

FED. ROAD DIST. NO.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	STP-247D(020)CI	1	23

STATE OF OKLAHOMA  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED  
**COUNTY BRIDGE**  
FEDERAL AID PROJECT NO. STP-247D(020)CI  
BRIDGE AND APPROACH PLANS  
MAJOR COUNTY  
SAND CREEK

STATE JOB NO. 28348(04)  
BRIDGE A LOCATION NO 47N2550E0510009  
EXISTING NBI NO. N/A; NEW NBI NO. 31936  
LOCATION N36°15'41"; LONGITUDE W98°27'44"

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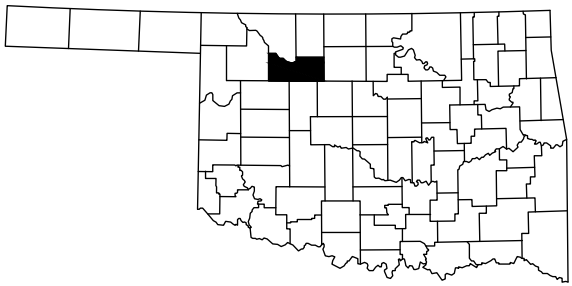
THE FOLLOWING STANDARDS SHALL BE USED:

2009 STANDARDS

ROADWAY	TRAFFIC	MAINTENANCE
CET4S-3-2	DU1-1-00	GRAU1-1-00
PSE-1-0	RSD1-1-00	GRH1-1-00
FHTMPP-1-0	TCS1-1-01	GRH2-1-00
RDI-3-1	TCS2-1-00	PM3-1-02
SSS-1-1	TCS4-1-01	GMS1-1-00
	TCS5-1-00	SSP1-1-02
	TCS6-1-02	SSA1-1-00

BRIDGE

CB26-C-SK30-ABUT-PC2-1-01E	CB26-C-SK0.30-PCB-BC-00E	CB26-C-SK30-SPR-QUAN-PCB-2-01E	EJ-DTL-02E
CB26-C-SK30-ABUT-PC2-2-02E	CB26-C-SK0.30-PCB-II-50-01E	CB26-C-SK30-WING-PC2-01E	EJ-SK-04E
CB26-C-SK30-ABUT-MISC-01E	CB26-C-SK0.30-PCB-DTL-1-01E	CB26-C-SK30-XSECT-PC234-01E	HP1-2-01E
CB26-C-SK30-DKSLB-1-01E	CB26-C-SK0.30-PCB-DTL-2-01E	CB26-C-SK30-DIA-END-PC234-01E	TR3-2-01E
CB26-C-SK30-DKSLB-2-01E	CB26-C-SK30-LSECT-PCB-01E	CB26-C-SK0.30-DIA-INT-PCB-01E	
CB26-C-SK30-DKSLB-BLST-01E	CB26-C-SK30-SPR-QUAN-PCB-1-01E	CB26-C-SK0.30-BRG-PC2-01E	

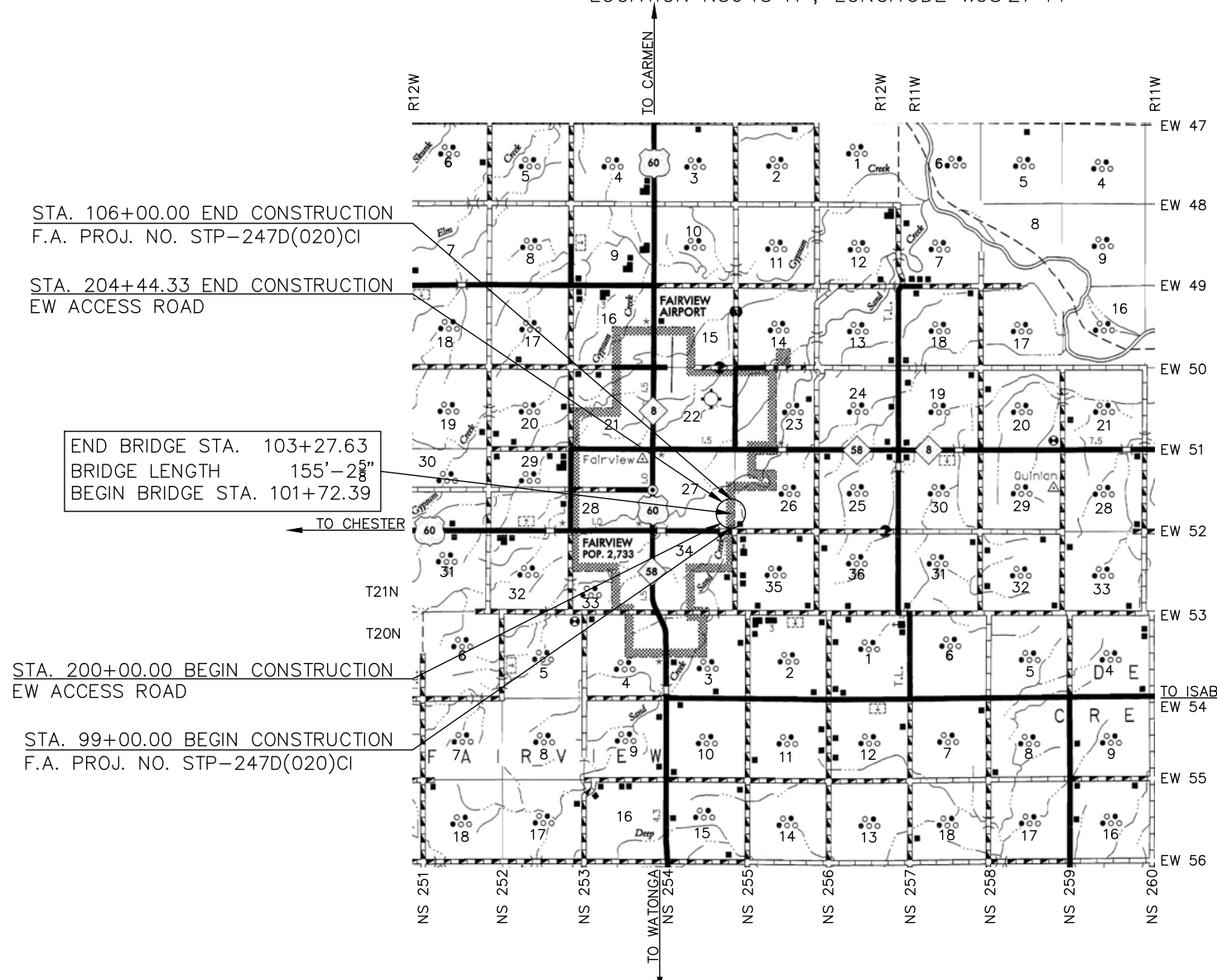


DESIGN DATA

ADT 2017= 88  
ADT 2037= 131  
DESIGN SPEED= 55 MPH  
TERRAIN- ROLLING  
FLEX ESALS= 0.13 M.

SURVEY DATA

- HORIZONTAL CONTROL
  - HORIZONTAL CONTROL FOR THIS SURVEY IS THE ESTABLISHED SECTION CORNERS ALONG THE CONSTRUCTION REFERENCE LINE & SECTION LINE
- VERTICAL CONTROL
  - LEVEL DATUM IS MEAN SEA LEVEL (U.S.C. & G.S.)



STA. 106+00.00 END CONSTRUCTION  
F.A. PROJ. NO. STP-247D(020)CI

STA. 204+44.33 END CONSTRUCTION  
EW ACCESS ROAD

END BRIDGE STA. 103+27.63  
BRIDGE LENGTH 155'-2 8/8"  
BEGIN BRIDGE STA. 101+72.39

STA. 200+00.00 BEGIN CONSTRUCTION  
EW ACCESS ROAD

STA. 99+00.00 BEGIN CONSTRUCTION  
F.A. PROJ. NO. STP-247D(020)CI

PROJECT LENGTHS BASED ON CRL

SCALES

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

CONVENTIONAL SIGNS

	PROPOSED ROAD
	RAILROADS
	RANGE & TOWNSHIP SECTION LINES
	QUARTER SECTION LINES
	FENCES
	GROUND LINE
	EXISTING ROADS
	BASE LINE
	GRADE LINES
	TELEPHONE & TELEGRAPH
	POWER LINES
	OIL WELLS
	BUILDINGS
	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 & RESET
	RIGHT-OF-WAY MARKERS-NEW
	CONTROLLED ACCESS
	RIGHT-OF-WAY FENCE

ROADWAY LENGTH	989.11 FT.	0.187 MI.
BRIDGE LENGTH	155.22 FT.	0.029 MI.
PROJECT LENGTH	1144.33 FT.	0.216 MI.
EXCEPTIONS	NONE	
EQUATIONS	STA. 104+43.37=STA. 204+44.33	

DATE 4-24-17

COMM. DIST. 1 [Signature]

COMM. DIST. 2 [Signature]

COMM. DIST. 3 [Signature]

ATTEST [Signature] COUNTY CLERK

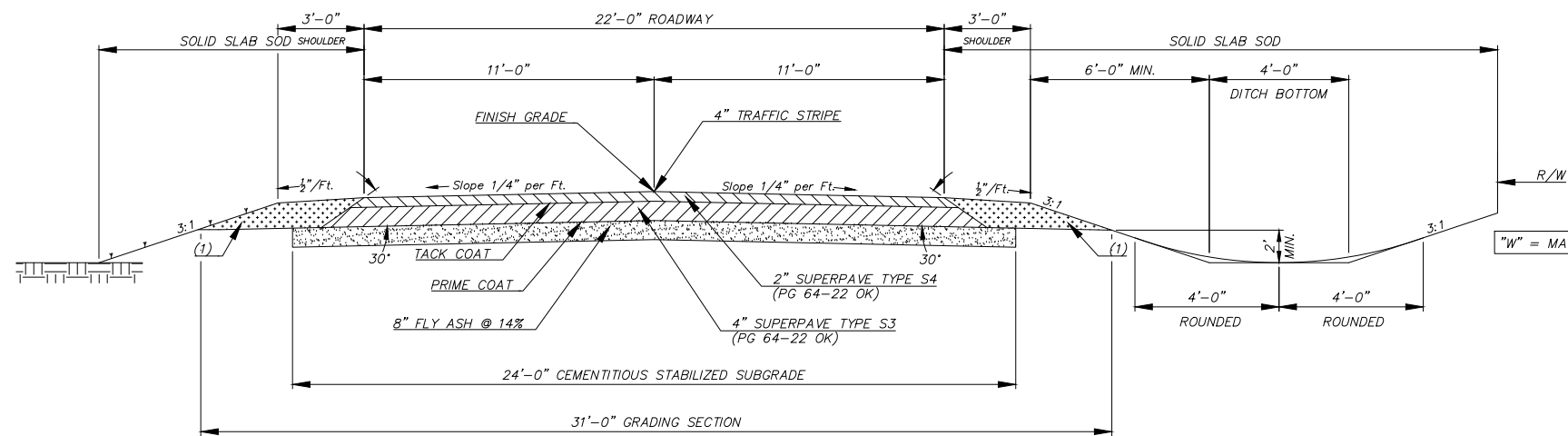


CIRCUIT ENGINEERING DIST. 8

2901 N. VAN BUREN  
ENID, OK 73703  
(580) 237-4810

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

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



TYPICAL SECTION  
NS-255, EW-52 & EW ACCESS RD.

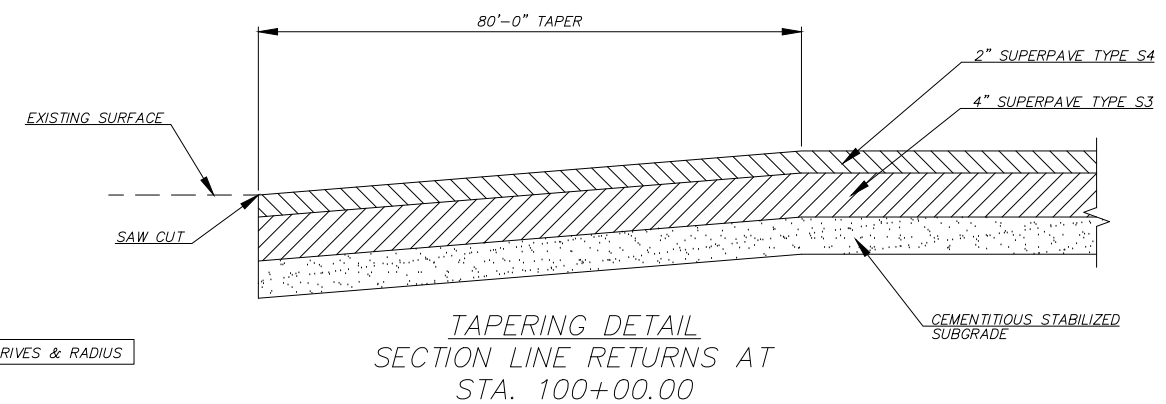
(1) SHOULDERING UP WILL BE INCLUDED  
IN THE EARTHWORK PAY ITEM.

SUMMARY OF MAINLINE SURFACING QUANTITIES *							
STATION EXTENT	LENGTH	FLY ASH	CEMENT. STAB. SUBGRADE	PRIME COAT	TACK COAT	SUPERPAVE TYPE S3	SUPERPAVE TYPE S4
	FT.	TON	S.Y.	GAL.	GAL.	TONS	TONS
99+00.00 TO 101+72.39	272.39	46.00	907.00	318.00	45.00	205.00	97.00
103+27.61 TO 106+00.00	272.39	46.00	907.00	326.00	46.00	213.00	100.00
200+00.00 TO 204+44.33	444.33	60.00	1,186.00	415.00	56.00	257.00	124.00
SHEET TOTALS	989.11	152.00	3,000.00	1,059.00	147.00	675.00	321.00

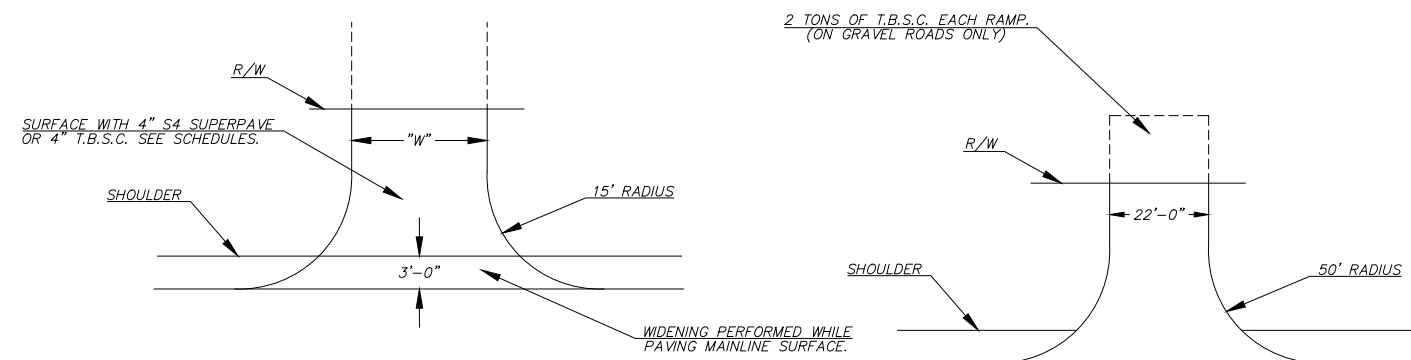
\*INCLUDES QUANTITIES FOR GUARDRAIL WIDENING.

SUMMARY OF DRIVES & SEC. LINE RETURNS										
STATION	LOCATION	STYLE	WIDTH	TACK COAT	SUPERPAVE TYPE S3	SUPERPAVE TYPE S4	T.B.S.C.	PRIME COAT	FLY ASH	CEMENT. STAB. SUBGRADE
			FT.	GAL.	TONS	TONS	TONS	GAL.	TON	S.Y.
100+00.00	RT.	S.L.R.	22.00	13.00	59.00	28.00		95.00	14.00	270.00
100+00.00	LT.	S.L.R.	22.00	19.00	87.00	42.00		139.00	20.00	397.00
104+82.00	RT.	FIELD	20.00				12.00			
105+65.00	LT.	FIELD	30.00				12.00			
TOTAL				32.00	146.00	70.00	24.00	234.00	34.00	667.00

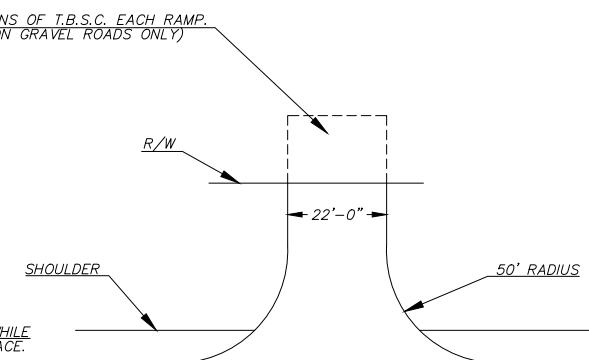
SUMMARY OF DRAINAGE STRUCTURES										
STR. NO.	STATION	DESCRIPTION	DESIGN	FL. INLET	FL. OUTLET	FILL HEIGHT	REINFORCED CONCRETE PIPE	CORR. GALV. STEEL PIPE	CULVERT END TREATMENT	PREFAB. CULVERT END SECTION
							613(A) ROUND 36"	613(B) ARCH 21"x15" 36"	613(M) TYPE A4	613(L) ROUND 36"
				FT.	FT.	FT.	L.F.	L.F.	EA.	EA.
1	105+65.00	CONST. 21"x15"x60' CGSPA SIDE DRAIN, LT.	CET	0.00	0.00	1.00		60.00	2.00	
2	201+12.50	CONST. 36"x64' RCP CROSS DRAIN	PCES-4	0.00	0.00	1.00	64.00			2.00
SHEET TOTAL							64.00	60.00	2.00	2.00



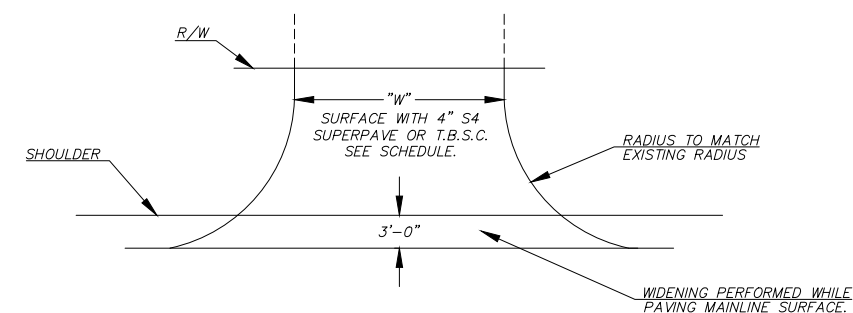
TAPERING DETAIL  
SECTION LINE RETURNS AT  
STA. 100+00.00



TYPICAL PRIVATE DRIVE  
OR FIELD ENTRANCE



TYPICAL SECTION LINE RETURN



TYPICAL APRON DETAIL  
OR COMMERCIAL DRIVE

SUMMARY OF SIGNS									
STATION	LOCATION	TYPE	SIZE	SIGN AREA	2 1/4" X 12 GA. SQUARE TUBE POSTS		LABEL	BLANK	
					SIGN POST LENGTH	LATERAL CLEARANCE FROM SURFACE			
				S.F.	FT.	FT.			
99+54.00	RT.	STOP	36"x36"	7.46	12	12	R1-1E	B-36(0)	
100+48.00	LT.	STOP	36"x36"	7.46	12	12	R1-1E	B-36(0)	
104+25.00	LT.	STOP	36"x36"	7.46	12	12	R1-1E	B-36(0)	
				22.38					

MAJOR COUNTY SAND CREEK

TYPICAL SECTION, LAYER  
DETAILS & DRIVES

GENERAL CONSTRUCTION NOTES (BRIDGE)

ALL CONSTRUCTION AND MATERIALS SHALL COMPLY WITH THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION ENGLISH VERSION, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

THE BRIDGE SITE WILL BE CLOSED TO ALL PUBLIC TRAFFIC DURING CONSTRUCTION, ACCESS WILL BE OPEN TO LOCAL TRAFFIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TRAFFIC CONTROL. ALL SIGNS, BARRICADES, LIGHTS, AND OTHER TRAFFIC CONTROL DEVICES AND MEASURES, ETC. SHALL BE PROVIDED IN ACCORDANCE WITH THE STANDARDS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION AS REVISED, AS SHOWN ON THE TCS STANDARDS AND ON DETAIL SHEETS. ALL CONSTRUCTION SIGNS WITH (10) SQUARE FEET OR MORE WILL BE DOUBLE POSTED.

ABUTMENT PILING CAPACITY:

THE MAXIMUM FACTORED PILE LOAD FOR EACH HP 12X53 PILE IS 67.6 TONS. ALL PILE SHALL BE AASHTO M270 GRADE 50.

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

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

WHERE:

$\phi$  = RESISTANCE FACTOR OF 0.4

E = ENERGY PRODUCED BY THE HAMMER PER BLOW IN FOOT-POUNDS. FOR GRAVITY AND SINGLE ACTING DIESEL HAMMERS, THE VALVE 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 & 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 SHOWN ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.

THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO THE COUNTY, CED #8, AND ODOT DIV 6 FOURTEEN (14) CALENDAR DAYS BEFORE ANY CONSTRUCTION OR DEMOLITION BEGINS ON THIS PROJECT.

PAY ITEM NOTES

(F-50) INCLUDES COST OF 4 TYPE 1 CODE 3 DELINEATORS (AMBER COLOR).

(R-51) INCLUDES 50.00 L.F. OF 48' RADIUS BEND.

(1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITY. SEE 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, "PLAN QUANTITIES" SECTION 109.01(B).

(2) SHALL INCLUDE ALL TRAFFIC CONTROL DEVICES NECESSARY TO REGULATE TRAFFIC DURING CONSTRUCTION. THIS ITEM SHALL BE PAID FOR AS LUMP SUM DUE TO THE MINOR EXTENT OF CONSTRUCTION FOR THIS PROJECT. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH TCS STANDARDS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.

(3) TO BE USED IN PLACE OF GRANULAR BACKFILL ON STD. CB26..32-C-SK30-ABUT-MISC. INCLUDES 10 C.Y. TO EXTEND CLSM TO THE TOP OF SUBGRADE.

ENVIRONMENTAL MITIGATION NOTES

PROPERTIES ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES (NRHP) HAVE BEEN IDENTIFIED WITHIN THE PROJECT AREA. THE STATE HISTORIC PRESERVATION OFFICE (SHPO)'S APPROVAL IS BASED ON THE PROJECT AS CURRENTLY PROPOSED. IF THERE ARE ANY CHANGES TO THE PROJECT PLANS, FURTHER COORDINATION WITH THE SHPO WILL BE REQUIRED THROUGH THE ENVIRONMENTAL PROGRAMS DIVISION PRIOR TO THE BID SOLICITATION PROCESS OR FIELD CHANGES DURING CONSTRUCTION.

IN ORDER TO AVOID IMPACTS TO THE EXISTING BRIDGE (NBI NO. 07307) ON EW-52, THE FOLLOWING MUST BE DONE.

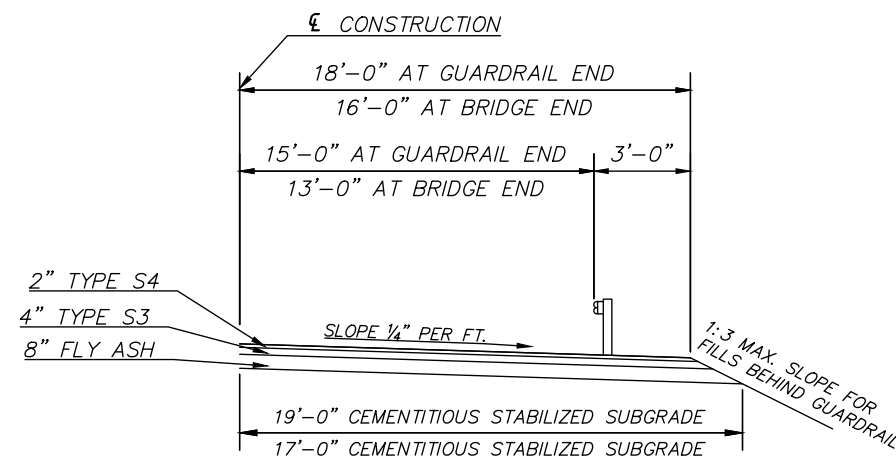
1. THE BRIDGE SHALL NOT BE REMOVED.
2. PRECAUTIONS SHALL BE TAKEN NOT TO DAMAGE THE BRIDGE.
3. THE BRIDGE SHALL NOT BE USED FOR STAGING OR OPERATION OF CONSTRUCTION EQUIPMENT.

GUARDRAIL SCHEDULE

SHEET	STATION TO STATION	ANCHOR UNITS		TOTAL LENGTH OF RAIL
		TYPE A	TYPE D-BF	L.F.
		EA.	EA.	L.F.
5	100+66.36 TO 101+66.36 RT.	1.00	1.00	100.00
5	100+51.75 TO 101+51.75 LT.	1.00	1.00	100.00
5	103+48.25 TO 104+48.25 RT.	1.00	1.00	100.00
* 5	103+33.64 TO 104+25.69 LT.	1.00	1.00	100.00
SHEET TOTALS		4.00	4.00	400.00

\*50' OF GUARDRAIL TO BE CURVED TO A RADIUS OF 48'.

PAY QUANTITIES				
200 BRIDGE PCB 50'-50'-50' SPAN TYPE II, CONVENTIONAL ABUTMENTS, 30' SKEW, 26'-0" CL. RDY, TR3 RAILS				
ITEM		DESCRIPTION	UNIT	QUANTITY
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON	(1) C.Y.	190.00
501(G)	6309	CLSM BACKFILL	(1)(3) C.Y.	86.00
503(A)	1311	PRESTRESSED CONCRETE BEAMS (TYPE II)	(1) L.F.	447.00
504(B)	1305	SAW-CUT GROOVING	(1) S.Y.	371.00
504(C)	6250	SEALED EXPANSION JOINT	(1) L.F.	66.12
504(D)	6239	CONCRETE RAIL (TR3)	(1) L.F.	368.20
506(A)	1322	STRUCTURAL STEEL	(1) LB.	960.00
507(A)	6172	WEATHERING STEEL FIXED BEARING ASSEMBLY	EA.	9.00
507(B)	6176	WEATHERING STEEL EXP. BEARING ASSEMBLY	EA.	9.00
509(A)	1326	CLASS AA CONCRETE	(1) C.Y.	120.10
509(B)	1328	CLASS A CONCRETE	(1) C.Y.	103.60
511(A)	1332	REINFORCING STEEL	(1) LB.	51120.00
514(A)	6010	PILES, FURNISHED (HP10X42)	L.F.	138.00
514(A)	6011	PILES, FURNISHED (HP12X53)	L.F.	315.00
514(B)	6292	PILES, DRIVEN (HP10X42)	L.F.	138.00
514(B)	6294	PILES, DRIVEN (HP12X53)	L.F.	315.00
514(L)	6220	PILE SPLICE, H-PILE (NON-BIDDABLE)	EA.	1.00
516(A)	6093	DRILLED SHAFTS 42" DIAMETER	L.F.	136.00
601(B)	1353	TYPE I-A PLAIN RIPRAP	TON	792.00
601(C)	1355	TYPE I-A FILTER BLANKET	TON	136.00
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND	L.F.	60.00
613(I)	6207	6" NON-PERFORATED PIPE UNDERDRAIN ROUND	L.F.	30.00
623(F)	5686	GUARDRAIL ANCHOR UNIT (TYPE D-BF)	EA.	4.00
623(F)	6029	GUARDRAIL ANCHOR UNIT (TYPE A)	(F-50)(R-51) EA.	4.00
880(J)	8905	CONSTRUCTION TRAFFIC CONTROL	(2) L. SUM	1.00



SHOULDER WIDENING FOR GUARDRAIL

MAJOR COUNTY SAND CREEK

SUMMARY OF PAY QUANTITIES & GENERAL NOTES (BRIDGE)

GENERAL CONSTRUCTION NOTES

THIS PROJECT IS TO BE CONSTRUCTED WITHOUT CLOSING THE EXISTING ROAD TO LOCAL TRAFFIC BUT CLOSED TO THROUGH TRAFFIC DURING BRIDGE CONSTRUCTION. THE PROJECT SHALL BE CLOSED TO THROUGH TRAFFIC DURING ROADWAY CONSTRUCTION. SEE STANDARD SPECIFICATIONS FOR MAINTENANCE OF LOCAL TRAFFIC AND SHEET 23 FOR CONSTRUCTION TRAFFIC CONTROL DETAILS. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL CONSTRUCTION SIGNING IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TCS STANDARDS. CONSTRUCTION SIGNS OVER 10 SQ. FT. SHALL BE DOUBLE POSTED.

THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO THE COUNTY, CED #8, AND ODOT DIV. 6 FOURTEEN (14) CALENDAR DAYS BEFORE ANY CONSTRUCTION OR DEMOLITION BEGINS ON THIS PROJECT.

THE CONTRACTOR SHALL MAINTAIN ALL EXISTING TRAFFIC CONTROL DEVICES SUCH AS STOP SIGNS, WARNING SIGNS, ETC. IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. COST TO BE INCLUDED IN PRICE BID FOR OTHER TRAFFIC CONTROL WORK.

NEW PAVEMENT MARKINGS SHALL BE DONE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND STATE STANDARDS.

ALL CONSTRUCTION AND MATERIALS SHALL COMPLY WITH THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION ENGLISH VERSION, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

IN ACCORDANCE WITH THE OKLAHOMA UNDERGROUND FACILITIES DAMAGE PREVENTION ACT THE CONTRACTOR SHALL NOTIFY THE OKLAHOMA ONE-CALL SYSTEM, INC. 48 HOURS "CALL OKIE" 1-800-522-6543 OR 811.

THIS PROJECT IS LOCATED NEAR KNOWN SOURCES OF GYPSUM (SULFATE) DEPOSITS. SPECIAL ATTENTION SHOULD BE USED TO AVOID BORROW MATERIAL THAT COULD ADVERSELY INTERACT WITH THE CALCIUM BASED ADDITIVES (FLY ASH, PORTLAND CEMENT, CEMENT KILN DUST, AND LIME) USED IN THE STABILIZED SUBGRADE. THE CONTRACTOR MAY BE REQUIRED TO PROVIDE SULFATE TESTING OF BORROW PIT SITES AS DIRECTED BY THE ENGINEER.

GENERAL CONSTRUCTION NOTES-EROSION CONTROL

GRASS: ALL DISTURBED AREAS AROUND STRUCTURES ONLY SHALL BE SODDED WITH BERMUDA SOLID SLAB SOD IN ACCORDANCE WITH SECTION 230.04(A) OF THE STANDARD SPECIFICATIONS.

FERTILIZER: AREAS ON WHICH BERMUDA SOLID SLAB SOD IS TO BE PLANTED SHALL HAVE 10-20-10 FERTILIZER APPLIED AT THE RATE OF 200 LBS. PER 1,000 SQ. YDS. OF SODDING, ONE HALF AFTER WATERING THE PREPARED SURFACE AND PRIOR TO PLANTING OF SOD, AND ONE HALF AFTER SODDING IS COMPLETED WITH WATERING USED TO INCORPORATE THE FERTILIZER INTO THE SOIL.

WATERING: ALL AREAS TO BE SODDED SHALL BE WATERED BEFORE SOD IS PLANTED TO OBTAIN ADEQUATE SOIL MOISTURE TO A DEPTH OF AT LEAST 5".

SEASONAL PLANTING RESTRICTIONS:

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 NOT BE SODDED.

UTILITIES:

PIONEER TELEPHONE  
STEVE LIEBL  
405-375-0714

AT&T  
KYLE BERGDALL  
580-249-5006

SUDDENLINK / WOODWARD  
MATT WERTHMANN  
405-334-3454

CITY OF FAIRVIEW ELECTRIC & WATER  
JERRY EUBANKS  
580-471-5742

COUNTY TO BE RESPONSIBLE FOR THE FOLLOWING:

1. ACQUIRING ALL REQUIRED R/W.
2. REMOVAL AND RESETTING ALL FENCES ON RIGHT-OF-WAY LINES.
3. RELOCATING ALL UTILITIES.

PAY QUANTITY NOTES

(R-11) THE QUANTITIES ESTIMATED FOR TEMPORARY EROSION AND SEDIMENT CONTROL IS 2.21 ACRES.

(R-20) ESTIMATED AT 100.8 LBS. PER SQ. YD. (SOIL EST. 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 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-49) TO BECOME THE PROPERTY OF AND BE DISPOSED OF BY THE CONTRACTOR IN A MANNER APPROVED BY THE ENGINEER.

(1) THIS PAY ITEM TO INCLUDE CLEARING AND GRUBBING, WIDENING AND EXCAVATION. INCLUDES PLACEMENT OF ADDITIONAL FILL ON DRIVES, MINIMUM OF 1-0" COVER OVER CGMP'S AS DIRECTED BY THE ENGINEER. ESTIMATED 1,684.00 C.Y. OF UNCLASSIFIED BORROW. INCLUDES SHOULDERING UP AND WIDENING AS REQUIRED TO OBTAIN 28' GRADING SECTION. INCLUDES ALL COSTS TO REMOVE, STOCKPILE, AND REPLACE THE TOPSOIL ON THE FINISHED GRADING SLOPES IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. PRICE BID ALSO INCLUDES COST OF 0-46-0 FERTILIZER ESTIMATED AT 150 LBS. PER ACRE. ANY MATERIAL NOT SUITABLE FOR SHOULDERING UP TO BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER.

(2) PRICE BID TO INCLUDE COST OF SILT REMOVAL.

(3) ESTIMATED QUANTITY ONLY TO BE USED FOR EROSION AND SEDIMENT CONTROL IN A MANNER APPROVED BY THE ENGINEER (SEE STANDARDS. TSC2-3 & TSD-2).

(4) SOLID SLAB QUANTITIES TO BE FIELD MEASURED BEFORE CUTTING SOD. PRICE BID TO INCLUDE WATERING AT 40 GAL. PER SQ. YD. AND 10-20-10 FERTILIZER AT 200 LBS. PER 1000 SQ. YDS. CONTRACTOR WILL SUPPLY SUFFICIENT WATER TO PRODUCE ADEQUATE GRASS GROWTH AS APPROVED BY THE ENGINEER. SODDING TO BE PLACED ON DISTURBED AREAS AROUND BRIDGE AND STRUCTURES, AS DIRECTED BY THE ENGINEER.

(5) ESTIMATED AT 141 LBS. PER C. F. INCLUDES 100.00 TONS FOR TEMPORARY USE AS DIRECTED BY THE ENGINEER.

(6) ESTIMATED AT 0.05 GAL. PER SQ. YD. PRIOR TO DILUTION.

(7) PRICE BID TO INCLUDE COST OF POST AND HARDWARE FOR INSTALLATION AND REMOVAL OF THE EXISTING SIGNS AND POSTS. THE EXISTING SIGNS SHALL BE STACKED ON THE RIGHT-OF-WAY TO BE REMOVED BY THE COUNTY FORCES.

(8) QUANTITY SHOWN INCLUDES 2560.00 L.F. TRAFFIC STRIPE (MULTI-POLY)(YELLOW). TRAFFIC STRIPE (MULTI-POLY) TO BE MEASURED BY THE L.F. OF 4" WIDE TRAFFIC STRIPE OF THE EQUIVALENT AMOUNT OF 4" WIDE STRIPE WHEN A NARROWER OR WIDER STRIPE IS SPECIFIED IN THE PLANS OR STANDARD DRAWINGS. 2560.00 L.F. OF THE TRAFFIC STRIPE (YELLOW) IS AN ESTIMATED QUANTITY FOR NO PASSING.

(9) IN ADDITION TO THE RESPONSIBILITIES SHOWN IN THE SPECIFICATIONS, CONTRACTOR SHALL PROVIDE 1) STATIONING FOR ASPHALT FIELD CALCULATIONS, 2) HORIZONTAL AND VERTICAL CONTROL, AND 3) A LICENSED LAND SURVEYOR TO RESET ALL SECTION CORNERS AND STAKE ANY AND ALL RIGHT-OF-WAY FOR CLEARING AND GRUBBING.

(10) PRICE BID TO INCLUDE THE COST OF TRENCH EXCAVATION AND STANDARD BEDDING MATERIAL CLASS B. ALSO INCLUDES THE COST TO REMOVE AND DISPOSE OF THE EXISTING PIPE.

28348(04)			
PAY QUANTITIES			
0100 ROADWAY			
ITEM NO.	DESCRIPTION	UNIT	QUANT.
202(H) 0185	EARTHWORK	(1) L. SUM	1.00
221(C) 2801	TEMPORARY SILT FENCE	(2)(3) L.F.	2,340.00
221(F) 0100	TEMPORARY SILT DIKE	(2)(3) L.F.	280.00
230(A) 2806	SOLID SLAB SODDING	(4) S.Y.	10,689.00
233(A) 2817	VEGETATIVE MULCHING	(R-11) AC	2.21
307(A) 4200	FLY ASH	(R-20) TON	186.00
307(E) 4240	CEMENTITIOUS STABILIZED SUBGRADE	S.Y.	3,667.00
402(E) 0225	TRAFFIC BOUND SURFACE COURSE TYPE E	(5) TON	124.00
407(B) 0250	TACK COAT	(6) GAL.	179.00
408 5774	PRIME COAT	(R-28) GAL.	1,293.00
411(B) 5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	(R-32) TON	821.00
411(C) 5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	(R-32) TON	391.00
509(D) 0325	CLASS C CONCRETE	(R-41) C.Y.	10.00
613(A) 0494	36" R.C. PIPE CLASS III	(10) L.F.	64.00
613(B) 4527	21"x15" CORR. GALV. STEEL PIPE ARCH	L.F.	60.00
613(L) 5734	36" PREFAB. CULVERT END SECTION, ROUND	EA.	2.00
613(M) 7186	TYPE A4 CULVERT END TREATMENT	EA.	2.00
619(B) 4728	REMOVAL OF ASPHALT PAVEMENT	(R-49) S.Y.	2,248.00
619(C) 0924	SAWING PAVEMENT	L.F.	64.00
850(A) 8110	SHEET ALUMINUM SIGNS	(7) S.F.	22.38
856(A) 8530	TRAFFIC STRIPE (MULTI-POLY)(4" WIDE)	(8) L.F.	2,560.00

28348(04)			
PAY QUANTITIES			
0600 STAKING			
ITEM NO.	DESCRIPTION	UNIT	QUANT.
642(B) 0096	CONSTRUCTION STAKING LEVEL II	(9) L. SUM	1.00

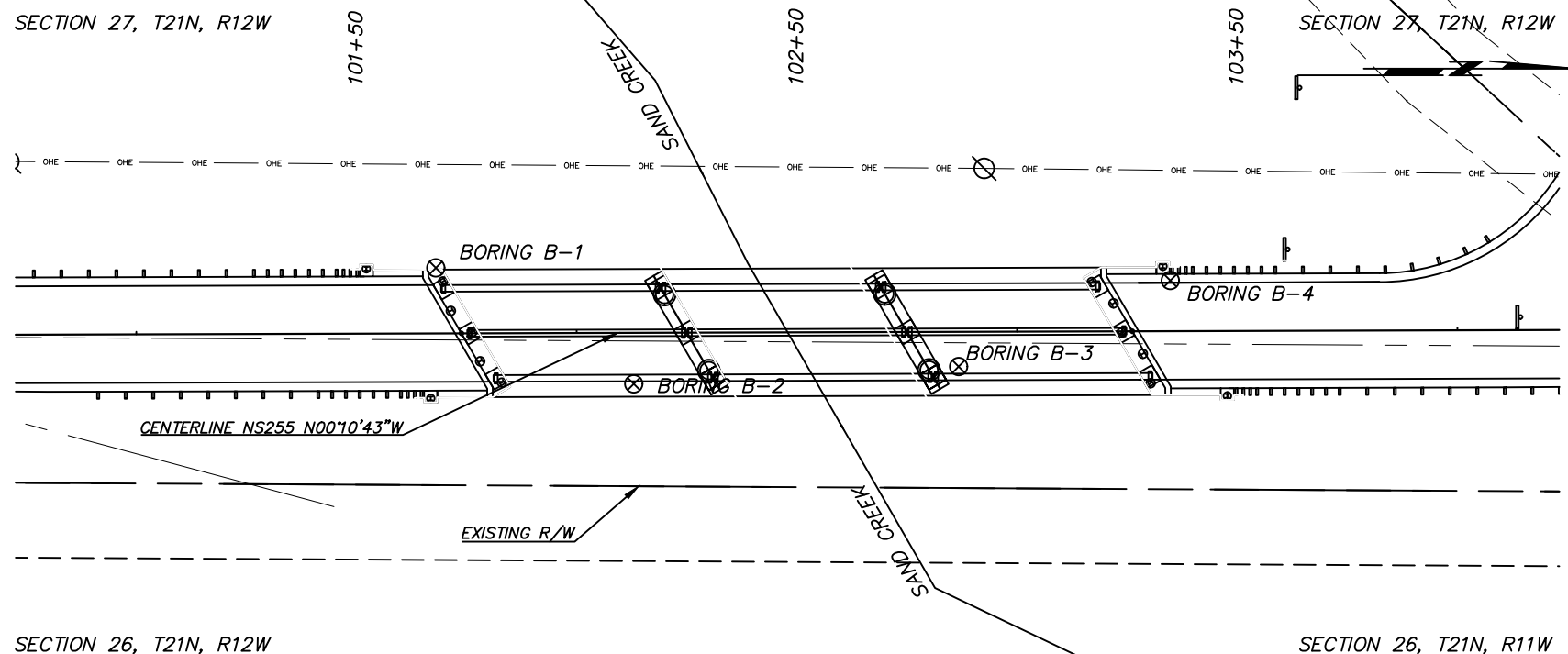
28348(04)			
PAY QUANTITIES			
0640 CONSTRUCTION			
ITEM NO.	DESCRIPTION	UNIT	QUANT.
220 2800	SWPPP MANAGEMENT AND DOCUMENTATION	L. SUM	1.00
641 1399	MOBILIZATION	L. SUM	1.00

MAJOR COUNTY SAND CREEK

SUMMARY OF PAY QUANTITIES AND GENERAL NOTES (ROADWAY)

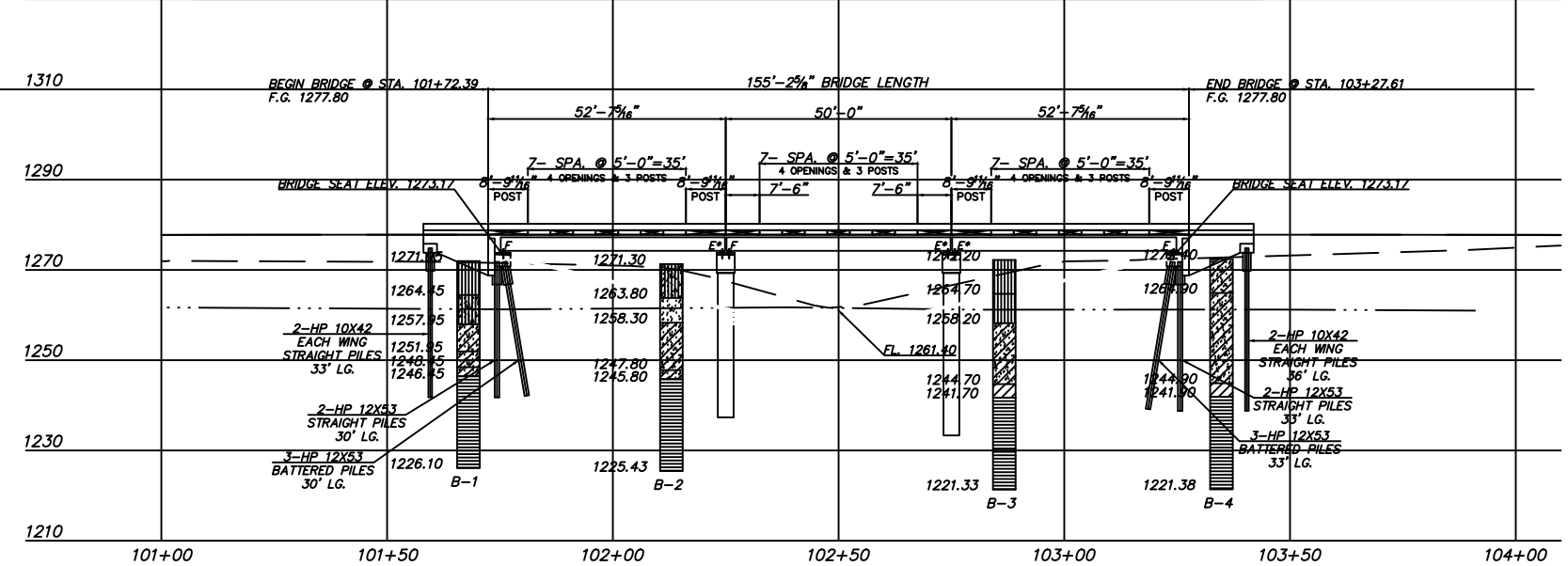
J/P NO. 28348(04)

SHEET NO. AR01



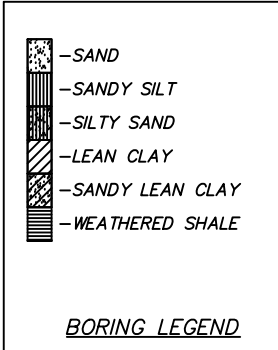
SECTION 27, T21N, R12W  
SECTION 26, T21N, R12W  
SECTION 26, T21N, R11W  
PLAN  
SCALE: 1"=20'

<b>BENCHMARK NO. 502</b> 1/2" IRON PIN STA. 99+20.98 ELEV. 1272.035 X=1831960.1680 Y=459170.1690	<b>BENCHMARK NO. 501</b> 1/2" IRON PIN STA. 99+43.66 ELEV. 1278.409 X=1832105.8320 Y=459193.5020	<b>CONTROL POINT NO. 2</b> 1/2" IRON PIN STA. 100+23.83 ELEV. 1276.937 X=1831972.9640 Y=459273.4720	<b>BENCHMARK NO. 500</b> 1/2" IRON PIN STA. 100+56.73 ELEV. 1275.330 X=1832204.1710 Y=459307.1210
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NOTE:  
SEE SHEET NO. 19-22  
FOR BORING INFORMATION  
\*USE SLOTTED ANCHOR PLATES,  
SEE STD.  
CB26-C-SK0..30-BRG-PC2-01E

ELEVATION  
SCALE: 1"=20'



B-1 PENETROMETER TEST		B-2 PENETROMETER TEST		B-3 PENETROMETER TEST		B-4 PENETROMETER TEST	
50/3.13"	50/3.5"	50/5.5"	50/3.25"	50/1.38"	50/1.38"	50/0.25"	50/0.75"
50/1.5"	50/1.0"	50/1.5"	50/0.5"	50/1.0"	50/0.25"	50/0.88"	50/0.38"
50/0.5"	50/0.25"	50/1.75"	50/1.38"	50/1.5"	50/0.5"	50/1.38"	50/0.75"
50/0.5"	50/0.25"	50/1.0"	50/0.63"	50/0.88"	50/0.38"	50/0.63"	50/0.25"
50/0.5"	50/0.25"	50/.88"	50/.38"	50/0.75"	50/0.5"	50/0.88"	50/0.63"
- 1245.50	- 1241.00	- 1244.80	- 1240.30	- 1241.20	- 1236.20	- 1241.40	- 1236.40
- 1236.10	- 1235.30	- 1235.30	- 1231.20	- 1231.20	- 1231.40	- 1231.40	- 1231.40
- 1231.10	- 1230.30	- 1230.30	- 1226.20	- 1226.20	- 1226.40	- 1226.40	- 1226.40
- 1226.10	- 1225.43	- 1225.43	- 1221.33	- 1221.33	- 1221.38	- 1221.38	- 1221.38

PAY QUANTITIES						
ITEM	DESCRIPTION	UNIT	ABUTMENT	SUPER STRUCTURE	PIER	QUANTITY
501(B) 1307	SUBSTRUCTURE EXCAVATION COMMON	C.Y.	190.00			190.00
501(G) 6309	CLSM BACKFILL	C.Y.	86.00			86.00
503(A) 1311	PRESTRESSED CONCRETE BEAMS (TYPE II)	L.F.		447.00		447.00
504(B) 1305	SAW CUT GROOVING	S.Y.		371.00		371.00
504(C) 6250	SEALED EXPANSION JOINT	L.F.		66.12		66.12
504(D) 6239	CONCRETE RAIL (TR3)	L.F.	57.60	310.60		368.20
506(A) 1322	STRUCTURAL STEEL	LB.		960.00		960.00
507(A) 6172	WEATHERING STEEL FIXED BEARING ASSEMBLY	EA.		9.00		9.00
507(B) 6176	WEATHERING STEEL EXP. BEARING ASSEMBLY	EA.		9.00		9.00
509(A) 1326	CLASS AA CONCRETE	C.Y.		120.10		120.10
509(B) 1228	CLASS A CONCRETE	C.Y.	68.00		35.60	103.60
511(A) 1332	REINFORCING STEEL	C.Y.	9,780.00	36,140.00	5,200.00	51,120.00
514(A) 6010	PILES, FURNISHED (HP10X42)	L.F.		138.00		138.00
514(A) 6011	PILES, FURNISHED (HP12X53)	L.F.		315.00		315.00
514(B) 6292	PILES, DRIVEN (HP10X42)	L.F.		138.00		138.00
514(B) 6294	PILES, DRIVEN (HP12X53)	L.F.		315.00		315.00
514(L) 6220	PILE SPLICE, H-PILE (NON-BIDDABLE)	EA.		1.00		1.00
516(A) 6093	DRILLED SHAFTS 42" DIAMETER	L.F.			136.00	136.00
601(B) 1353	TYPE I-A PLAIN RIPRAP	TON	792.00			792.00
601(C) 1355	TYPE I-A FILTER BLANKET	TON	265.00			265.00
613(H) 0450	6" PERFORATED PIPE UNDERDRAIN ROUND	L.F.	60.00			60.00
613(I) 1096	6" NON-PERFORATED PIPE UNDERDRAIN ROUND	L.F.	30.00			30.00
619(D) 1397	REMOVAL OF EXISTING BRIDGE STRUCTURE	L. SUM	1.00			1.00
623(F) 5686	GUARDRAIL ANCHOR UNIT (TYPE D-BF)	EA.	4.00			4.00
623(F) 6029	GUARDRAIL ANCHOR UNIT (TYPE A)	EA.	4.00			4.00
880(J) 8905	CONSTRUCTION TRAFFIC CONTROL	L. SUM	1.00			1.00

LOADING DATA

ABUTMENT PILES (HP 12X53):  
FACTOR PILE REACTION = 67.6 TONS/PILE. ALL ABUTMENT PILING SHALL BE DRIVEN THROUGH THE COMPACTED FILL. STEEL PILING SHALL BE DRIVEN TO POINT BEARING ON SOLID FOUNDATION MATERIAL UNTIL THE REQUIRED FACTOR PILE CAPACITY OF 67.6 TONS PER PILE IS OBTAINED.  
PIERS (42 INCH DIAMETER DRILLED SHAFTS):  
MAXIMUM DIRECT FACTORED REACTION = 270, 270 TONS/SHAFT  
NOMINAL UNIT BEARING RESISTANCE = 40, 62 TONS/S.F.  
BEARING RESISTANCE FACTOR = 0.5, 0.5  
BEARING CAPACITY = 192, 298 TONS/SHAFT  
NOMINAL FRICTION RESISTANCE = 6, 9 TONS/S.F.  
FRICTION RESISTANCE FACTOR = 0.5, 0.5  
FRICTION CAPACITY = 99, 148 TONS/SHAFT  
TOTAL CAPACITY = 291, 447 TONS/SHAFT

HYDRAULIC DATA

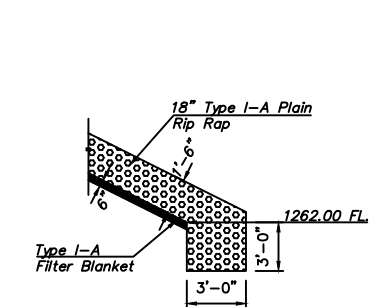
D.A. = 21.51 SQ. MI.  
SCS CONTROLLED D.A. = 0.00 SQ. MI.  
EFFECTIVE DRAINAGE AREA = 21.51 SQ. MI.  
Q25 = 5,560.00 C.F.S.  
V25 = 8.37 F.P.S.  
Q25 CALC. B.W. 1,273.59 FT.  
Q50 = 7,330.00 C.F.S.  
V50 = 9.28 F.P.S.  
Q50 = CALC. B.W. 1,274.85 FT.  
Q100 = 9,340.00 C.F.S.  
V100 = 10.83 F.P.S.  
Q100 = CALC. B.W. 1,276.26 FT.  
QO.T. = 15,300.00 C.F.S.  
OVERTOPPING ELEV. (LOW) = 1,277.52 FT.  
VO.T. (BRIDGE) = 15.18 F.P.S.  
EXTREME HIGHWATER ON RECORD = N/A  
MAXIMUM SCOUR DEPTH = 27.85 FT.

DESIGN DATA

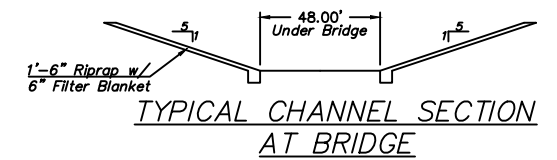
CONCRETE (CLASS A) F'C=3,000 PSI  
CONCRETE (CLASS AA) F'C=4,000 PSI  
REINFORCING STEEL (GR 60) F<sub>y</sub>=60,000 PSI  
STRUCTURAL STEEL (GR 50W) F<sub>y</sub>=50,000 PSI  
LOADING: HL-93 20 PSF FUTURE WEARING SURFACE  
5 PSF STAY-IN-PLACE FORMS  
DESIGN SPECIFICATIONS - AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH EDITION WITH 2010 INTERIMS, EXCEPT AS MODIFIED BY CURRENT ODOT BRIDGE DIVISION DESIGN POLICIES.  
ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.  
LFD OPERATING RATING: HS 29.0

CONTRACTOR NOTE:  
EXTEND RIP RAP TO THE  
SECOND GUARDRAIL POST.

NOTE:  
"TOEING-IN" APPLIES TO  
THE ENTIRE LENGTH OF  
THE BASE OF RIPRAP.



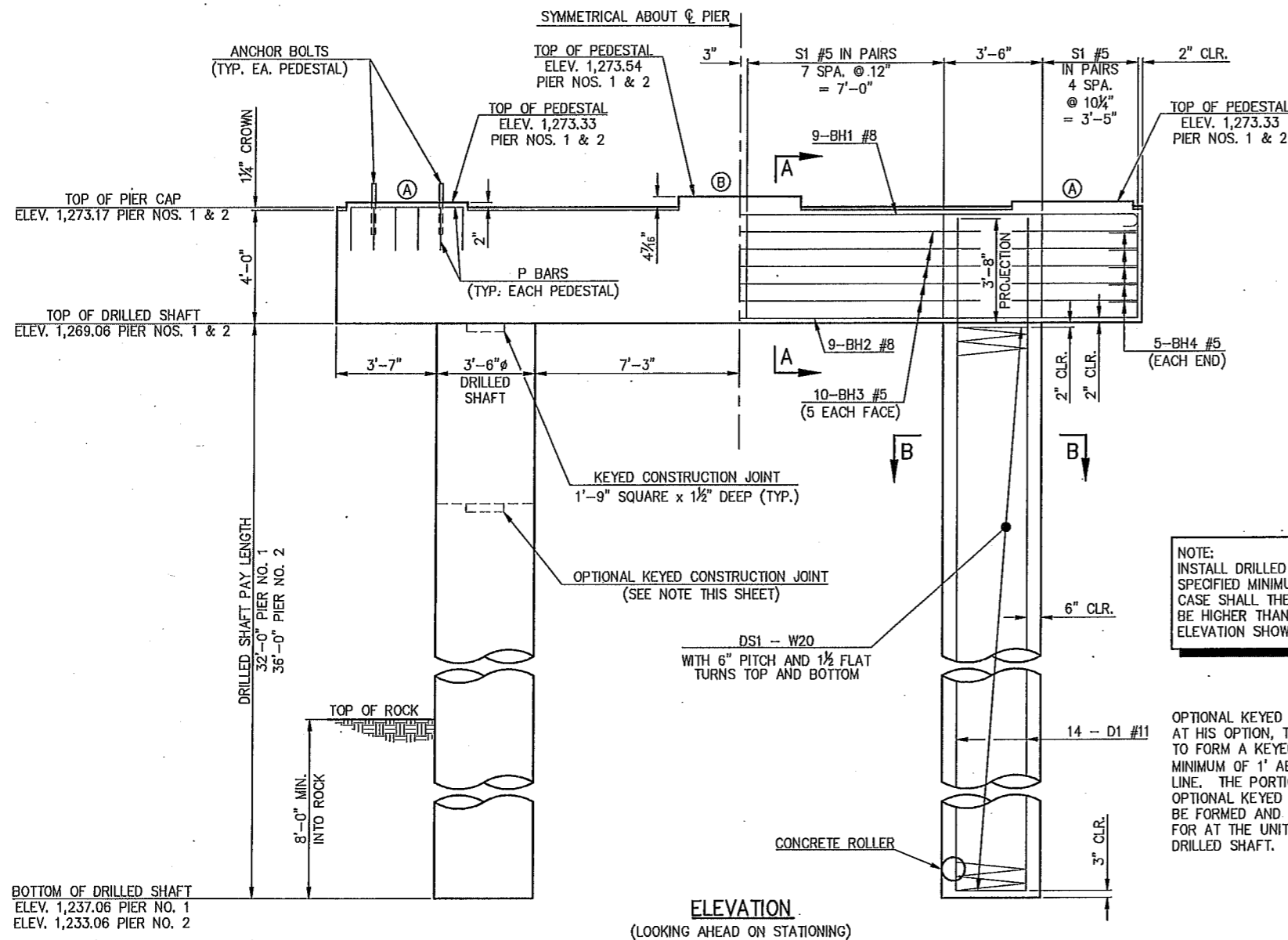
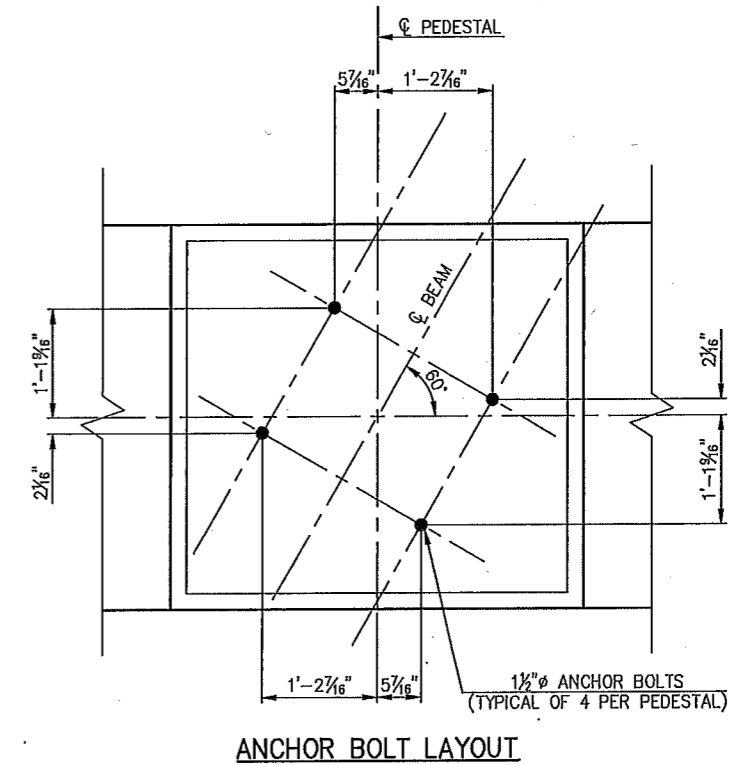
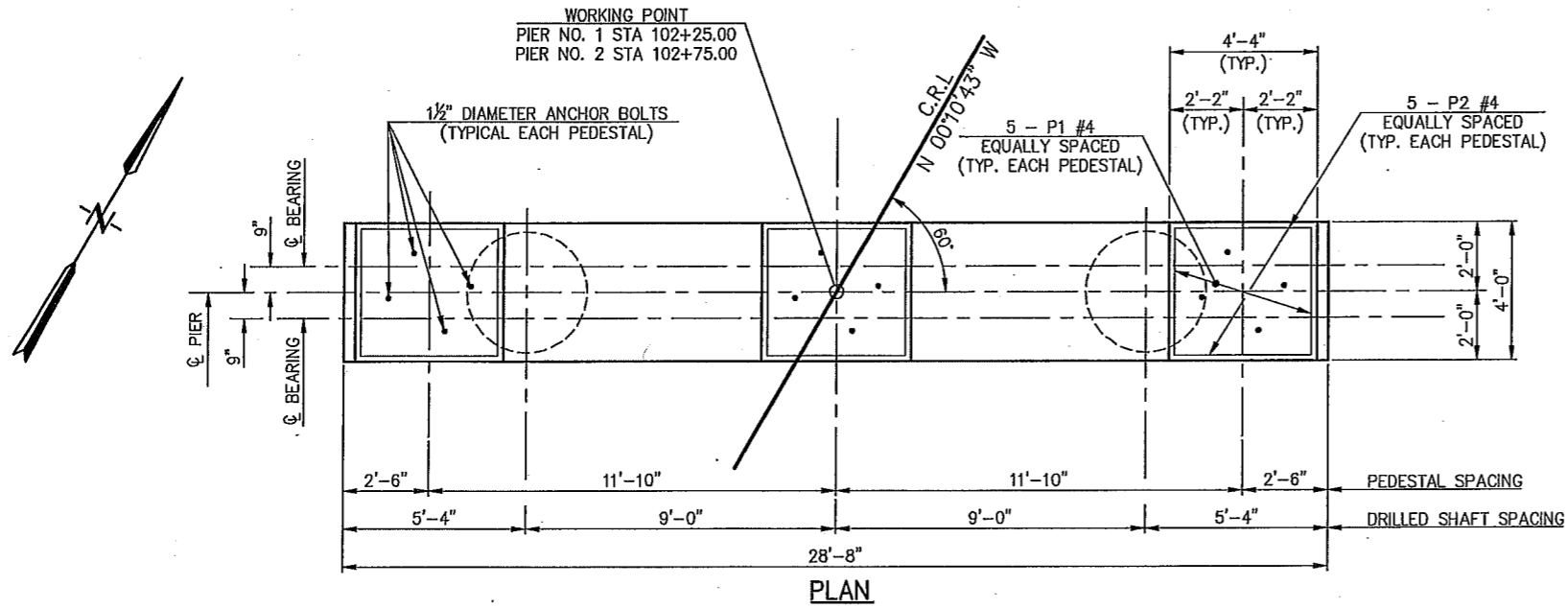
DETAIL OF TYPE I-A PLAIN RIPRAP



MAJOR COUNTY SAND CREEK  
GENERAL PLAN & ELEVATION  
CL STA. 102+50.00  
50'-50'-50' TYPE II PCB SPAN W/26'-0" CL. RDY.  
30 DEG. W/1'-1" TR3 CONC. RAILS  
J/P NO. 28348(04) SHEET NO. B001



DESCRIPTION	REVISIONS	DATE



NOTE:  
INSTALL DRILLED SHAFTS AT LEAST THE SPECIFIED MINIMUM DISTANCE INTO ROCK. IN NO CASE SHALL THE BOTTOM OF THE DRILLED SHAFT BE HIGHER THAN THE BOTTOM OF DRILLED SHAFT ELEVATION SHOWN IN THE PLANS.

OPTIONAL KEYED CONSTRUCTION JOINT:  
AT HIS OPTION, THE CONTRACTOR MAY ELECT TO FORM A KEYED CONSTRUCTION JOINT A MINIMUM OF 1' ABOVE THE NATURAL GROUND LINE. THE PORTION OF SHAFT ABOVE THE OPTIONAL KEYED CONSTRUCTION JOINT SHALL BE FORMED AND POURED, AND SHALL BE PAID FOR AT THE UNIT PRICE PER LINEAR FOOT OF DRILLED SHAFT.

PIER QUANTITIES				
ITEM	UNIT	PIER NO. 1	PIER NO. 2	TOTAL
CLASS A CONCRETE	C.Y.	17.80	17.80	35.60
REINFORCING STEEL	LB.	2,600.00	2,600.00	5,200.00
DRILLED SHAFTS 42" DIAMETER	L.F.	64.00	72.00	136.00

PROFESSIONAL ENGINEER  
MICHAEL B. SIMMONS  
24576  
2/26/2016

NS-255 OVER SAND CREEK MAJOR COUNTY  
BRIDGE "A"

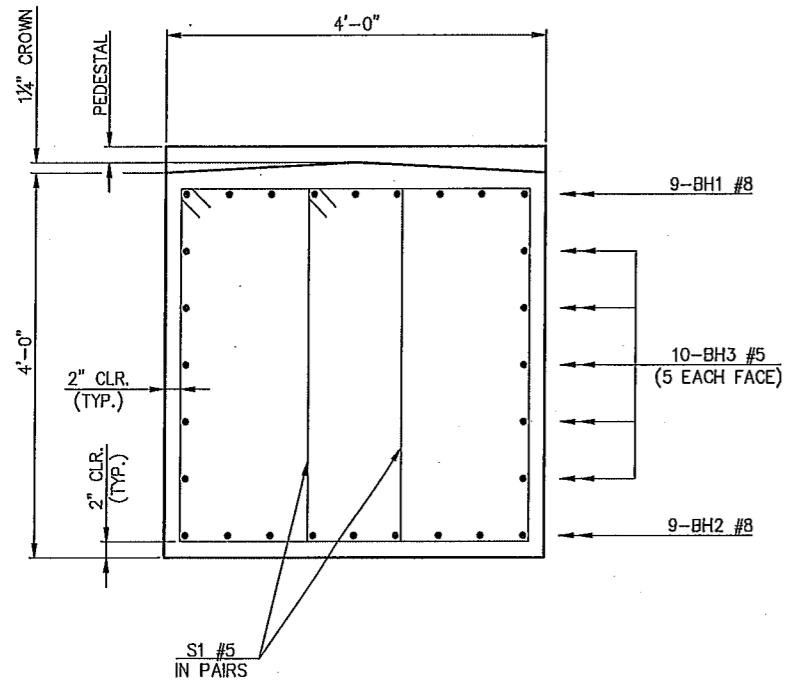
Design MZY 2/16  
Detail MZY 2/16  
Check MBS 2/16  
Squad  
Engr.

DETAILS OF PIERS  
(SHEET NO. 1 OF 2)

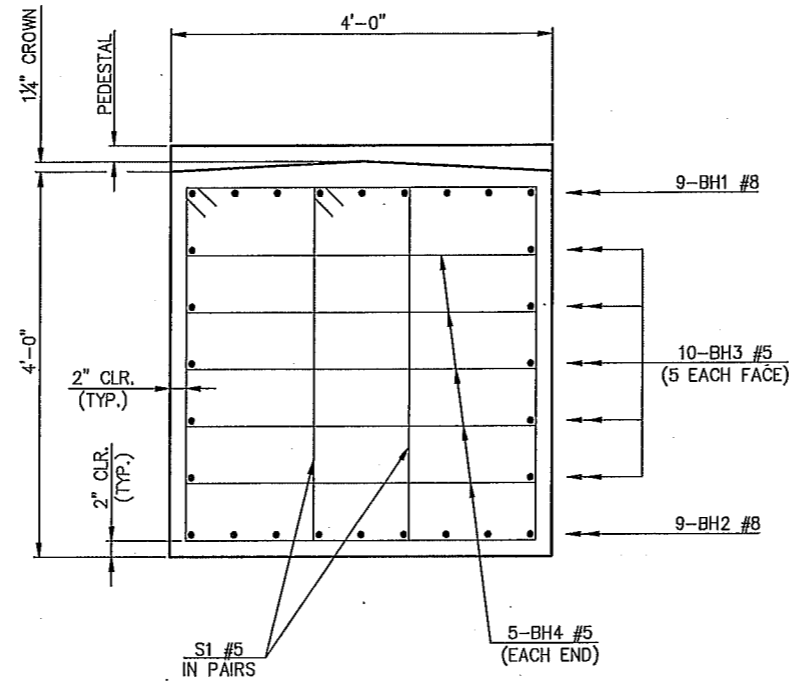
STATE OF OKLAHOMA GUY ENGINEERING SERVICES, INC.  
JOB PERM NO. 28348(04) SHEET NO. B002

Friday, February 26, 2016 2:57:55 PM  
V:\16-991E\_NS255\_Sand Ck\_28348\_CEDB\_Major County\STRUCTURAL\DWG\_Sand Creek CREEK - PIERS.dwg

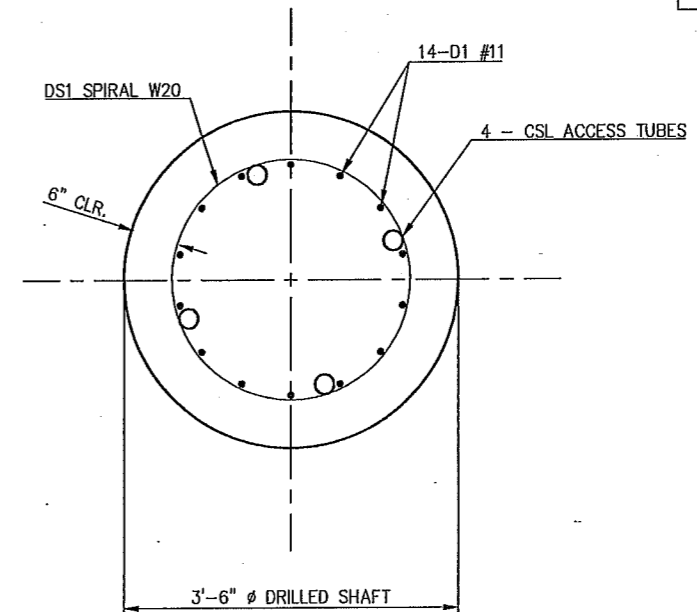
DESCRIPTION	REVISIONS	DATE



SECTION A-A



END SECTION

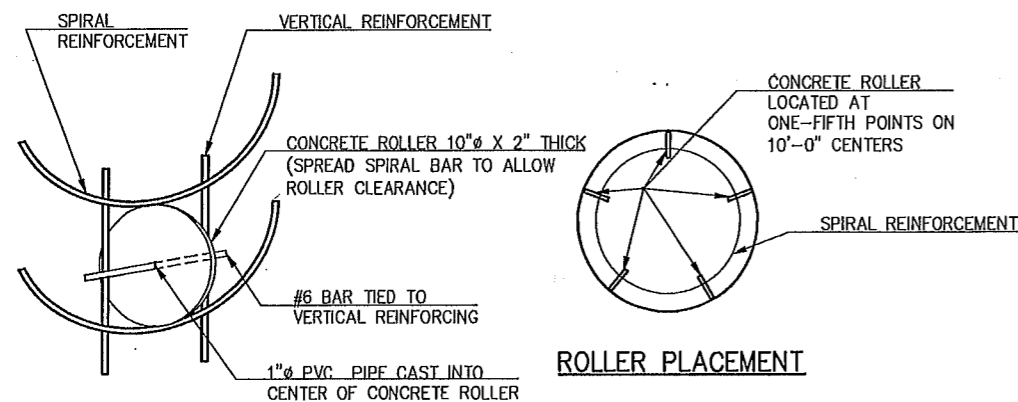


SECTION B-B

BAR LIST - PIER NO. 1				
MARK	SIZE	NO.	FORM	LENGTH
BH1	#8	9	BNT.	30'-2"
BH2	#8	9	STR.	28'-4"
BH3	#5	10	STR.	28'-4"
BH4	#5	10	BNT.	5'-8"
P1	#4	15	BNT.	6'-8"
P2	#4	15	BNT.	7'-0"
S1	#5	52	BNT.	12'-11"
TWO DRILLED SHAFTS ①				
D1	#11	28	STR.	35'-5"
DS1	W20	2	SPIRAL	520'-9"

BAR LIST - PIER NO. 2				
MARK	SIZE	NO.	FORM	LENGTH
BH1	#8	9	BNT.	30'-2"
BH2	#8	9	STR.	28'-4"
BH3	#5	10	STR.	28'-4"
BH4	#5	10	BNT.	5'-8"
P1	#4	15	BNT.	6'-8"
P2	#4	15	BNT.	7'-0"
S1	#5	52	BNT.	12'-11"
TWO DRILLED SHAFTS ①				
D1	#11	28	STR.	39'-5"
DS1	W20	2	SPIRAL	583'-8"

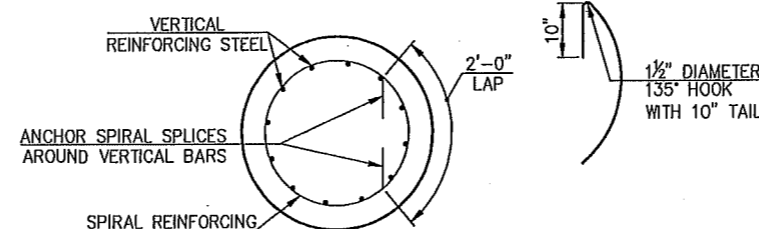
① INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.



ROLLER INSTALLATION

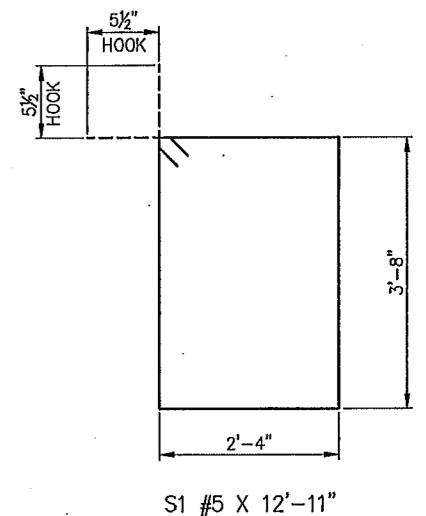
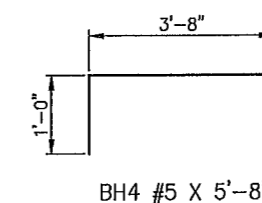
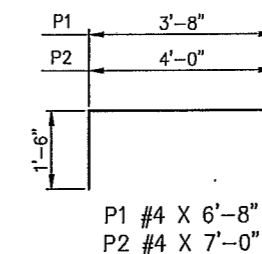
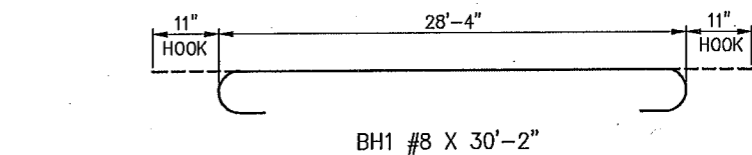
**DETAIL OF CONCRETE ROLLER**

NOTE: CONCRETE USED IN THE CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 P.S.I. SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS.



**DETAIL OF SPIRAL REINFORCING SPLICE**

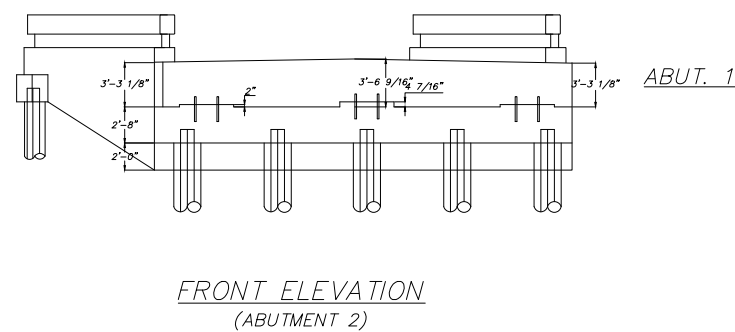
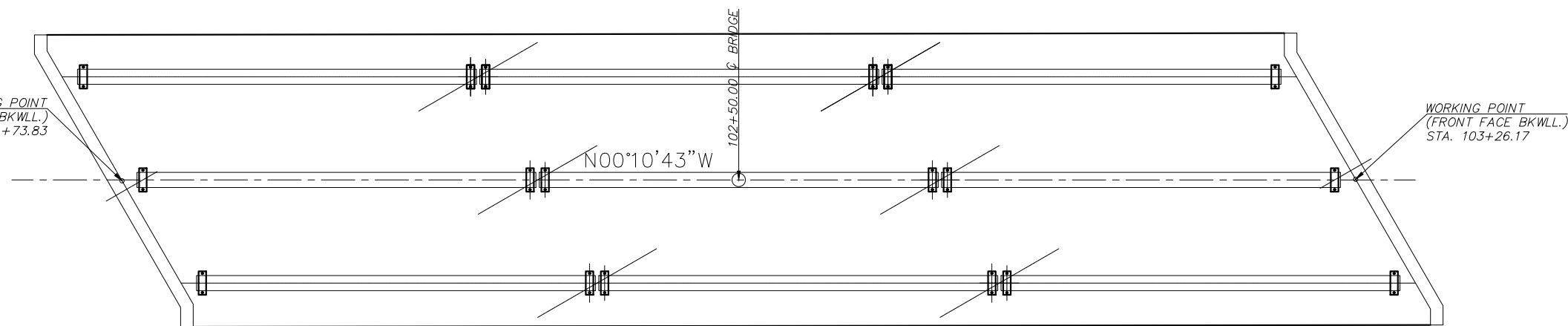
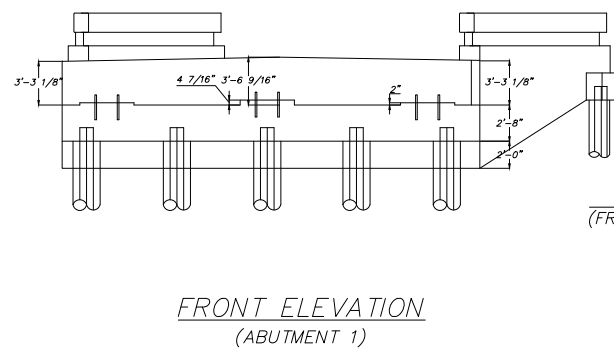
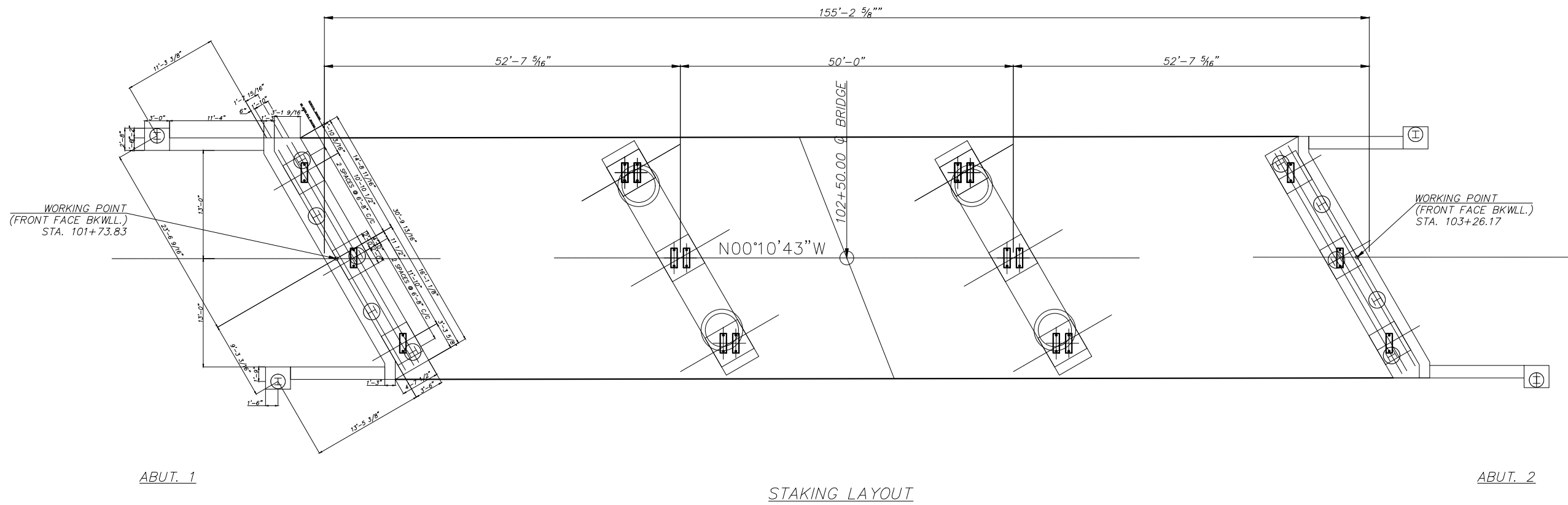
NOTE: SPIRAL BARS SHALL CONFORM TO AASHTO M-32. SPIRAL BAR LENGTH DOES NOT INCLUDE LAP. IF LAP IS REQUIRED, THE LENGTH OF THE LAP SHALL BE AS SHOWN.



PROFESSIONAL ENGINEER  
MICHAEL B. SIMMONS  
24576  
2/26/2016

NS-255 OVER SAND CREEK BRIDGE "A"	MAJOR COUNTY	Design	MZV	2/16
		Detail	MZV	2/16
		Check	MBS	2/16
		Special Engr.		
<b>STATE OF OKLAHOMA</b>	GUY ENGINEERING SERVICES, INC.	JOB PRICE NO. 28348(04)		SHEET NO. 003

Friday, February 26, 2016 2:58:44 PM V:\16-991E NS255 Sand Ck. 28348 CED8 Major County\STRUCTURAL\DWG\Sand Creek Creek - PIERS.dwg



MAJOR COUNTY SAND CREEK

STAKING LAYOUT, ANCHOR BOLTS & PEDESTAL LAYOUT

J/P NO. 28348(04)

SHEET NO. B004



BORING LOG		BORING NO. B-01		PAGE 1 OF 2								
CLIENT: CIRCUIT ENGINEERING DISTRICT 8		ENGINEER: TYLER SCHRODER, PE										
LOCATION: INT OF NS255 & EW 52 CO. RDS., MAJOR COUNTY, OK		PROJECT: NEW BRIDGE OVER SAND CREEK-- J/P NO. 28348(04)										
GRAPHICS LOG	LAYER / MATERIAL DESCRIPTION Station= 101+68.03, 14.9 FT LT CL Surface Elev. = 1271.95 feet Veg. Thick.: 18" GR. CVR	DEPTH, FT.	SAMPLES			TESTS						
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, IN.	SPT-N BLOWS / FT.	MOISTURE, %	DRY DENSITY, PCF	UNCONFINED STRENGTH, PSF	LIMITS (LL) (PL) INDEXES (PI) #200 SIEVE	
	MEDIUM STIFF, RED BROWN, SANDY SILT ELEV. = 1264.45	5	ML	1	SS	18	6	18.2			LL = 20 PI = 16 #200 = 83.0%	
	VERY LOOSE, RED BROWN, SILTY SANDY ELEV. = 1257.95	10	SM	2	SS	18	3	14.6			LL = NP PI = NP #200 = 29.0%	
	VERY HARD, RED BROWN, SANDY LEAN CLAY (SHALEY) ELEV. = 1251.95	15	CL	3	SS	18	65	17.9			LL = 29 PI = 16 #200 = 88.0%	
	VERY SOFT, RED BROWN, LEAN CLAY WITH SAND ELEV. = 1248.45	20	CL	4	SS	18	1/6" WOH	18.4			LL = 33 PI = 17 #200 = 77.0%	
	SOFT, RED BROWN, LEAN CLAY WITH SAND ELEV. = 1246.45	25	CL	5	SS	9	40/6"	21.3			LL = 35 PI = 24 #200 = 87.0%	
	MODERATELY HARD TO HARD, RED BROWN, WEATHERED SHALE (SILTY, SANDY)			6	TCP	0	50/3.5"					
							50/3.5"					
		30										
<b>REMARKS:</b> SOIL AND ROCK CLASSIFICATIONS ARE FROM DISTURBED SAMPLES. CORE SAMPLES AND FURTHER LABORATORY TESTING MAY REVEAL OTHER ROCK AND/OR SOIL TYPES. THE STRATIFICATION SHOWN IN THE SOIL AND ROCK ABOVE IS AN ESTIMATION OF IN-SITU CONDITIONS. THEREFORE, THE NATURAL TRANSITION BETWEEN SOIL AND ROCK TYPES MAY BE GRADUAL. * ESTIMATED FROM POCKET PENETROMETER												
 ARROWHEAD ENGINEERING COMPANY 3300 108TH AVE SE NORMAN, OK 73026 PHONE (405) 596-2642		WATER LEVEL OBSERVATIONS		DATE STARTED		6/9/15						
		WL	12.5 FT--WD	10 FT-AB	DATE COMPLETED		6/9/15					
		WL			RIG	CME-75	FOREMAN	C.K.				
		WL			REVIEWED	C.K.	JOB NO.	1441				

BORING LOG		BORING NO. B-01		PAGE 2 OF 2								
CLIENT: CIRCUIT ENGINEERING DISTRICT 8		ENGINEER: TYLER SCHRODER, PE										
LOCATION: INT OF NS255 & EW 52 CO. RDS., MAJOR COUNTY, OK		PROJECT: NEW BRIDGE OVER SAND CREEK-- J/P NO. 28348(04)										
GRAPHICS LOG	LAYER / MATERIAL DESCRIPTION Station= 101+68.03, 14.9 FT LT CL (Continued)	DEPTH, FT.	SAMPLES			TESTS						
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, IN.	SPT-N BLOWS / FT.	MOISTURE, %	DRY DENSITY, PCF	UNCONFINED STRENGTH, PSF	LIMITS (LL) (PL) INDEXES (PI) #200 SIEVE	
				7	TCP	0	50/1.5"					
							50/1.07"					
		35			RB							
	MODERATELY HARD TO HARD, RED BROWN, WEATHERED SHALE (SILTY, SANDY) (continued)			8	TCP	0	50/0.50"					
							50/0.25"					
		40			RB							
				9	TCP	0	50/0.50"					
							50/0.25"					
		45			RB							
	ELEV. = 1226.1			10	TCP	0	50/0.50"					
	Bottom of Boring at 45.85 feet						50/0.25"					
		50										
		55										
		60										
<b>REMARKS:</b> SOIL AND ROCK CLASSIFICATIONS ARE FROM DISTURBED SAMPLES. CORE SAMPLES AND FURTHER LABORATORY TESTING MAY REVEAL OTHER ROCK AND/OR SOIL TYPES. THE STRATIFICATION SHOWN IN THE SOIL AND ROCK ABOVE IS AN ESTIMATION OF IN-SITU CONDITIONS. THEREFORE, THE NATURAL TRANSITION BETWEEN SOIL AND ROCK TYPES MAY BE GRADUAL. * ESTIMATED FROM POCKET PENETROMETER												
 ARROWHEAD ENGINEERING COMPANY 3300 108TH AVE SE NORMAN, OK 73026 PHONE (405) 596-2642		WATER LEVEL OBSERVATIONS		DATE STARTED		6/9/15						
		WL	12.5 FT--WD	10 FT-AB	DATE COMPLETED		6/9/15					
		WL			RIG	CME-75	FOREMAN	C.K.				
		WL			REVIEWED	C.K.	JOB NO.	1441				

MAJOR COUNTY SAND CREEK

BORING LOGS  
B-01

J/P NO. 28348(04)

SHEET NO. B005


BORING LOG		BORING NO. B-02		PAGE 1 OF 2													
CLIENT: CIRCUIT ENGINEERING DISTRICT 8		ENGINEER: TYLER SCHRODER, PE															
LOCATION: INT OF NS255 & EW 52 CO. RDS., MAJOR COUNTY, OK		PROJECT: NEW BRIDGE OVER SAND CREEK-- J/P NO. 28348(04)															
GRAPHICS LOG	LAYER / MATERIAL DESCRIPTION Station= 102+12.97, 11.6 FT RT CL Surface Elev. = 1271.3 feet Veg. Thick.: 18" GR. CVR	DEPTH, FT.	SAMPLES			TESTS											
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, IN.	SPT-N BLOWS / FT.	MOISTURE, %	DRY DENSITY, PCF	UNCONFINED STRENGTH, PSF	LIMITS (LL) (PL) INDEXES (PI) #200 SIEVE						
	VERY LOOSE, RED BROWN WITH WHITE SEAMS, SILTY SAND ELEV. = 1263.8	5	SM	1	SS	16	4	10.4								LL = NP PI = NP U <sub>200</sub> = 27.0%	
	VERY LOOSE, RED BROWN, POORLY GRADED SAND ELEV. = 1258.3	10	SP	2	SS	18	4	16.7									LL = NP PI = NP U <sub>200</sub> = 8.0%
	VERY HARD, RED BROWN, LEAN CLAY WITH TRACES OF SAND (SHALEY) ELEV. = 1247.8	15	CL	3	SS	18	65	16.7									LL = 42 PI = 24 U <sub>200</sub> = 24.0%
	VERY HARD, RED BROWN, LEAN CLAY WITH TRACES OF SAND (SHALEY) ELEV. = 1247.8	20	CL	4	SS	18	59	30.4									LL = 38 PI = 14 U <sub>200</sub> = 20.0%
	SOFT, RED BROWN, LEAN CLAY WITH SAND ELEV. = 1245.8	25	CL	5	SS	9	42/6	10.9									LL = 35 PI = 12 U <sub>200</sub> = 19.0%
	MODERATELY HARD TO HARD, RED BROWN, WEATHERED SHALE (SILTY, SANDY)	30		6	TCP	0	50/3.25										U <sub>200</sub> = 97.0%
<b>REMARKS:</b> SOIL AND ROCK CLASSIFICATIONS ARE FROM DISTURBED SAMPLES. CORE SAMPLES AND FURTHER LABORATORY TESTING MAY REVEAL OTHER ROCK AND/OR SOIL TYPES. THE STRATIFICATION SHOWN IN THE SOIL AND ROCK ABOVE IS AN ESTIMATION OF IN-SITU CONDITIONS. THEREFORE, THE NATURAL TRANSITION BETWEEN SOIL AND ROCK TYPES MAY BE GRADUAL. * ESTIMATED FROM ROCKET PENETROMETER						<b>WATER LEVEL OBSERVATIONS</b> WL 9 FT--WD 7 FT-AB DATE STARTED 6/9/15 DATE COMPLETED 6/9/15 RIG CME-75 FOREMAN C.K. REVIEWED C.K. JOB NO. 1441											


BORING LOG		BORING NO. B-02		PAGE 2 OF 2												
CLIENT: CIRCUIT ENGINEERING DISTRICT 8		ENGINEER: TYLER SCHRODER, PE														
LOCATION: INT OF NS255 & EW 52 CO. RDS., MAJOR COUNTY, OK		PROJECT: NEW BRIDGE OVER SAND CREEK-- J/P NO. 28348(04)														
GRAPHICS LOG	LAYER / MATERIAL DESCRIPTION Station= 102+12.97, 11.6 FT RT CL (Continued)	DEPTH, FT.	SAMPLES			TESTS										
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, IN.	SPT-N BLOWS / FT.	MOISTURE, %	DRY DENSITY, PCF	UNCONFINED STRENGTH, PSF	LIMITS (LL) (PL) INDEXES (PI) #200 SIEVE					
	MODERATELY HARD TO HARD, RED BROWN, WEATHERED SHALE (SILTY, SANDY) (continued)	35		7	TCP	0	50/1.5"									
	MODERATELY HARD TO HARD, RED BROWN, WEATHERED SHALE (SILTY, SANDY) (continued)	40		8	TCP	0	50/1.75"									
	MODERATELY HARD TO HARD, RED BROWN, WEATHERED SHALE (SILTY, SANDY) (continued)	45		9	TCP	0	50/1.0"									
	Bottom of Boring at 45.87 feet	50		10	TCP	0	50/0.88"									
<b>REMARKS:</b> SOIL AND ROCK CLASSIFICATIONS ARE FROM DISTURBED SAMPLES. CORE SAMPLES AND FURTHER LABORATORY TESTING MAY REVEAL OTHER ROCK AND/OR SOIL TYPES. THE STRATIFICATION SHOWN IN THE SOIL AND ROCK ABOVE IS AN ESTIMATION OF IN-SITU CONDITIONS. THEREFORE, THE NATURAL TRANSITION BETWEEN SOIL AND ROCK TYPES MAY BE GRADUAL. * ESTIMATED FROM ROCKET PENETROMETER						<b>WATER LEVEL OBSERVATIONS</b> WL 9 FT--WD 7 FT-AB DATE STARTED 6/9/15 DATE COMPLETED 6/9/15 RIG CME-75 FOREMAN C.K. REVIEWED C.K. JOB NO. 1441										

MAJOR COUNTY SAND CREEK

BORING LOGS  
B-02

J/P NO. 28348(04) SHEET NO. B006

BORING LOG		BORING NO. B-03		PAGE 1 OF 2							
CLIENT: CIRCUIT ENGINEERING DISTRICT 8		ENGINEER: TYLER SCHRODER, PE									
LOCATION: INT OF NS255 & EW 52 CO. RDS., MAJOR COUNTY, OK		PROJECT: NEW BRIDGE OVER SAND CREEK-- J/P NO. 28348(04)									
GRAPHICS LOG	LAYER / MATERIAL DESCRIPTION Station= 102+86.71, 7.9 FT RT CL Surface Elev. = 1272.2 feet Veg. Thick.: 18" GR. CVR	DEPTH, FT.	SAMPLES			TESTS					
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, IN.	SPT-N BLOWS / FT.	MOISTURE, %	DRY DENSITY, PCF	UNCONFINED STRENGTH, PSF	LIMITS (LL) (PL) INDEXES (PI) #200 SIEVE
	SOFT, RED BROWN, SILT WITH SAND ELEV. = 1264.7	5	ML	1	SS	18	7	19.1			LL = 23 PI = 19 #200 = 87.0%
	VERY SOFT, RED BROWN, SANDY SILT ELEV. = 1258.2	10	ML	2	SS	18	4	20.0			LL = 21 PI = 2 #200 = 89.0%
	VERY HARD, RED BROWN, LEAN CLAY WITH TRACES OF SAND (SHALEY) ELEV. = 1244.7	15	CL	3	SS	10	22/6*	16.7			LL = 36 PI = 21 PI = 14 #200 = 93.0%
		CL	4	SS	18	54	21.0				LL = 39 PI = 25 PI = 14 #200 = 95.0%
	SOFT, RED BROWN, LEAN CLAY ELEV. = 1244.7	25	CL	5	SS	16	26	19.0			LL = 32 PI = 23 PI = 9 #200 = 93.0%
<b>REMARKS:</b> SOIL AND ROCK CLASSIFICATIONS ARE FROM DISTURBED SAMPLES. CORE SAMPLES AND FURTHER LABORATORY TESTING MAY REVEAL OTHER ROCK AND/OR SOIL TYPES. THE STRATIFICATION SHOWN IN THE SOIL AND ROCK ABOVE IS AN ESTIMATION OF IN-SITU CONDITIONS. THEREFORE, THE NATURAL TRANSITION BETWEEN SOIL AND ROCK TYPES MAY BE GRADUAL. * ESTIMATED FROM ROCKET PENETROMETER											
 ARROWHEAD ENGINEERING COMPANY 3300 108TH AVE SE NORMAN, OK 73026 PHONE (405) 596-2642		WATER LEVEL OBSERVATIONS			DATE STARTED 6/10/15						
		WL 13 FT--WD 10 FT-AB			DATE COMPLETED 6/10/15						
		WL			RIG CME-75 FOREMAN C.K.						
		WL			REVIEWED C.K. JOB NO. 1441						

BORING LOG		BORING NO. B-03		PAGE 2 OF 2							
CLIENT: CIRCUIT ENGINEERING DISTRICT 8		ENGINEER: TYLER SCHRODER, PE									
LOCATION: INT OF NS255 & EW 52 CO. RDS., MAJOR COUNTY, OK		PROJECT: NEW BRIDGE OVER SAND CREEK-- J/P NO. 28348(04)									
GRAPHICS LOG	LAYER / MATERIAL DESCRIPTION Station= 102+86.71, 7.9 FT RT CL (Continued) ELEV. = 1241.7 <th rowspan="2">DEPTH, FT.</th> <th colspan="3">SAMPLES</th> <th colspan="3">TESTS</th>	DEPTH, FT.	SAMPLES			TESTS					
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, IN.	SPT-N BLOWS / FT.	MOISTURE, %	DRY DENSITY, PCF	UNCONFINED STRENGTH, PSF	LIMITS (LL) (PL) INDEXES (PI) #200 SIEVE
		35	CL	6	SS	9	24/6*	17.1			LL = 30 PI = 18 PI = 12 #200 = 98.0%
				7	TCP	0	50/3.25*				50/1.38*
				8	TCP	0	50/1.0*				50/0.25*
		40		9	TCP	0	50/1.5*				50/0.50*
				10	TCP	0	50/0.88*				50/0.38*
		50		11	TCP	0	50/0.75*				50/0.50*
Bottom of Boring at 50.87 feet											
<b>REMARKS:</b> SOIL AND ROCK CLASSIFICATIONS ARE FROM DISTURBED SAMPLES. CORE SAMPLES AND FURTHER LABORATORY TESTING MAY REVEAL OTHER ROCK AND/OR SOIL TYPES. THE STRATIFICATION SHOWN IN THE SOIL AND ROCK ABOVE IS AN ESTIMATION OF IN-SITU CONDITIONS. THEREFORE, THE NATURAL TRANSITION BETWEEN SOIL AND ROCK TYPES MAY BE GRADUAL. * ESTIMATED FROM ROCKET PENETROMETER											
 ARROWHEAD ENGINEERING COMPANY 3300 108TH AVE SE NORMAN, OK 73026 PHONE (405) 596-2642		WATER LEVEL OBSERVATIONS			DATE STARTED 6/10/15						
		WL 13 FT--WD 10 FT-AB			DATE COMPLETED 6/10/15						
		WL			RIG CME-75 FOREMAN C.K.						
		WL			REVIEWED C.K. JOB NO. 1441						

MAJOR COUNTY SAND CREEK

BORING LOGS  
B-03

J/P NO. 28348(04) SHEET NO. B007

BORING LOG		BORING NO. B-04		PAGE 1 OF 2							
CLIENT: CIRCUIT ENGINEERING DISTRICT 8		ENGINEER: TYLER SCHRODER, PE									
LOCATION: INT OF NS255 & EW 52 CO. RDS., MAJOR COUNTY, OK		PROJECT: NEW BRIDGE OVER SAND CREEK-- J/P NO. 28348(04)									
GRAPHICS LOG	LAYER / MATERIAL DESCRIPTION Station= 103+34.81, 11.5 FT LT CL Surface Elev. = 1272.4 feet Veg. Thick.: 18" GR. CVR	DEPTH, FT.	SAMPLES			TESTS					
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, IN.	SPT-N BLOWS / FT.	MOISTURE, %	DRY DENSITY, PCF	UNCONFINED STRENGTH, PSF	LIMITS (LL) (PL) INDEXES (PI) #200 SIEVE
	MEDIUM STIFF, RED BROWN, LEAN CLAY WITH SAND ELEV. = 1264.9	5	CL	1	SS	18	10	17.0			LL = 37 PL = 16 PI = 19 #200 = 85.0%
	VERY HARD, RED BROWN, LEAN CLAY WITH TRACES OF SAND (SHALEY) ELEV. = 1244.9	10	CL	2	SS	18	42	18.7			LL = 38 PL = 22 PI = 16 #200 = 91.0%
		15	CL	3	SS	18	23	19.8			LL = 36 PL = 24 PI = 12 #200 = 91.0%
		20	CL	4	SS	18	62	17.3			LL = 39 PL = 24 PI = 15 #200 = 88.0%
	25	CL	5	SS	16	24/6" 46/6" 50/5"	15.6			LL = 32 PL = 22 PI = 10 #200 = 88.0%	
30	SOFT, RED BROWN, LEAN CLAY										
<b>REMARKS:</b> SOIL AND ROCK CLASSIFICATIONS ARE FROM DISTURBED SAMPLES. CORE SAMPLES AND FURTHER LABORATORY TESTING MAY REVEAL OTHER ROCK AND/OR SOIL TYPES. THE STRATIFICATION SHOWN IN THE SOIL AND ROCK ABOVE IS AN ESTIMATION OF IN-SITU CONDITIONS. THEREFORE, THE NATURAL TRANSITION BETWEEN SOIL AND ROCK TYPES MAY BE GRADUAL. * ESTIMATED FROM ROCKET PENETROMETER						<b>WATER LEVEL OBSERVATIONS</b> WL NONE--WD N/A-AB DATE STARTED 6/10/15 DATE COMPLETED 6/10/15 RIG CME-75 FOREMAN C.K. REVIEWED C.K. JOB NO. 1441					

BORING LOG		BORING NO. B-04		PAGE 2 OF 2							
CLIENT: CIRCUIT ENGINEERING DISTRICT 8		ENGINEER: TYLER SCHRODER, PE									
LOCATION: INT OF NS255 & EW 52 CO. RDS., MAJOR COUNTY, OK		PROJECT: NEW BRIDGE OVER SAND CREEK-- J/P NO. 28348(04)									
GRAPHICS LOG	LAYER / MATERIAL DESCRIPTION Station= 103+34.81, 11.5 FT LT CL (Continued)	DEPTH, FT.	SAMPLES			TESTS					
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, IN.	SPT-N BLOWS / FT.	MOISTURE, %	DRY DENSITY, PCF	UNCONFINED STRENGTH, PSF	LIMITS (LL) (PL) INDEXES (PI) #200 SIEVE
	ELEV. = 1241.9	35	CL	6	SS	9	24/6" 50/3.25" 50/0.25" 50/0.75"	14.5			LL = 30 PL = 18 PI = 12 #200 = 88.0%
	MODERATELY HARD TO HARD, RED BROWN, WEATHERED SHALE (SILTY, SANDY) ELEV. = 1221.38	40			RB						
		45			RB						
	Bottom of Boring at 51.02 feet	50			RB						
		55			RB						
	60				RB						
<b>REMARKS:</b> SOIL AND ROCK CLASSIFICATIONS ARE FROM DISTURBED SAMPLES. CORE SAMPLES AND FURTHER LABORATORY TESTING MAY REVEAL OTHER ROCK AND/OR SOIL TYPES. THE STRATIFICATION SHOWN IN THE SOIL AND ROCK ABOVE IS AN ESTIMATION OF IN-SITU CONDITIONS. THEREFORE, THE NATURAL TRANSITION BETWEEN SOIL AND ROCK TYPES MAY BE GRADUAL. * ESTIMATED FROM ROCKET PENETROMETER						<b>WATER LEVEL OBSERVATIONS</b> WL NONE--WD N/A-AB DATE STARTED 6/10/15 DATE COMPLETED 6/10/15 RIG CME-75 FOREMAN C.K. REVIEWED C.K. JOB NO. 1441					

MAJOR COUNTY SAND CREEK

BORING LOGS  
B-04

J/P NO. 28348(04) SHEET NO. B008

# STORM WATER MANAGEMENT PLAN

REVISIONS	
DESCRIPTION	DATE

## SITE DESCRIPTION

PROJECT LIMITS: COUNTY BRIDGE OVER SAND CREEK, 0.9 MI. EAST AND 0.5 MI. SOUTH OF FAIRVIEW, ON NS-255.

PROJECT DESCRIPTION: BRIDGE AND APPROACHES:  
 989.11 FT. OF ROADWAY (4" SUPERPAVE S3 AND 2" SUPERPAVE S4),  
 50'-50'-50' PCB SPAN, STANDARD ABUTMENTS = 155.22 FT. LONG BRIDGE,  
 SKEWED 30', GUARDRAIL BRIDGE & RIP RAP CHANNEL,  
 10,689.00 S.Y. OF SOLID SLAB SODDING.

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. REMOVE TEMPORARY 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: CANADIAN FINE SANDY LOAM

TOTAL AREA OF THE CONSTRUCTION SITE: 3.60 ACRES

ESTIMATED AREA TO BE DISTURBED: 2.21 ACRES

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 0.49 ACRES

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 0.80 ACRES

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: 0.30

LATITUDE & LONGITUDE OF CENTER OF PROJECT: N36°15'41" W98°27'44"

**PROJECT WILL DISCHARGE TO:**

NAME OF RECEIVING WATERS: SAND CREEK

SENSITIVE WATERS OR WATERSHEDS: YES  NO

303(d) IMPAIRED WATERS: YES  NO

IF YES, LIST IMPAIRMENT: \_\_\_\_\_

LOCATED IN A TMDL: YES  NO

LAKE THUNDERBIRD TMDL: YES  NO

MS4 ENTITY YES  NO

IF YES, LOCATION: \_\_\_\_\_

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 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 TARPULIN
- 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:

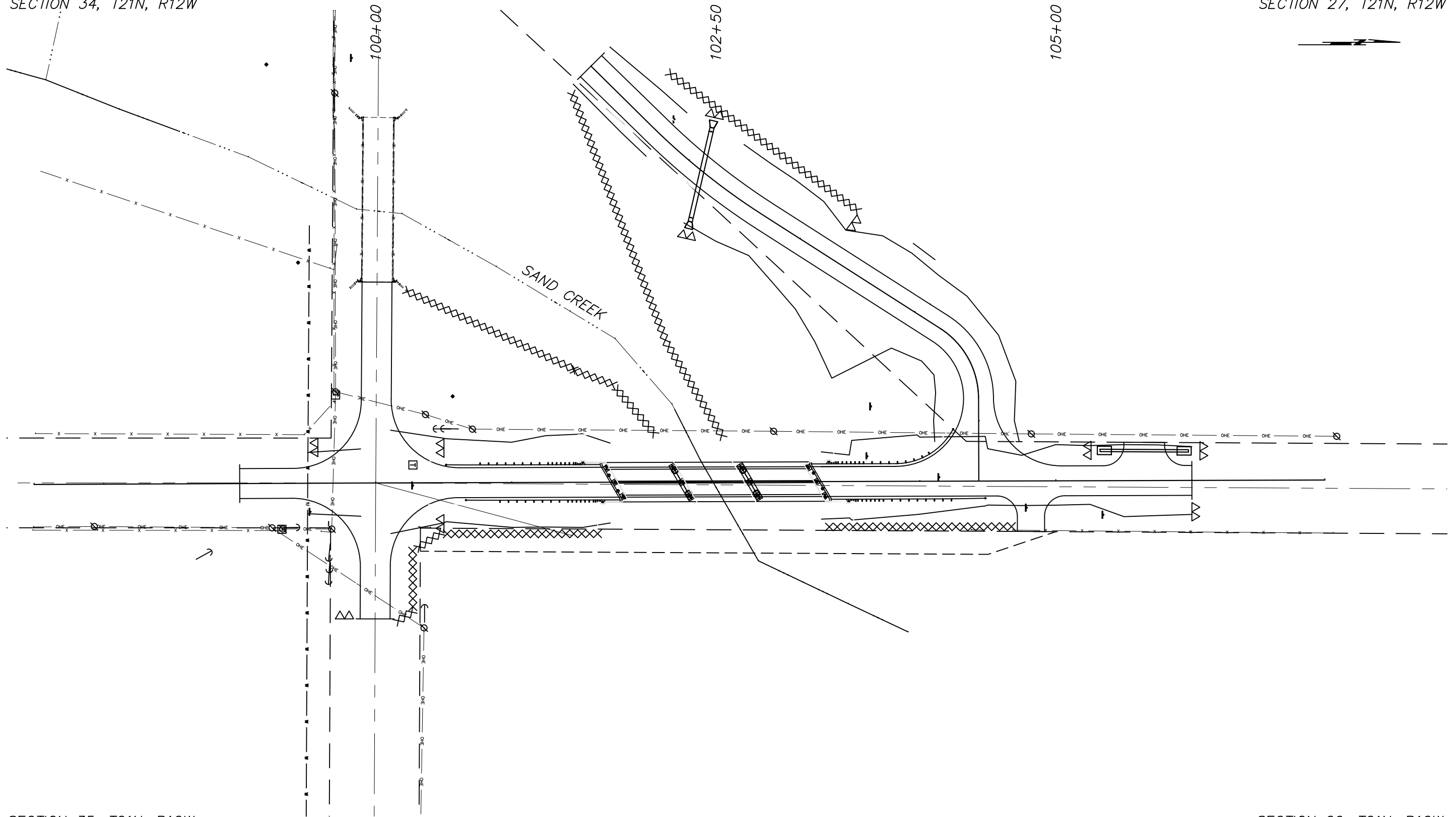
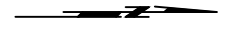
- 103.05 BONDING REQUIREMENTS
- 104.10 FINAL CLEANING UP
- 104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13 ENVIRONMENTAL PROTECTION
- 106.08 STORAGE AND HANDLING OF MATERIAL
- 107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20 STORM WATER MANAGEMENT
- 220 MANAGEMENT OF EROSION, SEDIMENTATION 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, 2017.

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION
DRAWN	JRR	08/14	<b>STORM WATER MANAGEMENT PLAN</b>
CHECKED			
APPROVED			
SQUAD	xxx		

SECTION 34, T21N, R12W

SECTION 27, T21N, R12W



SECTION 35, T21N, R12W

SECTION 26, T21N, R12W

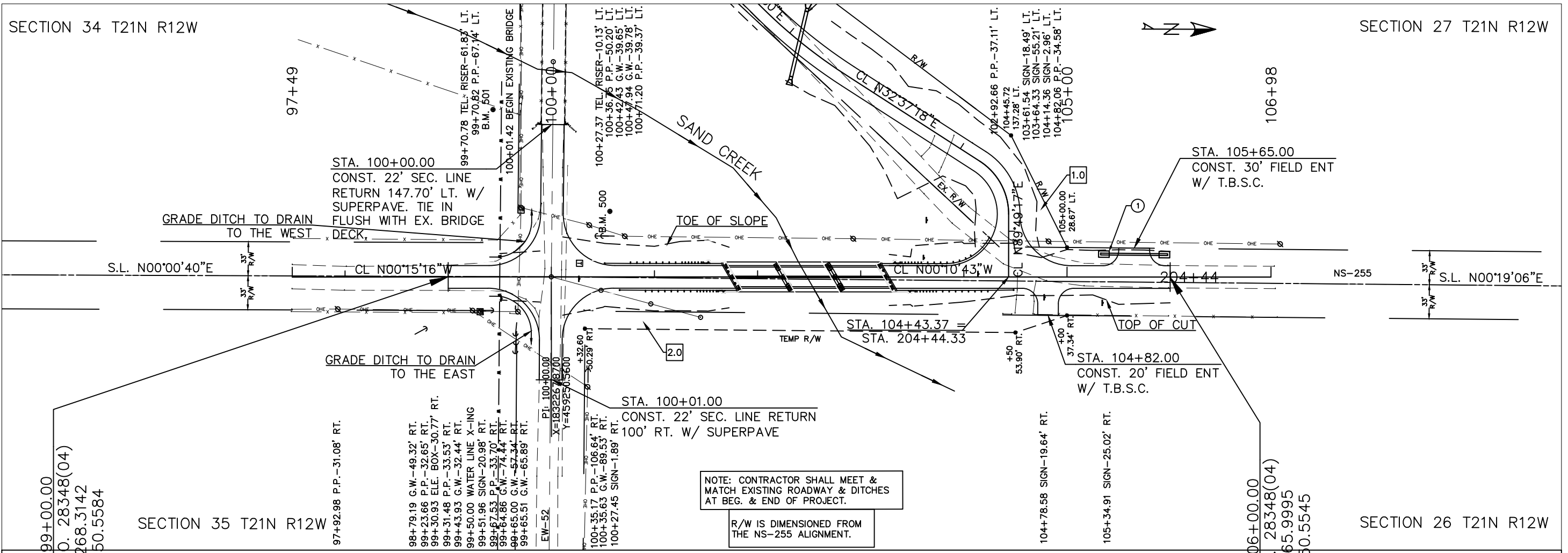
LEGEND	
TEMPORARY SILT DIKE	
TEMPORARY SILT FENCE	

MAJOR COUNTY	SAND CREEK
EROSION CONTROL	
J/P NO. 28348(04)	SHEET NO. R002



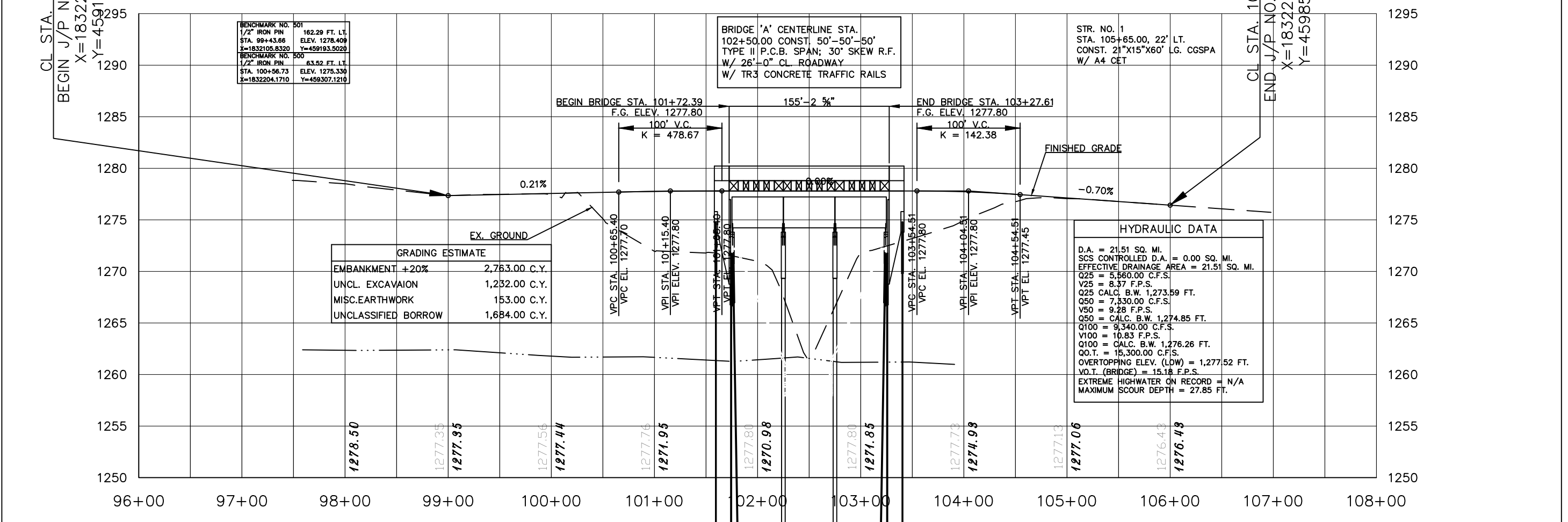
SECTION 34 T21N R12W

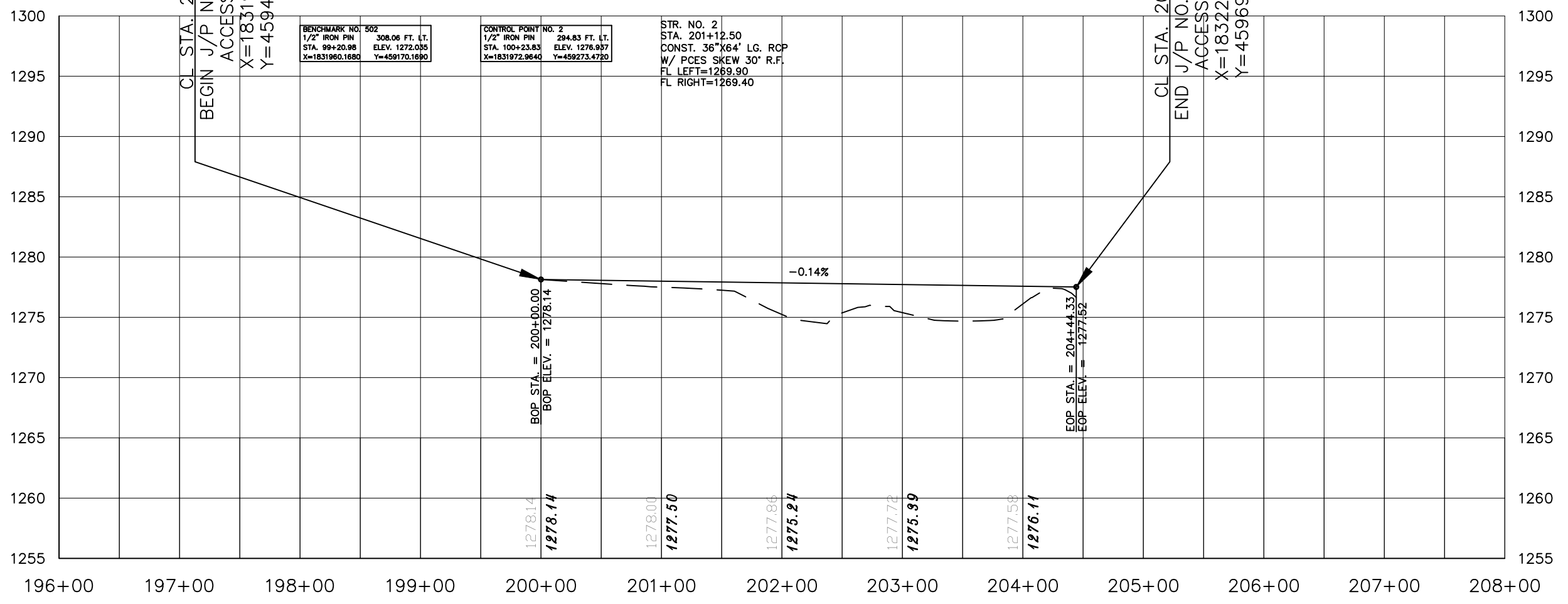
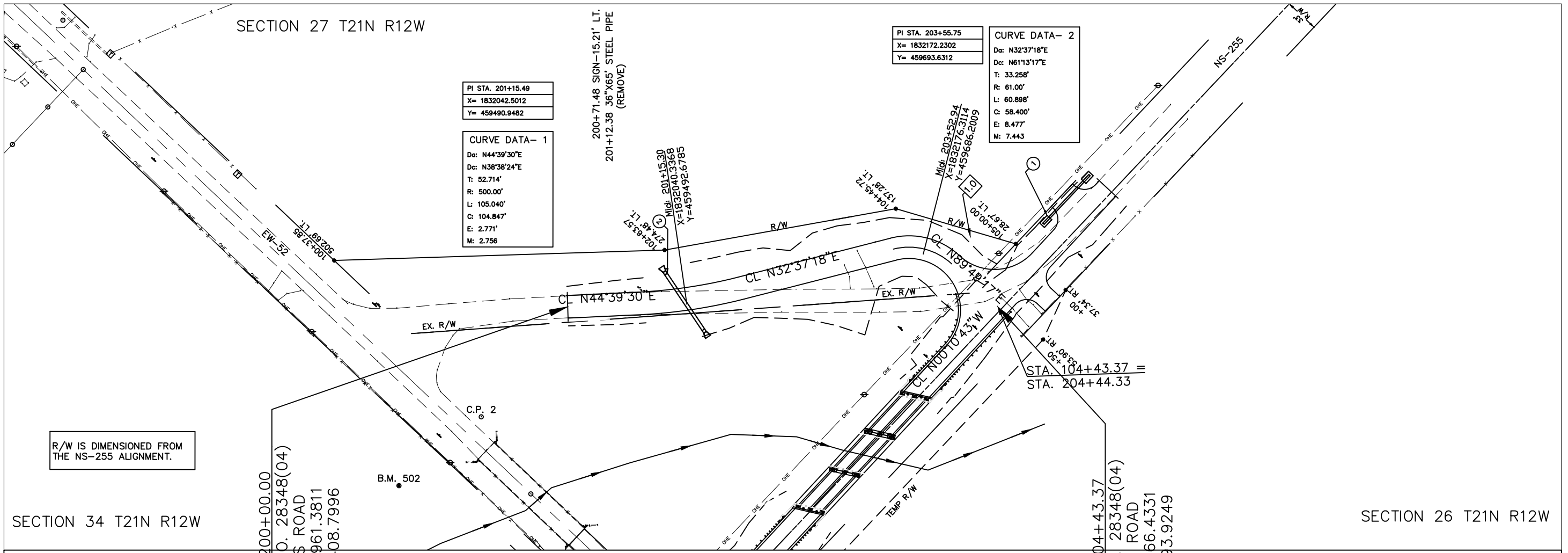
SECTION 27 T21N R12W



SECTION 35 T21N R12W

SECTION 26 T21N R12W





SCALES:  
1" = 50' HOR

SECTION 27 T21N R12W

SECTION 34 T21N R12W

NOTE: RIGHT-OF-WAY  
DIMENSIONED FROM SECTION LINE.

FROM 1/4 SECTION LINE TO  
SECTION LINE IS 2639.48'

ALL BENCHMARKS ARE  
REFERENCED FROM SECTION LINE.

GRADE DITCH TO DRAIN  
TO THE WEST

CL STA. 200+00.00  
BEGIN ACCESS JP NO. 28348(04)  
X=1831961.3810  
Y=459408.7996

CL STA. 204+44.33  
END ACCESS JP NO. 28348(04)  
X=1832266.4331  
Y=459693.9248

NS-255

STA. 104+43.37 =  
STA. 204+44.33

TOP OF CUT

BENCHMARK NO. 502 1/2" IRON PIN STA. 99+20.98 X=1831960.1680 Y=459170.1690	BENCHMARK NO. 501 1/2" IRON PIN STA. 99+43.66 ELEV. 1278.409 X=1832105.8320 Y=459193.5020
--	--

GRADE DITCH TO DRAIN  
TO THE EAST

CONTROL POINT NO. 2 1/2" IRON PIN STA. 100+23.83 X=1831972.9640 Y=459273.4720	BENCHMARK NO. 500 1/2" IRON PIN STA. 100+56.73 ELEV. 1275.330 X=1832204.1710 Y=459307.1210
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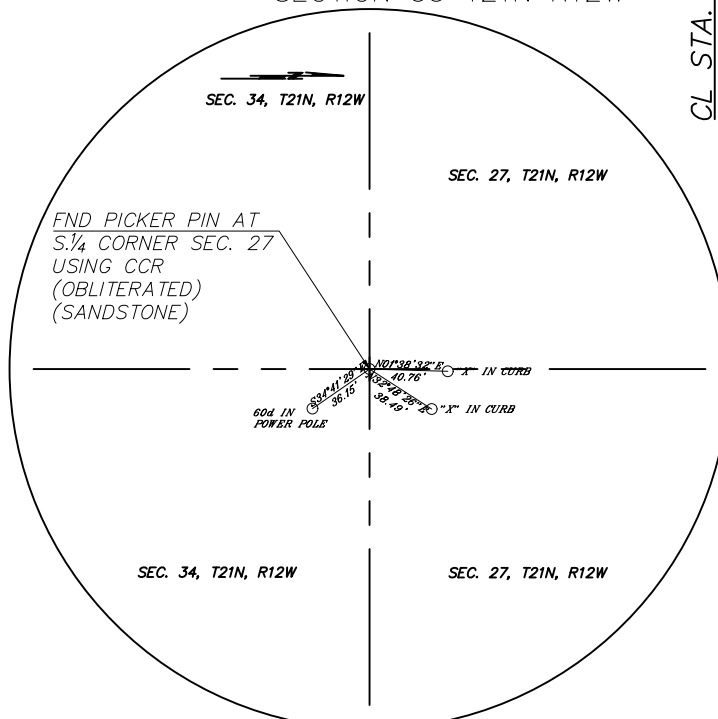
CL STA. 99+00.00  
BEGIN JP NO. 28348(04)  
X=1832268.3142  
Y=459150.5584

NOTE: CONTRACTOR SHALL MEET &  
MATCH EXISTING ROADWAY & DITCHES  
AT BEG. & END OF PROJECT.

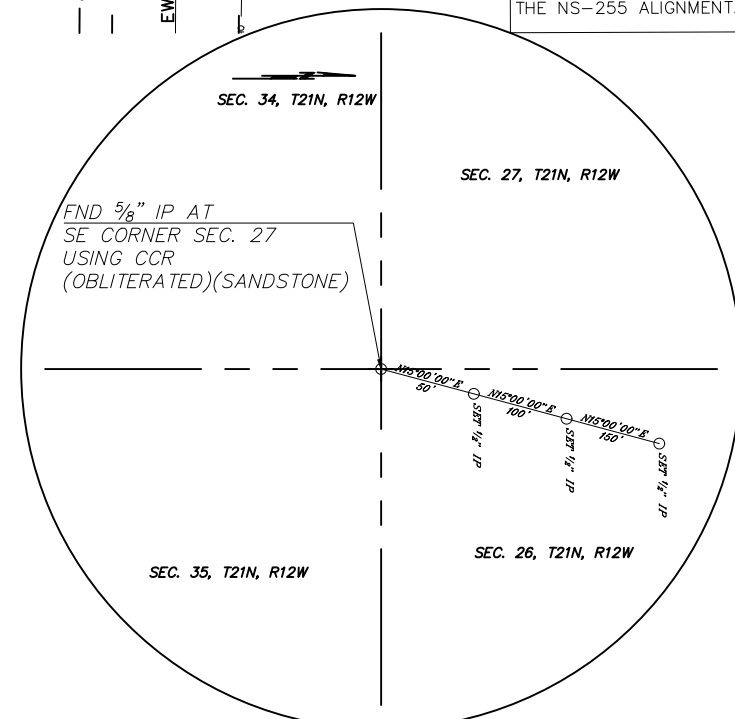
R/W IS DIMENSIONED FROM  
THE NS-255 ALIGNMENT.

SECTION 26 T21N R12W

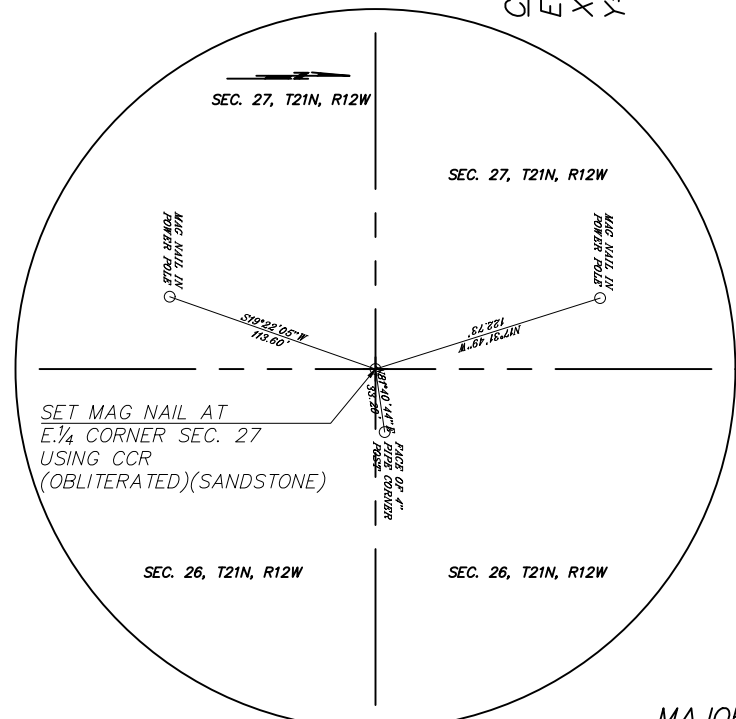
SECTION 35 T21N R12W



S. 1/4 SECTION CORNER  
SECTION 27, T21N, R12W  
STA. 100+00.00, LT. 2,628.62"  
X=1829639.3090  
Y=459267.6890



SE SECTION CORNER  
SECTION 27, T21N, R12W  
STA. 100+00.00  
X=1832267.8700  
Y=459250.5600



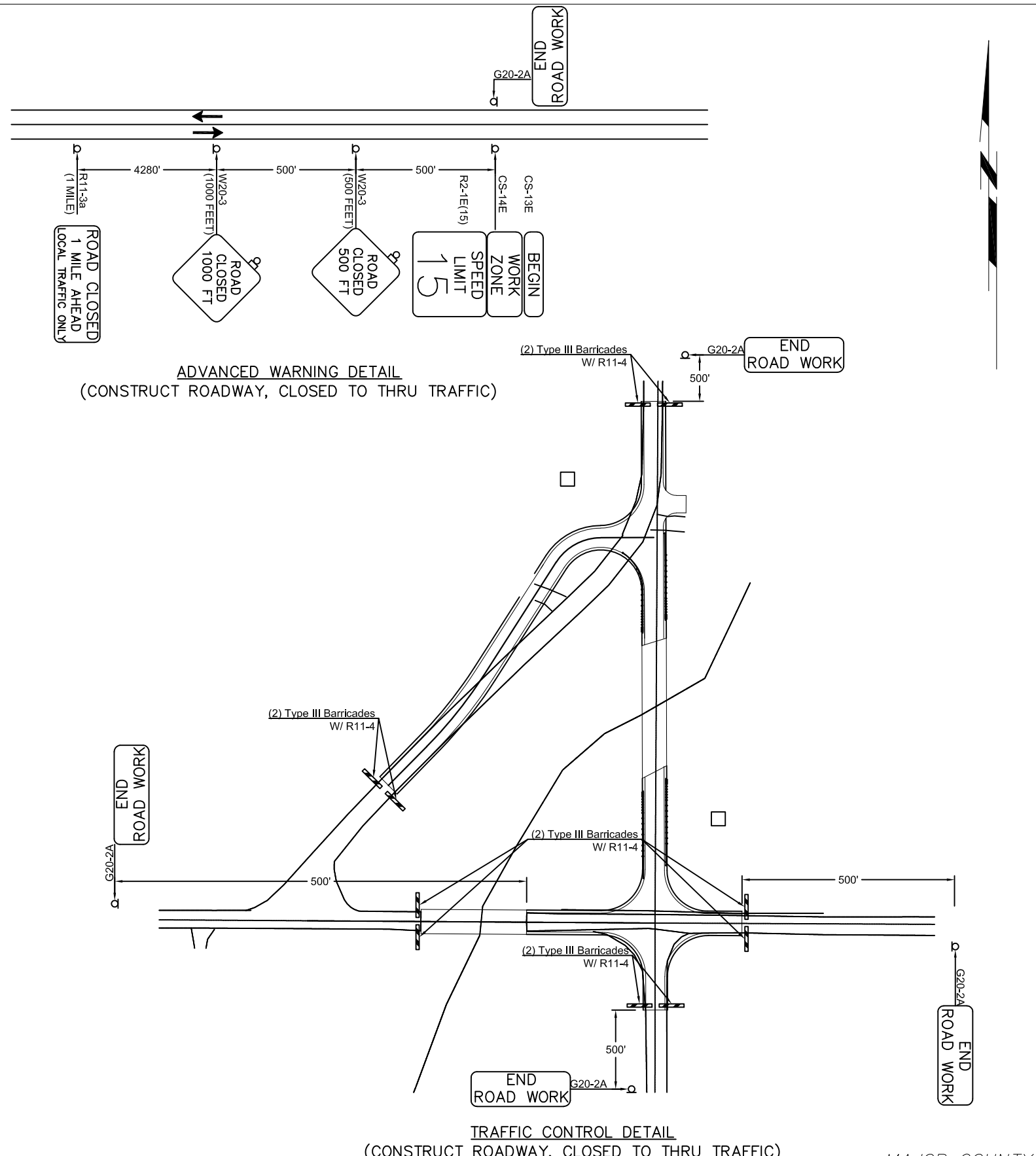
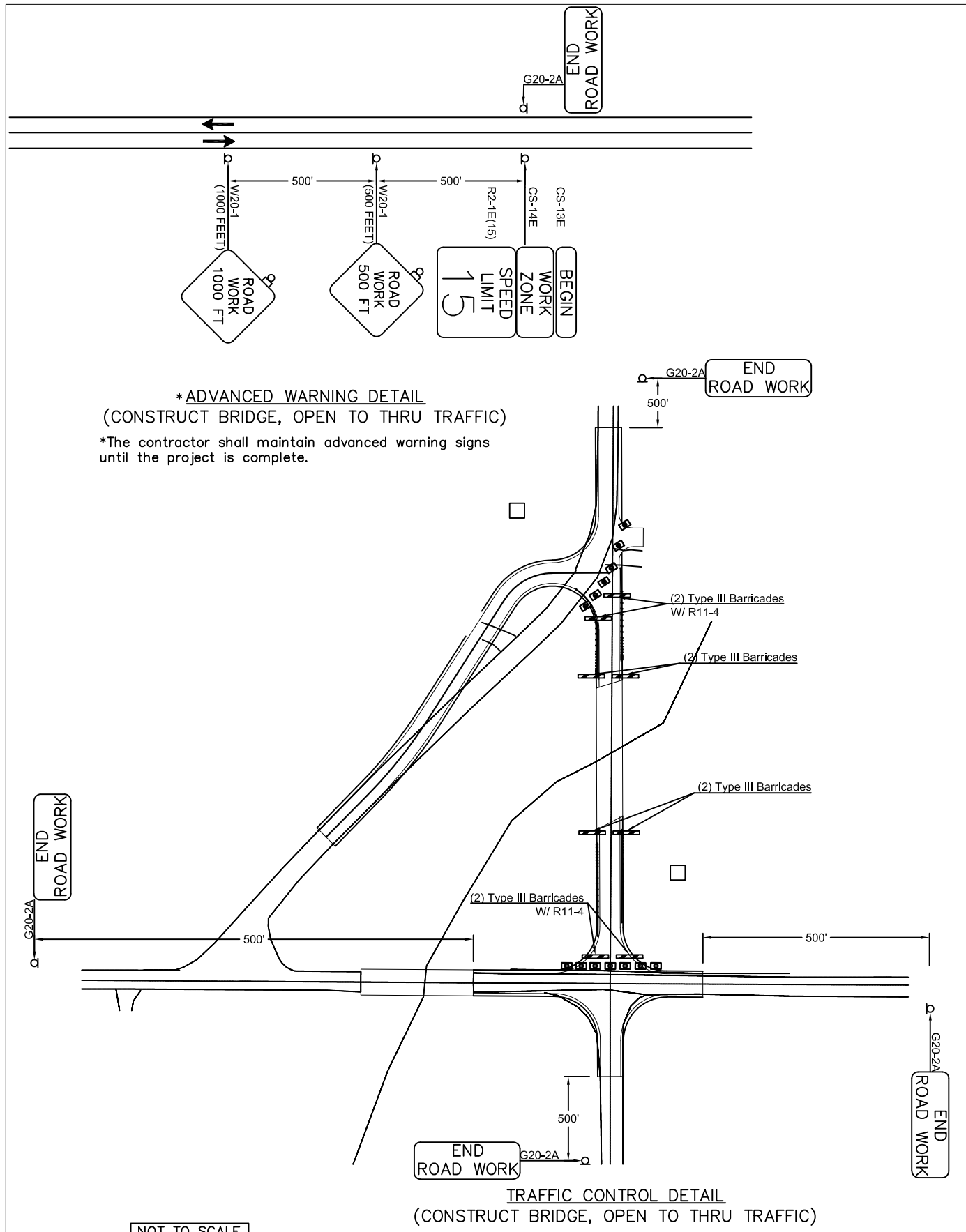
E. 1/4 SECTION CORNER  
SECTION 27, T21N, R12W  
STA. 126+31.98  
X=1832282.4900  
Y=461882.5030

MAJOR COUNTY SAND CREEK

ALIGNMENT, SURVEY  
REFERENCES AND R/W

J/P NO. 28348(04)

SHEET NO. S001



NOT TO SCALE

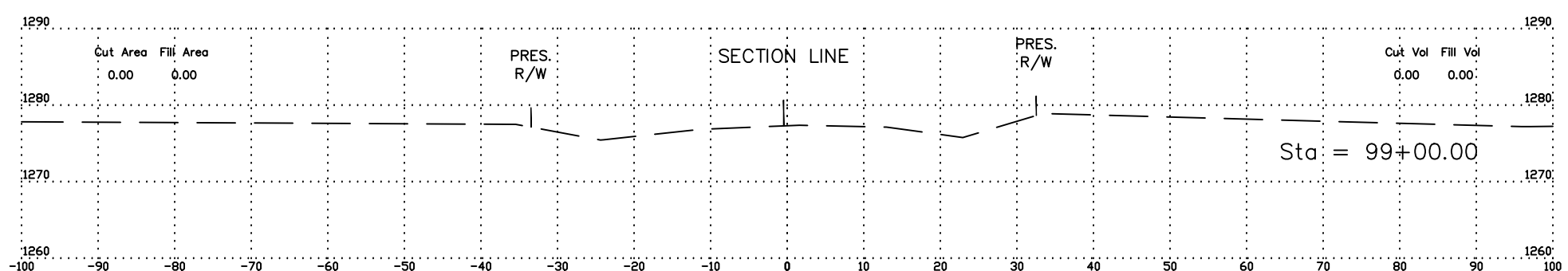
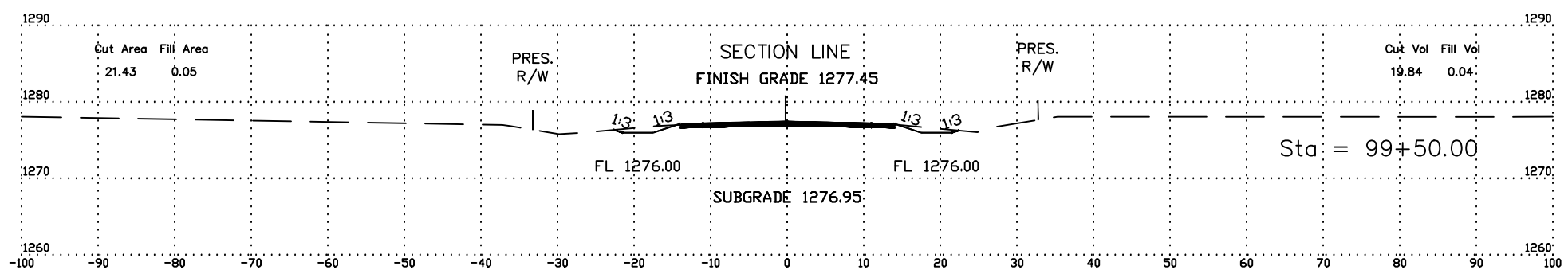
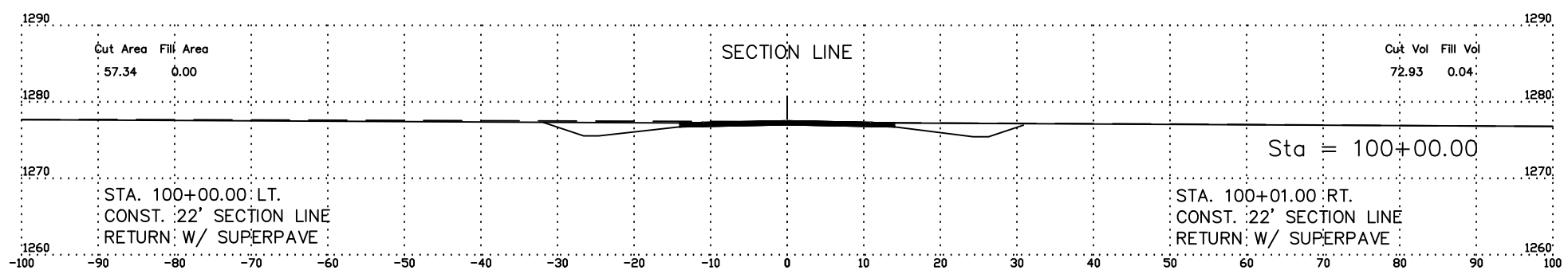
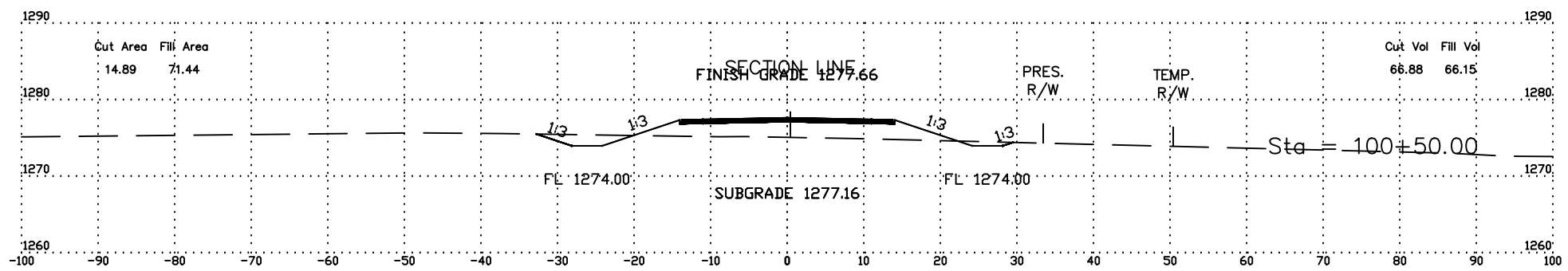
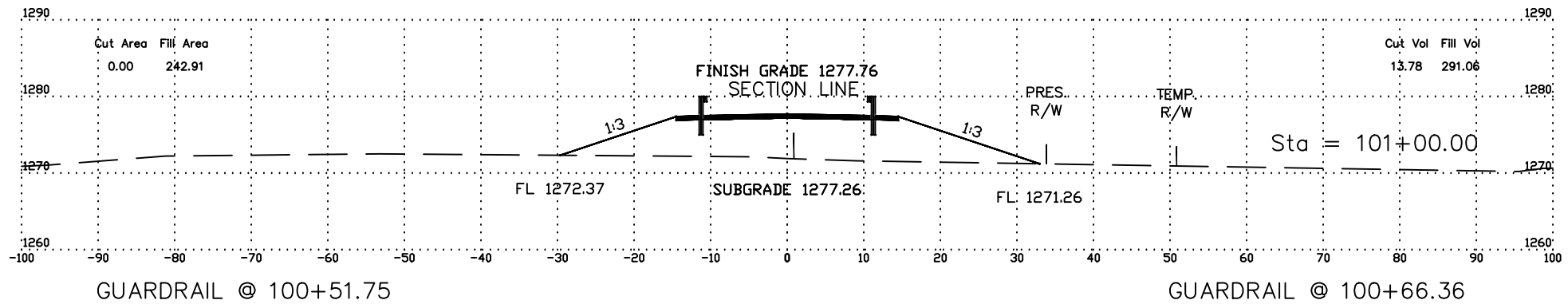
KEY:

▣	Vertical Panel
⊠	Sign
▬	Type III Barricade

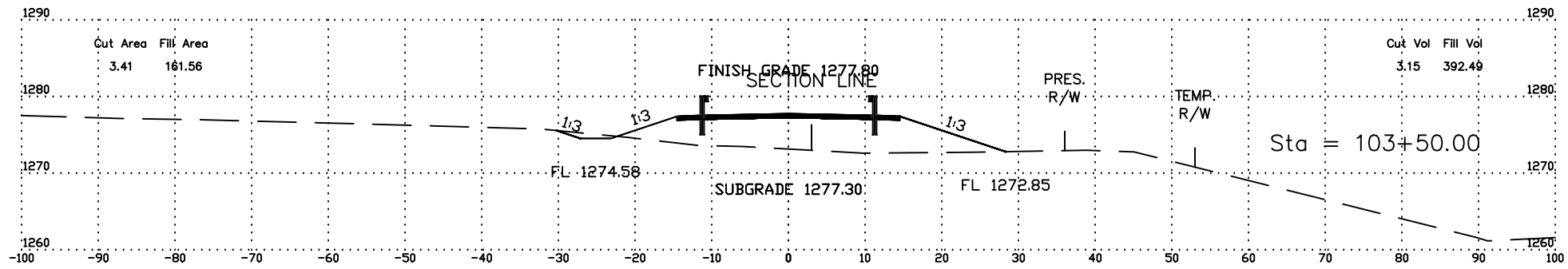
Note 1:  
The maximum spacing (feet) between vertical panels shall be twice the posted speed limit.

Note 2:  
All signs, barricades, and vertical panels shall contain a warning light.

Note 3:  
The contractor shall maintain drive access at all times.



SCALE:  
1" = 10'



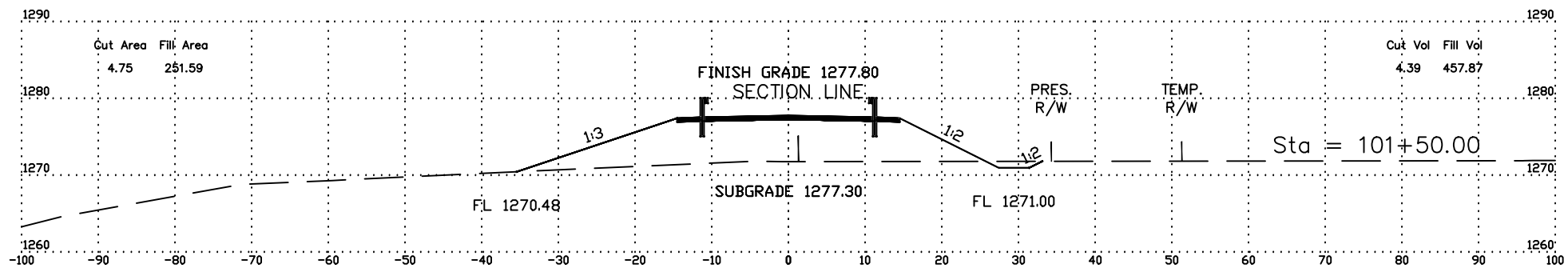
GUARDRAIL @ 103+33.64

GUARDRAIL @ 103+48.25

END BRIDGE @ 103+27.63  
 50'-50'-50' PCB SPAN (155.22 FT.)  
 CENTERLINE 102+50.00 SKEW 30° R.F.  
 BEGIN BRIDGE @ 101+72.39

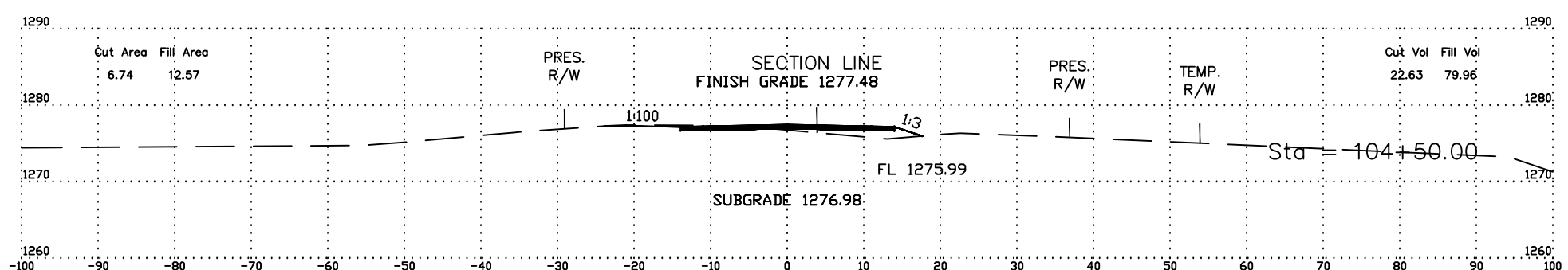
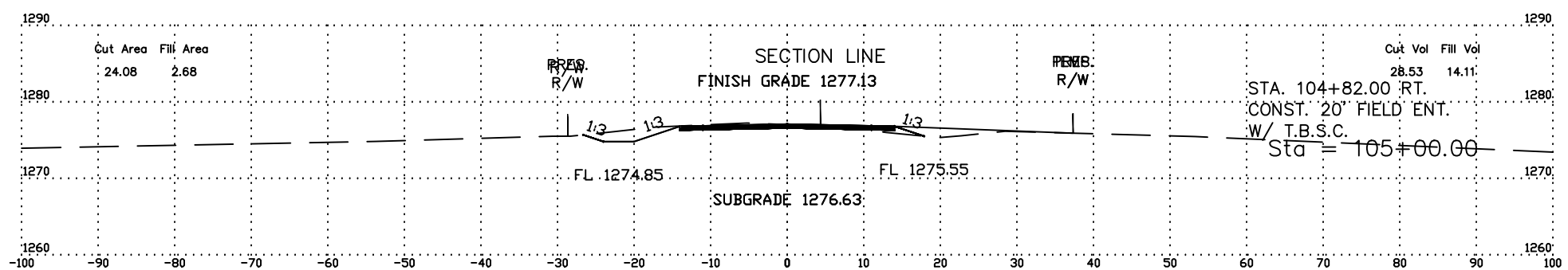
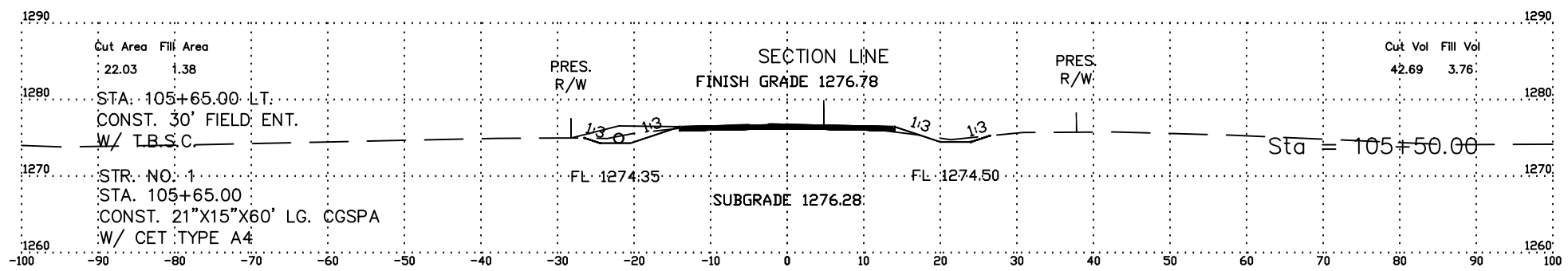
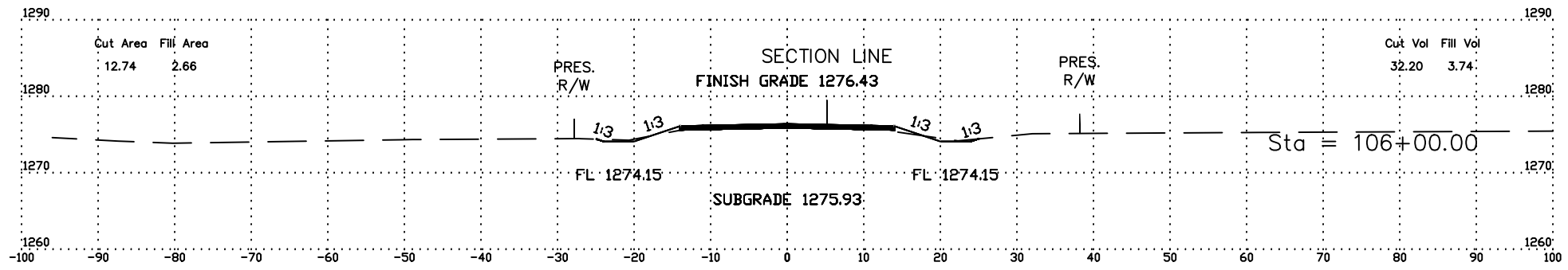
GUARDRAIL @ 101+51.75

GUARDRAIL @ 101+66.36



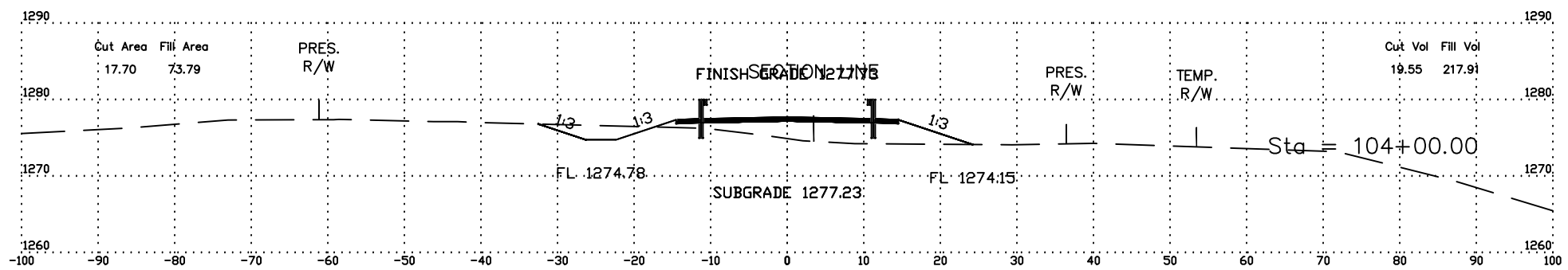
SCALE:  
1" = 10'



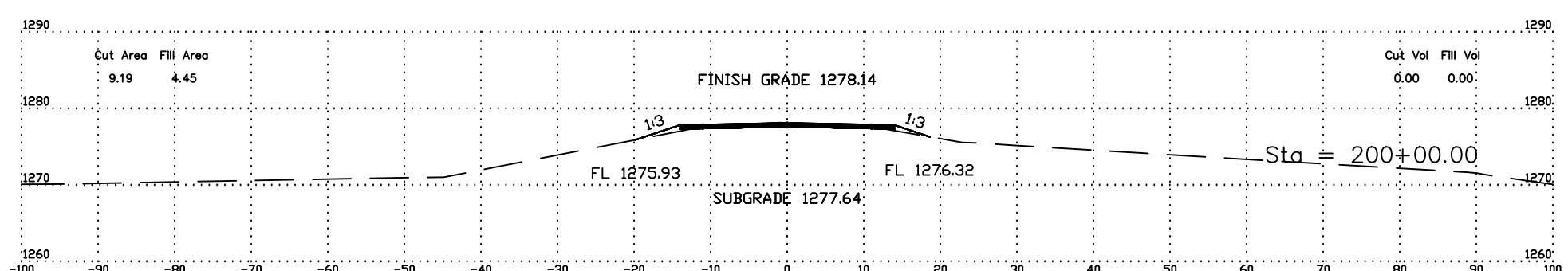
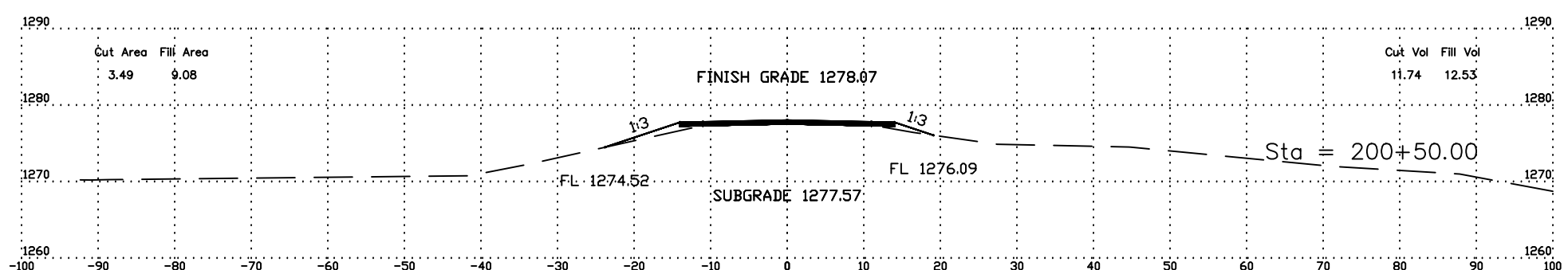
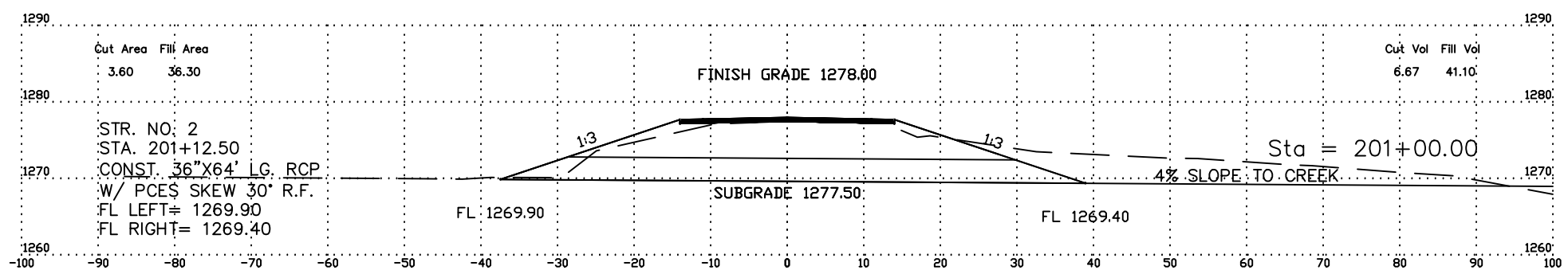
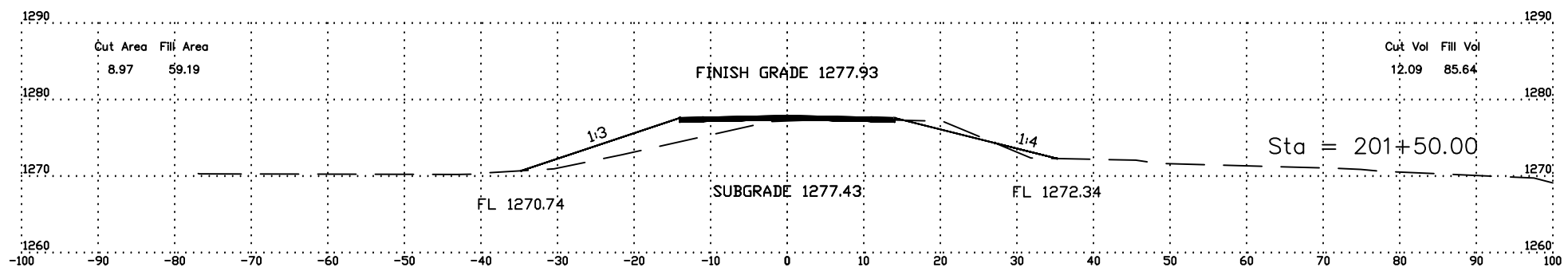
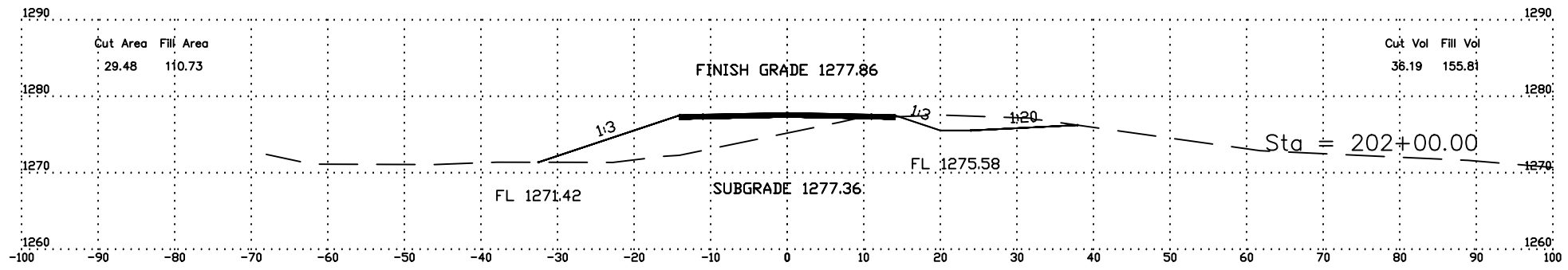


GUARDRAIL @ 104+25.69

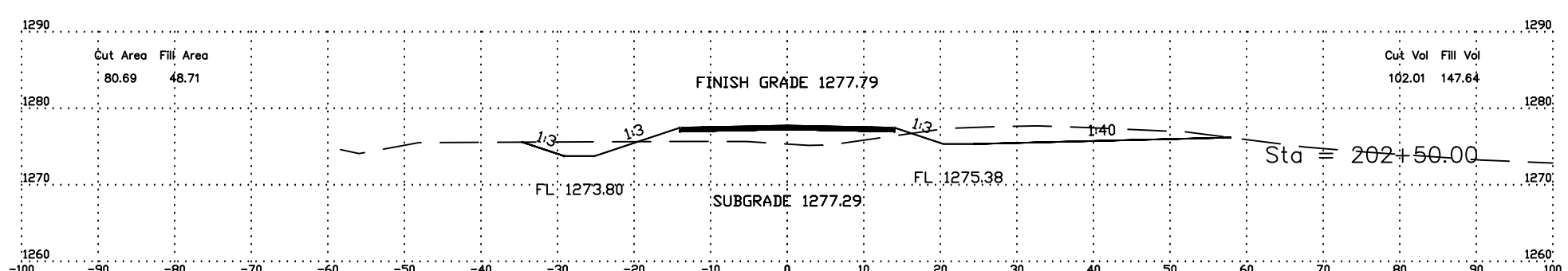
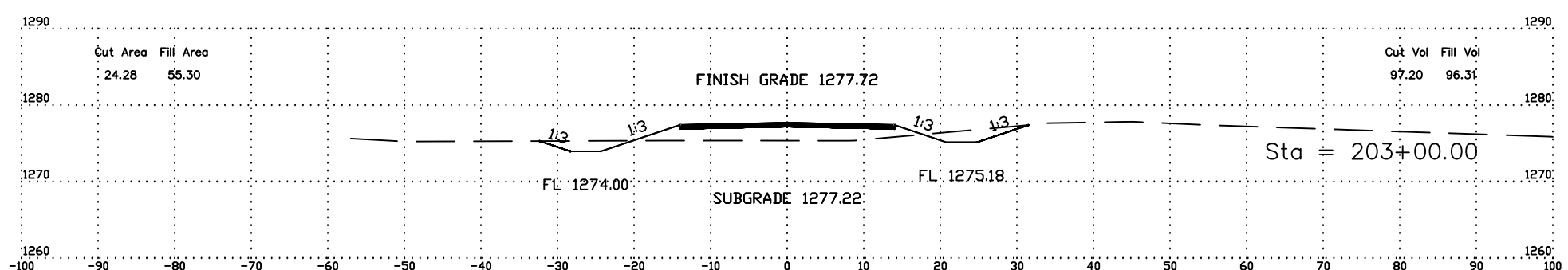
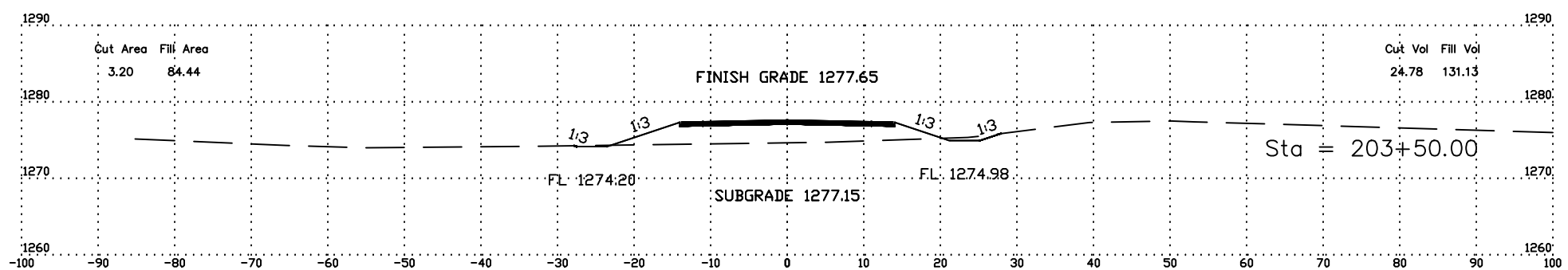
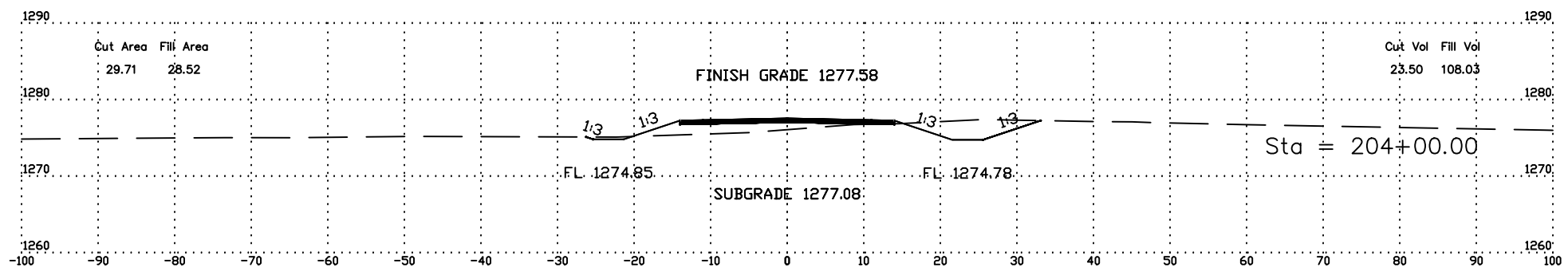
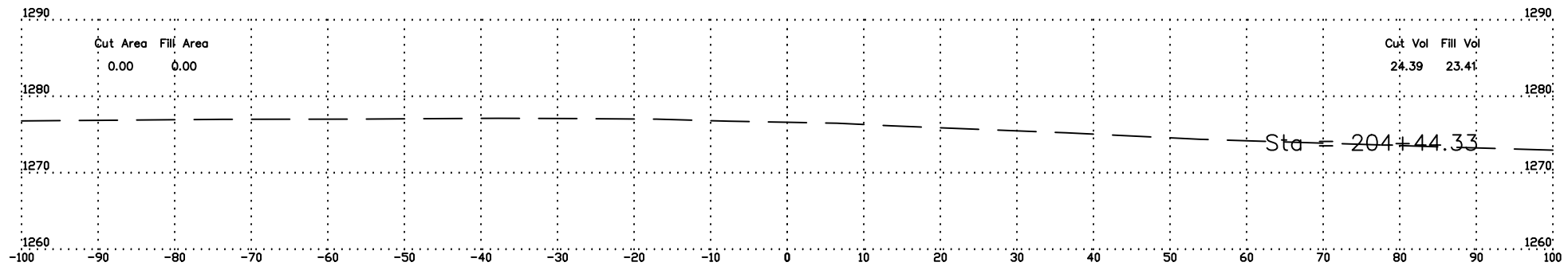
GUARDRAIL @ 104+48.25



SCALE:  
1" = 10'



SCALE:  
1" = 10'



SCALE:  
1" = 10'