





Bill Sanderson Gas Plant

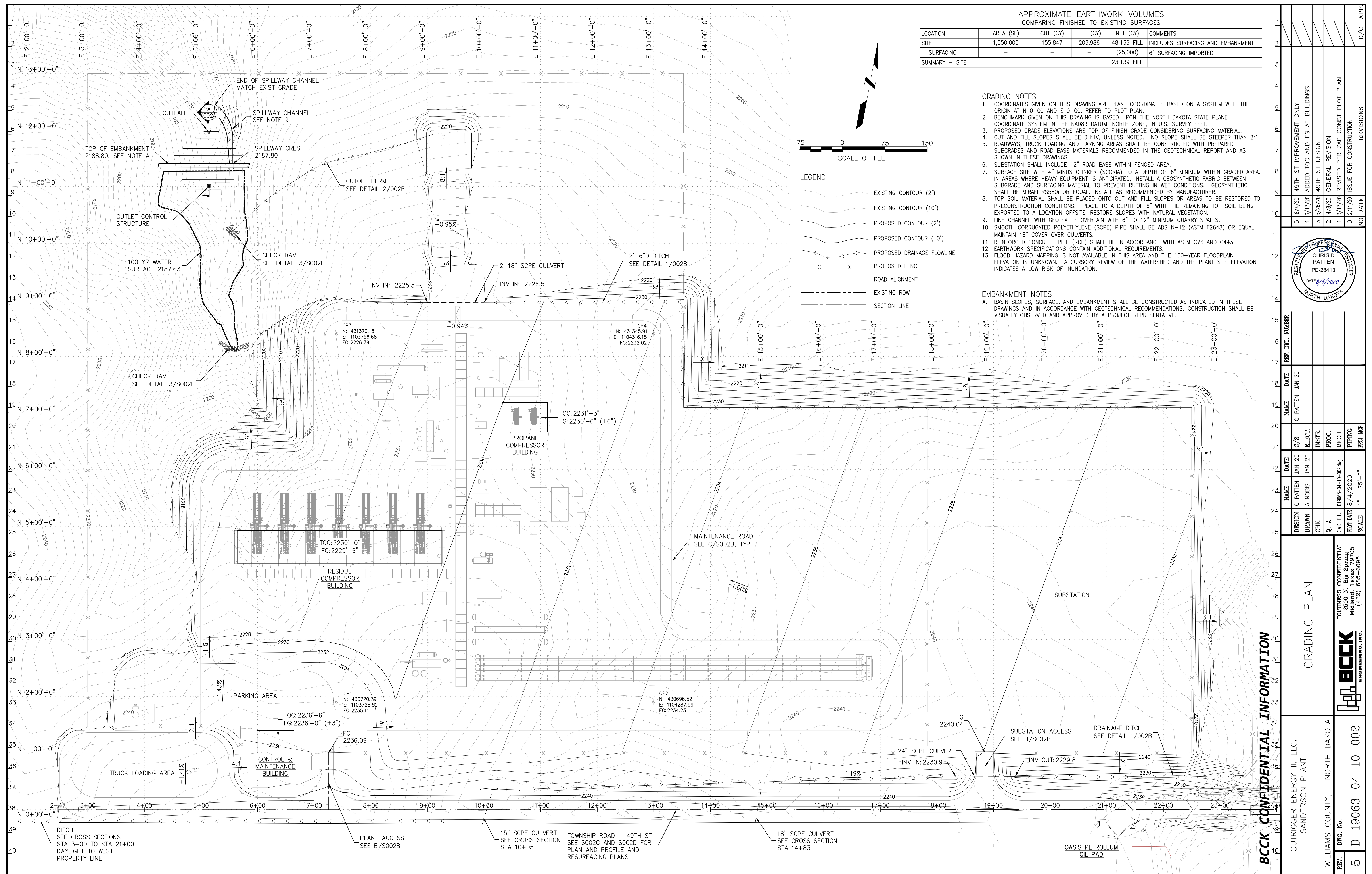
Plant Boundary / Edge of Disturbance
Plant Layout and Access Road

Legend

-  Access & Maintenance Road
-  Plant Equipment
-  Plant Piperack
-  Sanderson Gas Plant

Sanderson Gas Plant





APPROXIMATE EARTHWORK VOLUMES
COMPARING FINISHED TO EXISTING SURFACES

LOCATION	AREA (SF)	CUT (CY)	FILL (CY)	NET (CY)	COMMENTS
SITE	1,550,000	155,847	203,986	48,139 FILL	INCLUDES SURFACING AND EMBANKMENT
SURFACING	-	-	-	(25,000)	6" SURFACING IMPORTED
SUMMARY - SITE				23,139 FILL	



LEGEND

- EXISTING CONTOUR (2')
- EXISTING CONTOUR (10')
- PROPOSED CONTOUR (2')
- PROPOSED CONTOUR (10')
- PROPOSED DRAINAGE FLOWLINE
- PROPOSED FENCE
- ROAD ALIGNMENT
- EXISTING ROW
- SECTION LINE

GRADING NOTES

1. COORDINATES GIVEN ON THIS DRAWING ARE PLANT COORDINATES BASED ON A SYSTEM WITH THE ORIGIN AT N 0+00 AND E 0+00. REFER TO PLOT PLAN.
2. BENCHMARK GIVEN ON THIS DRAWING IS BASED UPON THE NORTH DAKOTA STATE PLANE COORDINATE SYSTEM IN THE NAD83 DATUM, NORTH ZONE, IN U.S. SURVEY FEET.
3. PROPOSED GRADE ELEVATIONS ARE TOP OF FINISH GRADE CONSIDERING SURFACING MATERIAL.
4. CUT AND FILL SLOPES SHALL BE 3H:1V, UNLESS NOTED. NO SLOPE SHALL BE STEEPER THAN 2:1.
5. ROADWAYS, TRUCK LOADING AND PARKING AREAS SHALL BE CONSTRUCTED WITH PREPARED SUBGRADES AND ROAD BASE MATERIALS RECOMMENDED IN THE GEOTECHNICAL REPORT AND AS SHOWN IN THESE DRAWINGS.
6. SUBSTATION SHALL INCLUDE 12" ROAD BASE WITHIN FENCED AREA.
7. SURFACE SITE WITH 4" MINUS CLINKER (SCORIA) TO A DEPTH OF 6" MINIMUM WITHIN GRADED AREA. IN AREAS WHERE HEAVY EQUIPMENT IS ANTICIPATED, INSTALL A GEOSYNTHETIC FABRIC BETWEEN SUBGRADE AND SURFACING MATERIAL TO PREVENT RUTTING IN WET CONDITIONS. GEOSYNTHETIC SHALL BE MIRAFI R5580; OR EQUAL. INSTALL AS RECOMMENDED BY MANUFACTURER.
8. TOP SOIL MATERIAL SHALL BE PLACED ONTO CUT AND FILL SLOPES OR AREAS TO BE RESTORED TO PRECONSTRUCTION CONDITIONS. PLACE TO A DEPTH OF 6" WITH THE REMAINING TOP SOIL BEING EXPORTED TO A LOCATION OFFSITE. RESTORE SLOPES WITH NATURAL VEGETATION.
9. LINE CHANNEL WITH GEOTEXTILE OVERLAIN WITH 6" TO 12" MINIMUM QUARRY SPALLS.
10. SMOOTH CORRUGATED POLYETHYLENE (SCPE) PIPE SHALL BE ADS N-12 (ASTM F2648) OR EQUAL. MAINTAIN 18" COVER OVER CULVERTS.
11. REINFORCED CONCRETE PIPE (RCP) SHALL BE IN ACCORDANCE WITH ASTM C76 AND C443.
12. EARTHWORK SPECIFICATIONS CONTAIN ADDITIONAL REQUIREMENTS.
13. FLOOD HAZARD MAPPING IS NOT AVAILABLE IN THIS AREA AND THE 100-YEAR FLOODPLAIN ELEVATION IS UNKNOWN. A CURSORY REVIEW OF THE WATERSHED AND THE PLANT SITE ELEVATION INDICATES A LOW RISK OF INUNDATION.

EMBANKMENT NOTES

- A. BASIN SLOPES, SURFACE, AND EMBANKMENT SHALL BE CONSTRUCTED AS INDICATED IN THESE DRAWINGS AND IN ACCORDANCE WITH GEOTECHNICAL RECOMMENDATIONS. CONSTRUCTION SHALL BE VISUALLY OBSERVED AND APPROVED BY A PROJECT REPRESENTATIVE.

REGISTRATION PROFESSIONAL ENGINEER
CHRIS D. PATTEN
 PE-28413
 DATE 8/4/2020
 NORTH DAKOTA

REV.	DATE	DESCRIPTION	BY	CHK.
1	8/4/20	49TH ST IMPROVEMENT ONLY		
2	6/17/20	ADDED TOC AND FG AT BUILDINGS		
3	5/26/20	49TH ST DESIGN		
4	4/8/20	GENERAL REVISION		
5	3/17/20	REVISED PER ZAP CONST. PLOT PLAN		
6	2/11/20	ISSUE FOR CONSTRUCTION		
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				

DESIGN C. PATTEN JAN 20
DRAWN A. NOBIS JAN 20
CHK. Q. A.
CAD FILE D:\9063-04-10-002.dwg
PLOT DATE 8/4/2020
SCALE 1" = 75'-0"

GRADING PLAN

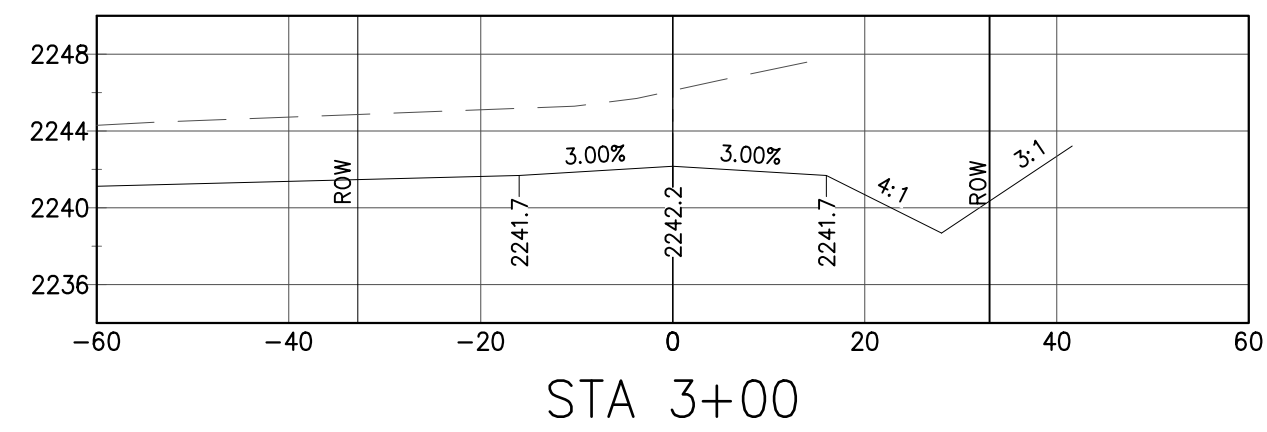
OUTRIGGER ENERGY II, LLC.
 SANDERSON PLANT

WILLIAMS COUNTY, NORTH DAKOTA

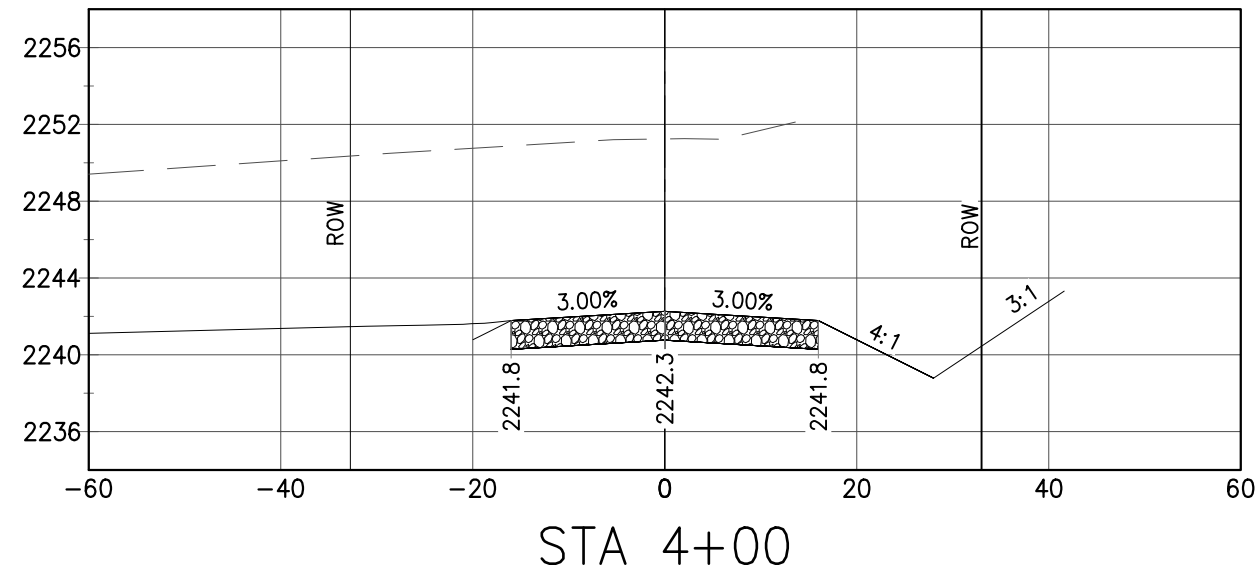
BCKK ENGINEERING, INC.
 BUSINESS CONFIDENTIAL
 2500 N. Big Spring
 Midland, Texas 79705
 (432) 685-6095

5 D-19063-04-10-002

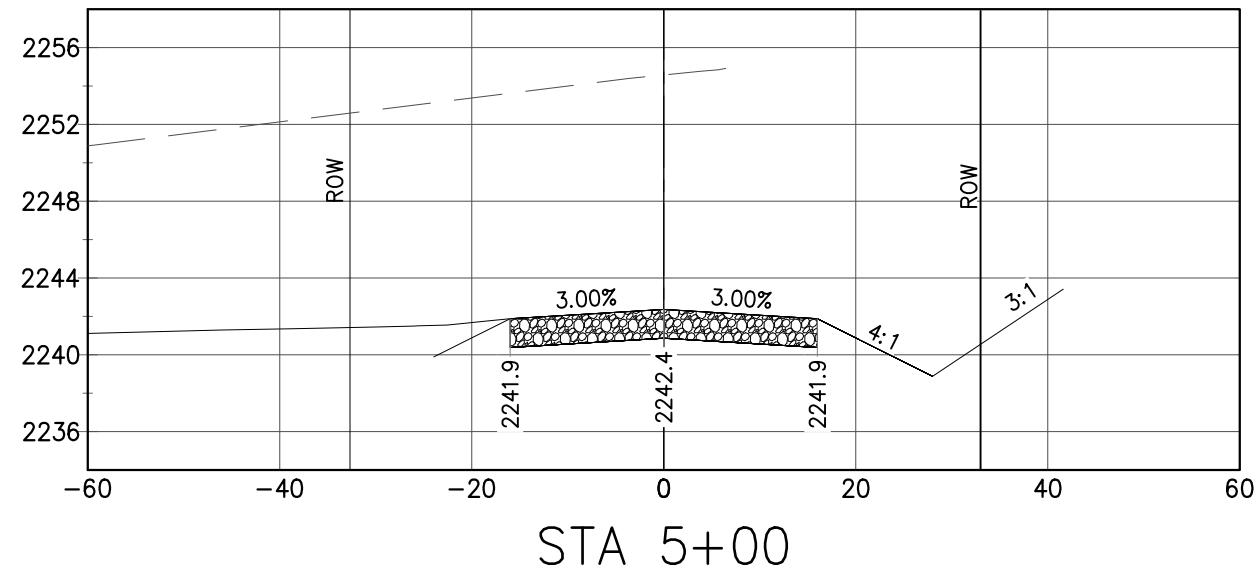
REV. DWG. No. 5



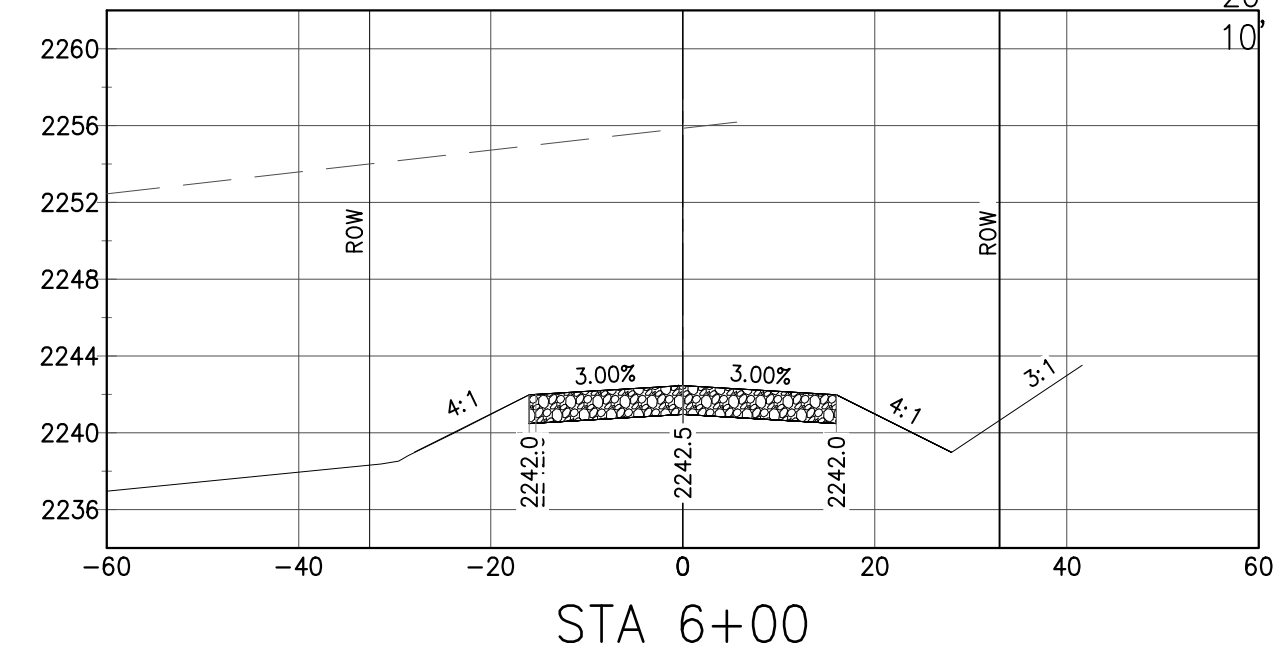
STA 3+00



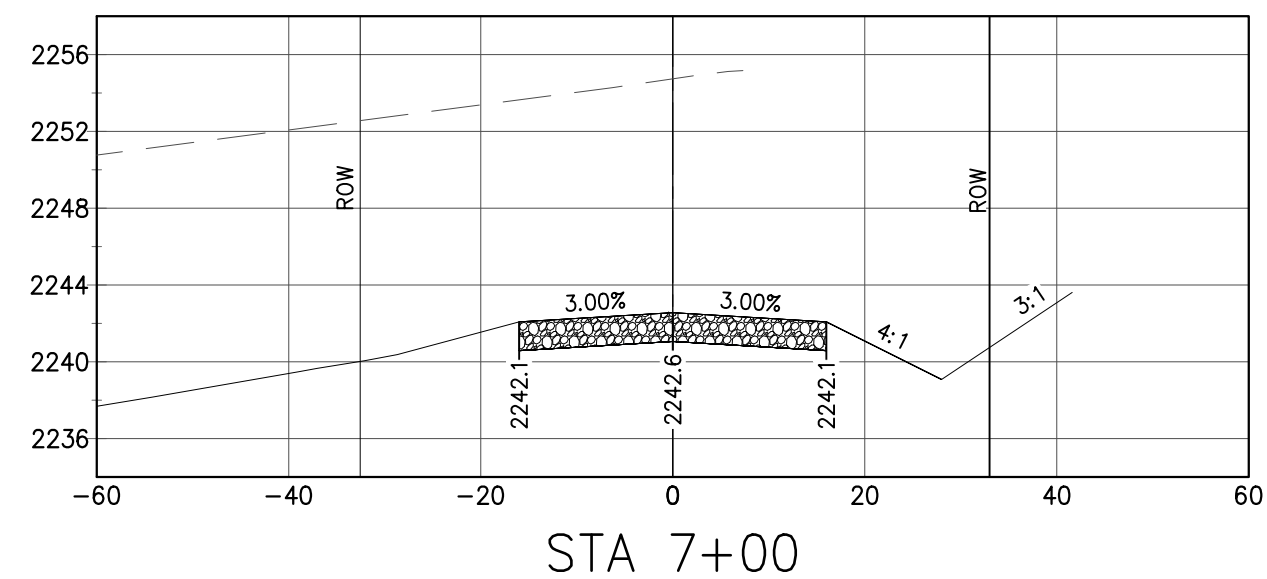
STA 4+00



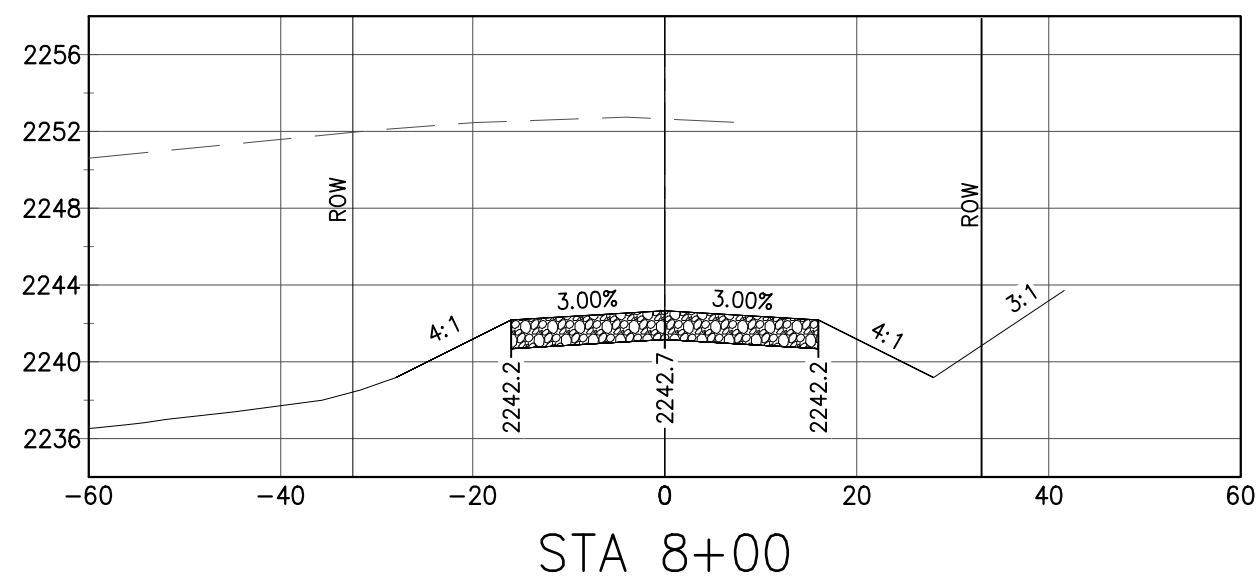
STA 5+00



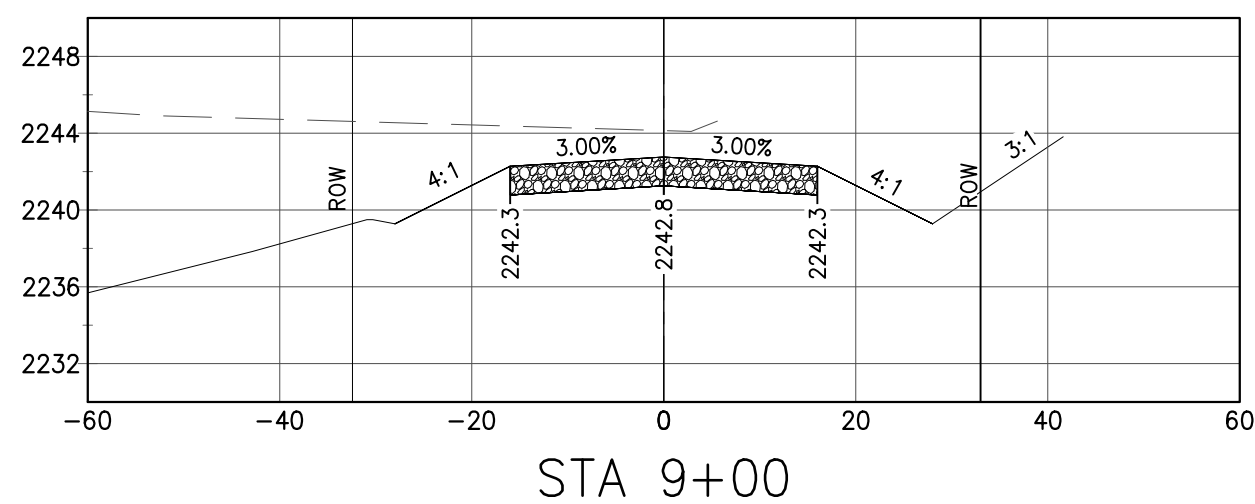
STA 6+00



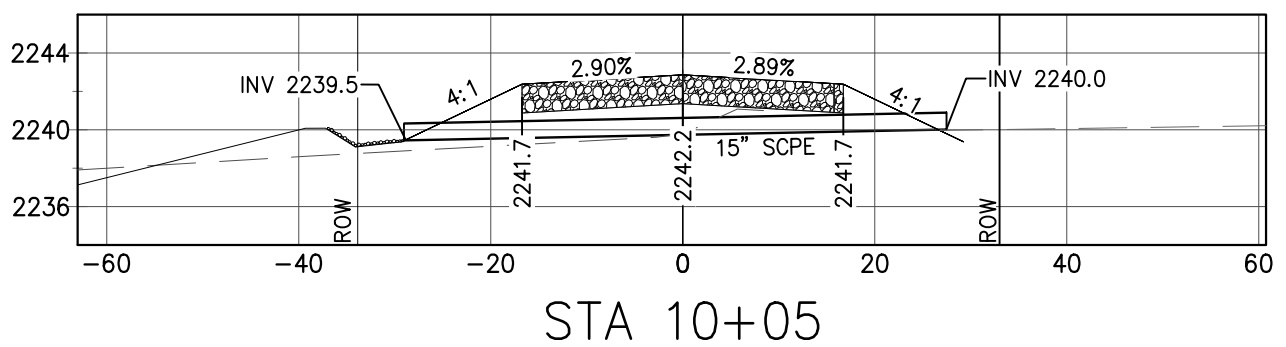
STA 7+00



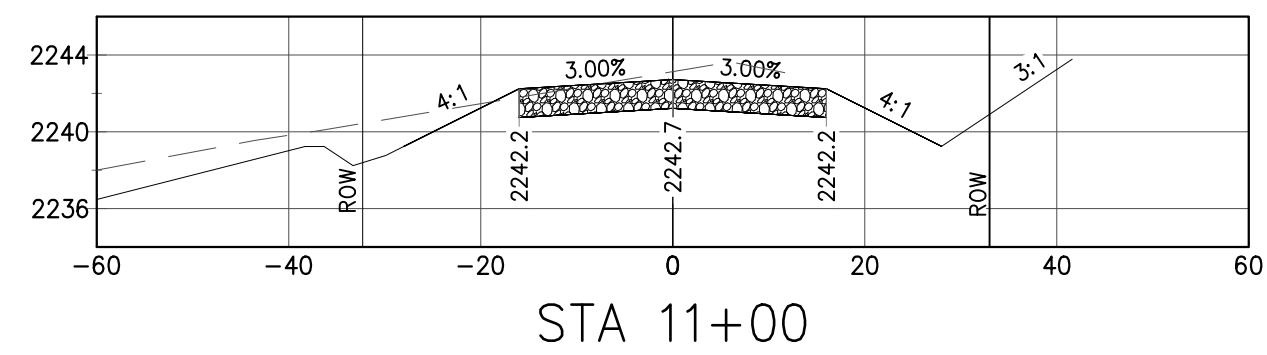
STA 8+00



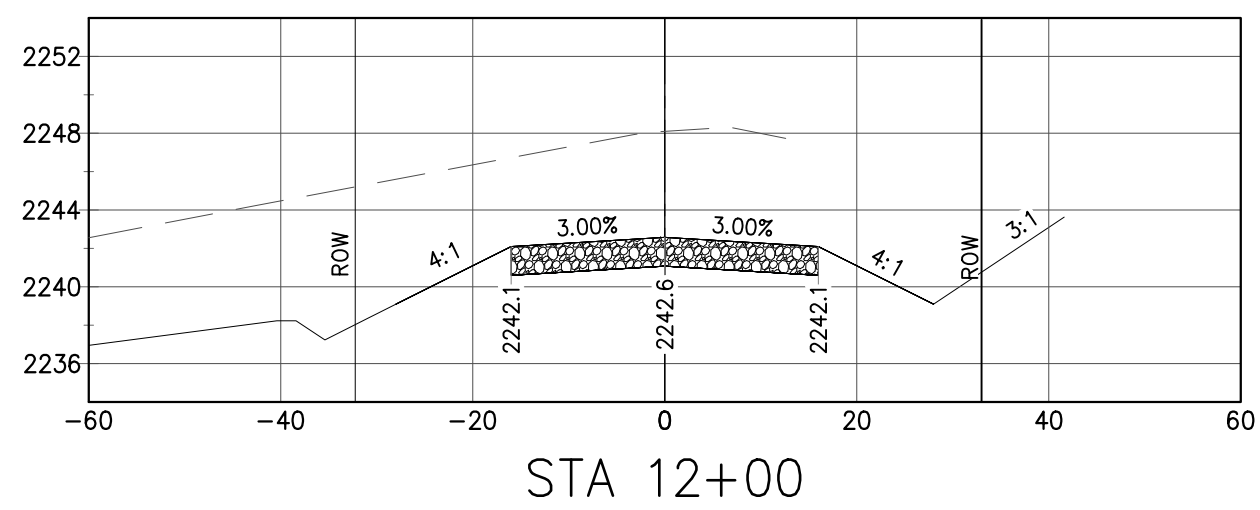
STA 9+00



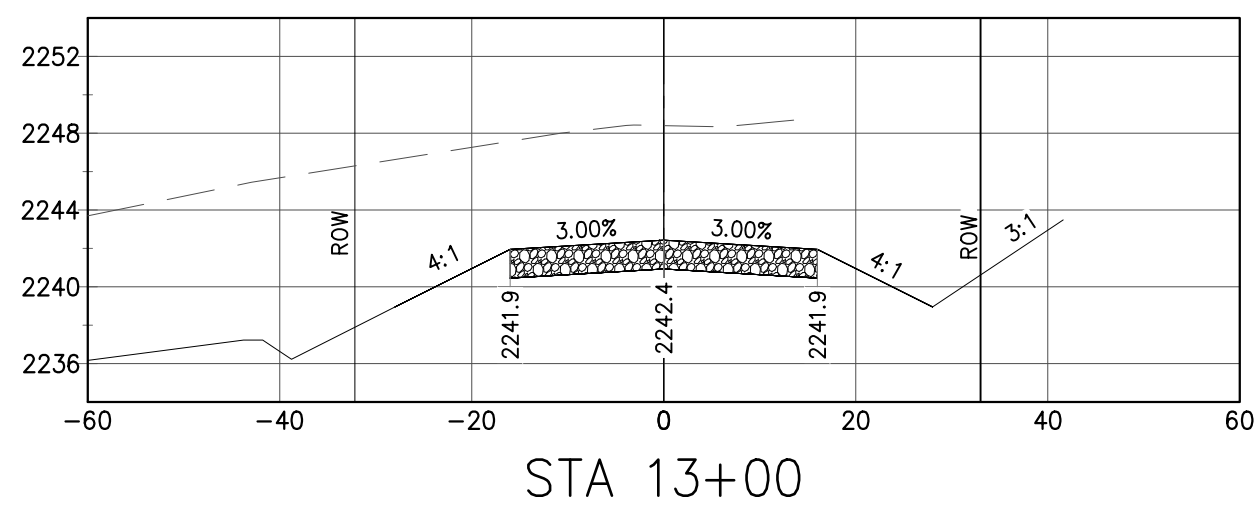
STA 10+05



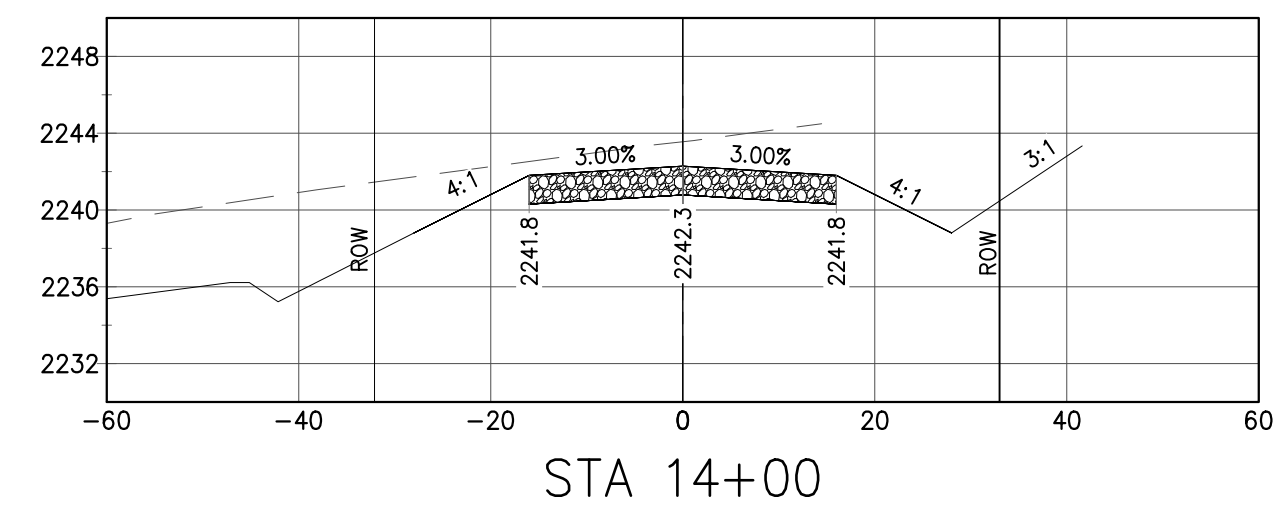
STA 11+00



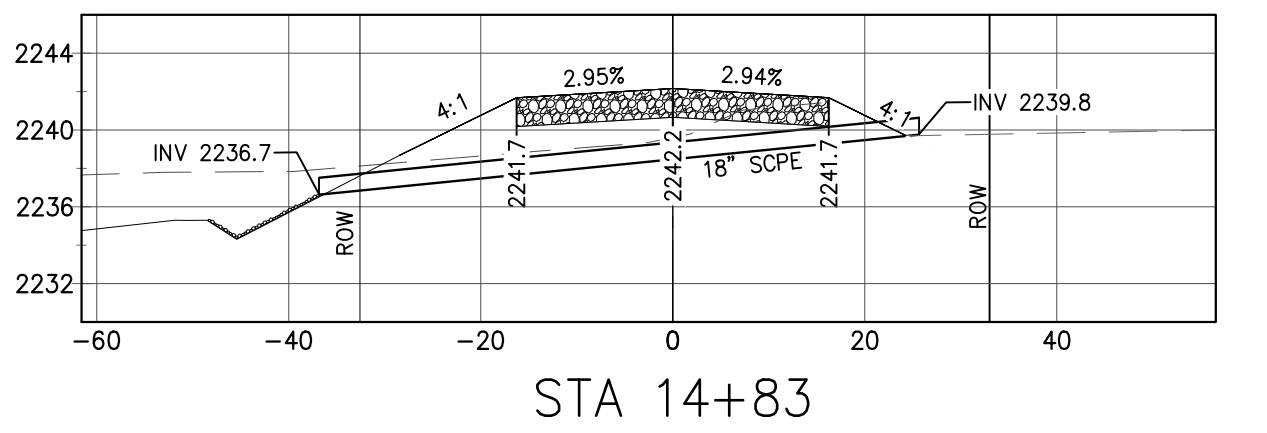
STA 12+00



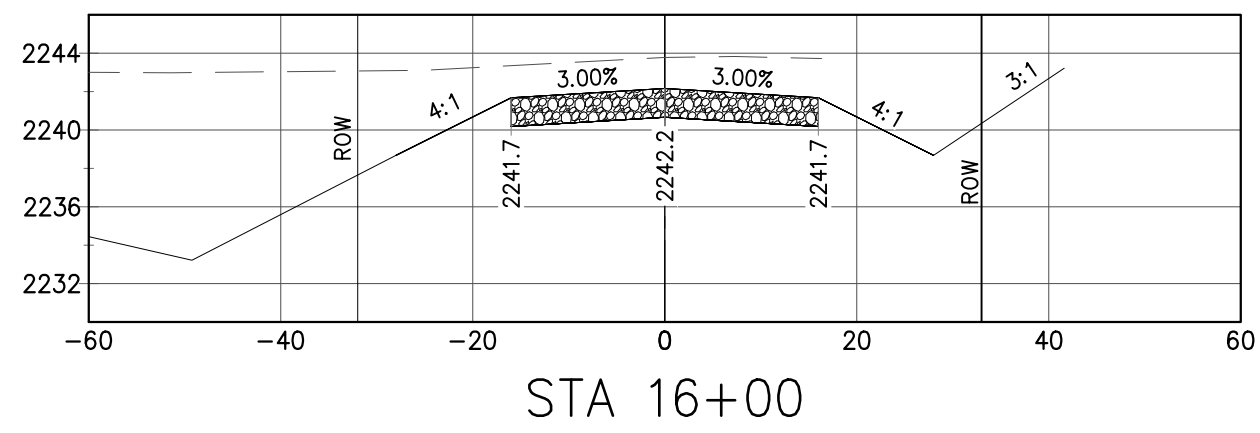
STA 13+00



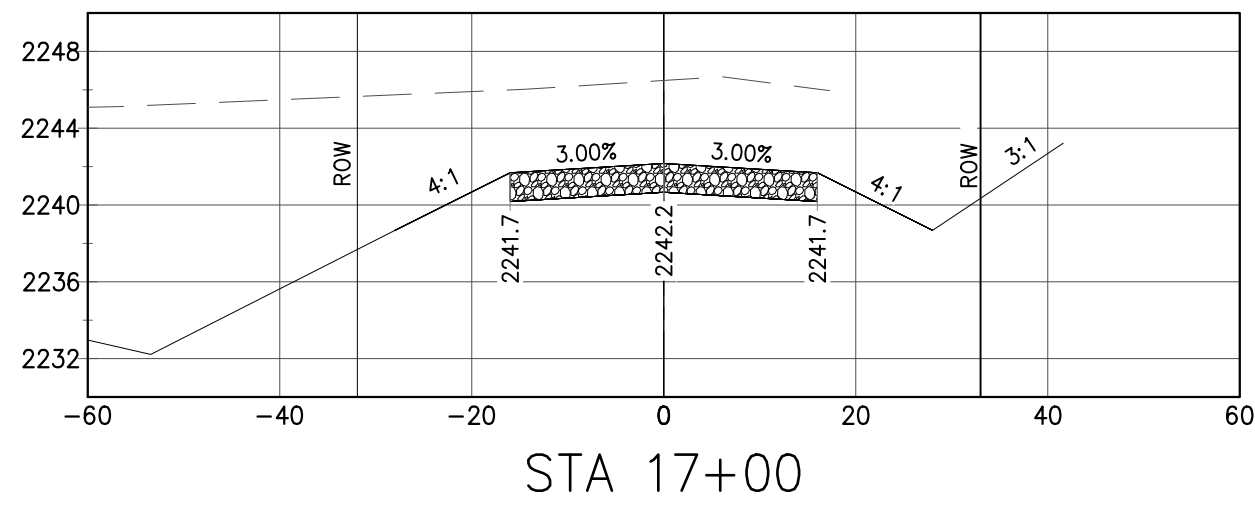
STA 14+00



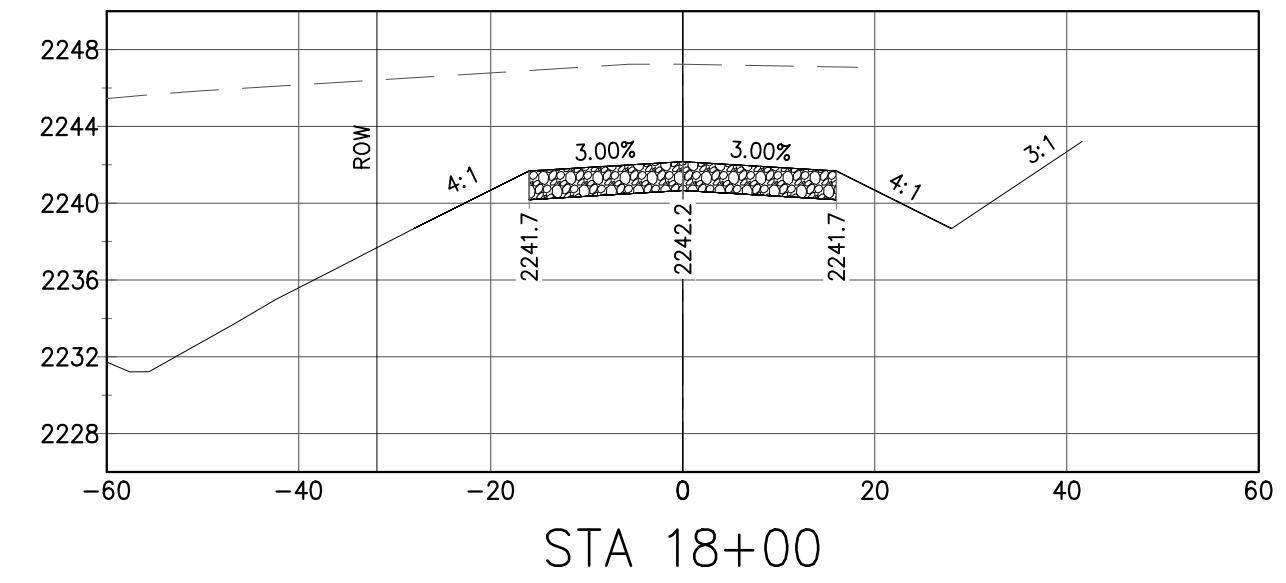
STA 14+83



STA 16+00



STA 17+00



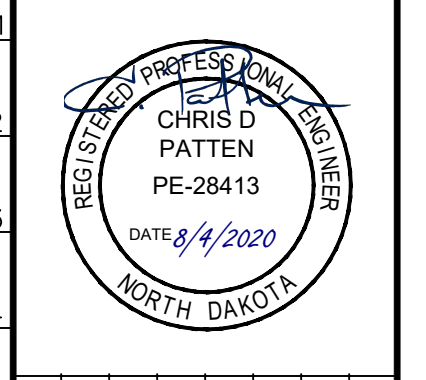
STA 18+00

GRADING NOTES

1. PROPOSED GRADE ELEVATIONS ARE TOP OF FINISH GRADE OR PAVED SURFACE.
2. REFER TO TYPICAL TOWNSHIP ROAD SECTIONS FOR ADDITIONAL REQUIREMENTS.
3. FORESLOPE SHALL BE 4H:1V FOR 12'-0" CUT AND FILL SLOPES BEYOND FORESLOPE SHALL BE 3H:1V, EXCEPT WHERE NOTED, AND NO SLOPE SHALL BE STEEPER THAN 2H:1V. BENCH ALL SLOPES OF 2H:1V.
4. RESEED SLOPES WITH NATIVE VEGETATION.
5. SURVEY DATA SOUTH OF TOWNSHIP ROAD FOR STA 3+00 TO 21+00 IS UNAVAILABLE. CONTRACTOR TO REFER TO TOWNSHIP ROAD SECTIONS FOR GRADING REQUIREMENTS.
6. MAINTAIN 18" COVER OVER ALL CULVERTS. INSTALL 4" TO 6" D50 RIPRAP FOR 12'-0" LENGTH AT CULVERT OUTLETS.

SCALE:
20' HORIZONTAL
10' VERTICAL

REV.	DATE	BY	APP.	DESCRIPTION
1	8/4/20			UPDATED NOTES
0	5/26/20			ISSUE FOR CONSTRUCTION
				NO DATE
				REVISIONS
				D/C APP.



REF. DWG. NUMBER

DESIGN	CHECK	DATE	NAME	DATE	NAME	C/S	INSTR.	PROC.	MECH.	PIPING	PROJ. MGR.
C. PATTEN	A. NOBIS	JAN 20	C. PATTEN	JAN 20	C. PATTEN						

DESIGN	CHECK	DATE	NAME	DATE	NAME	C/S	INSTR.	PROC.	MECH.	PIPING	PROJ. MGR.
C. PATTEN	A. NOBIS	JAN 20	C. PATTEN	JAN 20	C. PATTEN						

REV.	DWG. No.	DESCRIPTION
1	D-19063-04-10-002T	49TH ST CROSS SECTIONS STA 3+00 TO STA 18+00

BCKK CONFIDENTIAL INFORMATION

49TH ST CROSS SECTIONS
 STA 3+00 TO STA 18+00
 BUSINESS CONFIDENTIAL
 2500 N. Big Spring
 Midland, Texas 79705
 (432) 685-6095
BCKK
 ENGINEERING, INC.

OUTRIGGER ENERGY II, LLC.
 SANDERSON PLANT
 WILLIAMS COUNTY, NORTH DAKOTA

