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STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
UNITED STATES HIGHWAY
PROJECT NO. ACNHPP-253N(036)SS
BRIDGE AND APPROACHES
UNITED STATES HIGHWAY 169 OVER HICKORY CREEK
NOWATA COUNTY

OKLAHOMA DEPARTMENT OF TRANSPORTATION				
ODOT DIVISION	STATE	JOB PIECE No.	FISCAL SHEET YEAR No.	TOTAL SHEETS
8	OKLA	24750(04)	1	127
DESCRIPTION		REVISIONS	DATE	

MANDATORY TIE:
THE FOLLOWING PROJECT IS MANDATORILY TIED AND SHALL BE BID ACCORDINGLY:
1. JP 27092(04), PROJECT No. ACNHPP-253N(037)SS, US-169 OVER OPOSSUM CREEK AND OPOSSUM CREEK OVERFLOW, NOWATA COUNTY

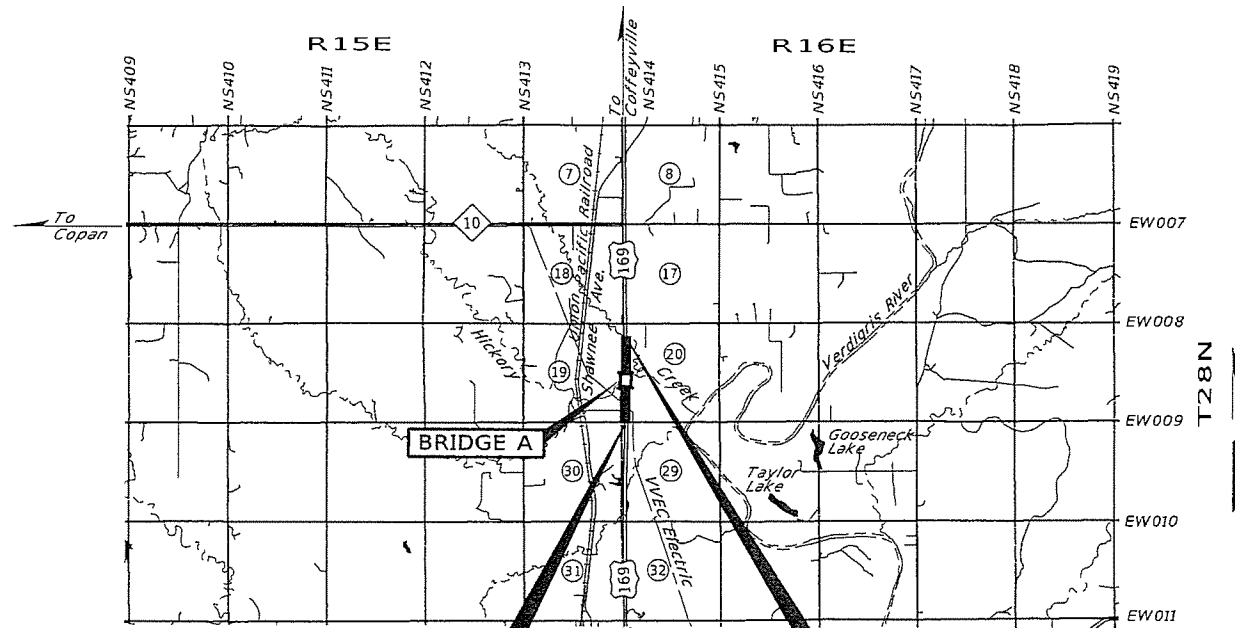
CONTROL SECTION 169-53-08
STATE JOB NO. 24750(04)
BRIDGE A LOCATION NO. 5308-1323X EXISTING NBI NO. 17018, NEW NBI NO. 30985

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X38 - X45	CROSS SECTIONS - SOUTH DETOUR
X46 - X55	CROSS SECTIONS - NORTH DETOUR

DESIGN DATA

AADT 2016	5,000
AADT 2036	7,000
K (DHV / ADT-TWO WAY)	10 %
D (DIRECTIONAL DIST.)	55 %
T (% OF DHV)	25 %
T (% OF AADT)	29 %
T ³ OVERLOADS (AXLES)	21 %
20 YR FLEX ESALS	12.90 MIL
US 169	V=65 MPH
DETOUR	V=45 MPH



CONTROL SUB-SECTION No. 12.9
 STA. 685+35.28 (Q US 169) BEGIN INCIDENTAL CONSTRUCTION STA. 689+84.21 END INCIDENTAL CONSTRUCTION
 STA. 736+36.76 END US 169 CONSTRUCTION BEGIN INCIDENTAL CONSTRUCTION STA. 740+78.46 (Q US 169) END INCIDENTAL CONSTRUCTION

BR A STA. 710+96.47
BR LENGTH= 281.47'
STA. 713+77.94

PROJECT LENGTH BASED ON US 169 C.R.L.

ROADWAY LENGTH	4,371.08 FT.	0.827 MI.
BRIDGE LENGTH	281.47 FT.	0.053 MI.
PROJECT LENGTH		0.880 MI.
EQUATIONS:	NONE	
EXCEPTIONS:	NONE	

THE FOLLOWING ODOT STANDARDS WILL BE REQUIRED

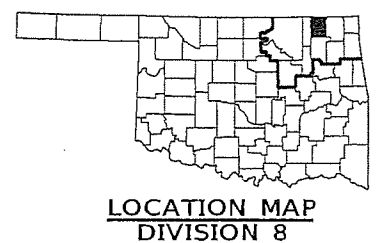
ROADWAY	TRAFFIC CONTROL	TRAFFIC SIGNING	TRAFFIC SAFETY	BRIDGE
SSS-1-1	TCS1-1-01	PM3-1-02	THRL-1-02	FSHP-42-2-00E
TSC2-3-2	TCS2-1-00	DU2-1-00	SKT-1-00	EJSK-03E
TSD-2-0	TCS3-1-01	RSD1-1-00	GHW1-1-00	EJ-DTL-01E
ASCD-5-2	TCS4-1-01	WSD3-1-00	GHW2-1-00	HP1-2-00E
LECS-4-1	TCS5-1-00	MSD1-1-00	RS1-1-00	B40-C-ABUT-MISC-01E
PSE-1-0	TCS6-1-02	MSD2-1-00		B40-C-PCB-DTL-01E
PCES-4-1	TCS7-1-02	MSD3-1-01		B40-C-BRG-PC4BT-01E
SPI-4-1	TCS8-1-00	MSD4-1-00		
SPB-1-4	TCS9-1-01	MSD5-1-00		
FHTCP-3-1	TCS11-1-01	SBS1-1-00		
PUD-3-2	TCS14-1-00	SBS2-1-00		
RDI-3-1	TCS16-1-00	SBS3-1-00		
PDT-1-3	TCS19-1-01	SBS4-1-00		
RWF1-2-2	TCS20-1-00	SBS5-1-00		
RWF3-2-2	TCS21-1-02	GMS1-1-00		
SUEL1-3-2	TCS23-1-00	GMS2-1-00		
SUEL4-3-2	TCS24-1-02	SSP1-1-02		
	TCS25-1-00	SSA1-1-00		
		FGS1-1-00		

SCALES

PLAN	1" = 50'
PROFILE HOR.	1" = 50'
VER.	1" = 5'
LAYOUT MAP	1" = 5,280'

CONVENTIONAL SYMBOLS

PROPOSED ROAD	—TUG— TELEPHONE UNDERGROUND
RAILROADS	—SS— SANITARY SEWER
RANGE & TOWNSHIP	—G— GAS LINE
SECTION LINES	—W— WATER LINE
QUARTER SECTION LINES	—FO— FIBER OPTIC LINE
FENCES	
GROUND LINE	
EXISTING ROADS	
BASE LINE	
GRADE LINES	
TELEPHONE & TELEGRAPH	
POWER LINES	
BUILDINGS	
OILWELL	
DRAINAGE STRUCTURES - IN PLACE	
DRAINAGE STRUCTURES - NEW	
RIGHT-OF-WAY LINES - EXISTING	
RIGHT-OF-WAY LINES - NEW	
RIGHT-OF-WAY MARKERS - IN PLACE	
RIGHT-OF-WAY MARKERS - REMOVE & REPLACE	
RIGHT-OF-WAY MARKERS - NEW	
CONTROLLED ACCESS	
RIGHT-OF-WAY FENCE	
NIC	NOT IN CONTRACT



CERTIFICATE OF AUTHORIZATION NO. 7569 P.E., L.S. RENEWAL DATE 6-30-18

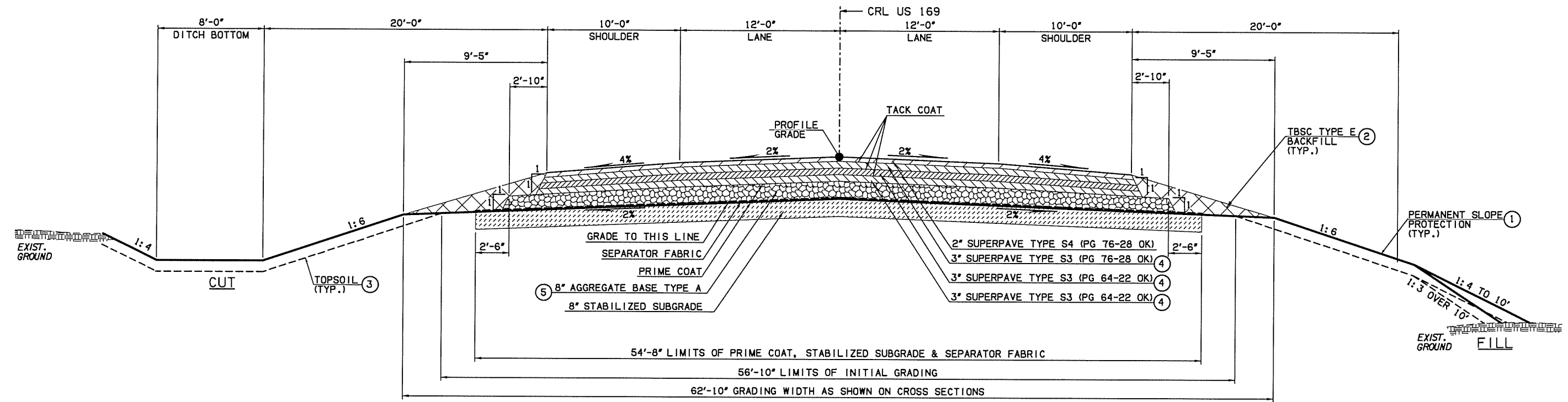
BENHAM
a Haskell Company
Benham Design, LLC
One West Third Street, Suite 200
Tulsa, Oklahoma 74103
(918) 492-1600

Shannon A. Koeninger
Shannon A. Koeninger, P.E.
OK P.E. NO. 20481
PROJECT ENGINEER
DATE: 7/11/16

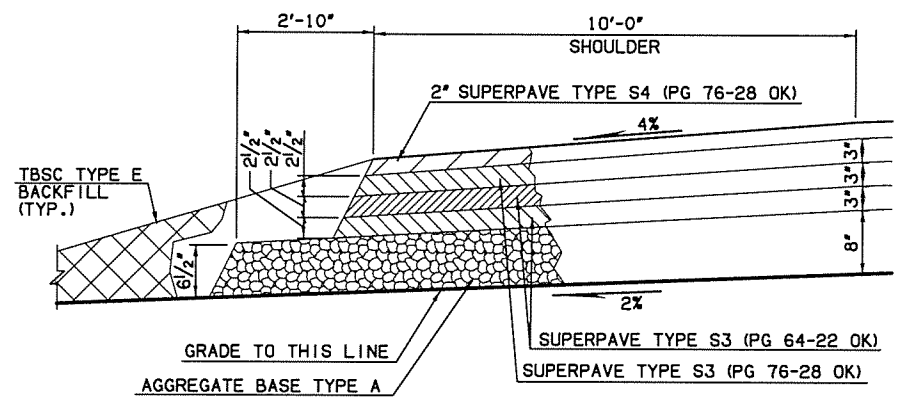
REGISTERED PROFESSIONAL ENGINEER
SHANNON A. KOENINGER
20481
OKLAHOMA

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

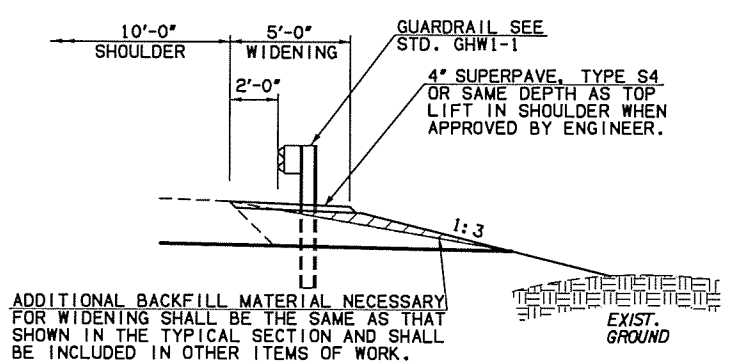
DIST.	STATE	J/P PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA	24750(04)		2	127



1 **TYPICAL SECTION**
US 169 NTS
 STA. 689+84.21 TO STA. 710+54.05
 STA. 714+20.35 TO STA. 736+36.76



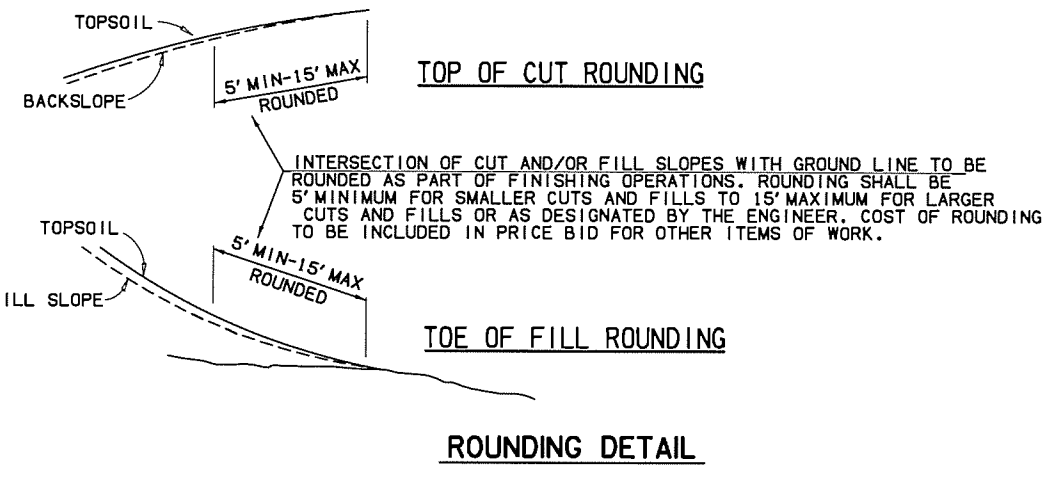
SHOULDER DETAIL
NTS



GUARDRAIL DETAIL

CRL US 169
 STA. 708+10.90 TO STA. 710+54.65 RT.
 STA. 708+48.40 TO STA. 710+54.65 LT. (OPPOSITE HAND)
 STA. 714+19.75 TO STA. 715+63.50 RT.
 STA. 714+19.75 TO STA. 716+63.50 LT. (OPPOSITE HAND)
 STA. 732+49.29 TO STA. 736+36.76 RT.
 STA. 734+74.23 TO STA. 736+36.76 LT. (OPPOSITE HAND)
 C US 169
 STA. 736+33.81 TO STA. 739+96.31 RT.

- ① PERMANENT SLOPE PROTECTION REFER TO DETAIL SHEET 4.
- ② TO BE BACKFILLED & COMPACTED AS PART OF THE FINISHING OPERATIONS. COST TO BE INCLUDED IN TBSC TYPE E.
- ③ 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 SPECIFICATIONS. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETE 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 ITEMS FOR SALVAGED TOPSOIL, LUMP SUM.
 THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO TOP OF THE SOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND TOPSOIL QUANTITY IS INCLUDED IN THE SUMMARIZED EARTHWORK.
- ④ ASPHALT LAYER TO BE TAPERED FROM FULL DEPTH AT SHOULDER TO 2 1/2" AT EDGE OF PAVING. SEE SHOULDER DETAIL THIS SHEET.
- ⑤ AGGREGATE BASE LAYER TO BE TAPERED FROM FULL DEPTH AT SHOULDER TO 6 1/2" AT EDGE OF PAVING. SEE SHOULDER DETAIL THIS SHEET.



ROUNDING DETAIL

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn			
Checked			
Approved			
Squad			

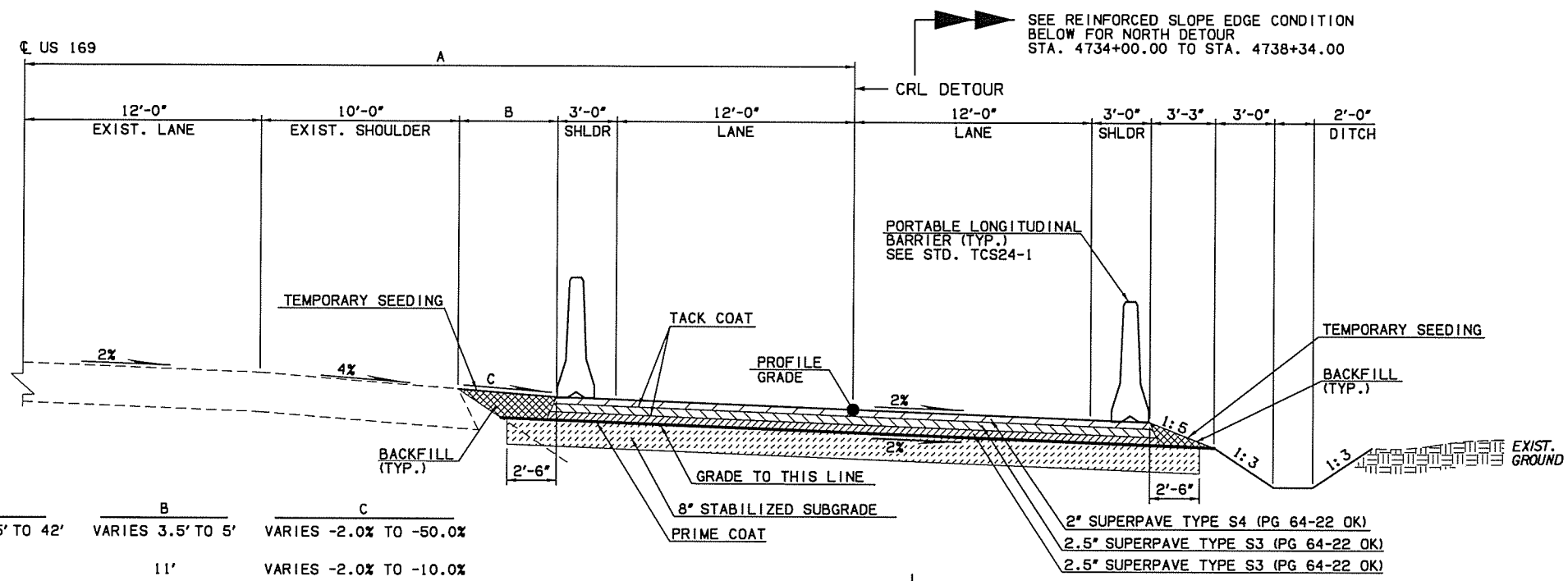
TYPICAL SECTION (1)

State Job No. 24750(04) Sheet No. 2

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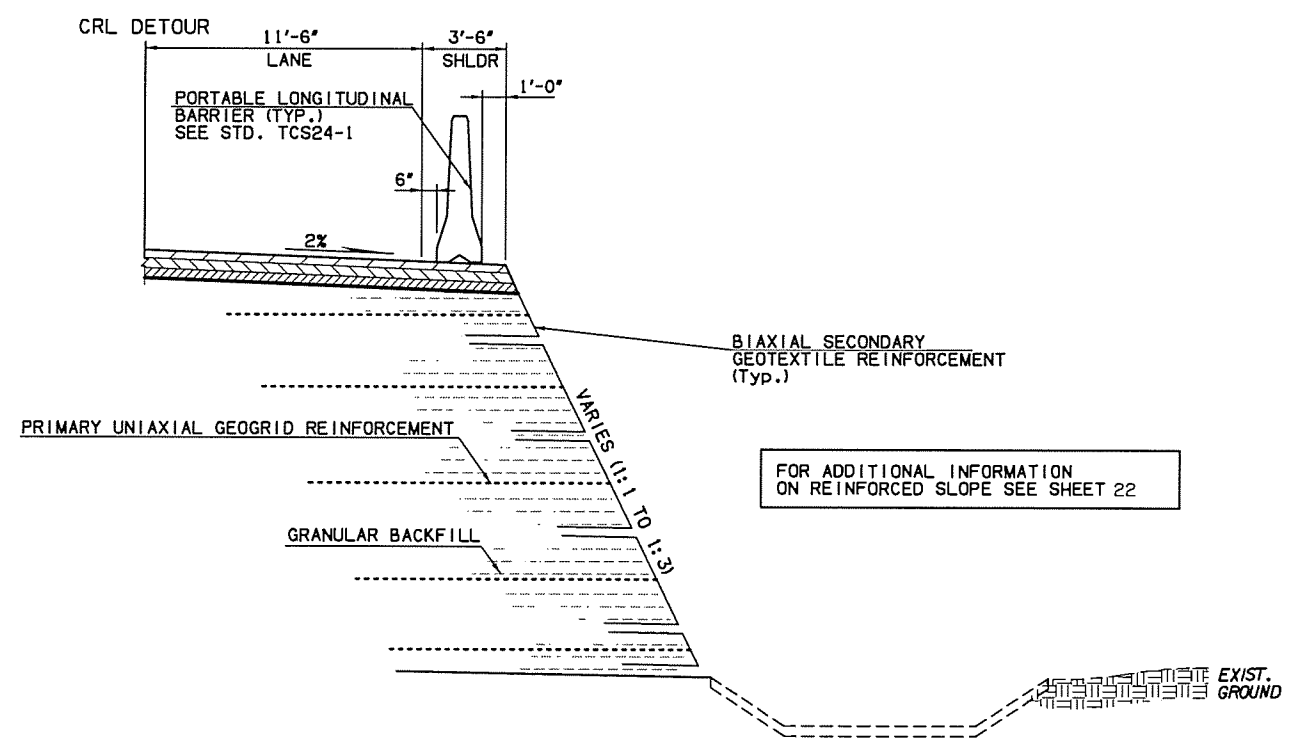
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FOOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
6	OKLA	24750(04)		3	127

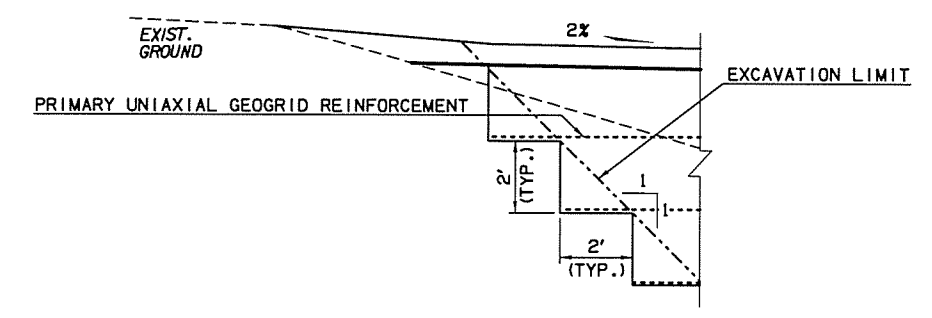


	A	B	C
SOUTH DETOUR:	VARIABLES 40.5' TO 42'	VARIABLES 3.5' TO 5'	VARIABLES -2.0% TO -50.0%
NORTH DETOUR:	48'	11'	VARIABLES -2.0% TO -10.0%

2 **TYPICAL SECTION - DETOUR** NTS
 STA. 2687+50.39 TO STA. 2699+34.51 (SOUTH DETOUR)
 STA. 4726+80.44 TO STA. 4738+45.89 (NORTH DETOUR)



REINFORCED SLOPE EDGE CONDITION NTS
 STA. 4734+00.00 TO STA. 4738+34.00 (NORTH DETOUR)



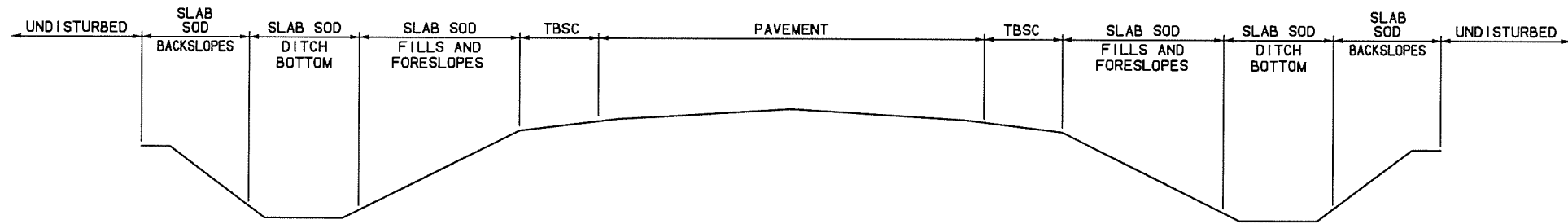
BENCHING DETAIL NTS
 STA. 4734+00.00 TO STA. 4738+34.00 (NORTH DETOUR)

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		TYPICAL SECTION (2)	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 3

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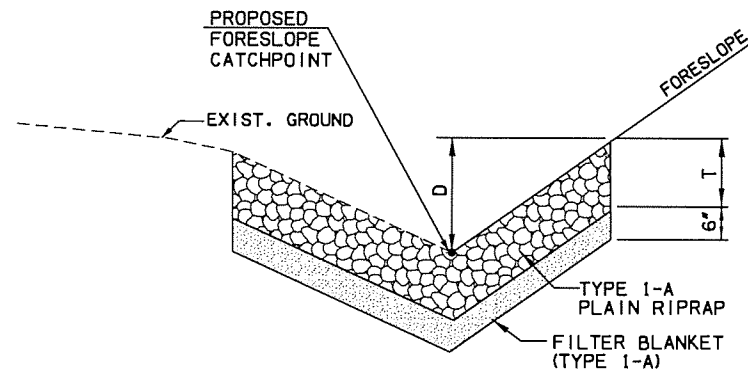
7/12/2016

DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		4	127

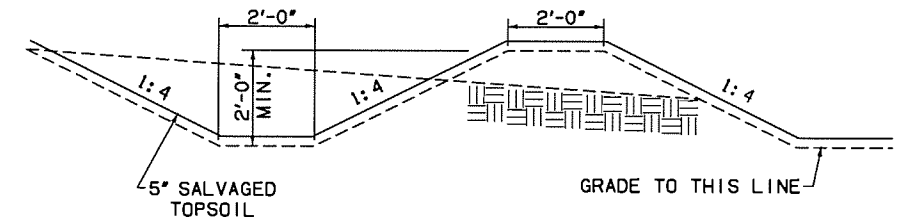


PERMANENT SLOPE PROTECTION

STATION	T	D
723+96 TO 724+20 LT.	18"	1'
723+85 TO 723+96 LT.	18"	0'

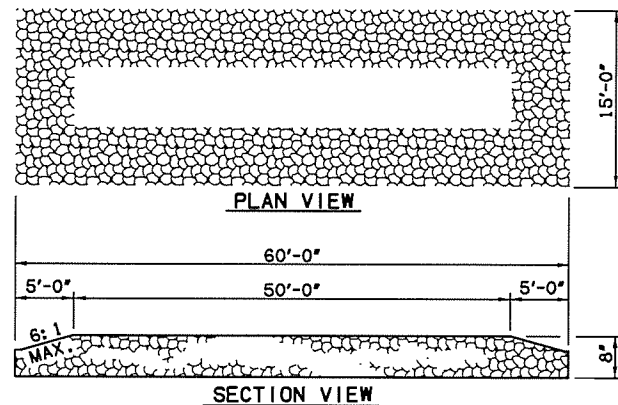


DITCH RIPRAP DETAIL
N.T.S.



INTERCEPTOR DIKE

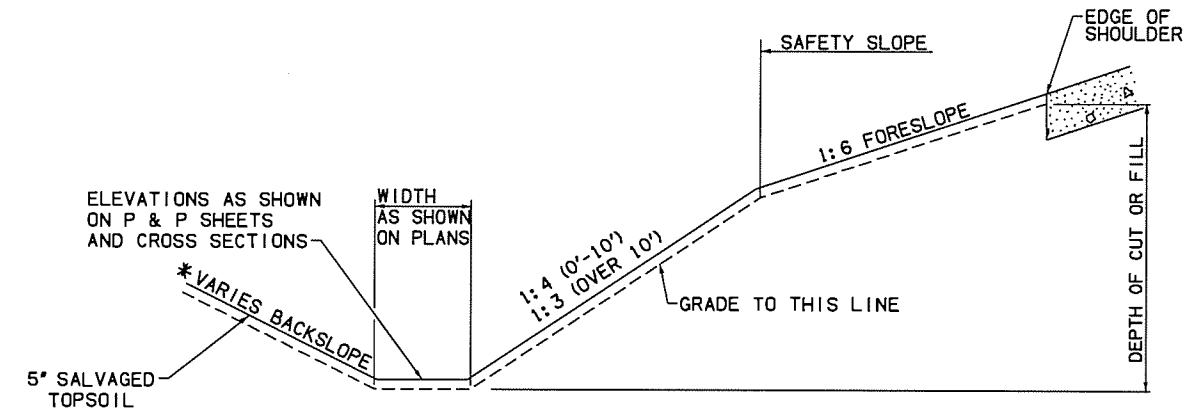
NOTE: INTERCEPTOR DIKES SHALL BE USED AS DIRECTED BY THE ENGINEER FOR EROSION CONTROL OF CUT SLOPES GREATER THAN 15 FEET OR IN LOCATIONS DEEMED NECESSARY TO RELIEVE SLOPE EROSION.



STABILIZED CONSTRUCTION EXIT (TYPE 1)
N.T.S.

NOTES :

- MATERIALS FOR THE ROCK BASE SHALL BE IN ACCORDANCE WITH 2009 STANDARD SPECIFICATIONS SEC. 713.03 STONE FILL FOR GABIONS, REVETMENT MATTRESSES, AND ROCK FILTER DAMS.
- LOCATION OF STABILIZED CONSTRUCTION EXIT TO BE AS APPROVED BY THE ENGINEER.



SPECIAL ROADWAY DITCH
(FILL)

* AS SHOWN ON CROSS SECTIONS

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn			
Checked			
Approved			
Squad			

MISCELLANEOUS DETAILS

State Job No. 24750(04) Sheet No. 4

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ODOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		5	127

ROADWAY 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.

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.

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.

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

TEMPORARY SEEDING MIX SHALL BE AS FOLLOWS:

KINDS OF SEED TO BE FURNISHED	QUANTITY PER ACRE
WHEAT (TRITICUM AESTILUM)	120 LBS. OF SEED
RYE WITH CLOVER	120 LBS. OF SEED

VEGETATIVE MULCHING: THE VEGETATIVE MULCH SHALL BE ANCHORED IN ACCORDANCE WITH THE "MULCHING-TILLER METHOD", AS SPECIFIED IN 233.04B(1) OF THE STANDARD SPECIFICATIONS.

THE PLANTING OF TEMPORARY SEEDS SHALL BE RESTRICTED TO THE PERIOD FROM SEPTEMBER 1 TO NOVEMBER 15.
THE PLANTING OF PERMANENT SEEDS SHALL BE RESTRICTED TO THE PERIOD FROM MARCH 15 TO JUNE 1.

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.

AT THE BEGINNING OF TURFING OPERATIONS, ANY AREAS INCLUDED IN PLANNED QUANTITIES THAT HAVE GROWN A SATISFACTORY VOLUNTEER TURF OF PERENNIAL GRASS, AS DETERMINED BY THE ENGINEER, SHALL BE FERTILIZED AND WATERED AS CALLED FOR ON THE PLANS, BUT SHALL NOT BE SEEDED, SODDED, OR SPRIGGED.

T.B.S.C. SURFACES SHALL BE SPRINKLED WITH WATER AND ROLLED WITH A PNEUMATIC ROLLER 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.

ROADWAY GENERAL CONSTRUCTION NOTES

NO PAYMENT WILL BE MADE FOR THE REMOVAL OF ABANDONED UTILITY PIPE LINES THAT INTERFERE WITH CONSTRUCTION. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

ALL WORK AND/OR MATERIALS NOT CLASSIFIED AS A "CONTRACT PAY ITEM" SHALL BE CONSIDERED INCIDENTAL AND THE COST THEREOF SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS WHICH ARE CLASSIFIED FOR PAYMENT.

TREES OUTSIDE THE TOE OF FILL SLOPES AND THE TOP OF CUT SLOPES SHALL NOT BE DISTURBED EXCEPT WITH THE APPROVAL OF THE ENGINEER. REMOVAL OF TREES SHALL BE LIMITED TO ONLY THOSE NECESSARY FOR THE CONSTRUCTION OF RIGHT-OF-WAY FENCE.

(CAUTION) THE LOCATION AND DEPTH OF ALL UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE HE MAY INFLICT TO THE EXISTING UNDERGROUND UTILITIES WITHIN THE PROJECT AREA AS A RESULT OF HIS DIGGING, TRENCHING, BORING, ETC. PRIOR TO DIGGING NEAR THE UTILITIES, THE CONTRACTOR SHALL CALL FOR A LIST OF ALL UNDERGROUND FACILITIES REGISTERED WITH THE FOLLOWING AGENCIES:
THE LOCAL COUNTY CLERK'S OFFICE
THE LOCAL CITY GOVERNMENT'S OFFICE
THE "OKIE" NOTIFICATION CENTER: (405) 840-5032 OR (800) 522-6543
(SEE UTILITY DATA ON SHEET FOR KNOWN UTILITIES IN THE AREA)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE HE MAY INFLICT TO THE EXISTING DRAINAGE STRUCTURES TO REMAIN IN PLACE, AND SHALL REPAIR SUCH DAMAGES AT NO ADDITIONAL COST TO ODOT.

ALL MATERIAL REMOVED, INCLUDING BUT NOT LIMITED TO DRAINAGE STRUCTURES, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER, UNLESS OTHERWISE SPECIFIED.

ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS AT ALL TIMES.

GEOTECHNICAL GENERAL CONSTRUCTION NOTES

THE FOLLOWING GEOTECHNICAL REPORTS HAVE BEEN PREPARED BY GW² ENGINEERING, INC. (NOW ROCA ENGINEERING, INC.):

Date	Description
December 16, 2013	SH169 over Hickory Creek Bridge "1"
December 29, 2013	SH169 over Hickory Creek Roadway Construction to Bridge "1"

LOCATIONS OF SOIL BORINGS AND BORING LOGS ARE INCLUDED IN THE PLANS. THE GEOTECHNICAL REPORTS ARE AVAILABLE FOR REVIEW AT THE OFFICE ENGINEER DIVISION, ODOT, 200 N.E. 21ST STREET, OKLAHOMA CITY OK 73105. ANY INFORMATION CONTAINED IN THE GEOTECHNICAL REPORT SHOULD NOT BE CONSIDERED AS REPRESENTATIVE OF ALL FIELD CONDITIONS.

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		GENERAL CONSTRUCTION NOTES	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 5

DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		6	127
DESCRIPTION		REVISIONS		DATE	
A UPDATED ENVIRONMENTAL NOTES				07/21/2016	

ENVIRONMENTAL MITIGATION NOTES

BALD EAGLE
 A SURVEY FOR EAGLES AND THEIR NESTS WAS CONDUCTED MARCH 2016. NO NESTS WERE OBSERVED WITHIN THE EXPECTED IMPACT AREA. SURVEY RESULTS ARE VALID FOR THE 2016 NESTING SEASON ONLY. IF CONSTRUCTION ACTIVITIES ARE NOT COMPLETED BY DECEMBER 1, 2016 THE RESIDENT ENGINEER SHALL CONTACT THE ODOT BIOLOGIST AT 405-521-2515. THE ODOT BIOLOGIST SHALL SCHEDULE AN ADDITIONAL SURVEY DURING DECEMBER AND JANUARY. IF THE SURVEY IS POSITIVE FOR A BALD EAGLE NEST, NO WORK WILL BE ALLOWED WITHIN 660 FEET OF THE NEST DURING THE NESTING SEASON (SEPTEMBER 16 THROUGH MAY 31), IN ACCORDANCE WITH THE NATIONAL BALD EAGLE MANAGEMENT GUIDELINES. IF THE 660 FOOT BUFFER CANNOT BE MAINTAINED, ALL CLEARING, CONSTRUCTION AND LANDSCAPING ACTIVITIES WITHIN 660 FEET OF THE NEST SHALL BE CONDUCTED BETWEEN JUNE 1 AND SEPTEMBER 15, OUTSIDE THE NESTING SEASON.

MIGRATORY BIRDS
 MIGRATORY BIRDS ARE PROTECTED BY THE FEDERAL MIGRATORY BIRD TREATY ACT. THESE BIRDS COMMONLY USE BRIDGES AND CULVERTS FOR NESTING. THE NESTING SEASON FOR THE BIRDS 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. MIGRATORY BIRD USE OF BRIDGE NBI NO. 17018 AND CULVERT AT STA. 735+35.63 HAS BEEN OBSERVED DURING THE INITIAL SURVEY CONDUCTED AS PART OF THE BIOLOGICAL STUDIES IN 2016. THE RESIDENT ENGINEER WILL EVALUATE THE CONTRACTOR'S PROPOSED WORK METHODS AND CONCLUDE WHETHER THE PROPOSED WORK WOULD POSE DISRUPTION TO ANY NESTING BIRDS BEFORE WORK NEAR THE STRUCTURE IS AUTHORIZED. IF THE PROPOSED WORK WILL HARM ANY NESTING BIRDS, THE BRIDGE MAY BE NETTED PRIOR TO APRIL 1 OR THE WORK DELAYED UNTIL THE NESTING SEASON IS COMPLETE. METHODS OTHER THAN NETTING MUST BE PRE-APPROVED BY THE ODOT BIOLOGIST.

AMERICAN BURYING BEETLE
 THE AMERICAN BURYING BEETLE IS A LARGE CARRION BURYING BEETLE THAT IS LISTED AS ENDANGERED UNDER THE ENDANGERED SPECIES ACT. IN ORDER TO AVOID ADVERSE IMPACTS, NO ARTIFICIAL LIGHTING SHALL BE USED DURING CONSTRUCTION. CARCASSES AND ALL FOOD TRASH SHALL BE REMOVED FROM THE PERMANENT AND TEMPORARY RIGHT-OF-WAY THROUGHOUT PROJECT ACTIVITIES.

BAT BRIDGE REMOVAL/MODIFICATION
 THE NORTHERN LONG EARED BAT IS A MIGRATORY, INSECT EATING BAT PROTECTED BY THE ENDANGERED SPECIES ACT. THIS SPECIES CAN USE BRIDGES AND CULVERTS AS SUMMER ROOSTING SITES. IF THE BRIDGE/CULVERT REMOVAL OR MODIFICATION IS TO OCCUR BETWEEN APRIL 1 AND NOVEMBER 15, THE RESIDENT ENGINEER SHALL CONTACT THE ODOT BIOLOGIST AT 405-521-2515 TO CONDUCT A BAT SURVEY. THE SURVEY CAN BE CONDUCTED ONLY BETWEEN MAY 15 AND AUGUST 15. IF LISTED BAT SPECIES ARE DETECTED, THE ODOT BIOLOGIST WILL CONSULT WITH US FISH AND WILDLIFE SERVICE. WORK ON THE BRIDGE WILL BE RESTRICTED AND MAY BE PROHIBITED FOR ALL OR PART OF THE DURATION OF THE BAT'S MATERNITY ROOSTING SEASON. ANY DELAY DUE TO THIS WILL NOT BE COMPENSATED.

KARST
 IF CAVES, SINKHOLES, LOSING STREAMS OR SPRINGS ARE ENCOUNTERED WITHIN THE PROJECT LIMITS AT ANY POINT BEFORE OR DURING THE PROJECT, A NO-WORK ZONE EXTENDING 300 FEET IN ALL DIRECTIONS SHALL BE ESTABLISHED AROUND THE NEWLY DISCOVERED FEATURE, AND THE RESIDENT ENGINEER SHALL IMMEDIATELY CONTACT THE ODOT BIOLOGIST AT (405) 521-2515. ALL PARKING, MAINTENANCE, STAGING, FUELING, STORMWATER MANAGEMENT ACTIVITIES, GROUND DISTURBING, TREE- CLEARING, OR ANY OTHER CONSTRUCTION ACTIVITY SHALL NOT BE ALLOWED WITHIN THE 300' BUFFER. BEST MANAGEMENT PRACTICES, SECONDARY CONTAINMENT MEASURES, AND OTHER STANDARD SPILL PREVENTION AND COUNTERMEASURES WILL BE ENACTED, IN CONJUNCTION WITH USFWS CONSULTATION, TO AVOID IMPACTS TO KARST FEATURES AND POTENTIAL HIBERNACULUM.

RIPARIAN VEGETATION REMOVAL RESTRICTION
 THE REMOVAL OF TREES AND SHRUBS SHALL BE RESTRICTED TO AREAS WITHIN THE ACTUAL LIMITS OF CONSTRUCTION (TOE OF SLOPE/TOP OF CUT).

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		ENVIRONMENTAL NOTES	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 6

ODOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		7	127

0100 ROADWAY

ITEM NO.	CODE NO.	DESCRIPTION	NOTES	UNIT	QUANTITY
201(A)	0102	CLEARING AND GRUBBING		LSUM	1
202(A)	0183	UNCLASSIFIED EXCAVATION	(R-1)	CY	194,251
205(A)	4229	TYPE A-SALVAGED TOPSOIL	(1) (R-5,7)	LSUM	1
221(C)	2801	TEMPORARY SILT FENCE	(5)	LF	3,286
221(F)	0100	TEMPORARY SILT DKE	(5)	LF	1,722
221(G)	0153	TEMPORARY ROCK FILTER DAM TYPE 4	(5)	CY	4
230(A)	2806	SOLID SLAB SODDING	(3) (R-7,8)	SY	72,606
232(A)	2813	SEEDING METHOD A	(1,2) (R-7,8)	AC	15,00
233(A)	2817	VEGETATIVE MULCHING	(1,2) (R-11)	AC	15,00
241	2832	MOWING	(R-16)	AC	30,00
242	0400	(PL) STABILIZED CONSTRUCTION EXIT	(4)	EA	4
303(A)	2100	AGGREGATE BASE TYPE A		CY	4,870
307(K)	4300	STABILIZED SUBGRADE	(9) (14)	SY	35,156
325	5271	SEPARATOR FABRIC		SY	26,037
326(A)	0100	GEOTEXTILE REINFORCEMENT	(7)	SY	4,830
326(B)	0100	GEOGRID REINFORCEMENT	(7)	SY	19,000
402(E)	0225	TRAFFIC BOUND SURFACE COURSE TYPE E	(8) (R-25)	TON	2,324
408	5774	PRIME COAT	(16) (R-28)	GAL	14,452
411(B)	5935	SUPERPAVE, TYPE S3 (PG 76-28 OK)	(R-30,32)	TON	3,284
411(B)	5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	(10) (R-30,32)	TON	9,160
411(C)	5950	SUPERPAVE, TYPE S4 (PG 76-28 OK)	(11) (R-30,32)	TON	2,737
411(C)	5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	(R-30,32)	TON	887
411(I)	6310	SUPERPAVE, TYPE S4 (PATCH) (PG 64-22 OK)	(4) (R-32)	TON	100
413(B)	4863	RUMBLE STRIP-METHOD HMA-CYC		LF	8,573
501(F)	6352	GRANULAR BACKFILL		CY	11,842
601(A)	0297	TYPE I PLAIN RIPRAP		TON	34
601(C)	0538	TYPE I-A FILTER BLANKET		TON	9
602(C)	4155	FILTER FABRIC		SY	34
613(A)	0491	18" R. C. PIPE CLASS III	(12,13)	LF	44
613(A)	0494	36" R. C. PIPE CLASS III	(12,13)	LF	80
613(L)	5726	18" PREFAB. CULVERT END SECTION, ROUND		EA	2
613(L)	5734	36" PREFAB. CULVERT END SECTION, ROUND		EA	1
619(A)	0920	REMOVAL OF STRUCTURES & OBSTRUCTIONS	(6) (R-48,49)	LSUM	1
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	(6) (R-49,50)	SY	32,836
619(B)	4780	REMOVAL OF GUARDRAIL	(6) (R-49)	LF	4,361
619(C)	0924	SAWMNG PAVEMENT		LF	546
623(A)	0932	BEAM GUARDRAIL W-BEAM SINGLE		LF	1,350
623(G)	8590	GUARDRAIL END TREATMENT (31")		EA	7
623(I)	8700	GUARDRAIL BRIDGE CONN - THRIE BEAM (31")		EA	4
624(A)	4281	FENCE - STYLE WWF	(15) (R-52)	LF	1,558

ROADWAY PAY ITEM NOTES

- (R-1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITY ONLY. SEE SECTION 109.01B OF THE STANDARD SPECIFICATIONS.
- (R-5) AN ESTIMATED QUANTITY OF 10,085 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 205(A) PRICE BID TO INCLUDE COST OF (18-46-0) FERTILIZER, ESTIMATED AT 150 POUNDS PER ACRE.

FOR 230(A) AND 232(A) PRICE BID TO INCLUDE COST OF (10-20-10) FERTILIZER, ESTIMATED AT 200 POUNDS PER 1000 SQUARE YARDS.
- (R-8) FOR 230(A) & 232(A) PRICE BID TO INCLUDE COST OF WATERING, ESTIMATED AT 60 GALLONS PER SQUARE YARD.
- (R-11) THE QUANTITIES ESTIMATED FOR TEMPORARY EROSION AND SEDIMENT CONTROL IS 15.00 ACRES.
- (R-16) QUANTITY BASED ON TWO APPLICATIONS.
- (R-25) ESTIMATED AT 120 LBS. PER CU. FT.
- (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 EMULSIFIED 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-30) PRICE BID TO INCLUDE COST OF 4,047 GALLONS OF TACK COAT, MEETING THE REQUIREMENTS OF SECTION 407 OF THE STANDARD SPECIFICATIONS.
- (R-32) ESTIMATED AT 112 LBS. PER SQ. YD. PER 1" THICK.
- (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.

ROADWAY PAY ITEM NOTES

- 1 TOPSOIL STOCKPILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR AT LEAST 21 DAYS ARE TO BE STABILIZED WITH TEMPORARY SEEDING AND MULCH NO LATER THAN 14 DAYS FROM THE LAST CONSTRUCTION ACTIVITY IN THE AREA. PRIOR TO SEEDING, (10-20-10) FERTILIZER OR APPROVED EQUAL SHALL BE APPLIED TO ALL AREAS TO BE STABILIZED.
- 2 SEEDING QUANTITIES - ONE APPLICATION OF SEEDING METHOD A FOR TEMPORARY EROSION CONTROL, IF NEEDED.
MULCHING QUANTITIES - ONE APPLICATION OF VEGETATIVE MULCHING FOR TEMPORARY EROSION CONTROL, IF NEEDED, ESTIMATED AT 4,000 LBS PER ACRE.
- 3 SOLID SLAB SODDING SHALL BE PLACED IN THE BOTTOM OF ALL UNPAVED DITCHES AND ALL OTHER DISTURBED AREAS PER PLANS. PERMANENT SLOPE PROTECTION SHALL BE SOLID SLAB SOD PER MISCELLANEOUS DETAILS, SHEET 4.
- 4 ESTIMATED QUANTITY TO BE USED AT THE DISCRETION OF THE ENGINEER.
- 5 PRICE BID SHALL INCLUDE SEDIMENT REMOVAL.
- 6 ITEMS TO BE REMOVED MAY OR MAY NOT BE PRESENT IN ANY SPECIFIED CONDITION.
- 7 GEOGRID AND GEOTEXTILE REINFORCEMENT SHALL MEET THE MINIMUM STRENGTH PROPERTIES SHOWN ON SHEET 22.
- 8 INCLUDES 2,275 TONS FOR SURFACING AND 49 TONS FOR TEMPORARY DRIVEWAYS AS SHOWN ON SUMMARIES (1).
- 9 INCLUDES 26,037 SY FOR SURFACING AND 9,119 SY FOR DETOUR SURFACING AS SHOWN ON SUMMARIES (1).
- 10 INCLUDES 6,627 TONS FOR SURFACING, 2,246 TONS FOR DETOUR SURFACING, AND 287 TONS FOR DRIVEWAYS AS SHOWN ON SUMMARIES (1).
- 11 INCLUDES 2,366 TONS FOR SURFACING, 260 TONS FOR GUARDRAIL WIDENING, AND 111 TONS FOR DRIVEWAYS AS SHOWN ON SUMMARIES (1).
- 12 INCLUDES THE PRICE OF A TONGUE AND GROOVE GASKET JOINT.
- 13 PRICE BID SHALL INCLUDE COST OF TRENCH EXCAVATION AND STANDARD BEDDING MATERIAL.
- 14 PRICE BID TO INCLUDE THE CHEMICAL ADDITIVE(S) TO ACHIEVE THE RATE SPECIFIED FOR THE APPROPRIATE SOIL CLASSIFICATION AS SPECIFIED IN THE MOST CURRENT ODOT MATERIALS DIVISION OHDL-50. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CLASSIFY THE SOIL AND DETERMINE THE APPROPRIATE ADDITIVE(S).
- 15 USE 3-1/2" DIAMETER X 8'-0" LONG GALVANIZED STEEL (SCHEDULE 40) PIPE FOR CORNER, STRETCHER & END POST AND 2" DIAMETER GALVANIZED STEEL PIPES (SCHEDULE 40) AS BRACING. ATTACH BRACE POST USING STANDARD CHAIN LINK FENCE HARDWARE MEETING THE REQUIREMENTS OF AASHTO M 181 AND ASTM A53. SEE CHAIN LINK FENCE DETAILS ON ROADWAY STANDARD RWF3-2. USE CORNER & STRETCHER POSTS DETAIL, NOT THE CORNER & STRETCHER POSTS DETAIL ALTERNATE SHOWN ON STANDARD RWF2-2 TO CONSTRUCT. PLACE CLASS A CONCRETE FOOTING AS PER ALTERNATE POST OPTION. OMIT TENSION WIRES. GATE POST WILL BE 5-9/16" DIAMETER X 8'-0" LONG AND MEET THE REQUIREMENTS OF STANDARD RWF3-2 POST AND FRAMEWORK SCHEDULE GATE POST OVER 12' TO 18' W/DE. NO WOODEN POST WILL BE ALLOWED.
- 16 INCLUDES 11,887 GALLONS FOR SURFACING, 2,006 GALLONS FOR DETOUR SURFACING, 404 GALLONS FOR GUARDRAIL WIDENING, AND 155 GALLONS FOR DRIVEWAYS AS SHOWN ON SUMMARIES (1).

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		ROADWAY PAY ITEMS AND NOTES	
Checked			
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Squad			
		State Job No. 24750(04)	Sheet No. 7

DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750104		8	127
DESCRIPTION		REVISIONS		DATE	
TRAFFIC CONTROL PAY QUANTITIES & NOTES				8/19/18	

0310 TRAFFIC SIGNING & STRIPING

ITEM NO.	CODE NO.	DESCRIPTION	NOTES	UNIT	QUANTITY
805(D)	8756	(PL) REMOVE & RESET EXISTING SIGNS	(TS-1)	EA	1
850(A)	8110	SHEET ALUMINUM SIGNS		SF	54
851(C)	8330	2 1/2" SQUARE TUBE POST	(TS-33)	LF	81
853	9069	GUARDRAIL DELINEATORS (TYPE 2, CODE 1)		EA	40
856(A)	8530	TRAFFIC STRIPE (MULTI-POLYMER) (4" WIDE)	(TS-24)	LF	12,580

0340 TRAFFIC CONTROL

ITEM NO.	CODE NO.	DESCRIPTION	NOTES	UNIT	QUANTITY
857(A)	8839	CONSTRUCTION TRAFFIC STRIPE (PAINT) (4" WIDE)	(TC-17, 20, 70, 75)	LF	11,130
857(C)	8851	REMOVABLE PAVEMENT MARKING TAPE (4" WIDE)	(TC-19, 70, 75)	LF	1,350
857(F)	8006	PAVEMENT MARKING REMOVAL (TRAFFIC STRIPE)	(TC-22, 70)	LF	3,980
871(A)	8325	(SP) IMPACT ATTENUATOR	(SP-3, 4) (TC-44, 52, 70, 84)	EA	18
877(B)	8484	DELIVER PORTABLE LONGITUDINAL BARRIER	(SP-2) (TC-1, 2, 70)	LF	7,088
877(C)	8486	RELOCATION OF PORTABLE LONGITUDINAL BARRIER	(SP-2) (TC-1, 2, 70)	LF	3,775
880(B)	8818	CONSTRUCTION SIGNS 0 TO 6.25 SF	(TC-26, 28, 33, 84)	SD	5,110
880(B)	8821	CONSTRUCTION SIGNS 6.26 TO 15.99 SF	(TC-26, 29, 33, 84)	SD	2,920
880(B)	8824	CONSTRUCTION SIGNS 16.0 TO 32.99 SF	(TC-26, 30, 33, 84)	SD	3,970
880(C)	8848	WING BARRICADES	(TC-26, 84)	SD	1,480
880(E)	8860	WARNING LIGHTS (TYPE A)	(TC-26, 84)	SD	2,920
880(F)	8878	DRUMS	(SP-1) (TC-33, 84)	SD	23,005
882(A)	8306	PORT. CHANGEABLE MESSAGE SIGN	(TC-52, 84, 85)	SD	730

TRAFFIC CONTROL PAY ITEM NOTES

- (TC-1) THE CONTRACTOR SHALL FURNISH AND INSTALL SUCH LIGHTS, SIGNS, BARRICADES, AND PROVIDE FLAGGERS NECESSARY FOR THE CONTROL, SAFETY, AND MAINTENANCE OF TRAFFIC WHEN INSTALLING, RELOCATING OR DELIVERING PORTABLE LONGITUDINAL BARRIER.
- (TC-2) QUANTITY INCLUDES SUFFICIENT LENGTH OF PORTABLE LONGITUDINAL BARRIER TO PROVIDE FOR THE LONGEST SECTION SHOWN ON THE PLANS. THIS SAME BARRIER WILL BE USED ON OTHER DETOUR PHASES.
- (TC-17) INCLUDES AN ESTIMATED 5,547 L.F. (PAINT)(4" WIDE) WHITE AND 5,583 L.F. (PAINT) (4" WIDE) YELLOW STRIPE.
- (TC-19) THIS ITEM INCLUDES AN ESTIMATED 909 L.F. (4" WIDE) WHITE AND 441 L.F. (4" WIDE) YELLOW STRIPE. THE CONTRACTOR SHALL PROVIDE AND INSTALL AN O.D.O.T. APPROVED REMOVABLE PAVEMENT MARKING TAPE. COST FOR REMOVAL OF THIS TAPE SHALL BE INCLUDED IN THE PRICE BID FOR THIS ITEM. NON-REMOVABLE MARKING TAPE (FOIL BACK) SHALL NOT BE CONSIDERED AN APPROVED EQUAL FOR THIS ITEM.
- (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-28) INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 0.00 S.F. AND 6.25 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.
- (TC-29) INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 6.26 S.F. AND 15.99 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.
- (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.

TRAFFIC CONTROL PAY ITEM NOTES CONTINUED

- (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-44) PRICE BID FOR THIS ITEM SHALL INCLUDE ATTENUATOR MODULES, SAND, WOODEN PALLETS (IF REQUIRED), RELOCATION, AND MAINTENANCE.
- (TC-52) ANY USED CHANGEABLE MESSAGE SIGNS 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 ON 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 MARKERS 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) 365 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 PROJECT'S 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 APPROVED SIGNS GO TO THE OKLAHOMA DEPARTMENT OF TRANSPORTATION WEBSITE AT: <http://www.okladot.state.ok.us/traffic/qpl/index.php>
- (SP-1) THIS DIVISION DOES NOT REQUIRE TYPE C WARNING LIGHTS.
- (SP-2) PRICE BID FOR THIS ITEM SHALL INCLUDE THE INSTALLATION AND MAINTENANCE OF THE REFLECTORS ON THE BARRIER WALL.
- (SP-3) PRICE BID FOR THIS ITEM SHALL INCLUDE SLOPE WORK TO FLATTEN GROUND WHERE THE MODULES WILL BE PLACED.
- (SP-4) CONSTRUCTION ZONE IMPACT ATTENUATOR 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 ON THE PROJECT.

TRAFFIC SIGNING & STRIPING PAY ITEM NOTES

- (TS-1) "REMOVAL OF SIGN FOOTINGS" SHALL MEAN THE REMOVAL OF AN EXISTING FOOTING WITH OR WITHOUT STUBS AND SHALL BE DISPOSED OF AS NOTED IN GENERAL CONSTRUCTION NOTES.
- (TS-24) QUANTITY SHOWN INCLUDES 11,092 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND 1,488 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(YELLOW). TRAFFIC STRIPE (MULTI-POLYMER) 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 SSA 1-1 AND SSP 1-1 (LATEST REVISION).

TRAFFIC SIGNING GENERAL CONSTRUCTION NOTES

- ANY DAMAGE CAUSED BY THE CONTRACTOR TO ANY STRUCTURES, ROADWAY SURFACES, STRIPING, RAISED PAVEMENT MARKERS, GUARDRAIL, SLOPES, AND SIGNS SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE RESIDENT ENGINEER.
- ALL REGULATORY SIGNS SHALL HAVE HIGH INTENSITY SHEETING. THE HIGH INTENSITY SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956-(LATEST REVISION) FOR TYPE III SHEETING.
- ALL WARNING SIGNS SHALL HAVE FLUORESCENT YELLOW SHEETING. THE FLUORESCENT YELLOW SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956-(LATEST REVISION) REQUIREMENTS FOR TYPE VIII SHEETING.
- ALL GREEN AND BLUE SIGNS ON CONVENTIONAL HIGHWAYS SHALL HAVE HIGH INTENSITY SHEETING. THE HIGH INTENSITY SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956-(LATEST REVISION) REQUIREMENTS FOR TYPE III SHEETING.
- ALL PANEL AND OVERHEAD SIGNS SHALL HAVE TYPE III HIGH INTENSITY BACKGROUND WITH TYPE VII LEGENDS AND BORDERS. THE TYPE III BACKGROUND AND THE TYPE VII LEGENDS AND BORDERS SHALL MEET THE REQUIREMENTS OF ASTM D4956-(LATEST REVISION).
- THE MANUFACTURER SHALL FURNISH A TYPE 'A' CERTIFICATION IN ACCORDANCE WITH ODOT STANDARD SPECIFICATIONS, LATEST EDITION, AND SUBSECTION 106.04. THE CERTIFICATION SHALL INCLUDE TEST RESULTS ON THE MATERIAL SUBMITTED FOR APPROVAL.
- ALL BROKEN CONCRETE INCLUDING OLD SIGN FOOTINGS WITH STUBS, WASTE MATERIAL AND DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE LIMITS OF THE PROJECT AND DISPOSED OF IN AN AREA APPROVED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THE DISPOSAL OF THIS MATERIAL. ANY PIPE POST OR WIDE FLANGE POST ABOVE THE OLD SIGN FOOTING SHALL BE CUT AND HANDLED AS PROPERTY OF THE STATE AND SHALL BE NEATLY STACKED ON THE JOB SITE, AS DESIGNATED BY THE ENGINEER UNTIL SUCH TIME AS DIVISION PERSONNEL CAN REMOVE THE MATERIAL FROM THE JOB SITE.
- NO SPLICES SHALL BE PERMITTED IN ANY PIPE OR WIDE FLANGE SIGN POSTS.
- ALL ANCHOR BOLTS SHALL BE GRADE A-36 STEEL.
- THE STATIONS AND LOCATIONS OF THE SIGN PLACEMENT, AS SHOWN ON THE PLAN SHEETS, ARE APPROXIMATE. EXACT STATIONS AND LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR SO THAT THE SIGN IS INSTALLED IN ACCORDANCE WITH DEPARTMENT STANDARDS AND THE MUTCD IN ORDER TO PROVIDE OPTIMUM VISIBILITY TO THE ONCOMING/APPROACHING MOTORIST. IF A PROPOSED LOCATION CONFLICTS WITH OTHER SIGNS, UTILITIES OR OTHER ROADWAY FEATURES, THE ENGINEER SHALL BE NOTIFIED.
- POST LENGTHS SHOWN ON THE SIGN SUMMARY ARE APPROXIMATE, EXACT LENGTH SHALL BE DETERMINED BY FIELD SURVEY BY THE CONTRACTOR.
- AFTER REMOVAL OF ANY SIGN FOOTINGS, THE HOLES SHALL BE FILLED WITH SOIL AND TAMPED AND SHAPED IN A MANNER APPROVED BY THE ENGINEER.
- FOR NEW OR EXISTING GROUND MOUNTED SIGNS, MAXIMUM STUB POST PROJECTION ABOVE FOOTING/GROUND LINE SHALL BE 1-3/4" +/- 1/4". MAXIMUM FOOTING PROJECTION ABOVE GROUND LINE SHALL BE NO MORE THAN 2". SHOULD ADDITIONAL SOIL BE REQUIRED, THE ENGINEER WILL DESIGNATE AN AREA TO OBTAIN ADDITIONAL SOIL. ALL ASSOCIATED COSTS SHALL BE INCLUDED IN OTHER ITEMS OF WORK.
- TRAFFIC CONTROL GENERAL CONSTRUCTION NOTES
 - ANY SIGNS AND/OR DELINEATORS WHICH ARE TO BE REMOVED DURING THIS PROJECT WILL BE STORED IN A PROTECTED AREA DESIGNATED BY THE RESIDENT ENGINEER, UNTIL SUCH A TIME THAT THEY ARE TO BE RESET BY THE CONTRACTOR. COST OF THIS WORK TO BE INCLUDED IN OTHER ITEMS OF WORK.
 - EXISTING ROADWAY SHALL REMAIN OPEN DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER BARRICADES, LIGHTS, AND SIGNING WITHIN THE LIMITS OF CONSTRUCTION. ALL CONSTRUCTION SIGNING WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS. CONSTRUCTION TRAFFIC CONTROL WILL BE 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.
 - THIS PROJECT SHALL BE CONSTRUCTED WITHOUT CLOSING TRAFFIC ON CROSS STREETS. A MINIMUM OF ONE LANE IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES.

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		TRAFFIC PAY ITEMS, CONSTRUCTION AND PAY ITEM NOTES	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 8

7/25/2016
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JP NO. 24750(04)		NBI NO. 30985	
BRIDGE "A" PAY ITEMS			
0200 BRIDGE "A"			
CONSTRUCT NEW CONVENTIONAL 100'-100'-75" TYPE IV P.C. BEAM SPANS WITH F-SHAPED PARAPET WITH 44'-0" CLEAR ROADWAY, SKEW 30° RF AT C.L. STA. 712+37.21 CRL US 169			
ITEM NO.	CODE NO.	DESCRIPTION	TOTAL
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON	255
501(G)	6309	CLSM BACKFILL	351.3
503(A)	1313	PRESTRESSED CONCRETE BEAMS (TYPE IV)	1370.0
504(A)	1304	APPROACH SLAB	443.2
504(B)	1305	SAW-CUT GROOVING	1791.1
504(C)	6250	SEALED EXPANSION JOINT	53.67
504(E)	6190	42" F-SHAPED PARAPET	732.8
506(A)	1322	STRUCTURAL STEEL	1670
507(A)	6170	STAINLESS STEEL FIXED BEARING ASSEMBLY	20
507(B)	6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY	10
509	6152	SPECIAL CONCRETE FINISH	104
509(A)	1326	CLASS AA CONCRETE	375.5
509(B)	1328	CLASS A CONCRETE	313.4
511(A)	1332	REINFORCING STEEL	2330
511(B)	6010	EPOXY COATED REINFORCING STEEL	158070
513(C)	6020	CLASS C BRIDGE DECK REPAIR	100
514(A)	6010	PILES, FURNISHED (HP10X42)	132
514(A)	6011	PILES, FURNISHED (HP12X53)	678
514(B)	6292	PILES, DRIVEN (HP10X42)	132
514(B)	6294	PILES, DRIVEN (HP12X53)	678
514(G)	6310	METAL PILE SHOES	28
514(L)	6220	PILE SPLICE, H-PILE (NON-BIDDABLE)	1
515(A)	6013	WATER REPELLENT (VISUALLY INSPECTED)	1608
516(A)	6096	DRILLED SHAFTS 60" DIAMETER	155
516(C)	6200	CROSSHOLE SONIC LOGGING	1
523(A)	6550	SEALER CRACK PREPARATION	54
523(B)	6560	SEALER RESIN	0.4
601(B)	1353	TYPE I-A PLAIN RIPRAP	1760
601(C)	1355	TYPE I-A FILTER BLANKET	300
601(I)	6312	FILTER FABRIC (RIPRAP)	1236
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND	115
613(I)	6207	6" NON-PERF. PIPE UNDERDRAIN RND.	40
619(B)	2500	REMOVAL OF BRIDGE ITEMS	1
		LSUM	1

BRIDGE PAY ITEM NOTES

- (1) PAY PLAN QUANTITY PER SECTION 109.01(B) OF THE STANDARD SPECIFICATIONS.
- (2) PLAN QUANTITY FOR CLASS AA CONCRETE INCLUDES 22.8 C.Y. FOR HAUNCHES OVER GIRDERS. THIS QUANTITY IS CALCULATED ASSUMING AN AVERAGE HAUNCH OF 3 5/16" FOR THE FULL LENGTH OF THE GIRDERS AT SPAN 1 AND SPAN 2, AND A 3" HAUNCH AT SPAN 3. SEE TYPICAL SECTION FOR HAUNCH DIMENSIONS AT BEARINGS, THE FINAL HAUNCH HEIGHTS WILL BE SET AFTER ERECTION OF GIRDERS AND DIAPHRAGMS TO PROVIDE FOR DEAD LOAD DEFLECTION AND GRADE ADJUSTMENT.
- (3) CROSSHOLE SONIC LOGGING ACCESS TUBES SHALL BE PLACED IN ALL DRILLED SHAFTS. INCLUDE ALL COSTS FOR CROSSHOLE SONIC LOGGING ACCESS TUBES IN THE PRICE BID FOR L.F. OF "DRILLED SHAFTS 60" DIAMETER".
- (4) PRICE BID SHALL INCLUDE THE WORK DESCRIBED IN SECTION 642.04(B) OF THE 2009 ODOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
- (5) THERE IS AN ESTIMATED 160.1 C.Y. OF CLASS AA CONCRETE FOR BOTH APPROACH SLABS.
- (6) THERE IS AN ESTIMATED 29,830 LBS. OF EPOXY COATED REINFORCING STEEL FOR BOTH APPROACH SLABS.
- (7) ITEM "SPECIAL CONCRETE FINISH" IS A LIQUID APPLIED URETHANE COATING (CIM 1000) TO BE APPLIED TO THE PIER CAP AS DETAILED IN THE PLANS.
- (8) A MINIMUM OF 1 DRILLED SHAFTS PER BRIDGE SHALL BE TESTED AND LOGGED WITH CROSSHOLE SONIC LOGGING. ADDITIONAL TESTING MAY BE REQUIRED, AT THE DISCRETION OF THE ENGINEER.
- (9) TO BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.
- (10) HARD ROCK WAS ENCOUNTERED DURING GEOTECHNICAL INVESTIGATION. SEE STAKING DIAGRAM.

0600 STAKING		STAKING PAY ITEMS	
ITEM NO.	CODE NO.	DESCRIPTION	TOTAL
642(B)	0096	CONSTRUCTION STAKING LEVEL 11	1

0640 CONSTRUCTION		CONSTRUCTION PAY ITEMS	
ITEM NO.	CODE NO.	DESCRIPTION	TOTAL
220	2800	SWPPP DOCUMENTATION AND MANAGEMENT	1
640(A)	1426	FIELD OFFICE	1
641	1552	MOBILIZATION	1

BRIDGE 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:

PLANS OF THE EXISTING BRIDGES MAY BE OBTAINED FROM THE ODOT REPRODUCTION DEPARTMENT, 200 N.E. 21ST ST., OKLAHOMA CITY, OK. 73105.

PILE DRIVING EQUIPMENT:

USE A PILE DRIVING HAMMER OF THE SIZE AND TYPE CAPABLE OF CONSISTENTLY DELIVERING THE EFFECTIVE DYNAMIC ENERGY SUFFICIENT TO DRIVE THE PILES TO THE REQUIRED TIP ELEVATION AND TO ACHIEVE THE AXIAL LOAD RESISTANCES WITHOUT EXCEEDING THE LIMITATIONS SET ON THE ALLOWABLE DRIVING STRESSES IN ACCORDANCE WITH SECTION 514.03(A)2.

ABUTMENT PILING CAPACITY:

THE MAXIMUM FACTORED LOAD FOR EACH HP12X53 PILE AT ABUTMENT 1 IS 75.62 TONS AND ABUTMENT 2 IS 78.06 TONS.

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

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

WHERE:

ϕ = 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:

- 1) THE PILE DRIVING HAMMER HAS A FREE FALL (GRAVITY & SINGLE ACTING HAMMERS ONLY).
- 2) THE HEAD OF THE PILE IS NOT BROOMED, CRUSHED OR OTHERWISE DAMAGED.
- 3) THE PENETRATION IS QUICK AND UNIFORM.
- 4) THERE IS NO APPRECIABLE REBOUND OF THE HAMMER.
- 5) 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 SHOWN ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.

STAY-IN-PLACE FORMS:

THE CONTRACTOR MAY NOT USE STAY-IN-PLACE STEEL DECK FORMS.

PERFORATED PIPE UNDERDRAIN ROUND:

ITEM "6" PERFORATED PIPE UNDERDRAIN - ROUND" INCLUDES ALL COSTS OF PERFORATED PIPE AND OF UNDERDRAIN COVER MATERIAL, BOTH COARSE AND FINE, FOR EACH ABUTMENT. THE INSTALLATION OF THE PERFORATED PIPE AND PIPE UNDERDRAIN COVER MATERIAL SHALL BE AS SHOWN ON THE PLANS AND ON STANDARD PUD-3.

ALL COSTS OF THE PERFORATED PIPE UNDERDRAIN INSTALLATION INCLUDING LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "6" PERFORATED PIPE UNDERDRAIN ROUND".

NON-PERFORATED PIPE UNDERDRAIN ROUND:

ITEM "6" NON-PERF. PIPE UNDERDRAIN - RND." INCLUDES ALL COSTS OF NON-PERFORATED PIPE, TRENCH EXCAVATION AND STANDARD BEDDING MATERIAL FOR EACH ABUTMENT. THE INSTALLATION OF THE NON-PERFORATED PIPE SHALL BE AS SHOWN ON THE PLANS AND ON STANDARD PUD-3.

ALL COSTS OF THE NON-PERFORATED PIPE UNDERDRAIN INSTALLATION INCLUDING BACKFILLING, LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "6" NON-PERF. PIPE UNDERDRAIN RND.".

STAINLESS STEEL FIXED BEARING ASSEMBLY:

PROVIDE AND INSTALL FIXED BEARING ASSEMBLIES OF THE SIZE AND SHAPE DETAILED IN THE PLANS AT THE ABUTMENTS AND PIER NO. 2. THERE IS AN ESTIMATED TOTAL WEIGHT OF 3,810 LBS. OF STRUCTURAL STEEL FOR 20 FIXED BEARINGS. INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE ANCHOR PLATES AND ANCHOR BOLTS, INCLUDING ALL MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS IN THE PRICE BID PER EACH OF "STAINLESS STEEL FIXED BEARING ASSEMBLY".

MANDATORY TIE:

THE COST OF THE FOLLOWING PAY ITEMS FOR JP 24750(04), NOWATA COUNTY SHALL INCLUDE THOSE PAY ITEMS FOR JP 27092(04), NOWATA COUNTY:

1. 642(B) CONSTRUCTION STAKING LEVEL 11
2. 640(A) FIELD OFFICE
3. 641 MOBILIZATION

DOT DIVISION	STATE	JPP PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		9	127
DESCRIPTION		REVISIONS		DATE	
UPDATED MANDATORY TIE				07/25/16	

BRIDGE GENERAL NOTES CONT'D.

STAINLESS STEEL EXPANSION BEARING ASSEMBLY:

PROVIDE AND INSTALL EXPANSION BEARING ASSEMBLIES OF THE SIZE AND SHAPE DETAILED IN THE PLANS. THERE IS AN ESTIMATED TOTAL WEIGHT OF 1,930 LBS. OF STRUCTURAL STEEL FOR 10 EXPANSION BEARINGS.

INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE ANCHOR PLATES, CONTACT ANGLES, ANCHOR BOLTS, NUTS AND WASHERS, INCLUDING ALL MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS IN THE PRICE BID PER EACH OF "STAINLESS STEEL EXPANSION BEARING ASSEMBLY".

WATER REPELLENT:

A PENETRATING WATER REPELLENT SURFACE TREATMENT SHALL BE APPLIED TO THE CONCRETE SURFACES OF THE BRIDGE AS SHOWN ON THE PLANS. PIER CAP SHALL BE TREATED ON ALL VERTICAL FACES EXCEPT WHERE SPECIAL CONCRETE FINISH IS APPLIED.

APPROACH SLAB:

CLASS AA CONCRETE SHALL BE USED IN THE APPROACH SLABS. THE QUANTITY GIVEN IS BASED ON THE ACTUAL SQUARE YARDS OF THE APPROACH SLABS. THE CONTRACT UNIT PRICE FOR APPROACH SLAB SHALL BE FULL COMPENSATION FOR CONCRETE, REINFORCING STEEL (INCLUDING FS2 BARS IN PARAPET), BACKER RODS, RAPID CURE JOINT SEALANT, POLYSTYRENE, LABOR, EQUIPMENT, AND INCIDENTALS NEEDED TO COMPLETE THE WORK AS SPECIFIED IN THE PLANS.

CONCRETE INTERMEDIATE DIAPHRAGMS:

ONCE THE CONCRETE HAS BEEN PLACED FOR THE INTERMEDIATE DIAPHRAGMS, WAIT A MINIMUM OF 24 HOURS BEFORE REMOVING THE SIDE FORMS. DO NOT REMOVE THE BOTTOM FORM FOR A MINIMUM OF THREE (3) DAYS, OR AS DIRECTED OTHERWISE BY THE ENGINEER. THIS TIME CAN BE SHORTENED IF THE CONCRETE HAS ATTAINED 80% OF THE SPECIFIED COMPRESSIVE STRENGTH.

CLSM BACKFILL:

THE CLSM BACKFILL MUST BE PLACED IN TWO LIFTS OF EQUAL HEIGHTS AT BOTH ABUTMENT 1 AND ABUTMENT 2. SEE STANDARD SPECIFICATIONS REGARDING CURING CLSM.

REMOVAL OF EXISTING BRIDGE STRUCTURES:

ITEM "REMOVAL OF EXISTING BRIDGE STRUCTURE" CONSISTS OF REMOVAL AND DISPOSAL OF A 80'- 100'-80" PL GIRDER SPAN BRIDGE WITH A 30' CLEAR ROADWAY, CURBS, AND CONCRETE AND METAL TRAFFIC RAIL, 30° SKEW AT C.L. US 169, STA. 712+72.00, INCLUDING THE ORIGINAL ABUTMENTS AND PIERS. THE CONTRACTOR SHALL FULLY INFORM HIMSELF OF THE NATURE OF THIS REMOVAL TO ALLOW FOR AN ACCURATE ESTIMATE.

REMOVAL OF EXISTING STRUCTURE SHALL BE IN ACCORDANCE WITH SECTION 619 OF THE STANDARD SPECIFICATION AND IN A MANNER APPROVED BY THE ENGINEER.

THE EXISTING STRUCTURAL STEEL IS PAINTED WITH LEAD-BASED PAINT. THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS AND FOLLOW ALL NECESSARY REGULATIONS IN HANDLING AND TRANSPORTING ANY STRUCTURAL STEEL CONTAINING LEAD-BASED PAINT.

CONTRACTOR SHALL NOT ALLOW CONCRETE OR STEEL RUBBLE TO FALL INTO, OR REMAIN IN THE CREEK. EXISTING PIERS AND THEIR SPREAD FOOTINGS SHALL BE REMOVED IN THEIR ENTIRETY.

THE BRIDGE BEAMS SHALL BECOME THE PROPERTY OF NOWATA COUNTY. THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE THE BEAMS AND WILL STORE THE BEAMS ON THE PROJECT FOR THE COUNTY TO PICK UP. ONCE THE BEAMS ARE STORED THE CONTRACTOR SHALL GIVE WRITTEN NOTIFICATION TO THE COUNTY TO REMOVE THE BEAMS FROM THE PROJECT. THE COUNTY WILL BE RESPONSIBLE FOR LOADING AND TRANSPORTING THE BEAMS. THE COUNTY WILL HAVE THIRTY (30) DAYS FROM THE TIME WRITTEN NOTIFICATION IS GIVEN TO REMOVE THE BEAMS. AFTER 30 DAYS, ANY BEAMS NOT REMOVED FROM THE PROJECT WILL BECOME THE PROPERTY OF THE CONTRACTOR. THE BEARINGS SHALL REMAIN THE PROPERTY OF ODOT AND WILL BE STOCKPILED WITHIN THE R/W AS DIRECTED BY THE ENGINEER. AFTER 30 DAYS ANY BEARINGS NOT REMOVED FROM THE PROJECT WILL BECOME THE PROPERTY OF THE CONTRACTOR. ITEMS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO ODOT OR THE COUNTY. ALL OTHER MATERIALS OTHER THAN THE BEAMS AND BEARINGS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE REMOVED FROM THE PROJECT IN A MANNER APPROVED BY THE ENGINEER.

ALL COSTS ASSOCIATED WITH THE REMOVAL, TRANSIT, AND DISPOSAL OF THE EXISTING BRIDGE STRUCTURE AS DESCRIBED ABOVE AND AS DIRECTED BY THE ENGINEER, INCLUDING LABOR, EQUIPMENT, AND INCIDENTALS, SHALL BE INCLUDED IN THE PRICE BID PER LUMP SUM OF "REMOVAL OF BRIDGE ITEMS".

Design	AEJ	6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	RAH	6/16	BRIDGE A	
Checked	AEJ	6/16	BRIDGE PAY ITEMS	
Approved	SAK	6/16	AND GENERAL NOTES	
Squad	BENHAM		Job Piece No. 24750(04)	Sheet No. 9

7/12/2016

DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		10	127

0100 ROADWAY

SUMMARY OF SURFACING - US 169

P&P NO.	STATION TO STATION	AGGREGATE	STABILIZED	SEPARATOR	TBSC	TACK	PRIME	SUPERPAVE,	SUPERPAVE,	SUPERPAVE,	RUMBLE
		BASE	SUBGRADE	FABRIC	TYPE E	COAT	COAT	TYPE S3	TYPE S3	TYPE S4	STRIP-METHOD
		TYPE A						(PG 76-28 OK)	(PG 64-22 OK)	(PG 76-28 OK)	HMA-CYC
		303(A)	307(K)	325	402(E)	**	408	411(B)	411(B)	411(C)	413(B)
		CY	SY	SY	TON	GAL	GAL	TON	TON	TON	LF
1	689+84.21 - 703+00.00	1,495	7,993	7,993	698	982	3,649	1,008	2,034	726	2,631
2	703+00.00 - 718+00.00	1,288	6,887	6,887	602	846	3,144	869	1,753	626	1,508
3	718+00.00 - 733+00.00	1,704	9,111	9,111	796	1,119	4,160	1,149	2,319	828	760
4	733+00.00 - 736+36.76	383	2,046	2,046	179	252	934	258	521	186	3,674
TOTALS		4,870	26,037	26,037	2,275	3,199	11,887	3,284	6,627	2,366	8,573

** FOR INFORMATION ONLY

0100 ROADWAY

SUMMARY OF SURFACING - Detours

P&P NO.	STATION TO STATION	STABILIZED	TACK	PRIME	SUPERPAVE,	SUPERPAVE,
		SUBGRADE	COAT	COAT	TYPE S3	TYPE S4
					(PG 64-22 OK)	(PG 64-22 OK)
		307(K)	**	408	411(B)	411(C)
		SY	GAL	GAL	TON	TON
5	2687+50.39 - 2699+34.51	4,596	402	1,011	1,132	447
6	4726+80.44 - 4738+45.89	4,523	396	995	1,114	440
TOTALS		9,119	798	2,006	2,246	887

** FOR INFORMATION ONLY

0100 ROADWAY

SUMMARY OF DRIVEWAYS

LOCATION	TYPE	WIDTH	RADIUS	LENGTH	TACK	PRIME	SUPERPAVE,	SUPERPAVE,
					COAT	COAT	TYPE S3	TYPE S4
					**	408	411(B)	411(C)
		FT	FT	FT	GAL	GAL	TON	TON
696+73.37	Rt Field Ent.	20	25	81	11	33	61	24
696+78.45	Lt Field Ent.	20	25	197	22	69	128	49
729+83.77	Rt Field Ent.	15	15 & 9	82	9	27	50	19
730+17.24	Rt Field Ent.	15	9 & 15	78	8	26	48	19
TOTALS					50	155	287	111

** FOR INFORMATION ONLY

0100 ROADWAY

SUMMARY OF TEMPORARY DRIVEWAYS

LOCATION	WIDTH	RADIUS	LENGTH	TBSC
				TYPE E
				402(E)
	FT	FT	FT	TON
SOUTH DETOUR				
2696+81.85	RT	20	20	22
NORTH DETOUR				
4729+83.30	RT	15	20 & 9	25
4730+16.79	RT	15	9 & 15	22
TOTALS				49

0100 ROADWAY

SUMMARY OF EROSION CONTROL

TOTAL	TOTAL	TYPE A	SOLID SLAB	SEEDING	VEGETATIVE	MOWING
DISTRURBED	PAVEMENT	SALVAGED	SODDING	METHOD A	MULCHING	
AREA	AREA	TOPSOIL				
		**	230(A)	232(A)	233(A)	241
SF	SF	CY	SY	AC	AC	AC
878,979.37	225,533.80	10,085	72,606	15.00	15.00	30.00
TOTALS :		10,085	72,606	15.00	15.00	30.00

** FOR INFORMATION ONLY

0100 ROADWAY

SUMMARY OF REMOVALS

STATION TO STATION	ASPHALT PAVEMENT	GUARDRAIL	SAWING PAVEMENT
	619(B)	619(B)	619(C)
	SY	LF	LF
US 169			
689+84.21 - 736+36.76	24,820	4,361	546
South Detour			
2687+50.39 - 2699+34.51	4,010	0	0
North Detour			
4726+80.44 - 4738+45.89	4,006	0	0
TOTALS			
	32,836	4,361	546

SUMMARY OF SIGN REMOVAL (FOR INFORMATION ONLY)

ALIGNMENT	APPROX. STATION	SIDE	REMOVAL OF EXISTING SIGN EA.
US 169	696+52	LT	1
US 169	697+58	RT	1
US 169	711+31	RT	1
US 169	711+31	RT	1
US 169	714+13	LT	1
US 169	714+13	LT	1
US 169	714+29	RT	1
US 169	722+44	LT	1
TOTAL			8

0100 ROADWAY

REMOVAL OF STRUCTURES & OBSTRUCTIONS 619(A)

STATION TO STATION	REMOVAL	REMOVAL	REMOVAL	REMOVAL	REMOVAL	PLUGGING
	OF HEADWALL	OF CONCRETE DITCH LINER	OF EXISTING SIGN	OF DRAINAGE PIPE	OF FENCE	OF 24" CMP
	EA	LF	EA	LF	LF	EA
US 169						
689+84.21 - 736+36.76	1	62	8	69	1,450	2
TOTALS						
	1	62	8	69	1,450	2

THIS SUMMARY IS INTENDED TO PROVIDE FOR THE REMOVAL OF ALL OBSTRUCTIONS. HOWEVER, IF ADDITIONAL OBSTRUCTIONS ARE ENCOUNTERED THEY SHALL BE REMOVED. THE COST OF ADDITIONAL OBSTRUCTIONS SHALL BE PAID FOR UNDER STRUCTURES AND OBSTRUCTIONS, ITEM

0100 ROADWAY

SUMMARY OF GUARDRAIL

LOCATION	STATION TO STATION	PRIME	SUPERPAVE,	BEAM	GUARDRAIL	GUARDRAIL	LENGTH	GUARDRAIL
		COAT	TYPE S4	GUARDRAIL	END	BRIDGE	INCLUDING	DELINEATORS
		408	(PG76-28 OK)	W-BEAM	TREATMENT	CONN. - THRIE	ANCHOR	(TYPE 2, CODE 1)
		GAL	TON	LF	EA	EA	LF	EA
US 169	708+10.90 RT. TO 710+54.65 RT.	51	33	137.5	1	1	206.25	5
US 169	708+48.40 LT. TO 710+54.65 LT.	51	33	137.5	1	1	206.25	5
US 169	714+19.75 RT. TO 715+63.50 RT.	39	25	75.0	1	1	143.75	3
US 169	714+19.75 LT. TO 716+63.50 LT.	51	33	137.5	1	1	206.25	5
US 169	732+49.29 RT. TO 736+36.76 RT.	87	56	387.5	1	0	437.50	9
EX. US 169	736+33.81 RT. TO 739+96.31 RT.	82	52	362.5	1	0	412.50	9
US 169	734+74.23 LT. TO 736+36.76 LT.	43	28	112.5	1	0	162.50	4
TOTALS		404	260	1350.0	7	4	40	40

** FOR INFORMATION ONLY

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		SUMMARIES (1)	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 10

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0100 ROADWAY

SUMMARY OF EARTHWORK					
BY CONSTRUCTION SEQUENCE					
LOCATION	UNCL. EXCAVATION	FILL	UNCL. BORROW	WASTE	
	202(A) C.Y.	(+20%) C.Y.	202(D) C.Y.	C.Y.	
US 169 Phase 1					
689+50.00 TO 736+50.00	120,299	36,391	0	83,909	
NORTH DETOUR - REINFORCED SLOPE	6,555				
US 169 Phase 2					
2686+50.00 TO 2700+00.00	29,698	995	0	28,703	
US 169 Phase 3					
4726+00.00 TO 4739+50.00	31,145	3,715	0	27,430	
NORTH DETOUR - REINFORCED SLOPE	6,555				
TOTALS:	194,251	41,100	0	140,041	

0100 ROADWAY

SUMMARY OF DITCH TREATMENT					
ALIGN.	LOCATION		DESCRIPTION	RIP RAP	
	STATION	STATION		TYPE I PLAIN RIPRAP	TYPE I-A FILTER BLANKET
				601(A)	602(C)
	STA	TO STA		TON	SY
US 169	723+85.00	- 724+20.00	LT 18" RIPRAP	34	9
TOTALS				34	9

0100 ROADWAY

SUMMARY OF FENCE				
LOCATION	STATION TO STATION	SIDE	FENCE, STYLE WWF	
			624(A)	LF
US 169				
	703+33.17 - 710+83.55	LT	814	
	709+58.88 - 711+08.88	RT	261	
	713+65.52 - 715+92.78	LT	252	
	713+90.35 - 715+40.35	RT	201	
ADDED 2% FOR GROUND MEASUREMENT			31	
TOTALS			1,558	

0100 ROADWAY

SUMMARY OF NORTH DETOUR - REINFORCED SLOPE				
LOCATION	STATION TO STATION	GEOTEXTILE REINFORCEMENT	GEOGRID REINFORCEMENT	GRANULAR BACKFILL
		326(A) S.Y.	326(B) S.Y.	501(F) CY
North Detour	4734+00.00 - 4738+34.00	4,830	19,000	11,842
TOTALS		4,830	19,000	11,842

0100 ROADWAY

SUMMARY OF DRAINAGE STRUCTURES											
STR. NO.	ALIGNMENT	STATION	DESCRIPTION	DESIGN	STRUCTURAL INSTALLATION		PIPE		18" PREFAB. CULVERT END SECTION, ROUND	36" PREFAB. CULVERT END SECTION, ROUND	STR. NO.
					TRENCH EXCAVATION	STD. BEDDING MATERIAL, CLASS B	18" R.C. PIPE CLASS III	36" R.C. PIPE CLASS III			
					**	*	613(A)	613(A)	613(L)	613(L)	
					CY	CY	LF	LF	EA	EA	
1	US 169	696+79.26	CONST. 18" X 44" LG RCP SD	PCES-4, SPI-4, SPB-1, FHTCP-3	21	12	44	0	2		1
2	US 169	720+13.51	CONST. EX' 36" X 80" LG RCP XD	PCES-4, SPI-4, SPB-1, FHTCP-3	-	137	0	80	0	1	2
TOTALS					21	149	44	80	2	1	TOTALS

** FOR INFORMATION ONLY

0310 TRAFFIC SIGNING AND STRIPING

SUMMARY OF SIGNING						
SIGN NO.	LOCATION		SIGN TYPE	SHEET ALUM. SIGNS	2 1/2" SQUARE TUBE POST	REMARKS
	STATION	OFFSET		850(A) SF	851(C) LF	
US 169						
1	696+60.00	45.00	LT R1-1	5.18	15.00	
2	697+02.00	45.00	LT D-3	-	-	(HWY 169, EW 09 - REMOVE AND RESET)
3	697+67.00	32.00	RT W8-13	9.00	17.00	
4	710+50.00	36.00	RT SP. SIGN NO. 1 (HICKORY CREEK)	15.00	16.00	
5	714+25.00	36.00	LT SP. SIGN NO. 1 (HICKORY CREEK)	15.00	16.00	
6	722+50.00	32.00	LT W8-13	9.00	17.00	
TOTALS				54	81	

0310 TRAFFIC SIGNING AND STRIPING

SUMMARY OF STRIPING		
TYPE		LF
TOTAL WHITE (MULTI-POLYMER)		
4" SOLID		11,092
TOTAL YELLOW (MULTI-POLYMER)		
4" DASH		1,488
856(A) TRAFFIC STRIPE (MULTI-POLYMER) (4" WIDE)	LF	12,580

STORM WATER MANAGEMENT PLAN

ODOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		12	127

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: THE EXTENTS OF IMPROVEMENTS TO US 169 FROM 154' EAST OF SECTION LINE NS 414 FROM THE INTERSECTION SECTION LINE EW009 WITH US 169 TO THE NORTH TO SECTION LINE EW 008 INTERSECTION WITH US 169.

PROJECT DESCRIPTION: GRADING, DRAINAGE, PAVING, STRIPING, CONSTRUCTION TRAFFIC CONTROL AND BRIDGE PLANS FOR THE CONSTRUCTION OF US 169 AND THE BRIDGE OVER HICKORY CREEK.

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

Prior to initiating soil disturbing activities, the Contractor will install all perimeter temporary sediment controls specified. Strip, stockpile and stabilize topsoil. Clear and grub only in necessary areas, preserving as much native vegetation as possible. Install, maintain and/or move temporary sediment items with construction operations as practical. If directed by the Engineer, plant temporary seeding. Replace salvaged topsoil and devices when an acceptable vegetative cover (at least 70%) has been attained. As site conditions warrant, the Contractor may choose to modify the type or arrangement of specified practices to improve their effectiveness as approved by the Engineer. The Contractor will maintain a log of the dates of major soil disturbance activities, and also the dates of installation of erosion control measures.

SOIL TYPE: SILTY SAND AND LEAN CLAY WITH SAND

AREA TO BE DISTURBED: 15.00 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°53'37" N ; 95°37'44" W

NAME OF RECEIVING WATERS: HICKORY CREEK

SENSITIVE WATERS OR WATERSHEDS: YES NO

303(d) IMPAIRED WATERS: YES NO

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

SOIL STABILIZATION PRACTICES:

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

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

STRUCTURAL PRACTICES:

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

OFFSITE VEHICLE TRACKING:

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

NOTES:

NO DISTURBED AREA TO ONE PROJECT OUTFALL EXCEEDS 5 ACRES.

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:

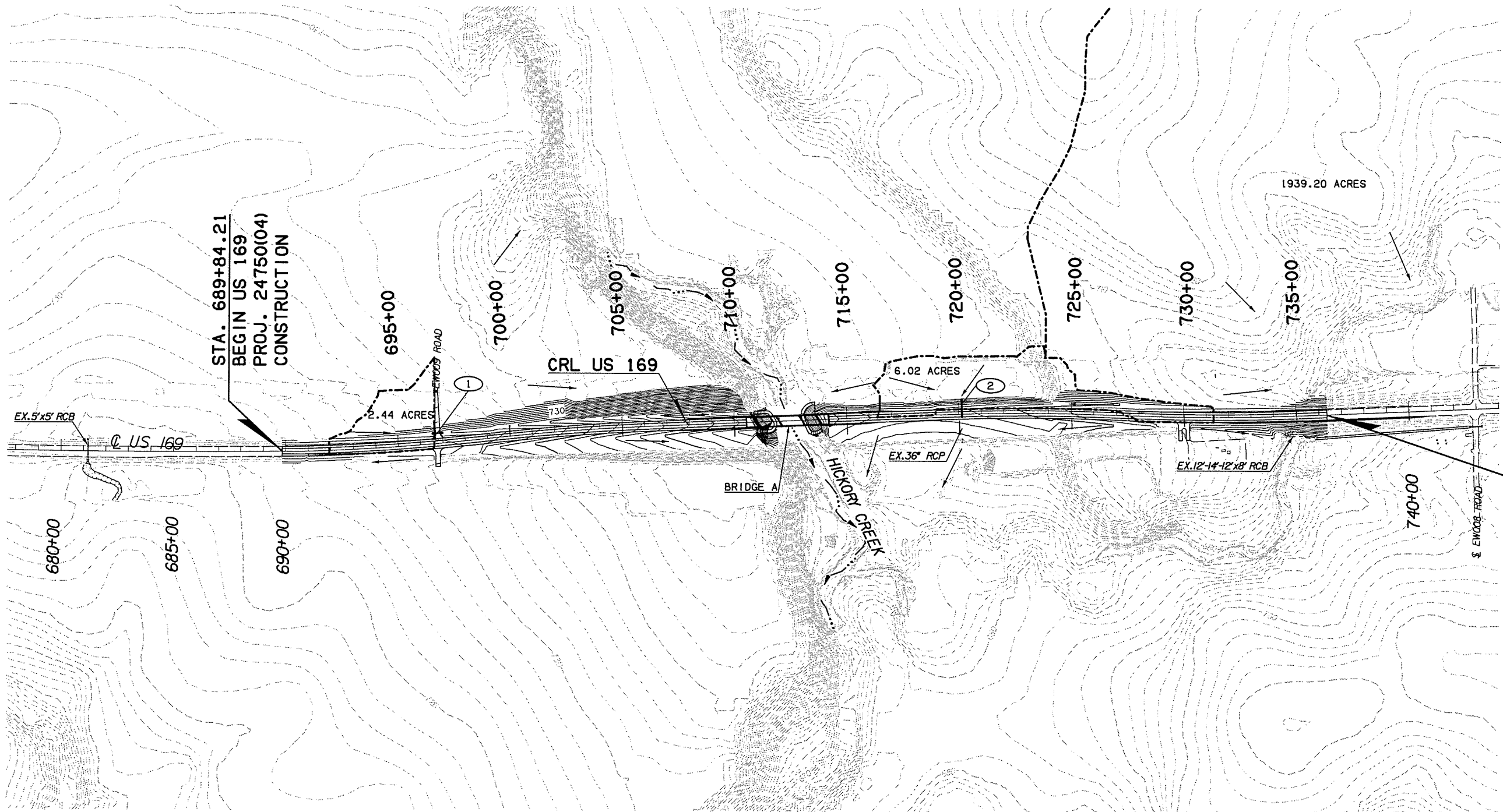
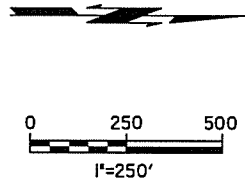
- 103.05 BONDING REQUIREMENTS
- 104.10 FINAL CLEANING UP
- 104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13 ENVIRONMENTAL PROTECTION
- 106.08 STORAGE AND HANDLING OF MATERIAL
- 107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20 STORM WATER MANAGEMENT
- 220 MANAGEMENT OF EROSION, SEDIMENTATION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

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		STORM WATER MANAGEMENT PLAN	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 12

DIST. DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		13	127



STA. 689+84.21
BEGIN US 169
PROJ. 24750(04)
CONSTRUCTION

STA. 736+36.76
END US 169
PROJ. 24750(04)
CONSTRUCTION

DRAINAGE STRUCTURE DESIGN RECORD

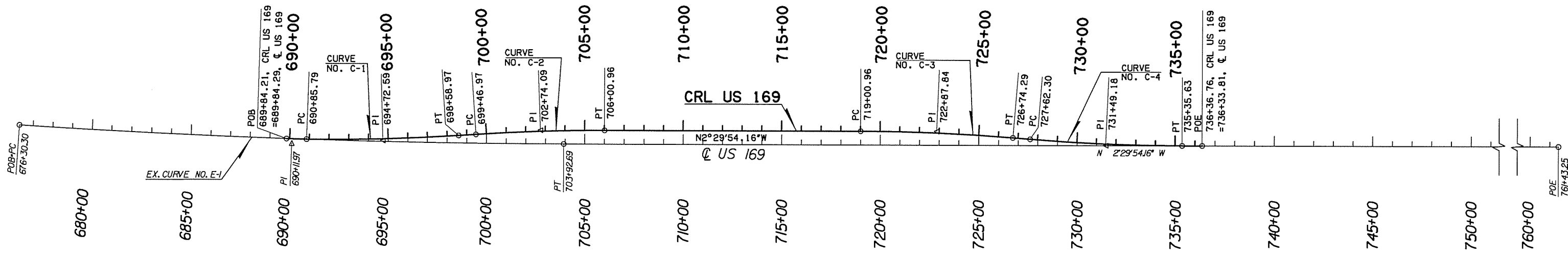
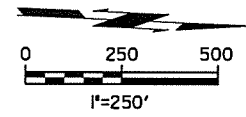
STR. NO.	DESIGN YEAR	ALIGNMENT	STATION	DESCRIPTION	DRAINAGE AREA	ANTICIPATED LAND USE	C, RUNOFF COEFFICIENT WEIGHTED (ANTICIPATED)		AVG. SLOPE OF WATERSHED		LENGTH OF OVERLAND FLOW		SLOPE OF OVERLAND FLOW		LENGTH OF CHANNEL FLOW		SLOPE OF CHANNEL		T _c , TIME OF CONCENTRATION		INTENSITY OF DESIGN YEAR RAINFALL		DESIGN YEAR DISCHARGE		T _w , DESIGN TAILWATER		F, INLET		F, OUTLET		STRUCTURE SLOPE		MAX ALLOWABLE HEADWATER		FLOW VELOCITY		TYPE OF HYDRAULIC CONTROL	COMMENTS
							%	ACRE	%	FT	%	FT	%	MIN	10	50	10	50	FT	ELEV	ELEV	FT/FT	ELEV	10	50	FT/S												
1	50	US 169	696+79.26	CONST 18" x 44' LG RCP SD	2.44	80.87% PASTURE, 19.13% PAVED	0.48	0.58	577.00	0.94	559.00	0.20	36.30	3.51	4.63	4.10	5.40	724.60	724.58	724.29	0.007	727.50	4.78	5.11	OUTLET													
2	50	US 169	720+13.51	CONST EXT. 36" x 80' LG RCP XD	6.02	91.38% PASTURE, 8.62% PAVED	0.50	1.64	64.00	6.95	1200.00	1.36	15.80	5.28	6.96	15.50	20.60	683.92	685.31	683.10	0.012	697.75	8.17	8.84	OUTLET													

LEGEND

- DRAINAGE AREA BOUNDARY
- XX.XX ACRES DRAINAGE AREA
- (XXX) DRAINAGE STRUCTURE NUMBER

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		DRAINAGE MAP	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 13

001	DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
6	OKLA	247501041		14	127	

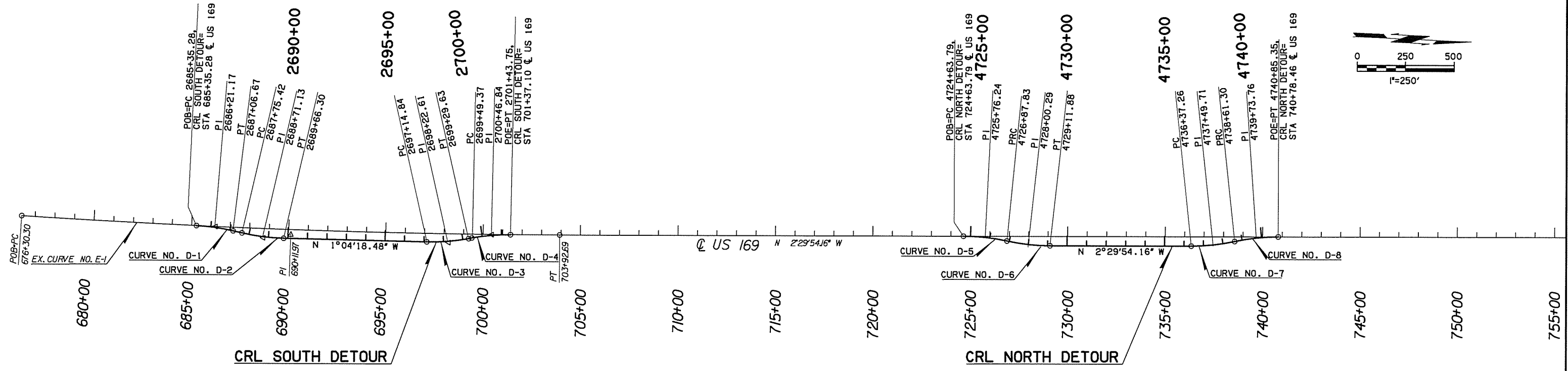


C US 169												
CURVE NO.	STATION	CARDINAL POINTS		DELTA	DEGREE	CURVE DATA				SUPER ELEVATION		
		NORTHING (FEET)	EASTING (FEET)			RADIUS (FEET)	TANGENT (FEET)	ARC LENGTH (FEET)	EXTERNAL (FEET)	V (MPH)	E (FT/FT)	S (FT/FT)
E-1	PC 676+30.30	694201.1352	2661902.4090	3°39'35.55" LT	0°07'56.96"	43245.690	1381.669	2762.399	22.066	NA	NA	NA
	PI 690+11.97	695582.5206	2661930.4163									
	PT 703+92.69	696962.8765	2661870.1878									
	POE 761+43.25	702707.9645	2661619.5148									

CRL US 169												
CURVE NO.	STATION	CARDINAL POINTS		DELTA	DEGREE	CURVE DATA				SUPER ELEVATION		
		NORTHING (FEET)	EASTING (FEET)			RADIUS (FEET)	TANGENT (FEET)	ARC LENGTH (FEET)	EXTERNAL (FEET)	V (MPH)	E (FT/FT)	S (FT/FT)
	POB 689+84.21	695555.0641	2661908.6605									
	PC 690+85.79	695656.6368	2661907.4200									
C-1	PI 694+72.59	696043.2518	2661895.4032	4°39'29.64" LT	0°36'08.93"	9510.000	386.802	773.177	7.863	65	8%	-2.00%
	PT 698+58.97	696427.6138	2661852.0283									
	PC 699+46.97	696515.0588	2661842.1602									
C-2	PI 702+74.09	696840.1199	2661805.4774	3°56'24.57" RT	0°36'08.93"	9510.000	327.124	653.991	5.625	65	8%	2.00%
	PT 706+00.96	697166.9332	2661791.2177									
	PC 719+00.96	698465.6975	2661734.5492									
C-3	PI 722+87.84	698852.2114	2661717.6847	4°39'33.10" RT	0°36'08.93"	9510.000	386.882	773.337	7.866	65	8%	2.00%
	PT 726+74.29	699238.8180	2661732.2718									
	PC 727+62.30	699326.7566	2661735.5898									
C-4	PI 731+49.18	699713.3632	2661750.1770	4°39'33.10" LT	0°36'08.93"	9510.000	386.882	773.337	7.866	65	8%	-2.00%
	PT 735+35.63	700099.8771	2661733.3124									
	POE 736+36.76	700200.9105	2661728.9041									

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		GEOMETRIC DATA (1)	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 14

FOOT DIVISION	STATE	J/V PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		15	127



CRL SOUTH DETOUR

CURVE NO.	STATION	CARDINAL POINTS		DELTA	DEGREE	CURVE DATA				SUPER ELEVATION		
		NORTHING (FEET)	EASTING (FEET)			RADIUS (FEET)	TANGENT (FEET)	ARC LENGTH (FEET)	EXTERNAL (FEET)	V (MPH)	E (FT/FT)	S (FT/FT)
D-1	PC 2685+35.28	695106.0593	2661911.2926	9°25'34.55" RT	5°30'00.00"	1041.741	85.887	171.387	3.535	45	NA	NA
	PI 2686+21.17	695191.9464	2661911.2926									
	PT 2687+06.67	695276.6738	2661925.3590									
D-2	PC 2687+75.42	695344.5015	2661936.6198	10°29'53.03" LT	5°30'00.00"	1041.741	95.705	190.874	4.387	45	NA	NA
	PI 2688+71.13	695438.9141	2661952.2941									
	PT 2689+66.30	695534.6022	2661950.5039									
D-3	PC 2697+14.84	696283.0109	2661936.5023	11°48'48.53" LT	5°30'00.03"	1041.740	107.777	214.790	5.560	45	NA	NA
	PI 2698+22.61	696390.7693	2661934.4863									
	PT 2699+29.63	696495.8325	2661910.4520									
D-4	PC 2699+49.37	696515.0785	2661906.0493	10°41'26.49" RT	5°30'00.03"	1041.740	97.471	194.376	4.550	45	NA	NA
	PI 2700+46.84	696610.0950	2661884.3133									
	PT 2701+43.75	696707.4944	2661880.5808									

CRL NORTH DETOUR

CURVE NO.	STATION	CARDINAL POINTS		DELTA	DEGREE	CURVE DATA				SUPER ELEVATION		
		NORTHING (FEET)	EASTING (FEET)			RADIUS (FEET)	TANGENT (FEET)	ARC LENGTH (FEET)	EXTERNAL (FEET)	V (MPH)	E (FT/FT)	S (FT/FT)
D-5	PC 4724+63.79	699031.9981	2661779.9067	12°19'21.01" RT	5°30'00.00"	1041.741	112.457	224.046	6.052	45	NA	NA
	PI 4725+76.24	699144.3478	2661775.0046									
	PRC 4726+87.83	699255.1553	2661794.1924									
D-6	PC 4726+87.83	699255.1570	2661794.1927	12°19'21.01" LT	5°30'00.00"	1041.741	112.457	224.046	6.052	45	NA	NA
	PI 4728+00.29	699365.9645	2661813.3806									
	PT 4729+11.88	699478.3141	2661808.4785									
D-7	PC 4736+37.26	700203.0028	2661776.8584	12°19'21.18" LT	5°30'00.00"	1041.741	112.457	224.046	6.052	45	NA	NA
	PI 4737+49.71	700315.3529	2661771.9563									
	PRC 4738+61.30	700424.0685	2661743.1899									
D-8	PC 4738+61.30	700424.0685	2661743.1899	12°19'21.18" RT	5°30'00.00"	1041.741	112.457	224.046	6.052	45	NA	NA
	PI 4739+73.76	700532.7840	2661714.4236									
	PT 4740+85.35	700645.1341	2661709.5214									

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		GEOMETRIC DATA (2)	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 15

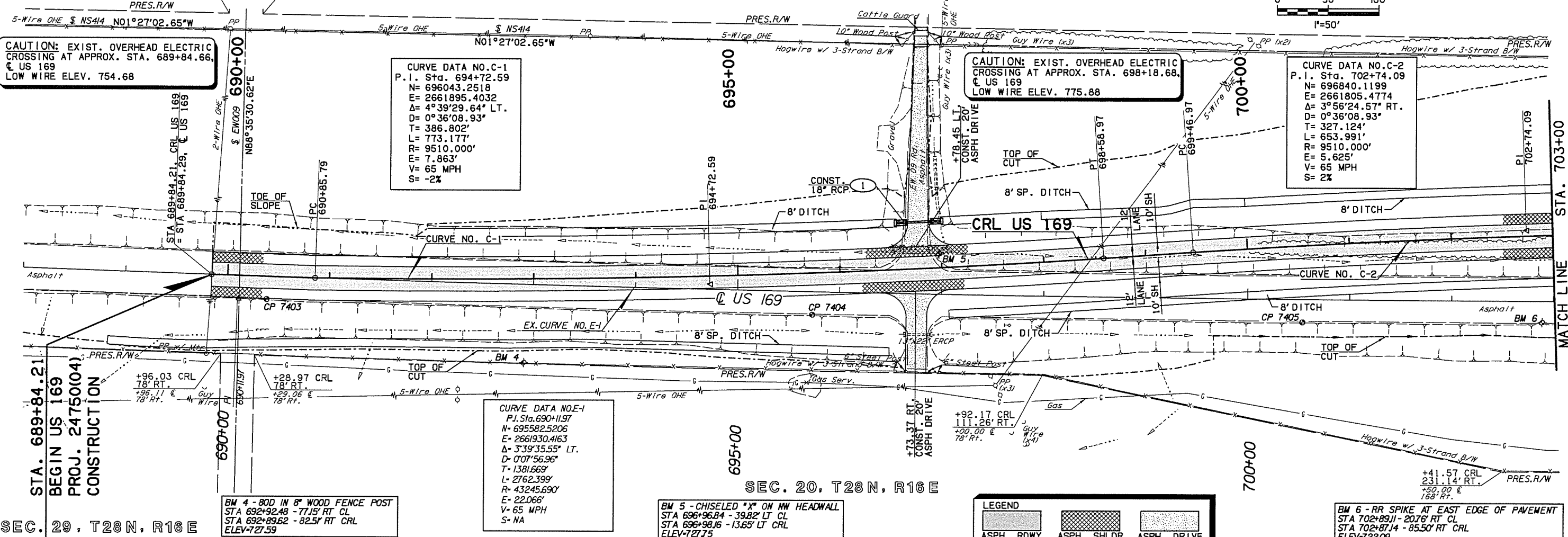
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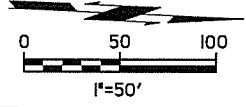
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SEC. 30, T28N, R16E

SEC. 19, T28N, R16E

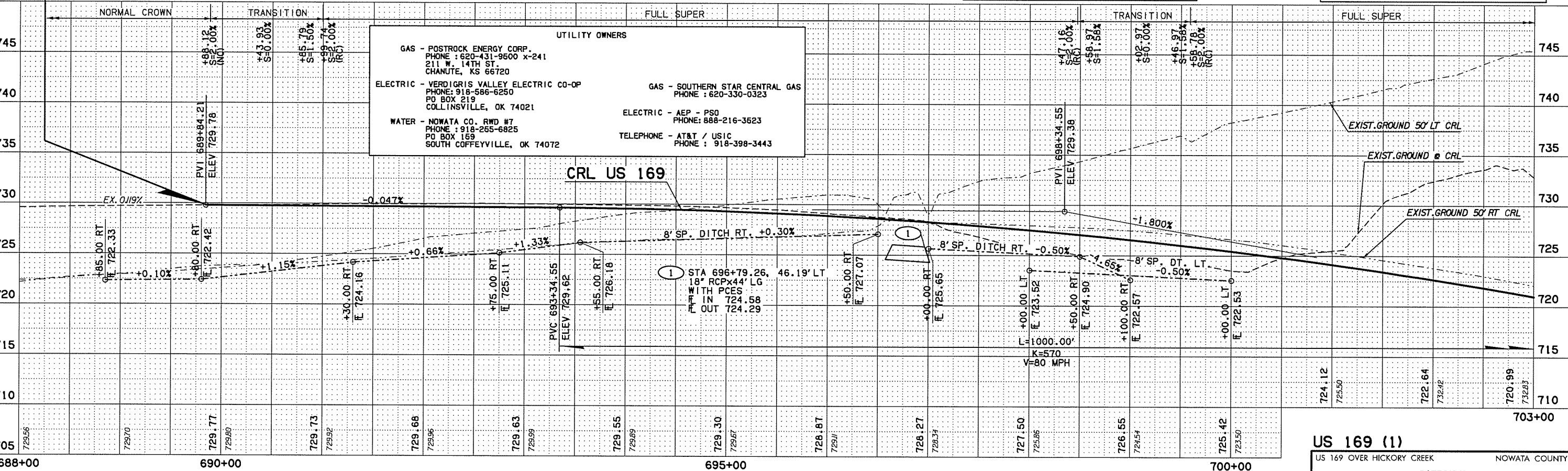


PROJECT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		16	127



SEC. 29, T28N, R16E

SEC. 20, T28N, R16E



688+00 690+00 695+00 700+00 703+00

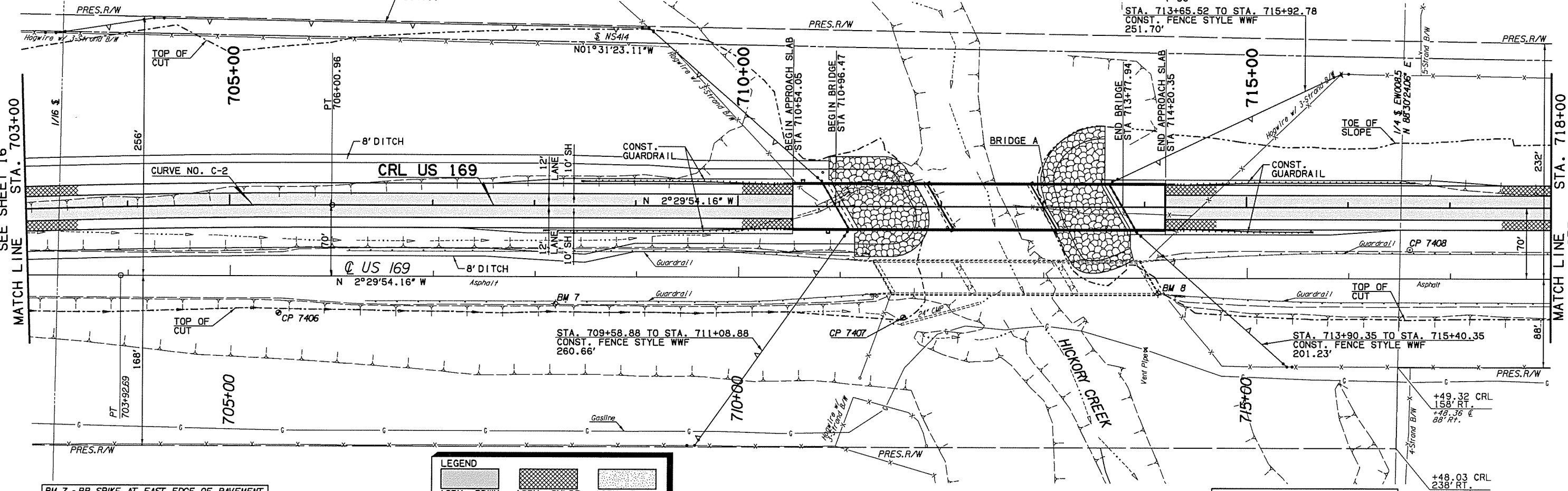
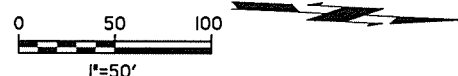
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UNIT	DIVISION	STATE	S/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)			17	127

SEC. 19, T28N, R16E



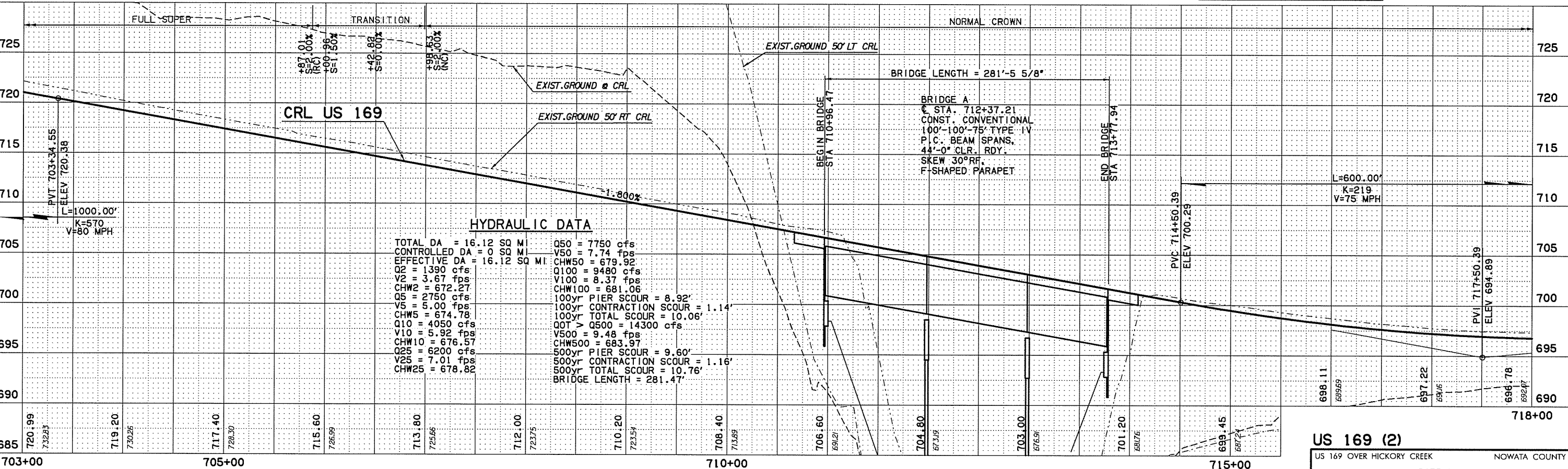
LEGEND

ASPH. RDWY.	ASPH. SHLDR.	ASPH. DRIVE

BM 7 - RR SPIKE AT EAST EDGE OF PAVEMENT
 STA 708+20.25 - 27.07' RT CL
 STA 708+21.20 - 97.07' RT CRL
 ELEV=711.90

BM 8 - CHISELED *X* ON NE HUBGUARD
 STA 714+12.60 - 15.77' RT CL
 STA 714+13.56 - 85.77' RT CRL
 ELEV=702.33

SEC. 20, T28N, R16E



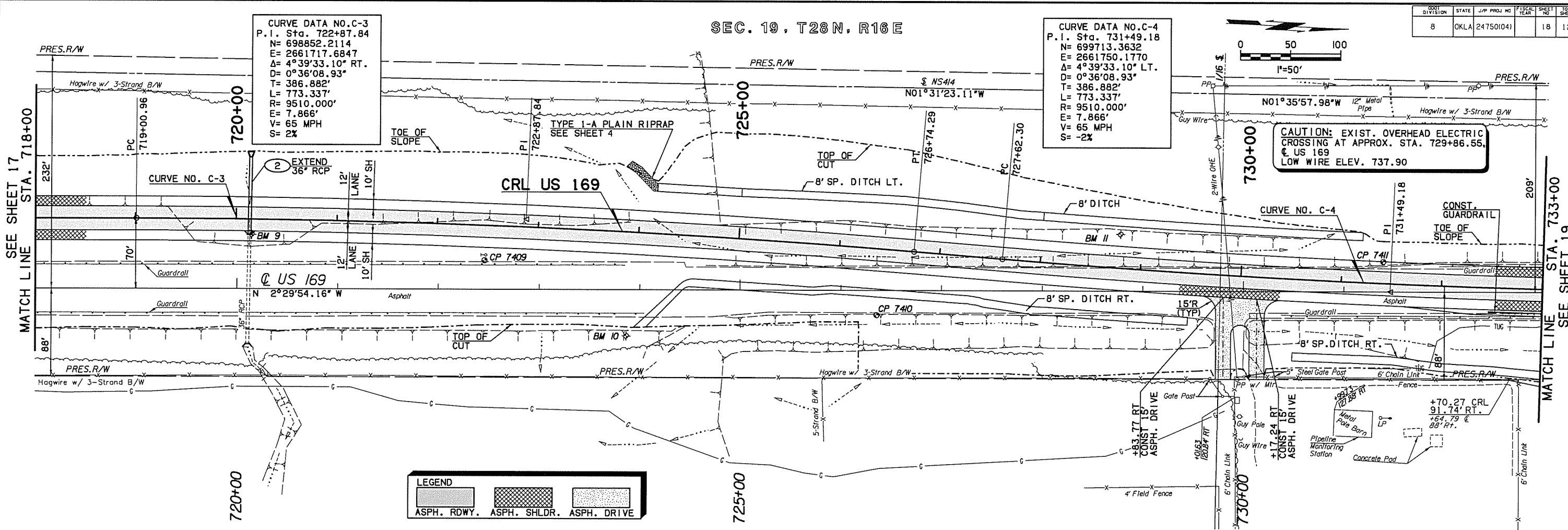
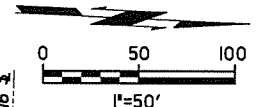
HYDRAULIC DATA

TOTAL DA = 16.12 SQ MI	Q50 = 7750 cfs
CONTROLLED DA = 0 SQ MI	V50 = 7.74 fps
EFFECTIVE DA = 16.12 SQ MI	CHW50 = 679.92
Q2 = 1390 cfs	Q100 = 9480 cfs
V2 = 3.67 fps	V100 = 8.37 fps
CHW2 = 672.27	CHW100 = 681.06
Q5 = 2750 cfs	100yr PIER SCOUR = 8.92'
V5 = 5.00 fps	100yr CONTRACTION SCOUR = 1.14'
CHW5 = 674.78	100yr TOTAL SCOUR = 10.06'
Q10 = 4050 cfs	QOT > Q500 = 14300 cfs
V10 = 5.92 fps	V500 = 9.48 fps
CHW10 = 676.57	CHW500 = 683.97
Q25 = 6200 cfs	500yr PIER SCOUR = 9.60'
V25 = 7.01 fps	500yr CONTRACTION SCOUR = 1.16'
CHW25 = 678.82	500yr TOTAL SCOUR = 10.76'
	BRIDGE LENGTH = 281.47'

SEC. 19, T28N, R16E

SEC. 20, T28N, R16E

0001	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		18	127



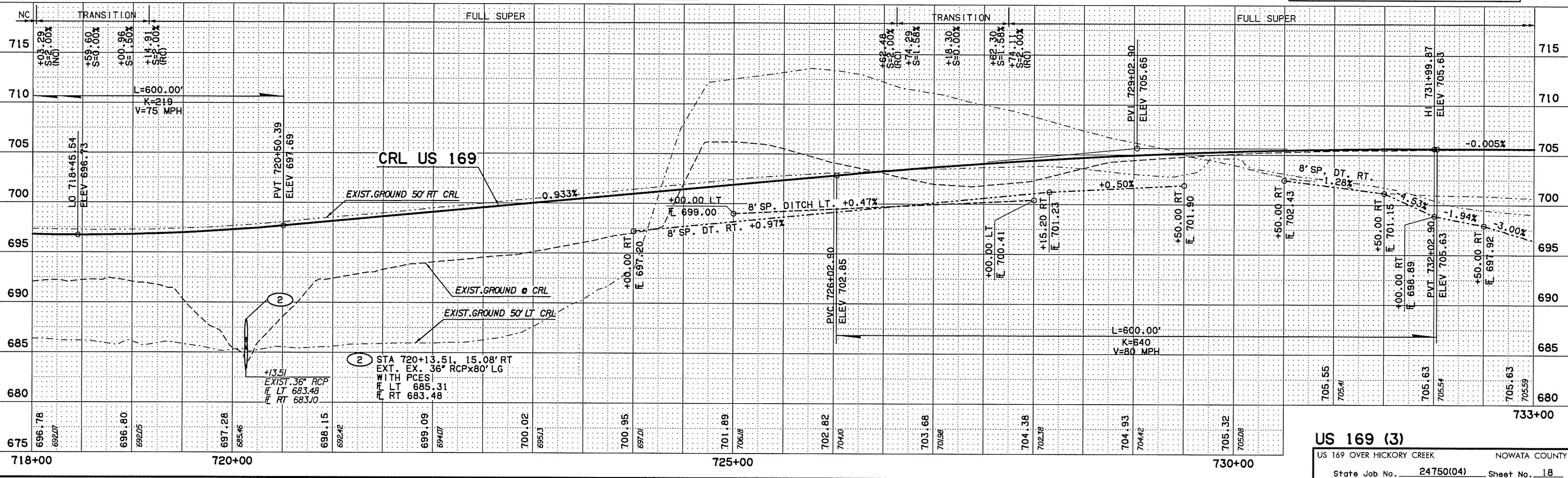
LEGEND

- ASPH. ROWY.
- ASPH. SHLDR.
- ASPH. DRIVE

BM 9 - CHISELED "X" ON W HEADWALL
 STA 720+1471 - 5403' LT CL
 STA 720+1586 - 1527' RT CRL
 ELEV-688.21

BM 10 - 80D IN 8" REDBUD TREE
 STA 723+86.90 - 46.46' RT CL
 STA 723+93.46 - 103.85' RT CRL
 ELEV-696.21

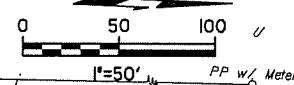
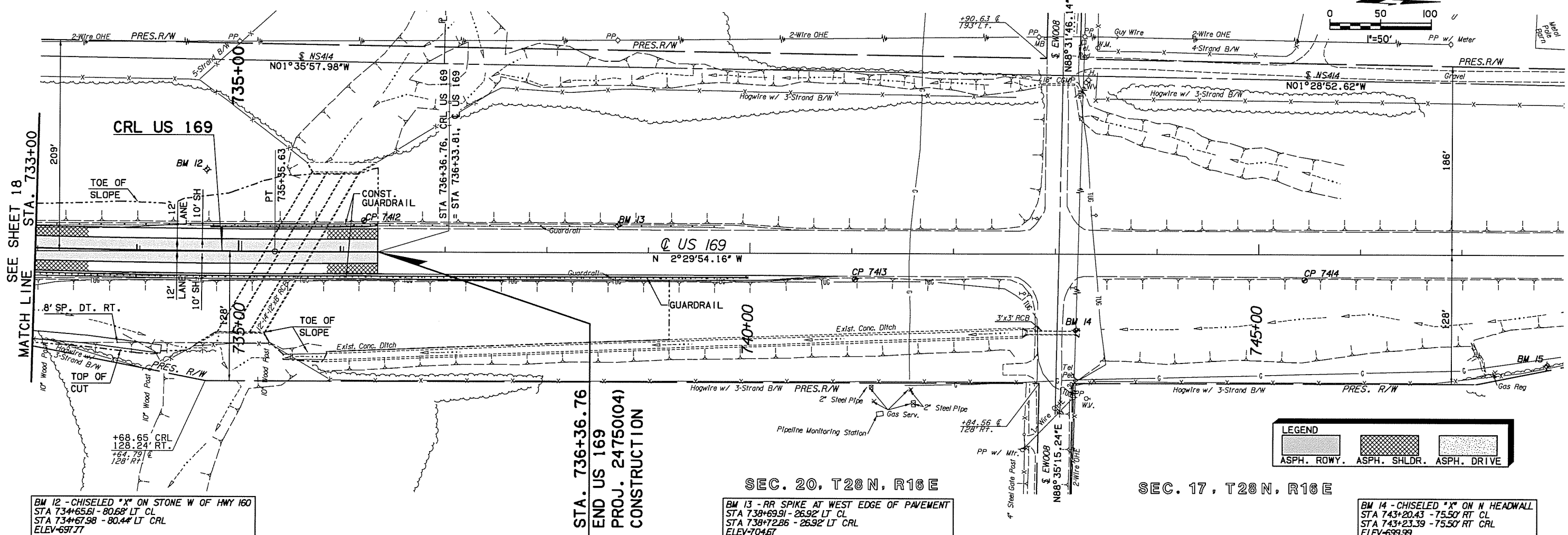
BM 11 - CHISELED "X" ON LIMESTONE W OF HWY 160
 STA 728+7736 - 56.49' LT CL
 STA 728+7785 - 33.84' LT CRL
 ELEV-707.08



SEC. 19, T28N, R16E

SEC. 18, T28N, R16E

0001	DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)			19	127



BM 12 - CHISELED "X" ON STONE W OF HWY 160
 STA 734+65.61 - 80.68' LT CL
 STA 734+67.98 - 80.44' LT CRL
 ELEV-697.77

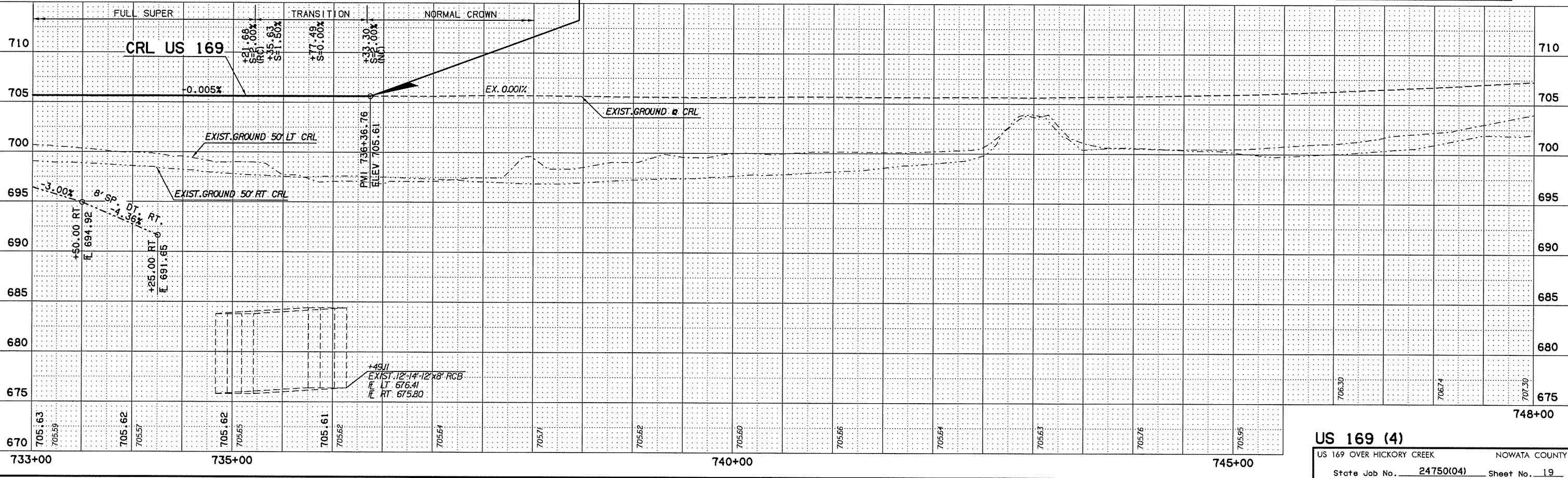
STA. 736+36.76
 END US 169
 PROJ. 24750(04)
 CONSTRUCTION

SEC. 20, T28N, R16E
 BM 13 - RR SPIKE AT WEST EDGE OF PAVEMENT
 STA 738+69.91 - 26.92' LT CL
 STA 738+72.86 - 26.92' LT CRL
 ELEV-704.67

SEC. 17, T28N, R16E
 BM 14 - CHISELED "X" ON N HEADWALL
 STA 743+20.43 - 75.50' RT CL
 STA 743+23.39 - 75.50' RT CRL
 ELEV-699.99

LEGEND

- ASPH. ROWY.
- ASPH. SHLDR.
- ASPH. DRIVE



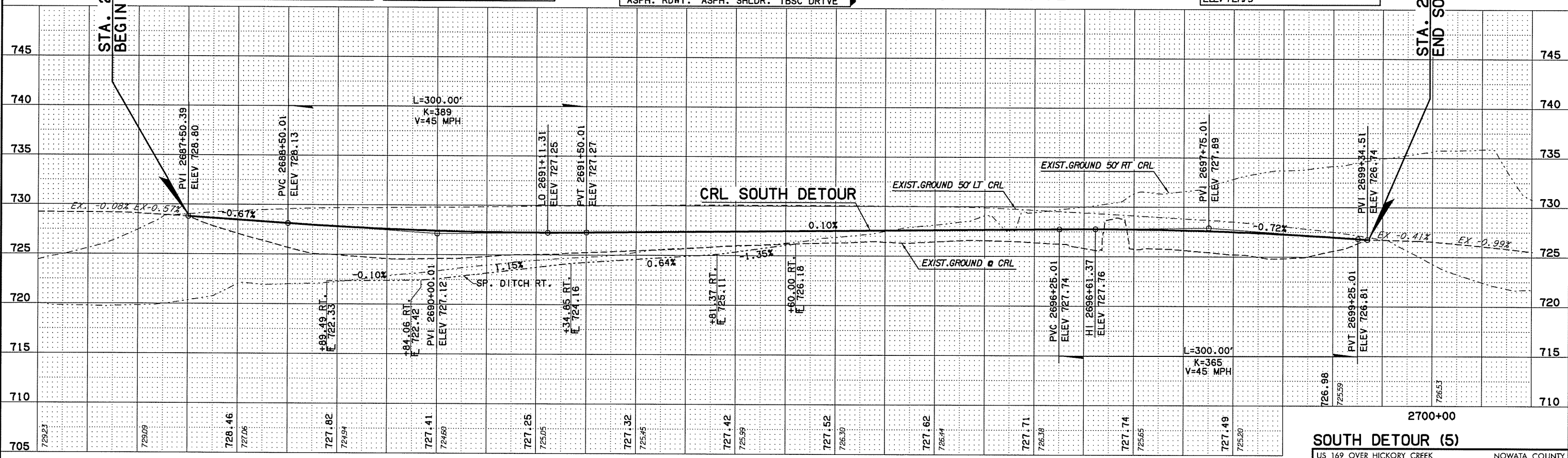
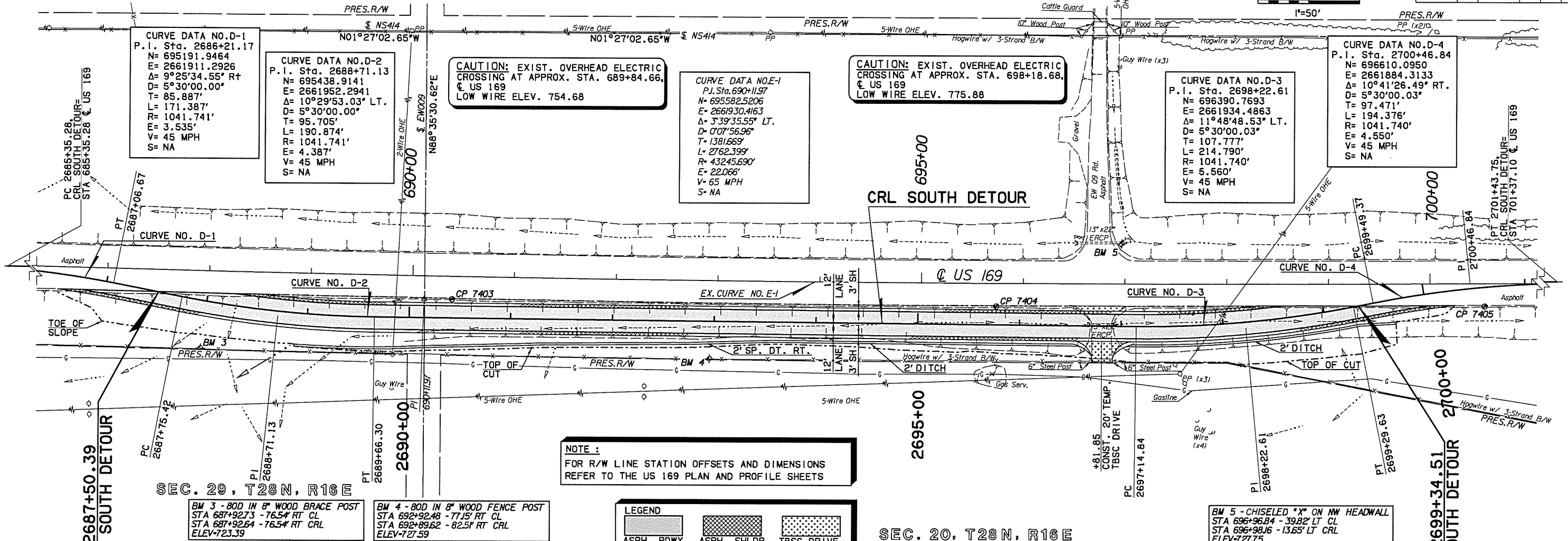
US 169 (4)
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 State Job No. 24750(04) Sheet No. 19

SEC. 30, T28N, R16E

SEC. 19, T28N, R16E



DIST.	STATE	JUR. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA	24750(04)		20	127



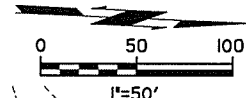
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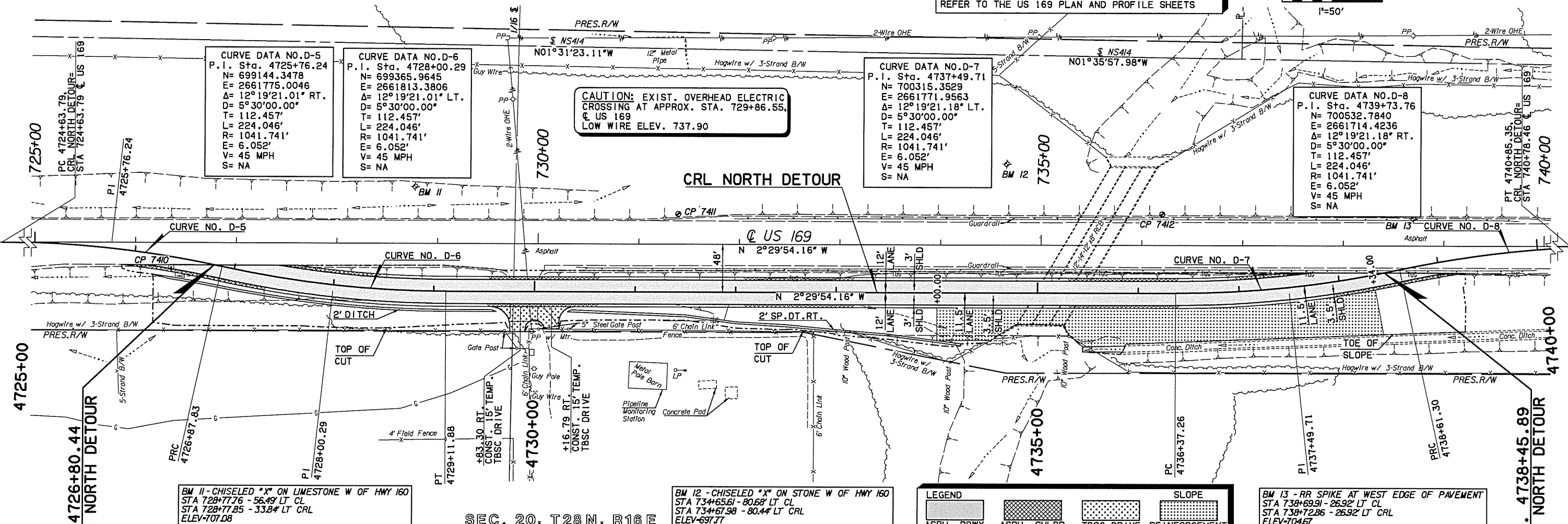
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SEC. 19, T28N, R16E

NOTE: FOR R/W LINE STATION OFFSETS AND DIMENSIONS REFER TO THE US 169 PLAN AND PROFILE SHEETS



DISTRICT	STATE	JOB PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		21	127



BM II - CHISELED *X* ON LIMESTONE W OF HWY 160
 STA 728+77.76 - 56.49' LT CL
 STA 728+77.85 - 33.84' LT CRL
 ELEV=707.08

BM 12 - CHISELED *X* ON STONE W OF HWY 160
 STA 734+65.61 - 80.68' LT CL
 STA 734+67.98 - 80.44' LT CRL
 ELEV=697.77

LEGEND

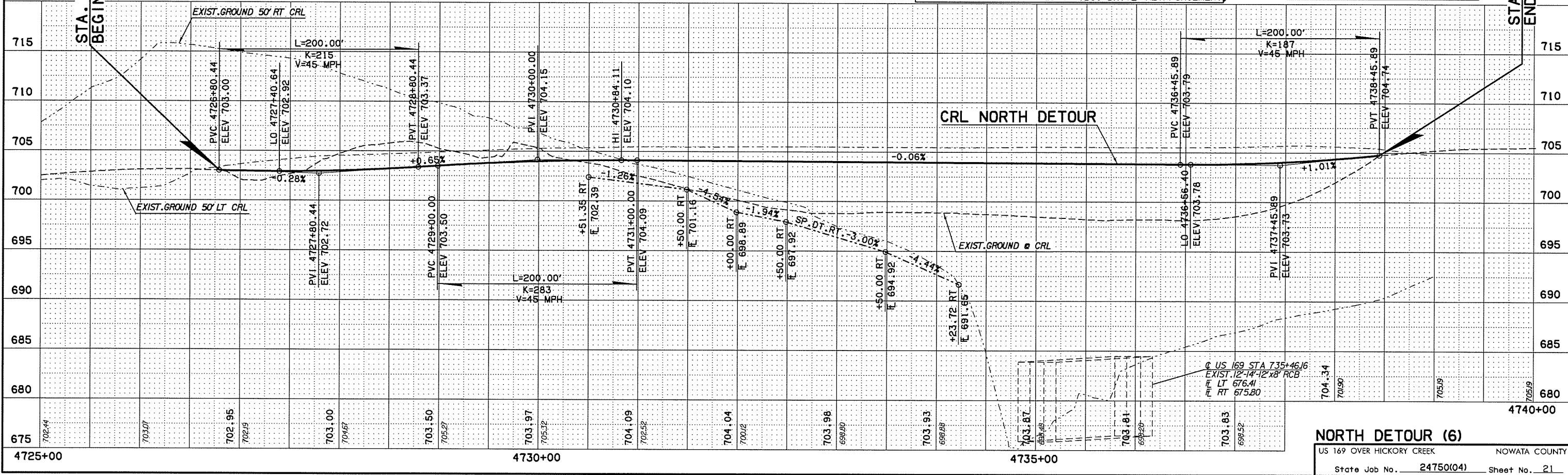
- ASPH. RDWY.
- ASPH. SHLDR.
- TBSC DRIVE
- REINFORCEMENT

SLOPE

- 0.28%
- 0.65%
- 0.06%
- 1.26%
- 1.94%
- 3.00%
- 4.44%
- +1.01%

BM 13 - RR SPIKE AT WEST EDGE OF PAVEMENT
 STA 739+69.91 - 26.92' LT CL
 STA 739+72.86 - 26.92' LT CRL
 ELEV=704.67

SEC. 20, T28N, R16E

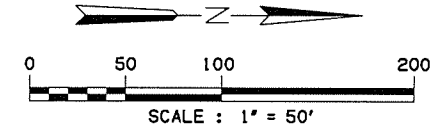
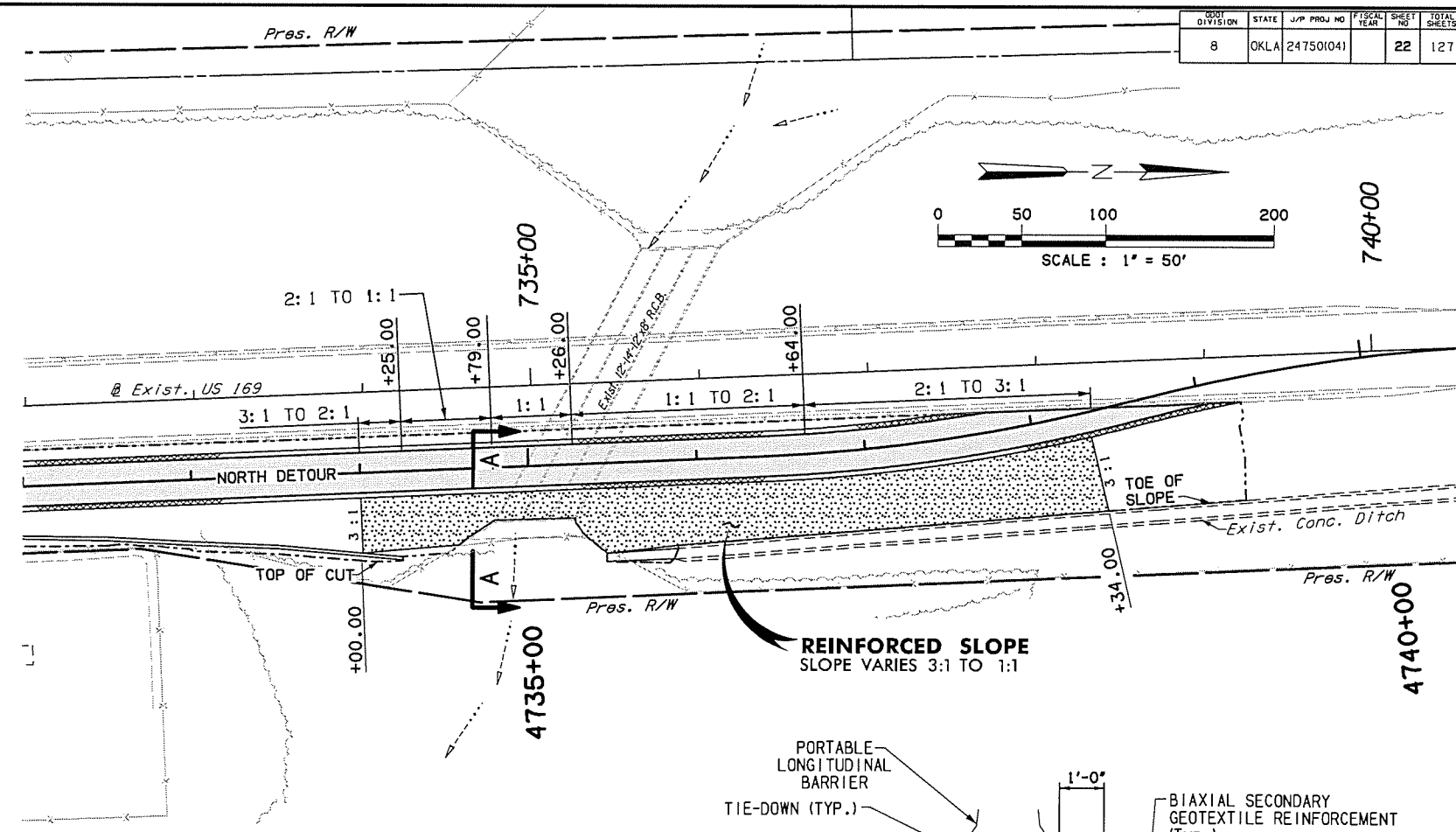
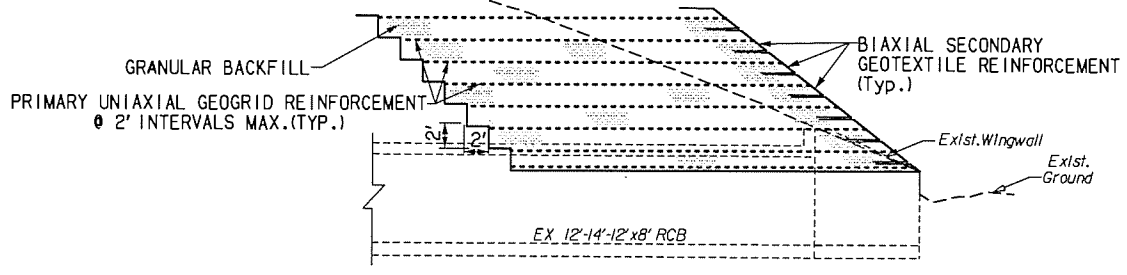


7/12/2016

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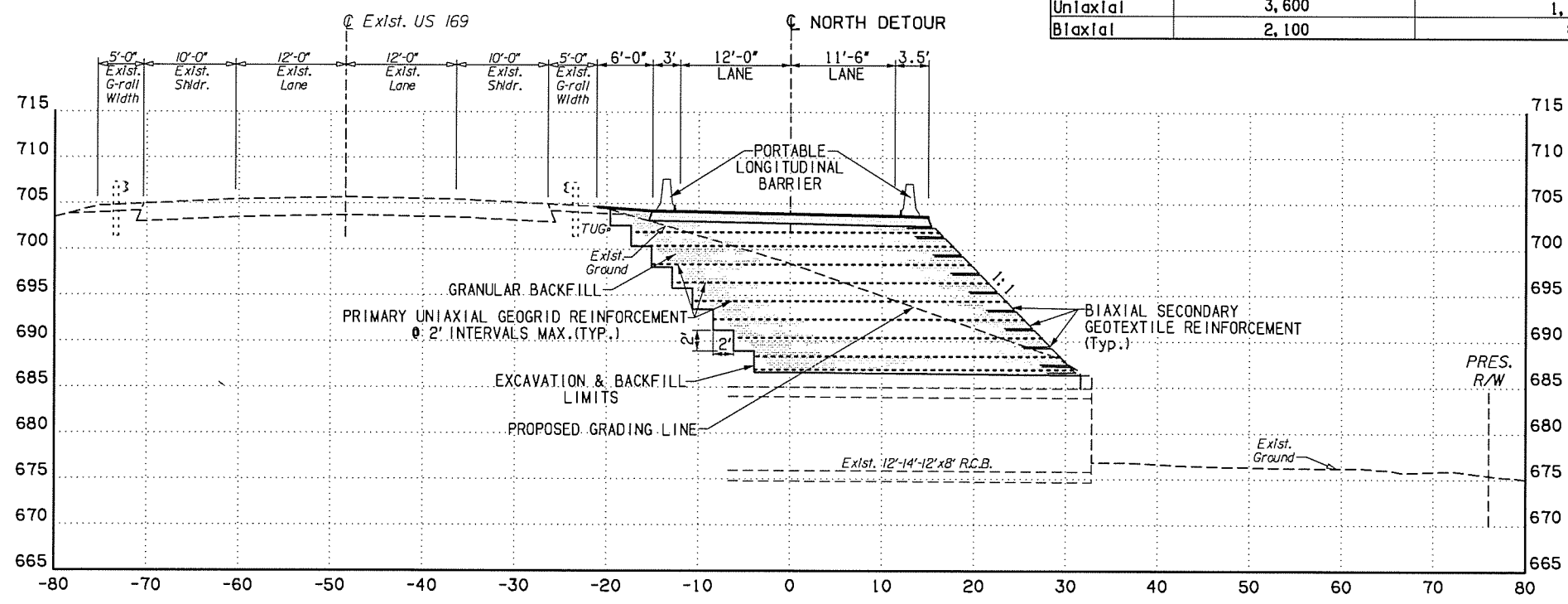
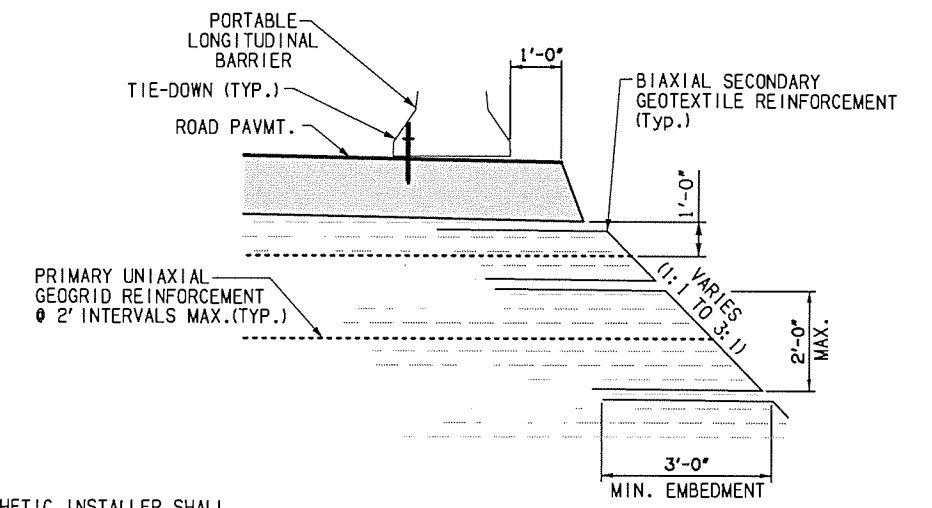
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DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		22	127



Geogrid and Geotextile Reinforcement Shall Meet The Following Strength Properties:

Reinforcement Type	Ultimate Strength (Lb/Ft)	Long Term Design Strength (lb/ft)
Uniaxial	3,600	1,835
Biaxial	2,100	594



NOTES:

- THE GEOSYNTHETIC INSTALLER SHALL HAVE DOCUMENTED EXPERIENCE OF AT LEAST FIVE PROJECTS OF SIMILAR CONSTRUCTION AND SCOPE. THE CONTRACTOR SHALL PROVIDE AN ON-SITE SUPERVISOR WITH A MINIMUM OF THREE YEARS EXPERIENCE INSTALLING SIMILAR REINFORCED EMBANKMENTS. WRITTEN VERIFICATION OF QUALIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO CONSTRUCTION OF THE REINFORCED SLOPE.
- PRIMARY REINFORCEMENT GEOSYNTHETIC (GEOGRID) SHALL BE LAID AT THE PROPER ELEVATION AND ORIENTATION AS SHOWN ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE ENGINEER. CORRECT ORIENTATION OF THE GEOSYNTHETIC SHALL BE VERIFIED BY THE ENGINEER.
- GRANULAR BACKFILL SHALL BE PLACED IN 8 INCH LIFTS AND COMPACTED ACCORDING TO ODOT SPECIFICATIONS.
- IF CONTRACTOR CHOOSES AN ALTERNATE DESIGN FOR THE REINFORCED SLOPE, IT SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OKLAHOMA. THE CONTRACTOR SHALL SUBMIT TO ODOT SIGNED AND SEALED CALCULATIONS AND DRAWINGS IN ACCORDANCE WITH SUBSECTION 105.02. ENSURE THE ENGINEER APPROVES THE ALTERNATE DESIGN PRIOR TO USE.
- TO MODIFY REINFORCED SLOPE TO PROPOSED GRADING LINE (CUTTING GEOGRID) AND ADD FILL AND TOPSOIL UP TO PROPOSED GRADING LINE. THIS AREA WILL BE SODDED.
- THE COST OF CUTTING THE GEOGRID REINFORCEMENT SHALL BE INCLUDED IN THE PRICE BID PER S.Y. OF GEOGRID REINFORCEMENT.

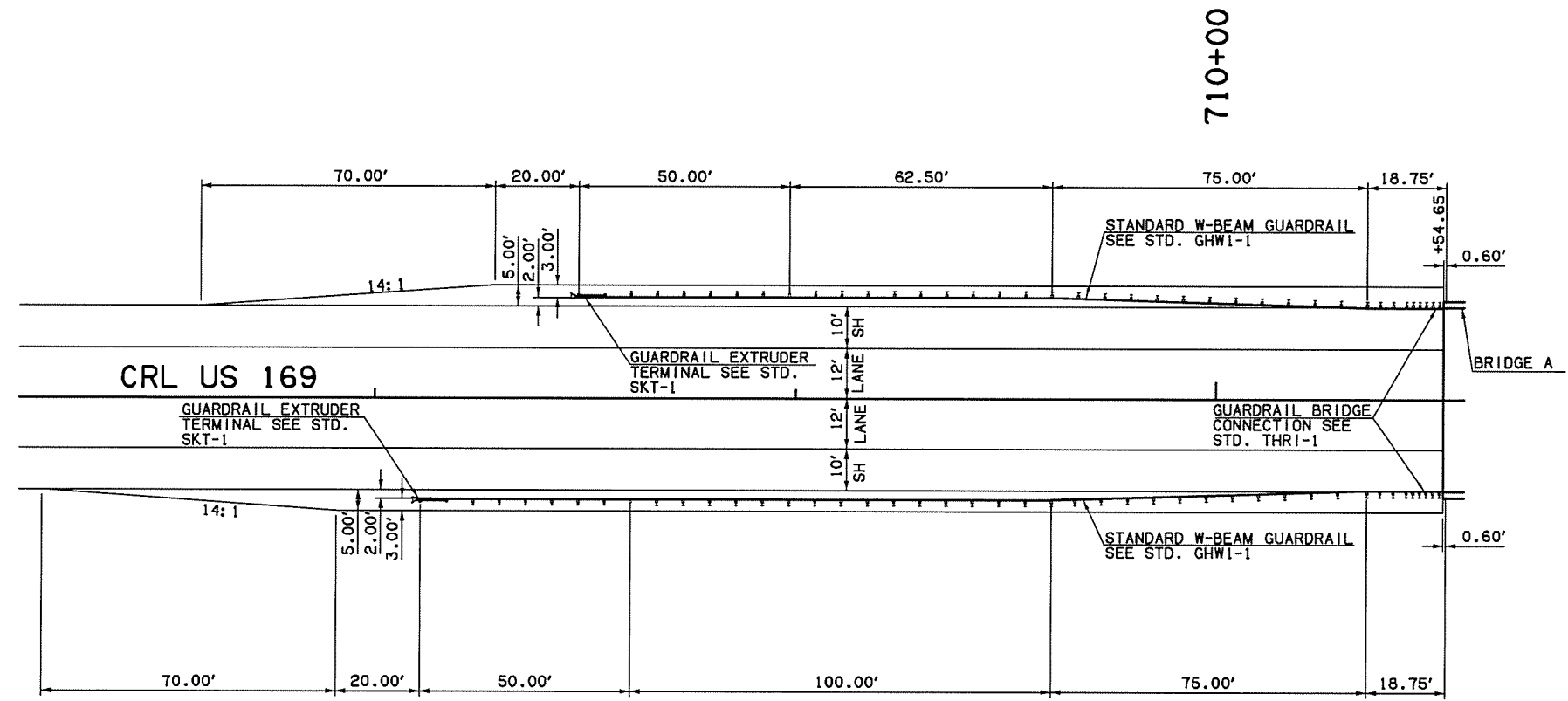
Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		NORTH DETOUR REINFORCED SLOPE State Job No. 24750(04) Sheet No. 22	
Checked			
Approved			
Squad			

7/12/2016

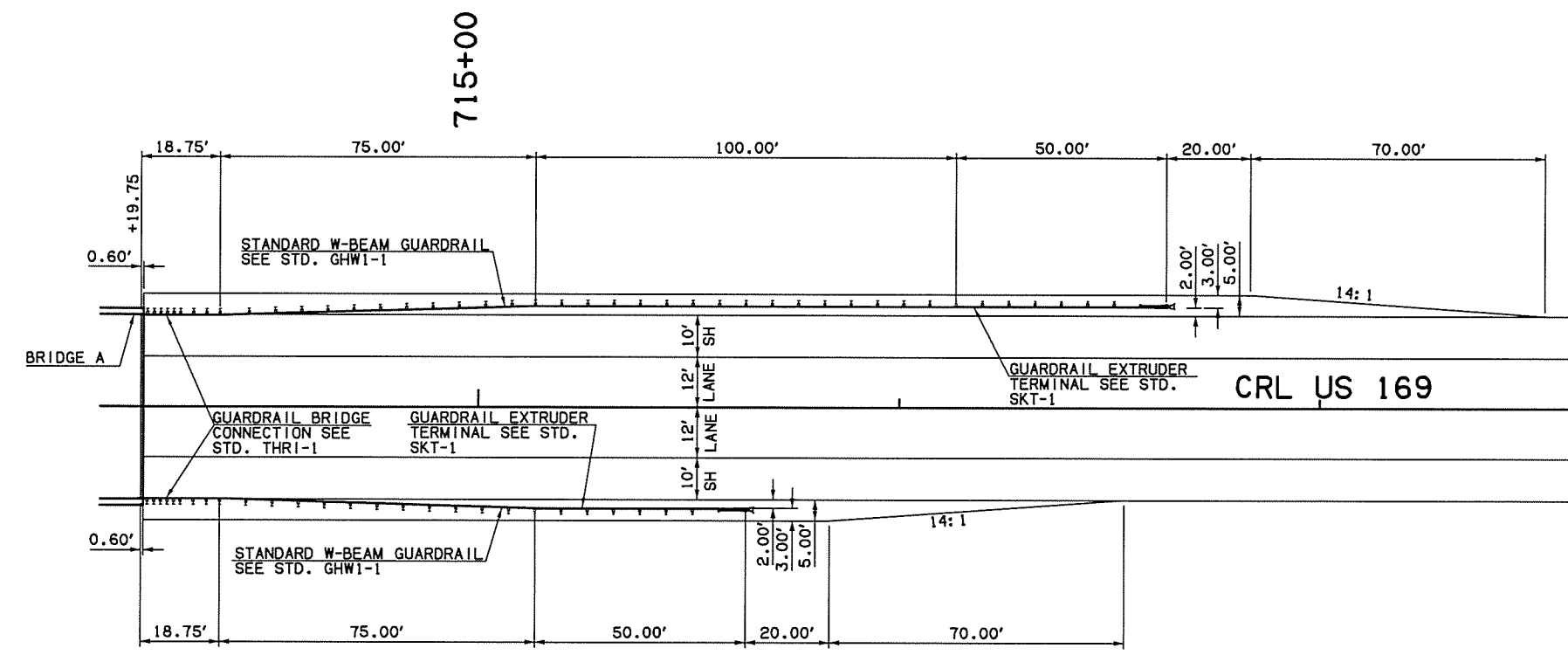
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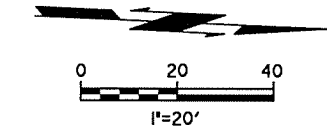
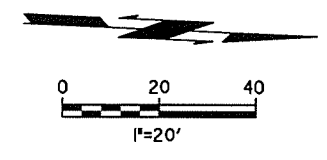
COOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		23	127



PLAN SOUTH



PLAN NORTH



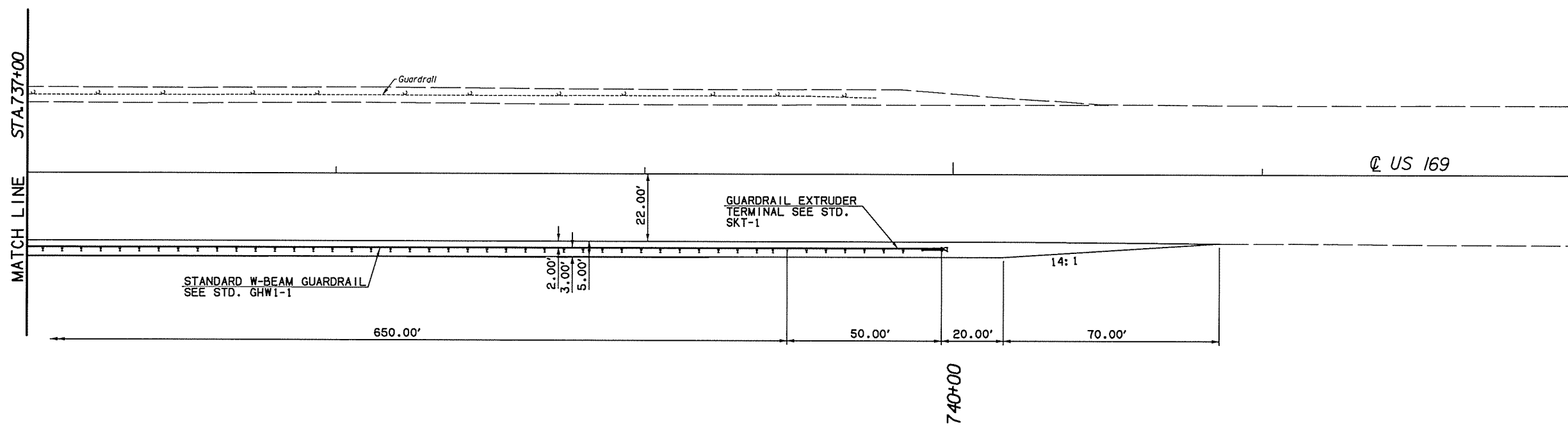
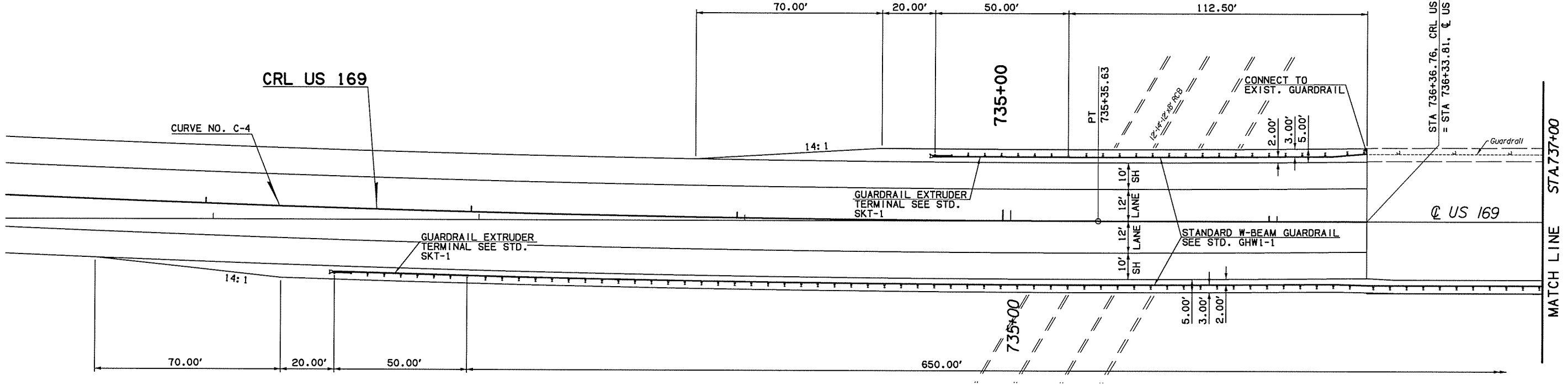
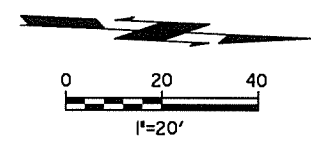
Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		GUARDRAIL LAYOUT (1)	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 23

7/12/2016

7:38:57 AM

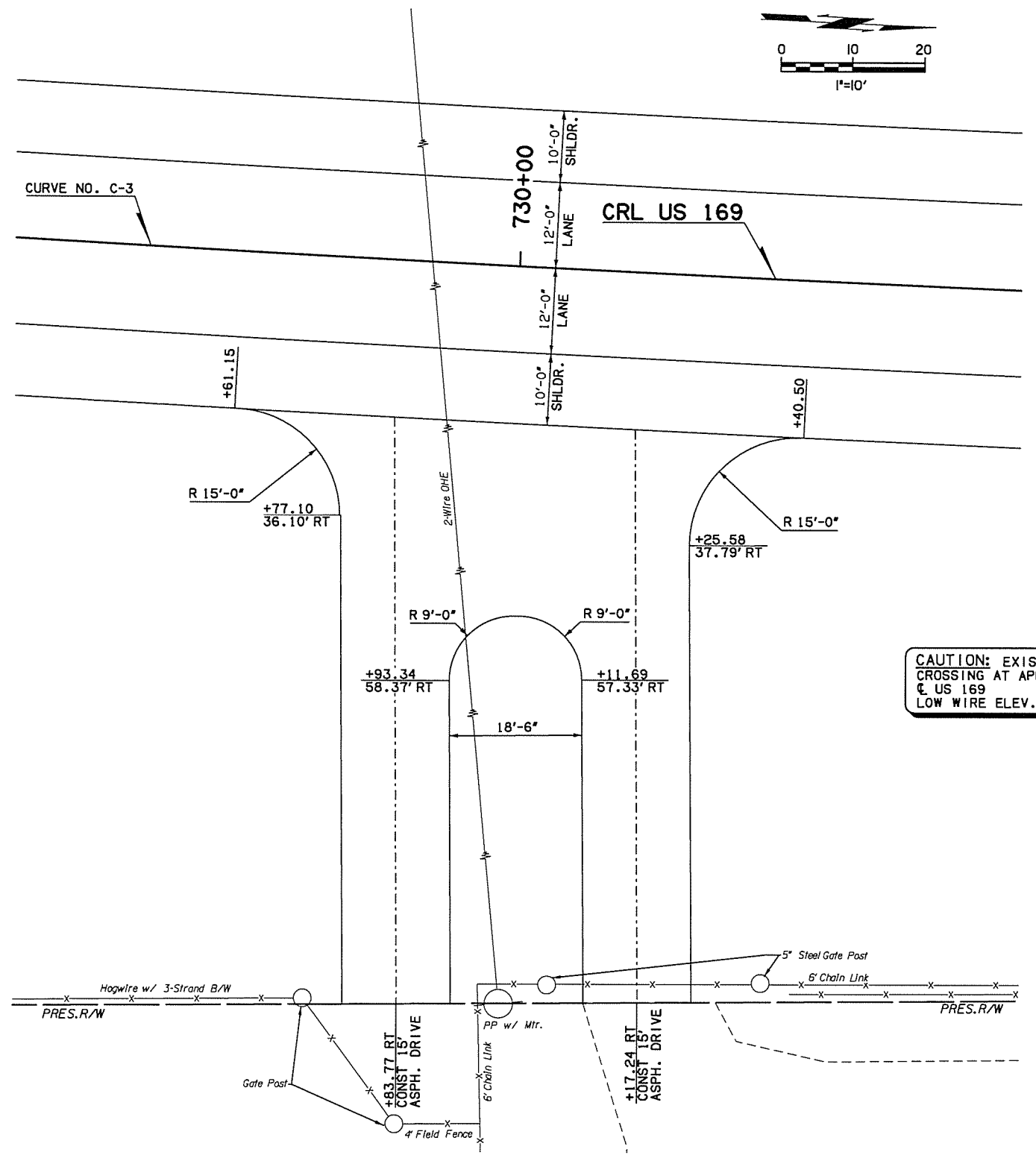
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DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		24	127



Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		GUARDRAIL LAYOUT (2)	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 24

DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		25	127



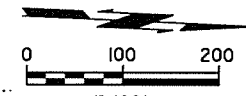
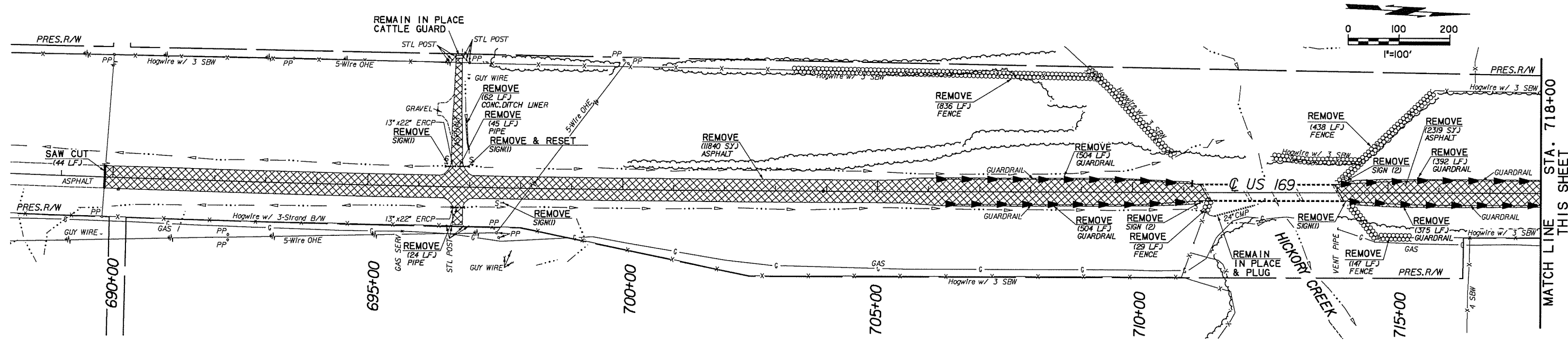
CAUTION: EXIST. OVERHEAD ELECTRIC CROSSING AT APPROX. STA. 729+86.55, @ US 169
LOW WIRE ELEV. 737.90

PLAN
DRIVEWAY STA. 729+83.77 RT.
DRIVEWAY STA. 730+17.24 RT.

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		DRIVEWAY DETAILS	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 25

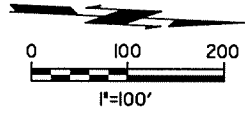
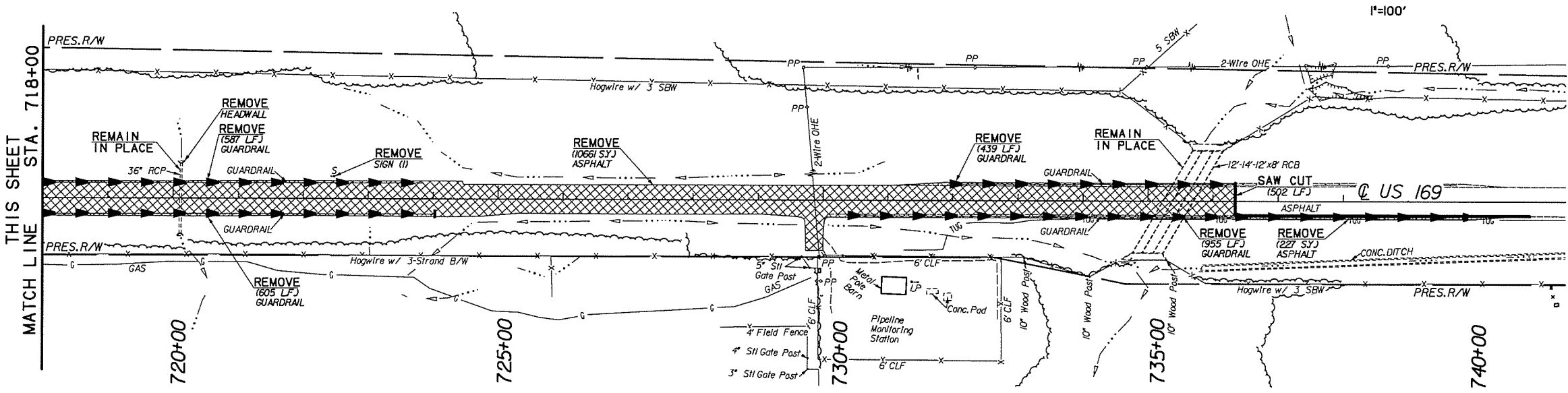
7/12/2016

UNIT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		26	127



MATCH LINE STA. 718+00 THIS SHEET

7:38:58 AM



THIS SHEET STA. 718+00 MATCH LINE

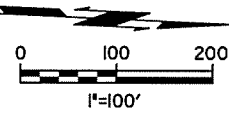
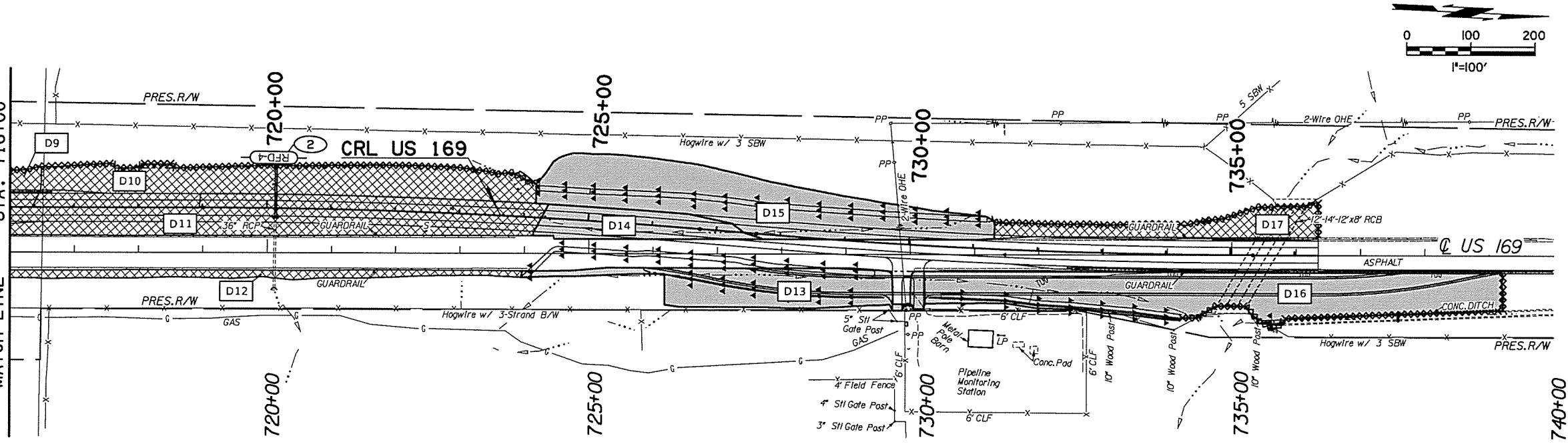
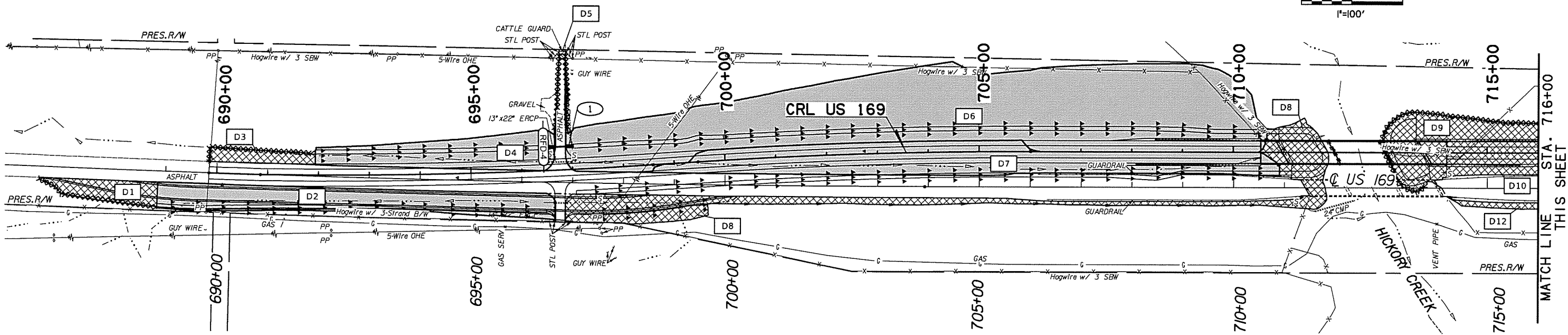
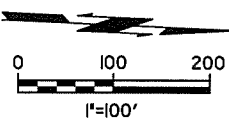
REMOVAL LEGEND

ASPHALT	
CONCRETE	
PIPE	
FENCE	
GUARDRAIL	
SAWCUT	

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		REMOVALS	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 26

P:\ECL\650-TUL\CVI\255231000-000T-US169B-rdg\20_DESGN\40_CAD_Hickory.dgn, C:\24750(04)_C.Plans_Remove_01.dgn

COY. DIVISION	STATE	J/P PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA	247501041		27	127



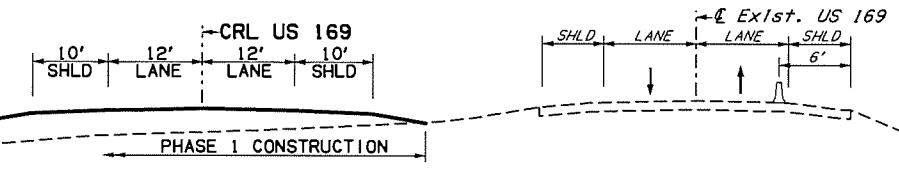
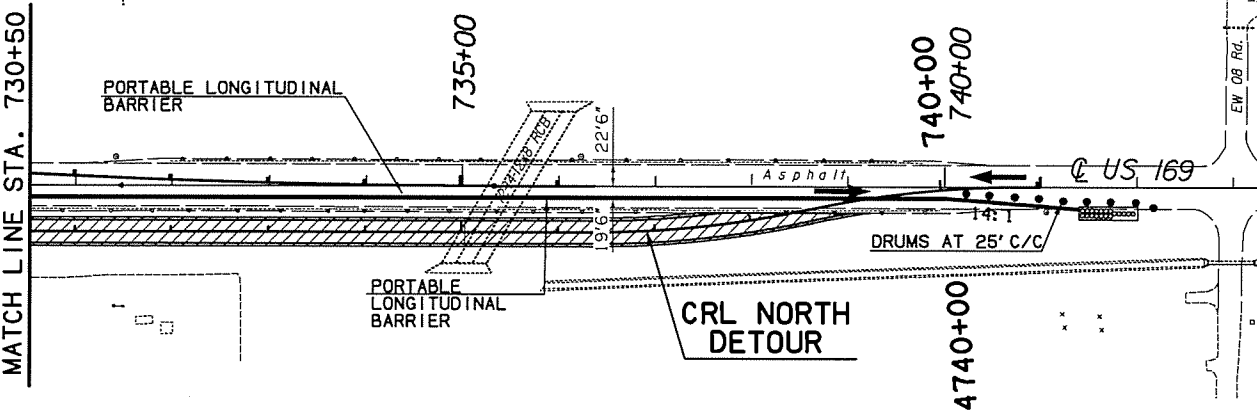
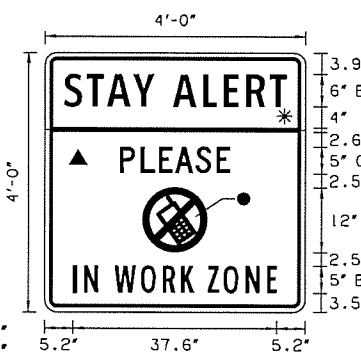
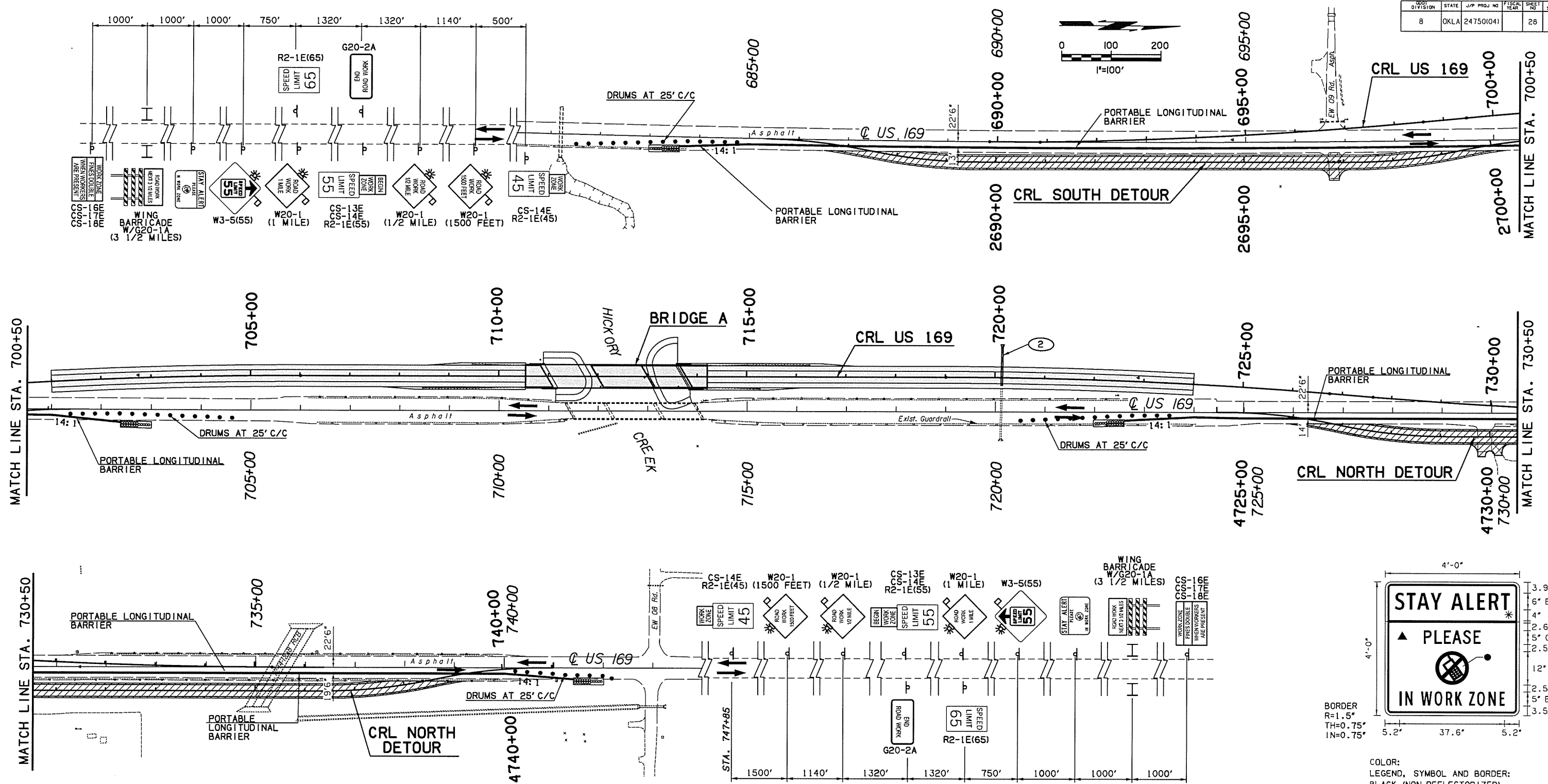
SUMMARY OF DISTURBED AREAS				
DRAINAGE AREA NUMBER	OUTFALL STATION	AREA		OUTFALL TREATMENT
		CHANNEL FLOW	SHEET FLOW	
		AC		
D1	N/A		0.19	NORMAL EROSION CONTROL
D2	688+84.64	0.84		NORMAL EROSION CONTROL
D3	N/A		0.12	NORMAL EROSION CONTROL
D4	691+94.04	0.59		NORMAL EROSION CONTROL
D5	N/A		0.01	NORMAL EROSION CONTROL
D6	710+65.92	4.17		NORMAL EROSION CONTROL
D7	710+91.32	1.42		NORMAL EROSION CONTROL
D8	N/A		0.94	NORMAL EROSION CONTROL
D9	N/A		0.69	NORMAL EROSION CONTROL
D10	N/A		0.93	NORMAL EROSION CONTROL
D11	N/A		1.20	NORMAL EROSION CONTROL
D12	N/A		0.25	NORMAL EROSION CONTROL
D13	723+99.94	0.57		NORMAL EROSION CONTROL
D14	724+15.04	0.31		NORMAL EROSION CONTROL
D15	724+16.51	1.15		NORMAL EROSION CONTROL
D16	735+02.41	1.29		NORMAL EROSION CONTROL
D17	N/A		0.33	NORMAL EROSION CONTROL
SUBTOTALS		10.34	4.67	
TOTALS		15.01		

LEGEND

- (XXX) DRAINAGE STRUCTURE NUMBER
- XXXXX TEMPORARY SILT FENCE
- ▲▲▲ TEMPORARY SILT DIKE
- (RFD-4) ROCK FILTER DAM (TYPE 4)
- XXXXX SHEET FLOW
- XXXXX CHANNEL FLOW
- DX DISTURBED AREA NUMBER

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		EROSION CONTROL	
Checked			
Approved			
Squad			
State Job No. 24750(04)		Sheet No. 27	

DDI DIVISION	STATE	J/P PROJ NO	PHYSICAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA	247501041		28	127



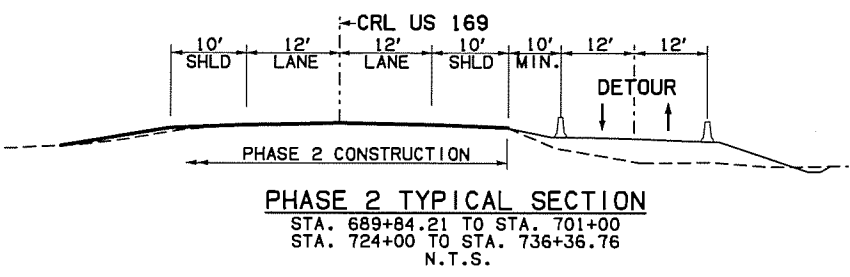
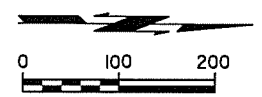
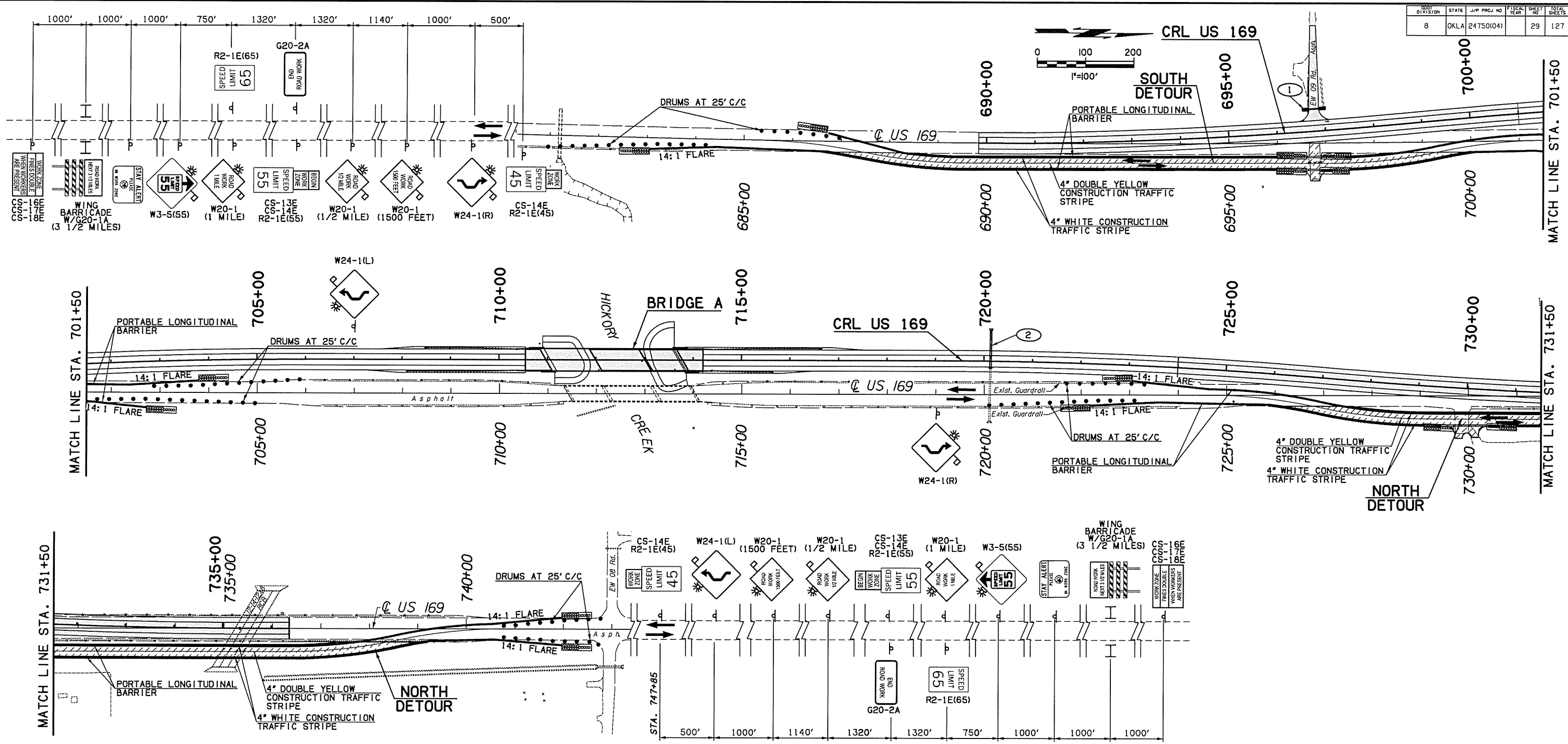
LEGEND

	CONSTRUCTION		SIGN
	TEMPORARY CONSTRUCTION		DRUMS
	COMPLETED CONSTRUCTION		WING BARRICADE
	COMPLETED TEMPORARY CONSTRUCTION		TRAFFIC FLOW DIRECTION
			PORTABLE LONGITUDINAL BARRIER
			IMPACT ATTENUATOR

PHASE 1		
ITEM	CONSTRUCTION	TRAFFIC
US 169	Sta. 701+00 to Sta. 724+00 except east foreslope / ditch	On Existing US 169
South Detour	Construct	
North Detour	Construct	
Bridge A	Construct	

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (1)	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 28

NOI DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		29	127

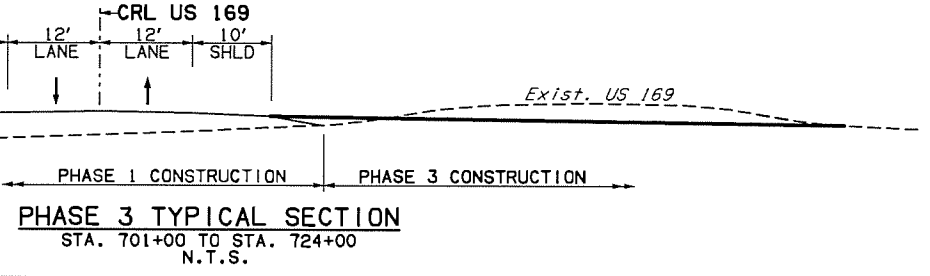
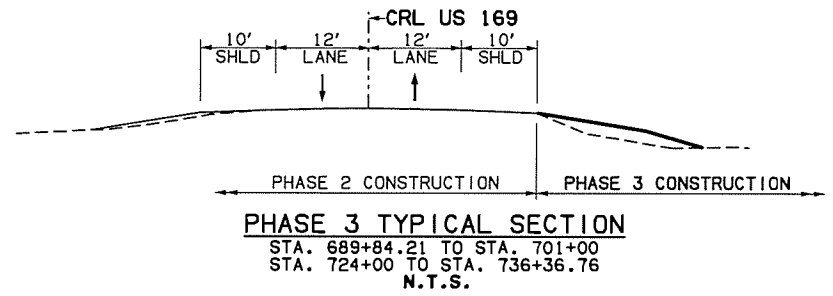
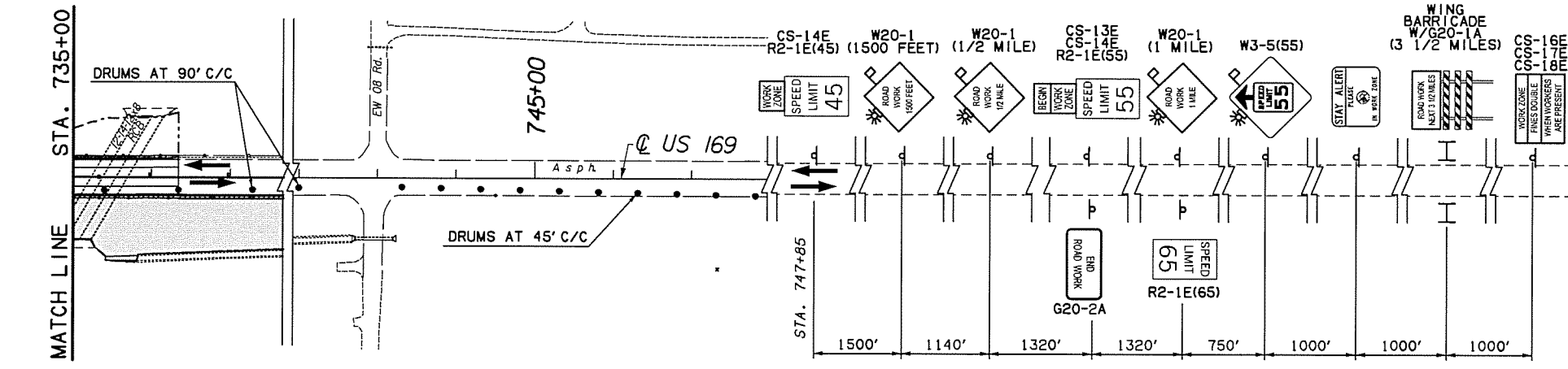
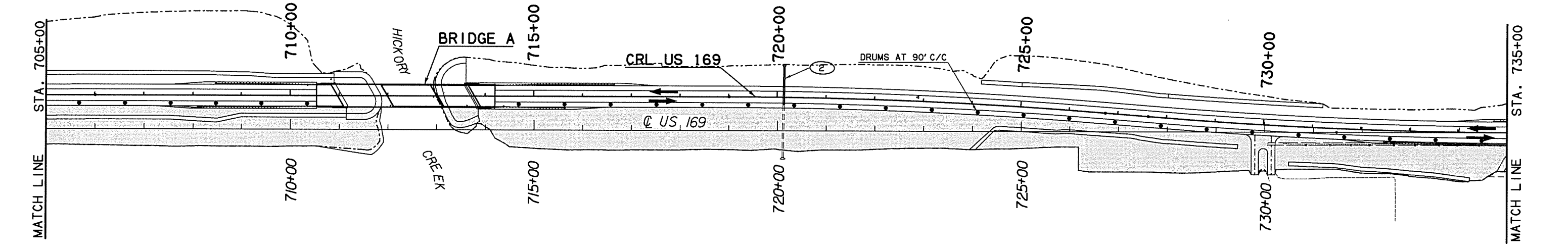
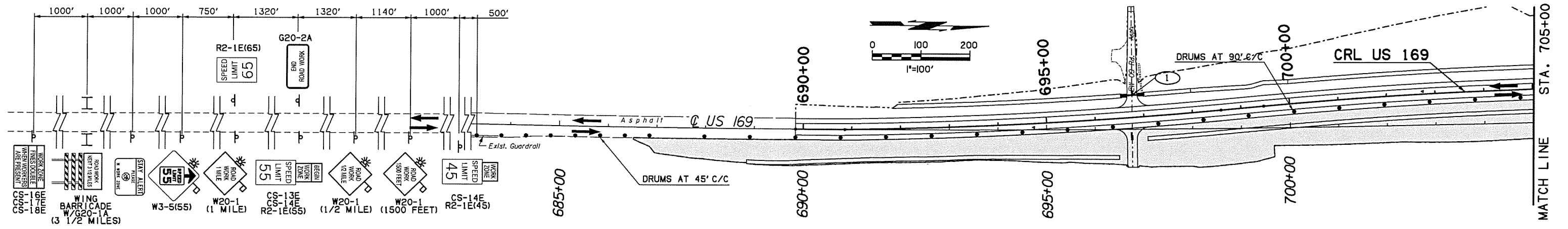


PHASE 2		
ITEM	CONSTRUCTION	TRAFFIC
US 169	Sta. 689+84.21 to Sta. 701+00 except east foreslope / ditch Sta. 724+00 to Sta. 736+36.76 except east foreslope / ditch	On South Detour, Existing US 169, North Detour
South Detour	No construction	
North Detour	No construction	
Bridge A	Construct	

- LEGEND**
- CONSTRUCTION
 - TEMPORARY CONSTRUCTION
 - COMPLETED CONSTRUCTION
 - COMPLETED TEMPORARY CONSTRUCTION
 - SIGN
 - DRUMS
 - WING BARRICADE
 - TRAFFIC FLOW DIRECTION
 - PORTABLE LONGITUDINAL BARRIER
 - IMPACT ATTENUATOR

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (2)	
Checked			
Approved			
Squad		State Job No. 24750(04)	Sheet No. 29

0001	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		30	127



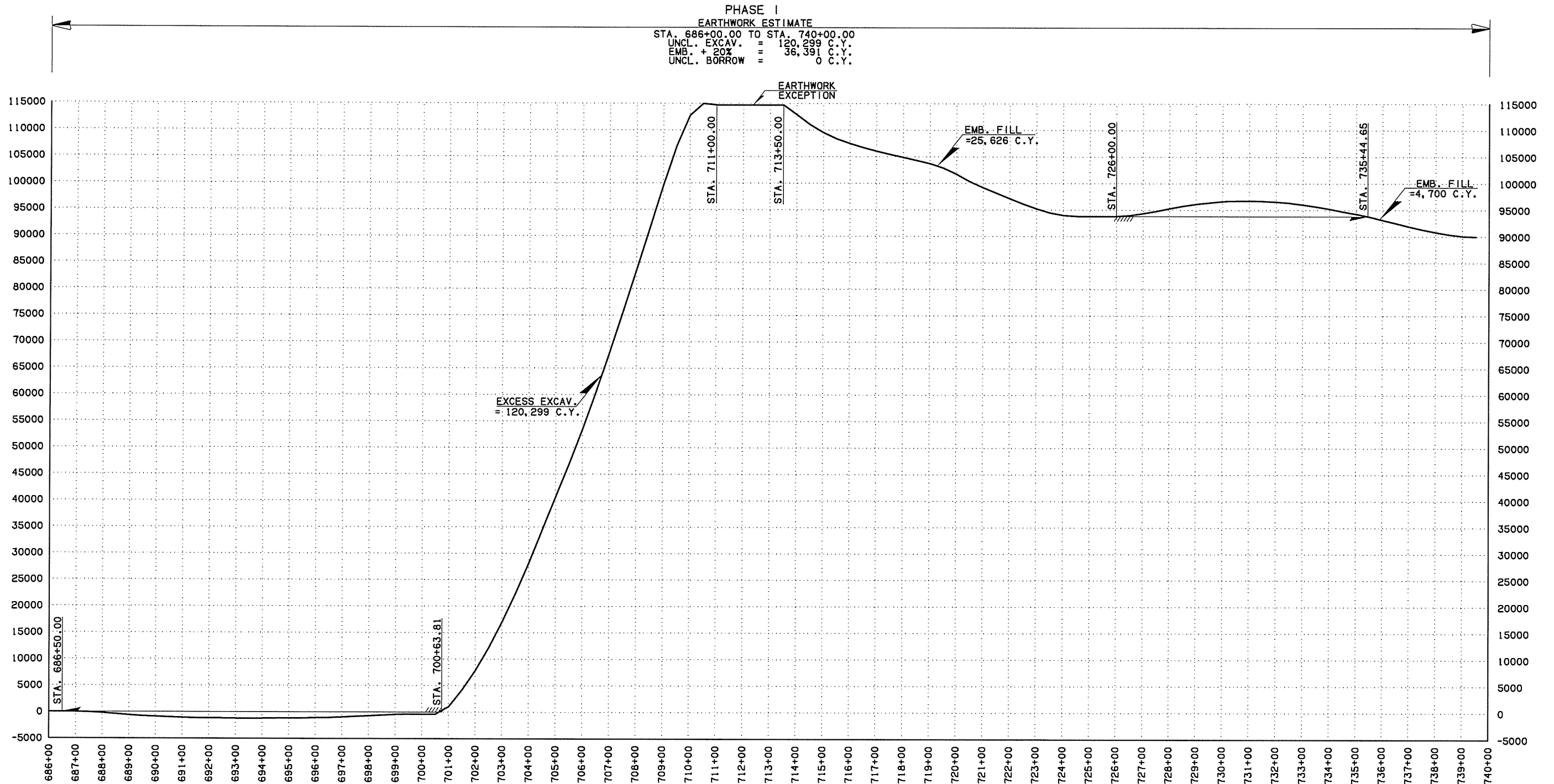
LEGEND

	CONSTRUCTION		SIGN
	TEMPORARY CONSTRUCTION		DRUMS
	COMPLETED CONSTRUCTION		WING BARRICADE
	COMPLETED TEMPORARY CONSTRUCTION		TRAFFIC FLOW DIRECTION
			PORTABLE LONGITUDINAL BARRIER
			IMPACT ATTENUATOR

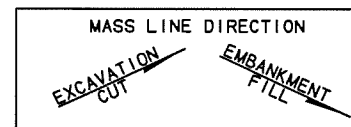
PHASE 3		
ITEM	CONSTRUCTION	TRAFFIC
US 169	Sta. 689+84.21 to Sta. 736+36.76 east foreslope / ditch	On Proposed US 169
South Detour	Remove	
North Detour	Remove	
Bridge A	No construction	

Design		US 169 OVER HICKORY CREEK SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (3) State Job No. 24750(04) Sheet No. 30	NOWATA COUNTY
Drawn			
Checked			
Approved			
Squad			

DIST. DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		31	127



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.

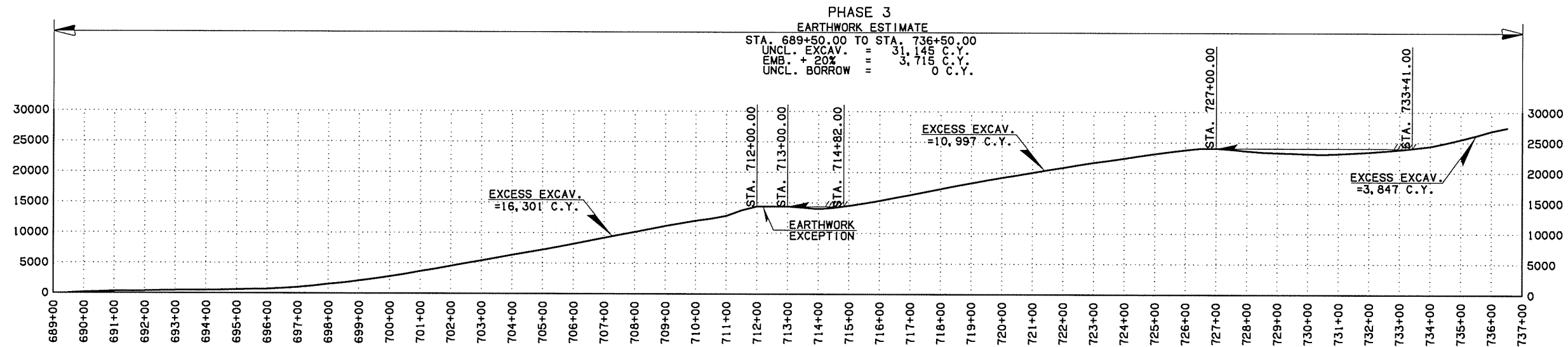
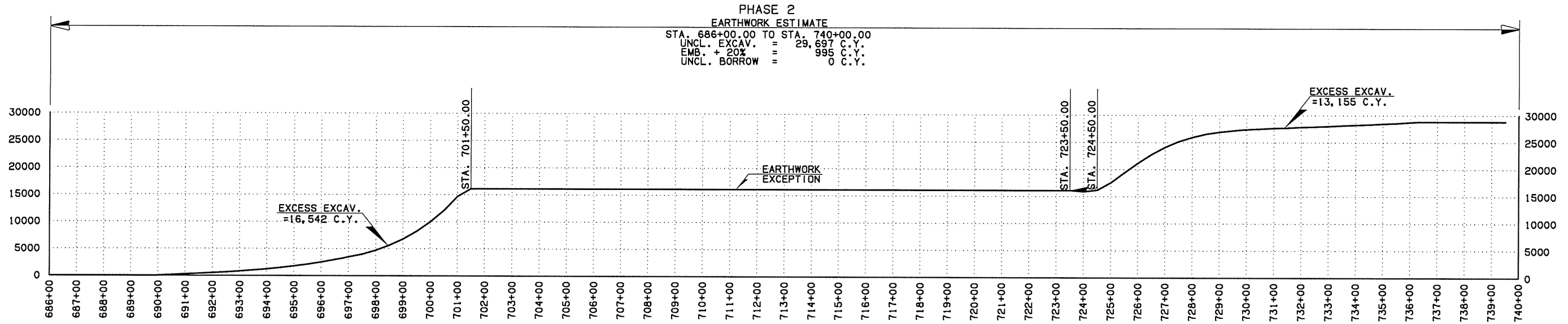


Design	
Drawn	
Checked	
Approved	
Squad	

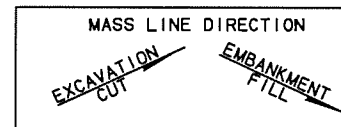
US 169 OVER HICKORY CREEK
NOWATA COUNTY

**MASS DIAGRAM (1)
PHASE I**

State Job No. 24750(04) Sheet No. 31



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.



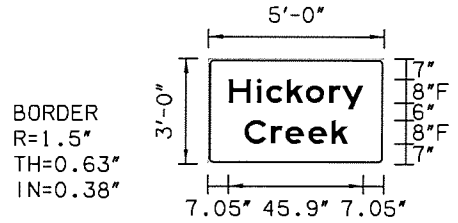
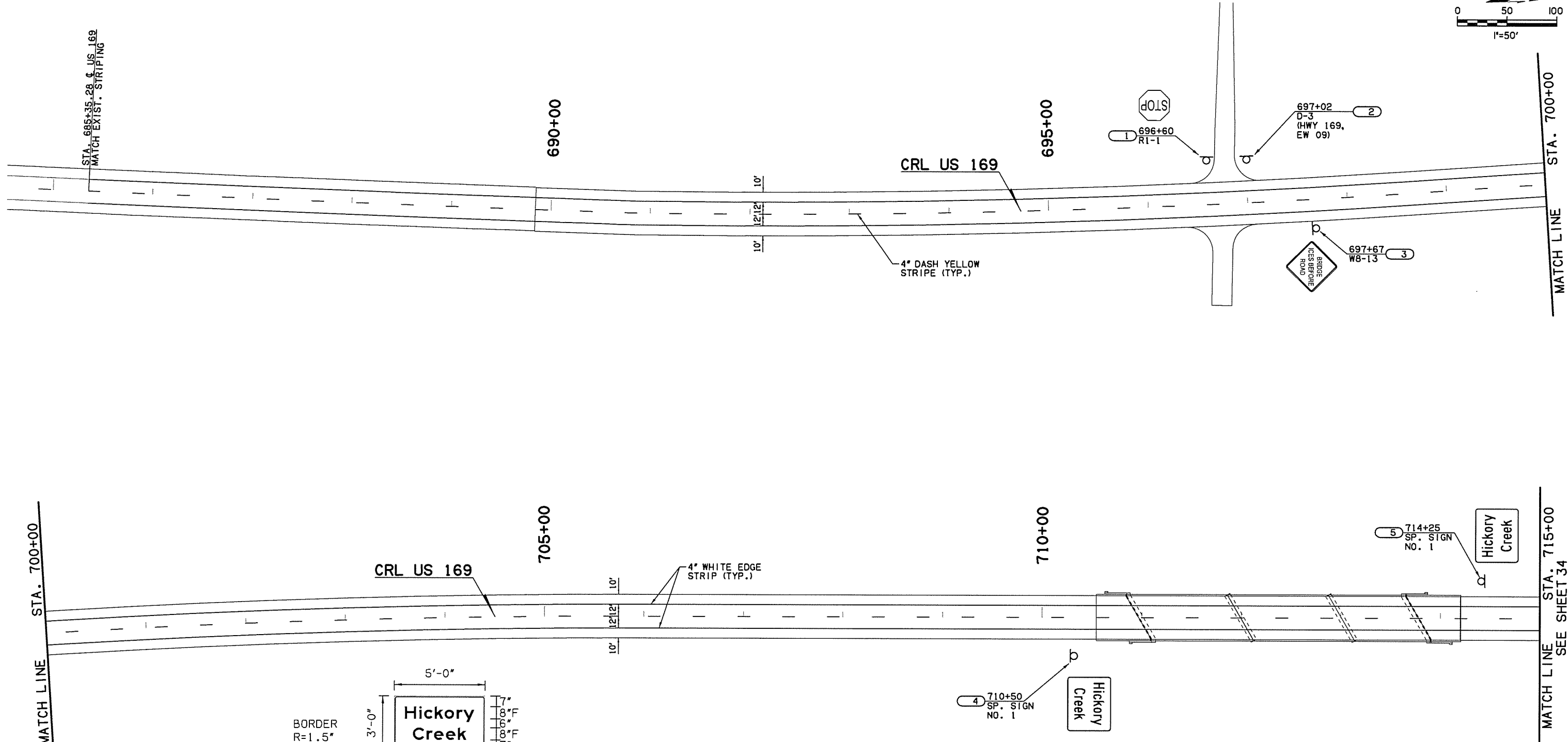
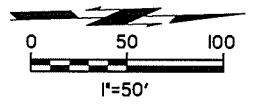
Design	
Drawn	
Checked	
Approved	
Squad	

US 169 OVER HICKORY CREEK
NOWATA COUNTY

MASS DIAGRAM (2) PHASES 2 & 3

State Job No. 24750(04) Sheet No. 32

DDI	DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	8	OKLA	24750(04)		33	127



Dimensions are in inches, tenths
Letter locations are panel edge to lower left corner

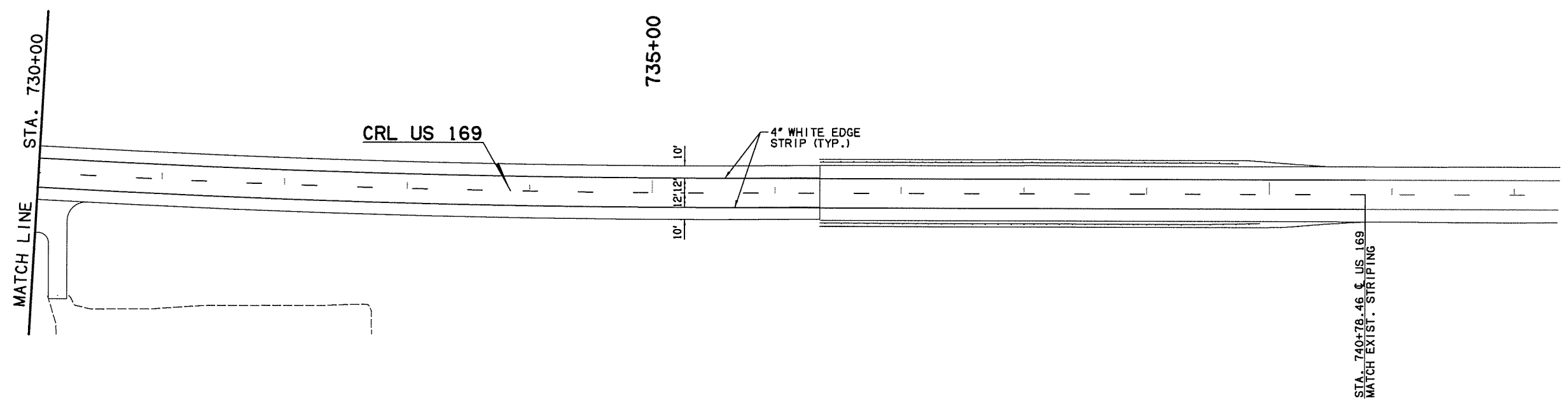
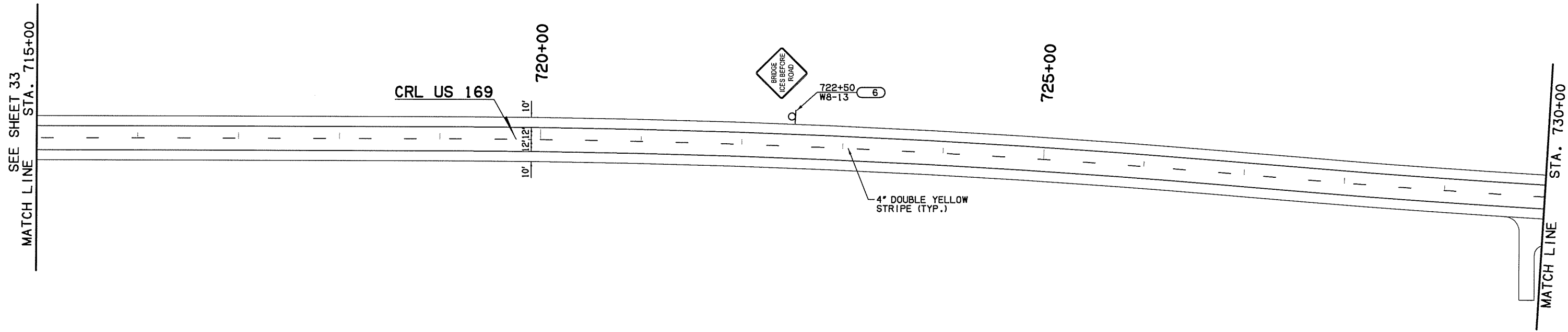
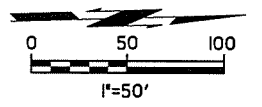
LETTER POSITIONS (X)		LENGTH	SERIES/SIZE
H	i c k o r y		F 2000
7	16.6 19.8 26.7 33.2 41.2 45.6 45.9		
C	r e e k		F 2000
12.4	21.4 26.3 34 42	35.2	

SPECIAL SIGN NO. 1
15.0 SF

SIGN NUMBER	SP. SIGN NO. 1
WIDTH x HGHT.	5' -0" x 3' -0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White/White

Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		SIGNING & STRIPING (1)	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 33

GOVT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		34	127



Design		US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn		SIGNING & STRIPING (2)	
Checked			
Approved			
Squad			
		State Job No. 24750(04)	Sheet No. 34

STATE OF OKLAHOMA DEPARTMENT OF TRANSPORTATION

SURVEY OF U.S. 169

SWO 4721(1)
STATE JOB NO. 24750(04)

NOWATA COUNTY, OKLAHOMA

BRIDGE OVER HICKORY CREEK
13.5 MILES NORTH OF U.S. 60

OKLAHOMA DEPARTMENT OF TRANSPORTATION				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO. TOTAL SHEETS
8		24750(04)		35 127
DESCRIPTION		REVISIONS	DATE	

INDEX OF SHEETS	
1.	TITLE SHEET
2-4.	SURVEY INFORMATION (notes, letters)
4-5.	NETWORK CONTROL & COGO POINTS
5.	COGO POINTS & ALIGNMENT REPORT
6.	HORIZONTAL CONTROL DIAGRAM
7-10.	SURVEY DATA SHEETS
11-16.	GEOMETRIC DATA SHEETS
SURVEY BEGAN: 02/22/2013	
SURVEY COMPLETED: 06/04/2013	
PERSONNEL:	TITLE:
DUSTIN McNALLY	PROF. LAND SURVEYOR
CHRIS CAUTHON	PROF. LAND SURVEYOR
JASON MOCK	SURVEY TECHNICIAN
JASON LILLY	SURVEY TECHNICIAN
RYAN HARRISON	LSIT
TIM DARRION	SURVEY TECHNICIAN
STEVEY MILLER	SURVEY TECHNICIAN
BRANDON TRAVERS	SURVEY TECHNICIAN
AMANDA REID	SURVEY TECHNICIAN
VINCENT MILLER	SURVEY TECHNICIAN
BENJAMIN MARTS	ENGINEER INTERN
EQUIPMENT:	SERIAL NO.
TRIMBLE S6 ROBOTIC TOTAL STATION	92810853; 92721064
TRIMBLE R8 GPS RECEIVER	4629119076; 4629119071
CARLSON GPS RECEIVER	NAE10403001; NAE10443001
SOKKIA B11 & 300	101384; 353373

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION
SURVEY DIVISION

SWO 4721(1) J/P 24750(04) ; Nowata CO.

HORIZONTAL CONTROL:

Oklahoma Coordinate System of 1927 Zone.

Oklahoma Coordinate System of 1983 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. HARN - E-17, CORS, MOCA.

1. SWO4721(1) adjusted to OKTU, OKPR 3rd Order Stations

A) Closure before adjustment X ; Y Angles

Trav. Length No. Angles

B) ; is Order before adjustment.

C) Method of Distance Measurement:

Electronic GPS Triangulation Chained

D) Instrument used for angles Trimble R8 & Carlson GNSS GPS Receivers

2. Centerline adjusted to GPS Primary 3rd Order Stations HARN E-17 CORS, MOCA, OKTU, OKPR

A) Closure before adjustment X ; Y Angles

B) ; is Order, Tied to

C) Method of Distance Measurement:

Electronic GPS Triangulation Chained

D) Instrument used for angles

VERTICAL CONTROL IS 3rd order. Level Line taken from GPS Primary 3rd order and tied to GPS Primary 3rd order.

NGVD 29 datum

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 M.) (2nd Order = 0.035 Ft. x sqrt of M.)
(3rd Order = 0.050 Ft. x sqrt. of M.)

Distribution:

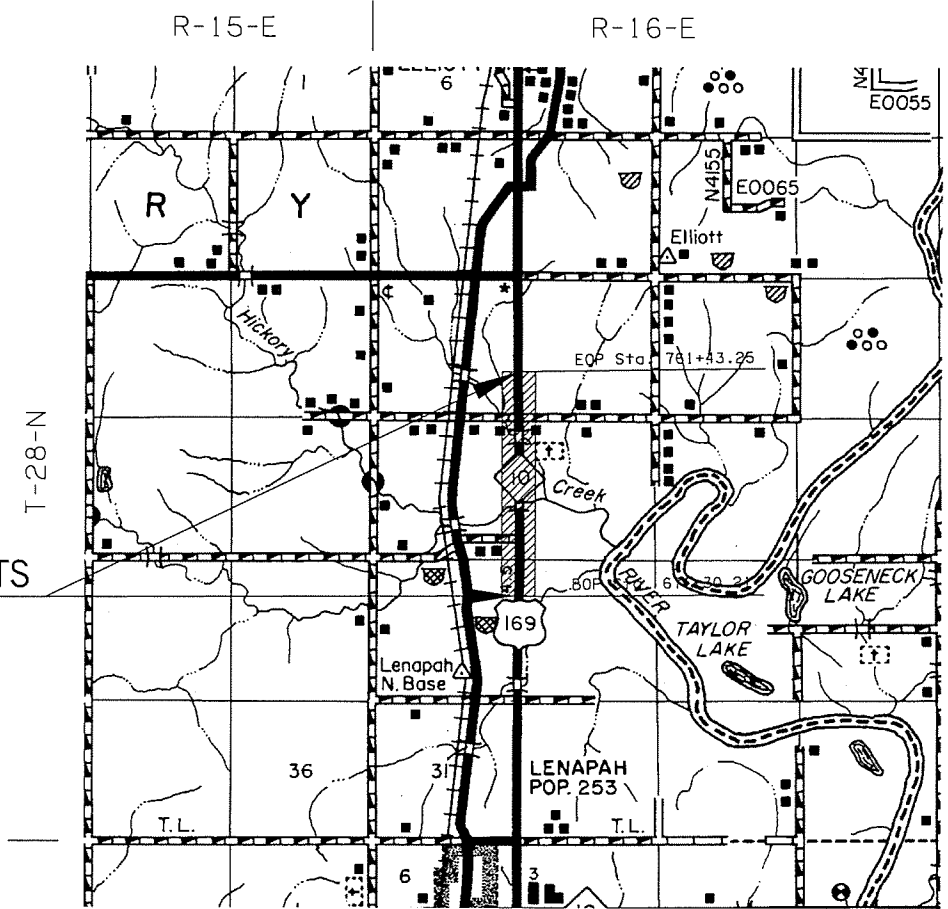
Copy w/survey reports

Copy in each Alignment and level book

(FORM SD #20)

Rev. 11/03

Dustin M. McNally
Professional Land Surveyor
06/28/13
Date



PROJECT EXTENTS

Utility	Phone Number
Gas Lines:	
Postrock Energy Corp.	620-431-9500 x241
Southern Star Central Gas	620-330-0323
Electric Lines:	
Verdigris Valley Electric Co-op	918-586-6250
AEP-PSO	1-888-216-3523
Telephone Line:	
AT&T / USIC	918-398-3443
Water Lines:	
Nowata Co. RWD #7	1-918-255-6825

PROJECT LENGTH 8513.04 FT. 1.61 MI.

BEGINNING STATION : 671+30.21

ENDING STATION : 761+43.25

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, 2010.

SPECIFICATIONS FOR SURVEYS FOR PRIMARY AND SECONDARY HIGHWAYS DATED JANUARY 1, 2011 GOVERN.

Electronic File Transfer Disclaimer:

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PLS	DMM		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	ARR		
CHECKED	VKM		
APPROVED	DMM		
CREW	GES, INC.		
SWO 4721(1) PROJECT NO. 24750(04) SHEET NO. 35			

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA.	24750(04)		36	127
DESCRIPTION		REVISIONS		DATE	

State of Oklahoma
Department of Transportation

Guy Engineering Services, Inc.
Dustin M. McNally, PLS 1638
10759 East Admiral Place Tulsa, Oklahoma 74116
Phone (918) 437-0282 Fax (918) 437-0455 C.A. 1427, Expires 6/2014

To: Mr. Larry Reser, Chief of Surveys
From: Dustin M. McNally, Professional Land Surveyor
Subject: SWO 4721(1), J/P No. 24750(04), U.S. 169, Bridge over Hickory Creek, 13.5 miles north of U.S. 60 at Nowata.

NOWATA COUNTY
Historical Letter and Written Report

1. General:

- Survey began: February 20, 2013
- Survey completed: June 04, 2013
- Personnel on this survey:
- Dustin M. McNally, PLS
- Chris A. Cauthon, PLS
- Jason Mock, Survey Technician
- Jason Lilly, Survey Technician
- Ryan Harrison, LSIT
- Tim DeArmon, Survey Technician
- Stevfen Miller, Survey Technician
- Brandon Travers, Survey Technician

Amanda Reid, Survey Technician
Vincent Miller, Survey Technician
Benjamin Marts, Engineer Intern

Previous Surveys and Plans relevant to this project:

SWO 2137(1) Survey
FAP No. F-193 (10) Plans

2. Assignment

Assignment of this survey originated by ODOT Project Management Division Task Order No. EC-1412D dated August 13, 2011 from Mr. Larry Reser, PLS, Chief of Surveys. This survey was assigned to me under Engineering Contract No. EC-1365, J/P No. 24750(04).

The Assignment of the survey included:

- SWO 4721(1) Survey Special Provisions
- Attachment No. 1- Location Map
- Attachment No. 2-Land Surveyor's Certification Form
- Attachment No. 3-SD Form #7
- Attachment No. 4-Specifications for surveys for Primary and Secondary Highways dated January 2011.
- Attachment No. 5-Suggested sequence of survey
- Attachment No. 6-Project Completion Percentages
- Attachment No. 7-Standard CADD files, issued March 5, 2004

3. Purpose:

The purpose of this survey is to furnish sufficient data to develop plans to construct a new bridge over Hickory Creek north of Nowata.

4. Survey Limits:

This survey begins at P.R.C. Station 676+30.21 and extends north to P.C. Station 761+34.68 as established under SWO2137(1) survey and shown on FAP No. F-193 (10) plans.

5. Alignment:

A001 – Centerline of present U.S. 169

The Centerline of Survey is 32.00 feet east and parallel to the centerline of survey as established under SWO 2137(1) survey and shown on FAP No. F-193 (10) plans.

6. Stationing:

Stationing for this survey is taken from SWO 2137(1) survey.

7. Horizontal Control:

Horizontal control for this survey is N.G.S. Oklahoma State Plane Coordinate System NAD 83 Lambert Projection North Zone (Zone 3501). The distances, coordinates, and elevations shown in this survey are U.S. Survey Feet. All angles and bearings are shown in degrees, minutes, and seconds.

8. Vertical Control:

A. Datum:

Level datum for this survey is N.G.S. N.A.V.D. 88.

B. Source:

Level datum for this survey was taken from G.P.S. network solution using CORS Stations OKMU, OKTU, and MOCA and HARN stations E17. The resulting elevations were applied to control points on each end of the project.

RTK ties were performed to insure accuracy.

Tie #1 - RV 2 a NGS First Class II order benchmark P.I.D. GG0455. The resulting tie was 0.03' lower than published elevation.

Tie #2 - E 17 a NGS First Class II order benchmark P.I.D. GG0465. The resulting tie was 0.03' higher than published elevation.

C. Method:

A double line of differential levels was run through the site using Sokkia model 300 and B21 automatic levels.

PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET (2) SWO 4721(1) PROJECT NO. 24750(04) SHEET NO. 36
DRAWN	ARR	
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA.	24750(04)		37	127
DESCRIPTION		REVISIONS		DATE	

D. Accuracy:
These benchmarks exceed the requirements for N.G.S. 3rd order leveling.

E. Results:
The results of these level runs have been placed in a list in the project design file showing the BM number, elevation, run 1 and run 2 differences, description of each benchmark, and position by station and offset from the CLS.

9. Measurement Units:
The distances, coordinates, and elevations shown on this survey are in US SURVEY FEET. All angles and bearings shown are in degrees, minutes, and seconds.

10. Topography/Digital Terrain Model:
Topography on this project was obtained from conventional field level topography using Trimble S-6 Robotic Total Stations, Trimble R8 GPS receivers with Trimble TSC-2 data collectors, and using Carlson RTK GPS receivers with Carlson Surveyor+ data collectors. All paving, structures, and finished floor elevations were obtained with the total stations. GPS RTK surveying was used for land ties and miscellaneous topography. As a minimum, the coverage bandwidths for topographic and/or surface features data obtained on this survey are as follows:

- 100 feet right and 200 feet left of the Centerline of Survey from the Beginning of Survey to Station 706+40.79, thence;
- 250 feet right and left of Centerline of Survey from 706+40.79 to Station 719+04.43, thence;
- 100 feet right and 200 feet left of the Centerline of Survey from Station 719+04.43 to the End of Survey.

11. Land Ties:
Complete land tie information was obtained by a combination of conventional field methods and real-time kinematic (RTK) GPS as needed to purchase new right-of-way, including the bounding out of all sections through which the survey centerline passes.
North Quarter Corner of Section 18, T-28-N, R-16-E, I.M.

Set a mag nail with Shiner stamped "CA-1427". The position was determined by single proportionate measurement.
Northwest Corner of Section 17, T-28-N, R-16-E, I.M.
The position was established by using a survey performed by the Settle Engineering Company for the Oklahoma Department of Transportation during 1956 to 1959. The survey is named SWO 2137(1). The survey shows an angle and distance from a P.O.T. at Station 795+79.10 established at the intersection of the north line of Section 17 Township 28 North Range 16 East and the Centerline of Survey. P.O.T. 795+79.10 nor any references were recovered. P.O.T. 795+79.10 was computed from points recovered north and south along the Centerline of Survey. The point south is a P.T. at Station 777+43.85. The point north is a P.O.T. at Station 799+01.10. Although the points themselves were not recovered, reference pin lines were found in condition. Field measure between the points resulted in a distance of 2158.27', the survey reflects a distance of 2157.25'. A proportioned position was computed for P.O.T. 795+79.10. An angle of 89°55'02" was measured between, a line beginning at the computed P.O.T. 795+79.10 to the north quarter corner of Section 17 Township 28 North Range 16 East and the Centerline of Survey. The survey reflects an angle of 89°55'. The survey reflects a distance of 99.60' from the P.O.T. 795+79.10 and the northwest corner of Section 17 Township 28 North Range 16 East. The position was established at 99.60' from the computed P.O.T. 795+79.10 at a bearing running from the north quarter corner of Section 17 Township 28 North Range 16 East through the computed P.O.T. 795+79.10.
East Quarter Corner of Section 20, T-28-N, R-16-E, I.M.
Set a 1/2" iron pin with cap stamped "CA-1427". The position was determined by single proportionate measurement.
North Quarter Corner of Section 29, T-28-N, R-16-E, I.M.
Set a 1/2" iron pin with cap stamped "CA-1427" using recorded ties to the centerline of survey performed by Settle Engineering for the Oklahoma Department of Transportation in 1956-1959, named SWO 2137(1). Set three references to monument.
Northeast Corner of Section 29, T-28-N, R-16-E, I.M.
The position was determined by double proportionate measurement. No monument was set. This position falls in a cultivated field.
West Quarter Corner of Section 30, T-28-N, R-16-E, I.M.
Set a 1/2" iron pin with cap stamped "CA-1427". The position was determined by single proportionate measurement.

East Quarter Corner of Section 30, T-28-N, R-16-E, I.M.
The position was determined by single proportionate measurement. No monument was set. This position falls in the Verdigris River.

12. Right-of-Way:
The existing rights-of-way shown on this survey are established by the direct relationship between field observation and descriptions found in a combination of easements and deeds found on file in the County Clerk's offices at the Nowata County Courthouse in Nowata, Oklahoma, along with the right-of-way depicted on FAP No. F-193 (10) plans. All property divisions adjacent to the present rights-of-way throughout the project limits have been properly established. This includes, as a minimum, the complete mathematical bounding of all parcels that fall partially or completely within the survey coverage limits. "Property division" includes present rights-of-way. The present rights-of-way have been tied to the centerline of survey and shown on the submitted survey notes.

13. Utilities:
Note: All utilities are shown as flagged by the utilities contacted or their representatives. All utilities serving the project area were contacted through OKIE One-Call. All utility locations are approximate, and depths and types are unknown. The utility locations shown on this survey are based on the flagged locations as performed by the utility owners or their contractors. Any inaccuracies or omissions are the responsibility of the utility owners and/or their contractors, and Guy Engineering Services accepts no responsibility for their failure to respond to the OKIE survey requests. Contact CALL OKIE at 1-800-522-OKIE.

14. Drainage:
Drainage areas for all drains crossing the Survey Centerline were taken from USGS quad maps scanned into a Microstation Design File.

15. Data Submitted:

PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET (3) SWO 4721(1) PROJECT NO. 24750(04) SHEET NO. 37
DRAWN	ARR	
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA.	24750(04)		39	127
DESCRIPTION			REVISIONS		DATE

COORDINATE POINT LIST

SWO 4721(1) JOB PIECE 24750(04)

PT. NO.	NORTHING	EASTING	PT. NO.	NORTHING	EASTING
8011	700831.798650000	2660206.348760000	8054	698011.389891200	2662694.769783900
8012	700815.702056300	2659579.314866800	8055	697993.348697600	2662646.250719700
8013	700257.217019000	2661540.434868600	8056	697977.901628300	2662601.663617500
8014	700240.526380800	2660855.638240000	8057	697955.213785600	2662569.673926000
8015	700549.064750800	2660848.118193800	8058	697956.025211300	2662525.648609200
8016	700820.088684500	2660724.054692700	8059	697986.894567600	2662457.635177900
8017	700845.088684500	2660724.054692700	8060	698047.492543700	2662435.725091500
8018	703473.024712700	2660136.160706200	8061	698092.569745000	2662391.578029700
8019	692955.792549400	2661968.701307500	8062	698104.784763000	2662362.961135800
8020	692982.708988800	2663049.331317100	8063	698138.732877300	2662328.872211100
8021	694295.695294400	2663014.493931000	8064	698150.815299400	2662306.372309800
8022	694328.201048800	2664328.110067100	8065	698134.763740800	2662257.343777300
8023	694364.244079700	2665648.351771900	8066	698100.802952800	2662231.570913600
8024	695003.610473300	2664978.138804100	8067	698053.847236700	2662206.697781900
8025	694984.567574400	2664309.901913500	8068	698018.346217900	2662166.732709700
8026	695669.856551300	2665265.689034300	8069	698027.997642000	2662148.123440300
8027	696073.005688300	2665601.940543800	8070	698031.774360700	2662137.148633700
8028	696237.405748500	2665382.591364900	8071	698022.666055900	2662090.798824700
8029	696378.449321500	2665109.723932100	8072	697994.000627400	2662051.268577700
8030	696721.416622500	2664784.877276500	8073	697961.232461000	2662014.780264600
8031	696808.706110700	2664998.049086500	8074	699590.725844100	2663537.268761500
8032	696926.757226500	2665250.498123500	8075	699607.903563800	2664196.196997000
8033	696993.198493600	2665315.826319200	8076	700914.446770000	2663504.126270000
8034	696981.875370900	2664919.786036000	8077	703143.728259100	2661669.647750900
8035	697579.675522500	2664905.426574900	8078	703244.280434100	2661685.835371600
8036	697554.598441300	2664844.541582700	8079	703511.738772400	2661676.223321000
8037	697487.300275900	2664637.463974900	8080	703538.052677600	2662774.906042600
8038	697443.309621800	2664379.365430900	8081	699539.192685000	2661560.484055000
8039	697483.290079800	2664247.342767700	9000	706013.658770000	2656177.547200000
8040	697493.783245900	2664212.692446200	9001	706045.378079523	2657424.361063310
8041	697480.323617800	2663929.847558000	9002	706078.979043000	2658745.138460900
8042	697588.338467400	2663708.095011200	9003	706146.180957900	2661386.692780900
8043	697829.946026800	2663412.892609300	9004	706208.521250000	2664024.958460000
8044	697931.393464000	2663370.151771000	9005	706270.627270000	2666663.369550000
8045	697959.628162400	2663340.426094200	9006	704694.066395000	2656212.057150000
8046	697991.666246600	2663351.111303800	9007	704725.793604583	2657461.719592990
8047	698049.064566000	2663299.019341290	9008	703374.474020000	2656246.567100000
8048	698095.783524100	2663245.587030100	9009	703406.208911100	2657499.078128860
8049	698085.104162700	2663194.829153000	9010	703439.605271100	2658817.163926100
8050	698053.069326600	2663120.026422600	9011	703506.444154300	2661455.157486200
8051	698054.290567400	2663011.495759400	9012	703569.661200900	2664094.654599000
8052	698094.854601500	2662927.479697700	9013	703632.875080000	2666734.019466000
8053	698076.928994700	2662832.139568700	9014	702053.312745000	2656276.844560000

Page 2 of 3

COORDINATE POINT LIST

SWO 4721(1) JOB PIECE 24750(04)

PT. NO.	NORTHING	EASTING	PT. NO.	NORTHING	EASTING
9015	702085.273064956	2657534.279740420	9035	695576.429100000	2661667.619330000
9016	700732.151470000	2656307.122020000	9036	695640.934100000	2664291.693760000
9017	700764.337555669	2657569.481343000	9037	695719.307994300	2666931.020625600
9018	700797.987410000	2658889.250630000	9038	694145.173730000	2656461.727725000
9019	700865.609890000	2661523.446890000	9039	694173.294917901	2657740.722433830
9020	700930.725730000	2664164.352730000	9040	692835.988260000	2656493.077640000
9021	700996.008710000	2666805.124980000	9041	692863.828069778	2657773.420504370
9022	699412.618960000	2656338.027115000	9042	692892.565937900	2659095.064751500
9023	699443.249187606	2657604.178953810	9043	692949.949980000	2661734.136260000
9024	698093.086450000	2656368.932210000	9044	693015.467997500	2664364.526374200
9025	698122.157088254	2657638.876662620	9045	693081.266227200	2667006.166327800
9026	698152.415363800	2658960.702790800	9046	691504.349345000	2656524.934020000
9027	698212.775480000	2661597.521220000	9047	691535.454038629	2657806.551957340
9028	698285.081397700	2664228.041264000	9048	690172.710430000	2656556.790400000
9029	698357.648480000	2666868.062590000	9049	690207.086350140	2657839.683252110
9030	696773.722825000	2656399.655010000	9050	690242.434340000	2659158.853280000
9031	696802.459594276	2657673.450508190	9051	690309.336570000	2661798.072280000
9032	695454.359200000	2656430.377810000	9052	690375.052030000	2664437.773710000
9033	695482.761153664	2657708.024378570	9053	690443.224460000	2667081.312030000
9034	695512.193230000	2659032.010460000			

Page 3 of 3

Alignment Report

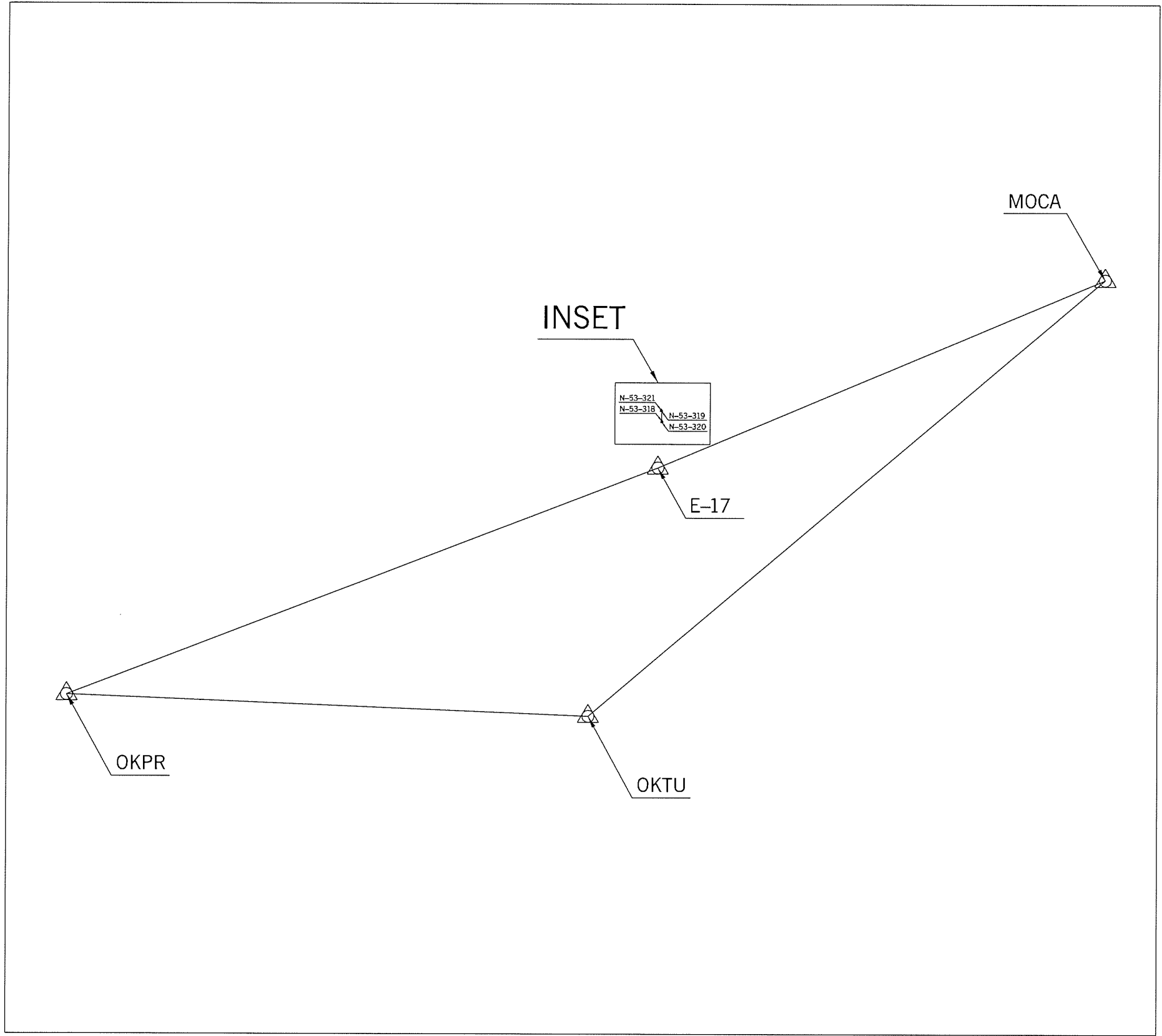
Project Name: SWO4721_1_V1
Description: Hickory Creek
Horizontal Alignment Name: A001
Description: Centerline of Survey
Style: Centerline

	STATION	NORTHING	EASTING
Element: Circular			
PC (1000)	676+30.21	694201.0493	2661902.4073
PI (1003)	690+11.92	695582.4777	2661930.4181
CC (1002)		695077.7496	2618665.5980
PT (1005)	703+92.70	696962.8767	2661870.1878
Radius:		43245.70	
Delta:		03°39'35.96" Left	
Degree of Curvature(Arc):		00°07'56.96"	
Length:		2762.49	
Tangent:		1381.71	
Chord:		2762.02	
Middle Ordinate:		22.06	
External:		22.07	
Tangent Direction:		N01°09'41.80" E	
Radial Direction:		S 88°50'18.20" E	
Chord Direction:		N 00°40'06.18" W	
Radial Direction:		N 87°30'05.84" E	
Tangent Direction:		N 02°29'54.16" W	
Element: Linear			
PT (1005)	703+92.70	696962.8767	2661870.1878
POE (1013)	761+43.25	702707.9645	2661619.5148
Tangent Direction:		N 02°29'54.16" W	
Tangent Length:		5750.55	

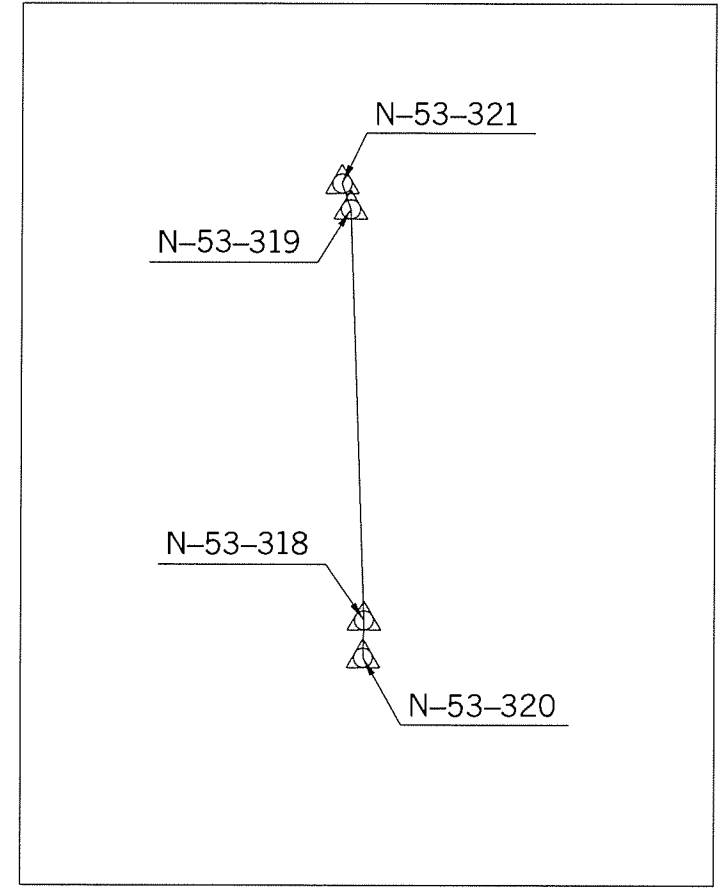
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DRAWN	ARR		
CHECKED	VKM		
APPROVED	DMM		
CREW	GES, INC.		

SWO 4721(1) PROJECT NO. 24750(04) SHEET NO. 39

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA.	24750(04)		40	127
DESCRIPTION		REVISIONS		DATE	



INSET



Note: Control Network Adjustment utilizing CORS Stations "MOCA", "OKPR", "OKTU", HARN Stations "E-17".

PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	ARR	
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	
SURVEY DATA SHEET (6)		
SWO 4721(1) PROJECT NO. 24750(04) SHEET NO. 40		

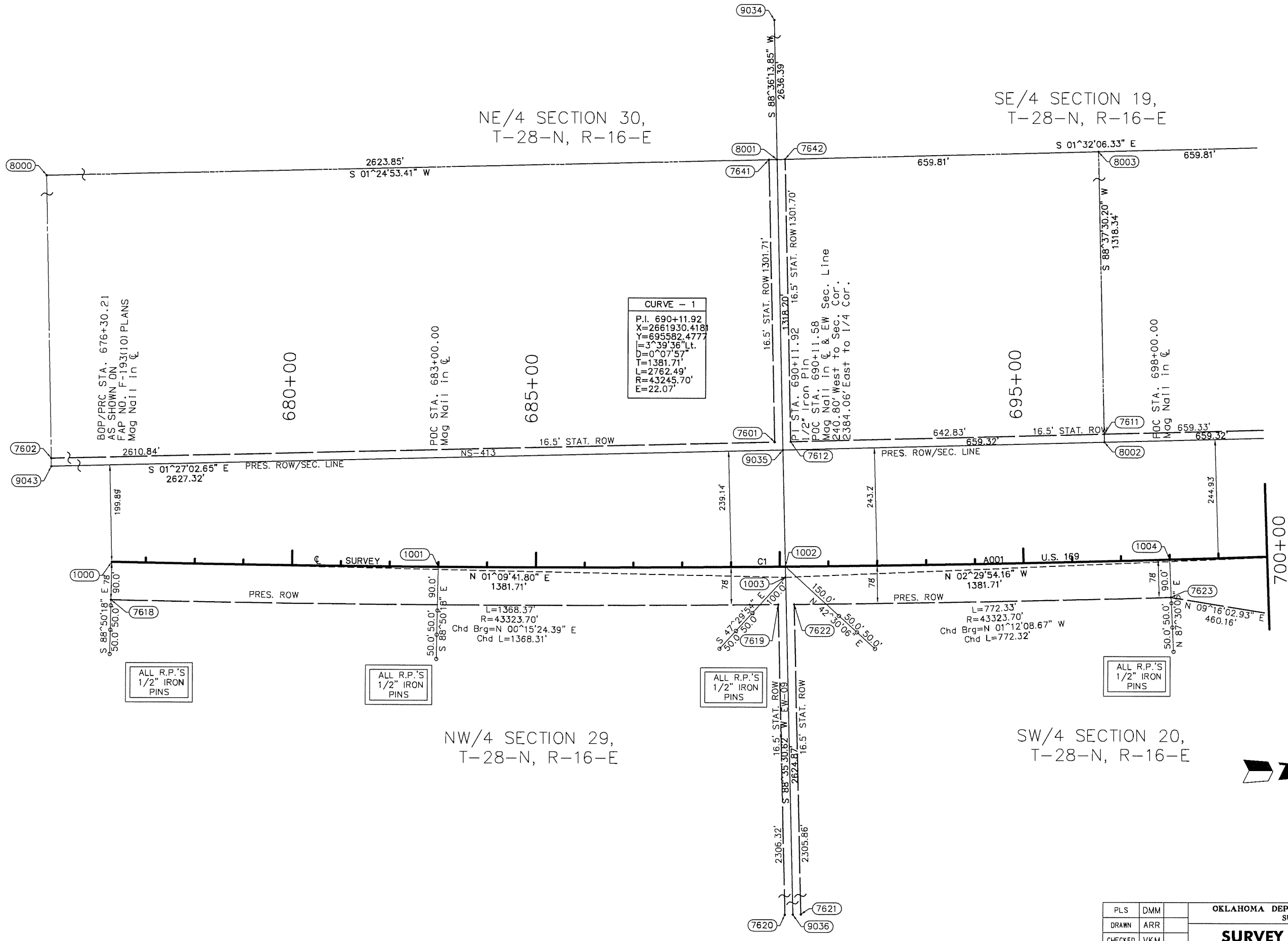
OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA.	247501041		41	127
DESCRIPTION			REVISIONS		
			DATE		

NE/4 SECTION 30,
T-28-N, R-16-E

SE/4 SECTION 19,
T-28-N, R-16-E

NW/4 SECTION 29,
T-28-N, R-16-E

SW/4 SECTION 20,
T-28-N, R-16-E

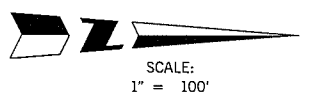


ALL R.P.'S
1/2" IRON
PINS

ALL R.P.'S
1/2" IRON
PINS

ALL R.P.'S
1/2" IRON
PINS

ALL R.P.'S
1/2" IRON
PINS



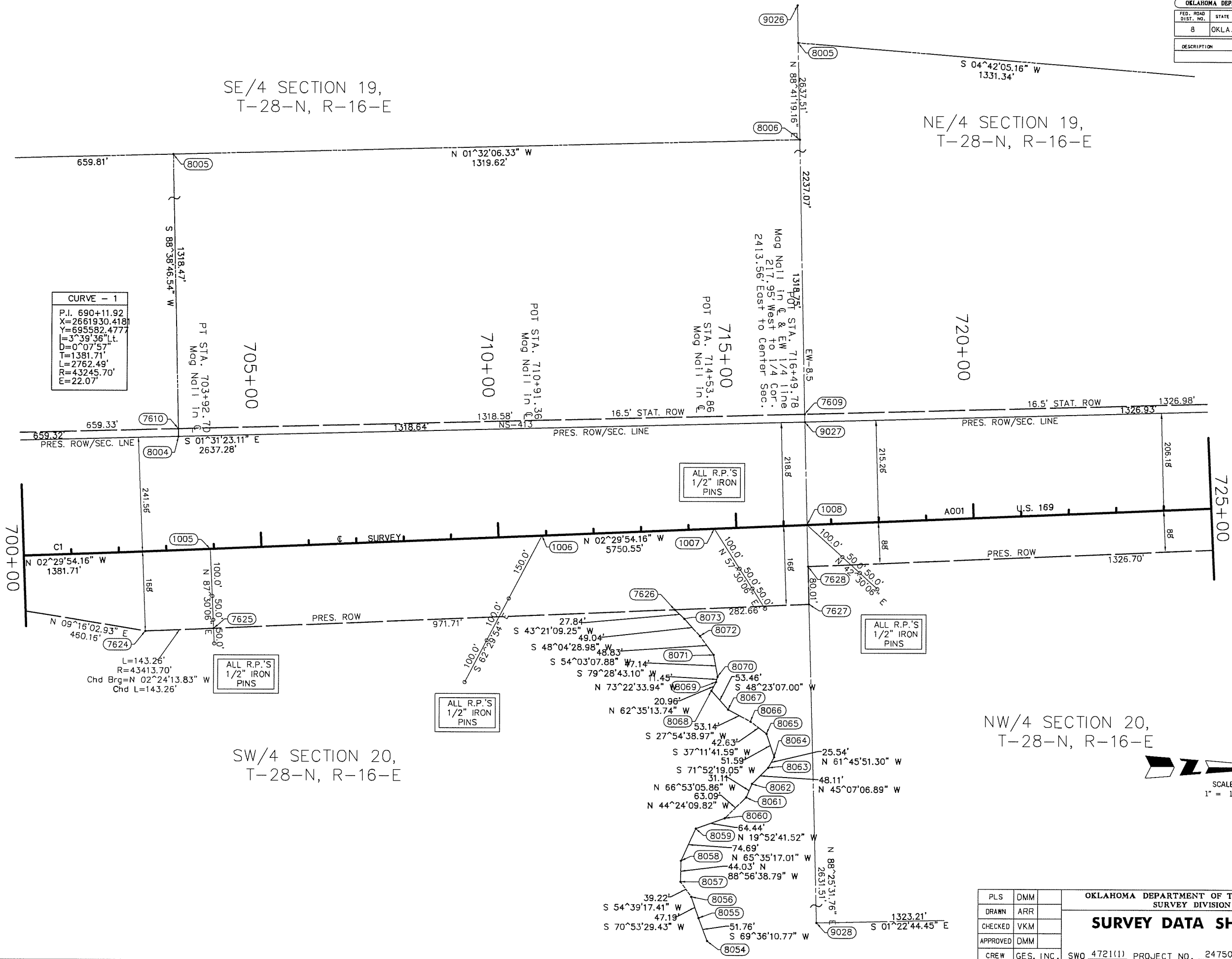
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DRAWN	ARR	
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	

SWO 4721(1) PROJECT NO. 247501041 SHEET NO. 41

OKLAHOMA DEPARTMENT OF TRANSPORTATION				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO. TOTAL SHEETS
8	OKLA	247501041		42 127
DESCRIPTION		REVISIONS		DATE

SE/4 SECTION 19,
T-28-N, R-16-E

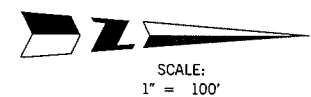
NE/4 SECTION 19,
T-28-N, R-16-E



PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	ARR	
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	

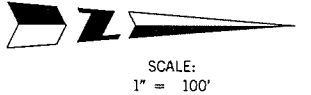
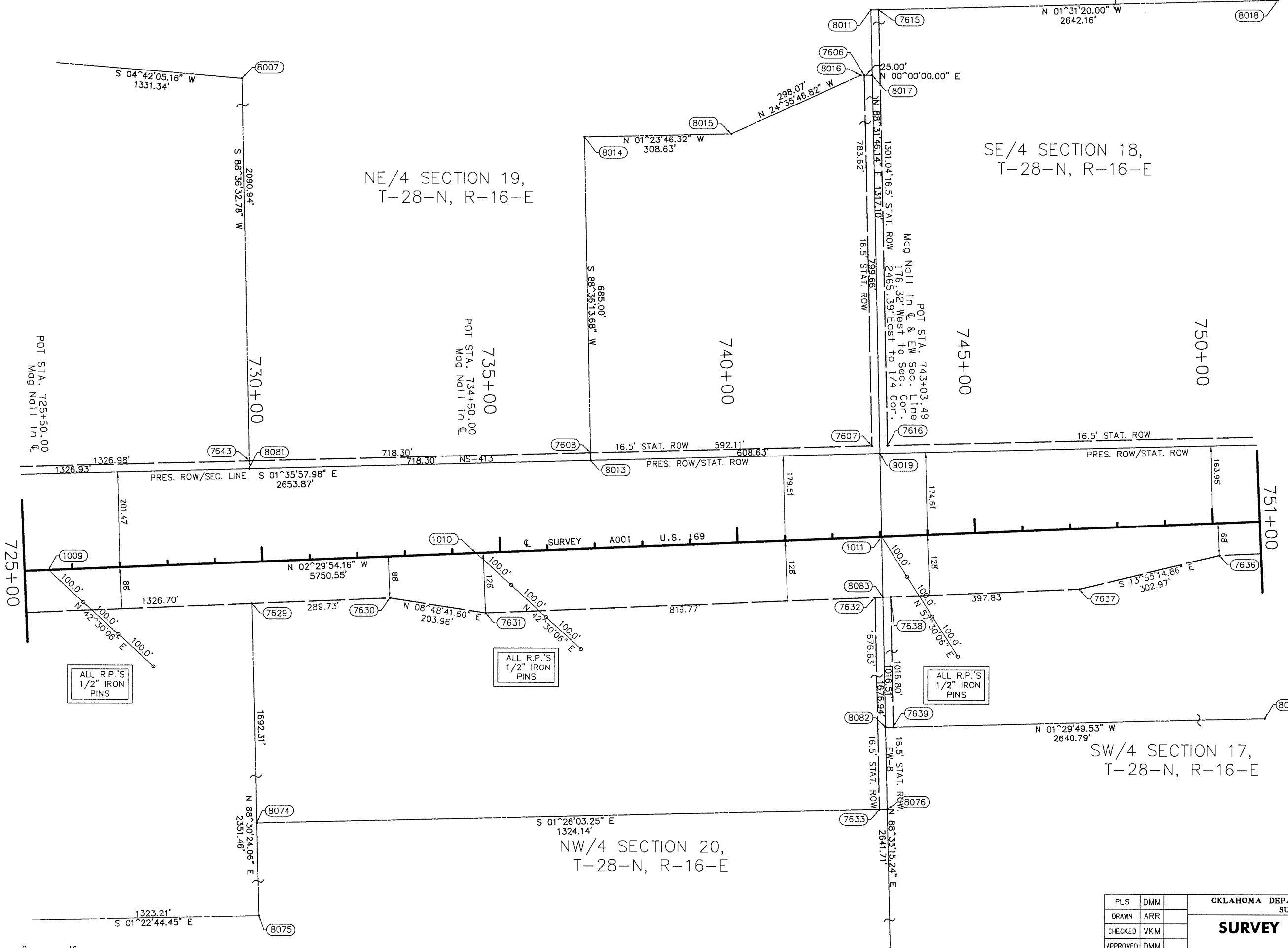
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SWO 4721(1) PROJECT NO. 247501041 SHEET NO. 42



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OKLAHOMA DEPARTMENT OF TRANSPORTATION				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
8	OKLA.	247501041	43	127
DESCRIPTION		REVISIONS	DATE	



PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	ARR	
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	

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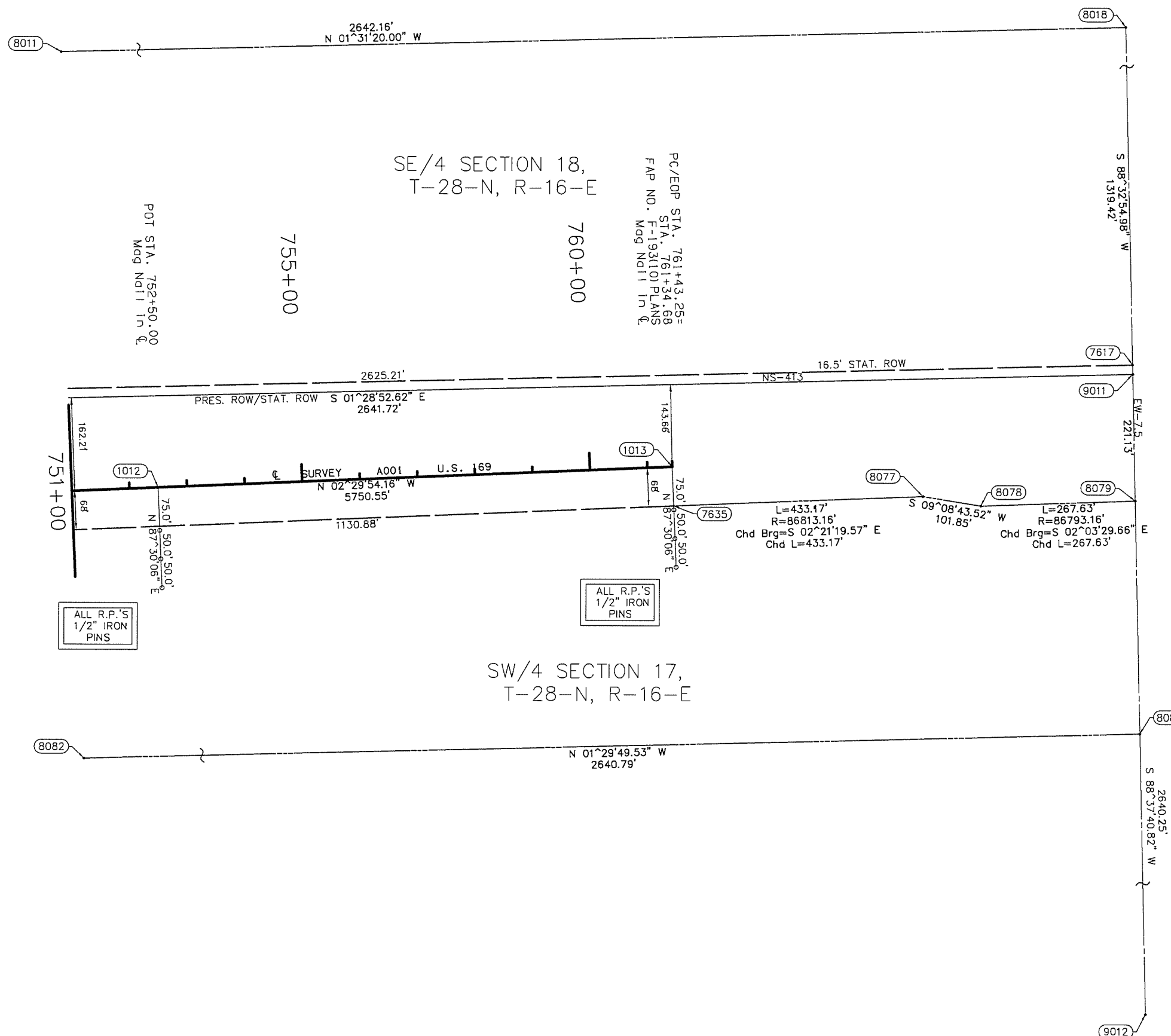
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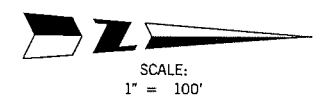
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OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA.	24750(04)		44	127
DESCRIPTION			REVISIONS	DATE	



ALL R.P.'S
1/2" IRON
PINS

ALL R.P.'S
1/2" IRON
PINS



PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	ARR	
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	

SURVEY DATA SHEET (10)

SWO 4721(1) PROJECT NO. 24750(04) SHEET NO. 44

OKLAHOMA DEPARTMENT OF TRANSPORTATION				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO. TOTAL SHEETS
8	OKLA.	24750(04)		45 127
DESCRIPTION	REVISIONS	DATE		

NORTHEAST CORNER OF SECTION 18, T-28-N, R-16-E, I.M. FOUND AND REJECTED A MAG NAIL SET BY PERSONS UNKNOWN. SET MAG NAIL WITH SHINER STAMPED "CA-1427" AND THREE REFERENCES.

THE POSITION WAS ESTABLISHED BY USING A SURVEY PERFORMED BY THE SETTLE ENGINEERING COMPANY FOR THE OKLAHOMA DEPARTMENT OF TRANSPORTATION DURING 1956 TO 1959. THE SURVEY IS NAMED SWO 2137(1). THE SURVEY SHOWS AN ANGLE AND DISTANCE FROM A P.O.T. AT STATION 795+79.10 ESTABLISHED AT THE INTERSECTION OF THE NORTH LINE OF SECTION 17 TOWNSHIP 28 NORTH RANGE 16 EAST AND THE CENTERLINE OF SURVEY. P.O.T. 795+79.10 NOR ANY REFERENCES WERE RECOVERED. P.O.T. 795+79.10 WAS COMPUTED FROM POINTS RECOVERED NORTH AND SOUTH ALONG THE CENTERLINE OF SURVEY. THE POINT SOUTH IS A P.T. AT STATION 777+43.85. THE POINT NORTH IS A P.O.T. AT STATION 799+01.10. ALTHOUGH THE POINTS THEMSELVES WERE NOT RECOVERED, REFERENCE PIN LINES WERE FOUND IN CONDITION. FIELD MEASURE BETWEEN THE POINTS RESULTED IN A DISTANCE OF 2156.27'. THE SURVEY REFLECTS A DISTANCE OF 2157.25'. A PROPORTIONED POSITION WAS COMPUTED FOR P.O.T. 795+79.10. AN ANGLE OF 89°55'02" WAS MEASURED BETWEEN A LINE BEGINNING AT THE COMPUTED P.O.T. 795+79.10 TO THE NORTH QUARTER CORNER OF SECTION 17 TOWNSHIP 28 NORTH RANGE 16 EAST AND THE CENTERLINE OF SURVEY. THE SURVEY REFLECTS AN ANGLE OF 89°55'. THE SURVEY REFLECTS A DISTANCE OF 99.60' FROM THE P.O.T. 795+79.10 AND THE NORTHWEST CORNER OF SECTION 17 TOWNSHIP 28 NORTH RANGE 16 EAST. THE POSITION WAS ESTABLISHED AT 99.60' FROM THE COMPUTED P.O.T. 795+79.10 AT A BEARING RUNNING FROM THE NORTH QUARTER CORNER OF SECTION 17 TOWNSHIP 28 NORTH RANGE 16 EAST THROUGH THE COMPUTED P.O.T. 795+79.10.

NORTHWEST CORNER OF SECTION 18, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A MAG NAIL AND TWO REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILE BY GUY R. BUCKLAND OF BUCKLAND SURVEYING COMPANY, LLC ON NOVEMBER 5, 2008. SET ONE REFERENCE.

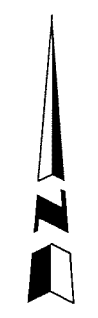
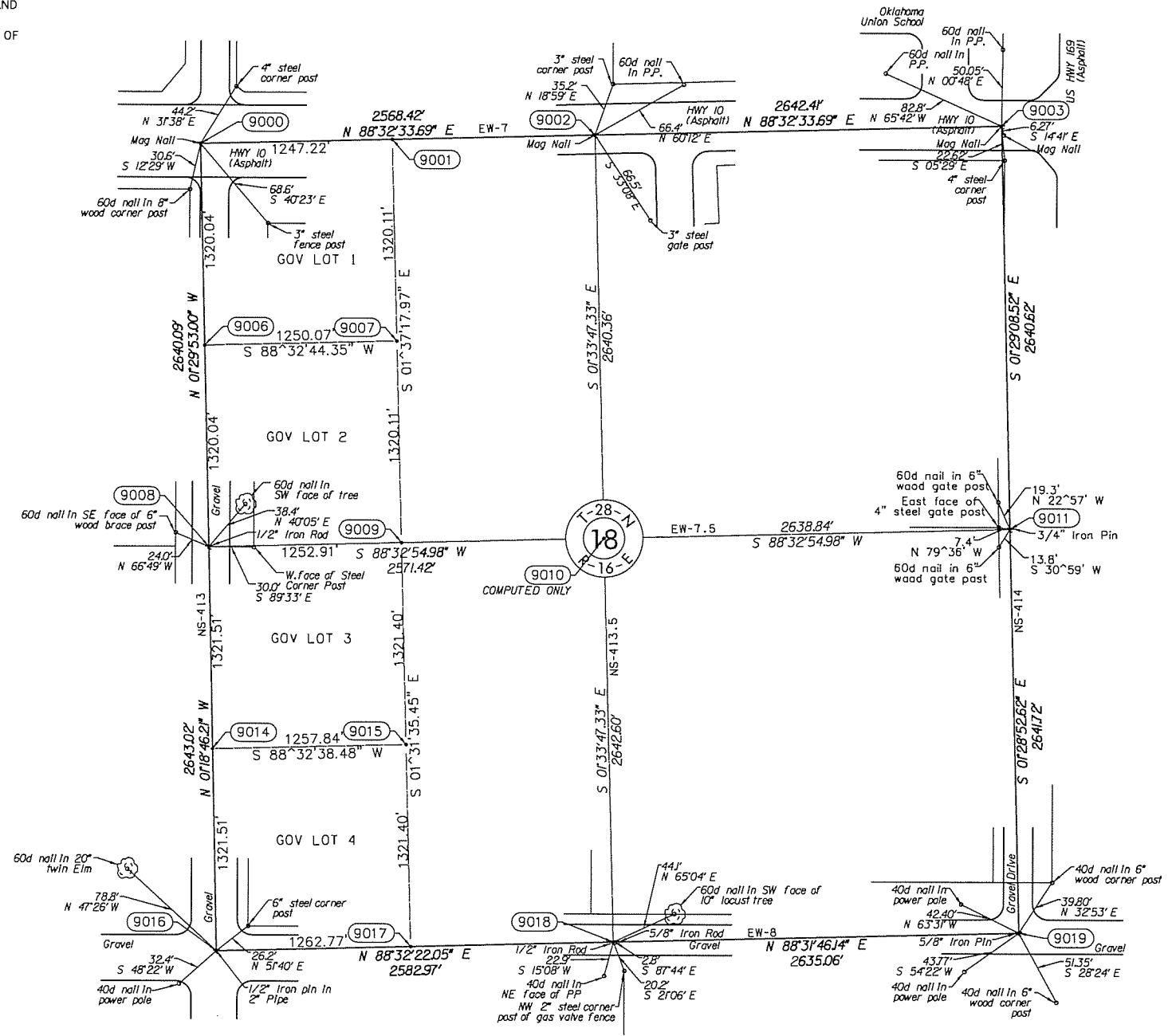
NORTH QUARTER CORNER OF SECTION 18, T-28-N, R-16-E, I.M. SET A MAG NAIL WITH SHINER STAMPED "CA-1427", POSITION DETERMINED BY SINGLE PROPORTIONATE MEASUREMENT. SET THREE REFERENCES.

WEST QUARTER CORNER OF SECTION 18, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 1/2" IRON ROD AS LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND, LS 1323 OF BUCKLAND SURVEYING COMPANY, INC. ON NOVEMBER 5, 2008. THIS POSITION WAS RECORDED AS LOST. FOUND 1 REFERENCE SET BY PERSONS UNKNOWN. SET TWO REFERENCES.

EAST QUARTER CORNER OF SECTION 18, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/4" IRON PIN AND 1 REFERENCE LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND OF BUCKLAND SURVEYING COMPANY, INC. ON NOVEMBER 5, 2005. SET 2 REFERENCES.

SOUTHWEST CORNER OF SECTION 18, T-28-N, R-16-E I.M. FOUND AND ACCEPTED A 1/2" IRON PIN INSIDE OF A 2" PIPE AND ONE REFERENCE LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND OF BUCKLAND SURVEYING COMPANY, INC. ON MARCH 20, 2007. SET TWO REFERENCES.

SOUTH QUARTER CORNER OF SECTION 18, T-28-N, R-16-E I.M. FOUND AND ACCEPTED A 1/2" IRON ROD AND 3 REFERENCES AS LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND, LS 1323, OF BUCKLAND SURVEYING COMPANY, INC. ON NOVEMBER 5, 2008. SET ONE REFERENCE.



SCALE: 1" = 500'

NOTE: REFERENCE'S SHOWN ARE NOT TO SCALE

PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	ARR	SURVEY DATA SHEET (11)
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	SWO 4721(1) PROJECT NO. 24750(04) SHEET NO. 45

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA.	247501041		46	127
DESCRIPTION		REVISIONS		DATE	

NORTHWEST CORNER OF SECTION 17, T-28-N, R-16-E, I.M. FOUND AND REJECTED A MAG NAIL SET BY PERSONS UNKNOWN. SET MAG NAIL WITH SHINER STAMPED "CA-1427" AND THREE REFERENCES.

THE POSITION WAS ESTABLISHED BY USING A SURVEY PERFORMED BY THE SETTLE ENGINEERING COMPANY FOR THE OKLAHOMA DEPARTMENT OF TRANSPORTATION DURING 1956 TO 1959. THE SURVEY IS NAMED SWO 2137(1). THE SURVEY SHOWS AN ANGLE AND DISTANCE FROM A P.O.T. AT STATION 795+79.10 ESTABLISHED AT THE INTERSECTION OF THE NORTH LINE OF SECTION 17 TOWNSHIP 28 NORTH RANGE 16 EAST AND THE CENTERLINE OF SURVEY. P.O.T. 795+79.10 NOR ANY REFERENCES WERE RECOVERED. P.O.T. 795+79.10 WAS COMPUTED FROM POINTS RECOVERED NORTH AND SOUTH ALONG THE CENTERLINE OF SURVEY. THE POINT SOUTH IS A P.T. AT STATION 777+43.85. THE POINT NORTH IS A P.O.T. AT STATION 799+01.10. ALTHOUGH THE POINTS THEMSELVES WERE NOT RECOVERED, REFERENCE PIN LINES WERE FOUND IN CONDITION. FIELD MEASURE BETWEEN THE POINTS RESULTED IN A DISTANCE OF 2156.27'. THE SURVEY REFLECTS A DISTANCE OF 2157.25'. A PROPORTIONED POSITION WAS COMPUTED FOR P.O.T. 795+79.10. AN ANGLE OF 89°55'02" WAS MEASURED BETWEEN A LINE BEGINNING AT THE COMPUTED P.O.T. 795+79.10 TO THE NORTH QUARTER CORNER OF SECTION 17 TOWNSHIP 28 NORTH, RANGE 16 EAST AND THE CENTERLINE OF SURVEY. THE SURVEY REFLECTS AN ANGLE OF 89°55'. THE SURVEY REFLECTS A DISTANCE OF 99.60' FROM THE P.O.T. 795+79.10 AND THE NORTHWEST CORNER OF SECTION 17 TOWNSHIP 28 NORTH RANGE 16 EAST. THE POSITION WAS ESTABLISHED AT 99.60' FROM THE COMPUTED P.O.T. 795+79.10 AT A BEARING RUNNING FROM THE NORTH QUARTER CORNER OF SECTION 17 TOWNSHIP 28 NORTH RANGE 16 EAST THROUGH THE COMPUTED P.O.T. 795+79.10.

NORTH QUARTER CORNER OF SECTION 17, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN SET BY PERSONS UNKNOWN. SET THREE REFERENCES.

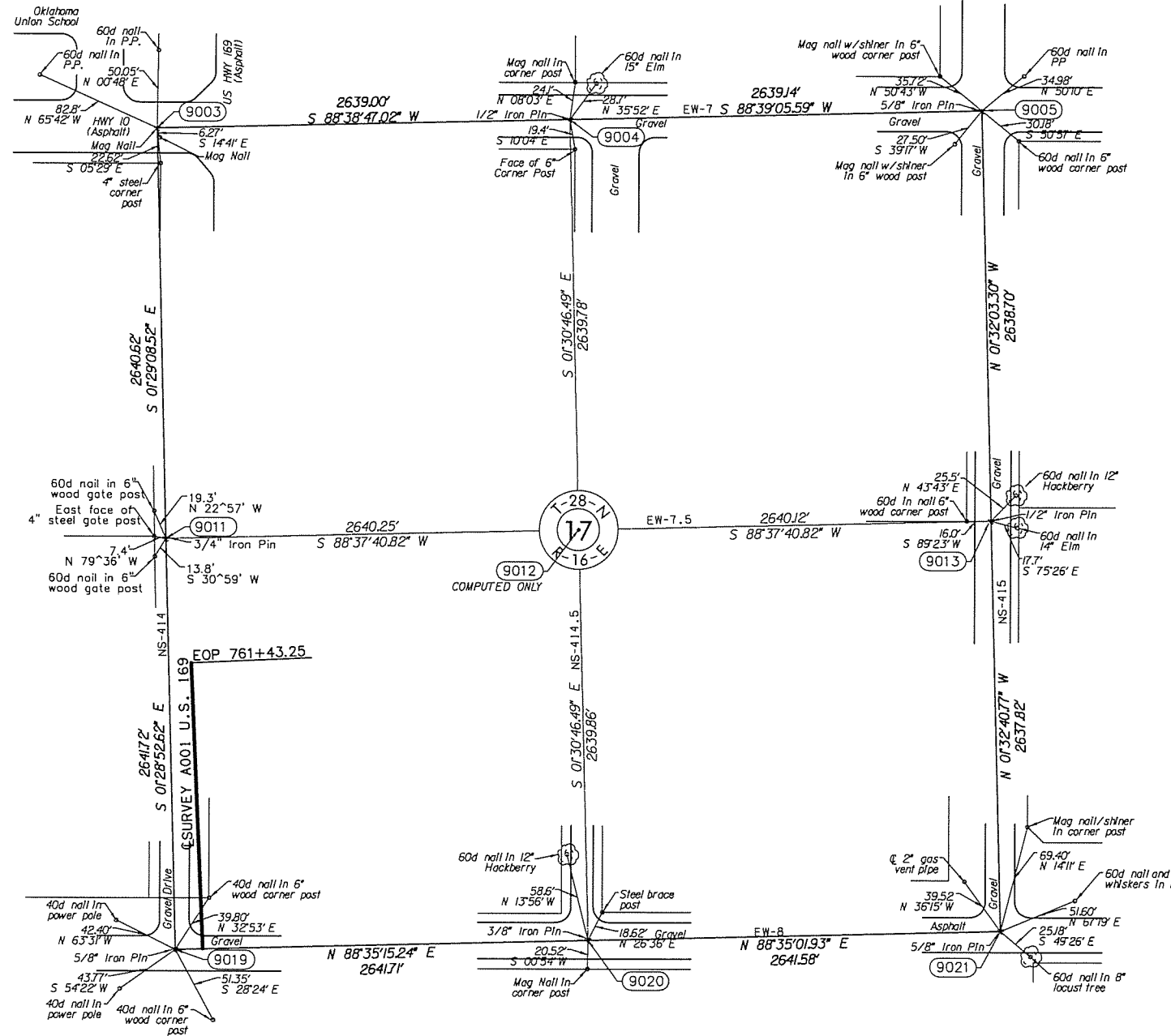
NORTHEAST CORNER OF SECTION 17, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 5/8" IRON PIN AND 4 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY R. GARY WALKER OF CORNERSTONE REGIONAL SURVEYING LLC ON FEBRUARY 3, 2006.

WEST QUARTER CORNER OF SECTION 17, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/4" IRON PIN AND 1 REFERENCE LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND OF BUCKLAND SURVEYING COMPANY, INC. ON NOVEMBER 5, 2005. SET 2 REFERENCES.

EAST QUARTER CORNER OF SECTION 17, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN WITH YELLOW CAP STAMPED LS 1323 AND TWO REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY R. GARY WALKER OF CORNERSTONE REGIONAL SURVEYING LLC ON FEBRUARY 3, 2006. SET ONE REFERENCE.

SOUTHWEST CORNER OF SECTION 17, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 5/8" IRON PIN AND 4 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND OF BUCKLAND SURVEYING COMPANY, INC. ON NOVEMBER 5, 2008.

SOUTHEAST CORNER OF SECTION 17, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 5/8" IRON PIN AND FOUR REFERENCES AS LISTED ON A CERTIFIED CORNER RECORD FILED BY R. GARY WALKER OF CORNERSTONE REGIONAL SURVEYING LLC ON FEBRUARY 3, 2006.



SOUTH QUARTER CORNER OF SECTION 17, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN SET BY PERSONS UNKNOWN. SET THREE REFERENCES.

SCALE: 1" = 500'

NOTE: REFERENCES SHOWN ARE NOT TO SCALE

PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET (12) SWO 4721(1) PROJECT NO. 247501041 SHEET NO. 46
DRAWN	ARR	
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	

OKLAHOMA DEPARTMENT OF TRANSPORTATION				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO. / TOTAL SHEETS
8	OKLA.	24750(04)		47 / 127
DESCRIPTION		REVISIONS		DATE

NORTHWEST CORNER OF SECTION 19, T-28-N, R-16-E I.M. FOUND AND ACCEPTED A 1/2" IRON PIN INSIDE OF A 2" PIPE AND ONE REFERENCE LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND OF BUCKLAND SURVEYING COMPANY, INC. ON MARCH 20, 2007. SET TWO REFERENCES.

NORTH QUARTER CORNER OF SECTION 19, T-28-N, R-16-E I.M. FOUND AND ACCEPTED A 1/2" IRON ROD AND 3 REFERENCES AS LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND, LS 1323, OF BUCKLAND SURVEYING COMPANY, INC. ON NOVEMBER 5, 2008. SET ONE REFERENCE.

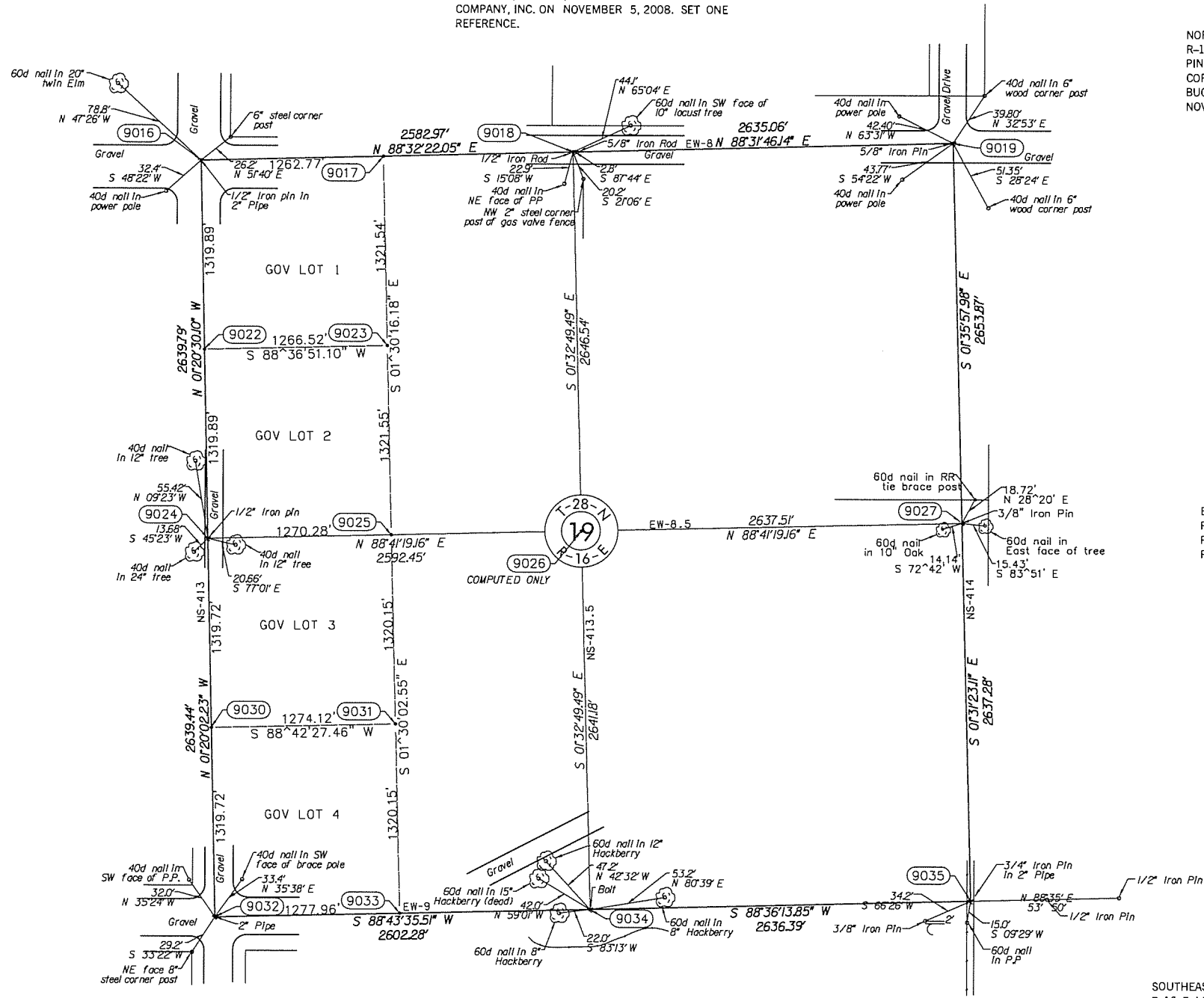
NORTHEAST CORNER OF SECTION 19, T-28-N, R-16-E I.M. FOUND AND ACCEPTED A 5/8" IRON PIN AND 4 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND OF BUCKLAND SURVEYING COMPANY, INC. ON NOVEMBER 5, 2008.

WEST QUARTER CORNER OF SECTION 19, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN WITH YELLOW CAP AND THREE REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND OF BUCKLAND SURVEYING COMPANY, INC. ON MARCH 20, 2007. THIS POSITION WAS RECORDED AS LOST.

EAST QUARTER CORNER OF SECTION 19, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN SET BY PERSONS UNKNOWN. SET THREE REFERENCES.

SOUTHWEST CORNER OF SECTION 19, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 2" PIPE AND THREE REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND OF BUCKLAND SURVEYING COMPANY, INC. ON MARCH 20, 2007.

SOUTH QUARTER CORNER OF SECTION 19, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 1" SQUARE BOLT SET BY PERSONS UNKNOWN. SET TWO REFERENCES.



SCALE: 1" = 500'

NOTE: REFERENCE'S SHOWN ARE NOT TO SCALE

SOUTHEAST CORNER OF SECTION 19, T-18-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/4" IRON PIN IN A 2" PIPE AND TWO REFERENCES SET BY PERSONS UNKNOWN. SET TWO REFERENCES.

PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	ARR	
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	
		SURVEY DATA SHEET (13)
		SWO 4721(1) PROJECT NO. 24750(04) SHEET NO. 47

OKLAHOMA DEPARTMENT OF TRANSPORTATION				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO. TOTAL SHEETS
8	OKLA.	247501041		48 127
DESCRIPTION		REVISIONS	DATE	

NORTHWEST CORNER OF SECTION 20, T-28-N, R-16-E I.M. FOUND AND ACCEPTED A 5/8" IRON PIN AND 4 REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND OF BUCKLAND SURVEYING COMPANY, INC. ON NOVEMBER 5, 2008.

NORTH QUARTER CORNER OF SECTION 20, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN SET BY PERSONS UNKNOWN. SET THREE REFERENCES.

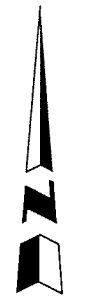
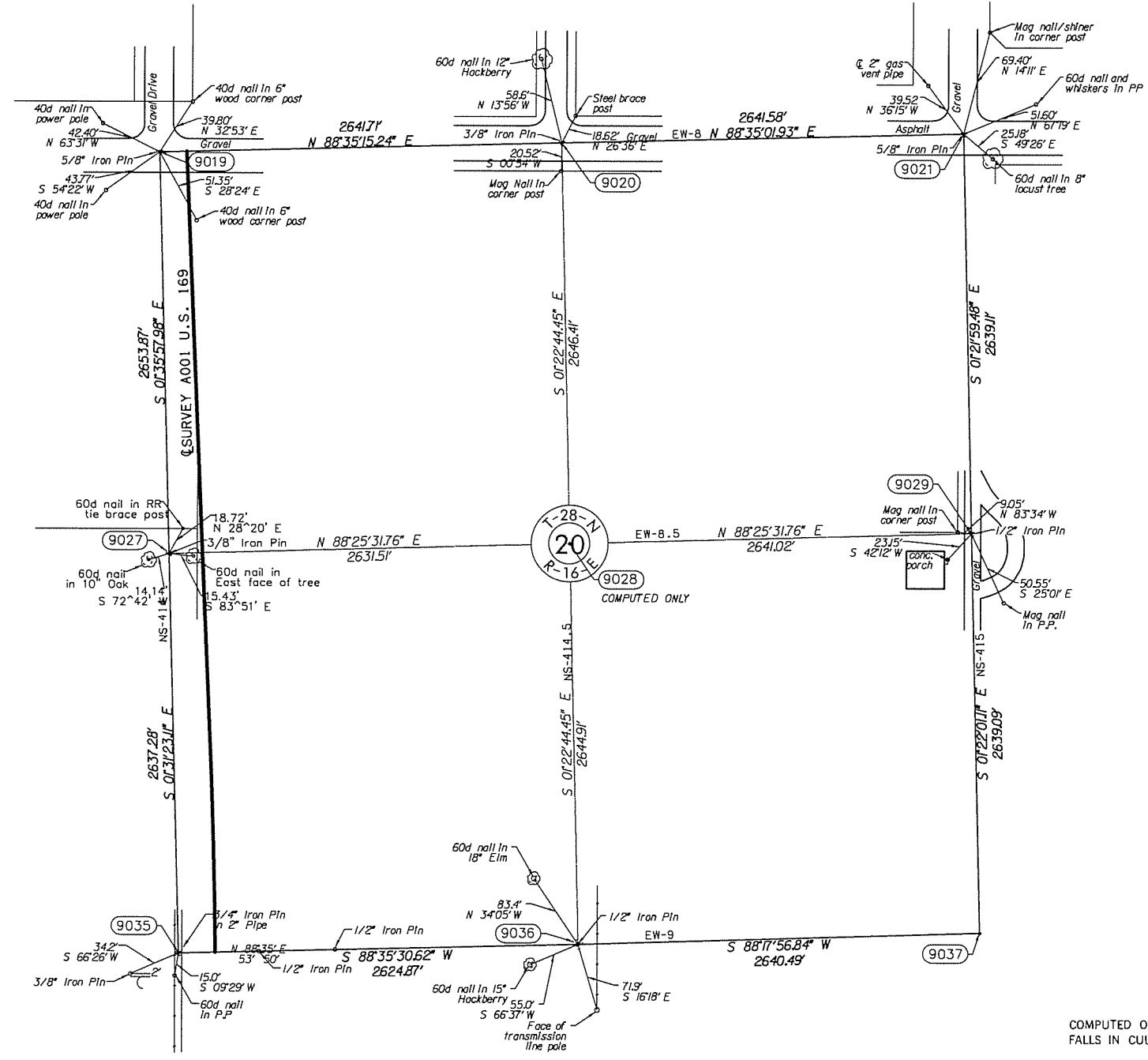
NORTHEAST CORNER OF SECTION 20, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 5/8" IRON PIN AND FOUR REFERENCES AS LISTED ON A CERTIFIED CORNER RECORD FILED BY R. GARY WALKER OF CORNERSTONE REGIONAL SURVEYING LLC ON FEBRUARY 3, 2006.

WEST QUARTER CORNER OF SECTION 20, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/8" IRON PIN SET BY PERSONS UNKNOWN. SET THREE REFERENCES.

EAST QUARTER CORNER OF SECTION 20, T-28-N, R-16-E, I.M. SET A 1/2" IRON PIN WITH CAP STAMPED "CA-1427". THE POSITION WAS DETERMINED BY USING SINGLE PROPORTIONATE MEASUREMENT. SET THREE REFERENCES.

SOUTHWEST CORNER OF SECTION 20, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/4" IRON PIN IN A 2" PIPE AND TWO REFERENCES SET BY PERSONS UNKNOWN. SET TWO REFERENCES.

SOUTH QUARTER CORNER OF SECTION 20, T-28-N, R-16-E, I.M. SET A 1/2" IRON PIN WITH CAP STAMPED "CA-1427" USING THE RECORDED TIES TO THE CENTERLINE OF A SURVEY PERFORMED BY SETTLE ENGINEERING FOR THE OKLAHOMA DEPARTMENT OF TRANSPORTATION IN 1956-1959, NAMED SWO 2137(1). SET THREE REFERENCES.



SCALE: 1" = 500'

NOTE: REFERENCE'S SHOWN ARE NOT TO SCALE

COMPUTED ONLY FALLS IN CULTIVATED FIELD

PLS	OMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	ARR	
CHECKED	VKM	
APPROVED	OMM	
CREW	GES, INC.	

SURVEY DATA SHEET (14)

SWO 4721(1) PROJECT NO. 247501041 SHEET NO. 48

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA.	24750041		49	127
DESCRIPTION			REVISIONS		DATE

NORTHWEST CORNER OF SECTION 20, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 2" PIPE AND THREE REFERENCES LISTED ON A CERTIFIED CORNER RECORD FILED BY GUY R. BUCKLAND OF BUCKLAND SURVEYING COMPANY, INC. ON MARCH 20, 2007.

NORTH QUARTER CORNER OF SECTION 30, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 1" SQUARE BOLT SET BY PERSONS UNKNOWN. SET TWO REFERENCES.

NORTHEAST CORNER OF SECTION 30, T-18-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/4" IRON PIN IN A 2" PIPE AND TWO REFERENCES SET BY PERSONS UNKNOWN. SET TWO REFERENCES.

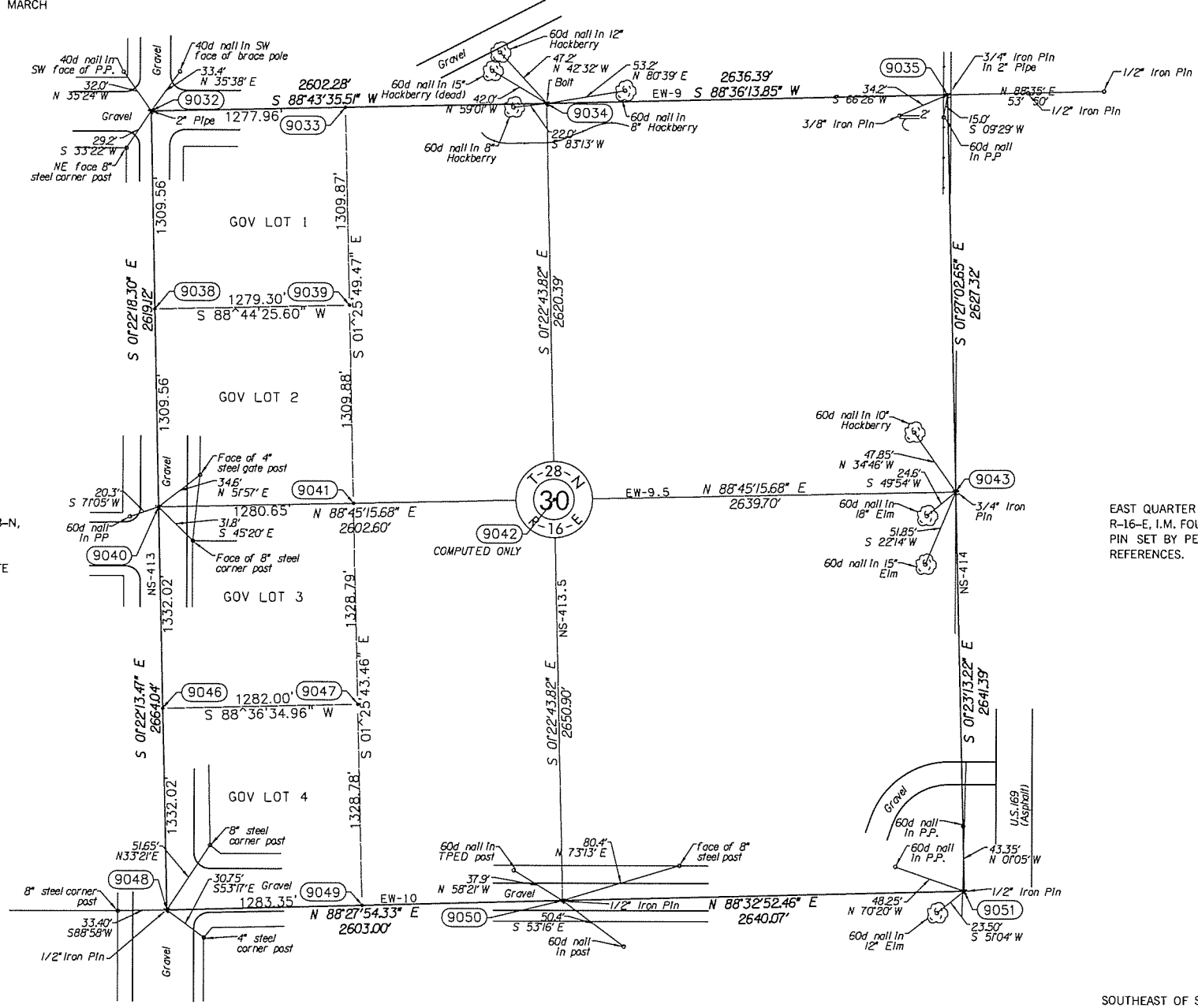
WEST QUARTER CORNER OF SECTION 30, T-28-N, R-16-E, I.M. SET 1/2" IRON PIN WITH CAP STAMPED "CA-1427". THE POSITION WAS DETERMINED BY USING SINGLE PROPORTIONATE MEASUREMENT. SET THREE REFERENCES.

EAST QUARTER CORNER OF SECTION 30, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/4" IRON PIN SET BY PERSONS UNKNOWN. SET THREE REFERENCES.

SOUTHWEST CORNER OF SECTION 30, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN SET BY PERSONS UNKNOWN. SET THREE REFERENCES.

SOUTH QUARTER CORNER OF SECTION 30, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN SET BY PERSONS UNKNOWN. SET THREE REFERENCES.

SOUTHEAST OF SECTION 30, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN SET BY PERSONS UNKNOWN. SET THREE REFERENCES.



SCALE: 1" = 500'

NOTE: REFERENCE'S SHOWN ARE NOT TO SCALE

PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	ARR	
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	
		SURVEY DATA SHEET (15)
		SWO 4721(1) PROJECT NO. 24750041 SHEET NO. 49

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA.	24750(04)		50	127
DESCRIPTION		REVISIONS		DATE	

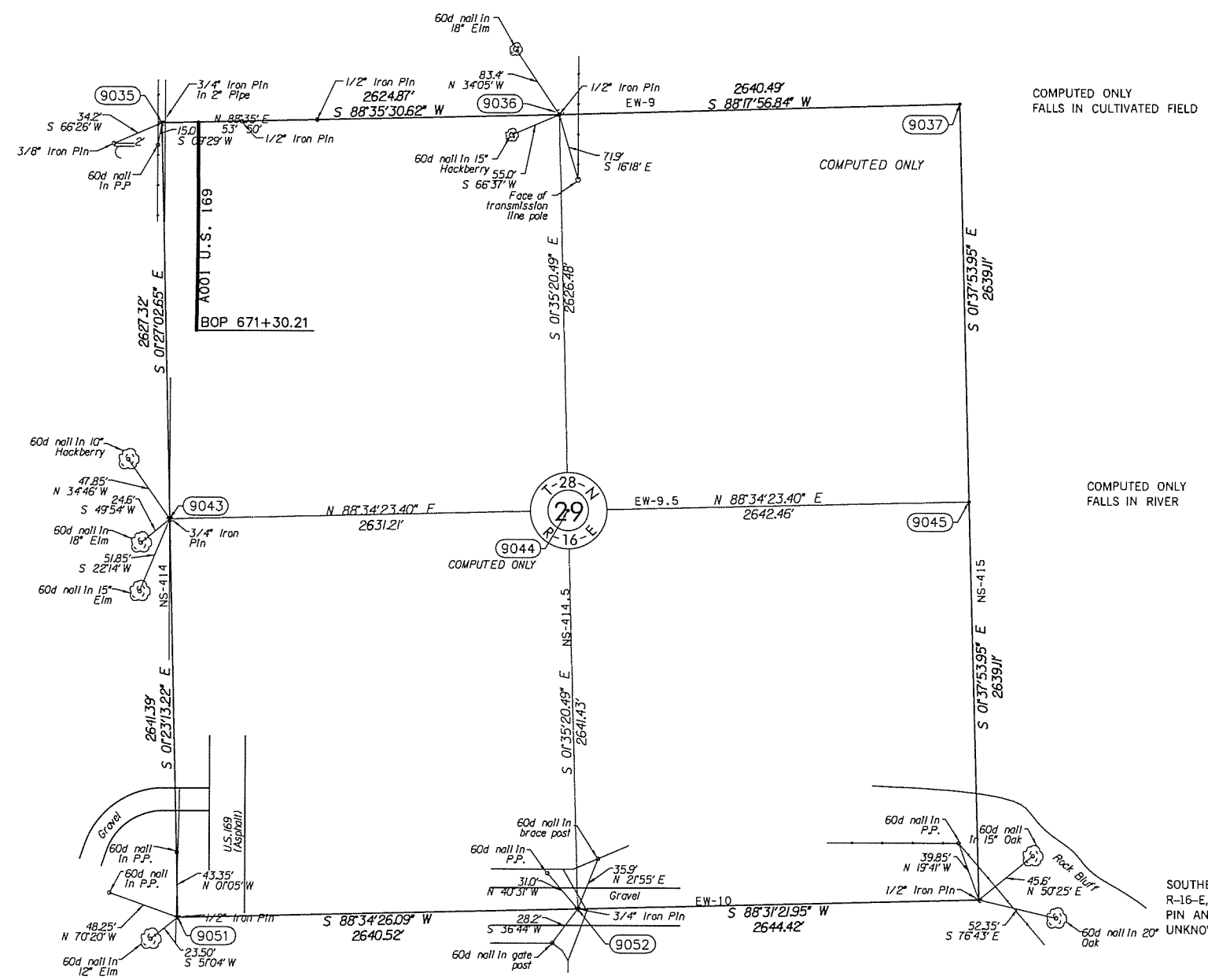
NORTHWEST CORNER OF SECTION 29, T-18-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/4" IRON PIN IN A 2" PIPE AND TWO REFERENCES SET BY PERSONS UNKNOWN. SET TWO REFERENCES.

NORTH QUARTER CORNER OF SECTION 29, T-28-N, R-16-E, I.M. SET A 1/2" IRON PIN WITH CAP STAMPED "CA-1427" USING THE RECORDED TIES TO THE CENTERLINE OF A SURVEY PERFORMED BY SETTLE ENGINEERING FOR THE OKLAHOMA DEPARTMENT OF TRANSPORTATION IN 1956-1959, NAMED SWO 2137(1). SET THREE REFERENCES.

WEST QUARTER CORNER OF SECTION 29, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/4" IRON PIN SET BY PERSONS UNKNOWN. SET THREE REFERENCES.

SOUTHWEST OF SECTION 29, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN SET BY PERSONS UNKNOWN. SET THREE REFERENCES.

SOUTH QUARTER CORNER OF SECTION 29, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 3/4" IRON PIN AND TWO REFERENCES SET BY PERSONS UNKNOWN. SET ONE REFERENCE.



COMPUTED ONLY
FALLS IN CULTIVATED FIELD

COMPUTED ONLY
FALLS IN RIVER

SOUTHEAST CORNER OF SECTION 29, T-28-N, R-16-E, I.M. FOUND AND ACCEPTED A 1/2" IRON PIN AND THREE REFERENCES SET BY PERSONS UNKNOWN.



SCALE:
1" = 500'

NOTE: REFERENCE'S SHOWN ARE NOT TO SCALE

PLS	DMM	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	ARR	
CHECKED	VKM	
APPROVED	DMM	
CREW	GES, INC.	
		SURVEY DATA SHEET (16)
		SWO 4721(1) PROJECT NO. 24750(04) SHEET NO. 50

7/12/2016

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P:\ENCL650-TUL-NCIV-2552310000-000T-US169Brdg-20_DESGN-40-CAD-Hickory\100\100-VB-100-A124750104-1-Gen-Plan-Elev-01.dgn

DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		51	127

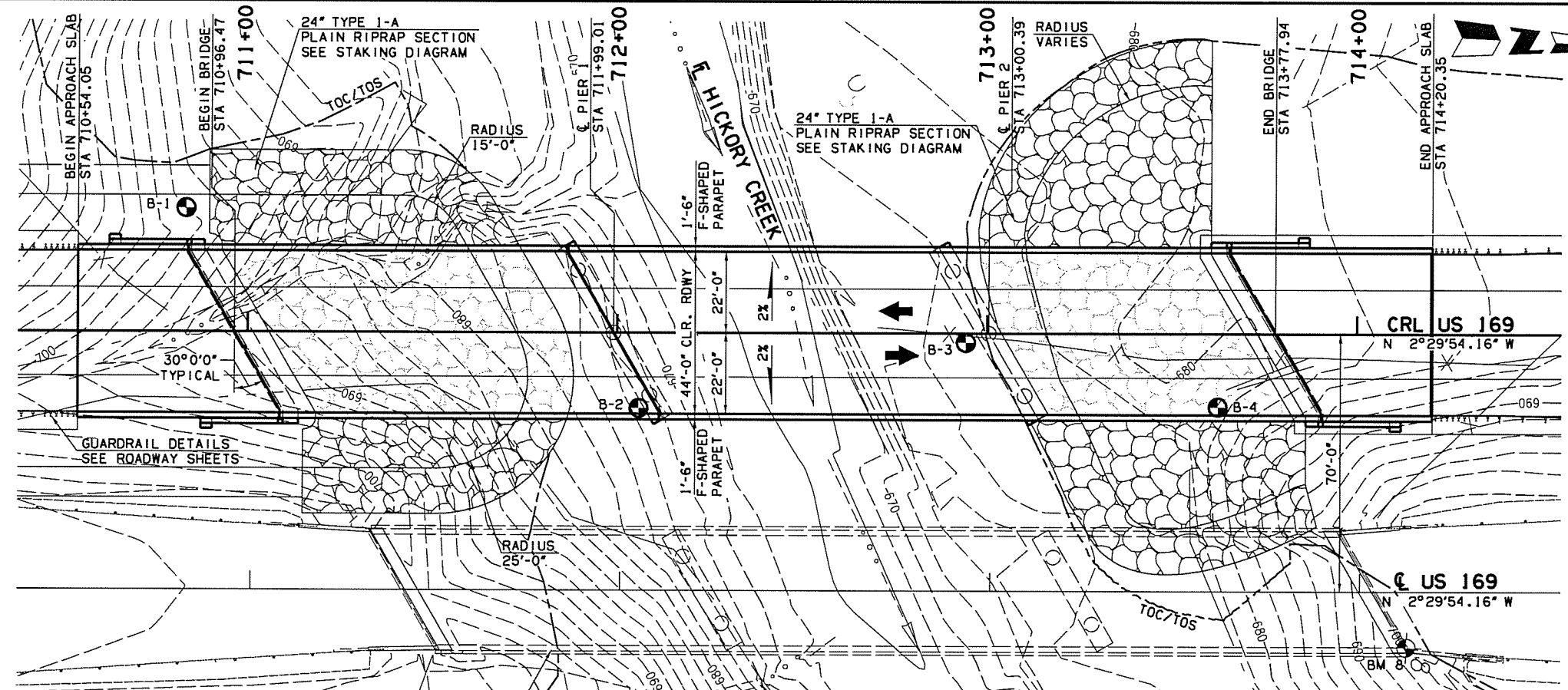
DESIGN DATA

LOADING
 HL-93, OKLAHOMA OVERLOAD TRUCK OR 315 OVERLOAD TRUCK
 20 PSF FUTURE WEARING SURFACE.
 LRFR OPERATING RATING = 1.80

DESIGN
 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION,
 EXCEPT FOR PILES WHICH SATISFY AASHTO STANDARD
 SPECIFICATIONS FOR HIGHWAY BRIDGES, 16TH EDITION WITH
 NO INTERIMS.
 ANS/AASHTO/AWS D1.5 BRIDGE WELDING CODE
 ANS/AWS D1.6 STRUCTURAL WELDING CODE - STAINLESS STEEL

MATERIAL
 CONCRETE:
 CLASS AA $f'_c = 4,000$ PSI
 CLASS A $f'_c = 3,000$ PSI
 REINFORCING STEEL:
 STRUCTURAL STEEL M270 (GRADE 50W) $F_y = 60,000$ PSI
 STAINLESS STEEL A240 (TYPE 316) $F_y = 50,000$ PSI
 STAINLESS STEEL A320, CLASS 2, (GRADE B8M) $F_y = 30,000$ PSI
 STAINLESS STEEL A320, CLASS 2, (GRADE B8M) $F_y = 58,000$ PSI

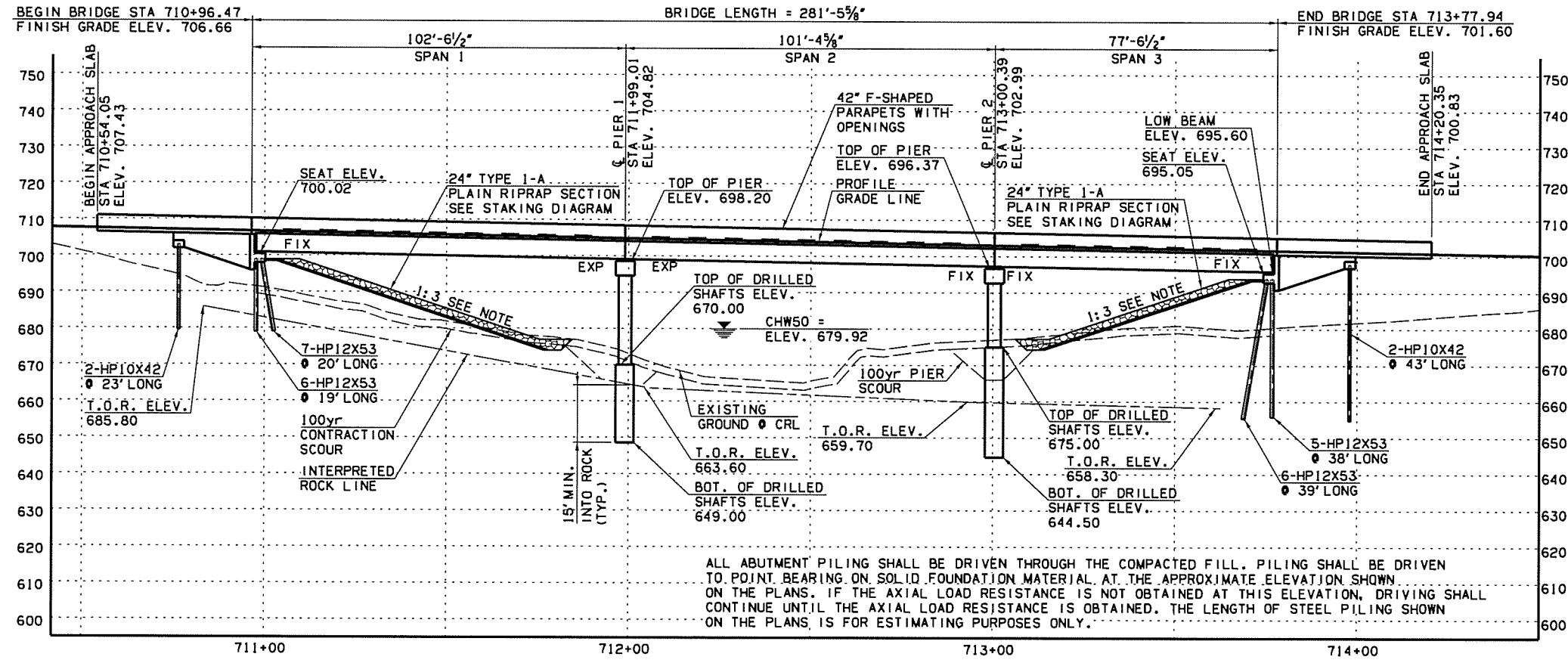
FOUNDATION DESIGN
ABUTMENT 1 (HP 12X53 PILING)
 FACTORED PILE REACTION = 75.62 TONS/PILE
ABUTMENT 2 (HP 12X53 PILING)
 FACTORED PILE REACTION = 78.06 TONS/PILE
PIER 1 (60" DIA. DRILLED SHAFTS)
 MAX. FACTORED REACTION = 550.20 T/SHAFT
 FACTORED FRICTION RESISTANCE (9 TSF) = 636.20 T/SHAFT
 FACTORED BEARING RESISTANCE (60 TSF) = 824.70 T/SHAFT
 TOTAL FACTORED RESISTANCE = 1460.80 T/SHAFT
 BEARING RESISTANCE FACTOR = 0.7
 FRICTION RESISTANCE FACTOR = 0.45
 FRICTION DEPTH OF ROCK NEGLECTED (FEET) = 5
PIER 2 (60" DIA. DRILLED SHAFTS)
 MAX. FACTORED REACTION = 522.20 T/SHAFT
 FACTORED FRICTION RESISTANCE (9 TSF) = 636.20 T/SHAFT
 FACTORED BEARING RESISTANCE (60 TSF) = 824.70 T/SHAFT
 TOTAL FACTORED RESISTANCE = 1460.80 T/SHAFT
 BEARING RESISTANCE FACTOR = 0.7
 FRICTION RESISTANCE FACTOR = 0.45
 FRICTION DEPTH OF ROCK NEGLECTED (FEET) = 5



PLAN
 SCALE: 1" = 20'
 NOTE: CONTOURS AT 2' INTERVAL.

BM 7 - RR SPIKE AT EAST EDGE OF PAVEMENT
 STA 708+20.25 - 27.07' RT CL
 STA 708+21.20 - 97.07' RT CRL
 ELEV=711.90

BM 8 - CHISELED "X" ON NE HUBGUARD
 STA 714+12.60 - 15.71' RT CL
 STA 714+13.56 - 85.71' RT CRL
 ELEV=702.33



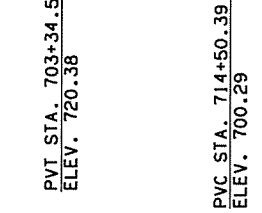
ELEVATION
 SCALE HORIZ. 1" = 20'
 VERT. 1" = 20'

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

HYDRAULIC DATA

TOTAL DA = 16.12 SQ MI Q50 = 7750 cfs
 CONTROLLED DA = 0 SQ MI V50 = 7.74 fps
 EFFECTIVE DA = 16.12 SQ MI CHW50 = 679.92
 Q2 = 1390 cfs Q100 = 9480 cfs
 V2 = 3.67 fps V100 = 8.37 fps
 CHW2 = 672.27 CHW100 = 681.06
 Q5 = 2750 cfs • 100yr PIER SCOUR = 8.92'
 V5 = 5.00 fps 100yr CONTRACTION SCOUR = 1.14'
 CHW5 = 674.78 • 100yr TOTAL SCOUR = 10.06'
 Q10 = 4050 cfs QOT > Q500 = 14300 cfs
 V10 = 5.92 fps V500 = 9.48 fps
 CHW10 = 676.57 CHW500 = 683.97
 Q25 = 6200 cfs • 500yr PIER SCOUR = 9.60'
 V25 = 7.01 fps 500yr CONTRACTION SCOUR = 1.16'
 CHW25 = 678.82 • 500yr TOTAL SCOUR = 10.76'
 BRIDGE LENGTH = 281.47'

NOTE: NOT APPLICABLE AT PIER 1 DUE TO ROCK ELEVATION



VERTICAL DATA

NOTE:

1:3 RIPRAP SLOPE INDICATED IS PERPENDICULAR TO ABUTMENT SEAT.

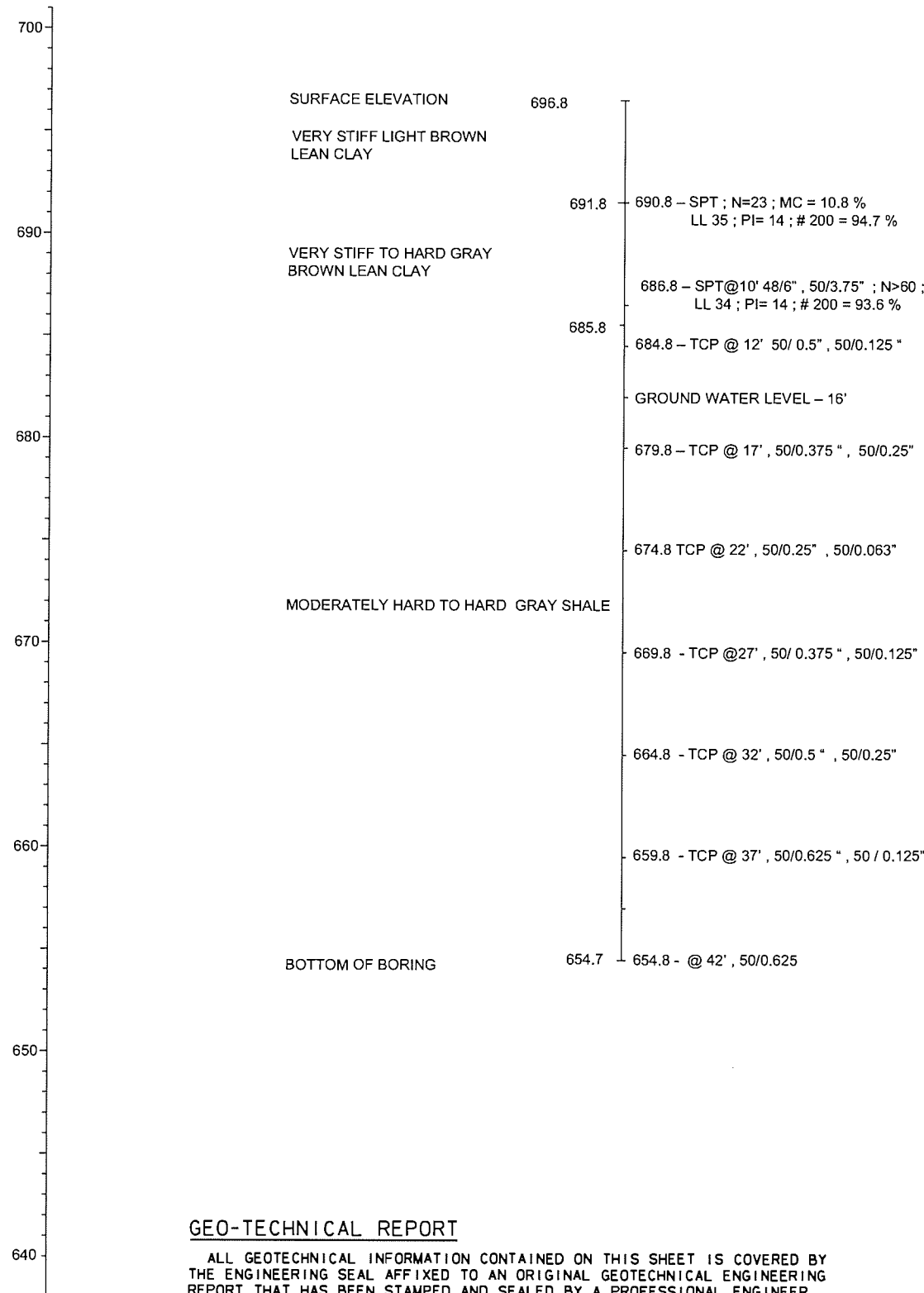
BRIDGE A @ STA. 712+37.21 CONST. CONVENTIONAL 100'-100'-75' TYPE IV P.C. BEAM SPANS, 44'-0" CLR. RDY. SKEW 30°RF, F-SHAPED PARAPET
 TO BE REMOVED EXISTING BRIDGE @ STA. 712+72.00, 80'-100'-80' PLATE GIRDER SPANS, 30' CLR. RDY W/2-18"S.C. SKEW 30°RF

Design	SAK 6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	WZB 6/16	BRIDGE A	
Checked	AEJ 6/16	GENERAL PLAN AND ELEVATION	
Approved	SAK 6/16		
Squad	BENHAM		
		Job Piece No. 24750(04)	Sheet No. 51

DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		52	127

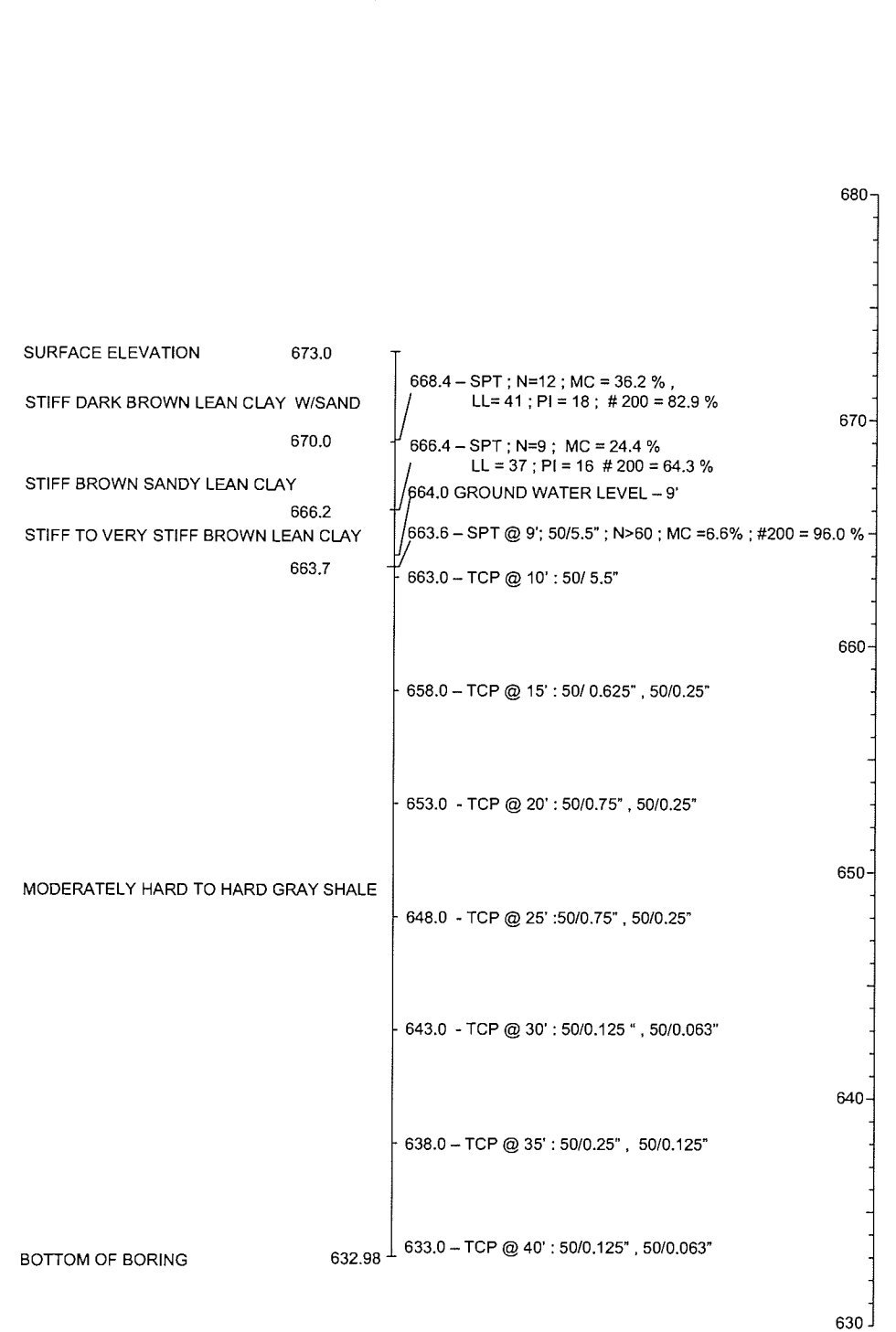
BORING NO. B-1

STA. 710+ 83.29, 33.54' LT OF BRIDGE CL.



BORING NO. B-2

STA. 712+05.84 , 20.46' RT OF BRIDGE CL.



GEO-TECHNICAL REPORT

ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA.

TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER AT (405) 522-0972. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECHNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

SITE GEOLOGY

THE SUBJECT PROJECT IS LOCATED AND BOUNDED BY PENNSYLVANIAN PERIOD, COFFEYVILLE FORMATION (IPCC), CHEVKERBOARD FORMATION (IPCC), SEMINOLE FORMATION (IPSL), AND LENAPAH FORMATION (IPLB) WITH ALLUVIUM (QAL). THESE FORMATIONS ARE DESCRIBED AS FOLLOWS:

- IPCC - COFFEYVILLE FORMATION: SHALE AND THIN-BEDDED SANDSTONE.
- IPCC - CHECKERBOARD FORMATION: LIMESTONE AND SOME SHALE.
- IPSL - SEMINOLE FORMATION: SHALE, SANDSTONE, AND THIN COAL BEDS.
- IPLB - LENAPAH FORMATION: LIMESTONE AND SHALE.
- QAL - ALLUVIUM: GRAVEL, SAND SILT, AND CLAY.

IN OUR FIELD EXPLORATION WE ENCOUNTERED ALLUVIUM OVERBURDEN SOILS OVER SHALE, SANDSTONE AND LIMESTONE FORMATIONS.

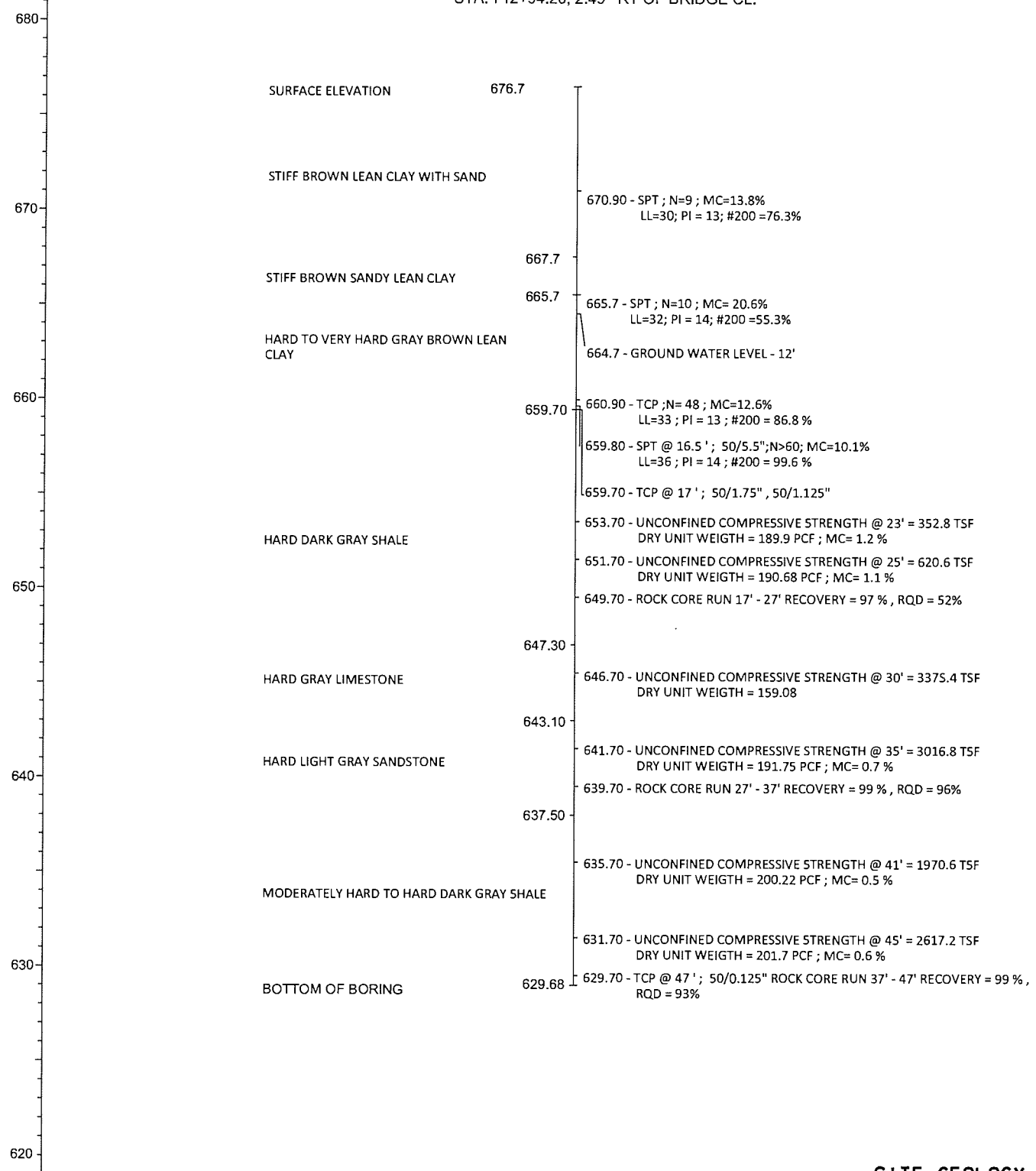
NOTES:

1. GROUNDWATER LEVELS WERE OBTAINED DURING THE DRILLING OPERATIONS AND MAY FLUCTUATE THROUGHT THE YEAR. BORING DATA IS PROVIDED BY GW².

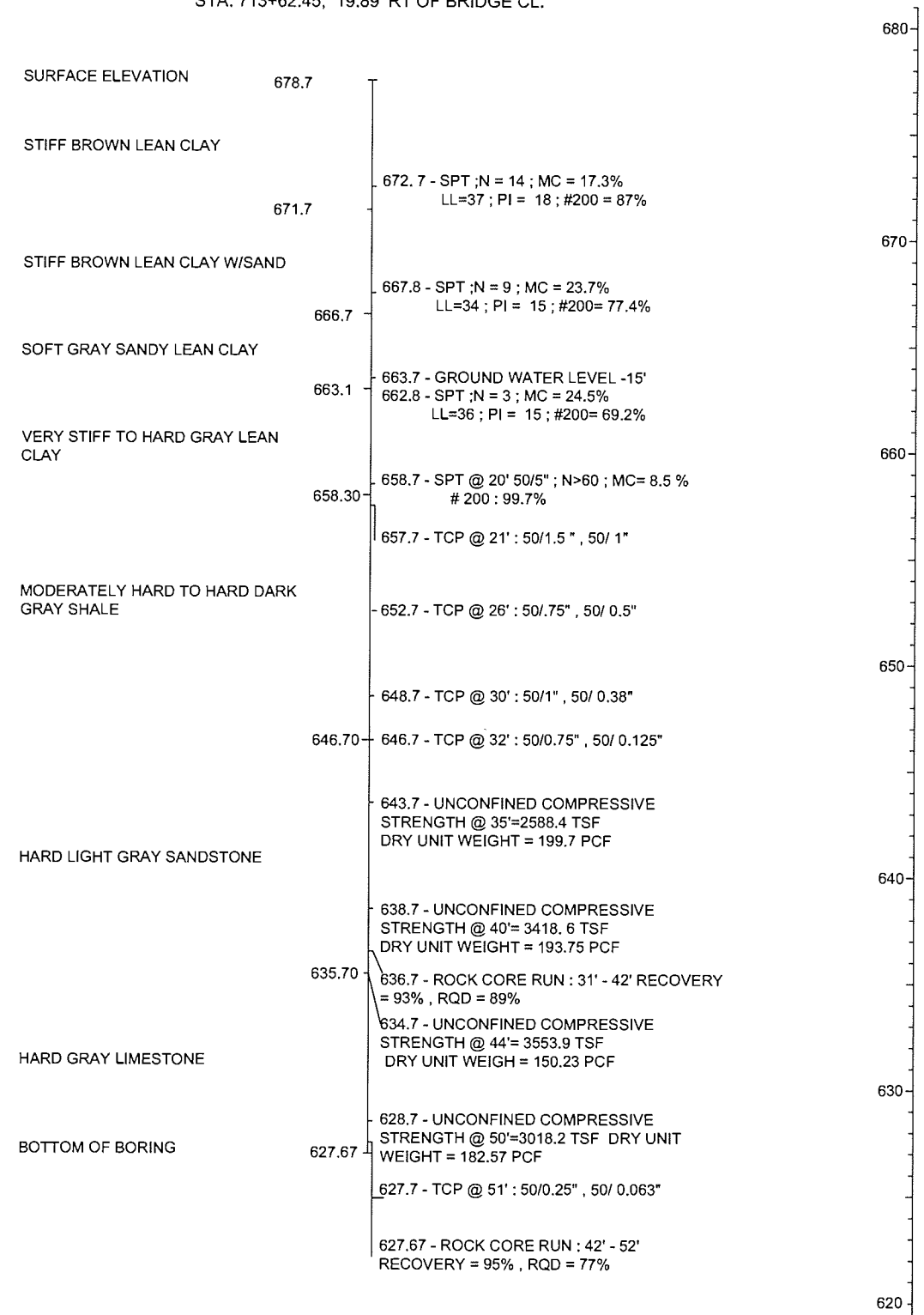
Design	GW2	6/16	US 169 OVER HICKORY CREEK BRIDGE A FOUNDATION REPORT (SHEET 1 OF 2)	NOWATA COUNTY
Drawn	RAH	6/16		
Checked	AEJ	6/16		
Approved	SAK	6/16		
Squad	BENHAM			
Job Piece No. 24750(04)			Sheet No. 52	

DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		53	127

BORING NO. B-3
STA. 712+94.26, 2.49' RT OF BRIDGE CL.



BORING NO. B-4
STA. 713+62.45, 19.89' RT OF BRIDGE CL.



GEO-TECHNICAL REPORT

ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER AT (405) 522-0972. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECHNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

SITE GEOLOGY

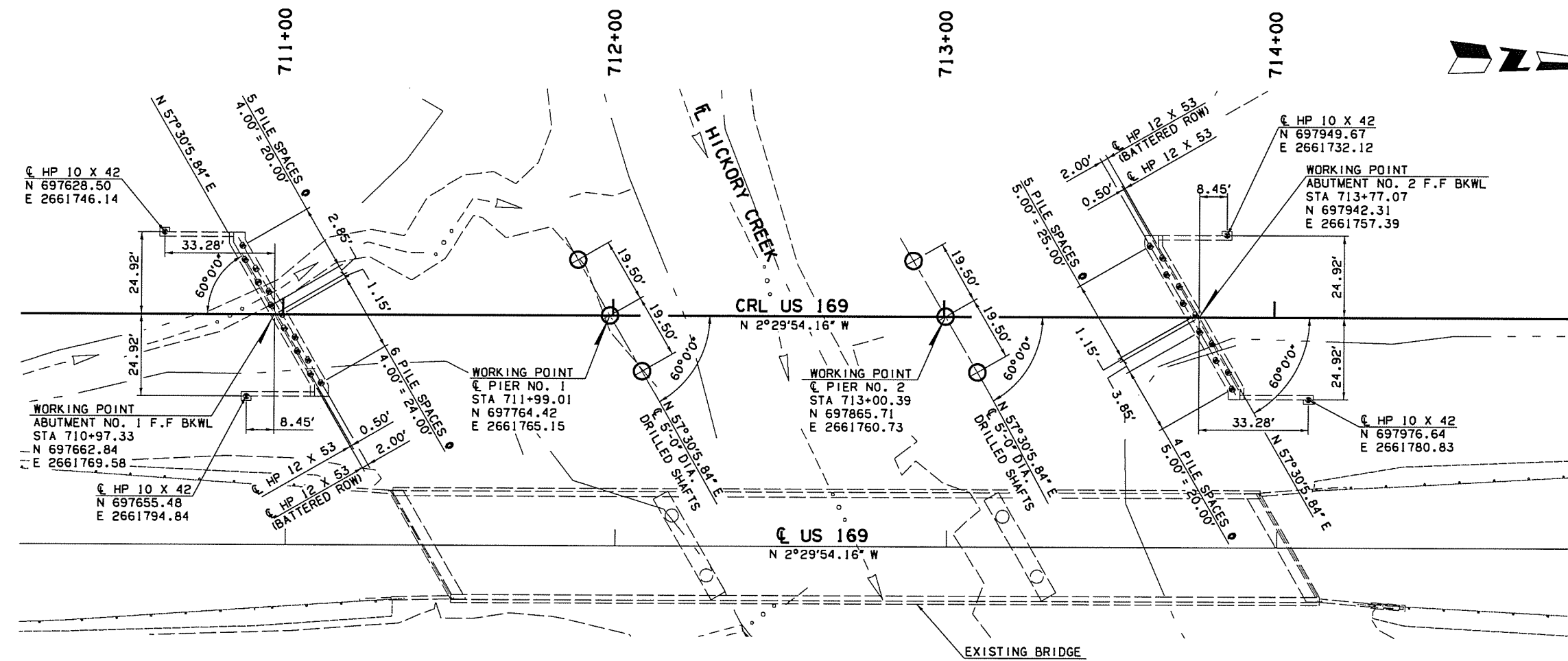
THE SUBJECT PROJECT IS LOCATED AND BOUNDED BY PENNSYLVANIAN PERIOD, COFFEYVILLE FORMATION (IPCC), CHECKERBOARD FORMATION (IPCC), SEMINOLE FORMATION (IPSL), AND LENAPAH FORMATION (IPLB) WITH ALLUVIUM (OAL). THESE FORMATIONS ARE DESCRIBED AS FOLLOWS:
 IPCC - COFFEYVILLE FORMATION: SHALE AND THIN-BEDDED SANDSTONE.
 IPCC - CHECKERBOARD FORMATION: LIMESTONE AND SOME SHALE.
 IPSL - SEMINOLE FORMATION: SHALE, SANDSTONE, AND THIN COAL BEDS.
 IPLB - LENAPAH FORMATION: LIMESTONE AND SHALE.
 OAL - ALLUVIUM: GRAVEL, SAND SILT, AND CLAY.
 IN OUR FIELD EXPLORATION WE ENCDUNTERED ALLUVIUM OVERBURDEN SOILS OVER SHALE, SANDSTONE AND LIMESTONE FORMATIONS.

NOTES:

1. GROUNDWATER LEVELS WERE OBTAINED DURING THE DRILLING OPERATIONS AND MAY FLUCTUATE THROUGH THE YEAR. BORING DATA IS PROVIDED BY GW².

Design	GW2	6/16	US 169 OVER HICKORY CREEK BRIDGE A FOUNDATION REPORT (SHEET 2 OF 2) Job Piece No. 24750(04) Sheet No. 53
Drawn	RAH	6/16	
Checked	AEJ	6/16	
Approved	SAK	6/16	
Squad	BENHAM		

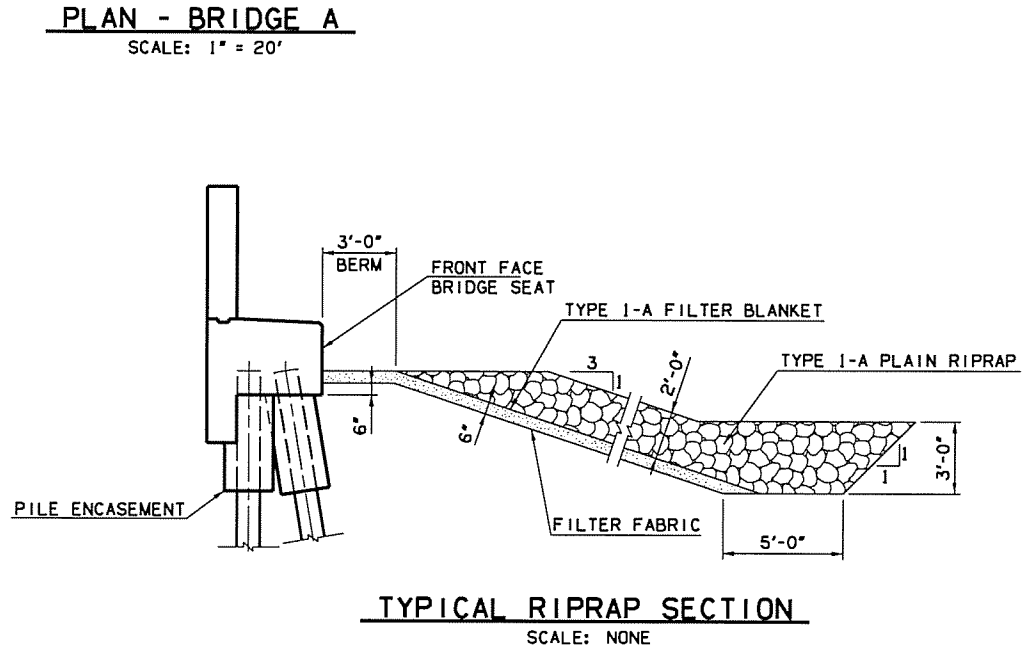
DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		54	127



DESCRIPTION	UNIT	ABUTMENT	PIER	SUPERSTR.	APPROACH	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	255				255
CLSM BACKFILL	CY	351.3				351.3
PRESTRESSED CONCRETE BEAMS (TYPE IV)	LF			1370.0		1370.0
APPROACH SLAB	SY				443.2	443.2
SAW-CUT GROOVING	SY			1376.1	415.0	1791.1
SEALED EXPANSION JOINT	LF			53.67		53.67
42" F-SHAPED PARAPET	LF			563.0	169.8	732.8
STRUCTURAL STEEL	LB			1670		1670
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA			20		20
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA			10		10
SPECIAL CONCRETE FINISH	SY		104			104
CLASS AA CONCRETE	CY			375.5		375.5
CLASS A CONCRETE	CY	129.7	183.7			313.4
REINFORCING STEEL	LB		2330			2330
EPOXY COATED REINFORCING STEEL	LB	19980	25720	112370		158070
CLASS C BRIDGE DECK REPAIR	SY				100	100
PILES, FURNISHED (HP10X42)	LF	132				132
PILES, FURNISHED (HP12X53)	LF	678				678
PILES, DRIVEN (HP10X42)	LF	132				132
PILES, DRIVEN (HP12X53)	LF	678				678
METAL PILE SHOES	EA	28				28
PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1				1
WATER REPELLENT (VISUALLY INSPECTED)	SY	200	120	1138	150	1608
DRILLED SHAFTS 60" DIAMETER	LF		155			155
CROSSHOLE SONIC LOGGING	EA		1			1
SEALER CRACK PREPARATION	LF			54		54
SEALER RESIN	GAL			0.4		0.4
TYPE I-A PLAIN RIPRAP	TON	1760				1760
TYPE I-A FILTER BLANKET	TON	300				300
FILTER FABRIC (RIPRAP)	SY	1236				1236
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	115				115
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	40				40
REMOVAL OF BRIDGE ITEMS	LSUM					1

ABUTMENT NO. 1	697.86
ABUTMENT NO. 2	693.38

SHEET NO.	TITLE
51	GENERAL PLAN AND ELEVATION
52 - 53	FOUNDATION REPORT
54	STAKING DIAGRAM
55	TYPICAL SECTION
56 - 61	ABUTMENT DETAILS
62 - 63	PIER DETAILS
64 - 65	P. C. TYPE IV BEAM DETAILS
66 - 69	SUPERSTRUCTURE DETAILS
70	LONGITUDINAL SECTION
71 - 72	APPROACH SLAB DETAILS



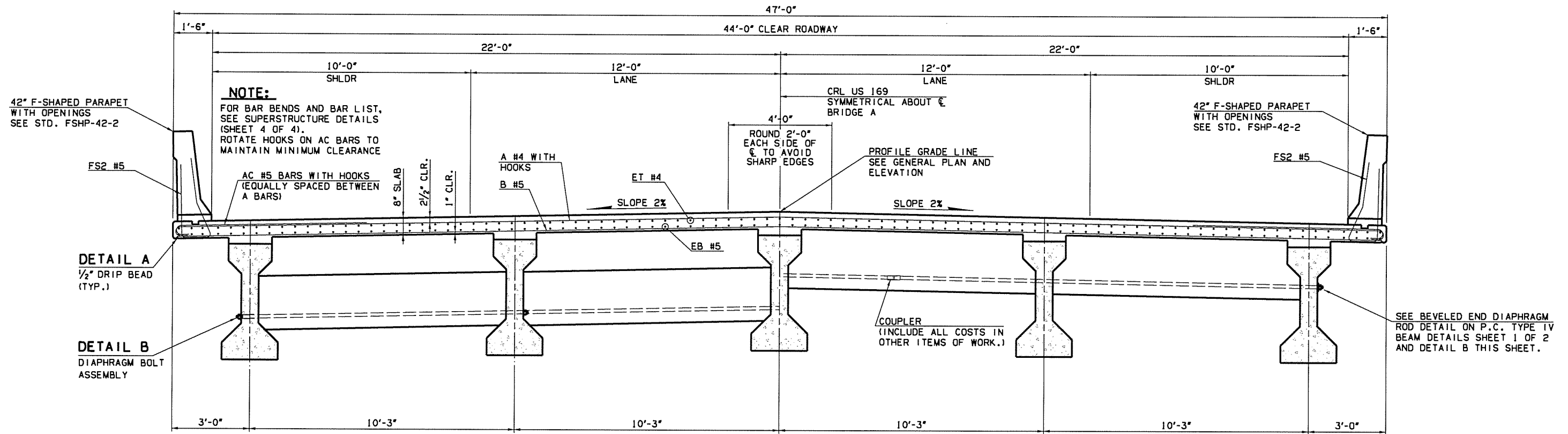
- NOTE:**
- ABUTMENT PILES SHALL BE ORIENTED SUCH THAT THE FLANGES ARE PARALLEL WITH THE FACE OF THE BRIDGE SEAT.
 - CONTRACTOR SHALL VERIFY LOCATION AND STATUS (I.E. "ABANDONED") OF ALL UTILITIES PRIOR TO BEGINNING EXCAVATION OR DRIVING PILES.
 - HARD ROCK WAS ENCOUNTERED AT THIS SITE. EXCAVATION FOR THE FOUNDATIONS MAY REQUIRE SPECIALTY HEAVY-DUTY DRILLING EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE FOR BEING FULLY AWARE OF THE FOUNDATION MATERIAL CONDITIONS AND THE DRILLING PROCESS PRIOR TO BEGINNING WORK.

- BRIDGE STANDARDS**
- FSHP-42-2
 - EJ-SK
 - EJ-DTL
 - HP1-2
 - B40-C-ABUT-MISC
 - B40-C-PCB-DTL
 - B40-C-BRG-PC4BT

Design	AEJ	6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	WZB	6/16	BRIDGE A	
Checked	KSJ	6/16		
Approved	SAK	6/16		
Squad	BENHAM			

STAKING DIAGRAM
Job Piece No. 24750(04) Sheet No. 54

DOT DIVISION	STATE	JWP PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		55	127

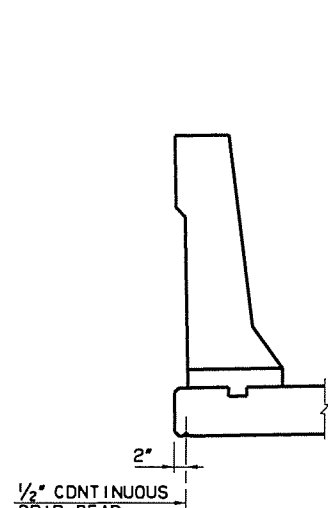


HALF SECTION AT INTERMEDIATE DIAPHRAGMS

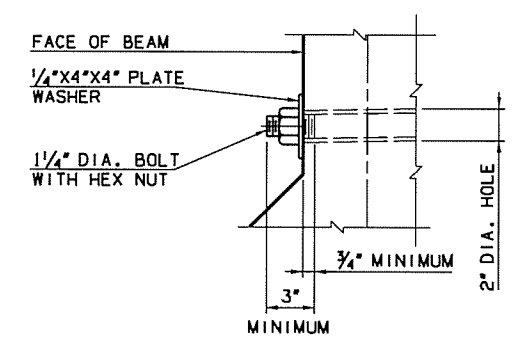
HALF SECTION AT END DIAPHRAGMS

TYPICAL SECTION THRU STRUCTURE

SCALE: 1/2" = 1'-0"

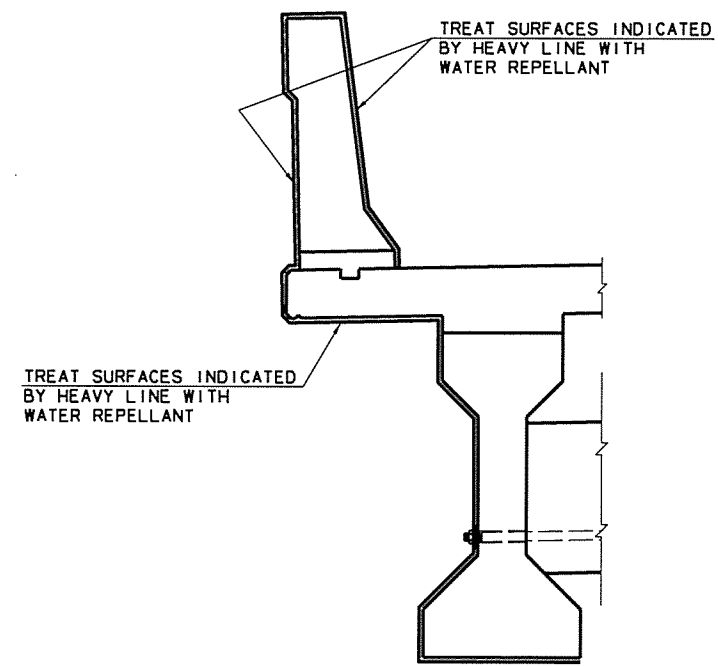


DETAIL A
SCALE: 3/4" = 1'-0"

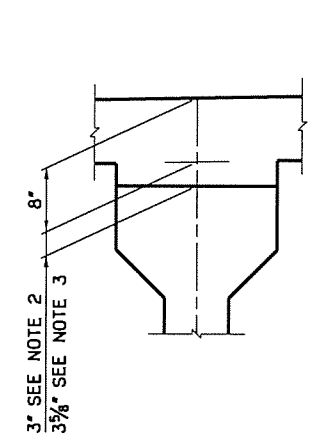


DETAIL B
SCALE: 3/4" = 1'-0"

NOTE:
 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.



WATER REPELLANT TREATMENT DETAILS
SCALE: 3/4" = 1'-0"



BEAM HAUNCH DETAIL
SCALE: 1" = 1'-0"

- NOTES:**
1. PLAN QUANTITIES FOR CLASS AA CONCRETE INCLUDE 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 HEIGHT FOR PAYMENT.
 2. 3" AT ABUTMENTS AND THE UPSTATION PEDESTALS OF PIER 1 AND PIER 2.
 3. 3 3/8" AT THE DOWNSTATION PEDESTALS OF PIER 1 AND PIER 2.

Design	SAK	6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	WZB	6/16	BRIDGE A	
Checked	AEJ	6/16		
Approved	SAK	6/16		
Squad	BENHAM			

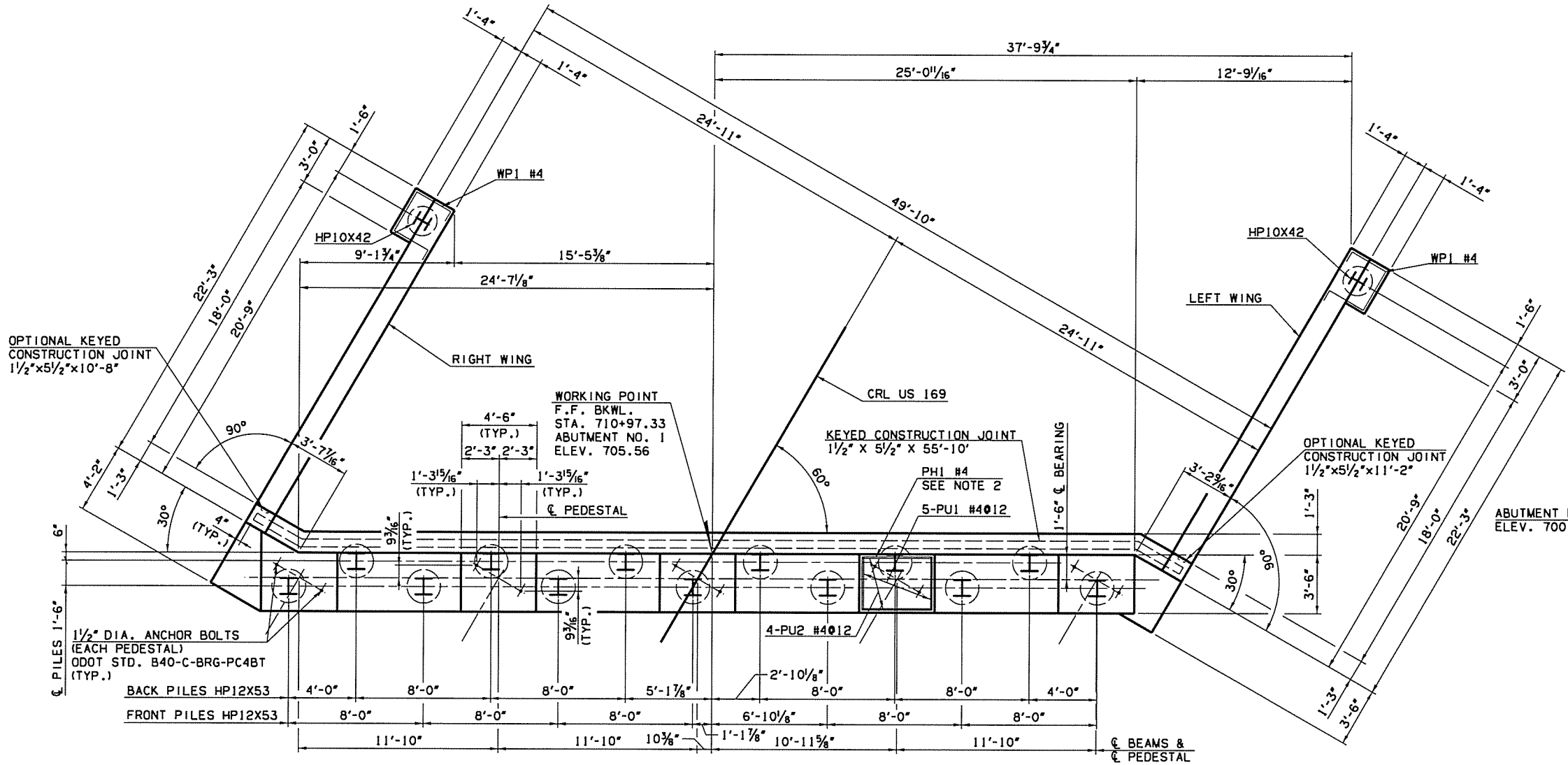
Job Piece No. 24750(04) Sheet No. 55

7/12/2016

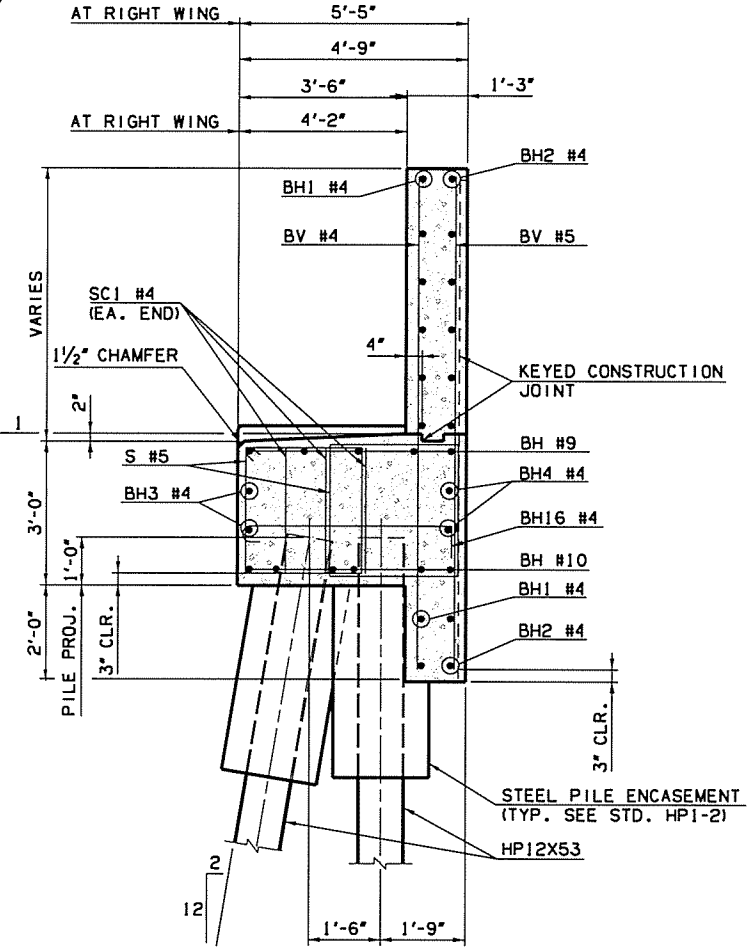
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P:\ECON\150-TUL CVV\255231000.0001_US169BR-dg 20_DESGN 40_CAD_Hickory\DMN\S-BrIDGE A\24750(04).S-Abut-1.plan_01.dgn

DOT DIVISION	STATE	JWP PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		56	127



PEDESTAL NO.	ELEVATION
1	700.19
2	700.50
3	700.81
4	700.72
5	700.62



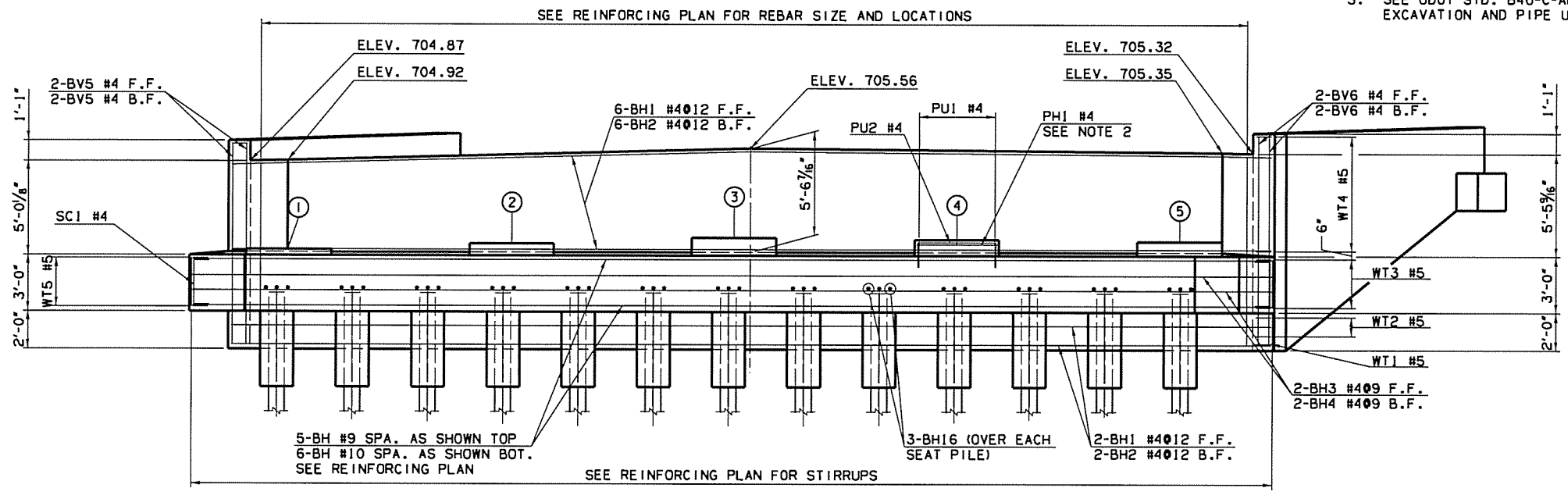
PLACE ALL WT WING REINFORCING TIED TO ABUTMENT SEAT AND BACKWALL REINFORCING BEFORE PLACING ABUTMENT SEAT AND BACKWALL CONCRETE.

PLAN - ABUTMENT NO. 1
SCALE: 1/4" = 1'-0"

- NOTES:**
- OMIT REINFORCING IN 2" HIGH PEDESTALS.
 - TWO REQUIRED AT PEDESTALS 3, 4 AND 5.
 - SEE ODOT STD. B40-C-ABUT-MISC FOR EXCAVATION AND PIPE UNDERDRAIN DETAILS.

TYPICAL SECTION THRU SEAT
SCALE: 1/2" = 1'-0"

ITEM	UNIT	ABUT NO. 1	ABUT NO. 2	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	130	125	255
CLSM BACKFILL	CY	181.4	169.9	351.3
CLASS A CONCRETE	CY	67.6	62.1	129.7
EPOXY COATED REINFORCING STEEL	LB	10240	9740	19980
PILES, FURNISHED (HP10X42)	LF	46	86	132
PILES, FURNISHED (HP12X53)	LF	254	424	678
PILES, DRIVEN (HP10X42)	LF	46	86	132
PILES, DRIVEN (HP12X53)	LF	254	424	678
METAL PILE SHOES	EA	15	13	28
WATER REPELLENT (VISUALLY INSPECTED)	SY	101	99	200
TYPE 1-A PLAIN RIPRAP	TON	800	960	1760
TYPE 1-A FILTER BLANKET	TON	135	165	300
FILTER FABRIC (RIPRAP)	SY	557	679	1236
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	57	58	115
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	20	20	40



ELEVATION - ABUTMENT NO. 1
SCALE: 1/4" = 1'-0"

F.F. = FRONT FACE
B.F. = BACK FACE

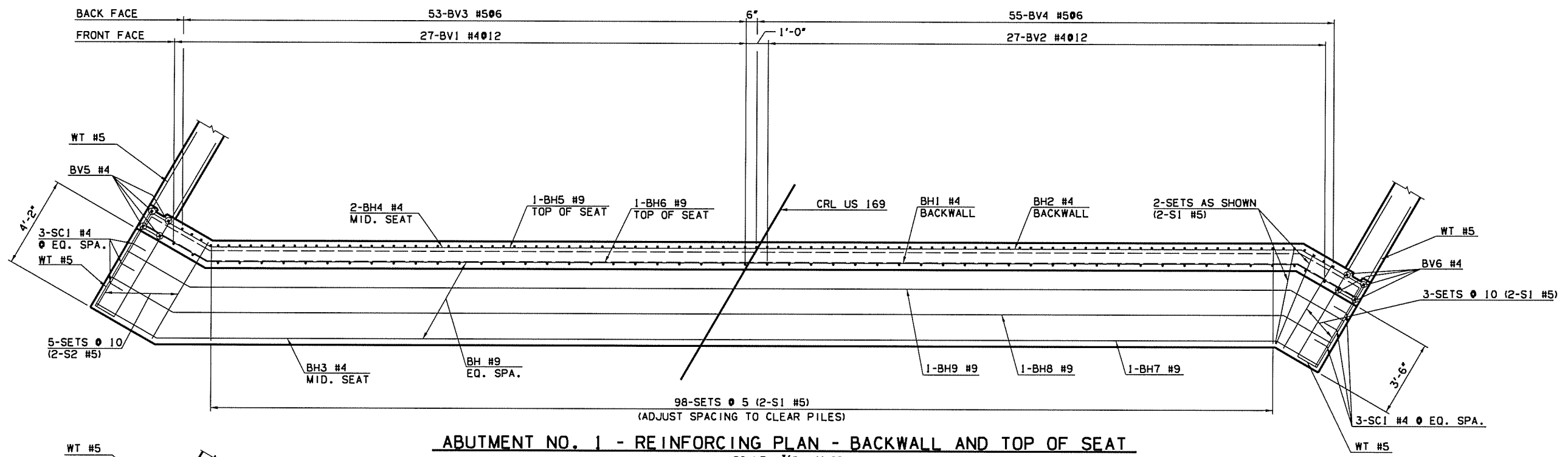
Design	AEJ	6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	RWS	6/16	BRIDGE A	
Checked	KSJ	6/16	ABUTMENT DETAILS	
Approved	SAK	6/16	(SHEET 1 OF 6)	
Squad	BENHAM		Job Piece No. 24750(04)	Sheet No. 56

1/12/2016

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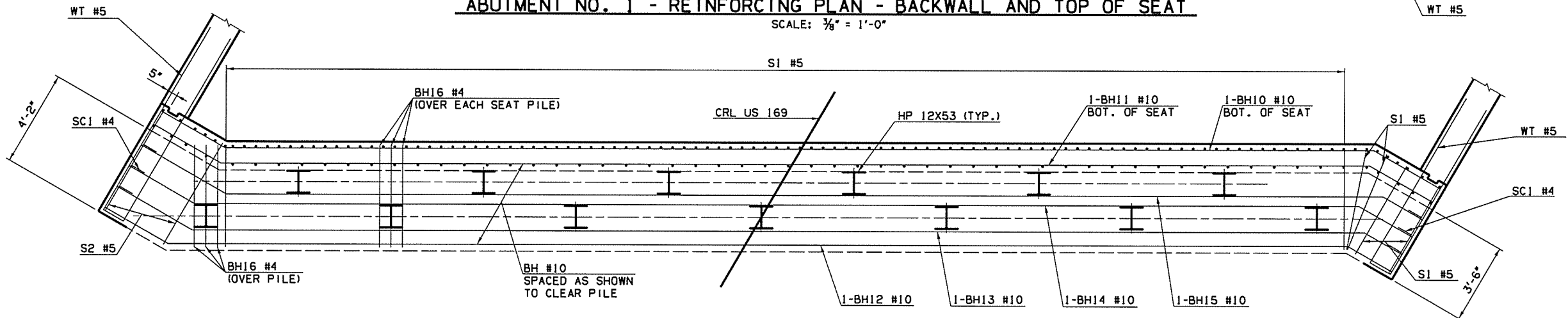
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DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		57	127



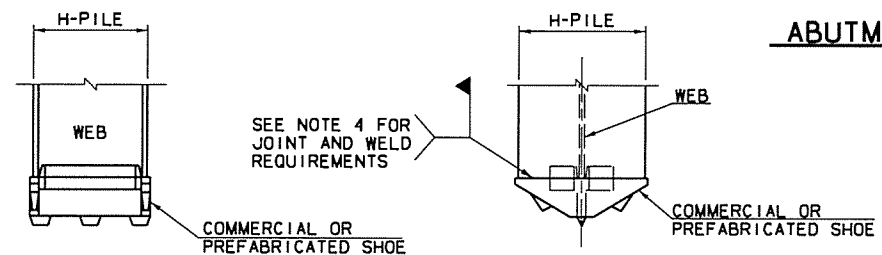
ABUTMENT NO. 1 - REINFORCING PLAN - BACKWALL AND TOP OF SEAT

SCALE: 3/8" = 1'-0"



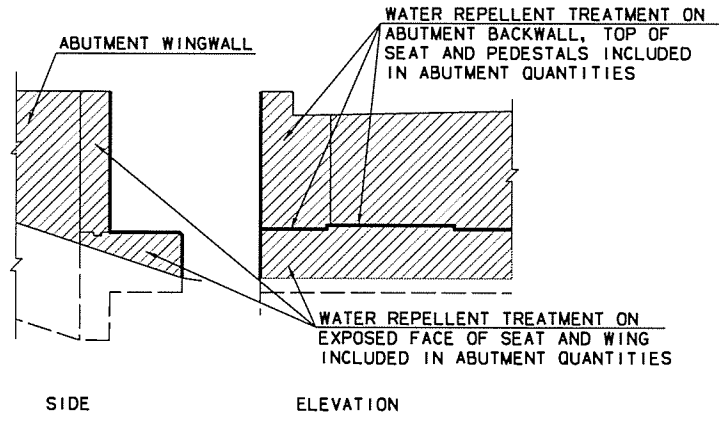
ABUTMENT NO. 1 - REINFORCING PLAN - BOTTOM OF SEAT

SCALE: 3/8" = 1'-0"



PREFABRICATED METAL PILE SHOE DETAIL

- NOTES:**
1. COMMERCIAL OR PREFABRICATED SHOES ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
 2. THE SHOE SHALL BE ATTACHED BY AN ODOT CERTIFIED WELDER.
 3. THE SHOE WELD JOINT DESIGN SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION, AND AS APPROVED BY THE ENGINEER.
 4. IF SHOES ARE WELDED AT A LOCATION OTHER THAN THE PROJECT SITE, ALL OF THE ABOVE PROVISIONS SHALL APPLY TO THE OFFSITE FABRICATOR. THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR OF THE ACTUAL LOCATION WHERE THE WELDING WILL BE PERFORMED A MINIMUM OF 5 WORKING DAYS BEFORE WORK COMMENCES.
 5. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER IN CONFORMANCE WITH REQUIREMENTS FOR WELDING AS SPECIFIED IN THE STANDARD SPECIFICATIONS.
 6. INCLUDE ALL COSTS OF MATERIAL, LABOR AND INCIDENTALS ASSOCIATED WITH FABRICATION AND INSTALLATION OF SHOES IN THE PRICE BID FOR EACH OF "METAL PILE SHOES".

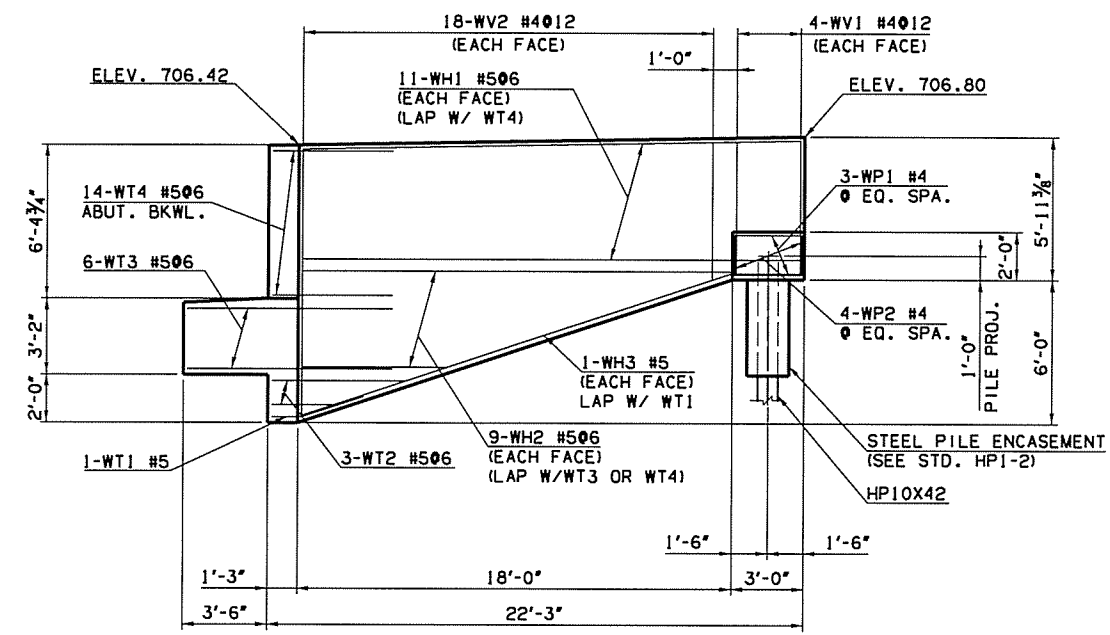


WATER REPELLENT TREATMENT DETAILS

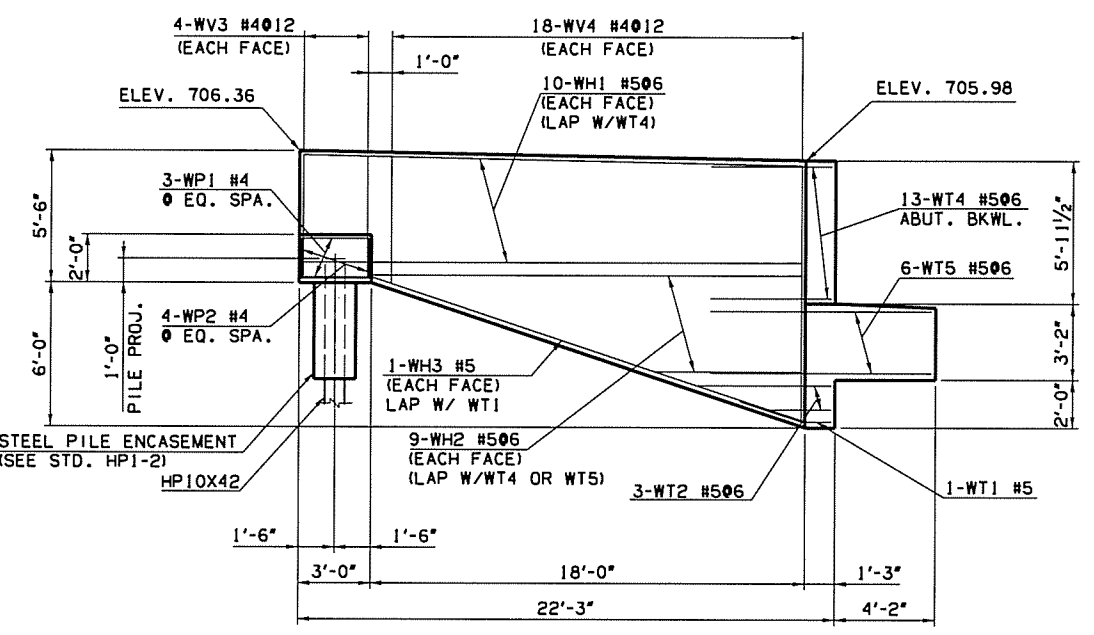
SCALE: NONE

Design	AEJ	6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	RWS	6/16	BRIDGE A	
Checked	KSJ	6/16	ABUTMENT DETAILS	
Approved	SAK	6/16	(SHEET 2 OF 6)	
Squad	BENHAM		Job Piece No. 24750(04)	Sheet No. 57

0001	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	247501041		58	127



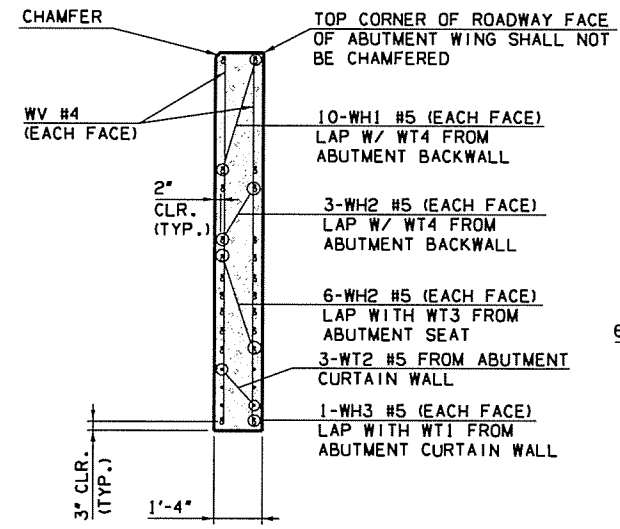
LEFT WING WALL ABUTMENT NO. 1
SCALE: 1/4" = 1'-0"



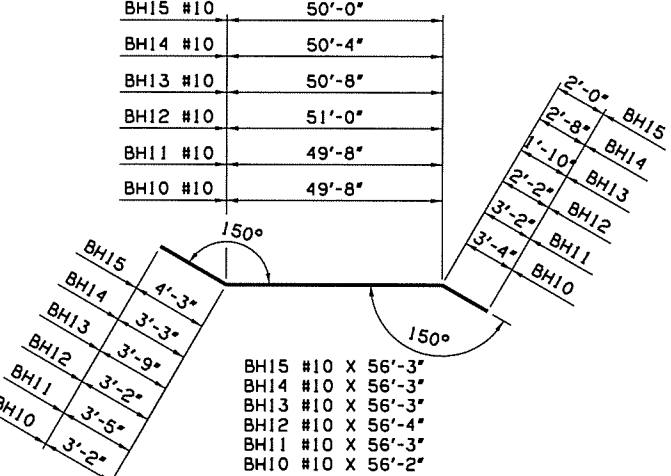
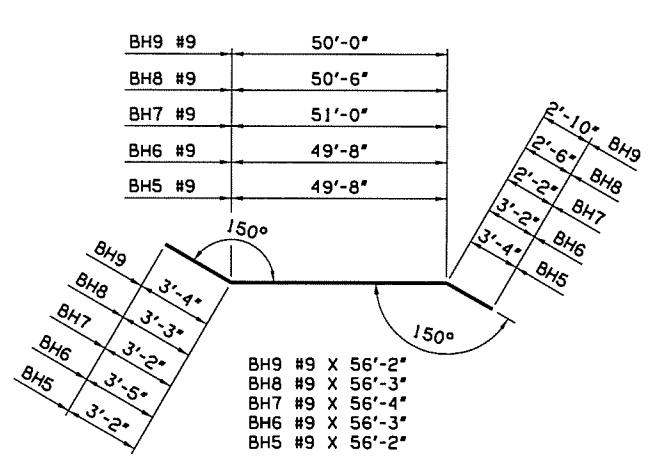
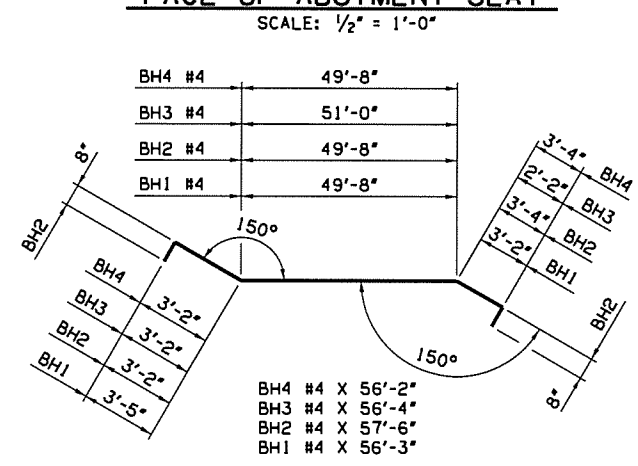
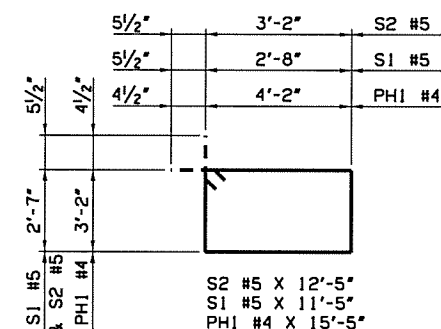
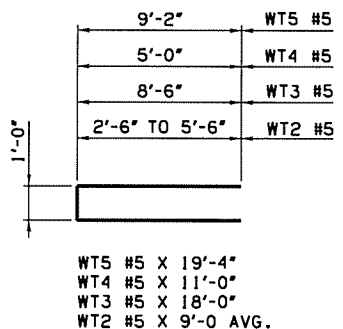
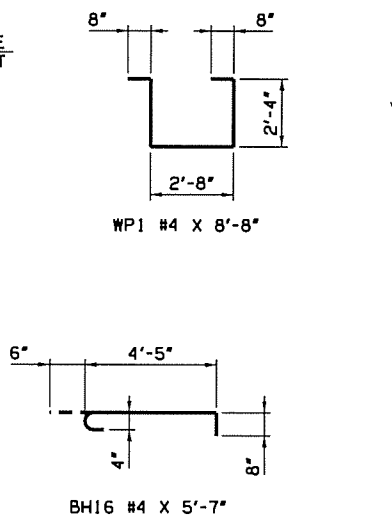
RIGHT WING WALL ABUTMENT NO. 1
SCALE: 1/4" = 1'-0"

ABUTMENT NO. 1 BAR LIST
(ONE REQUIRED)

EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
BH1	#4	8	BNT.	56'-3"	
BH2	#4	8	BNT.	57'-6"	
BH3	#4	2	BNT.	56'-4"	
BH4	#4	2	BNT.	56'-2"	
BH5	#9	1	BNT.	56'-2"	
BH6	#9	1	BNT.	56'-3"	
BH7	#9	1	BNT.	56'-4"	
BH8	#9	1	BNT.	56'-3"	
BH9	#9	1	BNT.	56'-2"	
BH10	#10	1	BNT.	56'-2"	
BH11	#10	1	BNT.	56'-3"	
BH12	#10	1	BNT.	56'-4"	
BH13	#10	1	BNT.	56'-3"	
BH14	#10	1	BNT.	56'-3"	
BH15	#10	1	BNT.	56'-3"	
BH16	#4	39	BNT.	5'-7"	
BV1	#4	27	STR.	9'-11" (AVG.)	9'-7" TO 10'-3"
BV2	#4	27	STR.	10'-2" (AVG.)	10'-0" TO 10'-3"
BV3	#5	53	STR.	9'-11" (AVG.)	9'-7" TO 10'-3"
BV4	#5	55	STR.	10'-2" (AVG.)	10'-0" TO 10'-3"
BV5	#4	4	STR.	10'-7"	
BV6	#4	4	STR.	11'-1"	
S1	#5	206	BNT.	11'-5"	
S2	#5	10	BNT.	12'-5"	
SC1	#4	6	BNT.	3'-9"	
WT1	#5	2	BNT.	8'-6"	
WT2	#5	6	BNT.	9'-0" (AVG.)	6'-0" TO 12'-0" NOTE 1
WT3	#5	6	BNT.	18'-0"	
WT4	#5	27	BNT.	11'-0"	
WT5	#5	6	BNT.	19'-4"	
PH1	#4	6	BNT.	15'-5"	
PU1	#4	20	BNT.	6'-5"	
PU2	#4	16	BNT.	7'-5"	
WP1	#4	6	BNT.	8'-8"	
WP2	#4	8	STR.	1'-7"	
WH1	#5	42	STR.	20'-8"	
WH2	#5	36	STR.	11'-9" (AVG.)	5'-9" TO 17'-8" NOTE 2
WH3	#5	4	BNT.	21'-8"	
WV1	#4	8	STR.	5'-6"	
WV2	#4	36	STR.	8'-5" (AVG.)	5'-8" TO 11'-1" NOTE 3
WV3	#4	8	STR.	5'-0"	
WV4	#4	36	STR.	7'-11" (AVG.)	5'-3" TO 10'-7" NOTE 3



(RIGHT WING SHOWN, LEFT WING SIMILAR)
SECTION THRU WING AT BACK FACE OF ABUTMENT SEAT
SCALE: 1/2" = 1'-0"

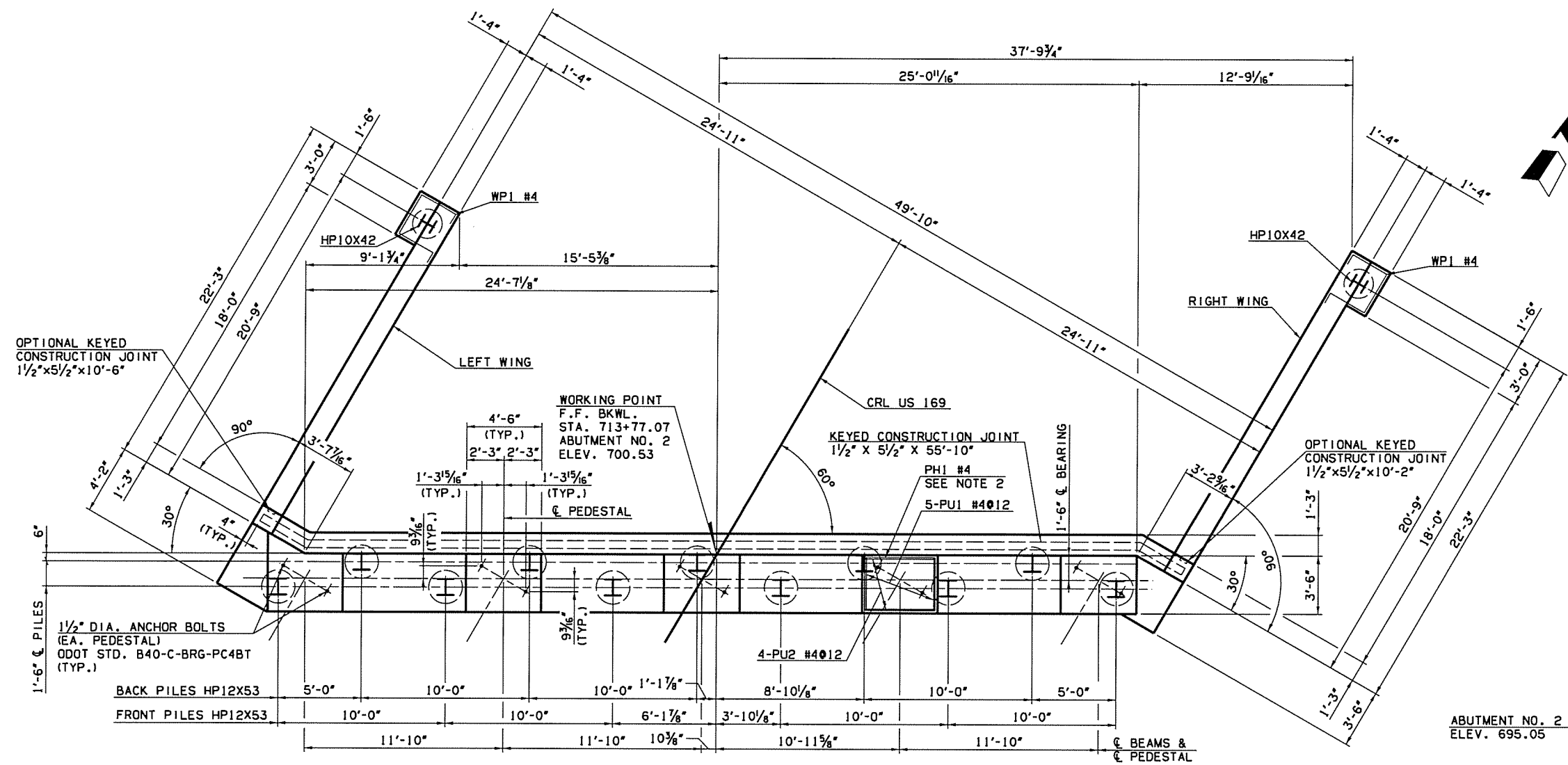


- NOTES:**
- 2 SETS OF 3
 - 4 SETS OF 9
 - 2 SETS OF 18

DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		59	127

TOP OF PEDESTAL ELEVATIONS

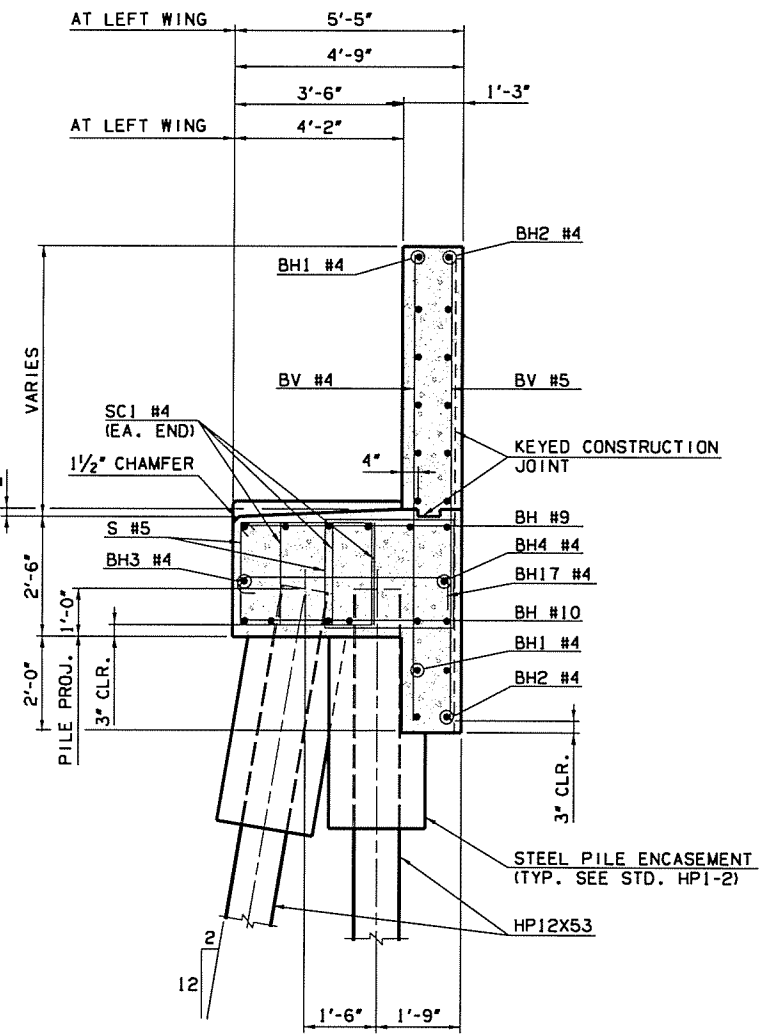
PEDESTAL NO.	ELEVATION
1	695.22
2	695.53
3	695.84
4	695.74
5	695.64



PLAN - ABUTMENT NO. 2

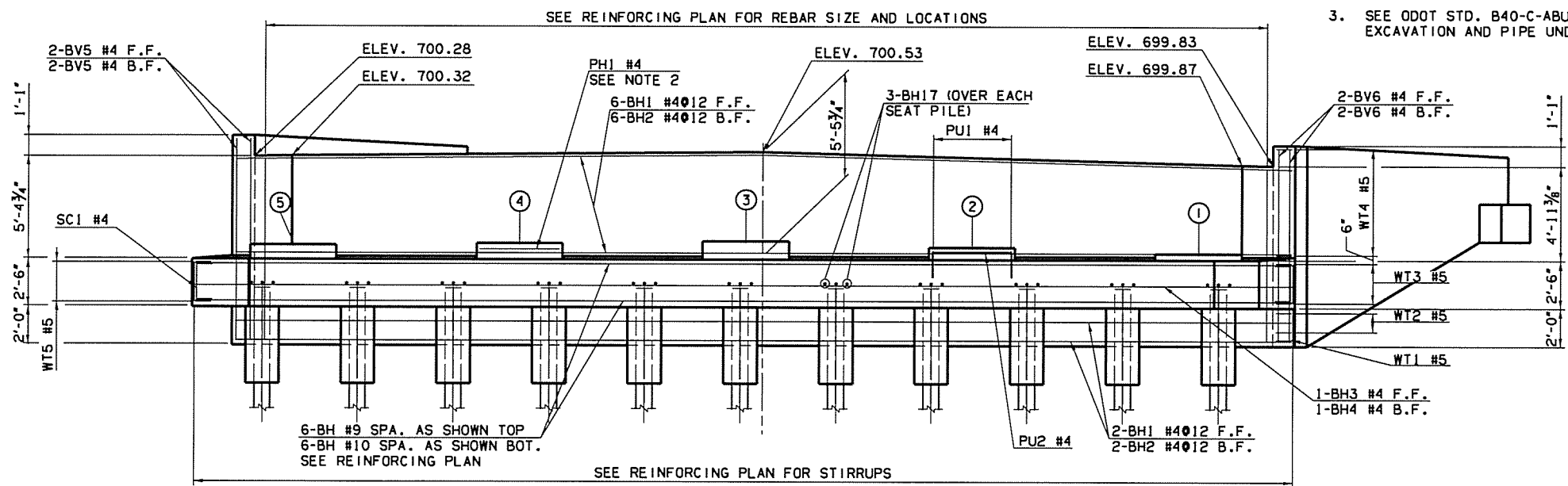
SCALE: 1/4" = 1'-0"

- NOTES:**
1. OMIT REINFORCING IN 2" HIGH PEDESTALS.
 2. TWO REQUIRED AT PEDESTALS 3, 4 AND 5.
 3. SEE ODOT STD. B40-C-ABUT-MISC FOR EXCAVATION AND PIPE UNDERDRAIN DETAILS.



TYPICAL SECTION THRU SEAT

SCALE: 1/2" = 1'-0"



ELEVATION - ABUTMENT NO. 2

SCALE: 1/4" = 1'-0"

PLACE ALL WT WING REINFORCING TIED TO ABUTMENT SEAT AND BACKWALL REINFORCING BEFORE PLACING ABUTMENT SEAT AND BACKWALL CONCRETE.

F.F. = FRONT FACE
B.F. = BACK FACE

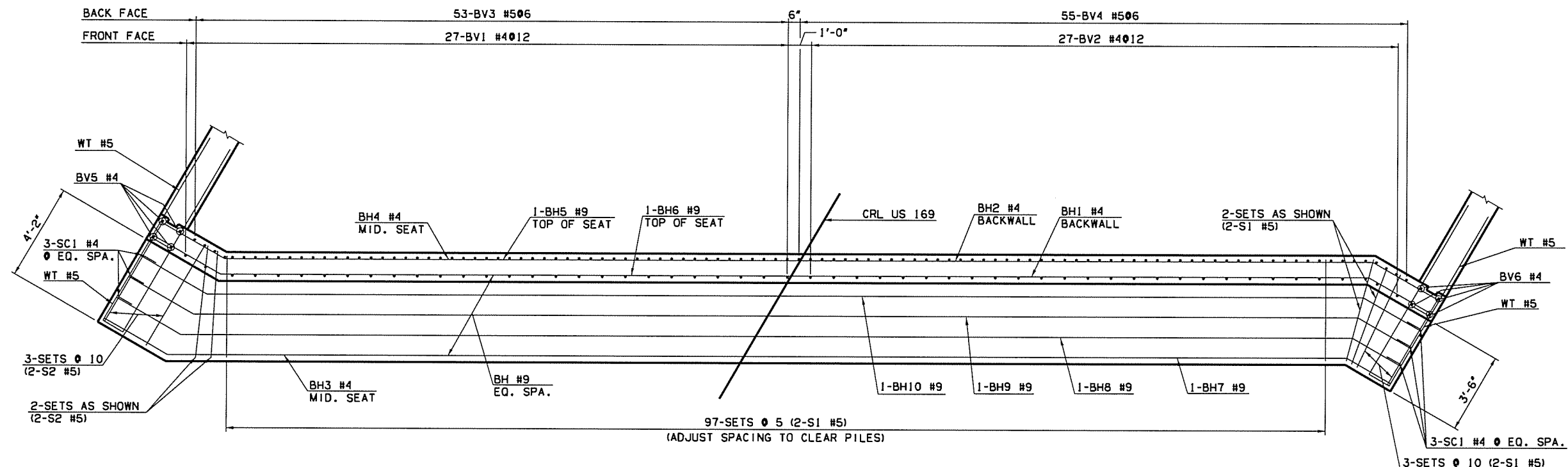
Design	AEJ	6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	RWS	6/16	BRIDGE A	
Checked	AEJ	6/16	ABUTMENT DETAILS	
Approved	SAK	6/16	(SHEET 4 OF 6)	
Squad	BENHAM		Job Piece No. 24750(04)	Sheet No. 59

7/12/2016

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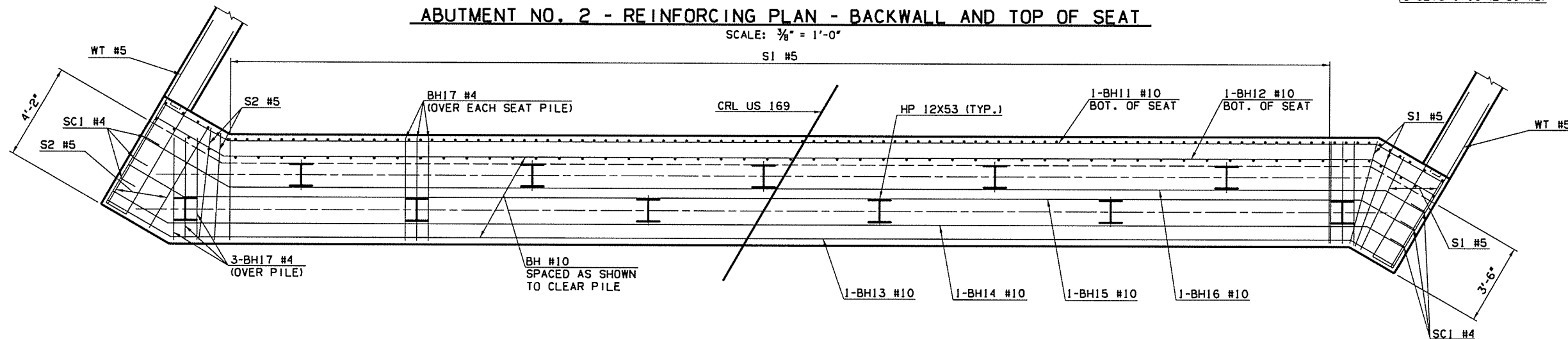
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DOT	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		60	127



ABUTMENT NO. 2 - REINFORCING PLAN - BACKWALL AND TOP OF SEAT

SCALE: 3/8" = 1'-0"

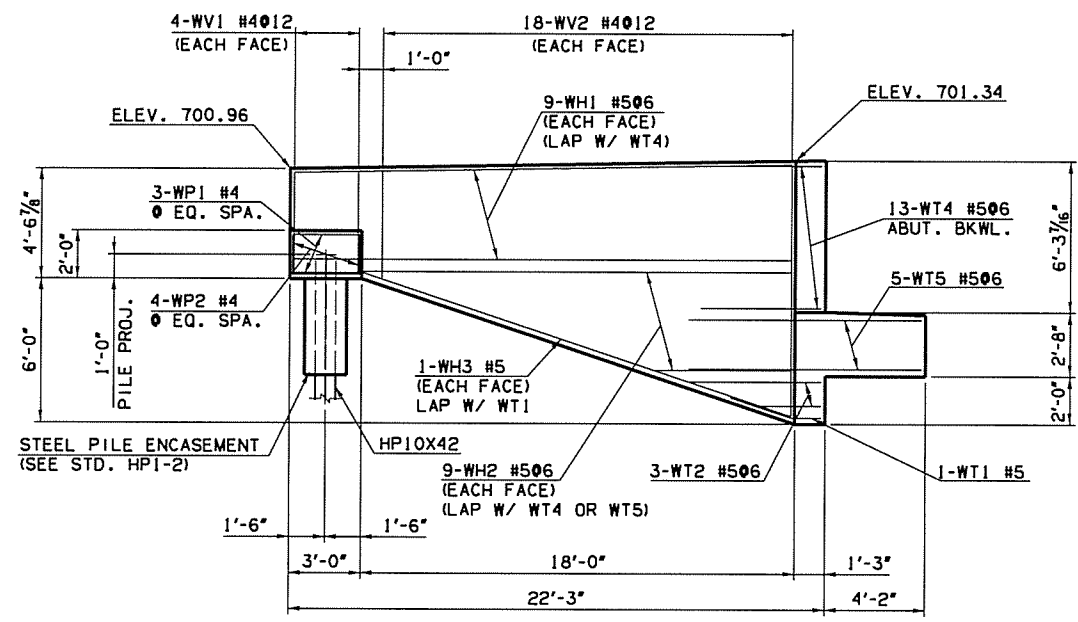


ABUTMENT NO. 2 - REINFORCING PLAN - BOTTOM OF SEAT

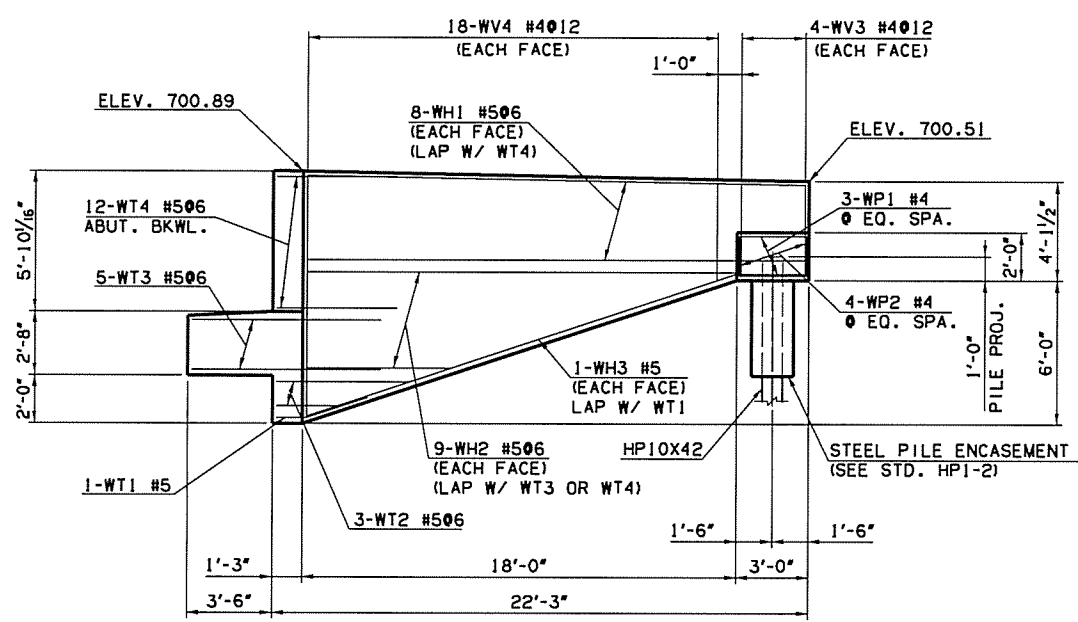
SCALE: 3/8" = 1'-0"

Design	AEJ	6/16	US 169 OVER HICKORY CREEK BRIDGE A ABUTMENT DETAILS (SHEET 5 OF 6) Job Piece No. 24750(04) Sheet No. 60	NOWATA COUNTY
Drawn	RWS	6/16		
Checked	AEJ	6/16		
Approved	SAK	6/16		
Squad	BENHAM			

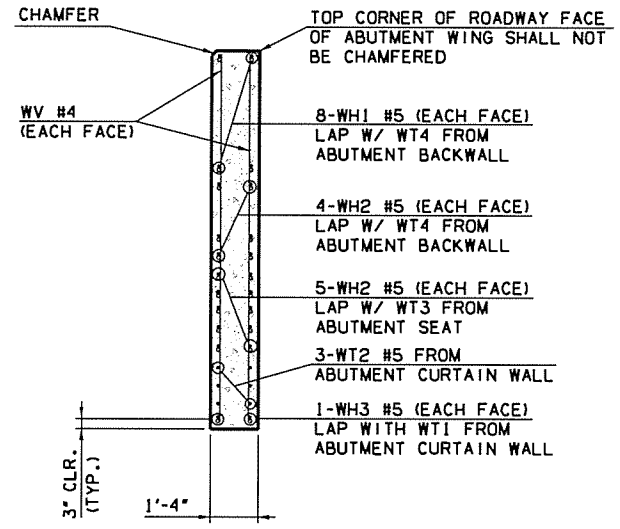
UNIT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		61	127



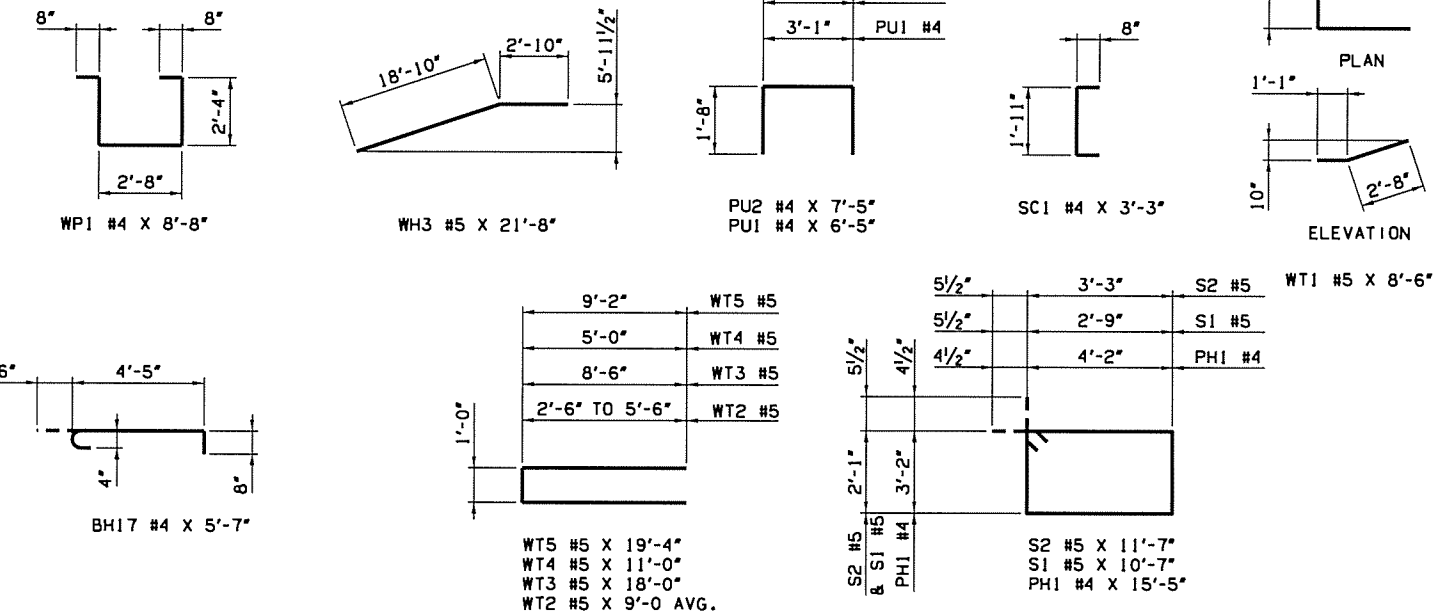
LEFT WING WALL ABUTMENT NO. 2
SCALE: 1/4" = 1'-0"



RIGHT WING WALL ABUTMENT NO. 2
SCALE: 1/4" = 1'-0"

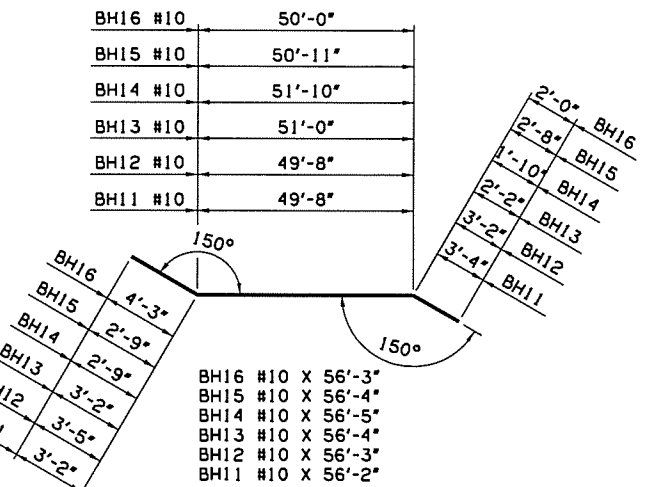
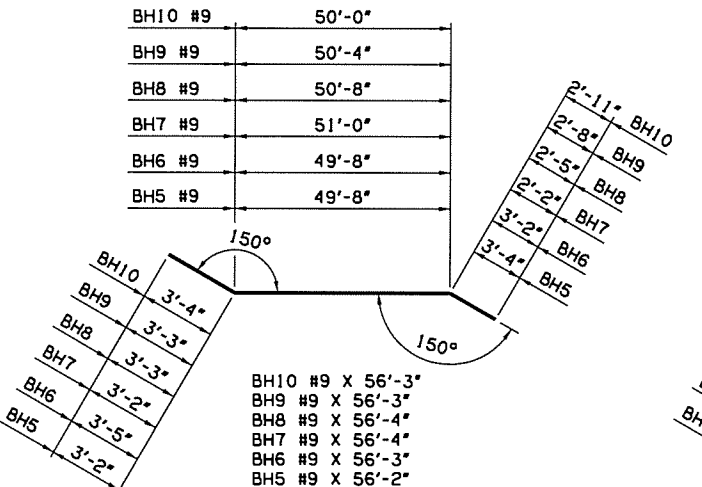
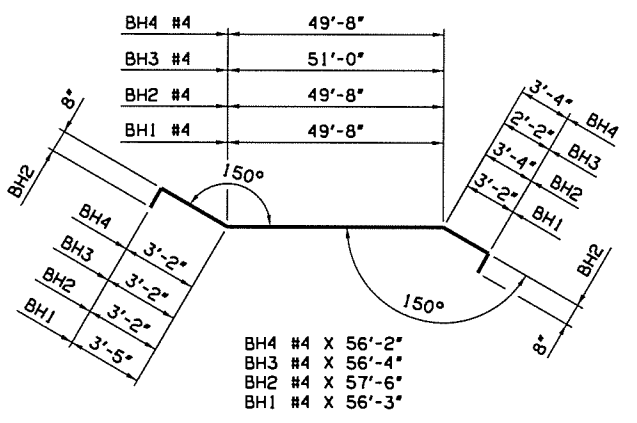


(RIGHT WING SHOWN, LEFT WING SIMILAR)
SECTION THRU WING AT BACK FACE OF ABUTMENT SEAT
SCALE: 1/2" = 1'-0"



ABUTMENT NO. 2 BAR LIST					
(ONE REQUIRED)					
EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
BH1	#4	8	BNT.	56'-3"	
BH2	#4	8	BNT.	57'-6"	
BH3	#4	1	BNT.	56'-4"	
BH4	#4	1	BNT.	56'-2"	
BH5	#9	1	BNT.	56'-2"	
BH6	#9	1	BNT.	56'-3"	
BH7	#9	1	BNT.	56'-4"	
BH8	#9	1	BNT.	56'-4"	
BH9	#9	1	BNT.	56'-3"	
BH10	#9	1	BNT.	56'-3"	
BH11	#10	1	BNT.	56'-2"	
BH12	#10	1	BNT.	56'-3"	
BH13	#10	1	BNT.	56'-4"	
BH14	#10	1	BNT.	56'-5"	
BH15	#10	1	BNT.	56'-4"	
BH16	#10	1	BNT.	56'-3"	
BH17	#4	33	BNT.	5'-7"	
BV1	#4	27	STR.	9'-7" (AVG.)	9'-6" TO 9'-8"
BV2	#4	27	STR.	9'-4" (AVG.)	9'-0" TO 9'-8"
BV3	#5	53	STR.	9'-7" (AVG.)	9'-6" TO 9'-8"
BV4	#5	55	STR.	9'-4" (AVG.)	9'-0" TO 9'-8"
BV5	#4	4	STR.	10'-6"	
BV6	#4	4	STR.	10'-1"	
S1	#5	204	BNT.	10'-7"	
S2	#5	10	BNT.	11'-7"	
SC1	#4	6	BNT.	3'-3"	
WT1	#5	2	BNT.	8'-6"	
WT2	#5	6	BNT.	9'-0" (AVG.)	6'-0" TO 12'-0" NOTE 3
WT3	#5	5	BNT.	18'-0"	
WT4	#5	25	BNT.	11'-0"	
WT5	#5	5	BNT.	19'-4"	
PH1	#4	6	BNT.	15'-5"	
PU1	#4	20	BNT.	6'-5"	
PU2	#4	16	BNT.	7'-5"	
WP1	#4	6	BNT.	8'-8"	
WP2	#4	8	STR.	1'-7"	
WH1	#5	34	STR.	20'-8"	
WH2	#5	36	STR.	11'-9" (AVG.)	5'-9" TO 17'-8" NOTE 1
WH3	#5	4	BNT.	21'-8"	
WV1	#4	8	STR.	4'-2"	
WV2	#4	36	STR.	7'-5" (AVG.)	4'-5" TO 10'-5" NOTE 2
WV3	#4	8	STR.	3'-8"	
WV4	#4	36	STR.	7'-0" (AVG.)	4'-0" TO 10'-0" NOTE 2

- NOTES:**
- 2 SETS OF 9
 - 2 SETS OF 18
 - 2 SETS OF 3



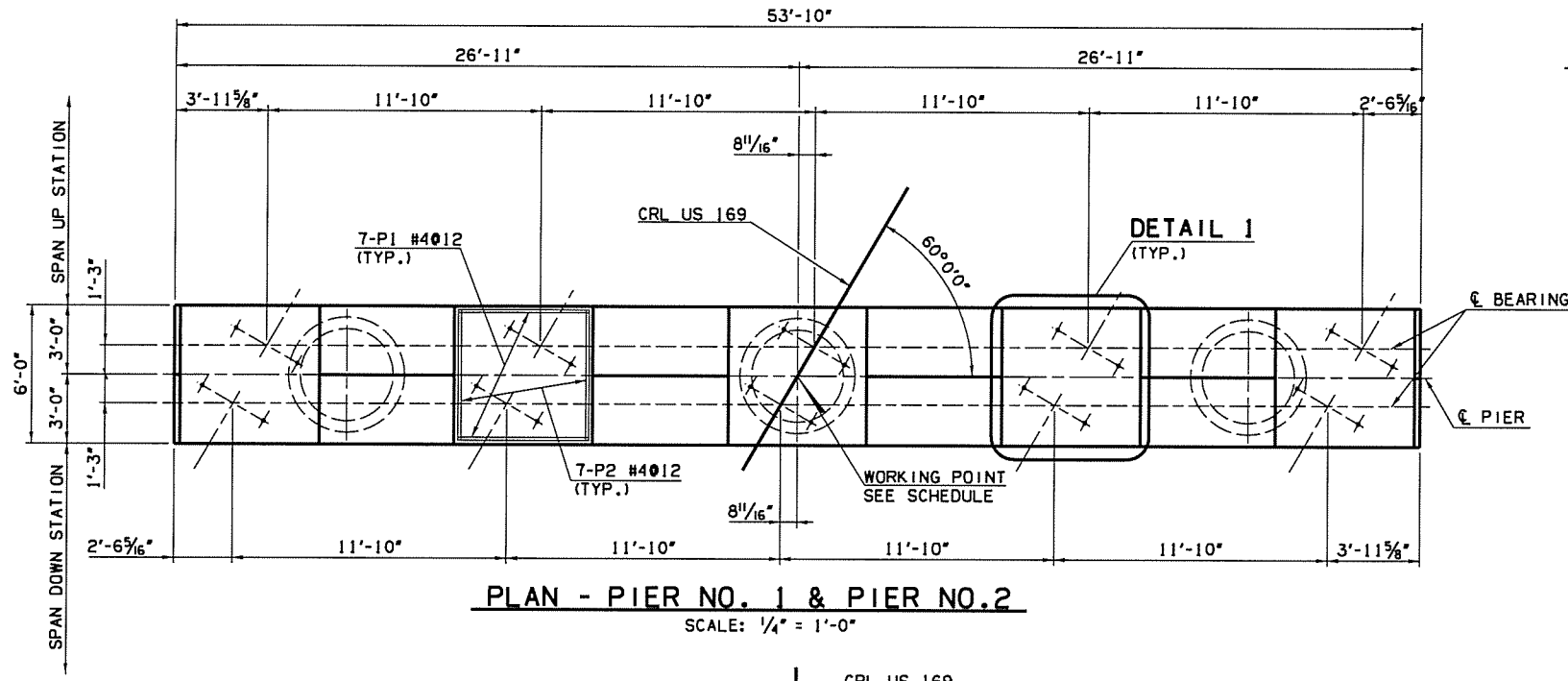
Design	AEJ	6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	RWS	6/16	BRIDGE A	
Checked	AEJ	6/16	ABUTMENT DETAILS	
Approved	SAK	6/16	(SHEET 6 OF 6)	
Squad	BENHAM		Job Piece No. 24750(04)	Sheet No. 61

7/12/2016

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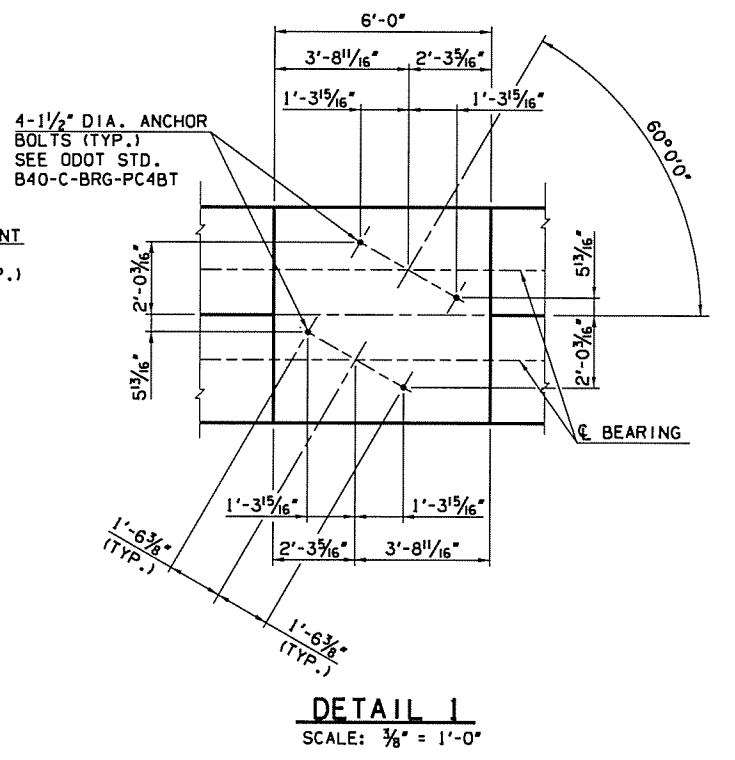
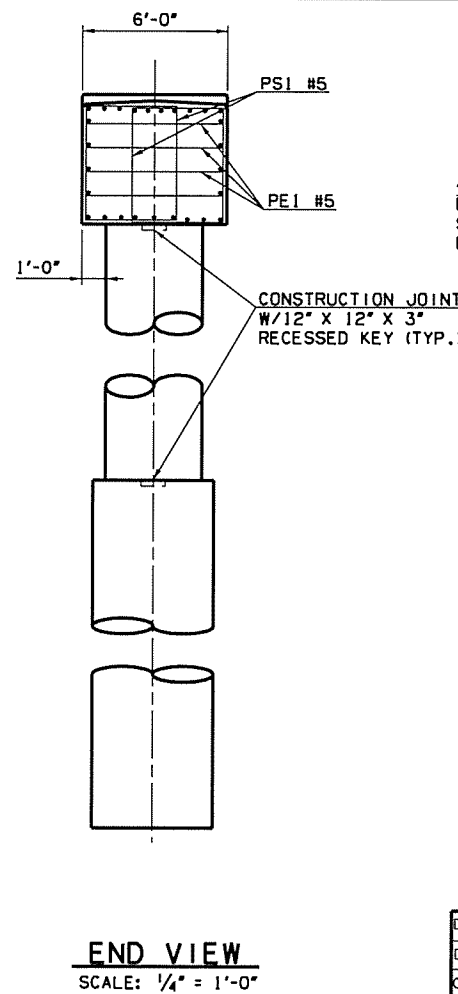
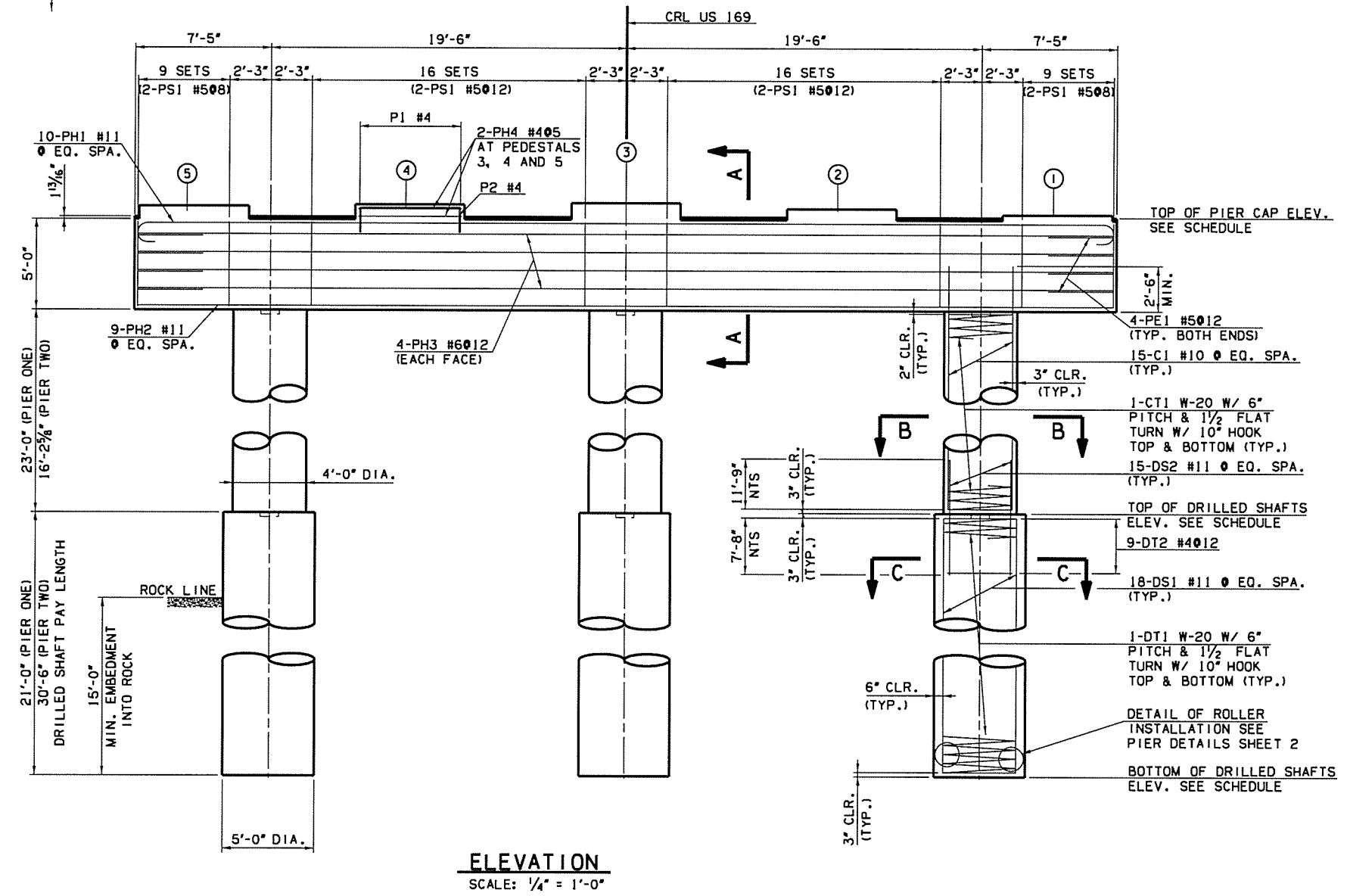
DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		62	127



- NOTE:**
1. ADJUST PH BARS AS NEEDED TO PROVIDE A MINIMUM OF 4" CLEARANCE FOR TREMIE AND CLEARANCE FOR ANCHOR BOLTS.
 2. OMIT REINFORCING IN 2" PEDESTALS.
 3. FOR BEARINGS SEE ODOT STD. B40-1-BRG-RB

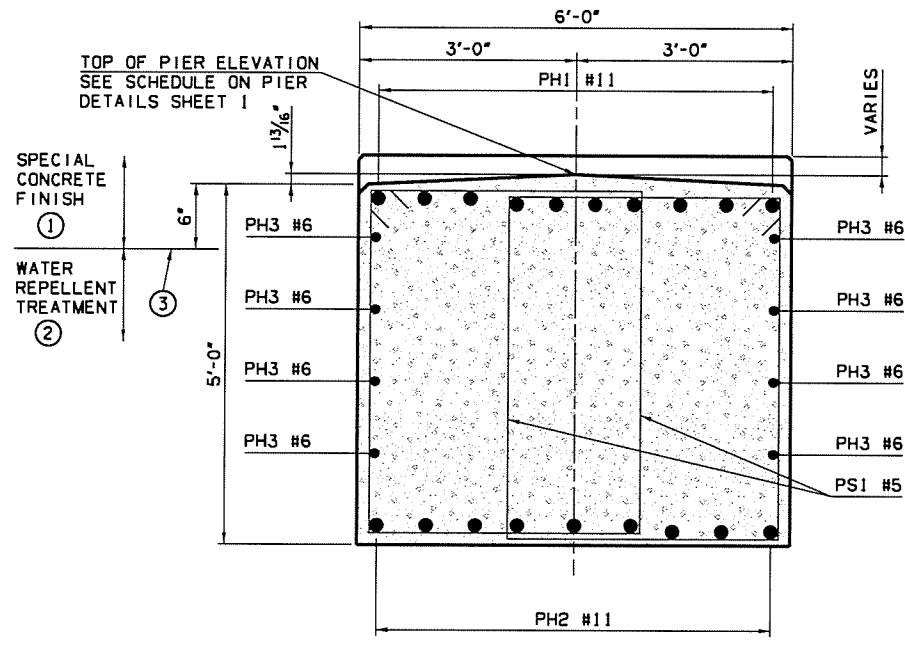
PIER STATIONS AND ELEVATIONS SCHEDULE			
PIER NO. 1			
PEDESTAL NO.	ELEVATION	WORKING POINT STATION	ELEVATION
1	698.37	711+99.01	
2	698.68	TOP OF PIER	698.20
3	698.99	TOP OF DRILLED SHAFTS	670.00
4	698.89	BOT. OF DRILLED SHAFTS	649.00
5	698.79		
PIER NO. 2			
PEDESTAL NO.	ELEVATION	WORKING POINT STATION	ELEVATION
1	696.54	713+00.39	
2	696.85	TOP OF PIER	696.37
3	697.16	TOP OF DRILLED SHAFTS	675.00
4	697.06	BOT. OF DRILLED SHAFTS	644.50
5	696.97		

PIER QUANTITIES				
ITEM	UNIT	PIER NO. 1	PIER NO. 2	TOTAL
SPECIAL CONCRETE FINISH	SY	52	52	104
CLASS A CONCRETE	CY	96.6	87.1	183.7
REINFORCING STEEL	LB	1320	1010	2330
EPOXY COATED REINFORCING STEEL	LB	13520	12200	25720
WATER REPELLENT (VISUALLY INSPECTED)	SY	60	60	120
DRILLED SHAFTS 60" DIAMETER	LF	63	92	155
CROSSHOLE SONIC LOGGING	EA			1

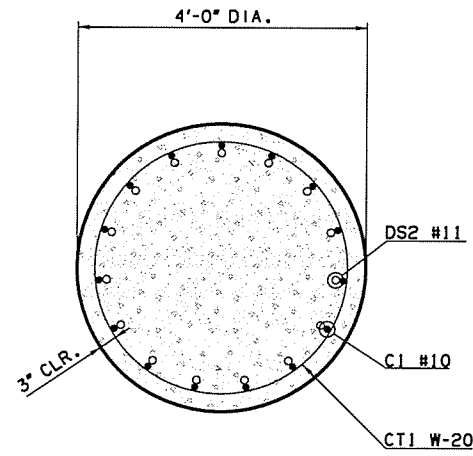


Design	AEJ	6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	RAH	6/16	BRIDGE A	
Checked	KSJ	6/16	PIER DETAILS	
Approved	SAK	6/16	(SHEET 1 OF 2)	
Squad	BENHAM		Job Piece No. 24750(04)	Sheet No. 62

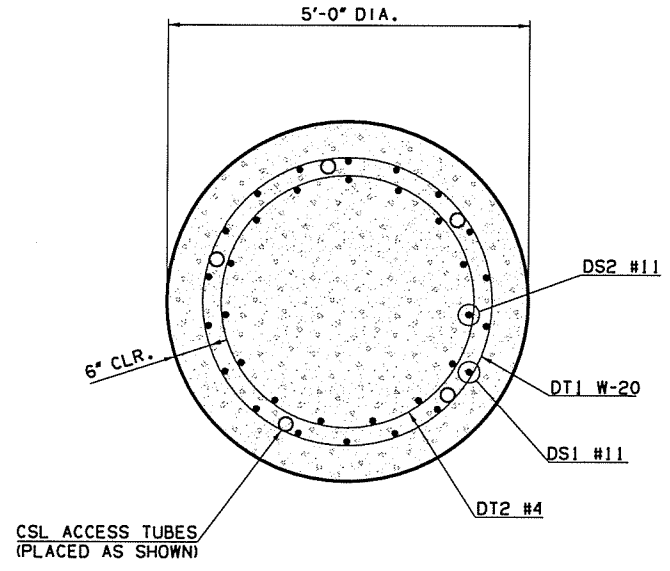
DOT	STATE	J/P PROJ NO	YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		63	127



SECTION A-A
SCALE: 3/4" = 1'-0"



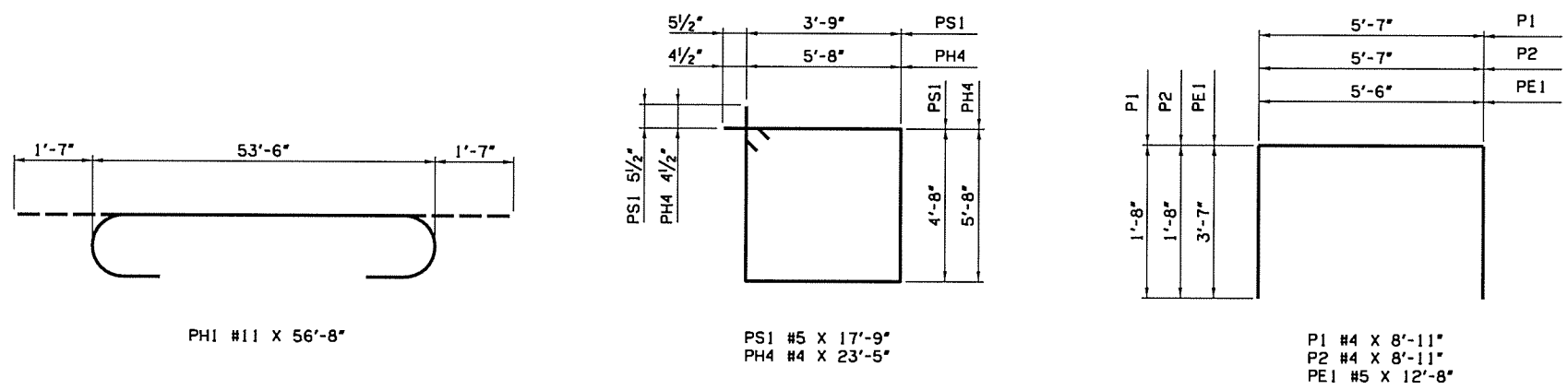
SECTION B-B
SCALE: 3/4" = 1'-0"



SECTION C-C
SCALE: 3/4" = 1'-0"

- APPLY CIM 1000, "SPECIAL CONCRETE FINISH" TO SURFACES INDICATED, INCLUDING TOP OF PIER CAP, ALL SURFACES OF THE PEDESTALS AND DOWN 6" BELOW THE EDGE OF THE CAP ON THE SIDES AND END FACES.
- TREAT ALL EXTERIOR VERTICAL SURFACES OF THE PIER CAPS WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT. (CIM 1000 WILL OVERLAP WATER REPELLENT NEAR TOP OF CAP)
- MASK SIDES AND ENDS OF PIER CAP ALONG THIS LINE TO PROVIDE A CLEAN STRAIGHT FINISH AT BOTTOM OF CIM 1000 APPLICATION.

NOTE:
APPLY URETHANE COATING BEFORE ANY OTHER SURFACE TREATMENTS.



PIER NO. 1 BAR LIST
(ONE PIER)

EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
C1	#10	45	STR	25'-5"	
PH1	#11	10	BNT	56'-8"	
PH2	#11	9	STR	53'-6"	
PH3	#6	8	STR	53'-6"	
PH4	#4	6	BNT	23'-5"	
PE1	#5	8	BNT	12'-8"	
PS1	#5	100	BNT	17'-9"	
P1	#4	28	BNT	8'-11"	
P2	#4	28	BNT	8'-11"	

PLAIN REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
CT1	W20	3	BNT	533'-8"	
DT2	#4	27	BNT	12'-6"	SEE NOTE 1

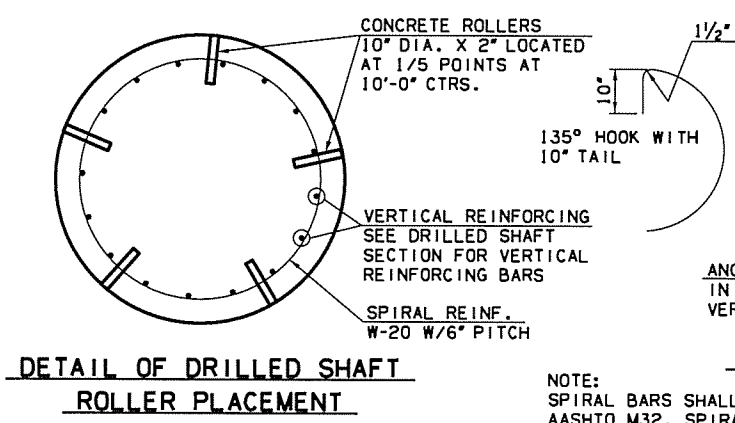
DRILLED SHAFT PLAIN REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
DS1	#11	54	STR	20'-6"	SEE NOTE 1
DS2	#11	45	STR	19'-5"	SEE NOTE 1
DT1	W20	3	BNT	555'-0"	SEE NOTE 1

PIER NO. 2 BAR LIST
(ONE PIER)

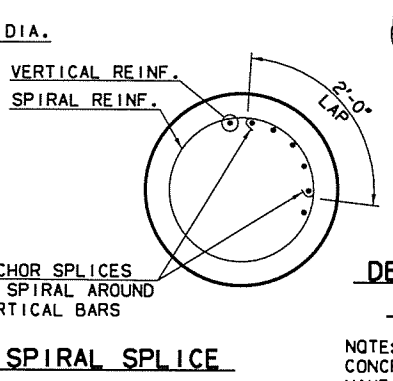
EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
C1	#10	45	STR	18'-7"	
PH1	#11	10	BNT	56'-8"	
PH2	#11	9	STR	53'-6"	
PH3	#6	8	STR	53'-6"	
PH4	#4	6	BNT	23'-5"	
PE1	#5	8	BNT	12'-8"	
PS1	#5	100	BNT	17'-9"	
P1	#4	28	BNT	8'-11"	
P2	#4	28	BNT	8'-11"	

PLAIN REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
CT1	W20	3	BNT	383'-3"	
DT2	#4	27	BNT	12'-6"	SEE NOTE 1

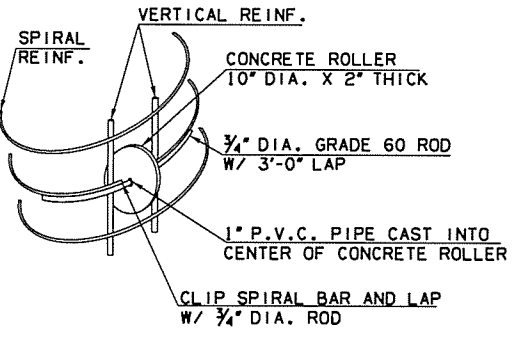
DRILLED SHAFT PLAIN REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
DS1	#11	54	STR	30'-0"	SEE NOTE 1
DS2	#11	45	STR	19'-5"	SEE NOTE 1
DT1	W20	3	BNT	798'-0"	SEE NOTE 1



DETAIL OF DRILLED SHAFT ROLLER PLACEMENT

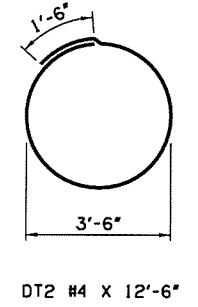


SPIRAL SPLICE



DETAIL OF DRILLED SHAFT ROLLER INSTALLATION

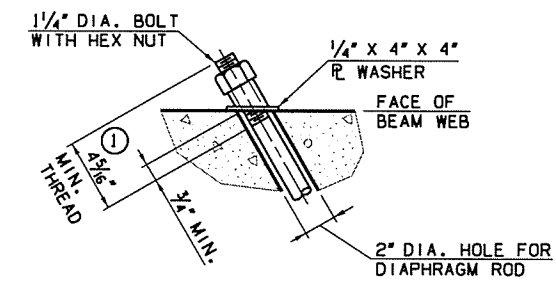
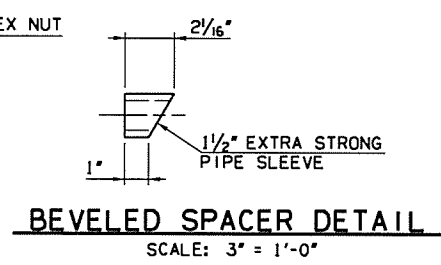
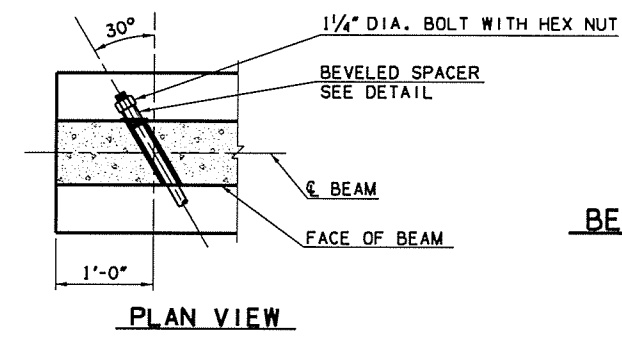
NOTE:
CONCRETE USED IN CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 P.S.I.. SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS.



- NOTE:**
- DRILLED SHAFT BARS ARE FOR INFORMATION PURPOSES ONLY. THE BARS ARE NOT INCLUDED IN THE QUANTITIES, BUT ARE INCLUDED IN THE PRICE BID FOR L.F. OF DRILLED SHAFTS.
 - INCLUDE COST FOR CROSSHOLE SONIC LOGGING ACCESS TUBES IN THE PRICE BID FOR L.F. OF DRILLED SHAFTS.
 - ALL EDGES OF PIER CAP SHALL HAVE A 1/2" CHAMFER EXCEPT FOR PEDESTAL EDGES WHICH SHALL HAVE A 3/4" CHAMFER.

Design	AEJ	6/16	US 169 DVER HICKORY CREEK BRIDGE A PIER DETAILS (SHEET 2 OF 2)	NOWATA COUNTY
Drawn	RAH	6/16		
Checked	KSJ	6/16		
Approved	SAK	6/16		
Squad	BENHAM			

Job Piece No. 24750(04) Sheet No. 63



① SEE DETAIL B, TYPICAL SECTION SHEET FOR MATERIALS AND PAINT

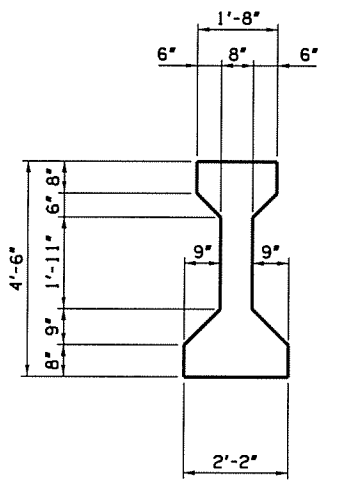
BOLT DETAIL
END DIAPHRAGM ROD DETAIL
 SCALE: 1" = 1'-0"

PRESTRESSED CONCRETE BEAM NOTES:

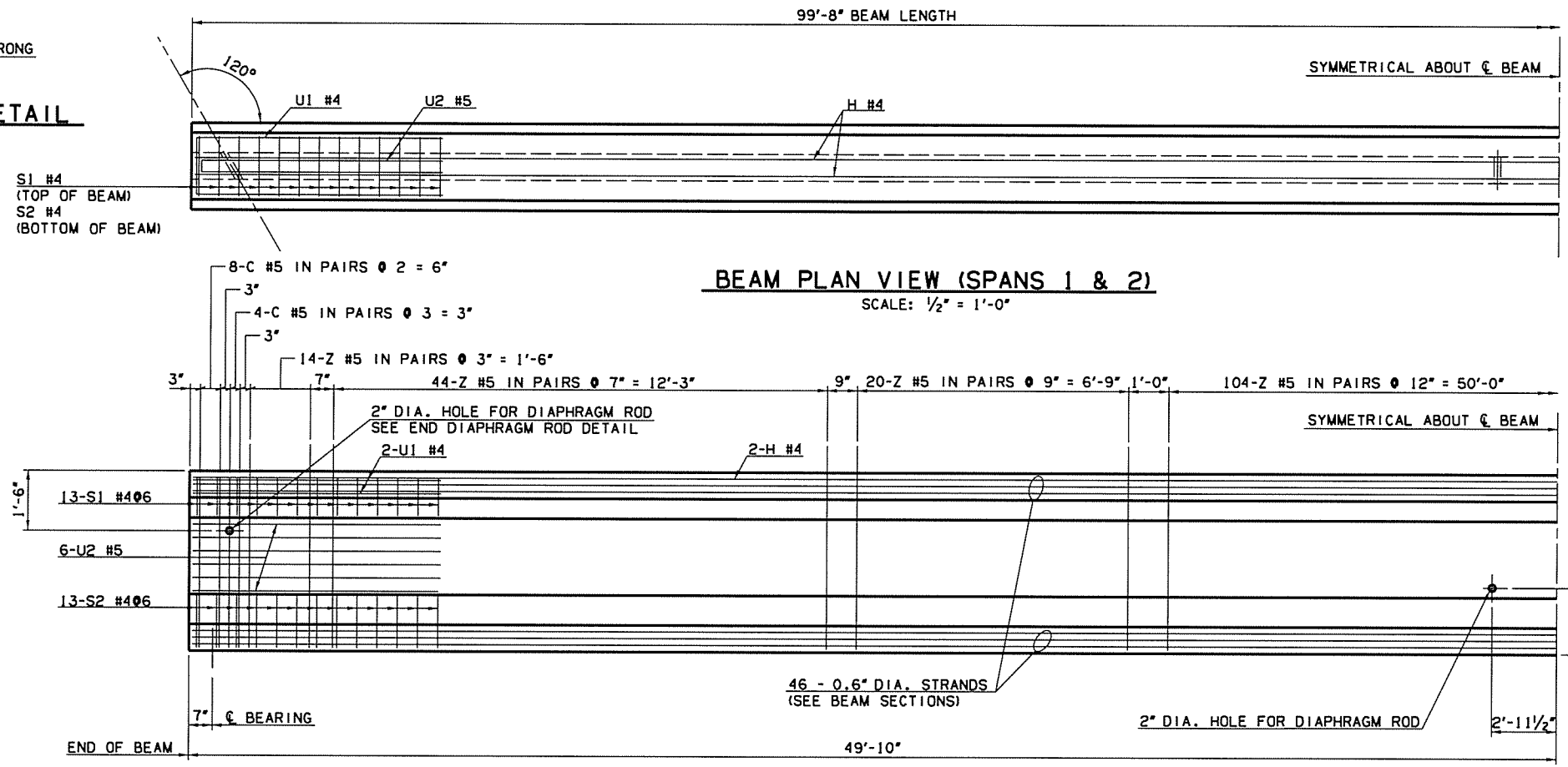
COMPRESSIVE STRENGTH
 PROVIDE CONCRETE WITH A COMPRESSIVE STRENGTH OF 7,500 P.S.I. AT TRANSFER OF PRESTRESS AND 10,000 P.S.I. AT 28 DAYS.

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

LRFR OPERATING RATING - 1.80
 THE OPERATING RATING SHOWN IS BASED ON A NORMAL STRENGTH USING ONLY STRANDS THAT ARE BONDED FOR THE FULL LENGTH OF THE BEAM. ALL PARTIALLY BONDED STRANDS ARE NEGLECTED IN STRENGTH COMPUTATIONS.



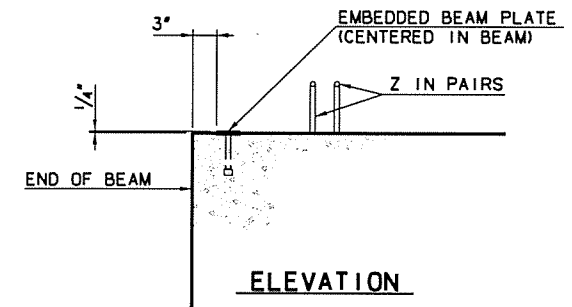
(TYPE IV P.C. BEAM)
END VIEW
 SCALE: 1/2" = 1'-0"



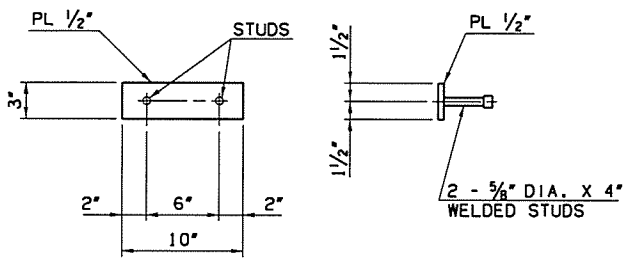
BEAM PLAN VIEW (SPANS 1 & 2)
 SCALE: 1/2" = 1'-0"

BEAM ELEVATION
 SCALE: 1/2" = 1'-0"

FOR BAR BENDS AND ADDITIONAL DETAILS SEE B40-C-PCB-DTL.



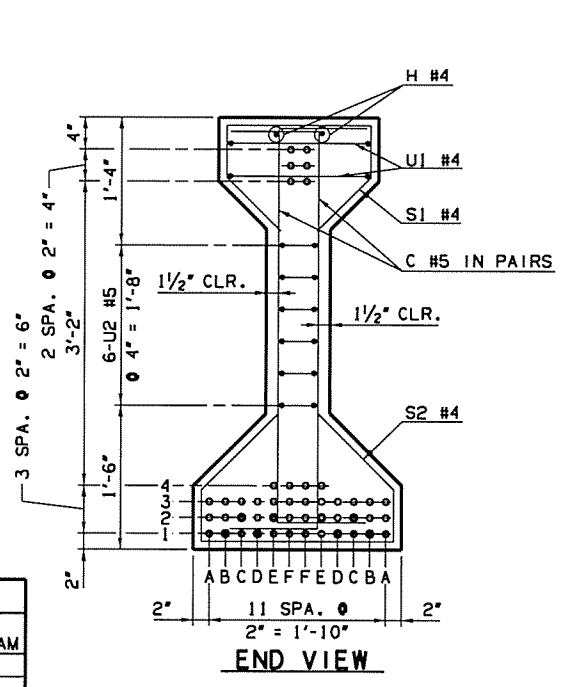
ELEVATION



EMBEDDED BEAM PLATE DETAILS
 SCALE: NONE

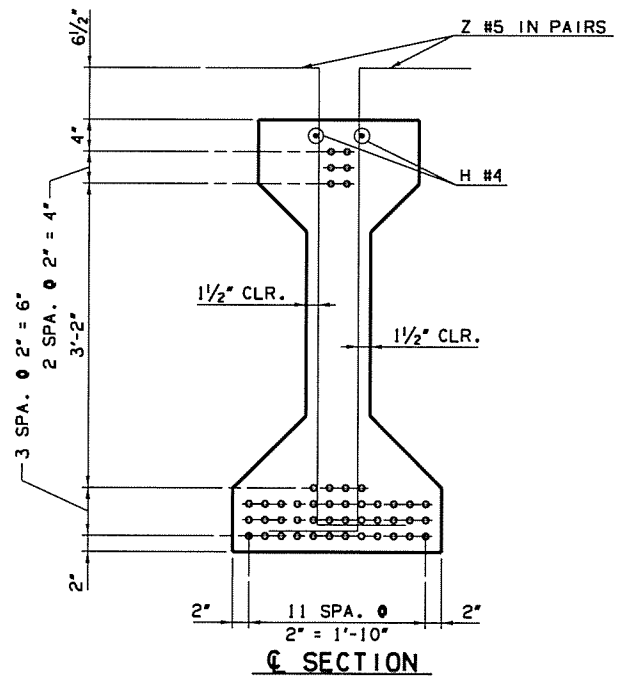
NOTE:
 PROVIDE AN EMBEDDED PLATE AT EXPANSION ENDS ONLY.

DEBOND SCHEDULE	
DEBOND PAIR	DEBOND LENGTH FROM END OF BEAM
B1	8'-0"
D1	8'-0"
C2	4'-0"
E2	4'-0"

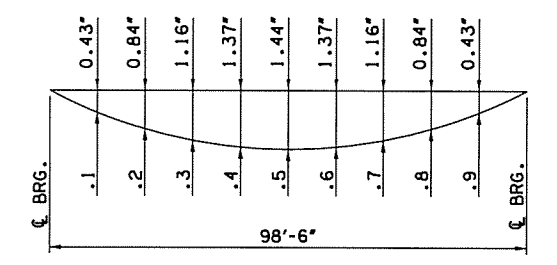


END VIEW

BEAM SECTIONS
 (46 - 0.6" DIA. STRANDS)



SECTION



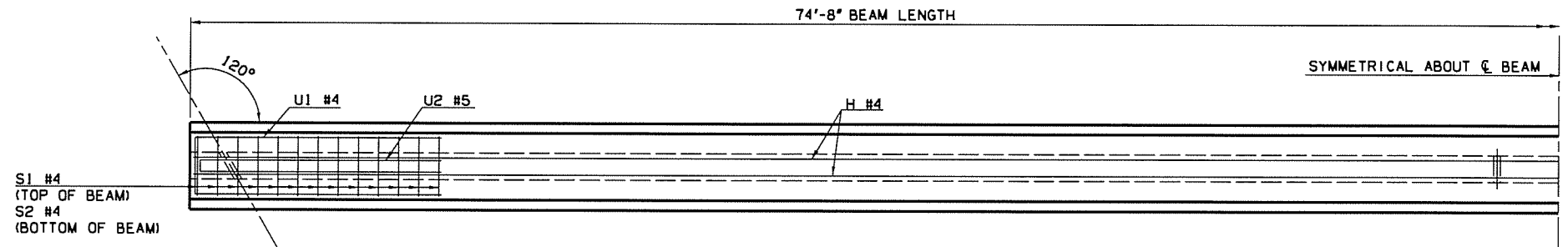
DEAD LOAD DEFLECTION DIAGRAM

NOTE:
 THE DEAD LOAD DEFLECTION SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL DEFLECTIONS DUE TO DECK SLAB + DIAPHRAGMS + HAUNCH + 42" F-SHAPED PARAPET. IT DOES NOT INCLUDE THE BEAM WEIGHT OR FUTURE WEARING SURFACE.

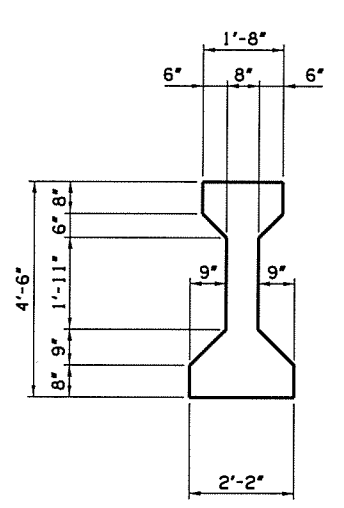
Design	AEJ 6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	WZB 6/16	BRIDGE A	
Checked	KAJ 6/16	P.C. TYPE IV BEAM DETAILS	
Approved	SAK 6/16	(SHEET 1 OF 2)	
Squad	BENHAM	Job Piece No. 24750(04)	Sheet No. 64

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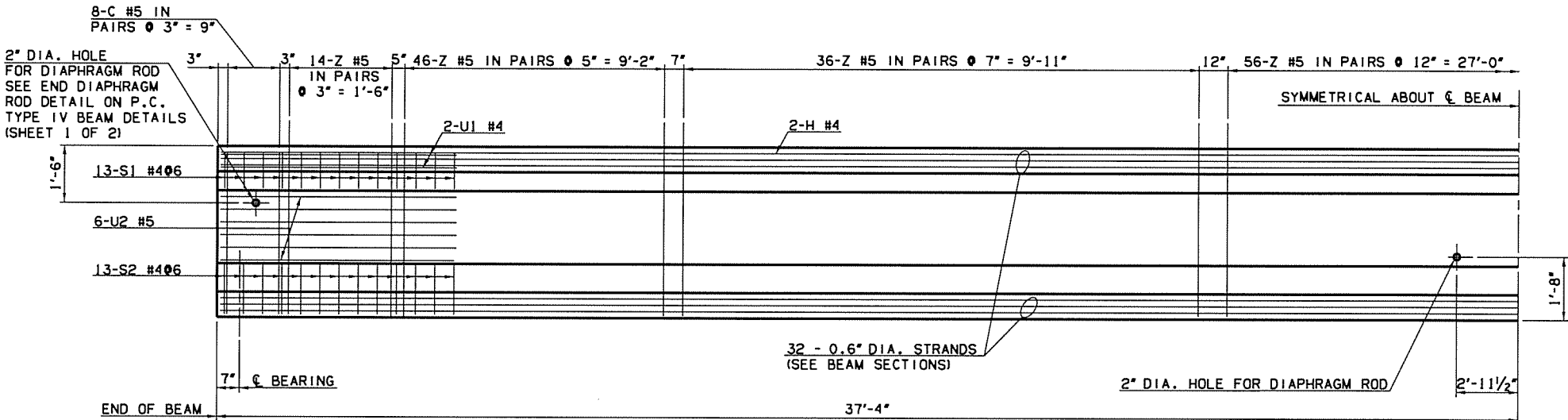
DOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	247501041		65	127



BEAM PLAN VIEW (SPAN 3)
SCALE: 1/2" = 1'-0"



(TYPE IV P.C. BEAM)
END VIEW
SCALE: 1/2" = 1'-0"



BEAM ELEVATION
SCALE: 1/2" = 1'-0"

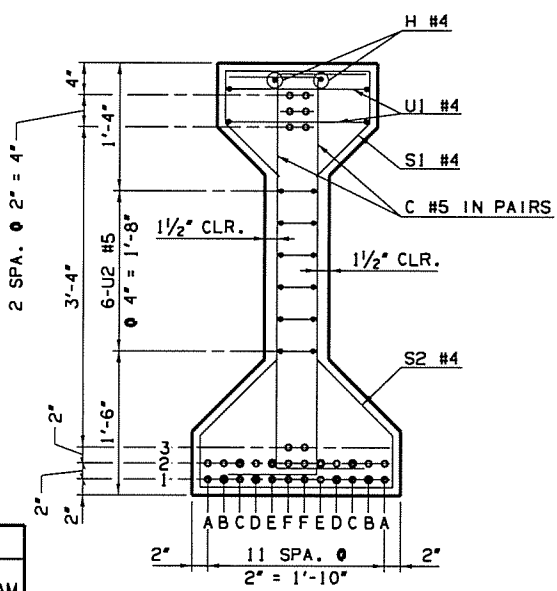
FOR BAR BENDS AND ADDITIONAL DETAILS SEE B40-C-PCB-DTL.

PRESTRESSED CONCRETE BEAM NOTES:

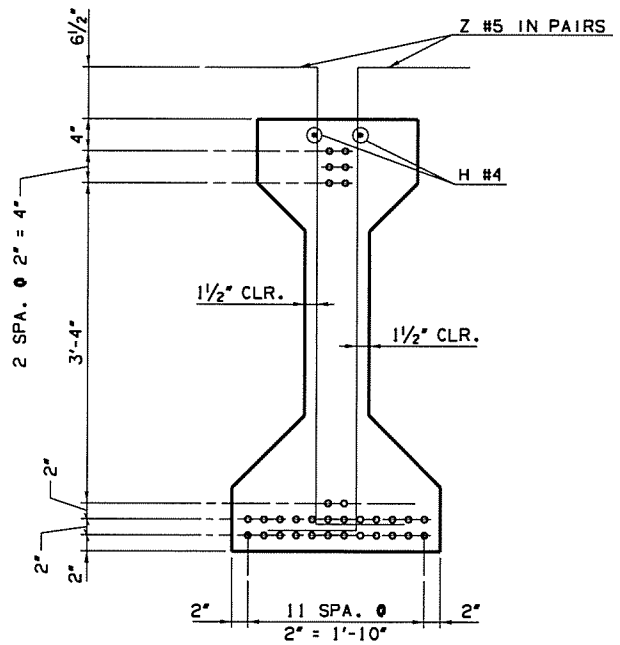
COMPRESSIVE STRENGTH
PROVIDE CONCRETE WITH A COMPRESSIVE STRENGTH OF 4,500 P.S.I. AT TRANSFER OF PRESTRESS AND 6,000 P.S.I. AT 28 DAYS.

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

LRFR OPERATING RATING - 2.19
THE OPERATING RATING SHOWN IS BASED ON A NORMAL STRENGTH USING ONLY STRANDS THAT ARE BONDED FOR THE FULL LENGTH OF THE BEAM. ALL PARTIALLY BONDED STRANDS ARE NEGLECTED IN STRENGTH COMPUTATIONS.



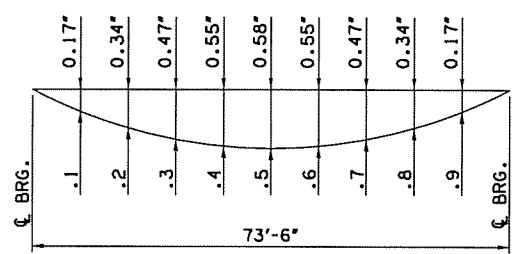
END VIEW



SECTION

DEBOND SCHEDULE	
DEBOND PAIR	DEBOND LENGTH FROM END OF BEAM
B1	20'-0"
D1	8'-0"

BEAM SECTIONS
(32 - 0.6" DIA. STRANDS)



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 + 42" F-SHAPED PARAPET. IT DOES NOT INCLUDE THE BEAM WEIGHT OR FUTURE WEARING SURFACE.

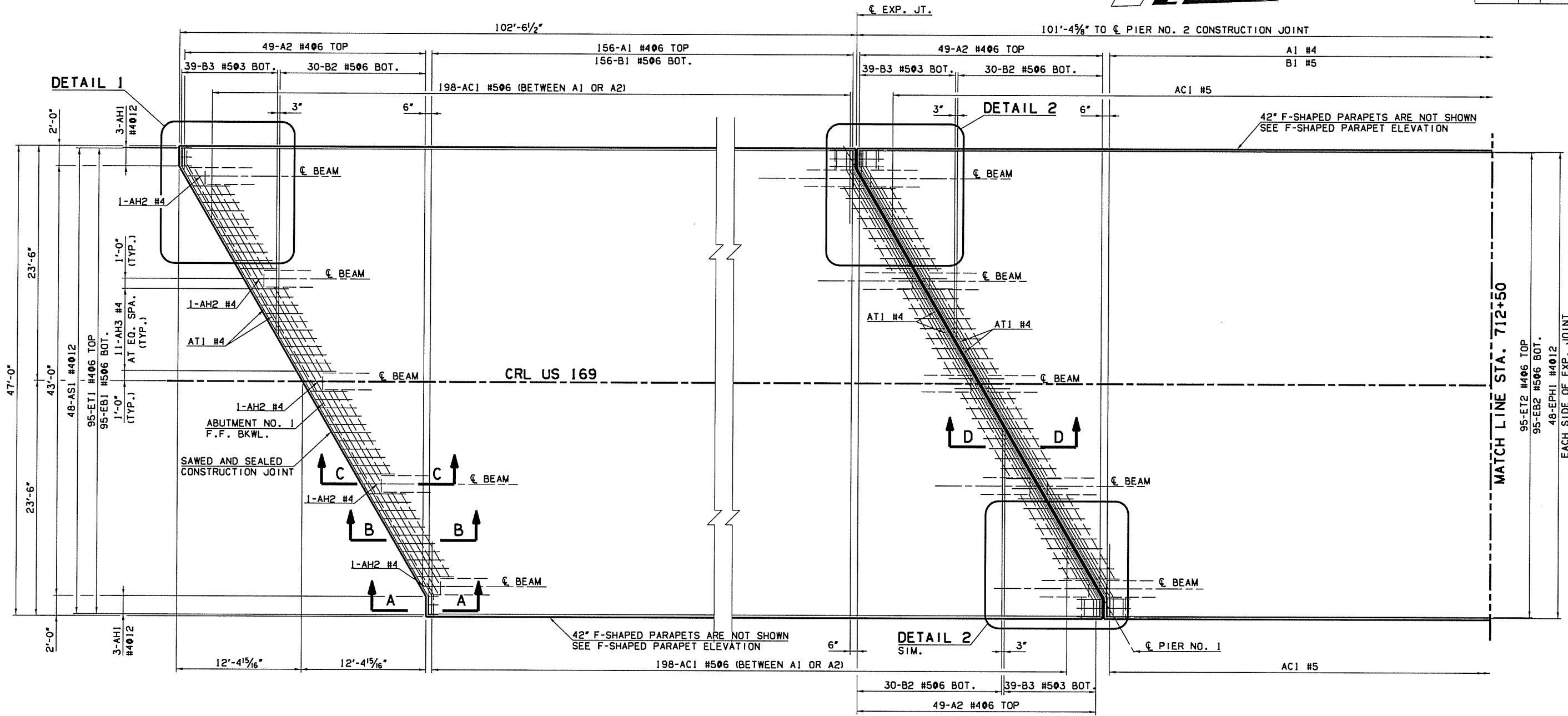
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Drawn	WZB	6/16		
Checked	KAJ	6/16		
Approved	SAK	6/16		
Squad	BENHAM			
Job Piece No. 247501041			Sheet No. 65	

7/12/2016

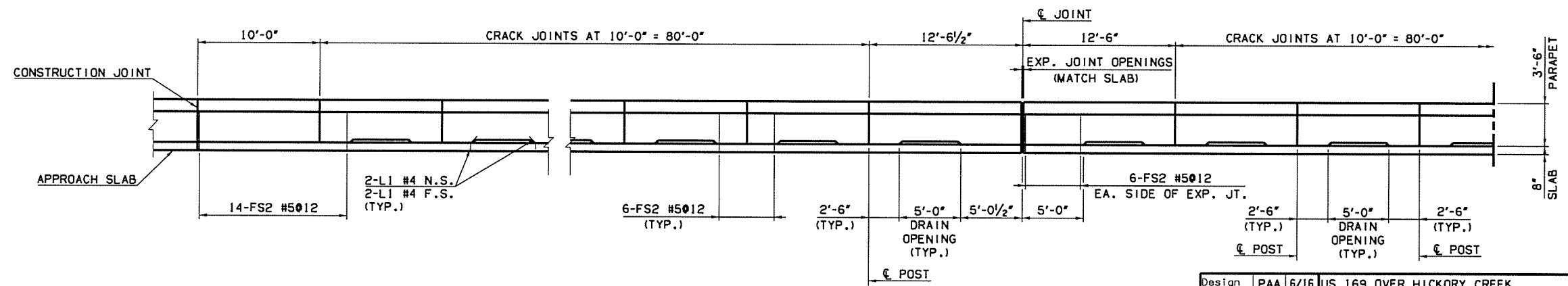
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UNIT	STATE	J.P. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA	247501041		66	127



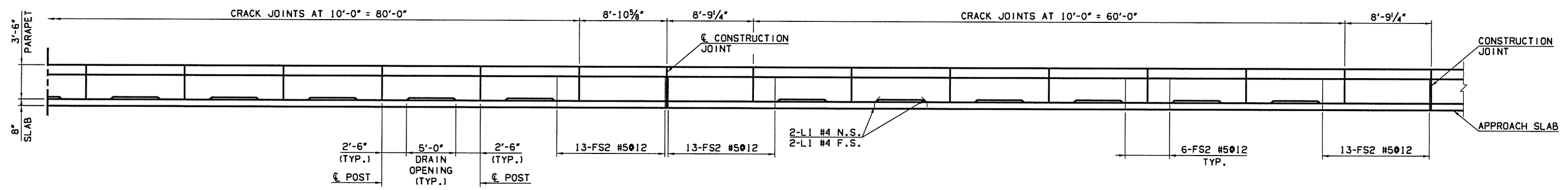
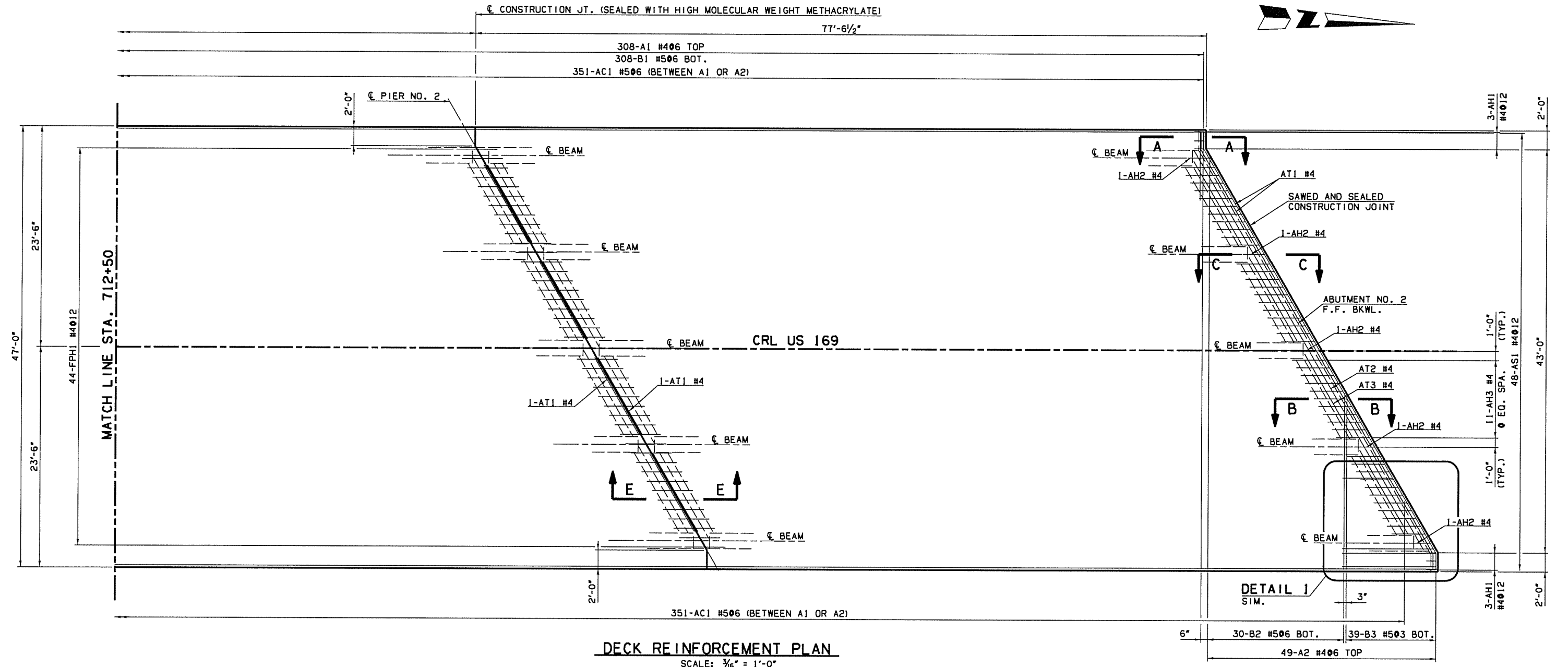
DECK REINFORCEMENT PLAN
SCALE: 3/16" = 1'-0"



F-SHAPED PARAPET ELEVATION
SCALE: 3/16" = 1'-0"

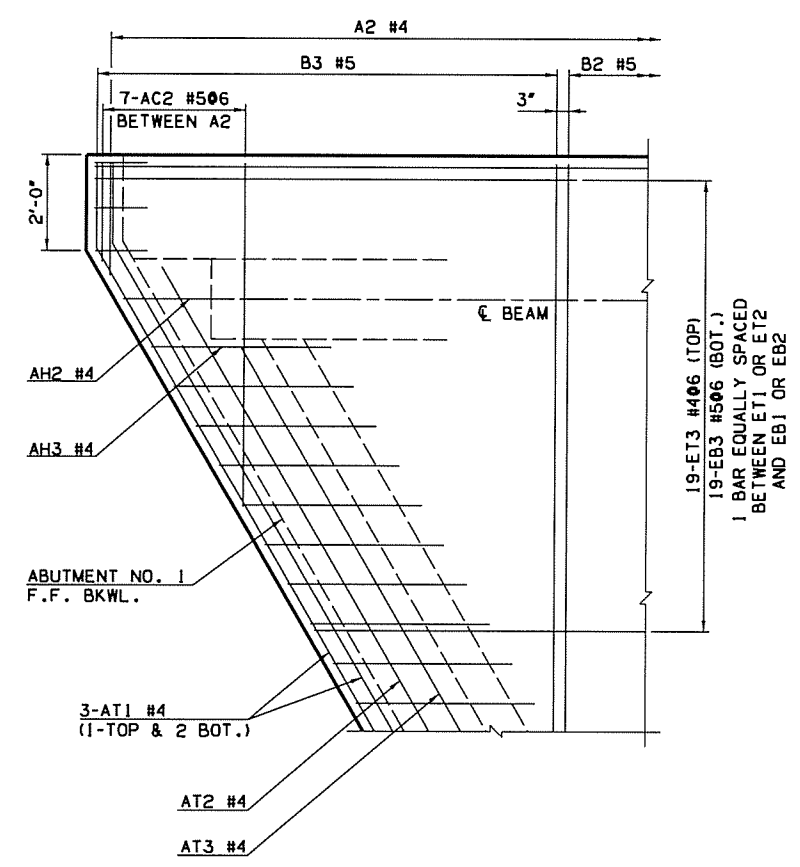
Design	PAA	6/16	US 169 OVER HICKORY CREEK BRIDGE A SUPERSTRUCTURE DETAILS (SHEET 1 OF 4)	NOWATA COUNTY
Drawn	JT	6/16		
Checked	AEJ	6/16		
Approved	SAK	6/16		
Squad	BENHAM			
Job Piece No. 247501041			Sheet No. 66	

DOT	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	247501041		67	127

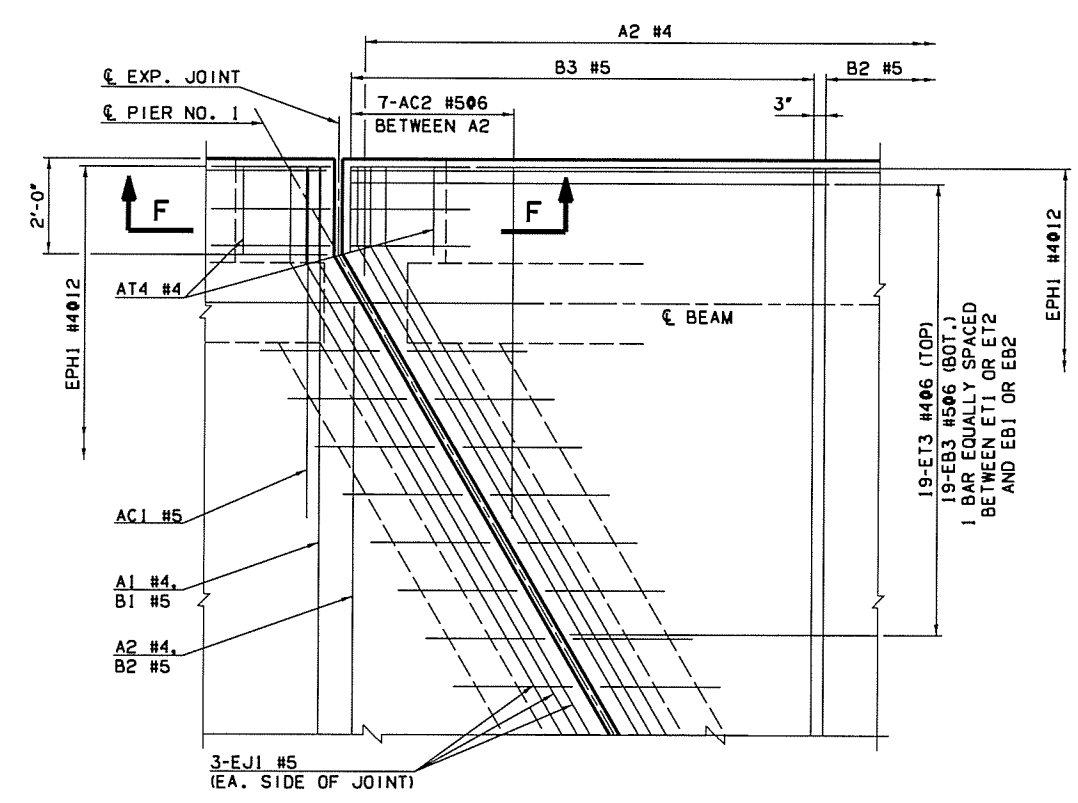


Design	PAA	6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	JT	6/16	BRIDGE A	
Checked	AEJ	6/16	SUPERSTRUCTURE DETAILS	
Approved	SAK	6/16	(SHEET 2 OF 4)	
Squad	BENHAM		Job Piece No. 247501041	Sheet No. 67

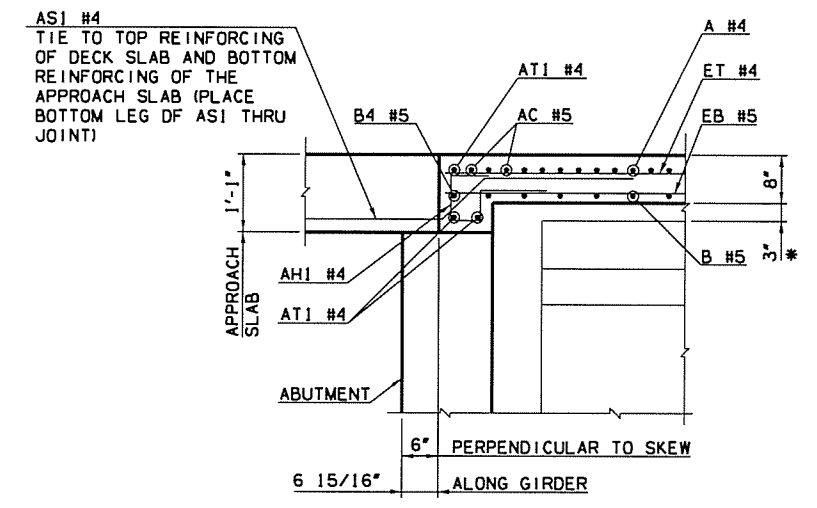
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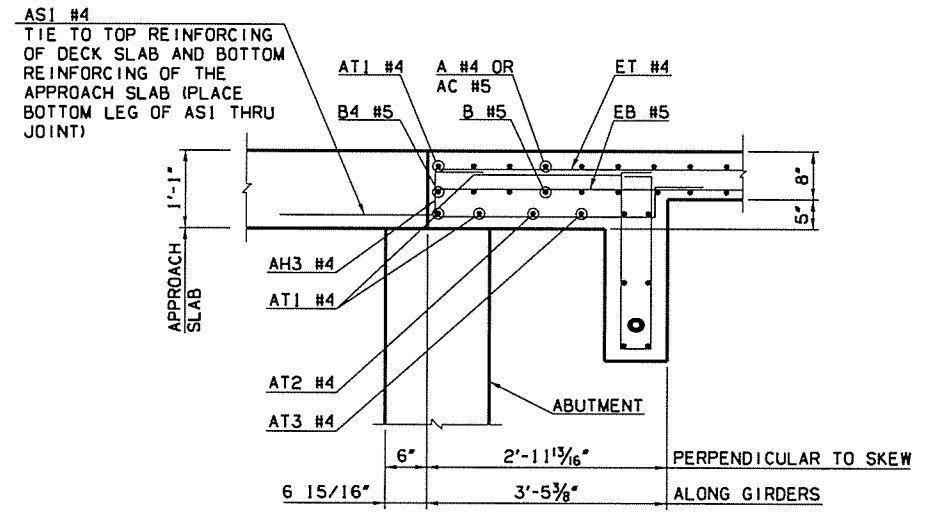
DETAIL 1
SCALE: 1/2" = 1'-0"



DETAIL 2
SCALE: 1/2" = 1'-0"

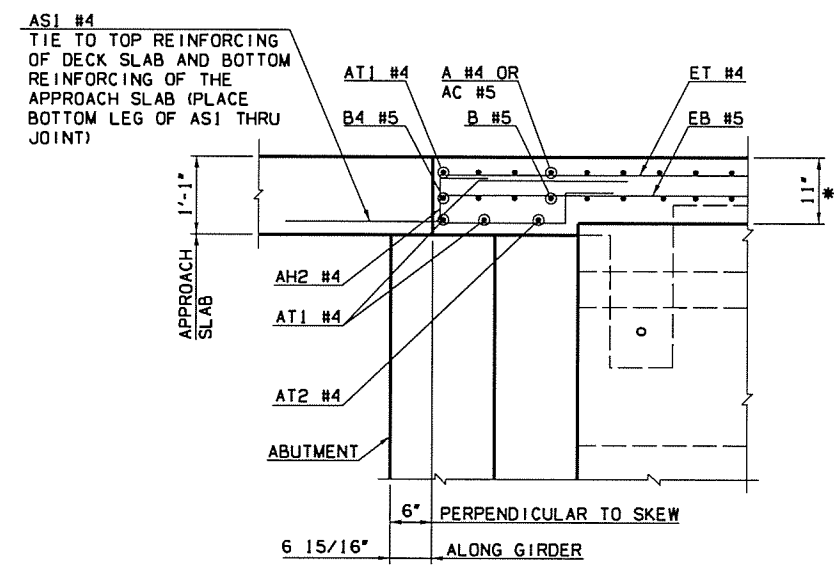


SECTION A-A
SCALE: 3/4" = 1'-0"

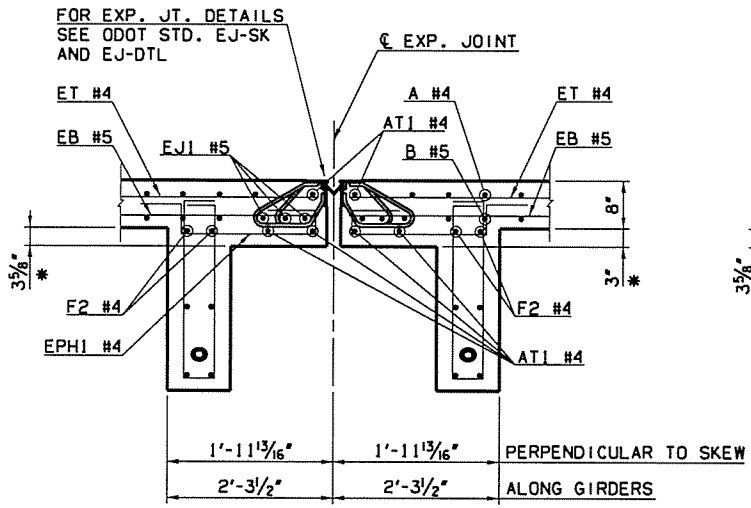


SECTION B-B
SCALE: 3/4" = 1'-0"

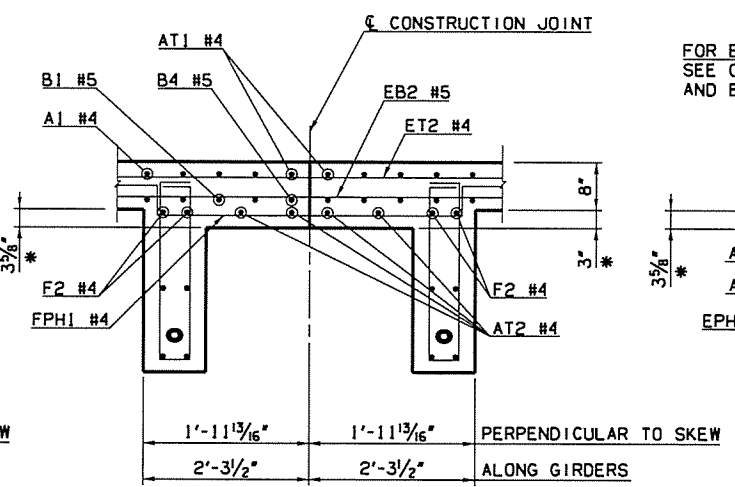
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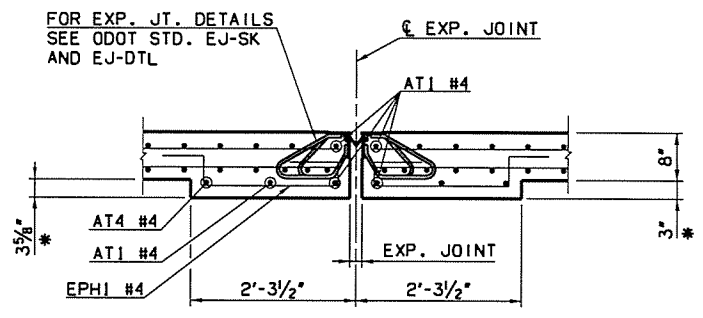
SECTION C-C
SCALE: 3/4" = 1'-0"



SECTION D-D
SCALE: 3/4" = 1'-0"

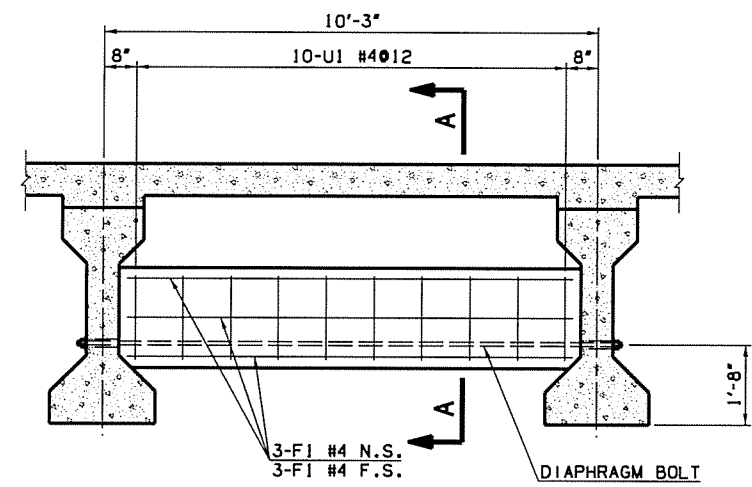
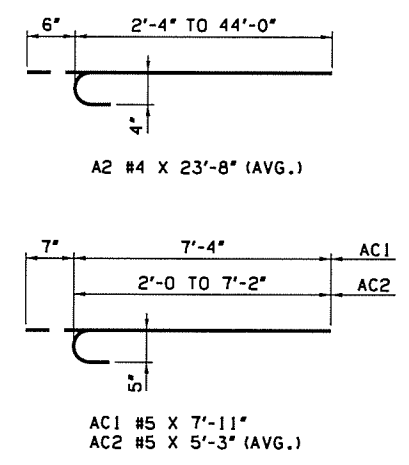
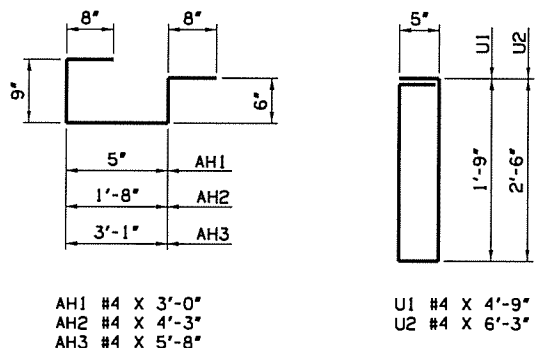
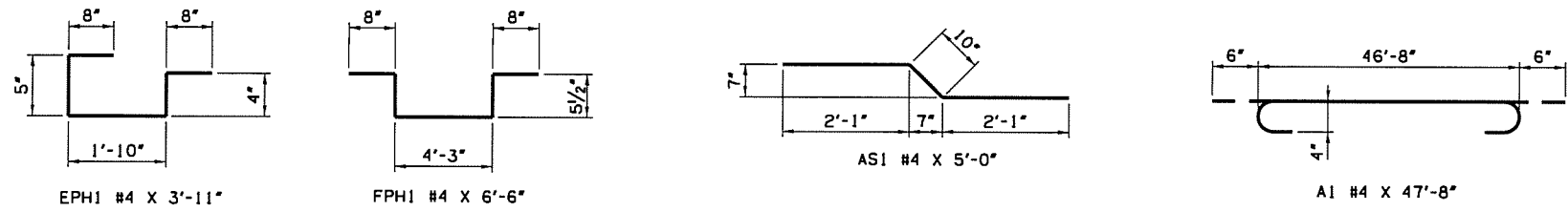


SECTION E-E
SCALE: 3/4" = 1'-0"

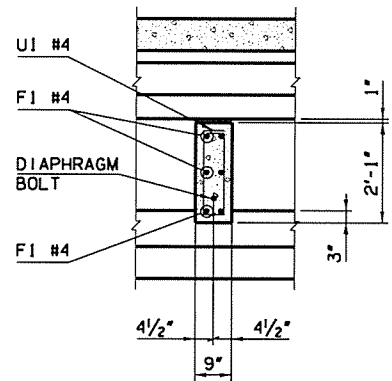


SECTION F-F
SCALE: 3/4" = 1'-0"

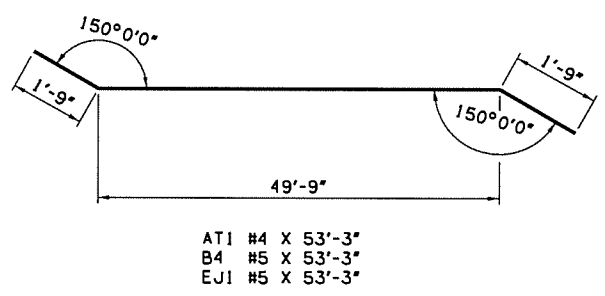
Design	PAA 6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	JT 6/16	BRIDGE A	
Checked	AEJ 6/16	SUPERSTRUCTURE DETAILS	
Approved	SAK 6/16	(SHEET 3 OF 4)	
Squad	BENHAM	Job Piece No. 247501041	Sheet No. 68



INTERMEDIATE DIAPHRAGM
SCALE: 1/2" = 1'-0"

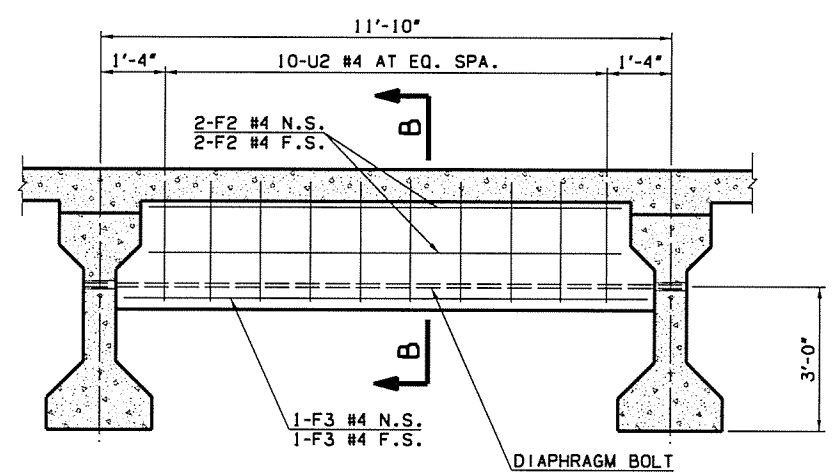


SECTION A-A
SCALE: 1/2" = 1'-0"

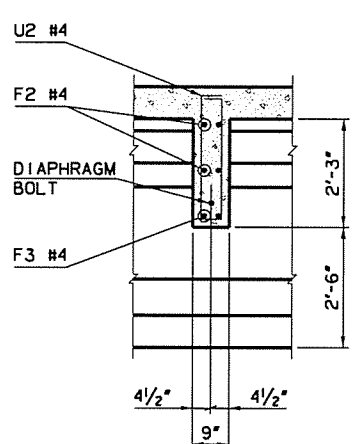


DECK SLAB NOTES:

- 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.
- 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' 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 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 THE 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.
- DO NOT PLACE THE CONCRETE FOR THE DECK SLAB OR APPLY OTHER MASSIVE LOADS TO THE BEAMS OR DIAPHRAGMS 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.
- LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS.
- DO NOT SAW-CUT GROOVE WITHIN 6" OF ANY CONSTRUCTION JOINT.
- BARS SHALL BE CONTINUOUS THRU CONSTRUCTION JOINTS AT FIXED PIERS. DO NOT LAP WITHIN 10 FEET OF CENTERLINE OF FIXED PIER.



END DIAPHRAGM
SCALE: 1/2" = 1'-0"



SECTION B-B
SCALE: 1/2" = 1'-0"

SUPERSTRUCTURE BAR LIST (ONE REQUIRED)					
EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
A1	#4	464	BNT.	47'-8"	
A2	#4	196	BNT.	23'-8" (AVG.)	2'-10" TO 44'-6" SEE NOTE 6
B1	#5	464	STR.	46'-8"	
B2	#5	120	STR.	31'-5" (AVG.)	18'-9" TO 44'-0"
B3	#5	156	STR.	10'-1" (AVG.)	1'-9" TO 18'-4"
B4	#5	4	BNT.	53'-3"	
AC1	#5	1098	BNT.	7'-11"	
AC2	#5	28	BNT.	5'-3" (AVG.)	2'-7" TO 7'-11" SEE NOTE 7
ET1	#4	95	STR.	104'-5"	SEE NOTE 1
ET2	#4	95	STR.	185'-0"	SEE NOTE 2
ET3	#4	76	STR.	10'-0"	
EB1	#5	95	STR.	105'-7"	SEE NOTE 3
EB2	#5	95	STR.	188'-6"	SEE NOTE 4
EB3	#5	76	STR.	10'-0"	
AH1	#4	12	BNT.	3'-0"	
AH2	#4	10	BNT.	4'-3"	
AH3	#4	88	BNT.	5'-8"	
AT1	#4	14	BNT.	53'-3"	
AT2	#4	6	STR.	48'-10"	
AT3	#4	8	STR.	10'-3"	
AT4	#4	4	STR.	1'-10"	
AS1	#4	96	BNT.	5'-0"	
F1	#4	72	STR.	9'-0"	
F2	#4	96	STR.	9'-6"	
F3	#4	48	STR.	10'-8"	
U1	#4	120	BNT.	4'-9"	
U2	#4	240	BNT.	6'-3"	
FS2	#5	382	BNT.	7'-4"	SEE NOTE 5
L1	#4	192	BNT.	1'-3"	SEE NOTE 5
EJ1	#5	6	BNT.	53'-3"	
EPHI	#4	96	BNT.	3'-11"	
FPHI	#4	44	BNT.	6'-6"	

NOTES:

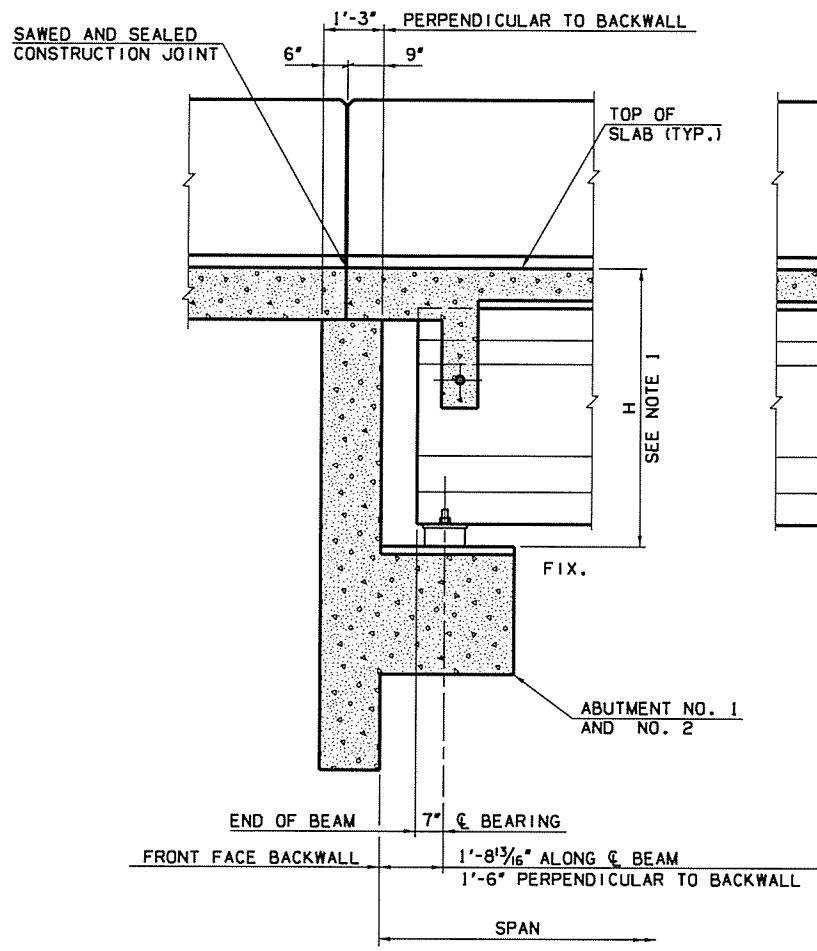
- INCLUDES 1 - 25" MIN. LAP.
- INCLUDES 3 - 25" MIN. LAPS.
- INCLUDES 1 - 39" MIN. LAP.
- INCLUDES 3 - 39" MIN. LAPS.
- SEE ODOT STD. FSHP-42-2.
- 4 SETS OF 49
- 4 SETS OF 7

SUPERSTRUCTURE QUANTITIES		
ITEM	UNIT	TOTAL
PRESTRESSED CONCRETE BEAMS (TYPE IV)	LF	1370.0
SAW-CUT GROOVING	SY	1376.1
SEALED EXPANSION JOINT	LF	53.67
42" F-SHAPED PARAPET	LF	563.0
STRUCTURAL STEEL	LB	1670
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	20
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	10
CLASS AA CONCRETE	CY	375.5
EPOXY COATED REINFORCING STEEL	LB	112370
WATER REPELLENT (VISUALLY INSPECTED)	SY	1138
SEALER CRACK PREPARATION	LF	54
SEALER RESIN	GAL	0.4

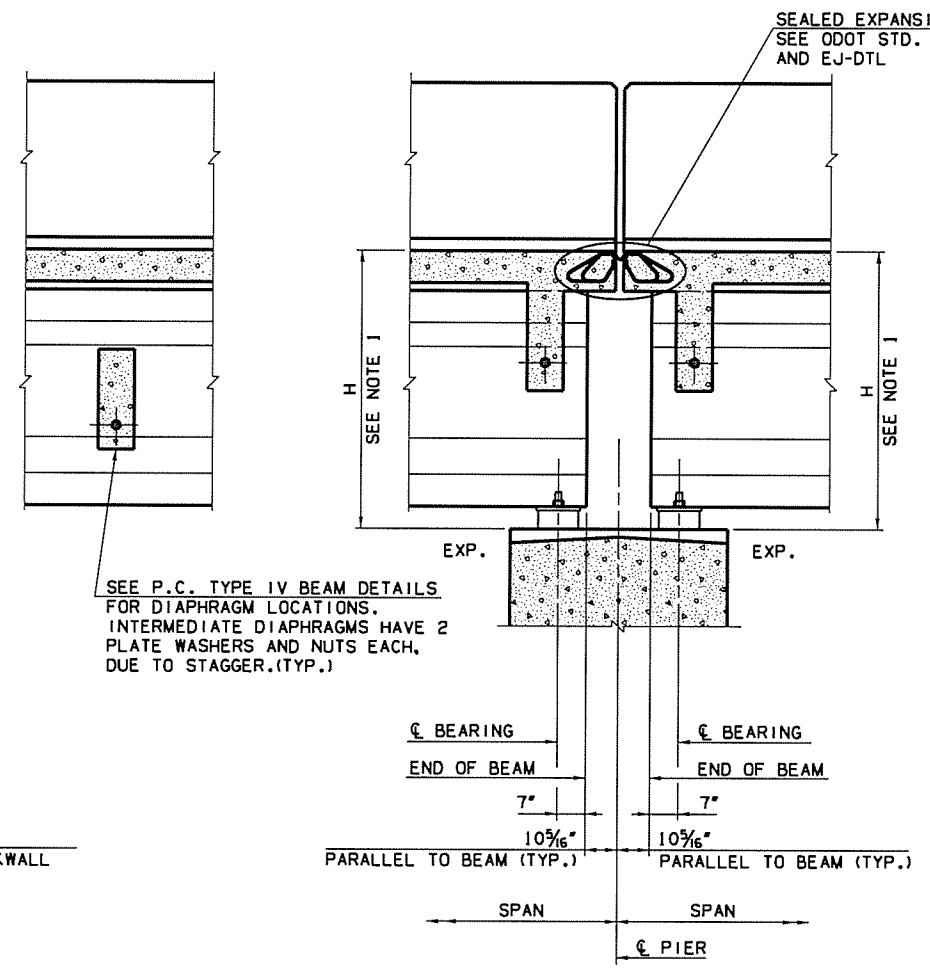
N.S. = NEAR SIDE
F.S. = FAR SIDE

Design	PAA	6/16	US 169 OVER HICKORY CREEK BRIDGE A SUPERSTRUCTURE DETAILS (SHEET 4 OF 4) Job Piece No. 24750(04) Sheet No. 69
Drawn	JT	6/16	
Checked	AEJ	6/16	
Approved	SAK	6/16	
Squad	BENHAM		

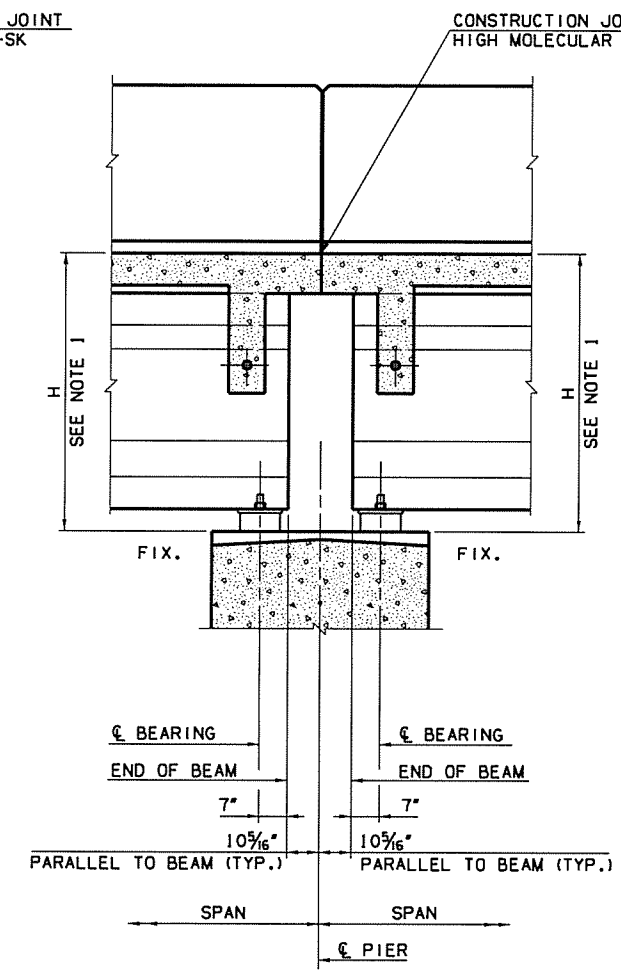
ODOT DIVISION	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		70	127



FIXED ABUTMENTS



EXPANSION PIER 1



FIXED PIER 2

LONGITUDINAL SECTION

SCALE: 1/2" = 1'-0"

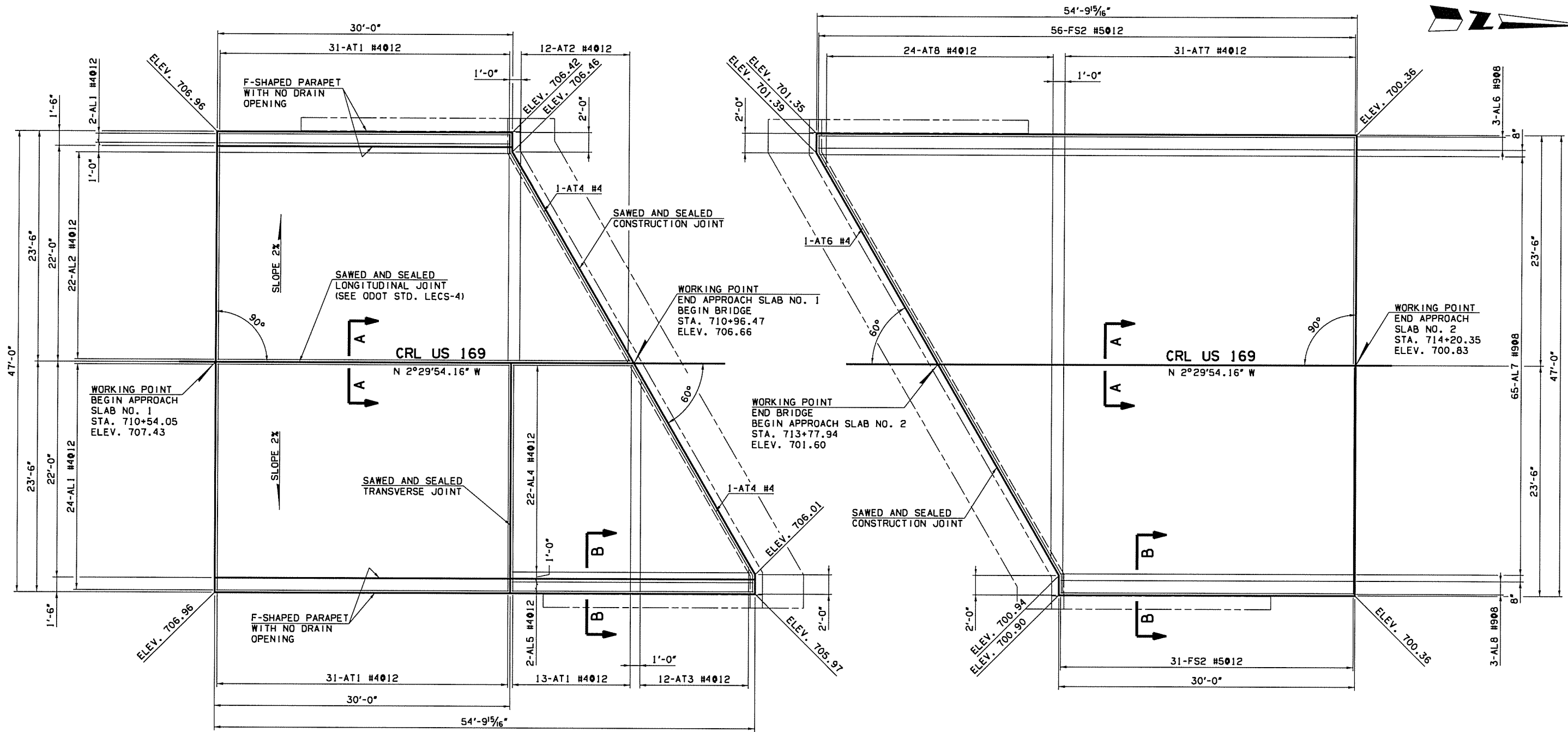
SEE P.C. TYPE IV BEAM DETAILS FOR DIAPHRAGM LOCATIONS. INTERMEDIATE DIAPHRAGMS HAVE 2 PLATE WASHERS AND NUTS EACH, DUE TO STAGGER.(TYP.)

SCHEDULE FOR DIMENSION H	
LOCATION	H
ABUTMENT NO. 1	5'-9 5/8"
PIER NO. 1 DWN STA	5'-10 1/4"
PIER NO. 1 UP STA	5'-9 5/8"
PIER NO. 2 DWN STA	5'-10 1/4"
PIER NO. 2 UP STA	5'-9 5/8"
ABUTMENT NO. 2	5'-9 5/8"

NOTES:
1. H DIMENSION IS FROM TOP OF DECK SLAB TO BOTTOM OF BEARING ASSEMBLY AT C BEARING.

NOTE:
FOR BEARING, SEE ODOT STD. B40-C-BRG-PC4BT

Design	AEJ	6/16	US 169 OVER HICKORY CREEK BRIDGE A LONGITUDINAL SECTION Job Piece No. 24750(04) Sheet No. 70	NOWATA COUNTY
Drawn	WZB	6/16		
Checked	KSJ	6/16		
Approved	SAK	6/16		
Squad	BENHAM			



TOP REINFORCING MAT
APPROACH SLAB NO. 1
SCALE: 3/16" = 1'-0"

BOTTOM REINFORCING MAT
APPROACH SLAB NO. 2
SCALE: 3/16" = 1'-0"

① THE DEPARTMENT CONSIDERS THE COST OF CLASS AA CONCRETE, REINFORCING STEEL (INCLUDING FS2 BARS), BACKER ROD, RAPID CURE JOINT SEALANT, POLYSTYRENE AND POLYETHYLENE TO BE INCLUDED IN THE CONTRACT UNIT PRICE OF APPROACH SLAB. THERE IS AN ESTIMATED 160.1 C.Y. OF CLASS AA CONCRETE AND AN ESTIMATED 29830 LB. OF EPOXY COATED REINFORCING STEEL IN BOTH APPROACH SLABS.

APPROACH SLAB QUANTITIES				
ITEM	UNIT	SLAB 1	SLAB 2	TOTAL
APPROACH SLAB	SY	221.6	221.6	443.2
SAW-CUT GROOVING	SY	207.5	207.5	415.0
42" F-SHAPED PARAPET	LF	84.9	84.9	169.8
WATER REPELLENT (VISUALLY INSPECTED)	SY	75	75	150

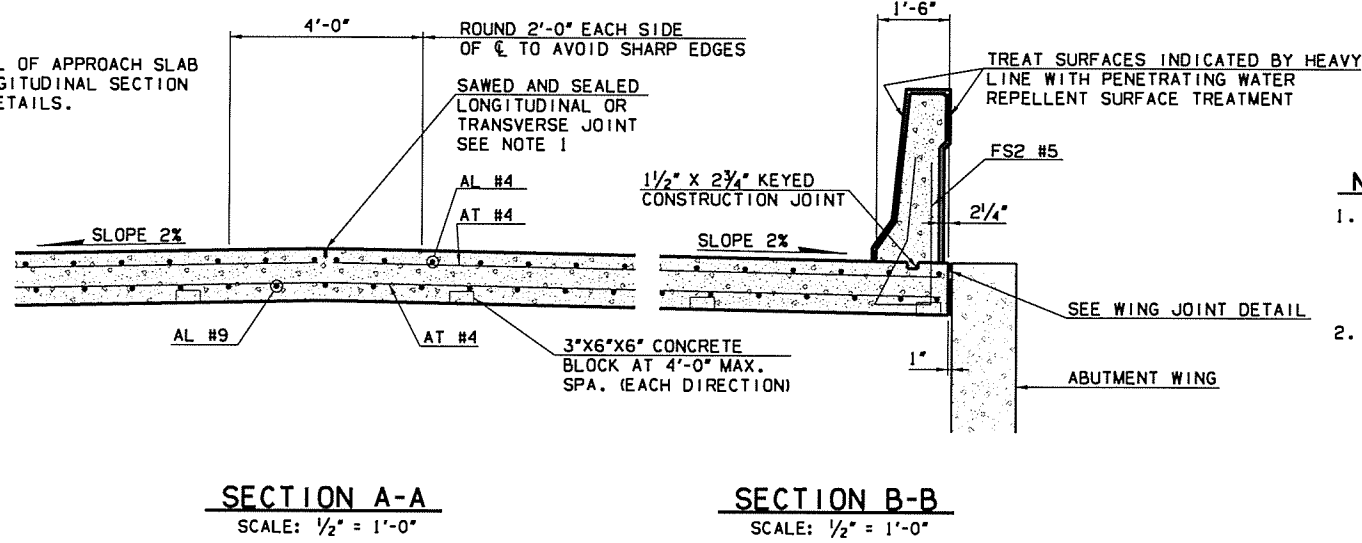
Design	PAA	6/16	US 169 OVER HICKORY CREEK BRIDGE A APPROACH SLAB DETAILS (SHEET 1 OF 2) Job Piece No. 24750(04) Sheet No. 71	NOWATA COUNTY
Drawn	JT	6/16		
Checked	AEJ	6/16		
Approved	SAK	6/16		
Squad	BENHAM			

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DIST. DIVISION	STATE	J/P PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	OKLA	247501041		72	127

NOTE:

FOR ADDITIONAL DETAIL OF APPROACH SLAB AT ABUTMENT, SEE LONGITUDINAL SECTION AND SUPERSTRUCTURE DETAILS.



NOTES:

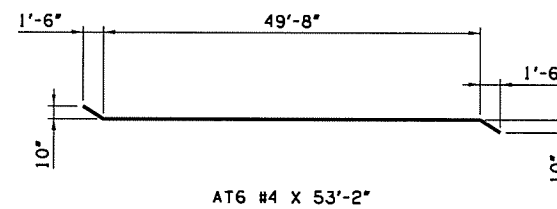
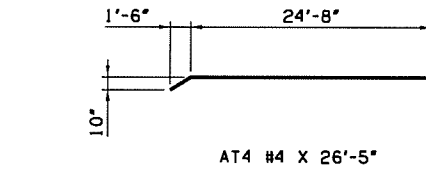
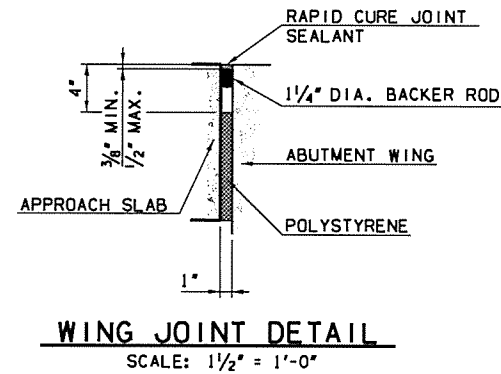
1. PLACE REINFORCING IN THE TOP OF THE APPROACH SLAB 2" FROM EITHER SIDE OF SAWS AND SEALED LONGITUDINAL OR TRANSVERSE JOINTS. FOR ADDITIONAL DETAILS OF SAW JOINTS, SEE STD. LECS-4.
2. FOR ADDITIONAL DETAIL OF 42" F-SHAPED CONCRETE PARAPET, SEE STD. FSHP-42-2.

APPROACH SLAB BAR LIST
(ONE SHOWN, TWO REQUIRED)

EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
AT1	#4	75	STR.	23'-2"	
AT2	#4	12	STR.	10'-3" (AVG.)	1'-0" TO 19'-6"
AT3	#4	12	STR.	12'-2" (AVG.)	2'-7" TO 21'-8"
AT4	#4	2	BNT.	26'-5"	
AT6	#4	1	BNT.	53'-2"	
AT7	#4	31	STR.	46'-8"	
AT8	#4	24	STR.	23'-1" (AVG.)	3'-2" TO 43'-0"
AL1	#4	26	STR.	29'-8"	
AL2	#4	22	STR.	35'-10" (AVG.)	29'-9" TO 41'-11"
AL4	#4	22	STR.	18'-3" (AVG.)	12'-1" TO 24'-4"
AL5	#4	2	STR.	24'-6"	
AL6	#9	3	STR.	54'-6"	
AL7	#9	65	STR.	42'-1" (AVG.)	29'-9" TO 54'-4"
AL8	#9	3	STR.	29'-8"	
FS2	#5	87	BNT.	7'-4"	SEE NOTE 1

NOTES:

1. FOR FS2 #5 BEND DETAIL SEE STD. FSHP-42-2



Design	PAA	6/16	US 169 OVER HICKORY CREEK BRIDGE A APPROACH SLAB DETAILS (SHEET 2 OF 2)	NOWATA COUNTY
Drawn	JT	6/16		
Checked	AEJ	6/16		
Approved	SAK	6/16		
Squad	BENHAM			
Job Piece No. 247501041			Sheet No. 72	

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-150 -100 -50 0 50 100 150

CUT AREA : 120.51
FILL AREA : 17.45

PRES. R/W
25'

CUT VOL : 227.36
FILL VOL : 41.07

CUT AREA : 125.04
FILL AREA : 19.51

PRES. R/W
25'

CUT VOL : 64.82
FILL VOL : 14.39

CUT AREA : 96.60
FILL AREA : 21.49

PRES. R/W
25'

CAUTION: EXIST. OVERHEAD ELECTRIC
CROSSING AT APPROX. STA. 689+84.66,
US 169
LOW WIRE ELEV. 754.68

CUT VOL : 61.20
FILL VOL : 16.34

CUT AREA : 0.00
FILL AREA : 0.00

PRES. R/W
25'

CUT VOL : 0.00
FILL VOL : 0.00

BEGIN PROJECT STA. 689+84.21

689+50

STA. 689+50 TO STA. 690+50

POL 729.75

POL 729.77

POL 729.78

E 723.23

E 722.65

E 722.48

E 722.39

PRES. R/W

PRES. R/W

PRES. R/W

GAS

GAS

GAS

GAS

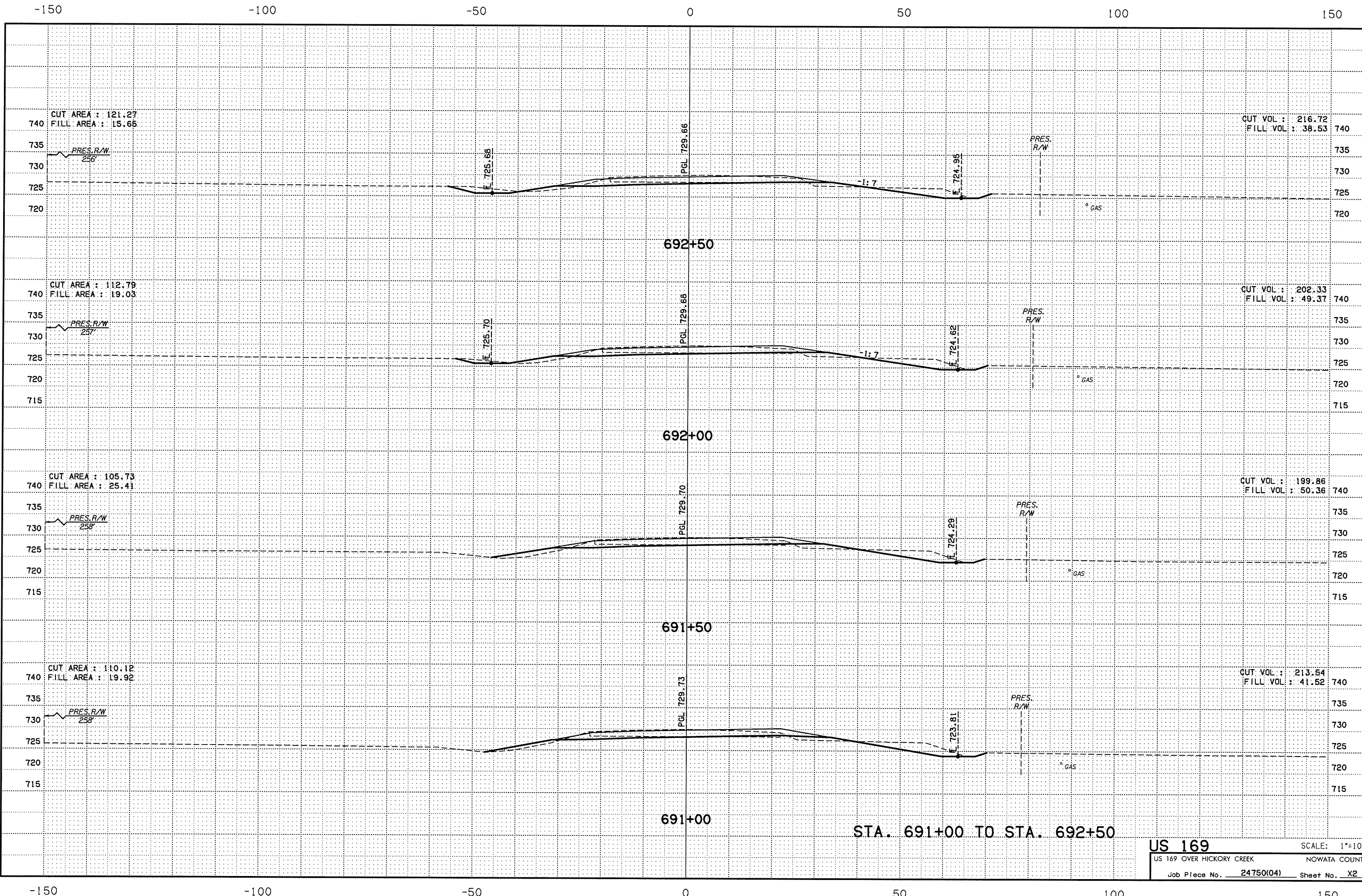
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US 169 SCALE: 1"=10'
US 169 OVER HICKORY CREEK NOWATA COUNTY
Job Place No. 24750(04) Sheet No. X1

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-150 -100 -50 0 50 100 150

CUT AREA : 121.27
FILL AREA : 15.65

CUT VOL : 216.72
FILL VOL : 38.53

CUT AREA : 112.79
FILL AREA : 19.03

CUT VOL : 202.33
FILL VOL : 49.37

CUT AREA : 105.73
FILL AREA : 25.41

CUT VOL : 199.86
FILL VOL : 50.36

CUT AREA : 110.12
FILL AREA : 19.92

CUT VOL : 213.54
FILL VOL : 41.52

STA. 691+00 TO STA. 692+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X2

-150 -100 -50 0 50 100 150

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-150 -100 -50 0 50 100 150

-150 -100 -50 0 50 100 150

CUT AREA : 173.99
FILL AREA : 6.88

CUT VOL : 302.10
FILL VOL : 19.42

CUT AREA : 152.27
FILL AREA : 10.60

CUT VOL : 266.67
FILL VOL : 22.67

CUT AREA : 135.73
FILL AREA : 9.80

CUT VOL : 241.32
FILL VOL : 22.55

CUT AREA : 124.89
FILL AREA : 10.50

CUT VOL : 227.93
FILL VOL : 29.05

694+50

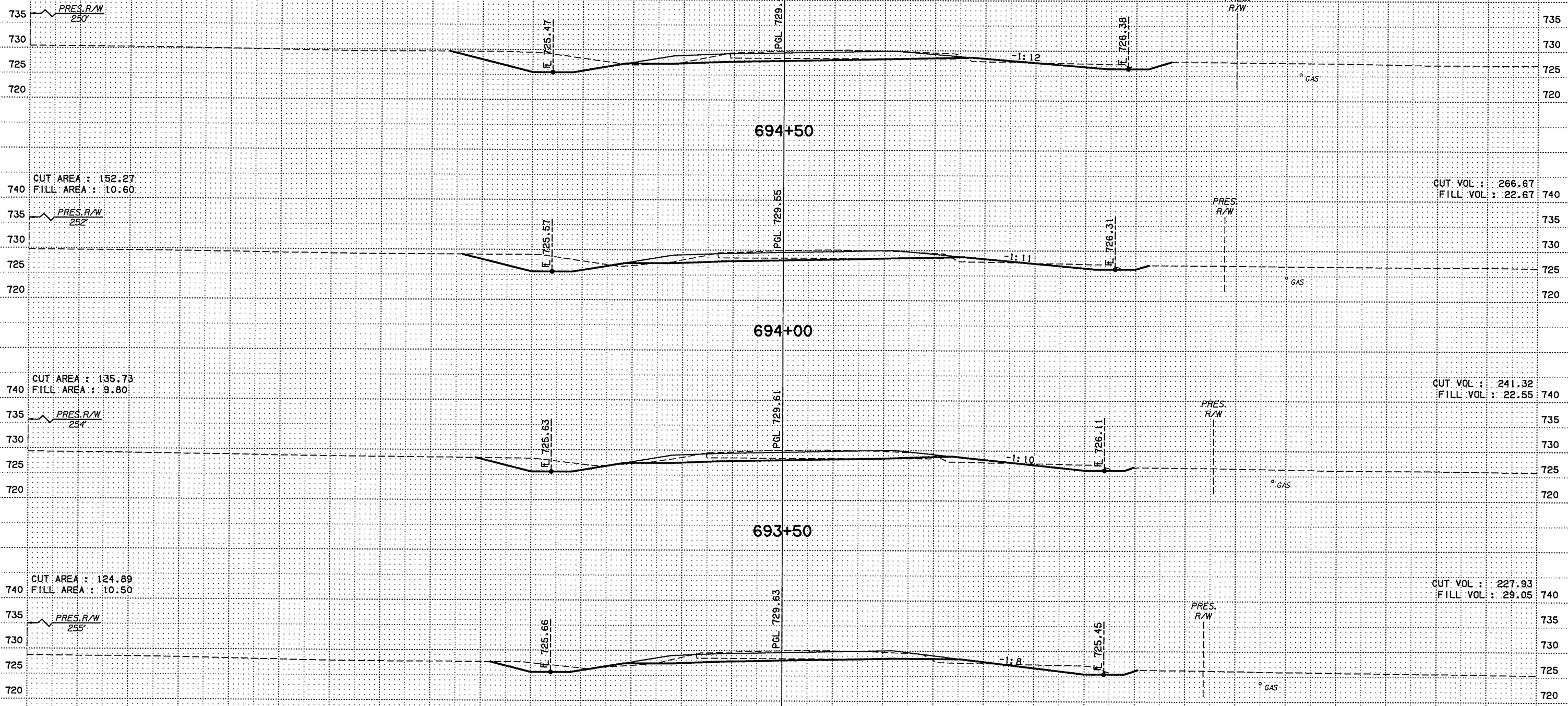
694+00

693+50

693+00

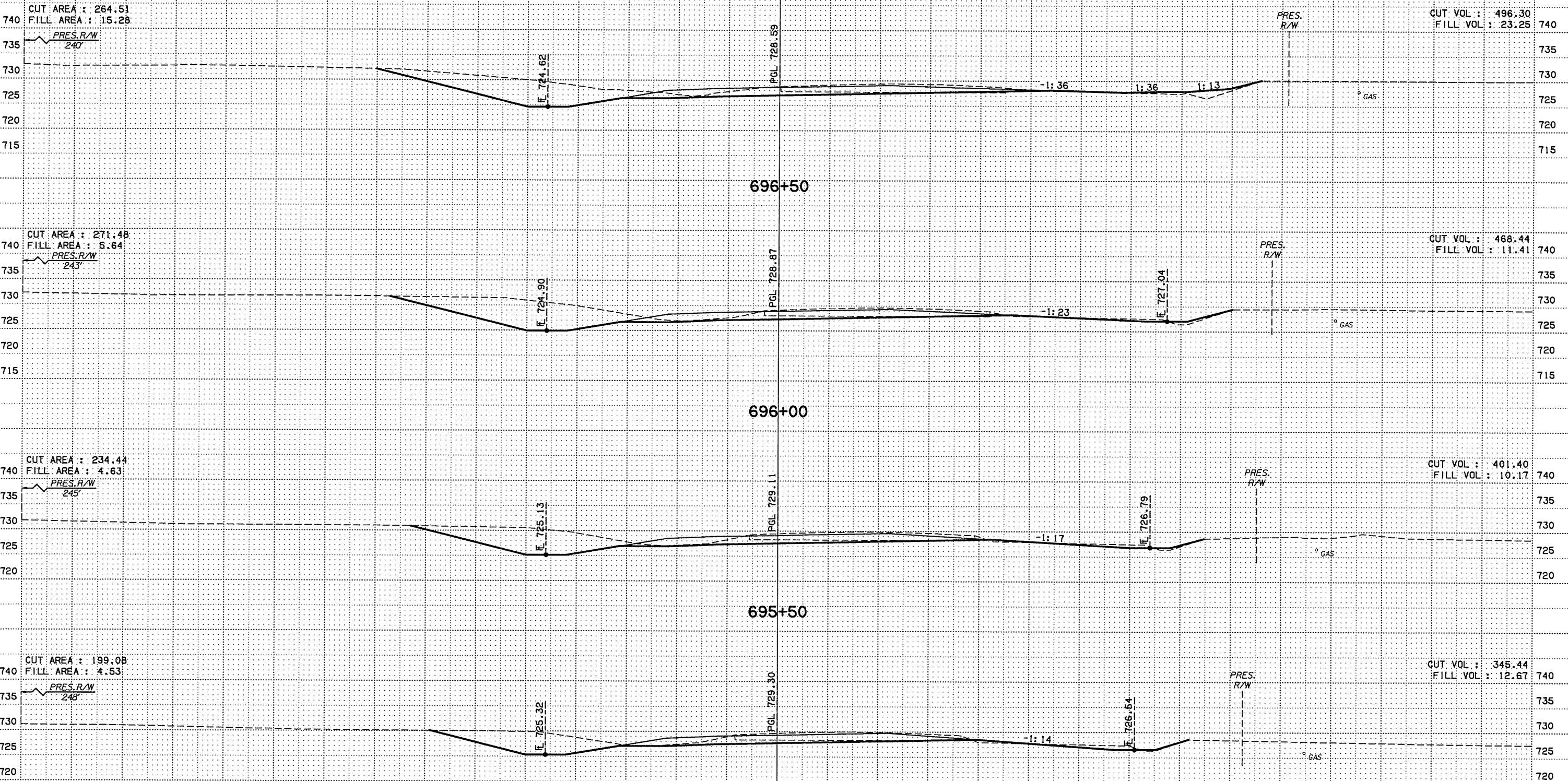
STA. 693+00 TO STA. 694+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X3



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-150 -100 -50 0 50 100 150



STA. 695+00 TO STA. 696+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X4

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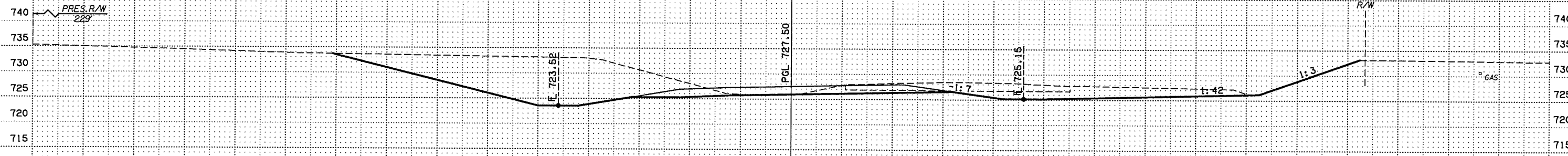
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-150 -100 -50 0 50 100 150

CUT AREA : 588.64
FILL AREA : 0.82

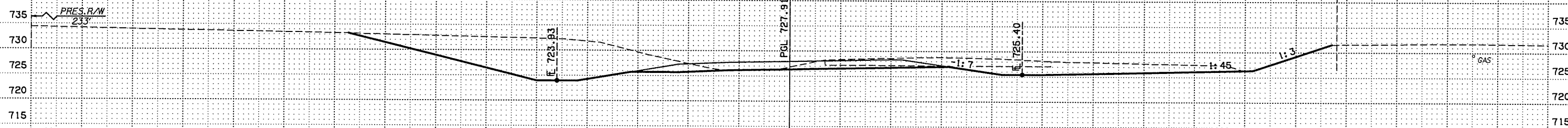
CAUTION: EXIST. OVERHEAD ELECTRIC CROSSING AT APPROX. STA. 698+18.68,
C. US 169
LOW WIRE ELEV. 775.88

CUT VOL : 1012.17
FILL VOL : 1.28



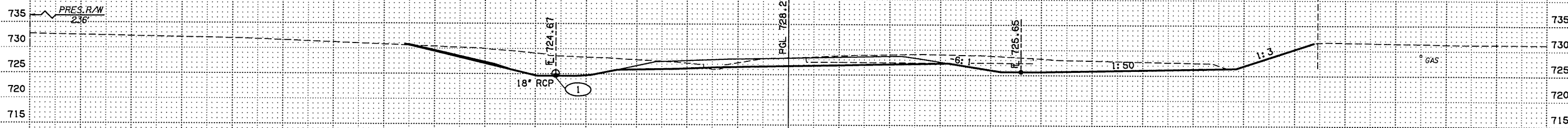
CUT AREA : 504.51
FILL AREA : 0.33

CUT VOL : 769.01
FILL VOL : 1.63



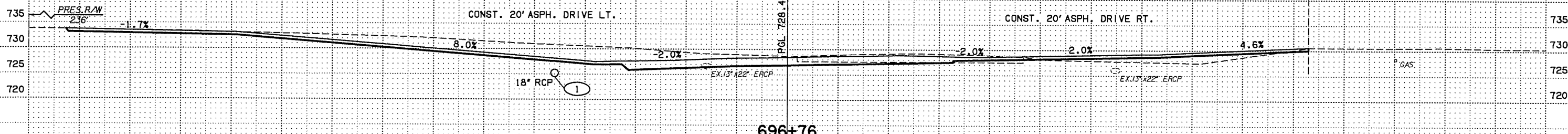
CUT AREA : 326.03
FILL AREA : 1.14

CUT VOL : 306.70
FILL VOL : 20.83



CUT AREA : 369.44
FILL AREA : 38.23

CUT VOL : 307.42
FILL VOL : 31.14



STA. 696+76 TO STA. 698+00

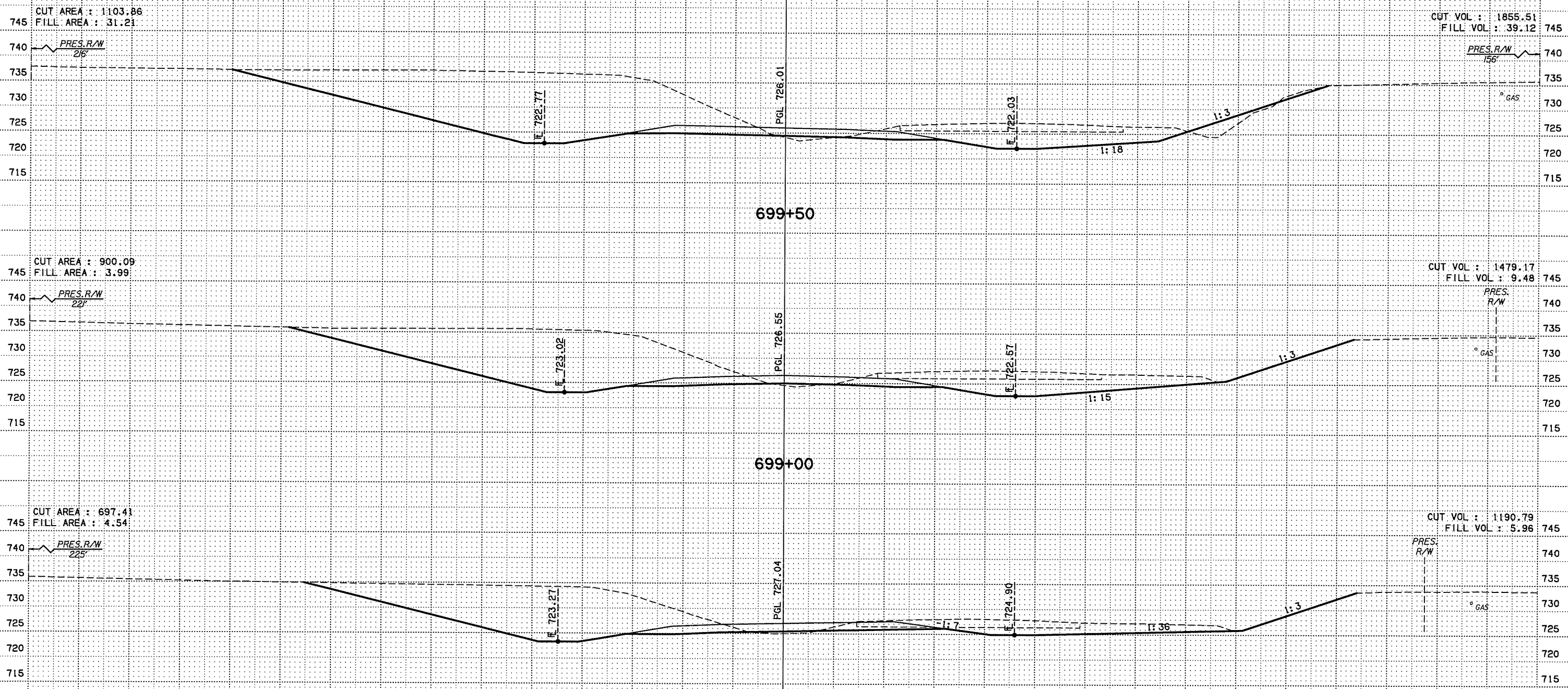
-150 -100 -50 0 50 100 150

US 169 SCALE: 1"=10'
US 169 OVER HICKORY CREEK NOWATA COUNTY
Job Piece No. 24750(04) Sheet No. X5

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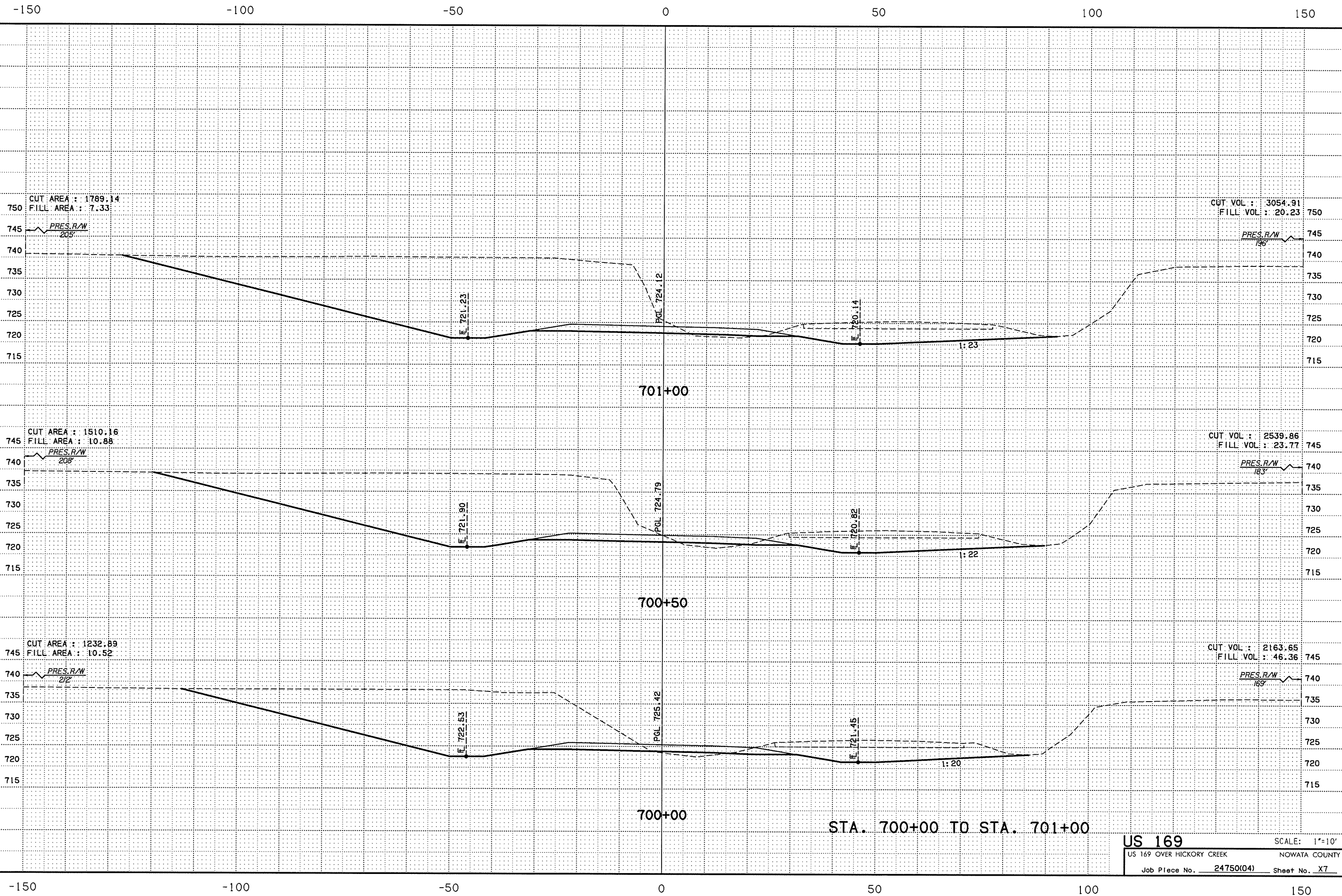
STA. 698+50 TO STA. 699+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Place No. 24750(04) Sheet No. X6

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STA. 700+00 TO STA. 701+00

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X7

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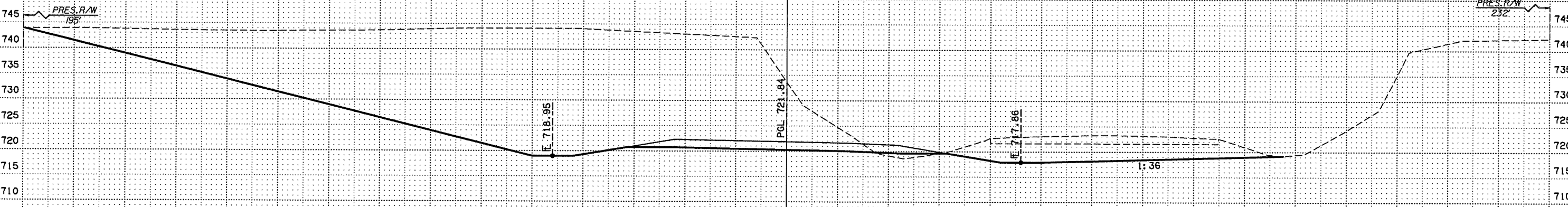
7/12/2016

-150 -100 -50 0 50 100 150

-150 -100 -50 0 50 100 150

CUT AREA : 2713.02
FILL AREA : 7.47

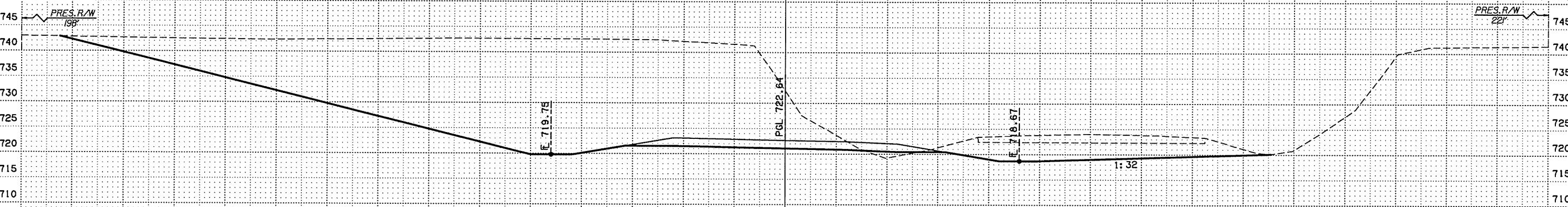
CUT VOL : 4725.50
FILL VOL : 15.96



702+50

CUT AREA : 2389.89
FILL AREA : 6.89

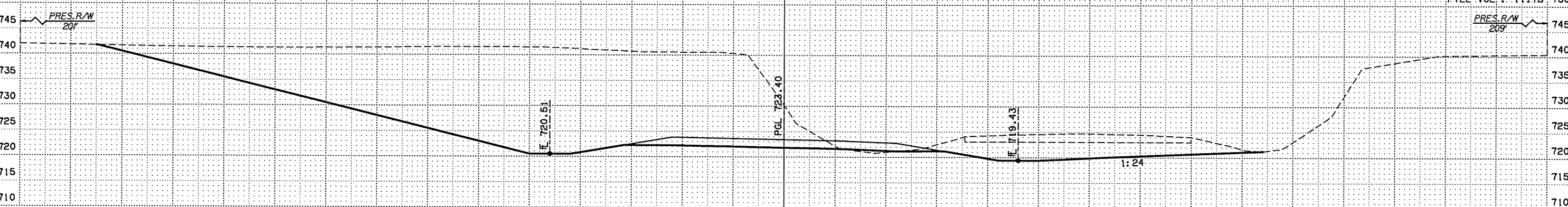
CUT VOL : 4130.66
FILL VOL : 11.25



702+00

CUT AREA : 2071.22
FILL AREA : 3.23

CUT VOL : 3574.41
FILL VOL : 11.73



701+50

STA. 701+50 TO STA. 702+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X8

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-150 -100 -50 0 50 100 150

-150 -100 -50 0 50 100 150

CUT AREA : 3254.24
FILL AREA : 8.64

CUT AREA : 3034.04
FILL AREA : 6.54

CUT VOL : 5822.49
FILL VOL : 16.86

CUT VOL : 5321.35
FILL VOL : 15.57

PRES. R/W
100'

PRES. R/W
102'

PRES. R/W
235'

PRES. R/W
233'

E 717.21

E 716.13

E 718.10

E 717.02

PGL 720.10'

PGL 720.99'

1:37

1:39

703+50

703+00

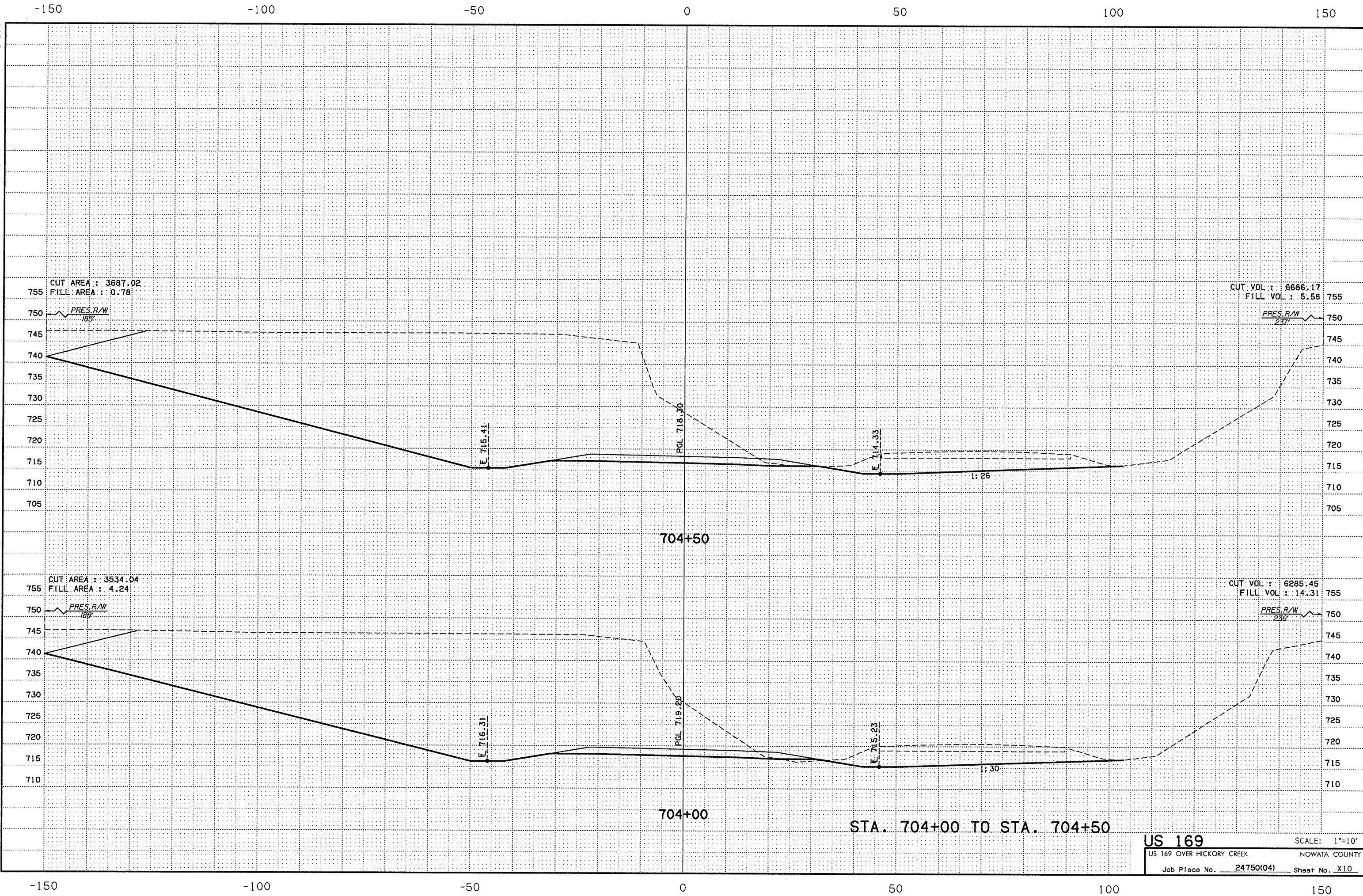
STA. 703+00 TO STA. 703+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X9

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7/12/2016

7:57:12 AM

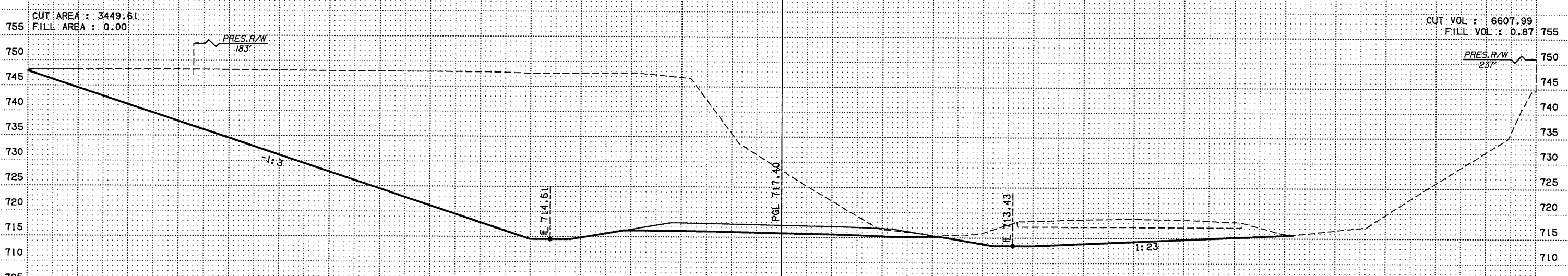
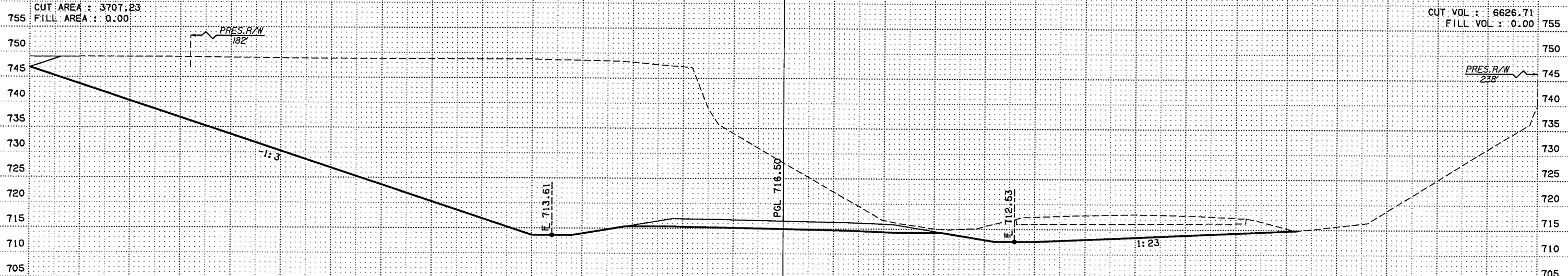


STA. 704+00 TO STA. 704+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X10

P:\NEC\1650-TUL\G1W\25523\1000_0001_US169BR.dwg\20_DESGN\40_CAD_Hickory\VDGN\C\24750(04)_C.X_Sect_ll.dgn 7/12/2016 7:57:14 AM

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STA. 705+00 TO STA. 705+50

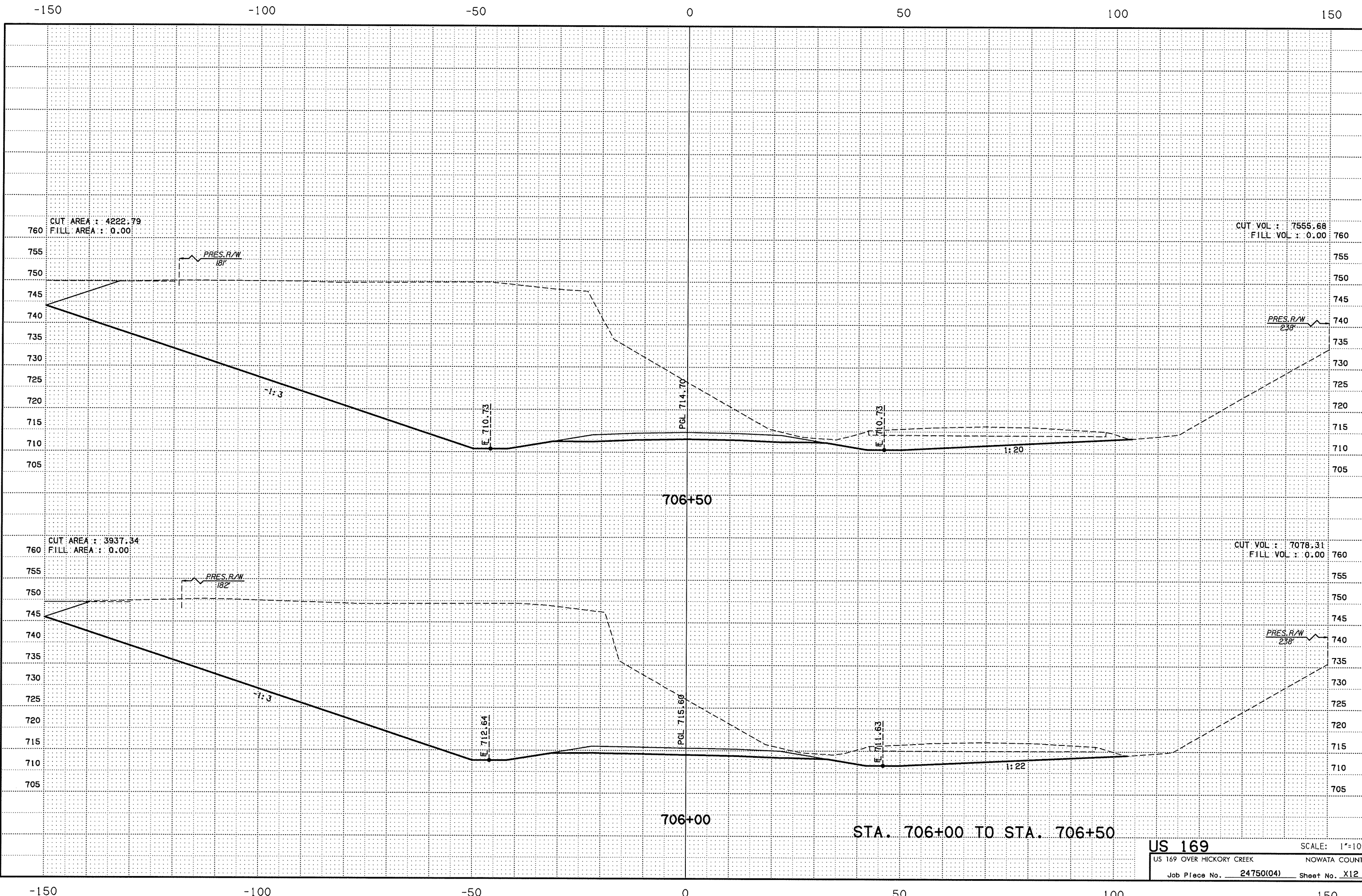
US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X11

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7/12/2016

7:57:16 AM



STA. 706+00 TO STA. 706+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X12

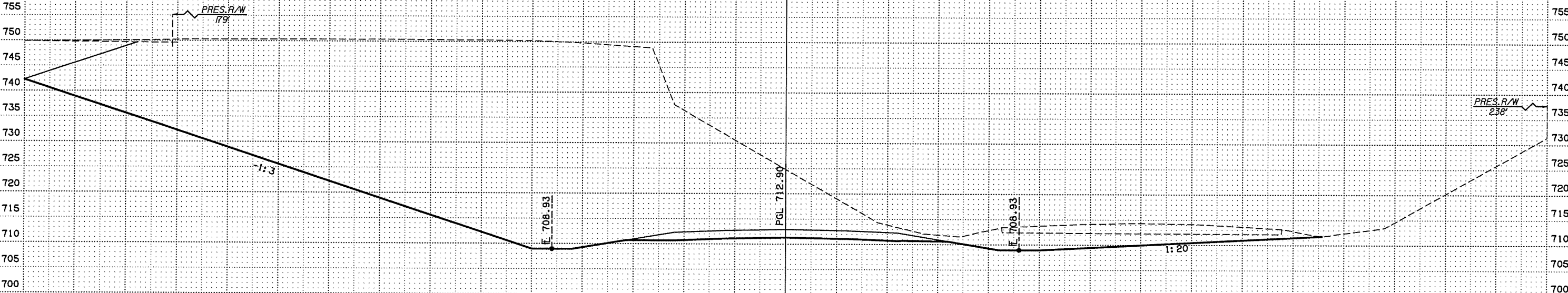
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7/12/2016
7:57:18 AM

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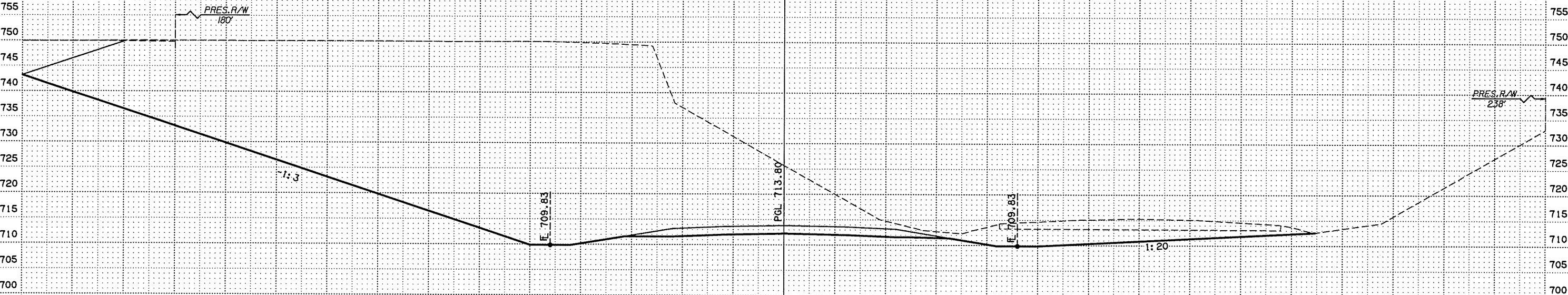
CUT AREA : 4501.61
FILL AREA : 0.00

CUT VOL : 8207.01
FILL VOL : 0.00



CUT AREA : 4361.95
FILL AREA : 0.00

CUT VOL : 7948.83
FILL VOL : 0.00



707+50

707+00

STA. 707+00 TO STA. 707+50

US 169
US 169 OVER HICKORY CREEK NOWATA COUNTY
Job Piece No. 24750(04) Sheet No. X13

SCALE: 1"=10'

-150 -100 -50 0 50 100 150

P:\EIN\650-TUL\CIV\25523\000_0DOT_US169Brdg\20_DESGN\40_CAD_Hickory\40_CAD_Hickory\40_CAD_Hickory\40_CAD_Hickory\C.X_Sect.14.dgn 7/12/2016 7:57:20 AM

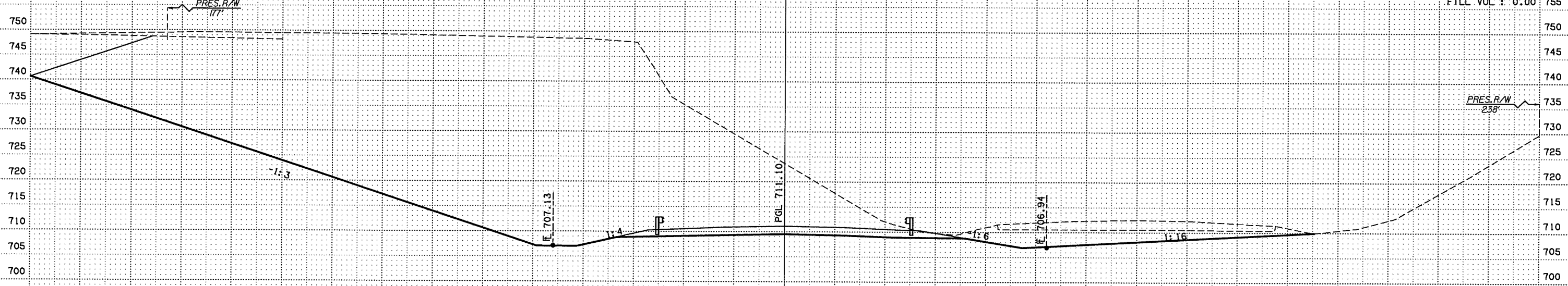
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CUT AREA : 4616.17
FILL AREA : 0.00

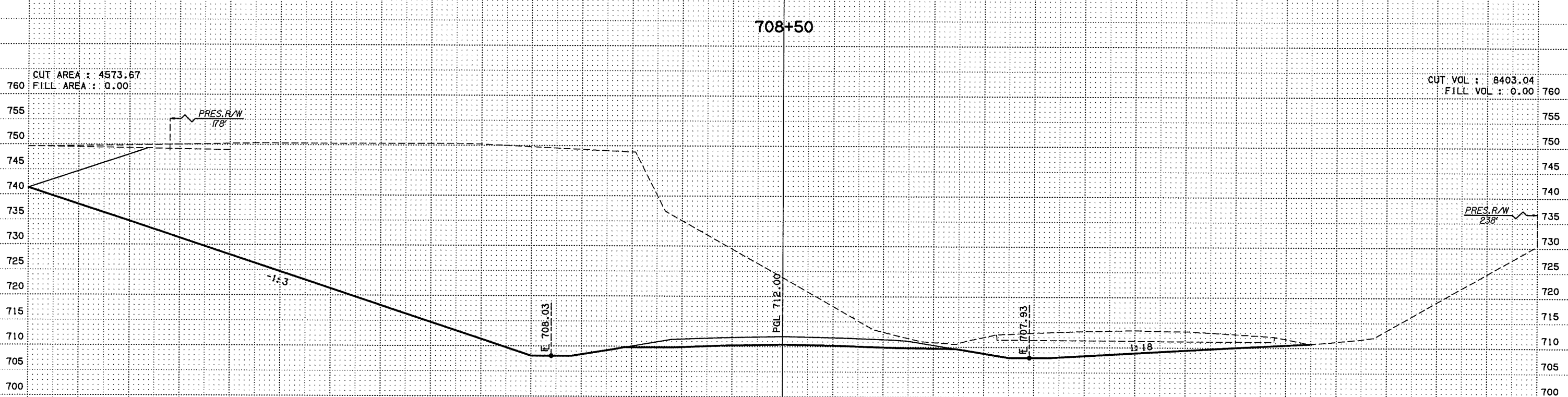
CUT VOL : 8509.11
FILL VOL : 0.00

CUT AREA : 4573.67
FILL AREA : 0.00

CUT VOL : 8403.04
FILL VOL : 0.00



708+50



708+00

STA. 708+00 TO STA. 708+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X14

-150 -100 -50 0 50 100 150

P:\E\1650-TUL\CIV\255231000_000T_US169Br.dwg\20_DESGN\40_CAD_Hickory\04_24750(04)_C.X_Sect_15.dgn

7/12/2016 7:57:22 AM

-150

-100

-50

0

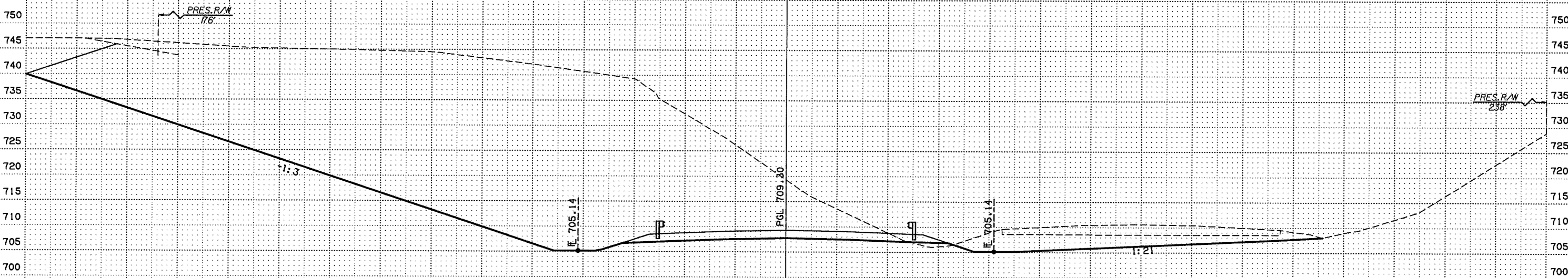
50

100

150

CUT AREA : 4008.14
FILL AREA : 6.40

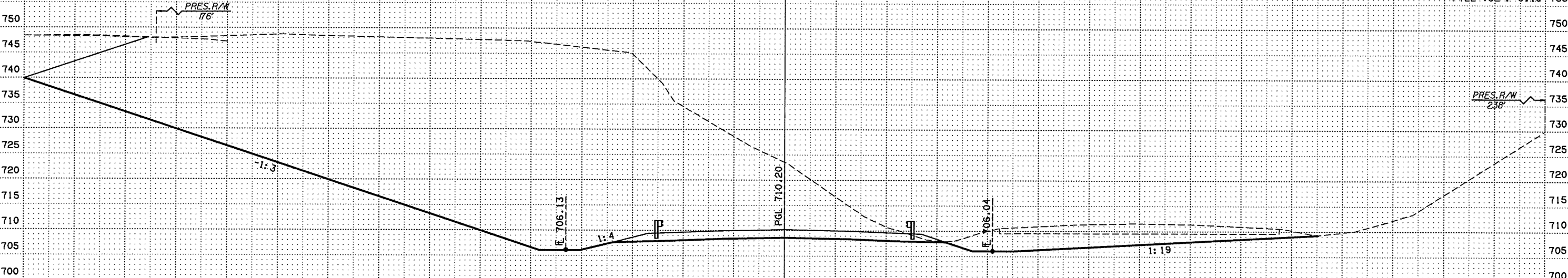
CUT VOL : 7909.06
FILL VOL : 7.31



709+50

CUT AREA : 4533.65
FILL AREA : 0.17

CUT VOL : 8472.05
FILL VOL : 0.19



709+00

STA. 709+00 TO STA. 709+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X15

-150

-100

-50

0

50

100

150

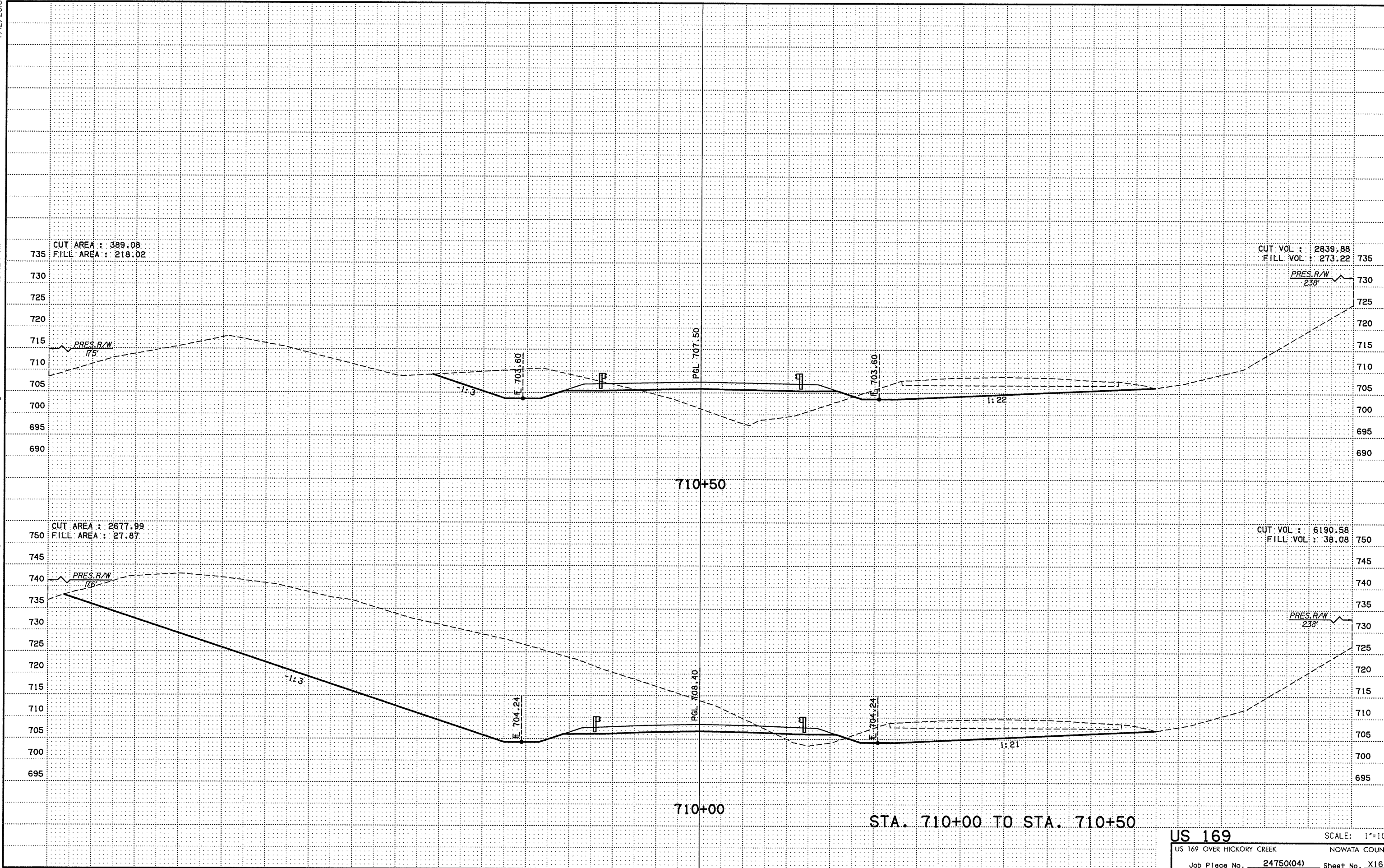
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7/12/2016

7:57:24 AM

-150 -100 -50 0 50 100 150

-150 -100 -50 0 50 100 150



STA. 710+00 TO STA. 710+50

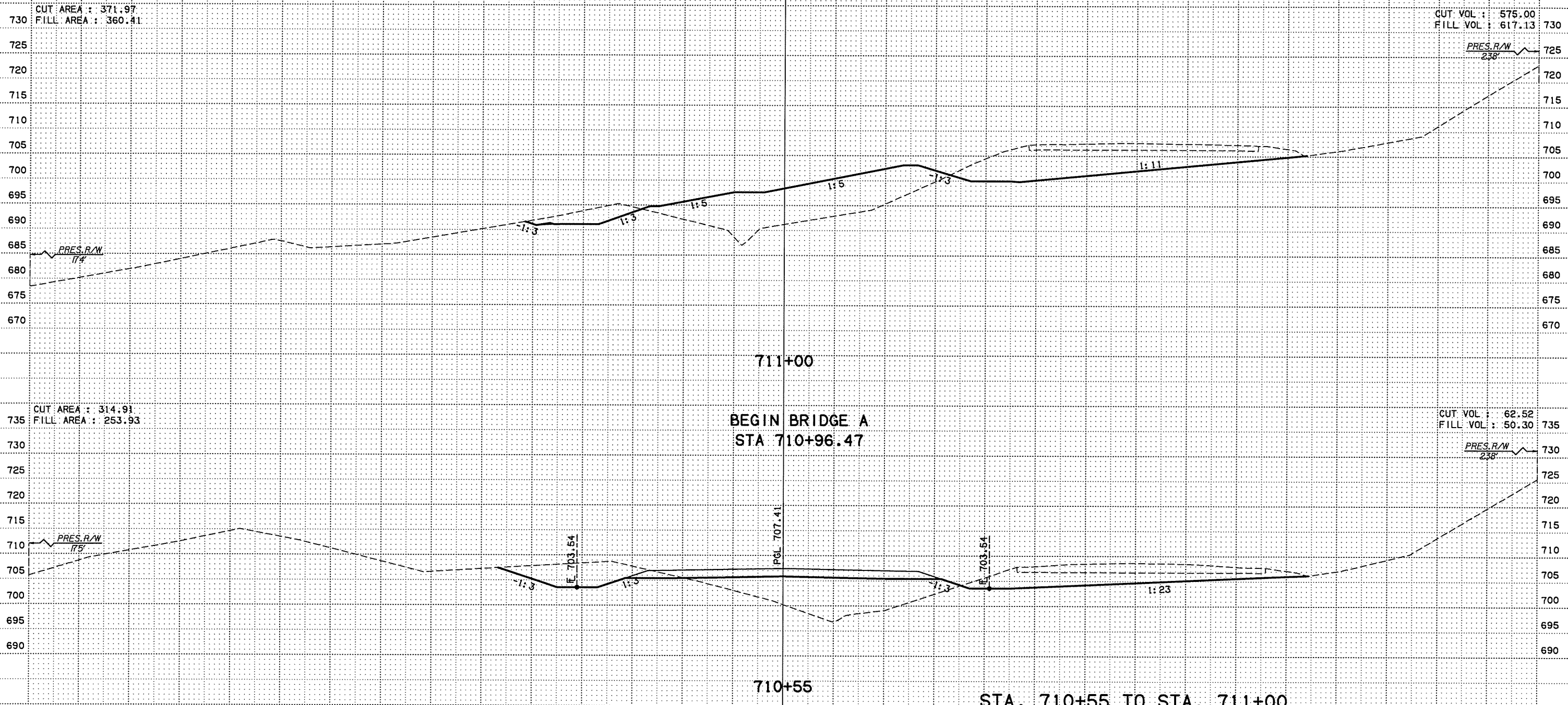
US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X16

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7/12/2016

7:57:26 AM

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-150 -100 -50 0 50 100 150

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X17

P:\NECIN650-TUL\CGW\255231000_0001_US169BR.dgn\20_DESGN\40_CAD_Hickory\DGN\C\24750(04)_C.X_Sect_IB.dgn

7/12/2016

7:51:27 AM

-150

-100

-50

0

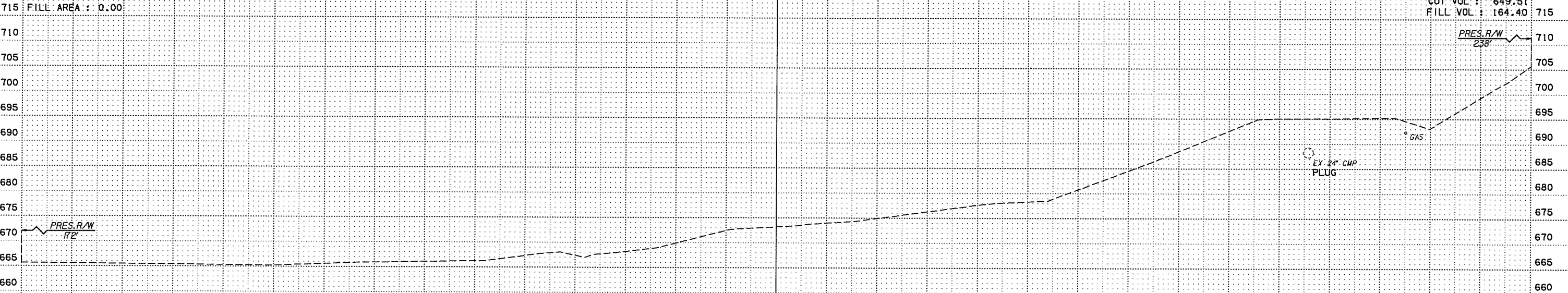
50

100

150

CUT AREA : 0.00
FILL AREA : 0.00

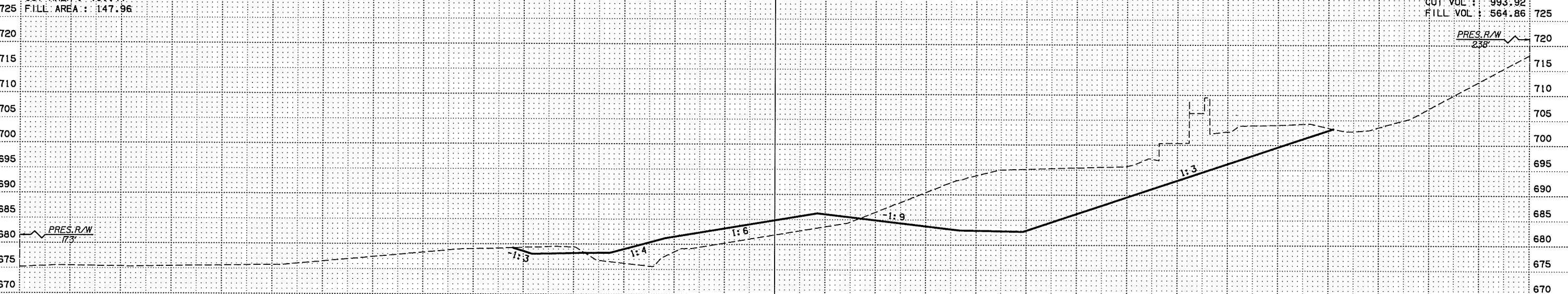
CUT VOL : 649.51
FILL VOL : 164.40



712+00

CUT AREA : 701.47
FILL AREA : 147.96

CUT VOL : 993.92
FILL VOL : 564.86



711+50

STA. 711+50 TO STA. 712+00

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X18

-150

-100

-50

0

50

100

150

P:\NEC\650-TUL\CV\255231000_000T_L\J169Br\gg\20_DESGN\40_CAD_Hickory\DCN\24750(04)_C.X_Sect_19.dgn

7/12/2016

7:57:29 AM

-150 -100 -50 0 50 100 150

CUT AREA : 1.89
FILL AREA : 861.68

CUT VOL : 1.75
FILL VOL : 993.45

PRES. R/W
170'

PRES. R/W
238'

1:3

1:6

1:3

GAS

713+50

CUT AREA : 0.00
FILL AREA : 32.43

CUT VOL : 0.00
FILL VOL : 36.03

PRES. R/W
170'

PRES. R/W
238'

GAS

713+00

CUT AREA : 0.00
FILL AREA : 0.00

CUT VOL : 0.00
FILL VOL : 0.00

PRES. R/W
170'

PRES. R/W
238'

GAS

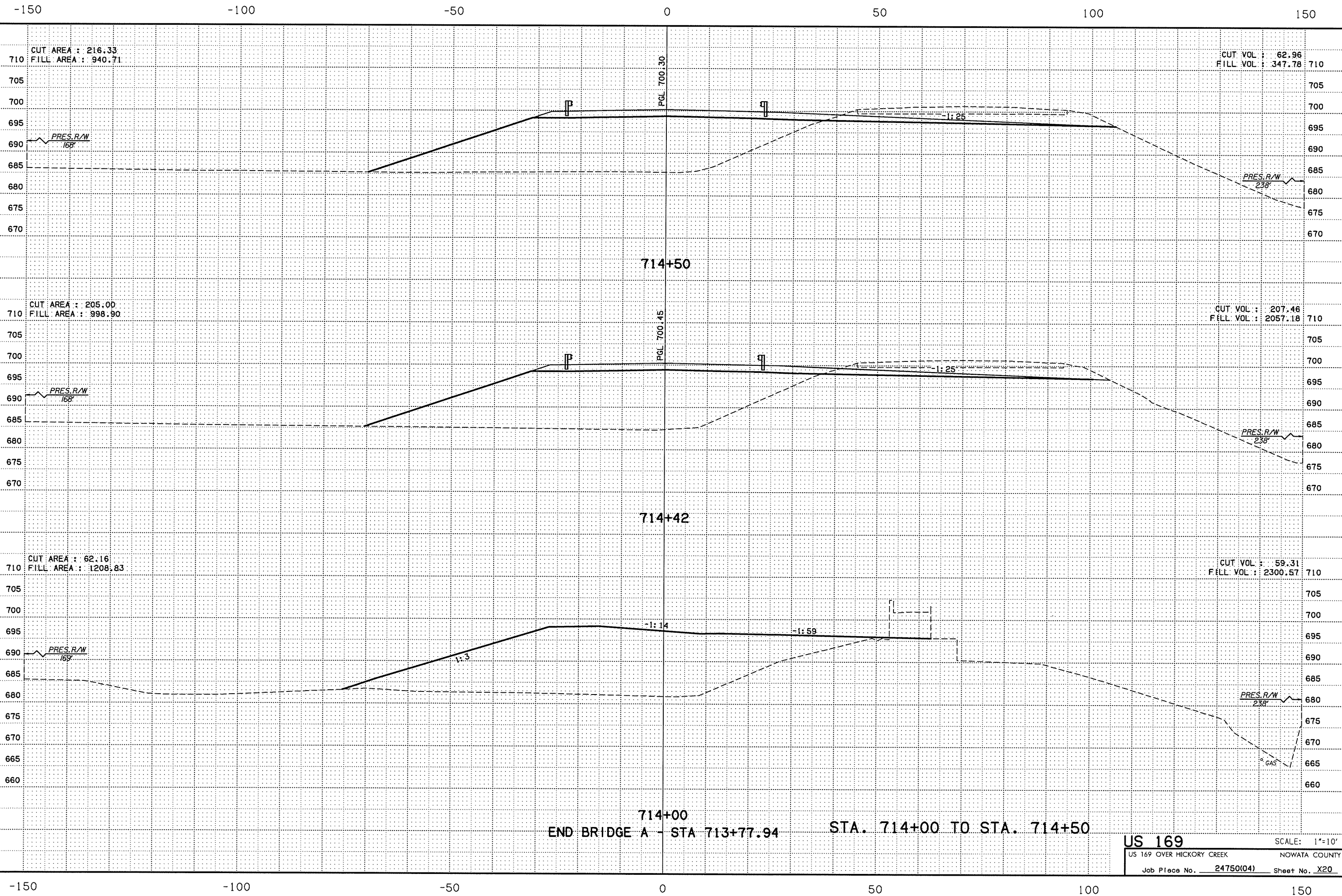
712+50

STA. 712+50 TO STA. 713+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X19

-150 -100 -50 0 50 100 150

P:\E\1650-TUL\CIV\25523\000_0DOT_US169B\20_DESGN\40_CAD_Hickory\04\C.X_Sect_20.dgn 7/12/2016 7:57:31AM



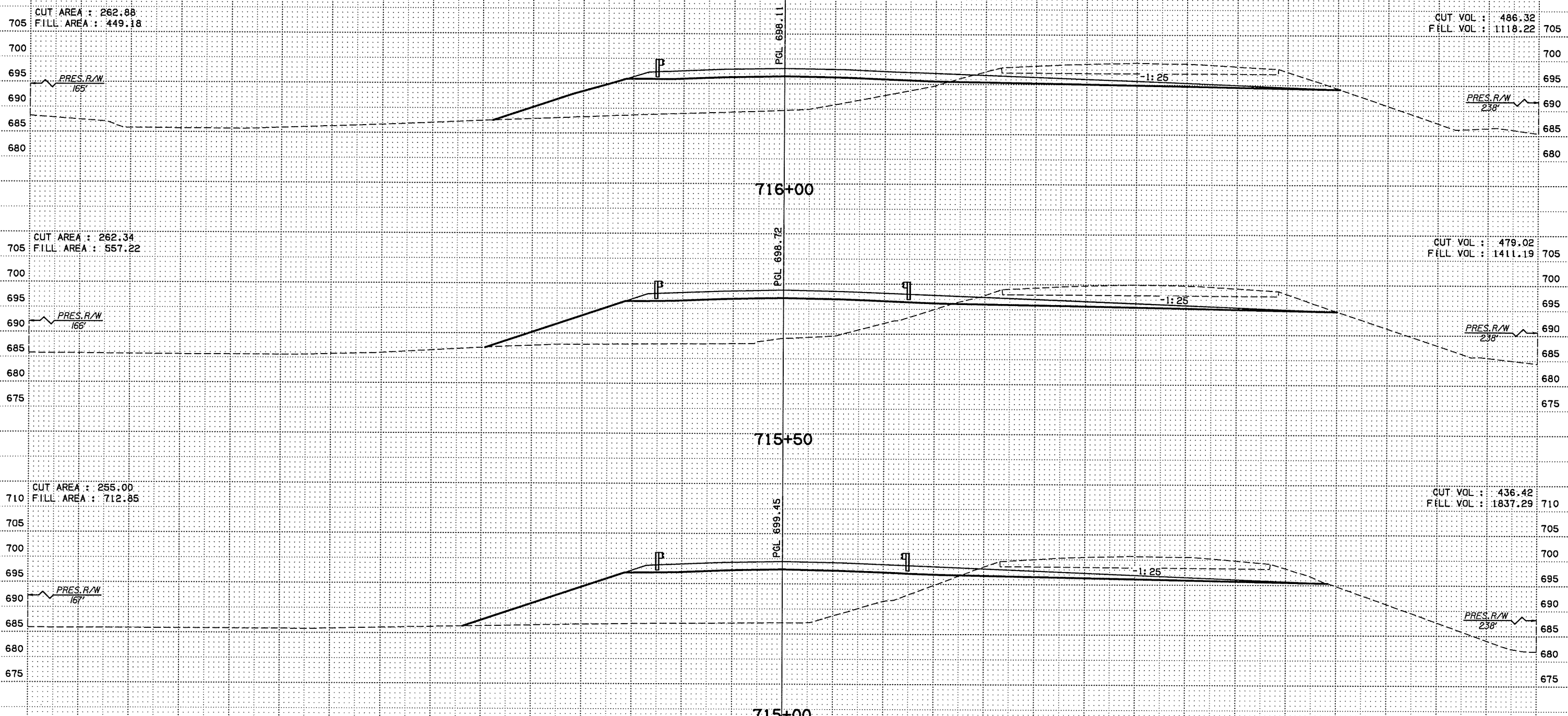
714+50
 714+42
 714+00
 END BRIDGE A - STA 713+77.94 STA. 714+00 TO STA. 714+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Place No. 24750(04) Sheet No. X20

P:\AEC\1650-TUL\CIV\255231000_000T_US169Br.dwg\20_DESGN\40_CAD_Hickory\DCN\C\24750(04)_C.X_Sect_21.dgn

7/12/2016 7:57:33 AM

-150 -100 -50 0 50 100 150



STA. 715+00 TO STA. 716+00

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X21

-150 -100 -50 0 50 100 150

P:\NEC\1650-TUL\CIV\25523\1000_0001_US169BR.dgn\20_DESGN\40_CAD_Hickory\04_C.X_Sect_22.dgn

7/12/2016

7:57:35 AM

-150 -100 -50 0 50 100 150

CUT AREA : 270.12
FILL AREA : 304.64

CUT VOL : 498.96
FILL VOL : 694.39

PRES. R/W
162'

PRES. R/W
158'

PGL 696.78

718+00

CUT AREA : 268.75
FILL AREA : 320.31

CUT VOL : 503.42
FILL VOL : 735.17

PRES. R/W
163'

PRES. R/W
158'

PGL 696.94

717+50

CUT AREA : 274.94
FILL AREA : 341.34

CUT VOL : 503.87
FILL VOL : 808.94

PRES. R/W
164'

PRES. R/W
158'

PGL 697.22

717+00

CUT AREA : 269.24
FILL AREA : 386.70

CUT VOL : 492.71
FILL VOL : 928.75

PRES. R/W
164'

PRES. R/W
158'

PGL 697.60

716+50

STA. 716+50 TO STA. 718+00

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X22

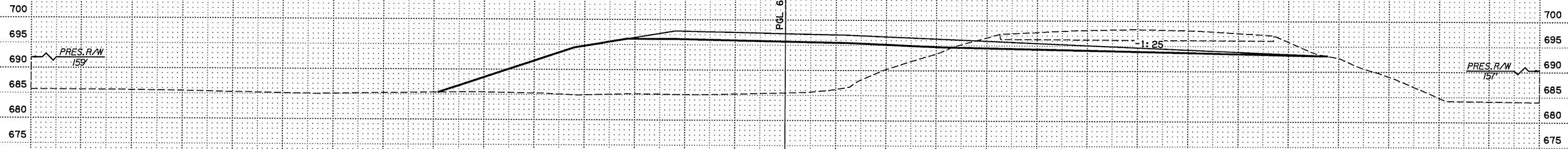
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-150 -100 -50 0 50 100 150

CUT AREA : 249.03
FILL AREA : 776.41

CUT VOL : 467.16
FILL VOL : 1419.76



720+00

CUT AREA : 255.50
FILL AREA : 501.38

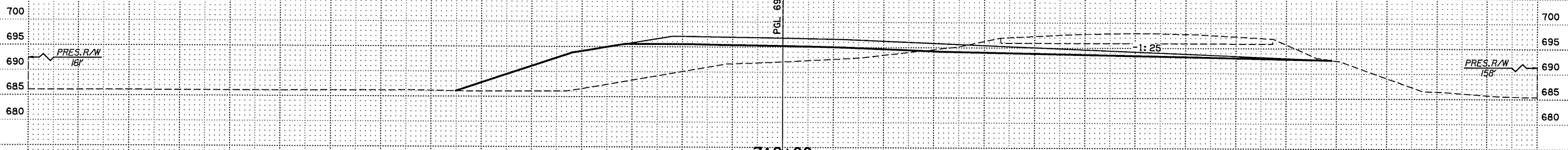
CUT VOL : 479.61
FILL VOL : 972.76



719+50

CUT AREA : 262.47
FILL AREA : 374.10

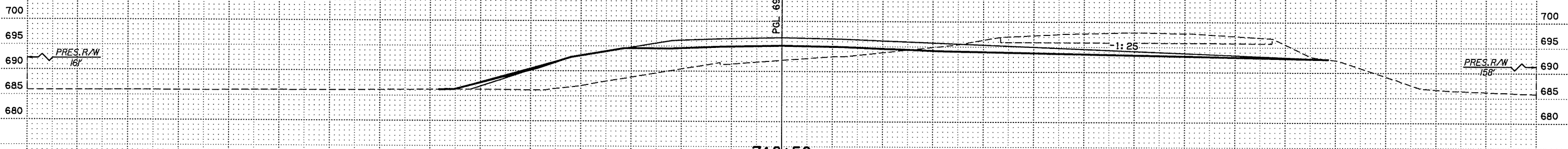
CUT VOL : 489.02
FILL VOL : 750.87



719+00

CUT AREA : 265.67
FILL AREA : 301.68

CUT VOL : 496.10
FILL VOL : 673.69



718+50

STA. 718+50 TO STA. 720+00

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X23

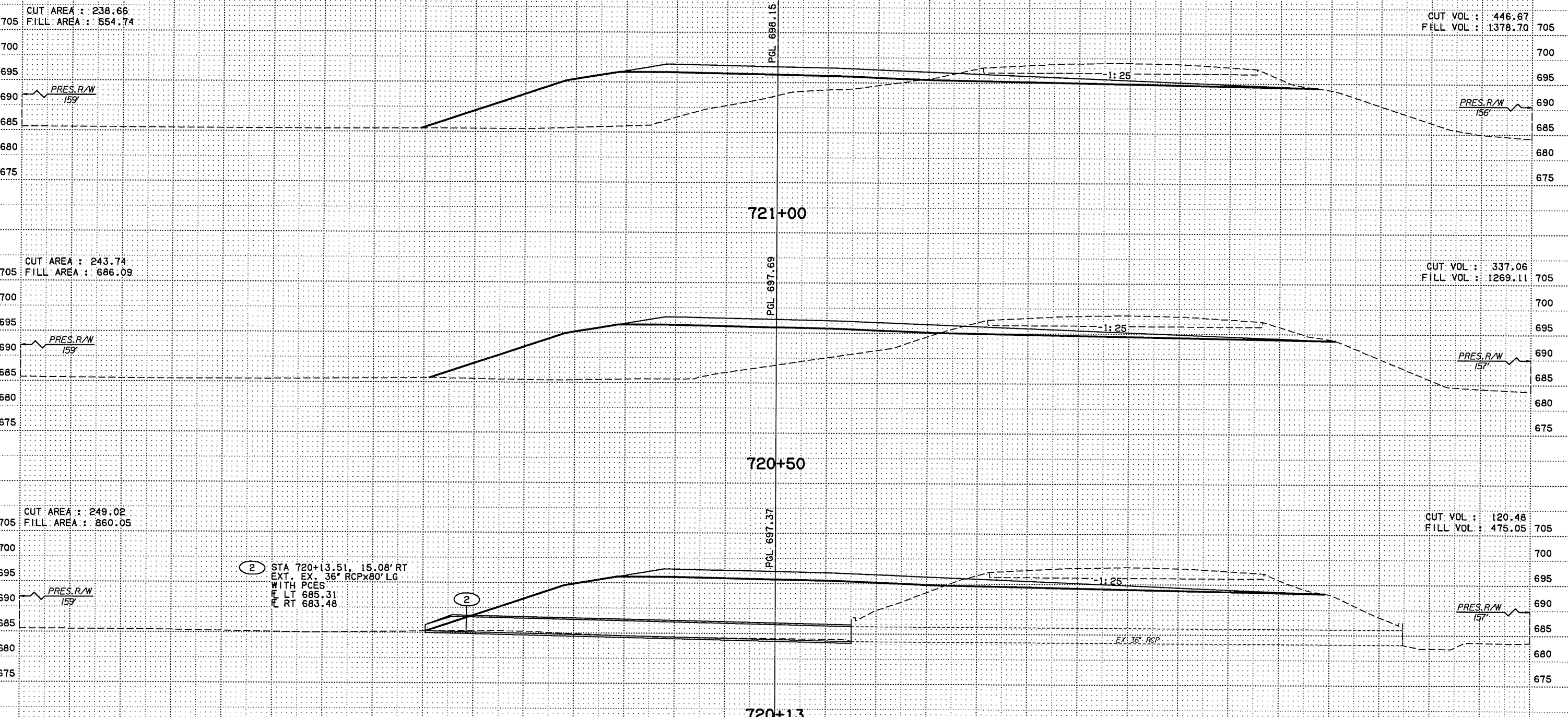
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7/12/2016

7:57:39 AM

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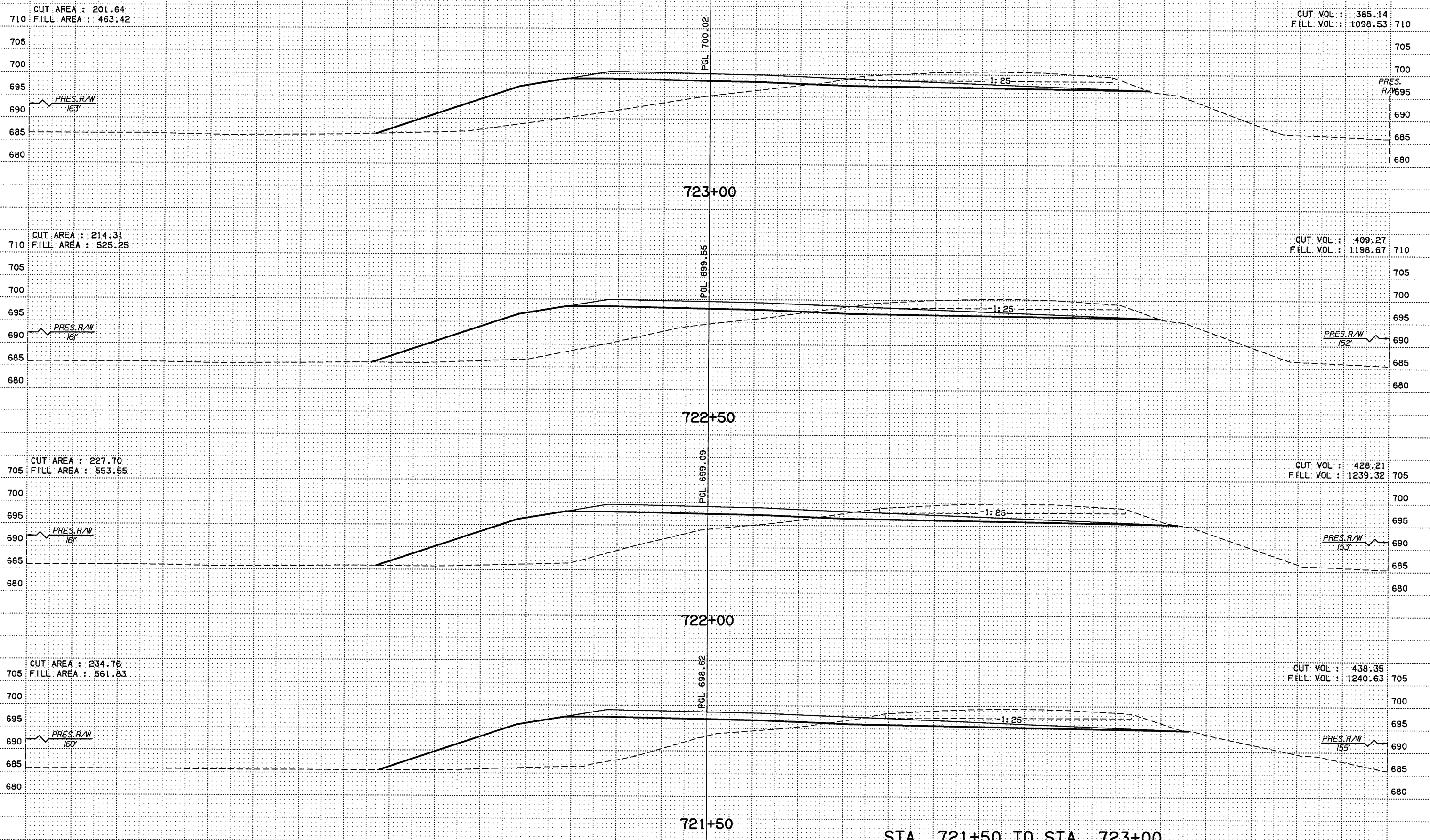
STA. 720+13 TO STA. 721+00

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X24

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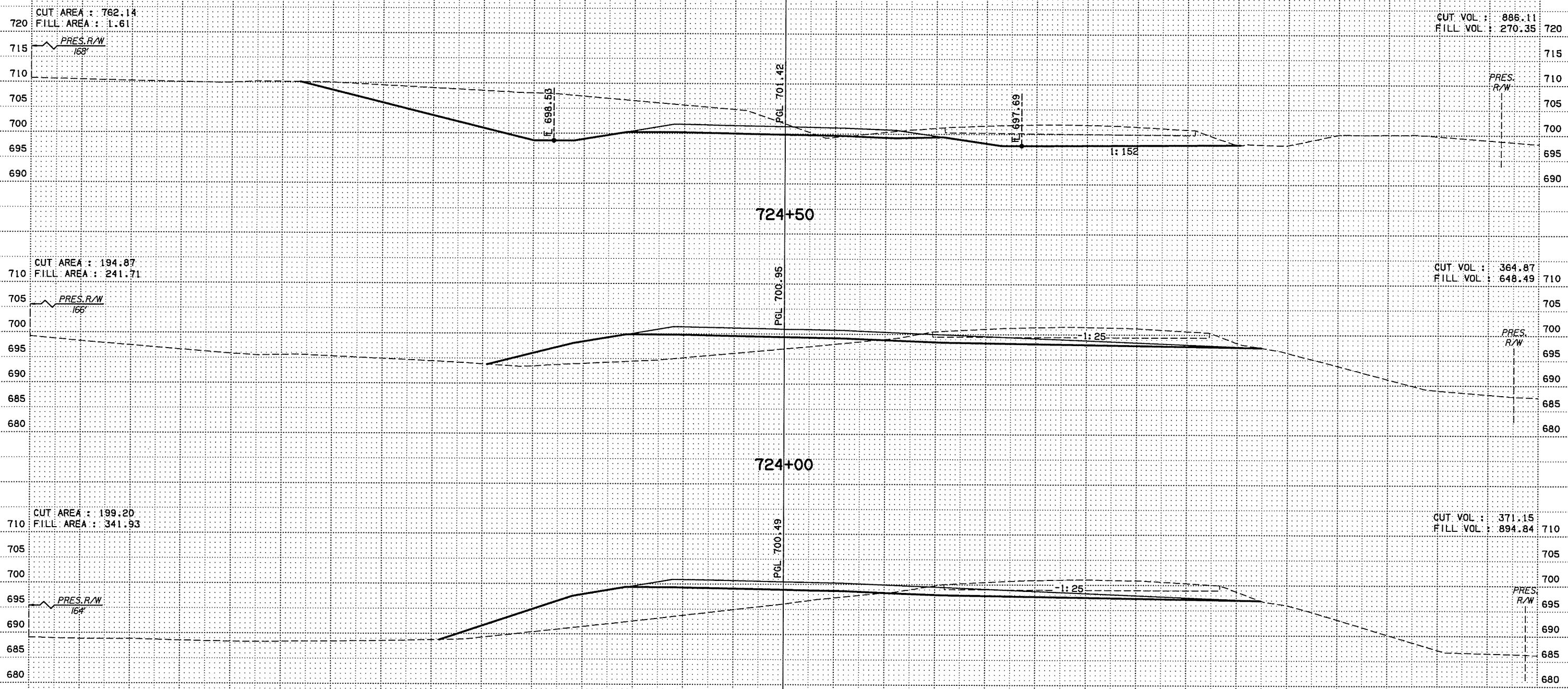
STA. 721+50 TO STA. 723+00

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Place No. 24750(04) Sheet No. X25

-150 -100 -50 0 50 100 150

P:\ACIN650-TUL\CIV\255231000-00DOT_US169Br'dg\20_DESGN\40_CAD-Hickory\DGN\C\24750(04)_C.X_Sect_26.dgn 7/12/2016 7:57:43 AM

-150 -100 -50 0 50 100 150



STA. 723+50 TO STA. 724+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X26

-150 -100 -50 0 50 100 150

P:\NEC\1650-TUL\CIV\255231000_0001_US169BR.dg\20_DESGN\40_CAD_Hickory\VDGN\CAD_Hickory\24750(04)_C.X_Sect_27.dgn

7/12/2016
7:57:45 AM

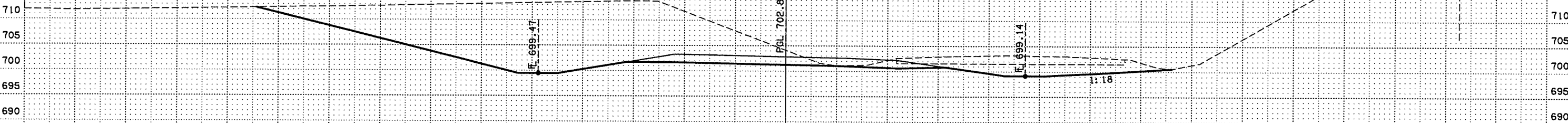
-150 -100 -50 0 50 100 150

CUT AREA : 1073.58
FILL AREA : 0.00

CUT VOL : 2070.35
FILL VOL : 0.00

PRES. R/W
176'

PRES.
R/W



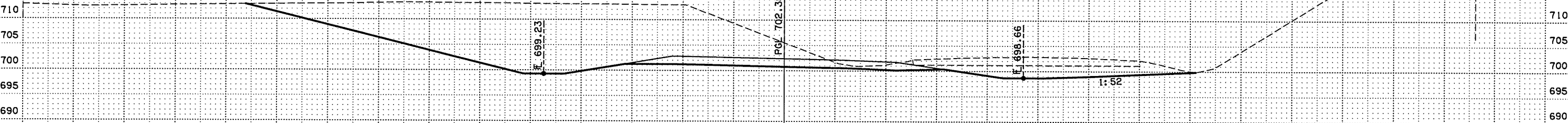
726+00

CUT AREA : 1162.40
FILL AREA : 0.00

CUT VOL : 2164.79
FILL VOL : 0.00

PRES. R/W
173'

PRES.
R/W



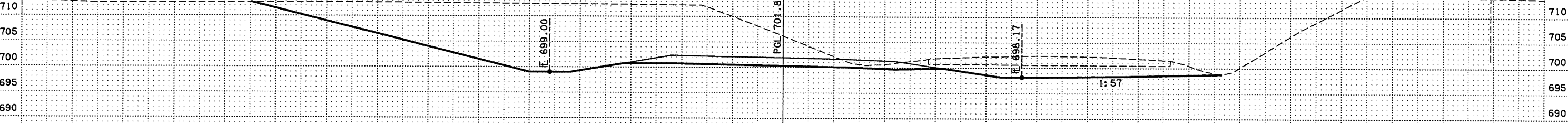
725+50

CUT AREA : 1175.58
FILL AREA : 0.00

CUT VOL : 1794.18
FILL VOL : 1.79

PRES. R/W
170'

PRES.
R/W



725+00

STA. 725+00 TO STA. 726+00

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X27

-150 -100 -50 0 50 100 150

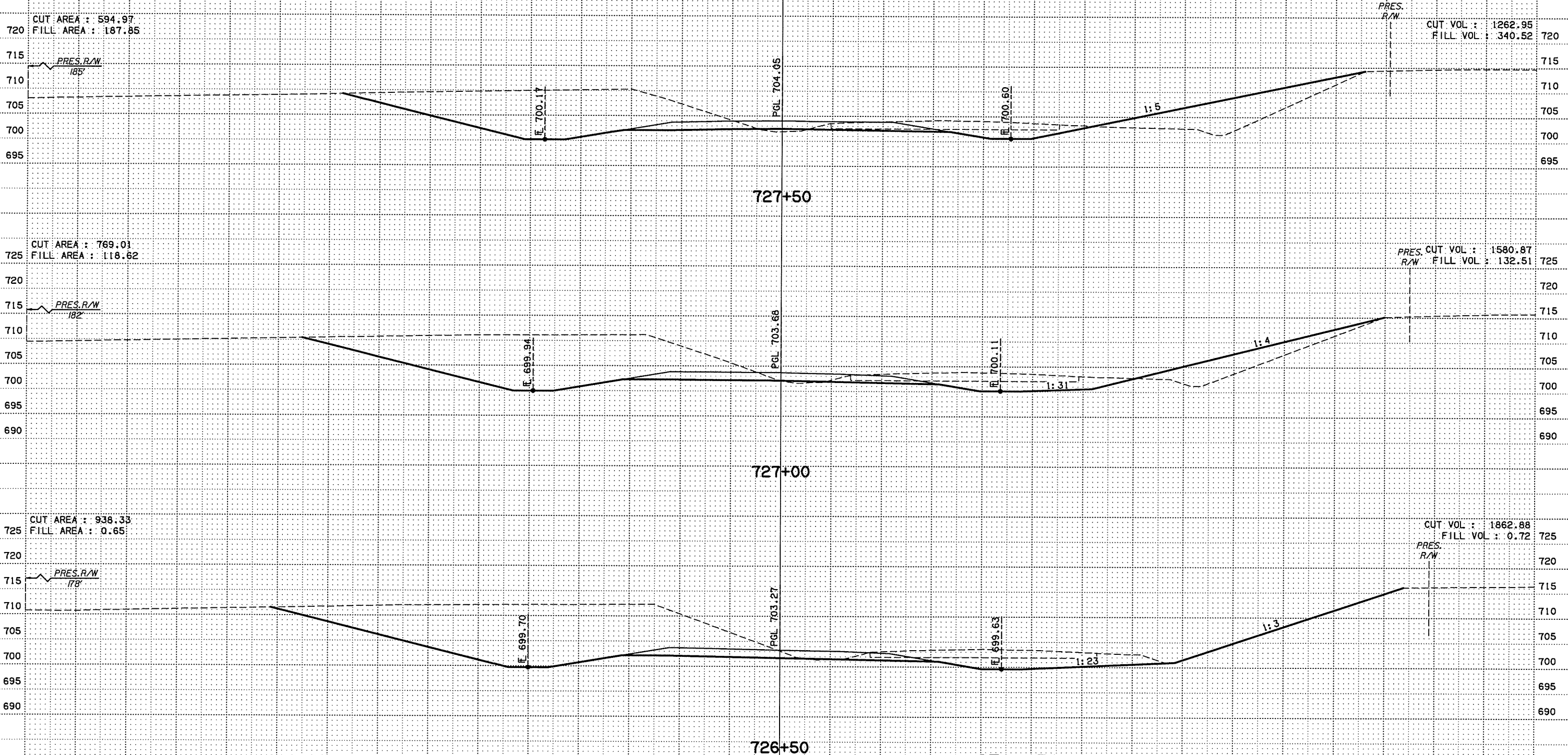
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7/12/2016

7:57:46 AM

-150 -100 -50 0 50 100 150

-150 -100 -50 0 50 100 150



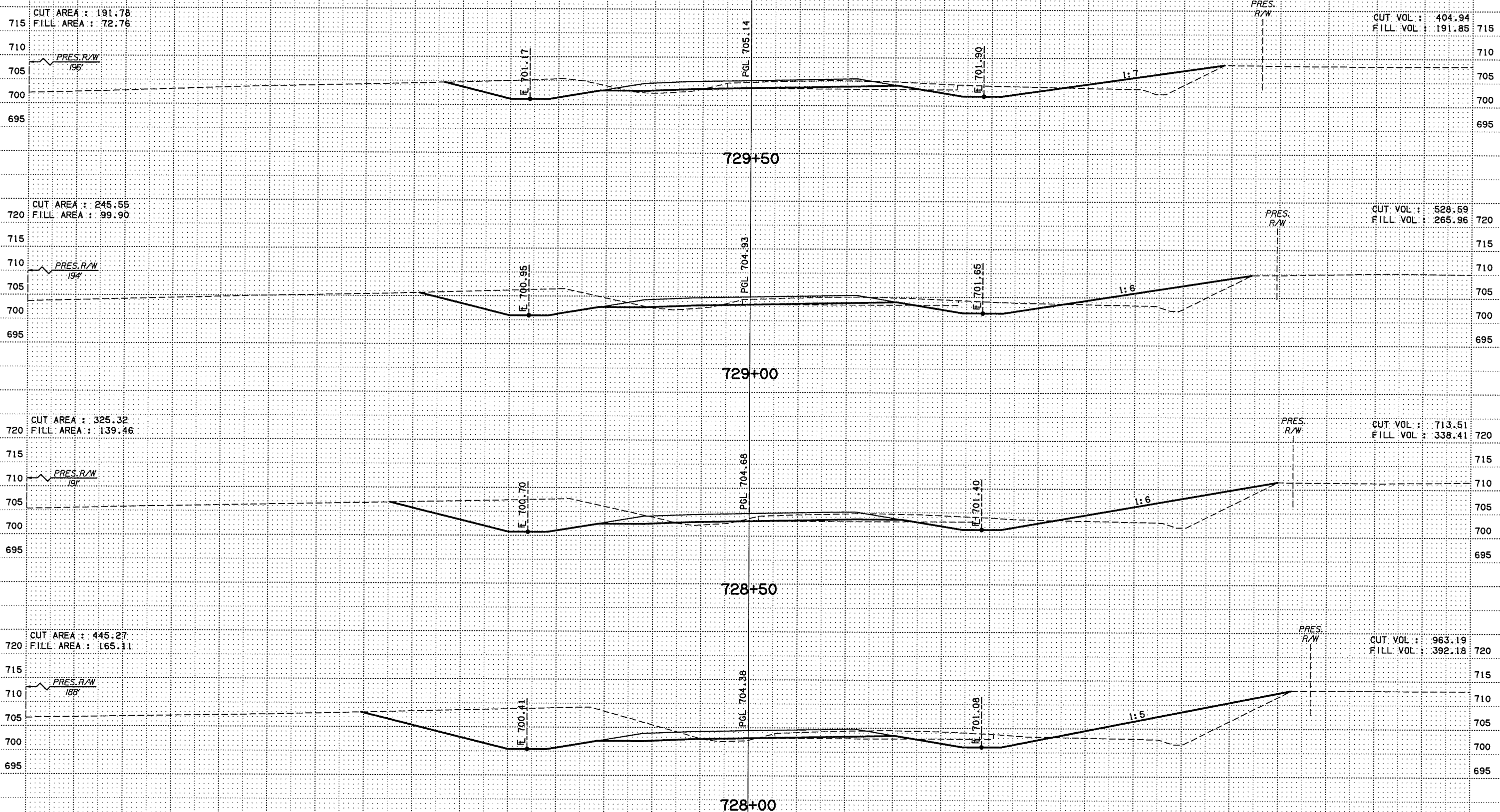
STA. 726+50 TO STA. 727+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X28

7/12/2016 7:57:48 AM P:\ECl\650-TUL\CIW\25523\000_ODOT_US169BR.dg\20_DESGN\40_CAD_Hickory\04_C.X_Sect_29.dgn

-150 -100 -50 0 50 100 150

CAUTION: EXIST. OVERHEAD ELECTRIC CROSSING AT APPROX. STA. 729+86.55, US 169 LOW WIRE ELEV. 737.90

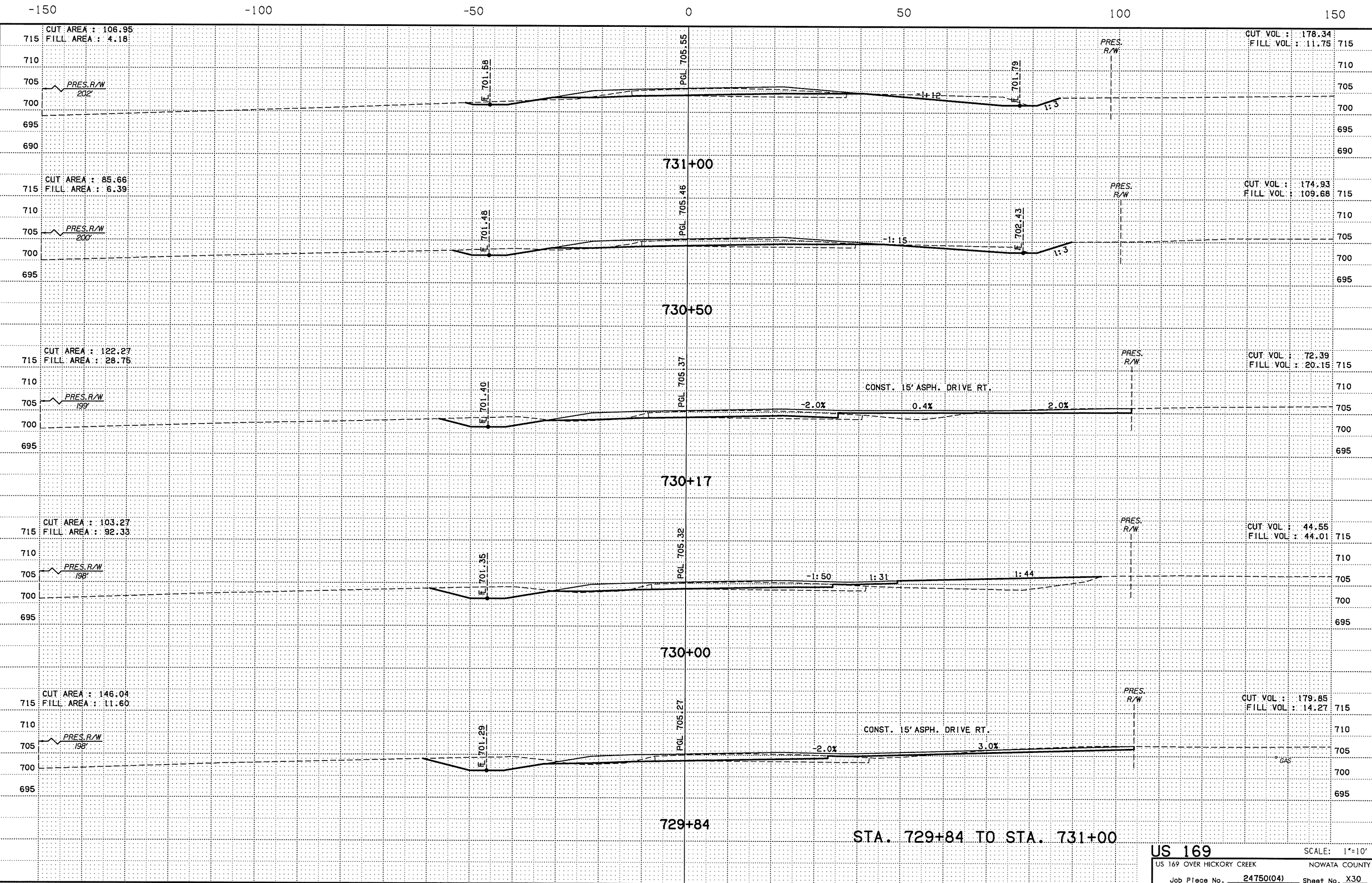


STA. 728+00 TO STA. 729+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X29

-150 -100 -50 0 50 100 150

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STA. 729+84 TO STA. 731+00

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X30

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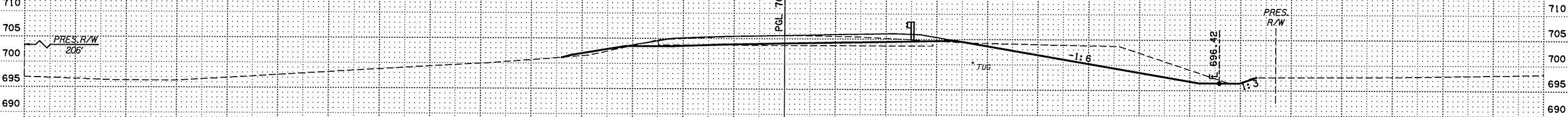
7/12/2016

7:57:52 AM

-150 -100 -50 0 50 100 150

CUT AREA : 193.16
FILL AREA : 6.23

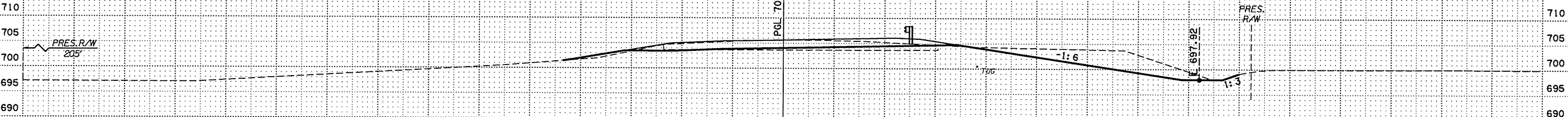
CUT VOL : 336.09
FILL VOL : 13.36



733+00

CUT AREA : 169.82
FILL AREA : 5.79

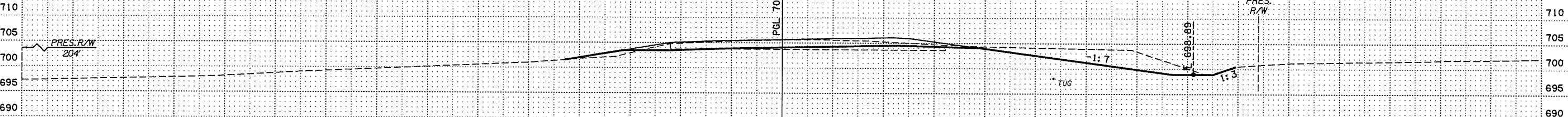
CUT VOL : 304.08
FILL VOL : 14.89



732+50

CUT AREA : 158.58
FILL AREA : 7.61

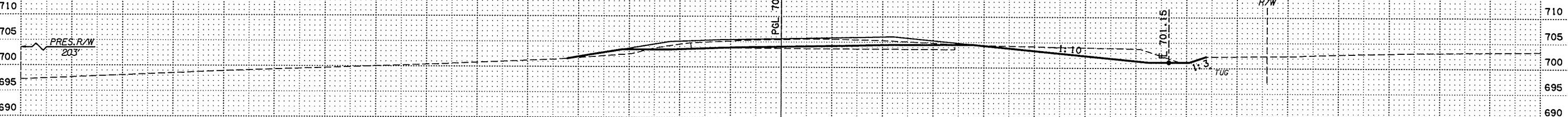
CUT VOL : 251.83
FILL VOL : 17.94



732+00

CUT AREA : 113.40
FILL AREA : 8.54

CUT VOL : 204.03
FILL VOL : 14.13



731+50

STA. 731+50 TO STA. 733+00

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X31

-150 -100 -50 0 50 100 150

P:\NEC\1650-TUL\CIV\255231000_00DOT_US169Br.dgn\20_DES\N\40_CAD_Hickory\04_C.X_Sect-32.dgn

7/12/2016

7:57:54 AM

-150 -100 -50 0 50 100 150

CUT AREA : 387.20
FILL AREA : 20.21

CUT VOL : 586.79
FILL VOL : 35.44

PRES. R/W
206'

PRES.
R/W

CUT AREA : 246.54
FILL AREA : 11.69

CUT VOL : 429.60
FILL VOL : 21.54

PRES. R/W
206'

PRES.
R/W

CUT AREA : 217.43
FILL AREA : 7.70

CUT VOL : 380.17
FILL VOL : 15.48

PRES. R/W
206'

PRES.
R/W

PGL 705.62

PGL 705.62

PGL 705.62

734+50

734+00

733+50

STA. 733+50 TO STA. 734+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X32

-150 -100 -50 0 50 100 150

P:\NEC\1650-TUL\CIV\255231000_000T_US169Br.dgn\20_DESGN\40_CAD_Hickory\04\24750(04)_C.X_Sect_33.dgn

7/12/2016

7:57:56 AM

-150 -100 -50 0 50 100 150

CUT AREA : 474.60
FILL AREA : 4.12

CUT VOL : 763.03
FILL VOL : 6.04

CUT AREA : 349.47
FILL AREA : 1.32

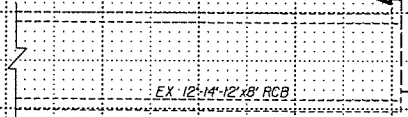
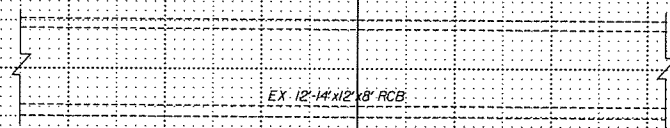
CUT VOL : 682.10
FILL VOL : 23.92

PRES. R/W
204'

PRES. R/W

PRES. R/W
205'

PRES. R/W



735+50

735+00

STA. 735+00 TO STA. 735+50

US 169 SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X33

-150 -100 -50 0 50 100 150

P:\NEC\1650-TUL\CIV\25523\1000_000T_US169Br.dg\20_DESGN\40_CAD_Hickory\40_CAD_Hickory\DGN\C\24750(04)_C.X_Sect_34.dgn 7/12/2016 7:57:58 AM

-150 -100 -50 0 50 100 150

CUT AREA : 0.00
FILL AREA : 0.00

CUT VOL : 372.49
FILL VOL : 0.00

CUT AREA : 402.29
FILL AREA : 0.00

CUT VOL : 811.93
FILL VOL : 4.58

736+50
END PROJECT STA. 736+36.76

PGL 705.61

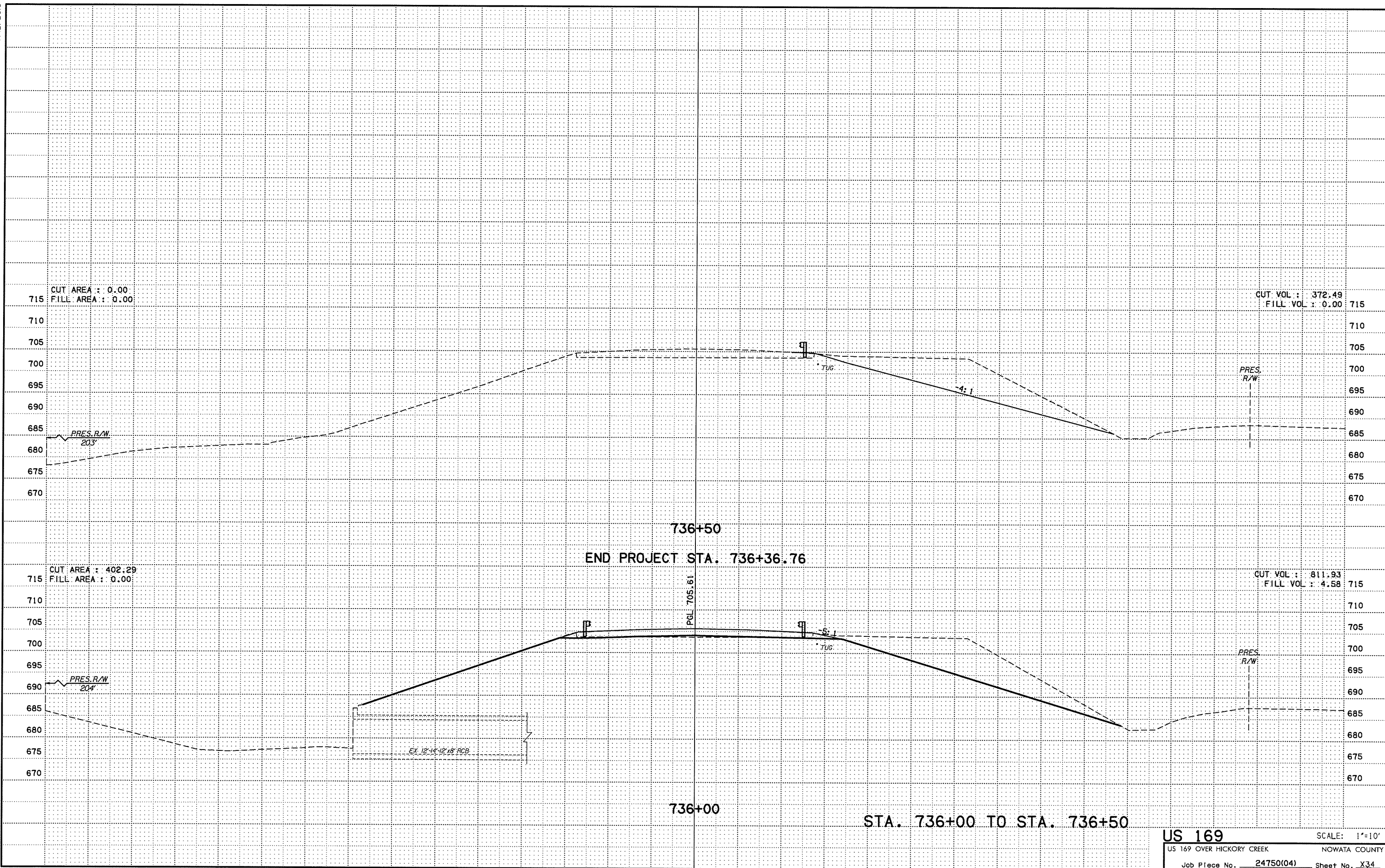
736+00

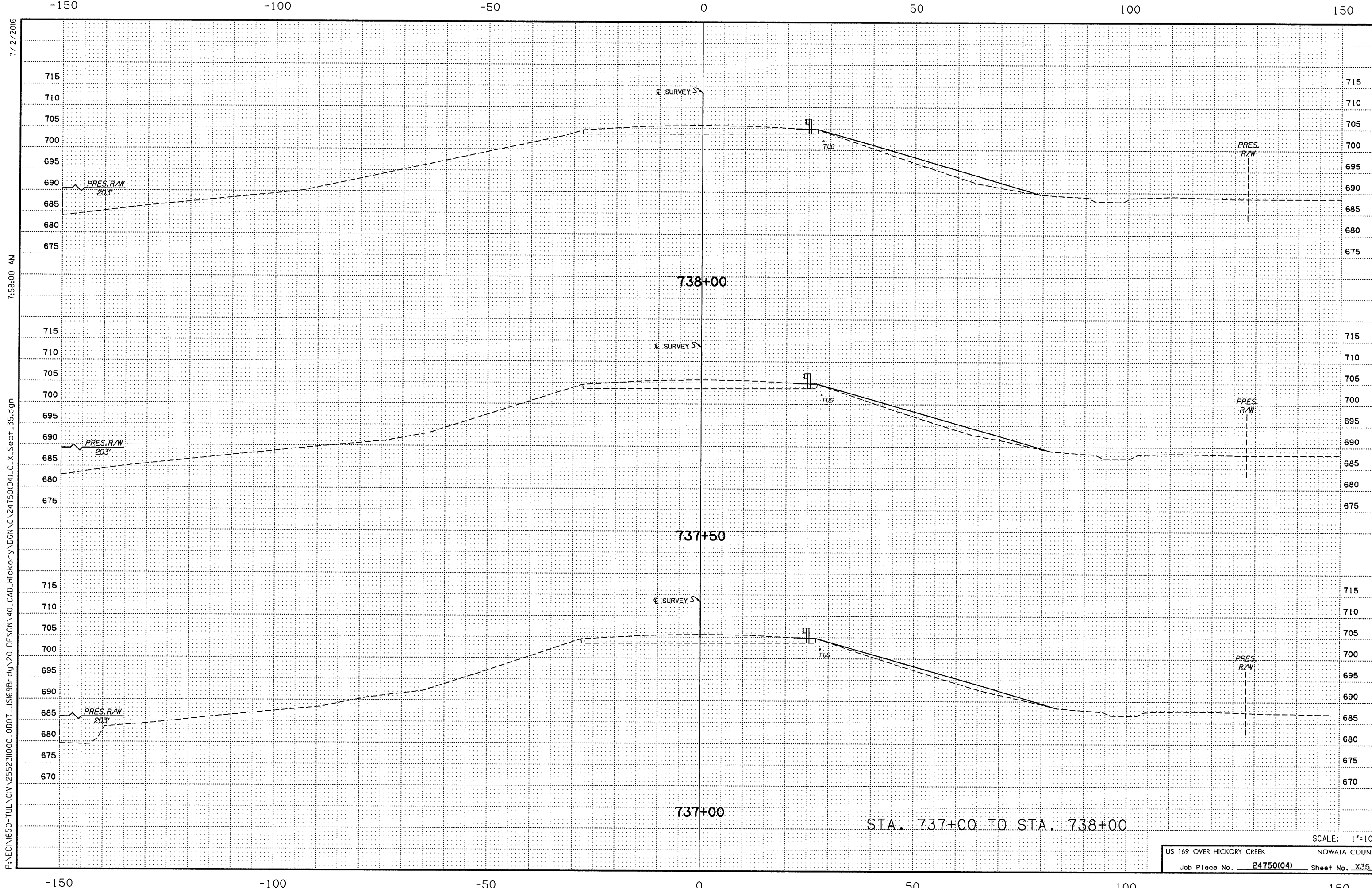
STA. 736+00 TO STA. 736+50

US 169
US 169 OVER HICKORY CREEK
NOWATA COUNTY
Job Piece No. 24750(04) Sheet No. X34

SCALE: 1"=10'

-150 -100 -50 0 50 100 150





7/12/2016
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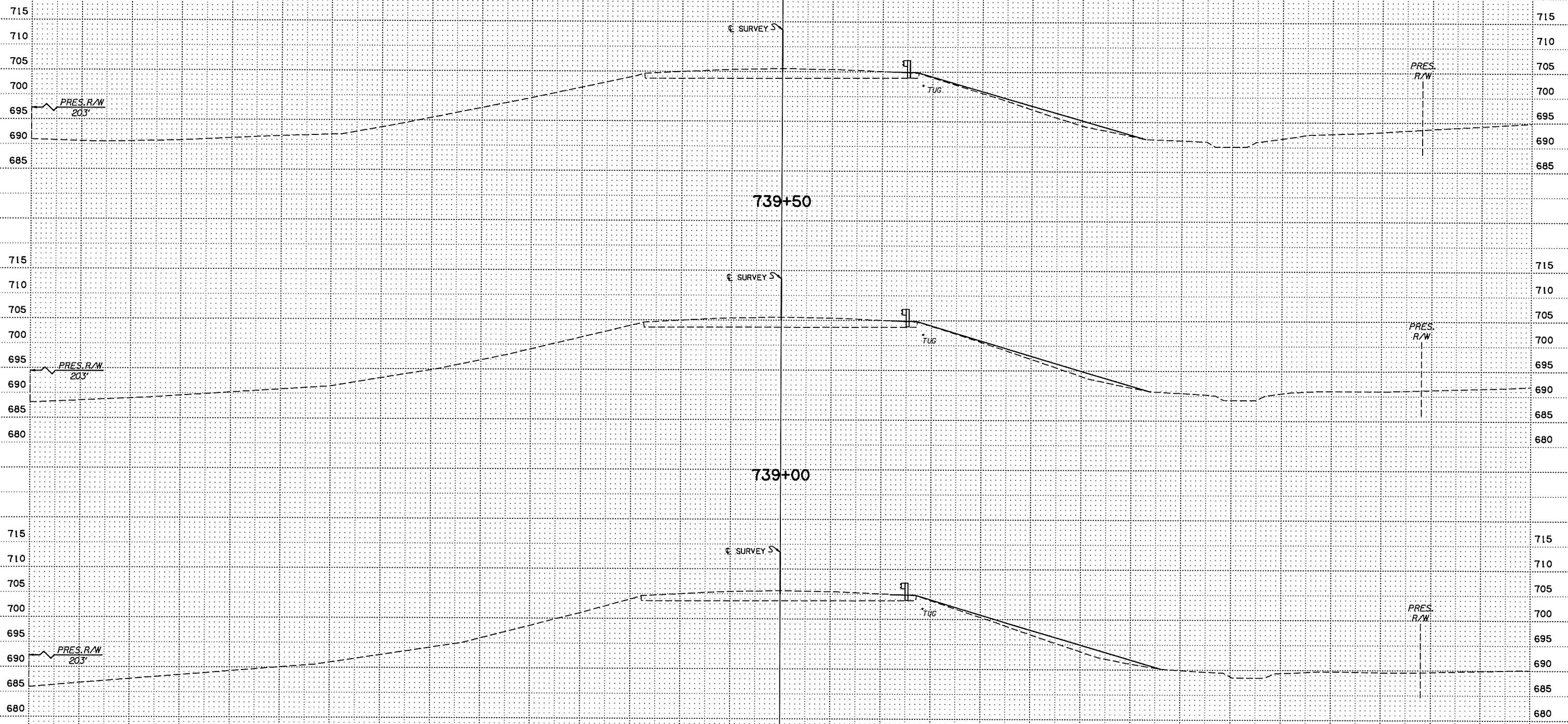
STA. 737+00 TO STA. 738+00

SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X35

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7:56:02 AM

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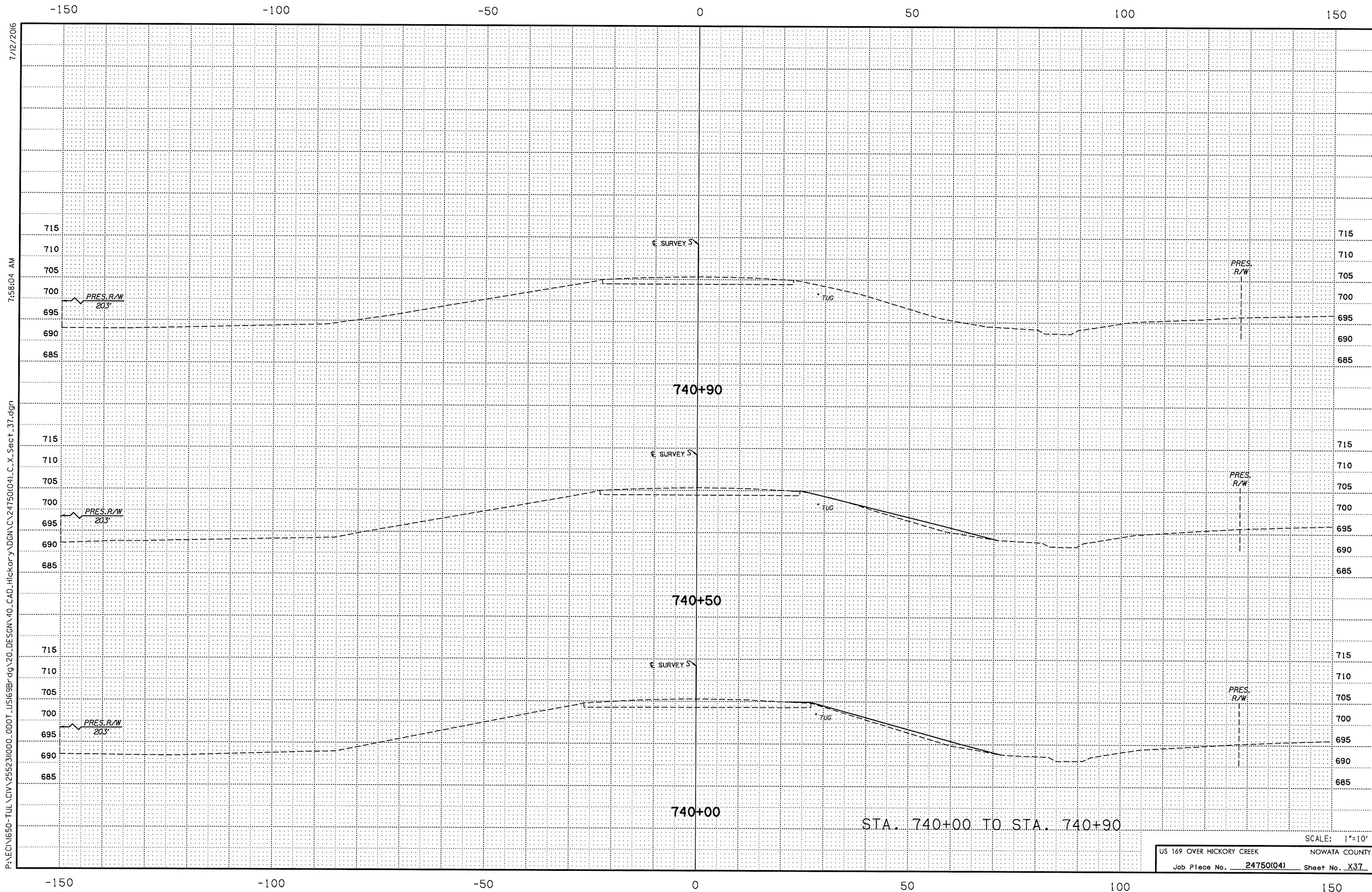


STA. 738+50 TO STA. 739+50

SCALE: 1"=10'

US 169 OVER HICKORY CREEK	NOWATA COUNTY
Job Piece No. 24750(04)	Sheet No. X36

-150 -100 -50 0 50 100 150



7/12/2016

7:58:04 AM

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-150 -100 -50 0 50 100 150

715
710
705
700
695
690
685

715
710
705
700
695
690
685

715
710
705
700
695
690
685

-150 -100 -50 0 50 100 150

SURVEY S

SURVEY S

SURVEY S

PRES. R/W
203'

PRES. R/W
203'

PRES. R/W
203'

PRES.
R/W

PRES.
R/W

PRES.
R/W

TUG

TUG

TUG

740+90

740+50

740+00

STA. 740+00 TO STA. 740+90

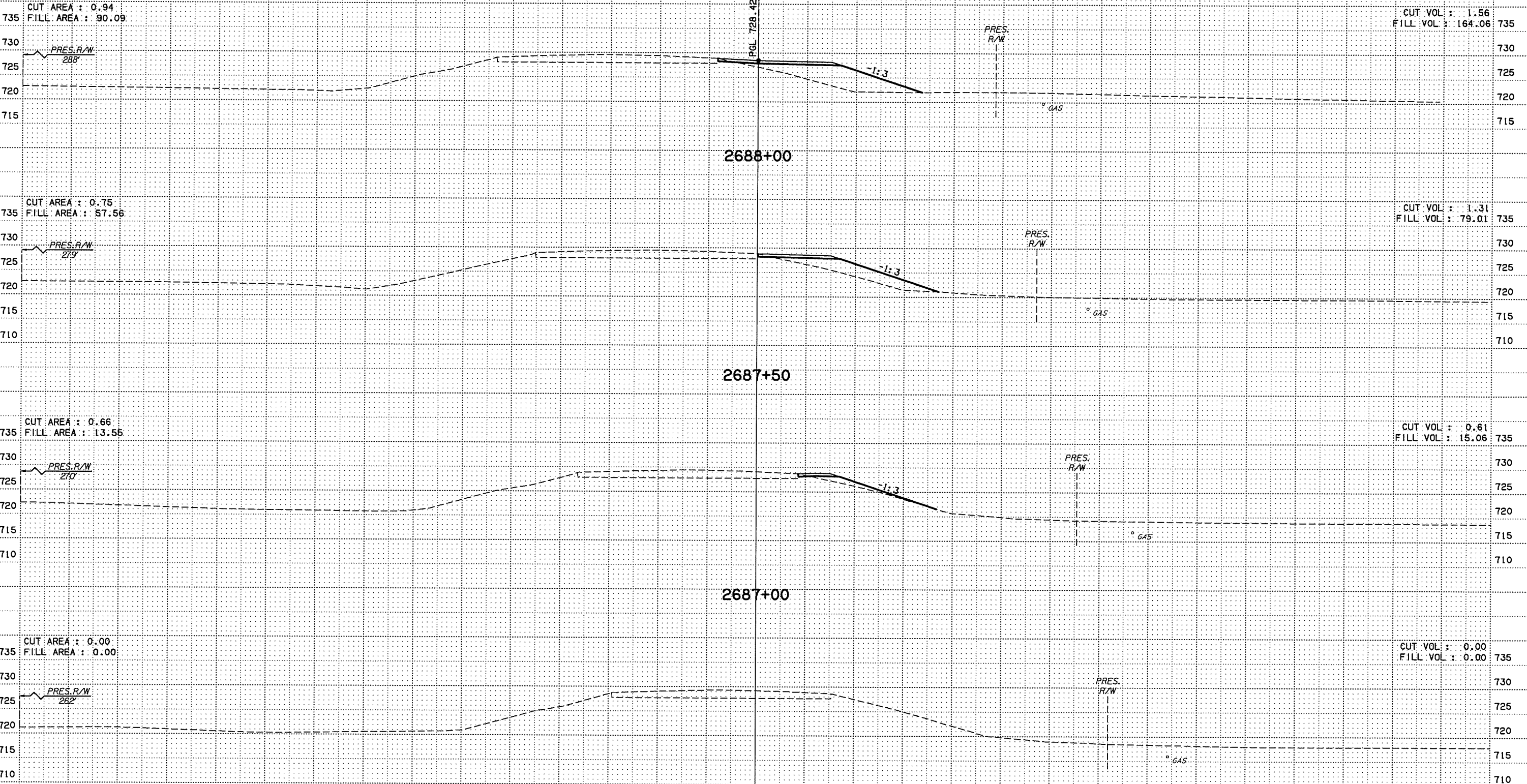
SCALE: 1"=10'
US 169 OVER HICKORY CREEK NOWATA COUNTY
Job Piece No. 24750(04) Sheet No. X37

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7/12/2016

7:58:06 AM

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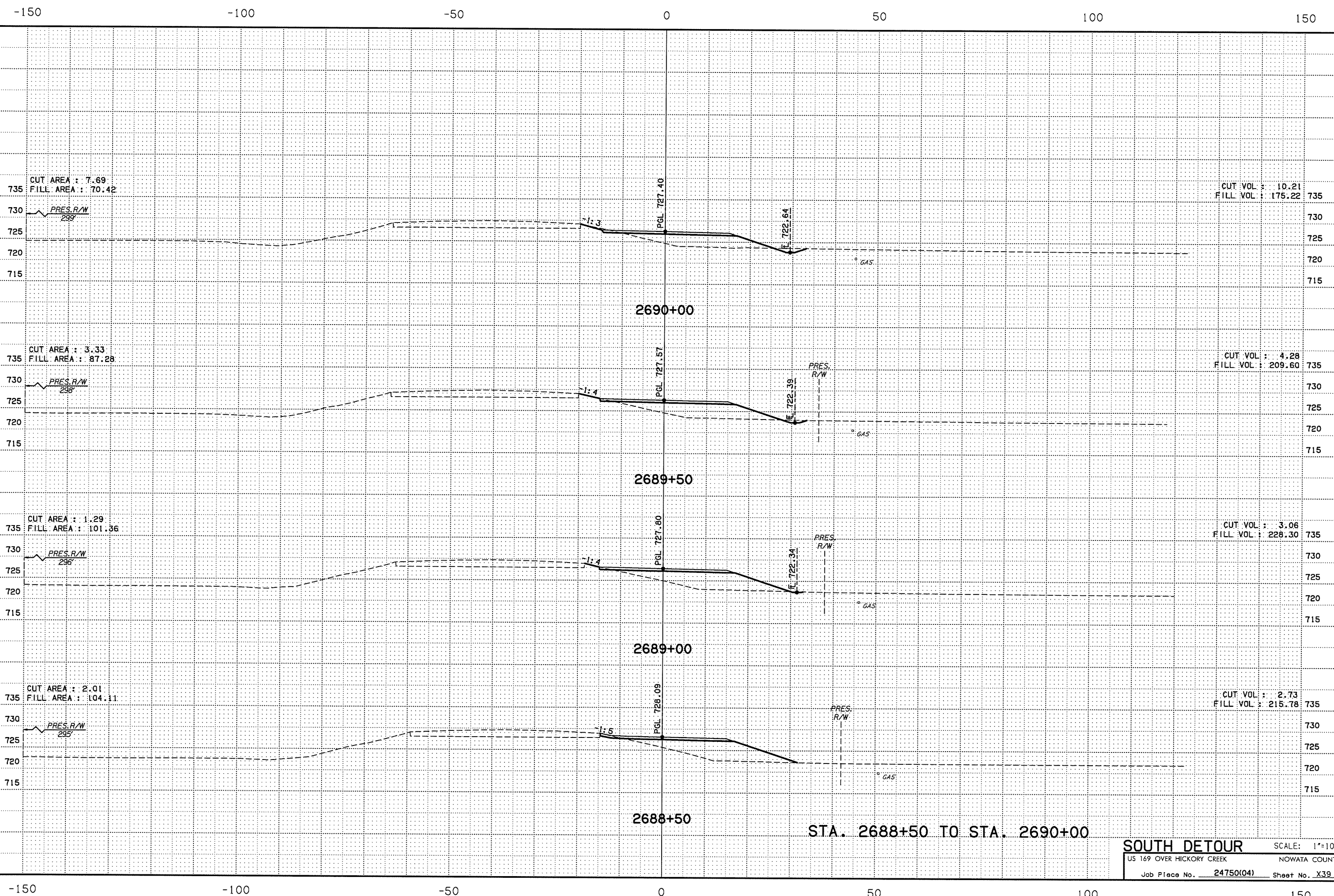


STA. 2686+50 TO STA. 2688+00

SOUTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X38

-150 -100 -50 0 50 100 150

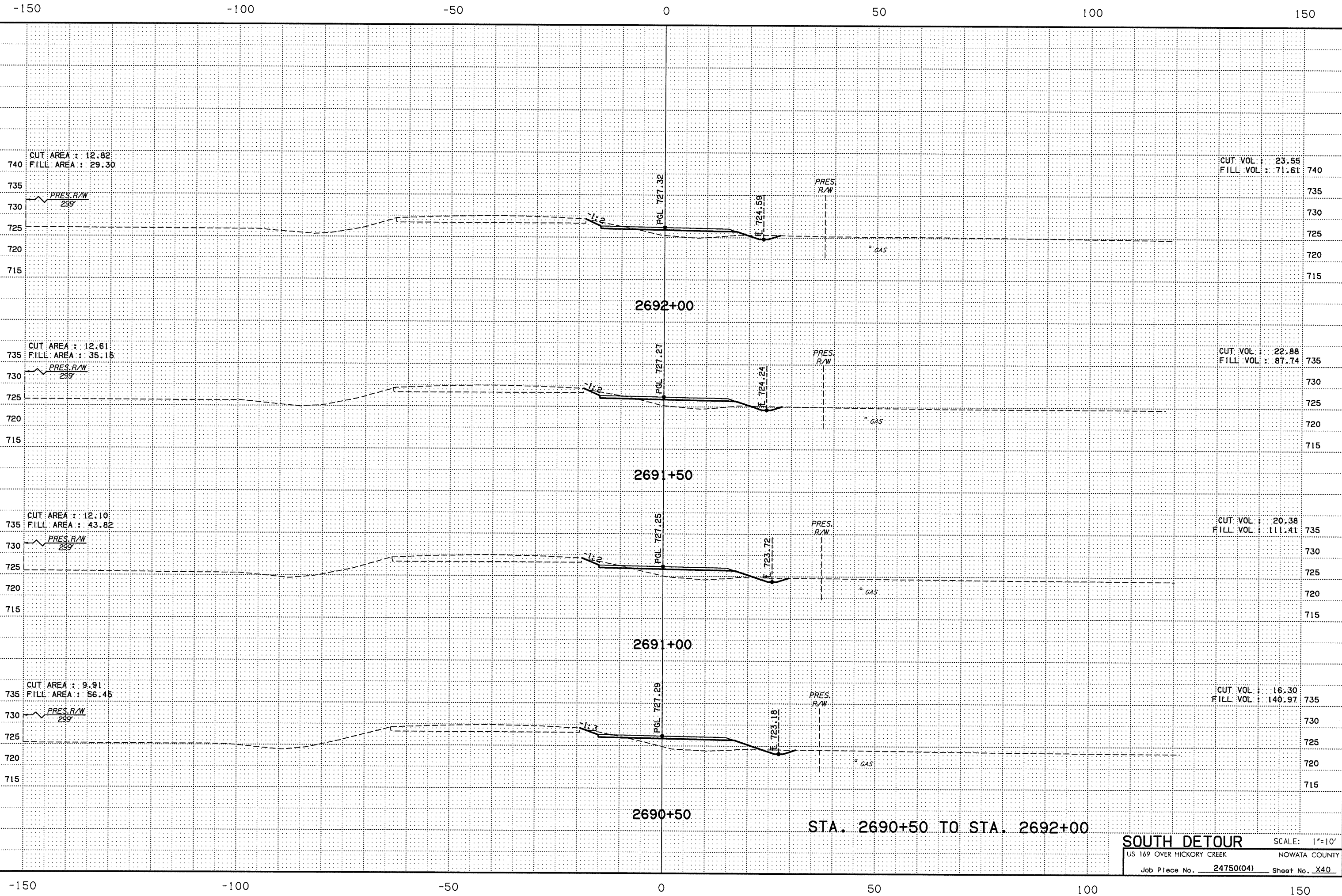
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STA. 2688+50 TO STA. 2690+00

SOUTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X39

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STA. 2690+50 TO STA. 2692+00

SOUTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X40

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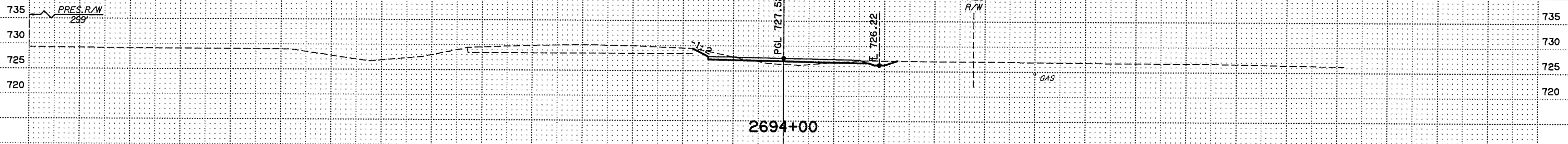
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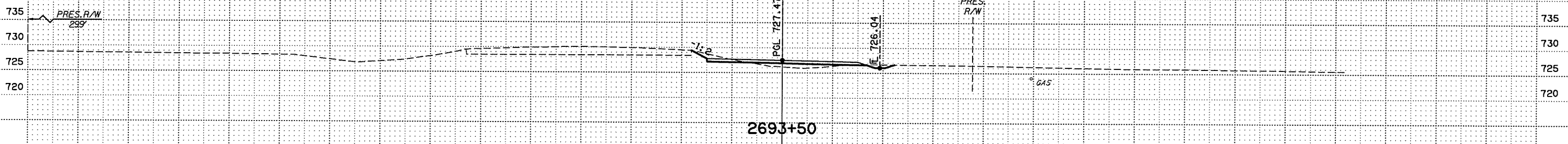
CUT AREA : 13.59
FILL AREA : 7.29

CUT VOL : 22.08
FILL VOL : 20.07



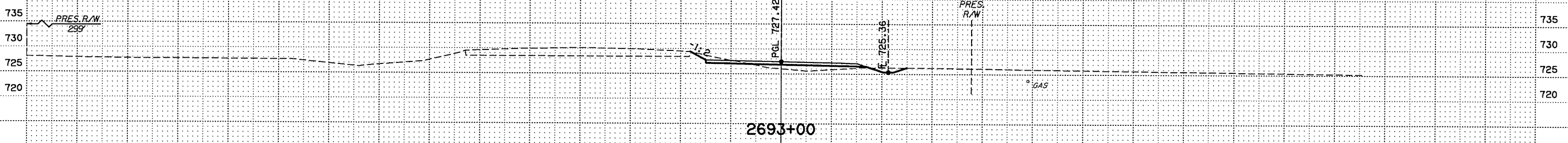
CUT AREA : 10.26
FILL AREA : 10.77

CUT VOL : 20.86
FILL VOL : 30.40



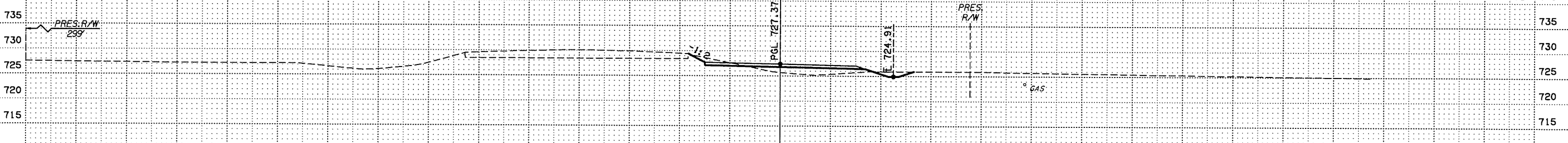
CUT AREA : 12.27
FILL AREA : 16.59

CUT VOL : 23.19
FILL VOL : 45.16



CUT AREA : 12.78
FILL AREA : 24.05

CUT VOL : 23.70
FILL VOL : 59.28



STA. 2692+50 TO STA. 2694+00

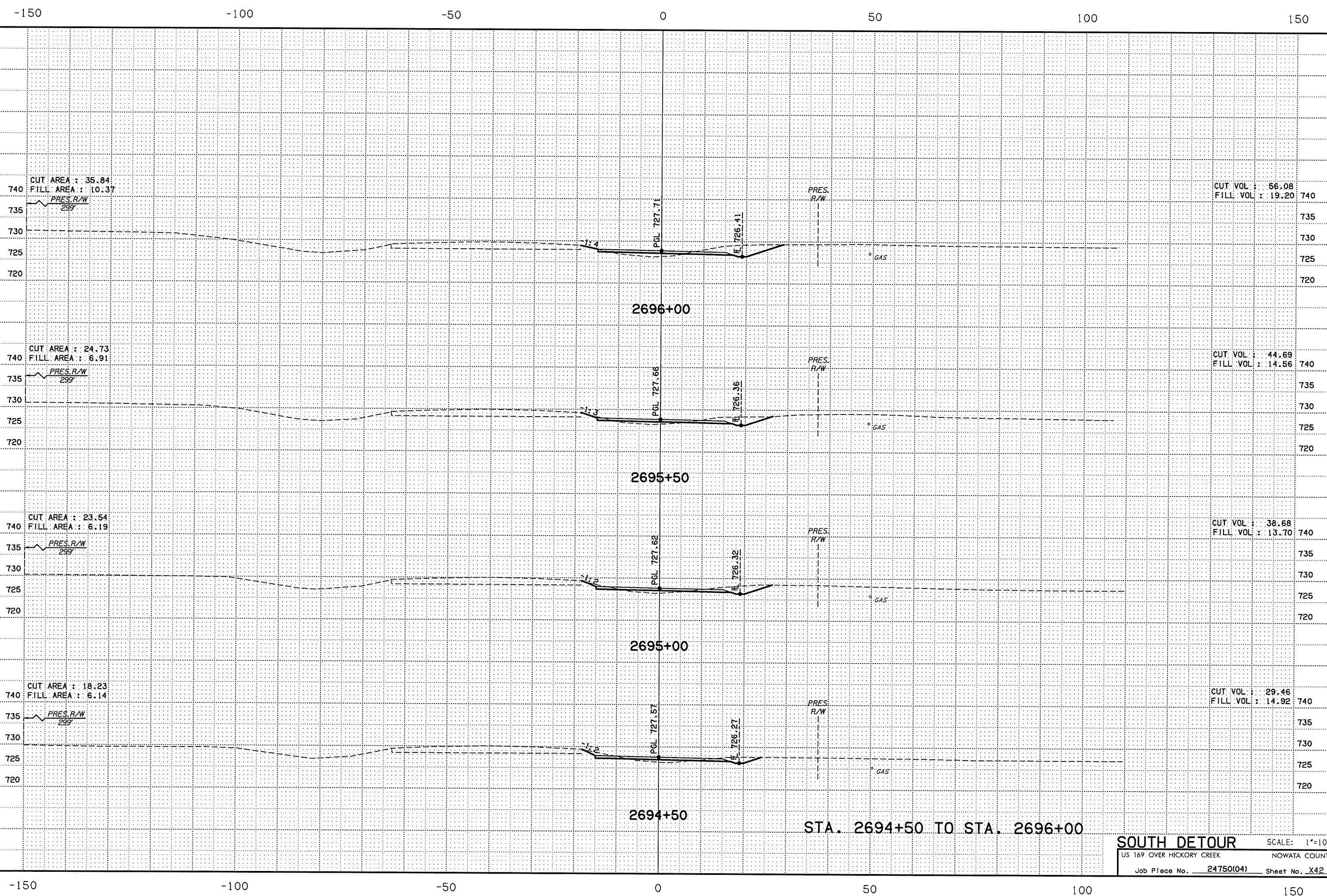
SOUTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X41

-150 -100 -50 0 50 100 150

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7/12/2016

7:58:13 AM

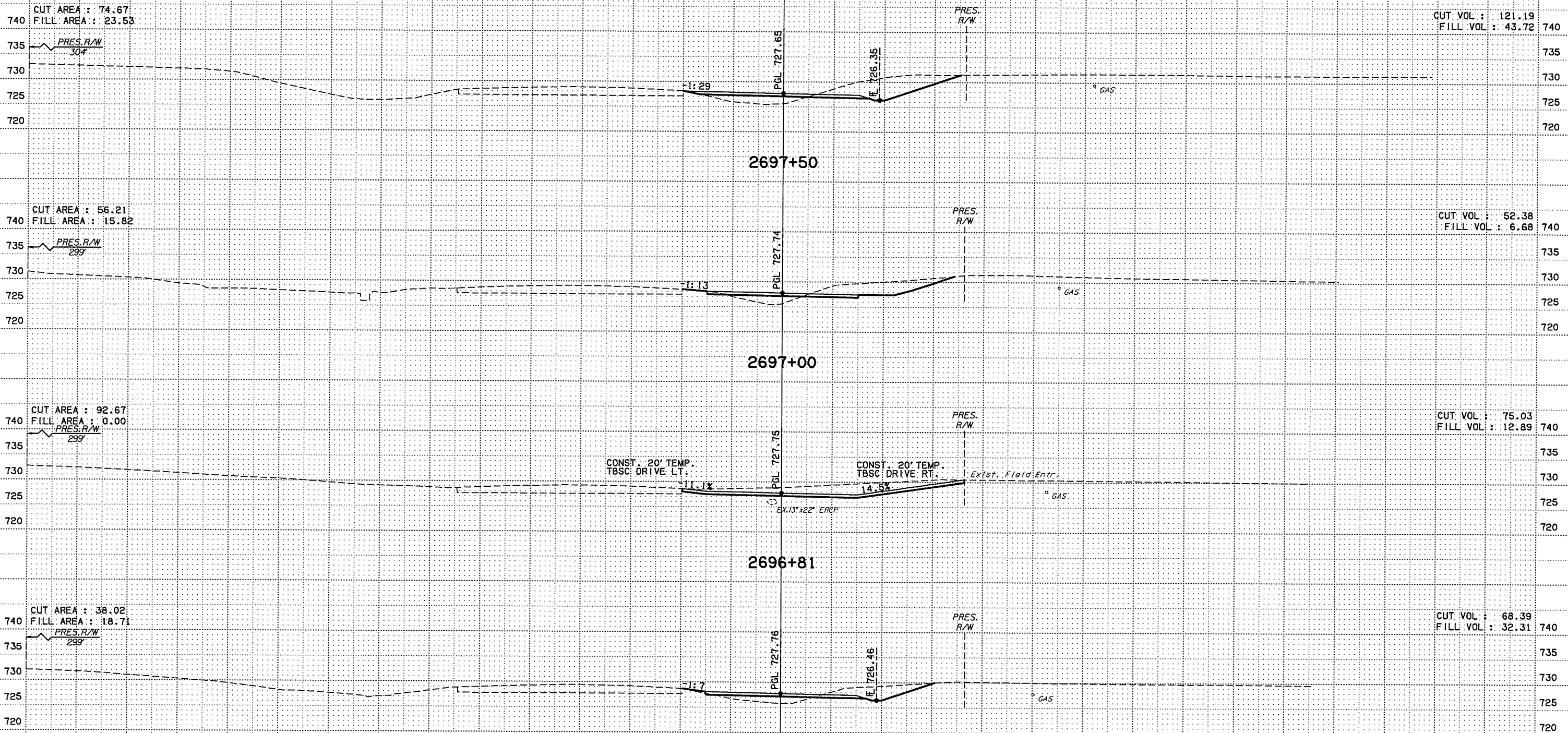


STA. 2694+50 TO STA. 2696+00

SOUTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X42

P:\E\1650-TUL\CV-2552\1000-000T_US169Brdg\20_DESGN\40_CAD_Hickory\DGN\C\24750(04)_C_X_Sect_S_Detour_06.dgn 7/12/2016 7:58:15 AM

-150 -100 -50 0 50 100 150



STA. 2696+50 TO STA. 2697+50

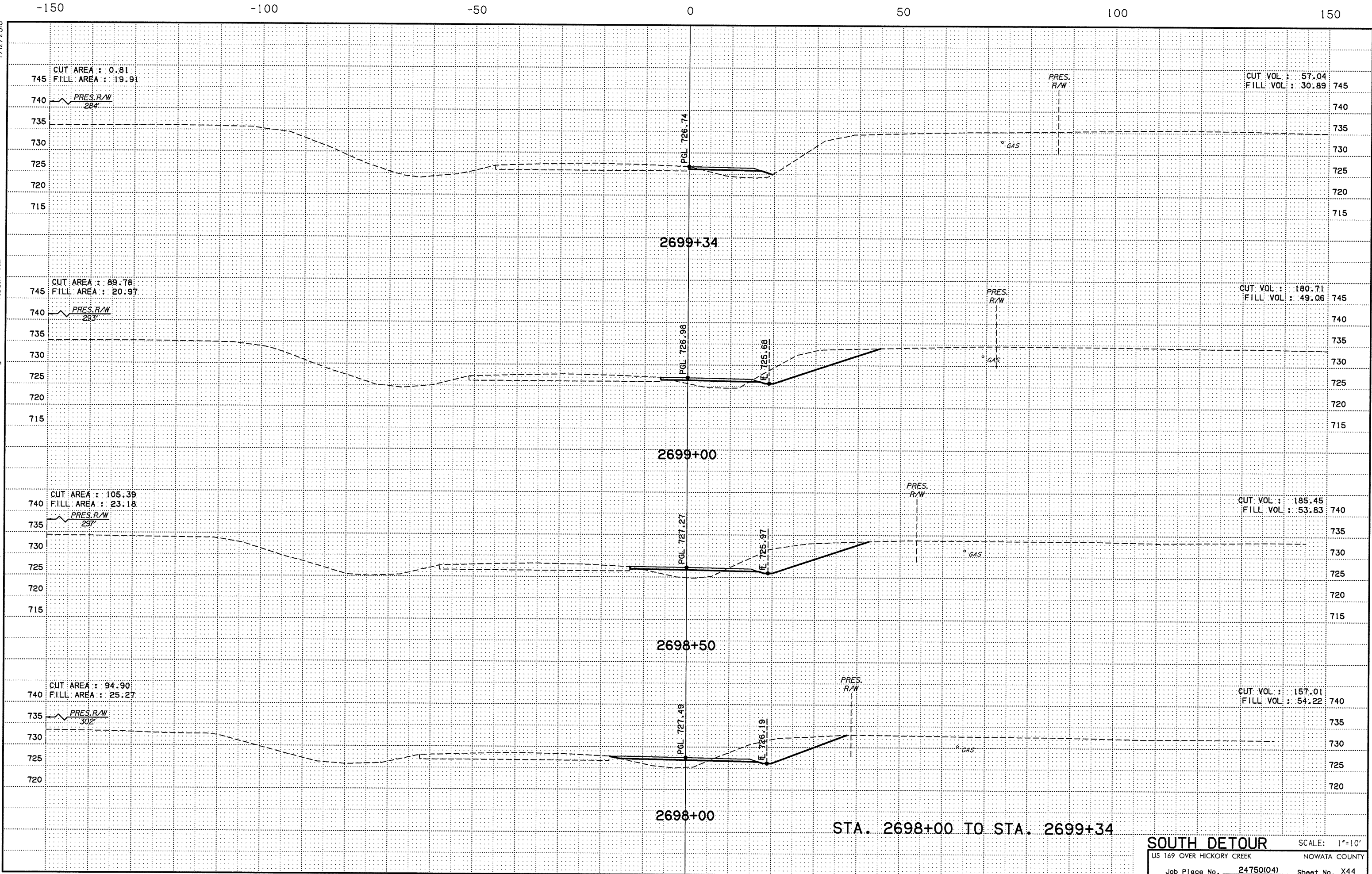
SOUTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X43

-150 -100 -50 0 50 100 150

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7/12/2016

7:58:17 AM



STA. 2698+00 TO STA. 2699+34

SOUTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X44

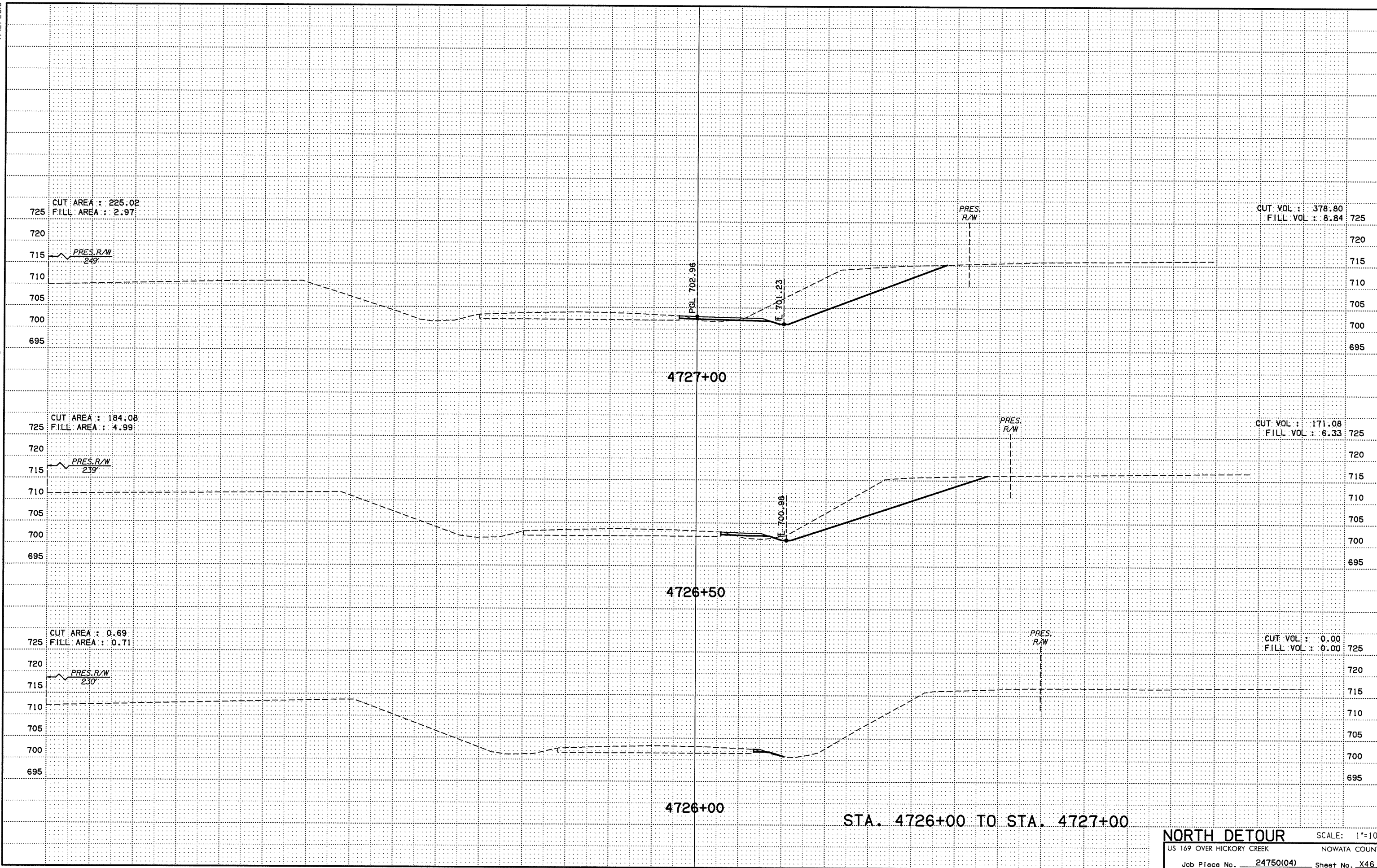
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7/12/2016

7:58:21 AM

-150 -100 -50 0 50 100 150

-150 -100 -50 0 50 100 150



STA. 4726+00 TO STA. 4727+00

NORTH DETOUR SCALE: 1"=10'
US 169 OVER HICKORY CREEK NOWATA COUNTY
Job Place No. 24750(04) Sheet No. X46

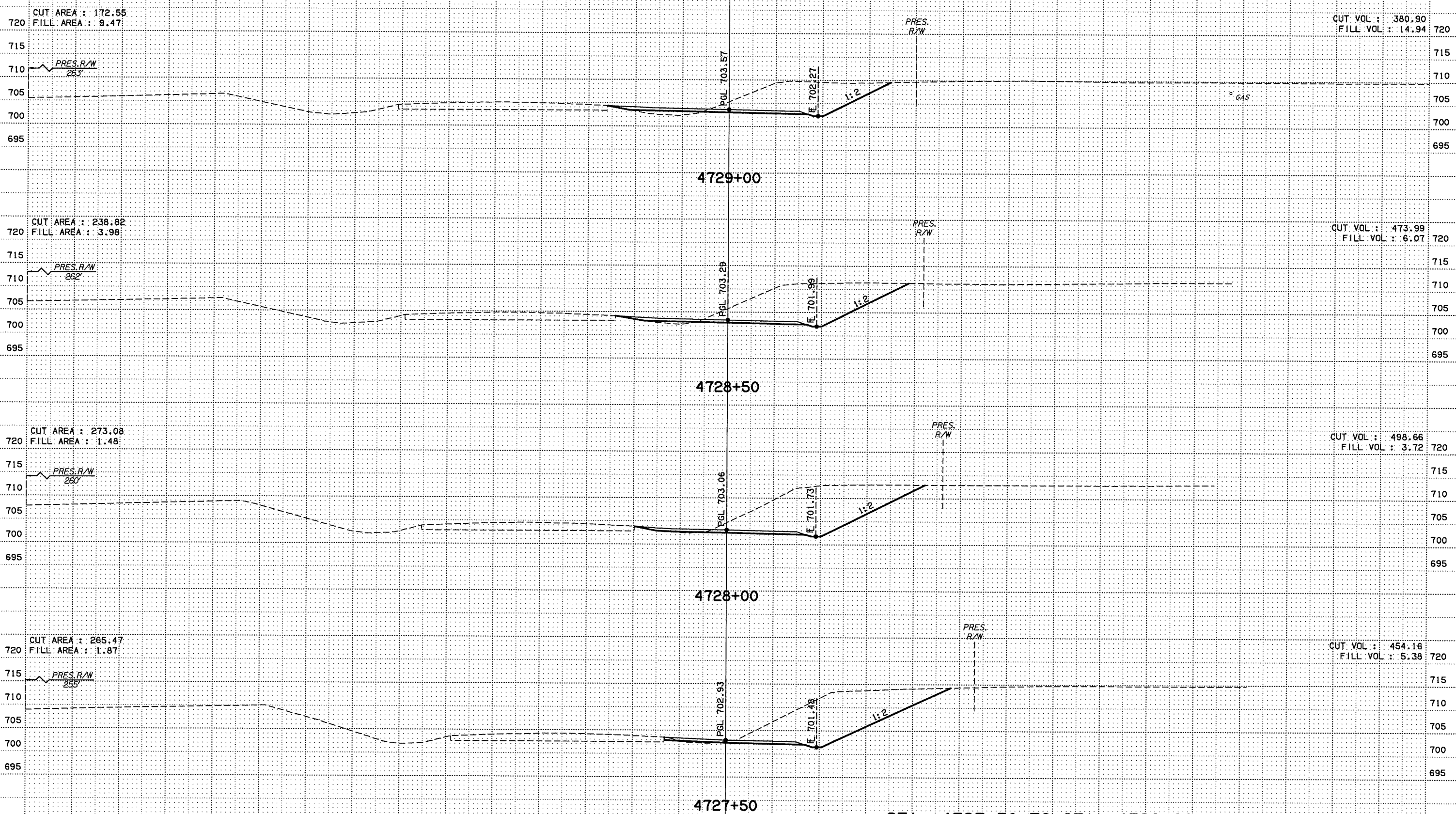
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7/12/2016

7:58:23 AM

-150 -100 -50 0 50 100 150

-150 -100 -50 0 50 100 150



STA. 4727+50 TO STA. 4729+00

NORTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X47

P:\E\1650-TUL\CIV\255231000_000T_US169Br-dg\20_DESGN\40_CAD_Hickory\06\24750(04)_C_X_Sect_N_Detour_03.dgn 7/12/2016 7:58:25 AM

-150 -100 -50 0 50 100 150

CUT AREA : 37.59
FILL AREA : 6.83

CUT VOL : 117.64
FILL VOL : 7.59

PRES. R/W
260'

PGL 704.08
E 702.39

PRES. R/W

4730+50

CUT AREA : 89.46
FILL AREA : 0.00

CUT VOL : 38.72
FILL VOL : 0.00

PRES. R/W
261'

PGL 703.99
E 702.39

PRES. R/W

Exist. Field Entr.

4730+00

CUT AREA : 121.94
FILL AREA : 0.00

CUT VOL : 175.37
FILL VOL : 8.06

PRES. R/W
261'

PGL 703.96
E 702.39

PRES. R/W

CONST. 35' TEMP.
TBSC DRIVE RT.

Exist. Field Entr.

4729+93

CUT AREA : 114.16
FILL AREA : 9.04

CUT VOL : 265.47
FILL VOL : 20.57

PRES. R/W
263'

PGL 703.82
E 702.52

PRES. R/W

0.645

4729+50

STA. 4729+50 TO STA. 4730+50

NORTH DETOUR
US 169 OVER HICKORY CREEK
NOWATA COUNTY
Job Piece No. 24750(04) Sheet No. X48

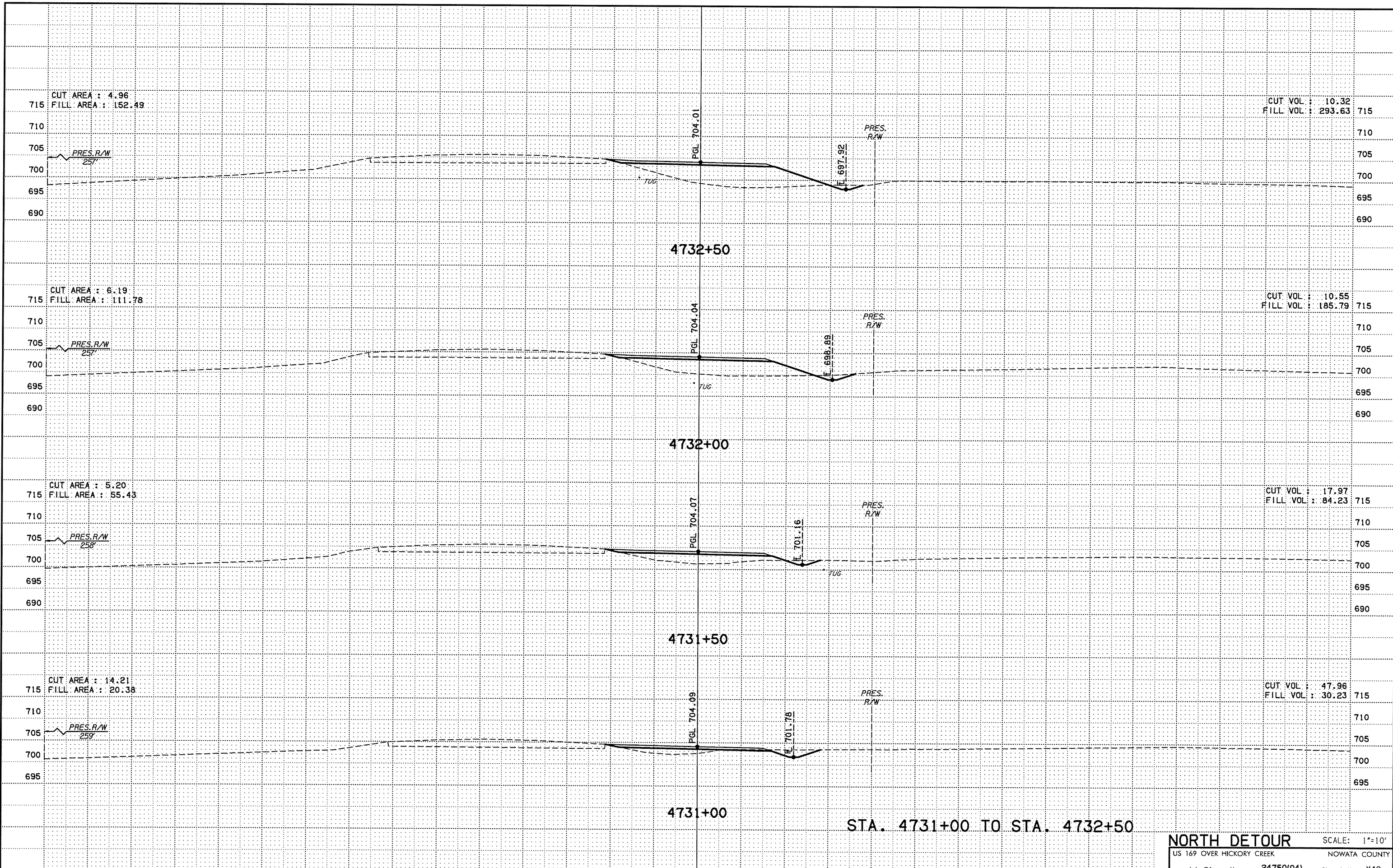
SCALE: 1"=10'

-150 -100 -50 0 50 100 150

P:\ECN1650-TUL\CIV\255231000_000T_US169BR.dg\20_DESGN\40_CAD_Hickory.DGN\C\24750(04)_C.X_Sect_N_DeTour_04.dgn

7/12/2016

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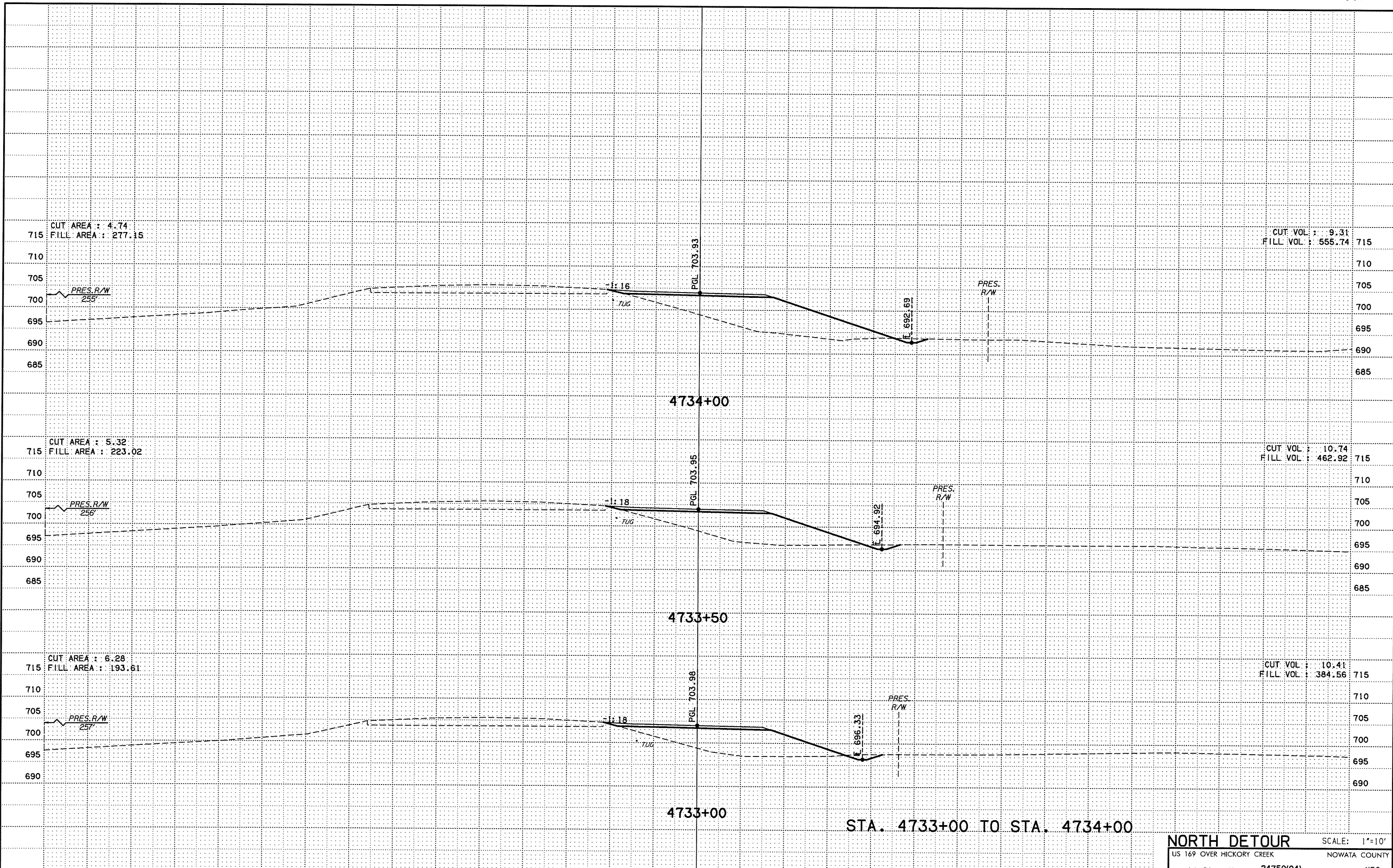


STA. 4731+00 TO STA. 4732+50

NORTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X49

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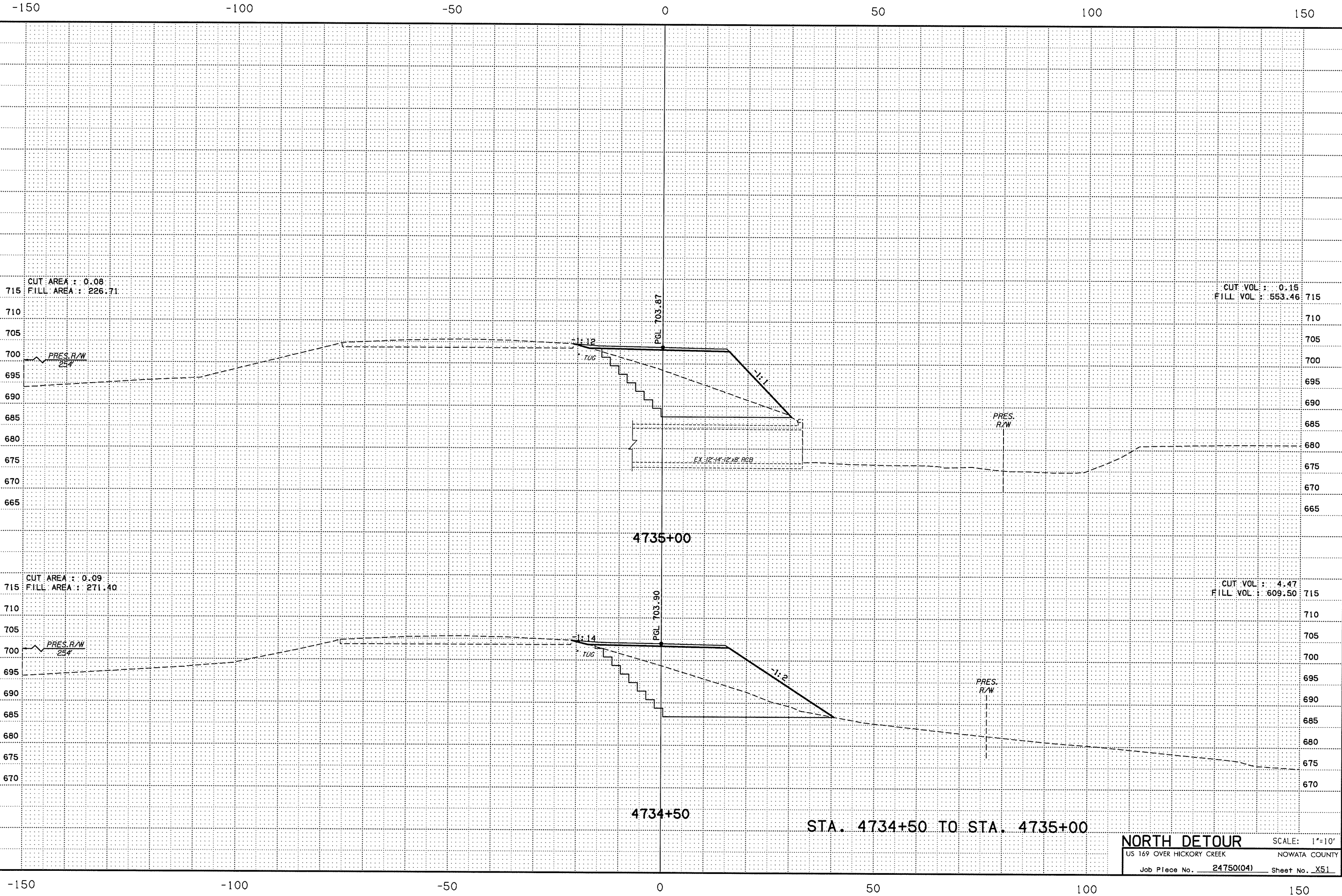
7/12/2016 7:58:29 AM



STA. 4733+00 TO STA. 4734+00

NORTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X50

P:\ECI\650-TUL\CVI\25523\1000_ODOT_USI69Br-dg\20_DESGN\40_CAD_Hickory\DCN\C\24750(04)_C_X_Sect_N_Detour_06.dgn 7/12/2016 7:58:31 AM



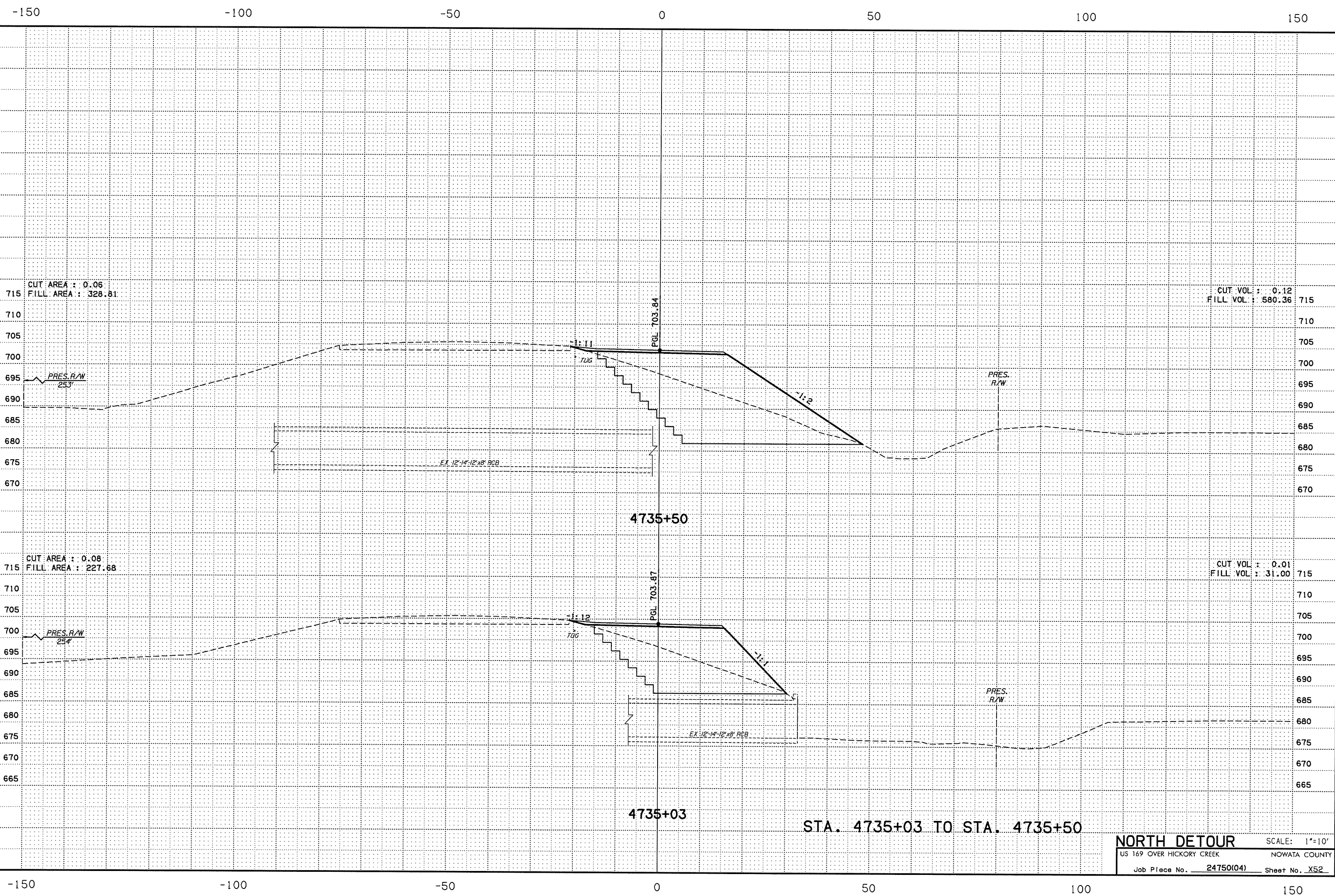
STA. 4734+50 TO STA. 4735+00

NORTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X51

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7/12/2016

7:58:33 AM



-150 -100 -50 0 50 100 150

-150 -100 -50 0 50 100 150

CUT AREA : 0.06
FILL AREA : 328.81

CUT VOL : 0.12
FILL VOL : 580.36

CUT AREA : 0.08
FILL AREA : 227.68

CUT VOL : 0.01
FILL VOL : 31.00

PRES. R/W
253'

PRES. R/W

PRES. R/W
254'

PRES. R/W

EX 12'-14'-12" RCB

EX 12'-14'-12" RCB

PGL 703.84

PGL 703.87

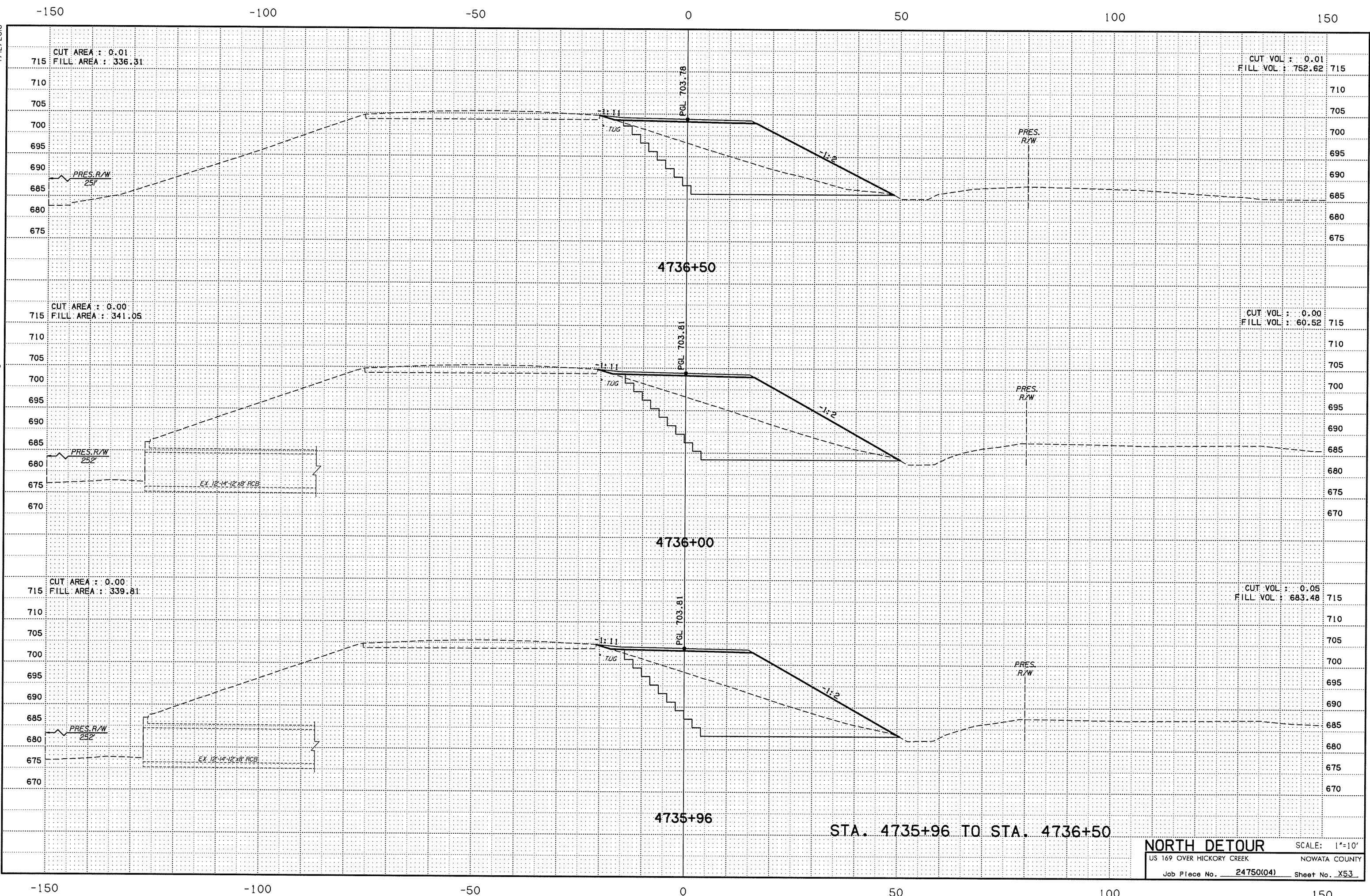
4735+50

4735+03

STA. 4735+03 TO STA. 4735+50

NORTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X52

P:\NEC\1650-TUL\CIV\25523\1000-000T_US\69Brdg\20_DESGN\40_CAD\Hickory\DGN\C\24750(04)_C_X_Sect_N_Detour_08.dgn 7/12/2016 7:58:35 AM



CUT AREA : 0.01
FILL AREA : 336.31

CUT VOL : 0.01
FILL VOL : 752.62

CUT AREA : 0.00
FILL AREA : 341.05

CUT VOL : 0.00
FILL VOL : 60.52

CUT AREA : 0.00
FILL AREA : 339.81

CUT VOL : 0.05
FILL VOL : 683.48

EX. 12-14-12'x8' PCB

EX. 12-14-12'x8' PCB

4736+50

4736+00

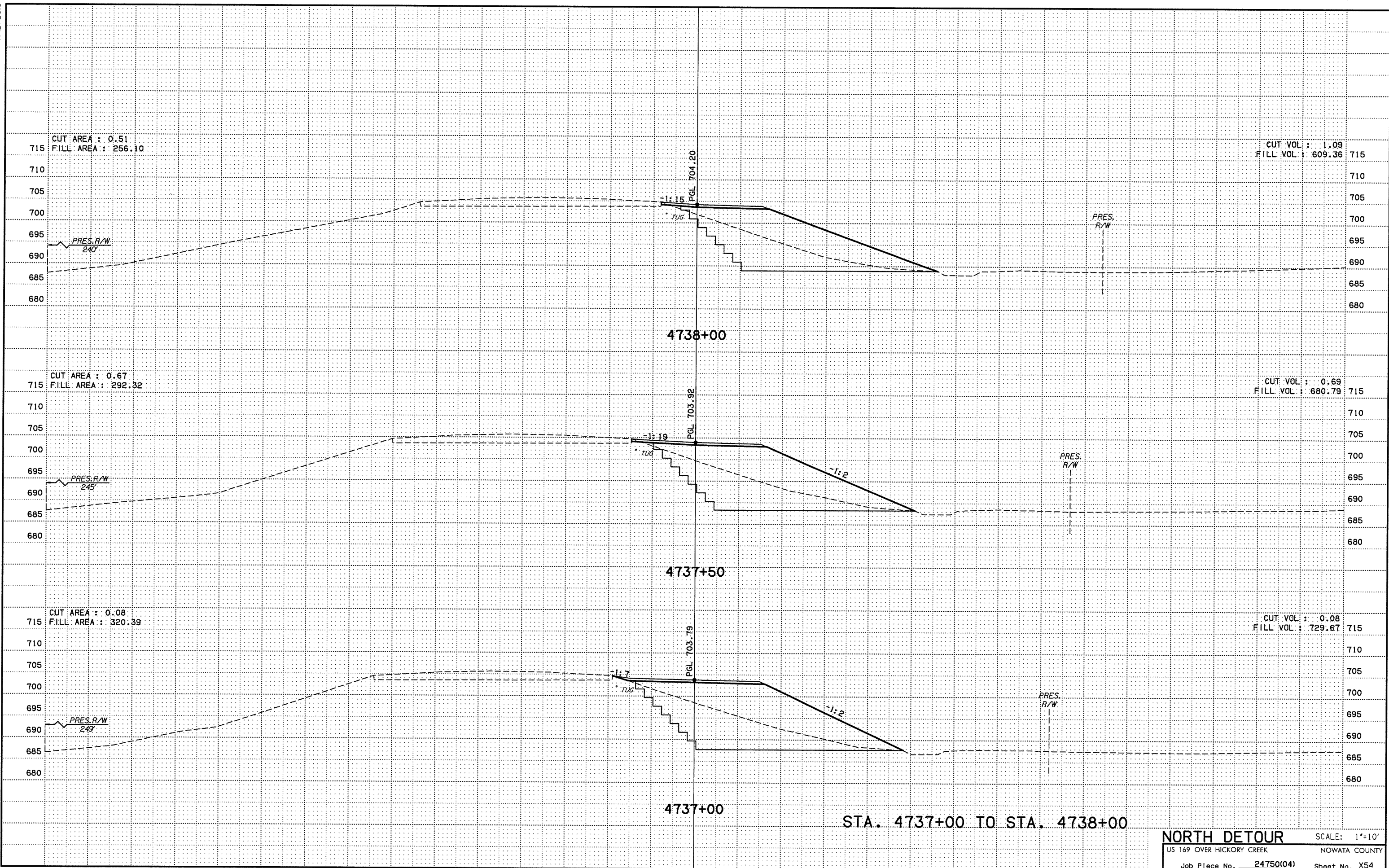
4735+96

STA. 4735+96 TO STA. 4736+50

NORTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X53

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7/12/2016
7:58:37 AM



STA. 4737+00 TO STA. 4738+00

NORTH DETOUR SCALE: 1"=10'
 US 169 OVER HICKORY CREEK NOWATA COUNTY
 Job Piece No. 24750(04) Sheet No. X54

P:\E\650-TUL\CIV\25523\1000_000T_US169Brdg\20_DESGN\40_CAD_Hickory\DN\C\24750(04)_C_X_Sect_N_Detour_10.dgn 7/12/2016 7:58:38 AM

-150 -100 -50 0 50 100 150

CUT AREA : 0.00
FILL AREA : 0.00

CUT VOL : 0.60
FILL VOL : 139.78

CUT AREA : 0.65
FILL AREA : 125.80

CUT VOL : 1.10
FILL VOL : 351.68

CUT AREA : 0.54
FILL AREA : 190.71

CUT VOL : 0.97
FILL VOL : 496.46

4739+50

4739+00

4738+50

STA. 4738+50 TO STA. 4739+50

NORTH DETOUR SCALE: 1"=10'
US 169 OVER HICKORY CREEK NOWATA COUNTY
Job Piece No. 24750(04) Sheet No. X55

-150 -100 -50 0 50 100 150