Nibley City Design Standards

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Date

These Design Standards, Construction Standards and Specifications shall govern the design and construction of all public infrastructure in Nibley City. These standards may be periodically updated and changed as deemed necessary. See www.nibleycity.com for the most current and up to date edition.

Table of Contents

Section 1 – General Definitions

1.1 General Definitions.

1. **Alley:** A public way used to provide secondary vehicular access to properties that also abut upon a street.
2. **Arterial Route or Street:** A general term including expressways and major arterial streets and interstate, state or county highways having regional continuity.
3. **Benchmark:** A mark affixed to a permanent or semi-permanent object along a line of survey to furnish a datum level. Nibley City base is 4546.58 feet (Nibley City GPS Monument).
4. **Block:** A piece or parcel of land or groups of lots entirely surrounded by public streets, streams, railroads or parks, or a combination hereof, other than alleys; or land which is designated or shown as a block on any recorded subdivision plat or official map or plat adopted by the council.
5. **Certified Percolation Test:** A saturated soil percolation test completed in accordance with Utah Administrative Rule, R317-4-5 with the exception that the test shall extend 2.0 feet below the bottom of the proposed invert of the pond. These tests shall be done in accordance with the certification requirements by a "qualified individual" as defined in R317-11.
6. **City Engineer:** The individual or firm appointed by the Council to be the City Engineer of the city.
7. **General Plan and Associated Master Plans:** A comprehensive plan, or parts thereof, providing for the future growth and improvement of the city and for the general location and coordination of streets and highways, schools and recreation areas, public building sites and other physical development, which shall have been duly adopted by the City Council.
8. **Planning Commission:** The Nibley City Planning Commission sometimes referred to hereinafter as the Commission.
9. **Collector Street:** A street that provides for traffic movement within neighborhoods of the city and between major streets and local streets and for direct access to abutting property.
10. **Conditional Approval:** An affirmative action by the City Planning Commission or City Council, indicating that approval will be forthcoming upon satisfaction of certain specified stipulations.
11. **Corner Lot:** A lot abutting on two (2) or more intersecting streets where the interior angle or intersection does not exceed one hundred thirty-five degrees (135 degrees). A corner lot shall be considered to be in that block in which the lot fronts.
12. **Council:** The governing body of the City.
13. **Curb or Curb and Gutter:** Sections of concrete that define and help to maintain the edges of asphalt road surfaces. The concrete sections may be flat or of a high back style. See street cross-section drawings and details located in section 3, standard drawing list.
14. **Development Master Plan (DMP):** A preliminary master plan for the development of a large, unusual or complicated land area, the platting of which is expected in

progressive stages. A DMP may be designed by the subdivider, planner and engineer and shall be subject to approval of the Commission.

15. **Detention:** The detaining or holding of water on site and releasing the water from the site into a pipeline, channel, or other water bodies at a slower rate than would otherwise occur.
16. **Detention Basin:** A pond or basin, either above ground or below, that catches the storm water runoff from a contributing area and uses the detention process.
17. **DEQ:** Utah Department of Environmental Quality
18. **DWQ:** Utah Division of Water Quality, a division of the DEQ.
19. **Easement:** A grant by the owner of the use of a parcel of land by the public, a corporation, or persons for specified use and purposes so designated on a plat.
20. **EM 1110-2-1601:** Engineering and Design – Hydraulic Design of Flood Control Channels, CECW-EH-D, US Army Corp of Engineers, June 1994
21. **Engineer:** The duly appointed and acting City Engineer.
22. **Engineering Plans:** Plans, profiles, cross-sections and other required details for the construction of public improvements, prepared by a registered engineer in accordance with the approved preliminary plat and in compliance with existing standards of design and construction by the Council.
23. **EPA:** United States Environmental Protection Agency
24. **Final Approval:** The unconditional approval of the final plat by the Council, as evidenced by certification on the plat by the Mayor of the city and all other required city officials as agents.
25. **Final Plat:** A map of all or part of a subdivision providing substantial conformance to an approved preliminary plat, prepared by a registered professional engineer or a registered land surveyor in accordance with the city's subdivision ordinance.
26. **HEC-11:** Design of Rip-Rap Revetment, Hydraulic Engineering Circular No. 11, US Dept. of Transportation, Federal Highway Administration. (FHWA-IP-89-016, March 1989)
27. **HEC-22:** Urban Drainage Design Manual, Hydraulic Engineering Circular No. 22, US Dept. of Transportation, Federal Highway Administration. (FHWA-SA-96-078, August 2001).
28. **HISTORICAL RUNOFF FLOW:** The runoff that has historically flowed off of a given piece of land in the specified storm frequency and duration prior to development, either in the land's pre-development agricultural or native condition.
29. **Improved Lot:** A lot that has all the improvements required by the subdivision ordinances.
30. **Interior Lot:** A lot having but one (1) side abutting on a street.
31. **Irrigation Facilities:** Includes canals, laterals, ditches, conduits, gates, pumps, and allied equipment necessary for the supply, delivery and drainage of irrigation water.
32. **Key Lot:** An interior lot, one (1) side of which is contiguous to the rear line of a corner lot.
33. **Land Exception:** Any parcel of land that is within the boundaries of the sub- division that is not owned by the subdivider.
34. **Local Street:** A street that provides for direct access to residential, commercial, industrial or other abutting land and for local traffic movements and connects to collector and/or major streets.

35. **Lot:** A piece or parcel of land separated from other pieces or parcels by description, as in a subdivision or on a record survey map, or by metes and bounds, for purposes of sale, lease or separate use.
36. **Lot width:** The width of a lot that shall be:
    a. If the side property lines are parallel, the shortest distance between these sidelines
    b. If the side property lines are not parallel, the width of the lot shall be the length of a line at right angles to the axis of the lot a distance equal to the front setback required for the district in which the lot is located. The axis of the lot shall be a line joining the mid-points of the front and rear property lines.
37. **Major Street:** A street, existing or proposed, which serves or is intended to serve as a major traffic way and which is designated on the master street plan as a controlled-access highway, major street, parkway or by equivalent terms suitable to identify street comprising the basic structure of the street plan.
38. **Marginal Access Street:** A minor street parallel and adjacent to an arterial route that provides access to abutting property and intercepts local streets and controls access to an arterial route.
39. **Minor Street:** A street, existing or proposed, which is supplementary to a collector or major street and of limited continuity, which serves or is intended to serve the local needs of a neighborhood.
40. **Mobile Home:** A vehicle or structure constructed with wheels capable of transportation or use on public streets or highways and which are designed and are or may be generally and commonly used for occupancy by persons for residential purposes in either temporary or permanent locations and which may be drawn over the public highways by a motor vehicle. The term "mobile home" includes all types of mobile homes or house trailers, including but not limited to "double-wide" or other oversized structures, and shall include appurtenant structures thereto; but shall not include any vehicle capable of self- propulsion such as recreation vehicles or campers.
41. **Mobile Home Subdivision:** A subdivision designed and intended for residential use where residence is primarily to be in mobile homes.
42. **Neighborhood Plan:** A plan to guide the platting of remaining vacant parcels in a partially built up neighborhood, so as to make reasonable use of all land, correlated street patterns, and achieve the best possible land use relationships.
43. **NOI:** A notice of intent to construct permit obtained from the DWQ which is required for all construction on areas greater than or equal to 1.0 acres.
44. **NOT:** A notice of termination to construction submitted to the DWQ upon the stabilization of 70 percent of the project site that required a NOI.
45. **Official Map:** Any map adopted by the Council under the provisions of Title 17, Chapter 27, Section 7 Utah Code Annotated, 1953 as amended.
46. **Owner:** The person or persons holding title by deed to land, or holding title as vendees under land contract, or holding any other title or record.
47. **Parcel of Land:** Contiguous quantity of land, in the possession of, or owned by, or recorded as the property of, the same claimant or person.
48. **Pedestrian Path/Trail:** A concrete, asphalt, or gravel path designated for a variety of non-motorized uses.

49. **Pedestrian Way:** A public walk dedicated through a block from street to street and/or providing access to a school, park, recreation area or shopping center.
50. **Planned Unit Development:** A use or combination of uses planned for a tract of land to be developed as a unit.
51. **Park/Planting Strip:** Planting strips are the area between the curb and the sidewalk along conventional streets. See street cross-section drawings and details located in section 3, standard drawing list.
52. **Plat:** A map of a subdivision prepared in accordance with standards of the subdivision ordinance.
53. **Preliminary Plat:** A preliminary map, including supporting data, indicating a proposed subdivision development, prepared in accordance with this ordinance and Utah Code.
54. **PWD:** Public Works Department
55. **Recorded Plat:** A final plat bearing all of the certificates of approval required in this title and duly recorded in the county recorder's office.
56. **Retention:** The retaining or keeping of water on site and preventing its release from the site by any method other than infiltration or evaporation.
57. **Retention Basin:** A pond that is built to capture and retain the design storm on site and dispose of it through infiltration.
58. **Return Frequency:** The frequency or likelihood of a storm of occurring. A 100-year storm has a one (1) percent chance of occurring in any given year while a 10-year storm has a ten (10) percent chance of occurring in any given year. This should never be interpreted as happening only once every 100 or 10 years for the two given examples.
59. **Sidewalk:** A concrete surface along side the planting strip or swales of a street or roadway designated for pedestrian traffic. See street cross-section drawings and details located in section 3, standard drawing list.
60. **Spread Width:** The width of water flow as measured from the flow line of the gutter into the asphalt.
61. **Stream Alteration Permit:** A permit that is obtained through the Utah Division of Water Rights and is necessary anytime construction impacts a stream, wetland, riparian zone, or other water body defined as the waters of the U.S.
62. **Street:** Any street, avenue, road, lane, parkway, place, viaduct, easement for access or other ways which is an existing state, county, or municipal roadway; or a street or way shown in a plat heretofore approved pursuant to law or approved by official action; or a street or way in a plat duly filed and recorded in the county recorder's office. A "street" includes the land between the right-of-way lines, whether improved or unimproved and may comprise pavement, shoulder, curbs, gutters, sidewalks, parking areas and lawns.
63. **Storm Event:** The event and hyetograph that define the design volume of precipitation, duration of the storm, intensity of the storm, and the pattern in which the precipitation falls.
64. **Subdivider:** The individual, firm, corporation, partnership, association, syndication, trust or other legal entity that executes the application and initiates proceedings for the subdivision of land in accordance with the provisions of this title.

65. **Subdivision:** The division of a tract, lot, or parcel of land owned by a person or legal entity as an undivided tract or parcel into two or more lots or other divisions of land for the purpose of the sale, lease, transfer, use building development, or redevelopment thereof, whether immediate or future. This definition shall not apply to the sale, lease, transfer, use, building development, or re-development of any existing lot that is shown as one of the lots of a subdivision in an approved final plat that has previously been recorded in the offices of the city and county recorders. The word "subdivide" and any derivative thereof shall have reference to the term "subdivision".
66. **Swale**: The area between the curb and the sidewalk or pedestrian path as used in low impact roadways (LIR).
67. **SWPPP:** A storm water pollution prevention plan which is required on any construction site.
68. **Through lot:** A lot abutting two (2) parallel or approximately parallel streets.
69. **Underground Injection/Retention System:** A system designed to be fully underground and to dispose of water, entirely or in part, through infiltration. These require a special permit from the DWQ known as a Class 5 injection well permit.
70. **Underground Injection Well:** A facility, such as a pressured injection well, free draining injection well, sump, or other buried underground facility that infiltrates or injects surface water into the subsurface or groundwater system to eliminate surface runoff.
71. **Useable Lot Area:** That portion of a lot which is usable for or adaptable to the normal uses of residential property, excluding any areas which may be covered by water, excessively steep, or included in certain types of easements.
72. **Utilities:** Installations or facilities, underground or overhead, furnishing for the use of the public electricity, culinary water, gas, communications, water drainage, sewage disposal or flood control, owned and operated by any person, firm, corporation, municipal department or board duly authorized by state or municipal regulations. Utility or utilities as used herein may also refer to such persons, firms, corporations, departments, or boards as applicable herein.
73. **Wetlands Mitigation, or 404, Permit:** A permit obtained through the US Army Corp of Engineers which allows the wetlands to be impacted and provides for required mitigation before the project can be approved.

Section 2 - Development Standards

2.1 Engineering Reasonability

A. The City's Design Standards do not relieve the developer's engineer from being responsible for examining and understanding local project conditions, confirming the correlation of all design standards with the techniques of construction, coordination of the standards with that of all other industry stndards, and for the complete and satisfactory desing ot the project.

2.2 Issue's not covered by these standards

A. All work not specifically described in these design standards and technical specifications shall conform to the APWA Manual of Standard Specifications as published by the Utah Chapter of the American Public Works Association. The latest edition at the time o the work shall be used.

2.3 Impact on Existing Infrastructure

A. The impact on existing infrastructure, will be reviewed by the City. The developer may be required to add additional off-site improvements in order to provide adequate service to the development.

2.4 Compliance with City Subdivision Ordinance

A. Included herein by reference is the current Nibley City Subdivision Ordinance as approved by the City Council. If a discrepancy exists between these design standards and the subdivision ordinance, the ordinance shall govern.

2.5 Compliance with City General Plan and Master Plans

A. All Subdivisions shall comply with the City's most recent General Plan and associated Master Plans. The following items shall be addressed in general terms in a written report to the City on all developments to assure compliance.

B. The effect of the proposed development on the lands on which the development proposed to be located.

C. The relationship of the development to, and the effect of the development on:

1. Gateways to the city, trails and parks
2. Geologic hazards
3. Loss of wetlands
4. Natural floodplain, natural drainage systems and canals
5. Soil Erosion
6. Steep slopes
7. Unstable soils
8. Utility corridors
9. Water conservation

10. Water recharge areas
11. Wildlife Corridors

D. The effect of the proposed development on other adjacent, surrounding or nearby lands;
E. The effect of the proposed development on the future development of Nibley City;
F. Identification of all non-developable land within or adjacent to the area proposed for development.

2.6 Required Studies, reports and plans: The following studies, reports, and plans may be required on all developments, if in the opinion of the City Engineer, Public Works Director and/or City Council; they are determined to be necessary for the development of the project:

A. Geotechnical Report. A geotechnical report shall be prepared by a qualified engineer, and must contain at least the following information:
   1. A slope Analysis with a contour map
   2. Classification of slopes on the site
      a. Class 1: Areas of Non-Steep slopes - less than 30%
      b. Class 2: Areas of steep slopes - 30% or greater

   **Note: Percentages shall be calculated as prescribed by the definition for "Steep Slopes". If the subdivision contains any areas of steep slopes, the person or firm preparing the soils report shall identify the class 2 areas, and should designate those areas as "Non-Buildable Areas" on the subdivision plat. If in the opinion of the qualified engineer any class 2 areas should not be designated as non-buildable areas, the report should include reasons why an exception should be made. The City Engineer will have final determination of such areas. **

   3. Soils Engineering properties including, but not limited to:
      a. Bearing capacity
      b. Settlement potential
      c. Slope failure potential
      d. Shrink/swell potential of the site.

   Note: Testing should be completed adequately to determine if the existing soil on the site is suitable for the development. If there any indications that the soil is not suitable for the type of development, the report shall include mitigation strategies for public infrastructure. In such a case, the Final Plat shall also put owners on notice that building on these soils will require on-site investigation and lot-specific soils hazard mitigation plans.
4. An estimate of the normal highest elevation of the seasonal high-water table based on piezometer-tube testing and the locations of swamps, seeps or springs with the reasons for the occurrence of these underground water sources.
5. Percolation test performed by a certified testing agency.
6. A written statement of the person or firm preparing the geotechnical report identifying any other means proposed to minimize hazards to life, property, and adverse effects on

the safety, use or stability of public rights of way or drainage channels, and adverse impacts on the natural environment.

B. Geologic Hazard Report. A geologic hazard report shall be prepared by a person or firm qualified by training and experience to have expert knowledge of geologic hazards and must identify the author and date of the data upon which the report is based. The report must include an analysis of the geologic conditions, conclusions regarding the effect of the geologic conditions on the development and recommendations covering the adequacy of sites to be developed within a recognized geologic hazard. It shall also include a written statement identifying the means proposed to minimize hazards to life or property, adverse effects on the safety, use, or impacts on the natural environment.

C. Water Conservation Plan. A water conservation plan shall contain an assessment of the potential outside culinary water use for the subdivision and recommendations for lot size, landscaping, and irrigation practices to minimize culinary water use. For land with irrigation water rights the conservation plan should contain an assessment and recommendations for development of a secondary water system.

D. Traffic Report. A Traffic report shall describe the traffic impacts that will be created by the project including but not limited to peak period trip generations rates, impacts on turning movements and road segment level of service and proposals to mitigate the impacts.

E. Fire Protection Plan. Fire Protection plan shall be required by any subdivision that in the opinion of the City Fire Authority may be susceptible to wild fire. The plan shall include as a minimum the plans for any needed firebreaks and planned fire-wise construction and/or landscaping for the subdivision.

2.7 Non Buildable Area's. Non-buildable areas shall be designated on the preliminary and final plat by shading and shall have a designation of "Non-Buildable" shown on the plat. Final determination will be made by Public Works Director.

A. The areas with the following characteristics will be considered for designation as Non-Buildable:
   1. Areas of Steep Slopes as defined in Nibley City Design Standards Definitions
   2. Areas with soils found to be unsuitable for development by a Geotechnical Report
   3. Natural drainage corridors, canal channels and wetlands
   4. Any areas identified by any required studies as potentially hazardous to life, limb or property
   5. Fire Breaks

B. No homes, buildings, or other structures, streets or alleys shall be erected or built on areas designated and platted as "Non-Buildable".

2.8 Utilities. To the maximum extent practical, all utilities shall be placed within existing road rights of way and front yard public utility easements. All water, sewer, electrical, telephone, natural gas, cable television, communications and other utilities shall be placed underground except for transformers, pedestals, and other appurtenances which are normally located above ground.

2.9 Easements. In the event that all utilities are not able to be placed within existing road rights of way or easements, a min 20 foot wide utility easement shall be required (10 feet on each side of the utility), and recorded at the Cache County Recorders Office.

Section 3 – Drawing Requirements – Plat & Construction

3.1 Final Plat Signature Boxes.

A. Surveyor's Certificate: the form of the professional surveyor's certificate shall be substantially as follows:

SURVEYOR'S CERTIFICATE

I, _____, a Registered Land Surveyor, hold Certificate No._____, as prescribed by the laws of the State of Utah, and do hereby certify that by authority of th e owners, I have made a survey of the tract of land shown on this plat, which is accurately described therewith, and have subdivided said tract of land into lots and streets to be hereafter known as _____, and that the same has been surveyed and staked on the ground as shown on this plat.

Signed on this _____day of _____, 20___

B. Owners Dedication: A specific statement of dedication of all streets, alley, crosswalks, drainage ways, pedestrian ways and other easements for public use by the person holding title of record, by persons holding title of record, by persons holding title as vendees under land contract, and by wives of said parties shall be required. If land dedicated are mortgaged, the montaged shall also sign the plat, and if subject to a Real Estate Contract, the seller or actual owner of the real property being subdivided shall also sign the Final Plat. Dedication shall include a written location by section, township and range, of the tract. If the plat contains private streets, public utilities shall be reserved the right to install and maintain utilities in the street right-of-way. The form of the owner's dedication shall be substantially as follows:

OWNER'S DEDICATION

Know all by these presents that we the undersigned owners of the above described tract of land, having caused the same to be subdivided into lots and streets to hereafter be known as _____, do hereby dedicate for perpetual use of the public all parcels of land shown on this plat as intended for public use, and do warrant, defend and save the municipality harmless against any easements or other encumbrances on the dedicated streets which will interfere with the municipality's use, operation and maintenance of the streets and do further dedicate the easements as shown, with the same warranty as given for other dedicated property.

In witness whereof, we have hereunto set our hands this _____day of _____, 20_____.

_____

Signed

_____

Signed

C. Required Acknowledgements

1. Acknowledgement

STATE OF UTAH)

ss._____

COUNTY OF CACHE)

On the _____Day of _____ A.D., 20_____, personally appeared before me, the signer(s) of the above Owner's Dedication, who duly acknowledged to me that he/she/they signed it freely and voluntarily and for the uses and purposes therein mentioned.

_____

Notary Public

2. Corporate Acknowledgement

a. STATE OF UTAH)

ss._____

COUNTY OF CACHE)

On the _____Day of _____ A.D., 20_____, personally appeared before me,
_____and_____,
who acknowledged to me that they are the _____ and _____ of corporation, that they signed the Owner's Dedication freely and voluntarily and for and in the behalf of the corporation for the purposes therein mentioned an d that the corporation executed the same.

_____

Notary Public

b. The form of a corporate, partnership, or other entity signature shall include a provision or a Notary in which the subdivider represents that the person signing

for the corporation, partnership, or other entity has the authority to execute the agreement for the corporation, partnership, or other entity.

E. Engineer's Certificate: the form of the Engineers Certificate shall be substantially as follows:

Engineers Certificate

I certify that I have examined this plat and find it to be correct and in accordance with the information on file in this Office and the city ordinance.

_____ _____
City Engineer Date

F. Utility Company Approvals: All utility companies must acknowledge and accept the easements as shown on the final plat. At a minimum the following company's signatures must be obtained:

Utility Company Approvals

_____ _____
Questar Gas Date

_____ _____
Rocky Mountain Power Date

_____ _____
Century Link Date

_____ _____
Comcast Communications Date

G. Planning Commission Approval and Acceptance: the form of the Planning Commission Approval and Acceptance shall be substantially as follows:

Planning Commission Approval and Acceptance

Presented to the Nibley City Planning Commission this _____ day of _____, 20_____, at which time this subdivision was recommended to the City Council for approval.

_____ _____
Planning Commission Chairman Date

H. City Council Approval and Acceptance: the form of the City Council Approval and Acceptance shall be substantially as follows:

City Council Approval and Acceptance

Presented to the Nibley City Council this _____ day of _____, 20_____, at which time this subdivision was approved and accepted.

_____ _____
Mayor Date

I. Attorney Approval: the form of the City Attorney Approval and Acceptance shall be substantially as follows:

Attorney Approval

Approved as to form this _____ day of _____, 20_____.

_____ _____
City Attorney Date

J. County Recorders No: the form of the Cache County Recorder's No shall be substantially as follows:

County Recorders No.

State of Utah, County of _____, recorded and filed at the request of:
_____

Date: _____ Time: _____ Fee: _____

Abstracted_____

Index_____ _____
Filed in: File of plats County Recorder

K. Agricultural Note: This note shall be required on all plats:

Agricultural Note:

This property is located in the vicinity of property that is used for agricultural purposes. It may be anticipated that such agricultural uses and activities may or may not in the future be conducted in this area and that such uses are previously existing uses.

Agricultural uses and situations must be sound agricultural practices and not bear a direct threat to the public health and safety.

L. Ground Water Note: This note shall be required on all plats.

Groundwater Note:

Areas in Nibley City have groundwater problems due to the varying depths of a fluctuating water table. The city's approval of a building permit or construction plans does not constitute a representation by the city that building at any specified elevation or location would solve subsurface or groundwater problems. In addition, concerns for building elevation and/or grading and drainage are unique to each building lot and site. Responsibility for these stated concerns, and all other such concerns related to a lot or other building site, remains solely with the building permit applicant, property owner and/or contractor. Nibley City is not responsible for any subsurface or groundwater problems which may occur, nor for other such concerns, including, but not limited to, building location and/or elevation, site grading, and drainage.

3.2 Construction Plan Requirements

A. Plan views of the street improvement shall be to a scale not greater than 1"=50' on new subdivisions and street improvements and shall contain the following information:
   1. Any existing street curbs, driveways, and property lines, right-of-way, and utility easements referenced to property corners, street intersections, or section lines within 300-feet of proposed construction. Running grade, existing cross slopes, and curb elevations shall be required to determine if finished design grades will provide a smooth transition from existing to new construction.
   2. Catch points and limits of slope for all cuts and fills.
   3. Location and sizes of water courses, stream and railroad crossings, water mains, culverts, sanitary sewers, and storm sewers, including any of the mentioned pipe inverts within 300-feet of the proposed project. Use arrows on both existing watercourses and storm drains, and on proposed storm drains, indicating direction of flow.
   4. Location of wells (public or private), gas mains, underground power, and any other utility (public or franchised) within 100-feet of the proposed project.
   5. On horizontal curves, show stationing of the point of tangency and the point of curvature. Show the length of tangent, length of centerline curve, the delta angle, radius point, and centerline radius distance.
   6. On half or three-quarter street improvements show the existing centerline, edges of pavements, and the extent of the proposed widening, i.e. the location of the opposite curb and right-of-way.
   7. Show all ADA ramps on each curb radii.
   8. The location of each manhole, catch basin, beginning and end of radius, point of curvature, and point of tangent shall be stationed to facilitate checking the plans with the profiles. The stationing shall be tied to existing property corners, centerline, centerline of intersections, and/or street monuments.

9. Side streets shall be stationed at the centerline of the intersection.

B. Profile Views. Profiles for the individual street shall be to the same horizontal scale on the same sheet and drawn immediately below the corresponding plan view to a vertical scale of 1"=5' reading from 0+00 left to right (where conditions warrant, right to left may be approved as well as a different vertical scale), and shall contain, in addition to the above, at least the following information:
   1. Location of catch basins, manholes, and other appurtenances with each numbered and stationed.
   2. Profile of existing and finished ground line at property line and/or pavement, left and right curb line, and proposed centerline.
   3. Percent of all street grades.
   4. Beginning of all vertical curves, points of vertical intersection, ends of vertical curve, low point of vertical curve (if a sag curve) and length of vertical curve.
   5. Design speed used and "K" value applied.
   6. On half street or three-quarter improvements show elevations of the centerline, edge of pavement, and proposed top of curb for 300-feet in each direction of the improvement.
   7. Profiles on stub streets shall be shown 300-feet past the terminus of the street.
   8. Street Transitions Street tapers to match new or widened streets to existing adjacent street improvements shall normally be in accordance with AASHTO standards, but shall be a minimum of 10:1 for Local Streets and 20:1 for Collector and Arterial Streets.

SPECIAL NOTE: The design engineer shall field locate and verify the alignment, depth, and inverts of all existing facilities shown on the plans that will be crossed by proposed facilities and shall certify them with a note on the plans. City as-builts are only to be used as an aid to the design engineer when field verifying the existing facilities

Section 4 – Water Design Standards

4.1 Purpose

A. The purpose of this rule is to provide specific requirements for the design and installation of transmission and distribution pipelines in Nibley, in compliance with City and State standards and rules. These standards are intended to follow state rules and assure that facilities are reliably capable of supplying water in adequate quantities, consistently meeting applicable state drinking water quality requirements, and not posing a threat to general public health.

4.2 Water Main Design

A. System Pressure
   1. Water main lines shall be designed to maintain minimum and maximum pressures as required in Utah State code R309-105-9, under all conditions of flow.

B. Hydraulic Analysis
   1. At the expense of the developer, any proposed water lines shall be added to the Cities existing hydraulic model, and analyzed to ensure proper pressures and flows as regulated by the State of Utah.

C. Minimum Water Main Size
   1. Minimum Water Main Size shall be 12 inches in commercial or industrial zones and 8 inches in all other zones.

D. Materials
   1. Rated for 200 psi min
   2. Shall be colored blue
   3. Shall be C-900 or C-905 PVC

4.3 Fire Protection & Hydrants

A. The design of water mains shall be consistent with the state fire flow requirements and pressure as determined by the local fire authority.
B. The location of fire hydrants shall be consistent with the requirements of the State adopted fire code and as determined by the Local Fire Authority, but in no case shall be farther than 500 feet apart in residential zones and 250 feet apart in commercial or industrial zones.
C. Fire Hydrant Laterals shall be min of 6 inches in diameter.
D. Shall not be connected to or located within 10 of sanitary sewers.
E. Auxiliary valves shall be installed on all hydrant laterals.
F. Drains shall be installed with a gravel packet unless the natural soils will provide adequate drainage.
G. All hydrants shall be compression type, Muller Super Centurion Model A-423.

4.4 Dead Ends

A. Water mains should be looped whenever practical. Dead end lines will be limited to select circumstances as determined by the Public Works Director.
B. Where dead ends occur, they shall be provided with a fire hydrant
C. No flushing devices of any kind shall be directly connected to a sewer.
D. Temporary dead ends
    1. Shall be allowed for construction purposes
    2. Flushing devices for construction
        a. 2 inches for 8 inch and 10 inch water main
        b. 4 inches for 12 inch and larger

4.5 Isolation Valves

A. Sufficient number of valves shall be provided on water mains so that inconvenience and sanitary hazards will be minimized during repairs. Valves shall be located at not more than 500 foot intervals in commercial and industrial zones and at not more than one block or 800 foot intervals in other districts.
B. Isolation valves shall be installed on all water lines at an intersecting location.
C. Gate Valves required on 10 inch lines and smaller.
D. Butterfly Valves required on 12 inch and larger lines.

4.6 Materials

A. All materials that may come in contact with drinking water shall be stamped with the NSF logo certifying that the material meets the requirements of ANSI/NSF Standard 61.
B. Pipes and fittings installed after January 4, 2014 shall be “lead free” in accordance with section 1417 of the Federal Safe Drinking Water Act.
C. Previously used materials are not allowed

4.7 High Points in Line

A. At high points where air can accumulate, provisions shall be made to remove air by means of a hydrant or air relief Valve.

4.8 Air Relief Valve

A. The open end of air relief vent pipe from automatic valves shall be provided with a #14 mesh, non corrodible screen and a downward elbow extended to at least one foot above grade.
B. Shall not be directly connected to the sewer.
C. Shall be installed in a manner to prevent it from freezing
D. Shut off valve required

4.9 Chamber Drainage – chambers, pits or manholes containing valves, blow-offs, meters or other such appurtenances

A. Shall not be connected directly to a storm drain or sanitary sewer.
B. Provided with a drain to daylight if possible. Where not possible, absorption pits may be used if the site is not subject to flooding.

4.10 Control Valve Stations

A. Pressure Reducing Valves (PRVs)
1. Isolation valves shall be installed on both sides of the pressure reducing valve.
2. Parallel PRV lines to accommodate low and high flow conditions shall be required.
3. By-pass lines and associated valves required.
4. Electronic pressure gauge shall be installed up stream and down stream of PRV, and both shall be tied into City SCADA system.
5. Flow monitoring device shall be required and tied into City SCADA system.

4.11 Backflow Devices

A. Shall conform to the State-adopted plumbing code.

4.12 Water Services

A. Corporation Stops
1. Shall be Mueller I.P. Thread/110 conductive compression corporation stops (H-15010)
2. Shall be installed at both ends of the service line
B. Unions and Couplings
1. Shall be Mueller H-15403, H-15428 and H-15451 or approved equal
C. Service Clamps
1. Shall be Mueller DR-25 Series double strapped
D. Service Line
1. Shall be Pure-Core Blue High Density Polyethylene with a 200 PSI rating
2. Tracer wire Required and shall be installed above the service line and attached to the setter with a grounding clamp
3. Warning tape required
4. Shall be installed continuously from the main line to the meter setter, with no joints
5. For new installs, shall be ran perpendicular with the centerline of road
6. Shall be ran at centerline of lot
E. Setters
1. Shall be copper Mueller H-1424
F. Meter Vaults
1. Shall be 21 inch, white PE pipe
2. Shall be installed 5 feet behind sidewalk in public utility easement
3. Finished grade of meter lid shall be within one inch of nearest concrete surface. If no concrete exists, finished grade shall be within one inch of surrounding existing surface.
G. Water Meters
1. Shall be provided and installed by the City upon payment of appropriate fee's

H. Connections from the water meter setter and private buildings shall conform to Adopted plumbing code, and inspected by building inspector at time of installation.
I. Meter Vault Lids
    1. Shall have a 2" recessed hole for meter antana

4.13 Separation from Sewer

A. Water mains shall be a min of ten feet min horizontally from sewer
B. Water mains shall be a min of 18 inches above sewer if they cross
C. Water lines and sewer lines shall not be installed in the same trench
D. If the basic separation standards as outlined cannot be met, an exception to the rule can be applied for with additional mitigation measures to protect public health, in accordance with Utah State Code R309-105-6(2)(b)

4.14 Cover

A. 5 feet of earth
B. Other insulation to prevent freezing as approved by Public Works Director

4.15 Thrust Blocking

A. Required on all tees, bends, plugs, hydrants per APWA plan No 561 and 562

4.16 Surface Water Crossings

A. Shall follow State of Utah R309 rules and to be approved on a case by case basis.

4.17 Individual Home Booster Pumps

A. Not Allowed

Section 5. Sewer Design Standards

5.1 GENERAL

A. Construction of a sewer project may not begin until the applicant has submitted detailed design and construction drawings to the City Engineer, and received a copy of the approved set of drawings, that have been stamped and signed by the City Engineer .
B. Sewer services to residential households do not constitute a sewer project, and will not generally be reviewed by the City Engineer.
C. Storm water and ground water shall not be allowed to enter the sanitary sewer system, unless approved by Public Works Director.
D. Each individually owned unit shall have a separate sewer line connected to the public sanitary sewer system unless otherwise approved by Public Works Director.
E. All connections to the public sanitary sewer system shall be constructed by a licensed plumber.
F. Sewer laterals shall be backfilled to the same standards as the sewer main line and other pipes.
G. Wastes detrimental to the public sanitary sewer system or plant shall not be discharged into the sanitary sewer system.
H. Property owners are responsible for maintenance of sewer laterals from the public main line, including tapping saddles or connections.
I. Property owners are responsible for the maintenance of all pretreatment facilities including but not limited to: grease traps, sand separators, oil separators, or clarifiers connected to their facilities.
J. All permits shall be secured and fees shall be paid before any work is commenced on a sewer connection.
K. Warning tape and locate wire shall be installed on all sewer laterals.

5.2 BASIS OF DESIGN

A. Planning Period
    1. Sewers shall be designed for the estimated ultimate tributary population. The City Engineer may approve the design for reduced capacities provided the capacity of the system can be readily increased when required. The maximum anticipated capacity required by institutions, industrial parks, etc. must be considered in the design.
B. Sewer Capacity
    1. The required sewer capacity shall be determined on the basis of peak hour sewage flow.
C. Per Capita Flow
    1. Residential sewer systems shall be designed on the basis of an annual average daily rate of flow of 100 gallons per capita per day.
D. Design Flow
    1. Residential laterals and collector sewers shall be designed with a peak hour factor of 4.0.

2. Interceptors and outfall sewers shall be designed with a peak hour factor of 2.5
3. Commercial and industrial capacities shall be calculated and documented by the Engineer or Architect based on fixtures and any expected process or wash down flows. Calculations shall not be considered final until approved by the City Engineer.
4. The City Engineer will consider other rates of flow for the design if such basis is justified on the basis of supporting documentation.

E. Design Calculations
1. Detailed computations, such as the basis of design, average and peak flow calculations and hydraulic calculations showing depth of flow, velocity, water surface profiles, and gradients shall be submitted with the construction plans.

5.3 DESIGN AND CONSTRUCTION DETAILS

A. Minimum Size
1. No gravity sewer main shall be of less than eight inches in diameter.

B. Depth of Bury
1. Sewer Main lines shall be buried a minimum of seven feet deep, unless otherwise approved by the City Engineer.

C. Slope
1. The pipe diameter and slope shall be selected to obtain velocities to minimize settling problems.
2. All sewers shall be designed and constructed to give mean velocities of not less than 2 feet per second.
3. Unless otherwise approved and/or required by the City Engineer, sewer lines eight through fifteen inches in diameter shall be designed to flow no more than half full during peak flow. Sewer lines larger than fifteen inches in diameter shall be designed to flow three-fourths full.
4. Table 1.3.D.4 shows the minimum slopes which shall be provided; however, slopes greater than these are desirable.

Table 1.3.D.4 - Minimum Slopes

Inch	**FEET/FEET**
8	0.004
10	0.0028
12	0.0022
15	0.0015

18	0.0012
21	0.0010
24	0.0008

5. Sewers shall be laid with uniform slope between manholes.

D. Flatter Slopes
   1. Slopes flatter than those required for the 2-feet-per-second velocity criterion, may be permitted by the City Engineer provided that:
      a. there is no other practical alternative;
      b. the depth of flow is not less than 30 percent of the diameter at the average design rate of flow;
      c. the design engineer has furnished with the report the computations showing velocity and depth of flow corresponding to the minimum, average and peak rates of flow for the present and design conditions in support of the request for variance; and

E. Steep Slopes
   1. Where velocities greater than 15 feet per second are attained, special provision shall be made to protect against displacement by erosion and shock.
   2. Sewers on 20 percent slopes or greater shall be anchored securely against lateral and axial displacement with suitable thrust blocks, concrete anchors or other equivalent restraints, spaced as follows:
      a. Not over 36 feet center to center on grades 20 percent and up to 35 percent;
      b. Not over 24 feet center to center on grades 35 percent and up to 50 percent;
      c. Not over 16 feet center to center on grades 50 percent and over.
   3. Where velocities greater than 15 feet per second are attained drop manholes may be used. Drop manholes may not be used under any other circumstances unless approved by City Engineer.

F. Alignment
   1. Sewers shall be located under the paved streets or roads to allow access of maintenance equipment under all weather conditions, unless otherwise approved by the City Engineer.
   2. Sewers shall be laid with a straight alignment between manholes.

G. Changes in Pipe Size
   1. When a smaller sewer joins a large one, the invert of the larger sewer should be lowered sufficiently to maintain the same energy gradient, and shall be documented by the design engineer in plan details and the hydraulic grade lines.

H. Materials
   1. The material of pipe selected should be suitable for local conditions. The material of sewer pipe should be compatible with factors such as industrial wastewater characteristics, putrecibility, physical and chemical properties of adjacent soil, heavy external loading, etc.
   2. The material of pipe must withstand superimposed loads without any damage. The design of trench widths and depths should allow for loads. Special bedding,

concrete cradle or encasement, or other special construction may be used to withstand extraordinary superimposed loading.

3. Unless otherwise approved by City Engineer, all sewers shall be constructed of green SDR 35(or thicker walled) PVC pipe.

5.4 CURVED SEWERS

A. Not allowed

5.5 INSTALLATION REQUIREMENTS

A. Standards
   1. The technical specifications shall require that installation be in accordance with the requirements based on the criteria, standards and procedures established by:
      a. Utah Administrative Code R317;
      b. Current American Public Works Association (APWA) Standards and Specs as amended by Nibley City;
      c. Recognized industry standards and practices;
      d. The product manufacturer's recommendations and guidance;
      e. The Following codes, as adopted by the State of Utah: International Building Code, International Plumbing Code, International Mechanical Code and National Electrical Code;
      f. American Society of Testing Materials (ASTM);
      g. American National Standards Institute (ANSI); and
      h. Occupational Safety and Health Administration (OSHA), US Department of Labor or its succeeding agencies;
      i. American Society of Civil Engineers (ASCE);
      j. American Water Works Association (AWWA);

5.6 MANHOLES

A. Location, manholes shall be installed at:
   1. The end of each line;
   2. All changes in grade, size, or alignment;
   3. All pipe intersections; and
   4. Distances not greater than 350 feet unless otherwise approved by City Engineer.

B. Drop Type Manholes
   1. A drop pipe should be provided for a sewer entering a manhole at an elevation of 24 inches (61 centimeters) or more above the manhole invert. Where the difference in elevation between the incoming sewer and manhole invert is less than 24 inches (61 centimeters), the invert should be filleted to prevent solids deposition.

C. Diameter
   1. The minimum diameter of manholes shall be 48 inches;
   2. All manholes with three or more pipes entering the base or with pipes 18 inches or larger in diameter shall be 60 inches inside diameter.

3. All manholes shall be analyzed by a Professional Engineer to ensure structural integrity of walls is sufficient for pipe penetrations.

D. Access
   1. Concentric cones required
   2. A minimum diameter of 25 inches shall be provided for safe access.
   3. Corrosive resistant steps beginning no more than 24 inches from the bottom surface of the manhole, up to and within 24 inches of cover of manhole shall be installed.

E. Flow Channel
   1. The flow channel through manholes should be made to conform in shape and slope to that of the sewers. The depth of flow channels should be between one-half and three-quarters of the diameter of the sewer. Adjacent floor area should drain to the channel with the minimum slope of 1 inch per foot (8.3 centimeters per meter).

F. Water tightness
   1. Manholes shall be of pre-cast concrete.
   2. Manholes shall be water tight.
   3. Sanitary sewer manholes shall not be installed where ponded water is expected for any duration.
   4. Manholes shall be located to avoid street runoff and high water.
   5. Locked manhole covers may be desirable in isolated easement locations or where vandalism may be a problem as directed by the City Engineer.

G. Electrical
   1. Electrical equipment installed or used in manholes shall conform to appropriate National Electrical Code, as adopted by the State of Utah, requirements.

5.7 INVERTED SIPHONS

A. Not allowed unless approved by City Engineer.

5.8 SEWERS IN RELATION TO STREAMS

A. Location of Sewers on Streams
   1. The top of all sewers entering or crossing streams shall be at a sufficient depth below the natural bottom of the stream bed to protect the sewer line from damage and freezing. In general, the following cover requirements must be met:
      a. one foot (30 centimeters) of cover is required where the sewer is located in bedrock;
      b. three feet (90 centimeters) of cover is required in other material;
      c. cover in excess of 5 feet may be required in streams having a high erosion potential; and
      d. in paved stream channels, the top of the sewer must be placed 5 feet below the bottom of the channel pavement.

B. Horizontal Location
   1. Sewers located along streams shall be outside of the stream bed and banks.

C. Structures

1. The sewer outfalls, headwalls, manholes, gate boxes, or other structures shall be located so they do not interfere with the free discharge of flood flows of the stream.

D. Alignment
   1. Sewers crossing streams should be designed to cross the stream as nearly at right angles to the stream flow as possible, and shall be free from change in grade.
   2 Sewer systems shall be designed to minimize the number of stream crossings.

E. Construction
   1. Materials.
      a. Sewer main shall be encased in a joint less casing.
      b. Material used to backfill the trench shall be engineered to protect sewer line from scour or other damage as directed by the City Engineer

F. Aerial Crossings
   1. Not Allowed.

5.9 PROTECTION OF WATER SUPPLIES

A. All sewer designs must comply with the requirements stated in Utah Administrative Code R309.

5.10 SEWER LATERALS

A. Sewer laterals shall be placed 10 feet from water service line
B. Shall run perpendicular to centerline of road

5.11 LIFT STATIONS AND FORCE MAINS

A. All Sewer Sewage Pumping Stations and Force Main Designs shall comply with Utah State Administrative Code R317-3-3.
B. A 12 gauge copper wire, PVC jacketed for underground service, shall be placed along the crown of force mains along its entire length.
   1. All splices shall be with gel filled wire connectors.
   2. At vault locations, coil wire inside of vault, and secure in a location that is readily accessible near the entrance of the vault, to allow access to the wires without completely entering the vault.
   3. Provide a termination point for locate wire every 500 linear feet. Termination points not in a vault should be protected in valve box type structures.

Section 6. Storm Drain Design Standards

6.1 Cache Storm Water Coalition

1. Design standards shall follow the Cache Valley Stormwater Design Standards established by the Cache Storm Water Coalition, as posted at www.nibleycity.com

6.2 Municipal Separate Storm Sewer System (MS4)

1. Nibley City is a registered MS4 community with the State of Utah. As such , all designs shall meet the requirements of Nibley Cities MS4 Permit.

Section 7. Other Utility Design Standards

7.1 Monuments. Permanent monuments shall be accurately set and established within the subdivision at such points and to the specifications determined by the City Engineer as necessary to definitely establish all the lines of the plat and individual lots.

A. All subdivision plats shall be tied to two corner or monuments of record or established land office survey corners, as well as the Nibley City Monument System.
B. Curb pins shall be placed in the center of the top of curb at locations where the property lines would intersect the curb if they were to extend to the centerline of the road.

7.2 Natural Gas Service. Natural gas mains and laterals shall be installed to each lot, to the lot line.

7.3 Electric Power Service. Underground electrical conduits shall be installed to each lot, to the lot line.

7.4 Street Lighting. Street lights shall be shown on construction plans, and required every:

A. Five hundred feet (500') throughout the subdivision;
B. At all intersections;
C. At the back of each cul-de-sac.

7.5 Street Signs. Street signs shall be paid for by the developer as part of the Development Agreement. City staff shall order the signs and install the street signs.

Section 8. Street Standards

8.1 Additional Referenced Standards. Design of street and related improvements in Nibley City shall conform to these Design Standards, Nibley City Standard Construction Specifications, and certain sections (as required by the City Engineer) of the current edition of the following referenced standards or documents:

A. "A Policy on the Geometric Design of Highways and Streets" American Association of State Transportation and Highway Officials (AASHTO)
B. "Manual on Uniform Traffic Control Devices (MUTCD) for streets and highways" US Department of Transportation Federal Highway Administration
C. "Guide for the Design of Pavement Structures" American Association of State Transportation and Highway Officials (AASHTO)
D. "Roadside Design Guide" American Association of State Transportation and Highway Officials (AASHTO)
E. "Standard Specifications for Highway Construction" Oregon Department of Transportation (ODOT)
F. Uniform Fire Code

8.2 Street Classification and Rights of Way Width. The Nibley City Transportation Master Plan shall establish street classifications. In the event that the Transportation Master Plan does not provide sufficient information in determining a classification, the City Engineer shall make a final determination.

A. Neighborhood Streets
    1. Serve up to 25 residences
    2. Serve an ADT of 750 or less
    3. Shall have a minimum of a 60-foot right of way
B. Residential Streets
    1. Serve between 26 and 75 residences
    2. Serve an ADT of 750 or less
    3. Shall have a minimum of a 66-foot right of way
C. Collector Streets
    1. Serve over 75 residences
    2. Serve an ADT between 750 and 4000
    3. Designated in the Transportation Master Plan or General Plan
    4. Shall have a minimum of 66-foot right of way
D. Arterial Streets
    1. Designated in the Transportation Master Plan or General Plan
    2. Shall have a minimum of 80-foot right of way

8.3 Standard Street Cross Sections. All street design shall conform to the standard cross sections set forth in Nibley City subdivision Ordinance.

8.4 Street Design Speeds Design considerations for all street geometrics shall reflect the following design speeds. Variances from these design speeds shall be approved by the City on a case-by case-basis.

A. Shall normally be as follows:

	Design Speed	Posted Limit
1. Neighborhood	30 mph	25 mph
2. Residential	30 mph	25 mph
3. Collector Streets	40 mph	25 mph
4. Arterial Streets	45 mph	35 mph

B. Design of controlled intersections shall conform to applicable requirements Referenced Standards listed in Section 6.1of these Design Standards.

8.5 Street Geometric Design. Design of vertical and horizontal curves, and super-elevated street sections shall be to AASHTO Standards as referenced herein. Horizontal and vertical curves for a given street shall reflect the design speed of the particular classification of the street.

A. Horizontal Alignment. Horizontal alignment and curvature shall be calculated in accordance with AASHTO's "Policy for the Geometric Design of Highways and Streets."
B. Horizontal Curve.
   1. Horizontal curve radii shall be computed using the above named AASHTO guide, but shall be restricted to the following minimum radii with 0% super elevation and standard friction factors:
      a. Neighborhood 100 ft
      b. Residential 100 ft
   2. Horizontal centerline of improvements shall be parallel to the centerline of the right-of-way.
   3. The centerline of proposed street extensions shall be aligned with the existing street centerline.
   4. Sharp horizontal curvature should not be introduced at or near the top of a pronounced crest.
C. Vertical curve.
   1. Sharp horizontal curvature should not be introduced at or near the low point of a pronounced sag vertical curve.
D. Vertical Alignment
   1. Vertical curves are required at changes in grade greater than 1.5%.
   2. Streets intersecting a Collector or Arterial Street shall be provided with a Landing averaging 5%, or less. Landings are that portion of the street within 20-feet of the nearest curb on the intersecting street at its required design full improvement width.
   3. Street grades, intersections, and super elevation transitions shall be designed to not allow concentrations of storm water to flow out of the gutter, across the street, or in a manner that is unsafe for vehicular travel.
   4. Vertical curves shall normally provide for desirable stopping sight distance, but shall at least provide for minimum stopping sight distance.
   5. Vertical curves shall be parabolic and of a minimum length computed from the formula:
      a. $L = K * A$
         where:

L = length of vertical curve in feet
K = design constant (rate of vertical curvature)
A = algebraic difference in grades, in percent

6. "K" is a constant for each design speed; its selection for crest vertical curves is based on stopping sight distance (SSD) requirements and, for sag vertical curves, on headlight sight distance. K values to be used for the design of vertical curves are as follows:

Design Speed MPH	Crest Minimum	V.C. SSD Desirable	SAG Minimum	V.C. SSD Desirable
20	10		20	
25	20		25	
30	30	30	35	35
35	40	50	45	50
40	60	80	55	70

E. Super-elevation. The maximum super-elevation rate permitted on City streets shall be:
   1. Residential 4%
   2. Collector 4%
   3. Arterial 6%
   4. Super-elevation design shall meet all requirements for vertical alignment, and shall be reviewed on a case-by-case basis.

F. Intersections.
   1. The interior angle at intersecting street shall be kept as near to 90 degrees, or perpendicular to the intersecting street, as possible. In no case shall the interior angle be less than 80 degrees for a distance of 100 feet.
   2. Standard Top Back Curb radii at intersections are as follows:
      a. Neighborhood/Neighborhood 20 ft
      b. Neighborhood/Residential 25 ft
      c. Residential/Residential 25 ft
      d. Residential/Collector
      e. Collector/Collector
      f. Collector/Arterial
      g. Arterial/Arterial
   3. ADA sidewalk ramps shall be provided at all intersections

G. Street Grades & Slopes.
   1. Maximum grade on streets shall be as follows:
      a. Arterials 6%
      b. Collectors 8%
      c. Residential 12%
      d. Neighborhood 12%
   2. Minimum grade
      a. On streets shall be 0.4%
      b. On a curve or curb radius less than 30 feet shall be 0.5%
   3. Cross slope
      a. Minimum 2%

b. Maximum 4%

4. Intersections
   a. Street grades at intersections shall be no greater than 2% for at least 50 feet from the center of the intersection.

8.6 Pavement Structural Design. Pavement structure design for all streets shall be per AASHTO standards for pavement design.

A. All laboratory test results required in the AASHTO procedure shall be provided to the City Engineer
B. Traffic coefficient derivation and data shall be provided to the City Engineer.
C. The Project Engineer may be required to submit pavement structure design data for any street for/if:
   1. City Engineer has reason to suspect unsuitable soil conditions
   2. City Engineer has reason to suspect high groundwater
   3. High percentage of trucks
   4. Any other conditions that may significantly affect the pavement structure design.

8.7 Concrete Curbs

A. APWA Type "A" Curb and Gutter shall be installed on all new construction or reconstruction to control drainage from sheet flow across the street, to preserve curb exposure during subsequent overlays, and to eliminate cracking new curbs during the street paving operation.

8.8 Driveways

A. Driveways -
   1. Single Family Dwellings in developed area's shall be limited to one driveway. Corner lots may be allowed two driveways, one driveway per fronting street.
   2. Multi-family Dwelling, Apartments, Industrial, and Commercial properties shall be limited to two driveways.
   3. One-way driveways shall be no closer than 75-feet between their nearest edges.
   4. Corner properties of less than 75-feet frontage on a collector or arterial street shall have no driveway located on the collector or arterial street.
   5. All proposed commercial businesses shall be limited to one two way driveway or two one-way driveways per roadway frontage.
   6. Driveways shall be located a minimum of 200-feet from the centerline of an intersection with a collector or arterial street.
   7. Variations from these standards shall be approved by the Public Works Director.
   8. Maximum width shall be 24 feet from bottom of curb cut to bottom of curb cut
B. Driveways on Collector or Arterial streets
   1. One-way driveway entrances onto a collector or arterial Street shall be located a minimum of 125-feet from a downstream intersection, and no closer than 75-feet from an upstream intersection

2. One-way driveway exits shall be located a minimum of 75-feet from the downstream intersection and no closer than 125-feet from an upstream intersection
3. Two-way driveways shall be located no closer than 125-feet from either downstream or upstream intersections

C. Driveway Turnaround
1. Should the length of a residential driveway be greater than 150-feet and the driveway have only one access to the street or does not loop to the street, an approved turnaround meeting Nibley City and Uniform Fire Code standards shall be provided

8.9 Cul-de-Sac

A. Length
1. Shall conform to the Nibley City Subdivision ordinance (11-5-5-F), and shall be measured from the center of the radius of the radius to the center of the right of way on the street perpendicular to the street of the cul-de-sac.

B. Radius
1. Turnaround area shall have a min radius of 66 feet to edge of asphalt.

C. Curb, gutter, sidewalk and planting strip within the turnaround area shall remain the same as the road cross section leading into the turnaround.

D. Temporary
1. Where a street is designed to remain only temporarily as a dead - end street, an adequate temporary turning area shall be provided at the dead end thereof to remain and be available for public use so long as the dead end exists.
2. Shall meet Nibley City and Uniform Fire code standard radius requirements.

E. Partial cul-de-sacs
1. Not allowed

8.10 Speed Humps or Bumps

A. Not allowed in a public right of way

Section 9. Landscape and Irrigation Design Standards

9.1 Sprinkler Design

A. Sprinkler designs must be submitted and approved as part of construction documentation during subdivision review process.
B. Sprinkler designs shall be designed not to spray over any hard surfaces on any property that will be owned and maintained by Nibley City.

9.2 Landscape Plan

A. Landscape plan must be submitted and approved as part of construction documentation during subdivision review process.

Section 10. Standard Details and Specifications

10.1 APWA 2012

A. Nibley City has adopted the 2012 APWA Standard Plans and Specifications, with the following amendments:

10.2 Changes to Definitions:

A. ENGINEER shall be defined as Nibley City Public Works Director.

10.3 Changes to Standard Details

A. Part1 – General Requirements
   1. Plan No 121 -Straw Bale Barrier
      a. Not Allowed
   2. Plan No 122 – Silt Fence
      a. 14 Gage 6 Inch Wire Mesh not required
   3. Plan No 124 – Inlet Protection – fence or Straw Bale
      a. Straw bale not allowed
   4. Plan no 126 - Stabilized Roadway Entrance
      a. Sediment fabric under the gravel not required

B. Part 2 – Roadways
   1. Plan No 205 – Curb and Gutter
      a. Remove note 2.B and note 3.B.1
      b. Remove Expansion Joint at beginning and end of radi
      c. Remove dowelled cold joint at new to old transition
   2. Plan No 206 – Curb and Gutter Connection
      a. Not required
   3. Plan 209 - Curbs
      a. Remove note 2.B. and note 3.B.1.
      b. Remove Expansion Joint at beginning and end of radi.
      c. Remove Dowelled Cold Joint at new to old transition.
   4. Plan No 225 - Open Driveway Approach
      a. Not allowed without pre approval in writing by Public Works Director.
   5. Plan 229 - Bridge Driveway Approach
      a. Not allowed without pre approval in writing by Public Works Director.
   6. Plan 235 - Corner Curb Cut Assembly
      a. Per note 1.B., Curb Return Alternate not allowed without pre approval in writing by Public Works Director.
   7. Plan No 236 - Mid Block Curb Cut Assembly
      a. Per note 1.B., Curb Return Alternate not allowed without pre approval in writing by Public Works Director.
   8. Plan No 238 - Detectable Warning Surface
      a. Remove Note 2.A., 2.B. and 2.D., not allowed.
      b. Color of panels to be Colonial Red
   9. Plan No 254 - Patch Repair - in place hot reused asphalt paving
      a. Flowable fill not allowed without pre approval in writing by Public Works Director
   10. Plan No 255 - Asphalt Concrete T-Patch

a. Flowable Fill not allowed without pre approval in writing by Public Works Director

11. Plan No 292 - Street Name Sign Post
    a. City to order and install all street signs, cost to be paid for by developer in development agreement

C. Part 3 – Storm Drain
    1. Plan No 302 - 30" Frame and Cover
        a. This style not allowed
    2. Plan No 360 - Raise Frame to Grade
        a. Cast iron grade rings allowed, max 12"
    3. Plan No 381 - Trench Backfill
        a. Do not use flowable fill without written prior approval by Public Works Director
    4. Plan No 382 - Pipe Zone Backfill
        a. Do not use flowable fill without written prior approval by Public Works Director.

D. Part 4 Sanitary Sewer
    1. Plan No 431 - Sewer Lateral Connection
        a. If not being connected to a structure at the time of stub from main, lateral must have 45° bend up, and extend to within one foot of the ground surface and capped. If buried, place marker for location
        b. Tracer wire is required entire length of sewer lateral
        c. Cast iron or brass cleanout plug not required, PVC allowed
    2. Plan No 432 - Sewer Lateral Relocation
        a. Clean out not required.
    3. Plan No 433 - Pipe Drop
        a. Alternate 1 not allowed

E. Part 5 – Water System
    1. Plan No 502 - 27 Inch Frame and Cover
        a. Inscription on cover shall say "Water"
        b. Shall have 2" recessed hole for meter antenna
    2. Plan No 503 - 38" Frame and Double Cover
        a. Inscription on cover shall say "Water"
    3. Plan No 511 - Fire Hydrant with Valve
        a. Muller Hydrant only, no other Hydrant shall be excepted
        b. Painted Bonnet per pressure zone not required
        c. MJ X FL tee on main line required
    4. Plan No 521 - ¾ Inch and 1 Inch Meter
        a. Installation in Driveways not allowed
        b. placement in new subdivisions shall be 5 feet behind sidewalk
        c. Grade to match existing TBC or Sidewalk, whichever is closer
        d. Tracer wire required from main line to setter, and connected with grounding clamp
        e. Compression coupling/fittings allowed
        f. No cross bar required
        g. Meter box to be 21 inch diameter corrugated PE

h. ¾ Inch meter yoke not allowed
i. Back flow prevention in meter yoke required
j. Blue Poly CTS from main to yoke, no copper allowed
k. Meter shall be paid for by contractor, but provided and installed by City

6. Plan No 522 - 1 ½ Inch and 2 Inch Meter
   a. Installation in Driveways not allowed
   b. Placement in new subdivisions shall be 5 feet behind sidewalk
   c. Grade to match existing TBC or Sidewalk, whichever is closer
   d. Tracer wire required from main line to setter, and connected with grounding clamp
   e. Compression coupling/fittings allowed
   f. Alternate meter box may be proposed, and approved by Nibley City Public Works Director
   g. Meter shall be paid for by contractor, but provided and installed by City
7. Plan No 523 - 3 and 4 Inch Compound meter with 2 Inch Bypass
   a. 2" Displacement meter not required (H in legend of drawing)
   b. Bypass to be constructed of DL 900 or Ductile (O in legend of drawing)
   c. Meter shall be paid for by contractor, but provided and installed by City
8. Plan No 525 - 6 Inch Compound meter with 2 Inch Bypass
   a. Vault and all associated piping to be designed and proposed by contractor for approval by Nibley City Public Works Director, before installation
   b. Meter shall be paid for by contractor, but provided and installed by City
9. Plan No 527 - 8 Inch Compound meter with 2 Inch Bypass
   a. Vault and all associated piping to be designed and proposed by contractor for approval by Nibley City Public Works Director, before installation
   b. Meter shall be paid for by contractor, but provided and installed by City
10. Plan No 529 - 10 Inch Turbo meter with 2 Inch Bypass
    a. Vault and all associated piping to be designed and proposed by contractor for approval by Nibley City Public Works Director, before installation
    b. Meter shall be paid for by contractor, but provided and installed by City
11. Plan No 541 - Water Service Line
    a. Type "K" copper pipe not allowed use Blue Poly CTS
    b. Tracer wire from main to setter yoke, connected to yoke with grounding clamp
12. Plan No 551 - ¾ Inch and 1 Inch Service Taps
    a. Use stainless double banded epoxy coated saddle clamp
    b. No Direct taps allowed
    c. Use Blue Poly CTS, no copper allowed
13. Plan No 571 - 4" Wash Out Valve
    a. Not allowed for permanent use, install fire hydrant
14. Plan No 573 - 6" Pressure Reducing valve with 2 Inch bypass
    a. Vault and all associated piping to be designed and proposed by contractor for approval by Nibley City Public Works Director, before installation
15. Plan No 574 - Cover Collar for Water Valves Box
    a. Steel hoop not required
    b. 12 Inch from rim of lid to outer edge of concrete
16. Plan No 593 - Pressurized Irrigation Water and Potable Water Interface

a. Type A Not allowed

F. Part 6 – Irrigation and Landscaping
   1. Plan No 613 - Irrigation Diversion Box
      a. Irrigation diversion boxes will be reviewed and approved by respective canal company
   2. Plan No 614 - Irrigation Diversion Box
      a. Irrigation diversion boxes will be reviewed and approved by respective canal company
   3. Plan No 621 - Stationary Head
      a. Unless otherwise approved in writing by Public Works Director, use pop up head
   4. Plan No 622 - Pop Up Head
      a. Type N nozzle head - use Hunter PRS 30 or Hunter PRS 40
      b. Type R rotor head - use Hunter 4 inch I20 or 6 inch I25
      c. Flexible swing pipe to be 12 inch minimum, 24 inch maximum
      d. Use spiral barb fittings for less than 8 gallons per minute
      e. Greater than 8 gallons per minute, to be designed and proposed by contractor for written approval by Nibley City Public Works Director, before installation
   5. Plan No 631 - Backflow Preventer (less than 3 inch diameter)
      a. Stop and waste to be Muller brand surrounded by 6 inches of 1 inch minus gravel material, wrapped in a filter fabric
      b. Backflow preventer device to proposed by contractor for written approval by Nibley City Public Works Director, before installation
      c. Enclosure required, to be proposed by contractor for written approval by Nibley City Public Works Director, before installation
   6. Plan No 631 - Backflow Preventer (3 inch diameter and larger)
      a. Backflow preventer device to proposed by contractor for written approval by Nibley City Public Works Director, before installation
      b. Enclosure required, to be proposed by contractor for written approval by Nibley City Public Works Director, before installation
      c. Sleeve pipe penetrations through concrete pad
      d. 12” minimum clearance from edge of enclosure to edge of concrete pad all sides
      e. Frost prevention not required
   7. Plan No 632 - Drain Valve
      a. Manual drain valves to be proposed by contractor for written approval by Nibley City Public Works Director, before installation
      b. Automatic drain valves not allowed
   8. Plan No 633 - Control Valve
      a. Valves larger than 2 inch to proposed by contractor for written approval by Nibley City Public Works Director, before installation
      b. Automatic control valve to be a 1 inch or 2 inch Hunter ICV
      c. Place concrete pavers under bottom edge of ground box
   9. Plan No 651 - Wire Runs for Landscape Irrigation
      a. All control wires to be ran inside appropriately sized pvc conduit, placed between 1 to 4 inches below sprinkler lines (when ran parallel)
   10. Plan No. 681 – Tree

a. Typical tree staking detail is not allowed. Instead use 2 inch diameter wood stakes that are 8 feet in length. Drive a minimum of two stakes vertical and embed a minimum of 2 feet below tree hole. Ensure that stakes are not driven through root ball. Use a minimum of two V.I.T. cinch ties to secure tree to wood stakes. Top cinch tie to be with in 6 inches of main branching of tree. Drive stakes parallel to prevailing wind direction.

G. Part 7 – Communications, Lighting, Traffic Control, Power
   1. All street lighting to be designed and meet Rocky Mountain Power Standards and specs.
   2. Traffic signals to be designed by Professional Engineer as part of construction Drawings.

Section 11. Subdivision Review and Approval Process Summary

This section is intended to be a summary of the subdivision review and approval process, and may not be all inclusive.

11.1 Preliminary Platt Approval
11.2 Final Platt Approval
11.3 Pre Development/Design Meeting (highly encouraged, not required)
11.4 Construction Plan Approval Process
A. All formal comments and responses must be in writing
B. City staff meet once a week to discuss development issue's
11.5 Low Impact Development Analysis Report
11.6 Source Protection Analysis
11.7 Development Agreement
A. Reviewed and approved by: City Planner, Public Works Director and City Engineer
11.8 Surety of Improvements (Bond/Letter of Credit)
A. Amount to prepared by City Engineer
11.9 Appropriate Fee's Paid
A. Signs
B. Concrete Collars
C. Street lights
D. Inspection fees
E. Storm water fee's (If part of a regional basin plan)
F. Engineering Design Review
G. Engineering update of water, sewer and storm drain models
11.10Transfer of water shares
11.10SWPPP Approval if larger than one acre, or part of a common plan of development
11.11Post Construction Storm Water Maintenance Agreement
11.12Pre-Construction Meeting
A. Material Submittals
B. Concrete protection Plan if cold weather is expected before completion of project
C. Required Attendance
1. Developer
2. General Contractor
11.11Notice to Proceed (NTP)
A. Issued by Public Works Director
B. No land disturbance shall take place without a NTP
11.12Pre Paving Meeting
11.13Open Space Dedication
A. Required before final release of warrantee bond

Section 12. Construction Inspection and Acceptance Summary

This section is intended to be a summary and may not be all inclusive.

12.1 Part 1 Partial Acceptance Inspection - This inspection is intended to insure that all buried public infrastructure (water, sewer, storm drain) and at grade storm water facilities are constructed according to the plan approved by the City Engineer and to Nibley City Standards and Specifications. Key points of this inspection include, but are not limited to:

***Note: No person shall operate or turn a Nibley City water system valve, unless he or she is explicitly employed by the City of Nibley. ***

A. Acceptance Testing per APWA
B. Review of approved SWPPP (including required self-inspections)
C. GPS (by city staff) of all buried fittings, bends, tee's, valves, thrust blocks, etc.
D. Water System
    1. Periodic visual inspection of construction process and materials
    2. Visual inspections required
        a. All tie in locations
        b. Fittings and Thrust blocks
    3. Water Main Commissioning Report Required
        a. Pressure Testing
        b. Bac-T Testing
        c. Tracer Continuity Test
E. Sewer System
    1. Periodic visual inspection of construction process and materials
    2. Commissioning Report
        a. Low Air Pressure Test
        b. Obstruction and Deflection test
        c. Tracer Continuity Test
        d. Sewer Video Inspection (to be done just prior to asphalting surface)
F. Storm Water System
    1. Grades and slopes of ponds, elevations, inlet and outlet structures
    2. GPS (by city staff) of all storm water pertinences

12.2 Part 2 Partial Acceptance Inspection - This inspection is intended to ensure that open space amenities (trails, parks, etc.) and roadways (minus the asphalt and sidewalks) are constructed according to the plan approved by the City Engineer and to Nibley City Standards and Specifications. Key points of this inspection include, but are not limited to:

A. Acceptance Testing per APWA
B. Review of approved SWPPP (including required self-inspections)
C. Proof roll test of native base material, with a loaded ten wheel dump truck
D. Visual inspection required
    1. When laying and compacting base course materials
    2. When laying geo fabric or grid
    3. When compaction tests are taken by contractor's representative

E. Compaction Reports required per APWA
F. Sewer Video Inspection shall be done at this time, just prior to placing of asphalt
G. Pre Paving Meeting

12.3 Part 3 Partial Acceptance Inspection - This inspection is intended to ensure that Asphalting of the roadway surface and the construction of sidewalks are in accordance with the plan approved by the City Engineer and Nibley City Standards and Specifications. Key points of this inspection include but are not limited to:

A. Acceptance Testing per APWA
B. Review of approved SWPPP (including required self-inspections)
C. Asphalt Construction Report
D. Sidewalk Compaction Report
E. Visual inspection required of sidewalk forms prior to placing of concrete
F. ADA ramp requirements

12.4 Final Acceptance Inspection - This inspection is intended to be an all-inclusive inspection of the public infrastructure. At this time, the Public Works Director and Division Managers within the department will come to the site together to conduct the Final Acceptance Inspection. The Contractor or his/her representative must be present. All infrastructure will be re-inspected at this time. Key points of this inspection include but are not limited to:

A. Review of approved SWPPP (including required self-inspections)
B. Acceptance testing per APWA
C. Water System
    1. Fire Hydrants will be opened and closed
    2. All valves will be checked for vertical alignment of the valve box, that it is free of debris and at proper grade
    3. Meter barrels and lids will be checked for proper grade
    4. Meter Setters will be turned on and off and checked for placement in center of barrel
    5. Review of Water Commissioning Report

D. Sewer System
    1. Manholes are not leaking at joints
    2. No debris left in manholes
    3. Vented lids with "Sewer" inscribed on them
    4. Lids are within 1 inch of asphalt grade
    5. Connections are not leaking and at proper grade
    6. Steps installed properly
    7. Review of Sewer Commissioning Report

E. Storm Water
    1. Catch basins are free of debris

2. Inlet/Outlet grates are properly installed
3. Orifice plates properly installed
4. Overflow's constructed per plan
5. Landscaping completed per plan

F. Curb and Gutter
1. No low spots per flood test
2. No cracking/spalling
3. Backfilled properly behind curb

G. Sidewalk
1. No cracking/spalling
2. No finish deformities (footprints)
3. Proper cross slope
4. Proper slopes and area's on ADA pedestrian ramps
5. Both edges backfilled properly

H. Asphalt
1. Asphalt 1/4" above lip of gutter
2. Asphalt Construction Report
3. No puddles

I. Final Grading and Backfill
1. Area between sidewalk and curb backfilled with min 6" top soil
2. Area behind the sidewalk properly backfilled and graded to existing surfaces
3. Construction debris removed from site

12.5 Issue Final Inspection Report (punch list)- Upon completion of the Final Acceptance Inspection, the Public Works Director shall issue an Inspection Report, detailing any deficiencies that need to be corrected. The developer shall have 30 days to complete the repairs, after such date the City reserves the right to repair the deficiencies by utilizing the financial Guaranty issued to the City by the Developer, per City Ordinance.

12.6 As-Built Drawings submitted- As - Built drawings shall be required as outlined in the Subdivision Ordinance, before an Improvements Completion and Acceptance Report will be issued.

12.7 Guaranty Period- The Guaranty period unless otherwise stipulated by the City, shall be a minimum of one year from the date of the issuance of an Improvements Completion and Acceptance Report.

12.8 Improvements Completion and Acceptance Report- This report will be issued to the Developer by the Public Works Director when the completed Subdivision has passed all required inspections, and all stipulations of the Subdivision Ordinance have been met, and is ready to be accepted by the City as public infrastructure. The date of the issuance of this report will begin the one year Guaranty Period.

12.9 End of Warrantee Inspection - This inspection is intended to find any defects in workmanship or construction that become evident during the Guarantee Period. It is the responsibility of the Developer to schedule the Final Inspection after the Guarantee Period has elapsed. If any defects are discovered during the inspection, the Developer shall have 30 days to complete the repairs, after such date the City reserves the right to repair the deficiencies by utilizing the Financial Guaranty issued to the City by the Developer, per City Ordinance. At this time, the site should be stabilized and a N.O.T. filed with the state and a copy submitted to the City. If no deficiencies are discovered, or they are repaired as specified, the City shall release the Warrantee Bond.