

SURVEY CONTROL DATA

- HORIZONTAL DATUM IS THE OKLAHOMA STATE PLANE COORDINATE SYSTEM, N.A.D. 83(2011) LAMBERT PROJECTION, SOUTH ZONE ADJUSTED TO N.G.S. STATE PLANE COORDINATES, UTILIZING OPUS.
 - ACCURACY - 3RD ORDER OR BETTER
- BEARINGS:

THE BEARINGS SHOWN HEREIN OR HEREON ARE GRID BEARINGS DERIVED FROM THE USC & GS OKLAHOMA PLANE COORDINATE SYSTEM AND ARE NOT ASTRONOMICAL.
- VERTICAL CONTROLS:
 - LEVEL DATUM IS NGS, NAVD 88, TAKEN FROM ADJUSTED PRIMARY CONTROL UTILIZING DIFFERENTIAL LEVELING TECHNIQUES.
 - ACCURACY - 3RD ORDER OR BETTER

LATITUDE 34° 36' 52"
LONGITUDE 98° 35' 52"

DESIGN DATA

ADT 2015 - 192
ADT 2035 - 285
V - 45 M.P.H.
Flex. ESALs - 0.22M

SCALES

PLAN 1:50
PROFILE HOR. 1:50
VER. 1:5
LAYOUT MAP 1" = 5280'

CONVENTIONAL SIGNS

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

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
COUNTY BRIDGE

BRIDGE AND APPROACH PLANS
**TRIBUTARY TO BLUE BEAVER CREEK
COMANCHE COUNTY**

PROJECT NO. CIRB-216C(074)RB

STATE JOB NO. 30440(04)

LOCATION: 16N2460E1650007

REMOVE NBI NO. 14582 CONSTRUCT NBI NO. 31581

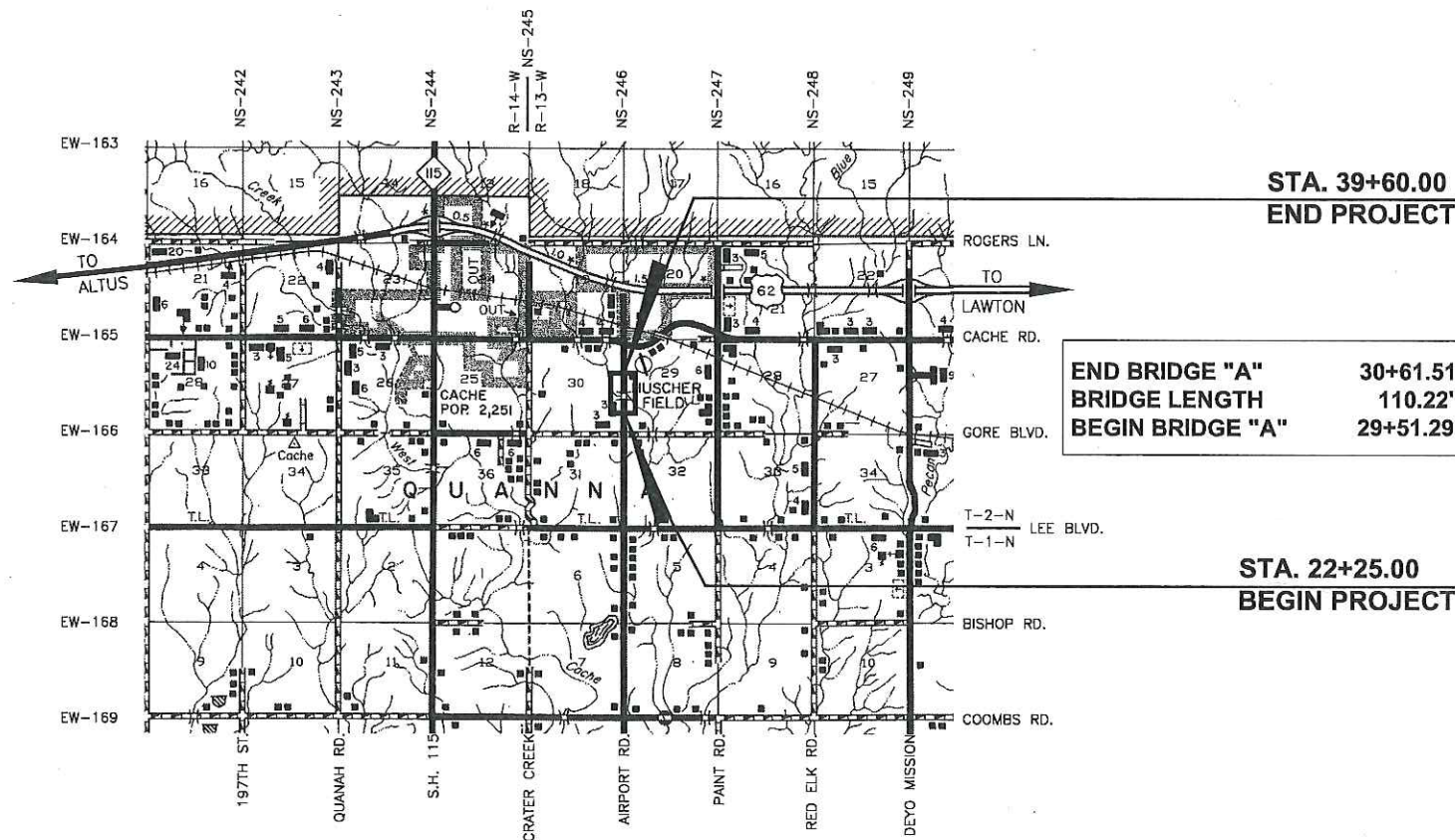
INDEX OF SHEETS

SHEET NO.	DESCRIPTION
0001.	TITLE SHEET
0002.	TYPICAL SECTION AND MISCELLANEOUS DETAILS
AR01.	SUMMARY OF PAY QUANTITIES AND GENERAL NOTES
AR02.	SUMMARY TABLES AND GUARDRAIL BENDING DETAIL
B001.	BRIDGE "A" GENERAL PLAN & ELEVATION
B002.	GEOTECHNICAL INFORMATION
R001.	STORM WATER MANAGEMENT PLAN
R002.	EROSION CONTROL PLAN
R003-R004.	PLAN AND PROFILE
X001. - X010.	X - SECTIONS

THE FOLLOWING STANDARDS WILL BE REQUIRED FOR THIS PROJECT.

2009 COUNTY BRIDGE	ROADWAY 2009	TRAFFIC 2009
CB26-C-SK30-ABUT-PC4-1-01E	SSS-1-1	GRAU1-1-00
CB26-C-SK30-ABUT-PC4-2-02E	TSC2-3-2	GRH1-1-00
CB26-C-SK30-XSECT-PC234-01E	TSO-2-0	GRH2-1-00
CB26-C-SK30-LSECT-PCB-01E	PSE-1-0	TCS1-1-01
CB26-C-SK30-DKSLB-1-01E	PCES-4-1	TCS2-1-00
CB26-C-SK30-DKSLB-2-01E	SPI-4-1	TCS4-1-01
CB26-C-SK30-DKSLB-BLIST-01E	SPB-1-4	TCS5-1-00
CB26-C-SK30-DIA-END-PC234-01E	FHTMPP-1-0	TCS7-1-02
CB26-C-SK30-SPR-QUAN-PCB-1-01E	MI-3-0	TCS9-1-01
CB26-C-SK0.30-PCB-IV-105-01E	RDI-3-1	DU2-1-00
CB26-C-SK0.30-DIA-INT-PCB-01E	DC-3-2	
CB26-C-SK0.30-BRG-PC4-01E		
CB26..32-C-SK30-WING-PC4-01E		
CB26..32-C-SK30-ABUT-MISC-01E		
CB26..32..C.I..SKO.30-GRAU-BC-00E		

2009 STATE BRIDGE
HP1-2-01E
TR3-2-01E



APPROVED
COMANCHE COUNTY BOARD OF COMMISSIONERS

DISTRICT NO. 1 DATE: October 16 2016
 DISTRICT NO. 2 DATE: October 16 2016
 DISTRICT NO. 3 DATE: October 16 2016

ATTEST
 COUNTY CLERK DATE: October 16 2016

PREPARED BY:
CEC CORPORATION
CA32 PE/LS 6/30/2018
OKLAHOMA CITY, OKLAHOMA

CEC

AMANDA FAY BAKER
26474
OKLA. REG. NO. 26474

AMANDA FAY BAKER
OKLA. REG. NO. 26474

DATE: 8-8-17

OKLAHOMA DEPARTMENT OF TRANSPORTATION	DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
DATE APPROVED	DATE APPROVED
BY	BY
CHIEF ENGINEER	DIVISION ADMINISTRATOR
PROJECT NO. CIRB-216C(074)RB	SHEET NO. 0001

PROJECT LENGTH BASED ON C.R.L.

ROADWAY LENGTH: 1,627.78 FT. 0.307 MILES
 BRIDGE "A" LENGTH: 110.22 FT. 0.020 MILES
 PROJECT LENGTH: 0.328 MILES

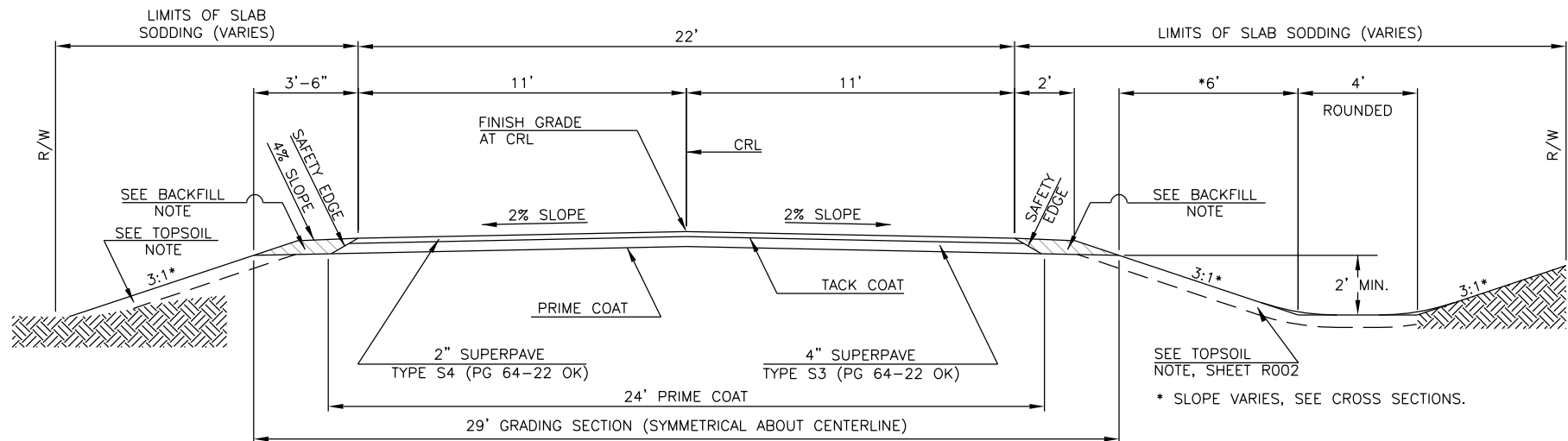
EQUATIONS: NONE
 EXCEPTIONS: NONE

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

DON HAWTHORNE
COMMISSIONER, DISTRICT NO. 3
COMANCHE COUNTY

SHELLY MOODY
LOCAL GOVERNMENT DIVISION
OKLAHOMA DEPARTMENT OF TRANSPORTATION

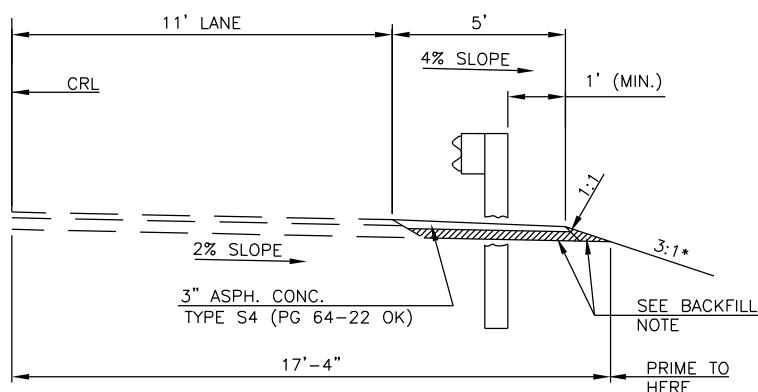
P.E. NO. 30440(01)



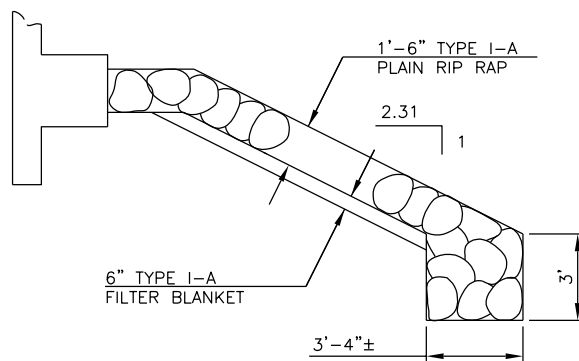
TYPICAL SECTION

EROSION CONTROL AND CONSTRUCTION NOTES
SEE EROSION CONTROL PLAN, SHEET NO. R002, FOR EROSION CONTROL, CONSTRUCTION AND TOPSOIL NOTES.

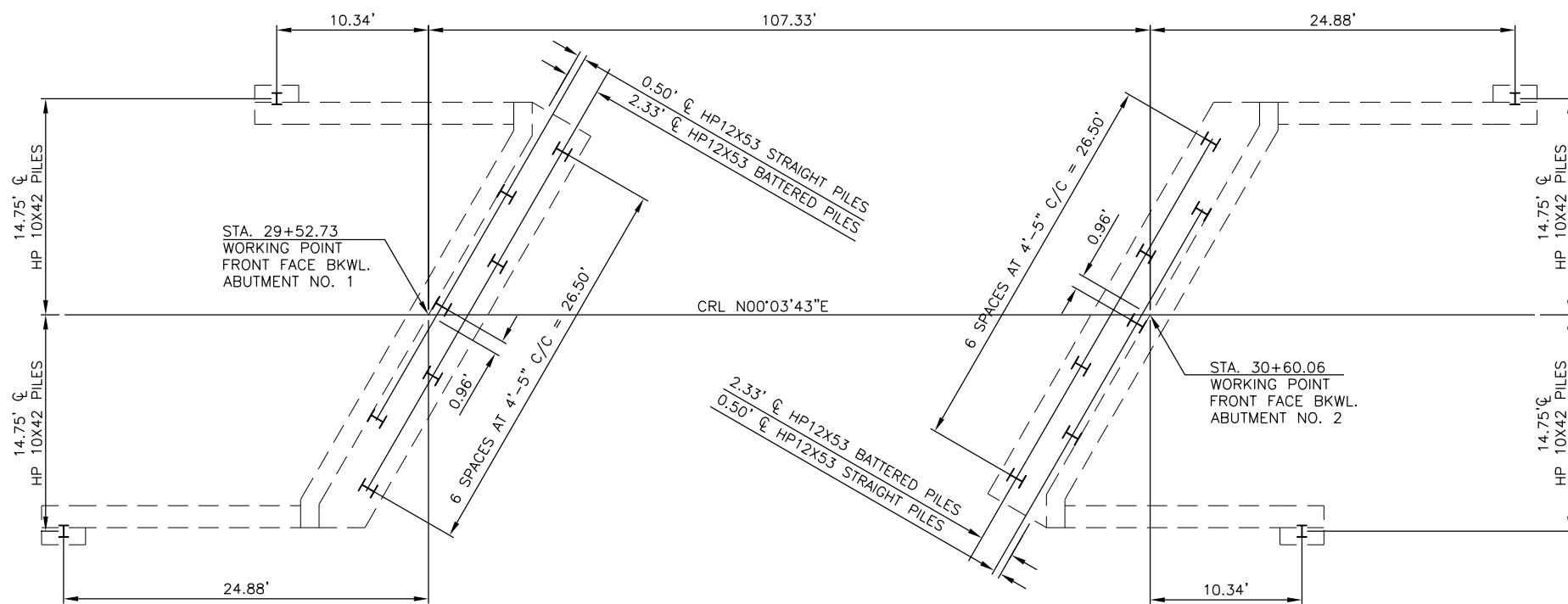
BACK FILL NOTE:
SHOULDERS SHALL BE BACK FILLED AND COMPACTED AS PART OF THE FINISHING OPERATION, PRICE TO BE INCLUDED IN EARTHWORK.



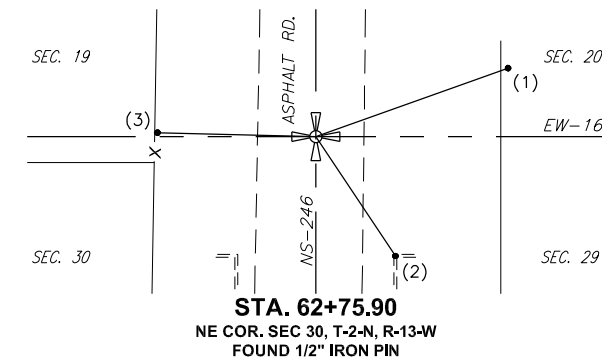
GUARD RAIL WIDENING SECTION



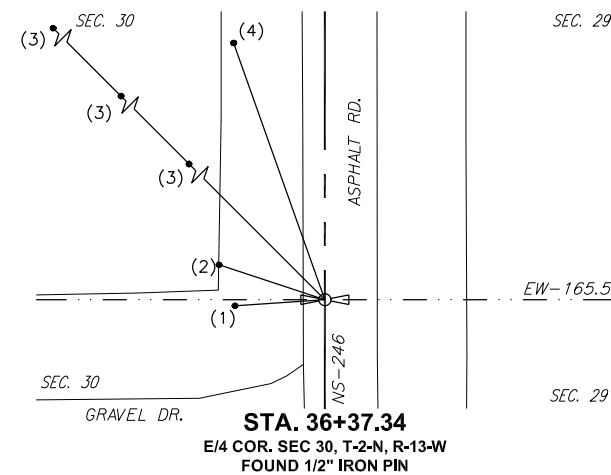
RIPRAP TYPICAL SECTION



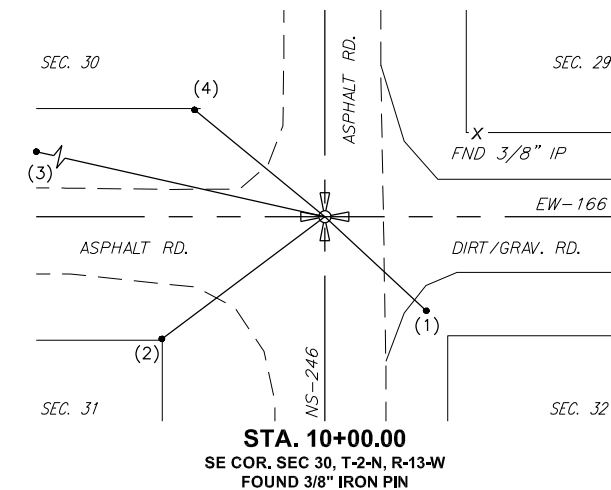
STAKING DIAGRAM



- STA. 62+75.90**
NE COR. SEC 30, T-2-N, R-13-W
FOUND 1/2" IRON PIN
- (1) FOUND PK NAIL TOP RAILROAD TIE CORNER POST 35.40' AT N 70°24'02" E
 - (2) FOUND CUT "X" NORTHWEST CORNER OF HEADWALL 24.90' AT S 33°38'45" E
 - (3) FOUND PK NAIL ATOP 12" WOOD POST 27.50' AT N 88°34'39" W



- STA. 36+37.34**
E/4 COR. SEC 30, T-2-N, R-13-W
FOUND 1/2" IRON PIN
- (1) FOUND 60D NAIL SOUTH FACE TRIPLE TRUNK TREE 23.45' AT S 86°09'46" W
 - (2) SOUTHEAST FACE 3" STEEL BRACE POST 29.00' AT N 71°41'10" W
 - (3) SET 1/2" IRON PIN 3" DEEP 100', 150' AND 200' AT N 45°00'00" W
 - (4) FOUND 60D NAIL EAST FACE 24" BRACE POST 70.95' AT N 19°32'24" W



- STA. 10+00.00**
SE COR. SEC 30, T-2-N, R-13-W
FOUND 3/8" IRON PIN
- (1) FOUND 60D NAIL NORTHWEST FACE POWER POLE 36.00' AT S 47°13'26" E
 - (2) NORTHEAST FACE 2" STEEL CORNER POST 52.97' AT S 53°08'29" W
 - (3) FOUND 60D NAIL SOUTHEAST FACE POWER POLE 118.20' AT N 77°15'29" W
 - (4) FOUND 60D NAIL ATOP 4" WOOD POST 43.85' AT N 50°32'15" W

SECTION CORNER REFERENCES

TRIBUTARY TO BLUE BEAVER CREEK COMANCHE COUNTY

TYPICAL SECTION AND MISCELLANEOUS DETAILS

JOB PIECE NO. 30440(04) SHEET NO. 0002

0200 – BRIDGE			
BRIDGE "A" PAY QUANTITIES			
105' X 26' CLEAR ROADWAY CONVENTIONAL PCB SPAN SKEWED 30 DEGRESS LEFT FORWARD			
ITEM	DESCRIPTION	UNITS	QUANTITY
501(B)	1307 SUBSTRUCTURE EXCAVATION COMMON	(R-1) CY	220.00
501(F)	6352 GRANULAR BACKFILL	(R-1) CY	102.00
503(A)	1313 PRESTRESSED CONCRETE BEAMS (TYPE IV)	(R-1) LF	314.00
504(B)	1305 SAW-CUT GROOVING	(R-1) SY	266.70
504(D)	6239 CONCRETE RAIL (TR3)	(R-1) LF	291.30
506(A)	1322 STRUCTURAL STEEL	(R-1) LB	690.00
507(A)	6172 WEATHERING STEEL FIXED BEARING ASSEMBLY	EA	3.00
507(B)	6176 WEATHERING STEEL EXPANSION BEARING ASSEMBLY	EA	3.00
509(A)	1326 CLASS AA CONCRETE	(R-1) CY	86.10
509(B)	1328 CLASS A CONCRETE	(R-1) CY	79.40
511(A)	1332 REINFORCING STEEL	(R-1) LB	33,490.00
514(A)	6010 PILES, FURNISHED (HP 10X42)	LF	142.00
514(A)	6011 PILES, FURNISHED (HP 12X53)	LF	442.00
514(B)	6292 PILES, DRIVEN (HP 10X42)	LF	142.00
514(B)	6294 PILES, DRIVEN (HP 12X53)	LF	442.00
514(L)	6220 PILE SPLICE, H-PILE(NON BIDDABLE)	EA	1.00
601(B)	1353 TYPE I-A PLAIN RIPRAP	(1) TON	1,214.00
601(C)	1355 TYPE I-A FILTER BLANKET	(2) TON	316.00
613(H)	6204 6" PERFORATED PIPE UNDERDRAIN ROUND	LF	60.00
613(I)	6207 6" NON-PERF. PIPE UNDERDRAIN RND.	LF	60.00
619(D)	1397 REMOVAL OF EXISTING BRIDGE STRUCTURE	(3) LSUM	1.00
623(A)	1418 BEAM GUARDRAIL W-BEAM SINGLE	(15) LF	35.00
623(F)	5686 GUARDRAIL ANCHOR UNIT (TYPE D-BF)	EA	4.00
623(F)	6029 GUARDRAIL ANCHOR UNIT (TYPE A)	(4) EA	3.00
880(J)	8905 CONSTRUCTION TRAFFIC CONTROL	(5) LSUM	1.00

0640 – CONSTRUCTION			
PAY QUANTITIES			
220	2800 SWPPP DOCUMENTATION AND MANAGEMENT	LSUM	1.00
641	1399 MOBILIZATION	LSUM	1.00

0600 – STAKING			
PAY QUANTITIES			
642(B)	0096 CONSTRUCTION STAKING LEVEL II	(6) LSUM	1.00

0100 – ROADWAY			
ROADWAY PAY QUANTITIES			
ITEM	DESCRIPTION	UNITS	QUANTITY
201(A)	0102 CLEARING AND GRUBBING	LSUM	1.00
202(H)	0185 EARTHWORK	(8)(9)(10) LSUM	1.00
221(C)	2801 TEMPORARY SILT FENCE	(11) LF	1,200.00
221(F)	0100 TEMPORARY SILT DIKE	(11) LF	300.00
230(A)	2806 SOLID SLAB SODDING	(R-7)(R-8) SY	18,599.00
233(A)	2817 VEGETATIVE MULCHING	(R-11) AC	7.70
402(E)	0225 TRAFFIC BOUND SURFACE COURSE TYPE E	(16) TON	100.00
411(B)	5945 SUPERPAVE, TYPE S3 (PG 64-22 OK)	(R-31)(R-32)(12) TON	1067.00
411(C)	5960 SUPERPAVE, TYPE S4 (PG 64-22 OK)	(R-30)(R-32)(13) TON	556.00
509(D)	0325 CLASS C CONCRETE	(R-41) CY	10.00
613(B)	0690 24" CORR. GALV. STEEL PIPE	LF	28.00
613(B)	0691 30" CORR. GALV. STEEL PIPE	LF	82.00
613(B)	4528 28" x 20" CORR. GALV. STEEL PIPE ARCH	LF	56.00
613(L)	4516 28" x 20" PREFAB. CULVERT END SECTION, ARCH	EA	4.00
613(L)	5730 24" PREFAB. CULVERT END SECTION, ROUND	EA	2.00
613(L)	5732 30" PREFAB. CULVERT END SECTION, ROUND	EA	4.00
619(A)	0920 REMOVAL OF STRUCTURES & OBSTRUCTIONS	(R-48)(R-49) LSUM	1.00
624(C)	4458 FENCE-STYLE SWF (4 BARBED WIRE)	(R-52)(R-53)(14) LF	732.00
624(C)	4459 FENCE-STYLE SWF (5 BARBED WIRE)	(R-52)(R-53)(14) LF	1,847.00
624(H)	5920 (PL) GATE	(14) EA	3.00
629(E)	5048 REMOVE AND RESET MAILBOX	EA	2.00

ENVIRONMENTAL MITIGATION

CLIFF AND BARN SWALLOW NOTES:
CLIFF SWALLOWS AND BARN SWALLOWS ARE SMALL COLONIAL NESTING BIRDS PROTECTED BY THE FEDERAL MIGRATORY BIRD TREATY ACT. THESE SPECIES COMMONLY USE BRIDGES AND CULVERTS FOR NESTING. THE NESTING SEASON FOR THE SWALLOWS RUNS FROM APRIL 1 TO AUGUST 31. ANY ACTIVITIES WHICH WOULD DESTROY ACTIVE NESTS OR HARM EGGS OR BIRDS WOULD VIOLATE THE MIGRATORY BIRD TREATY ACT. SWALLOW USE OF BRIDGE NBI NO. 14582 WAS NOT OBSERVED DURING INITIAL SURVEYS CONDUCTED AS PART OF THE BIOLOGICAL STUDIES IN NOVEMBER 2014. SWALLOWS MAY OCCUPY THE BRIDGE IN THE FUTURE NESTING SEASONS. THE RESIDENT ENGINEER WILL EVALUATE THE CONTRACTOR'S PROPOSED WORK METHODS AND CONCLUDE WHETHER THE PROPOSED WORK WOULD POSE DISRUPTION TO THE NESTING BIRDS BEFORE WORK NEAR THE STRUCTURE IS AUTHORIZED. IF THE PROPOSED WORK WILL HARM THE NESTING BIRDS, THE BRIDGE MAY BE NETTED PRIOR TO APRIL 1 OR THE WORK DELAYED UNTIL THE NESTING SEASON IS COMPLETE. METHODS OTHER THAN NETTING MUST BE PRE-APPROVED BY THE ODOT BIOLOGIST.

A POTENTIAL WATER WELL HOUSE WAS IDENTIFIED AT STATION 37+10 RT. IN THE EVENT THAT THE COUNTY ACQUIRES THIS WELL, THE COUNTY WILL BE RESPONSIBLE FOR ENSURING THAT IT IS PROPERLY PLUGGED BY AN OWRB LICENSED WATER WELL DRILLER IN ACCORDANCE WITH OAC 785:35-11-1 (RULES OF THE OKLAHOMA WATER RESOURCES BOARD).

PAY QUANTITY NOTES

- (R-1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITY ONLY. SEE SECTION 109.01B OF THE STANDARD SPECIFICATIONS.
- (R-7) FOR 230(A) PRICE BID TO INCLUDE COST OF 10-20-10 FERTILIZER, ESTIMATED AT 200 LBS. PER 1,000 SQUARE YARDS.
- (R-8) FOR 230(A) PRICE BID TO INCLUDE COST OF WATERING, ESTIMATED AT 80 GALLONS PER SQUARE YARD.
- (R-11) THE QUANTITY ESTIMATED FOR TEMPORARY EROSION AND SEDIMENT CONTROL IS 3.85 ACRES.
- (R-30) PRICE BID TO INCLUDE COST OF 1,661 GALLONS OF TACK COAT MEETING THE REQUIREMENTS OF SECTION 407 OF THE STANDARD SPECIFICATIONS.
- (R-31) PRICE BID TO INCLUDE COST OF 712 GALLONS OF PRIME COAT MEETING THE REQUIREMENTS OF SECTION 408 OF THE STANDARD SPECIFICATIONS AND ESTIMATED AS 0.35 GAL. PER SQ. YD. ON TOP OF COMPLETED SUBGRADE AND 0.25 GAL PER SQ. YD. ON TOP OF AGGREGATE BASE. THE ACTUAL CUTBACK PRIME COAT REQUIRED FOR PLACEMENT OPERATIONS WILL BE DETERMINED BY THE CONTRACTOR AND SHALL CONSIDER THE RESIDUE FROM DISTILLATION PERCENTAGE SHOWN IN SECTION 708.03 OF THE STANDARD SPECIFICATIONS.
- (R-32) ESTIMATED AT 112 LBS. PER SQ. YD. PER 1" THICK.
- (R-41) QUANTITY INCLUDES AN ESTIMATED 10 C.Y. TO BE USED AS DIRECTED BY THE ENGINEER.
- (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-52) INCLUDES 2% FOR GROUND MEASUREMENT.
- (R-53) ALL GATES AND GATE END POSTS FOR STRANDED WIRE FENCE (SWF) SHALL BE CONSTRUCTED AT THE SAME WIDTH AS THE EXISTING, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

- ESTIMATED AT 110 LBS./CU. FT.
- ESTIMATED AT 105 LBS./CU. FT.
- ITEM "REMOVAL OF EXISTING BRIDGE STRUCTURE" CONSISTS OF REMOVAL AND DISPOSAL OF A 34 FOOT I-BEAM SPAN AND SUBSTRUCTURE ELEMENTS. CONTRACTOR SHALL CAREFULLY REMOVE ROADWAY BEAMS AND PLACE THEM UPON PROJECT RIGHTS-OF-WAY FOR REMOVAL BY COMANCHE COUNTY. COST OF REMOVAL SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "REMOVAL OF EXISTING BRIDGE STRUCTURES." REMOVAL AND DISPOSAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IN ACCORDANCE WITH SECTION 619.04 (b)2 OF THE SPECIFICATIONS AND IN A MANNER APPROVED BY THE ENGINEER.
- PRICE BID TO INCLUDE THE COST OF 4 TYPE 1 CODE 3 DELINEATORS. (AMBER COLOR).
- CONSTRUCTION TRAFFIC CONTROL SHALL INCLUDE ALL BARRICADES AND SIGNS REQUIRED ON EACH END OF THE CONSTRUCTION AREA AND OTHER AREAS DESIGNATED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SIGNS, BARRICADES, LIGHTS, ETC., ACCORDING TO THE STANDARDS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, AND AS SHOWN ON THE STANDARD DRAWINGS. COST OF ALL NECESSARY CONSTRUCTION SIGNING WILL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "CONSTRUCTION TRAFFIC CONTROL."
- IN ADDITION TO THE RESPONSIBILITIES SHOWN IN THE SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND/OR REESTABLISHING THE SURVEY CONTROL POINTS SHOWN ON THE PLANS, STAKING THE CENTERLINE OF CONSTRUCTION AND REESTABLISHING RIGHT-OF-WAY STAKES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING BENCH MARKS SHOWN ON THE PLANS AND FOR ESTABLISHING NEW BENCH MARKS AS NEEDED TO CONSTRUCT THE PROJECT.
- SEE SUMMARY OF GRADING QUANTITIES, SHEET NO. R003.
- INCLUDES COST TO BREAK UP EXISTING ASPHALT PAVEMENT TO A SIZE OF NOT MORE THAN THREE INCHES TO BE INCORPORATED INTO ROADWAY EMBANKMENT.
- INCLUDES COST OF SALVAGING AND PLACING TOPSOIL APPROXIMATELY 25 FEET WIDE BY 5 INCHES DEEP FROM STA. 22+25 TO 39+25 AND 18-46-0 FERTILIZER (ESTIMATED AT 150 LBS PER ACRE). SEE TOPSOIL NOTE, SHEET NO. R002.
- PRICE BID TO INCLUDE COST OF TEMPORARY SEDIMENT REMOVAL.
- INCLUDES 116 TONS FOR RURAL DRIVES AND 12 TONS FOR MAILBOX TURNOUTS.
- INCLUDES 57 TONS FOR RURAL DRIVES AND 42 TONS FOR GUARD RAIL WIDENING AND 6 TONS FOR MAILBOX WIDENING.
- ALL GATES, GATE POSTS, CORNER AND STRETCH POSTS SHALL BE STEEL PIPE.
- PRICE BID TO INCLUDE ONE W-BEAM END SECTION FLARED.
- TO BE USED IN A MANNER APPROVED BY THE ENGINEER.

GENERAL NOTES

SPECIFICATIONS: COMPLY WITH THE REQUIREMENTS OF THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, AS APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION JANUARY 4, 2010, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

ANCHOR PLATES- SLOTTED FOR EXPANSION: ALLOWANCE SHALL BE MADE FOR TEMPERATURE AT TIME OF SETTING OF EXPANSION ANCHOR PLATES. ANCHOR PLATES SHALL BE SET WITH ANCHOR BOLTS IN CENTER OF SLOT FOR 60°F. FOR EACH 100' OF EXPANSION TO THE BEARING ASSEMBLY, THE CENTERLINE OF THE SLOT SHALL BE 1/8" FROM THE CENTERLINE OF THE ANCHOR BOLT IN THE DIRECTION OF EXPANSION FOR EACH 15' THE TEMPERATURE IS ABOVE 60°F, OR SHALL BE SET 1/8" FROM THE CENTERLINE OF THE ANCHOR BOLT IN THE DIRECTION OF THE CONTRACTION FOR EACH 15' THE TEMPERATURE IS BELOW 60°F.

AIR VENTS: 2" PVC PIPE SHALL BE PLACED VERTICALLY THROUGH THE DECK BETWEEN THE BEAMS AS SHOWN IN THE DETAIL SHOWN ON SHEET NO. B001, GENERAL PLAN AND ELEVATION.

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.

CREEK AND RIVER BANKS SHALL BE KEPT IN THEIR NATURAL STATE AS MUCH AS POSSIBLE. THE CONTRACTOR SHALL NOT UNDULY STRIP EXISTING PROTECTIVE VEGETATION IN THE VICINITY OF THE STREAM BANKS AND SHALL SO CONDUCT HIS OPERATIONS AS NOT TO DAMAGE THE BANKS WITH HIS EQUIPMENT. NO BANK UPSTREAM OR DOWNSTREAM SHALL BE EXCAVATED EXCEPT AS APPROVED FOR AND AS SHOWN ON THE PLANS. NO WORK ROADS SHALL BE CONSTRUCTED UPSTREAM WHERE IT IS NECESSARY TO CUT THE STREAM OR RIVER BANKS EXCEPT BY THE APPROVAL OF THE ENGINEER. BANK CUTS FOR WORK ROADS SHALL BE LOCATED DOWNSTREAM AND REPLACED BY THE CONTRACTOR TO THEIR ORIGINAL SHAPE AND DENSITY. UNNECESSARY STRIPPING OF VEGETATION GROWTH ALONG BANKS IN THE CONSTRUCTION AREA IS NOT PERMITTED

THE FOLLOWING ITEMS WILL BE THE RESPONSIBILITY OF THE COUNTY AND NOT A PART OF THIS CONTRACT: (1) ACQUISITION AND STAKING OF RIGHT-OF-WAY; (2) UTILITY RELOCATION; (3) DETOUR SIGNING, IF REQUIRED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SIGNING.

ROADWAY SHALL BE CLOSED TO THROUGH TRAFFIC DURING THE CONSTRUCTION PERIOD. CONTRACTOR SHALL PROVIDE ACCESS TO ADJACENT LAND OWNERS AND TENANTS.

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

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

THE CONTRACTOR SHALL NOTIFY THE COMANCHE COUNTY BOARD OF COMMISSIONERS, CED 6 AND ODOT DIVISION VII OFFICE IN DUNCAN, IN WRITING, FOURTEEN CALENDAR DAYS PRIOR TO BEGINNING CONSTRUCTION.

INDIAN PROPERTY LOCATED WITHIN PROJECT LIMITS, FROM BEGINNING OF PROJECT TO APPROXIMATELY STA. 36+37 LT.

PILE DRIVING AND CAPACITY –
THE FACTORED REACTION FOR EACH HP 12X53 PILE AT THE ABUTMENT IS 75.2 TONS ON BRIDGE "A".
THE FOLLOWING FORMULA (GATES EQUATION) SHALL BE USED TO DETERMINE THE AXIAL LOAD RESISTANCE OF THE DRIVEN FOUNDATION PILES.

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

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:

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

THE NUMBER OF BLOWS PER INCH OF PILE PENETRATION MAY BE MEASURED EITHER DURING INITIAL DRIVING OR BY RE-DRIVING WITH A WARM HAMMER OPERATED AT FULL ENERGY AFTER A PILE SET PERIOD, AS DETERMINED BY THE ENGINEER. IF WATER JETS ARE USED IN CONNECTION WITH THE DRIVING, DETERMINE THE AXIAL LOAD RESISTANCE BY THE FORMULA ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.

TRIBUTARY TO BLUE BEAVER CREEK COMANCHE COUNTY

SUMMARY OF PAY QUANTITIES AND GENERAL NOTES

JOB PIECE NO. 30440(04) SHEET NO. ARO1

SUMMARY OF DRAINAGE STRUCTURES									
STR. NO.	STATION	DESCRIPTION	DESIGN	CGSP		CGSPA	PCES		
				24" (FEET)	30" (FEET)	28"x20" (FEET)	24" (EACH)	30" (EACH)	28"x20" (EACH)
1	28+10 RT.	30" SIDE DRAIN	CGMP		38			2	
2	28+86 LT.	30" SIDE DRAIN	CGMP		44			2	
3	34+13 LT.	24" SIDE DRAIN	CGMP	28			2		
4	36+08 LT.	28"x20" SIDE DRAIN	CGMPA			28		2	
5	39+12 RT.	28"x20" SIDE DRAIN	CGMPA			74		2	
TOTALS				28	82	102	2	4	4

SUMMARY OF DRIVES				
STATION	DESCRIPTION	SIZE	TYPE S3 ASPH. (TON)	TYPE S4 ASPH. (TON)
28+10	RURAL DRIVE RT.	16' X 71'	32	16
28+86	RURAL DRIVE LT.	21' X 69'	40	20
34+13	RURAL DRIVE LT.	10' X 60'	19	10
36+08	RURAL DRIVE LT.	10' X 48'	15	8
39+91	RURAL DRIVE RT.	12' X 30'	12	6
TOTALS			116	57

CONSTRUCT ALL DRIVES AND RAMPS PER STD. RDI-3.

SUMMARY OF GUARDRAILS						
STATION TO STATION	LT.	RT.	TYPE D-BF (EACH)	TYPE A (EACH)	W-BEAM SINGLE (FEET)	TOTAL LENGTH (FEET)
28+27.36 - 29+27.36		X	1	1		100.00
28+94.32 - 29+41.90*	X		1		35*	65.00
30+70.90 - 31+70.90		X	1	1		100.00
30+85.44 - 31+85.44	X		1	1		100.00
TOTALS			4	4	35	365.00

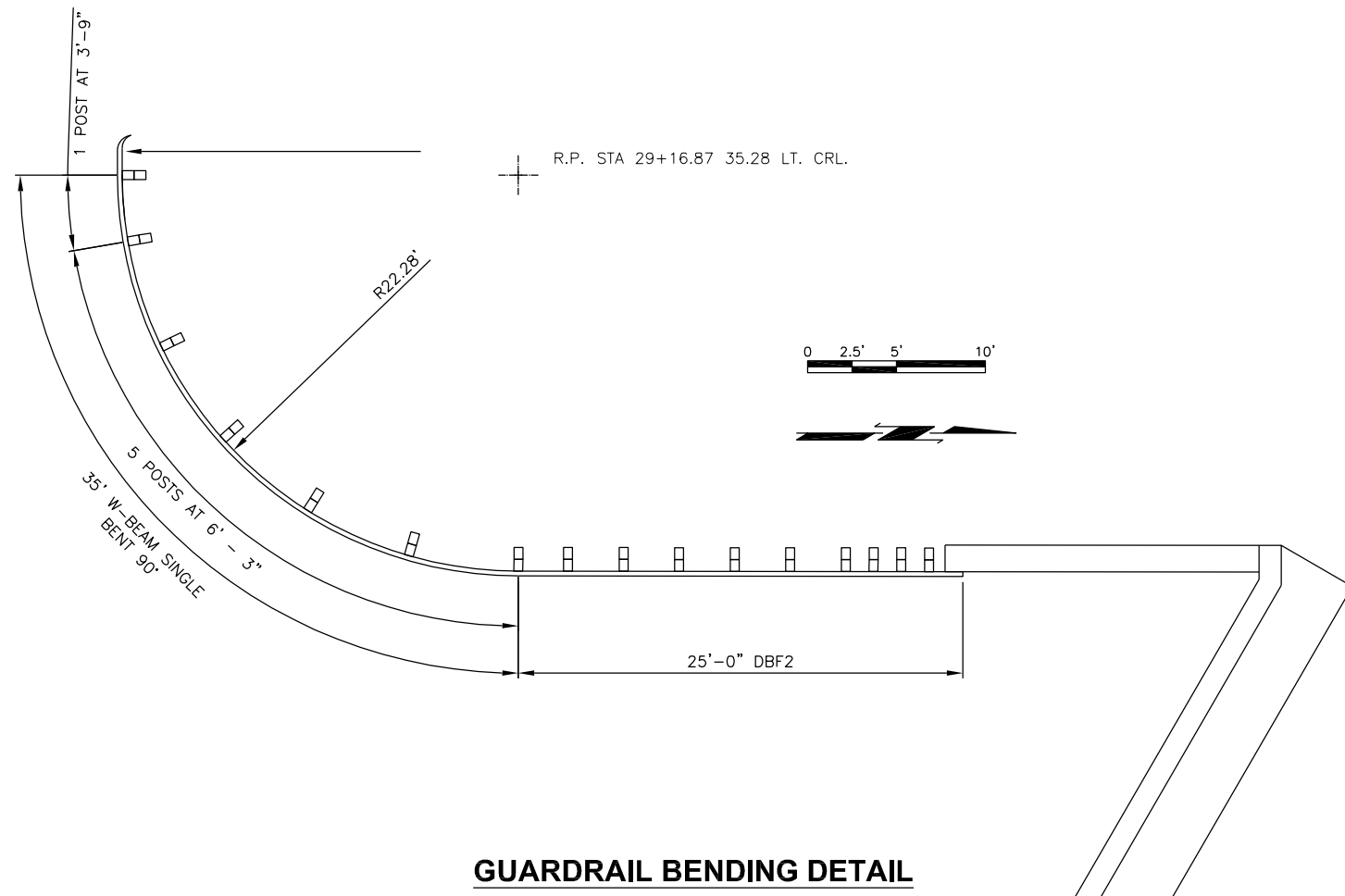
*SEE GUARDRAIL BENDING DETAIL THIS SHEET.

SUMMARY OF FENCING						
SHT. NO.	ALIGNMENT	SIDE	PERM. OR TEMP.	STATION TO STATION	STYLE SWF	
					4 BARBED 624(C)	5 BARBED 624(C)
7	CL SRVY	LT.	PERM.	27+60 TO 34+73	732	
7	CL SRVY	RT.	PERM.	21+35 TO 29+24		792
8	CL SRVY	RT.	PERM.	32+30 TO 38+60		644
8	CL SRVY	LT.	PERM.	36+39 TO 40+40		411
TOTALS					732	1,847

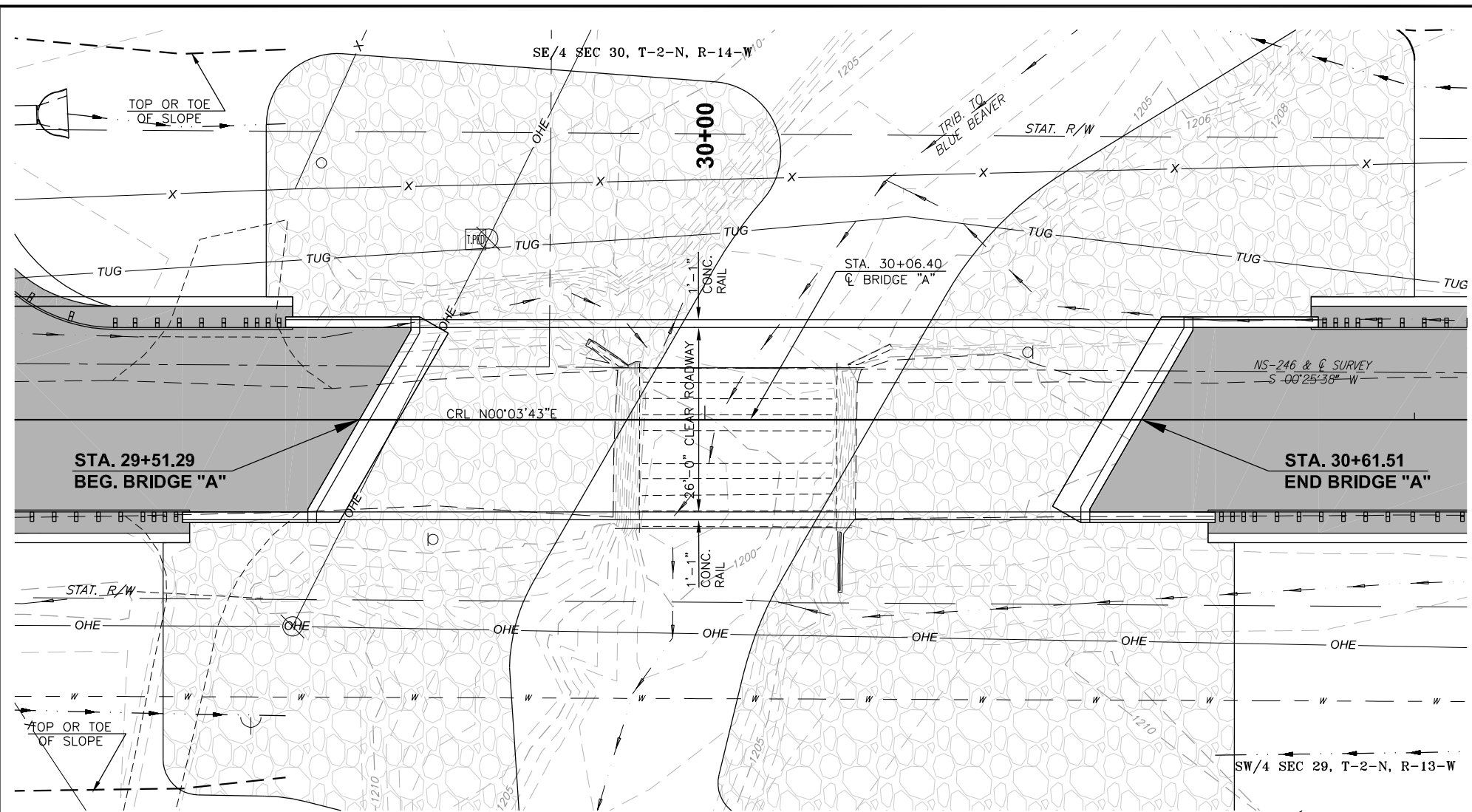
FENCE LENGTHS EXCLUDE THE WIDTH OF GATES.

SUMMARY OF GATES				
SHT. NO.	ALIGNMENT	CENTERLINE STATION	GATE WIDTH	(PL) GATE 624(H) EA.
7	CL SRVY	28+10 RT.	16'	1
7	CL SRVY	28+86 LT.	24'	1**
8	CL SRVY	34+14 LT.	12'	1
TOTAL				3

** GATE TO CONSIST OF TWO 12' PANELS



GUARDRAIL BENDING DETAIL



APPROX. LIMITS OF RIPRAP:
 58 FEET LEFT. 62 FEET RIGHT
 CARRY RIPRAP TO SECOND GUARD RAIL
 POST AT EACH WING WALL UNLESS
 OTHERWISE SHOWN.

LOAD AND RESISTANCE FACTOR DESIGN DATA

CONCRETE CLASS AA $f'_c = 4$ KSI
 CONCRETE CLASS A $f'_c = 3$ KSI
 REINF. STEEL $f_y = 60$ KSI
 STRUCTURAL STEEL
 M270 (GRADE 50W) $F_y = 50$ KSI

LFD OPERATING RATING: HS 55.0
 LOADING: HL-93
 20 P.S.F. FUTURE WEARING SURFACE.
 5 P.S.F. STAY-IN-PLACE FORMS

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,
 5TH EDITION WITH 2010 INTERIMS, EXCEPT AS MODIFIED
 BY CURRENT ODOT BRIDGE DIVISION DESIGN POLICIES.
 ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

HYDRAULIC DATA

D.A. =	8.99 SQ. MI.
Q2 =	669 CFS
V2 =	2.05 FPS
CHW =	1206.65 FT
Q5 =	1,530 CFS
V5 =	2.59 FPS
CHW =	1209.47 FT
Q10 =	2,430 CFS
V10 =	3.49 FPS
CHW =	1210.59 FT
Q25 =	3,980 CFS
V25 =	5.01 FPS
CHW =	1211.80 FT
Q50 =	5,100 CFS
V50 =	6.11 FPS
CHW =	1212.39 FT
Q100 =	6,480 CFS
V100 =	7.46 FPS
CHW =	1213.04 FT
Qot =	Q39

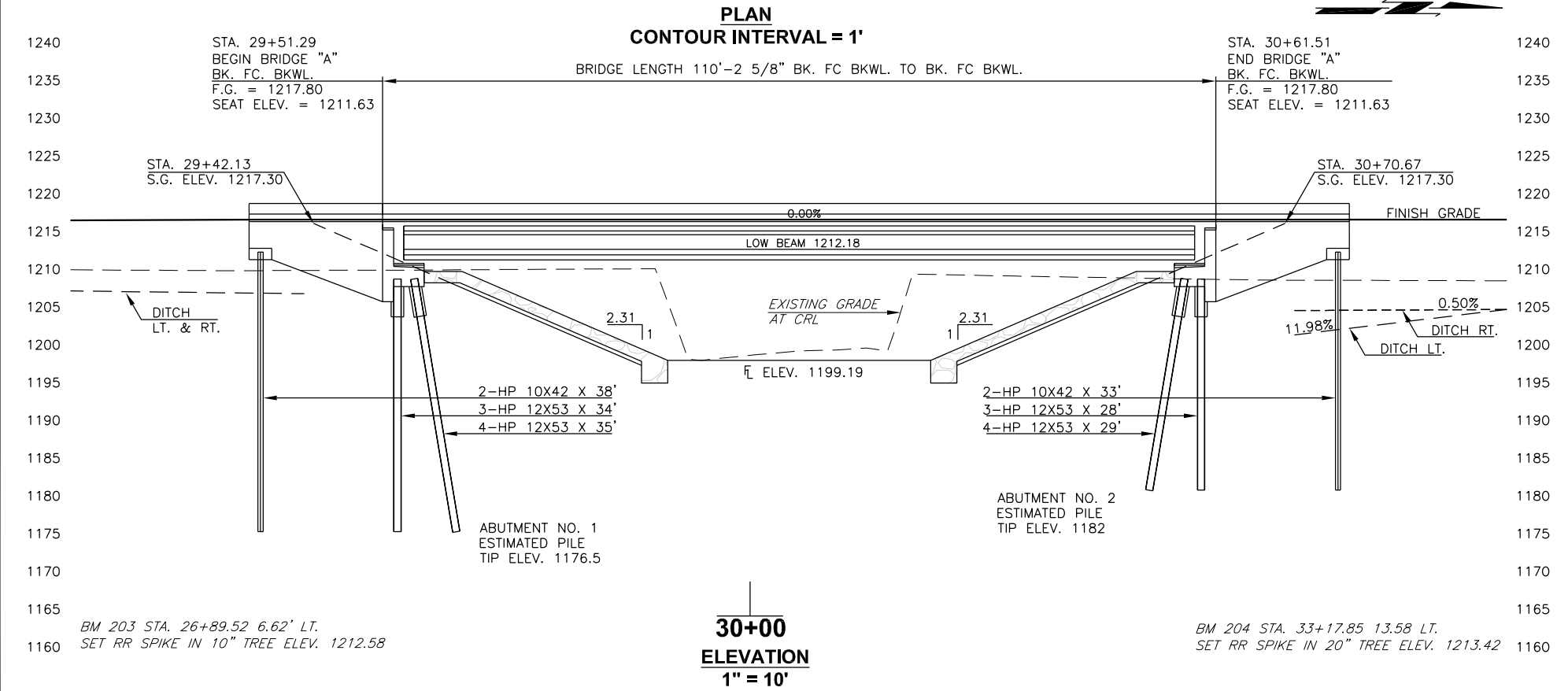
ABUTMENT FOUNDATION DATA

ABUTMENTS: HP 12X53 PILING **ABUTMENTS NO. 1 & 2**
 REQUIRED ULTIMATE PILE CAPACITY 75.2 TON/PILE

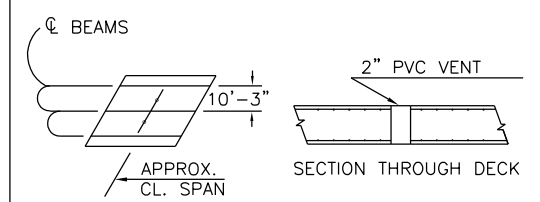
PILE CAPACITY SHALL BE VERIFIED USING THE ODOT MODIFIED
 GATES EQUATION SHOWN ON SHEET AR01. ALL ABUTMENT
 PILING SHALL BE DRIVEN THROUGH THE COMPACTED FILL TO
 POINT BEARING ON SOLID FOUNDATION MATERIAL. PILING
 SHALL BE DRIVEN TO THE APPROXIMATE ELEVATION SHOWN ON
 THE PLANS. IF THE REQUIRED ULTIMATE PILE CAPACITY IS
 NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE
 UNTIL THE REQUIRED ULTIMATE PILE CAPACITY IS OBTAINED.
 THE LENGTH OF STEEL PILING SHOWN ON THE PLANS IS FOR
 ESTIMATING PURPOSES ONLY.

BRIDGE "A" PAY QUANTITIES

105' X 26' CLEAR ROADWAY CONVENTIONAL PCB SPAN SKEWED 30 DEGREES LEFT FORWARD					
ITEM	DESCRIPTION	UNITS	ABUTMENTS	SUPSTR.	TOTAL
501(B)	SUBSTRUCTURE EXCAVATION COMMON	CY	220.00		220.00
501(F)	GRANULAR BACKFILL	CY	102.00		102.00
503(A)	PRESTRESSED CONCRETE BEAMS (TYPE IV)	LF		314.00	314.00
504(B)	SAW-CUT GROOVING	SY		266.70	266.70
504(D)	CONCRETE RAIL (TR3)	LF	70.80	220.50	291.30
506(A)	STRUCTURAL STEEL	LB		690.00	690.00
507(A)	WEATHERING STEEL FIXED BEARING ASSEMBLY	EA		3.00	3.00
507(B)	WEATHERING STEEL EXPANSION BEARING ASSEMBLY	EA		3.00	3.00
509(A)	CLASS AA CONCRETE	CY		86.10	86.10
509(B)	CLASS A CONCRETE	CY	79.40		79.40
511(A)	REINFORCING STEEL	LB	11,460.00	22,030.00	33,490.00
514(A)	PILES, FURNISHED (HP 10X42)	LF	142.00		142.00
514(A)	PILES, FURNISHED (HP 12X53)	LF	442.00		442.00
514(B)	PILES, DRIVEN (HP 10X42)	LF	142.00		142.00
514(B)	PILES, DRIVEN (HP 12X53)	LF	442.00		442.00
514(L)	PILE SPLICE, H-PILE(NON BIDDABLE)	EA	1.00		1.00
601(B)	TYPE I-A PLAIN RIPRAP	TON	1,214.00		1,214.00
601(C)	TYPE I-A FILTER BLANKET	TON	316.00		316.00
613(H)	6" PERFORATED PIPE UNDERDRAIN ROUND	LF	60.00		60.00
613(I)	6" NON-PERF. PIPE UNDERDRAIN RND.	LF	60.00		60.00
619(D)	REMOVAL OF EXISTING BRIDGE STRUCTURE	LSUM			1.00
623(A)	BEAM GUARDRAIL W-BEAM SINGLE	LF			35.00
623(F)	GUARDRAIL ANCHOR UNIT (TYPE D-BF)	EA			4.00
623(F)	GUARDRAIL ANCHOR UNIT (TYPE A)	EA			3.00
880(J)	CONSTRUCTION TRAFFIC CONTROL	LSUM			1.00



AIR VENT DETAILS



PLACE 2" PVC PIPE VERTICALLY THROUGH THE DECK
 BETWEEN BEAMS AT APPROXIMATE CENTER OF EACH
 SPAN. DO NOT PLACE DIRECTLY ABOVE DIAPHRAGMS.

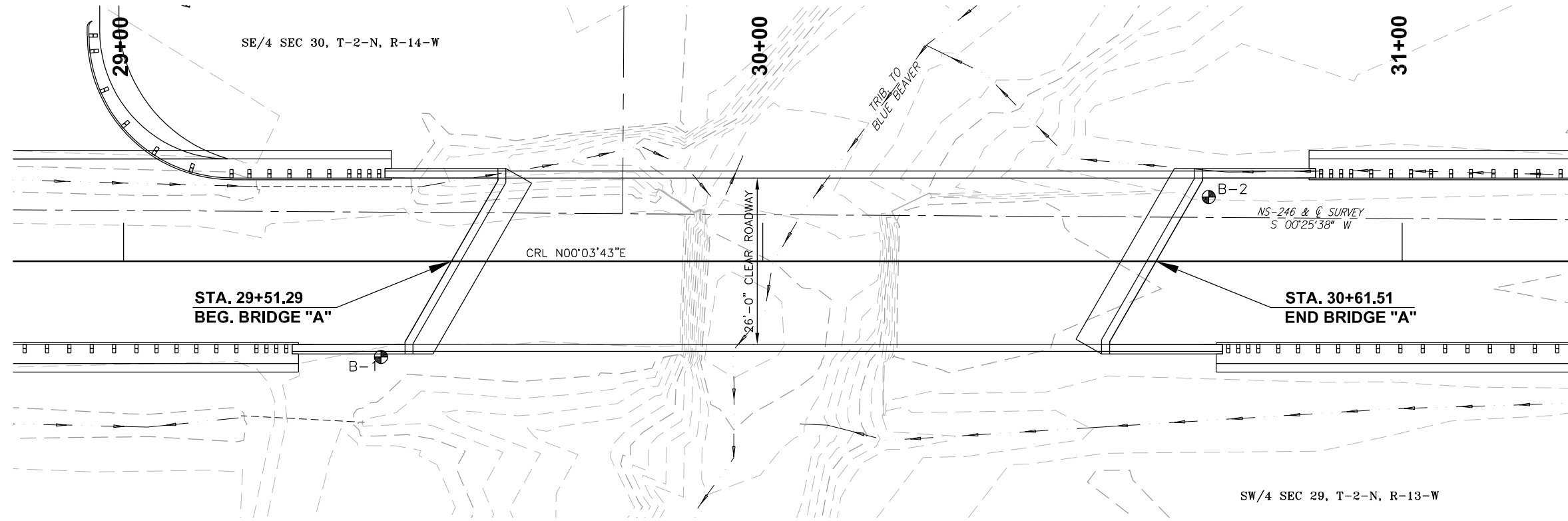
BRIDGE "A": 105' X 26' CLEAR ROADWAY
 CONVENTIONAL PCB SPAN SKEWED 30 DEGREES
 LEFT FORWARD WITH TR-3 CONCRETE RAILS.
 CENTERLINE STATION 30+06.40.

EXISTING BRIDGE: 34' I-BEAM SPAN. (REMOVE)

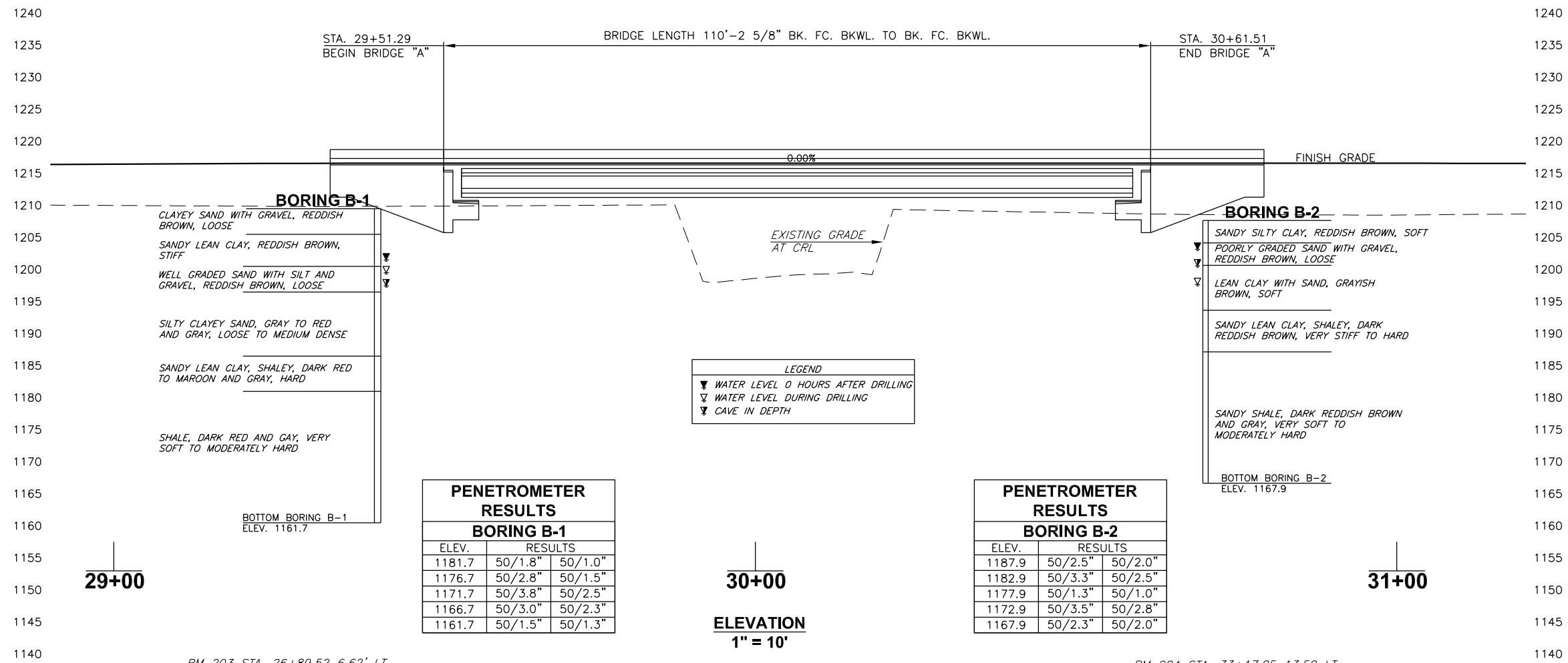
TRIBUTARY TO BLUE BEAVER CREEK COMANCHE COUNTY

BRIDGE "A" GENERAL PLAN AND ELEVATION

JOB PIECE NO. 30440(04) SHEET NO. B001



PLAN
CONTOUR INTERVAL = 1'



BORING B-1

CLAYEY SAND WITH GRAVEL, REDDISH BROWN, LOOSE

SANDY LEAN CLAY, REDDISH BROWN, STIFF

WELL GRADED SAND WITH SILT AND GRAVEL, REDDISH BROWN, LOOSE

SILTY CLAYEY SAND, GRAY TO RED AND GRAY, LOOSE TO MEDIUM DENSE

SANDY LEAN CLAY, SHALEY, DARK RED TO MAROON AND GRAY, HARD

SHALE, DARK RED AND GRAY, VERY SOFT TO MODERATELY HARD

BOTTOM BORING B-1
ELEV. 1161.7

BORING B-2

SANDY SILTY CLAY, REDDISH BROWN, SOFT

POORLY GRADED SAND WITH GRAVEL, REDDISH BROWN, LOOSE

LEAN CLAY WITH SAND, GRAYISH BROWN, SOFT

SANDY LEAN CLAY, SHALEY, DARK REDDISH BROWN, VERY STIFF TO HARD

SANDY SHALE, DARK REDDISH BROWN AND GRAY, VERY SOFT TO MODERATELY HARD

BOTTOM BORING B-2
ELEV. 1167.9

LEGEND

▼ WATER LEVEL 0 HOURS AFTER DRILLING

▽ WATER LEVEL DURING DRILLING

▽ CAVE IN DEPTH

PENETROMETER RESULTS BORING B-1

ELEV.	RESULTS	
1181.7	50/1.8"	50/1.0"
1176.7	50/2.8"	50/1.5"
1171.7	50/3.8"	50/2.5"
1166.7	50/3.0"	50/2.3"
1161.7	50/1.5"	50/1.3"

PENETROMETER RESULTS BORING B-2

ELEV.	RESULTS	
1187.9	50/2.5"	50/2.0"
1182.9	50/3.3"	50/2.5"
1177.9	50/1.3"	50/1.0"
1172.9	50/3.5"	50/2.8"
1167.9	50/2.3"	50/2.0"

BRIDGE "A": 105' X 26' CLEAR ROADWAY
CONVENTIONAL PCB SPAN SKEWED 30 DEGREES
LEFT FORWARD WITH TR-3 CONCRETE RAILS.
CENTERLINE STATION 30+06.40.

EXISTING BRIDGE: 34' I-BEAM SPAN. (REMOVE)

TRIBUTARY TO BLUE BEAVER CREEK COMANCHE COUNTY

GEOTECHNICAL INFORMATION

JOB PIECE NO. 30440(04) SHEET NO. B002

BM 203 STA. 26+89.52 6.62' LT.
SET RR SPIKE IN 10" TREE ELEV. 1212.58

BM 204 STA. 33+17.85 13.58 LT.
SET RR SPIKE IN 20" TREE ELEV. 1213.42

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

PROJECT LIMITS:

 PROJECT LIES ALONG N-S SECTION LINE 246, AIRPORT ROAD, WITHIN
 SECTIONS 29 AND 306, T-2-N, R-13-W, COMANCHE COUNTY, OKLAHOMA.

PROJECT DESCRIPTION: _____

 CONSTRUCTION OF A 105' PCB SPAN AND APPROACH ROADWAYS.

- SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:**
1. INSTALL PERIMETER EROSION CONTROL DEVICES.
 2. VEGETATIVE STRIPPING, UNDERCUT AND STOCKPILE TOPSOIL.
 3. ROADWAY EXCAVATION AND EMBANKMENT.
 4. INSTALL SILT FENCE, DIKES WITHIN PROJECT LIMITS.
 5. ABUTMENT CONSTRUCTION.
 6. PLACE CHANNEL RIPRAP.
 7. COMPLETE BRIDGE CONSTRUCTION.
 8. CULVERT TRENCHING AND CONSTRUCTION.
 9. VEGETATIVE MULCHING.
 10. CONST. FINISHED ROADWAY PAVING.
 11. SPREAD TOPSOIL.
 12. INSTALL SOLID SLAB SOD.

SOIL TYPE: HENNESSEY AND ADDINGTON UNITS

AREA TO BE DISTURBED: 4.9 ACRES

OFFSITE AREA TO BE DISTURBED: _____
 (FOR CONTRACTOR USE)

MAXIMUM ACRES TO BE DISTURBED AT ANY ONE TIME: _____
 (FOR CONTRACTORS USE)

LATITUDE & LONGITUDE OF CENTER OF PROJECT: LATITUDE 34° 36' 52"
 LONGITUDE 98° 35' 52"

NAME OF RECEIVING WATERS: TRIBUTARY TO BLUE BEAVER 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.

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

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

NOTE: TEMPORARY EROSION CONTROL METHODS ARE TO BE USED ON ALL DISTURBED AREAS WHERE CONST. 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:

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

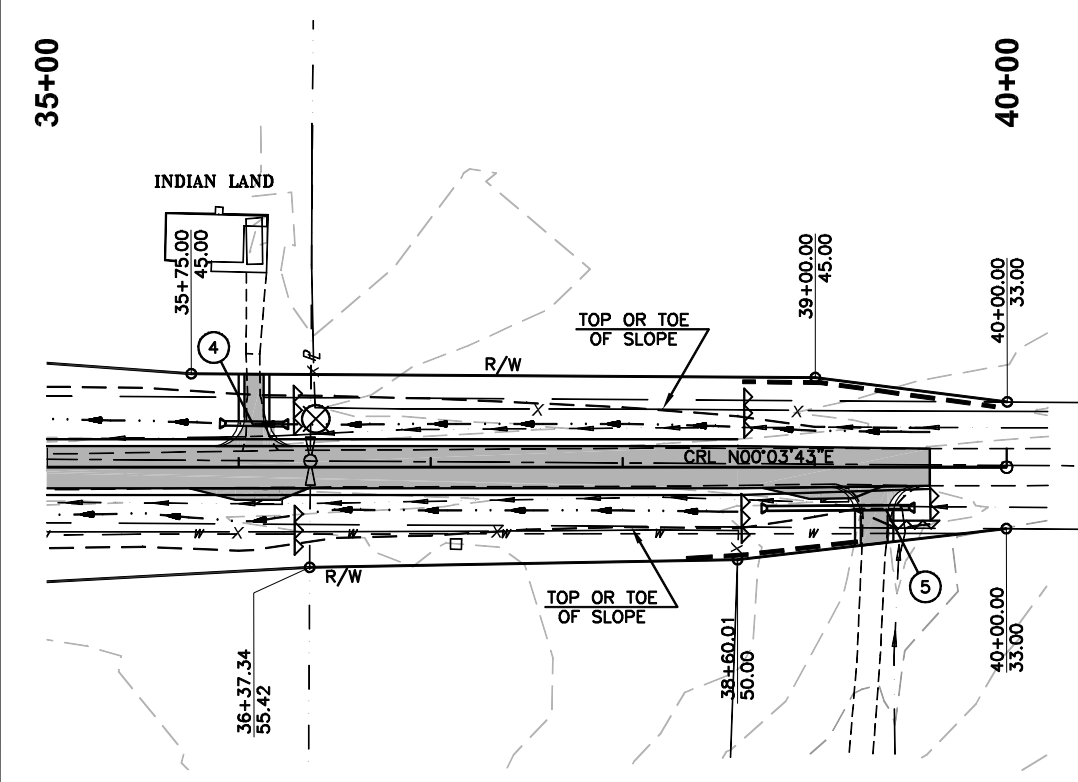
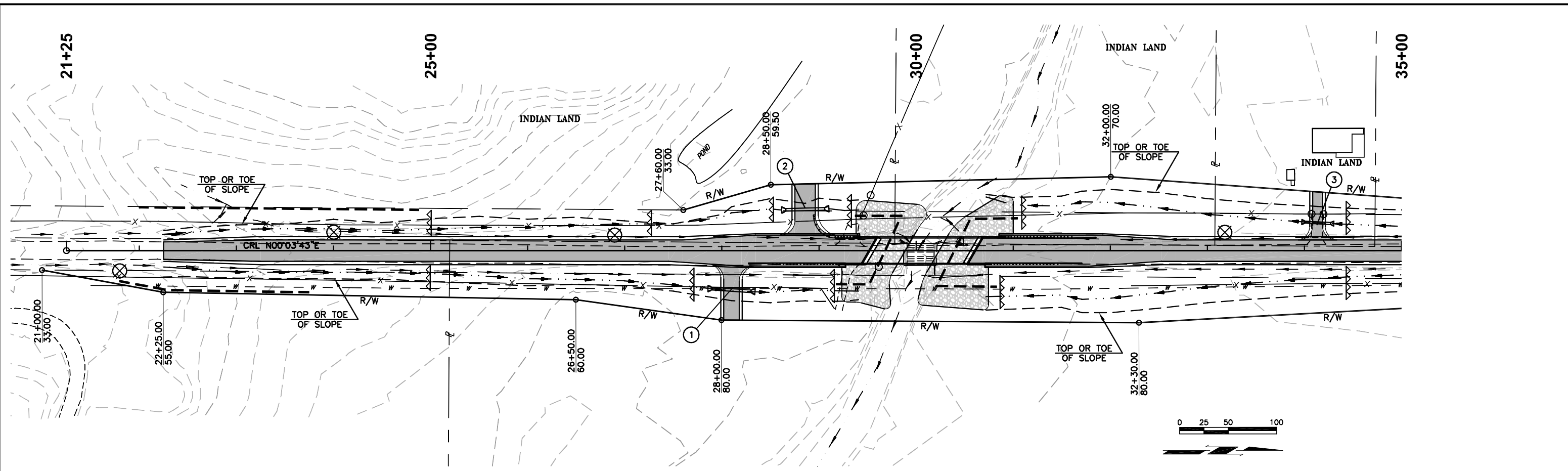
IN ADDITION:

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

TRIBUTARY TO BLUE BEAVER CREEK COMANCHE COUNTY

STORM WATER MANAGEMENT PLAN

JOB PIECE NO. 30440(04) SHEET NO. R001



EROSION CONTROL AND CONSTRUCTION NOTES

SOLID SLAB SODDING SHALL BE PLACED ON ALL DISTURBED AREAS.

THE PLANTING OF SOLID SLAB SOD SHALL BE RESTRICTED TO THE PERIOD FROM MARCH 1 TO AUGUST 31.

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.

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

TOPSOIL NOTE:
RESERVED TOPSOIL SHALL BE SPREAD APPROX. 5 INCHES THICK FIRST ON COMPLETED FORE SLOPES OF FILL SECTIONS AND THE REMAINDER ON COMPLETED CUT SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER.

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.

EROSION CONTROL QUANTITIES			
DESCRIPTION	UNITS	QUANTITY	
TEMPORARY SILT FENCE	(1) LF	1,200.00	
TEMPORARY SILT DIKE	(1) LF	300.00	
SOLID SLAB SODDING	SY	18,599.00	
VEGETATIVE MULCHING	(2) AC	7.70	
CLASS C CONCRETE	(3) CY	10.00	
TYPE 1-A PLAIN RIPRAP	TON	1,214.00	
TYPE 1-A FILTER BLANKET	TON	316.00	

LEGEND	
TEMPORARY SILT FENCE	---
TEMPORARY SILT DIKE	▲▲▲▲
SOLID SLAB SOD DITCH	→→→→
RIPRAP	▨

- (1) ESTIMATED QUANTITY FOR USE IN CONJUNCTION WITH THIS SHEET AND AS DIRECTED BY THE ENGINEER.
- (2) QUANTITY BASED ON 3.85 ACRES AT TWO APPLICATIONS.
- (3) QUANTITY INCLUDES 10 C.Y. FOR USE AS DIRECTED BY THE ENGINEER.

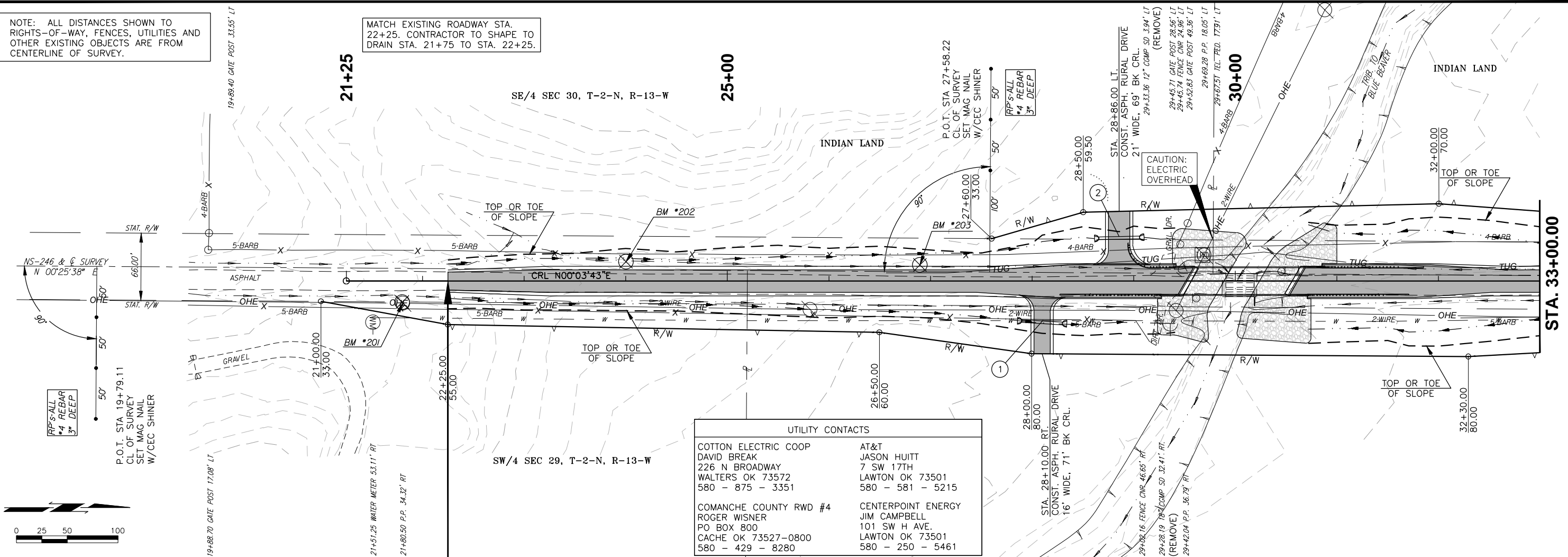
TRIBUTARY TO BLUE BEAVER CREEK COMANCHE COUNTY

EROSION CONTROL PLAN

JOB PIECE NO. 30440(04) SHEET NO. R002

NOTE: ALL DISTANCES SHOWN TO RIGHTS-OF-WAY, FENCES, UTILITIES AND OTHER EXISTING OBJECTS ARE FROM CENTERLINE OF SURVEY.

MATCH EXISTING ROADWAY STA. 22+25. CONTRACTOR TO SHAPE TO DRAIN STA. 21+75 TO STA. 22+25.



UTILITY CONTACTS	
COTTON ELECTRIC COOP	AT&T
DAVID BREAK	JASON HUITT
226 N BROADWAY	7 SW 17TH
WALTERS OK 73572	LAWTON OK 73501
580 - 875 - 3351	580 - 581 - 5215
COMANCHE COUNTY RWD #4	CENTERPOINT ENERGY
ROGER WISNER	JIM CAMPBELL
PO BOX 800	101 SW H AVE.
CACHE OK 73527-0800	LAWTON OK 73501
580 - 429 - 8280	580 - 250 - 5461

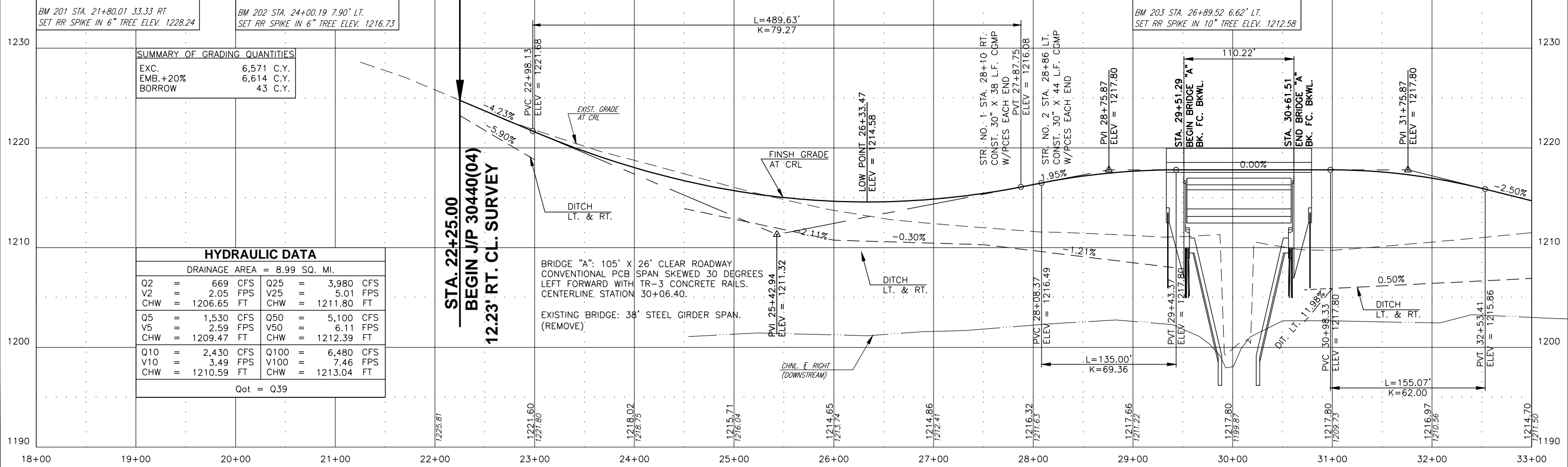
SUMMARY OF GRADING QUANTITIES	
EXC.	6,571 C.Y.
EMB. +20%	6,614 C.Y.
BORROW	43 C.Y.

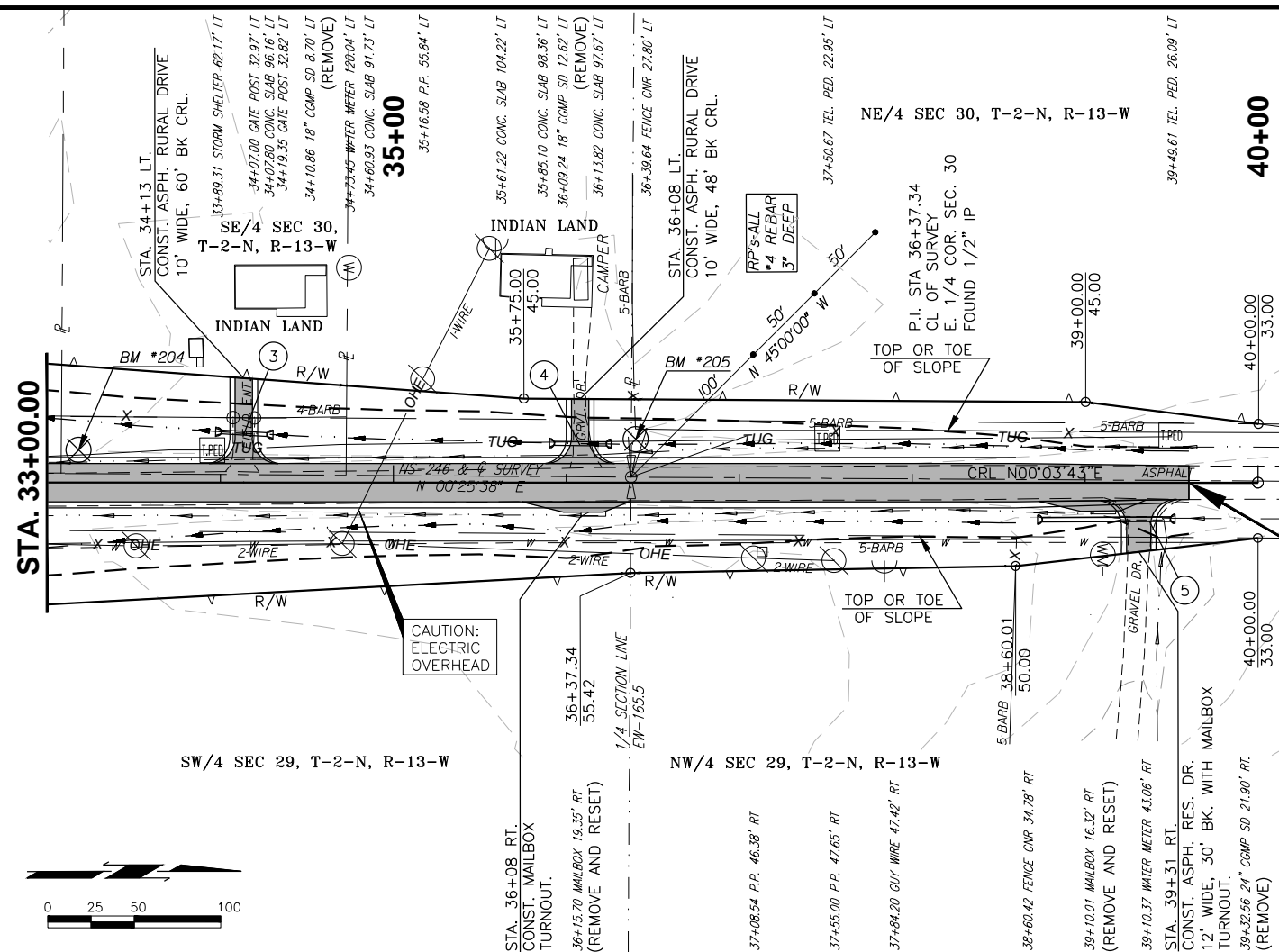
HYDRAULIC DATA			
DRAINAGE AREA = 8.99 SQ. MI.			
Q2 =	669 CFS	Q25 =	3,980 CFS
V2 =	2.05 FPS	V25 =	5.01 FPS
CHW =	1206.65 FT	CHW =	1211.80 FT
Q5 =	1,530 CFS	Q50 =	5,100 CFS
V5 =	2.59 FPS	V50 =	6.11 FPS
CHW =	1209.47 FT	CHW =	1212.39 FT
Q10 =	2,430 CFS	Q100 =	6,480 CFS
V10 =	3.49 FPS	V100 =	7.46 FPS
CHW =	1210.59 FT	CHW =	1213.04 FT
Qot = Q39			

STA. 22+25.00
BEGIN J/P 30440(04)
12.23' RT. CL. SURVEY

BRIDGE "A": 105' X 26' CLEAR ROADWAY CONVENTIONAL PCB SPAN SKEWED 30 DEGREES LEFT FORWARD WITH TR-3 CONCRETE RAILS. CENTERLINE. STATION 30+06.40.

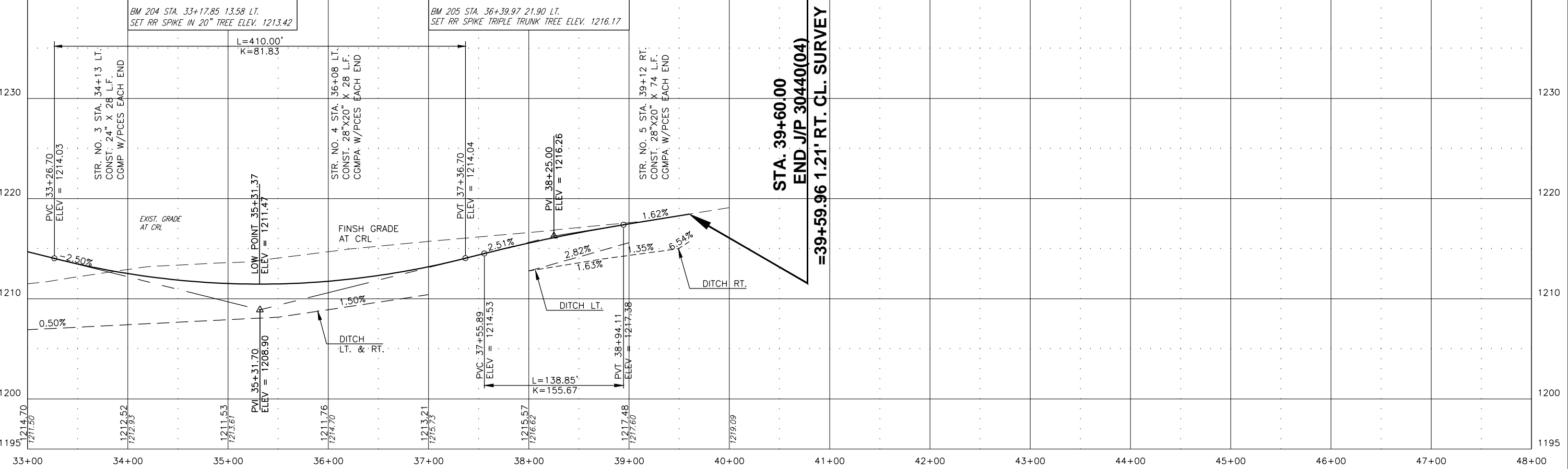
EXISTING BRIDGE: 38' STEEL GIRDER SPAN. (REMOVE)

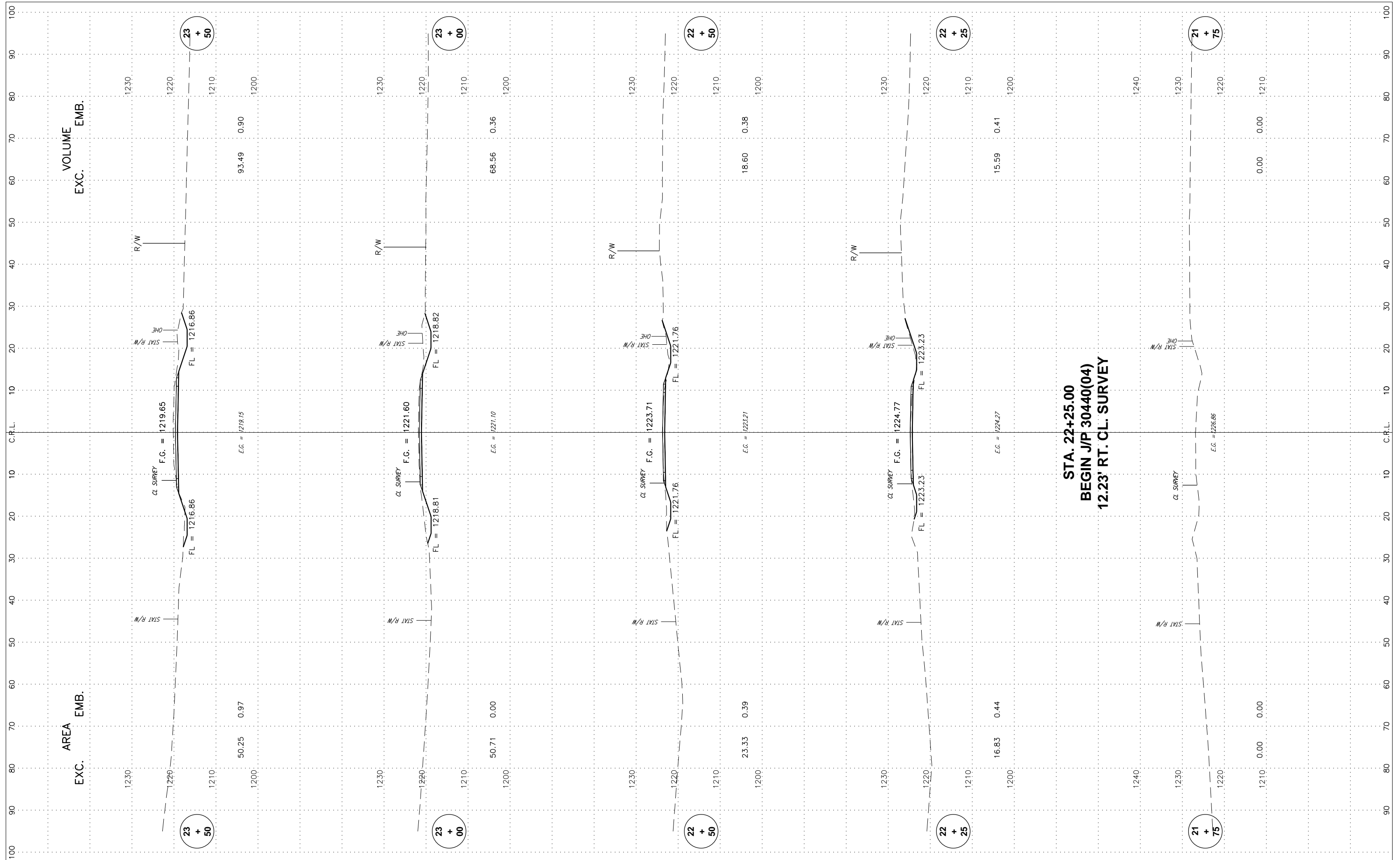




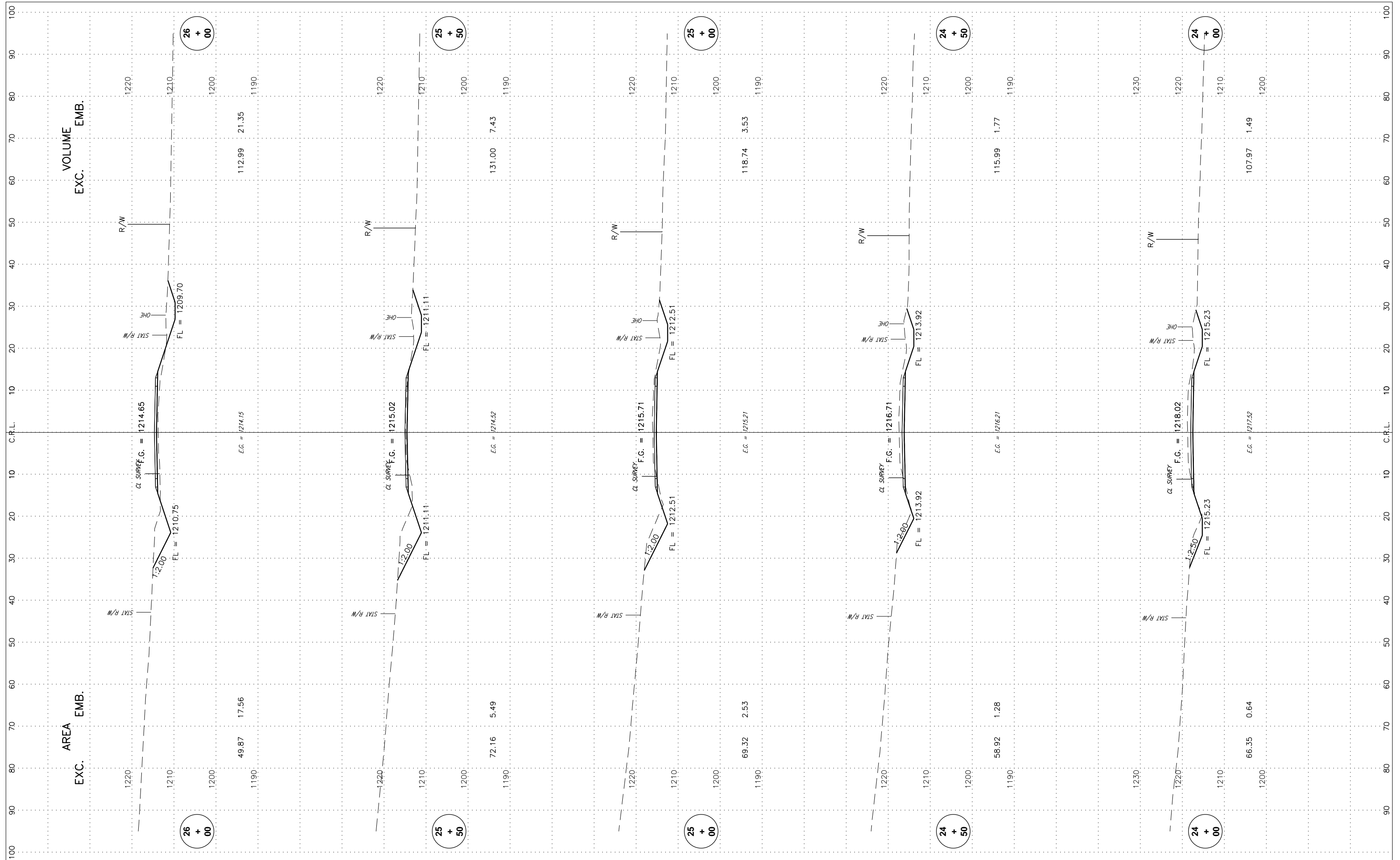
CONTRACTOR TO MATCH EXISTING ROADWAY STA. 39+60. SHAPE TO DRAIN STA. 39+60 - 40+00.

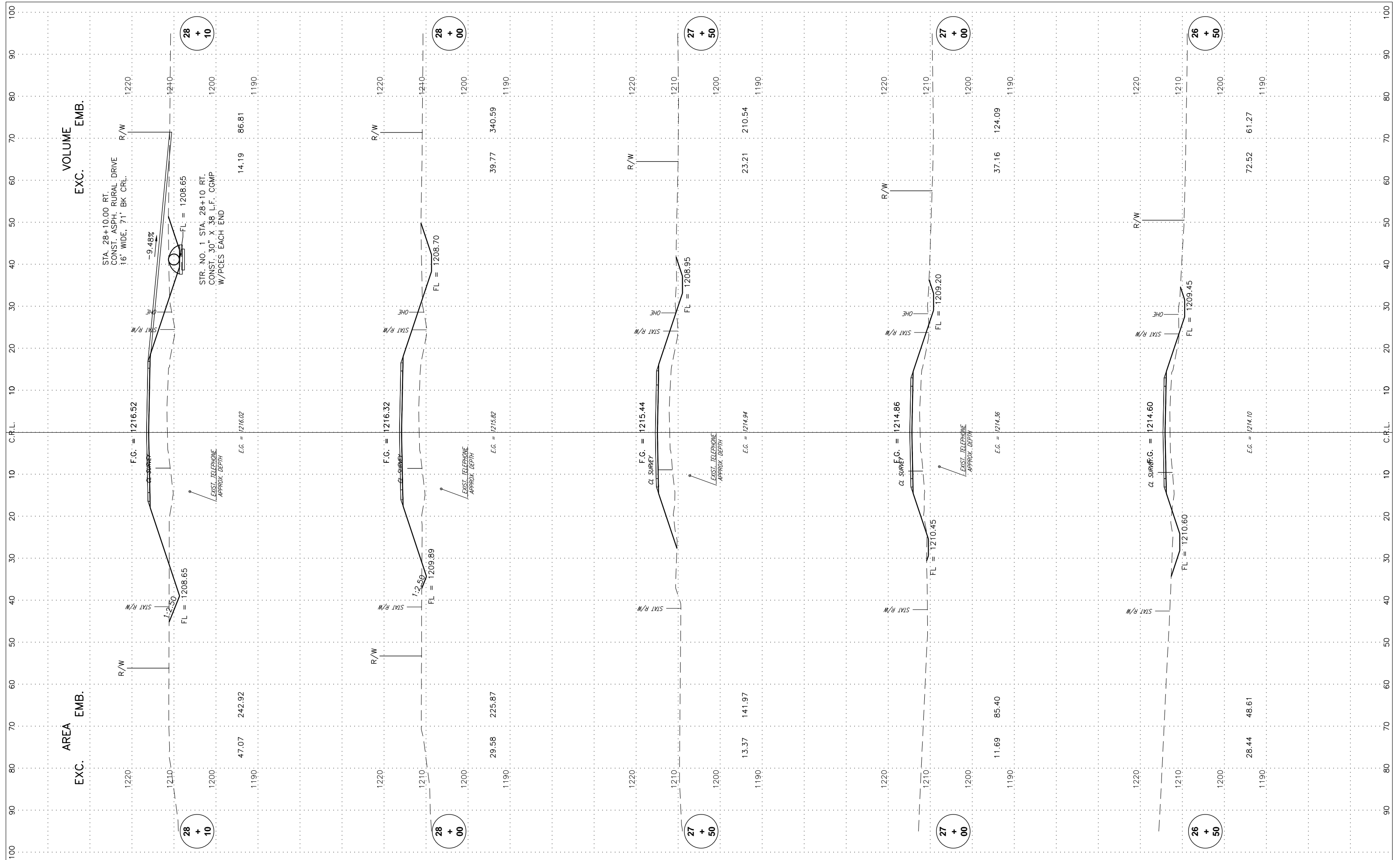
NOTE: ALL DISTANCES SHOWN TO RIGHTS-OF-WAY, FENCES, UTILITIES AND OTHER EXISTING OBJECTS ARE FROM CENTERLINE OF SURVEY.

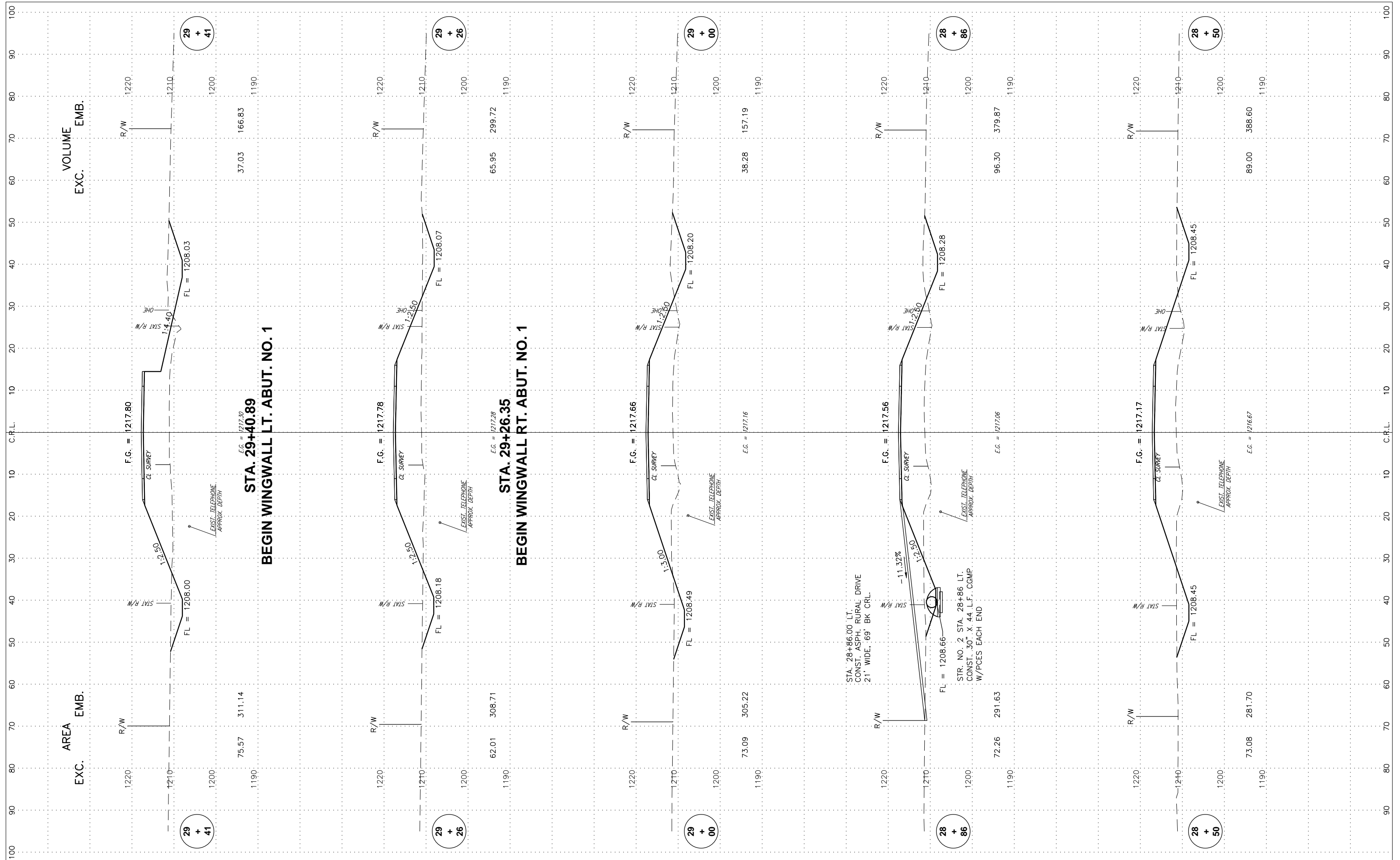


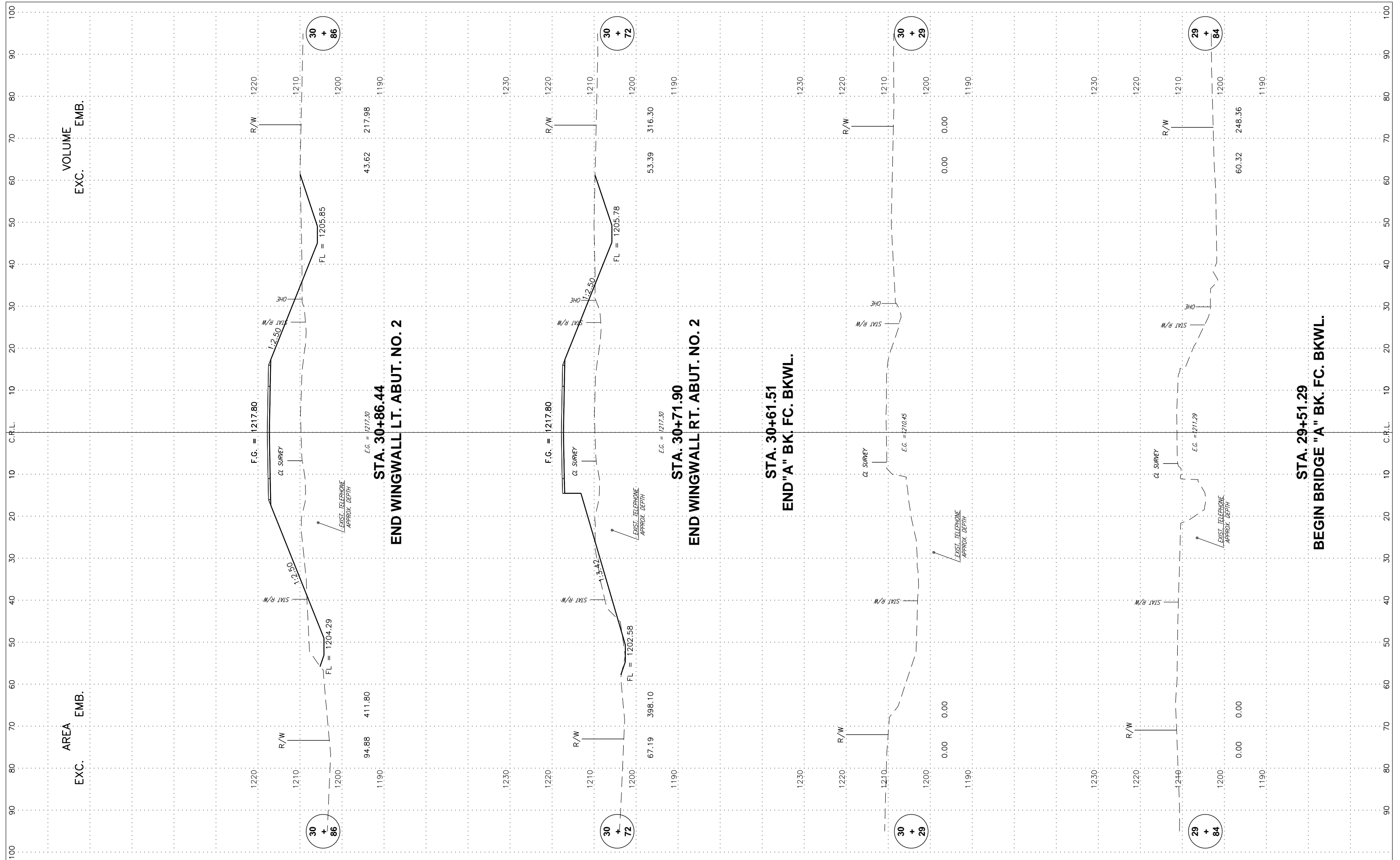


**STA. 22+25.00
 BEGIN J/P 30440(04)
 12.23' RT. CL. SURVEY**









30 + 86

30 + 86

STA. 30+86.44
END WINGWALL LT. ABUT. NO. 2

30 + 72

30 + 72

STA. 30+71.90
END WINGWALL RT. ABUT. NO. 2

30 + 29

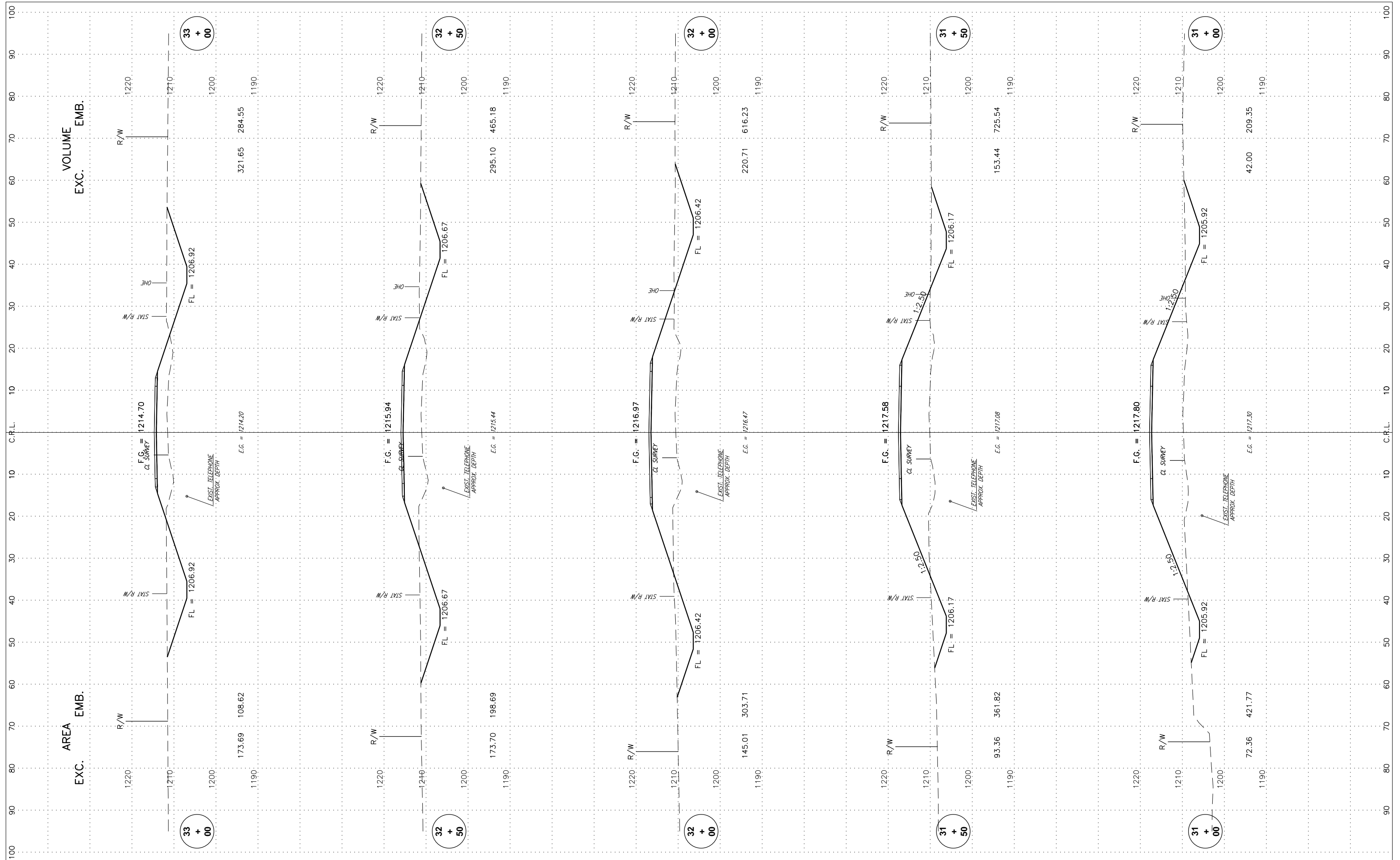
30 + 29

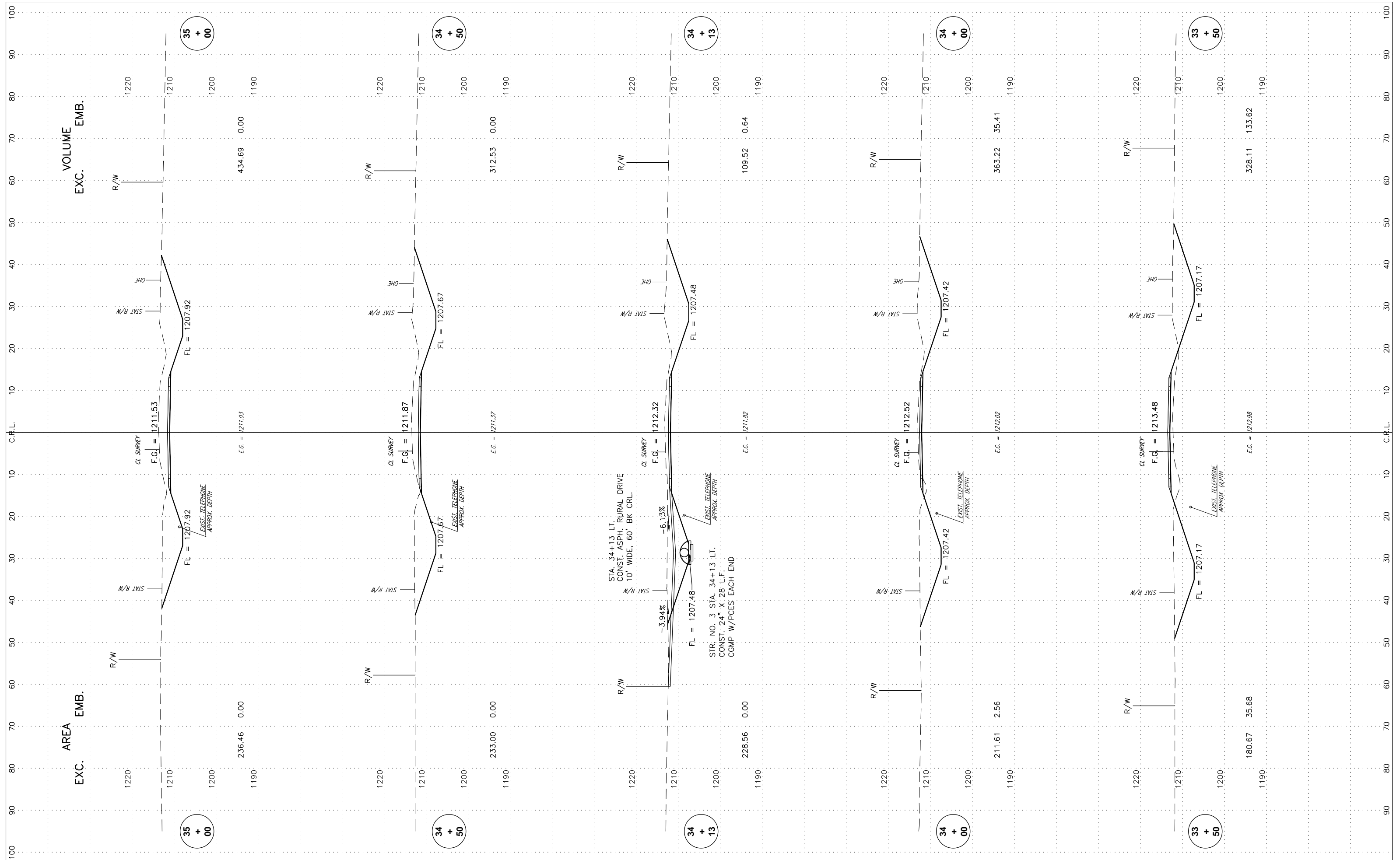
STA. 30+61.51
END "A" BK. FC. BKWL.

29 + 84

29 + 84

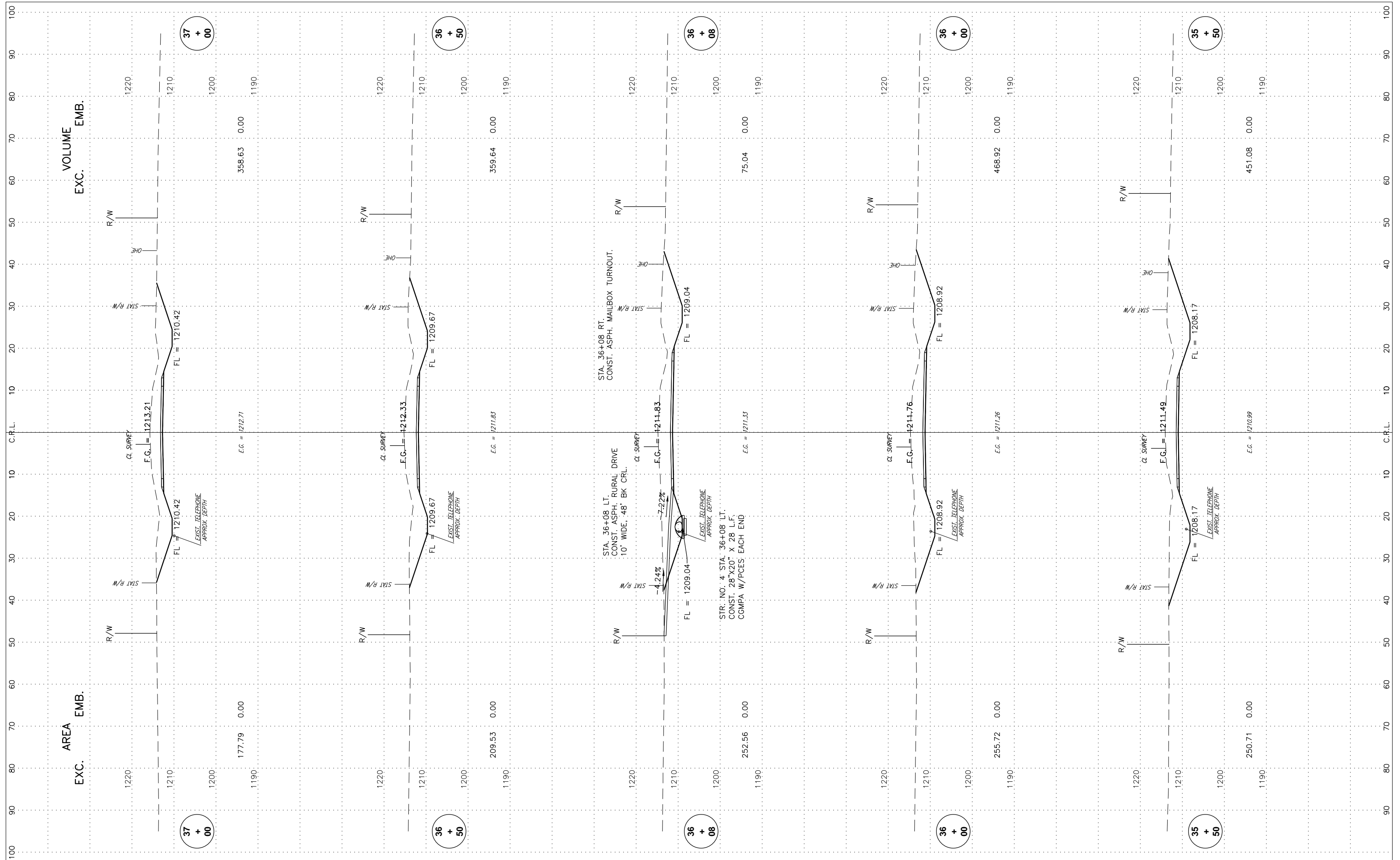
STA. 29+51.29
BEGIN BRIDGE "A" BK. FC. BKWL.





STA. 34+13 LT.
 CONST. ASPH. RURAL DRIVE
 10' WIDE, 60' BK CRL.

STR. NO. 3 STA. 34+13 LT.
 CONST. 24" X 28" L.F.
 CGMP W/PCES EACH END



VOLUME
EXC. EMB.

AREA
EXC. EMB.

37
+
00

37
+
00

36
+
50

36
+
50

36
+
08

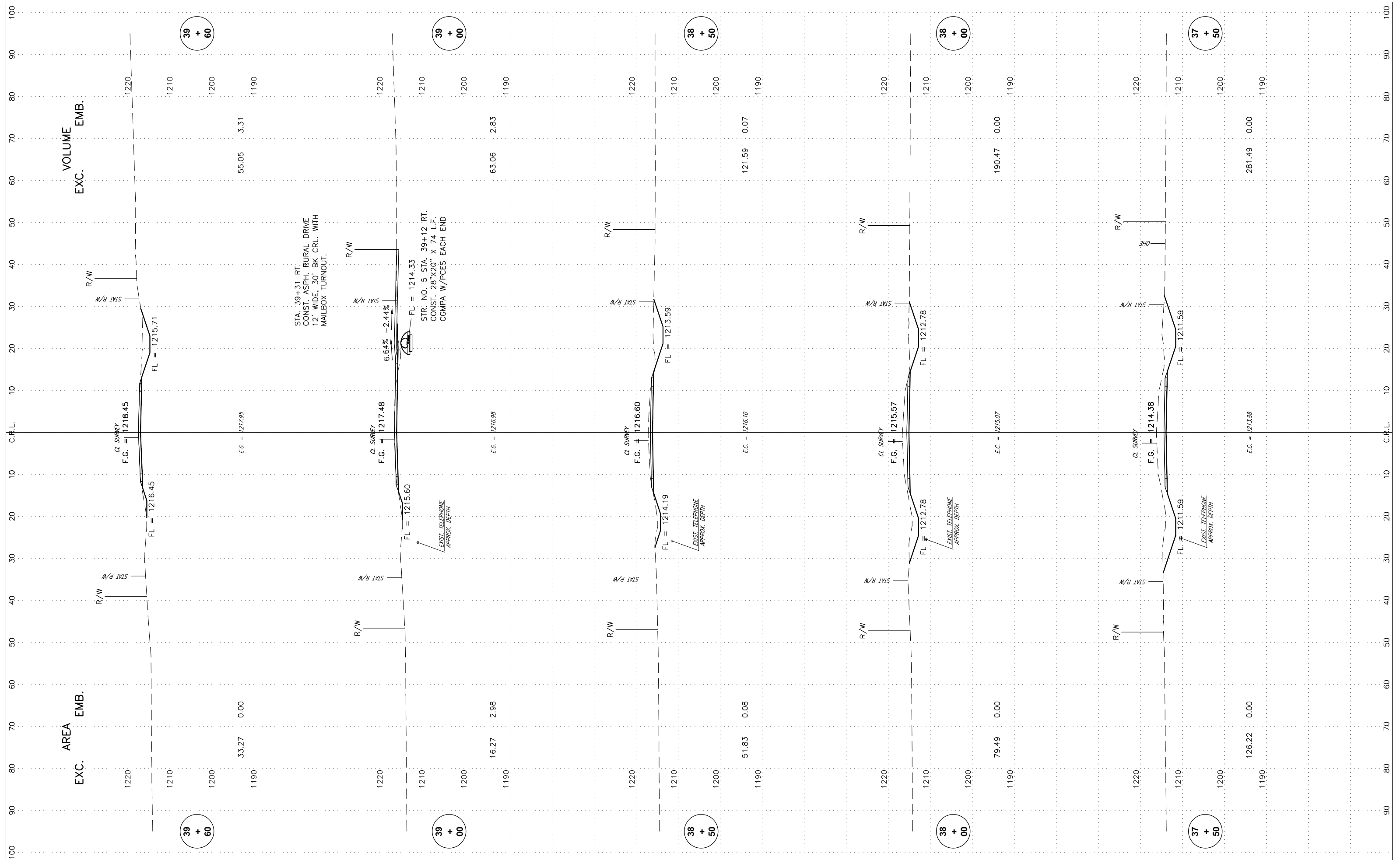
36
+
08

36
+
00

36
+
00

35
+
50

35
+
50



VOLUME
EMB.

AREA
EMB.

39
+

39
+

60

60

39
+

39
+

00

00

38
+

38
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50

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38
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38
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00

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37
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37
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C.R.L.
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C.R.L.
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