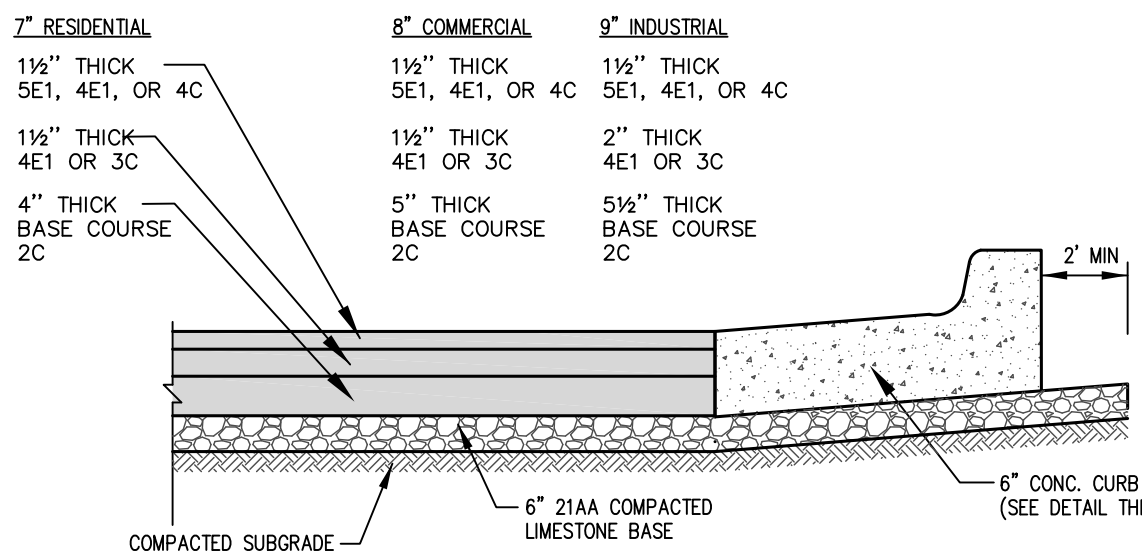
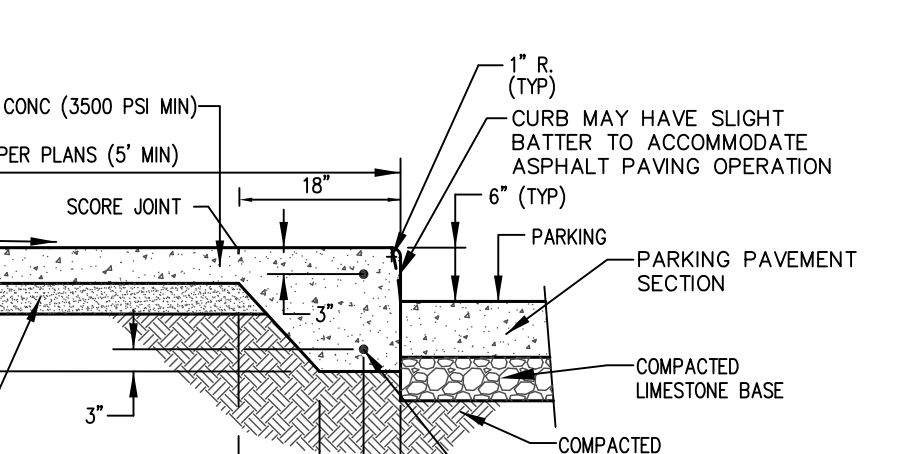


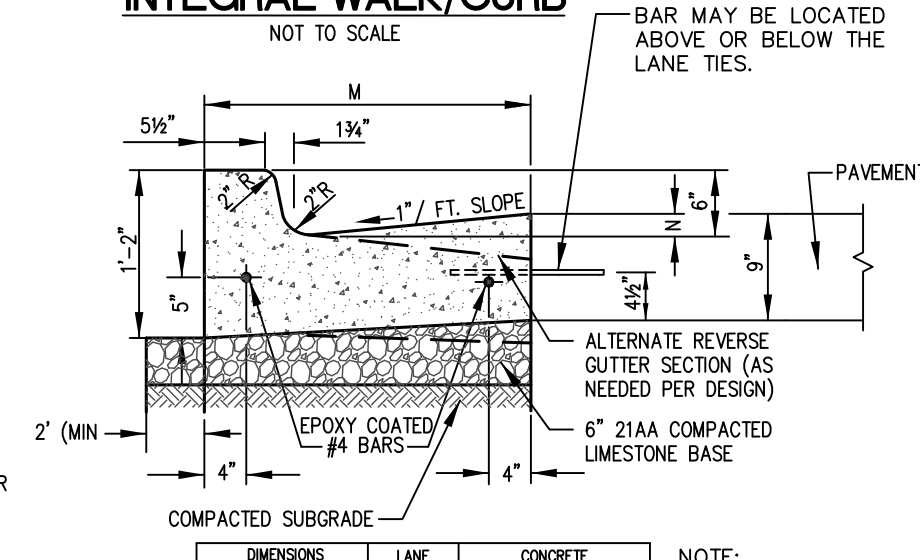
**TYPICAL CONCRETE PARKING SECTION**  
NOT TO SCALE



**TYPICAL BITUMINOUS PARKING SECTION**  
NOT TO SCALE



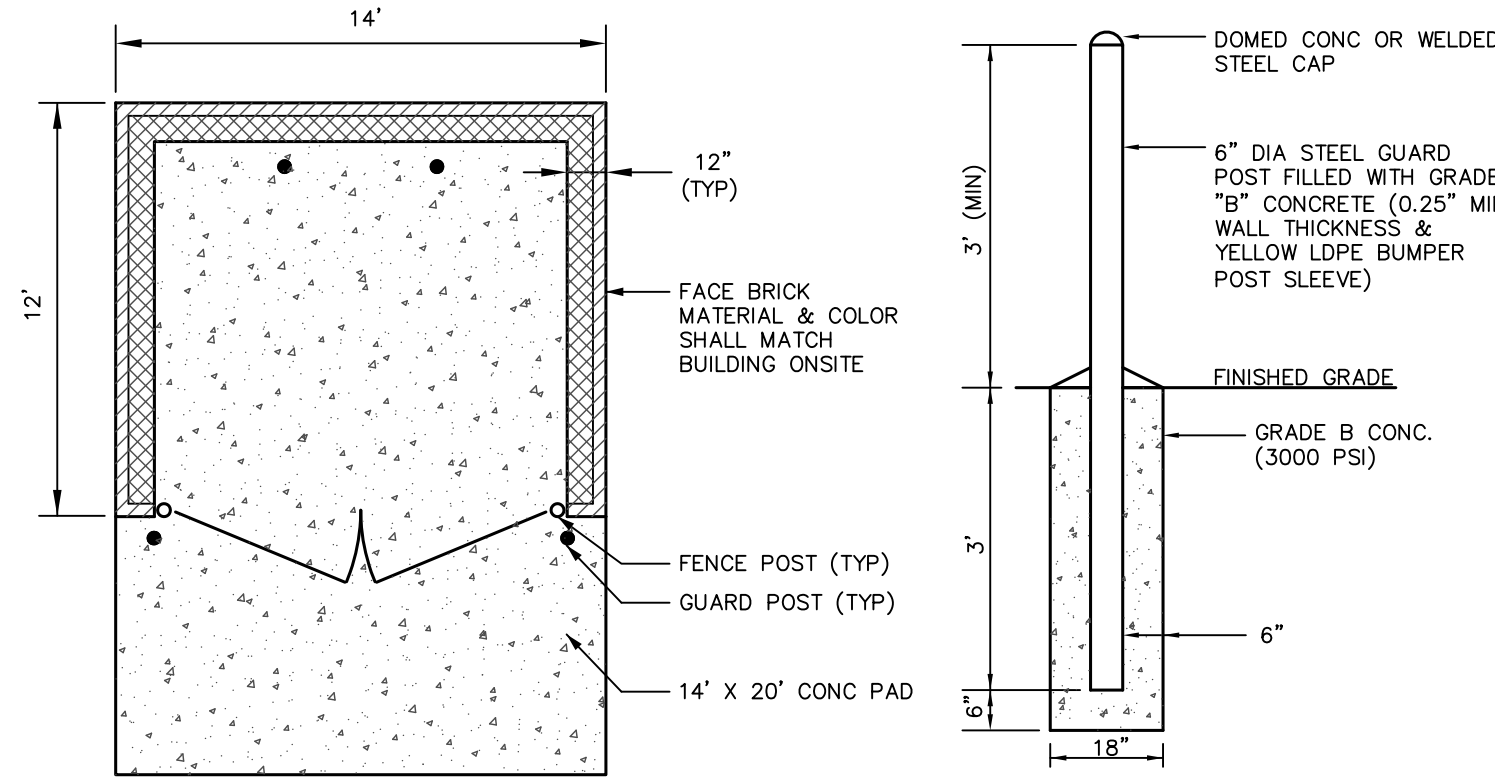
**TYPICAL CONCRETE PAVEMENT INTEGRAL WALK/CURB**  
NOT TO SCALE



**TYPICAL CONCRETE CURB & GUTTER**  
NOT TO SCALE

DIMENSIONS	LANE TIES	CONCRETE QU. YD. / LIN. FT.	NOTE:
1'-4"	1"	AS SHOWN	0.0484
1'-4"	1"	OMITTED	0.0484
2'-0"	1"	AS SHOWN	0.0810
2'-0"	1"	OMITTED	0.0810

**TYPICAL PARKING AREA PAVEMENT / CURB DETAILS**



**TYPICAL SCREENED DUMPSTER ENCLOSURE DETAILS**  
NOT TO SCALE

**GENERAL NOTES**

- EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS. TREE ROOTS SHALL BE COMPLETELY REMOVED.
- EXCAVATE TO THE DEPTH OF THE FINAL SUBGRADE ELEVATION TO ALLOW FOR GRADE CHANGES AND THE PLACEMENT OF THE RECOMMENDED PAVEMENT SYSTEM.
- THE PAVEMENT SUBGRADE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DRY DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. THE FINAL SUBGRADE SHALL BE THOROUGHLY PROOF-ROLLED IN THE PRESENCE OF A GEOTECHNICAL/PAVEMENT ENGINEER TO DETERMINE STABILITY. LOOSE OR YIELDING AREAS WHICH CANNOT BE MECHANICALLY STABILIZED SHALL BE REMOVED AND REPLACED WITH CLASS II SAND OR AS DIRECTED BY THE ENGINEER. ALL FILL MATERIAL AND BASE MATERIAL SHALL BE TESTED AND ITS COMPACTION AND SUITABILITY FOR ACCEPTANCE OF THE BASE MATERIAL AND PAVEMENT SHALL BE CERTIFIED BY SAID TESTING FIRM. THE OWNER SHALL SUPPLY THREE COPIES OF GEOTECHNICAL AND TECHNICAL REPORTS TO RICHMOND TOWNSHIP.
- IF IN THE OPINION OF THE INSPECTOR/ENGINEER, FIELD CONDITIONS WARRANT ADDITIONAL TESTING, THE DEVELOPER SHALL ARRANGE FOR AND PAY FOR ALL REQUIRED ADDITIONAL TESTING.
- 21AA LIMESTONE AGGREGATE BASE SHALL BE COMPACTED TO ACHIEVE A 95% COMPACTION LEVEL (MODIFIED PROCTOR - ASTM D 1557-91). THE BASE SHALL EXTEND A MINIMUM OF 2 FEET BEYOND THE BACK OF CURB OR THE PAVED EDGE.
- CONCRETE PAVEMENT TESTING SHALL BE REQUIRED FOR ALL PROJECTS.
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE RICHMOND TOWNSHIP, MACOMB COUNTY DEPARTMENT OF ROADS, AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.
- CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.
- FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LICENSES FOR ALL INSPECTION.
- 1.0 INCH AND 2.0 INCH EXPANSION JOINTS SHALL BE INSTALLED PER MCDR / MDOT STANDARDS.
- FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 95% OF THE MAXIMUM DRY DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.
- 8\"/>

**PAVING NOTES**

**CONCRETE PAVEMENT**

- CONCRETE SHALL CONSIST OF: PORTLAND CEMENT TYPE IA (AIR-ENTRAINED) WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES. PAVEMENT SHALL BE PLANT MIXED CONFORMING TO MDOT GRADE P1 DESIGNED TO MITIGATE ASR PER ASTM STANDARDS.
- ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.
- THE CONCRETE BATCH PLANT SHALL BE MDOT CERTIFIED WITH LOCATION APPROVED BY THE TOWNSHIP AND MCDR.
- NO CONCRETE PAVING SHALL BE ALLOWED PRIOR TO MAY 1, OR AFTER NOVEMBER 1 (UNLESS APPROVED BY MDOT, MCDR OR RICHMOND TOWNSHIP).
- AIR TEMPERATURE AT POINT OF PLACEMENT, AWAY FROM ARTIFICIAL HEAT SHALL BE MINIMUM 25° F AND RISING.
- TEMPERATURE OF CONCRETE AT TIME OF PLACEMENT SHALL BE BETWEEN 45° F AND 90° F.

**BITUMINOUS PAVEMENT**

- BITUMINOUS MIXTURE SHALL CONSIST OF: BASE COURSE - MDOT BITUMINOUS MIXTURE NO. 2C; LEVELING COURSE - MDOT BITUMINOUS MIXTURE NO. 3C; WEARING COURSE - MDOT BITUMINOUS MIXTURE NO. 4C; ASPHALT CEMENT PENETRATION GRADE 85-100 (PG 64-22) RECLAIMED ASPHALT PAVEMENT (RAP) SHALL NOT BE ALLOWED IN THE 4\"/>

**TRI-COUNTY**  
Engineering Consultants  
48701 Hayes Road  
Shelby Twp, MI 48315  
TEL: (810) 394-7887  
FAX: (586) 666-4642  
Info@Tri-CountyEng.com  
www.Tri-CountyEng.com



CLIENT NAME:  
**RICHMOND TOWNSHIP**  
MACOMB COUNTY

**3 WORKING DAYS**  
800-482-7171



Know what's below.  
Call before you dig.

PRIOR TO CONSTRUCTION, ALL EXISTING UTILITIES, LOCATION AND DEPTH WITHIN THE PROJECT AREA SHALL BE FIELD VERIFIED. CALL MISS DIG SYSTEM 3 WORKING DAYS PRIOR TO CONSTRUCTION.

UTILITY INFORMATION SHOWN ON THIS DRAWING IS APPROXIMATE AND MAY BE DISCLOSED INFORMATION BY VARIOUS UTILITY COMPANIES, PUBLIC AGENCIES, OR OTHER SOURCES AND THIS MAY NOT NECESSARILY REFLECT ACTUAL FIELD LOCATIONS AND NO GUARANTEE IS GIVEN TO COMPLETENESS OR ACCURACY.

COPYRIGHT (C) 2021. ALL RIGHTS RESERVED. THIS DRAWING AND ALL INFORMATION CONTAINED HEREIN ARE NOT TO BE USED, OR REPRODUCED WITHOUT WRITTEN PERMISSION BY TRI-COUNTY ENGINEERING CONSULTANTS.

PROJECT NAME:  
**RICHMOND TOWNSHIP**  
PAVING  
STANDARD DETAILS

PROJECT LOCATION:  
SEC 1, T05N, R14E  
RICHMOND TOWNSHIP  
MACOMB COUNTY

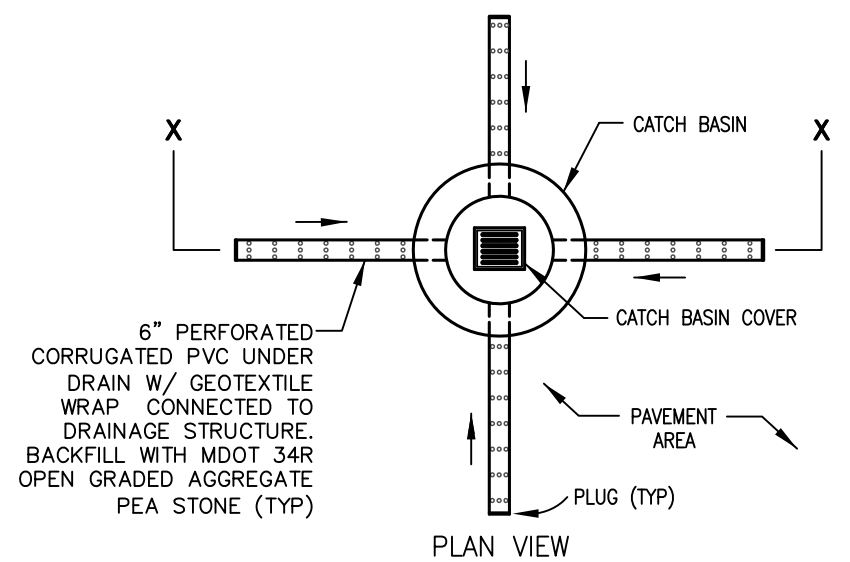
Drawn By: TCCE  
Checked By: TWP  
Approved By: TWP

REVISIONS:  
1. 12/17/21  
2. 08/30/22

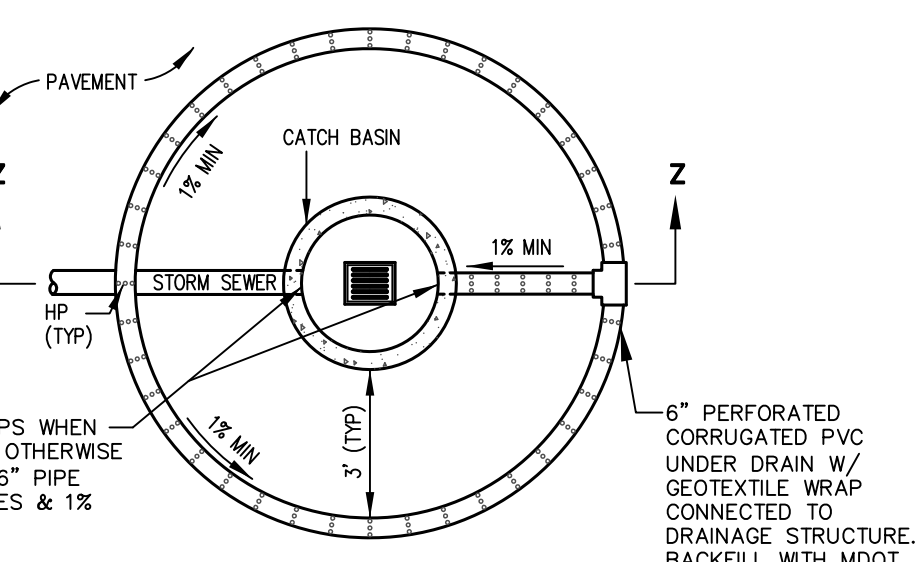
**SIDEWALK CONSTRUCTION NOTES**

- PROVIDE TRANSVERSE SAW CUT JOINTS AT APPROX 5' INTERVALS (7' MAX). SAW 1/8" WIDE X 1" DEEP JOINTS. TOOLED JOINTS NOT ACCEPTABLE.
- PROVIDE FULL DEPTH TRANSVERSE EXPANSION JOINTS, BY INSTALLING 1/2" THICK PROMULGED JOINT FILLER SET 1/4" BELOW THE CONCRETE SURFACE IN THE JOINTS AT 50' MAX INTERVALS.
- PLACE 1/2" FIBER EXPANSION JOINT FILLERS AT EACH SIDE OF DRIVE.
- PROVIDE 1" FIBER EXPANSION JOINT FILLERS AT CURB AND BUILDING OR ROW LINE.
- AT DRIVEWAYS WITH CURB & GUTTER, PROVIDE CURB DROP PER CURRENT MDOT STANDARDS.
- AT UNPAVED DRIVE OR PAVED DRIVE WITH POOR CONDITION, INCREASE THE SLAB THICKNESS TO 6" OR EXISTING SLAB THICKNESS WHICHEVER GREATER.
- PROVIDE 10' BET EDGE OF DRAINAGE TO TOP OF BANK FOR DETENTION BASINS, OPEN DRAINS...ETC.
- ADJACENT FINISHED GRADE SHALL BE SET 2" BELOW TO ACCOMMODATE SOD.
- MAX GRADE ALONG SIDEWALK SHALL NOT EXCEED 1 ON 12.
- SIDEWALK CROSS SLOPE SHALL BE 2% FOR DRAINAGE.
- A MIN 95' SIDEWALK CENTERLINE RADIUS SHALL BE PROVIDED FOR HORIZONTAL ALIGNMENT.
- PROVIDE MIN 3' HORIZONTAL CLEARANCE AND MIN 10' VERTICAL CLEARANCE FROM ALL FIXED OBJECTS AND AS DIRECTED BY THE OWNER.
- PROVIDE HANDICAP ACCESSIBLE RAMP AT STREET INTERSECTIONS AND AS INDICATED ON PLANS.
- HANDICAP ACCESSIBLE RAMP SHALL BE CONSTRUCTED PER CURRENT MDOT STANDARDS.
- CLEAN SAW CUT JOINTS SHALL BE PROVIDED WHENEVER NEW PAVEMENT MATCHES EXISTING PAVEMENT.
- UTILITY STRUCTURES SHALL BE ADJUSTED PER CURRENT MUNICIPALITY STANDARDS AND SHALL MATCH PROPOSED SIDEWALK GRADE.

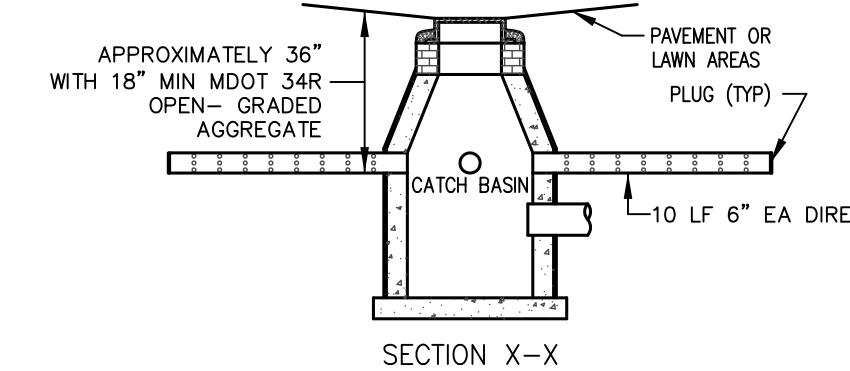
SCALE VERIFICATION:  
0 0.5 1  
BAR IS ONE-INCH  
ADJUST SCALES ACCORDINGLY IF NOT  
SCALE:  
NONE  
DRAWING NO:  
RichmondStdPAV  
Sheet of



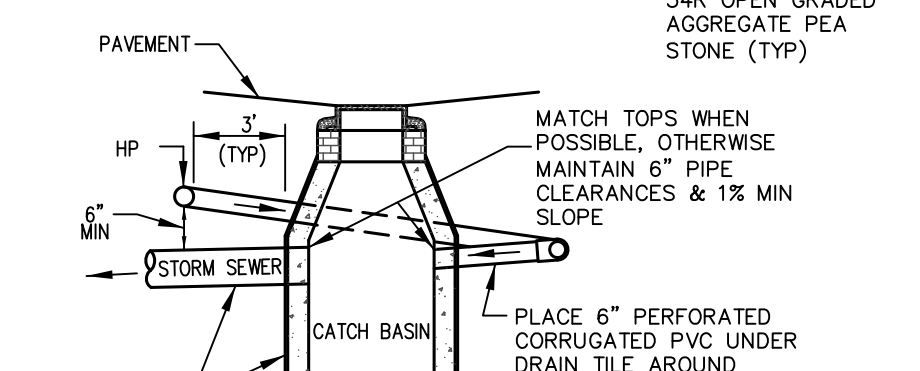
**TYPICAL FINGER TYPE UNDERDRAIN (WITHIN PARKING LOTS OUTSIDE CURB LINES)**  
NOT TO SCALE



**TYPICAL CIRCULAR UNDERDRAIN DETAIL (WITHIN PARKING LOTS OUTSIDE CURB LINES)**  
NOT TO SCALE



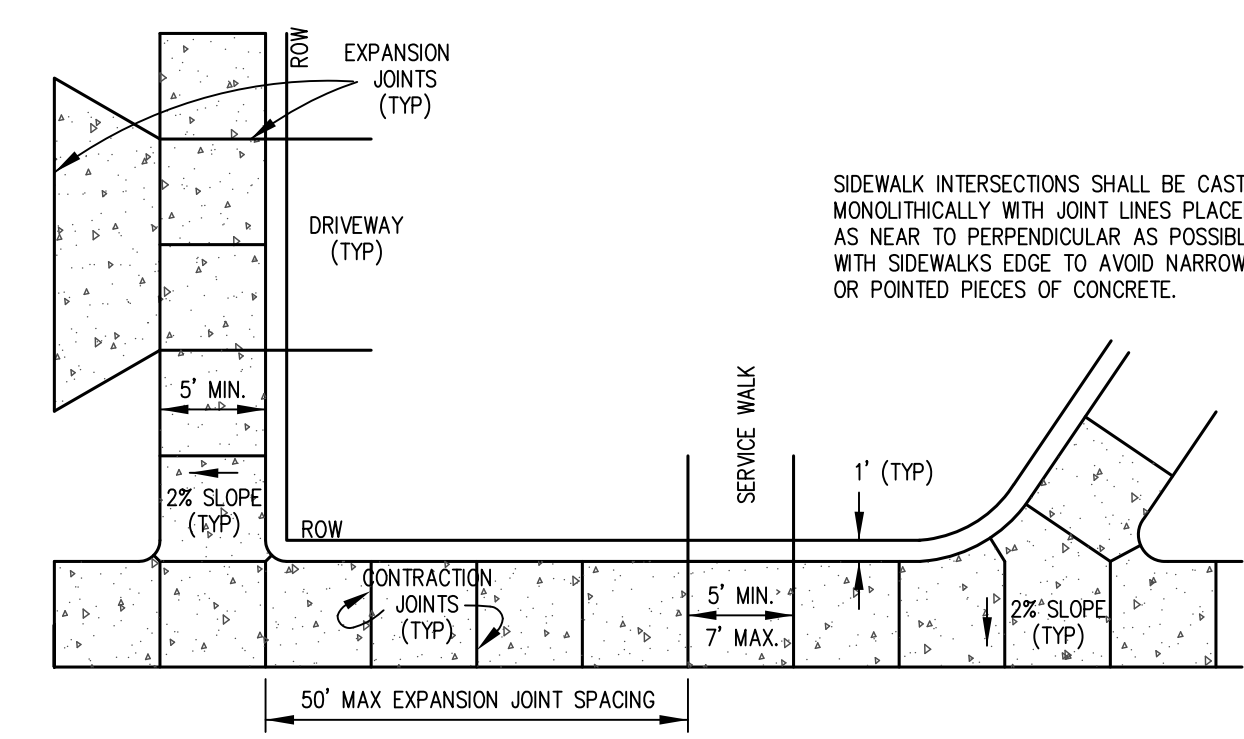
**TYPICAL UNDER DRAIN SECTION**  
NOT TO SCALE



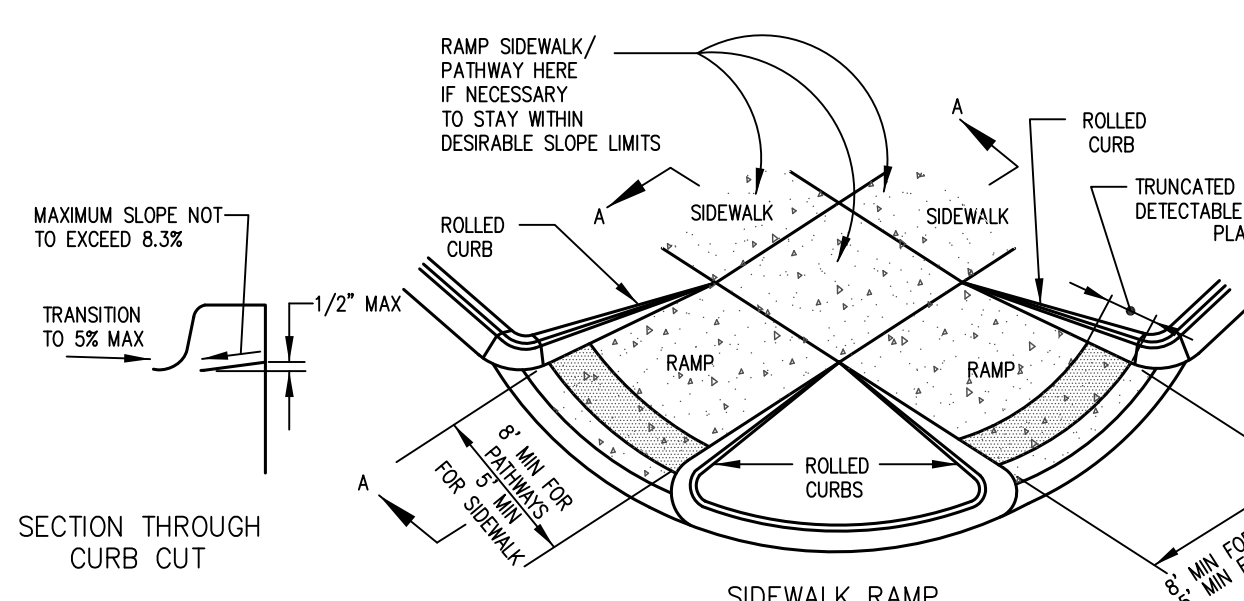
**TYPICAL FINGER TYPE UNDERDRAIN (WITHIN PARKING LOTS AT CURB LINES)**  
NOT TO SCALE

- NOTES:
- UNDER DRAIN TO BE 6" PVC AASHTO M 278 SDR-35 WITH PERFORATIONS MEETING AASHTO M 278.
  - ALL UNDER DRAIN PIPES SHALL BE INSTALLED AT A MIN SLOPE OF 1%.
  - PIPE SHALL BE INSTALLED WITH THE PERFORATIONS PLACED DOWN.
  - PROPOSED UNDER DRAIN PIPE LAYOUT, FLOW LINE ELEV. AND DETAILS SHALL BE APPROVED PRIOR TO CONSTRUCTION.

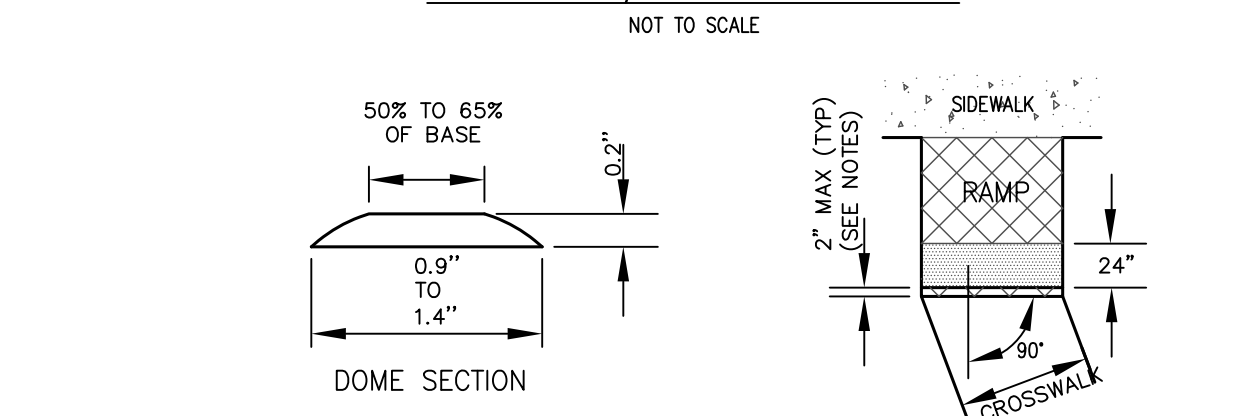
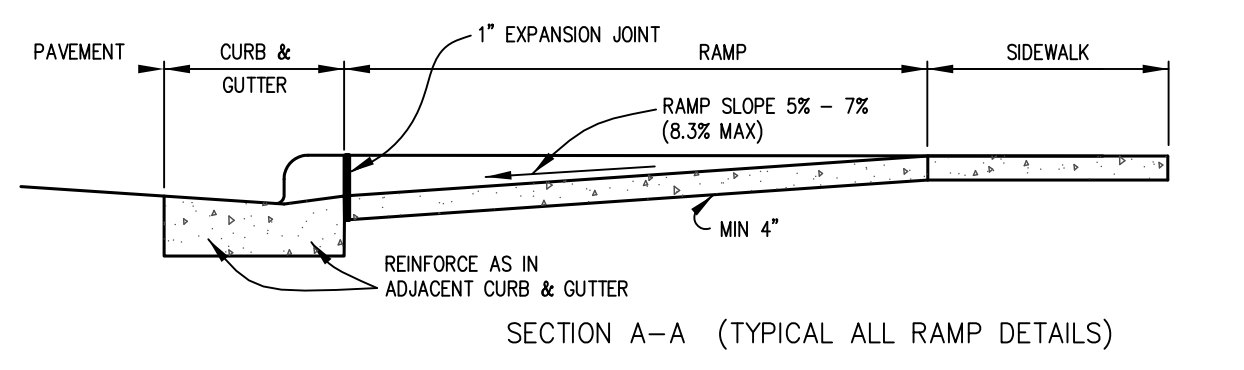
**TYPICAL UNDER DRAIN DETAILS**



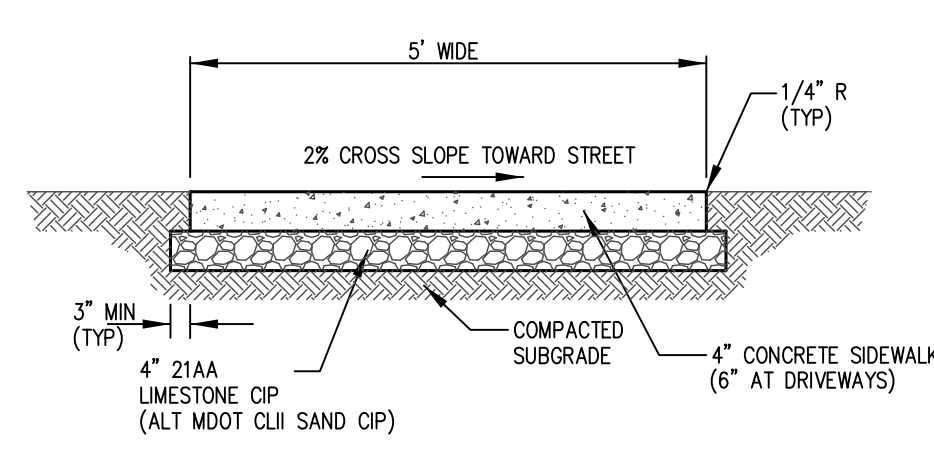
**TYPICAL SIDEWALK JOINT LAYOUTS**  
NOT TO SCALE



**TYPICAL SIDEWALK RAMP DETAILS AT ROAD INTERSECTION**  
MDOT TYPE 4, STANDARD PLAN R-28  
NOT TO SCALE



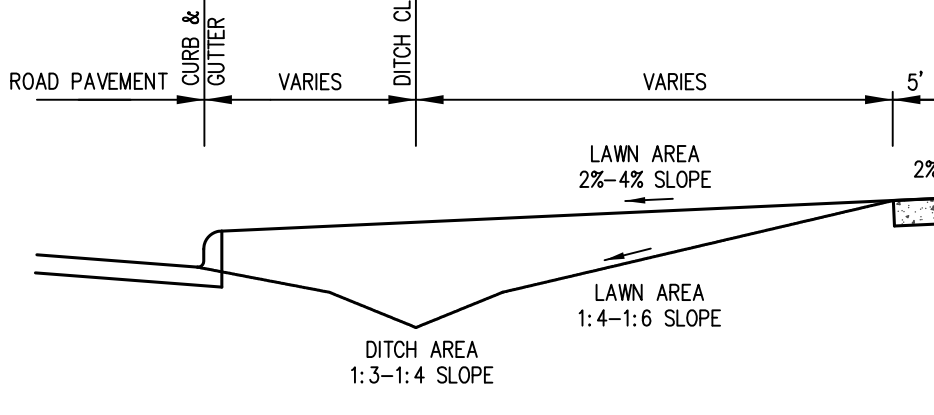
**DETECTABLE WARNING DETAILS**  
MDOT STANDARD PLAN R-28  
NOT TO SCALE



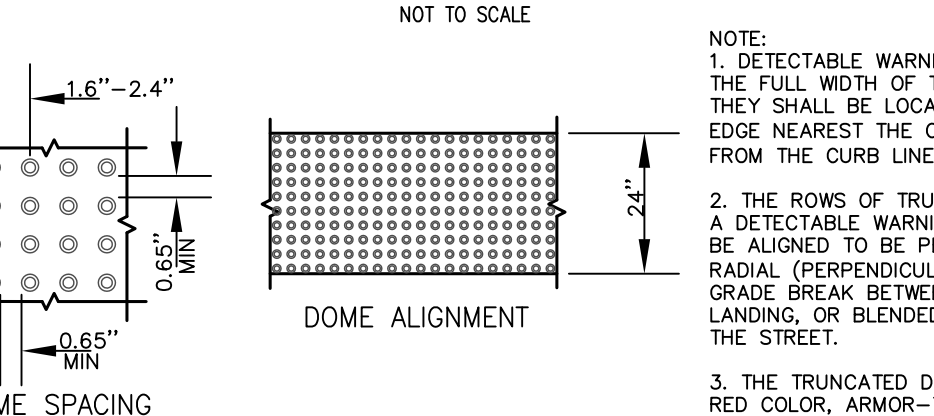
**CONCRETE SIDEWALK DETAIL**  
NOT TO SCALE

**CONCRETE PAVEMENT NOTES**

- CONCRETE SHALL BE MDOT GRADE P1 W/ PORTLAND CEMENT TYPE IA (AIR ENTRAINED) SIX SACK MIX AND MIN 3500 PSI STRENGTH.
- CONCRETE SLUMP SHALL BE 1.5" - 3".
- CONCRETE AIR CONTENT SHALL BE 1% - 6%.
- ALL CONCRETE PAVEMENT (SIDEWALKS, DRIVEWAYS, CURB, ETC.) SHALL BE SPRAY CURED WITH WHITE MEMBRANE COMPOUND IMMEDIATELY AFTER FINISHING.
- PLACEMENT TEMPERATURE SHALL BE 45 DEG TO 90 DEG.



**SIDEWALK GRADING SECTION**  
NOT TO SCALE



**TYPICAL CONCRETE SIDEWALK DETAILS**