CITY OF NAPA LADDER TRUCK

TURN DIMENSIONS
### Turning Performance Analysis

5/3/2011

<table>
<thead>
<tr>
<th>Bid Number: 253</th>
<th>Chassis: Velocity Chassis, Aerials, Tandem 48K, PUC (Big Block), 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department: City of Napa</td>
<td>Body: Aerial, HD Ladder 105', PUC, Alum Body</td>
</tr>
</tbody>
</table>

#### Parameters:

- **Inside Cramp Angle:** 45°
- **Axle Track:** 82.92 in.
- **Wheel Offset:** 5.3 in.
- **Tread Width:** 17.4 in.
- **Chassis Overhang:** 78 in.
- **Additional Bumper Depth:** 7 in.
- **Front Overhang:** 85 in.
- **Wheelbase:** 256.5 in.

#### Calculated Turning Radii:

- **Inside Turn:** 20 ft. 2 in.
- **Curb to curb:** 36 ft. 7 in.
- **Wall to wall:** 40 ft. 11 in.

#### Comments:

- Note: Truck Length is 42’

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<table>
<thead>
<tr>
<th>CategoryID</th>
<th>Category Description</th>
<th>OptionCode</th>
<th>OptionDescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Axle, Front, Custom</td>
<td>0508849</td>
<td>Axle, Front, Oshkosh TAK-4, Non Drive, 22,800 lb, Imp/Vel/Dash CF</td>
</tr>
<tr>
<td>30</td>
<td>Wheels, Front</td>
<td>0019618</td>
<td>Wheels, Front, Alcoa, 22.50&quot; x 13.00&quot;, Aluminum, Hub Pilot</td>
</tr>
<tr>
<td>31</td>
<td>Tires, Front</td>
<td>0594821</td>
<td>Tires, Front, Goodyear, G296 MSA, 425/65R22.50, 20 ply</td>
</tr>
<tr>
<td>38</td>
<td>Bumpers</td>
<td>0123628</td>
<td>Bumper, Non-extended, Imp/Vel</td>
</tr>
<tr>
<td>437</td>
<td>Aerial Devices</td>
<td>0592925</td>
<td>Aerial, 105' Heavy Duty Ladder</td>
</tr>
</tbody>
</table>

#### Notes:

- Actual Inside Cramp Angle may be less due to highly specialized options.
- Curb to Curb turning radius calculated for a 9.00 inch curb.
### Definitions:

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<tr>
<th>Term</th>
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<tr>
<td>Inside Cramp Angle</td>
<td>Maximum turning angle of the front inside tire.</td>
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<td>Axle Track</td>
<td>King-pin to King-pin distance of the front axle.</td>
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<tr>
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<td>Tread Width</td>
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<td>Chassis Overhang</td>
<td>Distance of the center-line of the front axle to the front edge of the cab. This does not include the bumper depth.</td>
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<td>Additional Bumper Depth</td>
<td>Depth that the bumper assembly adds to the front overhang.</td>
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<td>Wheelbase</td>
<td>Distance between the center lines of the vehicle's front and rear axles.</td>
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<td>Inside Turning Radius</td>
<td>Radius of the smallest circle around which the vehicle can turn.</td>
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<td>Radius of the smallest circle inside of which the vehicle's tires can turn. This measurement assumes a curb height of 9 inches.</td>
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<td>Wall to Wall Turning Radius</td>
<td>Radius of the smallest circle inside of which the entire vehicle can turn. This measurement takes into account any front overhang due to chassis, bumper extensions and/or aerial devices.</td>
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STEERING LOCK ANGLE = 41.2 deg.

ACHIEVED STEERING ANGLE:
- 30 deg. SWEEP ANGLE: 20.8 deg.
- 60 deg. SWEEP ANGLE: 30.7 deg.
- 90 deg. SWEEP ANGLE: 35.6 deg.
- 120 deg. SWEEP ANGLE: 38.2 deg.
- 150 deg. SWEEP ANGLE: 39.6 deg.
- 180 deg. SWEEP ANGLE: 40.4 deg.

2011 Napa Fire Ladder
Custom
[ft]
Copyright (c) 2011, Transoft Solutions
CITY OF NAPA FIRE ENGINE

TURN DIMENSIONS
Turning Performance Analysis

Chassis: Velocity Chassis (Big Block)
Body: Pumper, Med, Galv, 2nd Gen

Parameters:
- Inside Cramp Angle: 45°
- Axle Track: 82.92 in.
- Wheel Offset: 4.68 in.
- Tread Width: 14.90 in.
- Chassis Overhang: 65.99 in.
- Additional Bumper Depth: 16.00 in.
- Front Overhang: 81.99 in.
- Wheelbase: 198.00 in.

Calculated Turning Radii:
- Inside Turn: 15 ft. 6 in.
- Curb to Curb: 29 ft. 8 in.
- Wall to Wall: 33 ft. 9 in.

Comments:

Actual Inside Cramp Angle may be less due to highly specialized options.

Curb to Curb turning radius calculated for a 9.00 inch curb.
### Turning Performance Analysis

**Vehicle Information**

- **Chassis**: Velocity Chassis (Big Block)
- **Body**: Pumper, Med, Galv, 2nd Gen

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Select Current Vehicle

Group:
- VSS 1990 (CH)
- RAS-K-5AE (DE)
- FGSG 2001 (DE)
- CROW (NL)
- ROA (NL)
- DANSK (DK)
- VEPESEN (NO)
- VAGVET (SE)
- TIEHALLINTO (FI)
- CITY OF NAPA

Vehicle:
- LADDER TRUCK '94 SIM
- FIRE ENGINE
- LADDER TEMPLATE

Name: FIRE ENGINE1
Group: CITY OF NAPA
Type: Fire Truck
Lock to lock time: 7.00 sec.
Steering lock angle: 34.0 deg.
Length: 30.77 feet
Width: 8.50
Track: 8.90
Units: feet

OK  Cancel  Help
STEERING LOCK ANGLE = 34.0 deg.

ACHIEVED STEERING ANGLE:

- 30 deg. SWEEP ANGLE: 19.6 deg.
- 60 deg. SWEEP ANGLE: 27.7 deg.
- 90 deg. SWEEP ANGLE: 31.2 deg.
- 120 deg. SWEEP ANGLE: 32.8 deg.
- 150 deg. SWEEP ANGLE: 33.5 deg.
- 180 deg. SWEEP ANGLE: 33.8 deg.