1. Length and width of driveway shall be shown on the plans or as directed.
2. Maintain existing direction of storm water flow on the driveway.
3. Provide temporary access during driveway construction.
4. Depressed curb shall be constructed as per depressed curb detail.

5. In lieu of dense graded (DGA), recycled concrete aggregate (RCA) is acceptable. All RCA must meet NIDOT specifications and be certified by an NIDOT approved plant of origin. All RCA shipments must be free of foreign materials and contaminants.

Revisions

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</table>

Ronald Sandler  
Licensed Professional Engineer  
License No. 240E05162300

County of Middlesex  
Department of Infrastructure Management  
Office of Engineering/Planning/Public Works  
75 Bayard St., New Brunswick, NJ 08901

HOT MIX ASPHALT TYPICAL  
DRIVEWAY SECTION ADJACENT TO  
REINFORCED CONCRETE  
SIDEWALK AND APRON

Ronald Sandler  
acting County Engineer  
M.E. P.E. No. 240E05162300

Scale: HOT to SCALE  
Sheet No. 1 of 1  
Date: 4/25/17
DETAIL #6

H.M.A. 9.5M64
SURFACE COURSE

H.M.A. 19M64
BASE COURSE

DENSE GRADED AGGREGATE
BASE COURSE
95% COMPACTION REQUIRED
[CERTIFICATION UPON REQUEST]

NOTES:

1. MIX NUMBERS ARE IN ACCORDANCE WITH THE CURRENT NEW JERSEY
   DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR
   ROAD AND BRIDGE CONSTRUCTION.

2. IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE
   (RCA) IS ACCEPTABLE. ALL RCA MUST MEET NJDOT SPECIFICATIONS
   AND BE CERTIFIED BY AN NJDOT APPROVED PLANT OF ORIGIN. ALL RCA
   SHIPMENTS MUST BE FREE OF FOREIGN MATERIALS AND
   CONTAMINANTS.

3. PAVEMENT CORES (UPON REQUEST)

REVISIONS

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HOT MIX ASPHALT PAVEMENT
DETAIL

County of Middlesex
Department of Infrastructure Management
Office of Engineering/Planning/Public Works
75 Bayard St., New Brunswick, NJ 08901

Ronald Sandner
Date
Licensed Professional Engineer
License No. 24603318200

Designed By: [Signature]
Drawn By: [Signature]
Checked By: [Signature]
Approved By: [Signature]

Scale: NOT TO SCALE
Sheet No. 1 of 1
Date: 4/25/17

Ronald Sandner
Acting County Engineer
P.E. No. 24603318200
CONCRETE DRIVEWAY REINFORCED, 6" THICK

6" TIGHT 4500 PSI CONCRETE, AIR ENTRAINED

5'-0" SIDEWALK AREA

VARIABLE APRON AREA

DENSE GRADED AGGREGATE, 6" THICK
95% COMPACTION REQUIRED [CERTIFICATION UPON REQUEST]

2% MAX (1.5% RECOMMENDED)

6" X 6", #10 X 10 WELDED WIRE MESH OR FIBER REINFORCED CONCRETE

DENSE GRADED AGGREGATE BEDDING 5" THICK
95% COMPACTION REQUIRED [CERTIFICATION UPON REQUEST]

PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER

1-1/2" PAVEMENT SURFACE

DEPRESSED CURB

NOTES:

1. TRANSVERSE EXPANSION JOINTS, 1/2" WIDE SHALL BE PROVIDED AT INTERVALS OF NOT MORE THAN 8' AND FILLED WITH PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER (AASHTO M33). LONGITUDINAL JOINTS 1/2" WIDE SHALL BE PROVIDED BETWEEN CURBS AND ABUTTING SIDEWALKS, AND SHALL BE FILLED WITH PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER (AASHTO M33). THE TOP OF ALL JOINT FILLER SHALL BE TRIMMED 1/2" BELOW THE TOP OF THE SIDEWALK AND FILLED WITH JOINT SEALER (SIKAFLEX-1A OR APPROVED EQUAL).

2. IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE (RCA) IS ACCEPTABLE. ALL RCA MUST MEET NIDOT SPECIFICATIONS AND BE CERTIFIED BY AN NIDOT APPROVED PLANT OF ORIGIN. ALL RCA SHIPMENTS MUST BE FREE OF FOREIGN MATERIALS AND CONTAMINANTS.

---

Reinforced Concrete Driveway Detail

County of Middlesex
Department of Infrastructure Management
Office of Engineering/Planning/Public Works
75 Bayard St., New Brunswick, NJ 08901

Ronald Sandner
Licensed Professional Engineer
License No. 246531612000

Date

Sheet No. 1 of 1

Scale: NOT to SCALE

Designed By

Drawn By

Checked By

Approved By

Ronald Sandner
Acting County Engineer
N.J. P.E. No. 246531612000

Date: 4/25/17
METHOD OF DEPRESSING CURBS

TOP OF CURB
PAVEMENT SURFACE

PAVEMENT SURFACE

SECTION A-A

NOTE:
1. PREFORMED RUTMINOUS CELLULAR TYPE EXPANSION JOINT FILLER
   (AASHTO M13) 1/2" WIDE IN THE CURB SHALL BE PROVIDED AT
   APPROXIMATELY EQUAL DISTANCES OF NOT MORE THAN 20" BETWEEN
   JOINTS, AND SHALL BE FLUSH WITH THE TOP AND FACE OF CURB.

2. IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE (RCA)
   IS ACCEPTABLE. ALL RCA MUST MEET NIDOT SPECIFICATIONS AND BE
   CERTIFIED BY AN NIDOT APPROVED PLANT OF ORIGIN. ALL RCA SHIPMENTS
   MUST BE FREE OF FOREIGN MATERIALS AND CONTAMINANTS.

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<tr>
<td>9&quot;x16&quot;</td>
<td>17½'</td>
<td>16'</td>
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TYPICAL COUNTY ROAD WIDENING DETAIL

NOTES:
1. PROVIDE SLOPE TOWARDS GUTTER LINE TO ENSURE POSITIVE DRAINAGE.
2. IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE (RCA) IS ACCEPTABLE. ALL RCA MUST MEET NDOT SPECIFICATIONS AND BE CERTIFIED BY AN NDOT APPROVED PLANT OF ORIGIN. ALL RCA SHIPMENTS MUST BE FREE OF FOREIGN MATERIALS AND CONTAMINENTS.
DETAIL #10

NOTES:

1. **PREFORMED BITUMINOUS CELLULAR TYPE EXPANSION JOINT FILLER (AASHTO M33) 1/2" WIDE IN THE CURB SHALL BE PROVIDED AT APPROXIMATELY EQUAL DISTANCES OF NOT MORE THAN 2 FT BETWEEN JOINTS, AND SHALL BE PLUSH WITH THE TOP AND FACE OF CURB.

2. **CURB SHALL BE INSTALLED ON TOP OF 5" THICK DENSE GRADED AGGREGATE BEDDING.

3. **THE COST OF EXPANSION JOINTS IN THE CURB AND DENSE GRADED AGGREGATE BEDDING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE CURB.

4. **4" CURB FACE IS PREFERRED.

5. **IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE (RCA) IS ACCEPTABLE. ALL RCA MUST MEET NIDOT SPECIFICATIONS AND BE CERTIFIED BY AN NIDOT APPROVED PLANT OF ORIGIN. ALL RCA SHIPMENTS MUST BE FREE OF FOREIGN MATERIALS AND CONTAMINANTS.

---

**County of Middlesex**  
**Department of Infrastructure Management**  
**Office of Engineering/Planning/Public Works**  
**75 Bayard St., New Brunswick, NJ 08901**

**STANDARD GRAY CONCRETE VERTICAL CURB DETAIL**

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**Revisions**

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**Designed By**:  
**Drawn By**:  
**Check By**:  
**Approved By**:  
**Scale**: NOT TO SCALE

**Ronald Sandner**  
Licensed Professional Engineer  
License No. 24E03162200  
Date 4/25/17  
Sheet No. 1 of 1
NOTES:

1. UNLESS SPECIFIED ON THE PLANS, USE HEAVY DUTY TRENCH FRAMES WITH GRADE PATTERN NO. 4565A, CAMPBELL FOUNDARY, HARRISON, N.J., OR AN APPROVED EQUAL.

2. IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE (RCA) IS ACCEPTABLE. ALL RCA MUST MEET NJDOT SPECIFICATIONS AND BE CERTIFIED BY AN NJDOT APPROVED PLANT OF ORIGIN. ALL RCA SHIPMENTS MUST BE FREE OF FOREIGN MATERIALS AND CONTAMINANTS.

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County of Middlesex
Department of Infrastructure Management
Office of Engineering/Planning/Public Works
75 Bayard St., New Brunswick, NJ 08901

TRENCH FRAME WITH GRADE DETAIL

Ronald Sendner
Date
Licensed Professional Engineer
License No. 240963162300

Designed By: Ronald Sendner
Drawn By: Ronald Sendner
Checked By: Ronald Sendner
Approved By: Ronald Sendner

Scale: NOT TO SCALE
Sheet No. 1 of 1
Date: 4/25/17

H.R.P.E. No. 240963162300
DETAIL #12

NOTES:

1. TRANSVERSE EXPANSION JOINTS, 1/2" WIDE, SHALL BE PROVIDED AT INTERVALS OF NOT MORE THAN 15' AND FILLED WITH PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER (AASHTO M37). LONGITUDINAL JOINTS, 1/2" WIDE, SHALL BE PROVIDED BETWEEN CURB AND ABUTTING SIDEWALKS, AND SHALL BE FILLED WITH PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER (AASHTO M37). THE TOP OF ALL JOINT FILLER SHALL BE TRIMMED 1/2" BELOW THE TOP OF THE SIDEWALK AND FILLED WITH JOINT SEALER (Sikaflex-1A), OR AN APPROVED EQUAL.

2. IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE (RCA) IS ACCEPTABLE. ALL RCA MUST MEET NDOT SPECIFICATIONS AND BE CERTIFIED BY AN NDOT APPROVED PLANT OF ORIGIN. ALL RCA SHIPMENTS MUST BE FREE OF FOREIGN MATERIALS AND CONTAMINANTS.

CONCRETE CRADLE CURB DETAIL
for ADA RAMPS

County of Middlesex
Department of Infrastructure Management
Office of Engineering/Planning/Public Works
75 Bayard St., New Brunswick, NJ 08901

Ronald Sandner
Licensed Professional Engineer
License No. 24023162200

Date: 4/25/17

Sheet No. 1 of 1
Scale: NOT TO SCALE
Rev. 1

CONCRETE CRADLE 4" WIDE (MONOLITHIC WITH CURB)
CONCRETE VERTICAL CURB
2' KNOCKOUT DETAIL
NOTE:

1. TRANSVERSE EXPANSION JOINTS, 1/2" WIDE, SHALL BE PROVIDED AT INTERVALS OF NOT MORE THAN 15' AND FILLED WITH PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER (AASHTO M31). LONGITUDINAL JOINTS, 1/2" WIDE, SHALL BE PROVIDED BETWEEN CURBS AND ABUTTING SIDEWALKS, AND SHALL BE FILLED WITH PREFORMED BITUMINOUS TYPE JOINT FILLER (AASHTO M31). THE TOP OF ALL JOINT FILLER SHALL BE 1/2" BELOW THE TOP OF THE SIDEWALK AND FILLED WITH JOINT SEALER (SICAFLEX-1A), OR AN APPROVED EQUAL.

2. SIDEWALK WIDTH SHALL BE 5'6" MINIMUM UNLESS OTHERWISE NOTED ON THE APPROVED PLANS.

3. TYPE OF SEEDING SHALL MEET FREEHOLD SOIL CONSERVATION DISTRICT REQUIREMENTS.

4. THE COST OF THE EXPANSION JOINT, JOINT FILLER, WELDED WIRE MESH AND DENSE GRADED AGGREGATE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE CONCRETE SIDEWALK.

5. IN LIEU OF WELDED WIRE MESH FIBER REINFORCED CONCRETE IS ACCEPTABLE.

6. IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE (RCA) IS ACCEPTABLE. ALL RCA MUST MEET NIDOT SPECIFICATIONS AND BE CERTIFIED BY AN NIDOT APPROVED PLANT OF ORIGIN. ALL RCA SHIPMENTS MUST BE FREE OF FOREIGN MATERIALS AND CONTAMINANTS.

County of Middlesex
Department of Infrastructure Management
Office of Engineering/Planning/Public Works
75 Bayard St., New Brunswick, NJ 08901

REINFORCED CONCRETE SIDEWALK DETAIL

Ronald Sandner
Date: 4/25/17
Licensed Professional Engineer
License No. 2460316200
DEDAL #15

2% SLOPE [1.5% RECOMMENDED]
9' REINFORCED CONCRETE SIDEWALK
8.33% MAX [7.5% RECOMMENDED]
9 x 18" CONCRETE VERTICAL CURB
SLOPING CURB & SIDEWALK

ELEVATION

4" CURB FACE

SLOPING CURB & SIDEWALK
8.33% MAX [7.5% RECOMMENDED]

HMA 9.5M64
5' MIN
1' MIN
5'-9"

E.O.P.

County of Middlesex
Department of Infrastructure Management
Office of Engineering/Planning/Public Works
75 Bayard St., New Brunswick, NJ 08901

HALF PARALLEL REINFORCED CONCRETE RAMP TO HMA SHOULDER

Ronald Sendner
Licensed Professional Engineer
License No. 24603162200

Scale: NOT to SCALE
Sheet No. 1 of 1
Date: 4/25/17

Ronald Sendner
Acting County Engineer
N.J. P.E. No. 24603162200
TYPICAL COUNTY CURB INSTALLATION DETAIL

NOTE:

1. PROVIDE SLOPE TOWARDS GUTTER LINE TO ENSURE POSITIVE DRAINAGE.
TEMPORARY TRENCH RESTORATION DETAIL: PAVED AREA

NOTE:

1. THE STORM SEWER TRENCH AND BEDDING DETAIL MAY BE UTILIZED AS AN ALTERNATE.

2. THE TEMPORARY TRENCH DETAIL MUST BE CONVERTED TO THE FINAL TRENCH DETAIL (NO SOONER THAN 30 DAYS AND NO LATER THAN 90 DAYS FROM COMPLETION OF TRENCH CONSTRUCTION.)

FINAL TRENCH RESTORATION DETAIL: PAVED AREA

SURFACE TO BE MILLED AT A DEPTH OF 1" AND RESURFACED WITH 2" OF HMA 95/64

POLYMERIZED JOINT ADHESIVE
BACKFILL WITH DENSE GRADED
AGGREGATE (DGA) OR RECYCLED
CONCRETE AGGREGATE (RCA), MAXIMUM
COMPACTED THICKNESS OF EACH LAYER
SHALL NOT EXCEED 4" THICK
3" MINIMUM

NOTES:
1. 95% COMPACTION REQUIRED
   (CERTIFICATION UPON REQUEST)
2. BACKFILLING WITH EXCAVATED
   MATERIAL SHALL NOT BE PERMITTED
3. A MINIMUM OF 1/4" THICK (HOT MIX
   ASPHALT) HMA 95/64 IS REQUIRED EVEN
   WHEN EXISTING SURROUNDING PAVEMENT
   IS LESS THAN 1/4" THICK.

COVER & BEDDING MATERIAL
A. NATURAL GAS (SAND)
B. SANITARY SEWER (5" BROKEN STONE)
C. WATER (5" BROKEN STONE)
D. TEL. COM (SAND)

PIPELINE WARNING TAPE
PROPOSED UTILITY MAIN

32" MIN. MHC

TACK COAT
TEMPORARY TRENCH RESTORATION DETAIL (PAVED AREA)

NOTE:

1. THE STORM SEWER TRENCH AND BEDDING DETAIL MAY BE UTILIZED AS AN ALTERNATE.

2. THE TEMPORARY TRENCH DETAIL MUST BE CONVERTED TO THE FINAL TRENCH DETAIL (NO SOONER THAN 30 DAYS AND NO LATER THAN 90 DAYS FROM COMPLETION OF TRENCH CONSTRUCTION).

COVER & BEDDING MATERIAL
A. NATURAL GAS (SAND)
B. SANITARY SEWER (6" BROKEN STONE)
C. WATER (6" BROKEN STONE OR DGA)
D. TEL. CON (SAND)

POLYMERIZED JOINT ADHESIVE
1. 8" DENSE GRADED AGGREGATE BASE COURSE
2. 2" HMA 9.5664 BASE COURSE
3. 2" OR LESS PAVEMENT TO BE RECONSTRUCTED
4. 3" OR LESS PAVEMENT TO BE RECONSTRUCTED
5. 6" HMA 9.5664 BASE COURSE
6. STRAIGHT SAW CUT EXISTING PAVEMENT (TYP.)
7. POLYMERIZED JOINT ADHESIVE
8. PIPELINE WARNING TAPE
9. PROPOSED UTILITY MAIN
10. NOTES:
   1. 95% COMPACTION REQUIRED (CERTIFICATION UPON REQUEST)
   2. BACKFILLING WITH EXCAVATED MATERIAL SHALL NOT BE PERMITTED.
   3. A MINIMUM OF 10" THICK (NOT MIXED ASPHALT). 7" HMA 9.5664 IS REQUIRED EVEN WHEN EXISTING SURROUNDING PAVEMENT IS LESS THAN 10" THICK.
   4. PAVEMENT CORES (UPON REQUEST)

FINAL TRENCH RESTORATION DETAIL (PAVED AREA) WHEN TRENCH IS WITHIN 3' OF EDGE OF PAVEMENT/CURBLINE

Revisions

County of Middlesex
Department of Infrastructure Management
Office of Engineering/Planning/Public Works
75 Bayard St., New Brunswick, NJ 08901

UTILITY TRENCH AND BEDDING DETAIL (PAVED AREA)
LONGITUDINAL JOINT

Revised

Date

Sheet No. 1 of 1

Drawn: Ronald Sander

typed Professional Engineer

License No. 24002516250

Redline: yes

Reviewed: yes

Drawn: Ronald Sander

Acting County Engineer

Date: 11/16/2019

Scale: NOT TO SCALE

NO. DATED BY

Ronald Sander

NO. DATED BY

Ronald Sander

NO. DATED BY

Ronald Sander

NO. DATED BY

Ronald Sander

NO. DATED BY