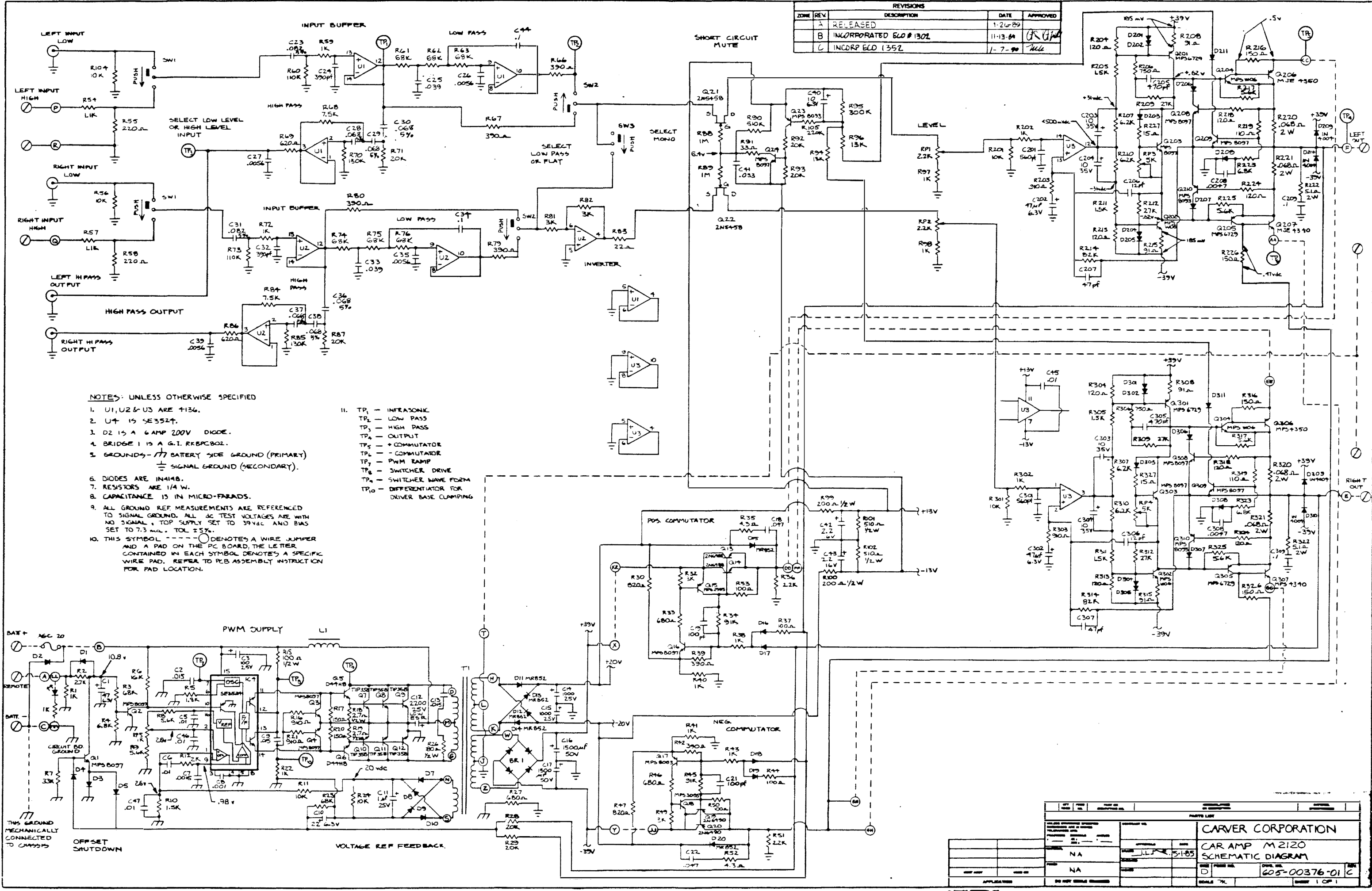


CARVER

M-2120

SCHEMATICS AND LAYOUTS

| ZONE | REV                     | DESCRIPTION | DATE     | APPROVED |
|------|-------------------------|-------------|----------|----------|
| A    | RELEASED                |             | 1-2-69   |          |
| B    | INCORPORATED ELD # 1302 |             | 11-13-69 |          |
| C    | INCORP ELD 1352         |             | 1-7-70   |          |



**NOTES: UNLESS OTHERWISE SPECIFIED**

1. U1, U2 & U3 ARE  $\mu$ 136.
2. U4 IS SE3524.
3. D2 IS A 6 AMP 200V DIODE.
4. BRIDGE 1 IS A G.I. RKBPC802.
5. GROUNDS -  $\text{---}$  BATTERY SIDE GROUND (PRIMARY)  
 $\text{---}$  SIGNAL GROUND (SECONDARY).
6. DIODES ARE IN4148.
7. RESISTORS ARE 1/4 W.
8. CAPACITANCE IS IN MICRO-FARADS.
9. ALL GROUND REF. MEASUREMENTS ARE REFERENCED TO SIGNAL GROUND. ALL DC TEST VOLTAGES ARE WITH NO SIGNAL, TOP SUPPLY SET TO 39Vdc AND BIAS SET TO 7.3 ma.  $\pm$  5%.
10. THIS SYMBOL  $\text{---}$  DENOTES A WIRE JUMPER AND A PAD ON THE PC BOARD, THE LETTER CONTAINED IN EACH SYMBOL DENOTES A SPECIFIC WIRE PAD. REFER TO PCB ASSEMBLY INSTRUCTION FOR PAD LOCATION.

11. TP<sub>1</sub> - INFRASONIC
- TP<sub>2</sub> - LOW PASS
- TP<sub>3</sub> - HIGH PASS
- TP<sub>4</sub> - OUTPUT
- TP<sub>5</sub> - COMMUTATOR
- TP<sub>6</sub> - COMMUTATOR
- TP<sub>7</sub> - PWM RAMP
- TP<sub>8</sub> - SWITCHER DRIVE
- TP<sub>9</sub> - SWITCHER WAVE FORM
- TP<sub>10</sub> - DIFFERENTIATOR FOR DRIVER BASE CLAMPING

| PARTS LIST |   | QUANTITY |   | DESCRIPTION |       |
|------------|---|----------|---|-------------|-------|
| U1         | 1 | 1        | 1 | OPAMP       | OPAMP |
| U2         | 1 | 1        | 1 | OPAMP       | OPAMP |
| U3         | 1 | 1        | 1 | OPAMP       | OPAMP |
| U4         | 1 | 1        | 1 | OPAMP       | OPAMP |
| Q1         | 1 | 1        | 1 | TRANS       | TRANS |
| Q2         | 1 | 1        | 1 | TRANS       | TRANS |
| Q3         | 1 | 1        | 1 | TRANS       | TRANS |
| Q4         | 1 | 1        | 1 | TRANS       | TRANS |
| Q5         | 1 | 1        | 1 | TRANS       | TRANS |
| Q6         | 1 | 1        | 1 | TRANS       | TRANS |
| Q7         | 1 | 1        | 1 | TRANS       | TRANS |
| Q8         | 1 | 1        | 1 | TRANS       | TRANS |
| Q9         | 1 | 1        | 1 | TRANS       | TRANS |
| Q10        | 1 | 1        | 1 | TRANS       | TRANS |
| D1         | 1 | 1        | 1 | DIODE       | DIODE |
| D2         | 1 | 1        | 1 | DIODE       | DIODE |
| D3         | 1 | 1        | 1 | DIODE       | DIODE |
| D4         | 1 | 1        | 1 | DIODE       | DIODE |
| D5         | 1 | 1        | 1 | DIODE       | DIODE |
| D6         | 1 | 1        | 1 | DIODE       | DIODE |
| D7         | 1 | 1        | 1 | DIODE       | DIODE |
| D8         | 1 | 1        | 1 | DIODE       | DIODE |
| D9         | 1 | 1        | 1 | DIODE       | DIODE |
| D10        | 1 | 1        | 1 | DIODE       | DIODE |
| R1         | 1 | 1        | 1 | RES         | RES   |
| R2         | 1 | 1        | 1 | RES         | RES   |
| R3         | 1 | 1        | 1 | RES         | RES   |
| R4         | 1 | 1        | 1 | RES         | RES   |
| R5         | 1 | 1        | 1 | RES         | RES   |
| R6         | 1 | 1        | 1 | RES         | RES   |
| R7         | 1 | 1        | 1 | RES         | RES   |
| R8         | 1 | 1        | 1 | RES         | RES   |
| R9         | 1 | 1        | 1 | RES         | RES   |
| R10        | 1 | 1        | 1 | RES         | RES   |
| R11        | 1 | 1        | 1 | RES         | RES   |
| R12        | 1 | 1        | 1 | RES         | RES   |
| R13        | 1 | 1        | 1 | RES         | RES   |
| R14        | 1 | 1        | 1 | RES         | RES   |
| R15        | 1 | 1        | 1 | RES         | RES   |
| R16        | 1 | 1        | 1 | RES         | RES   |
| R17        | 1 | 1        | 1 | RES         | RES   |
| R18        | 1 | 1        | 1 | RES         | RES   |
| R19        | 1 | 1        | 1 | RES         | RES   |
| R20        | 1 | 1        | 1 | RES         | RES   |
| R21        | 1 | 1        | 1 | RES         | RES   |
| R22        | 1 | 1        | 1 | RES         | RES   |
| R23        | 1 | 1        | 1 | RES         | RES   |
| R24        | 1 | 1        | 1 | RES         | RES   |
| R25        | 1 | 1        | 1 | RES         | RES   |
| R26        | 1 | 1        | 1 | RES         | RES   |
| R27        | 1 | 1        | 1 | RES         | RES   |
| R28        | 1 | 1        | 1 | RES         | RES   |
| R29        | 1 | 1        | 1 | RES         | RES   |
| R30        | 1 | 1        | 1 | RES         | RES   |
| R31        | 1 | 1        | 1 | RES         | RES   |
| R32        | 1 | 1        | 1 | RES         | RES   |
| R33        | 1 | 1        | 1 | RES         | RES   |
| R34        | 1 | 1        | 1 | RES         | RES   |
| R35        | 1 | 1        | 1 | RES         | RES   |
| R36        | 1 | 1        | 1 | RES         | RES   |
| R37        | 1 | 1        | 1 | RES         | RES   |
| R38        | 1 | 1        | 1 | RES         | RES   |
| R39        | 1 | 1        | 1 | RES         | RES   |
| R40        | 1 | 1        | 1 | RES         | RES   |
| R41        | 1 | 1        | 1 | RES         | RES   |
| R42        | 1 | 1        | 1 | RES         | RES   |
| R43        | 1 | 1        | 1 | RES         | RES   |
| R44        | 1 | 1        | 1 | RES         | RES   |
| R45        | 1 | 1        | 1 | RES         | RES   |
| R46        | 1 | 1        | 1 | RES         | RES   |
| R47        | 1 | 1        | 1 | RES         | RES   |
| R48        | 1 | 1        | 1 | RES         | RES   |
| R49        | 1 | 1        | 1 | RES         | RES   |
| R50        | 1 | 1        | 1 | RES         | RES   |
| R51        | 1 | 1        | 1 | RES         | RES   |
| C1         | 1 | 1        | 1 | CAP         | CAP   |
| C2         | 1 | 1        | 1 | CAP         | CAP   |
| C3         | 1 | 1        | 1 | CAP         | CAP   |
| C4         | 1 | 1        | 1 | CAP         | CAP   |
| C5         | 1 | 1        | 1 | CAP         | CAP   |
| C6         | 1 | 1        | 1 | CAP         | CAP   |
| C7         | 1 | 1        | 1 | CAP         | CAP   |
| C8         | 1 | 1        | 1 | CAP         | CAP   |
| C9         | 1 | 1        | 1 | CAP         | CAP   |
| C10        | 1 | 1        | 1 | CAP         | CAP   |
| C11        | 1 | 1        | 1 | CAP         | CAP   |
| C12        | 1 | 1        | 1 | CAP         | CAP   |
| C13        | 1 | 1        | 1 | CAP         | CAP   |
| C14        | 1 | 1        | 1 | CAP         | CAP   |
| C15        | 1 | 1        | 1 | CAP         | CAP   |
| C16        | 1 | 1        | 1 | CAP         | CAP   |
| C17        | 1 | 1        | 1 | CAP         | CAP   |
| C18        | 1 | 1        | 1 | CAP         | CAP   |
| C19        | 1 | 1        | 1 | CAP         | CAP   |
| C20        | 1 | 1        | 1 | CAP         | CAP   |
| C21        | 1 | 1        | 1 | CAP         | CAP   |
| C22        | 1 | 1        | 1 | CAP         | CAP   |
| C23        | 1 | 1        | 1 | CAP         | CAP   |
| C24        | 1 | 1        | 1 | CAP         | CAP   |
| C25        | 1 | 1        | 1 | CAP         | CAP   |
| C26        | 1 | 1        | 1 | CAP         | CAP   |
| C27        | 1 | 1        | 1 | CAP         | CAP   |
| C28        | 1 | 1        | 1 | CAP         | CAP   |
| C29        | 1 | 1        | 1 | CAP         | CAP   |
| C30        | 1 | 1        | 1 | CAP         | CAP   |
| C31        | 1 | 1        | 1 | CAP         | CAP   |
| C32        | 1 | 1        | 1 | CAP         | CAP   |
| C33        | 1 | 1        | 1 | CAP         | CAP   |
| C34        | 1 | 1        | 1 | CAP         | CAP   |
| C35        | 1 | 1        | 1 | CAP         | CAP   |
| C36        | 1 | 1        | 1 | CAP         | CAP   |
| C37        | 1 | 1        | 1 | CAP         | CAP   |
| C38        | 1 | 1        | 1 | CAP         | CAP   |
| C39        | 1 | 1        | 1 | CAP         | CAP   |
| C40        | 1 | 1        | 1 | CAP         | CAP   |
| C41        | 1 | 1        | 1 | CAP         | CAP   |
| C42        | 1 | 1        | 1 | CAP         | CAP   |
| C43        | 1 | 1        | 1 | CAP         | CAP   |
| C44        | 1 | 1        | 1 | CAP         | CAP   |
| C45        | 1 | 1        | 1 | CAP         | CAP   |
| C46        | 1 | 1        | 1 | CAP         | CAP   |
| C47        | 1 | 1        | 1 | CAP         | CAP   |

**CARVER CORPORATION**  
**CAR AMP M2120**  
**SCHEMATIC DIAGRAM**  
 D 605-00376-01 C  
 SCALE 7/8" = 1"

| DWG NO.      |  | REV |   | DATE |  |
|--------------|--|-----|---|------|--|
| 602-00376-01 |  | 1   | G |      |  |

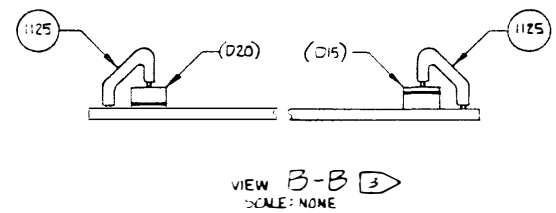
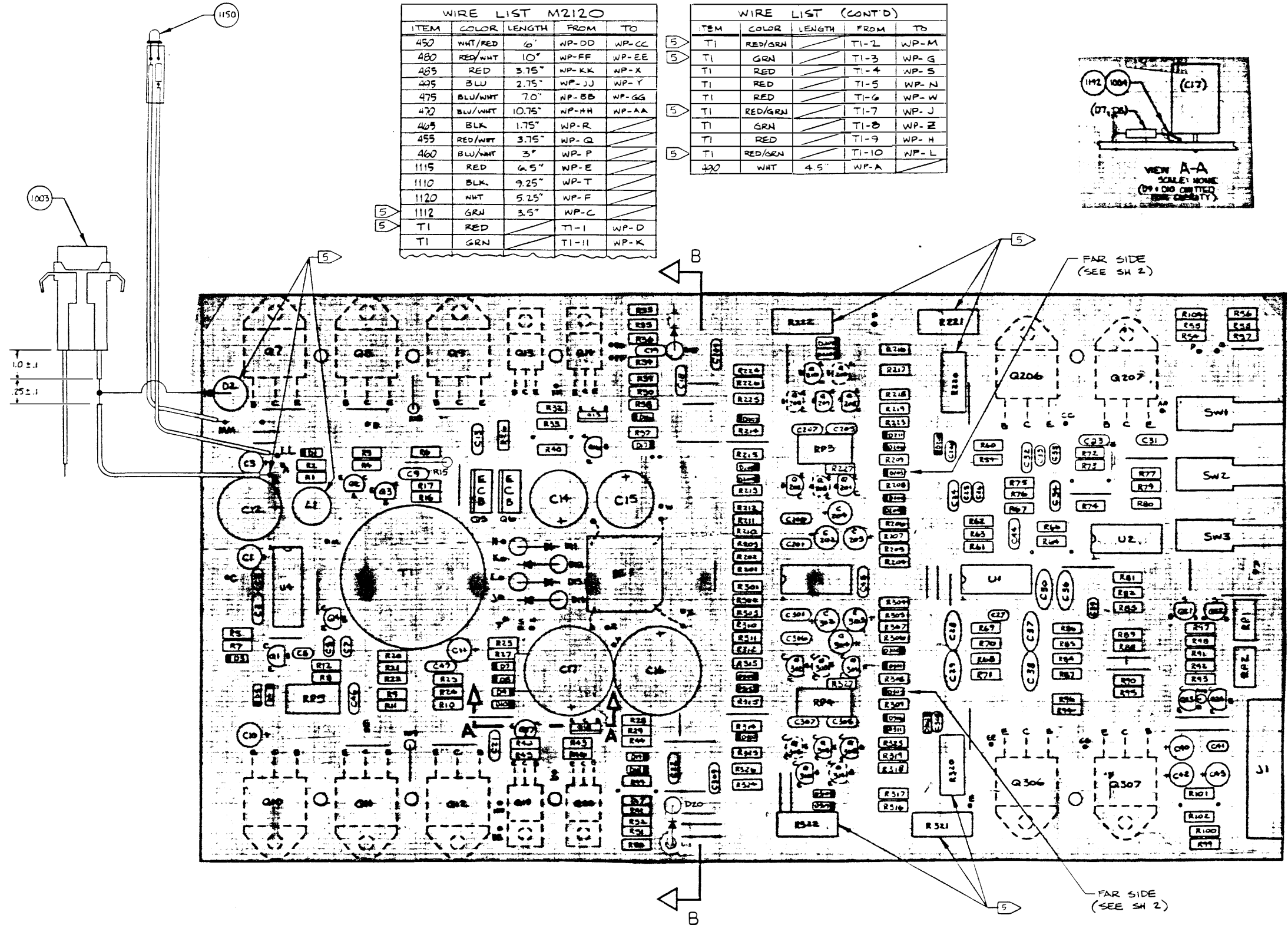
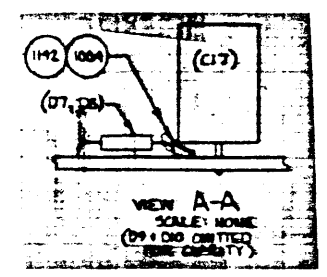
  

| REVISIONS |     |  |          |          |
|-----------|-----|--|----------|----------|
| ZONE      | REV | DESCRIPTION  | DATE     | APPROVED |
| A         |     | RELEASED.  |          |          |
| B         |     | INCRP CHANGE PER ECO # 985   |          |          |
| C         |     | INCRP CHANGE PER ECO # 100   |          |          |
| D         |     | INCRP CHANGE PER ECO # 1214  |          |          |
| E         |     | INCRP CHANGE PER ECO # 1030  |          |          |
| E1        |     | REVISED AND REDRAWN.<br>INCRP CHANGE PER ECO # 1288  | 11-10-99 | J.L.     |
| F         |     | INCORPORATED ECO # 1302<br>- ITEM NO. CALLOUTS CHANGED TO MATCH<br>PARTS LIST.<br>- DWG NO. CHANGED FROM "602-00376-00"<br>TO "602-00376-01" | 11-15-01 | J.L.     |
| G         |     | INCRP ECO 1352   | 1-7-90   | J.L.     |

| WIRE LIST M2120 |         |        |       |       |
|-----------------|---------|--------|-------|-------|
| ITEM            | COLOR   | LENGTH | FROM  | TO    |
| 452             | WHT/RED | 6"     | WP-DD | WP-CC |
| 480             | RED/WHT | 10"    | WP-FF | WP-EE |
| 485             | RED     | 3.75"  | WP-KK | WP-X  |
| 495             | BLU     | 2.75"  | WP-JJ | WP-Y  |
| 475             | BLU/WHT | 7.0"   | WP-BB | WP-GG |
| 470             | BLU/WHT | 10.75" | WP-HH | WP-AA |
| 465             | BLK     | 1.75"  | WP-R  |       |
| 455             | RED/WHT | 3.75"  | WP-Q  |       |
| 460             | BLU/WHT | 3"     | WP-P  |       |
| 1115            | RED     | 4.5"   | WP-E  |       |
| 1110            | BLK     | 9.25"  | WP-T  |       |
| 1120            | WHT     | 5.25"  | WP-F  |       |
| 1112            | GRN     | 3.5"   | WP-C  |       |
| T1              | RED     |        | TI-1  | WP-D  |
| T1              | GRN     |        | TI-11 | WP-K  |

| WIRE LIST (CONT'D) |         |        |       |      |
|--------------------|---------|--------|-------|------|
| TEM                | COLOR   | LENGTH | FROM  | TO   |
| T1                 | RED/GRN |        | TI-2  | WP-M |
| T1                 | GRN     |        | TI-3  | WP-G |
| T1                 | RED     |        | TI-4  | WP-S |
| T1                 | RED     |        | TI-5  | WP-N |
| T1                 | RED     |        | TI-6  | WP-W |
| T1                 | RED/GRN |        | TI-7  | WP-J |
| T1                 | GRN     |        | TI-8  | WP-Z |
| T1                 | RED     |        | TI-9  | WP-H |
| T1                 | RED/GRN |        | TI-10 | WP-L |
| 490                | WHT     | 4.5"   | WP-A  |      |



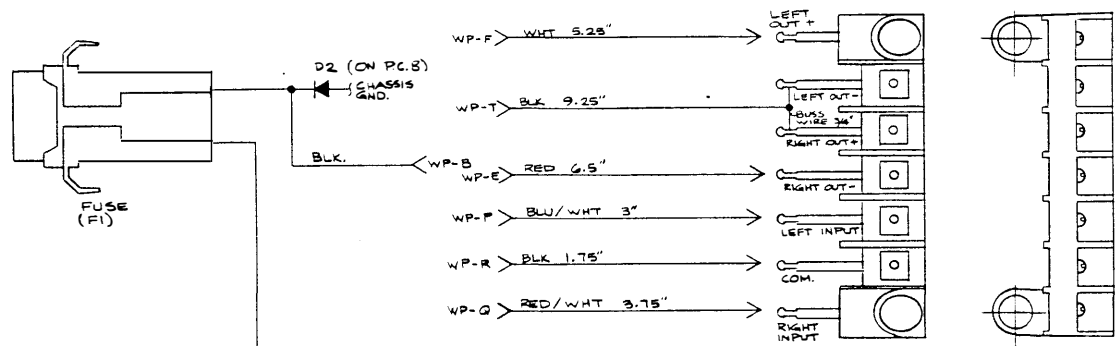
- 1. BEND LEAD/WIRE AFTER INSERTION LEAVING A MINIMUM OF .25" LENGTH TO BE SOLDERED.
  - 2. APPLY DOUBLE BACK TAPE FOAM, ITEM 1145, AS SHOWN ON SHEET 2. FOAM SHALL NOT COME IN CONTACT WITH LARGE ROILED AREAS.
  - 3. MOUNT DIODES: D15 & D20 SO THAT BODY OF PART IS MOUNTED WITH LEAD TOWARDS EDGE OF BOARD. INSTALL SLEEVING, ITEM 1125, ON EXPOSED LEAD AS SHOWN IN VIEW B-B.
2. ASSEMBLE USING PCB 501-00376-00 REV D.  
1. ALL ITEMS ARE ON 602-00376-01 PARTS LIST.
- NOTES: UNLESS OTHERWISE SPECIFIED

|   |  |                    |          |
|---|--|--------------------|----------|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ARE:<br>FRACTIONS DECIMALS ANGLES<br>XX .XXX : |  | CONTRACT NO.       |          |
| MATERIAL  |  | APPROVALS          | DATE     |
| FINISH  |  | DRAWN M. CREW      |          |
| DASH NO.  |  | CHECKED J. EDWARDS | 11-10-99 |
| APPLICATION   |  | ENG                |          |
|   |  | MFG                |          |
|   |  | ISSUED             |          |

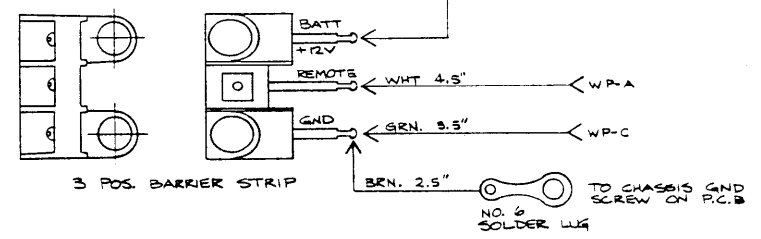
|                        |                      |
|------------------------|----------------------|
| CARVER                 |                      |
| ASSY PCB-M2120 CAR AMP |                      |
| SIZE D                 | DWG NO. 602-00376-01 |
| SCALE 2:1              | SHEET 1 OF 2         |

|                       |  |                        |       |          |
|-----------------------|--|------------------------|-------|----------|
| DWG. NO. 606-00003-00 |  | REV. A                 | DATE  | APPROVED |
| ZONE                  |  | DESCRIPTION            | DATE  | APPROVED |
| A                     |  | RELEASED TO PRODUCTION | 3-1-9 | JL       |



7 POS. BARRIER STRIP

NOTES: UNLESS OTHERWISE SPECIFIED  
 1. SOLDER WIRES AND COMPONENTS USING SILVER SOLDER, P/N 403-30002-00 AS REQUIRED.



3 POS. BARRIER STRIP

|   |                         |                    |  |
|---|-------------------------|--------------------|--|
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS DECIMALS ANGLES AS: 1/16 1/32 1/64 | CONTRACT NO.            | PARTS LIST         |  |
| MATERIAL  | APPROVALS               | DATE               | <h1>CARVER</h1> <p>WIRE DIAGRAM<br/>M-2120</p> |
| FINISH  | DRAWN BY: GORMAN        | 3-1-9              |  |
| DO NOT SCALE DRAWING  | CHECKED BY: [Signature] | 4-7-87             |  |
| SCALE 2:1   | ISSUED                  | SIZE / FRGM. NO. D | DWG. NO. 606-00003-00 REV. A                   |