PERMIT

PERMIT MUST BE POSTED AT PROJECT SITE, VISIBLE FROM ROAD

Permit Number 16-03  Permit Date: 09/14/16

Permit Granted To: Jon & Kristine Riewer

Project Address 2620 Long Lake Road
City, State, ZIP: Detroit Lakes, MN 56501

Project Type Impervious Surface Coverage - >10,000SF in Shoreland District
*Approved revision to permit #16-03*

Permit Granted with the Following Conditions to be Satisfied by the Permit Holder:

Approved per Wenck Associates review recommendation, Review ID16-02, dated 09/13/2016, review #3.

1) Project will be constructed as shown on Revised Stormwater Management plan, sheet 02, by WSN, dated 09/12/16

2) Ensure all unsuitable material for infiltration is removed from infiltration basin to have a minimum of 3 feet below the bottom of the 1-inch rock (elevation 1365.00)

3) Have a proper relationship between between the 1-inch rock, pea rock, and sand/compost mixture to ensure sediment does not fall down into voids (see example in Wenck review).

**Install according to Becker County or Detroit Lakes Shoreland Ordinance and Planning and Zoning regulations, and State of MN - Department of Natural Resources**

This permit is valid for 18 months.

Permit may be revoked at any time upon violation of Pelican River Water Management Rules. Any changes to this site permit results in nullification of this permit and a new permit will have to be obtained.

Signature of Tera Guetter, District Administrator
PELICAN RIVER WATERSHED DISTRICT
PERMIT REVIEW

REVIEW DATE: September 13, 2016 – Review #3
WENCK REVIEW ID: 16-02
ITEM: Jon and Kristine Riewer Residence Reconstruction

RECOMMENDATION TO DISTRICT ADMINISTRATOR:
____ X Issue permit with conditions (see end of report)
____ Verify compliance with conditions before permit issue (see end of report)
____ Deny permit

APPLICANT: Jon and Kristine Riewer
2620 Long Lake Road
Detroit Lakes, MN 56501

PURPOSE: The proposed project involves demolition of existing house, portion of driveway, concrete, pavers and retaining wall and reconstruction of a new residence, porch, patio, driveway, stormwater ponds and landscaping. Following completion, approximately 15,651-square feet of the 62,836-square foot site (24.91%) will be converted to impervious area. This is a decrease of approximately of 3.21% of impervious area.

LOCATION:

APPLICABILITY:
Total impervious surface (new and existing) of 10,000 sq. ft. or more within the Shoreland Zone (land located within 1,000 linear feet of a lake, or 300 linear feet of a stream or river)

EXHIBITS:
1. Permit Application Memo, by WSN, dated 2/2/16, recd. 2/3/16.
2. Web Soil Survey Data, from USDA, dated 10/14/15, recd. 2/3/16.
3. NOAA Atlas 14, Volume 8, Version 2, from NOAA, dated 2/2/16, recd. 2/3/16.
4. Soil boring location figure and soil boring log, by Torey Sonnenberg, dated 1/23/16, recd. 2/3/16.
5. Comment Response Letter, by WSN, dated 3/6/16, recd. 3/6/16
6. Neenah trench casting with grate product brochure, recd. 3/6/16.
7. Letter/memo, by WSN, dated 9/12/16, recd. 9/13/16.
8. Revised HydroCAD Model and watershed figure, by WSN, dated 9/12/16, recd. 9/13/16.
9. Revised Site development figure with erosion control plan, by WSN, dated 9/12/16, recd. 9/13/16.

FINDINGS:

Maintenance: A detailed schedule indicating dates and sequence of land alteration activities has been received. A detailed description of how erosion and sediment control and soil stabilization measures will be monitored, maintained, and removed has been received. The name, address and phone number of the party responsible for maintenance of all erosion control measures has been provided. A maintenance plan for on-site treatment measures has been provided.

Soils & Erosion Control Plan: Soils affected by the proposal are imported black loam and fill gravel. Preliminary landscaping plans for storm water treatment practices and site re-vegetation has been provided. Adjacent properties are protected from sediment deposition. Wetlands, waterbodies and water conveyance systems are protected from erosion. Project site is not greater than 1 acre; an NPDES permit is not required.

Grading Plan: The location/dimension of existing property lines, roads, structures, utilities, easements, and paved and unpaved areas has been provided. A detailed site topographic plan (minimum 2-foot contours) for the proposed project conditions, which clearly indicates alterations to existing grades and topographic features, has been provided.

Stormwater & Hydraulics: Stormwater leaving the site is discharged into a well defined receiving channel or pipe and routed to a public drainage system. The rate of post-development runoff from the site does not exceed pre-development rates for the 5-, 25-, and 100-year, 24-hour storm events.

Water Quality: Water quality treatment facilities does achieve 90% TSS and 50% total phosphorus removal. Water quality ponds, infiltration basin, or filtration basin are designed correctly.

RECOMMENDATION TO DISTRICT ADMINISTRATOR:

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_______ Verify compliance with conditions before permit issue (see end of report)

_______ Deny permit

As your re-submittal is reviewed, we may find the need to request additional information, and will so inform you.
Conditions:

1. Ensure all unsuitable material for infiltration is removed from infiltration basin to a minimum of 3 feet below the bottom of the 1-inch rock (Elevation 1365.00).
2. Have a proper relationship between the 1-inch rock, pea rock and sand/compost mixture to ensure sediment does not fall down into the voids. The following relationships are not required, but would be an example of what is acceptable.

An example of acceptable relationship:

The pea rock shall exhibit the following relationships to the 1-inch rock:

1. \[ D_{15} \text{ (1-inch rock)} \leq 5 \]
   \[ \frac{D_{85} \text{ (pea rock)}}{ \text{ }} \]

2. \[ D_{50} \text{ (1-inch rock)} \leq 25 \]
   \[ \frac{D_{50} \text{ (pea rock)}}{ \text{ }} \]

3. \[ D_{15} \text{ (1-inch rock)} \leq 20 \]
   \[ \frac{D_{15} \text{ (pea rock)}}{ \text{ }} \]

3. The pea rock shall exhibit the following relationships to the sand/compost mixture:

   1. \[ D_{15} \text{ (pea rock)} \leq 5 \]
      \[ \frac{D_{85} \text{ (sand/compost mixture)}}{ \text{ }} \]

   2. \[ D_{50} \text{ (pea rock)} \leq 25 \]
      \[ \frac{D_{50} \text{ (sand/compost mixture)}}{ \text{ }} \]

   3. \[ D_{15} \text{ (pea rock)} \geq 5 \]
      \[ \frac{D_{15} \text{ (sand/compost mixture)}}{ \text{ }} \]

Where \( D_{15}, D_{50}, \) and \( D_{85} \) are the diameters with which 15%, 50%, and 85% by weight are finer than, respectively.