



***A Guideline for
Asphalt Paving Materials (APM)
Pre-Paving Conference Agenda***

ASPHALT PAVING MATERIALS -PRE-PAVING CONFERENCE AGENDA

Rev. 11-22-16

*The items in the following agenda are minimum requirements that should be covered during the conference. The agenda may be used as is or as a base to develop a customized agenda. **Checked boxes adjacent to names of attendees are to be on the project distribution list.***

Project Number:		<input type="checkbox"/> Owners Rep:	
Project Code (SA):		Project Engineer:	
Location:		Contractor:	
Date:		Superintendent:	
Time:		Foreman:	

I. Attendance Roster

<input type="checkbox"/> Name:		Office Number:	
Representing:		Fax Number:	
Responsibilities:		Cell Number:	
City, State, Zip:		E-Mail Address:	

<input type="checkbox"/> Name:		Office Number:	
Representing:		Fax Number:	
Street Address:		Cell Number:	
City, State, Zip:		E-Mail Address:	

<input type="checkbox"/> Name:		Office Number:	
Representing:		Fax Number:	
Street Address:		Cell Number:	
City, State, Zip:		E-Mail Address:	

<input type="checkbox"/> Name:		Office Number:	
Representing:		Fax Number:	
Street Address:		Cell Number:	
City, State, Zip:		E-Mail Address:	

II. PROJECT ORGANIZATION AND STATUS

A. OWNER/AGENCY Personnel:

1. Person in Charge at Paving Site:

Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	

2. Alternate Contact (when personal identified in A.1 is not present):

Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	

3. Quality Assurance Supervisor:

Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	

4. Tester/Duties:

Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	

5. Inspector/Duties:

Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	

Comments: Discuss the Escalation Process for Paving Items (i.e. what is the chain of command and how/when issues are elevated to the next level in an effort to improve communication and decision making).

B. Contractor Personnel:			
1. Quality Control Supervisor:			
Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	
2. Personnel to Notify at Paving Site			
Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	
3. Other:			
Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	
Comments: Discuss the Escalation Process for Paving Items (i.e. what is the chain of command and how/when issues are elevated to the next level in an effort to improve communication and decision making).			

II. PROJECT ORGANIZATION AND STATUS

C. Testing Information:
1. Is (Are) the mix design(s) approved by the Owner/Agency? (CDOT Form 43) (MGPEC Form 20)
2. Test locations determined by?
3. Frequency of tests to be performed? Refer to table 106-1 of section 106.05 of the Standard Specifications for minimum sampling and testing for Asphalt Paving Materials (APM). <input type="checkbox"/> Check Testing has been completed. Which daily Rice value will be used for compaction verification? (Field Lab or Region Lab)
4. Are Quality Assurance tests to be performed in addition to Quality control tests? (All jobs including "M" projects greater than \$150,000 require testing) ➤ If Yes, how often and who will be responsible to schedule the QA tests?
5. Turnaround time of QA and QC test results. ➤ Preliminary test results shall be distributed immediately upon completion. ➤ Final test results shall be distributed immediately upon completion.
<i>No change shall be made in the ingredients comprising the approved mix design without prior written approval of the Project Engineer. This includes asphalt binder suppliers.</i>

III. SCHEDULING

A. Materials:

Materials will be available for sampling on:

B. Asphalt Plant:

The asphalt plant will be ready to be checked on:

- What is the location of the plant to be used?

- What is the back up plan if the designated plant breaks down?

- Type of Release Agent available?

C Scales and Certified Weigher:

1. Has a copy of the scale certification been submitted? Yes No Comments:
➤ Has a copy of the weigher certification been submitted? Yes No Comments:

2. Weigh tickets shall contain information required by the owner. Comments:

3. Are truck weigh tickets required to be delivered on site? How will the weight tickets be collected? Comments:

4. The Contractor shall provide a list of the haul vehicles and required information per specification (CDOT subsection 109.01)

5. Random checks of the scales are required in the Standard Specifications (CDOT 109.01)

D. Paving Equipment:

The paving equipment will be set up and ready to be checked on:

E. Paving Sequence:

1. The Contractor will commence paving on:
2. How many days per week does the Contractor intend to work?
3. The Contractor proposes to work the following hours:
4. Where will paving start?
5. What paving sequence will the Contractor follow?

F. Quality Control Plan. A quality control plan shall provide information to control the quality of the following:

1. Segregation:
 - Submitted: Date Submitted
 - Approved: Date Approved
2. Longitudinal Joint Construction:
 - Submitted: Date Submitted
 - Approved: Date Approved
3. Transverse Joint Construction:
 - Submitted: Date Submitted
 - Approved: Date Approved

<p>4. Smoothness:</p> <ul style="list-style-type: none"> ➤ This Project is Category 1 <input type="checkbox"/> Category 2 <input type="checkbox"/> Category 3 <input type="checkbox"/> Category 4 <input type="checkbox"/> ➤ This Project is Profiler (MRI) <input type="checkbox"/>
<p>5. Will an on-site Pre-Placement (Tailgate) meeting occur prior to the beginning of placement to discuss "Best Practices" (See Attached) <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>6. Who will be the 3rd party, independent testing lab for dispute resolution?</p> <p>a. Asphalt Mix Dispute Lab (per CP 17)?</p> <ul style="list-style-type: none"> ➤ <input type="checkbox"/> Submitted in writing prior to Pre-Pave Conference. <p>b. Roadway Smoothness Profiling?</p> <ul style="list-style-type: none"> ➤ <input type="checkbox"/> Submitted in writing prior to Pre-Pave Conference.
<p>7. Other project specific "Special Provisions":</p>

IV. PREPARATION

A. Method of Approving Pavement Surface? (IE: Soil Subgrade, ABC, Milled Surface, ETC.)

Milled surface will be ready for inspection on what date?

Comments:

B. Has the Subgrade or Underlying Pavement Surface Been Approved for Paving?

- Yes
- No

Is the milled surface approved?

- Yes
- No
- NA

- By whom was the pavement surface approved?

C. Tack Coat:

1. Material type
2. Application Rate?
3. How will the Contractor protect the tacked surface after placement, and prior to the placement of the APM?

Comment: The Inspector/Tester will verify all surfaces to accept a new layer of APM will have the proper amount and coverage of tack placed.

V. PRODUCTION AND PLACEMENT

A. Compaction Test Section:

The following procedures should be observed and documented:

1. The Contractor must establish a roller pattern and carefully record the following information:

a. Type, size, amplitude, frequency, and speed of roller:

b. Tire pressure for rubber tire rollers and if the pass for vibratory rollers is vibratory or static:

c. Surface temperature of mixture behind the lay-down machine and subsequent temperatures and densities after each roller pass:

d. Sequence and distance from lay-down machine for each roller and total number of passes of each roller to obtain specified density:

2. When the Compaction Test Section has been completed, the Contractor shall furnish a complete copy of this data to the person in charge (II.A.1) before continuing to pave. Comments:

3. When a successful Compaction Test Section has been completed, the Contractor is required to maintain the roller pattern established during the Compaction Test Section for the balance of the Hot Bituminous Pavement construction (i.e., the Contractor must use the same number and type of rollers and operate them at the same speed, frequency, amplitude and in the same position, relative to the lay-down machine, as was performed during the Compaction Test Section. If Contractor wants to perform minor* changes to the roller pattern that was established during the Compaction Test Section, the Contractor must Perform a Roller Pass Study to demonstrate that the density is obtained with the new roller pattern before proceeding with the paving operation.

Comments:

* The Project Team needs to agree to "minor" at prepave. Minor changes may include items such as: type of roller; numbers of rollers; distance from paver; number of roller passes; and temperatures.

4. The Contractor is responsible for compaction testing of the Compaction Test Section. Comments:

5. Cores are required to calibrate the nuclear density gauge. The Contractor can continue to pave under the following conditions:

- The period that the Contractor continues to pave without test results from cores shall not exceed one working day.
- Construction proceeds at the Contractor's risk.
- What method will be used to bulk core samples?
Traditional Method (CP-44, Method "B") QC QA
Core Dry QC QA

Comments:

6. A new Compaction Test Section or roller pass study will be required whenever there is a major* change in the compaction process.

Comments:

* The Project Team needs to agree to "major" at prepave. Major changes may include items such as: New Mix Design; change in lift thickness; or other items that could affect the nuclear density gauge correlations.

7. Striping plan: subcontractor or Contractor to install striping?

- When will striping occur?
- What material will be used?
- Have Materials Data Sheets been submitted? Approved? If Not when?
- Has the striping plan been submitted? Approved? If Not when?

VI. TRAFFIC CONTROL

A. Method of Handling Traffic:

Has the Method of Handling Traffic been submitted for the Asphalt Paving Materials Pavement placement operation?
If not, when will it be submitted?
Is the traffic control plan approved?

VII. FOLLOW UP ITEMS

Items discussed during the meeting, which shall need follow up.

Item for follow up	Who will follow up	Date of completion or response
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

SUGGESTED BEST PRACTICES FOR MINIMIZING SEGREGATION

1. *Aggregate Stockpiles:*

- Build in Layers
- Avoid any procedure that will allow the aggregate to be pushed or dumped over the side of a stockpile
- Separate to prevent intermingling
- Aggregate Handling:
 - Loader operator works full face of stockpile
 - Install dividers on the “cold feed” bins to prevent the material from flowing into an adjacent bin
 - DO NOT pile the aggregate so high it flows over the dividers

2. *Loading the Surge Silo: (if the plant has a “batcher or “Gob Hopper” at the top of the silo)*

- Adjust the conveying devices to deposit the material in the center of the batcher or gob hopper
- Keep the gates on the batcher or gob hopper closed unless dropping a load of mix
- Close the gate on the batcher or gob hopper before it is empty to prevent the material from dribbling into the silo

3. *Loading Trucks:*

- Keep the gates on the bottom of the silo closed so the material does not dribble into the trucks
- Take care to center the trucks (left to right) when loading
- Load trucks in multiple drops with the first drop at the rear, second at the front and then alternate dumps
- If the mix is prone to segregation, you should avoid loading the trucks by “slowly” driving forward while dropping the mix from the silo

4. *Dumping Trucks:*

- To provide as surge of material to the paver, when using end dump type trucks, the box should be raised until the mix moves to the rear of the bed charging the tail gate prior to releasing the load
- If any mix is spilled on the roadway, in front of the paver while dumping the truck, the spilled mix should be removed from the roadway before the paver moves forward across the mixture on the grade

5. *Laydown Operations:*

- Only dump the wings on the paver hopper at the end of the paving day and utilize this material in the night taper joint or waste the material
- To provide consistent flow of material to the screed and avoid gradual deceleration/ acceleration, the paver should be started and stopped quickly at normal operating speed
- Keep the hopper more than half full at all times and maintain the height within 1 inch the entire paving day
- The auger height should be adjusted so the bottom of the auger is at least two (2) inches above the finished surface of the Asphalt Paving Materials (APM) mat
- Adjust the feed sensors to keep the material near the center of the auger at all times
- Correctly adjust the lead and tail crown of the screed so that the surface of the APM behind the paver is uniform in appearance and texture
- Install or verify the material management kits are installed and functioning properly. This includes the “kick back” paddles under the gear box and outer edges of the auger
- Adjust the flow control; gates at the rear of the hopper so that:
 - The slat conveyors run continuously
 - The amount of material being presented to the augers allows for them to run almost continually, (minimum of 80% of the time)

6. *Windrow Elevators:*

- When using pickup machines, they should be adjusted so that all of the APM is removed from the surface

7. *Troubleshooting:*

- If segregation is observed behind the paver, check the trucks as they arrive and are dumping to see if the mix in the truck is segregated
- The risk of causing thermal segregation is increased when paving in cooler temperatures

SUGGESTED BEST PRACTICES FOR PAVEMENT SMOOTHNESS

PAVER OPERATIONS – BEST PRACTICES and INNOVATIONS

Keep the hopper full: If you are not using a hopper insert leave as much surge as possible between truck exchanges and do not run the hopper empty. This will minimize “truck fans” by allowing hot, uniform material from the next truck to blend with mix from the previous dump. Keeping your mat as thermally uniform as possible will result in better densities.

Controlled hopper wing cycling: The wings are where the large, cooler stone tends to collect if not properly reintroduced back to the mix. Regular cycling, where allowed by spec, will reduce large buildups of this segregated material. Don't wait until you are “out of material” to cycle the wings.

Use a hopper insert: If you are using pick up machines and windrow paving use a hopper insert. It will reduce or eliminate segregation.

Keep a constant head of material at the spreading augers: A consistent flow of material to the spreading augers will prevent them from spinning too fast or too slow, which can cause longitudinal segregation. As a rule of thumb a proper head of material is ½ up the spreading auger. Constant changes in the head of material make waves in the mat. If allowed to rotate too fast, longitudinal stripes will occur in line with the reversing augers; too low a rate and the larger stone will drop and collect at the bearing support

Time the conveying and spreading systems: Ensure the ratio pots or flow gates are set to deliver enough material to the spreading augers to keep them running continuously. Set your sonic feeds and leave them there.

Keep your paver speed steady: Drag race paving may be entertaining but stops and starts cause the head of material to rise and fall changing the mat thickness. This not only affects ride but can detrimentally affect density.

Correct lead crown setting and proper strike off adjustment: Equipment fine-tuning issues will help eliminate longitudinal segregation. String line your screed before every job and introduce the correct amount of lead crown; usually 1/8 - 1/4 inches. Make sure your strike offs are correctly aligned. Refer to your owner's manual for the recommended procedure.

Correct spread auger length: Once you have the job planned out if you need to build up the spreading augers then DO IT. Trying to compensate for spreading augers that are too short by running them faster will only result in segregation. This only gets worse with more gap graded mixes. If you have a 20' screed and the job calls for wide paving then BUILD UP THE SCREED; use the auger extensions, wide mat grade supports and the outboard bearing supports. The finished jobs will more then compensate for the time involved in the build up. Then plan the layout so you can maximize the use of the built up screed.

Use Thermal guns: Equip your paver operator and roller hands with thermal (infrared) handheld thermometers and use them to monitor changes in the mat temperature. Establishment of a thermal range during the test strip process gives you a working range to be used through out the paving project.

Don't broadcast material across the mat: This just gives the appearance of a segregation problem. Don't rake material off the joint onto the new mat. Don't walk on the fresh mat.

Train your personnel: Not only in the operation of the equipment but in the art of reading mat defects. The sooner these defects are identified the sooner remedial action can be taken. Remember when the only tool you have is a hammer every problem looks like a nail.

Pave predominately uphill: On steep grades in mountainous terrain, pave uphill when possible. Control of material and speed of equipment is easier to maintain when paving uphill. Paving downhill may be problematic with paver and roller speeds. This may cause "ripples" in the mat that are difficult to remove. The mat may shove and tear more when operations proceed downhill, requiring patching or other undesired corrective work. QC should be onsite to monitor densities when steep grades require a change in the roller pattern.

NOTE: It is not intended to change the direction of the paving operation in rolling terrain. If the roadway grade is predominately in the uphill or downhill direction on mountain passes or other significant elevation changes, paving uphill provides a better product.

JOB SET UP – BEST PRACTICES

Partnering

All personnel involved in the construction planning and design need to meet before the job so we can all “be on the same page” and resolve possible problems before they arise.

Pre Paving Planning Meeting

Meet with your crew every day to review the plan for the day’s construction and expectations. Plan the truck route, plan the job layout, and assign people to required tasks.

Communication

Constant communication with all the elements of the paving process from design engineers to the lute man. This keeps all phases of the job on schedule and free of “Uh Ohs”.

Mix Selection

Insure the mix is of an adequate design for both strength and workability. Mind your temperatures.

Machine Maintenance

Not only does well maintained iron contribute to a more pleasant work environment it shows your people that you care enough about them to give them the best tools. It provides for a safer work environment and a more productive and profitable organization.

Smoothness-Thickness-Yield

The inspectors and field personnel need to be aware of the paving fundamental that yield, minimum thickness, and smoothness can not be obtained at the same time.

Crew Training

Not only in the operation of the equipment but in the art of reading mat defects. The sooner these defects are identified the sooner remedial action can be taken. Remember when the only tool you have is a hammer every problem looks like a nail.

Know the Consequences

Of improperly operating the machines, improper principles and techniques of paving, rolling and trucking of poor safety awareness. Designate a “job site safety man” know the way to emergency medical care.

BEST PRACTICES FOR LONGITUDINAL JOINT CONSTRUCTION

1. **BE CONSISTANT:** Decide on a plan and stick with it.
2. **COMMIT TO A GOOD JOINT:** Quality contractors build quality joints.
3. **MAINTAIN A PROPER TAPER:** Tapers range from near vertical to 12:1. Regardless of what taper is used, keep it consistent. Vertical edges and notches as vertical as possible. Keep edges confined as long as possible. Maintain a Proper “Head of Material”
4. **MAINTAIN PROPER OVERLAP:** Keep overlap consistent typically from 0-1.5 inches. Place proper amount of Asphalt Paving Materials (APM) at the joint: Too little will allow water to enter the joint. Too much will cause a ridge which will carry water and interfere with compaction. **DO NOT RAKE THE JOINT!** If raking to correct improper amount of material, just bump the joint, **DO NOT BROADCAST** loose material across the mat.
5. **USE PROPER ROLLING TECHNIQUES!**

BEST PRACTICES FOR BREAK DOWN ROLLER OPERATORS

1. Communicate – with paving crew and foreman for job requirements prior to the arrival of asphalt.
2. Confirm maintenance and water system checks – done on a daily basis to rollers.
3. Determine lift thickness – base or surface riding course.
4. Be aware of material temperature – at delivery to paver and behind screed.
5. Determine rolling drum mode – vibratory or static.
6. Make required amplitude adjustments both roller drums – depending on mix design, material thickness, and temperature zone.
7. Optimize water system controls – to avoid material pick-up and eliminate excessive water usage.
8. Establish proper rolling pattern – determined by paving width, roller drum width, unsupported edges, and drum overlap.
9. Determine rolling speed – to achieve proper impact spacing and meet smoothness requirements.
10. Monitor rolling temperature – and work within optimum temperature zones.
11. Make required rolling coverages – to achieve density requirements.
12. Adjust rolling operations – to satisfy density, smoothness, and production rates.
13. Maintain consistency throughout the entire shift.

BEST PRACTICES FOR FINISH ROLLER OPERATION

1. Communicate – with paving crew, foreman and breakdown roller operator for job requirements.
2. Confirm maintenance and water system checks – done on a daily basis to rollers.
3. Be aware of material temperature – avoid “tender zone.”
4. Determine rolling drum mode – vibratory or static depending upon requirements to achieve density and smoothness.
5. Optimize water system controls – to avoid material pick-up and eliminate excessive water usage.
6. Establish proper rolling pattern, – determined by paving width, roller drum width, unsupported edges, and drum overlap.
7. Coordinate final rolling process with QA / QC personnel.
8. Monitor rolling temperature – and work within optimum temperature zones.
9. Make required rolling coverage’s – to achieve density requirements and to remove drum edge marks.
10. Maintain consistency throughout the entire shift.

BEST PRACTICES FOR PAVER OPERATORS

Safety operates the paver using "Best Practices" procedures, to produce the highest-quality pavement possible.

1. Select a paving speed that balances delivery, paver capacity and the compaction process and pave with few if any extended stops.
2. Work with screed operator in establishing and maintaining the head of material within a plus or minus one-inch tolerance.
3. Steer the paver holding to a pre-determined reference.
4. Direct the truck driver to raise bed and exit when empty.
5. Utilize rapid, but smooth start and stops to help prevent end-of-load roughness (if stopping is necessary.)
6. Observe APM being discharged into paver hopper or insert for changes in characteristics of the mix.
7. Monitor paver for unusual noise or vibration (notify the proper person to take corrective actions).
8. Work with dump person to make sure truck does not bump paver, or let hopper run low.
9. Work as a team member.

Teamwork Agreement

We, the undersigned partners in Colorado transportation construction, agree to work together as a cohesive, cooperative team to safely deliver quality projects to the public on time and within budget, providing an opportunity for well-managed, competent contractors to make a reasonable profit.

Teamwork Objectives:

- Claims mitigated and resolved promptly
- Safer projects
- Increased job satisfaction
- Reduced delays
- Higher quality
- Reduced total project costs

Teamwork Values

What we value, we do. Each project has its own culture and its norms or “way of doing business.” The following is a list of partnering values; attributes of the way we want to do business as partners. As project leaders, the RE’s and PM’s job is to instill these values into the project and to identify and overcome any barriers that interfere with their achievement.

- Fairness
- Cooperation
- Trust
- Open and honest communication
- Teamwork
- Joint problem solving
- Working for mutual gain
- Rapid dispute resolution at the field level

Required Core Project Goals:

- Safe, On Budget, On Time, Quality Met

Recommended Project Specific Goals:

Project specific goals and mutually agreed upon individual goals may be added to your core project goals. Some recommended project-specific goals are listed below for consideration. The RE and PM should discuss with each other what types of goals are important to ensure that the project is not just good, but great!

- Environmental commitments met • Third party coordination
- Disputes resolved • Public relations
- Teamwork/communication • Minimize public impact
- Partnering maintenance • Having fun
- Public image • Job satisfaction

We have identified the following teamwork success factors and commit ourselves to their continuous improvement.

- #1 Follow up and measure progress
- #2 Train and empower the field staff
- #3 Get stakeholders to participate and buy-in
- #4 Partner at the strategic/program level
- #5 Ensure decision making and risk management occurs
- #6 Recognize and award effort

Best Practices for Operator Safety

- Unload and operate equipment only if qualified
- Inspect equipment before use
- Test backup alarm and other safety devices
- Know blind spots and swing radius
- Use seatbelts
- Use 3 points of contact entering and exiting equipment
- Look for over moving equipment and vehicles
- Wipe up grease and fluids on walking/working surfaces

Work Zone Safety Tips

- 10.** Obey Road Crew Flaggers and Speed Limits
- 9.** Look Out for Workers and Flag Persons
- 8.** Don't Tailgate!!! Keep a Safe Distance.
- 7.** AVOID Changing Lanes in a Work Zone.
- 6.** Minimize Distractions.
- 5.** Stay Alert!!!
- 4.** Be Patient!! Remember Road Improvements Benefit You!
- 3.** Keep up with the Traffic Flow.
- 2.** Expect the Unexpected, Work Zones Can Change!
- 1. Remember - Dads, Sons, Brothers, Moms, Sisters, and Daughters Work HERE!!!!!!**