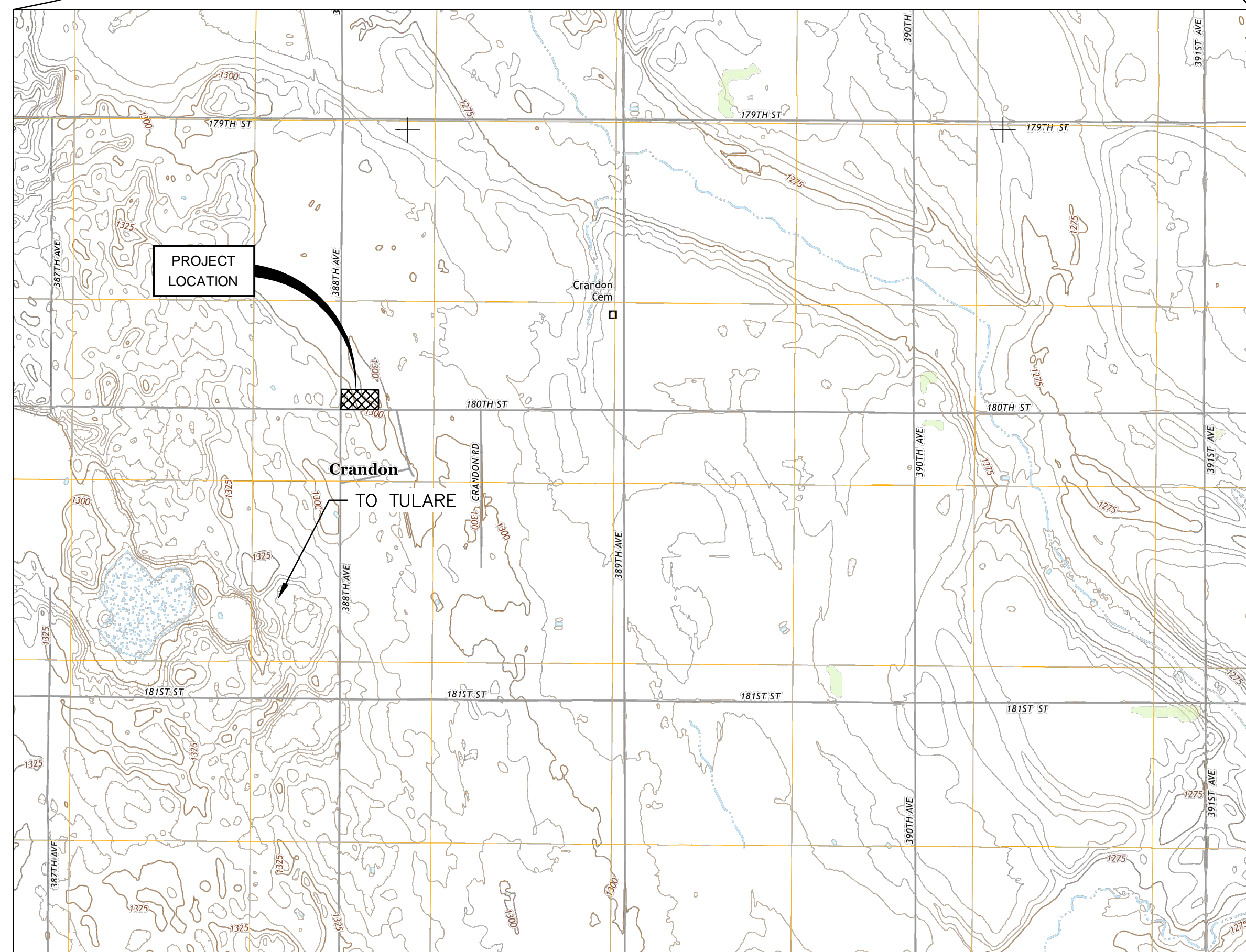


# NORTHWESTERN ENERGY SUBSTATION IMPROVEMENTS: DAKOTA ACCESS SUBSTATION NEAR TULARE, SOUTH DAKOTA

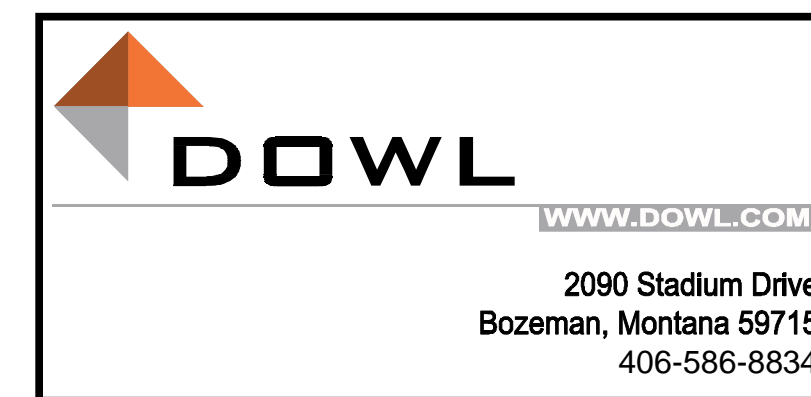


PREPARED FOR:

NORTHWESTERN ENERGY  
121 EAST GRIFFIN DR.  
BOZEMAN, MT 59715



PREPARED BY:



### SHEET INDEX

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## GENERAL NOTES:

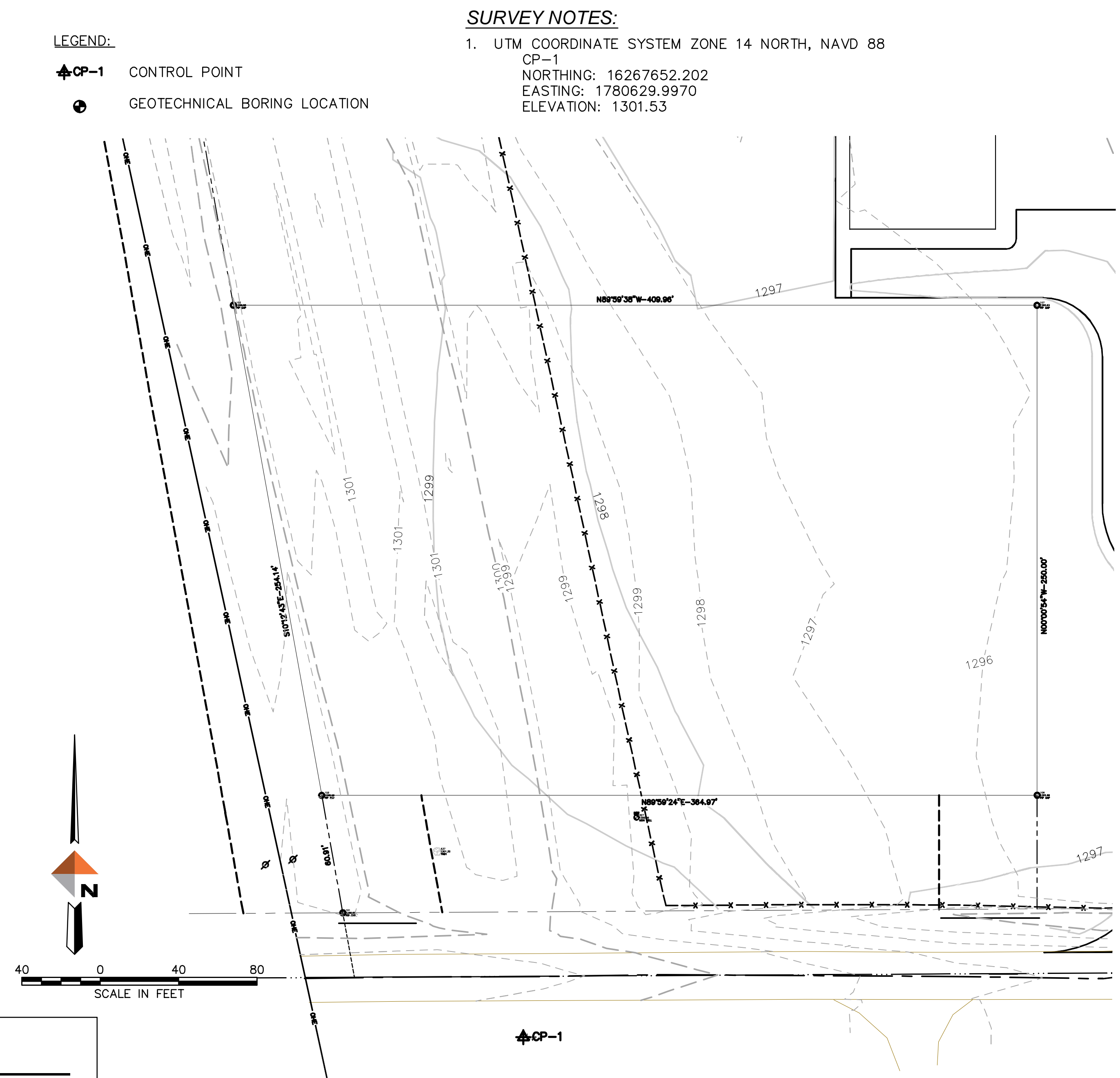
1. THE LOCATION OF EXISTING UTILITIES SHOWN IS APPROXIMATE AND THE CONTRACTOR SHALL FIELD VERIFY PRIOR TO CONSTRUCTION. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEANS TO PROTECT EXISTING UTILITIES.
2. WHERE CONDITIONS ARE ENCOUNTERED WHICH APPEAR DIFFERENT FROM THOSE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO THE PERFORMANCE OF WORK.
3. ALL WORK AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND MODIFICATIONS THERETO. IN CASE OF A CONFLICT BETWEEN REGULATORY OR STANDARD SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.
4. CONSTRUCTION SAFETY AND SANITATION FACILITIES SHALL BE PROVIDED BY THE CONTRACTOR AND MAINTAINED PER THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
5. THE CONTRACTOR SHALL PROTECT ADJACENT PRIVATE AND PUBLIC PROPERTY FROM DAMAGE DURING CONSTRUCTION. ANY DISTURBED PROPERTY OR SECTION CORNERS ARE TO BE RESET BY A PROFESSIONAL LAND SURVEYOR AT THE CONTRACTORS EXPENSE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ANY AND ALL UTILITIES IN THE AREA PRIOR TO BEGINNING ANY WORK ON THIS PROJECT.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL, INCLUDING BUT NOT LIMITED TO DETOURS, SIGNAGE AND FLAGGING PERSONNEL. THE CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS IN ACCORDANCE WITH THE GOVERNING AUTHORITY.
8. THE CONTRACTOR SHALL REPLACE EXISTING FENCING AND ROADSIDE APPURTENANCES DISPLACED OR DAMAGED BY CONSTRUCTION. PRIOR TO REMOVING ANY EXISTING FENCING THE CONTRACTOR SHALL PROVIDE TEMPORARY OFFSET FENCING SUITABLE FOR CONTROL OF LIVESTOCK.
9. CONTRACTOR SHALL PROCURE THE NECESSARY DISCHARGE PERMITS AND STORMWATER CONTROL PERMITS.
10. EXISTING UTILITY SERVICES (SEWER, GAS, TELEPHONE, ETC.) ARE NOT SHOWN ON THE DRAWINGS, AND HAVE NOT BEEN LOCATED.
11. ANY REMOVED STRUCTURES SHALL BE DISPOSED OF OFF THE SITE IN A LAWFUL MANNER.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL, USING WATER OR OTHER METHODS APPROVED BY THE REPRESENTATIVE.
13. CONTRACTOR SHALL PROVIDE A SET OF AS-BUILT DRAWINGS TO THE REPRESENTATIVE PRIOR TO THE FINAL ACCEPTANCE AND FINAL PAYMENT.

Item	Description	Est. Quantity	Unit
<b>Site Work</b>			
1	Remove Topsoil & unsuitable matrl. (assumed 2' depth)	4,802	C.Y.
2	Pad Gravel Surfacing (6" depth)	1,104	C.Y.
3	Pad Subgrade (Net Fill)	9,287	C.Y.
4	Gravel Road Mix (12" depth)	193	C.Y.
5	Road Subgrade Material (Net Fill)	431	C.Y.
6	18" CMP Pipe	90	LF
7	18" CMP Flared End section	4	EA
8	Chain link Fence	960	LF
9	20' Drive Gate	2	EA
<b>Erosion Control</b>			
1	Silt Fence	195	LF
2	Construction Entrance	1	LS
3	Staging Area	1	LS
4	Concrete Washout	1	LS
5	Portable Toilet Enclosure	1	LS
6	Seed distrubed Areas	1	LS

## GENERAL PROJECT LEGEND

EXISTING ITEMS		NEW ITEMS	
	EXISTING CONTOUR (1.00' INTERVAL)		EXISTING LIGHT POLE
	EXISTING EDGE OF ASPHALT		EXISTING ELECTRIC METER
	EXISTING EDGE OF GRAVEL		EXISTING JUNCTION BOX
	EXISTING FENCE		EXISTING STORM CULVERT
	EXISTING PROPERTY LINE		EXISTING SANITARY SEWER MAIN
	EXISTING EASEMENT		EXISTING SANITARY SEWER MANHOLE
	EXISTING RAILROAD R.O.W.		EXISTING WATER MAIN
	EXISTING HIGHWAY R.O.W.		EXISTING GATE VALVE
	EXISTING SIGN		EXISTING FIRE HYDRANT
	EXISTING GAS LINE		DECIDUOUS TREE
	EXISTING FIBER OPTICS LINE		CONIFEROUS TREE
	EXISTING TELE/COMMUNICATION LINE		RETAINING WALL
	EXISTING PEDESTAL		
	EXISTING OVERHEAD POWER		
	EXISTING BURIED POWER		
	EXISTING UTILITY POLE		
	EXISTING UTILITY ANCHOR		

## SURVEY CONTROL



## COMMON ABBREVIATIONS

SD STORM DRAIN	OHP OVERHEAD POWER
PP POWER POLE	UNK UNKNOWN LOCATION
GA GUY ANCHOR	I.E. INVERT ELEVATION
EOP EDGE OF PAVEMENT	INV. EL. INVERT ELEVATION
L.F. LINEAL FEET	UGP UNDERGROUND POWER
EL. ELEVATION	TEL UNDERGROUND TELEPHONE
(TYP) TYPICAL	CMP CORRUGATED METAL PIPE
INV. INVERT	RCP REINFORCED CONCRETE PIPE
S= SLOPE	CP CONTROL POINT
C.B. CATCH BASIN	FL FLOWLINE
MH MANHOLE	CL CENTERLINE

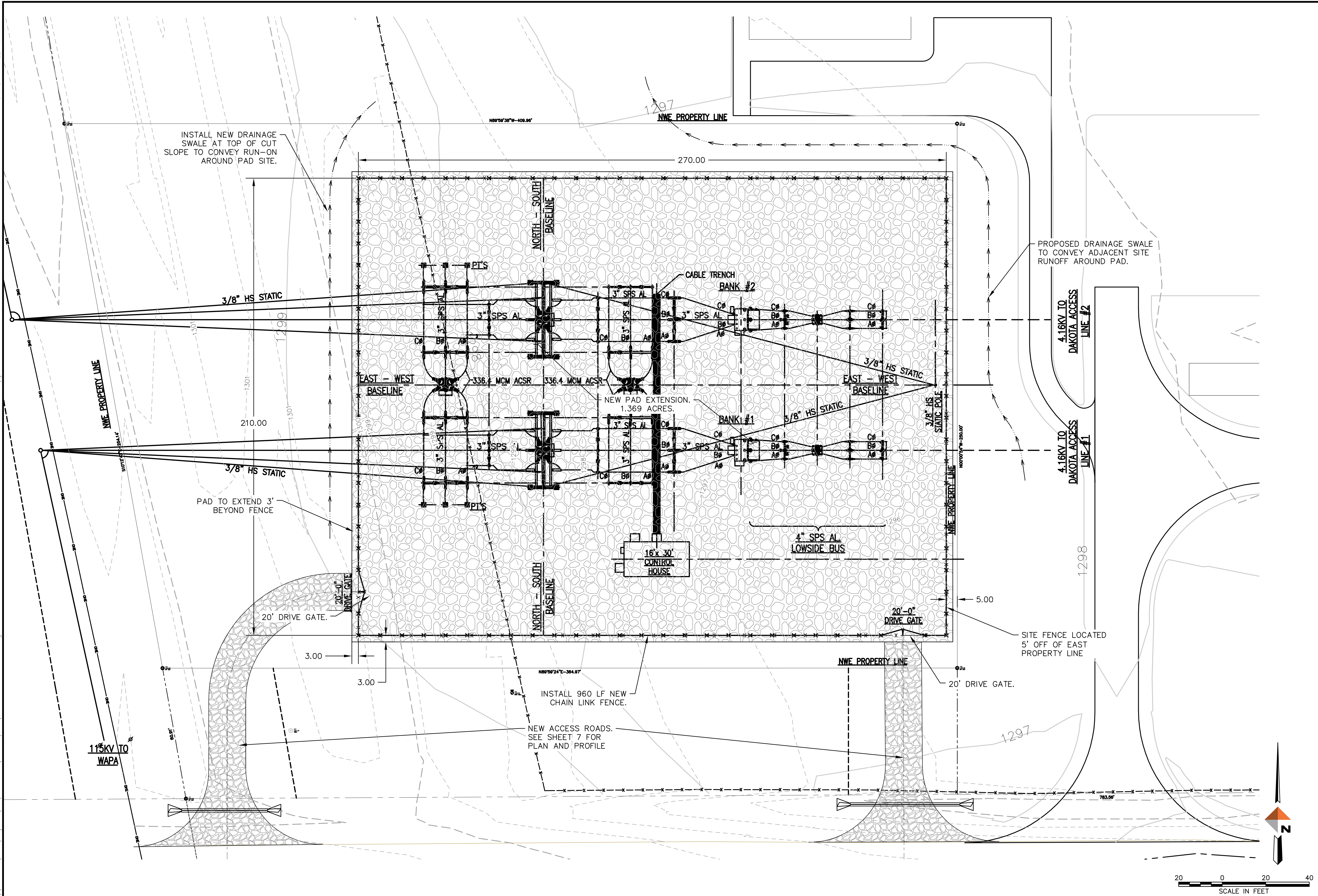
**CAUTION !!!**  
**EXISTING UTILITIES IN AREA**  
**CONTRACTOR RESPONSIBLE FOR**  
**UTILITY LOCATES PRIOR TO**  
**AND DURING CONSTRUCTION**

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DAKOTA ACCESS SUBSTATION  
 NEAR TULARE, SOUTH DAKOTA  
**GENERAL NOTES, SURVEY CONTROL**  
 PROJECT LEGEND

PROJECT 4528.11689.01  
 DATE 11/03/2015

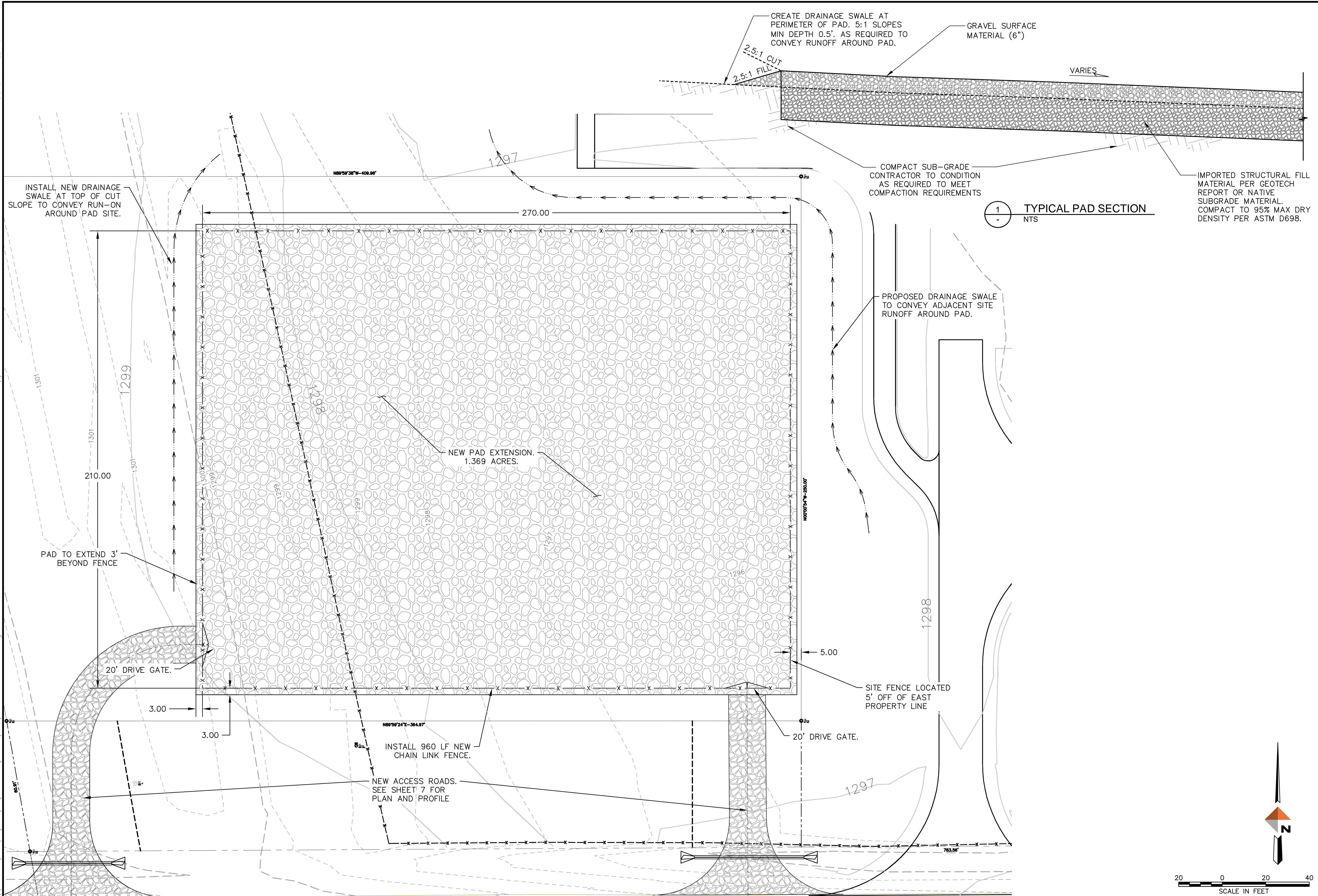


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DAKOTA ACCESS SUBSTATION  
 NEAR TULARE, SOUTH DAKOTA  
**PROPOSED IMPROVEMENTS  
 WITH NWE BASE**

PROJECT 4528.11689.01  
 DATE 11/03/2015



INSTALL NEW DRAINAGE SWALE AT TOP OF CUT SLOPE TO CONVEY RUN-ON AROUND PAD SITE.

CREATE DRAINAGE SWALE AT PERIMETER OF PAD. 5:1 SLOPES MIN DEPTH 0.5'. AS REQUIRED TO CONVEY RUNOFF AROUND PAD.

GRAVEL SURFACE MATERIAL (6")

VARIES

COMPACT SUB-GRADE CONTRACTOR TO CONDITION AS REQUIRED TO MEET COMPACTION REQUIREMENTS

IMPORTED STRUCTURAL FILL MATERIAL PER GEOTECH REPORT OR NATIVE SUBGRADE MATERIAL. COMPACT TO 95% MAX DRY DENSITY PER ASTM D698.

1 TYPICAL PAD SECTION  
- NTS

NEW PAD EXTENSION. 1.369 ACRES.

PAD TO EXTEND 3' BEYOND FENCE

20' DRIVE GATE.

SITE FENCE LOCATED 5' OFF OF EAST PROPERTY LINE

20' DRIVE GATE.

INSTALL 960 LF NEW CHAIN LINK FENCE.

NEW ACCESS ROADS. SEE SHEET 7 FOR PLAN AND PROFILE

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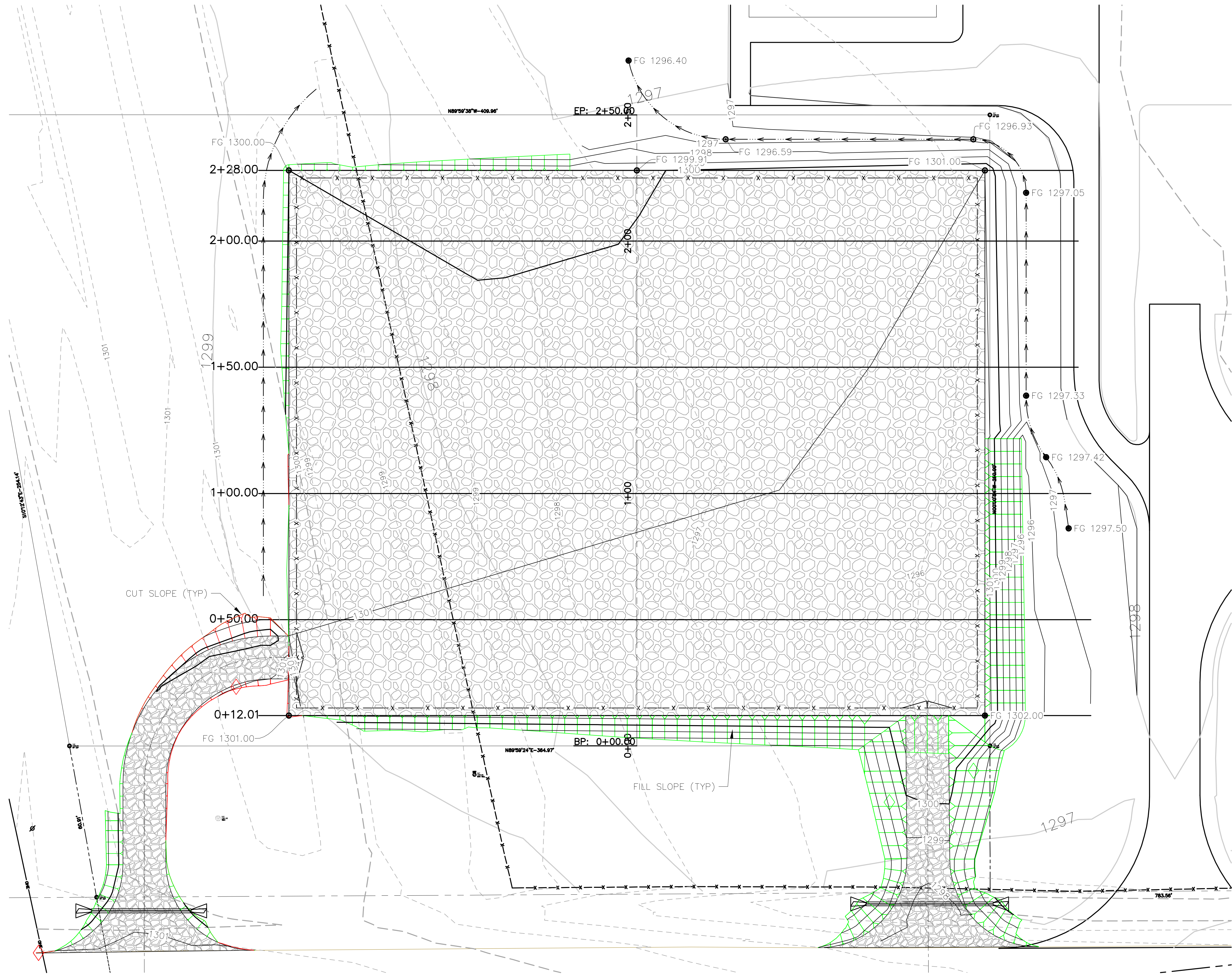
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**PROPOSED IMPROVEMENTS**

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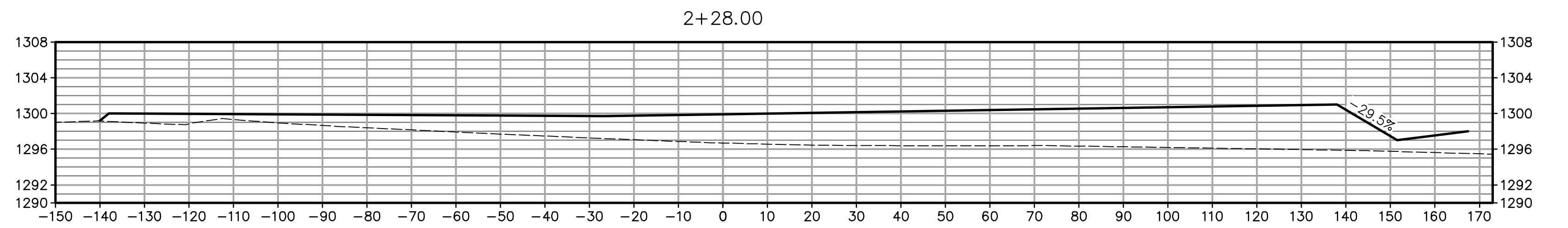
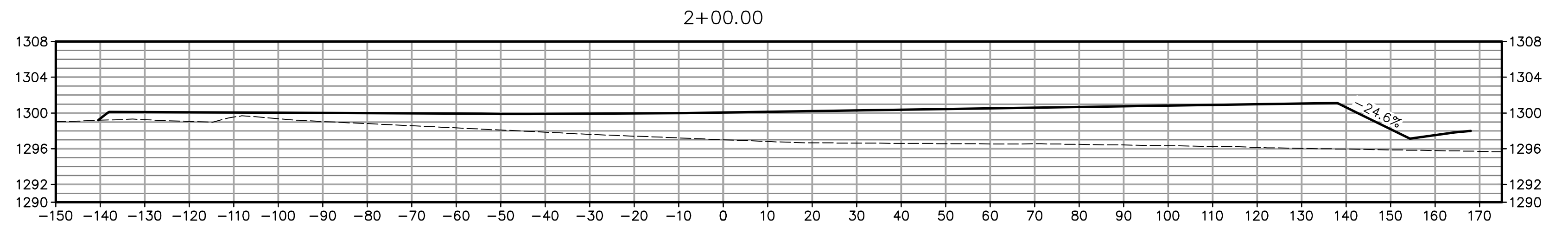
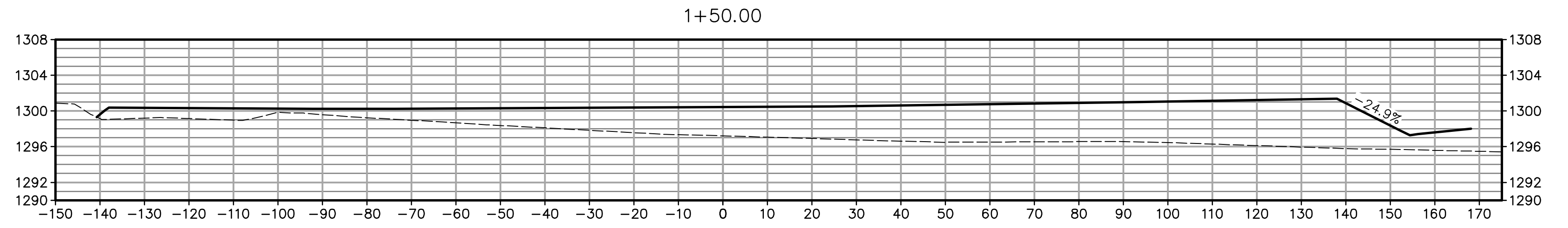
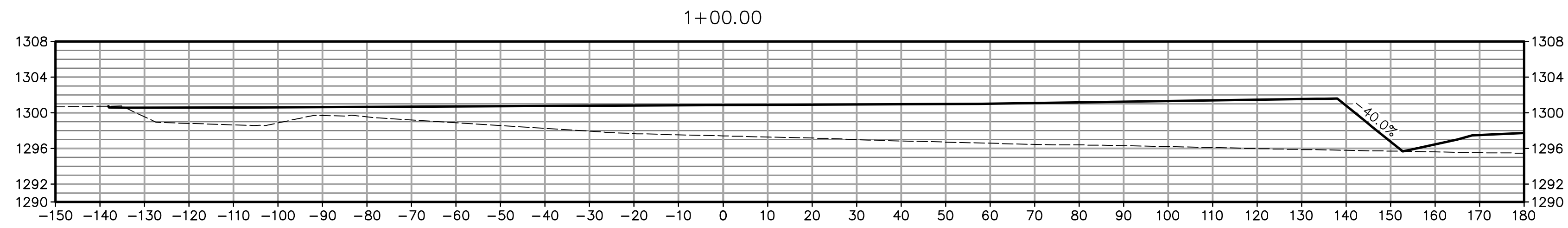
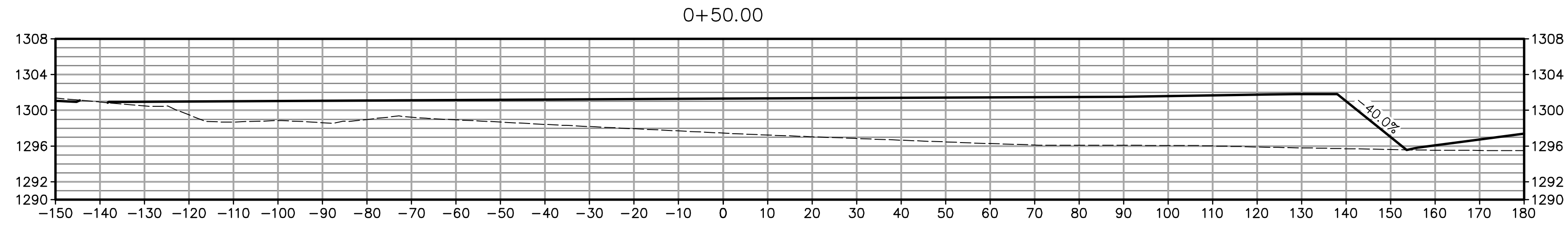
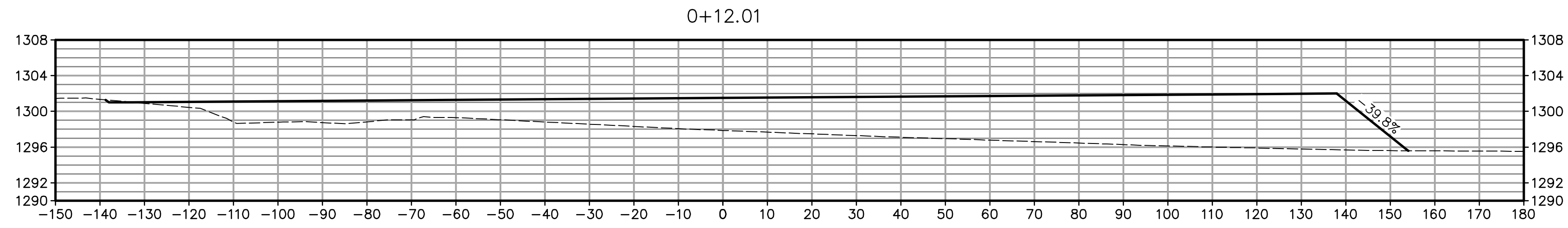
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DAKOTA ACCESS SUBSTATION  
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**PROPOSED IMPROVEMENTS  
 GRADING PLAN**

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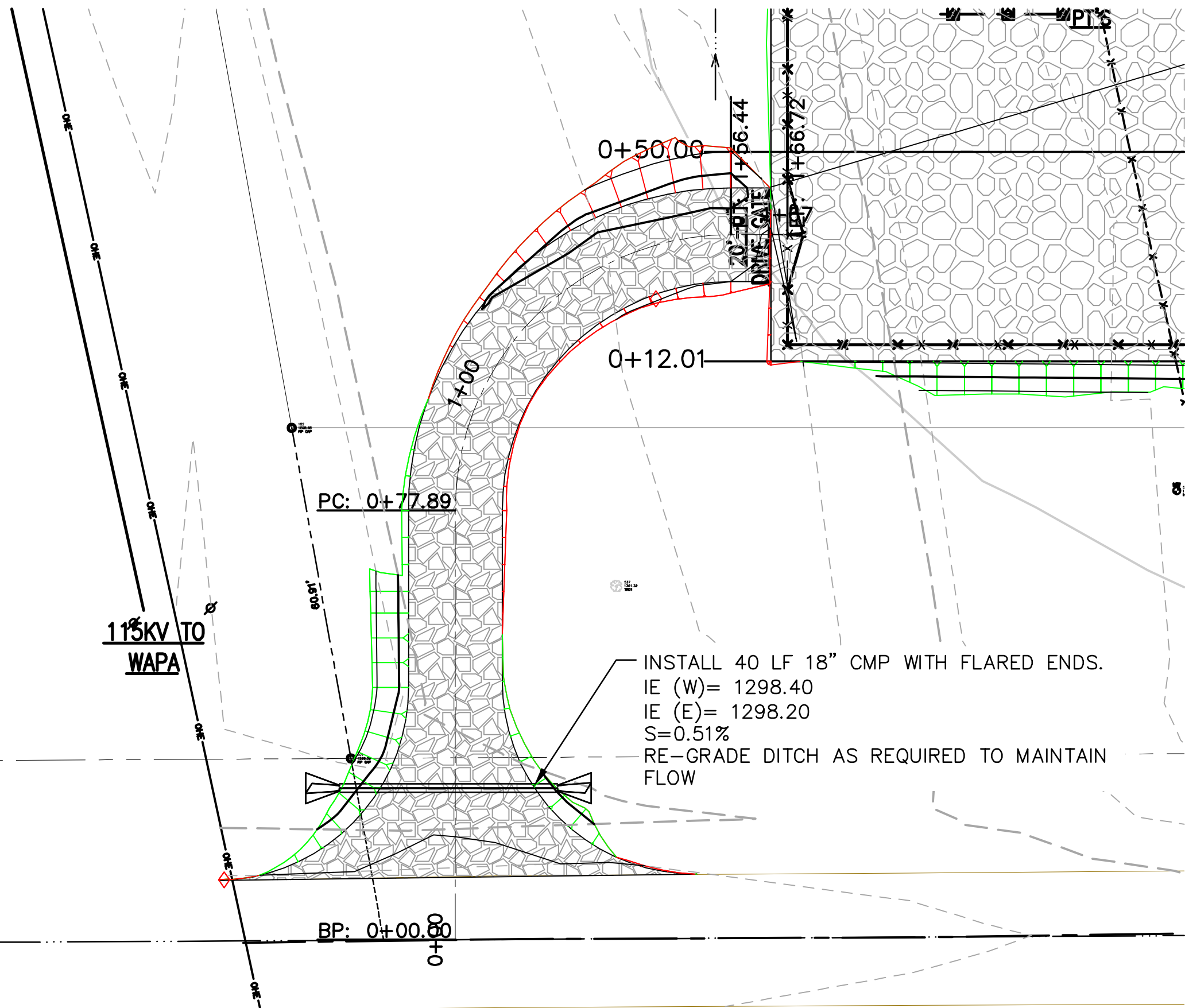
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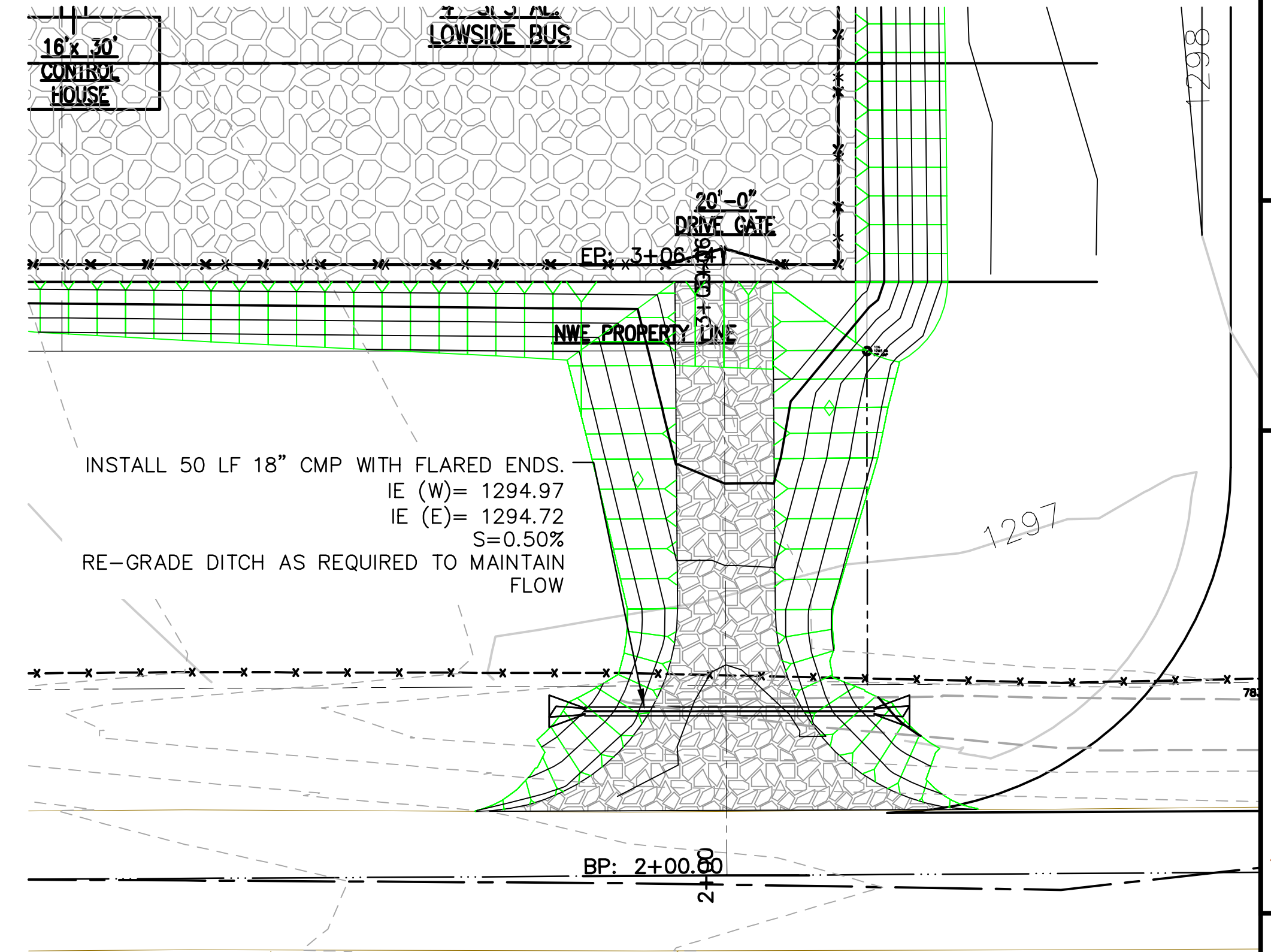
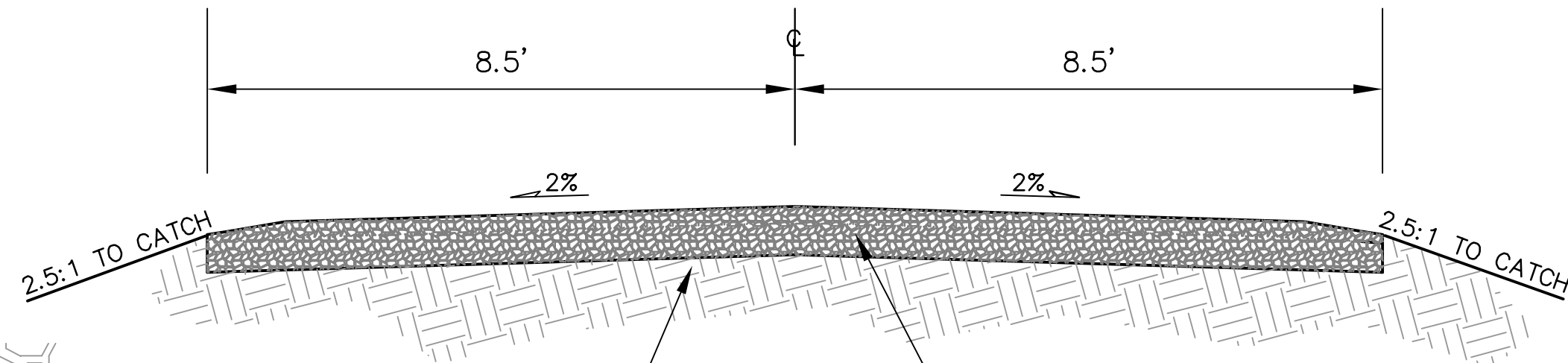
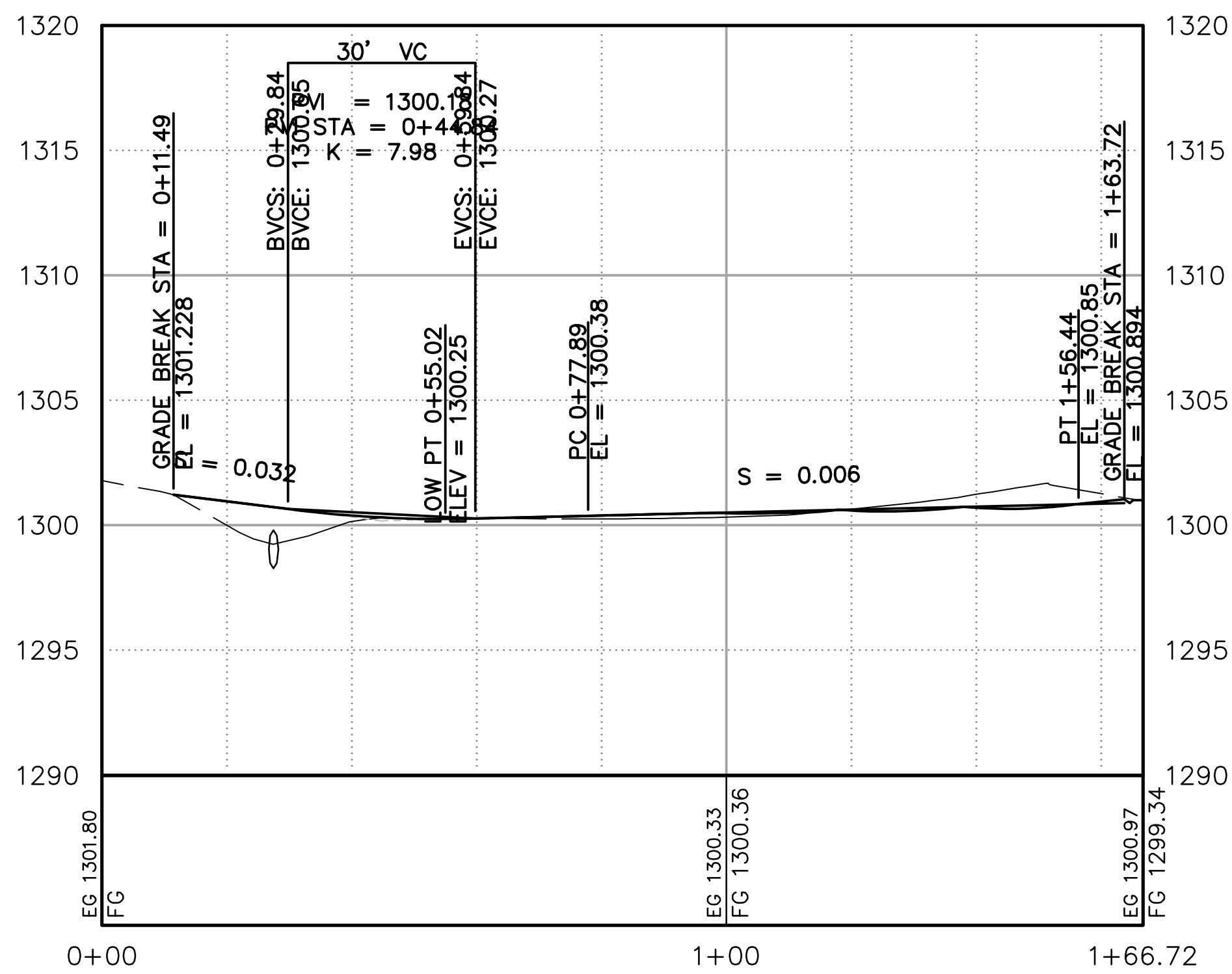
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 GRADING PLAN - SECTION VIEWS

PROJECT 4528.11689.01  
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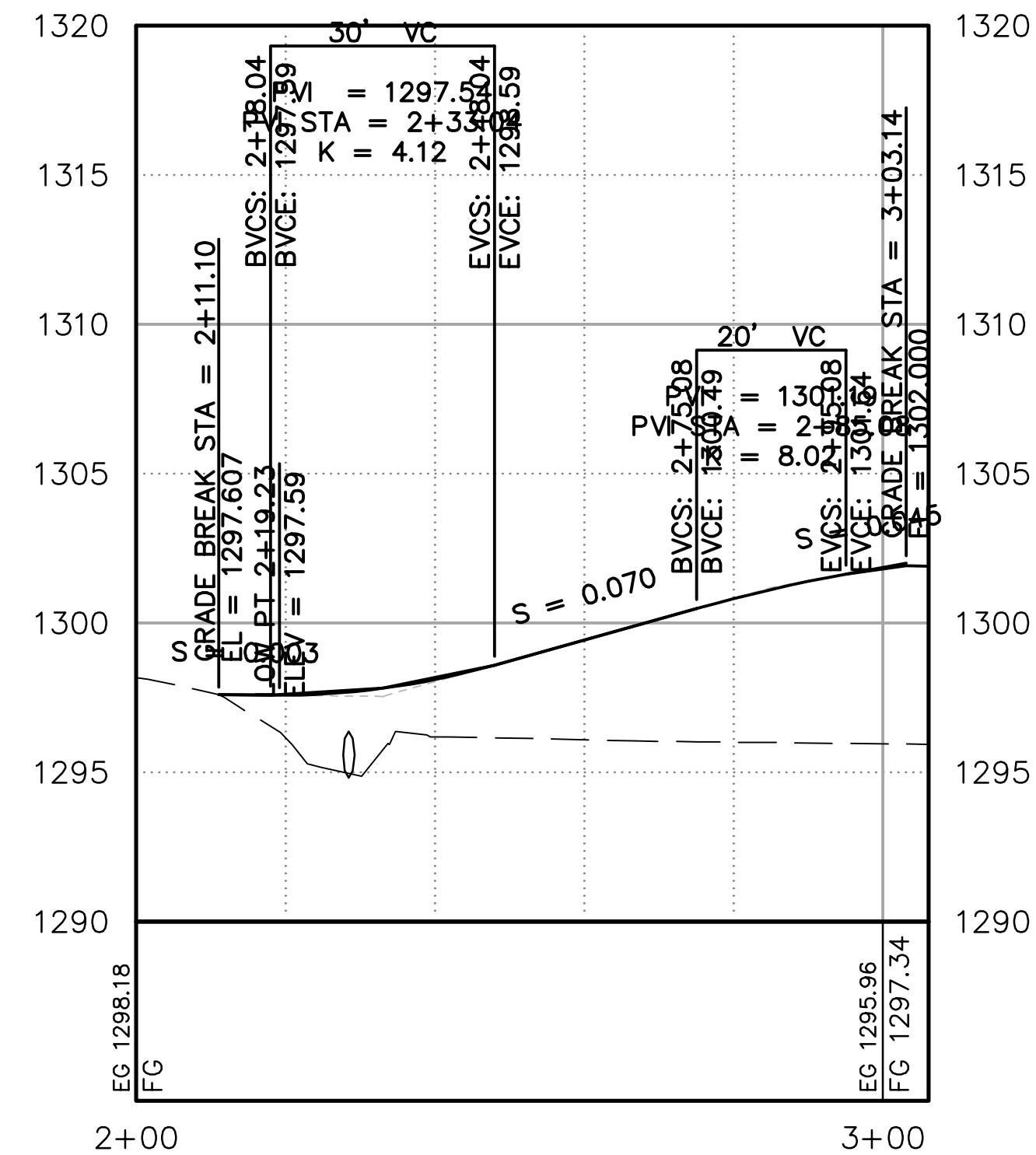
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PV - (1) - ACCESS ROAD WEST



PV - (2) - ACCESS ROAD EAST



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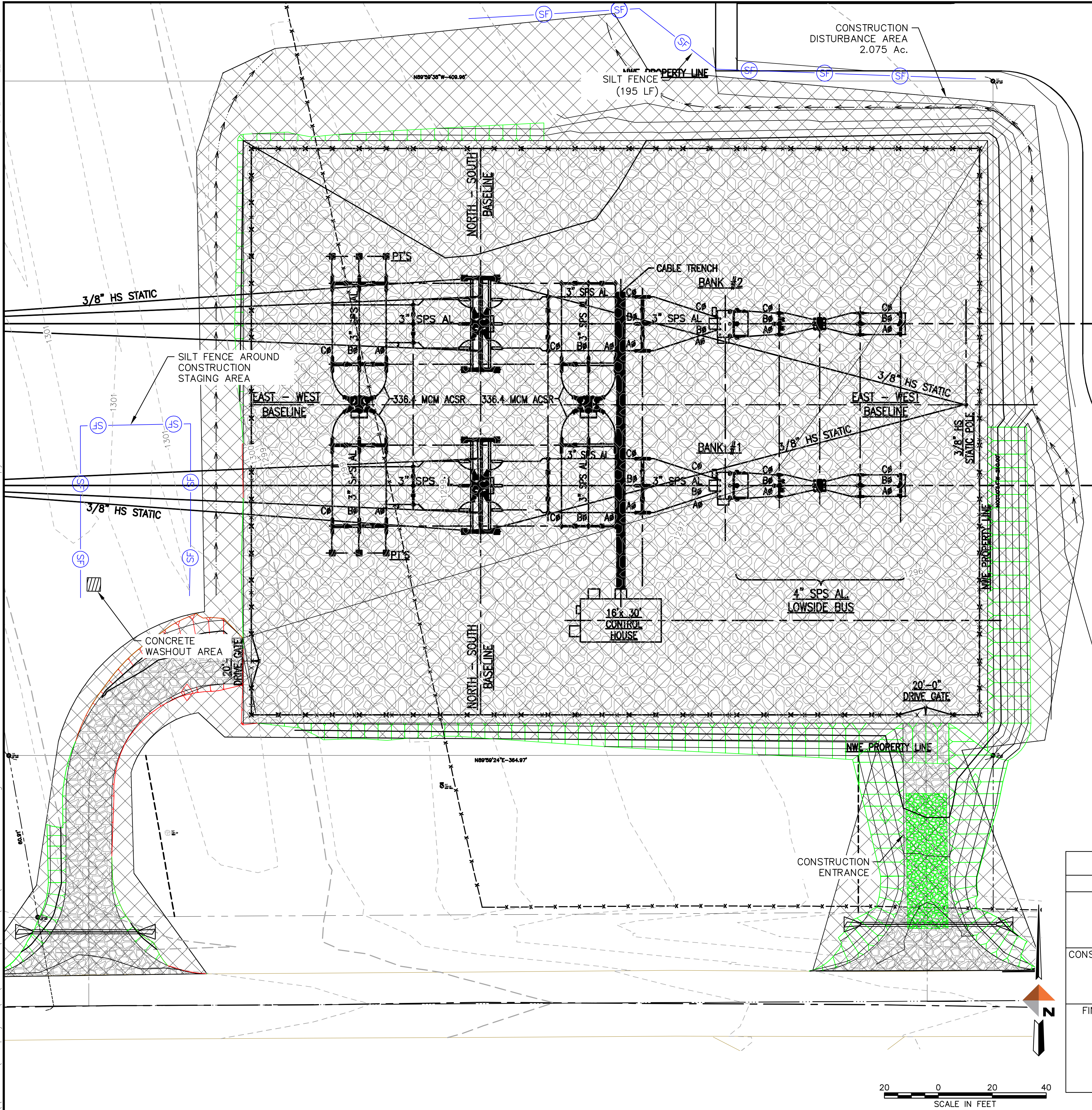
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**PROPOSED IMPROVEMENTS**  
ACCESS ROADS - PLAN & PROFILE

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### LEGEND

-  CONSTRUCTION ENTRANCE
-  SILT FENCE
-  CONCRETE WASHOUT AREA

**NOTES:**

1. EXISTING LANDSCAPING/GRASS ADJACENT TO CONSTRUCTION AREAS IS TO BE USED AS A VEGETATIVE BUFFER (EROSION CONTROL BMP).
2. STABILIZE OR COVER SOIL STOCKPILES AT THE END OF EACH DAY.
3. USE CLEARING TECHNIQUES THAT RETAIN NATURAL VEGETATION AND RETAIN NATURAL DRAINAGE PATTERS WHERE FEASIBLE.
4. STABILIZE SOIL WITHIN 14 DAYS OF CLEARING OR INACTIVITY IN CONSTRUCTION.
5. EMPLOY WIND EROSION TECHNIQUES TO PREVENT THE BLOWING OF DUST OR SEDIMENT FROM THE SITE.
6. CONTRACTOR SHALL SWEEP AND CLEAN PUBLIC ROADS/AREAS THAT ARE IMPACTED BY CONSTRUCTION ACTIVITIES.
7. KEEP SOLID WASTE MATERIAL IN A CONTAINER OR AN ENCLOSED WASTE COLLECTION AREA ON SITE.
8. STORE CHEMICALS, PAINTS, PETROLEUM, FERTILIZERS AND PESTICIDES IN A COVERED ENCLOSURE.
9. REMOVE AND PROPERLY DISPOSE OF CONCRETE RESIDUE AT CONCLUSION OF CONSTRUCTION.
10. DISPOSE OF EMPTY/UNUSED CHEMICAL AND HAZARDOUS WASTE CONTAINERS IN ACCORDANCE WITH LABEL INSTRUCTION.
11. SEGREGATE POTENTIALLY HAZARDOUS WASTE FROM NON-HAZARDOUS WASTE.
12. PERFORM DAILY CLEANUP OF CONSTRUCTION SITE TO ENSURE THAT ALL LITTER IS CONTAINED IN AN APPROPRIATE ENCLOSURE OR CONTAINER.
13. RECYCLE WASTE MATERIAL WHERE FEASIBLE.

SWPPP STAGING				
BMP	INITIAL	INTERIM	FINAL	DESCRIPTION
SILT FENCE (DTL 1/SHT 9)	X	X		SILT FENCE IS TO BE INSTALLED ON EAST SIDE OF THE PROJECT TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE
CONSTRUCTION ENTRANCE (DTL 2/SHT 9)	X	X		CONSTRUCTION ENTRANCE SHALL BE INSTALLED INITIALLY AND MAINTAINED THROUGH OUT THE PROJECT TO LIMIT SEDIMENT TRACKING ONTO ROADWAY.
FINAL STABILIZATION			X	ONCE CONSTRUCTION ACTIVITY IS COMPLETE SURFACE RESTORATION SHALL BE COMPLETED TO ACHIEVE FINAL STABILIZATION. THIS WILL INCLUDE SOD, SEED, GRAVEL SURFACING, CONCRETE, OR ASPHALT.



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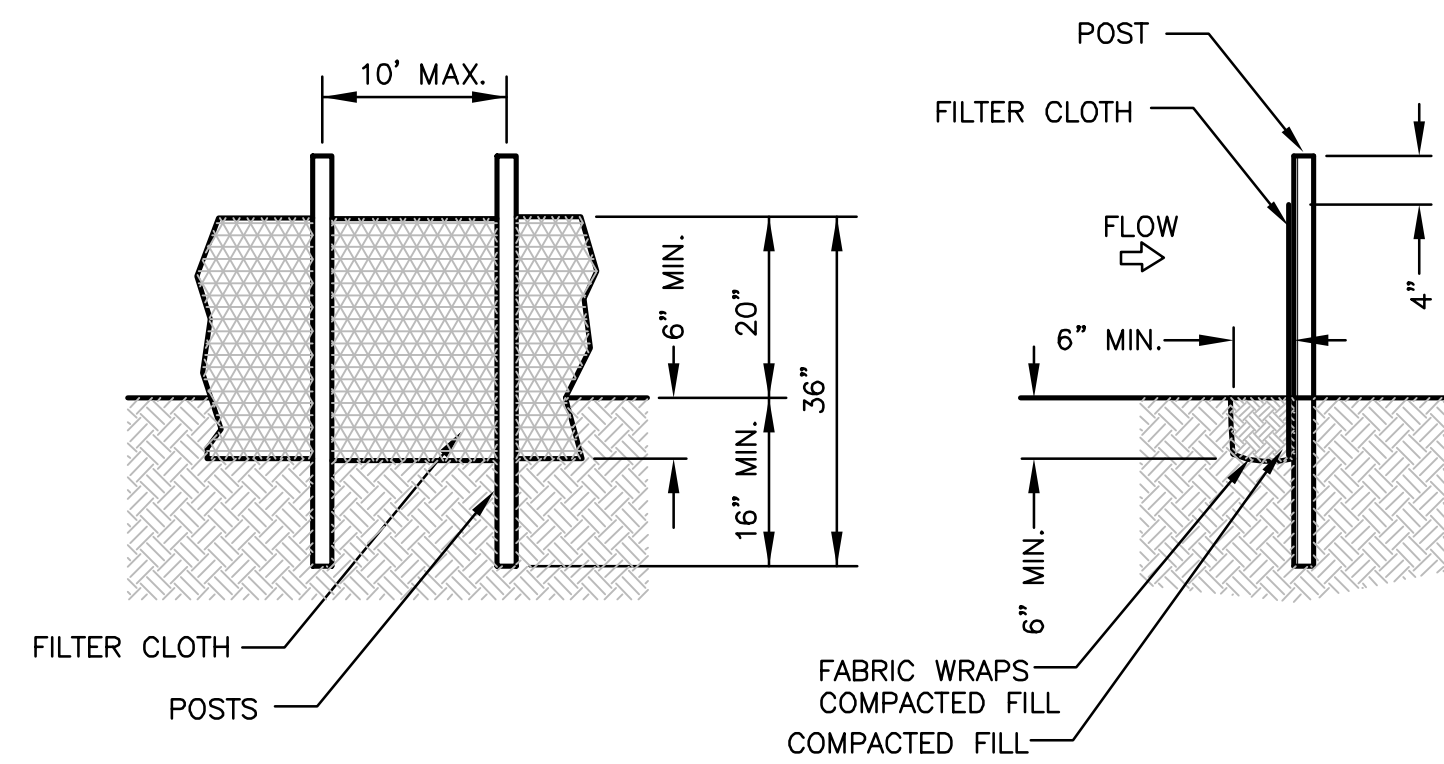
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 NEAR TULARE, SOUTH DAKOTA  
**EROSION CONTROL**

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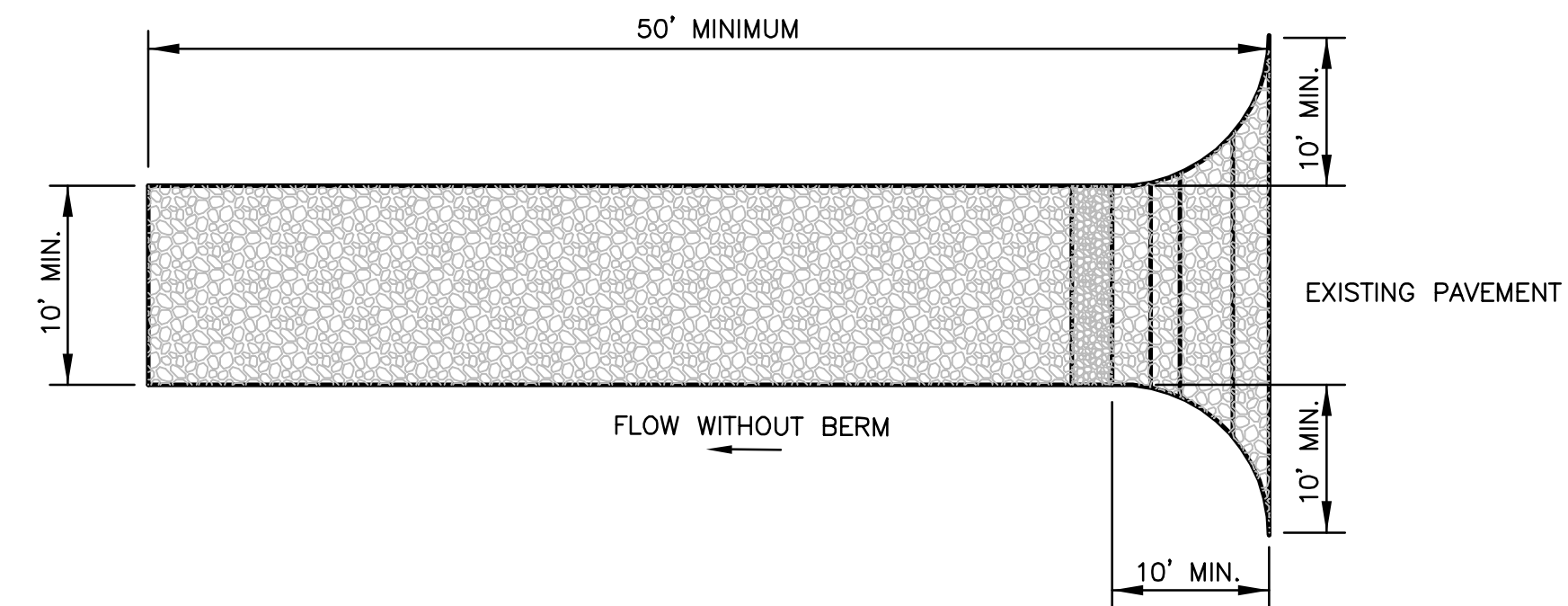
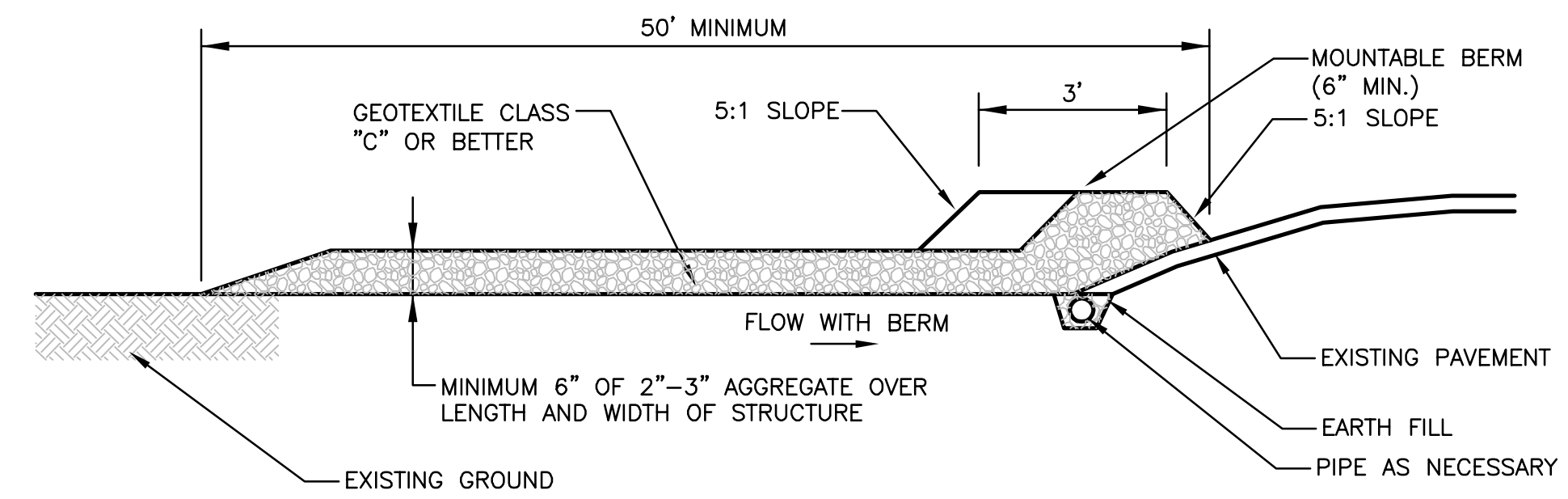


SLOPE (%)	SLOPE STEEPNESS	SLOPE LENGTH (FT.) (MAXIMUM)	SILT FENCE LENGTH (FT.) (MAXIMUM)
2	0-50:1	UNLIMITED	UNLIMITED
2-10	50:1-10:1	125	1,000
10-20	10:1-5:1	100	750
20-33	5:1-3:1	60	500
33-50	3:1-2:1	40	250
50+	>2:1	20	125

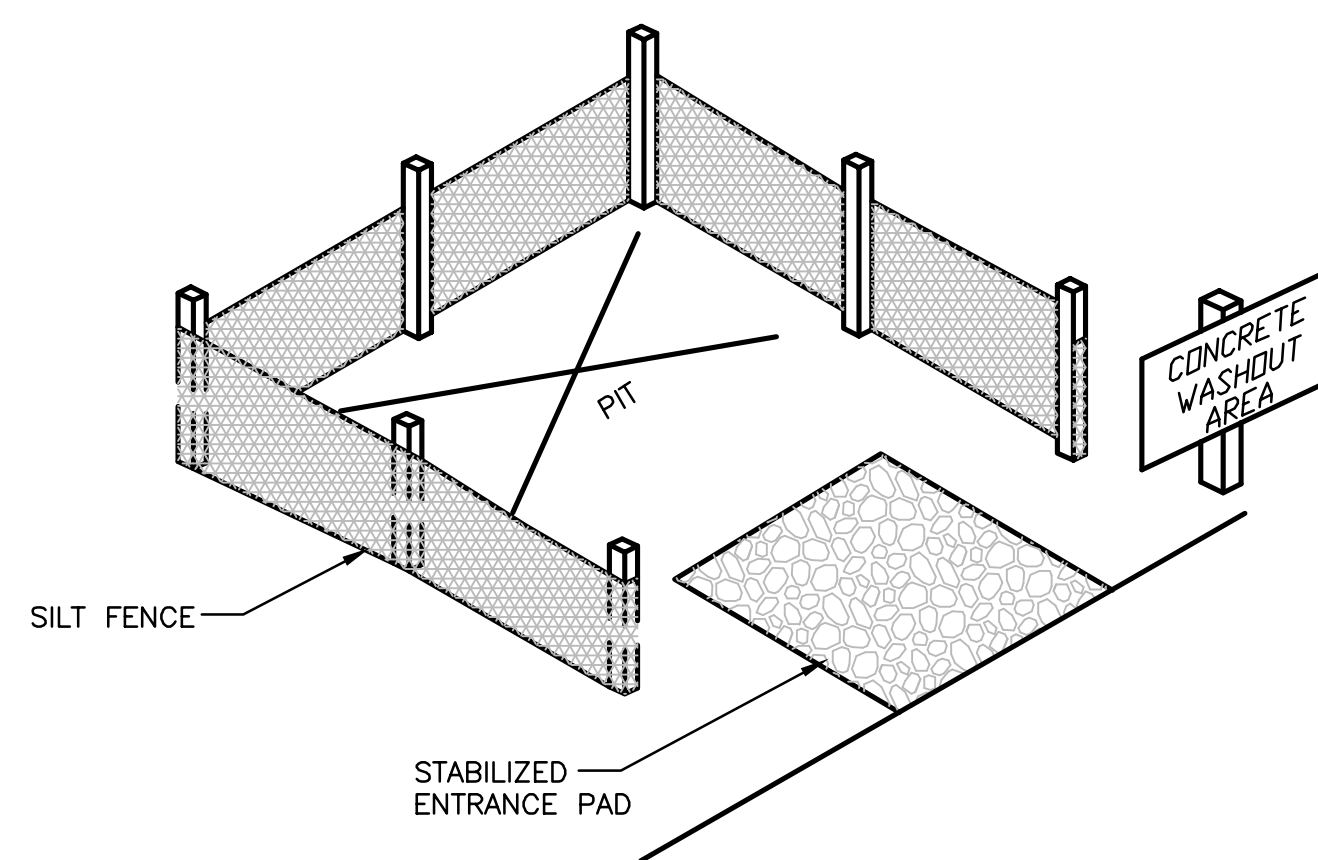
DESIGN NOTES:

- THE POSTS MUST BE A MINIMUM OF 16" INTO THE GROUND AND AT LEAST TO THE TOP OF THE FABRIC.
- THE FABRIC SHOULD EXTEND 16"-24" ABOVE THE GROUND.
- WOOD OR STEEL POSTS MAY BE USED IN CERTAIN INSTANCES.
- SILT FENCE SHOULD BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE.
- USE 36" WIDE CLOTH.
- WHERE ENDS OF THE GEOTEXTILE FABRIC COME TOGETHER, THE ENDS SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
- IF WOOD POSTS ARE TO BE USED THEY MUST MEET THE FOLLOWING SPECIFICATIONS: 1.5"x1.5" MINIMUM SQUARE POSTS OR 1.75" MINIMUM DIAMETER ROUND POST.
- IF METAL POSTS ARE TO BE USED THEY MUST BE STANDARD "T" OR "U" POST WEIGHING NOT LESS THAN 1 LB. PER LINEAR FOOT.
- THE LENGTH OF THE FLOW CONTRIBUTING TO SILT FENCE SHALL CONFORM TO THE FOLLOWING LIMITATIONS: FOR SLOPES LESS THAN 2% AND SANDY SOILS, MAXIMUM SLOPE AND SILT FENCE LENGTHS WILL BE LIMITED. ALWAYS CHECK LOCAL REQUIREMENTS.

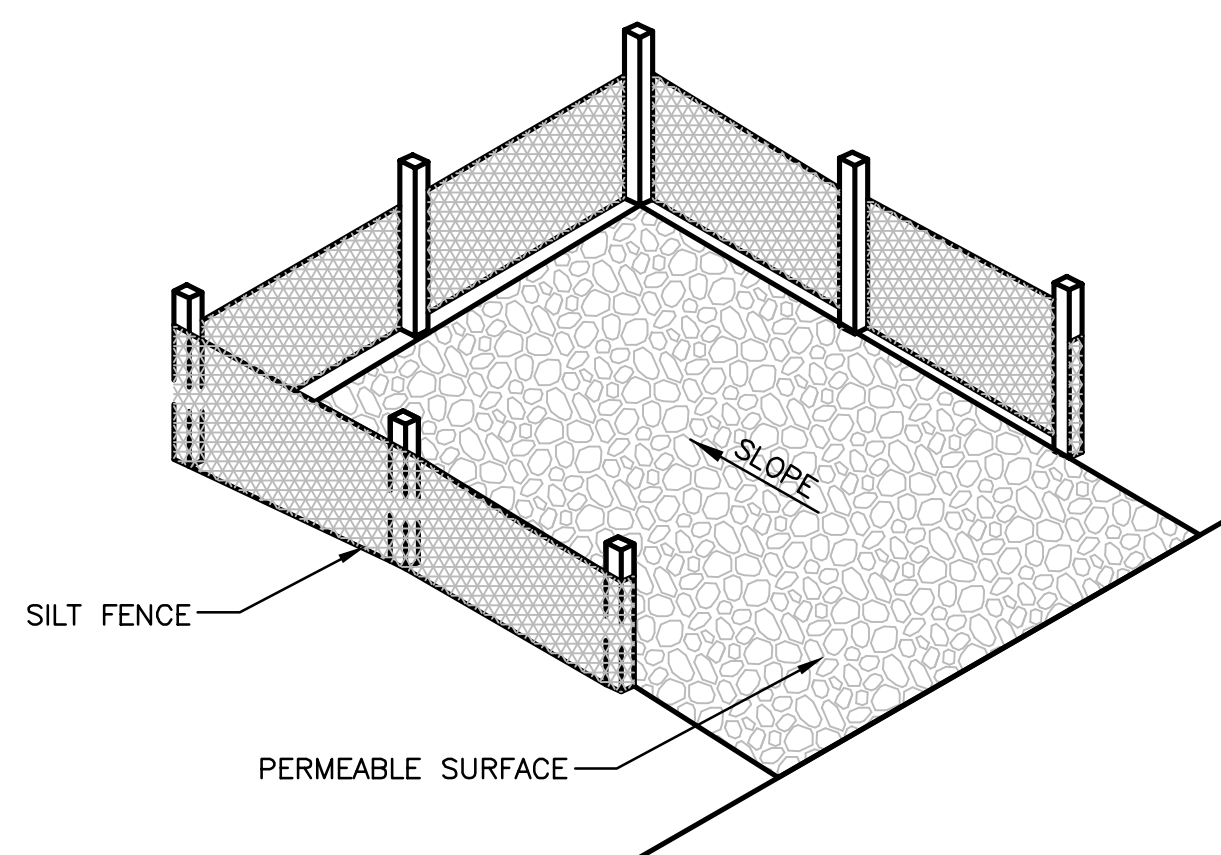
1  
9 SILT FENCE  
NTS



2  
9 CONSTRUCTION ENTRANCE  
NTS



3  
9 CONCRETE WASHOUT AREA  
NTS



4  
9 PORTABLE TOILET ENCLOSURE  
NTS

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EROSION CONTROL DETAILS

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