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SBN Far Detector Building Conventional Facilities

S. Dixon

ICARUS Integration Meeting

25 October 2017

SBN Far Detector Building – Electrical Power

Requirements (20MAR15 Readiness Review)

- 55 kw for TPC;
- 25 kw for Veto;
- 20 kw for spare;
- Totals to 100 kw or 125 kVA.

Installed

- 225 kVA dedicated detector power system;
- (2)-75 kVA transformers/panelboards;

(Note: Linda is evaluating circuits/location)

SBN Far Detector Building – Cryo Power

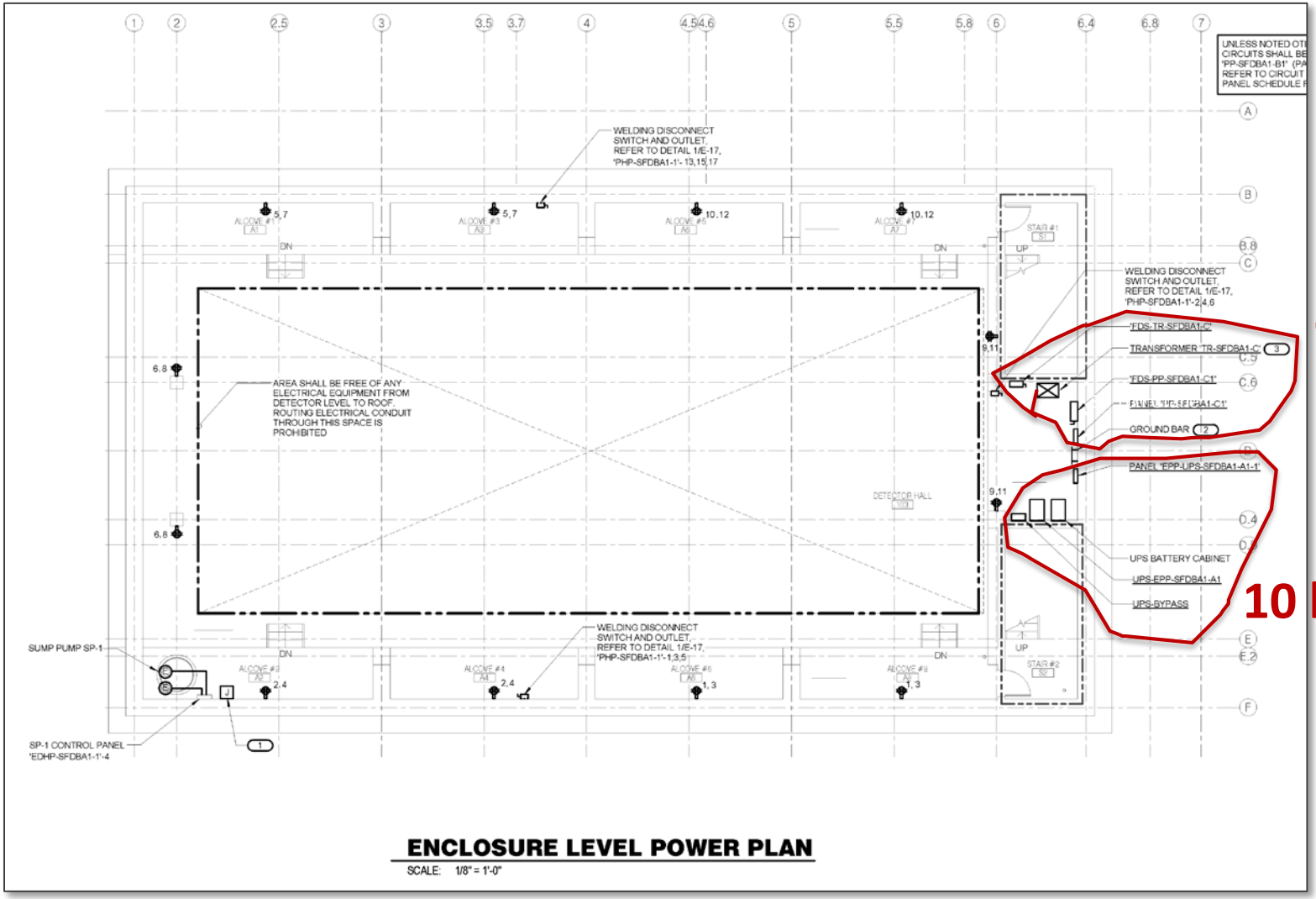
Requirements (20MAR15 Readiness Review)

- 150 kw;
- UPS required for monitoring and control equipment.

Installed

- Fed from 750 kVA building power system;
- (1)-75 kVA transformers/panelboard;
- 10 kVA UPS (expandable to 20 kVA)

SBN Far Detector Building - Power



Cryo Panel

10 kVA UPS

From 6-7-93, Sheet E-6 (SBN-doc-276)

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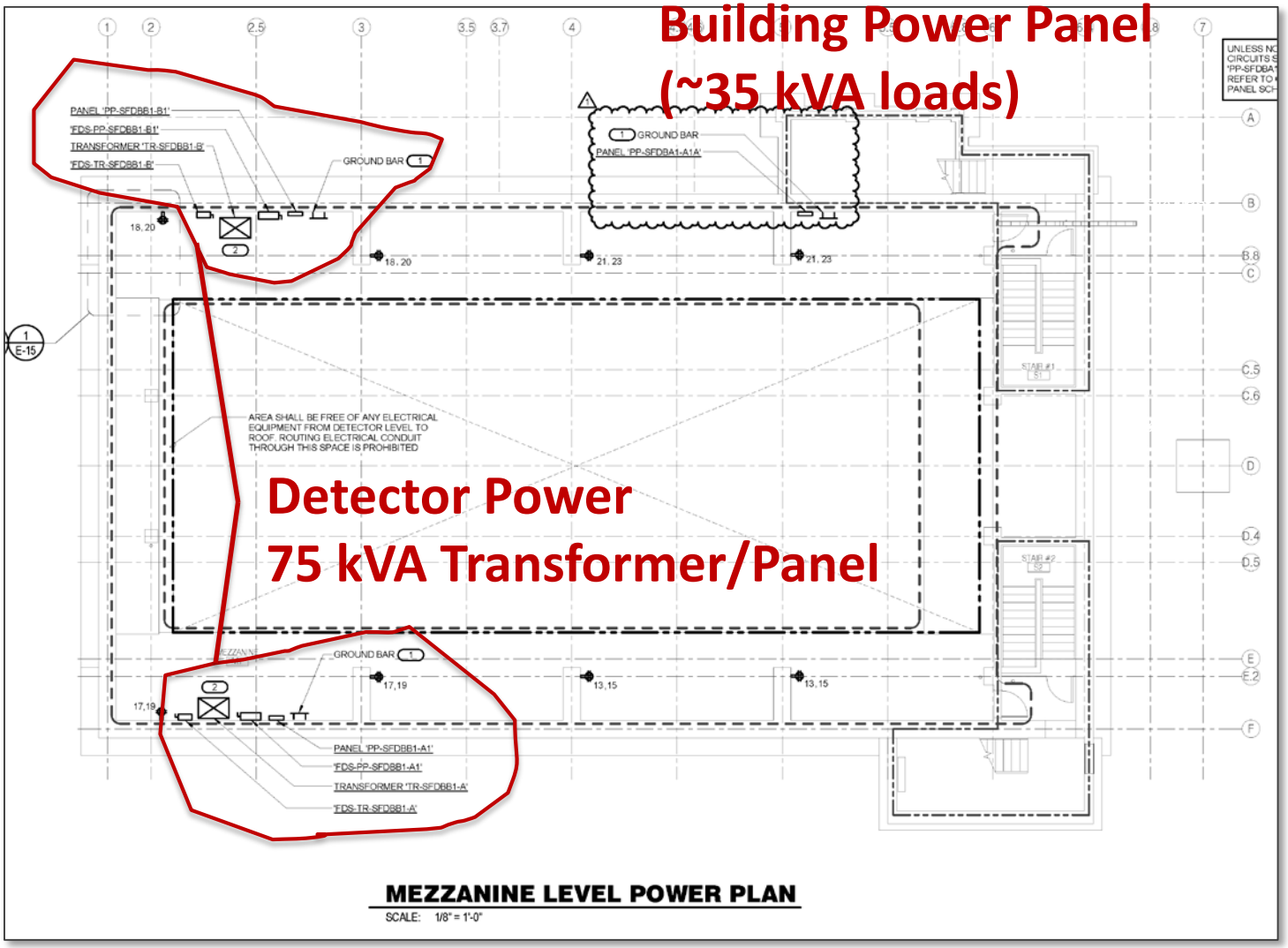
SBN Far Detector Building - Power



From 6-7-93, Sheet E-7 (SBN-doc-276)

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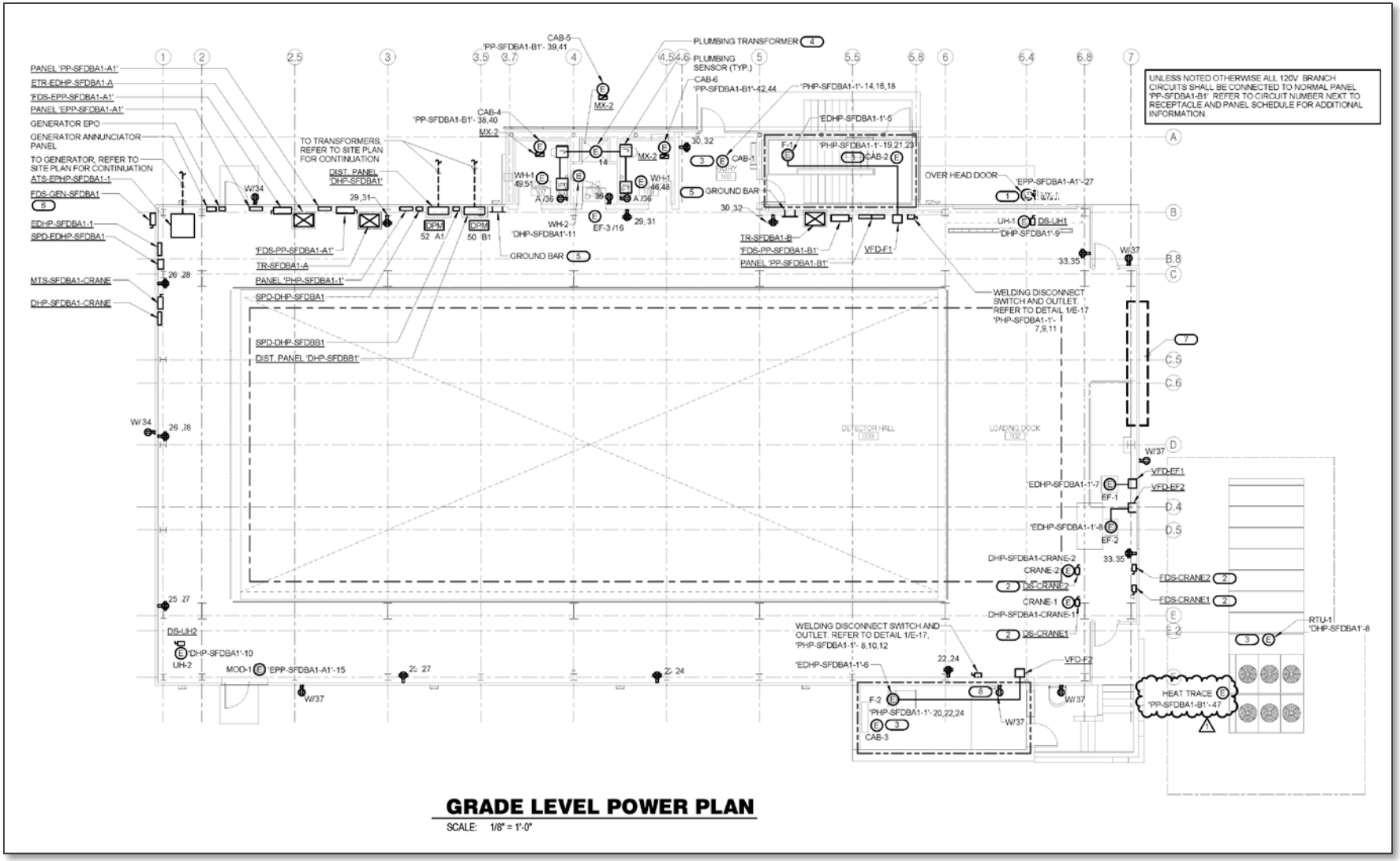
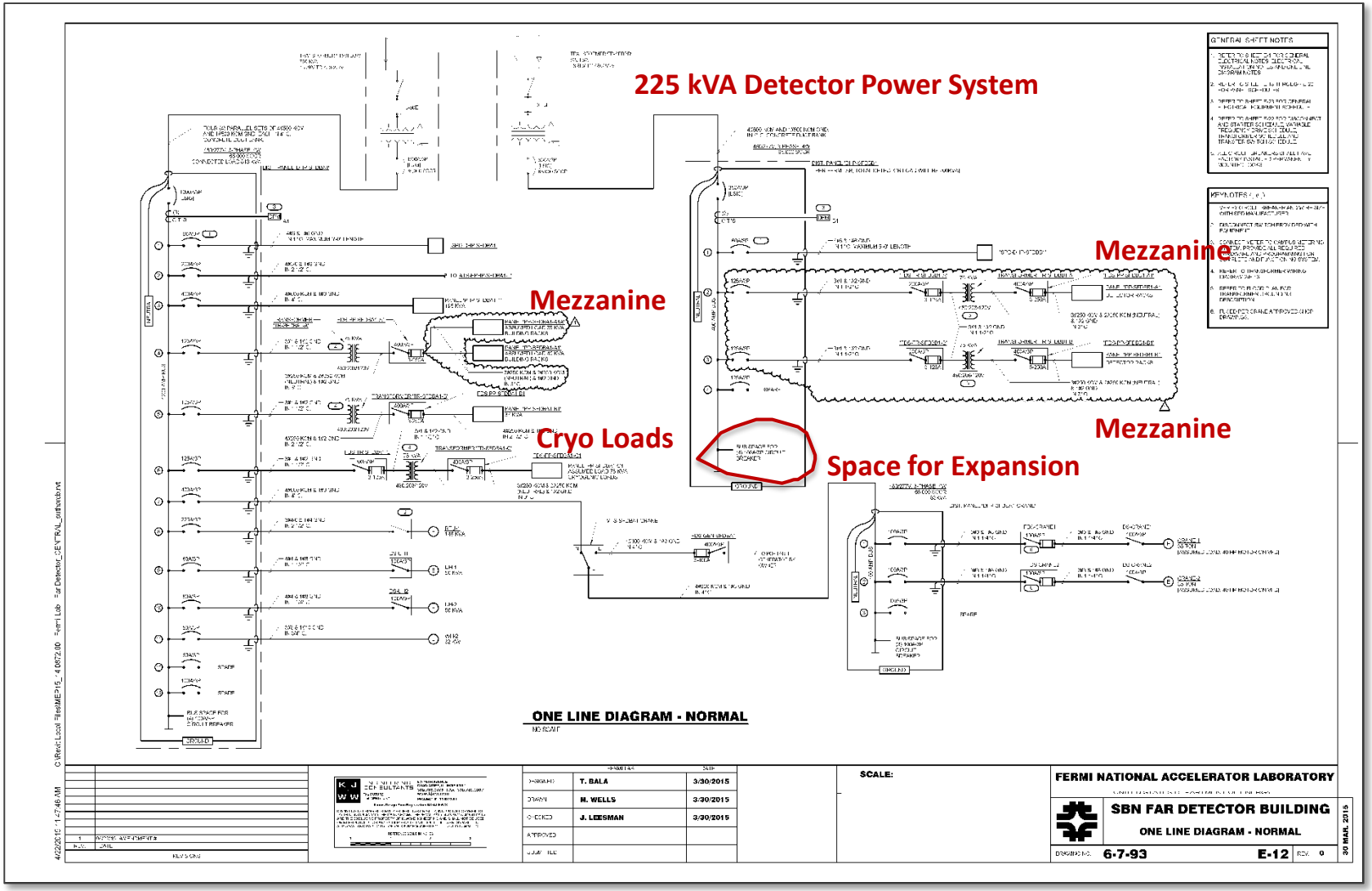
SBN Far Detector Building - Power



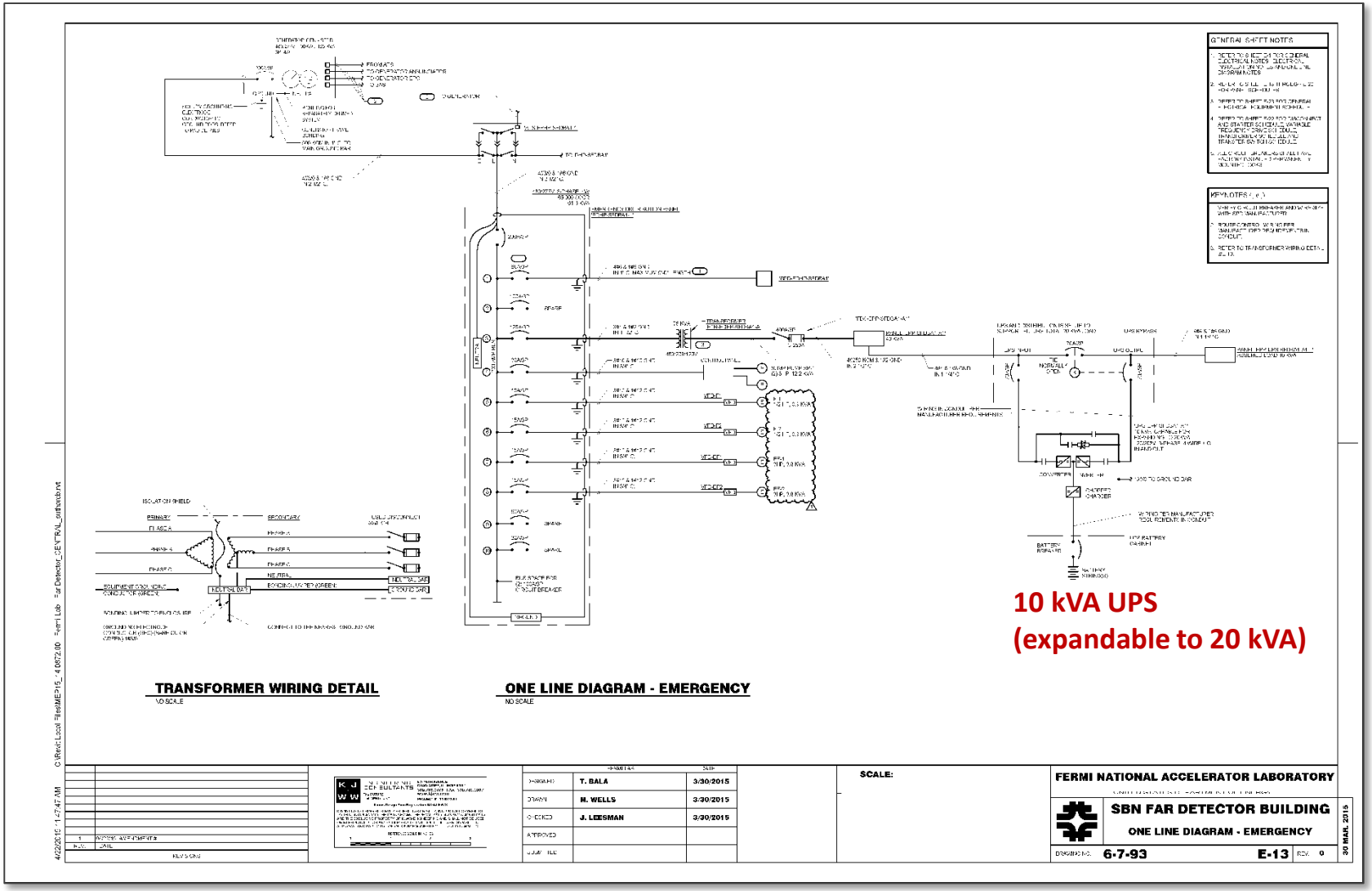
From 6-7-93, Sheet E-8 (SBN-doc-276)

SBN Far Detector Building - Power



From 6-7-93, Sheet E-12 (SBN-doc-276)

SBN Far Detector Building - Power



From 6-7-93, Sheet E-13 (SBN-doc-276)

SBN Far Detector Building – HVAC

Cooling Requirements (20MAR15 Readiness Review)

- All power converted to heat (100 kw);

Installed

- 27,000 cfm, 70 ton HVAC unit;
- Zoned distribution system (grade level and enclosure level, separated by shielding);
- Detector loads are at enclosure level;
- Supply through ductwork.

SBN Far Detector Building – HVAC

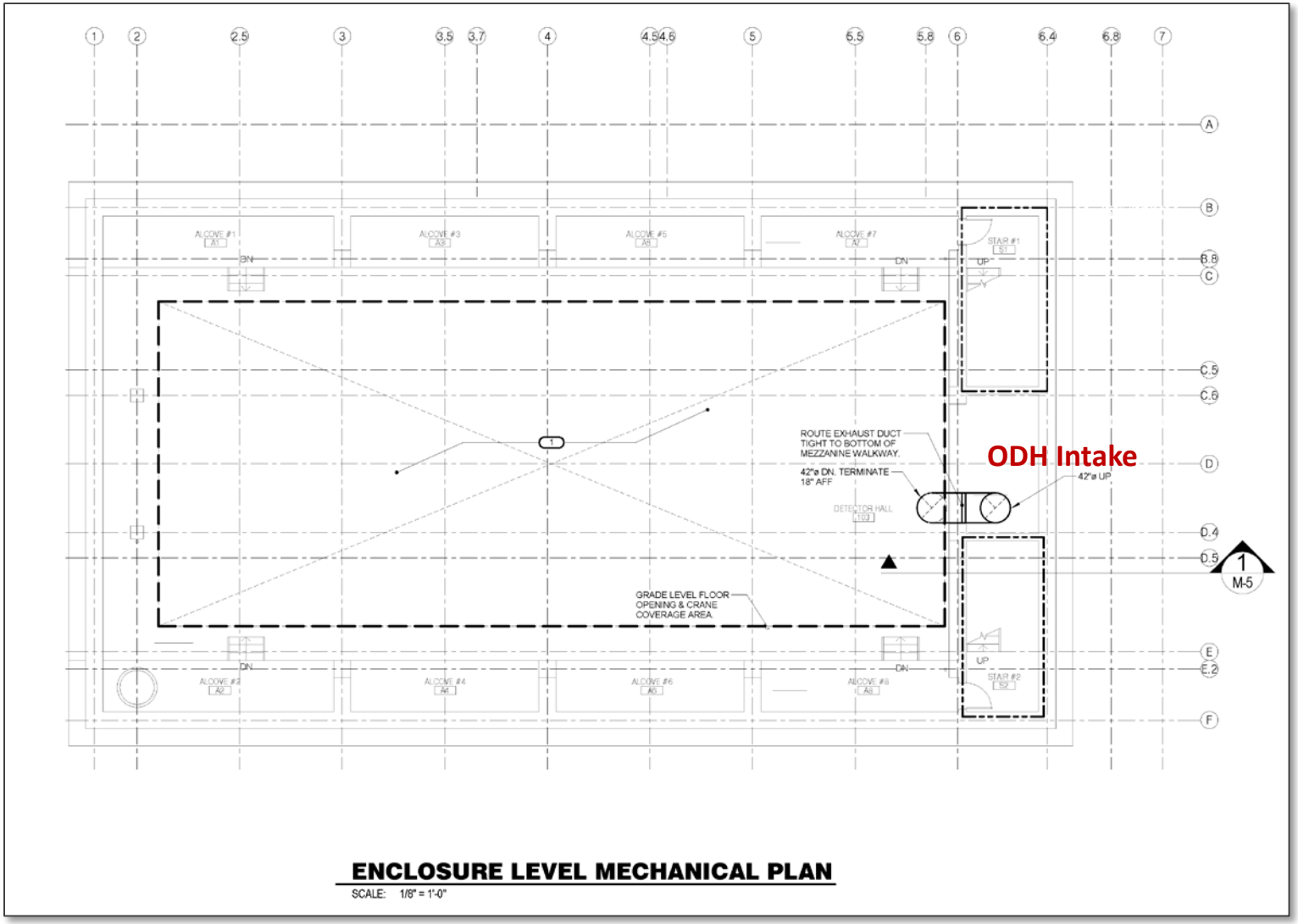
ODH Requirements (from M. Geynisman)

- 10,000 cfm exhaust;
- Intake at enclosure level;

Installed

- 27,000 cfm, 70 ton HVAC unit;
- Zoned distribution system (grade level and enclosure level, separated by shielding);
- Detector loads are at enclosure level;
- Supply through ductwork;
- Modified shielding design to allow air from south end;
- Stairs are pressurized.

SBN Far Detector Building - HVAC



From 6-7-93, Sheet M-2 (SBN-doc-276)

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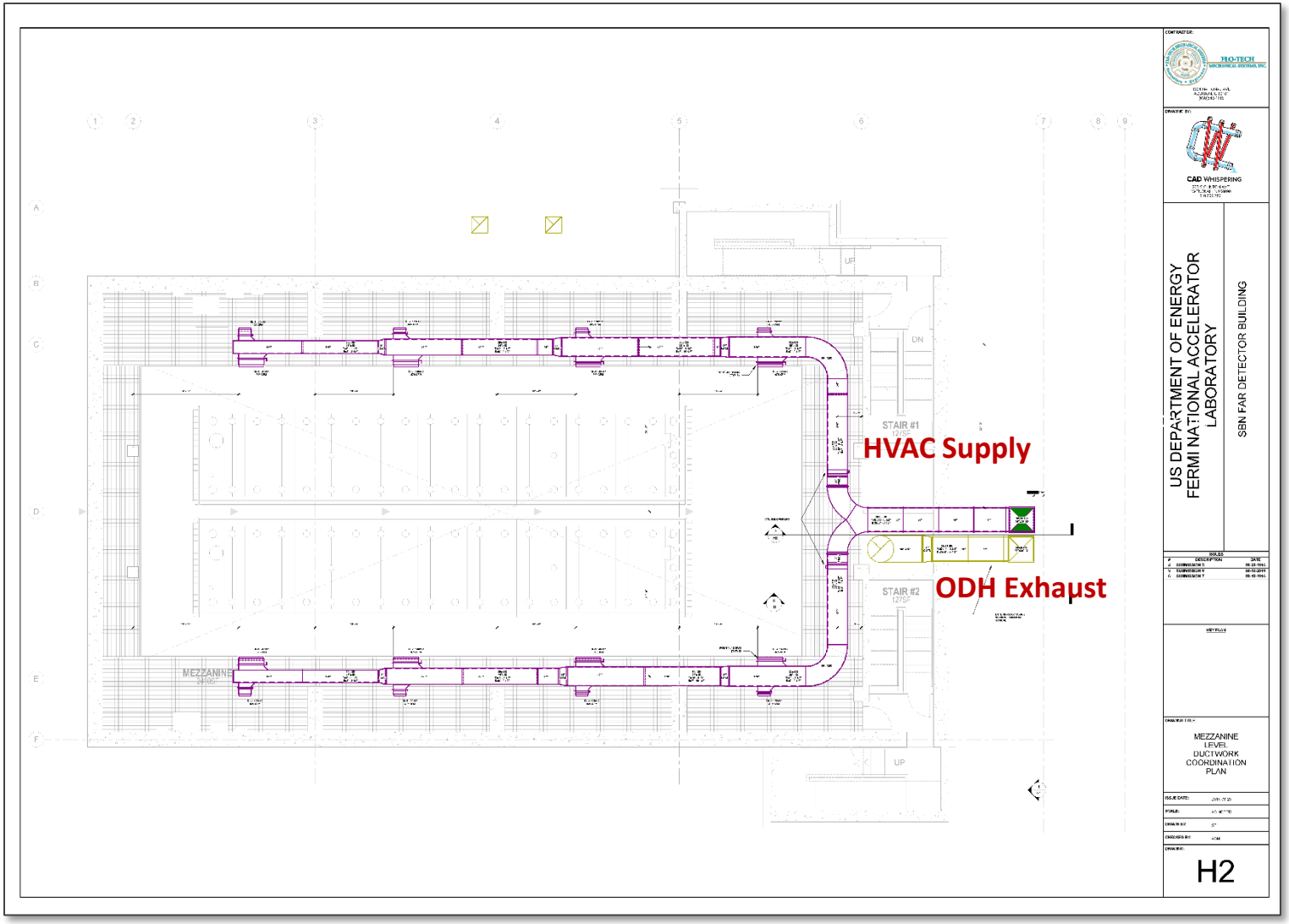
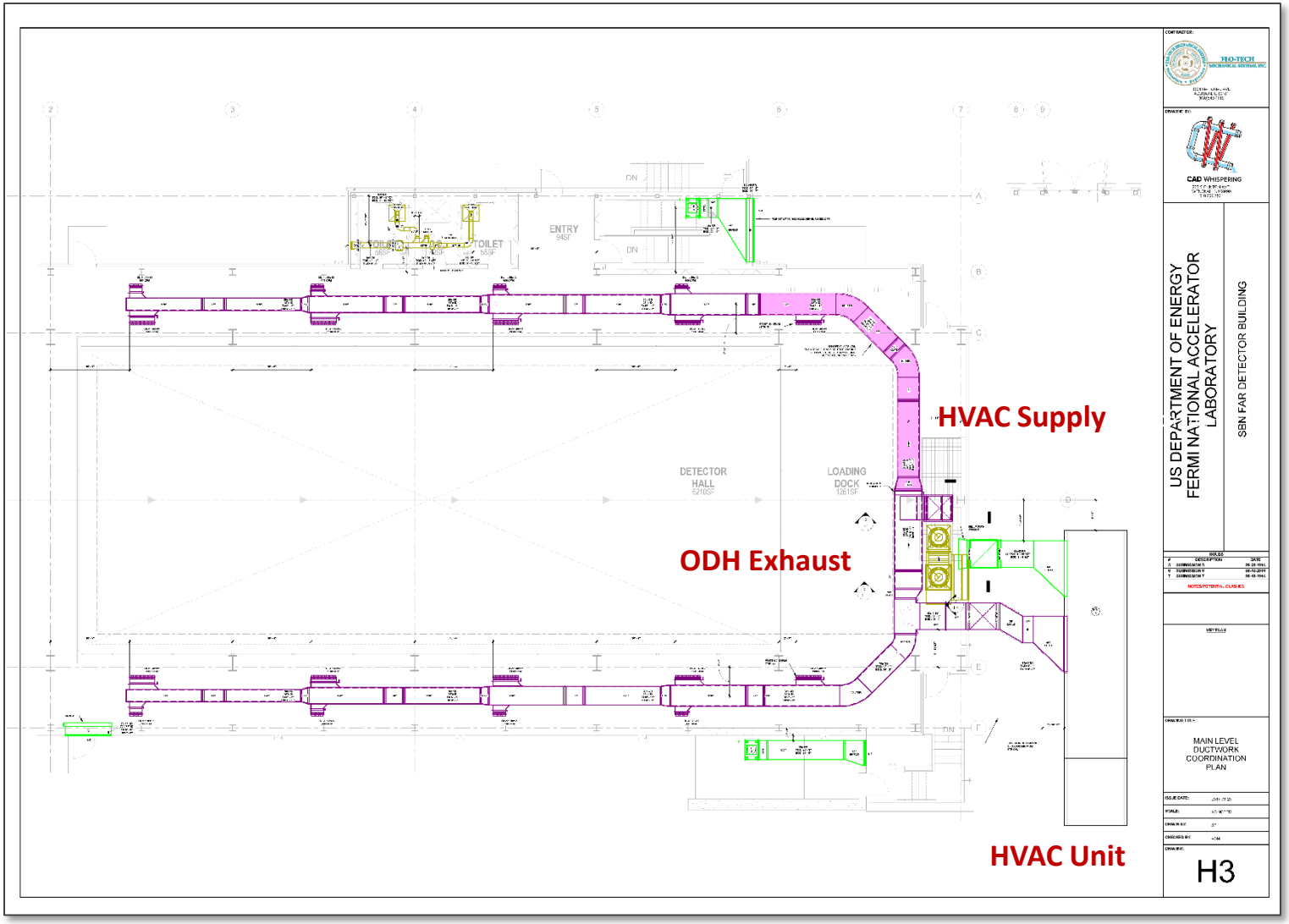
SBN Far Detector Building - HVAC



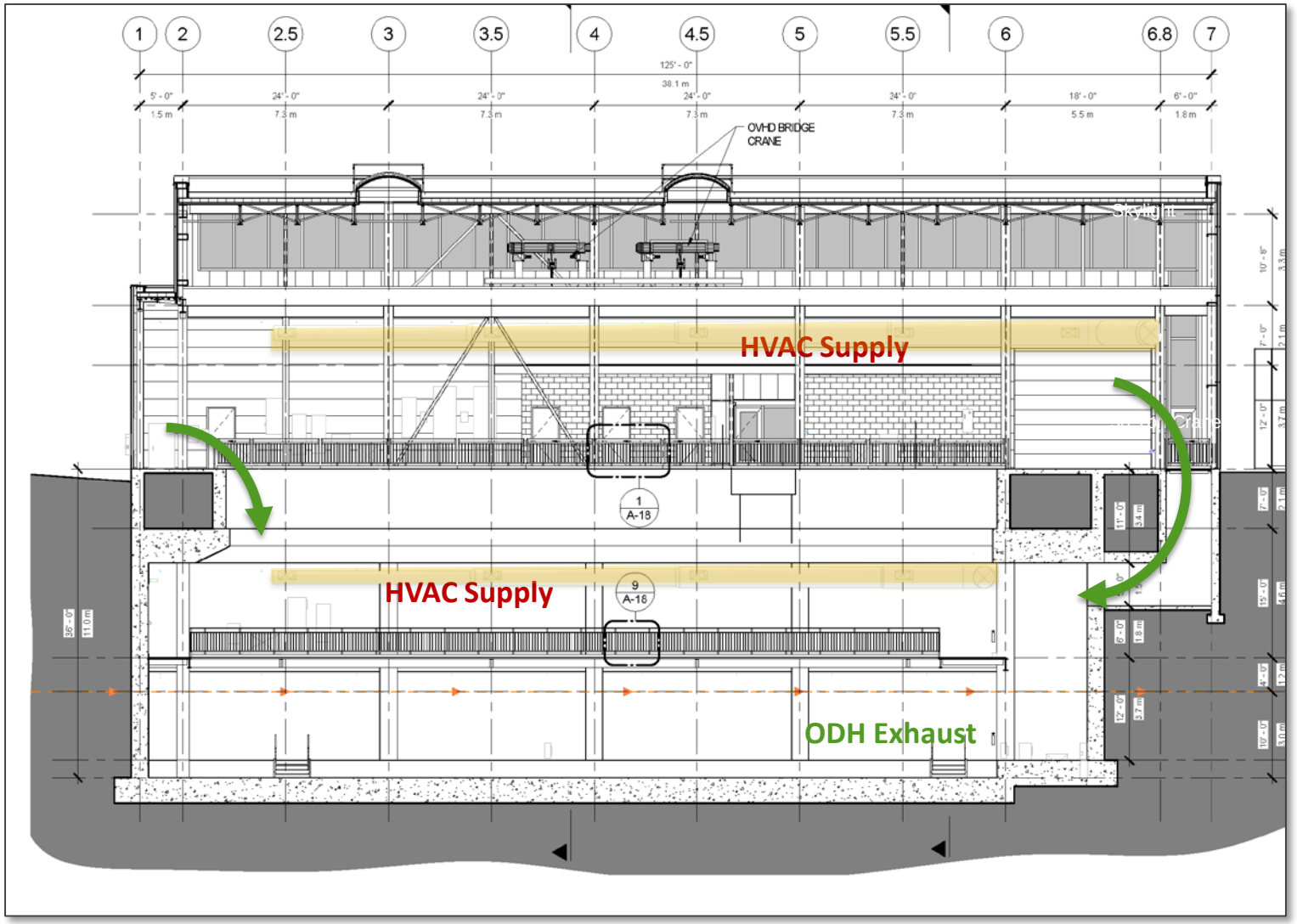
From Shop Drawing H2

SBN Far Detector Building - HVAC



From Shop Drawing H3

SBN Far Detector Building - HVAC



From 6-7-93, Sheet A-6 (SBN-doc-276)

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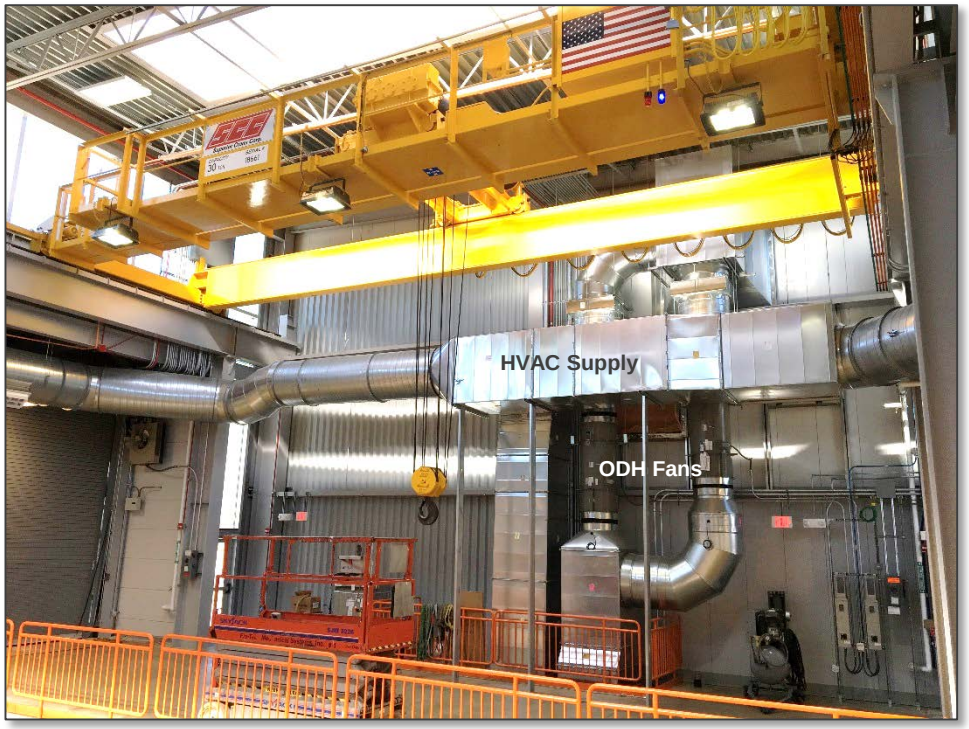
SBN Far Detector Building - HVAC

Looking North From Loading Dock

SBN Far Detector Building - HVAC

Looking North From Enclosure Level



Looking North at North Wall

SBN Far Detector Building - HVAC

Looking South From Loading Dock