

ROCKY FLATS SITE

REGULATORY CONTACT RECORD

Purpose: Grading the Slump Area South of FC-4 and Former Building 991

Contact Record Approval Date: September 27, 2007

Site Contact(s) / Affiliation(s):

Scott Surovchak, DOE
John Boylan, S.M. Stoller
Rick DiSalvo, S.M. Stoller

Regulatory Contact(s) / Affiliation(s):

Carl Spreng / CDPHE

Discussion

The hillside slump south of the location of former Building 991 on the south side of Functional Channel (FC)-4, which began developing in 2006, needs to be regraded and seeded to stabilize the hillside and address worker safety and aesthetic concerns. The slumping is likely due to water saturation of the soils caused by disruption of the French drain underlying the hill and removal of the outfall associated with the drainage during closure. The hillside was constructed as part of the former Protected Area security fencing installation in the 1970s. The regrading is anticipated to make the topography of the area similar to that which existed prior to the hillside construction. Sentinel well 45605 is located within the slumping area; its casing is no longer vertical and the stress caused by the slumping is affecting its long-term serviceability. This well needs to be replaced after the grading work is completed. Other than the Sentinel well location, movement of the soils creating the slump does not affect the implementation of the remedy.

The excavation work will exceed the 3-foot-depth limit specified by the institutional controls (Rocky Flats Legacy Management Agreement [RFLMA], Attachment 2, Table 4, Institutional Control 2) and thus requires pre-approved procedures.

DOE, CDPHE, and Stoller staff informally consulted on August 30, 2007, on the regrading concept, and the attached S.M. Stoller Conceptual Design shows the grading location, depth of excavation, and placement of fill based on the outcome of those discussions. Note that Design Sheet 3 also shows the location of former Individual Hazardous Substance Site (IHSS) 154, the Pallet Burn Site, which is discussed in more detail below.

The regrading is projected to generate approximately 7,000 cubic yards of excess material. This soil will be spread at and adjacent to the former 903 Pad area (refer to Design Sheet 8), which will facilitate revegetation efforts in this area. The fill placement activity will conform with the applicable institutional controls, and the final elevation after fill placement and reseeded is expected to be slightly above the existing elevation. Erosion controls for the regrading excavation and fill activities will be employed in accordance with the Central Operable Unit (OU) Erosion Control Plan.

CDPHE approval for this work is requested before final design and procurement activities proceed. It is anticipated that the construction work will be completed in November 2007.

The objective of the institutional control is to maintain the current depth to subsurface contamination or contaminated structures. This control also results in achieving compliance with the CDPHE risk management policy of ensuring that residual risks to the site user are at or below 1×10^{-6} . Based on a review of the location of the regraded area, the limited aerial extent, and the minor change in depth to subsurface contamination, the regrading does not impact compliance with the risk management policy.

CDPHE has requested that the following information be included in contact records for soil excavation related to this institutional control that will not return soil to the preexisting grade:

1 - Provide information about any remaining subsurface structures in the vicinity so that the minimum cover assumption will not be violated (or state that there are none if that is the case).

There are no subsurface structures in the vicinity. The slump has been informally referred to as the "Building 991 slump" for ease of reference due to its proximity to the location of former Building 991. Portions of former Building 991 remain in the subsurface, but are located north of FC-4, well outside the hillside slump regrading activity area.

2 - Provide information about any former IHSSs/PACs or other known soil or groundwater contamination in the vicinity (or state that there is no known contamination).

The following IHSSs/Potential Areas of Concern (PACs) are in the vicinity of the hillside slump regrading activity area:

- IHSS 154 (PAC 900-154), Pallet Burn Site – Oil-contaminated pallets and other wood debris were burned in this area, which is located south of the slumping soils, just north of FC-5. The conceptual design drawing (Sheet 3) shows that the extent of regrading just touches the northern extent of IHSS 154, approximately between the southern end of Sections E and F (Sheets 6 and 7). Burning activities were conducted in 1965 and the area was removed sometime in the 1970s. Characterization of this IHSS in 2002, as part of IHSS Group 900-2, resulted in three of six sample locations with detectable levels of arsenic, and two of the three locations had arsenic above the wildlife refuge worker (WRW) soil action level specified in the Rocky Flats Cleanup Agreement (RFCA), both at depths greater than 4.5 feet below the surface.

Detected arsenic concentrations in the three locations ranged from 15.3 to 55.1 milligrams per kilogram (mg/kg). The two sample concentrations above the WRW RFCA soil action level of 22.2 mg/kg were 24.1 and 55.1 mg/kg. Based on the RFCA Attachment 5 Subsurface Soil Risk Screen, soil removal was not required because of the depth of the samples with concentrations above the WRW RFCA soil action level and because the IHSS was not in a significant erosion area, as identified in RFCA Attachment 5. No Further Accelerated Action was approved by CDPHE in 2002.

The proposed regrading may remove some soil adjacent to IHSS 154, but this would not significantly decrease the elevation of soils within IHSS 154. Prior to regrading, the

boundaries of IHSS 154 will be surveyed and marked. No excavation will take place inside the IHSS boundary.

- IHSS 192 (PAC 000-192), Antifreeze Discharge – On December 2 or 3, 1980, approximately 155 gallons of antifreeze solution, 25% ethylene glycol in water, were discharged from a brine chiller evaporator into a floor drain in former Building 708. The floor drain discharged into a buried culvert, which subsequently discharged into South Walnut Creek. The discharge was impounded in Pond B-1 and 5,000 gallons of water were flushed through the drainage system into Pond B-1. Based on the degradation model for ethylene glycol, it was predicted to reach undetectable levels in leachate and soil within 1 week of the discharge.

IHSS 192 was part of OU 16, Low Priority Sites, and a No Action remedy for this IHSS was approved in the 1994 OU 16 Corrective Action Decision/Record of Decision.

- PAC 000-503, Solar Pond Water Spill Along Central Avenue – In 1994, a tanker truck transporting water from the Solar Evaporation Ponds to the former Building 374 storage tanks spilled approximately 35 gallons over a 0.5-mile stretch of asphalt on Central Avenue. The spilled water was cleaned up from the asphalt. No Further Accelerated Action was approved by CDPHE in 2002.

More detailed information on these PACs/IHSSs and the disposition of these areas is provided in the Historical Release Report, Appendix B of the Remedial Investigation/Feasibility Study Report.

3 - Resurvey any new surface established in subsurface soil, unless sufficient existing data is available to characterize the surface (or state that the excavated soil will be replaced and the original contours restored).

When completed, the new surface elevations will be consistent with the final design drawings for the regrading work. Final elevations will be surveyed and the resulting data will be used to update the Central OU topography maps.

Resolution

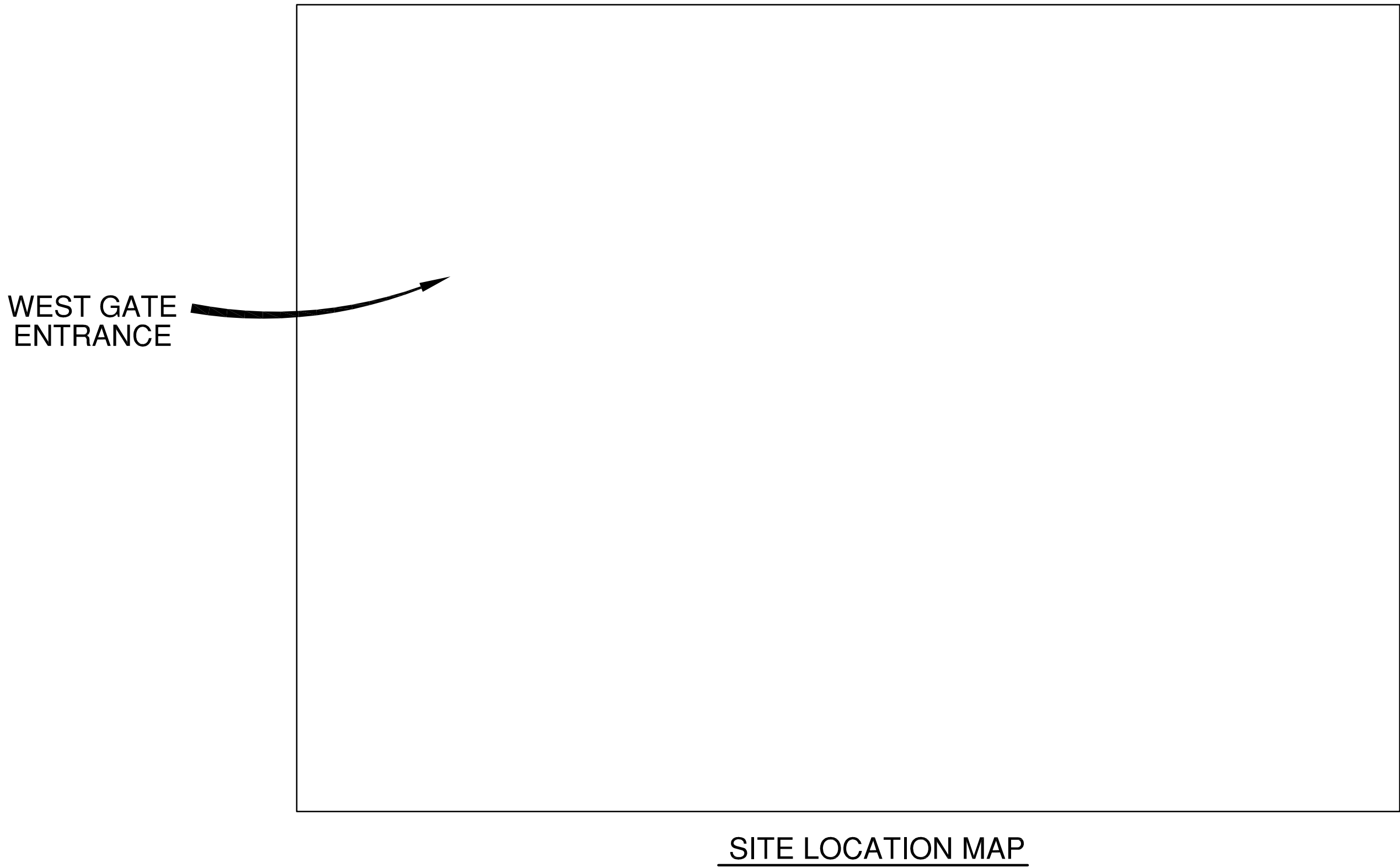
Carl Spreng, CDPHE, approved the regrading work as described in this Contact Record.

Contact Record Prepared by: Rick DiSalvo

Distribution:

Carl Spreng, CDPHE
Scott Surovchak, DOE
Linda Kaiser, Stoller
Rocky Flats Contact Record
File

UNITED STATES
DEPARTMENT OF ENERGY
LEGACY MANAGEMENT
ROCKY FLATS SITE
BUILDING AREA 991 SLUMP REPAIR



INDEX OF DRAWINGS

SHEET	TITLE	DRAWING NO.
1	TITLE SHEET	S03433-R00-T01-D+
2	PROJECT SITE PLAN	S03434-R00-F01-D+
3	GRADING PLAN	S03435-R00-C01-D+
4	SECTIONS A AND B	S03436-R00-C02-D+
5	SECTIONS C AND D	S03437-R00-C03-D+
6	SECTIONS E AND F	S03438-R00-C04-D+
7	SECTIONS G AND H	S03439-R00-C05-D+
8	EROSION CONTROL PLAN	S03640-R00-C06-D+

ABBREVIATIONS

APPROX.	APPROXIMATE	HORIZ.	HORIZONTAL	SHT	SHEET
℄	CENTER LINE	INV	INVERT	SPPTS	SOLAR POND PLUME TREATMENT SYSTEM
DIA.	DIAMETER	MAX.	MAXIMUM		
DOE	DEPARTMENT OF ENERGY	MIN.	MINIMUM	STA.	STATION
E	EASTING	MW	MONITORING WELL	THK.	THICK
EL. OR ELEV.	ELEVATION	N	NORTHING	TYP.	TYPICAL
EXIST.	EXISTING	NA	NOT APPLICABLE		
		NIC	NOT IN CONTRACT		
		NTS	NOT TO SCALE		

DRAWING LEGEND

PLAN

—T—O—W—	BURIED — TELEPHONE/OPTICAL/WATER	←	PROJECT ACCESS/HAUL ROUTE
—E—G—IP—	BURIED — ELECTRICAL/GAS LINES/IRRIGATION PIPE	⊗	UTILITY POLE
+++++	RAILROAD TRACK	>---<	UNDERGROUND DRAINAGE CULVERT
—x—x—x—	WIRE FENCE	XXXX ○	EXISTING MONITORING WELL
—●—●—●—	CHAIN LINK FENCE	38	HIGHWAY
—□—□—□—	SILT FENCE	↙	SLOPE/FLOW ARROW
— — — — —	DRAINAGE DITCH/WATER LINE LIMITS	—▲—	TOP OF SLOPE
=====	EXISTING UNIMPROVED DIRT ROAD	⊕	SURVEY CONTROL POINT
—⚡—	OVERHEAD ELECTRICAL LINE	▧	BUILDING/STRUCTURE
—○—	TREES/SHRUBS/BRUSH	▬	EROSION CONTROL WATTLES
— — — — —	EXISTING CONTOURS		
=====	PROPOSED CONTOURS		

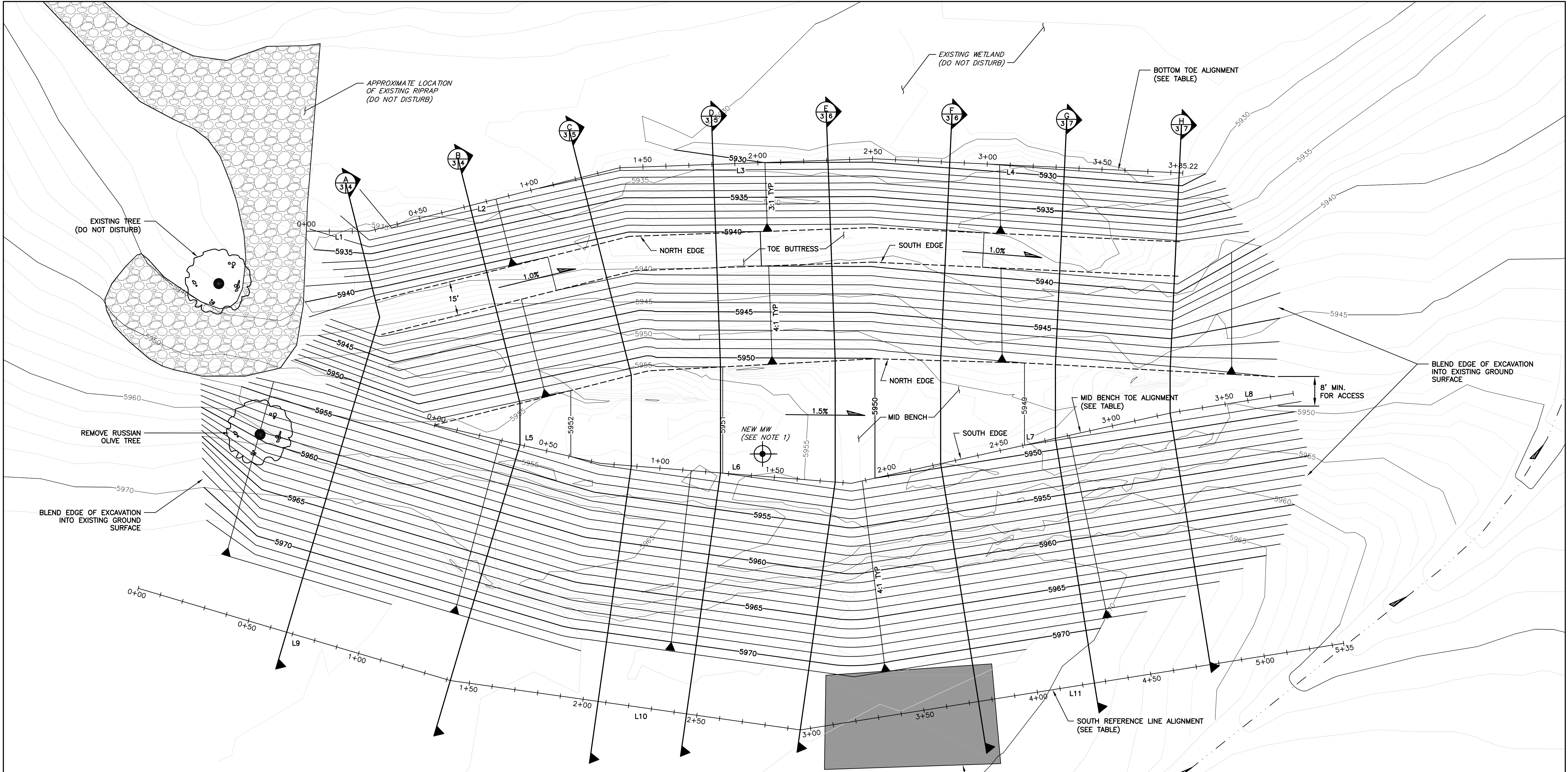
SECTION

▨	COMPACTED SOIL
▩	UNDISTURBED SOIL
▩▩▩	SCARIFIED SUBGRADE
▨▨▨	GRAVEL OR DRAIN ROCK
🌿	REVEGETATION

DETAIL SYMBOL

1	DETAIL NUMBER/SECTION LETTER
2	SHEET ON WHICH
3	DETAIL/SECTION IS TAKEN FROM
	SHEET ON WHICH
	DETAIL/SECTION IS DRAWN

REVISION NO.	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	PROJECT A/E	APPROVAL
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION, COLORADO			S.M. Stoller Corporation Work Performed by Under DOE Contract No. DE-AC01-02GJ79491			
PROJECT LOCATION ROCKY FLATS SITE GOLDEN, COLORADO		APPROVALS DRAWN BY: T. BOEHLER ENGINEER: J. KIENHOLZ PROJECT ENGINEER		DATE: -/-/07 -/-/07 -/-/07		
REFERENCE		APPROVED BY: M. MADRIL PROJECT MANAGER: L. KAISER DOE CONFORMANCE (SEE RECORD)		DATE: -/-/07 -/-/07 -/-/07		
			PROJECT NO. LTS-111-0056-13-001D DRAWING NO. S03433-R00-T01-D+			SHT. 1 OF 8
			BUILDING AREA 991 SLUMP REPAIR			
			TITLE SHEET			



BOTTOM TOE ALIGNMENT TABLE				
LINE NO.	LENGTH	BEARING	START POINT (N,E)	END POINT (N,E)
L1	27.28'	S 90° 00' 00.00" E	749730.7, 2085303.1	749730.7, 2085330.4
L2	112.55'	N 75° 47' 33.91" E	749730.7, 2085330.4	749758.4, 2085439.5
L3	110.00'	N 87° 56' 11.22" E	749758.4, 2085439.5	749762.3, 2085549.4
L4	135.39'	S 87° 21' 43.63" E	749762.3, 2085549.4	749756.1, 2085684.7

MID BENCH TOE ALIGNMENT TABLE				
LINE NO.	LENGTH	BEARING	START POINT (N,E)	END POINT (N,E)
L5	74.01'	S 76° 57' 52.83" E	749646.4, 2085359.0	749629.7, 2085431.1
L6	109.59'	S 85° 26' 32.55" E	749629.7, 2085431.1	749621.0, 2085540.4
L7	143.98'	N 77° 34' 21.09" E	749621.0, 2085540.4	749651.9, 2085681.0
L8	52.42'	N 81° 00' 22.16" E	749651.9, 2085681.0	749660.1, 2085732.7

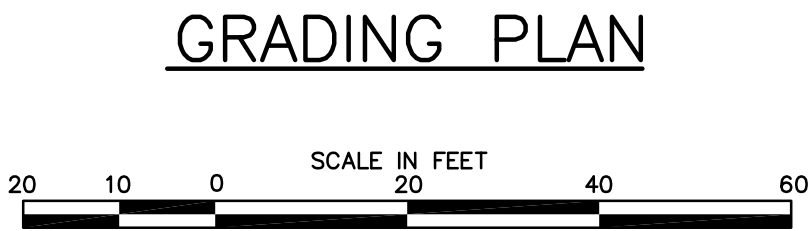
SOUTH REFERENCE LINE ALIGNMENT TABLE				
LINE NO.	LENGTH	BEARING	START POINT (N,E)	END POINT (N,E)
L9	141.81'	S 73° 31' 51.77" E	749575.2, 2085230.0	749535.1, 2085365.8
L10	153.86'	S 81° 58' 41.00" E	749535.1, 2085365.8	749513.6, 2085518.1
L11	239.53'	N 80° 56' 59.56" E	749513.6, 2085518.1	749551.3, 2085754.7

SECTION LOCATION ALONG BOTTOM TOE ALIGNMENT		
SECTION	STATION	NORTHING, EASTING
A	0+22.46	749730.8, 2085325.6
B	0+72.60	749741.9, 2085374.3
C	1+22.60	749754.1, 2085422.8
D	1+80.58	749759.8, 2085480.2
E	2+30.58	749761.6, 2085530.2
F	2+83.66	749760.8, 2085583.2
G	3+33.66	749758.5, 2085633.2
H	3+83.66	749756.2, 2085683.1

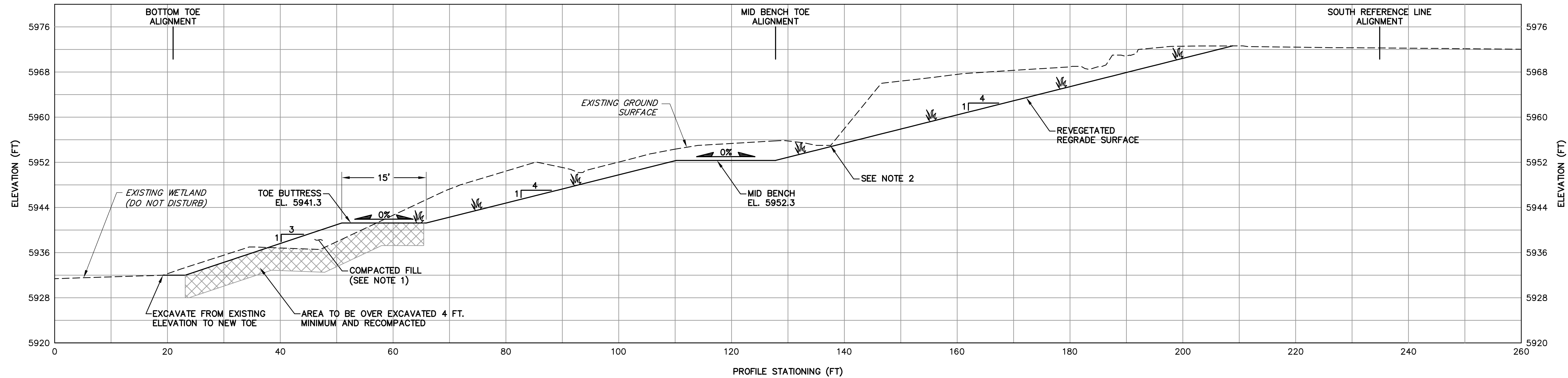
SECTION LOCATION ALONG MID BENCH TOE ALIGNMENT		
SECTION	STATION	NORTHING, EASTING
A	-	-
B	0+38.10	749637.8, 2085396.1
C	0+87.54	749628.6, 2085444.6
D	1+26.47	749625.5, 2085483.4
E	1+76.56	749621.5, 2085533.3
F	2+23.42	749629.5, 2085579.3
G	2+74.59	749640.5, 2085629.2
H	3+25.72	749651.5, 2085679.2

SECTION LOCATIONS ALONG SOUTH REFERENCE LINE ALIGNMENT		
SECTION	STATION	NORTHING, EASTING
A	0+67.32	749556.2, 2085294.5
B	1+41.61	749535.1, 2085365.8
C	2+06.61	749526.0, 2085430.1
D	2+45.47	749520.6, 2085468.6
E	2+97.47	749513.6, 2085518.1
F	3+74.05	749526.0, 2085595.7
G	4+25.13	749534.0, 2085646.2
H	4+76.17	749542.0, 2085696.6

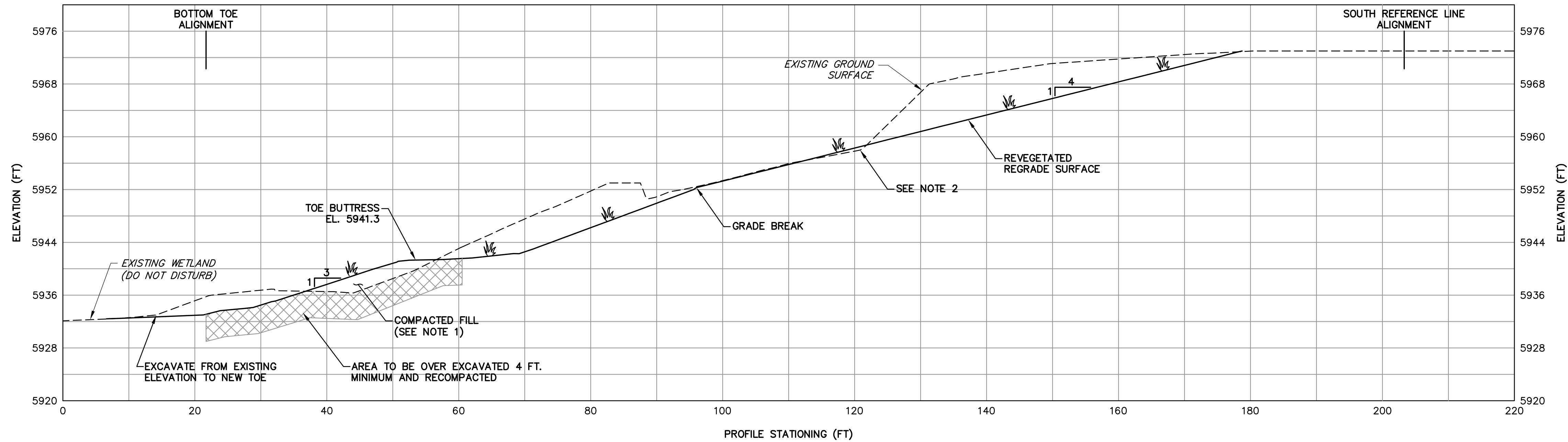
NOTE:
1) NEW MONITORING WELL TO REPLACE THE MONITORING WELL DESTROYED DURING THE SLUMP TO BE INSTALLED BY OTHERS.



REVISION NO.	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	PROJECT A/E	APPROVAL
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION, COLORADO						
PROJECT LOCATION ROCKY FLATS SITE GOLDEN, COLORADO			Work Performed by S.M. Stoller Corporation Under DOE Contract No. DE-AC01-02GJ79491 BUILDING AREA 991 SLUMP REPAIR			
REFERENCE			GRADING PLAN			
			APPROVALS	DATE	PROJECT NO.	SHT. OF
			DRAWN BY: T. BOEHLER	-/-/07	LTS-111-0056-13-001D	3 OF 8
			ENGINEER: J. KIENHOLZ	-/-/07		
			PROJECT ENGINEER:			
			APPROVED BY: M. MADRIL	-/-/07		
			PROJECT MANAGER: L. KAISER	-/-/07		
			DOE ENVIRONMENTAL (SEE RECORD)	-/-/07		



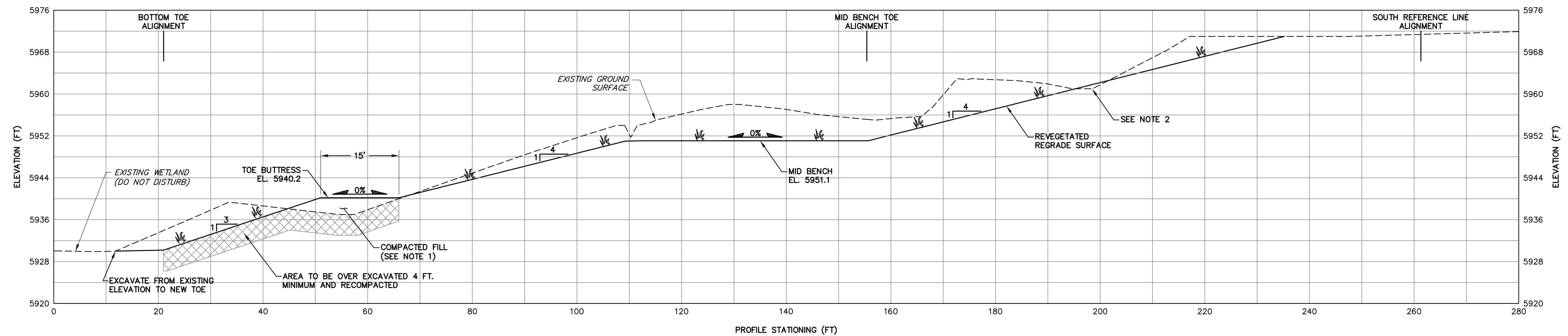
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VERT: 1" = 10'



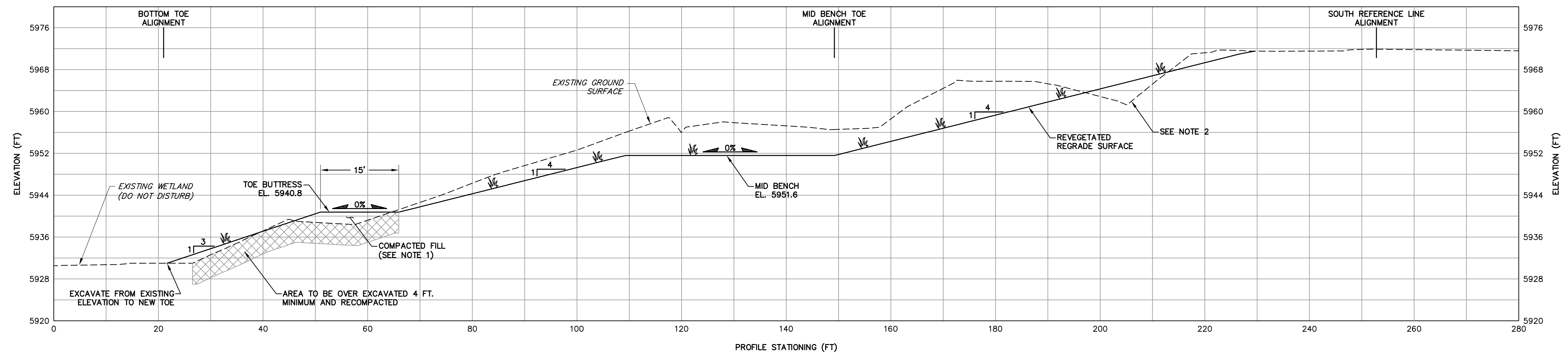
A
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SCALE: HORIZ: 1" = 10'
VERT: 1" = 10'

- NOTE:**
- 1) IN FILL AREAS, SCARIFY A MINIMUM 12-INCH DEPTH, WORK THE SCARIFIED MATERIAL TO A UNIFORM CONDITION AND MOISTURE CONDITION, AND COMPACT WITH A MINIMUM OF THREE PASSES WITH SHEEP'S FOOT COMPACTION EQUIPMENT.
 - 2) EXCAVATE AND FILL LARGE SUBSIDENCE CRACKS PRIOR TO FILL PLACEMENT.
 - 3) SPREAD FILL IN 12-INCH LIFTS (MAXIMUM).

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PROJECT LOCATION		ROCKY FLATS SITE GOLDEN, COLORADO		APPROVALS		BUILDING AREA 991 SLUMP REPAIR	
REFERENCE		DRAWN BY:		T. BOEHLER	-/-/07	PROJECT NO. LTS-111-0056-13-001D	
		ENGINEER		J. KIENHOLZ	-/-/07		
		PROJECT ENGINEER					
		APPROVED BY:		M. MADRIL	-/-/07		
		PROJECT MANAGER		L. KAISER	-/-/07	SHT. 4 OF 8	
		DOE CONCURRENCE (SEE RECORD)			-/-/07	DRAWING NO. S03436-R00-C002-D+	



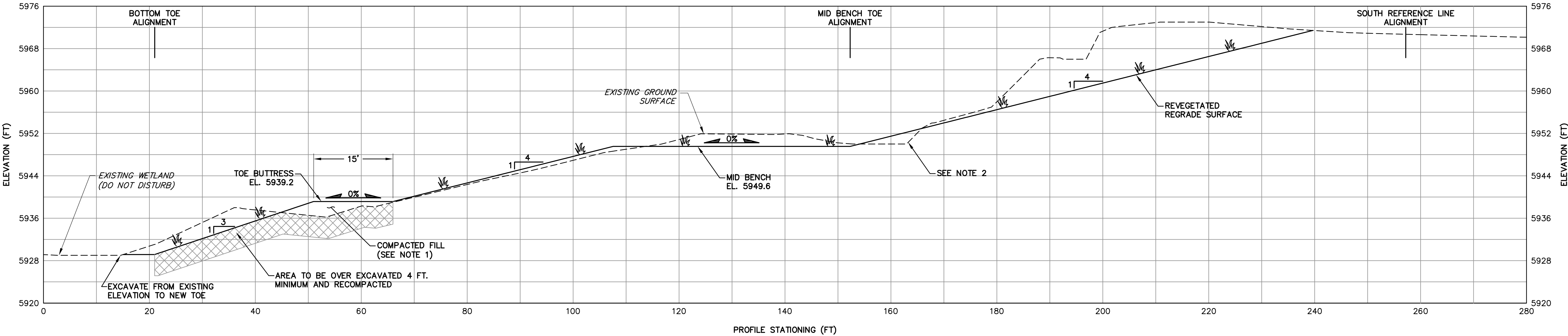
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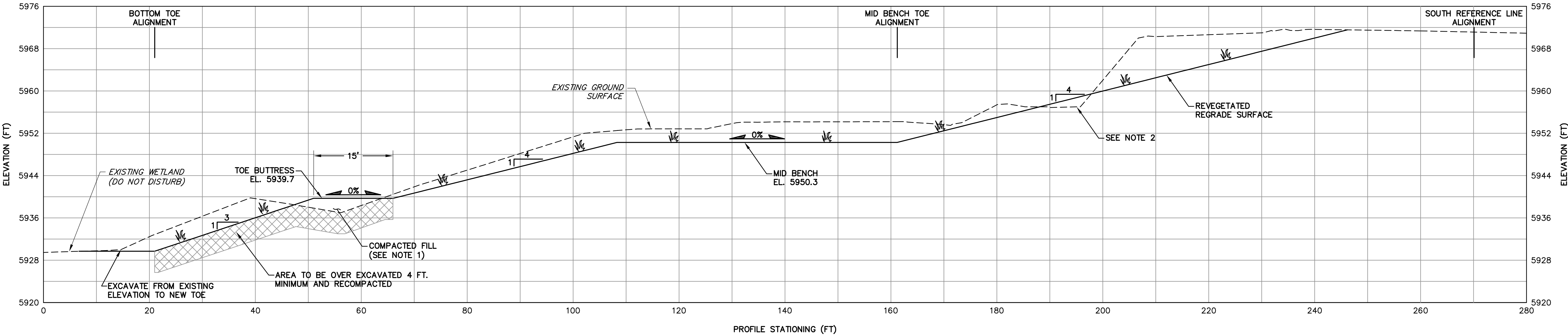
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SCALE: HORIZ: 1" = 10'
VERT: 1" = 10'

- NOTE:**
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U.S. DEPARTMENT OF ENERGY					S.M. Stoller Corporation				
GRAND JUNCTION, COLORADO					Work Performed by Under DOE Contract No. DE-AC01-02GJ79491				
PROJECT LOCATION				APPROVALS		BUILDING AREA 991 SLUMP REPAIR			
ROCKY FLATS SITE GOLDEN, COLORADO				DRAWN BY	DATE	SECTIONS C AND D			
				T. BOEHLER	-/-/07				
				ENGINEER					
				J. KIENHOLZ	-/-/07				
				PROJECT ENGINEER					
REFERENCE				APPROVED BY		PROJECT NO. LTS-111-0056-13-001D			
				M. MADRIL	-/-/07				
				PROJECT MANAGER					
				L. KAISER	-/-/07				
				DOE CONFORMANCE (SEE RECORD)					
				DRAWING NO.	S03437-R00-C003-D+	SHT.		5	OF 8



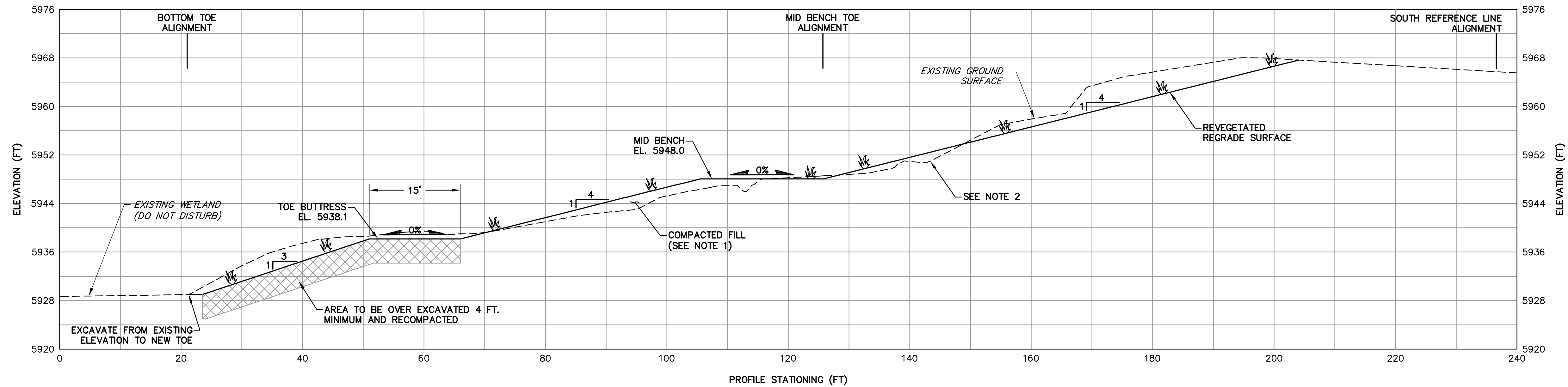
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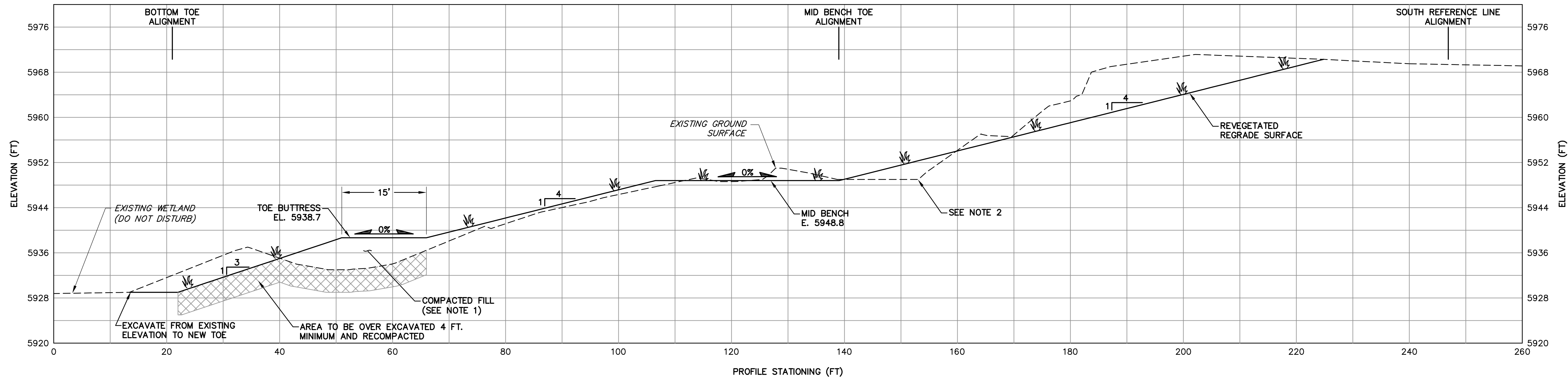
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PROJECT LOCATION		ROCKY FLATS SITE GOLDEN, COLORADO		APPROVALS		BUILDING AREA 991 SLUMP REPAIR	
REFERENCE		DRAWN BY:		T. BOEHLER		-/-/07	
		ENGINEER:		J. KIENHOLZ		-/-/07	
		PROJECT ENGINEER:					
		APPROVED BY:		M. MADRIL		-/-/07	
		PROJECT MANAGER:		L. KAISER		-/-/07	
		DOE CONCURRENCE (SEE RECORD)		-/-/07		PROJECT NO. LTS-111-0056-13-001D	
						DRAWING NO. S03438-R00-C004-D+	
						SHT. 6 OF 8	



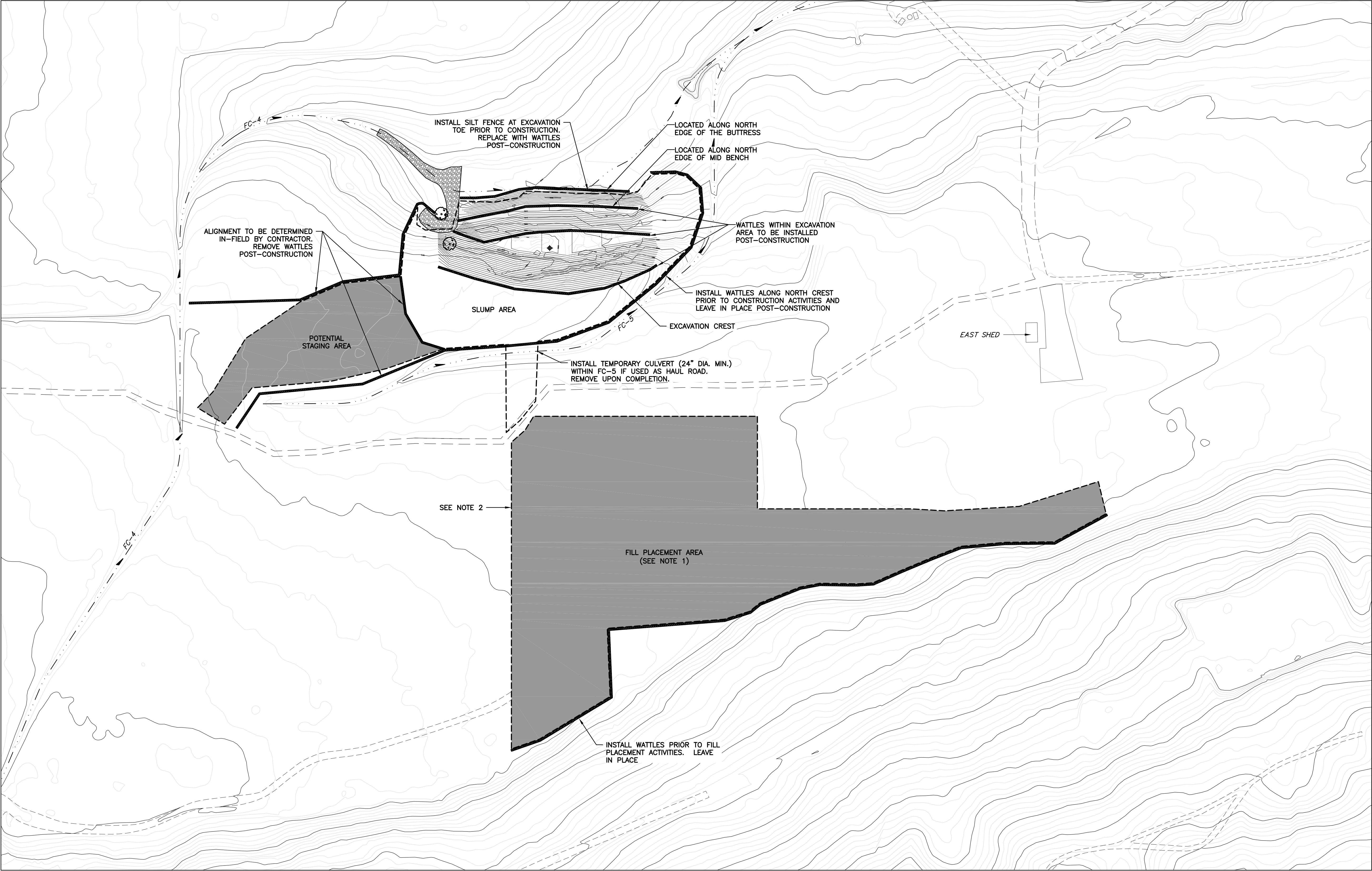
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PROJECT LOCATION		ROCKY FLATS SITE GOLDEN, COLORADO		APPROVALS		BUILDING AREA 991 SLUMP REPAIR		
REFERENCE		DRAWN BY:		T. BOEHLER		-/-/07		
		ENGINEER:		J. KIENHOLZ		-/-/07		
		PROJECT ENGINEER:						
		APPROVED BY:		M. MADRIL		-/-/07		
		PROJECT MANAGER:		L. KAISER		-/-/07		
		DOE CONCURRENCE:		(SEE RECORD)		-/-/07		
				PROJECT NO.		LTS-111-0056-13-001D		
				DRAWING NO.		S03439-R00-C005-D+		
						SHT. 7		OF 8



NOTE:

- 1) SPREAD FILL MATERIAL GENERATED FROM AREA 991 EXCAVATION IN ONE, SIX-INCH THICK LAYER AND REVEGETATE. ACTUAL AREA MAY VARY DEPENDING ON FILL GENERATED FROM EXCAVATION.
- 2) CONTRACTOR TO STAKE PERIMETER OF FILL PLACEMENT AREA PRIOR TO CONSTRUCTION ACTIVITIES.
- 3) INSTALL WATTLES AND SILT FENCE AS DIRECTED BY THE CONTRACTOR AND PER THE EROSION CONTROL PLAN FOR ROCKY FLATS CENTRAL OPERABLE UNIT DATED 4/26/07.



GRADING PLAN



REVISION NO.		DATE	DESCRIPTION	DRAWN BY	CHECKED BY	PROJECT A/E	APPROVAL
U.S. DEPARTMENT OF ENERGY		GRAND JUNCTION, COLORADO		Work Performed by S.M. Stoller Corporation Under DOE Contract No. DE-AC01-02GJ79491			
PROJECT LOCATION		APPROVALS		BUILDING AREA 991 SLUMP REPAIR			
ROCKY FLATS SITE GOLDEN, COLORADO		DRAWN BY: T. BOEHLER	DATE: -/-/07	ENGINEER: J. KIENHOLZ			
PROJECT ENGINEER		APPROVED BY:		PROJECT NO.			
REFERENCE		M. MADRIL	-/-/07	L. KAISER		LTS-111-0056-13-001D	
DOE DOCUMENT NUMBER (SEE RECORD)		-/-/07	-/-/07	DRAWING NO.		S03640-R00-C006-D+	SHT. 8 OF 8