**FOUNDATION REVIEW, LRFD**

Piles

     , 20

TO:

 Director, Geotechnical Engineering Division

FROM:

Route:

Structure No.:

Des. No.:

Construction Project No.:

Over:

It is recommended that the following foundations be used for the structure identified above.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Support | No. 1 | No. 2 | No. 3 | No. 4 |
| Type |       |       |       |       |
| Size, incl. Shell Thickness |       |       |       |       |
| Factored Design Load, *Qp*(kip) |       |       |       |       |
| Unfactored Permanent Load, *Qd* (kip)\* |       |       |       |       |
| Min. Pile Tip Elev. for Scour /Integral Bent/ Downdrag/ Lateral Design |       |       |       |       |
| Pile Tips | Yes [ ]  No [ ]  | Yes [ ]  No [ ]  | Yes [ ]  No [ ]  | Yes [ ]  No [ ]  |
| Bottom of Footing Elevation |       |       |       |       |
| Top of Footing Elevation |       |       |       |       |

The structure is on piles, so the Summary of Pile Loading for Geotechnical Testing is completed as shown below. Yes [ ]  No [ ]  n/a [ ]

Notes:

 \* Qd should include all service dead loads and is required when the neutral plane method is used to calculate downdrag loads. This field may be left as “N/A” if the neutral plane method isn’t used.

**SUMMARY OF PILE LOADING FOR GEOTECHNICAL TESTING**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Support | No. 1 | No. 2 | No. 3 | No. 4 |
| Pile Size, Type, and Grade |       |       |       |       |
| Factored Design Load, *Qp* (kip) |       |       |       |       |
| Factored Design Soil Resistance, *RR*(kip) |       |       |       |       |
| Resistance Factor φ*dyn* |       |       |       |       |
| Downdrag Load, *DD* (kip) |       |       |       |       |
| Nominal Soil Resistance, *Rn* (kip) \* |       |       |       |       |
| Downdrag friction, *Rs dd* (kip) |       |       |       |       |
| Scour Zone Friction, *Rs scour* (kip) |       |       |       |       |
| Relaxation of Tip in Shale, *Rrelax* (kip) |       |       |       |       |
| Nominal Driving Resistance, *Rndr*(kip) |       |       |       |       |
| Testing Method | Standard Specifications Section 701.05(     ) |

The MSE-wall or modular-block-wall factored applied pressure shown on the wall envelope is less than the factored bearing resistance. Yes [ ]  No [ ]  n/a [ ]

Notes:

\* In Calculation of *DD*, γp = 1.4

***Qp*≤ *Qp max* (factored pile resistance)**

***Qp* ≤ *RR***

To calculate *Rn*: 

To calculate *Rndr*: *Rndr* = *Rn* + (Geotechnical Losses) (*Rs scour* or *Rs dd* or *Rs liq*)

Other:

Approved by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:

 (Signed) Geotechnical Engineer

Reviewed by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:

 (Signed) Reviewer, [ ]  INDOT **[ ]** Consultant,

Reviewed by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:

 (Signed) INDOT Geotechnical Engineering Division