300 - Roadways
STREET FUNCTIONAL CLASSIFICATIONS

A. ARTERIAL
   A GENERAL TERM DENOTING A HIGHWAY PRIMARILY FOR THROUGH TRAFFIC, CARRYING HEAVY LOADS AND LARGE COLUMNS OF TRAFFIC, USUALLY ON A CONTINUOUS ROUTE.

B. COLLECTOR
   STREET DESIGNED TO CONDUCT TRAFFIC FROM LOCAL STREETS TO ARTERIALS, COLLECTOR HAS FURTHER BREAKDOWN OF COLLECTOR-RESIDENTIAL AND COLLECTOR-INDUSTRIAL AND COMMERCIAL.

C. MINOR
   A STREET DESIGNED TO PROVIDE ACCESS TO ABUTTING PROPERTY TO COLLECTORS.

<table>
<thead>
<tr>
<th>STREET FUNCTIONAL CLASSIFICATION</th>
<th>RIGHT-OF-WAY WIDTH</th>
<th>BACK-TO-BACK</th>
<th>BACK-TO-BACK CURB</th>
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<tbody>
<tr>
<td>ARTERIAL</td>
<td>80</td>
<td>59</td>
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<tr>
<td>COLLECTOR-RES.</td>
<td>60</td>
<td>37</td>
<td>41</td>
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<tr>
<td>COLLECTOR-IND. AND COMM.</td>
<td>60</td>
<td>37</td>
<td>41</td>
</tr>
<tr>
<td>MINOR</td>
<td>50</td>
<td>31</td>
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</tbody>
</table>
ITEM 448 - "V" ASPHALT CONCRETE SURFACE COURSE

ITEM 448 - "VI" ASPHALT CONCRETE INTERMEDIATE COURSE

ITEM 304 - "VII" ASPHALT CONCRETE BASE

ITEM 304 - "VIII" AGGREGATE BASE (2-6" LIFTS)
(WATER BETWEEN LIFTS AS REQUIRED)

ITEM 608 - "III" CONCRETE WALK. 1/4" PER FOOT SLOPE (0.0208)

ITEM 609 - COMBINATION CURB AND GUTTER - TYPE 2

NOTES

A. ALL WORK TO CONFORM TO ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS LATEST REVISION UNLESS OTHERWISE SPECIFIED.

B. ITEM 407 TACK COAT, SHALL BE REQUIRED WHEN 10 DAYS HAVE ELAPSED BETWEEN ASPHALT PLACEMENT LIFTS UNLESS OTHERWISE SPECIFIED BY THE CITY. APPLICATION RATE IS 0.10 GALLON PER SQUARE YARD.

C. ALL BUTT JOINTS SHALL BE SEALED WITH PG64-22 WITHIN 24 HOURS AFTER PLACEMENT OF ITEM 448

D. NO CONCRETE PAVEMENT WILL BE ACCEPTED
### Minimum Street Design Standards

<table>
<thead>
<tr>
<th></th>
<th>25 MPH</th>
<th>35 MPH</th>
<th>45 MPH</th>
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<tr>
<td><strong>Minimum Centerline Grades</strong></td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
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<tr>
<td><strong>Maximum Centerline Grades</strong></td>
<td>10%</td>
<td>7%</td>
<td>4%</td>
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<tr>
<td><strong>Minimum Length of Vertical Curve</strong> (See Note A)</td>
<td>50FT</td>
<td>50FT</td>
<td>100FT</td>
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<tr>
<td><strong>Minimum Centerline Radius</strong></td>
<td>250FT</td>
<td>400FT</td>
<td>600FT</td>
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<tr>
<td><strong>Minimum Length Tangent Between Curves</strong></td>
<td>50FT</td>
<td>50FT</td>
<td>100FT</td>
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<tr>
<td><strong>Minimum Back-Of-Curb Radius</strong></td>
<td>25FT</td>
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<td>50FT</td>
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<tr>
<td><strong>Minimum Horizontal Visibility</strong></td>
<td>200FT</td>
<td>300FT</td>
<td>500FT</td>
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<tr>
<td><strong>Minimum Stopping Sight Distance</strong> (Measured from 3.5' eye-level to 6' object height)</td>
<td>200FT</td>
<td>300FT</td>
<td>500FT</td>
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<tr>
<td><strong>Crossroad Grade-Stop Condition-Within 100' of an Intersection</strong></td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
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<tr>
<td><strong>Right-Of-Way Width</strong></td>
<td>50FT</td>
<td>60FT</td>
<td>80FT</td>
</tr>
</tbody>
</table>

### Notes

A. Minimum length of vertical curve can be reduced or eliminated to allow for proper drainage, with approval.
**CONCRETE CURB DETAILS**

**CITY OF PIQUA**  
**TYPE 1 CURB**

- **4" PERFORATED PIPE**
- **NORMAL WIDTH OF PAVEMENT**
- **DEPRESS FOR DRIVE**

**NOTE:**
For the Type 1 Curb, there shall be 3.5' from the top of curb to the face of gutter.

**TYPE 6 BARRIER CURB**

- **NORMAL WIDTH OF PAVEMENT**

**TYPE 2 COMBINATION CURB AND GUTTER**

**NOTES**

A. Concrete and work shall meet the requirement set forth in ODOT Item 609 curbing.

B. Curbing shall have contraction joints every 10'.

C. Minimum of 6" of ODOT 304 shall be placed under curbing.

D. Curbing shall be backfilled immediately after forms are removed or as soon as practical when slip forming prior to other construction operations.

E. Provide broom finish and edging to all exposed surfaces.

F. With prior City direction, apply white pigmented curing compound 80°F air temperature or clear on all surfaces including back immediately after finishing surfaces.

G. All concrete shall be ODOT Class QC1, (4000 PSI, 600 LB/CY cement) proportioning options 1,2, and 3 not allowed.

H. Concrete shall contain 6% ± 2% of total air.

I. All curbing placed shall have a front and rear form exception: unless curbing is slip formed by machine or is abutting concrete driveway or sidewalk or otherwise approved by the engineer.

J. Minimum flow line slope of the perforated pipe is to be 0.003 FT/FT to outlet.

---

**4" SHALLOW PIPE UNDERDRAIN DETAIL**  
**AS REQUIRED BY CITY**

- **304 AGGREGATE BASE**
- **#57 AGGREGATE**
- **4" PERFORATED PIPE**

---

**CITY OF PIQUA**  
**CONCRETE CURB DETAILS**

**DATE APPROVED:**  
**DECEMBER 2016**

**BG**  
**9-26-16**

**PAGE No.**  
**300-4**
RESIDENTIAL DRIVE APPROACH

A. DRIVE APPROACHES SHALL MEET THE REQUIREMENTS OF ODOT ITEM 452, 499, 608, AND 609 CAST IN-PLACE CONCRETE.

B. DRIVE APPROACHES MAY BE PLACED MONOLITHICALLY WITH CURB.

C. MAXIMUM JOINT SPACING SHALL BE 10' LONGITUDINALLY, TRANSVERSELY AND AT TAPERS.

D. EXPANSION MATERIAL SHALL BE ½" PREMOLDED, ODOT APPROVED.

E. 6" OF COMPACTED ODOT ITEM 304, ITEM 411 OR 57'S AGGREGATE BASE SHALL BE PLACE UNDER DRIVE APPROACHES.

F. PROVIDED BROOM FINISH AND EDGING TO ALL EXPOSED SURFACES.

G. WHERE CURB AND GUTTER HAS NOT BEEN DROPPED AT DRIVE APPROACHES, THE CONTRACTOR WILL CUT AND REMOVE CURB. (SEE DETAIL)

H. WHERE ASPHALTIC CONCRETE PAVEMENT HAS BEEN DISTURBED, THE ASPHALT SHALL BE REPLACED BY THE CONTRACTOR AS DIRECTED BY THE CITY.

I. JOINTS SHALL BE CLEANED AND EDGED BY A ½" RADIUS EDGER. LONGITUDINAL JOINTS SHALL BE AS DIRECTED BY THE CITY. EXPANSION JOINTS SHALL BE OF SUCH DIMENSIONS AS SHOWN ON STANDARD DRAWINGS FOR CONSTRUCTION JOINTS.

J. CONCRETE SHALL CONTAIN 6% ± 2% OF TOTAL AIR.

K. CONCRETE SHALL BE ODOT CLASS QC1.

L. THIS STANDARD DRAWING IS FOR GUIDELINE PURPOSES. EACH INDIVIDUAL DRIVE WILL NEED TO BE DESIGNED AND SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL.

M. "W"=10' MINIMUM TO 24' MAXIMUM UNLESS OTHERWISE APPROVED BY THE CITY.

N. IF CURB IS REMOVED AND REPLACED DURING DRIVEWAY CONSTRUCTION, JOINTS BETWEEN EXISTING AND NEW CURB ARE TO BE DOWELLED WITH #4 REBAR 6" IN LENGTH, 3" INTO CURB, 4" OC.

O. ALL NEW CONSTRUCTION OR MODIFICATIONS OF DRIVE APPROACHES REQUIRE A CONCRETE APPROACH, REGARDLESS OF WHETHER THERE IS A SIDEWALK OR NOT. THE NEW APPROACH IS TO GO FROM EDGE OF THE EXISTING STREET TO RIGHT OF WAY OR MINIMUM OF 6'-0".

P. DRAINAGE ISSUES WILL HAVE TO BE ADDRESSED, WHEN A DRIVEWAY IS INSTALLED OR MODIFIED.

Q. PRECAUTIONS SHALL BE TAKEN TO PROTECT EXISTING CONCRETE, BRICK FROM TIRE MARKS AND DAMAGE DURING CONSTRUCTION.
NOTE #1
SIDEWALK THICKNESS SHALL BE EQUAL TO THE
THICKNESS OF THE DRIVEWAY IN THIS AREA.

NOTE #2
SIDEWALK THICKNESS SHALL BE EQUAL TO THE
THICKNESS OF THE DRIVEWAY IN THIS AREA.

NOTES
A. DRIVE APPROACHES SHALL MEET THE REQUIREMENTS OF
   ODOT ITEM 452, AND 499 CAST IN PLACE CONCRETE
B. DRIVE APPROACHES MAY BE PLACED MONOLITHICLY WITH
   CURB
C. MAXIMUM JOINT SPACING SHALL BE 10’ LONGITUDINALLY
   AND TRANSVERSELY WITH JOINTS AT TAPERS
D. EXPANSION MATERIAL SHALL BE 1/2” PREMOLDED.
E. 6” OF COMPACTED ODOT ITEM 304 OR ITEM 411 AGGREGATE
   BASE SHALL BE PLACED UNDER DRIVE APPROACHES.
F. PROVIDE BROOM FINISH AND EDGING TO ALL EXPOSED
   SURFACES.
G. WHERE CURB AND GUTTER HAS NOT BEEN DROPPED AT DRIVE
   APPROACHES, THE CONTRACTOR WILL CUT AND REMOVE CURB
   (SEE DETAIL)
H. WHERE ASPHALTIC CONCRETE PAVEMENT IS DISTURBED, THE
   ASPHALT SHALL BE REPLACED BY THE CONTRACTOR AS
   DIRECTED BY THE CITY.
I. JOINTS SHALL BE CLEANED AND EDGED BY A 1/4”
   RADIUS EDGER. LONGITUDINAL JOINTS SHALL BE AS
   DIRECTED BY THE CITY. EXPANSION JOINTS SHALL BE
   OF SUCH DIMENSIONS AS SHOWN ON STANDARD
   DRAWINGS FOR CONSTRUCTION JOINTS.
J. MINIMUM WIDTH FOR ONE-WAY TRAFFIC IS 16'-0”
   MINIMUM WIDTH FOR TWO WAY TRAFFIC IS 25'-0”
   MAXIMUM WIDTH IS 45'-0” FOR BUSINESS AND 45'-0” FOR
   INDUSTRIAL UNLESS OTHERWISE APPROVED BY THE CITY.
K. THIS STANDARD DRAWING IS FOR GUIDELINE PURPOSES, EACH
   INDIVIDUAL DRIVE WILL NEED TO BE DESIGNED AND SUBMITTED
   TO THE CITY FOR REVIEW AND APPROVAL.
L. CONCRETE SHALL BE QC1 WITH 6% ± 2% OF THE TOTAL AIR. (4000
   PSI, 600 LB/CY CEMENT. PROPORTIONING OPTIONS 1,2,&3 NOT
   ALLOWED.
M. IF THE CURB IS REMOVED AND REPLACED DURING DRIVEWAY
   CONSTRUCTION, JOINTS BETWEEN CURB AND DRIVEWAY ARE
   TO BE DOWELED WITH #4 REBAR 6’ IN LENGTH DOWELED 3”
   INTO THE GUTTER PLATE @ 2’ OC.
N. ALL NEW CONSTRUCTION OR MODIFICATIONS
   OF THE DRIVE APPROACHES REQUIRE A
   CONCRETE APPROACH REGARDLESS OF
   WHETHER THIS IS A SIDEWALK OR NOT. THE NEW
   APPROACH IS TO GO FROM EDGE OF EXISTING
   STREET TO THE RIGHT OF WAY OR A MINIMUM
   OF 10'-0”
P. DRAINAGE ISSUES WILL HAVE TO BE ADDRESSED
   WHEN A DRIVEWAY IS INSTALLED OR MODIFIED.
Q. PRECAUTIONS SHALL BE TAKEN TO PROTECT
   EXISTING CONCRETE, BRICK FROM TIRE MARKS
   AND DAMAGE DURING CONSTRUCTION.

CITY OF PIQUA

COMMERCIAL AND INDUSTRIAL
DRIVE APPROACH
DRIVE APPROACH AND CONCRETE SIDEWALK DETAIL WITH NO CURB LAWN

SIDEWALK THICKNESS SHALL BE EQUAL TO THE THICKNESS OF THE DRIVEWAY IN THIS AREA OF THE SIDEWALK.

DRIVE APRON WITH NO CURB LAWN

FOR DRIVEWAY SPECIFICATIONS SEE PAGE 300-5 OR 300-6

NOTE #1
ALL CURB, DRIVEWAY OR SIDEWALK CONSTRUCTION SHALL COMPLY WITH CITY OF PIQUA STANDARD DRAWINGS 300-04, 300-05 AND 300-06

CONCRETE SIDEWALK ABUTTING CURB, COP TYPE #2 CURB SHOWN

SEE CITY OF PIQUA STANDARD DRAWING 300-5 OR 300-6 REGARDING CUTTING AND PINNING FOR NEW OR MODIFICATIONS

SLOPE 1/4" PER 1'-0"

4'-0" CONCRETE WALK

4'-0" OR AS SPECIFIED BY THE CITY

CONST. JOINT

12"

1/1 SLOPE

6" COMPACTED ODOT ITEM 304 OR ITEM 411 AGGREGATE BASE.

6" COMPAKTED ODOT ITEM 304 OR ITEM 411 AGGREGATE BASE.
NOTES

A. CITY TO SPECIFY TYPE 1, 2, OR 3 RAMP.

B. ANY COMBINATION OF SIDE SLOPES ON OPPOSITE SIDES OF A RAMP MAY BE USED TO BEST FIT THE SITE CONDITIONS.

C. THE MINIMUM RAMP LENGTH IS 6'-0" FOR THE BACK OF A 6'-0" CURB AND MAY BE INCREASED WHERE FEASIBLE TO OBTAIN FLATTER RAMP SLOPE OR TO BETTER BLEND WITH THE WALK CONFIGURATION.

D. WALK THICKNESS IN THE RAMP SLOPES SHALL BE 6" MINIMUM OR THICKER AS NECESSARY TO MATCH ADJACENT WALK THICKNESS.

E. CURB RAMPS SHALL MEET AND BE FINISHED TO AMERICAN WITH DISABILITIES ACT (ADA) STANDARDS.

F. TEXTURE OF CONCRETE SURFACES SHALL BE OBTAINED BY COURSE BROOMING TRAVERSE TO THE RAMP SLOPES.

G. AND SHALL BE ROUGHER THAN ADJACENT WALK.

H. CURB RAMPS SHALL MEET THE REQUIREMENTS OF ODOT ITEM 608 UNLESS OTHERWISE SPECIFIED WITHIN. REFER TO ODOT STANDARD DRAWINGS FOR ADDITIONAL CURB RAMP CONFIGURATIONS.

I. CONCRETE SHALL BE ODOT QC1 (4000 PSI 600LB/CY CEMENT AND CONTAIN 6% ± 2% TOTAL AIR.

J. FOR RECONSTRUCTION JOBS THE CURB RAMPS WILL HAVE TO BE ADDRESSED BASED ON THE EXISTING CONDITIONS.


L. CURB RAMPS TO BE Poured ON COMPACTED UNDISTURBED EARTH OR IF OVER EXCAVATED BY THE CONTRACTOR THE CURB RAMP SHALL BE Poured ON COMPACTED GRANULAR BEDDING. CITY INSPECTION OF FORM WORK IS REQUIRED PRIOR TO PLACING CONCRETE.

M. PROVIDE BROOM FINISH AND EDGING TO ALL EXPOSED SURFACES. TEXTURE SHALL BE A MEDIUM BROOM WITH TOOL FINISH, CITY TO REVIEW AND APPROVE PRIOR TO POURING.

N. ALL DETECTABLE WARNINGS CURB RAMPS TO BE CAST IRON MANUFACTURED BY EAST JORDAN IRON WORKS 7005 SERIES, NEEHAH FOUNDRY MODEL R-4984 OR APPROVED EQUAL.

O. ALL RAMPS SHALL BE DOWELED TO HE CURB BY THE USE OF #4 REBAR AS PER CITY STANDARDS 300-07 CONCRETE SIDEWALK ABUTTING TYPE 2 CURB DETAIL.
Plan View

Section A-A

Combined Curb and Sidewalk Detail

Concrete Sidewalk Detail
CONCRETE SIDEWALK NOTES

NOTES

A. WALK TO BE POURED ON UNDISTURBED EARTH OR COMPACTED GRANULAR BEDDING.
B. PROVIDE BROOM FINISH TO ALL EXPOSED SURFACES.
C. CONCRETE SHALL CONFORM TO ODOT ITEM 499 CONCRETE. CONCRETE WORK SHALL CONFORM TO ODOT ITEM 499 UNLESS OTHERWISE SPECIFIED WITHIN.
D. PROVIDE EDGING AROUND ALL EXPOSED SURFACES.
E. APPLY ONE COAT OF A CLEAR ODOT APPROVED CONCRETE SEALER ON ALL SURFACES INCLUDING THE BACK PER THE MANUFACTURER’S RECOMMENDATIONS.
F. WHEN RENOVATING EXISTING STREETS, THE SIDEWALKS SHALL BE REPLACED TO CONFORM WITH CITY CONSTRUCTION STANDARDS AND DRAWINGS.
G. CONCRETE SHALL BE ODOT QC1 (4000 PSA, 600 LB/CY CEMENT) PROPORTIONING OPTIONS 1.2. & 3 NOT ALLOWED.
H. CONCRETE SHALL CONTAIN 6% ± 2% OF TOTAL AIR.
I. PROPERTY PINS SHALL BE RE-ESTABLISHED AFTER FINISHING OF SIDEWALK.

SIDEWALK JOINTS

1. GENERAL: CONSTRUCT ISOLATION, CONSTRUCTION, AND CONTRACTION JOINTS, AND TOOL EDGINGS TRUE TO LINE WITH FACIES PERPENDICULAR TO SURFACE PLANE OF CONCRETE. CONSTRUCT TRANSVERSE JOINTS AT RIGHT ANGLES TO CENTERLINE, UNLESS OTHERWISE INDICATED.
   A. WHEN JOINING EXISTING PAVEMENT, PLACE TRANSVERSE JOINTS TO ALIGN WITH PREVIOUSLY PLACED JOINTS, UNLESS OTHERWISE INDICATED.

2. CONSTRUCTION JOINTS: SET CONSTRUCTION JOINTS AT SIDE AND END TERMINATION OF PAVEMENT AND AT LOCATIONS WHERE PAVEMENT OPERATIONS ARE STOPPED FOR MORE THAN ONE-HALF HOUR. UNLESS PAVEMENT TERMINATES AT ISOLATION JOINTS.

3. EXPANSION JOINTS: FORM ISOLATION JOINTS OF PREFORMED JOINT-FILLER STRIPS ABUTTING MANHOLES, STRUCTURES, WALKS, OTHER FIXED OBJECTS, AND WHERE INDICATED. EXPANSION JOINTS SHALL NOT BE PLACED AT THE BUILDING FACE UNLESS DIRECTED BY THE CITY OF PIQUA.
   A. LOCATION OF EXPANSION JOINTS AT INTERVALS OF 60', UNLESS OTHERWISE INDICATED.
   B. LOCATE EXPANSION JOINTS ALONG BUILDINGS.
   C. THE EXPANSION JOINT MATERIAL SHALL BE ½ "THICK ODOT SPECIFICATIONS.

4. CONTRACTION JOINTS: FORM WEAKENED–PLANE CONTRACTION JOINTS, SECTIONING CONCRETE INTO AREAS AS INDICATED IN THE PLANS. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE–FOURTH OF THE CONCRETE THICKNESS, WHERE INDICATED, AS FOLLOWS:
   A. GROOVED JOINTS: FROM CONTRACTION JOINTS AFTER INITIAL FLOATING BY GROOVING AND FINISHING EACH EDGE OF JOINT WITH GROOVER TOOL TO THE FOLLOWING RADIUS. REPEAT GROOVING OF CONTRACTION JOINTS AFTER APPLYING SURFACE FINISHES. ELIMINATE GROOVER OVERFLOW SLURRY MARKS ON CONCRETE SURFACES. QUALITY WORK SHALL BE PERFORMED OR THE NEW SIDEWALK WILL BE REMOVED AND REDONE AT THE CONTRACTOR’S EXPENSE. RADIUS TO BE ¼ INCH (6 MM).
   B. SAWED JOINTS WILL NOT BE PERMITTED.

5. EDGING: TOOL EDGES OF JOINTS IN CONCRETE AFTER INITIAL FLOATING WITH AN EDGING TOOL TO A RADIUS OF 1/4 INCH (6MM). REPEAT TOOLING OF EDGES AFTER APPLYING SURFACE FINISHES. ELIMINATE TOOL MARKS (OVERFLOW SLURRY) ON CONCRETE SURFACES.
**ASPHALT OVERLAY AND MONUMENT**

**METAL ONE PIECE ADJUSTING RINGS**

A. IF REQUIRED, MONUMENT BOXES SHALL BE SET PRIOR TO THE LAYING OF ODOT ITEM 448 ASPHALT UNLESS OTHERWISE PREAPPROVED.

B. MONUMENT ASSEMBLIES SHALL BE NEENAH R-1978-A2 OR EAST JORDAN 8375.

C. MONUMENT BOXES SHALL MEET THE REQUIREMENTS OF ODOT ITEM 604 UNLESS OTHERWISE SPECIFIED WITHIN.

**NOTES**

A. ATTACH SECURELY TO THE EXISTING FRAME BY TACK WELD OR MECHANICAL DEVICES.

B. CONSIST EITHER OF CAST METAL HAVING AN INTEGRAL RIM AND SEAT, OR BE FABRICATED METAL WITH A STURDY CONNECTION BETWEEN THE SEAT AND RIM.

C. PROVIDE AN EVEN SEAT FOR THE MANHOLE COVER.

D. SHALL BE A SOLID ONE PIECE RING ACCEPTABLE TO THE CITY OF PIQUA. ADJUSTABLE DIAMETER MANHOLE RINGS WILL NOT BE ACCEPTABLE.

E. ANY INSTALLATION UNACCEPTABLE TO THE CITY SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.

**FEATHERING DETAIL**

- Surface of Ex. Pavement
- Asphalt Cement Coating
- Intermediate Course
- Surface Course
- 2'-6" MIN
- "d" 
- 1 1/2"
- 1 1/2"

**NOTES**

- MINIMUM LENGTH = 10' PER 1" OF "d".

**BUTT JOINT DETAIL**

- Surface of Ex. Pavement
- Asphalt Cement Coating
- Intermediate Course
- Surface Course
- Sealing Required PG 64-22, within 24 hrs after placement of asphalt

**MANHOLES ADJUSTED TO GRADE FOR OVERLAYS**

- Surface Course
- Intermediate Course
- Existing Pavement
- Sealing Required PG 64-22, within 24 hrs after placement of asphalt

**USING CONCRETE OR MORTAR**

- Existing Pavement
- Provide metal one piece adjusting rings

**NOTES**

- Class MS concrete shall be placed a min. of 3" beyond the base of the casting. The width at the top shall be adjusted to conform to the min. base diameter.

- **Note:** Any installation unacceptable to the City shall be replaced by the contractor at his expense.
GENERAL
A.  ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH ODOT SPECIFICATIONS LATEST REVISION.
B.  CONTRACTOR MUST APPLY FOR NECESSARY PERMITS, FEES WITH THE CITY BEFORE CONSTRUCTION OR DEMOLITION BEGINS.

PAVEMENT REPLACEMENT
A.  IMMEDIATELY AFTER PLACEMENT OF BACKFILL IN EXISTING STREETS, A TEMPORARY PAVEMENT SHALL BE INSTALLED AND THE STREET OPENED. TEMPORARY PAVEMENT SHALL CONSIST OF 8" OF COMPACTED ODOT SPECIFIED 411 BASE AND A SURFACE COURSE APPROVED BY THE CITY. THE SURFACE COURSE KEPT Flush WITH THE EXISTING STREET.
B.  PERMANENT PAVEMENT REPLACEMENT SHALL BE EQUAL TO OR EXCEED THE EXISTING PAVEMENT. ( MINIMUM PAVEMENT COMPOSITION, SEE PAGE 300-2)
C.  ANY SETTLEMENT OF A TRENCH CAUSING A DEPRESSION SHALL BE REFILLED AS REQUIRED AT THE CONTRACTOR'S EXPENSE. THIS PROVISION APPLIES FOR ONE YEAR PERIOD AFTER THE WORK HAS BEEN ACCEPTED BY THE CITY.
D.  ALL TEMPORARY PAVEMENT AND SIDEWALK SHALL BE MAINTAINED BY THE CONTRACTOR OR DEVELOPER AT THIS OWN EXPENSE IN A SUITABLE AND SAFE CONDITION FOR TRAFFIC UNTIL PERMANENT REPLACEMENT IS MADE OR THE PROJECT IS FINALLY ACCEPTED BY THE CITY. COLD PATCH ALL TRENCHES A MINIMUM OF 4" WHEN FINAL ASPHALT WILL NOT BE REPLACED WITHIN 24 HOURS.

TRAFFIC CONTROL
A.  THE CONTRACTOR SHALL MAINTAIN TRAFFIC CONTROL AT ALL TIMES WITH THE PROPER BARRICADES AS PER THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THESE CONTROL DEVICES SHALL BE IN PLACE PRIOR TO ANY WORK COMMENCING.
B.  TRAFFIC SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE CITY.

CURB STAKING AND ROADWAY
A.  LINE AND GRADE EVERY 25'-0" ON A CONVENIENT OFFSET.

PAVEMENT (ASPHALT)
A.  THE CONTRACTOR SHALL PROVIDE THE CITY WITH A COPY OF THE NORMAL ( MEDIUM TRAFFIC) ODOT 448 JOB MIX FORMULA FOR EACH PLANT THAT PROVIDES HOT MIXED ASPHALT TO THIS PROJECT. ALL MIXES SHALL FOLLOW ODOT JOB MIX FORMULA.
B.  ALL WORK SHALL ADHERE TO ODOT'S LASTEST REVISIONS AND TO THE CITY SPECIFICATIONS WHICHER IS MORE STRINGENT SHALL PREVAIL UNLESS OTHERWISE APPROVED.
C.  PATCHED AREAS SHALL BE SEALED ON THE PERIMETER OF THE PATCH WITH ASPHALT CEMENT.
D.  ALL UTILITY ADJUSTMENTS, MANHOLE, WATER VALVES, SHALL BE RAISED TO FINISHED GRADE AFTER THE FINAL ASPHALT Course IS Laid. IF SMOOTHNESS DOESN'T MEET THE CITY'S REQUIREMENTS A REPAIR SIMILAR TO MR. MANHOLE SHALL BE USED TO ADJUST THE MANHOLE OR VALVE.
E.  ASPHALT CEMENT SHALL BE USED NEXT TO THE LIP OF GUTTER PRIOR TO THE FINAL ASPHALT LIFT BEING PLACED.
F.  TACK COAT SHALL BE APPLIED PRIOR TO THE PLACEMENT OF THE FINAL LIFT OF ASPHALT IF THE EXISTING ASPHALT LIFT IS DIRTY, OR AFTER TEN DAYS UNLESS OTHERWISE APPROVED. TEMPERATURE MUST BE 50° F OR HIGHER, ALL TACK SHALL BE TRACKLESS.
G.  PRIME COAT SHALL BE APPLIED ON NEW AGGREGATE WHEN TEMPERATURE IS 50° F OR HIGHER . ALL DRIVEWAYS SHALL BE PRIMED PRIOR TO PLACEMENT OF ASPHALT UNLESS OTHERWISE APPROVED.
H.  NO ASPHALT SHALL BE PLACED OVER EXCAVATED TRENCHES HAVE BEEN COMPACTED AS PER CITY SPECIFICATIONS.
I.  FINAL LIFT OF ASPHALT SHALL BE FINISHED TO 1/4" ABOVE THE LIP OF GUTTER.
J.  ASPHALT CEMENT SHALL BE USED ON ALL JOINTS AND FEATHERED SURFACES PRIOR TO PLACEMENT OF THE NEXT COURSE OF ASPHALT TO THE ABUTTING JOINT, UNLESS OTHERWISE APPROVED.
K.  ALL EDGES TO BE TRIMMED BACK TO SOLID MATERIAL BY SAWING AND BE STRAIGHT AND NEAT AS PER THE CITY'S INSTRUCTIONS.

TYPICAL ALLEY CONSTRUCTION
A.  MINIMUM STANDARD ( UNLESS OTHERWISE APPROVED).
B.  FOR RENOVATION OF EXISTING ALLEYS ONLY. NO NEW ALLEYS WILL BE APPROVED WITHIN THE CITY.
PERMIT REQUIRED
A RIGHT-OF-WAY PERMIT FOR ANY DIGGING OR EXCAVATING WITHIN A PUBLIC RIGHT-OF-WAY FOR ANY STREET OR ALLEY IS REQUIRED 48 HOURS IN ADVANCE OF THE WORK. IN THE EVENT OF AN EMERGENCY, THE PERMIT APPROVAL REQUIREMENT SHALL BE WAIVED AND THE PROPER APPLICATION MUST BE SUBMITTED AS SOON AS POSSIBLE, BUT NO LATER THAN THE END OF THE FIRST WORKING WEEKDAY AFTER THE START OF WORK. AN EMERGENCY IS DEFINED AS A REPAIR REQUIRED TO PROVIDE SERVICE TO UTILITY CUSTOMERS OR TO MITIGATE A HAZARD, WHICH THREATENS PUBLIC HEALTH OR SAFETY.

PERMIT FORMS ARE AVAILABLE FROM THE CITY STREET DEPARTMENT. THE PERMIT FORM IS TO BE COMPLETED BY THE PERSON OR FIRM PLANNING THE WORK WITHIN THE RIGHT-OF-WAY. ALL FEES MUST BE PAID AND APPROVALS OBTAINED BEFORE ANY WORK IS STARTED. A 72 WORKING HOUR LEAD-TIME IS RECOMMENDED. A PERMIT FEE OF $25 WILL BE REQUIRED OF EACH APPLICANT, INCLUDING CITY DEPARTMENTS.

PERFORMANCE BOND
ANY INDIVIDUAL OR FIRM WHO MAKES APPLICATION FOR A RIGHT-OF-WAY OPENING PERMIT MUST PROVIDE A CURRENT PERFORMANCE BOND TO THE CITY OF PIQUA IN THE AMOUNT OF $3000.

NO BOND IS REQUIRED FOR PLUMBERS WHO HOLD A CURRENT PLUMBING LICENSE IN THE CITY OF PIQUA AND HAVE A CURRENT PERFORMANCE BOND ON FILE IN THE HEALTH DEPARTMENT.

IN THE EVENT THAT AFTER NOTIFICATION FROM THE CITY ANY CONTRACTOR FAILS TO CORRECT PROBLEMS ASSOCIATED WITH POOR TRENCH REPAIR OR MAINTENANCE WITHIN 24 HOURS OF NOTIFICATION, THE CITY RESERVES EXCLUSIVE RIGHT TO CORRECT THE PROBLEMS AND COLLECT ASSOCIATED COSTS FROM THE PERFORMANCE BOND.

WORK REQUIREMENTS
THE APPLICANT SHALL HAVE SUFFICIENT BARRICADES, WARNING SIGNS, AND LIGHTS DURING THE ENTIRE PERIOD THAT WORK IS BEING PERFORMED AND SHALL ADHERE TO APPLICABLE SECTION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

ALL DISTURBED AREAS MUST BE RETURNED TO A CONDITION THAT IS AS GOOD AS OR BETTER THAN THE CONDITION BEFORE THE WORK BEGAN. ALL REPAIRS MUST MEET CITY SPECIFICATIONS. THE CITY STREET SUPERINTENDENT WILL INSPECT AND APPROVE ALL REPAIRS. THE BOND WILL BE RETURNED AFTER ALL REPAIRS ARE APPROVED, IF APPLICABLE. FOR CLOSURE OF ARTERIALS OR BUSY COLLECTORS THE CITY RESERVES THE RIGHT TO DIRECT CONTRACTOR TO CLOSE THE STREET DURING OFF PEAK TRAFFIC HOURS. CLOSURE MAY OCCUR AT NIGHT OR ON WEEKENDS. CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL ASSOCIATED WITH ROAD CLOSURE. EFFORTS SHALL BE MADE TO MINIMIZE ANY DISTURBANCE TO TREES OR ROOTS. EXCAVATION CAUSING DAMAGE TO TREES WILL RESULT IN THE REMOVAL AND REPLACEMENT, OR OTHERWISE HAS A DIRECT IMPACT ON PRIVATE PROPERTIES, OR OTHERWISE HAS A DIRECT IMPACT ON PRIVATE PROPERTIES IN THE OPTION OF THE ENGINEER. THE APPLICANT MUST NOTIFY ALL AFFECTED PROPERTY OWNERS IN WRITING, AND PROVIDE A COPY OF THE NOTIFICATION AND A MAILING LIST PRIOR THE ENGINEERING DEPARTMENT ISSUING THE PERMIT.

ALL CONTRACTORS WHO PERFORM WORK REQUIRING ENTRY INTO ANY CONFINED SPACE OF A CITY-OWNED UTILITY SHALL COMPLY WITH THE CITY’S CONFINED SPACE ENTRY PROCEDURES AND IN ACCORDANCE WITH ALL OSHA REGULATIONS, IF APPLICABLE, AND APPROVAL FROM THE WASTEWATER SUPERINTENDENT OR DESIGNEE.

MATERIAL SPECIFICATION
ALL WORK SHALL BE IN ACCORDANCE WITH THE ATTACHED DRAWINGS AND SPECIFICATIONS AND APPROVED BY THE ENGINEERING DEPARTMENT PRIOR TO COMMENCEMENT OF WORK.

STREET OPENINGS- THE MATERIAL USE TO FILL IN A DITCH OR A HOLE SHALL BE ODOT 603, GRANULAR MATERIAL (#304,#411) OR ODOT ITEM 613 LOW STRENGTH MORTAR BACKFILL. OTHER APPROVED GRANULAR MATERIALS MAY BE USED ONLY UPON THE CONTRACTOR RECEIVING PRIOR WRITTEN APPROVAL FROM THE ENGINEERING DEPARTMENT IF EXTINGUATING CIRCUMSTANCES EXIST. CONTRACTORS CONCERNED WITH THE CONTACT OF THE LOW STRENGTH MORTAR BACKFILL WITH THE FITTINGS AND THE PIPE MAY PLACE A MAXIMUM OF 12 INCHES OF ODOT TYPE 603 BACKFILL ABOVE THE TOP OF THE PIPE.

FOR RIGHT-OF-WAY OPENINGS BEYOND THE LIMITS OF THE PAVEMENT THE BACKFILL SHALL BE IN ACCORDANCE WITH THE ATTACHED DRAWINGS AND SPECIFICATIONS. ASPHALT SURFACE- ASPHALT SURFACE SHALL BE PLACED TO A DEPTH AS STATED IN ITEM 3, PAVEMENT RESTORATION, AS DETAILED IN THE ATTACHED SPECIFICATIONS.

CONSTRUCTION
REPAIR AREAS SHALL BE RECTANGULAR IN SHAPE WITH DIMENSIONS AS REQUIRED TO ENVELOP THE SURFACE DETERIORATION. AT THE DIRECTION OF THE CITY THE LIMITS OF THE REPAIRED REPLACEMENT MAY BE EXTENDED AS DEEMED NECESSARY. PAVEMENT SHALL BE REMOVED BY METHODS THAT WILL NOT DAMAGE ADJACENT PAVEMENT. ALL JOINTS AND VERTICAL FACES SHALL BE SAW CUT, CLEANED AND COATED WITH BITUMINOUS MATERIAL (TACK COAT) PRIOR TO PLACEMENT OF BITUMINOUS CONCRETE.

ALL JOINTS SHALL BE SEALED WITH ASPHALT SEALER AFTER THE FINAL SURFACE MATERIAL IS PLACED.

IF LOW STRENGTH MORTAR BACKFILL IS USED, LOW STRENGTH MORTAR BACKFILL SHALL BE BROUGHT UP UNIFORMLY TO THE FILL LINE SHOWN ON THE PLANS OR THE BOTTOM OF THE EXISTING PAVEMENT.
TRENCH DETAIL

BEDDING
GRANULAR BEDDING MATERIAL SHALL BE CRUSHED STONE OR GRAVEL COMPLYING WITH TYPE 2 BEDDING (#57 OR #67). BEDDING SHALL EXTEND 6 INCHES BELOW THE CONDUIT. BEDDING MATERIAL SHALL EXTEND 12 INCHES ABOVE THE TOP AND TO EACH SIDE OF THE CONDUIT. USE SHOVEL SLICING AND SPUD BARS IN CONJUNCTION WITH THE COMPACTION OPERATIONS TO COMPACT THE MATERIAL AND TO MANIPULATE THE MATERIAL UNDER THE HAUNCH OF THE PIPE.

BACKFILL
ALL TRENCH EDGES WITHIN THE STREET RIGHT-OF-WAY, UNDER OR WITHIN 5 FEET OF PROPOSED OR EXISTING PAVEMENT, CURB, DRIVEWAYS, ALLEYS, OR WALKS SHALL BE BACKFILLED WITH EITHER GRANULAR BACKFILL MATERIAL (#304, #411) OR ODOT ITEM 613 LOW STRENGTH MORTAR BACKFILL.

GRANULAR MATERIAL SHALL BE PLACED IN MAXIMUM 8-INCH LIFTS. FOR GRANULAR EMBANKMENT AND STRUCTURAL BACKFILL, COMPACT EACH LIFT OF MATERIAL USING MECHANICAL DEVICES, HOE RAMS, JUMPING JACKS, HAND DEVICES, VIBRATING PLATES, OR OTHER SIMILAR EQUIPMENT. COMPACTION REQUIREMENTS SHALL BE 90% OF STANDARD PROCTOR CURVE. LOW STRENGTH MORTAR BACKFILL SHALL BE FURNISHED AND PLACED AS PER ODOT ITEM 613.

ALL TRENCH EDGES NOT WITHIN THE STREET RIGHT-OF-WAY, NOT UNDER OR WITHIN 5 FEET OF PROPOSED OR EXISTING PAVEMENT, CURB, DRIVEWAYS, ALLEYS, OR WALKS CAN BE BACKFILLED WITH CLEAN NATIVE MATERIAL COMPACTED IN 12 INCH LIFTS. MATERIAL SHALL BE COMPACTED TO 85% OF THE ORIGINAL COMPACTION. NO MATERIAL SHALL BE USED FOR BACKFILLING THAT CONTAINS GRANULAR MATERIAL ROCK OR STONE GREATER THAN 4 INCHES IN DIAMETER.

PAVEMENT RESTORATION
IN PAVED AREAS WITHIN THE STREET RIGHT-OF-WAY THE PAVEMENT AND AGGREGATE BASE COMPOSITION SHALL BE PROVIDED EQUAL TO THE EXISTING PAVEMENT BUT IN NO CASE SHALL THE COMPOSITION BE LESS THAN THE FOLLOWING: 1-1/2 INCHES OF ODOT ITEM 448, SURFACE COURSE, TYPE 1 2-1/2 INCHES OF ODOT ITEM 448 INTERMEDIATE COURSE, TYPE 2 10 INCHES OF ODOT ITEM 304 AGGREGATE BASE IN ALLEYWAYS AND DRIVEWAYS OUTSIDE OF THE STREET RIGHT-OF-WAY THE REPLACEMENT OF PAVEMENT AND/OR AGGREGATE SHALL BE EQUAL TO THE EXISTING AND/OR AGGREGATE SHALL BE EQUAL TO THE EXISTING ALLEYWAY OR DRIVEWAY COMPOSITION. IF THE PERMANENT ASPHALT CANNOT BE APPLIED WITHIN 48 HOURS OF THE INITIAL REPAIR. ODOT ITEM 405 OR COLD PATCH SHALL BE APPLIED TO THE TRENCH SURFACE. MINIMUM THICKNESS OF THE COLD PATCH MATERIAL SHALL BE 4 INCHES. SAID MATERIAL SHALL BE REMOVED PRIOR TO THE PLACEMENT OF ODOT ITEM 448.

INTERMEDIATE COURSE, TYPE 2

CONCRETE RESTORATION
ALL CONCRETE DRIVEWAYS, DRIVE APPROACHES, AND SIDEWALKS WITHIN THE STREET RIGHT-OF-WAY, SHALL BE REPLACED WITH ODOT CLASS QC1 OR QCMS CONCRETE FOR THE FOLLOWING:
SIDEWALKS --- MINIMUM THICKNESS OF 4" INCHES OF CONCRETE.
• MATCH ORIGINAL WIDTH OF SIDEWALK
• MINIMUM WIDTH OF 4 FEET REQUIRED
• MINIMUM THICKNESS OF 4 INCHES
• DRIVEWAYS AND DRIVE APPROACHES
• RESIDENTIAL: MINIMUM THICKNESS OF 6 INCHES OF CONCRETE
• BUSINESS: MINIMUM THICKNESS OF 8 INCHES OF CONCRETE
• INDUSTRIAL: MINIMUM THICKNESS 10 INCHES OF CONCRETE

ALL CONCRETE DRIVEWAYS, DRIVE APPROACHES, AND SIDEWALKS OUTSIDE OF THE STREET RIGHT-OF-WAY SHALL BE REPLACED EQUAL TO THE EXISTING MATERIAL COMPOSITION.

COMPACTION GUIDELINES
THE CONTRACTOR MAY OPERATE SMALL COMPACTION EQUIPMENT WITH LESS THAN A TOTAL WEIGHT OF 1 TON OVER THE CONDUIT TO COMPACT THE BACKFILL. DO NOT USE HOE RAMS ON TOP OF THE CONDUIT UNTIL 2 FEET OF BACKFILL IS COMPACTED ON TOP OF THE CONDUIT. THE CONTRACTOR MAY OPERATE COMPACTION EQUIPMENT WITH LESS THAN A TOTAL WEIGHT OF 8 TONS, BUT MORE THAN 1 TON, OVER THE CONDUIT AFTER PLACING AND COMPACTING 2 FEET OF BACKFILL. DO NOT OPERATE EQUIPMENT WITH A TOTAL WEIGHT OF 8 TONS OR MORE UNTIL PLACING AND COMPACTING A COVER OF 4 FEET OVER THE TOP OF THE CONDUIT.

THE ABOVE RESTRICTIONS APPLY WHEN WORKING WITHIN ONE SPAN ON EACH SIDE OF THE CONDUIT, OR 6 FEET, WHICHEVER IS LESS.

ALL TRENCHES AND EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER THE PLACEMENT OF THE CONDUIT. UNLESS DIRECTED OTHERWISE BY THE CITY ENGINEER. UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER THE CONDUIT HAS BEEN PLACED.
AGGREGATE BASE, ASPHALT, CONCRETE AND SUBGRADE TESTING

AN INDEPENDENT CERTIFIED TESTING LABORATORY ACCEPTANCE TO THE CITY OF PIQUA IS TO BE USED BY THE CONTRACTOR TO PERFORM THE REQUIRED TESTING. THE TESTING LAB SHALL PROVIDE THE CITY OF PIQUA WITH ONE COPY OF ALL TEST RESULTS, INSPECTION LOGS ETC.

1) ASPHALT- ONE TEST SAMPLE PER TYPE PER PAVED LAYER OR PAVER PASS PER DAY
   PLANT TESTING, BY ODOT, OR BY A TESTING LAB
   A) TEST- GRADATION AND EXTRACTION TO DETERMINE BITUMEN CONTENT
      BASED ON SUBMITTED JOB MIX FORMULA.
   B) THE ENGINEER MAY REQUIRE ADDITIONAL ASPHALT SAMPLES BY TYPE, PER
      LAYER OR PAVER PASS.

2) CONCRETE
   A) CURBING- ONCE DAILY DURING PLACEMENT
   B) DRIVEWAY- ONCE DAILY DURING PLACEMENT
   C) SIDEWALK- ONCE DAILY DURING PLACEMENT
   D) TESTING REQUIRED
      I) SLUMP TEST
      II) AIR ENTRAINMENT
      III) CONCRETE TEST CYLINDERS FOR COMPRESSION STRENGTH TESTING AT 7
           DAYS, 14 DAYS, AND 28 DAYS.
   E) THE ENGINEER MAY REQUIRE ADDITIONAL SAMPLES OF CONCRETE FOR CURB,
      DRIVEWAY OR SIDEWALK.

3) AGGREGATE BASE AND STREET SUB-GRADE

4) DRIVEWAYS AND SIDEWALK AREAS WHERE EMBANKMENT HAS BEEN PLACED OR UNDERCUTTING
   HAS OCCURRED AT THE DISCRETION OF THE ENGINEER.
   A) COMPACTION / DENSITY TESTING USING STANDARD MATERIAL PROCTOR AT 98%
   B) SIDEWALKS, AS DIRECTED
      I) A MINIMUM OF 10 FEET FROM THE START AND END OF THE WORK AREA.
      II) A MAXIMUM OF 100 FOOT INTERVALS
   C) DRIVEWAYS AS DIRECTED
      I) ONE PER AREA.

i) A MINIMUM OF 20 FEET FROM START AND END OF WORK AREA.
ii) A MINIMUM OF 3 FEET FROM THE PROPOSED CURB-LINE.

B) AGGREGATE BASE
   I) COMPACTION/DENSITY TESTING USING STANDARD MATERIAL PROCTOR AT 98%
   II) A MINIMUM OF 20 FEET FROM START AND END OF WORK AREA.
   III) A MAXIMUM OF 100-FOOT INTERVALS ALTERNATING SIDES OF THE STREET.
   IV) A MINIMUM OF 3 FEET FROM THE PROPOSED CURB-LINE.
   C) THE ENGINEER MAY REQUIRE ADDITIONAL COMPACTION / DENSITY TESTING IN
      INTERSECTIONS, FILL AREAS OR IN AREAS OF UNDERCUTTING.

C) STREET SUB-GRADE
   I) COMPACTION/DENSITY TESTING USING "ONE POINT" PROCTOR AT 98%
   II) A MAXIMUM OF 100-FOOT INTERVALS OUTSIDE OF ALL UTILITY TRENCHES IN
       UNDISTURBED SOILS, ALTERNATING SIDES OF THE STREET.
PERMIT TO BLOCK WAY

1. NO STREET, ALLEY, PARKING LANE, OR SIDEWALK SHALL BE BLOCKED WITHOUT THE CITY FIRST APPROVING A PERMIT TO BLOCK WAY. APPLICATIONS FOR A PERMIT TO BLOCK WAY CAN BE OBTAINED AT THE CITY OF PIQUA ENGINEERING DEPARTMENT OR ONLINE AT THE CITY OF PIQUA WEBSITE: WWW.PIQUAOH.ORG E-GOV SERVICES ONLINE DOCUMENTS.

2. APPLICATIONS FOR A PERMIT TO BLOCK WAY SHALL BE SUBMITTED TO THE CITY OF PIQUA ENGINEERING A MINIMUM OF 3 WORKING DAYS PRIOR TO THE REQUESTED BLOCKAGE.

3. APPLICATION SHALL INCLUDE A DETAILED DRAWING OF THE WORK ZONE LAYOUT AND INCLUDE SIGNAGE, CONES, BARRICADES, BARRELS ETC. ALL WORK ZONES SHALL CONFORM TO THE CURRENT EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

4. IT SHALL BE THE APPLICANT/CONTRACTORS RESPONSIBILITY FOR PROVIDING AND MAINTAINING ALL NECESSARY SAFETY MATERIALS FOR THE SET UP OF THE WORK ZONE.

5. THE CITY OF PIQUA ENGINEERING DEPARTMENT SHALL INSPECT THE WORK ZONE PERIODICALLY TO ASSURE THE MAINTENANCE OF THE DEVICES.

6. ALL EXCAVATION/ REPAIR SHALL COMPLY WITH RIGHT-OF-WAY OPENING PERMIT REQUIREMENTS.

STREET OR ALLEY CLOSING PERMIT

1. NO STREET, ALLEY OR PARKING LANE SHALL BE CLOSED TO THRU TRAFFIC WITHOUT THE CITY FIRST APPROVING A STREET OR ALLEY CLOSING PERMIT. APPLICATIONS FOR A STREET OR ALLEY CLOSING PERMIT CAN BE OBTAINED AT THE CITY OF PIQUA ENGINEERING DEPARTMENT OR ONLINE AT THE CITY OF PIQUA WEBSITE: WWW.PIQUAOH.ORG E-GOV SERVICES ONLINE DOCUMENTS.

2. APPLICATIONS FOR A STREET OR ALLEY CLOSING PERMIT SHALL BE SUBMITTED TO THE CITY OF PIQUA ENGINEERING DEPARTMENT A MINIMUM OF 5 WORKING DAYS PRIOR TO THE REQUESTED BLOCKAGE, EXCLUDING WEEKENDS AND HOLIDAYS.

3. APPLICANT SHALL BE RESPONSIBLE FOR NOTIFYING IN WRITING ALL ADJACENT PROPERTY OWNERS TO BE AFFECTED BY THE CLOSURE. THE CITY SHALL RECEIVE A COPY OF THE WRITTEN NOTICE AND A LIST OF THE PROPERTY OWNERS AND THEIR ADDRESS THAT HAVE BEEN NOTIFIED.

4. APPLICATION SHALL INCLUDE A DETAILED DRAWING OF THE WORK ZONE LAYOUT AND INCLUDE SIGNAGE CONES, BARRICADES, BARRELS ETC. ALL WORK ZONES SHALL CONFORM TO THE CURRENT EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

5. IT SHALL BE THE APPLICANT/CONTRACTORS RESPONSIBILITY FOR PROVIDING AND MAINTAINING NECESSARY SAFETY MATERIALS FOR THE SET UP OF THE WORK ZONE.

6. THE CITY OF PIQUA ENGINEERING DEPARTMENT SHALL INSPECT THE WORK ZONE PERIODICALLY TO ASSURE THE MAINTENANCE OF THE DEVICES.

7. ALL EXCAVATION/ REPAIR SHALL COMPLY WITH RIGHT-OF-WAY OPENING PERMIT REQUIREMENTS.
DRIVE APPROACH WITH CULVERT

NOTES

A. DRIVE APPROACHES SHALL BE CONSTRUCTED PER THE CITY STANDARDS AND APPROVAL.

B. ALL NEW CONSTRUCTION OR MODIFICATIONS OF DRIVE APPROACHES REQUIRE A CONCRETE APPROACH, REGARDLESS OF WHETHER THERE IS A SIDEWALK OR NOT. THE NEW APPROACH IS TO GO FROM EDGE OF EXISTING STREET OR PAVEMENT TO THE RIGHT OF WAY OR A MINIMUM OF 6'-0".

C. ANY DRAINAGE ISSUES WILL HAVE TO BE ADDRESSED WHEN A DRIVEWAY IS INSTALLED OR MODIFIED.

D. IF THE EXISTING ROADWAY IS DISTURBED DURING CONSTRUCTION THE PROPERTY OWNER WILL BE RESPONSIBLE TO REPAIR ANY DAMAGE THE SATISFACTION OF THE CITY.

E. THE PROPERTY OWNER MUST SUBMIT A DRAWING TO BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION.

F. THE EXACT SIZE AND LOCATION OF THE PROPOSED CULVERT AND HEADWALLS WILL BE DETERMINED BY THE CITY PRIOR TO CONSTRUCTION.
AREA TO BE INCLUDED IN ITEM SPEC., BRICK PAVING, WALK

2" WEEP HOLE SPACED 10" C/C

#4 REBAR 6" LONG DOWELED 3" INTO CURB 6" ON CENTER

BRICK TYPICAL SECTION AT CURB RAMPS

1. ITEM 608, 5" CONCRETE WALK, AS PER PLAN APPLY 2 COATS OF SUPER DIAMOND CLEAR CURING AND SEALING COMPOUND, OR APPROVED EQUIVALENT PER MANUFACTURER'S RECOMMENDATION ON ALL SURFACES INCLUDING BACK OF CURB IMMEDIATELY AFTER FINISHING SURFACES.

2. ITEM 411, 8" AGGREGATE BASE, (IN 2 EQUAL 4" LIFTS), SATURATED WITH WATER PRIOR TO COMPACTION.

3. ITEM SPECIAL, BRICK PACING, WALK (2–1/4" BRICK), (REFER TO CITY FOR SPECIFICATIONS)

4. 3/4" ROLLED BITUMINOUS SETTING BED. (REFER TO CITY FOR SPECIFICATIONS)

5. ITEM 608, 4" CONCRETE UNDERLAYMENT, CURE & SEAL WITH ONE COAT OF DIAMOND CLEAR, OR ODOT APPROVED CURING COMPOUND.

6. ITEM 411, 5-3/4" AGGREGATE BASE SATURATE WITH WATER PRIOR TO COMPACTION

7. ITEM 204, SUBGRADE COMPACTION

8. ITEM 407, TACK COAT @ 0.10 GAL/S.Y. NEOPRENE MODIFIED ASPHALT.

9. NEOPRENE MODIFIED ASPHALT ADHESIVE.
MATERIALS:

A. BRICK PAVERS

1. MANUFACTURED FROM EXTRUDED FIRECLAY OR SHALE AND FIRE TO PRODUCE A DENSE PAVER THOROUGHLY ANNEALED AND EVENLY BURNED SO THAT WHEN BROKEN THEY SHOW A UNIFORMLY DENSE STRUCTURE FREE FROM LIME, AIR POCKETS, AND MARKED LAMINATIONS.

2. PROVIDE BRICK PAVERS IN WALK AREAS IN ACCORDANCE WITH ASTM C 902, CLASS SX, TYPE I.

3. PAVER THICKNESS SHALL BE 2-¼" (MINIMUM).

4. PROVIDE A BEVEL-EDGE BRICK PAVER OF QUALITY AND COLOR TO MATCH THE TONE AND HUE OF THE BRICKS LISTED BELOW AS APPROVED BY THE ENGINEER. PROVIDE THREE REPRESENTATIVE BRICKS FOR COLOR APPROVAL.

BRICK PAVER SPECIFICATIONS:

#30 CLEAR RED RUSTIC DIMENSIONS 2-1/4" X 4" X 8" AS MANUFACTURED BY WHITACRE GREER BRICK FOR WALKS AND CURB RAMPS BRICK MUST MEET DIMENSIONS AND QUALITY, CONTRACTOR IS TO DISCARD ANY DEFECTIVE BRICKS.

COLOR BLENDING INSTRUCTIONS:
PAVERS ARE TO BE LAID FROM MULTIPLE PALLETS TO ACCOMPLISH A UNIFORM BLENDING OF COLORS.

B. INSTALLATION OF BRICK PAVERS

1. PLACE THE PAVERS BY HAND WHEN THE MODIFIED ASPHALT ADHESIVE IS DRY TO THE TOUCH. PLACE IN STRAIGHT COURSES CONTROLLED BY ACCURATELY PLACED STRIKING LINES, WITH HAND TIGHT JOINTS AND UNIFORM TOP SURFACE. KEEP GOOD ALIGNMENT AND THE PATTERN THAT IS SHOWN ON THE PLANS OR APPROVED SHOP DRAWINGS. ESTABLISH COURSING PERPENDICULAR TO STREET CENTERLINE.

2. PROTECT NEWLY LAID PAVERS AT ALL TIMES BY PANELS OF PLYWOOD ON WHICH THE INSTALLER STANDS. ADVANCE THESE PANELS OF PLYWOOD AS WORK ARE PROGRESSES. KEEP THE PLYWOOD PROTECTION IN AREAS WHICH WILL BE SUBJECT TO CONTINUED MOVEMENT OF MATERIALS AND EQUIPMENT.

A. JOINT TREATMENT

1. VARY HAND-TIGHT JOINTS FROM 0" TO MAXIMUM 3/16" WITH 1/8" BEING THE AVERAGE JOINT DIMENSION. FILL JOINTS WITH STABILIZED JOINT FILLER CONSISTING OF SAND AND SANDLOCK MIXTURE, SEE 4. THROUGH 7 FOR INSTALLATION.

2. SAW BRICK PAVERS TO FIT TIGHTLY AROUND OBSTACLES WITHIN THE PAVING AREA. MEET JOINTING TOLERANCE OF HAND-TIGHT JOINTS. FIT PAVERS AROUND CIRCULAR OBJECTS WITH CIRCULAR OR ARCH FORM, NOT ANGULAR.

B. BLENDING SANDLOCK WITH SAND

A. UNIFORMLY BLEND 1 1/2" LBS OF OF SANDLOCK PER 100 LBS . OF DRY JOINT SAND MATERIAL ON-SITE MIXING RATIO MAY BE ADJUSTED BETWEEN 1 AND 1 ½ LBS PER 100 LBS OF SAND.

B. BLENDING CAN BE ACCOMPLISHED EITHER BY HAND MIXING OR DRY MIXING IN A MECHANICAL MIXED ON SITE, OR MATERIAL CAN BE PRE-MIXED IN PROPER PROPORTIONS AND DELIVERED TO THE WORK SITE. MIX ONLY ENOUGH MATERIAL TO COMPLETE FILL THE JOINTS OF THE PAVERS WHICH HAVE BEEN SET THAT DAY. ONCE MIXED MATERIAL MUST REMAIN COMPLETELY DRY PRIOR TO APPLICATION. PROPER PRECAUTION SHOULD BE TAKEN TO PROTECT MATERIALS FROM EXCESSIVE MOISTURE EXPOSURE PRIOR TO USE. WHILE SANDLOCK CAN BE ADDED TO DAMP SAND, IT SHOULD NOT BE USED WITH SAND THAT IS WET. BE SURE TO COVER SAND PILES AT THE END OF EVERY WORK DAY OR IF RAIN IS EXPECTED.

3. SAW BRICK PAVERS TO FIT WITHIN THE PATTERN AROUND OBSTACLES AND PROVIDE A SURFACE AREA GREATER THAN ONE-THIRD A FULL-SIZE BRICK, UNLESS APPROVED BY THE CITY AS THE ONLY ALTERNATIVE.

4. BLENDING SANDLOCK WITH SAND

A. UNIFORMLY BLEND 1 1/2" LBS OF OF SANDLOCK PER 100 LBS . OF DRY JOINT SAND MATERIAL ON-SITE MIXING RATIO MAY BE ADJUSTED BETWEEN 1 AND 1 ½ LBS PER 100 LBS OF SAND.

B. BLENDING CAN BE ACCOMPLISHED EITHER BY HAND MIXING OR DRY MIXING IN A MECHANICAL MIXED ON SITE, OR MATERIAL CAN BE PRE-MIXED IN PROPER PROPORTIONS AND DELIVERED TO THE WORK SITE. MIX ONLY ENOUGH MATERIAL TO COMPLETE FILL THE JOINTS OF THE PAVERS WHICH HAVE BEEN SET THAT DAY. ONCE MIXED MATERIAL MUST REMAIN COMPLETELY DRY PRIOR TO APPLICATION. PROPER PRECAUTION SHOULD BE TAKEN TO PROTECT MATERIALS FROM EXCESSIVE MOISTURE EXPOSURE PRIOR TO USE. WHILE SANDLOCK CAN BE ADDED TO DAMP SAND, IT SHOULD NOT BE USED WITH SAND THAT IS WET. BE SURE TO COVER SAND PILES AT THE END OF EVERY WORK DAY OR IF RAIN IS EXPECTED.

5. PLACEMENT OF MIXED JOINT MATERIAL

SPREAD MIXED JOINT SAND MATERIAL OVER PAVED SURFACE EVENLY; COMPLETELY COVER PAVER SURFACE WITH THIN LAYER OF MIXED AGGREGATE AND SANDLOCK. USING A PUSH BROOM SWEEP THE MIXTURE INTO THE JOINTS WITH A SLIGHT POUNDING MOTION. CONTINUE THIS PROCEDURE UNTIL ALL JOINTS ARE FULL AND SAND CAN NO LONGER BE VIBRATED INTO THEM.

6. ACTIVATION OF BONDING

A. CAREFULLY SWEEP ENTIRE PAVEMENT CLEAN TO REMOVE SANDLOCK MIXTURE FROM THE PAVER SURFACE, EXCESS SAND MATERIALS INCLUDING CHAMFERED AREAS MUST BE SWEEP OFF PAVED SURFACE AND REMOVED. POWER BROOMS OR BLOWERS ARE RECOMMENDED FOR LARGE AREAS. EXCESS MATERIAL REMAINING ON SURFACE AFTER THE MIXTURE HAS BEEN ACTIVATED IS DIFFICULT TO REMOVE.

B. THE PAVED AREA, INCLUDING JOINTS, SHOULD BE FLOODED WITH WATER TO ACTIVATE THE SANDLOCK ADDITIVE. CARE MUST BE TAKEN TO AVOID WASHING SAND FROM THE JOINTS. DO NOT USE HIGH PRESSURE SPRAY FOR FLOODING SURFACE. AFTER FLOODING, AREA SHOULD BE COMPLETELY DRY, INCLUDING JOINTS, PRIOR TO PERMITTING TRAFFIC TO USE PAVED AREAS. DRIVING TYPICALLY OCCURS WITHIN 2 TO 6 HOURS, DEPENDING UPON WEATHER CONDITIONS.

7. CLEANUP

IF SANDLOCK IS LEFT ON SURFACE, IT WILL EMULSIFY. DEPENDING ON SEVERITY, IT MAYCOME OFF WITH WATER AND BRUSHING; IF SEVERE, IT MAY REQUIRE PRESSURE WASHING, NEVER LEAVE DRY SANDLOCK RESIDUE ON SURFACE.
BITUMINOUS SETTING BED FOR BRICK PAVERS

THICKNESS OF THE FINISHED SETTING BED SHALL BE NO MORE THAN 1" OR LESS THAN 1/2", THE SETTING BED SHALL BE COMPACTED WITH A MECHANICAL TAMING DEVICE TO A NOMINAL DEPTH OF 3/4" WHILE STILL HOT. THE THICKNESS SHALL BE ADJUSTED SO THAT WHEN THE ASPHALT BLOCK OR BRICK PAVERS ARE PLACED, THE TOP SURFACE OF THE PAVERS WILL BE AT THE REQUIRED FINISHED GRADE. BE SURE FINISHED SURFACES DO NOT VARY FROM THE TRUE LINES, LEVELS, OR GRADE BY MORE THAN 1/8" IN TEN (10) FEET WHEN MEASURING WITH STRAIGHT EDGES.

A COATING OF TWO (2) PERCENT NEOPRENE-MODIFIED ASPHALT ADHESIVE SHALL BE APPLIED BY SQUEEZING OR TROWELING OVER THE TOP SURFACE OF THE BITUMINOUS SETTING BED SO AS TO PROVIDE A BOND UNDER THE PAVERS. IF IT IS TROWELED, THE TROWEL SHALL BE SERRATED WITH SERRATIONS NOT TO EXCEED ONE-SIXTEENTH (1/16) OF A INCH.

ON ALL DRIVEWAYS AREAS, CROSSWALKS, OR OTHER WHICH SHALL RECEIVE VEHICULAR TRAFFIC OVER BRICK PAVERS. PRIME CONCRETE, SUB SLAB SURFACE WITH EMLULIFIED ASPHALT (RS-10R CRS-1) BRICK PAVERS WILL BE SUPPLIED BY THE CONTRACTOR. BRICK PAVERS SUPPLIED WILL BE MANUFACTURED FROM EXTRUDED FIRECLAY OR SHALE AND BE FIRED TO PRODUCE A DENSE PAVER WITH AN ABSORPTION OF LESS THAN 5%(IN A 24 HOUR COLD WATER ABSORPTION TEST), A MAXIMUM SATURATION OF COEFFICIENT OF 0.78 MINIMUM. AVERAGE COMPRESSIVE STRENGTH SHALL NOT BE LESS THAN 10,000 P.S.I., THE PAVERS MUST BE CAPABLE OF WITHSTANDING AT LEAST THE EQUIVALENT OF 50 CYCLES OF FREEZE-THAW CONDITIONS. THE ERMISIBLE TOLERANCE FOR INDIVIDUAL PAVERS SHALL CONFORM TO THE ASTM DESIGNATION C-902-79A. PAVER SIZE TO BE UTILIZED IN BRICK STRIP IN PEDESTRIAN, DRIVEWAY, AND ALLEY AREAS SHALL BE 2 1/4"THICK. 4" WIDE AND 8" LONG. BRICK PAVERS FURNISHED BY CONTRACTORS SHALL BE AS MANUFACTURED BY WHITACRE-GREER CLEAR RED RUSTIC #30, OR APPROVED EQUAL. NO PAVERS WHICH ARE CHIPPED, CRACKED OR OTHERWISE DAMAGED ARE TO BE INSTALLED. AFTER THE MODIFIED ASPHALT ADHESIVE IS APPLIED, CAREFULLY PLACE THE PAVERS BY HAND IN STRAIGHT COURSES WITH HAND TIGHT JOINTS AND UNIFORM TOP SURFACE. GOOD ALIGNMENT MUST BE KEPT, AND THE PATTERN SHALL BE THAT SHOW ON THE PLANS. HAND TIGHT JOINTS SHALL READ FROM 0" TO MAXIMUM OF 1/8" FOR BRICK PAVERS. SWEEP DRY MIXTURE OF ONE (1) PART COLORED PORTLAND CEMENT TO MATCH COLOR OF PAVERS AND THREE (3) PARTS SAND UNTIL JOINTS ARE COMPLETELY FILLED. FOG LIGHTLY WITH WATER, CEMENT STAINS THAT REMAIN SHOULD BE CLEANED, PORTLAND CEMENT WITH COLOR ADDED SHALL CONFIRM TO ASTM C-150, SAND SHALL CONFORM TO ASTM C-144.

ALL PAVERS SHALL BE RETAINED BY SIDEWALK, CURB, OR ROADWAY. CUT PAVERS PAVERS WHERE REQUIRED TO PROVIDE DESIRED LAYOUT AND PATTERN AS SHOWN ON DRAWINGS. ALL CUTTINGS SHALL BE SO ACCOMPLISHED SO AS TO LEAVE A CLEAN EDGE TO THE TRAFFIC SURFACE. USE MASONRY SAW AND OTHER APPROVED TOOLS FOR CUTTING. VERY DIMENSIONS SHOWN ON DRAWINGS FOR PAVED PAVED AREAS AND OBTAIN APPROVAL FROM ENGINEER FOR ANY DIMENSION CHANGES RECOMMENDED, IN WIDTH OF PAVED AREAS, AND ANY PATTERN CHANGES. DIMENSION CHANGES SHALL BE ALLOWED TO COMPENSATE FOR UTILIZATION OF FULL BRICKS AND TO MINIMIZE CUTTING OF BRICKS ONLY.

CONTRACTOR TO PROTECT THE FINISHED WORK FROM DAMAGE THROUGH THE CONSTRUCTION PERIOD TERMINATING AT FINAL ACCEPTANCE OF THE ENTIRE PROJECT. AT PROJECT COMPLETION, SWEEP AREA AND REPAIR ANY DAMAGED WORK. THE CONTRACTOR SHALL PROTECT ALL CONCRETE SUB-SLAB SURFACES POURED FROM DAMAGE OR CHIPPING BY RESIDENTIAL OR VEHICULAR TRAFFIC UNTIL BRICK IS LAID AND WORK ACCEPTED BY ENGINEER.

THE BRICK CONTRACTOR SHALL BE INVOLVED WITH THE PROJECT ASSISTING AND ADVISING THE CONCRETE WALK, DRIVES, AND ADJACENT BRICK PAVED AREAS. MINOR ADJUSTMENTS IN THE CONCRETE INSERT DIMENSIONS SHOWN ON PLANS MAY BE MADE AS APPROVED BY THE CITY TO MINIMIZE THE CUTTING OF BRICK PAVERS AND OBTAIN OPTIMAL PATTERN PLACEMENT. THE CONTRACTOR SHALL PROVIDE THE CITY THE REPRESENTATIVE TYPICAL PAVED AREAS TO BE USED IN DETERMINING THE FINAL INSERT DIMENSIONS CONSTRUCTED IN CONCRETE BY THE CONTRACTOR. THE REPRESENTATIVE BRICK AREAS SHALL DEMONSTRATE FINAL ARRANGEMENT OF PAVERS IN REGARD TO DIMENSIONS AND PATTERN. AFTER THE ENGINEER HAS REVIEWED THE REPRESENTATIVE CONSTRUCTED AREA AND AGREEMENT IS REACHED AS TO ALL OF THE FINAL DETAILS OF THE BRICK PAVED AREAS, CONTRACTOR MY COMMENCE CONSTRUCTION. THE SAMPLE CONSTRUCTION AREA WILL THEN BECOME THE STANDARD FOR ALL FUTURE WORK.