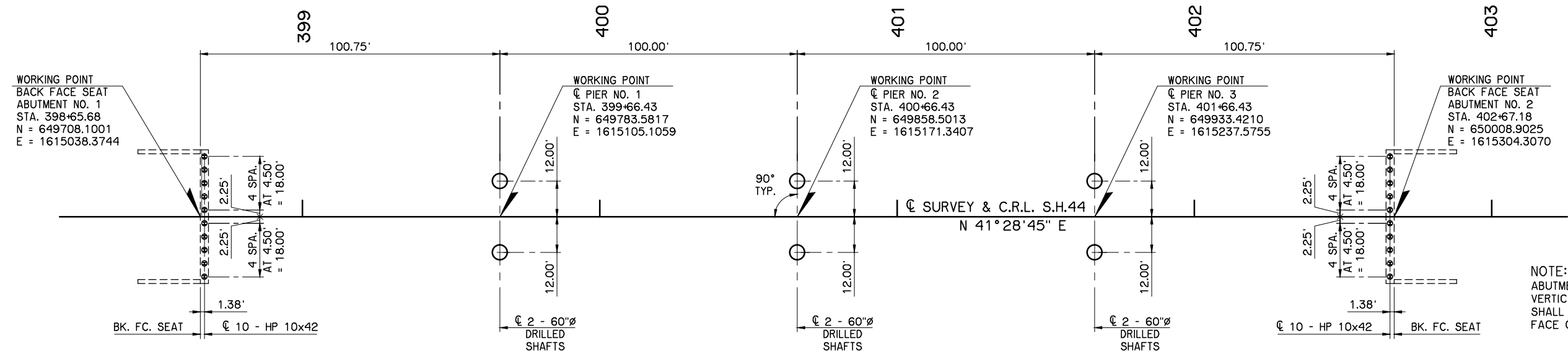


REV. NO.	DESCRIPTION	DATE



NOTE:
 ABUTMENT PILES SHALL BE DRIVEN VERTICAL AND FACE OF PILE WEB SHALL BE ORIENTED PARALLEL WITH FACE OF ABUTMENT SEAT.

SUBSTRUCTURE LAYOUT

SUMMARY OF BRIDGE QUANTITIES						
ITEM	UNIT	ABUTMENTS	PIERS	SUPERSTR.	APPR. SLABS	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	C.Y.	90				90
CLSM BACKFILL	C.Y.	200				200
PRESTRESSED CONCRETE BEAMS (TYPE IV)	L.F.			1,596		1,596
APPROACH SLAB	S.Y.				224.8	224.8
SAW-CUT GROOVING	S.Y.			1,788.8	213.4	2,002.2
CONCRETE RAIL (TR4)	L.F.			801.0	96.0	897.0
STRUCTURAL STEEL	LB.			1,500		1,500
WEATHERING STEEL FIXED BEARING ASSEMBLY	EA.			8		8
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA.			24		24
ELASTOMERIC BEARING PADS	EA.			24		24
CLASS AA CONCRETE	C.Y.			501.0		501.0
CLASS A CONCRETE	C.Y.	59.6	122.1			181.7
EPOXY COATED REINFORCING STEEL	LB.	9,660	15,810	110,020		135,490
PILES, FURNISHED (HP 10x42)	L.F.	880				880
PILES, DRIVEN (HP 10x42)	L.F.	880				880
PILE SPLICE, H-PILE (NON-BIDDABLE)	EA.	1				1
WATER REPELLENT (VISUALLY INSPECTED)	S.Y.	22	228	1,454	44	1,748
DRILLED SHAFTS 60" DIAMETER	L.F.		286			286
CROSSHOLE SONIC LOGGING	EA.		2			2
SEALER CRACK PREPARATION	L.F.			244.5		244.5
SEALER RESIN	GAL.			3		3
TYPE I-A PLAIN RIPRAP	TON	1,454				1,454
TYPE I-A FILTER BLANKET	TON	288				288
6" PERFORATED PIPE UNDERDRAIN ROUND	L.F.	84				84
6" NON-PERF. PIPE UNDERDRAIN RND.	L.F.	48				48
REMOVAL OF EXISTING BRIDGE STRUCTURE	L.SUM					1

HYDRAULIC DATA

TOTAL DRAINAGE AREA = 328 SQ. MILES
 CONTROLLED DRAINAGE AREA = 130 SQ. MILES
 EFFECTIVE DRAINAGE AREA = 198 SQ. MILES

Q2 = 2,890 C.F.S.
 V2 = 4.75 F.P.S.
 Q2 CHW ELEVATION = 1552.12 FT.

Q5 = 6,540 C.F.S.
 V5 = 6.98 F.P.S.
 Q5 CHW ELEVATION = 1556.39 FT.

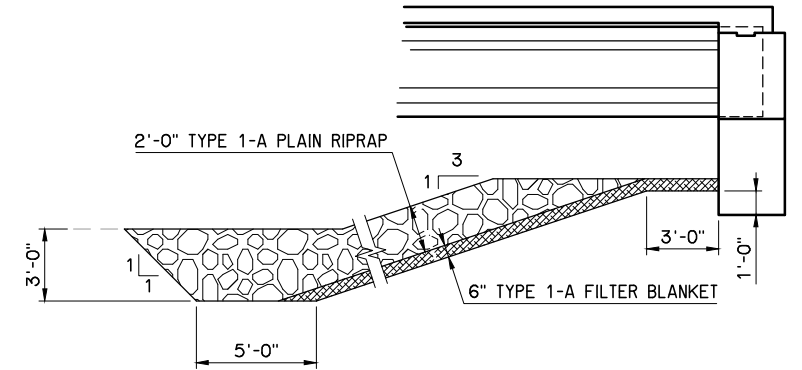
Q10 = 10,200 C.F.S.
 V10 = 9.05 F.P.S.
 Q10 CHW ELEVATION = 1559.11 FT.

Q25 = 16,400 C.F.S.
 V25 = 14.82 F.P.S.
 Q25 CHW ELEVATION = 1561.44 FT.

Q50 = 22,400 C.F.S.
 V50 = 15.96 F.P.S.
 Q50 CHW ELEVATION = 1564.25 FT.

Q100 = 28,100 C.F.S.
 V100 = 13.54 F.P.S.
 Q100 CHW ELEVATION = 1565.98 FT.
 PIER SCOUR DEPTH = 9.18 FT.
 CONTRACTION SCOUR DEPTH = 8.36 FT.
 TOTAL SCOUR DEPTH = 17.54 FT.

QRDWH = 34,550 C.F.S.
 VRDWH = 11.57 F.P.S.
 QRDWH CHW ELEVATION = 1567.28 FT.
 PIER SCOUR DEPTH = 10.36 FT.
 CONTRACTION SCOUR DEPTH = 16.26 FT.
 TOTAL SCOUR DEPTH = 26.62 FT.
 QOT = Q220



SECTION THRU RIPRAP AT BRIDGE SEAT

FOUNDATION DATA

PIERS (60" DIAMETER DRILLED SHAFTS)

FACTORED DRILLED SHAFT REACTION = 696.1 TON / SHAFT

NOMINAL UNIT BEARING RESISTANCE = 58.0 T.S.F.
 BEARING RESISTANCE FACTOR = 0.70
 FACTORED BEARING RESISTANCE = 797.2 TON / SHAFT

NOMINAL UNIT FRICTION RESISTANCE = 4.90 T.S.F.
 FRICTION RESISTANCE FACTOR = 0.45
 FACTORED FRICTION RESISTANCE = 242.5 TON / SHAFT
 DEPTH OF ROCK NEGLECTED FOR FRICTION = 8.0 FT.

TOTAL FACTORED DRILLED SHAFT RESISTANCE = 1039.6 TON / SHAFT

ABUTMENTS (HP 10x42 PILING)

FACTORED PILE REACTION = 74.4 TON / PILE

FACTORED PILE RESISTANCE:
 DRIVE PILING THROUGH THE COMPACTED FILL AND TO A POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN ON THE PLANS. IF A FACTORED AXIAL LOAD RESISTANCE EQUAL TO OR GREATER THAN THE FACTORED PILE REACTION IS NOT OBTAINED AT THIS ELEVATION, CONTINUE DRIVING UNTIL SUCH IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY.

- ① 370 L.F. FOR ABUT. NO. 1 AND 510 L.F. FOR ABUT. NO. 2
- ② 411 TONS FOR ABUT. NO. 1 AND 645 TONS FOR ABUT. NO. 2
- ③ 61 TONS FOR ABUT. NO. 1 AND 100 TONS FOR ABUT. NO. 2
- ④ 24 L.F. FOR ABUT. NO. 1 AND 24 L.F. FOR ABUT. NO. 2
- ⑤ ADDITIONAL 398 TONS INCLUDED FOR SPECIAL INLET SHOWN ON SHEET 8
- ⑥ ADDITIONAL 127 TONS INCLUDED FOR SPECIAL INLET SHOWN ON SHEET 8

S.H. 44 OVER ELK CREEK		KIOWA COUNTY	
Design	AFW	Detail	DRB
Check	AFW	Check	AFW
SUBSTRUCTURE LAYOUT AND SUMMARY OF BRIDGE QUANTITIES			
WHITE ENGINEERING ASSOCIATES			
STATE OF OKLAHOMA		DEPARTMENT OF TRANSPORTATION	
JOB PIECE NO. 28999(04)		SHEET NO. 22	