

METAL POLE STANDARD FOUNDATION SELECTION FORM

SIGNAL INVENTORY NO.: U-5319 DATE: 05/16/18

INTERSECTION OF: SR 1308 AND SR 1470

BORING LABEL: MP-1 COUNTY: ONslow

RESIDENT OR DIVISION ENGINEER: Trevor Carroll

CONTRACTOR NAME: NCDOT Geotechnical Engineering Unit

BORING INFORMATION:

SPT DEPTH	1 ft (0.3 m)	2.5 ft (0.8 m)	5 ft (1.5 m)	7.5 ft (2.3 m)	10 ft (3.0 m)	15 ft (4.6 m)	20 ft (6.1 m)	26 ft (7.9 m)
N-VALUE								
MIN = 0	7	7	8	10	10	5	7	1
MAX = 50								

$$N_{AVG} = \frac{(N@1' + N@2.5' + \dots + N@Deepest\ Boring\ Depth^*)}{\text{Total Number of N-values}} = \underline{6.9}$$

$$Y = (N@1')^2 + (N@2.5')^2 + \dots + (N@Deepest\ Boring\ Depth^*)^2 = \underline{437}$$

$$Z = (N@1' + N@2.5' + \dots + N@Deepest\ Boring\ Depth^*) = \underline{55}$$

*Note: Do not include the N-value at the deepest boring depth if the boring is discontinued because one of the following occurs:

- A total of 100 blows have been applied in any 2 consecutive 6-in. (0.15-m) intervals.
- A total of 50 blows have been applied with < 3-in. (.08-m) penetration.

$$N_{STD\ DEV} = \left[\frac{(\text{Total Number of N-values} \times Y) - Z^2}{(\text{Total Number of N-values}) \times (\text{Total Number of N-values} - 1)} \right]^{0.5} = \underline{2.9}$$

Design N-value = $N_{AVG} - (N_{STD\ DEV} \times 0.45)$ = **5.6**

IS **Design N-value** or THE AVERAGE OF THE N-VALUES AT 1 ft, 2.5 ft, 5 ft and 7.5 ft (0.3 m, 0.8 m, 1.5 m and 2.3 m) LESS THAN 4? Yes No

If yes, standard drilled pier foundation from Foundation Selection Table on plans can not be used.

DESCRIPTION OF SOIL: Sand and Clay

DRILLED PIER LENGTH (L): 32.5 ft or m (circle) **From Foundation Selection Table on Plans**

DEPTH OF BORING: 32.5 ft or m (circle)

IS DRILLED PIER LENGTH, L, GREATER THAN DEPTH OF BORING? Yes No

If yes, standard drilled pier foundation from Foundation Selection Table on plans can not be used.

CONTRACTOR REPRESENTATIVE SIGNATURE: _____

DIVISION REPRESENTATIVE SIGNATURE: _____

METAL POLE STANDARD FOUNDATION SELECTION FORM

SIGNAL INVENTORY NO.: U-5319 DATE: 05/16/18

INTERSECTION OF: SR 1308 AND SR 1470

BORING LABEL: MP-2 COUNTY: ONslow

RESIDENT OR DIVISION ENGINEER: Trevor Carroll

CONTRACTOR NAME: NCDOT Geotechnical Engineering Unit

BORING INFORMATION:

SPT DEPTH	1 ft (0.3 m)	2.5 ft (0.8 m)	5 ft (1.5 m)	7.5 ft (2.3 m)	10 ft (3.0 m)	15 ft (4.6 m)	20 ft (6.1 m)	26 ft (7.9 m)
N-VALUE								
MIN = 0	10	4	6	7	6	4	2	1
MAX = 50								

$$N_{AVG} = \frac{(N@1' + N@2.5' + \dots + N@Deepest\ Boring\ Depth^*)}{\text{Total Number of N-values}} = \underline{5.0}$$

$$Y = (N@1')^2 + (N@2.5')^2 + \dots + (N@Deepest\ Boring\ Depth^*)^2 = \underline{258}$$

$$Z = (N@1' + N@2.5' + \dots + N@Deepest\ Boring\ Depth^*) = \underline{40}$$

*Note: Do not include the N-value at the deepest boring depth if the boring is discontinued because one of the following occurs:

- A total of 100 blows have been applied in any 2 consecutive 6-in. (0.15-m) intervals.
- A total of 50 blows have been applied with < 3-in. (.08-m) penetration.

$$N_{STD\ DEV} = \left[\frac{(\text{Total Number of N-values} \times Y) - Z^2}{(\text{Total Number of N-values}) \times (\text{Total Number of N-values} - 1)} \right]^{0.5} = \underline{2.9}$$

Design N-value = $N_{AVG} - (N_{STD\ DEV} \times 0.45)$ = **3.7**

IS **Design N-value** or THE AVERAGE OF THE N-VALUES AT 1 ft, 2.5 ft, 5 ft and 7.5 ft (0.3 m, 0.8 m, 1.5 m and 2.3 m) LESS THAN 4? Yes X No

If yes, standard drilled pier foundation from Foundation Selection Table on plans can not be used.

DESCRIPTION OF SOIL: Sand, Silt and Clay

DRILLED PIER LENGTH (L): 37.5 ft or m (circle) **From Foundation Selection Table on Plans**

DEPTH OF BORING: 37.5 ft or m (circle)

IS DRILLED PIER LENGTH, L, GREATER THAN DEPTH OF BORING? Yes No

If yes, standard drilled pier foundation from Foundation Selection Table on plans can not be used.

CONTRACTOR REPRESENTATIVE SIGNATURE: _____

DIVISION REPRESENTATIVE SIGNATURE: _____

METAL POLE STANDARD FOUNDATION SELECTION FORM

SIGNAL INVENTORY NO.: U-5319 DATE: 05/16/18

INTERSECTION OF: SR 1308 AND SR 1470

BORING LABEL: MP-3 COUNTY: ONslow

RESIDENT OR DIVISION ENGINEER: Trevor Carroll

CONTRACTOR NAME: NCDOT Geotechnical Engineering Unit

BORING INFORMATION:

SPT DEPTH	1 ft (0.3 m)	2.5 ft (0.8 m)	5 ft (1.5 m)	7.5 ft (2.3 m)	10 ft (3.0 m)	15 ft (4.6 m)	20 ft (6.1 m)	26 ft (7.9 m)
N-VALUE MIN = 0 MAX = 50	27	12	4	7	9	14	21	1

$$N_{AVG} = \frac{(N@1' + N@2.5' + \dots + N@Deepest\ Boring\ Depth^*)}{\text{Total Number of N-values}} = \underline{11.9}$$

$$Y = (N@1')^2 + (N@2.5')^2 + \dots + (N@Deepest\ Boring\ Depth^*)^2 = \underline{1657}$$

$$Z = (N@1' + N@2.5' + \dots + N@Deepest\ Boring\ Depth^*) = \underline{95}$$

*Note: Do not include the N-value at the deepest boring depth if the boring is discontinued because one of the following occurs:

- A total of 100 blows have been applied in any 2 consecutive 6-in. (0.15-m) intervals.
- A total of 50 blows have been applied with < 3-in. (.08-m) penetration.

$$N_{STD\ DEV} = \left[\frac{(\text{Total Number of N-values} \times Y) - Z^2}{(\text{Total Number of N-values}) \times (\text{Total Number of N-values} - 1)} \right]^{0.5} = \underline{8.7}$$

Design N-value = $N_{AVG} - (N_{STD\ DEV} \times 0.45)$ = **8.0**

IS **Design N-value** or THE AVERAGE OF THE N-VALUES AT 1 ft, 2.5 ft, 5 ft and 7.5 ft (0.3 m, 0.8 m, 1.5 m and 2.3 m) LESS THAN 4? Yes No

If yes, standard drilled pier foundation from Foundation Selection Table on plans can not be used.

DESCRIPTION OF SOIL: Sand, Silt and Clay

DRILLED PIER LENGTH (L): 42.5 ft m (circle) **From Foundation Selection Table on Plans**

DEPTH OF BORING: 42.5 ft m (circle)

IS DRILLED PIER LENGTH, L, GREATER THAN DEPTH OF BORING? Yes No

If yes, standard drilled pier foundation from Foundation Selection Table on plans can not be used.

CONTRACTOR REPRESENTATIVE SIGNATURE: _____

DIVISION REPRESENTATIVE SIGNATURE: _____

METAL POLE STANDARD FOUNDATION SELECTION FORM

SIGNAL INVENTORY NO.: U-5319 DATE: 05/16/18

INTERSECTION OF: SR 1308 AND SR 1470

BORING LABEL: MP-4 COUNTY: ONslow

RESIDENT OR DIVISION ENGINEER: Trevor Carroll

CONTRACTOR NAME: NCDOT Geotechnical Engineering Unit

BORING INFORMATION:

SPT DEPTH	1 ft (0.3 m)	2.5 ft (0.8 m)	5 ft (1.5 m)	7.5 ft (2.3 m)	10 ft (3.0 m)	15 ft (4.6 m)	20 ft (6.1 m)	26 ft (7.9 m)
N-VALUE								
MIN = 0	7	6	6	8	5	4	1	5
MAX = 50								

$$N_{AVG} = \frac{(N@1' + N@2.5' + \dots + N@Deepest\ Boring\ Depth^*)}{\text{Total Number of N-values}} = \underline{5.3}$$

$$Y = (N@1')^2 + (N@2.5')^2 + \dots + (N@Deepest\ Boring\ Depth^*)^2 = \underline{252}$$

$$Z = (N@1' + N@2.5' + \dots + N@Deepest\ Boring\ Depth^*) = \underline{42}$$

*Note: Do not include the N-value at the deepest boring depth if the boring is discontinued because one of the following occurs:

- A total of 100 blows have been applied in any 2 consecutive 6-in. (0.15-m) intervals.
- A total of 50 blows have been applied with < 3-in. (.08-m) penetration.

$$N_{STD\ DEV} = \left[\frac{(\text{Total Number of N-values} \times Y) - Z^2}{(\text{Total Number of N-values}) \times (\text{Total Number of N-values} - 1)} \right]^{0.5} = \underline{2.1}$$

Design N-value = $N_{AVG} - (N_{STD\ DEV} \times 0.45)$ = **4.3**

IS **Design N-value** or THE AVERAGE OF THE N-VALUES AT 1 ft, 2.5 ft, 5 ft and 7.5 ft (0.3 m, 0.8 m, 1.5 m and 2.3 m) LESS THAN 4? Yes No

If yes, standard drilled pier foundation from Foundation Selection Table on plans can not be used.

DESCRIPTION OF SOIL: Sand, Silt and Clay

DRILLED PIER LENGTH (L): 42.5 ft or m (circle) **From Foundation Selection Table on Plans**

DEPTH OF BORING: 42.5 ft or m (circle)

IS DRILLED PIER LENGTH, L, GREATER THAN DEPTH OF BORING? Yes No

If yes, standard drilled pier foundation from Foundation Selection Table on plans can not be used.

CONTRACTOR REPRESENTATIVE SIGNATURE: _____

DIVISION REPRESENTATIVE SIGNATURE: _____