

CITY OF CHARDON, OHIO
MUNICIPAL SPECIFICATIONS FOR
STREETS

SECTION 1A

GENERAL REQUIREMENTS

1. **DESCRIPTION:** The Contractor shall provide all labor, equipment and incidentals to complete the work specified herein.
2. **ACCESS TO FACILITIES:** The Contractor shall minimize the amount of ground area required for his equipment. The Contractor shall not obstruct access to buildings and shall maintain traffic at all times.
3. **SAFETY:** Safety requirements shall be in accordance with the General Clauses and the Occupational Safety and Health Act of 1970, U.S. Department of Labor.
4. **NOISE, DUST AND ODOR CONTROL:** The Contractor's construction activities shall be conducted to minimize all unnecessary noise, dust and odors. The use of oil or other materials which may cause tracking shall not be permitted.
5. **USE OF CITY FORCES:** The Contractor shall provide all labor, services, materials, equipment, proper and necessary to complete the work required by the Contract. It is expressly understood and agreed by the Contractor as a part of this Contract that no City services, materials, equipment, labor or property shall be used for this project without the express written permission of the City Manager. The Contractor shall reimburse the City for any and all such services, materials, equipment and property used. The Contractor further agrees that such unauthorized use of City employees shall result in the immediate termination of this Contract.
6. **OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS:**
 - A. **Application:** The Construction and Material Specifications of the Ohio Department of Transportation (ODOT) shall apply where noted on the plans and/or specifications. Each item or section referred to in the ODOT specifications shall have the same effect, application and force as if produced in their entirety herein, except the following:
 1. **Coarse Aggregate in Asphalt Concrete**
 - a. Aggregate shall be gravel, limestone or slag.
 - b. If gravel is used as the aggregate, it shall be fractured on more than one side.
 2. **Bitumen Content in Asphalt Concrete**

- a. Bitumen content shall be minimum of 6% of the total mix.

3. Laboratory Testing:

- a. The Contractor shall be responsible for having a reputable testing laboratory test the asphalt concrete materials for the bitumen content and the total aggregate percent of weight passing thru a sieve as required by ODOT specifications. Samples shall be taken by the Contractor, and the Contractor shall be responsible for the transportation of the same to the lab. One sample per day per material shall be taken or as directed by the Engineer and copies of the test shall be sent to the Engineer.

4. Recycled Material:

- a. No recycled ODOT Item 301, 404, 403 or 402 will be accepted for this project.

5. Tack Coat:

- a. After the tack coat is applied, the Contractor shall apply the surface coat as soon as possible so as to eliminate inconvenience to property owners. If necessary tack coat shall be applied between pavement layers as directed by the Engineer.

6. Feathering:

- a. After the surface coat of the resurfacing is complete the Contractor shall feather to all drives as directed by the Engineer with Item 404. The asphalt shall be feathered at a slope not to exceed 8% (1 inch per foot).

7. Payment for Asphalt:

- a. Payment shall be based upon a conversion of the net weight of plant delivery tickets for the bituminous aggregate base and asphalt concrete delivered, placed and accepted by the Engineer.
- b. Plant delivery tickets shall show the gross weight, truck tare weight of delivered materials and total material for each type of material delivered to the project during that work day.
- c. Gravel and limestone mixes shall be converted at 4,000 pounds per cubic yard. Slag mixes shall be converted at 3,800 pounds per cubic yard.

B. Interpretation: Notice should be taken that the ODOT specifications are to be used for the method of construction and installation and acceptance of the referenced item(s) and that the unit of measure to be used for payment purposes may or may not correspond to that used by ODOT.

C. Modifications: Where a specification contained herein modifies the ODOT specifications or a section thereof, the modifications shall prevail without altering the force and application of the remaining sections of the ODOT specifications.

- 7. SITE EROSION CONTROL:** The Contractor shall provide site erosion control to prevent runoff water from the site to carry sand, silt, dirt, etc., into any storm sewer or drainage channel. Method of control shall be presented in writing to the Engineer before proceeding with any excavation to work.
- 8. PERMITS:** The Contractor shall obtain and pay for all permits required to perform the work specified herein.
- 9. TEMPORARY FACILITIES:** Each Contractor shall make his own arrangements for, and pay all costs associated with providing and maintain temporary sanitary, water and phone service. Use of the Owner's facilities is prohibited. No separate payment will be made for the temporary facilities. The cost of providing and maintain temporary facilities shall be included in the cubic yard bid item for the ODOT Item 404 (Item No. 1).
- 10. PRESERVATION OF PROPERTY CORNERS AND SURVEY MARKERS:** The Contractor shall preserve all cornerstones, iron pins, concrete monuments or any other type of land monument. He shall have all land monuments in the proximity of the work referenced. He shall replace destroyed or damaged monuments and shall furnish a certification by a registered surveyor that the monuments have been restored.
- 11. UTILITY COMPANY NOTIFICATION:** The Contractor shall at least two (2) working days, excluding Saturdays, Sundays and Legal Holidays, prior to construction in the area of the utility; notify the Owner in writing, by telephone or person. The Contractor before digging, shall call the following utilities for field location:

UTILITY CONTACTS FOR MUNICIPAL PROJECTS

AT&T
13630 Loraine Avenue, 2nd Floor,
Cleveland, OH 44111
ATTN: James Janis
PH: (216) 476-6142
FAX: (216) 476-6013
E-MAIL: pj8191@att.com

Orwell Natural Gas Co., Inc.
8500 Station Street, Suite 100
Mentor, OH 44060
ATTN: Darryl Knight
PH: (440) 974-5120
CELL: (216) 346-0704
FAX: (440) 974-5114
E-MAIL: gotgas@orwellgas.com

City of Chardon
111 Water Street
Chardon, OH 44024-1201
ATTN: Paul Hornyak
PH: (440) 286-2655
FAX: (440) 286-5541
E-MAIL: publicsrv@chardon.cc

The Illuminating Company
6896 Mill Road, Suite 110
Brecksville, OH 4414
ATTN: Mark Robinson
PH: (440) 717-6845
FAX: (440) 546-8773
E-MAIL: robinsonme@firstenergycorp.com

Dominion East Ohio Gas Company
320 Springside Drive, Suite 320
Akron, OH 44333
ATTN: Mary Long
PH: (330) 664-2409
E-MAIL: relocation@dom.com

The Illuminating Company
Doug Hogan
440-350-7716
djhogan@firstenergycorp.com

Hit Gas Line – Call Dispatch @
216-736-6650

Time Warner Cable
7820 Division Drive
Mentor, OH 44060
ATTN: Larry Clark (Manager)
Or Dave Detore
PH: (216) 531-6188
FAX: (440) 974-3201
E-MAIL: david.detore@twcable.com

Windstream
205 South Hambden Street
Chardon, OH 44024
ATTN: Jon Hobby
PH: (440) 285-5474
FAX: (440) 285-5468
E-MAIL: jon.hobby@windstream.com

CALL OHIO UTILITIES PROTECTION SERVICE
TWO (2) WORKING DAYS BEFORE YOU DIG
TOLL FREE NO. 1-800-362-2764
Non-Members must be called directly.
Updated 10/26/12

12. CONSTRUCTION SCHEDULING: The Contractor will be required to submit to the Engineer, in writing, his proposed construction sequences for the project. No construction shall commence until review of the Contractor's proposal by the Engineer. Approval will be given for proposed sequences only, and shall not cause the Engineer to Owner to accept any responsibility for the actual work in progress.

SECTION 2G

ASPHALT PAVEMENT

1. **DESCRIPTION:** The Contractor shall furnish and install the asphalt concrete pavement reconstruction and resurfacing as shown in the plans, Section 2E and specified herein.

2. **GENERAL:**

A. **Slope:** Asphalt paved streets shall slope away from the centerline and have a center crown. Cross slope shall be $\frac{1}{4}$ inch per foot unless otherwise directed by the Engineer.

3. **MATERIALS:**

A. **Aggregate Base:** Aggregate base shall be in accordance with ODOT Item 304.

B. **Prime Coat:** Prime coat shall be in accordance with ODOT Item 408 using 702.02 cutback asphalt MC30 or MC70 or 702.03 cutback asphalt emulsion primer 20 or 702.09 tars RT-2 or RT-3.

C. **Tack Coat:** Tack coat shall be in accordance with ODOT Item 407 using 702.02 cutback asphalt RC-250, or 702.04 emulsified asphalt RS-1, SS-1 or SS-1H.

D. **Asphalt Concrete:** Asphalt concrete shall be in accordance with ODOT Item 404, 402 and 403.

E. **Concrete with Portland Cement:** Concrete shall be in accordance with Section 3A, "Concrete," Class A.

F. **Pavement Markings:** All pavement markings shall be in accordance with ODOT Item 642, Traffic Paint.

G. **Bituminous Aggregate Base:** Bituminous aggregate base shall be in accordance with ODOT Item 301.

H. **Stabilized Crushed Aggregate:** Stabilized crushed aggregate shall be in accordance with ODOT Item 411.

4. **INSTALLATION:**

A. **Asphalt Concrete Pavement:**

1. **Subbase Repair:** Subbase repair shall include the removal and disposal of damaged aggregate and replacement of ODOT Item 304. Areas for repair shall be determined as directed by the Engineer.
2. **Subbase Surface Shaping:** Subbase surface shall be shaped to cross slopes shown in details in Section 2E of the specifications and as directed by the Engineer for proper drainage.
3. **Pavement Composition:** Pavement composition shall be as shown in Section 2E of the specifications, placed in accordance with ODOT Items 404 and 402.
4. **Prime Coat:** Prime coat shall be applied according to ODOT Item 408 at a rate of .40 gallon per square yard.
5. **Tack Coat:** Tack coat shall be applied according to ODOT Item 407 at a rate of .10 gallon per square yard.
6. **Stabilized Aggregate Shoulders:** Stabilized aggregate shoulders shall be constructed along proposed pavement as shown in the plans and in accordance with ODOT Item 411.
7. **Topsoil:** Grading and seeding shall be constructed adjacent to proposed pavement as shown in the plans. Payment for repair grading and seeding beyond this area shall be included in Item No. 14, ODOT Item 404.

B. Asphalt Concrete Resurfacing:

1. **Resurfacing Composition:** Resurfacing composition shall be as shown in the plans, placed in accordance with ODOT Item 404 and 403.
2. **Base Repair:** Base repair shall include the removal and disposal of damaged pavement and replacement of ODOT Item 301. Areas for repair shall be determined as directed by the Engineer.
3. **Tack Coat:** Tack coat shall be applied according to ODOT Item 407 at a rate of .10 gallon per square yard.
4. **Topsoil:** Grading and seeding shall be constructed adjacent to proposed pavement as shown in the plans. Payment for repair grading and seeding beyond this area shall be included in Item No. 14, ODOT Item 404.
5. **Concrete Curb:** Concrete curb shall be ODOT Type 6 per ODOT Standard Construction Drawing BP-7 and shall be placed as shown in the plans, constructed in accordance with ODOT Item 609.04.
6. **Swale Construction and Re-grading:** Swale construction and regrading shall be as shown in the plans and shall be performed to permit straight and unobstructed flow in the ditch.
7. **Swale Cleaning:** Swale cleaning shall be as shown in the plans and shall be performed to permit straight and unobstructed flow in the ditch.

C. Pavement Markings: Pavement markings shall be placed as shown in Section 2E of the specifications and be in accordance with ODOT Item 642, Traffic Paint.

SECTION 2G

ASPHALT RESURFACING

1. **DESCRIPTION:** The Contractor shall furnish and install the asphalt concrete and latex modified emulsified asphalt resurfacing as shown in Section 2E and specified herein.
2. **GENERAL:**
 - A. **Slope:** Resurfaced streets shall slope away from the centerline and have a center crown. Cross slope shall be $\frac{1}{4}$ inch per foot unless otherwise directed by the Engineer.
 - B. **Asphalt Concrete:** Butt joints shall be placed as directed by the Engineer at both ends of the asphalt concrete resurfacing.
3. **Materials:**
 - A. **Tack Coat:** Tack coat shall be RC-250, RS-1, SS-1 or SS-1H in accordance with ODOT Item 404 and 402.
 - B. **Asphaltic Concrete:** Asphaltic concrete shall be in accordance with ODOT Item 404 and 402.
 - C. **Concrete with Portland Cement:** Concrete shall be in accordance with Section 3A, "Concrete," Class A.
 - D. **Pavement Markings:** All pavement markings shall be in accordance with ODOT Item 621, Pavement Markings.
4. **INSTALLATION:**
 - A. **Asphalt Concrete Resurfacing:**
 1. **Resurfacing Composition:** Resurfacing composition shall be as shown in Section 2E of the specifications. Placed in accordance with ODOT Item 404 and 402.
 2. **Tack Coat:** Tack coat shall be applied according to ODOT Item 407 at a rate of .10 gallon per square yard.
 - B. **Concrete Curb Replacement:** Concrete curb replacement shall be ODOT Type 6 per ODOT Standard Construction Drawing BP-7 and shall be constructed as shown in the specifications and in accordance with ODOT Item 609.04.

C. Pavement Markings: Pavement markings shall be placed as shown in Section 2E of the specifications and be in accordance with ODOT Item 643 Polyester and 644 Thermoplastic, Pavement Markings.

D. Concrete Sidewalks: Concrete sidewalk is to be 4" in depth and constructed as shown in Section 2E of the specifications and in accordance with ODOT Item 608.03.

5. INSTALLATION:

A. Concrete Pavement Removed:

1. Where existing concrete pavement is to be removed, a heat joint shall be sawed at the removal limit.
2. All concrete pavement, concrete curb and subbase in the designated removal area are to be removed from the site and disposed. All arrangements for disposal of materials shall be made by the Contractor at no cost to the Owner.

B. Concrete Pavement:

1. **Longitudinal Joints:** Hook bolts shall be placed along the longitudinal joints as shown in Section 2E of the specifications. Hook bolts shall be placed in accordance with ODOT Item 451 and ODOT Standard Construction Drawing BP-3.
2. **Contraction Joints:** Contraction joints shall be placed as shown in Section 2E of the specifications in accordance with ODOT Item 451 and ODOT Standard Construction Drawing BP-4.
3. **Construction Joints:** Construction joints shall be placed as shown in Section 2E of the specifications and in accordance with ODOT Item 451 and ODOT Standard Construction Drawing BP-4.
4. **Pavement Composition:** Pavement composition shall be as shown in Section 2E of the specifications.
5. **Subbase:** Pavement subbase shall be constructed in accordance with ODOT Item 451.

C. Integral Concrete Curb: Integral concrete curb shall be ODOT Type 3A, per ODOT Standard Construction Drawing BP-7 and shall be constructed as shown in the specifications and in accordance with ODOT Item 609.04.

D. Underdrain: Underdrain shall be constructed in accordance with ODOT Item 605.03. Underdrain shall be connected to and sloped towards the nearest constructed catch basin.

SECTION 3A

CONCRETE

1. **DESCRIPTION:** The Contractor shall furnish and place the normal weight, plain and reinforced, site placed Portland cement concrete as shown on the plans and as specified herein, including concrete bases and supports for equipment and piping.
2. **GENERAL:** Concrete work shall conform to all requirements of American Concrete Institute (ACI) 301, Specifications for Structural Concrete for Buildings, and ACI 318, Building Code Requirements for Reinforced Concrete, except as modified herein. For concrete sanitary structures, concrete work shall also conform to ACI 350, "Concrete Sanitary Engineering Structures." Concrete sanitary structures are defined in Section 2.2, ACI 350. The Contractor shall retain at least one copy of each of the above references in his field office at all times.
3. **SUBMITTALS:**
 - A. **Certificate of Compliance:** Contractor shall obtain and deliver to the Engineer a Certificate of Compliance signed by the cement manufacturer identifying the cement and stating that the cement delivered to the batching site complies with these specifications.
 - B. **Mill Test Reports:** Contractor shall submit copies of mill test reports for each shipment of cement, aggregates, admixtures and all other materials certifying compliance with the requirements specified herein.
 - C. **Mix Design Submittal:** Prior to the concrete being placed, the Contractor shall furnish a mix design for each class of concrete for review and approval. All documentation necessary to substantiate the proposed proportions shall be submitted to the Engineer for review and approval.
 - D. **Calculations:** Contractor shall submit copies of the calculations, signed and stamped by a registered engineer in the state that the job is located, for all concrete members designed by the Contractor.
4. **MATERIALS FOR CONCRETE:**
 - A. **Portland Cement:** Portland cement shall conform to the requirements of ASTM C150, Type I, unless otherwise noted.
 1. **Exceptions:**
 - a. **Warm Climates:** In warm climates, Type II cement may be substituted.
 - b. **High Sulfate Soils:** In areas where the concrete is subjected to high sulfate soils so designated on the plans (>.2 percent) or high

sulfate water (>1,500 parts per million [ppm]), Type V cement shall be used.

2. **Brand of Cement:** One brand of cement shall be used throughout the project unless otherwise acceptable to Engineer.
3. **Alkali Content:** All cement shall contain no more than .6 percent total alkali. Total alkali shall be determined from the sum of sodium oxide (Na₂O) calculated as sodium oxide. The determination for total alkali shall be made by the method set forth in ASTM C114.
4. **Storage of Cement:** Cement shall be stored in weather tight containers. Cement which contains lumps or has partially hardened or set shall be rejected. All cement that is rejected by the Engineer shall be immediately removed from the site or from storage with other cement intended for use in the work.

B. Admixtures: Admixtures, when required or permitted for air entraining, water reducing or densifying, shall conform to the following:

1. **Pozzolan:** Shall conform to ASTM C618, Class F, except that the loss on ignition shall not exceed 6 percent.
2. **Approval:** All admixtures shall receive the approval of the Engineer prior to use. All additives shall be compatible with the cement used, shall be used in strict accordance with the manufacturer's recommendations, and under the initial supervision of a representative of the manufacturer.

C. Water: Water shall be clean and free from deleterious amounts of sewage, oil, acid, alkali, clay, organic matter or other deleterious substances.

1. **Chloride and Sulfate Limits:** Water shall not contain chlorides calculated as sodium chloride in excess of 1,000 ppm nor sulfates calculated as sodium sulfate in excess of 1,000 ppm.
2. **Chloride Limit – Pre-stressed Concrete:** Water used for pre-stressed concrete shall not contain chlorides calculated as sodium chloride in excess of 500 ppm.

D. Aggregates:

1. **Normal Weight Aggregates:** Normal weight aggregates shall conform to ASTM C33 and as herein specified. Provide aggregates from a single source for exposed concrete.
 - a. **Fine Aggregate:** Fine aggregate shall consist of natural sand or manufactured sand.
 - b. **Coarse Aggregate:** Coarse aggregate shall consist of crushed rock, gravel, crushed gravel or air-cooled blast furnace slag.

- 1) **Grading:** The coarse aggregate shall conform to requirements for Size 57, unless otherwise approved by the Engineer.
- 2) **Deleterious Substances:**

Test	Percent by Weight
Removed by decantation	1
Shale	1
Coal and lignite	1
Clay lumps	¼
Soft fragments	3
Other deleterious substances which will readily disintegrate	1

Total of b to f inclusive, not more than 5.

2. **Lightweight Aggregates:** Lightweight aggregates shall conform to ASTM C330. Lightweight concrete will only be used where specified on the plans.

5. PROPORTIONING:

- A. **Concrete:** Concrete shall be proportioned in accordance with ACI 301, except as noted below.

1. **Measurement of Materials:** Materials shall be measured by weighing.
2. **Requirements:** Concrete shall conform to the following requirements for each class of concrete.

Class	Where Used	Minimum Bags of Cement per cu. Yd.	F'c	Air (%)*
A	Reinforced wall, columns, slabs, beams, non-reinforced	6.5	4,000	5-7
B	Non-reinforced concrete not designed as Classes A, C or D	5.75	3,500	5-7
C	Non-reinforced so designation on the plans	4.0	2,000	5-7
D	Grout fill or topping so designated on plans	9.0	--	6-9

*In geographical regions of moderate and negligible weathering indices (Figure 1, ASTM C33), 3 to 4 percent entrained air may be used.

3. **Ratios:** Class D concrete shall have a water to cement ratio of .44 and a fine sand to cement ratio of 3.0 by weight.

4. In addition to the above, concrete for sanitary structures shall be proportioned in accordance with ACI 350, "Concrete Sanitary Engineering Structures."

6. **FORMWORK:** Formwork shall conform to ACI 301 except as noted below.

A. **Form Ties:** In no instance may the form tie be cut off flush with the forms.

7. **REINFORCEMENT:** All reinforcement shall conform to ACI 301 except as noted below.

A. **Material:**

1. **Reinforcing Bars:** All reinforcing bars shall conform to the requirements of ASTM 615, Grade 60.

2. **Welded Wire Fabric:** Welded wire fabric shall conform to the requirements of ASTM A185.

B. **Fabricating:**

1. **Splices:** All splices for reinforcing bars shall be Class C splices unless otherwise noted. All splices for welded wire fabric shall be measured between the outermost cross wires and shall be not less than one spacing of cross wires plus 2 inches or 8 inches.

8. **JOINTS AND EMBEDDED ITEMS:**

A. **Materials:**

1. **Expansion and Isolation Joints:** Expansion joint filler, unless otherwise shown, shall be self-expanding cork of the sizes and thickness shown on the plans conforming to the requirements of ASTM D1752, Type III.

2. **Waterstops:** Waterstop for construction joints shall be polyvinyl chloride (PVC) serrated type without center bulb not less than 6 inch width and 3/8 inch thick, Serviced No. 13, "Wirestop FR-6380" by Paul Murphy Plastics Company or equal with all joints spliced.

3. **Caulking:** See Section 7B, "Caulking."

4. **Elastomeric Bearing Pads:** Bearing pads and laminated bearings shall be of the compound known as neoprene. Size, thickness and hardness shall be as shown.

B. **Extent of Work:**

1. **Waterstop:** All joints in water bearing walls or slabs or joints subjected to groundwater shall be made watertight utilizing waterstops.

9. PLACING: No concrete shall be placed except when the Engineer or certified concrete technician is present, unless otherwise authorized by the Engineer. Give due notice to all Contractors affected before placing concrete.

10. FINISHING OF FORMED SURFACES:

A. Description: Inside faces of covered basins, clear wells and reservoirs, filters below the media line, open tanks and flumes below water or flow lines and the outside of structures below finish grade lines shall be classed as not exposed to view.

B. Unspecified Finish: If the finish is not designated on the plans, the following finishes shall be used as applicable:

1. Smooth Form Finish: For all concrete surfaces not exposed to view.

2. Smooth Rubbed Finish: For all concrete surfaces exposed to view.

11. SLABS:

A. Floor Hardener: All exposed surfaces and floors within buildings which will be subject to pedestrian or vehicular traffic in normal operation, shall be treated to harden and dustproof the surface. This shall be accomplished by the use of a liquid floor hardener applied in three applications in accordance with the manufacturer's directions. Floor hardener shall be a liquid such as "Lapidolith" by Sonneborn, "Surfhard" by Euclid Chemical Company, "Saniseal" by Master Builders or equal.

B. Unspecified Finish:

1. Troweled Finish: All slabs, except as specified below, shall have a troweled finish.

2. Floated Finish: Exterior walks and pavements shall have a floated finish, unless otherwise shown.

C. Finishing Tolerance:

1. The finishing tolerance shall be Class B unless noted otherwise.

12. CURING: When membrane curing compounds are used, the curing compound shall be nontoxic and free of taste and odor, unless otherwise noted.

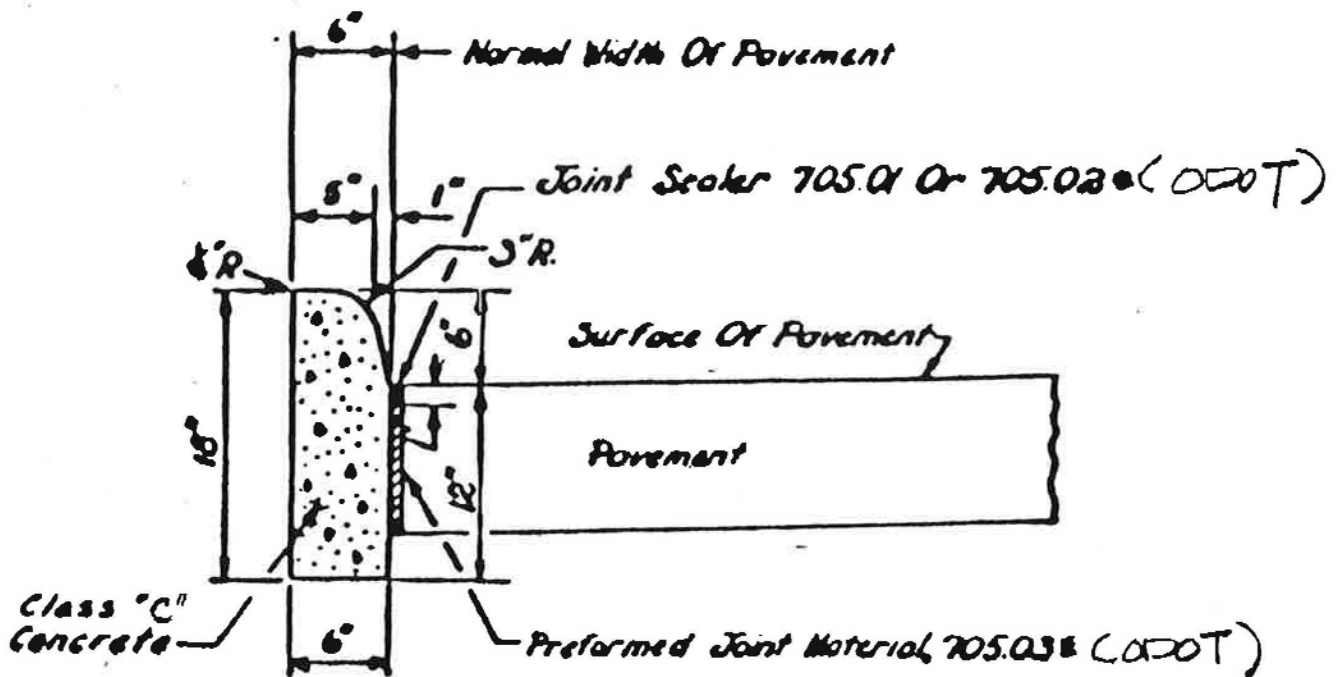
13. TESTING:

A. Cement: Cement shall be sampled and tested as prescribed in applicable ASTM specifications.

B. Testing Laboratory: All required testing shall be done at no cost to the Owner. The Contractor shall employ a concrete testing laboratory, approved by the Engineer, to do all the required material testing. The concrete testing laboratory shall send two copies of all test reports directly to the Engineer. A certified technician employed by the testing laboratory shall be present during the placing of all concrete.

14. MOISTURE – VAPOR BARRIER: Moisture-vapor barriers shall be 6 mil thick polyethylene film meeting the requirements of ASTM D2103, “Visqueen,” “Polyfilm,” or equal.

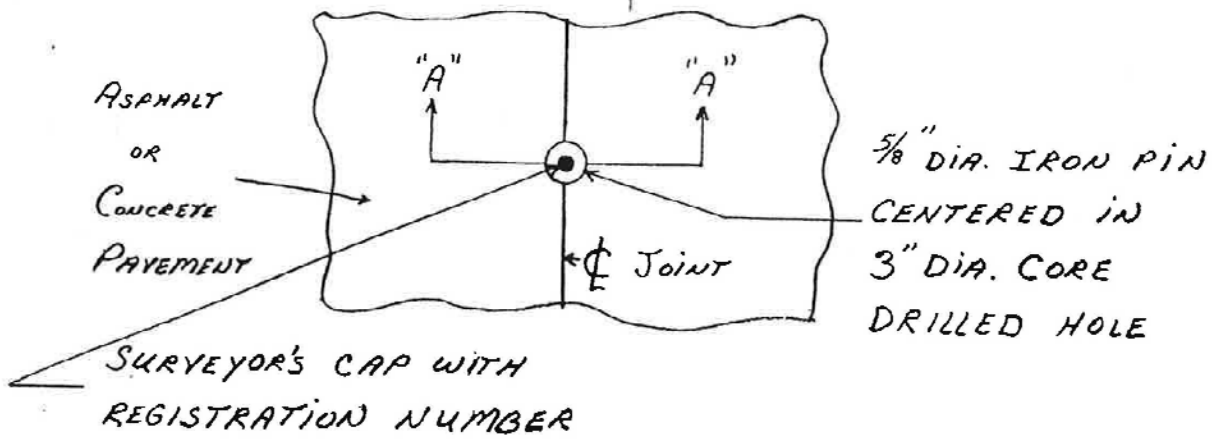
15. PERIMETER INSULATION: Perimeter insulation shall be of the size and thickness shown. Insulation shall be rigid closed cell extruded polystyrene complying with ASTM C-578 Type VI having a compressive resistance of 40 pounds per square inch (psi) and a density of not less than 2 pounds per cubic foot. Five year aged thermal resistance shall be not less than 5.0 Btu/in/sq. ft. at 75 degrees Fahrenheit (°F). Insulation shall be styrofoam HI-40-SB by Dow Chemical Company or equal. Foamglas by Pittsburgh Coating Corporation will be acceptable if the “R” value is equaled by increasing the required thickness accordingly. Mastic shall be as recommended by the manufacturer.



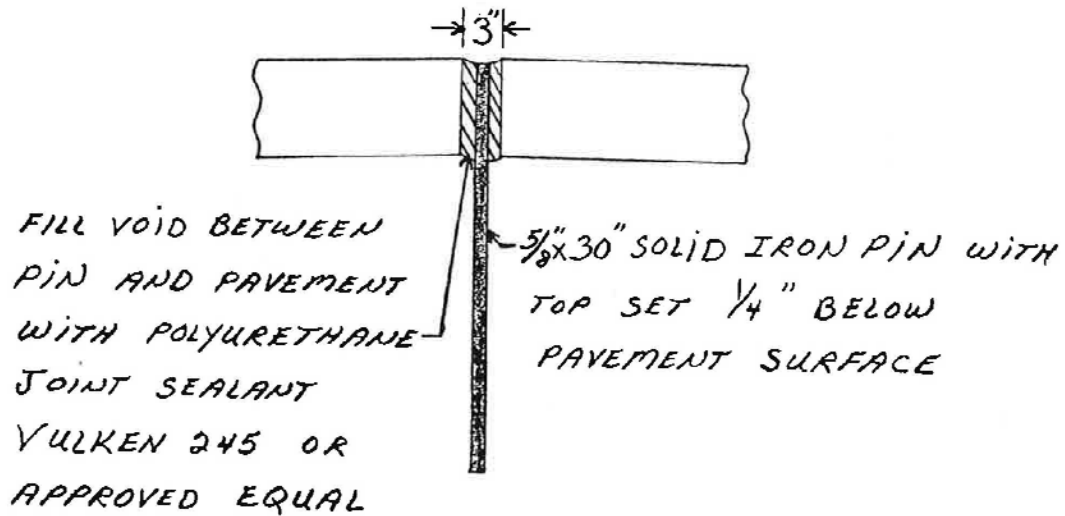
- NOTES:**
- 1. 1/2" Contraction Joints Constructed At 10 Foot Intervals.
 - 2. Expansion Joints Shall Be Provided Per O.D.O.T. Standard.
 - * Expansion Joint Material Is Not Required When Curb Is Adjacent To Flexible Type Pavement.

MODIFIED ODOT TYPE 6, CONCRETE CURB

(ALTERNATE FOR INTEGRAL CURB & GUTTER: ODOT TYPE 2 CURB)



PLAN VIEW



SECTION A - A

VILLAGE OF CHARDON DEPT. OF PUBLIC SERVICE	5-24-91	BOXLESS PAVEMENT MONUMENT
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SECTION 3B

OVERHEAD MAST ARM MOUNTED STREET NAME SIGNS

1. GENERAL:

- A.** A draft layout with dimensions of each proposed sign shall be submitted to the Director of Public Service for review and approval prior to placement of order.

2. MATERIALS:

- A.** Sign Blank shall be .080 gauge minimum thickness 5052-H38 Alloy with a standard height of 18". The length of the nameplate shall be determined by the number of letters in the street name, including the prefixes and suffixes, with a minimum length of 48". Where extra length is required, it shall be provided in 6" increments. Corners of the blank plate shall be rounded to match and correspond with the white outline.
- B.** Reflective Sheeting shall be VIP Diamond grade white #3990 or approved equal.
- C.** Electronic Cuttable Film shall be Worbouys Green Series #1176 or approved equal.

3. LETTERING DESIGN:

- A.** Letter font shall be 8" Highway Gothic upper and lower case.
- B.** Standard abbreviations for street (St), avenue (Ave), boulevard (Blvd), etc. shall be used following the street name. Periods, hyphens, commas and other punctuation shall not be used.

4. LETTER SPACING:

- A.** The control for the spacing values in street name sign layout is the distance recognized as aesthetic spacing between two straight letters (HN). A spacing control of two times (plus 10-15%) the width of the stroke of the letter shall be the aesthetic control (100%).

The spacing control (100%) is used as a basis for all aesthetic letter spacing and two times the control plus ½ the aesthetic spacing from letter to letter is used as the space between words in the complete legend.

The spacing of legend is dependent upon letter series, since the stroke width determines the distance between letters. Letter spacing shall be:

Straight to straight	2 strokes widths (+10-15%)
Straight to curved	1 ½ stroke widths (+10-15%)
Curved to curved	1 stroke width (+10-15%)

All edges which are not vertical are classified as curved: i.e., an A would be classified as curved on both edges.

The minimum end margin shall be equal to the space between two words.

5. OUTLINE:

- A.** The outline shall be white, ¾” wide with radius corners to match the corners of the blank plate.

**MUNICIPAL STANDARD SPECIFICATIONS
FOR
PAVING OF PARKING LOTS, LOADING AREAS AND DRIVEWAYS**

1. Materials shall conform to the Ohio Department Of Transportation (ODOT) item specification numbers noted; or thereafter the ODOT specification recommended in that category.
2. Where sidewalks cross driveway aprons, the driveway apron paving requirements shall govern the pavement thickness of the sidewalk.
3. The apron area of all parking lot, loading area, and driveway street entrances shall be constructed of concrete from the street pavement to the Right of Way line. The pavement shall be ODOT Item 452 Non-Reinforced Concrete Pavement. Apron thickness shall be as follows:
 - A. Driveway aprons for one and two family dwellings shall be a minimum of:
 - 6" ODOT 452 Non-Reinforced Concrete Pavement
 - 4" ODOT 304 Compacted Aggregate Base (limestone)
 - ODOT 204 Compacted Subgrade
 - B. Driveway aprons for all other uses shall be a minimum of:
 - 8" ODOT 452 Non-Reinforced Concrete Pavement
 - 6" ODOT 304 Compacted Aggregate Base (limestone)
 - ODOT 204 Compacted Subgrade
4. When, in the opinion of the Service Director or his designee, site and traffic conditions are acceptable for their use, the following minimum paving specifications shall be utilized for areas outside of a public right-of-way or easement.

A. ONE AND TWO FAMILY RESIDENCES:

1. New Construction:

Asphalt:

- 3" ODOT 448 Asphalt Concrete Surface Course, Type 1, installed in two (2) 1 ½" compacted lifts.
- 6" ODOT 304 Compacted Aggregate Base (limestone)
- ODOT 204 Compacted Subgrade

Concrete:

4" ODOT 452 Non-Reinforced Concrete Pavement

4" ODOT 304 Compacted Aggregate Base (limestone)

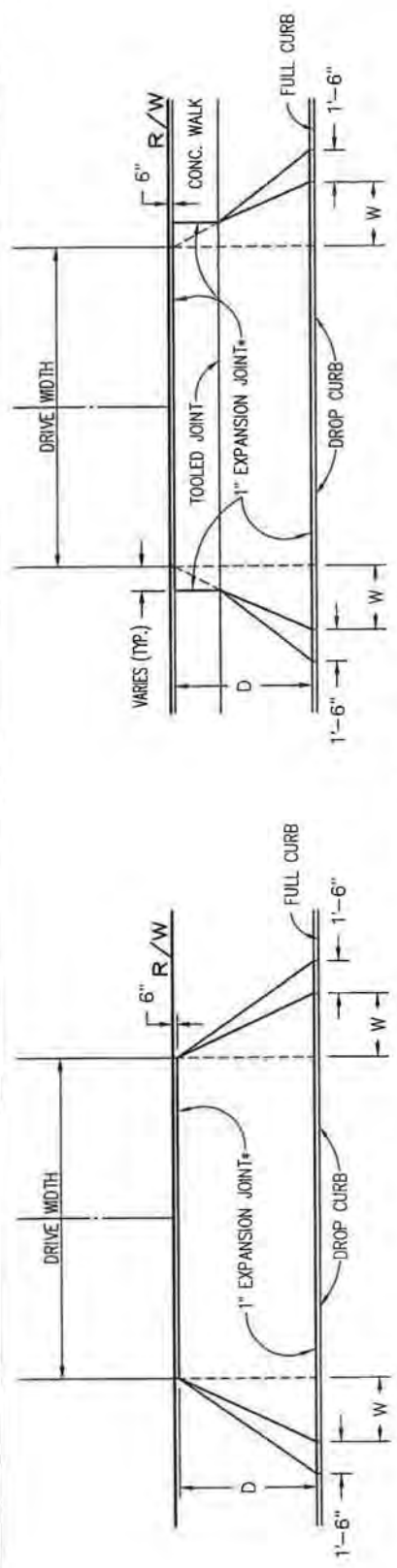
ODOT 204 Compacted Subgrade

2. **Existing Driveway Replacement:** One and two family driveways having an existing hard surface or an existing aggregate surface may be replaced using one of the following specifications:
 - a. 4" ODOT 452 Non-Reinforced Concrete Pavement
4" ODOT 304 Compacted Aggregate Base (limestone) or existing compacted base material as approved by the Service Director or his designee.
 - b. 3" ODOT 448 Asphalt Concrete Surface Course, Type 1, installed in two (2) 1 ½" compacted lifts.
6" ODOT 304 Compacted Aggregate Base (limestone) or existing compacted base material as approved by the Service Director or his designee.
 - c. 2" Compacted ODOT 411 stabilized crushed aggregate* or other material as approved by the Service Director or his designee.
6" ODOT 304 compacted aggregate base (limestone)

*Materials for use under ODOT 411 shall be restricted to crushed stone, crushed gravel or recycled asphalt concrete pavement. Crushed slag, granulated slag, and recycled concrete are not permitted.

B. ALL OTHER USES:

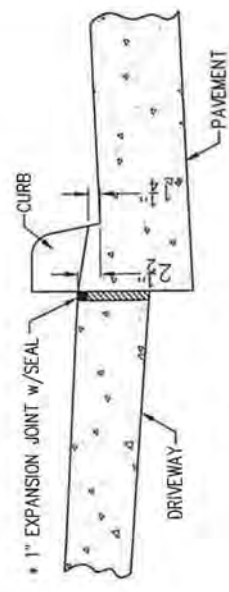
1. Asphalt:
 - 1 ½" ODOT 448 Asphalt Concrete Surface Course, Type 1
 - 3 ½" ODOT 301 Asphalt Concrete Base
 - 6" ODOT 304 compacted aggregate base (limestone)
 - ODOT 204 Compacted Subgrade
2. Concrete:
 - 6" ODOT 452 Non-Reinforced Concrete Pavement
 - 4" ODOT 304 Compacted Aggregate Base (limestone)
 - ODOT 204 Compacted Subgrade



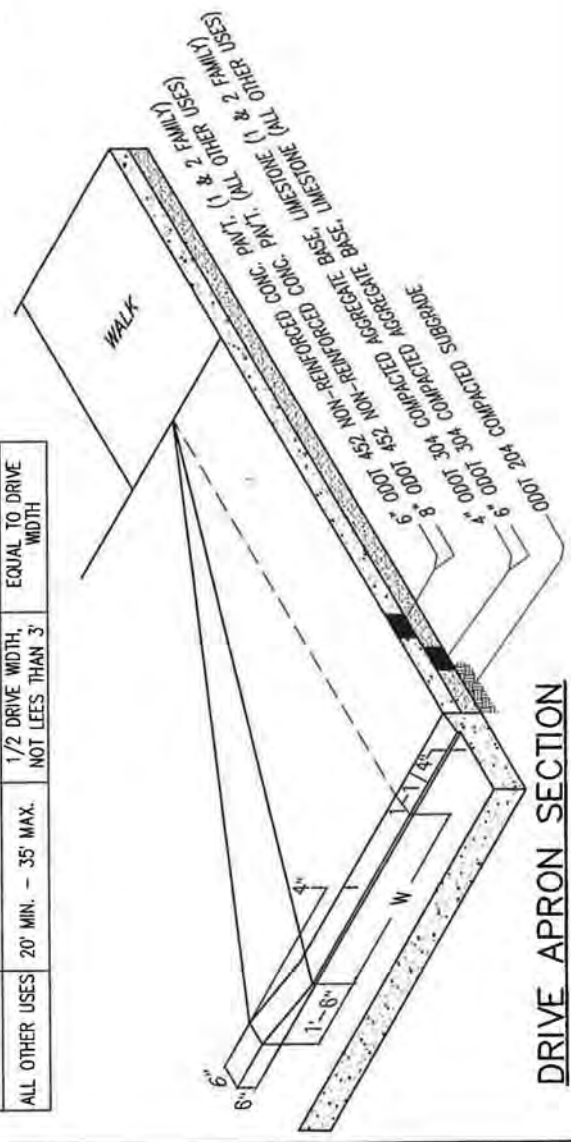
DRIVE APRON DETAIL
 (WITH OR WITHOUT CONCRETE WALK)
 NOT TO SCALE

* EXPANSION JOINT MATERIAL PER ODOT 705.03;
 USE WITH CONCRETE DRIVEWAYS & PAVEMENTS.
 SEAL TOP 1" OF EXPANSION JOINT WITH ODOT 705.04

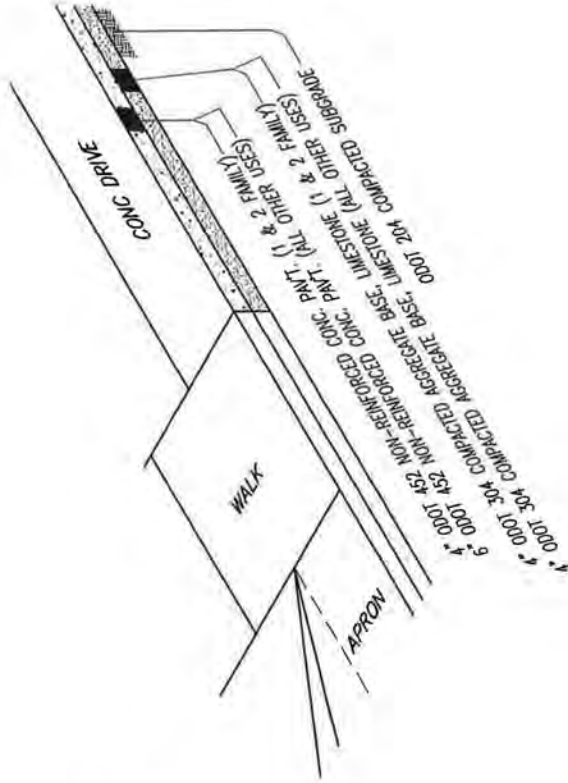
	DRIVE WIDTH	W	D
1 & 2 FAMILY	9' MIN. - 20' MAX.	3' MIN.	10' MIN.
ALL OTHER USES	20' MIN. - 35' MAX.	1/2 DRIVE WIDTH, NOT LEES THAN 3'	EQUAL TO DRIVE WIDTH



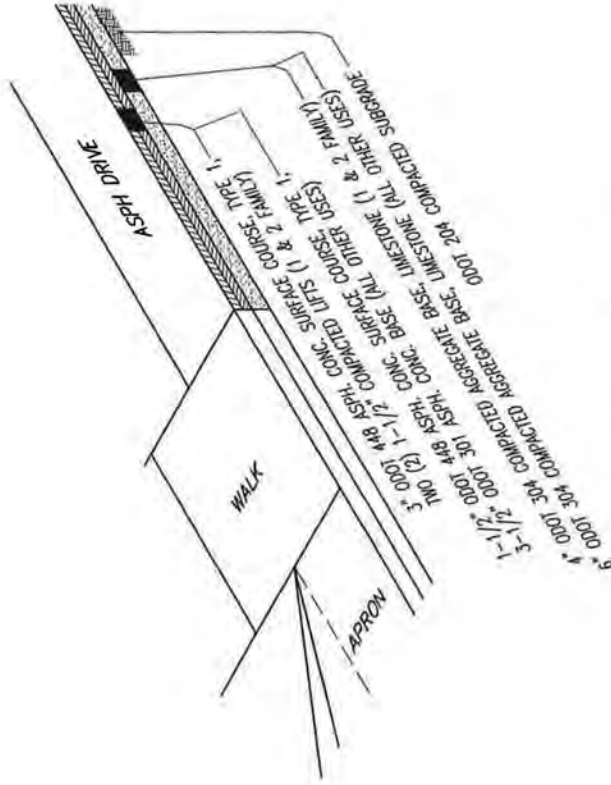
DROP CURB DETAIL
 @ DRIVEWAYS
 NOT TO SCALE



DRIVE APRON SECTION
 NOT TO SCALE



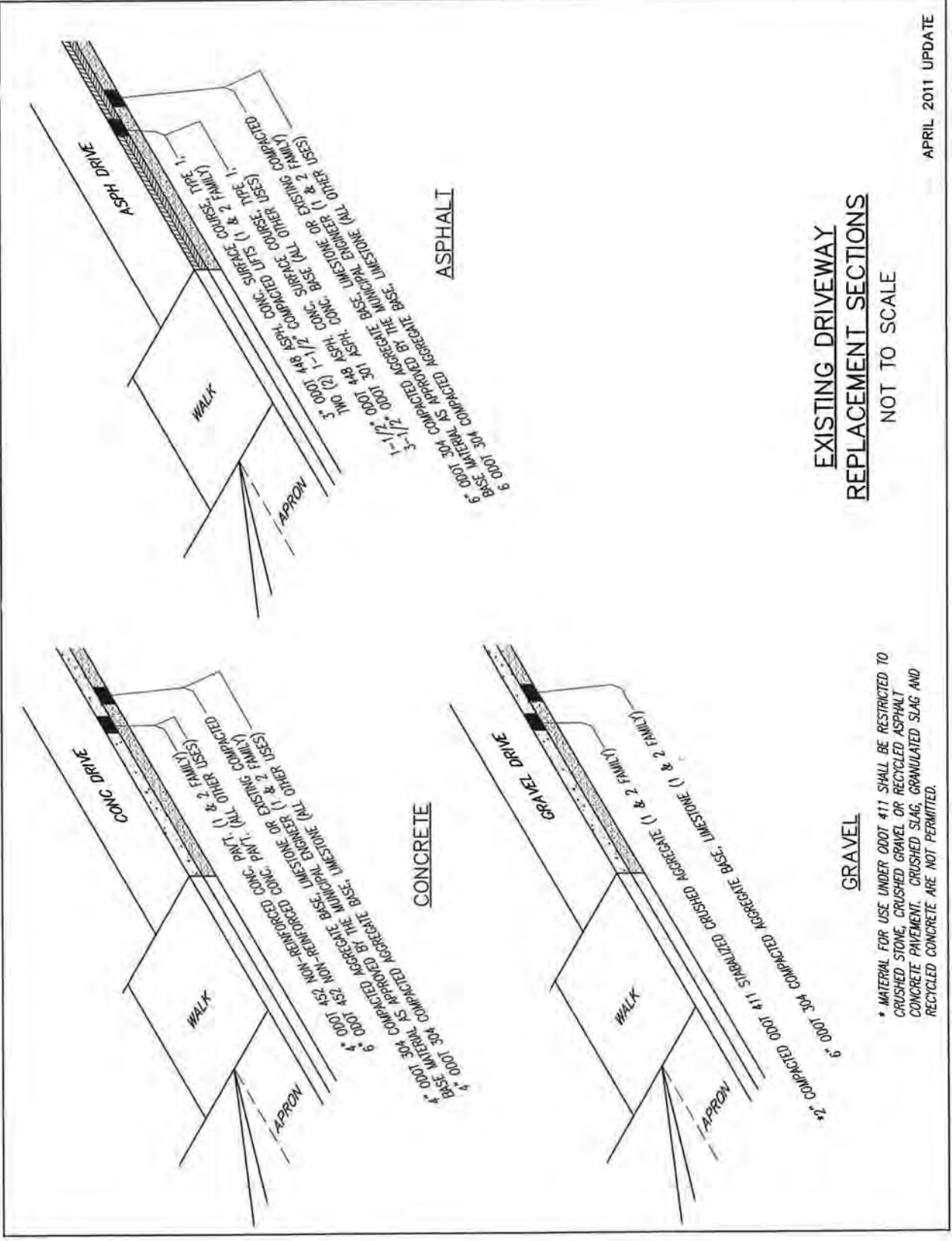
CONCRETE



ASPHALT

**NEW CONSTRUCTION
DRIVEWAY SECTIONS**

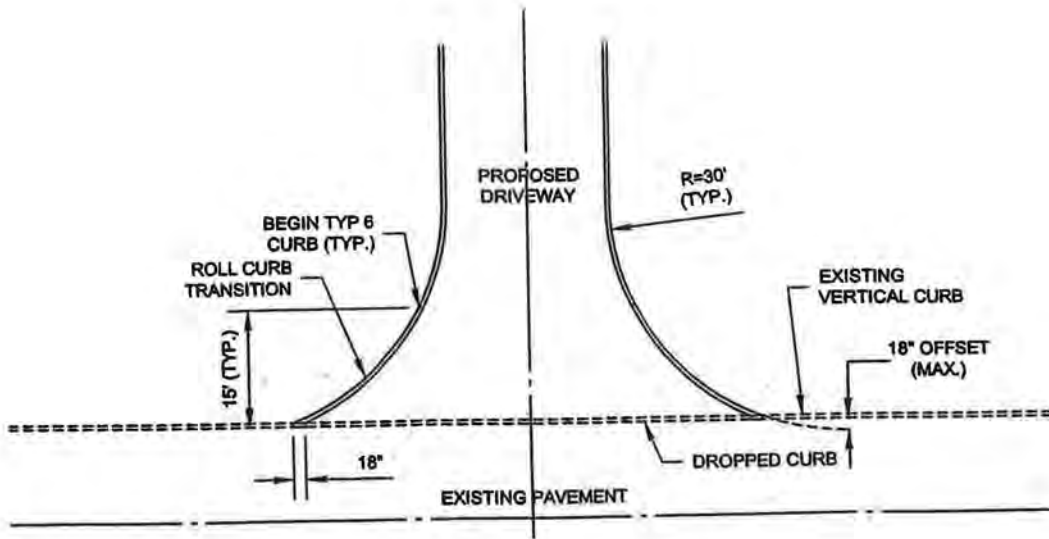
NOT TO SCALE



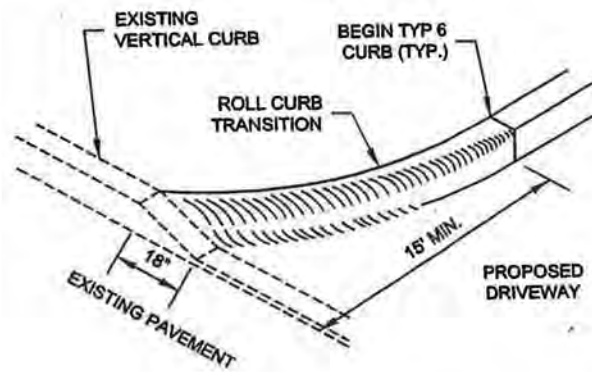
**EXISTING DRIVEWAY
REPLACEMENT SECTIONS**

NOT TO SCALE

* MATERIAL FOR USE UNDER 0001 411 SHALL BE RESTRICTED TO CRUSHED STONE, CRUSHED GRAVEL OR RECYCLED ASPHALT CONCRETE PAVEMENT. CRUSHED SLAG, GRANULATED SLAG AND RECYCLED CONCRETE ARE NOT PERMITTED.



**DRIVEWAY INTERSECTION
PAVEMENT DETAIL**
NOT TO SCALE



**DRIVEWAY INTERSECTION
ISOMETRIC DETAIL**
NOT TO SCALE