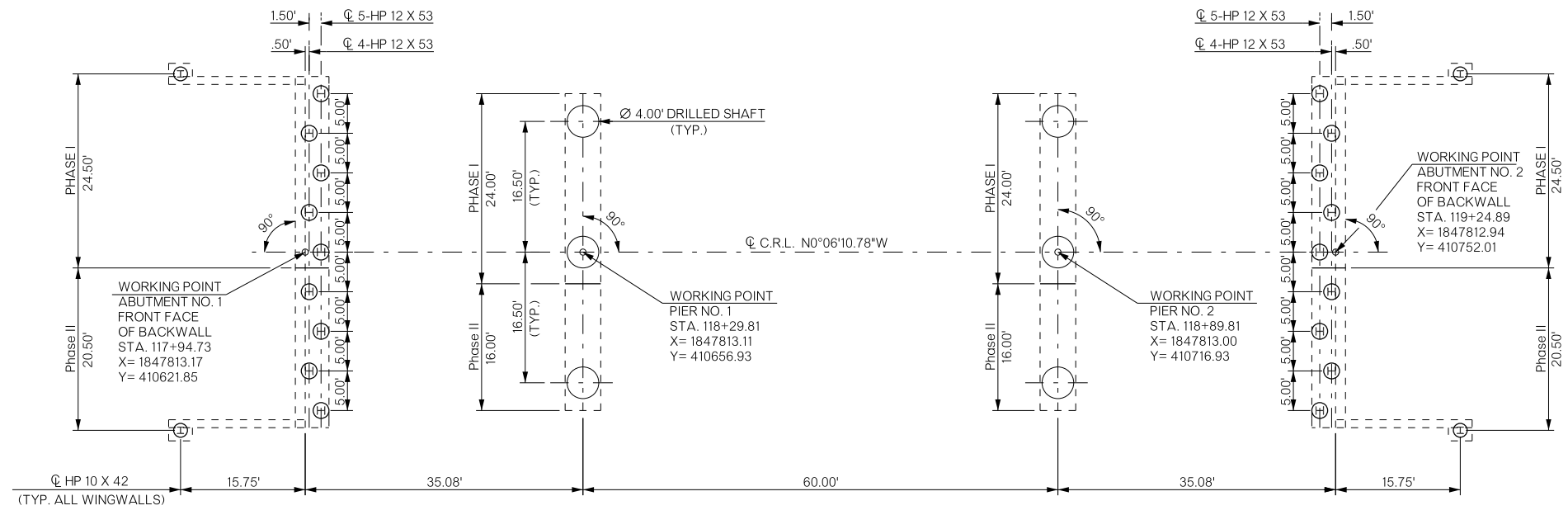


| REVISIONS | | |
|-----------|-------------|------|
| REV. NO. | DESCRIPTION | DATE |
| | | |



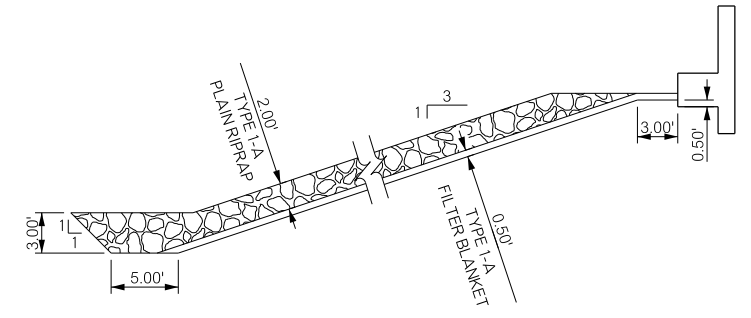
SUBSTRUCTURE STAKING DIAGRAM

FOUNDATION DATA

ABUTMENTS (HP 12 X 53 PILING)
 ABUTMENTS 1 & 2
 MAXIMUM FACTORED PILE REACTION = 53.3 TONS/PILE
 PIERS 1 & 2 (48" DIAMETER DRILLED SHAFTS)

| | PIER 1 | PIER 2 | FT |
|--------------------------------------|---------|--------|------------|
| MINIMUM DEPTH INTO ROCK | = 15.0 | 10.0 | FT |
| FACTORED REACTION | = 271.0 | 271.0 | TONS/SHAFT |
| NOMINAL UNIT BEARING RESISTANCE | = 47.1 | 25.4 | TONS/SF |
| BEARING RESISTANCE FACTOR | = 0.7 | 0.7 | |
| FACTORED BEARING RESISTANCE | = 414.3 | 223.4 | TONS/SHAFT |
| NOMINAL UNIT FRICTION RESISTANCE | = 2.6 | 7.8 | TONS/SF |
| FRICTION RESISTANCE FACTOR | = 0.45 | 0.45 | |
| FACTORED FRICTION RESISTANCE | = 147.0 | 220.5 | TONS/SHAFT |
| DEPTH OF ROCK NEGLECTED FOR FRICTION | = 5.0 | 5.0 | FT |
| TOTAL FACTORED RESISTANCE | = 561.3 | 444.0 | TONS/SHAFT |

STANDARDS
 LECS-4-1
 PUD-3-2
 TR4-2-00E
 EJ-SQ-04E
 EJ-DTL-02E
 HP1-2-01E

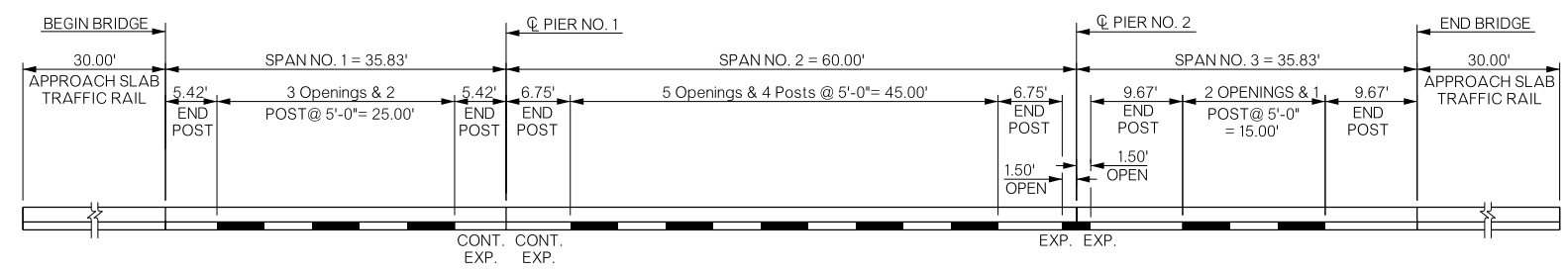


SECTION THRU RIPRAP AT BRIDGE SEAT
 (DIMENSIONS ARE PERPENDICULAR TO BRIDGE SEAT)

| ITEM | UNIT | QUANTITIES | | | TOTAL |
|--|-------|------------|----------|-----------------|-----------|
| | | ABUTMENTS | PIERS | SUPER-STRUCTURE | |
| SUBSTRUCTURE EXCAVATION COMMON | C.Y. | 160.00 | ---- | ---- | 160.00 |
| CLSM BACKFILL | C.Y. | 160.00 | ---- | ---- | 160.00 |
| PRESTRESSED CONCRETE BEAMS (TYPE II) | L.F. | ---- | ---- | 645.00 | 645.00 |
| APPROACH SLAB | S.Y. | ---- | ---- | ---- | 281.20 |
| ① SAW-CUT GROOVING | S.Y. | ---- | ---- | 585.20 | 852.00 |
| SEALED EXPANSION JOINT | L.F. | ---- | ---- | 43.20 | 43.20 |
| ② CONCRETE TRAFFIC RAIL (TR4) | L.F. | ---- | ---- | 263.40 | 383.40 |
| STRUCTURAL STEEL | LB. | ---- | ---- | 1420.00 | 1420.00 |
| STAINLESS STEEL FIXED BEARING ASSEMBLIES | EA. | ---- | ---- | 10.00 | 10.00 |
| STAINLESS STEEL EXPANSION BEARING ASSEMBLIES | EA. | ---- | ---- | 20.00 | 20.00 |
| CLASS AA CONCRETE | C.Y. | ---- | ---- | 153.40 | 153.40 |
| CLASS A CONCRETE | C.Y. | 75.40 | 62.80 | ---- | 138.20 |
| CLASS C CONCRETE | C.Y. | ---- | ---- | ---- | 25.00 |
| MECHANICAL SPLICE | EA. | 48.00 | 56.00 | 474.00 | 578.00 |
| EPOXY COATED REINFORCING STEEL | LB. | 9,820.00 | 7,700.00 | 39,780.00 | 57,300.00 |
| PILES, FURNISHED (HP 10 X 42) | L.F. | 160.00 | ---- | ---- | 160.00 |
| PILES, FURNISHED (HP 12 X 53) | L.F. | 648.00 | ---- | ---- | 648.00 |
| PILES, DRIVEN (HP 10 X 42) | L.F. | 160.00 | ---- | ---- | 160.00 |
| PILES, DRIVEN (HP 12 X 53) | L.F. | 648.00 | ---- | ---- | 648.00 |
| PILE SPLICE H-PILE (NON-BIDDABLE) | EA. | 1.00 | ---- | ---- | 1.00 |
| ③ WATER REPELLENT (VISUALLY INSPECTED) | S.Y. | 76.40 | 130.00 | 372.00 | 634.40 |
| DRILLED SHAFTS 48" DIAMETER | L.F. | ---- | 258.00 | ---- | 258.00 |
| CROSSHOLE SONIC LOGGING | EA. | ---- | ---- | ---- | 2.00 |
| SEALER CRACK PREPARATION | L.F. | ---- | ---- | 172.50 | 172.50 |
| SEALER RESIN | GAL. | ---- | ---- | 2.20 | 2.20 |
| TYPE I-A PLAIN RIPRAP | TON | ---- | ---- | ---- | 830.00 |
| TYPE I-A FILTER BLANKET | TON | ---- | ---- | ---- | 160.00 |
| 6" PERFORATED PIPE UNDERDRAIN ROUND | L.F. | 84.00 | ---- | ---- | 84.00 |
| 6" NON-PERFORATED PIPE UNDERDRAIN ROUND | L.F. | 100.00 | ---- | ---- | 100.00 |
| REMOVAL OF EXISTING BRIDGE STRUCTURE | L.SUM | ---- | ---- | ---- | 1.00 |

- ① INCLUDES 266.80 SQUARE YARDS OF SAW-CUT GROOVING FOR APPROACH SLABS
- ② INCLUDES 120.00 LINEAR FEET OF TRAFFIC RAIL FOR APPROACH SLABS
- ③ INCLUDES 56.00 SQUARE YARDS OF WATER REPELLENT FOR APPROACH SLABS

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



TRAFFIC RAIL LAYOUT

| | | | | | | |
|------------------------------|--|------------------------------|--|----------------|-----|--------------------|
| BRIDGE "B" | | COMANCHE COUNTY | | DESIGN | MLC | 08/16 |
| U.S.-277 OVER SNAKE CREEK | | | | DETAIL | VNT | 08/16 |
| SUBSTRUCTURE STAKING DIAGRAM | | | | CHECK | DAH | 04/17 |
| | | | | SQUAD: HARJO | | ENGR: MOLLA-ESMAIL |
| STATE OF OKLAHOMA | | DEPARTMENT OF TRANSPORTATION | | | | |
| JOB/PIECE NO. 27968(04) | | | | SHEET NO. B011 | | |