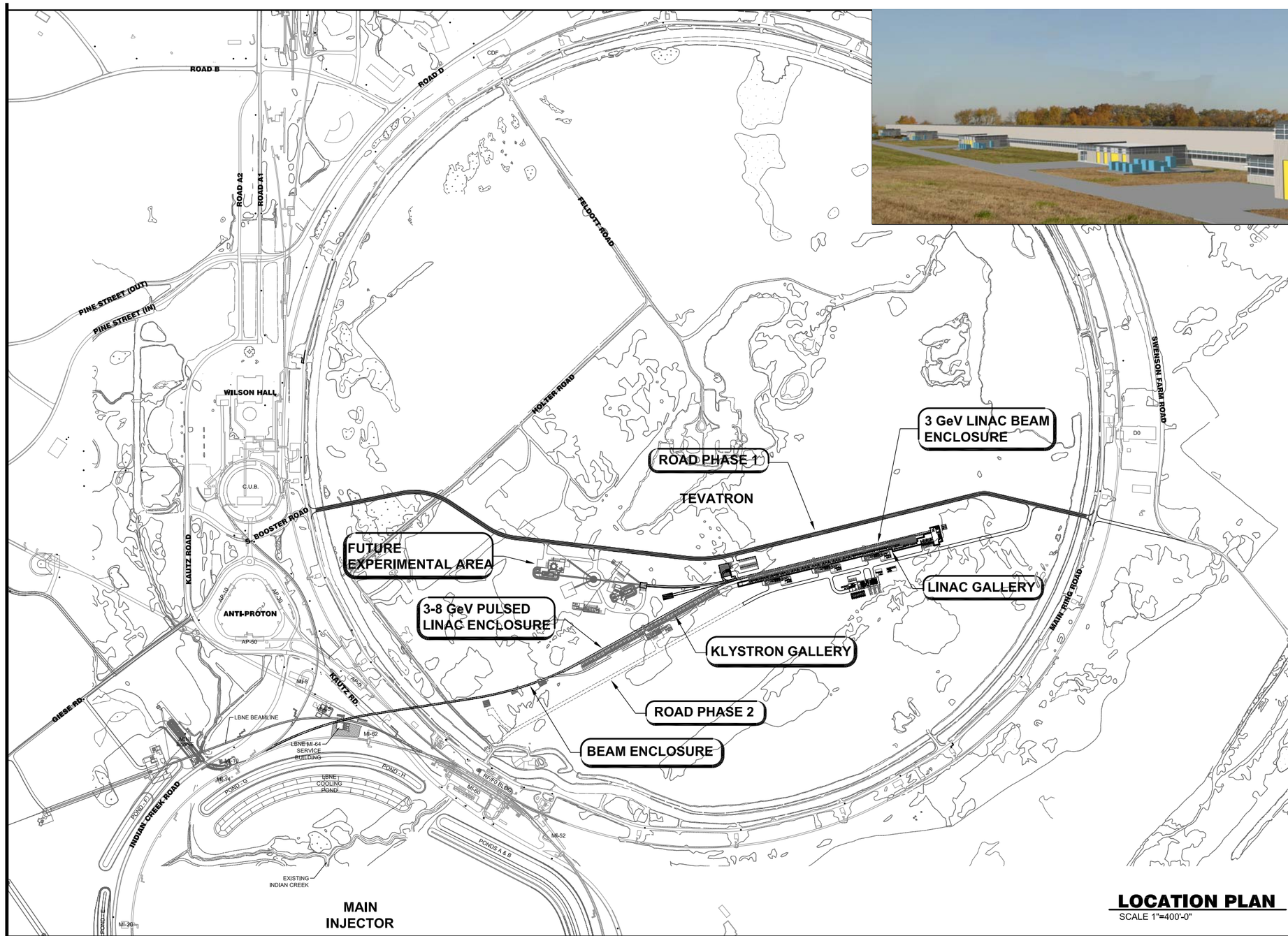


LOCATION PLAN
SCALE 1"=400'-0"

DRAWING LIST

INDEX	
PDR-100	TITLE SHEET
PDR-101	PROJECT OVERVIEW SITE PLAN
PDR-102	CRITERIA PLAN
PDR-103	3 GeV LINAC SITE & UTILITY PLAN
PDR-104	3 GeV LINAC SITE & UTILITY PLAN
PDR-105	3 GeV LINAC SITE & UTILITY PLAN
PDR-106	3 GeV LINAC SITE & UTILITY PLAN
PDR-107	3 GeV LINAC SITE & UTILITY PLAN
PDR-108	TRANSPORT SERVICE BLDG SITE & UTILITY PLAN
PDR-109	3-8 GeV RCS SITE & UTILITY PLAN
PDR-110	3-8 GeV RCS SITE & UTILITY PLAN
PDR-111	FUTURE EXPERIMENTAL AREA
PDR-200	3 GeV LINAC GALLERY PLAN
PDR-300	8 GeV RCS PLANS
PDR-400	SERVICE BUILDING PLANS
PDR-500	BEAM ENCLOSURE OVERVIEW PLAN
PDR-501	2 GeV LINAC ENCLOSURE PLAN
PDR-502	2 GeV LINAC ENCLOSURE PLAN
PDR-503	2 GeV LINAC ENCLOSURE PLAN
PDR-504	8 GeV RCS ENCLOSURE PLAN
PDR-505	TRANSPORT SERVICE BLDG ENCLOSURE PLAN

Project X Conventional Facilities

Preliminary Design

Project X

SCALE:

PROJECT NORTH
W E S

PROJECT X CONVENTIONAL FACILITIES
PRELIMINARY DESIGN
TITLE SHEET

PDR

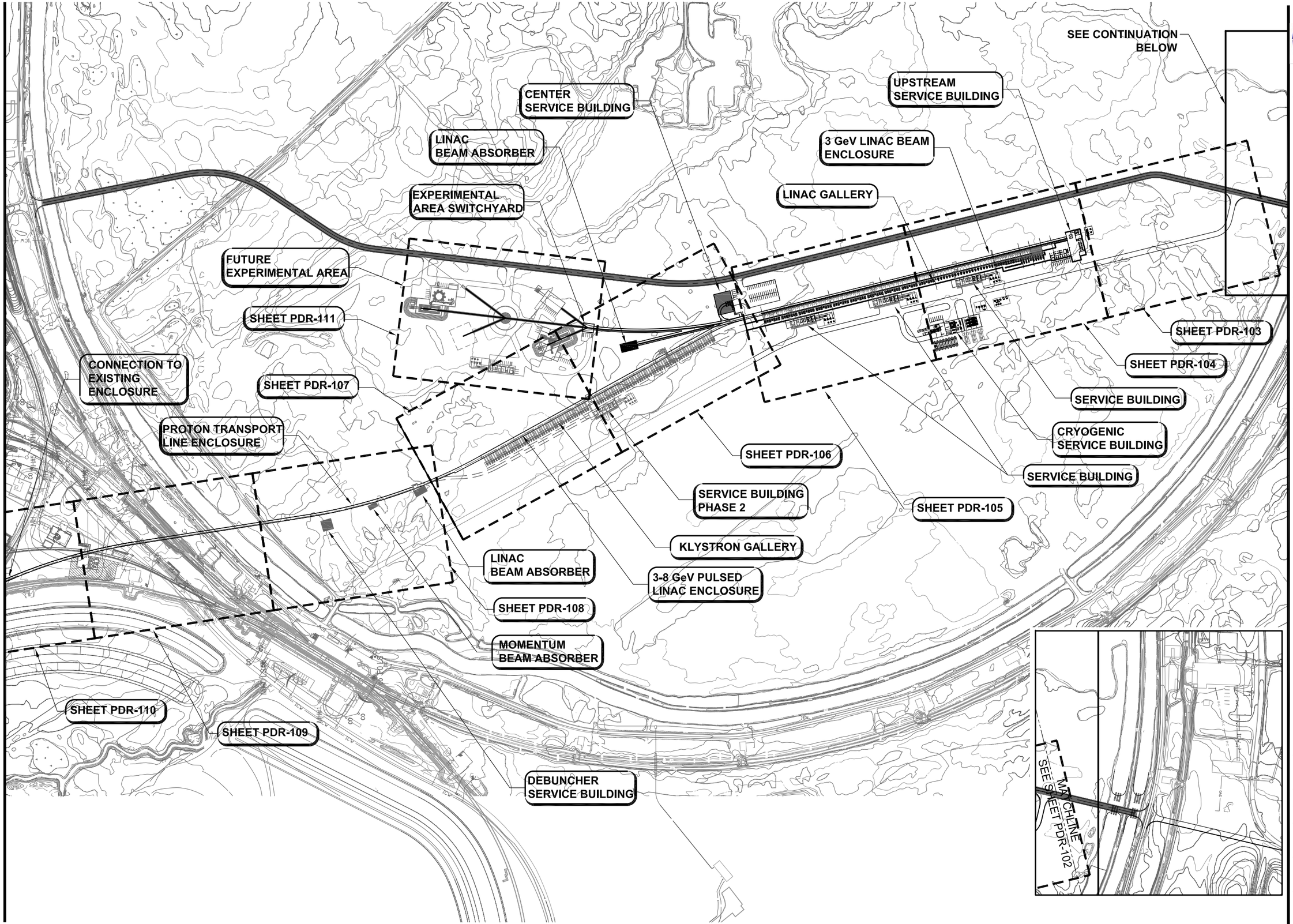
Fermilab

U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-100



Project X

SCALE: 1" = 200'-0" SCALE 200 0 200 400 FEET

PROJECT NORTH
W E S

PROJECT X
CONVENTIONAL FACILITIES
PROJECT SITE & UTILITIES
PROJECT OVERVIEW SITE PLAN

PDR

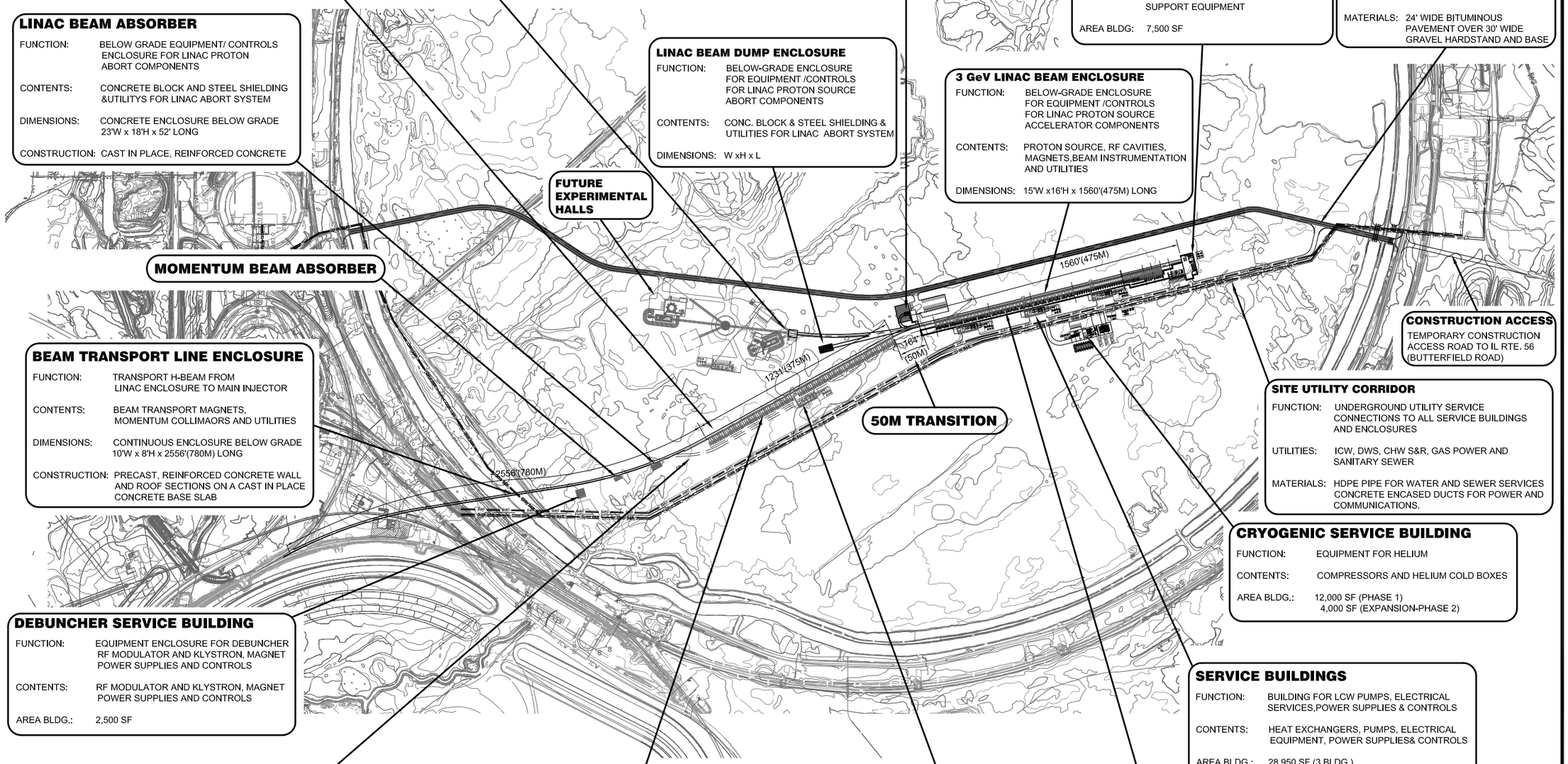
Fermilab

U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-101



3-8 GeV PULSED LINAC

FUNCTION: BELOW-GRADE ENCLOSURE FOR EQUIPMENT /CONTROLS FOR RCS ACCELERATOR COMPONENTS

CONTENTS: RF CAVITIES, MAGNETS, BEAM INSTRUMENTATION AND UTILITIES

DIMENSIONS: 15'W x16'H x 1321'(375M) LONG

CONSTR.: CAST IN PLACE, REINF. CONCRETE

EXPERIMENTAL AREA SWITCHYARD

FUNCTION: BELOW-GRADE ENCLOSURE & TRANSPORT OF PROTON BEAM TO EXPERIMENTAL AREA, STRIPPING, AND RF SEPARATION TO EXPERIMENTS

CONTENTS: BEAM TRANSPORT MAGNETS, COLLIMATION, RF SEPARATION AND UTILITIES

DIMENSIONS: W xH x L

CENTER SERVICE BUILDING

FUNCTION: PERSONNEL/ EQUIPMENT ACCESS FOR INSTALLATION OF LINAC

CONTENTS: CRANE BAY, HATCH AND STAGING AREA

AREA BLDG.: 8,000 SF

UPSTREAM SERVICE BUILDING

FUNCTION: PERSONNEL/ EQUIPMENT ACCESS FOR INSTALLATION AND OPERATION OF LOW ENERGY SUPPORT EQUIPMENT AND TECHNICAL SPACE

CONTENTS: ELECTRICAL EQUIPMENT & CONTROLS, UTILITY SERVICES & PROTON SOURCE SUPPORT EQUIPMENT

AREA BLDG: 7,500 SF

SERVICE ROAD

FUNCTION: PROVIDE ACCESS TO ALL SERVICE BUILDINGS AND UTILITY CORRIDOR

MATERIALS: 24' WIDE BITUMINOUS PAVEMENT OVER 30' WIDE GRAVEL HARDSTAND AND BASE

LINAC BEAM ABSORBER

FUNCTION: BELOW GRADE EQUIPMENT/ CONTROLS ENCLOSURE FOR LINAC PROTON ABORT COMPONENTS

CONTENTS: CONCRETE BLOCK AND STEEL SHIELDING &UTILITYS FOR LINAC ABORT SYSTEM

DIMENSIONS: CONCRETE ENCLOSURE BELOW GRADE 23'W x 18'H x 52' LONG

CONSTRUCTION: CAST IN PLACE, REINFORCED CONCRETE

LINAC BEAM DUMP ENCLOSURE

FUNCTION: BELOW-GRADE ENCLOSURE FOR EQUIPMENT /CONTROLS FOR LINAC PROTON SOURCE ABORT COMPONENTS

CONTENTS: CONC. BLOCK & STEEL SHIELDING & UTILITIES FOR LINAC ABORT SYSTEM

DIMENSIONS: W xH x L

3 GeV LINAC BEAM ENCLOSURE

FUNCTION: BELOW-GRADE ENCLOSURE FOR EQUIPMENT /CONTROLS FOR LINAC PROTON SOURCE ACCELERATOR COMPONENTS

CONTENTS: PROTON SOURCE, RF CAVITIES, MAGNETS,BEAM INSTRUMENTATION AND UTILITIES

DIMENSIONS: 15'W x16'H x 1560'(475M) LONG

FUTURE EXPERIMENTAL HALLS

MOMENTUM BEAM ABSORBER

CONSTRUCTION ACCESS

TEMPORARY CONSTRUCTION ACCESS ROAD TO IL RTE. 56 (BUTTERFIELD ROAD)

BEAM TRANSPORT LINE ENCLOSURE

FUNCTION: TRANSPORT H-BEAM FROM LINAC ENCLOSURE TO MAIN INJECTOR

CONTENTS: BEAM TRANSPORT MAGNETS, MOMENTUM COLLIMAORS AND UTILITIES

DIMENSIONS: CONTINUOUS ENCLOSURE BELOW GRADE 10'W x 8'H x 2556'(780M) LONG

CONSTRUCTION: PRECAST, REINFORCED CONCRETE WALL AND ROOF SECTIONS ON A CAST IN PLACE CONCRETE BASE SLAB

50M TRANSITION

SITE UTILITY CORRIDOR

FUNCTION: UNDERGROUND UTILITY SERVICE CONNECTIONS TO ALL SERVICE BUILDINGS AND ENCLOSURES

UTILITIES: ICW, DWS, CHW S&R, GAS POWER AND SANITARY SEWER

MATERIALS: HDPE PIPE FOR WATER AND SEWER SERVICES CONCRETE ENCASED DUCTS FOR POWER AND COMMUNICATIONS.

CRYOGENIC SERVICE BUILDING

FUNCTION: EQUIPMENT FOR HELIUM

CONTENTS: COMPRESSORS AND HELIUM COLD BOXES

AREA BLDG.: 12,000 SF (PHASE 1)
4,000 SF (EXPANSION-PHASE 2)

DEBUNCHER SERVICE BUILDING

FUNCTION: EQUIPMENT ENCLOSURE FOR DEBUNCHER RF MODULATOR AND KLYSTRON, MAGNET POWER SUPPLIES AND CONTROLS

CONTENTS: RF MODULATOR AND KLYSTRON, MAGNET POWER SUPPLIES AND CONTROLS

AREA BLDG.: 2,500 SF

SERVICE BUILDINGS

FUNCTION: BUILDING FOR LCW PUMPS, ELECTRICAL SERVICES,POWER SUPPLIES & CONTROLS

CONTENTS: HEAT EXCHANGERS, PUMPS, ELECTRICAL EQUIPMENT, POWER SUPPLIES& CONTROLS

AREA BLDG.: 28,950 SF (3 BLDG.)

SHIELDING BERMS

CONSTRUCTION: COHESIVE SOILS COMPACTED TO 135 PCF, CAPPED W/ 8" OF TOP SOIL

SLOPE: 3' HORIZONTAL TO 2' VERTICAL

ELEVATIONS: 24'-6" SHIELDING OVER ENCLOSURES
26'-0" SHIELDING AT SERVICE BLDG'S

KLYSTRON GALLERY (FUTURE)

FUNCTION: EQUIPMENT FOR RF POWER GENERATION

CONTENTS: KLYSTRONS, MODULATORS, CONTROLS AND UTILITY SERVICES

AREA BLDG.: 39,770 SF

SERVICE BUILDING (FUTURE)

FUNCTION: BUILDING FOR LCW PUMPS, ELECTRICAL SERVICES,POWER SUPPLIES & CONTROLS

CONTENTS: HEAT EXCHANGERS, PUMPS, ELECTRICAL EQUIPMENT, POWER SUPPLIES& CONTROLS

AREA BLDG.: 9,650 SF

LINAC GALLERY

FUNCTION: EQUIPMENT FOR RF POWER GENERATION

CONTENTS: RF AMPLIFIERS, MODULATORS, CONTROLS AND UTILITY SERVICES

AREA BLDG: 17,532 SF (50'W&.>50'W GALLERY)
37,907 SF (30'W x 1330'LONG)

Project X

SCALE: 1" = 300'-0" SCALE 300 0 300 600 FEET

PROJECT NORTH
W E S

PROJECT X CONVENTIONAL FACILITIES

CRITERIA PLAN

PDR

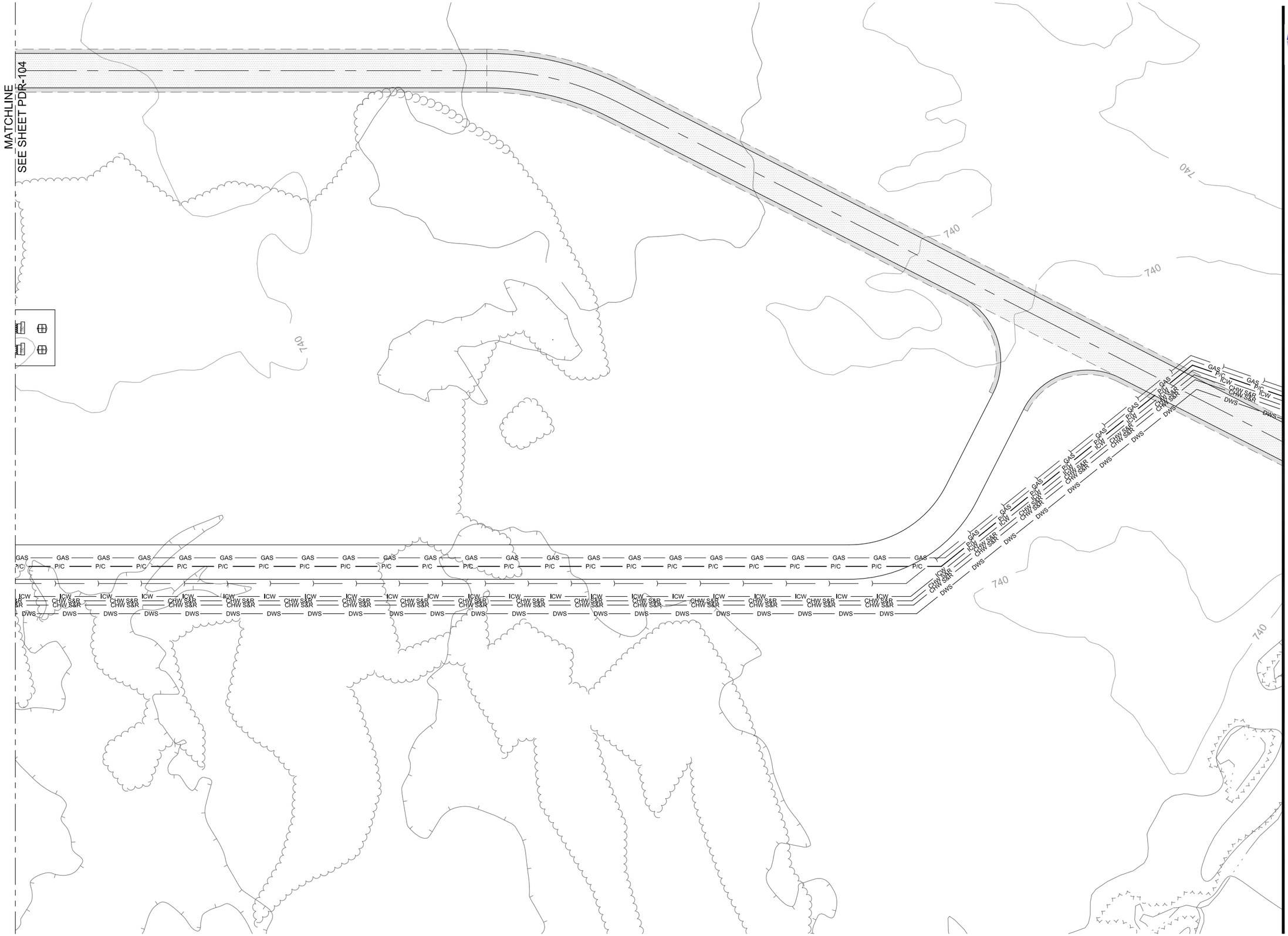
Fermilab

U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-102



Project X

SCALE:
1" = 30'-0"
30 0 30 60
SCALE FEET

PROJECT NORTH
W E S

PROJECT X CONVENTIONAL FACILITIES

PROJECT SITE & UTILITIES

3 GeV LINAC SITE & UTILITY PLAN

PDR

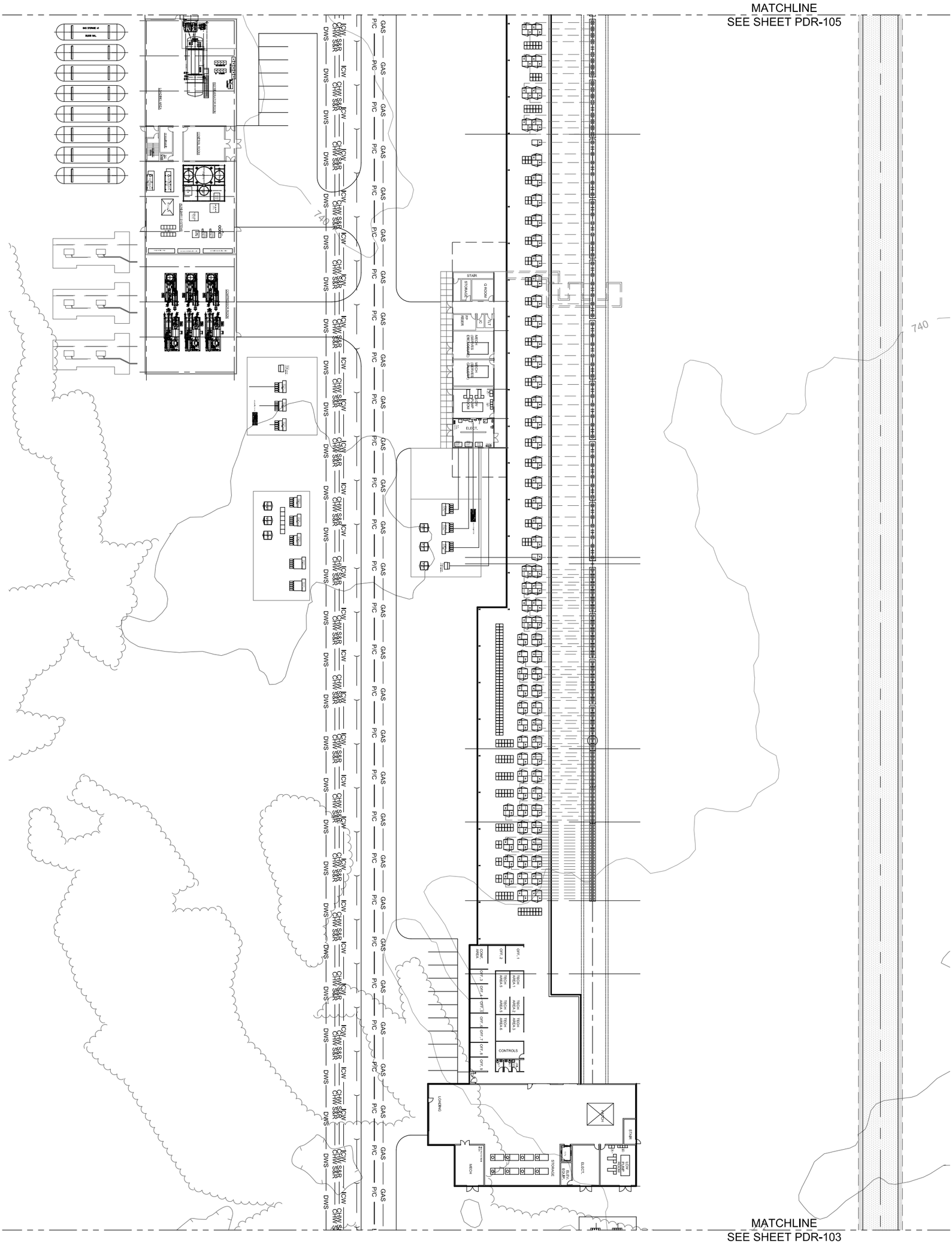
Fermilab

U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-103



PROJECT X
CONVENTIONAL FACILITIES

PROJECT SITE & UTILITIES

3 GeV LINAC SITE & UTILITY PLAN

PROJECT NORTH

SCALE:

1" = 30'-0"

30 0 30 60

SCALE FEET

PDR

Fermilab

U.S. DEPARTMENT OF ENERGY

DATE

JULY 2010

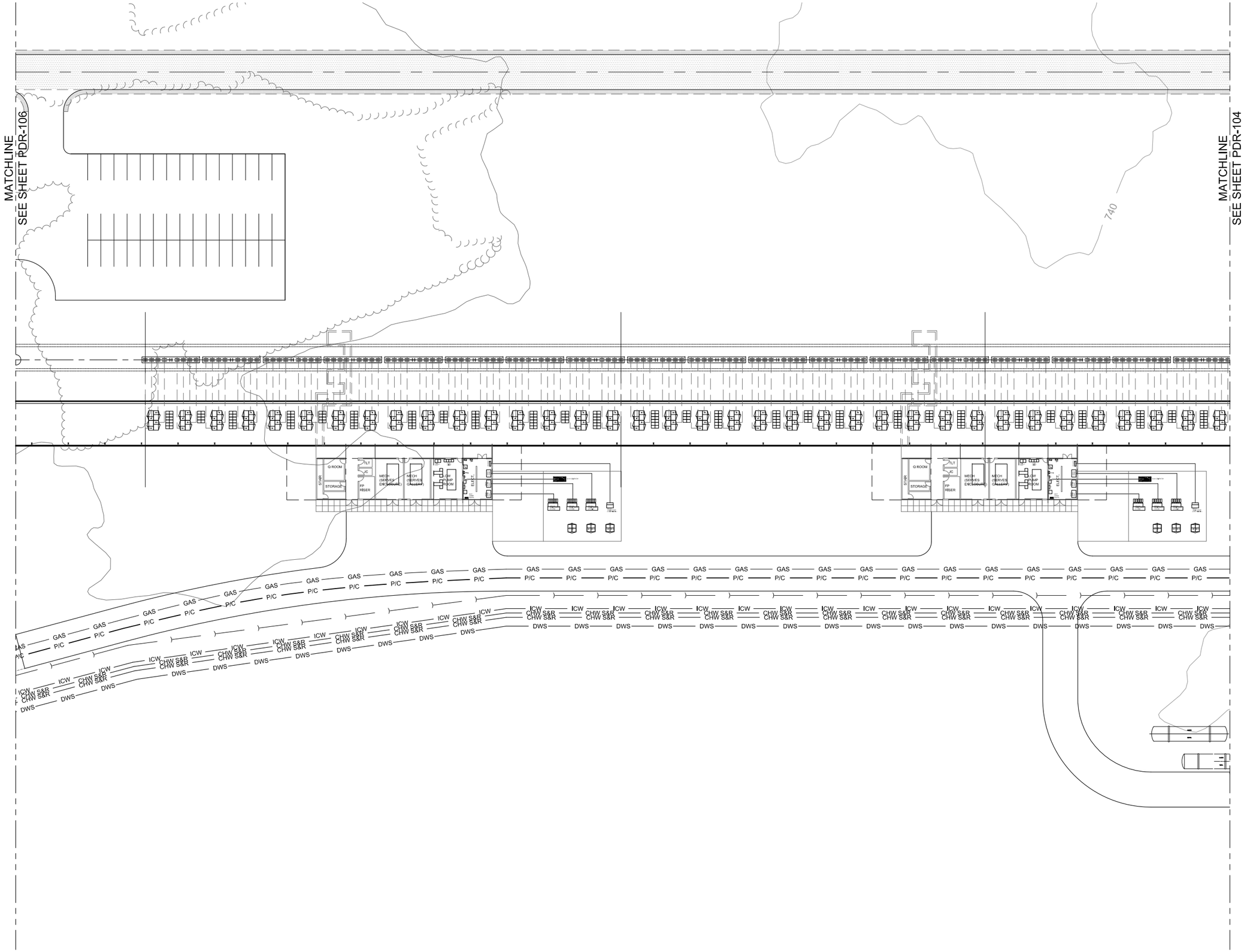
PROJECT NO.

4-2-1

DRAWING NO.

PDR-104

Project X



Project X

SCALE:
1" = 30'-0"
30 0 30 60
SCALE FEET

PROJECT NORTH
W E S

PROJECT X
CONVENTIONAL FACILITIES

PROJECT SITE & UTILITIES

3 GeV LINAC SITE & UTILITY PLAN

PDR

Fermilab

U.S. DEPARTMENT OF ENERGY

DATE

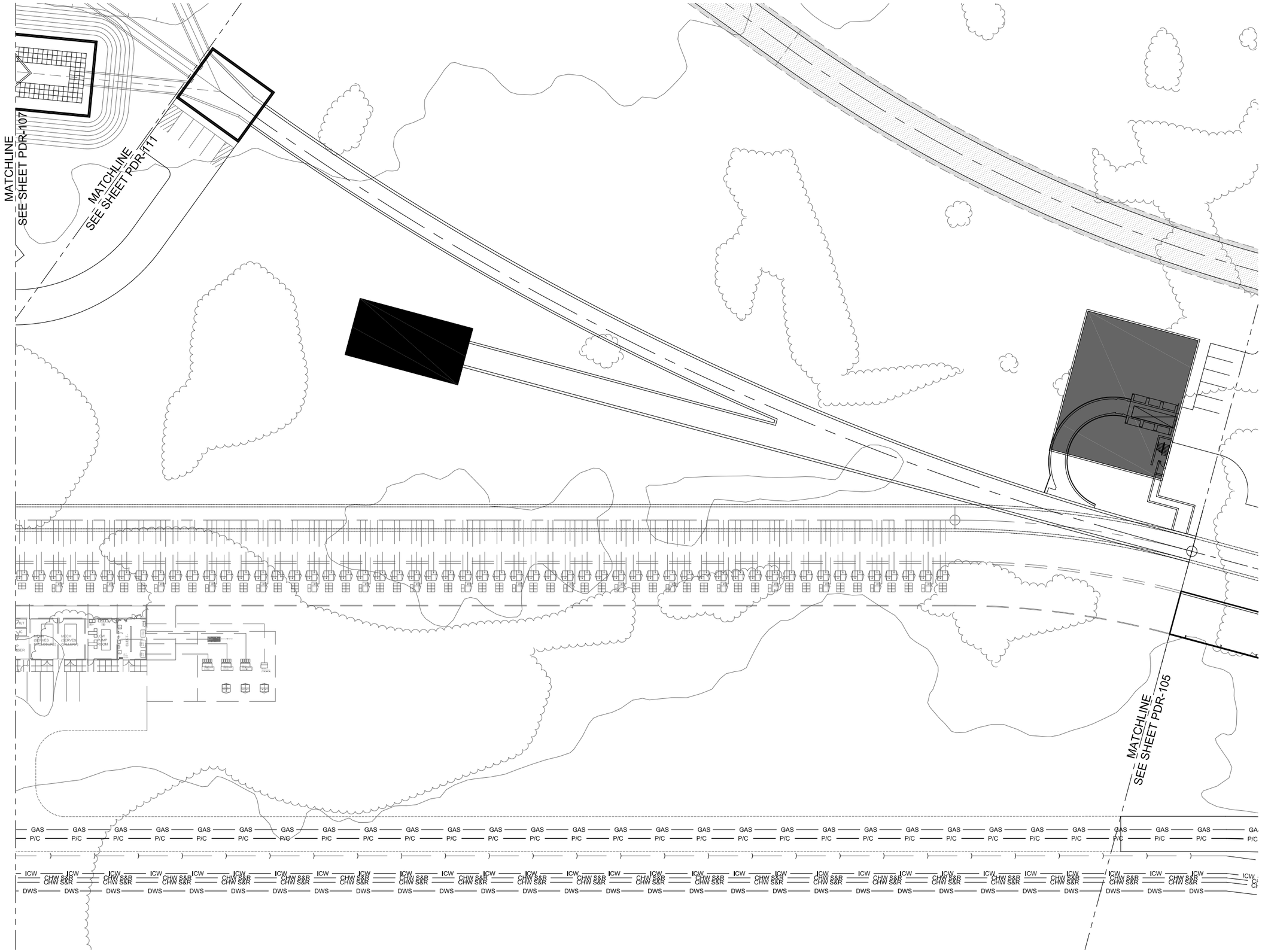
JULY 2010

PROJECT NO.

4-2-1

DRAWING NO.

PDR-105



Project X

SCALE:
1" = 30'-0"
30 0 30 60
SCALE FEET

PROJECT NORTH
W E S

PROJECT X
CONVENTIONAL FACILITIES
PROJECT SITE & UTILITIES
3-8 GeV LINAC SITE & UTILITY PLAN

PDR

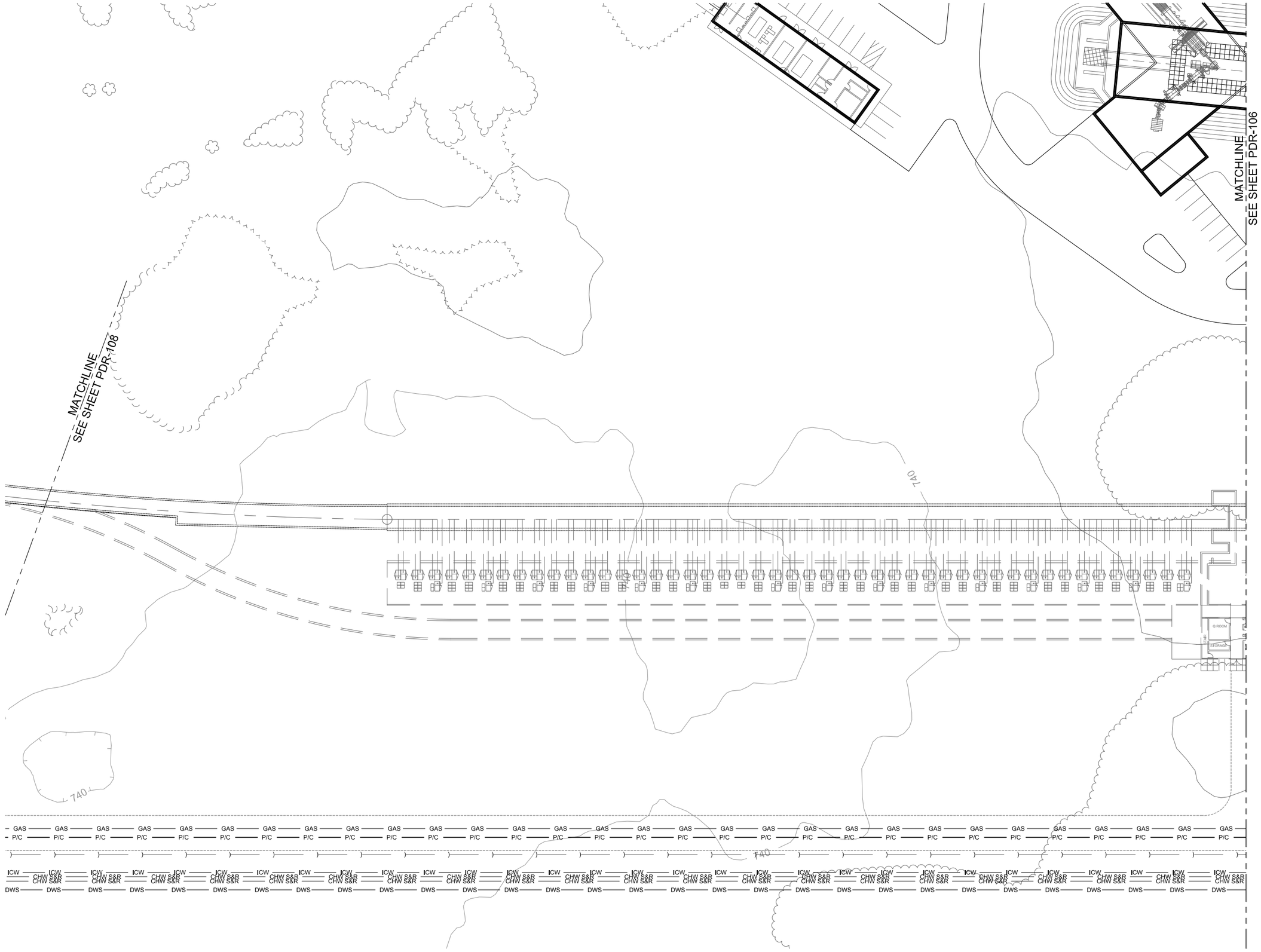
Fermilab

U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-106



Project X

SCALE:
1" = 30'-0"
30 0 30 60
SCALE FEET

PROJECT NORTH
W E S

PROJECT X
CONVENTIONAL FACILITIES
PROJECT SITE & UTILITIES
3-8 GeV LINAC SITE & UTILITY PLAN

PDR

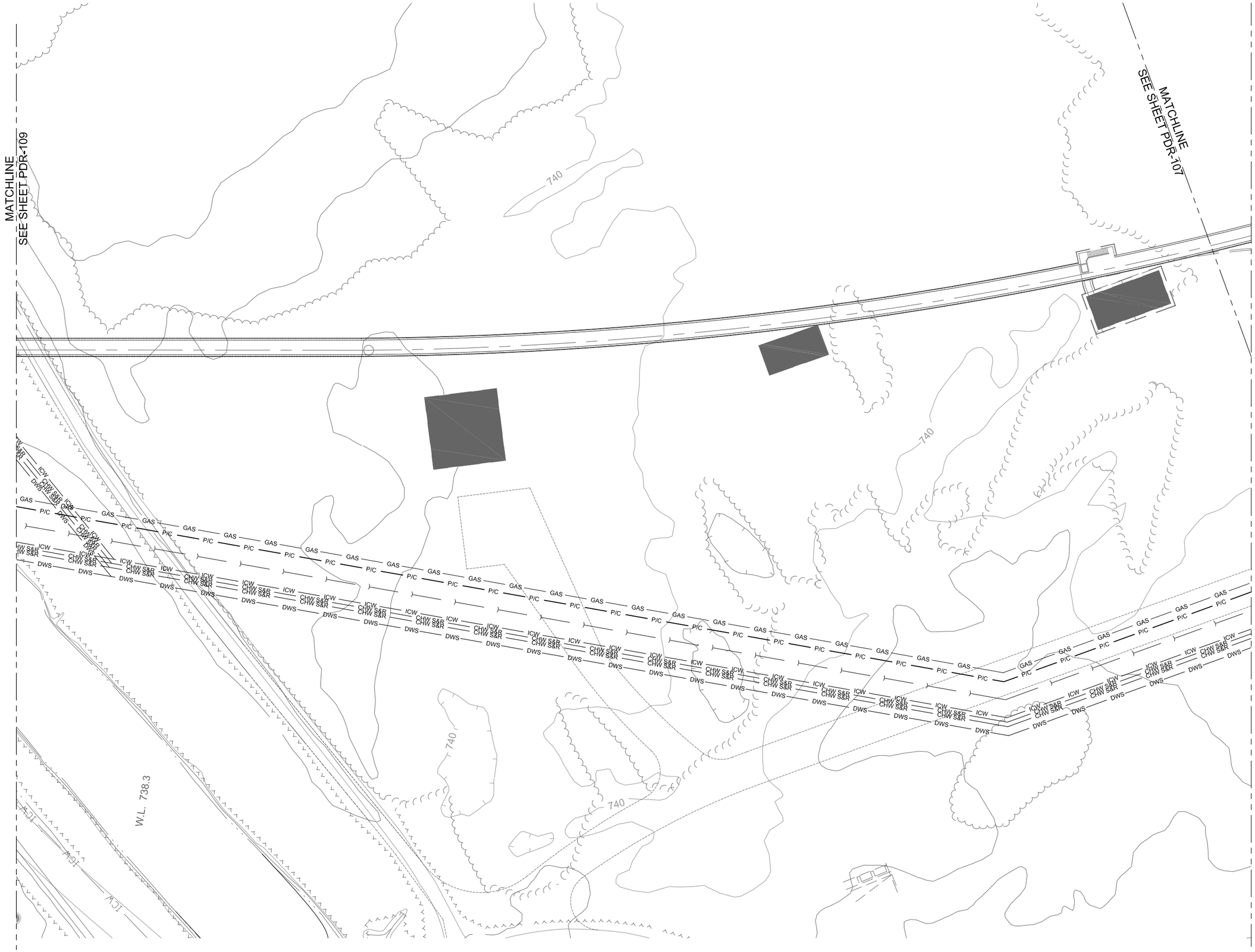
Fermilab

U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-107



Project X

SCALE:
1" = 30'-0"
30 0 30 60
SCALE FEET

PROJECT NORTH
W
E
S

PROJECT X
CONVENTIONAL FACILITIES
PROJECT SITE & UTILITIES
SERVICE BLDG SITE & UTILITY PLAN

PDR

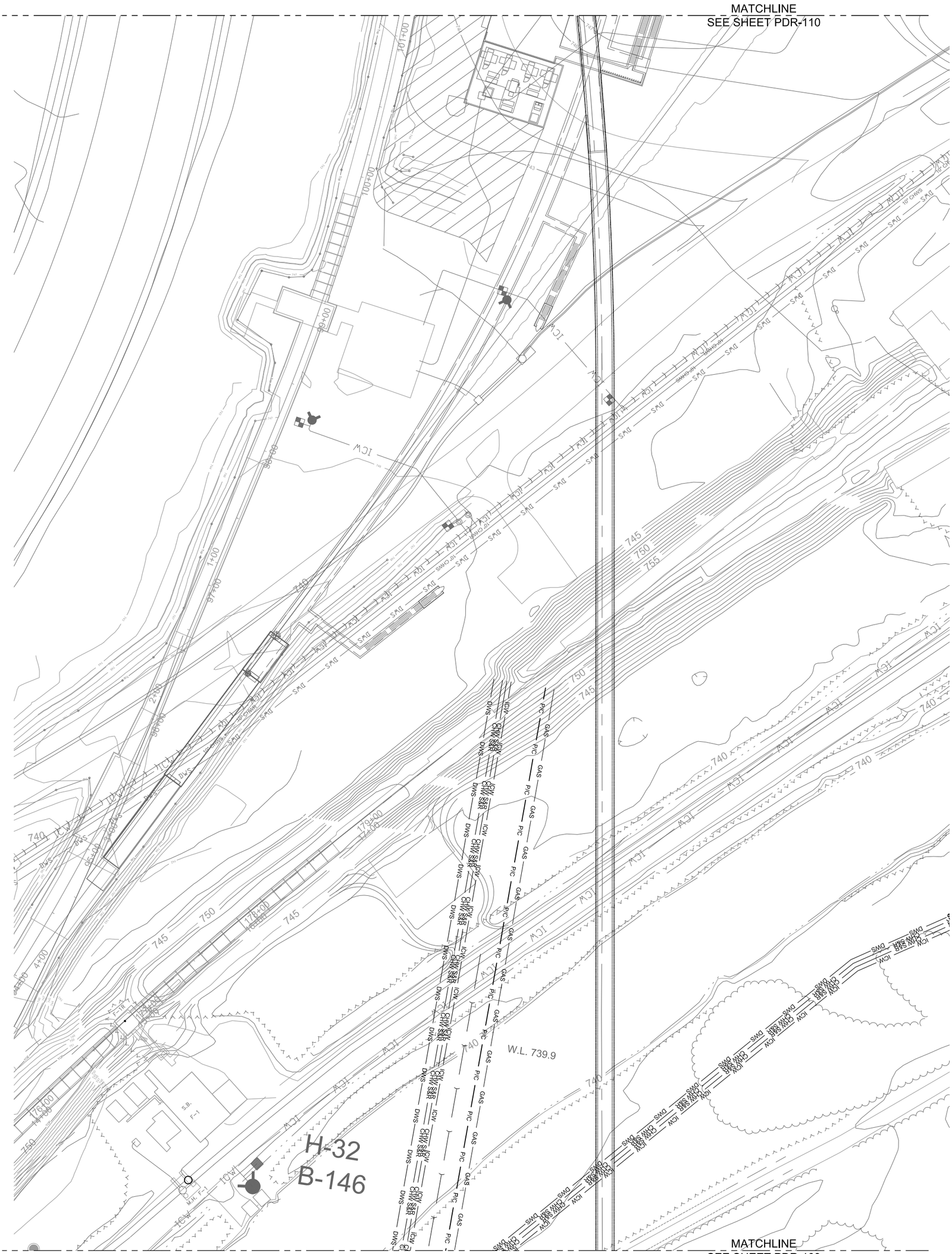
Fermilab

U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-108



PDR

Fermilab

U.S. DEPARTMENT OF ENERGY

DATE

JULY 2010

PROJECT NO.

4-2-1

DRAWING NO.

PDR-109

PROJECT X
CONVENTIONAL FACILITIES

PROJECT SITE & UTILITIES

3-8 GeV LINAC SITE & UTILITY PLAN

PROJECT NORTH

SCALE:

1" = 30'-0"

30 0 30 60

SCALE FEET

Project X

MATCHLINE
SEE SHEET PDR-109

PDR

Fermilab

U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-110

PROJECT X
CONVENTIONAL FACILITIES

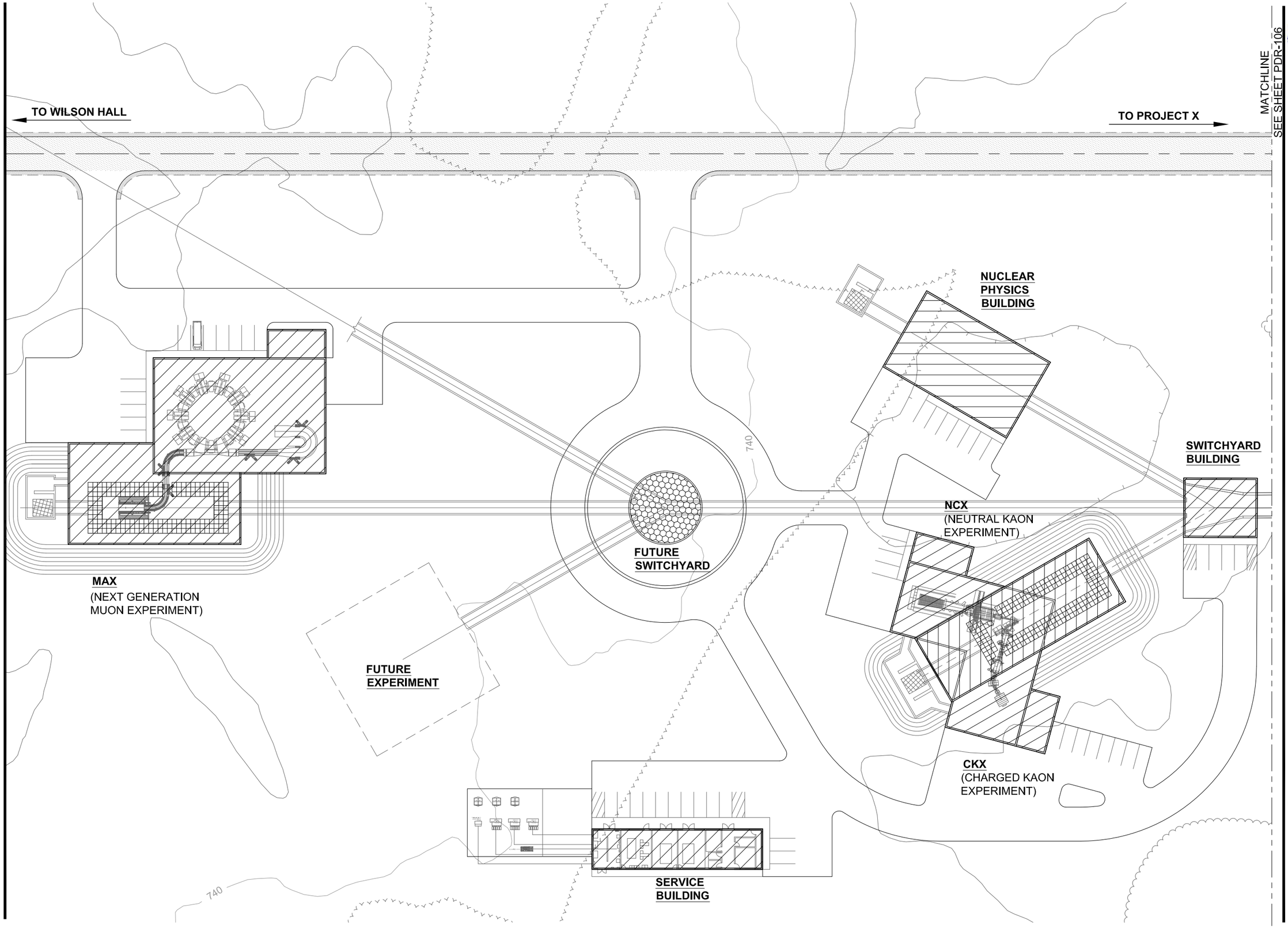
PROJECT SITE & UTILITIES

3-8 GeV LINAC SITE & UTILITY PLAN

PROJECT NORTH

SCALE:
1" = 30'-0"
30 0 30 60
SCALE FEET

Project X



Project X

SCALE:
1" = 30'-0"
30 0 30 60
SCALE FEET

PROJECT NORTH
W
E
S

PROJECT X
CONVENTIONAL FACILITIES
PROJECT SITE & UTILITIES
FUTURE EXPERIMENTAL AREA

PDR

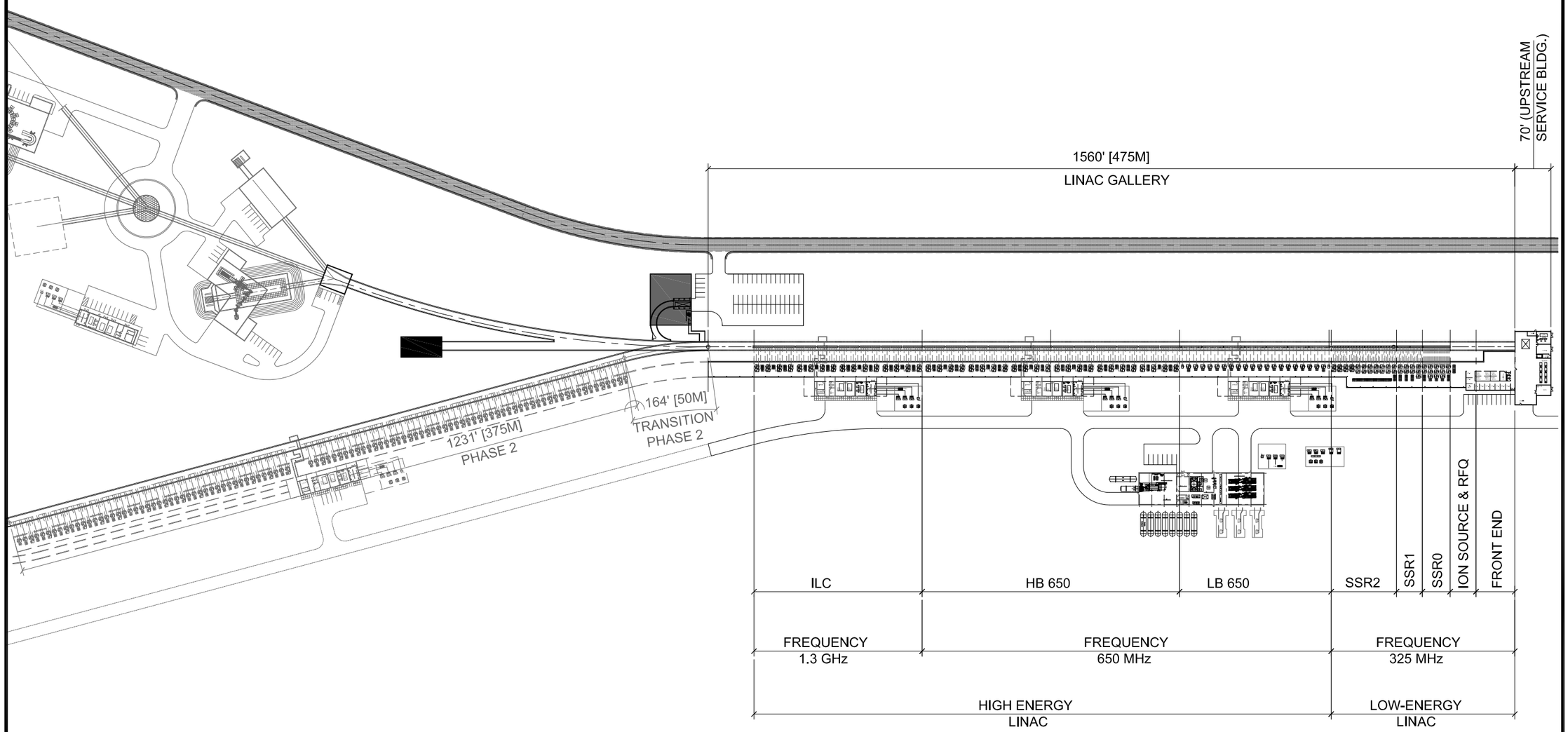
Fermilab

U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-111



Project X

SCALE:

1" = 200'-0"

SCALE 200 0 200 400 FEET

PROJECT NORTH

W E S

PROJECT X
CONVENTIONAL FACILITIES
UPSTREAM SERVICE BLDG &
LINAC GALLERY
PROJECT OVERVIEW SITE PLAN

PDR

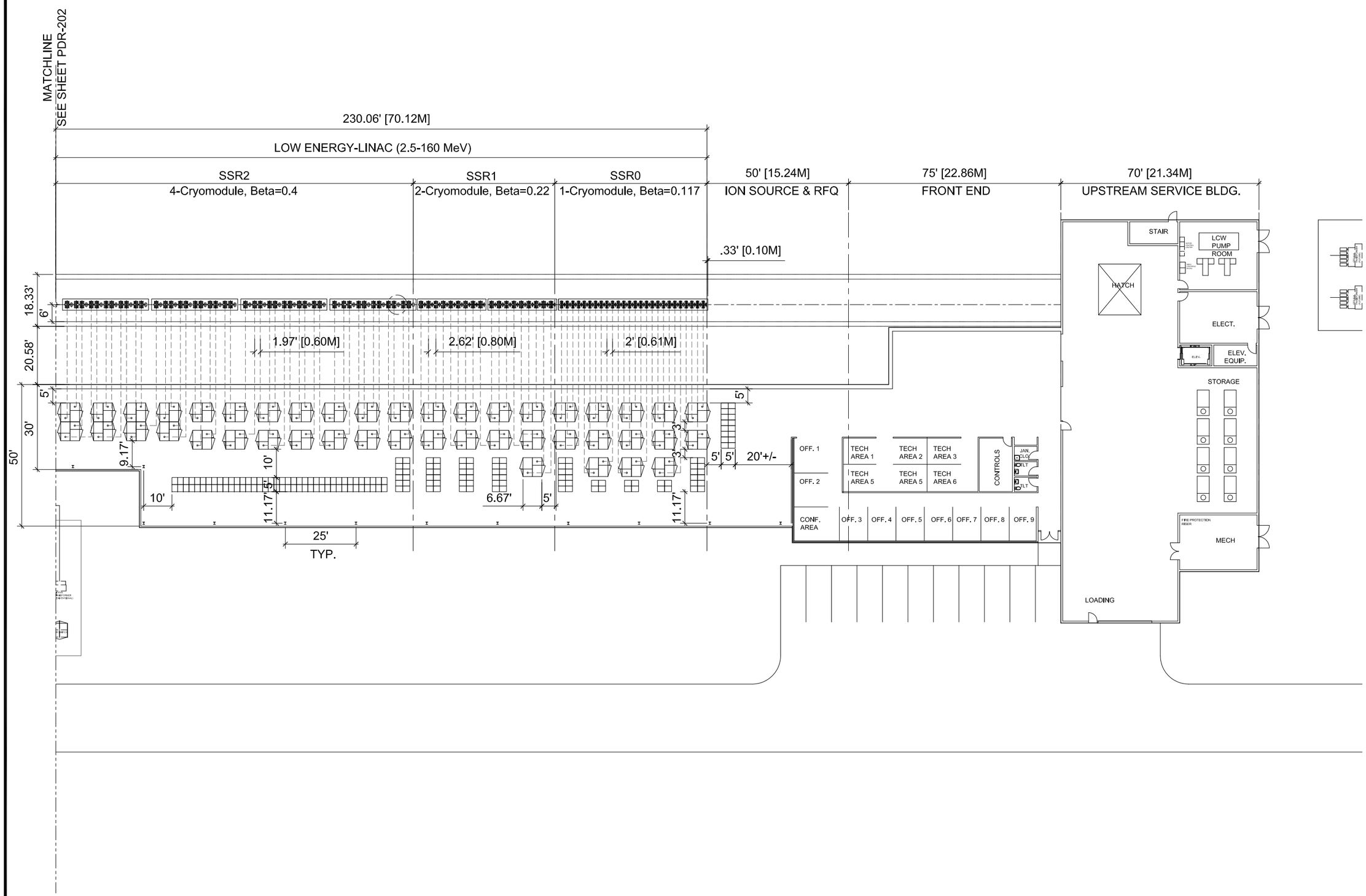
Fermilab

U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-200



Project X

SCALE:

1/16"=1'-0"

PROJECT NORTH

W E S

PROJECT X CONVENTIONAL FACILITIES

UPSTREAM SERVICE BUILDING
& 3 GeV LINAC GALLERY PLAN

PDR

Fermilab

U.S. DEPARTMENT OF ENERGY

DATE

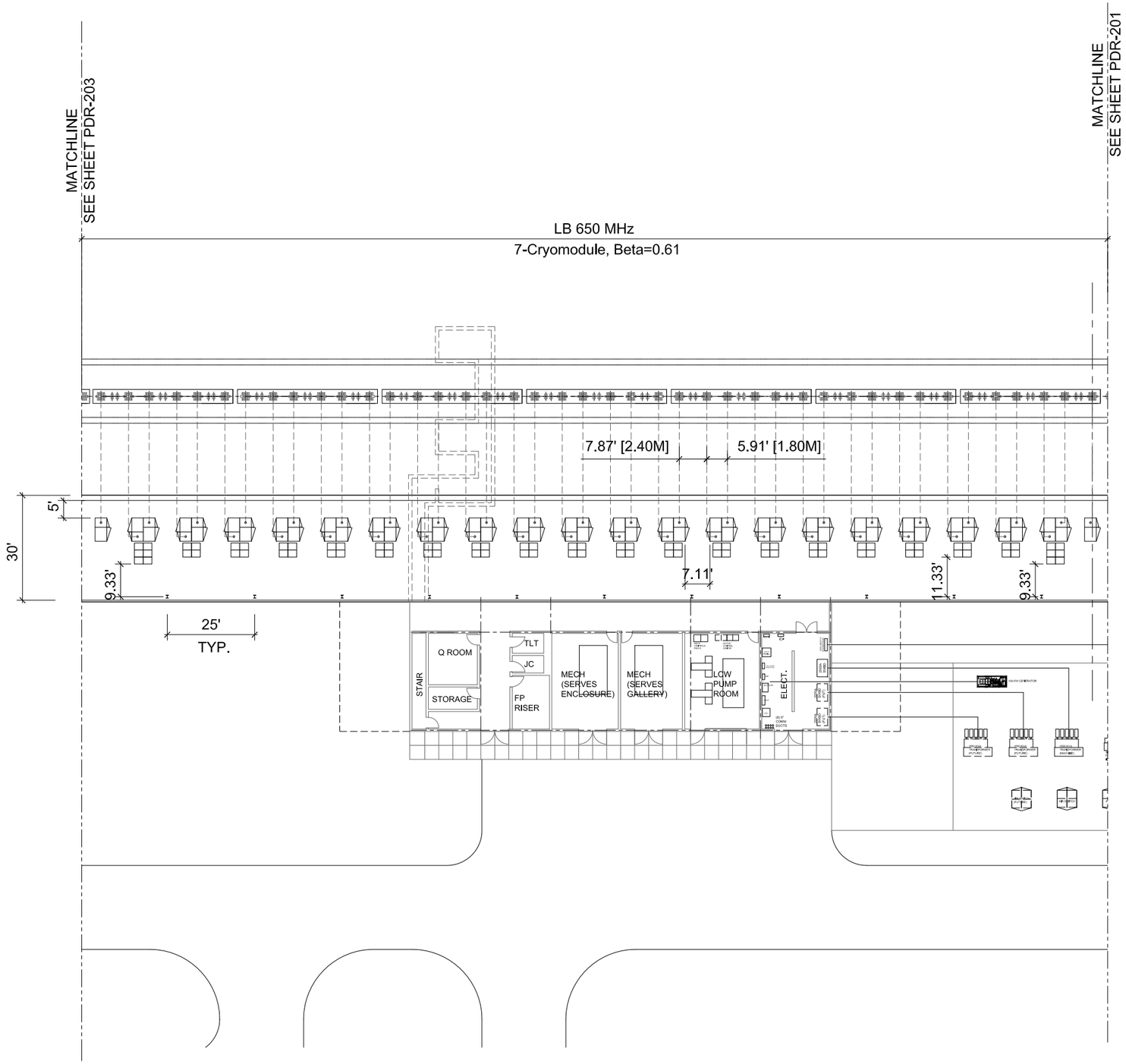
JULY 2010

PROJECT NO.

4-2-1

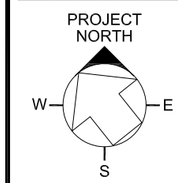
DRAWING NO.

PDR-201



Project X

SCALE:



PROJECT X CONVENTIONAL FACILITIES

3 GeV LINAC GALLERY PLAN

PDR

Fermilab

U.S. DEPARTMENT OF ENERGY

DATE

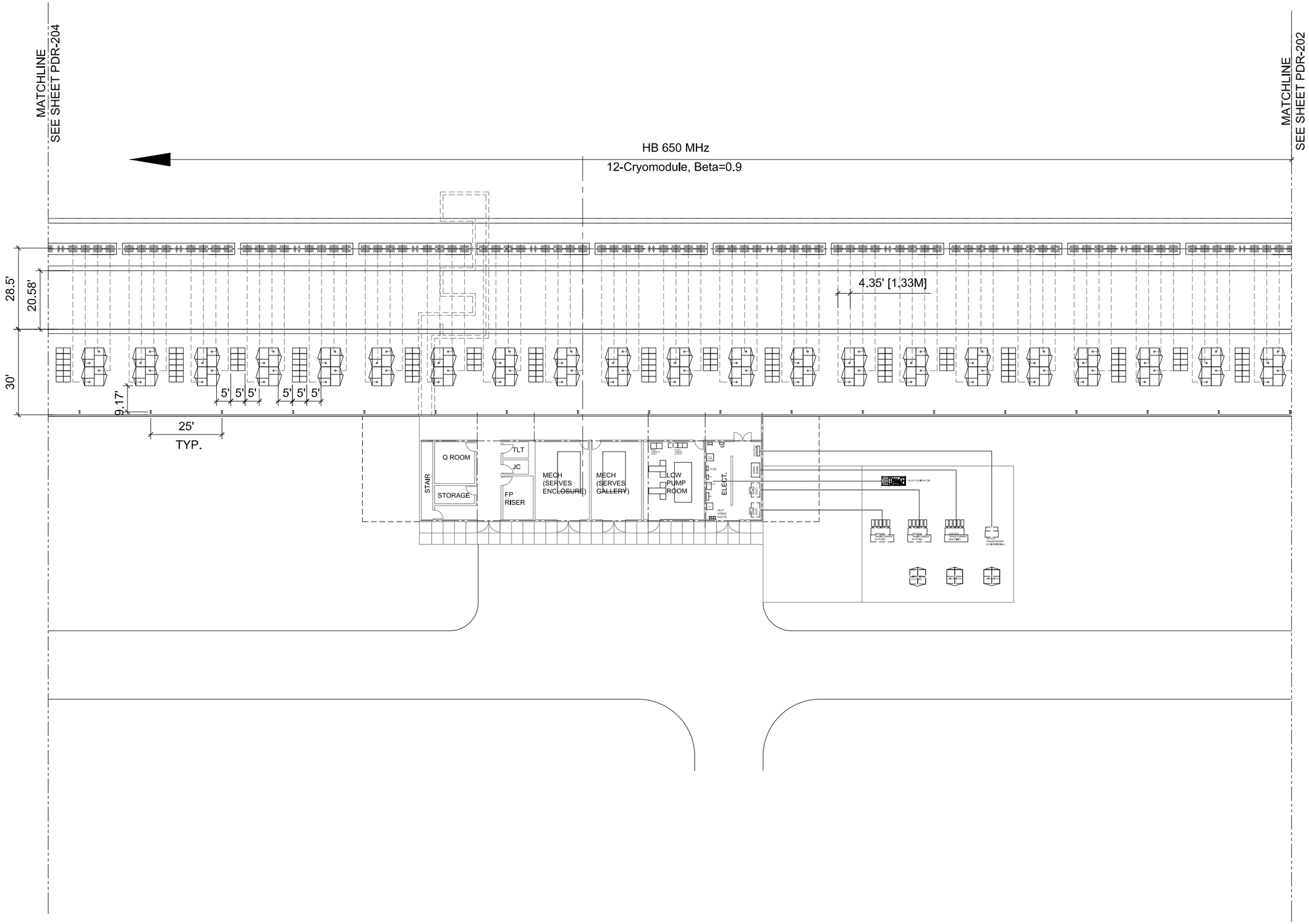
JULY 2010

PROJECT NO.

4-2-1

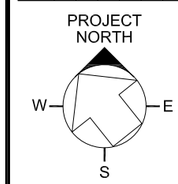
DRAWING NO.

PDR-202



Project X

SCALE:



PROJECT X CONVENTIONAL FACILITIES

3 GeV LINAC GALLERY PLAN

PDR

Fermilab

U.S. DEPARTMENT OF ENERGY

DATE

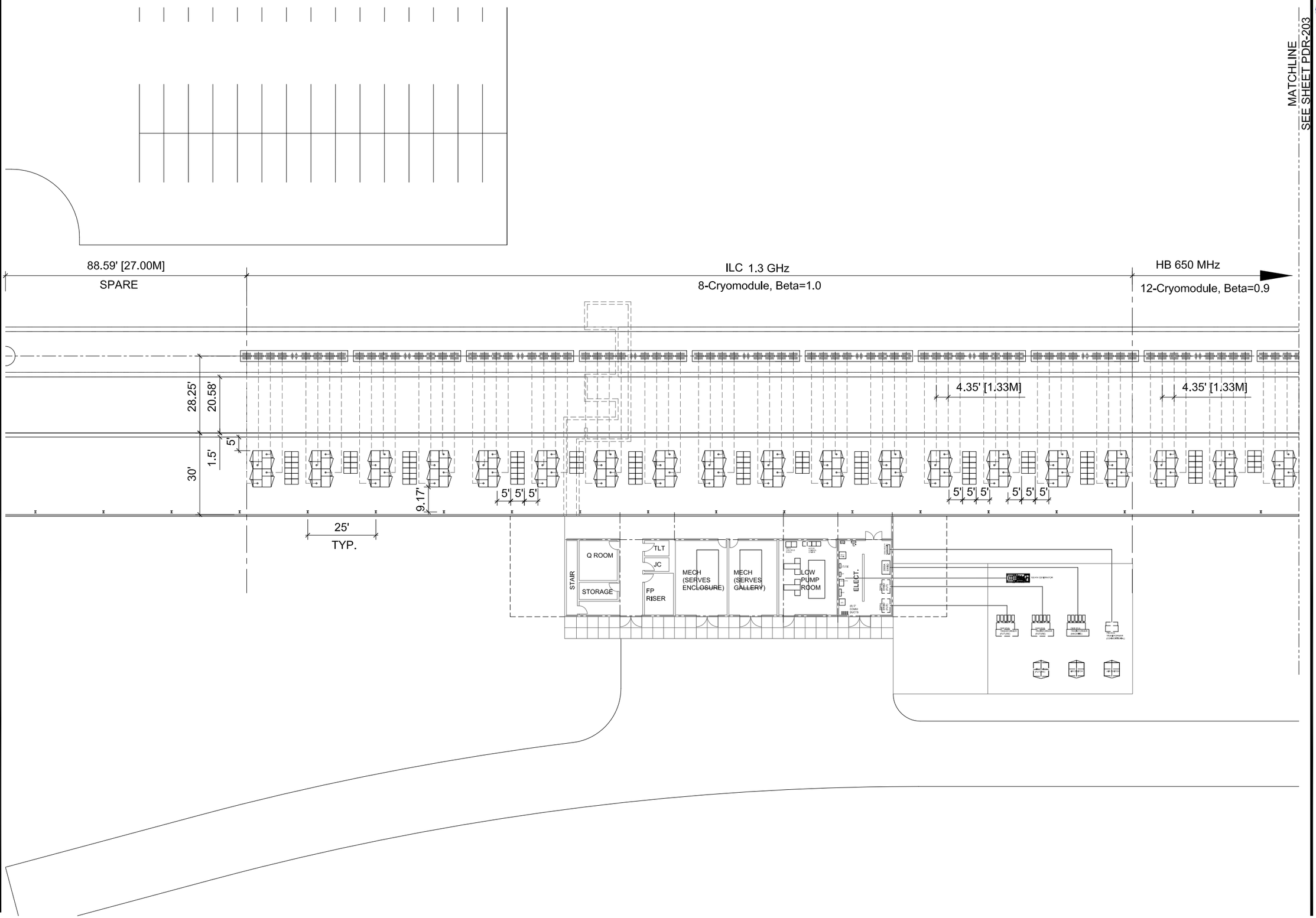
JULY 2010

PROJECT NO.

4-2-1

DRAWING NO.

PDR-203



Project X

SCALE:

1/16"=1'-0"

16 0 16 32 FEET

PROJECT NORTH

W E S

PROJECT X CONVENTIONAL FACILITIES

3 GeV LINAC GALLERY PLAN

PDR

Fermilab

U.S. DEPARTMENT OF ENERGY

DATE

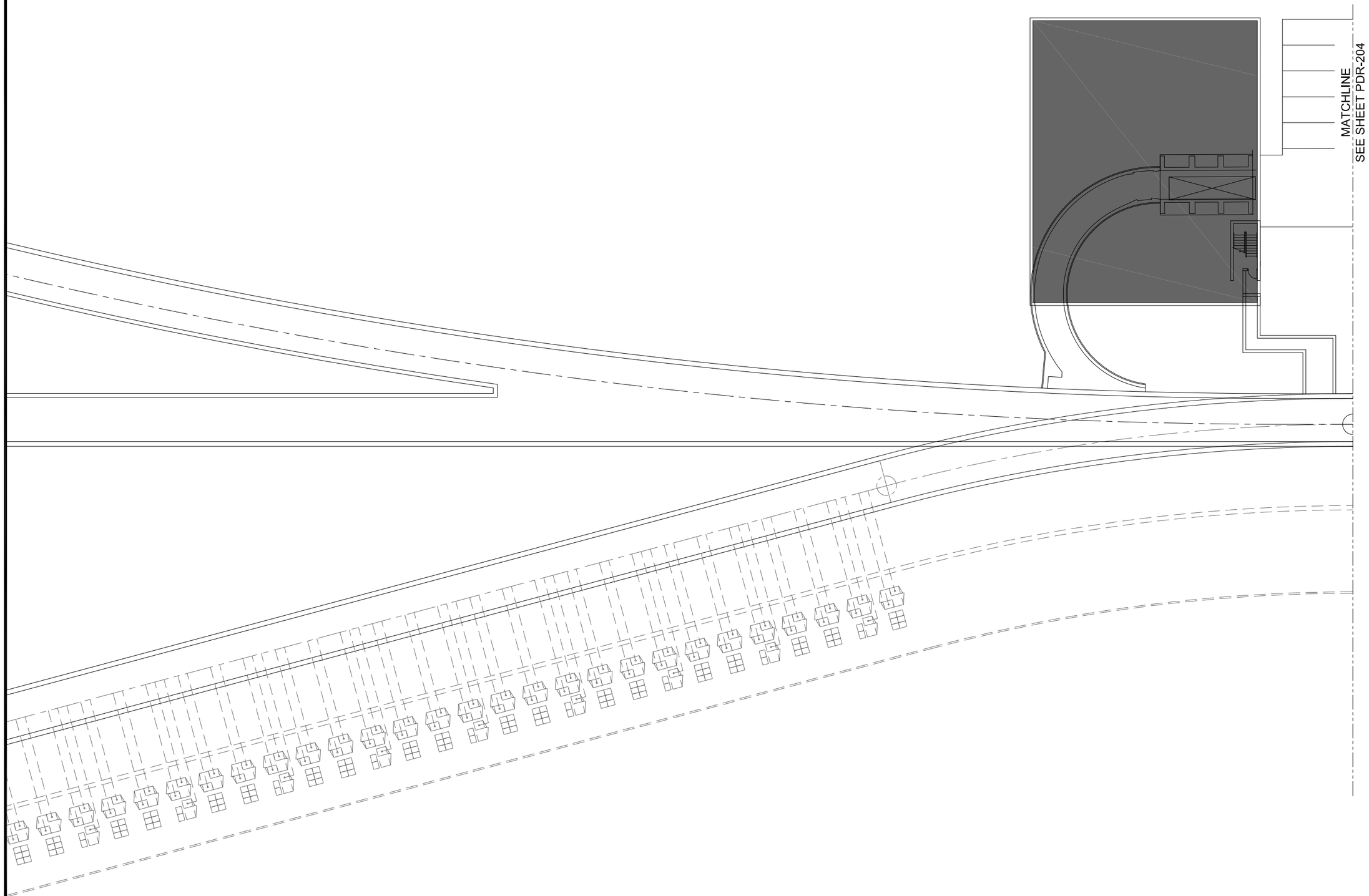
JULY 2010

PROJECT NO.

4-2-1

DRAWING NO.

PDR-204



Project X

SCALE:

1/16"=1'-0"

16 0 16 32

SCALE FEET

PROJECT NORTH

W E S

PROJECT X
CONVENTIONAL FACILITIES

2 GeV LINAC GALLERY PLAN

PDR

Fermilab

U.S. DEPARTMENT OF ENERGY

DATE

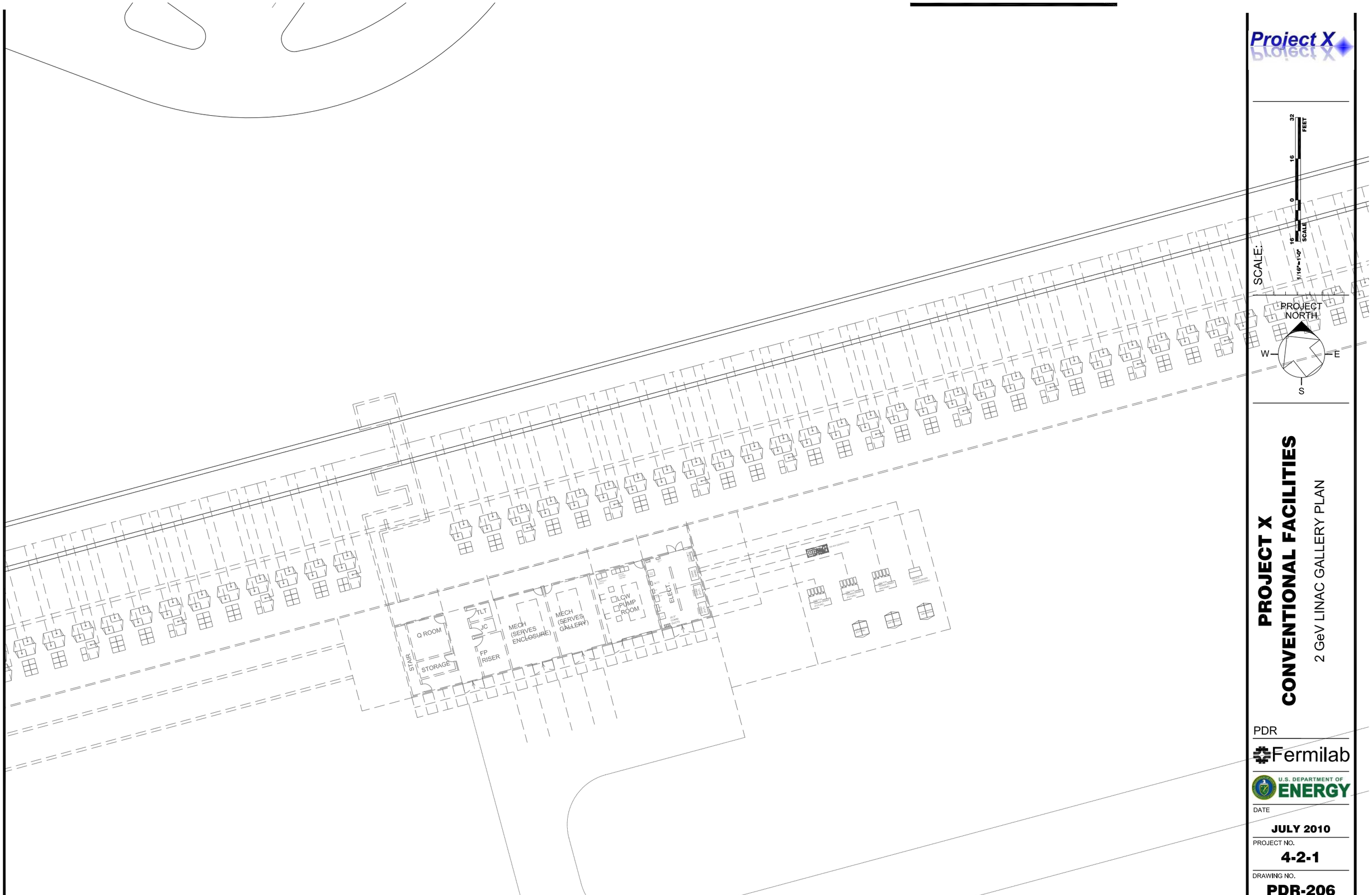
JULY 2010

PROJECT NO.

4-2-1

DRAWING NO.

PDR-205



Jul 27, 2010 - 10:56am M:\Active Projects\4\2\1\PDR Drawings\200\PDR-206.dwg

Project X

PROJECT X
CONVENTIONAL FACILITIES

2 GeV LINAC GALLERY PLAN

PDR

Fermilab

U.S. DEPARTMENT OF ENERGY

DATE

JULY 2010

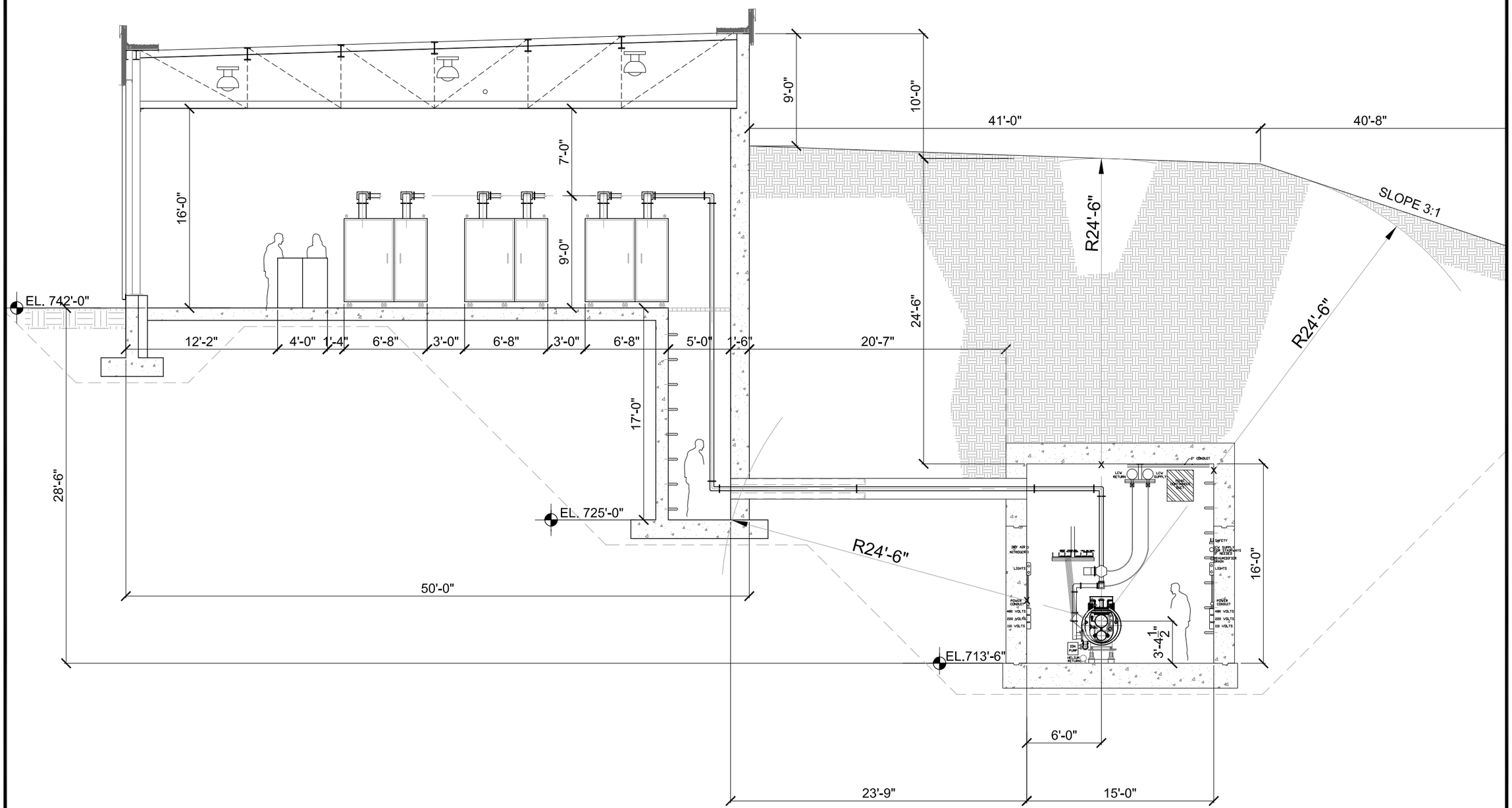
PROJECT NO.

4-2-1

DRAWING NO.

PDR-206

SECTION A



Project X

SCALE:

1/16"=1'-0"

16 0 16 32 FEET SCALE

PROJECT NORTH

W E S

PROJECT X
CONVENTIONAL FACILITIES
SECTION A

PDR

Fermilab

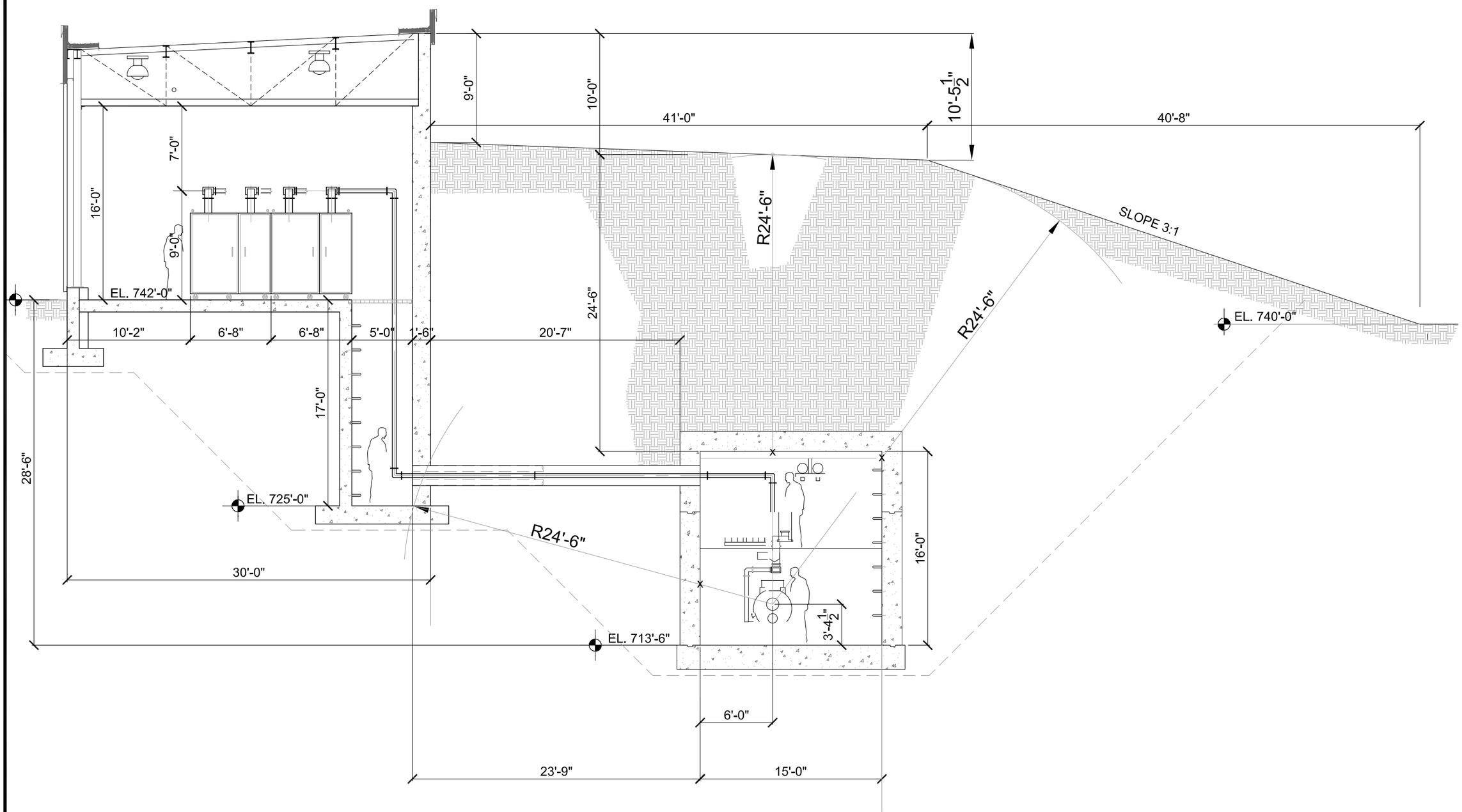
U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-207

SECTION B



Project X

SCALE:

32 16 0 16 FEET
1/16"=1'-0" SCALE

PROJECT NORTH
W E S

PROJECT X
CONVENTIONAL FACILITIES
SECTION B

PDR

Fermilab

U.S. DEPARTMENT OF ENERGY

DATE
JULY 2010

PROJECT NO.
4-2-1

DRAWING NO.
PDR-208