



NuMI

MINOS

D. Bogert NuMI Installation

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Status of NuMI Civil Construction

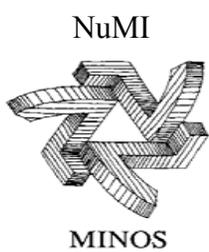


Construction by Ragnar Benson

Continues at the Target (MI-65) Area Underground

(Left) Pretarget Masonry Walls constructed

(Right) Target Pit Liner Walls and Walkways formed and poured



Ragnar Benson

Contract Milestones

The Ragnar Benson contract contains ten intermediate milestones. Two of these with the **Bold Names** are DOE Level 2 Milestones.

Milestone #	Name	Contract Date	Contract Value	Status
1	Initial Critical Items	10/28/02	270,737	DONE
2	Mobilization 2 Sites	12/27/02	435,358	DONE
3	Foundations Done 2 Sites	03/23/03	618,236	LATE 4/19 (?)
4	Target Pit Liner Done	05/05/03	2,469,885	DONE 3/31
5	MI-65 Bldg Shell Complete	06/15/03	747,832	Uncertain 7/15?
6	MINOS Bldg Shell Complete	07/20/03	1,304,759	Maybe o.k.?
7	Target Area/MI-65 Ben. Occ.	09/18/03	5,308,450	Underway
8	MINOS Bldg Complete	10/25/03	1,426,635	
9	MINOS Area Ben. Occ.	12/12/03	5,222,075	Underway
10	Final Completion	01/08/04	76,033	
Contract Additions (approx) – no additional time			\$0.32M	
TOTALS as of 3/31/03 (approx)			\$18.2M	Approx \$6.3M



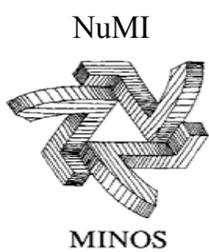
Ragnar Benson and the DOE Milestones

The DOE Level 2 Milestone Dates are later than the Ragnar Benson contract dates.

Milestone #-DOE	#-R/B	Name	Contract Date	DOE Date (Project Plan)
L-2-18	5	MI-65 Bldg Shell Complete	06/15/03	9/30/03
L-2-11	9	MINOS Area Ben. Occ. [Beneficial Occupancy of both Fermilab service buildings (Target and MINOS) is obtained]	12/12/03	5/31/04

**THE DOE MILESTONE DATES ARE NOT THREATENED BY THE
PROGRESS OF RAGNAR BENSON TO DATE.**

DETAILED ANALYSIS TO FOLLOW.



Construction Status: Progress Since NTP2 on November 22, 2002

The Ragnar Benson contract has moved ahead reasonably promptly, but some delay has developed. There are 340 work elements in the Ragnar Benson schedule, and work has started on 106 of the work elements, with 64 of those completed as of 3/31/03. 9 of the 42 elements underway have started prior to early start. 27 elements have NOT started after their scheduled early start, but 15 of the 27 are still prior to late start dates. On 3/31, 12 of the 27 not started were late with respect to late start, and 9 of these were late with respect to late finish. 12 more elements still underway are late with respect to late finish. There is negative float to contract completion, and a projected late completion. Project Management on 3/31 assesses the critical path as 23 workdays late. Ragnar Benson has informed Project Management that they do not expect a late completion. Ragnar Benson has provided a draft schedule revision to demonstrate recovery of lost time so that final contract milestones will be met, although intermediate milestones may be missed. Project Management is concerned that the work has been understaffed. Ragnar Benson staffing in the draft schedule revision is also being reviewed.

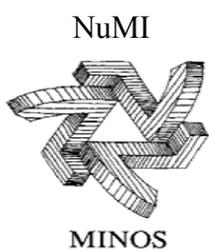
Ragnar Benson is about 33% through the contract by time, has started over 31% of the work elements, and we estimate that on 3/31/03 RBI had accomplished about \$6.3M earned value of an \$18.2M contract (34.6%).



Construction Status: Progress Since the start of the Contract

Major Accomplishments Since November 22, 2002 ("NTP2"):

- 1) Target Pit Liner and Walkways completed – 1 month early.
- 2) Masonry in Pre-Target and support rooms installed, and first level masonry on “target bridge” built.
- 3) Ceilings for Pretarget Emergency Egress Corridors formed and poured.
- 4) Pipe and electrical support brackets set throughout underground target area.
- 5) Piping and electrical rough-in underway throughout target underground area.
12” Beam Pipe completed in Carrier Pipe. 6” Beam Pipe completed.
- 6) 80% footings and foundations completed at MI-65 building (target). (Late)
- 7) 60% footings and foundations completed at MINOS building. (Late)
- 8) Utility duct banks being built, MI-8 beamline crossed during shutdown period.
- 9) MINOS Hall and Access masonry completed, Masonry walls at muon alcoves and in decay walkway completed.
- 10) MINOS Hall and Access emergency corridor ceilings being formed.
- 11) Piping and electrical support brackets set in Absorber Access and Hall.
- 12) Piping and electrical rough-in underway in Absorber Access and Hall. (Late)
- 13) Sprinkler lines rough-in complete in MINOS Hall and Access.
- 14) Sprinkler lines rough-in underway in Absorber Access.
- 15) Detector Support steel on-site and transported to MINOS Hall.

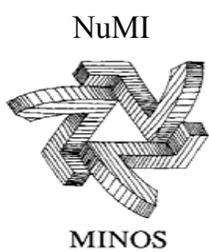


Representative Pictures

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- The Carrier Tunnel (left) looking upstream with the 12" beam pipe installed, and MINOS Hall (right) looking downstream with emergency corridor masonry completed and sprinkler rough-in visible.



Representative Pictures (Continued)

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- The Target Area Utility Labyrinth (left) looking “downstream” with most items installed, and MINOS Service Building foundations (right) looking upstream (south).



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May '03 Construction Projection for SB&O – What we told DOE in Dec '02

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Extraction Room, Carrier Tunnel; All work almost complete. Turn over scheduled for 6/1/03. Beam pipe, pipe supports, process piping, electrical installation, fire detection all substantially complete.

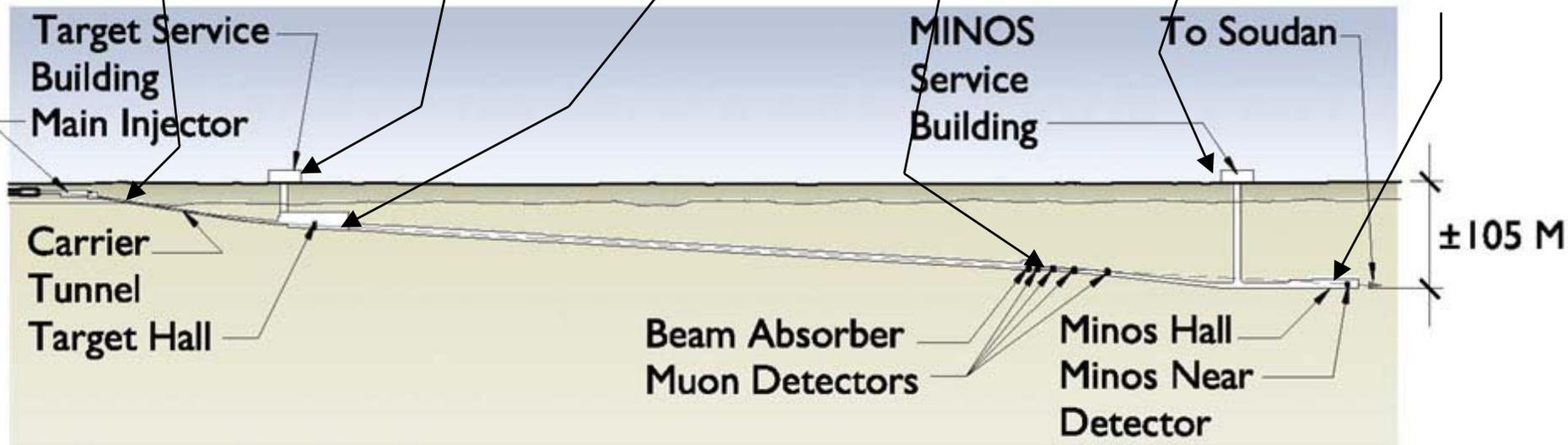
Target Service Building (MI-65): Footings, foundations, slab completed, steel framing erected.

Target Hall, Pre-Target: Early tunnel stocking completed, pit liner formed and poured, masonry completed, ceilings over walkway complete.

Absorber Hall & Access Tunnel, Muon Alcoves: Electrical panels, conduit supports, electrical rough in, & trimming, complete.

MINOS Service Building: Footings, foundations, slab completed, steel framing erected.

MINOS Hall and Access: Early tunnel stocking completed, masonry completed, ceilings over walkway complete, MINOS detector steel frame erected.





March 31, '03 Construction Status Service Buildings & Outfitting

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Extraction Room, Carrier Tunnel; Beam pipe installation almost complete; pipe supports, process piping installation, electrical installation underway.

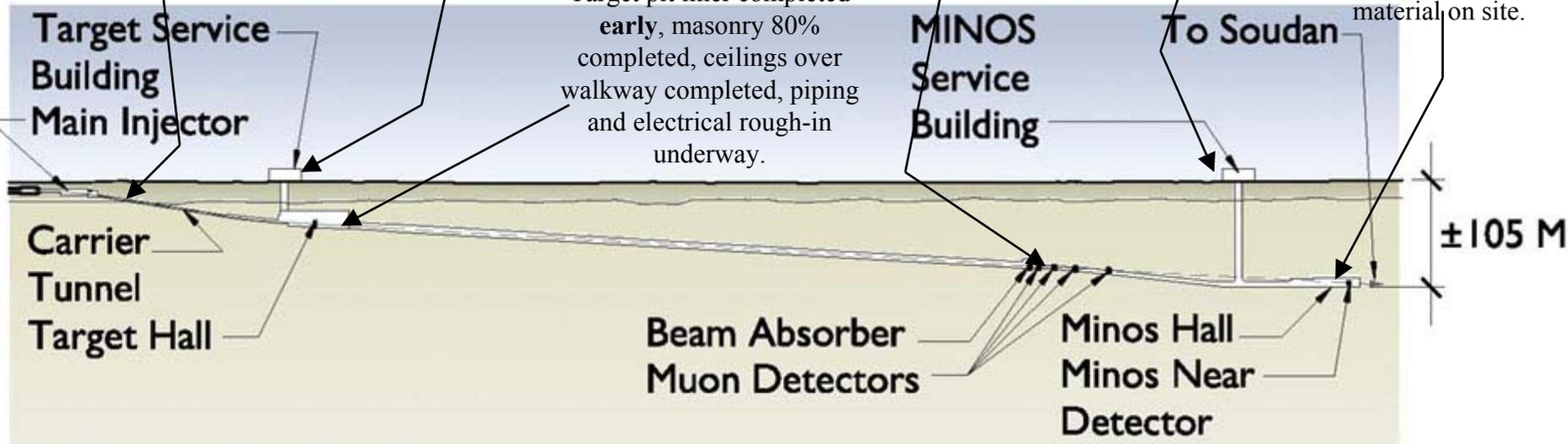
Target Service Building (MI-65): 80% Footings and foundations completed. Excavation around "shaft collar" completed. **LATE**

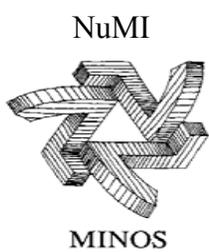
Absorber Hall & Access Tunnel, Muon Alcoves: Electrical and piping support installed, Masonry completed, Electrical and piping rough-in Underway. **LATE**

MINOS Service Building: Footings, foundations, excavation underway, shaft collar excavation complete. **LATE**

MINOS Hall and Access: Early tunnel stocking completed, masonry completed, ceilings over walkway under construction, sprinklers being installed Steel frame material on site.

Target Hall, Pre-Target: Early tunnel stocking completed, Target pit liner completed **early**, masonry 80% completed, ceilings over walkway completed, piping and electrical rough-in underway.





SB&O First Six Months - Planned Accomplishments

SB&O Contract: (**BOLD %** completed 3/31/03)

Target Service Building:

- 1) Pour footings (**80%**), foundations (**80%**), slab
- 2) Steel framing erected (*Possibly Late*)

MINOS Service Building:

- 1) Pour footings(**60%**), foundations (**60%**), slab
- 2) Steel framing erected (*Possibly Late*)

Target Area Below Grade:

- 1) Carrier Tunnel – Beam pipe(**100%**), pipe supports(**100%**), process piping(**40%**), electrical installation(**35%**), fire detection – almost complete for 6/1/03
- 2) Target Hall, Pre-Target – Early tunnel stocking complete(**100%**), pit liner formed and poured (approx 1500 CY)(**100%**), masonry completed(**90%**), walkway ceilings poured(**100%**).

MINOS Area Below Grade:

- 1) MINOS Hall and Access - Early tunnel stocking complete(**100%**), masonry completed(**100%**), walkway ceilings poured(**80%**), MINOS Detector Steel Frame erected (**10%**).
- 2) Absorber Hall, Absorber Access, Muon Alcoves –Masonry(**100%**) Electrical panels, conduit supports(**90%**), electrical rough in & trimming completed (**20%**).