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**Legend**

- **A.S.T.M.**: American Society for Testing & Materials
- **A.D.A.**: American Disabilities Act
- **AGGREGATE**: American Association of State Highway and Transportation Officials
- **AGG**: AGGREGATE
- **C.I.**: CAST IRON
- **C.L.**: CLASS
- **C.M.P.**: CORRUGATED METAL PIPE
- **COMP.**: COMPACTED or COMPACTION
- **CONC.**: CONCRETE
- **D.I.**: DUCTILE IRON
- **DIA.**: DIAMETER
- **I.D.**: INSIDE DIAMETER
- **F.L.G.**: FLANGE
- **G.V.**: GATE VALVE
- **JT.**: MECHANICAL
- **M.J.**: MECHANICAL JOINT
- **O.I.**: ON CENTER
- **OSHA**: OCCUPATIONAL AND SAFETY HAZARD ASSOCIATION
- **R**: RADIUS
- **R.W.**: RIGHT-OF-WAY
- **S.L.**: SLOPE
- **S.T.K.**: THICK
- **T.Y.P.**: TYPICAL
- **W.A.D.O.T.**: Washington State Department of Transportation

**Note:**

- CIRCLED NUMBERS HEREBIN THESE STANDARDS INDICATE A NOTE REFERENCE
Notes:

1. This street section should be used as the minimum standard for all streets not classified as Collector or Arterial, or under conditions in which the Standard Drawing for Alternate Local Street (28' Street) is allowed.

2. The eight foot (8') wide green strip may be narrowed to a minimum width of five feet (5') in areas of excessive cuts and fills, as approved by City Engineer.

3. Center streets in platted right-of-way, unless approved otherwise by the City Engineer. Additional right-of-way shall be required as necessary to accommodate topography, utilities, or other needs as determined by the City Engineer.

4. Compact all subgrade and base aggregate to 95% of AASHTO T99 max. proctor density.

5. Seed all roadside backfill and excavations as per Standard Specifications.

6. Wider platted rights-of-way allow narrower easements, proportionately. Additional easements may be required as necessary.

7. Maximum street centerline profile grade shall equal 10.0% or as approved by the City Engineer.

8. Subgrade underdrain systems are required in inherently "wet" areas, as specified by the City Engineer, see Standard Drawing for Subsurface Drainage.

9. Tree selection and planting shall comply with the City's Arboricultural Standards and Specifications.

10. This dimension shall be four feet (4') where standard franchise utility pedestals (excluding transformers) are to be located and shall be six feet (6') where pedestals and an AV/STA power transformer pad is required (see Standard Drawing for Franchise Utility Details).
Notes:

1. Use of this street standard shall be limited to cul-de-sacs and one to two block unextendable streets. In addition, this standard shall only be used in Residential Zones unless otherwise approved by the City Engineer. Engineering plans for subdivisions must specify on which side of street parking will be allowed.

2. The 10' wide green strip may be narrowed to a minimum width of five feet (5') in areas of excessive cuts and fills, as approved by City Engineer.

3. Center streets in plated right-of-way, unless approved otherwise by the City Engineer. Additional right-of-way shall be required as necessary to accommodate topography, utilities, or other needs as determined by the City Engineer.

4. Compact all subgrade and base aggregate to 95% of AASHTO T99 max. proctor density.

5. Seed all roadside backfill and excavations as per Standard Specifications.

6. Wider plated right-of-way allow narrower easements, proportionately. Additional easement may be required as necessary.

7. Maximum street centerline profile grade shall equal 10.0% or as approved by the City Engineer.

8. Subgrade undrained systems are required in inherently "wet" areas, as specified by the Engineer, see Standard Drawing for Subsurface Drainage.

9. Tree selection and planting shall comply with the City's Arboricultural Standards and Specification Guide.

10. This dimension shall be four feet (4') where standard franchise utility pedestals (excluding transformers) are to be located and shall be six feet (6') where pedestals and an AVISTA power transformer pad is required (see Standard Drawing for Franchise Utility Details).

11. All signs to be furnished and installed by "Developer." Signs and installation to be in accordance with MUTCD.
Notes:

1. This street section shall be used as a minimum standard for Collector class streets in all zones or for other high volume Collector streets where on-street parking is not considered essential and future travel lanes are not anticipated.

2. The green strip may be narrowed to a minimum width of five feet (5') in areas of excessive cuts and fills, as approved by City Engineer.

3. Center streets in platted right-of-way, unless approved otherwise by the City Engineer. Additional right-of-way width shall be required as necessary to accommodate topography, utilities, turn lanes, roundabouts, signalized intersections, or other needs as determined by the City Engineer. Additional right-of-way required for transit stops at Minor Arterial and Collector intersections or every thousand feet (1000).

4. Compact all subgrade and base aggregate to 95% of AASHTO T99 max. proctor density.

5. Seed all roadside backfill and excavations as per Standard Specifications.

6. Wider platted rights-of-way allow narrower easements, proportionately. Additional easements may be required as necessary.

7. Maximum street centerline profile grade shall equal 10.0% or as approved by the City Engineer.

8. Subgrade underdrain systems are required in inherently "wet" areas, as specified by the City Engineer, see Standard Drawing for Subsurface Drainage.

9. Tree selection and planting shall comply with the City's Arboricultural Standards and Specification Guide.

10. This dimension shall be four feet (4') where standard franchise utility pedestal (no transformers) are to be located and shall be six feet (6') where pedestals and an AVISTA power transformer pad is required (see Standard Drawing for Franchise Utility Details).

11. On-street parking (9' width for Residential and 10' width for Collector/Industrial) is optional in this road standard. If included on one or both sides, then additional right-of-way shall be required (see Standard Drawing for Collector Parking Detail).

12. A center median is an option in this road standard. Minimum planter width shall be seven feet (7') with curbs on each side. Travel lanes adjacent to median shall be increased two feet (2') in width. Additional ROW shall be required to accommodate the median, curbs, and additional lane widths.

13. Collector streets in Commercial and Industrial zones shall be subject to access control.
Notes:

1. This street section shall be used as a minimum standard for collector class streets in all zones or for other high volume Collector streets where on-street parking is not considered essential and future travel lanes are not anticipated.

2. The green strip may be narrowed to a minimum width of five feet (5') in areas of excessive cuts and fills, as approved by City Engineer.

3. Center streets in platted right-of-way, unless approved otherwise by the City Engineer. Additional right-of-way width shall be required as necessary to accommodate topography, utilities, turn lanes, roundabouts, signalized intersections, or other needs as determined by the City Engineer. Additional right-of-way required for transit stops at Minor Arterial and Collector intersections or every thousand feet (1000').

4. Compact all subgrade and base aggregate to 95% of AASHTO T99 max. proctor density.

5. Seed all roadside backfill and excavations as per Standard Specifications.

6. Wider platted rights-of-way allow narrower easements, proportionately. Additional easements may be required as necessary.

7. Maximum street centerline profile grade shall equal 10.0% or as approved by the City Engineer.

8. Subgrade underdrain systems are required in inherently "wet" areas, as specified by the City Engineer, see Standard Drawing for Subsurface Drainage.

9. Tree selection and planting shall comply with the City's Arboricultural Standards and Specification Guide.

10. This dimension shall be four feet (4') where standard franchise utility pedestals (no transformers) are to be located and shall be six feet (6') where pedestals and an AVISTA power transformer pad is required (see Standard Drawing for Franchise Utility Details).

11. On-street parking (6' width for Residential and 10' width for Collector/Industrial) is optional in this road standard. If included on one or both sides, then additional right-of-way shall be required (see Standard Drawing for Collector Parking Detail).

12. A center median is an option in this road standard. Minimum planter width shall be seven feet (7') with curbs on each side. Travel lanes adjacent to median shall be increased two feet (2') in width. Additional right-of-way shall be required to accommodate the median, curbs, and additional lane widths.

13. Collector streets in Commercial and Industrial zones shall be subject to access control.
Notes:

1. Parking on Collector streets shall be a minimum of nine feet (9') wide in Residential zones and ten feet (10') wide in Commercial and Industrial zones.

2. The green strip may be narrowed to a minimum width of five feet (5') in areas of excessive cuts and fills, as approve by the City Engineer.
Notes:

1. This street section shall be used as a minimum standard for Minor Arterial class streets in all zones.

2. The green strip may be narrowed to a minimum width of eight feet (8') to accommodate bus pull-outs, additional lanes, and other needs, as approved by City Engineer.

3. Center streets in platted right-of-way, unless approved otherwise by the City Engineer. Additional right-of-way shall be required as necessary to accommodate topography, utilities, turn lanes, parking, roundabouts, signalized intersections, or other needs as determined by the City Engineer. Additional right-of-way required for transit stops at Minor Arterial and Collector intersections or thousand feet (1000')

4. Compact all subgrade and base aggregate to 95% of AASHTO T99 max. proctor density.

5. Seed all roadside backfill and excavation as per Standard Specifications.

6. Wider platted rights-of-way allow narrower easements, proportionately. Additional easements may be required.

7. Maximum street centerline grade shall equal 10.0% or as approved by the City Engineer.

8. Subgrade underdrain systems are required in inherently "wet" areas, as specified by the City Engineer, see Standard Drawing for Subsurface Drainage.

9. Tree selection and planting shall comply with the City's Arboricultural Standards and Specification Guide.

10. This dimension shall be four feet (4') where standard franchise utility pedestals (no transformers) are to be located and shall be six feet (6') where pedestals and an AVISTA power transformer pad is required (see Standard Drawing for Franchise Utility Details).

11. On-street parking (9' width for residential and 10' width for Commercial/Industrial) is optional in this road standard. If included on one or both sides, additional right-of-way shall be required.

12. A center median is an option in this road standard. Minimum planter width shall be ten feet (10') for Residential and eleven feet (11') for Commercial/Industrial with curbs on each side. Travel lanes adjacent to median shall be increased two feet (2') in width. Additional right-of-way shall be required to accommodate the median, curbs, and additional lane widths.

13. Minor Arterial streets shall be subject to access control. No residential driveways shall be permitted.

14. Minimum sidewalk widths shall be six feet (6') in Residential zones and eight feet (8') in Commercial and Industrial zones. Back of sidewalk to be at the right-of-way line.
Notes:

1. This street section shall be used as a minimum standard for Minor Arterial class streets in all zones.

2. The green strip may be narrowed to a minimum width of eight feet (8') to accommodate bus pull-outs, additional lanes, and other needs, as approved by City Engineer.

3. Center streets in platted right-of-way, unless approved otherwise by the City Engineer. Additional right-of-way shall be required as necessary to accommodate topography, utilities, turn lanes, roundabouts, signalized intersections, or other needs as determined by the City Engineer. Additional right-of-way required for transit stops at Minor Arterial and Collector intersections or every thousand feet (1000').

4. Compact all subgrade and base aggregate to 95% of AASHTO T99 max. proctor density.

5. Seed all roadside backfill and excavation as per Standard Specifications.

6. Wider platted rights-of-way allow narrower easements, proportionately. Additional easements may be required.

7. Maximum street centerline profile grade shall equal 10.0% or as approved by the City Engineer.

8. Subgrade underdrain systems are required in inherently "wet" areas, as specified by the City Engineer, see Standard Drawings for Subsurface Drainage.

9. Tree selection and planting shall comply with the City's Arboricultural Standards and Specification Guide.

10. This dimension shall be four feet (4') where standard franchise utility pedestals (no transformers) are to be located and shall be six feet (6') where pedestals and an AVISTA power transformer pad is required (see Standard Drawing for Franchise Utility Details).

11. On-street parking (9' width for Residential and 10' width for Collect/Industrial) is optional in this road standard. If included on one or both sides, additional right-of-way shall be required.

12. A center curb or median is an option in this road standard. Minimum median planter width shall be ten feet (10') for Residential and eleven feet (11') for Commercial/Industrial with curbs on each side. Travel lanes adjacent to median shall be increased two feet (2') in width. Additional right-of-way shall be required to accommodate the median, curbs, and additional lane widths.

13. Minor Arterial streets shall be subject to access control. No residential driveways shall be permitted.

14. Minimum sidewalk widths shall be six feet (6') in Residential zones and eight feet (8') in Commercial and Industrial zones. Back of sidewalk to be at the right-of-way line.
NOTES:
1. No parking allowed on either side of street.
2. Use of this street standard shall be limited to areas with low potential for "pass through" traffic and shall not conflict with or hinder the public street system configuration and logical extensions.

**TYPICAL SECTION**

- Ditch and driveway culverts maintained by property owners. 12" RCP, CMP or smooth wall interior HDPE pipe culvert with flared ends required at all driveways. Minimum coverage as per manufacturer recommendations. Culvert provided by property owner.

- 8' Public Utility Easement
- 8' Public Utility Easement
- 60' R/W Roadway
- 60' R/W Roadway
- 8' Public Utility Easement
- 8' Public Utility Easement

- Subgrade Separation Geotextile Fabric (TDI Type II, Woven or Nonwoven)
- Subgrade Separation Geotextile Fabric (TDI Type II, Woven or Nonwoven)

- 4" Bituminous Pavement Surface (2 Lifts; 2-1/2" base, 1-1/2" top)
- 4" Bituminous Pavement Surface (2 Lifts; 2-1/2" base, 1-1/2" top)

- -2.75% Comp. Aggregate
- -2.75% Comp. Aggregate

- Approved Topsoil (18" min. thick) Seed per Specs. (typ.)
- Approved Topsoil (18" min. thick) Seed per Specs. (typ.)

- Scour Subgrade surface prior to Topsoil Backfill (3" min. depth)
- Scour Subgrade surface prior to Topsoil Backfill (3" min. depth)

- Plant trees according to City planting guidelines
- Plant trees according to City planting guidelines

- 5' Concrete Sidewalk (see Std. Dwg. for Sidewalks & Pathways)
- 5' Concrete Sidewalk (see Std. Dwg. for Sidewalks & Pathways)
NOTES:
1. No parking allowed on either side of alley.
2. "No Parking in Alley" signage to be installed by developer in accordance with MUTCD and City Specifications if required by City Engineer.
3. Drainage system required as approved by the City Engineer.
4. Geotechnical Engineering assessment of soil conditions may be required by City Engineer to determine if additional asphalt pavement and aggregate base depth will be required.
5. Truncated domes are required at sidewalk crossings of public alleys.

TYPICAL SECTION
NOTES:

1. Compact all subgrade and aggregate base to 95% of AASHTO T99 max. proctor density.
2. Seed all roadside backfill and excavations as per specifications.
3. Maximum centerline profile grade equals 10.0% or as approved by the City Engineer. Additional easements may be required as necessary.
4. Subgrade underdrain systems are required in inherently "wet" areas, as specified by the Engineer.
5. This dimension shall be four feet (4') where standard franchise utility pedestals (no transformers) are to be located and shall be six feet (6') where pedestals and on AVISTA power transformer pad is required (see Standard Drawing for Franchise Utility Details).
6. Sidewalks, vehicular cubed cuts/approaches, and pedestrian drops shall comply with City Standards where required and installed.
7. Designated fire lanes shall be signed for no parking and curbs (if present) shall be painted yellow. Additional width may be required for Fire Department access.
8. Gates shall not be permitted.
9. Public utility and franchise utility easements shall be provided per City Standards for utilities within the roadway area.
10. Private streets shall be limited in use to Planned Unit Developments (PUD) and shall not conflict with or hinder the public street system configuration and logical extensions. Private streets shall not promote "pass through" traffic between public streets.
11. Sidewalks or other pedestrian pathways shall be installed if required by the PUD process and shall be a minimum of five feet (5') in width.
12. City shall not provide any maintenance, repair, or snow removal on private streets.
13. A street light shall be installed at each intersection of a private street with a public street per the Residential Street Lighting Standard Drawing.
14. Vertical and horizontal alignment of private streets shall meet the requirements for Fire Department access as per the International Fire Code.
**NOTES:**

1. Use of cul-de-sac and 'dead end' streets shall be limited to promote street connectivity and emergency vehicle access. Cul-de-sacs shall only be allowed when topographic conditions or other factors prohibit reasonable extension of the street.

2. Center cul-de-sacs and turnarounds in platted right-of-way unless otherwise approved by the City Engineer.

3. All signs to be furnished and installed by 'Developer'. Signs and installation to be in accordance with MUTCD and City Specifications.

4. Tree selection and planting shall comply with the City's Arboricultural Standards and Specification Guide.

5. All cul-de-sacs to be constructed with a minimum of 1.0% sloping surface to drain.

6. All curb radii dimensions are measured as per the Standard Drawing for Curbs.

7. Seed all cutfills slopes and green strips per city specifications.

8. Installation of optional Planter Island as per approval by the City Engineer.

9. 'Not A Through Street' sign required at the entrance of cul-de-sac streets.

10. No utility poles, lights standards, mailboxes, fire hydrants, or other vertical features allowed in sidewalk or paver block strip within cul-de-sac.

11. Geotechnical Engineering assessment of soil conditions may be required by City Engineer to determine if additional asphalt pavement and aggregate base depth will be required.
NOTES:
1. Other configurations may be approved by the City Engineer and Fire Marshal; basic dimensional criterion shown herein must be satisfied.
2. Temporary easements must be granted for those portions of temporary turnarounds outside of platted public utility easements and rights-of-way.
3. Temporary turnarounds may be designed to include driveways; public easement required.
4. ‘End of Roadway’ markers per Standard Drawing for End of Road Marker & Dead End Signs must be placed as shown.
5. All signs to be furnished and installed by ‘Developer.’ Signs and installation to be in accordance with MUTCD and City Specifications.
6. One street light required. Locate as per Standard Drawing for Residential Street Lighting.
7. Temporary turnarounds with steep embankments exceeding three feet (3') in height must have guardrail or barrier protection; as required and/or approved by the City Engineer.
8. Temporary turnarounds shall be designed to provide a minimum drainage slope of 1% to an approved public storm drainage system, including catch basins and piping, as required.
9. Curb, Type 'B' required all-around or as approved by the City Engineer.
NOTES:
1. Replacement curb and sidewalk may be cast monolithic with prior approval of City Engineer.
2. Sidewalk to back-of-curb slope may not exceed 12:1 without City Engineer’s approval.
3. Light broom finish curb parallel with the long axis of curb.
4. Rolled curb prohibited where sidewalk is adjacent to curb, unless specially allowed by the City Engineer. In areas without planter strips, sidewalks adjacent to to rolled curb shall be a minimum of six inches (6”) thick.
5. All curb roadway planimetric radii dimensions shall be measured to the *Radius Dimension Line* shown in the typical curb section.
6. See table for curb radii requirements. Thirty foot (30’) curb radii are required where any City street intersects an Idaho Transportation Department roadway.

### CURB RADIUS REQUIREMENTS

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<th>Intersecting Street Classification</th>
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<tr>
<td>Local - Collector</td>
<td>15’</td>
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<tr>
<td>Local - Arterial</td>
<td>25’</td>
</tr>
<tr>
<td>Collector - Collector</td>
<td>25’</td>
</tr>
<tr>
<td>Collector - Arterial</td>
<td>25’</td>
</tr>
<tr>
<td>Arterial - Arterial</td>
<td>30’</td>
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</table>

4” of 3/4(“) Aggr. (95% Comp. Req’d.)

4” Min. of 3/4(“) Aggr. (95% Comp. Req’d.)

4” of 3/4(“) Aggr. (95% Comp. Req’d.)

7. "Shed" section streets require ‘spill curb’ on the uphill side with gutter matching street cross slope.
8. Type 'A' curb only allowed where extending or replacing existing Type 'A' Curb.
9. Type 'C' curb only allowed in cul-de-sacs and where replacing existing rolled curb.
NOTES:

1. Minimum sidewalk widths shall be five feet (5') for local streets. For sidewalk widths for collectors and arterials, see Standard Street Section Drawings. Pathway width shall be ten feet (10') unless otherwise approved by the City Engineer.

2. Maximum cross slope of 2.0%; minimum cross slope of 1% - pathway cross slope may be 'crowned' or 'shed'. Maximum sustained longitudinal grade for pathways of 5%. Pathways shall be free of humps, dips, or unnecessary curves.

3. Curb and sidewalk may be cast monolithic for repairs only with prior approval of City Engineer.

4. Slope from sidewalk to back-of-curb may not exceed 1:12.1 without City Engineer's approval.

5. Green strip required between curb and sidewalk width as specified in Standard Street Section Drawings. In areas of excessive cuts and fills, width may be reduced, as approved by the City Engineer.

6. Sidewalks shall be five inches (5") thick as shown on this drawing - with the following exceptions:
   a. Sidewalks through driveways shall be six inches (6") thick and constructed per the Std. Dwg. for Driveway Approaches.
   b. Sidewalks constructed adjacent to rolled curb shall be six inches (6") thick and reinforced as shown on this drawing.
   c. Reinforcement as directed by City Engineer.

7. Coarse broom finish sidewalk concrete perpendicular to the long axis of sidewalk; light broom finish curb concrete parallel to the long axis of curb.

8. This dimension shall be four feet (4') where standard franchise utility pedestals (excluding transformers) are to be located and shall be six feet (6') where pedestals and an AVISTA power transformer pad is required (see Standard Drawing for Franchise Utility Details).

9. Any trees adjacent to or with branches overhanging the pathway shall be kept trimmed such that ten feet (10') of both vertical and horizontal clearance exists between any branches and the pathway. Landscape vegetation cannot overhang sidewalk.

10. If fall protection is required by code, railing should be installed with a minimum height of 42" and a minimum height of 54" for bridges. Railing style must be approved by City Engineer.

11. 'Select' native backfill shall be free of clods, roots, gravel, and other inert material and shall be neatly graded to blend with the path and the adjoining ground. Backfill shall be compacted to 90% within 2' of path edge.

12. Furnish and install drainage culverts as required and as directed by the City Engineer.

PATHWAY

TYPICAL SECTION

SIDEWALK

TYPICAL SECTION
NOTES:

1. Moscow Standard Construction Specifications apply. Pedestrian ramps must comply with current Americans with Disability Act (ADA) Accessibility Guidelines.

2. All ramps shall be textured with Detectable Warnings. "Truncated Domes" as required by the current ADA Guidelines and as allowed by the City Engineer. The truncated domes shall extend the full length and full width of the flush curb ramp and two feet (2') radial to back of curb. Truncated Domes shall be prefabricated plate units cast monolithic with the concrete and set flush and to manufactured specifications. Coarse broom finish the remainder of the ramp.

3. All curb roadway planimetric radii dimensions shall be measured to the 'Radial Dimension Line' shown in the typical curb sections. See Standard Drawing for Curbs & Sidewalks. Curb radii shall conform to "Curb Radii Requirements" table in Standard Drawing for Curbs & Gutters.

4. Light broom finish curbs and gutters parallel with the long axis of the curb and/or curb and gutter. Coarse broom finish sidewalks perpendicular to the long axis of sidewalk.

5. Rolled curb section properties may vary from those shown as specifically allowed by the City Engineer.

6. Sidewalk constructed in driveway locations shall be six inches (6") thick and reinforced, all as per Standard Drawing for Driveway Approaches.

7. Specified 2.0% cross-slopes shall be 1% minimum and 2.0% maximum.

8. Construct curb or sloped (4:1) backfill - as required and/or allowed by the City Engineer.

9. Type I or Type II pedestrian ramp is the required standard; Type III, IV, or V ramps may be allowed in special circumstances as approved by the City Engineer.

10. Curb and sidewalk may be cast monolithic with prior approval of City Engineer.
NOTES:
1. Existing curb and sidewalk section to be removed (saw cuts required) prior to construction of vehicular approaches.
2. The width "W" of a vehicle approach providing access to residential uses shall be a maximum of twenty feet (20'). Vehicle approaches providing two-way access to commercial uses shall be a maximum of thirty feet (30') wide unless a wider width is deemed appropriate by the City Engineer.
3. Vehicle approaches shall be located at least thirty feet (30') from the intersection of the curb line of an intersecting street.
4. Approaches shall be limited to one per street frontage for each lot, with the following exceptions:
   a. Two twenty foot (20') curb cuts may be permitted to commercial uses where one cut will be egress only and the other ingress only.
   b. Additional approaches may be authorized by the City Engineer, in his/her opinion, an exceptionally long street frontage or traffic conditions in the area justify such approaches.
5. Truncated domes are not to be installed in sidewalk at driveways.
6. A City of Moscow excavation permit is required to construct new driveways through existing curbs and sidewalks.
7. Curb and sidewalk may be cast monolithic with prior approval of City Engineer. (Strike dummy joint at back of curb)
8. Driveways within State of Idaho right-of-way are subject to Idaho Transportation Department standards and permits. Inquire at Moscow Engineering Department (208-883-7034).
9. Reinforcement shall be 6 x 6 - W2.1 / 2.1 welded wire mesh or No. 4 rebar @ 1'-0" centers each way centered in slab.
10. Forms shall be inspected by the City prior to placing concrete. No Exceptions.
11. Lip height shall be 1-3/4" (plus/minus 1/4').
12. Vehicle approaches per this standard required for all driveways.
13. In areas with rolled curb, the number of driveways shall not exceed the number of curb cuts allowed per lot (as per Zoning Code Section 6-4).
NOTE:

1. The repair of cement concrete street shall include the installation of 9" long 5/8" diameter steel dowels @ 1'-0" o/c @ mid slab, drilled and tightly driven or epoxied 4.5" into the existing slab.

2. Contractor shall submit a pavement joint pattern for entire project for approval by City Engineer.

3. When possible, manholes and other appurtenances shall be centered between joints.

4. Compact all subgrade and base aggregate to 95% of AASHTO T99 max. proctor density.

5. Cement concrete pavement allowed when approved by the City Engineer.
NOTE:
1. CITY CODE HAS PRECEDENCE OVER THIS DRAWING. Parking lots shall conform strictly to the Off-Street Parking Requirements of City Code (Title 4, Section 6-5).
2. See also ADA Standards and International Building Code for Design Accessibility.
3. Single ADA accessible vehicle spaces require a five foot (5') access aisle. Van accessible stalls shall have an eight foot (8') wide aisle width. Two (2) ADA accessible spaces may share a common access aisle with a minimum width of eight feet (8'). Spaces to be standard vehicle size.
4. Dimensions shown are minimum; user friendly lots exceed these dimensions.
5. Fire Code requirements relative to traffic aisle width have precedence over this drawing.
6. Sidewalk adjacent to curb shall slope -2.0% or -1% toward curb.

TWO-WAY TRAFFIC

ONE-WAY TRAFFIC

Minimum Number of Accessible Parking Spaces

<table>
<thead>
<tr>
<th>Total Parking Spaces In Lot</th>
<th>Spaces Required Van Accessible Spaces Per Access Aisle</th>
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<tr>
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<td>26 to 50</td>
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<tr>
<td>51 to 75</td>
<td>3</td>
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<tr>
<td>76 to 100</td>
<td>4</td>
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<tr>
<td>101 to 150</td>
<td>5</td>
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<tr>
<td>1001 and over</td>
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TURNING CLEARANCES

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<tr>
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</tbody>
</table>

PARKING LOT

CITY OF MOSCOW
ENGINEERING DEPARTMENT

DRAWING NUMBER: 11
NOTES:
1. TYPE I DRIVEWAY applies to all driveways except those for single family dwellings and duplexes.
2. TYPE II DRIVEWAY applies to single family and duplex lots.
3. Driveway grade must also match existing sidewalk elevation. The City Engineer may allow reconstruction of the sidewalk for the purpose of matching a proposed driveway grade. ADA Standards Apply.
4. Maximum cross slope of driveways shall not exceed 5.0%.
5. Maximum slope of parking areas and aisles shall not exceed 5.0% in any direction.
6. Noted grades measured at driveway centerline.
7. Or as approved by the Building Official.
8. Sidewalk adjacent to curb shall slope -2.0% or -1% towards curb.
NOTES:

1. The locations of City water, sanitary sewer and storm sewer mains shown are preferred where possible, curvilinear street alignment and tangent utility runs dictate other locations, as approved by the City Engineer.

2. The 'community' style mailboxes shall be placed in locations approved by both the Postal Service and the City Engineer. The Developer is responsible for the construction of ‘community’ mailbox concrete support slab, all in accordance with U.S. Postal Service construction requirements. The support slab shall extend to the City sidewalk.

3. Utility poles (wood, metal, or other) shall be located with 1.5' minimum clearance from back of curb to face of pole or 1.0' minimum from back of sidewalk to face of pole. Sign posts shall be located 1.5' minimum from back of curb; their location shall also conform to MUTCD requirements.

4. Franchise utilities, including pedestals shall be located within street right-of-way or public utility easement and as shown on the Standard Drawing for Franchise Utility Details.

**Typical Section**
ROAD CROSSING FOR SECONDARY PEDESTAL (Typical)

NOTES:
1. Verify conduit sizes with utilities prior to installation.
2. Bundle conduits for each utility at pedestal locations.
3. Dimensions shown are minimum unless otherwise noted.
4. Unless otherwise directed, the Gas, Power, Telephone, and T.V. Cable will be installed on the North and East sides of the street.
5. Furnish and install pull strings in all conduits.

MAIN LINE (Typical)
Area to be brought to final grade by "Developer" prior to placement of pedestals by utility companies.

Minimum dimensions unless otherwise noted.

TRENCH X-SECTION DETAIL

30" min.
6"
6" sand bedding & padding
(if necessary)

TRENCH X-SECTION DETAIL

1.5" min.
1.5" min.
5.5" min.
30" min.
12" min.
6" sand bedding & padding
(if necessary)

PVC to house

Flush to Back of Sidewalk

6" sand bedding & padding
(if necessary)

GAS
PHONE
TV

Power Pad

PVC to mark location

Vertical marking conduit

Lot Side

Street Side

POWER
GAS
PHONE
TV
NOTES:

1. Street lights (pole, fixture, and conductors) to be furnished, installed, owned, and maintained by AVISTA. 'Cobra head' style light fixtures are required unless otherwise approve by the City Engineer.

2. Wood street light poles will be furnished and installed as the standard - metal davit poles are allowed but the additional/incremental costs of furnishing metal davit poles shall be paid by the Developer directly to AVISTA.

3. Developer shall furnish and install buried conduit for street lights - all as required by AVISTA - at Developer expense.

4. All street lights shall be full cut-off.

5. Street lights in residential developments will generally be installed at all four-way intersections, three-way (tee) intersections, ninety degree corners, permanent cul-de-sacs, and temporary turnarounds - one at each of these locations. Additional street lights at other locations may be as allowed or required by the City Engineer.

6. Street lights shall comply with Moscow City Code Title 4, Section 6-15.
NOTES:

1. DEAD END signs shall be placed as near as possible to the beginning of all streets that terminate (either temporary or permanent) in a dead end or cul-de-sac. END OF ROAD MARKERS (two of them) shall be placed at the end of all terminated streets EXCEPT permanent cul-de-sacs.

2. Reflectors and reflective sheeting shall meet the requirements set forth in the most current editions of the Manual for Uniform Traffic Control Devices and Idaho Transportation Department’s Standard Specifications for Highway Construction.

3. U-channel galvanized steel posts weighing 3.0 lbs./ft. and conforming to ASTM A499, or a 4"x4" treated wood post, shall be a minimum requirement. No splicing or bolting of multiple u-channels will be allowed. All posts shall meet the Engineer’s approval.

4. Theft resisting “Tuftnut” brand hardware shall be used for sign installation.

5. Signs shall be installed vertically plumb.

Advance Warning Sign, Placed at Nearest Intersection if Possible. Location to be determined by City Engineer. (MUTCD W14-1a on top of Street Name Sign or 30"x30" W14-1a as shown.)
Notes:

1. Area within the Sight Triangle shall be kept clear of obstructions to provide the motorist with adequate field of vision at an intersection.

2. Within the Sight Triangle all existing trees shall be kept trimmed such that ten feet (10') of clearance exists between any branches and the ground. Any tree branches overhanging the sidewalk shall be kept trimmed such that ten feet (10') of clearance exists between any branches and the sidewalk.

3. Within the Sight Triangle, all existing shrubs shall be kept trimmed to a maximum height of three feet (3').

4. Sight obstruction Vertical Clear Area measurements shall be in reference to the existing centerline street elevation within the Sight Triangle.

5. If curb does not exist, then the Sight Triangle will be measured by extending the edges of street pavement; on unpaved streets, the Sight Triangle will be measured by extending the edge of the traveled way as determined by the City Engineer.

6. This City Standard enforces Idaho Code 49:221.

7. All dimensional criteria (as shown) must be satisfied.

8. Unusual topography may require more stringent requirements at some locations to obtain adequate Sight Triangles as determined by City Engineer.
NOTES:

1. "Subsurface Drainage" materials and installation shall comply with City of Moscow Standard Construction Specifications.

2. Base aggregate and surfacing depth and type to be the same as that required for the street section where this trench backfill is utilized.

3. Minimum pipe gradient = 1% unless specifically allowed or directed otherwise by the City Engineer.
Notes:
1. Survey caps must be securely attached to rebar or pipe.
2. Survey monuments shown on the SURVEY MONUMENT Standard Drawing may be used as street monuments.
3. Survey caps will be aluminum or brass and a punch mark placed at the exact location. Plastic caps not allowed.
4. Cover and casing shall be machined to a true bearing all around.
5. The monument casing shall be bedded in aggregate.
6. The casing and cover shall be gray iron castings suitable for heavy traffic loading; minimum unit weight = 46 lbs.
7. The installation shall result in a "bump-free" street surface, as approved by the city engineer.
8. The cover shall include the wording as shown.
9. All materials shall be manufactured in the U.S.A.
Cover and casing shall be machined to a true bearing all around.

The brass cap shall conform to the requirements of the most current edition of the Idaho Transportation Department's standard specification for highway construction.

The casing and cover shall be gray iron castings suitable for heavy traffic loading, minimum unit weight = 46 lbs.

All material except the brass cap shall be covered with a protective coating after welding. The coating shall be of a bituminous type or approved equal.

The installation shall result in a relatively 'bump-free' street surface, as approved by the city engineer.

The cover shall include the wording as shown.

All materials shall be manufactured in the U.S.A.
48" STANDARD MANHOLE
w/ PRECAST BASE

CAST-IN-PLACE ALTERNATE BASE

Pipe thru M.H.
w/ top cut-out
(if possible)
Mortar this area after pipe is cut (Typ.)
4" of 3/4"(-)
Comp. Aggregate

Standard Manhole Lid & Frame (see Std. Dwg. for Storm & Sanitary Manhole Ring & Cover)

Asphalt Patch (see Detail A) ③③

NOTES:
1. Precast bases are preferred.
2. Steps shall not be installed in the manholes.
3. Manholes located in paved areas shall have asphaltic hot mix patch four inches (4") thick with top course mix restoring surface to exact line and grade of street. Manhole lids in new pavement shall be raised and adjusted to finished grade after completion of street paving.
4. Manholes located in unpaved streets or alleys shall have their lids adjusted to two inches (2") below gravel surface.
5. All cast-in-place concrete shall be troweled very smooth.
6. All joints between precast manhole/sections shall be very smooth.
7. All flow across manholes shall be on-tenth of a foot (0.1) fall, unless the flow changes direction more than 45⁰, then the fall shall be two-tenths of a foot (0.2) or greater.
8. Channels shall be as per Standard Drawing for Manhole Base Details.
9. Lids shall be set a quarter inch (1/4") below the existing paved street grade.
10. Flat slab top allowed on shallow manholes.
11. Contractors shall comply with the most current OSHA requirements for excavation.
12. WSDOT Catch Basin Type 2 may be required at certain locations by the City Engineer in place of this manhole standard.

Mortar Not Req'd.

Mastic Gasket Not Req'd.
on Storm Manholes

Not to exceed 10" total

#4 Rebar @ 12" O/C each way (2" min. embedment)

All Pipes to protrude 1"-2" into Manhole and be neatly mortared all around (inside and outside).

MANHOLE w/ CATCH BASE

ASPHALT PATCH DETAIL

CITY OF MOSCOW
ENGINEERING DEPARTMENT

DRAFTED BY: CEEFIZ
CHECKED BY: K. LIPPS
DRAWING SCALE: NTS
DATE: 3-4-2014

DRAWING NUMBER: 21
NOTES:
1. Precast bases with integral pipe couplers are preferred.
2. Manholes shall be constructed watertight and tested per Standard Construction Specifications.
3. Steps shall not be installed in the manholes.
4. Drop configuration is used when the entrance pipe exceeds two feet (2') above the top of the exit pipe and only with permission of the City Engineer. Drop pipe penetrations shall be neatly mortared. Drop configuration not allowed in new manhole installations.
5. Manholes located in paved areas shall have asphaltic patch four inches (4") thick placed in two lifts to exit of line and grade of street. Manhole ring shall be 1/4" below finished patch.
6. Manholes located in unpaved streets or alleys shall have lid adjusted two inches (2") below gravel surface.
7. All cast-in-place conc. shall be troweled smooth.
8. All joints between precast manhole sections shall be sealed with mastic gaskets and finished with mortar.
9. All flow across manholes shall be one-tenth of a foot (0.1), unless the flow changes direction more than 45°, then the fall shall be two-tenths of a foot (0.2') or greater.
10. Manufactured watertight manhole couplings required at all pipe penetrations.
11. Channels shall be per Manhole Base Details Standard Drawing.
12. Shallow manholes may be constructed with flat-top precast lids, as approved by the City Engineer.
13. Seal between riser and cone, riser and riser, and riser and frame with two parallel 3/8" diameter beads of silicone sealant.
14. Where new manholes are constructed on existing mains, or where existing manholes are modified, all pipe penetrations shall also be sealed on the exterior by the careful and simple application(s) of non-shrink grout. Groutable manufactured collars shall be used on new pipes where they enter existing manholes.
15. Manufacturer's standard O-ring joint also acceptable alternate to the standard mastic gasket and mortar joints as shown.
16. Contractor shall comply with the most current OSHA requirements for excavations.
17. Backfill around manholes shall be Class 'D' for all roadways and alleys; Class 'A' for all other locations unless specifically allowed or directed otherwise by the City Engineer.
NOTES:

1. Manholes shall be constructed watertight test per Standard Construction Specification.
2. Steps shall not be installed in the manholes.
3. Manholes located in paved areas shall have asphaltic patch four inches (4") thick placed in two lifts to exact line and grade of street. Manhole ring shall be quarter inch (1/4") below finished patch.
4. Manholes located in gravel streets or alleys shall have lid adjusted to two inches (2") below gravel surface.
5. All cast-in-place conc. shall be troweled smooth.
6. Manufactured watertight manhole couplers are required at all pipe penetrations.
7. Contractor shall comply with the most current OSHA requirements for excavations.
8. Seal between riser and cone, riser and riser, and riser and frame with two parallel three-eighths of an inch (3/8") diameter beads of silicone sealant.
9. Backfill around manholes shall be Class 'D' for all roadways and alleys; Class 'A' for all other locations unless specifically allowed or directed otherwise by the City Engineer.
10. City standard manhole ring and cover; a 4.5" traffic rated ring and lid will be allowed with approval from City Engineer.
11. Type D manholes shall comply with the Standard Construction Drawing for Manhole Base Details.

SECTION 1

NTS

SECTION 2

NTS

A ASPHALT PATCH
DETAIL
NOTES:

1. Raised letters are Sharp Face Gothic font; 2.5" for "SANITARY" and "STORM," 1.5" for "CITY OF MOSCOW." Center word about center line.


3. All covers shall be interchangeable within the dimensions shown. All mating surfaces shall be machine finished to ensure a non-rocking fit. The inside vertical recessed face of the ring and the vertical outside edge of the cover shall be machined or manufactured to the following tolerances:
   Ring: +3/32 inch to -3/32 inch
   Cover: +3/32 inch to -3/32 inch

4. Rings (traffic rated) of lesser height may be used in special circumstances, as allowed by the City Engineer.
Note:
All channels to be 'U' shaped (See Channel X-Section)

Manhole Barrel (typ.)
Sewer Pipe (typ.)

Slope Base as Arrows Indicate (typ.) Slope 1'/:1'

TYPE A

TYPE B

TYPE C

TYPE D

Type E
For Dead End Line

CHANNEL X-SECTION
NOTES:
1. Catch Basins shall be used in all City streets, City parking lots, and City alleys for catchment and conveyance of surface runoff. Catch Inlets are not to be used in these locations unless specifically allowed by the City Engineer.
2. Catch Basin shall be precast concrete per WSDOT Catch Basin Type 1 and Catch Inlets per WSDOT Concrete Inlet, unless otherwise approved by the City Engineer.
3. Catch Basins located in paved areas shall have asphaltic patch four inches (4") thick (in two lifts) restoring surface to original line and grade. (see note 6)
4. Catch basins located in gravel streets or alleys shall have grate adjusted two inches (2") below gravel surface.
5. All pipes shall protrude 1'-2" into the basin and shall be neatly mortared all around (inside and outside). Exit pipe to manhole or storm main shall have 1'-6" minimum cover.
6. Catch Basins shall be set 0.10 foot lower than adjoining street grade.
7. All materials shall be manufactured in the U.S.A.
8. Catch Basins and Inlets shall be pre-cast concrete conforming to AASHTO M199 or ASTM C478, as shown.
9. Catch Basins and Inlets shall be backfilled to grade as per adjoining pipe trench backfill.
10. Catch Inlets may only be used as a 'bubbler', area drain, or where clearance over some particular obstacle is necessary and if approved by the City Engineer.
11. Frames and Grates shall be as per the Catch Basin & Catch Inlet Gates and/or the Combination Inlet Standard Drawing.
**NOTES:**

1. Curb and Gutter Pan design as per WSDOT Cement Concrete Curb And Gutter Pan.
2. The centerline of the drainage structure may differ from the centerline of the frame and grate.
3. The intent of this design is to facilitate the compaction of hot mix asphalt pavement adjacent to a drainage structure.
NOTES:

1. Curb and Gutter Pan design as per WSDOT Combination Inlet.

2. The dimensions of the Frame and Hood may vary slightly among different manufacturers. The Frame may have cast features intended to support a grate guard. Hood units shall mount outside of the Frame. The methods for fastening the Safety Bar / Debris Guard Rod to the Hood may vary. The Hood may include casting lugs. The top of the Hood may be cast with a pattern.

3. Attach the Hood to the frame with two 3/4" x 2" hex head bolts, nuts, and oversize washers. The washers shall have diameters adequate to assure full bearing across the slots.

4. When bolt-down grates are specified, provide two holes in the frame that are vertically aligned with the grate slots. Tap each hole to accept 5/8" x -11 NC x 2" hex head cap screws. Location of bolt-down holes varies among different manufacturers. See BOLT-DOWN DETAIL, WSDOT Standard Plan S-30.10.

5. This plan is intended to show the installation details of a manufactured product. It is not the intent of this plan to show the specific details necessary to fabricate the castings shown on this drawing.

6. The asymmetry of the Combination Inlet shall be considered when calculating the offset distance for the catch basin. See SECTION A.
1. Standard Frame and Grate as per WSDOT Rectangular Frame and Rectangular Grate.

2. A 2-1/6" riser is allowable.

3. All pipes shall protrude 1'-2" into the inlet and shall be neatly mortared all around (inside and outside). Exit pipe shall have 1.5 foot min. cover.

4. Inlet grates and catch basins in paved areas shall be set one tenth of a foot (0.10') lower than adjacent ground elevation.

5. All materials shall be manufactured in the U.S.A.

6. Type "A" grate required in all installations unless specifically allowed otherwise by the City Engineer.

7. Catch basins located in unpaved streets, alleys, or landscaped area shall have grate adjusted two inches (2") below gravel surface.

8. All basins, frames, and grates shall be rated for heavy traffic loading.

9. Rectangular solid metal cover may be used at junction points where grate is not necessary.
NOTE:
Vanes to be placed towards origin of water flow

Frame (Cast Iron)

Grate (Ductile Iron)

SECTION A-A

SECTION B-B

NOTES:

1. All pipes shall protrude 1'-2" into the inlet and shall be neatly mortared all around (inside and outside). Exit pipe shall have 1.5 foot min. cover.

2. Inlet grates and catch basins in paved areas shall be set one-tenth of a foot (0.10') lower than adjacent ground elevation.

3. All materials shall be manufactured in the U.S.A.

4. Catch basins located in unpaved streets, alleys, or landscaped areas shall have grate adjusted two inches (2") below gravel surface.

5. All basins, frames, and grates shall be rated for heavy traffic loading.
Sanitary Sewer House Connection

1. Pipe materials shall be as follows:
   b. From right-of-way to within two feet (2') of the house: SDR 35 PVC, (ASTM D-3034), with integral gasketed bell and spigot joints or Schedule 40 ABS plastic pipe with glued fittings.

   If the water service line and sanitary or storm drain service lines from the right-of-way to the house are installed in the same trench, the piping material shall be Schedule 40 ABS with glued fittings unless all three of the following requirements are met:
   a. The bottom of the water pipe, at all joints, shall be at least twelve inches (12") above the top of the sanitary or storm drain service line.
   b. The water pipe shall be placed on a solid shelf, excavated at one side of the common trench, with a minimum clear horizontal distance of at least twelve inches (12") from the sanitary or storm drain service line.
   c. Where the sanitary or storm drain line crosses the water service line, the top of the sanitary or the storm drain line is a minimum of twelve inches (12") below the water service line.

2. Trench bottom to be prepared, as required, for a firm bed.

3. Existing sewer mains shall be tapped by the City, at the Owner’s expense.

4. Sewer service laterals shall be connected to the new mains with manufactured wyes. Connection to existing mains require ROMAC “CB” saddles, or equivalent.

5. Owner to obtain the necessary permits from the Moscow Community Development Department and Public Works Department.

6. This work shall comply with the Uniform Plumbing Code (UPC).

7. Sewer services shall connect to the sanitary sewer main at a point above the centerline of the pipe.

8. Construction to be inspected by the City.

9. Sanitary service laterals (stubs) shall be air tested with the sanitary sewer main.

10. All backfill under sidewalks shall be crushed aggregate. (95% minimum compaction)

11. The service lateral (from main to house) shall be bedded in sand or 3/4("); crushed aggregate; from two inches (2") under the pipe to two inches (2") over the pipe.

12. SANITARY service laterals shall be green pipe from the main to the house, including stub outs and markers.

13. STORM service laterals shall be white pipe from the main to the house, including stub outs and markers.

14. Marking tape shall be three inch (3") wide commercially manufactured, and labeled “STORM DRAIN” for storm sewer and “SEWER” for sanitary sewer use.

15. Storm drain and sanitary sewer services (private) located within public street right-of-way or public utility easements shall have a 2.5’ minimum burial depth unless specifically allowed otherwise by the City Engineer.
1. Pipe and fittings, from the water main to the curb stop, will be supplied by the City.
2. Water main shall be capped by the City.
3. Trench bottom to be prepared, as required, for a firm bed. If the water service line and sanitary or storm drain service lines, from the right-of-way to the house, are installed in the same trench, then all three of the following requirements shall be met:
   a. The bottom of the water pipe, at all points, shall be at least twelve inches (12") above the top of the sanitary or storm drain service lines.
   b. The water pipe shall be placed on a solid shelf, excavated at one side of the common trench, with a minimum clear horizontal distance of at least twelve inches (12") from the sanitary or storm drain service line.
   c. Where the sanitary or storm drain line crosses the water service line, the top of the sanitary or storm drain line is a minimum of twelve inches (12") below the water service line.
4. The roadway subgrade shall be established prior to the installation of the water service laterals.
5. The water service lateral shall be bedded in sand or pea gravel from four inches (4") under the pipe to four inches (4") over the pipe.
6. After the installation of the water service lateral, a 4" PVC marker shall be placed at the capped end of the curb stop. The marker will be provided by the City. It shall be the responsibility of the Contractor to install, maintain, and protect the marker.
7. The capped curb stop shall be located eighteen inches (18") beyond the back of curb, if placed in the green strip, and one foot (1') minimum to two feet (2') maximum beyond the back of sidewalk, if sidewalk is installed next to the curb.
8. The capped curb stop shall be buried to a minimum depth of thirty six inches (36") from finished grade elevation.
9. The water service lateral and curb stop shall be installed perpendicular to the curb or the sidewalk.
10. When water meter is located in the green strip, a two inch (2") minimum diameter conduit shall be installed extending two feet (2') from the front of the sidewalk to two feet (2') behind the back of sidewalk.
11. Pipe installation shall be inspected by the City before the trench is backfilled.
12. Owner to obtain the necessary permits from the Moscow Community Development Department and Public Works Department.
13. The Owner's work shall comply with the Uniform Plumbing Code (UPC).
14. All backfill under sidewalks shall be 3/4" (-) crushed aggregate (95% min. compaction).
FIRE HYDRANT INSTALLATION

NOTES:
1. Thrust blocks shall be cast against undisturbed, firm earth.
2. Hydrants shall be set truly vertical.
3. Materials and installation shall also conform to the City’s Standard Specifications.
4. FOR LIVE TAP ONLY: After the Contractor exposes the main, the City will provide the labor and pipe tapping tools for this connection at a set fee to the Contractor. Contractor is responsible for trench backfill and street patch in accordance with City Standards.
5. Where sidewalk is adjacent to or within four feet (4') of the back of curb the hydrant shall be located one foot (1') behind the sidewalk (measured from the face of the hydrant cap to back of sidewalk). Where there is curb but no sidewalk the hydrant shall be located two feet (2') from the back of curb (measured to the face of the hydrant cap). Where there is no sidewalk or curb locate the hydrant as directed by the City Engineer.
6. All fire hydrants and the water lines to the fire hydrants become the City’s once installed. Twenty foot (20’) wide public utility easements centered on and around the fire hydrant and the waterline to the fire hydrant shall be granted to the City.
7. Furnish and install protective bollards if required by the City Engineer.
8. A three foot (3’) radius clear zone required all around fire hydrant, maximum slope of 10%.
9. Fire hydrant to be set to manufacturer elevation and bury specifications.

DEAD-END FIRE HYDRANT DETAILS

A. OPTION 1
B. OPTION 2

REVISIONS
DESCRIPTION
DATE

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CHECKED BY: K. L. LIN
DRAWING SCALE: NTS
DATE: 3-6-2014

CITY OF MOSCOW
ENGINEERING DEPARTMENT

DRAWING NUMBER: 30
THRU BLOCK SIZE

<table>
<thead>
<tr>
<th>Size of Pipe</th>
<th>Horiz Bends Sq. Feet of Bearing on Undisturbed Earth</th>
<th>Vertical Down Bends Cu.Yds.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tees &amp; Deadends</td>
<td>90°</td>
</tr>
<tr>
<td>4&quot;</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6&quot;</td>
<td>4</td>
<td>5-1/2</td>
</tr>
<tr>
<td>8&quot;</td>
<td>7</td>
<td>9-1/2</td>
</tr>
<tr>
<td>10&quot;</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>12&quot;</td>
<td>15-1/2</td>
<td>22</td>
</tr>
<tr>
<td>16&quot;</td>
<td>21</td>
<td>27</td>
</tr>
</tbody>
</table>

NOTES:
1. Thrust blocking for water mains shall be, as a minimum, the size indicated in the above Table.
2. Concrete shall be from a commercial source and be a minimum of 5-sack mix or ITD Class 22.
3. Concrete shall not be allowed in joints or in contact with pipes. Protect with plastic or paper sheeting prior to placing concrete.
4. Tie rods shall be 3/4" minimum diameter steel; coat tie rods with bituminous coating or approved equal. Hook (2" min.) all embedded ends.
5. The minimum distance between the fitting and excavated bank shall be three (3) pipe diameters.
6. Thrust blocks shall be cast against firm, undisturbed earth, as approved by the City Engineer.
7. Thrust blocks must be inspected by the City prior to backfill.
8. Thrust blocks for vertical up bends shall correspond to the requirements of horizontal bends.
NOTES:
1. Gate valves shall be located each side of the crossing.
2. The depth of burial and location must provide for creek bank cleaning excavations.
3. Subgrade at the bottom of the trench must be firm. If not, the trench must be over-excavated as directed by the City Engineer and backfilled with compacted 3/4" (-) crushed basalt.
4. Concrete encasement shall be 6-sack City Standard.
5. Tie rods shall be per City Standard for vertical thrust blocks.
6. Grip rings shall be used with all creek crossing mechanical joint fittings, including the gate valves.
7. Creek crossing permits required as applicable. Creek bottom and bank restoration as required by Army Corps of Engineers Permit.
8. Erosion and sediment control shall comply with City Code.
9. Minimum water main cover = 4.0 ft. throughout the crossing; as measured from finish grade to top of pipe.

TRANSVERSE SECTION

LONGITUDINAL SECTION

Approved Excavated Material
(95% Min. Comp. Req'd.)

Pit Run Rock
(3" min.-12" max. Dia.)

Width as approved by the
City Engineer

Compacted Crushed Basalt Backfill

Approved Creek Bedding

12" Min.

6" min. typ.

I.D +18"

60 ft.

Cast-in-Place Concrete Encasement

Existing Creek Bed

Precast Concrete Blocks

Mechanical Joint Fittings

Cast-in-Place Concrete Encasement

Water Line

Precast Concrete Blocks

Thrust Blocking-Twice the standard size

Standard Tie Rods (coated)

Class 51 Ductile Iron Pipe (Typical between valves)
NOTES:

1. Class 'A' Backfill shall be used in areas where there is to be re-vegetation and some trench settlement may be tolerated.

2. Class 'B' Backfill may not be constructed within the public right-of-way and has limited application - refer to the City's Standard Construction Specifications.

3. Contractor shall comply with the most current OSHA requirements for excavations.

4. Backfill shall comply with the requirements of the City's Standard Construction Specifications.
NOTES:

1. Class 'C' Backfill shall be used in areas where asphalt pavement, concrete curb, sidewalk, driveway, or gravel surfacing is not anticipated and where topsoil is not required.

2. Class 'D' Backfill is for areas where asphalt pavement, concrete, curb, sidewalk, or gravel surfacing is existing or anticipated.

3. Contractor shall comply with the most current OSHA requirements for excavations.

4. Backfill shall comply with the requirements of the City's Standard Construction Specifications.
1. Class 'E' Backfill may be substituted for Class 'D' Backfill within new streets only (not existing streets) if specifically allowed by the City Engineer.

2. Class 'F' Backfill shall be utilized in trenches within existing pavement.

3. Compaction for all trench backfill above the pipe zone shall be 95% minimum of AASHO T99. All native backfill material shall be placed in six inch (6") maximum lifts and wide sheepsfoot roller. Density testing frequency for native backfill will be in excess of that required for the Class 'D' crushed aggregate backfill.

4. Backfill around manholes and catch basins shall be all crushed aggregate; native material backfill will not be allowed.

5. Base aggregate depth and type to be the same as that required for the street section where this trench backfill is utilized.

6. All trenches excavated within existing paved streets shall be backfilled and surfaced the same day with a two inch (2") thick compacted cold mix asphalt patch (smooth) - to be replaced with the City's standard four inch (4") hot mix asphalt surfacing as soon as scheduling allows; unless specifically approved otherwise by the City Engineer.

7. The new asphalt patch shall match the existing pavement grade. Across the width of the trench, the new surface shall not exceed 0.25 inches out-of-level.

8. Existing pavement shall be cut full depth and in continuous, straight lines. Broken edges will not be allowed. Pavement cuts shall be 'tacked' immediately prior to installation of the hot mix patch.

9. Contractor shall comply with the most current OSHA requirements for excavations.

10. Backfill shall comply with the requirements of the City's Standard Construction Specifications.
Temporary Street or Alley Cut Repair

[Step One - Temp.]

Concrete Cut Repair
[Step Two - Permanent]

Asphalt Cut Repair (Street or Alley)
[Step Two - Permanent]

NOTES:

1. All excavations made within public right-of-way and easements require excavation permits from the City prior to commencing work. Street closure permits are required as applicable.

2. See City of Moscow Standard Construction Specifications for additional requirements regarding street and alley cut repair.

3. Prior to commencing, contractor shall furnish, install and maintain traffic control in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) and as allowed and approved by the City Engineer.

4. Street cuts within Idaho Highway Right-Of-Way require an Idaho Transportation Department (ITD) permit and are subject to ITD permit conditions (i.e. backfilling, surfacing requirements and traffic control).

5. The pavement removal required to perform the initial excavation shall be the width of the excavation opening and is not to include the removal of the pavement of the width required to construct the permanent patch. All pavement cuts shall be sawed in neat, straight lines, as allowed and approved by the City. The limits of the pavement cut for the permanent patch shall be as described in the Standard Construction Specifications.

6. Moscow Public Works Department shall be notified prior to beginning backfilling operations. Noncompliance with this provision shall require re-excavation and witnessed compaction.

7. ALL STREET AND ALLEY CUTS IN EXISTING ASPHALT PAVEMENT SHALL BE BACKFILLED AND TEMPORARILY PATCHED AT THE END OF EACH DAY - unless specifically allowed otherwise by the City Engineer. Properly applied steel plates may be utilized in lieu of this requirement if allowed by the City.

8. Temporary street surfacing (cold mix asphalt or flowable fill) shall be placed (and maintained) uniformly smooth across the width and length of the patch and shall match the existing, adjoining street grade. The finished surface of the temporary patch shall be level with, or no greater than 0.25 inches above the adjacent roadway surface.

9. Temporary street surface repair maintenance is the responsibility of the contractor.

10. The contractor making the cut shall be responsible for any future settling of the street cut for a period of one year from the date that temporary patch is completed.
NOTES:
1. Install ends of silt fence slightly up slope to prevent sediment from flowing past ends of fence. See Typical Silt Fence Layout.
2. Overlap vertical silt fence splices eight inches (8") minimum and construct in a manner to prevent silt laden runoff from passing between posts. Avoid placing splices at sumps and other low points.
3. Do not install silt fence in a manner that it will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.
4. If backup support is specified, attach fabric to backup support in a manner to hold fabric securely and reduce the potential of tearing.
5. During excavation, minimize ground disturbance around anchor trench and smooth surface to prevent concentrated flows. Compact backfill in trench in a manner that will prevent underflow.
NOTES:
1. The size and shape of the silt trap sack to fit the storm structure it will service (rectangular or round).
2. The silt trap sack shall have a built-in high-flow relief system (overflow bypass).
3. The silt trap sack assembly must allow removal without spilling the collected material.
4. Empty silt trap sack and dispose of sediment and debris before the sack is half-full.
5. Ensure the silt trap sack assembly does not spill or fall into the storm structure. If sediment is spilled into the storm structure, remove the spilled material by suction hose or other approved method.
6. Construction entrances should be inspected regularly for signs of thinning areas where mud begins to show through. Add gravel periodically to maintain the integrity of the pad.

DETAILS

Silt Trap Sack

Drainage grate

Retrieval system

Adjustable wire frame

Overflow bypass

Drainage grate

Silt trap sack in catch basin

Sediment and debris

Filtered Water

Drainage Grate

Grate Frame

Trim Fabric

Overflow bypass ports

Silt Trap Sack beneath Drainage grate.

12' Min.

20' for Residential
50' for Commercial

Rock Construction Entrance
8" thick, 3" (-) Gravel
(geotextile as required)

Existing curb and gutter.