POLICY STATEMENT
CITY OF POST FALLS
VERTICAL CONTROL

prepared by: RSP
date: 
modified: listed at end

Goal: To provide a common vertical control network to efficiently manage existing and future public infrastructure within the City of Post Falls.

Policy: All projects shall be designed on the horizontal and vertical datum’s identified by the City of Post Falls. The City of Post Falls does not maintain or verify the coordinates or elevations of any of the control points referenced within this policy. Information provided within this policy is based upon the best available data that the City of Post Falls has on record. It shall be incumbent upon the design professional to verify the validity of any control point in a manner consistent with the accepted standard of professional care and the desired accuracy for the type of work being performed. NAVD 1988 Datum. Horizontal Control shall be on the Idaho State Plane Coordinate System NAD 1983 – 1992 adjustment.

Vertical Control Network: The City’s vertical control network consists of three (3) types of benchmarks: Base Control, City Benchmarks and Project Benchmarks.

Horizontal Control Network: The City horizontal control network consists of the existing Section corners recognized and on file within the records of Kootenai County, Idaho (Base Control – Horizontal), Benchmarks installed with constructed City and private projects (Project Benchmarks – Horizontal) and property corners when such data is collected

Vertical Control

Vertical Control Network: Vertical control shall be on the NAVD 1988 Datum.

The City’s vertical control network consists of three (3) types of benchmarks: Base Control, City Benchmarks and Project Benchmarks. Historically the City of Post Falls has utilized the NGVD 1929 Datum for vertical control with the installation of the original sewer system in the mid 1980’s. A majority of projects between the 1980’s and 2010 were completed using the referenced NGVD 1929 datum; however, some projects were designed on NAVD 1988 Datum with the 1992 adjustment and others on assumed datum’s. Historical elevation data from as-built plans should be used with caution as not all plans indicate their elevation datum. As of 2015, the City of Post Falls is in the process of converting all electronic data for the water reclamation system to the datum of NAVD 1988 – 1992 adjustment.

Base Control - Vertical: When a Base Control Point is located within 0.50 miles of a project, it may be utilized as part of a project in-lieu of a City Benchmark or
Project Benchmark. All Base Control shall be tied to or be a part of the National System, as maintained by the USGS (United States Geological Survey).

New Base Control points shall be located at roadway intersections, preferably with roadways classified as collectors or arterials, outside of the roadway prism and within the concrete sidewalk or asphalt trail.

New Base Control points when established on behalf of the City, non USGS points, shall consist of an aluminum or brass cap on a 1” x 30” galvanized pipe embedded within a concrete foundation. Concrete foundations for Base Control points shall be 8-inches in diameter and a minimum of 48-inches long. A standard monument casing (SD 2020) shall be provided and the cap shall be stamped “City of Post Falls” “Vertical Control”. Elevations will meet 2nd order accuracy standards, as a minimum, when set.

City Benchmark - Vertical: City Benchmarks will be established in conjunction with local development. It is desired to obtain a network of City Benchmarks, at buildout, with coverage of one-mile coverage per benchmark; or no location within the City greater than 0.5 miles from a City Benchmark.

When a City Benchmark or Base Control point is not within 0.50 miles of a proposed project, or when deemed necessary by the City Engineer, a project shall provide a new City Benchmark as part of the project. New City Benchmarks shall meet or exceed third order accuracy standards when set.

New City Benchmarks shall be located at roadway intersections, preferably with roadways classified as collectors or arterials, outside of the roadway prism and within the concrete sidewalk or asphalt trail.

All new City Benchmarks shall consist of an aluminum or brass cap on a 1” x 30” galvanized pipe and located within a standard monument casing (SD 2020). The cap for the City Benchmark shall be stamped “City of Post Falls” “Vertical Control”.

Where traffic signalization is being installed as part of a project, provisions shall be made at one (1) signal foundation to include a City Benchmark as part of the signal foundation.

Project Benchmark: Every project shall provide at least one (1) Project Benchmark. Project Benchmarks may be an established City Benchmark or Base Control point located within 0.50 miles of the project. When an established City Benchmark or Base Control point is not located within 0.50 miles of the project, a new Project Benchmark shall be established.

An existing project benchmark from another project may be utilized in-lieu of a City Benchmark or Base Control point, if an existing project benchmark exists
within 0.25 miles of a proposed project and the benchmark is considered to be reliable and in good condition.

New Project Benchmarks shall be tied to at least one (1) Base Control – Vertical or City Benchmark if located within 0.50 miles of the new project benchmark. Alternately, New Project Benchmarks may be tied to at least two (2) existing Project Benchmarks located within 0.25 miles of the New Project Benchmark. New Project Benchmarks shall meet or exceed third order accuracy standards when set.

RECOGNIZED
BASE CONTROL - VERTICAL

<table>
<thead>
<tr>
<th>Designation</th>
<th>NGS Data Sheet</th>
<th>NGVD 29 (archive)</th>
<th>NAVD 88</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 3405</td>
<td>YES</td>
<td>2127.12</td>
<td>2130.94</td>
<td>Ross Point Baptist Camp, near River at the end or Ross Point Camp Lane.</td>
</tr>
<tr>
<td>M 352</td>
<td>YES</td>
<td>2153.07</td>
<td>2156.88</td>
<td>At Post Falls Highway District Shop, on Seltice Way.</td>
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CITY BENCHMARKS – VERTICAL
(Calculated values are based on a City average adjustment factor of +3.82 feet from NGVD 29 to NAVD 88)

<table>
<thead>
<tr>
<th>Designation / Name</th>
<th>NGVD 29 (archive)</th>
<th>NAVD 88</th>
<th>Year Established / By</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC1 / IDA 90-64</td>
<td>2135.59</td>
<td>2139.41</td>
<td>(calculated)</td>
<td>T 50 N  R 05 W Sec. 06 NE ½</td>
</tr>
<tr>
<td>VC2 / Ferry &amp; Bremington</td>
<td>2199.53</td>
<td>2203.35</td>
<td>2004 / Lake City Engineering</td>
<td>T 51 N  R 05 W Sec. 36 SW ¼</td>
</tr>
<tr>
<td>VC3 / Mullan &amp; Chase</td>
<td>2178.77</td>
<td>2182.59</td>
<td>(calculated)</td>
<td>T 51 N  R 05 W Sec. 33 SE Corner</td>
</tr>
<tr>
<td>Designation / Name</td>
<td>NGVD 29 (archive)</td>
<td>NAVD 88</td>
<td>Year Established / By</td>
<td>Location</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------</td>
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<td>-----------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>VC4 / Falls Park</td>
<td>2131.24</td>
<td>2135.06</td>
<td>2003 / JR Bonnett Engineering</td>
<td>T 50 N R 05 W Sec. 03 NW ¼</td>
</tr>
<tr>
<td>VC5 / Bay St. Apts.</td>
<td>2174.46</td>
<td>21748.28</td>
<td>2004 / Tate Engineering</td>
<td>T 50 N R 05 W Sec. 02 Cent. Sec.</td>
</tr>
<tr>
<td>VC6 / 1st Ave &amp; Bay</td>
<td>2178.51</td>
<td>2182.33</td>
<td>2004 / Tate Engineering</td>
<td>T 50 N R 05 W Sec. 02 SW ¼</td>
</tr>
<tr>
<td>VC7 / Bogie &amp; Dandelion</td>
<td>2227.95</td>
<td>2231.76</td>
<td>2005 / I.N.C.</td>
<td>T 51 N R 05 W Sec. 26 SW ¼</td>
</tr>
</tbody>
</table>

**PROJECT BENCHMARKS – VERTICAL**

(Calculated values are based on a City average adjustment factor of +3.82 feet from NGVD 29 to NAVD 88)

<table>
<thead>
<tr>
<th>Designation / Name</th>
<th>NGVD 29 (archive)</th>
<th>NAVD 88</th>
<th>Year Established / By</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>OBSIDIAN</td>
<td></td>
<td>2206.95</td>
<td>2014 / WCE</td>
<td>T 51 N R 05 W Sec. 36 SE 1/4</td>
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<td>RESERVE</td>
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<td>2219.23</td>
<td>2014 / TRISTATE</td>
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<tr>
<td>SE Corner Sec. 33</td>
<td>2178.77</td>
<td>2182.60 (calculated)</td>
<td></td>
<td>T 51 N R 05 W Sec 33 SE 1/4</td>
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<tr>
<td>16th / GREENSFERRY</td>
<td>2209.18</td>
<td>2213.00 (calculated)</td>
<td></td>
<td>T 51 N R 05 W Sec 36 SW / NW</td>
</tr>
<tr>
<td>16th / SYRINGA</td>
<td>2194.29</td>
<td>2198.11 (calculated)</td>
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<td>T 51 N R 05 W Sec 35 Center</td>
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<tr>
<td>Poleline / SH41</td>
<td>2211.39</td>
<td>2215.21 (calculated)</td>
<td>T 51 N R 05 W Sec 25 SE corner</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
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<td></td>
</tr>
<tr>
<td>Poleline / Cecil</td>
<td>2224.48</td>
<td>2228.30 (calculated)</td>
<td>T 51 N R 05 W Sec 25 SE corner</td>
<td></td>
</tr>
<tr>
<td>Poleline / Greensferry</td>
<td>2209.75</td>
<td>2213.57 (calculated)</td>
<td>T 51 N R 05 W Sec 35</td>
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<tr>
<td>Idaho / Teton</td>
<td>2220.50</td>
<td>2224.32</td>
<td>T 51 N R 05 W Sec 35</td>
<td></td>
</tr>
</tbody>
</table>
City Benchmark: VC1

Location:
Township: 50 N
Range: 05 W
Section: 06
Quarter: NE
N. LAT: 
W. LONG: 
(Coordinates are for reference only)

Description: Located along the South right-of-way line for Seltice Way. Approximately 0.25 miles West of Pleasantview Rd. Benchmark is a 3-1/4” Brass cap stamped IDA 90-64

Elevation: 
NAVD 1988 2139.41 (calculated)
NGVD 1929 2135.59 (archive)

Established By: 

City Benchmark: VC2

Location:
Township: 51 N
Range: 05 W
Section: 36
Quarter: SW
N. LAT: 
W. LONG: 
(Coordinates are for reference only)

Description: Fire Hydrant, located in the NW Corner of the intersection of Ferry Landing and Bremington Dr. Benchmark is the NW bolt on the top flange.

Elevation: 
NAVD 1988 2203.35
NGVD 1929 2199.53 (archive)

Established By: Lake City Engineering / 2004
City Benchmark: VC3

Location: Township: 51 N
Range: 05 W
Section: 33
Quarter: SE
N. LAT: 
W. LONG:
(Coordinates are for reference only)

Description: Located in the intersection of Mullan Ave. and Chase Rd. Benchmark is a ¾” Bolt being the SE Corner of Said Section 33.

Elevation: NAVD 1988 2182.59 (calculated)
NGVD 1929 2178.77 (archive)

Established By:

City Benchmark: VC4

Location: Township: 50 N
Range: 05 W
Section: 03
Quarter: NW
N. LAT: 
W. LONG:
(Coordinates are for reference only)

Description: Located in Falls Park on an old concrete foundation. Benchmark is a ¾” Bolt being in the SW corner of said foundation.

Elevation: NAVD 1988 2135.06 (calculated)
NGVD 1929 2131.24 (archive)

Established By: JR Bonette Engr. / 2003
City Benchmark: VC5

Location:
- Township: 50 N
- Range: 05 W
- Section: 02
- Quarter:
- N. LAT: 
- W. LONG:
  (Coordinates are for reference only)

Description: Located in the center of said section 02, along the East side of Bay St. between 3rd Ave. and the B.N.R.R. spur line.

Elevation:
- NAVD 1988 2178.28 (calculated)
- NGVD 1929 2174.46 (archive)

Set By: Tate Engr. / 2005

City Benchmark: VC6

Location:
- Township: 50 N
- Range: 05 W
- Section: 02
- Quarter: SW
- N. LAT: 
- W. LONG:
  (Coordinates are for reference only)

Description: Fire Hydrant, located in the NE Corner of the intersection of 1st Ave. and Bay St. Benchmark is the SW bolt on the top flange, with a chiseled “X”.

Elevation:
- NAVD 1988 2182.33 (calculated)
- NGVD 1929 2178.51 (archive)

Established By: Tate Engr. / 2005
City Benchmark: VC7

Location: Township: 51 N
Range: 05 W
Section: 26
Quarter: SW
N. LAT:
W. LONG:
(Coordinates are for reference only)

Description: Located in the NW corner of the intersection of Bogie Dr. and Dandelion St., in the pedestrian ramp. Benchmark is a chiseled “X” in the concrete.

Elevation: NAVD 1988 2231.76
NGVD 1929 2227.95 (archive)

Established By: I.N.C. / 2005

City Benchmark: (future)

Location: Township:
Range:
Section:
Quarter:
N. LAT:
W. LONG:
(Coordinates are for reference only)

Description:

Elevation: NAVD 1988

Established By:
Project Benchmark: Obsidian

Location:
Township: T 51 N
Range: R 05 W
Section: 36
Quarter: SE
N. LAT:  
W. LONG:
(Coordinates are for reference only)

Description: Southeast lot corner of Lot 7 Block 3 in the plat of Obsidian Acres. Being a 5/8” rebar

Elevation: NAVD 1988 2206.95

Established By: Whipple Consulting Engineers - 2014

Project Benchmark: Reserve

Location:
Township: T 51 N
Range: R 05 W
Section: 26
Quarter:  
N. LAT:  
W. LONG:
(Coordinates are for reference only)

Description: 5/8” Rebar with plastic cap (6602). Approximately 100 feet northwest of the Bogie Ave. / Greensferry Rd. intersection.

Elevation: NAVD 1988 2219.23

Established By: Tri-State Consultants - 2014
Project Benchmark:

Location: Township: T 51 N
Range: R 05 W
Section: 26
Quarter: SE
N. LAT: 
W. LONG: 
Coordinates are for reference only

Description: Bolt located at the Section Corner for the southeast quarter of Section 33.

Elevation: NAVD 1988 2182.60 (calculated)
NGVD 1929 2178.77 (archive)

Established By:

Project Benchmark: 16th / Greensferry

Location: Township: T 51 N
Range: R 05 W
Section: 36
Quarter: W corner
N. LAT: 
W. LONG: 
Coordinates are for reference only

Description: West corner of section 36. ½" rod in monument case.

Elevation: NAVD 1988 2213.00 (calculated)
NGVD 1929 2209.18 (archive)

Established By:
Project Benchmark: 16th / Syringa

Location:
- Township: T 51 N
- Range: R 05 W
- Section: 35
- Quarter: center of sec
- N. LAT:
- W. LONG:

Coordinates are for reference only.

Description: Section corner for the center of Section 35. Intersection of 16th Ave. / Syringa St.

Elevation:
- NAVD 1988 2198.11 (calculated)
- NGVD 1929 2194.29 (archive)

Established By:

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Project Benchmark: Poleline / SH41

Location:
- Township: T 51 N
- Range: R 05 W
- Section: 25
- Quarter: SE 1/4
- N. LAT:
- W. LONG:

Coordinates are for reference only.

Description: 2" aluminum cap being the southeast corner of section 25.

Elevation:
- NAVD 1988 2215.21 (calculated)
- NGVD 1929 2211.39 (archive)

Established By:
Project Benchmark: Poleline / Cecil

Location:
- Township: T 51 N
- Range: R 05 W
- Section: 25
- Quarter: SE
- N. LAT: 
- W. LONG:
  (Coordinates are for reference only)

Description: 2" Aluminum cap being the south corner of section 25

Elevation:
- NAVD 1988: 2228.30 (calculated)
- NGVD 1929: 2224.48 (archive)

Established By:

Project Benchmark: Poleline / Greensferry

Location:
- Township: T 51 N
- Range: R 05 W
- Section: 26
- Quarter: SE 1/4
- N. LAT: 
- W. LONG:
  (Coordinates are for reference only)

Description: rebar in the southwest corner of the intersection

Elevation:
- NAVD 1988: 2213.57 (calculated)
- NGVD 1929: 2209.75 (archive)

Established By: JUB Engineers 2012
Project Benchmark: Teton / Idaho

Location: Township: T 51 N
Range: R 05 W
Section: 35
Quarter:
N. LAT:
W. LONG:
(Coordinates are for reference only)

Description: City Fire Hydrant #836. Southwest bolt with "X". Approximately 175 feet east of the intersection of Idaho / Teton

Elevation: NAVD 1988 2224.32
NGVD 1929 2220.50 (archive)

Established By:

Project Benchmark: (future)

Location: Township: T XX N
Range: R 0X
Section:
Quarter:
N. LAT:
W. LONG:
(Coordinates are for reference only)

Description:

Elevation: NAVD 1988 XXXX.XX

Established By: