



SURVEY POINTS FOR PROTON BEAM ENCLOSURES

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In the following, we define locations within the enclosures. These will usually be at locations that are 1' 3" from the east or west walls, or 2' from the north or south ends of the tunnels. Also, a location is specified at all "break points" in the tunnels (that is, where the tunnel bends slightly), or, at "step" points when the tunnel width changes.

These locations are given names and coordinates. The coordinates may be adjusted slightly later, but the names, and the description of the location, will remain the same.

The naming scheme is as follows:

<u>ENCLOSURE</u>	<u>POINT NAME</u>	<u>NO. OF POINTS</u>
B	Boston 1 to Boston 5	5
C	Cleveland 1 to Cleveland 14	14
D	Denver 1 to Denver 6	6
E	Elmira 1 and Elmira 2	2
G Manholes	Grand Central 1 to Grand Central 6	6
F Manholes	Fargo 1 to Fargo 6	6

I. Enclosure B

<u>SURVEY POINT NAME</u>	<u>X</u>	<u>Y</u>	<u>DESCRIPTION OF LOCATION</u>
Boston 1	100,000.67	100,371.28	2' N of S end, 1.25' E of W wall.
Boston 2	100,000.67	100.405.00	1.25' E of W wall at extractor bend center.
Boston 3	100,000.67	100,560.00	1.25' E of W wall at transition to 7' tunnel.



<u>SURVEY POINT NAME</u>	<u>X</u>	<u>Y</u>	<u>DESCRIPTION OF LOCATION</u>
Boston 4	100,000.67	100,680.00	1.25' E of W wall at transition to 10' tunnel.
Boston 5	100,000.67	100,788.00	2' S of N end 1.25' E of W wall.
II Enclosure C			
Cleveland 1	100,000.67	100,962.00	2' N of S end 1.25' E of W wall.
Cleveland 2	100,016.83	100,962.00	In quad pit attached to C 2' N of S end, 1.25' W of east wall.
Cleveland 3	100,017.43	100, 978.00	Quad pit attached to C 2' S of N end, 1.25' W of east wall.
Cleveland 4	100,000.67	101,020.00	1.25' E of W wall. At break in wall.
Cleveland 5	99,999.62	101,145.00	1.25' E of W wall. At break in wall, and transition to 8' tunnel.
Cleveland 6	100,000.67	101,258.00	2' S of notch in middle of C.
Cleveland 7	99,994.62	101,260.00	1.25' E of W wall. At break in wall, and return to 5' tunnel.
Cleveland 8	99,988.75	101,350.00	1.25' E of W wall, at break in wall.
Cleveland 9	99,975.81	101,500.00	1.25' E of W wall, no break in wall.
Cleveland 10	99,964.60	101,630.00	1.25' E of W wall, at location of south wall access to G1 and E.
Cleveland 11	99,954.25	101,750.00	1.25' E of W wall, at break in wall.
Cleveland 12	99,943.23	101,852.00	1.25' E of W wall, at break in wall.

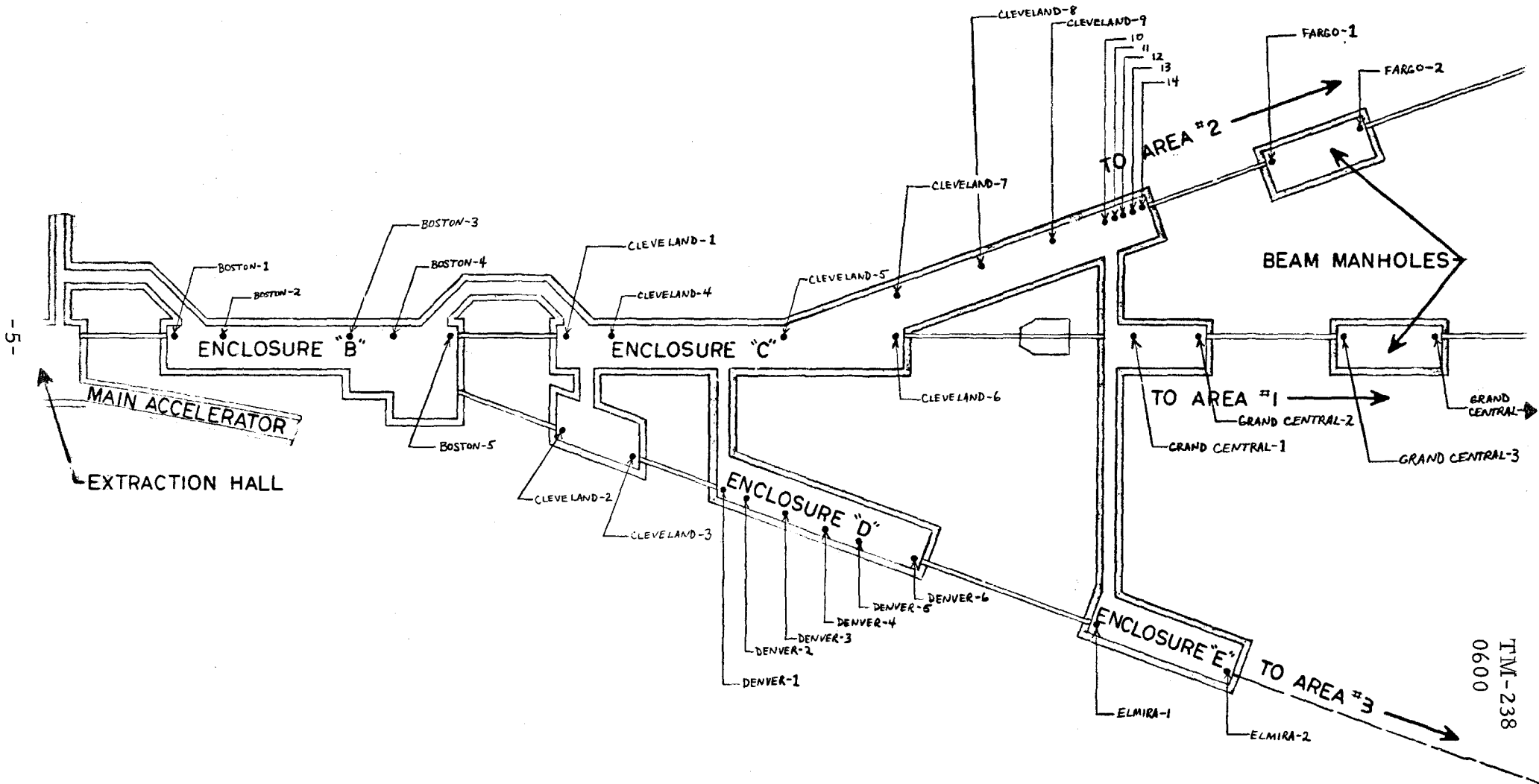
<u>SURVEY POINT NAME</u>	<u>X</u>	<u>Y</u>	<u>DESCRIPTION OF LOCATION</u>
Cleveland 13	99,920.89	102,000.00	1.25' E of W wall, at break in wall.
Cleveland 14	99,912.89	102,048.00	2' S of N end. 1.25' E of W wall.
III Endlosure D			
Denver 1	100,024.87	101,127.00	2' N of S end 1.25' W of E wall.
Denver 2	100,026.01	101,150.00	1.25' W of E wall At break in wall.
Denver 3	100,029.50	101,215.00	1.25' W of E wall At break in wall.
Denver 4	100,038.32	101,335.00	1.25' W of E wall At break in wall.
Denver 5	100,049.35	101,450.00	1.25' W of E wall At break in wall
Denver 6	100,054.05	101,498.00	2' S of N end. 1.25' W of E wall.
IV Enclosure E			
Elmira 1	100,067.15	101,632.00	2' N of S end 1.25' W of E wall.
Elmira 2	100,073.59	101,698.00	2' S of temp. closure at 1700'. 1.25' W of E wall.
V Manholes G-1 to G-3			
Grand Central 1	100,000.67	101,650.00	Few feet N of stairs* to G-1.
Grand Central 2	100,000.67	101,705.50	2' S of N end of G-1.*
Grand Central 3	100,000.67	102,287.00	2' N of S end of G-2*.
Grand Central 4	100,000.67	102,343.00	2' S of N end of G-2*.
Grand Central 5	100,000.67	102,867.00	2' N of S end of G-3*.
Grand Central 6	100,000.67	102,923.00	2' S of N end of G-3*.

	<u>SURVEY POINT NAME</u>	<u>X</u>	<u>Y</u>	<u>DESCRIPTION OF LOCATION</u>
VI	Manholes F-1 to F-3			
	Fargo 1	99,851.31	102,418.00	2' N of S end of F-1.*
	Fargo 2	99,842.11	102,473.28	2' S of N end of F-1.*
	Fargo 3	99,764.86	102,937.36	2' N of S end of F-2.*
	Fargo 4	99,755.66	102,992.64	2' S of N end of F-2.*
	Fargo 5	99,678.41	103,456.72	2' N of S end of F-3.*
	Fargo 6	99,669.21	103,512.00	2' S of N end of F-3.*

*Location with respect to E or W walls not yet specified. Should be at 1.25' from wall opposite man access.

AIM POINTS

<u>DESCRIPTION</u>	<u>LOCATION</u>
Upbend Center for Beam Line G (Grand Central)	X = 100,000.67' Y = 101,200.00' Elev. = 725.17'
Downbend Center for Beam Line G (Grand Central)	X = 100,000.67' Y = 103,155.00' Elev. = 745.00'
Upbend Center for Beam Line F (Fargo)	X = 99,920.93' Y = 101,999.74' Elev. = 725.17'
Downbend Center for Beam Line F (Fargo)	X = 99,575.14' Y = 104,077.16' Elev. = 746.00'
Downstream End of Target Box for Target Area 2 (at end of Fargo Line)	X = 99,538.00' Y = 104,300.00' Elev. = 746.00'



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