Table Of Contents For Standard Details

SECTION 1000 – GENERAL REQUIREMENTS
1000-A  Project Sign
1000-B  Project Sign For Projects Of Short Duration

SECTION 1200 – INCIDENTAL CONSTRUCTION
1200-A  Replacement Of Government Corner Monument In Paved Area

SECTION 1400 – CONSTRUCTION PERIOD POLLUTION PREVENTION
1400-A  Construction Vehicle Entry
1400-B  Steep Slope Protection
1400-C  Diversion Dike
1400-D  Compost Berm And Compost Sock
1400-E  Silt Fence Installation
1400-F  Slope Drain
1400-G  Minimum Erosion Control For Single Family Residential Lot
1400-H  Rope Barrier
1400-I  Sediment Basin Outlet – Sheet 1 of 2
1400-J  Sediment Basin Outlet – Sheet 2 of 2
1400-K  Sediment Trap Outlet

SECTION 2100 – TRENCHING AND TUNNELING
2100-A  Trench Detail
2100-B  Sanitary And Storm Sewer Bedding
2100-C  Platform For Exposed Pipe Installation

SECTION 2250 – UTILITY PATCH REQUIREMENTS
2250-A  Asphalt Pavement Patch
2250-B  Pavement Patch In Failed Pavements
2250-C  Concrete Pavement Patch
2250-D  Patch Merging – Case 1
2250-E  Patch Merging – Case 2

SECTION 4100 – CONCRETE PAVEMENT AND FLATWORK
4100-A  Concrete Pavement Joint Details
4100-B  Concrete Pavement Joint Layout And Patching
4100-C  Curb And Gutter Sections
4100-D  Curb And Gutter Installation (Asphalt Streets)
4100-E  Curb And Gutter Installation (Concrete Streets)
4100-F  ADA Ramp For New Construction
4100-G  Driveway Layout – Sheet 1 of 2 – General
4100-H  Driveway Layout – Sheet 2 of 2 – For ADA Accessibility
4100-I  Driveway Dimensions & Materials – Sheet 1 of 6 – Construction Entrance
4100-J  Driveway Dimensions & Materials – Sheet 2 of 6 – Field Entrance
4100-K  Driveway Dimensions & Materials – Sheet 3 of 6 – Residential
SECTION 5000 – MANHOLE CONSTRUCTION
5000-A Standard Manhole Detail – Sheet 1 of 3
5000-B Standard Manhole Detail – Sheet 2 of 3
5000-C Standard Manhole Detail – Sheet 3 of 3
5000-D Drop Manhole Detail
5000-E Bolt-Down Manhole Detail

SECTION 5200 – STORM SEWER
5200-A Plunge Pool For Outlet In Line With Stream
5200-B Toe Wall For Flared End Section
5200-C Storm Sewer Outlet Lateral To Stream – Sheet 1 of 2 – Plan View
5200-D Storm Sewer Outlet Lateral To Stream – Sheet 2 of 2 – Toe Bank Protection
5200-E Level Spreader – Sheet 1 of 2 – Plan View
5200-F Level Spreader – Sheet 2 of 2 – Rigid Lip Cross Section

SECTION 5500 – STORM SEWER INLETS
5500-A Curb Inlet Detail – Sheet 1 of 4
5500-B Curb Inlet Detail – Sheet 2 of 4
5500-C Curb Inlet Detail – Sheet 3 of 4
5500-D Curb Inlet Detail – Sheet 4 of 4
5500-E Stepped Box Detail For Curb Inlet
5500-F Field Inlet
5500-G Grated Area Inlet

SECTION 6500 – MODULAR BLOCK RETAINING WALL SYSTEM
6500-A Manufactured Block Retaining Wall For Use With Inlet Or Sidewalk

SECTION 7100 – TREES AND SHRUBS
7100-A Tree Planting
For Projects Scheduled to Last 45 Calendar Days Or Longer At A Fixed Location

NOTES:

1. Sign Shall Be Black On White Background, Of Durable, Weatherproof Construction, With Professional Layout & Lettering, Sample Layout Shown, Submit Actual Layout To Engineer For Approval.

2. Project Sign Required Only For Work Administered By Unified Government Public Works Department.


4. Posts Shall Be Built To Breakaway As Per KDOT Standards.
   a. A Skid Mount Is An Acceptable Alternate To Buried Post Foundation.

5. Frame & Post & Skids If Used Shall Be 4x6 Weatherproofed Timbers.

6. Names Of Current Mayor & Commissioners May Be Obtained From The UG Commissioners Office: (913) 573-5040

PROJECT SIGN
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 1000-A
2008 Edition
36"x36" Sign Face
Secure Portable
Or Fixed Mount

For Spot Repairs Or Projects Scheduled To Last Less Than 45 Calendar Days At A Single Site

NOTES:

1. Sign Shall Be Black On White Background, Of Durable, Weatherproof Construction, With Professional Layout & Lettering, Sample Layout Shown, Submit Actual Layout To Engineer For Approval.

2. Project Sign Required Only For Work Administered By Unified Government Public Works Department.

NOTE:
All Work Shall Be Carried Out Under
The Direction Of A Kansas Registered
Professional Land Surveyor, & Subject
To Inspection By U.G. Surveyor.

REPLACEMENT OF GOVERNMENT CORNER MONUMENT IN PAVED AREA
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 1200–A
2008 Edition
NOTES:
1. Renew Aggregate When Mud From Tires, Encroachment Of Sub Soil Or Loss Of Loose Aggregate Cause Fines To Fill More Than 25% Of Surface Voids.
Diversion Dike At Top Of Slope. Grade To Downdrain Or Other Erosion Resistant Release.

Erosion Control Blanket Or Compost Blanket.

Compost Sock Or Other Approved Slope Intercept.

Not To Exceed 10'

Deposition Area 4 To 20'

Silt Fence Or Compost Berm

Vertical Scale Exaggerated

⚠️ Steep Slope Protection Applies To All Slopes Steeper Than 15%.

STEEP SLOPE PROTECTION
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
Seed Dike & Flow Channel
Within 7 Days

Erosion Control Blanket
Where Called For In The
Project Drawings

Do Not Disturb Uphill
Vegetation

If Borrow For Dike Is
Windrowed From
Adjacent Soil, These
Operations Shall Be
Conducted From The
Downhill Side

DIVERSION DIKE
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
COMPOST BERM AND COMPOST SOCK
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
Alternate Install Fabric 6" Into Trench Backfill & Compact. Use Trench Method Only For Inaccessible Areas, Short Runs Or Rocky Soil.

3 Staples In Top 8"

Flow
6"

Stakes @ 4' In Ponded Areas. Stakes @ 8' On Sloping Runs.

2'

Fabric Sliced 6" Into Ground By Slicer.

Existing Contour
Install Silt Fence Level With Contour Return End Uphill

SILT FENCE INSTALLATION
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
Note: For Temporary Erosion Control Only
**Erosion Protection Standard.** Where stormwater flow is:

1. Concentrated flow (yard swale), then stabilize swale per detail on this page.

2. Sheet flow entering the site from an undisturbed area, then no additional protection is required.

3. Sheet flow entering the site from a disturbed area, then install perimeter flow control. Perimeter flow control may be compost sock, silt fence, 6 foot width of sod, 10 foot width of undisturbed native cover, or rocked construction entrance.

4. Sheet flow exiting the site, then install perimeter flow control to slow the velocity. See notes for definition of perimeter flow control.

MINIMUM EROSION CONTROL FOR SINGLE
FAMILY RESIDENTIAL LOT
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 1400-G
2008 Edition
3/8" Synthetic Rope
Yellow Or High Visibility Orange
Preferred Colors

Clove Hitch Or Quick Release Alternate

Post; Driven Into Ground:
- T-Post
- 1" Dia. Steel Rod, #8 Rebar
- 2" Dia. Wood Post
- Or Equivalent Stability.

If Vehicle Strikes Occur, Add Orange
Flagging Or Replace Rope Barrier
With Construction Fence.

Typical Dimensions & Materials

Quick Release Alternate to Clove Hitch

Note: Quick Release Alternate Must Be Kept
Taught Throughout Placement. Not For
Use On End Posts.

ROPE BARRIER
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 1400—H
2008 Edition
Emergency Overflow Channel, See Project Plans For Location & Elevation

"Clean Out Required" Marker, See Project Plans For Elevation

Spillway Elevation, See Project Plans For Elevation

Embarkment As Constructed, See Project Plans For Elevation

Seed Top & Downstream Face Of Embankment Mulch With Erosion Control Blanket

Minimum Embankment Height After Settlement, See Project Plans For Elevation

Control Water Surface

See Sheet 2 Of 2

Storage Volume, See Project Plans For Contours

SECTION THROUGH EMBANKMENT AND BASIN CONTROLS
NO SCALE

SEDIMENT BASIN OUTLET, SHEET 1 OF 2
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 1400–I
2008 Edition
NOTES:

1. See Project Plans Or Design Guidelines For Diameter Of Pipes And Size And Number Of Dewatering Holes.


3. The Riser Shall Have A Base Attached With Sufficient Weight And Size To Prevent Flotation Or Over-Turning Of The Riser.
See Pavement Patch Details
Section 2250 For Required Pavement Sections, Overcuts, & Load Transfer Devices

Match Adjacent Elevation and Surfaces

In Open Areas Fill with Acceptable Excavated Material @ 90%. If Trench is in Embankment, Match Embankment Compaction Requirement.

Under Pavement and within 4’ Horizontal of Pavement, Fill with Aggregate Base Course, A8-3 @ 95%
Small Patches May Use Flowable Fill, (60 to 90 psi).

Bedding Zone: See Individual Utility Requirements

TRENCH SECTION

NOTES:

1. If Rock Is Encountered Contact Engineer To Verify & Define Upper Limit Of Rock. See Individual Utility Requirements For Over excavation.

2. Shore Or Slope Sides Of Excavation. OSHA Has Additional Requirements For Excavations.

3. Thickness Of Lifts Must Match Compaction Methods.

TRENCH DETAIL
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 2100–A
2008 Edition
Initial Backfill Allowable Materials

<table>
<thead>
<tr>
<th>Application</th>
<th>Select Fill</th>
<th>Stone Fill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paved Areas, All Materials &amp; Depths</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Open Areas, Rigid Pipes, Depths to 30’</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Open Area, Flexible Pipe, Depths to 30’</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

See Section 2100 For Definition Of Stone Fill & Select Fill

Bedding Depth Below Pipe

<table>
<thead>
<tr>
<th>Pipe Diameter</th>
<th>In Soil</th>
<th>In Rock</th>
</tr>
</thead>
<tbody>
<tr>
<td>24” &amp; Less</td>
<td>4”</td>
<td>6”</td>
</tr>
<tr>
<td>27” through 60”</td>
<td>4”</td>
<td>9”</td>
</tr>
<tr>
<td>66” &amp; Greater</td>
<td>6”</td>
<td>12”</td>
</tr>
</tbody>
</table>

Concrete Encasement Minimum 6” Beyond Outer Wall Of Pipe. Form or Cast Against Trench Wall. Reinforcing Steel Shall Be two #6 Bar for Pipe Up To 8” Dia; Four #6 Bar for 10” Through 24” Dia; & as Approved By the Engineer for Larger Than 24”.

SANITARY AND STORM SEWER BEDDING
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
CONDITION TO AVOID

Where the top of the pipe is above the existing ground, excess soil loads will occur.

STEP 1: Build Earth Platform

STEP 2: Excavate Trench & Place Pipe

NO SCALE

PLATFORM FOR EXPOSED PIPE INSTALLATION
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
Concrete Paving Mix Adjust Thickness To Match Existing Pavement Subgrade Except Base Must Be Min 6" & Need Not Exceed 12".

Trench Backfill Per Detail Utility Trench.

Undisturbed Subgrade At Overcut

Pavement Joint, Normally At Lane Line.

FLAG NOTES:
⚠️ Minimum Overcut Shall Be 1.0 Foot, Overcut Shall Be A Single Rectangle Oriented Parallel & Perpendicular to the Travel Lanes.
⚠️ No Load Transfer Devices Are Required At Overcut Joint.

LEGEND

Excavation
Overcut

SHEET NOTES:
1. Streets With Brick Base & Asphalt Overlay Shall Be Patched Per Asphalt Pavement Patch Details.
2. Refer To Specification For Asphalt & Concrete Mix, Tack, Placement, And Compaction Requirements.

ASPHALT PAVEMENT PATCH
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 2250–A
2008 Edition
2" Asphalt Surface Course

Concrete Paving Mix Adjust Thickness To Match Existing Pavement Subgrade Except Base Must Be Min 6"

Trench Backfill Per Detail Utility Trench.

Undisturbed Subgrade At Over Cut

Failed Existing Pavement

PAVEMENT X-SECTION

* At UG Engineer’s Instruction Use 6" Minimum Flush Filled Concrete Paving Mix.

---

FLAG NOTES:

⚠️ To Maximum Extent Permitted By Pavement Condition, Locate A Saw Cut Between 6" & 2′-0″ Of The Excavation. For Remainder Of Pavement Edge, Remove Dislodged Pavement Fragments With Minimum Disruption To Remaining Fragments. Any Shape Of Pavement Patch Acceptable In Failed Pavements.

SHEET NOTES:


2. Refer To UG Standard Specifications For Asphalt & Concrete Mix & Tack, Placement & Compaction Requirements.

LEGEND

Excavation

Pavement Patch

---

PAVEMENT PATCH IN FAILED PAVEMENTS
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 2250-B
2008 Edition
Concrete Paving Mix
Adjust Thickness To Match
Existing Pavement Subgrade
Except New Pavement Must
Be Min. 8" & Need
Not Exceed 14".
Trench Backfill Per
Utility Trench Detail

Dowels & Tiebars
Per Concrete
Pavement Joint
Details
Existing
Pavement
Undisturbed
Subgrade At
Overtcut

PAVEMENT X-SECTION

6' Min

6

6

6

Transverse Joint

Longitudinal
Joints

FLAG NOTES:

⚠ Minimum Longitudinal Overtcut In
Mid-Panel Shall Be 1.0 Foot.

⚠ Minimum Transverse Overtcut 0.0 Foot.

⚠ Where Minimum Longitudinal Overtcut
Would Result In Remaining Panel
Less Than 10' Long Between Cut
& Transverse Joint Or Shrinkage
Crack, Then Replace Panel To
Transverse Joint Or Shrinkage
Crack.

⚠ Patches Shall Extend From One
Longitudinal Joint To Another.
No Additional Overtcut Is Required.

⚠ Where Patch Crosses Longitudinal
Joint, Patch May Stagger Only If
Stagger Is Greater Than 6 Feet.

⚠ Transverse Joint Dowels & Longitudinal
Joint Tie Bars (Including Curb Tie
Bars) Shall Be Installed Per Details
For Concrete Pavement Joint Layout &
 Patching.

SHEET NOTES:

1. Streets With Brick Driving
Surface Shall Be Patched Per
Asphalt Pavement Patch Details.

2. If Asphalt Overlay Covers
More Than 80% Of The Panels
Surrounding The Cut, Then
Restore Per Asphalt Pavement
Patch Details.

3. Refer To UG Standard Specifications
For Concrete Mix, Curing Requirements,
And For Minimum Strength For
Opening To Traffic.

4. Pavement Thickness And Finish
Shall Match Thickness Of
Adjacent Panels Except New
Pavement Shall Not Be Less
Than 8" Thick, Nor Greater
Than 14" Thick.

5. Overtcut Edges Shall Be Saw
Cut Full Depth. Damaged Edges
Shall Be Recut.

LEGEND

Excavation

Overcut

CONCRETE PAVEMENT PATCH

PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION

UNIFIED GOVERNMENT

UG 2250–C
2008 Edition
FLAG NOTES:

⚠️ When 3 Or More Patches Over The Same Utility, Whether As Part Of The Current Repair Or A Previous Repair, Are Separated By An Average Center-To-Center Distance Of 25 Feet Or Less The Mill And Overlay Requirement Shall Be Applicable. Intermediate Gaps Of Greater Than 25 Feet Shall Be Incorporated In The Merge Patch As Long As The Average c-c Distance Requirement Is Met.

⚠️ Minimum 2" Depth Mill & Overlay Full Width Of All Lanes Multiple Patches Encroach. Overlay Shall Be Placed By Paving Machine. Terminal Header Shall Align Across All Lanes To Be Over Laid.

EXCEPTIONS TO THIS RULE WILL BE AT THE ENGINEER'S DISCRETIONS. FACTORS TO BE CONSIDERED ARE:

A. The Condition Of The Unpatched Pavement. The Worse The Unpatched Pavement, The Less Need To Merge The Patch. Failed Pavements May Not Require Any Merging Of Patches.

B. Alignment Of The Multiple Patches. The Closer The Patches Are To The Wheel Path, The Greater The Need To Merge Patches.

C. The Total Number Of Multiple Patches. The Greater The Number Of Patches, The Greater Need To Merge The Patches.

D. The Average & Maximum Distance Between Multiple Patches. The Greater The Average Or Maximum distance, The Less Need To Merge Patches.

E. The Location Of Lane Lines And Pavement Joints. Preference Given To Merging Patches In The Same Lane.

PATCH MERGING – CASE 1
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 2250–D
2008 Edition
FLAG NOTES:

⚠️ If Standard Overcut Would Be Less Than 2' From The Curb And Gutter, Then Extend The Patch To The Gutter Line.

⚠️ Merge Every Existing Patch Whose Edge Is Less Than 9' From A Rectangle Drawn Around The Standard Overcut And All Closer Patches That Meet The Same Requirement. This Is A Recursive Determination With No Set Limit Of Intermediate Patches.

Exceptions To This Rule Will Be At The Engineer’s Discretion. Factors To Be Considered Are:

A. The Surface Texture And Structural Soundness Of The Existing Patch. The Better The Existing Patch, The Less Need To Merge The Patch.


C. The Continuity Of The Existing Patch To The Standard Overcut. The Greater The Number Of Intervening Patches, The Less The Need To Join The Patch.


E. The Location Of Lane Lines And Pavement Joints. Preference Given To Merging Patches In The Same Lane.

⚠️ Merged Patch Shall Be Full Depth Pavement Replacement Or 2” Mill And Overlay At Engineer’s Discretion. Overlay Shall Be Placed By Paving Machine. Factors To Be Considered Are:

A. The Structural Soundness Of The Existing Patch. The Better The Existing Patch, The Less Need For Full Depth Pavement Replacement.

B. The Condition Of The Unpatched Pavement. The Better The Unpatched Pavement, The Less Need For Full Depth Replacement.

LEGEND

- Standard Overcut
- Existing Patch
- Area Of Merged Patch

PATCH MERGING – CASE 2
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
CONCRETE PAVEMENT JOINT DETAILS
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

EXPANSION JOINT
Space Expansion Joints As Shown On Project Drawings

Saw Control Joint
1 1/8" x 18" Dowel; 12" Centers, Continuous Across Joint for New Construction; Vert And Horiz Alignment Supports Required. 3 @ 12" Centered On Each Wheel Track For Patch.

TRANSVERSE JOINT NEW PAVEMENT
Spacing of Transverse Joint As Shown On Project Drawings; 15' If Not Shown.

#4 x 2'- 0" Tie Bar: 2'- 6" Centers.

TIED LONGITUDINAL CONSTRUCTION JOINT
Place Longitudinal Joint Where Shown On The Project Drawing; At Lane Lines If Not Shown.

Saw Cut Or Form 1 1/4" Deep.
1 1/8" x 18" Dowel, 3 @ 12" Centered On Each Wheel Track For Patch. Vert And Horiz Alignment Supports Required.
Grease This End
Saw Cut.
Drill Hole, Epoxy Or Grout Filled.

TRANSVERSE JOINT AT PATCH

If Kerf Is ≤ 1/8", Then No Sealant Is Required.
If Kerf > 1/8", Then Seal Control Joint.

CONTROL JOINT DIMENSIONS
Note: Joints In Sidewalks Or Driveways Me Be Toolied As An Alternate To Saw Cutting. Toolied Joints Do Not Require Sealant.

KEY SHAPE
Dowels In Dowel Basket At Transverse Joints
Deformed Tiebars At Longitudinal Joint (Lane Line)
Deformed Tiebars At Curb Joint.
Space Joints To Eliminate Wire Mesh, 15' Typical, Or As Shown On The Project Drawings.

NEW CONSTRUCTION

3 @ 1-1/8" x 18" Dowels In Each Wheel Track
Deformed Tiebars At Curb And Lane Line.
Length As Marked By Engineer, 6' Minimum.

TRANSVERSE CONTROL JOINT REPAIR

Cut Tiebars. Do Not Reinstall.
3 @ 1-1/8" x 18" Dowels In Each Wheel Track
Length As Marked By Engineer, 6' Minimum.

TRANSVERSE EXPANSION JOINT REPAIR

CONCRETE PAVEMENT JOINT LAYOUT AND PATCHING
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 4100-B
2008 Edition
NOTES:
Broom Finish Shall Be Used For All Curb & Gutter.

CURB AND GUTTER SECTIONS
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 4100–C
2008 Edition
CURB REPAIR

(Where Adjacent Pavement Is To Remain In Place)

Bottom Of Curb To Match Subgrade Or Base Course Cross Slope.

Base Overrun As Required For Contractor’s Method Of Placement, Min 3”

Pavement Preparation And Placement Under The Curb Shall Be Completed In The Same Operation As The Traveled Section Of The Roadway.

As Required For Forms 4”-12” Typ.

Surface Mix Asphalt

Existing Asphalt Pavement

Saw Cut Pavement

Cast Conc. Base Against Saw Cut

Conc. Base May Be Cast At Same Time As Curb Or Separately

Subgrade For Repair: Remove Loose Earth, Stabilize Soft Spots, Level With Aggregate Bedding And Trim To Subgrade Elevation.

For Pavements 8 To 10 Inches Thick, Place Curb On Prepared Subgrade, Dimension T Shall Equal Pavement Thickness.

For Pavements Greater Than 10 Inches, Place Curb On Base Layers, Dimension T Shall Be A Minimum Of 7.5 Inches, But Shall Match The Pavement Coursing.

New Asphalt Pavement

CURB FOR NEW PAVEMENT

(For New Mainline Pavement & Repairs Where Adjacent Pavement Is Replaced)

NOTES: Installation Details Shown on This Sheet for Standard Curb Apply to All Typical Curb Sections.

CURB AND GUTTER INSTALLATION (ASPHALT STREETS)
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 4100–D
2008 Edition
Saw Cut Edge. If Slab To Remain Is Damaged Or Chipped Excessively During Removal Of Curb, Engineer May Require Replacement Of Pavement Panel.

Existing Concrete Pavement

Subgrade For Repair: Remove Loose Earth Stabilize Soft Spots, Level With Aggregate Bedding And Trim To Subgrade Elevation.

Existing Base

Drill And Epoxy #4 x 2'-0" Tie Bars @ 2'-6" C.C.

CURB REPAIR
(Where Adjacent Pavement Is To Remain In Place)

#4 x 2'-0" Tie Bars @ 2'-6" C.C.

Base Overrun As Required For Contractor's Method Of Placement, Min 3"

New Concrete Pavement

4" Base Course, AB-3 Continuous Through Mainline Pavement And C&G

Thicken Curb Section To Match Mainline Slab

CURB FOR NEW CONCRETE PAVEMENT
(For New Mainline Pavement & Repairs Adjacent To Pavement Slabs Should Be Replaced)

NOTES: Installation Details Shown on This Sheet for Standard Curb Apply to All Typical Curb Sections.

CURB AND GUTTER INSTALLATION (CONCRETE STREETS)
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
ADA RAMP FOR NEW CONSTRUCTION
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
Location Of Accessible Route
Varies. See Driveway Layout Detail

Entrance Slab
Accessible Route
Min 4’-0"
Max Slope 1:12
Max 2% Cross Slope
Slope Varies, Match Site Conditions.

Concrete Slab Extends To Property Line.

See Dimension Table For Slab Thickness And Reinforcing.

4” Base Course, AB-3, CA-5, Or Rock For Construction Entrance.

Compacted Subgrade

DRIVEWAY SECTION

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. Width</th>
<th>Min. Slab Thickness</th>
<th>Min. Reinforcing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential *</td>
<td>25'</td>
<td>6”</td>
<td>None</td>
</tr>
<tr>
<td>Commercial</td>
<td>30’</td>
<td>8”</td>
<td>None</td>
</tr>
<tr>
<td>Industrial Δ</td>
<td>35’</td>
<td>8”</td>
<td>#4 @ 12” CC At Midspan On Chairs</td>
</tr>
</tbody>
</table>

*For Rural Section Roads (No C&G) Residential Driveways May Be 6” Asphalt On Compacted Subgrade.

Δ May Be Larger Than 35’ If Approved By The County Engineer.

DIMENSION TABLE

Commercial & Industrial Drives
May Have Radius Not Less
Than 15’, Nor Greater Than
25’. Single and Multi-Family
Residential Shall Have A
Transition Not Less Than 3’,
Nor Greater Than 5’.

Eliminate Center Control Joint
for Widths Less Than 15 Feet.

CONTROL JOINT LOCATIONS

DRIVEWAY LAYOUT, SHEET 1 OF 2

GENERAL

PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION

UNIFIED GOVERNMENT

UG 4100–G
2008 Edition
ACCESSIBLE ROUTE AT TOP OF DRIVEWAY

Where Pedestrian Easement Does Not Allow Accessible Route At Top Of Entrance Slab, Accessible Route Shall Lay Between Sloped Portions Of The Entrance Slab.

ACCESSIBLE ROUTE AlIGNED WITH SIDEWALK

Where Pedestrian Easement Does Not Allow Accessible Route At Top Of Entrance Slab, Accessible Route Shall Lay Between Sloped Portions Of The Entrance Slab.
NOTE:
Applies to Single Family & Duplex Lots. Multifamily Entries Shall Conform to Commercial Driveway Standards.
Pavement In ROW:
8 Inches Concrete Mix Per Tech. Prov.
4 Inches Aggregate Base

Pavement On Lot:
Asphalt Or Concrete Per Owner’s Design

R. 10’ (Min For Commercial)
R. 15’ (Min For Industrial)
25’ (Max)

40’ (Min)

35’ (Max)

30’ (Max)
STANDARD SIDEWALK DETAIL
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
Cover Shall Match Elevation & Slope Of Adjacent Finished Pavement. In Lawn Areas Cover Shall Be Level & 1/2" Above Adjacent Lawn. In Open Fields and Unimproved Land Cover Shall Be 12" Above Adjacent Ground.

Grade Rings Shall Have Keyed Joints. 2 Required for New Construction 4" Min 12" Max. Maximum 18" For Resetting Cover For Street Overlay.

Reinforcement Shall Meet ASTM C 478 For Precast Sections.

Base Dimensions Shown Are Minimums. Bases Shall Be 2" Thicker For Depths Greater Than 30 Feet.

NOTES:
1. Risers, Cones & Grade Rings Shall Conform To ASTM C 478. Use Concentric Cones Unless Otherwise Directed.
2. All New Sanitary Manholes Shall Be Vacuum Tested.

STANDARD MANHOLE DETAIL, SHEET 1 OF 3
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 5000–A
2008 Edition
Invert Shaping Requirements
Apply To All Manholes,
Junction Boxes, & Inlets.

"U" Shaped
Channel Match
Lower 1/2 Of Pipe.
Depth = 3/4 Pipe Dia.

INVERT SHAPING

Alternate Clamping
Type Shoe For Precast
Base. Submit Cut
Sheet For Approval.

SANITARY SEWER PIPE JOINT WATERSTOP

1" x 1" Keyway
3/8 " O-Ring Waterstop
For Cast In Place Base.

STANDARD MANHOLE COVER (SANITARY)

1" Lifting Hole In
Every Other Gusset.

"Made In USA"
On Top Of Ring

2 Concealed
Pickslots

"Storm" or
"Sanitary" Inserts

STANDARD MANHOLE DETAIL, SHEET 2 OF 3
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

NOTE:
1. Furnished With Machined
Horizontal Bearing Surface.
Material: Gray Cast Iron ASTM
A-48, Class 35B.
Weight: Frame 225 Lbs.
Cover 135 Lbs.
Finish: No Paint

Revised on 7/30/2012
23 1/8" on the MH lid was changed to 23 1/4"
Cover shall match elevation & slope of adjacent finished pavement. In lawn areas, cover shall be level & 1/2" above adjacent lawn. In open fields and unimproved land, cover shall be 12" above adjacent ground.

Grade rings shall have keyed joints. 2" required for new construction, 4" min, 12" max. Maximum 18" for resetting cover for street overlay.

Minimum 8" slab shall support HS20 loading with one foot of cover.

Use flat top only on manholes 6' or less in depth.

Deep manholes & junction boxes may be stepped to a 4' inner diameter @ 7'-0" clear above the bench elevation. Opening of reducer shall be centered on the flow channel.

Barrel reduction for deep manholes.

Standard manhole detail, sheet 3 of 3
Public Works Department, Engineering Division
Unified Government

UG 5000-C
2008 Edition
Inside Drops Are Not Allowed

For Rigid Pipe, Extend Cradle To 1st Joint Past Point Where Trench Reaches Allowable Width.

Concrete Encasement

6" Min.

10" Min.

2' Min.

12"

Drop Pipe Shall Be Same Diameter & Material As Main.

Upper Limit for Encasement for PVC Drop Pipe and Main Remainder of Backfill Shall Be Granular Material.

DROP MANHOLE DETAIL
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 5000-D
2008 Edition
BOLT-DOWN MANHOLE DETAIL
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: FRAME 310 LBS.
COVER 195 LBS.

NOTES:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
2. FURNISHED WITH T-GASKET.
PLUNGE POOL FOR OUTLET IN LINE WITH STREAM
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

ISOMETRIC VIEW

Length & Width Per Project Drawings

Downstream Channel

Top of Rock 0 to 1.0 feet below Pipe Outlet

Profile (AA)

Riprap for Upslope Protection and Shaped to Downstream Channel

Filter Course

NO SCALE
TOE WALL FOR FLARED END SECTION
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 5200-B
2008 Edition
Upstream key

Lateral pipe outlet to stream

Provide barrier to flow behind toe protection every 70 ft

May be left unfilled. Flood flows will deposit site

Peak toe bank protection

Strom Sewer Outlet Lateral to Stream, Sheet 1 of 2
Plan View

Public Works Department, Engineering Division

Unified Government
Peak Location Varies: Near but not necessarily at outer bank of system. Important to maintain smooth curve in horizontal alignment.

Channel behind peak:
Provide rock barrier to height of peak at downstream limit and each 70'. Otherwise leave area to fill in through natural siltation or sloughing.

Riprap @ \( \frac{3}{4} \) ft. Light 18. Adjust to form continuous peak @ 1 - \( 1 \frac{1}{2} \) ft. Above base flow water surface.

Trim sand bar to maintain base of riprap at least 1' below base flow water surface.

NO SCALE
NOTE:
Top Bank Of Transition Channel & End Embankment To Be A Minimum Of 6" Above Rigid Lip.
NOTE:
Rigid Lip May Be 6"x6" Staked Timber Ties, 6"x6"
Cast In Place Concrete Strip, Or 4"x3" Articulated
Concrete Edging Blocks.
STANDARD CURB INLET CASTING (STORM)

CURB INLET DETAIL, SHEET 2 OF 4

PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION

UNIFIED GOVERNMENT

Heavy Duty Casting Deeter # 1305, Or Equal. Total Weight 330#. Lettering Per Casting Detail. Center Cover Casting at Back of Lid.

#4 Longitudinal As Shown, Both Mats

#4 Bar Encircling Opening, Both Mats

LID PLAN VIEW

Traverse Bar #4 @ 6” Ctrs, W/ 180° Bend

2 1/2” R

1#4 Bar @ Nose

5#4 Bar Bottom Mat

SECTION AA

2#4 Bar Bottom Mat

3#4 Bar Top Mat

2-Concealed Picks

6 Gussets 5/8” Taper To 7/16”

2 5/8” 4 1/2”

3/8”

1” Dia. Lifting Hole In Every Other Gusset.

Julian Date

NOTE:
1. Furnished With Machined Horizontal Bearing Surface.

Material: Gray Cast Iron ASTM A-48, Class 35B.

Weight: Frame 110 Lbs.

Cover 135 Lbs.

Finish: No Paint

UG 5500–B
2008 Edition
#4 Bars At 12" Centers (Both Ways) (All Walls) Horizontal Bars Continuous Around Corners. Lap 16 Inches.

Concrete Invert To Spring Line Of Outlet Pipe When Inlet Serves As Junction Box. When Inlet Is Terminal Point On Storm Sewer Slope Invert @ 1:12 To Outlet Pipe.

4" Min. 10" Max

Base To Box Connection For Precast Box Embed Box 4" Minimum Into Base Concrete.

8" Min.

Precast Box

Cast In Place Box

6" Min.

Full Width Grout Bed

1 1/2" CI. (Typical)

6" Wall (Typical)

4" Min. 10" Max

NOTES:

For Street Grades Up To 4% Tip Precast Box To Match Street Grade. For Grades Greater Than 4% Order Box With Appropriate Slope Across Top.

Precast Base May Be Used For Construction Of New Sewer Line But Shall Not Be Used For Replacement Of Existing Inlets.

Steps Not Required.
NOTES:
For Cast In Place Box, Place Pipe First & Cast Wall To Fully Bond With Pipe.
# 4 @ 12" Both Ways
Continue Reinforcing Steel
Through Step Back
Section.

Front & Side Wall May Be
Cast In Place Or May Be
Cut From Precast Box. If
Cut Tie To Cast In Place
Back Wall W/#4 Tie Bars
@ 12" C.C. Min., 6" Deep
Epoxy Filled Drill Hole.

NOTES:

See Curb Inlet Detail For Other Requirements.

For Use Only When Approved By Engineer To Avoid Conflict With An Existing Utility.
NOTE: FIELD INLET IS A SIDE OPENING INLET LOCATED AWAY FROM PAVEMENT & SURROUNDED BY VEGETATED EARTH.

△ INSTALL CONCRETE THROAT IN ORIENTATION CALLED FOR ON PLANS

FIELD INLET
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT

UG 5500–F
2008 Edition

3' Typical

6" Typical

3' Typical

PLAN VIEW

1/4 ":12", Typ.

7"

3' Typical for New Construction. Repair To Match Existing Box Dimension.

6" Typical

SECTION

See Curb Inlet Detail For Wall Reinforcing & Base Requirements.

NOTE:
Tops Cast Monolithic With Boxes Are Acceptable.

GRATED AREA INLET
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
UG 5500–G
2008 Edition
MANUFACTURED BLOCK RETAINING WALL
FOR USE WITH INLET OR SIDEWALK
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
UNIFIED GOVERNMENT
Remove the soil at the top of the rootball to expose the root flare. Plant with the root flare level with the surrounding soil.

- Stake trees, shrubs do not require staking.
- Sun cover for trunk 2'-0" min.
- Bark mulch 3" thick taper to 0" @ trunk.
- Place dike for water retention.
- Scarify sides in clay soil if excavation causes glaze.
- Planting mix backfill to 1/2 depth of pit—saturate—compact by hand pressure. Complete fill—saturate completely.
- Holes shall be three times the width and the same depth as the root ball. If excavation method glazes the soil on the sides of the pit, the side shall be thoroughly scratched to remove glaze. Engineer shall approve locations of pits; minimum 24-hour notification is required.

Depth of planting pit equal to height of root ball.

Diameter of planting pit equal to 3 times diameter of root ball.

Remove wire & burlap from root ball.