A 22 MIL [0.559 mm] THICKNESS. PAINT VOLUMES ASSUME A 17 MIL [0.432 mm] THICKNESS. EPOXY VOLUMES ASSUME ESTIMATING PURPOSES ONLY。

QUANTITIES ARE BASED ON THE SIZES OF PAVEMENT MARKINGS SHOWN AND ARE FOR SUGGESTED, BUT TO THE RELATIVE SCALE.

ON NARROW, LOW-SPEED BICYCLE PATHS, SIZES OF LETTERS MAY BE SMALLER THAN TEN TIMES THE HEIGHT OF THE CHARACTERS UNDER ANY CONDITION.

TIMES THE HEIGHT OF CHARACTERS FOR LOW-SPEED ROADS, BUT NOT MORE THAN WHEN WORDS AND SYMBOLS ARE USED IN COMBINATION, SPACE THEM AT LEAST FOUR LOCATION.

DIRECTION OF TRAVEL. DO NOT EXCEED THREE LINES OF INFORMATION AT ANY FOR MULTIPLE LINES OF INFORMATION, PLACE THE INFORMATION SO IT READS IN THE SAME LANE.

EXCEPT IN THE CASE OF THE WORD "SCHOOL". SEE DTL. DWG. NO. 620-10 FOR ALL PAVEMENT MARKINGS ARE TO CONFORM TO THE REQUIREMENTS OF THE "MANUAL OF TRANSPORTATION"

OF TRANSPORTATION, FROM THE FEDERAL HIGHWAY ADMINISTRATION.

ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" ALL PAVEMENT MARKINGS ARE TO CONFORM TO THE REQUIREMENTS OF THE "MANUAL

EACH SQUARE EQUALS 4 INCHES [100 mm].

NOTES:

1. EACH SQUARE EQUALS 4 INCHES (100 mm).

2. ALL PAINT MARKINGS ARE TO CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" PUBLICATIONS FROM THE FEDERAL HIGHWAY ADMINISTRATION.

3. ALL LETTERS ARE TO BE WHITE.

4. USE THE SIZES OF LETTERS SHOWN UNLESS SMALLER OR LARGER SIZES ARE NEEDED. THE SIZE OF LETTERS MAY BE SCALING PROPORTIONALLY DOWN BY THE HEIGHT OF ANY LETTER TO 60 PERCENT (1.8 M). LARGER SIZES MAY BE USED FOR ARROWS AND SPECIAL MARKS AND OTHER CRITICAL LOCATIONS.

5. DO NOT EXCEED MORE THAN ONE LINE WIDTH OF ANY LETTER. USE THE SIZES OF LETTERS SHOWN UNLESS SMALLER OR LARGER SIZES ARE NEEDED.

6. ALL LETTERS ARE TO BE WHITE.

7. USE THE SIZES OF LETTERS SHOWN UNLESS SMALLER OR LARGER SIZES ARE NEEDED. THE SIZE OF LETTERS MAY BE SCALING PROPORTIONALLY DOWN BY THE HEIGHT OF ANY LETTER TO 60 PERCENT (1.8 M). LARGER SIZES MAY BE USED FOR ARROWS AND SPECIAL MARKS AND OTHER CRITICAL LOCATIONS.

8. DO NOT EXCEED MORE THAN ONE LINE WIDTH OF ANY LETTER. USE THE SIZES OF LETTERS SHOWN UNLESS SMALLER OR LARGER SIZES ARE NEEDED.

9. FOR MULTIPLE LINES OF INFORMATION, PLACE THE INFORMATION SO IT READS IN THE SAME LANE. DO NOT EXCEED THREE LINES OF INFORMATION AT ANY TIME.

10. WHEN WORDS AND SYMBOLS ARE USED IN COMBINATION, SPACE THEM AT LEAST FOUR TIMES THE HEIGHT OR CHARACTERS FOR LOW-SPEED ROADS, BUT NOT MORE THAN TEN TIMES THE HEIGHT OF THE CHARACTERS UNDER ANY CONDITION.

11. IN NARROW, LOW-SPEED BICYCLE PATHS, SIZES OF LETTERS MAY BE SMALLER THAN FEASIBLE, BUT TO THE RECOMMENDED SCALE.

12. QUANTITIES ARE BASED ON THE SIZES OF PAINT MARKINGS SHOWN AND ARE FOR ESTIMATING PURPOSES ONLY.

13. PAINT VOLUMES ASSUME A 17 MIL [0.432 mm] THICKNESS. EPOXY VOLUMES ASSUME A 22 MIL (0.559 mm) THICKNESS.
### Epoxy Volumes
Epoxy volumes assume a 22 mil [0.559 mm] thickness.

### Paint Volumes
Paint volumes assume a 17 mil [0.432 mm] thickness. And are for estimating purposes only.

### Quantities

<table>
<thead>
<tr>
<th>#</th>
<th>Area (ft²)</th>
<th>Paint (gal)</th>
<th>Epoxy (gal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.78</td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>2</td>
<td>6.76</td>
<td>0.07</td>
<td>0.09</td>
</tr>
<tr>
<td>3</td>
<td>5.97</td>
<td>0.06</td>
<td>0.08</td>
</tr>
<tr>
<td>4</td>
<td>5.54</td>
<td>0.06</td>
<td>0.08</td>
</tr>
<tr>
<td>5</td>
<td>6.86</td>
<td>0.07</td>
<td>0.09</td>
</tr>
<tr>
<td>6</td>
<td>6.94</td>
<td>0.07</td>
<td>0.10</td>
</tr>
<tr>
<td>7</td>
<td>4.11</td>
<td>0.04</td>
<td>0.06</td>
</tr>
<tr>
<td>8</td>
<td>7.74</td>
<td>0.08</td>
<td>0.11</td>
</tr>
<tr>
<td>9</td>
<td>6.94</td>
<td>0.07</td>
<td>0.10</td>
</tr>
<tr>
<td>0</td>
<td>7.11</td>
<td>0.08</td>
<td>0.10</td>
</tr>
</tbody>
</table>

### Metric Quantities

<table>
<thead>
<tr>
<th>#</th>
<th>Area (m²)</th>
<th>Paint (liters)</th>
<th>Epoxy (liters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.25</td>
<td>0.11</td>
<td>0.14</td>
</tr>
<tr>
<td>2</td>
<td>0.61</td>
<td>0.26</td>
<td>0.34</td>
</tr>
<tr>
<td>3</td>
<td>0.54</td>
<td>0.23</td>
<td>0.30</td>
</tr>
<tr>
<td>4</td>
<td>0.50</td>
<td>0.22</td>
<td>0.28</td>
</tr>
<tr>
<td>5</td>
<td>0.62</td>
<td>0.27</td>
<td>0.35</td>
</tr>
<tr>
<td>6</td>
<td>0.62</td>
<td>0.27</td>
<td>0.35</td>
</tr>
<tr>
<td>7</td>
<td>0.37</td>
<td>0.16</td>
<td>0.21</td>
</tr>
<tr>
<td>8</td>
<td>0.70</td>
<td>0.30</td>
<td>0.39</td>
</tr>
<tr>
<td>9</td>
<td>0.62</td>
<td>0.27</td>
<td>0.35</td>
</tr>
<tr>
<td>0</td>
<td>0.62</td>
<td>0.27</td>
<td>0.35</td>
</tr>
</tbody>
</table>

### Notes:
1. Each square equals 4 inches [100 mm].
2. All pavement markings are to conform to the requirements of the "Manual on Uniform Traffic Control Devices" and "Standard Highway Signs" publications, from the Federal Highway Administration.
3. All numbers are to be white.
4. Use the sizes of numbers shown unless smaller or larger sizes are needed. The size of numbers may be scaled proportionately down by approximately one-third for low-speed, urban conditions. The minimum height of any number is 6 feet [1.8 m]. Larger sizes may be used for above average speeds and other critical locations.
5. Do not exceed more than one lane in width for any pavement markings except in the case of the word "School." See Dwg. No. 620-10 for more information.
6. For multiple lines of information, place the information so it reads in the direction of travel. Do not exceed three lines of information at any location.
7. When words and symbols are used in combination, space them at least four times the height of characters for low-speed roads. But not more than ten times the height of the characters under any condition.
8. On narrow, low-speed bicycle paths, sizes of numbers may be smaller than suggested, but to the relative scale.
9. Quantities are based on the sizes of pavement markings shown and are for estimating purposes only.
10. Paint volumes assume a 17 mil [0.432 mm] thickness. Epoxy volumes assume a 22 mil [0.559 mm] thickness.

### DETAILED DRAWING

**REFERENCE**

- Dwg. No. 620-05
- Montana Department of Transportation

**Standard Spec. Section 620**

**Pavement Markings (Numbers)**

Units shown in brackets [ ] are metric and are in millimeters (mm) unless other units are shown.
Unles otherwise noted each square equals 4 [100] inches.

All pavement markings are to conform to the requirements of the "Manual on Uniform Traffic Control Devices" and "Standard Highway Signs" publications, from the Federal Highway Administration.

All words are to be white.

Use the sizes of words shown unless smaller or larger sizes are needed. The size of words may be scaled proportionately down by approximately one-third for low-speed, urban conditions. The minimum height of any word is 6 feet [1.8 m]. Larger sizes may be used for above average speeds and other critical locations.

Do not exceed more than one lane in width for any pavement markings, except in the case of the word "School". When "School" is extended to the width of two lanes, scale the word up proportionately to fit the application width.

For multiple lines of information, place the information so it reads in the direction of travel. Do not exceed three lines of information at any location.

When words and symbols are used in combination, space them at least four times the height of characters for low-speed roads, but not more than ten times the height of the characters under any condition.

On narrow, low-speed bicycle paths, sizes of letters may be smaller than suggested, but to the relative scale.

Quantities are based on the sizes of pavement markings shown and are for estimating purposes only.

Paint volumes assume a 17 mil [0.432] thickness. Epoxy volumes assume a 22 mil [0.559] thickness.

Quantities shown in brackets {} are metric and are in millimeters (mm) unless other units are shown.

Details drawing


Dwg. No. 620-10

Section 620

Pavement Markings
( Words )

Units shown in brackets {} are metric and are in millimeters (mm) unless other units are shown.
NOTE: R(O) = OUTSIDE CURVE RADIUS, R(I) = INSIDE CURVE RADIUS.

DETAILED DRAWING

NOTE: REFER TO STRAIGHT & TURN ARROWS

FOR MORE DETAIL.

(1 SQUARE = 0.32' [100])

E = 0.36 GAL. [1.42 L]
P = 0.28 GAL. [1.10 L]
AREA = 25.99 FT² [2.54 m²]

(1 SQUARE = 0.8' [200])

E = 0.16 GAL. [0.63 L]
P = 0.12 GAL. [0.48 L]
AREA = 11.42 FT² [1.12 m²]

(1 SQUARE = 8' [200])

E = 0.32 GAL. [1.20 L]
P = 0.25 GAL. [0.93 L]
AREA = 23.64 FT² [2.15 m²]

(1 SQUARE = 4' [100])

E = 0.06 GAL. [0.23 L]
P = 0.05 GAL. [0.18 L]
AREA = 4.56 FT² [0.41 m²]

NOTES:

1. ALL PAVEMENT MARKINGS ARE TO CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY GOUERY PUBLICATIONS" FROM THE FEDERAL HIGHWAY ADMINISTRATION.

2. ALL ARROWS ARE TO BE WHITE.

3. ALL SIZES OF ARROWS SHOWN UNLESS SMALLER OR LARGER SIZES ARE MENTIONED. THE SIZES OF ARROWS MAY BE SCALLED PROPORTIONATELY DOWN BY APPROXIMATELY LINE TO ADJUST FOR SPEED-ARROW CONDITIONS. SMALLER SIZES MAY BE USED FOR ABOVE AVERAGE SPEEDS AND OTHER CRITICAL LOCATIONS.

4. DO NOT PAINT MORE THAN ONE LINE IN WIDTH FOR ANY PAVEMENT MARKINGS EXCEPT AS PERMITS OF THE WORD "SCHOOL." SEE DTL. DWG. NO. 620-10 FOR MORE INFORMATION.

5. DETAILS SHOWN IN INCHES OR MILLIMETERS, UNLESS OTHER UNITS ARE SHOWN.

6. QUANTITIES ARE BASED ON THE SIZES OF PAVEMENT MARKINGS SHOWN AND ARE FOR ESTIMATING PURPOSES ONLY.

7. UNITS SHOWN IN INCHES (1 SQUARE = 0.32') AND METERS AND ARE IN MILLIMETERS, UNLESS OTHER UNITS ARE SHOWN.

8. WHEN WORDS AND SYMBOLS ARE USED IN COMBINATION, SPACE THEM AT LEAST TWICE THE HEIGHT OF THE CHARACTERS. USE DIMENSIONED LENGTHS WHERE APPLICABLE.

9. QUANTITIES ARE BASED ON THE SIZES OF PAVEMENT MARKINGS SHOWN AND ARE FOR ESTIMATING PURPOSES ONLY.

10. FOR LEFT LANE, USE MIRROR IMAGE.
NOTE:
CENTER SYMBOLS IN PARKING STALLS. 
BORDER REQUIRED UNLESS CONTRACT STATES OTHERWISE.

STROKE WIDTH:
USE STANDARD SYMBOL UNLESS CONTRACT STATES OTHERWISE.

NOTE:
FOR LOW-SPEED INSTALLATIONS, THE 3'-0" (900) AND 2'-6" (750) DIMENSIONS MAY BE REDUCED.

SPECIAL 41" (1025) STD. 24" (600)
SPECIAL 4" (100)

P = 0.08 GAL. (0.30 L) BLUE
P = 0.04 GAL. (0.14 L) WHITE
AREA = 11.00 FT² (1.02 m²)

E = 0.69 GAL. (2.55 L)
P = 0.53 GAL. (1.97 L)
AREA = 50.42 FT² (4.56 m²)

TRAVEL DIRECTION OF SYMBOLS

SPECIAL 36" (900) SPECIAL 4" (100)

NOTE:
ALL PAINT VOLUMES ARE TO BE CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" PUBLICATIONS, FROM THE FEDERAL HIGHWAY ADMINISTRATION.

NOTE:
ALL SYMBOLS ARE TO BE WHITE EXCEPT FOR THE ACCESSIBILITY PARKING SPACE SYMBOL WHICH HAS A BLUE BACKGROUND AND WHITE HANDICAPPED SYMBOL AND BORDER.

NOTE:
DO NOT PAINT MARKINGS WITHIN 18'-0" (5400) OF THE END AND 24'-0" (7200) OF THE START OF THE WORK." 

NOTE:
WHEN WORDS AND SYMBOLS ARE USED IN COMBINATION, SPACE THEM AT LEAST TWO TIMES THE HEIGHT OF CHARACTERS FOR LOW-SPEED ROADS, BUT DIMINISH THOSE LETTERS TIME THE HEIGHT OF THE CHARACTERS APPEARING FOR HIGH-SPEED ROAD.

QUANTITIES ARE BASED ON THE SIZES OF PAVEMENT MARKINGS SHOWN AND ARE FOR ESTIMATING PURPOSES ONLY.

QUANTITIES PER TRIANGLE:
3" - Paint Volumes Assume a 1/2" (12.7) Thickness
(2) - Paint Volumes Assume a 1/2" (12.7) Thickness

UNIT SHOWN IN BRACKETS [ ] ARE METRIC AND ARE IN MILLIMETERS (MM) UNLESS OTHER UNITS ARE SHOWN.

REFERENCE
DWG. NO.
DETAILED DRAWING
PAVEMENT MARKINGS (SYMBOLS)
MDTX
DEPARTMENT OF TRANSPORTATION
MONTANA

STANDARD SPEC.
SECTION 6.00-20

E = 0.50 GAL. (1.86 L)
P = 0.39 GAL. (1.44 L)
AREA = 36.54 FT² (3.33 m²)

E = 0.80 GAL. (3.03 L)
P = 0.62 GAL. (2.34 L)
AREA = 58.10 FT² (5.42 m²)

E = 0.04 GAL. (0.15 L)
P = 0.03 GAL. (0.12 L)
AREA = 3.00 FT² (0.27 m²)

E = 0.54 GAL. (2.00 L)
P = 0.61 GAL. (2.30 L)
AREA = 12.00 FT² (1.10 m²)

E = 0.02 GAL. (0.08 L)
P = 0.01 GAL. (0.04 L)
AREA = 6.00 FT² (0.55 m²)

E = 0.10 GAL. (0.38 L)
P = 0.10 GAL. (0.38 L)
AREA = 18.00 FT² (1.66 m²)

E = 0.10 GAL. (0.38 L)
P = 0.10 GAL. (0.38 L)
AREA = 20.00 FT² (1.83 m²)

E = 0.10 GAL. (0.38 L)
P = 0.10 GAL. (0.38 L)
AREA = 24.00 FT² (2.22 m²)

E = 0.10 GAL. (0.38 L)
P = 0.10 GAL. (0.38 L)
AREA = 40.00 FT² (3.72 m²)

E = 0.10 GAL. (0.38 L)
P = 0.10 GAL. (0.38 L)
AREA = 50.00 FT² (4.65 m²)

E = 0.10 GAL. (0.38 L)
P = 0.10 GAL. (0.38 L)
AREA = 60.00 FT² (5.55 m²)

E = 0.10 GAL. (0.38 L)
P = 0.10 GAL. (0.38 L)
AREA = 80.00 FT² (7.48 m²)
UNLESS OTHER UNITS ARE SHOWN.
METRIC UNITS SHOWN IN BRACKETS [ ] ARE

NOTES:
1. ALL PAVEMENT MARKINGS ARE TO CONFORM TO THE REQUIREMENTS OF THE
STANDARD SPECIFICATION FOR HIGHWAY WORKSHOPS AND MAINTENANCE ADVERTISING
SIGNS PUBLICATIONS FROM THE FEDERAL HIGHWAY ADMINISTRATION.
2. DO NOT EXCEED MORE THAN ONE LANE IN WIDTH FOR ANY PAVEMENT MARKINGS EXCEPT IN THE CASE OF THE WORD “SCHOOL”. SEE DTL.
3. UNITS SHOWN IN SQUARES ARE FOR ESTIMATING PURPOSES ONLY.
4. VOLUMES ARE BASED ON THE SIZES OF PAVEMENT MARKINGS SHOWN
AND ARE FOR ESTIMATING PURPOSES ONLY.
5. PAINT VOLUMES ASSUME A 0.5 MIL (-0.0002) THICKNESS.
6. AQUA VOLUMES ASSUME A 0.75 MIL (-0.0003) THICKNESS.
7. SQUARE FEET = 0.093 SQUARE METER
8. SQUARE INCHES = 0.00064 SQUARE METER
9. SQUARE MILLIMETERS = 0.001 SQUARE MILLIMETERS

REFERENCES:
DETAILED DRAWING
REFERENCE DWG. NO.
620-25 DWG.
DETAILED DRAWING
REFERENCE DWG. NO.
620-10 DWG.
DETAILED DRAWING
REFERENCE DWG. NO.
620-25 DWG.
DETAILED DRAWING
REFERENCE DWG. NO.
620-10 DWG.
DETAILED DRAWING
REFERENCE DWG. NO.
620-25 DWG.
**OF TRANSPORTATION**

**MONTANA DEPARTMENT**

**YELLOW SKIP RUMBLE STRIPE**

**DOUBLE YELLOW AND NO PASSING RUMBLE STRIPE**

**YELLOW SKIP RUMBLE STRIPE**

**DOUBLE YELLOW TAPERED ISLAND RUMBLE STRIPE**

**DOUBLE YELLOW BULLNOSE ISLAND RUMBLE STRIPE**

**DOUBLE YELLOW TURN LANE RUMBLE STRIPE**

**NOTES:**

1. See centerline rumble strips DTL, DWG. NO. 431-00 for additional information.
2. All pavement markings are to conform to the requirements of the "Manual on Uniform Traffic Control Devices" and "Standard Highway Signs" publications, from the Federal Highway Administration.