Concrete Paving Field Inspection
Inspector's Workshop

What do you look for in urban paving?
What paperwork?

National Concrete Pavement Technology Center

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IOWA STATE UNIVERSITY
Institute for Transportation

www.cptechcenter.org

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Concrete Paving Field Inspection
Inspector's Workshop

1. Why are we here?
2. How do we achieve quality for PCC paving?
3. Got a project….Now what?
4. What is concrete?
5. What kinds of equipment are used?
6. What happens before you start paving?
7. What happens when you're finally paving?
8. What is the inspector's role?
9. What about all of the other road building stuff?
10. **What do you look for in urban paving?**
11. **What paperwork?**

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Instructor

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Representing the National Concrete Pavement Technology Center

www.cptechcenter.org

WHAT DO YOU LOOK FOR IN URBAN PAVING?

Urban Paving Challenges

- Challenges
  - Utilities, Staging, Access

- Become familiar with locations of:
  - Intakes
  - Manholes
  - Sidewalks
  - Utilities – gas, water, electric, etc.

- Granular base
  - Haul roads
  - Access for property owners

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Environmental Regulations

- Ready mix truck washouts & disposal
- Storm water pollution prevention plans / Erosion Control

Boxouts - Uses

- Intake and manhole locations
- Side streets
- Accesses
- Pavement width changes

Boxouts - General

- Usually formed with steel forms staked in place
- Rock placed in boxout to prevent filling with concrete
- Check forms for stability
- Post paving check for dowel bar locations

Curbs

- Check gutter flow line elevations
- Hand finishing at driveway and sidewalk curb drops
- Median and stop sign islands require special shaping

Hand Pours - Types

- Irregular areas
- Parking locations
- Turn lanes
- Intersection radius

Hand Pours – Subgrade/Subbase Preparation

- Uniformity needed
- Check for soft areas
- Utility locations

Hand Pours – Form Placement

- Clean Forms
- Straight
- Oiled
- Anchored
- Match thickness of paving
- Achieve proper drainage

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Hand Pours – Concrete Placement

- Concrete Placement
  - ➢Vibratory Screed
  - ➢Roller Screed
- Vibrator
  - ➢For consolidation
  - ➢Not for moving concrete (shovels)

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Obstructions

- Some obstacles can’t be avoided
- Be aware of potential conflicts
- Quadruple check elevations
- Think and look ahead
- Delays can cost the contractor and/or the agency $$

Proper Jointing

- Proper jointing is critical for long lasting pavement
- Check plans for joint spacing and placement
- Layout ahead of time with contractor
- Layout intersections and driveways first

The Rules of Jointing

Things to Do

- Match existing joints or cracks
- Place joints to meet in-pavement structures
- Remember max. joint spacing
- Place isolation joints where needed
- Can make field adjustments to joint location!

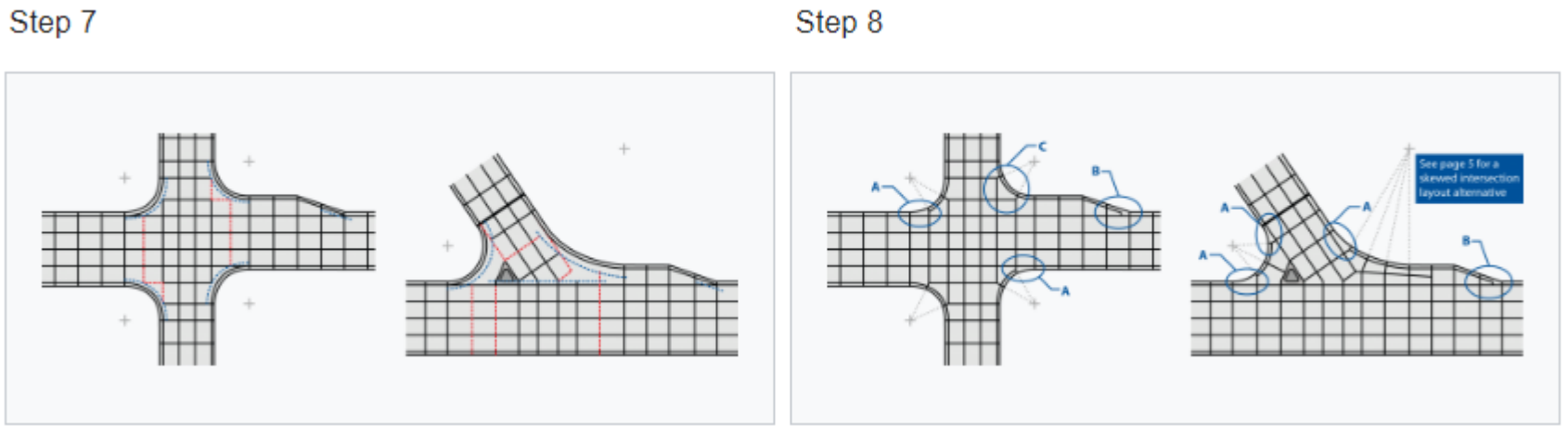
Things to Avoid

- Slabs < 1 ft (0.3 m) wide
- Slabs > 15 ft (5.0 m) wide
- Angles < 60º (~90º is best)

Do this by dog-legging joints through curved radius points

- Creating interior corners (L-shaped slabs)
- Odd Shapes (keep slabs square or pie-shaped)

ACPA: Wikipave joint layout: https://wikipave.org/index.php?title=Joint_Layout



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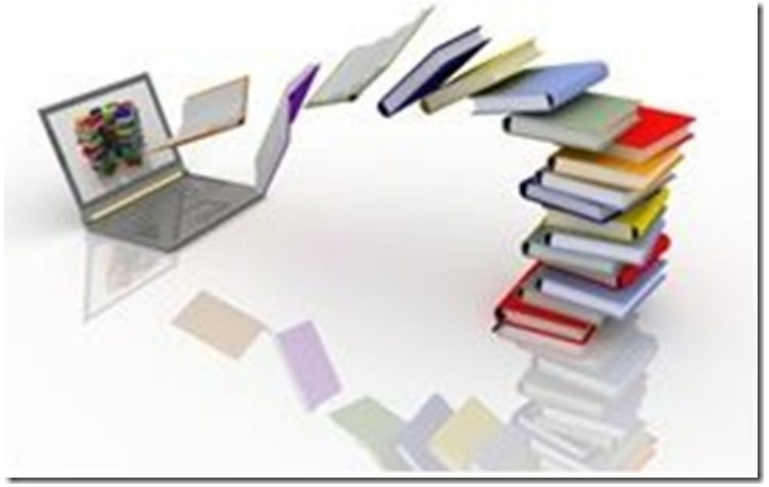
WHAT PAPERWORK?

Documentation

Document

Document

Document



Helpful Forms

Paver Setup

Form 830213

10-07

Project Information/Paver Inspection

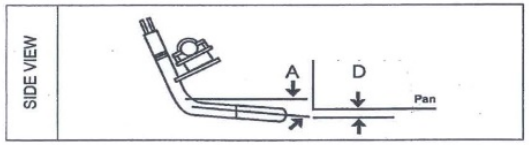
Date	Project Number	Contract Number
Location		County
Project Inspector	Paving Foreman	
Type/Model of Paver		
Type/Mounting Location of Tie-Bar Inserter		
Location of Tie-Bar Inserter from Pavement Edge		

Note: If any information changes during the project, a new form needs to be completed.

Spacing (in)																								
Paving Direction																								
Cumulative Total																								
Vibrator No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Freq X 100																								
Station																								
Freq X 100																								
Station																								
Freq X 100																								
Station																								

General Notes:

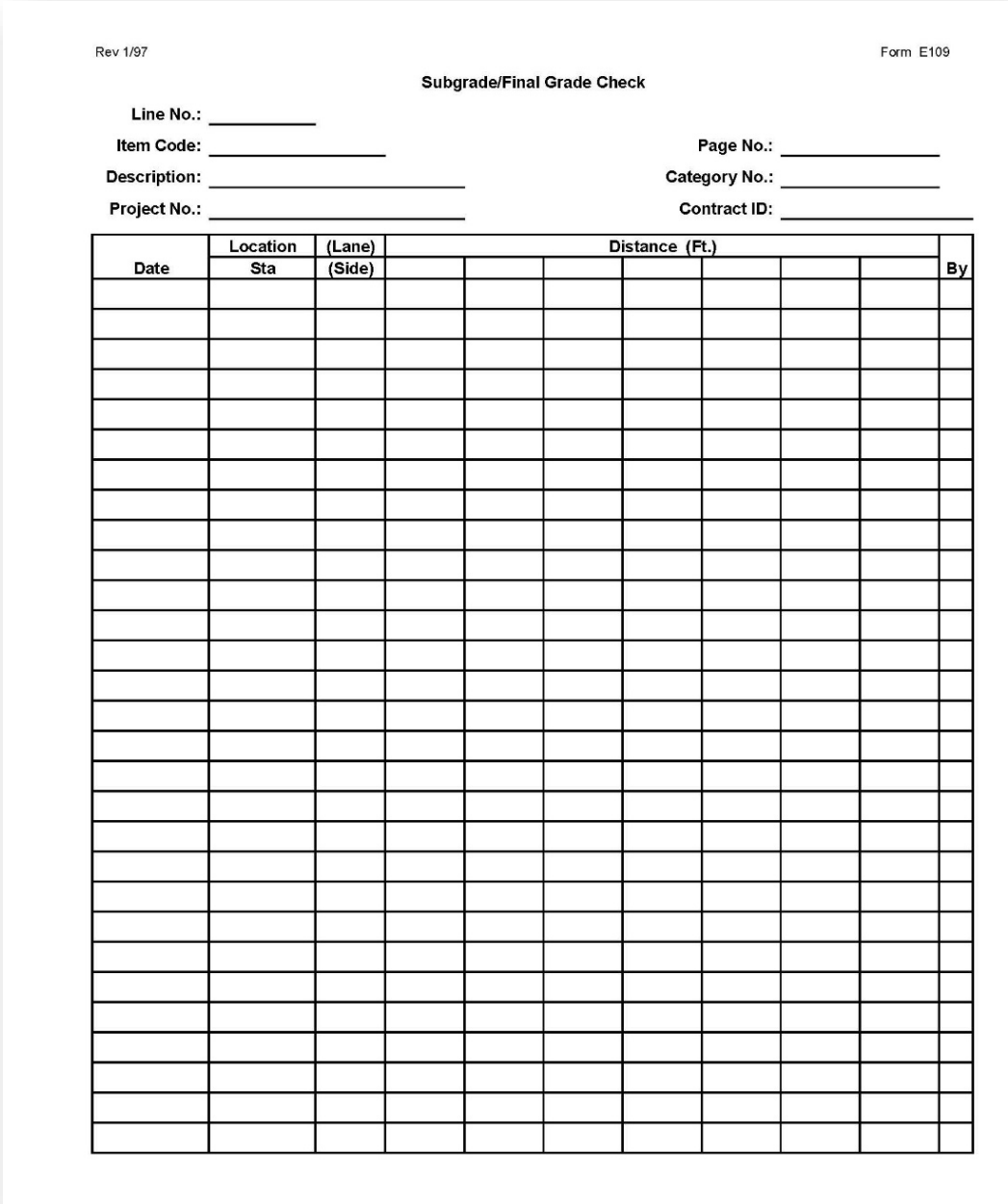
1. Spec Limits – Refer to specification 2301.
2. Spacing not to exceed 16". Centerline spacing may be increased to 30" max due to physical limitations of paver such as mounting bracket locations; spacing should not be increased for tie steel insertion or lack of adequate number of vibrators.
3. When vibration monitoring is used, check and record frequency on a minimum of two vibrators daily.
4. When vibration monitoring is not used, check and record frequency of each vibrator twice daily.



Angle	(A)=
Depth (in.)	(D)=

Helpful Forms

Subgrade Checks



Rev 1/97 Form E109

Subgrade/Final Grade Check

Line No.: _____

Item Code: _____ Page No.: _____

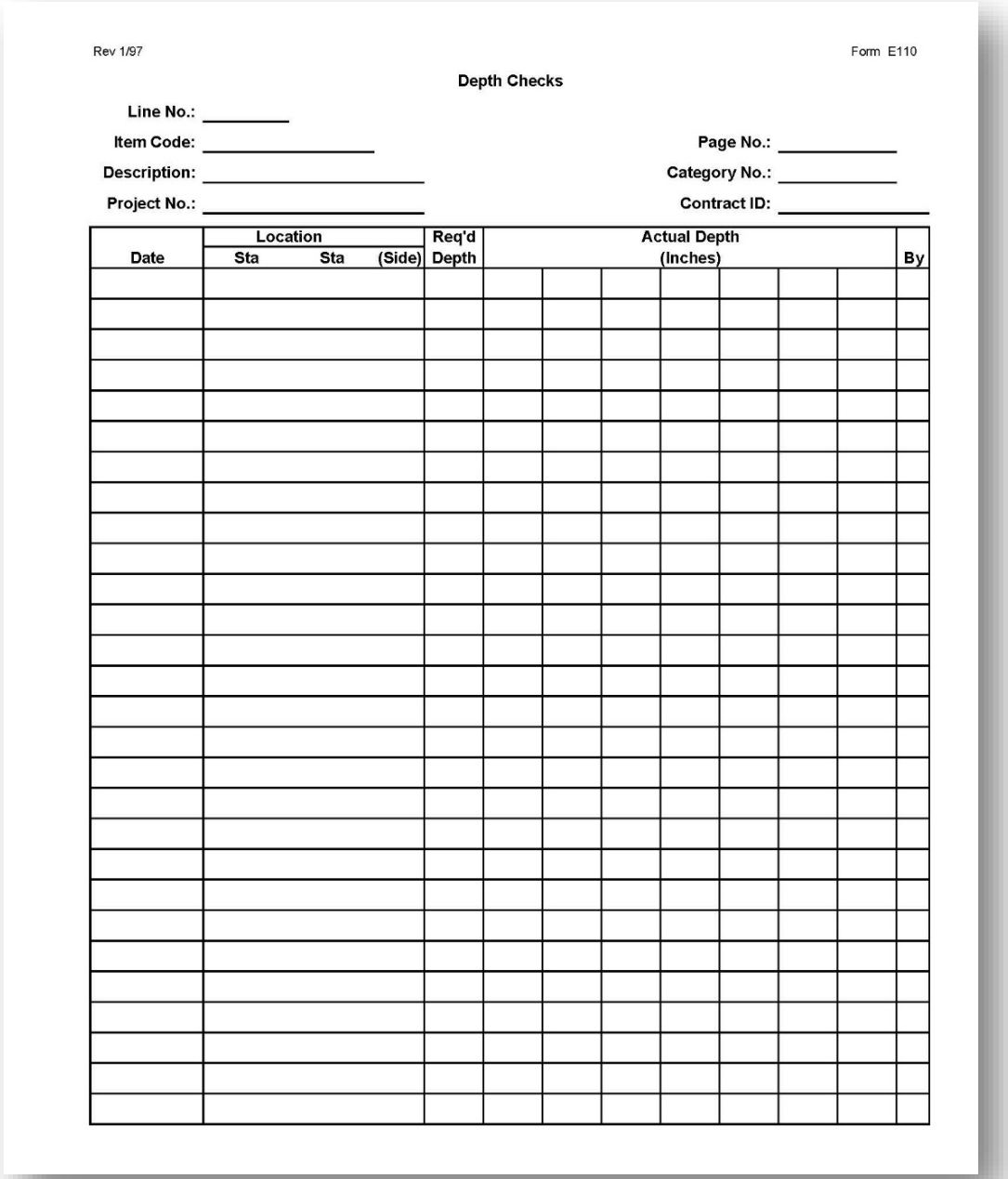
Description: _____ Category No.: _____

Project No.: _____ Contract ID: _____

Date	Location Sta	(Lane) (Side)	Distance (Ft.)							By

Helpful Forms

Depth Checks



Rev 1/97 Form E110

Depth Checks

Line No.: _____

Item Code: _____ Page No.: _____

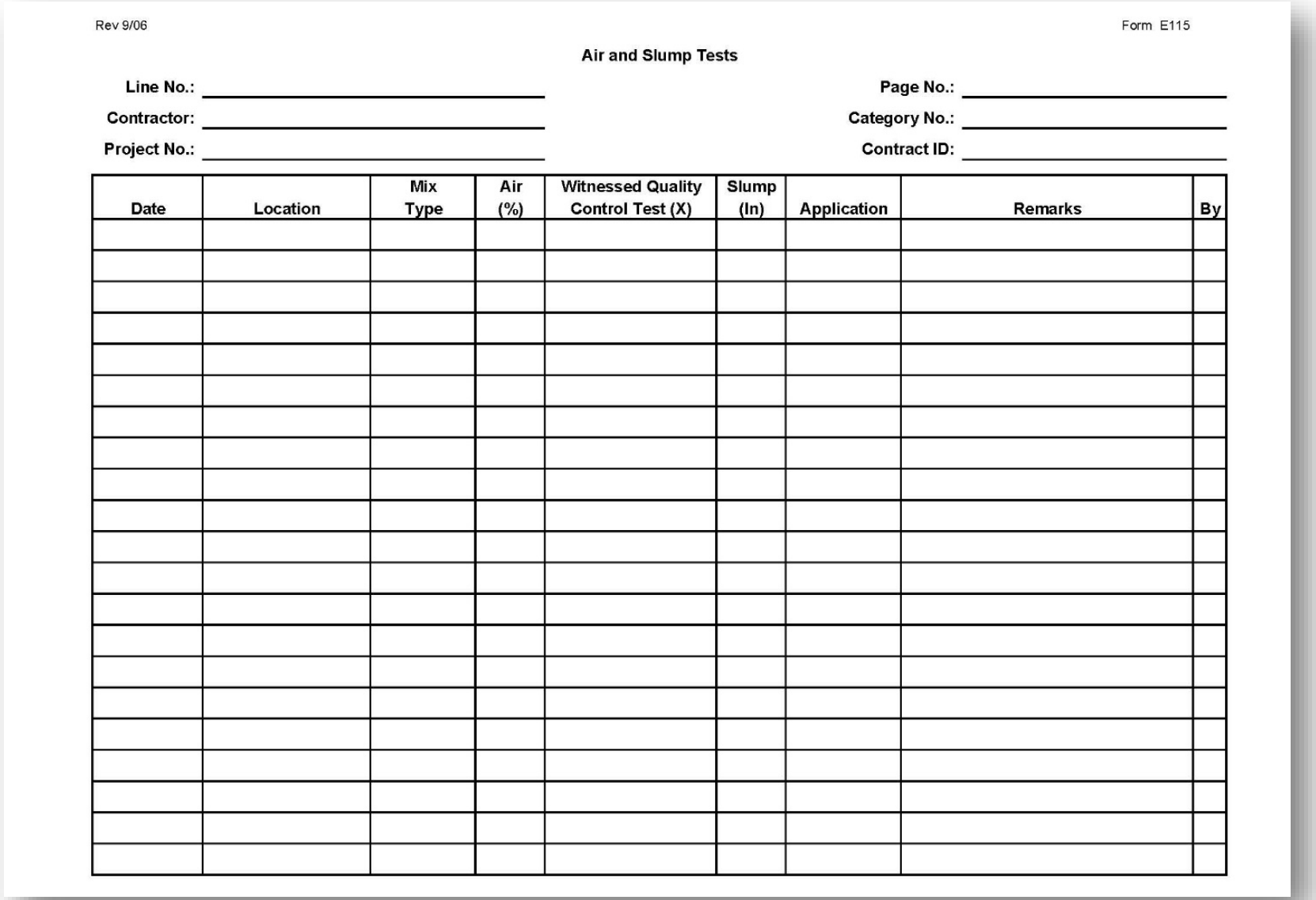
Description: _____ Category No.: _____

Project No.: _____ Contract ID: _____

Date	Location Sta	Location Sta	(Side)	Req'd Depth	Actual Depth (Inches)							By

Helpful Forms

Air/Slump



Rev 9/06 Form E115

Air and Slump Tests

Line No.: _____ Page No.: _____

Contractor: _____ Category No.: _____

Project No.: _____ Contract ID: _____

Date	Location	Mix Type	Air (%)	Witnessed Quality Control Test (X)	Slump (In)	Application	Remarks	By

Helpful Forms

Paving Items

Rev 1/97 Form E111

PC Concrete Item Check List

Line No.: _____

Item Code: _____

Description: _____

Project No.: _____

Page No.: _____

Category No.: _____

Contract ID: _____

Date	Location Sta	(Side)	Basket (x)	Tie Bars Plastic (x)	Tie Bars Hard (x)	Vibrator (x)	Air & Slump (x)	Depth (x)	Width (x)	Yield (x)	Slope (x)	Texture (x)	Mix Temp. (°F)	Protect. (Y/N)	Cure Rate (gal/sy)	By

Helpful Forms

Daily Paving Summary

1/97 Form E023A

Daily PCC Report

Line No.: __________

Item Code: ____________________

Description: ____________________________

Project No.: ____________________________

Page No.: __________

Category No.: __________

Contract ID: ____________

	Station				Time				Estimated	Used (CY)		Est.	Slip or	Cold	Pay	Pay	
Date	From	To	Lane	Mix No.	Start	Stop	Length (ft)	Width (ft)	CY Today	Today	To Date	Used (%)	Fixed (S / F)	Wethr (Y / N)	Today (SY)	to Date (SY)	By
															0.000		
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Helpful Forms

Texture

Rev 1/97 Form E112

Texture Tolerance Checks

Line No.: ________

Item Code: ____________ Page No.: ____________

Description: ______________________ Category No.: ____________

Project No.: ______________________ Contract ID: ____________

Date	Sta	Land Area Between Grooves (1)										Avg.	Texture Depth (2)						Avg.	By
												0.000							0.000	
												0.000							0.000	
												0.000							0.000	
												0.000							0.000	
												0.000							0.000	
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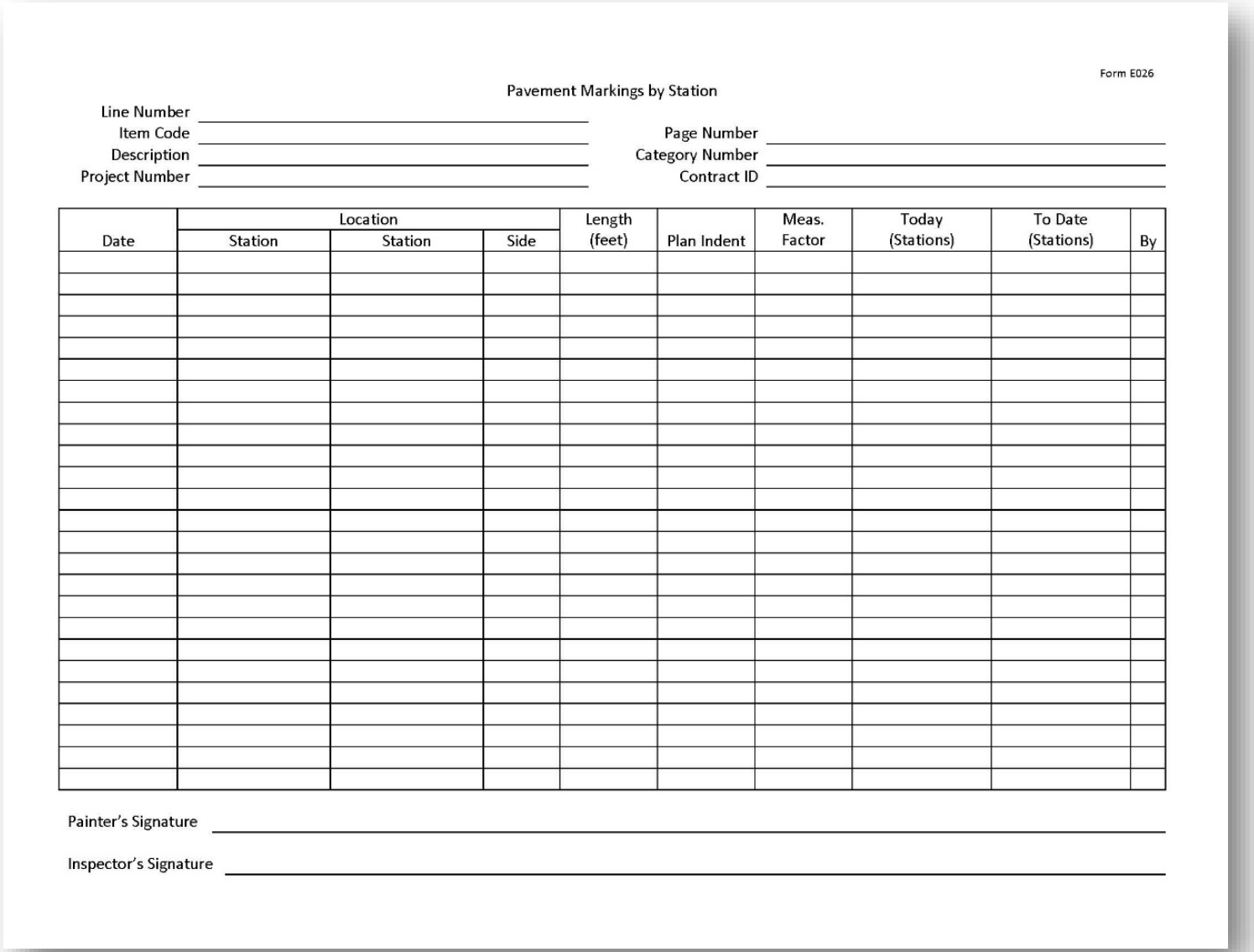
												0.000							0.000	
												0.000							0.000	

	Limestone	Gravel
Blade segment thickness:	0.130 in. max	0.130 in. max
Land area between grooves (1):	0.100 in. - 0.125 in.	0.080 in. - 0.110 in.
Texture Depth (2):	Target of 1/16 in. with an average of 1/32 in. - 3/32 in.	

Helpful Forms

Pavement Markings



Form E026

Pavement Markings by Station

Line Number _____
Item Code _____
Description _____
Project Number _____

Page Number _____
Category Number _____
Contract ID _____

Date	Location			Length (feet)	Plan Indent	Meas. Factor	Today (Stations)	To Date (Stations)	By
	Station	Station	Side						

Painter's Signature _____

Inspector's Signature _____

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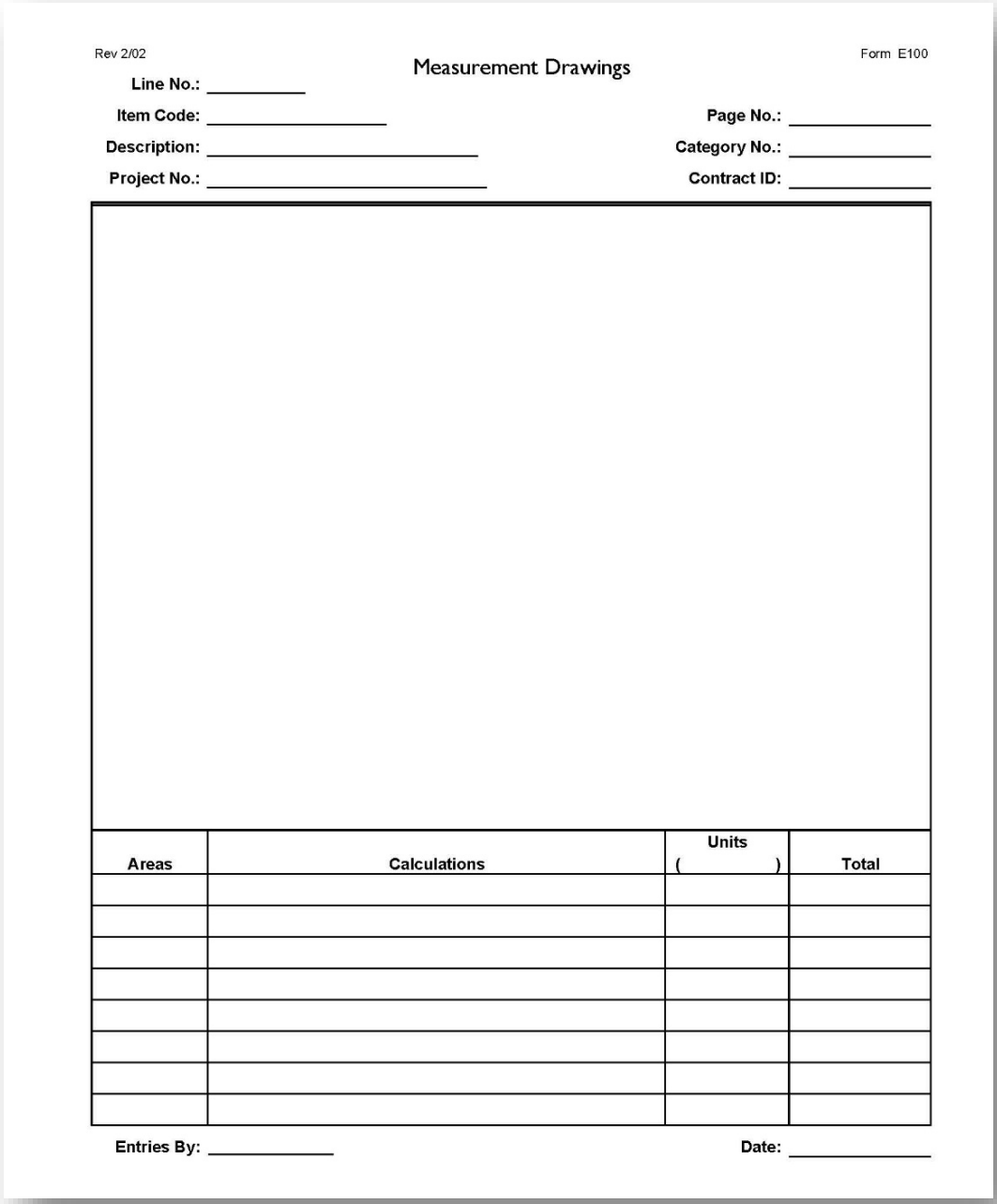
Helpful Forms

Drawing



Rev 2/02

Measurement Drawings

Form E100

Line No.: _____

Item Code: _____

Description: _____

Project No.: _____

Page No.: _____

Category No.: _____

Contract ID: _____

Areas	Calculations	Units ( )	Total

Entries By: _____

Date: _____

Inspector's Tool Kit

SPECIFICATION BOOK
SUPPLEMENTAL SPECIFICATIONS
ROAD STANDARDS
MATERIALS I.M.'S
COPY OF FORMS OR SMALL BOOK
PEN OR PENCIL
CALCULATOR
AIR METER
SLUMP CONE
BEAM BOXES
BUCKETS
SQUARE NOSE SHOVEL
RAGS
RUBBER GLOVES
CAN OF SPRAY PAINT
MAGIC MARKER
SMALL TROWEL
NUMBERS FOR STATIONING
6' RULER – ENGLISH/METRIC
4' LEVEL
STRING
VIBRATOR CHECKER
PAVEMENT DEPTH CHECKER
TIRE DEPTH GAUGE – CHECKING TEXTURE
HARD HAT
SAFETY VEST
WATER
SNACK FOOD
SUN BLOCK

THANK YOU !

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