THIS PROJECT IS A MANDATORY TIE TO A NEARBY PROJECT, JOB PIECE NUMBER 28825(04)

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED

STATE HIGHWAY

FEDERAL AID PROJ. NO. ACSTP-277B(035)SS
BRIDGE AND APPROACHES
SH-34 OVER NORTH PERSIMMON CREEK

WOODWARD COUNTY

STATE JOB NO. 28827(04)
CONTROL SECTION NO. 34-77-16

BRIDGE "A" LOCATION NO. 7716 0757 X
EXISTING NBI NO. 03444; NEW NBI NO. 31750

REVISIONS	
DESCRIPTION	DATE

INDEX OF SHEETS

DESIGN DATA

ADT 2016	= 2,120
ADT 2036	= 3,030
DHV (2-WAY)	= 333
K (DHV/ADT)	= 11%
D	= 55%
T (% DHV)	= 20%
T (% ADT)	= 17%
T^2 (% ADT)	= 13%
V	= 65 MPH
(20YR)FLEX ESAL's	= 3.2M

BRIDGE 'A'

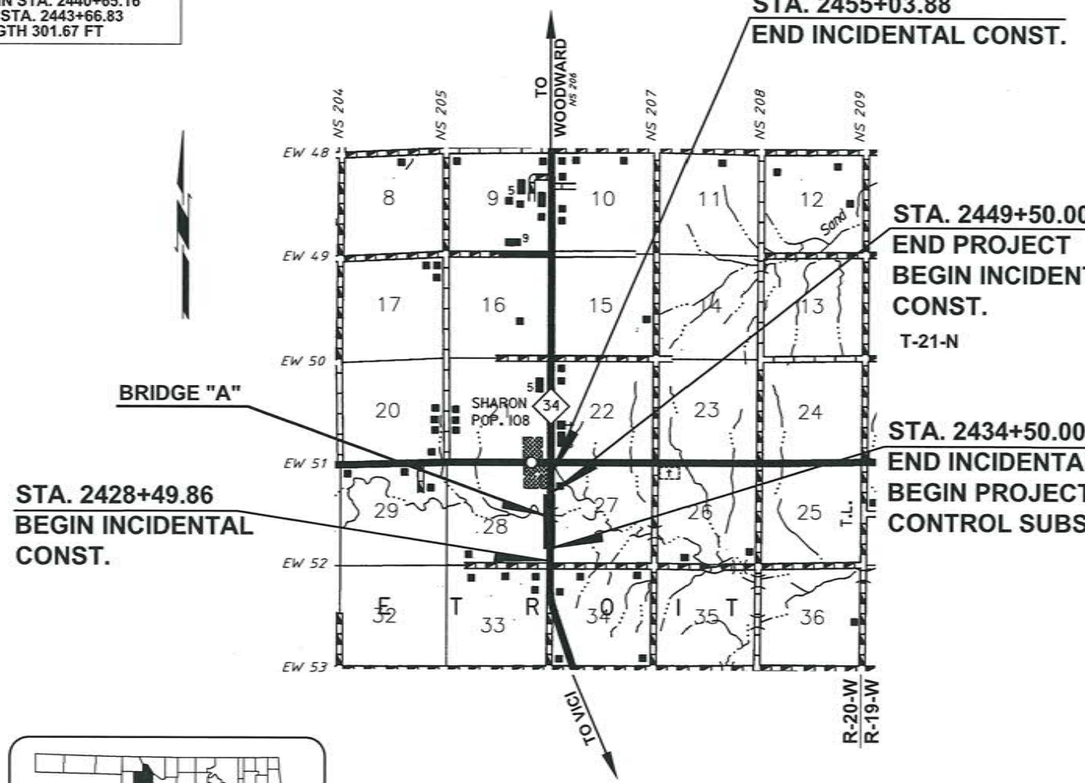
EXIST. NBI NO. 03444
NEW NBI NO. 31750
LOCATION NO. 7716 0757 X
BEGIN STA. 2440+65.16
END STA. 2443+66.83
LENGTH 301.67 FT

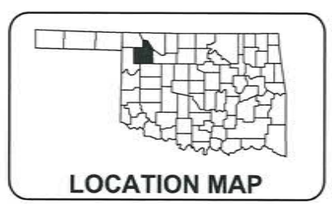
SCALES

PLAN	1"=50'
PROFILE HOR.	1"=50'
PROFILE VERT.	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)*





PROJECT LENGTH BASED ON CL SURVEY STATIONING

ROADWAY LENGTH	1,198.33 FT	0.226	MI
BRIDGE LENGTH	301.67 FT	0.057	MI
PROJECT LENGTH	1,500.00 FT	0.284	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-I-ABUT-MISC-01E
TSC2-3-2	DU1-1-00	TCS2-1-00	B40-I-AS-03E
TSD-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	TSC9-1-01	
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	

2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION GOVERN, APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, JANUARY 4, 2010.

P.E. NO. 28827(01)

REGISTERED PROFESSIONAL ENGINEER JEREMY P. STAHLE 21725 OKLAHOMA

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

Jeremy P. Stahle
JEREMY P. STAHLE, P.E.
OKLA. REG. NO. 21725

6/17/16
DATE

CEC infrastructure solutions

REGISTERED PROFESSIONAL ENGINEER TRAVIS A. COLLINS 22794 OKLAHOMA

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

Travis A Collins
TRAVIS A. COLLINS, P.E.
OKLA. REG. NO. 22794

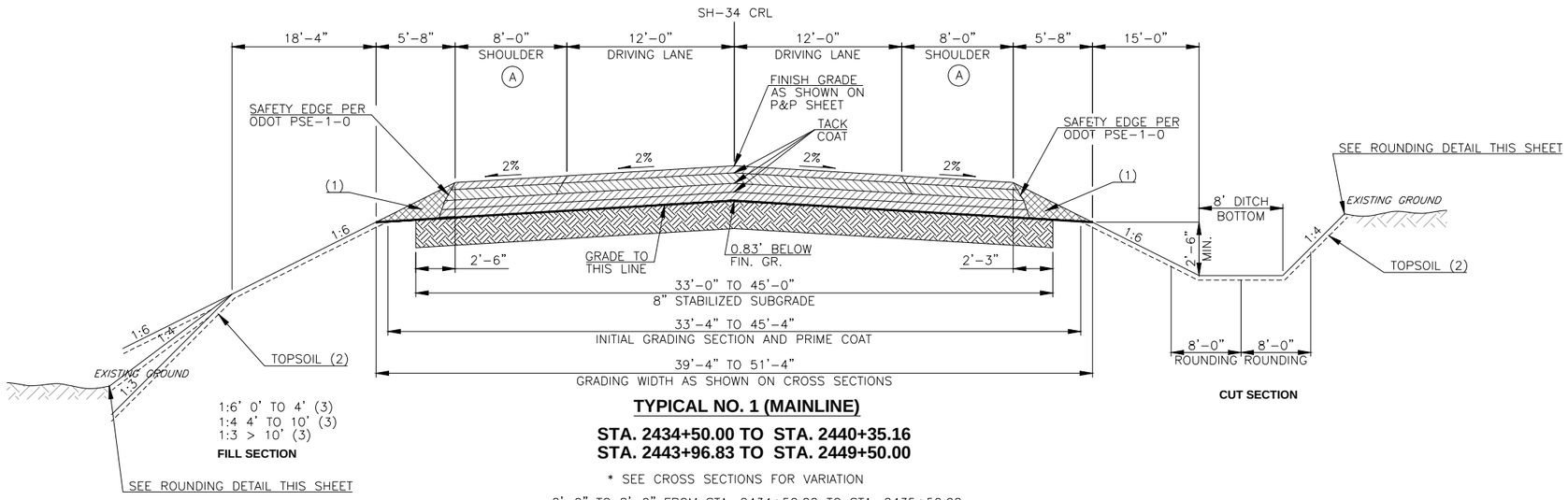
6-17-16
DATE

CEC infrastructure solutions

OKLAHOMA DEPARTMENT OF TRANSPORTATION	DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
DATE APPROVED	DATE APPROVED
BY	BY
CHIEF ENGINEER	DIVISION ADMINISTRATOR

SWO 4844(1) WOODWARD COUNTY
PROJECT NO. ACSTP-277B(035)SS SH-34
SHEET NO. 1

REVISIONS	
DESCRIPTION	DATE



TYPICAL NO. 1 (MAINLINE)

STA. 2434+50.00 TO STA. 2440+35.16
STA. 2443+96.83 TO STA. 2449+50.00

* SEE CROSS SECTIONS FOR VARIATION

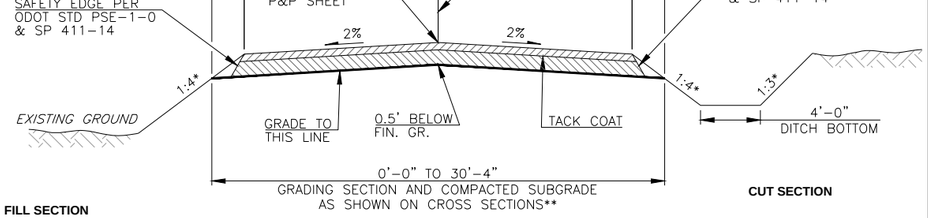
(A) 2'-0" TO 8'-0" FROM STA. 2434+50.00 TO STA. 2435+50.00
8'-0" TO 2'-0" FROM STA. 2448+50.00 TO STA. 2449+50.00

(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

PAVEMENT REQUIREMENT			
10" PAVT. STRUCTURE	12'-0" DRIVING LANES	2'-0" TO 8'-0" PAVED SHOULDERS	0'-0" TO 5'-0" GUARDRAIL WIDENING SECTION
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) 2-2.5" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK) 2-2.5" SUPERPAVE TYPE S3 (PG 64-22 OK)	



TYPICAL NO. 3 (DETOUR)

STA. 2428+49.86 TO STA. 2455+03.88

* SEE CROSS SECTIONS FOR VARIATION

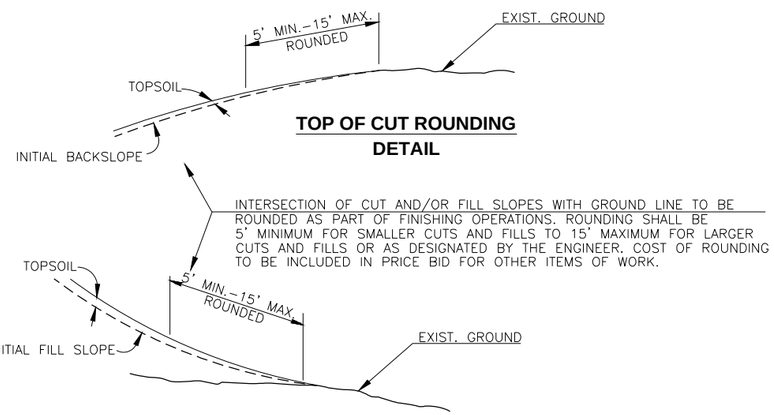
** SUBGRADE TO BE COMPACTED AS PER SPECIFICATIONS. COST TO BE INCLUDED IN EARTHWORK.

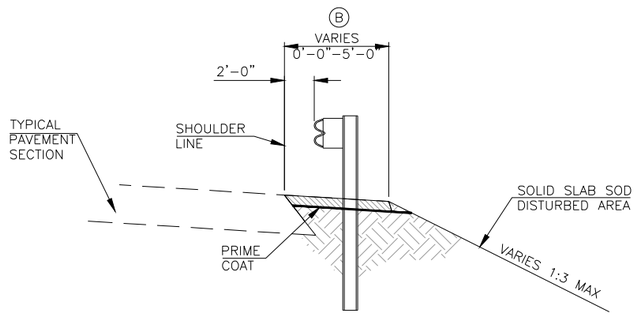
(C) 0'-0" TO 13'-0" FROM STA. 2428+49.86 TO STA. 2430+28.68
13'-0" FROM STA. 2430+28.68 TO STA. 2453+69.43
13'-0" TO 0'-0" FROM STA. 2453+69.43 TO STA. 2455+03.88

(D) 0'-0" TO 13'-0" FROM STA. 2430+28.68 TO STA. 2430+96.24
13'-0" FROM STA. 2430+96.24 TO STA. 2453+03.33
13'-0" TO 0'-0" FROM STA. 2453+03.33 TO STA. 2453+69.43

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)

ROUNDING DETAIL





TYPICAL NO. 2 (GUARDRAIL WIDENING)

LEFT
STA. 2437+26.41 TO STA. 2440+35.16
STA. 2443+96.83 TO STA. 2447+80.58

(B) 0'-0" TO 5'-0" FROM STA. 2437+26.41 TO STA. 2437+96.41
5'-0" FROM STA. 2437+96.41 TO STA. 2440+35.16
5'-0" FROM STA. 2443+96.83 TO STA. 2447+10.52
5'-0" TO 0'-0" FROM STA. 2447+10.52 TO STA. 2447+80.58

RIGHT
STA. 2436+51.41 TO STA. 2440+35.16
STA. 2443+96.83 TO STA. 2447+05.58

(B) 0'-0" TO 5'-0" FROM STA. 2436+51.41 TO STA. 2437+21.41
5'-0" FROM STA. 2437+21.41 TO STA. 2440+35.16
5'-0" FROM STA. 2443+96.83 TO STA. 2446+35.58
5'-0" TO 0'-0" FROM STA. 2446+35.58 TO STA. 2447+05.58

FILENAME: 2 TYPICAL SECTIONS.DWG

DESIGN		SH-34 OVER N. PERSIMMON CREEK	WOODWARD COUNTY
DRAWN		**TYPICAL SECTIONS**	
CHECKED			
CEC		STATE JOB NO. 28827(04)	SHEET NO. 2

JP 28827(04)
ROADWAY - 0100

PAY QUANTITIES (ROADWAY)

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	12,667
202(D)	0184	UNCLASSIFIED BORROW	(R-4)	CY	5,475
205(A)	4230	TYPE A SALVAGED TOPSOIL	(R-5)(R-7)	CY	4,804
221(C)	2801	TEMPORARY SILT FENCE		LF	768
221(F)	0100	TEMPORARY SILT DIKE		LF	161
221(G)	0150	TEMPORARY ROCK FILTER DAM TYPE 1		CY	20
230(A)	2806	SOLID SLAB SODDING	(R-7)(R-8)	SY	22,990
233(A)	2817	VEGETATIVE MULCHING	(3)(R-11)	AC	3.80
241	2832	MOWING	(R-16)	AC	23.68
307(K)	4300	STABILIZED SUBGRADE	(1)(R-1)	SY	6,361
310(B)	0149	SUBGRADE, METHOD B		SY	303
407(B)	0250	TACK COAT		GAL	3,678
408	5774	PRIME COAT	(R-28)	GAL	5,753
411(B)	5940	SUPERPAVE, TYPE S3 (PG 70-28 OK)	(R-32)	TON	531
411(B)	5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	(R-32)	TON	3,483
411(C)	5955	SUPERPAVE, TYPE S4 (PG 70-28 OK)	(R-32)	TON	344
411(C)	5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	(R-32)	TON	1,164
613(A)	4498	43" X 26" R.C. PIPE ARCH CLASS A-III		LF	96
613(B)	0689	18" CORR. GALV. STEEL PIPE	(R-46)	LF	24
613(B)	0698	72" CORR. GALV. STEEL PIPE	(R-46)	LF	204
613(B)	4819	96" CORR. GALV. STEEL PIPE	(R-46)	LF	79
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	2,539
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	(R-49)(R-50)	SY	11,286
619(B)	4767	REMOVAL OF ASPHALT DRIVEWAY	(R 49)(R 50)	SY	215
619(B)	4780	REMOVAL OF GUARDRAIL	(R 49)	LF	560
623(A)	0932	BEAM GUARDRAIL W BEAM SINGLE		LF	750
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	331

JP 28827(04)
CONSTRUCTION - 0640

PAY QUANTITIES (CONSTRUCTION)

PAY ITEM	CODE NO.	DESCRIPTION	UNIT	QUANTITY
220	2800	SWPPP DOCUMENTATION AND MANAGEMENT	LSUM	1

⚠ STAKING & MOBILIZATION FOR THIS PROJECT WILL BE INCLUDED IN THE BID PRICE ON THE MANDATORY TIED PROJECT, JOB PIECE NUMBER 28825(04).

SUGGESTED SEQUENCE OF CONSTRUCTION

(1) CONSTRUCT TEMPORARY DETOUR.

(2) SHIFT TRAFFIC TO TEMPORARY DETOUR. REMOVE EXISTING SH-34 SECTION AND BRIDGE. CONSTRUCT NEW SH-34 SECTION AND BRIDGE.

(3) 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 4,804 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 3.80 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.

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.

REVISIONS	
DESCRIPTION	DATE
⚠ STAKING REMOVED	8/10/16

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. 03444 HAS BEEN 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 ITEMS & NOTES (ROADWAY).DWG

DESIGN	
DRAWN	
CHECKED	
CEC	

SH-34 OVER N. PERSIMMON CREEK WOODWARD COUNTY

PAY ITEMS & NOTES (ROADWAY)

STATE JOB NO. 28827(04) SHEET NO. 3

REVISIONS	
DESCRIPTION	DATE

JP 28827(04)
0301

PAY QUANTITIES (PERMANENT TRAFFIC)

PAY ITEM	CODE NO.	DESCRIPTION		UNIT	QUANTITY
853	9069	GUARDRAIL DELINEATORS (TYPE 2, CODE 1)		EA	26
856(A)	8530	TRAFFIC STRIPE (MULTI-POLY.) (4" WIDE)	(TS-24)	LF	3,408

JP 28827(04)
0302

PAY QUANTITIES (TEMPORARY TRAFFIC)

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

MANDATORY TIE

THIS PROJECT SHALL BE MANDATORILY TIED WITH WOODWARD COUNTY JOB PIECE 28825(04) AND SHALL BE BID ACCORDINGLY.

PAY ITEMS & NOTES (PERMANENT TRAFFIC)

(TS-24) QUANTITY SHOWN INCLUDES 3,000 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND 408 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 5,400 L.F. (PAINT)(4" WIDE) WHITE 5,400 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 ITEMS & NOTES (TRAFFIC).DWG

DESIGN	
DRAWN	
CHECKED	
CEC	

SH-34 OVER N. PERSIMMON CREEK WOODWARD COUNTY

PAY ITEMS & NOTES (TRAFFIC)

STATE JOB NO. 28827(04) SHEET NO. 3A

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE

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 HP12X53 PILE AT EACH ABUTMENT IS 95.0 TONS.

THE FACTORED PILE REACTION FOR EACH HP14X89 PILE AT EACH PIER IS 225.0 TONS.

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

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

WHERE:
$\emptyset$ = 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 BUILT–UP CONTACT ANGLES SHALL CONFORM TO ASTM A240 (AUSTENTIC 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 (AUSTENTIC STAINLESS STEEL, TYPE 316, CHARPY V–NOTCH TESTING NOT REQUIRED). USE AUSTENTIC 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.

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.

GENERAL NOTES CONTINUED

CONCRETE –
ALL PEDESTAL CONCRETE EDGES SHALL HAVE A ¾" CHAMFER. ALL OTHER EXPOSED CONCRETE EDGES OF THE SUBSTRUCTURE SHALL HAVE A 1½" CHAMFER UNLESS OTHERWISE SHOWN OR NOTED. ALL EXPOSED CONCRETE EDGES OF THE SUPERSTRUCTURE SHALL HAVE A ¾" 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. SWALLOW USE OF BRIDGE NBI NO. 03444 HAS BEEN OBSERVED DURING THE INITIAL SURVEYS CONDUCTED AS PART OF THE BIOLOGICAL STUDIES IN JUNE, 2013. ANY ACTIVITIES WHICH WOULD DESTROY ACTIVE NESTS OR HARM EGGS OR BIRDS WOULD VIOLATE THE MIGRATORY BIRD TREATY ACT. THE RESIDENT ENGINEER WILL EVALUATE THE CONTRACTOR'S PROPOSED WORK METHODS AND CONCLUDE WHETHER THE PROPOSED WORK WOULD HARM THE NESTING BIRDS BEFORE WORK NEAR THE STRUCTURE IS AUTHORIZED. IF THE PROPOSED WORK WILL HARM THE 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.

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	Z.M.B.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

BRIDGE GENERAL NOTES

JOB PIECE NO. 28827(04) SHEET NO. 4

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE

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 101.6 C.Y. OF CLASS AA CONCRETE AND 19,760 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 2,010 LB. OF STRUCTURAL STEEL. INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE ELASTOMERIC PADS, ANCHOR PLATES, CONTACT ANGLES, 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 4,020 LB. OF STRUCTURAL STEEL. INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE ELASTOMERIC PADS, ANCHOR PLATES, CONTACT ANGLES, 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 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.

B7 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.

B8 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".

B9 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.

B10 RIPRAP QUANTITY ESTIMATED AT 120 LBS. PER CUBIC FOOT.

B11 FILTER BLANKET QUANTITY ESTIMATED AT 105 LBS. PER CUBIC FOOT.

B12 INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE PERFORATED PIPE AND PIPE UNDERDRAIN COVER MATERIAL (BOTH FILTER SAND 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 AS SHOWN ON STD. B40-C-ABUT-MISC AND STD. PUD-3.

B13 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.

B14 ITEM "REMOVAL OF EXISTING BRIDGE STRUCTURE" INCLUDES REMOVAL AND DISPOSAL OF SUPERSTRUCTURE AND SUBSTRUCTURE, INCLUDING PULLING EXISTING CONCRETE PILING, OF 7 – 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. 28827(04)
0200 BRIDGE A

PAY QUANTITIES

SH-34 OVER NORTH PERSIMMON CREEK
100' X 100' X 100' TYPE IV P.C. BEAM SPANS, 0° SKEW,
40' CLEAR ROADWAY WITH TR-4 PARAPETS ℄ STA. 2442+16.00

ITEM NO.	ITEM		UNIT	TOTAL
501(B) 1307	SUBSTRUCTURE EXCAVATION COMMON	B1,B2	C.Y.	3,600
501(G) 6309	CLSM BACKFILL	B1	C.Y.	210
503(A) 1313	PRESTRESSED CONCRETE BEAMS (TYPE IV)	B1	L.F.	1,495
504(A) 1304	APPROACH SLAB	B1,B3	S.Y.	281.2
504(B) 1305	SAW-CUT GROOVING	B1	S.Y.	1,607.6
504(C) 6250	SEALED EXPANSION JOINT	B1	L.F.	41.8
504(D) 6245	CONCRETE RAIL (TR4)	B1	L.F.	723.3
506(A) 1322	STRUCTURAL STEEL	B1	LB.	1,430
507(A) 6170	STAINLESS STEEL FIXED BEARING ASSEMBLY	B1,B4	EA.	10
507(B) 6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY	B1,B5	EA.	20
509(A) 1326	CLASS AA CONCRETE	B1,B6	C.Y.	580.6
509(B) 1328	CLASS A CONCRETE	B1,B6	C.Y.	168.0
509(D) 1331	CLASS C CONCRETE		C.Y.	9.3
511(A) 1332	REINFORCING STEEL	B1	LB.	2,200
511(B) 6010	EPOXY COATED REINFORCING STEEL	B1	LB.	161,450
514(A) 6010	PILES, FURNISHED (HP 10X42)	B7	L.F.	432
514(A) 6011	PILES, FURNISHED (HP 12X53)	B7	L.F.	1,887
514(A) 6016	PILES, FURNISHED (HP 14X89)	B7	L.F.	3,900
514(B) 6292	PILES, DRIVEN (HP 10X42)		L.F.	432
514(B) 6294	PILES, DRIVEN (HP 12X53)		L.F.	1,887
514(B) 6297	PILES, DRIVEN (HP 14X89)		L.F.	3,900
514(L) 6220	PILE SPLICE, H-PILE (NON-BIDDABLE)		EA.	1
515(A) 6013	WATER REPELLENT (VISUALLY INSPECTED)	B1	S.Y.	1,319
523(A) 6550	SEALER CRACK PREPARATION	B1,B8	L.F.	41
523(B) 6560	SEALER RESIN	B1,B9	GAL.	1
601(B) 1353	TYPE I-A PLAIN RIPRAP	B10	TON	1,283
601(C) 1355	TYPE I-A FILTER BLANKET	B11	TON	289
613(H) 6204	6" PERFORATED PIPE UNDERDRAIN ROUND	B1,B12	L.F.	84
613(I) 6207	6" NON-PERF. PIPE UNDERDRAIN RND.	B13	L.F.	68
619(D) 1397	REMOVAL OF EXISTING BRIDGE STRUCTURE	B14	LSUM	1

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

PAY ITEMS AND NOTES (BRIDGE)

JOB PIECE NO. 28827(04) SHEET NO. 5

REVISIONS	
DESCRIPTION	DATE

SUMMARY OF SURFACING

STATION TO STATION	ALIGNMENT	STABILIZED SUBGRADE 307(C)	SUBGRADE METHOD B 310(B)	TACK COAT 407(B)	PRIME COAT 408	SUPERPAVE, TYPE S3 (PG 70-28 OK) 411(B)	SUPERPAVE, TYPE S3 (PG 64-22 OK) 411(B)	SUPERPAVE, TYPE S4 (PG 70-28 OK) 411(C)	SUPERPAVE, TYPE S4 (PG 64-22 OK) 411(C)
		SY	SY	GAL	GAL	TON	TON	TON	TON
MAINLINE									
2434+50.00 TO 2440+35.16	CL SURVEY	3,258		1,327	1,141	273	938	177	108
2443+96.83 TO 2449+50.00	CL SURVEY	3,103		1,265	1,081	258	889	167	103
DETOUR									
2428+49.86 TO 2443+00.00	DETOUR			564	1,742		853		423
2443+00.00 TO 2455+03.88	DETOUR			477	1,462		725		356
WIDENING FOR GUARDRAIL									
2437+26.41 TO 2440+35.16 LT	CL SURVEY				49				31
2436+51.41 TO 2440+35.16 RT.	CL SURVEY				61				39
2443+96.83 TO 2447+80.58 LT.	CL SURVEY				62				39
2443+96.83 TO 2447+05.58 RT.	CL SURVEY				49				31
DRIVEWAYS*			303	45	106		68		34
TOTAL		**6,361**	**303**	**3,678**	**5,753**	**531**	**3,483**	**344**	**1,164**

*REFERENCE "SUMMARY OF DRIVEWAYS" FOR ADDITIONAL INFORMATION

SUMMARY OF DRIVEWAYS

SHEET NUMBER	ALIGNMENT	STATION	LT.	RT.	TYPE	LENGTH	WIDTH	RADII	
						LF	LF	LT	RT.
18	CL SURVEY	2436+25.00		X	ASPH. TYPE 1	120	16	15	15
18	CL SURVEY	2436+25.00		X	TEMP. ASPH. DR.	51	12	15	15

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

SUMMARY OF REMOVALS

SHEET NUMBER	ALIGNMENT	REMOVAL OF FENCE 619(B)	REMOVAL OF ASPHALT PAVEMENT 619(B)	REMOVAL OF ASPHALT DR VEWAY 619(B)	REMOVAL OF GUARDRAIL 619(B)
		LT	SY	SY	LF
18	CL SURVEY	1,225	2,147	136	280
19	CL SURVEY	1,314	2,179		280
18	DETOUR		3,780		
19	DETOUR		3,180	79	
	TOTAL	**2,539**	**11,286**	**215**	**560**

SUMMARY OF MISCELLANEOUS ITEMS

SHEET NUMBER	ALIGNMENT	TYPE A SALVAGED TOPSOIL 205(A)	MOWING 241
		CY	AC
18	CL SURVEY	2,456	6.36
19	CL SURVEY	2,348	5.48
	TOTAL	**4,804**	**11.84**

REMOVAL OF STRUCTURES AND OBSTRUCTIONS SUMMARY

ALIGNMENT	STATION	SHEET NO.	DESCRIPTION	QUANTITY
CL SURVEY	2436+24.99, 100.09' RT	18	TEMPORARY 18" CGWP	24 LF
CL SURVEY	2437+64.07, 50.00' RT	18	42"X78" RCPA W/ HEADWALLS	31 LF
CL SURVEY	2442+41.71, 41.38' RT, 108.93' RT	18	TEMPORARY 72" CGSP	68 LF
CL SURVEY	2442+50.71, 41.26' RT, 108.82' RT	18	TEMPORARY 72" CGSP	68 LF
CL SURVEY	2442+61.72, 35.77' RT, 114.82' RT	18	TEMPORARY 96" CGSP	79 LF
CL SURVEY	2442+72.72, 40.99' RT, 108.55' RT	18	TEMPORARY 72" CGSP	68 LF

SUMMARY OF EARTHWORK

STATION TO STATION	UNCLASSIFIED EXCAVATION 202(A)	EMBANKMENT +15%	EXCESS EXCAVATION	UNCLASSIFIED BORROW 202(D)
	CY	CY	CY	CY
PHASE 1				
2428+49.86 TO 2455+03.88	1,987	6,462		4,475
PHASE 2				
2434+50.00 TO 2449+50.00	3,882	2,481	1,401	
PHASE 3				
2428+49.86 TO 2455+03.88	5,798	2,266	3,532	
TOTAL	**11,667**	**11,209**	**4,933**	**4,475**

SUMMARY OF PAVEMENT MARKINGS

SHEET NUMBER	ALIGNMENT	TRAFFIC STRIPE (MULTI-POLY.)(WHITE) (4" WIDE) 856(A)	TRAFFIC STRIPE (MULTI-POLY.)(YELLOW) (4" WIDE) 856(A)
		LF	LF
21	CL SURVEY	3,000	408
	TOTAL	**3,000**	**408**

SUMMARY OF EROSION CONTROL

SHEET NUMBER	TEMPORARY SILT FENCE 221(C)	TEMPORARY SILT DIKE 221(F)	TEMPORARY ROCK FILTER DAM TYPE 1 221(G)	SOLID SLAB SODDING 230(A)	VEGETATIVE MULCHING 233(A)
	LF	LF	CY	SY	AC
17	768	161	20	22,990	3.80
TOTAL	**768**	**161**	**20**	**22,990**	**3.80**

SUMMARY OF FENCE

ALIGNMENT	STATION TO STATION	LT.	RT.	FENCE-STYLE SWF (5 BARBED WIRE) 624(C)
				LF
CL SURVEY	2442+95.00 TO 2446+06.00	X		331
			TOTAL	**331**

SUMMARY OF DRAINAGE STRUCTURES

STRUCTURE NUMBER	SHEET NUMBER	ALIGNMENT	STATION	OFFSET	DESCRIPTION	DESIGN	FL ELEVATION PIPE IN	FL ELEVATION PIPE OUT	PIPE SLOPE OUT	43"X26" RCPA CLASS III 613(A)	18" CGSP 613(B)	72" CGSP 613(B)	96" CGSP 613(B)	TYPE S6 CET 613(M)
							FT	FT	%	LF	LF	LF	LF	EA
1	18	CL SURVEY	2436+24.99	47.59' RT	SIDE DRAIN	SPI-4-0	2021.96	2020.95	1.05	96				2
T1	18	CL SURVEY	2442+41.71	41.38' RT, 108.93' RT	CROSS DRAIN	SPI-4-0	2012.40	2012.00	0.56			68		
T2	18	CL SURVEY	2442+50.71	41.26' RT, 108.82' RT	CROSS DRAIN	SPI-4-0	2012.40	2012.00	0.56			68		
T3	18	CL SURVEY	2442+61.72	35.77' RT, 114.82' RT	CROSS DRAIN	SPI-4-0	2010.60	2010.00	0.76				79	
T4	18	CL SURVEY	2442+72.72	40.99' RT, 108.55' RT	CROSS DRAIN	SPI-4-0	2012.40	2012.00	0.59			68		
T5	18	CL SURVEY	2436+24.99	100.09' RT	SIDE DRAIN	SPI-4-0	2021.38	2021.14	1.00		24			
									TOTAL	**96**	**24**	**204**	**79**	**2**

SUMMARY OF TRAFFIC CONTROL

SHEET NUMBER	SIGN DAYS	CONSTRUCTION TRAFFIC STRIPE (PAINT)(4") 857(A)	PAVEMENT MARKING REMOVAL (TRAFFIC STRIPE) 857(F)	CONSTRUCTION SIGNS 0 TO 6.25 S.F. 880(B)		CONSTRUCTION SIGNS 6.26 TO 15.99 S.F. 880(B)		CONSTRUCTION SIGNS 16.0 TO 32.99 S.F. 880(B)		CONSTRUCTION BARRICADES (TYPE II) 880(C)		WING BARRICADES 880(C)		WARNING LIGHTS (TYPE A) 880(E)		CHANNELIZER CONES 880(G)	
		LF	LF	EA	SD	EA	SD	EA	SD	EA	SD	EA	SD	EA	SD	EA	SD
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 GUARDRAIL

STATION TO STATION	LT.	RT.	TOTAL LENGTH INCLUDING ANCHOR UNITS	BEAM GUARDRAIL W-BEAM SINGLE 625(A)	GUARDRAIL END TREATMENT (31") 625(G)	GUARDRAIL BRIDGE CONN-THRIE BEAM (31") 625(I)
			LF	LF	EA	EA
2437+42.64 TO 2440+35.79		X	293.75	225	1	1
2443+96.21 TO 2446+14.96		X	218.75	150	1	1
2438+17.64 TO 2440+35.79	X		218.75	150	1	1
2443+96.21 TO 2446+89.96	X		293.75	225	1	1
			TOTAL	750	4	4

FILENAME: 6 SUMMARY SHEET.DWG

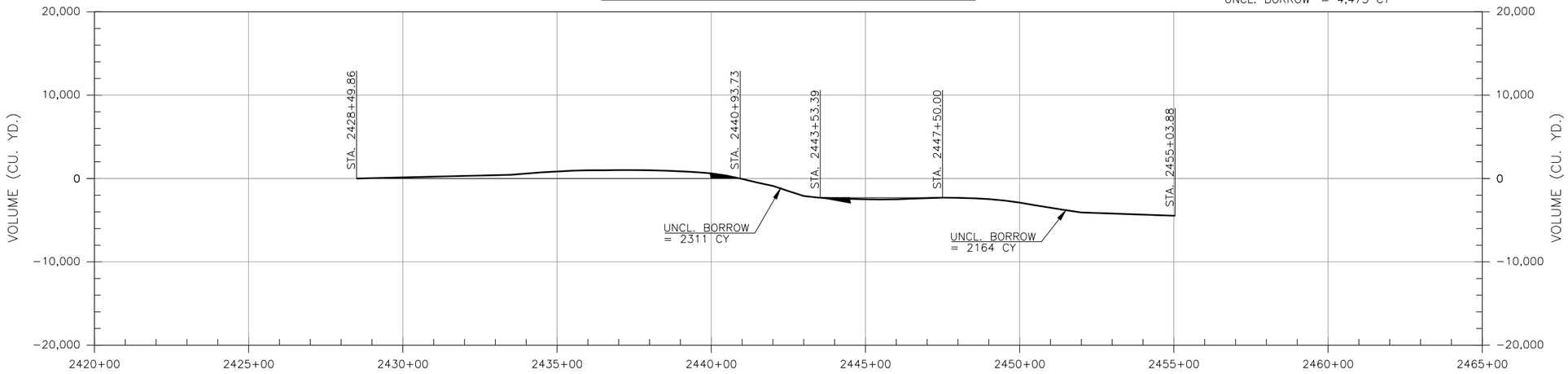
DESIGN		SH-34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
DRAWN		**SUMMARY SHEET**
CHECKED		
CEC		STATE JOB NO. 28827(04) SHEET NO. 6

REVISIONS	
DESCRIPTION	DATE

MASS DIAGRAM
PHASE 1 (DETOUR) TOTAL VOLUME

PHASE 1 (DETOUR) EARTHWORK ESTIMATE
STA. 2428+49.86 TO STA. 2455+03.88

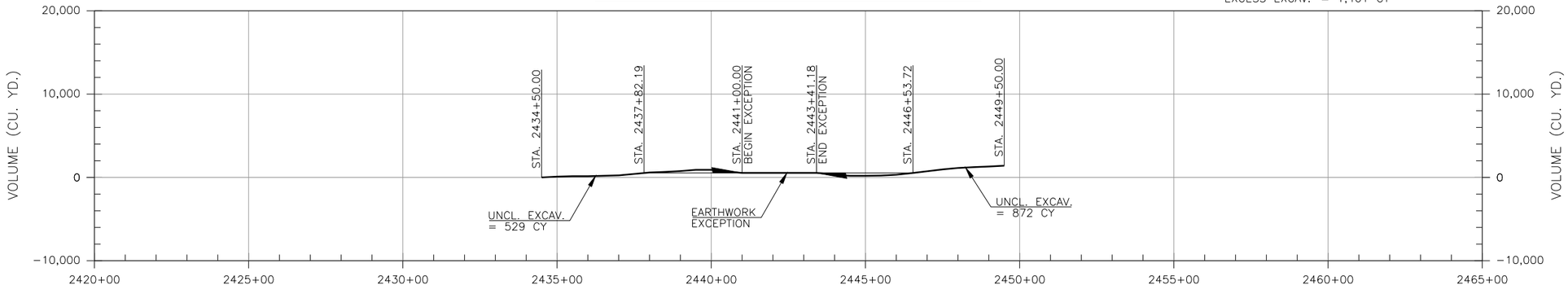
UNCL. EXCAV. = 1,987 CY
EMB. + 15% = 6,462 CY
UNCL. BORROW = 4,475 CY



MASS DIAGRAM
PHASE 2 (MAINLINE) TOTAL VOLUME

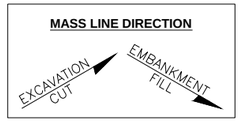
PHASE 2 (MAINLINE) EARTHWORK ESTIMATE
STA. 2434+50.00 TO STA. 2449+50.00

UNCL. EXCAV. = 3,882 CY
EMB. + 15% = 2,481 CY
EXCESS EXCAV. = 1,401 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.

MASS LINE DIRECTION



FILENAME: 7A MASS DIAGRAM (SHEET 2 OF 2).DWG

DESIGN		SH−34 OVER N. PERSIMMON CREEK	WOODWARD COUNTY
DRAWN		**MASS DIAGRAM (SHEET 1 OF 2)**	
CHECKED			
CEC		STATE JOB NO. 28827(04)	SHEET NO. 7

REVISIONS		
DESCRIPTION		DATE

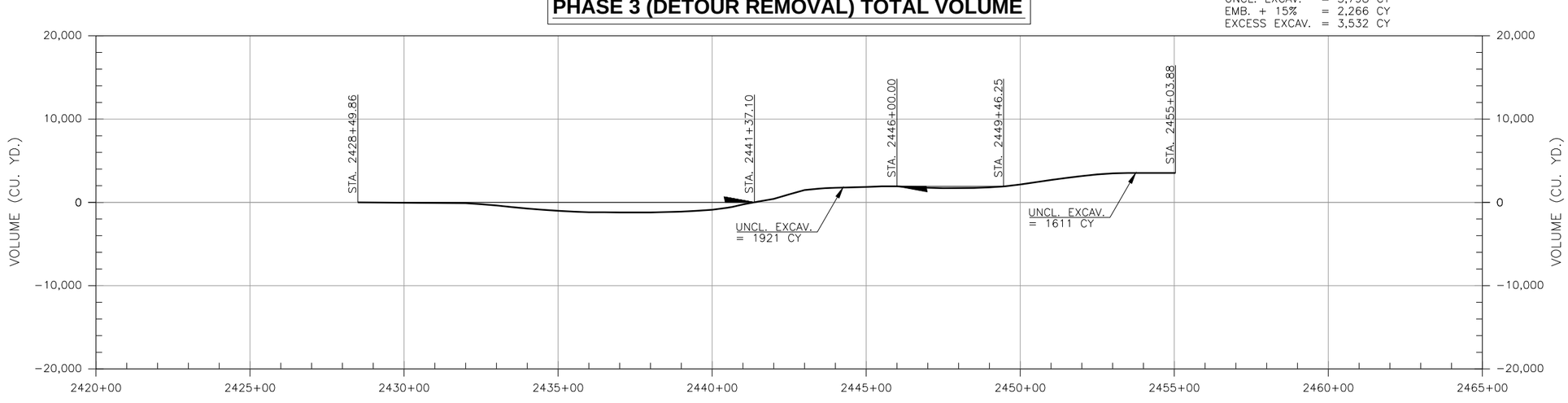
SUMMARY OF EARTHWORK

STATION TO STATION	UNCLASSIFIED EXCAVATION 202(A)	EMBANKMENT +15%	EXCESS EXCAVATION	UNCLASSIFIED BORROW 202(D)
	CY	CY	CY	CY
PHASE 1				
2428+49.86 TO 2455+03.88	1,987	6,462		4,475
PHASE 2				
2434+50.00 TO 2449+50.00	3,882	2,481	1,401	
PHASE 3				
2428+49.86 TO 2455+03.88	5,798	2,266	3,532	
TOTAL	**11,667**	**11,209**	**4,933**	**4,475**

MASS DIAGRAM
PHASE 3 (DETOUR REMOVAL) TOTAL VOLUME

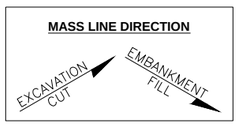
PHASE 3 (DETOUR REMOVAL) EARTHWORK ESTIMATE
STA. 2428+49.86 TO STA. 2455+03.88

UNCL. EXCAV. = 5,798 CY
EMB. + 15% = 2,266 CY
EXCESS EXCAV. = 3,532 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.

MASS LINE DIRECTION



FILENAME: 7A MASS DIAGRAM (SHEET 2 OF 2).DWG

DESIGN		SH-34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
DRAWN		**MASS DIAGRAM (SHEET 2 OF 2)**
CHECKED		
CEC		STATE JOB NO. 28827(04) SHEET NO. 7A

STORM WATER MANAGEMENT PLAN

REVISIONS

DESCRIPTION	DATE

SITE DESCRIPTION

PROJECT LIMITS: BEGINS 4,075 FEET SOUTH OF SH-34 AND EW-51 INTERSECTION, CONTINUING NORTH 2,688 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: 6.45 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°16'06.81" N, 99°20'08.81" W

NAME OF RECEIVING WATERS: NORTH PERSIMMON CREEK

SENSITIVE WATERS OR WATERSHEDS: YES [ ] NO [X]

303(d) IMPAIRED WATERS: YES [ ] NO [X]

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.

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- ____ TEMPORARY SEEDING
- _X_ PERMANENT SODDING, SPRIGGING OR SEEDING
- _X_ VEGETATIVE MULCHING
- ____ SOIL RETENTION BLANKET
- _X_ 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
- _X_ TEMPORARY SILT FENCE
- _X_ TEMPORARY SILT DIKES
- ____ TEMPORARY FIBER LOG
- ____ DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- ____ DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- _X_ ROCK FILTER DAMS
- ____ TEMPORARY SLOPE DRAIN
- ____ PAVED DITCH W/ DITCH LINER PROTECTION
- ____ TEMPORARY DIVERSION CHANNELS
- ____ TEMPORARY SEDIMENT BASINS
- ____ TEMPORARY SEDIMENT TRAPS
- ____ TEMPORARY SEDIMENT FILTERS
- _X_ TEMPORARY SEDIMENT REMOVAL
- ____ RIP RAP
- _X_ INLET SEDIMENT FILTER
- ____ TEMPORARY BRUSH SEDIMENT BARRIERS
- ____ SANDBAG BERMS
- ____ TEMPORARY STREAM CROSSINGS

OFFSITE VEHICLE TRACKING:

- _X_ HAUL ROADS DAMPENED FOR DUST CONTROL
- _X_ LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- _X_ 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 STORM WATER MANAGEMENT PLAN.DWG

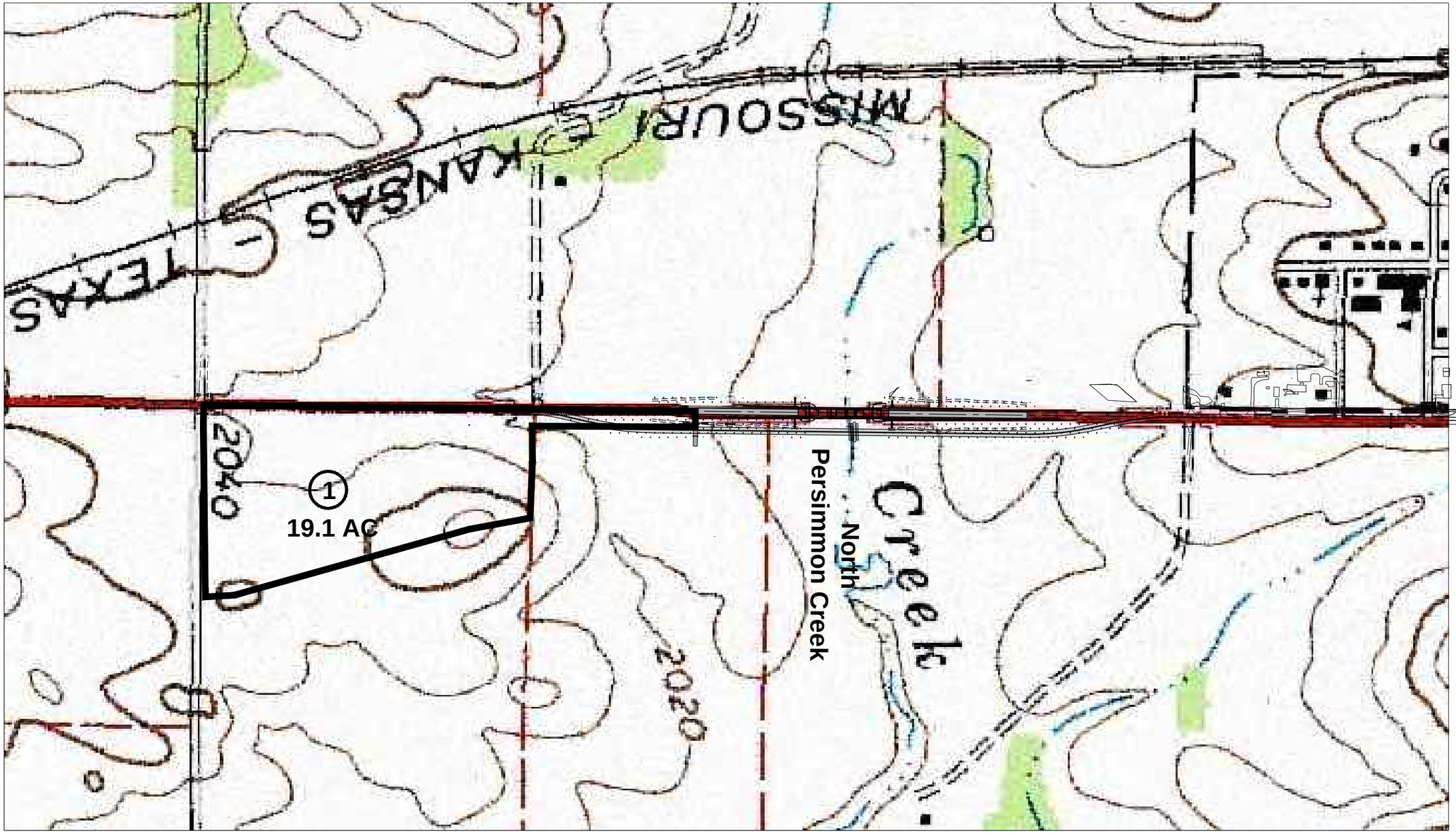
DESIGN	
DRAWN	
CHECKED	
CEC	

SH-34 OVER N. PERSIMMON CREEK WOODWARD COUNTY

STORM WATER MANAGEMENT PLAN

STATE JOB NO. 28827(04) SHEET NO. 8

REVISIONS	
DESCRIPTION	DATE



FILENAME: 9 DRAINAGE AREA MAP.DWG

DESIGN	
DRAWN	
CHECKED	
CEC	

SH-34 OVER N. PERSIMMON CREEK WOODWARD COUNTY

DRAINAGE AREA MAP

JOB PIECE NO. 28827(04) SHEET NO. 9

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION
SURVEY DIVISION

SWO 4844(1) J/P 28827(04) ; E.C. 1394 WOODWARD CO.

HORIZONTAL CONTROL:

( ) Oklahoma Coordinate System of 1927 _____ Zone.
(X) Oklahoma Coordinate System of 1983 (1993) North Zone.
( ) Oklahoma Dept. of Transportation Plane Coordinate System of 1927 _____ Zone.
( ) Oklahoma Dept. of Transportation Plane Coordinate System of 1983 _____ Zone.
( ) Arbitrary Coordinate System

HORIZONTAL PLANE DATUM DEFINITION:

Oklahoma Department of Transportation coordinates were derived by multiplying the Oklahoma Coordinate Systems of 1927 or 1983 by the combined adjustment factor of 1.00010. The ODOT Coordinate System is 2350 feet above sea level.

1. Primary Control adjusted to OBTAINED BY OPUS SOLUTIONS (B) Order
Stations
A) Closure before adjustment X ; Y Angles
Trav. Length No. Angles ; 1:
B) ; is ( ) Order before adjustment.
C) Method of Distance Measurement:
( ) Electronic (X) GPS ( ) Triangulation ( ) Chained
D) Instrument used for angles

2. Secondary Control adjusted to Primary Control (B) Order
Stations W-77-740, W-77-741
A) Closure before adjustment X ; Y Angles
B) Secondary Control ; is (3rd) Order; Tied to
C) d of Distance Measurement:
( ) Electronic (X) GPS ( ) Triangulation ( ) Chained
D) Instrument used for angles Topcon Hiper II GPS

VERTICAL CONTROL IS (3rd) order. Level Line taken from 3" ALUMINUM CAP W-77-740
(3RD order and tied to OBTAINED BY OPUS SOLUTIONS (3RD) order.
VERTICAL CLOSURE = 0.006 feet before adjustment. 3rd order would allow 0.05 feet.

( ) NGVD 29 datum
(X) NAVD 88 datum

ACCURACY DEFINITION:

(1) HORIZONTAL: (3rd Order = Class I = 1 : 10,000')
(3rd Order = Class II = 1 : 5,000')
(2) VERTICAL: (1st Order = 0.017 Ft. x sqrt. of Mi.) (2nd Order = 0.035 Ft. x sqrt. of Mi.)
(3rd Order = 0.050 Ft. x sqrt. of Mi.)

Distribution:
Copy w/survey reports
Copy in each Alignment and level book

JOSEPH H. FARMER
Professional Land Surveyor

May 29, 2013
Date

(FORM SD #20)
Rev. 11/03

UTILITY OWNERS CONTACT INFORMATION		
OWNER	ADDRESS	PHONE
OG&E	3220 S. HIGH ST. OKLAHOMA CITY, OK 73129	(405) 553-0902
ONG	4901 N. SANTA FE AVE. P.O.BOX 401 OKC, OK 73118	(405) 556-6411
PIONEER TELEPHONE	205 E. ROBERTS KINGFISHER, OK 73750	(405) 375-0255
TOWN OF SHARON		(580) 334-0174

BEFORE YOU DIG 1-800-522-OKIE CALL OKIE

THIS SURVEY MEETS THE OKLAHOMA MINIMUM STANDARDS FOR THE PRACTICE OF LAND SURVEYING AS ADOPTED BY THE OKLAHOMA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS, MAY 11, 2007.

SPECIFICATIONS FOR SURVEYS FOR PRIMARY AND SECONDARY HIGHWAYS DATED FEBRUARY 2007 GOVERN.

SDS # 01 OF 07

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

SURVEY OF

STATE HIGHWAY 34

BRIDGE OVER NORTH PERSIMMON CREEK, 7.6 MILES NORTH OF THE DEWEY COUNTY LINE

SWO 4844(1)

STATE JOB NO. 28827(04),

WOODWARD COUNTY

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS

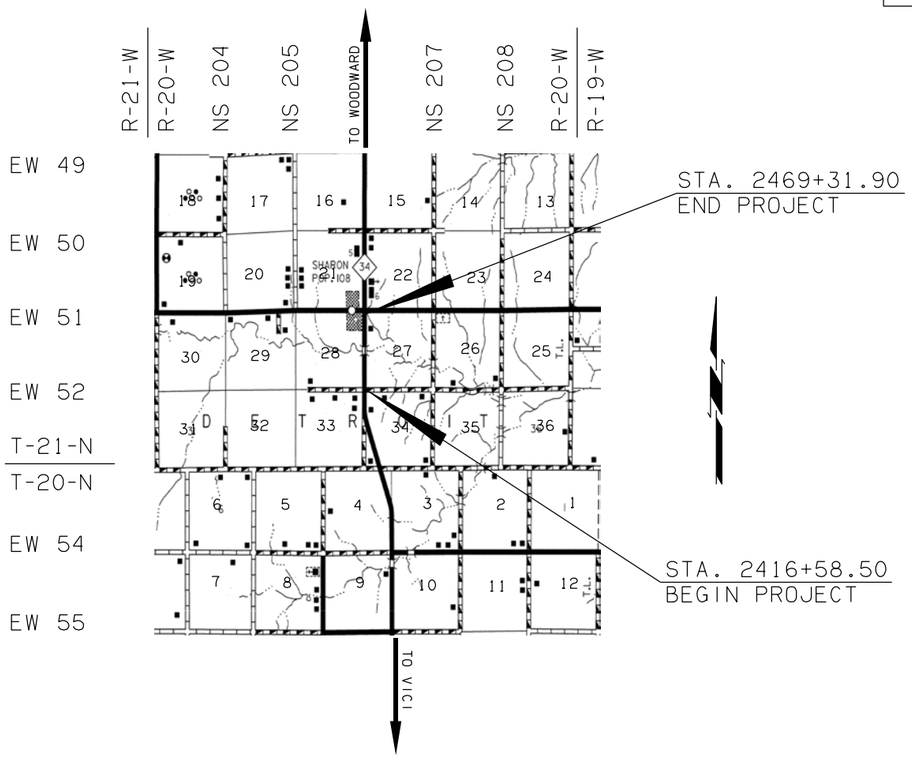
REVISIONS
DESCRIPTION DATE

INDEX OF SHEETS

PERSONNEL:
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

SURVEY BEGAN: NOVEMBER 14, 2012
SURVEY COMPLETED: APRIL 16, 2013

EQUIPMENT:
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 AUTOCAD PLATFORMS



PROJECT LENGTH: 5,273.4 FT. 1.00 MILE

EQUATIONS: BOP STA. 2416+58.50
EOP STA. 2469+31.90

EXCEPTIONS: NONE

Electronic File Transfer Disclaimer:

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STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

SWO 4844(1) JOB/PIECE 28827(04) ENGR. CONTRACT NO. 1394

LAND SURVEYORS CERTIFICATION

I hereby certify that all land and property sub division distances, angles, corners and monumentation made or used in conjunction with this survey and depicted or recorded herein or hereon were recovered, established or re-established in substantial conformity with:

- applicable instructions contained in the U.S. Government Bureau of Land Management publication "Manual of Surveying Instructions";
- its supplement, "Restoration of Lost or obliterated Corners and Subdivision of Sections";
- "Oklahoma Minimum Standards for the Practice of Land Surveying" as adopted by the State Board of Registration for Professional Engineers and Land Surveyors; and
- sound land surveying practices;

including a thorough search, study, analysis and consideration of all existing records and field evidence.

I further certify that all survey monuments depicted exist and that all land survey work was done by me or under my direct supervision and that it is true, accurate and correct to the best of my knowledge and belief.

Dated this 29 day of May, 2013.

Land Surveyor _____
Signature

Joseph H. Farmer
Printed Name

LICENSED PROFESSIONAL LAND SURVEYOR JOSEPH H. FARMER 1739 OKLAHOMA

Oklahoma Registered Land Surveyor No. 1739

Certificate of Authorization No. 32 Exp. Date June 30, 2014

DATE APPROVED _____
BY _____
CHIEF OF SURVEYS

PREPARED BY:
JOSEPH H. FARMER, PLS
COBB ENGINEERING COMPANY

COBB ENGINEERING COMPANY EST. 1921

PREPARED FOR:
OKLAHOMA DEPARTMENT OF TRANSPORTATION
SURVEY DIVISION

SHEET NO. 10

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS

REVISIONS	
DESCRIPTION	DATE

OKLAHOMA DEPARTMENT OF TRANSPORTATION

SURVEY DIVISION (405) 521-2621 FAX (405) 522-0364

05/29/2013

To: Mr. Larry Reser, Chief of Surveys
From: Joseph H. Farmer, Professional Land Surveyor
Subject: Re: SWO 4844(1) – S.H. 34, Bridge over North Persimmon Creek, 7.6 miles North of the Dewey County Line, Woodward County, Oklahoma

Historical Letter and Written Report

1. GENERAL

A. Survey began November 12, 2012
Survey completed April 16, 2013
B. The measurement unit for this project was 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 North Persimmon Creek south of Sharon. The survey will include 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. 2416+58.50 (EW-52 Section Line) and extends North to P.I. Sta. 2469+31.90 (EW-51 Section Line) = P.I. Sta. 2469+33.40 as established under SWO 1994(1) survey and shown on FAP No. F-418 (8) plans (approximate centerline length = 1.00 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 one (1) monument along this survey. It is a 3 inch aluminum cap marked W-77-740.

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-77-740. A complete set of check levels was run throughout the survey using a Sokkia digital level.

B. The adjusted levels and vertical differences between bench marks are shown in Following file: SWO4844_1_V1.dgn (SDS 3) and SWO4844_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 TSCI, TSCII, 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 SWO4844_1_V1_SFF.dgn and SWO 4844_1_V1_TOPO.dgn.

10. DTM / CROSS SECTIONS

Cross sections on this survey were provided 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 SWO4844_1_V1_SFF.dgn

11. LAND TIES

Land ties for this survey were established for the following:

T-21-N, R-20-W, I.M. – Secs. 27 and 28

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.

Ehud Noble Darling 10/02/1873

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

NORTH QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-745, T-21-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 R. JIVIDEN, LS 1083, ON 01-03-95.

NORTHEAST CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-746, T-21-N, R-20-W, I.M. FOUND 60D NAIL 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 2 REMAINING REFERENCES ON OCCR FILED BY R. JIVIDEN, LS 1083, ON 08-14-85.

EAST QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-747, T-21-N, R-20-W, I.M. SET 5/8" IRON PIN WITH CA 32 CAP 6" DEEP. SINGLE PROPORTION MEASUREMENT BETWEEN SECTION CORNERS 0.5 MILE NORTH AND 0.5 MILE SOUTH.

SOUTHEAST CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-754, T-21-N, R-20-W, I.M. FOUND 1/2" IRON PIN 2" DEEP. MATCHES MONUMENT DESCRIPTION ON OCCR FILED BY T. JIVIDEN, LS 1149, ON 08-14-85.

SOUTH QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-753, T-21-N, R-20-W, I.M. SET 5/8" IRON PIN WITH CA 32 CAP 6" DEEP. MONUMENT WAS SET ON-LINE BETWEEN SECTION CORNERS 0.5 MILE EAST AND 0.5 MILE WEST AND IN-LINE WITH FENCE RUNNIN SOUTH.

SOUTHWEST CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-752, T-21-N, R-20-W, I.M. FOUND 3/4" IRON PIN 10" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS DISTANCE TO CENTERLINE OF SURVEY FOR SH-34 AS CALLED OUT ON SH-34 FAP NO. F-418(8) HIGHWAY PLANS.

WEST QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-748, T-21-N, R-20-W, I.M. SET 5/8" IRON PIN WITH CA 32 CAP. MONUMENT WAS SET FROM SH-34 FAP F-418(8) HIGHWAY PLANS.

NORTH QUARTER CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-743, T-21-N, R-20-W, I.M. FOUND 1/2" IRON PIN 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS REFERENCES ON OCCR FILED BY R. JIVIDEN, LS 1083, ON 07-22-08.

NORTHEAST CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-744, T-21-N, R-20-W, I.M. FOUND BENT 3/4" IRON PIN 12" DEEP. MONUMENT FITS DISTANCE TO CENTERLINE OF SURVEY FOR SH034 AS CALLED OUT ON SH-34 FAP NO. F-418(8) HIGHWAY PLANS.

SOUTH QUARTER CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-751, T-21-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH LS 1083 CAP 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS REFERENCES ON OCCR FILED BY R. JIVIDEN, LS 1083, ON 12-26-07.

SOUTHEAST CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-750, T-21-N, R-20-W, I.M. SET 5/8" IRON PIN WITH CA 32 CAP. MONUMENT WAS SET ON NORTH SIDE OF 8" WOOD FENCE POST. MONUMENT FITS WITHIN 0.03' OF PROPORTIONAL DISTANCE TO QUARTER SECTION CORNER 0.5 MILE EAST. OLD FENCE LINE 0.5 MILE NORTH FITS WITHIN 1' OF SINGLE PROPORTION MEASUREMENT BETWEEN THIS CORNER AND SECTION CORNER 1 MILE NORTH.

WEST QUARTER CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-749, T-21-N, R-20-W, I.M. SET 5/8" IRON PIN WITH CA 32 CAP. MONUMENT WAS SET ON-LINE BETWEEN SECTION CORNERS 0.5 MILE NORTH AND 0.5 MILE SOUTH AND IN-LINE WITH OLD FENCE RUNNING EAST AND WEST.

NORTHWEST CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-742, T-21-N, R-20-W, I.M. FOUND 60D NAIL 6" DEEP. MONUMENT FITS PROPORTIONAL DISTANCE TO QUARTER SECTION CORNER 0.5 MILE EAST. MONUMENT ALSO FALLS IN CENTER OF EAST-WEST ROAD AND IN-LINE WITH ROAD RUNNING NORTH.

12. EXISTING RIGHT-OF-WAY

Existing right of way as shown on this survey is based off of FAP-418 (8) Plans and verified with right-of-way deeds where available.

13. UTILITIES

A. All utility companies servicing this survey project were contacted through "CALL OKIE". Contacts for the town of Sharon water lines and sanitary sewer lines were provided by Ed Laird (Director of Environmental Services, Woodward Public Works Dept.) (580) 254-8554.

B. No utilities of any kind were located by USIC (Utility Locator). There were multiple correspondences between Tanner Wentworth (Cobb Engr. Survey Party Chief) and the USIC utility line locator. The USIC utility line locator said he would mark the lines and then provided dates as to when he would mark them on three separate occasions. After each occasion The USIC locator mentioned that he was "too busy" and could not mark the lines. After two weeks and multiple attempts to get the lines marked by USIC, Tanner Wentworth left messages with Jason Dewey (USIC Northwest Supervisor) and Dave Stewart (USIC West supervisor) in an attempt to get the lines marked. No USIC representatives responded to these messages.

C. Information regarding type, size, ownerships, location, depth, etc. is placed in computer file SWO4844_1_V1_SD7.pdf.

14. Environmental Concerns

There were no environmental concerns that were encountered.

15. DRAINAGE INFORMATION

Drainage areas were determined from USGS Stream Stats and USGS Quad Maps. Drainage data was taken from USGS Basin Characteristics Report. Data was field verified for accuracy placed in computer file SWO4844_1_V1_DRA.dgn and SWO4844_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 will be 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. From 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 GTP 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 a Microstation Platform
AutoCAD Civil 3D
Microstation V8

19. Personnel

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 1
Parker Kupler, Technician 1
Matthew Chernicky, Lead ROW Agent

P.L.S.	J.H.F.	05/29/13	S.H. 34, BRIDGE OVER N. PERSIMMON CREEK, 7.6 MILES N. OF THE DEWEY COUNTY LINE — WOODWARD COUNTY
DRAWN	J.E.M.	05/29/13	
CHECKED	T.J.W.	05/29/13	**HISTORICAL LETTER & WRITTEN REPORT**
APPROV.	J.H.F.	05/29/13	
CREW CHIEF		T.J.W.	SWO NO. 4844(1) J/P NO. 28827(04) SHEET NO. 11

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS

REVISIONS	
DESCRIPTION	DATE

S.H. 34, BRIDGE OVER NORTH PERSIMMON CREEK, 7.6 MILES NORTH OF THE DEWEY COUNTY LINE

CHECK LEVELS — **SWO# 4844(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						**2041.417**	SET 5/8" IRON PIN WITH ALUMINUM CAP STAMPED W-77-740 APPROXIMATE STA. 2414+71.81 65.89' RT.
to	0.502	0.500	0.5010	0.501			
BM 201					2041.9180		CUT "X" IN DRAINAGE STRUCTURE NORTH HEADWALL STA. 2416+71.94 40.84' LT.
to	-1.258	-1.257	-1.2575	-1.258			
TBM 202					2040.6605		SET 5/8" IRON PIN WITH COBB CAP STA. 2417+09.38 56.23' RT.
to	-1.719	-1.729	-1.7240	-1.724			
BM 203					2038.9365		SET RAILROAD SPIKE IN EAST SIDE OF POWER POLE STA. 2421+24.33 63.19' LT.
to	-1.788	-1.787	-1.7875	-1.788			
BM 204					2037.1490		SET RAILROAD SPIKE IN EAST SIDE OF POWER POLE STA. 2424+27.64 62.75' LT.
to	-3.568	-3.566	-3.5670	-3.567			
TBM 205					2033.5820		SET 5/8" IRON PIN WITH COBB CAP STA. 2429+75.60 61.25' RT.
to	-2.786	-2.787	-2.7865	-2.787			
BM 206					2030.7955		CUT "X" IN DRAINAGE STRUCTURE NORTH HEADWALL STA. 2430+00.97 41.05' LT.
to	-2.368	-2.366	-2.3670	-2.367			
BM 207					2028.4285		SET RAILROAD SPIKE IN EAST SIDE OF POWER POLE STA. 2433+77.63 63.66' LT.
to	-5.465	-5.465	-5.4650	-5.465			
BM 208					2022.9635		CUT "X" IN DRAINAGE STRUCTURE NORTH HEADWALL STA. 2437+78.81 49.94' RT.
to	3.729	3.726	3.7275	3.728			
TBM 209					2026.6910		SET MAG NAIL WITH COBB SHINER STA. 2440+67.10 18.02' RT.
to	0.823	0.824	0.8235	0.824			
BM 210					2027.5145		CUT "X" IN BRIDGE SOUTHEAST WINGWALL STA. 2440+79.01 17.63' RT.
to	-0.013	-0.013	-0.0130	-0.013			
BM 211					2027.5015		CUT "X" IN BRIDGE NORTHWEST WINGWALL STA. 2443+32.24 17.24' LT.
to	-0.638	-0.638	-0.6380	-0.638			
TBM 212					2026.8635		SET MAG NAIL WITH COBB SHINER STA. 2443+41.84 17.75' LT.
to	-3.117	-3.123	-3.1200	-3.120			
BM 213					2023.7435		SET RAILROAD SPIKE IN NORTHEAST SIDE OF POWER POLE STA. 2448+69.71 62.73' LT.
to	11.243	11.245	11.2440	11.244			
BM 214					2034.9875		CUT "X" IN DRAINAGE STRUCTURE SOUTH HEADWALL STA. 2455+74.84 38.57' RT.
to	5.448	5.449	5.4485	5.449			
TBM 215					2040.4360		SET 5/8" IRON PIN WITH COBB CAP STA. 2456+70.62 60.02' RT.
to	6.673	6.675	6.6740	6.674			
BM 216					2047.1100		SET RAILROAD SPIKE IN EAST SIDE OF POWER POLE STA. 2460+59.11 48.62' LT.
to	-2.898	-2.896	-2.8970	-2.897			
TBM 217					2044.2130		SET 5/8" IRON PIN WITH COBB CAP STA. 2463+87.34 48.13' RT.
to	1.918	1.920	1.9190	1.919			
BM 218					2046.1320		CUT "X" IN DRAINAGE STRUCTURE EAST WEADWALL STA. 2464+05.52 31.98' RT.
to	-7.726	-7.726	-7.7260	-7.726			
CP 2					2038.4060		SET 5/8" IRON PIN WITH ALUMINUM CAP STAMPED W-77-741 APPROXIMATE STA. 2471+08.90 62.64' RT.

```
            Project Name: SWO 4844_1
             Description: SH 34 Bridge over North Persimmon Creek
Horizontal Alignment Name: a001
             Description: Centerline of Survey
                   Style: CL
                                 STATION        EASTING       NORTHING

Element: Linear
                POB (10000)      2416+58.50   1574703.6465   461902.1864
                POE (10006)      2469+31.90   1574768.8807   467175.1791
          Tangent Direction:   N  0°42'31.65" E
             Tangent Length:         5273.40
```

SWO 4844(1) STATE JOB NO. 28827(04)

S.H. 34, Bridge over North Persimmon Creek, 7.6 miles North of the Dewey County line, Woodward County, Oklahoma

NODE ID	NORTHING	EASTING	NODE ID	NORTHING	EASTING
W-77-740	461714.69664700	1574767.22447000	5024	466735.90012547	1574713.44237680
W-77-741	467351.38818700	1574833.70280400	5025	466685.90344437	1574712.82384904
			5026	466585.91105050	1574711.58680545
201	461916.13061500	1574662.97864800	5027	466485.91865663	1574710.34976188
202	461952.36449300	1574760.50359300	5028	466425.92322031	1574709.60753578
203	462368.76392900	1574646.22305300	5029	466350.92892490	1574708.67975310
204	462672.04668200	1574650.41528400	5030	466175.94223564	1574706.51492681
205	463218.42942000	1574781.18384800	5031	465890.96391311	1574702.98935270
206	463245.06601500	1574679.20992600	5032	465857.54173722	1574702.57587438
207	463621.97200700	1574661.25754600	5033	465857.72287877	1574687.57696751
208	464021.71759500	1574779.81000500	5034	464868.96530309	1574675.34467514
209	464310.37747100	1574751.46007400	5035	464539.37940611	1574671.26724388
210	464322.29382200	1574751.21701400	5036	461902.05616123	1578637.88006504
211	464575.93020400	1574719.48788000	5037	461913.25463249	1577308.10181330
212	464585.54318600	1574719.08871300	5038	467159.96625249	1573435.43788664
213	465113.92552400	1574680.64513800	5039	467162.96622681	1573435.46749976
214	465817.75238500	1574790.66495900	5040	464535.97789896	1574966.24773671
215	465913.25835300	1574813.29273900	5041	464475.98249049	1574965.50551091
216	466303.06077500	1574709.46323700	5042	464232.02361278	1574797.47477753
217	466630.07257600	1574810.26754500	5043	464192.19228303	1574666.97206122
218	466648.44514000	1574794.34408600	5044	464225.54129809	1574582.37813003
			5045	464325.65735072	1574573.61593820
5000	461891.13560365	1579934.65706561	5046	464351.27395930	1574523.92902478
5001	464477.37554932	1579988.21969052	5047	464384.24056700	1574284.31850169
5002	465786.99863663	1580015.34279265	5048	464512.92116993	1574219.86864339
5003	467063.62823171	1580041.78257921	5049	464544.93795257	1574157.61974276
5004	467103.76054780	1577408.95250271	5050	464599.82386566	1574050.90734168
5005	467141.23586498	1574833.46573801	5051	464671.07160301	1574087.29085337
5006	464537.90318486	1574801.25892892	5052	464543.00447246	1574336.28645588
5007	461934.63674323	1574769.05293930			
5008	461935.87193114	1574639.05827234	8000	465786.55457775	1580048.34067250
5009	461942.85153685	1574024.26727888	8001	461869.06056764	1578637.21787091
5010	461944.05947540	1573917.86732214	8002	463180.79341160	1578663.54325869
5011	461950.11840702	1573384.17290687	8003	463194.16044795	1577332.98960587
5012	461964.90951435	1572081.29056333	8004	465822.40837381	1577384.05603747
5013	461983.35611574	1569508.40605345	8005	461909.71743338	1574035.89232197
5014	464595.17627534	1569515.25700981	8006	461910.92537194	1573929.49236522
5015	467209.74508065	1569522.11515849	8007	462600.42899896	1573793.55735982
5016	467193.82930959	1570804.25889241	8008	462567.68596059	1573699.06904481
5017	467177.50374223	1572119.40154231	8009	463233.76770111	1573514.76873709
5018	467163.87492218	1573142.13214424	8010	463232.63091850	1573617.30551706
5019	467148.39082888	1574529.23096895	8011	463235.07535650	1573396.81938428
5020	467145.86845616	1574718.51424944	8012	461917.11996750	1573383.84813800
5021	466895.88747149	1574715.42164053	8013	463249.55594670	1572090.68303300
5022	466845.89127456	1574714.80311873	8014	463261.30943960	1570784.73597450
5023	466785.89583824	1574714.06089261	8015	464581.36744020	1570791.28730150

Page 1 of 2

SWO 4844(1) STATE JOB NO. 28827(04)

S.H. 34, Bridge over North Persimmon Creek, 7.6 miles North of the Dewey County line, Woodward County, Oklahoma

NODE ID	NORTHING	EASTING	NODE ID	NORTHING	EASTING
8016	467226.82981800	1570804.42274900	10004	465443.41539686	1574747.45638758
8017	467196.89796350	1573140.62295076	10005	466343.34653183	1574758.58977459
8018	466750.88639884	1573161.00622615	10006	467175.17912050	1574768.88068884
8019	466750.88639884	1573111.00622615			
8020	464555.17818317	1573211.35278392			
8021	464553.03074550	1573409.79063056			
8022	464883.02252200	1573413.03713061			
8023	464868.43080166	1574723.34173573			
8024	466442.99669030	1573428.38435010			
8025	466436.04069313	1573950.37459923			
8026	465866.71112248	1573943.33120865			
8027	465893.48628583	1574513.70607214			
8028	466178.46460835	1574517.23164632			
8029	466353.45129762	1574519.39647256			
8030	466428.44559303	1574520.32425524			
8031	466488.44102935	1574521.06648138			
8032	466588.43342322	1574522.30352495			
8033	466848.41364728	1574525.51983824			
8034	466898.40984421	1574526.13836002			
8035	466787.15702459	1574619.41925234			
8036	466737.16082766	1574618.80073056			
8037	466687.16463073	1574618.18220877			
8038	465908.01932636	1573423.12117640			
8039	465857.14322581	1574735.57346956			
8040	467192.96495750	1573435.76263100			
9000	467096.11867900	1580075.46255300			
9001	464476.99047650	1580021.21879200			
9002	461857.86227400	1579966.97503100			
9003	461880.25886128	1577307.46071081			
9004	464508.06203462	1577358.51850094			
9005	467136.75471300	1577409.59357400			
9006	467175.42645800	1574751.88244800			
9007	464538.85999362	1574719.26449112			
9008	461902.32953900	1574686.64698000			
9009	461931.91033600	1572081.04929600			
9010	464567.20149739	1572100.31677000			
9011	467210.50345700	1572119.64281400			
9012	467243.15617900	1569489.20268400			
9013	464595.53338300	1569482.25783300			
9014	461950.59248200	1569475.31999900			
10000	461902.18638074	1574703.64650968			
10001	462743.62199194	1574714.05622654			
10002	463643.55312691	1574725.18961355			
10003	464538.66163082	1574736.26333798			

Page 2 of 2

P.L.S.	J.H.F.	05/29/13	S.H. 34, BRIDGE OVER N. PERSIMMON CREEK, 7.6 MILES N. OF THE DEWEY COUNTY LINE	WOODWARD COUNTY
DRAWN	J.E.M.	05/29/13	**LEVELS, COGO POINTS & ALIGNMENT REPORT**	
CHECKED	T.J.W.	05/29/13		
APPROV.	J.H.F.	05/29/13		
CREW CHIEF		T.J.W.	SWO NO. 4844(1) J/P NO. 28827(04) SHEET NO. 12	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS

REVISIONS	
DESCRIPTION	DATE

W-77-740

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: MARCH 28, 2013
RINEX FILE: LOG2321N.120 TIME: 12:16:06 UTC

SOFTWARE: PAGE5 1209.04 MASTER73.PL 082112 START: 2012/11/16 13:22:00
EPHEMERIS: IGS17145.EPH [PRECISE] STOP: 2012/11/16 18:41:00
NAV FILE: BRDC3210.12N OBS USED: 12688/13691 : 93%
ANT NAME: TPSHIPER*II NONE # FIXED AMB: 77/ 88 : 88%
ARP HEIGHT: 2 OVERALL RMS: 0.013(M)

REF FRAME: NAD*83(2011)(EPOCH: 2010.0000) IGS08 (EPOCH: 2012.8761)

X:	-835316.473(M)	0.013(M)	-835317.254(M)	0.013(M)
Y:	-5081202.924(M)	0.006(M)	-5081201.541(M)	0.006(M)
Z:	3751928.817(M)	0.034(M)	3751928.691(M)	0.034(M)
LAT:	36 15 39.38950	0.032(M)	36 15 39.40996	0.032(M)
E LON:	260 39 52.01981	0.012(M)	260 39 51.97996	0.012(M)
W LON:	99 20 7.98019	0.012(M)	99 20 8.02004	0.012(M)
EL HGT:	594.019(M)	0.014(M)	592.947(M)	0.014(M)
ORTHO HGT:	622.225(M)	0.024(M)	[NAVD88 (COMPUTED USING GEOID12A)]	

	UTM COORDINATES UTM (ZONE 14)	STATE PLANE COORDINATES SPC (3501 OK N)
NORTHING (Y) [METERS]	4012943.520	140730.921
EASTING (X) [METERS]	469857.562	479990.010
CONVERGENCE [DEGREES]	-0.19846715	-0.78817095
POINT SCALE	0.99961119	0.99994673
COMBINED FACTOR	0.99951801	0.99985352

US NATIONAL GRID DESIGNATOR: 14SMF6985712943(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(M)
DF4058	OKCL CLINTON CORS ARP	N352859.349	W0985817.246	92359.3
DG9774	OKBF BUFFALO CORS ARP	N364940.881	W0993828.840	68633.0
DM7151	TXPY PERRYTON CORS ARP	N362336.089	W1004855.888	133708.4

NEAREST NGS PUBLISHED CONTROL POINT

GJ0245	J 33	N361449.	W0991956.	1586.5

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
DEPARTMENT OF HIGHWAYS
SURVEY DIVISION

S.D. FORM NO. 11
REVISED 3/10/75

POSITION AND DESCRIPTION OF SURVEY MONUMENTS

COUNTY WOODWARD STATION NUMBER W-77-740 SWO 4844(1) DATE 03/28/2013

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 187' SOUTH OF EW-52 AND APPROXIMATELY 83' EAST OF NS-206.

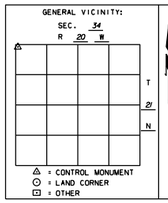
ESTABLISHED BY: JOSEPH H.FARMER,RPLS

COORDINATE SYSTEM: [ ] USC&GS, [ ] OHD, [X] OTHER (SPECIFY) OK STATE PLANE (NAD 83)

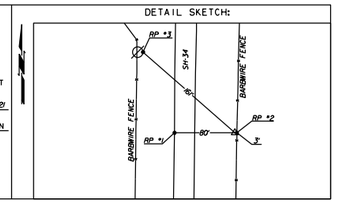
GRID DATA:	COORDINATES (FEET)	GRID BEARING	DISTANCE	POINTS OBSERVED
NORTH ZONE	X 1574767.2245	WEST	80'	RP 1-WEST EDGE OF SH-34
ACCURACY:		EAST	5'	RP 2 - FENCE LINE
3RD ORDER	Y 467146.966	NORTHWEST	16'	RP 3 - EAST FACE OF POWER POLE

GEODETIC DATA:	POSITION		ELEVATION
ANGLE OF VARIANCE (D) 00°47'17.42"	LATITUDE N36°15'39.3895"	NORTH	2041.41'
	LONGITUDE W99°20'07.9802"	WEST	SOURCE: NAVD88
			ACCURACY: 3RD

GENERAL VICINITY:



DETAIL SKETCH:



STATE OF OKLAHOMA
DEPARTMENT OF HIGHWAYS
SURVEY DIVISION

S.D. FORM NO. 11
REVISED 3/10/75

POSITION AND DESCRIPTION OF SURVEY MONUMENTS

COUNTY WOODWARD STATION NUMBER W-77-741 SWO 4844(1) DATE 03/28/13

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

METHOD ESTABLISHED: TRILATERATION ___, TRIANGULATION ___, TRAVERSE ___, OTHER (SPECIFY)
NORTHING & EASTING DERIVED BY RTK OBSERVATION AVERAGES & ELEVATION DERIVED BY DIFFERENTIAL LEVEL RUN

HEIGHT OF INSTRUMENT ABOVE MONUMENT: ___ FEET. TYPE OF WITNESS POST ___

WRITTEN DESCRIPTION OF LOCATION: APPROXIMATELY 177' NORTH OF EW-51 AND APPROXIMATELY 80' EAST OF NS-206.

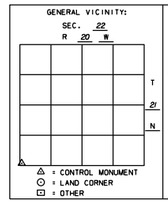
ESTABLISHED BY: JOSEPH H .FARMER,RPLS

COORDINATE SYSTEM: [ ] USC&GS, [ ] OHD, [X] OTHER (SPECIFY) OK STATE PLANE (NAD 83)

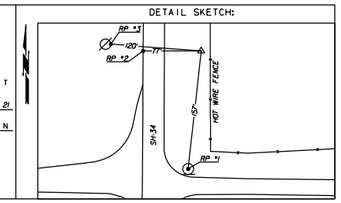
GRID DATA:	COORDINATES (FEET)	GRID BEARING	DISTANCE	POINTS OBSERVED
NORTH ZONE	X 1574833.7028	SOUTH-SOUTHWEST	157'	RP 1-NORTH FACE OF SIGN
ACCURACY:		WEST	77'	RP 2 - WEST EDGE OF SH-34
3RD ORDER	Y 467351.3882	WEST-NORTHWEST	120'	RP 3 - EAST FACE OF POWER POLE

GEODETIC DATA:	POSITION		ELEVATION
ANGLE OF VARIANCE (D) 00°47'17.50"	LATITUDE N36°16'35.1354"	NORTH	2038.406'
	LONGITUDE W99°20'08.1153"	WEST	SOURCE: NAVD88
			ACCURACY: 3RD

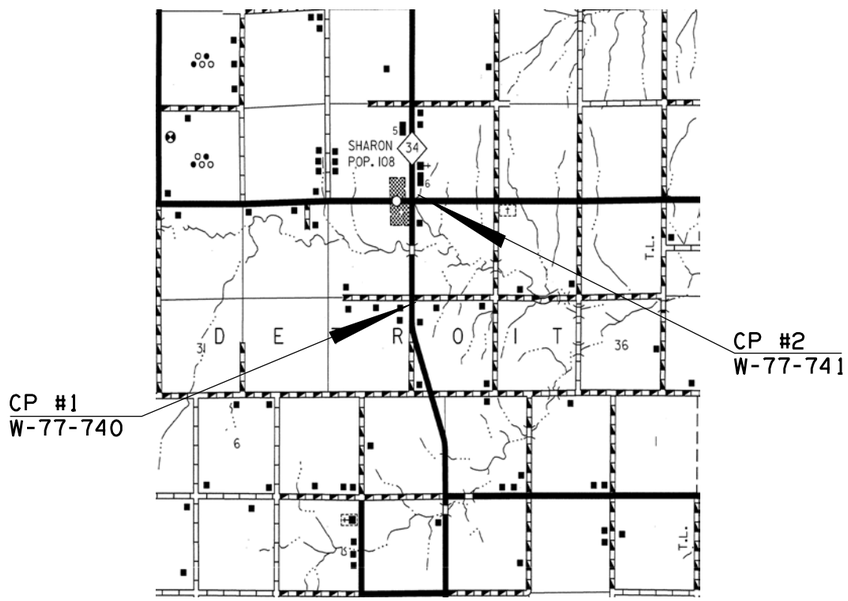
GENERAL VICINITY:



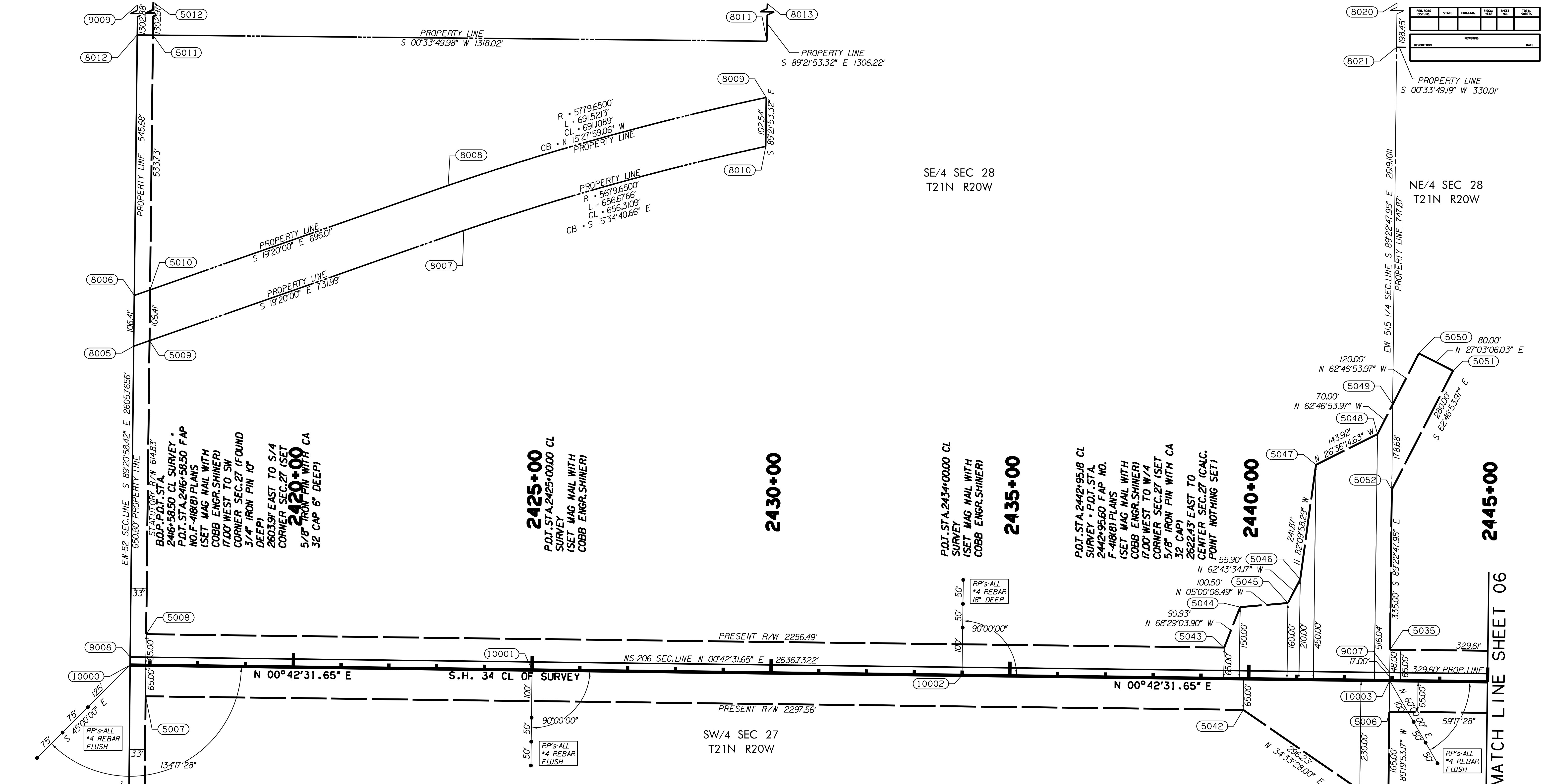
DETAIL SKETCH:



CONTROL MAP

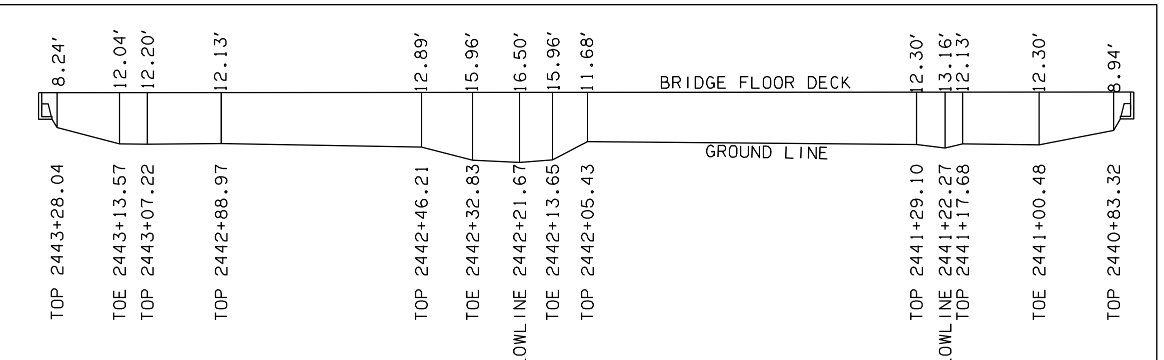


P.L.S.	J.H.F.	05/29/13	S.H. 34, BRIDGE OVER N. PERSIMMON CREEK, 7.6 MILES N. OF THE DEWEY COUNTY LINE	WOODWARD COUNTY
DRAWN	J.E.M.	05/29/13	**CONTROL MAP & INFORMATION**	
CHECKED	T.J.W.	05/29/13		
APPROV.	J.H.F.	05/29/13		
CREW CHIEF		T.J.W.	SWO NO. 4844(1) J/P NO. 28827(04) SHEET NO. 13	

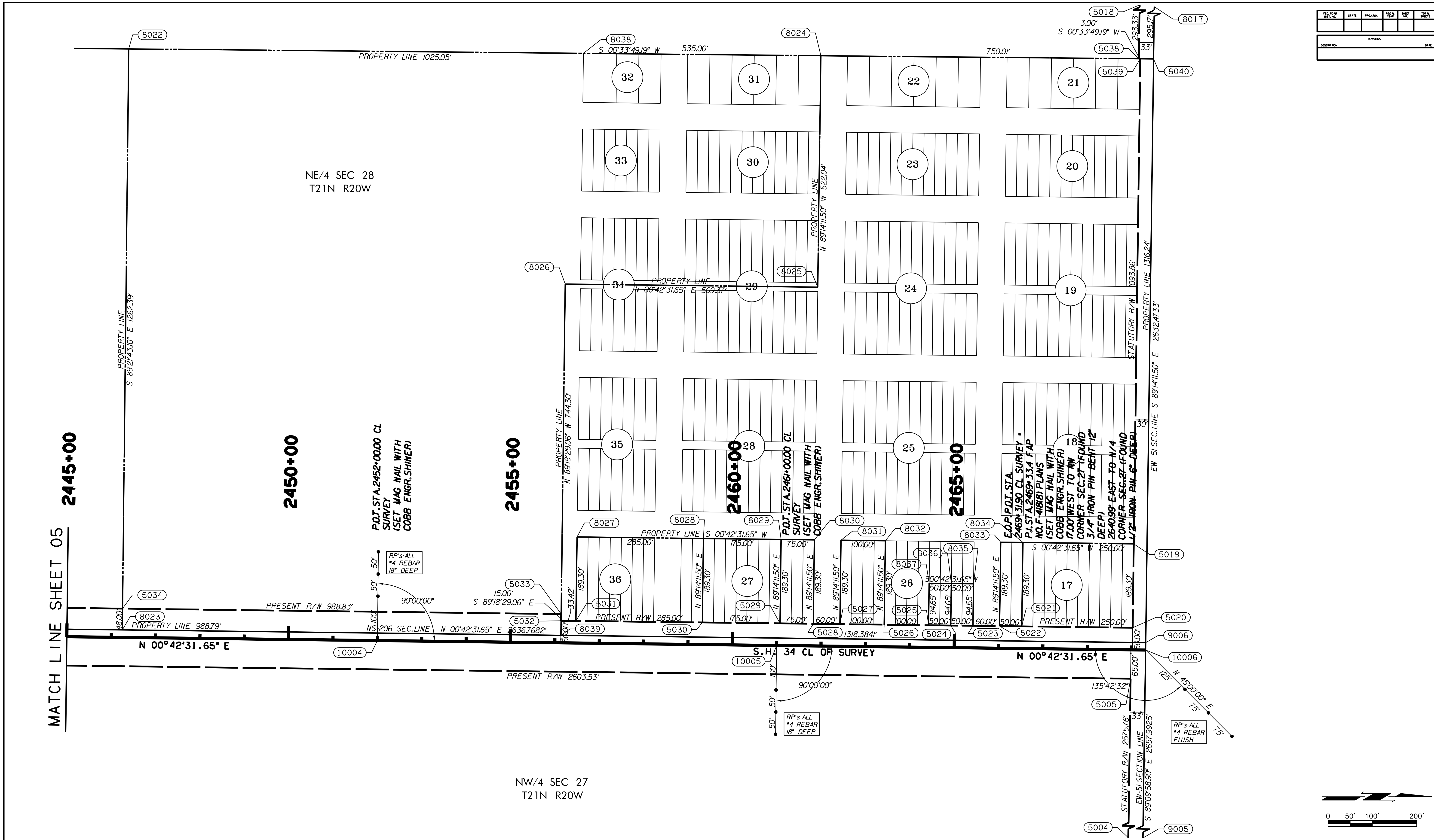


S.H. 34 - BRIDGE OVER NORTH PERSIMMON CREEK
SIDE VIEW OF NORTH PERSIMMON CREEK BRIDGE
(UPSTREAM SIDE)
NOT TO SCALE

STA. 2442+05.57 31.00'x253.33' CONCRETE BRIDGE
DRAINAGE AREA: 59.51 SQUARE MILES
BEG. BRIDGE FLOOR ELEV. = 2027.12'
END BRIDGE FLOOR ELEV. = 2026.98'
LOW BEAM ELEV. = 2024.14'
HIGH WATER ELEV. = 2015.60
EXTREME HIGH WATER ELEV. = 2022.10
-NOTE-
-DRAINAGE AREA DETERMINED FROM USGS STREAM STATISTICS.
-HIGH WATER ELEV. & EXTREME HIGH WATER ELEV. TAKEN FROM FAP F-418(8) PLANS.



P.L.S.	J.H.F.	05/29/13	S.H. 34, BRIDGE OVER N. PERSIMMON CREEK, 7.6 MILES N. OF THE DEWEY COUNTY LINE — WOODWARD COUNTY
DRAWN	J.E.M.	05/29/13	**SURVEY DATA SHEET**
CHECKED	T.J.W.	05/29/13	
APPROV.	J.H.F.	05/29/13	
CREW CHIEF		T.J.W.	SWO NO. 4844(1) J/P NO. 28827(04) SHEET NO. 14



P.L.S.	J.H.F.	05/29/13	S.H. 34, BRIDGE OVER N. PERSIMMON CREEK, 7.6 MILES N. OF THE DEWEY COUNTY LINE — WOODWARD COUNTY
DRAWN	J.E.M.	05/29/13	
CHECKED	T.J.W.	05/29/13	SURVEY DATA SHEET
APPROV.	J.H.F.	05/29/13	
CREW CHIEF		T.J.W.	SWO NO. 4844(I) J/P NO. 28827(04) SHEET NO. 15

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS

REVISIONS	
DESCRIPTION	DATE

NORTHWEST CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-742, T-21-N, R-20-W I.M. FOUND 60D NAIL 6" DEEP. MONUMENT FITS PROPORTIONAL DISTANCE TO QUARTER SECTION CORNER 0.5 MILE EAST. MONUMENT ALSO FALLS IN CENTER OF EAST-WEST ROAD AND IN-LINE WITH ROAD RUNNING NORTH. 9012

NORTH QUARTER CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-743, T-21-N, R-20-W I.M. FOUND 1/2" IRON PIN 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS REFERENCES ON OCCR FILED BY R. JIVIDEN, LS 1083, ON 07-22-08. 9011

NORTHEAST CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-744, T-21-N, R-20-W I.M. FOUND BENT 3/4" IRON PIN 12" DEEP. MONUMENT FITS DISTANCE TO CENTERLINE OF SURVEY FOR SH-34 AS CALLED OUT ON SH-34 FAP NO. F-418(8) HIGHWAY PLANS. 9006

NORTH QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-745, T-21-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 R. JIVIDEN, LS 1083, ON 01-03-95. 9005

NORTHEAST CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-746, T-21-N, R-20-W I.M. FOUND 60D NAIL 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 2 REMAINING REFERENCES ON OCCR FILED BY R. JIVIDEN, LS 1083, ON 08-14-85. 9000

RP - SET 60D NAIL IN TOP 8" CORNER POST N 35°43'03" W 68.00'

RP - SET 60D NAIL IN SW SIDE POWER POLE N 45°58'35" E 77.35'

RP - SET 60D NAIL IN TOP 8" GATE POST S 62°40'57" E 106.05'

RP - FND 60D NAIL IN NW SIDE F.O.WARNING POST S 50°40'07" W 74.13'

RP - FND 60D NAIL IN S. SIDE RR TIE FENCE POST N 44°25'51" E 68.73'

RP - FND 60D NAIL IN NE SIDE 4" FENCE POST S 39°17'54" E 65.27'

RP - FND 60D NAIL IN NW SIDE POWER POLE S 50°04'16" W 46.00'

RP - SET MAG NAIL W/COBB SHINER ℄ OF SURVEY FOR SH-34 S 89°09'59" E 17.00'

RP - FND 60D NAIL IN N.SIDE 6" COR.POST S 67°21'01" E 88.60'

RP - FND 60D NAIL IN NW SIDE 6" GATE POST S 40°39'24" W 43.30'

RP - FND 60D NAIL IN SW SIDE 8" GATE POST S 52°15'48" E 103.00'

RP - FND 60D NAIL IN E.SIDE 8" COR.POST N 04°06'39" W 35.20'

RP - FND 60D NAIL IN NE SIDE 6" GATE POST S 10°15'10" E 34.20'

RP - FND 60D NAIL IN SW SIDE 4" COR.POST N 5°01'47" W 58.60'

RP - FND 60D NAIL IN W.SIDE 6" COR.POST S 39°42'12" W 48.20'

RP - NW COR. 4"X4" VINYL FENCE COR.POST S 22°01'00" E 50.75'

2630.6428' N 89°17'19.68" W

2632.4733' N 89°14'11.50" W

2657.9925' N 89°09'58.90" W

EW-51 2666.1787' S 89°01'36.13" E

ASPHALT GRAVEL DIRT RD.

WEST QUARTER CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-749, T-21-N, R-20-W I.M. SET 5/8" IRON PIN WITH CA 32 CAP. MONUMENT WAS SET ON-LINE BETWEEN SECTION CONERS 0.5 MILE NORTH AND 0.5 MILE SOUTH AND IN-LINE WITH OLD FENCE RUNNING EAST AND WEST. 9013

CENTER OF SECTION 28, T-21-N, R-20-W I.M. CALCULATED POINT, NOTHING SET 9010

CENTER OF SECTION 27, T-21-N, R-20-W I.M. CALCULATED POINT, NOTHING SET 9004

2647.6319' N 00°09'01.04" E

2643.3726' S 00°25'08.04" W

2636.7682' N 00°42'31.65" E

2629.1888' N 01°06'47.19" E

2619.6899' N 01°11'11.26" E

NW/4 NE/4 NW/4 NE/4

SH-34

RP - SET 60D NAIL IN SE SIDE 10" TREE N 09°27'06" W 40.75'

RP - SET 60D NAIL IN NE SIDE 6" TREE S 58°31'06" W 16.20'

RP - SET 60D NAIL IN NW SIDE 6" CEDAR TREE S 20°14'24" E 9.90'

EW-51.5 2618.2122' S 89°22'47.95" E

26.19.1011' S 89°22'47.95" E

N 89°17'28" W

RP - SET 1/2" IP 150.00'

RP - SET 1/2" IP 200.00'

RP - SET 1/2" IP 100.00'

RP - SET 60D NAIL IN N.SIDE POWER POLE N 59°22'45" W 53.05'

RP - SET 60D NAIL IN SE SIDE 8" TREE S 65°47'18" W 52.15'

RP - SET MAG NAIL W/COBB SHINER ℄ OF SURVEY FOR SH-34 S 89°19'53" E 17.00'

2639.4337' N 89°19'53.17" W

RP - SET 1/2" IP 18" DEEP 150.00'

2662.8816' N 89°19'53.17" W N 88°48'49" W

RP - SET 1/2" IP 18" DEEP 100.00'

RP - SET 1/2" IP 18" DEEP 50.00'

9007 WEST QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-748, T-21-N, R-20-W I.M. SET 5/8" IRON PIN WITH CA 32 CAP. MONUMENT WAS SET FROM SH-34 FAP F-418(8) HIGHWAY PLANS.

9001 EAST QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-747, T-21-N, R-20-W I.M. SET 5/8" IRON PIN WITH CA 32 CAP 6" DEEP. SINGLE PROPORTION MEASUREMENT BETWEEN SECTION CORNERS 0.5 MILE NORTH AND 0.5 MILE SOUTH.

2644.9500' N 00°09'01.04" E

2635.3615' S 00°25'08.04" W

2636.7322' N 00°42'31.65" E

2628.2991' N 00°06'47.19" E

2619.6899' N 01°11'11.26" E

SW/4 SE/4 SW/4 SE/4

CENTERLINE OF SURVEY

NS-205 NS-205.5 NS-206 NS-206.5 NS-207

RP - SET 60D NAIL IN NE SIDE 6" GATE POST N 55°35'59" W 45.15'

RP - SET 60D NAIL IN NE SIDE 4" CORNER POST N 84°56'40" W 37.30'

RP - SET 60D NAIL IN N.SIDE 6" GATE POST N 89°14'47" E 25.70'

RP - SET 60D NAIL S. SIDE RR TIE COR.POST N 60°57'06" W 55.82'

RP - FND 60D NAIL IN TOP OF 4" FENCE POST N 14°25'48" E 24.20'

RP - FND 60D NAIL IN TOP OF 8" COR.POST S 01°16'37" W 26.99'

RP - FND 60D NAIL IN TOP OF 4" FENCE POST S 37°24'34" E 33.90'

RP - SET 60D NAIL E. SIDE POWER POLE S 29°37'14" W 93.89'

RP - SET 60D NAIL IN SW SIDE 6" GATE POST N 12°55'24" W 25.55'

RP - SET 60D NAIL NW SIDE POWER POLE N 72°08'24" E 91.95'

RP - SET MAG NAIL W/COBB SHINER ℄ SURVEY FOR SH-34 S 89°31'03" E 17.00'

RP - SET 60D NAIL IN NW SIDE 8" COR.POST S 02°05'08" W 24.40'

SOUTHEAST CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-754, T-21-N, R-20-W I.M. FOUND 1/2" IRON PIN 2" DEEP. MATCHES MONUMENT DESCRIPTION ON OCCR FILED BY T. JIVIDEN, LS 1149, ON 08-14-85. 9002

RP - FND 60D NAIL IN S.SIDE 8" COR.POST N 40°24'23" E 48.40'

RP - SET 60D NAIL IN NE SIDE 8" COR.POST S 49°31'37" E 50.35'

RP - SET 60D NAIL IN NE SIDE POWER POLE S 45°00'09" E 34.10'

RP - SET 60D NAIL IN SE SIDE POWER POLE S 43°25'03" W 43.00'

EW-52 2605.7963' N 89°35'21.19" W

2605.7656' S 89°20'58.42" E

2620.9067' S 89°31'03.02" E

2659.6089' S 89°31'03.02" E

ASPHALT DIRT GRAVEL

9014 SOUTHWEST CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-750, T-21-N, R-20-W I.M. SET 5/8" IRON PIN WITH CA 32 CAP. MONUMENT WAS SET ON NORTH SIDE OF 8" WOOD FENCE POST. MONUMENT FITS WITHIN 0.03' OF PROPORTIONAL DISTANCE TO QUARTER SECTION CORNER 0.5 MILE EAST. OLD FENCE LINE 0.5 MILE NORTH FITS WITHIN 1' OF SINGLE PROPORTION MEASUREMENT BETWEEN THIS CORNER AND SECTION CORNER 1 MILE NORTH.

9009 SOUTH QUARTER CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-751, T-21-N, R-20-W I.M. FOUND 1/2" IRON PIN WITH LS 1083 CAP 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS REFERENCES ON OCCR FILED BY R. JIVIDEN, LS 1083, ON 12-26-07.

9008 SOUTHWEST CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-752, T-21-N, R-20-W I.M. FOUND 3/4" IRON PIN 10" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS DISTANCE TO CENTERLINE OF SURVEY FOR SH-34 AS CALLED OUT ON SH-34 FAP NO. F-418(8) HIGHWAY PLANS.

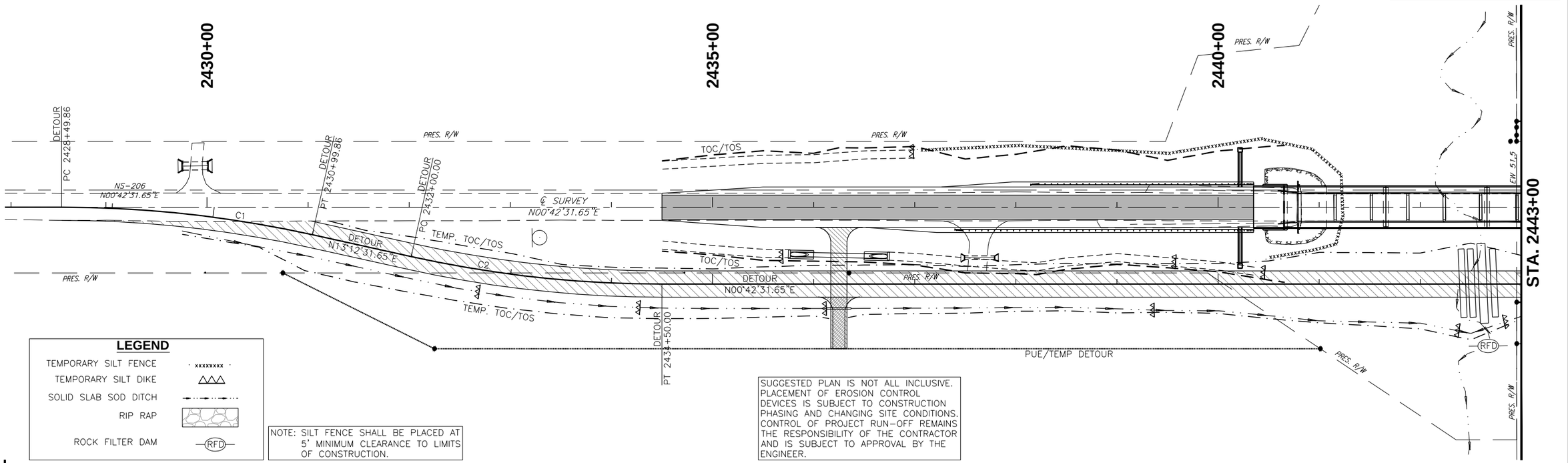
9003 SOUTH QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-753, T-21-N, R-20-W I.M. SET 5/8" IRON PIN WITH CA 32 CAP 6" DEEP. MONUMENT WAS SET ON-LINE BETWEEN SECTION CORNERS 0.5 MILE EAST AND 0.5 MILE WEST AND IN-LINE WITH FENCE RUNNING SOUTH.

0 250' 500' 1000'

P.L.S.	J.H.F.	05/29/13	S.H. 34, BRIDGE OVER N. PERSIMMON CREEK, 7.6 MILES N. OF THE DEWEY COUNTY LINE — WOODWARD COUNTY
DRAWN	J.E.M.	05/29/13	
CHECKED	T.J.W.	05/29/13	**LAND TIE SHEET**
APPROV.	J.H.F.	05/29/13	
CREW CHIEF		T.J.W.	SWO NO. 4844(1) J/P NO. 28827(04) SHEET NO. 16

SDS ▪ 07 OF 07

REVISIONS	
DESCRIPTION	DATE



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.

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.

EROSION CONTROL QUANTITIES

DESCRIPTION	UNITS	QUANTITY
TEMPORARY SILT FENCE	LF	768
TEMPORARY SILT DIKE	LF	161
TEMPORARY ROCK FILTER DAM TYPE 1	CY	20
SOLID SLAB SODDING	SY	22,990
VEGETATIVE MULCHING	AC	3.80

FILENAME: 17 EROSION CONTROL SHEET.DWG

DESIGN	
DRAWN	
CHECKED	
CEC	

SH-34 OVER N. PERSIMMON CREEK WOODWARD COUNTY

EROSION CONTROL SHEET

STATE JOB NO. 28827(04) SHEET NO. 17

CURVE 1 DATA
DETOUR
P.I. STA. 2429+75.36
N = 463225.2754
E = 1574720.0149
R = 1145.913'
T = 125.498'
Δ = 12°30'00"
L = 249.999'
D = 5°00'00"
V = 45 MPH
S = NO SUPER

CURVE 2 DATA
DETOUR
P.I. STA. 2433+25.50
N = 463567.1229
E = 1574800.2499
R = 1145.895'
T = 125.496'
Δ = 12°30'00"
L = 249.995'
D = 5°00'00"
V = 45 MPH
S = NO SUPER

SECTION 28
T-21-N, R-20-W

2430+00 2435+00 2440+00

2436+77.34, 64.0' LT. POWER POLE

2437+64.07, 50.0' RT. 42"X28" RCPA REMOVE

GUARDRAIL END TREATMENT STA. 2438+17.04, 22.3' LT

INSTALL 150 LF STD W-BEAM GUARDRAIL W/ GET

2439+80.50, 63.3' LT. POWER POLE

INSTALL THRIE BEAM BRIDGE CONNECTION

2443+21.53, 63.0' LT. POWER POLE

EXISTING BRIDGE
CL. STA. 2442+05.58
7-36' I-BEAM SPANS
TOTAL LENGTH= 253.33'
LOW BEAM ELEV.= 2023.65'
RDWY. OT ELEV.= 2026.73'
RDWY. OT STA.= 2444+74.61

REVISIONS	
DESCRIPTION	DATE

DETOUR PC 2428+49.86

BM #206

5-BARB OHE

PRES. R/W

BM #207

4-WIRE

STA. 2434+50.00
END INCIDENTAL CONST.
BEGIN PROJECT

TOC/TOS

65' LT

EW 51.5

NS-206
N00°42'31.65"E

8'X3' RCB

℄ SURVEY
N00°42'31.65"E

STA. 2428+56.19
BEGIN INCIDENTAL CONST.

C1

DETOUR PT 2430+99.86

DETOUR PC 2432+00.00

TEMP. TOC/TOS

DETOUR
N13°12'31.65"E

C2

FOC

4-BARB

BM #205

+75

DETOUR
N00°42'31.65"E

+35

42"X28" RCPA

BM #208

65'

BM #210

BM #209

T1 T2 T3 T4

3-BARB

5-BARB

94' RT

135' RT

140' RT

PRES. R/W

PERSIMMON CREEK NORTH

0' 25' 50' 100'

TEMP. TOC/TOS

DETOUR PT 2434+50.00

+25
140' RT

T5

STA. 2436+25.00
CONST. 16' ASPH. DR.
W/ 43"X26" RCPA SD

STA. 2436+25.00
CONST. 12' TEMP.
ASPH. DR.
W/ 18" CGSP SD

PUE/TEMP DETOUR

GUARDRAIL END TREATMENT
STA. 2437+42.04
22.3' RT

SECTION 27
T-21-N, R-20-W

4-BARB

INSTALL 225 LF
STD W-BEAM
GUARDRAIL W/ GET

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

BENCHMARK #205
STA. 2429+75.60 61.25' RT
SET 5/8" IRON PIN W/ COBB CAP
ELEVATION = 2033.58

BENCHMARK #206
STA. 2430+00.97 41.05' LT
CUT "X" IN DRG. STR. NORTH HEADWALL
ELEVATION = 2030.80

BENCHMARK #207
STA. 2433+77.63 63.66' LT
SET R.R. SPIKE IN E. SIDE OF PWR POLE
ELEVATION = 2028.43

BENCHMARK #208
STA. 2437+78.81 49.94' RT
CUT "X" IN DRG. STR. IN NORTH HEADWALL
ELEVATION = 2022.96

BENCHMARK #209
STA. 2440+67.10 18.02' RT
SET MAG NAIL W/ COBB SHINER
ELEVATION = 2026.69

BENCHMARK #210
STA. 2440+79.01 17.63' RT
CUT "X" IN BRIDGE SOUTHEAST WINGWALL
ELEVATION = 2027.51

PROPOSED BRIDGE
CL. STA. 2442+16.00
3-100' TYPE IV PCB SPAN
TOTAL LENGTH= 300.50'
LOW BEAM ELEV.= 2022.07'
RDWY. OT ELEV.= 2025.80'
RDWY. OT STA.= 2437+77.57

L=390'
K=195

STR. NO. T1
STA. 2442+41.71
41.38' RT, 108.93' RT
CONST. 72" CGSP X 68' LG.

STR. NO. T2
STA. 2442+50.71
41.26' RT, 108.82' RT
CONST. 72" CGSP X 68' LG.

STR. NO. T3
STA. 2442+61.72
35.77' RT, 114.82' RT
CONST. 96" CGSP X 79' LG.

STR. NO. T4
STA. 2442+72.72
40.99' RT, 108.55' RT
CONST. 72" CGSP X 68' LG.

L=255'
K=160

PVC 2436+82.50
ELEV = 2026.08

LOW POINT 2437+77.63
ELEV = 2025.80

PVT 2439+37.50
ELEV = 2026.60

PVC 2440+21.00
ELEV = 2027.43

STA. 2440+65.16
BEGIN BRIDGE "A"

301.67'
BRIDGE LENGTH

PVI 2442+16.00
ELEV = 2029.38

EXIST. GRADE @ ℄ SURVEY

FINISHED GRADE @ CRL

-1.00%

-0.59%

1.00%

PVI 2438+10.00
ELEV = 2025.32

FINISHED GRADE @ DETOUR

SP. DITCH RT.
FL=2023.29

SP. DITCH LT.
FL=2022.37

DETOUR
PVC 2435+56.08
ELEV = 2025.00

DETOUR
PVI 2436+56.08
ELEV = 2024.00

-1.16%

DETOUR
PVI 2437+56.08
ELEV = 2022.84

SP. DITCH LT.
FL=2021.32

L=200'
K=1231
DETOUR

SP. DITCH LT.
FL=2019.21

SP. DITCH RT.
FL=2018.56

DETOUR
PVC 2439+25.00
ELEV = 2026.88

SP. DITCH RT.
FL=2017.04

L=200'
K=172
DETOUR

DETOUR
PVI 2440+25.00
ELEV = 2019.72

DETOUR
PVT 2441+25.00
ELEV = 2019.72

SP. DITCH RT.
FL=2014.45

0.00%

EXISTING BRIDGE
CL. STA. 2442+05.58
7-36' I-BEAM SPANS
TOTAL LENGTH= 253.33'
LOW BEAM ELEV.= 2023.65'
RDWY. OT ELEV.= 2026.73'
RDWY. OT STA.= 2444+74.61

HYDRAULIC DATA	
DRAINAGE AREA = 59.51 SQ MI.	
CONTROLLED DRAINAGE AREA = 0 SQ MI.	
EFFECTIVE DRAINAGE AREA = 59.51 SQ MI.	
Q2 = 1,180 CFS	Q25 = 7,510 CFS
CHW2 = 2,017.23 FT	CHW25 = 2,020.82 FT
V2 = 3.34 FPS	V25 = 7.30 FPS
Q5 = 2,820 CFS	Q50 = 10,300 CFS
CHW5 = 2,018.46 FT	CHW50 = 2,021.96 FT
V5 = 4.71 FPS	V50 = 8.60 FPS
Q10 = 4,550 CFS	Q100 = 13,200 CFS
CHW10 = 2,019.45 FT	CHW100 = 2,023.02 FT
V10 = 5.78 FPS	V100 = 9.79 FPS
SCOUR (100 YR)	SCOUR (500 YR)
CONTRACTION = 9.05'	CONTRACTION = 21.40'
PIER = 9.30'	PIER = 7.84'
TOTAL = 18.35'	TOTAL = 29.24'

UTILITY OWNERS CONTACT INFORMATION		
OWNERS	ADDRESS	PHONE
ONEOK	4901 N. SANTA FE OKLAHOMA CITY, OK 73118	THOMAS BROWN 405-323-9045
OGE CORP	P.O. BOX 321 OKLAHOMA CITY, OK 73101-0321	STEPHEN ECHARD 405-553-0902
PIONEER COMMUNICATIONS	205 E. ROBBERTS KINGFISHER, OK 73750	BLAKE CALLAHAN 405-375-0255

2040 2030 2020 2010 2000

DET. 2030.55 DET. 2029.55 DET. 2028.55 DET. 2027.55 DET. 2026.55 +50 2027.46 DET. 2025.56 2027.17 DET. 2024.55 2026.57 DET. 2023.48 2025.99 DET. 2022.33 2025.81 DET. 2021.17 2026.27 DET. 2020.17 2027.22 DET. 2019.74 2028.06 DET. 2019.72 2028.40 DET. 2019.72 2028.22

2428+00 2429+00 2430+00 2431+00 2432+00 2433+00 2434+00 2435+00 2436+00 2437+00 2438+00 2439+00 2440+00 2441+00

PP1

STATE JOB NO. 28827(04) Sheet No. 18

SECTION 28
T-21-N, R-20-W

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

CURVE 3 DATA
DETOUR
P.I. STA. 2450+75.40
N = 465317.8827
E = 1574821.9092
R = 1145.905'
T = 125.398'
Δ = 12°30'00"
L = 249.800'
D = 5°00'00"
V = 45 MPH
S = NO SUPER

REVISIONS
DESCRIPTION | DATE

STA. 2443+00
2445+00
2450+00
2455+00

INSTALL THRIE BEAM BRIDGE CONNECTION
STA. 2442+95.00 TO 2446+06.00 CONST. 5W BARBED FENCE 331 LF
INSTALL 225 LF STD W-BEAM GUARDRAIL W/ GET
2445+81.39, 64.0' LT. POWER POLE
GUARDRAIL END TREATMENT STA. 2446+89.96 22.3' LT
2449+61.32, 64.1' LT. POWER POLE
2449+69.94, 63.6' LT. POWER POLE
2451+78.66, 64.1' LT. POWER POLE
2453+14.68, 29.8' RT. SIGN
2453+91.13, 61.7' LT. POWER POLE
2454+67.40, 29.5' RT. SIGN
2455+53.64, 28.4' LT. SIGN

R/W
+06 85' LT
+40 85' LT
+90
BM #213
BM #211
BM #212
PRES. R/W
5-BARB
OHE
4-WIRE
TOC/TOS
TEMP. TOC/TOS
FOG
4-BARB
G
DETOUR N00°42'31.65"E
DETOUR PC 2449+50.00
DETOUR PT 2451+99.80
DETOUR PC 2453+00.04
DETOUR 2455+50.04
℄ SURVEY N00°42'31.65"E
NS-206 N00°42'31.65"E
DETOUR N11°47'28.35"W
C3
C4
+75
+00
+26 94' RT
+50 135' RT
65'
50'
PUE/TEMP DETOUR
BM #214
18"X29' RCP
34"X24" RCP
36"X25" RCP
6' CLR
SHARON PLAT
1-WIRE
2-WIRE
3-WIRE
0' 25' 50' 100'

STA. 2449+50.00
END PROJECT
BEGIN INCIDENTAL CONST.

STA. 2455+03.88
END INCIDENTAL CONST.

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

CURVE 4 DATA
DETOUR
P.I. STA. 2454+25.54
N = 465661.6104
E = 1574750.1558
R = 1145.916'
T = 125.498'
Δ = 12°30'00"
L = 250.000'
D = 5°00'00"
V = 45 MPH
S = NO SUPER

INSTALL 150 LF STD W-BEAM GUARDRAIL W/ GET
GUARDRAIL END TREATMENT STA. 2446+14.96, 22.3' RT

SECTION 27
T-21-N, R-20-W

L=390'
K=195
301.67' BRIDGE LENGTH
STA. 2443+66.83 BRIDGE "A" END
PVI 2444+11.00 ELEV = 2027.43
PVC 2444+75.79 ELEV = 2026.78
L=250'
K=179
LOW POINT 2446+54.92 ELEV = 2025.88
PVT 2447+25.79 ELEV = 2026.02
FINISHED GRADE @ CRL
EXIST. GRADE @ ℄ SURVEY
-1.00%
0.40%
2.20%
PVI 2446+00.79 ELEV = 2025.53
FINISHED GRADE @ DETOUR
0.65%
SP. DITCH RT. FL=2015.50
SP. DITCH LT. FL=2018.00
SP. DITCH LT. FL=2020.80
SP. DITCH RT. FL=2018.75
SP. DITCH LT. FL=2015.00
DETOUR PVC 2443+37.50 ELEV = 2019.72
DETOUR PVI 2444+00.00 ELEV = 2019.72
DETOUR PVT 2444+62.50 ELEV = 2020.15
DETOUR PVC 2449+22.50 ELEV = 2023.11
DETOUR PVI 2450+50.00 ELEV = 2023.94
DETOUR PVT 2451+77.50 ELEV = 2026.74
L=125'
K=193
DETOUR
L=255'
K=165
DETOUR

2040
2030
2020
2010
2000

DET. 2019.72 2028.22
DET. 2019.82 2027.53
DET. 2020.37 2026.55
DET. 2021.02 2025.97
DET. 2021.67 2025.94
DET. 2022.32 2026.32
DET. 2022.97 2026.71
+50 2026.91
DET. 2023.80
DET. 2025.22
DET. 2027.24
DET. 2029.43
DET. 2031.63

2443+00 2444+00 2445+00 2446+00 2447+00 2448+00 2449+00 2450+00 2451+00 2452+00 2453+00 2454+00 2455+00 2456+00

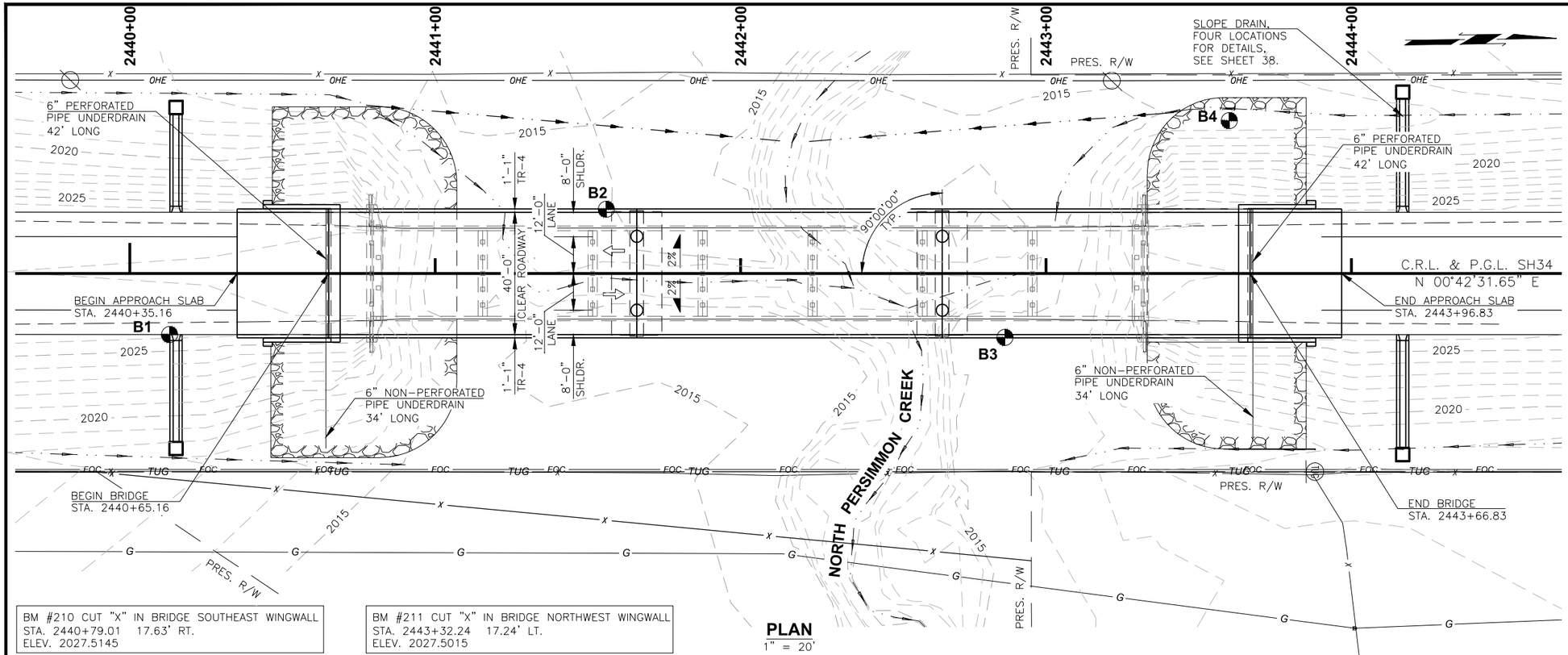
BENCHMARK #211
STA. 2443+32.24 17.24' LT.
CUT "X" IN BRIDGE NW WINGWALL
ELEVATION = 2027.50'

BENCHMARK #212
STA. 2443+41.84 17.75' LT.
SET MAG NAIL W/ COBB SHINER
ELEVATION = 2026.86'

BENCHMARK #213
STA. 2448+69.71 62.73' LT.
SET R.R. SPIKE IN NE SIDE OF PWR POLE
ELEVATION = 2023.74'

BENCHMARK #214
STA. 2455+74.84 38.57' RT.
CUT "X" IN DRG. STR. SOUTH HEADWALL
ELEVATION = 2034.99'

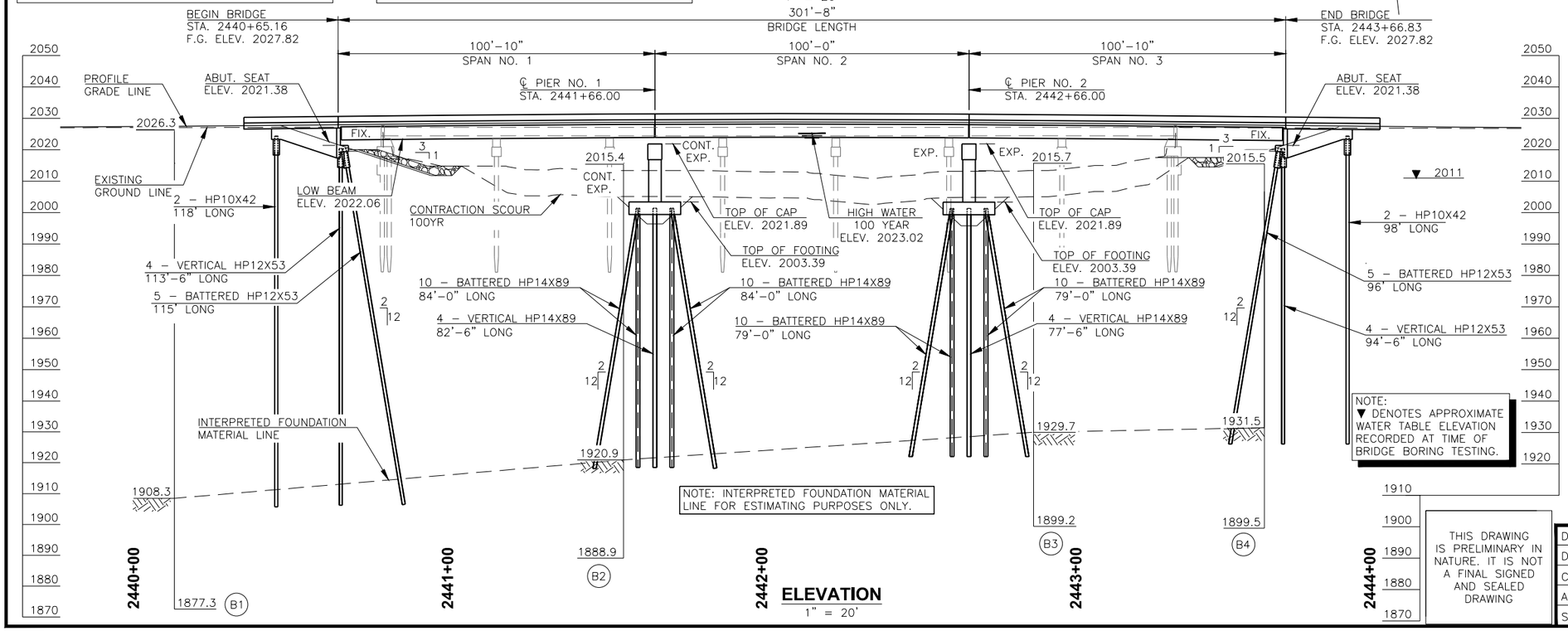
PP2 STATE JOB NO. 28827(04) Sheet No. 19



BM #210 CUT "X" IN BRIDGE SOUTHEAST WINGWALL
STA. 2440+79.01 17.63' RT.
ELEV. 2027.5145

BM #211 CUT "X" IN BRIDGE NORTHWEST WINGWALL
STA. 2443+32.24 17.24' LT.
ELEV. 2027.5015

PLAN
1" = 20'



NOTE: INTERPRETED FOUNDATION MATERIAL LINE FOR ESTIMATING PURPOSES ONLY.

NOTE:
▼ DENOTES APPROXIMATE WATER TABLE ELEVATION RECORDED AT TIME OF BRIDGE BORING TESTING.

ELEVATION
1" = 20'

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE

DESIGN DATA

CONCRETE CLASS A	f'c = 3 K.S.I.
CONCRETE CLASS AA	f'c = 4 K.S.I.
REINFORCING STEEL (GRADE 60)	fy = 60 K.S.I.
STRUCTURAL STEEL M 270 (GRADE 50W)	Fy = 50 K.S.I.
STAINLESS STEEL A240 (TYPE 316)	Fy = 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 50.2

STANDARDS

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

HYDRAULIC DATA

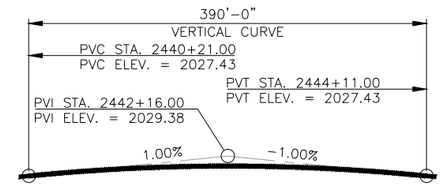
TOTAL DRAINAGE AREA = 59.51 SQ. MI.
CONTROLLED DRAINAGE AREA = 0 SQ. MI.
EFFECTIVE DRAINAGE AREA = 59.51 SQ. MI.

Q2 =	1,180	CFS	Q5 =	2,820	CFS
CHW2 =	2017.23	FT	CHW5 =	2018.46	FT
V2 =	3.34	FPS	V5 =	4.71	FPS
Q10 =	4,550	CFS	Q25 =	7,510	CFS
CHW10 =	2019.45	FT	CHW25 =	2020.82	FT
V10 =	5.78	FPS	V25 =	7.30	FPS
Q50 =	10,300	CFS	Q100 =	13,200	CFS
CHW50 =	2021.96	FT	CHW100 =	2023.02	FT
V50 =	8.60	FPS	V100 =	9.79	FPS
Q500 =	22,700	CFS			
CHW500 =	2026.71	FT			
V500 =	10.93	FPS			

SCOUR (100YR)		SCOUR (500YR)	
CONTRACTION =	9.05'	CONTRACTION =	21.40'
PIER =	9.30'	PIER =	7.84'
TOTAL =	18.35'	TOTAL =	29.24'

QOT = 424

NOTE:
FOR FOUNDATION DATA, SUMMARY OF BRIDGE PAY QUANTITIES, AND SHEET INDEX, SEE SHEET 21.



PROFILE DATA
C.R.L. & P.G.L. SH34

DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

GENERAL PLAN AND ELEVATION

100'-100'-100' TYPE IV P.C. BEAM SPANS, 0° SKEW, 40' CLEAR ROADWAY WITH TR-4 PARAPETS ℄ STA. 2442+16.00

JOB PIECE NO. 28827(04) SHEET NO. 20

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE

SUMMARY OF BRIDGE PAY QUANTITIES

ITEM	UNIT	ABUTMENTS	PIERS	SUPER-STRUCTURE	APPROACH SLAB	SLOPE DRAIN	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	C.Y.	200	3,400				3,600
CLSM BACKFILL	C.Y.	210					210
PRESTRESSED CONCRETE BEAMS (TYPE IV)	L.F.			1,495			1,495
APPROACH SLAB	S.Y.				281.2		281.2
SAW-CUT GROOVING	S.Y.			1,341.0	266.6		1,607.6
SEALED EXPANSION JOINT	L.F.			41.8			41.8
CONCRETE RAIL (TR4)	L.F.			603.3	120.0		723.3
STRUCTURAL STEEL	LB.			1,430			1,430
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA.			10			10
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA.			20			20
CLASS AA CONCRETE	C.Y.		222.2	358.4			580.6
CLASS A CONCRETE	C.Y.	97.0	71.0				168.0
CLASS C CONCRETE	C.Y.					9.3	9.3
REINFORCING STEEL	LB.		2,200				2,200
EPOXY COATED REINFORCING STEEL	LB.	11,440	52,180	97,830			161,450
PILES, FURNISHED (HP 10X42)	L.F.	432					432
PILES, FURNISHED (HP 12X53)	L.F.	1,887					1,887
PILES, FURNISHED (HP 14X89)	L.F.		3,900				3,900
PILES, DRIVEN (HP 10X42)	L.F.	432					432
PILES, DRIVEN (HP 12X53)	L.F.	1,887					1,887
PILES, DRIVEN (HP 14X89)	L.F.		3,900				3,900
PILE SPLICE, H-PILE (NON-BIDDABLE)	EA.						1
WATER REPELLENT (VISUALLY INSPECTED)	S.Y.	118	150	995	56		1,319
SEALER CRACK PREPARATION	L.F.			41			41
SEALER RESIN	GAL.			1			1
TYPE I-A PLAIN RIPRAP	TON	1,283					1,283
TYPE I-A FILTER BLANKET	TON	289					289
6" PERFORATED PIPE UNDERDRAIN ROUND	L.F.	84					84
6" NON-PERF. PIPE UNDERDRAIN RND.	L.F.	68					68
REMOVAL OF EXISTING BRIDGE STRUCTURE	LSUM						1

FOUNDATION DATA

PIER NO. 1 & NO. 2 (HP14X89 PILING)
FACTORED PILE REACTION = 225.0 TON/PILE

ABUTMENT NO. 1 & NO. 2 (HP12X53 PILING)
FACTORED PILE REACTION = 95.0 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:

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	Z.M.B.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

SUMMARY OF BRIDGE PAY QUANTITIES

JOB PIECE NO. 28827(04) SHEET NO. 21

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE

BORING NO. B-1

STA. 2440+13.00
20' RIGHT
OF C.R.L. SH 34

ELEVATION 2026.3

SILTY SAND WITH ASPHALT MILLINGS, BROWN (10YR 4/3) AND BLACK (10YR 2/1) (FILL MATERIAL)

CLAYEY SAND, DARK BROWN (10YR 3/3), VERY LOOSE TO LOOSE (POSSIBLE FILL MATERIAL)

SILTY SAND, GRAYISH BROWN (10YR 5/2), VERY LOOSE TO LOOSE

N=0, WEIGHT OF HAMMER AT 40 FEET

POORLY GRADED SAND WITH SILT, VERY PALE BROWN (10YR 7/4), VERY LOOSE TO MEDIUM DENSE

SILTY SAND, LIGHT REDDISH BROWN (5YR 6/4), VERY LOOSE TO MEDIUM DENSE

SANDY SILTSTONE, RED (2.5YR 5/6), WELL CEMENTED TO VERY WELL CEMENTED

2024.3	
2021.3	SPT 7
2016.3	SPT 5
2011.3	SPT 3
2008.3	
2006.3	SPT 2
2001.3	SPT 2
1996.3	SPT 10
1993.3	
1991.3	SPT 10
1988.3	
1986.3	SPT 0
1981.3	SPT 20
1976.3	SPT 15
1971.3	SPT 16
1966.3	SPT 12
1961.3	SPT 2
1956.3	SPT 4
1951.3	SPT 4
1946.3	SPT 4
1941.3	SPT 9
1936.3	SPT 10
1931.3	SPT 4
1926.3	SPT 3
1921.3	SPT 14
1916.3	SPT 5
1911.3	SPT 14
1908.3	SPT 50/5"
1907.3	TCP 50/1.1"
	TCP 50/0.8"
1902.3	TCP 50/1.3"
	TCP 50/1"
1897.3	TCP 50/2.3"
	TCP 50/1"
1892.3	TCP 50/0.9"
	TCP 50/0.5"
1887.3	TCP 50/1.1"
	TCP 50/0.6"
1982.3	TCP 50/0.6"
	TCP 50/0.4"
	TCP 50/1"
	TCP 50/0.4"

ELEVATION 1877.3
TOTAL DEPTH = 149'
DATE OF BORING: 6/16/14
WATER ELEVATION 2008.3'
24 HOURS AFTER DRILLING

BORING NO. B-2

STA. 2441+56.00
21' LEFT
OF C.R.L. SH 34

ELEVATION 2015.4

LEAN CLAY WITH SAND, DARK BROWN (10YR 3/3), MEDIUM STIFF

SILTY SAND, DARK BROWN (10YR 3/3), VERY LOOSE

POORLY GRADED SAND WITH SILT, DARK BROWN (10YR 3/3), VERY LOOSE

N=0, WEIGHT OF HAMMER AT 35 FEET

SILTY SAND, GRAYISH BROWN (10YR 5/2), VERY LOOSE TO MEDIUM DENSE

SILTY SAND, WITH GRAVEL, LIGHT GRAY (10YR 7/2) TO LIGHT REDDISH BROWN (5YR 4/4), LOOSE TO MEDIUM DENSE

SILTY SAND, VERY PALE BROWN (5YR 7/4), VERY LOOSE TO MEDIUM DENSE

SILTY SAND, WITH GRAVEL, LIGHT REDDISH BROWN (5YR 6/4), VERY LOOSE TO MEDIUM DENSE

SANDY SILTSTONE, RED (2.5YR 5/6), WELL CEMENTED TO VERY WELL CEMENTED

SANDY LEAN CLAY, DARK BROWN (10YR 3/3), MEDIUM STIFF

SILTY SAND, LIGHT GRAY (10YR 7/2), VERY LOOSE

LEAN CLAY, GRAY (10YR 6/1), SOFT

SILTY SAND, LIGHT GRAY (10YR 7/2) TO DARK GRAY (10YR 4/1), VERY LOOSE TO LOOSE

POORLY GRADED SAND WITH SILT, LIGHT GRAY (10YR 7/2), VERY LOOSE TO LOOSE

SANDY LEAN CLAY, DARK GRAY (10YR 4/1), MEDIUM STIFF

SILTY SAND, REDDISH BROWN (5YR 4/3) WITH GRAY (10YR 6/1), LOOSE TO MEDIUM DENSE

POORLY GRADED SAND, VERY PALE BROWN (10YR 7/3), LOOSE TO MEDIUM DENSE

INTERPRETED FOUNDATION LINE

SANDY SILTSTONE, RED (2.5YR 5/6), CEMENTED TO VERY WELL CEMENTED

	SPT 5
2011.4	
2010.4	SPT 2
2009.9	
2005.4	SPT 2
2000.4	SPT 2
1998.9	
1995.4	SPT 1
1991.4	
1990.4	SPT 4
1985.4	SPT 4
1980.4	SPT 0
1975.4	SPT 2
1970.4	SPT 17
1965.4	SPT 4
1961.4	
1960.4	SPT 8
1955.4	SPT 11
1950.4	SPT 1
1945.4	SPT 11
1940.4	SPT 2
1937.4	
1935.4	SPT 11
1930.4	SPT 1
1925.4	SPT 1
1920.9	
1920.4	SPT 25
1918.9	SPT 34
	SPT 50/6"
1913.9	TCP 50/1.5"
	TCP 50/1"
1908.9	TCP 50/2"
	TCP 50/1.1"
1903.9	TCP 50/1.3"
	TCP 50/1"
1898.9	TCP 50/1.3"
	TCP 50/0.5"
1893.9	TCP 50/1.3"
	TCP 50/0.8"
	TCP 50/1"
	TCP 50/0.8"
	TCP 50/1.8"
	TCP 50/0.5"

ELEVATION 1888.9
TOTAL DEPTH = 126.5'
DATE OF BORING: 5/19/14
WATER ELEVATION 2011.4'
18 HOURS AFTER DRILLING

BORING NO. B-3

STA. 2442+77.00
21' RIGHT
OF C.R.L. SH 34

ELEVATION 2015.7

	SPT 5
2010.2	
2010.7	SPT 3
2009.7	
2005.7	SPT 3
2005.2	
2001.7	
2000.7	SPT 2
1995.7	SPT 7
1990.7	SPT 5
1985.7	SPT 3
1981.7	
1980.7	SPT 2
1975.7	SPT 5
1970.7	SPT 4
1965.7	SPT 3
1960.7	SPT 3
1955.7	SPT 6
1951.7	
1950.7	SPT 10
1945.7	SPT 12
1941.7	
1940.7	SPT 9
1935.7	SPT 9
1930.7	SPT 4
	SPT 25
1929.7	SPT 50/5.5"
1929.2	TCP 50/4"
	TCP 50/2.1"
1924.2	TCP 50/1.8"
	TCP 50/0.5"
1919.2	TCP 50/1.1"
	TCP 50/0.9"
1914.2	TCP 50/1.5"
	TCP 50/1"
1909.2	TCP 50/1.8"
	TCP 50/1.3"
1904.2	TCP 50/2.1"
	TCP 50/1.3"
	TCP 50/1.1"
	TCP 50/0.6"

ELEVATION 1899.2
TOTAL DEPTH = 116.5'
DATE OF BORING: 5/20/14
WATER ELEVATION 2010.2'
0 HOURS AFTER DRILLING

BORING NO. B-4

STA. 2443+60.00
50' LEFT
OF C.R.L. SH 34

ELEVATION 2015.5

CLAYEY SAND, DARK BROWN (10YR 3/3), VERY LOOSE TO LOOSE

SANDY LEAN CLAY, DARK BROWN (10YR 3/3), VERY SOFT

N=0, WEIGHT OF HAMMER AT 15 FEET

N=0, WEIGHT OF HAMMER AT 20 FEET

SILTY SAND, VERY PALE BROWN (10YR 7/4), VERY LOOSE TO MEDIUM DENSE

N=0, WEIGHT OF HAMMER AT 50 FEET

POORLY GRADED SAND, VERY PALE BROWN (10YR 7/3), VERY LOOSE
N=0, WEIGHT OF HAMMER AT 60 FEET

LEAN CLAY WITH SAND, SHALEY, RED (5YR 4/6), VERY STIFF TO HARD

SANDY SILTSTONE, RED (2.5YR 5/6), CEMENTED TO VERY WELL CEMENTED

2010.5	SPT 8
2005.5	SPT 2
2003.5	
2000.5	SPT 0
1999.5	
1995.5	SPT 0
1992.5	
1990.5	SPT 5
1985.5	SPT 1
1980.5	SPT 2
1975.5	SPT 24
1970.5	SPT 10
1965.5	SPT 0
1960.5	SPT 2
1955.5	SPT 0
1950.5	SPT 3
1945.5	SPT 18
1944.5	
1940.5	SPT 50
1935.5	SPT 41
1931.5	SPT 30
	SPT 41
1929.5	SPT 50/5"
	TCP 50/3.3"
1924.5	TCP 50/2.5"
	TCP 50/2"
1919.5	TCP 50/1.5"
	TCP 50/2.8"
1914.5	TCP 50/2"
	TCP 50/0.6"
1909.5	TCP 50/0.3"
	TCP 50/1.3"
1904.5	TCP 50/0.5"
	TCP 50/1.5"
	TCP 50/0.8"
	TCP 50/1.1"
	TCP 50/0.6"

ELEVATION 1899.5
TOTAL DEPTH = 116'
DATE OF BORING: 6/17/14
WATER ELEVATION 2010.5'
2 HOURS AFTER DRILLING

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.

NOTES:

SPT DENOTES STANDARD PENETRATION TESTS

TCP DENOTES TEXAS CONE PENETRATION TESTS

DENOTES WATER ELEVATION DURING DRILLING

DENOTES WATER ELEVATION AT NOTED TIME

DENOTES CAVE IN DEPTH

DENOTES ROCK ELEVATION

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.

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	M.R.S.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

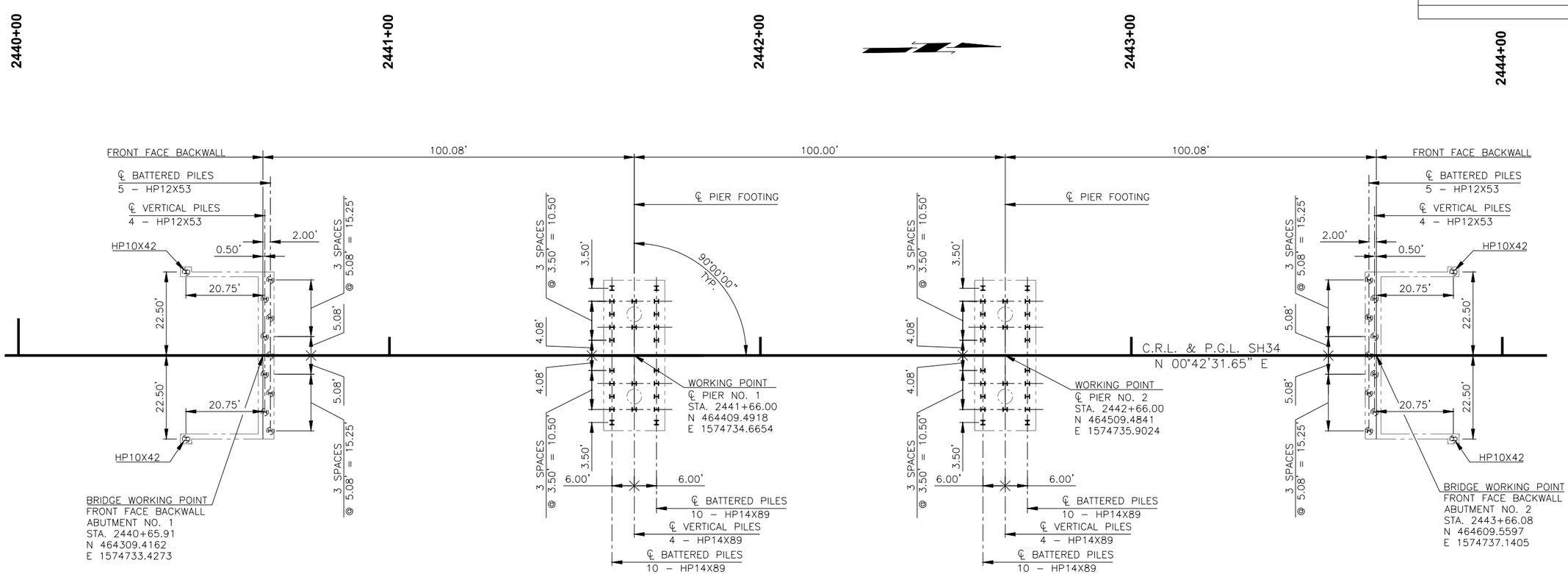
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

FOUNDATION REPORT

JOB PIECE NO. 28827(04) SHEET NO. 22

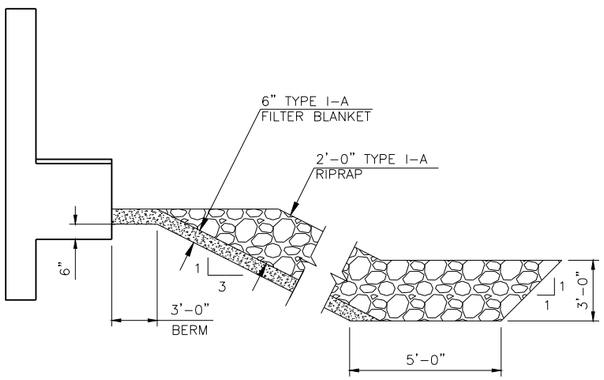
CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE



SUBSTRUCTURE LAYOUT

1" = 15'

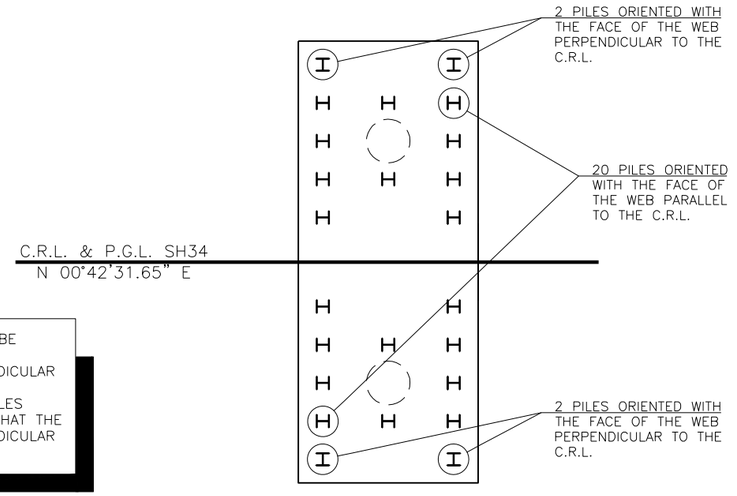


RIPRAP AND FILTER BLANKET DETAIL

(DIMENSIONS AND SLOPE PERPENDICULAR TO FACE OF ABUTMENT)

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

ABUTMENT SEAT PILES SHALL BE ORIENTATED SUCH THAT THE FACE OF THE WEB IS PERPENDICULAR TO THE FRONT FACE OF THE ABUTMENT BACKWALL. WING PILES SHALL BE ORIENTATED SUCH THAT THE FACE OF THE WEB IS PERPENDICULAR TO THE WINGWALL.



PIER FOOTING PILE ORIENTATION

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DESIGN	J.W.H.	
DRAWN	M.R.S.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

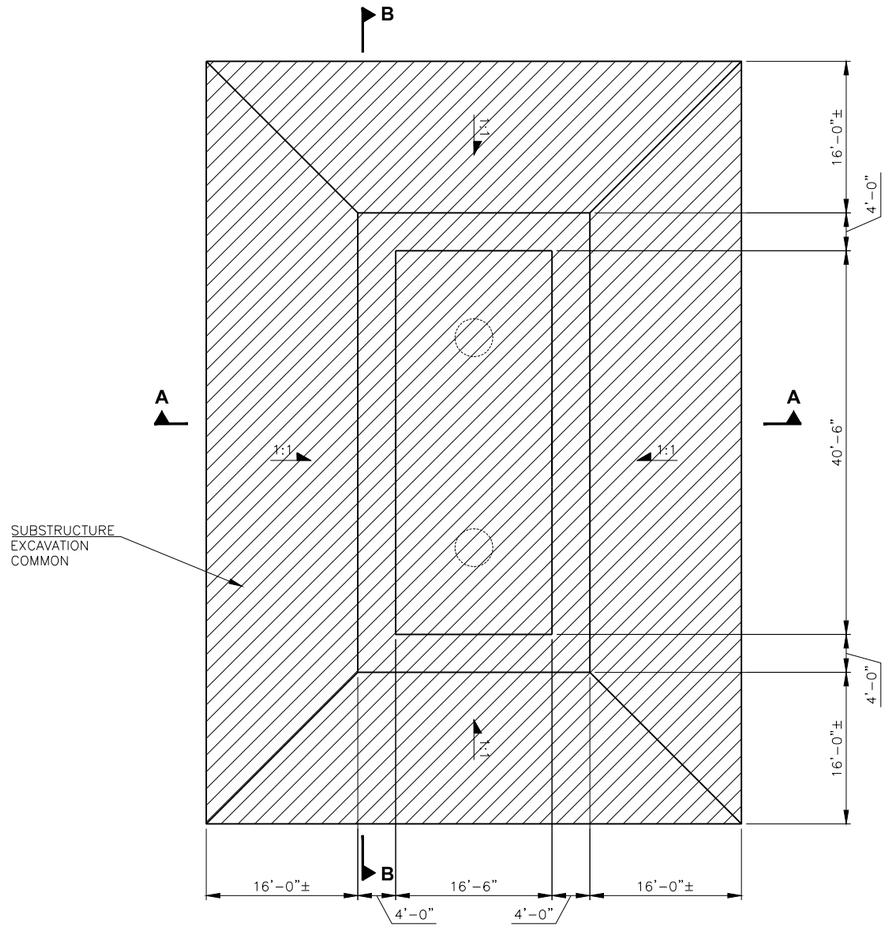
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

SUBSTRUCTURE LAYOUT

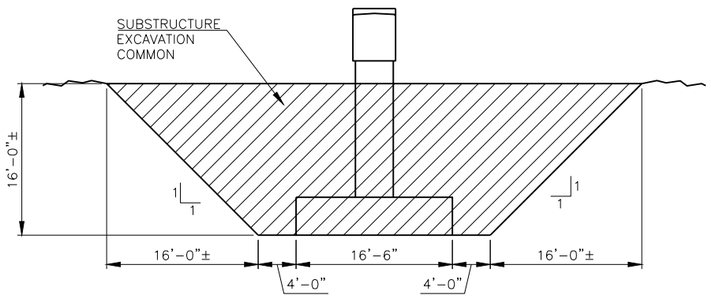
JOB PIECE NO. 28827(04) SHEET NO. 23

CEC // TRANSPORTATION

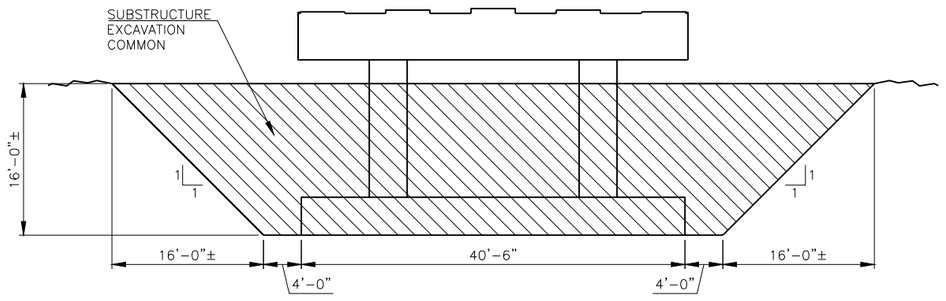
DESCRIPTION	REVISIONS	DATE



SUBSTRUCTURE EXCAVATION PLAN



SECTION A-A



SECTION B-B

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

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DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

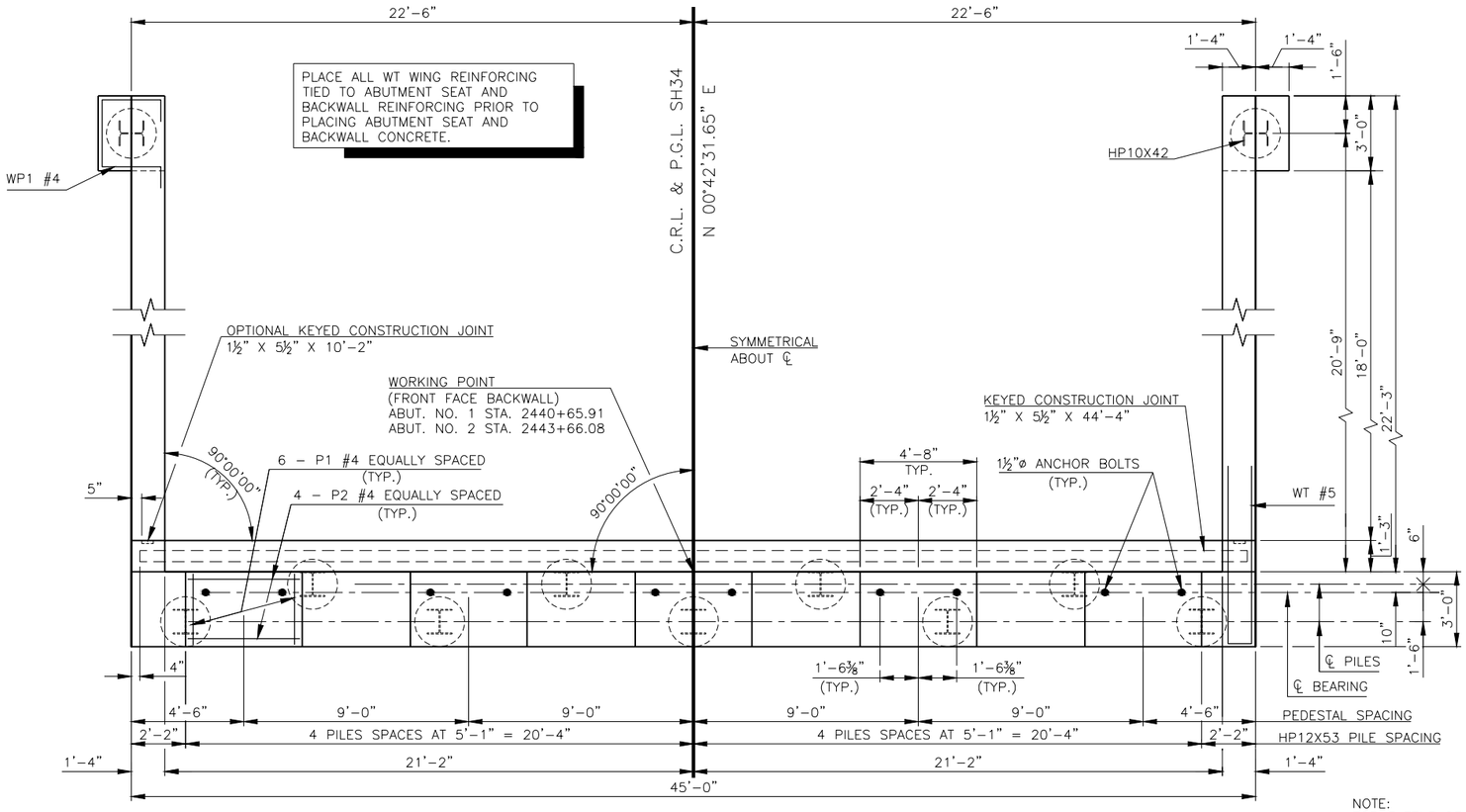
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

SUBSTRUCTURE EXCAVATION AT PIERS

JOB PIECE NO. 28827(04) SHEET NO. 24

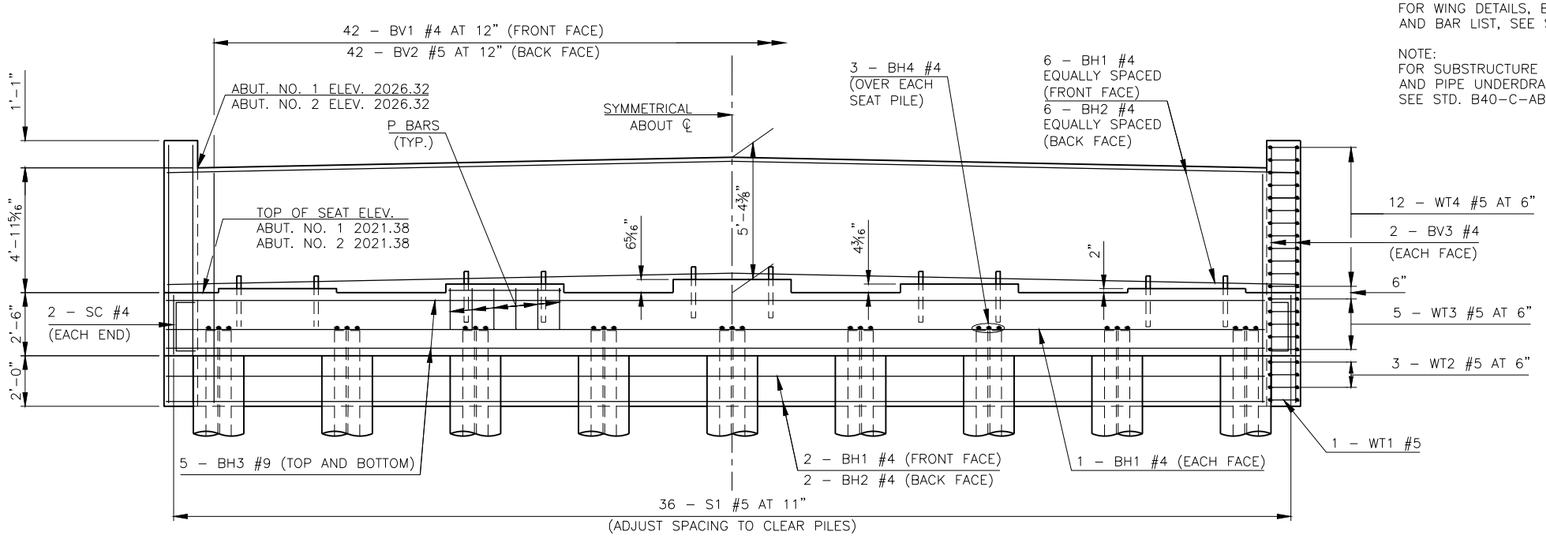
CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE



ABUTMENT PLAN

(ABUTMENT NO. 1 AND 2 SHOWN)

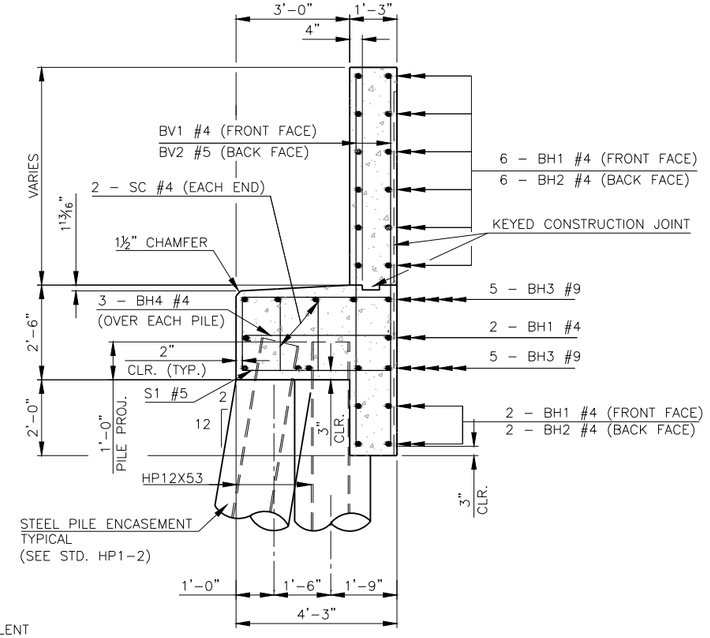


ABUTMENT ELEVATION

(ABUTMENT NO. 1 AND 2 SHOWN)

ABUT. NO. 1

ABUT. NO. 2



SECTION THRU SEAT

NOTE:
FOR EXTENT OF WATER REPELLENT TREATMENT, SEE SHEET 31.

NOTE:
FOR WING DETAILS, BAR BENDS, AND BAR LIST, SEE SHEET 26.

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

ABUTMENT QUANTITIES

ITEM	UNIT	ABUT. NO. 1	ABUT. NO. 2	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	C.Y.	100	100	200
CLSM BACKFILL	C.Y.	105	105	210
CLASS A CONCRETE	CY.	48.5	48.5	97.0
EPOXY COATED REINFORCING STEEL	LB.	5,720	5,720	11,440
PILES, FURNISHED (HP10X42)	L.F.	236	196	432
PILES, FURNISHED (HP12X53)	L.F.	1,029	858	1,887
PILES, DRIVEN (HP10X42)	L.F.	236	196	432
PILES, DRIVEN (HP12X53)	L.F.	1,029	858	1,887
WATER REPELLENT (VISUALLY INSPECTED)	S.Y.	59	59	118
TYPE I-A PLAIN RIPRAP	TON	702	581	1,283
TYPE I-A FILTER BLANKET	TON	158	131	289
6" PERFORATED PIPE UNDERDRAIN ROUND	L.F.	42	42	84
6" NON - PERF. PIPE UNDERDRAIN RND.	L.F.	34	34	68

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DESIGN	J.W.H.	
DRAWN	Z.M.B.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

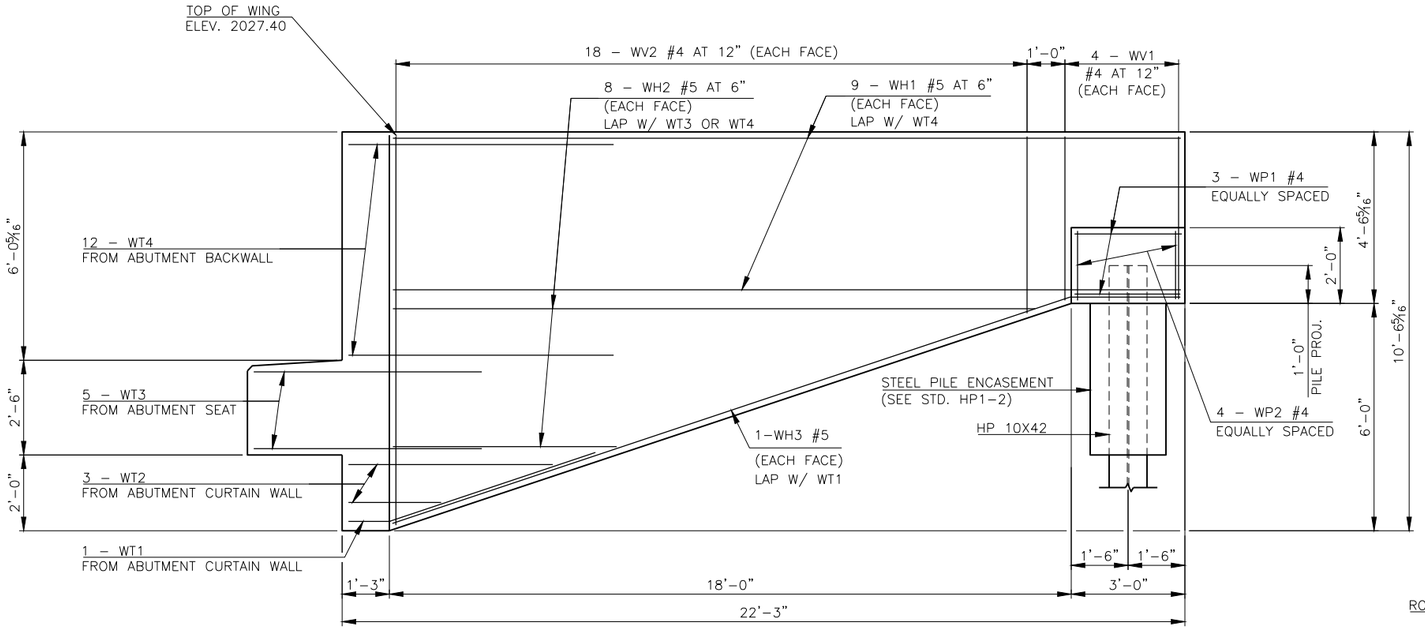
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

ABUTMENT DETAILS

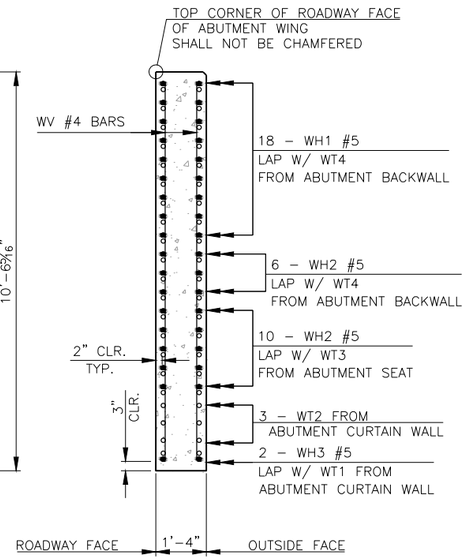
JOB PIECE NO. 28827(04) SHEET NO. 25

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE



WING ELEVATION



SECTION THRU WING AT BACK FACE OF ABUTMENT SEAT

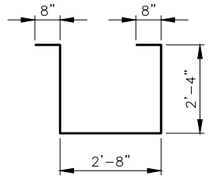
ABUTMENT BAR LIST

ONE SHOWN – TWO REQUIRED

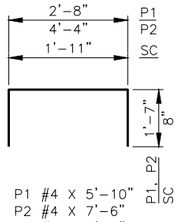
EPOXY COATED REINFORCING

	MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
	BH1	#4	10	STR.	44'–8"	
	BH2	#4	8	BNT.	46'–0"	
	BH3	#9	10	STR.	44'–8"	
	BH4	#4	27	BNT.	5'–1"	
①	BV1	#4	42	STR.	9'–2" AVG.	9'–0" TO 9'–4"
①	BV2	#5	42	STR.	9'–2" AVG.	9'–0" TO 9'–4"
	P1	#4	30	BNT.	5'–10"	
	P2	#4	20	BNT.	7'–6"	
	S1	#5	36	BNT.	12'–7"	
	SC	#4	4	BNT.	3'–3"	
	WH1	#5	36	STR.	20'–8"	
②	WH2	#5	32	STR.	11'–4" AVG.	6'–1" TO 16'–7"
	WH3	#5	4	BNT.	21'–8"	
	WP1	#4	6	BNT.	8'–8"	
	WP2	#4	8	STR.	1'–7"	
	WT1	#5	2	BNT.	8'–6"	
③	WT2	#5	6	BNT.	9'–0" AVG.	6'–0" TO 12'–0"
	WT3	#5	10	BNT.	17'–0"	
	WT4	#5	24	BNT.	11'–0"	
	WV1	#4	16	STR.	4'–1"	
④	WV2	#4	72	STR.	7'–3" AVG.	4'–6" TO 10'–0"

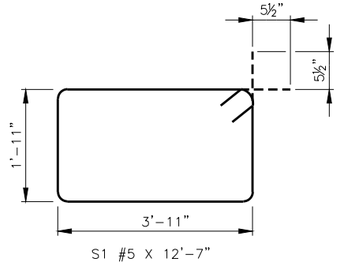
① TWO SETS OF 21.
② FOUR SETS OF 8.
③ TWO SETS OF 3.
④ FOUR SETS OF 18.



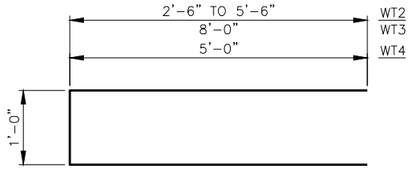
WP1 #4 X 8'–8"



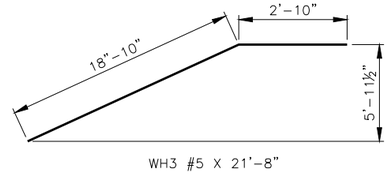
P1 #4 X 5'–10"
P2 #4 X 7'–6"
SC #4 X 3'–3"



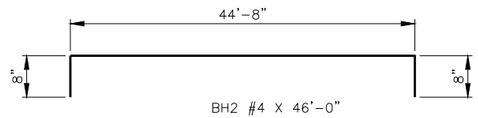
S1 #5 X 12'–7"



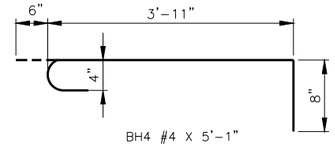
WT2 #5 X 9'–0" AVG.
WT3 #5 X 17'–0"
WT4 #5 X 11'–0"



WH3 #5 X 21'–8"

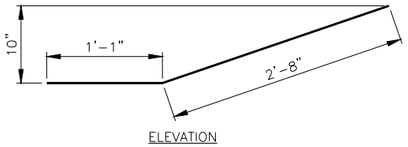


BH2 #4 X 46'–0"



BH4 #4 X 5'–1"

PLAN



ELEVATION
WT1 #5 X 8'–6"

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	Z.M.B.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

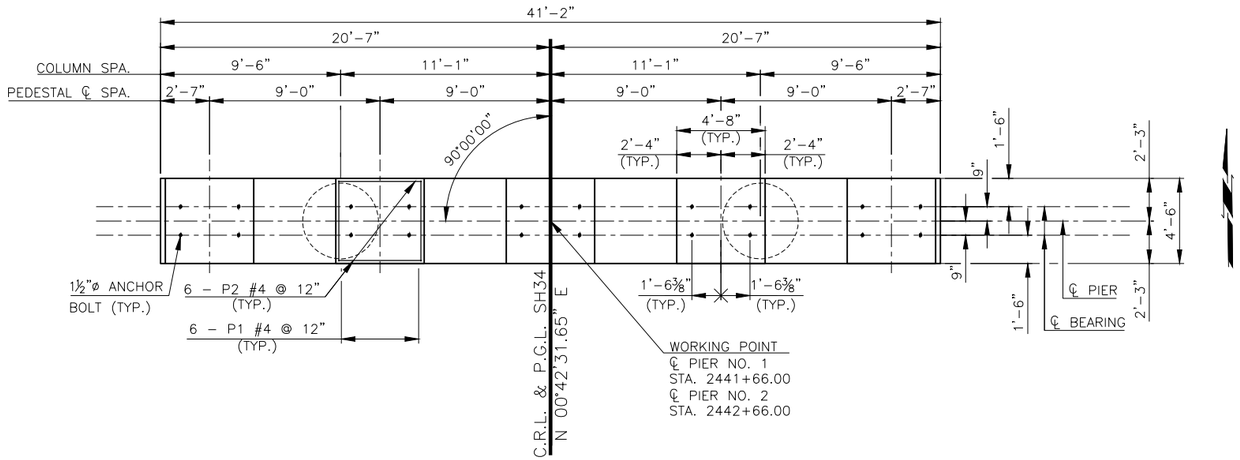
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

ABUTMENT WING DETAILS

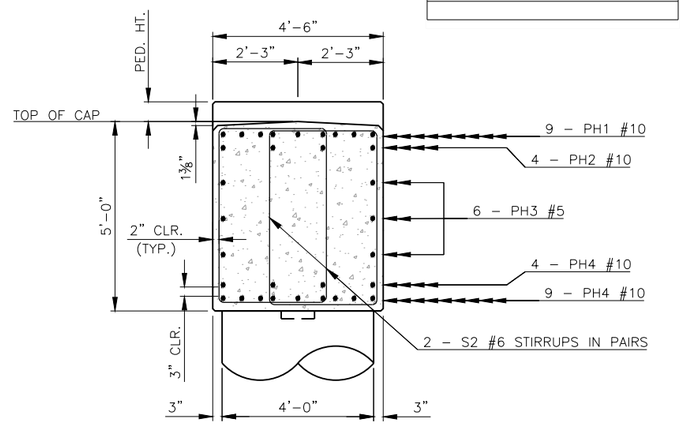
JOB PIECE NO. 28827(04) SHEET NO. 26

CEC // TRANSPORTATION

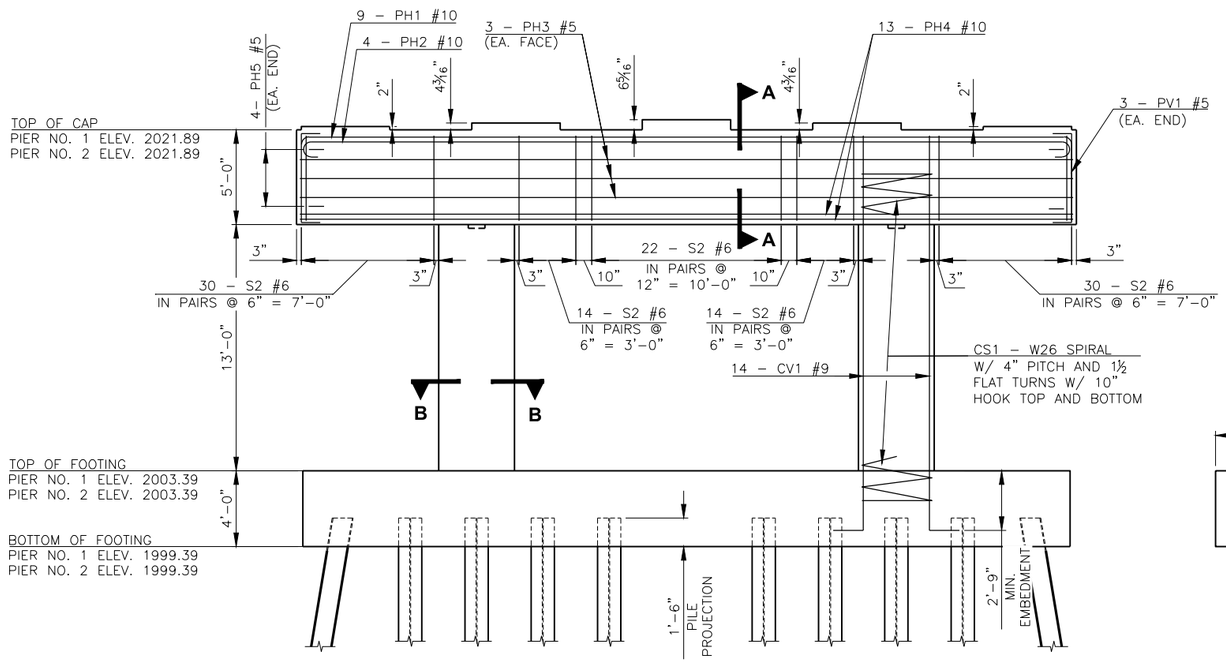
DESCRIPTION	REVISIONS	DATE



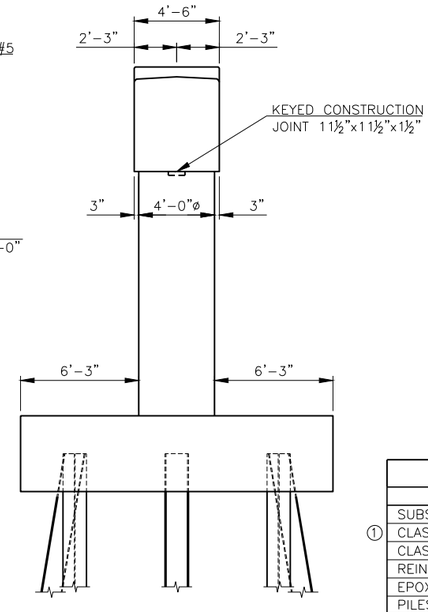
PLAN



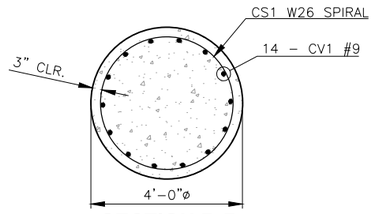
SECTION A-A



ELEVATION



SIDE



SECTION B-B

NOTE:
FOOTING REINFORCEMENT OMITTED FOR CLARITY. FOR ADDITIONAL FOOTING DETAILS, SEE SHEETS 28 AND 29.

NOTE:
FOR BAR BENDS AND BAR LIST, SEE SHEET 30.

NOTE:
FOR SUBSTRUCTURE EXCAVATION, SEE SHEET 24.

NOTE:
FOR PILING STEEL PLATE REINFORCING TIP DETAILS, SEE SHEET 30.

PIER QUANTITIES

	ITEM	UNIT	PIER NO. 1	PIER NO. 2	TOTAL
	SUBSTRUCTURE EXCAVATION COMMON	C.Y.	1,700	1,700	3,400
①	CLASS AA CONCRETE	C.Y.	111.1	111.1	222.2
	CLASS A CONCRETE	C.Y.	35.5	35.5	71.0
	REINFORCING STEEL	LB.	1,100	1,100	2,200
	EPOXY COATED REINFORCING STEEL	LB.	26,090	26,090	52,180
	PILES, FURNISHED (HP 14X89)	L.F.	2,010	1,890	3,900
	PILES, DRIVEN (HP 14X89)	L.F.	2,010	1,890	3,900
	WATER REPELLENT (VISUALLY INSPECTED)	S.Y.	75	75	150

① QUANTITY USED TO CONSTRUCT PIER COLUMNS AND FOOTING.

W26 COLUMN SPIRAL TO EXTEND 2'-0" MINIMUM INTO PIER CAP AND FOOTING.

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	Z.M.B.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

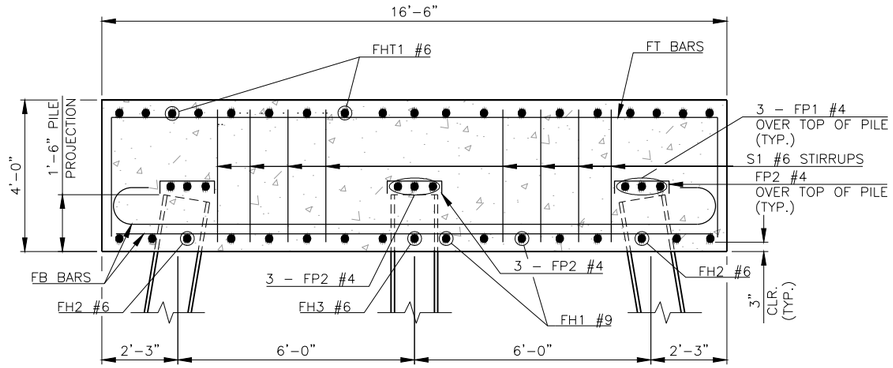
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

PIER NO. 1 AND 2 DETAILS (SHEET 1 OF 3)

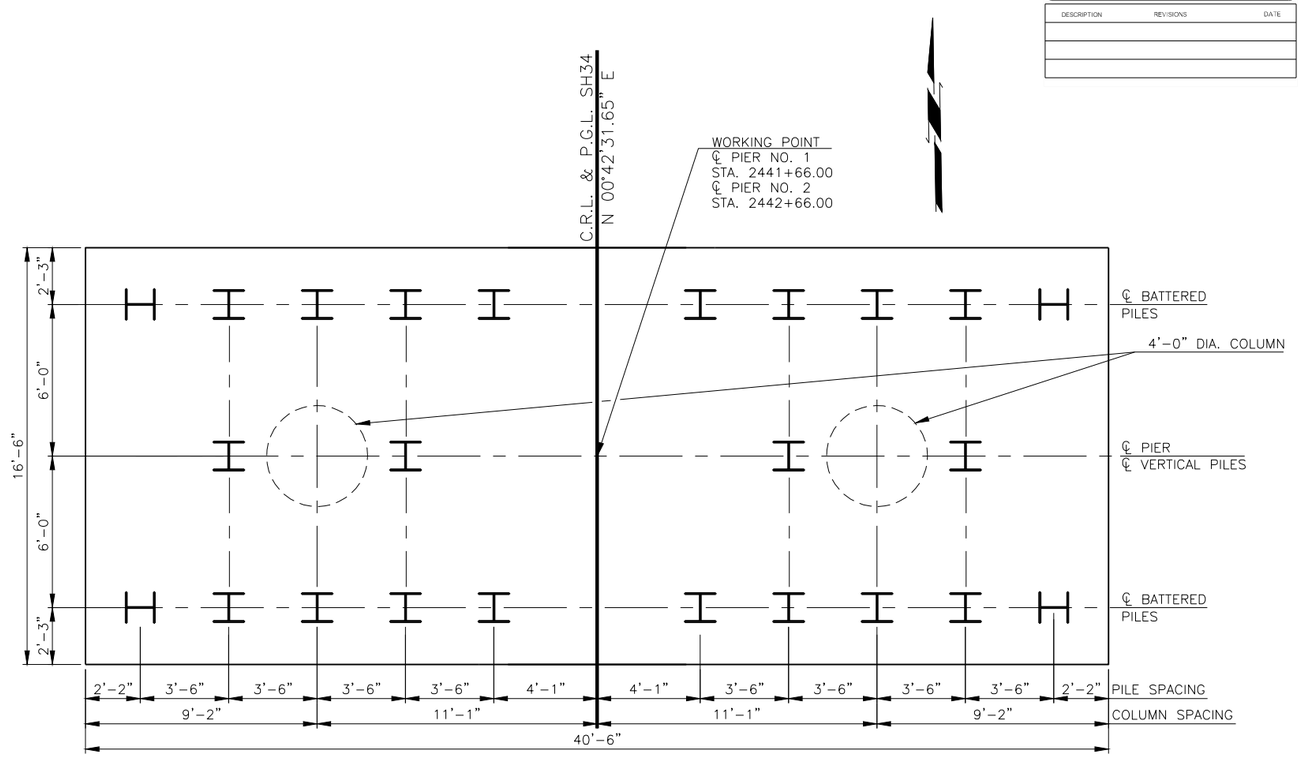
JOB PIECE NO. 28827(04) SHEET NO. 27

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE

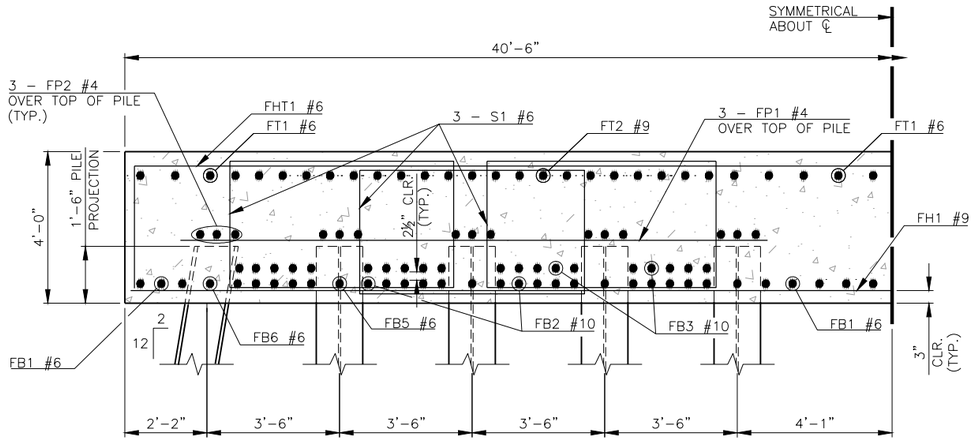


SECTION C-C



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 29.

NOTE:
FOR BAR BENDS AND BAR LIST, SEE SHEET 30.

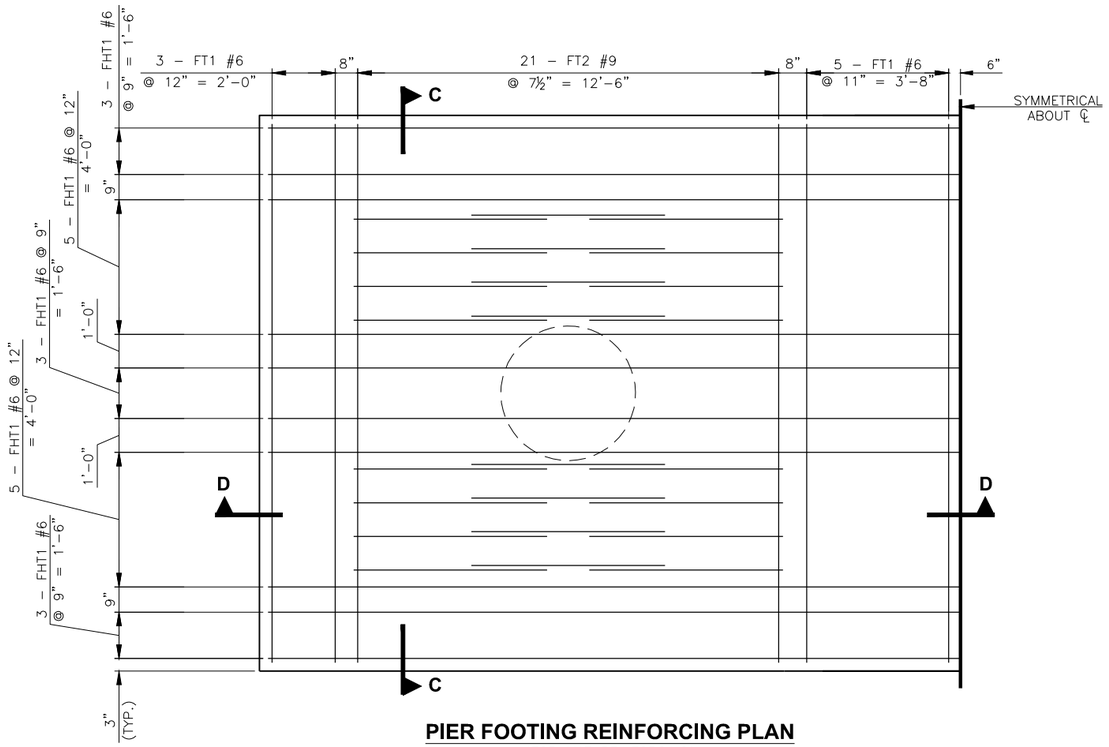
THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

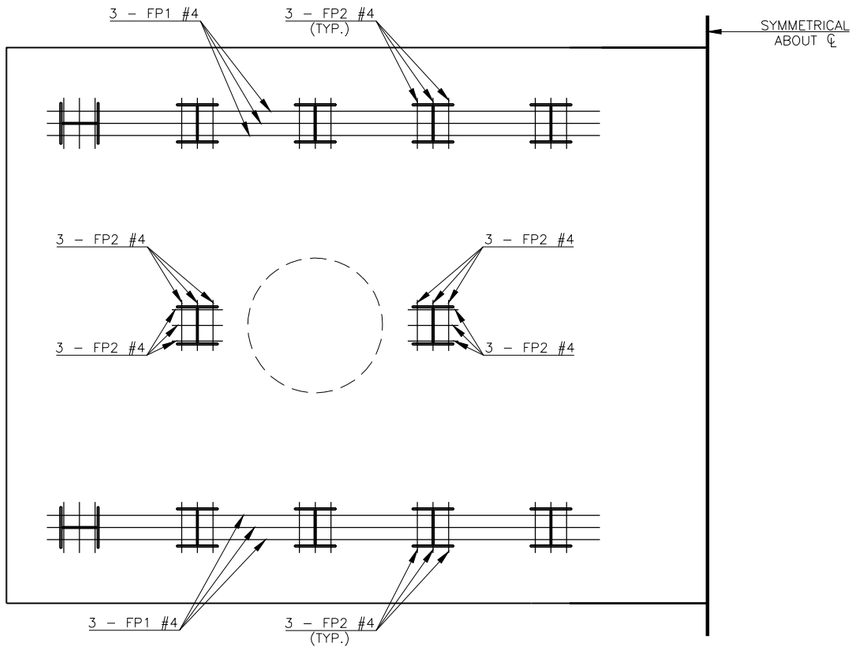
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

PIER NO. 1 AND 2 DETAILS (SHEET 2 OF 3)

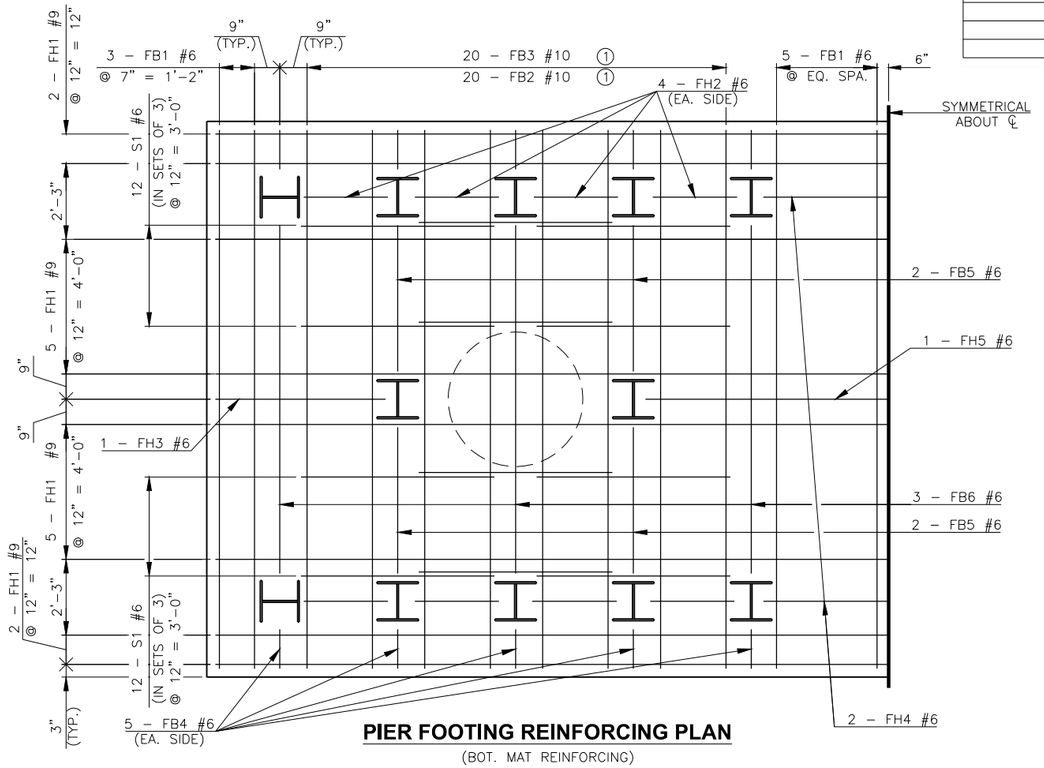
JOB PIECE NO. 28827(04) SHEET NO. 28



PIER FOOTING REINFORCING PLAN
(TOP MAT REINFORCING)



PIER FOOTING REINFORCING PLAN
(REINFORCING OVER TOP OF PILES)



PIER FOOTING REINFORCING PLAN
(BOT. MAT REINFORCING)

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

NOTE:
FOR SECTIONS C–C AND D–D, SEE SHEET 28.

NOTE:
FOR BAR BENDS AND BAR LIST, SEE SHEET 30.

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

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE

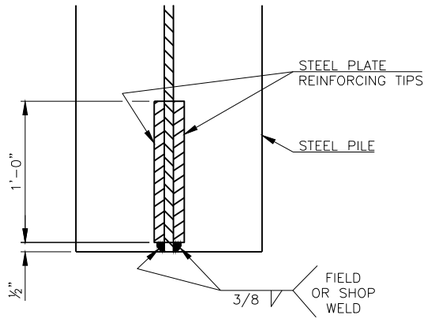
THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

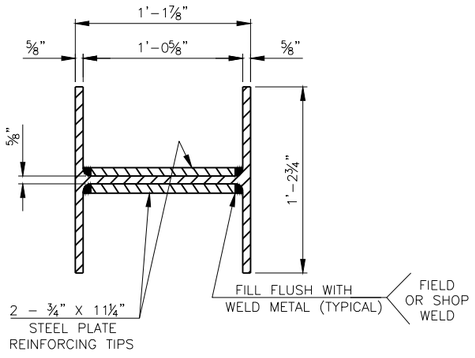
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

PIER NO. 1 AND 2 DETAILS (SHEET 3 OF 3)

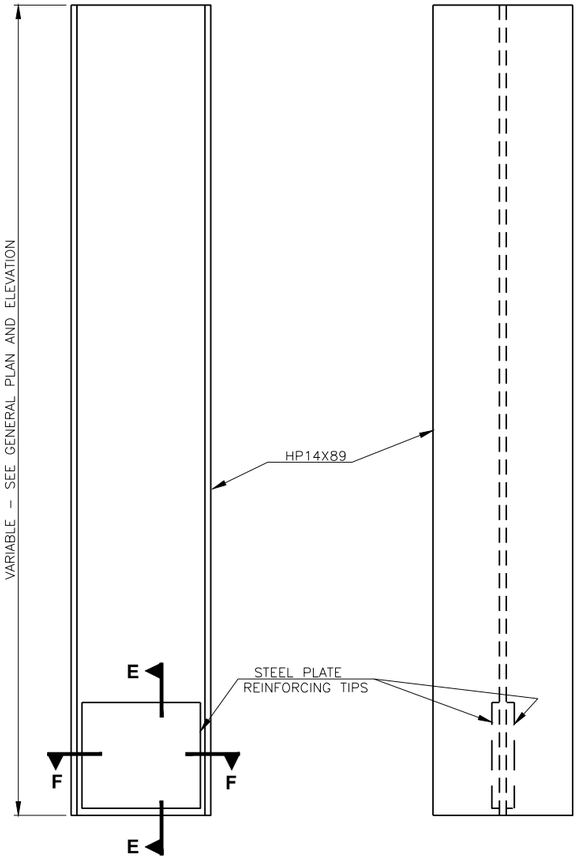
JOB PIECE NO. 28827(04) SHEET NO. 29



SECTION E-E

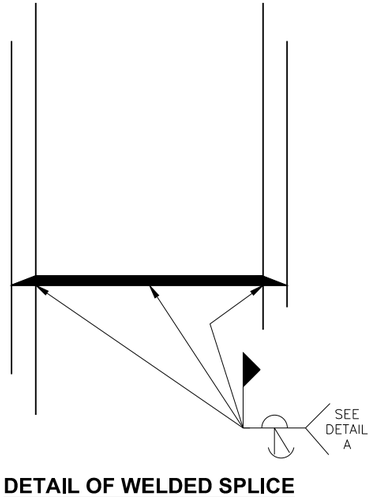


SECTION F-F

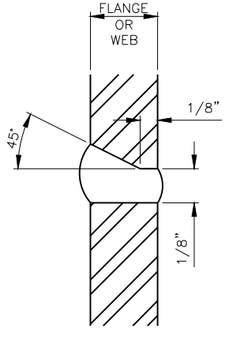


ELEVATION OF WEB

ELEVATION OF FLANGE



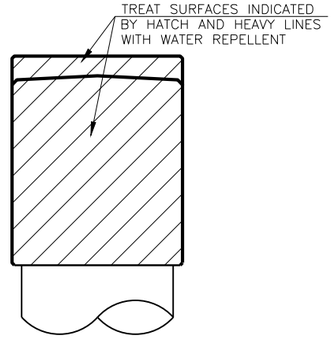
DETAIL OF WELDED SPLICE



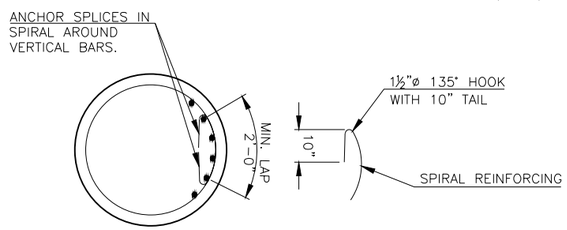
DETAIL A

DETAIL OF PILING

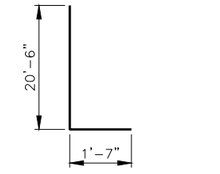
NOTE:
PROVIDE STRUCTURAL STEEL FOR PILING AND STEEL PLATE REINFORCING TIPS IN ACCORDANCE WITH AASHTO M270 (ASTM A572), GRADE 50. THE CONTRACTOR MAY USE MANUFACTURED DRIVING TIPS AS AN ALTERNATIVE TO THE STEEL PLATE REINFORCING TIPS SHOWN WITH APPROVAL BY THE BRIDGE ENGINEER. THE DEPARTMENT CONSIDERS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



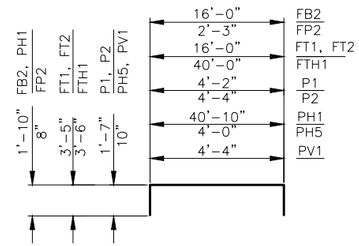
WATER REPELLENT TREATMENT DETAIL



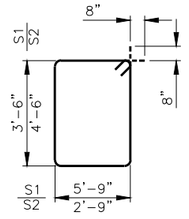
SPIRAL REINFORCING SPLICE DETAIL



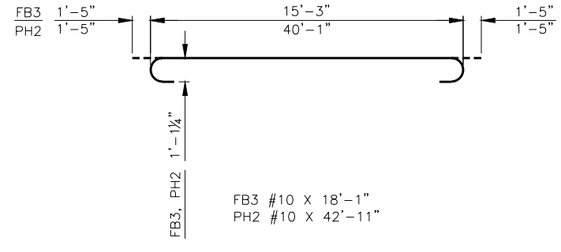
CV1 #9 X 22'-1"



FB2 #10 X 19'-8"
FP2 #4 X 3'-7"
FT1 #6 X 22'-10"
FT2 #9 X 22'-10"
FTH1 #6 X 47'-0"
P1 #4 X 7'-4"
P2 #4 X 7'-6"
PH1 #10 X 44'-6"
PH5 #5 X 5'-8"
PV1 #5 X 6'-0"



S1 #6 X 19'-10"
S2 #6 X 15'-10"



FB3 #10 X 18'-1"
PH2 #10 X 42'-11"

PIER BAR LIST

ONE SHOWN - TWO REQUIRED

EPOXY COATED REINFORCING

MARK	SIZE	NO.	FORM	LENGTH
CV1	#9	28	BNT.	22'-1"
FB1	#6	16	STR.	16'-0"
FB2	#10	40	BNT.	19'-8"
FB3	#10	40	BNT.	18'-1"
FB4	#6	20	STR.	1'-2"
FB5	#6	8	STR.	4'-4"
FB6	#6	6	STR.	10'-4"
FH1	#9	14	STR.	40'-0"
FH2	#6	16	STR.	2'-6"
FH3	#6	2	STR.	5'-0"
FH4	#6	2	STR.	7'-5"
FH5	#6	1	STR.	14'-5"
FP1	#4	12	STR.	15'-6"
FP2	#4	84	BNT.	3'-7"
FT1	#6	16	BNT.	22'-10"
FT2	#9	42	BNT.	22'-10"
FTH1	#6	19	BNT.	47'-0"
P1	#4	30	BNT.	7'-4"
P2	#4	30	BNT.	7'-6"
PH1	#10	9	BNT.	44'-6"
PH2	#10	4	BNT.	42'-11"
PH3	#5	6	STR.	40'-10"
PH4	#10	13	STR.	40'-10"
PH5	#5	8	BNT.	5'-8"
PV1	#5	6	BNT.	6'-0"
S1	#6	48	BNT.	19'-10"
S2	#6	110	BNT.	15'-10"

PLAIN REINFORCING

MARK	SIZE	NO.	FORM	LENGTH
① CS1	W26	2	BNT.	587'-7"

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.

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	Z.M.B.	J.F.R.
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

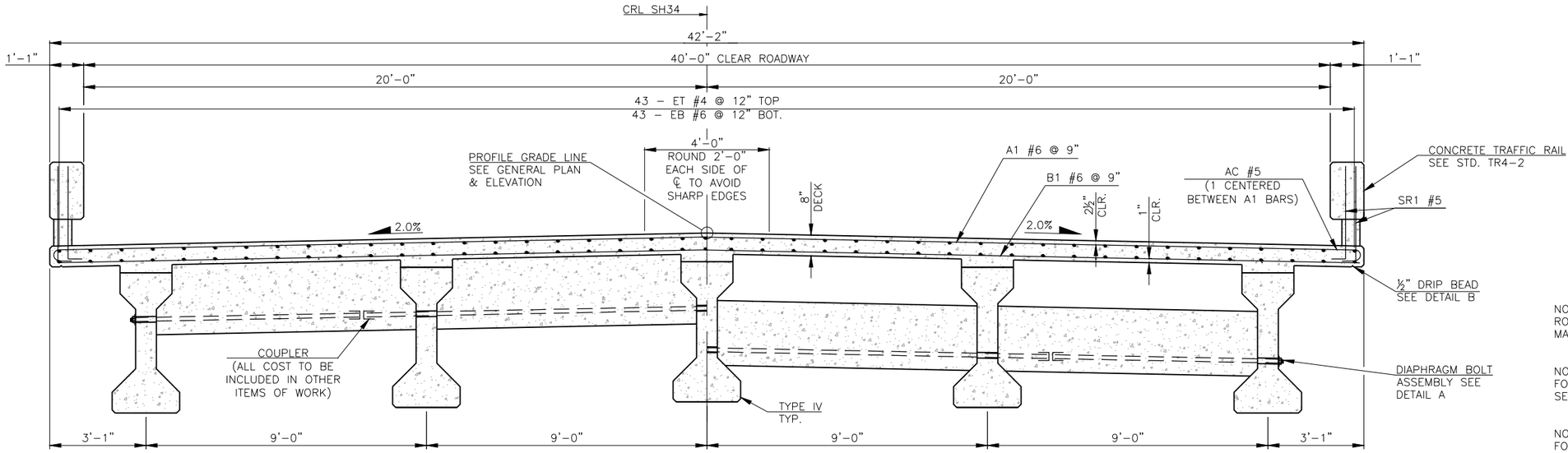
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

PIER STEEL PILING DETAIL AND BAR LIST

JOB PIECE NO. 28827(04) SHEET NO. 30

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE



HALF SECTION AT END DIAPHRAGM

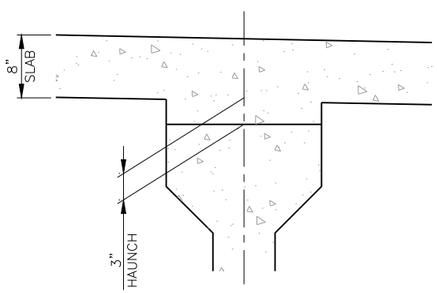
HALF SECTION AT INTERMEDIATE DIAPHRAGM

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

NOTE:
FOR SUPERSTRUCTURE QUANTITIES, SEE SHEET 32.

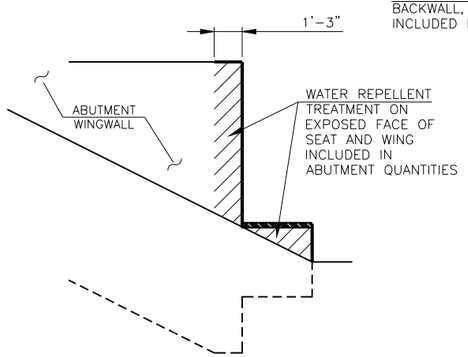
NOTE:
FOR BAR BENDS AND BAR LIST, SEE SHEET 36.

TYPICAL CROSS SECTION

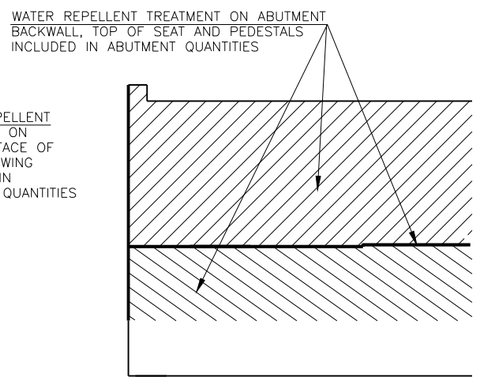


BEAM HAUNCH DETAIL

NOTE:
PLAN QUANTITIES FOR CLASS AA CONCRETE INCLUDE 23.1 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.

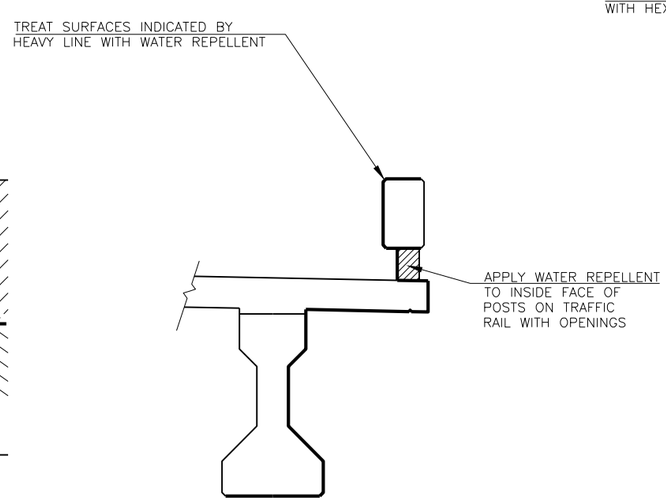


SIDE



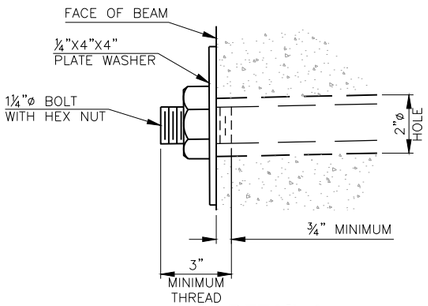
ELEVATION

ABUTMENT

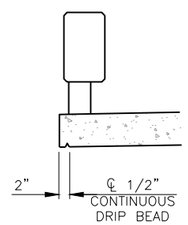


TRAFFIC RAIL, SLAB, AND BEAM

WATER REPELLENT TREATMENT DETAILS



DETAIL A



DETAIL B

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

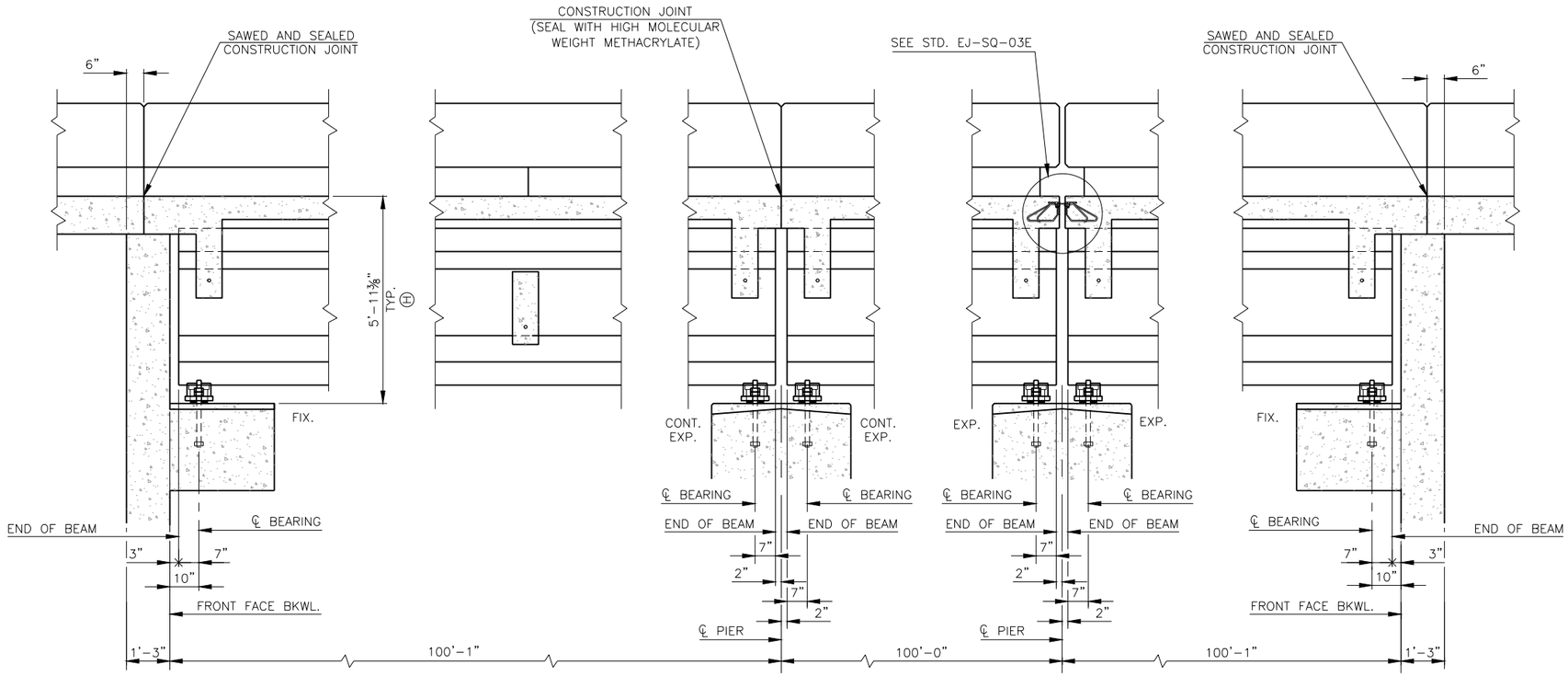
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

TYPICAL CROSS SECTION

JOB PIECE NO. 28827(04) SHEET NO. 31

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE



ABUTMENT NO. 1 — **INTERMEDIATE DIAPHRAGM** — **PIER NO. 1** — **PIER NO. 2** — **ABUTMENT NO. 2**

Ⓗ DIMENSION IS FROM TOP OF DECK SLAB TO BOTTOM OF BEARING ASSEMBLY AT ℄ BEARING.

LONGITUDINAL SECTION

DO NOT PLACE THE CONCRETE FOR THE DECK SLAB OR APPLY OTHER MASSIVE LOADS TO THE BEAMS UNTIL THE CONCRETE IN THE DIAPHRAGMS HAS BEEN IN PLACE A MINIMUM OF 10 DAYS OR AT THE DISCRETION OF THE ENGINEER. THE ENGINEER MAY APPROVE SHORTENED TIME IF THE BEAM AND DIAPHRAGM CONCRETE HAS ATTAINED 80% OF THE SPECIFIED COMPRESSIVE STRENGTH.

EXPANSION JOINT SETTING SCHEDULE

EXP. JOINT OPENING	TEMPERATURE
	PIER NO. 2
3"	0°F
2⅞"	2°F
2¾"	8°F
2⅝"	14°F
2½"	20°F
2⅜"	26°F
2¼"	31°F
2⅛"	37°F
2"	43°F
1⅞"	49°F
1¾"	55°F
1⅝"	60°F
1½"	66°F
1⅜"	72°F
1¼"	78°F
1⅛"	84°F
1"	90°F
⅞"	95°F
¾"	101°F
⅝"	107°F
½"	113°F
⅜"	119°F
¼"	120°F

SUPERSTRUCTURE QUANTITIES

ITEM	UNIT	TOTAL
PRESTRESSED CONCRETE BEAMS (TYPE IV)	L.F.	1,495
SAW-CUT GROOVING	S.Y.	1,341
SEALED EXPANSION JOINT	L.F.	41.8
CONCRETE RAIL (TR4)	L.F.	603.3
STRUCTURAL STEEL	LB.	1,430
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA.	10
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA.	20
CLASS AA CONCRETE	C.Y.	358.4
EPOXY COATED REINFORCING STEEL	LB.	97,830
WATER REPELLENT (VISUALLY INSPECTED)	S.Y.	995
SEALER CRACK PREPARATION	L.F.	41
SEALER RESIN	GAL.	1

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

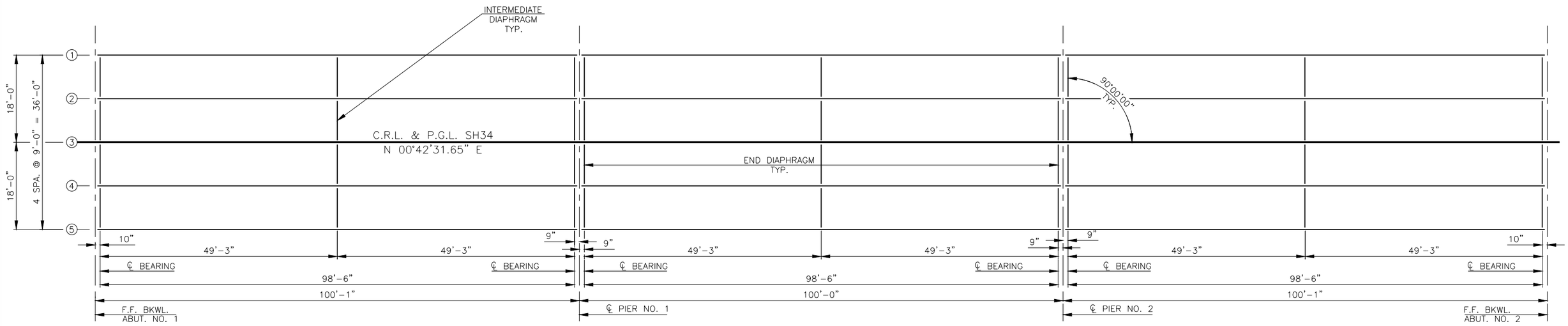
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

LONGITUDINAL SECTION

JOB PIECE NO. 28827(04) SHEET NO. 32

CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE



BEAM FRAMING PLAN

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

BEAM FRAMING PLAN

JOB PIECE NO. 28827(04) SHEET NO. 33

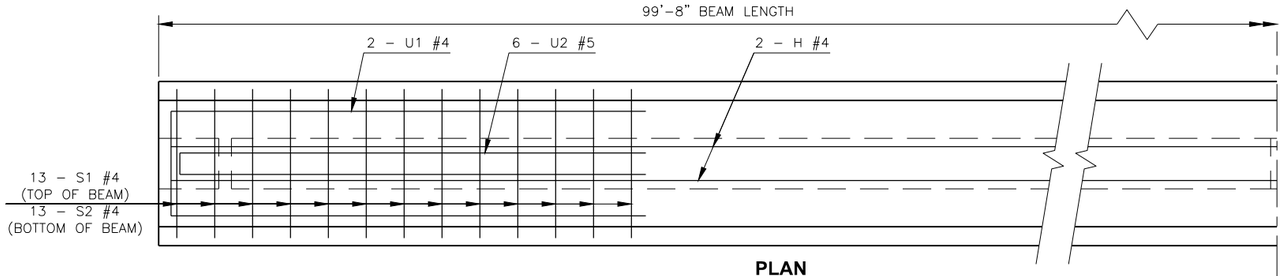
CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE

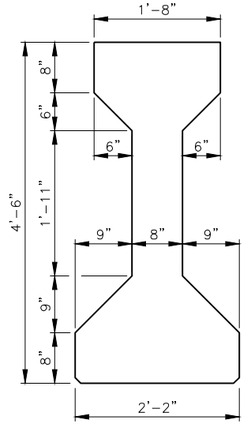
PRESTRESSED CONCRETE BEAM NOTES

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.

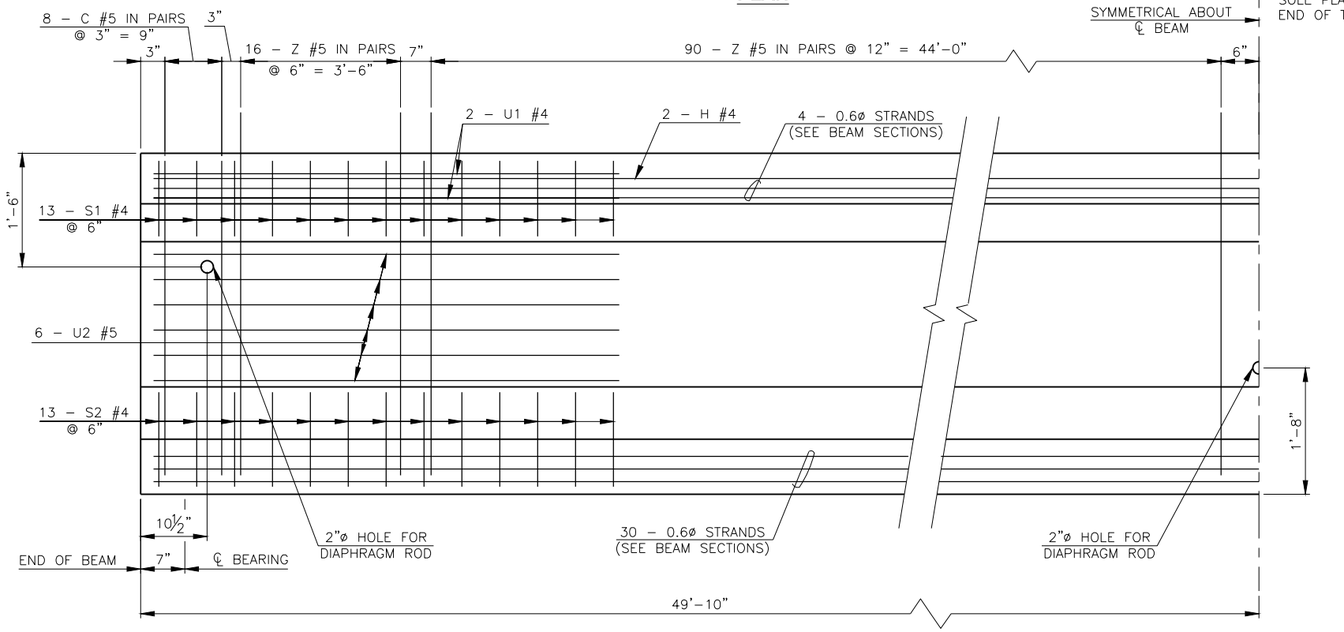
STRAND TYPE
PROVIDE LOW-RELAXATION STRANDS HAVING A NOMINAL DIAMETER OF 0.6" WITH ULTIMATE TENSILE STRENGTH OF 270 K.S.I.



PLAN

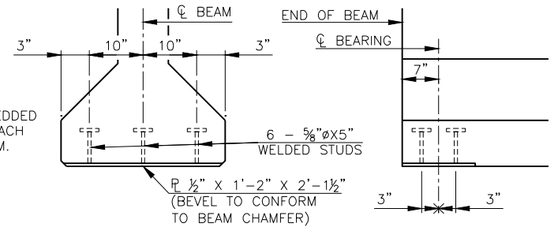


END VIEW



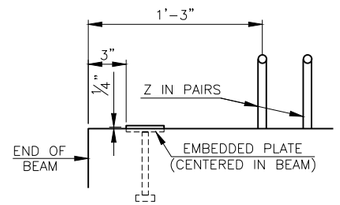
ELEVATION

NOTE:
PROVIDE AN EMBEDDED SOLE PLATE AT EACH END OF THE BEAM.

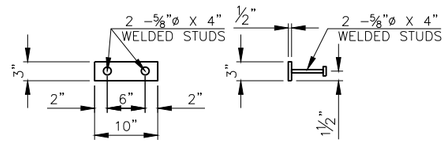


END VIEW **ELEVATION**

EMBEDDED SOLE PLATE DETAILS



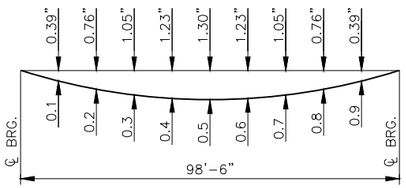
ELEVATION



TOP VIEW **END VIEW**

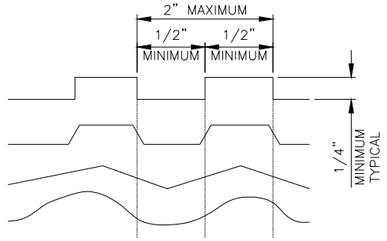
EMBEDDED BEAM PLATE DETAILS

NOTE:
PROVIDE AN EMBEDDED BEAM PLATE AT EXPANSION ENDS ONLY.



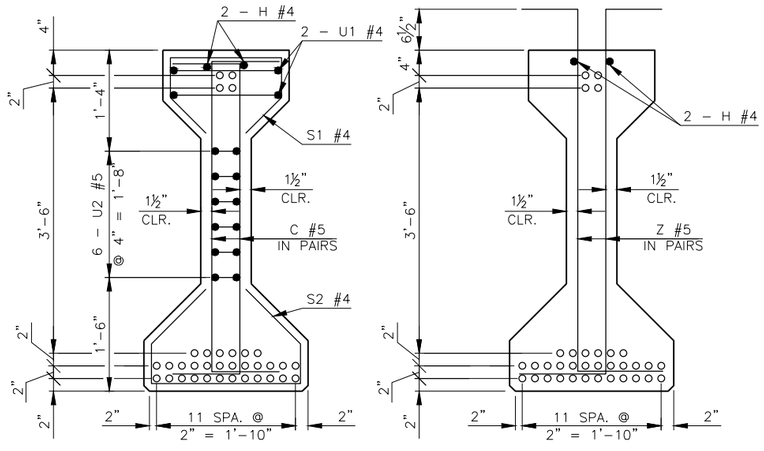
DEAD LOAD DEFLECTION DIAGRAM

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



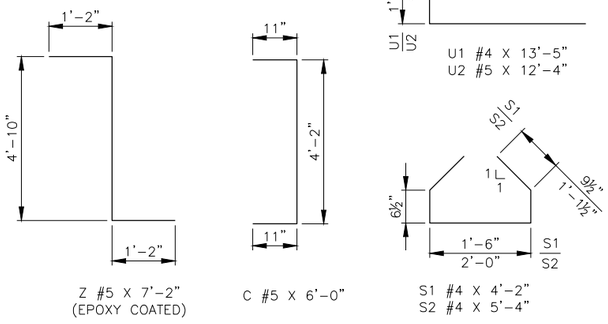
INTENTIONALLY ROUGHENED SURFACE DETAILS

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 SOWN 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 USED SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER. REPAIR ANY DAMAGE TO THE REINFORCEMENT'S EPOXY COATING BEFORE PLACEMENT OF DECK CONCRETE.



END SECTION **℄ SECTION**

BEAM SECTIONS
(34 - 0.6"ø STRANDS)



TYPE IV P.C. BEAM BAR BEND DETAILS

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

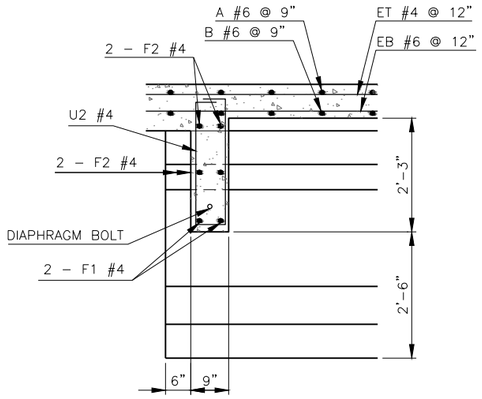
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

P.C.B. DETAILS-TYPE IV

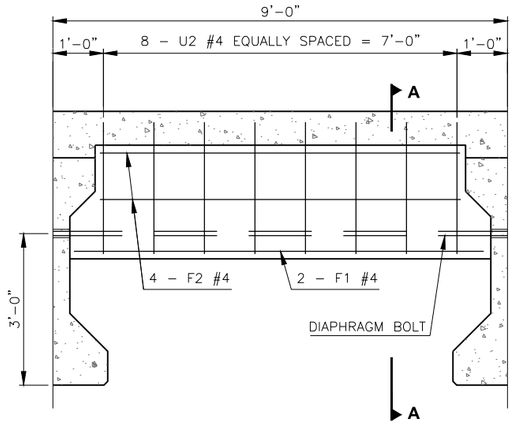
JOB PIECE NO. 28827(04) SHEET NO. 34

CEC // TRANSPORTATION

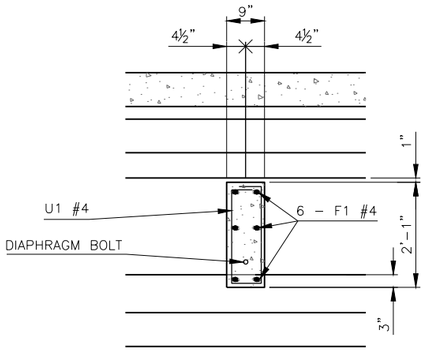
DESCRIPTION	REVISIONS	DATE



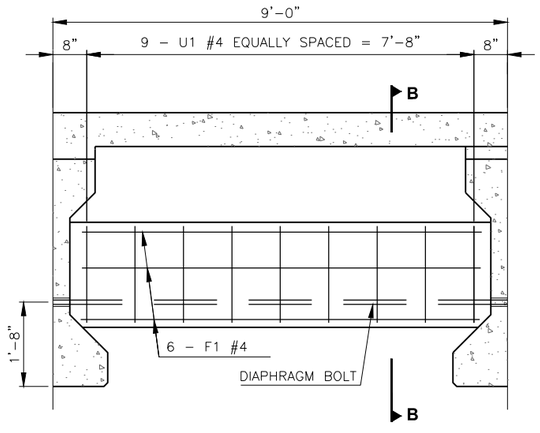
SECTION A-A



END DIAPHRAGM



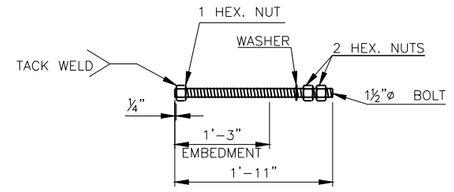
SECTION B-B



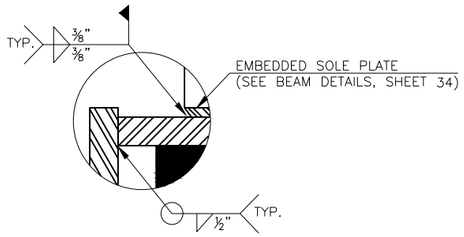
INTERMEDIATE DIAPHRAGM

DIAPHRAGM DETAILS

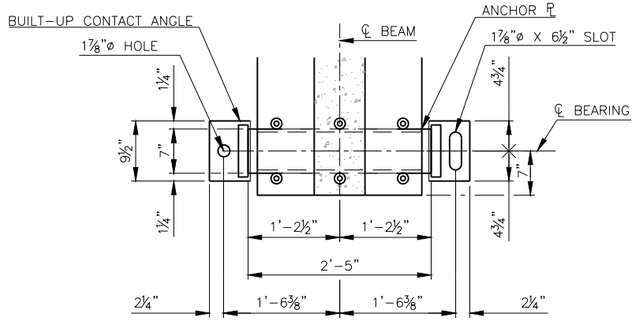
NOTE:
FOR BAR BENDS,
SEE SHEET 36.



ANCHOR BOLT DETAIL

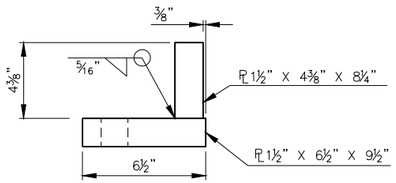


DETAIL A

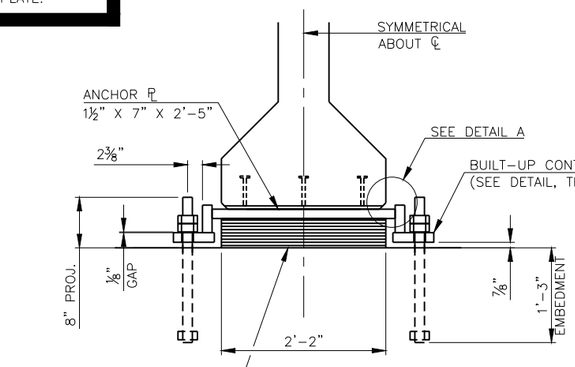


FIX. BRG. **EXP. BRG.**

PLAN



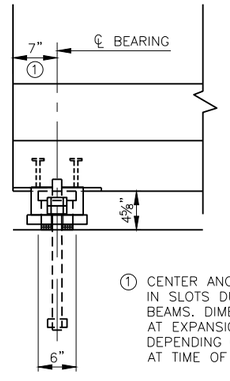
DO NOT BOND BEARING PAD
TO THE ANCHOR PLATE.



ELASTROMETRIC BEARING PAD
60 DURO
4⅝" X 6" X 2'–2"
2 – ¼" COVER LAYER
8 – ⅜" INTERNAL LAYERS
9 – ⅛" LAMINATE PLATES

END VIEW

BUILT-UP CONTACT ANGLE DETAIL



① CENTER ANCHOR BOLTS IN SLOTS DURING SETTING OF BEAMS. DIMENSION MAY VARY AT EXPANSION BEARINGS DEPENDING ON TEMPERATURE AT TIME OF BEAM SETTING.

SIDE VIEW

BEARING DETAILS

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

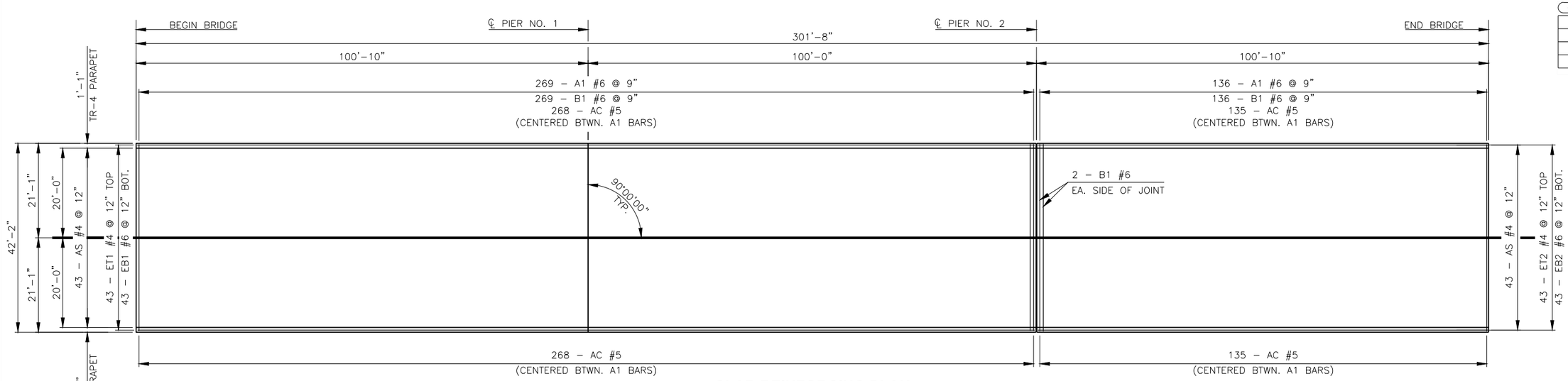
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

DIAPHRAGM AND BEARING DETAILS

JOB PIECE NO. 28827(04) SHEET NO. 35

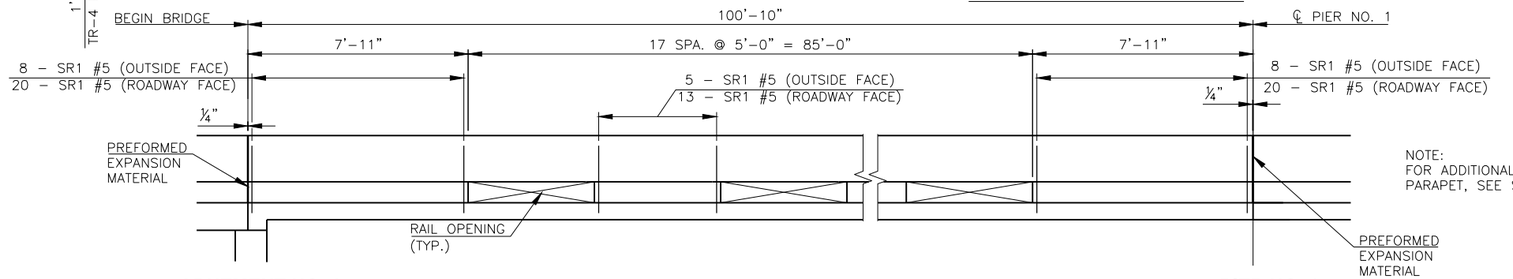
CEC // TRANSPORTATION

DESCRIPTION	REVISIONS	DATE



C.R.L. & P.G.L. SH34
N 00°42'31.65" E

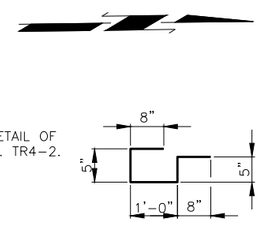
SLAB REINFORCING PLAN



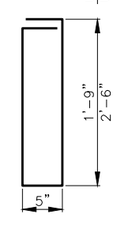
ABUTMENT NO. 1

PIER NO. 1

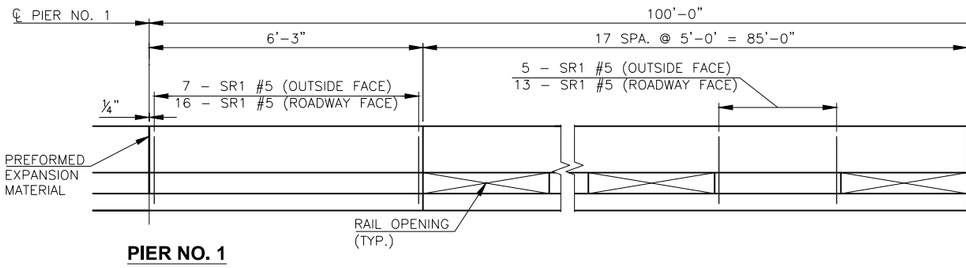
NOTE:
FOR ADDITIONAL DETAIL OF PARAPET, SEE STD. TR4–2.



EPH1 #4 X 3'–2"

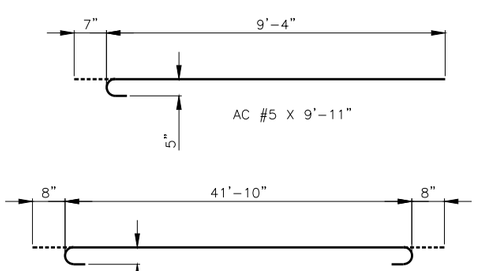


U1 #4 X 4'–9"
U2 #4 X 6'–3"

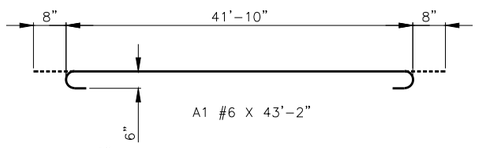


PIER NO. 1

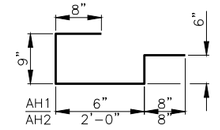
PIER NO. 2



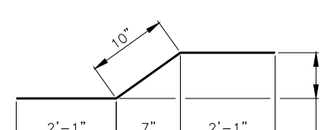
AC #5 X 9'–11"



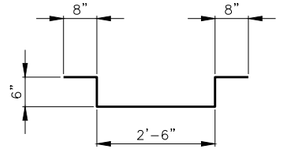
A1 #6 X 43'–2"



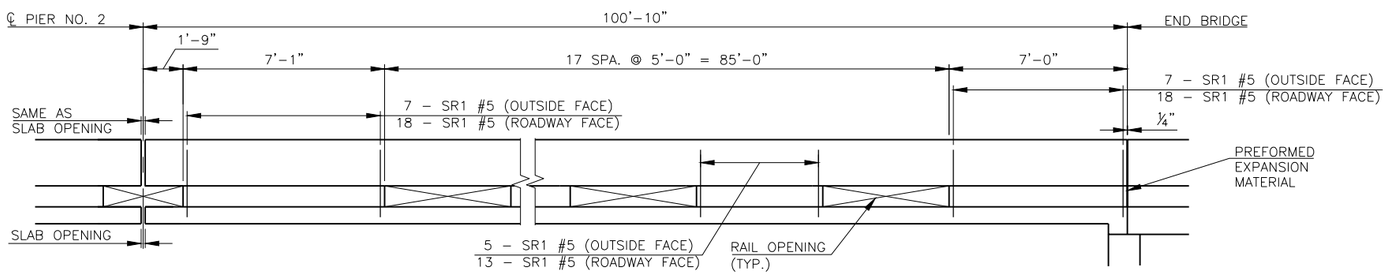
AH1 #4 X 3'–1"
AH2 #4 X 4'–7"



AS #4 X 5'–0"



FPH1 #4 X 4'–10"



PIER NO. 2

ABUTMENT NO. 2

PARAPET ELEVATION

SUPERSTRUCTURE BAR LIST

EPOXY COATED REINFORCING

	MARK	SIZE	NO.	FORM	LENGTH
	A1	#6	405	BNT.	43'–2"
	AC	#5	806	BNT.	9'–11"
	AH1	#4	22	BNT.	3'–1"
	AH2	#4	64	BNT.	4'–7"
	AS	#4	86	BNT.	5'–0"
	AT1	#4	4	STR.	41'–10"
	B1	#6	409	STR.	41'–10"
①	EB1	#6	43	STR.	212'–2"
②	EB2	#6	43	STR.	104'–6"
	EPH1	#4	43	BNT.	3'–2"
	EPT1	#4	2	STR.	41'–10"
③	ET1	#4	43	STR.	206'–8"
④	ET2	#4	43	STR.	102'–8"
	F1	#4	120	STR.	8'–0"
	F2	#4	96	STR.	7'–2"
	FPH1	#4	38	BNT.	4'–10"
	FPT1	#4	2	STR.	41'–10"
⑤	SR1	#5	1,172	BNT.	4'–1"
	U1	#4	108	BNT.	4'–9"
	U2	#4	192	BNT.	6'–3"

① INCLUDES 3 LAPS AT 3'–10"
② INCLUDES 1 LAP AT 3'–10"
③ INCLUDES 3 LAPS AT 2'–0"
④ INCLUDES 1 LAP AT 2'–0"
⑤ FOR BAR BEND, SEE STD. TR4–2.

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

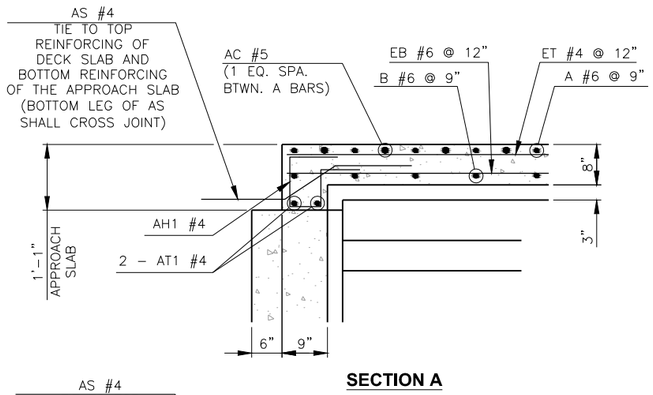
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

SUPERSTRUCTURE DETAILS

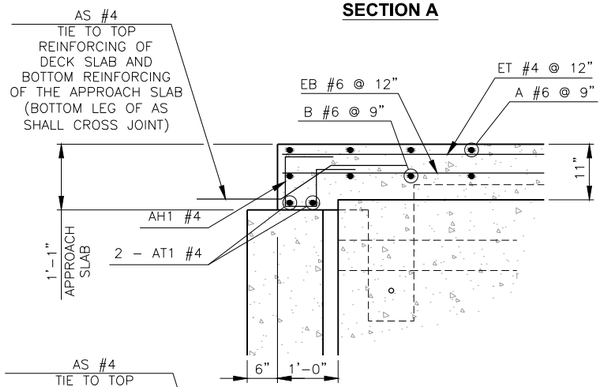
JOB PIECE NO. 28827(04) SHEET NO. 36

CEC // TRANSPORTATION

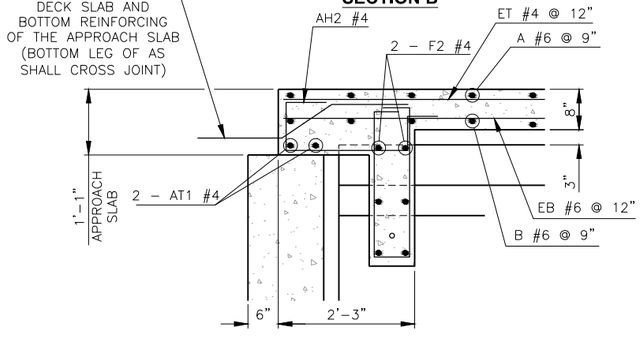
DESCRIPTION	REVISIONS	DATE



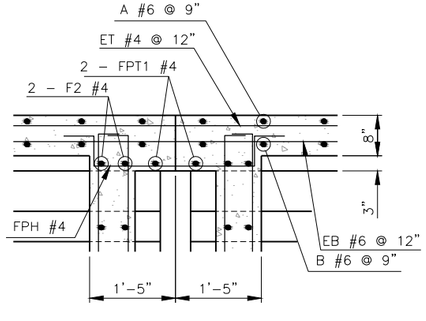
SECTION A



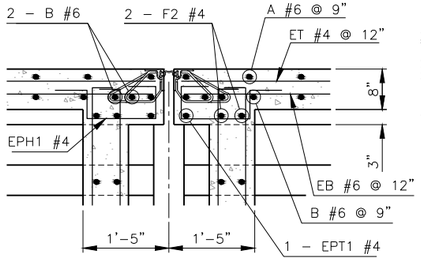
SECTION B



SECTION C

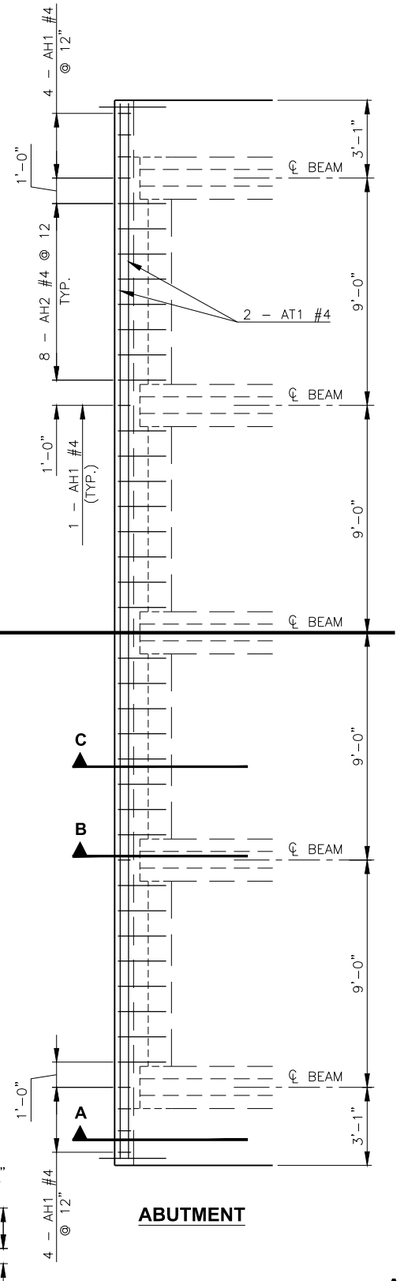


SECTION D

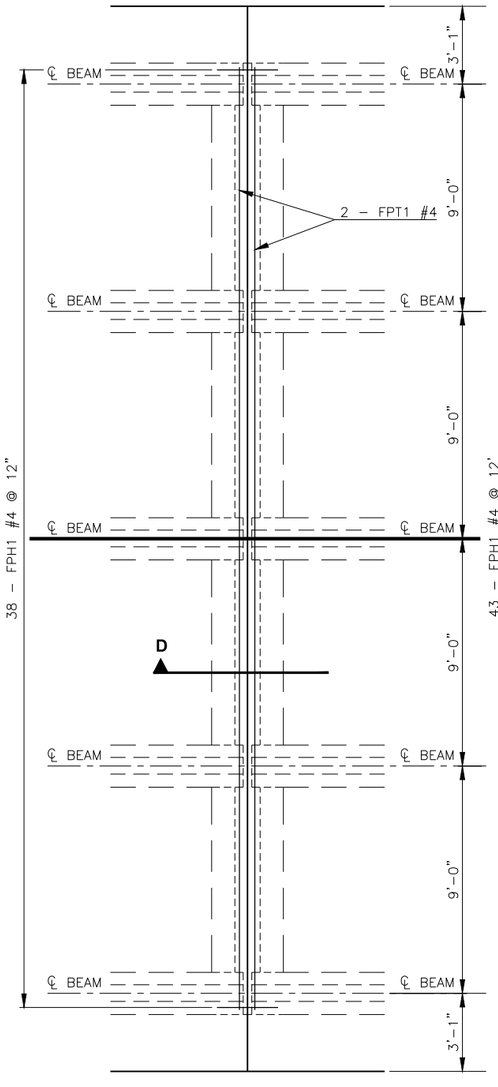


SECTION E

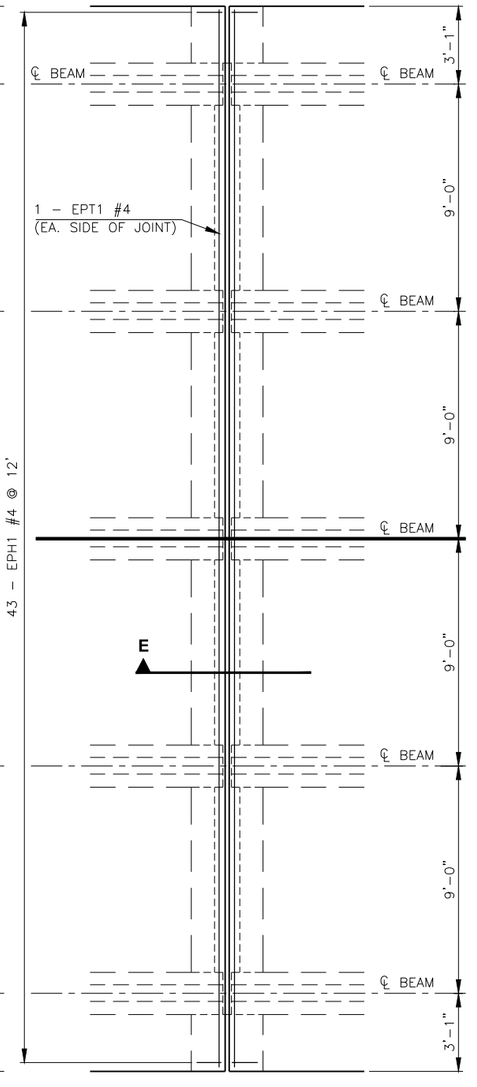
NOTE:
FOR BAR BENDS AND BAR LIST, SEE SHEET 36.



ABUTMENT



PIER NO. 1



PIER NO. 2

ADDITIONAL SLAB REINFORCING AT DIAPHRAGMS

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

DESIGN	J.W.H.	
DRAWN	R.A.P.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

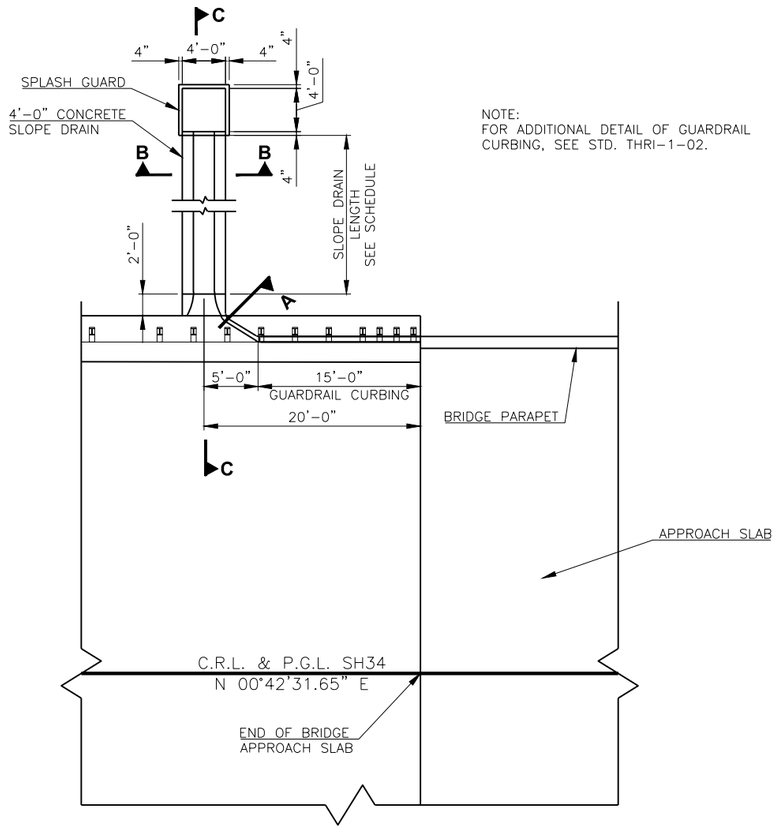
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

ADDITIONAL SLAB REINFORCING

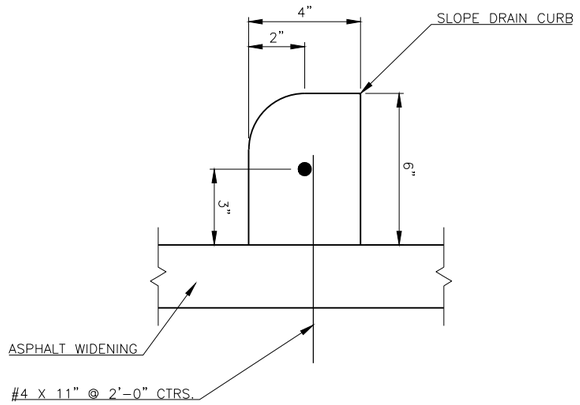
JOB PIECE NO. 28827(04) SHEET NO. 37

CEC // TRANSPORTATION

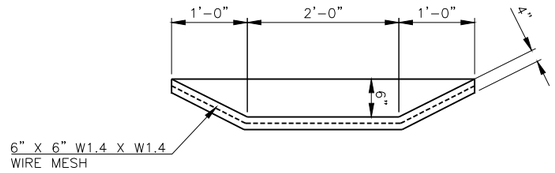
DESCRIPTION	REVISIONS	DATE



NOTE:
FOR ADDITIONAL DETAIL OF GUARDRAIL CURBING, SEE STD. THRI-1-02.



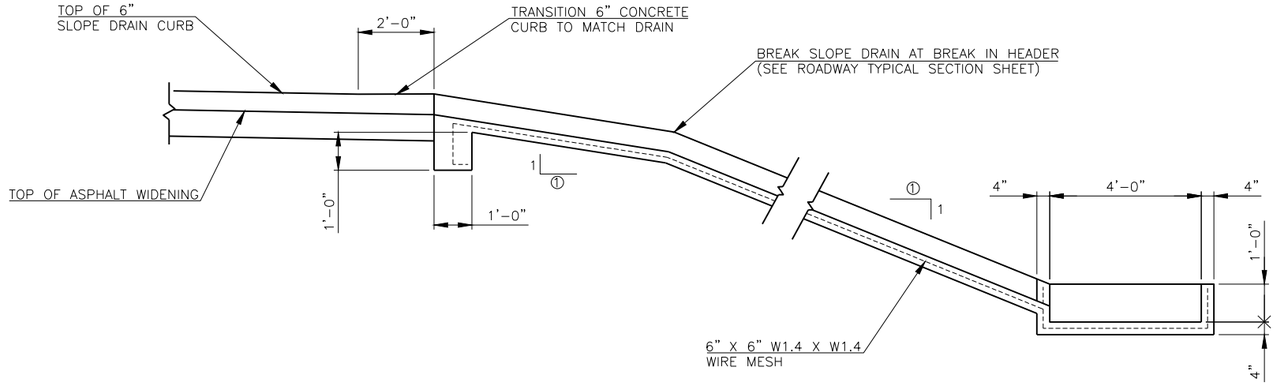
SECTION A



SECTION B-B

SLOPE DRAINS SCHEDULE	
SLOPE DRAIN	ESTIMATED LENGTH
ABUTMENT NO. 1 – WEST	30'-0"
ABUTMENT NO. 1 – EAST	33'-0"
ABUTMENT NO. 2 – WEST	35'-0"
ABUTMENT NO. 2 – EAST	35'-0"

SLOPE DRAIN QUANTITIES		
ITEM	UNITS	TOTAL
CLASS C CONCRETE	C.Y.	9.3



SECTION C-C

① SLOPE TO MATCH SLOPE OF HEADER

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".

THIS DRAWING IS PRELIMINARY IN NATURE. IT IS NOT A FINAL SIGNED AND SEALED DRAWING

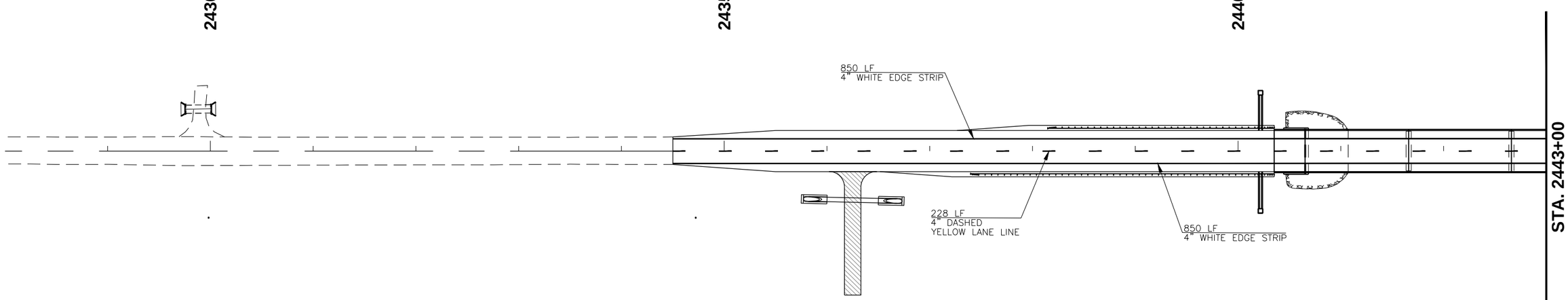
DESIGN	J.W.H.	
DRAWN	Z.M.B.	
CHECKED	J.W.H.	
APPROV.	T.A.C.	
SQUAD	CEC	

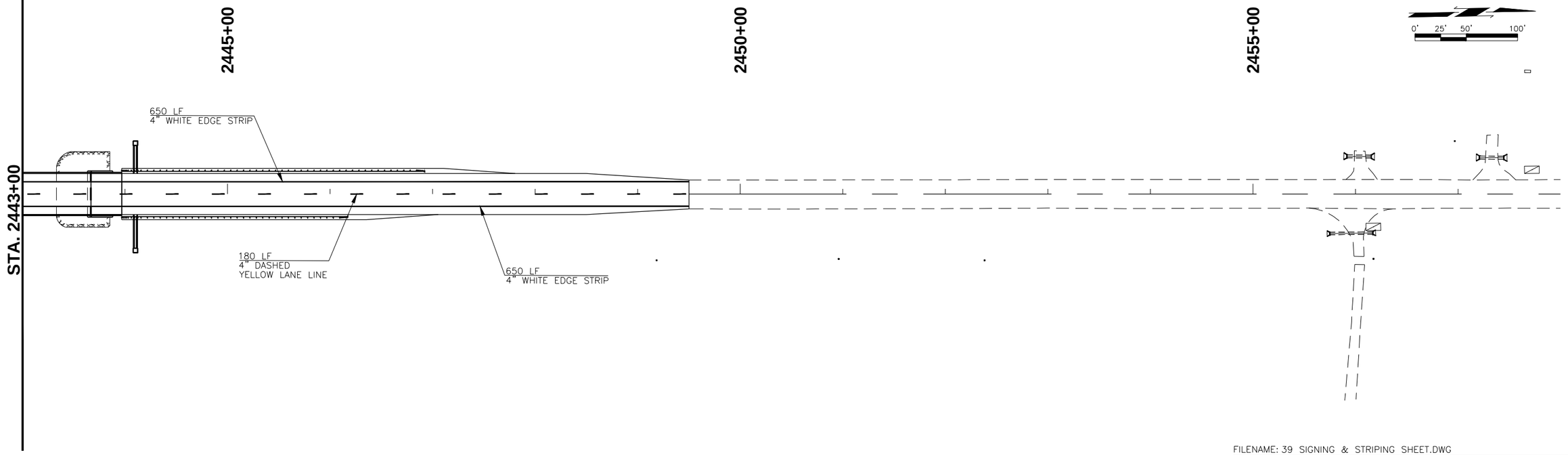
SH34 OVER N. PERSIMMON CREEK WOODWARD COUNTY
BRIDGE A

SLOPE DRAIN DETAILS

JOB PIECE NO. 28827(04) SHEET NO. 38

REVISIONS	
DESCRIPTION	DATE



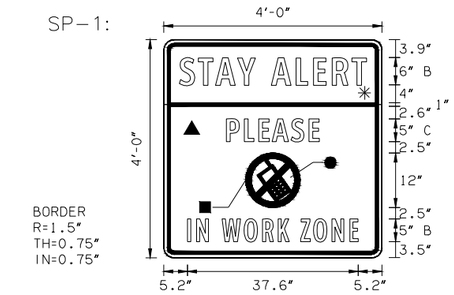


FILENAME: 39 SIGNING & STRIPING SHEET.DWG

DESIGN		SH-34 OVER N. PERSIMMON CREEK	WOODWARD COUNTY
DRAWN		**SIGNING & STRIPING SHEET**	
CHECKED			
CEC		STATE JOB NO. 28827(04)	SHEET NO. 39

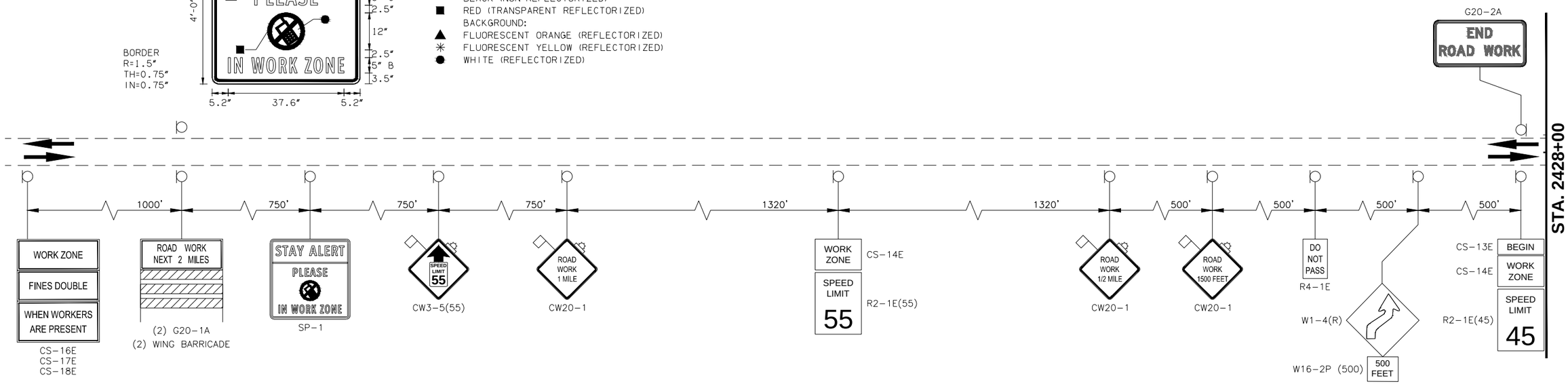
REVISIONS	
DESCRIPTION	DATE

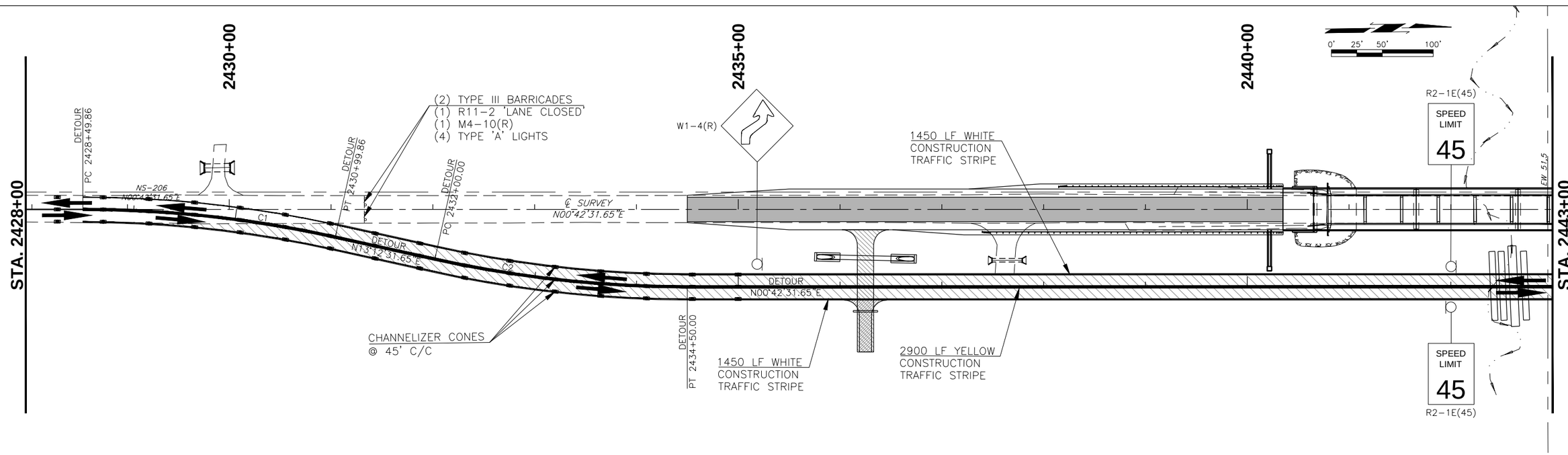
SP-1:



BORDER
R=1.5"
TH=0.75"
IN=0.75"

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

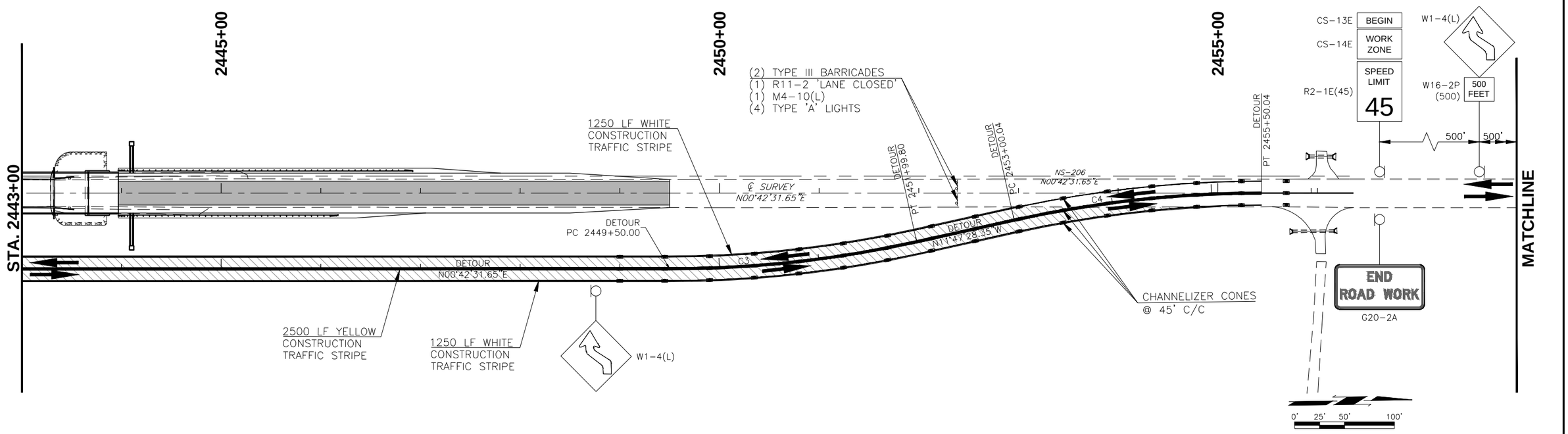


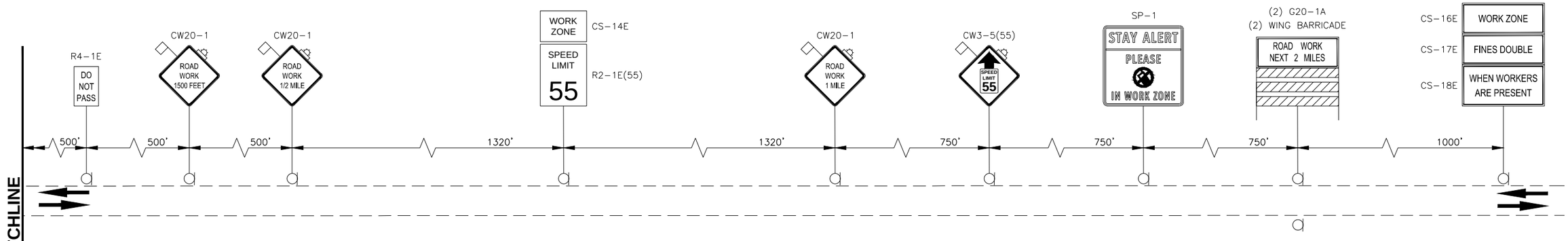


FILENAME: 40 TRAFFIC CONTROL (SHEET 1 OF 2).DWG

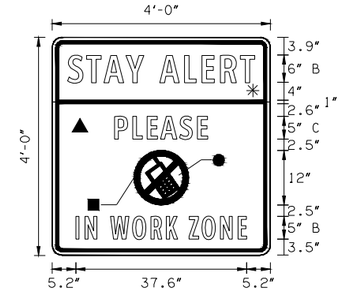
DESIGN		SH-34 OVER N. PERSIMMON CREEK	WOODWARD COUNTY
DRAWN		**TRAFFIC CONTROL (SHEET 1 OF 2)**	
CHECKED			
CEC		STATE JOB NO. 28827(04)	SHEET NO. 40

REVISIONS		
DESCRIPTION		DATE





SP-1:



BORDER
R=1.5"
TH=0.75"
IN=0.75"

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

FILENAME: 40 TRAFFIC CONTROL (SHEET 1 OF 2).DWG

DESIGN	
DRAWN	
CHECKED	
CEC	

SH-34 OVER N. PERSIMMON CREEK WOODWARD COUNTY

TRAFFIC CONTROL (SHEET 2 OF 2)

STATE JOB NO. 28827(04) SHEET NO. 41

AREA
EXC. EMB.

VOLUME
EXC. EMB.

2429 + 50

0	0	PHASE 1
0	0	PHASE 2
0	1	PHASE 3

PRES. R/W
OHE
F.G. = 2030.38
FOC TUG
GAS

PHASE 1	0	0
PHASE 2	0	0
PHASE 3	0	2

2429 + 00

0	0	PHASE 1
0	0	PHASE 2
0	1	PHASE 3

PRES. R/W
OHE
F.G. = 2031.32
FOC TUG
GAS

PHASE 1	0	0
PHASE 2	0	0
PHASE 3	0	2

2428 + 50

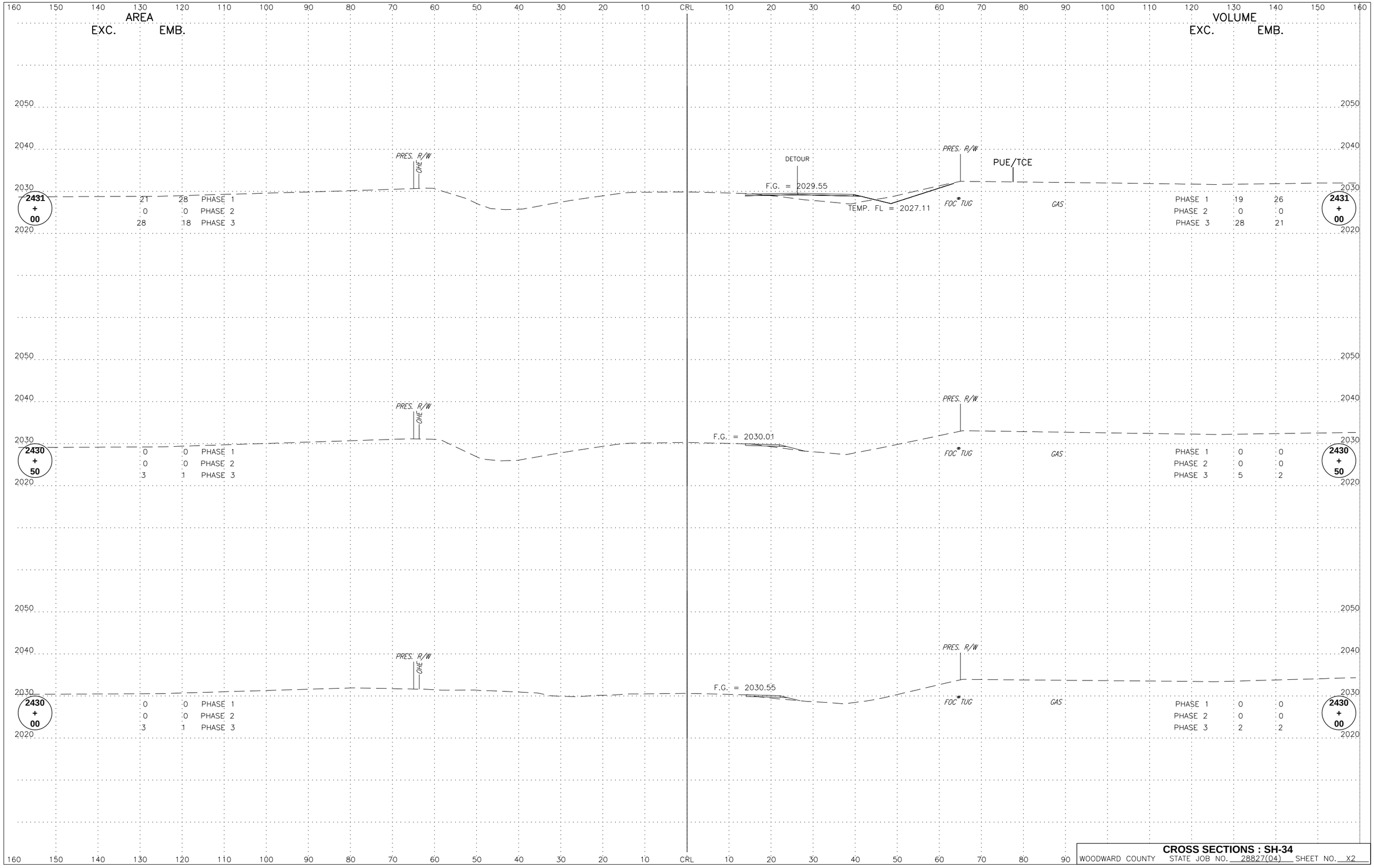
0	0	PHASE 1
0	0	PHASE 2
0	0	PHASE 3

PRES. R/W
OHE
FOC TUG
GAS

PHASE 1	0	0
PHASE 2	0	0
PHASE 3	0	0

STA. 2428+49.86
BEGIN INCIDENTAL CONSTRUCTION
(DETOUR ALIGNMENT)

CROSS SECTIONS: SH-34
WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X1



CROSS SECTIONS : SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X2

AREA

EXC. EMB.

VOLUME

EXC. EMB.

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

2040 2030 2020 2010

PRES. R/W OHE

DETOUR PRES. R/W

F.G. = 2028.06

FOC TUG GAS

TEMP. FL = 2025.55

PUE/TCE

2432 + 50

81	15	PHASE 1
0	0	PHASE 2
15	81	PHASE 3

PHASE 1	145	37
PHASE 2	0	0
PHASE 3	37	167

2432 + 50

2040 2030 2020 2010

PRES. R/W OHE

DETOUR PRES. R/W

F.G. = 2028.55

FOC TUG GAS

TEMP. FL = 2026.17

PUE/TCE

2432 + 00

76	25	PHASE 1
0	0	PHASE 2
25	76	PHASE 3

PHASE 1	119	54
PHASE 2	0	0
PHASE 3	54	137

2432 + 00

2040 2030 2020 2010

PRES. R/W OHE

DETOUR PRES. R/W

F.G. = 2029.08

FOC TUG GAS

TEMP. FL = 2026.64

PUE/TCE

2431 + 50

52	33	PHASE 1
0	0	PHASE 2
33	52	PHASE 3

PHASE 1	68	57
PHASE 2	0	0
PHASE 3	57	75

2431 + 50

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X3

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

AREA

EXC. EMB.

VOLUME

EXC. EMB.

2040 2030 2020 2010

PRES. R/W

OHE

PRES. R/W

DETOUR

PUE/TCE

1:8

F.G. = 2026.55

FOC TUG

TEMP. FL = 2023.72

GAS

2434 + 00

82	0	PHASE 1
0	0	PHASE 2
0	82	PHASE 3

PHASE 1	154	0
PHASE 2	0	0
PHASE 3	0	178

2434 + 00

2040 2030 2020 2010

PRES. R/W

OHE

PRES. R/W

DETOUR

PUE/TCE

1:6

F.G. = 2027.03

FOC TUG

TEMP. FL = 2024.33

GAS

2433 + 50

85	0	PHASE 1
0	0	PHASE 2
0	85	PHASE 3

PHASE 1	157	4
PHASE 2	0	0
PHASE 3	4	182

2433 + 50

2040 2030 2020 2010

PRES. R/W

OHE

PRES. R/W

DETOUR

PUE/TCE

F.G. = 2027.55

FOC TUG

TEMP. FL = 2024.94

GAS

2433 + 00

85	4	PHASE 1
0	0	PHASE 2
4	85	PHASE 3

PHASE 1	154	18
PHASE 2	0	0
PHASE 3	18	177

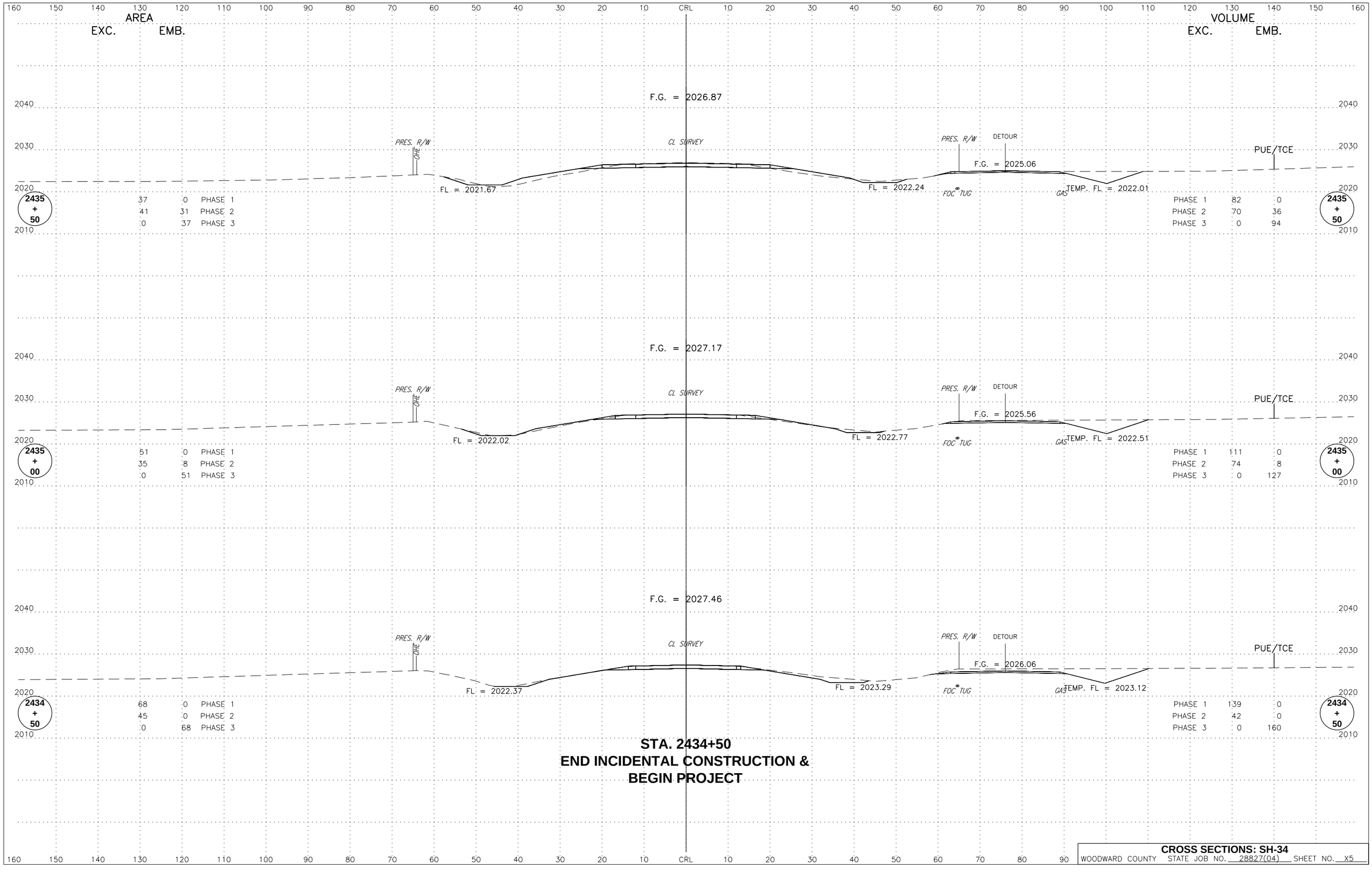
2433 + 00

2040 2030 2020 2010

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X4



STA. 2434+50
END INCIDENTAL CONSTRUCTION &
BEGIN PROJECT

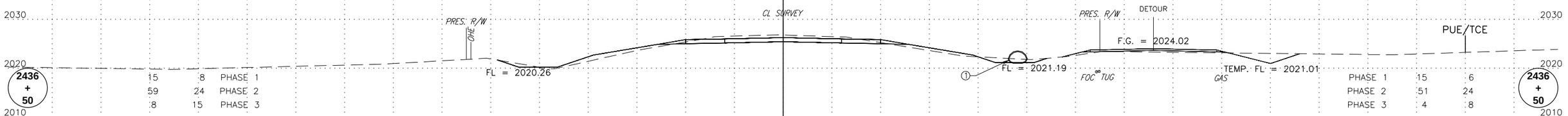
CROSS SECTIONS: SH-34
WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X5

AREA

	EXC.	EMB.	
2436 + 50	15	8	PHASE 1
	59	24	PHASE 2
	8	15	PHASE 3

VOLUME

	EXC.	EMB.	
2436 + 50	PHASE 1	15	6
	PHASE 2	51	24
	PHASE 3	4	8

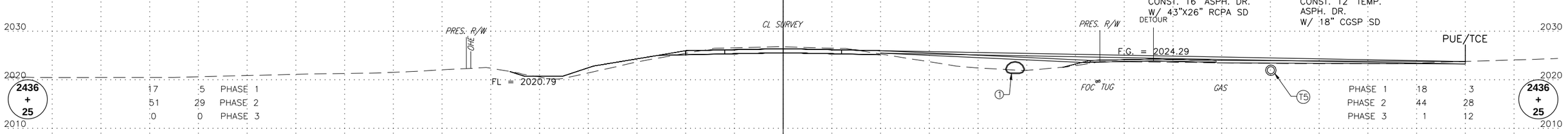


2436 + 25	17	5	PHASE 1
	51	29	PHASE 2
	0	0	PHASE 3

2436 + 25	PHASE 1	18	3
	PHASE 2	44	28
	PHASE 3	1	12

STA. 2436+25.00
CONST. 16' ASPH. DR.
W/ 43"X26" RCPA SD

STA. 2436+25.00
CONST. 12' TEMP.
ASPH. DR.
W/ 18" CGSP SD

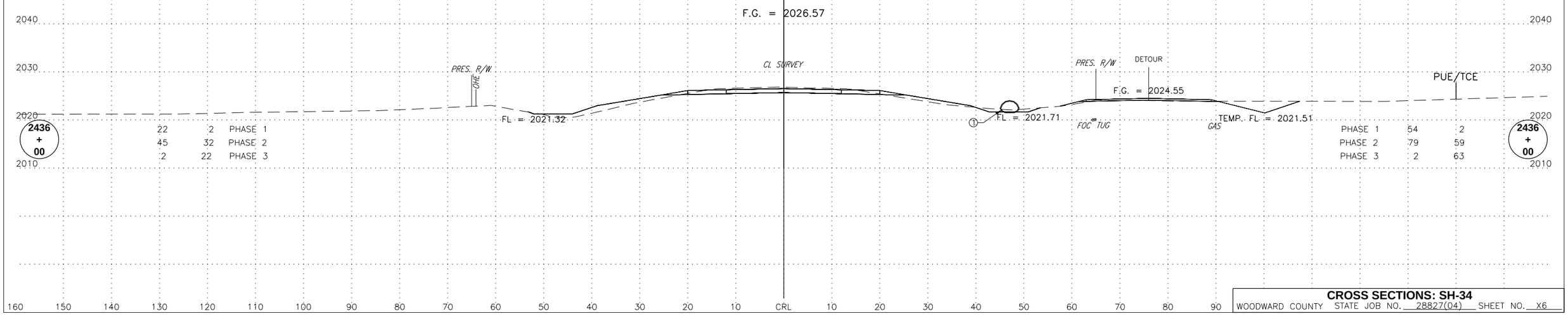


STR. NO. 1
STA. 2436+24.99, 47.59' RT. S.D.
CONST. 43"X26" RCPA X 96' LG.
W/ CET BOTH ENDS

STR. NO. T5
STA. 2436+24.99, 100.09' RT. S.D.
CONST. 18" CGSP X 24' LG.

2436 + 00	22	2	PHASE 1
	45	32	PHASE 2
	2	22	PHASE 3

2436 + 00	PHASE 1	54	2
	PHASE 2	79	59
	PHASE 3	2	63



CROSS SECTIONS: SH-34

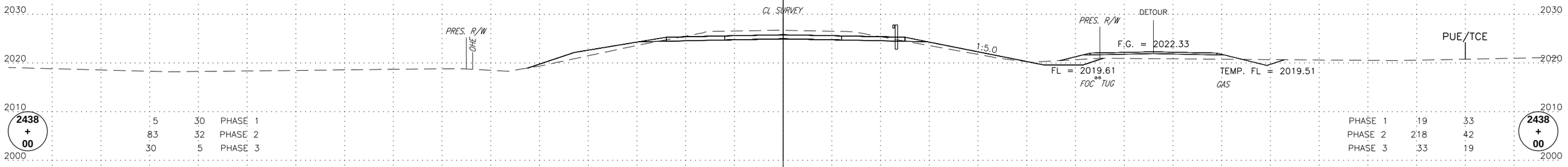
WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X6

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

AREA
EXC. EMB.

VOLUME
EXC. EMB.

F.G. = 2025.81



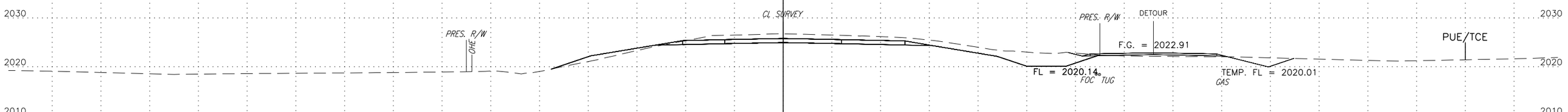
2438 + 00

5	30	PHASE 1
83	32	PHASE 2
30	5	PHASE 3

PHASE 1	19	33
PHASE 2	218	42
PHASE 3	33	19

2438 + 00

F.G. = 2025.82



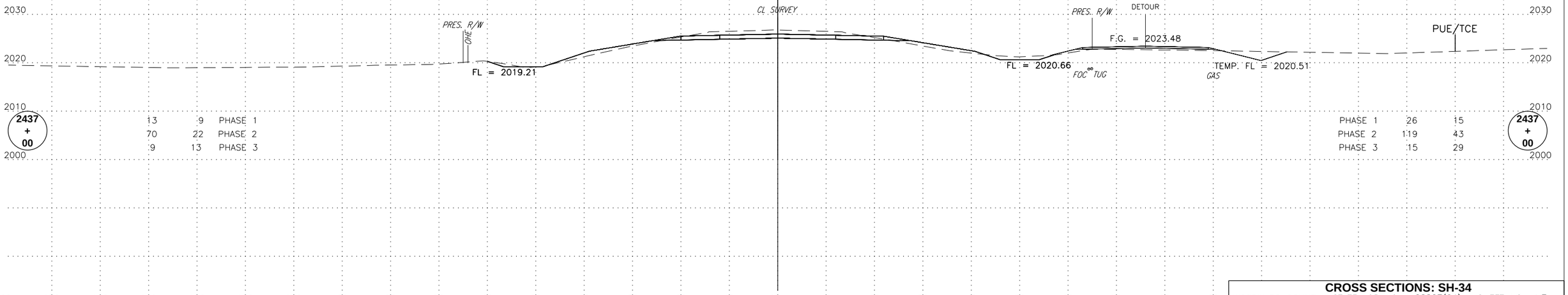
2437 + 50

15	6	PHASE 1
152	13	PHASE 2
6	13	PHASE 3

PHASE 1	25	13
PHASE 2	206	32
PHASE 3	13	27

2437 + 50

F.G. = 2025.99



2437 + 00

13	9	PHASE 1
70	22	PHASE 2
9	13	PHASE 3

PHASE 1	26	15
PHASE 2	119	43
PHASE 3	15	29

2437 + 00

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X7

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

AREA

EXC. EMB.

VOLUME

EXC. EMB.

F.G. = 2026.72

CL SURVEY

PRES. R/W

OHE

1:3.0

1:3.0

DETOUR

PRES. R/W

F.G. = 2020.61

FL = 2017.80

FOC TUG

GAS

TEMP. FL = 2016.68

PUE/TCE

2030 2020 2010 2000

2439 + 50

3	61	PHASE 1
77	20	PHASE 2
61	3	PHASE 3

PHASE 1	11	95
PHASE 2	160	27
PHASE 3	95	12

F.G. = 2026.27

CL SURVEY

PRES. R/W

OHE

1:4.0

1:3.0

DETOUR

PRES. R/W

F.G. = 2021.17

FL = 2018.56

FOC TUG

GAS

TEMP. FL = 2017.84

PUE/TCE

2030 2020 2010 2000

2439 + 00

8	42	PHASE 1
96	10	PHASE 2
42	8	PHASE 3

PHASE 1	12	70
PHASE 2	163	46
PHASE 3	70	14

F.G. = 2025.96

CL SURVEY

PRES. R/W

OHE

1:5.0

1:4.0

DETOUR

PRES. R/W

F.G. = 2021.75

FL = 2019.09

FOC TUG

GAS

TEMP. FL = 2019.01

PUE/TCE

2030 2020 2010 2000

2438 + 50

5	34	PHASE 1
80	40	PHASE 2
34	5	PHASE 3

PHASE 1	9	60
PHASE 2	151	67
PHASE 3	60	11

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X8

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

AREA
EXC. EMB.

VOLUME
EXC. EMB.

F.G. = 2027.83

CL SURVEY

2030
2020
2010
2000

S. R/W

OHE

1:3.0

1:3.0

DETOUR

F.G. = 2019.82

FL = 2014.45

FOC TUG

GAS

PRES. R/W

TEMP. FL = 2014.19

PUE/TCE

2440 + 66

1	174	PHASE 1
21	175	PHASE 2
182	1	PHASE 3

PHASE 1	1	96
PHASE 2	13	97
PHASE 3	102	1

F.G. = 2027.70

CL SURVEY

2030
2020
2010
2000

RES. R/W

OHE

1:3.0

1:3.0

DETOUR

F.G. = 2019.88

FL = 2015.07

FOC TUG

GAS

PRES. R/W

TEMP. FL = 2014.35

PUE/TCE

2440 + 50

1	153	PHASE 1
22	154	PHASE 2
165	1	PHASE 3

PHASE 1	3	229
PHASE 2	58	204
PHASE 3	239	3

F.G. = 2027.22

CL SURVEY

2030
2020
2010
2000

PRES. R/W

OHE

1:3.0

1:3.0

DETOUR

PRES. R/W

F.G. = 2020.17

FL = 2017.04

FOC TUG

GAS

TEMP. FL = 2015.52

PUE/TCE

2440 + 00

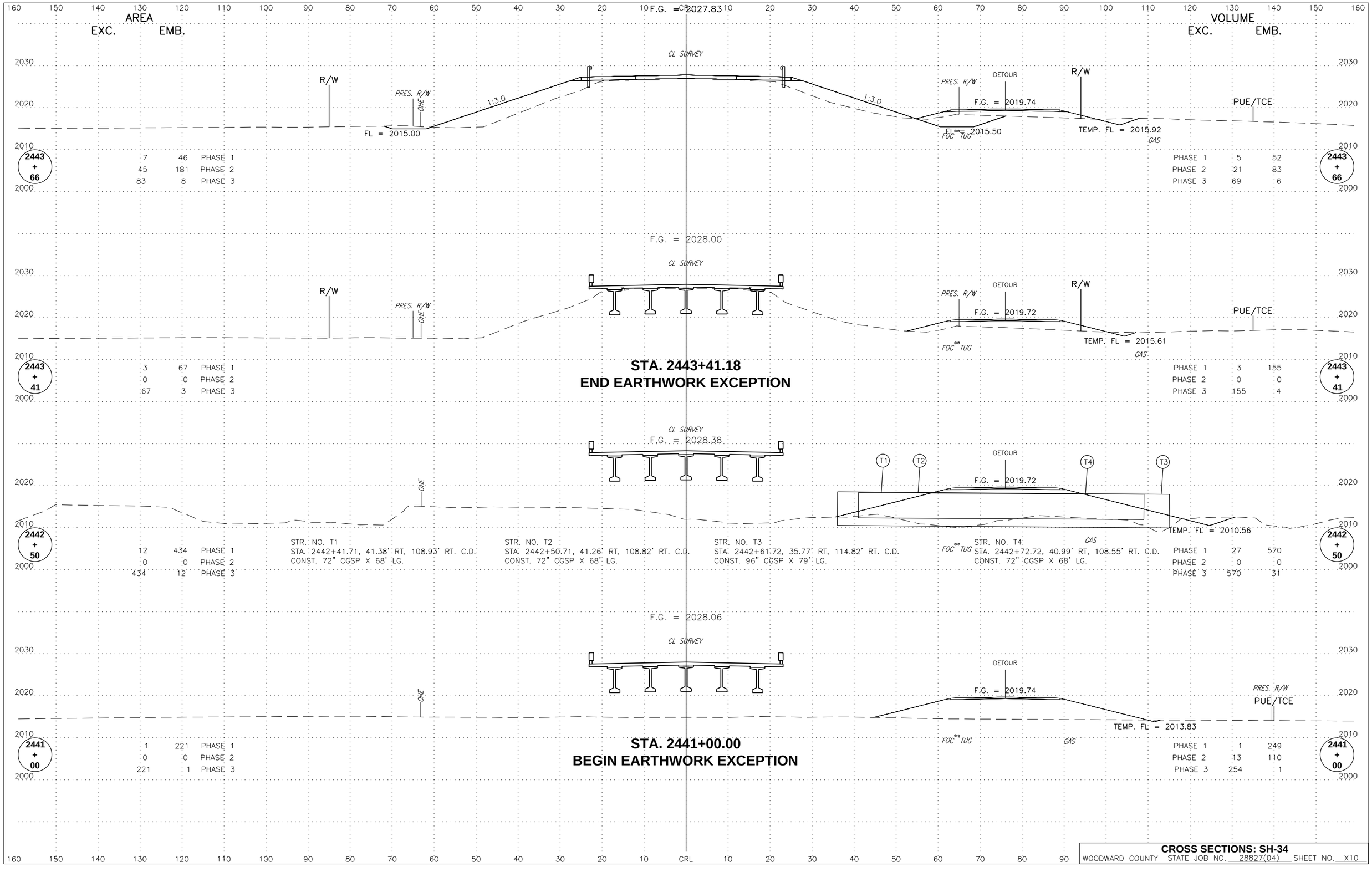
2	94	PHASE 1
41	66	PHASE 2
94	2	PHASE 3

PHASE 1	5	144
PHASE 2	108	79
PHASE 3	143	6

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X9



CROSS SECTIONS: SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X10

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

AREA EXC. EMB.

VOLUME EXC. EMB.

F.G. = 2026.55

R/W

PRES. R/W

OHE

CL SURVEY

1:3.0

1:3.0

PRES. R/W

DETOUR

R/W

F.G. = 2020.37

PUE/TCE

FL = 2017.18

FOC TUG

FL = 2016.25

TEMP. FL = 2016.63

GAS

2030 2020 2010 2000

2445 + 00

12	32	PHASE 1
77	54	PHASE 2
32	12	PHASE 3

PHASE 1	19	63
PHASE 2	140	128
PHASE 3	64	21

F.G. = 2027.04

R/W

PRES. R/W

OHE

CL SURVEY

1:3.0

1:3.0

PRES. R/W

DETOUR

R/W

F.G. = 2020.05

PUE/TCE

FL = 2016.37

FOC TUG

FL = 2015.97

TEMP. FL = 2016.48

GAS

2030 2020 2010 2000

2444 + 50

8	36	PHASE 1
74	84	PHASE 2
36	8	PHASE 3

PHASE 1	11	64
PHASE 2	130	198
PHASE 3	64	13

F.G. = 2027.53

R/W

PRES. R/W

OHE

CL SURVEY

1:3.0

1:3.0

PRES. R/W

DETOUR

R/W

F.G. = 2019.82

PUE/TCE

FL = 2015.55

FOC TUG

FL = 2015.69

TEMP. FL = 2016.33

GAS

2030 2020 2010 2000

2444 + 00

4	33	PHASE 1
66	130	PHASE 2
33	4	PHASE 3

PHASE 1	7	49
PHASE 2	70	195
PHASE 3	73	9

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X11

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

AREA
EXC. EMB.

VOLUME
EXC. EMB.

F.G. = 2025.88

R/W | PRES. R/W | OHE | CL SURVEY | PRES. R/W | DETOUR | R/W | PUE/TCE

1:4.0

FL = 2018.70

F.G. = 2021.34

FOC ∞ TUG
FL = 2017.08

TEMP. FL GAS 2017.08

2030 2020 2010 2000

2446 + 50

47	1	PHASE 1
166	42	PHASE 2
1	47	PHASE 3

PHASE 1	75	4
PHASE 2	297	94
PHASE 3	4	87

F.G. = 2025.97

R/W | PRES. R/W | OHE | CL SURVEY | PRES. R/W | DETOUR | R/W | PUE/TCE

1:3.0 | 1:5.0

FL = 2018.35

F.G. = 2021.02

FOC ∞ TUG
FL = 2016.80

TEMP. FL = 2016.93 GAS

2030 2020 2010 2000

2446 + 00

34	4	PHASE 1
155	60	PHASE 2
3	34	PHASE 3

PHASE 1	50	21
PHASE 2	235	120
PHASE 3	68	58

F.G. = 2026.19

R/W | PRES. R/W | OHE | CL SURVEY | PRES. R/W | DETOUR | R/W | PUE/TCE

1:3.0 | 1:4.0

FL = 2018.00

F.G. = 2020.69

FOC ∞ TUG
FL = 2016.52

TEMP. FL = 2016.78 GAS

2030 2020 2010 2000

2445 + 50

20	19	PHASE 1
98	70	PHASE 2
70	20	PHASE 3

PHASE 1	30	47
PHASE 2	162	115
PHASE 3	95	34

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34
WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X12

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

AREA
EXC. EMB.

VOLUME
EXC. EMB.

F.G. = 2026.32

R/W
PRES. R/W
CHE
CL SURVEY
FL = 2019.75
PRES. R/W
DETOUR
F.G. = 2022.32
R/W
FOC TUG
FL = 2017.92
GAS
TEMP. FL = 2017.53
PUE/TCE

2030
2020
2010
2000

2448 + 00

23	40	PHASE 1
106	27	PHASE 2
40	23	PHASE 3

PHASE 1	50	57
PHASE 2	217	49
PHASE 3	57	58

F.G. = 2026.12

R/W
PRES. R/W
CHE
CL SURVEY
FL = 2019.40
PRES. R/W
DETOUR
F.G. = 2021.99
R/W
FOC TUG
FL = 2017.64
GAS
TEMP. FL = 2017.38
PUE/TCE

2030
2020
2010
2000

2447 + 50

31	21	PHASE 1
128	26	PHASE 2
21	31	PHASE 3

PHASE 1	68	22
PHASE 2	273	50
PHASE 3	22	79

F.G. = 2025.94

R/W
PRES. R/W
CHE
CL SURVEY
FL = 2019.05
PRES. R/W
DETOUR
F.G. = 2021.67
R/W
FOC TUG
FL = 2017.36
GAS
TEMP. FL = 2017.23
PUE/TCE

2030
2020
2010
2000

2447 + 00

43	3	PHASE 1
166	28	PHASE 2
3	43	PHASE 3

PHASE 1	84	3
PHASE 2	307	65
PHASE 3	3	96

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34
WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X13

AREA
EXC. EMB.

VOLUME
EXC. EMB.

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

2030
2020
2010
2000

F.G. = 2026.91

R/W
PRES. R/W
OHE
CL SURVEY
FL = 2020.80
DETOUR
R/W
PRES. R/W
F.G. = 2023.31
PUE/TCE
FL = 2018.75
FOC
TUG
GAS
TEMP. FL = 2017.98

2449 + 50

11	100	PHASE 1
47	12	PHASE 2
100	11	PHASE 3

STA. 2449+50
END PROJECT &
BEGIN INCIDENTAL CONSTRUCTION

PHASE 1	25	158
PHASE 2	101	34
PHASE 3	158	29

2449 + 50

F.G. = 2026.71

R/W
PRES. R/W
OHE
CL SURVEY
FL = 2020.45
DETOUR
R/W
PRES. R/W
F.G. = 2022.97
PUE/TCE
FL = 2018.47
FOC
TUG
GAS
TEMP. FL = 2017.83

2449 + 00

16	70	PHASE 1
62	24	PHASE 2
70	16	PHASE 3

PHASE 1	33	112
PHASE 2	139	55
PHASE 3	112	38

2449 + 00

F.G. = 2026.51

R/W
PRES. R/W
OHE
CL SURVEY
FL = 2020.10
DETOUR
R/W
PRES. R/W
F.G. = 2022.64
PUE/TCE
FL = 2018.19
FOC
TUG
GAS
TEMP. FL = 2017.68

2448 + 50

20	51	PHASE 1
87	35	PHASE 2
51	20	PHASE 3

PHASE 1	40	84
PHASE 2	179	57
PHASE 3	84	45

2448 + 50

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34
WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X14

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

AREA

EXC. EMB.

VOLUME

EXC. EMB.

2030 2020 2010 2000

PRES. R/W

ONE

DETOUR

PRES. R/W

F.G. = 2025.22

FOC TUG

GAS

TEMP. FL = 2019.15

PUE/TCE

2451 + 00

5	146	PHASE 1
0	0	PHASE 2
146	5	PHASE 3

PHASE 1	7	276
PHASE 2	0	0
PHASE 3	276	8

2451 + 00

2030 2020 2010 2000

PRES. R/W

ONE

DETOUR

R/W

PRES. R/W

F.G. = 2024.44

FOC TUG

GAS

TEMP. FL = 2019.65

PUE/TCE

2450 + 50

3	152	PHASE 1
0	0	PHASE 2
152	3	PHASE 3

PHASE 1	6	280
PHASE 2	0	0
PHASE 3	280	7

2450 + 50

2030 2020 2010 2000

PRES. R/W

ONE

DETOUR

R/W

PRES. R/W

F.G. = 2023.80

FOC TUG

GAS

TEMP. FL = 2018.12

PUE/TCE

2450 + 00

4	150	PHASE 1
0	0	PHASE 2
150	4	PHASE 3

PHASE 1	14	232
PHASE 2	43	11
PHASE 3	232	16

2450 + 00

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X15

AREA

EXC. EMB.

VOLUME

EXC. EMB.

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

2040 2030 2020 2010

2452 + 50

PRES. R/W

OHE

7 90 PHASE 1
0 0 PHASE 2
90 7 PHASE 3

DETOUR

F.G. = 2028.40

PRES. R/W

PUE/TCE

TEMP. FL = 2023.31

FOC TUG

GAS

PHASE 1 10 196
PHASE 2 0 0
PHASE 3 196 12

2452 + 50

2452 + 00

PRES. R/W

OHE

4 122 PHASE 1
0 0 PHASE 2
122 4 PHASE 3

DETOUR

F.G. = 2027.24

PRES. R/W

PUE/TCE

TEMP. FL = 2022.04

FOC TUG

GAS

PHASE 1 7 239
PHASE 2 0 0
PHASE 3 239 8

2452 + 00

2451 + 50

PRES. R/W

OHE

4 136 PHASE 1
0 0 PHASE 2
136 4 PHASE 3

DETOUR

PRES. R/W

F.G. = 2026.18

PUE/TCE

TEMP. FL = 2020.56

FOC TUG

GAS

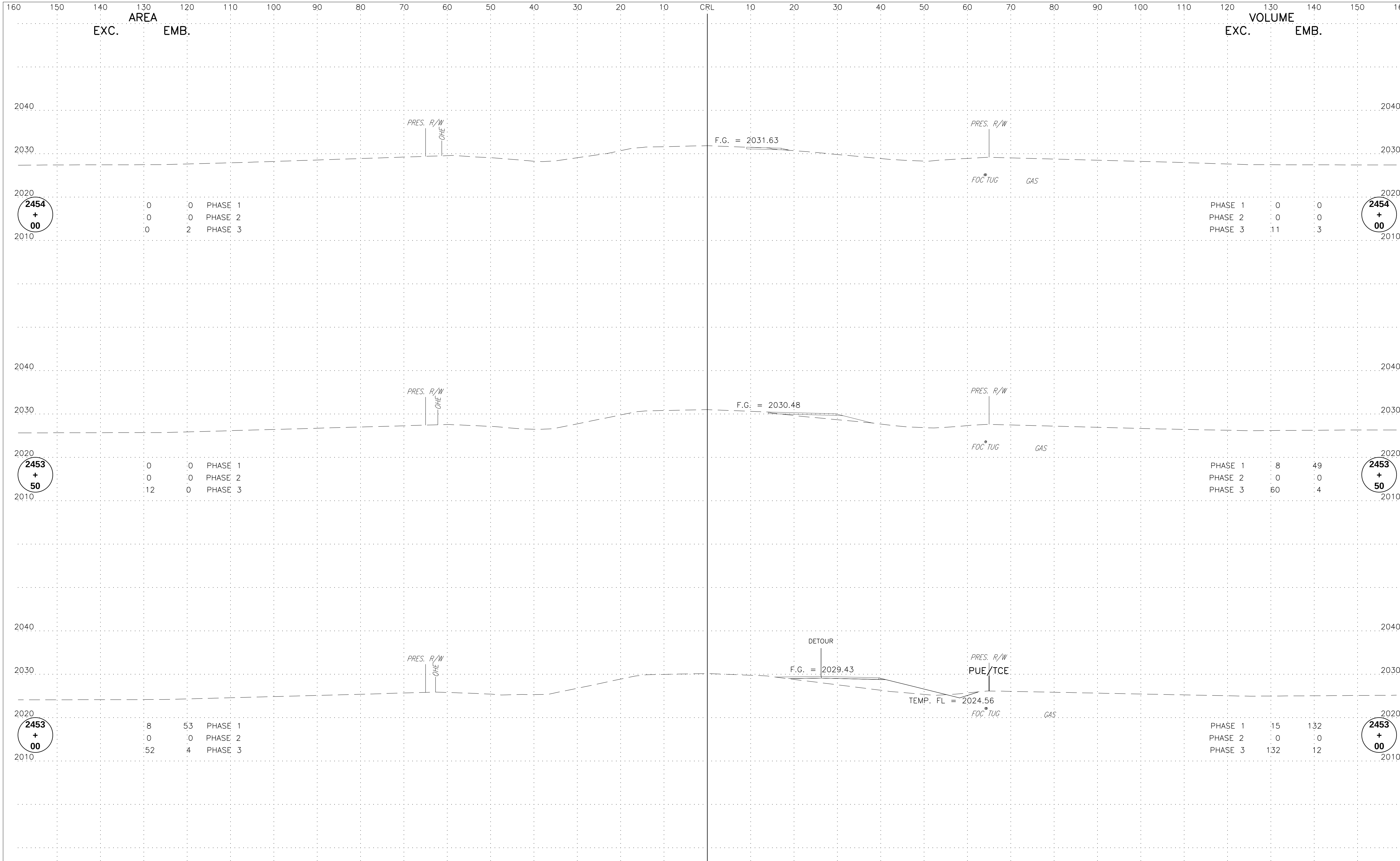
PHASE 1 8 262
PHASE 2 0 0
PHASE 3 261 10

2451 + 50

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X16



CROSS SECTIONS: SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X17

AREA

EXC. EMB.

VOLUME

EXC. EMB.

STA. 2455+50.04
END INCIDENTAL CONSTRUCTION
(DETOUR ALIGNMENT)

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

2050
2040
2030
2020
2010

PRES. R/W
OHE
PRES. R/W
FOCTUG GAS

2455 + 50

0	0	PHASE 1
0	0	PHASE 2
0	0	PHASE 3

PHASE 1	0	0
PHASE 2	0	0
PHASE 3	0	1

2455 + 50

PRES. R/W
OHE
F.G. = 2033.43
1:10
PRES. R/W
FOCTUG GAS

2455 + 00

0	0	PHASE 1
0	0	PHASE 2
0	1	PHASE 3

PHASE 1	0	0
PHASE 2	0	0
PHASE 3	0	2

2455 + 00

PRES. R/W
OHE
F.G. = 2032.19
1:8
PRES. R/W
FOCTUG GAS

2454 + 50

0	0	PHASE 1
0	0	PHASE 2
0	1	PHASE 3

PHASE 1	0	0
PHASE 2	0	0
PHASE 3	1	3

2454 + 50

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 CRL 10 20 30 40 50 60 70 80 90

CROSS SECTIONS: SH-34

WOODWARD COUNTY STATE JOB NO. 28827(04) SHEET NO. X18