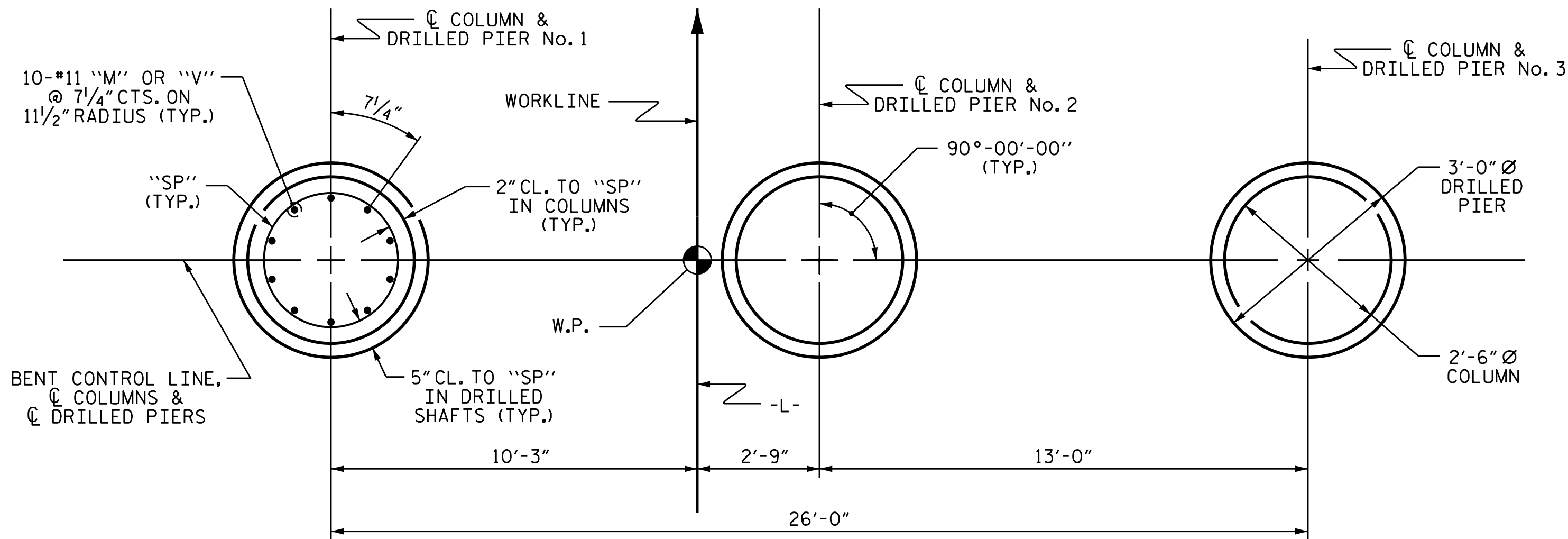
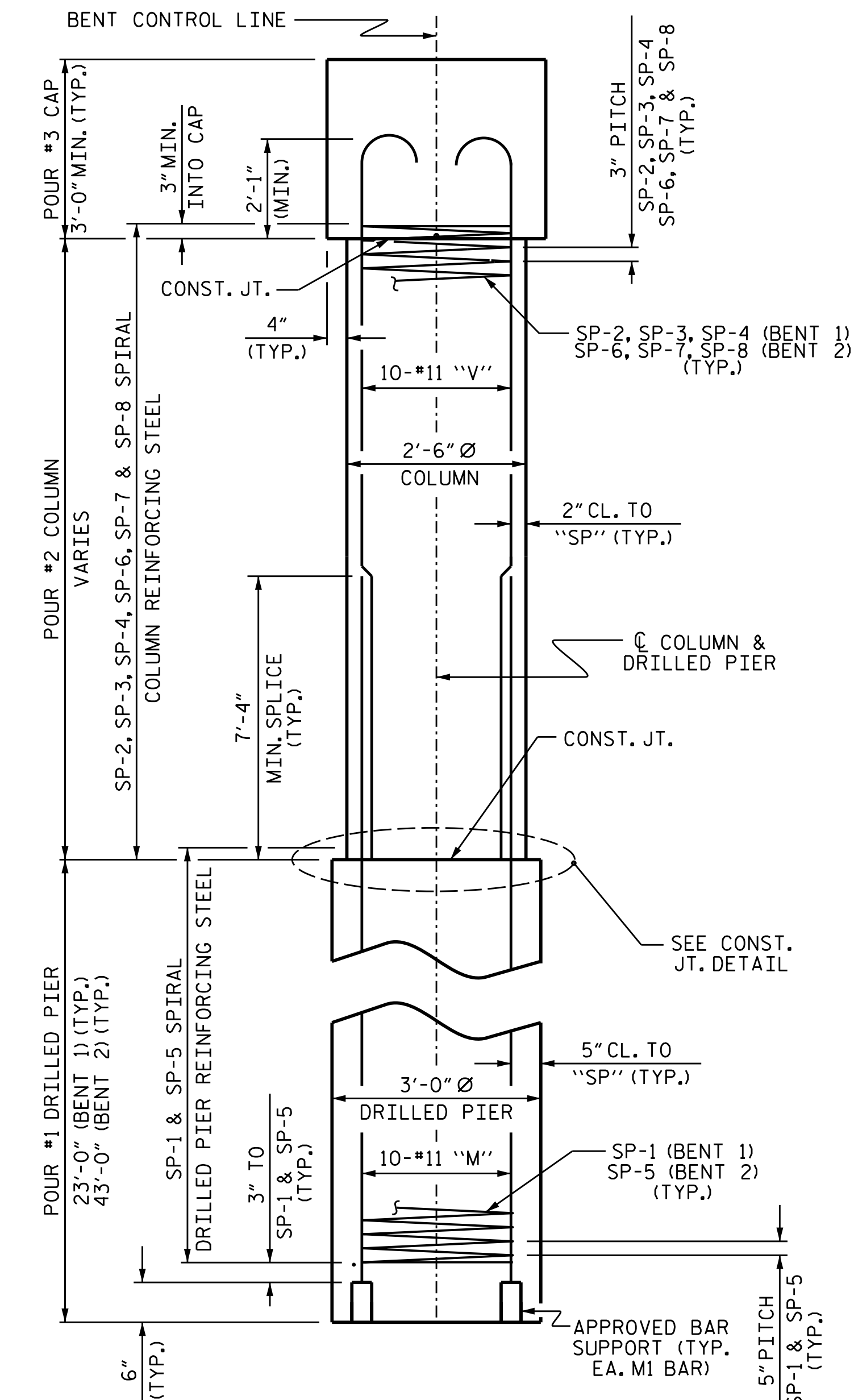
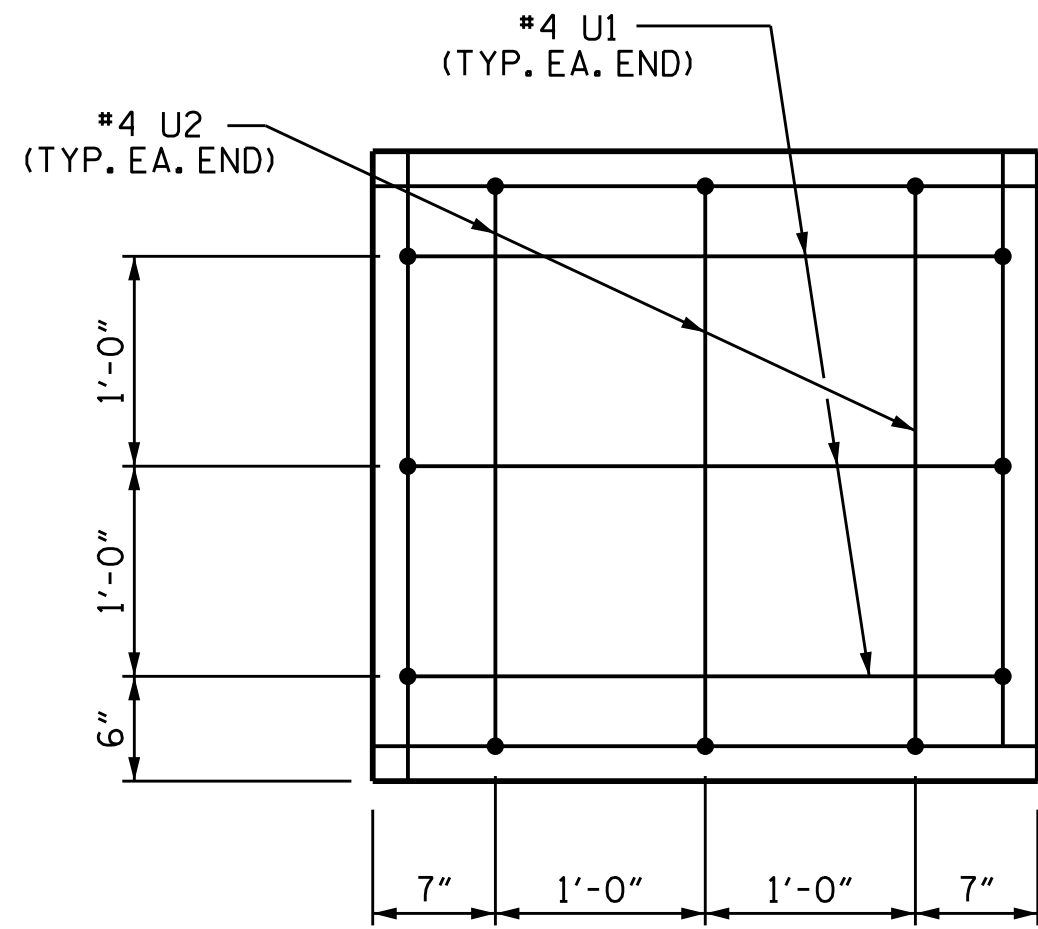




PLAN OF DRILLED PIERS & COLUMNS

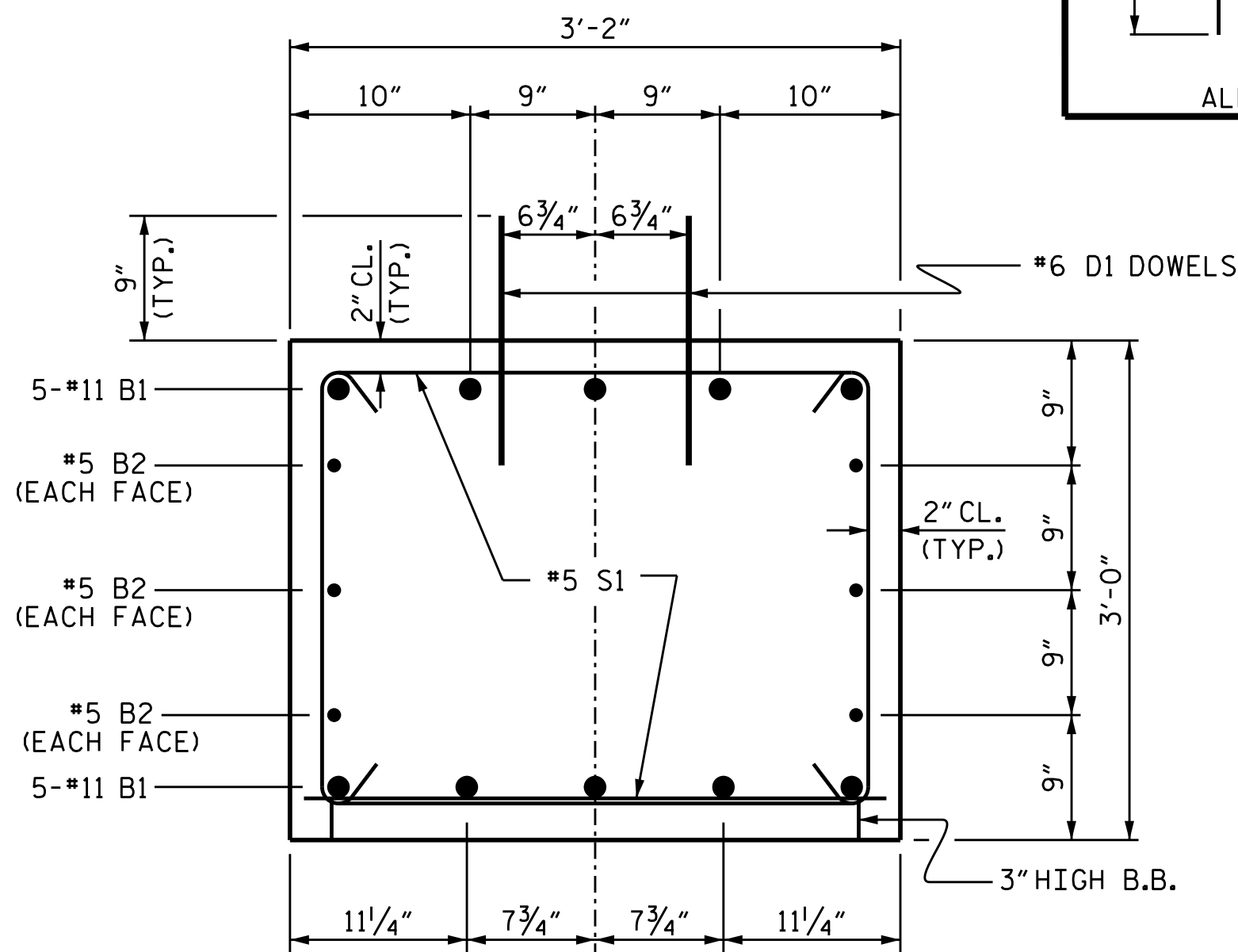


END ELEVATION



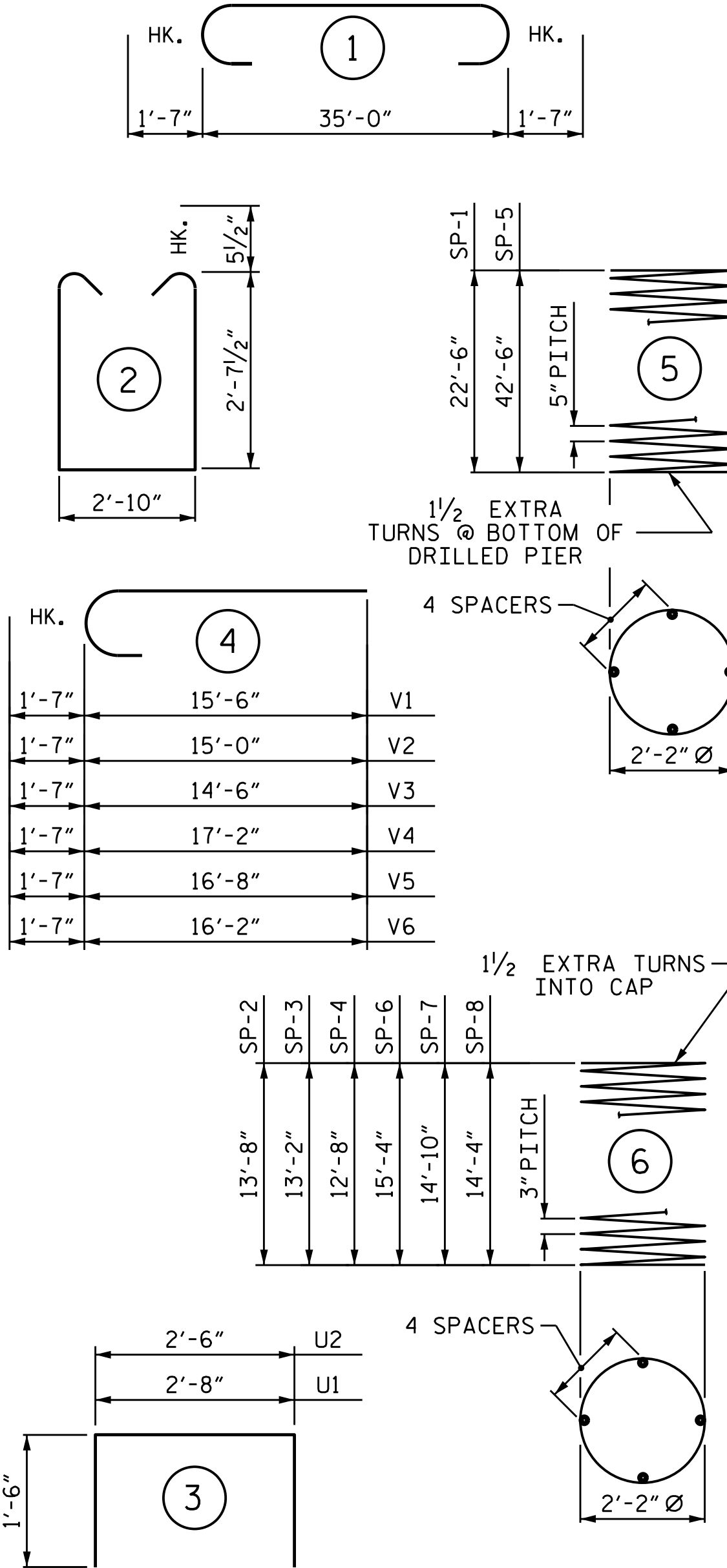
END OF CAP VIEW

(TYPICAL BOTH ENDS)



SECTION THRU CAP

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

| FOR BENT 1                                                                                                           |     |      |      |          |        | FOR BENT 2                                                                                                          |     |      |      |          |        |
|----------------------------------------------------------------------------------------------------------------------|-----|------|------|----------|--------|---------------------------------------------------------------------------------------------------------------------|-----|------|------|----------|--------|
| BAR                                                                                                                  | NO. | SIZE | TYPE | LENGTH   | WEIGHT | BAR                                                                                                                 | NO. | SIZE | TYPE | LENGTH   | WEIGHT |
| B1                                                                                                                   | 10  | #11  |      | 38'-2"   | 2028   | B1                                                                                                                  | 10  | #11  |      | 38'-2"   | 2028   |
| B2                                                                                                                   | 6   | #5   | STR  | 35'-2"   | 220    | B2                                                                                                                  | 6   | #5   | STR  | 35'-2"   | 220    |
| D1                                                                                                                   | 44  | #6   | STR  | 1'-6"    | 99     | D1                                                                                                                  | 44  | #6   | STR  | 1'-6"    | 99     |
| M1                                                                                                                   | 30  | #11  | STR  | 33'-10"  | 5393   | M2                                                                                                                  | 30  | #11  | STR  | 54'-10"  | 8740   |
| S1                                                                                                                   | 60  | #5   | 2    | 9'-0"    | 563    | S1                                                                                                                  | 60  | #5   | 2    | 9'-0"    | 563    |
| U1                                                                                                                   | 6   | #4   | 3    | 5'-8"    | 23     | U1                                                                                                                  | 6   | #4   | 3    | 5'-8"    | 23     |
| U2                                                                                                                   | 6   | #4   | 3    | 5'-6"    | 22     | U2                                                                                                                  | 6   | #4   | 3    | 5'-6"    | 22     |
| V1                                                                                                                   | 10  | #11  | 4    | 17'-1"   | 908    | V4                                                                                                                  | 10  | #11  | 4    | 18'-9"   | 996    |
| V2                                                                                                                   | 10  | #11  | 4    | 16'-7"   | 881    | V5                                                                                                                  | 10  | #11  | 4    | 18'-3"   | 970    |
| V3                                                                                                                   | 10  | #11  | 4    | 16'-0"   | 850    | V6                                                                                                                  | 10  | #11  | 4    | 17'-9"   | 943    |
| REINFORCING STEEL (FOR ONE BENT)                                                                                     |     |      |      |          |        | REINFORCING STEEL (FOR ONE BENT)                                                                                    |     |      |      |          |        |
| 10,987 LBS.                                                                                                          |     |      |      |          |        | 14,604 LBS.                                                                                                         |     |      |      |          |        |
| SP-1                                                                                                                 | 3   | *    | 5    | 397'-7"  | 1244   | SP-5                                                                                                                | 3   | *    | 5    | 745'-4"  | 2332   |
| SP-2                                                                                                                 | 1   | **   | 6    | 381'-6"  | 255    | SP-6                                                                                                                | 1   | **   | 6    | 429'-2"  | 287    |
| SP-3                                                                                                                 | 1   | **   | 6    | 367'-10" | 246    | SP-7                                                                                                                | 1   | **   | 6    | 415'-6"  | 278    |
| SP-4                                                                                                                 | 1   | **   | 6    | 354'-3"  | 237    | SP-8                                                                                                                | 1   | **   | 6    | 401'-11" | 268    |
| SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT)                                                                       |     |      |      |          |        | SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT)                                                                      |     |      |      |          |        |
| 1,982 LBS.                                                                                                           |     |      |      |          |        | 3,165 LBS.                                                                                                          |     |      |      |          |        |
| * THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR                 |     |      |      |          |        | * THE SP-5 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR                |     |      |      |          |        |
| ** THE SP-2, SP-3 AND SP-4 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR |     |      |      |          |        | * THE SP-6, SP-7 AND SP-8 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR |     |      |      |          |        |
| CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)                                                                            |     |      |      |          |        | CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)                                                                           |     |      |      |          |        |
| POUR #2 (COLUMNS) 7.1 C.Y.                                                                                           |     |      |      |          |        | POUR #2 (COLUMNS) 8.0 C.Y.                                                                                          |     |      |      |          |        |
| POUR #3 (CAP) 12.5 C.Y.                                                                                              |     |      |      |          |        | POUR #3 (CAP) 12.5 C.Y.                                                                                             |     |      |      |          |        |
| TOTAL CLASS A CONCRETE 19.6 C.Y.                                                                                     |     |      |      |          |        | TOTAL CLASS A CONCRETE 20.5 C.Y.                                                                                    |     |      |      |          |        |
| DRILLED PIERS: (FOR ONE BENT)                                                                                        |     |      |      |          |        | DRILLED PIERS: (FOR ONE BENT)                                                                                       |     |      |      |          |        |
| DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS) 18.9 C.Y.                                                              |     |      |      |          |        | DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS) 35.4 C.Y.                                                             |     |      |      |          |        |
| 3'-0" Ø DRILLED PIER NOT IN SOIL 21 LIN. FT.                                                                         |     |      |      |          |        | 3'-0" Ø DRILLED PIER NOT IN SOIL 24 LIN. FT.                                                                        |     |      |      |          |        |
| 3'-0" Ø DRILLED PIER IN SOIL 51 LIN. FT.                                                                             |     |      |      |          |        | 3'-0" Ø DRILLED PIER IN SOIL 111 LIN. FT.                                                                           |     |      |      |          |        |
| PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER 24 LIN. FT.                                                          |     |      |      |          |        | PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER 45 LIN. FT.                                                         |     |      |      |          |        |
| CSL TUBES 204 LIN. FT.                                                                                               |     |      |      |          |        | CSL TUBES 372 LIN. FT.                                                                                              |     |      |      |          |        |

CONSTRUCTION JOINT DETAIL

PROJECT NO. B-6047  
RUTHERFORD COUNTY  
STATION: 18+20.00 -L-

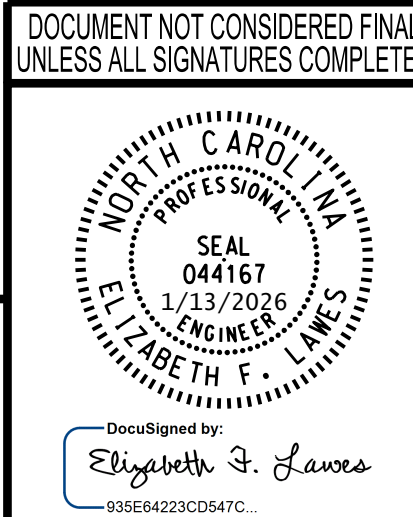
SHEET 3 OF 3

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
BENT  
DETAILS

REVISIONS

| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO.       |
|-----|-----|-------|-----|-----|-------|-----------------|
| 1   |     |       | 3   |     |       | S-20            |
| 2   |     |       | 4   |     |       | TOTAL SHEETS 25 |



WSP USA Inc.  
434 FAYETTEVILLE STREET  
SUITE 1500  
RALEIGH, NC 27601  
TEL: 1.919.836.4040  
LICENSE NO. F-0165

DESIGNED BY: T. KIRSCHBAUM DATE: FEB 2023  
DRAWN BY: T. KIRSCHBAUM DATE: FEB 2023  
CHECKED BY: E. LAWES DATE: APR 2023  
DESIGN ENGINEER OF RECORD: E. LAWES DATE: AUG 2025