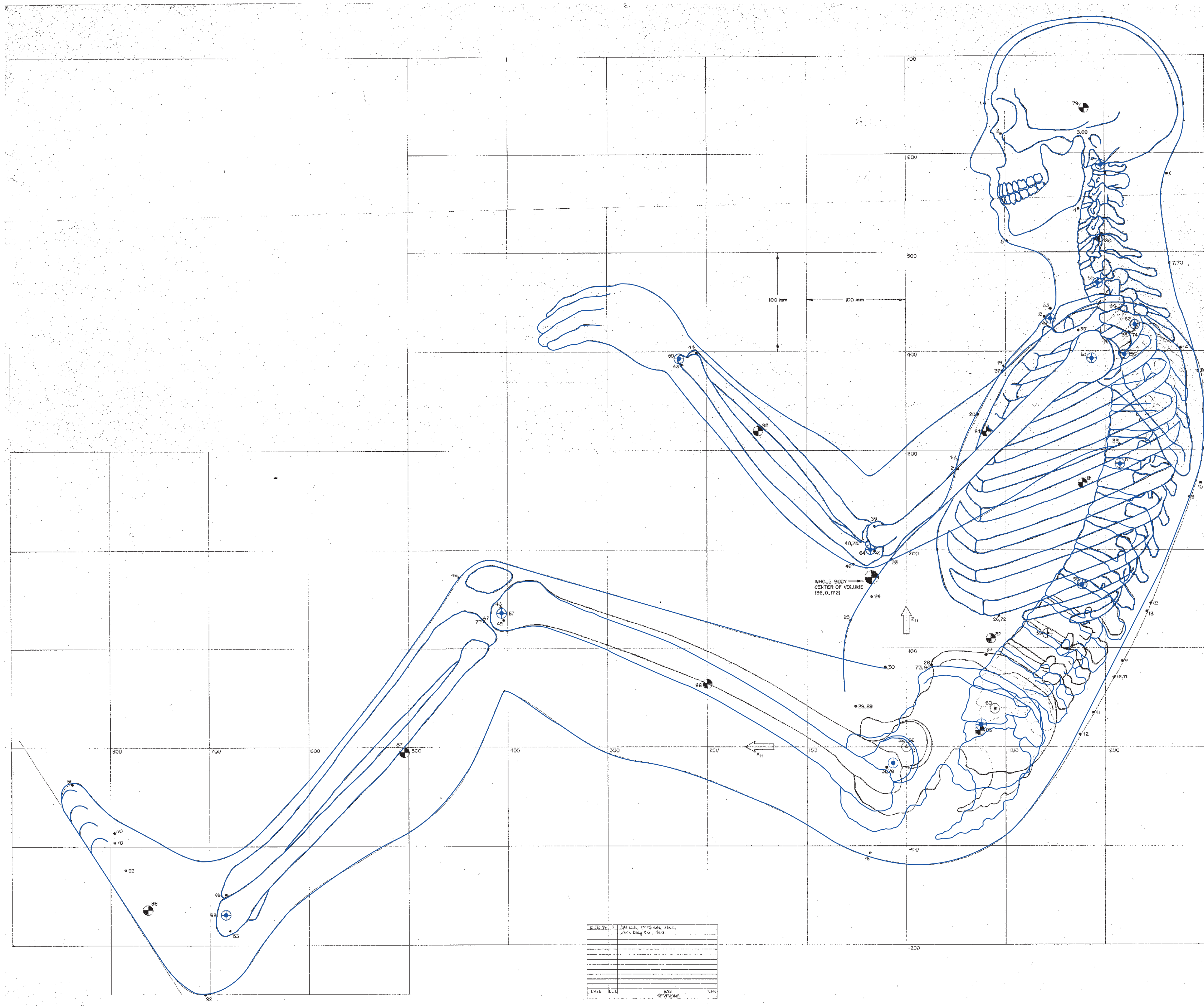

HEAD

1 GLABELLA (-80, 0, 661)
2 INFRAORBITALE (L,R) (-96, ±34, 620)
3 TRAGION (L,R) (-185, ±83, 614)
4 GONION (L,R) (-175, ±70, 544)
5 GNATHION (-101, 0, 511)
6 NUCHALE (-262, 0, 579)

VERTEBRAL COLUMN

7 C7 (-256, 0, 489)
8 T4 (-293, 0, 380)
9 T8 (-284, 0, 253)
10 T12 (-246, 0, 146)
11 L2 (-217, 0, 67)
12 L5 (-174, 0, 13)
13 MID-SPINE 10th RIB (-242, 0, 138)
14 SUPERIOR MARGIN SCAPULA (L,R) (-276, ±79, 403)
15 INFERIOR MARGIN SCAPULA (L,R) (-296, ±126, 267)
16 RIB PROJECTION TO BACK (-209, 0, 71)
17 ILIOCRISTALE PROJECTION TO BACK (-198, 0, 35)

TORSO

18 SUPRASTERNALE (-139, 0, 435)
19 MESOSTERNALE (-98, 0, 385)
20 SUBSTERNALE (-72, 0, 336)
21 BIMAMMARY MIDLINE (-52, 0, 281)
22 NIPPLE (L,R) (-52, ±113, 290)
23 10th RIB, ANTERIOR, MID-LINE (15, 0, 191)
24 UMBILICUS (35, 0, 153)
25 MAXIMUM ABDOMINAL PROTRUSION (56, 0, 129)
26 10th RIB (L,R) (-93, ±156, 133)

PELVIS

27 ILIOCRISTALE (L,R) (-80, ±161, 93)
28 ANTERIOR SUPERIOR ILIAC SPINE (L,R) (-25, ±116, 83)
29 PUBIC SYMPHYSIS (51, 0, 41)
30 THIGH/ABDOMINAL JUNCTION (L,R) (21, ±122, 61)
31 TROCHANTERION (SKELETAL RECONSTRUCTION) (L,R) (20, ±203, -20)
32 H-POINT (0, ±82, 0)

SHOULDER

33 CLAVICALE (L,R) (-145, ±23, 443)
34 ACROMIO-CLAVICULAR ARTIC. (L,R) (-215, ±182, 443)
35 GREATER TUBERCLE HUMERUS (L,R) (-173, ±218, 42?)
36 ACROMION (L,R) (-224, ±203, 419)
37 ANTERIOR SCYE (L,R) (-97, ±154, 380)
38 POSTERIOR SCYE (L,R) (-214, ±197, 306)

ARM

39 LATERAL HUMERAL EPICONDYLE (L,R) (32, ±242, 224)
40 RADIALE (L,R) (46, ±243, 209)
41 MEDIAL HUMERAL EPICONDYLE (L,R) (32, ±173, 199)
42 OLECRANON (L,R) (53, ±210, 186)
43 ULNAR STYLOID (L,R) (226, ±191, 387)
44 STYLION (L,R) (211, ±135, 399)

LEG AND FOOT

45 LATERAL FEMORAL EPICONDYLE (L,R) (404, ±159, 129)
46 MEDIAL FEMORAL EPICONDYLE (L,R) (407, ±87, 142)
47 TIBIALE (L,R) (424, ±88, 128)
48 PATELLA (L,R) (449, ±150, 172)
49 SPHYRION (L,R) (684, ±61, -149)
50 METATARSAL-PHALANGEAL (I) (L,R) (796, ±84, -86)
51 DIGIT (I) (L,R) (839, ±147, -37)
52 METATARSAL-PHALANGEAL V (L,R) (785, ±174, -194)
53 MALLEOLUS (L,R) (680, ±126, -185)

JOINT CENTERS

54 HEAD/NECK (-196, 0, 588)
55 C7/T1 (-193, 0, 469)
56 T4/T5 (-220, 0, 397)
57 T8/T9 (-215, 0, 287)
58 T12/L1 (-177, 0, 165)
59 L2/L3 (-142, 0, 115)
60 L5/S1 (-89, 0, 39)
61 STERNOCLAVICULAR (-145, ±43, 433)
62 CLAVISCAPULAR (-230, ±166, 427)
63 GLENOHUMERAL (-186, ±175, 395)
64 ELBOW (36, ±208, 201)
65 WRIST (228, ±158, 395)
66 HIP (H-POINT) (0, ±82, 0)
67 KNEE (405, ±138, 136)
68 ANKLE (684, ±94, -169)

ORIGINS OF SEGMENT

69 HEAD (-185, 0, 611)
70 NECK (-266, 0, 489)
71 THORAX (-209, 0, 71)
72 ABDOMEN (-93, 0, 133)
73 PELVIS (-25, 0, 83)
74 UPPER ARMS (-221, ±203, 419)
75 LOWER ARMS (46, ±243, 209)
76 UPPER LEGS (20, ±203, -20)
77 LOWER LEGS (421, ±88, 128)
78 FEET (796, ±126, -96)

EST. SEGMENT CENTERS OF GRAVITY

79 HEAD (-179, 0, 646)
80 NECK (-195, 0, 515)
81 THORAX (-177, 0, 267)
82 ABDOMEN (-85, 0, 110)
83 PELVIS (-74, 0, 17)
84 UPPER ARMS (-80, ±191, 319)
85 LOWER ARMS (149, ±174, 320)
86 UPPER LEGS (200, ±131, 64)
87 LOWER LEGS (504, ±125, -5)
88 FEET (763, ±110, -164)

HIP SEGMENTATION PLANE POINTS

89 PUBOTUBEROSITY (51, ±35, 41)
90 SHIFTED ASIS (-25, ±126, 83)
91 INFERIOR TUBEROSITY PROJECTION (37, ±49, -107)

HEEL POINT ON FLOOR OF SEATING BUCK

92 POSTERIOR CALCANEUS (705, ±94, -260)

KEY

- ANATOMICAL POINTS
- JOINT CENTERS
- CENTERS OF GRAVITY

NOTE: THIS DRAWING IS ILLUSTRATIVE OF THE POSITION OF THE SKELETON WITHIN THE BODY BASED ON THE LOCATION OF MEASURED SURFACE LANDMARKS. IT SHOULD NOT BE USED FOR QUANTITATIVE MEASUREMENTS OF SKELETAL COMPONENTS.

DATE	LET.	WAS REVISIONS	CHK
? Oct '84	A	Add scale, coordinate lables, whole body C.G., date.	

TRANSPORTATION RESEARCH INSTITUTE
THE UNIVERSITY OF MICHIGAN

TITLE - ANTHROPOMETRIC SPECIFICATIONS FOR MID-SIZED MALE DUMMY (SIDE VIEW WITH SKELETON)

PROJECT - CONTRACT NO. DTNH22-80-C-07502

SPONSOR: U.S. DEPARTMENT OF TRANSPORTATION NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

DATE: NOV. 30, 1983

DRAWING NO. MM-104 (4th DRAWING OF 5)