## SPECIAL NOTE

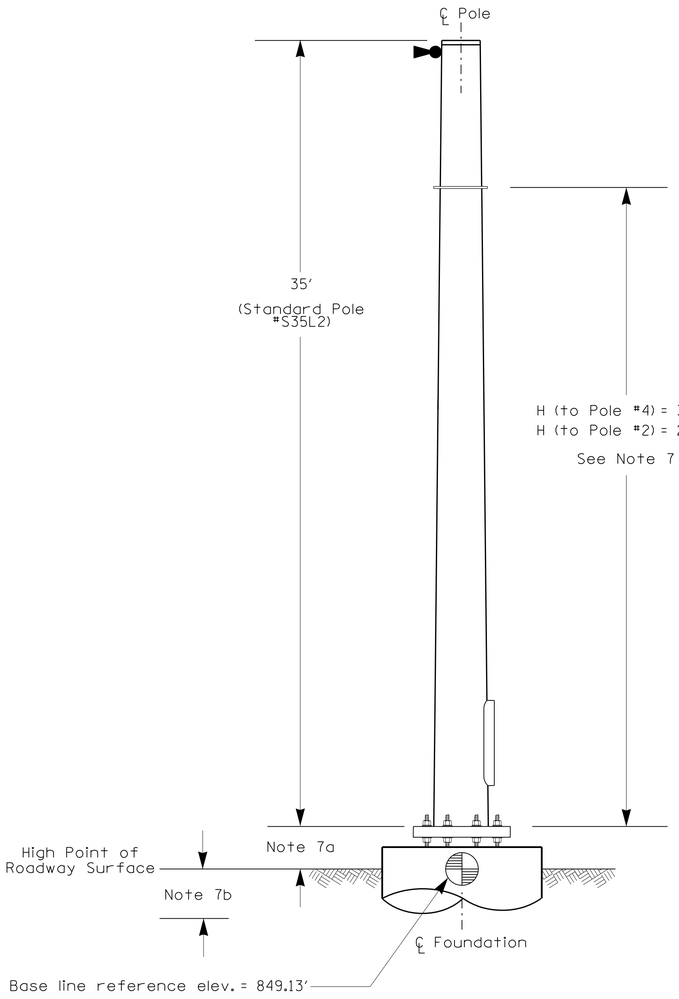
The contractor is responsible for verifying that the attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

### Elevation Data for Span Wire Attachment (H1)

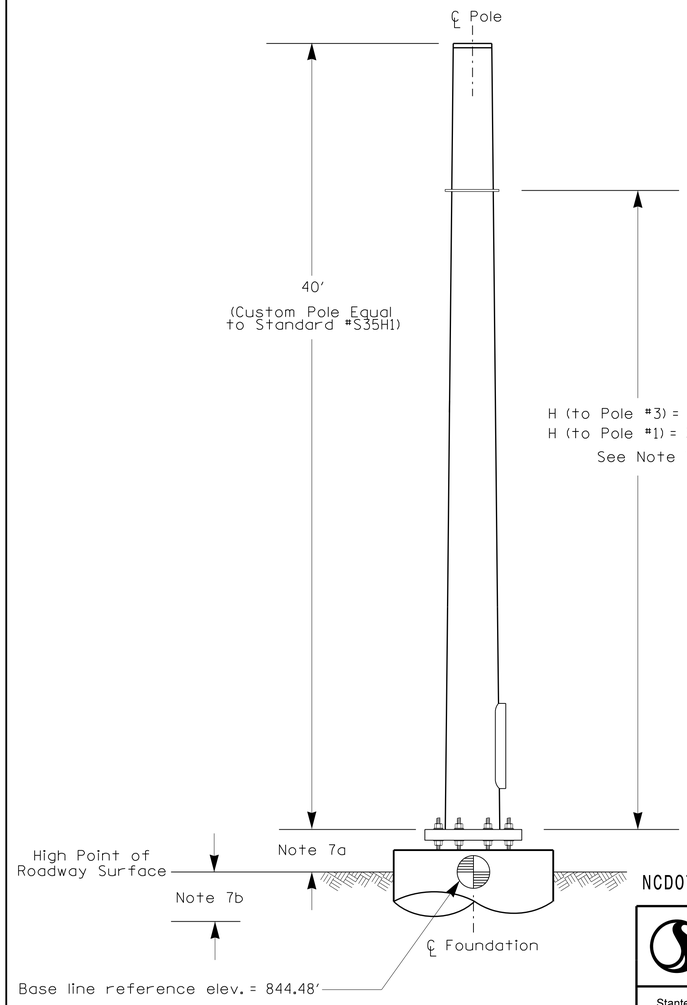
| Elevation Differences for: | Pole 3 | Pole 4 |
|---|---|---|
| Baseline reference point at ℄ Foundation @ ground level | 849.13 ft. | |
| Elevation difference at high point of roadway surface to Pole #4 | + 3.90 ft. | |
| Elevation difference at high point of roadway surface to Pole #2 | - 0.60 ft. | |
| Baseline reference point at ℄ Foundation @ ground level | | 844.48 ft. |
| Elevation difference at high point of roadway surface to Pole #3 | | + 8.55 ft. |
| Elevation difference at high point of roadway surface to Pole #1 | | + 9.44 ft. |

NOTE: SEE SHEET SIG-X.X FOR INTERSECTION LOADING DIAGRAM

### Elevation View - Strain Pole #3




### Elevation View - Strain Pole #4




## METAL STRAIN POLE No. 3 and 4

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-3833C | SIG-12.5 |

### STRAIN POLE LOADING SCHEDULE

| SIGNAL HEAD NUMBER | LOADING SYMBOL | DESCRIPTION | AREA | SIZE | WEIGHT |
|---|---|---|---|---|---|
| 21, 22, 23, 24 41, 42, 43, 44, 45 61, 62, 63, 64 81, 82, 83, 84, 85, 86 | | SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE, HANGER, AND BALANCE ADJUSTER | 9.5 S.F. | 25.5"W X 53.5"L | 56 LBS |
| 10 | | OPTICIAL EVP DETECTOR | 0.25 S.F. | 4.75"W X 12.0"L X 7.13"H | 1.2 LBS |
| Ⓐ Ⓑ Ⓒ | | SIGN WITH HANGER | 7.5 S.F. | 30.0"W X 36.0"L | 14 LBS |
| Ⓢ | | STREET NAME SIGN WITH HANGER | 16.0 S.F. | 24.0"W X 96.0"L | 36 LBS |

### NOTES

DESIGN REFERENCE MATERIAL

1. Design the traffic signal structure and foundation in accordance with:
   - The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
   - The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
   - The 2018 NCDOT Roadway Standard Drawings.
   - The traffic signal project plans and special provisions.
   - The NCDOT "Metal Pole Standards" located at the following NCDOT website: https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

DESIGN REQUIREMENTS

2. Fabricate Metal Strain Poles #3 & #4 using design loadings shown. The contractor may revise attachment heights and radial orientations of wire entrances with the approval of the Engineer. Any modifications to the original location of accessories must be reflected on the shop drawings when they are submitted for review and approval.
3. All signal heads are to be tethered at the bottom of the signal head housing.
4. Design a drilled pier foundation that conforms to the requirements of ITSS Project Special Provisions (Version 18.2) included with and as part of these plans.
5. Comply with NEC code 230.2(E) concerning service equipment disconnect.
6. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
7. The attachment height (H1) shown is based on the following design assumptions:
   a. The top of the pole base plate is 0.75 feet above the ground elevation.
   b. Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway below the spans between adjacent pole attachment points.
8. If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-5000.
9. The contractor is responsible for verifying that the attachment heights shown will allow for proper positioning of the signal heads over the roadway.
10. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

NCDOT Wind Zone 4 (90 mph)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road-Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

SCALE: 0 N/A

US 21 (Charlotte Highway) at SR 1100 (Brawley School Road)/ SR 1117 (Wilson Avenue)

Division 12 | Iredell County | Mooresville

| | | | |
|---|---|---|---|
| PLAN DATE: | May 2022 | REVIEWED BY: | E D Harris |
| PREPARED BY: | J Hambright | REVIEWED BY: | R M Muncey |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 042678 ENGINEER DERRICK A. WALLER

DocuSigned by: Derrick Waller 3/22/2023
SIGNATURE DATE

SIG. INVENTORY NO. 12-1369