

SECTION 6.0

ENGINEERING DEPARTMENT REQUIREMENTS

6.1 GENERAL

This Section identifies work which is to be coordinated through the Engineering Department. The Developer is responsible for obtaining the necessary City design and construction standards, permits and for coordinating with the Engineering Department to ensure its requirements have been met. The Developer is responsible for expediting the work and obtaining the necessary approvals and permits to proceed with construction.

In the case of construction of secondary water canal weirs, the Developer is responsible for processing these approvals through the respective canal company prior to preliminary plat approval. The Developer is to provide all fees and securities necessary to construct these facilities.

For the most part, these requirements apply equally to commercial and industrial site plans as well as residential construction plans. Commercial sites include all commercial buildings and church sites.

6.2 MASTER PLANS

One of the first items the Developer needs to do is to review the City's master plans prior to starting design of various utilities or street systems. The City has completed the following master plans:

1. Culinary water system
2. Secondary water system
3. Transportation
4. Storm drainage system
5. Wastewater system
6. Parks and trails

The Developer needs to contact the Engineering Department and review these documents prior to proceeding with design.

6.3 DESIGN AND CONSTRUCTION STANDARDS

The Developer is responsible for obtaining the City's design and construction standards for land disturbance, roads and bridges, culinary water, and storm drain facilities. These standards are available on the City's web site at www.wjordan.com or through the Engineering Department for a fee, which covers the cost of reproduction of these documents.

6.4 PRELIMINARY DESIGN

All preliminary design is to be in compliance with the City's master plans and design and construction standards and is to include the following:

- A. Master Plan Compliance – Prior to beginning design of any facilities, the Developer is to meet with the Engineering Department and receive information regarding facility sizing/locations for the proposed project. Call ahead and set up an appointment through the Engineering Department secretary.
- B. Fire Flow Calculations – The Developer is to demonstrate to City Staff, through engineering calculations prepared by a registered civil engineer, that the fireflow required by the Fire Department can be met, prior to the construction of buildings being started. Prior to an outside consultant preparing these calculations, the Developer's consultant must obtain Engineering Department approval of the modeling technique and assumptions.
- C. Flood Plain Evaluation – The Developer is to submit a flood plain evaluation performed and stamped by a registered civil engineer to document whether the property lies within a flood plain or not.
- D. Drainage Calculation – The City has completed a storm drain and flood control master plan, which identifies major storm drain facilities to which each Developer must connect. The Developer is responsible for constructing pipelines and other facilities to the master plan facilities. Calculations must be prepared for the Developer provided facilities by a registered civil engineer and submitted to the Engineering Department for review and comment. The City will return an approved set of calculations to the Developer once these calculations are deemed to meet the City's requirements.
- E. Traffic Impact Study – The Developer may be required to pay for a traffic impact study to be prepared by a registered traffic engineer, under the Engineering Department's direction that addresses the traffic and transportation impacts of the project. The extent of investigation and scope of work is defined in Guidelines for Traffic Impact Studies and will be determined by the Engineering Department. All original copies of the report are to be wet stamped and signed by the traffic engineer.
- F. Geotechnical Report – The Developer is to submit to the Engineering Department for approval, a geotechnical report prepared by a registered geotechnical engineer. This report is to contain a soils report of the project's underlying soils, which is to identify groundwater levels and other soils data important to construction of the road and structures. The report is to contain recommendations to correct problems in the field and is to also contain a section that identifies pavement design for all facilities to be dedicated to the City Guidelines for Geotechnical Reports identifies the extent and scope of work for the geotechnical report and the report is to be delivered to the Engineering Department directly from the geotechnical engineer preparing the report. All original copies of the report are to be wet stamped and signed by the engineer.
- G. Subdrain/basement Drain Report – A separate report is to be prepared by a registered civil or geotechnical engineer which identifies design of subdrain/basement drains for the project. Those projects of specific concern are those, which lie near to, or adjacent to irrigation canals which run through the City. The City will, however, determine whether such a report needs to be prepared and what its extent will be. All original copies of the report are to be wet stamped and signed by the engineer.
- H. Grading Report – The City has established a Land Disturbance Ordinance as part of its Municipal Code and will require a grading report including drawings prepared for each project. The report will need to identify where dirt will be move from, where its final placement will be, how it will

be placed and methods of placement and compaction to meet the City's land disturbance ordinance. Prior to performing any grading on the project, the Developer is to obtain a Land Disturbance Permit from the Engineering Department. All projects over 5 acres in size are also required to have Utah Pollution Discharge Elimination System (UPDES) and Storm Water Pollution Prevention (SWPP) permits from the State of Utah, Department of Environmental Quality.

6.5 FINAL DESIGN AND DRAWING PREPARATION

Final design is to take into account the City's design and construction standards for all publicly dedicated facilities. These standards are available through the City's Engineering Department for a fee or on the City's web site www.wjordan.com.

A packet is to be submitted to the City's Engineering Department that includes all design assumptions and calculations and certifies the City's standards have been followed. Final drawings are to be submitted on the City's standard size sheets of 24x 36. Final drawings will be signed and stamped by the Developer's registered professional engineer for the project.

For commercial site plans, the Engineering Department will review all sheets which show the site improvements outside the building envelope, including site grading, drainage facilities, on-site public water lines, and hydrants, overland release path for storm water overflows, street lighting, and landscaping on street frontages.

Drawings submitted to the Engineering Department are to be organized according to the following order:

1. Cover Sheet
2. Abbreviations, Legends and Sheet Index Sheet
3. General Notes Sheet
4. Typical Sections Sheet
5. Survey Control Plan
6. Overall Utility Plan
7. Site Demolition Plan
8. Subdivision Plat or Site Plan
9. Street Signs and Striping Plan
10. Overall Grading and Master Storm Drainage Plan
11. Grading and Storm Drainage Details
12. Grading and Drainage Plan Key Sheet
13. Grading and Drainage Plan
14. Overall Storm Water Pollution Prevention Plan
15. Street Plan and Profile Sheets
16. Traffic Signal Plan

Additional information is provided in the Engineering Department, Construction Drawings Checklist contained in – Subdivision Final Plat Process. This completed and filled-out checklist is required to be submitted with the copies of the check prints submitted for City review.

The following items are required as part of the construction plans:

- A. Copies - Three copies of construction plans are to be submitted:
1. One set for Engineering Department review
 2. One set for the City
 3. One set returned to the Developer for corrections and revisions
- B. All drawings are to be clear and legible and conform to good engineering and drafting practice.
- C. Drawings are to have signature blocks for Engineering, Community Development, Public Works, Fire Department and other City departments on all sheets. Departments will sign off on their block as they review it.
- D. Size - 24x36 with ½-inch border on top, bottom, and right sides; left side is to be 1 ½-inches.
- E. Plans are to include the following information:
1. North arrow (plan)
 2. Elevations reference to USGS datum
 3. Stationing and elevations for profiles
 4. Title block located in lower right corner of sheet to include:
 - a. Project title
 - b. Specific type and location of work
 - c. Name of engineer with license number and Utah Engineer's stamps
 5. Scale: 1"=20' or 1"=40' horizontally, 1"=2' or 4' vertically
 6. Both plan and profile views for curb and gutter plans for:
 - a. Each side of the street
 - b. Center line, may be eliminated
 - c. Top of curb elevations with curve data must be shown for all curb returns
 7. Culinary water system - Size and location of mains, laterals, mains, valves, hydrants and pipe type.
 9. Sanitary Sewer system - Size and location of mains, laterals, mains, valves, hydrants and pipe type.
 10. Storm Drain system - Size and location of mains, laterals, mains, valves, hydrants and pipe type.
 11. Subdrains, their manholes and cleanouts
 12. Irrigation facilities
 - a. Size and location of all required irrigation piping
 - b. Data regarding flow and outfall of affected irrigation water
 - c. Separate sheets of details for structures, etc.

6.6 GUIDELINES AND CRITERIA FOR PLAN PREPARATION

- A. Plan Submittal - Submittal to the city generally falls into three categories:
1. Initial submittal,
 2. Resubmission addressing City comments and
 3. The final submittal of the originals for City approval. The general requirement for each of these submittals is outlined in Table 1.1.

Table 1.1 – Submittal Requirements

Item	Required for initial Screening Acceptance	Required for Resubmittal	Required for Approval
Number of Plan Sets (bluelines)	4	As Requested	Original Mylar Duplicate Mylar
Bond Estimate Form (completed by engineer)	1 Copy	As Requested	Approved Estimate
Tentative Map or other Conditions	1 Copy	-	On File
Final Map Conditions	-	1 Copy	On File
Geotechnical Soils Investigation Report (1)	2 Copies	-	On File
Traffic Impact Analysis (2)	2 Copies	Approved	On File
Drainage Study (2)	2 Copies	Approved	On File
Notarized Off-Site Grading Authorization Letter (3)	-	1 Copy	On File
Developer Agreement Information Form (5)	-	1 Copy	On File
Subdivision or Improvement Agreement	-	-	Completed
Improvement Bonds	-	-	Posted
Plan Review and other Fees	-	-	Paid

- (1) – if construction of public street is required
- (2) – if required as a condition of approval
- (3) – if offsite grading or construction is required
- (4) – if design deviates from Guidelines or Standard Requirements
- (5) – Required if Subdivision Agreement is to be used

The specific requirements of each of these categories are discussed in greater detail in the following subsections.

- B. Plan Submittal - Engineers submitting plans to the City for initial screening are to provide:
1. Three (3) sets of complete plans (check prints) sealed by a registered Engineer in responsible charge.
 2. One (1) copy of the completed bond estimate form with quantities for all public improvements, also quantities should be shown on construction plans.

In addition, the following items are required as part of the initial review submittal:

1. Two (2) copies of the geotechnical soils investigation report if the project includes construction of public streets. The report must include a pavement section recommendation for all proposed public streets.
2. Verification of traffic impact analysis (TIA) submittal to the traffic engineer if a TIA is a condition of approval.
3. Verification of drainage study submittal to Engineering Department if a drainage study is a condition of approval.

4. When a project requires grading or construction off-site, One (1) copy of a notarized authorization from every private property owner on whose property work is required.
5. Completed Development Agreement information form if a Subdivision Agreement will be prepared.
6. Written notice of deviations. If the plan submittal contains deviations from either these guidelines or the requirements of the uniform standards and City policy, the design engineer is to as part of the initial submittal include a letter to the City outlining all deviations and substantial reasons for requesting the deviations.

In addition to the items outlined above the Assessor's Parcel Number (APN#) is to be placed on the cover or title sheet of the submittal. Fire flow information is to be placed on the water plan and secondary water information is to be placed on the master utility plan.

All initial submittals are reviewed for conformance to the Engineering Department initial plan screening checklist. Failure of the design engineer to include the required information with the initial submittal will result in rejection of the plan submittal and the return to the design engineer. If the submittal contains sufficient information to be processed for review, the submittal will be accepted and both the design engineer and developer will be notified. Following the initial plan screening, the three plan sets submitted will be circulated to various sections within the City for review and comment. This process generally takes two weeks. When comments are received from the other City reviewing groups, the Engineering Department will consolidate the comments and review the plans for conformance to City standards. The entire initial review process generally takes 3 to 4 weeks depending on the current workload and complexity of the project. The Engineering Department will transmit the review comments to the design engineer and either request the plans be resubmitted for review or that mylars be submitted following corrections.

- C. Resubmittal - If the conditions of approval or the Engineering Department require a drainage study or traffic impact analysis, those studies are to be approved prior to resubmittal of the improvement plans to the Engineering Department.

Engineers resubmitting plans to the City for review are to provide:

1. One (1) to three (3) sets of complete plans (check prints) as requested from the initial review sealed by the Engineer in responsible charge.
2. One (1) copy of the initial plan review comments (redlined plans). The redline of the fire plan should be retained by the engineer for use in obtaining fire signature on the Mylar.
3. Verification of Traffic Impact Study (TIS) approval by the Engineering Department if a TIS is a condition of approval.
4. Verification of drainage study approval by Engineering Department if a drainage study is a condition of approval.
5. Design engineer's certification that the grading plan is in conformance with the approved drainage study.
6. Design engineer's certification that the plans are in conformance with the approved traffic impact study.

Plans resubmitted to the City for subsequent review are to address all previously made land development review comments. The design engineer is to certify the grading plan conformance to the approved drainage study with the initial resubmittal and subsequently thereafter. All redesign from the previous submittal is to be clearly identified. In the event of major changes or significant redesign from the previous submittal, the design engineer should contact the Engineering Department to schedule a meeting to discuss the redesign concurrent with the

resubmittal. Failure to meet with the Engineering Department to resubmitting a major redesign may delay the plan process.

The resubmittal review process generally takes between 5 and 15 working days depending on the current workload, complexity of the project, and thoroughness of the design engineer in addressing previously made comments. After reviewing the plans, the Engineering Department will either return the plans to the design engineer to address comments or request that original and duplicate mylars be submitted to the City for approval.

- D. Required Easements and Rights-of Way - When improvement plans indicate easements to be dedicated or rights-of-way granted a complete package must be submitted prior to approval of the plans. This package must include legal descriptions, 8 ½ by 11 sketch and current vesting document. Easements may include ingress/egress, drainage, sewer, and intersite easements.
- E. Final Submittal and Plan Approval - Improvement plans for subdivisions cannot be approved until after the final plat is approved. Prior to submitting original mylars and duplicate mylars to the Engineering Department for approval, certain prerequisite items must be submitted to and approved by the City. As part of the initial plan submittal the design engineer is required to submit a complete bond estimate form. This form is reviewed and if it is deemed accurate with no major design issues outstanding, an approved bond estimate form will be provided to the design engineer. The process of completing the bond estimate and obtaining the required bond estimate form is the responsibility of the developer and should be commenced early on in the process.
- F. Request for Deviation Procedure - All deviations from these guidelines, the uniform standards or City policy are to be submitted to and approved by the Engineering Department. There are two types of deviations the engineer may need to address during the design process. First, deviations from the guideline requirements. All deviations from the guidelines are to be listed and submitted with the plans and other documents identified in “Initial plan submittal”. Upon receipt, the deviation listing will be reviewed by the plan screener and supervisor. If the deviations are deemed to have merit, the plans will be screened and either accepted or rejected. If the deviations are considered to be only for the convenience of the design engineer, the Engineering Department will review the deviation request. If the Engineering Department considers the deviations acceptable, the plans will be screened and either accepted or rejected. If the plans are rejected and the design engineer desires to appeal the decision, the appeal is to be made in writing to the City. Upon receipt of the design engineer appeal, the engineer will schedule a meeting with the design engineer and the City staff engineer. The purpose of the meeting is to allow the design engineer the opportunity to present its case to support the request. Within five working days following the appeal meeting, the Engineering Department is to inform the design engineer of its decision. The decision of the Engineering Department is to be final at this time.

The second type of deviation is a deviation from the requirements of the uniform standards and/or drawings or City policy. The design engineer is to identify and request a deviation from standards in writing and submit the request along with the other documents required in subsection 6.7.B. “Initial plan submittal”. If the deviation is deemed to be in the best interest of the City and the project, the plans will be allowed to proceed through the plan review process. If the deviation as requested is determined to be unacceptable to the City, the Engineering Department is to schedule a meeting with the design engineer to attempt to resolve the issue. If the deviation is rejected and the design engineer desires to appeal the decision, the appeal is to be made in writing to the City Engineer. Upon receipt of the design engineer appeal, the City Engineer will schedule a meeting with the design engineer and the City staff engineer. The purpose of the meeting is to

allow the design engineer the opportunity to present its case in support of the request. Within five working days following the appeal meeting, City staff engineer is to inform the design engineer of his decision. The decision of the City Engineer is to be final. If the denial of a deviation from standards or City policy will significantly impact a project, the design engineer is to contact the Engineering Department to review and resolve the design issue prior to making the initial submittal.

- G. Plan Setup Requirements - The City is required to be the custodian of all improvement plans in perpetuity once they are approved. As the City moves to archiving plans on electronic media it is important that some degree of uniformity is maintained. The objective of the following plan setup requirements is to provide uniformity and standardization of plan submittal while allowing the design engineer flexibility with respect to presentation. Standardization of information along with uniformity in setup and presentation allows the review process to occur in a more orderly and timely fashion.
- H. Plan Sheet Size - All plans submitted to the City of City of West Jordan must be signed and sealed by a civil engineer who is registered in the State of Utah. Plans are to be plotted or drafted onto mylar reproducible sheets and having an overall size of 24-inches wide by 36-inches long with margins placed accordingly. One and one-half inches on the left side and ½-inch on all remaining sides with a line thickness of 0.075 inches.
- I. Title Block - Each plan sheet is to contain a title block located adjacent to the right side margin. The design engineer has the flexibility to determine the layout of the title block provided the following information is included somewhere in the title block. The title block is to include:
1. Title of sheet
 2. Project name
 3. Developer's or owner's name, address, and phone number
 4. Engineering consultants name, address, and phone number
 5. Professional engineer's name, P.E. number and seal and
 6. Revision block
- J. Benchmark - All projects are to utilize and reference an existing recorded City benchmark datum within one-quarter mile of the project site. If an existing benchmark is not located within the one-quarter mile limit, a temporary benchmark on the project site suitable for the project construction/inspection purposes is to be established and referenced to the City datum. Every plan sheet to be utilized for construction of improvements is to indicate the referenced benchmark.
- K. Drawing Scales - Drawing scales are to be a minimum of one-inch = forty feet (40') horizontal for plan views, unless otherwise noted in these guidelines. Drawing scales are to be a minimum of one inch = 40-feet horizontal, one inch = 4-feet vertical for plan and profile when slopes are less than 5 percent and a minimum of one inch = 40-feet horizontal, one inch = 8-feet vertical for plan and profile when slopes are greater than 5 percent. Plan and profile sheets are to be arranged such that the plan view is in the top half and the profile view is in the bottom half of the sheet. Profiles are to have vertical lines at every 50-foot station and horizontal lines at every 4-foot elevation.

All details are to be drawn to scale. The horizontal and vertical scale need not be the same. The purpose of requiring details be presented at scale is to allow the plan reviewer the ability to see spatial relationships of the various elements in the detail.

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- L. Plan Orientation - Generally, in laying out and developing the design, the design engineer is to consider the following hierarchy in establishing plan sheet orientation;
1. North should be to the top or right of the sheet
 2. Stationing is to be left to right unless the sheet orientation with respect to North will not permit. The image is to only be drawn on the front side of the mylar.
- M. Text Size and Line Weights - The final criteria for acceptance will be that all information provided on the plans be clear, concise and legible when the 24-inch x 36-inch sheet drawing is reduced to an 11-inch x 17-inch format. The following text size and line weight references are recommended for clarity but are not required. All text, which includes but not limited to dimensional text, spot elevations text, notes and other text are recommended to be lero (L80) or romans. Shx font type with a text height of 0.08 inches and a pen thickness of 0.25mm. Profile elevations and stations are recommended to have a text height of 0.1 inches and a pen thickness of 0.50mm. Detail titles are recommended to have bold type font with a height of 0.20 inches. Street names are recommended to also have a bold type font with text height of 0.25 inches. All existing underground utilities are recommended to be shown dashed.
- N. Line Type, Symbols and Abbreviations - The City requires the use of line types, symbols and abbreviations consistent with the *Uniform Standard Drawings for Public Works' Construction Off-Site Improvements, City of West Jordan City* Legends and abbreviation listings used on the plans are to only include those terms that are not included in the standards.
- O. Plan Set Organization - The City requires that all sheets in the plan set be sequentially numbered, beginning with the title or cover sheet, with information presented and arranged in the following order:
1. Title/vicinity map/ quantities
 2. Plat
 3. Survey contour data sheet
 4. Storm water pollution previous plan
 5. General notes
 6. Master utility plan
 7. Grading plan and details
 8. Street plan & profile/sections/details
 9. Traffic signal plan
 10. Striping/signage/streetlight plans
 11. Sanitary sewer plan & profile/details
 12. Storm drain plan & profiles/details
 13. Water utility plan & profile/details

Depending on the complexity and scope of the project, a complete plan set may contain plan sheets from any or all of the above referenced groups. The guidelines indicate the minimum information. Data that must be presented and should not deter the design engineer from providing additional information as may be required. In the event the design engineer believes that the requirements of these guidelines are not applicable to a specific site or condition, the engineer is to request a deviation from the City. To facilitate the plan review and construction process, the City prefers that certain information be placed in a specific location on given sheets. The preferred location is identified in ***bold italics*** following the item description.

Example: North Arrow (upper right quadrant of sheet)

The above example indicates that the preferred location for the north arrow is in the upper right quadrant of the plan sheet. The City realizes that on rare occasions it may not be possible for the design engineer to comply with the City information placement preference. In those instances, the design engineer needs to identify all deviations from these guidelines in writing and submit the deviation listing to the City in accordance with, "Request for deviation procedure".

- P. Cover Sheet Requirements - The design engineer may elect to provide a separate title sheet as part of the entire plan set or utilize the first sheet of the plan set to present additional information such as the vicinity map or quantities and thereby eliminate the need for separate sheets for those items. The guidelines allow the design engineer flexibility in the placement of information provided that such information is presented in a clear and concise manner. Regardless of whether or not the design engineer elects to utilize a separate title sheet, the first sheet of the plan set is to contain at a minimum the following information:
1. Title block
 2. Project title
 3. North arrow
 4. Scale of drawing
 5. "Call Before You Dig" symbol and telephone number is shown (plan sheets).
 6. Revisions block is shown.
 7. Sheet size of improvement plans is 24" x 36".
 8. Mylar sepia or vellum drawing sheets, not paper sepia drawing sheets, has been used for all drawings (At final submittal).
 9. All lettering in capital letters, 3/16-inch (0.120-inch) size minimum.
 10. Accepted City layout of title block.
 11. Initials and last name of designer, drafter and checker on the drawings.
 12. Name of City is shown.
 13. Shows name and address of owner and/or developer.
 14. Must show the name, address, fax number, and telephone number of the engineering firm preparing the plans.
 15. Assessor's Parcel Number is shown.
 16. Must clearly show the name, and "Phase" or "Unit", of the project. For subdivisions the name is to agree with the final map. For multiple units, each final map is to have a separate set of improvement drawings.
 17. Drawings must be numbered consecutively and show the total number of sheets.
 18. Provide an area map showing the project and how it fits into the immediate area. The map is to include a north arrow and details about the project (1" = 500').
 19. Provide a vicinity map showing the location of the project. The map is to include a north arrow.
 20. Seal and signature of the design professional is shown.
 21. Approval block - Engineering Department.
 22. Approval block for design engineer and statement/disclaimer is provided.
- Q. Vicinity Map Requirements - Every plan set submitted is to contain a vicinity map. The design engineer may elect to place the vicinity map on a separate sheet immediately following the title sheet or place the vicinity map on the title sheet. If the design engineer elects to place the vicinity map on the title sheet, no separate vicinity map sheet is required provided the information required by this subsection is presented on the title sheet. The vicinity map is to relate the project to major landlines and prominent geographic features on an expanded scale. The following information is to be provided either on the title sheet or the vicinity map sheet:

1. A map of the City of City of West Jordan area with the project highlighted
2. A site map of the project and construction area (*upper right quadrant of sheet*)
3. North arrow for City and site maps

In addition, the vicinity map may include the following items when applicable:

4. Highways, streets, roads and railroads
5. Channels, washes and bridges
6. Other pertinent geographic features

The City's information placement preference is not applicable when the vicinity map and associated required information is placed on the title sheet.

- R. Abbreviations, Legends and Sheet Index – This drawing sheet is to include the necessary abbreviations, legends and sheet index necessary for the project and are to include the following:
1. Title block
 2. Project title
 3. North arrow
 4. “Call Before You Dig” symbol and telephone number is shown (plan sheets).
 5. Revisions block is shown.
 6. Provide a sheet index for all sheets in the lower right corner. All sheets are to be numbered consecutively.
 7. Abbreviations are provided.
 8. Legend is shown.
 9. Section identification system is provided.
 10. Detail identification system is shown.
- S. General Notes Requirements - Every plan set submitted is to contain a General Note sheet that provides applicable City standard notes. The following information is to be presented on either the second or third sheet of the plan set depending on how the design engineer elected to present the information required for the title sheet and vicinity map. The General Note sheet is to contain the following information where applicable:
1. Title block
 2. City of City of West Jordan General Notes
 3. City of City of West Jordan Clearing and Grubbing Notes
 4. City of City of West Jordan Grading Notes
 5. City of City of West Jordan Sewer Notes
 6. City of City of West Jordan Traffic Notes
 7. City of City of West Jordan Streetlight Notes
 8. City of City of West Jordan Fire Department Notes
 9. City of City of West Jordan Water Standards Notes
 10. City of City of West Jordan Dewatering Notes
 11. City of City of West Jordan Storm Drainage and Flood Control Notes
 12. City of City of West Jordan U.P.D.E.S. Notes
 13. City of City of West Jordan Erosion Control Notes
 14. “Call Before You Dig” symbol & telephone # (plan sheets)
- T. Typical Sections – This drawing is to show the typical sections to be used for the project and may include the following:
1. Title block

2. "Call Before You Dig" symbol and telephone number is provided (plan sheets).
3. Local street, 60-foot right-of-way, minor collector, 72-foot right-of-way, major collector, 84-foot right-of-way, arterial, 106-foot plus right-of-way, cross-sections are shown. Drawings are to show maximum cut and fill lines.
4. Residential collector, 57-foot right-of-way is shown.
5. Typical sections must have right-of-way or property line dimensions, cross slopes, type of curb, width of sidewalks, and the structural section material and thickness shown.
6. Typical utility locations
7. Typical trail sections

U. Survey Control Plan - Survey Control Data Sheet includes:

1. Title block
2. North arrow
3. "Call Before You Dig" symbol and telephone number is shown (plan sheets).
4. Co-ordinates at each outside boundary corner are shown.
5. Basis of bearings is shown on the drawing.
6. Shows the bearing equation, 10,000/10,000 co-ordinate at section corner or at point of beginning is shown.
7. Shows survey monuments found with identifying marker plates.
8. Indicates the class of survey and references to appropriate Record of Survey plats.
9. Shows monument lines, bearings, and distances between monuments.
10. At least two section corner ties to boundary are provided.
11. Legal description of boundary is provided.
12. Benchmark acceptable to the County, with elevation is provided. The plan must show identification number, location, and elevation per NAVD 88.
13. USGS datum of elevations is shown on plans.
14. Signature and stamp of the registered land surveyor who prepared the survey.

V. Overall Utility Plan - Many design engineers find it useful to provide a master utility plan as part of the plan set. The inclusion of this sheet is mandatory. Master utility plans are generally provided for one of two purposes, either for construction or to indicate the schematic relationships of the various utilities. If the intent of the master utility plan is for construction, the plan is to have a scale of not less than one-inch = 40-feet to conform to the requirements of "General plan sheet requirements" and provide the information required by this subsection.

If construction plans are included in the submittal for the various utilities at a scale of not less than one-inch = 40-feet and the intent of the master utility plan is to indicate the schematic relationship of the utilities, then the plan scale can be reduced to a scale of not less than one-inch = 100-feet. Schematic master utility plans need to conform to the requirements of this subsection.

Master utility plans to be utilized for construction are to provide the following information:

1. Title block
2. Scale at 1"= 60' or 1"= 100'
3. "Call Before You Dig" symbol and telephone number are shown (plan sheets).
4. Complete the separate Street Plan and Profile Checklist (C100) and show this information on this plan.
5. Complete the separate Sanitary Sewer Plan and Profile Checklist (SS100) and show this information on this plan.

6. Complete the separate Storm Drain Plan and Profile Checklist (D100) and show this information on this plan.
7. Complete the separate Culinary Water Plan and Profile. Checklist (CW100) and show this information on this plan.
8. Complete the separate Secondary Water Plan and Profile Checklist (SW100) and show this information on this plan. This will include pressurized secondary water design (pipelines) and unpressurized secondary water design (ditches and canals).
9. Shows relationship of utilities to each other on plan view.
10. Indicates all utilities including culinary water, sanitary sewer, storm drain, natural gas, secondary water, power, telephone, cable and all other utilities.
11. Water meter locations are shown.
12. Overhead utilities must be buried. Show existing overhead utilities on this drawing and indicate how and where they will be buried.
13. All utility stub-outs are to be shown. They are to be constructed into each lot past the City's right-of-way at least 10-feet.
14. Utility easements are to be shown. The City's standard is a 20-foot easement for one utility, and a 25-foot easement for two utilities.
15. All streets are named and existing and future right-of-way width to centerline is shown.
16. Existing and proposed hydrants and streetlights are shown.
17. Must show existing improvements in, and adjacent to, the project. Must clearly distinguish "existing" and "to be constructed" improvements (Plan Sheets).
18. Water and sewer facilities located and dimensioned from the centerline of the road or property line, are shown. Drawings must show a mandatory 10-foot separation between culinary water and sewer facilities.
19. Driveways, if known, are shown – sidewalk ramps are located.
20. Fire Department flow calculation information is indicated.
21. Fire Department approval block is shown.
22. Public Works Department approval block is shown.

Street Lighting

1. Streetlights are shown on the preliminary plat, final plat and construction drawings.
2. Developer contacts UP&L with plat information, UP&L designs street lighting, pull boxes, conduits, wires, etc.
3. UP&L gets City a letter or report indicating where the streetlights and facilities are to be located and their design.
4. Detail of streetlight locations is indicated.
5. Streetlights are provided at ends of cul-de-sacs, all street intersections, at 250-foot spacing.
6. A streetlight is located at the entrance to any pedestrian pass-through

If construction information and data is clearly and concisely presented on other sheets of the plan set and the intent of the master utility plan is to indicate the spatial relationships of the various utilities, the amount of information on this plan may be reduced.

- W. Site Demolition Plan – In the event that site demolition is required, this plan will be required to be prepared. This drawing will show all demolition included as part of the project and the drawing is to include:
1. Title block
 2. Project title
 3. North arrow
 4. Scale of drawing

5. "Call Before You Dig" symbol and telephone number are shown (plan sheets).
 6. Revisions block is shown.
 7. Structures and other facilities to be removed are shown.
 8. Complete the separate Street Plan and Profile Checklist (C100) and show this information on this plan.
 9. Obtain State permit for demolition of structures.
- X. Subdivision Plat or Site Plan – Plat/Copy of Plat that will be recorded with Salt Lake County Recorder's Office. The plat is to follow the guidelines/requirements of Salt Lake County requirements and is to include the following:
1. Complete the separate Land Development, Concept Plan, Preliminary Plat and Final Plat or Site Plan Checklists to complete this item.
- Y. Street Signs and Striping Plan – This drawing is to indicate all traffic control required during construction to adequately and safely construct the project. This drawing will require the following:
1. Title block
 2. Project title
 3. North arrow
 4. Scale of drawing
 5. "Call Before You Dig" symbol and telephone number is shown (plan sheets).
 6. Revisions block is indicated.
 7. 12" x 36" W14-1P "Dead End" and W14-2P "No Outlet" placards are provided with street name sign on residential streets where they intersect with collector streets, when applicable – the sign is to face the collector street. Placards also provided on interior intersections if the end of the street is more than 300-feet from or not visible from the intersection.
 8. 30" x 30" W14-1 "Dead End" and W14-2 "No Outlet" signs are provided on the lot line past a thru intersection when conditions are as above.
 9. A 6" x 24" yellow "Temporary" placard with black lettering and border is included under any W14 sign, where applicable.
 10. 30" x 30" R1-1 "Stop" signs are provided on residential streets at intersections with collector streets and where otherwise warranted – "T" intersections will not typically require a stop sign, but most 4-legged intersections should have stop signs on the lesser legs.
 11. 24" x 30" R2-1 Speed limit signs (25mph) are provided at entrance points into the subdivision, generally located at the first lot line, and at intervals of approximately 1,500-feet.
 12. Crosswalk, Trail crossing signs
 13. Striping plan
 14. Bike lanes
- Z. Overall Grading and Master Storm Water Drainage Plan – This drawing is to provide a summary, or overall view, of the project's grading and master storm water drainage plan. Subsequent drawings also are required to provide additional detail, if required. These drawings are to include the following:
1. Title block
 2. Project title
 3. North arrow
 4. Scale of drawing
 5. "Call Before You Dig" symbol and telephone number are shown (plan sheets).
 6. Revisions block is indicated.

7. A note on the drawing from the design engineer verifying that the proposed improvements comply with the City's design and construction standards and master plan for storm drainage and flood control.
8. Location of FEMA 100-year flood plain and wetlands are shown.
9. Drainage calculations – These are to include the assumption of the 100-year storm event with 0.2 cubic foot per second/acre discharge in 24 hours and are to be stamped by a registered professional engineer. Engineer is to use TR55 or HEC1 and provide output from these calculations. (Separate report)
10. Orifice sizes, number of manholes, invert and rim elevations; required riprap, required double inlet/dissipator, etc. are indicated.
11. Detention areas and details are shown. This is to include spillways at a 3:1 maximum side slopes.
12. Permits – State stream alteration, county flood control, Corps of Engineer (COE), etc. permits have been obtained and evidence has been received by the City.
13. Cross-sections showing the elevational relationship, property line, and existing or “to be constructed” walls project's boundary with adjacent properties are provided.
14. Finished floor elevation of all buildings adjacent to this property and spot grades on adjacent properties to show elevational relationships.
15. Pad and finished floor elevations for all new structures are shown. (Site Plan only)
16. Street names are shown, show at the front of each lot.
17. Percentage of grade and direction of flow is indicated.
18. Proposed and existing drainage easements, with dimensions, elevations and typical sections as needed.
19. Size, slope, location, and description of existing and “to be constructed” storm drain facilities are shown.
20. All existing and “to be constructed” block walls are shown.
21. “Sight visibility easements”, with dimensions, are shown.
22. Distance and bearing from project boundary to major intersection or major roadway is shown.
23. Sidewalk ramps with dimensions are indicated.
24. Engineer's note stating that the grading plan conforms to the approved drainage study is provided.
25. Elevations shown (top of curb, flowline and crownline) at limits of construction, P.C.'s, P.T.'s, and grade breaks.
26. Contours, at two-foot intervals, for undeveloped property are shown.
27. Dashed lines and labels showing existing improvements, with elevations noted, as needed, are provided to show the project's conformity with the existing conditions.
28. Shows existing or “to be dedicated” rights-of-way and easements.
29. Existing conditions - Must show “Existing Conditions” for the property being developed and within 100-feet of the project's boundary.
30. Existing contours are shown.
31. Slopes of 30-percent or greater are shown.
32. Proposed contours for parking lot and landscaping are shown.
33. Floodplain note/ evaluation was provided.
34. Road widths match Transportation Master Plan and/or Planning Commission requirements.
35. Road grades are minimum 0.5-percent and a maximum of 12-percent.
36. Sidewalks are provided as required.
37. Curb and gutter are provided as required.
38. Any waterways provided are 6-feet wide and only used with prior Engineering Department approval.
39. Erosion protection is provided for all cut and fill slopes.

40. Energy dissipaters are provided on the outfall of drain lines discharging into creeks and earthen channels capable of slowing velocities to 3-feet per second.
41. Storm drainage calculations were provided and reviewed.
42. Subdrain system – If project fronts canal property, the geotechnical report indicates groundwater within the footing zone, or the area is known for a high groundwater table.
43. Subdrain note was shown, if applicable.
44. Storm drains lines, catch basins, and clean out boxes are provided as needed.
45. Catch basins are provided at all sag points and every 500-feet. Doublewide catch basins, with two grates, are provided at sag points so the directional vanes can be installed in both directions.
46. Combination cleanout boxes provided at all changes in direction and every 500-feet.
47. An overland release for storm water is provided for all sag points such that no structures would be flooded if the underground drain system were blocked or the capacity exceeded.
48. Cul-de-sacs are graded to drain away from the bulb.
49. Drainage calculations were submitted and checked.
50. Storm drainpipe within paved area of City streets is reinforced concrete pipe (RCP), CL III and is a minimum 15-inch in diameter. Laterals may be sized to a 12-inch minimum size.
51. Smooth-wall corrugated HDPE pipe may be used in areas outside the City's right-of-way.
52. Subsurface drains are provided to an approved system or outfall where needed to lower groundwater levels to 3-feet below all basement levels. (To be maintained by Homeowner's Association)
53. Existing irrigation ditches have been piped or abandoned as approved by the ditch master.
54. Existing irrigation tailwater ditches or sheet flow is properly conveyed through the property.
55. All storm drainage conveyance systems have an oil water separator system, in heavily traveled areas (i.e. Commercial subdivisions, car washes, gas stations, etc.), in place before it discharges into the city system.

AA. Grading and Storm Drainage Details – This sheet is to include all of the details necessary to construct the grading and storm drainage facilities for the project. This sheet is to include:

1. Title block
2. Project title
3. North arrow
4. Scale of drawing
5. "Call Before You Dig" symbol and telephone number is shown (plan sheets).
6. Revisions block is indicated.
7. Keyed Slope Detail
8. Backdrain Plan Section
9. Cut-Fill Transition Detail
10. Rear Lot Drainage Swale (Permanent)
11. Typical Section (Front to Back Lot Benching)
12. Standard Rear Lot Inlet Box – Plan View
13. Standard Rear Lot Inlet Box – Profile View

BB. Grading and Drainage Plan Key Sheet – This sheet is to include the following:

1. Title block
2. Project title
3. North arrow
4. Scale of drawing
5. "Call Before You Dig" symbol and telephone number is shown (plan sheets).
6. Revisions block is indicated.

7. Legend
8. Grading & Drainage Plan Key Drawing – Show adjacent roads, properties, etc.
9. Subdivision – Site Summary

Grading and Drainage Plan - This sheet is to include the following:

1. Title block
2. Project title
3. North arrow
4. Scale of drawing
5. “Call Before You Dig” symbol and telephone number is shown (plan sheets).
6. Revisions block is indicated.
7. Grading & Drainage Plan Key Drawing – Show adjacent roads, properties, existing contours, graded contours, vegetation, etc.

(One of Several Sheets)(For a portion of the Subdivision, based on the Key Sheet)

DD. Overall Storm Water Pollution Prevention Plan – This plan is meet the requirements of the City’s ordinances and standards and the first part of the drawings/plan are to show the overall plan for erosion control and revegetation. Additional drawings may also be necessary to provide additional detail.

1. Title block
2. Project title
3. North arrow
4. Scale of drawing
5. “Call Before You Dig” symbol and telephone number are provided (plan sheets).
6. Revisions block is provided.
7. A verification from the design engineer that the proposed improvements comply with the City’s design and construction standards for land disturbance.
8. Any project over 1-acre requires a SWPP plan and permit be prepared (permit application available in the Engineering Department).
9. Project description - Type of project, area to be disturbed, number of units (residential/commercial) or square feet (single-parcel commercial/industrial sites).
10. Description of existing site conditions - Topography, vegetation, streams, lakes, canals, drainage features.
11. Description of bounding areas that may be affected by land-disturbing activities - Streams, canals, roads, residential and commercial areas.
12. Critical areas called out on plan such as steep slopes and environmentally sensitive areas.
13. Erosion and Sediment control plan showing BMP practices
14. Permanent stabilization - Methods used to permanently stabilize the site (e.g., sod, seed.).
15. Grading report - Identify where dirt will be moved from, final placement, placement methods and compaction. Prior to any grading on project, this report is to be submitted to the Engineering Department for review.
16. Grading Permit from the Engineering Department.
17. Erosion protection is provided for all cut and fill slopes.
18. Energy dissipaters are provided on the outfall of drain lines discharging into creeks and earthen channels capable of slowing velocities to 3-feet per second.

EE. Street Plan and Profile - This drawing is to provide all necessary information required to review the street plan and underlying utility work for adequacy for design as well as for eventual construction of the project. This will require that the following be provided:

1. Title block

2. Project title
3. North arrow
4. Scale of drawing
5. “Call Before You Dig” symbol and telephone number are shown (plan sheets).
6. Revisions block is shown.

Typical Sections

1. Typical street cross-sections
2. Local street, 50-foot right-of-way, minor collector, 66-foot right-of-way, major collector, 80, 90-foot right-of-way, arterial, 126-foot plus right-of-way, cross-sections are shown.
Drawings are to shown maximum cut and fill lines.
3. Show sidewalk ramps with dimensions.
4. Extend existing ground profile 200-feet beyond project.
5. Typical sections must have right-of-way or property line dimensions, cross slopes, type of curb, width of sidewalks, and the structural section material and thickness shown.

General Requirements

1. Profile view over plan view is shown.
2. A verification from the design engineer that the proposed improvements comply with the City’s design and construction standards and master plan for roads and bridges and transportation.
3. Permits – Permits have been received by the developer and evidence has been provided to the City. This may include Utah Department of Transportation (UDOT) if the project impacts State roads, railroads, City encroachment permits, etc.
4. Design efficient for snow removal and storage, and for traffic circulation.
5. A soils report has been prepared, submitted, and reviewed by the City recommending a pavement design.
6. The roadway cross-section meets at least the minimum City standards of local residential streets. The actual thicknesses are to be determined by the soils report.
7. Roadway designs meet the City standard for curb radii for local residential streets of 28-feet; for collector roadways of 35-feet and cul-de-sacs of 40-feet.
8. Roadway designs meet the City standard for vertical/horizontal design of 10-percent maximum grade for residential roadways, 8-percent for collector roadways, 6-percent for arterial roadways, and 100-feet of 3-percent. The minimum slope for these roadways is 0.5-percent. These roadways are also to meet the requirements of 90-degrees at intersections, intersections spaced 300-feet apart, the correct K value, 2-percent cross-slopes, etc.
9. Driveway designs meet the City standard of concrete apron, 30-feet maximum; for residential roadways – 50-feet from intersections, for collector roadways – 150-feet from intersections, and for arterial roadways – 200 to 250-feet from intersections. The spacing of these accesses shall be 85 to 150-feet for collectors, and 200 to 275 for arterial roadways.
10. Street names with right-of-way and back of curb widths are indicated and a designation as “Public” or “Private” to be maintained by are shown on each street plan or section, if on each sheet.
11. Centerline bearing(s) and stationing are shown.
12. Curve data is indicated.
13. Profile for centerline, near and far curbs - Also show crown profile, if there is an offset crown.
14. Centerline profile view – Curb profile may be eliminated.
15. Top of curb elevations with curve data shown for all curb returns.

16. No scale larger than 1"= 40' horizontally / 1"= 4' vertically grades less than 5-percent are shown. Grades more than 5-percent can be 1"= 40' / 1" = 8'.
17. If vertical curve is shown on profile, the vertical curve is shown on the plan view.
18. Curve table is shown in plan view.
19. Line of sight line shown in plan view.

Culinary Water

1. A verification from the design engineer that the proposed improvements comply with the City's design and construction standards and master plan for culinary water.
2. Culinary water meter are located within the City's right-of-way and within landscaped areas unless otherwise directed by the City.
3. Drawings indicate water system line sizes, valve locations and that the water lines are looped.
4. Notes indicate the method/procedure for connecting onto existing water line source. Needs to indicate it will be done according to the City's Culinary Water Design and Construction Standards.
5. Plan view over profile view is shown (12-inch and over, or in unimproved areas).
6. Street names with right-of-way and back of curb dimensions are shown.
7. Waterline(s) located with dimensions from centerline (CL) or property line (PL), provide bearing of waterline if not parallel to CL or PL.
8. Length of pipe distance between valves, type, size and slope are shown.
9. Indicate separation at all utility crossings.
10. All waterline easements are shown (document no., if existing).
11. Culinary water lines are provided, 8-inch minimum PVC C-900 water pipe, generally located on the north and east sides of the streets.
12. All culinary water lines are required to show all valves, fittings, and thrust blocks.
13. Service laterals are provided to each lot.
14. Combination air/vacuum relief valve assemblies (Apco 140C Series, Crispin UL Series, or approved equivalent) are provided at all high points of the water system.
15. Fire hydrants are provided at 500-foot minimum spacing on residential streets, 400-foot on cul-de-sacs, 200-foot minimum on collector streets with commercial frontage, and where otherwise needed as marked by the Engineering Department.
16. Fire hydrants are located on lot lines whenever possible.
17. Fire hydrants are called out as Mueller Super Centurion, Waterous Pacer 100, or Clow Medallion.
18. Fire hydrants in cul-de-sacs are placed at the lot line closest to the neck of the bulb, where feasible.
19. Fire hydrants, which are preferred, or wash-out valves are placed at low points and end-of-line points of culinary water mains, to act as blow-offs.
20. Secondary water lines are located in the south and west side of roadways in the parkstrips.
21. Public Works Department approval signature block and Water Notes are indicated.
22. Fire Department signature block is shown.
23. Fire flow calculations have been provided and reviewed.
24. Centerline profile view – Curb profile may be eliminated
25. Top of curb elevations with curve data shown for all curb returns.
26. Scale no larger than 1"= 40' horizontally / 1" = 4' vertically are used.
27. If a vertical curve is shown on the profile view, a vertical curve is shown on plan view.
28. Curve table shown in plan view.
29. Curve table shown in plan view.
30. Line of sight line shown in plan view.

Storm Drainage and Flood Control

1. Plan view over profile view is shown
2. A verification from the design engineer that the proposed improvements comply with the City's design and construction standards and master plan for storm drainage and flood control.
3. Street names with right-of-way and back of curb dimensions are shown.
4. Drainage calculations (Separate Document from Drawings) - These are to include the assumption of the 100-year storm event with 0.2 cubic foot per second/acre discharge in 24 hours and are to be stamped by a registered professional engineer.
5. Orifice sizes, number of manholes, invert and rim elevations; required riprap, required double inlet/dissipator, etc. are indicated.
6. Detention areas and details are shown. This is to include spillways at a 3:1 maximum side slopes.
7. Ditch master approvals have been provided.
8. Storm drain line(s) are labeled as public or private.
9. Show all laterals and drop inlets.
10. Storm sewer(s) located with dimensions from centerline (CL) or property line (PL), provide bearing of storm sewer line if not parallel to CL or PL.
11. Manholes are numbered.
12. Indicate the length of pipe, distance between manholes, type, size, and slope.
13. Indicate separation at all waterline crossings.
14. All drainage easements are shown (document no., if existing).
15. Storm drainage calculations were provided and reviewed.
16. All catch basins or storm drain appurtenances are to have proposed rim elevations with invert elevations shown on plan. A 3-foot minimum distance is shown between the rim and invert of the pipeline, unless approved by the Engineering Department.
17. Floodplain notes / evaluation are provided.
18. Subdrain system – Provide a subdrain system if the project fronts canal property, the geotechnical report indicates groundwater within the footing zone, or the area is known for a high groundwater table.
19. Subdrain Note are shown, if applicable.
20. All curb and gutter PC/PT, direction changes, sidewalks, handicap ramps, are to have finish grade (FG) calculations shown on the plan.
21. Storm drain lines, catch basins, and clean-out boxes are provided as needed.
22. Catch basins are provided at all sag points and every 500-feet or at all intersections, to intercept storm water runoff discharge. Doublewide catch basins, with two grates are provided at sag points so the directional vanes can be installed in both directions.
23. Manholes are to be located every 400-feet.
24. An overland release for storm water is provided for all sag points such that no structures will be flooded if the underground drain system were blocked or the capacity exceeded.
25. Storm drainpipe within paved area of City streets is reinforced concrete pipe (RCP), CL 111 and is a minimum of 15-inches in diameter.
26. Smooth-wall corrugated HDPE pipe may be used in areas outside the City's right-of-way only.
27. Subsurface drains are provided to an approved system, or outfall, where needed to lower groundwater levels to 3-feet below all basement levels.
28. Existing irrigation ditches are piped or abandoned as allowed in writing by ditch master.
29. Existing irrigation tailwater ditches or sheet flow is properly conveyed through the property.

30. In heavily traveled areas, i.e. commercial subdivisions, car washes, gas stations, etc., all storm drainage conveyance systems are to have an oil water separator system .in place before it discharges into the City's system.
31. Centerline profile view – Curb profile may be eliminated on new street construction.
32. Top of curb elevations with curve data shown for all curb returns.
33. No scale larger than 1"= 40' horizontally / 1" = 4' vertically is used.
34. If a vertical curve shown on the profile view, a vertical curve is shown on plan view.
35. Curve table is shown in the plan view.

Sanitary Sewer

1. Complete the requirements for the Sanitary Sewer Plan and Profile Sheets as indicated by the South Valley Water Reclamation Plant and show this information on this set of drawings.

Secondary Water

1. Complete the Secondary Water Plan and Profile Sheets checklist and show the information.

FF. Traffic Signal Plan – When a project requires the construction or modification of a traffic signal, a separate traffic signal plan will be required. The traffic signal plan is to have a scale of one-inch = 20-feet. In addition to the general requirements of drawings, the signal plans are to contain the following information:

1. Title block
2. Project title
3. North arrow
4. Scale of drawing
5. "Call Before You Dig" symbol and telephone number is shown (plan sheets).
6. Revisions block is shown.
7. All streets are named and dimensioned.
8. Conduit runs are shown.
9. Detail of signal pole location are shown.
10. Detail of signal improvements, i.e. foundation and pole type/size, location of pull boxes, cabinets, conduits, detection facilities, are shown.
11. Traffic signal notes
12. All existing improvements including streetlights, signal poles, curb and gutter, driveways, sidewalk ramps, drop inlets, surface and subsurface utilities are to be shown and located by centerline stationing.
13. All existing or "to be constructed" hand holes, pull boxes, underground conduits and detector loops are to be shown and located by centerline stationing
14. All existing or "to be constructed" stop bars, cross walks and pavement markings are to be shown and dimensioned
15. All improvements "to be constructed" including streetlights, signal poles, pull boxes, driveways, sidewalk ramps, curb, drop inlets, and subsurface utilities are to be shown and located by centerline stationing
16. Each signal type and location
17. Street name sign schedule
18. Conduit and cable schedule
19. Phase diagram

GG. Quantity and Schedule Requirements - Every plan set submitted is to contain a quantity estimate. The City requires the quantity estimate to contain quantities of all public improvements in a format consistent with the City's bond estimate form. In addition, the City requires quantities of

improvements constructed within public easements, whether or not they are publicly maintained. If the project contains both public and private improvements, the design engineer may elect to indicate both quantity estimates on the plans to facilitate the review of the public improvement bond estimate. The quantity estimate may be placed on a separate sheet or on the title sheet. The design engineer may elect to use schedules to clarify construction items, however; the use of schedules is not mandatory.

6.7 STANDARD NOTES

A. General Notes

1. All construction and materials are to be in accordance with the “City of West Jordan Design and Construction Standards”; and other applicable approved standards issued by the controlling agency; the International Building Code; and all local city codes and ordinances applicable, except as noted on this sheet as “Deviations from Standards”.
2. The existence and location of any overhead or underground utility lines, pipes, or structures shown on these plans are obtained by a research of the available records. Existing utilities are located on plans only for the convenience of the Contractor. Existing utility service laterals may not be shown on the plans. The Contractor is to, at his own expense, locate all underground and overhead interference’s, which may affect his operation during construction and is to take all necessary precautions to avoid damage to it. The Contractor is to use extreme caution when working near overhead utilities so as to safely protect all personnel and equipment, and is to be responsible for all cost and liability in connection therewith.
3. The Contractor is to take all precautionary measures necessary to protect existing utility lines, structures and street improvements which are to remain in place, from damage, and all such improvements or structures damaged by the Contractor’s operations are to be repaired or replaced satisfactory to the Engineering Department and owning utility company at the expense of the Contractor.
4. All construction is to be as shown on these plans, any revisions are to have the prior written approval of the Engineering Department.
5. Type V cement is to be used in all off-site concrete work. Concrete to be 3,000 P.S.I. minimum @ 28 days. Mix designs to be approved by the City, prior to the use on the project.
6. Permits are required for any work in the public Right-of-way. The Contractor is to secure all permits and inspections required for this construction.
7. Expansion joints required, maximum every 300-feet in extruded-type curb.
8. Asphalt cement (AC) pavement to be ½-inch above lip of all gutters after compaction, except at sidewalk ramps and cross gutters.
9. Curb and gutter found to be unacceptable to the City is to be removed and replaced.
10. Sidewalk ramps are to be constructed in each quadrant of an intersection per standard drawing 235. Exact location of ramps may be adjusted in the field by a City inspector.
11. Contractor is to provide all necessary horizontal and vertical transitions between new construction and existing surfaces to provide for proper drainage and for ingress and egress to new construction. The extent of transitions to be as shown on plans.
12. All grading work is to conform to the soils report as prepared by the Soils Engineer approved by the Engineering Department, and as shown on these plans.
13. Exact location of all saw cut lines may be adjusted or determined in the field by a City of West Jordan Engineer if location on plans is not clearly shown, or existing pavement condition requires relocation.
14. The Contractor is to take all precautions necessary to protect existing permanent surveying monuments. Any monuments disturbed are to be replaced and adjusted per available records at the Salt Lake County Surveyors Office.

15. Utility company meter boxes, manhole lids, valve covers, etc., are to be located out of driveways, driveway aprons, flow lines, and cross gutters unless written approval is granted by the utility company and the Engineering Department.
16. Wall notes: (Below)
17. All walls, new or existing, are only shown on civil plans for the purpose of reviewing grading relationships; flood control and sight distance at intersections. New walls require a separate permit and inspection by the Building Department.
18. Asphalt mix design must be submitted and approved by the Engineering Department prior to the placement of Asphalt within City Right of Way.
19. Contractor is to adjust all new and existing inlets, valve boxes, manhole rims, and sewer clean outs, etc. to finish grade as applicable whether or not they are shown on the plans.

B. Traffic Notes

1. All construction signing, barricading, and traffic delineation is to conform to the “Manual on Uniform Traffic Control Devices”, latest edition.
2. The street sign Contractor is to obtain street names and block numbering from the Engineering Department prior to construction.
3. Before any work is started in the right-of-way, the Contractor is to install all advance warning signs for the construction zone. The Contractor is to install temporary stop signs at all new street encroachments into existing City streets where warranted immediately after first grading work is accomplished, and is to maintain said signs until permanent signs are installed.
4. When a designated “Safe Route To School” is encroached upon by a construction work zone and the Traffic Engineer identifies a need for students to be assisted in the safe crossing through that work zone, the Contractor is to be required to provide a qualified “crossing guard”. The guard is to be present for the full duration of time those children are likely to be present.
5. If the improvements necessitate the obliteration, temporary obstruction, temporary removal or relocation of any existing traffic pavement marking, such pavement marking is to be restored or replaced with like materials to the satisfaction of the Engineering Department.
6. The Contractor is to be responsible for providing and installing all permanent signs shown on the plans. Street name signs are to conform in their entirety to current City standards. All other signs are to be standard size unless otherwise specified on the plans. All signposts are to be installed in accordance with the current City standards.
7. When a proposed street light standard is located within 5-feet of any proposed sign shown on the plans to be mounted on a signpost, the sign is to be mounted on the street light standard and the signpost is to be eliminated.
8. All permanent traffic control devices called for hereon are to be in place and in final position prior to allowing any public traffic onto the portions of the road(s) being improved hereunder, regardless of the status of completion of paving or other off-site improvements called for by these plans.
9. Street signs and stop signs are to be installed per City standard specifications for placement of street name signs.
10. The Contractor is to provide barricades, signs, flashers, other equipment and flag persons necessary to insure the safety of workers and visitors.
11. Work in public streets as approved by City excavation permits, once begun, is to be expedited to completion so as to provide minimum inconvenience to adjust property owners and to the traveling public.
12. The Contractor is to be responsible for notifying for Utah Transit Authority (UTA) and the Jordan School District Transportation Services Department if the construction interrupts or

relocates a bus stop or has an adverse effect on bus service on that street to arrange for temporary relocation of stop.

C. Streetlight Notes

1. No deviation of street light, pull box, conduits (etc.) locations are to be permitted without written approval of the Engineering Department. Any deviation from the plan location will require written notice from the Engineering Department.
2. All existing street lighting is to remain operational during construction.
3. All empty conduits are to have pull strings installed prior to final inspection.
4. Any structure such as block walls, chain link fences, retaining walls, etc., are to leave a minimum clearance of 18-inches to the face of street lightning pole on all sides when streetlight is installed behind sidewalk, and is to at no time completely enclose the street lighting pole.
5. As-built drawings are to be supplied to the Engineering Department who will provide copies to the Public Works Department prior to any pre-final inspection. The as-built drawing needs to be stamped as –built and signed by the preparer.
6. Service points are to be coordinated with Utah Power and Light, and wherever possible, be located near the center of the circuit. Service points are to be shown on the plans.
7. It is to be assumed that in the absence of an existing, workable circuit to attach to, all installations are to require a new service for operation of the circuit. In this case contact Utah Power and Light.
8. Wherever there is an overhead utility that may conflict with the installation of street lighting circuits and/or poles, these conflicts must be resolved between the developer and the utilities involved before streetlight bases are installed at no expense to the City of West Jordan and UPL.
9. The Contractor is to furnish complete service to transformers and control systems if required on plans, and is deemed necessary by UPL.

D. Grading Notes

1. In the event that any unforeseen conditions not covered by these notes are encountered during grading operations, the owner/engineer is to be immediately notified for direction.
2. It is the responsibility of the Contractor to perform all necessary cuts and fills within the limits of this project and the related off-site work, so as to generate the desired subgrade, finish grades and slopes shown.
3. Contractor is to take full responsibility for all excavation. Adequate shoring is to be designed and provided by the Contractor to prevent undermining of any adjacent features or facilities and/or caving of the excavation.
4. The Contractor is warned that an earthwork balance was not necessarily the intent of this project. Any additional material required or leftover material following earthwork operations becomes the responsibility of the Contractor.
5. The grading Contractor is responsible to coordinate with the owner to provide for the requirements of the project Storm Water Pollution Prevention Plan (SWPPP) and associated permit.
6. Contractor is to grade to the lines and elevations shown on the plans within the following horizontal and vertical tolerances and degrees of compaction, in the areas indicated:

		<u>Horizontal</u>	<u>Vertical</u>	<u>Compaction</u>
a.	Pavement area subgrade	0.1'+ +0.0'	to -0.1'	See soils report
b.	Engineered fill	0.5'+	+0.1' to -0.1'	See soils report

- Compaction Testing will be performed by the owner or his representative.
7. All cut and fill slopes are to be protected until effective erosion control has been established.
 8. The use of potable water without a special permit for building or construction purposes including consolidation of backfill or dust control is prohibited. The Contractor is to obtain all necessary permits for construction water.
 9. The Contractor is to maintain the streets, sidewalks and all other public right-of-way in a clean, safe and usable condition. All spills of soil, rock or construction debris is to be promptly removed from the publicly owned property during construction and upon completion of the project. All adjacent property, private or public is to be maintained in a clean, safe and usable condition.
 10. In the event that any temporary construction items is required that is not shown on these drawings, the owner agrees to provide and install such item at his own expense and at the direction of the Engineering Department. Temporary construction includes ditches, berms, road signs and barricades, etc.

E. Fire Department Notes

1. Authorized hydrants for this project are:
 - a. Kennedy Guardian
 - b. Mueller a-423 Centurion
 - c. Clow Model 2546 Medallion
2. On any new home or building installation, accessible fire hydrants are to be installed before combustible construction commences and said fire hydrants are to be in good working order with an adequate water supply.
3. Contractor is to call the Public Works Department and Engineering inspector for underground inspection, pressure and flush verification of all fire hydrants and fire lines before back filling.
4. Painting of the curbs and hydrant and any work necessary for protection of hydrants from physical damage is to be completed before approval.
5. A permit is required from the Fire Department for on-site water lines and fire hydrants. The permit and Contractor's material and test certificate for underground piping form is to obtain the Fire Department prior to any work beginning.
6. A flow test must be witnessed by the Fire Department prior to occupancy for verification of required on-site water supply.
7. All on-site fire main materials must be U.L. listed and A.W.W.A. approved.
8. Fire Hydrant Spacing:
Residential – 500-feet unsprinklered; 1,000-feet sprinklered.
Commercial, including multi-family – 300-feet unsprinklered; 600-feet sprinklered.
9. Where new water mains are extended along streets, hydrants are to be spaced at maximum 1,000-foot spacing to provide for transportation hazards.
10. No fire hydrant is to be located within 6-feet of any curb return, driveway, power pole, street light or any other obstruction.
11. Two sources of supply are required whenever there are four or more fire hydrants installed on a single system.
12. Not more than two hydrants can be out of service due to a single main break.
13. Fire apparatus access roads are to have an unobstructed width of not less than 20-feet provided no parking is allowed, not less than 28-feet if parallel parking is allowed on one side, and not less than 36-feet if parallel parking is allowed on both sides. Vertical clearance is to not be less than 13-feet, 6-inches and is to be paved.

14. The turning radius for any fire apparatus access road and/or fire lane, public or private, is to be not less than 45-feet outside radius and 22-feet inside radius and is to be paved.
15. A fire apparatus road is to be required when any portion of an exterior wall of the first story is located more than 150-feet from Fire Department vehicle access roads and/or fire lanes, public or private, in excess of 150-feet in length is to be provided with an approved turn around area.
16. Access roads are to be marked by placing approved signs at the start of the designated fire lane, one sign at the end of the fire lane and width signs at intervals of 100-feet along all designated fire lanes. Signs to be placed on both sides of an access roadway if needed to prevent parking on either side. Signs to be installed no higher than 10-feet or less than 6-feet from roadway level. The curb along or on the pavement or cement if curb is not present, is to be painted with red weather resistant paint in addition to the signs.
17. Electrically controlled access gates are to be provided with an approved emergency vehicle detector/receiver system. Said system is to be installed in accordance with the City of West Jordan City F.D. approval. Gates are only allowed with prior approval.

F. Culinary Water Notes

1. No work is to begin until the water plans have been released for construction by the Engineering Department. Following water plan approval, 48-hour notice is to be given to the Public Works Department prior to the start of construction. Notice must be given by 2:00 P.M. the business day prior to an inspection.
2. All work is to conform to City of West Jordan City standard plates, drawing, and specifications and the Culinary Water Design and Construction Standards, latest edition.
3. All work, except as modified by these plans or by note 2, is to be done in accordance with the most current draft or edition of the Road and Bridge Design and Construction Standards for off-site improvements.
4. A single pipe material is to be used throughout the project, unless otherwise approved by the Engineering Department.
5. All service laterals 2-inches in diameter and smaller are to be copper tubing with City of West Jordan City approved service saddles.
6. All water meter boxes are to be located outside of driveway areas.
7. All valves are to be located outside of driveways, gutters, curbs and alley gutters.
8. The following requirements must be met in the event a water line and sanitary sewer or storm sewer line cross:

A minimum 18-inch vertical separation (outside to outside) must be maintained when the water line is installed over the sanitary or storm sewer line. If the vertical separation cannot be maintained or the water line must be placed under the sanitary or storm sewer line, the sanitary or storm sewer line must be constructed with one of the following or, as shown on these plans:

- a. Potable water supply quality material
- b. Encasement, with 4-inch concrete (minimum)
- c. Sleeving with potable water supply quality pipe.

Each provision must extend along the sanitary or storm sewer, on either side of the water main, a minimum 10-foot distance perpendicular to the exterior of main.

9. Warning tape is to be required over all mains, all 6-inch diameter and larger service laterals, and any service lateral not installed perpendicular to the main.

10. All water facilities are to be filled, disinfected, pressure tested, flushed, filled and an acceptance water sample obtained prior to connection to the City of West Jordan distribution system.
11. The Contractor must obtain all meters 2-inches and smaller from City of West Jordan Public Works – 48-hours prior to pick-up.
12. Construction may interrupt service, with City of West Jordan Public Works approval and proper notification, between the hours of 10:00 P.M. and 6:00 A.M. Sunday through Thursday. Circumstances that may require temporary service feed must have prior City of West Jordan Public Works approval.
13. All water facility construction materials used must be as listed on the City of West Jordan Public Works pre-approved materials and manufacturers listing for new facilities, latest revision or specifically approved on these plans.
14. Approval of these plans for the water used stubout installation will not be construed as a commitment for water service to this property.
15. Conditional approval of valved outlet (6-inch and larger)
In the event the water plans show one or more valved outlets extending out of paved areas, installations of these outlets is acceptable, however, if the outlets are incorrectly located or not used for any reason when the property is developed, the developer is to abandon the outlets at the connection to the active main in accordance with the district's standards and at the developer's expense.
16. Water Crossing Note

The following are the requirements that must be met when there is a water-sewer crossing:

When protection of the water line is considered, the minimum vertical distance 18-inches must be maintained when the water line is installed over the sewer/storm line. If this distance cannot be maintained because of physical obstructions or the water line must be placed under the sewer/storm line, the sewer/line must be constructed with any on if the following:

- a. Extra heavy cast iron or ductile iron pipe
 - b. Water supply quality
 - c. Encasement with 4-inches minimum of concrete or sleeving with water quality pipe.
- Each of these provisions must be extended for 10-feet on either sides of the water line at 90 degrees to the crossing.

6.8 PLAN CHECK

Two plan check reviews are provided as part of the engineering review fees. The Developer will be charged an additional \$100.00 for each subsequent plan check, which must be paid to the City's Finance Department prior to the Engineering Department reviewing the drawings.

6.9 ENGINEERING DEPARTMENT APPROVAL

Once the Engineering Department staff has reviewed all corrections to the plans and have verified that the requested changes have been made, the plans will be submitted to the Engineering Department for review and approval. The Engineering Department will then notify the Developer in writing of that approval.

6.10 EASEMENT AND FEE PARCEL DEDICATIONS

The Developer is to verify to the Engineering Department's satisfaction that all easement and fee parcels needed for the project have been dedicated to the City. The Developer is to submit such recorded documents to the Engineering Department for their files.

6.11 SUBDIVISION INSPECTION

All improvements to be dedicated to the City for public use are to be inspected by the City's Engineering Department. A preconstruction meeting will be held for each project before any work is done. At this meeting the Developer and the Developer's contractor will be notified of the points when City staff must be present and have the facilities inspected prior to proceeding with the next step. No facilities are to be covered up or concrete poured without first receiving the proper inspection by the Engineering Department. Failure to comply with this requirement will result in the pipeline being uncovered, or concrete being removed and replaced, at the contractor's expense, to ensure proper procedures have been followed.

6.12 ENGINEERING DEPARTMENT APPROVAL LETTER

Once the Engineering Department is fully satisfied that all Engineering Department requirements have been met, the Engineering Department will notify the City's Building Department, through CityView, indicating that building permits may be issued for the project.
