. |
|------|---------|-----|-------------------|------|
| B | 9/28/15 | JL | ISSUED FOR REVIEW | |
| A | 12/9/14 | LBJ | ISSUED FOR REVIEW | |

UPLAND CONSTRUCTION DITCH LINE ONLY TOP SOIL SEGREGATION

PROJECT NO. **10395700**

| | | | |
|----------------|----------------|------------------|----------|
| DRAWN BY: MR | DATE: 09/15/14 | DWG. NO. | REV. |
| CHECKED BY: RL | DATE: 09/15/14 | P12-56-SD | B |
| SCALE: N.T.S. | APP.: | | |



NOTES:

- ① DEPTH OF TOP SOIL SEGREGATED BASED UPON SITE-SPECIFIC CONDITIONS; MAX 12" INCHES, MIN-ACTUAL DEPTH OF TOP SOIL.
- ② ACTUAL WIDTH OF ROW WILL VARY DEPENDING UPON DEPTH OF TOP SOIL TO BE SEGREGATED.
- ③ DEPTH OF COVER BASED UPON LANDOWNER OR STATE SPECIFIC REQUIREMENTS.

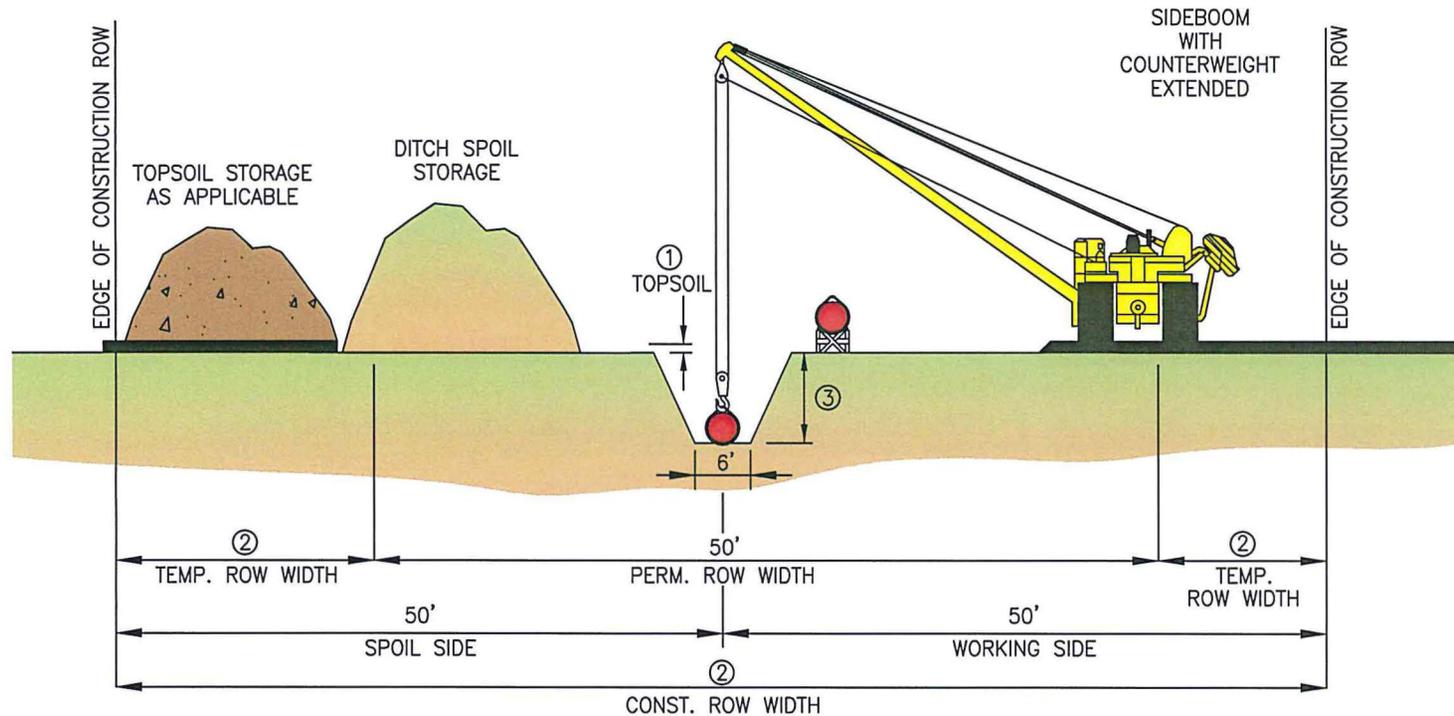
| REV. | DATE | BY | DESCRIPTION | CHK. |
|------|---------|-----|-------------------|------|
| B | 9/28/15 | JL | ISSUED FOR REVIEW | |
| A | 12/9/14 | LBJ | ISSUED FOR REVIEW | |

PROJECT NO. 10395700

TYPICAL RIGHT-OF-WAY CONFIGURATION FOR SOUTH DAKOTA

HEAVILY FORESTED LANDS, WETLANDS AND UPLAND

| | | | |
|-----------------|----------------|-----------|------|
| DRAWN BY: JWH | DATE: 09/15/14 | DWG. NO. | REV. |
| CHECKED BY: DAH | DATE: 09/19/14 | P12-57-SD | B |
| SCALE: N.T.S. | APP.: | | |



NOTES:

- ① DEPTH OF TOP SOIL SEGREGATED BASED UPON SITE-SPECIFIC CONDITIONS; MAX 18" INCHES, MIN-ACTUAL DEPTH OF TOP SOIL.
- ② ACTUAL WIDTH OF ROW WILL VARY DEPENDING UPON DEPTH OF TOP SOIL TO BE SEGREGATED.
- ③ DEPTH OF COVER BASED UPON LANDOWNER OR STATE SPECIFIC REQUIREMENTS.

| REV. | DATE | BY | DESCRIPTION | CHK. |
|------|---------|-----|-------------------|------|
| B | 9/28/15 | JL | ISSUED FOR REVIEW | |
| A | 12/9/14 | LBJ | ISSUED FOR REVIEW | |

PROJECT NO. 10395700

TYPICAL RIGHT-OF-WAY CONFIGURATION FOR SOUTH DAKOTA

SCRUB SHRUB SATURATED WETLANDS

| | | | |
|-----------------|----------------|-----------|------|
| DRAWN BY: JWH | DATE: 09/15/14 | DWG. NO. | REV. |
| CHECKED BY: DAH | DATE: 08/18/14 | P12-58-SD | B |
| SCALE: N.T.S. | APP.: | | |