7852.2300 LAND REQUIREMENTS

For the proposed pipeline, the applicant shall provide the following information:

A. permanent right of way length, average width, and estimated acreage:

The Sandpiper Pipeline Project preferred route, to the extent practicable, is co-located with EPND's existing right-of-way or other utility rights-of-way in Minnesota. In Minnesota, the preferred route follows the EPND System beginning at the North Dakota border south of Grand Forks, North Dakota in Polk County and extending east to Clearbrook, Minnesota. At Clearbrook, the preferred route then turns south and generally follows the existing Minnesota Pipe Line Company right-of-way to a point near Hubbard, Minnesota. From Hubbard, the preferred route turns east, following parts of existing third-party rights-of-way where practicable, to the Wisconsin border abutting Carlton County, Minnesota. The preferred route in Minnesota traverses approximately 299 miles.

Right-of-Way Requirements – West of Clearbrook

From the North Dakota border to the Clearbrook Terminal, the Project will generally be constructed and installed adjacent to the existing EPND right-of-way. Typically, the right-of-way requirements in upland areas include up to 55-feet of permanent easement, of which 25-feet would be new easement and 65-feet of temporary workspace, for a total land requirement of 120-feet. In wetland areas, the temporary workspace requirement would be reduced to 40-feet, for a total land requirement of 95-feet.

EPND's design configuration and anticipated construction execution methods are intended to take advantage of the proximity of the Project to the existing EPND pipeline west of Clearbrook to minimize new right-of-way requirements.

Typical drawings depicting the construction footprint from the North Dakota border to Clearbrook in upland and wetland areas are included in Appendix F of the EIR.

Right-of-Way Requirements – East of Clearbrook

From Clearbrook, Minnesota to the Wisconsin border, the preferred route will follow a portion of the Minnesota Pipe Line Company right-of-way and parts of existing electrical transmission and railroad lines. Where co-location is not practicable, the pipeline will, by necessity, be constructed in greenfield areas. For both co-located and greenfield areas, this typically results in a construction footprint of 120-feet for standard pipeline construction in upland

areas, including 50-feet of permanent easement and 70-feet of temporary workspace. In wetland areas, the temporary workspace requirement would be reduced to 40-feet, for a total land requirement of 95-feet. Both the permanent easement and the temporary workspace areas may be returned to pre-existing uses by the landowners if they do not impact safe operation and inspection of the pipelines.

Typical drawings depicting the construction footprint from Clearbrook to the Wisconsin border in upland and wetland areas, whether parallel to third-party rights-of-way or in greenfield locations are included in Appendix F of the EIR.

In certain limited areas, the right-of-way encounters environmental features (such as extended wetlands) that require special construction methods. Typically, this results in a maximum construction footprint of 95-feet, including 50-feet of permanent easement and 45-feet of temporary workspace. EPND has presently identified approximately 9 miles of potential right-of-way in the following areas that contain environmental features that will necessitate these special construction methods:

- Milepost 395 to 396
- Milepost 415 to 416
- Milepost 460 to 462
- Milepost 484 to 485
- Milepost 496.5, 520, 546 and 555
- Milepost 558 to 562

B. temporary right-of-way (workspace) length, estimated width, and estimated acreage:

The Project will be constructed using a 120-foot-wide construction right-of-way consisting of existing or new easements. Approximately 65- to 70-feet of the 120-foot right-of-way will consist of temporary work space. Additional temporary workspace of up to 100-feet in width and 200-feet in length will be required at feature crossings (e.g., roads and waterbodies). For the 299-mile-long portion of the preferred route that will cross Minnesota, construction will affect approximately 5,137 acres of land (see Table 4.2-1 of the EIR). Access roads and pipeyards known as of the date of this filing are presented in Tables 1.2.3-1 and 1.2.2-1 of the EIR, respectively.

C. estimated range of minimum trench or ditch dimensions including bottom width, top width, depth, and cubic yards of dirt excavated:

Trenches will be dug using a trackhoe or crawler-mounted wheel type ditching machine. Typical trench dimensions are included in Table 7852.2300-C. The total excavation will comprise approximately 1.35 million cubic yards of soil for the Project.

Table 7852.2300-C
Typical Trench Dimensions

	24-inch outside diameter pipe	**30-inch outside diameter pipe**
Minimum ditch depth to allow for a minimum of 36-inches of ground cover to the top of the pipe	60-inches	66-inches
Trench width at the bottom	3-feet	4-feet
Trench width at the top	4-feet	5-feet

D. minimum depth of cover for state and federal requirements:

In accordance with federal requirements (49 Code of Federal Regulation ("C.F.R.") Part 195.248), the depth of cover between the top of the pipe and the ground level, road bed, or river bottom will range between 36- to 48-inches, depending on the location of the pipe and the presence of rock.

State law requires that a minimum depth of cover of 54-inches be maintained in cultivated areas unless waived by the landowner.

In locations where Sandpiper is co-located with adjacent pipelines that are buried in accordance with federal requirements, both safety and land use considerations have led EPND to propose the installation with a minimum 36-inch depth of cover. This approach will:

- minimize the amount of soil excavated and, therefore, reduce the total acreage temporarily impacted, and will decrease the loss of soil productivity through erosion;
- create no additional limits on deep plowing;
- facilitate crossings of pipelines at similar depths by other facilities; and
- alleviate the potential for existing lines to subside during installation of the new pipelines by installing new lines at close to the same elevation.

To implement the proposed depth of installation, where necessary, landowners will be asked to waive the 54-inch minimum cover requirement, as was done during the 1994, 1998, 2002, and 2010 Enbridge expansion projects.

E. right-of-way sharing or paralleling: type of facility in the right-of way, and the estimated length, width, and acreage of the right-of-way:

West of Clearbrook, the Project will generally be constructed within and/or adjacent to existing EPND right-of-way and parallel to existing facilities described in Section 7852.2100 Subpart 4.D. East of Clearbrook, the preferred route often parallels railroads, pipelines, highways, and other utilities and is crossed by such facilities.