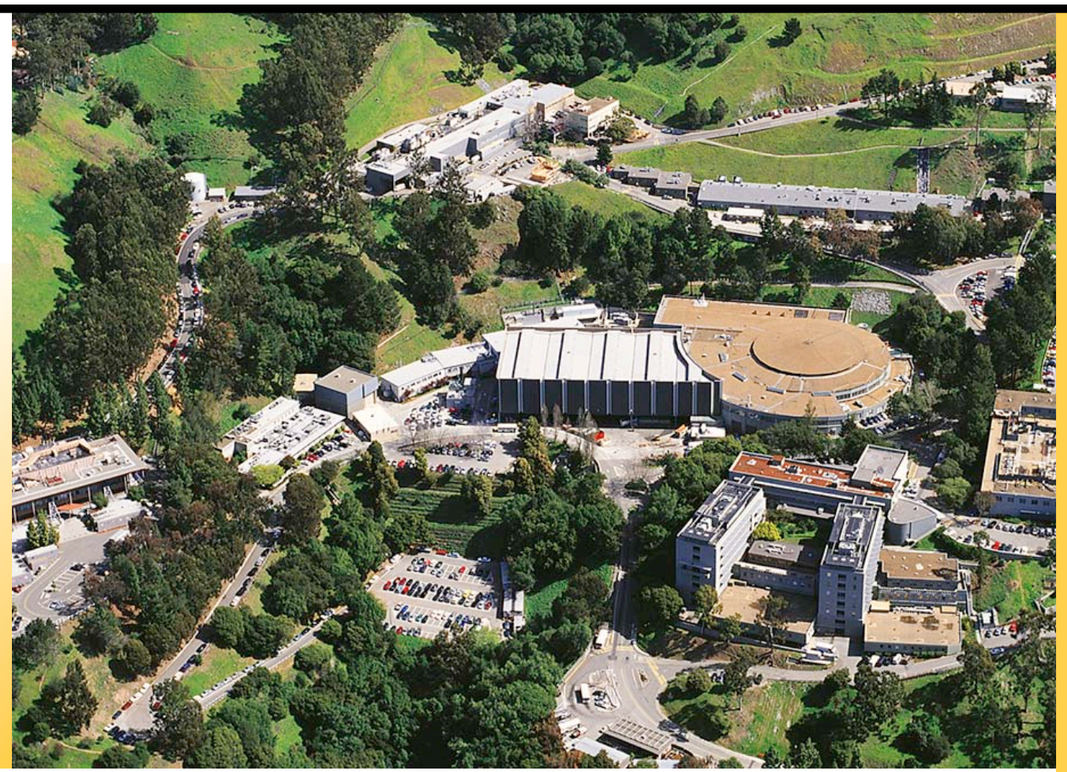
Lawrence Berkeley National Laboratory

Bevatron Area Massing Study Update

Planning for the NGLS



JUNE 2009

REV. 2 03.24.2010

Bevatron Study Area

Planning Considerations

The Bevatron site provides most visitors with their first impression of the Lab. The large, flat site—an anomaly on the steep hillside campus—presents the Lab with a major opportunity for new development.

U.C. GRID NORTH

TRUE N

16° 43'

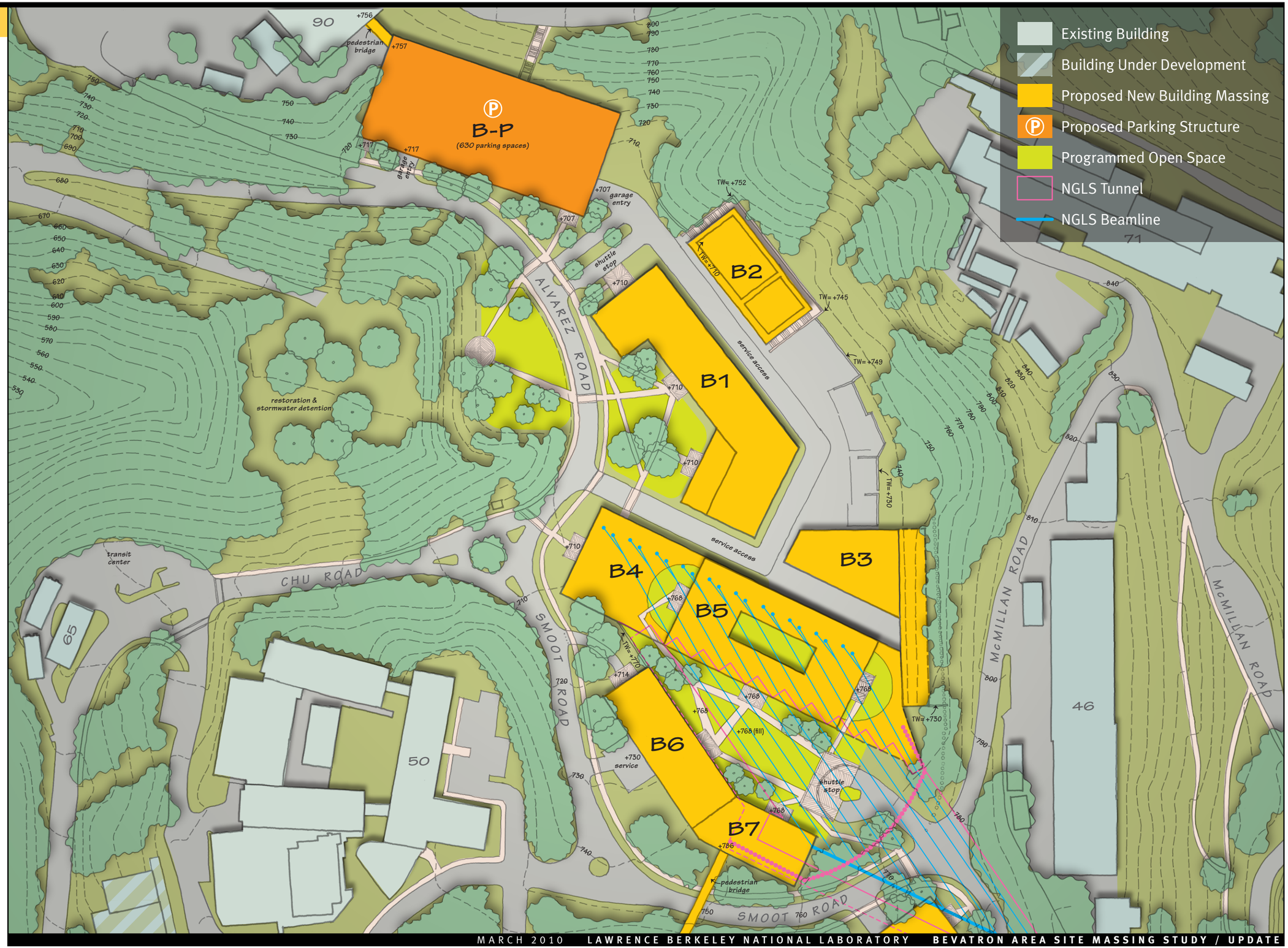
0 50' 100'

0 10 20 30m

Bevatron Study Area

Site Massing

New buildings frame open spaces with views of Blackberry Canyon. A parking structure at the north end of the site creates a vertical connection to Building 90. Fill needed for the *Next Generation Light Source (NGLS)* project brings the grade at the south end up to Smoot Road. Both improve pedestrian connectivity to surrounding areas by bridging grade changes.

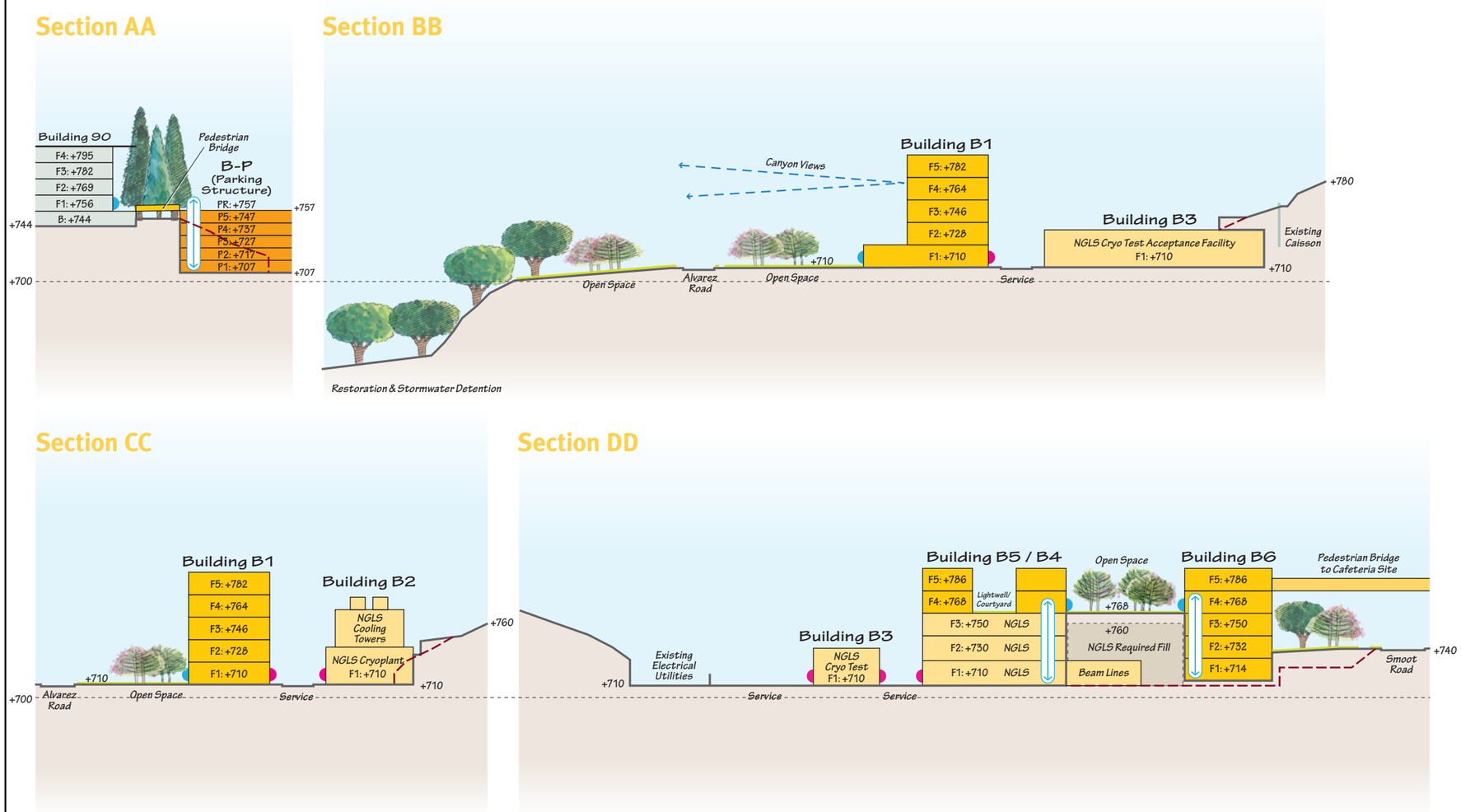


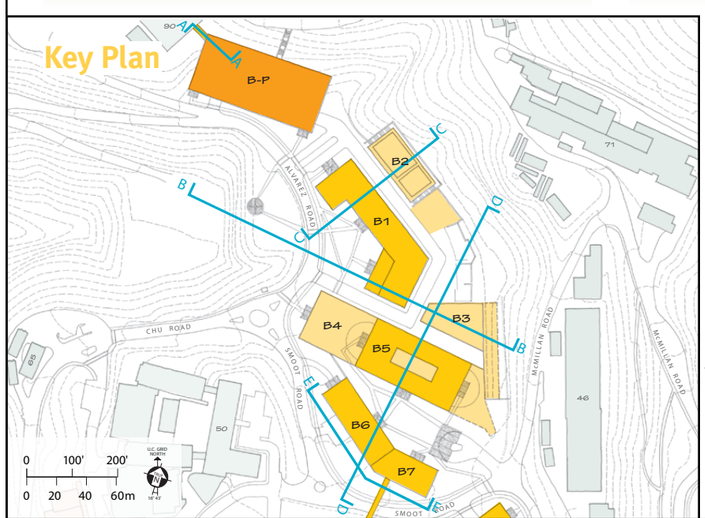
Bevatron Study Area

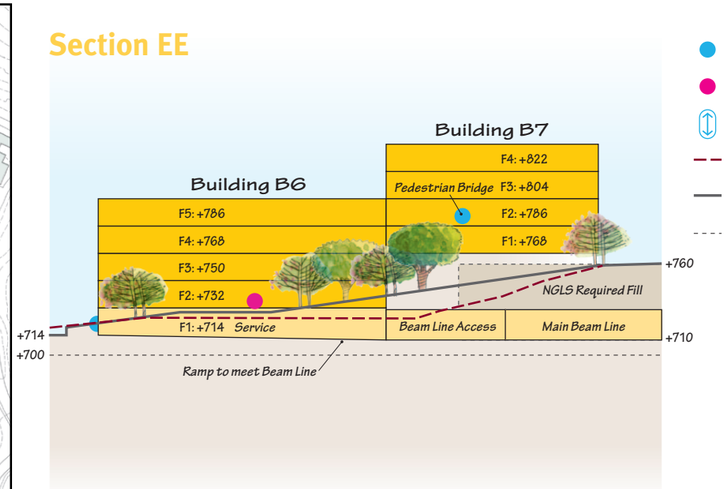
Section Views

Assumptions

- Implementation of the NGLS facility per the NGLS Conceptual Tunnel Design & Construction Cost Estimate: Phase II Report (Jacobs Associates, August 2009)
- NGLS Cryoplant (B2) includes cooling towers and gas storage on roof. Outdoor area to southeast reserved for related program.
- Linear portion of NGLS Cryomodule Test Acceptance Facility (B3) requires 10 feet of fill on roof
- Existing electrical utilities to remain. Additional space reserved for expansion.
- NGLS beam lines require 30 feet of fill in southeast area of the study area (marked *fill* on plan)
- Access required to main NGLS beam line via first floor of Building B6







- Building entry
- Service access
- Vertical connection through building
- Existing ground plane
- Finished ground plane
- Reference plane

0 50' 100'
0 10 20 30m

Bevatron Study Area

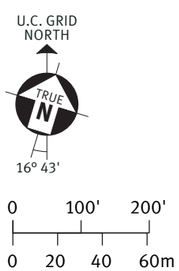
Site Diagrams

A. Grading

B. Open Space

C. Pedestrian Circulation & Shuttle Stops

D. Vehicular Circulation



Bevatron Study Area

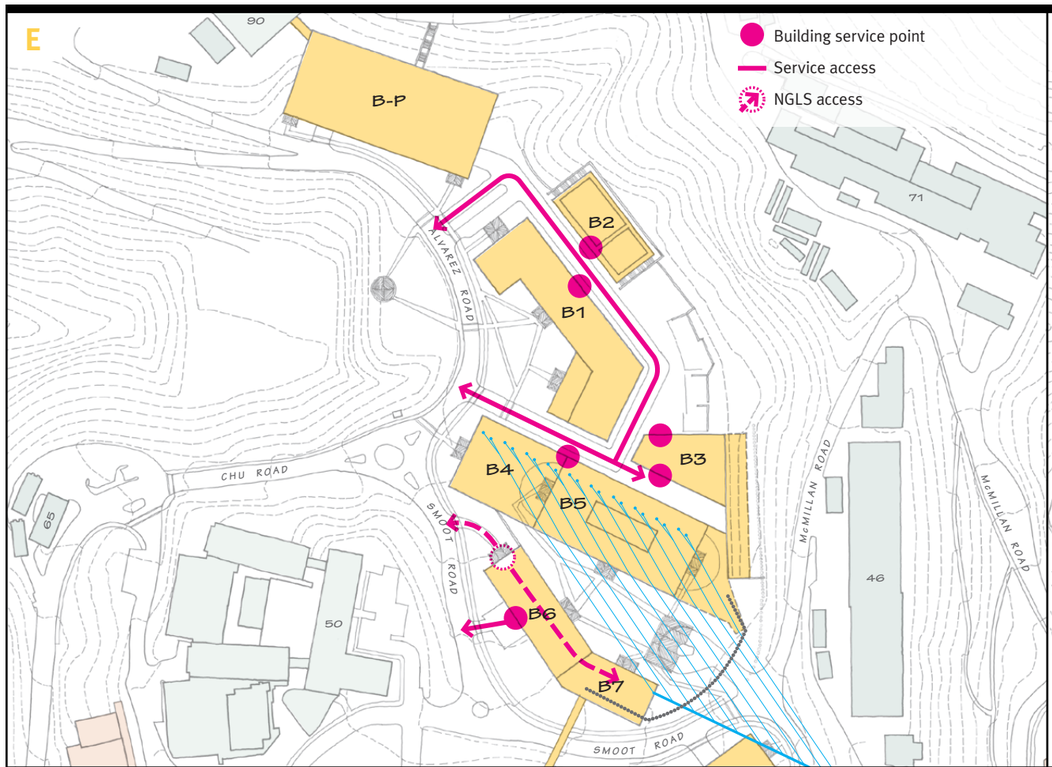
Site Diagrams

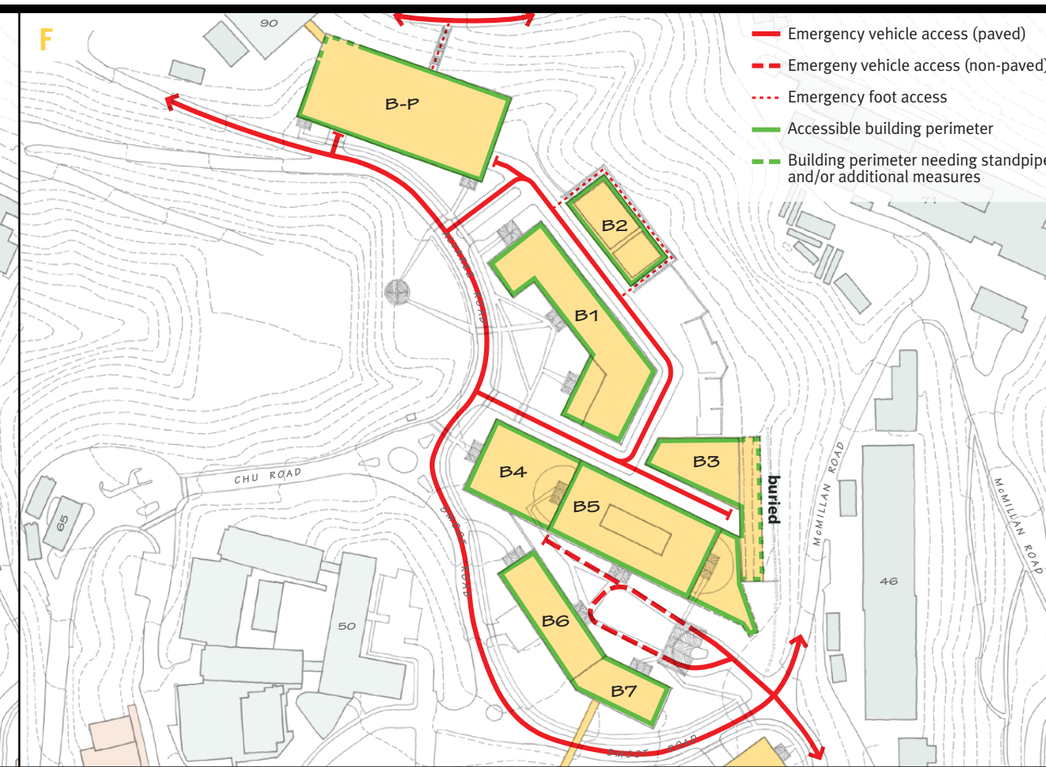
E. Service Access

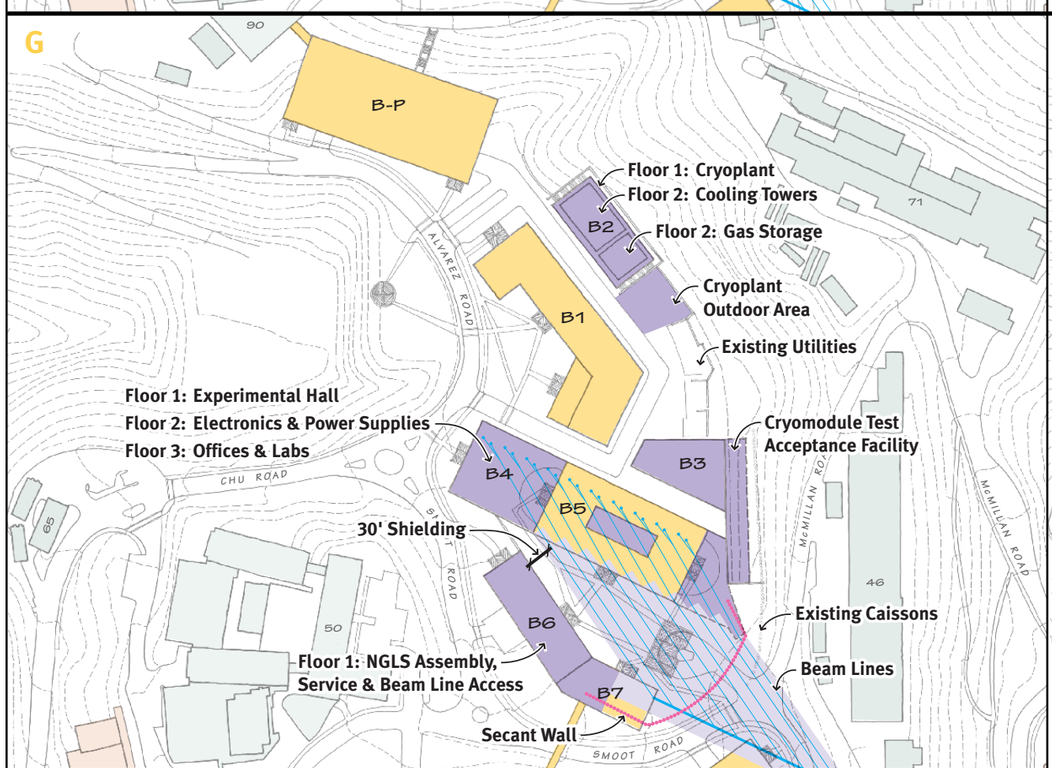
F. Emergency Access

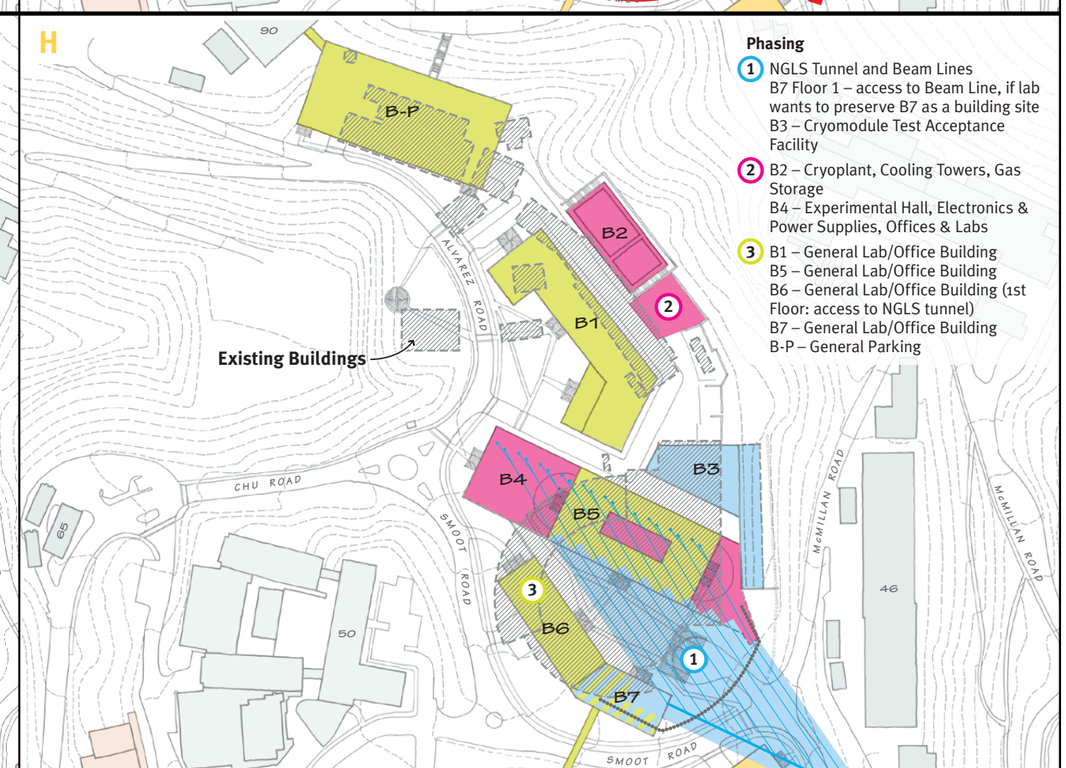
G. Annotated Site Plan

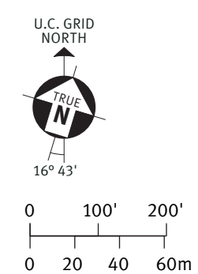
H. Construction Phasing











Bevatron Study Area

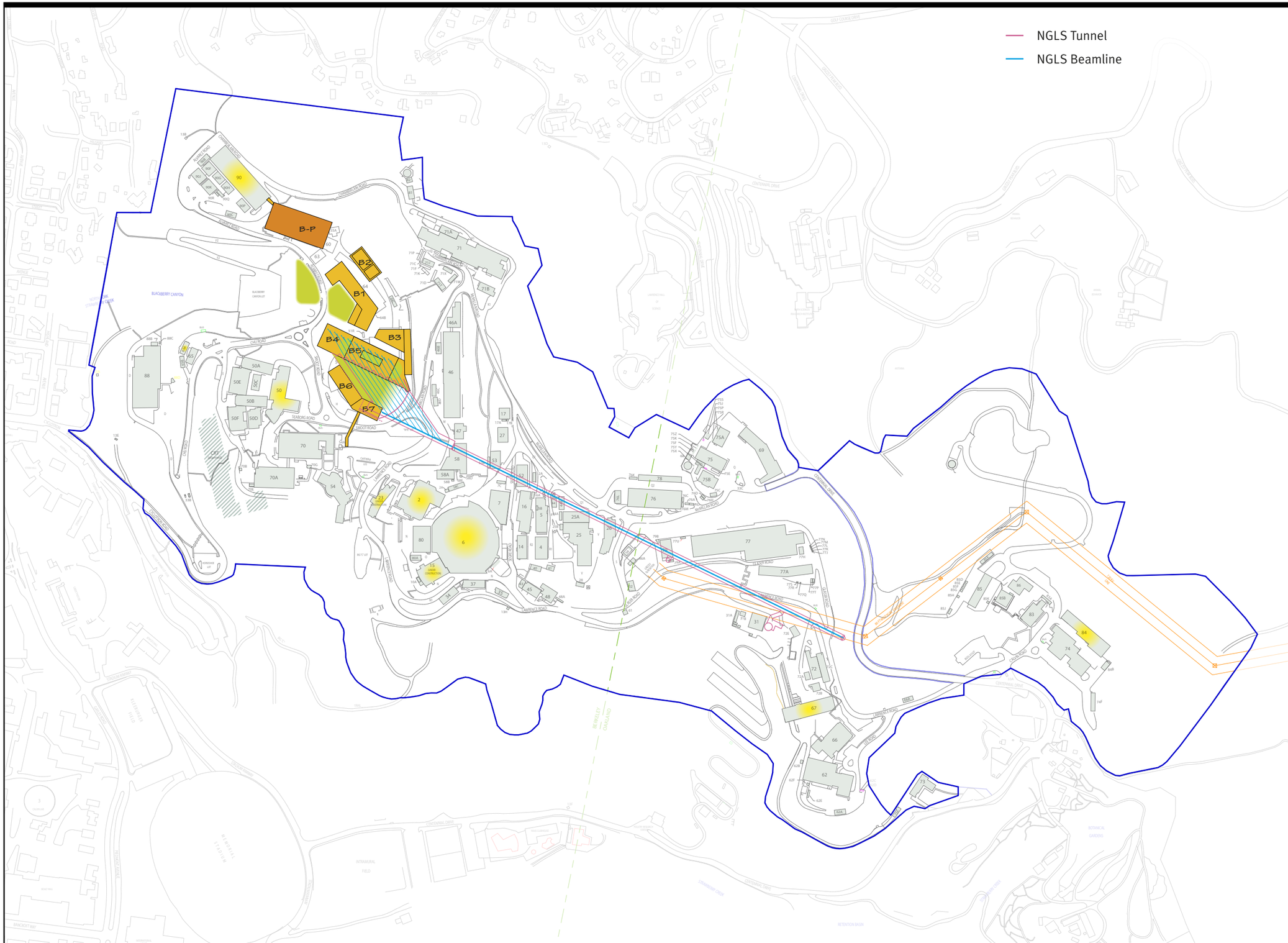
Further Planning Considerations

1. Building B7 is located above the NGLS tunnel/fill. Development will depend on timing/phasing.
2. Existing caissons will need to be removed or modified.
3. The size of the Cryoplant (B2 and associated outdoor area) may need to be increased form 16,500 GSF (as shown) to 20,000 GSF. This could be accommodated by increasing the width or depth of the building.
4. Reducing the heights of the upper two floors of B4 from 18' to 12' would allow the addition of a floor to building B5.
5. Develop an alternative assuming off-site location for NGLS *(not shown)*

Bevatron Study Area

NGLS Tunnel Alignment

Revised Sept. 2009



2.8

Bevatron Study Area

View of Site Looking South after Building 51 Deconstruction

Artist's concept

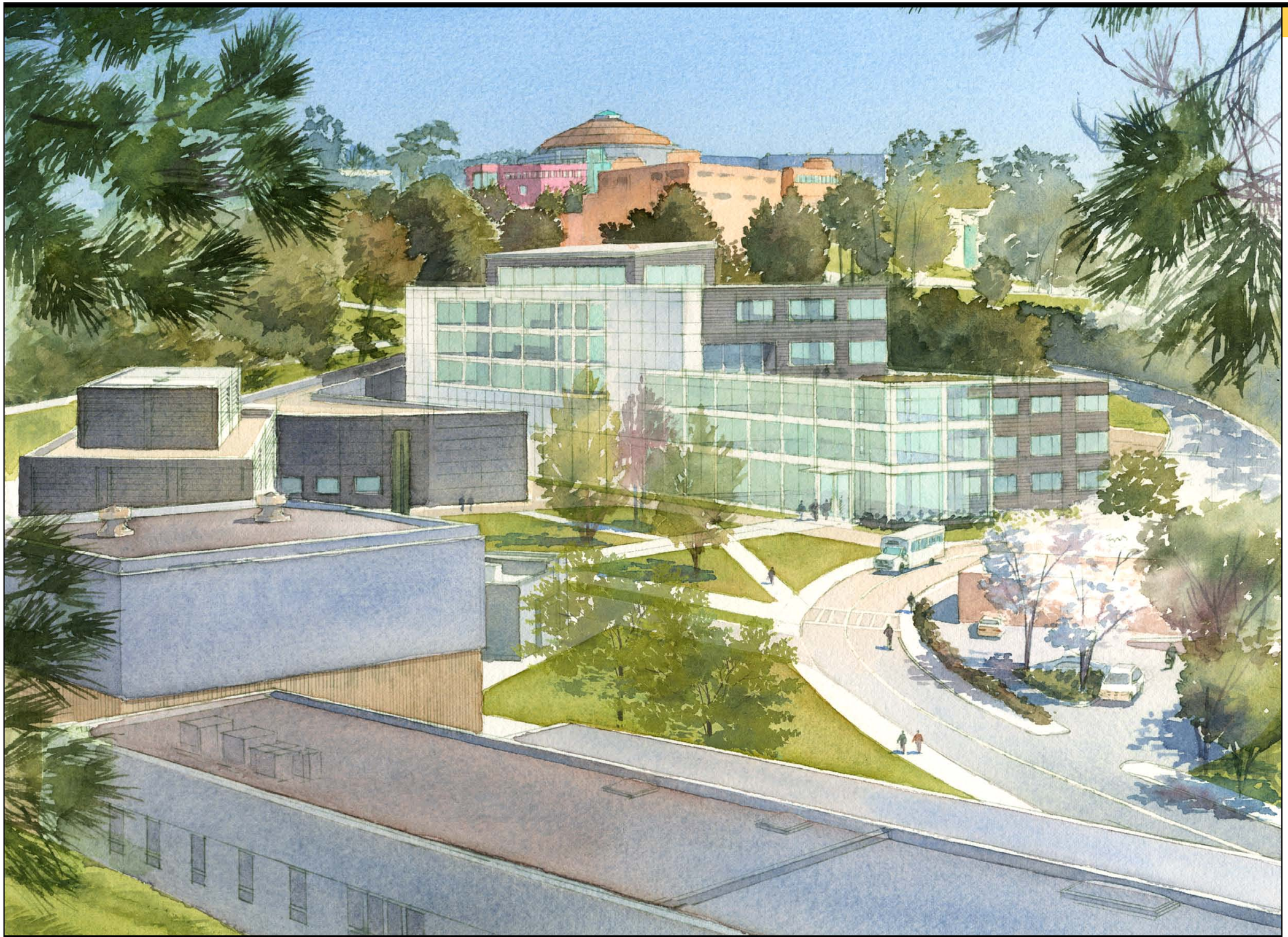
March. 2010

Bevatron Study Area

NGLS Facility: Buildings B3, B4 and B5

Artist's concept

March. 2010



Bevatron Study Area

Data Tables: Proposed New Buildings

Revised Sept. 2009

Assumptions

Table 1 shows a conservative capacity estimate by assuming 18 feet floor-to-floor.

Table 2 shows a more moderate capacity estimate by assuming that half of the floors are 12 feet floor-to-floor and half are 18 feet floor-to-floor.

Notes

1 FFE = Finish floor elevation

2 Height = Height from outside ground elevation to the highest finish floor elevation

3 GSF = Gross square footage

4 NGLS = Next Generation Light Source

5 Includes 1st floor of B6

6 1st floor = 20'
2nd floor = 12'
3rd floor = 12'

7 Cooling Towers and Gas Storage located on roof of B2 are counted in the Cryoplant Outdoor Area total GSF

Table 1: Gross Square Footage / All lab floors

Bevatron Site All lab floors (floor-to-floor = 18ft)

Bldg	Potential Use	Floors	FFE[1]	Height[2]	GSF[3] / Floor	Total GSF
B1	Office/Lab/Conference	5	710	72	25,000	125,000
B2	NGLS[4] Cryoplant	1	710	0	10,500	10,500
Note: Cryoplant area may be increased to 14,000 GSF						
	NGLS[4] Cryoplant Outdoor Area (ground)		710	0	6,000	6,000
B2	NGLS[4] Cooling Towers (on roof)[7]	1	740	0	4,500	4,500
B2	NGLS[4] Gas Storage (on roof)[7]	1	740	0	2,000	2,000
B3	NGLS[4] Cryomodule Test Facility	1	710	0	16,500	16,500
B4	NGLS[4] Experimental Building	3	710	40	51,000	153,000
B5	Office/Lab	2	768	76	22,000	44,000
B6	Office/Lab (NGLS Service on F1)	5	714	72	12,000	60,000
B7	Office/Lab	4	768	54	8,000	32,000
					NGLS[4] Building GSF	[5]192,000
					NGLS[4] Cryoplant Outdoor Area GSF	[7]12,500
					Office/Lab GSF	249,000
					Total GSF	**453,500**
Parking					Spaces / Floor	Total Spaces
BP	Parking	6	707	60	105	**630**

Table 2: Gross Square Footage / Mixed office & lab floors

Bevatron Site Mixed office (12ft) & lab (18ft) floors (1:1)

Bldg	Potential Use	Floors	FFE[1]	Height[2]	GSF[3] / Floor	Total GSF
B1	Office/Lab/Conference	6	710	72	25,000	150,000
B2	NGLS[4] Cryoplant	1	710	0	10,500	10,500
Note: Cryoplant area may be increased to 14,000 GSF						
	NGLS[4] Cryoplant Outdoor Area (ground)		710	0	6,000	6,000
B2	NGLS[4] Cooling Towers (on roof)[7]	1	740	0	4,500	4,500
B2	NGLS[4] Gas Storage (on roof)[7]	1	740	0	2,000	2,000
B3	NGLS[4] Cryomodule Test Facility	1	710	0	16,500	16,500
B4	NGLS[4] Experimental Building	3	710	[6]32	51,000	153,000
B5	Office/Lab	3	754	68	22,000	66,000
B6	Office/Lab (NGLS Service on F1)	6	714	72	12,000	72,000
B7	Office/Lab	5	768	60	8,000	40,000
					NGLS[4] Building GSF	[5]192,000
					NGLS[4] Cryoplant Outdoor Area GSF	[7]12,500
					Office/Lab GSF	316,000
					Total GSF	**520,500**
Parking					Spaces / Floor	Total Spaces
BP	Parking	6	707	60	105	**630**

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