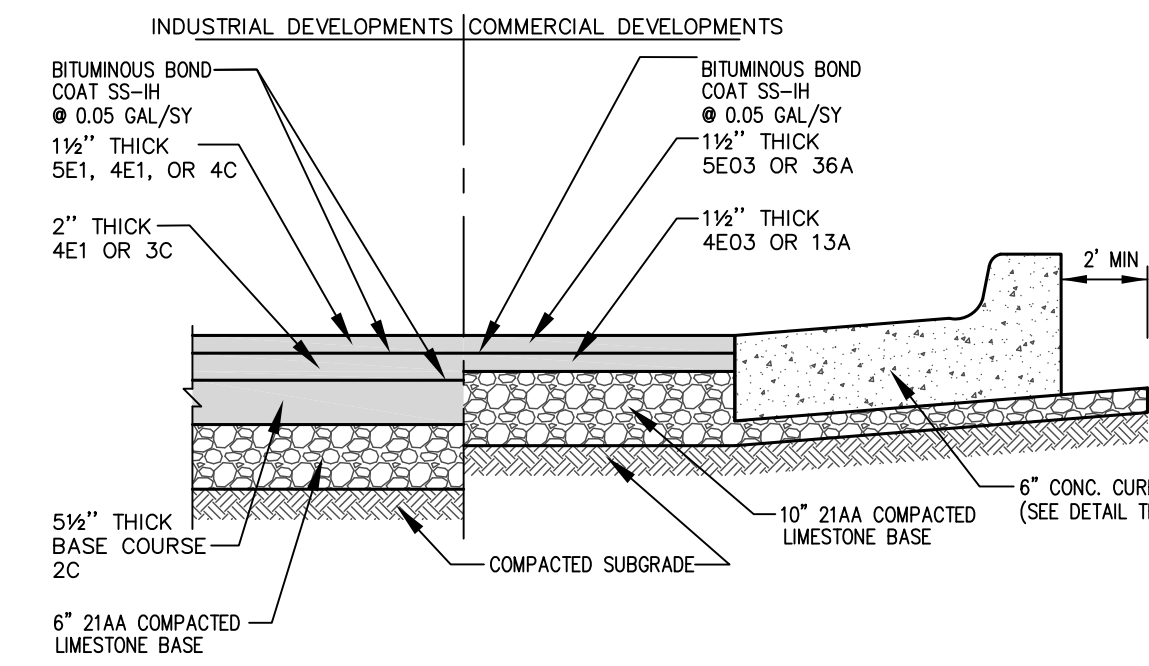
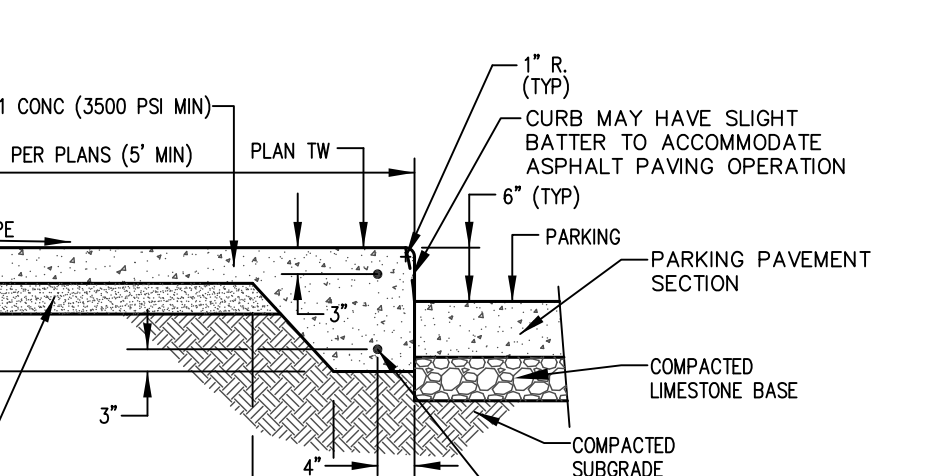


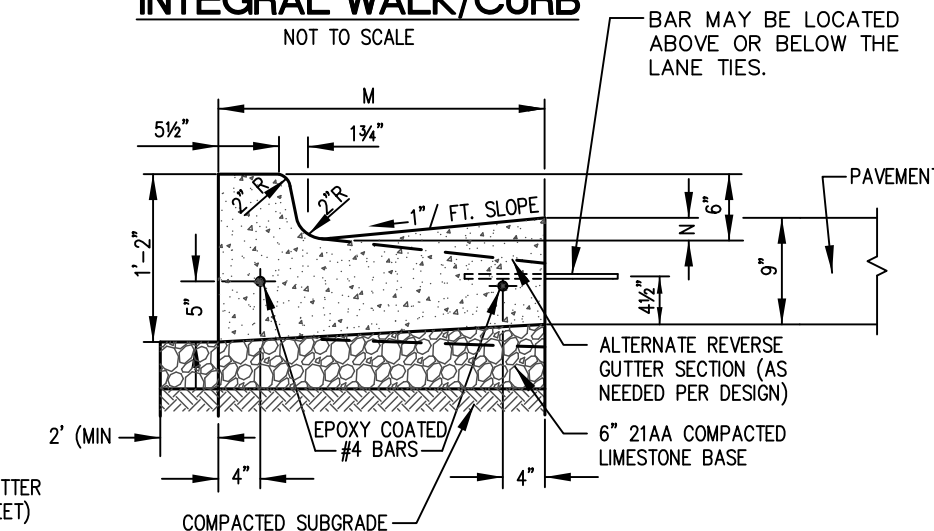
TYPICAL CONCRETE PARKING SECTION
NOT TO SCALE



TYPICAL BITUMINOUS PARKING SECTION
NOT TO SCALE

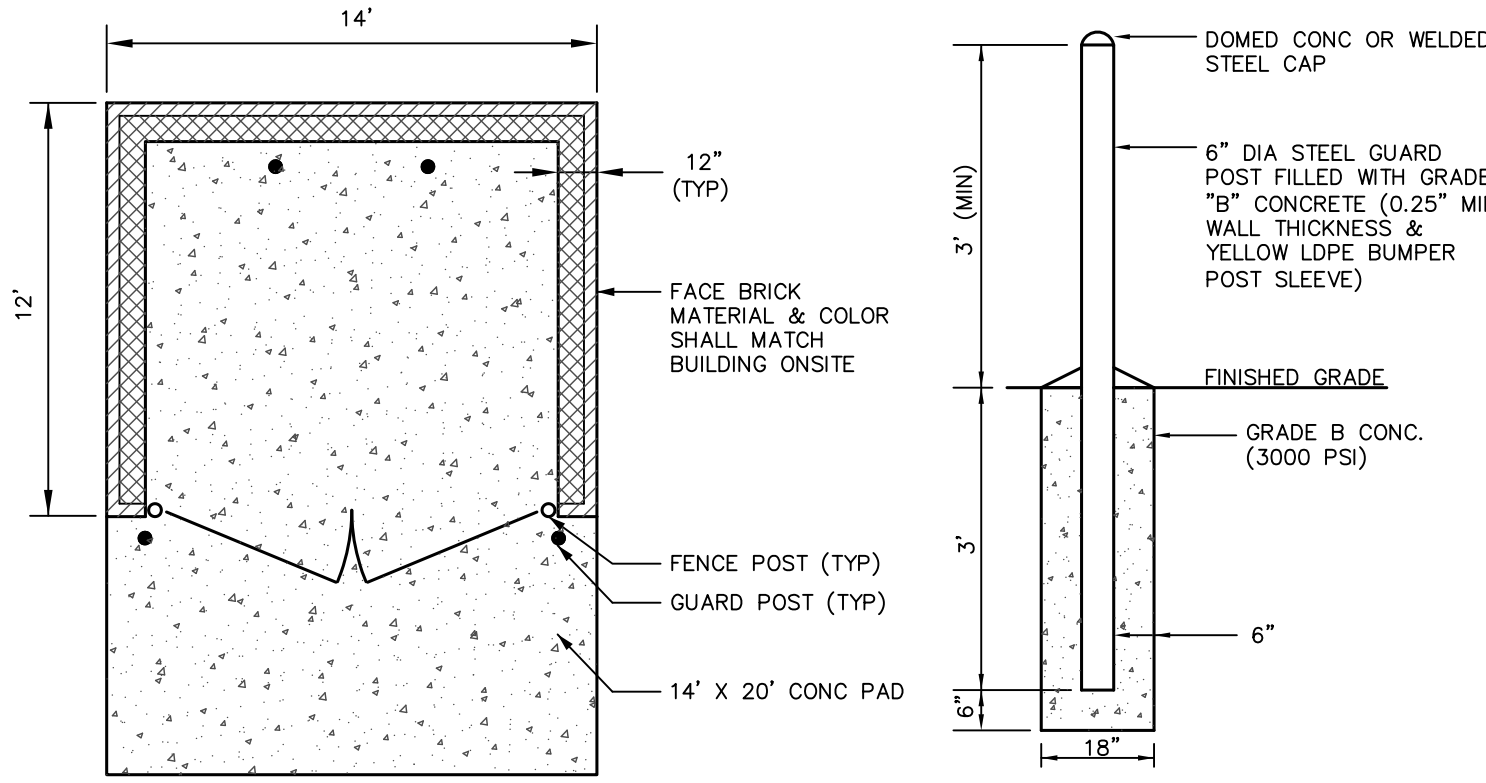


TYPICAL CONCRETE PAVEMENT INTEGRAL WALK/CURB
NOT TO SCALE



TYPICAL PARKING AREA PAVEMENT / CURB DETAILS
NOT TO SCALE

DIMENSIONS	LANE TIES	CONCRETE QU. Yds. / LIN. FT.	NOTE:
1'-0" x 1'	AS SHOWN	0.0484	NOTE: MDOOT B-2 CURB & GUTTER MAY BE ALLOWED BY THE TOWNSHIP ENGINEER AS ALTERNATE.
1'-4" x 1'	OMITTED	0.0484	
2'-0" x 1'	AS SHOWN	0.0810	
2'-0" x 1'	OMITTED	0.0810	



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.
- 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 COMPACTON 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 / MDOOT 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.
- 6\"/>

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 MDOOT 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 MDOOT 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 MDOOT, 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 - MDOOT BITUMINOUS MIXTURE NO. 2C; LEVELING COURSE - MDOOT BITUMINOUS MIXTURE NO. 3C; WEARING COURSE - MDOOT BITUMINOUS MIXTURE NO. 4C; ASPHALT CEMENT PENETRATION GRADE 85-100 (PG 64-22) RECLAIMED ASPHALT PAVEMENT (RAP) SHALL NOT BE ALLOWED IN THE THICK 4C MIX.
- FOR PRIVATE RESIDENTIAL ROADWAYS, COMMERCIAL PARKING LOTS, AND BIKE PATHS ALTERNATE EQUIVALENT MDOOT BITUMINOUS MIXTURE MAY BE USED, WITH APPROVAL FROM THE TOWNSHIP ENGINEER.
- ALL BITUMINOUS MATERIAL SHALL BE COMPACTED TO A DENSITY OF 97% OF THE FIELD CONTROL DENSITY AS DETERMINED BY THE MARSHALL METHOD.
- A BOND COAT OF SS-1H EMULSION IS REQUIRED BETWEEN THE BASE COURSE AND LEVELING COURSE AND BETWEEN THE LEVELING COURSE AND WEARING COURSE WHEN EITHER 48 HOURS HAVE ELAPSED BETWEEN PLACEMENT OF THE BITUMINOUS COURSES OR THE SURFACE OF THE PAVEMENT HAS BEEN CONTAMINATED WITH DIRT, DUST, OR FOREIGN MATERIAL. THE BOND COAT SHALL BE APPLIED IN A UNIFORM MANNER OVER THE SURFACE AT A RATE OF 0.10 GALLON/SY. (BETWEEN LEVELING COURSE AND BASE COURSE & 0.05 GALLON/SY BETWEEN WEARING COURSE AND LEVELING COURSE) THE COATS MAY DIFFER. IN THE EVENT A BOND COAT IS NOT REQUIRED, THE LEVELING COURSE MAY REQUIRE LOCALIZED BROOM CLEANING.
- DO NOT PLACE HMA OR APPLY BOND COAT WHEN PRECIPITATION IS IMMINENT OR WHEN MOISTURE ON THE EXISTING SURFACE WILL PREVENT SATISFACTORY CURING. UNLESS OTHERWISE APPROVED BY THE ENGINEER IN WRITING, TEMPERATURE AND SEASONAL REQUIREMENTS FOR PLACING HMA WILL BE ACCORDING TO THE CURRENT MDOOT SPECIFICATIONS. PAVING WILL NOT BE ALLOWED BELOW THESE MINIMUM TEMPERATURES, NOR WHEN FROST IS ON OR IN THE GRADE OR ON THE EXISTING SURFACE.

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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.

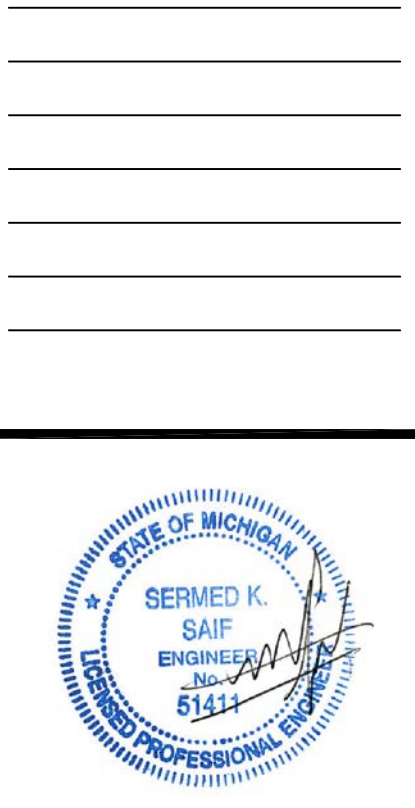
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PROJECT NAME:
RICHMOND TOWNSHIP
PAVING
STANDARD DETAILS

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

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

REVISIONS:
1. 12/17/21



SCALE VERIFICATION:
0 0.5 1
BAR IS ONE-INCH ADJUST SCALES ACCORDING IF NOT INDICATED.

SCALE:
NONE

DRAWING NO:
RichmondStdPAV

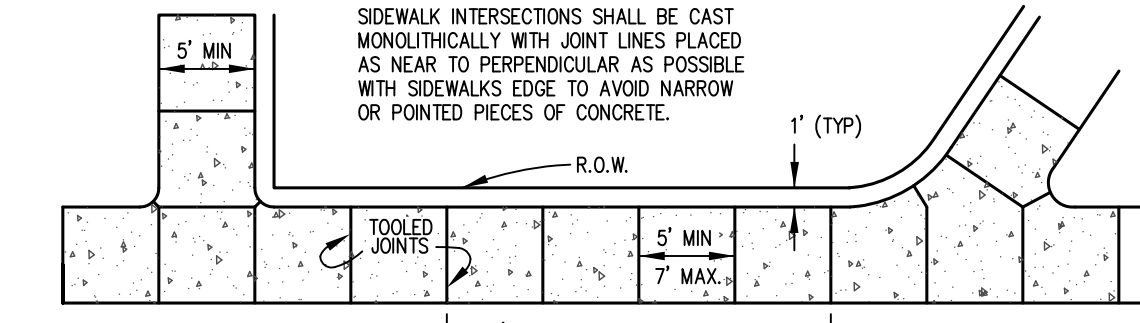
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SIDEWALK STANDARD NOTES

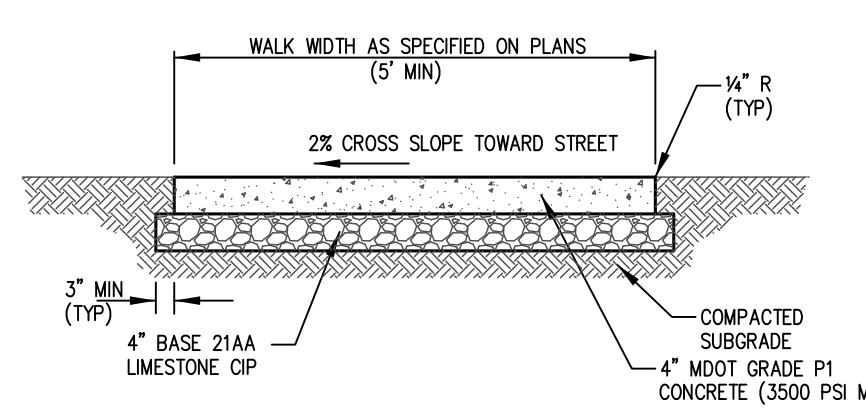
- SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1993, SHALL BE INSTALLED AS SHOWN ON THE PLAN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.
- SIDEWALK AND PATHWAY RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. DETAILS SHOW SIDEWALK RAMP DETAILS AT PARKING LOT AND ROADWAY INTERSECTION. HANDICAP RAMPS SHALL MEET ADA BARRIER FREE REQUIREMENTS.
- RAMPS SHALL BE PROVIDED AT CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB.
- SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE SLOPE OF RAMP.
- SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.
- CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP. FREE OF SACS AND SHORT GRADE CHANGES. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.
- IF POSSIBLE, DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH EXISTING EXCEPT WHERE DRAINAGE STRUCTURES ARE BEING UTILIZED IN THE NEW CONSTRUCTION. LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER LOCATION OF DRAINAGE STRUCTURE.
- THE NORMAL GUTTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
- THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.
- CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".

SIDEWALK CONSTRUCTION NOTES

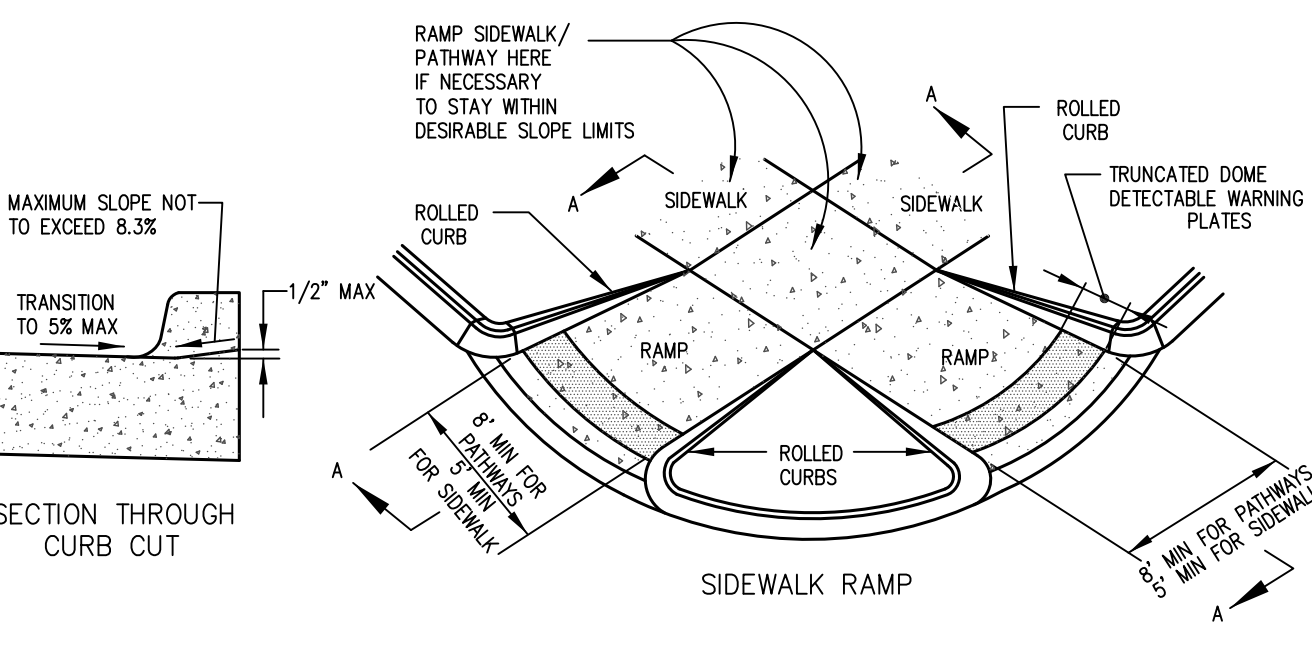
- PROVIDE TRANSVERSE SAW CUT JOINTS AT APPROX 5' INTERVALS (7' MAX), SAW 1/8" WIDE X 1" DEEP JOINTS. TOOLED JOINTS NOT ACCEPTABLE.
- PROVIDE FULL DEPTH TRANSVERSE EXPANSION JOINTS, BY INSTALLING 1/2" THICK FPMOLDED JOINT FILLER SET 1/4" BELOW THE CONCRETE SURFACE IN THE JOINTS AT 50' MAX INTERVALS.
- 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 MDOOT STANDARDS.
- AT UNPAVED DRIVE OR PAVED DRIVE WITH POOR CONDITION, INCREASE THE SLAB THICKNESS TO 6" OR EXISTING SLAB THICKNESS WHICHEVER IS GREATER.
- PROVIDE 10' BET EDGE OF SIDEWALK 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 RAMPS AT STREET INTERSECTIONS AND AS INDICATED ON PLANS.
- HANDICAP ACCESSIBLE RAMPS SHALL BE CONSTRUCTED PER CURRENT MDOOT 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.



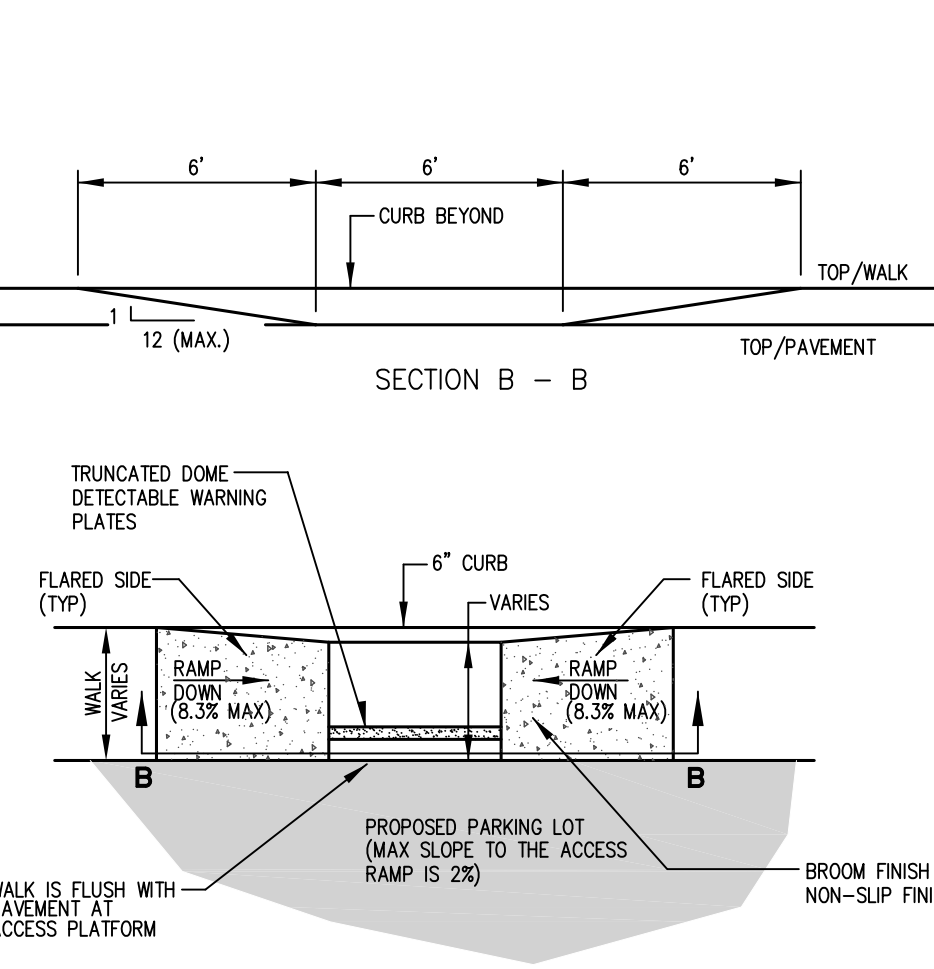
TYPICAL SIDEWALK JOINT LAYOUTS
NOT TO SCALE



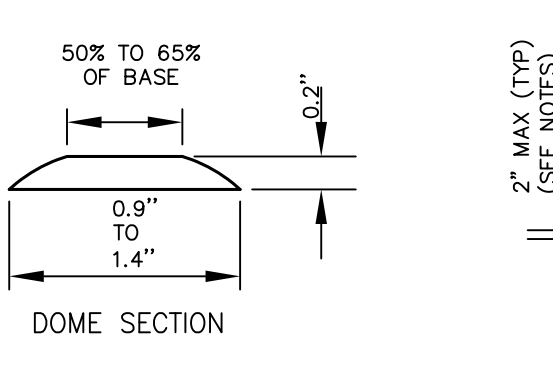
TYPICAL SIDEWALK CROSS SECTION
NOT TO SCALE



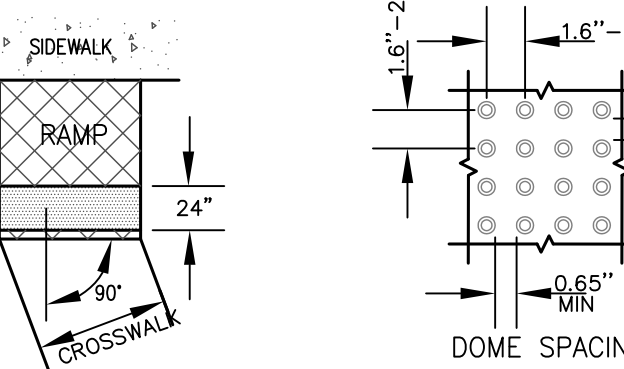
TYPICAL SIDEWALK RAMP DETAILS AT ROAD INTERSECTION
MDOOT TYPE 4, STANDARD PLAN R-28
NOT TO SCALE



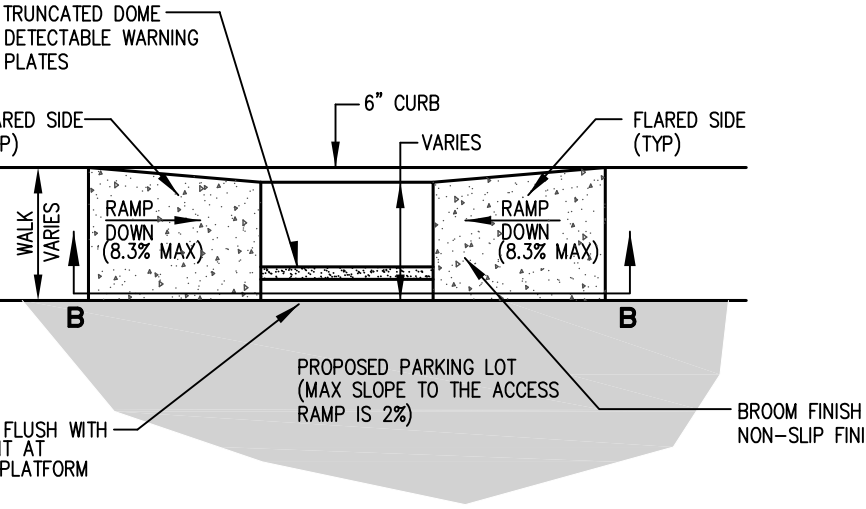
TYPICAL SIDEWALK RAMP (DETAIL AT PARKING LOT)
NOT TO SCALE



DETECTABLE WARNING DETAILS
MDOOT STANDARD PLAN R-28
NOT TO SCALE



DETECTABLE WARNING DETAILS
MDOOT STANDARD PLAN R-28
NOT TO SCALE



TYPICAL SIDEWALK RAMP (DETAIL AT PARKING LOT)
NOT TO SCALE

TYPICAL CONCRETE SIDEWALK DETAILS

TYPICAL UNDER DRAIN DETAILS

- 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