MUCOOL Test Facility

Status & Civil Design

Milorad Popovic
FNAL
23-Oct-02

Close Up, 2000

Near Future Activities

Warning

Any usage of the facility should be completely parasitic to Linac Operations and maintenance. Construction will/should require only modest, ~ three weeks of invasive interaction with Linac, which will/should be schedule as part of regular shutdowns.

1. Liquid Hydrogen Absorber test facility

a. Engineering Tests no Beam----Sep-2003

b. Beam Related Hydrogen Absorber test ------Jun-2004

c. Short Fully Integrated Cooling Section, H-Abs., Be-Window RF Cavity, SC Solenoid----Sep-2004

2. High Power RF Test Bed, 200MHz and 805MHz

a. Be Window RF Cavity, High Power RF Test---Sep-2004

b. Grid Based RF Cavity, High Power Test—Sep-2004

c. Cryo Cold Copper Cavity

Future Activities

1. **Superconduting Test Facility**

   200MHz Superconduting Cavity, NSF-Cornell

   SNS maybe

   805MHz Cavity for Linac Energy Upgrade

2. **Any H-, 400MeV Beam Related Experiment**

People&Groups

- **Universities&FNAL**

  D.Kaplan, M.A.Cummings,
  E.Black, J.Norem, D.Summers
  S.Geer,….
- **FESS**

  T. Lackowski Cost. Coordinator

  J.Sims-Structural Eng.

  R. Alber- Task Manager
  G.VanZandbergen-Architect
- **Cryo**
  B.Norris, A. Klebaner, A. Martinez

  C. Darve
- **RF**

  A. Moretti
- **Beam Line**

  C. Johnstone, C. Ankenbrandt

  R. Johnson
- **Instrumentation**

  D. Errede, M. Shea
- **Safety**

  J. Priest-ES&H

  M.Gerardi-Radiation

  B.Fritz-Environment
- **LH2-Safety?**

  J.Kilmer,

  D. Allspach

  W.Smart
- **ProtonSource**

  B.Webber-G.Leader

  J. Lackey

30-Aug-2001

Past & Future, South View

30-Jun-2001

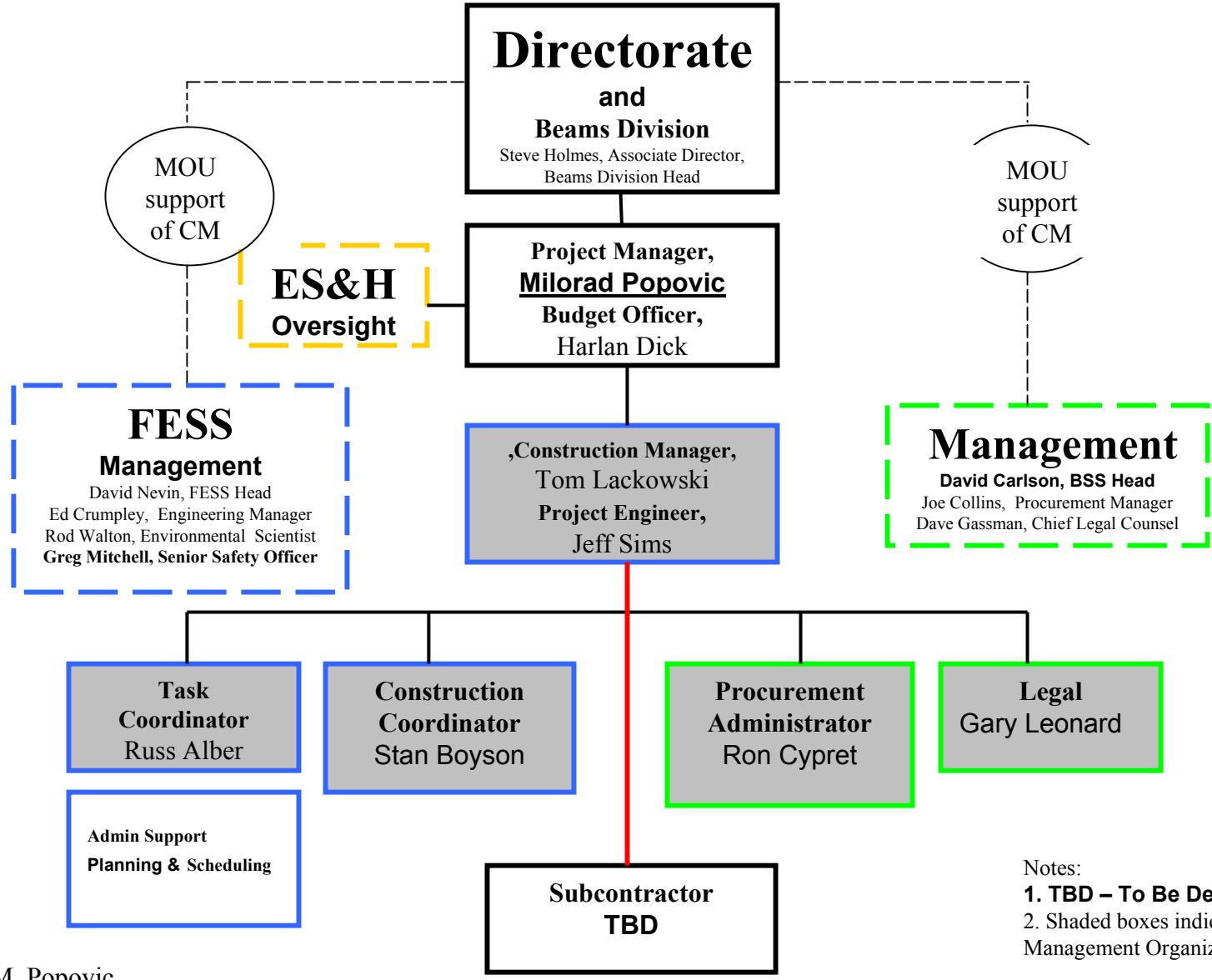
Future

Past & Future, North View

1500kVATransformer
Oct-2001

Future

MuCool Design/Procurement/Construction Organization



Notes:
1. TBD – To Be Determined
2. Shaded boxes indicate Construction Management Organization (CMO)

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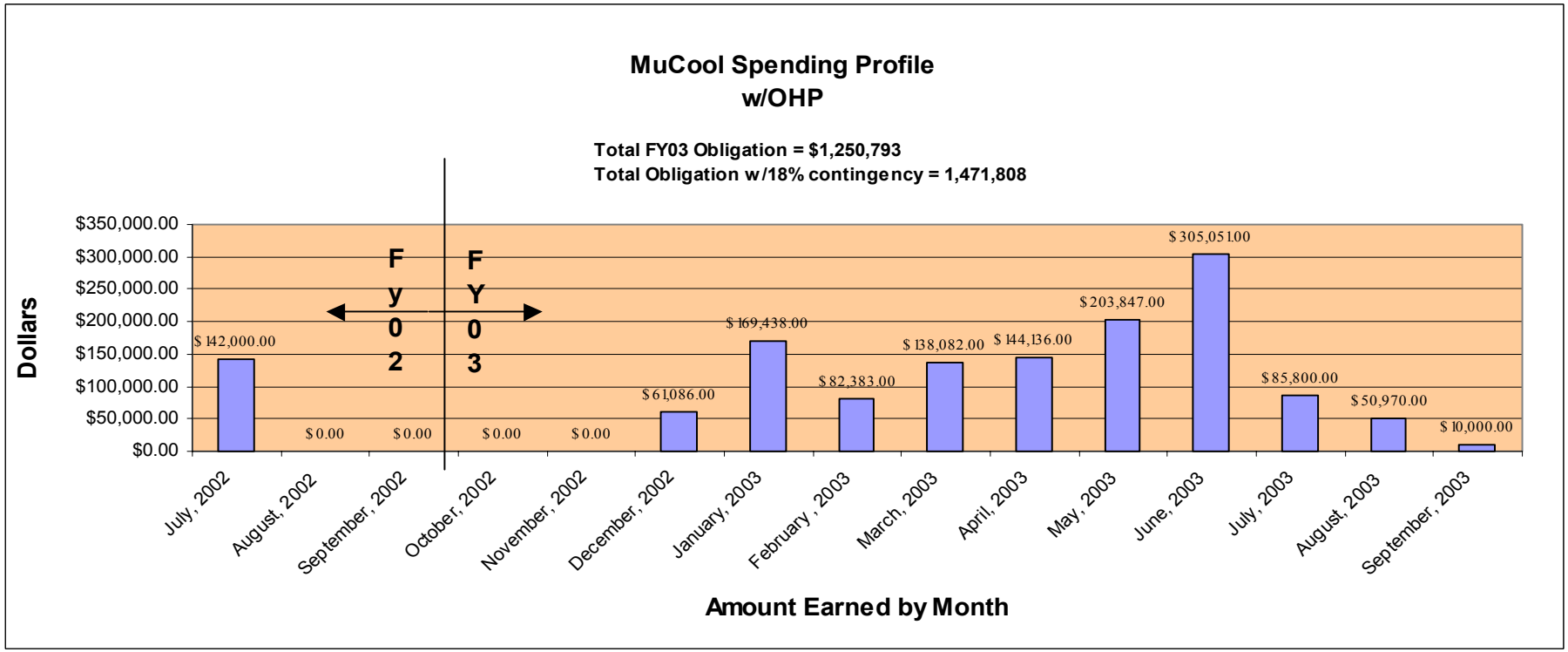
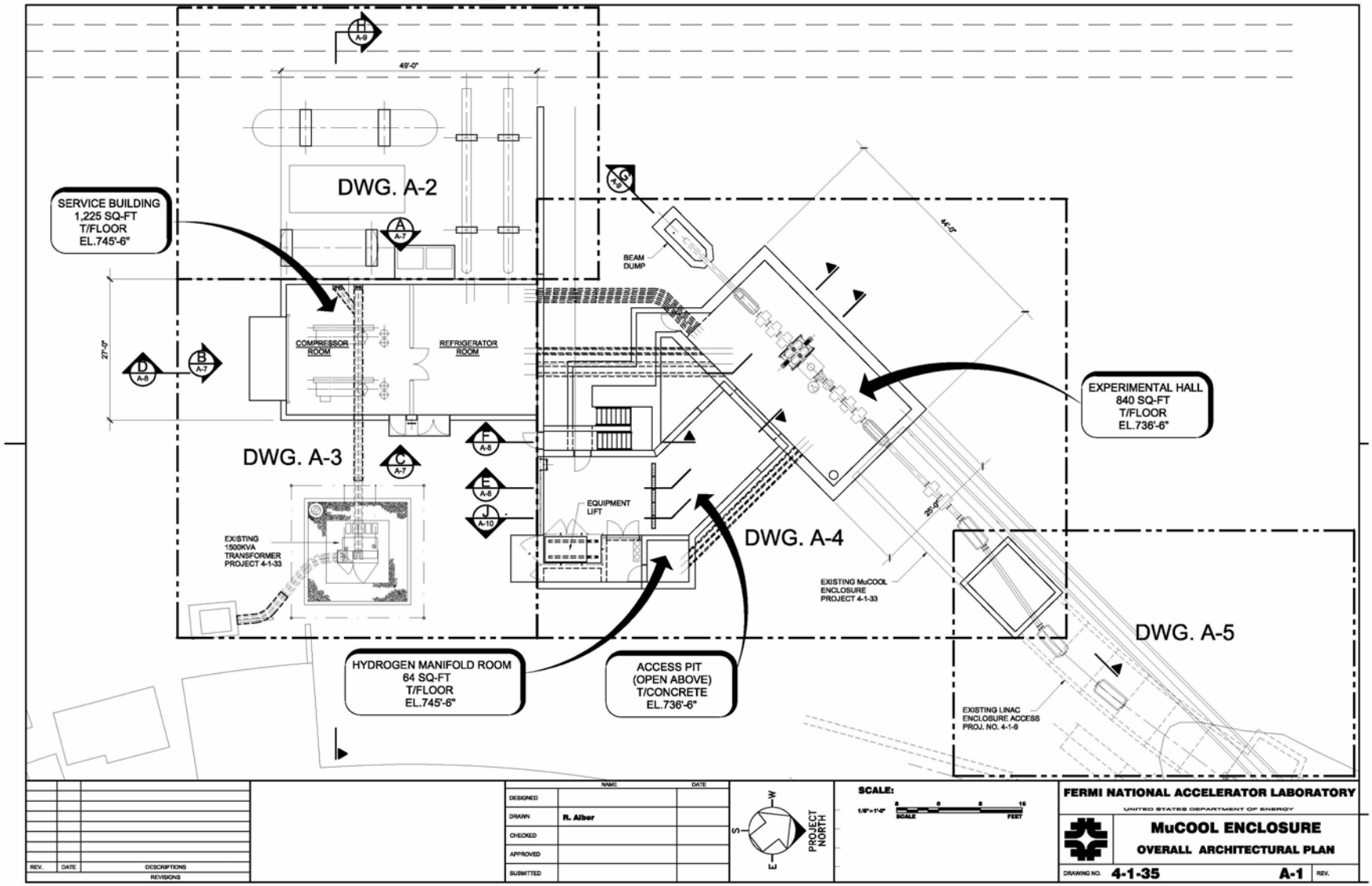
Spending Profile



MuCool Site Plan, as May-02



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Important Dates

MILESTONE	DEFINITION	BASELINE
Start Project	Directive signed	**1 Feb 01**
T2 Design Complete	Contract documents submitted for procurement	3 Oct 02
Begin Construction	Notice To Proceed Issued	15 Dec 02
Construction Complete	Final acceptance of all work	**15 Sep 03**
Project Complete	Project closed	**15 May 04**

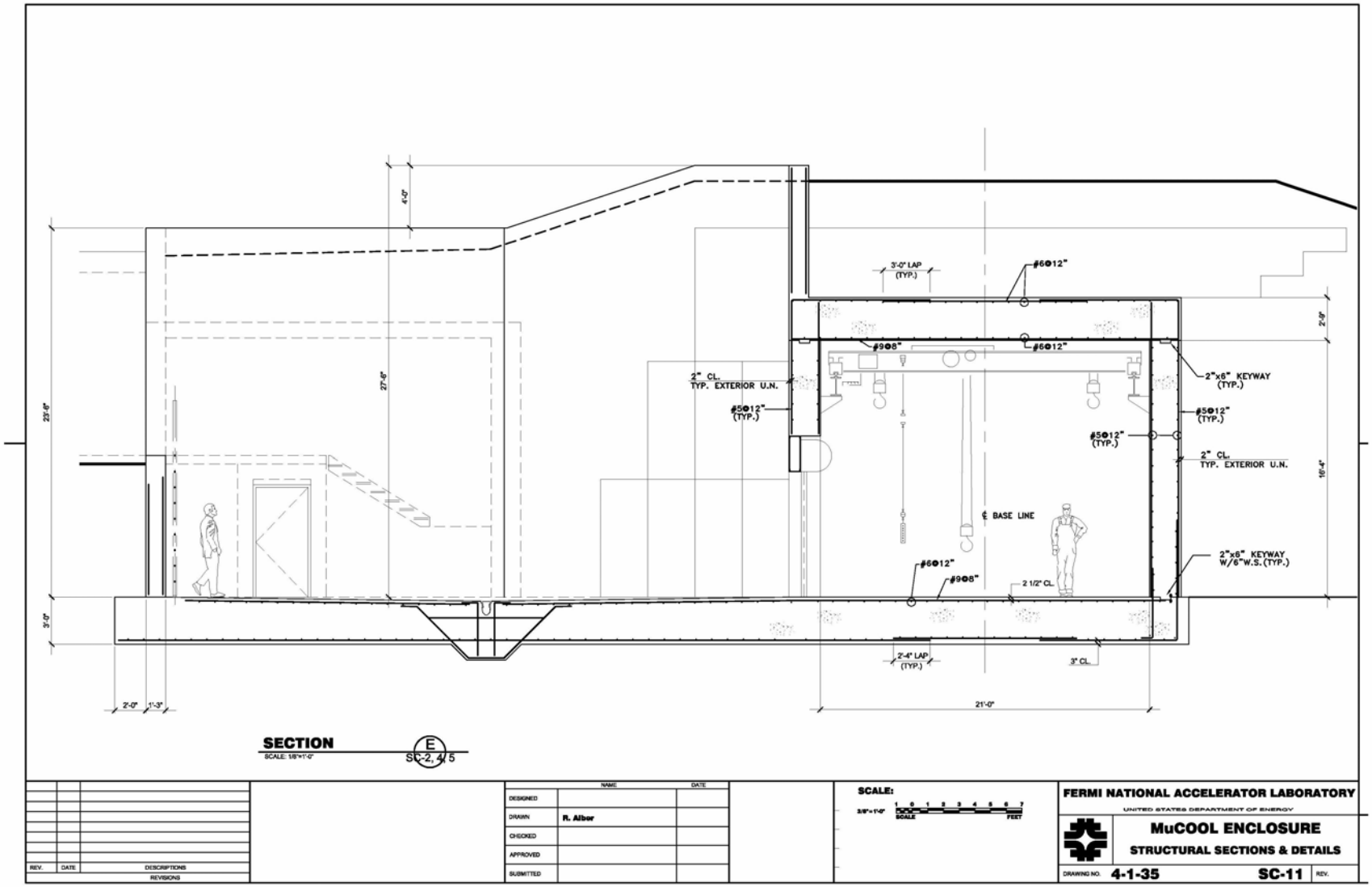
Total Project Budget

		FY2001	FY2002	FY2002	FY2003	TOTAL
1.	EDIA	83,201	16,700	241,138	66,797	407,836
2.	Construction	220,700	375,000	240,000	419,486	1,255,186
3.	Removal/Relocation of Cryogenics	170,999	0	(170,999)	0	0
4.	Contingency	94,900	78,300	34,861	37,940	246,001
5.	G&A	113,960	94,000	71,000	3,000	281,960
	TOTAL	683,760	564,000	416,000	527,223	2,190,983

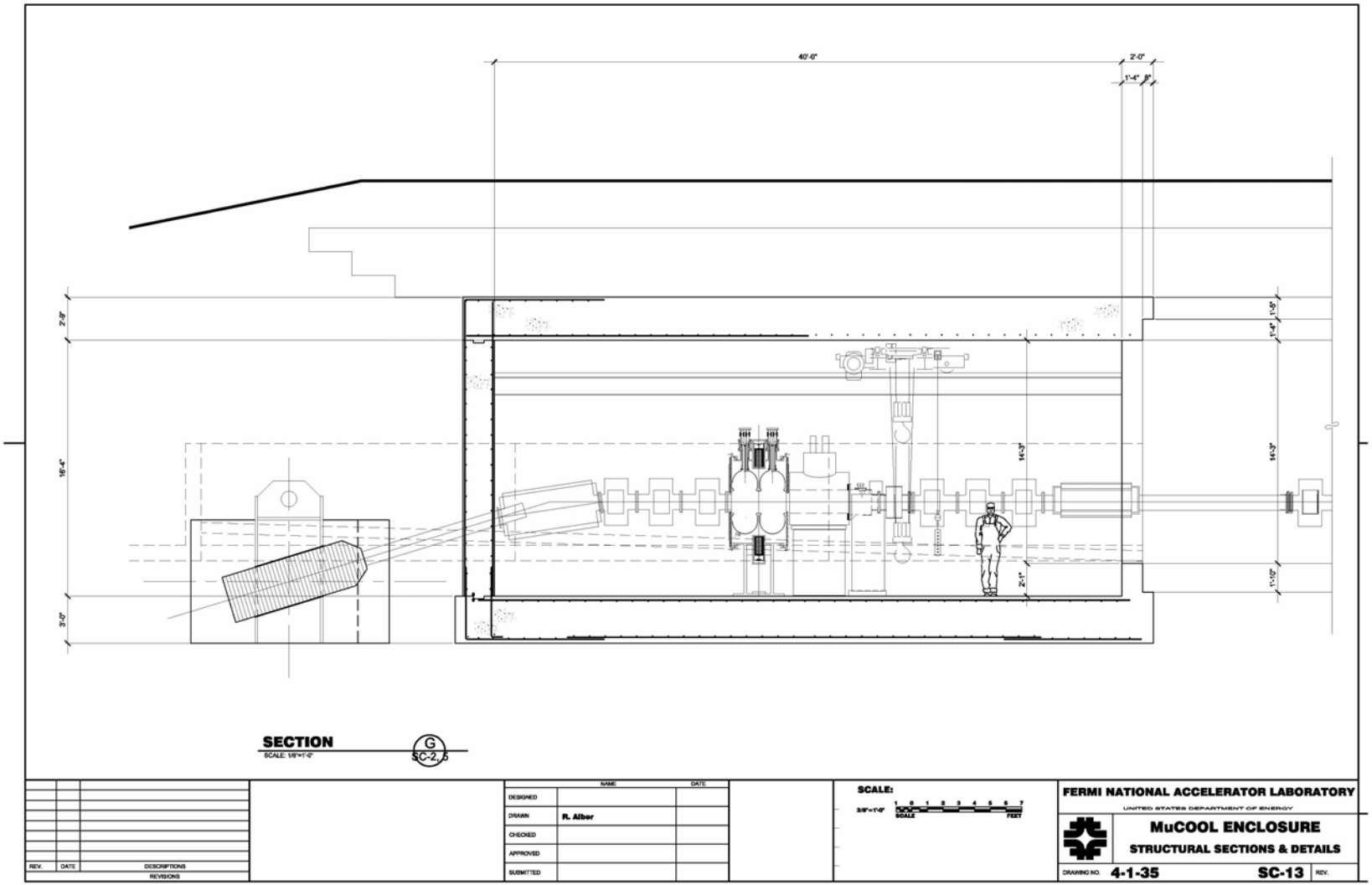
Value of Project in Today's $

Civil Construction	2.1M$
200 MHz RF Station	1.5M$
805 MHz RF Station	1.5M$
Helium Cryo Plant	2.0M$
Power Transformer	0.2M$
Beam	0.0M$
TOTAL	**7.3M$**

Cross Section



Side View


40'-0"
2'-0"
1'-4"
8"
2'-9"
16'-4"
3'-0"
1'-6"
1'-4"
14'-3"
14'-3"
2'-1"
11'-10"
SECTION
SCALE: 1/8"=1'-0"
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REVISIONS
NAME
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DRAWN
R. Alber
CHECKED
APPROVED
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SCALE:
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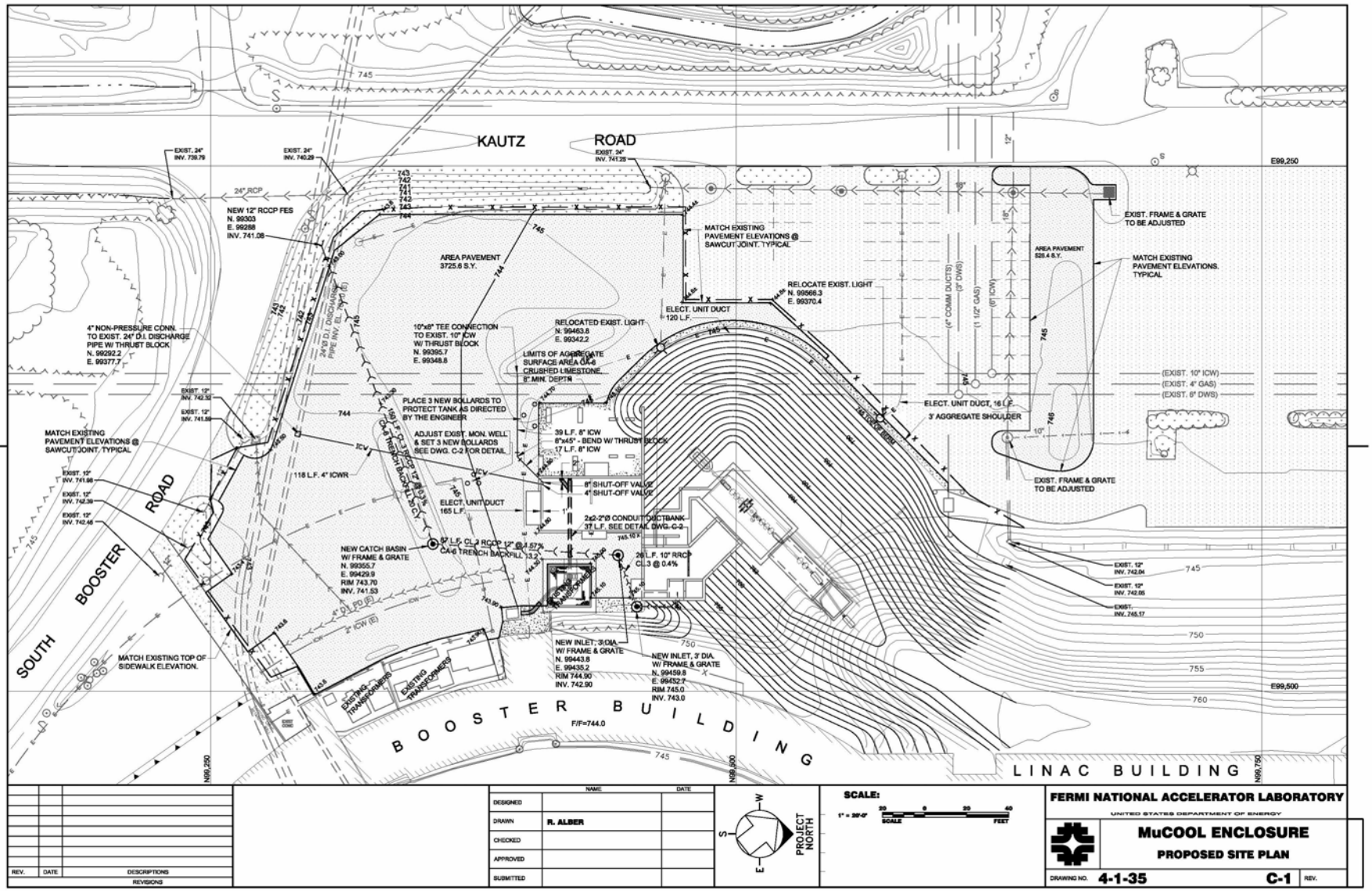
SCALE
FEET
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
MuCOOL ENCLOSURE
STRUCTURAL SECTIONS & DETAILS
DRAWING NO.
4-1-35
SC-13
REV.

MuCool Site, Roads, Utilities, Berm…



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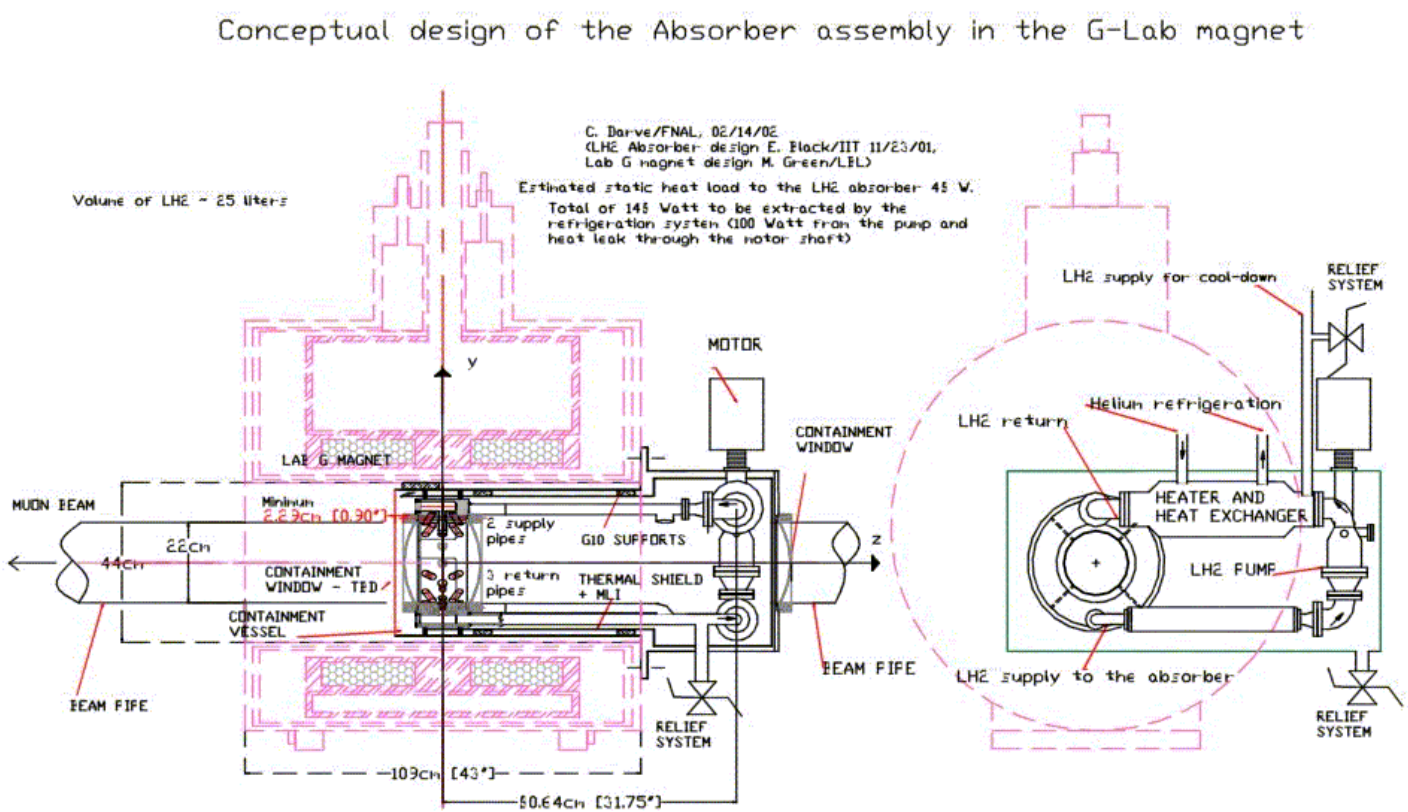
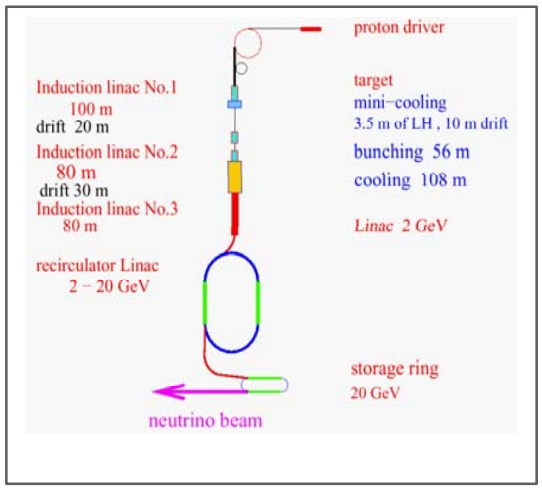
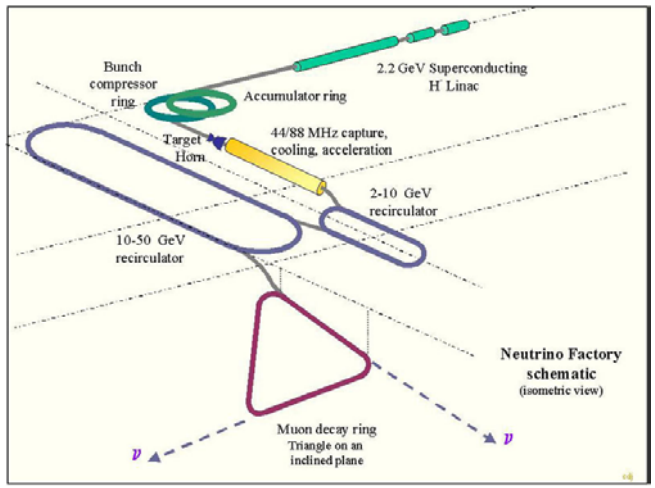
Absorber Assembly



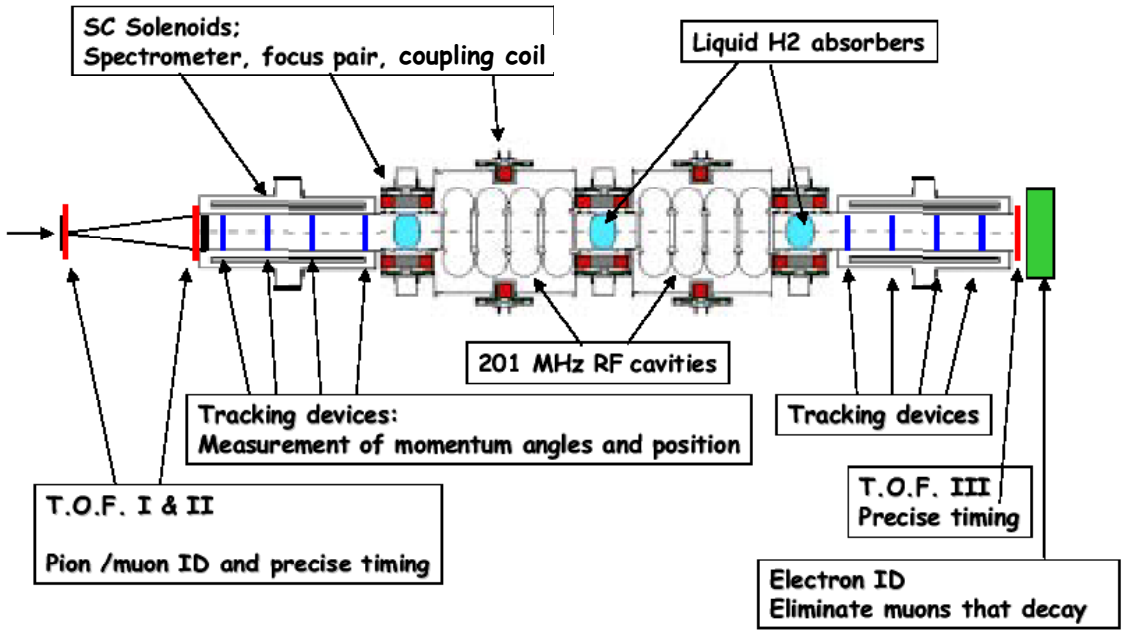
Future

Support for U.S. Consortium on MICE: the International Muon Ionization Cooling Experiment
DRAFT 9/22/02





Future



Schematic layout of MICE