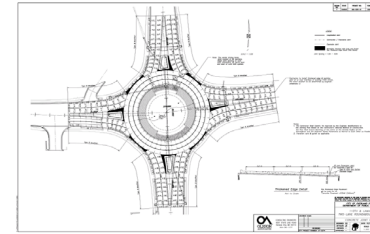


## Concrete Roundabout Construction

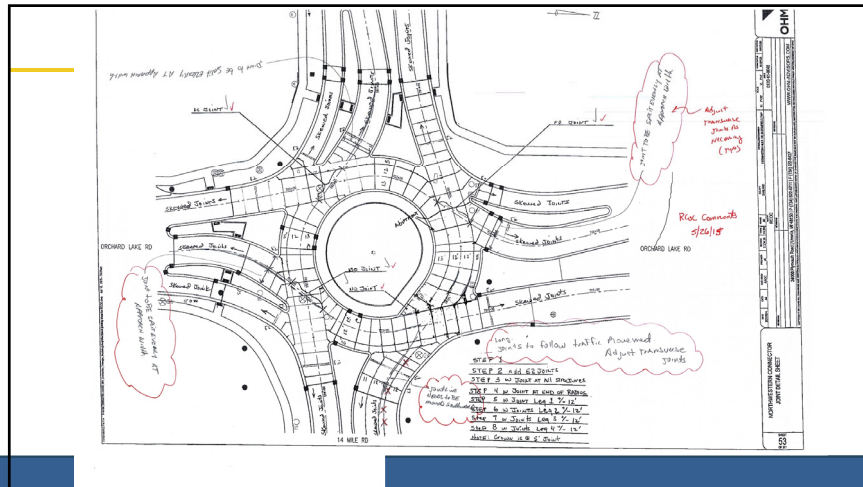
- Joint Layout Plan
  - Bring up Pavement Markings Layer/Level in CAD
  - Coordinate joint layout with traffic engineers
- Maintenance of Traffic
- Field Engineering
  - Contractor Joint Layout; Must match MOT/staging/phasing



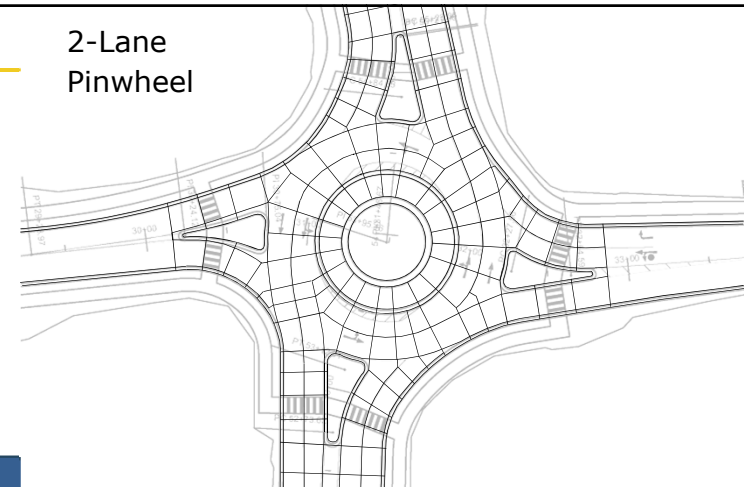
## Concrete Roundabout Jointing

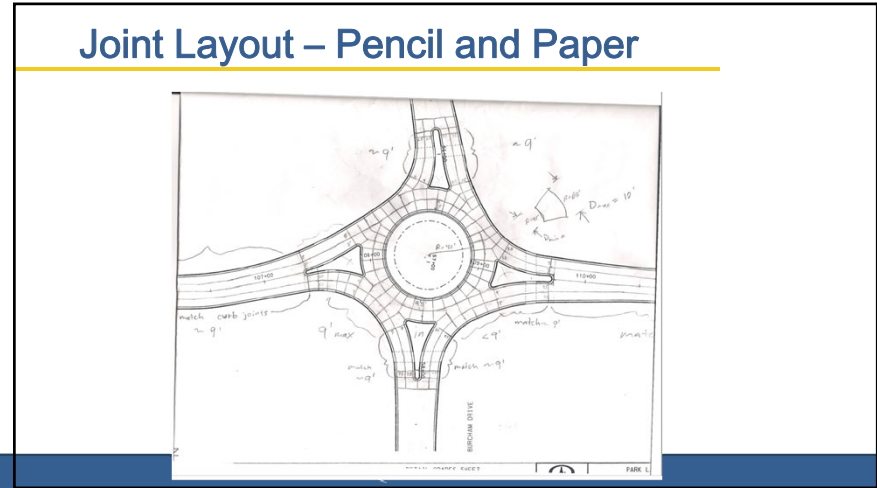
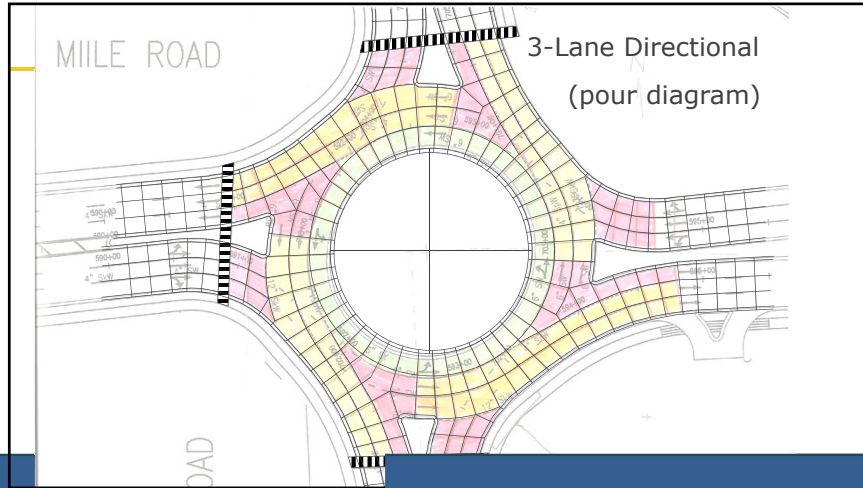


- Develop a jointing plan
  - Bird's eye view
- Remember rules
- Follow the steps
- Be practical!
- Allow for field adjustments



## 2-Lane Pinwheel





## MDOT Contractor Joint Layout Special Provision

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
JOINT LAYOUT PLAN FOR PORTLAND CEMENT  
CONCRETE PAVEMENT INTERSECTIONS

CAT JFS 1 of 2 CAT APPR OEB MJE 01-05-05  
FRSR APRR 05-05-11

**A. Description.** This special provision sets forth requirements for submitting a joint layout detail plan to the Engineer for approval and construction of joints in concrete pavements at intersections, including turn lanes, as shown on the plans. Portions of such plans, including the Standard Plans, 90 Series, R-47 Series, and R-48 Series, the standard specifications, and this special provision.

**B. Joint Layout Detail Plan.** The bids for inclusion into the joint layout detail plan are bound by when the bid is opened, and shall be open for each respective roadway. The Engineer will have the authority to determine if a joint layout detail plan is necessary and if approved, shall include longitudinal line lines and all existing and proposed utility/structure structures within the intersections and square. These structures will be available for the Contractor's use.

Using the furnished worksheets, submit a joint layout detail plan to the Engineer (5 days minimum) prior to construction. The Engineer will review the Contractor's joint layout detail plan. Any comments or proposed revisions to the plan will be returned to the Contractor in a timely manner so as to produce an approved joint layout detail plan to construct. Clear each plan to include joints related to existing joint operations, locations of longitudinal and transverse construction joints, and any other pertinent elements necessary to provide a complete understanding of the concrete pavement. Provide the Engineer with a copy of the submitted plan and any other documents used as a basis for developing the joint layout detail plan, such as the American Concrete Paving Association (ACPA) guidelines for Intersection Joint Layout.

**C. Construction.** The tolerance joint type specified for the mainline pavement will govern with the tolerance of the intersection. The tolerance joint type specified for each respective intersecting roadway will govern outside the boundaries of the intersection. Modifications to the mainline tolerance joint type specified for the intersecting roadway. Tolerances that include joints related to existing joint operations, locations of longitudinal and transverse construction joints, and any other pertinent elements necessary to provide a complete understanding of the concrete pavement. Provide the Engineer with a copy of the submitted plan and any other documents used as a basis for developing the joint layout detail plan, such as the American Concrete Paving Association (ACPA) guidelines for Intersection Joint Layout.

**D. Bid.** All plans after the contract has been awarded shall be submitted to the Engineer for review, but before construction begins. Unless otherwise specified, use all joints with the modulus, but provide unless stated according to subsection 602.23.5 of the Standard Specifications for


CAT JFS 2 of 2 12SPR02B1  
01-05-05

**4. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit prices using the following contract items (pay items):


Contract Item (Pay Item)	Pay Unit
Joint Construction (Type), Intersection	Foot
Joint Expansion (Type), Intersection	Foot
Joint Plan of Intersection, Road, Intersection	Foot

**Joint, Construction (Type), Intersection, Joint, Expansion (Type), Intersection, and Joint, Plan of Intersection (Type), Intersection will be measured in feet based on field measured quantities, not to exceed the quantity shown on the approved Contractor's joint layout detail plan. Payment includes quantity of joint materials required, such as seal, form, assemblies, expansion joint lines, and joint sealant, during, forming, and setting the joints, controlling and applying joint breakers where required, and installing joint sealers as applicable.**

## Cass Avenue Roundabouts - Construction Issues



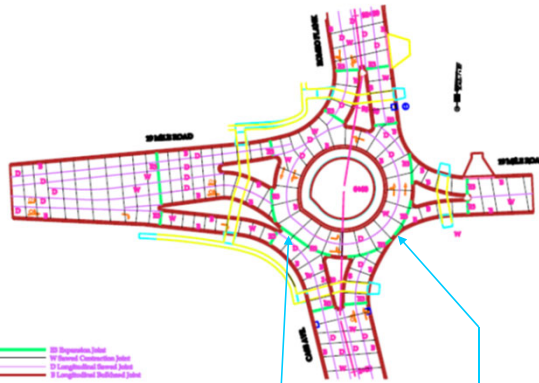
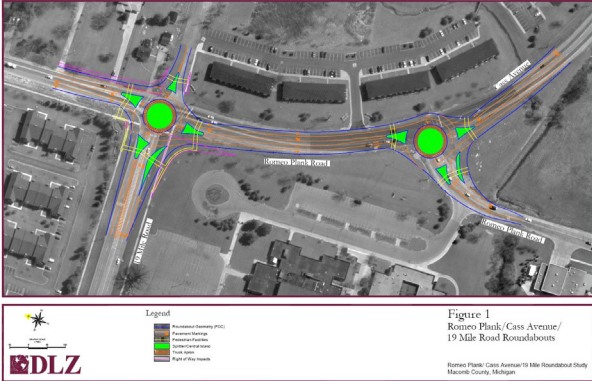
- Construction of Concrete Roundabouts Under Traffic
- Plan Your Stages Carefully
- Partner with Contractor!
- Development of Paving Plan
  - Pavement Widths
  - Elevations
  - Cross Section
- Joint Layout



### Maintenance of Traffic



### Concept Designs



Exp. Joints Isolating Roundabout

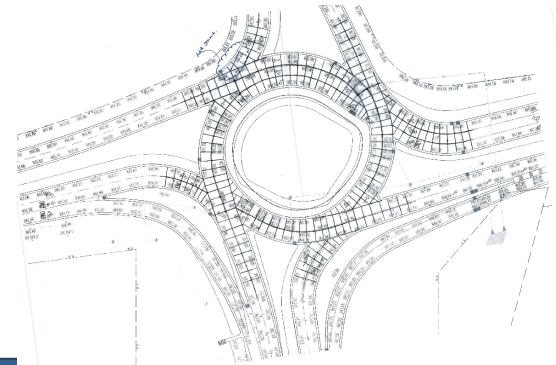


### M-5 Roundabout at Pontiac Trail, Commerce Township, Oakland County, 2011



- 10" non reinforced concrete
- Doweled in the roundabout
- Three lanes
- Constructed in three stages.

### M-5 & Pontiac Trail 60,000 ADT





### Field Engineering



### Field Engineering



### What not to do...



What not to do...



What not to do...



What not to do...



- Joint Types need to match!



Thank You!

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616-633-9629

