

**THIS PROJECT IS A MANDATORY TIE TO A NEARBY PROJECT, JOB PIECE NUMBER 28827(04)**

STATE OF OKLAHOMA  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED  
**STATE HIGHWAY**  
FEDERAL AID PROJ. NO. ACSTP-277B(034)SS  
BRIDGE AND APPROACHES  
SH 34 OVER SOUTH PERSIMMON CREEK  
**WOODWARD COUNTY**  
STATE JOB NO. 28825(04)  
CONTROL SECTION NO. 34-77-16

BRIDGE "A" LOCATION NO. 7716 0486 X  
EXISTING NBI NO. 03426; NEW NBI NO. 31749

**INDEX OF SHEETS**

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**DESIGN DATA**

|                    |          |
|--------------------|----------|
| ADT 2016           | = 2,150  |
| ADT 2036           | = 3,070  |
| DHV (2-WAY)        | = 338    |
| K (DHV/ADT)        | = 11%    |
| D                  | = 55%    |
| T(%DHV)            | = 17%    |
| T(%ADT)            | = 20%    |
| T(%ADT)            | = 13%    |
| V                  | = 65 MPH |
| (20 YR)FLEX ESAL's | = 3.2M   |

**SCALES**

|              |        |
|--------------|--------|
| PLAN         | 1"=50' |
| PROFILE HOR. | 1"=50' |
| PROFILE VER. | 1"=5'  |
| LAYOUT MAP   | N.T.S. |

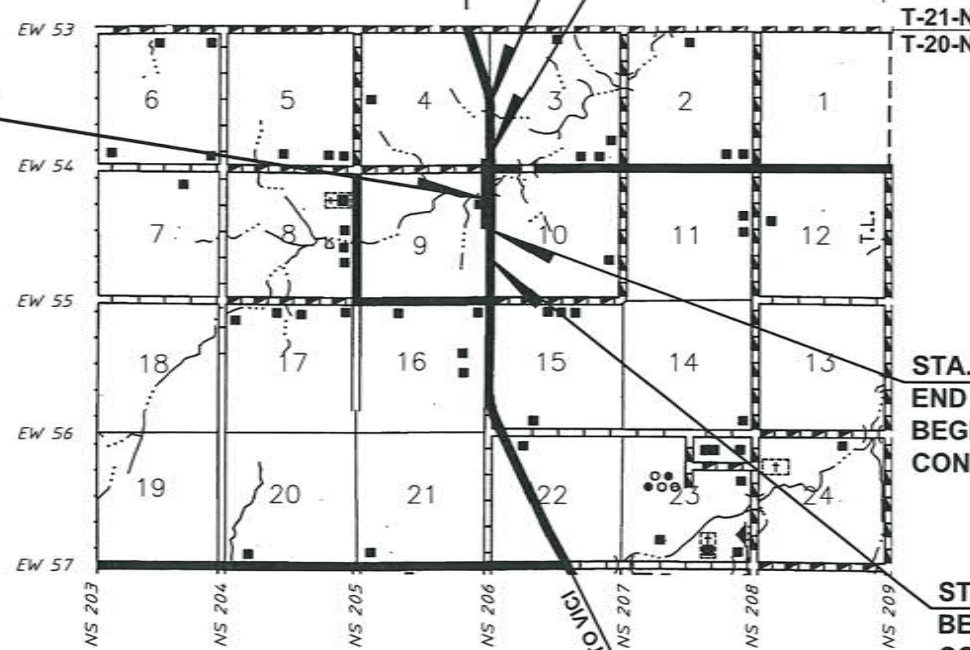
**CONVENTIONAL SYMBOLS**

|  |                                 |
|--|---------------------------------|
|  | PROPOSED ROADS                  |
|  | SECTION LINES                   |
|  | QUARTER SECTION LINES           |
|  | FENCES (EXISTING)               |
|  | EXISTING GRADE                  |
|  | EXISTING ROADS                  |
|  | EXISTING INDEX CONTOURS         |
|  | EXISTING INTERMEDIATE CONTOURS  |
|  | BASE LINE                       |
|  | PROPOSED GRADE                  |
|  | COMMUNICATION LINES (EXISTING)  |
|  | POWER LINES (EXISTING)          |
|  | GAS LINE (EXISTING)             |
|  | SANITARY SEWER LINES (EXISTING) |
|  | WATER LINES (EXISTING)          |
|  | COMMUNICATION LINES (PROPOSED)  |
|  | POWER LINES (PROPOSED)          |
|  | GAS LINE (PROPOSED)             |
|  | SANITARY SEWER LINES (PROPOSED) |
|  | WATER LINES (PROPOSED)          |
|  | BUILDINGS (EXISTING)            |
|  | DRAINAGE STRUCTURES (EXISTING)  |
|  | DRAINAGE STRUCTURES (PROPOSED)  |
|  | RIGHT-OF-WAY LINES (EXISTING)   |
|  | RIGHT-OF-WAY LINES (PROPOSED)   |
|  | RIGHT-OF-WAY FENCE              |
|  | FLOWLINE (EXISTING)             |
|  | FLOWLINE (PROPOSED)             |
|  | TOE OF SLOPE (EXISTING)         |

BRIDGE "A"

EXIST. NBI NO. 03426  
NEW NBI NO. 31749  
LOCATION NO. 7716 0486 X  
BEGIN STA. 2296+43.89  
END STA. 2298+44.39  
LENGTH 200.50 FT.

BRIDGE "A"



**PROJECT LENGTH BASED ON CL SURVEY STATIONING**

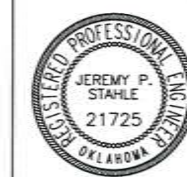
|                |             |          |
|----------------|-------------|----------|
| ROADWAY LENGTH | 1,474.50 FT | 0.279 MI |
| BRIDGE LENGTH  | 200.50 FT   | 0.037 MI |
| PROJECT LENGTH | 1,675.00 FT | 0.317 MI |

EXCEPTIONS \_\_\_\_\_ NONE  
EQUATIONS \_\_\_\_\_ NONE

**STANDARDS**

THE FOLLOWING ODOT STANDARDS ARE REQUIRED FOR THIS PROJECT:

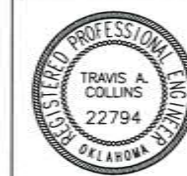
| ROADWAY    | TRAFFIC   | TRAFFIC CONTROL | BRIDGE              |
|------------|-----------|-----------------|---------------------|
| SSS-1-1    | PM3-1-02  | TCS1-1-01       | B40-1-ABUT-MISC-01E |
| TSC2-3-2   | DU1-1-00  | TCS2-1-00       | B40-1-AS-03E        |
| TS2-2-0    | DU2-1-00  | TCS4-1-01       | TR4-2-00E           |
| TRFD-1-2   | RSD1-1-00 | TCS5-1-00       | HP1-2-00E           |
| ASCD-5-2   | WSD3-1-00 | TCS6-1-02       |                     |
| LECS-4-1   | SBS1-1-00 | TCS7-1-02       |                     |
| PSE-1-0    | GMS1-1-00 | TCS8-1-00       |                     |
| CET6S-3-2  | SSP1-1-02 | TCS9-1-01       |                     |
| SPI-4-1    | SSA1-1-00 | TCS10-1-00      |                     |
| SPB-1-4    | THRI-1-02 | TCS11-1-01      |                     |
| FHTMPP-1-0 | SKT-1-00  | TCS13-1-00      |                     |
| FHTCP-3-1  | GA31-1-00 | TCS14-1-00      |                     |
| PUD-3-2    | GHW1-1-00 | TCS19-1-01      |                     |
| PDT-1-3    | GHW2-1-00 | TCS20-1-00      |                     |
| RWF2-2-1   |           | TCS21-1-02      |                     |
|            |           | TCS22-1-00      |                     |



PREPARED BY:  
CEC CORPORATION  
CA32 6/30/18  
TULSA, OKLAHOMA



*Jeremy P. Stahle* 6/17/16  
DATE  
JEREMY P. STAHL, P.E.  
OKLA. REG. NO. 21725



PREPARED BY:  
CEC CORPORATION  
CA32 6/30/18  
OKLAHOMA CITY, OKLAHOMA

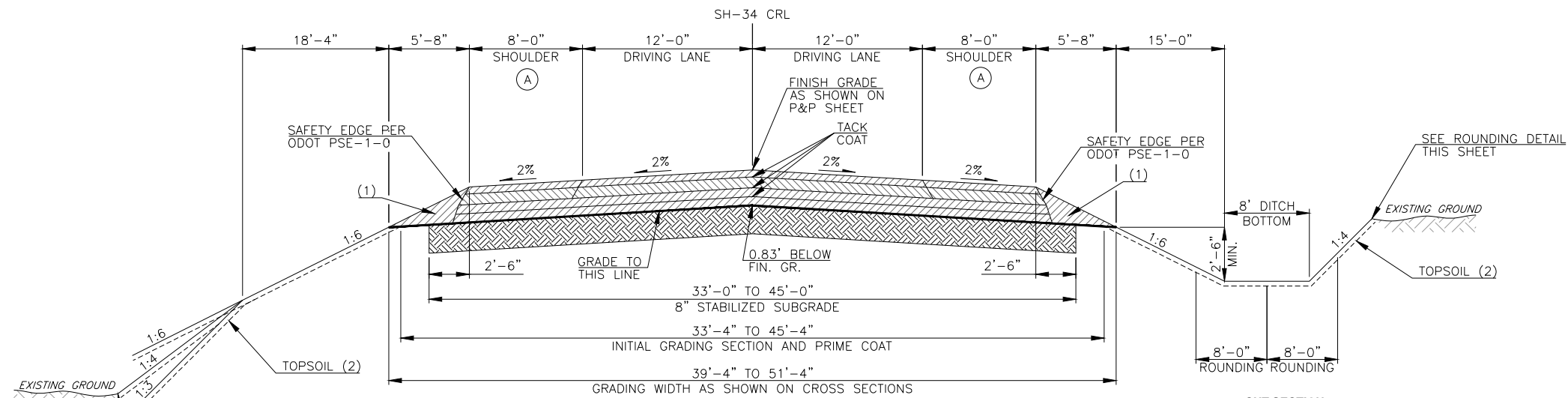


*Travis A. Collins* 6-17-16  
DATE  
TRAVIS A. COLLINS, P.E.  
OKLA. REG. NO. 22794

OKLAHOMA  
DEPARTMENT OF TRANSPORTATION  
DATE APPROVED \_\_\_\_\_  
BY \_\_\_\_\_  
CHIEF ENGINEER

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
DATE APPROVED \_\_\_\_\_  
BY \_\_\_\_\_  
DIVISION ADMINISTRATOR

| DESCRIPTION | REVISIONS | DATE |
|-------------|-----------|------|
|             |           |      |



**TYPICAL NO. 1 (MAINLINE)**  
**STA. 2290+50.00 TO STA. 2296+19.89**  
**STA. 2298+68.39 TO STA. 2307+25.00**

- \* SEE CROSS SECTIONS FOR VARIATION
- (A) 2'-0" TO 8'-0" FROM STA. 2290+50.00 TO STA. 2291+50.00  
8'-0" TO 2'-0" FROM STA. 2306+25.00 TO STA. 2307+25.00

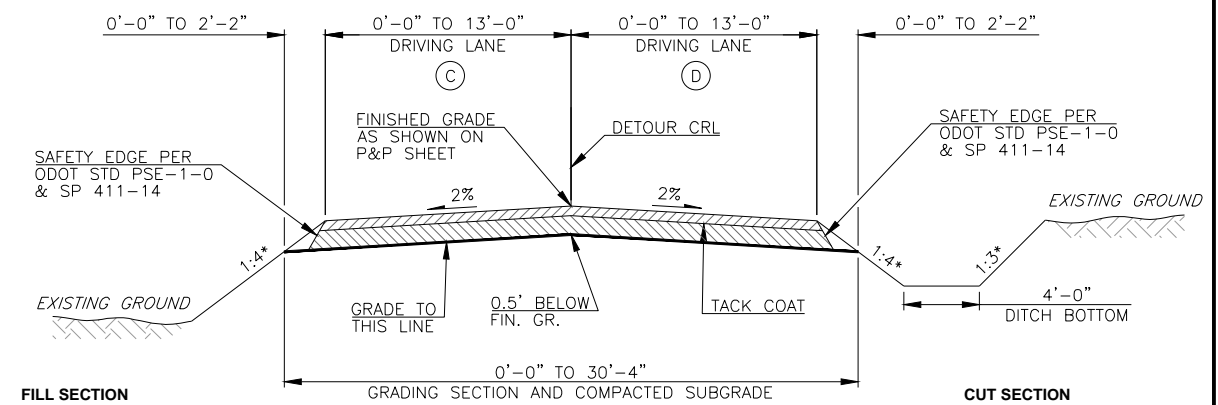
| PAVEMENT REQUIREMENT |  |  |                                    |
|----------------------|--|--|------------------------------------|
| 10" PAVT. STRUCTURE  | 12'-0" DRIVING LANES   | 2'-0" TO 8'-0" PAVED SHOULDERS   | 0'-0" TO 5'-0" GUARDRAIL WIDENING  |
| SURFACE COURSE       | 2" SUPERPAVE TYPE S4 (PG 70-28 OK)   | 2" SUPERPAVE TYPE S4 (PG 64-22 OK)   | 4" SUPERPAVE TYPE S4 (PG 64-22 OK) |
| BASE COURSE          | 3" SUPERPAVE TYPE S3 (PG 70-28 OK)<br>2-2.5" SUPERPAVE TYPE S3 (PG 64-22 OK) | 3" SUPERPAVE TYPE S3 (PG 64-22 OK)<br>2-2.5" SUPERPAVE TYPE S3 (PG 64-22 OK) |                                    |

- (1) BACKFILL NOTE:  
THIS AREA TO BE BACKFILLED AND COMPACTED AS A PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURED IN UNCLASSIFIED BORROW.
- (2) TOPSOIL NOTE:  
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, STOCKPILE IT, AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATION. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATION SHALL BE INCLUDED IN THE PAY ITEM FOR SALVAGED TOPSOIL, LUMP SUM. THE GRADING LINE IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASSLINE BALANCE.
- (3) DISTANCE MEASURED VERTICALLY FROM EDGE OF FINISHED GRADE SHOULDER

1:6' 0' TO 4' (3)  
1:4' 0' TO 10'  
1:3' > 10'

**FILL SECTION**

SEE ROUNDING DETAIL THIS SHEET



**TYPICAL NO. 3 (DETOUR)**  
**STA. 2284+95.00 TO STA. 2313+02.00**

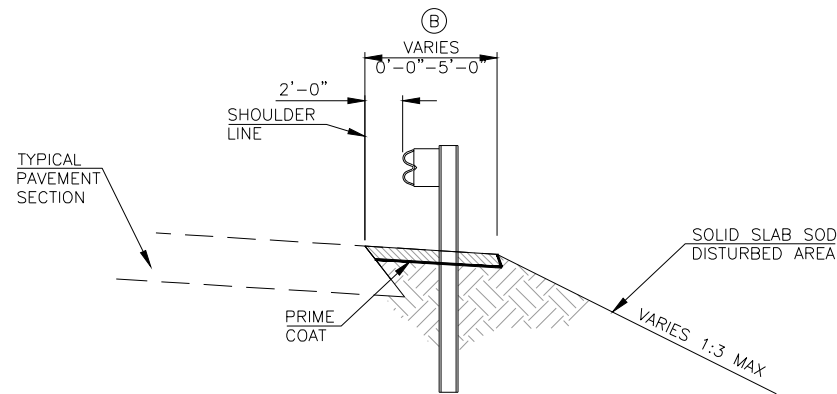
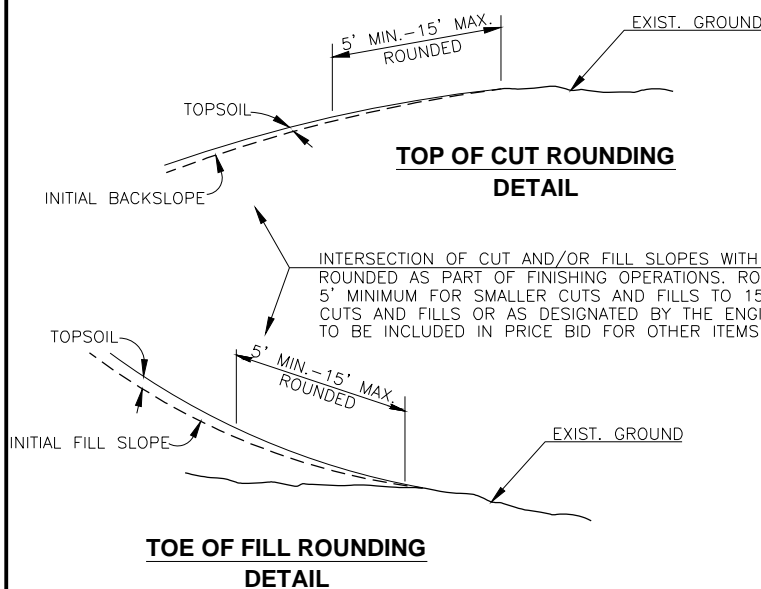
- \* SEE CROSS SECTIONS FOR VARIATION
- \*\* SUBGRADE TO BE COMPACTED AS PER SPECIFICATIONS. COST TO BE INCLUDED IN EARTHWORK.
- (C) 0'-0" TO 13'-0" FROM STA. 2284+95.00 TO STA. 2286+07.25  
13'-0" FROM STA. 2286+07.25 TO STA. 2311+64.73  
13'-0" TO 0'-0" FROM STA. 2311+64.73 TO STA. 2313+02.00
- (D) 0'-0" TO 13'-0" FROM STA. 2286+07.25 TO STA. 2286+76.19  
13'-0" FROM STA. 2286+76.19 TO STA. 2310+99.26  
13'-0" TO 0'-0" FROM STA. 2310+99.26 TO STA. 2311+64.73

| PAVEMENT REQUIREMENT |                                    |
|----------------------|------------------------------------|
| 6" PAVT. STRUCTURE   | 0'-0" TO 13'-0" DRIVING LANES      |
| SURFACE COURSE       | 2" SUPERPAVE TYPE S4 (PG 64-22 OK) |
| BASE COURSE          | 4" SUPERPAVE TYPE S3 (PG 64-22 OK) |

FILENAME: 2 TYPICAL SECTIONS.DWG

|         |                               |                 |
|---------|-------------------------------|-----------------|
| DESIGN  | SH-34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   |                               |                 |
| CHECKED |                               |                 |
| CEC     | STATE JOB NO. 28825(04)       | SHEET NO. 2     |

**ROUNDING DETAIL**



**TYPICAL NO. 2 (GUARDRAIL WIDENING)**

- LEFT  
STA. 2293+11.14 TO STA. 2296+19.89  
STA. 2298+68.39 TO STA. 2302+52.14
- (B) 0'-0" TO 5'-0" FROM STA. 2293+11.14 TO STA. 2293+81.14  
5'-0" FROM STA. 2293+81.14 TO STA. 2296+19.89  
5'-0" FROM STA. 2298+68.39 TO STA. 2301+82.14  
5'-0" TO 0'-0" FROM STA. 2301+82.14 TO STA. 2302+52.14
- RIGHT  
STA. 2292+36.14 TO STA. 2296+19.89  
STA. 2298+68.39 TO STA. 2301+77.14
- (B) 0'-0" TO 5'-0" FROM STA. 2292+36.14 TO STA. 2293+06.14  
5'-0" FROM STA. 2293+06.14 TO STA. 2296+19.89  
5'-0" FROM STA. 2298+68.39 TO STA. 2301+07.14  
5'-0" TO 0'-0" FROM STA. 2301+07.14 TO STA. 2301+77.14

| DESCRIPTION | REVISIONS | DATE |
|-------------|-----------|------|
|-------------|-----------|------|

| JP 28825(04)<br>ROADWAY - 0100  |          |  |                   |          |
|---------------------------------|----------|--|-------------------|----------|
| <b>PAY QUANTITIES (ROADWAY)</b> |          |  |                   |          |
| PAY ITEM                        | CODE NO. | DESCRIPTION                            | UNIT              | QUANTITY |
| 201(A)                          | 0102     | CLEARING AND GRUBBING                  | LSUM              | 1        |
| 202(A)                          | 0183     | UNCLASSIFIED EXCAVATION                | (R-1)(R-4) CY     | 26,288   |
| 202(D)                          | 0184     | UNCLASSIFIED BORROW                    | (R-4) CY          | 8,644    |
| 205(A)                          | 4230     | TYPE A SALVAGED TOPSOIL                | (R-5)(R-7) CY     | 6,789    |
| 221(C)                          | 2801     | TEMPORARY SILT FENCE                   | LF                | 1,368    |
| 221(F)                          | 0100     | TEMPORARY SILT DIKE                    | LF                | 140      |
| 221(G)                          | 0150     | TEMPORARY ROCK FILTER DAM TYPE 1       | CY                | 20       |
| 230(A)                          | 2806     | SOLID SLAB SODDING                     | (R-7)(R-8) SY     | 36,464   |
| 233(A)                          | 2817     | VEGETATIVE MULCHING                    | (3)(R-11) AC      | 5.70     |
| 241                             | 2832     | MOWING                                 | (R-16) AC         | 28.50    |
| 307(K)                          | 4300     | STABILIZED SUBGRADE                    | (1)(R-1) SY       | 7,888    |
| 310(B)                          | 0149     | SUBGRADE, METHOD B                     | (R-1) SY          | 1,412    |
| 407(B)                          | 0250     | TACK COAT                              | GAL               | 4,583    |
| 408                             | 5774     | PRIME COAT                             | (R-28) GAL        | 7,086    |
| 411(B)                          | 5940     | SUPERPAVE, TYPE S3 (PG 70-28 OK)       | (R-32) TON        | 693      |
| 411(B)                          | 5945     | SUPERPAVE, TYPE S3 (PG 64-22 OK)       | (R-32) TON        | 4,342    |
| 411(C)                          | 5955     | SUPERPAVE, TYPE S4 (PG 70-28 OK)       | (R-32) TON        | 594      |
| 411(C)                          | 5960     | SUPERPAVE, TYPE S4 (PG 64-22 OK)       | (R-32) TON        | 1,272    |
| 613(A)                          | 4496     | 28" X 18" R.C. PIPE ARCH CLASS A-III   | LF                | 70       |
| 613(A)                          | 4497     | 36" X 22" R.C. PIPE ARCH CLASS A-III   | LF                | 96       |
| 613(A)                          | 4498     | 43" X 26" R.C. PIPE ARCH CLASS A-III   | LF                | 108      |
| 613(B)                          | 0689     | 18" CORR. GALV. STEEL PIPE             | (R-46) LF         | 32       |
| 613(B)                          | 0690     | 24" CORR. GALV. STEEL PIPE             | (R-46) LF         | 87       |
| 613(B)                          | 0697     | 66" CORR. GALV. STEEL PIPE             | (R-46) LF         | 203      |
| 613(B)                          | 5075     | 108" CORR. GALV. STEEL PIPE            | (R-46) LF         | 110      |
| 613(M)                          | 7197     | TYPE B6 CULVERT END TREATMENT          | EA                | 4        |
| 613(M)                          | 7198     | TYPE C6 CULVERT END TREATMENT          | EA                | 2        |
| 619(A)                          | 0920     | REMOVAL OF STRUCTURES & OBSTRUCTIONS   | (R-48)(R-49) LSUM | 1        |
| 619(B)                          | 4725     | REMOVAL OF FENCE                       | (R-49) LF         | 4,291    |
| 619(B)                          | 4728     | REMOVAL OF ASPHALT PAVEMENT            | (R-49)(R-50) SY   | 12,876   |
| 619(B)                          | 4767     | REMOVAL OF ASPHALT DRIVEWAY            | (R-49)(R-50) SY   | 1,355    |
| 619(B)                          | 4780     | REMOVAL OF GUARDRAIL                   | (R-49) LF         | 566      |
| 623(A)                          | 0932     | BEAM GUARDRAIL W-BEAM SINGLE           | LF                | 756.25   |
| 623(F)                          | 8300     | GUARDRAIL TRAIL END TURNDOWN (31")     | EA                | 2        |
| 623(G)                          | 8590     | GUARDRAIL END TREATMENT (31")          | (2) EA            | 4        |
| 623(I)                          | 8700     | GUARDRAIL BRIDGE CONN-THRIE BEAM (31") | EA                | 4        |
| 624(C)                          | 4459     | FENCE-STYLE SWF (5 BARBED WIRE)        | (R-52)(R-53) LF   | 4,431    |

| JP 28825(04)<br>STAKING - 0600  |          |                               |          |          |
|---------------------------------|----------|-------------------------------|----------|----------|
| <b>PAY QUANTITIES (STAKING)</b> |          |                               |          |          |
| PAY ITEM                        | CODE NO. | DESCRIPTION                   | UNIT     | QUANTITY |
| 642(B)                          | 0096     | CONSTRUCTION STAKING LEVEL II | (4) LSUM | 1        |

| JP 28825(04)<br>CONSTRUCTION - 0640  |          |                                    |          |          |
|--------------------------------------|----------|------------------------------------|----------|----------|
| <b>PAY QUANTITIES (CONSTRUCTION)</b> |          |                                    |          |          |
| PAY ITEM                             | CODE NO. | DESCRIPTION                        | UNIT     | QUANTITY |
| 220                                  | 2800     | SWPPP DOCUMENTATION AND MANAGEMENT | LSUM     | 1        |
| 641                                  | 1552     | MOBILIZATION                       | (4) LSUM | 1        |

### SUGGESTED SEQUENCE OF CONSTRUCTION

- CONSTRUCT TEMPORARY DETOUR.
- SHIFT TRAFFIC TO TEMPORARY DETOUR. REMOVE EXISTING SH-34 SECTION AND BRIDGE. CONSTRUCT NEW SH-34 SECTION AND BRIDGE.
- SHIFT TRAFFIC TO NEW SH-34 SECTION, REMOVE TEMPORARY DETOUR AND PERFORM FINISHING OPERATIONS.

### PAY ITEMS & NOTES (ROADWAY)

- (R-1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITY ONLY. SEE SECTION 109.01B OF THE STANDARD SPECIFICATIONS.
- (R-4) INCLUDES 1,000 CU. YDS. FOR DRIVEWAYS, RETURNS, DIKES, AND MISCELLANEOUS EARTHWORK.
- (R-5) AN ESTIMATED QUANTITY OF 6,789 C.Y. TOPSOIL TO BE RESERVED FOR REPLACEMENT OF APPROXIMATELY 5" ON COMPLETED FORESLOPES, DITCHES, AND BACKSLOPES. THIS QUANTITY IS INCLUDED IN THE EARTHWORK BALANCE. ANY ADDITIONAL EXCAVATION REQUIRED IN CUT SECTIONS TO ALLOW FOR PLACEMENT OF TOPSOIL TO FINAL GRADE, SHALL BE INCLUDED IN THE PRICE BID.
- (R-7) FOR TYPE A SALVAGED TOPSOIL, PRICE BID TO INCLUDE COST OF 10-20-10 FERTILIZER, ESTIMATED AT 200 POUNDS PER 1,000 SQUARE YARDS.
- FOR SOLID SLAB SODDING, PRICE BID TO INCLUDE COST OF 10-20-10 FERTILIZER ESTIMATED AT 200 POUNDS PER 1,000 SQUARE YARDS.
- (R-8) FOR SOLID SLAB SODDING, PRICE BID TO INCLUDE COST OF WATERING, ESTIMATED AT 40 GALLONS PER SQUARE YARD.
- (R-11) THE QUANTITIES ESTIMATED FOR TEMPORARY EROSION AND SEDIMENT CONTROL IS 5.70 ACRES.
- (R-16) QUANTITY BASED ON TWO APPLICATIONS.
- (R-28) PRIME COAT SHALL BE APPLIED AT AN ESTIMATED RATE OF 0.35 GAL. PER SQ. YD. WHEN APPLIED TO SUBGRADE, AND 0.25 GAL. PER SQ. YD. WHEN APPLIED TO AGGREGATE BASE. THE ACTUAL CUTBACK PRIME COAT REQUIRED FOR PLACEMENT OPERATIONS WILL BE DETERMINED BY THE CONTRACTOR, AND SHALL CONSIDER THE RESIDUE FROM DISTILLATION PERCENTAGE SHOWN IN SECTION 708.03 OF THE STANDARD SPECIFICATIONS.
- (R-32) ESTIMATED AT 112 LBS. PER SQ. YD PER 1" THICK.
- (R-46) ANY DRAINAGE STRUCTURE DESCRIBED AS TEMPORARY, SHALL AFTER COMPLETION OF THE PROJECT, BE REMOVED BY AND BECOME THE PROPERTY OF THE CONTRACTOR.
- (R-48) INCLUDES REMOVAL OF ALL EXISTING ROADWAY DRAINAGE STRUCTURES, HEADWALLS (UNLESS OTHERWISE SPECIFIED), INLETS, FENCES, AND OTHER STRUCTURES WITHIN THE RIGHT OF WAY.
- (R-49) TO BECOME THE PROPERTY OF AND BE DISPOSED OF BY THE CONTRACTOR IN A MANNER APPROVED BY THE ENGINEER.
- (R-50) MATERIALS REMOVED SHALL NOT BE MEASURED FOR PAYMENT UNDER SECTION 202.06 UNCLASSIFIED EXCAVATION.
- (R-52) INCLUDES 2% FOR GROUND MEASUREMENT.
- (R-53) ALL GATES AND GATE END POSTS FOR STRANDED WIRE FENCE (SWF) SHALL BE CONSTRUCTED AT THE SAME WIDTH AS THE EXISTING, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- (1) STABILIZED SUBGRADE TO PAID FOR BY THE SQUARE YARD IN ACCORDANCE TO SECTION 307.06 IN THE 2009 ODOT SPECIFICATIONS. THE SOILS REPORT INDICATED THE USE OF CHEMICAL ADDITIVES SHOULD NOT BE PROBLEMATIC WITH REGARDS TO SOLUBLE SULFATES, BUT CAUTION SHOULD BE USED WITH REGARDS TO THE POTENTIAL OF RANDOMLY OCCURRING HIGH SULFATE AREAS NOT FOUND IN THE SOILS INVESTIGATION.
- (2) THIS PAY ITEM WILL INCLUDE THE SKT-SP-MSG OR APPROVED SUBSTITUTE. THE ET-PLUS WILL NOT BE ALLOWED.
- (3) THIS ITEM SHALL BE WHEAT HAY ONLY.
- (4) THE BID PRICE FOR STAKING & MOBILIZATION WILL INCLUDE THIS PROJECT, AND THE MANDATORY TIED PROJECT, JOB PIECE 28827(04).

### EROSION CONTROL AND CONSTRUCTION NOTES

SOLID SLAB SODDING SHALL BE PLACED ON ALL DISTURBED AREAS.

AT THE BEGINNING OF SODDING OPERATIONS, ANY AREA INCLUDED IN THE PLANNED QUANTITIES THAT HAS GROWN A SATISFACTORY TURF OF PERENNIAL GRASS, AS DETERMINED BY THE ENGINEER, SHALL NOT BE SODDED, WATERED OR FERTILIZED.

TEMPORARY EROSION CONTROL: IF THE DIRT WORK IS COMPLETED AFTER THE APPROVED PLANTING SEASON FOR SODDING HAS ENDED, DISTURBED AREAS WILL BE PLANTED WITH A TEMPORARY COVER CROP CONSISTING OF WHEAT OR OTHER SMALL GRAIN AT THE RATE OF 20 POUNDS/ACRE IN ACCORDANCE WITH SECTION 232 OF THE STANDARD SPECIFICATIONS. COST OF TEMPORARY COVER CROP TO BE INCLUDED IN THE PRICE BID FOR SOLID SLAB SODDING.

### GENERAL CONSTRUCTION NOTES

THIS PROJECT SHALL BE CONSTRUCTED WITHOUT CLOSING THE EXISTING ROAD TO LOCAL AND THROUGH TRAFFIC. SEE STANDARD SPECIFICATIONS FOR MAINTENANCE OF LOCAL AND THROUGH TRAFFIC.

MAINTENANCE OF THROUGH TRAFFIC INCLUDES THE MAINTENANCE OF THE EXISTING ROAD IN CLOSE PROXIMITY TO THE NEW CONSTRUCTION AS SHOWN ON THE PLANS.

THIS PROJECT SHALL BE CONSTRUCTED WITHOUT CLOSING THE EXISTING SECTION LINE ROADS TO LOCAL AND THROUGH TRAFFIC. SEE STANDARD SPECIFICATIONS FOR MAINTENANCE OF LOCAL AND THROUGH TRAFFIC.

ALL TREES, BRUSH, AND OTHER DEBRIS THAT MIGHT INTERFERE WITH THE FLOW OF WATER SHALL BE CLEANED OUT TO THE RIGHT-OF-WAY LINE, AT EACH STRUCTURE AND BRIDGE, IN A MANNER APPROVED BY THE ENGINEER. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY RIGHT-OF-WAY FENCE AS REQUIRED. WHEN THE PORTION OF THE PROJECT THAT REQUIRED THIS FENCE IS COMPLETED, THE TEMPORARY FENCE SHALL BE REMOVED, AND PERMANENT RIGHT-OF-WAY FENCING SHALL BE RESTORED OR INSTALLED IN A MANNER APPROVED BY THE ENGINEER. ALL COST OF TEMPORARY FENCING SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

ALL FLOWLINES THAT ARE TO BE FILLED SHALL BE THOROUGHLY TAMPED BEFORE CONSTRUCTION OR EXTENSION OF DRAINAGE STRUCTURES. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

IN ORDER TO ALLEVIATE DUST CONDITIONS DURING GRADING OPERATIONS AND BEFORE PAVEMENT WORK IS COMPLETED, THE CONTRACTOR SHALL SPRINKLE GRADING AT INTERVALS APPROVED BY THE ENGINEER. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

THIS PROJECT IS LOCATED NEAR KNOWN SOURCES OF GYPSUM (SULFATE) DEPOSITS. SPECIAL ATTENTION SHOULD BE USED TO AVOID BORROW MATERIAL THAT COULD ADVERSELY INTERACT WITH THE CALCIUM BASED ADDITIVES (FLY ASH, PORTLAND CEMENT, CEMENT KILN DUST, AND LIME) USED IN THE STABILIZED SUBGRADE. THE CONTRACTOR MAY BE REQUIRED TO PROVIDE SULFATE TESTING OF BORROW PIT SITES AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL NOT WASTE ANY EXCESS EXCAVATION UNTIL ALL PLANNED EMBANKMENTS AND BACKFILLS ARE COMPLETED. EXCESS UNCLASSIFIED EXCAVATION MATERIAL DETERMINED BY THE ENGINEER TO BE SUITABLE FOR BACKFILL SHALL BE USED TO REDUCE ANY UNCLASSIFIED BORROW NEEDED. COST OF SECOND HANDLING SHALL BE INCLUDED IN OTHER ITEMS OF WORK. ANY REMAINING EXCESS EXCAVATION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER.

PRIME COAT SHALL BE APPLIED TO THE SUBGRADE IMMEDIATELY AFTER FINAL COMPACTION AND SHAPING TO RETAIN MOISTURE FOR PROPER CHEMICAL REACTION OF THE SOIL ADDITIVE.

THE CONTRACTOR SHALL KEEP THE OPEN TRENCH DRAINED. COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

VEGETATIVE MULCHING: THE VEGETATIVE MULCH SHALL BE ANCHORED IN ACCORDANCE WITH THE "MULCHING-TILLER METHOD", AS SPECIFIED IN 233.04B(2) OF THE STANDARD SPECIFICATIONS.

AREAS ON WHICH SALVAGED TOPSOIL IS TO BE REPLACED SHALL HAVE 18-46-0 FERTILIZER APPLIED, AT THE RATE OF 150 POUNDS PER ACRE, JUST PRIOR TO THE REPLACEMENT OF SALVAGED TOPSOIL.

SURFACING OF RETURNS, UNLESS OTHERWISE SHOWN ON THE PLANS, SHALL BE OF THE SAME MATERIAL (BASE AND SURFACE) AS THAT OF THE ABUTTING SHOULDER OF THE MAINLINE. BASE AND SURFACE THICKNESS SHALL BE THE THICKNESS SHOWN ON PLANS.

EXCESS ASPHALT AT JOINTS AND CRACKS IN EXISTING PAVEMENT SHALL BE REMOVED FLUSH TO TOP OF PAVING IN A MANNER APPROVED BY THE ENGINEER.

IN ACCORDANCE WITH THE OKLAHOMA UNDERGROUND FACILITIES DAMAGE PREVENTION ACT THE CONTRACTOR SHALL NOTIFY THE OKLAHOMA ONE-CALL SYSTEM, INC. 48 HOURS PRIOR TO BEGINNING EXCAVATION. OKLAHOMA ONE-CALL SYSTEM, INC. "CALL OKIE" 1-800-522-6543 OR 811.

### ENVIRONMENTAL NOTES

CLIFF SWALLOWS AND BARN SWALLOWS ARE SMALL COLONIAL NESTING BIRDS PROTECTED BY THE FEDERAL MIGRATORY BIRD TREATY ACT. THESE SPECIES COMMONLY USE BRIDGES AND CULVERTS FOR NESTING. THE NESTING SEASON FOR THE SWALLOWS RUNS FROM APRIL 1 TO AUGUST 31. ANY ACTIVITIES WHICH WOULD DESTROY ACTIVE NESTS OR HARM EGGS OR BIRDS WOULD VIOLATE THE MIGRATORY BIRD TREATY ACT. SWALLOW USE OF BRIDGE NBI NO. 03426 WAS NOT OBSERVED DURING THE INITIAL SURVEYS CONDUCTED AS PART OF THE BIOLOGICAL STUDIES IN 2013. SWALLOWS MAY OCCUPY THE BRIDGE IN FUTURE NESTING SEASONS. THE RESIDENT ENGINEER WILL EVALUATE THE CONTRACTOR'S PROPOSED WORK METHODS AND CONCLUDE WHETHER THE PROPOSED WORK WOULD POSE DISRUPTION TO ANY NESTING BIRDS BEFORE WORK NEAR THE STRUCTURE IS AUTHORIZED. IF THE PROPOSED WORK WILL HARM ANY NESTING BIRDS, THE BRIDGE MAY BE NETTED PRIOR TO APRIL 1 OR THE WORK DELAYED UNTIL THE NESTING SEASON IS COMPLETE. METHODS OTHER THAN NETTING MUST BE PRE-APPROVED BY THE ODOT BIOLOGISTS.

FILENAME: 3 PAY QUANTITIES & NOTES (ROADWAY).DWG

|         |  |  |                 |
|---------|--|--|-----------------|
| DESIGN  |  | SH-34 OVER S. PERSIMMON CREEK              | WOODWARD COUNTY |
| DRAWN   |  | <b>PAY ITEMS &amp; NOTES<br/>(ROADWAY)</b> |                 |
| CHECKED |  |  |                 |
| CEC     |  |  |                 |
|         |  | STATE JOB NO. 28825(04)                    | SHEET NO. 3     |

| JP 28825(04)<br>0301               |          |  |      |          |  |
|------------------------------------|----------|--|------|----------|--|
| PAY QUANTITIES (PERMANENT TRAFFIC) |          |  |      |          |  |
| PAY ITEM                           | CODE NO. | DESCRIPTION                                    | UNIT | QUANTITY |  |
| 850(A)                             | 8110     | SHEET ALUMINUM SIGNS (TS-34)                   | SF   | 28.36    |  |
| 851(C)                             | 8327     | 2 1/4" SQUARE TUBE POST (TS-33)                | LF   | 12       |  |
| 851(C)                             | 8330     | 2 1/2" SQUARE TUBE POST (TS-33)                | LF   | 48       |  |
| 853                                | 9069     | GUARDRAIL DELINEATORS (TYPE 2, CODE 1)         | EA   | 23       |  |
| 856(A)                             | 8530     | TRAFFIC STRIPE (MULTI-POLY.) (4" WIDE) (TS-24) | LF   | 5,481    |  |

| JP 28825(04)<br>0302               |          |   |      |              |              |  |
|------------------------------------|----------|---|------|--------------|--------------|--|
| PAY QUANTITIES (TEMPORARY TRAFFIC) |          |   |      |              |              |  |
| PAY ITEM                           | CODE NO. | DESCRIPTION   | UNIT | JP 28825(04) | JP 28827(04) |  |
| 857(A)                             | 8839     | CONSTRUCTION TRAFFIC STRIPE (PAINT) (4" WIDE) (TC-16)(TC-17)(TC-20)(TC-70)(TC-75) | LF   | 11,692       | 10,800       |  |
| 857(F)                             | 8006     | PAVEMENT MARKING REMOVAL (TRAFFIC STRIPE) (TC-22)(TC-70)(TC-75)                   | LF   | 1,397        | 1,322        |  |
| 880(B)                             | 8818     | CONSTRUCTION SIGNS 0 TO 6.25 SF (TC-26)(TC-33)(TC-84)                             | SD   | 4,800        | 4,800        |  |
| 880(B)                             | 8821     | CONSTRUCTION SIGNS 6.26 TO 15.99 SF (TC-26)(TC-33)(TC-84)                         | SD   | 4,800        | 2,880        |  |
| 880(B)                             | 8824     | CONSTRUCTION SIGNS 16.0 TO 32.99 SF (TC-26)(TC-30)(TC-33)(TC-84)                  | SD   | 3,360        | 3,360        |  |
| 880(C)                             | 8842     | CONSTRUCTION BARRICADES (TYPE III) (TC-26)(TC-84)                                 | SD   | 2,880        | 960          |  |
| 880(C)                             | 8848     | WING BARRICADES (TC-26)(TC-84)  | SD   | 960          | 960          |  |
| 880(E)                             | 8860     | WARNING LIGHTS (TYPE A) (TC-26)(TC-84)  | SD   | 1,680        | 3,840        |  |
| 880(G)                             | 8890     | CHANNELIZER CONES (TC-26)(TC-84)  | SD   | 23,040       | 23,040       |  |
| 882(A)                             | 8306     | PORTABLE CHANGEABLE MESSAGE SIGN (SP-1)(TC-52)(TC-84)(TC-85)                      | SD   | 14           | 14           |  |

NOTE:  
PAY ITEM NOTES LISTED ONLY PERTAIN TO JP 28825(04). FOR ADDITIONAL PAY ITEM NOTES SPECIFIC TO JP 28827(04), REFER TO THE JP 28827(04) PLAN SHEETS.

#### MANDATORY TIE

THIS PROJECT SHALL BE MANDATORILY TIED WITH WOODWARD COUNTY JOB PIECE 28827(04) AND SHALL BE BID ACCORDINGLY.

#### PAY ITEMS & NOTES (PERMANENT TRAFFIC)

- (TS-24) QUANTITY SHOWN INCLUDES 3,350 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND 2,131 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(YELLOW) AND WILL BE MEASURED BY THE LINEAR FOOT OF FOUR INCH (4") WIDE TRAFFIC STRIPE.
- (TS-33) INCLUDED IN THIS PAY ITEM IS ALL HARDWARE ASSOCIATED WITH PROPERLY ANCHORING AND MOUNTING THE HIGHWAY SIGN IN ACCORDANCE WITH O.D.O.T. PLANS AND STANDARD DRAWINGS SSA1-1 AND SSP1-1-(LATEST REVISION).
- (TS-34) INCLUDED IN THIS PAY ITEM IS THE REMOVAL OF ANY EXISTING SIGNS TO BE REPLACED BY NEW ASSEMBLIES AND THE REMOVAL OF ANY EXISTING SIGNS THAT WILL BE IN CONFLICT WITH THE NEW ROADWAY OR NEW SIGNAGE.

#### PAY ITEMS & NOTES (TEMPORARY TRAFFIC)

- (TC-16) PAINT SHALL CONFORM TO SECTION 711 "TRAFFIC STRIPE", OF THE O.D.O.T. STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
- IF CONSTRUCTION TRAFFIC STRIPE PAINT IS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND FAILS DURING THE FIRST SIX MONTHS OF SERVICE, REPLACEMENT WILL BE MADE AT THE CONTRACTOR'S EXPENSE AND SHALL BE ACCOMPLISHED IN A TIMELY MANNER UPON NOTIFICATION BY THE ENGINEER OF SUCH FAILURE.
- (TC-17) INCLUDES AN ESTIMATED 5,846 L.F. (PAINT)(4" WIDE) WHITE 5,846 L.F. (PAINT)(4" WIDE) YELLOW STRIPE.
- (TC-20) ALL STRIPING TO BE PLACED ON TEMPORARY SURFACES OR ON SURFACES SCHEDULED TO BE REMOVED SHALL BE DONE WITH PAINT UNLESS OTHERWISE NOTED ON THE PLANS OR STANDARD DRAWINGS. TEMPORARY PAVEMENT MARKINGS PLACED ON FINISHED PAVEMENT OR EXISTING PAVEMENT TO REMAIN IN PLACE SHALL USE ONE OF THE FOLLOWING METHODS:
- REMOVABLE PAVEMENT MARKING TAPE
  - CLASS A PAVEMENT MARKERS
- (TC-22) AMOUNT SHOWN IS AN APPROXIMATION AND THE ACTUAL AMOUNT OF REMOVAL, IF NECESSARY, SHALL BE DETERMINED BY THE ENGINEER. PRICE BID FOR PAVEMENT MARKING REMOVAL SHALL INCLUDE THE COST OF REMOVING STRIPE, ARROWS, WORDS AND SYMBOLS, AS SHOWN IN THE PLANS. THESE ITEMS MAY CONSIST OF PLASTIC, PAINT OR NON-REMOVABLE MARKING TAPE.
- (TC-26) ALL CONSTRUCTION TRAFFIC CONTROL WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS, AND INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (CURRENT EDITION), AND COMPLIANT WITH APPLICABLE O.D.O.T. STANDARD DRAWINGS. PRICE BID FOR THIS ITEM SHALL BE PAYMENT IN FULL FOR THE INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF ALL NECESSARY CONSTRUCTION TRAFFIC CONTROL DEVICES REQUIRED FOR COMPLETION OF THE PROJECT.
- ALL SIGNS AND BARRICADES WHICH ARE SHOWN WITH TYPE 'A' LIGHTS IN THE STANDARD DRAWINGS SHALL HAVE THE CORRESPONDING LIGHT ATTACHED DURING NON-DAYLIGHT HOURS.
- (TC-30) INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 16.00 S.F. AND 32.99 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.
- (TC-33) ALL CONSTRUCTION WORK ZONE SIGNS SHALL HAVE FLUORESCENT SHEETING. THE FLUORESCENT SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956 (LATEST REVISION)
- THE MANUFACTURER SHALL FURNISH A TYPE 'D' CERTIFICATION IN ACCORDANCE WITH O.D.O.T. STANDARD SPECIFICATIONS (CURRENT EDITION) SUBSECTION 106.04. THE CERTIFICATION SHALL INCLUDE TEST RESULTS ON MATERIAL SUBMITTED FOR APPROVAL.
- (TC-52) ANY USED CHANGEABLE MESSAGE SIGN TO BE PLACED ON THIS PROJECT SHALL BE SUBJECT TO INSPECTION AND APPROVAL, BY THE OKLAHOMA DEPARTMENT OF TRANSPORTATION, TO ASSURE THAT THEY ARE IN GOOD WORKING CONDITION, PRIOR TO PLACEMENT OF THE PROJECT.
- (TC-70) THIS ITEM IS AN ESTIMATED QUANTITY TO BE USED AS DEEMED NECESSARY BY THE ENGINEER.
- (TC-75) TEMPORARY PAVEMENT MARKINGS SHALL BE IN PLACE THE SAME DAY THAT EXISTING PAVEMENT MARKINGS ARE REMOVED FROM ANY ROADWAY OPEN TO TRAFFIC. ALSO, ALL TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVED PRIOR TO THE INSTALLATION OF FINAL STRIPING.
- (TC-84) 240 CONSTRUCTION CALENDAR DAYS WERE USED TO COMPUTE THE SIGN DAY PAY ITEMS. THE AMOUNT OF CALENDAR DAYS USED TO COMPUTE THE SIGN DAY PAY ITEMS IS AN ESTIMATED QUANTITY ONLY, BASED ON THE CURRENT O.D.O.T. STANDARDS AND SUGGESTED CONSTRUCTION SEQUENCE FOR THIS PROJECT. THESE ESTIMATED SIGN DAY QUANTITIES MAY CHANGE AS THE PROJECTS CONSTRUCTION TRAFFIC CONTROL IS MODIFIED DURING CONSTRUCTION.
- (TC-85) THESE SIGNS MUST BE ON THE OKLAHOMA DEPARTMENT OF TRANSPORTATION LIST OF APPROVED CHANGEABLE MESSAGE SIGNS. FOR A LIST OF THE APPROVED SIGNS GO TO THE OKLAHOMA DEPARTMENT OF TRANSPORTATION WEBSITE AT:  
<http://www.okladot.state.ok.us/traffic/qpl/index.php>
- (SP-1) SIGN PLACEMENT LOCATIONS SHALL BE DETERMINED BY THE ENGINEER.

FILENAME: 3A PAY QUANTITIES & NOTES (TRAFFIC).DWG

|         |  |  |                 |
|---------|--|--|-----------------|
| DESIGN  |  | SH-34 OVER S. PERSIMMON CREEK              | WOODWARD COUNTY |
| DRAWN   |  | <b>PAY ITEMS &amp; NOTES<br/>(TRAFFIC)</b> |                 |
| CHECKED |  |  |                 |
| CEC     |  | STATE JOB NO. 28825(04)                    | SHEET NO. 3A    |



## GENERAL NOTES

**SPECIFICATIONS –**  
COMPLY WITH THE REQUIREMENTS OF THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

**EXISTING PLANS –**  
THE EXISTING STRUCTURE WAS ORIGINALLY CONSTRUCTED AS PART OF FEDERAL AID PROJECT NO. F-418(8). PLANS OF THIS PROJECT ARE AVAILABLE FROM THE OKLAHOMA DEPARTMENT OF TRANSPORTATION TECHNOLOGY SERVICES PLANS SECTION, 200 N.E. 21ST STREET, OKLAHOMA CITY, OKLAHOMA 73105.

**PILE DRIVING AND CAPACITY –**  
THE FACTORED PILE REACTION FOR EACH HP10X42 PILE AT EACH ABUTMENT IS 110.0 TONS.

THE FACTORED PILE REACTION FOR EACH HP14X89 PILE AT EACH PIER IS 208.0 TONS.

THE FOLLOWING FORMULA (GATES EQUATION) SHALL BE USED TO DETERMINE THE AXIAL LOAD RESISTANCE OF THE DRIVEN FOUNDATION PILES.

$$\text{AXIAL LOAD RESISTANCE} = \phi[(0.875 \sqrt{E} \log_{10} (10N)) - 50] \quad (\text{TONS})$$

WHERE:

$\phi$  = RESISTANCE FACTOR OF 0.4

E = ENERGY PRODUCED BY THE HAMMER PER BLOW IN FOOT-POUNDS. FOR GRAVITY AND SINGLE ACTING DIESEL HAMMERS, THE VALUE IS BASED ON THE ACTUAL RAM STROKE OBSERVED IN THE FIELD AND MEASURED IN FEET MULTIPLIED BY THE RAM WEIGHT IN POUNDS.

N = AVERAGE NUMBER OF HAMMER BLOWS PER INCH OF PILE PENETRATION FOR THE LAST 10 TO 20 BLOWS DELIVERED TO THE PILE HEAD.

THE ABOVE FORMULA IS ONLY APPLICABLE WHEN:

- THE PILE DRIVING HAMMER HAS A FREE FALL (GRAVITY AND SINGLE ACTING HAMMERS ONLY).
- THE HEAD OF THE PILE IS NOT BROOMED, CRUSHED OR OTHERWISE DAMAGED.
- THE PENETRATION IS QUICK AND UNIFORM.
- THERE IS NO APPRECIABLE REBOUND OF THE HAMMER AND A FOLLOWER IS NOT USED.

THE NUMBER OF BLOWS PER INCH OF PILE PENETRATION MAY BE MEASURED EITHER DURING INITIAL DRIVING OR BY RE-DRIVING WITH A WARM HAMMER OPERATED AT FULL ENERGY AFTER A PILE SET PERIOD, AS DETERMINED BY THE ENGINEER.

IF WATER JETS ARE USED IN CONNECTION WITH THE DRIVING, DETERMINE THE AXIAL LOAD RESISTANCE BY THE FORMULA ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.

**STRUCTURAL STEEL –**

STRUCTURAL STEEL FOR PILING SHALL CONFORM TO AASHTO M270 (ASTM A572), GRADE 50.

STRUCTURAL STEEL FOR ANCHOR PLATES AND CONTACT PLATES SHALL CONFORM TO ASTM A240 (AUSTENITIC STAINLESS STEEL, TYPE 316, CHARPY V-NOTCH TESTING NOT REQUIRED). FOR ANCHOR BOLTS, PROVIDE CONTINUOUSLY THREADED BARS IN ACCORDANCE WITH ASTM A320, CLASS 2, GRADE B8M (AUSTENITIC STAINLESS STEEL, TYPE 316, CHARPY V-NOTCH TESTING NOT REQUIRED). USE AUSTENITIC STAINLESS STEEL NUTS AND WASHERS CONFORMING TO ASTM A194, GRADE 8M AND ASTM A320, RESPECTIVELY. PERFORM ALL WELDING CONSISTENT WITH PROCEDURES FOR STAINLESS STEEL.

PROVIDE STRUCTURAL STEEL FOR DIAPHRAGM BOLTS AND PLATE WASHERS IN ACCORDANCE WITH AASHTO M270 (ASTM A709), GRADE 50W (WEATHERING STEEL, CHARPY V-NOTCH TESTING NOT REQUIRED). THE CONTRACTOR MAY SUBSTITUTE A #10 REINFORCING BAR IN ACCORDANCE WITH AASHTO M31, GRADE 60, AND THREADED AT THE ENDS AS SHOWN FOR THE DIAPHRAGM BOLT AT NO ADDITIONAL COST TO THE DEPARTMENT. PROVIDE HEX NUTS IN ACCORDANCE WITH AASHTO M291 (ASTM A563).

PAINT EXPOSED DIAPHRAGM BOLT, PLATE WASHER, AND HEX NUT WITH TWO (2) COATS OF ZINC-RICH PAINT (6 MIL MINIMUM THICKNESS) AFTER ASSEMBLY. INCLUDE ALL COST OF DIAPHRAGM BOLT, PLATE WASHER, AND HEX NUT IN THE CONTRACT UNIT PRICE FOR STRUCTURAL STEEL.

## GENERAL NOTES CONTINUED

**DECK SLAB –**

EPOXY COAT OR GALVANIZE STEEL ITEMS USED TO FACILITATE CONSTRUCTION, SUCH AS DECK FORM HANGERS, TY-BAR CLIPS, INSERT WELD ANCHORS, OR OTHER APPURTENANCES, THAT WILL REMAIN IN PLACE IN THE DECK SLAB. EPOXY-COAT IN ACCORDANCE WITH AASHTO M284 OR GALVANIZE IN ACCORDANCE WITH AASHTO M111.

THE DECK SLAB SHALL BE POURED ONE SPAN AT A TIME. NO SPAN SHALL BE POURED UNTIL AT LEAST 48 HOURS AFTER ANY ADJACENT POUR HAS BEEN COMPLETED. IN THE EVENT OF AN EMERGENCY, HALT THE PLACEMENT OF CONCRETE BY FORMING A CONSTRUCTION JOINT MADE PERPENDICULAR TO THE DIRECTION OF TRAFFIC OR AS DIRECTED BY THE ENGINEER. DO NOT PLACE ANY HEAVY EQUIPMENT ON THE FINISHED DECK SLAB WITHIN 5 FEET OF ANY CONSTRUCTION JOINT UNTIL CONCRETE IS IN PLACE ON BOTH SIDES OF THE RESPECTIVE JOINT, AND AT LEAST 48 HOURS HAS ELAPSED SINCE CONCRETE PLACEMENT.

SEAL ALL DECK SLAB CONSTRUCTION JOINTS WITH HIGH MOLECULAR WEIGHT METHACRYLATE IN ACCORDANCE WITH SECTION 523 OF THE SPECIFICATIONS. INCLUDE ALL COST OF THE EQUIPMENT AND LABOR FOR THE INSTALLATION OF THE HIGH MOLECULAR WEIGHT METHACRYLATE SEALER IN THE CONTRACT UNIT PRICE OF "SEALER CRACK PREPARATION". INCLUDE ALL COST OF HIGH MOLECULAR WEIGHT METHACRYLATE SEALER IN THE CONTRACT UNIT PRICE OF "SEALER RESIN". THE DEPARTMENT WILL NOT MEASURE THE PREPARATION AND SEALER OF EMERGENCY CONSTRUCTION JOINTS FOR PAYMENT.

**CONCRETE –**

ALL PEDESTAL CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER. ALL OTHER EXPOSED CONCRETE EDGES OF THE SUBSTRUCTURE SHALL HAVE A 1 1/2" CHAMFER UNLESS OTHERWISE SHOWN OR NOTED. ALL EXPOSED CONCRETE EDGES OF THE SUPERSTRUCTURE SHALL HAVE A 3/4" CHAMFER UNLESS OTHERWISE SHOWN OR NOTED. ALL CHAMFER STRIPS SHALL BE SIZED LUMBER.

EQUIP CONCRETE VIBRATORS WITH A SHEATH DESIGNED TO PREVENT DAMAGE TO EPOXY COATINGS WHEN VIBRATING CONCRETE CONTAINING EPOXY COATED REINFORCING STEEL.

CEMENT USED FOR PIER COLUMNS AND FOOTINGS SHALL BE TYPE V PORTLAND CEMENT IN ACCORDANCE WITH SECTION 701 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. AS AN OPTION, TYPE II PORTLAND CEMENT MAY BE USED WITH THE ADDITION OF CLASS F FLY ASH TO THE MIX DESIGN. IF TYPE II PORTLAND CEMENT IS USED WITH THE ADDITION OF CLASS F FLY ASH, THE CONCRETE MIX DESIGN SHALL BE APPROVED BY THE ENGINEER.

**STAY-IN-PLACE DECK FORMS –**

STAY-IN-PLACE DECK FORMS ARE NOT ALLOWED.

**WATER REPELLENT TREATMENT –**

WATER REPELLENT TREATMENT SHALL BE APPLIED TO THE BRIDGE IN A MANNER CONSISTENT WITH THE DETAILS SHOWN IN THE PLANS.

## ENVIRONMENTAL MITIGATION NOTES

**MIGRATORY BIRD NOTE –**

CLIFF SWALLOWS AND BARN SWALLOWS ARE SMALL COLONIAL NESTING BIRDS PROTECTED BY THE FEDERAL MIGRATORY BIRD TREATY ACT. THESE SPECIES COMMONLY USE BRIDGES AND CULVERTS FOR NESTING. THE NESTING SEASON FOR THE SWALLOWS RUNS FROM APRIL 1 TO AUGUST 31. ANY ACTIVITIES WHICH WOULD DESTROY ACTIVE NESTS OR HARM EGGS OR BIRDS WOULD VIOLATE THE MIGRATORY BIRD TREATY ACT. SWALLOW USE OF BRIDGE NBI NO. 03426 WAS NOT OBSERVED DURING THE INITIAL SURVEYS CONDUCTED AS PART OF THE BIOLOGICAL STUDIES IN 2013. SWALLOWS MAY OCCUPY THE BRIDGE IN THE FUTURE NESTING SEASONS. THE RESIDENT ENGINEER WILL EVALUATE THE CONTRACTOR'S PROPOSED WORK METHODS AND CONCLUDE WHETHER THE PROPOSED WORK WOULD POSE DISRUPTION TO ANY NESTING BIRDS BEFORE WORK NEAR THE STRUCTURE IS AUTHORIZED. IF THE PROPOSED WORK WILL HARM ANY NESTING BIRDS, THE BRIDGE MAY BE NETTED PRIOR TO APRIL 1 OR THE WORK DELAYED UNTIL THE NESTING SEASON IS COMPLETE. METHODS OTHER THAN NETTING MUST BE PRE-APPROVED BY THE ODOT BIOLOGIST.



|         |        |  |                              |                 |
|---------|--------|--|------------------------------|-----------------|
| DESIGN  | J.W.H. |  | SH34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   | J.W.H. |  | BRIDGE A                     |                 |
| CHECKED | J.W.H. |  | <b>BRIDGE GENERAL NOTES</b>  |                 |
| APPROV. | T.A.C. |  |                              |                 |
| SQUAD   | CEC    |  |                              |                 |
|         |        |  | JOB PIECE NO. 28825(04)      | SHEET NO. 4     |

**PAY ITEM NOTES**

- B1 PAYMENT TO THE CONTRACTOR WILL BE BASED ON PLAN QUANTITIES.
- B2 CONCRETE MAY BE PLACED AGAINST THE LIMITS OF EXCAVATION IF THE MATERIAL IS EXCAVATED TO THE NEAT LINES OF THE SUBSTRUCTURE AND APPROVED BY THE ENGINEER. MEASUREMENT AND PAYMENT WILL BE AS SHOWN IN THE PLANS.  
  
THE CONTRACTOR WILL INCLUDE ALL COST OF TEMPORARY RETAINING STRUCTURES AND TEMPORARY WATER CONTROL SYSTEMS NECESSARY TO CONSTRUCT THE BRIDGE PIERS, INCLUDING EQUIPMENT, MATERIALS, LABOR, AND INCIDENTALS, IN THE CONTRACT UNIT PRICE BID FOR "SUBSTRUCTURE EXCAVATION COMMON". ANY TEMPORARY RETAINING STRUCTURES AND TEMPORARY WATER CONTROL SYSTEMS WILL BE PROVIDED IN ACCORDANCE WITH SECTION 502 OF THE SPECIFICATIONS.
- B3 THE APPROACH SLABS CONTAIN AN ESTIMATED TOTAL OF 81.2 C.Y. OF CLASS AA CONCRETE AND 15,820 LB. OF EPOXY COATED REINFORCING STEEL. INCLUDE ALL COSTS FOR CONSTRUCTING THE APPROACH SLABS, INCLUDING CONCRETE, REINFORCING STEEL (INCLUDING SLAB TO BRIDGE RAILING BARS), BACKER ROD, RAPID CURE JOINT SEALANT, POLYSTYRENE, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, IN THE CONTRACT UNIT PRICE OF "APPROACH SLAB".
- B4 PROVIDE AND INSTALL FIXED BEARING ASSEMBLIES OF THE SIZE, SHAPE AND LOCATION AS DETAILED IN THE PLANS. THE FIXED BEARING ASSEMBLIES CONTAIN AN ESTIMATED TOTAL OF 810 LB. OF STRUCTURAL STEEL. INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE ELASTOMERIC PADS, ANCHOR PLATES, ANCHOR BOLTS, NUTS AND WASHERS, INCLUDING ALL MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, IN THE CONTRACT UNIT PRICE OF "STAINLESS STEEL FIXED BEARING ASSEMBLY".
- B5 PROVIDE AND INSTALL EXPANSION BEARING ASSEMBLIES OF THE SIZE, SHAPE AND LOCATION AS DETAILED IN THE PLANS. THE EXPANSION BEARING ASSEMBLIES CONTAIN AN ESTIMATED TOTAL OF 4,030 LB. OF STRUCTURAL STEEL. INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE ELASTOMERIC PADS, ANCHOR PLATES, CONTACT PLATES, ANCHOR BOLTS, NUTS AND WASHERS, INCLUDING ALL MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, IN THE CONTRACT UNIT PRICE OF "STAINLESS STEEL EXPANSION BEARING ASSEMBLY".
- B6 PROVIDE AND INSTALL ELASTOMERIC PADS BETWEEN THE TOP SURFACE OF THE BEAMS AND THE BOTTOM SURFACE OF THE DECK SLAB. THE ELASTOMERIC PADS SHALL BE OF THE SIZE AND SHAPE AS DETAILED IN THE PLANS AND LOCATED AT EACH BEAM END ABOVE EACH PIER. INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE ELASTOMERIC PADS ABOVE THE BEAMS, INCLUDING ALL MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, IN THE CONTRACT UNIT PRICE OF "(PL) ELASTOMERIC BEARING PADS".
- B7 ALL COSTS ASSOCIATED WITH THE USAGE OF TYPE V PORTLAND CEMENT, TYPE II PORTLAND CEMENT AND CLASS F FLY ASH INCLUDING MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID.
- B8 PAYMENT TO THE CONTRACTOR WILL BE BASED ON PLAN QUANTITIES UNLESS ADDITIONAL PILING LENGTH IS REQUIRED. ADDITIONAL PILES, FURNISHED, AS AUTHORIZED BY THE ENGINEER, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE.
- B9 PREPARE SURFACE AND INSTALL HIGH MOLECULAR WEIGHT METHACRYLATE SEALER FOR DECK SLAB CONSTRUCTION JOINTS AT LOCATIONS SHOWN IN THE PLANS IN ACCORDANCE WITH SECTION 523 OF THE SPECIFICATIONS. INCLUDE COSTS FOR LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN THE CONTRACT UNIT PRICE OF "SEALER CRACK PREPARATION".
- B10 PROVIDE HIGH MOLECULAR WEIGHT METHACRYLATE SEALER FOR DECK SLAB CONSTRUCTION JOINTS AT LOCATIONS SHOWN IN THE PLANS IN ACCORDANCE WITH SECTION 523 OF THE SPECIFICATIONS. INCLUDE ALL COSTS OF THE SEALER RESIN MATERIAL IN THE CONTRACT UNIT PRICE OF "SEALER RESIN". SEALER RESIN QUANTITY ESTIMATED AT 0.011 GALLONS PER FOOT OF CONSTRUCTION JOINT.
- B11 RIPRAP QUANTITY ESTIMATED AT 120 LBS. PER CUBIT FOOT.
- B12 FILTER BLANKET QUANTITY ESTIMATED AT 105 LBS. PER CUBIT FOOT.
- B13 INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE PERFORATED PIPE AND PIPE UNDERDRAIN COVER MATERIAL (BOTH FILTER AND COARSE), INCLUDING ALL MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, IN THE CONTRACT UNIT PRICE OF "6" PERFORATED PIPE UNDERDRAIN ROUND". INSTALLATION SHALL BE SHOWN ON STD. B40-I-ABUT-MISC-OIE AND STD. PUD-3.
- B14 EXTENT, LOCATIONS AND DEPTH OF NON-PERFORATED PIPE UNDERDRAIN MAY BE ADJUSTED BY THE ENGINEER DURING CONSTRUCTION. INSTALL MARKER POSTS AT THE END OF EACH NON-PERFORATED PIPE. INCLUDE ALL COSTS ASSOCIATED WITH THE PROVIDING AND INSTALLING OF NON-PERFORATED PIPE, MARKER POSTS, AND STANDARD BEDDING MATERIAL, INCLUDING ALL TRENCH EXCAVATION, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, IN THE CONTRACT UNIT PRICE OF "6" NON-PERFORATED PIPE-UNDERDRAIN ROUND". INSTALLATION SHALL BE SHOWN ON STD. B40-I-ABUT-MISC-OIE AND STD. PUD-3.

**PAY ITEM NOTES CONTINUED**

- B15 ITEM "REMOVAL OF EXISTING BRIDGE STRUCTURE" INCLUDES REMOVAL AND DISPOSAL OF SUPERSTRUCTURE AND SUBSTRUCTURE, INCLUDING PULLING EXISTING CONCRETE PILING, OF 4 - 36' I-BEAM SPANS WITH 28' CLEAR ROADWAY IN ACCORDANCE WITH SUBSECTION 619.04(B)-2 OF THE SPECIFICATIONS AND IN A MANNER APPROVED BY THE ENGINEER. THE STRUCTURE AND MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. INCLUDE ALL COSTS FOR LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN THE CONTRACT UNIT PRICE OF "REMOVAL OF EXISTING BRIDGE STRUCTURE".
- THE EXISTING STEEL BEAMS WILL BE SALVAGED FOR REUSE AND BECOME PROPERTY OF WOODWARD COUNTY. THE CONTRACTOR WILL REMOVE EXISTING STEEL BEAMS TAKING CARE TO NOT DAMAGE THE BEAMS. THE BEAMS WILL BE PLACED ON THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER. WOODWARD COUNTY WILL BE INFORMED THAT THE EXISTING BRIDGE BEAMS ARE COATED WITH LEAD PAINT.

| J.P. NO. 28825(04)<br>0200 BRIDGE A  |  |             |         |
|--|--|-------------|---------|
| <b>PAY QUANTITIES</b>  |  |             |         |
| SH-34 OVER THE SOUTH PERSIMMON CREEK<br>62' X 75' X 62' TYPE III P.C. BEAM SPANS, 0° SKEW,<br>40' CLEAR ROADWAY WITH TR-4 PARAPETS @ STA. 2297+44.14 |  |             |         |
| ITEM NO.   | ITEM                                       | UNIT        | TOTAL   |
| 501(B) 1307  | SUBSTRUCTURE EXCAVATION COMMON             | B1,B2 C.Y.  | 3,495   |
| 501(G) 6309  | CLSM BACKFILL                              | B1 C.Y.     | 200     |
| 503(A) 1312  | PRESTRESSED CONCRETE BEAMS (TYPE III)      | B1 L.F.     | 995     |
| 504(A) 1304  | APPROACH SLAB                              | B1,B3 S.Y.  | 224.8   |
| 504(B) 1305  | SAW-CUT GROOVING                           | B1 S.Y.     | 1,104.4 |
| 504(D) 6245  | CONCRETE RAIL (TR4)                        | B1 L.F.     | 497.0   |
| 506(A) 1322  | STRUCTURAL STEEL                           | B1 LB.      | 1,100   |
| 507(A) 6170  | STAINLESS STEEL FIXED BEARING ASSEMBLY     | B1,B4 EA.   | 10      |
| 507(B) 6174  | STAINLESS STEEL EXPANSION BEARING ASSEMBLY | B1,B5 EA.   | 20      |
| 507(C) 6282  | ELASTOMERIC BEARING PADS                   | B1,B6 EA.   | 20      |
| 509(A) 1326  | CLASS AA CONCRETE                          | B1,B7 C.Y.  | 492.7   |
| 509(B) 1328  | CLASS A CONCRETE                           | B1,B7 C.Y.  | 128.8   |
| 509(D) 1331  | CLASS C CONCRETE                           | C.Y.        | 11.0    |
| 511(A) 1332  | REINFORCING STEEL                          | B1 LB.      | 1,880   |
| 511(B) 6010  | EPOXY COATED REINFORCING STEEL             | B1 LB.      | 124,970 |
| 514(A) 6010  | PILES, FURNISHED (HP 10X42)                | B8 L.F.     | 1,312   |
| 514(A) 6016  | PILES, FURNISHED (HP 14X89)                | B8 L.F.     | 3,424   |
| 514(B) 6292  | PILES, DRIVEN (HP 10X42)                   | L.F.        | 1,312   |
| 514(B) 6297  | PILES, DRIVEN (HP 14X89)                   | L.F.        | 3,424   |
| 514(L) 6220  | PILE SPLICE, H-PILE (NON-BIDDABLE)         | EA.         | 1       |
| 515(A) 6013  | WATER REPELLENT (VISUALLY INSPECTED)       | B1 S.Y.     | 869     |
| 523(A) 6550  | SEALER CRACK PREPARATION                   | B1,B9 L.F.  | 163     |
| 523(B) 6560  | SEALER RESIN                               | B1,B10 GAL. | 2       |
| 601(B) 1353  | TYPE I-A PLAIN RIPRAP                      | B11 TON     | 1,458   |
| 601(C) 1355  | TYPE I-A FILTER BLANKET                    | B12 TON     | 327     |
| 613(H) 6204  | 6" PERFORATED PIPE UNDERDRAIN ROUND        | B1,B13 L.F. | 84      |
| 613(I) 6207  | 6" NON-PERF. PIPE UNDERDRAIN RND.          | B14 L.F.    | 30      |
| 619(D) 1397  | REMOVAL OF EXISTING BRIDGE STRUCTURE       | B15 LSUM    | 1       |



|         |        |  |   |
|---------|--------|--|---|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK<br>BRIDGE A | <b>PAY ITEMS AND NOTES<br/>(BRIDGE)</b> |
| DRAWN   | J.W.H. |  |   |
| CHECKED | J.W.H. |  |   |
| APPROV. | T.A.C. |  |   |
| SQUAD   | CEC    |  |   |
|         |        | JOB PIECE NO. 28825(04) SHEET NO. 5      |   |

| SUMMARY OF SURFACING     |           |                     |                 |           |            |                      |                      |                      |                      |
|--------------------------|-----------|---------------------|-----------------|-----------|------------|----------------------|----------------------|----------------------|----------------------|
| STAT ON TO STATION       | ALIGNMENT | STABILIZED SUBGRADE | SUBGRADE METHOD | TACK COAT | PRIME COAT | SUPERPAVE, TYPE S3   | SUPERPAVE, TYPE S3   | SUPERPAVE, TYPE S4   | SUPERPAVE, TYPE S4   |
|                          |           | 307(K)              | 310(R)          | 407(B)    | 408        | (PG 70-28 OK) 411(B) | (PG 64-22 OK) 411(B) | (PG 70-28 OK) 411(C) | (PG 64-22 OK) 411(C) |
|                          |           | SY                  | SY              | GAL       | GAL        | TON                  | TON                  | TON                  | TON                  |
| MAINTENANCE              |           |                     |                 |           |            |                      |                      |                      |                      |
| 2290+50.00 TO 2295+19.89 | CL SURVEY | 3,209               |                 | 1,308     | 1,115      | 277                  | 884                  | 174                  | 105                  |
| 2298+68.39 TO 2307+25.00 | CL SURVEY | 4,679               |                 | 1,902     | 1,686      | 416                  | 1,341                | 262                  | 163                  |
| DETOUR                   |           |                     |                 |           |            |                      |                      |                      |                      |
| 2284+95.00 TO 2299+00.00 | DETOUR    |                     |                 | 585       | 1,786      |                      | 908                  |                      | 478                  |
| 2299+00.00 TO 2313+02.00 | DETOUR    |                     |                 | 576       | 1,763      |                      | 893                  |                      | 421                  |
| WIDENING FOR GUARDRAIL   |           |                     |                 |           |            |                      |                      |                      |                      |
| 2293+11.14 TO 2296+19.89 | CL SURVEY |                     |                 |           | 53         |                      |                      |                      | 34                   |
| 2292+36.14 TO 2296+19.89 | CL SURVEY |                     |                 |           | 68         |                      |                      |                      | 43                   |
| 2298+68.39 TO 2302+52.14 | CL SURVEY |                     |                 |           | 68         |                      |                      |                      | 43                   |
| 2298+68.39 TO 2301+77.14 | CL SURVEY |                     |                 |           | 53         |                      |                      |                      | 34                   |
| DRIVEWAYS*               |           | 1,412               |                 | 212       | 494        |                      | 316                  | 158                  |                      |
| TOTAL                    |           | 7,888               | 1,412           | 4,583     | 7,086      | 693                  | 4,342                | 594                  | 1,272                |

\*REFERENCE "SUMMARY OF DRIVEWAYS" FOR ADDITIONAL INFORMATION

| SUMMARY OF DRIVEWAYS |           |            |     |     |                       |        |    |       |    |       |     |
|----------------------|-----------|------------|-----|-----|-----------------------|--------|----|-------|----|-------|-----|
| SHEET NUMBER         | ALIGNMENT | STAT ON    | LT. | RT. | TYPE                  | LENGTH |    | WIDTH |    | RAJII |     |
|                      |           |            |     |     |                       | LF     | LF | LF    | LF | LT.   | RT. |
| 19                   | CL SURVEY | 2288+35.00 | X   |     | ASPH. TYPE 1          | 96     | 15 | 35    | 35 |       |     |
| 19                   | CL SURVEY | 2288+35.00 | X   |     | TEMP. ASPH. DR.       | 37     | 11 | 10    | 10 |       |     |
| 19                   | CL SURVEY | 2294+67.71 | X   |     | TEMP. ASPH. DR.       | 55     | 12 | 10    | 10 |       |     |
| 19                   | CL SURVEY | 2294+97.63 |     | X   | ASPH. TYPE 1          | 63     | 12 | 35    | 35 |       |     |
| 20                   | CL SURVEY | 2305+49.04 | X   |     | TEMP. ASPH. SL RETURN | 101    | 25 | 10    | 10 |       |     |
| 20                   | CL SURVEY | 2305+49.04 | X   |     | ASPH. SL RETURN       | 101    | 25 | 50    | 50 |       |     |
| 20                   | CL SURVEY | 2305+68.91 |     | X   | ASPH. SL RETURN       | 79     | 25 | 50    | 50 |       |     |

NOTE: SEE "SUMMARY OF SURFACING" FOR REQUIRED SURFACING QUANTITIES

| SUMMARY OF REMOVALS |           |                  |                             |                             |                      |
|---------------------|-----------|------------------|-----------------------------|-----------------------------|----------------------|
| SHEET NUMBER        | ALIGNMENT | REMOVAL OF FENCE | REMOVAL OF ASPHALT PAVEMENT | REMOVAL OF ASPHALT OR WEAVY | REMOVAL OF GUARDRAIL |
|                     |           | 619(B)           | 619(B)                      | 615(B)                      | 619(B)               |
|                     |           | LF               | SY                          | SY                          | LF                   |
| 19                  | CL SURVEY | 2,265            | 2,432                       | 363                         | 383                  |
| 20                  | CL SURVEY | 2,076            | 3,012                       | 645                         | 383                  |
| 19                  | DETOUR    |                  | 3,746                       | 128                         |                      |
| 20                  | DETOUR    |                  | 3,666                       | 219                         |                      |
| TOTAL               |           | 4,291            | 12,876                      | 1,355                       | 566                  |

| SUMMARY OF PAVEMENT MARKINGS |           |                                       |  |
|------------------------------|-----------|---------------------------------------|--|
| SHEET NUMBER                 | ALIGNMENT | TRAFFIC STRIPE                        | TRAFFIC STRIPE                         |
|                              |           | (MULTI-POLY) (WHITE) (4" WIDE) 856(A) | (MULTI-POLY) (YELLOW) (4" WIDE) 856(A) |
|                              |           | LF                                    | LF                                     |
| 42                           | CL SURVEY | 3,350                                 | 2,131                                  |
| TOTAL                        |           | 3,350                                 | 2,131                                  |

| SUMMARY OF MISCELLANEOUS ITEMS |           |                         |        |
|--------------------------------|-----------|-------------------------|--------|
| SHEET NUMBER                   | ALIGNMENT | TYPE A SALVAGED TOPSOIL | MOWING |
|                                |           | 205(A)                  | 241    |
|                                |           | CY                      | AC     |
| 19                             | CL SURVEY | 2,881                   | 6.05   |
| 20                             | CL SURVEY | 3,908                   | 8.20   |
| TOTAL                          |           | 6,789                   | 14.25  |

| REMOVAL OF STRUCTURES AND OBSTRUCTIONS SUMMARY |                                    |           |                          |          |
|--|------------------------------------|-----------|--------------------------|----------|
| ALIGNMENT                                      | STATION                            | SHEET NO. | DESCRIPTION              | QUANTITY |
| CL SURVEY                                      | 2288+38.42 TO 40.50' LT            | 19        | 28"x18" CGMPA            | 29 LF    |
| CL SURVEY                                      | 2294+59.84 TO 42.00' RT            | 19        | 51"x31" RCB W/ HEADWALLS | 28 LF    |
| CL SURVEY                                      | 2305+50.75 TO 37.60' LT            | 20        | 28"x18" CGMPA            | 33 LF    |
| CL SURVEY                                      | 2288+35.75 TO 89.52' LT            | 19        | TEMPORARY 24" CGMP       | 40 LF    |
| CL SURVEY                                      | 2294+67.75 TO 53.25' LT            | 19        | TEMPORARY 18" CGMP       | 32 LF    |
| CL SURVEY                                      | 2295+89.16 TO 133.09' LT 41.61' LT | 19        | TEMPORARY 56" CGMP       | 98 LF    |
| CL SURVEY                                      | 2297+02.88 TO 137.51' LT 34.62' LT | 19        | TEMPORARY 108" CGMP      | 110 LF   |
| CL SURVEY                                      | 2297+14.41 TO 140.12' LT 41.70' LT | 19        | TEMPORARY 66" CGMP       | 105 LF   |
| CL SURVEY                                      | 2305+49.17 TO 113.87' LT           | 20        | TEMPORARY 24" CGMP       | 47 LF    |

| SUMMARY OF EARTHWORK     |                         |            |                   |                     |
|--------------------------|-------------------------|------------|-------------------|---------------------|
| STATION TO STATION       | UNCLASSIFIED EXCAVATION | EMBANKMENT | EXCESS EXCAVATION | UNCLASSIFIED BORROW |
|                          | 202(A)                  | +15% CY    | CY                | 202(D)              |
| PHASE 1                  |                         |            |                   |                     |
| 2284+95.00 TO 2313+02.00 | 8,230                   | 9,626      |                   | 1,396               |
| PHASE 2                  |                         |            |                   |                     |
| 2280+50.00 TO 2307+25.00 | 8,524                   | 14,717     |                   | 6,193               |
| PHASE 3                  |                         |            |                   |                     |
| 2284+95.00 TO 2313+02.00 | 8,536                   | 8,589      |                   | 55                  |
| TOTAL                    |                         | 25,288     | 32,932            | 7,644               |

| SUMMARY OF EROSION CONTROL |                      |                     |                                  |                    |                     |      |
|----------------------------|----------------------|---------------------|----------------------------------|--------------------|---------------------|------|
| SHEET NUMBER               | TEMPORARY S.T. FENCE | TEMPORARY S.T. DIKE | TEMPORARY ROCK FILTER DAM TYPE 1 | SOLID SLAB SODDING | VEGETATIVE MULCHING |      |
|                            | 221(C)               | 221(F)              | 221(G)                           | 230(A)             | 233(A)              |      |
|                            |                      | LF                  | LF                               | CY                 | SY                  |      |
| 19                         | 1,368                | 140                 | 20                               | 36,464             | 5.70                |      |
| TOTAL                      |                      | 1,368               | 140                              | 20                 | 36,464              | 5.70 |

| SUMMARY OF FENCE |                          |       |     |                         |
|------------------|--------------------------|-------|-----|-------------------------|
| ALIGNMENT        | STATION TO STATION       | LT.   | RT. | FENCE STYLE SW7         |
|                  |                          |       |     | (5 BARBED W/ 4L) 624(C) |
|                  |                          | LF    |     |                         |
| CL SURVEY        | 2285+97.84 TO 2405+21.08 | X     |     | 1,939                   |
| CL SURVEY        | 2293+77.41 TO 2293+88.56 | X     |     | 88                      |
| CL SURVEY        | 2305+86.10 TO 2315+31.56 | X     |     | 948                     |
| CL SURVEY        | 2289+45.86 TO 2303+00.00 |       | X   | 1,309                   |
| TOTAL            |                          | 4,344 |     |                         |

| SUMMARY OF SIGNS |           |         |        |        |                        |                       |                  |                  |
|------------------|-----------|---------|--------|--------|------------------------|-----------------------|------------------|------------------|
| SHEET NUMBER     | ALIGNMENT | STAT ON | OFFSET | SIGNS  | TYPE OF SIGNS          | 2 1/4" SQUARE         | 2 1/2" SQUARE    |                  |
|                  |           |         |        |        |                        | ALUMINUM SIGNS 850(A) | TUBE POST 851(C) | TUBE POST 851(C) |
|                  |           | LF      | LF     | LF     | LF                     | LF                    | LF               |                  |
| 42               | CL SURVEY | 2289+25 | 25' RT | WB-13E | "BARRIERS BEFORE ROAD" | 9                     | 3                | 12               |
| 42               | CL SURVEY | 2305+25 | 59' LT | R1-1E  | "STOP"                 | 5.18                  | 3                | 12               |
| 42               | CL SURVEY | 2305+97 | 60' RT | R1-1E  | "STOP"                 | 5.18                  | 3                | 12               |
| 42               | CL SURVEY | 2306+05 | 29' LT | WB-13E | "BARRIERS BEFORE ROAD" | 9                     | 3                | 12               |
| TOTAL            |           |         |        |        |                        | 28.36                 | 12               | 48               |

| SUMMARY OF TRAFFIC CONTROL |           |                               |                                 |   |                           |                           |                           |                   |       |    |       |                 |     |                  |       |                   |        |
|----------------------------|-----------|-------------------------------|---------------------------------|---|---------------------------|---------------------------|---------------------------|-------------------|-------|----|-------|-----------------|-----|------------------|-------|-------------------|--------|
| SHEET NUMBER               | SIGN DAYS | CONSTRUCTION TRAFFIC STRIPE   |                                 | PAVEMENT MARKING REMOVAL (TRAFFIC STRIPE) |                           | CONSTRUCTION SIGNS        |                           |                   |       |    |       | WING BARRICADES |     | WARN V.G. LIGHTS |       | CHANNELIZER CONES |        |
|                            |           | TRAFFIC STRIPE (PAINT) 857(A) | REMOVAL (TRAFFIC STRIPE) 857(F) | 6 TO 6.25 S.F. 880(B)                     | 6.26 TO 15.99 S.F. 880(B) | 16.0 TO 32.99 S.F. 880(D) | BARRICADES (TYPE ) 880(C) | BARRICADES 880(C) | EA    | SD | EA    | SD              | EA  | SD               | EA    | SD                | EA     |
| 43                         | 240       | 5912                          | 707                             | 10  | 2,400                     | 11                        | 2,640                     | 7                 | 1,680 | 6  | 1,440 | 2               | 480 | 16               | 3,840 | 48                | 11,520 |
| 44                         | 240       | 5780                          | 690                             | 10  | 2,400                     | 9                         | 2,160                     | 7                 | 1,680 | 6  | 1,440 | 2               | 480 | 16               | 3,840 | 48                | 11,520 |
| TOTAL                      |           | 11,692                        | 1,397                           | 20  | 4,800                     | 20                        | 4,800                     | 14                | 3,360 | 12 | 2,880 | 4               | 960 | 32               | 7,680 | 96                | 23,040 |

| SUMMARY OF DRAINAGE STRUCTURES |              |           |            |                      |             |        |              |          |              |                               |                               |                               |
|--------------------------------|--------------|-----------|------------|----------------------|-------------|--------|--------------|----------|--------------|-------------------------------|-------------------------------|-------------------------------|
| STRUCTURE NUMBER               | SHEET NUMBER | ALIGNMENT | STATION    | OFFSET               | DESCRIPTION | DESIGN | FL ELEVATION |          | P.P.L. SLOPE | 28"x18" RCPA CLASS III 613(A) | 36"x22" RCPA CLASS III 613(A) | 43"x26" RCPA CLASS III 613(A) |
|                                |              |           |            |                      |             |        | PIPE IN      | PIPE OUT |              |                               |                               |                               |
|                                |              |           |            |                      |             |        |              |          |              |                               |                               |                               |
| 1                              | 19           | CL SURVEY | 2288+37.31 | 36.97' LT            | SIDE DRAIN  | SP4-0  | 2059.60      | 2057.97  | 2.33         |                               |                               |                               |
| 2                              | 19           | CL SURVEY | 2294+84.72 | 34.40' RT            | SIDE DRAIN  | SP4-0  | 2042.78      | 2036.89  | 5.47         |                               |                               |                               |
| 3                              | 20           | CL SURVEY | 2305+50.08 | 43.77' LT            | SIDE DRAIN  | SP4-0  | 2057.03      | 2053.57  | 3.62         | 96                            | 108                           |                               |
| 11                             | 19           | CL SURVEY | 2288+35.75 | 89.52' LT            | SIDE DRAIN  | SP4-0  | 2059.27      | 2058.56  | 1.76         |                               |                               |                               |
| 12                             | 19           | CL SURVEY | 2294+67.75 | 53.25' LT            | SIDE DRAIN  | SP4-0  | 2038.91      | 2036.86  | 6.35         |                               |                               |                               |
| 13                             | 19           | CL SURVEY | 2296+89.16 | 133.09' LT 41.61' LT | CROSS DRAIN | SP4-0  | 2029.50      | 2029.01  | 0.50         |                               |                               |                               |
| 14                             | 19           | CL SURVEY | 2297+02.88 | 137.51' LT 34.62' LT | CROSS DRAIN | SP4-0  | 2028.01      | 2025.68  | 2.12         |                               |                               |                               |
| 15                             | 19           | CL SURVEY | 2297+14.41 | 140.12' LT 41.70' LT | CROSS DRAIN | SP4-0  | 2030.32      | 2029.79  | 0.50         |                               |                               |                               |
| 15                             | 20           | CL SURVEY | 2305+49.17 | 113.87' LT           | SIDE DRAIN  | SP4-0  | 2059.75      | 2057.85  | 4.06         |                               |                               |                               |
| TOTAL                          |              |           |            |                      |             |        |              |          |              | 70                            | 96                            | 108                           |

| SUMMARY OF GUARDRAIL     |     |     |                        |                      |                           |                                      |                              |
|--------------------------|-----|-----|------------------------|----------------------|---------------------------|--------------------------------------|------------------------------|
| STATION TO STATION       | LT. | RT. | TOTAL LENGTH           | BEAM GUARDRAIL       | GUARDRAIL TREATMENT       | GUARDRAIL BRIDGE                     |                              |
|                          |     |     | INCLUDING ANCHOR UNITS | W-BEAM SINGLE 623(A) | END TURNDOWN (31") 623(F) | GUARDRAIL END TREATMENT (31") 623(G) | CONNECTION BEAM (31") 623(H) |
|                          |     |     |                        |                      |                           |                                      |                              |
| 2293+26.14 TO 2294+82.37 |     | X   | 187.50                 | 112.50               | 1                         | 1                                    |                              |
| 2294+98.43 TO 2296+20.52 |     | X   | 162.50                 | 118.75               | 1                         |                                      | 1                            |
| 2298+57.77 TO 2300+86.52 |     | X   | 218.75                 | 150.00               |                           | 1                                    | 1                            |
| 2294+01.77 TO 2296+70.52 |     | X   | 218.75                 | 150.00               |                           | 1                                    | 1                            |
| 2289+57.77 TO 2301+61.52 |     | X   | 293.75                 | 225.00               |                           | 1                                    | 1                            |
| TOTAL                    |     |     |                        | 756.25               | 2                         | 4                                    | 4                            |

FILENAME: 6 SUMMARY SHEET.DWG

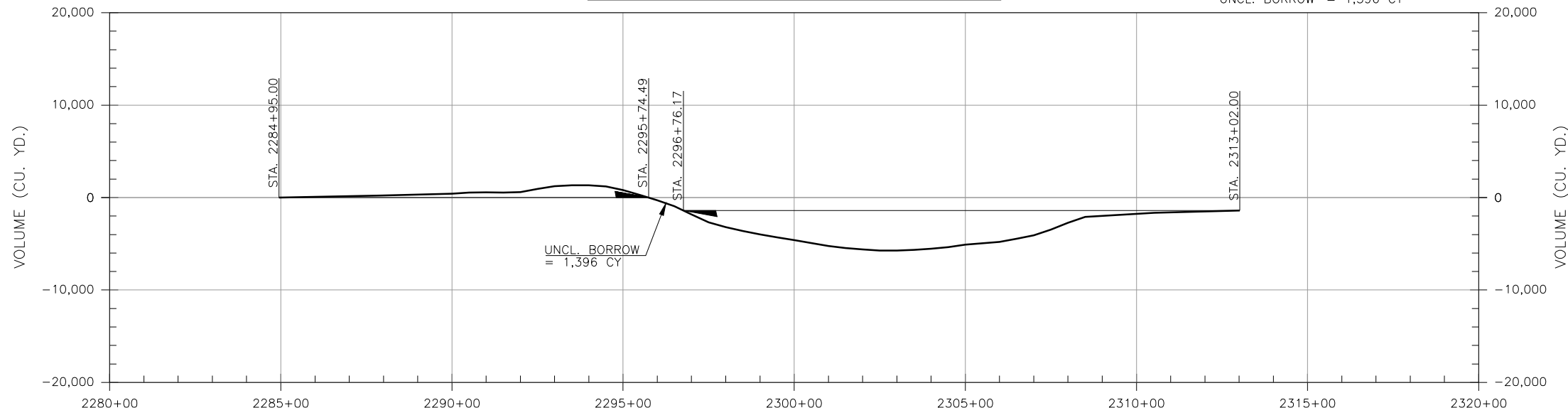
|         |                               |                 |
|---------|-------------------------------|-----------------|
| DESIGN  | SH-34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   |                               |                 |
| CHECKED |                               |                 |
| CEC     | <b>SUMMARY SHEET</b>          |                 |
|         | STATE JOB NO. 28825(04)       | SHEET NO. 6     |

| DESCRIPTION | REVISIONS | DATE |
|-------------|-----------|------|
|             |           |      |

**MASS DIAGRAM  
PHASE 1 (DETOUR) TOTAL VOLUME**

PHASE 1 (DETOUR) EARTHWORK ESTIMATE  
STA. 2284+95.00 TO STA. 2313+02.00

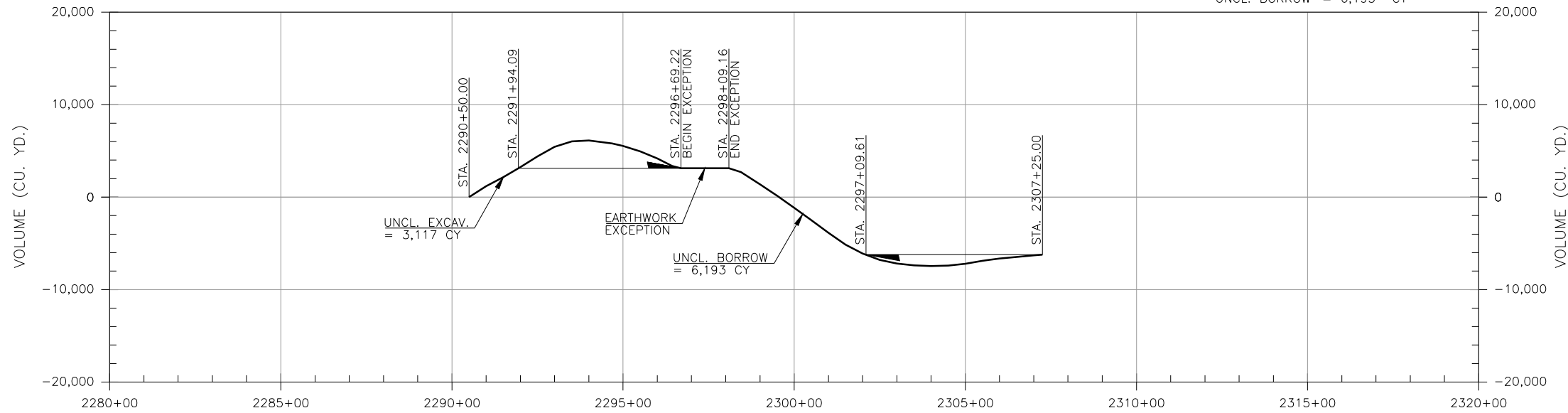
UNCL. EXCAV. = 8,230 CY  
EMB. + 15% = 9,626 CY  
UNCL. BORROW = 1,396 CY



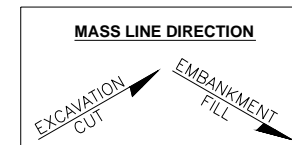
**MASS DIAGRAM  
PHASE 2 (MAINLINE) TOTAL VOLUME**

PHASE 2 (MAINLINE) EARTHWORK ESTIMATE  
STA. 2290+50.00 TO STA. 2307+25.00

UNCL. EXCAV. = 8,524 CY  
EMB. + 15% = 14,717 CY  
UNCL. BORROW = 6,193 CY



MASS DIAGRAM PROVIDED FOR BIDDING PURPOSES ONLY. ACTUAL BALANCE POINTS TO BE DETERMINED BY CONTRACTOR AND VOLUME OF MATERIAL ENCOUNTERED DURING GRADING OPERATIONS. WHENEVER POSSIBLE, THE CONTRACTOR SHALL SEQUENCE EARTHWORK OPERATIONS IN ORDER TO OBTAIN THE MATERIAL FROM THE CUT SECTION FOR USE AS FILL RATHER THAN OBTAINING UNCLASSIFIED BORROW. MATERIAL DEPICTED AS WASTE SHALL ONLY BE CONSIDERED WASTE ONCE ALL EARTHWORK OPERATIONS HAVE BEEN COMPLETED. THIS MATERIAL SHALL BE USED TO REDUCE THE NEED FOR UNCLASSIFIED BORROW AT ANY LOCATION AND TIME THROUGH THE DURATION OF THE PROJECT.



FILENAME: 7 MASS DIAGRAM SHEET.DWG

|         |                               |                 |
|---------|-------------------------------|-----------------|
| DESIGN  | SH-34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   |                               |                 |
| CHECKED |                               |                 |
| CEC     | STATE JOB NO. 28825(04)       | SHEET NO. 7     |

**MASS DIAGRAM  
(SHEET 1 OF 2)**



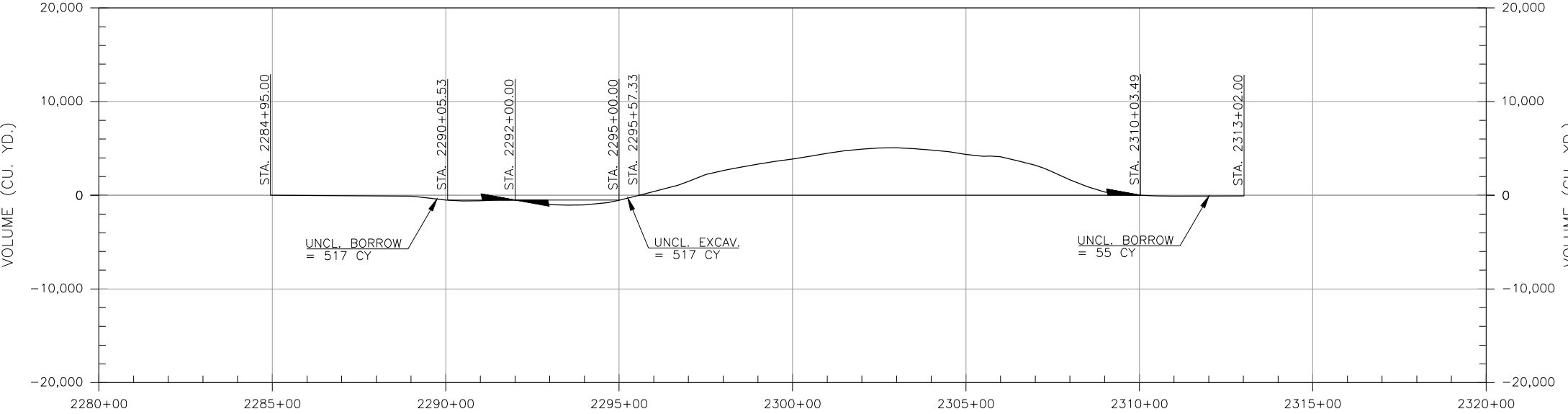
| DESCRIPTION | REVISIONS | DATE |
|-------------|-----------|------|
|             |           |      |

| SUMMARY OF EARTHWORK                |                                |                 |                   |                            |
|-------------------------------------|--------------------------------|-----------------|-------------------|----------------------------|
| STATION TO STATION                  | UNCLASSIFIED EXCAVATION 202(A) | EMBANKMENT +15% | EXCESS EXCAVATION | UNCLASSIFIED BORROW 202(D) |
|                                     | CY                             | CY              | CY                | CY                         |
| PHASE 1<br>2284+95.00 TO 2313+02.00 | 8,230                          | 9,626           |                   | 1,396                      |
| PHASE 2<br>2290+50.00 TO 2307+23.00 | 8,524                          | 14,717          |                   | 6,193                      |
| PHASE 3<br>2284+95.00 TO 2313+02.00 | 8,534                          | 8,589           |                   | 55                         |
| <b>TOTAL</b>                        | <b>25,288</b>                  | <b>32,932</b>   |                   | <b>7,644</b>               |

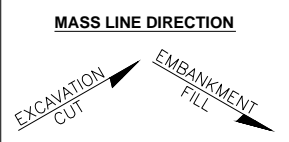
PHASE 3 (DETOUR REMOVAL) EARTHWORK ESTIMATE  
STA. 2284+95.00 TO STA. 2312+02.00

UNCL. EXCAV. = 8,534 CY  
EMB. + 15% = 8,589 CY  
UNCL. BORROW = 55 CY

**MASS DIAGRAM  
PHASE 3 (DETOUR REMOVAL) TOTAL VOLUME**



MASS DIAGRAM PROVIDED FOR BIDDING PURPOSES ONLY. ACTUAL BALANCE POINTS TO BE DETERMINED BY CONTRACTOR AND VOLUME OF MATERIAL ENCOUNTERED DURING GRADING OPERATIONS. WHENEVER POSSIBLE, THE CONTRACTOR SHALL SEQUENCE EARTHWORK OPERATIONS IN ORDER TO OBTAIN THE MATERIAL FROM THE CUT SECTION FOR USE AS FILL RATHER THAN OBTAINING UNCLASSIFIED BORROW. MATERIAL DEPICTED AS WASTE SHALL ONLY BE CONSIDERED WASTE ONCE ALL EARTHWORK OPERATIONS HAVE BEEN COMPLETED. THIS MATERIAL SHALL BE USED TO REDUCE THE NEED FOR UNCLASSIFIED BORROW AT ANY LOCATION AND TIME THROUGH THE DURATION OF THE PROJECT.



FILENAME: 7 MASS DIAGRAM SHEET.DWG

|         |  |  |                 |
|---------|--|--|-----------------|
| DESIGN  |  | SH-34 OVER S. PERSIMMON CREEK          | WOODWARD COUNTY |
| DRAWN   |  | <b>MASS DIAGRAM<br/>(SHEET 2 OF 2)</b> |                 |
| CHECKED |  |  |                 |
| CEC     |  | STATE JOB NO. 28825(04)                | SHEET NO. 7A    |

# STORM WATER MANAGEMENT PLAN

| DESCRIPTION | REVISIONS | DATE |
|-------------|-----------|------|
|             |           |      |

## SITE DESCRIPTION

## EROSION AND SEDIMENT CONTROLS

**PROJECT LIMITS:** BEGINS 2,125 FEET SOUTH OF SH-34 AND EW-54 INTERSECTION, CONTINUING NORTH 2,909 FEET NORTH ALONG SH-34.

**PROJECT DESCRIPTION:** RECONSTRUCT BRIDGE AND ROADWAY APPROACHES.

**SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:** \_\_\_\_\_

1. VEGETATIVE STRIPPING
2. UNDERCUT & STOCKPILE EXISTING TOPSOIL, PRESERVE AS MUCH NATIVE VEGETATION AS POSSIBLE.
3. REMOVE AND REPLACE EXISTING PAVEMENT AND BRIDGE
4. SPREAD TOPSOIL
5. INSTALL SOLID SLAB SOD

SOIL TYPE: RUSH SPRINGS

AREA TO BE DISTURBED: 8.71 ACRES

OFFSITE AREA TO BE DISTURBED: \_\_\_\_\_  
(FOR CONTRACTOR USE)

MAXIMUM ACRES TO BE DISTURBED AT ANY ONE TIME: \_\_\_\_\_  
(FOR CONTRACTOR USE)

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 36°13'46.84" N, 99°19'43.01" W

NAME OF RECEIVING WATERS: SOUTH PERSIMMON CREEK

SENSITIVE WATERS OR WATERSHEDS: YES  NO

303(d) IMPAIRED WATERS: YES  NO

NOTE:  
THIS SHEET SHOULD BE USED IN CONJUNCTION WITH A DRAINAGE MAP THAT ILLUSTRATES THE DRAINAGE PATTERNS/PATHWAYS AND RECEIVING WATERS FOR THIS PROJECT. THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

**SOIL STABILIZATION PRACTICES:**

- \_\_\_\_\_ TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- \_\_\_\_\_ SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

**STRUCTURAL PRACTICES:**

- \_\_\_\_\_ STABILIZED CONSTRUCTION EXIT
- TEMPORARY SILT FENCE
- TEMPORARY SILT DIKES
- \_\_\_\_\_ TEMPORARY FIBER LOG
- \_\_\_\_\_ DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- \_\_\_\_\_ DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- ROCK FILTER DAMS
- \_\_\_\_\_ TEMPORARY SLOPE DRAIN
- \_\_\_\_\_ PAVED DITCH W/ DITCH LINER PROTECTION
- \_\_\_\_\_ TEMPORARY DIVERSION CHANNELS
- \_\_\_\_\_ TEMPORARY SEDIMENT BASINS
- \_\_\_\_\_ TEMPORARY SEDIMENT TRAPS
- \_\_\_\_\_ TEMPORARY SEDIMENT FILTERS
- TEMPORARY SEDIMENT REMOVAL
- \_\_\_\_\_ RIP RAP
- INLET SEDIMENT FILTER
- \_\_\_\_\_ TEMPORARY BRUSH SEDIMENT BARRIERS
- \_\_\_\_\_ SANDBAG BERMS
- \_\_\_\_\_ TEMPORARY STREAM CROSSINGS

**OFFSITE VEHICLE TRACKING:**

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY

**NOTES:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:**

**MAINTENANCE AND INSPECTION:**

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

**WASTE MATERIALS:**

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

**HAZARDOUS MATERIALS:**

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

**GENERAL NOTES:**

A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

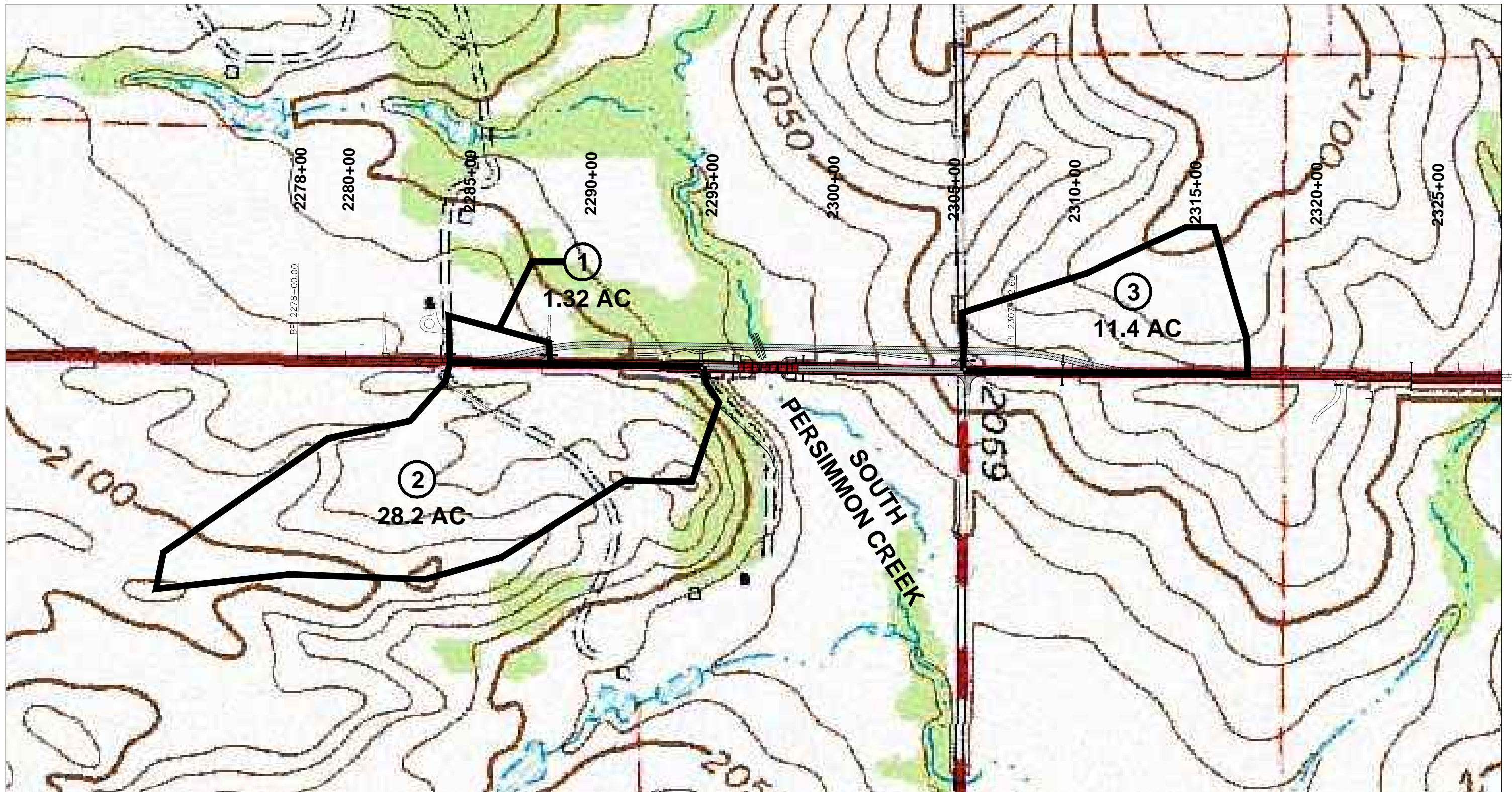
**THE FOLLOWING SECTIONS OF THE 2009 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:**

- 103.05** BONDING REQUIREMENTS
- 104.10** FINAL CLEANING UP
- 104.12** CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13** ENVIRONMENTAL PROTECTION
- 106.08** STORAGE AND HANDLING OF MATERIAL
- 107.01** LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20** STORM WATER MANAGEMENT
- 220** MANAGEMENT OF EROSION, SEDIMENTATION AND STORM WATER POLLUTION PREVENTION AND CONTROL
- 221** TEMPORARY SEDIMENT CONTROL

**IN ADDITION:**

"ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA." ODEQ, WATER QUALITY DIVISION, SEPTEMBER 13, 2012.

|  |  |  |
|--|--|--|
| FILENAME: 8 STORMWATER MANAGEMENT PLAN.DWG |  |  |
| DESIGN                                     |  | SH-34 OVER S. PERSIMMON CREEK WOODWARD COUNTY              |
| DRAWN                                      |  | <h3 style="margin: 0;">STORMWATER<br/>MANAGEMENT PLAN</h3> |
| CHECKED                                    |  |  |
| CEC  |  |  |
|  |  | STATE JOB NO. <u>28825(04)</u> SHEET NO. <u>8</u>          |





| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
|                     |       |           |             |           |              |
| REVISIONS           |       |           |             |           | DATE         |
| DESCRIPTION         |       |           |             |           |              |

**OKLAHOMA DEPARTMENT OF TRANSPORTATION**  
SURVEY DIVISION (405) 521-2621 FAX (405) 522-0364

04/24/2013

To: Mr. Larry Reser, Chief of Surveys  
From: Joseph H. Farmer, Professional Land Surveyor  
Subject: Re: SWO4843(1), S.H. 34, Bridge over South Persimmon Creek, 4.9 miles north of the Dewey County line.

Historical Letter and Written Report

**1. GENERAL**

- A. Survey began November 14, 2012
- Survey completed March 19, 2013
- B. The measurement unit for this project will be the U.S. Survey Foot.

**2. SURVEY ASSIGNMENT**

The above described survey was assigned to me by Mr. Larry Reser, Chief of Surveys, and completed by my crew at Cobb Engineering.

**3. PURPOSE OF THIS SURVEY**

The purpose of this survey is to furnish sufficient data to develop plans to construct a new bridge over South Persimmon Creek south of Stratton. The survey includes the Alignment, Topographic/Planimetric data, Surface Features/DTM data, Land Ties, Utilities, Drainage, and all other pertinent information needed to aid in the design.

**4. SURVEY LIMITS**

This survey began at P.O.T. Sta. 2279+25.78 (EW-54.5 % Section Line) and extends north to P.C. Sta. 2329+41.50 as established under SWO 1994(1) survey and shown on FAP No. F-418 (8) plans (approximate centerline length = 0.95 mile).

**5. ALIGNMENTS**

The Centerline of Survey for this project is along and identical to the centerline of present S.H. 34 as established under SWO 1994(1) survey and shown on FAP No. F-418 (8) plans.

**6. STATIONING**

Stationing for this survey was taken from SWO 1994(1) survey and FAP No. F-418 (8) plans.

**7. HORIZONTAL CONTROL**

- A. Horizontal Control for this survey is NAD 83 (1993) Oklahoma State Plane Coordinate System, Lambert Projection, North Zone, and derived utilizing static GPS.
- B. Primary Horizontal control was established on 2 monuments along this survey. They are 5/8 inch aluminum caps marked W-77-713 and W-77-714.
- C. Secondary horizontal control was established along the centerline of survey and referenced and shown on the survey data sheets of this survey.
- D. The primary control network, the secondary network and section boundaries for this survey are in compliance with NGS Second Order Class 11 standards for horizontal control (1 : 20,000).

**8. VERTICAL CONTROL**

- A. Level datum for this survey is NGS, NAVD 88, taken from PRIMARY CONTROL POINT NO. W-77-713. A complete set of check levels was run throughout the survey using a Sokkia automatic level.
- B. The adjusted levels and vertical differences between bench marks are shown in following file: SWO4843\_1\_V1.dgn (SDS 2) and SWO4843\_1\_V1\_Level Worksheet.pdf
- C. Accuracy - 3rd order or better before adjustment.

**9. TOPOGRAPHY**

Topography on this survey was obtained by utilizing the Topcon and Trimble GPS RTK systems and Total Station technology with the Trimble TSC1, TSC2, and TOPCON FC-2500 data collectors for field instruments. Centerline profile, bridge profiles, and drainage structures were obtained for the length of the project by utilizing conventional field methods. The supportive information pertaining to the surface features are available in the computer file SWO4843\_1\_V1\_SFF.dgn and SWO4843\_1\_V1\_TOPO.dgn.

**10. DTM / CROSS SECTIONS**

Cross sections on this survey were obtained by the Topcon and Trimble GPS RTK system and total station technology processed and output in the form of a DTM survey and placed in computer file SWO4843\_1\_V1\_SFF.dgn

**11. LAND TIES**

Land ties for this survey were established for the following:

T-20-N, R-20-W, I.M.; Sections 3, 4, 9, and 10

A search was made for any trace of the original monuments and/or accessories. All filed certified corners received from the Oklahoma Department of Libraries were researched and noted. The original survey and survey notes were used from the following survey.

Ehnd Noble Darling 10/02/1873

A complete detailed account of each corner set or used follows:

NORTHWEST CORNER OF SECTION 4, O.D.O.T. MONUMENT W-77-715, T-20-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH LS 1083 CAP 4" DEEP. MATCHES MONUMENT DESCRIPTION ON OCCR FILED BY R. JIVIDEN, LS 1083, ON 10-25-85.

SOUTH QUARTER CORNER OF SECTION 33, O.D.O.T. MONUMENT W-77-716, T-21-N, R-20-W, I.M. FOUND 5/8" IRON PIN WITH LS 1689 CAP 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 3 OF 3 REFERENCES ON OCCR FILED BY G. HUBBS, LS 1689, ON 12-18-12.

NORTH QUARTER CORNER OF SECTION 4, O.D.O.T. MONUMENT W-77-717, T-20-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH BROKEN CAP 4" DEEP. MATCHES MONUMENT DESCRIPTION ON OCCR FILED BY R. JIVIDEN, LS 1083, ON 10-25-85.

SOUTHWEST CORNER OF SECTION 34, O.D.O.T. MONUMENT W-77-718, T-21-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH LS 1083 CAP 4" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 3 OF 3 REFERENCES ON OCCR FILED BY F. WINDHOLZ, LS 1421, ON 11-06-12.

NORTHEAST CORNER OF SECTION 4, O.D.O.T. MONUMENT W-77-719, T-20-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH LS 1083 CAP 8" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 1 OF 1 REMAINING REFERENCES ON OCCR FILED BY R. JIVIDEN, LS 1083, ON 10-25-85.

SOUTH QUARTER CORNER OF SECTION 34, O.D.O.T. MONUMENT W-77-720, T-21-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH LS 1083 CAP 4" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 2 OF 2 REMAINING REFERENCES ON OCCR FILED BY F. WINDHOLZ, LS 1421, ON 11-06-12.

NORTH QUARTER CORNER OF SECTION 10, O.D.O.T. MONUMENT W-77-730, T-20-N, R-20-W, I.M. FOUND 60D NAIL 2" DEEP. MONUMENT FITS 4 OF 4 REMAINING REFERENCES ON OCCR FILED BY R. JIVIDEN, LS 1083, ON 04-11-08 AND F. WINDHOLZ, LS 1421, ON 02-25-05.

NORTHEAST CORNER OF SECTION 10, O.D.O.T. MONUMENT W-77-731, T-20-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH BROKEN PLASTIC CAP 4" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 2 OF 2 REMAINING REFERENCES ON OCCR FILED BY R. JIVIDEN, LS 1083, ON 04-11-06.

EAST QUARTER CORNER OF SECTION 10, O.D.O.T. MONUMENT W-77-732, T-20-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH LS 4121 CAP 1" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 3 OF 3 REFERENCES ON OCCR FILED BY F. WINDHOLZ, LS 1421, ON 09-28-09.

WEST QUARTER CORNER OF SECTION 10, O.D.O.T. MONUMENT W-77-733, T-20-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH LS 1083 CAP. MATCHES MONUMENT DESCRIPTION AND FITS 4 OF 4 REFERENCES ON OCCR FILED BY F. WINDHOLZ, LS 1421, ON 09-28-09.

WEST QUARTER CORNER OF SECTION 9, O.D.O.T. MONUMENT W-77-734, T-20-N, R-20-W, I.M. SET 5/8" IRON PIN WITH CA 32 CAP 4" DEEP. SINGLE PROPORTION MEASUREMENT BETWEEN SECTION CORNERS 0.5 MILE NORTH AND 0.5 MILE SOUTH. MONUMENT FALLS IN LINE WITH THE FENCE RUNNING EAST.

SOUTHWEST CORNER OF SECTION 9, O.D.O.T. MONUMENT W-77-735, R-20-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH CA 980 CAP 1" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 4 OF 4 REFERENCES ON OCCR FILED BY A. FELDER, LS 864, ON 05-04-08.

SOUTH QUARTER CORNER OF SECTION 9, O.D.O.T. MONUMENT W-77-736, T-20-N, R-20-W, I.M. FOUND 60D NAIL 1" DEEP. MONUMENT FITS 3 OF 3 REFERENCE ON OCCR FILED BY G. HUBBS, LS 1689, ON 09-18-12.

SOUTHWEST CORNER OF SECTION 10, O.D.O.T. MONUMENT W-77-737, T-20-N, R-20-W, I.M. FOUND 1/2" IRON PIN 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 3 OF 3 REFERENCES ON OCCR FILED BY F. WINDHOLZ, LS 1421, ON 09-28-09.

SOUTH QUARTER CORNER OF SECTION 10, O.D.O.T. MONUMENT W-77-738, T-20-N, R-20-W, I.M. FOUND 1/2" IRON PIN 2" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 3 OF 3 REFERENCES ON OCCR FILED BY F. WINDHOLZ, LS 1421, ON 09-28-09.

SOUTHEAST CORNER OF SECTION 10, O.D.O.T. MONUMENT W-77-739, O.D.O.T. MONUMENT W-77-739, T-20-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH LS 1421 CAP. MATCHES MONUMENT DESCRIPTION AND FITS 3 OF 3 REFERENCES ON OCCR FILED BY F. WINDHOLZ, LS 1421, ON 09-28-09.

**12. EXISTING RIGHT-OF-WAY**

Existing right of way as shown on this survey is based off of FAP No. F-418(8) Plans and confirmed utilizing Right-of-Way deeds where available.

**13. UTILITIES**

- A. All utility companies servicing this survey project were contacted through "CALL OKIE"
- B. **OneOK.ONG.** An underground Transmission Pipeline Parallels SH-34 from Approximate Sta. 2321+81.37 101.54' Rt. to Approximate Sta. 2329+41.46 101.31' Rt. and continues northwesterly beyond the project limits. This pipeline was not marked in the field by a utility locating service or OneOK.ONG. (The described location of this pipeline is approximate, was not field verified, and was determined from a utility atlas provided by OneOK.ONG.  
**Pioneer Telephone.** Multiple underground telephone line locations and an underground fiber optic line location were not marked in the field by a utility locating service or Pioneer Telephone. (The described location of the following lines are approximate, were not field verified, and were determined from a utility atlas provided by Pioneer Telephone.  
Paralleling from (Sta. 2279+25.78 63.85' Lt. to Sta. 2329+42.50 65.99' Lt.) Crossing at (Sta. 2305+14.53)  
Paralleling from (Sta. 2305+27.30 50.33' Rt. to Sta. 2306+19.17 118.17' Rt.)  
Paralleling from (Sta. 2318+37.00 76.26' Rt. to Sta. 2329+40.38 77.74' Rt.)  
Paralleling from (Sta. 2279+27.20 85.59' Rt. to Sta. 2329+41.14 63.29' Rt.)
- C. Information regarding type, size, ownerships, location, depth, etc. is placed in computer file SWO4843\_1\_V1\_SD-7.pdf.

**14. ENVIRONMENTAL CONCERNS**

An old water well is potentially located at Sta. 2304+89.50 59.42' Rt. According to the Land Owner this is a hand poured concrete pad with a hole in the center of it.

**15. DRAINAGE INFORMATION**

Drainage areas were determined from USGS Stream Stats, USGS Quad Maps in the project area, and data taken from USGS Basin Characteristics Report. Data was field verified for accuracy and placed in computer file SWO4843\_1\_V1\_DRA.dgn and SWO4843\_1\_V1\_USGS Drainage.pdf

**16. SURVEY DATA SHEETS**

Survey Data Sheets were submitted in the form of a Microstation Design File archived on the O.D.O.T. Mainframe Computer, as per O.D.O.T. Survey Division Standards. These will be incorporated into the set of design drawings and are in substantial conformity with the O.D.O.T. Survey Division Standards for Survey Data Sheets, as maintained on O.D.O.T. (s) Intranet.

**17. SUBMISSION OF SURVEY DATA**

- A. Historical Letter & Written Report.
- B. Form SD-1, Transmittal Letter w/FSVARCH.INDEX attached.
- C. Form SD-7, Public and Privately Owned Utilities List w/ vicinity maps where available.
- D. Form SD-11, Position and Description of Survey Monuments (GPS control monuments, Brass/Aluminum Caps for benchmarks, etc.) (if applicable).
- E. Form SD-20, Survey Control Data Statement.
- F. Form SD-41, Surveyor's Certification.
- G. Cogo Data (coordinate list with alignments).
- H. Benchmarks & Check Levels list, including the SWO and description of the project.
- I. Original and reduced copy (8" x 11") of each Certified Land Corner form.
- J. NGS Recovery Form for each horizontal and vertical monument recorded or used during the course of the survey.

**18. EQUIPMENT USED**

- Topcon GR3 GPS
- Topcon Hiper II GPS
- Topcon IS 3" Imaging Robotic Total Station
- Topcon FC-2500 Data Collectors
- GPT-9005A 5" robotic Total Station
- Topcon GPT 3000W Total Station
- Topcon GPT 3005W Total Station
- Topcon GTS 3000 Total Station
- Topcon GTS 313 Total Station
- Trimble TSC 1 Data Collectors
- Trimble TSC 2 Data Collectors
- Trimble 5700 GPS
- Trimble 5800 GPS
- Sokkia SDL 30 Digital Level

Inroads working in Microstation Platforms  
AutoCAD Civil 3D  
Microstation

**19. Personnel**

- Darren Smith, P.L.S. Division Manager 4
- Adam Hinds, P.L.S. Survey Manager 1
- Joe Farmer, P.L.S. Technician Manager 2
- Tanner Wentworth, L.S.I. Survey Intern 1
- Brian Bird, L.S.I. Survey Intern 1
- Corey Simmons, Technician 1
- Sam McGee, Technician 1
- Eric Mentzer, Technician 3
- Eric Oldham, Technician 1
- Matthew Overall, Technician 1
- Rebecca Robichaux, Technician 2
- Parker Kugler, Technician 1
- Matthew Chernicky, Lead ROW Agent

|            |        |          |   |                 |
|------------|--------|----------|---|-----------------|
| P.L.S.     | J.H.F. | 04/24/13 | SH-34 BRIDGE OVER S. PERSIMMON CREEK, 4.9 MI. N. OF DEWEY COUNTY LINE | WOODWARD COUNTY |
| DRAWN      | J.E.M. | 04/24/13 |   |                 |
| CHECKED    | J.H.F. | 04/24/13 |   |                 |
| APPROV.    | J.H.F. | 04/24/13 |   |                 |
| CREW CHIEF | T.J.W. |          |   |                 |

**HISTORICAL LETTER & WRITTEN REPORT**

SWO NO. 4843(1) J/P NO. 28825(04) SHEET NO. 11

|                     |       |           |             |           |              |
|---------------------|-------|-----------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|                     |       |           |             |           |              |
| DESCRIPTION         |       |           |             |           | DATE         |

SH 34 BRIDGE OVER SOUTH PERSIMMON CREEK, 4.9 MILES NORTH OF THE DEWEY COUNTY LINE

| CHECK LEVELS |         | SWO# 4843(1) |            |            | BENCHMARKS LIST |                     | (ENGLISH)   |  | (OPUS) NAVD 88 DATUM |  |
|--------------|---------|--------------|------------|------------|-----------------|---------------------|---|--|----------------------|--|
| BM NO.       | RUN 1   | RUN 2        | MEAN DIFF. | ADJ. DIFF. | ADJ. ELEV.      | PUBLISHED ELEVATION | BM DESCRIPTION, STA/OFFSET  |  | SHEET 1 OF 1         |  |
| CP 1         |         |              |            |            |                 | 2076.728            | SET 5/8" IRON PIN W/ ALUMINUM CAP STAMPED W-77-713 APPROX. STA. 2278+05.38 64.16' RT. |  |                      |  |
| to           | -7.001  | -7.007       | -7.0040    | -7.004     |                 |                     |   |  |                      |  |
| BM 201       |         |              |            |            | 2069.7240       |                     | CUT "X" IN DRAINAGE STRUCTURE HEADWALL STA. 2284+00.05 34.39' RT.                     |  |                      |  |
| to           | -2.185  | -2.186       | -2.1855    | -2.186     |                 |                     |   |  |                      |  |
| CP 2         |         |              |            |            | 2067.5385       |                     | SET 5/8" IRON PIN W/ COBB CP CAP STA. 2284+66.55 50.63' LT.                           |  |                      |  |
| to           | -5.348  | -5.350       | -5.3490    | -5.349     |                 |                     |   |  |                      |  |
| BM 202       |         |              |            |            | 2062.1895       |                     | SET RAILROAD SPIKE IN CORNER POST STA. 2288+08.78 64.59' LT.                          |  |                      |  |
| to           | -19.067 | -19.070      | -19.0685   | -19.069    |                 |                     |   |  |                      |  |
| BM 203       |         |              |            |            | 2043.1210       |                     | CUT "X" IN DRAINAGE STRUCTURE HEADWALL STA. 2294+71.23 39.70' RT.                     |  |                      |  |
| to           | -2.303  | -2.308       | -2.3055    | -2.306     |                 |                     |   |  |                      |  |
| CP 3         |         |              |            |            | 2040.8155       |                     | SET 5/8" IRON PIN W/ COBB CP CAP STA. 2296+66.90 26.25' RT.                           |  |                      |  |
| to           | -10.277 | -10.276      | -10.2765   | -10.277    |                 |                     |   |  |                      |  |
| CP 4         |         |              |            |            | 2030.5390       |                     | SET 5/8" IRON PIN W/ COBB CP CAP STA. 2297+25.44 44.55' RT.                           |  |                      |  |
| to           | 1.979   | 1.980        | 1.9795     | 1.980      |                 |                     |   |  |                      |  |
| CP 5         |         |              |            |            | 2032.5185       |                     | SET 5/8" IRON PIN W/ COBB CP CAP STA. 2298+08.73 50.10' LT.                           |  |                      |  |
| to           | 3.068   | 3.068        | 3.0680     | 3.068      |                 |                     |   |  |                      |  |
| BM 204       |         |              |            |            | 2035.5865       |                     | SET RAILROAD SPIKE IN POWER POLE STA. 2299+04.74 62.20' LT.                           |  |                      |  |
| to           | 21.724  | 21.726       | 21.7250    | 21.725     |                 |                     |   |  |                      |  |
| CP 6         |         |              |            |            | 2057.3115       |                     | SET 5/8" IRON PIN W/ COBB CP CAP STA. 2305+20.38 42.18' LT.                           |  |                      |  |
| to           | 0.583   | 0.582        | 0.5825     | 0.583      |                 |                     |   |  |                      |  |
| BM 205       |         |              |            |            | 2057.8940       |                     | CUT "X" IN DRAINAGE STRUCTURE HEADWALL STA. 2305+36.85 37.77' LT.                     |  |                      |  |
| to           | 2.401   | 2.403        | 2.4020     | 2.402      |                 |                     |   |  |                      |  |
| CP 7         |         |              |            |            | 2060.2960       |                     | SET 5/8" IRON PIN W/ COBB CP CAP STA. 2306+04.82 32.37' LT.                           |  |                      |  |
| to           | 7.163   | 7.155        | 7.1590     | 7.159      |                 |                     |   |  |                      |  |
| BM 206       |         |              |            |            | 2067.4550       |                     | CUT "X" IN DRAINAGE STRUCTURE HEADWALL STA. 2309+56.07 49.86' RT.                     |  |                      |  |
| to           | 3.472   | 3.475        | 3.4735     | 3.474      |                 |                     |   |  |                      |  |
| CP 8         |         |              |            |            | 2070.9285       |                     | SET 5/8" IRON PIN W/ COBB CP CAP STA. 2309+78.55 29.94' LT.                           |  |                      |  |
| to           | 15.475  | 15.475       | 15.4750    | 15.475     |                 |                     |   |  |                      |  |
| BM 207       |         |              |            |            | 2086.4035       |                     | SET RAILROAD SPIKE IN POWER POLE STA. 2313+96.33 64.06' RT.                           |  |                      |  |
| to           | -10.184 | -10.186      | -10.1850   | -10.185    |                 |                     |   |  |                      |  |
| CP 9         |         |              |            |            | 2076.2185       |                     | SET 5/8" IRON PIN W/ COBB CP CAP STA. 2320+55.16 30.12' RT.                           |  |                      |  |
| to           | 1.386   | 1.385        | 1.3855     | 1.386      |                 |                     |   |  |                      |  |
| BM 208       |         |              |            |            | 2077.6040       |                     | CUT "X" IN DRAINAGE STRUCTURE HEADWALL STA. 2320+86.29 37.81' RT.                     |  |                      |  |
| to           | -2.368  | -2.370       | -2.3690    | -2.369     |                 |                     |   |  |                      |  |
| CP 10        |         |              |            |            | 2075.2350       |                     | SET 5/8" IRON PIN W/ COBB CP CAP STA. 2321+38.10 23.84' RT.                           |  |                      |  |
| to           | -20.469 | -20.473      | -20.4710   | -20.471    |                 |                     |   |  |                      |  |
| BM 209       |         |              |            |            | 2054.7640       |                     | SET RAILROAD SPIKE IN POWER POLE STA. 2326+16.60 64.59' RT.                           |  |                      |  |
| to           | 7.282   | 7.278        | 7.2800     | 7.280      |                 |                     |   |  |                      |  |
| CP 11        |         |              |            |            | 2062.0440       |                     | SET 5/8" IRON PIN W/ COBB CP CAP STA. 2328+46.00 28.08' RT.                           |  |                      |  |
| to           | -1.324  | -1.325       | -1.3245    | -1.325     |                 |                     |   |  |                      |  |
| CP 12        |         |              |            |            | 2060.7195       |                     | SET 5/8" IRON PIN W/ COBB CP CAP STA. 2329+04.58 27.29' LT.                           |  |                      |  |
| to           | 2.852   | 2.853        | 2.8525     | 2.853      |                 |                     |   |  |                      |  |
| CP 13        |         |              |            |            | 2063.5720       |                     | SET 5/8" IRON PIN W/ ALUMINUM CAP STAMPED W-77-714 APPROX. STA. 2330+47.51 61.69' RT. |  |                      |  |

Project Name: SWO4843\_1  
Description: SH 34 Bridge Over South Persimmon Creek  
Horizontal Alignment Name: a001  
Description: Centerline of Survey  
Style: CL

|                    | STATION         | EASTING      | NORTHING    |
|--------------------|-----------------|--------------|-------------|
| Element: Linear    |                 |              |             |
| POB (10500)        | 2279+25.78      | 1576620.8097 | 448478.5953 |
| PI (10505)         | 2307+62.60      | 1576667.9224 | 451315.0232 |
| Tangent Direction: | N 0°56'58.45" E |              |             |
| Tangent Length:    | 2836.82         |              |             |
| Element: Linear    |                 |              |             |
| PI (10505)         | 2307+62.60      | 1576667.9224 | 451315.0232 |
| POE (10508)        | 2329+41.50      | 1576691.8905 | 453493.7903 |
| Tangent Direction: | N 0°37'58.45" E |              |             |
| Tangent Length:    | 2178.90         |              |             |

SWO4843(1) STATE JOB NO. 28825(04)  
SH 34 Bridge over South Persimmon Creek, 4.9 miles North of the Dewey County line, Woodward County, Oklahoma

| NODE ID  | NORTHING        | EASTING          | NODE ID | NORTHING        | EASTING          |
|----------|-----------------|------------------|---------|-----------------|------------------|
| W-77-713 | 448357.14790300 | 1576682.96867000 | 5022    | 451121.43437635 | 1579293.63629743 |
| CP-2     | 449020.13105400 | 1576579.14787400 | 5023    | 451055.43908378 | 1579292.74486388 |
| CP-3     | 450219.03532000 | 1576675.91435200 | 5024    | 451035.28932632 | 1581885.54731309 |
| CP-4     | 450277.26862200 | 1576695.17701000 | 5025    | 448431.34183958 | 1581834.14156410 |
| CP-5     | 450362.11844100 | 1576601.92210100 | 5026    | 448477.51808603 | 1576685.80078376 |
| CP-6     | 451073.54047100 | 1576621.63397100 | 5027    | 449001.66361694 | 1576694.48829206 |
| CP-7     | 451157.79905800 | 1576632.83940400 | 5028    | 449051.49102707 | 1576705.31553550 |
| CP-8     | 451531.28641900 | 1576640.27065700 | 5029    | 449951.36742956 | 1576720.23063685 |
| CP-9     | 452607.17313700 | 1576712.21958500 | 5030    | 450001.52628638 | 1576711.06062690 |
| CP-10    | 452690.17126100 | 1576706.85338600 | 5031    | 450171.40705971 | 1576713.87633464 |
| CP-11    | 453397.98485000 | 1576718.91309100 | 5032    | 450419.84545247 | 1576861.72249174 |
| CP-12    | 453457.16940500 | 1576664.19590600 | 5033    | 450367.07003420 | 1576717.11937233 |
| W-77-714 | 453599.11509900 | 1576754.74764000 | 5034    | 451016.38689584 | 1576727.88154675 |
|          |                 |                  | 5035    | 451026.55124589 | 1576718.04864340 |
| 201      | 448952.23180100 | 1576663.05390100 | 5036    | 451073.97001133 | 1576718.83459100 |
| 202      | 449362.54366900 | 1576570.86124400 | 5037    | 451139.89185027 | 1576729.92859333 |
| 203      | 450023.17509400 | 1576686.11579100 | 5038    | 451314.12562553 | 1576732.81645038 |
| 204      | 450458.30969500 | 1576591.40928800 | 5039    | 453493.07229976 | 1576756.88654836 |
| 205      | 451089.92962900 | 1576626.32114700 | 5040    | 453494.50828541 | 1576626.89447958 |
| 206      | 451507.93249300 | 1576719.81482100 | 5041    | 452553.06572523 | 1576616.49467227 |
| 207      | 451948.00407800 | 1576738.88183400 | 5042    | 452503.17923560 | 1576605.94298771 |
| 208      | 452638.21173100 | 1576720.25436300 | 5043    | 452053.20668936 | 1576600.97229091 |
| 209      | 453168.19275800 | 1576752.89078100 | 5044    | 451893.66073106 | 1576558.76553268 |
|          |                 |                  | 5045    | 451316.61129401 | 1576552.83296447 |
| 5000     | 454815.33444195 | 1581782.46774610 | 5046    | 451140.97476661 | 1576549.92181935 |
| 5001     | 445850.11743549 | 1579186.86578134 | 5047    | 451074.73107677 | 1576598.83072343 |
| 5002     | 445885.31098058 | 1576558.66009719 | 5048    | 453064.93107237 | 1576587.06606444 |
| 5003     | 445853.95476975 | 1573946.31368965 | 5049    | 450291.58481786 | 1576386.09944880 |
| 5004     | 445887.85737833 | 1571368.04021143 | 5050    | 450208.01839129 | 1576416.26999600 |
| 5005     | 448494.33762552 | 1571397.21406039 | 5051    | 450159.75925260 | 1576583.66542134 |
| 5006     | 451100.41686284 | 1571426.38342092 | 5052    | 448479.67248202 | 1576555.81863661 |
| 5007     | 451087.54237598 | 1574018.96924470 | 5053    | 445867.71420747 | 1577872.76306755 |
| 5008     | 451153.53851040 | 1574019.91154488 | 5054    | 448729.75685526 | 1576559.96368783 |
| 5009     | 451166.41336246 | 1571427.25217828 | 5055    | 449199.75685526 | 1576567.75375501 |
| 5010     | 453793.27038161 | 1571466.52458798 | 5056    | 449792.36912331 | 1576717.59530177 |
| 5011     | 456673.16179071 | 1571510.41847860 | 5057    | 450591.02873936 | 1576710.83139471 |
| 5012     | 456663.01794161 | 1571972.66536075 | 5058    | 451067.82207336 | 1575727.75276353 |
| 5013     | 456640.76767192 | 1574100.42934763 | 5059    | 451125.03404463 | 1578793.64928136 |
| 5014     | 456636.06859465 | 1574589.16003205 | 5060    | 451147.01926807 | 1575332.71689484 |
| 5015     | 456607.96466018 | 1576723.54678302 | 5061    | 452425.74066807 | 1576605.08754966 |
| 5016     | 456602.78831404 | 1577220.01663577 | 5062    | 452424.71601687 | 1576745.08477244 |
| 5017     | 456576.27816619 | 1579330.04842229 | 5063    | 455114.40004234 | 1571486.87710035 |
| 5018     | 456569.53446142 | 1579851.01878682 | 5064    | 456654.48263852 | 1572788.88515414 |
| 5019     | 456557.76781974 | 1581979.92248544 | 5065    | 456625.23406560 | 1575412.00123564 |
| 5020     | 453703.85873171 | 1581931.19722133 | 5066    | 456592.65199028 | 1578026.80297009 |
| 5021     | 451101.28187169 | 1581886.76299411 | 5067    | 456564.99979114 | 1580671.46327719 |

SWO4843(1) STATE JOB NO. 28825(04)  
SH 34 Bridge over South Persimmon Creek, 4.9 miles North of the Dewey County line, Woodward County, Oklahoma

| NODE ID | NORTHING        | EASTING          | NODE ID | NORTHING        | EASTING          |
|---------|-----------------|------------------|---------|-----------------|------------------|
| 5068    | 455010.18143980 | 1581953.50028600 | 9004    | 445855.29341500 | 1571334.67366200 |
|         |                 |                  | 9005    | 448494.43636300 | 1571364.21309850 |
| 8000    | 445834.71944500 | 1577872.15009900 | 9006    | 448486.60147735 | 1573882.86154596 |
| 8001    | 447165.54014400 | 1576580.10741250 | 9007    | 448478.76480400 | 1576602.10749300 |
| 8002    | 447150.76502968 | 1577896.56427116 | 9008    | 448454.85642473 | 1579239.84759362 |
| 8003    | 447135.98945336 | 1579213.02112881 | 9009    | 448431.04272400 | 1581867.14209300 |
| 8004    | 448729.75685526 | 1576606.21262707 | 9010    | 451068.02879000 | 1581919.20006800 |
| 8005    | 448729.75685526 | 1575877.51262707 | 9011    | 451088.43510700 | 1579293.41602100 |
| 8006    | 449199.75685526 | 1575885.19977493 | 9012    | 451107.50170500 | 1576645.10215100 |
| 8007    | 449199.75685526 | 1576613.89977493 | 9013    | 451120.54050800 | 1574019.42734300 |
| 8008    | 449793.13325450 | 1576623.60482200 | 9014    | 451133.57931100 | 1571393.75253500 |
| 8009    | 449786.48136372 | 157441.80778291  | 9015    | 453793.58771654 | 1571433.92561731 |
| 8010    | 449785.60808102 | 1577549.22423313 | 9016    | 453768.35058217 | 1574058.28044044 |
| 8011    | 449771.64576586 | 1579366.63180731 | 9017    | 453743.15182836 | 1576878.64415158 |
| 8012    | 450587.28655164 | 1577456.50249639 | 9018    | 453723.45976238 | 1579311.00531420 |
| 8013    | 450591.45648321 | 1576636.66190435 | 9019    | 453703.61186213 | 1581964.19781576 |
| 8014    | 451100.81870340 | 1577573.35824669 | 9020    | 456590.58280666 | 1582013.48755045 |
| 8015    | 451963.01536643 | 1578799.24363089 | 9021    | 456602.53328100 | 1579             |

# W-77-713

ALL COMPUTED COORDINATE ACCURACIES ARE LISTED AS PEAK-TO-PEAK VALUES.  
FOR ADDITIONAL INFORMATION:  
HTTP://WWW.NGS.NOAA.GOV/OPUS/ABOUT.JSP#ACCURACY

USER: TWENTWORTH@COBBENGR.COM DATE: JANUARY 08, 2013  
RINEX FILE: LOG2320N.120 TIME: 14:49:21 UTC

SOFTWARE: PAGE5 1209.04 MASTER3.PL 082112 START: 2012/11/15 13:21:00  
EPHEMERIS: 1GS17144.EPH [PRECISE] STOP: 2012/11/15 23:13:00  
NAV FILE: BRDC3200.12N OBS USED: 21454 / 23644 : 91%  
ANT NAME: TPSHIPR\*11 NONE # FIXED AMB: 98 / 112 : 88%  
ARP HEIGHT: 2 OVERALL RMS: 0.015(M)

REF FRAME: NAD83(2011)EPOCH: 2010.0000 1GS08 (EPOCH: 2012.8737)

X: -835076.101(M) 0.027(M) -835076.882(M) 0.027(M)  
Y: -5083685.888(M) 0.021(M) -5083684.505(M) 0.021(M)  
Z: 3748657.822(M) 0.008(M) 3748657.695(M) 0.008(M)

LAT: 36 13 27.56626 0.014(M) 36 13 27.58667 0.014(M)  
E LON: 260 40 17.64228 0.025(M) 260 40 17.60245 0.025(M)  
W LON: 99 19 42.35772 0.025(M) 99 19 42.39755 0.025(M)  
EL HGT: 604.810(M) 0.019(M) 603.736(M) 0.019(M)  
ORTHO HGT: 632.988(M) 0.034(M) [NAVD88 (COMPUTED USING GEOID12A)]

| UTM COORDINATES       |             | STATE PLANE COORDINATES |  |
|-----------------------|-------------|-------------------------|--|
| UTM (ZONE 14)         |             | SPC (3501 OK N)         |  |
| NORTHING (Y) [METERS] | 4008879.720 | 136659.532              |  |
| EASTING (X) [METERS]  | 470483.151  | 480573.930              |  |
| CONVERGENCE [DEGREES] | -0.19408811 | -0.78397067             |  |
| POINT SCALE           | 0.99961073  | 0.99994590              |  |
| COMBINED FACTOR       | 0.99951585  | 0.99985099              |  |

US NATIONAL GRID DESIGNATOR: 14SMF7048308879(NAD 83)

| PID    | DESIGNATION            | BASE STATIONS USED |              |             |
|--------|------------------------|--------------------|--------------|-------------|
|        |                        | LATITUDE           | LONGITUDE    | DISTANCE(M) |
| DN5856 | TXC1 CANADIAN CORS ARP | N355513.071        | W1002241.907 | 100419.1    |
| DG9774 | OKBF BUFFALO CORS ARP  | N364940.881        | W0993828.840 | 72623.3     |
| DM7151 | TXPY PERRYTON CORS ARP | N362336.089        | W1004855.888 | 134879.5    |

NEAREST NGS PUBLISHED CONTROL POINT  
GJ0246 K 33 N361307. W0992047. 1733.4

THIS POSITION AND THE ABOVE VECTOR COMPONENTS WERE COMPUTED WITHOUT ANY KNOWLEDGE BY THE NATIONAL GEODETIC SURVEY REGARDING THE EQUIPMENT OR FIELD OPERATING PROCEDURES USED.

STATE OF OKLAHOMA S.D. FORM NO. 11  
DEPARTMENT OF HIGHWAYS REVISED 3/10/75  
SURVEY DIVISION

POSITION AND DESCRIPTION OF SURVEY MONUMENTS

COUNTY WOODWARD STATION NUMBER W-77-713 S.W. 484311 DATE 01/08/13

TYPE OF MONUMENT 5/8" IRON PIN WITH ALUMINUM CAP MONUMENT SET FOR GPS CONTROL

METHOD ESTABLISHED: TRILATERATION , TRIANGULATION , TRAVERSE , OTHER (SPECIFY)

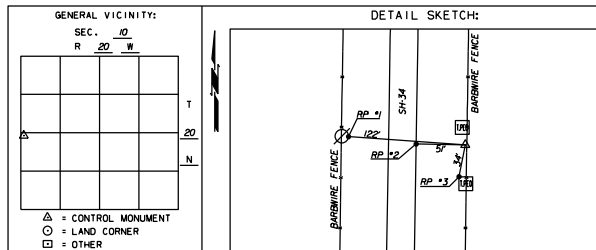
STATIC GPS OBSERVATIONS USING OPUS SOLUTIONS

HEIGHT OF INSTRUMENT ABOVE MONUMENT: \_\_\_\_\_ FEET, TYPE OF WITNESS POST \_\_\_\_\_

WRITTEN DESCRIPTION OF LOCATION: APPROXIMATELY 12088 SOUTH OF EW-545 QUARTER SECTION LINE AND APPROXIMATELY 8089 EAST OF NS-206 SECTION LINE.

ESTABLISHED BY: JOSEPH H.FARMER/RPLS

| COORDINATE SYSTEM: <input type="checkbox"/> USCGS, <input type="checkbox"/> OHD, <input checked="" type="checkbox"/> OTHER (SPECIFY) <u>OK STATE PLANE (NAD 83)</u> |                                       |                       |          |
|---|---------------------------------------|-----------------------|----------|
| GRID DATA:  | COORDINATES (FEET)                    | GRID BEARING          | DISTANCE |
| NORTH ZONE  | X 1576682.9687                        | WEST-NORTHWEST        | 122'     |
| ACCURACY:   | Y 448357.479                          | WEST                  | 5'       |
| 3RD ORDER   |                                       | SOUTH-SOUTHWEST       | 34'      |
| GEODETIC DATA:  | POSITION                              | ELEVATION             |          |
| ANGLE OF VARIANCE (D)   | LATITUDE <u>N3613°27'56.63"</u> NORTH | 2063.57'              |          |
| 02°47'02.29"  | LONGITUDE <u>W99°19'42.3577"</u> WEST | SOURCE: <u>NA/D88</u> |          |
|   |                                       | ACCURACY: <u>3RD</u>  |          |



# W-77-714

ALL COMPUTED COORDINATE ACCURACIES ARE LISTED AS PEAK-TO-PEAK VALUES.  
FOR ADDITIONAL INFORMATION:  
HTTP://WWW.NGS.NOAA.GOV/OPUS/ABOUT.JSP#ACCURACY

USER: TWENTWORTH@COBBENGR.COM DATE: JANUARY 08, 2013  
RINEX FILE: LOG2320N.120 TIME: 14:52:16 UTC

SOFTWARE: PAGE5 1209.04 MASTER3.PL 0821123 START: 2012/11/15 13:34:00  
EPHEMERIS: 1GS17144.EPH [PRECISE] STOP: 2012/11/15 20:15:00  
NAV FILE: BRDC3200.12N OBS USED: 13776 / 15400 : 89%  
ANT NAME: TPSHIPR\*11 NONE # FIXED AMB: 97 / 101 : 96%  
ARP HEIGHT: 2 OVERALL RMS: 0.014(M)

REF FRAME: NAD83(2011)EPOCH: 2010.0000 1GS08 (EPOCH: 2012.8735)

X: -834922.438(M) 0.019(M) -834923.219(M) 0.019(M)  
Y: -5082750.603(M) 0.025(M) -5082749.220(M) 0.025(M)  
Z: 3749944.580(M) 0.026(M) 3749944.454(M) 0.026(M)

LAT: 36 14 19.41055 0.035(M) 36 14 19.43100 0.035(M)  
E LON: 260 40 17.64337 0.021(M) 260 40 17.60353 0.021(M)  
W LON: 99 19 42.35663 0.021(M) 99 19 42.39647 0.021(M)  
EL HGT: 600.799(M) 0.008(M) 599.726(M) 0.008(M)  
ORTHO HGT: 628.987(M) 0.016(M) [NAVD88 (COMPUTED USING GEOID12A)]

| UTM COORDINATES       |             | STATE PLANE COORDINATES |  |
|-----------------------|-------------|-------------------------|--|
| UTM (ZONE 14)         |             | SPC (3501 OK N)         |  |
| NORTHING (Y) [METERS] | 4010477.092 | 138257.300              |  |
| EASTING (X) [METERS]  | 470488.590  | 480595.821              |  |
| CONVERGENCE [DEGREES] | -0.19415452 | -0.78397049             |  |
| POINT SCALE           | 0.99961073  | 0.99994618              |  |
| COMBINED FACTOR       | 0.99951648  | 0.99985190              |  |

US NATIONAL GRID DESIGNATOR: 14SMF7048810477(NAD 83)

| PID    | DESIGNATION            | BASE STATIONS USED |              |             |
|--------|------------------------|--------------------|--------------|-------------|
|        |                        | LATITUDE           | LONGITUDE    | DISTANCE(M) |
| DF4058 | OKCL CLINTON CORS ARP  | N352859.349        | W0985817.246 | 89828.8     |
| DN5856 | TXC1 CANADIAN CORS ARP | N355513.071        | W1002241.907 | 100959.2    |
| DM7151 | TXPY PERRYTON CORS ARP | N362336.089        | W1004855.888 | 134654.4    |

NEAREST NGS PUBLISHED CONTROL POINT  
GJ0245 J 33 N361449. W0991956. 976.2

THIS POSITION AND THE ABOVE VECTOR COMPONENTS WERE COMPUTED WITHOUT ANY KNOWLEDGE BY THE NATIONAL GEODETIC SURVEY REGARDING THE EQUIPMENT OR FIELD OPERATING PROCEDURES USED.

STATE OF OKLAHOMA S.D. FORM NO. 11  
DEPARTMENT OF HIGHWAYS REVISED 3/10/75  
SURVEY DIVISION

POSITION AND DESCRIPTION OF SURVEY MONUMENTS

COUNTY WOODWARD STATION NUMBER W-77-714 S.W. 484311 DATE 01/08/13

TYPE OF MONUMENT 5/8" IRON PIN WITH ALUMINUM CAP MONUMENT SET FOR GPS CONTROL

METHOD ESTABLISHED: TRILATERATION , TRIANGULATION , TRAVERSE , OTHER (SPECIFY)

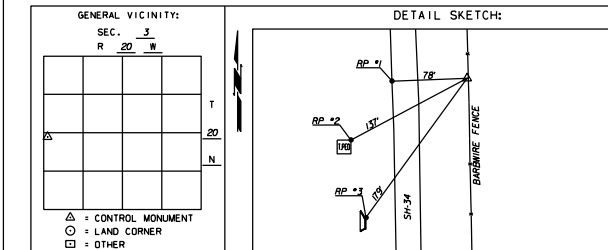
STATIC GPS OBSERVATIONS USING OPUS SOLUTIONS

HEIGHT OF INSTRUMENT ABOVE MONUMENT: \_\_\_\_\_ FEET, TYPE OF WITNESS POST \_\_\_\_\_

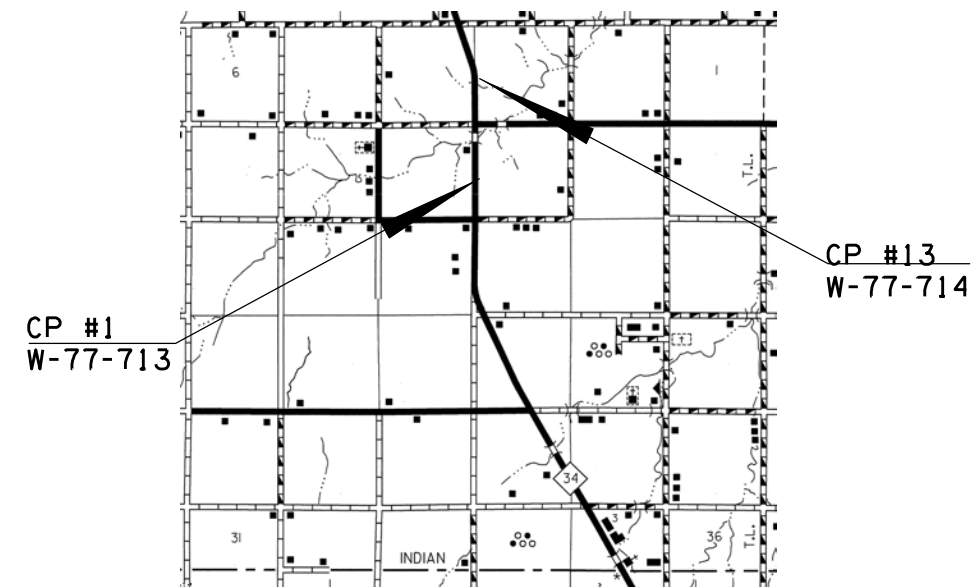
WRITTEN DESCRIPTION OF LOCATION: APPROXIMATELY 7793 EAST OF NS-206 SECTION LINE AND APPROXIMATELY 14346 SOUTH OF EW-535 QUARTER SECTION LINE.

ESTABLISHED BY: JOSEPH H.FARMER/RPLS

| COORDINATE SYSTEM: <input type="checkbox"/> USCGS, <input type="checkbox"/> OHD, <input checked="" type="checkbox"/> OTHER (SPECIFY) <u>OK STATE PLANE (NAD 83)</u> |                                       |                       |          |
|---|---------------------------------------|-----------------------|----------|
| GRID DATA:  | COORDINATES (FEET)                    | GRID BEARING          | DISTANCE |
| NORTH ZONE  | X 15767547.476                        | WEST                  | 78'      |
| ACCURACY:   | Y 453599.051                          | SOUTH-SOUTHWEST       | 137'     |
| 3RD ORDER   |                                       | SOUTHWEST             | 179'     |
| GEODETIC DATA:  | POSITION                              | ELEVATION             |          |
| ANGLE OF VARIANCE (D)   | LATITUDE <u>N3614°19'40"</u> NORTH    | 2063.57'              |          |
| 02°47'02.29"  | LONGITUDE <u>W99°19'42.3577"</u> WEST | SOURCE: <u>NA/D88</u> |          |
|   |                                       | ACCURACY: <u>3RD</u>  |          |



# CONTROL MAP



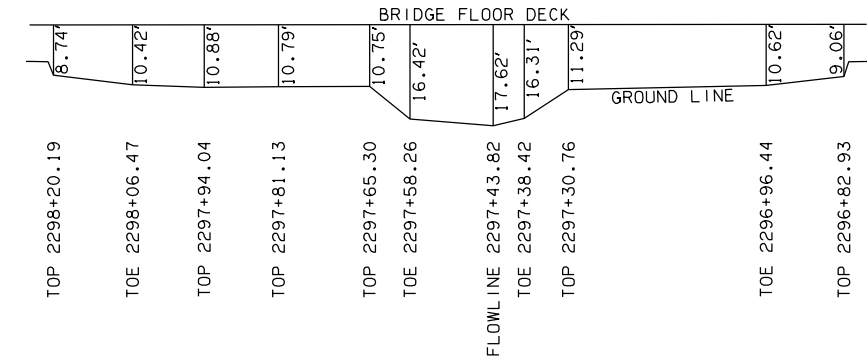
|            |        |                       |   |                     |
|------------|--------|-----------------------|---|---------------------|
| P.L.S.     | J.H.F. | 04/24/13              | SH-34 BRIDGE OVER S. PERSIMMON CREEK, 4.9 MI. N. OF DEWEY COUNTY LINE | WOODWARD COUNTY     |
| DRAWN      | J.E.M. | 04/24/13              |   |                     |
| CHECKED    | J.H.F. | 04/24/13              | <b>CONTROL MAP &amp; INFORMATION</b>                                  |                     |
| APPROV.    | J.H.F. | 04/24/13              |   |                     |
| CREW CHIEF | T.J.W. | SWO NO. <u>484311</u> | J/P NO. <u>28825(04)</u>  | SHEET NO. <u>13</u> |

SE/4 SEC 09  
T20N R20W

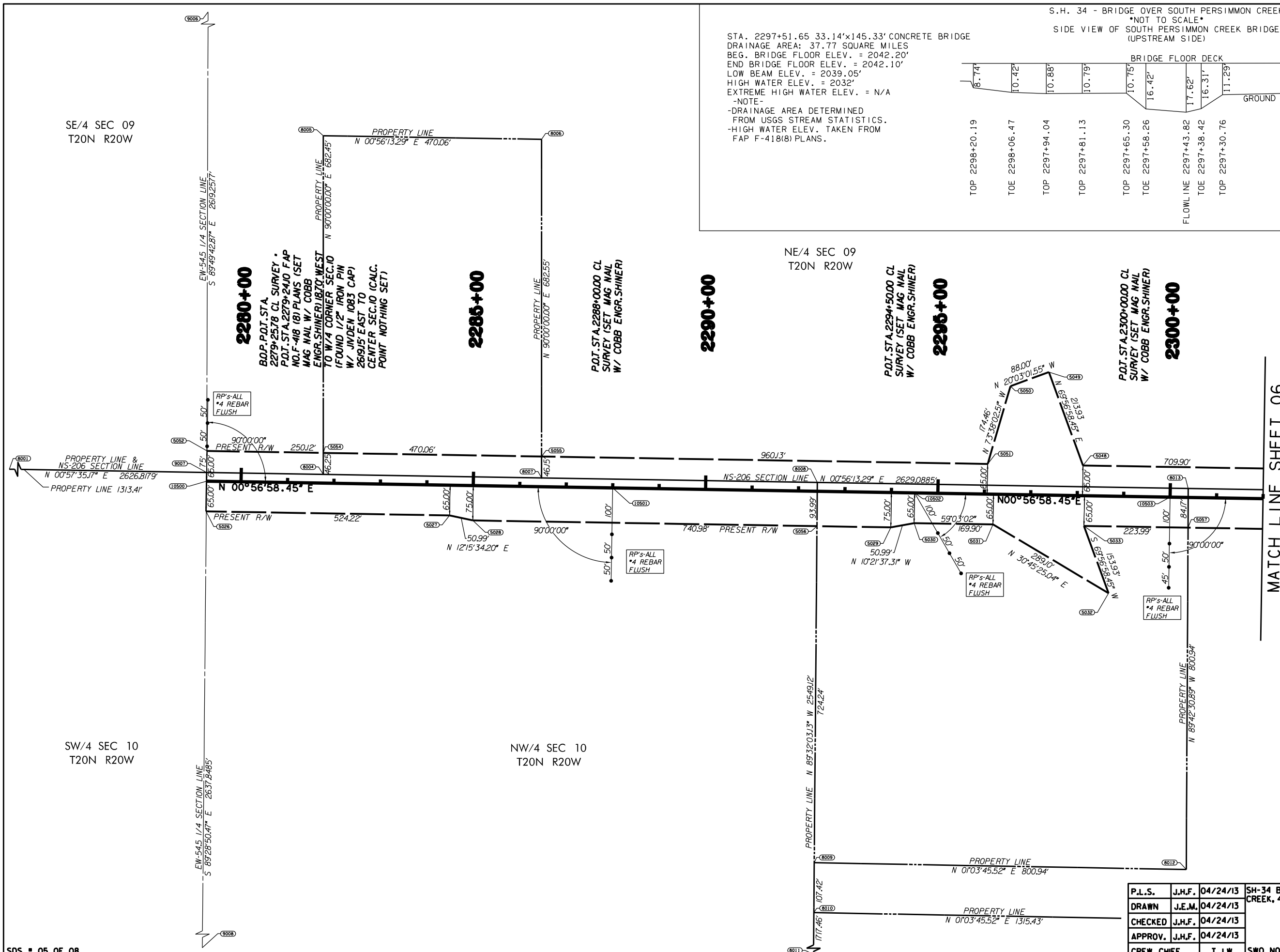
SW/4 SEC 10  
T20N R20W

STA. 2297+51.65 33.14'x145.33' CONCRETE BRIDGE  
DRAINAGE AREA: 37.77 SQUARE MILES  
BEG. BRIDGE FLOOR ELEV. = 2042.20'  
END BRIDGE FLOOR ELEV. = 2042.10'  
LOW BEAM ELEV. = 2039.05'  
HIGH WATER ELEV. = 2032'  
EXTREME HIGH WATER ELEV. = N/A  
-NOTE-  
-DRAINAGE AREA DETERMINED FROM USGS STREAM STATISTICS.  
-HIGH WATER ELEV. TAKEN FROM FAP F-418(8) PLANS.

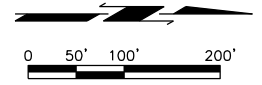
S.H. 34 - BRIDGE OVER SOUTH PERSIMMON CREEK  
\*NOT TO SCALE\*  
SIDE VIEW OF SOUTH PERSIMMON CREEK BRIDGE (UPSTREAM SIDE)



| REV. NO. | DATE | DESCRIPTION |
|----------|------|-------------|
|          |      |             |



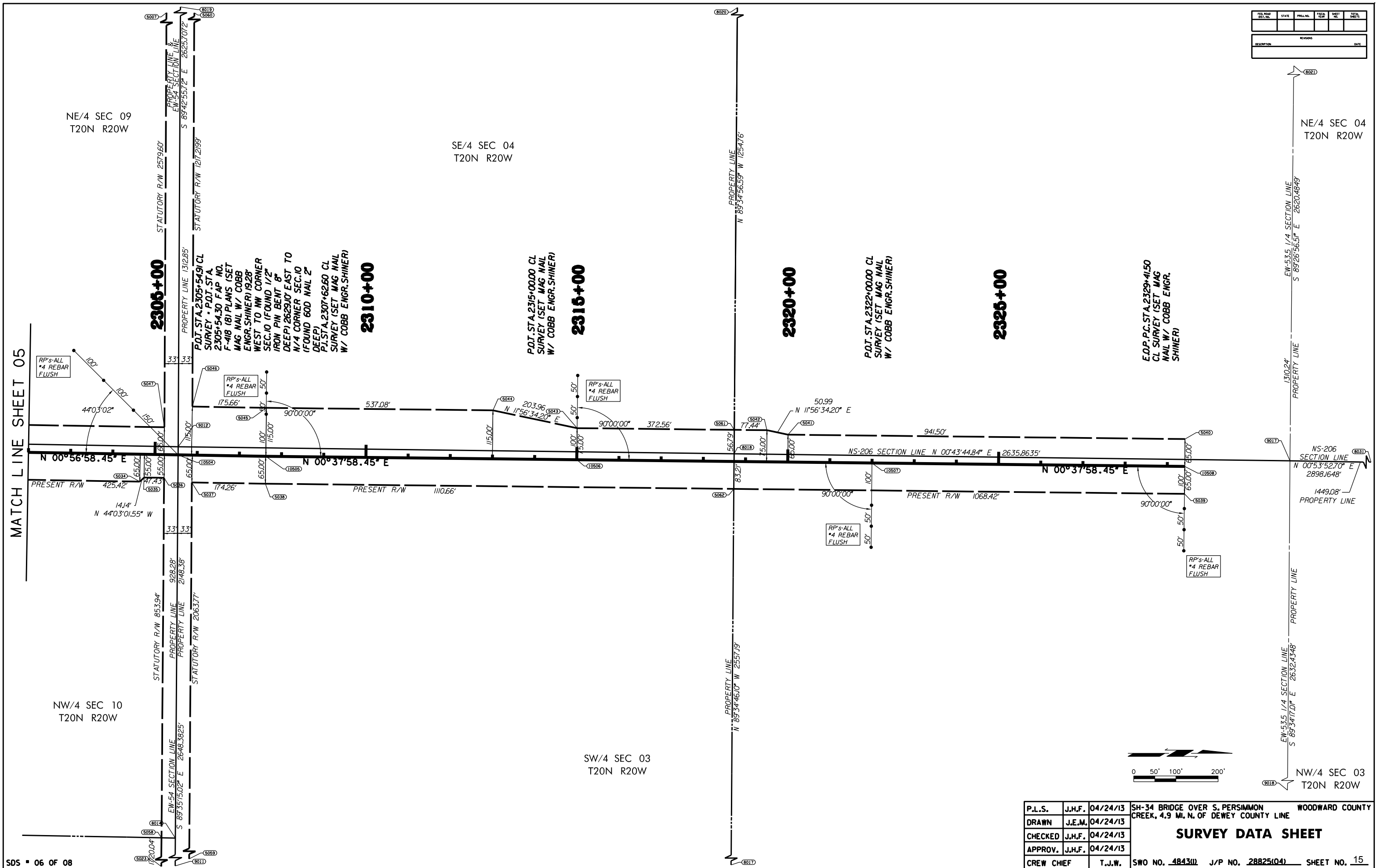
MATCH LINE SHEET 06



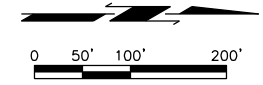
|   |        |          |   |                 |
|---|--------|----------|---|-----------------|
| P.L.S.  | J.H.F. | 04/24/13 | SH-34 BRIDGE OVER S. PERSIMMON CREEK, 4.9 MI. N. OF DEWEY COUNTY LINE | WOODWARD COUNTY |
| DRAWN   | J.E.M. | 04/24/13 | <b>SURVEY DATA SHEET</b>  |                 |
| CHECKED   | J.H.F. | 04/24/13 |   |                 |
| APPROV.   | J.H.F. | 04/24/13 |   |                 |
| CREW CHIEF  | T.J.W. |          |   |                 |
| SWO NO. <u>4843W</u> J/P NO. <u>28825(04)</u> SHEET NO. <u>14</u> |        |          |   |                 |



| REV. NO. | DATE | DESCRIPTION |
|----------|------|-------------|
|          |      |             |
|          |      |             |

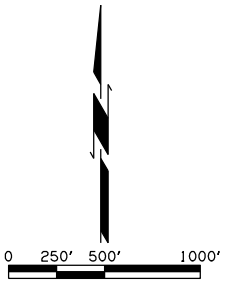
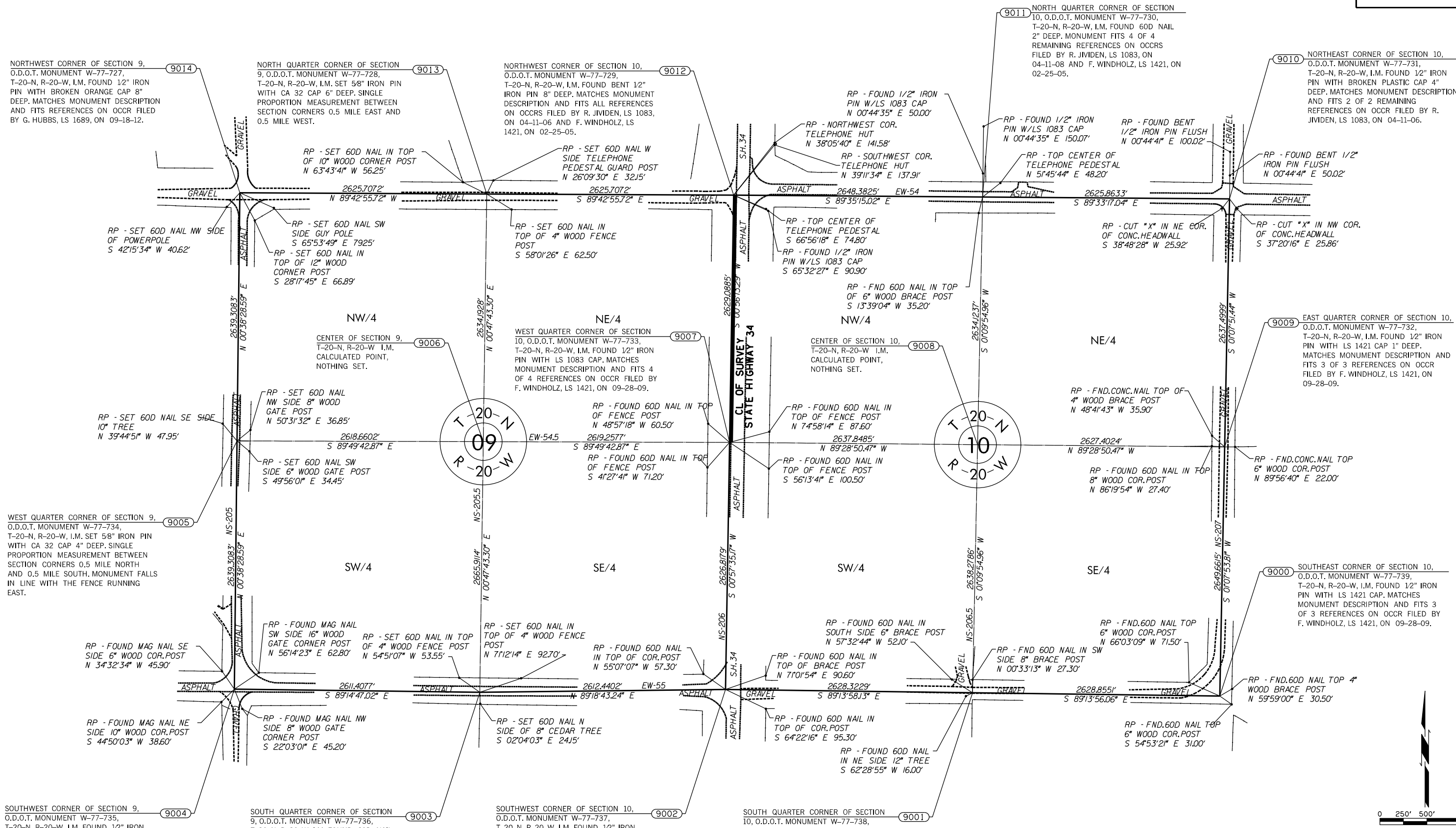


MATCH LINE SHEET 05



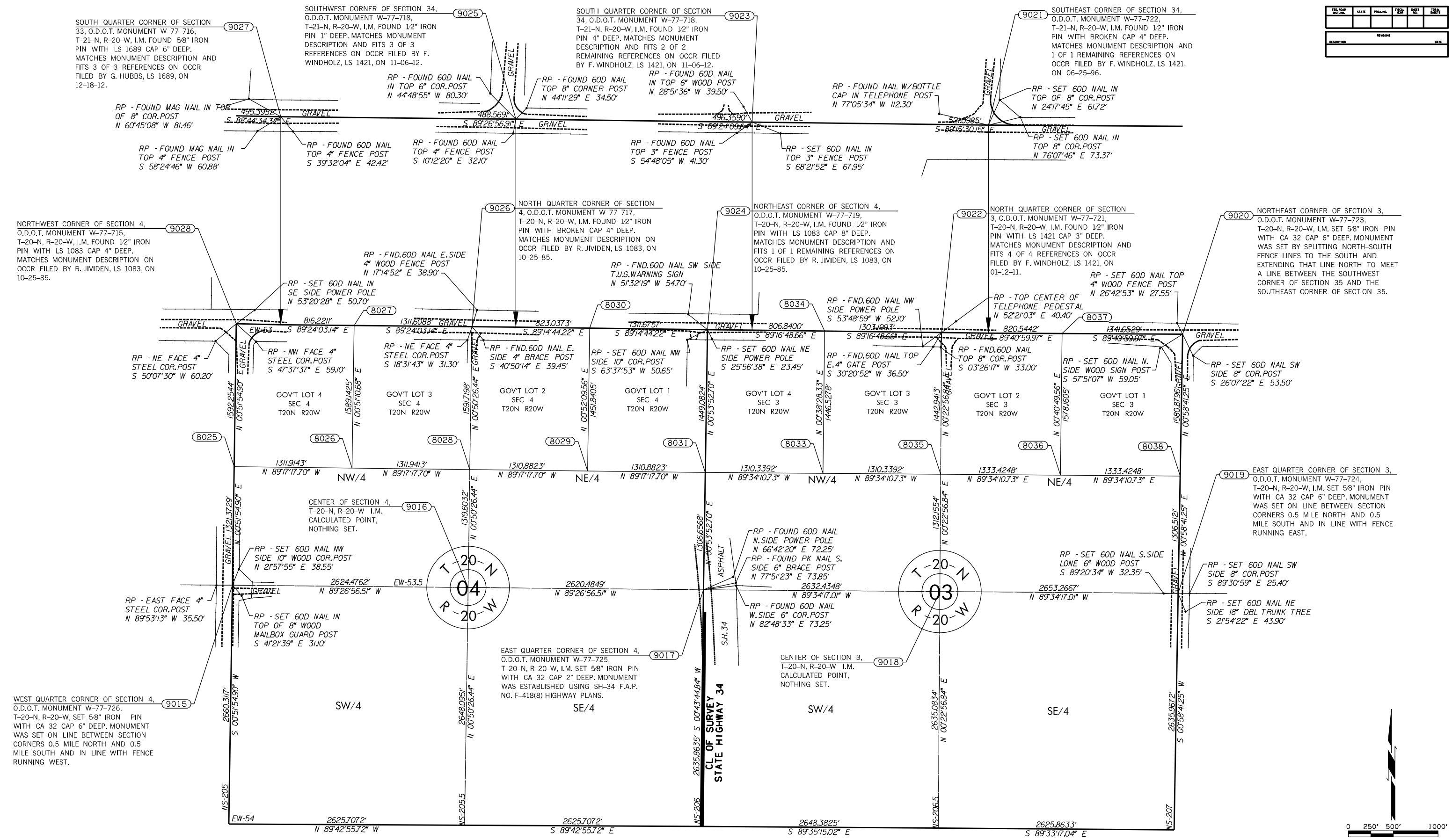
|   |        |          |   |                 |
|---|--------|----------|---|-----------------|
| P.L.S.  | J.H.F. | 04/24/13 | SH-34 BRIDGE OVER S. PERSIMMON CREEK, 4.9 MI. N. OF DEWEY COUNTY LINE | WOODWARD COUNTY |
| DRAWN   | J.E.M. | 04/24/13 | <b>SURVEY DATA SHEET</b>  |                 |
| CHECKED   | J.H.F. | 04/24/13 |   |                 |
| APPROV.   | J.H.F. | 04/24/13 |   |                 |
| CREW CHIEF  | T.J.W. |          |   |                 |
| SWO NO. <u>4843W</u> J/P NO. <u>28825(04)</u> SHEET NO. <u>15</u> |        |          |   |                 |

|           |       |           |           |           |              |
|-----------|-------|-----------|-----------|-----------|--------------|
| FILE NO.  | STATE | PROJ. NO. | FEED. NO. | SHEET NO. | TOTAL SHEETS |
|           |       |           |           |           |              |
| REVISIONS |       |           |           |           | DATE         |
|           |       |           |           |           |              |

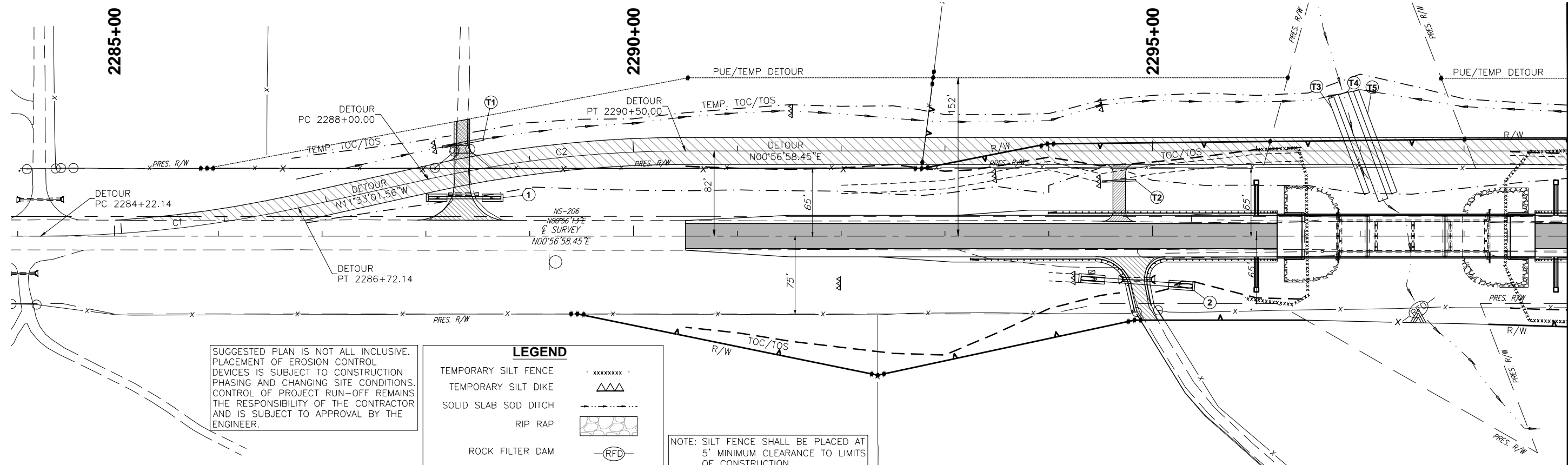


|            |        |          |   |  |
|------------|--------|----------|---|--|
| P.L.S.     | J.H.F. | 04/24/13 | SH-34 BRIDGE OVER S. PERSIMMON CREEK, 4.9 MI. N. OF DEWEY COUNTY LINE | WOODWARD COUNTY                              |
| DRAWN      | J.E.M. | 04/24/13 |   |  |
| CHECKED    | J.H.F. | 04/24/13 |   |  |
| APPROV.    | J.H.F. | 04/24/13 |   |  |
| CREW CHIEF | T.J.W. |          | SWO NO. <u>4843W</u>  | J/P NO. <u>28825(04)</u> SHEET NO. <u>16</u> |

| FILE NO. | DATE | BY | REVISION |
|----------|------|----|----------|
|          |      |    |          |
|          |      |    |          |
|          |      |    |          |



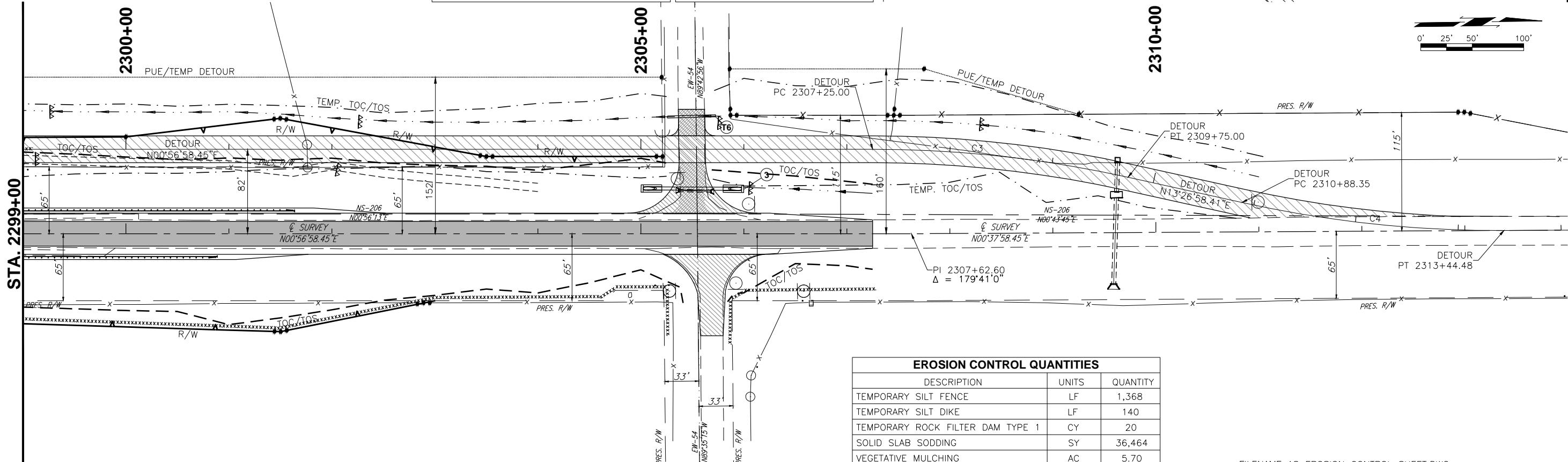
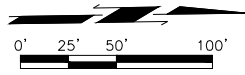
|            |        |   |   |                 |
|------------|--------|---|---|-----------------|
| P.L.S.     | J.H.F. | 04/24/13  | SH-34 BRIDGE OVER S. PERSIMMON CREEK, 4.9 MI. N. OF DEWEY COUNTY LINE | WOODWARD COUNTY |
| DRAWN      | J.E.M. | 04/24/13  | <b>LAND TIE SHEET</b>   |                 |
| CHECKED    | J.H.F. | 04/24/13  |   |                 |
| APPROV.    | J.H.F. | 04/24/13  |   |                 |
| CREW CHIEF | T.J.W. | SWO NO. <u>4843W</u> J/P NO. <u>28825(04)</u> SHEET NO. <u>17</u> |   |                 |



SUGGESTED PLAN IS NOT ALL INCLUSIVE. PLACEMENT OF EROSION CONTROL DEVICES IS SUBJECT TO CONSTRUCTION PHASING AND CHANGING SITE CONDITIONS. CONTROL OF PROJECT RUN-OFF REMAINS THE RESPONSIBILITY OF THE CONTRACTOR AND IS SUBJECT TO APPROVAL BY THE ENGINEER.

| LEGEND               |       |
|----------------------|-------|
| TEMPORARY SILT FENCE | ----- |
| TEMPORARY SILT DIKE  | ▲▲▲▲  |
| SOLID SLAB SOD DITCH | ----- |
| RIP RAP              | ⊗     |
| ROCK FILTER DAM      | (RFD) |

NOTE: SILT FENCE SHALL BE PLACED AT 5' MINIMUM CLEARANCE TO LIMITS OF CONSTRUCTION.



| EROSION CONTROL QUANTITIES       |       |          |
|----------------------------------|-------|----------|
| DESCRIPTION                      | UNITS | QUANTITY |
| TEMPORARY SILT FENCE             | LF    | 1,368    |
| TEMPORARY SILT DIKE              | LF    | 140      |
| TEMPORARY ROCK FILTER DAM TYPE 1 | CY    | 20       |
| SOLID SLAB SODDING               | SY    | 36,464   |
| VEGETATIVE MULCHING              | AC    | 5.70     |

**SECTION 9  
T-20-N, R-20-W**

2290+00

2295+00

**SECTION 10  
T-20-N, R-20-W**

STA. 2299+00

| CURVE 1 DATA<br>DETOUR | CURVE 2 DATA<br>DETOUR |
|------------------------|------------------------|
| P.I. STA. 2285+47.64   | P.I. STA. 2289+25.50   |
| N = 449107.3526        | N = 449478.5388        |
| E = 1576631.2312       | E = 1576555.3722       |
| R = 1145.916'          | R = 1145.916'          |
| T = 125.498'           | T = 125.498'           |
| Δ = 12°30'00"          | Δ = 12°30'00"          |
| L = 250.000'           | L = 250.000'           |
| D = 5°00'00"           | V = 45 MPH             |
| V = 45 MPH             | S = NO SUPER           |
| S = NO SUPER           |                        |

**NOTE: ALL DISTANCES SHOWN TO RIGHT OF WAY, FENCES, UTILITIES, AND OTHER EXISTING OBJECTS ARE FROM C.L. OF SURVEY**

**ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE & SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION**

**SEE SHEET 6 FOR ALL DRAINAGE STRUCTURE INFORMATION**

**STA. 2284+95.00  
BEGIN INCIDENTAL CONST.**

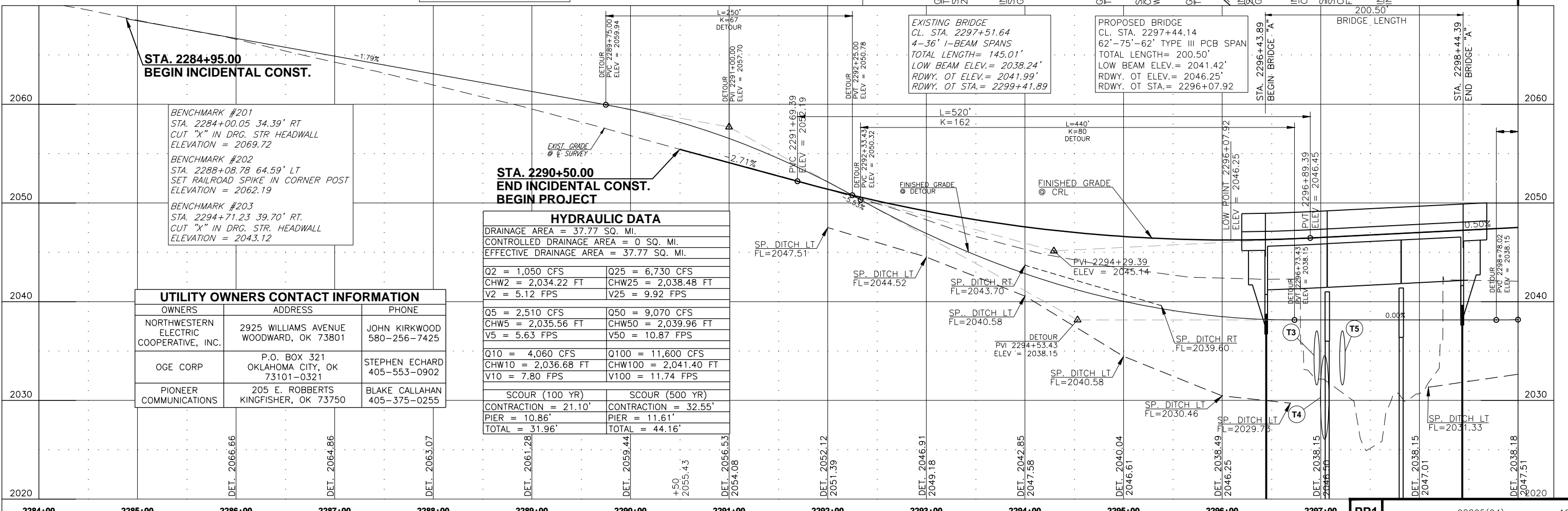
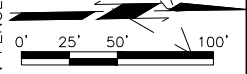
**STA. 2290+50.00  
END INCIDENTAL CONST.  
BEGIN PROJECT**

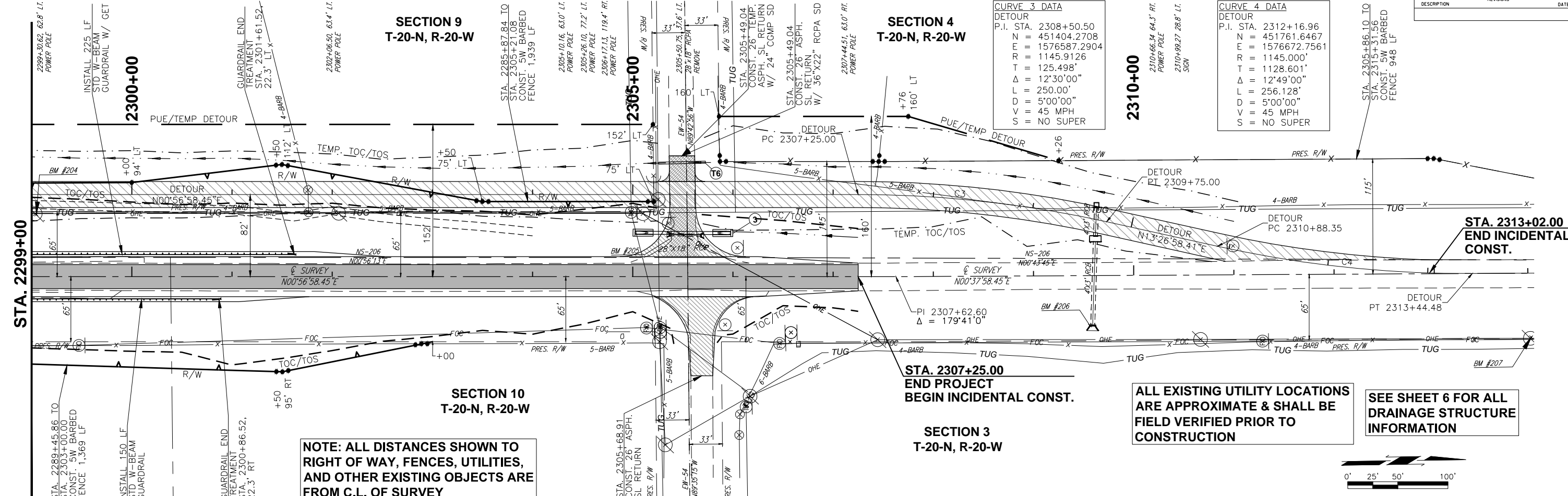
| UTILITY OWNERS CONTACT INFORMATION      |  |                                |
|---|--|--------------------------------|
| OWNERS                                  | ADDRESS                                      | PHONE                          |
| NORTHWESTERN ELECTRIC COOPERATIVE, INC. | 2925 WILLIAMS AVENUE<br>WOODWARD, OK 73801   | JOHN KIRKWOOD<br>580-256-7425  |
| OGE CORP                                | P.O. BOX 321<br>OKLAHOMA CITY, OK 73101-0321 | STEPHEN ECHARD<br>405-553-0902 |
| PIONEER COMMUNICATIONS                  | 205 E. ROBERTS<br>KINGFISHER, OK 73750       | BLAKE CALLAHAN<br>405-375-0255 |

| HYDRAULIC DATA                          |                      |
|---|----------------------|
| DRAINAGE AREA = 37.77 SQ. MI.           |                      |
| CONTROLLED DRAINAGE AREA = 0 SQ. MI.    |                      |
| EFFECTIVE DRAINAGE AREA = 37.77 SQ. MI. |                      |
| Q2 = 1,050 CFS                          | Q25 = 6,730 CFS      |
| CHW2 = 2,034.22 FT                      | CHW25 = 2,038.48 FT  |
| V2 = 5.12 FPS                           | V25 = 9.92 FPS       |
| Q5 = 2,510 CFS                          | Q50 = 9,070 CFS      |
| CHW5 = 2,035.56 FT                      | CHW50 = 2,039.96 FT  |
| V5 = 5.63 FPS                           | V50 = 10.87 FPS      |
| Q10 = 4,060 CFS                         | Q100 = 11,600 CFS    |
| CHW10 = 2,036.68 FT                     | CHW100 = 2,041.40 FT |
| V10 = 7.80 FPS                          | V100 = 11.74 FPS     |
| SCOUR (100 YR)                          |                      |
| CONTRACTION = 21.10'                    |                      |
| CONTRACTION = 32.55'                    |                      |
| PIER = 10.86'                           |                      |
| PIER = 11.61'                           |                      |
| TOTAL = 31.96'                          |                      |
| TOTAL = 44.16'                          |                      |

EXISTING BRIDGE  
CL. STA. 2297+51.64  
4-36' I-BEAM SPANS  
TOTAL LENGTH = 145.01'  
LOW BEAM ELEV. = 2038.24'  
RDWY. OT ELEV. = 2041.99'  
RDWY. OT STA. = 2299+41.89

PROPOSED BRIDGE  
CL. STA. 2297+44.14  
62'-75'-62' TYPE III PCB SPAN  
TOTAL LENGTH = 200.50'  
LOW BEAM ELEV. = 2041.42'  
RDWY. OT ELEV. = 2046.25'  
RDWY. OT STA. = 2296+07.92





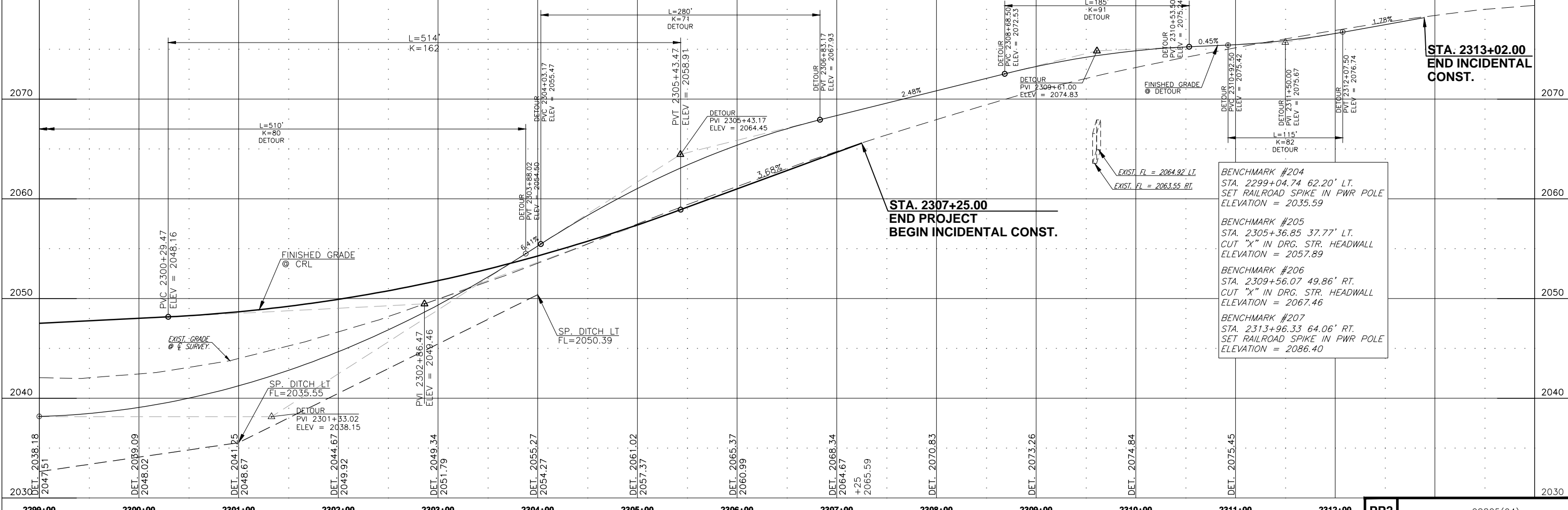
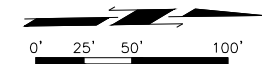
**CURVE 3 DATA**  
 DETOUR  
 P.I. STA. 2308+50.50  
 N = 451404.2708  
 E = 1576587.2904  
 R = 1145.9126  
 T = 125.498'  
 Δ = 12°30'00"  
 L = 250.00'  
 D = 5°00'00"  
 V = 45 MPH  
 S = NO SUPER

**CURVE 4 DATA**  
 DETOUR  
 P.I. STA. 2312+16.96  
 N = 451761.6467  
 E = 1576672.7561  
 R = 1145.000'  
 T = 1128.601'  
 Δ = 12°49'00"  
 L = 256.128'  
 D = 5°00'00"  
 V = 45 MPH  
 S = NO SUPER

**NOTE: ALL DISTANCES SHOWN TO RIGHT OF WAY, FENCES, UTILITIES, AND OTHER EXISTING OBJECTS ARE FROM C.L. OF SURVEY**

**ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE & SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION**

**SEE SHEET 6 FOR ALL DRAINAGE STRUCTURE INFORMATION**

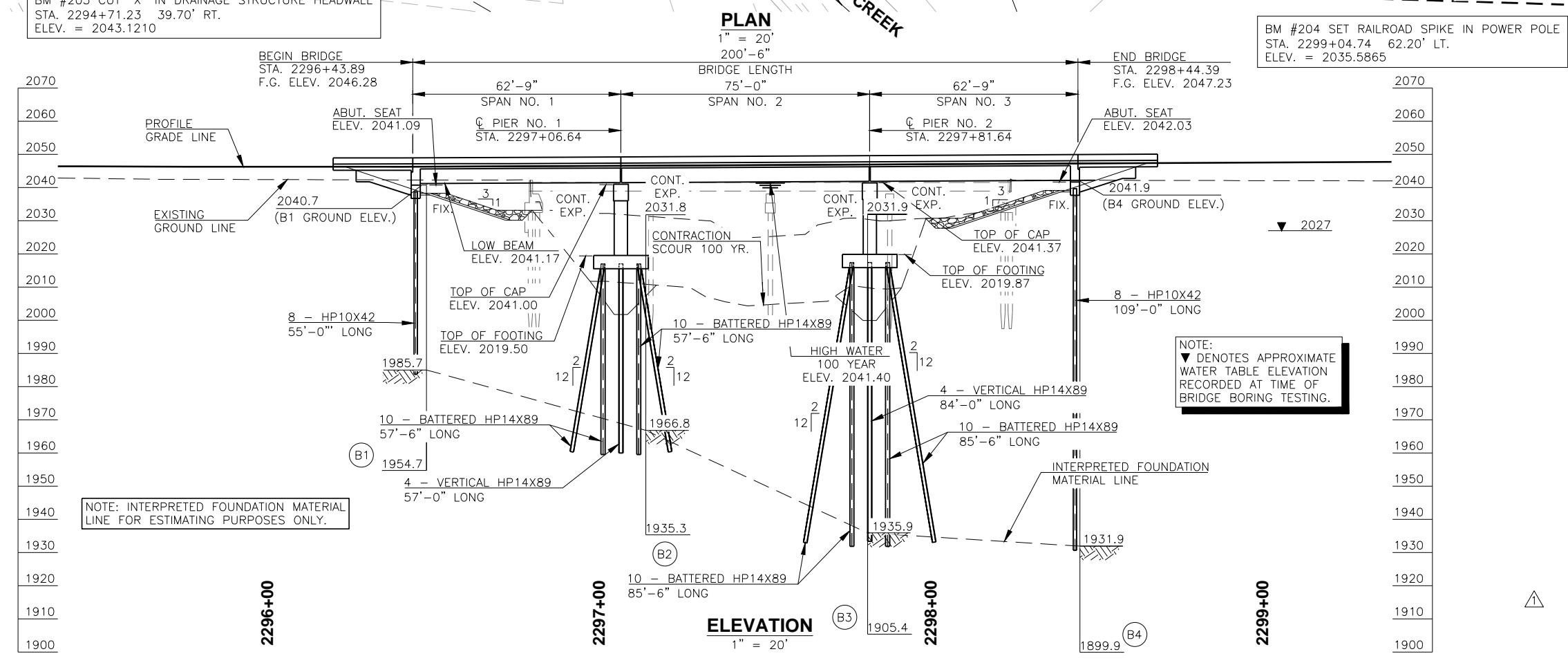
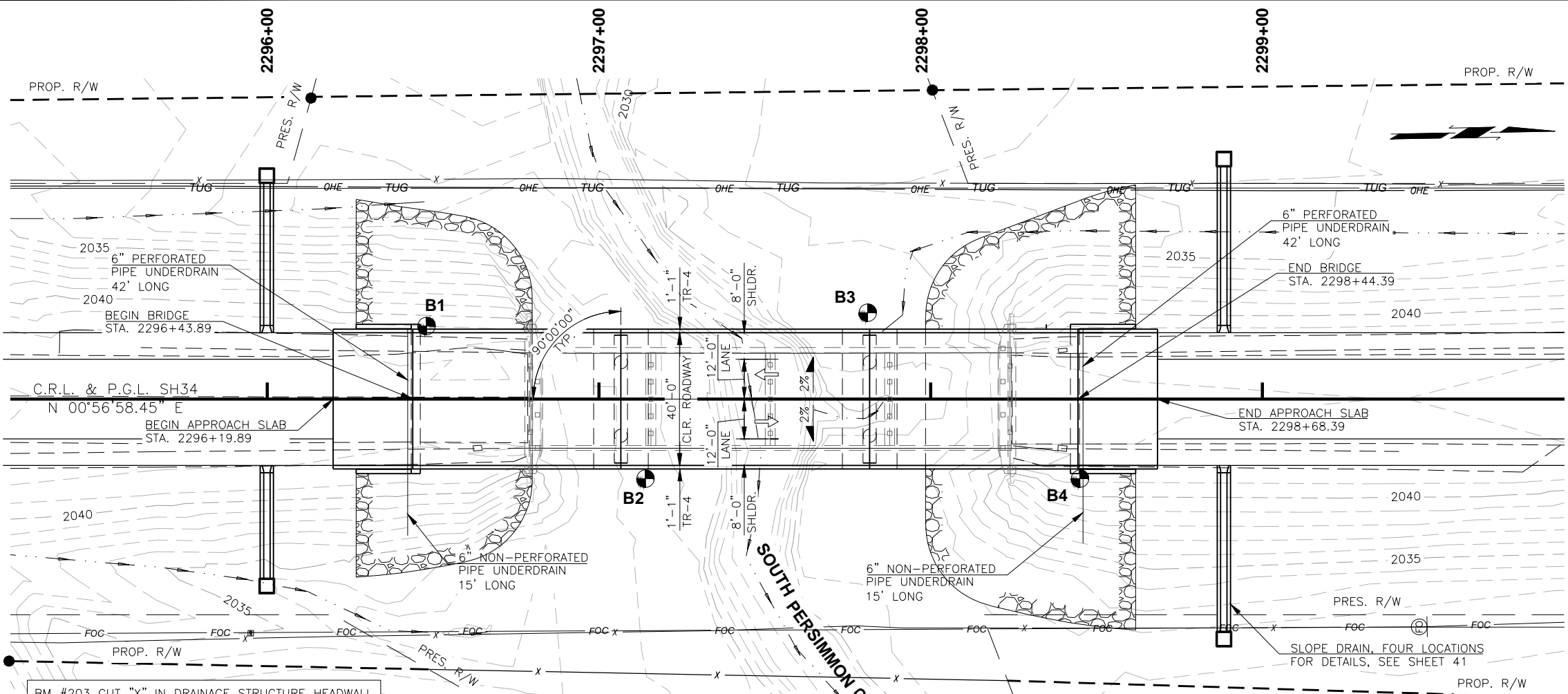


**BENCHMARK #204**  
 STA. 2299+04.74 62.20' LT.  
 SET RAILROAD SPIKE IN PWR POLE  
 ELEVATION = 2035.59

**BENCHMARK #205**  
 STA. 2305+36.85 37.77' LT.  
 CUT "X" IN DRG. STR. HEADWALL  
 ELEVATION = 2057.89

**BENCHMARK #206**  
 STA. 2309+56.07 49.86' RT.  
 CUT "X" IN DRG. STR. HEADWALL  
 ELEVATION = 2067.46

**BENCHMARK #207**  
 STA. 2313+96.33 64.06' RT.  
 SET RAILROAD SPIKE IN PWR POLE  
 ELEVATION = 2086.40



**DESIGN DATA**

CONCRETE CLASS A  $f'_c = 3$  K.S.I.  
 CONCRETE CLASS AA  $f'_c = 4$  K.S.I.  
 REINFORCING STEEL (GRADE 60)  $f_y = 60$  K.S.I.  
 STRUCTURAL STEEL M 270 (GRADE 50W)  $F_y = 50$  K.S.I.  
 STAINLESS STEEL A240 (TYPE 316)  $F_y = 30$  K.S.I.

LOADING:  
 HL-93 OR OKLAHOMA OVERLOAD TRUCK  
 20 P.S.F. FUTURE WEARING SURFACE  
 5 P.S.F. STAY-IN-PLACE FORMS

DESIGN:  
 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION.  
 ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE  
 ANSI/AASHTO/AWS D1.6 STRUCTURAL WELDING CODE - STAINLESS STEEL.

LFD OPERATING RATING: HS 39.4

**STANDARDS**

B40-1-ABUT-MISC-01E  
 B40-1-AS-03E  
 TR4-2-00E  
 HP1-2-00E  
 LECS-4-1  
 PUD-3-2

**HYDRAULIC DATA**

TOTAL DRAINAGE AREA = 37.77 SQ. MI.  
 CONTROLLED DRAINAGE AREA = 0 SQ. MI.  
 EFFECTIVE DRAINAGE AREA = 37.77 SQ. MI.

Q2 = 1,050 CFS  
 CHW2 = 2034.22 FT  
 V2 = 5.12 FPS

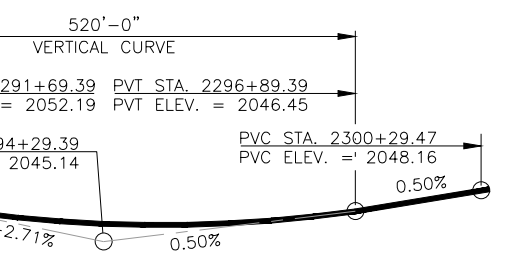
Q10 = 4,060 CFS  
 CHW10 = 2036.68 FT  
 V10 = 7.80 FPS

Q50 = 9,070 CFS  
 CHW50 = 2039.96 FT  
 V50 = 10.87 FPS

Q100 = 11,600 CFS  
 CHW100 = 2041.40 FT  
 V100 = 11.74 FPS

SCOUR (100YR)  
 CONTRACTION = 21.10'  
 PIER = 10.86'  
 TOTAL = 31.96'

SCOUR (500YR)  
 CONTRACTION = 32.55'  
 PIER = 11.61'  
 TOTAL = 44.16'



|                                   |        |   |                 |
|-----------------------------------|--------|---|-----------------|
| DESIGN                            | J.W.H. | SH34 OVER S. PERSIMMON CREEK  | WOODWARD COUNTY |
| DRAWN                             | R.A.P. | BRIDGE A  |                 |
| <b>GENERAL PLAN AND ELEVATION</b> |        |   |                 |
| CHECKED                           | J.W.H. | 62'-75'-62' TYPE III P.C. BEAM SPANS, 0° SKEW, 40' CLEAR ROADWAY WITH TR-4 PARAPETS @ STA. 2297+44.14 |                 |
| APPROV.                           | T.A.C. | JOB PIECE NO. 28825(04) SHEET NO. 21  |                 |
| SQUAD                             | CEC    |   |                 |



**SUMMARY OF BRIDGE PAY QUANTITIES**

| ITEM                                       | UNIT | ABUTMENTS | PIERS  | SUPERSTRUCTURE | APPROACH SLAB | SLOPE DRAIN | TOTAL   |
|--|------|-----------|--------|----------------|---------------|-------------|---------|
| SUBSTRUCTURE EXCAVATION COMMON             | C.Y. | 90        | 3,405  |                |               |             | 3,495   |
| CLSM BACKFILL                              | C.Y. | 200       |        |                |               |             | 200     |
| PRESTRESSED CONCRETE BEAMS (TYPE III)      | L.F. |           |        | 995            |               |             | 995     |
| APPROACH SLAB                              | S.Y. |           |        |                | 224.8         |             | 224.8   |
| SAW-CUT GROOVING                           | S.Y. |           |        | 891.0          | 213.4         |             | 1,104.4 |
| CONCRETE RAIL (TR4)                        | L.F. |           |        | 401.0          | 96.0          |             | 497.0   |
| STRUCTURAL STEEL                           | LB.  |           |        | 1,100          |               |             | 1,100   |
| STAINLESS STEEL FIXED BEARING ASSEMBLY     | EA.  |           |        | 10             |               |             | 10      |
| STAINLESS STEEL EXPANSION BEARING ASSEMBLY | EA.  |           |        | 20             |               |             | 20      |
| ELASTOMERIC BEARING PADS                   | EA.  |           |        | 20             |               |             | 20      |
| CLASS AA CONCRETE                          | C.Y. |           | 233.6  | 259.1          |               |             | 492.7   |
| CLASS A CONCRETE                           | C.Y. | 59.6      | 69.2   |                |               |             | 128.8   |
| CLASS C CONCRETE                           | C.Y. |           |        |                |               | 11.0        | 11.0    |
| REINFORCING STEEL                          | LB.  |           | 1,880  |                |               |             | 1,880   |
| EPOXY COATED REINFORCING STEEL             | LB.  | 9,440     | 45,720 | 69,810         |               |             | 124,970 |
| PILES, FURNISHED (HP 10X42)                | L.F. | 1,312     |        |                |               |             | 1,312   |
| PILES, FURNISHED (HP 14X89)                | L.F. |           | 3,424  |                |               |             | 3,424   |
| PILES, DRIVEN (HP 10X42)                   | L.F. | 1,312     |        |                |               |             | 1,312   |
| PILES, DRIVEN (HP 14X89)                   | L.F. |           | 3,424  |                |               |             | 3,424   |
| PILE SPLICE, H-PILE (NON-BIDDABLE)         | EA.  |           |        |                |               |             | 1       |
| WATER REPELLENT (VISUALLY INSPECTED)       | S.Y. | 34        | 146    | 645            | 44            |             | 869     |
| SEALER CRACK PREPARATION                   | L.F. |           |        | 163            |               |             | 163     |
| SEALER RESIN                               | GAL. |           |        | 2              |               |             | 2       |
| TYPE I-A PLAIN RIPRAP                      | TON  | 1,458     |        |                |               |             | 1,458   |
| TYPE I-A FILTER BLANKET                    | TON  | 327       |        |                |               |             | 327     |
| 6" PERFORATED PIPE UNDERDRAIN ROUND        | L.F. | 84        |        |                |               |             | 84      |
| 6" NON-PERF. PIPE UNDERDRAIN RND.          | L.F. | 30        |        |                |               |             | 30      |
| REMOVAL OF EXISTING BRIDGE STRUCTURE       | LSUM |           |        |                |               |             | 1       |

**FOUNDATION DATA**

PIER NO. 1 & NO. 2 (HP14X89 PILING)  
FACTORED PILE REACTION = 208.0 TON/PILE

ABUTMENT NO. 1 & NO. 2 (HP10X42 PILING)  
FACTORED PILE REACTION = 110.0 TON/PILE

STEEL PILING:  
ALL PILING SHALL BE DRIVEN THRU COMPACTED FILL. PILING SHALL BE DRIVEN TO A POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN ON THE PLANS. IF THE REQUIRED AXIAL LOAD RESISTANCE IS NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE UNTIL THE REQUIRED AXIAL LOAD RESISTANCE IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY.

**SHEET INDEX:**

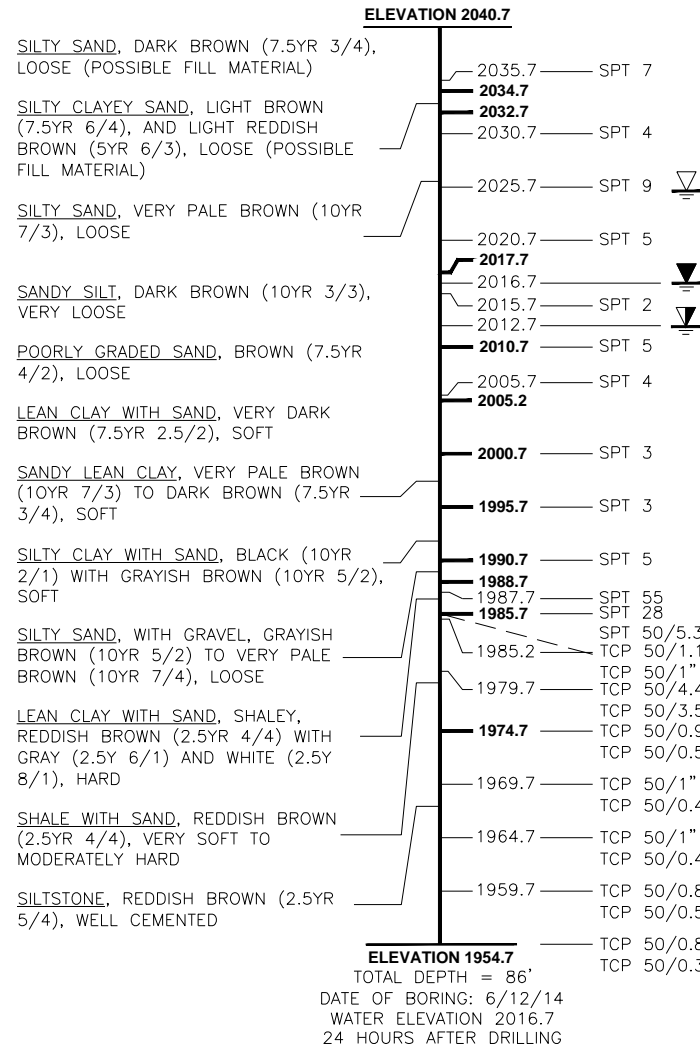
4. BRIDGE GENERAL NOTES
5. PAY ITEMS AND NOTES (BRIDGE)
21. GENERAL PLAN AND ELEVATION
22. SUMMARY OF BRIDGE PAY QUANTITIES
23. FOUNDATION REPORT
24. SUBSTRUCTURE LAYOUT
25. SUBSTRUCTURE EXCAVATION AT PIERS
26. ABUTMENT DETAILS
27. ABUTMENT WING DETAILS
28. PIER NO. 1 AND 2 DETAILS (SHEET 1 OF 3)
29. PIER NO. 1 AND 2 DETAILS (SHEET 2 OF 3)
30. PIER NO. 1 AND 2 DETAILS (SHEET 3 OF 3)
31. PIER STEEL PILING DETAIL AND BAR LIST
32. TYPICAL CROSS SECTION
33. LONGITUDINAL SECTION AND PARAPET ELEVATION
34. BEAM FRAMING PLAN
35. P.C.B. DETAILS - TYPE III SPAN NO. 1 AND 3
36. P.C.B. DETAILS - TYPE III SPAN NO. 2
37. BEARING DETAILS
38. ABUTMENT DIAPHRAGM DETAILS (SHEET 1 OF 2)
39. ABUTMENT DIAPHRAGM DETAILS (SHEET 2 OF 2)
40. SLAB REINFORCING PLAN
41. SLOPE DRAIN DETAILS



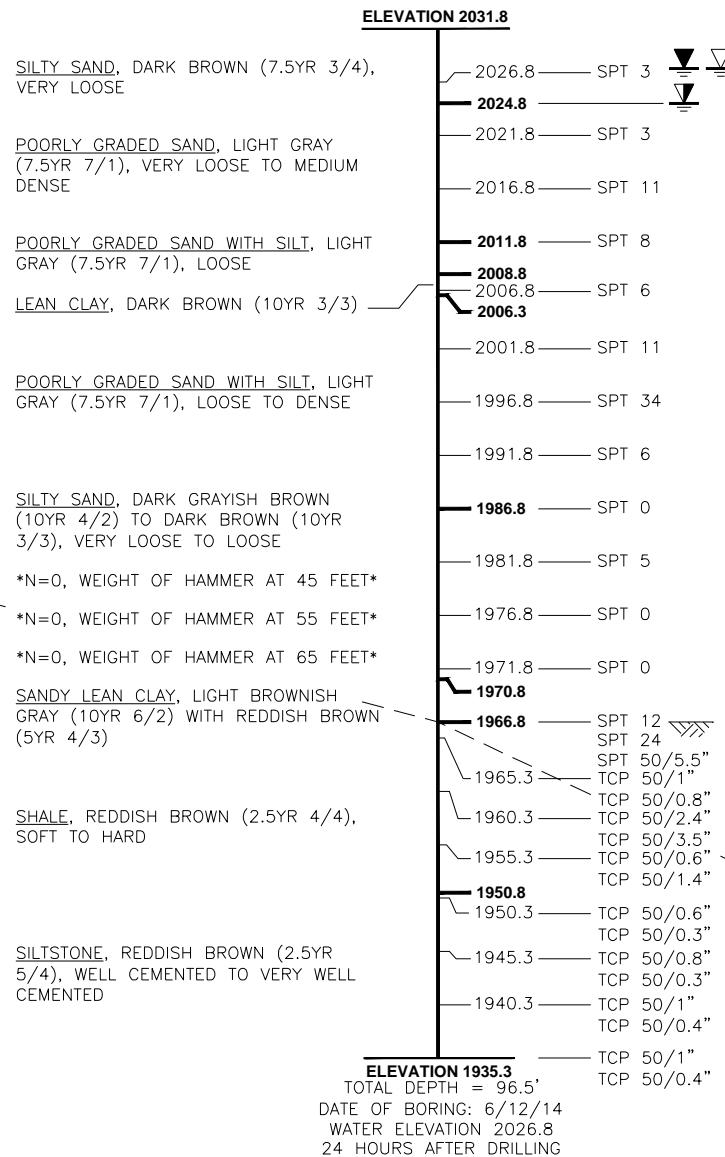
|         |        |   |                 |
|---------|--------|---|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK                | WOODWARD COUNTY |
| DRAWN   | R.A.S. | BRIDGE A                                    |                 |
| CHECKED | J.W.H. | <b>SUMMARY OF<br/>BRIDGE PAY QUANTITIES</b> |                 |
| APPROV. | T.A.C. |   |                 |
| SQUAD   | CEC    | JOB PIECE NO. 28825(04)                     | SHEET NO. 22    |



BORING NO. B-1  
 STA. 2296+48.00  
 22' LEFT  
 OF C.R.L. SH34



BORING NO. B-2  
 STA. 2297+14.00  
 24' RIGHT  
 OF C.R.L. SH34



NOTES:

SPT DENOTES STANDARD PENETRATION TESTS

TCP DENOTES TEXAS CONE PENETRATION TESTS

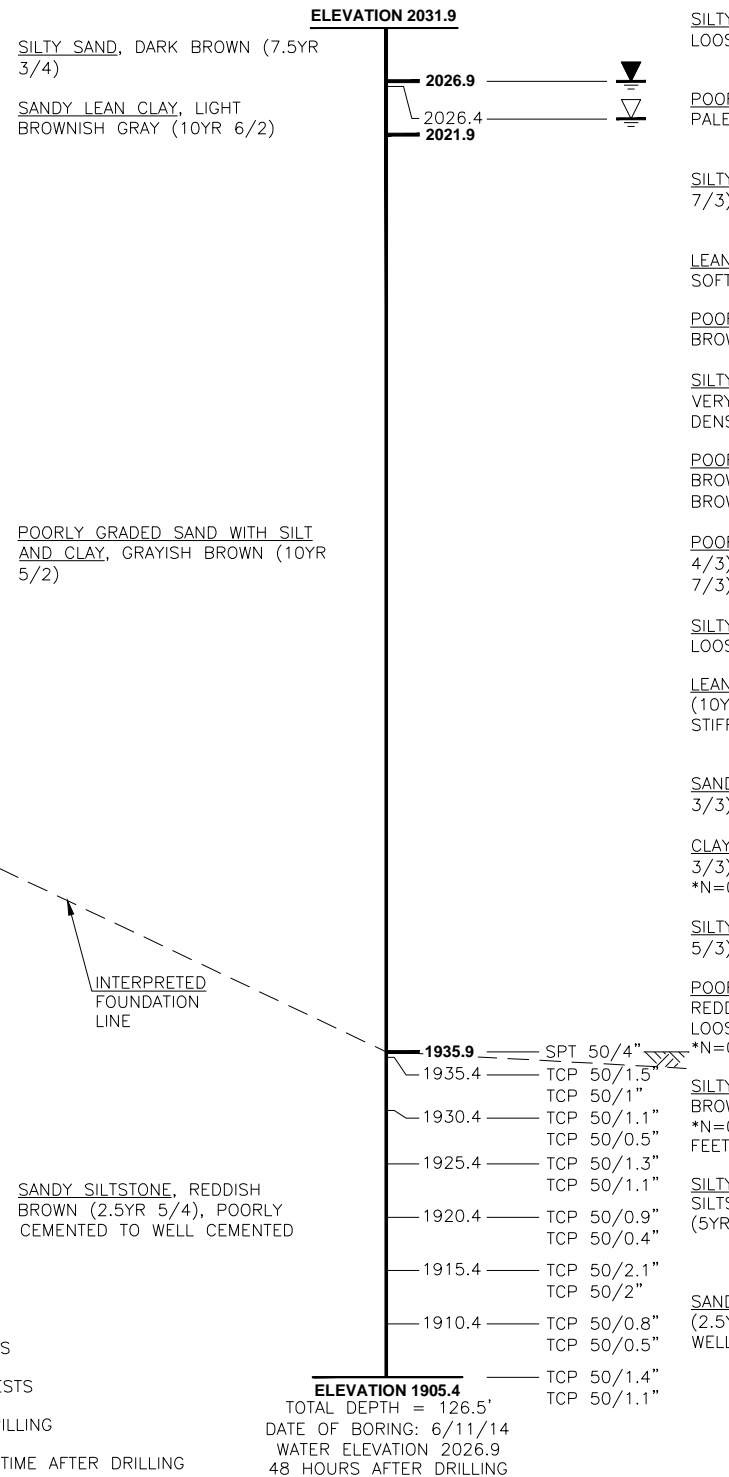
▽ DENOTES WATER ELEVATION DURING DRILLING

▽ DENOTES WATER ELEVATION AT NOTED TIME AFTER DRILLING

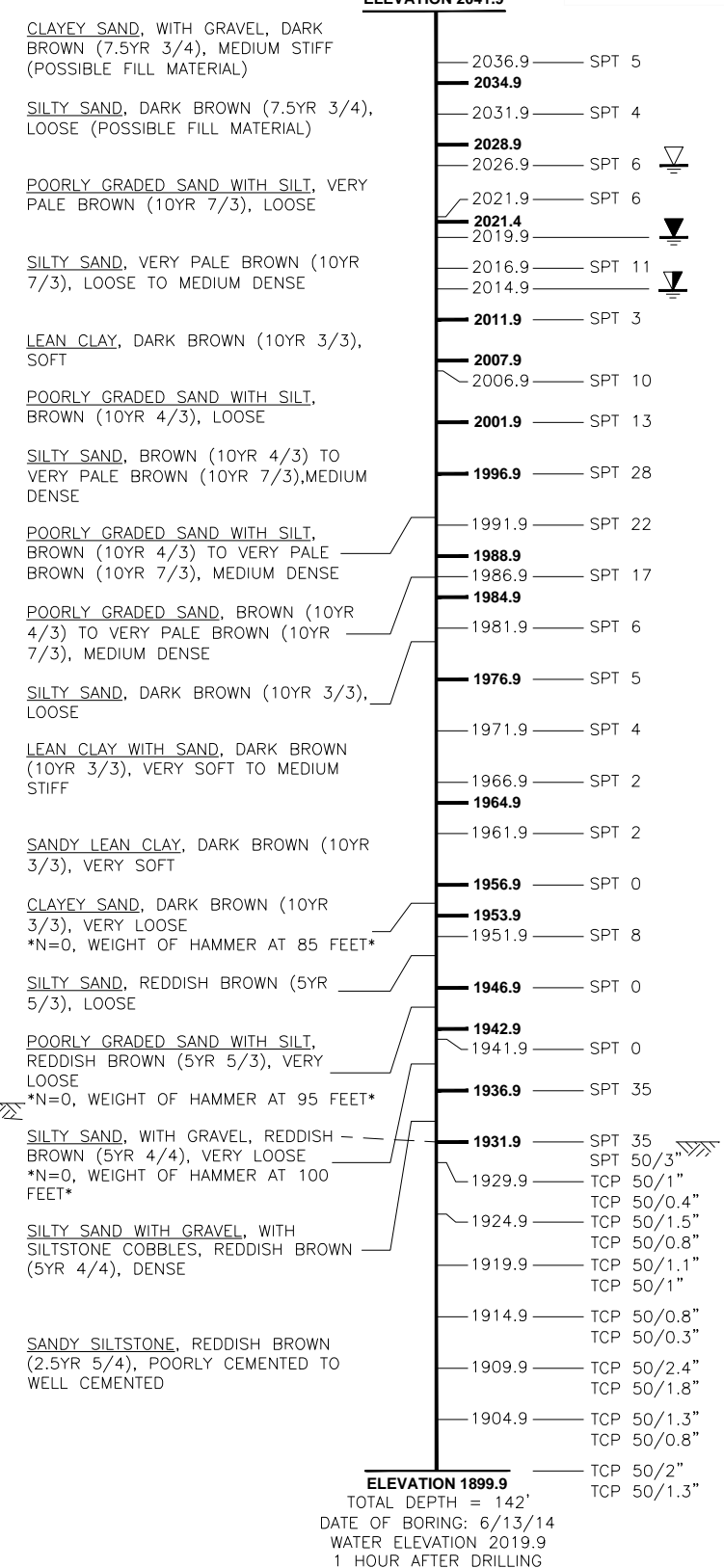
▽ DENOTES CAVE IN DEPTH

▽ DENOTES ROCK ELEVATION

BORING NO. B-3  
 STA. 2297+81.00  
 26' LEFT  
 OF C.R.L. SH34



BORING NO. B-4  
 STA. 2298+45.00  
 24' RIGHT  
 OF C.R.L. SH34



| CEC // TRANSPORTATION |           |         |
|-----------------------|-----------|---------|
| DESCRIPTION           | REVISIONS | DATE    |
| REMOVED PRELIM. STAMP |           | 7-12-16 |

NOTE:  
 INTERPRETED FOUNDATION LINE  
 FOR ESTIMATING PURPOSES ONLY.

WATER ELEVATIONS SHOWN WERE OBTAINED AT THE  
 TIME BORINGS WERE DRILLED AND MAY FLUCTUATE  
 THROUGHOUT THE YEAR.

**GEOLOGICAL STATEMENT**

DIVISION SIX OF THE "ENGINEERING CLASSIFICATION OF GEOLOGICAL MATERIALS", PUBLISHED BY THE OKLAHOMA DEPARTMENT OF TRANSPORTATION (ODOT) INDICATES THE PROJECT SITE IS UNDERLAIN BY THE RUSH SPRINGS UNIT (PRS.)

THE RUSH SPRINGS UNIT CONSISTS DOMINANTLY OF ORANGE-BROWN, FINE-GRAINED SANDSTONE IN THE UPPER HALF OF THE UNIT AND INTERBEDDED RED-BROWN SILTY SHALE, SILTSTONE AND SANDSTONE IN THE LOWER HALF. SHALE IS DOMINANT IN THE LOWER HALF OF THE UNIT IN THE DIVISION, BUT THE SHALE GRADES TO SANDSTONE ACROSS WOODWARD COUNTY AND BECOMES ALMOST ENTIRELY SANDSTONE IN NORTHERN DEWEY COUNTY OF DIVISION 5.

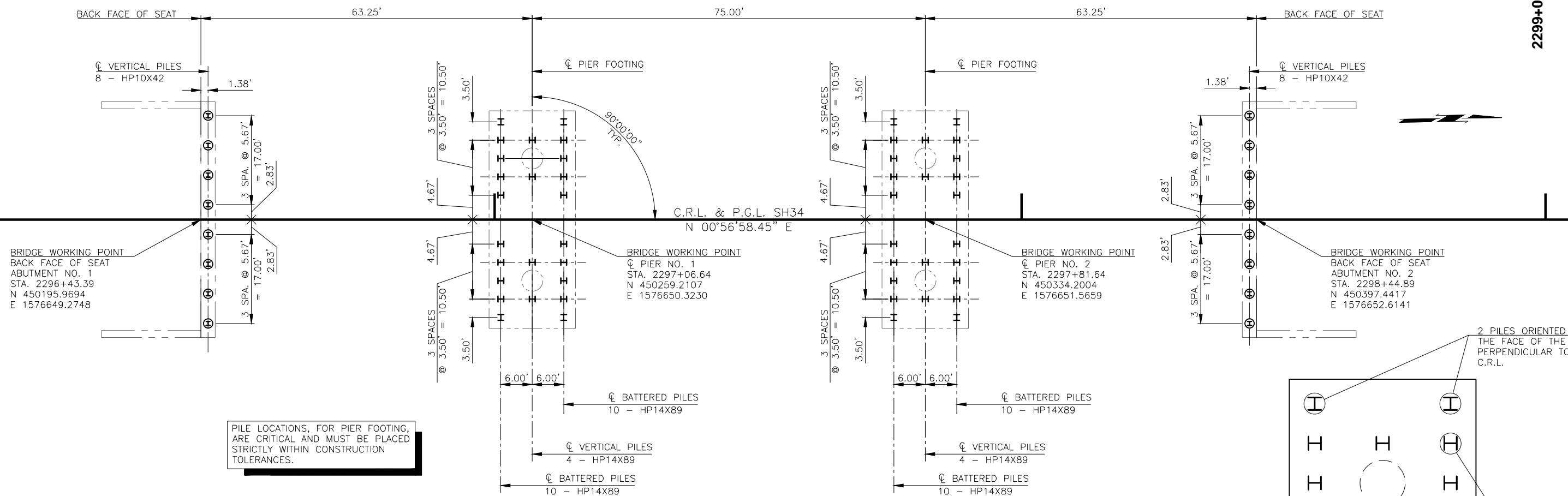
|         |        |                              |                 |
|---------|--------|------------------------------|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   | Z.M.B. | BRIDGE A                     |                 |
| CHECKED | J.W.H. | <b>FOUNDATION REPORT</b>     |                 |
| APPROV. | T.A.C. |                              |                 |
| SQUAD   | CEC    |                              |                 |
|         |        | JOB PIECE NO. 28825(04)      | SHEET NO. 23    |

2296+00

2297+00

2298+00

2299+00

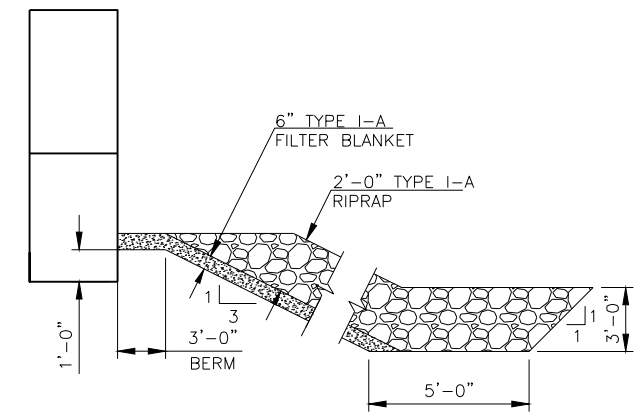


PILE LOCATIONS, FOR PIER FOOTING, ARE CRITICAL AND MUST BE PLACED STRICTLY WITHIN CONSTRUCTION TOLERANCES.

ABUTMENT SEAT PILES SHALL BE ORIENTED SUCH THAT THE FACE OF THE WEB IS PERPENDICULAR TO THE BACK FACE OF SEAT.

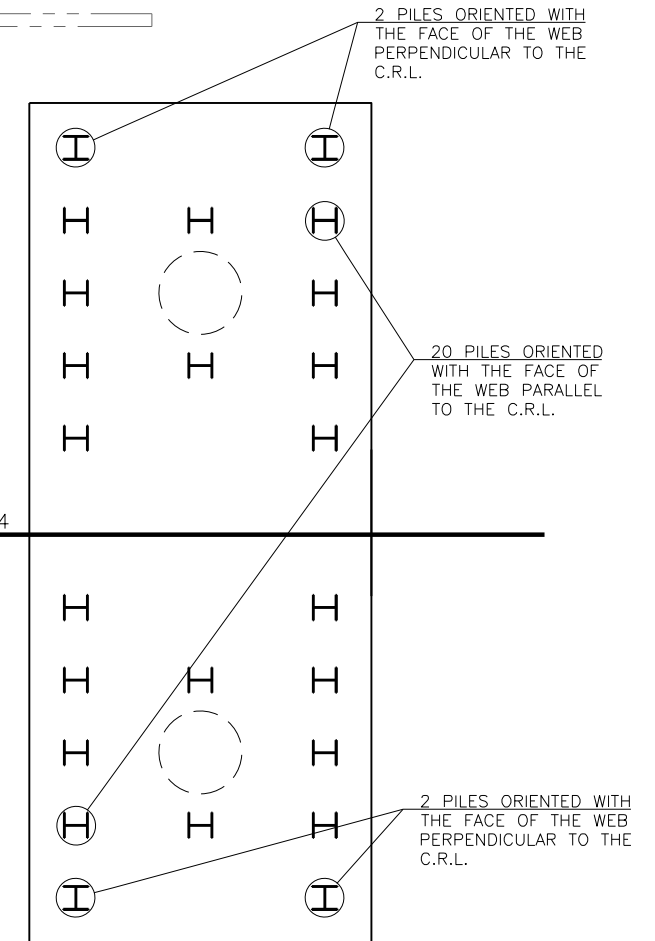
### SUBSTRUCTURE LAYOUT

1" = 10'



### RIPRAP AND FILTER BLANKET DETAIL

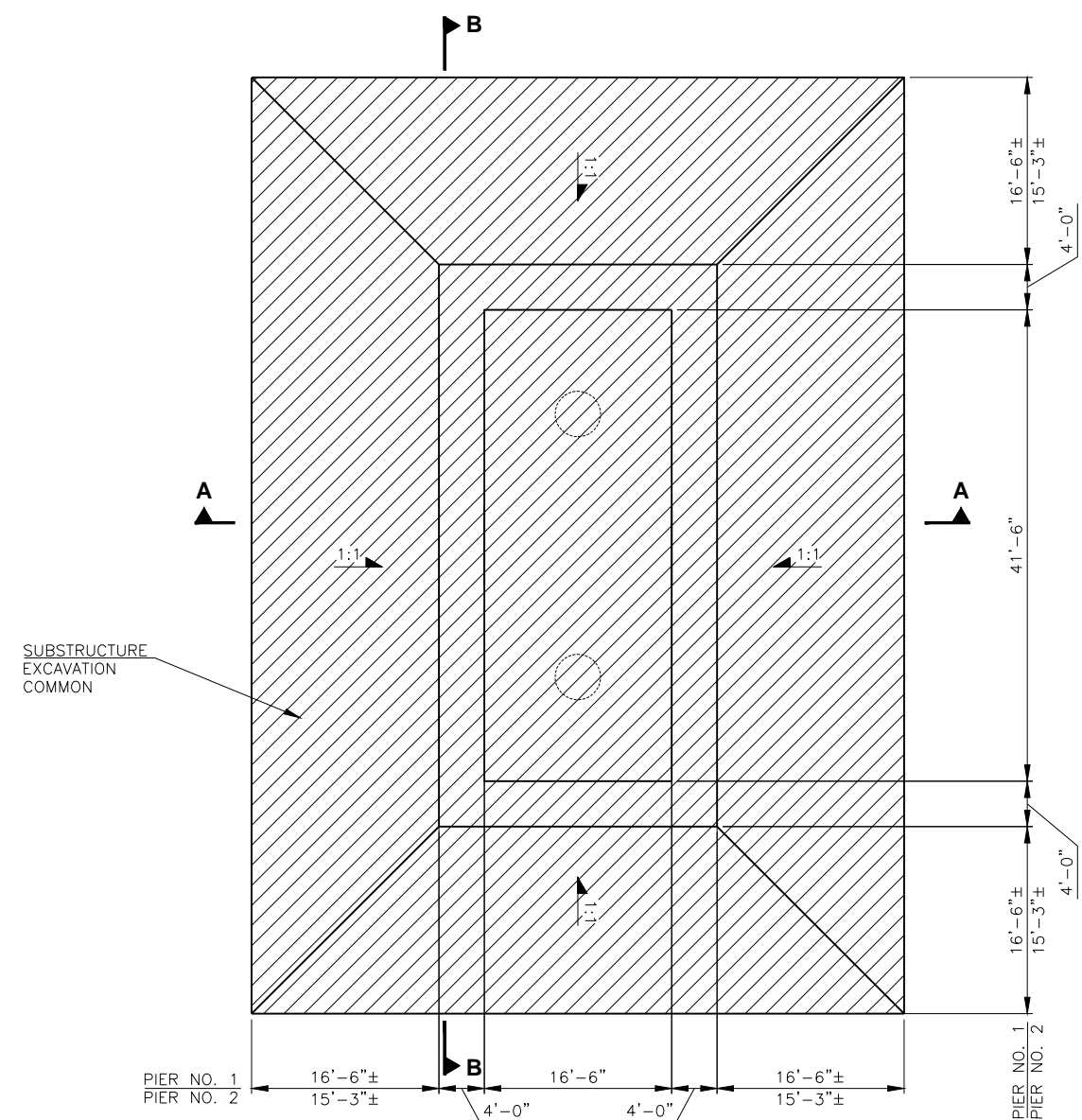
(DIMENSIONS AND SLOPE PERPENDICULAR TO FACE OF ABUTMENT)



### PIER FOOTING PILE ORIENTATION

|         |        |                              |                 |
|---------|--------|------------------------------|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   | Z.M.B. | BRIDGE A                     |                 |
| CHECKED | J.W.H. | <b>SUBSTRUCTURE LAYOUT</b>   |                 |
| APPROV. | T.A.C. |                              |                 |
| SQUAD   | CEC    |                              |                 |
|         |        | JOB PIECE NO. 28825(04)      | SHEET NO. 24    |



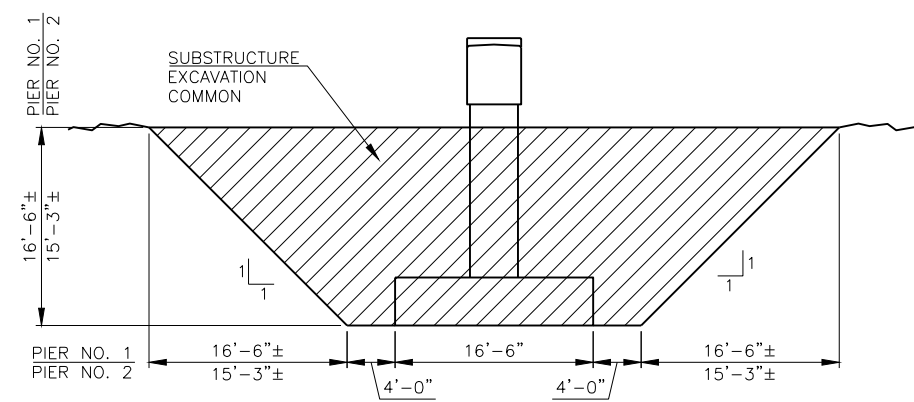


SUBSTRUCTURE EXCAVATION COMMON

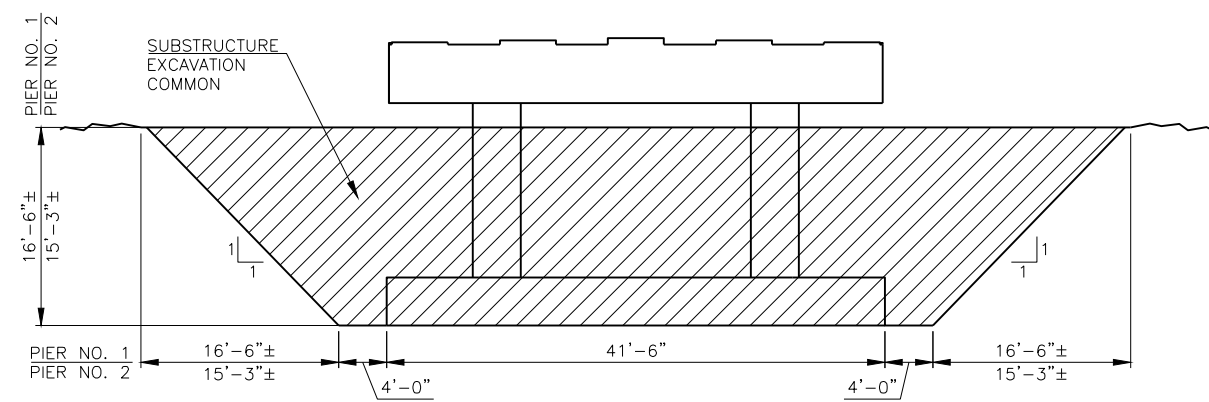
NOTE:  
FOR SUBSTRUCTURE EXCAVATION AT ABUTMENTS AND PIPE UNDERDRAIN DETAILS, SEE STD. B40-I-ABUT-MISC.

NOTE:  
THE CONTRACTOR WILL INCLUDE ALL COST OF TEMPORARY RETAINING STRUCTURES AND TEMPORARY WATER CONTROL SYSTEMS NECESSARY TO CONSTRUCT THE BRIDGE PIERS, INCLUDING EQUIPMENT, MATERIALS, LABOR, AND INCIDENTALS, IN THE CONTRACT UNIT PRICE BID FOR "SUBSTRUCTURE EXCAVATION COMMON". ANY TEMPORARY RETAINING STRUCTURES AND TEMPORARY WATER CONTROL SYSTEMS WILL BE PROVIDED IN ACCORDANCE WITH SECTION 502 OF THE SPECIFICATIONS.

**SUBSTRUCTURE EXCAVATION PLAN**

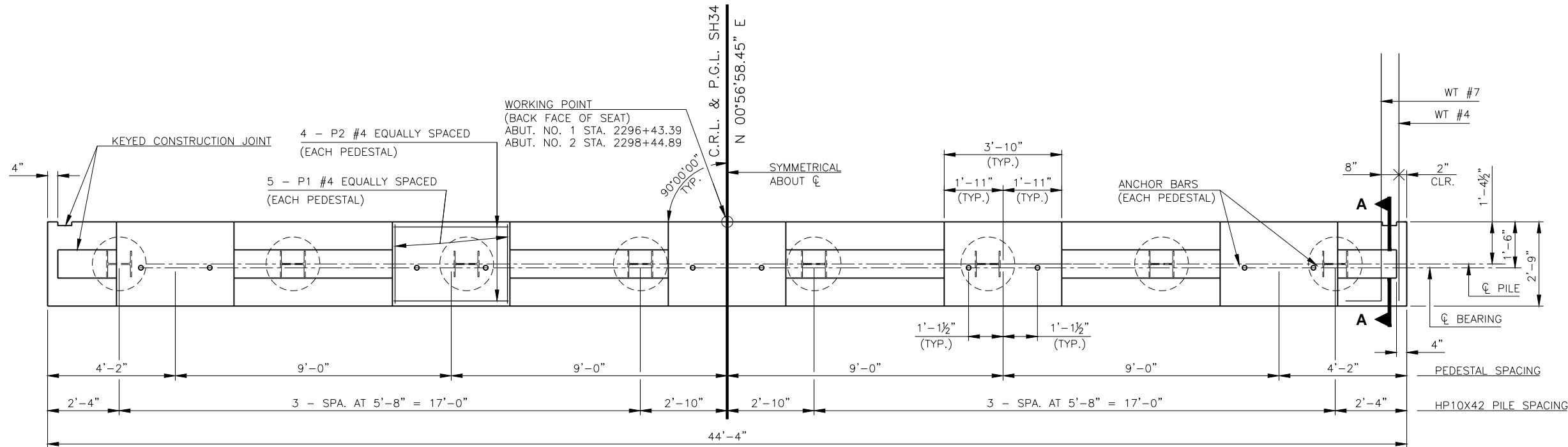


**SECTION A-A**

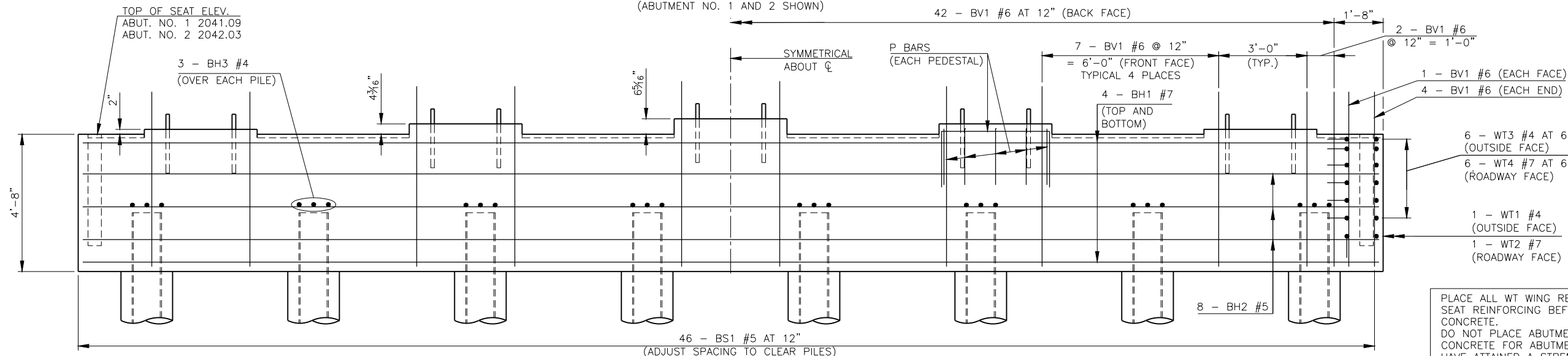


**SECTION B-B**

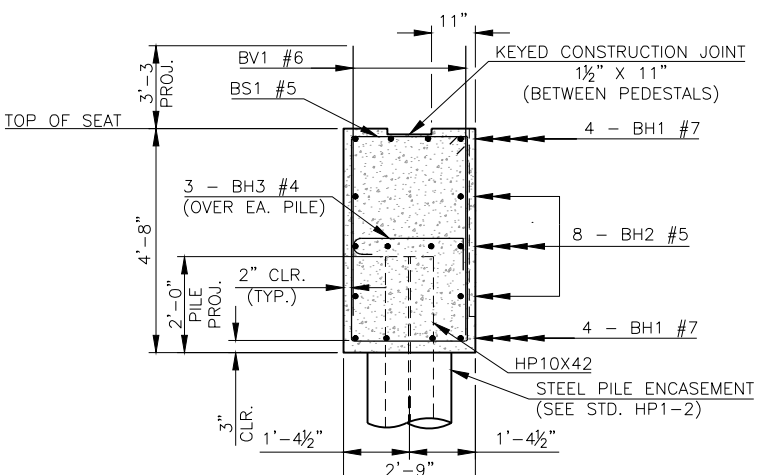
|         |        |   |                 |
|---------|--------|---|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK            | WOODWARD COUNTY |
| DRAWN   | R.A.P. | BRIDGE A                                |                 |
| CHECKED | J.W.H. | <b>SUBSTRUCTURE EXCAVATION AT PIERS</b> |                 |
| APPROV. | T.A.C. |   |                 |
| SQUAD   | CEC    |   |                 |
|         |        | JOB PIECE NO. 28825(04)                 | SHEET NO. 25    |



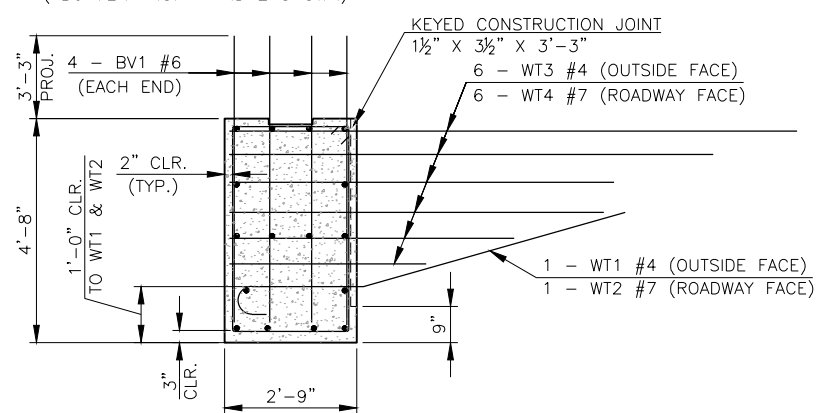
**ABUTMENT PLAN**  
(ABUTMENT NO. 1 AND 2 SHOWN)



**ABUTMENT ELEVATION**  
(ABUTMENT NO. 1 AND 2 SHOWN)



**SECTION THRU ABUTMENT SEAT**



**SECTION A-A**

NOTE:  
FOR WING DETAILS, BAR BENDS  
AND BAR LIST, SEE SHEET 27.

NOTE:  
FOR EXTENT OF WATER REPELLENT  
TREATMENT, SEE SHEET 32.

NOTE:  
FOR ABUTMENT DIAPHRAGM  
DETAILS, SEE SHEETS 38 AND 39.

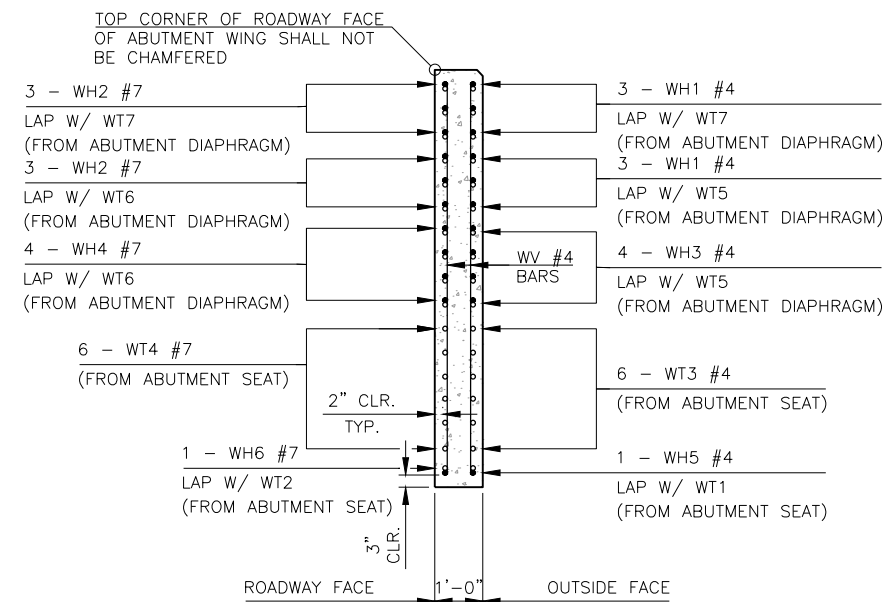
NOTE:  
FOR SUBSTRUCTURE EXCAVATION  
AND PIPE UNDERDRAIN DETAIL,  
SEE STD. B40-I-ABUT-MISC.

PLACE ALL WT WING REINFORCING TIED TO ABUTMENT  
SEAT REINFORCING BEFORE PLACING ABUTMENT SEAT  
CONCRETE.  
DO NOT PLACE ABUTMENT WING CONCRETE UNTIL  
CONCRETE FOR ABUTMENT DIAPHRAGM AND DECK SLAB  
HAVE ATTAINED A STRENGTH OF 3,000 P.S.I.

| ABUTMENT QUANTITIES                  |      |             |             |       |
|--------------------------------------|------|-------------|-------------|-------|
| ITEM                                 | UNIT | ABUT. NO. 1 | ABUT. NO. 2 | TOTAL |
| SUBSTRUCTURE EXCAVATION COMMON       | C.Y. | 45          | 45          | 90    |
| CLSM BACKFILL                        | C.Y. | 100         | 100         | 200   |
| CLASS A CONCRETE                     | C.Y. | 29.8        | 29.8        | 59.6  |
| EPOXY COATED REINFORCING STEEL       | LB.  | 4,720       | 4,720       | 9,440 |
| PILES, FURNISHED (HP10X42)           | LF.  | 440         | 872         | 1,312 |
| PILES, DRIVEN (HP10X42)              | LF.  | 440         | 872         | 1,312 |
| WATER REPELLENT (VISUALLY INSPECTED) | S.Y. | 17          | 17          | 34    |
| TYPE I-A PLAIN RIPRAP                | TON  | 604         | 854         | 1,458 |
| TYPE I-A FILTER BLANKET              | TON  | 136         | 191         | 327   |
| 6" PERFORATED PIPE UNDERDRAIN ROUND  | LF.  | 42          | 42          | 84    |
| 6" NON-PERF. PIPE UNDERDRAIN RND.    | LF.  | 15          | 15          | 30    |

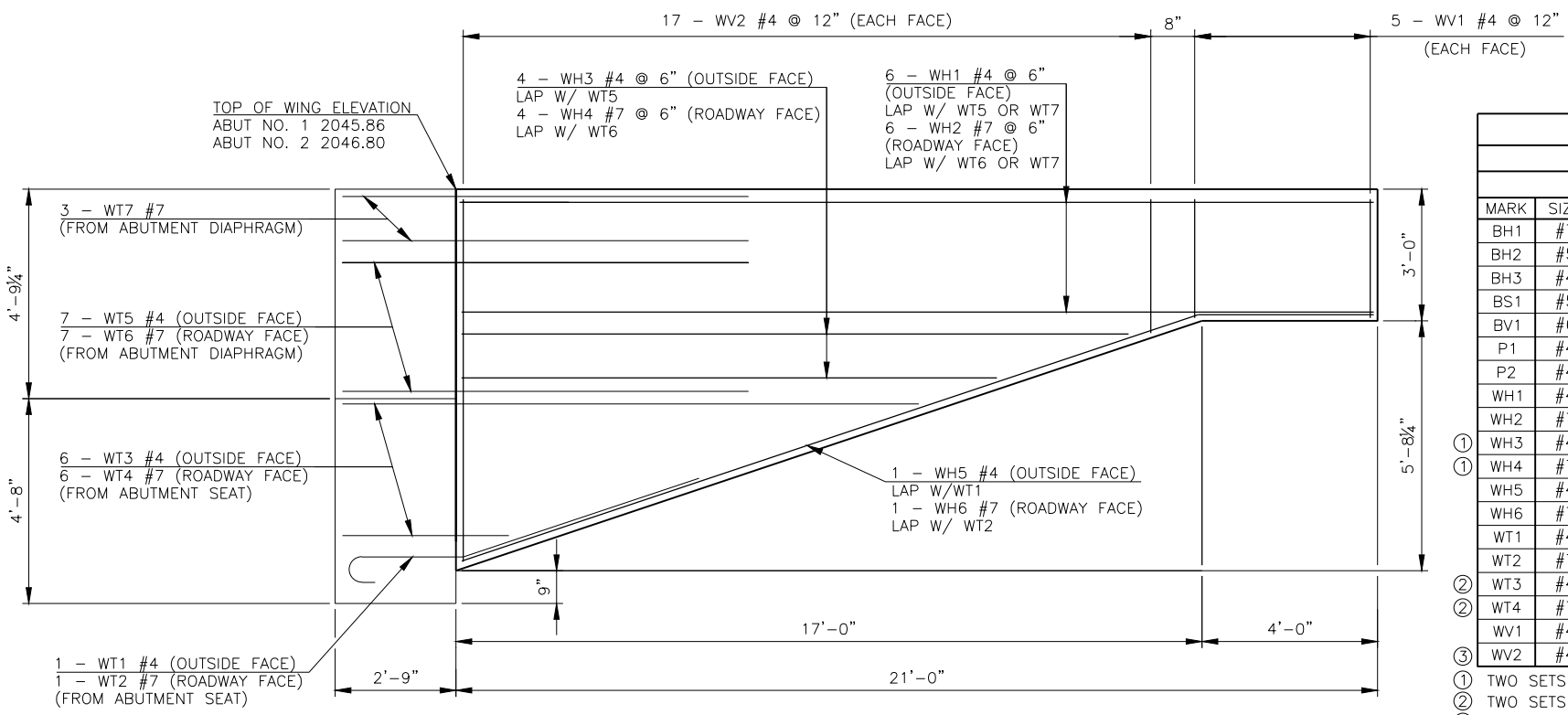
|         |        |                              |                 |
|---------|--------|------------------------------|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   | R.A.P. | BRIDGE A                     |                 |
| CHECKED | J.W.H. |                              |                 |
| APPROV. | T.A.C. |                              |                 |
| SQUAD   | CEC    |                              |                 |

**ABUTMENT DETAILS**

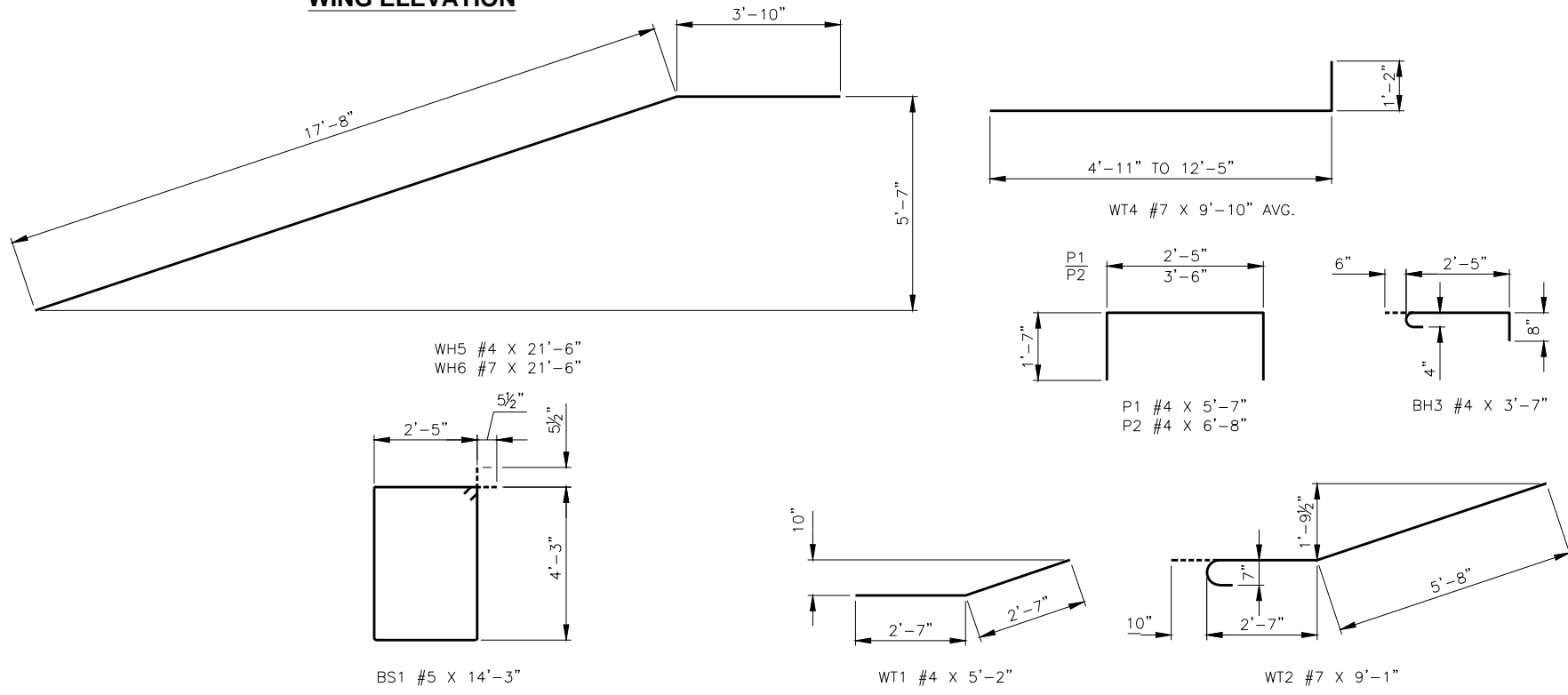


**SECTION THRU WING AT BACK FACE OF ABUTMENT SEAT**

NOTE:  
FOR ABUTMENT DIAPHRAGM DETAILS,  
SEE SHEETS 38 AND 39.



**WING ELEVATION**

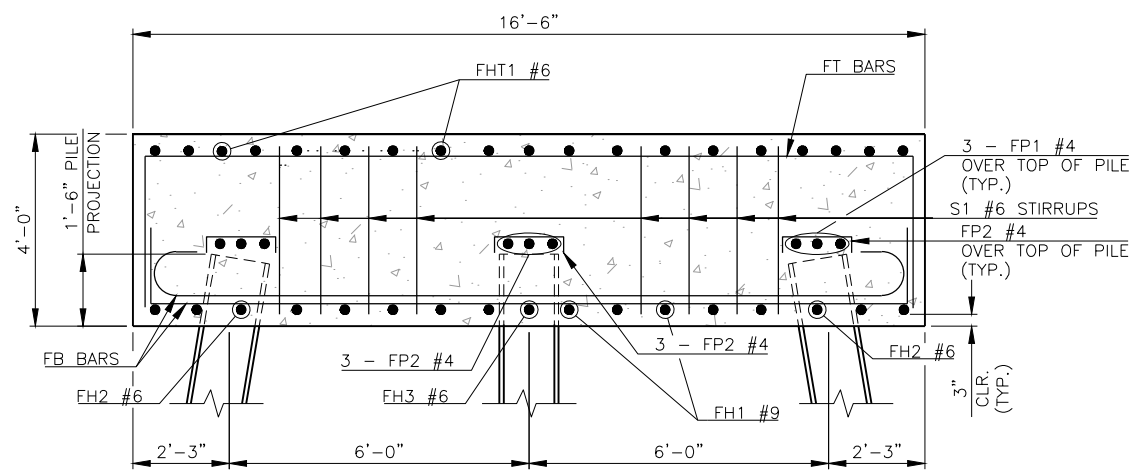


| ABUTMENT BAR LIST        |      |     |      |             |                  |
|--------------------------|------|-----|------|-------------|------------------|
| ONE SHOWN - TWO REQUIRED |      |     |      |             |                  |
| EPOXY COATED REINFORCING |      |     |      |             |                  |
| MARK                     | SIZE | NO. | FORM | LENGTH      | LENGTH VARIATION |
| BH1                      | #7   | 8   | STR. | 44'-0"      |                  |
| BH2                      | #5   | 8   | STR. | 44'-0"      |                  |
| BH3                      | #4   | 24  | BNT. | 3'-7"       |                  |
| BS1                      | #5   | 46  | BNT. | 14'-3"      |                  |
| BV1                      | #6   | 86  | STR. | 7'-8"       |                  |
| P1                       | #4   | 25  | BNT. | 5'-7"       |                  |
| P2                       | #4   | 20  | BNT. | 6'-8"       |                  |
| WH1                      | #4   | 12  | STR. | 20'-8"      |                  |
| WH2                      | #7   | 12  | STR. | 20'-8"      |                  |
| ① WH3                    | #4   | 8   | STR. | 13'-4" AVG. | 11'-3" TO 15'-5" |
| ① WH4                    | #7   | 8   | STR. | 13'-4" AVG. | 11'-3" TO 15'-5" |
| WH5                      | #4   | 2   | BNT. | 21'-6"      |                  |
| WH6                      | #7   | 2   | BNT. | 21'-6"      |                  |
| WT1                      | #4   | 2   | BNT. | 5'-2"       |                  |
| WT2                      | #7   | 2   | BNT. | 9'-1"       |                  |
| ② WT3                    | #4   | 12  | STR. | 8'-8" AVG.  | 4'-11" TO 12'-5" |
| ② WT4                    | #7   | 12  | BNT. | 9'-10" AVG. | 6'-1" TO 13'-7"  |
| WV1                      | #4   | 20  | STR. | 2'-7"       |                  |
| ③ WV2                    | #4   | 68  | STR. | 5'-6" AVG.  | 2'-10" TO 8'-2"  |

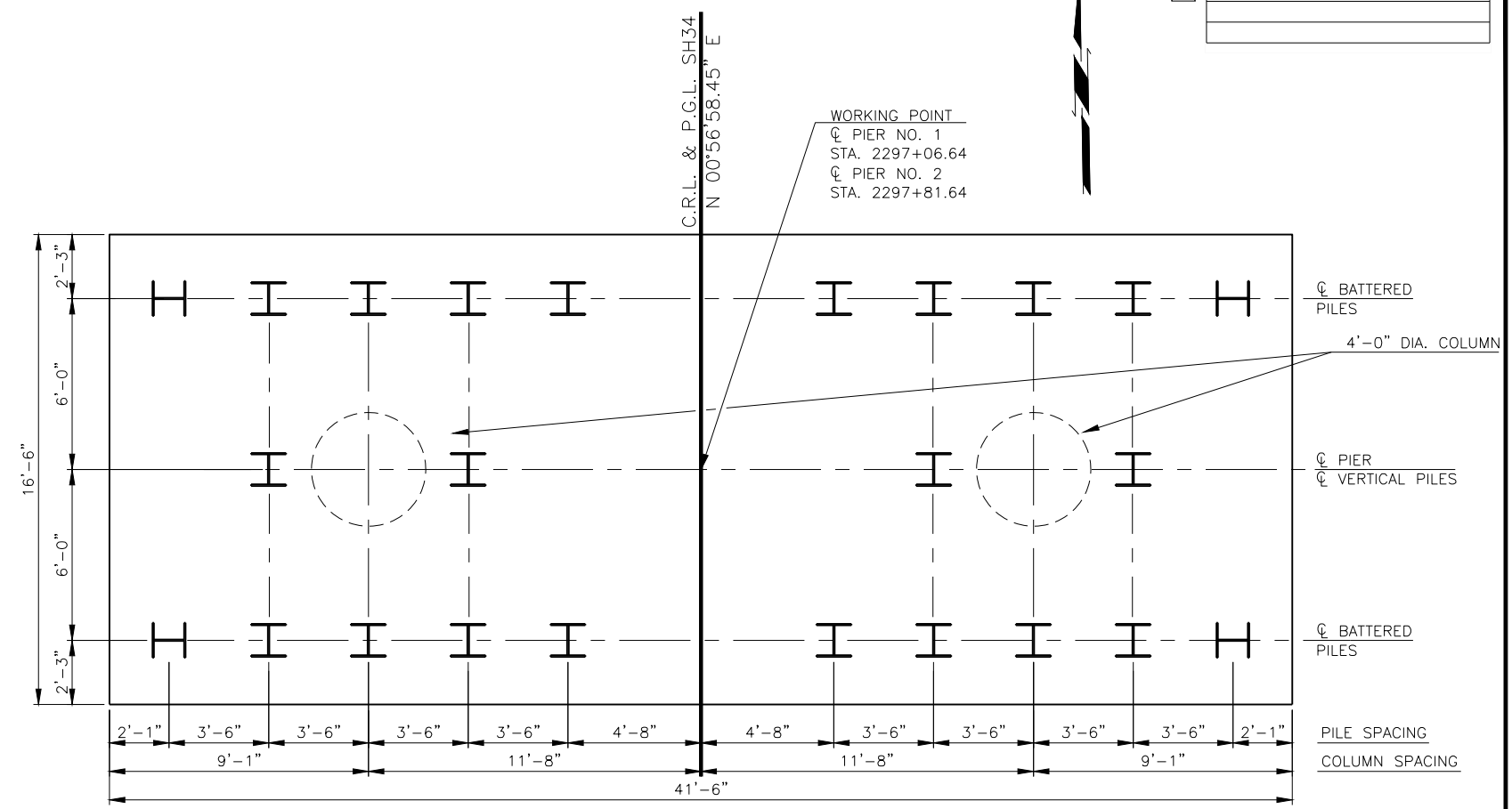
- ① TWO SETS OF 4.
- ② TWO SETS OF 6.
- ③ FOUR SETS OF 17.

|         |        |                              |                 |
|---------|--------|------------------------------|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   | R.A.P. | BRIDGE A                     |                 |
| CHECKED | J.W.H. | <b>ABUTMENT WING DETAILS</b> |                 |
| APPROV. | T.A.C. |                              |                 |
| SQUAD   | CEC    |                              |                 |
|         |        | JOB PIECE NO. 28825(04)      | SHEET NO. 27    |

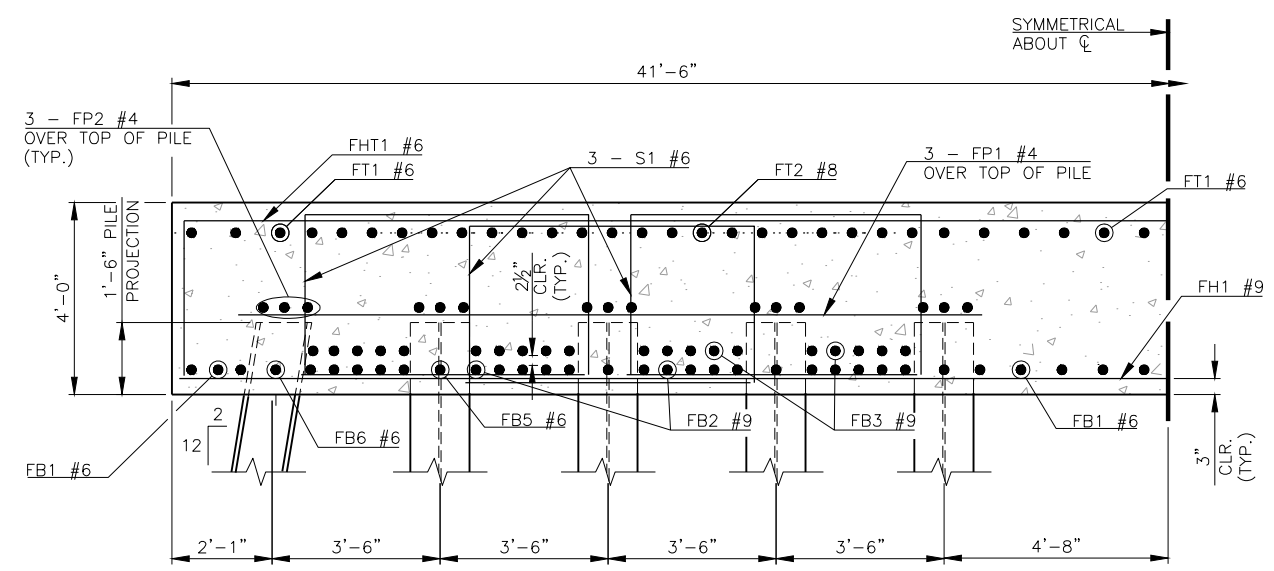




**SECTION C-C**



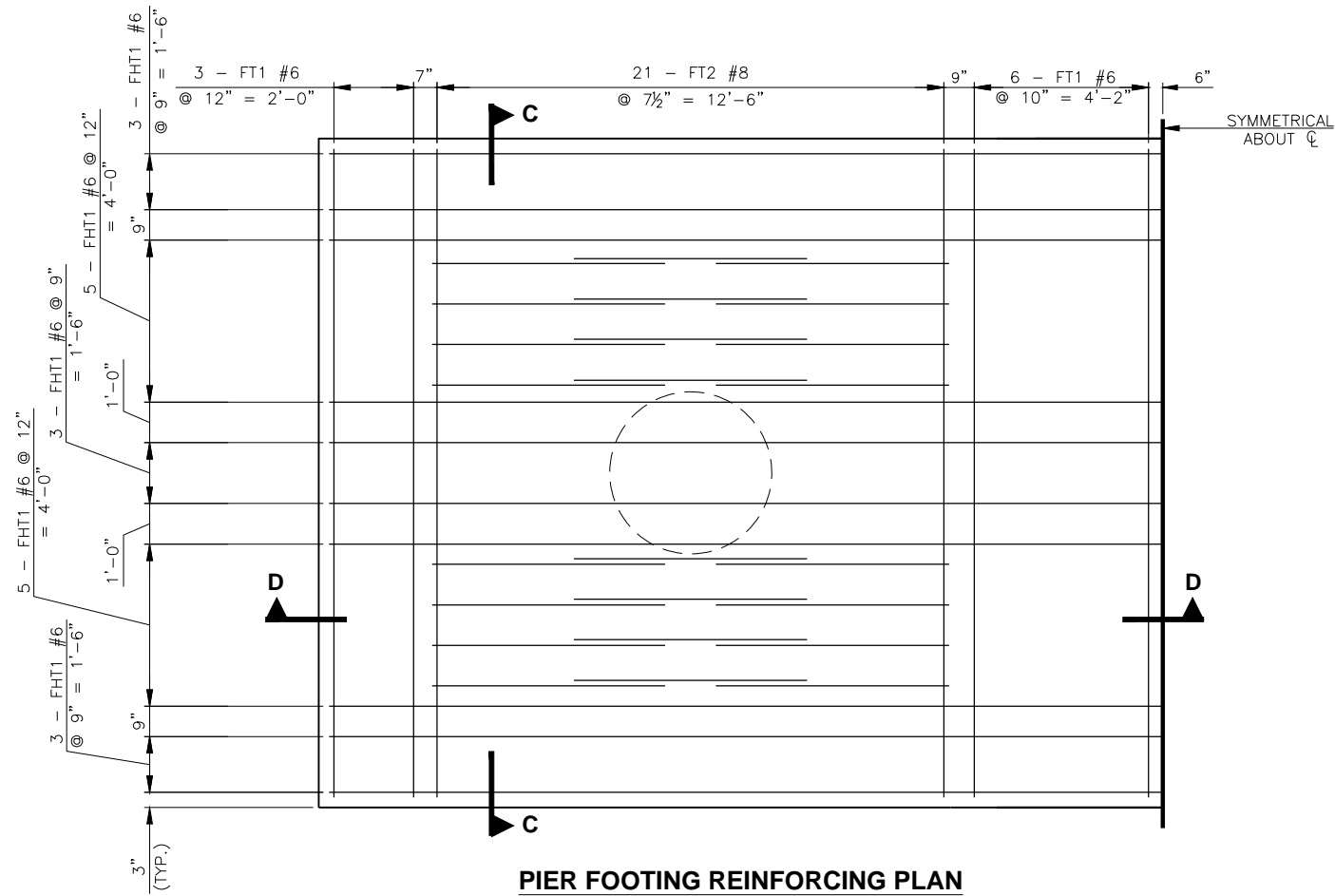
**PIER FOOTING PLAN**  
PILE LOCATIONS AND FOOTING DIM.



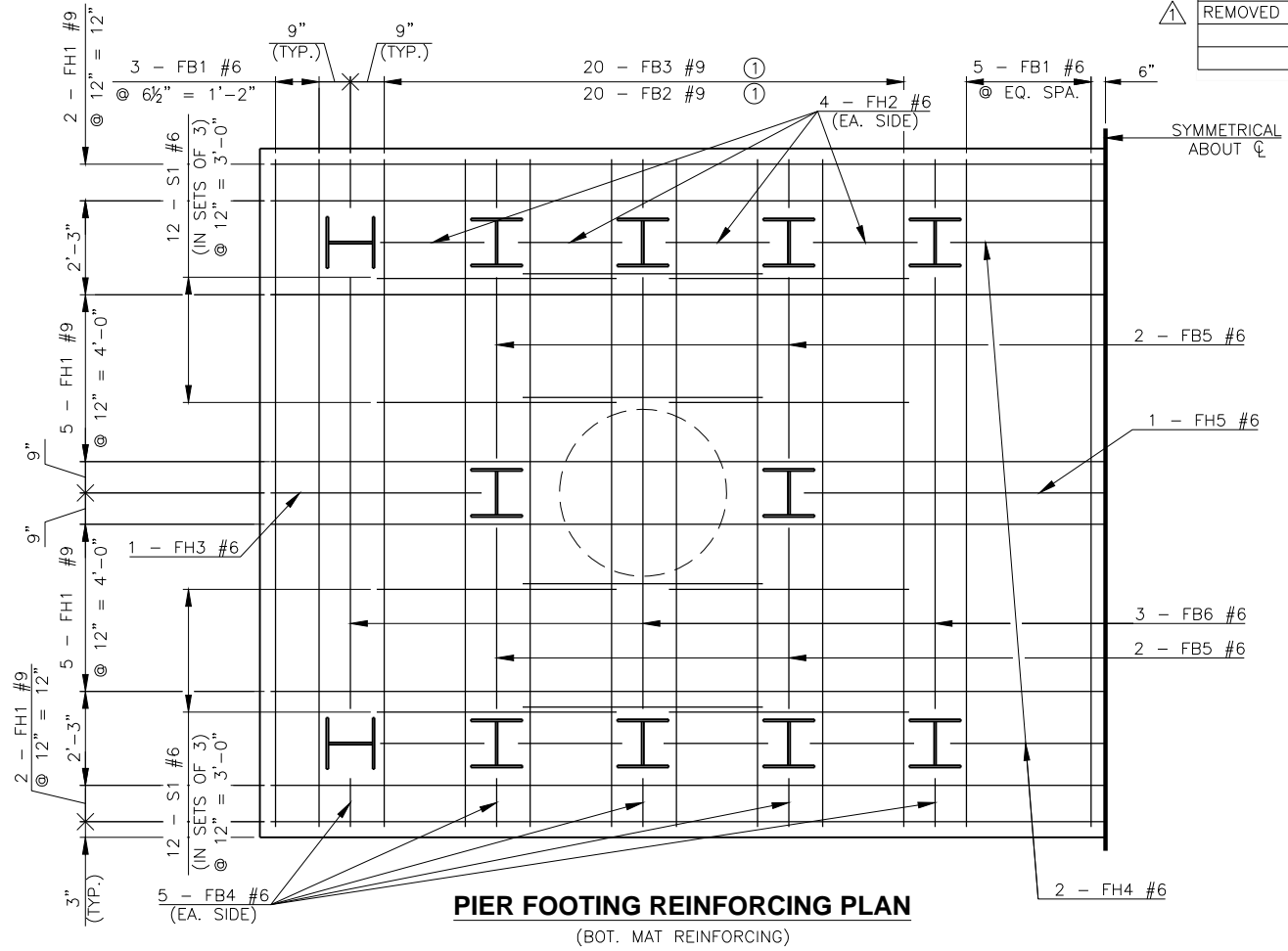
**SECTION D-D**

- NOTE:  
ALL PIER FOOTING PILES ARE HP14X89
- NOTE:  
PLACE BARS AS SHOWN, MINIMUM HORIZONTAL CLEARANCE BETWEEN BARS IS 3".
- NOTE:  
FOR REINFORCING PLAN, SEE SHEET 30.
- NOTE:  
FOR BAR BENDS AND BAR LIST, SEE SHEET 31.

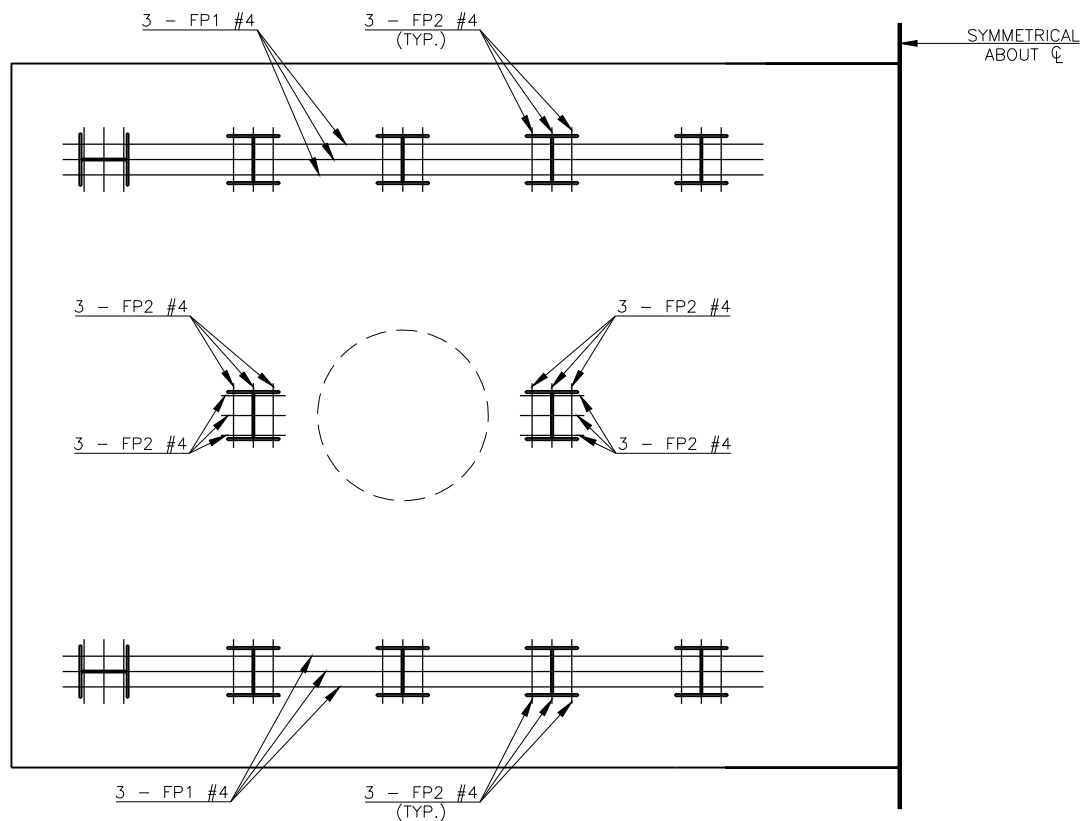
|         |        |  |                 |
|---------|--------|--|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK                       | WOODWARD COUNTY |
| DRAWN   | R.A.P. | BRIDGE A   |                 |
| CHECKED | J.W.H. | <b>PIER NO. 1 AND 2 DETAILS<br/>(SHEET 2 OF 3)</b> |                 |
| APPROV. | T.A.C. |  |                 |
| SQUAD   | CEC    |  |                 |
|         |        | JOB PIECE NO. 28825(04)                            | SHEET NO. 29    |



**PIER FOOTING REINFORCING PLAN**  
(TOP MAT REINFORCING)



**PIER FOOTING REINFORCING PLAN**  
(BOT. MAT REINFORCING)



**PIER FOOTING REINFORCING PLAN**  
(REINFORCING OVER TOP OF PILES)

NOTE:  
PLACE BARS AS SHOWN, MINIMUM HORIZONTAL CLEARANCE BETWEEN BARS IS 3".

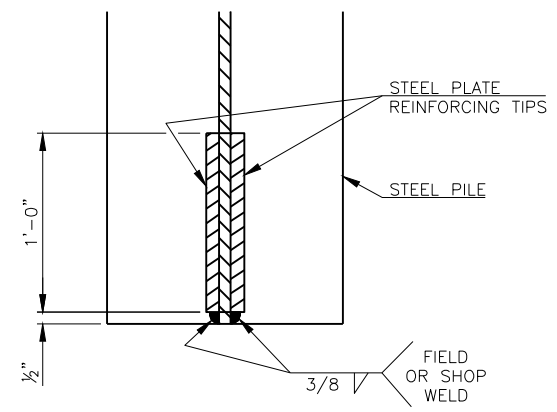
NOTE:  
FOR SECTIONS C-C AND D-D, SEE SHEET 29.

NOTE:  
FOR BAR BENDS AND BAR LIST, SEE SHEET 31.

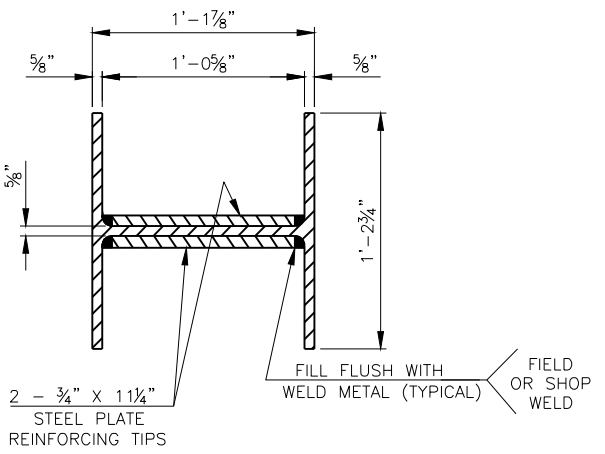
① 5 BARS AT EQ. SPA. BTWN. PILES, SEE SECTION D-D FOR BAR PLACEMENT.

|         |        |  |                 |
|---------|--------|--|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK                             | WOODWARD COUNTY |
| DRAWN   | R.A.P. | BRIDGE A   |                 |
| CHECKED | J.W.H. | <b>PIER NO. 1 AND 2 DETAILS</b><br><b>(SHEET 3 OF 3)</b> |                 |
| APPROV. | T.A.C. |  |                 |
| SQUAD   | CEC    |  |                 |
|         |        | JOB PIECE NO. 28825(04)                                  | SHEET NO. 30    |

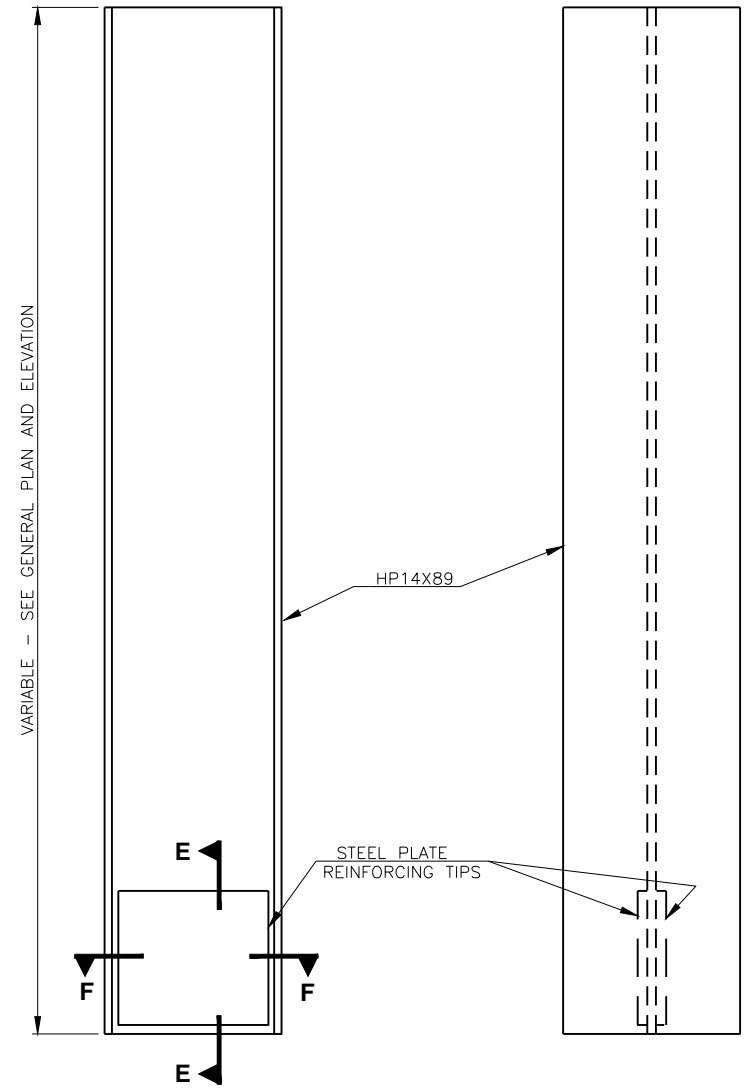




**SECTION E-E**



**SECTION F-F**

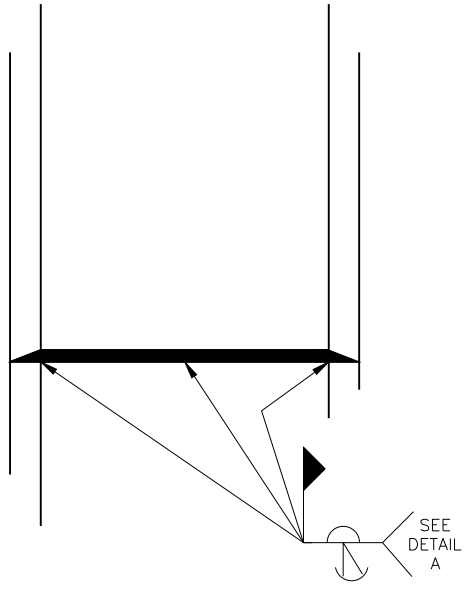


**ELEVATION OF WEB**

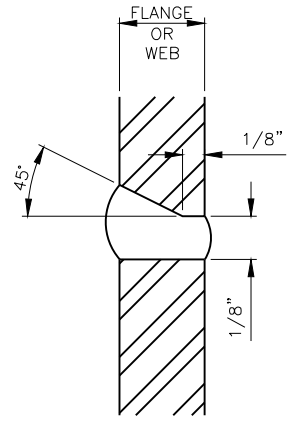
**ELEVATION OF FLANGE**

**DETAIL OF PILING**

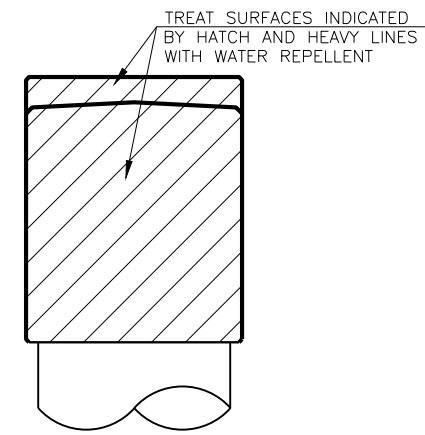
NOTE:  
 PROVIDE STRUCTURAL STEEL FOR PILING AND STEEL PLATE REINFORCING TIPS IN ACCORDANCE WITH AASHTO M270 (ASTM A572), GRADE 50. THE CONTRACTOR MAY USE MANUFACTURED DRIVING TIPS AS AN ALTERNATIVE TO THE STEEL PLATE REINFORCING TIPS SHOWN WITH APPROVAL BY THE BRIDGE ENGINEER. THE DEPARTMENT CONSIDERS THE COST OF STEEL PLATE REINFORCING TIPS OR MANUFACTURED DRIVING TIPS TO BE INCLUDED IN THE CONTRACT UNIT PRICE OF PILES, FURNISHED.



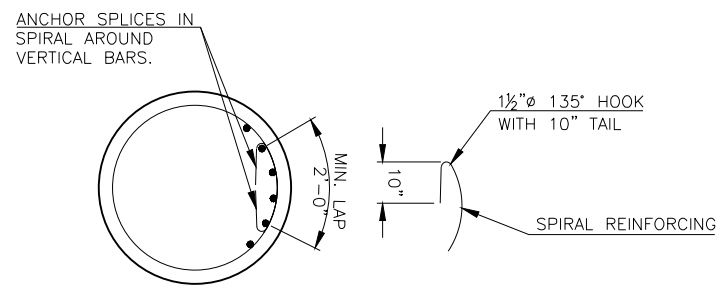
**DETAIL OF WELDED SPLICE**



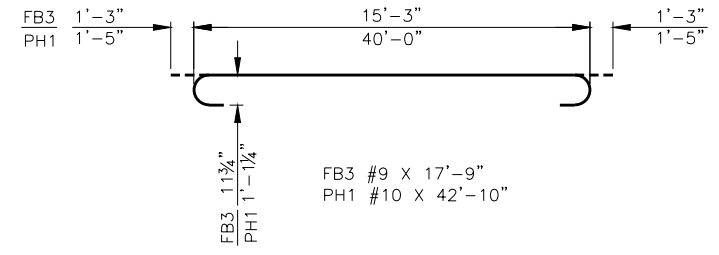
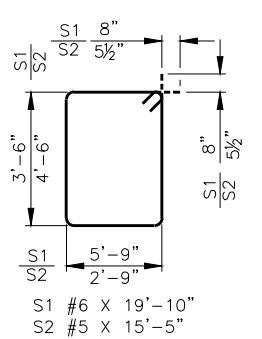
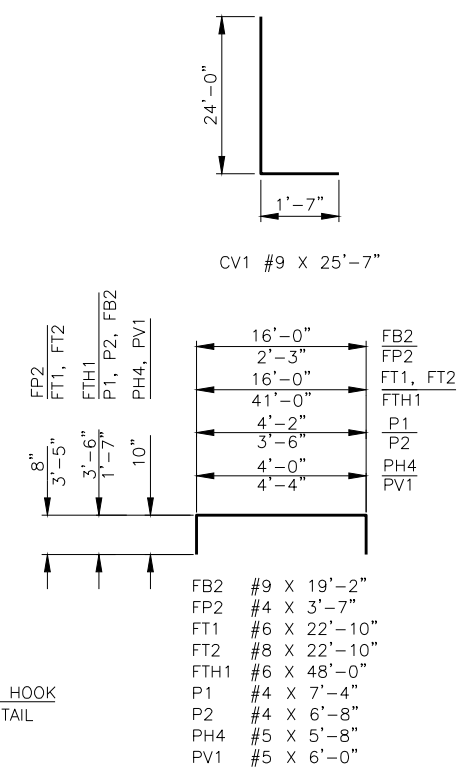
**DETAIL A**



**WATER REPELLENT TREATMENT DETAIL**

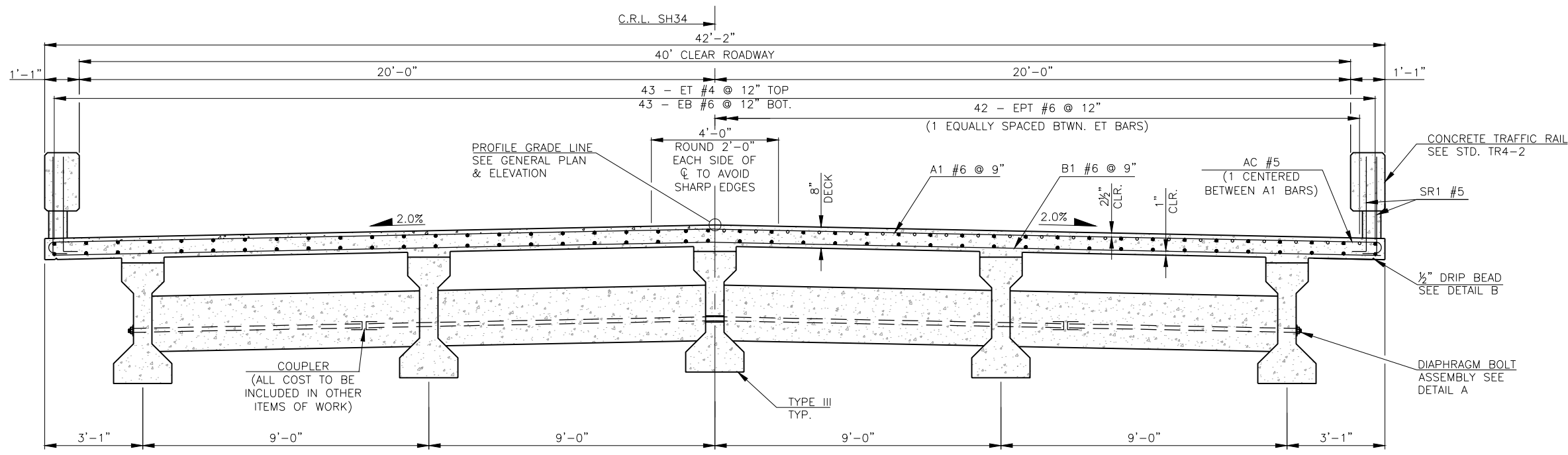


**SPIRAL REINFORCING SPLICE DETAIL**



| PIER BAR LIST            |      |     |      |         |
|--------------------------|------|-----|------|---------|
| ONE SHOWN - TWO REQUIRED |      |     |      |         |
| EPOXY COATED REINFORCING |      |     |      |         |
| MARK                     | SIZE | NO. | FORM | LENGTH  |
| CV1                      | #9   | 30  | BNT. | 25'-7"  |
| FB1                      | #6   | 16  | STR. | 16'-0"  |
| FB2                      | #9   | 40  | BNT. | 19'-2"  |
| FB3                      | #9   | 40  | BNT. | 17'-9"  |
| FB4                      | #6   | 20  | STR. | 1'-2"   |
| FB5                      | #6   | 8   | STR. | 4'-4"   |
| FB6                      | #6   | 6   | STR. | 10'-4"  |
| FH1                      | #9   | 14  | STR. | 41'-0"  |
| FH2                      | #6   | 16  | STR. | 2'-6"   |
| FH3                      | #6   | 2   | STR. | 5'-0"   |
| FH4                      | #6   | 2   | STR. | 8'-7"   |
| FH5                      | #6   | 1   | STR. | 15'-7"  |
| FP1                      | #4   | 12  | STR. | 15'-6"  |
| FP2                      | #4   | 84  | BNT. | 3'-7"   |
| FT1                      | #6   | 18  | BNT. | 22'-10" |
| FT2                      | #8   | 42  | BNT. | 22'-10" |
| FTH1                     | #6   | 19  | BNT. | 48'-0"  |
| P1                       | #4   | 25  | BNT. | 7'-4"   |
| P2                       | #4   | 30  | BNT. | 6'-8"   |
| PH1                      | #10  | 9   | BNT. | 42'-10" |
| PH2                      | #5   | 8   | STR. | 40'-0"  |
| PH3                      | #10  | 9   | STR. | 40'-0"  |
| PH4                      | #5   | 8   | BNT. | 5'-8"   |
| PV1                      | #5   | 6   | BNT. | 6'-0"   |
| S1                       | #6   | 48  | BNT. | 19'-10" |
| S2                       | #6   | 104 | BNT. | 15'-5"  |
| PLAIN REINFORCING        |      |     |      |         |
| MARK                     | SIZE | NO. | FORM | LENGTH  |
| CS1                      | W26  | 2   | BNT. | 701'-6" |

① LENGTH SHOWN DOES NOT ACCOUNT FOR SPLICES. CONTRACTOR MAY ADD SPLICES AS NECESSARY, BUT PAYMENT WILL NOT BE MADE FOR EXTRA LENGTH REQUIRED FOR SPLICES.



HALF SECTION AT INTERMEDIATE DIAPHRAGM

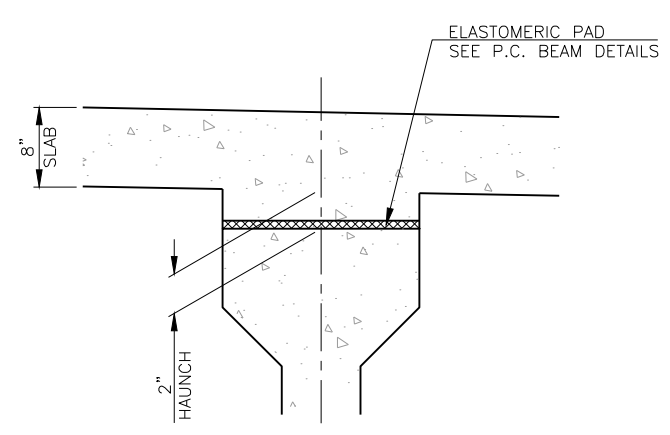
HALF SECTION AT PIER DIAPHRAGM

TYPICAL CROSS SECTION

NOTE:  
ROTATE A AND AC BARS TO  
MAINTAIN MINIMUM CLEARANCE.

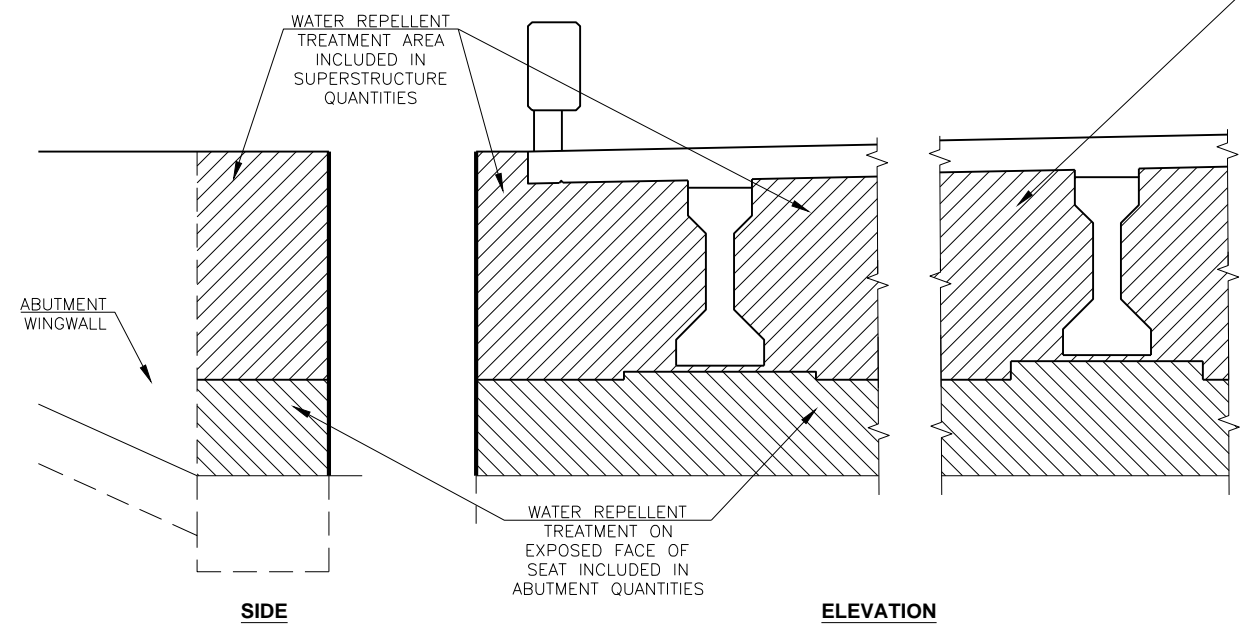
NOTE:  
FOR SUPERSTRUCTURE QUANTITIES,  
SEE SHEET 34.

NOTE:  
FOR BAR BENDS AND BAR LIST,  
SEE SHEET 40.



BEAM HAUNCH DETAIL

NOTE:  
PLAN QUANTITIES FOR CLASS AA CONCRETE INCLUDE 7.6 CY.  
FOR BEAM HAUNCHES. THE HAUNCH HEIGHT SHOWN IS THE  
THEORETICAL HAUNCH HEIGHT AT THE CENTERLINE BEARING  
ONLY, MEASURED FROM THE BOTTOM OF THE DECK SLAB TO  
THE TOP OF THE BEAM, AND VARIES ACROSS THE SPAN.  
DETERMINE THE ACTUAL HAUNCH HEIGHT (ACCOUNTING FOR  
BEAM CAMBER, DEAD LOAD DEFLECTION AND ROADWAY GRADE)  
AFTER ERECTION OF THE BEAMS AND SUBMIT TO THE  
ENGINEER FOR APPROVAL. THE ENGINEER WILL NOT MEASURE  
DIFFERENCES BETWEEN THE THEORETICAL AND THE ACTUAL  
HAUNCH HEIGHTS FOR PAYMENT.

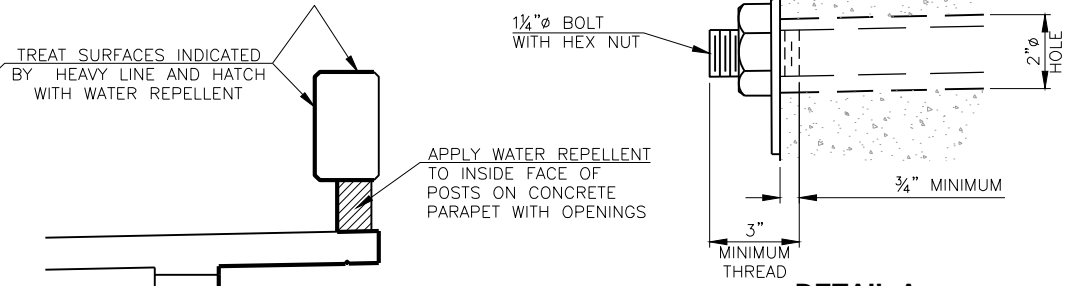


SIDE

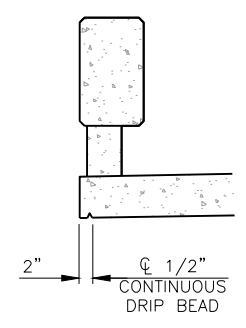
ABUTMENT

ELEVATION

WATER REPELLENT TREATMENT DETAILS



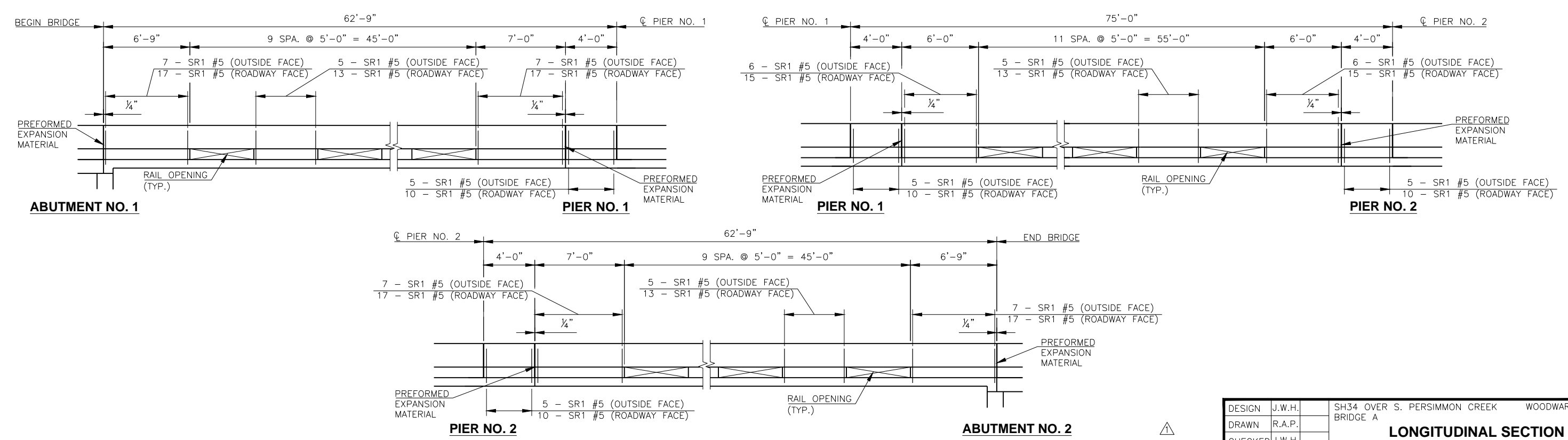
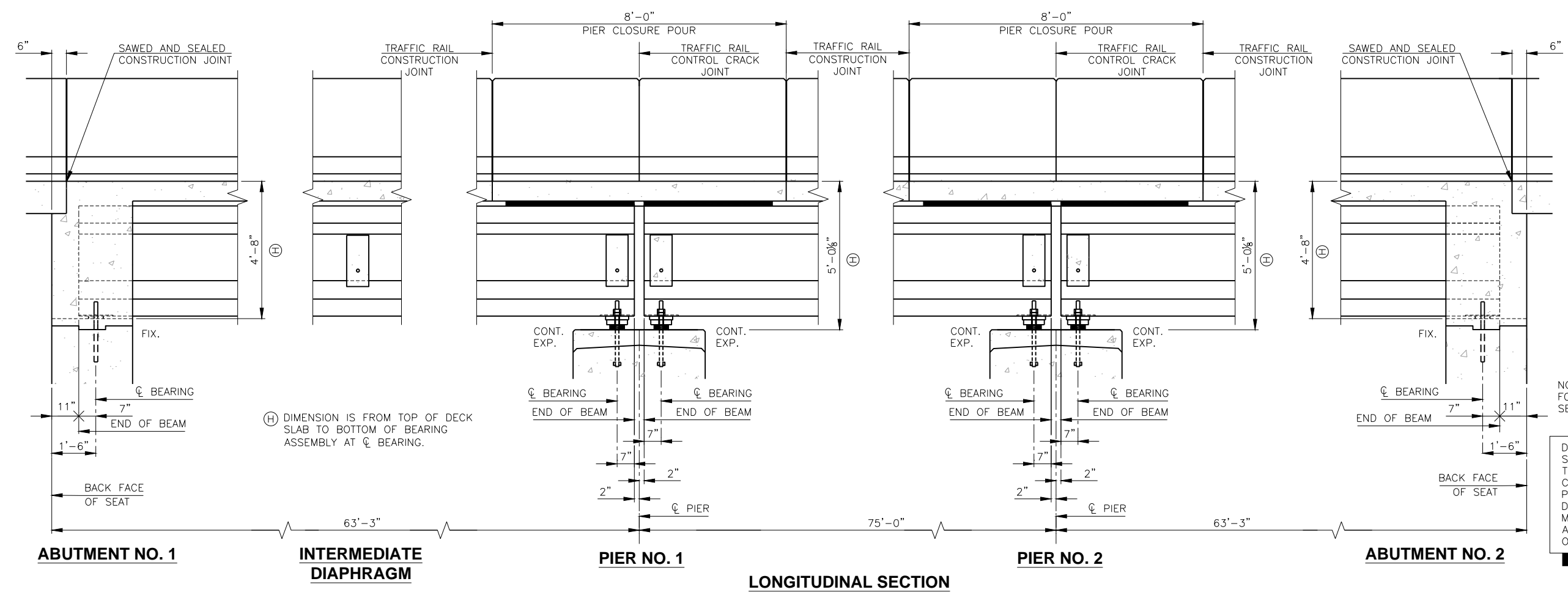
DETAIL A



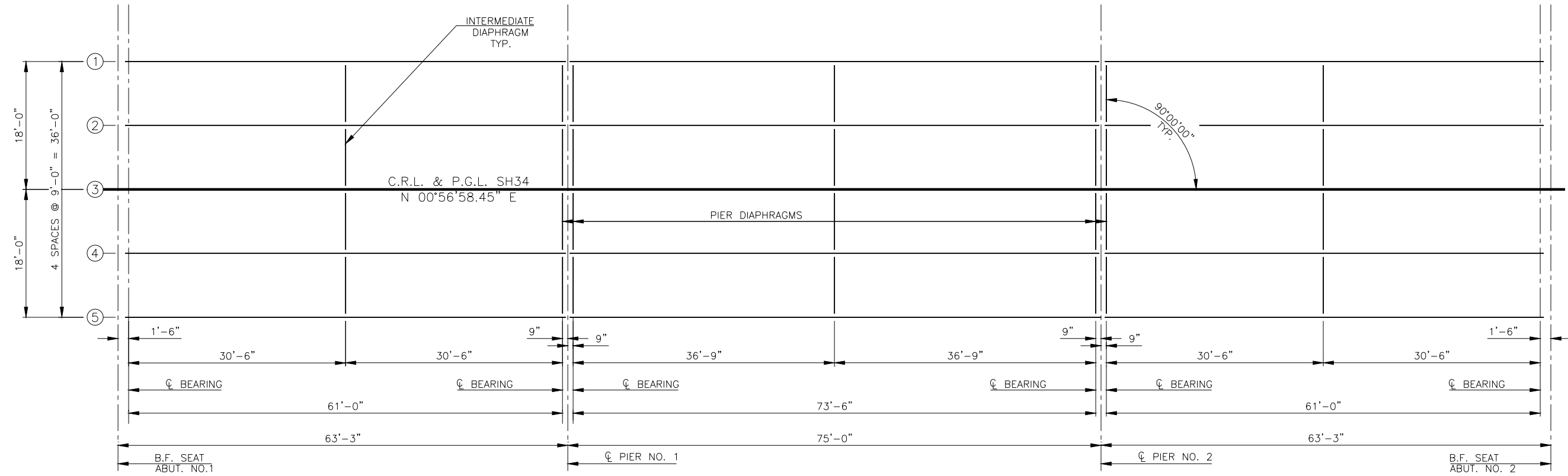
DETAIL B

TRAFFIC RAIL, SLAB, AND BEAM

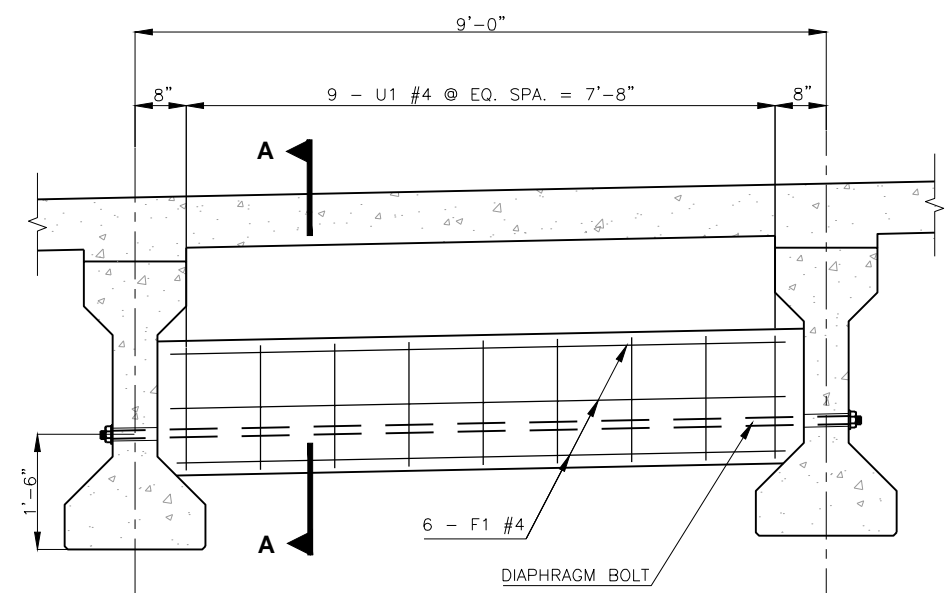
|         |        |                              |                 |
|---------|--------|------------------------------|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   | R.A.P. | BRIDGE A                     |                 |
| CHECKED | J.W.H. | <b>TYPICAL CROSS SECTION</b> |                 |
| APPROV. | T.A.C. |                              |                 |
| SQUAD   | CEC    |                              |                 |
|         |        | JOB PIECE NO. 28825(04)      | SHEET NO. 32    |



|         |        |   |                 |
|---------|--------|---|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK                      | WOODWARD COUNTY |
| DRAWN   | R.A.P. | BRIDGE A  |                 |
| CHECKED | J.W.H. | <b>LONGITUDINAL SECTION AND PARAPET ELEVATION</b> |                 |
| APPROV. | T.A.C. |   |                 |
| SQUAD   | CEC    |   |                 |
|         |        | JOB PIECE NO. 28825(04) SHEET NO. 33              |                 |

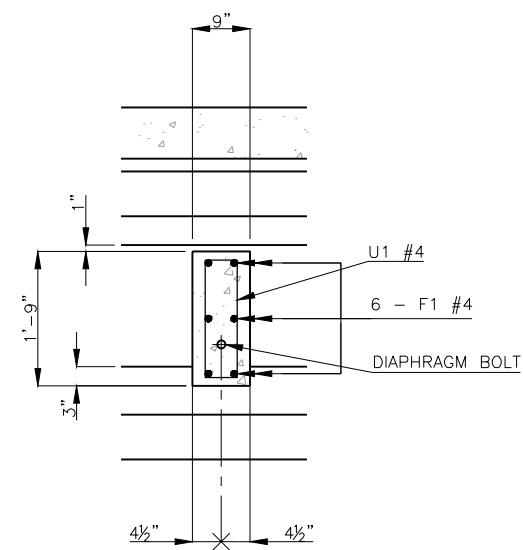


**BEAM FRAMING PLAN**



**INTERMEDIATE AND PIER DIAPHRAGM ELEVATION**

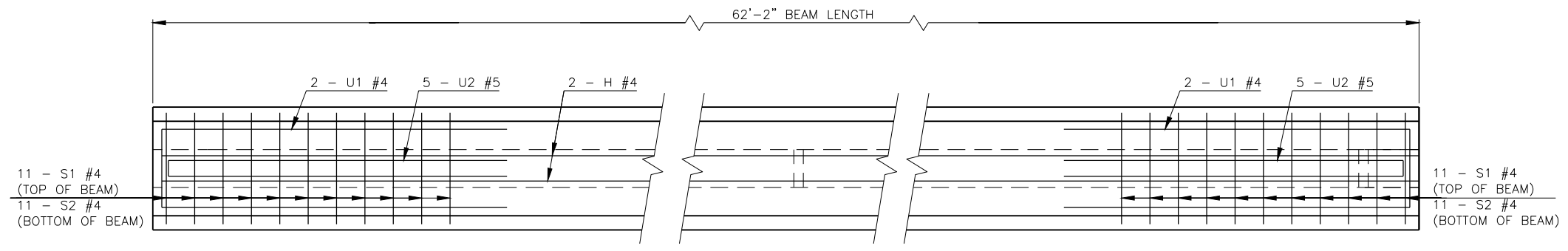
NOTE:  
FOR BAR BEND, SEE SHEET 40.



**SECTION A-A**

| SUPERSTRUCTURE QUANTITIES                  |      |        |
|--|------|--------|
| ITEM                                       | UNIT | TOTAL  |
| PRESTRESSED CONCRETE BEAMS (TYPE III)      | L.F. | 995    |
| SAW-CUT GROOVING                           | S.Y. | 891.0  |
| CONCRETE RAIL (TR4)                        | L.F. | 401.0  |
| STRUCTURAL STEEL                           | LB.  | 1,100  |
| STAINLESS STEEL FIXED BEARING ASSEMBLY     | EA.  | 10     |
| STAINLESS STEEL EXPANSION BEARING ASSEMBLY | EA.  | 20     |
| ELASTOMERIC BEARING PADS                   | EA.  | 20     |
| CLASS AA CONCRETE                          | C.Y. | 259.1  |
| EPOXY COATED REINFORCING STEEL             | LB.  | 69,810 |
| WATER REPELLANT (VISUALLY INSPECTED)       | S.Y. | 645    |
| SEALER CRACK PREPARATION                   | L.F. | 163    |
| SEALER RESIN                               | GAL. | 2      |

|         |        |                              |                 |
|---------|--------|------------------------------|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   | Z.M.B. | BRIDGE A                     |                 |
| CHECKED | J.W.H. | <b>BEAM FRAMING PLAN</b>     |                 |
| APPROV. | T.A.C. |                              |                 |
| SQUAD   | CEC    |                              |                 |
|         |        | JOB PIECE NO. 28825(04)      | SHEET NO. 34    |



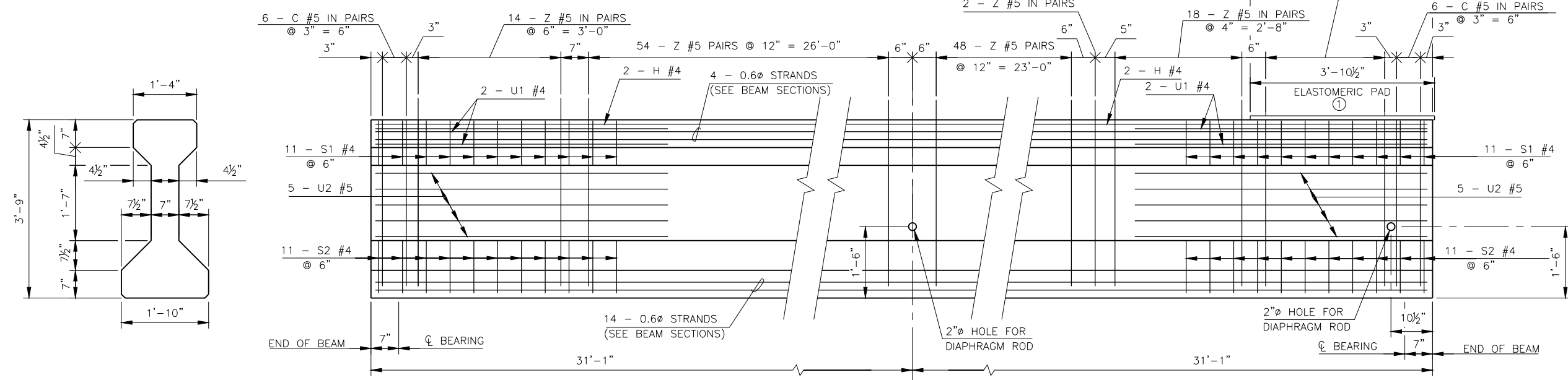
HALF PLAN AT ABUTMENT

HALF PLAN AT PIER

**PRESTRESSED CONCRETE BEAM NOTES**  
 COMPRESSIVE STRENGTH  
 PROVIDE CONCRETE WITH A COMPRESSIVE STRENGTH OF 5,250 P.S.I. AT TRANSFER OF PRESTRESS AND 7,000 P.S.I. AT 28 DAYS.  
 STRAND TYPE  
 PROVIDE LOW-RELAXATION STRANDS HAVING A NOMINAL DIAMETER OF 0.6" WITH ULTIMATE TENSILE STRENGTH OF 270 K.S.I.

① PROVIDE ELASTOMERIC PAD WITH A 50 DUROMETER HARDNESS AND CONSISTING OF A SINGLE LAYER 5/8" THICK X 1'-4" WIDE X 3'-10 1/2" LONG. EXTEND PAD 1/2" BEYOND THE END OF THE BEAM AS SHOWN.

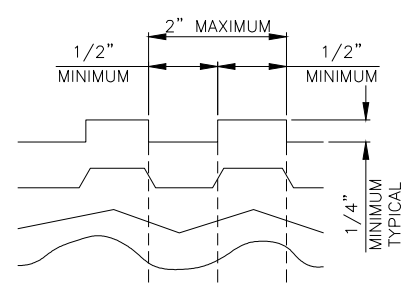
NOTE:  
 FOR EMBEDDED SOLE PLATE DETAILS, SEE SHEET 36.



END VIEW

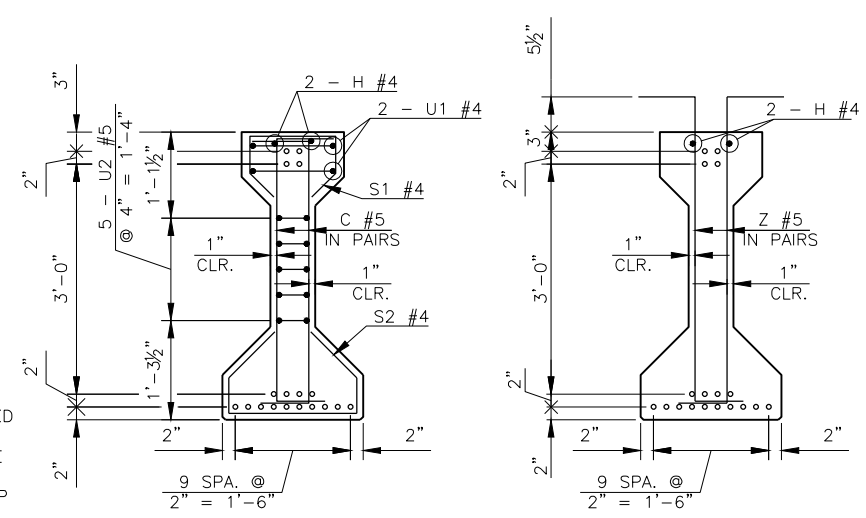
HALF ELEVATION AT ABUTMENT

HALF ELEVATION AT PIER



INTENTIONALLY ROUGHENED SURFACE DETAILS

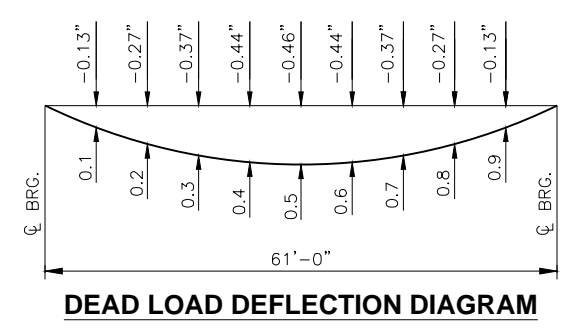
TOP SURFACE OF P.C. BEAMS SHALL BE INTENTIONALLY ROUGHENED TO A MINIMUM HEIGHT OF 1/4" OVER A MAXIMUM PITCH OF 2" MEASURED LONGITUDINALLY ALONG THE LENGTH OF THE BEAM. THE CREST AND TROUGH ASSOCIATED WITH THE HEIGHT SHALL NOT BE LESS THAN 1/2" AND SHALL EXTEND THE FULL WIDTH OF THE TOP FLANGE. PRODUCE THE ROUGHENED SURFACE BY USING A SPECIAL TROWEL TO FORM ONE OF THE SURFACES SHOWN IN THE DETAILS, BY CLEANING THE CONCRETE SURFACE WITH A STIFF WIRE BRUSH (OR BLASTING) TO THE EXTENT THAT AGGREGATE IS EXPOSED TO A HEIGHT OF 1/4", OR BY ANOTHER APPROVED METHOD. THE METHOD SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER. REPAIR ANY DAMAGE TO THE REINFORCEMENT'S EPOXY COATING BEFORE PLACEMENT OF DECK CONCRETE.



END SECTION

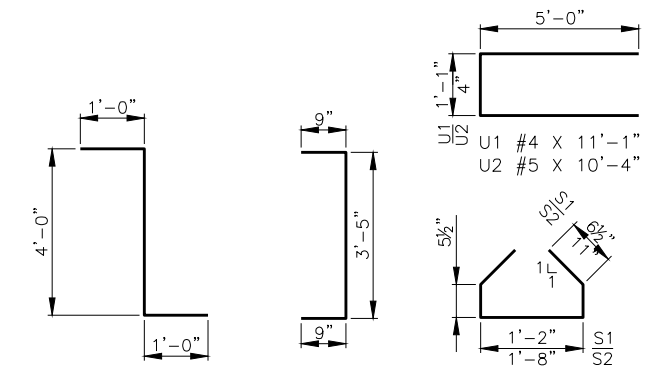
CL SECTION

BEAM SECTIONS  
 (18 - 0.6" STRANDS)



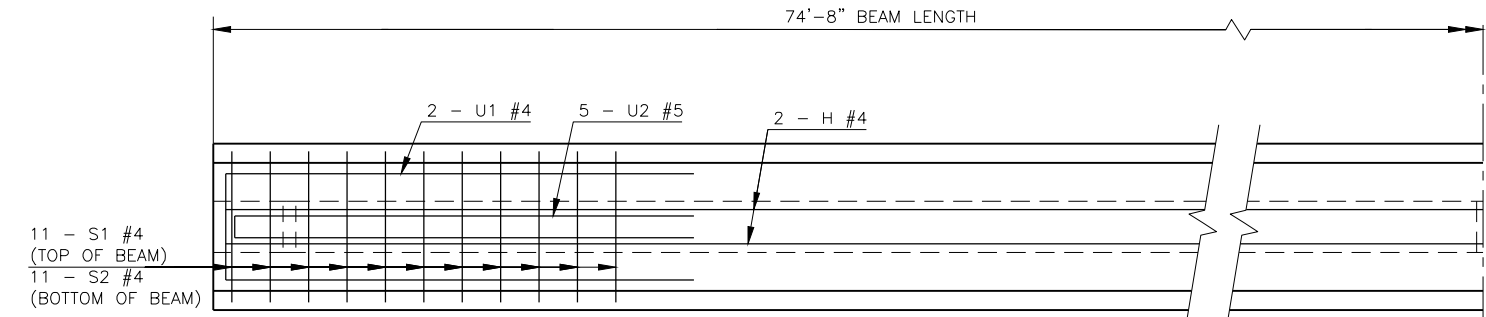
DEAD LOAD DEFLECTION DIAGRAM  
 (SPAN NO. 1 & 3)

NOTE:  
 THE DEAD LOAD DEFLECTION SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL DEFLECTIONS DUE TO DECK SLAB + HAUNCH + DIAPHRAGMS + CONCRETE PARAPET. IT DOES NOT INCLUDE THE BEAM WEIGHT OR FUTURE WEARING SURFACE.



TYPE III P.C. BEAM BAR BEND DETAILS

|         |        |   |                 |
|---------|--------|---|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK                          | WOODWARD COUNTY |
| DRAWN   | R.A.P. | BRIDGE A  |                 |
| CHECKED | J.W.H. | <b>P.C.B. DETAILS - TYPE III<br/>SPAN NO. 1 AND 3</b> |                 |
| APPROV. | T.A.C. |   |                 |
| SQUAD   | CEC    |   |                 |
|         |        | JOB PIECE NO. 28825(04)                               | SHEET NO. 35    |

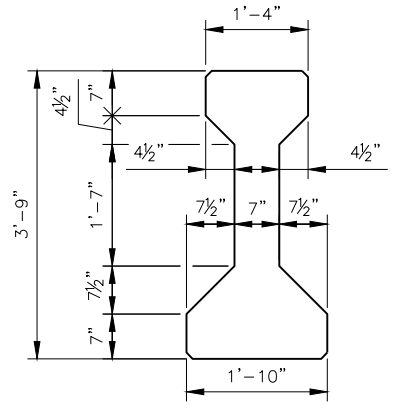


**PLAN**

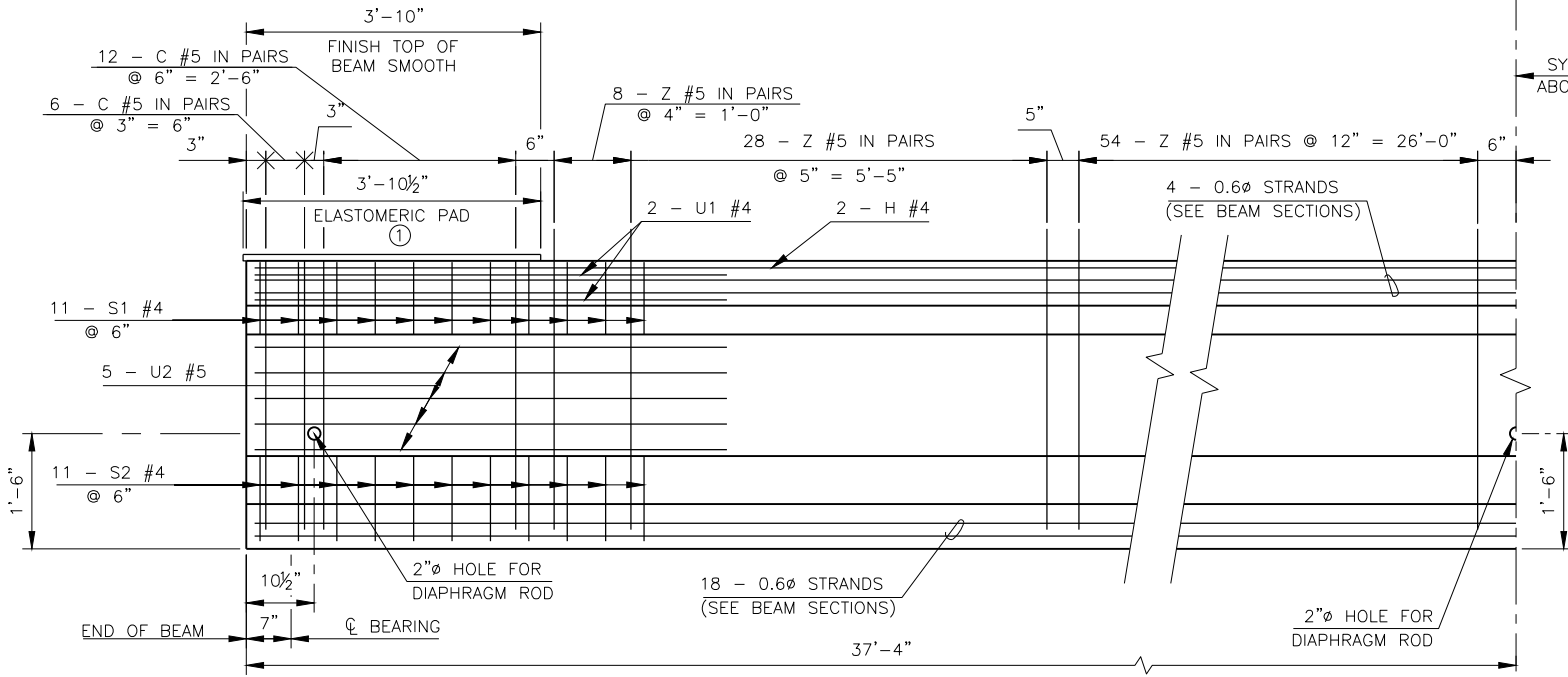
**PRESTRESSED CONCRETE BEAM NOTES**

COMPRESSIVE STRENGTH  
 PROVIDE CONCRETE WITH A COMPRESSIVE STRENGTH OF 7,000 P.S.I. AT TRANSFER OF PRESTRESS AND 10,000 P.S.I. AT 28 DAYS.  
 STRAND TYPE  
 PROVIDE LOW-RELAXATION STRANDS HAVING A NOMINAL DIAMETER OF 0.6" WITH ULTIMATE TENSILE STRENGTH OF 270 K.S.I.

- ① PROVIDE ELASTOMERIC PAD WITH A 50 DUROMETER HARDNESS AND CONSISTING OF A SINGLE LAYER 5/8" THICK X 1'-4" WIDE X 3'-10 1/2" LONG. EXTEND PAD 1/2" BEYOND THE END OF THE BEAM AS SHOWN.

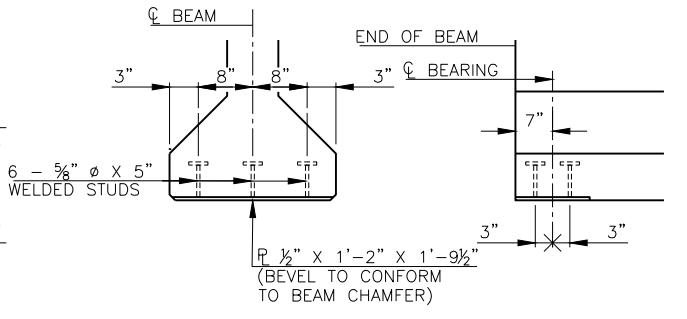


**END VIEW**



**ELEVATION**

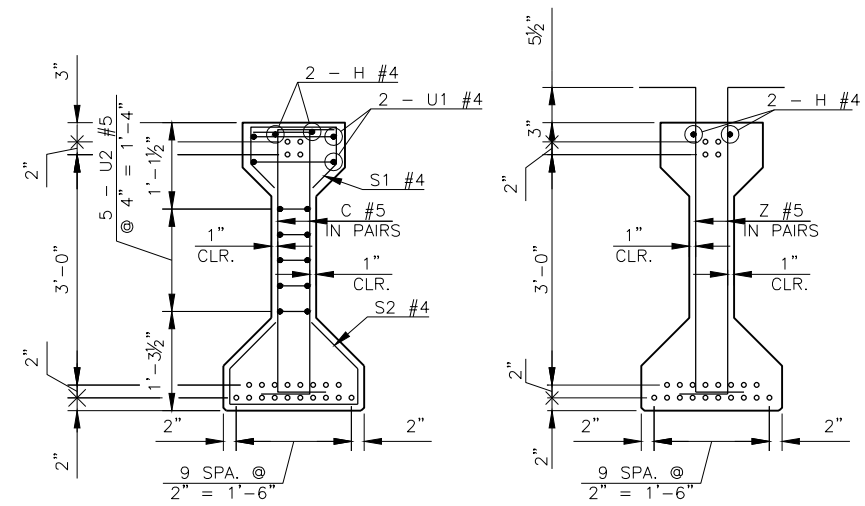
SYMMETRICAL ABOUT C BEAM



**END VIEW**

**ELEVATION**

**EMBEDDED SOLE PLATE DETAILS**

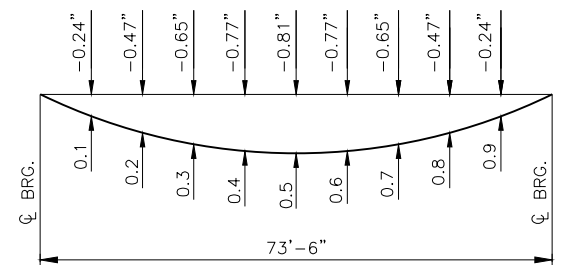


**END SECTION**

**C SECTION**

**BEAM SECTIONS**  
(22 - 0.6" STRANDS)

NOTE:  
 FOR INTENTIONALLY ROUGHENED SURFACE DETAILS AND BAR BENDS, SEE SHEET 35.

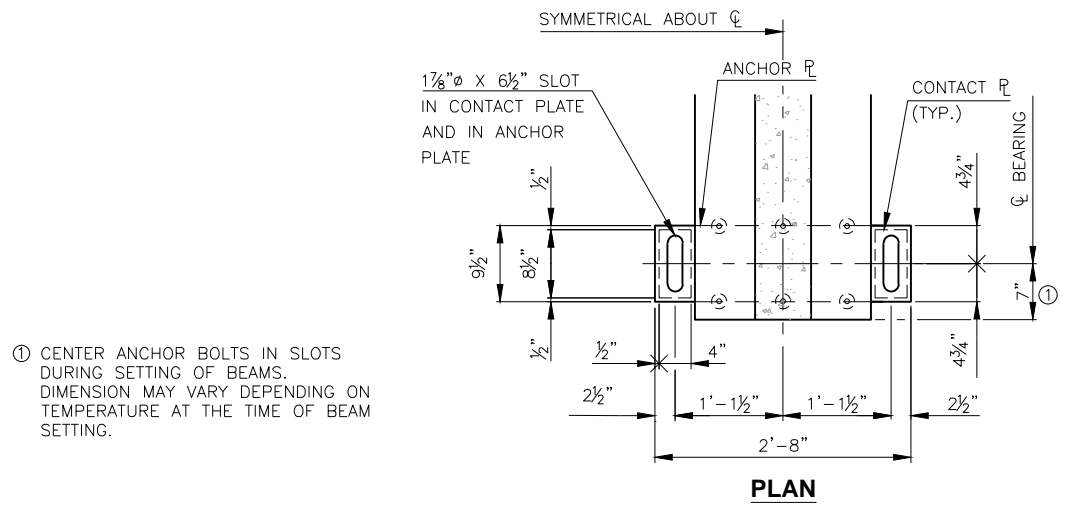


**DEAD LOAD DEFLECTION DIAGRAM**

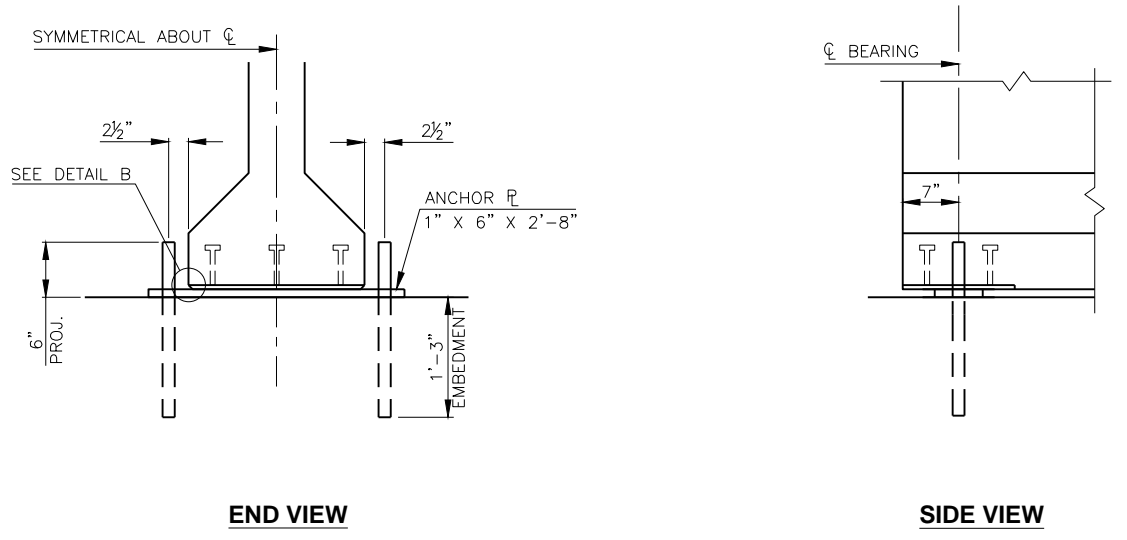
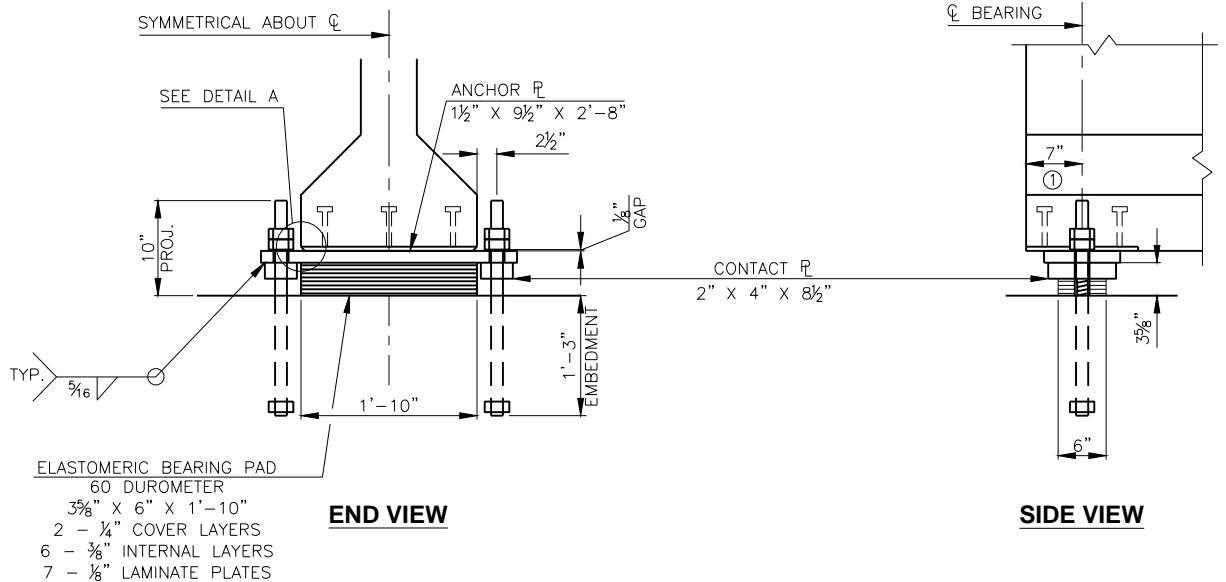
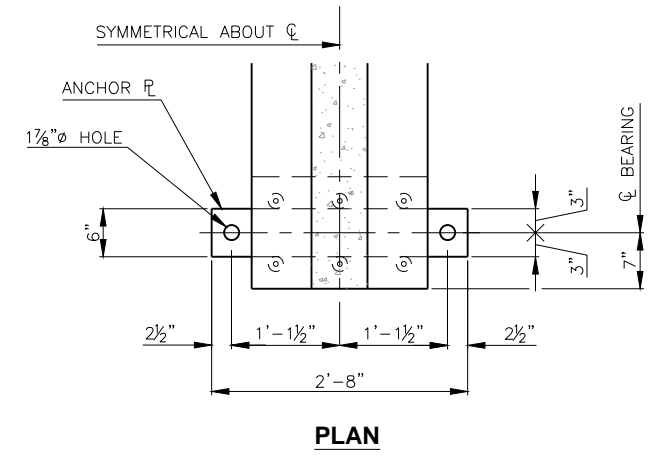
(SPAN NO. 2)

NOTE:  
 THE DEAD LOAD DEFLECTION SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL DEFLECTIONS DUE TO DECK SLAB + HAUNCH + DIAPHRAGMS + CONCRETE PARAPET. IT DOES NOT INCLUDE THE BEAM WEIGHT OR FUTURE WEARING SURFACE.

|         |        |   |                 |
|---------|--------|---|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK                          | WOODWARD COUNTY |
| DRAWN   | R.A.P. | BRIDGE A  |                 |
| CHECKED | J.W.H. | <b>P.C.B. DETAILS - TYPE III</b><br><b>SPAN NO. 2</b> |                 |
| APPROV. | T.A.C. |   |                 |
| SQUAD   | CEC    |   |                 |
|         |        | JOB PIECE NO. 28825(04)                               | SHEET NO. 36    |

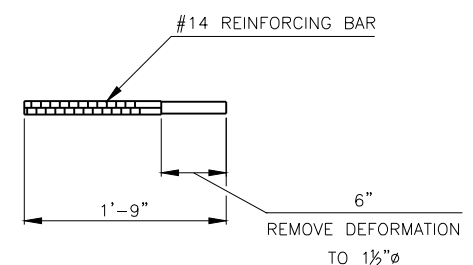
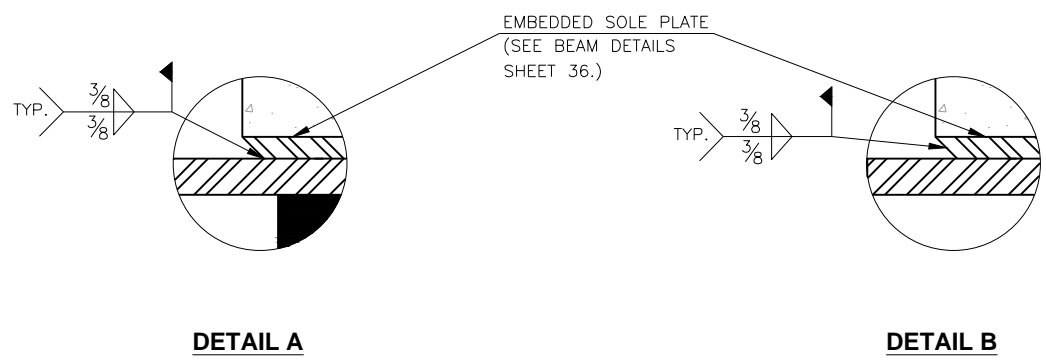
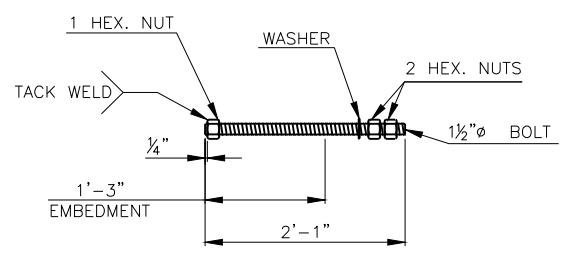


DO NOT BOND BEARING PAD TO THE ANCHOR PLATE.



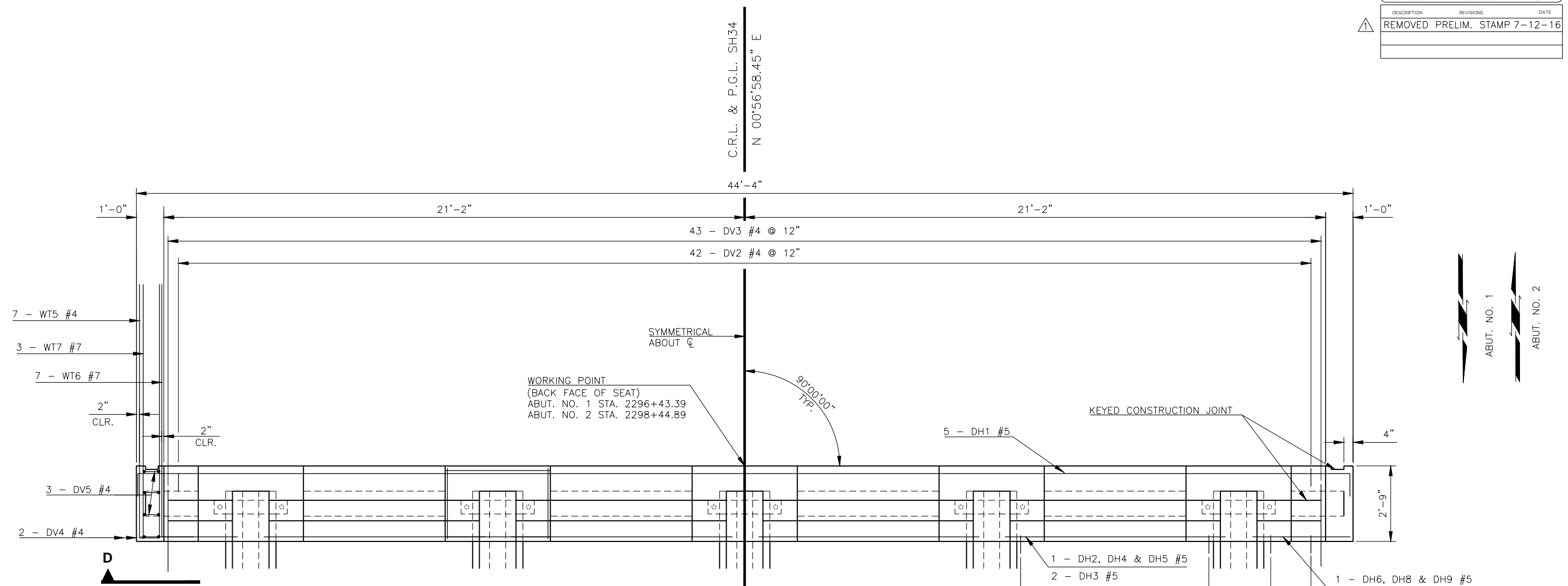
**PIER EXPANSION BEARING DETAIL**

**ABUTMENT FIXED BEARING DETAIL**



|         |        |                              |                 |
|---------|--------|------------------------------|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   | Z.M.B. | BRIDGE A                     |                 |
| CHECKED | J.W.H. | <b>BEARING DETAILS</b>       |                 |
| APPROV. | T.A.C. |                              |                 |
| SQUAD   | CEC    |                              |                 |
|         |        | JOB PIECE NO. 28825(04)      | SHEET NO. 37    |

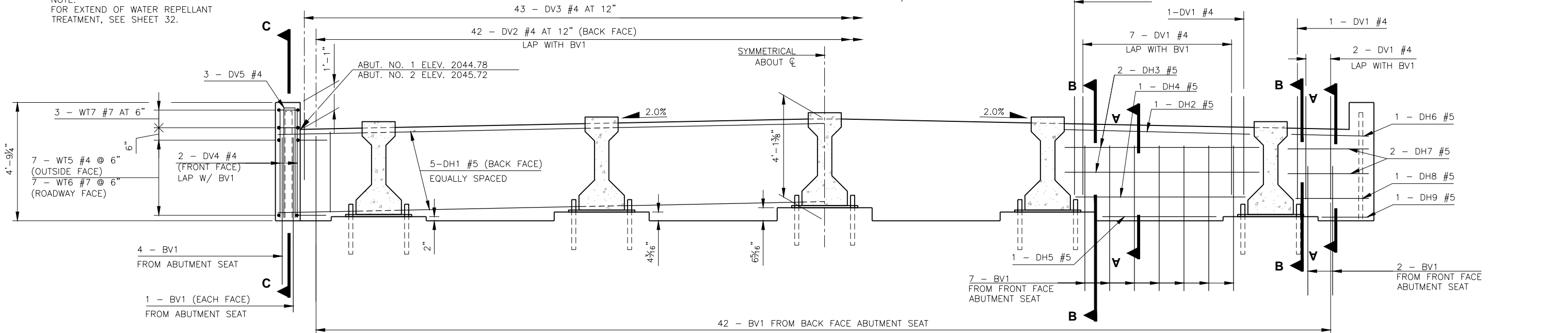
C.R.L. & P.C.L. SH34  
N 00°56'58.45" E



**DIAPHRAGM PLAN**  
(ABUTMENT NO. 1 SHOWN,  
ABUTMENT NO. 2 OPPOSITE HAND)

NOTE:  
FOR SECTION A-A, B-B, C-C AND  
D, SEE SHEET 39.

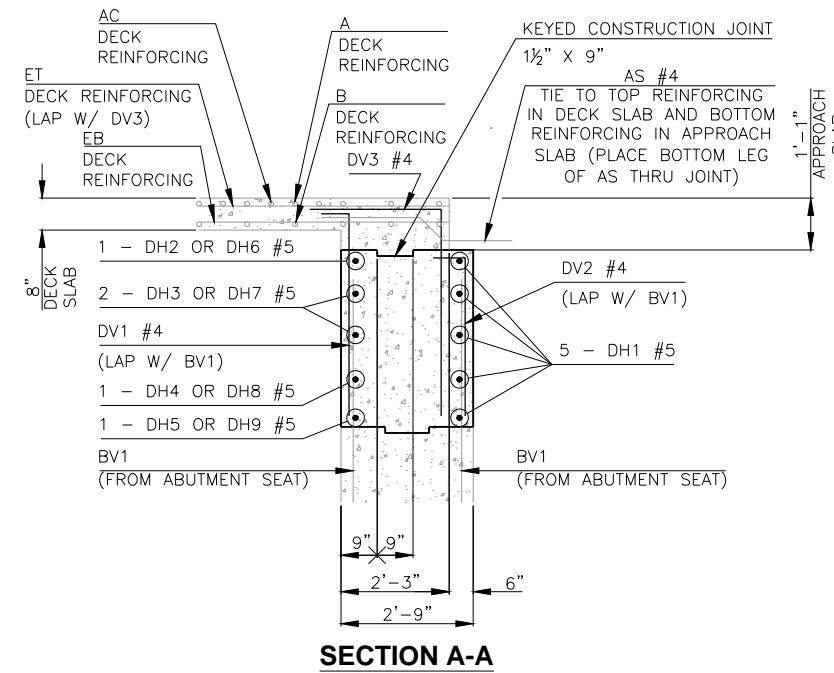
NOTE:  
FOR EXTEND OF WATER REPELLANT  
TREATMENT, SEE SHEET 32.



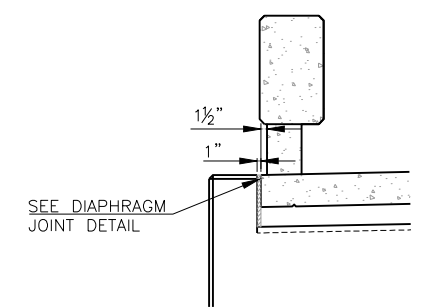
**DIAPHRAGM ELEVATION**  
(ABUTMENT NO. 1 SHOWN,  
ABUTMENT NO. 2 OPPOSITE HAND)

|         |        |  |                 |
|---------|--------|--|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK                         | WOODWARD COUNTY |
| DRAWN   | R.A.P. | BRIDGE A   |                 |
| CHECKED | J.W.H. | <b>ABUTMENT DIAPHRAGM<br/>DETAILS (SHEET 1 OF 2)</b> |                 |
| APPROV. | T.A.C. |  |                 |
| SQUAD   | CEC    |  |                 |
|         |        | JOB PIECE NO. 28825(04)                              | SHEET NO. 38    |





DECK SLAB SHOWN FOR INFORMATIONAL PURPOSES ONLY. DO NOT PLACE DECK SLAB CONCRETE UNTIL THE ABUTMENT DIAPHRAGM CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH OF 3000 P.S.I.

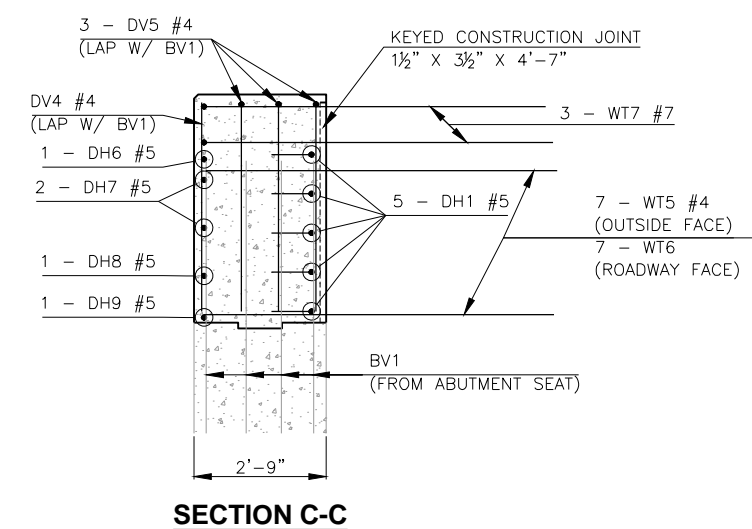
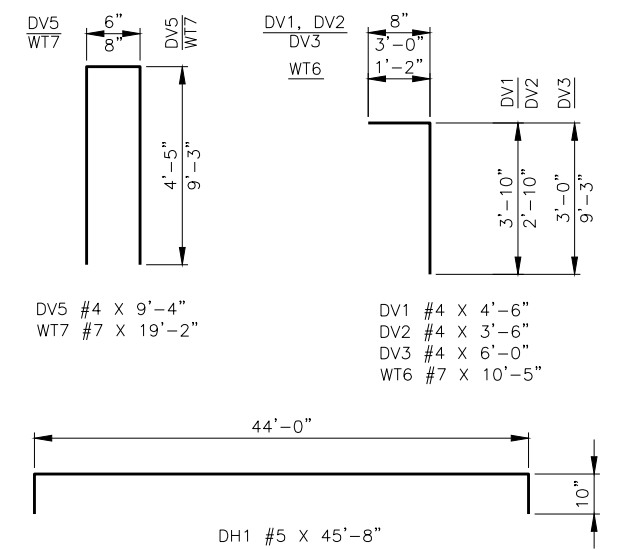
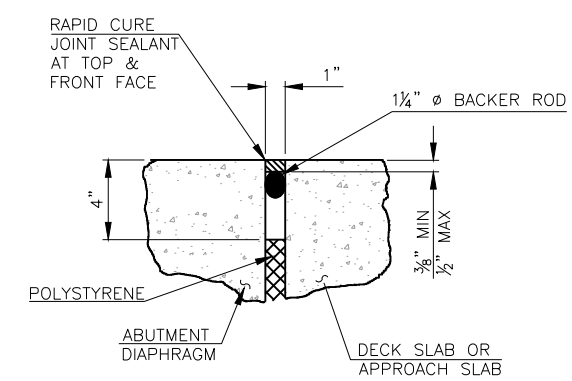
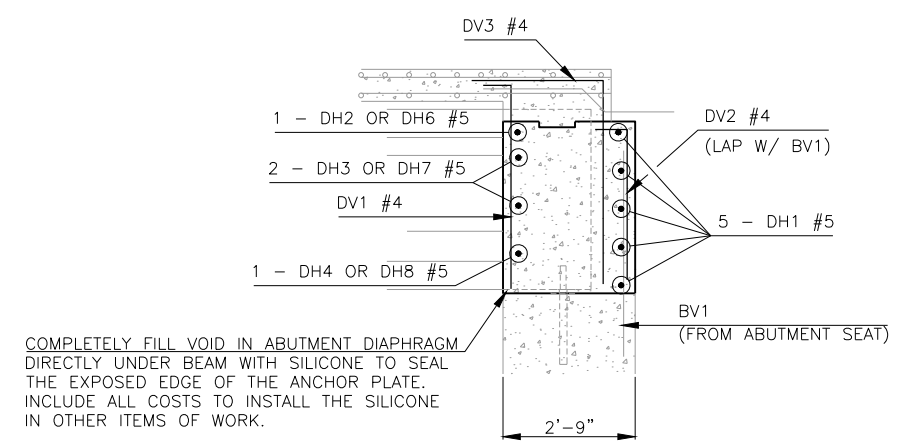


**ABUTMENT DIAPHRAGM BAR LIST**

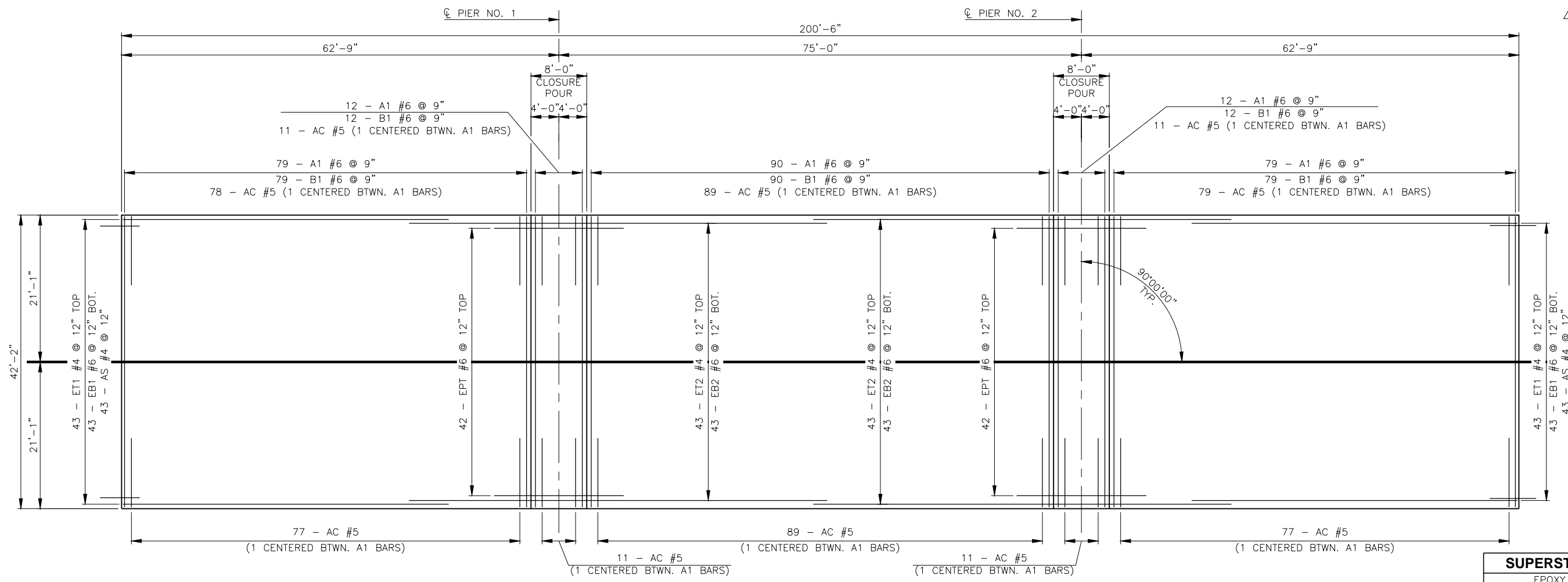
ONE SHOWN - TWO REQUIRED

EPOXY COATED REINFORCING

| MARK | SIZE | NO. | FORM | LENGTH |
|------|------|-----|------|--------|
| DV1  | #4   | 42  | BNT. | 4'-6"  |
| DV2  | #4   | 42  | BNT. | 3'-6"  |
| DV3  | #4   | 43  | BNT. | 6'-0"  |
| DV4  | #4   | 4   | STR. | 4'-5"  |
| DV5  | #4   | 6   | BNT. | 9'-4"  |
| DH1  | #5   | 5   | BNT. | 45'-8" |
| DH2  | #5   | 4   | STR. | 7'-2"  |
| DH3  | #5   | 8   | STR. | 7'-11" |
| DH4  | #5   | 4   | STR. | 6'-8"  |
| DH5  | #5   | 4   | STR. | 4'-6"  |
| DH6  | #5   | 2   | STR. | 3'-2"  |
| DH7  | #5   | 4   | STR. | 3'-6"  |
| DH8  | #5   | 2   | STR. | 2'-11" |
| DH9  | #5   | 2   | STR. | 1'-8"  |
| WT5  | #4   | 14  | STR. | 5'-9"  |
| WT6  | #7   | 14  | BNT. | 10'-5" |
| WT7  | #7   | 6   | BNT. | 19'-2" |



| DESCRIPTION           | REVISIONS | DATE    |
|-----------------------|-----------|---------|
| REMOVED PRELIM. STAMP |           | 7-12-16 |



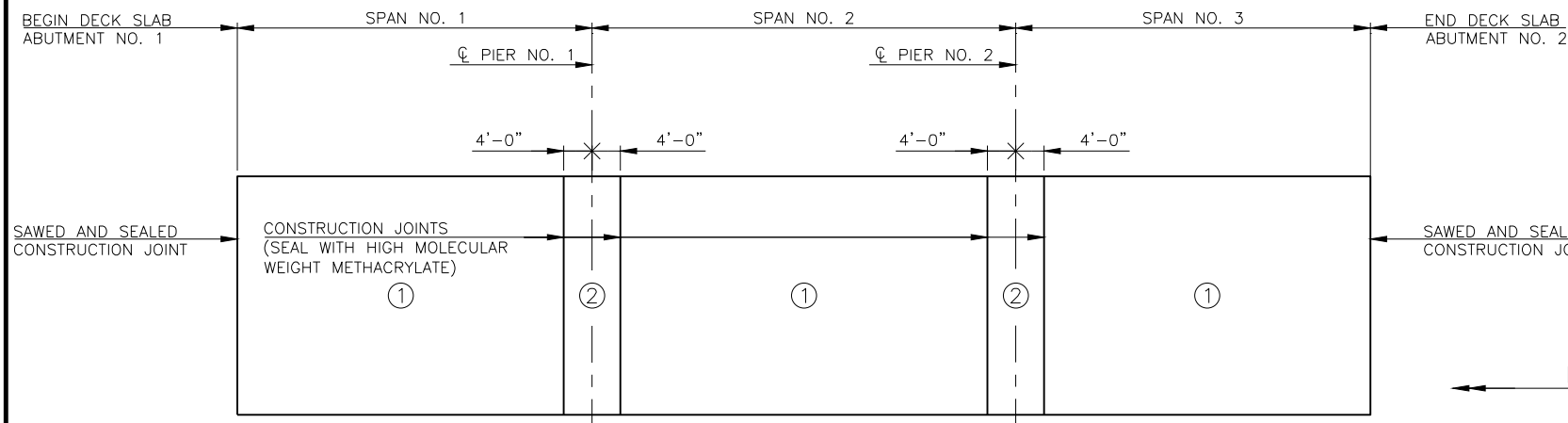
C.R.L. & P.G.L. SH34  
N 00°56'58.45" E

**SLAB REINFORCING PLAN**

**SUPERSTRUCTURE BAR LIST**

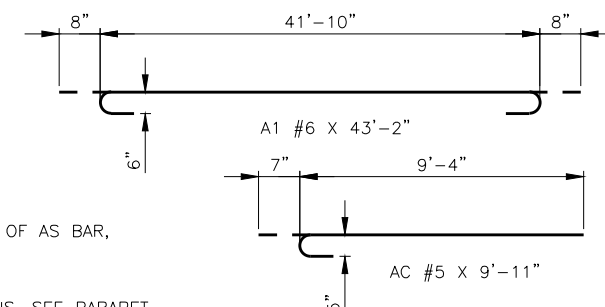
| EPOXY COATED REINFORCING |      |     |      |         |
|--------------------------|------|-----|------|---------|
| MARK                     | SIZE | NO. | FORM | LENGTH  |
| A1                       | #6   | 272 | BNT. | 43'-2"  |
| AC                       | #5   | 534 | BNT. | 9'-11"  |
| AS                       | #4   | 86  | BNT. | 5'-0"   |
| B1                       | #6   | 272 | STR. | 41'-10" |
| EB1                      | #6   | 86  | STR. | 45'-11" |
| EB2                      | #6   | 86  | STR. | 60'-0"  |
| EPT                      | #6   | 84  | STR. | 12'-0"  |
| ET1                      | #4   | 86  | STR. | 43'-2"  |
| ET2                      | #4   | 86  | STR. | 60'-0"  |
| F1                       | #4   | 168 | STR. | 8'-1"   |
| SR1                      | #5   | 864 | BNT. | 4'-1"   |
| U1                       | #4   | 252 | BNT. | 4'-1"   |

- ① PROVIDE CONTINUOUS REINFORCING THROUGH CONSTRUCTION JOINTS AT PIERS. DO NOT LAP WITHIN 10'-0" OF CENTERLINE OF PIER. MINIMUM LAP LENGTH OF EB1 TO EB2 IS 3'-10".
- ② PROVIDE CONTINUOUS REINFORCING THROUGH CONSTRUCTION JOINTS AT PIERS. DO NOT LAP WITHIN 10'-0" OF CENTERLINE OF PIER. MINIMUM LAP LENGTH OF ET1 TO ET2 IS 2'-0".
- ③ FOR BAR BEND, SEE STD. TR4-2.

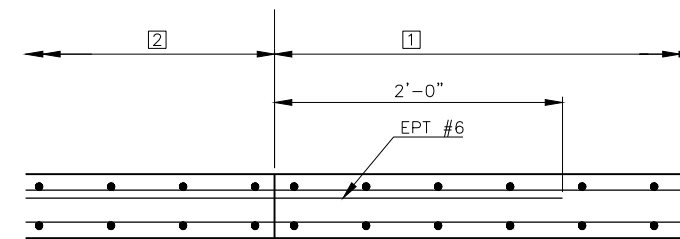


**DECK SLAB POURING SEQUENCE DIAGRAM**

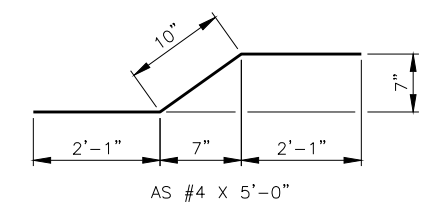
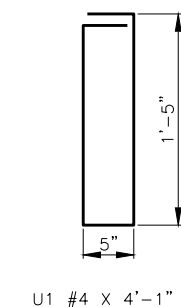
NOTE:  
THE DECK SLAB IS DIVIDED INTO SECTIONS BETWEEN CONSTRUCTION JOINTS AS SHOWN. PLACE THE DECK SLAB CONCRETE OF EACH SECTION IN THE NUMERICAL SEQUENCE INDICATED. SECTIONS OF THE DECK SLAB WITH THE SAME NUMBER MAY BE PLACED IN ANY ORDER. SECTIONS IN SEQUENCE 2 MAY BE PLACED BEFORE ALL OF THE SEQUENCE 1 ARE COMPLETED IF SEQUENCE 1 AT THE COMMON CONSTRUCTION JOINT IS COMPLETE.



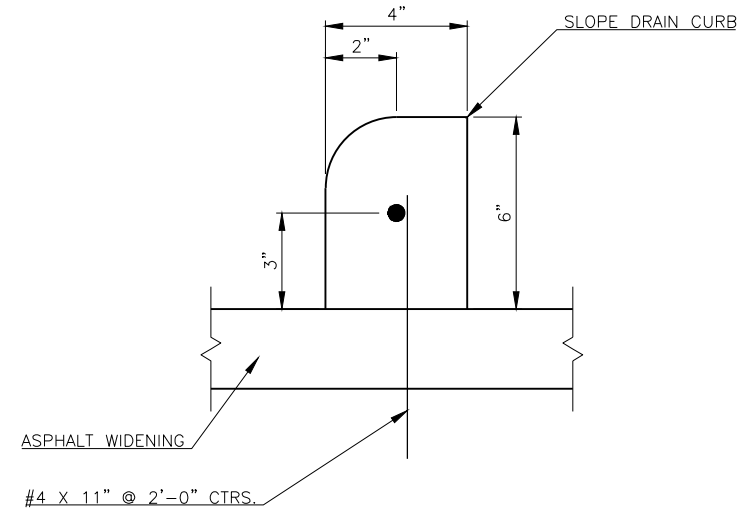
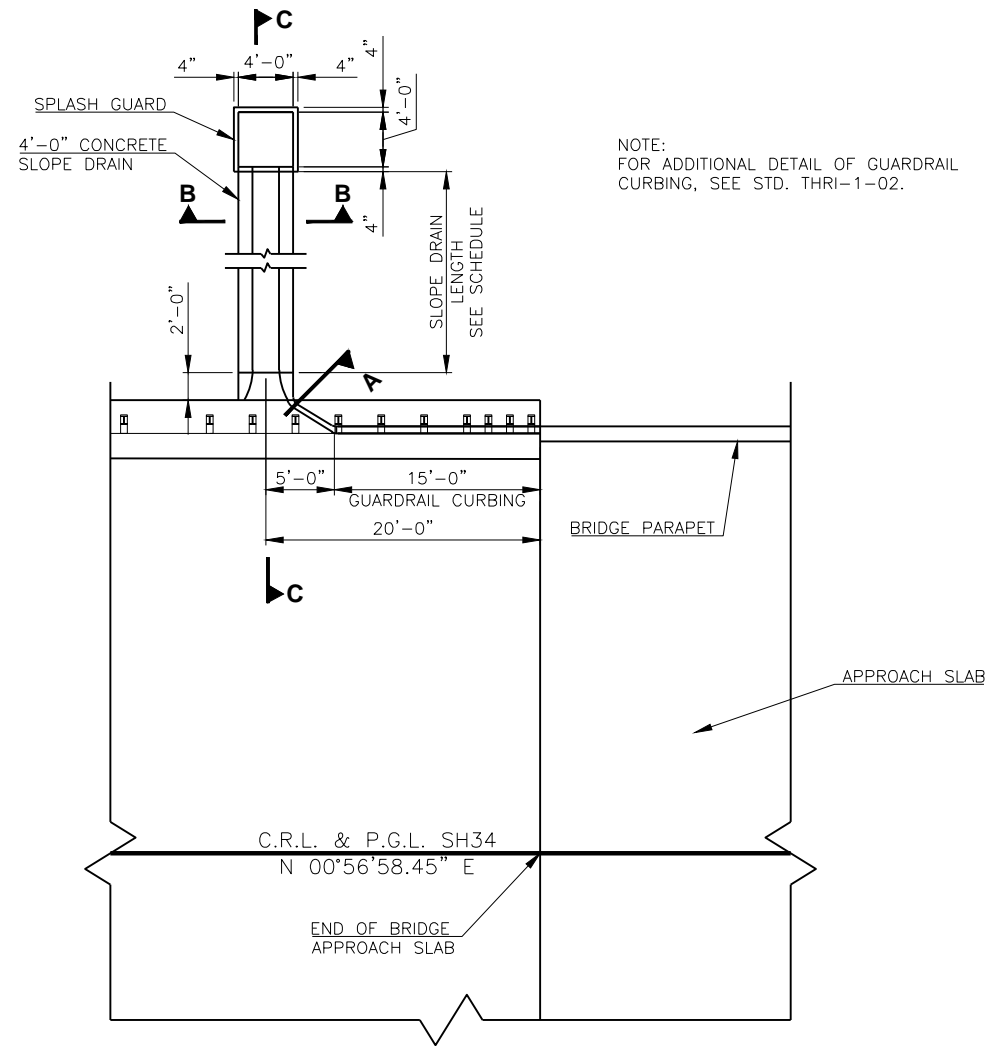
NOTE:  
FOR ADDITIONAL DETAIL OF AS BAR, SEE SHEET 39.  
NOTE:  
FOR SR1 BAR LOCATIONS, SEE PARAPET ELEVATION ON SHEET 33.



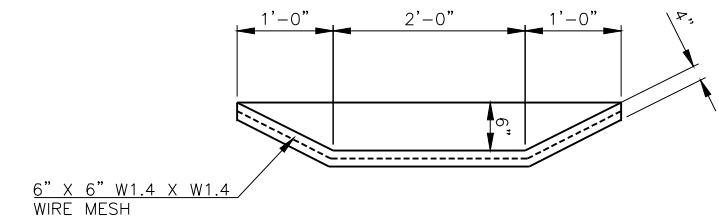
**CONSTRUCTION JOINT DETAIL**



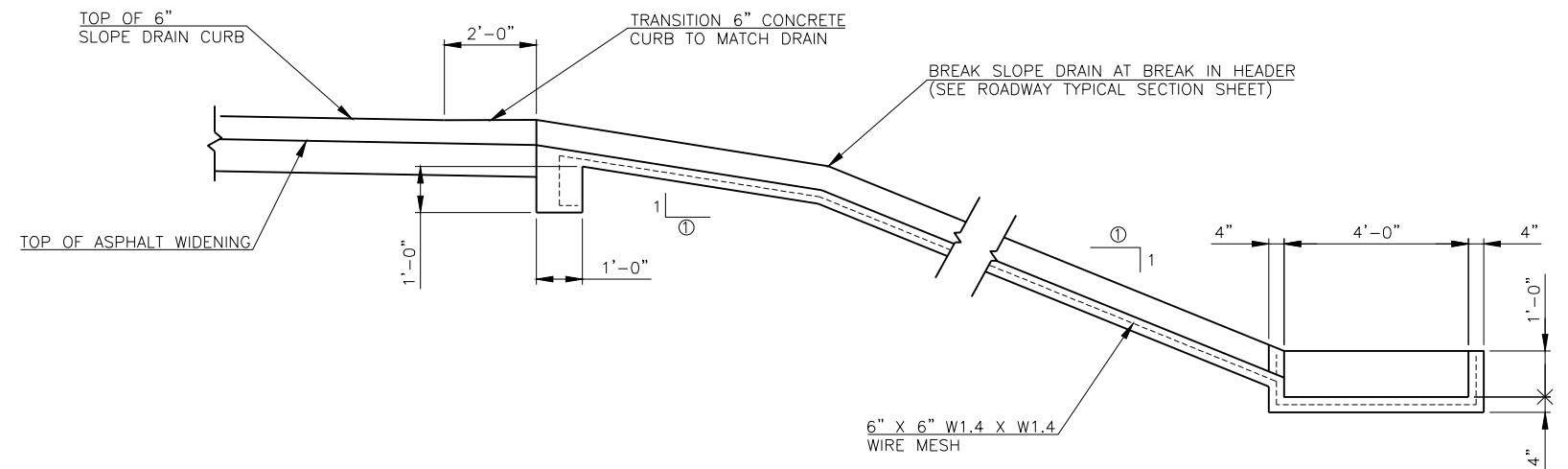
|         |        |                              |                 |
|---------|--------|------------------------------|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   | R.A.P. | BRIDGE A                     |                 |
| CHECKED | J.W.H. | <b>SLAB REINFORCING PLAN</b> |                 |
| APPROV. | T.A.C. |                              |                 |
| SQUAD   | CEC    |                              |                 |
|         |        | JOB PIECE NO. 28825(04)      | SHEET NO. 40    |



SECTION A



SECTION B-B



SECTION C-C

NOTE:  
 FOR DETAILS OF ASPHALT ROADWAY AND WIDENING SEE ROADWAY PLANS.

SLOPE DRAINS, SPLASH BASINS AND SLOPE DRAIN CURB SHALL BE CONSTRUCTED USING CLASS 'C' CONCRETE AS SHOWN ON THIS SHEET. LENGTH OF SLOPE DRAIN SHOWN IN THE PLANS IS ESTIMATED. ACTUAL LENGTH TO BE DETERMINED IN THE FIELD BY THE ENGINEER. ALL COSTS OF THE SLOPE DRAINS, SPLASH BASINS AND SLOPE DRAIN CURBS INCLUDING REINFORCEMENT SHALL BE INCLUDED IN THE BRIDGE PAY ITEM FOR "CLASS 'C' CONCRETE".

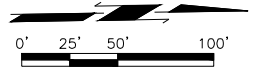
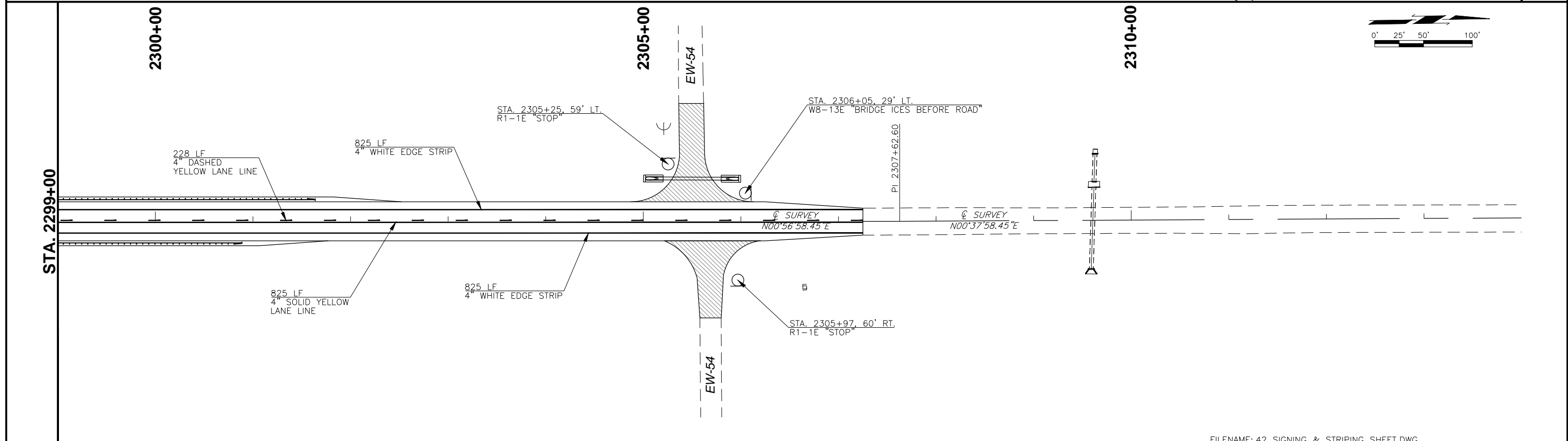
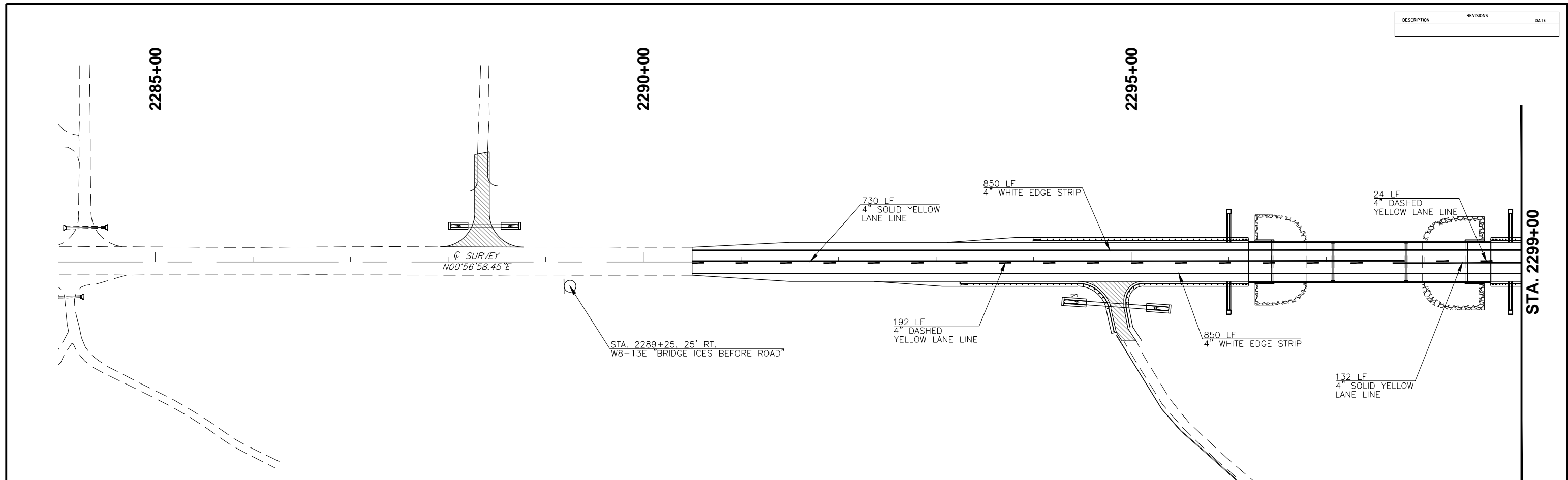
① SLOPE TO MATCH SLOPE OF HEADER

| SLOPE DRAINS SCHEDULE |                  |
|-----------------------|------------------|
| SLOPE DRAIN           | ESTIMATED LENGTH |
| ABUTMENT NO. 1 - WEST | 43'-0"           |
| ABUTMENT NO. 1 - EAST | 32'-0"           |
| ABUTMENT NO. 2 - WEST | 48'-0"           |
| ABUTMENT NO. 2 - EAST | 48'-0"           |

| SLOPE DRAIN QUANTITIES |       |       |
|------------------------|-------|-------|
| ITEM                   | UNITS | TOTAL |
| CLASS C CONCRETE       | C.Y.  | 11.0  |

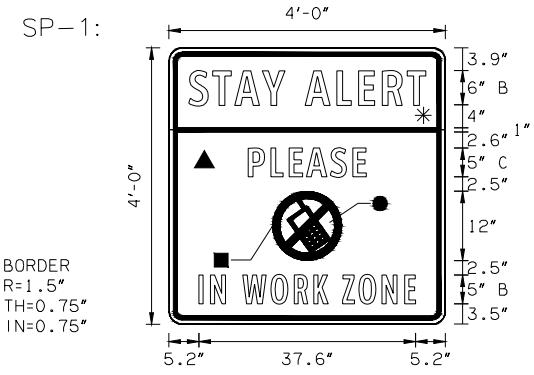
|         |        |                              |                 |
|---------|--------|------------------------------|-----------------|
| DESIGN  | J.W.H. | SH34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   | Z.M.B. | BRIDGE A                     |                 |
| CHECKED | J.W.H. | <b>SLOPE DRAIN DETAILS</b>   |                 |
| APPROV. | T.A.C. |                              |                 |
| SQUAD   | CEC    |                              |                 |
|         |        | JOB PIECE NO. 28825(04)      | SHEET NO. 41    |

| DESCRIPTION | REVISIONS | DATE |
|-------------|-----------|------|
|             |           |      |

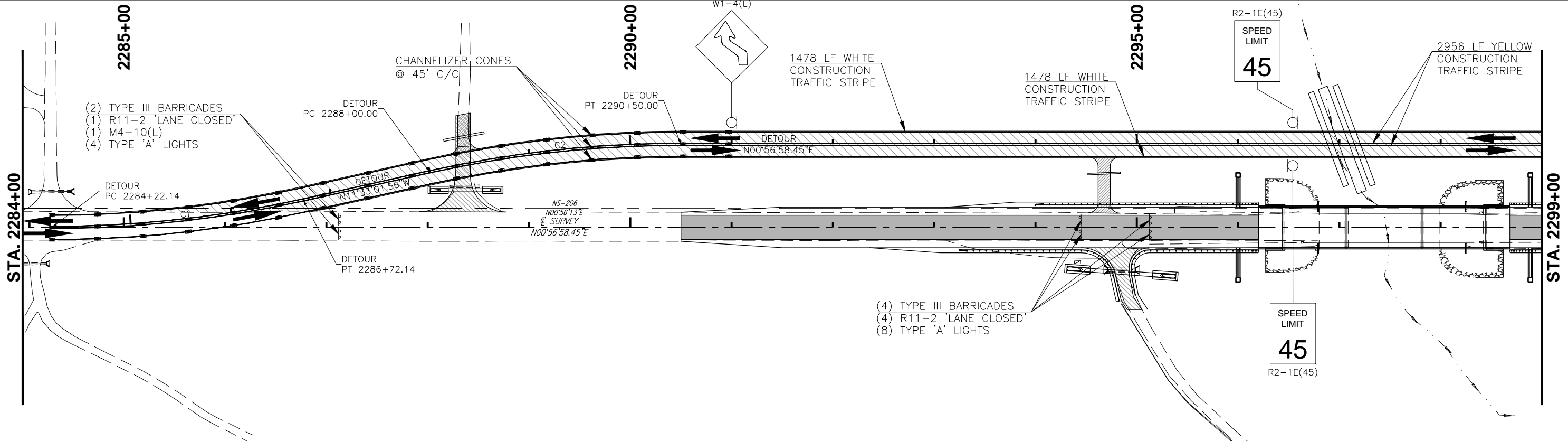
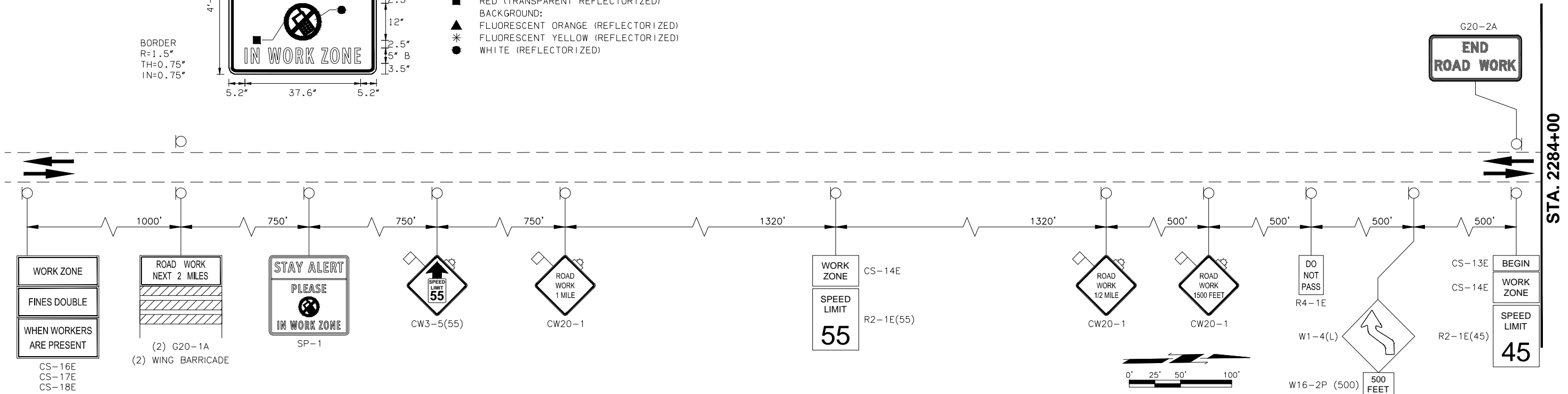


|   |   |
|---|---|
| FILENAME: 42 SIGNING & STRIPING SHEET.DWG |   |
| DESIGN                                    | SH-34 OVER S. PERSIMMON CREEK WOODWARD COUNTY |
| DRAWN                                     | <b>SIGNING &amp; STRIPING SHEET</b>           |
| CHECKED                                   |   |
| CEC                                       | STATE JOB NO. 28825(04) SHEET NO. 42          |

| DESCRIPTION | REVISIONS | DATE |
|-------------|-----------|------|
|             |           |      |



- COLOR:  
 LEGEND, SYMBOL AND BORDER:  
 BLACK (NON-REFLECTORIZED)  
 RED (TRANSPARENT REFLECTORIZED)  
 BACKGROUND:  
 FLUORESCENT ORANGE (REFLECTORIZED)  
 FLUORESCENT YELLOW (REFLECTORIZED)  
 WHITE (REFLECTORIZED)
- BLACK (NON-REFLECTORIZED)
  - ▲ FLUORESCENT ORANGE (REFLECTORIZED)
  - \* FLUORESCENT YELLOW (REFLECTORIZED)
  - WHITE (REFLECTORIZED)

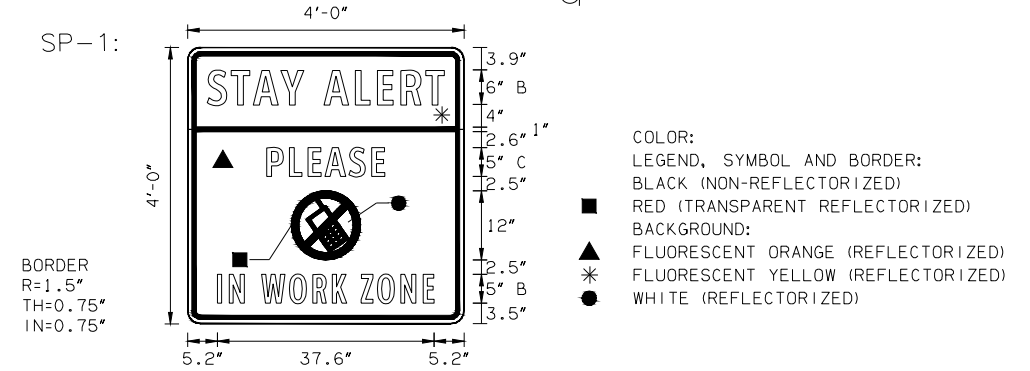
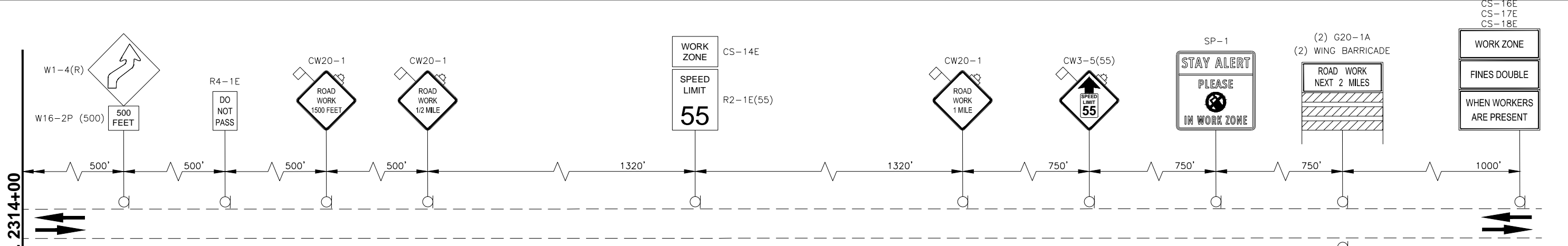
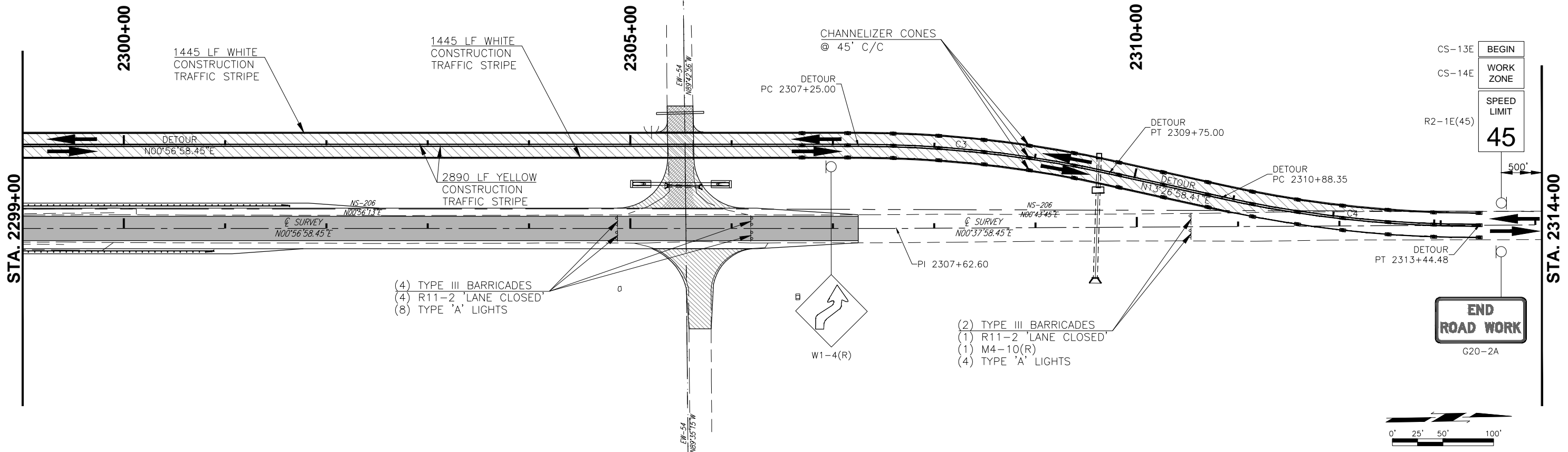


FILENAME: 44 TRAFFIC CONTROL (SHEET 2 OF 2).DWG

|         |                               |                 |
|---------|-------------------------------|-----------------|
| DESIGN  | SH-34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   |                               |                 |
| CHECKED |                               |                 |
| CEC     | STATE JOB NO. 28825(04)       | SHEET NO. 43    |

**TRAFFIC CONTROL  
(SHEET 1 OF 2)**

| DESCRIPTION | REVISIONS | DATE |
|-------------|-----------|------|
|             |           |      |

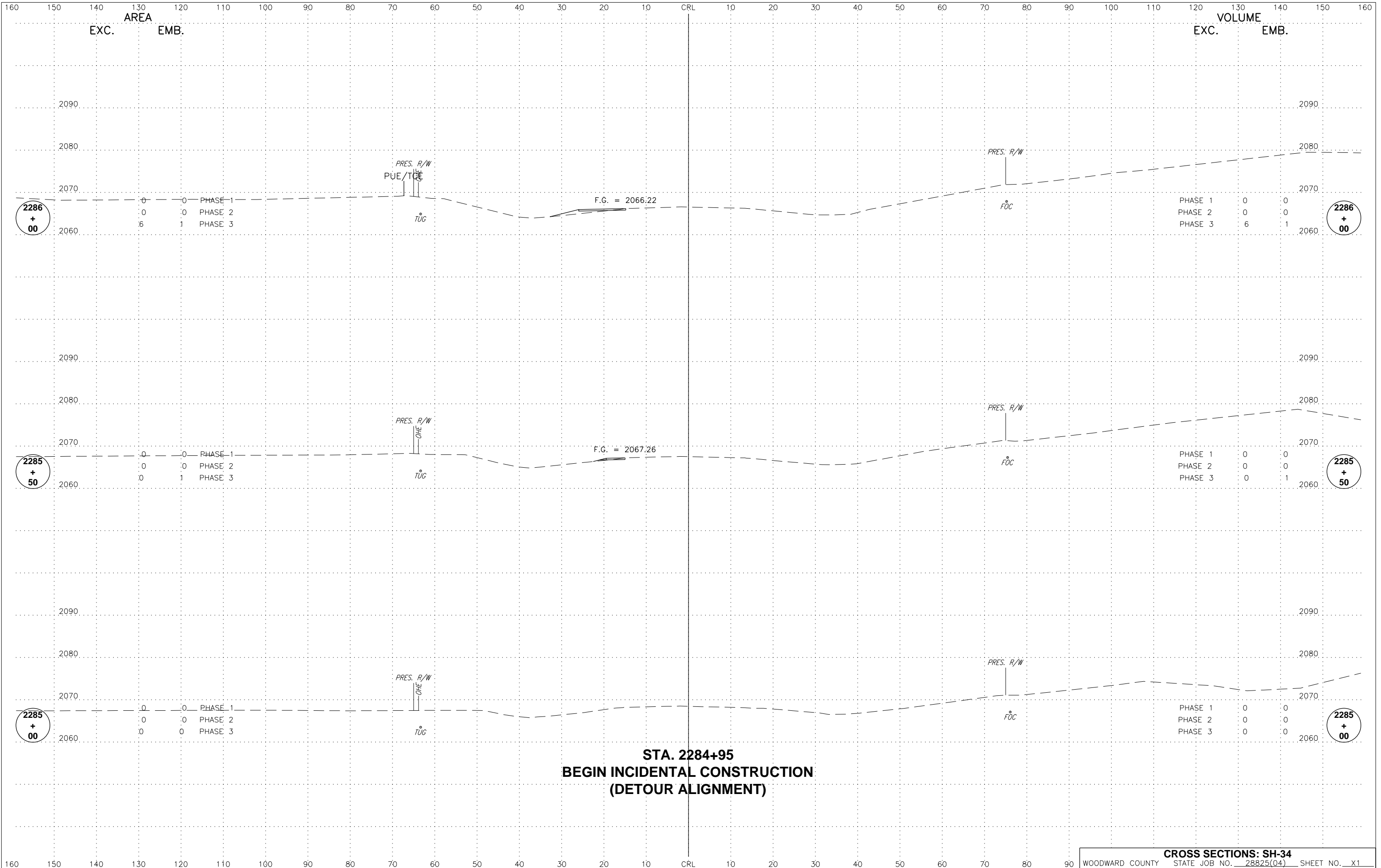


FILENAME: 44 TRAFFIC CONTROL (SHEET 2 OF 2).DWG

|         |                               |                 |
|---------|-------------------------------|-----------------|
| DESIGN  | SH-34 OVER S. PERSIMMON CREEK | WOODWARD COUNTY |
| DRAWN   |                               |                 |
| CHECKED |                               |                 |
| CEC     |                               |                 |

**TRAFFIC CONTROL  
(SHEET 2 OF 2)**

STATE JOB NO. 28825(04) SHEET NO. 44



2286  
+  
00

| AREA | PHASE 1 | PHASE 2 | PHASE 3 |
|------|---------|---------|---------|
| EXC. | 0       | 0       | 6       |
| EMB. | 0       | 0       | 1       |

F.G. = 2066.22

| VOLUME | PHASE 1 | PHASE 2 | PHASE 3 |
|--------|---------|---------|---------|
| EXC.   | 0       | 0       | 6       |
| EMB.   | 0       | 0       | 1       |

2286  
+  
00

2285  
+  
50

| AREA | PHASE 1 | PHASE 2 | PHASE 3 |
|------|---------|---------|---------|
| EXC. | 0       | 0       | 0       |
| EMB. | 0       | 0       | 1       |

F.G. = 2067.26

| VOLUME | PHASE 1 | PHASE 2 | PHASE 3 |
|--------|---------|---------|---------|
| EXC.   | 0       | 0       | 0       |
| EMB.   | 0       | 0       | 1       |

2285  
+  
50

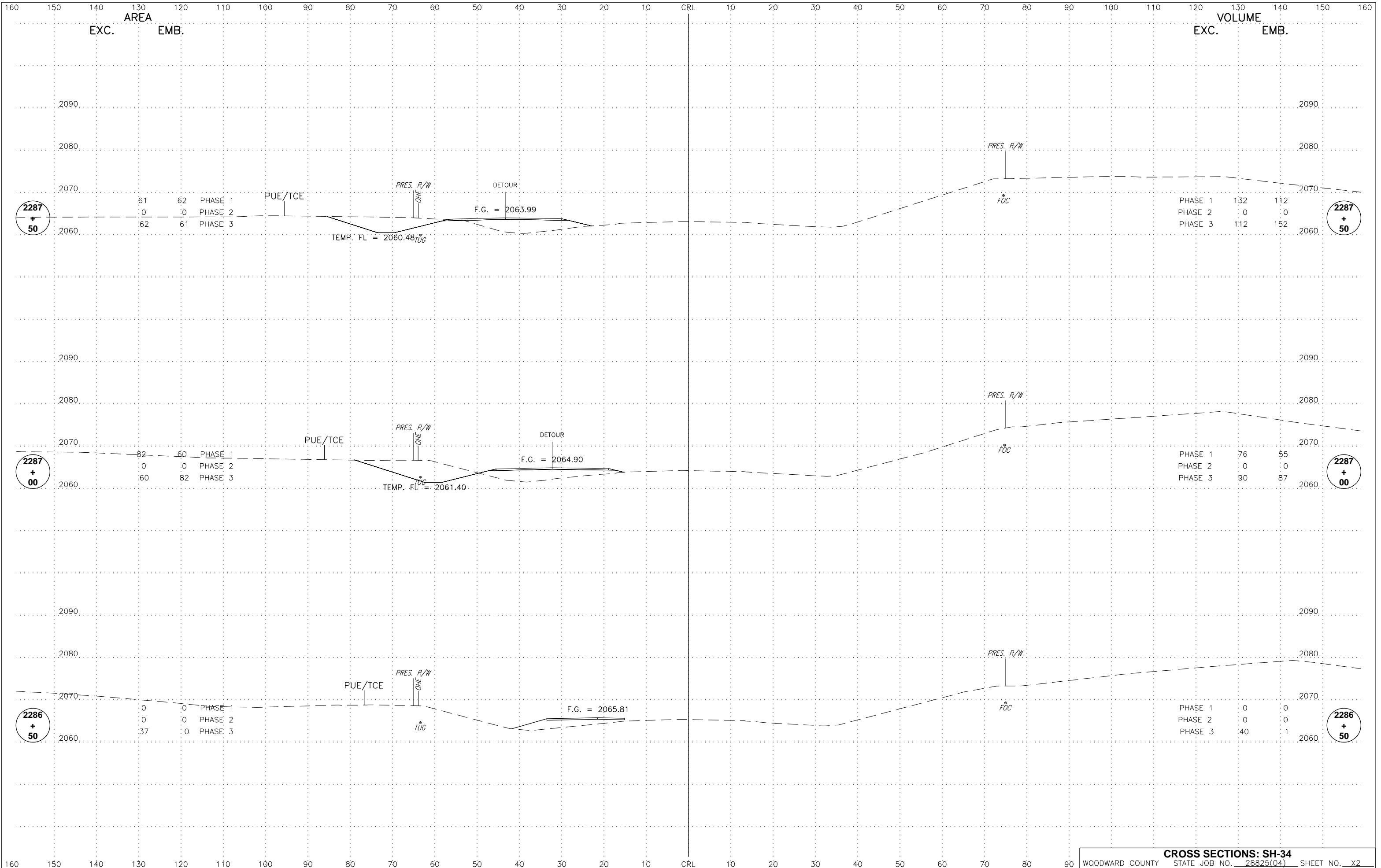
2285  
+  
00

| AREA | PHASE 1 | PHASE 2 | PHASE 3 |
|------|---------|---------|---------|
| EXC. | 0       | 0       | 0       |
| EMB. | 0       | 0       | 0       |

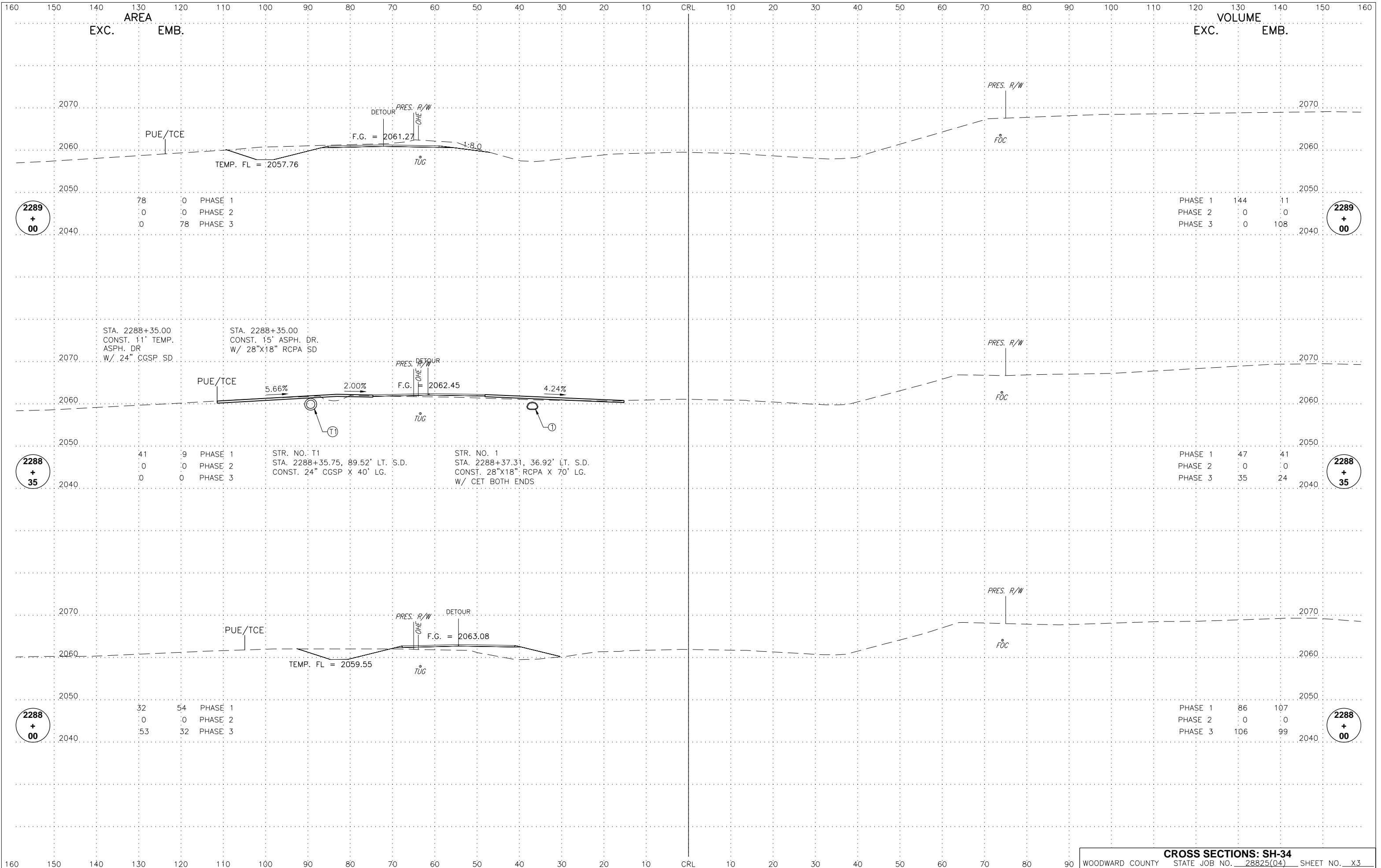
| VOLUME | PHASE 1 | PHASE 2 | PHASE 3 |
|--------|---------|---------|---------|
| EXC.   | 0       | 0       | 0       |
| EMB.   | 0       | 0       | 0       |

2285  
+  
00

**STA. 2284+95  
BEGIN INCIDENTAL CONSTRUCTION  
(DETOUR ALIGNMENT)**







2289  
+  
00

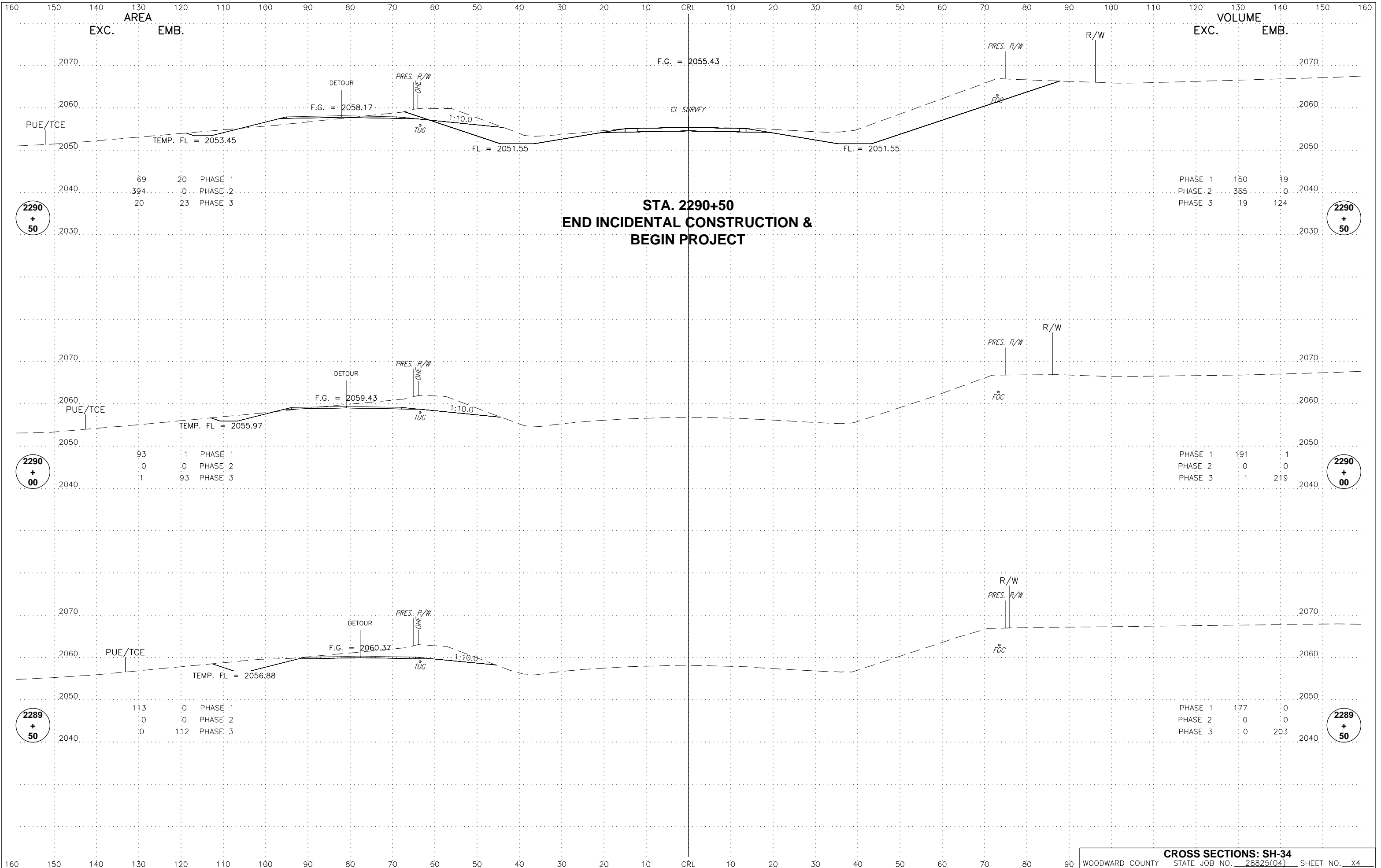
2289  
+  
00

2288  
+  
35

2288  
+  
35

2288  
+  
00

2288  
+  
00



**STA. 2290+50  
END INCIDENTAL CONSTRUCTION &  
BEGIN PROJECT**

2290  
+  
50

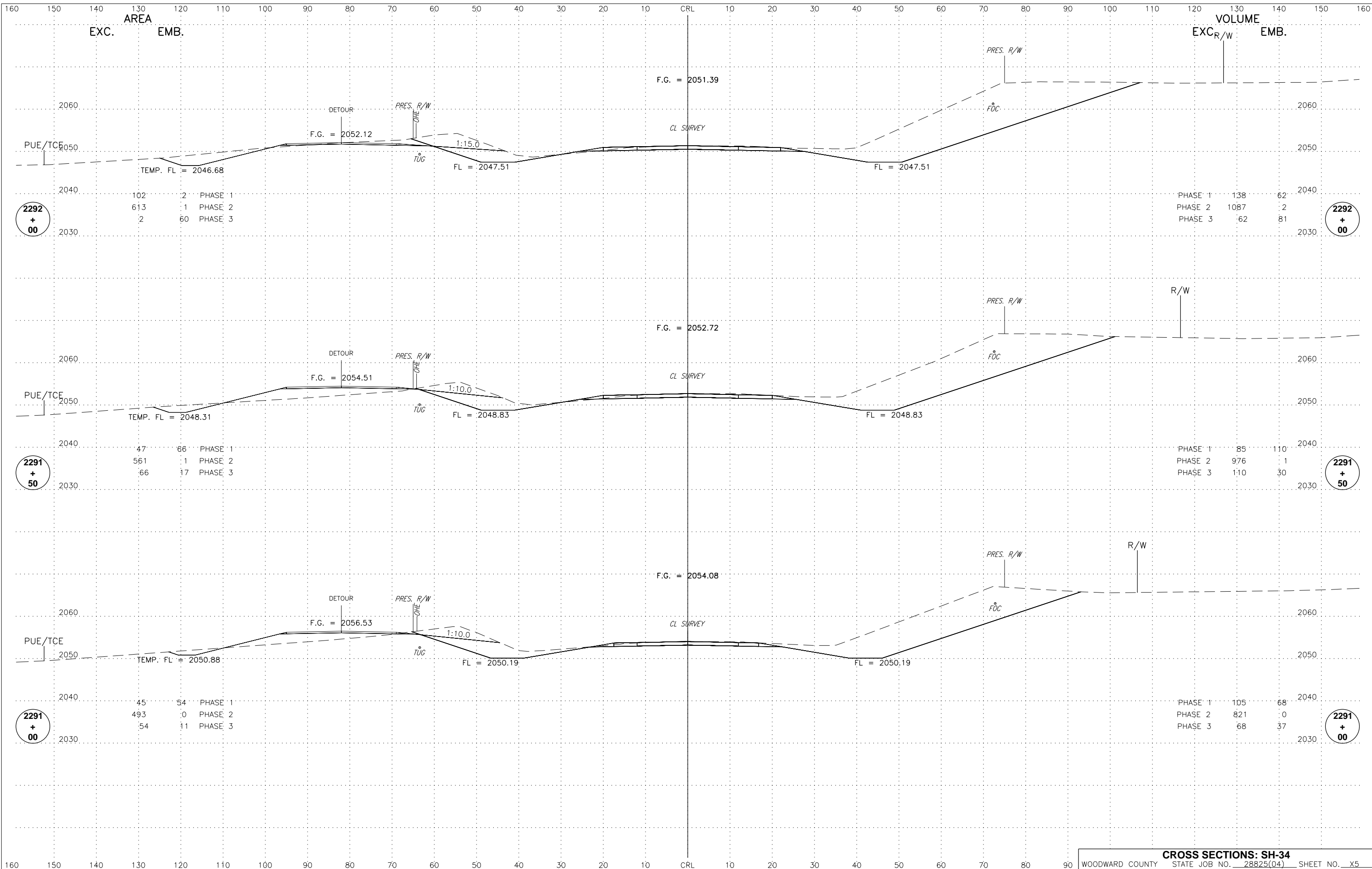
2290  
+  
50

2290  
+  
00

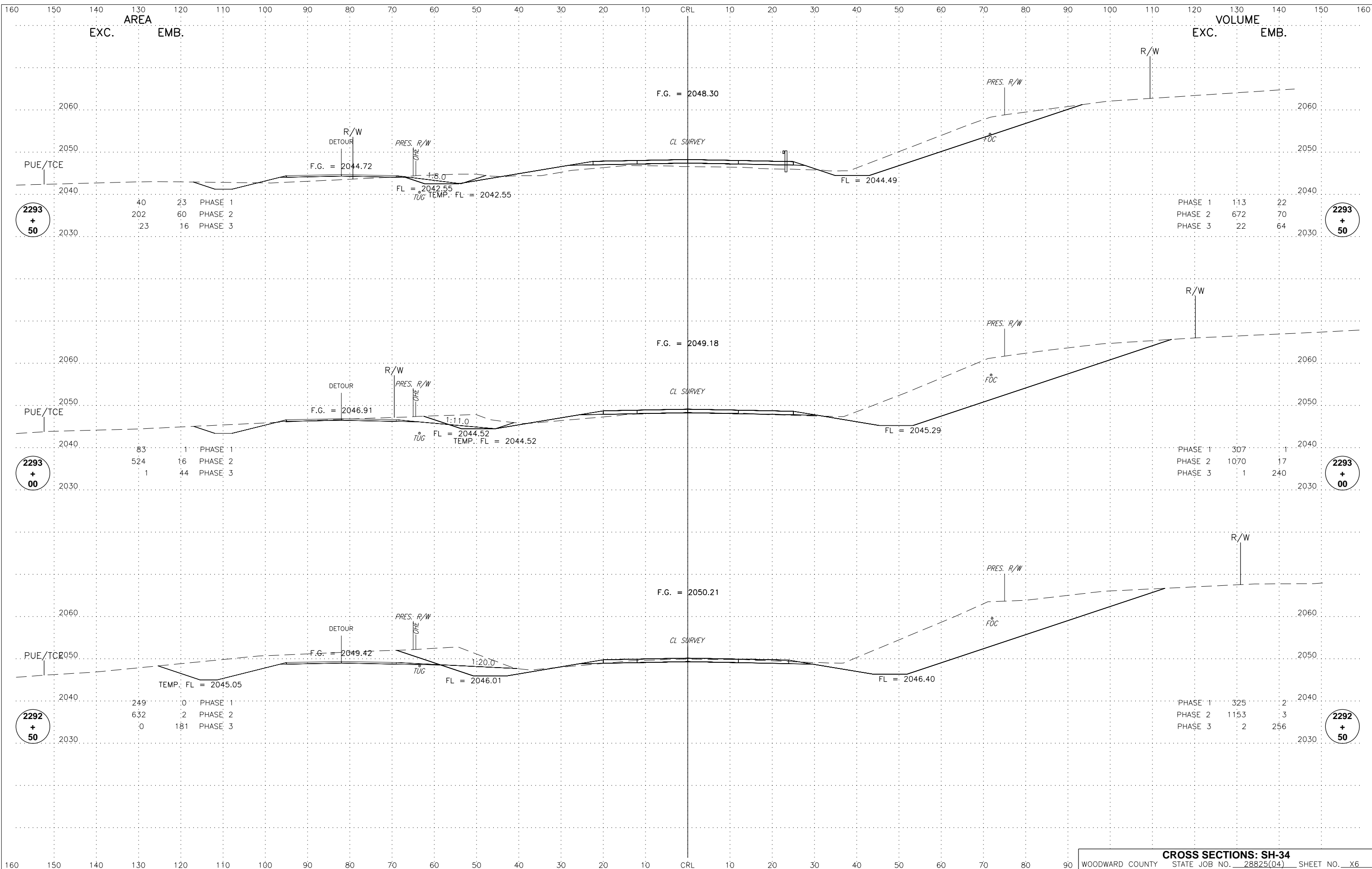
2290  
+  
00

2289  
+  
50

2289  
+  
50



**CROSS SECTIONS: SH-34**



2293  
+  
50

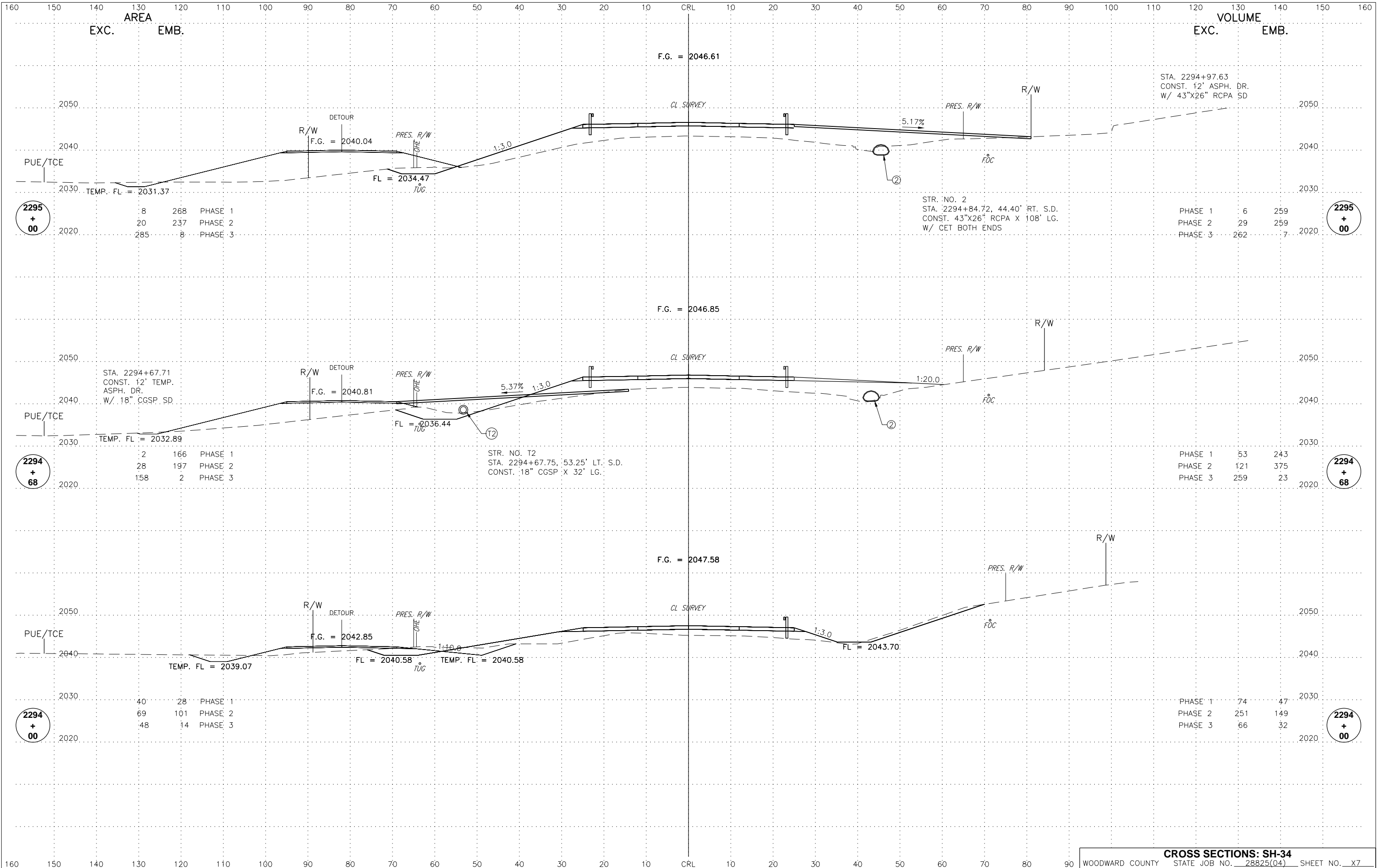
2293  
+  
50

2293  
+  
00

2293  
+  
00

2292  
+  
50

2292  
+  
50



2295  
+  
00

2295  
+  
00

2294  
+  
68

2294  
+  
68

2294  
+  
00

2294  
+  
00

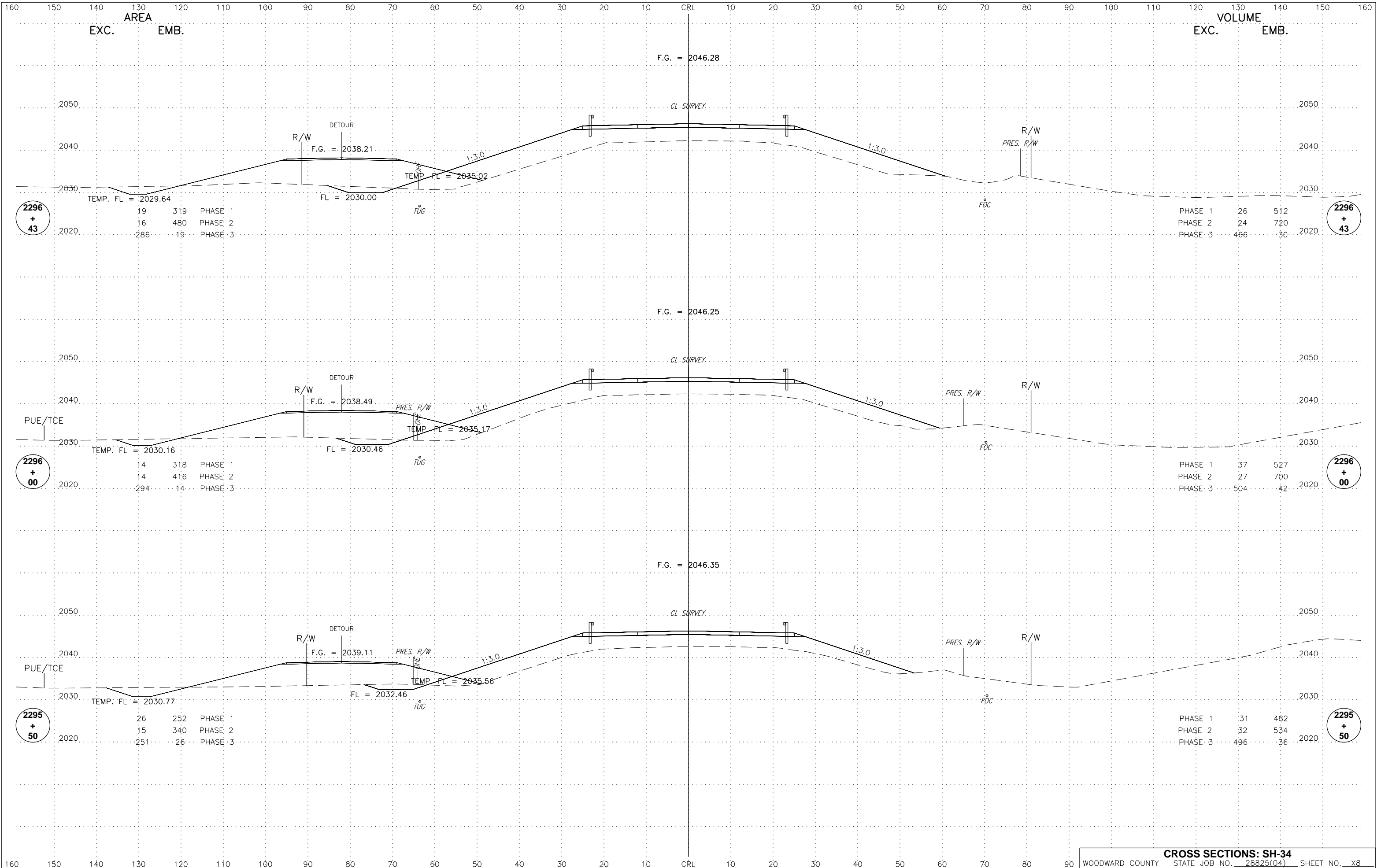
STA. 2294+97.63  
CONST. 12" ASPH. DR.  
W/ 43"x26" RCPA SD

STR. NO. 2  
STA. 2294+84.72, 44.40' RT. S.D.  
CONST. 43"x26" RCPA X 108' LG.  
W/ CET BOTH ENDS

STR. NO. T2  
STA. 2294+67.75, 53.25' LT. S.D.  
CONST. 18" CGSP X 32' LG.

PHASE 1 74 47  
PHASE 2 251 149  
PHASE 3 66 32

**CROSS SECTIONS: SH-34**



2296  
+  
43

2296  
+  
43

2296  
+  
00

2296  
+  
00

2295  
+  
50

2295  
+  
50

| AREA               | EXC. | EMB. | PHASE   | 1 | 2 | 3 |
|--------------------|------|------|---------|---|---|---|
| TEMP. FL = 2029.64 | 19   | 319  | PHASE 1 |   |   |   |
|                    | 16   | 480  | PHASE 2 |   |   |   |
|                    | 286  | 19   | PHASE 3 |   |   |   |

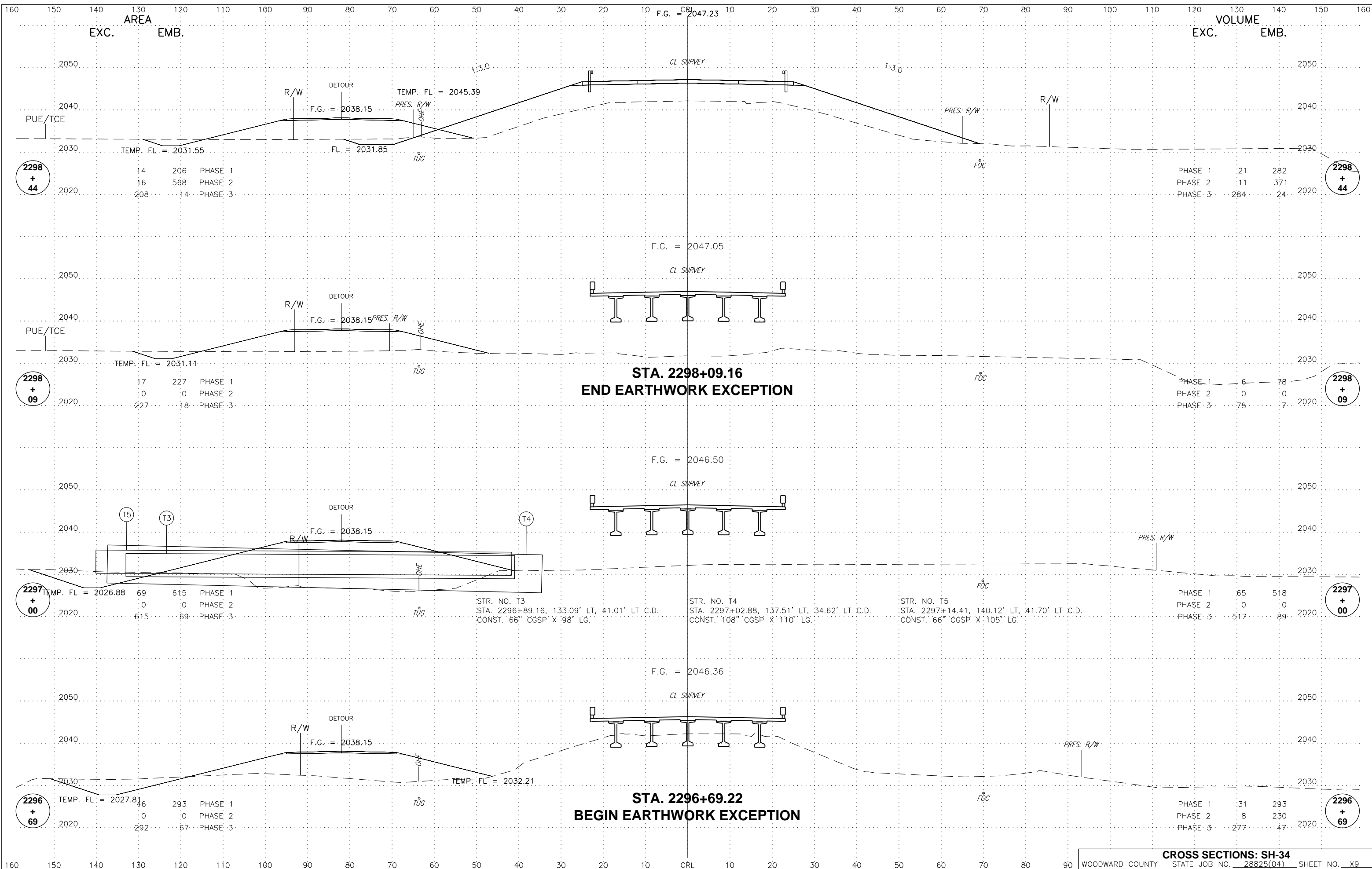
| VOLUME | EXC. | EMB. | PHASE   | 1   | 2   | 3 |
|--------|------|------|---------|-----|-----|---|
|        |      |      | PHASE 1 | 26  | 512 |   |
|        |      |      | PHASE 2 | 24  | 720 |   |
|        |      |      | PHASE 3 | 466 | 30  |   |

| AREA               | EXC. | EMB. | PHASE   | 1 | 2 | 3 |
|--------------------|------|------|---------|---|---|---|
| TEMP. FL = 2030.16 | 14   | 318  | PHASE 1 |   |   |   |
|                    | 14   | 416  | PHASE 2 |   |   |   |
|                    | 294  | 14   | PHASE 3 |   |   |   |

| VOLUME | EXC. | EMB. | PHASE   | 1   | 2   | 3 |
|--------|------|------|---------|-----|-----|---|
|        |      |      | PHASE 1 | 37  | 527 |   |
|        |      |      | PHASE 2 | 27  | 700 |   |
|        |      |      | PHASE 3 | 504 | 42  |   |

| AREA               | EXC. | EMB. | PHASE   | 1 | 2 | 3 |
|--------------------|------|------|---------|---|---|---|
| TEMP. FL = 2030.77 | 26   | 252  | PHASE 1 |   |   |   |
|                    | 15   | 340  | PHASE 2 |   |   |   |
|                    | 251  | 26   | PHASE 3 |   |   |   |

| VOLUME | EXC. | EMB. | PHASE   | 1   | 2   | 3 |
|--------|------|------|---------|-----|-----|---|
|        |      |      | PHASE 1 | 31  | 482 |   |
|        |      |      | PHASE 2 | 32  | 534 |   |
|        |      |      | PHASE 3 | 496 | 36  |   |



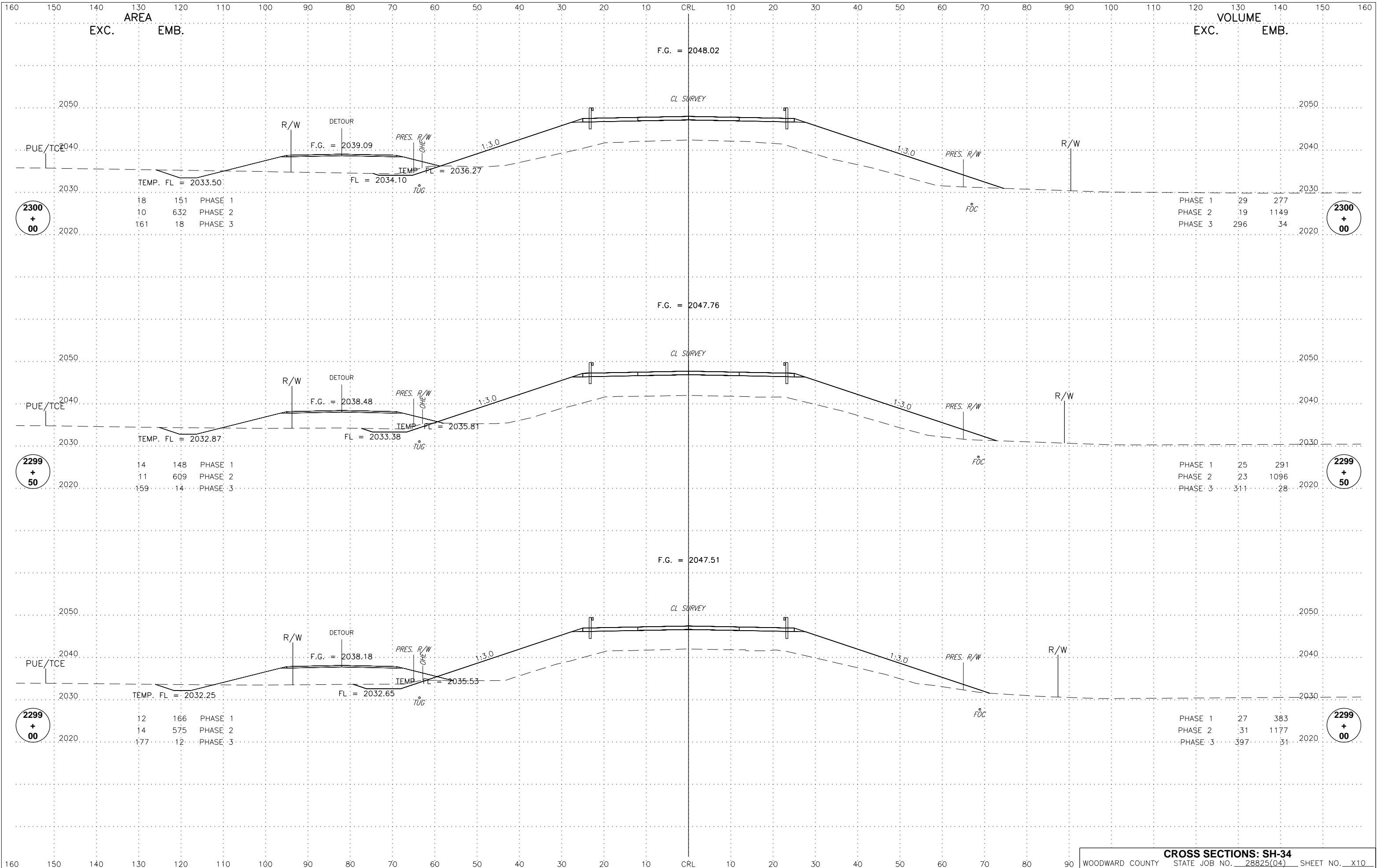
**STA. 2298+09.16**  
**END EARTHWORK EXCEPTION**

**STA. 2296+69.22**  
**BEGIN EARTHWORK EXCEPTION**

STR. NO. T3  
STA. 2296+89.16, 133.09' LT, 41.01' LT C.D.  
CONST. 66" CGSP X 98' LG.

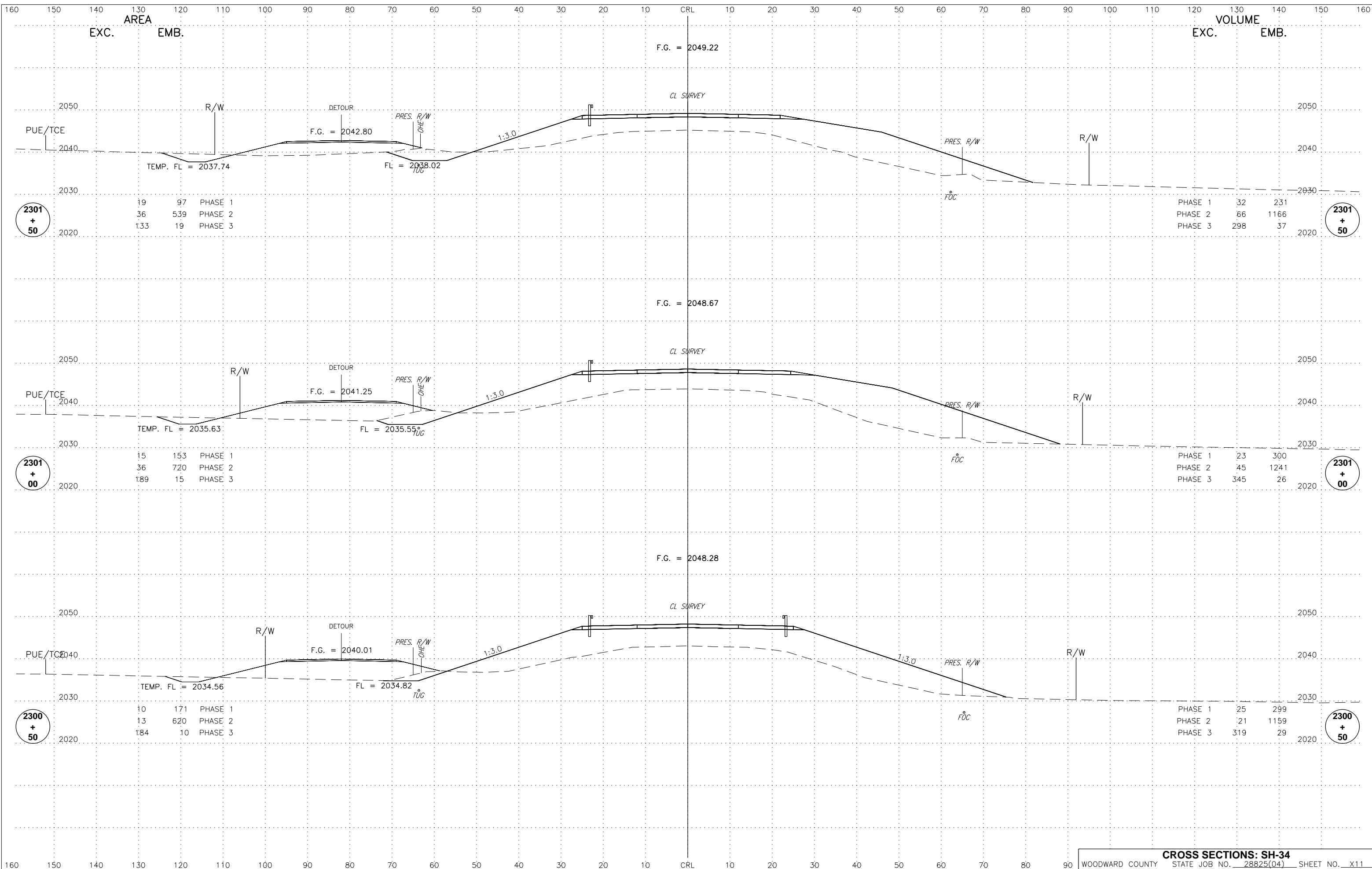
STR. NO. T4  
STA. 2297+02.88, 137.51' LT, 34.62' LT C.D.  
CONST. 108" CGSP X 110' LG.

STR. NO. T5  
STA. 2297+14.41, 140.12' LT, 41.70' LT C.D.  
CONST. 66" CGSP X 105' LG.



**CROSS SECTIONS: SH-34**





2301  
+  
50

| AREA |      |         |
|------|------|---------|
| EXC. | EMB. |         |
| 19   | 97   | PHASE 1 |
| 36   | 539  | PHASE 2 |
| 133  | 19   | PHASE 3 |

| VOLUME |      |         |
|--------|------|---------|
| EXC.   | EMB. |         |
| 32     | 231  | PHASE 1 |
| 66     | 1166 | PHASE 2 |
| 298    | 37   | PHASE 3 |

2301  
+  
50

2301  
+  
00

| AREA |      |         |
|------|------|---------|
| EXC. | EMB. |         |
| 15   | 153  | PHASE 1 |
| 36   | 720  | PHASE 2 |
| 189  | 15   | PHASE 3 |

| VOLUME |      |         |
|--------|------|---------|
| EXC.   | EMB. |         |
| 23     | 300  | PHASE 1 |
| 45     | 1241 | PHASE 2 |
| 345    | 26   | PHASE 3 |

2301  
+  
00

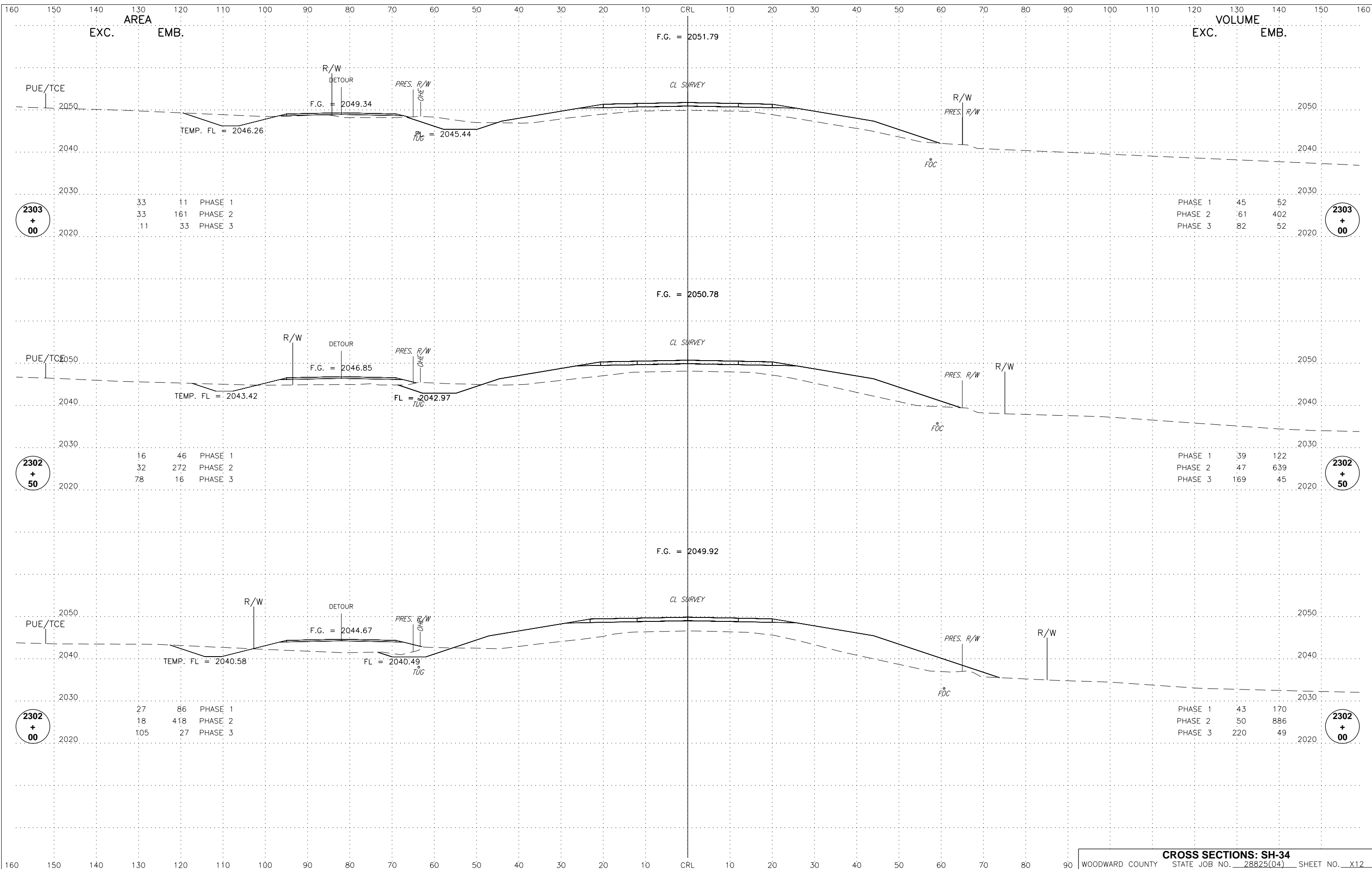
2300  
+  
50

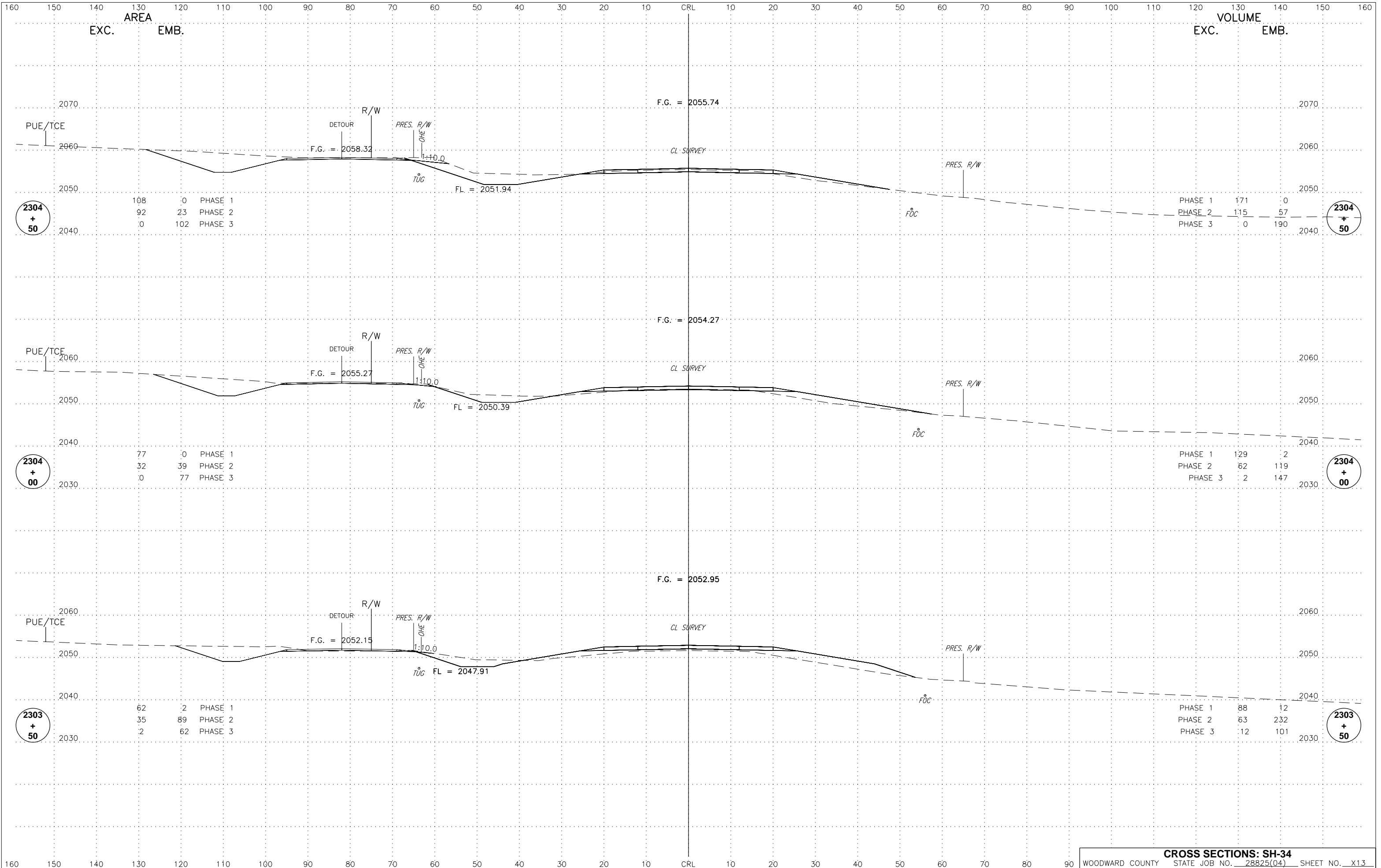
| AREA |      |         |
|------|------|---------|
| EXC. | EMB. |         |
| 10   | 171  | PHASE 1 |
| 13   | 620  | PHASE 2 |
| 184  | 10   | PHASE 3 |

| VOLUME |      |         |
|--------|------|---------|
| EXC.   | EMB. |         |
| 25     | 299  | PHASE 1 |
| 21     | 1159 | PHASE 2 |
| 319    | 29   | PHASE 3 |

2300  
+  
50

**CROSS SECTIONS: SH-34**





2304  
+  
50

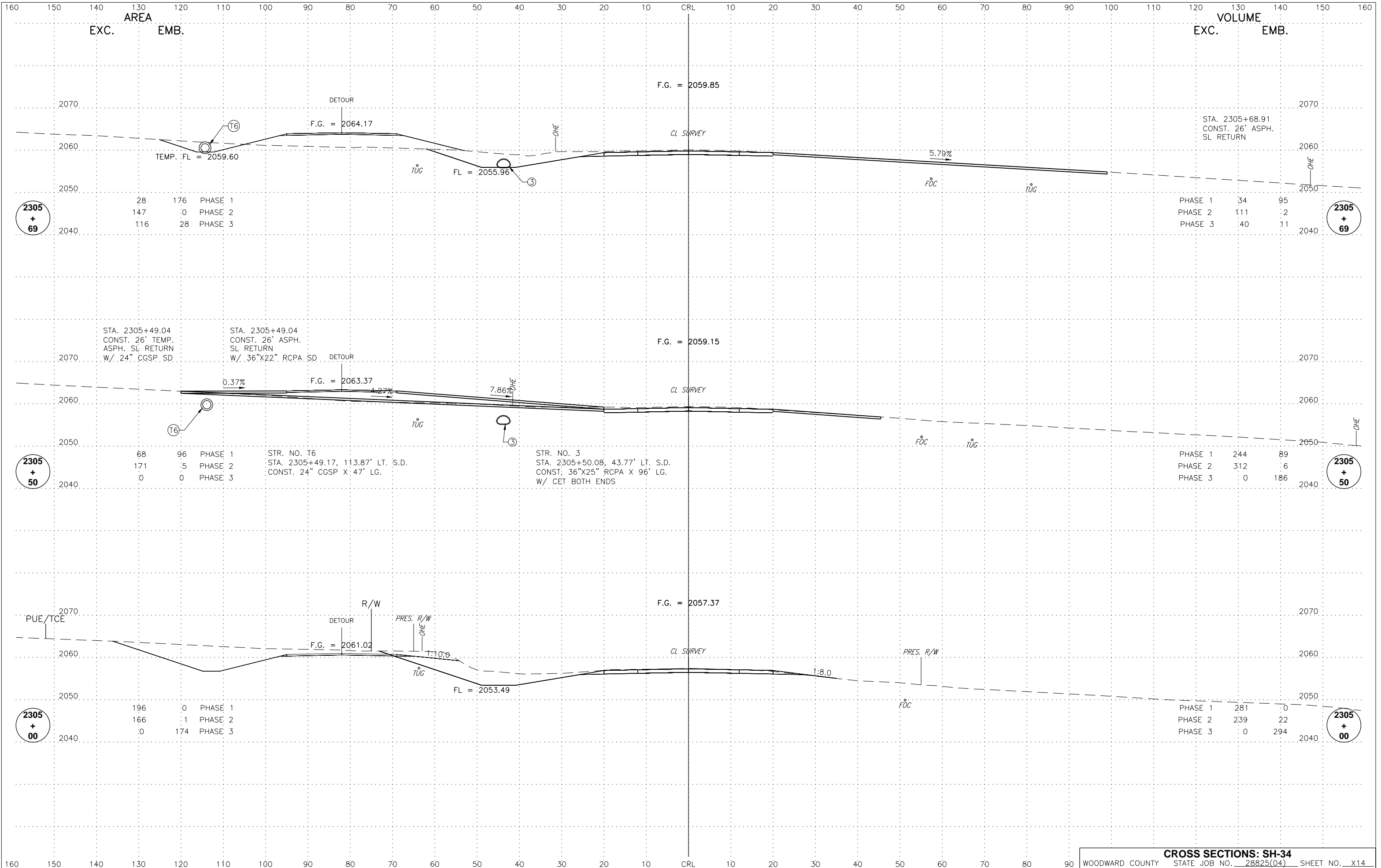
2304  
+  
50

2304  
+  
00

2304  
+  
00

2303  
+  
50

2303  
+  
50



2305  
+  
69

2305  
+  
69

2305  
+  
50

2305  
+  
50

2305  
+  
00

2305  
+  
00

AREA  
EXC. EMB.

VOLUME  
EXC. EMB.

|     |     |         |
|-----|-----|---------|
| 28  | 176 | PHASE 1 |
| 147 | 0   | PHASE 2 |
| 116 | 28  | PHASE 3 |

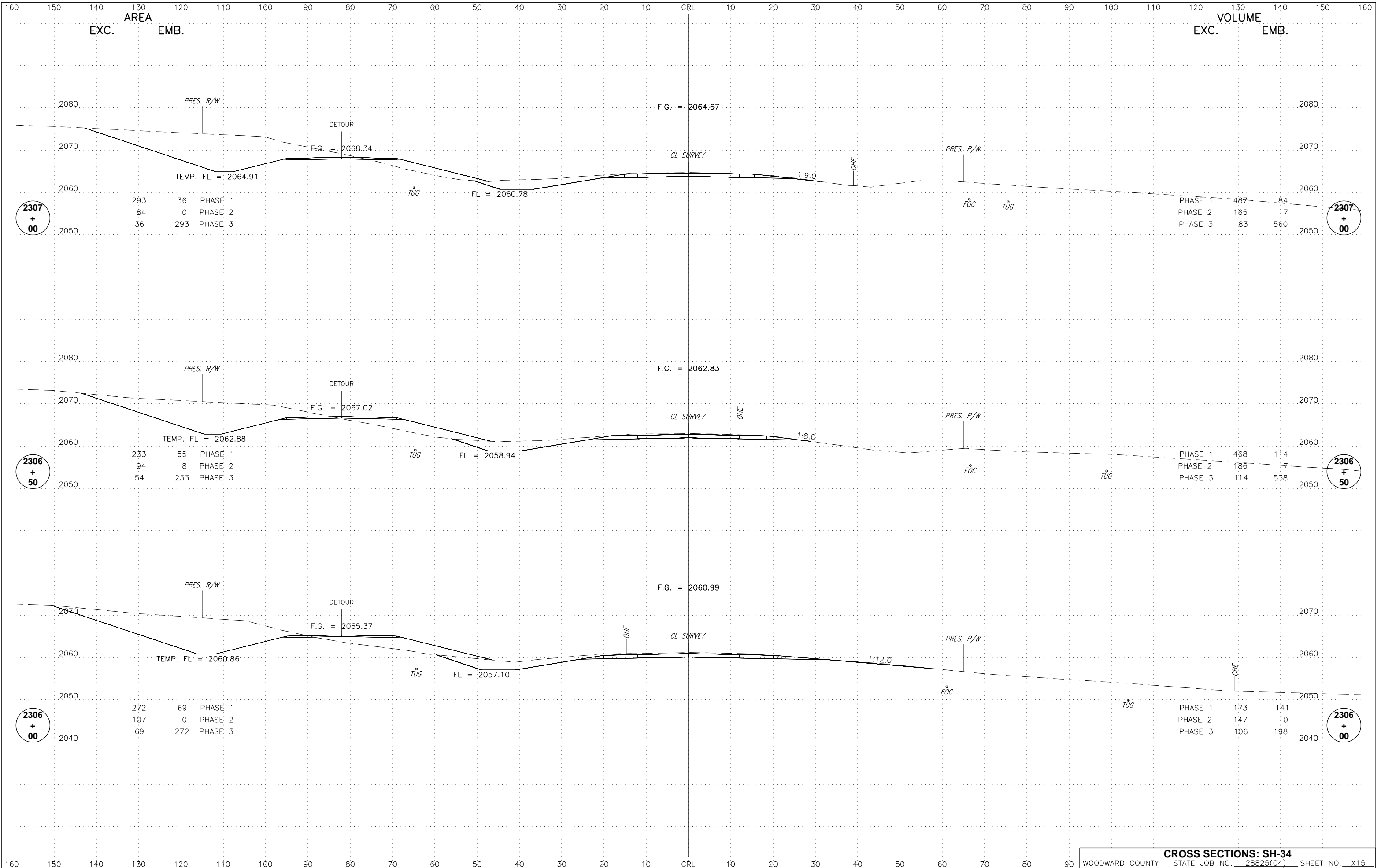
|     |    |
|-----|----|
| 34  | 95 |
| 111 | 2  |
| 40  | 11 |

|     |    |         |
|-----|----|---------|
| 68  | 96 | PHASE 1 |
| 171 | 5  | PHASE 2 |
| 0   | 0  | PHASE 3 |

|     |     |
|-----|-----|
| 244 | 89  |
| 312 | 6   |
| 0   | 186 |

|     |     |         |
|-----|-----|---------|
| 196 | 0   | PHASE 1 |
| 166 | 1   | PHASE 2 |
| 0   | 174 | PHASE 3 |

|     |     |
|-----|-----|
| 281 | 0   |
| 239 | 22  |
| 0   | 294 |



2307  
+  
00

2307  
+  
00

2306  
+  
50

2306  
+  
50

2306  
+  
00

2306  
+  
00

AREA  
EXC. EMB.

VOLUME  
EXC. EMB.

|     |     |         |
|-----|-----|---------|
| 293 | 36  | PHASE 1 |
| 84  | 0   | PHASE 2 |
| 36  | 293 | PHASE 3 |

|     |     |
|-----|-----|
| 487 | 84  |
| 165 | 7   |
| 83  | 560 |

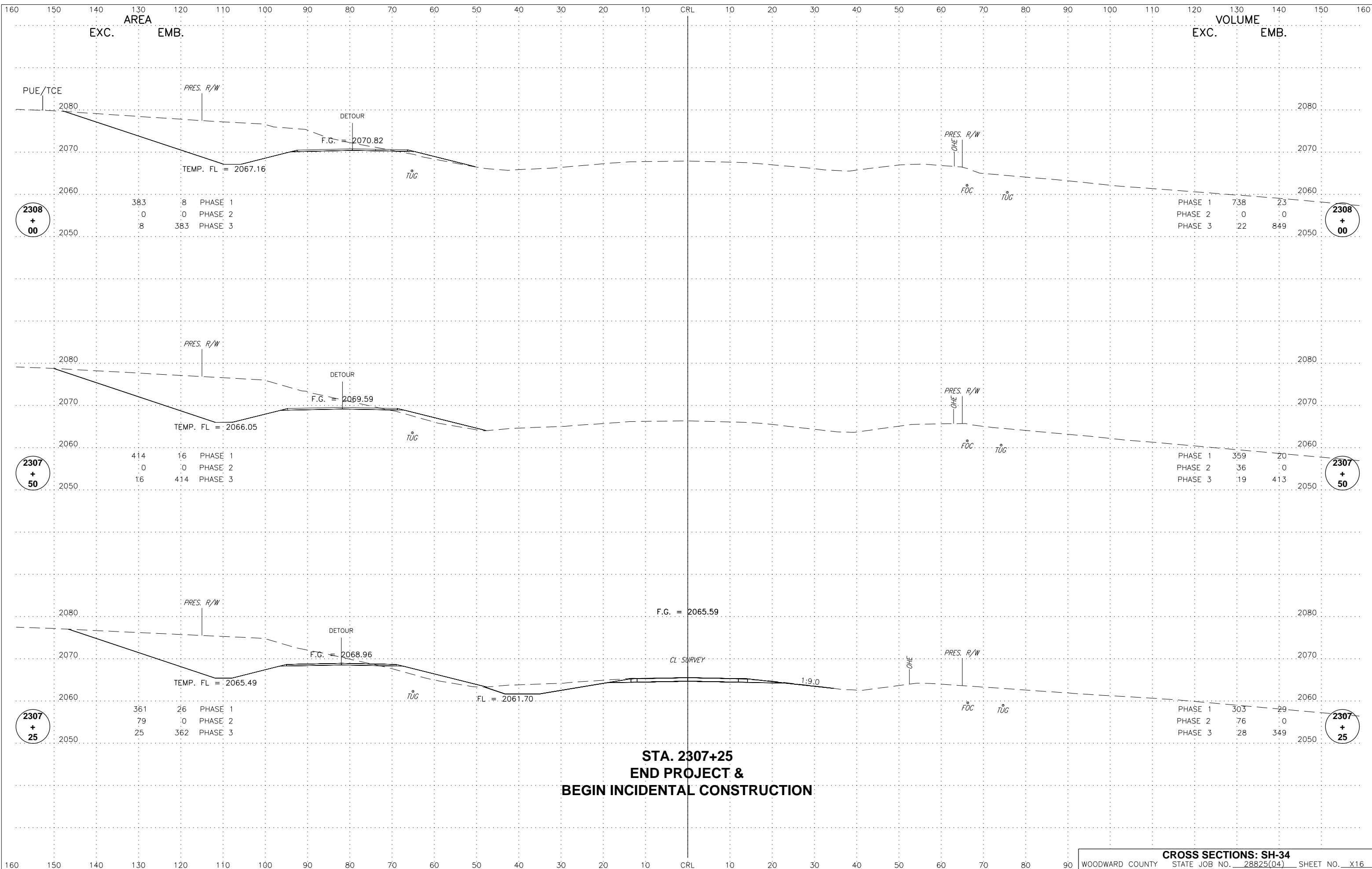
|     |     |         |
|-----|-----|---------|
| 233 | 55  | PHASE 1 |
| 94  | 8   | PHASE 2 |
| 54  | 233 | PHASE 3 |

|     |     |
|-----|-----|
| 468 | 114 |
| 186 | 7   |
| 114 | 538 |

|     |     |         |
|-----|-----|---------|
| 272 | 69  | PHASE 1 |
| 107 | 0   | PHASE 2 |
| 69  | 272 | PHASE 3 |

|     |     |
|-----|-----|
| 173 | 141 |
| 147 | 0   |
| 106 | 198 |

CROSS SECTIONS: SH-34



2308  
+  
00

2308  
+  
00

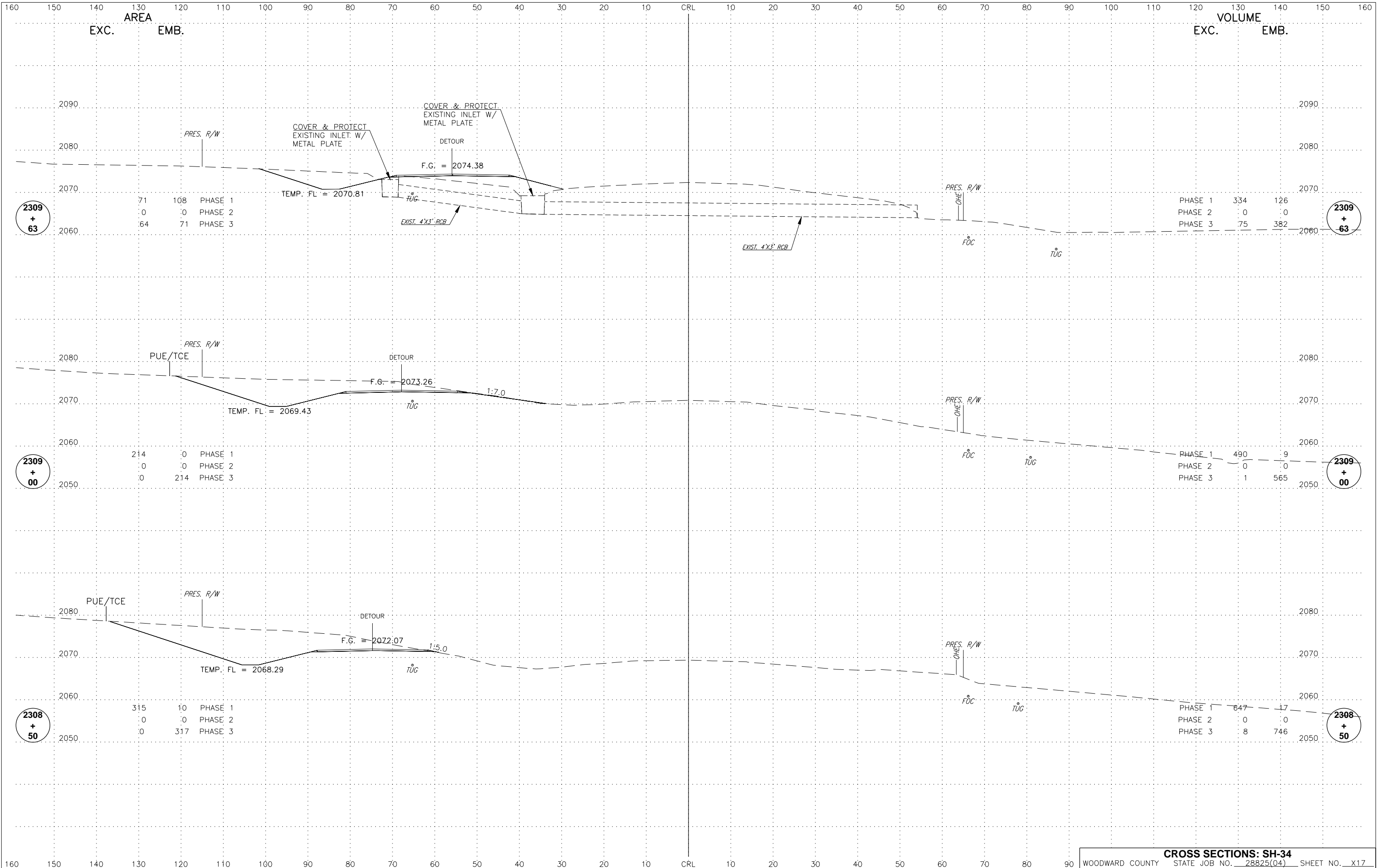
2307  
+  
50

2307  
+  
50

2307  
+  
25

2307  
+  
25

**STA. 2307+25  
END PROJECT &  
BEGIN INCIDENTAL CONSTRUCTION**



2309  
+  
63

2309  
+  
63

2309  
+  
00

2309  
+  
00

2308  
+  
50

2308  
+  
50

AREA  
EXC. EMB.

VOLUME  
EXC. EMB.

|    |     |         |
|----|-----|---------|
| 71 | 108 | PHASE 1 |
| 0  | 0   | PHASE 2 |
| 64 | 71  | PHASE 3 |

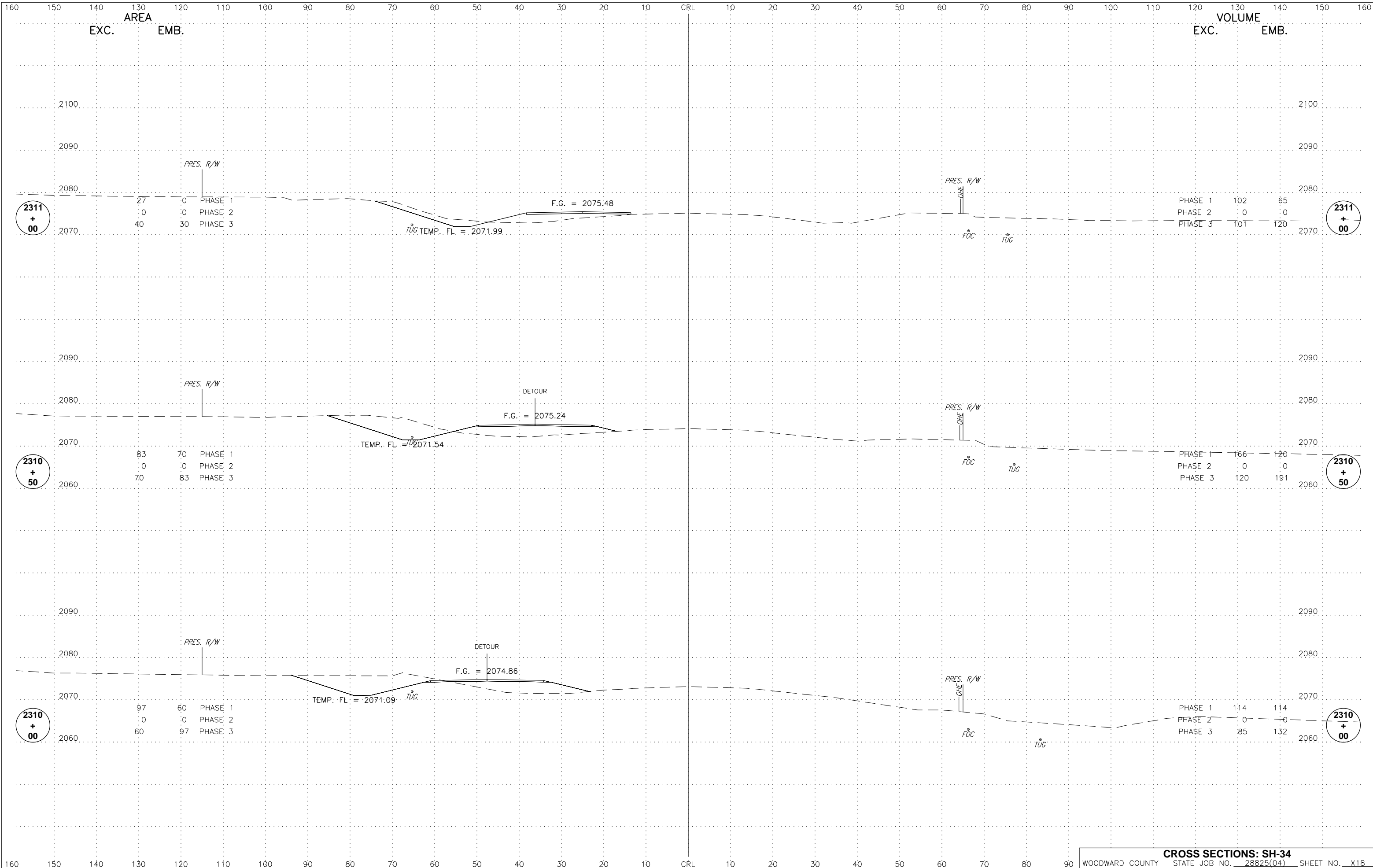
|         |     |     |
|---------|-----|-----|
| PHASE 1 | 334 | 126 |
| PHASE 2 | 0   | 0   |
| PHASE 3 | 75  | 382 |

|     |     |         |
|-----|-----|---------|
| 214 | 0   | PHASE 1 |
| 0   | 0   | PHASE 2 |
| 0   | 214 | PHASE 3 |

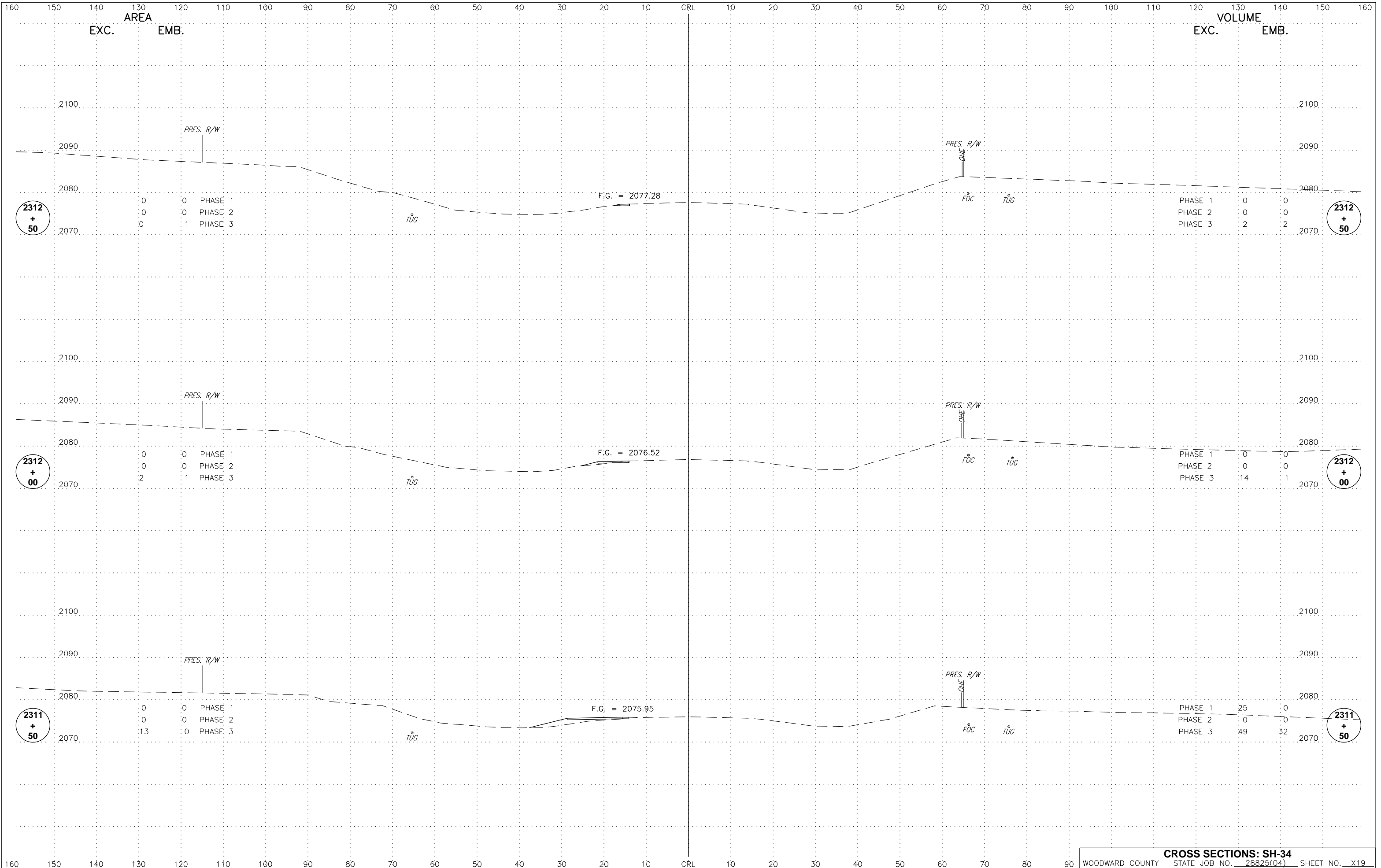
|         |     |     |
|---------|-----|-----|
| PHASE 1 | 490 | 9   |
| PHASE 2 | 0   | 0   |
| PHASE 3 | 1   | 565 |

|     |     |         |
|-----|-----|---------|
| 315 | 10  | PHASE 1 |
| 0   | 0   | PHASE 2 |
| 0   | 317 | PHASE 3 |

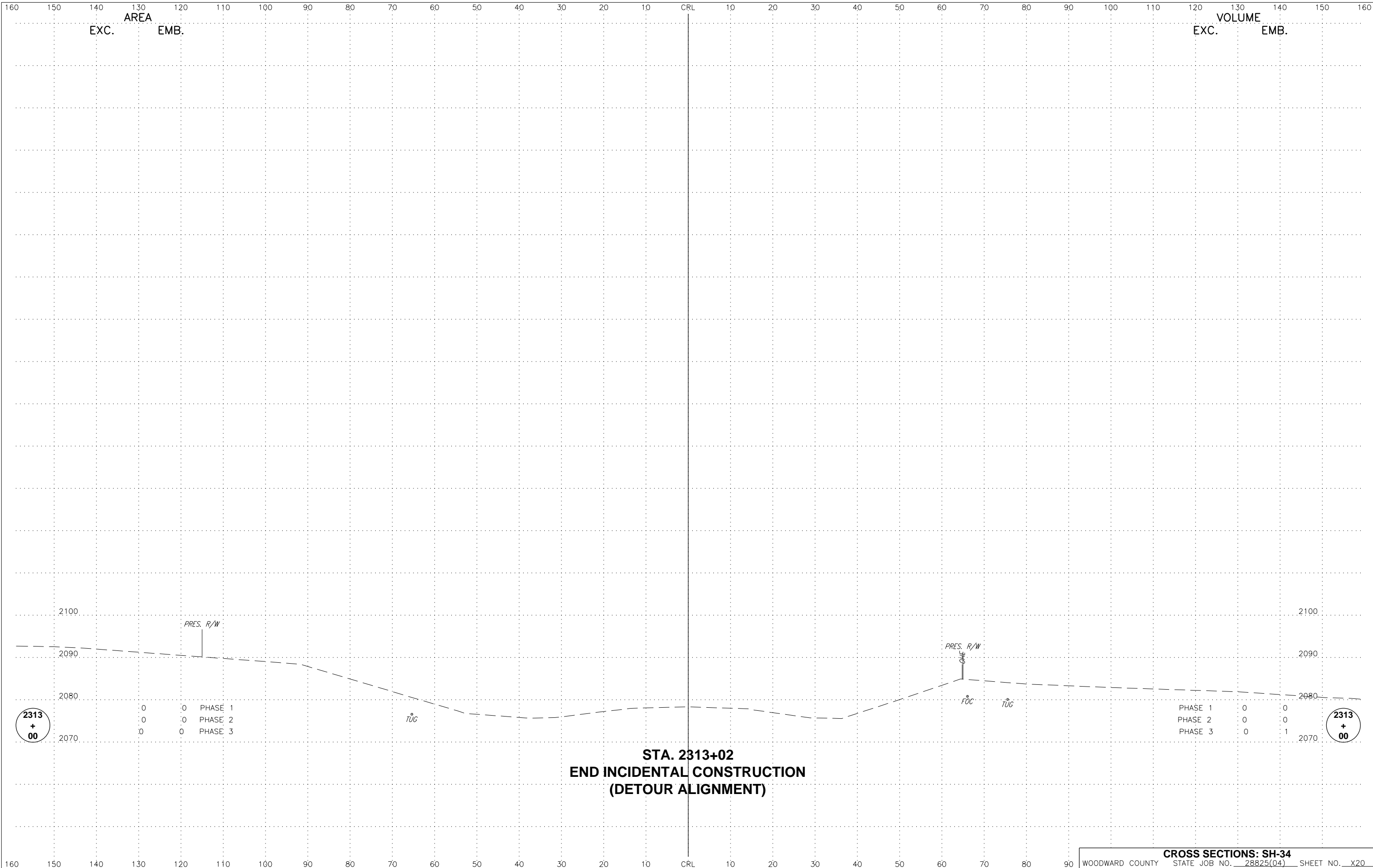
|         |     |     |
|---------|-----|-----|
| PHASE 1 | 647 | 17  |
| PHASE 2 | 0   | 0   |
| PHASE 3 | 8   | 746 |







**CROSS SECTIONS: SH-34**



AREA  
EXC.    EMB.

VOLUME  
EXC.    EMB.

2313  
+  
00

2313  
+  
00

|   |   |         |
|---|---|---------|
| 0 | 0 | PHASE 1 |
| 0 | 0 | PHASE 2 |
| 0 | 0 | PHASE 3 |

|         |   |   |
|---------|---|---|
| PHASE 1 | 0 | 0 |
| PHASE 2 | 0 | 0 |
| PHASE 3 | 0 | 1 |

**STA. 2313+02  
END INCIDENTAL CONSTRUCTION  
(DETOUR ALIGNMENT)**