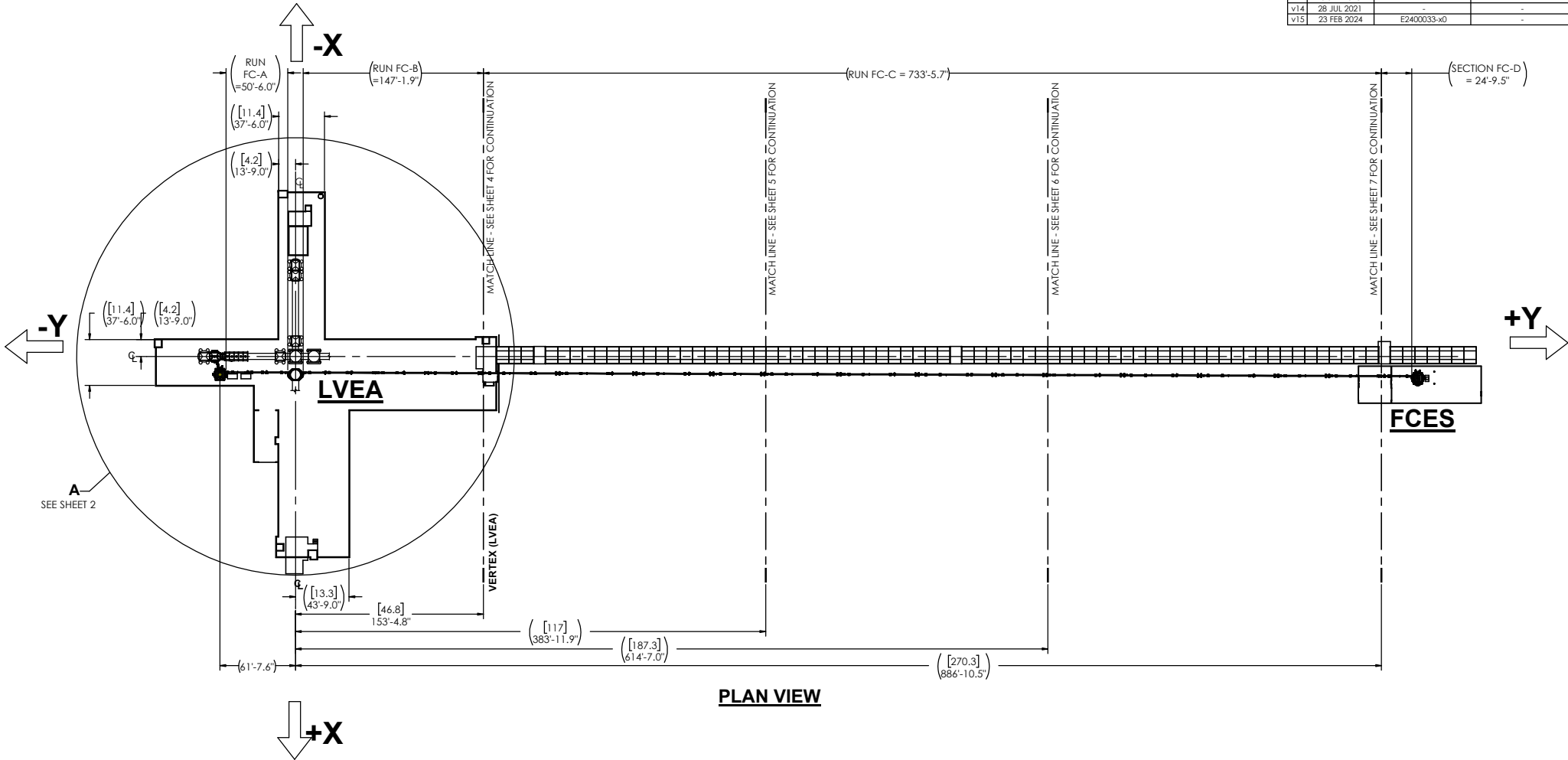
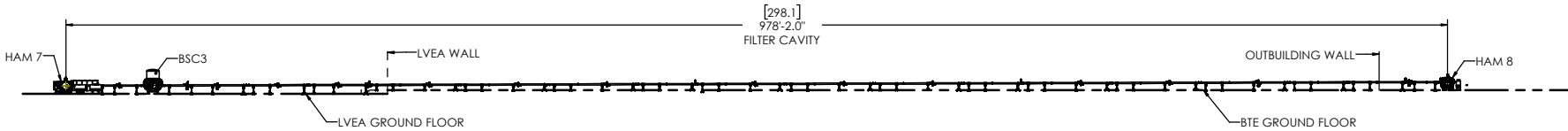


| REV. | DATE        | DCN #       | DRAWING TREE # |
|------|-------------|-------------|----------------|
| v1   | 5 SEP 2018  | -           | -              |
| v14  | 28 JUL 2021 | -           | -              |
| v15  | 23 FEB 2024 | E2400033-x0 | -              |



PLAN VIEW

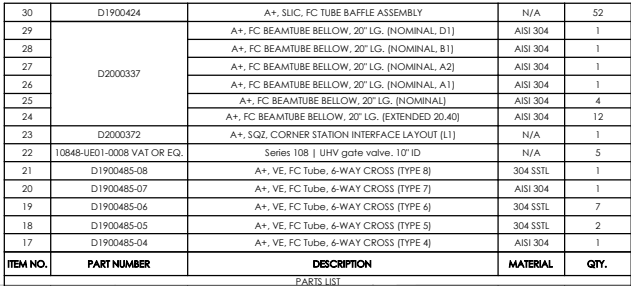


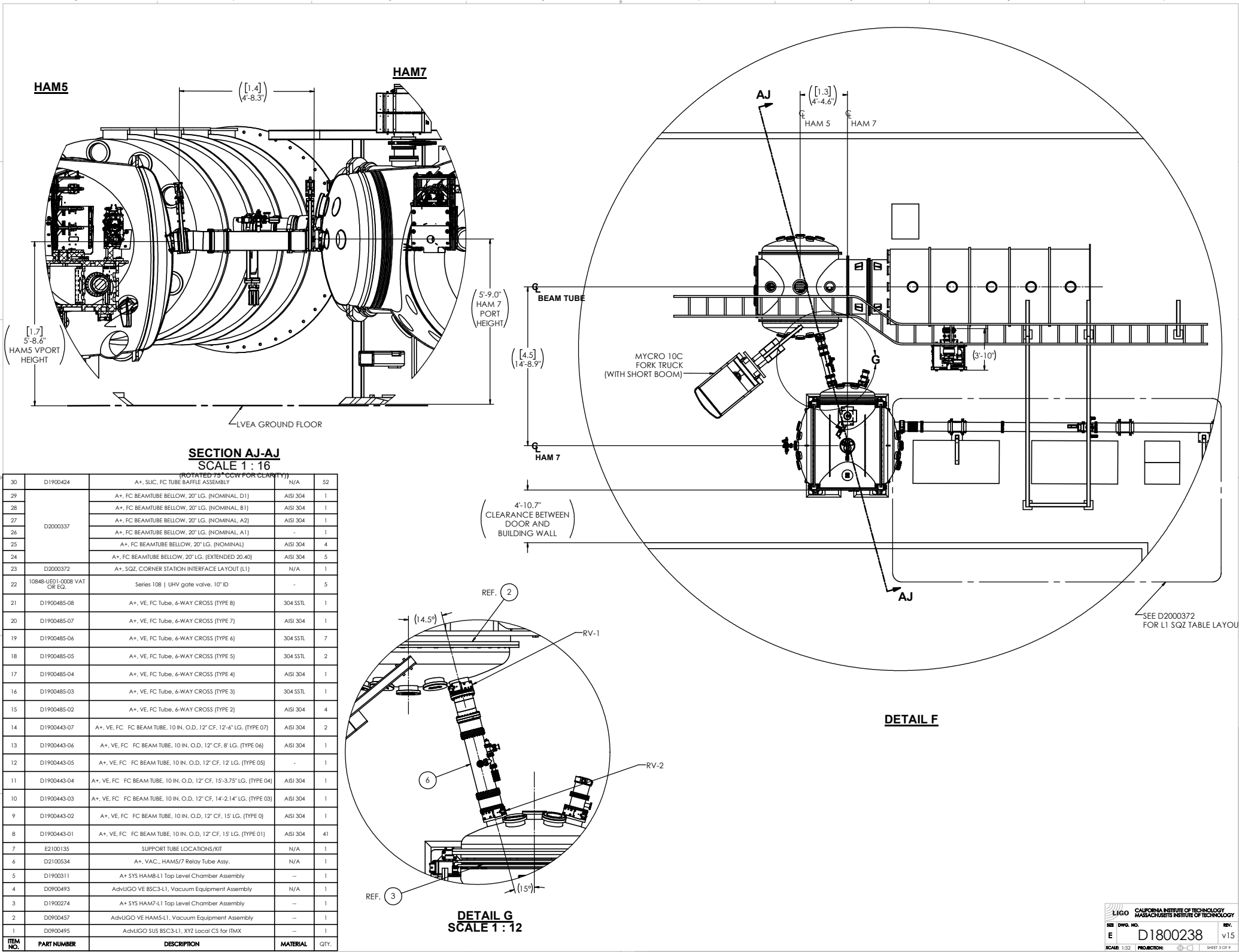
ELEVATION VIEW

(LVEA BUILDING, BTEs, AND OUTBUILDING, NOT SHOWN FOR CLARITY)

| TITLES AND REQUIREMENTS (ALL DIMENSIONS SPECIFIED) |  | LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY<br>MASSACHUSETTS INSTITUTE OF TECHNOLOGY |  | PART NAME                          |  |
|----------------------------------------------------|--|----------------------------------------------------------------------------------|--|------------------------------------|--|
| DIMENSIONS ARE IN INCHES (MM)                      |  | 1. INTERPRET DRAWING PER ASME Y14.5-1994.                                        |  | A+, Vacuum Equipment, L1, 300m FC. |  |
| MATERIAL                                           |  | N/A                                                                              |  | DESIGNER                           |  |
| FINISH                                             |  | N/A                                                                              |  | CHECKER                            |  |
| TEST ASBY                                          |  | D0901466                                                                         |  | APPROVAL                           |  |
|                                                    |  |                                                                                  |  | SCALE: 1:360                       |  |
|                                                    |  |                                                                                  |  | PROJECTION                         |  |
|                                                    |  |                                                                                  |  | SHEET 1 OF 9                       |  |

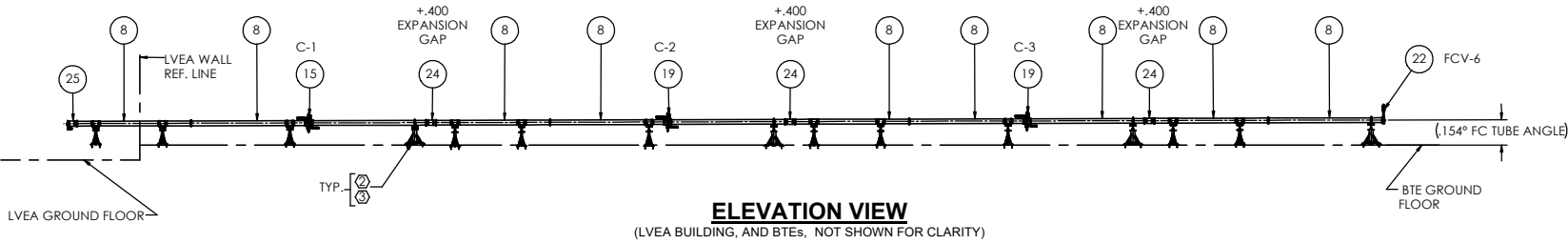
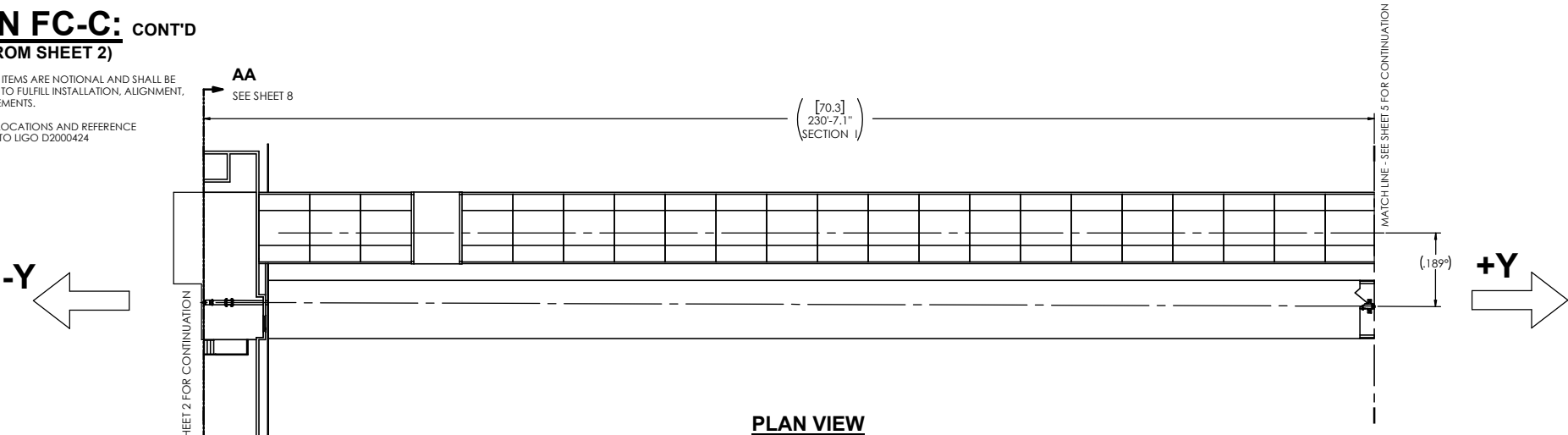
**3** FOR SUPPORT STAND LOCATIONS AND REFERENCE DESIGNATIONS REFER TO LIGO D2000424



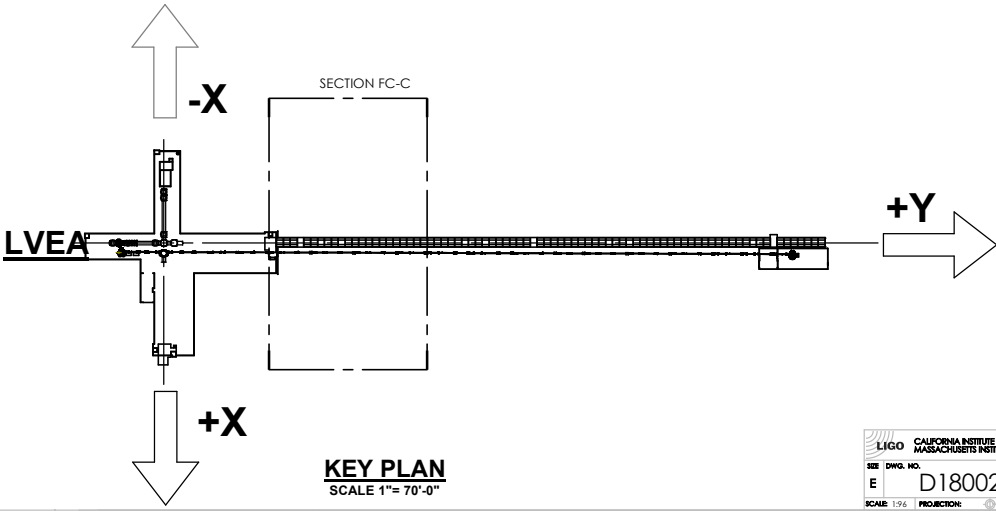


SECTION FC-C: CONT'D  
(CONTINUED FROM SHEET 2)

- ② HEIGHT OF INDICATED ITEMS ARE NOTIONAL AND SHALL BE PLACED AS REQUIRED TO FULFILL INSTALLATION, ALIGNMENT, AND ACCESS REQUIREMENTS.
- ③ FOR SUPPORT STAND LOCATIONS AND REFERENCE DESIGNATIONS REFER TO LIGO D2000424

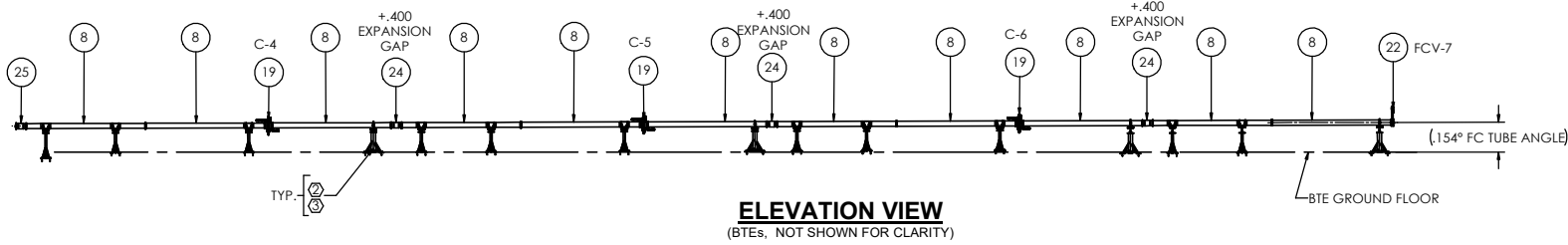
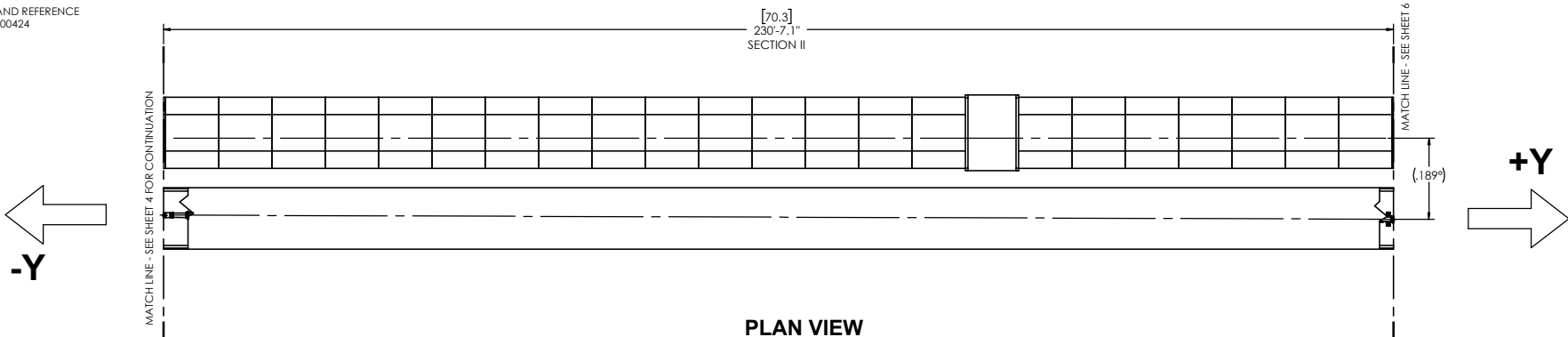


|          |                            |                                                                       |          |      |
|----------|----------------------------|-----------------------------------------------------------------------|----------|------|
| 30       | D1900424                   | A+, SLIC, FC TUBE BAFFLE ASSEMBLY                                     | N/A      | 52   |
| 29       | D2000337                   | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL D1)                          | 304 S3TL | 1    |
| 28       |                            | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL B1)                          | 304 S3TL | 1    |
| 27       |                            | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL A2)                          | 304 S3TL | 1    |
| 26       |                            | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL A1)                          | 304 S3TL | 1    |
| 25       |                            | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL)                             | 304 S3TL | 4    |
| 24       |                            | A+, FC BEAMTUBE BELLOW, 20" LG. (EXTENDED 20.40)                      | 304 S3TL | 12   |
| 23       | D2000372                   | A+, SQL, CORNER STATION INTERFACE LAYOUT (L1)                         | N/A      | 1    |
| 22       | 10848-UB01-0008 VAI OR EQ. | Series 108   UHV gate valve, 10" ID                                   | -        | 5    |
| 21       | D1900485-08                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 8)                                 | 304 S3TL | 1    |
| 20       | D1900485-07                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 7)                                 | 304 S3TL | 1    |
| 19       | D1900485-06                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 6)                                 | 304 S3TL | 7    |
| 18       | D1900485-05                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 5)                                 | 304 S3TL | 2    |
| 17       | D1900485-04                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 4)                                 | 304 S3TL | 1    |
| 16       | D1900485-03                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 3)                                 | 304 S3TL | 1    |
| 15       | D1900485-02                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 2)                                 | 304 S3TL | 4    |
| 14       | D1900443-07                | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 12'-6" LG. (TYPE 07)    | 304 S3TL | 2    |
| 13       | D1900443-06                | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 8" LG. (TYPE 06)        | 304 S3TL | 1    |
| 12       | D1900443-05                | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 12" LG. (TYPE 05)       | 304 S3TL | 1    |
| 11       | D1900443-04                | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 15'-3.75" LG. (TYPE 04) | 304 S3TL | 1    |
| 10       | D1900443-03                | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 14'-2.14" LG. (TYPE 03) | 304 S3TL | 1    |
| 9        | D1900443-02                | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 15" LG. (TYPE 02)       | 304 S3TL | 1    |
| 8        | D1900443-01                | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 15" LG. (TYPE 01)       | 304 S3TL | 41   |
| 7        | E2100135                   | SUPPORT TUBE LOCATIONS/KIT                                            | N/A      | A/R  |
| 6        | D2100534                   | A+, VAC., HAM5/7 Relay Tube Assy.                                     | N/A      | 1    |
| 5        | D1900311                   | A+ SYS HAM8-L1 Top Level Chamber Assembly                             | -        | 1    |
| 4        | D0900493                   | AdvUGO VE BSC3-L1, Vacuum Equipment Assembly                          | N/A      | 1    |
| 3        | D1900274                   | A+ SYS HAM7-L1 Top Level Chamber Assembly                             | -        | 1    |
| 2        | D0900457                   | AdvUGO VE HAM5-L1, Vacuum Equipment Assembly                          | -        | 1    |
| 1        | D0900495                   | AdvUGO SUS BSC3-L1, XYZ Local CS for ITMX                             | -        | 1    |
| ITEM NO. | PART NUMBER                | DESCRIPTION                                                           | MATERIAL | QTY. |

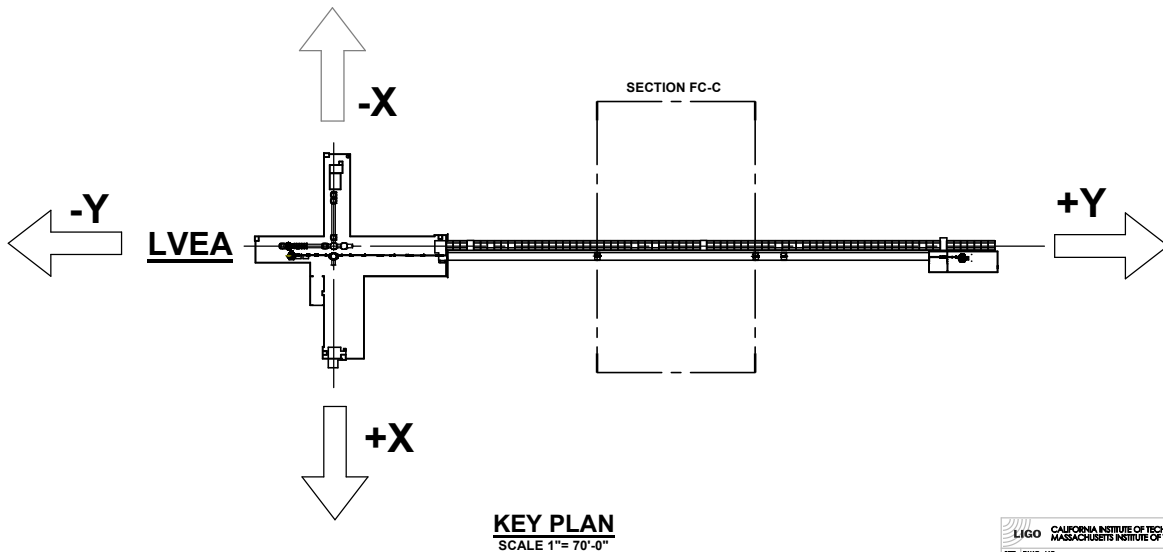


SECTION FC-C: CONT'D  
(CONTINUED FROM PREVIOUS SHEET)

- ② HEIGHT OF INDICATED ITEMS ARE NOTIONAL AND SHALL BE PLACED AS REQUIRED TO FULFILL INSTALLATION, ALIGNMENT, AND ACCESS REQUIREMENTS.
- ③ FOR SUPPORT STAND LOCATIONS AND REFERENCE DESIGNATIONS REFER TO LIGO D2000424

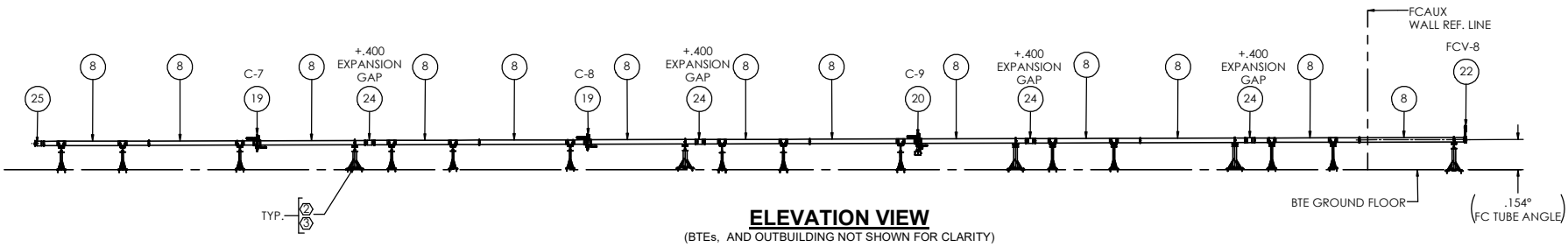
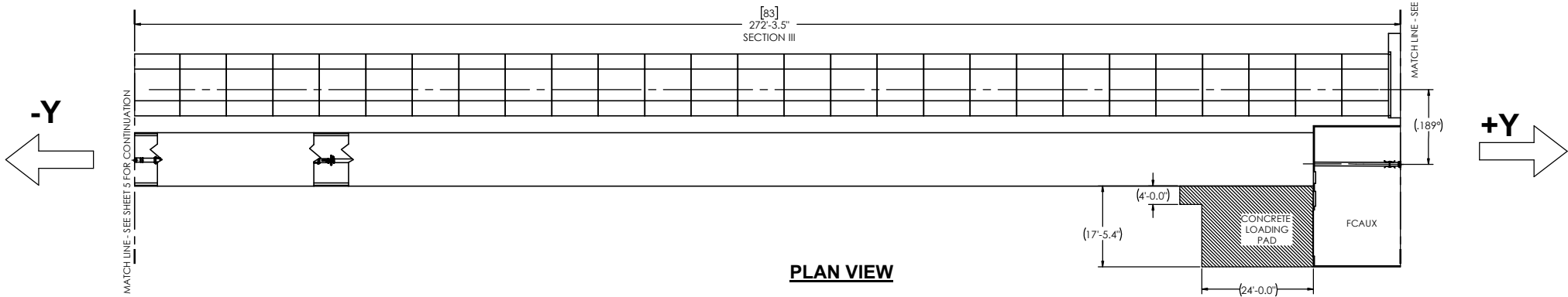


|          |                           |                                                                       |           |      |
|----------|---------------------------|-----------------------------------------------------------------------|-----------|------|
| 30       | D1900424                  | A+, SLIC, FC TUBE BAFFLE ASSEMBLY                                     | N/A       | 52   |
| 29       | D2000337                  | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL, D1)                         | 304 SS316 | 1    |
| 28       |                           | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL, B1)                         | 304 SS316 | 1    |
| 27       |                           | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL, A2)                         | 304 SS316 | 1    |
| 26       |                           | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL, A1)                         | -         | 1    |
| 25       |                           | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL)                             | 304 SS316 | 4    |
| 24       |                           | A+, FC BEAMTUBE BELLOW, 20" LG. (EXTENDED 30.4)                       | 304 SS316 | 5    |
| 23       | D2000373                  | A+, SGT, CORNER STATION INTERFACE LAYOUT (L1)                         | N/A       | 1    |
| 22       | 10848-1001-2008 VAI OR EQ | Series 108   UHV gate valve, 10" ID                                   | -         | 5    |
| 21       | D1900485-08               | A+, VE, FC Tube, 6-WAY CROSS (TYPE 8)                                 | 304 SS316 | 1    |
| 20       | D1900485-07               | A+, VE, FC Tube, 6-WAY CROSS (TYPE 7)                                 | 304 SS316 | 1    |
| 19       | D1900485-06               | A+, VE, FC Tube, 6-WAY CROSS (TYPE 6)                                 | 304 SS316 | 7    |
| 18       | D1900485-05               | A+, VE, FC Tube, 6-WAY CROSS (TYPE 5)                                 | 304 SS316 | 2    |
| 17       | D1900485-04               | A+, VE, FC Tube, 6-WAY CROSS (TYPE 4)                                 | 304 SS316 | 1    |
| 16       | D1900485-03               | A+, VE, FC Tube, 6-WAY CROSS (TYPE 3)                                 | 304 SS316 | 1    |
| 15       | D1900485-02               | A+, VE, FC Tube, 6-WAY CROSS (TYPE 2)                                 | 304 SS316 | 4    |
| 14       | D1900443-07               | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 12'-6" LG. (TYPE 07)    | 304 SS316 | 2    |
| 13       | D1900443-06               | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 8' LG. (TYPE 06)        | 304 SS316 | 1    |
| 12       | D1900443-05               | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 12' LG. (TYPE 05)       | -         | 1    |
| 11       | D1900443-04               | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 15'-3.75" LG. (TYPE 04) | 304 SS316 | 1    |
| 10       | D1900443-03               | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 14'-2.14" LG. (TYPE 03) | 304 SS316 | 1    |
| 9        | D1900443-02               | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 15' LG. (TYPE 02)       | 304 SS316 | 1    |
| 8        | D1900443-01               | A+, VE, FC FC BEAM TUBE, 10 IN. O.D., 12" CF, 15' LG. (TYPE 01)       | 304 SS316 | 41   |
| 7        | E2100135                  | SUPPORT TUBE LOCATIONS/KIT                                            | N/A       | 1    |
| 6        | D2100534                  | A+, VAC., HAMS/7 Relay Tube Assy.                                     | N/A       | 1    |
| 5        | D1900311                  | A+ SYS HAMB-L1 Top Level Chamber Assembly                             | -         | 1    |
| 4        | D0900493                  | AdvLIGO VE BSC3-L1, Vacuum Equipment Assembly                         | N/A       | 1    |
| 3        | D1900274                  | A+ SYS HAM7-L1 Top Level Chamber Assembly                             | -         | 1    |
| 2        | D0900457                  | AdvLIGO VE HAM5-L1, Vacuum Equipment Assembly                         | -         | 1    |
| 1        | D0900495                  | AdvLIGO SUS BSC3-L1, XYZ Local CS for ITMX                            | -         | 1    |
| ITEM NO. | PART NUMBER               | DESCRIPTION                                                           | MATERIAL  | QTY. |

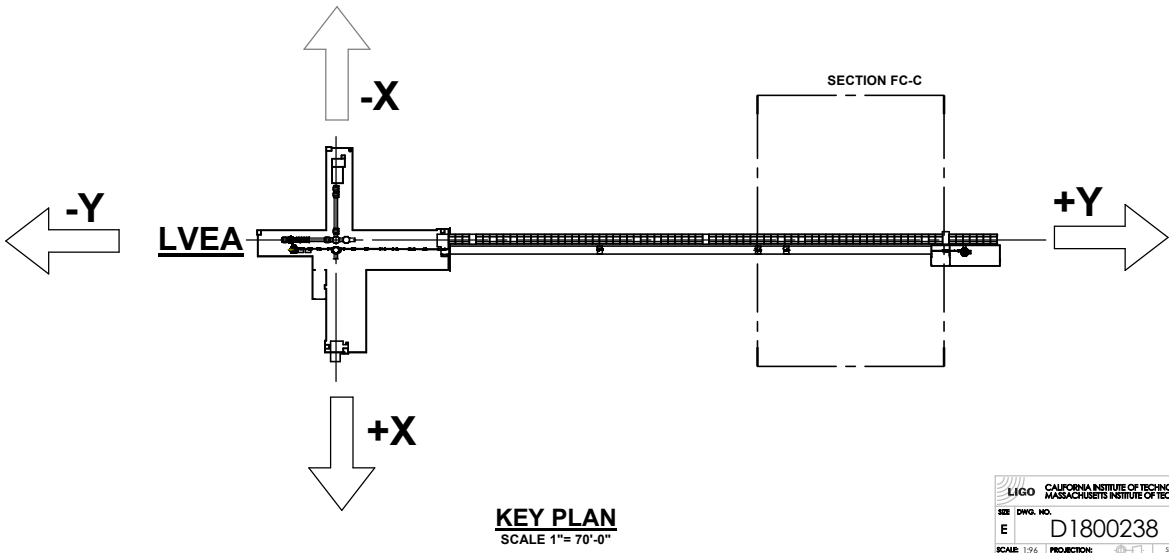


SECTION FC-C: CONT'D  
(CONTINUED FROM PREVIOUS SHEET)

- ② HEIGHT OF INDICATED ITEMS ARE NOTIONAL AND SHALL BE PLACED AS REQUIRED TO FULFILL INSTALLATION, ALIGNMENT, AND ACCESS REQUIREMENTS.
- ③ FOR SUPPORT STAND LOCATIONS AND REFERENCE DESIGNATIONS REFER TO LIGO D2000424



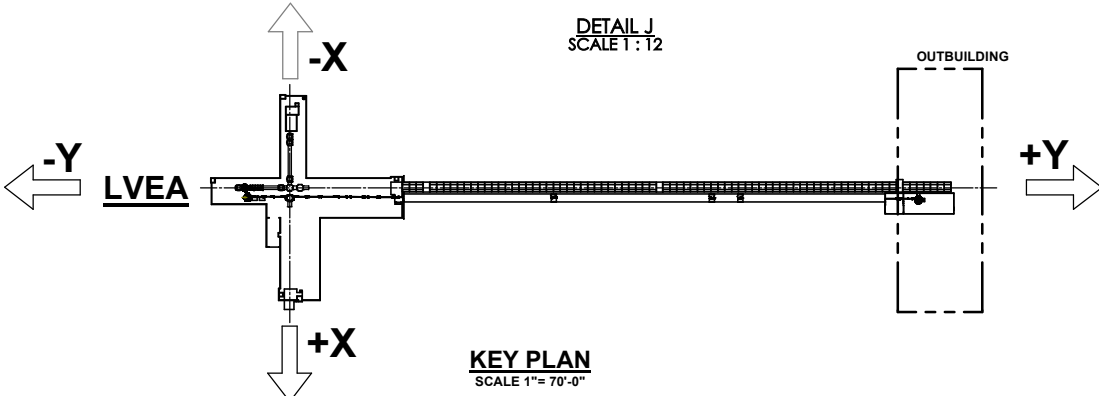
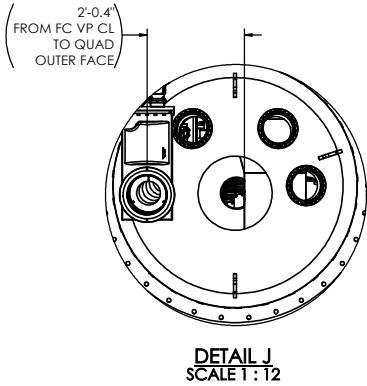
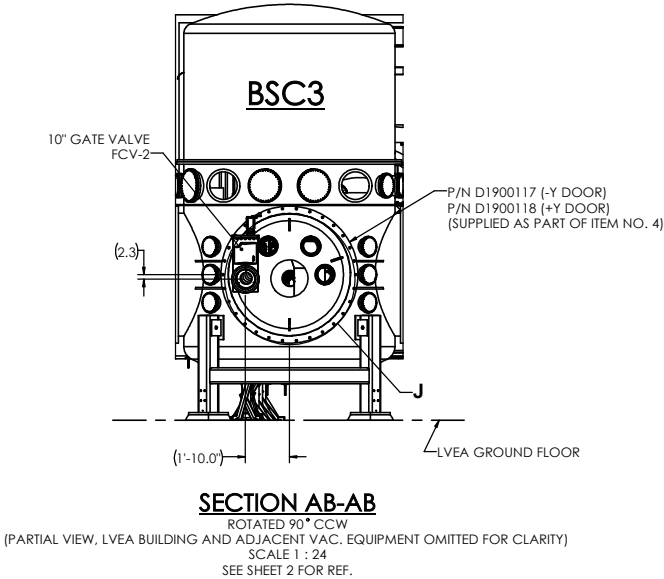
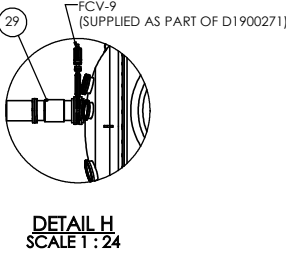
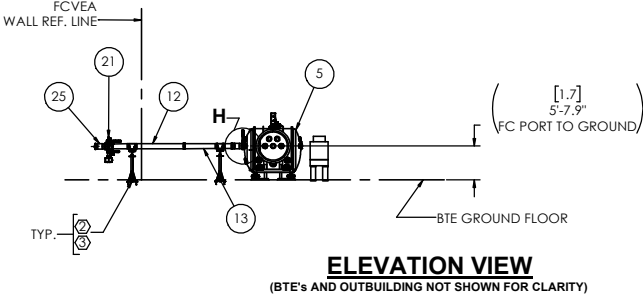
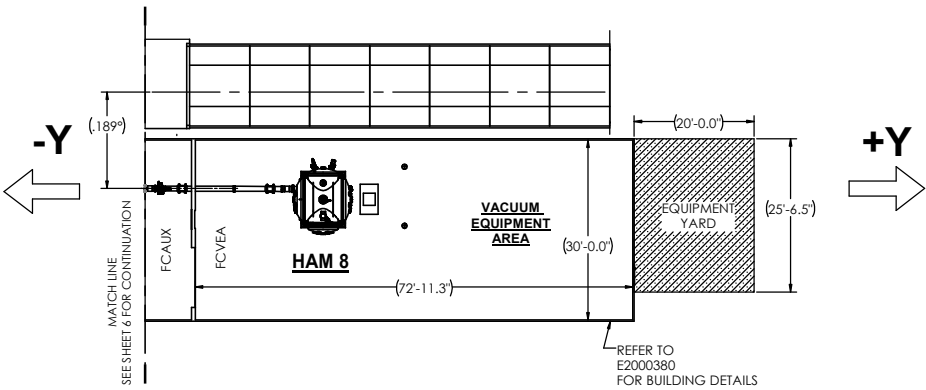
|          |                            |                                                                        |          |      |
|----------|----------------------------|------------------------------------------------------------------------|----------|------|
| 30       | D1900424                   | A+, SLIC, FC TUBE BAFFLE ASSEMBLY                                      | N/A      | 52   |
| 29       | D2000337                   | A+, FC BEAMTUBE BELOW, 20' LG. (NOMINAL, D1)                           | ASI 304  | 1    |
| 28       |                            | A+, FC BEAMTUBE BELOW, 20' LG. (NOMINAL, B1)                           | ASI 304  | 1    |
| 27       |                            | A+, FC BEAMTUBE BELOW, 20' LG. (NOMINAL, A2)                           | ASI 304  | 1    |
| 26       |                            | A+, FC BEAMTUBE BELOW, 20' LG. (NOMINAL, A1)                           | -        | 1    |
| 25       |                            | A+, FC BEAMTUBE BELOW, 20' LG. (NOMINAL)                               | ASI 304  | 4    |
| 24       |                            | A+, FC BEAMTUBE BELOW, 20' LG. (EXTENDED 20.40)                        | ASI 304  | 12   |
| 23       | D2000372                   | A+, SQZ, CORNER STATION INTERFACE LAYOUT (L1)                          | N/A      | 1    |
| 22       | 10848-10E1-3008 VAT OR EQ. | Series 108   UHV gate valve, 10" ID                                    | -        | 5    |
| 21       | D1900485-08                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 8)                                  | 304 SS1L | 1    |
| 20       | D1900485-07                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 7)                                  | ASI 304  | 1    |
| 19       | D1900485-06                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 6)                                  | 304 SS1L | 7    |
| 18       | D1900485-05                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 5)                                  | 304 SS1L | 2    |
| 17       | D1900485-04                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 4)                                  | ASI 304  | 1    |
| 16       | D1900485-03                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 3)                                  | 304 SS1L | 1    |
| 15       | D1900485-02                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 2)                                  | ASI 304  | 4    |
| 14       | D1900443-07                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D., 12" CF, 12'-6" LG. (TYPE 07)    | -        | 2    |
| 13       | D1900443-06                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D., 12" CF, 8' LG. (TYPE 06)        | ASI 304  | 1    |
| 12       | D1900443-05                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D., 12" CF, 12' LG. (TYPE 05)       | -        | 1    |
| 11       | D1900443-04                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D., 12" CF, 15'-3.75" LG. (TYPE 04) | ASI 304  | 1    |
| 10       | D1900443-03                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D., 12" CF, 14'-2.14" LG. (TYPE 03) | ASI 304  | 1    |
| 9        | D1900443-02                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D., 12" CF, 15' LG. (TYPE 02)       | ASI 304  | 1    |
| 8        | D1900443-01                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D., 12" CF, 15' LG. (TYPE 01)       | ASI 304  | 41   |
| 7        | E2100135                   | SUPPORT TUBE LOCATIONS/KIT                                             | N/A      | 1    |
| 6        | D2100534                   | A+, VAC., HAM5/7 Relay Tube Assy.                                      | N/A      | 1    |
| 5        | D1900311                   | A+ SYS HAM6-L1 Top Level Chamber Assembly                              | -        | 1    |
| 4        | D0903493                   | AdvLIGO VE BSC3-L1, Vacuum Equipment Assembly                          | N/A      | 1    |
| 3        | D1900274                   | A+ SYS HAM7-L1 Top Level Chamber Assembly                              | -        | 1    |
| 2        | D0900457                   | AdvLIGO VE HAM5-L1, Vacuum Equipment Assembly                          | -        | 1    |
| 1        | D0900495                   | AdvLIGO SUS BSC3-L1, XYZ Local CS for IMX                              | -        | 1    |
| ITEM NO. | PART NUMBER                | DESCRIPTION                                                            | MATERIAL | QTY. |



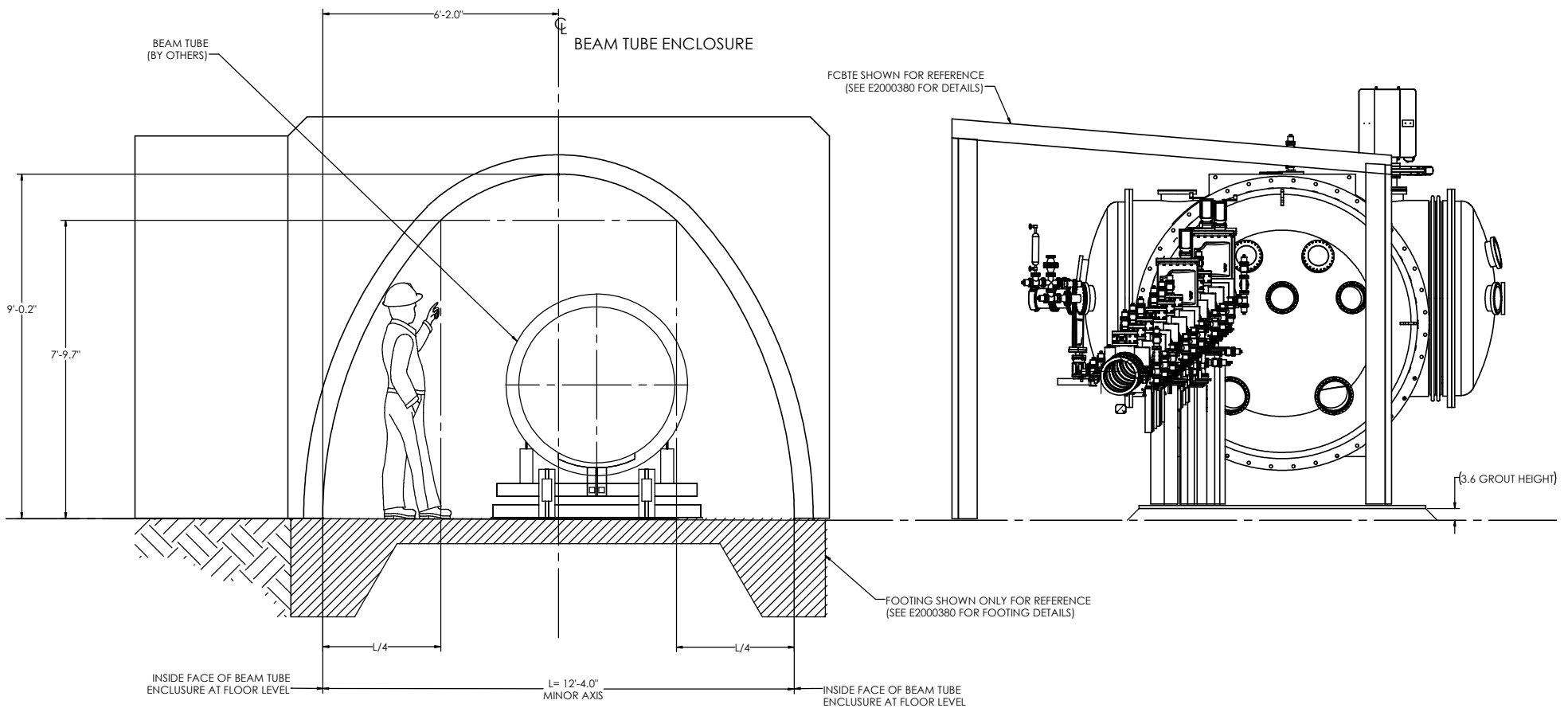
OUTBUILDING

NOTES CONTINUED:

- ② HEIGHT OF INDICATED ITEMS ARE NOTIONAL AND SHALL BE PLACED AS REQUIRED TO FULFILL INSTALLATION, ALIGNMENT, AND ACCESS REQUIREMENTS.
- ③ FOR SUPPORT STAND LOCATIONS AND REFERENCE DESIGNATIONS REFER TO LIGO D2000424



|          |                            |                                                                       |           |      |
|----------|----------------------------|-----------------------------------------------------------------------|-----------|------|
| 30       | D1900424                   | A+, SLIC, FC TUBE BAFFLE ASSEMBLY                                     | N/A       | S2   |
| 29       | D2000337                   | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL, D1)                         | 304 SS TL | 1    |
| 28       |                            | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL, B1)                         | 304 SS TL | 1    |
| 27       |                            | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL, A2)                         | 304 SS TL | 1    |
| 26       |                            | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL, A1)                         | -         | 1    |
| 25       |                            | A+, FC BEAMTUBE BELLOW, 20" LG. (NOMINAL)                             | 304 SS TL | 4    |
| 24       |                            | A+, FC BEAMTUBE BELLOW, 20" LG. (EXTENDED 20.40)                      | 304 SS TL | 12   |
| 23       | D2000372                   | A+, SQZ, CORNER STATION INTERFACE LAYOUT (L1)                         | N/A       | 1    |
| 22       | 10848-UE01-0008 VAC CR FLD | Series 108   UHV gate valve, 10" ID                                   | -         | 5    |
| 21       | D1900485-08                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 8)                                 | 304 SS TL | 1    |
| 20       | D1900485-07                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 7)                                 | 304 SS TL | 1    |
| 19       | D1900485-06                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 6)                                 | 304 SS TL | 7    |
| 18       | D1900485-05                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 5)                                 | 304 SS TL | 2    |
| 17       | D1900485-04                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 4)                                 | 304 SS TL | 1    |
| 16       | D1900485-03                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 3)                                 | 304 SS TL | 1    |
| 15       | D1900485-02                | A+, VE, FC Tube, 6-WAY CROSS (TYPE 2)                                 | 304 SS TL | 4    |
| 14       | D1900443-07                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D. 12" CF, 12'-6" LG. (TYPE D7)    | -         | 2    |
| 13       | D1900443-06                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D. 12" CF, 8' LG. (TYPE D6)        | 304 SS TL | 1    |
| 12       | D1900443-05                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D. 12" CF, 12' LG. (TYPE D5)       | -         | 1    |
| 11       | D1900443-04                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D. 12" CF, 15'-3.75" LG. (TYPE D4) | 304 SS TL | 1    |
| 10       | D1900443-03                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D. 12" CF, 14'-2.14" LG. (TYPE D3) | 304 SS TL | 1    |
| 9        | D1900443-02                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D. 12" CF, 15' LG. (TYPE D2)       | 304 SS TL | 1    |
| 8        | D1900443-01                | A+, VE, FC, FC BEAM TUBE, 10 IN. O.D. 12" CF, 15' LG. (TYPE D1)       | 304 SS TL | 41   |
| 7        | E2100135                   | SUPPORT TUBE LOCATIONS/KIT                                            | N/A       | 1    |
| 6        | D2100534                   | A+, VAC., HAM5/7 Relay Tube Assy.                                     | N/A       | 1    |
| 5        | D1900331                   | A+ SYS HAM8-L1 Top Level Chamber Assembly                             | -         | 1    |
| 4        | D0900493                   | AdvLIGO VE BSC3-L1, Vacuum Equipment Assembly                         | N/A       | 1    |
| 3        | D1900274                   | A+ SYS HAM7-L1 Top Level Chamber Assembly                             | -         | 1    |
| 2        | D0900457                   | AdvLIGO VE HAM5-L1, Vacuum Equipment Assembly                         | -         | 1    |
| 1        | D0900495                   | AdvLIGO SUS BSC3-L1, XYZ Local CS for IIMX                            | -         | 1    |
| ITEM NO. | PART NUMBER                | DESCRIPTION                                                           | MATERIAL  | QTY. |



**SECTION AA-AA**  
SCALE 1 : 12  
(OUTBUILDING, NOT SHOWN FOR CLARITY)  
SEE SHEET 4

6-WAY CROSSES: POSITIONS WRT X-AXIS

