Attachment A
Miscellaneous Requirements

1.0 QUALITY ASSURANCE PROVISIONS

1.1 Inspection and Sampling:

All thermoplastic material intended for use by the California Department of Transportation (Department) must be sampled, tested and approved by the Transportation Laboratory **before** shipment.

Manufacturers shall take representative samples of each lot of thermoplastic and ship the samples to the Transportation Laboratory. The address of the Transportation Laboratory is listed in section 3.4. Two (duplicate) 6000 g (13 lb) samples of each lot of thermoplastic are required to be sent to the Transportation Laboratory for testing unless other arrangements have been made. A lot shall consist of a batch or consecutive batches of thermoplastic manufactured on the same day using the same formulation. A batch shall be that amount of thermoplastic that was manufactured and packaged in a single operation. Thermoplastic from the same lot shall be palletized, shrink-wrapped, labeled with the manufacturer's lot and batch numbers (on each pallet) and batch number (on each bag) and stored in a common area to facilitate random sampling of the entire lot by an Inspector. A lot shall be more than 2000 lbs and less than 44,000 lbs of thermoplastic.

Manufacturers must submit the following information along with the two representative 13 lb samples of each lot for testing.

1. State Specification number.
2. Manufacturer's Product number
3. Color; (White or Lead-Free Yellow) and total lot size (lbs) represented by samples.
4. Identification numbers of batches comprising the lot, and lot number.
5. Date of manufacture.
6. Form (block or granular).
7. Viscosity
8. Binder Type (hydrocarbon or alkyd).
9. Sampling method (splitting, thieving, quartering, random bag, etc.).
10. Purchase Order or Contract number.

A manufacturer's test report shall also be included with the representative duplicate samples of each lot sent to the Transportation Laboratory. The following information shall be included in the manufacturer's test report:

- Brookfield Thermosel Viscosity
- Hardness
- Binder Content
- Glass Bead Content

- Daytime Luminance Factor
- Yellow Color (for yellow only)
- Yellowness Index (for white only)

The samples and above information shall be sent to the Transportation Laboratory at the address listed in section 3.4. A Certificate of Compliance (see section 3.1) shall accompany the samples.

Once the Transportation Laboratory approves a lot of thermoplastic, the manufacturer will be notified that the lot is approved for shipment.
When shipments of the approved lots/batches of thermoplastic are made to a Department Maintenance facility, the manufacturer shall fax the following information to the Transportation Laboratory within 48 hours of the shipping date. Out of State manufacturers shall also fax the following information to the Transportation Laboratory whenever shipments of approved lots/batches are shipped to warehouses, resellers, or Contractors within the State of California.

- State Specification number.
- A list of each delivery locations and delivery dates.
- Name and phone number of contact person(s) at the delivery location(s).
- Colors, batch/lot numbers and quantity of material comprising shipment.
- Purchase Order number or Contract number and date that order was received.

This information shall be faxed to: Transportation Laboratory, Chemical Testing Section, 5900 Folsom Blvd., Sacramento, CA 95819-4612, attn.: Lisa Dobeck, Fax (916) 227-7168.

1.2 The Department reserves the right to take random samples of lots/batches of thermoplastic destined for use by the Department, at the manufacturer's facility. Sampling may also be done at the Contractor's warehouse or jobsite. If requested by the Inspector, batch tickets must also be provided for batches of thermoplastic produced for the Department.

The Department also reserves the right to retest any batch/lot of thermoplastic after delivery. Results from such retesting shall prevail over all other tests and will be the basis of rejection. Material not meeting the specification shall be removed and replaced by the supplier at their expense, including all costs for handling, retesting and shipping.

1.3 **Testing:**
All tests shall be performed according to the specified test methods, latest revision. Qualitative and quantitative analysis may also be performed by other methods of analysis, at the option of the Department. The manufacturer shall

maintain a laboratory sufficiently staffed and equipped so as to maintain the quality of the product as called for in these specifications.

2.0 PREPARATION FOR DELIVERY

2.1 Packaging:

2.1.1 Block Form:

The thermoplastic material shall be packaged in suitable containers to which it will not adhere nor interact during shipment and storage. The blocks of cast thermoplastic material shall be approximately 35 by 12 by 2 inches and shall weigh approximately 50 lbs. The containers shall be palletized as specified in the contract or purchase order.

2.1.2 Granular Form:

The thermoplastic material shall be packaged in meltable bags which are compatible with the thermoplastic and which weigh approximately 50 lbs when filled. The containers must have sufficient strength and be properly sealed to prevent breakage and leakage during normal handling. The bags shall be shrink-wrapped to reduce shifting of the bags on the pallet and shall be palletized as specified in the contract or purchase order.

2.2 Markings:

Each individual unit/container of product shall be labeled. This label shall include: State Specification number, color, type of binder, manufacturer's name and address, date of manufacture and batch number. Lead-free yellow materials shall be marked "Lead-Free". Thermoplastic meant for recessed application shall be marked "For Recessed Application". All markings on containers shall be legible and permanent. Markings shall not smear or rub off container. Containers failing to meet marking requirements will not be accepted.

The containers and labeling shall meet all applicable US Department of Transportation and Interstate Commerce Commission regulations. Concerning the content, each container shall be labeled with such warnings or precautions as are required by Local, State and Federal laws and requirements.

3.0 NOTES

3.1 Certificates of Compliance:

The manufacturer of thermoplastic materials shall furnish the Engineer with a Certificate of Compliance in conformance with the provisions of the California Department of Transportation Standard Specifications, latest version, section 6-1.07, "Certificate of Compliance." The Certificate shall also include a list, by title and section, of all applicable State and Federal packaging and labeling laws and a statement that all requirements have been met. Certificates of Compliance shall be sent along with each delivery of thermoplastic and also with samples sent to the Transportation Laboratory for testing.

3.2 **Material Safety Data Sheets:**

Material Safety Data Sheets (MSDSs) shall be provided by the manufacturer with each delivery of thermoplastic. These MSDSs shall include health hazard information on the material when it is heated to application temperature.

3.3 **Patents:**

The Contractor shall assume all costs arising from the use of patented; materials, equipment, devices or processes used on or incorporated in the work, and further agrees to indemnify and save harmless the State of California and its duly authorized representatives from all suits at law or action of every nature for or on account of the use of any patented; materials, equipment, devices or processes.

3.4 **Contact Information:**

Please send the representative samples of each lot to:

California Department of Transportation
Transportation Laboratory – Chemistry Branch
5900 Folsom Blvd.
Sacramento, CA 95819
Attention: Andy Rogerson
Fax: (916) 227-7168

STATE OF CALIFORNIA SPECIFICATION

PALLETS, WOODEN

1 SCOPE

This specification covers pallets intended for use with low lift pallet trucks or forklift trucks.

2 SPECIFICATION AND STANDARDS

Specifications and standards referenced in this document in effect on the opening of the Invitation for Bid form a part of this specification where referenced.

3 REQUIREMENTS

3.1 Material

The pallets shall be constructed from nominal size standard or better (West Coast Lumber Inspection Bureau, Standard Grading Rules for West Coast Lumber) grade Douglas Fir, Hemlock, Larch or Hem-Fir. The stringers shall be S4S and the decking S4S or S1S2E (re-

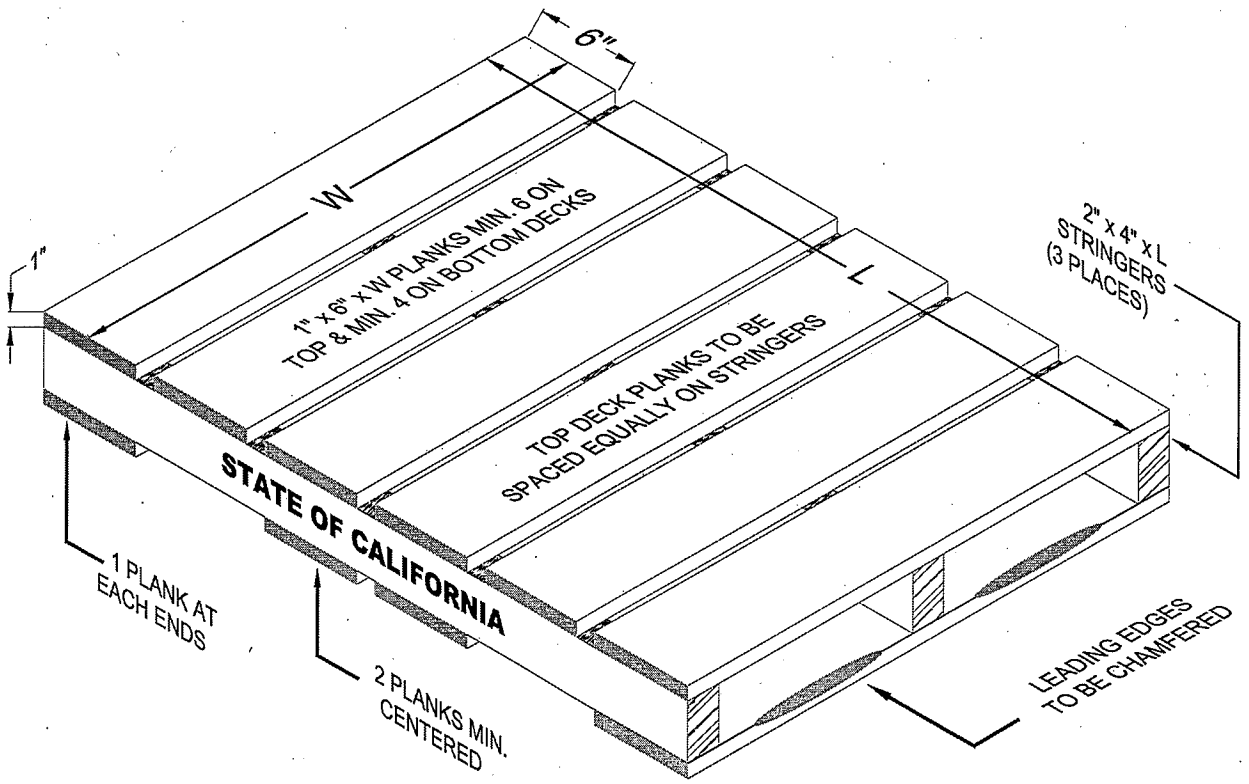

FIG. 1 - TYPE 2 WOODEN PALLET

sawed) with no edge knots. Sawed side is to be assembled to the inside of the pallets. Fastening shall be accomplished with 2¼ inch (+1/16 inch) 7 penny flat head drive screws (helical threaded nail) or 2¼ (+1/16 inch) #10 wire gauge annular ring nails as recommended in Specifications and Grades for Warehouse. Permanent or Returnable Pallets of West Coast Woods as published by the National Wooden Pallet and Container Association (Specifications and Grades, NWPCA).

3.2 Non-Standard Duty-Cycle Pallets

When specifically requested by the user, pallets may be manufactured using pine, oak or ash woods.

3.3 Construction

Pallet type and construction shall comply with Specifications and Grades, NWPCA. The pallets shall be Grade "Quality" (QAL).

The decking shall be secured with 3 nails or screws at each surface of contact with the stringer. Nails shall not be within ½ inch of deck-board edges or another nails.

All leading and outside edges of the bottom deck shall be chamfered. The chamfers shall be at least 12 inches long and shall be cut on an approximate 35 degree angle to the face so as to leave an edge adjacent to the chamfer not less than ¼ inch nor more than ½ inch from the outer

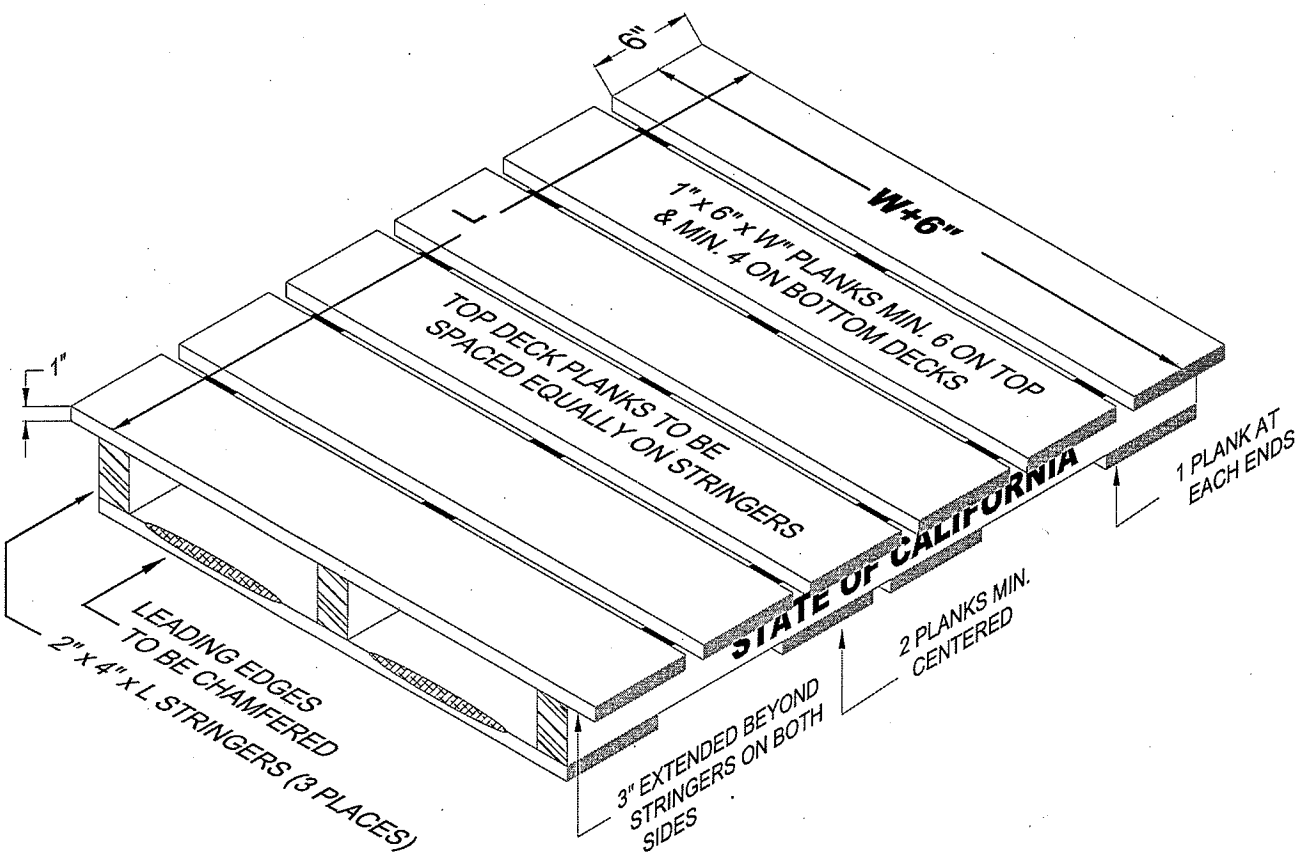

FIG. 2 - TYPE 4
SINGLE WING WOODEN PALLET

edge of the deck-board. The chamfer shall extend to within 3 inches of the stringers. Pallet configuration shall comply with illustration A.

COMMONLY USED PALLET TYPES & SIZE			
SIZE	**TYPE**	**TOP DECK**	**BOTTOM DECK**
1	**2** (Fig. 1)	42"L x 36"W Six 1" x 6" x 36" deck-boards, spaced evenly along the pallet width	42"L x 36"W Min. Four 1" x 6" x 36" boards. One placed each end of the stingers Two at center of the stringers
2	**2** (Fig. 1)	42"L x 42"W Six 1" x 6" x 42" deck-boards, spaced evenly along the pallet width	42"L x 42"W Min. Four 1" x 6" x 42" boards. One placed each end of the stingers Two at center of the stringers
3	**2** (Fig. 1)	44"L x 44"W Six 1" x 6" x 44" deck-boards, spaced evenly along the pallet width	44"L x 44"W Min. Four 1" x 6" x 44" boards. One placed each end of the stingers Two at center of the stringers(Fig. 1)
4	**2** (Fig. 1)	45"L x 36"W Six 1" x 6" x 36" deck-boards, spaced evenly along the pallet width	45"L x 36"W Min. Four 1" x 6" x 36" boards. One placed each end of the stingers Two at center of the stringers
5	**2** (Fig. 1)	46"L x 44"W Six 1" x 6" x 44" deck-boards, spaced evenly along the pallet width	46"L x 44"W Min. Four 1" x 6" x 44" boards. One placed each end of the stingers Two at center of the stringers
6	**2** (Fig. 1)	48"L x 48"W Six 1" x 6" x 48" deck-boards, spaced evenly along the pallet width	48"L x 48"W Min. Four 1" x 6" x 48" boards. One placed each end of the stingers Two at center of the stringers
Note: SIZE 1, TYPE 4 - has a single wing applied to top deck.			
1	**4 (Fig. 2)**	42"L x 36"W Six 1" x 6" x 36" deck-boards, spaced evenly along the pallet width with 3" wings extending beyond the stringers outboard faces	42"L x 30"W Min. Four 1" x 6" x 36" boards. One placed each end of the stingers, Two at center of the stringers

4 SAMPLING AND INSPECTION

This commodity will be sampled and inspected for compliance to this specification as deemed necessary. Sampling and inspection by attributes will be in accordance with ANSI/ASQ Z1.4 1993, Sampling Procedures and Tables for Inspection by Attributes. An inspection lot is defined as one delivery to one agency at one time.

4.1 Workmanship

The pallets shall be free from defects as outlined under Grade "Quality" (QAL) in the "Specifications and Grades", NWPCA.

5 MARKING

Each pallet shall be marked (two places), **"STATE OF CALIFORNIA"**. Marking shall be easily readable, in black letters and on outboard faces of stringers.