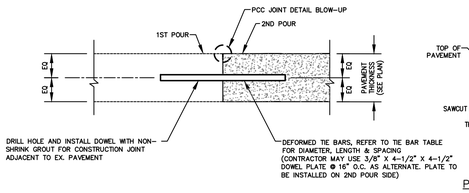
Dowel size*

Slab depth, in. (mm)	Dowel diameter, in. (mm)	Dowel embedment, in. (mm)†	Total dowel length, in. (mm)‡
5 (125)	5/8 (16)	5 (125)	12 (300)
6 (150)	3/4 (19)	6 (150)	14 (360)
7 (180)	7/8 (22)	6 (150)	14 (360)
8 (200)	1 (25)	6 (150)	14 (360)
9 (230)	1-1/8 (29)	7 (180)	16 (400)

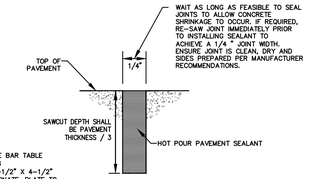
*All dowels spaced at 12 in. (300 mm) centers.
†On each side of joint.
‡Allowance made for joint openings and for minor errors in positioning dowels.

Tie bar dimensions

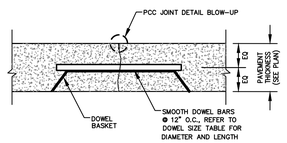
Slab depth, in. (mm)	Tiebar size, in. (mm)	Tiebar spacing			
		Distance to nearest free edge or to nearest joint where movement can occur			
		10 ft, in. (mm)	12 ft, in. (mm)	14 ft., in. (mm)	24 ft, in. (mm)
5 (125)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	28 (710)
5-1/2 (140)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	25 (630)
6 (150)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	23 (580)
6-1/2 (165)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	21 (530)
7 (180)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	20 (510)
7-1/2 (190)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	18 (460)
8 (200)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	28 (710)	17 (430)
8-1/2 (215)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	36 (910)	16 (410)
9 (230)	1/2 x 30 (13 x 760)	36 (910)	36 (910)	—	24 (610)



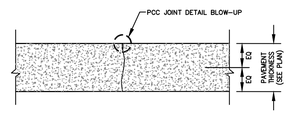
CONSTRUCTION JOINT



PCC JOINT DETAIL BLOW-UP (TYP.)

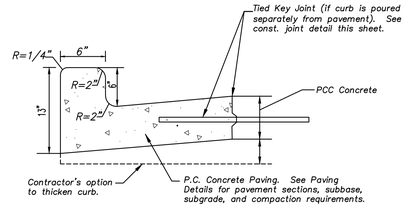


CONTRACTION JOINT (DOWELED)

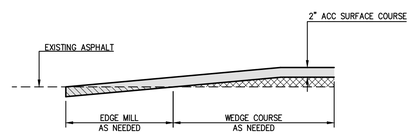


CONTRACTION JOINT (UNDOWELED)

CONCRETE JOINT DETAILS
SCALE: N.T.S.



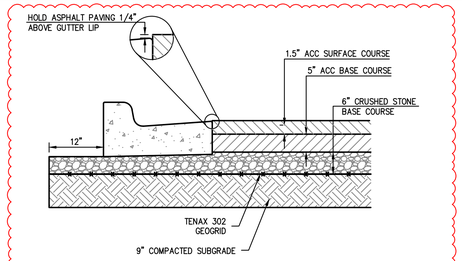
MONOLITHIC CONCRETE CURB DETAIL
SCALE: N.T.S.



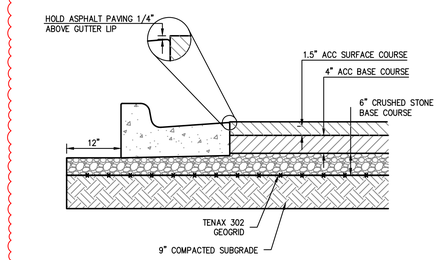
ASPHALT MILL & OVERLAY DETAIL
SCALE: N.T.S.

GENERAL PAVING NOTES:

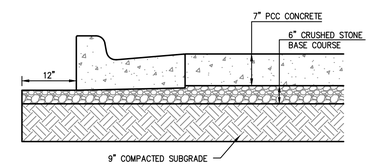
1. PRIOR TO PLACEMENT OF GRANULAR BASE OR ASPHALT, PROOF ROLL AND RE-COMPACT THE EXPOSED SURFACES UP TO A MINIMUM LATERAL DISTANCE OF TWO (2) FEET OUTSIDE THE PAVEMENT. ANY LOCALIZED SOFT, WET, OR LOOSE AREAS IDENTIFIED DURING THE PROOF ROLLING SHOULD BE REPAIRED PRIOR TO PAVING. FILL MATERIAL SHOULD BE PLACED IN LOOSE LIFTS UP TO A MAXIMUM OF EIGHT (8) INCHES IN THICKNESS AND COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698 AT MOISTURE CONTENTS WITHIN 0% AND +4% OF THE OPTIMUM FOR SOILS WITH A LIQUID LIMIT OF GREATER THAN 40, AND – +/– 3% OF THE OPTIMUM FOR SOILS WITH A LIQUID LIMIT OF LESS THAN 40. MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT SHOULD BE DETERMINED BY THE STANDARD PROCTOR TEST (ASTM D 698).
2. PROOFROLL WITH A 25 TON RUBBER TIRE VEHICLE AND REPAIR SUBGRADE DEFICIENCIES. IF ANY SIGNIFICANT EVENT, SUCH AS PRECIPITATION, OCCURS AFTER PROOFROLLING, THE SUBGRADE SHOULD BE REVIEWED BY QUALIFIED PERSONNEL IMMEDIATELY PRIOR TO PLACING THE PAVEMENT.
3. CRUSHED STONE BASE COURSE USED BENEATH CONCRETE PAVING SHALL BE COMPACTED KDOT AB-3 OR EQUIVALENT.
4. ASPHALTIC SURFACE COURSE SHALL BE APWA TYPE 3. THE SURFACE COURSE SHOULD BE COMPACTED TO A MINIMUM OF 97% MARSHALL DENSITY (ASTM SPECIFICATION D 1559). 30% RAP IS ALLOWED.
5. ASPHALTIC BASE COURSE SHALL BE APWA TYPE 1. THE BASE COURSE SHOULD BE COMPACTED TO A MINIMUM OF 95% MARSHALL DENSITY (ASTM SPECIFICATION D 1559). 30% RAP IS ALLOWED.
6. THE CONTRACTOR SHALL PROVIDE A TACK COAT BETWEEN LIFTS OF ASPHALT.
7. ALL SITE CONCRETE (CURBS, PAVEMENTS, SIDEWALKS, ETC.) SHALL MEET KANSAS CITY MATERIALS METRO BOARD (KCMMB) MIX DESIGN SPECIFICATIONS FOR 4,000 P.S.I. AIR ENTRAINED CONCRETE.
8. IN NEW PAVEMENT AREAS, CONTRACTOR SHALL OVER EXCAVATE AS REQUIRED TO ESTABLISH NEW COMPACTED SUBGRADE ELEVATIONS.
9. CONTRACTOR IS RESPONSIBLE FOR ALL PAVEMENT AND SUBGRADE MATERIALS TESTING.



HEAVY DUTY ASPHALT PAVING – DRIVE LANES

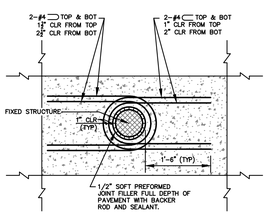


STANDARD ASPHALT PAVING – CAR PARKING AREAS

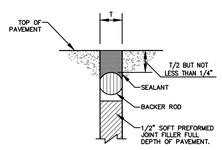


CONCRETE PAVING

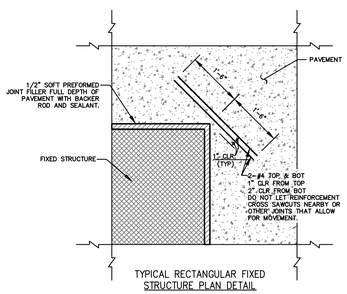
PAVING SECTIONS
SCALE: N.T.S.



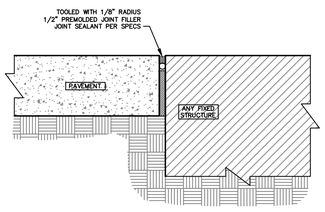
TYPICAL ROUND FIXED
STRUCTURE PLAN DETAIL
USES: MANHOLES, LIGHT POLE BASES AND BOLLARDS



BACKER ROD AND SEALANT
SECTION AT FIXED STRUCTURE



TYPICAL RECTANGULAR FIXED
STRUCTURE PLAN DETAIL
USES: BUILDINGS, RETAINING WALLS/DOCK WALLS AND DROP INLETS



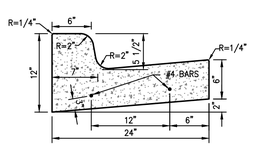
ISOLATION JOINT

NOTES:

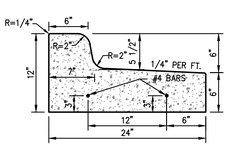
ISOLATION JOINT TO BE USED FOR FIXED STRUCTURES SUCH AS BUILDINGS, RETAINING WALLS/DOCK WALLS, DROP INLETS, MANHOLES, LIGHT POLE BASES AND BOLLARDS.

PAVEMENT IS NOT CONSIDERED A FIXED STRUCTURE.

ISOLATION JOINT DETAILS
SCALE: N.T.S.

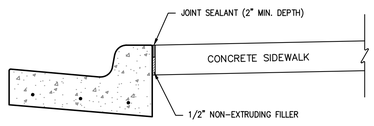


TYPE "B"
CURB & GUTTER



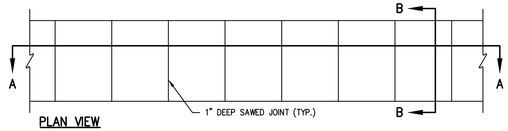
TYPE "B" TIP-OUT
CURB & GUTTER

PRIVATE TYPE "B" CONCRETE CURB & GUTTER DETAILS
SCALE: N.T.S.



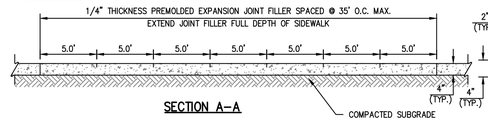
ALL OTHER DETAILS SAME AS SHOWN PER THIS SHEET.

SIDEWALK AT CURB DETAIL
SCALE: N.T.S.

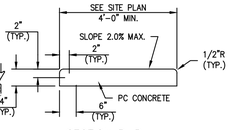


PLAN VIEW

NOTE: PROVIDE 1/2" EXPANSION JOINT BETWEEN SIDEWALK AND ALL FIXED OBJECTS



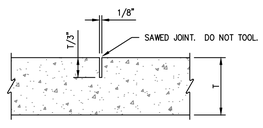
SECTION A-A



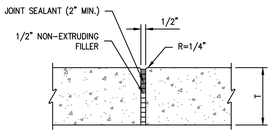
SECTION B-B

NOTE:
1. USE KANSAS CITY MATERIALS METRO BOARD (KCMMB) MIX DESIGN SPECIFICATIONS FOR 4,000 P.S.I. AIR ENTRAINED CONCRETE FOR ALL PRIVATE SIDEWALKS.

PRIVATE CONCRETE SIDEWALKS (NON REINFORCED)
SCALE: N.T.S.



TYPE A JOINT



TYPE B JOINT

NOTE: TYPE A JOINTS SHALL NOT EXCEED 20 TIMES THE PAVEMENT THICKNESS (T).

CONCRETE SIDEWALK JOINT DETAILS
SCALE: N.T.S.

STATE OF MISSOURI
JUDD DAVID CLAUSSEN
NUMBER PE-29830
10/24/23
PROFESSIONAL ENGINEER

PHELPS ENGINEERING, INC.
1270 N. Winchester
Olathe, Kansas 66061
(913) 393-1155
Fax (913) 393-1164
www.phelpsengineering.com

PLANNING
ENGINEERING
IMPLEMENTATION

PAVEMENT DETAILS
CRASH CHAMPIONS
451 S.E. OLDHAM PARKWAY
LEE'S SUMMIT, JACKSON COUNTY, MO

No.	Date	Revisions:	By	App.
1.	08-15-22	ESI #1	SNH	DAF
2.	11-09-22	ESI #2	SNH	DAF
3.	03-22-23	REVISED WATER METER	SNH	DAF
4.	10-24-23	REVISED ASPHALT PAVEMENT SECTION	SNH	DAF

PROJECT NO. 210229
DATE: 05-24-22 DRAWN: SNH
CHECKED: DAF APPROVED: JDC
CERTIFICATE OF AUTHORIZATION:
KANSAS ENGINEERING – LS-82
LAND SURVEYING – E-391
CERTIFICATE OF AUTHORIZATION
MISSOURI
LAND SURVEYING-2007001128
ENGINEERING-2007005308

SHEET
C5

\\PHELPS-SERVER\Projects\P\210229\Dwg\Permit Plans\DETAILS - PRIVATE.dwg Layout:PAVE 1 Oct 24, 2023 - 10:36am Daniel Finn