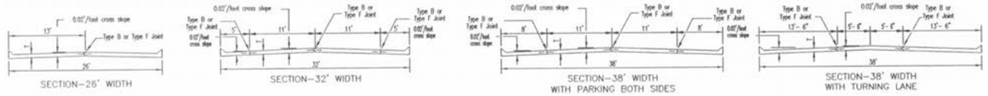
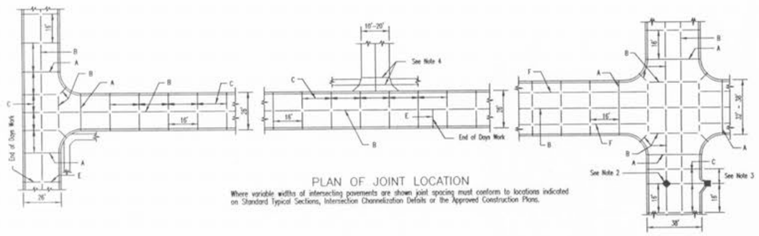
CONSTRUCTION DETAILS

INTEGRAL ROLLED CURB AND CONCRETE PAVEMENT TYPICAL SECTIONS AND DETAILS





PLAN OF JOINT LOCATION

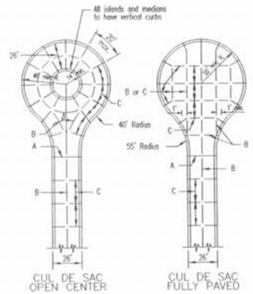
Where variable widths of intersecting pavements are shown joint spacing must conform to locations indicated on Standard Typical Sections, Intersection Channelization Details or the Approved Construction Plans.

GENERAL NOTES

1. Do not scale drawing. Follow dimensions.
2. All street inlets shall be separated from the pavement and curb by expansion joint material extending completely through curb and slab. Manhole castings within the pavement limits shall be boxed as shown.
3. When a joint falls within 5ft. of, or contacts inlets, manholes, or other structures, shorten one or more panels either side of opening to permit joint to fall on round structures and at or between corners of rectangular structures.
4. Driveway configurations are shown in the "Entrance Construction Details."
5. Construction joints and tie bars may be omitted when curb is poured monolithic with pavement.
6. Minimum Thickness for Pavement is:

Residential 26' wide Streets	6"
Residential 32'–38' wide Streets	7"

7. For joint and bar requirements refer to the Pavement Construction Details for "Joints and Curbs." Std. Dwg. C502.03. Note that the width and location may change the type of joint required.
8. Transverse or longitudinal construction joints in slip formed pavements may be made with a groover or tool, if such device has been approved in advance by the Department.
9. The locations of the Type B longitudinal construction joints in the sections may be interchanged for the different widths of construction if approved by the Department.



CUL DE SAC OPEN CENTER

CUL DE SAC FULLY PAVED

JOINT REQUIREMENTS FOR CONCRETE PAVEMENT

STREET	JOINT TYPE	JOINT AND BAR REQUIREMENTS	
3 LANE RESIDENTIAL 32'–38' wide pavement 7" thick concrete	Transverse	TYPE C no steel bars	
	Longitudinal	Within a poured section: TYPE F 5/8 " Φ deformed tie bars 18"@ Φ 30"ctrs.	At the edge between two poured sections: TYPE B 5/8 " Φ deformed tie bars 30"@ Φ 30"ctrs.
	Expansion	TYPE A no steel bars	
RESIDENTIAL 2 LANE 26' wide pavement 6" thick concrete	Transverse	TYPE C no steel bars	
	Longitudinal	Full Width Construction: TYPE F modified with 1/2 " Φ deformed tie bars 18"@ Φ 30"ctrs.	Half Width Construction: TYPE B modified with 1/2 " Φ deformed tie bars 30"@ Φ 30" ctrs.
	Expansion	TYPE A no steel bars	

NOTE

Joint filler material shall meet ASTM designations as follows:

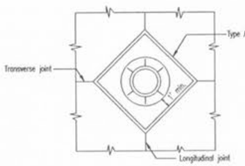
Bituminous type	ASTM	D-994-53
Non extruding & resilient bituminous type (fiber)	ASTM	D-1751-60T
Non extruding & resilient non bituminous type (rubber)	ASTM	D-5249

NOTE

Joint sealant material shall meet ASTM and AASHTO designations as follows:

ASTM D-3405	AASHTO M-301 or
ASTM D-1190-74	AASHTO M-173-84

or latest revisions thereof.

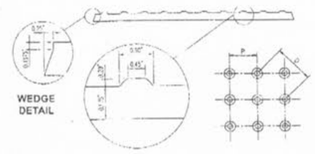


MANHOLE BOXING

SAINT CHARLES COUNTY HIGHWAY DEPARTMENT ST. CHARLES, MISSOURI
PAVEMENT CONSTRUCTION DETAILS
INTEGRAL ROLLED CURB AND CONCRETE PAVEMENT TYPICAL SECTIONS AND DETAILS
DATE: October, 2002 — DRAWING C502.02

CASTinTACT™ Warning Panels are the latest innovation in detectable warning systems. A long term solution meeting both state and federal guidelines for handicap detection. CASTinTACT Warning Panels are designed for exterior use at the bottom of curb ramps and other locations such as depressed corners, raised crosswalks and raised intersections, borders of median and islands, at the edge of transit platforms and where railroad tracks cross the sidewalk to warn people with visual impairments of potential hazards. Detectable warnings must be installed across the full width of ramps, and 24" minimum in length up the ramp. CASTinTACT Warning Panels are integrally colored to provide visual contrast with the adjacent walking surface.

CASTinTACT™ are cementitious based concrete panels with the same co-effecient of expansion as the concrete base. 7/8" thick high strength concrete reinforced with stainless steel prestress strand resulting in a high strength and crack resistant panel. Abrasion resistant truncated domes are achieved with an engineered mix design of granite and quartz aggregate that produces an average compressive strength of 10,000 psi (69 MPa). CASTinTACT are quality controlled manufactured to produce a dense, freeze thaw durable panel. Architectural concrete finished for safe wet and dry slip resistance. Concrete surfaces are easily maintained and cleaned with pressure washing.



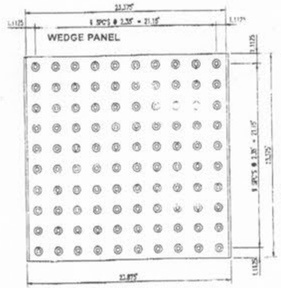
WEDGE DETAIL

DOME SPECIFICATION

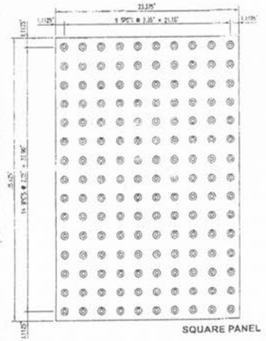
Americans with Disabilities Act 4.29.2 Standards
Dome Base = 0.9" (23 mm)
Dome Top = 0.45" (12 mm)
Dome Height = 0.2" (5 mm)
Dome Spacing (P) = 2.35" (60 mm)
Dome Diag. Spacing (D) = 3.32" (85 mm)

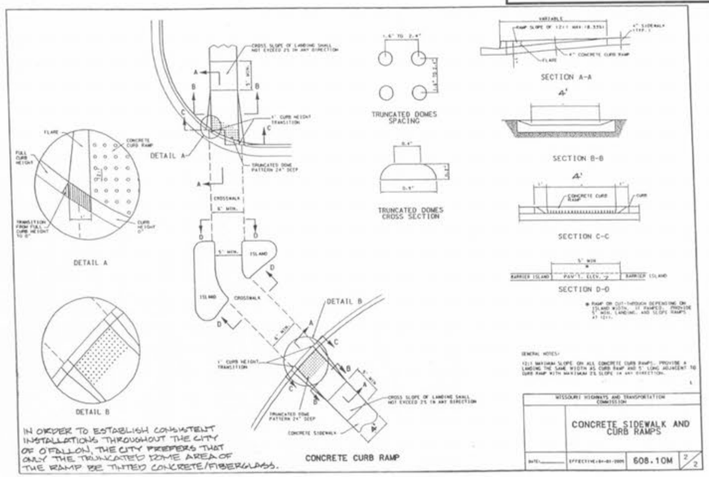
PANEL SPECIFICATION

Panel Thickness = .0875" (22 mm)
Avg Panel PSI = 10,000 (69 MPa) ASTM C39
Reinforcement = 304 Stainless Steel 1/16" 7x7 4" OC both directions and faces.
Final prestress forces after loss, 300 lbs per tendon, net panel prestress force 172 psi in both directions.
Slip Resistance = 0.80 ASTM D 2047 Modified



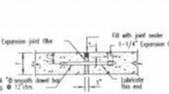
PANEL SIZES AVAILABLE:
Wedge Edge Panel includes 1'x2', 2'x2', 2.5'x2', 3'X2'
Square Edge Panel includes 2'x2', 3'x2' and 4'x2'
Stocking colors are yellow, red, black and white.
Custom colors available.



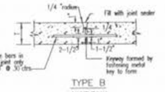


IN ORDER TO ESTABLISH CONSISTENT INSTALLATIONS THROUGHOUT THE CITY OF O'FALLON, THE CITY PREFERS THAT ONLY THE TRUNCATED DOME AREA OF THE RAMP BE TINTED CONCRETE/FIBERGLASS.

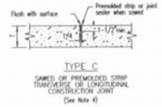
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
CONCRETE SIDEWALK AND CURB RAMPS
DATE: EFFECTIVE 01-01-2000 — 608.10 — 1/2



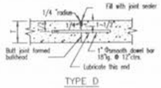
TYPE AA
ALTERNATE EXPANSION JOINT



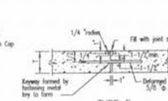
TYPE B
LONGITUDINAL CONSTRUCTION JOINT
(See Note 5)



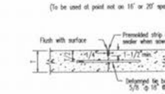
TYPE C
SAWED OR PREMOLDED STRIP TRANSVERSE OR LONGITUDINAL CONSTRUCTION JOINT
(See Note 4)



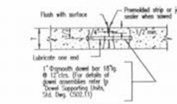
TYPE D
TRANSVERSE CONSTRUCTION JOINT



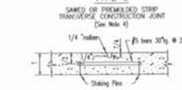
TYPE E
TIED TRANSVERSE CONSTRUCTION JOINT
(To be used at point not on 16' or 20' spacing)



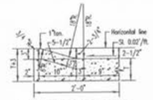
TYPE E
SAWED OR PREMOLDED STRIP LONGITUDINAL CONSTRUCTION JOINT
(See Note 5)



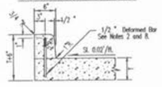
TYPE G
SAWED OR PREMOLDED STRIP TRANSVERSE CONSTRUCTION JOINT
(See Note 4)



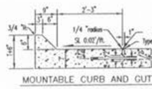
TYPE H
SAWED JOINT WITH TIE BARS



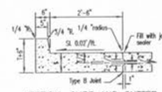
INTEGRAL ROLLED CURB



INTEGRAL VERTICAL CURB

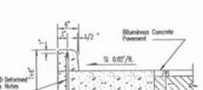


MOUNTABLE CURB AND GUTTER

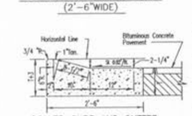


VERTICAL CURB AND GUTTER
(3'-0"WIDE)

TYPE J
SAWED OR PREMOLDED STRIP TRANSVERSE CONSTRUCTION JOINT WITH BITUMINOUS OVERLAY

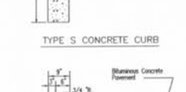


VERTICAL CURB AND GUTTER
(2'-6"WIDE)



ROLLED CURB AND GUTTER
(2'-6"WIDE)

TYPE S CONCRETE CURB



MOUNTABLE CURB AND GUTTER
(2'-6"WIDE)

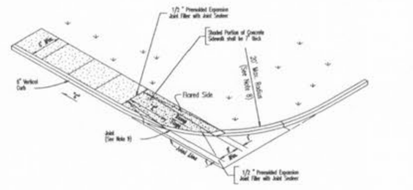
GENERAL NOTES

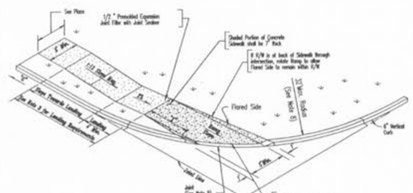
1. Do not scale drawing. Follow dimensions.
2. Construction joint and tie bars may be omitted when curb is poured integral with pavement.
3. Minimum Thickness for Pavement in Bituminous Concrete Pavement Thickness = (T)

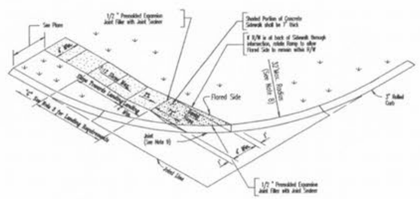
Concrete Pavement Thickness = (T)	
All Residential Minor and Local Streets	6"
Residential Collector and Non-Residential Streets	7"
All Arterial Streets	8"

4. Type "L" Transverse Joint is required for Arterial and Non-Residential streets. Use Type "L" Transverse Joint for all others.
5. For Subdivision or Minor Streets having a concrete pavement 1/2 " Ø deformed tie bars, 30" long at 30 " centers shall be used for Type "L" longitudinal joints and 1/2" Ø deformed tie bars 18" long at 30 " centers shall be used for Type "F" Longitudinal Joints.
6. Refer to Pavement Construction Details for "Integral Vertical Curb and Concrete Pavement Typical Sections and Details," Std. Dwg. C502.01 and "Integral Rolled Curb and Concrete Pavement Typical Sections and Details," Std. Dwg. C502.02 for joint and bar requirements for different street classifications. Note that width and location of each poured portion of the pavement may change the type and location of joint required.
7. All deformed bars for joints and curbs shall be Billet Steel Bars conforming to A.S.T.M.615-75, Grade 40.
8. Length of the tie bars shall equal the thickness of pavement plus the height of curb less 3". Tie bars shall be placed @ 24"centers.
9. Transverse or longitudinal construction joints in slip formed pavements may be made with a groover or tool, if such device has been approved in advance by the Department.
10. The free end of the dowel bar for a length of at least 11 inches shall be coated with an approved graphite grease.
11. All dowel bars 18"@ Ø 12"ctrs. shall be epoxy coated.

SAINT CHARLES COUNTY HIGHWAY DEPARTMENT ST. CHARLES, MISSOURI
PAVEMENT CONSTRUCTION DETAILS
JOINTS AND CURBS
DATE: September, 2002 — DRAWING C502.03







TYPE 1 AND TYPE 2 CURB RAMPS	
GRADE ALONG CURB (%)	MIN. LENGTH OF RAMP SLOPE (L.F.)
NEGATIVE (–) VALUES	6
0 TO +1	7
+1.01 TO +2	8
+2.01 TO +3	10
+3.01 TO +4	12
GREATER THAN +4	15

NOTE: Positive (+)%– Proceeding away from intersection and up a grade.
Negative (–)%– Proceeding away from intersection and down a grade.

TYPE 3 CURB RAMP	
GRADE ALONG CURB (%)	MIN. LENGTH OF RAMP SLOPE (L.F.)
NEGATIVE (–) VALUES	3
0 to +2	4
+2.01 to +3	5
+3.01 to +4	6
+4.01 to +5	8
+5.01 to +6	11
GREATER THAN +6	15

NOTE: Positive (+)%– Proceeding away from intersection and up a grade.
Negative (–)%– Proceeding away from intersection and down a grade.

GENERAL NOTES

1. Do not scale drawing. Follow dimensions.
2. Sidewalks and sidewalk curb ramps shall be constructed in accordance with these details and the current approved "Americans with Disabilities Act Accessibility Guidelines" (ADAAG).
3. Provide a landing at the top of each straight ramp when the Grade Along Curb (%) is greater than +.25 and less than 6.75. For other values of %, including all negative (–) values, no landing is required.
4. Minimum sidewalk width along 6" vertical curb shall be 5 feet. Minimum sidewalk width along 3" rolled curb shall be 4 feet.
5. Maximum sidewalk cross slope 0.02"/ft.
6. All sidewalk sections shall be 4" thick, except where indicated on 7" thick by shaded portions shown on details. All sidewalk sections and curb ramps, regardless of thickness, shall be paid for as "Concrete Sidewalk."
7. Where curb ramp meets pavement, bullnose will not be permitted.
8. Construct a diagonal ramp when the minimum corner radius allowed for a straight ramp is exceeded.
9. If monolithic concrete curb is constructed, strike a dummy joint across bottom of ramp at curb line. If concrete curb is doweled–on, block out pavement to provide full depth curb across ramp from outer point of curb taper to outer point of curb taper.
10. For sidewalk locations on Cul–De–Sacs, refer to "Pavement Construction Details."
11. For pavement longitudinal and transverse joints and tie bar requirements and dimensions, refer to the Pavement Construction Details for "Joints and Curbs," Std. Dwg. C502.03.
12. For roadway cross slopes, pavement types, and thicknesses, refer to "Standard Typical Section."
13. All curb ramps shall have a detectable warning complying with "Americans with Disabilities Act Accessibility Guidelines" (ADAAG).

VA, 2A between expansion joints

SAINT CHARLES COUNTY HIGHWAY DEPARTMENT ST. CHARLES, MISSOURI
PAVEMENT CONSTRUCTION DETAILS
CONCRETE SIDEWALK AND CURB RAMPS
DATE: June, 2002 — DRAWING C608.10

CD/2