| SPAN (ft) | DESIGN WIND HEIGHT TO ℄ TRUSS (ft) | MAXIMUM DRILLED SHAFT AXIAL LOAD (kips) | MAXIMUM DRILLED SHAFT MOMENT (k-ft) | DRILLED SHAFT EMBEDMENT LENGTH (ft) AVERAGE N (BLOWS/12") | | | |
|---|---|---|---|---|---|---|---|
| | | | | 10 | 20 | 30 | 40 |
| 10 | 15 | 67 | 56 | 20 | 14 | 14 | 14 |
| | 20 | 81 | 89 | 24 | 14 | 14 | 14 |
| | 25 | 96 | 130 | 28 | 17 | 17 | 17 |
| | 30 | 112 | 180 | 32 | 20 | 20 | 20 |
| | 35 | 129 | 239 | 37 | 23 | 23 | 23 |
| | 40 | 147 | 307 | 41 | 27 | 27 | 27 |
| | 45 | 166 | 384 | 46 | 30 | 30 | 30 |
| | 50 | 185 | 470 | 51 | 33 | 33 | 33 |
| | 55 | 205 | 566 | 56 | 37 | 37 | 37 |
| 15 | 15 | 72 | 56 | 22 | 14 | 14 | 14 |
| | 20 | 89 | 89 | 26 | 15 | 14 | 14 |
| | 25 | 106 | 130 | 31 | 17 | 17 | 17 |
| | 30 | 124 | 180 | 35 | 20 | 20 | 20 |
| | 35 | 143 | 239 | 40 | 23 | 23 | 23 |
| | 40 | 163 | 307 | 45 | 27 | 27 | 27 |
| | 45 | 183 | 384 | 51 | 30 | 30 | 30 |
| | 50 | 205 | 470 | 56 | 33 | 33 | 33 |
| | 55 | 227 | 566 | 62 | 37 | 37 | 37 |
| 20 | 15 | 78 | 56 | 23 | 14 | 14 | 14 |
| | 20 | 96 | 89 | 28 | 15 | 14 | 14 |
| | 25 | 114 | 130 | 33 | 18 | 17 | 17 |
| | 30 | 134 | 180 | 38 | 20 | 20 | 20 |
| | 35 | 155 | 239 | 43 | 23 | 23 | 23 |
| | 40 | 177 | 307 | 49 | 27 | 27 | 27 |
| | 45 | 199 | 384 | 55 | 30 | 30 | 30 |
| | 50 | 223 | 470 | 61 | 33 | 33 | 33 |
| | 55 | 247 | 566 | 67 | 37 | 37 | 37 |
| 25 | 15 | 83 | 56 | 25 | 14 | 14 | 14 |
| | 20 | 103 | 89 | 30 | 16 | 14 | 14 |
| | 25 | 123 | 130 | 35 | 19 | 17 | 17 |
| | 30 | 145 | 180 | 41 | 22 | 20 | 20 |
| | 35 | 168 | 239 | 47 | 25 | 23 | 23 |
| | 40 | 191 | 307 | 53 | 28 | 27 | 27 |
| | 45 | 216 | 384 | 59 | 31 | 30 | 30 |
| | 50 | 241 | 470 | 66 | 34 | 33 | 33 |
| | 55 | 267 | 566 | 72 | 38 | 37 | 37 |
| 30 | 15 | 89 | 56 | 26 | 15 | 14 | 14 |
| | 20 | 110 | 89 | 32 | 17 | 14 | 14 |
| | 25 | 132 | 130 | 37 | 20 | 17 | 17 |
| | 30 | 155 | 180 | 43 | 23 | 20 | 20 |
| | 35 | 180 | 239 | 50 | 26 | 23 | 23 |
| | 40 | 205 | 307 | 56 | 30 | 27 | 27 |
| | 45 | 232 | 384 | 63 | 33 | 30 | 30 |
| | 50 | 259 | 470 | 70 | 37 | 33 | 33 |
| | 55 | 287 | 566 | 78 | 40 | 37 | 37 |

| SPAN (ft) | DESIGN WIND HEIGHT TO ℄ TRUSS (ft) | MAXIMUM DRILLED SHAFT AXIAL LOAD (kips) | MAXIMUM DRILLED SHAFT MOMENT (k-ft) | DRILLED SHAFT EMBEDMENT LENGTH (ft) AVERAGE N (BLOWS/12") | | | |
|---|---|---|---|---|---|---|---|
| | | | | 10 | 20 | 30 | 40 |
| 35 | 15 | 94 | 56 | 27 | 15 | 14 | 14 |
| | 20 | 117 | 89 | 33 | 18 | 14 | 14 |
| | 25 | 141 | 130 | 40 | 21 | 17 | 17 |
| | 30 | 166 | 180 | 46 | 25 | 20 | 20 |
| | 35 | 192 | 239 | 53 | 28 | 23 | 23 |
| | 40 | 219 | 307 | 60 | 31 | 27 | 27 |
| | 45 | 247 | 384 | 67 | 35 | 30 | 30 |
| | 50 | 277 | 470 | 75 | 39 | 33 | 33 |
| | 55 | 307 | 566 | 83 | 43 | 37 | 37 |
| 40 | 15 | 99 | 56 | 29 | 16 | 14 | 14 |
| | 20 | 124 | 89 | 35 | 19 | 14 | 14 |
| | 25 | 149 | 130 | 42 | 22 | 17 | 17 |
| | 30 | 176 | 180 | 49 | 26 | 20 | 20 |
| | 35 | 204 | 239 | 56 | 30 | 23 | 23 |
| | 40 | 233 | 307 | 64 | 33 | 27 | 27 |
| | 45 | 263 | 384 | 71 | 37 | 30 | 30 |
| | 50 | 295 | 470 | 80 | 41 | 33 | 33 |
| | 55 | 327 | 566 | 88 | 45 | 37 | 37 |
| 45 | 15 | 105 | 56 | 30 | 17 | 14 | 14 |
| | 20 | 131 | 89 | 37 | 20 | 14 | 14 |
| | 25 | 158 | 130 | 44 | 24 | 17 | 17 |
| | 30 | 187 | 180 | 51 | 27 | 20 | 20 |
| | 35 | 216 | 239 | 59 | 31 | 23 | 23 |
| | 40 | 247 | 307 | 67 | 35 | 27 | 27 |
| | 45 | 279 | 384 | 76 | 39 | 30 | 30 |
| | 50 | 313 | 470 | 84 | 44 | 33 | 33 |
| | 55 | 347 | 566 | 93 | 48 | 37 | 37 |

1. DETERMINE DRILLED SHAFT DIAMETER AND MAXIMUM DRILLED SHAFT AXIAL LOAD (KIPS) FROM TABLE BASED ON SPAN LENGTH AND DESIGN WIND HEIGHT TO CENTERLINE OF TRUSS.
2. CONTACT THE HOUSTON DISTRICT LABORATORY FOR CONCISE DRILLED SHAFT EMBEDMENT LENGTH OR USE THE FOLLOWING ITERATIVE PROCEDURE.
3. MAKE AN INITIAL ESTIMATE OF THE DRILLED SHAFT EMBEDMENT LENGTH.
4. FROM SOIL EXPLORATION DATA, DETERMINE AN AVERAGE N VALUE (BLOWS/12") OF THE SOIL THROUGHOUT THE UPPER THIRD OF THE EMBEDMENT LENGTH. USE A WEIGHTED-AVERAGE OF THE BLOW COUNT OF INDIVIDUAL STRATA.
5. USE TABLE TO DETERMINE THE REQUIRED DRILLED SHAFT EMBEDMENT LENGTH BASED ON AXIAL LOAD AND AVERAGE N.
6. IF THE REQUIRED EMBEDMENT LENGTH DIFFERS SIGNIFICANTLY FROM THE INITIAL ESTIMATED EMBEDMENT LENGTH, RETURN TO STEP 3 WITH THE REQUIRED EMBEDMENT LENGTH DETERMINED IN STEP 5 AND REPEAT STEPS 3, 4 & 5.
7. THE EMBEDMENT LENGTH TABLE IS BASED UPON THE GREATEST EMBEDMENT LENGTH DERIVED FROM MOMENT, UPLIFT, OR THE AXIAL LOAD IN THE DRILLED SHAFT.

DESIGNER NOTE:
THIS SHEET IS FOR DESIGNER'S USE IN DETERMINING DRILLED SHAFT DIAMETER, LOADS AND EMBEDMENT. DO NOT INSERT INTO PLANSET.

## FOUNDATION DATA AND EMBEDMENT LENGTH TABLE

(42" DIAMETER DRILLED SHAFT FOR ALL CASES)

*Texas Department of Transportation*
*Houston District Bridge*
*Green Ribbon Project*

# BRACED TEE OVERHEAD SIGN STRUCTURE FOUNDATION DATA AND EMBEDMENT SELECTION TABLE

WAVE SCHEME
BTOSS-WS

| FILE: STDN45.DGN | DN: HOU | CK: HOU | DW: HOU | CK: HOU |
|---|---|---|---|---|
| ©TxDOT AUGUST 2011 | DISTRICT | FED REG | PROJECT NO. | SHEET |
| REVISIONS | HOUSTON | 6 | | |
| | COUNTY | | CONTROL | SECT | JOB | HIGHWAY |

STDN45C