AGREEMENT BETWEEN THE CITY OF RAPID CITY AND OS DEVELOPMENT INC. FOR THE DESIGN, CONSTRUCTION AND DEDICATION OF LAND FOR A WATER RESERVOIR AND BOOSTER STATION.

This Agreement is made and entered into by and between the CITY OF RAPID CITY, a municipal corporation of the State of South Dakota, located at 300 Sixth Street, Rapid City, SD 57701, herein after referred to as the "City," and OS DEVELOPMENT, INC., a South Dakota corporation, located at P.O. Box 6400, Rapid City, SD 57709, herein after referred to as the "Developer."

RECITALS

WHEREAS, the Developer has proposed constructing a large residential development known as Morningstar (the "Project") on land generally located south of Highway 44 and immediately to the west of Reservoir Road; and

WHEREAS, the City currently has inadequate water infrastructure in this area to support the Project; and

WHEREAS, to be feasible, the Project will require the City to move forward with construction of a water reservoir and booster station; and

WHEREAS, the City has previously identified this area as the site of a future water reservoir; and

WHEREAS, the cost of constructing a water reservoir is normally a City expense; and

WHEREAS, if the City agrees to build the reservoir now, the Developer has offered to pay for the design of the water reservoir and booster station along with their supporting infrastructure, contribute to the cost of actually constructing the reservoir and booster station and donate the land on which they will be located; and

WHEREAS, the proposed reservoir and booster station will benefit water service in this area by providing a new water pressure zone resulting in stabilized water pressure and increased water volume which may benefit Rapid City Regional Airport, improved fire protection, and the ability of the City to provide water service to additional areas outside the Project boundaries; and

WHEREAS, the purpose of this Agreement is to enumerate the parties mutual rights and obligations with respect to the design and construction of the water reservoir and booster station.

NOW THEREFORE, in consideration of the mutual promises made herein the parties hereby agree as follows:

1. The Developer shall retain a professional engineering firm (the "Consultant") to design a one and one-half to two million gallon water reservoir (actual size to be determined during design), telemetry to allow integration with City's SCADA system and a booster station, based

on design criteria and capacity requirements furnished by the City. The booster station shall be a non-skid mount type booster station. The reservoir and booster station shall be designed and constructed in accordance with the Scope of Services which has been attached hereto as Exhibit "A." The City's Public Works Dept. will perform preliminary reviews of drawings and specifications and have final approval of the construction drawings for these improvements. The Public Works Dept. will coordinate submitting the 11-6-19 review application to the City's Growth Management Dept with the Consultant.

- 2. The Developer will provide sufficient land on which to locate the water reservoir and the booster station and any other related appurtenant facilities in the form of a permanent utility easement or utility lot. Such easements, shall be in a form acceptable to the City Attorney's Office and will be provided to the City prior to the advertising of bids for construction of the public improvements contemplated in this Agreement.
- 3. The Developer's Consultant will provide the City bid letting services, including but not necessarily limited to, preparation of bid documents for the City's review and approval and award recommendation once bids are received. The Consultant will provide recommendations to, and follow the directions given by the City's Public Works Dept. on all aspects of designing the water reservoir and booster station. Upon the preparation of the bid documents by the Consultant and acceptance of the documents by Public Works Staff, the project will be bid by the City. Per State bid law, the City Council shall be responsible for approving the City's bid authority and awarding the construction contract to the lowest responsible bidder. The City Council will also need to approve any payment requests and change orders. Preparation of payment requests and change orders will be the responsibility of the City. The City may enter into a separate contract with a professional engineering firm for construction observation services related to the reservoir and booster station construction or may use its own staff to conduct additional construction observation. The City shall be solely responsible for paying for the construction observation services. Such expense may, but is not necessarily included in, the \$1,000,000 the City has identified for this project.
- 4. The Developer shall contribute \$1,020,600 to construct the water reservoir and \$430,300 to construct the booster station. The Developer shall pay to design the reservoir and booster station. The Developer's estimated cost to design the reservoir is \$170,100 and the booster station \$80,000. The parties acknowledge the approved Project Plan for TID #66 identifies \$510,300 as the amount the Developer is eligible to be reimbursed out of the TID for constructing the booster station. No proceeds from the TID were allocated to designing the booster station. If the Developer wants to be reimbursed for the \$80,000 in booster station design costs, the Project Plan will need to be amended. The City has agreed to pay any construction costs over the amount contributed by the Developer up to \$1,000,000. The parties acknowledge \$1,000,000 is the entire amount the City currently has budgeted to contribute to the construction of these improvements. Should the bids for construction exceed \$2,450,900, the City will need to identify additional funds prior to awarding the contract for construction. The City may, but is under no obligation to provide additional funds. If the cost of construction is less than \$2,450,900, or if the City is able to identify additional funds to cover construction costs in excess of that amount, it shall notify the Developer, and within Ten (10) days of being notified by the City, the Developer will remit to the City's Finance Office \$1,450,900. The Developer

acknowledges the City cannot legally award the construction contract until all construction funds are in the possession of the City. If the cost of construction exceeds the amount previously identified, and the City is unable to identify additional funds to make up for the excess cost, or the Developer fails to provide its share of the funds necessary for construction by the time allowed for awarding the bid, the City may reject all bids and is under no further obligation to proceed with construction of the reservoir, booster station and/or any related appurtenant facilities. The City is also under no obligation to provide the Developer with any compensation for the services rendered by the Consultant. If the amount of the lowest responsible bid is at or less than \$2,450,900 the City agrees it will award the construction contract. The City agrees to deposit the money provided by the Developer under this paragraph in an interest bearing account. The City will have sole discretion to decide what type of account to place these funds in. The Developer on behalf of itself, its heirs, assigns and successors in interest, releases the City from any and all claims arising out of the City's collection and payment of any interest generated from these funds. The Developer acknowledges the City is doing this for the Developer's sole benefit and would not agree to place the funds in an interest bearing account absent the Developer's promise to release the City from any liability related to the payment of the interest from the account. The money provided by the Developer will be the first money used to pay for construction of the project. The City will remit to the Developer any interest generated from the account, minus any administrative expenses, or other actual costs and/or fees incurred by the City related to the account. The City will receive a periodic statement from the financial institution where the account is located itemizing the amount of interest earned on the Developer's funds. The City will have forty-five (45) days from the date it receives the statement to process and remit the interest payment to the Developer.

- 5. The City will work with the Developer, through the Consultant, to coordinate construction of the reservoir and booster station to serve the Project. The parties acknowledge that the reservoir and booster station may not be substantially complete by the time the Developer is ready to begin building or occupying new houses within Morningstar Subdivision. The City agrees the Developer will be allowed to obtain building permits and certificates of occupancy for residential structures within the Project under the following conditions:
 - a) The construction contract for the reservoir and booster station has been awarded;
 - b) The Developer, at its own expense, shall install a master pressure reducing valve (PRV) station on the 14" water transmission main going south along Reservoir Rd. from Highway 44. The Developer will also be responsible for the cost of abandoning the master PRV station when it is no longer necessary. The Developer will have ninety (90) days from the date the City provides it written notice that the master PRV is no longer necessary to abandon it.
 - c) The Developer shall include in the purchase agreement for all lots a requirement that the owner of the lot shall install an individual PRV. The language in the purchase agreement shall also put the subsequent owner on notice that no water shall be provided to the residence and no certificate of occupancy will be issued prior to the individual PRV being installed. Once the reservoir has been accepted by the City and becomes operational, no further individual PRV's will need to be installed and the Developer will

be released from the obligation to include this language in subsequent purchase agreements.

- 6. Upon completion of the water reservoir, booster station and any appurtenant facilities and their acceptance by the City, the water reservoir, booster station, and any appurtenant facilities shall belong to the City and any future maintenance and needed expansion shall be the responsibility of the City.
- 7. It is the City's intent to establish connection fees to recoup any of the funds expended by the City in constructing the reservoir, booster station or any related appurtenances which are not otherwise being reimbursed through TID #66. These connection fees will be established per the City's standard procedure for imposing such fees. The City will not charge connection fees to any land or subdivided lots within Morningstar Subdivision as evidenced by the Layout Plat approved by the Rapid City Common Council on April 16, 2007. If the final configuration of the Lots and/or streets in the Final Plat(s) differs from the Layout Plat, it is the intent of the parties that no connection fees be charged to any of the Lots located within the boundaries of Morningstar as evidenced by the Layout Plat previously referred to.
- 8. The parties' obligations under this Agreement are contingent upon full performance of their respective obligations contained in the water and sewer oversizing agreements and the Contract for Private Development between the City and OS Development for Tax Increment District #66. The parties acknowledge the mutual promises they have made would not have been made without the Developer's promise to construct both the reservoir and oversize water and sewer mains and the City's promise to pay the amounts set out in the agreements. Should either of the parties fail to perform any of their respective obligations under the agreements the other party may seek specific performance of the other parties obligation or, may seek to terminate any remaining obligations to the extent that they have not already been performed. To the extent that performance has occurred, the party may seek to be compensated for the value of such performance.
- 9. The parties may undertake any legal or equitable action available to enforce the provisions of this Agreement in addition to any other remedies provided herein. This Agreement shall be deemed to be prepared jointly by the parties hereto and neither shall be deemed to be its sole author. In the event of any claim of ambiguity, no provision shall thereby be construed against either party.
- 10. If any section(s), or provision of this Agreement is declared invalid for any reason whatsoever by any competent court, such invalidity shall not affect any other section(s) or provision of this Agreement if they can be given effect without the invalid section(s) or provisions.
- 11. This Agreement, along with the Agreement Between the City of Rapid City and OS Development, Inc., for Payment of Oversize Costs for a Public Water Main, Agreement Between the City of Rapid City and OS Development, Inc., for Payment of Oversize Costs for Public Sanitary Sewer Mains, Contract for Private Development Between the City of Rapid City and OS Development Inc. and the Project Plan for Tax Increment District #66 are the entire

agreement of the parties. No other writings or negotiations are part of this document. This Agreement may only be modified by mutual agreement of both parties. Any modifications or addendums to this Agreement must be in writing.

- 12. This Agreement shall be construed according to the laws of the State of South Dakota. Any action concerning this Agreement shall be venued in Rapid City, South Dakota in the Circuit Court for the Seventh Judicial Circuit.
- 13. If the Landowner is a corporation, it has the power to enter into this Agreement and its officers signing for it have full power and authority to do so.

Dated this day	of, 2008.
	CITY OF RAPID CITY
	Mayor
ATTEST:	
Finance Officer	
	OS DEVELOPMENT, INC.
	By:
	Its:
State of South Dakota) ss.
County of Pennington)
Mayor and Finance Officer,	of, 2008, before me, the undersigned officer, nks and James F. Preston, who acknowledged themselves to be the respectively, of the City of Rapid City, a municipal corporation, and Finance Officer, being authorized so to do, executed the foregoing

agreement for the purposes therein contained by signing the name of the City of Rapid City by themselves as Mayor and Finance Officer.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

SEAL	Notary Public, South Dakota My Commission Expires:
State of South Dakota)	
County of Pennington)ss	S.
personally appeared of OS De	, 2008, before me, the undersigned officer, who acknowledged themself to be the evelopment, Inc., and that as such, being duly authorized to do ment for the purposes herein contained.
IN WITNESS WI	HEREOF, I hereunto set my hand and official seal.
	Notary Public, South Dakota My Commission Expires:

SEAL

EXHIBIT A

333 West Boulevard • Suite 304 • Rapid City, South Dakota 57701 Telephone (605) 348-6668 • Fax (605) 348-2445

December 10, 2008

Mr. Robert Ellis, Director of Public Works City of Rapid City 300 Sixth Street Rapid City, South Dakota 57701

Re: Morningstar Subdivision Water Distribution System Improvements

Rapid City, South Dakota

Dear Mr. Ellis:

The following letter is to outline the proposed water distribution improvements associated with the construction of the Morningstar Subdivision. The subdivision is located approximately 1.5 miles south of Highway 44 on the west side of Reservoir Road. The proposed Morningstar Subdivision consists of 388 acres and is to include 721 single-family residences, 191 multi-family residences, and a 4.5 acre neighborhood commercial property.

Previous studies conducted for the area as well as discussions with City staff indicate that a water storage reservoir and water booster station is required to service the Morningstar Subdivision. The level of quality on the Morningstar Water Reservoir/Booster Station will be of similar quality to previous projects completed within the City of Rapid City. These projects include the Red Rock Reservoir, Elk Vale Reservoir, and Stoney Creek Well 12/Booster Station Meeting minutes from previous meetings have been attached to further clarify design requirements.

The following design criteria shall be addressed when designing the water storage reservoir and water booster station. All design criteria shall comply with City of Rapid City Design Standards as outlined herewith:

Water Storage Reservoir:

Site Design

- a. The facility shall be located on a platted lot. Title to the lot shall be transferred to the City prior to the project being advertised for bid;
- b. Lot size requirements shall be evaluated on a case-by-case basis, but shall generally be not less than three (3) times the footprint of the reservoir and in all cases shall be per City Ordinance;
- c. Setbacks and yards shall be provided per City Ordinance but not less than forty (40) feet for all lot lines;
- d. Driveway and approach per City ordinance but not less than twenty (20) feet wide, shall be a reinforced PCC pavement for commercial approaches and driveways, and where driveway lengths exceed seventy-five (75) feet alternative widths or materials may be considered;
- e. Landscaping;
- f. Parking requirements per City Ordinance;
- g. ADA requirements;
- h. Site grading and drainage; the maximum site grade shall not exceed 20% (5:1). Steeper grades or use of retaining walls is not allowed without separate written approval by the City Engineer. Drainage is to be directed towards

Civil Consulting Municipal

- streets or drainage easements. Detention facilities may be required and should be identified in the design report, include construction phase sediment and erosion control plans;
- i. Exterior lighting is to be vandal proof (general site and valve vault). Provide flexibility for lighting of individual areas gate, valve vault, reservoir access, general site, etc. Lighting shall be provided for all areas of maintenance access or equipment to allow maintenance work to occur at night. Lighting shall be wired so that it can be switched on or off from within enclosures on the site. The lighting design shall be consistent with neighborhood aesthetics and the extent of visual screening of site or equipment shall be identified in the design report.

2. Security

- a. Design of physical barriers shall be a component of the design and shall comply with the most current national standards for facilities of this type;
- b. Electronic; intrusion alarms shall be included.

Structure

- a. Structural drawings;
- b. Structural calculations shall be a supplemental submittal;
- c. Hydraulic design or calculations shall include considerations for short circuiting, baffling, water quality, velocities;
- d. Minimum work space and floor plan requirements for vaults or accessory structures:
- e. Aesthetics;
- f. Fire protection meeting City Fire Code requirements (IFC);
- g. Low maintenance building materials shall be utilized;
- h. Lighting:
- Finishes and coatings;
- j. Corrosion protection;
- k. Thermal and moisture protection:
- Doors and windows.

4. HVAC

- Heating system;
- b. Dehumidification.
- Mechanical equipment and piping
 - a. Valves, etc.:
 - b. Meters:
 - c. Finishes and coatings including provisions for corrosion resistance or control;
 - d. Pipe and valve identification standardized colors, flow arrows, and labels;
 - e. Piping schematics and isometric drawings;
 - f. Thrust restraint and pipe support design; and
 - g. Piping and instrumentation diagrams (P&ID).

6. Electrical

a. SCADA - The design engineer shall prepare written recommendations for controls and alarm conditions. The City Public Works Department will provide written direction regarding alarm conditions and controls to be incorporated into the final design.

Recommended minimum alarm and data conditions reported to the Water Treatment Plant shall include foundation drain leak detection, real time flows, system pressure, building or vault "low" or "high" temperature, site or access intrusion (reservoir or vault), CL2 residual (real time); site "power fail", "vault flood" alarm/free water detection, and smoke alarm. These conditions are to be interfaced with the City's SCADA system (at Water Treatment Plant or other designated monitoring location).

- b. General electrical shall include schematics, equipment schedules, materials, panel boards, RTU's, and labeling of equipment and switches, etc.
- 7. Operations and maintenance Manuals and as-constructed drawings
 - a. Reviewed and certified by Engineer of Record to be complete and in compliance with the drawings and specifications
 - b. Provide minimum of five (5) sets;
 - c. Shall be bound and indexed:
 - d. Include construction records;
 - e. Include schematics of all equipment, supplier, warranty information Including start dates, and installer identification.

Water Booster Station:

1. Site Design

- a. The facility shall be located on a platted lot. Title to the lot shall be transferred to the City prior to the project being advertised for bid;
- b. Lot size requirements shall be per City Ordinance but not less than eight thousand (8,000) square feet;
- c. Set backs and yards shall be provided per City Ordinance, but not less than twenty-five (25) feet for all lot lines;
- d. Driveway and approach per City Ordinance but not less than twenty (20) feet wide and shall be a reinforced PCC pavement for commercial approaches and driveways;
- e. Landscaping;
- f. Parking requirements per City Ordinance;
- g. ADA requirements;
- h. Site grading and drainage: the maximum site grade shall not exceed 20% (5:1). Steeper grades or use of retaining walls is not allowed without separate written approval by the City Engineer. Drainage is to be directed towards streets or drainage easements. Detention facilities may be required and should be identified in the design report, include construction phase sediment and erosion control plans;
- i. Exterior lighting is to be vandal proof. Supplemental external lighting shall be provided outside of the building and shall be wired so that they can be switched on or off from within the building. Lighting shall be provided for all external accessory equipment to allow maintenance work at night. Lighting shall be wired so that it can be switched on or off from within the building. The lighting design shall be consistent with neighborhood aesthetics;
- j. Extent of visual or audible screening of External Accessory Equipment shall be identified in the design report;
- A noise abatement system shall be designed by an individual regularly engaged in the design of noise suppression and abatement for external mechanical systems; and
- Redundancy.
- 2. Security

- Design of physical barriers shall be a component of the design and shall comply with the most current national standards for facilities of this type;
- b. Electronic; intrusion alarms shall be included.
- 3. Standby Power Requirements
- Structure
 - a. Minimum work space and floor plan requirements;
 - b. Aesthetics:
 - c. Fire protection meeting City fire code requirements (IFC);
 - d. Low maintenance building materials shall be utilized;
 - e. Lighting;
 - f. Finishes and coatings;
 - g. Thermal and moisture protection;
 - h. Doors and windows; and
 - i. Address geotechnical engineering site evaluation and considerations.
- HVAC
 - a. Heating system; and
 - b. Air conditioning and dehumidification.
- 6. Mechanical equipment and piping
 - a. Chemical feed:
 - b. Pump requirements;
 - c. Valves, etc.;
 - d. Meters:
 - e. Equipment efficiency;
 - f. Chemical storage requirements;
 - g. Finishes and coatings, including provisions for corrosion resistance or control: and
 - Thrust restraint and pipe support design.
- 7. Electrical
 - a. SCADA The design engineer shall prepare written recommendations for controls and alarm conditions. The City Public Works Department will provide written direction regarding alarm conditions and controls to be incorporated into the final design.

Recommended minimum alarm and data conditions reported to the Water Treatment Plant shall include pump fail, real time flows, high/low motor current, high discharge pressure, low suction pressure; chemical feed pump fail, abnormal power, building low and high temperature; building intrusion, MCC impending trip, transfer switch "normal power" and "emergency power", building power fail; flood alarm/free water detection, smoke alarm and no flow (based on flow meter). These conditions are to be interfaced with City's SCADA system (at Water Treatment Plant or other designated monitoring location).

- b. General electrical shall include schematics, equipment schedules, materials, panel boards, RTU's, and labeling of equipment and switches, etc.
- 8. Operation and maintenance Manuals and as-constructed drawings
 - a. Reviewed and certified by Engineer of Record to be complete and in compliance with the drawings and specifications;
 - b. Provide minimum of five (5) sets;
 - c. Shall be bound and indexed;

- d. Include construction records;
- e. Include schematics of all equipment, supplier, warranty information including start dates, and installer identification.

Hopefully, this adequately addresses the parameters to be considered in the design of the water storage reservoir and water booster station for the Morningstar Subdivision. If you have any questions or require any additional information, please feel free to contact me.

Sincerely,

STOCKWELL ENGINEERS, INC.

Jon Brown, PE

Principal

Attachments

Cc: Mr. Phil Olsen, OS Development

File

Stockwell Engineers, Inc.

333 West Boulevard • Suite 304 • Rapid City, South Dakota 57701 Telephone (605) 348-6668 • Fax (605) 348-2445

PROJECT COORDINATION AGENDA MORNINGSTAR WATER RESERVOIR RAPID CITY, SOUTH DAKOTA

City of Rapid City Engineering Conference Room 300 Sixth Street Rapid City, South Dakota

July 24, 2008

The following agenda outlines the order of discussion for the referenced project progress meeting scheduled for July 24, 2008.

- 1. Introductions
- 2. Project Background (Phil Olsen/City of Rapid City)
 - a. Morningstar Meadows Residential Development
 - Water reservoir is required to allow the Morningstar Meadows development to go forward while providing adequate fire protection for the airport.
 - The budget for the reservoir is \$2,020,000.00
 - Engineering design costs will be covered by the developer.
 Bidding and construction administration will be contracted through the City of Rapid City.
 - b. Existing Water Study showing capacity/elevation requirements, etc.
 - Burns & McDowell Mater Utility Plan
 - Water Elevation: 3200 for new low level pressure zone
 - c. Existing Geotechnical report detailing existing soil conditions on-site
 - American Engineering Geotechnical Evaluation
 - d. Existing topographic site survey
 - Cetec Engineering (topographic survey, and preliminary design submittal)
- 3. Tank Design (TKDA/City of Rapid City)
 - a. 2.0 MG prestressed, wire-wound concrete reservoir
 - 1.5 MG reservoir based on available budget
 - Bid both prestressed and post-tensioned reservoir
 - SEI/TKDA to submit design evaluation comparing prestressed vs. post-tensioned
 - 14" fill line, 24" outlet pipe
 - Red Rock Reservoir, and Elk Vale reservoir are two recently completed reservoirs available for review
 - b. Full/Partial burry preference
 - Full burry preference, however, not opposed to upper portion of reservoir being exposed
 - For complete burry, 3' minimum cover with 15,000 lb. roof loading

- c. Access Hatch preference
 - 2 hatch system with locking devices on both hatches
- d. Architectural features
 - No preferences discussed for partial burry.
- e. System controls
 - Siemens Technology. Same controls as used on Red Rock Reservoir project.
- f. Security features (Vent house vs. Fencing)
 - Epoxy coated, earth toned, perimeter fencing with gated entrance
- 4. Civil/Site Design (Stockwell Engineers/City of Rapid City)
 - a. Grading plan to be consistent with proposed development grading plan
 - Size of site required will be based on tank design.
 - Grading and easements to handle overflow
 - b. Sidewalk installation.
 - ADA requirements need to be met for site access and parking
 - c. Irrigation requirements
 - Drip irrigation may be required for trees/plantings. A lawn irrigation system is not required.
 - d. Landscaping requirements
 - A low maintenance, zero-scaping site is desired. Use or boulders and river rock for landscaping features is preferred.
 - e. Fencing requirements
 - Discussed above under the Security features section
 - f. Driveway width requirements
 - A 12-14' wide paved driveway is required
 - g. Parking requirements
 - 2 parking spots. 1 handicap parking area with access aisle
- Project Timeline
 - a. Submit Plans/Specifications/Design Report for City of Rapid City review:
 - See below
 - b. Submit Final Plans/Specifications/Design Report for City acceptance
 - See below
 - Begin Advertisement/Bidding process
 - A winter bed letting is anticipated
 - d. Substantial project completion
 - A July 2009 completion date is anticipated

B. Additional Comments/Discussion

- a. Storm water quality requirements will need to be met for this project.
- b. Contractor prequalification's
 - Pre-qualification of General Contractor
 - Pre-qualification of tank manufacturer as sub-contractor
 - 50% general contractor requirement. An exception will need to be granted to lower the percentage of work completed by the general contractor
- c. Submittal schedule
 - Submittal showing preliminary layout, design assumptions, etc.
 (2 week review process)
 - 65% design submittal (2 week review)
 - Final design submittal
 - i. 11-6-19 review through Growth Management
 - Begin Advertisement/Bidding process

Stockwell Engineers, Inc.

393 West Boulevard • Suite 304 • Rapid City, South Dakota 57701 Telephone (605) 348-6668 • Fax (605) 348-2445

DESIGN COORDINATION MEETING MINUTES MORNINGSTAR WATER RESERVOIR RAPID CITY, SOUTH DAKOTA

City of Rapid City Engineering Conference Room 300 Sixth Street Rapid City, South Dakota

August 25, 2008

The following minutes outline summarizes the discussion for the above referenced project coordination meeting held on July 24, 2008 at 1:00 pm. For continuity purposes, the following minutes do not necessarily represent the order of discussion.

- 1. Introductions
- 2. Design Alternatives
 - a. Relocate reservoir site east
 - i. Exposed/Partially exposed domed reservoir
 - ii. Less grading required
 - iii. Shallower valve vault structure
 - Site selection is the developer's decision.
 - The City of Rapid City prefers a completely buried reservoir, but a partially exposed reservoir is also acceptable.
 - The dome structure of the reservoir shall be a concrete structure
 - The type of architectural treatments used is up to the developer. The City would prefer that the money be directed to additional storage capacity rather than architectural features.
 - This reservoir will be on a new pressure system without an established elevation. Based on previous studies, the HGL elevation should be between 3200-3220.
 - b. Valve vault structure
 - i. Precast vs. cast in place structure
 - The City has had difficulty with precast structures in the past and prefers that a cast in place structure be used which meets all confined space requirements.
 - An at-grade vault structure is acceptable and preferred as compared to the below grade structure proposed on the 35% design submittal.
 - Combining the booster station and the vault structure is acceptable. It is felt that combining the two projects would deliver cost saving to the City of Rapid City and the developer.
 - c. Reservoir interior drain system
 - i. Constant floor cross slope vs. floor with sump in middle
 - ii. Using fill or discharge line as drain line vs. separate drain line
 - Using a constant interior floor slope to drain the reservoir is acceptable.
 - The City of Rapid City requires two pipe penetrations (inlet & outlet).
 Combining the drain line and outlet line is acceptable.
 - The City has had shear problems in the past with sidelet pipes (wall). All
 pipe penetrations shall be through the floor.

Civil Consulting Municipal

3. Additional Comments/Discussion

- The Stony Creek project has the motorized control valve that the City of Rapid City would like to use.
- In order to ensure a competitive bid, the reservoir will be bid as both a posttensioned and pre-stressed structure
- If the project construction budget becomes an issue, the City is willing to reduce storage in order to have all the preferred controls, monitoring, and SCADA system devices.
- The B&M Master Utility plan will be reviewed to determine whether a 20" or 24" discharge line is required
- In the project specifications, there will be two separate pre-qualifications.
 One for the tank manufacturers and one for the General Contractors.
- A request will need be filed with the City to lower the General Contractor percentage of work requirement to 25-30%.
- A two year no-leak requirement will be written into the project specifications.
 This will also be addressed as part of the City Standard 2 year surety that the Contractor is required to provide.
- There was some brief discussion on the requirements of the proposed booster station. An engineering report will need to be prepared and submitted to the City to properly define all the requirements
- Two design submittals are anticipated for the reservoir project (65% and Final).