

BID FOR
SPARKS SEWER MAINTENANCE

BID # 13/14-005

BIDS DUE NOT LATER THAN: 1:45 PM ON AUGUST 7, 2013

PUBLIC BID OPENING: 2:00 PM ON AUGUST 7, 2013

[NOTE: TIME BIDS ARE DUE IS DIFFERENT FROM BID OPENING TIME]



431 PRATER WAY
P.O. BOX 857
SPARKS, NV 89432-0857

Company Name: _____

**CITY OF SPARKS
NOTICE TO BIDDERS
SPARKS SEWER MAINTENANCE
BID #13/14-005**

NOTICE IS HEREBY GIVEN that the City of Sparks, Nevada, will receive written sealed bids only, for the project listed above. Said bids must be in the hands of the Contracts and Risk Manager at 431 Prater Way, Sparks, Nevada, **NO LATER THAN 1:45 PM ON AUGUST 7, 2013**. Bids postmarked prior to, but not received until after this deadline will not be accepted. Vendor bid response submittals may not be sent to the City of Sparks via the Internet/e-mail and will not be entertained for award by the City of Sparks. The right is reserved to reject any Bid/Proposal or to accept the Bid/Proposal which is deemed by the City of Sparks to be in the best interest of the City of Sparks. The City of Sparks reserves the right to waive any irregularities and/or informalities in the bid process.

All Bids are to be marked clearly on the outside. Bids will be opened and publicly read at **2:00 PM ON AUGUST 7, 2013**, at Sparks City Hall, 431 Prater Way Sparks, NV 89431.

PROJECT DESCRIPTION: The City of Sparks is seeking pricing from qualified contractors to perform routine/scheduled and emergency sanitary sewer maintenance at designated locations, under the general direction of City staff. Maintenance activity would include all labor, equipment and supplies required to perform complete maintenance of facilities further described in the document "Sparks Sanitary Sewer Collection System Maintenance", dated 6/21/2013, contained within the complete bid document. The project shall include routine maintenance cleaning of approximately 313 miles of 15" and smaller sanitary sewer pipeline, monthly maintenance of "hot spot" areas, emergency cleaning services, disposal of removed materials, permits, and other activities and supplies to ensure a properly functioning sanitary sewer system.

PRE-BID MEETING: A non-mandatory pre-bid meeting will be held at 9AM on July 30, 2013 at City of Sparks, City Hall, 431 Prater Way, Sparks, NV 89431 in the Lobby Conference Room.

BONDING/LICENSING: A Bid Bond in the amount of 5% of the total amount bid, calculated against the annual cost of service for all specified locations. This bid bond will function as a penalty in the event the successful bidder fails to enter into a written contract with the City in accordance with the bid documents. Additionally, the City will be entitled to actual damages, if any. Prospective bidders will be required to have a current Contractor's License under the Nevada State Law for the type of work specified herein.

The work to be performed under this Contract shall be commenced by the successful Bidder after all executed Contract documents have been submitted, and after being notified to proceed by the City of Sparks.

Bid documents and specifications may be obtained from the City of Sparks website. Please visit <http://www.cityofsparks.us/bids> to obtain complete bid documents. There is no cost to use the system or obtain plans, but registration at the site is required. It is the responsibility of all potential bidders/responders to monitor the Purchasing Division's website for any changing information prior to submitting their bid/proposal. For further information, contact the Purchasing Division at (775) 353-2273. The individual responsible for coordinating this bid is: Dan Marran, CPPO, C.P.M. – Contracts and Risk Manager

Reno Gazette Journal Legal Notices Section
Publish Date: July 17, 2013
Proof of publication required

Bidder's Checklist

Bidders are instructed to complete and return the following forms in order for their bids to be complete. Failure to return the following items may result in your bid being declared “non-responsive.”

1. _____ Bid Item Schedule
2. _____ Bidder Information Sheets
3. _____ Subcontractor Information Form (5% list due with bid submittal)
4. _____ Acknowledgement and Execution Form
5. _____ Certification Regarding Debarment
6. _____ Bid Bond
7. _____ Signed Bid Addenda (if applicable)

**CITY OF SPARKS
 BID ITEM SCHEDULE**

BID # 13/14-005

BID TITLE: SPARKS SEWER MAINTENANCE

PRICES must be valid for 90 calendar days after the bid opening.

COMPLETION of this project is expected **PURSUANT TO CONTRACT DOCUMENTS.**

BIDDER acknowledges receipt of _____ Addenda.

 Bidder Name

 (signature)

Item No.	Quantity	Unit	Description	Unit Price	Total Price
1.01	92966	LF	MSA 1 routine cleaning	\$ _____ /LF	\$ _____
1.02	53807	LF	MSA 2 routine cleaning	\$ _____ /LF	\$ _____
1.03	34796	LF	MSA 3 routine cleaning	\$ _____ /LF	\$ _____
1.04.1	98888	LF	MSA 4.1 routine cleaning	\$ _____ /LF	\$ _____
1.04.2	60128	LF	MSA 4.2 routine cleaning	\$ _____ /LF	\$ _____
1.05	69978	LF	MSA 5 routine cleaning	\$ _____ /LF	\$ _____
1.06	48412	LF	MSA 6 routine cleaning	\$ _____ /LF	\$ _____
1.07	46399	LF	MSA 7 routine cleaning	\$ _____ /LF	\$ _____
1.08	95411	LF	MSA 8 routine cleaning	\$ _____ /LF	\$ _____
1.09	29354	LF	MSA 9 routine cleaning	\$ _____ /LF	\$ _____
1.10	43088	LF	MSA 10 routine cleaning	\$ _____ /LF	\$ _____
1.11	42278	LF	MSA 11 routine cleaning	\$ _____ /LF	\$ _____
1.12	65861	LF	MSA 12 routine cleaning	\$ _____ /LF	\$ _____

1.13	165145	LF	MSA 13 routine cleaning	\$ _____ /LF	\$ _____
1.14	253098	LF	MSA 14 routine cleaning	\$ _____ /LF	\$ _____
1.15	51663	LF	MSA 15 routine cleaning	\$ _____ /LF	\$ _____
1.16	26453	LF	MSA 16 routine cleaning	\$ _____ /LF	\$ _____
1.17	250592	LF	MSA 17 routine cleaning	\$ _____ /LF	\$ _____
1.18	83966	LF	MSA 18 routine cleaning	\$ _____ /LF	\$ _____
1.WC	40415	LF	MSA WC routine cleaning	\$ _____ /LF	\$ _____
2.00	200000	LF	Root removal and treatment	\$ _____ /LF	\$ _____
3.00	12	EA	Hot Spot areas 1-34, monthly cleaning, per month.	\$ _____ /EA	\$ _____
4.00	12	EA	Lift station maintenance	\$ _____ /EA	\$ _____
5.00	180	EA	Emergency call, contingent item	\$ _____ /EA	\$ _____
FA	1	FA	Force Account	\$75,000.00	\$75,000.00

Total Bid Price \$ _____	
(written total bid price)	\$ _____

MISCELLANEOUS (reference costs)

Fuel Component expressed as a percentage, per Item G of the Scope of Work	
Cleaning pipe sizes greater than 15” and less than or equal to 21”- Cost per Linear Foot	
Anticipated number of crews assigned to work	

Bidder Information

COMPANY INFORMATION:

Company Name:
Contact Name:
Address:
City:
State / Zip Code:
Telephone Number including area code:
Fax Number including area code:
E-mail:

COMPANY BACKGROUND

- 1) Has your company ever failed to complete any contracts awarded to it? No___ Yes___ (If yes, please provide details.)

- 2) Has your company filed any arbitration request or law suits on contracts awarded within the last five years? No___ Yes___ (If yes, please provide details.)

- 3) Does your company now have any legal suits or arbitration claims pending or outstanding against it or any officers relating to the performance of a public contract? No___ Yes___ (If yes, please provide details.)

- 4) Does your company now employ any officers or principals who were with another firm when that company failed to complete a contract within the last five years? No___ Yes___ (If yes, please provide details.)

- 5) Has your company had a contract partially or completely terminated for default (cause) within the past five years? No___ Yes___ (If yes, please provide details.)

- 6) Has your company been found non-responsible on a government bid within the last five years? No___ Yes___ (If yes, please provide details.)

Bidder Information

CONTRACTOR LICENSE INFORMATION:

Nevada State Contractor's License Number (If Applicable):
License Classification(s):
Limitation(s) of License:
Date Issued:
Date of Expiration:
Name of Licensee:
City, State, Zip Code of Licensee:
Telephone Number of Licensee:

BUSINESS LICENSING INFORMATION All vendors doing business within the City of Sparks are required to obtain and maintain a current business license from the City of Sparks prior to commencement of work (Sparks Municipal Code Section 5.08.020A). Vendor(s) awarded a contract resulting from this bid shall be required to obtain a current business license if they do not already hold one.

City of Sparks Business License Number:
Date Issued:
Date of Expiration:
Name of Licensee:
City, State, Zip Code of Licensee:
Telephone Number of Licensee:
Taxpayer Identification Number:

Bidder Information

DISCLOSURE OF PRINCIPALS:

a) Individual and/or Partnership:

Owner 1) Name:
Address:
City, State, Zip Code:
Telephone Number:
Owner 2) Name:
Address:
City, State, Zip Code:
Telephone Number:
Other 1) Title:
Name
Other 2) Title:
Name:

b) Corporation:

State in which Company is Incorporated:
Date Incorporated:
Name of Corporation:
Address
City, State, Zip Code:
Telephone Number:
President's Name:
Vice-President's Name:
Other 1) Name:
Title:

**SUBCONTRACTOR DETAIL
SUBCONTRACTORS EXCEEDING FIVE PERCENT OF BID AMOUNT**

INSTRUCTIONS: Per NRS 338.141, Bidder submits the following names of First-Tier Subcontractors who will provide to Bidder labor or a portion of the Work or improvements for which Subcontractor will be paid an amount exceeding five percent (5%) of the Bid Price. The Bidder shall list the name of a Subcontractor for each portion of the Work, the value of which exceeds five percent (5%) of the Bid Price. **If Bidder will perform more than 1% of the Work, BIDDER SHALL ALSO LIST HIS NAME and description of the work that the prime contractor will perform in the space provided below.**

Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description & Value of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description & Value of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description & Value of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description & Value of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description & Value of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description & Value of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description & Value of Work:		

Bidder Name: _____

Authorized Signature: _____

SUBCONTRACTOR DETAIL
SUBCONTRACTORS EXCEEDING ONE PERCENT OF BID AMOUNT OR \$50,000

INSTRUCTIONS: In compliance with NRS 338.141, Bidder submits the following names of First-Tier Subcontractors who will provide to Bidder labor or a portion of the Work or improvements for which Subcontractor will be paid an amount exceeding one percent (1%) of the Bid or \$50,000, whichever is greater. The Bidder shall list the name of a Subcontractor for each portion of any of the Work the value of which exceeds one percent (1%) of the Bid Price.

Since all Subcontractors listed on the Bidder's 5% Subcontractor Information Form are over 1% of the Bid amount, those Subcontractors shall automatically be deemed incorporated into this 1% Subcontractor Information form and need not be re-listed below.

Information provided must be submitted within two (2) hours after the completion of the opening of the bids (Per NRS 338.141). Bidder shall enter "NONE" under "Name of Subcontractor" if not utilizing subcontractors exceeding this amount. This form must be complete in all respects. If, additional space is needed, attach a separate page. The bidder may elect to submit this information with the bid proposal and, in that case, the bidder will be considered as having submitted this information within the above two hours.

Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description & Value of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description & Value of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description & Value of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description & Value of Work:		

Bidder Name: _____ **Authorized Signature:** _____

CITY OF SPARKS ACKNOWLEDGMENT AND EXECUTION:

STATE OF _____)
) SS
County of _____)

_____ (Name of Principal) being first duly sworn, deposes and says: That he/she is the Bidder, or authorized agent of the Bidder for whom the aforesaid described work is to be performed by; that he/she has read the Plans, Specifications, and related documents including but not limited to, any addenda issued and understands the terms, conditions, and requirements thereof; that if his/her bid is accepted that he/she agrees to furnish and deliver all materials except those specified to be furnished by the City of Sparks (Owner) and to do and perform all work for the **SPARKS SEWER MAINTENANCE**, Bid # **13/14-005**, together with incidental items necessary to complete the work to be constructed and/or services to be provided in accordance with the Specifications, Plans, and Contract Documents annexed hereto.

TO THE CONTRACTS AND RISK MANAGER OF THE CITY OF SPARKS:

The undersigned, as Bidder, declares that the only persons or parties interested in this proposal, as principals, are those named herein, the Bidder is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid: that this proposal is made without collusion with any other person, firm or corporation; that he/she has carefully examined the location of the proposed work; the proposed form of Contract, the Contract Provisions, Plans, Specifications and Contract Documents incorporated therein referred to and made part thereof; that he/she proposes and agrees if this proposal is accepted, that he/she will contract with the City of Sparks in the form of the Contract prescribed, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the Contract and annexed Contract Provisions, Plans and Specifications, in the manner and time prescribed and according to the requirements of the Project Representative as therein set forth, it being understood and agreed that the quantities shown herein are approximate only and are subject to increase or decrease, and that he/she will accept, in full, payment therefore the indicated prices.

Contractor/Bidder:

(Printed Name of Contractor/Bidder)

BY:

Firm:

Address:

City:

State / Zip Code:

Telephone Number:

Fax Number:

E-mail Address:

(Signature of Principal)

Signature:

DATED this _____ day of _____, 2013.

State of Nevada)

County of _____) SS.
)

On this _____ day of _____, in the year 2013, before me,

_____/Notary Public, personally appeared _____ Personally known to me (or proved

to me on the basis of satisfactory evidence) to be the person whose name is subscribed to this instrument, and acknowledged that he (she) executed it. WITNESS my hand and official seal.

Notary's Signature:

My commission Expires:

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER
RESPONSIBILITY MATTERS**

(This form to be signed and returned at the time of bid)

The prospective bidder, _____ certifies to the best of its knowledge and belief that it and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. Any exceptions provided will not necessarily result in denial of award, but will be considered in determining bidder responsibility and whether or not the City will enter into contract with the party. For any exception noted, indicate on an attached sheet to whom it applies, initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

Typed Name & Title of Authorized Representative

Signature of Authorized Representative

Date

I am unable to certify to the above statement. My explanation is attached.

Signature _____ Date _____

CITY OF SPARKS, NEVADA – 5% Bid Bond

KNOW ALL MEN BY THESE PRESENTS: That we the undersigned _____, as “Principal,” and _____, as “Surety,” are hereby held and firmly bound unto the City of Sparks, Nevada, as “Obligee,” in the penal sum of _____dollars (\$_____) for the payment of which, well and truly to be made, the Principal and Surety bind themselves, their heirs, executors, and administrators, successors and assigns, jointly and severally, by this instrument. The condition of the obligation of this bid bond is as follows:

WHEREAS, NRS 332.105 authorizes local governments to require bid bonds to insure execution and proper performance of the Contract and the Bonding Company has an “A” or better rating with Moody’s or A.M. Best and T-Listed with the U.S. Treasury Department;

AND, WHEREAS, the Principal has submitted a bid for Bid # **13/14-005**, for the **SPARKS SEWER MAINTENANCE**.

NOW, THEREFORE,

- (a) If said Bid shall be rejected; or
- (b) If said Bid shall be accepted and the Principal shall execute and deliver the contract in the bid documents (“Contract”) to Obligee in accordance with the terms of the bid documents, and give such bond or bonds as may be specified in the bid or contract documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or
- (c) If the Principal shall pay to the Obligee the full amount of the bid bond as a penalty irrespective of the Obligee’s actual damages in the event of the failure of the Principal to enter into such Contract and give such bond or bonds,

then, this obligation shall be null and void. Otherwise it shall remain in full force and effect, it being expressly understood and agreed that the liability of the Surety (but not of the Principal) for any and all claims hereunder shall, in no event, exceed the penal amount of the obligation as herein stated.

The Surety, for the consideration for which this bond was executed, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Obligee may accept such bid, and hereby waives notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and the Surety has caused their seal to be hereto affixed and these present to be signed by their proper officers.

Signed, Sealed and dated: _____

Principal
By: _____

Surety
By: _____

GENERAL CONDITIONS

General Conditions



GENERAL CONDITIONS

Please Read Carefully

These Provisions Are a Part of Your Bid and any Contract Awarded

Scope of Bid/Proposal: Bids/Proposals are hereby requested for **SPARKS SEWER MAINTENANCE**, as per specifications herein.

The bidder agrees that:

- A. Bidder has carefully examined the specifications, and all provisions relating to the item(s) to be furnished or the work to be done; understands the meaning, intent, and requirements; and
- B. Bidder will enter into a written contract and furnish the item(s) or complete the work in the time specified, and in strict conformity with the City of Sparks specifications for the prices quoted.

Note: Bidder is defined as any individual, partnership, or corporation submitting a bid, proposal, or quotation in response to a request for bid (RFB), request for proposal (RFP), request for information (RFI) or request for quotation (RFQ). A bidder may also be referred to as a bidder, contractor, supplier or vendor.

The use of the title "Bidder," "Vendor", "Contractor" or "Consultant" within this solicitation document and any resulting contract shall be deemed interchangeable and shall refer to the person or entity with whom the City of Sparks is soliciting and/or contracting for the service or product referenced within the bid document.

1. Prices:

All prices and notations must be in ink or typewritten. Mistakes may be crossed out and corrections typed or written with ink adjacent to the error. Bids shall indicate the unit price extended to indicate the total price for each item bid. Any difference between the unit price correctly extended and the total price shown for all items bid shall be resolved in favor of the unit prices. Bidders are encouraged to review all prices prior to bid submittal, as withdrawal or correction may not be permitted after the bid has been opened.

2. Firm Prices:

Prices on bid shall be firm prices not subject to escalation unless otherwise provided for in the specifications. In the event the specifications provide for escalation, the maximum limit shall be shown, or the bid shall not be considered. In the event of a decline in market price below a price bid, the City of Sparks shall receive the benefit of such decline.

3. Items Offered:

If the item offered by the bidder has a trade name, brand and/or catalog number, such shall be stated in the bid. If the bidder proposes to furnish an item of a manufacturer or vendor other than that mentioned on the face hereof, bidder must specify maker, brand, quality, catalog number, or other trade designation. Unless such is noted on the bid form, it will be deemed that the item offered is that designated even though the bid may state "or equal".

4. Brand Names:

Whenever reference to a specific brand name is made by the City, it is intended to describe a component that has been determined to best meet operational, performance, or reliability standards of the City, thereby incorporating these standards by reference within the specifications. These specifications are not meant to limit the vendor; they are guidelines to minimum qualifications. The bidder shall indicate their compliance or non-compliance for each line of the specification. Any deviations from the specifications or where submitted literature does not fully support the meaning of the specifications must be clearly cited in writing by the bidder.

General Conditions



An equivalent (“or equal”) may be offered by the bidder, subject to evaluation and acceptance by the City. It is the bidder’s responsibility to provide, at bidder’s expense, samples, test data, or other documentation the City may require to fully evaluate and determine acceptability of an offered substitute. The City reserves the sole right to reject a substituted component that will not meet or exceed City standards.

5. Samples:

Samples may be required for bid evaluation and testing purposes. Bidders shall agree to provide samples upon request and at no additional cost to the City.

6. Withdrawal of Bids:

Bids may be withdrawn by written or facsimile notice received prior to the exact hour and date specified for receipt of bid. A bid may also be withdrawn in person by a bidder, or bidder’s authorized representative, prior to the exact hour and date set for receipt of bids. Telephone withdrawals are not permitted.

7. Late Bids, Modifications, or Withdrawals:

Bids, modifications of bids, or bid withdrawals received after the exact time and date specified for receipt will not be considered.

8. Mistake in Bid:

- (a) If the bidder discovers a mistake in bid prior to the hour and date specified for receipt of bid, bidder may correct the mistake by withdrawing the bid in accordance with Item 7 above and resubmit prior to the stated bid deadline.
- (b) If within seventy-two hours of the bid closing and prior to the issuance of a purchase order or a contract, the apparent low bidder discovers a mistake in bid of a serious and significant nature, bidder may request consideration be given to withdrawing the bid. The mistake must be evident and provable. The right is reserved by the City to reject any and all requests for withdrawal of bids. The decision of the Purchasing Manager is final as regards acceptance or rejection of requests for withdrawal after closing of bids.
- (c) A mistake in bid cannot be considered once a purchase order or contract is issued.

9. Signature:

All bids shall be signed and the title and firm name indicated. A bid by a corporation shall be signed by an authorized officer, employee or agent with his or her title.

10. Exceptions:

A bidder deviating from specifications must specify any and all deviation(s). Failure to note said exceptions shall be interpreted to convey that the bidder shall propose to perform in the manner described and/or specified in this bid solicitation. If exception(s) are taken or alternatives offered, complete descriptions must be shown separately.

11. Confidential Information:

Any information deemed confidential or proprietary should be clearly identified by the bidder as such. It may then be protected and treated with confidentiality only to the extent permitted by state law. Otherwise the information shall be considered a public record. Information or data submitted with a bid will not be returned.

12. Quality:

Unless otherwise required in the specifications, all goods furnished shall be new and unused.



13. Litigation Warranty:

The bidder, by bidding, warrants that bidder is not currently involved in litigation or arbitration concerning the materials or bidder's performance concerning the same or similar material or service to be supplied pursuant to this contract of specification, and that no judgments or awards have been made against bidder on the basis of bidder's performance in supplying or installing the same or similar material or service, unless such fact is disclosed to the City in the bid. Disclosure may not disqualify the bidder. The City reserves the right to evaluate bids on the basis of the facts surrounding such litigation or arbitration and to require bidder to furnish the City with a surety bond executed by a surety company authorized to do business in the State of Nevada and approved by The City of Sparks in a sum equal to one hundred percent (100%) of the contract price conditional on the faithful performance by bidder of the contract in the event the bid is awarded to bidder, notwithstanding the litigation or arbitration.

14. Royalties, Licenses and Patents:

Unless otherwise specified, the bidder shall pay all royalties, license and patent fees. The bidder warrants that the materials to be supplied do not infringe any patent, trademark or copyright and further agrees to defend any and all suits, actions and claims for infringement that are brought against the City, and to defend, indemnify and hold harmless the City from all loss or damages, whether general, exemplary or punitive, as a result of any actual or claimed infringement asserted against the City, the bidder or those furnishing material to bidder pursuant to this contract.

15. Performance Standards:

Performance of work and acceptability of equipment or materials supplied pursuant to any contract or award shall be to the satisfaction and full discretion of the City.

16. Americans with Disabilities Act (ADA) Standards:

Bidders shall be required to comply with current ADA Standards in preparing their bids and executing work required under any contract resulting from this bid. Completed work must comply with current ADA Standards.

17. Warranties:

(a) Unless otherwise specified, all workmanship, material, labor or equipment provided under the contract shall be warranted by bidder and/or manufacturer for a minimum of twelve (12) months after acceptance by City. Greater warranty protection will be accepted. Lesser warranty protection must be indicated by bidder on the bid proposal as an exception.

(b) Bidder shall be considered primarily responsible to the City for all warranty service, parts and labor applicable to the goods or equipment provided by bidder under this bid or award, irrespective of whether bidder is an agent, broker, fabricator or manufacturer's dealer. Bidder shall be responsible for ensuring that warranty work is performed at a local agency or facility convenient to City and that services, parts and labor are available and provided to meet City's schedules and deadlines. If required and defined within the Scope of Work, the Bidder will post a performance bond after contract award to guarantee performance of these obligations. Bidder may establish a service contract with a local agency satisfactory to City to meet this obligation if bidder does not ordinarily provide warranty service.

18. Addenda:

The effect of all addenda to the bid documents shall be considered in the bid, and said addenda shall be made part of the bid documents and shall be returned with them. Before submitting a bid, each bidder shall ascertain

General Conditions



whether or not any addenda have been issued, and failure to acknowledge any such addenda may render the bid invalid and result in its rejection.

All potential bidders are responsible for monitoring the City website regarding the availability of new bid documents or addenda (where applicable). The City of Sparks will not be responsible for the results of any potential failures in automatic notification systems to potential bidders or plan holders with respect to these documents and will not adjust bid schedules or requirements due to any potential failures of those systems. It is the responsibility of all potential bidders/responders to monitor the Purchasing Division's website for any changing information prior to submitting their bid/proposal.

19. Specifications to Prevail:

The detailed requirements of the Specifications, Scope of Work or Special Conditions shall supersede any conflicting reference in these General Conditions or the stated language on the City of Sparks Standard Purchase Order that are in conflict therewith.

20. Taxes:

The City is exempt from State, City and County Sales Taxes per NRS 372.325. The City will furnish Exemption Certificates for Federal Excise Tax when applicable.

21. Prevailing Wages:

Bidder is responsible for complying with all applicable local, State and Federal wage laws, whether or not specifically cited in this bid document.

Per NRS Sections 338.020 through 338.090, certain projects defined as "public works" require the payment of the prevailing wage as determined by the Labor Commissioner. Generally speaking, projects/contracts for construction of a public work valued at less than \$100,000 are exempt from the prevailing wage requirement (NRS 338.080). Bidder shall be fully aware of the prevailing wage requirements of the State of Nevada as detailed in NRS Chapter 338 and price their bid response accordingly. Further information concerning Prevailing Wage rates can be found at:

<http://www.laborcommissioner.com/pwpw.html>

Federal "Davis Bacon" wages may be applicable if the funding for the project includes Federal funds. These requirements are detailed in the "Special Conditions – Federal Requirements" section that will be included in this bid document when such conditions apply.

PROJECT NOTE: The contract for services is intended for the continuing normal maintenance of City property and facilities. Therefore per NRS 338.011 (subsection 1), payment of prevailing wages is not required.

22. Conflict of Interest:

No City employee or elected or appointed member of City government, or member of the employee's immediate family, may participate directly or indirectly in the procurement process pertaining to this bid if they:

- (a) Have a financial interest or other personal interest that is incompatible with the proper discharge of their official duties in the public interest or would tend to impair their independence, judgment or action in the performance of their official duties.
- (b) Are negotiating for or have an arrangement concerning prospective employment with bidder. The bidder warrants to the best of his knowledge that the submission of the bid will not create such conflict of interest.

General Conditions



In the event such a conflict occurs, the bidder is to report it immediately to the Purchasing Manager. For breach or violation of this warranty, the City shall have the right to annul this contract without liability at its discretion, and bidder may be subject to damages and/or debarment or suspension.

23. Disqualification of Bidder:

Any one or more of the following may be considered as sufficient for the disqualification of a prospective Bidder and the rejection of the Bid:

- (a) The Bidder is not responsive or responsible.
- (b) The quality of services, materials, equipment or labor offered does not conform to the approved plans and specifications.
- (c) There is evidence of collusion among prospective Bidders (Participants in such collusion will receive no recognition as Bidders).
- (d) The Bidder lacks the correct contractor's license classification required for the defined scope of work.
- (e) Lack of competency, understanding of the scope of work, adequate machinery, plant and/or equipment as revealed in routine due diligence associated with bid evaluation.
- (f) Unsatisfactory performance record as shown by past work for the City of Sparks, judged from the standpoint of workmanship, progress, and quality of services/goods provided.
- (g) Uncompleted work which, in the judgment of the City of Sparks, might hinder or prevent the prompt completion of additional work, if awarded.
- (h) Failure to pay or satisfactorily settle all bills due for labor and/or material on any contract(s).
- (i) Failure to comply with any requirements of the City of Sparks.
- (j) Failure to list, as required, all subcontractors who will be employed by the Bidder.
- (k) Any other reason determined, in good faith, to be in the best interest of the City of Sparks.

24. Gratuities:

The City may rescind the right of the bidder to proceed under this agreement if it is found that gratuities in the form of entertainment, gifts, cash or otherwise are offered or given by the bidder, or any agent or representative of the bidder, to any officer or employee of the City with the intent of influencing award of this agreement or securing favorable treatment with respect to performance of this agreement.

25. Bidder's Security (This Section IS IS NOT Applicable to this bid):

A bid deposit is required in an amount equal to at least 5% of the total amount bid, calculated against the annual cost of service for all specified locations. The bid security may only be in cash, a cashier's or certified check made payable to the City of Sparks, or a bid bond. If the bid security is a bond, it shall be executed by a surety insurer authorized to issue surety bonds in the State of Nevada. All Bonding Companies must have an "A" rating or better with Moody's or A.M. Best Company, and be included on the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bond and as Acceptable Reinsuring Companies" as published in circular 570 (as amended) by the audit staff, Bureau of Accounts, U.S. Treasury Department. (In other words, the company is T-listed.) The bid security must be executed by the bidder and enclosed with the bid proposal in the sealed bid envelope.

26. Performance and Payment Bonds:

Per NRS 339.025, before any contract, except one subject to the provisions of chapter 408 of NRS, exceeding \$100,000 for any project for the new construction, repair or reconstruction of any public building or other public work or public improvement of any contracting body is awarded to any contractor, he shall furnish to the contracting body the following bonds which become binding upon the award of the contract to the contractor (All Bonding Companies must have an "A" rating or better with Moody's or A.M. Best Company, and be

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included on the current list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bond and as Acceptable Reinsuring Companies” as published in circular 570 (as amended) by the audit staff, Bureau of Accounts, U.S. Treasury Department. (In other words, the company is T-listed.):

Performance Bond (This Section IS IS NOT Applicable to this bid):

The Contractor awarded this bid will be required to furnish the City with a surety bond conditioned upon the faithful performance of the contract. This may take the form of a bond executed by a surety company authorized to do business in the State of Nevada and approved by the City of Sparks. The bond shall be in a sum equal to one hundred percent (100%) of the annual amount of the contract price. Such bond shall be forfeited to the City in the event that bidder receiving the contract shall fail or refuse to fulfill the requirements and all terms and conditions of the contract.

Payment Bond (This Section IS IS NOT Applicable to this bid):

The Contractor awarded this bid will be required to furnish the City with a payment bond. This may take the form of a bond executed by a surety company authorized to do business in the State of Nevada and approved by the City of Sparks. The bond shall be in a sum equal to one hundred percent (100%) of the annual amount of the contract price. The bond must be solely for the protection of claimants supplying labor or materials to the contractor to whom the contract was awarded, or to any of his subcontractors, in the prosecution of the work provided for in such contract.

27. Indemnification:

Upon award, Contractor agrees to hold harmless, indemnify, and defend City, its officers, agents, employees, and volunteers from any loss or liability, financial or otherwise resulting from any and all claims, demands, suits, actions, or causes of action, caused by any action, either direct or passive, the omission, failure to act, or negligence on the part of Contractor, its employees, agents, representatives, or Subcontractors arising out of the performance of work under this Agreement by Contractor, or by others under the direction or supervision of Contractor.

If City’s personnel are involved in defending such actions, Contractor shall reimburse City for the time and costs spent by such personnel at the rate charged City for such services by private professionals.

In determining the nature of the claim against City, the incident underlying the claim shall determine the nature of the claim, notwithstanding the form of the allegations against City.

Nothing in this contract shall be interpreted to waive nor does the City, by entering into this contract, waive any of the provisions found in Chapter 41 of the Nevada Revised Statutes.

28. Insurance:

BIDDERS' ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW. IT IS HIGHLY RECOMMENDED THAT BIDDERS CONFER WITH THEIR RESPECTIVE INSURANCE CARRIERS OR BROKERS TO DETERMINE IN ADVANCE OF BID SUBMISSION THE AVAILABILITY OF INSURANCE CERTIFICATES AND ENDORSEMENTS AS PRESCRIBED AND PROVIDED HEREIN. IF THE APPARENT LOW BIDDER FAILS TO COMPLY STRICTLY WITH THE INSURANCE REQUIREMENTS, THAT BIDDER MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

Should work be required on City premises or within the public right-of-way, upon award of the contract, the bidder shall provide proof of Commercial General Liability Insurance and Automobile Liability, Professional

General Conditions



Liability and Workers' Compensation if applicable, prior to initiation of any services under City, Bid, Proposal or Contract. Coverage shall be from a company authorized to transact business in the State of Nevada and the City of Sparks and shall meet the following minimum specifications:

INDUSTRIAL INSURANCE

It is understood and agreed that there shall be no Industrial Insurance coverage provided for Contractor or any Sub-Contractor of the Contractor by the City. Contractor agrees, as a precondition to the performance of any work under this Agreement and as a precondition to any obligation of the City to make any payment under this Agreement to provide City with a certificate issued by an insurer in accordance with NRS 616B.627 and with a certificate of an insurer showing coverage pursuant to NRS 617.210.

It is further understood and agreed by and between City and Contractor that Contractor shall procure, pay for, and maintain the above mentioned industrial insurance coverage at Contractor's sole cost and expense.

Should Contractor be self-funded for Industrial Insurance, Contractor shall so notify City in writing prior to the signing of this Contract. City reserves the right to approve said retentions, and may request additional documentation, financial or otherwise, for review prior to the signing of this Contract.

MINIMUM LIMITS OF INSURANCE

CONTRACTOR shall maintain coverages and limits no less than:

1. General Liability: \$1,000,000 (or amount customarily carried by Contractor, whichever is greater) combined single limit per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, the general aggregate limit shall be increased to equal twice the required occurrence limit or revised to apply separately to this project or location.
2. Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage. No aggregate limit may apply.
3. Workers' Compensation: Contractor shall provide proof of worker's compensation insurance as required by NRS 616B.627 or proof that compliance with the provisions of Nevada Revised Statutes, Chapters 616A-D and all other related chapters is not required.

Contractor will maintain Contractor liability insurance during the term of this Agreement and for a period of three (3) years from the date of substantial completion of the project. In the event that Contractor goes out of business during the term of this Agreement or the three (3) year period described above, Contractor shall purchase Extended Reporting Coverage for claims arising out of Contractor's negligent acts, errors and omissions committed during the term of the Contractor Liability Policy.

Should City and Contractor agree that higher Contractor Coverage limits are needed warranting a project policy, project coverage shall be purchased and the premium for limits exceeding the above amount shall be borne by City. City retains the option to purchase project insurance through Contractor's insurer or its own source.

OTHER INSURANCE PROVISIONS

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverages

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- a. City, its officers, agents, employees, and volunteers are to be included as insureds as respects damages and defense arising from: activities performed by or on behalf of Contractor, including the insured's general supervision of Contractor; products and completed operations of Contractor; premises owned, occupied, or used by Contractor; or automobiles owned, leased, hired, or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to City, its officers, employees, or volunteers.
- b. Contractor's insurance coverage shall be Primary insurance with respect to the City, its officers, agents, employees, and volunteers. Any insurance or self-insurance maintained by City, its officers, employees, or volunteers shall be excess of Contractor's insurance and shall not contribute with it in any way.
- c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to City, its officers, agents, employees, or volunteers.
- d. Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2. All Coverages

Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled, or non-renewed by either Contractor or by the insurer, reduced in coverage or in limits except after thirty (30) days' prior written notice has been given to City except for nonpayment of premium.

ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with a Best's rating of no less than A-: VII. City, with the approval of the Risk Manager, may accept coverage with carriers having lower Best's ratings upon review of financial information concerning Contractor and insurance carrier. City reserves the right to require that Contractor's insurer be a licensed and admitted insurer in the State of Nevada, or on the Insurance Commissioner's approved but not admitted list.

VERIFICATION OF COVERAGE

Contractor shall furnish City with certificates of insurance and with original endorsements affecting coverage required by this contract. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf.

Prior to the start of any Work, Contractor must provide the following documents to City of Sparks, Attention: Purchasing Division, P.O. Box 857, Sparks, NV 89432-0857:

- A. Certificate of Insurance.** Contractor must provide a Certificate of Insurance form to the City of Sparks to evidence the insurance policies and coverage required of Contractor.
- B. Additional Insured Endorsements.** An original Additional Insured Endorsement, signed by an authorized insurance company representative, must be submitted to the City of Sparks, by attachment to the Certificate of Insurance, to evidence the endorsement of the City of Sparks as additional insured.
- C. Policy Cancellation Endorsement.** Except for ten days notice for non-payment of premium, each insurance policy shall be endorsed to specify that without thirty (30) days prior written notice to the City of Sparks, the policy shall not be cancelled, non-renewal or coverage and/or limits reduced or

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materially altered, and shall provide that notices required by this paragraph shall be sent by certified mailed to the address specified above. A copy of this signed endorsement must be attached to the Certificate of Insurance.

D. Bonds (as Applicable). Bonds as required and/or defined in the original bid documents.

All certificates and endorsements are to be addressed to the City of Sparks, Purchasing Division and be received and approved by City before work commences. The City reserves the right to require complete certified copies of all required insurance policies at any time.

SUBCONTRACTORS

Contractor shall include all Subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each Subcontractor. All coverages for Subcontractors shall be subject to all of the requirements stated herein.

MISCELLANEOUS CONDITIONS

1. Contractor shall be responsible for and remedy all damage or loss to any property, including property of City, caused in whole or in part by Contractor, any Subcontractor, or anyone employed, directed, or supervised by Contractor.
2. Nothing herein contained shall be construed as limiting in any way the extent to which Contractor may be held responsible for payment of damages to persons or property resulting from its operations or the operations of any Subcontractors under it.
3. In addition to any other remedies City may have if Contractor fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time herein required, City may, at its sole option:
 - a. Purchase such insurance to cover any risk for which City may be liable through the operations of Contractor under this Agreement and deduct or retain the amount of the premiums for such insurance from any sums due under the Agreement;
 - b. Order Contractor to stop work under this Agreement and/or withhold any payments which become due Contractor here under until Contractor demonstrates compliance with the requirements hereof; or,
 - c. Terminate the Agreement.

29. Safety Program:

Upon award, the Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. The Contractor shall take all necessary precautions for the safety of, and shall provide all necessary protection to prevent damage, injury, or loss to:

1. All employees on the work site and all other persons who may be affected thereby.
2. All the work, materials, and equipment to be incorporated therein, whether in storage on or off the site.
3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

Contractor shall comply with all applicable laws, ordinances, rules, regulations, and others of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss. He shall erect and maintain, as required by existing conditions and progress on the work, all necessary safeguards for safety and protection, including posting danger signs, other warnings against hazards,

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promulgating safety regulations, and notifying owners and users of adjacent utilities. Contractor shall comply with OSHA'S Hazard Communication Standards.

Contractor shall designate a responsible member of its organization at the site whose duty shall be the prevention of accidents. This person shall be Contractor's superintendent unless otherwise designated in writing by Contractor to the Owner and the Engineer.

30. Award of Contract:

- (a) Bids/Proposals will be analyzed and award will be made to the lowest, responsive and responsible bidder whose bid conforms to the solicitation and whose bid is considered to be most advantageous to the City, price and other factors considered. Factors to be considered may include, but are not limited to: bidder's past performance, total unit cost, economic cost analysis, life cycle costs, warranty and quality, maintenance cost, durability, the operational requirements of the City and any other factors which will result in the optimum economic benefit to the City.
- (b) The City reserves the right to reject any item or items, to waive informalities, technical defects and minor irregularities in bids/proposals received; and to select the bid(s) or proposal(s) deemed most advantageous to the City. Should the City elect to waive a right it will not constitute an automatic waiver of that right in the future nor will it impact any other right or remedy. The City may consider bids/proposals submitted on an "all or nothing" basis if the bid/proposal is clearly designated as such.
- (c) The City reserves the right to award one or more contracts on the bids/proposals submitted, either by award of all items to one bidder or by award of separate items or groups of items to various bidders as the interests of the City may require, unless the bidder clearly specifies otherwise in his bid.
- (d) Upon acceptance by the City of Sparks, the solicitation, bid, proposal, or price quotation and issuance of a purchase order issued to the successful bidder shall be deemed to result in a binding contract incorporating those terms and these General Conditions without further action required by either party. Items are to be furnished as described in the bid and in strict conformity with all instructions, conditions, specifications, and provisions in the complete contract, as defined by this clause or any related integrated agreement.

31. Request for Proposal (RFP) Submittals:

In the case of Request for Proposals (RFP's), it should be noted that the documents submitted by prospective bidders are competitive sealed proposals and not competitive sealed bids. When proposals are opened, prices and other information will not be made public until the proposal is awarded. There shall be no disclosure of any bidder's information to competing bidders prior to the award of the proposal.

By their nature, proposals will include a number of variables that will vary based on the complexity of the product or service addressed within the proposal. Therefore, the evaluation of RFP's and the recommendation for award will not be based on price alone. Selection criteria will be better defined for each scope of work in the Special Conditions section of this bid.

Upon award of the contract, the executed contract and proposals will become public information. Accordingly, each proposal should be submitted on the vendor's most favorable terms from a price and technical standpoint.

32. Bidder Preference Law (This Section IS IS NOT Applicable to this bid):

This project will be bid and awarded under the Provisions(s) of NRS 338.147, which restricts preference given to certain contractors on Public Works Projects. The NRS cited in this section is meant to be a reference only. Each bidder shall acquaint himself with the latest provisions of NRS 338.147.

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If the Contract for any Public Works Construction Project is expected to cost \$250,000 or more, then all Contractors must be able to submit upon request, a copy of their Certificate of Bidder Preference issued by the State Contractor's Board to be eligible for bidder preference (Call 775-688-1141 or 775-486-1100 to obtain certification information from the State Contractors Board).

To the extent Contractor has sought, qualified and receives a bidding preference on this project, pursuant to Nevada Revised Statutes Chapter 338, Contractor acknowledges and agrees that the following requirements will be adhered to, documented and attained for the duration of the Project:

1. At least 50 percent of the workers employed on the Project (including subcontractors) hold a valid driver's license or identification card issued by the Nevada Department of Motor Vehicles;
2. All vehicles used primarily for the public work will be (a) registered and (where applicable) partially apportioned to Nevada; or (b) registered in Nevada; and
3. The Contractor shall maintain and make available for inspection within Nevada all payroll records related to the Project.

Contractor recognizes and accepts that failure to comply with any requirements herein shall be a material breach of the contract and entitle the City of Sparks to liquidated damages in the amount set by statute. In addition, the Contractor recognizes and accepts that failure to comply with any requirements herein may lose its certification for a preference in bidding and/or its ability to bid on any contracts for public works pursuant to NRS Chapter 338.

To the extent Contractor has sought, qualified and receives a bidding preference, and this project has a value of over \$250,000 pursuant to Nevada Revised Statutes Chapter 338, each contract between the contractor, applicant or design-build team and a subcontractor must provide for the apportionment of liquidated damages assessed pursuant to this section if a person other than the Contractor was responsible for the breach of a contract for a public work caused by a failure to comply with a requirement of Items 1-3 within this section. The apportionment of liquidated damages must be in proportion to the responsibility of each party for the breach.

This section shall not be applicable for projects in which some or all of the funding comes from Federal sources.

33. Tie Bids:

Should identical low, responsive and responsible bids be received from two or more bidders, the City of Sparks Purchasing Manager shall notify all parties involved in the tie and may at his option, exercise the following tie breaking method unless another alternative is apparent and prudent:

Should there be two or more low, responsive and responsible tie bids where representatives of the bidders wish to participate in the tie breaking process, the City of Sparks Purchasing/Contracts Manager shall set a mutually agreed upon time where, in his office, he shall shuffle a new deck of playing cards and have each bidder's representative cut the cards. The tie bidder who cuts the highest card (with Ace high) shall be recommended for bid award.

34. Appeals/Protests – Bids Only (Not Applicable to Request for Proposals):

A person who submits a bid on a contract may, after the bids are opened and within 5 business days after the date the "Recommendation to Award" is issued by the City, unless otherwise stated in the Special Conditions,

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file a notice of protest regarding the awarding of the contract. The City's "Recommendation to Award" will be dated and posted on the City's public website within the area where bid notices and bid re-caps are posted (Currently: <http://www.cityofsparks.us/departments/financial-services/purchasing/bids-rfps>).

- (a) A notice of protest must include a written statement setting forth with specificity the reasons the person filing the notice believes the applicable provisions of law were violated.
- (b) A person filing a notice of protest may be required by the governing body or its authorized representative, at the time the notice of protest is filed, to post a bond with a good and solvent surety authorized to do business in this State or submit other security, in a form approved by the governing body or its authorized representative, to the governing body or its authorized representative who shall hold the bond or other security until a determination is made on the protest. A bond posted or other security submitted with a notice of protest must be in an amount equal to the lesser of:
 - (1) Twenty-five percent of the total value of the bid submitted by the person filing the notice of protest;
 - or
 - (2) Two hundred fifty thousand dollars (\$250,000).
- (c) A notice of protest filed in accordance with the provisions of this section operates as a stay of action in relation to the awarding of any contract until a determination is made by the governing body or its authorized representative on the protest.
- (d) A person who submits an unsuccessful bid may not seek any type of judicial intervention until the governing body or its authorized representative has made a determination on the protest and awarded the contract.
- (e) A governing body or its authorized representative is not liable for any costs, expenses, attorney's fees, loss of income or other damages sustained by a person who submits a bid, whether or not the person files a notice of protest pursuant to this section.
- (f) If the protest is upheld, the bond posted or other security submitted with the notice of protest must be returned to the person who posted the bond or submitted the security. If the protest is rejected, a claim may be made against the bond or other security by the governing body or its authorized representative in an amount equal to the expenses incurred by the governing body or its authorized representative because of the unsuccessful protest. Any money remaining after the claim has been satisfied must be returned to the person who posted the bond or submitted the security.

35. Documentation:

Due to the time constraints that affect contract performance, all required documents, certificates of insurance and bonds shall be provided to the City within ten (10) calendar days following award or date of request by City, whichever is later. Any failure to comply may result in bid being declared non-responsive and rejected, and at City's option, the bid bond may be attached for damages suffered.

36. Discounts:

- (a) Prompt payment discounts will not be considered in evaluating bids for award. However, offered discounts will be taken if payment is made within the discount period, even though not considered in the evaluation of bids.
- (b) In connection with any discount offered, time will be computed from date of delivery and acceptance, or invoice receipt, whichever is later. Payment is deemed to be made for the purpose of earning the discount on the date of mailing of the City check.
- (c) Any discount offered other than for prompt payment should be included in the net price quoted and not included in separate terms. In the event this is not done, the City reserves the right to accept the discount offered and adjust prices accordingly on the Purchase Order.

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37. Seller's Invoice:

Invoices shall be prepared and submitted in duplicate to the address shown on the Purchase Order. Separate invoices are required for each Purchase Order. Invoices shall contain the following information: Purchase Order number, item number, description of supplies or services, sizes, unit of measure, quantity, unit price and extended totals.

38. Inspection and Acceptance:

Inspection and acceptance will be at destination unless specified otherwise, and will be made by the City department shown in the shipping address or other duly authorized representative of the City. Until delivery and acceptance, and after any rejection, risk of loss will be on the bidder unless loss results from negligence of the City.

39. Lost and Damaged Shipments:

Risk of loss or damage to items prior to the time of their receipt and acceptance by the City is upon the bidder. The City has no obligation to accept damaged shipments and reserves the right to return at the bidder's expense damaged merchandise even though the damage was not apparent or discovered until after receipt of the items.

40. Late Shipments:

Bidder is responsible to notify the City department receiving the items and the Purchasing Manager of any late or delayed shipments. The City reserves the right to cancel all or any part of an order if the shipment is not made as promised.

41. Document Ownership:

All technical documents and records originated or prepared pursuant to this contract, including papers, reports, charts, and computer programs, shall be delivered to and become the exclusive property of the City and may be copyrighted by the City. Bidder assigns all copyrights to City by undertaking this agreement.

42. Advertisements, Product Endorsements:

City employees and agencies or organizations funded by the City of Sparks are prohibited from making endorsements, either implied or direct, of commercial products or services without written approval of the City Manager. No bidder may represent that the City of Sparks has endorsed their product or service without prior written approval.

43. Optional Cooperative Purchase Agreement

It is intended that any other public agency (i.e., city, county, district, public agency, municipality or state agency) shall have the option to participate (A.K.A. "join" or "piggyback") in any award made as a result of this solicitation. The City of Sparks shall incur no financial responsibility in connection with purchase orders or contracts made by the bidder with another public agency resulting from this solicitation. The public agency utilizing the original contract shall accept sole responsibility for placing orders and making applicable payments to the vendor. Should the Bidder not wish for a contract resulting from this bid to be used by other public agencies, they have the option to decline that option at the time of request.

44. Vendor Workplace Policies

No Vendor providing a service, program or activity to the public on behalf of the City shall discriminate against any person because of sex, race, color, creed, national origin or disability. Vendor, if providing a service, program or activity to the public on behalf of the City, shall comply with the Americans with Disability Act and City's policies pursuant thereto when providing said service, program or activity.

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The City of Sparks is an Affirmative Action/Equal Opportunity Employer. Bidders shall be cognizant of the requirements for compliance with Executive Order 11246, entitled "Equal Employment Opportunity" as amended by Executive Order 11375 and as supplemented in regulations of the U.S. Department of Labor (41 CFR part 60).

45. Business License Requirement:

All companies doing business with, or within, the City of Sparks are required to obtain and maintain a current business license from the City of Sparks prior to the commencement of work per Sparks Municipal Code Section 5.08.020A. Bidder(s) awarded a contract resulting from this bid shall be required to obtain a current business license if they do not already possess one.

46. City Provisions to Prevail:

Except as indicated in the specifications, the City's standard General Conditions shall govern any contract award. Any standard terms and conditions of bidder submitted by bidder shall not be acceptable to City unless expressly agreed to by the City. The City reserves the right to reject bidder's bid as non-responsive, to consider the bid without bidder's standard terms and conditions, or to require bidder to delete reference to such, as a condition of evaluation or award of the bid. If, after award of contract, bidder (contract vendor) provides materials or services accompanied by new or additional standard terms or conditions, they too shall be considered void and City may require deletion as a further condition of performance by vendor.

47. Invalid Provisions:

In the event that any one or more of the provisions of this agreement shall be found to be invalid, illegal or unenforceable, the remaining provisions shall remain in effect and be enforceable.

48. Amendments and Modifications:

The Purchasing Manager may at any time, by written order, and without notice to the sureties, make a modification to the contract or an amendment to the Purchase Order, within the general scope of this contract, in (1) quantity of materials or service, whether more or less; (2) drawings, designs, or specifications, where the supplies to be furnished are to be specially manufactured for the City; (3) method of shipment or packing; and (4) place of delivery. If any such change causes an increase or decrease in the cost or the time required for the performance of this contract, an equitable adjustment shall be made by written modification of the contract or amendment to the Purchase Order. Any claim by the bidder for adjustment under this clause must be asserted within 30 calendar days from the notification date.

49. Assignment:

Vendor shall not assign or delegate duties or responsibilities under this agreement, in whole or in part, without prior written approval of the City.

50. Disputes After Award:

Except as otherwise provided in these provisions, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Purchasing Manager, who shall reduce this decision to writing and mail a copy to the bidder. The decision of the Purchasing Manager shall be final and conclusive, unless bidder requests arbitration within ten (10) calendar days. Pending final decision of a dispute, the bidder shall proceed diligently with the performance of the contract and in accordance with the Purchasing Manager's decision.

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51. Arbitration after Award:

Any and all disputes, controversies or claims arising under or in connection with the contract resulting from this bid, including without limitation, fraud in the inducement of this Contract, or the general validity or enforceability of this Contract, shall be governed by the laws of the State of Nevada without giving effect to conflicts of law principles, may be submitted to binding arbitration before one arbitrator, and shall be conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association in a private manner in Washoe County, Nevada. This award shall be final and judgment may be entered upon it in any court having jurisdiction thereof. In reaching this final award, the arbitrator shall have no authority to change or modify any provision of this Contract. All other expenses of arbitration shall be borne equally by the parties. All fees, including legal fees, shall be borne by the party who incurred them. All costs of enforcement shall be borne by the losing party. Each party shall have the right to discovery in accordance with the Nevada Rules of Civil Procedure.

52. Lawful Performance:

Vendor shall abide by all Federal, State and Local Laws, Ordinances, Regulations, and Statutes as may be related to the performance of duties under this agreement. In addition, all applicable permits and licenses required shall be obtained by the vendor, at vendor's sole expense.

53. Annual Appropriation of Funds:

Multi-year term supply and service contracts and leases are subject to annual appropriation of funds by the City Council. The City plans and makes appropriations to the City Budget with respect to a fiscal year that starts July 1st and ends June 30th of each year. Payments made under term contracts and leases are considered items of current expense. Purchase Orders are funded when issued; therefore, they are current expense items and are not subject to any subsequent appropriation of funds.

Continuance of a multi-year contract beyond the limits of funds available shall be contingent upon appropriation of the requisite funds in the ensuing fiscal year and the termination of this contract due to lack of appropriation shall be without penalty.

54. Extension:

When in the City's best interest, this agreement may be extended on a daily, month-to-month, or annual basis by mutual agreement of both parties. Services and/or materials received under an extension shall be in accordance with pricing, terms, and conditions, as described herein.

55. Termination:

The City may terminate this agreement and be relieved of any consideration to the vendor should vendor fail to perform in the manner required. Furthermore, the City may terminate this agreement for any reason without penalty upon giving thirty (30) days written notice to the vendor. In the event of termination, the full extent of City liability shall be limited to an equitable adjustment and payment for materials and/or services authorized by and received to the satisfaction of the City prior to termination.

56. Venue:

This agreement shall be governed by and interpreted according to the laws of the State of Nevada, and venue for any proceeding shall be in Washoe County.

Special Conditions and Specifications (Specific to Project)

In instances where the Special Conditions conflict with the General Conditions, the Special Conditions will prevail with respect to that instance or item(s).

SPARKS SEWER MAINTENANCE SCOPE OF WORK

BACKGROUND

The City of Sparks is seeking pricing from qualified contractors to perform routine/scheduled and emergency sanitary sewer maintenance at designated locations, under the general direction of City staff. Maintenance activity would include all labor, equipment and supplies required to perform complete maintenance of facilities further described in the document "Sparks Sanitary Sewer Collection System Maintenance", dated 6/21/2013.

Sewer Maintenance is presently, and historically has been, performed mostly by City employees. The purpose of this bid is three fold:

- 1) Determine the current market price of services
- 2) After bid submittal, compare the submitted pricing to the present cost of services when the service is performed by City staff at their current wage/benefit level (including administrative and operational overhead)
- 3) Potentially enter in to a contract with the lowest responsive and responsible bidder (after City Council award) to perform the identified services.

THE CITY RESERVES THE RIGHT TO RETAIN SERVICES "IN-HOUSE" REGARDLESS OF THE RESULTS OF THE COMPARISON BETWEEN PRIVATE CONTRACTORS AND CITY STAFF. The final result of this bid may be that no contract will be awarded and the service will be retained "in-house." In that case, the City would formally reject all bids, without prejudice.

The term of any potential contract will be for an initial period of one (1) year, with mutually agreeable options for additional 1-year periods (up to 4 total years). Pricing for subsequent option years may be renegotiated based on documented operational conditions observed in the prior year of the contract. However, increases to the contracted price beyond the previous year of the contract are not guaranteed. The City reserves the right to re-bid the service to coincide with the completion of any contract year. The linear footage may increase or decrease due to growth of the respective facilities or additions/deletions to the pipelines maintained under this contract.

A. GENERAL INFORMATION

Intent of Plans and Specifications

The intent of the plans and specifications is to prescribe a complete outline of work which the Bidder undertakes to do in full compliance with the contract. He shall furnish all required materials, equipment, tools, labor, water, facilities, disposal, and incidentals, unless otherwise provided in the contract and shall include the cost of these items in the contract unit prices. Contractor shall note that use of hydrants for water is not permitted within the City of Sparks. Contractor's facilities shall include an appropriate source of water for this project. All items of work called for on the plans or in the specifications and not included as a separate item in the proposal shall be considered as incidental to the other items listed in the proposal and the payment for such incidental items shall be considered as included in the contract unit prices bid.

Authority of the Project Manager

All work shall be done under the supervision of the Project Manager acting on behalf of the City. He shall decide all questions which arise as to the quality and acceptability of materials furnished, work performed, manner of performance, rates of progress, interpretation of the plans and specifications, acceptable fulfillment of the contract and compensation under the specifications. He shall determine the amount of work performed and materials furnished and his decision and estimate shall be final.

Cooperation with Other Contractors

The Contractor shall cooperate with other contractors who may be employed by the City on construction of other work adjacent to or in the proximity of the location of the project.

Limits of Contractor's Operations

The Contractor will confine his operations within the limits as shown within the bid document. If the Contractor's operations result in damage to any publicly or privately owned facilities outside the limitations of the easement, the Contractor shall, at his expense, repair such damage or indemnify the owner of the damaged property.

The Contractor shall at all times so conduct the work as to ensure the least possible obstruction to normal pedestrian and vehicular traffic including access to all public and private properties during all states of the work, and inconvenience to the general public and the residents in the vicinity of the work, to ensure the protection of persons and property in a manner satisfactory to the Project Manager.

No road or street shall be closed to the public, except with the permission of the City. Specific traffic control requirements are further outlined within the specifications. Fire hydrants on or adjacent to the work area shall be kept accessible at all times. During the work, provision shall also be made by the Contractor to ensure the use of sidewalks, public telephones and the proper functioning of gutters, sewer inlets, drainage ditches and irrigation ditches.

Protection of Existing Utilities

The Bidder shall inform himself of the exact location of all conduits, ducts, cables, pipe systems, etc. and shall protect said utilities. Any damage caused by operation of the Bidder shall be repaired by the Bidder at his own expense.

Other Provisions

The City may authorize a suspension of work during unfavorable weather or other conditions beyond the control of the Contractor. During such a suspension, the Contractor shall make attempts to coordinate with the City to provide such portions of the service as may be agreed upon between the Contractor and the City of the accommodation of both parties.

During non-working hours any hazardous section of the work shall be outlined with markers and warnings. If deemed necessary by the City, barricades may be erected to protect public traffic at the expense of the Contractor.

Cleanup

At the completion of the work day, the Contractor will clean up all waste materials, excess materials and trash.

B. QUALIFICATIONS

The contractor must provide, within the proposal, certified supporting data regarding the qualifications of the Contractor as defined in this section of the BID. The City may award this contract based on “multiple criteria” as determined by cost and other criteria that is requested in the specification section. The contractor is required to furnish the following information:

Equipment

Bidders shall provide a listing (upon request) of equipment that will be used to service any contract resulting from this bid. The City reserves the right to perform a physical inspection of bidder(s) offices, yards or other locations to verify the bidder possesses the required volume of equipment to service the City’s requirements, as specified. Equipment used by the City to perform this work is detailed within the Plans and Specifications.

Subcontractors

Bidders must include in their bid, complete identification of all subcontractors, including business address, telephone number, point of contact and work to be performed. For subcontractors performing the work called out in this solicitation, the same information requested of the contractor must also be provided for the subcontractor.

Bid Bond

Bids must be accompanied by a guarantee consisting of a certified check, cashier's check or BIDDER's bid bond payable to the CITY OF SPARKS or cash deposit in the amount not less than five (5) percent of the total amount bid, calculated against the annual cost of service for all specified locations. Bids not accompanied by such a guarantee will be deemed non-responsive and will not be considered. If a BIDDER to whom a contract is awarded fails or refuses to execute the contract documents or furnish the required insurance policies and bonds as set forth in those documents, the bid guarantee shall be forfeited to the CITY OF SPARKS. Bid guarantees of all BIDDERS will be held until the successful BIDDER has properly executed all contract documents.

Performance Bond

The Contractor awarded this bid will be required to furnish the City with a surety bond conditioned upon the faithful performance of the contract. This may take the form of a bond executed by a surety company authorized to do business in the State of Nevada and approved by the City of Sparks. The bond shall be in a sum equal to one hundred percent (100%) of the annual amount of the contract price. Such bond shall be forfeited to the City in the event that bidder receiving the contract shall fail or refuse to fulfill the requirements and all terms and conditions of the contract.

Payment Bond

The Contractor awarded this bid will be required to furnish the City with a payment bond.

This may take the form of a bond executed by a surety company authorized to do business in the State of Nevada and approved by the City of Sparks. The bond shall be in a sum equal to one hundred percent (100%) of the annual amount of the contract price. The bond must be solely for the protection of claimants supplying labor or materials to the contractor to whom the contract was awarded, or to any of his subcontractors, in the prosecution of the work provided for in such contract.

Licenses

The successful contractor shall be licensed to do business within the City of Sparks at the time of award.

Additional Information

The City reserves the right to request any additional information to determine if the contractor is adequately prepared to fulfill the contract.

Disqualification of Contractors

Although not intended to be an exhaustive list of causes, any one or more of the following causes, among others, may be considered sufficient for the disqualification of a contractor and the rejection of their bid:

- a. Evidence of collusion among contractors.
- b. Lack of competency as revealed by financial statements, experience, staff or equipment statements, as submitted.
- c. Lack of responsibility as shown by past work, judged from the standpoint of workmanship, as submitted.
- d. Default on previous municipal contract.
- e. Any other information the City finds relevant.

Prevailing wage

The contract for services is intended for the continuing normal maintenance of City property and facilities. Therefore, per NRS 338.011 (subsection 1), payment of prevailing wages is not required.

C. SCOPE OF WORK

DESCRIPTION

Performance consists of maintaining sanitary sewer conveyance facilities which require the use of specialized equipment (Vactor's, flushers, specialized nozzles, CCTV cameras, etc), as well as hand labor. Contractor shall furnish all labor, equipment, disposal facilities and fees, water, fuel, supplies, permits and any other items needed to perform all work necessary. The areas to be maintained are described in this solicitation. All prospective Bidders are advised to review the maps and visit each location as necessary. ***It shall be the responsibility of the Contractor(s) to verify the length of pipelines and associated maintenance to be accomplished in accordance with areas specified.*** The Contractor(s) shall inspect the areas and become familiar with site conditions; determine the amount of effort required; and equipment and personnel required prior to submitting a bid.

The intent of any contract resulting from this bid is to provide for the complete maintenance of City

identified sanitary sewer conveyance facilities further discussed in the “Sparks Sanitary Sewer Collection System Maintenance” document dated 6/21/2013, excepted as noted below:

Reporting and Observations (Safety Hazards)

Contractor shall take notice of any safety hazards that are readily apparent and remedy them where possible. In cases where this is not possible, Contractor shall immediately notify the City Project Manager in order for the issue to be addressed and mitigated.

D. STANDARDS OF PERFORMANCE

Operational Guidelines

- 1) The Contractor shall maintain coordination with the Project Manager at all times. Either party may request and be granted a conference upon request within two (2) working days of the request.
- 2) The Contractor shall submit a work schedule prior to beginning any work cycle. The work schedule shall contain the route to be followed and the location of work each day. The Contractor shall contact the Project Manager daily with the progress of the preceding day and the anticipated completion of work for the day. This notification shall be either an e-mail (preferred) or a fax and shall be delivered before 9:00 a.m. of each working day. The Contractor shall also consult with the Project Manager prior to any schedule variance. The notification shall occur the day before any scheduled variation is to take place and must be agreed to by the Project Manager.
- 3) When work by City forces, by other contractors, or weather conditions of a temporary nature prevent the Contractor from maintaining any facilities, and such conditions are eliminated during the period designated for that Maintenance Service Area, the Project Manager may require the Contractor to maintain these facilities as part of the cycle without penalty for exceeding the time allowed.
- 4) No storage, disposal, water filling, or service of equipment shall take place on City property.
- 5) Should the Contractor be obstructed or delayed in the prosecution of or completion of the work as a result of unforeseeable causes beyond the control of the Contractor, and not due to his fault or neglect, including but not restricted to acts of God or the public enemy, acts of government, fires, floods, discovery of pre-existing hazardous materials, utility conflicts, epidemics, quarantine regulations, strikes or lockouts, the Contractor shall notify the Project Manager immediately by telephone and in writing within two (2) business days after the commencement of such delay, stating the cause or causes thereof, or be deemed to have waived any right which the Contractor may have had to request a time extension.
- 6) If the Contractor complies with the two (2) business days notice requirement, the Project Manager shall ascertain the facts and the extent of the delay being claimed. The Project Manager’s findings of fact justify such an extension, and the Project Manager’s finding of fact shall be final and conclusive on the parties. The Contractor shall cooperate with the Project

Manager's investigation of the delays by providing any schedules, correspondence or other data that may be required to complete the findings of fact.

Performance & Inspection Standards

- 1) Contractor shall provide a cleaned pipeline that is free of all debris, roots and other materials and restore flow back to a minimum of 95% of the original carrying capacity. All debris, roots and other materials removed during cleaning shall be removed from the access manhole by the use of a Vactor or other approved equipment for disposal, and shall not be flushed downstream. The Project Manager shall review completed areas for quality and acceptance. Areas determined to be unsatisfactory by the Project Manager shall be re-cleaned at no additional cost to the City. Areas requiring re-cleaning shall be completed within the MSA scheduled cleaning cycle time.
- 2) The City reserves the right to audit the performance of the contractor and the operators of equipment at any time. This may include scheduled or surprise inspection of vehicles, equipment, maintenance records, employee training records, etc. The City may request "ride-along" trips to observe the skills and habits of employees in addition to the routine following of maintenance crews as the City may feel necessary.
- 3) The City's Project Manager or approved City personnel may perform inspections of City facilities upon receipt of notification that service has been completed. Performance shall be measured against the specifications of the bid contained herein. Following completion of an inspection the following ratings shall apply. A rating of satisfactory requires no additional service at site, a rating of unsatisfactory would require vendor call back to correct deficiencies.
- 4) The following grading system is based on the Contractor's total performance relating to the number of occasions that the Contractor is required to correct deficiencies at any site in a period of one month. Contractor shall be notified of grade each month and also be given a grade for each quarter of the contract year.

Example:

- a) Out of a 100 possible points, 2 points will be deducted for each pipe where deficiencies must be corrected.
- b) The Excellent range is a score of 95 - 100. Satisfactory is 85 - 94. Any score below 85 is unsatisfactory.
- c) The City's Project Manager shall give the Contractor written notice of work deficiencies via fax or e-mail within twenty-four working (24) hours of inspection.
- d) Any month that a vendor's rating drops below eighty-five 85% is an indication of unsatisfactory performance by the Contractor. Three or more monthly ratings below eighty-five 85% during a rolling twelve (12) month period constitute an "Event of Deficiency".

- e) Such an event shall be justification for the City to schedule a meeting to discuss the Contractor's plan for corrective action to prevent future such events. More than one Event of Deficiency within a rolling twelve (12) month period constitutes an Event of Default and shall be subject to the City exercising its right to terminate for cause.
- f) Any Contractor that does not service all the pipes for which it is responsible shall be found to be in the state of Nonperformance. Three (3) instances of nonperformance within a rolling twelve (12) month period constitutes an Event of Default and shall be subject to the City exercising its right to terminate for cause.

Liquidated Damages

Should the Contractor fail to complete any portion of the work under contract on or before the date stipulated for that Maintenance Service Area cleaning cycle (or later date as may result from a City granted extension of time), the Contractor shall pay to the City as liquidated damages, the actual (documented) costs incurred by the City to remedy the deficiency.

Equipment

- 1) The Contractor shall furnish equipment of a type and quantity to perform the work satisfactory within the time specified herein. If, in the opinion of the Project Manager, the Contractor has insufficient equipment on the job to satisfactorily complete the work within the required time, the Contractor shall immediately provide additional equipment as directed by the Project Manager at no additional cost to the City.
- 2) The City reserves the right to inspect all equipment before it is placed in or while it is in service. If at any time, the Project Manager determines that any equipment is deficient in any way, the Contractor shall remove the equipment from service immediately, and the equipment shall remain out of service until the deficiency is corrected to the satisfaction of the Project Manager. Inspection and approval of the Contractor's equipment by the Project Manager shall not relieve the Contractor of responsibility or liability for injury to persons or damage to property caused by the operation of the Contractor's equipment, nor shall it relieve the Contractor of the responsibility to meet the established time for the completion of the mowing cycle.
- 3) Contractor shall keep accurate records of maintenance and repairs on equipment used on this contract, which shall be available at any time for the City to request.
- 4) As a minimum, all equipment operated on a roadway shall be legally equipped and marked. Contractor is responsible for determining legal requirements.
- 5) Equipment used by the Contractor must be in good repair and shall be so maintained. Equipment which damages existing sanitary sewer conveyance facilities shall not be allowed.

Complaints

- 1) All public complaints concerning sewer maintenance shall be brought to the attention of the contractor. Complaints will be investigated by the contractor and action will be taken to mitigate the cause of the complaint.

- 2) Complaints brought to the contractor's attention shall be investigated and resolved by 5:00 p.m. the following business day.
- 3) A standardized form, to be approved by the City, shall be completed for each complaint received by or referred to the contractor.
- 4) Contractor shall be required to file a monthly report on all complaints.

Holidays and Inclement Weather

- 1) When inclement weather, in the opinion of the City's authorized representative, prevents adherence to the regular schedule for two or less days in a given week, the locations so affected by the weather shall be serviced within five (5) working days of the scheduled service without interruption of the regular schedule. The contractor shall perform all extra work required by such inclement weather without additional charge, and shall provide the City with a schedule of when the makeup service will be done.
- 2) When any holiday or observance occurs on a regular scheduled service day, said location shall be serviced within five (5) working days from the regularly scheduled day without interruption in the regular schedule.

E. BILLING and REPORTS

Billings shall be submitted monthly, and shall be based on actual work completed as per the Bid Item Schedule. Adjustments shall be based upon the unit costs (per location) submitted in the bid provided by the contractor. Additional charges outside the scope of the contract may be billed only upon City approval, which must be obtained prior to work commencing.

In addition to other data filed with the City of Sparks, the contractor shall, on a monthly basis, file reports with the City detailing the maintenance activity for the previous month. The reports shall be submitted with the invoice for the previous month. All reports will be pre-formatted by the City in either Microsoft Excel or Microsoft Access. The contractor will be required to input the date, and provide to the City on hard copy and electronically. The City reserves the right to change the format or requirements of the reports at any time.

- a. Maintenance Log: each service location detailed by name and description, date(s) serviced and specific services performed.
- b. Scheduled service areas not completed as scheduled, and explanation for the missed service.
- c. Complaints: quantity, detail of each complaint, actions taken, resolution.
- d. Failure to submit required reports with the invoice may result in delay of payment of invoice until such time that reports are submitted to the satisfaction of the City.

F. PRICE PROPOSALS

Contractor shall provide annual cost proposals for each of the listed locations on the Bid Item Schedule located on Page 4 of the bid document. The City of Sparks reserves the right to use any of the following options, and to change at any time during the course of the contract. Pricing shall be all-inclusive of equipment, labor and replacement parts as specified in the bid document.

Bidders will be evaluated against each other by comparing the annualized total cost to provide services to all locations (Grand Total). The City will not consider bids that do not include pricing for all listed locations. Further, the City will not be considering splitting the award of this bid between multiple firms. However, the City reserves the right to negotiate further reductions in contracted service (reduction in service locations) with the apparent low bidder, prior to award of any contract. Therefore, bidders are encouraged to accurately price their bids for each location and not “load” their bids with inflated or decreased pricing in any particular location. ***THE CITY RESERVES THE RIGHT TO RETAIN SERVICES “IN-HOUSE” REGARDLESS OF THE RESULTS OF THE COMPARISON BETWEEN PRIVATE CONTRACTORS AND CITY STAFF.***

G. FUEL CONSIDERATIONS

The City shall consider requests for contract rate changes in cases where fuel costs are shown to change dramatically. Any requests for rate changes shall be made in writing to the City and will not be unreasonably withheld. Similarly, requests by the City to decrease rates, based on reductions in fuel costs, shall not be unreasonably withheld.

However, the City will not consider a blanket increase of the entire rate being charged. Increases will only be considered against the portion of the rate that can be attributed to fuel costs. Therefore, bidders are directed to indicate the percentage of their rate that covers the fuel cost for this service and note this on the Bid Item Schedule. This information will only be used in instances where rate changes are requested by either the Contractor or the City.

Requests will be considered when the average diesel (No. 2 fuel oil) price postings for Nevada (as provided by AAA Daily Fuel Gauge Report) has changed by 25% or more from the average at the time of bid. Once a request is made, the rate change shall be recalculated monthly coinciding with service dates using the then current fuel price average for the remainder of the contract period. Contract rate changes shall be calculated by the following formula:

$$\text{New Unit Price} = \text{Original Unit Price} \times (1 + (\% \text{ fuel change} \times \% \text{ fuel component}))$$

For example, if the unit price is \$0.41/ft for cleaning. Fuel component was listed as 20% at time of bid. Fuel change is an increase of 33%.

$$\text{New Unit Price} = \$0.41 \times (1 + (0.33 \times 0.20))$$

$$\text{New Unit Price} = \$0.44$$

**BID ITEM CLARIFICATION
SPARKS SEWER MAINTENANCE
BID #13/14-005**

GENERAL INFORMATION

Unless indicated otherwise within the specific bid item as described in this section, the Engineer's estimated quantity as contained in the bid schedule shall be the final pay quantity. For bid items measured in lineal feet, the quantities are estimated by taking the horizontal projected lengths. For bid items measured in square feet, the quantities are estimated by taking the horizontal projected areas.

The Engineer's estimated quantity, as contained in the bid schedule, is based on the details and dimensions shown on the plans, and no guarantee is made that the quantity, which can be determined by measurements and computations, will equal the estimated quantity. No allowance will be made in the event that the quantity based on measurements and computations does not equal the estimated quantity.

In case of discrepancy between the quantity contained in the bid schedule and the quantity or summation for quantities for the same item shown on the plans, payment will be based on the quantity contained in the bid schedule.

If the quantity of a particular item of work is intentionally increased or decreased during construction, the final pay quantity of that item will be adjusted to reflect the change.

Bid Item 1.01 – 1.WC – MSA 1-18 & WC routine cleaning

This item shall include providing all labor, materials, supplies, equipment, services, permits, water, disposal facilities, disposal fees, and other incidentals necessary for routine maintenance cleaning for each Maintenance Service Area as described in the plans and specifications. Note that hydrants will not be allowed to be a source of water; contractor will need to procure a source of water for the purposes of performing this work. Routine cleaning is performed on pipelines 15" (fifteen inches) and smaller. This bid price shall include costs of cleaning water, minor root cleaning as needed, lateral trimming as needed, and removal and disposal at a suitable facility of waste materials from the pipeline segments cleaned. Measurement for this area shall be per plan. No additional payment will be allowed for additional passes required to clean a segment of pipeline. Payment will be on a per linear foot basis of actual unique pipeline cleaned.

Note that "WC" is short for Washoe County. A portion of the City's service area is actually within Washoe County.

Bid Item 2.00 – Root removal and treatment

This item shall include providing all labor, materials, supplies, equipment (including mechanical trimming nozzles and CCTV inspection equipment), services, permits, water, chemical treatment(s), disposal facilities, disposal fees, and other incidentals necessary for deliberate, mechanical root removal and treatment. No specific areas are identified for specific root removal; however the City of Sparks performs mechanical root removal on approximately 200,000 linear feet of pipeline per year within the "urban core", generally defined as within the McCarran Boulevard ring. Chemical treatment may be applied for root control on an as needed basis; currently the City of Sparks applies chemical treatment to approximately 5% of the system requiring root removal. Pre-approval of chemical treatment is required through TMWRF and Engineering prior to application. This bid price shall include costs of cleaning water, root removal and treatment as needed, and removal and disposal at a suitable facility of waste materials from the pipeline segments cleaned. Measurement for this area shall be per plan per

segment cleaned. No additional payment will be allowed for additional passes required to clean a segment of pipeline. Payment will be on a per linear foot basis of actual unique pipeline cleaned.

Bid Item 3.00 – Hot Spot areas 1-34

This item shall include providing all labor, materials, supplies, equipment, services, permits, water, disposal facilities, disposal fees, and other incidentals necessary for additional routine maintenance cleaning for each Hot Spot area identified and as described in the plans and specifications. Note that hydrants will not be allowed to be a source of water; contractor will need to procure a source of water for the purposes of performing this work. It is anticipated that each Hot Spot area will be maintained on a minimum monthly basis. This bid price shall include costs of cleaning water, minor root cleaning as needed, lateral trimming as needed, and removal and disposal at a suitable facility of waste materials from the pipeline segments cleaned. Measurement for this area shall be per plan. No additional payment will be allowed for additional passes required to clean a segment of pipeline. Payment will be on a per each basis for each month Hot Spot areas 1-34 are cleaned. Partial payment may be allowed for section not requiring cleaning on a monthly basis as determined by the Project Manager.

Bid Item 4.00 – Lift Station maintenance

This item shall include providing all labor, materials, supplies, equipment, services, permits, water, disposal facilities, disposal fees, and other incidentals necessary for maintenance, servicing, and cleaning for each of the seven (7) sanitary sewer lift stations as described in the plans and specifications. Note that hydrants will not be allowed to be a source of water; contractor will need to procure a source of water for the purposes of performing this work. This bid price shall include costs of cleaning water, root cleaning and treatment as needed, lateral trimming as needed, and removal and disposal at a suitable facility of waste materials from the pipeline segments cleaned. Payment will be on a per each basis for each month of service provided.

Bid Item 5.00 – Emergency call, contingent item

This item shall include providing all labor, materials, supplies, equipment, services, permits, water, disposal facilities, disposal fees, and other incidentals necessary for emergency call-out services. Note that hydrants will not be allowed to be a source of water; contractor will need to procure a source of water for the purposes of performing this work. The City performs between 10 and 20 such service calls each month. The purpose of this item is to remove the blockage as quickly as possible; as such a 45-minute response time from the time of initial call is required. Payment will be on a per each basis for each emergency call.

Force Account

A force account of \$75,000 has been established for this project and shall be included in each bid. The force account will be utilized for extra work authorized and approved by the Engineer and the City of Sparks.

Miscellaneous – Fuel Component expressed as a percentage, per Item G of the Scope of Work

This item is a contingency item, and shall provide the fuel cost percentage in the event a Fuel Consideration increase or decrease is requested. Fuel Consideration will be considered and calculated as specified in Item G of the Scope of Work.

Miscellaneous – Contingency Item – Pipe sizes greater than 15” and less than or equal to 21” - cleaning

This item is a contingency item, and shall provide a unit cost for services if required. Quantity may be increased or decreased as necessary. This item shall include providing all labor, materials, supplies, equipment, services, permits, water, disposal facilities, disposal fees, and other incidentals necessary for maintenance cleaning for pipelines greater than 15” and less than or equal to 21” in size as described in the plans and specifications. Note that hydrants will not be allowed to be a source of water; contractor will need to procure a source of water for the purposes of performing this work. This bid price shall include costs of cleaning water, minor root cleaning as

needed, lateral trimming as needed, and removal and disposal at a suitable facility of waste materials from the pipeline segments cleaned. Measurement for this area shall be footage cleaned as requested by the City. No additional payment will be allowed for additional passes required to clean a segment of pipeline. Payment will be on a per linear foot basis of actual unique pipeline cleaned.

Miscellaneous – Anticipated number of crews assigned to work

This item is informational only, and shall provide a mechanism for the City of Sparks to determine oversight needs in administering this contract.



Sparks Sanitary Sewer Collection System Maintenance

- Sanitary Sewer System Maintenance Standards and Methodologies, Scheduled Maintenance Tasks, Staffing, Equipment and Other Important System Details

6/21/2013

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I. - Description

The City currently owns, operates, and maintains approximately 350 miles of gravity sewer pipeline servicing approximately 39,000 residential and commercial customers. Maintenance of the Sparks sanitary sewer system is critical to prolong the life of the collection system infrastructure and transport waste to a point of treatment (TMWRF) without disruption or overflows.

To that end, the City of Sparks employs a team of sewer maintenance workers to maintain and operate the sewer waste collection system. Some of their responsibilities include cleaning and repairing pipelines, CCTV and Panoramic condition inspection, performing maintenance on pumps and motors at lift stations, and providing customer service to the public. In addition these crews also respond to stoppage complaints and other emergency situations. Ultimately, these individuals have the responsibility of preventing damage to the community's environment from pollution caused by sanitary sewer overflows and generally protecting the City's sewer infrastructure investment.

Therefore, it is imperative that the City designs and implements a proactive maintenance program performed on a periodic (preventive) basis. Preventive maintenance is scheduled on the basis of specific criteria such as known problem areas (for example—a sewer main that often gets clogged, a low point that is often first to overflow in a storm event, or even an area prone to blockages) or passage of a certain amount of time (calendar period). Proper collection system preventative maintenance allows for optimal performance and is less expensive in the long run than emergency repairs. Properly operating sewer lines also provides uninterrupted customer service and environmental protection from overflows.

Sanitary sewage is collected and conveyed to the Truckee Meadows Water Reclamation Facility (TMWRF), a 40-mgd regional facility. Two interceptor lines (“north” and “south”) convey flows into the plant, however only the north interceptor carries sewage generated within the City. The north interceptor also serves the City of Reno, Sun Valley General Improvement District, and unincorporated areas of Washoe County.

Operation of the City of Sparks' sanitary waste collection and treatment facilities is permitted under Nevada Division of Environmental Protection Permit No. NV0020150.

II. – Sanitary Sewer System Maintenance

In addition to routine cleaning, another major goal of an effective and efficient sewer system maintenance program is to minimize the investments of labor, materials, money, and equipment. In other words, we want to manage our human and material resources as effectively as possible, while delivering a high level of service to our customers. The benefits of an effective preventative maintenance program are as follows:

- Sewer facility projected life spans can potentially be extended saving replacement costs and reducing the amount of money needed for capital improvements
- Maintenance can be planned and scheduled.
- Work backlogs can be identified.
- Ensures the availability of facilities and equipment as intended.
- Maintains the reliability of the equipment and facilities as designed. (*Utility systems are required to operate 24 hours per day, 7 days per week, and 365 days per year. Reliability is a critical component.*)
- Adequate resources necessary to support the maintenance program can be identified, budgeted, and defended.
- Capital Improvement Program (CIP) items can be identified, budgeted, and defended.

Of the benefits stated above, the reliability of the system is the most critical component. If facilities are not reliable, then the ability of the system to maintain the value of the investment is compromised on many levels within the community. The City of Sparks wastewater collection system represents a major capital investment in this community.

If maintenance of the system is not managed in a coherent and coordinated way, equipment and facilities will deteriorate quickly causing these assets to perform poorly and possibly significantly diminishing intended life span. Poor maintenance also reduces the overall system capacity and ability to accommodate future growth. Therefore, deferred or inadequate system maintenance can ultimately result in higher sewer rates required to fund an expanded CIP program to repair facilities. Higher sewer service rates and connection fees could also have other negative unintended consequences such as hampering the City's ability to attract new businesses.

A.) Cleaning Standards & Requirements:

This section of the paper defines what exactly needs to be cleaned within the Sparks sanitary sewer system and the frequency of cleaning. The current standard within the Sparks Sewer Maintenance program consists of a routine cleaning of public sewer main facilities generally 15" and smaller. The routine cleaning frequency for these lines is intended to be at least a minimum of once every year.

Generally speaking sewer maintenance work consists of furnishing all labor, equipment, material, electrical power, water (needed for cleaning), sewage debris disposal facilities (includes all permits and fees), and traffic control to complete the required cleaning and maintenance of approximately 313 lineal miles of sanitary sewer. The City of Sparks requires that sewer cleaning be performed daily to remove all debris, roots and other materials and restore any one section of sewer pipe back to a minimum of 95% of the original carrying capacity.

In order to provide an understanding of the sewer cleaning capability needed by the City, staff has compiled nineteen 11x17 maps showing the approximate sewer pipe size and manhole locations. Each of these maps represents a different "Maintenance Service Area" or MSA. Currently, there are 18 different MSA's within the City of Sparks Incorporated boundary. These maintenance service areas were defined by the historic residential construction patterns that have occurred within the City. Not all MSAs are the same size in terms of area or in the number of sewer facilities contained within them. They have been used by the sewer maintenance crews as a way to logically distribute and organize the sewer maintenance activities.

Generally, MSA's 1-12 represent older Sparks' neighborhoods and therefore older sewer infrastructure. A large majority of sewer main pipes in these MSAs are located on private property in the backyard usually running perpendicular to the residential property along the rear yard fence line. Cleaning techniques used in these areas will need to be more sensitive due to the fact that infrastructure is older in these areas and mostly located on private residential property. Pipes in these MSAs are usually constructed of reinforced concrete, cast iron, and sometimes clay. This paper will provide some further insight on some recommended cleaning processes that can or should be used in these sensitive residential areas.

MSAs 13-18 represent newer residential areas within the City of Sparks and pipes in these areas are mostly constructed of PVC. Fortunately, the majority of sewer lines in these MSAs are located in the street or public Right-Of-Way. However, sewer maintenance staff has indicated that the pipes in these MSAs require a little more flushing

due to longer and flatter sections of sewer main pipe. A map of each of these MSAs has been provided as part of this report in APPENDIX 1. Staff highly recommends reviewing each of these maps in detail to gain a better feel for the scale and size of the Sparks Sewer System.

Staff further analyzed the pipe sizes in each MSA that require sewer cleaning and has determined the capability to routinely clean sewer pipes up to 15 inches in diameter is required. The City requires the additional capability to clean sewer pipes up to 21 inches in diameter on an as needed basis. As shown in the following table, the majority of sewer main pipes are 8-12 inches in diameter.

1. - Pipes To Be Cleaned: Breakdown of Pipe Size and Length by MSA

MSA	Required Routine Pipe Maintenance Capability								Additional Capability			
	4"	6"	8"	10"	12"	13"	14"	15"	16"	18"	20"	21"
1	-	178	82,267	8,210	1,608	-	-	703	-	2,617	-	4,816
2	21	3,091	45,027	4,565	758	-	-	344	-	-	-	-
3	-	640	28,420	3,815	139	-	-	1,781	-	2,003	-	-
4.1	-	2,316	93,266	2,883	423	-	-	-	-	536	-	4,167
4.2	118	209	46,221	11,287	2,055	-	-	238	-	-	-	-
5	-	328	60,161	7,265	2,223	-	-	-	-	3,667	-	4,619
6	-	1,572	41,065	3,747	2,028	-	-	-	-	649	-	-
7	-	524	33,490	4,863	4,782	-	-	2,740	-	455	-	-
8	-	690	84,976	3,553	3,262	-	2,228	697	653	-	-	3,373
9	-	955	21,948	2,283	2,660	-	570	933	1,246	-	-	-
10	-	664	34,107	2,271	2,930	-	480	2,633	-	-	-	-
11	-	2,166	32,863	5,265	198	-	-	1,786	-	-	-	-
12	373	9,197	40,180	7,860	5,405	-	-	2,846	-	3,209	-	-
13	399	491	133,358	15,805	1,561	-	-	13,530	-	1,100	13	907
14	-	655	239,425	9,512	2,796	162	-	548	-	3,094	-	-
15	934	973	44,463	5,262	31	-	-	-	-	-	-	-
16	71	1,925	24,457	-	-	-	-	-	-	-	-	6,552
17	340	2,765	229,928	8,303	5,342	-	-	3,914	-	9,218	-	-
18	-	4,052	64,879	3,525	8,950	-	-	2,560	-	3,029	-	-
WC Island	-	-	34,416	2,395	2,189	-	-	1,415	-	669	-	-
Total FT:	2,255	33,388	1,414,916	112,684	49,340	162	3,279	36,667	1,899	30,245	13	24,434
Total Miles:	0.4	6.3	268.0	21.3	9.3	0.0	0.6	6.9	0.4	5.7	0.0	4.6

- 1.) **Total Required Routine Pipe Maintenance Length (4"-15"):** 1,652,690
In Miles: 313
- 2.) **Total Additional Capability Length (16"-21"):** 56,591
In Miles: 11

In the above table, the shaded olive area is the required routine pipe maintenance capability needed by the City of Sparks. Note that the pipe sizes in the routine cleaning

category range from 4 inches in diameter up to 15 inches in diameter. The total linear feet of required pipe maintenance is approximately 1.6 million. The shaded green area indicates the additional larger pipe sizes and total lengths by MSA requiring additional capability to clean. A more detailed analysis of the entire Sparks sewer system has provided in APPENDIX 2 of this report.

With the exception of a few instances where maintenance staff has removed a large boulder, a 5 gallon bucket and a short scrap PVC pipe, the Sparks Sewer System historically has encountered 3 major causes of sewer system blockages. The City sewer maintenance staff has found that these blockages lead to citizen complaints and overall poor system performance. In the past, typical citizen complaints have been strong sewage smell (probably due to sewage not flowing properly and turning septic), back-up of sewage into private residences and sewer manhole overflow to name a few.

APPENDIX 3 – Example #1, #2 and #3 of this report provides some pictures of full and partial blockages encountered within the Sparks Sewer System. Generally, the blockage causes are defined as follows:

- 1) **Tree roots** - Tree roots and shrubs tend to seek moisture and their roots system will find cracks in pipes. These roots over time will grow and eventually cause a blockage, which in turn will create a backup. When the roots have caused the line to be broken it may be necessary to repair or replace the line.
- 2) **Paper Products** - Paper towels, diapers, wipes and feminine products cause problems in sewer service pipes. Unlike bathroom toilet paper, many of these products do not deteriorate quickly. Once the product is flushed it may become lodged with other debris in the line causing a backup.
- 3) **Grease** - People still dispose of grease/cooking oil down the drain, especially in residential areas. The grease will go down the drain and into the sewer line, but when the water has stopped or slowed, the grease in the system begins to coagulate and stick to other debris. Sewer lines become coated and then begin to have less capacity to carry the wastewater. Over time, this will lead to increased sanitary sewer backup and potentially flooding into homes, which would result in increased costs of maintenance and repair of sewer pipes. Additionally, excessive grease that enters the treatment facility causes interference and operations problems. Blocked sewer pipes, if undetected, can also cause the release of untreated sewerage (sanitary sewer overflow) onto the streets creating an environmental and public health issues.

The City of Sparks maintenance staff typically encounters one or more of these pre-existing conditions within the sewer facilities being maintained. The ability to properly remedy and restore a given section of sewer pipe to within the required 95% of the carrying capacity is necessary to maintaining overall system performance.

B.) Pipe Cleaning Process & Methodology:

This section of the paper discusses how to effectively clean a given section of sewer pipe as well as some of the recommended cleaning techniques and processes used. On any given day, the City of Sparks sewer maintenance crews currently use a variety of cleaning techniques in order to effectively clean a given section of pipe. Additionally, it's not uncommon for maintenance crews to perform several cleaning passes on any given section within the system in order to adequately clean out the debris. Specifically, sewer maintenance staff has used one or more of the following Mechanical or Hydraulic cleaning methods on pipes within the sanitary sewer system.

2. - Sparks Specific Sewer Cleaning Methods Table

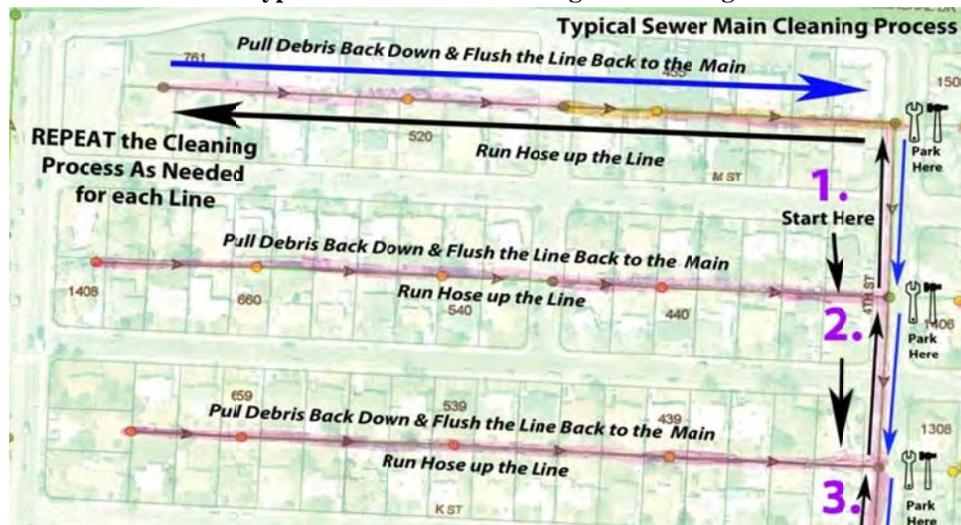
Technology	Uses and Applications
<u>Mechanical:</u> -Rodding	<ul style="list-style-type: none"> • Uses an engine and a drive unit with continuous rods or sectional rods • As blades rotate they break up grease deposits, cut roots, and loosen debris • Most effective in lines up to 12 inches in diameter • Used on a limited basis due to potential for damaging pipelines • City of Sparks does not own such equipment, when needed it is borrowed from City of Reno
-Bucket Machine	<ul style="list-style-type: none"> • Cylindrical device, closed on one end with 2 opposing hinged jaws at the other • Jaws open and scrape off the material and deposit it in the bucket • Partially removes large deposits of silt, sand, gravel, and solid waste • Not used by the City of Sparks
<u>Hydraulic:</u> -Balling	<ul style="list-style-type: none"> • A threaded rubber cleaning ball that spins and scrubs the pipe interior as flow increases in the sewer line. • Removes deposits of settled inorganic material and grease build-up • Most effective in sewers ranging in size from 5"-24" inches • Not used by the City of Sparks
-Flushing	<ul style="list-style-type: none"> • Introduces a heavy flow of water into the line at a manhole • Removes floatables and some sand and grit • Most effective when used in combination with other mechanical operations, such as rodding or bucket machine cleaning • Used in specific situations
-Jetting	<ul style="list-style-type: none"> • Directs high velocities of water against the pipe walls. • Removes debris and grease build-up, clears blockages, and cuts roots within small diameter pipes • Efficient for routine cleaning of small diameter, low flow sewers • Primary cleaning method employed by the City of Sparks

If roots are present, root cutters or mechanical brushes shall be attached to a jet nozzle and sent through the line to remove all root intrusions. All debris shall be removed at the point of entry to prevent downstream blockages. Debris removal is typically performed using a vacator truck. All spoils removed from the pipe shall be properly disposed of at a Nevada Department of Environmental Protection permitted location.

Roots shall be removed in the sections where root intrusion is a problem. Special attention should be used during the cleaning operation to assure almost complete removal of roots from the joints. Procedures may include the use of mechanical equipment such as rodding machines and equipment such as high-velocity jet cleaners. Chemical root treatment may be used as an option with approval from City Engineering and TMWRF Operations staff.

City maintenance crews have found that the best method for cleaning a given section of sewer main pipe starts by parking the maintenance truck at a given sewer manhole location, preferably at a manhole that is easily accessed in public Right-Of-Way and downstream of the section to be cleaned. After the vehicle is parked, maintenance crews need to setup all necessary traffic control devices such as cones and signs informing drivers of any road hazards. Next, maintenance crews run the flusher hose up the sewer line towards the beginning point of that section. After the flusher hose is inserted to the beginning of a section, crews turn on the flusher nozzle and adjust the pressure. The crews then pull the hose towards the vehicle bringing with it all of the debris down the line. This process is then repeated until crews are satisfied that the line is clean. In extreme cases, staff will run a CCTV camera up the line to determine if additional cleaning is necessary. The graphic below best illustrates this process.

3. – Typical Sewer Main Cleaning Process Diagram



In the graphic located on the preceding page, the black arrow lines indicate the process for running the flusher hose up the line. The blue arrow line indicates that the flusher hose nozzle is turned on and the cleaning process started. The purple numbers indicate positions to start at within this branch of the sewer system and the recommended sewer maintenance vehicle location. In this example, crews would start at position #1 and then work their way down to position #3. This is a typical cleaning method applied to the Sparks sewer system, a larger sewer main cleaning process diagram has been included in APPENDIX 4 of this report.

It should be noted that, some of the sewer main lines are located in easements and backyards. Special equipment and expertise is required to clean sewer lines in these sensitive residential areas. These residential locations may require extended runs (up to 1200') and/or remote entry through side yards.

Further complicating the cleaning process within residential backyards, are locations within the existing sewer network where the sewer main lines “T” or change direction 90 degrees. Sparks maintenance crews have indicated that these sections within the system are very difficult to clean and are extremely time consuming. As shown in the diagram below, the sewer maintenance vehicle must be moved to three separate locations in order to effectively clean 90 degree mains. Essentially, as shown below, crews need to gain access to manholes in backyards at positions #1 and #2 before proceeding to position #3, in order to perform the cleaning process defined earlier.

4. – 90 Degree Sewer Main Cleaning Process Diagram



Contact and coordination with property owners may be necessary for access, which may also require advance scheduling of work. Entry onto private property to access manholes will be required to perform this work. Therefore, Sparks' employees or contractor's

working on behalf of the City and engaged in this work are required to pass a background check.

The sewer pipeline sections shall be cleaned using hydraulically propelled, high-velocity jet, or mechanically powered equipment. Selection of the equipment used shall be based on the conditions of lines at the time the work commences. The equipment used by the sewer maintenance crews shall be capable of removing dirt, grease, rocks, sand, and other materials and obstructions from the sewer lines and manholes. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning again attempted. If, again, successful cleaning cannot be performed or the equipment fails to traverse the entire manhole section, it will be assumed that a major blockage exists and the cleaning effort shall be abandoned and City Engineering contacted immediately. Three examples of sewer lines before and after cleaning was performed have been provided in APPENDIX 5 of this report.

Additionally certain areas are identified “low pressure” zones. These areas require special care, including reduced pressure and increased passes during cleaning to insure damage or backflow does not occur to private facilities. Pipeline cleaning activities that discharge water into a building or residence shall be cleaned up to the property Owners and City’s satisfaction, at no cost to the Owner or the City of Sparks.

C.) Extensive Root Removal Operations

The intrusion of roots into waste collection pipes is probably the most destructive problem encountered in the City of Sparks sewer collection system. These roots can block or reduce flow, cause overflows, or reduce hydraulic capacity (leading to a loss of self-scouring velocities). Sewer pipes with blocked or reduced flow often have septic pools that produce hydrogen sulfide and other dangerous or odor causing gases. Roots also can damage pipes and other structural parts of the waste collection system. Because sewer systems are underground and out of sight, sewer stoppages and overflows are the main way that most municipalities and homeowners find out about root problems. Structural damage, often more costly than stoppages, usually goes unnoticed until the damage is determined through CCTV probing by city maintenance staff.

To be successful, any sewer cleaning program must be effective but must not cause harm to the public, the environment, or to the sewer system itself. Certain areas of the city have known extensive root problems and require intensive root cleaning efforts. These areas are difficult and very labor intensive to clean and require a tandem cleaning and CCTV operation.

City sewer maintenance staff has found that the combination of mechanical and chemical cleaning methods can be extremely effective in locations with extensive roots problems. Specifically, the use of chemical root control products or herbicides can be carefully used to kill plant roots.

Herbicides kill plant roots in two fundamental ways, either by contact or through a systemic action. Contact herbicides have a localized effect and cause quick dieback on only the parts of the plant roots that they touch. Systemic herbicides are absorbed by roots or foliage and are carried throughout the plant. Each of these herbicidal methods takes time, anywhere from two weeks or more in order to provide the desired results. Currently, the city of staff uses two products that have been approved by the Truckee Meadows Water Reclamation Facility: RootX and Duke's Root Control. Details on how each of these products is used and applied can be found in APPENDIX 6 of this report.

The root removal operation utilizes both a mechanical and chemical root removal method and a CCTV camera van crew simultaneously. This type of cleaning operation is not considered routine but is needed from time to time in order to effectively clean excessive roots from the sewer collection system. Staff estimates that 200,000 linear feet of sewer lines are treated in this manner yearly. In general, sewer line root control is a matter of using the right technologies, safely and effectively.

D.) Sparks Sewer System Hot Spots:

“Hot Spots” are locations in the collection system where a peculiar situation has been identified which is subject to backups and potential spills and requires a higher level of maintenance other than routine (once every year). These locations within the sewer system are known recurring maintenance issues and are currently being cleaned and monitored on a monthly basis. Over the years, Sparks Maintenance crews have identified 35 “Hot Spots” within the existing Sparks Sanitary Sewer System.

These 35 locations can be difficult and very time consuming to clean. Typically, a CCTV camera van is also required to make sure that the impediments are removed and that the pipes were effectively cleaned. Multiple passes with a jetter and root cleaner may be needed. Cleaning and maintenance of each of the 34 hotspot locations is required on a monthly basis. Sewer system “Hot Spot” maps are provided in APPENDIX 7 of this report.

E.) Lift Station Maintenance:

Pumping stations in sewage collection systems, also called lift stations, are designed to handle raw sewage that is fed from underground gravity pipelines (pipes that are sloped so that a liquid can flow in one direction under gravity). Sewage is fed into and stored in an underground pit, commonly known as a wet well. The well is equipped with electrical instrumentation to detect the level of sewage present. When the sewage level rises to a predetermined point, a pump will be started to lift the sewage upward through a pressurized pipe system called a sewer force main or rising main from where the sewage is discharged into a gravity manhole. From here the cycle starts all over again until the sewage reaches its point of destination—the TMWRF treatment plant.

By this method, lift stations are used to move waste to higher elevations. In the case of high sewage flows into the well (for example during peak flow periods and wet weather) it may become necessary to for additional pumps to be used. If this is insufficient, or in the case of failure of the pumping station, a backup in the sewer system can occur, leading to a sanitary sewer overflow—the discharge of raw sewage into the environment. That is why it is imperative to perform monthly and annual maintenance checks on each of the Sparks sewer system lift stations.

The City of Sparks lift stations were designed so that one pump or one set of pumps could handle normal peak flow conditions. The storage volume of the wet well between the "pump on" and "pump off" settings is designed to minimize pump starts and stops, but is not so long a retention time as to allow the sewage in the wet well to go septic. This is another reason why the Sparks maintenance crews have found that these pumps need to be maintained and/or at least checked on a weekly basis.

The Sparks sanitary sewer system employs 7 lift station sewage pumps that have an end-suction centrifugal pump with open impellers and are specially designed with a large open passage so as to avoid clogging with debris or winding stringy debris onto the impeller. An AC induction motor like the one shown in the picture on the preceding page drives the pump. A map showing the locations of all 7 lift stations within the City of Sparks has been provided in APPENDIX 8 of this report.

5. – Parlanti Lane Lift Station Pictures

The pictures shown above of the pump (left) and wet well (right), are from the City of Sparks Parlanti Lane Lift Station. The interior of any sewage lift station is considered to be a very dangerous place. Poisonous gases, such as methane and hydrogen sulfide, can accumulate in the wet well; an ill-equipped person entering the well could potentially be overcome by fumes very quickly. Any entry into the wet well requires the correct confined space entry method for a hazardous environment. However, to minimize the need for entry, many of the Sparks sewer system facilities were designed to allow crews the ability to remove pumps and other equipment from outside the wet well. Currently, the City of Sparks only has one lift station located on Bay Shore Drive that requires entry. The pictures below show the Bay Shore Lift Station and the access ladder that is needed to service the lift station.

6. – Bay Shore Drive Lift Station Pictures

Sewage lift stations are, by their very nature, a harsh environment, and the equipment contained within them usually takes quite a beating with time. Also, maintenance crews have indicated that the pumps can be a little difficult at times to keep them operational. The general nature of sanitary raw sewage is both corrosive and abrasive. Therefore, periodic maintenance, repair and replacement of equipment and pumps can sometimes be needed. The pictures below are from an older lift station in Sparks, note the rust and signs of wear. This particular pump is currently being replaced due to a leaky shaft seal.

7. – Gorman-Rupp Pump Pictures



Annual and weekly maintenance of the 7 Sparks lift stations is required. Weekly maintenance consists of checking the head pressure, a visual inspection for any signs of overflow and possibly a cleaning to ensure that the lift station is functioning properly. The yearly or annual maintenance of these 7 lift stations may require some pump repair and possibly oil changes. Sewer maintenance crews have found that the seals next to the impeller sometimes leak and sewage water can then enter the pump which then requires a full pump rebuild.

To accomplish the annual lift station maintenance, Sparks' maintenance crews use a preventative maintenance checklist. This checklist can be found in APPENDIX 9 of this report. To perform the lift station annual maintenance, the crews always test the entire system first. This gives them an indicator of the condition of each part of the system. First, the floats are tested, to see if they operate all functions intended. Namely, on/off operation of the lead pump, duplexing when the lag float is raised, and alternation is tested. The high water alarm is also tested at this point. They also check the junction box for wires that are loose, dark burnt marks to indicate bad connections, and look to insure that no fluids are entering the inside of the box. This is important because sometimes the tank may overflow into junction box.

If more than one, each pump is run as part of the float testing, and you can observe to see if pumps are noisy, vibrating, and also whether they pump down at the same rate. A swirling turbulent action in the wet well during a pump run can indicate that the check valve on the off-pump has failed, causing recirculation back through the off pump and back into the well.

When a full repair of the system is required, the first step is to clean out the tank. The entire system must be isolated by plugging the inlet piping. The tank is then pumped down to dry level and the tank is cleaned out by a sanitary vacuum truck, sometimes using a disinfectant spray. A pressure washer is also used to spray down the walls, floor and all internal equipment.

In many of the Sparks sewage lift stations, there is a rail system. The pictures of the Parlanti Ln. lift station located at the top of page 15 show both the pump and the rail system. The rails allow the sewer maintenance crews to remove pumps from the station without the need to enter the tank. A small boom crane or lifting device is attached to the pump lifting chains, and the pumps are removed by simply pulling straight up. The connection to the piping is a “quick disconnect” type. The pump slides up on the rails and is free when it reaches the top of the tank.

After the inspection of the system, sewer maintenance crews will generally decide if the metal parts in the rails are deteriorated to the point that it is time to replace the entire guts of the station. This involves cutting the discharge piping off and connecting new piping, valves and rail system inside the tank.

Next, the top lid should be inspected for integrity. Support structures should be inspected, and the lid should be replaced if rust is too severe. The tank should then be inspected for breach, and repaired. Particular attention should be paid to the bottom corners, for damage. Finally, the control panel and components should be checked out for loose wires, correct operation, proper amp draw and error-free pump operation.

A lift station is considered a CONFINED SPACE, which requires that confined space safety rules be used. OSHA laws govern confined space entry, and dictate the required safety equipment at the site, number of workers and their roles, and procedures during entry. In confined space, there must be at least three men to do the job – an authorized entrant, authorized attendant, and stand-by safety personnel. A safety tripod with removal harness must be in place and used, to allow a means of retrieving a disabled worker.

This type of sewer facility maintenance work also requires the use of a “sniffer”, an air quality analyzer, which is used to check the tank for harmful or dangerous gases. Because of the nature of raw sewage, methane gas, for one, may be present, and can cause a worker to lose consciousness if exposed. For this reason, an evacuation fan is used to continuously pull the air from the tank and bring in fresh air. The tank air should also be checked during work, to insure that the air quality remains safe for the workers. If the fan cannot bring air quality to standards for safe entry, a self-contained air pack will be required.

Sewer maintenance workers must have a combination of plumbing skills, electrical skills, controls experience, structural know-how and a good knowledge of safety practices and rules. Lift station maintenance can be a bit difficult and as such the City of Sparks recently completed a “Supplemental Lift Station Operation Maintenance Manual” so that a standardized reference for maintaining these facilities was available to sewer maintenance crews. The City of Sparks Public Works Department Supplemental Lift Station Operation & Maintenance Manual can be found in APPENDIX 12.

F.) Required Sewer Cleaning Equipment:

Currently, the City of Sparks sewer maintenance crews utilize 2 combination (high velocity hydro jet/Vacuum) vactor style trucks. The picture below shows the larger sewer vactor truck vehicle which is capable of storing 3,000 gallons of water.

8. – Large 3K Gallon Sparks Combination Flusher/Vactor Truck Picture



This larger capacity sewer maintenance truck saves time and ultimately money because of fewer trips to get water for cleaning and flushing activities. Additionally, this truck is ideal for cleaning sewer lines behind houses because of the extra-long 1,200 FT steel

braided 2000 PSI nylon flusher hose (blue ¾” hose shown in the above picture on the front of the vehicle). Having the capability of extra water and the longer hose ultimately saves time and money.

The second combination (high velocity hydro jet/Vacuum) vactor style truck is shown below and is shorter in terms of overall vehicle length making it ideal for cleaning sewer lines in tighter locations such as alley ways. It also has the extra-long 1,200 FT steel braided 2000 PSI nylon flusher hose, however, it can only hold 1,500 gallons of water. Generally, both of these combination vehicles are ideal for cleaning the Sparks sewer system because they can both perform two key functions: flushing and debris removal. Additionally, these combination vehicles save the City money and staffing because historically these two functions were performed separately on 2 different types of vehicles. These larger combination vehicles require less staffing and are more functional.

9. – Small 1.5K Gallon Sparks Combination Flusher/Vactor Truck Picture



The following vehicle specifications are generally required:

1) Combination High-Velocity (hydro-cleaning) Jet and Vacuum System

Equipment: All high-velocity sewer cleaning equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more high-velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all size lines designated to be cleaned. Equipment shall also include a high-velocity gun for washing and scouring manhole walls and floor and produce at least 2,000 psi pressure. The gun shall be capable of producing flows from a fine spray to a solid stream. The hydro-cleaning equipment shall include a minimum 1,000 gallon water storage tank, auxiliary engines and pumps, and include a minimum of 1200 feet of 1-1.4-inch I.D. high-pressure hose on a power driven hose reel. Pump nozzle combinations shall be capable of producing water flow rates up to 120 gpm,

and a minimum of 60 gpm at a working pressure up to 2,000 psi. The vacuum system shall be a positive displacement blower with a minimum of 4,200 cfm at 15 inches of mercury. The NASSCO Jetter Code of Practice shall be consulted as a guide for the selection of different type nozzles and recommended pressure applications for various cleaning requirements. Owner must approve any variations to this specification in advance.

- 2) **Mechanically Powered Equipment:** Bucket machines shall be in pairs with sufficient power to perform the work in an efficient manner. Machines shall be belt operated or have an overload device. Machines with direct drive that could cause damage to the pipe will not be allowed. Bucket machines are no longer used by the City of Sparks. A power rodding machine shall be either a sectional or continuous rod type capable of holding a minimum of 750 feet of rod. The rod shall be specifically heat treated steel. To insure safe operation, the machine shall be fully enclosed and have an automatic safety clutch or relief valve. The City of Sparks typically does not use power rodding equipment.
- 3) **Large Diameter Cleaning:** For cleaning large diameter sewer, storm or combination pipes, consideration should be given to a combination hydraulic high volume water and solids separation system. The flow from the sewer will provide water for the pump operation so no potable water is necessary and treatment costs are not a factor. Water volume of up to 250 GPM at 2000 PSI+ will move solids to the downstream manhole in high flow conditions. The separation system will dewater solids to 95% (passing a paint filter test) and transfer them to a dump truck for transport to a sewage treatment plant or approved landfill. Sewer water will be filtered to a point where it can be used in the pump for continuous cleaning. No by-passing of sewer flows will be necessary. The unit shall be capable of 24 hour operation and the unit shall not leave the manhole until a section is fully cleaned.

Sewer maintenance crews should be aware that certain areas are identified as “low pressure” zones. These areas require special care, including reduced pressure and increased passes during cleaning to insure damage or backflow does not occur to private facilities.

III. -Unique Sewer System Conditions & Other Important System Details

A.) Sewer Maintenance Worker Background Checks & Training:

Some of the sewer facilities are located in easements and backyards. Entry onto private property to access manholes will likely be required to perform this work; employees engaged in this work will be required to pass a background check meeting the requirements of Human Resources.

Proper training is necessary to perform routine sewer maintenance on the City of Sparks sanitary sewer system. This training includes but is not limited to the following: traffic control and safety training, Confined Space Rescue training.

B.) Specific Job Related Hazards:

The prospective maintenance contractor should be aware that during maintenance of sewage and wastewater, workers may be killed by drowning, trench collapses, falls, confined spaces, and exposure to chlorine or hydrogen sulfide gas. This type of work can also make workers sick.

Sewage and wastewater contain bacteria, funguses, parasites, and viruses that can cause intestinal, lung, and other infections. If equipment, work practices, and personal protective equipment (PPE) don't protect workers from ingesting these agents, they can get sick.

During any part of treatment, transport, or application of sewage sludge, workers can be exposed to materials that can cause disease. This is true even if they work around treated (class B) bio-solids. Careful work habits can help protect workers.

Some of the biological hazards that could potentially be in sewage or wastewater include the following:

- 1) **Bacteria** - may cause diarrhea, fever, cramps, and sometimes vomiting, headache, weakness, or loss of appetite. These are some bacteria and diseases they cause: e-coli, shigellosis, typhoid fever, salmonella, and cholera.
- 2) **Funguses** - aspergillus and other funguses often grow in compost. These can lead to allergic symptoms (such as runny nose) and sometimes can lead to lung infection or make asthma worse.
- 3) **Parasites** - cryptosporidium and giardia lamblia may cause diarrhea and stomach cramps, and even nausea or a slight fever. Roundworm (ascariasis). Most people have no symptoms. With a lot of roundworms, workers may

cough and have trouble breathing or they may experience pain in the belly as well as possible blocked intestines.

- 4) **Viruses - Hepatitis A** causes liver disease. You may feel tired, pain in your belly, nauseous off and on; you may have jaundice (yellow skin) or diarrhea or not be hungry. The CDC says sewage maintenance workers are not at more risk of hepatitis A infection than other workers. However, if a lot of people in the community have hepatitis A, the risk may be higher than usual.
- 5) **Blood Borne Viruses** are a hazard mainly to workers in health care facilities. Hepatitis B and HIV are blood borne:
 - a. **Hepatitis B** causes liver disease. Workers may feel tired, have jaundice (yellow skin), pain in the belly, feel nauseous off and on, throw up, or not be hungry. However, this disease has not been linked to direct exposure to raw sewage in the U.S.
 - b. **Human Immunodeficiency Virus (HIV)** causes AIDS. There are no known cases of wastewater workers getting HIV from their jobs in the U.S. and the risk is virtually nonexistent.

For work around sewage or wastewater, engineering controls and work practices are the best ways to protect workers from exposures to disease and illness. When engineering controls are not possible, the prospective sewer maintenance contractor shall be required to use personal protective equipment (PPE). The contractor should also know that for some of the maintenance jobs and around some hazards, respiratory protection may be required.

In addition to all of the preceding sections of this report, the prospective contractor will be required to have met all of the following work place training and conditions:

- Training and education about the hazards of wastewater and sewage
- A place onsite with clean water for washing your hands
- A place to wash and clean up after work
- The right PPE, such as gloves, goggles, a face shield, water-resistant suit, or respirator – depending on the job
- Clean areas set aside for eating
- Cleaning facilities or services for clothing and equipment.

C.) Required Vaccinations:

The U.S. Centers for Disease Control and Prevention recommends that the general public, including all wastewater treatment plant operators and others working within

wastewater treatment plants, be up-to-date on their immunizations for diphtheria and tetanus. Booster shots are recommended every 10 years after the initial immunizations are administered. The tetanus booster needs to be repeated if a wound or puncture becomes dirty and a booster shot has not been received within 5 years.

The preventive effect of the vaccine immune serum globulin for hepatitis A is short-lived (about 3 weeks), and is not routinely recommended for wastewater workers unless there has been direct exposure to wastewater splashed into an open wound or the mouth or a severe outbreak has occurred in the community. However, the hepatitis B vaccination is required by the City of Sparks for all sewer maintenance workers. The prospective sewer maintenance contractor who employs any workers engaged in sewer cleaning and maintenance are (required/encouraged) to be inoculated as follows:

10. – Required/Encouraged Sewer Maintenance Worker Vaccinations

Disease	Immunization	Required
Hepatitis A	Hepatitis A immune globulin treatment	YES
Hepatitis B	Hepatitis A immune globulin treatment with hepatitis B vaccine	YES
Measles	Combined measles, mumps, and rubella vaccine (MMR)	ENCOURAGED
Mumps	Mumps vaccine	ENCOURAGED
Rubella	Rubella vaccine	ENCOURAGED
Tetanus and diphtheria	TD vaccine	YES

D.) City of Sparks Sewage Spill Response Plan:

The Sewage Spill Response Plan is designed to ensure that every report of a sewage overflow incident is immediately dispatched to the appropriate City of Sparks sanitary sewer maintenance personnel for confirmation. Quick response will minimize the effects of the overflow with respect to impacts on public health, beneficial uses and water quality of surface waters and on customer service. The plan further includes provisions to ensure safety pursuant to the directions provided by the Nevada Department of Environmental Protection (NDEP) and that notification and reporting is made to the NDEP when applicable. For purposes of this spill response plan, “confirmed sewage spill” is also sometimes referred to as “sewer overflow,” “overflow,” or “SSO.”

The Sewage Spill Response Plan presents a strategy for the City of Sparks Sewer Utility to mobilize labor, materials, tools and equipment to correct or repair any condition, which may cause or contribute to an unpermitted discharge. In situations where the sewer maintenance workers are on scene or involved in a sewage spill, they will be required to fill out an incident report form depending on the size on the size and location of the incident in accordance with NDEP permit NV0020150, “II.A.4d.” A copy of the City of Sparks Sewage Response Plan has been included in APPENDIX 11 of this report.

E.) Traffic Control Plans & NDOT Traffic Control Permits:

A large majority of the Sparks Sewer main pipes are located within the Street or in the City of Sparks Public Right-Of-Way. The City of Sparks requires all employees and contractors performing work on behalf of the city to prepare a set of “Traffic Control Plans” depending on the level of access control needed. The basic objective of each traffic control plan (TCP) is to permit work within the public right of way efficiently and effectively while maintaining a safe, uniform flow of traffic.

The sewer maintenance work being performed and the public traveling through the work zone in vehicles, bicycles or as pedestrians must be given equal consideration when developing a traffic control plan. A Traffic Control Plan shall be required for all work performed within the public right-of-way. Each traffic control plan shall be developed consistent with the Manual on Uniform Traffic Control Devices (MUTCD).

Data to be included on a traffic control plan will vary depending upon the complexity of the sewer maintenance service being performed, the volume of traffic affected and the roadway geometrics where the work is being performed. The TCP must clearly depict the exact sequence of the maintenance operation(s), the work to be performed, and the traveled way that will be utilized by all movements of traffic during each phase of

construction. A few Sample Traffic Control Plans have been provided in APPENDIX 10 of this report.

It is important to be aware that some of the sewer pipelines are located within Nevada Department of Transportation (NDOT) Right-Of-Way. Work within these roadways will require an NDOT access permit, and may require special working hours. Permits for this work on NDOT roadways will be issued by:

NDOT District 2
310 Galletti Way
Sparks, NV 89431

F.) Water Used For Cleaning Sewer Facilities & Equipment:

Currently, the City of Sparks sewer maintenance crews obtain anywhere between 6,000-9,000 gallons of potable water through City owned and operated facilities on a daily basis in order to perform day-to-day sewer cleaning maintenance. The City purchases this water from the Truckee Meadows Water Authority. Contractors should be aware that any water used to clean City sewer system facilities will need to be provided separately by the contractor.

Sparks sewer maintenance crews have indicated that effluent or non-potable water could be used as a cheaper option instead of treated potable water. However, they strongly believe that it's more difficult to use in some cleaning situations and that it significantly degrades the cleaning equipment faster. Specifically, they mentioned that if effluent water is used, maintenance crews have to be more careful where the water is discharged.

Additionally, keeping track of which sewer maintenance vehicles have the effluent water can be problematic and would need to be managed carefully so that it's not mistakenly used for the wrong purposes. All of the pumps, tanks and hoses would have to be disinfected periodically using bleach. The bleach is extremely corrosive and hard on the rubber hoses and pump parts which could cause sewer maintenance vehicle downtime. Sewer maintenance staff also indicated that by using effluent water in the sewer maintenance trucks, that it becomes extremely difficult to disinfect certain pieces of equipment such as the inside of the water holding tanks.

Further complicating the use of effluent water for cleaning sewer facilities is the fact that the current set of effluent fill stands are permitted individually by the Nevada Department of Environmental Protection (NDEP) for very specific uses. Language from the NDEP Effluent Reuse permit states that "*The Truckee Meadows Water Reclamation Facility (TMWRF – NEV2003506) will provide tertiary treated, denitrified and disinfected*

effluent to supply the City of Sparks truck fill stations for reuse for construction water, soil conditioning, irrigation, and dust control. All truck fill stations are, and shall be, operated in accordance with the approved Effluent Management Plan (EMP) and permit conditions.” City of Sparks staff believes that if effluent water is to be used for cleaning sewers that the city may need to re-apply and revise each of the NDEP Effluent Reuse permits and potentially amend the Effluent Management Plan in order to include the use of effluent water in this manner.

Truckee Meadows Water Authority regulations or standards for backflow prevention are a strict requirement and must be adhered to, so that potable water sources are not accidentally contaminated. The City of Sparks requires that any water used to clean the sewer lines be discharged into the sanitary sewer system downstream of the cleaning operation. Under no circumstances shall the contractor discharge the water used to clean sewer lines be discharged onto the ground, into any streams or into any storm drain facilities.

G.) NDEP Permits and Disposal of Sewage Debris:

Currently, the City of Sparks sewer maintenance crews dispose of any sewage debris (i.e. – roots, root balls, sludge, grit, paper, and other garbage) at the Gandolfo Horseman’s Park. This location has been permitted by the Nevada Department of Environmental Protection as having the necessary Storm Water Pollution Prevention Best Management Practices. Some of these BMP’s include the usage of a sand/oil separator connected to an enclosed cement basin and should be consistent with those BMP’s detailed in the City of Sparks SWPP Plan. The picture below shows some of the typical sewage debris that creates blockages within the system.

11. – Typical Sparks Sewer System Sewage Debris Removed Picture



The sewage debris is then transported to the Lockwood Landfill for permanent disposal.

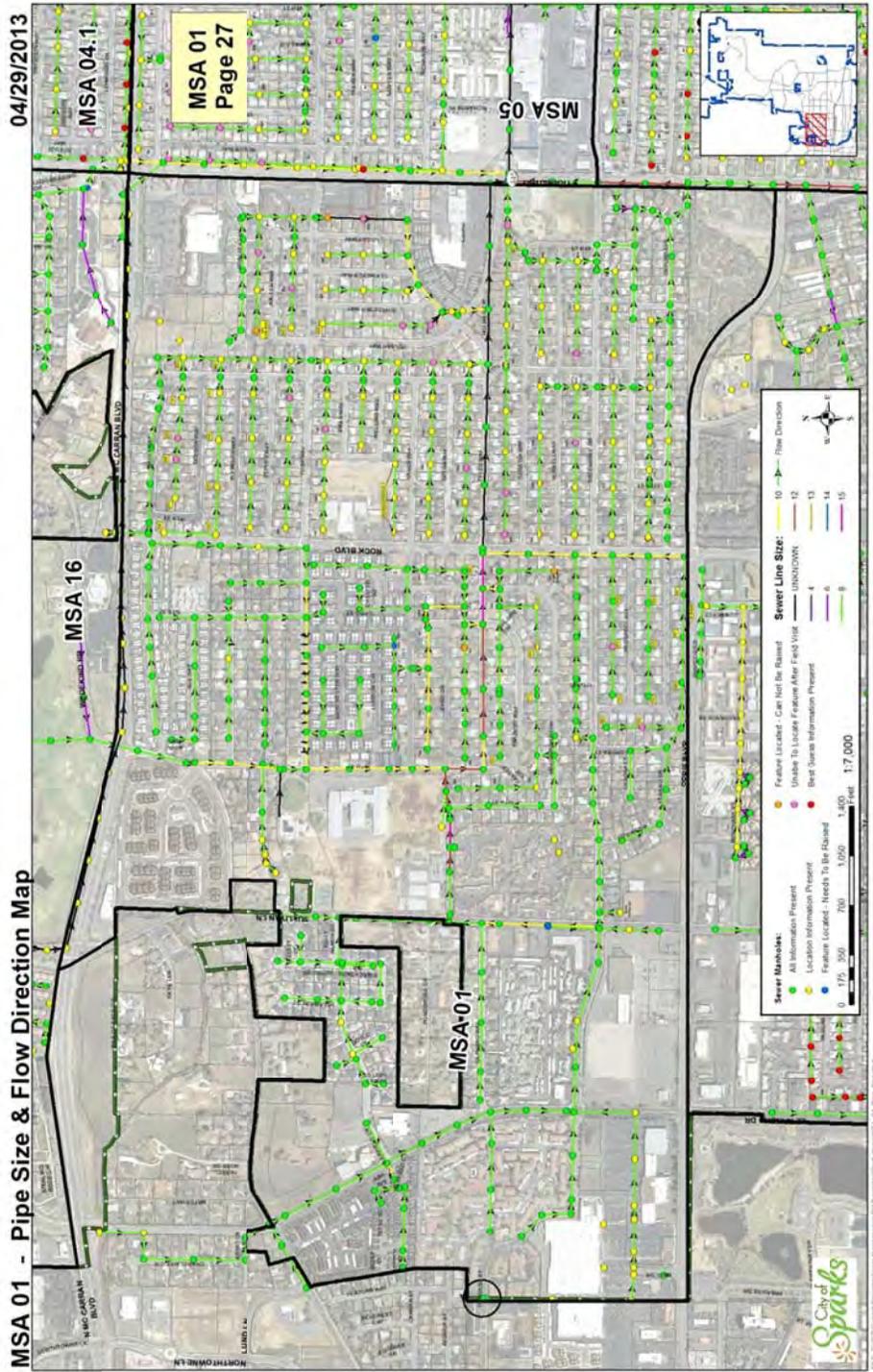
IV. – Sewer System Calls for Service and Emergency Callout

Currently, the City of Sparks maintenance crews are available to respond to sewer service calls seven days a week, 24 hours a day, 365 days a year. Our crew provides a high level of customer service to ensure that complaints are properly addressed. They will determine whether the sewer problem is the city's responsibility (at which time they'll fix it at no charge) or if the stoppage is the responsibility of the homeowner (at which time they'll then advise calling a plumber). Our maintenance crews make every effort to respond to service calls within 45 minutes (average response time is within 30 minutes). It should be noted that City sewer maintenance crews respond to approximately 20 calls for service per month.

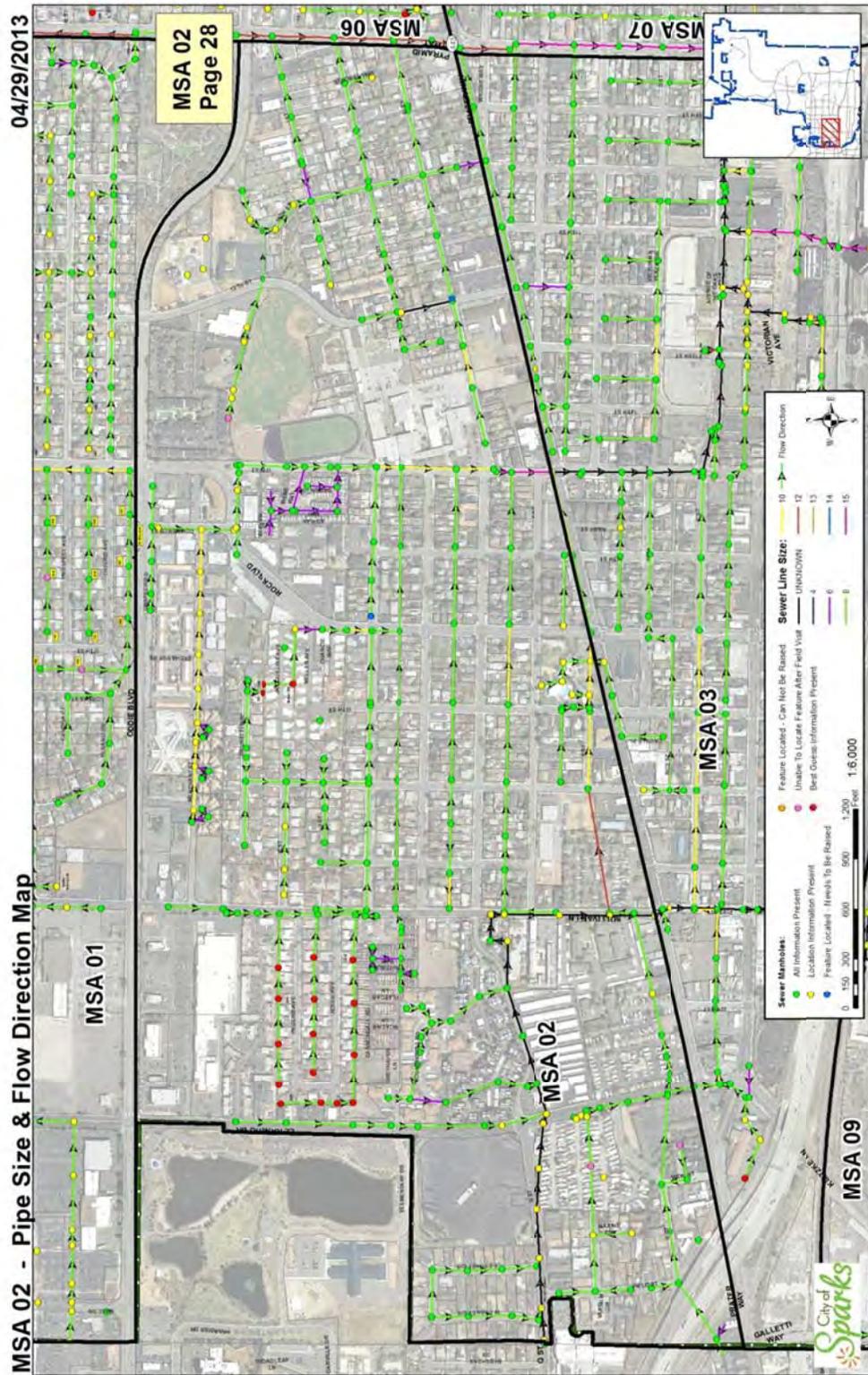
Since Emergency Calls may be received at any time, a 24-hour emergency contact is necessary. City of Sparks Public Works Maintenance is not manned 24/7, therefore calls received after hours are taken by PD Dispatch and routed to appropriate on-call personnel. Response is required within 45 minutes of initial contact. The intent of Emergency Cleaning shall be to primarily remove the blockage and restore flow.

APPENDIX 1 – Sewer Pipe Size and Flow Maps by Maintenance Service Area
Please review the attached 11x17 MSA maps

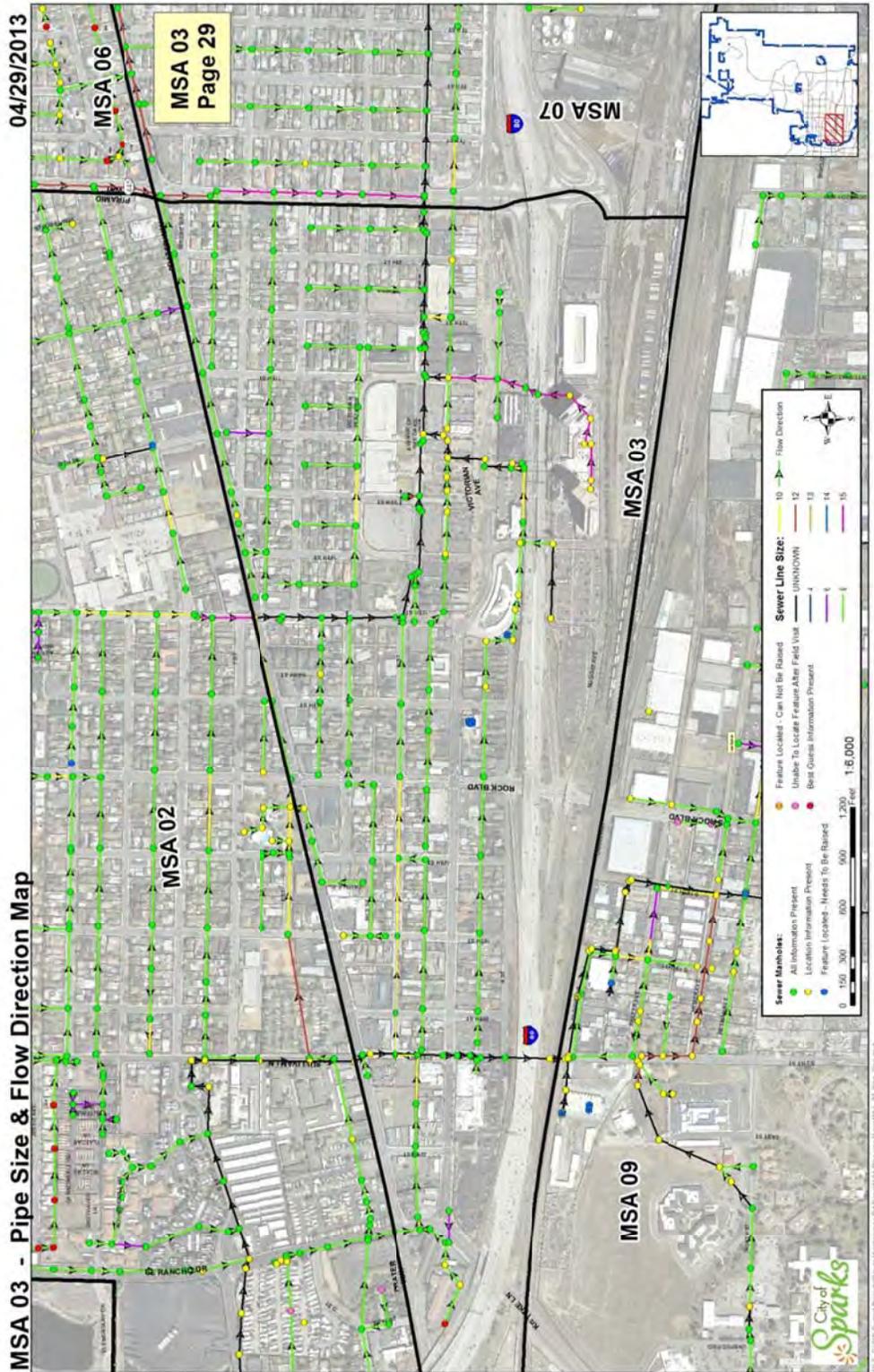
Maintenance Service Area #01



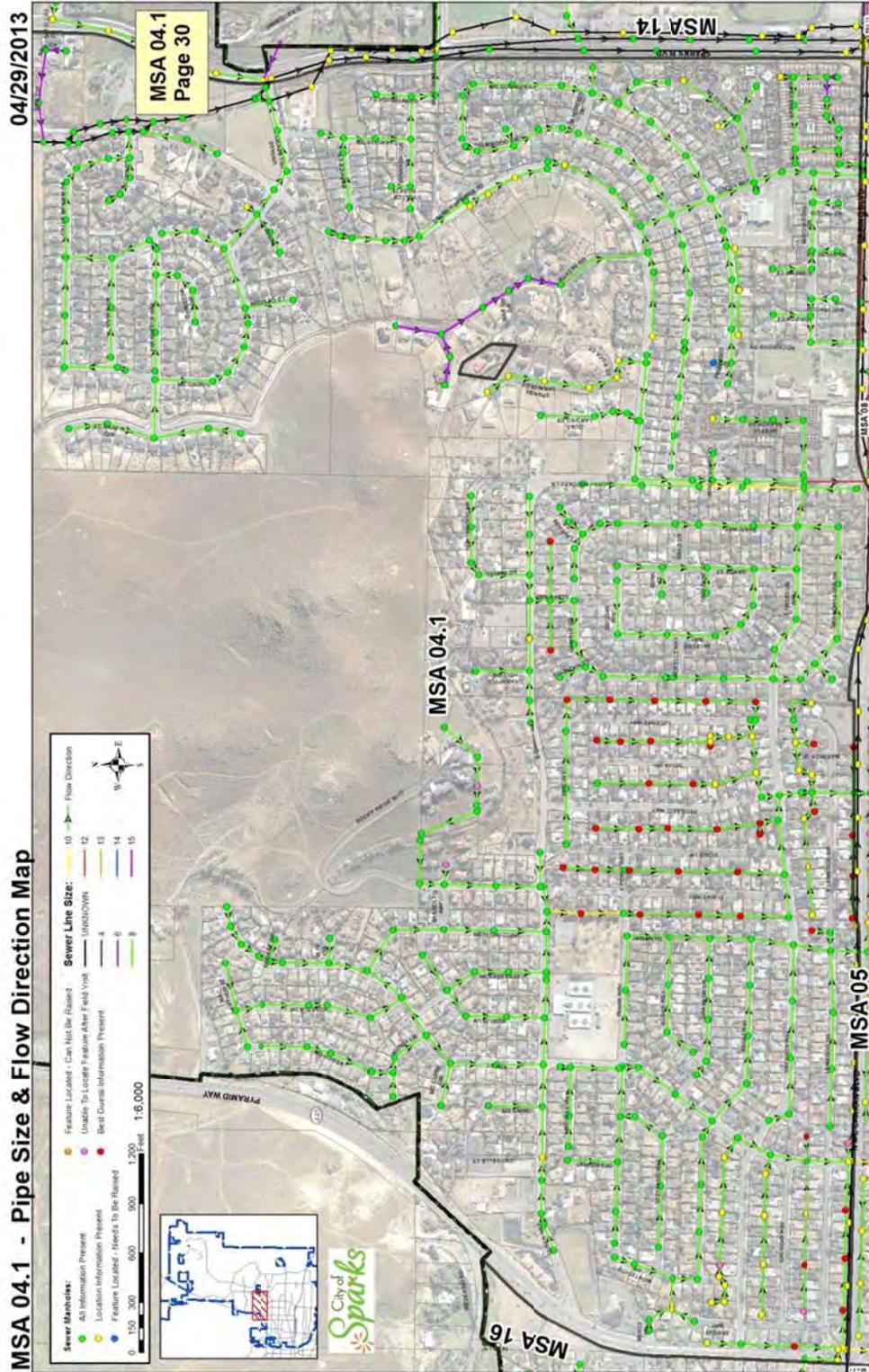
Maintenance Service Area #02



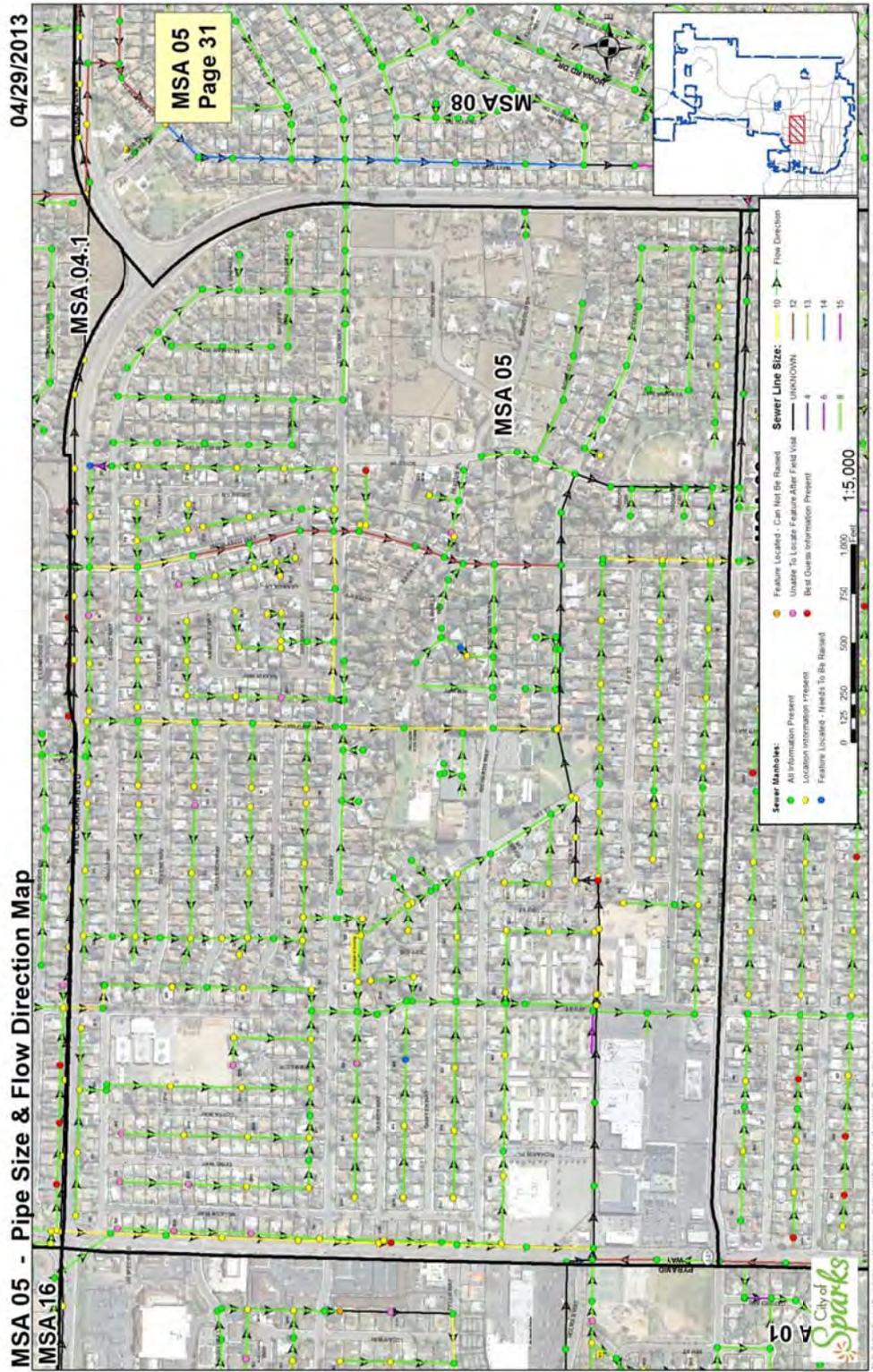
Maintenance Service Area #03



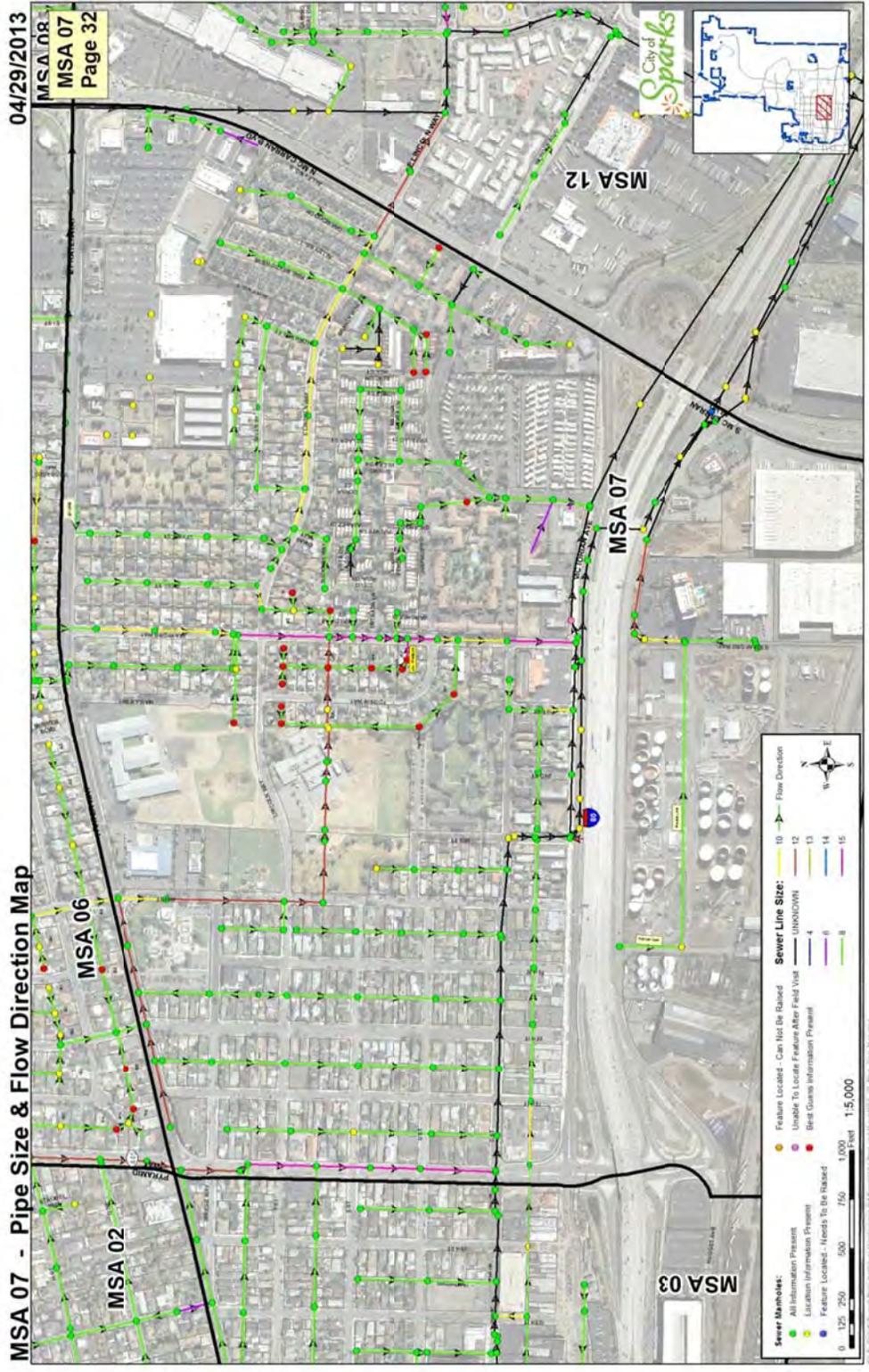
Maintenance Service Area #04.1



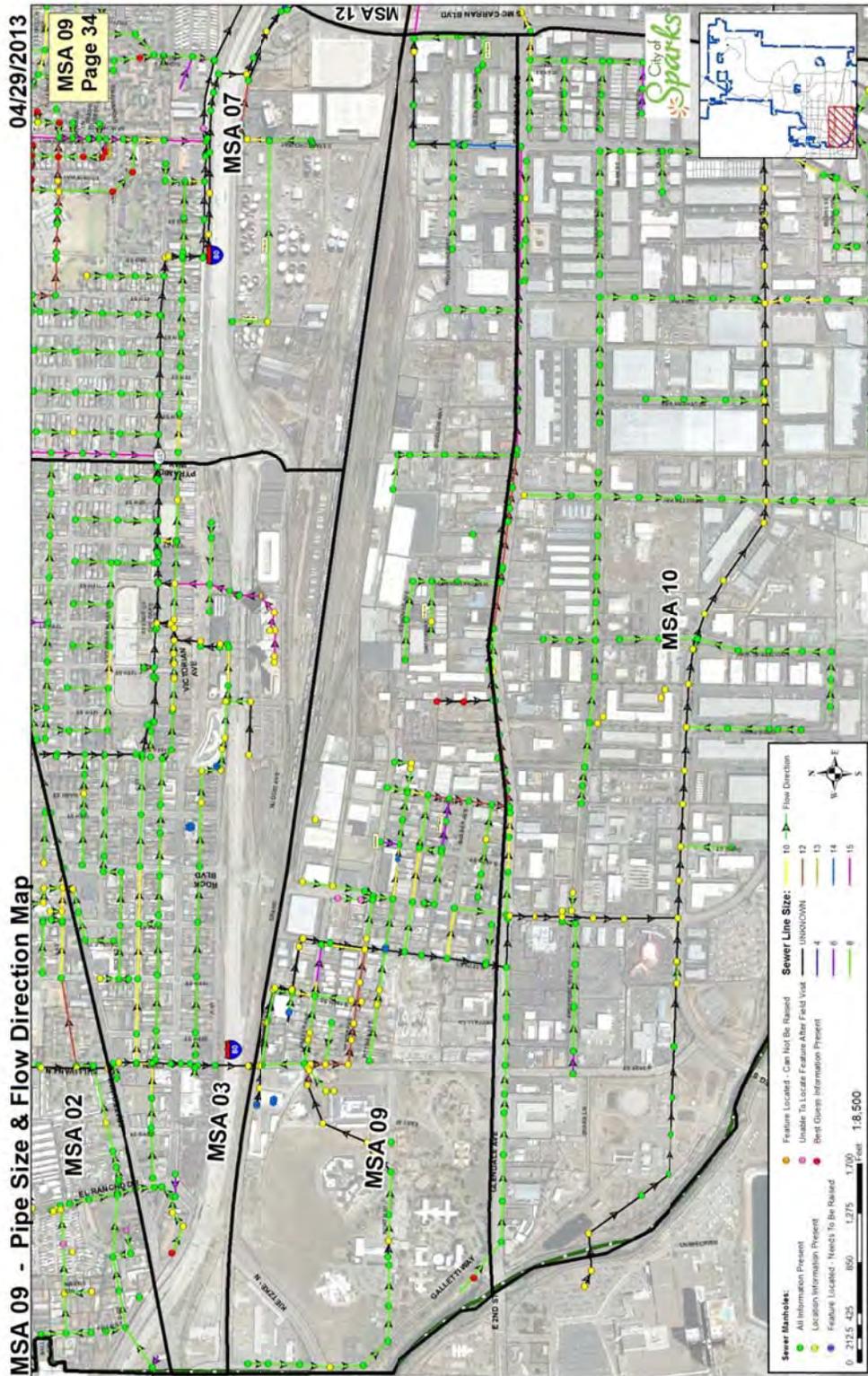
Maintenance Service Area #05



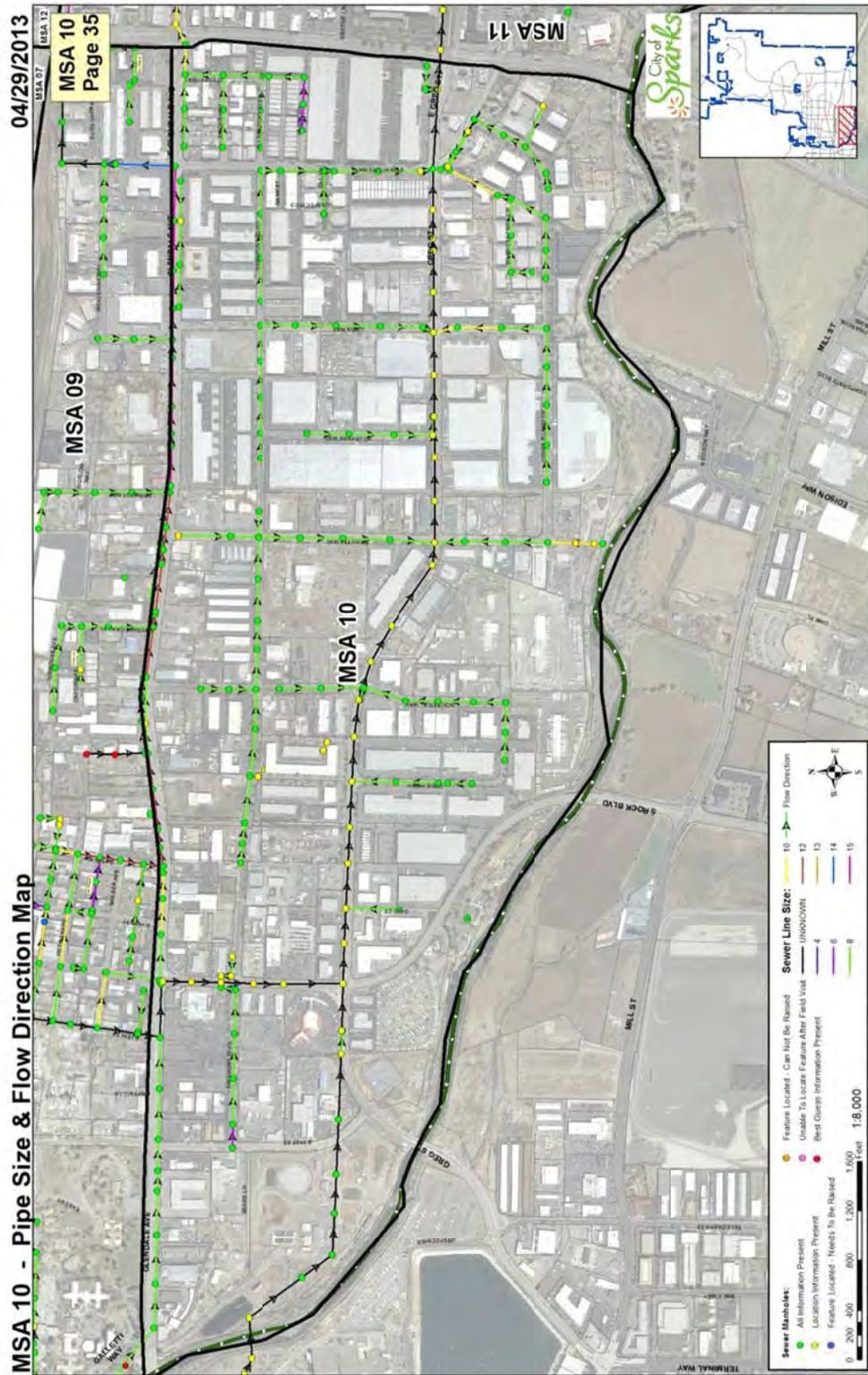
Maintenance Service Area #07



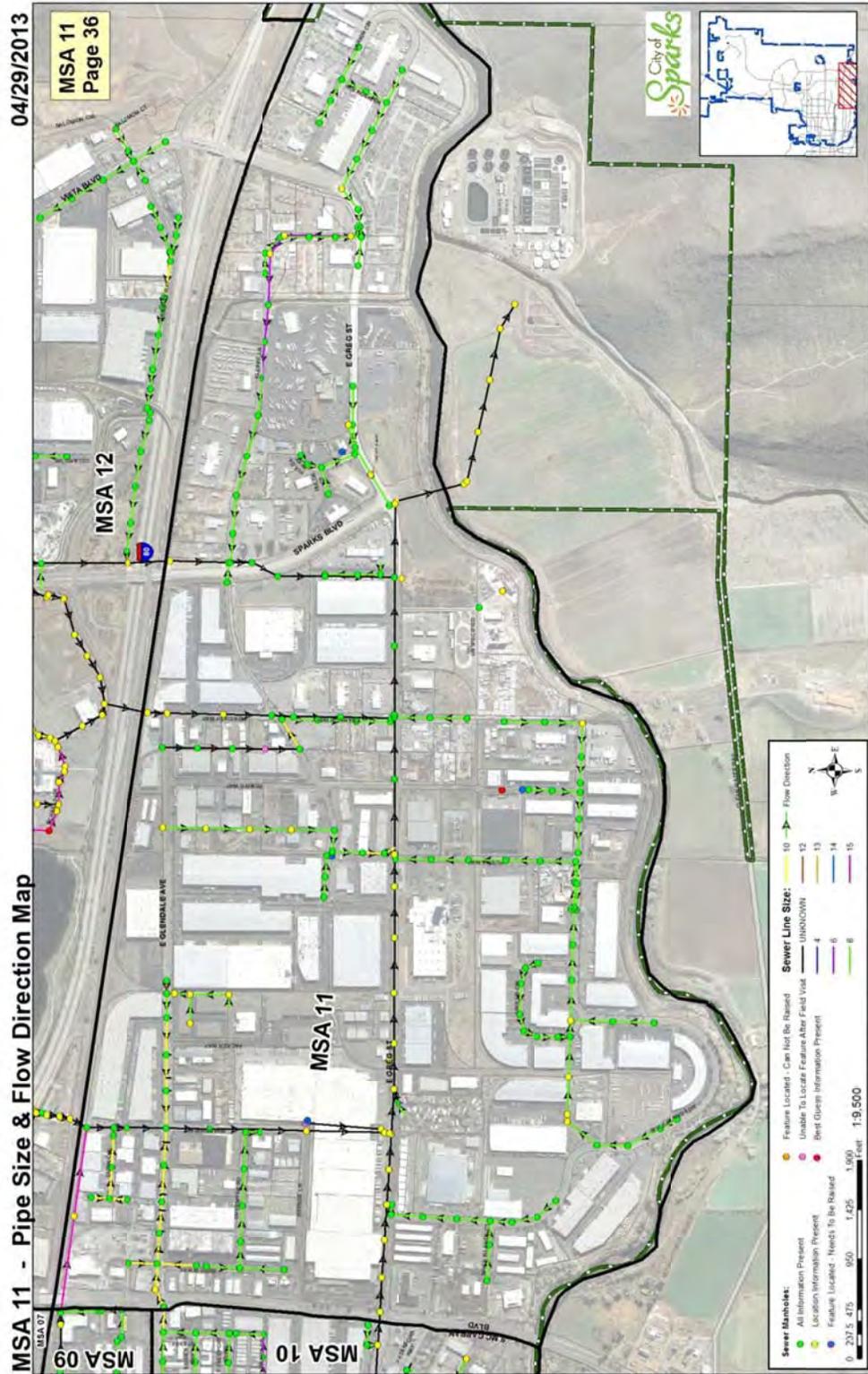
Maintenance Service Area #09



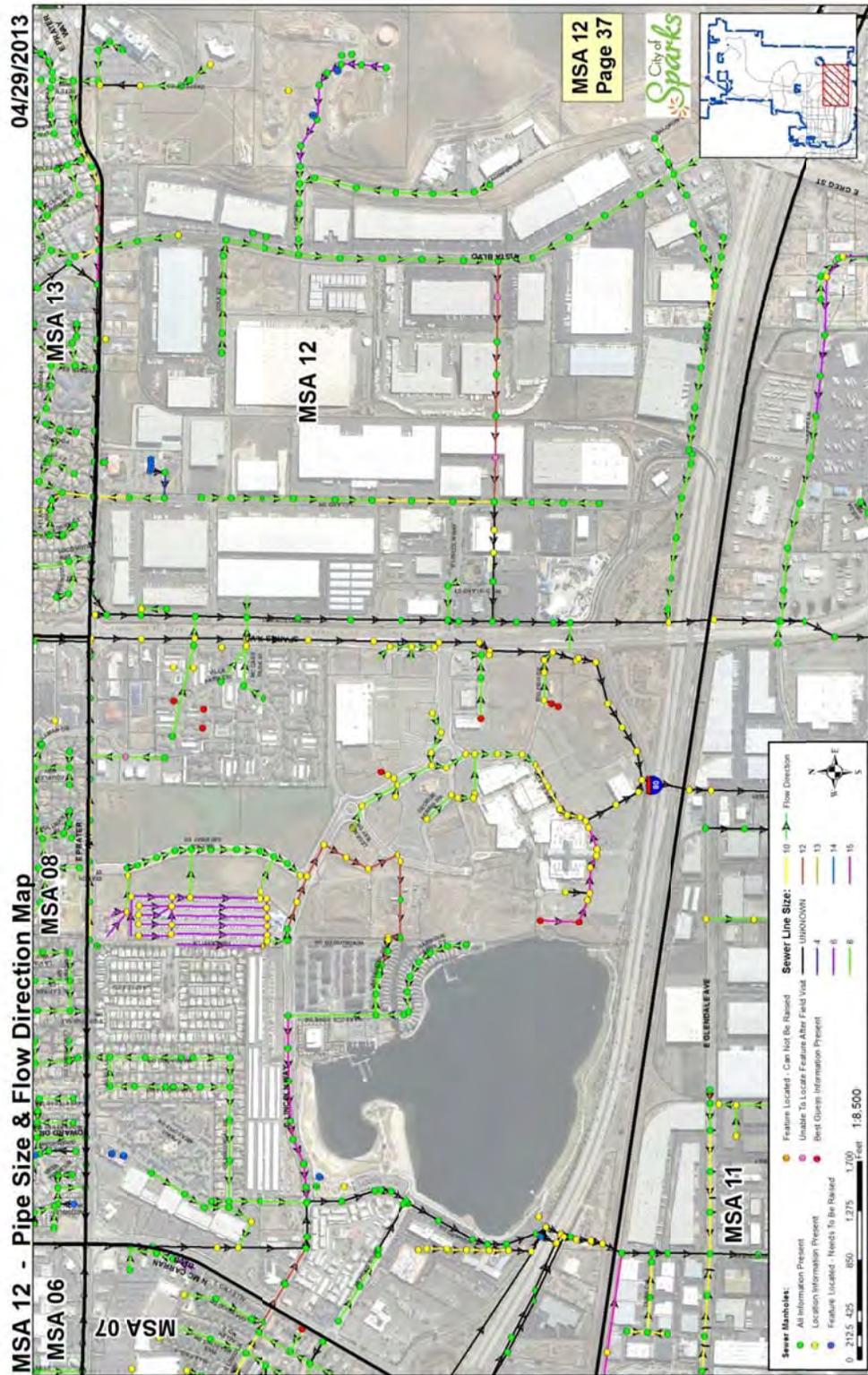
Maintenance Service Area #10



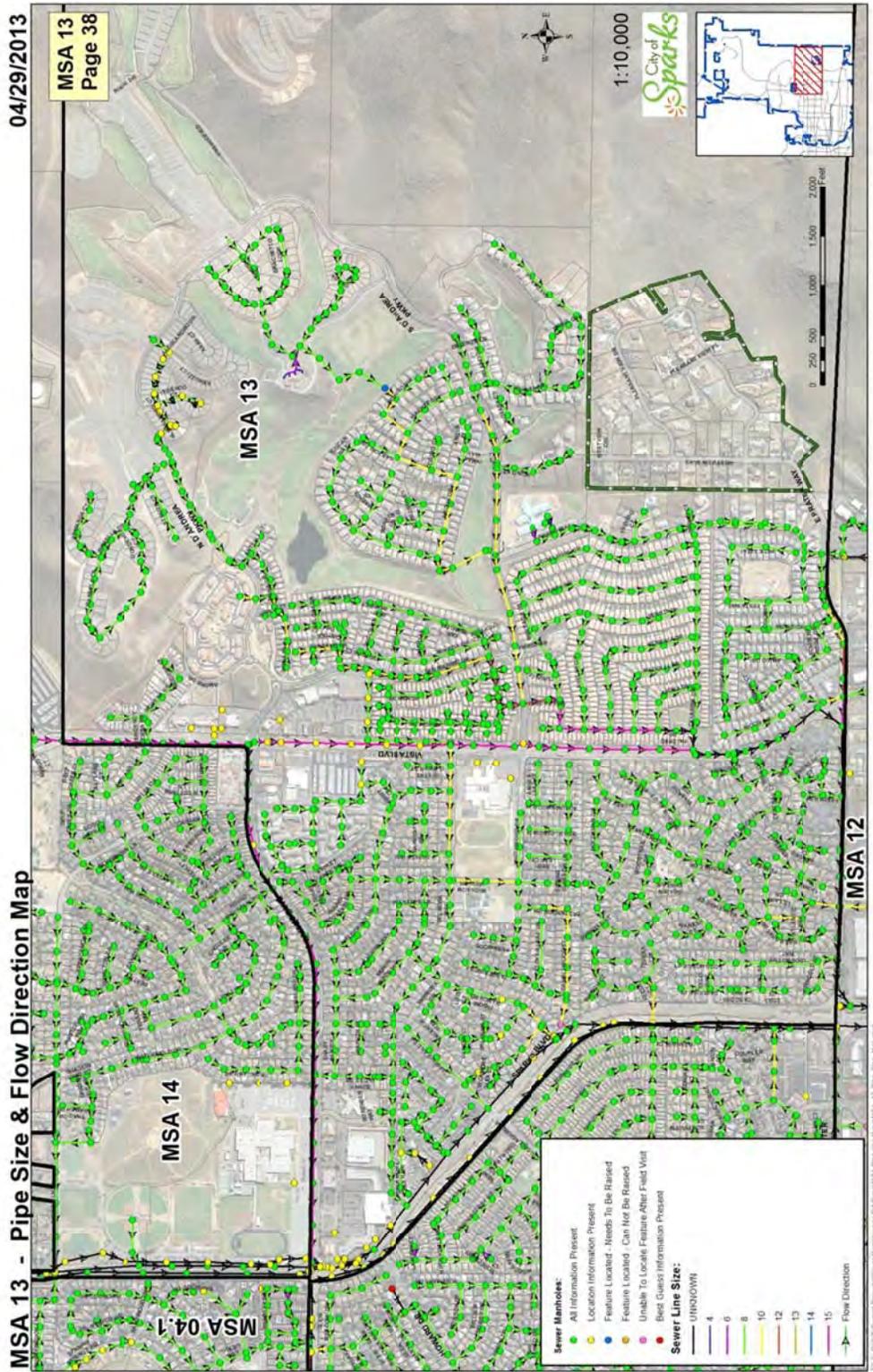
Maintenance Service Area #11



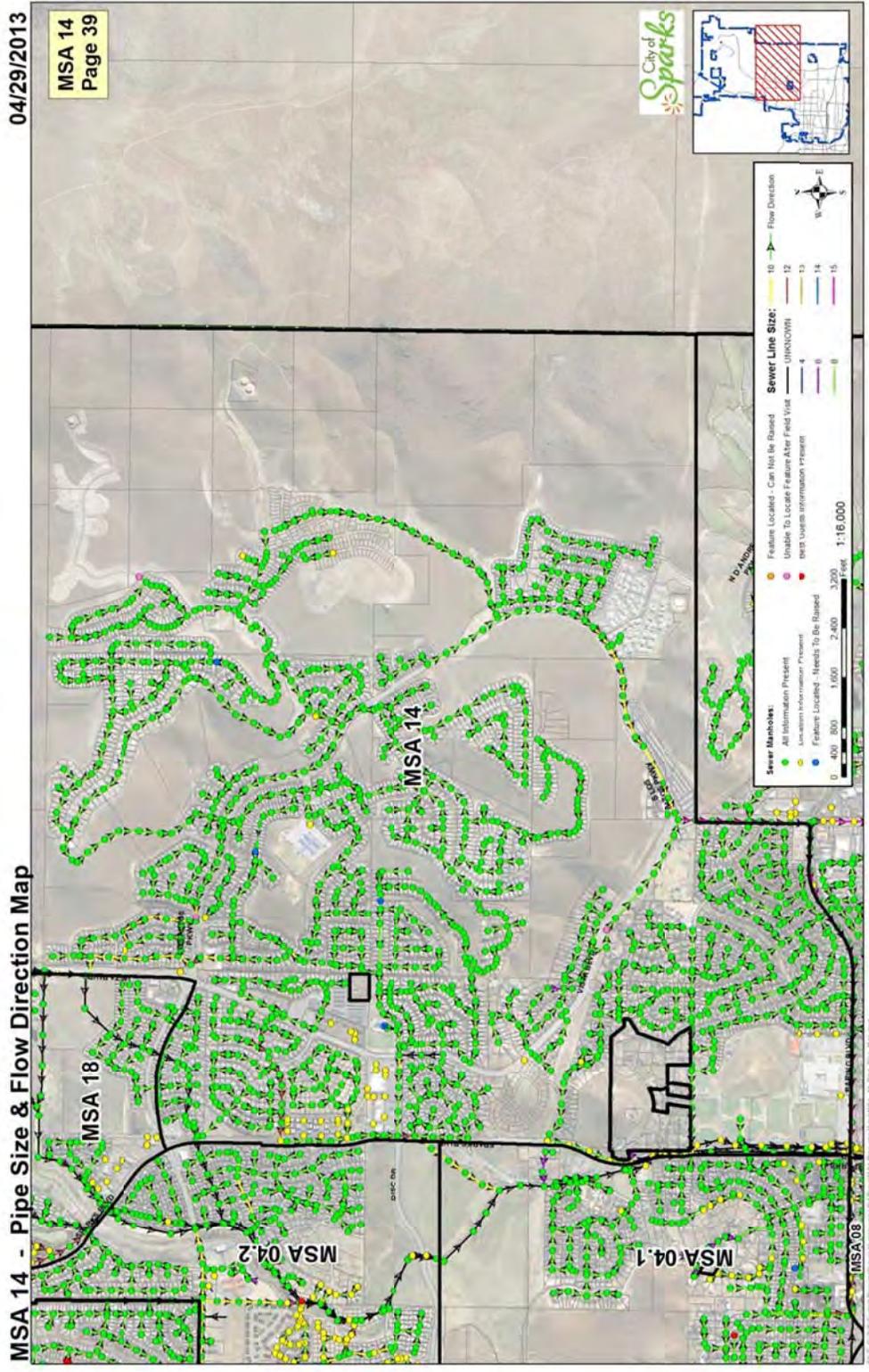
Maintenance Service Area #12



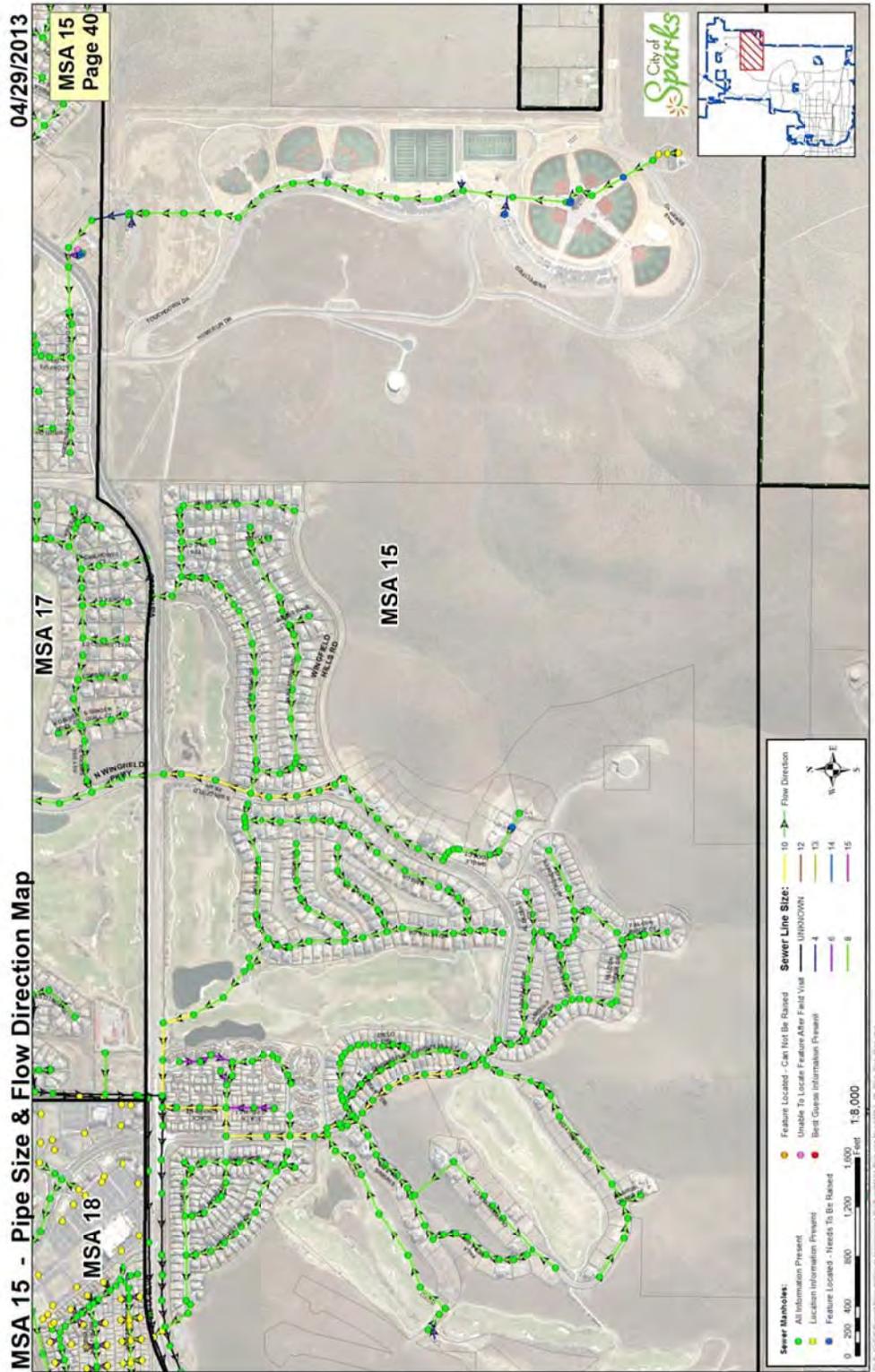
Maintenance Service Area #13



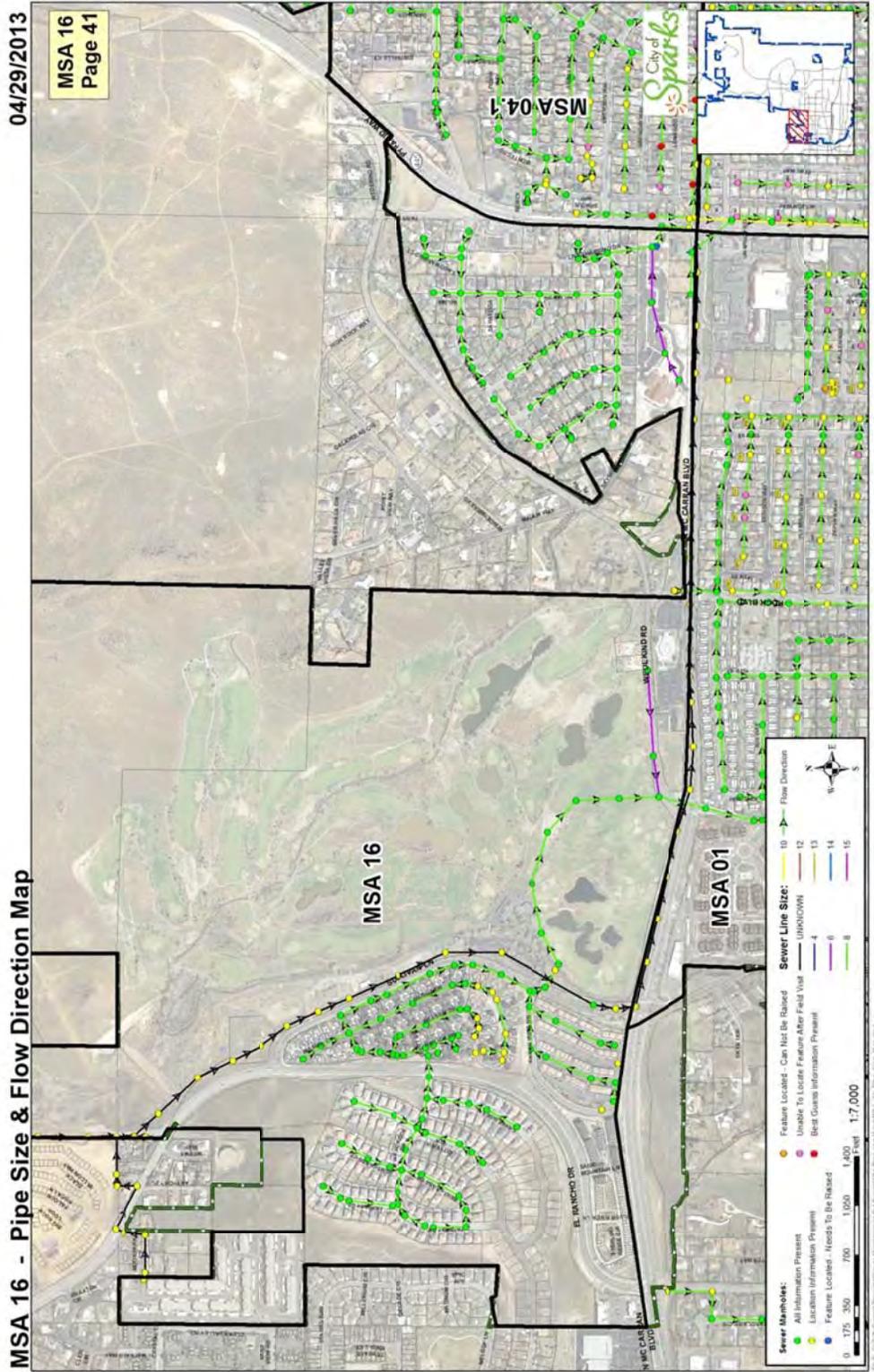
Maintenance Service Area #14



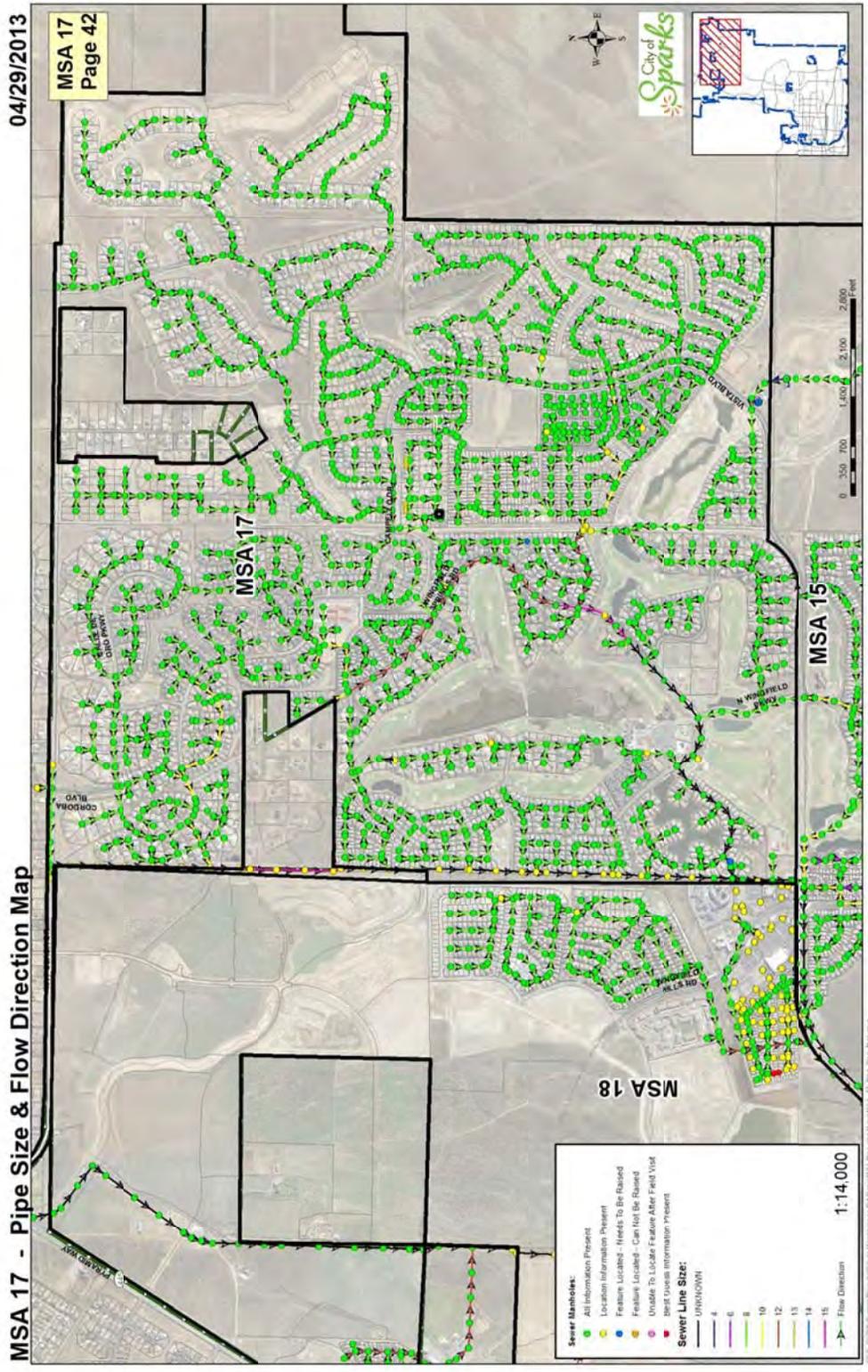
Maintenance Service Area #15



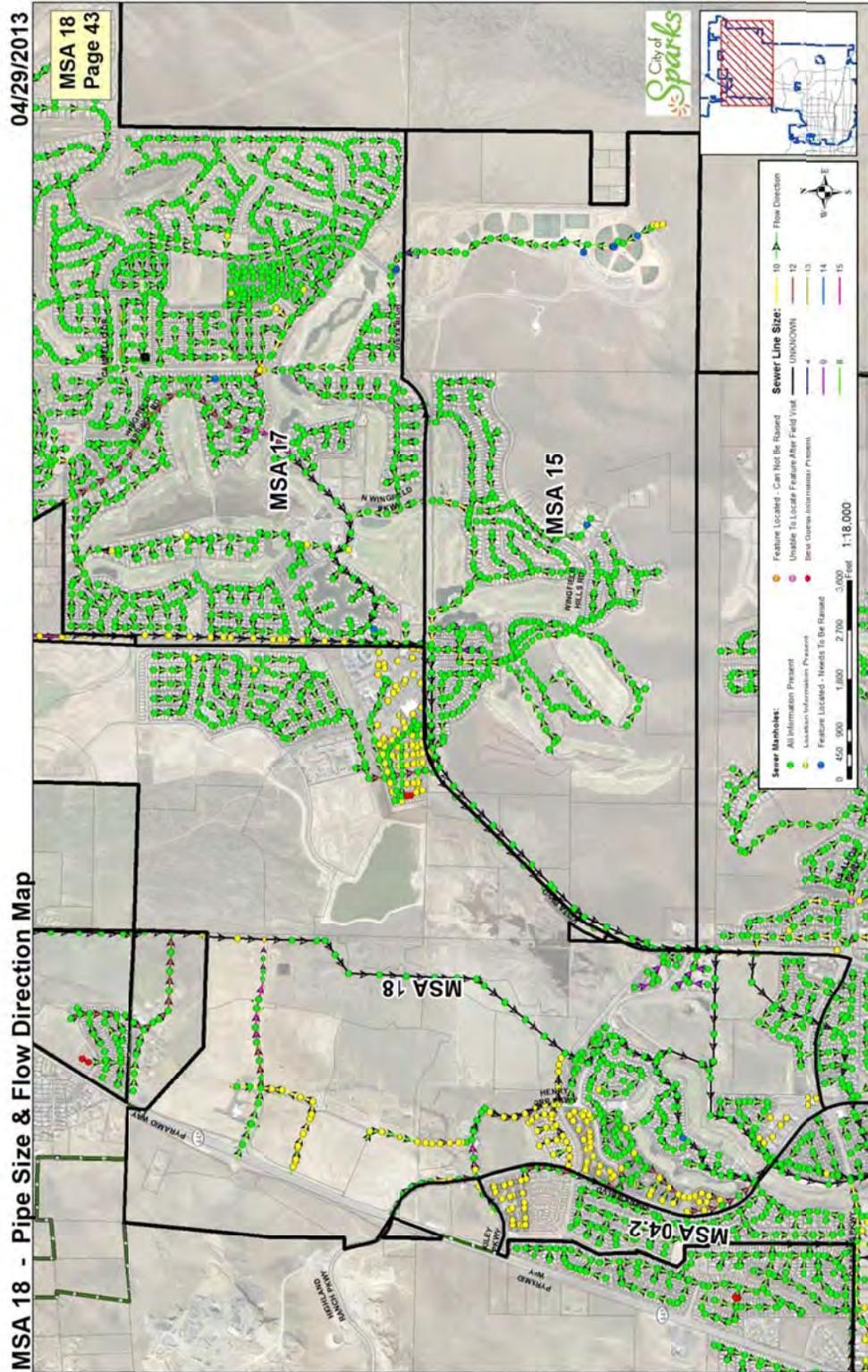
Maintenance Service Area #16



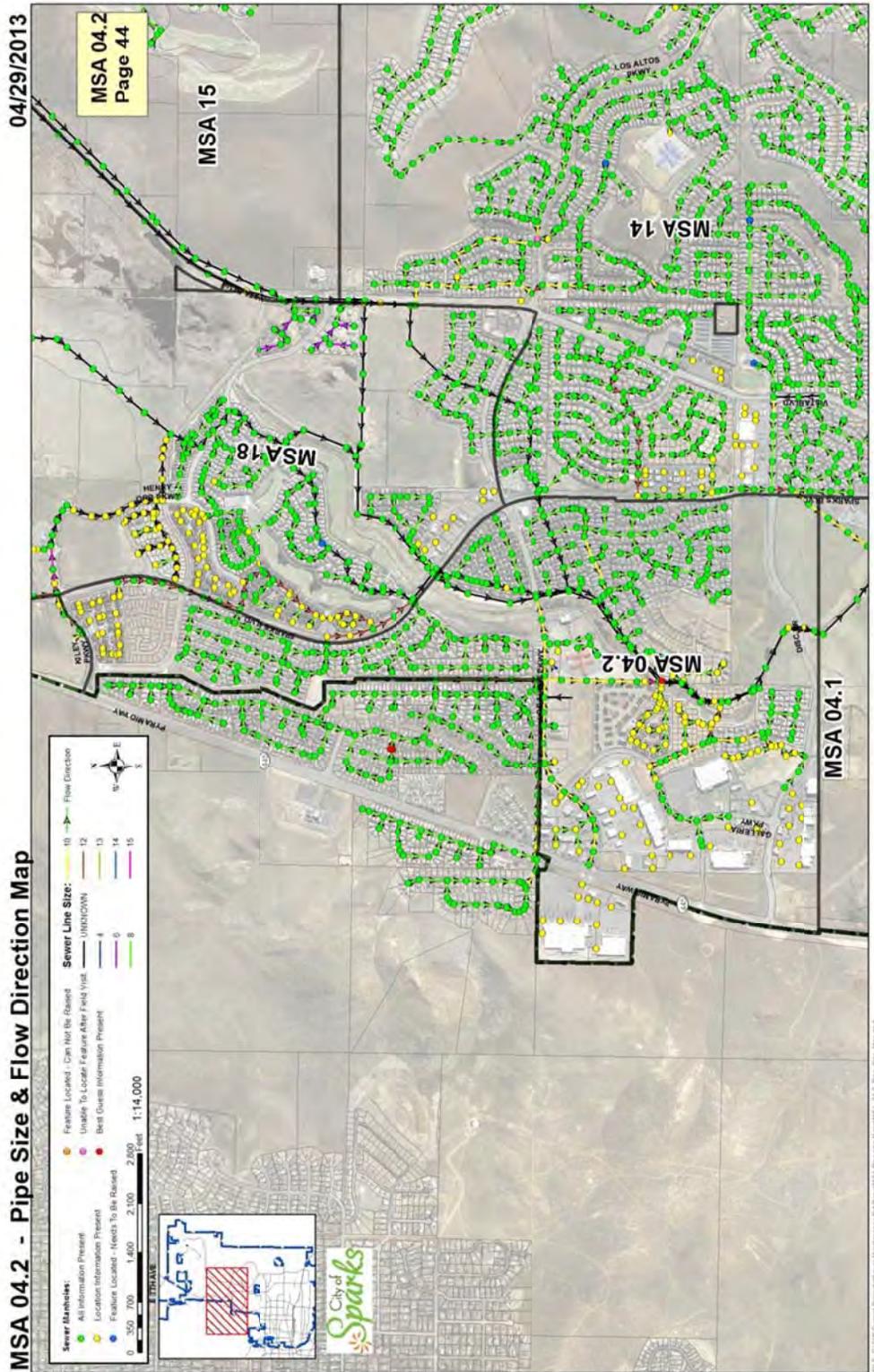
Maintenance Service Area #17



Maintenance Service Area #18



Maintenance Service Area #04.2



APPENDIX 2 – MSA Pipe Sizes and Lengths To Be Cleaned

07/02/2013 3:26 PM



City of Sparks Sanitary Sewer Pipe Size & Length Analysis

MSA	1.) Required Routine Pipe Maintenance Capability										Total To Be Routine Cleaned				3.) Maintenance Managed Separately - Cleaning Capability Not Required										Total Routine Feet MSA		Total MSA	
	4"	6"	8"	10"	12"	13"	14"	15"	16"	18"	20"	21"	Additional Capacity	Size Cleaning	24"	27"	30"	31"	36"	39"	42"	48"	54"	60"	Feet MSA	Miles MSA		
1		178	32,267	5,210	1,008			701	92,966			2,617	4,516	7,433											200,399	10.0		
2	21	3,091	45,027	4,566	758			544	51,807					2,003	419	1,117	775	1,524							57,641	10.9		
3		640	28,420	3,816	139			1,781	34,796			7,003		2,003	946	1,078	375	351							40,648	7.7		
4	1	2,316	33,746	2,883	413				94,888			3,167		4,703				1,294					2,556		108,044	20.5		
4.2	11.8	209	46,221	11,287	2,055			238	60,127			3,667		8,285				3,774					1,071		74,689	14.1		
5		398	60,163	7,266	733				69,977			4,515		8,285											78,262	14.8		
6		1,572	41,065	3,747	733				48,411			648		649											52,358	9.8		
7		524	33,590	4,863	472			2,740	46,399			455		455				577							57,683	10.9		
8		690	34,976	3,558	3,762			2,228	677			455		4,026				2,631					1,874		107,093	19.9		
9		935	21,948	2,285	2,660			570	333			3,373		1,246				2,400							31,725	6.4		
10		684	34,107	2,274	2,930			480	2,033			1,246					179	448	9,557						56,220	10.6		
11		7,166	32,863	5,265	108			1,769	42,278									2,572							47,850	9.3		
12		9,197	40,180	2,860	3,405			2,846	65,861			3,299		3,209				8,194	1,767					9,686	60,384	11.4		
13		399	491	133,538	15,806	1,561		13,310	165,145			1,100	13	2,020				3,990						6,352	91,783	17.4		
14		655	239,425	9,512	2,796	162		540	253,098			3,094		3,094				3,674						4,826	180,645	34.2		
15		914	978	44,483	5,262	31			51,663									4,807							56,299	50.8		
16		71	1,925	74,457					76,452					6,552											82,904	15.7		
17		340	2,705	279,228	8,303	5,842		3,914	295,592			9,218		9,218				3,271							310,004	63		
18		4,062	64,279	3,525	8,950			2,560	83,965			3,028		3,029				24,859							119,633	22.7		
19								1,415	40,415			609		609				1,529							44,549	8.4		
20		2,255	31,368	1,414,916	112,684	69,340	162	3,279	36,607	1,652,690	1,899	30,245	13	24,434	56,591	35,507	1,822	44,803	1,598	43,952	1,767	18,199	6,033	3,627	22,739	1,889,326	357.8	
Total FT																												
Total Miles	0.4	6.3	268.0	21.3	9.3	0.0	0.6	6.9	313	1,652,690	1.9	5.7	0.0	4.6	11	6.7	0.3	8.5	0.3	8.3	0.3	3.4	1.1	0.7	4.3	317.8		

- 1.) Total Required Routine Pipe Maintenance Length (4"-15") In Miles: 313
- 2.) Total Additional Capacity Length (18"-21") In Miles: 56,591
- 3.) Total Pipe Maintenance Managed Separately (24"-60") In Miles: 180,046

Pipe_Size_Analysis_05142013.xlsx

APPENDIX 3 – Pictures of Typical City of Sparks Sewer System Maintenance Issues

Example #1 - Pictures of Full or Partial Blockages:



Example #2 - Pictures of Heavy Debris, Roots and Grease Causing Partial Blockages:

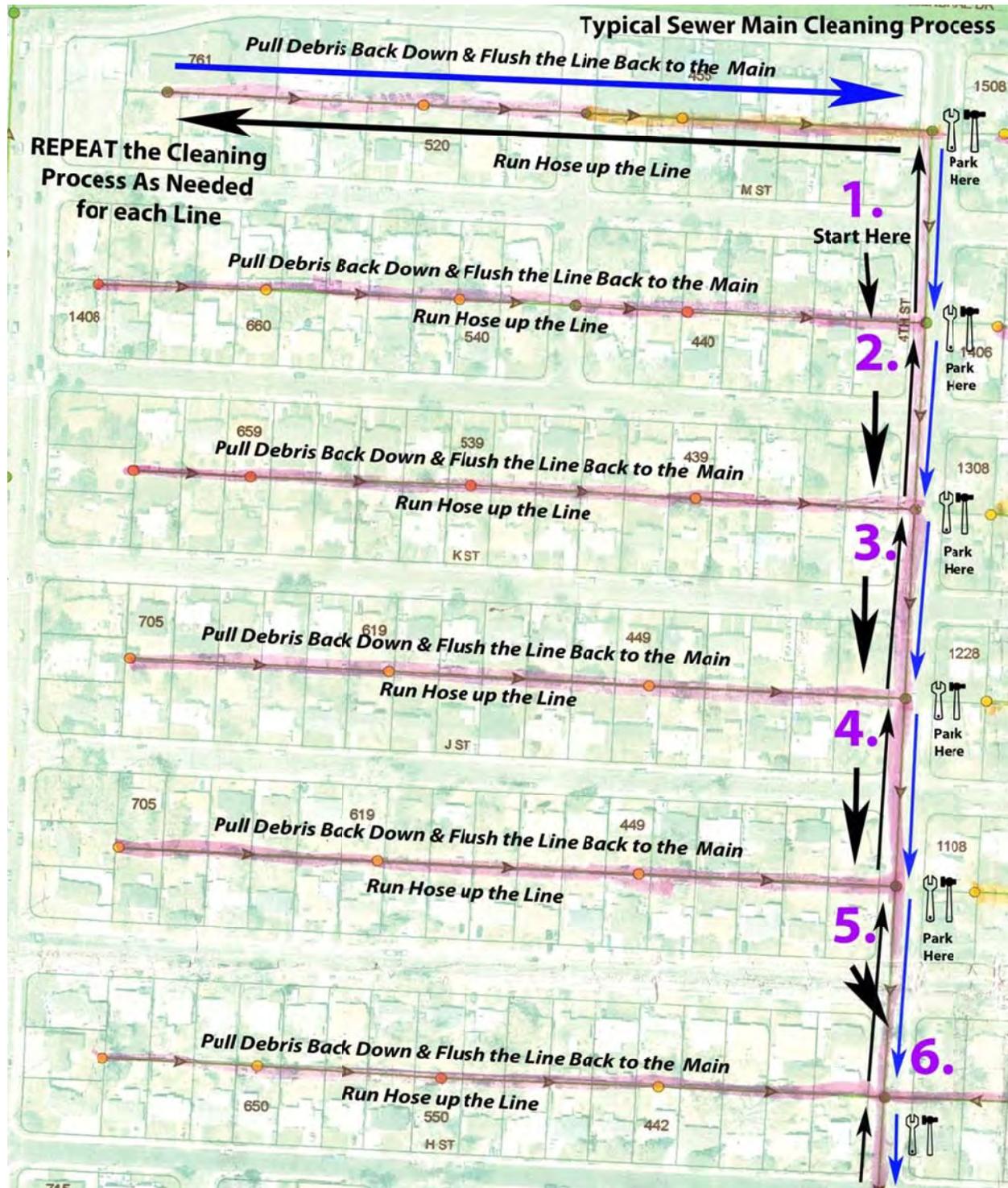


Example #3 - Pictures of Roots Causing Partial Blockages:

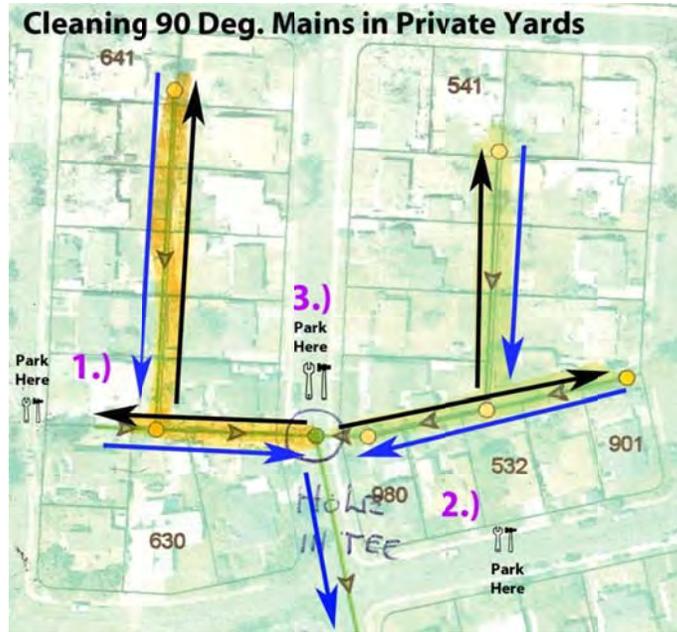


APPENDIX 4 – Pipe Cleaning Processes

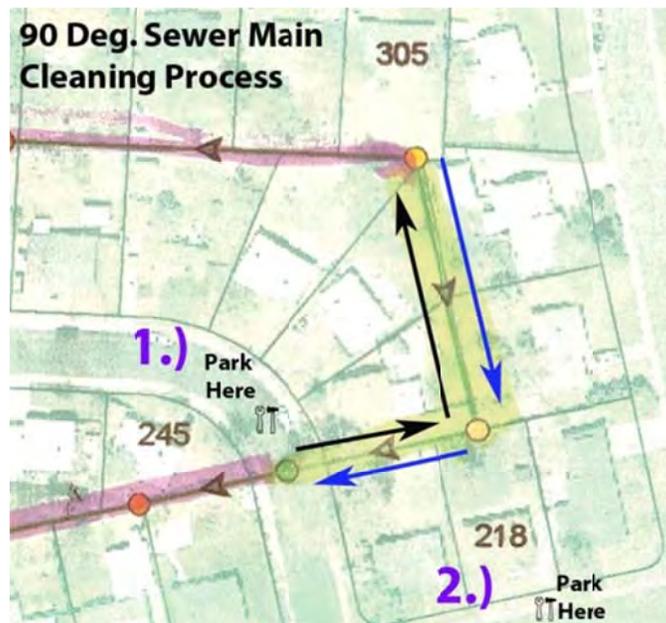
Example #1 – Typical City of Sparks Cleaning Process



Example #1 – 90 Degree Cleaning Process (Private Yard Access)



Example #2 – 90 Degree Cleaning Process (Private Yard Access)



APPENDIX 5 – Before and After Cleaning Pictures

Example #1 – Before & After Pictures



Example #2 – Before & After Pictures



Example #3 – Before & After Pictures



APPENDIX 6 – Chemical Root Removal Products, Application Methods and MSD Sheets

RootX

[How RootX Works](#)

[How To Use RootX](#)

[RootX Success Stories](#)

[FDU-200](#)

[Compare RootX](#)

[FAQs](#)

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How RootX Works

RootX is a simple, cost-effective and proven way to kill pipeline roots in sewer lines, storm pipes and septic systems (not for use in septic systems in the state of Florida).

RootX uses the aquatic herbicide Dichlobenil. It's non-caustic, non-fumigating and non-systemic, and it contains no diquat dibromide, copper sulfate or metam sodium. RootX is classified as a

General Use product by the Environmental Protection Agency, and it's registered for use in all 50 states (EPA registration #68464-1) as well as Canada. In addition, RootX carries the signal word CAUTION, the lowest chemical hazard rating according to the ISO 3864-2 standard for hazard severity panels.

Foaming RootX formula kills roots, keeps pipes clear

The patented RootX formula foams on contact with water. The foam fills the entire pipe to reach the top where 90 percent of the roots live. Degreasing agents strip away grease and grime so the RootX herbicide can penetrate the roots, killing the root tissue on contact. RootX promotes bacterial growth to speed the decay and natural removal of roots. The foam also leaves a thin layer of the RootX herbicide on the pipe walls to prevent re-growth.

Enhances mechanical root cutting

Mechanical root cutting is an immediate and short-term solution to relieving pipeline blockages caused by root intrusion. However, cutting roots is like pruning a tree; it stimulates even more vigorous and destructive root growth in the remaining roots. That means new root growth can fully clog your pipe again in just nine months.



Treating pipes with RootX not only kills all the roots on contact, it also leaves a thin layer of the herbicide on the pipe walls to prevent roots from coming back. New root growth after treatment with RootX is much slower and less destructive to the pipe.

If this is the first time you're treating a pipe or if it is completely blocked, it makes sense to use mechanical cutting to remove the root mass and restore pipe flow right away. However, you can kill any remaining roots in the line and stunt re-growth longer by applying RootX immediately after mechanical cutting.

It's important to apply RootX within the first hour after cutting or wait six to eight weeks. That's because roots release a traumatic acid to cover the cut ends and protect them against further injury. If you apply RootX immediately after cutting, the herbicide can penetrate the root ends before the traumatic acid coating is complete. After six to eight weeks, the traumatic acid will have dissipated, leaving the most vulnerable part of the root—the white tender meristem growth where cells are actively dividing—exposed to the herbicide. The more root tissue you can treat with RootX, the better.

Once you've put your pipelines on a maintenance program with annual RootX treatments, you should be able to eliminate mechanical root cutting in most cases.



Fast, easy and guaranteed effective

Treating pipes with RootX is fast and easy. Your maintenance crews



can treat a 400-foot mainline in 30 minutes or less using the jetter trucks you already have.

RootX not only kills all the roots in your pipe today; it leaves a barrier on the pipe walls that prevents future root growth. That's why RootX is guaranteed to keep to keep 8-inch and larger municipal sewer lines free from blockages caused by live root growth for 24 months after application. For smaller 4- to 6-inch service laterals, the guarantee is 12 months.

[RootX Material Safety Data Sheet \(.pdf 288kb\)](#)

[How RootX Works](#)[How To Use RootX](#)[RootX Success Stories](#)[FDU-200](#)[Compare RootX](#)[FAQs](#)[RootX Guarantee](#)[Order RootX](#)[Request Information](#)[Local RootX Rep](#)[RootXperts](#)[Video](#)[News](#)[Budget/Footage Estimator](#)

How to use RootX

RootX application chart

Method	RootX amount	Pipe diameter	Length
FDU 100	40-lb. box	8-18 in.	600-800 ft.
Direct pour/vacuum	40-lb. box	8 in.	150-300 ft.
RootX jars	2-lb. jar	4 in.	50 ft.
RootX jars	4-lb. jar	4 in.	100 ft.
RootX jars	4-lb. jar	6 in.	75 ft.

RootX is easy to apply using your existing maintenance craws and high-pressure jetting equipment. That means you can make RootX part of your regular sewer maintenance program. And you don't have to wait weeks for a root-control service provider.

Each box or case of RootX jars comes with two pairs of gloves and two dust masks for use when handling the RootX chemical. Choose the application method that works best for your location.

[RootX Material Safety Data Sheet \(.pdf 288kb\)](#)

Treating mainlines (8 to 18 inches)

Foam Dispersal Unit (FDU) 100 method

Using the FDU 100, your maintenance crews can treat a 400-foot mainline in 30 minutes or less.

1. Determine the correct orifice to attach to the FDU 100 by measuring the time it takes to fill a 5-gallon bucket with the jetter truck running at idle. RootX includes a variety of orifice attachments and an orifice chart with the FDU 100.



2. Insert the orifice into the inlet side of the FDU 100.



3. Insert the hose with the cleaning nozzle in the downstream manhole and begin pushing it upstream.

4. Remove the cleaning nozzle and hose from the upstream manhole using a gaffing hook or rope. Signal the jetter truck operator to slacken the hose. Detach the cleaning nozzle from the hose.



5. Take the RootX bag out of the box and remove the tie separating the two chemicals.



6. Grasp both ends of the bag and rock it back and forth for about a minute to mix the two chemicals together. For RootX to work properly, the chemicals must be completely mixed, creating a uniform gray mixture throughout the bag.

7. Cut the small end of the RootX bag about 1/2 inch from the top and slip the transfer tube into the opening. Slide the two retaining rings over the bag and transfer tube, securing them in the two grooves on the transfer tube.



8. Pick up the FDU 100 and remove the locking ring, then remove the nozzle. Place the transfer tube with the RootX bag attached inside the FDU 100 and secure it with the

locking ring.

9. If you're using the RootX tripod, release the latch to open the tripod, place the FDU 100 inside and close the latch to secure the FDU 100 in place. If you're not using the tripod, have one crew member hold the FDU 100. 
10. Lift the RootX bag over the FDU 100, allowing the chemical to flow into the chamber. Hold the FDU 100 so the chemical is distributed evenly throughout the chamber. 
11. Remove the transfer tube from the FDU 100. Be sure to retain the transfer tube, retaining rings and the locking ring for future use.
12. Reinstall the nozzle on the FDU 100 and secure it with the locking ring. 
13. Attach the inlet cap of the FDU 100 to the leader hose. Attach the leader hose to your jetter truck hose. Be sure to tighten all connections with a wrench. 
14. Signal the jetter truck operator to slowly reel in the hose until the nozzle is just visible from the manhole. Use a sewer string to control the FDU 100 as you lower it into the manhole. 
15. With the FDU 100 now in position, signal the truck operator to start the water running at idle speed.
16. Verify the flow has started out of the FDU 100 and signal the truck operator to begin reeling back the hose at a speed no higher than 20 feet per minute. 
17. The FDU 100 releases a foam spray to more efficiently treat pipes of varying diameters with the same amount of RootX chemical. The RootX foam coats the roots and pipe walls, leaving a barrier on the pipe to prevent re-growth. 
18. Once the FDU 100 reaches the downstream manhole, retrieve the unit by gently shaking the line as you're reeling it in.
19. Detach the FDU 100 from the leader hose. Remove the locking ring and the nozzle. Hold the open end of the FDU 100 over the manhole and use the jetter truck hose to clean out any remaining RootX chemical. Rinse out the nozzle as well. Make sure the wash water goes directly into the sewer. 

Treating small lines and service laterals (8 inches or less)

Direct Pour

The direct pour method can be used on a pipe with a diameter of 8 inches or less that are too small for the FDU 100. You can also use the direct pour method on larger-diameter pipes with extreme blockages.

1. Take the RootX bag out of the box and remove the tie separating the two chemicals.
2. Grasp both ends of the bag and rock back and forth for about a minute to mix the two chemicals together. For RootX to work properly, the chemicals must be completely mixed.
3. Pour the RootX chemical directly from the package into the upstream manhole or cleanout.
4. Pour 5 gallons of water per pound of RootX used to activate the root-killing foam.
5. The natural flow of the line carries the foam down the pipe, coating the roots and pipe walls. The RootX foam leaves a barrier on the pipe to prevent re-growth.

Vacuum method

The vacuum method can be used on a pipe with a diameter of 8 inches or less that are too small for the FDU 100.

1. Follow steps 1-4 of the direct pour method.

- At the downstream manhole, turn on the jetter truck and activate the cleaning nozzle. This creates a vacuum in the line, pulling the RootX foam through the pipe.

RootX jars

RootX jars offer a convenient method for treating residential service laterals and other small pipes. And it requires no equipment. Treating service laterals with RootX eliminates root intrusion problems before they can create problems in mainlines.

- Pour the RootX chemical directly from the jar into an upstream cleanout.
- Pour 1 1/2 to 5 gallons of water per pound of RootX used to activate the root-killing foam.
- The natural flow of the line carries the foam down the pipe.**

MATERIAL SAFETY DATA SHEET

Emergency Phone: Chemtrec 800-424-9300

Effective Date: April 14, 2011

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: RootX**DESCRIPTION:** A foaming herbicide for control of roots in pipelines.

EPA Reg. No. 68464-1

COMPANY IDENTIFICATION:

General Chemical Company
PO Box 7626
Salem, OR 97303
1-800-844-4974

2. HAZARD IDENTIFICATION

HAZARDS TO HUMANS AND DOMESTIC ANIMALS: CAUTION Causes moderate eye irritation. Harmful if swallowed, inhaled or absorbed through skin.

ENVIRONMENTAL HAZARDS: This chemical has properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow may result in ground-water contamination. Do not use near a well or where drinking water is stored. Do not contaminate water when disposing of equipment, wash water or rinsate.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>Chemical Name</u>	<u>CAS Number</u>	<u>Composition</u>	<u>TLV[‡]</u>
Sulfamic Acid	N/A	5329-14-6	40-50%	Not Established
Quartz, Crystalline Silica	N/A	14808-60-7	> 1.5%	0.1 mg/m ³
Dichlobenil	2,6-dichlorobenzonitrile	1194-65-6	0.55%	Not Established

‡ The Threshold Limit Value listed is an inhalation limit established by the American Conference of Governmental Industrial Hygienists (ACGIH).

4. FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-858-7378 for emergency medical treatment information.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

IF SWALLOWED: Immediately call a poison control center or doctor. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

5. FIRE-FIGHTING MEASURES

Flash point (Closed Cup): > 420°F

Auto Ignition Temperature: 980°F

Flammable Limits (LFL-UFL): Not Determined

Fire and Explosion Hazards: Thermal decomposition may release oxides of carbon, sulfur, and nitrogen and / or ammonia.

Means of Extinction: Water fog, foam, dry chemical or CO₂.

Fire Fighting Instructions: Keep upwind and isolate hazard area. Use any means necessary to fight surrounding fire. Dike and collect any runoff to prevent entry to drains or water bodies.

Firefighting Equipment: Self-contained breathing apparatus and full bunker gear.

NFPA Ratings: Health – 2 / Flammability – 1 / Instability – 1

6. ACCIDENTAL RELEASE MEASURES

Clean up spills immediately observing the precautions in Section 8 of this MSDS. Control spill at the source and vacuum spill to avoid creating dust. Once all material is cleaned up and placed in disposal containers, seal the containers and arrange for disposal.

7. HANDLING AND STORAGE

Avoid contact with skin, eyes, or clothing. Avoid breathing dust. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Wash contaminated clothing before reuse.

Do not contaminate water, food, or feed by storage or disposal. Store in a dry place and avoid storage near food or feed products.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Handle only with adequate ventilation. Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower.

Protective Clothing: Applicators and other handlers, including mixers and loaders, must wear long-sleeved shirt, long pants, shoes plus socks and chemical-resistant gloves. Mixers and loaders must also wear a chemical-resistant apron. Wear a NIOSH approved personal respirator if dust from this product exceeds permissible exposure levels (Section 3).

General: Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. Follow manufacturer's instruction for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White to light brown powder

Odor: Slight aromatic

pH: 2 – 3 (25% solution in water)

Density: 17.114 lbs/gal

Solubility: Disperses in water

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: None known.

CHEMICAL STABILITY: Stable under normal use and storage conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may release oxides of carbon, sulfur, and nitrogen and / or ammonia.

INCOMPATIBILITY WITH OTHER MATERIALS: Strong oxidizing agents, nitric acid or chlorine.

POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION**ACUTE ORAL TOXICITY**

Oral LD₅₀ (rat): > 5,000 mg/kg

ACUTE DERMAL TOXICITY

Dermal LD₅₀ (rat): > 2,000 mg/kg

ACUTE INHALATION TOXICITY

Inhalation LC₅₀ (rat): > 2 mg/L (4-hour)

EYE IRRITANT

Rabbit – Slightly to moderately irritating

SKIN IRRITATION

Rabbit – Slightly irritating

SENSITIZATION

Guinea Pig – Not a contact sensitizer

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

CARCINOGENICITY:

ACGIH: Not listed

IARC: Not listed

NTP: Not listed

OSHA: Not listed

MUTAGENIC DATA: No evidence of mutagenic effects during *in vivo* and *in vitro* assays.

ADDITIONAL DATA: Not known to cause reproductive or birth defects at normal exposure levels.

12. ECOLOGICAL INFORMATION

For terrestrial uses, do not use near a well or where drinking water is stored. Do not apply directly to water or to areas where surface water is present or to inter tidal areas below the mean high water mark. Do not contaminate water when disposing of equipment, wash water or rinsate. This chemical has properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow may result in ground-water contamination.

The following data is for the active ingredient Dichlobenil:

AQUATIC TOXICITY

Various Fish Species (LC₅₀ 96-hr): 5 – 13 mg/L

Daphnia (LC₅₀ 48-hr): 6.2 mg/L

Algae (EC₅₀ 5-day): 2.0 – 2.7 mg/L

AVIAN TOXICITY

Bobwhite Quail (LD₅₀): 683 mg/kg

OTHER

Bees (LD₅₀ Contact): > 11 µg/bee

Worms (LD₅₀): > 1000 mg/kg substrate

13. DISPOSAL CONSIDERATIONS

Do not contaminate water, food or feed by disposal.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container. Refer to the product label for additional container disposal instructions.

14. TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME: Not regulated by DOT.

SEVERE MARINE POLLUTANT: No

15. REGULATORY INFORMATION**FIFRA –**

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act. The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide.

SARA Title III – Section 302 Extremely Hazardous Substances

Not Listed

SARA Title III – Section 311/312 Hazard Categories

Immediate (Acute), Delayed (Chronic)

SARA Title III – Section 312 Threshold Planning Quantity

N/A

SARA Title III – Section 313 Reportable Ingredients

Nore

CERCLA – Section 304 Reportable Ingredients

Nore

CALIFORNIA PROP 65 STATUS –

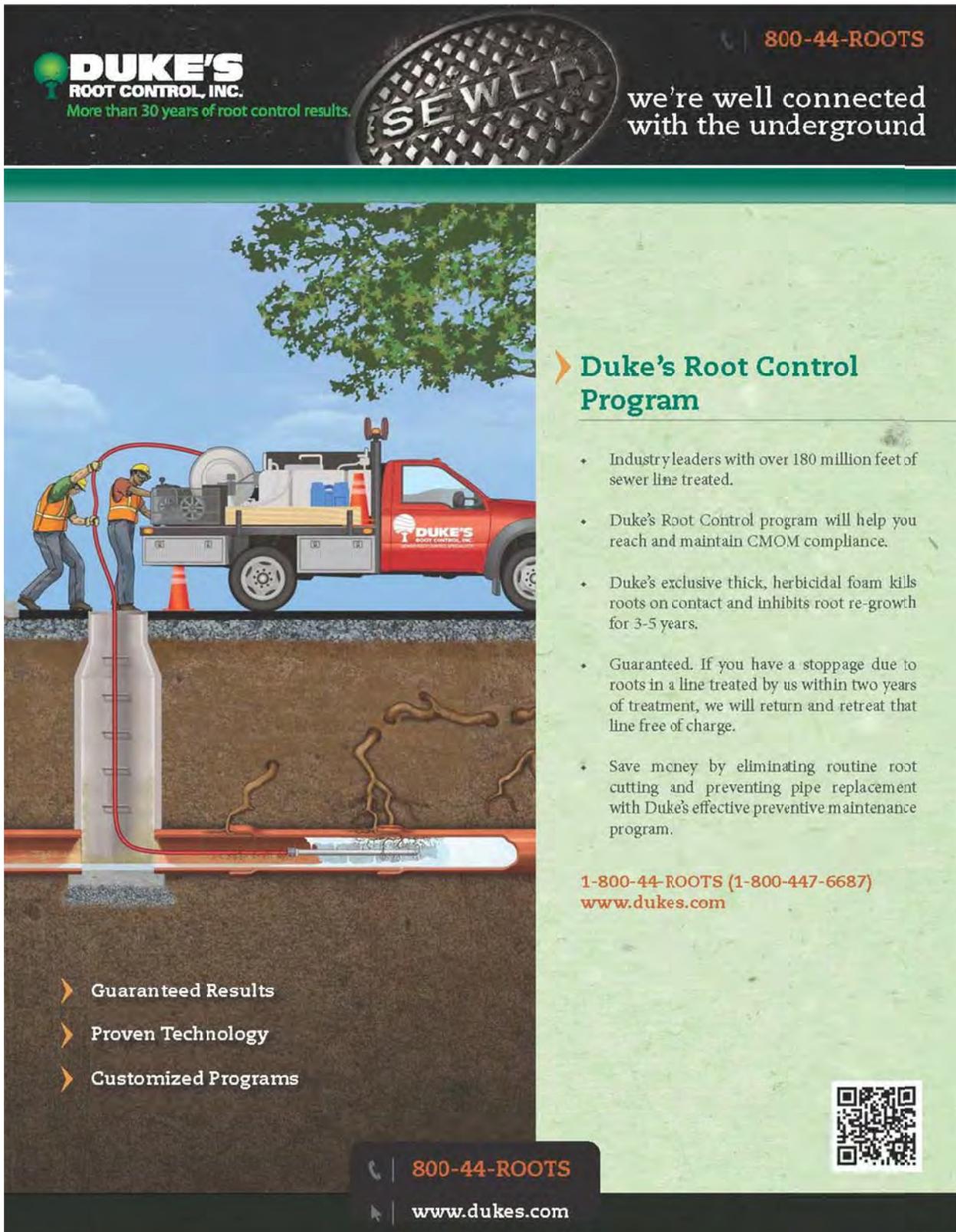
This product contains crystalline silica, a compound known to the state of California to cause cancer.

16. OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.

DISCLAIMER:

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER WILL NOT BE LIABLE FOR ANY LOSS, INJURY OR DAMAGES AND TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, PURCHASERS AND/OR USERS OF THIS PRODUCT HEREBY WAIVE ANY STRICT LIABILITY. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR THE PARTICULAR PURPOSE, AND THERE ARE NO OTHER IMPLIED WARRANTIES, EXCEPT AS SPECIFICALLY SET FORTH ON THE PRODUCT LABEL. MANUFACTURER'S OBLIGATION ON ANY CLAIM IS LIMITED TO REPLACEMENT OF ANY DEFECTIVE PACKAGE OF ROOTX. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER WILL NOT BE LIABLE FOR ANY LOSS, INJURY OR DAMAGES TO PERSONS OR PROPERTY RESULTING FROM FAILURE OR IMPROPER USE OF THE PRODUCT, NOR WILL THE MANUFACTURER BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND SUSTAINED BY THE PURCHASER OR USER OF THIS PRODUCT. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, PURCHASERS AND/OR USERS OF THIS PRODUCT HEREBY WAIVE ANY STRICT LIABILITY OR PRODUCT LIABILITY CLAIM THEY MIGHT HAVE AGAINST THE MANUFACTURER AND/OR SELLER. SELLER AND MANUFACTURER ARE NOT LIABLE FOR ANY USE OF THIS PRODUCT NOT IN COMPLIANCE WITH THE DIRECTIONS ON THE PRODUCT LABEL.



DUKE'S ROOT CONTROL, INC.
More than 30 years of root control results.

800-44-ROOTS

we're well connected with the underground

➤ Duke's Root Control Program

- Industry leaders with over 180 million feet of sewer line treated.
- Duke's Root Control program will help you reach and maintain CMOM compliance.
- Duke's exclusive thick, herbicidal foam kills roots on contact and inhibits root re-growth for 3-5 years.
- Guaranteed. If you have a stoppage due to roots in a line treated by us within two years of treatment, we will return and retreat that line free of charge.
- Save money by eliminating routine root cutting and preventing pipe replacement with Duke's effective preventive maintenance program.

1-800-44-ROOTS (1-800-447-6687)
www.dukes.com

➤ Guaranteed Results
➤ Proven Technology
➤ Customized Programs

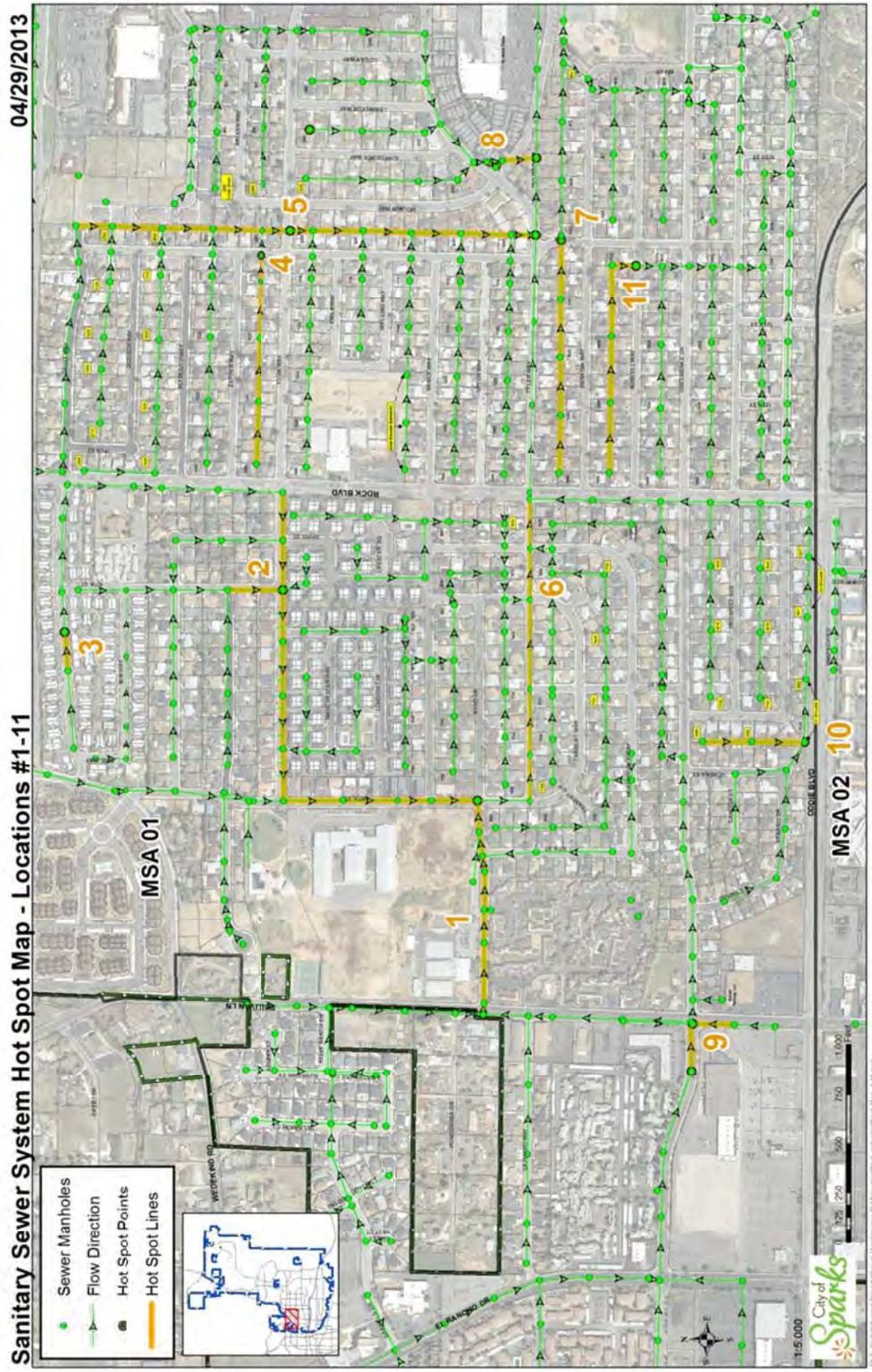
800-44-ROOTS
www.dukes.com



APPENDIX 7 – City of Sparks Sewer System Hotspots

Please review the attached 11x17 “Hot Spot” maps.

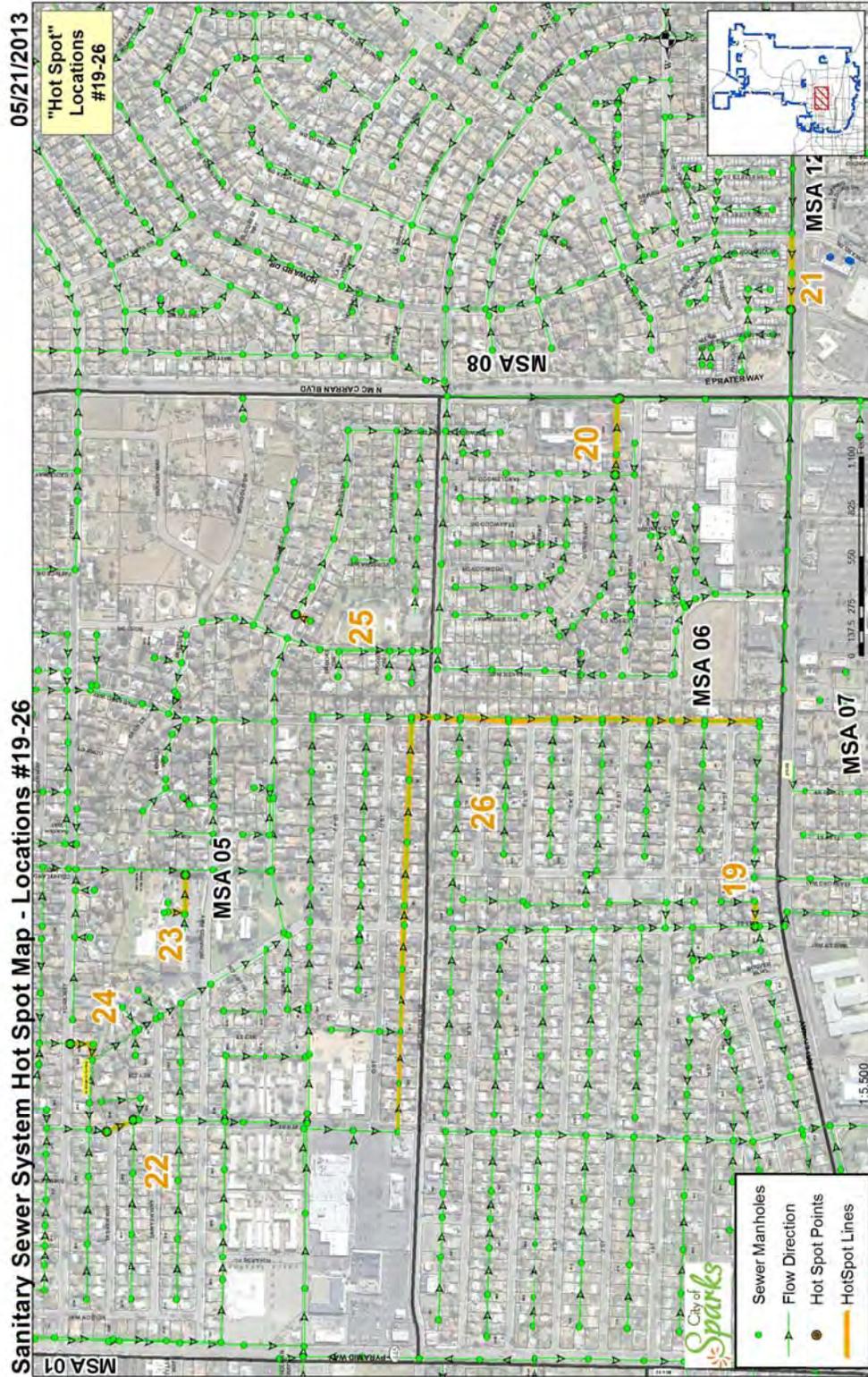
Hot Spots 1-11



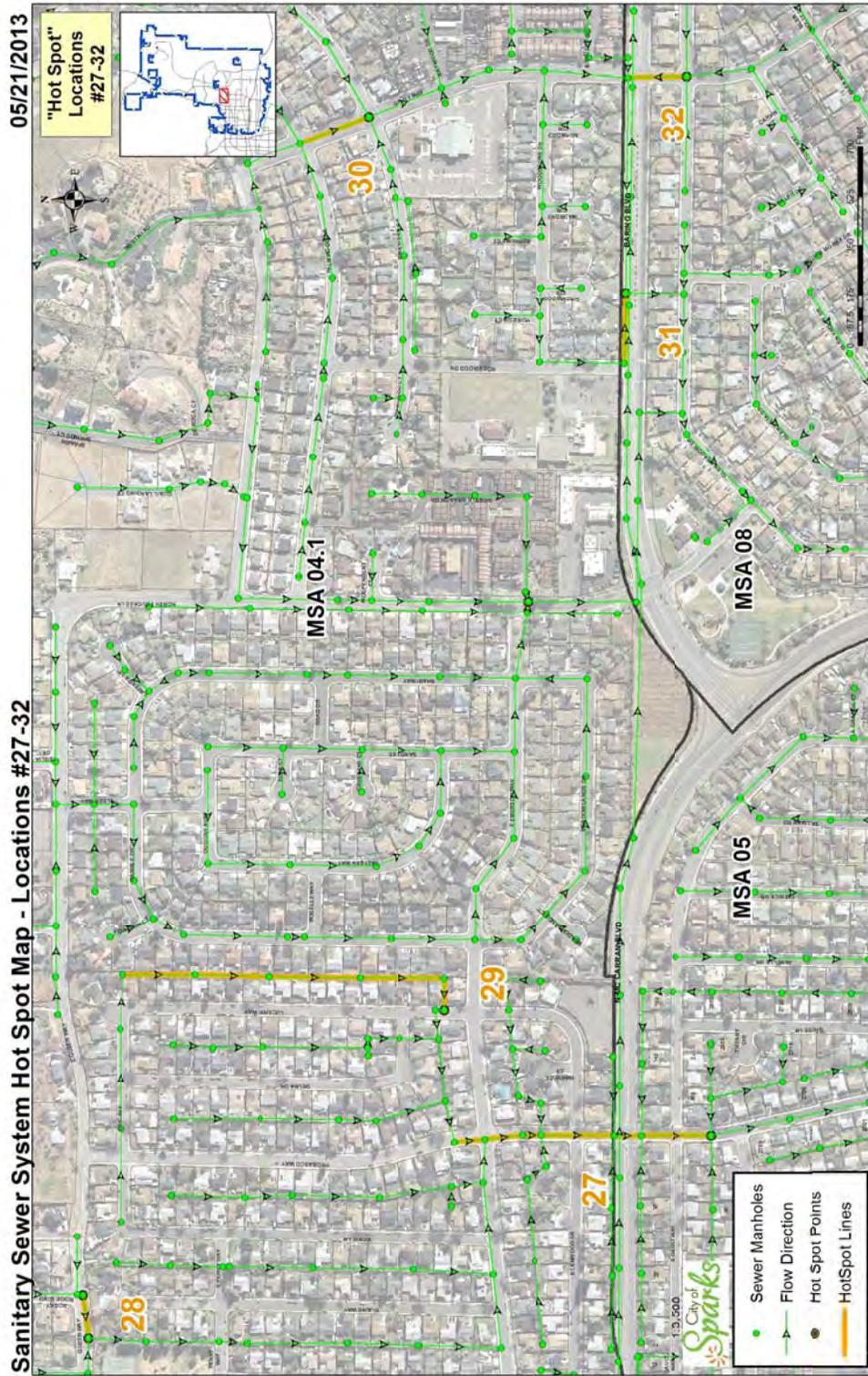
Hot Spots 12-18



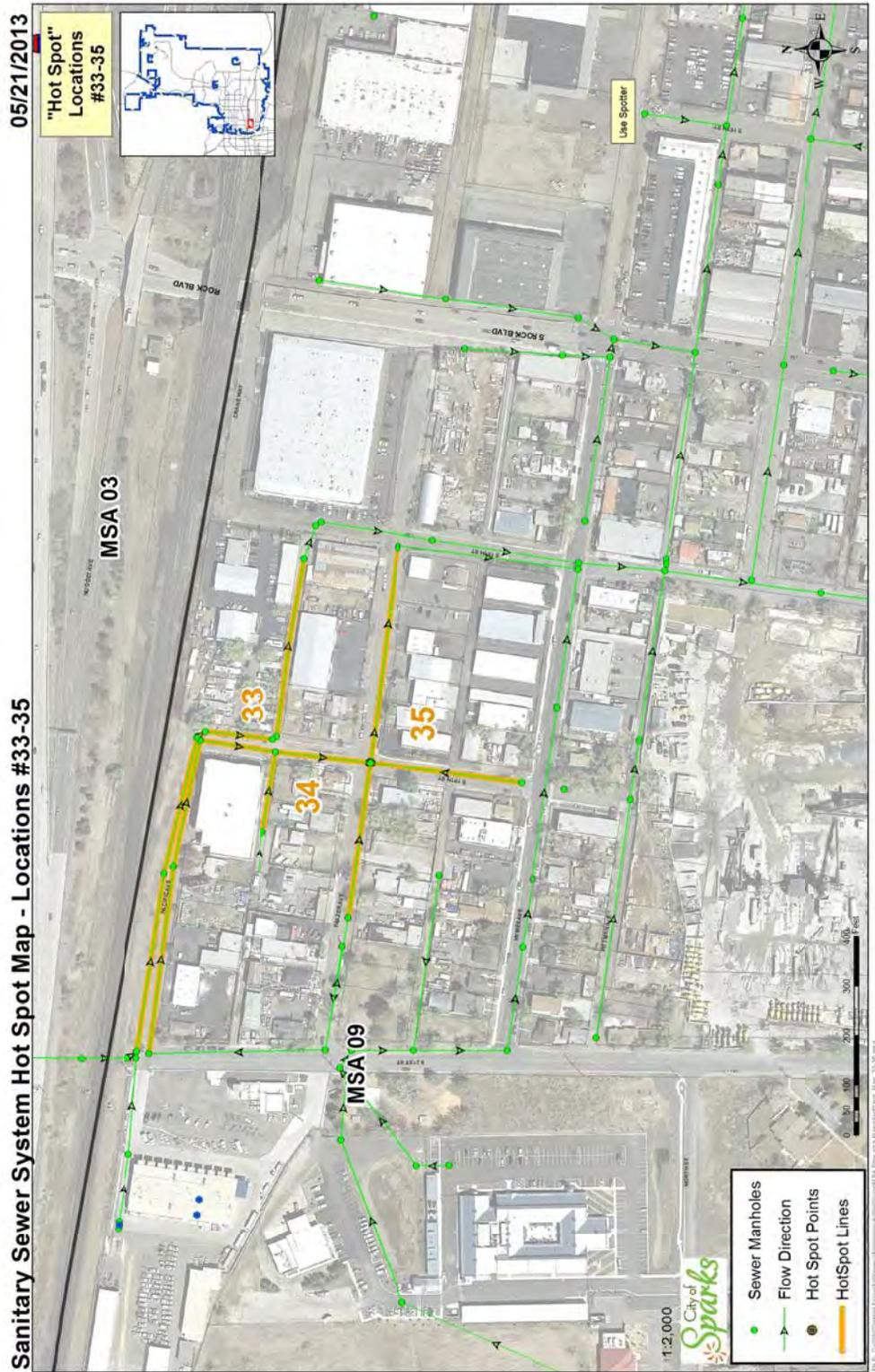
Hot Spots 19-26



Hot Spots 27-32



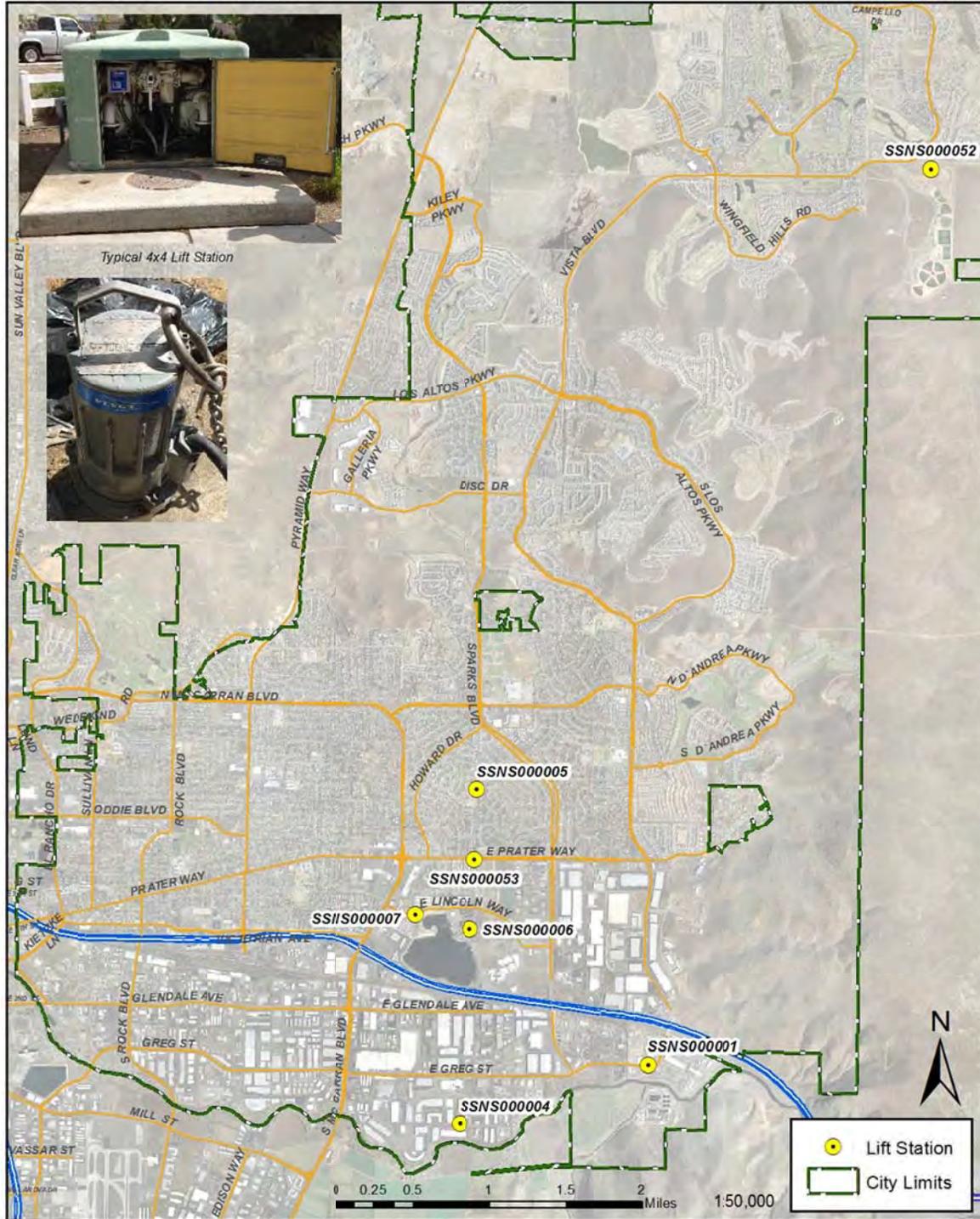
Hot Spots 33-35



APPENDIX 8 – Lift Station Location Map

Lift Station Locations

04/29/2013



APPENDIX 9 – Lift Station Annual Preventative Maintenance Checklist

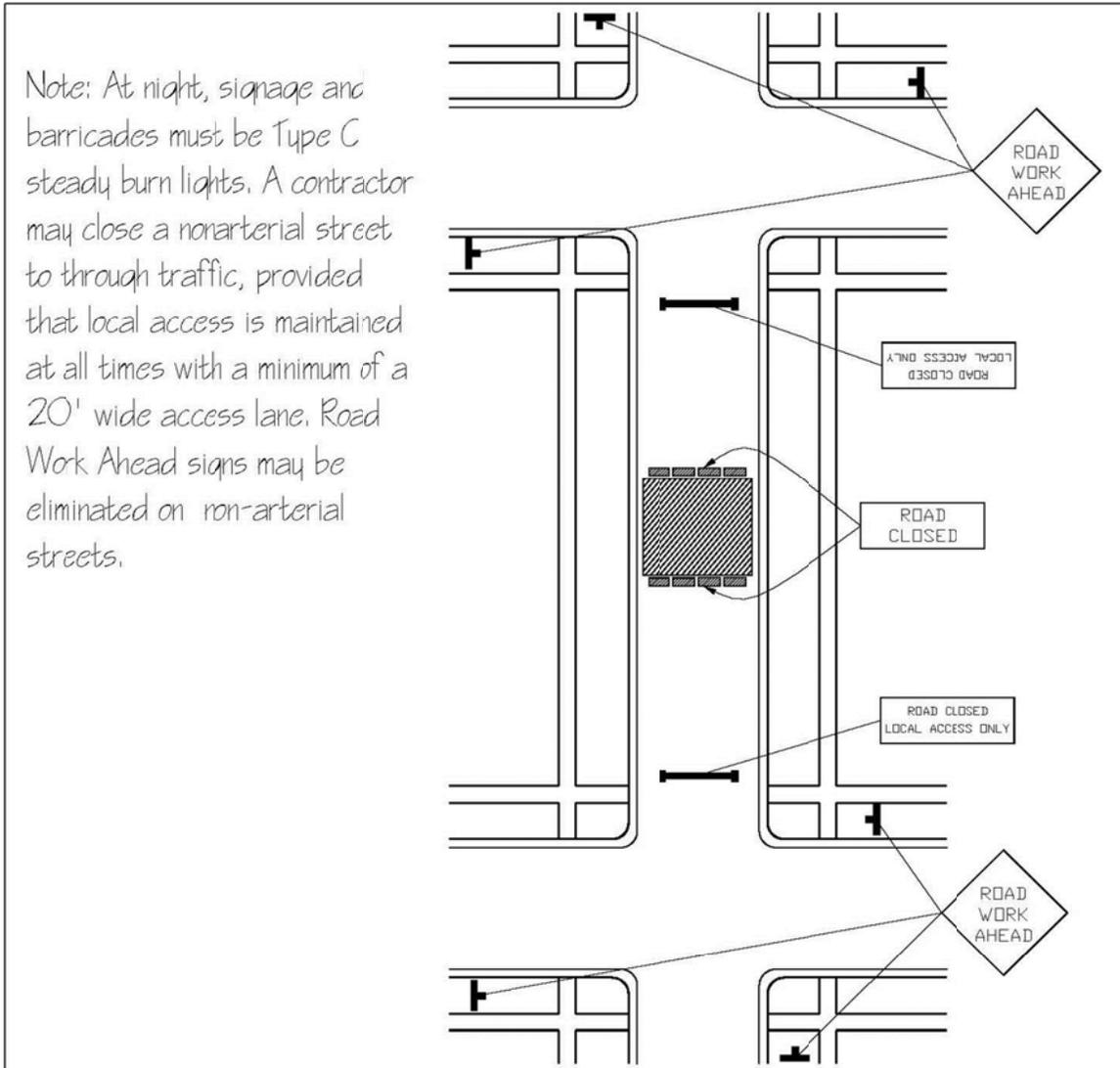
PREVENTIVE MAINTENANCE CHECK LIST								
STATION: _____								
Pump No. 1 S/N: _____ Pump No. 2 S/N: _____								
G.P.M. _____ T.D.H. _____								
	MON.	TUE.	WED.	THU.	FRI.	SAT.	SUN.	COMMENTS:
CHECKED BY:								
DATE:								
TIME:								
Hours								
Suction Gauge								
Discharge Gauge								
R.P.M.								
Seal Oil								
Bearing Oil								
Belts								
Hours								
Suction Gauge								
Discharge Gauge								
R.P.M.								
Seal Oil								
Bearing Oil								
Belts								
Air Flow Indicator								
Monitor 1 Pump Cycle								
Sump Pump								
Blower								
Dehumidifier								
Air Pump								
Back-up Air Pump								
Air Release Valve								
Exercise Plug Valves								
Check Valve								
Lubricate A.R.V.								
Retension V-Drive								
Adjust Imp./Wear plate								
Clean Air Pump Filter								
Recalibrate Transducer								
Grease Motor Bearings								
Locks								
Lights								
Heater								

**Take Gauge Reading While Pumps Are Running
And At The OFF Level.**



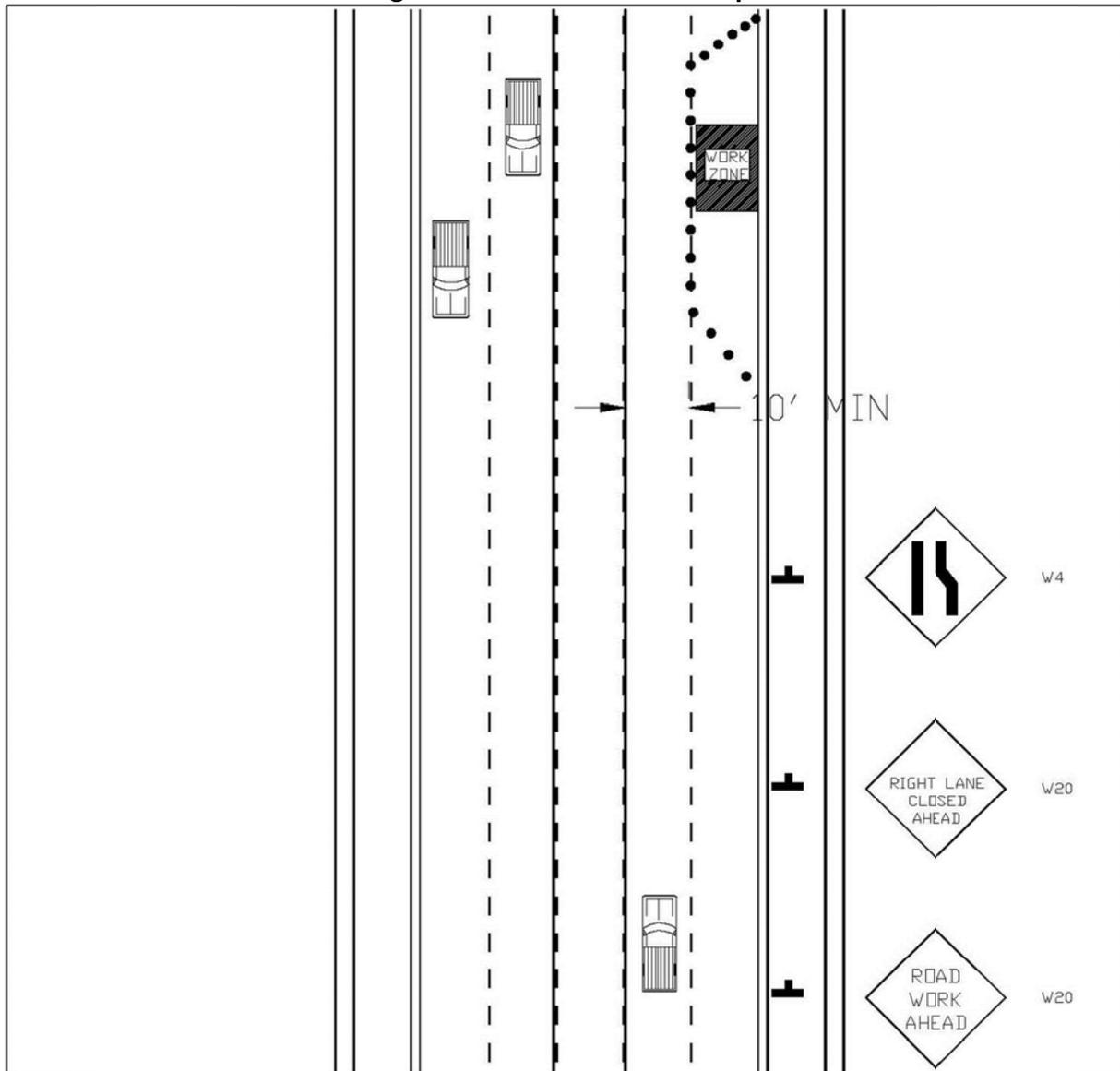
APPENDIX 10 – Sample Traffic Control Plans

Non-Arterial Road Closure Example



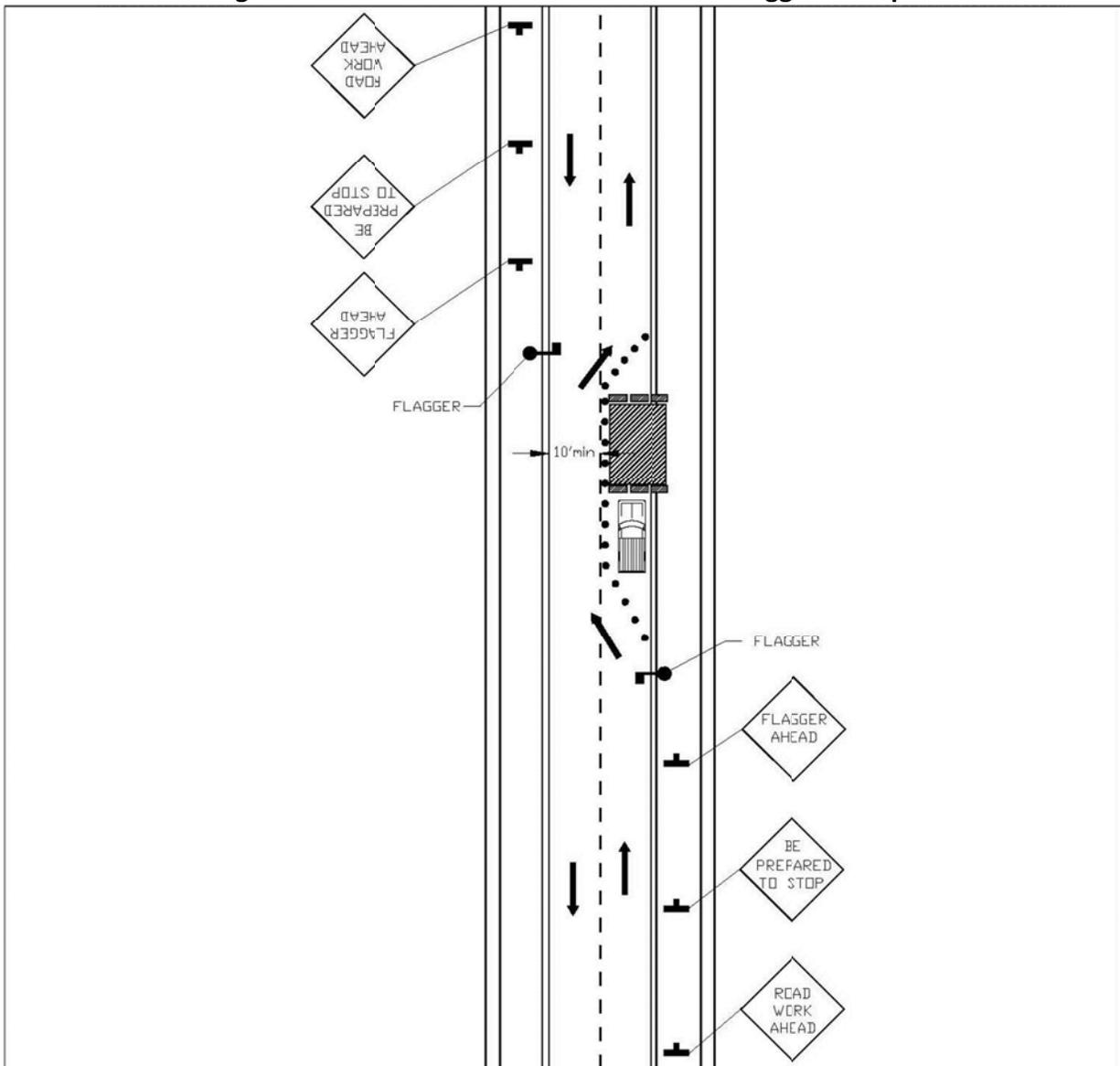
NON-ARTERIAL ROAD CLOSURES		MERGING TAPER LENGTHS FOR CONE PATTERN (All minimums)								
		MPH	10	15	20	25	30	35	40	
<input type="checkbox"/> APPROVED BY: _____ <input type="checkbox"/> APPROVED WITH CONDITIONS BY: _____ DATE: _____ START TRAFFIC CONTROL SET UP DATE: _____ OFF PEAK 9:00 AM WEEKDAYS MUST BE OUT OF THE ROAD BY DATE: _____ OFF PEAK 3:30 PM WEEKDAYS <u>EVENING AND WEEKENDS ONLY</u> START TRAFFIC CONTROL SET UP DATE & TIME: _____ MUST BE OUT OF THE ROAD BY DATE & TIME: _____	LANE WIDTH	8'	14	30	54	84	120	164	214	
	10'	17	38	67	105	150	204	267		
	12'	20	45	80	125	180	245	320		
	14'	24	53	94	146	210	286	374		
	16'	27	60	107	167	240	327	427		
		NUMBER OF CHANNELIZATION DEVICES (CONES) Offset cones 1 foot maximum.								

Right Lane Road Closure Example



<p>RIGHT LANE CLOSURE</p> <p><input type="checkbox"/> APPROVED BY: _____</p> <p><input type="checkbox"/> APPROVED WITH CONDITIONS BY: _____ DATE: _____</p> <p>START TRAFFIC CONTROL SET UP DATE: _____ OFF PEAK 9:00 AM WEEKDAYS</p> <p>MUST BE OUT OF THE ROAD BY DATE: _____ OFF PEAK 3:30 PM WEEKDAYS</p> <p><u>EVENING AND WEEKENDS ONLY</u></p> <p>START TRAFFIC CONTROL SET UP DATE & TIME: _____</p> <p>MUST BE OUT OF THE ROAD BY DATE & TIME: _____</p>		<p>MERGING TAPER LENGTHS FOR CONE PATTERN (All minimums)</p> <table border="1"> <thead> <tr> <th>MPH</th> <th>10</th> <th>15</th> <th>20</th> <th>25</th> <th>30</th> <th>35</th> <th>40</th> </tr> </thead> <tbody> <tr> <td>8'</td> <td>14</td> <td>30</td> <td>54</td> <td>84</td> <td>120</td> <td>164</td> <td>214</td> </tr> <tr> <td>10'</td> <td>17</td> <td>38</td> <td>67</td> <td>105</td> <td>150</td> <td>204</td> <td>267</td> </tr> <tr> <td>12'</td> <td>20</td> <td>45</td> <td>80</td> <td>125</td> <td>180</td> <td>245</td> <td>320</td> </tr> <tr> <td>14'</td> <td>24</td> <td>53</td> <td>94</td> <td>146</td> <td>210</td> <td>286</td> <td>374</td> </tr> <tr> <td>16'</td> <td>27</td> <td>60</td> <td>107</td> <td>167</td> <td>240</td> <td>327</td> <td>427</td> </tr> </tbody> </table> <p>LANE WIDTH</p> <p>NUMBER OF CHANNELIZATION DEVICES (CONES)</p> <p>Offset cones 1 foot maximum.</p>		MPH	10	15	20	25	30	35	40	8'	14	30	54	84	120	164	214	10'	17	38	67	105	150	204	267	12'	20	45	80	125	180	245	320	14'	24	53	94	146	210	286	374	16'	27	60	107	167	240	327	427
MPH	10	15	20	25	30	35	40																																												
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14'	24	53	94	146	210	286	374																																												
16'	27	60	107	167	240	327	427																																												

Single Lane Non-Arterial Road Closure With Flagger Example



SINGLE LANE NON-ARTERIAL WITH FLAGGER		MERGING TAPER LENGTHS FOR CONE PATTERN (All minimums)						
		MPH	10	15	20	25	30	35
LANE WIDTH	8'	14	30	54	84	120	164	214
	10'	17	38	67	105	150	204	267
	12'	20	45	80	125	180	245	320
	14'	24	53	94	146	210	286	374
	16'	27	60	107	167	240	327	427
		NUMBER OF CHANNELIZATION DEVICES (CONES)						
		Offset cones 1 foot maximum.						

APPROVED BY: _____ DATE: _____

APPROVED WITH CONDITIONS BY: _____ DATE: _____

START TRAFFIC CONTROL SET UP DATE: _____ OFF PEAK 9:00 AM WEEKDAYS

MUST BE OUT OF THE ROAD BY DATE: _____ OFF PEAK 3:30 PM WEEKDAYS

EVENING AND WEEKENDS ONLY

START TRAFFIC CONTROL SET UP DATE & TIME: _____

MUST BE OUT OF THE ROAD BY DATE & TIME: _____

APPENDIX 11 – City of Sparks Sewage Spill Response Plan

City of Sparks Environmental Control Section Recommended Operation Procedure Page 1 of 3	
Sanitary Sewer Overflow (SSO)	Updated: 04/30/13 Reviewed (TME): 04/30/13
<u>Purpose</u>	The purpose of this document is to provide Environmental Control (EC) staff with the information necessary to safely mitigate impact to the storm sewer system, to protect the general populace, determine the cause and persons responsible and make the appropriate notifications for an SSO.
<u>General</u>	SSO's are a hazard to the environment and general populace. Prompt response, removal of waste material and sanitization is essential to protect the environment and human health.
<u>Skills & Qualifications</u>	Responding EC staff must have completed a 40-hr Haz-WOPER Certification class. EC staff that has not completed the class may assist. Staff must be familiar with proper safety measures and materials used in clean up and removal of waste materials.
<u>Safety Equipment</u>	Personal safety is of primary importance and should never be overlooked or bypassed. A) Rubber Gloves B) Safety Vest C) Steel-toed boots D) Traffic cones E) Eye Protection F) Rubber Boots
<u>On-scene Documentation</u>	Information such as the cause of the SSO, the responsible party, location, volume, direction and terminus of overflow, are necessary for proper documentation and reporting purposes. The Spill Report Forms contained in the Spill Response Folder should be used for on-scene documentation of an SSO.

Cleanup Procedures

1. Be safe! Place warning cones or tape around the overflow to protect both yourself and the general populace. Wear proper PPE to minimize contact with wastes.
2. If the overflow is, or may be flowing toward a storm sewer drain, block the route of entry using sand, absorbent or drain blockers if possible. Alternately, flow may be diverted into a nearby sanitary sewer line that is not backed up.
3. Determine if the SSO is from a City of Sparks line or a private line. If it is a City line, notify a representative of the Sparks Maintenance and Operations at 353-2271. If necessary, Sparks Dispatch may be utilized to contact the appropriate City staff. Additionally, if the SSO is very large, reaches the Truckee River and/or adversely impacts the populace, immediately attempt to notify the ECS supervisor. If the SSO is from a private line, the responsible party shall be required to take immediate action to alleviate and clean-up the overflow. Local Septic Waste haulers contact information should be provided to the private party. In any event, the SSO must be terminated as soon as possible.
4. If the SSO enters a storm sewer drop inlet or has contaminated a porous surface (dirt, grass, etc.) EC staff shall notify Washoe County Health District at 328-2436. Large SSO's or SSO's that reach bodies of water may need to be reported to NDEP within 24 hours. The need for notifying NDEP should be determined by a supervisor who will in turn make the appropriate notification.
5. Large amounts of SSO waste should be cleaned up by thoroughly washing down the area with copious amounts of water and vacuuming up all waste. Contaminated areas may be flushed to a blocked (effluent side) storm drain drop inlet that is then cleaned with a vacuum truck. After all solids and liquids are removed, the contaminated area should be sanitized using a 10% house-hold bleach / water mixture (or other type of sanitizing agent). Sanitizing agents shall be kept out of the storm drain system. Solid material may be placed into plastic bags and properly disposed. If the SSO is from a private line, the responsible party shall be required to perform all of the above actions. City of Sparks Maintenance and Operations should not enter private property to unplug a private sanitary or storm sewer line unless there is a very large overflow that cannot be temporarily contained.
6. Contaminated materials used during clean up should be placed into plastic bags and may be disposed at TMWRF in the grit truck. Drain blockers, boots and other equipment should be washed off to the sanitary sewer and sanitized with a bleach solution. Raw sewage contains pathogens and toxic chemicals. Wash thoroughly and often during and after an event.

Post Incident Procedures

1. Inform the ECS supervisor of all SSO's, regardless of size and confirm that all proper notifications have been made to the City, County and State.
 - a) Within twenty-four (24) hours of any SSO that imminently and substantially endangers human health, the City shall notify:

Nevada Division of Environmental Protection (NDEP) 1-888-331-6337
 - b) In cases where the Truckee River is discharged into, the City shall, within two (2) hours of notifying NDEP of the SSO, also notify:

Pyramid Lake Paiute Tribe (775)-574-1000
U.S. Fish and Wildlife Service (775)-861-6300
Truckee-Carson Irrigation District (775)-423-2141
2. Completely fill out an *Incident Report Form* in the ECS database. Thorough, complete and accurate information is very important. Depending on the size and location of the incident and in accordance with NDEP permit NV0020150, "II.A.4.d. A written report shall be submitted to the administrator within five (5) days of diversion, bypass, spill, overflow, upset, or discharge detailing the entire incident."
 - i. Time and date of discharge;
 - ii. Type of discharge (e.g. bypass, upset, or violation);
 - iii. The effluent limitation, condition, or standard violated;
 - iv. Exact location and estimated amount of discharge;
 - v. Flow path and any bodies of water which the discharge contacts;
 - vi. The specific cause of the discharge;
 - vii. The preventative and/or corrective actions taken; and
 - viii. A comprehensive list of all agencies, organizations, tribes, utilities, or local governments notified and when notification was issued.

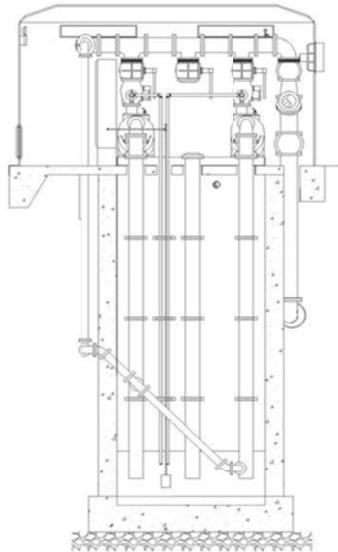
Sampling

1. If an SSO reaches a flowing storm sewer or body of water (North Truckee Drain, Steamboat Creek, or Truckee River) within 24 hours of the spill, fecal coliform samples shall be collected upstream and downstream of the spill outfall to demonstrate proper spill mitigation.

APPENDIX 12 – Supplemental Lift Station Operation & Maintenance Manual

City of Sparks Public Works Department Supplemental Lift Station Operation & Maintenance Manual

Prepared for:



Prepared by:



June 2013

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1.0 INTRODUCTION

The purpose of this operation and maintenance manual is to supplement the manufacturer's operation and maintenance manual and keep the City of Sparks sewage lift stations in reliable and ready condition. The necessity for preparing this supplemental manual arose from the desire to have a standardized reference for the lift stations maintained and operated by the City of Sparks Public Works Department. This supplemental manual is intended to be used in unison with the Gorman-Rupp operation and maintenance manual supplied with each lift station.

As anyone who is responsible for the upkeep of a sewage lift station knows, the successful continued operation of the lift station is a day to day challenge. There are potential problems with clogged pumps, scum and solids accumulations in the wet well, odors, corrosion, inoperable level control systems and confined space entry problems to name only a few. Most of these problems can be successfully mitigated, or at least lessened, through the proper design and day to day routine maintenance of the lift station.

This supplemental manual, when used in close unison with the existing manufacturer's operation and maintenance manual, should provide those responsible for the day to day operation of the facility a clear understanding of not only how the facility is to function but also to help them identify and prevent impending problems. It is much easier to be aware of the potential problems and take efforts to prevent them from happening than it is to repair a problem once it has occurred.

In order to successfully operate the facility, the operator must fully understand the relationship which exists between all of the components. This includes knowing the relationship between inflow, wet well operating volume, pump cycle time, pump output and the force main. The lift station should receive regular scheduled inspections and preventative maintenance. The frequency of these inspections and maintenance will likely change based the lift stations age, operating history, size and potential to negatively impact the environment.

2.0 DESCRIPTION

The sewage pumping station is designed to transfer sewage from a wet well to sewage lines that are usually higher in elevation. The pump station includes two self priming centrifugal pumps, a level control system, a motor control system, suction and discharge piping, associated valving and a wet well.

Suction piping connects the wet well to the pumps and electrical motors drive the pumps and transmit power via drive belts. The electrical motors are controlled by the wet well level sensors.

The pump that starts first is considered the lead pump while the pump that starts second is considered the lag pump. The pumps alternate after each cycle so that the lead pump becomes the lag pump on the next cycle and vice versa. This method of operation is used to equalize the pump run times and mechanical wear. During normal operation the lead pump will pump down the liquid in the wet well from a pump start point to a pump stop point. If the incoming flow rate exceeds the lead pump's pumping capability the wet well level control will signal the lag pump to turn on so that both pumps combined will work to empty the wet well.

Level control is provided by an air bubbler system. The system consists of two air pumps, a pressure switch and air piping that extends vertically into the wet well. As the liquid level rises the pressure increases in the air piping. A pressure transducer is used to sense the differential air pressures and sends electrical signals to turn the pumps on or off at user defined set points.

3.0 WASTEWATER INFLOW

The inflow into the wet well continually varies from minute to minute. It is important to always have some idea what the maximum and minimum flow rates are into the wet well and at what times of the day they occur in addition to knowing the total daily flow which passes through the lift station. Typically, the maximum and minimum flows occur at the same time from day to day and are of the same magnitude. They will, however, vary a little during the weekend not only with at what time of the day they occur but also in their magnitude. Also, the daily flows totals, peaks and lows are expected to gradually change from season to season. It is important to know the flow characteristics into the lift station wet well on an ongoing basis.

In the absence of a flow meter the flow rate entering the wet well can be determined by first calculating the cross sectional area of the wet well and multiplying it by the distance between pump off and pump on. The resulting number is the wet well operating volume. Once the volume is known the time to fill the wet well from pump off to pump on is recorded. The volume of inflow divided by time to fill the wet well yields the incoming flow rate. A worksheet can be found in Appendix A that assists with calculating incoming flow rates and pumping flow rates.

The production capacity of the lift station pumps must, at a minimum, always equal the peak flow rate entering the wet well. The operator should review the daily fluctuations in flow and always be aware of what the peak flows are. As long as the pump output is greater than the peak flows entering the wet well there should be no cause for concern. The importance of knowing the flows entering the wet well is for maximizing the operation of the facility.

4.0 WET WELL

The wet well is probably the single source of most complaints and problems in the facility. The proper maintenance and operation of the wet well is crucial to the successful operation of the entire lift station facility. Two items must be considered in setting the operating volume in the wet well. They are:

- Detention time
- Pump cycle time

The detention time is important for following three reasons.

- The longer the detention time, the more likely it is that the wastewater will become septic and produce additional odors and corrosion problems.
- The longer the wastewater remains in the wet well, the more likely it is that the grease contained in the wastewater will separate and solidify thus forming the scum layer.
- The longer the wastewater remains in the wet well, the more time is available for settleable matter to deposit on the bottom of the wet well where it potentially could remain requiring removal with a vacuum truck or other similar methods. The longer the detention time, the more particulate matter will settle.

As a general rule, the maximum detention time that the wastewater should remain in the wet well should never exceed thirty (30) minutes. Typically this is difficult to achieve during the lower late night flows.

The pump cycle time is defined as the time between successive starts of the pump. Cycle time is important because if it is too short it will negatively affect the life of the electrical motors on the pumps. The shortest cycle time always occurs when the inflow into the wet well is equal to one half (1/2) of the pump flow rate. At every other flow rate, greater or smaller, the cycle time will increase. For example, for a 1000 gpm pump, the shortest cycle time will occur when the inflow into the wet well is 500 gpm. For every other inflow rate, whether it is 400 or 600 gpm, the cycle time will increase.

The minimum allowable cycle time is a function of the size of the electrical motor. The larger the motor, the longer the required cycle time. Gorman-Rupp, the supplier of the lift station pumps, states that from their experiences a pump cycle time of three (3) minutes for motors up to 30 HP has not shown any negative effects on the motors. Presumably, the longer the cycle time, the less wear the motor will experience. Motor starts of approximately 4 per hour is desirable.

Currently the largest sewage lift station pump motor the City of Sparks has in operation is 25 HP, therefore, the minimum cycle time should never be less than 3 minutes. Remember, the minimum cycle time occurs when the inflow into the wet well is approximately equal to one half of the pump production rate. At all other flow rates, the cycle time will increase. Dependent on the inflow characteristics, the minimum cycle time typically may only occur one to three times per day for some short period of time. The cycle times throughout the day can and should be determined from collected field data.

It is possible that the inflow into the wet well may at all times be close to one half of the pump production thus the minimum cycle time would be occurring routinely from cycle to cycle. It is not recommended that the pumps be operated near the minimum 3 minute cycle time for extended periods of time. That is to say, in these instances it may be a good idea to increase the cycle time to lessen the number of motor starts.

The cycle time can be determined from actual pump operating data. It can be calculated mathematically by utilizing the following formula:

5

$$t = \frac{V}{(Q_D - Q_i)} + \frac{V}{Q_i}$$

where:

t = cycle time, minutes (minimum cycle time occurs when $Q_i = \frac{1}{2}$ of Q_D)

V = Wet well volume between pump ON and OFF, gallons (See Appendix B)

Q_D = Pump discharge rate, gpm

Q_i = Inflow rate into wet well, gpm

$$\text{Time required to pump the wet well down} = \frac{V}{(Q_D - Q_i)}$$

$$\text{Time for the wet well to fill} = \frac{V}{Q_i}$$

Wet well volumes for various depths and for various diameters can be found in Appendix B

The only variables that can be used when adjusting cycle time is the pump discharge rate and wet well volume.

5.0 FORCE MAIN

The force main length and diameter must be considered when determining the overall operational mode of the sewage lift station. The length and diameter of the force main affects detention time and the diameter also affects the velocity. Excessive detention times in force mains cause septicity. Septicity can create odors and corrosion at the force main discharge point. Anaerobic conditions in the force main, if allowed to develop, can begin to produce gas which will collect at the force main high points reducing the hydraulic area of the force main. Again, generally the detention time in the force main should not exceed 30 minutes.

It is important to understand that adjusting the pump cycle time will have no effect on the overall detention time in the force main itself. Force main detention time is related to the daily total flow which passes through the force main. Decreasing the cycle time will, however, decrease the solids settling time intervals between on cycles. Assuming that total volume in the force main from the lift station check valves to the discharge point is 555 gallons. Dividing the total daily flow which enters the lift station by the force main volume (555 gallons) yields the turnover rate in the force main which then divided by 24 hours yields the average detention time in the force main.

Example: Calculate force main detention time.

Total Daily Flow = 10,000 gallons per 24 hours

Force Main Volume = 555 gallons

$$\text{Turnover Rate} = \frac{10,000 \text{ gallons per 24 hours}}{555 \text{ gallons}} = 18 \text{ times per day}$$

$$\text{Average Detention Time} = \frac{24 \text{ hours per day}}{18 \text{ times per day}} = 1.33 \text{ hours}$$

In the above example, the average detention time is 80 minutes (1.33 hours) which is greater than the generally accepted detention time of 30 minutes to prevent septicity. In this case the wastewater would be expected to be septic, malodorous and corrosive. In addition, gases may

begin to develop in the force main. As can be seen, the only variable which will decrease detention time in the force main is the total daily flows. As the daily flow increases, the detention time will decrease. Tables 5.1 and 5.2 show estimated force main volumes currently operated by the City of Sparks.

TABLE 5.1
FORCE MAIN VOLUMES PER 100' OF PIPE

Volumes for the Various Pipeline Nominal Diameters (gallons)					
Nominal Pipe Size (inches)	3"	4"	6"	8"	10"
Volume (gallons)	48.8	75.4	167.1	298.2	450

TABLE 5.2
APPROXIMATE FORCE MAIN VOLUME

Lift Station	O'Callaghan	Spice Island	East Greg	Howard	Golden Eagle	Bayshore
Pipe Diameter	4"	4"	6"	3"	4"	8"
Pipe Length	850'	43.5'	1482'	89'	286'	1058'
Total Volume	641 gal.	28 gal.	2176 gal.	33 gal.	186 gal.	2959 gal.

As previously stated, the longer the time between pump starts (cycle time), the more time is available for particulate matter to settle in the force main. Force mains behave much differently than gravity collection systems because in gravity collection systems there is almost always some flow occurring which moves solids along. This is not the case in sewage force mains because when the pumps are not on, then there is no flow occurring in the pipe, and solids will begin to settle. How many solids actually settle is dependent on the physical characteristic of the particle and how long the period of no flow occurs. It is believed that the settling time in the force main should never

be allowed to exceed 30 minutes maximum.

Once solids have settled in the force main (which will happen every time the pumps are off), sufficient velocities must be achieved to resuspend the solids for transportation down the pipeline. If these velocities are not achieved, the solids will remain in the pipe and will continue to increase in depth. If allowed to remain, these solids will become anaerobic and will slowly begin reducing the effective area of the force main which in turn will also begin reducing the pumping rates seen at the lift station. Eventually, if this is allowed to continue, either the system will reach equilibrium at some point at a reduced hydraulic capacity or the force main will become plugged altogether and the pumps will no longer function. Cleaning the force main of a large accumulation of anaerobic solids can also increase the organic loading at the wastewater treatment plant. It is best to avoid this potential problem from the outset because once solids are firmly in place in a force main, it can be difficult and costly to remove them.

The velocity that is required to resuspend the solids in a force main when the lift station pumps first come on is approximately 3.5 feet per second minimum. Once the solids are suspended, less velocity, somewhere in the order of 2 to 2.5 feet per second, will be required to keep them moving through the pipeline. Fortunately, due the characteristics of the sewage pumps and high water elevation in the wet well when the pumps are first called on, the pumps will initially pump more flow thus higher velocity. As the wet well water elevation begins to lower, the pumps will “back up on their curve” and begin to decrease in flow rate. See Section 6.0, Wastewater Pumps, for a description of pump curves and system curves.

Table 5.3 shows calculated velocities for the various pipe diameters that can be found at the lift stations the City of currently has in operation.

TABLE 5.3
PIPELINE VELOCITIES VERSUS FLOW RATE

Flow Rate (gpm)	Velocity for the Various Pipeline Nominal Diameters (feet per second)				
	3"	4"	6"	8"	10"
25	0.9	0.6	0.25	0.14	0.1
50	1.7	1.1	0.5	0.3	0.2
75	2.6	1.7	0.75	0.4	0.3
100	3.4	2.2	1.0	0.6	0.4
120	4.1	2.7	1.2	0.7	0.44
140	4.8	3.1	1.4	0.8	0.5
160	5.5	3.5	1.6	0.9	0.6
180	6.1	4.0	1.8	1.0	0.7
200	6.8	4.4	2.0	1.4	0.74
250	8.5	5.5	2.5	1.7	0.9
300	10.2	6.6	3.0	2.0	1.1
350	11.9	7.7	3.5	2.2	1.3
400	13.6	8.9	4.0	2.5	1.5
450	15.4	9.9	4.5	2.8	1.7
500	17.1	11.0	5.0	3.1	1.9
550	18.8	12.2	5.5	3.4	2.0
600	---	13.3	6.0	3.6	2.2
650	---	14.4	6.5	3.9	2.4
700	---	15.6	7.0	4.2	2.6
750	---	16.6	7.5	4.4	2.8

800	---	17.7	8.0	4.5	3.0
850	---	18.8	8.5	4.7	3.1
900	---	19.9	9.0	5.0	3.3
950	---	---	9.5	5.3	3.5

Shaded area indicates optimal, or preferred, operating range.

Whenever the pumps first come ON, the initially desired velocity should be at least approximately 3.5 feet per second. As stated, this is the minimum velocity that is required to resuspend the solids that have settled in the force main. As the wet well is drawn down, the pump flow rate will begin to decline, however, the velocity should never be allowed to fall below 2.5 feet per second.

The force main should be periodically cleaned. This can be done by allowing the wet well level to increase to the inlet elevation and then turning on all of the pumps at once. This will help keep the force main clean of any larger solids that have accumulated. This should be performed during those times of the day that have the least electrical charges (low demand periods) and caution should be exercised to avoid tripping the demand charge if possible.

6.0 WASTEWATER PUMPS

The lift stations are equipped with Gorman-Rupp supplied duplex self-priming centrifugal pumps and v-belt drive motors of varying horsepower. Pumps vary in design output from 150 gpm to 850 gpm with motor horsepower ranging from 3hp to 25hp. Specified pump data, total dynamic head (TDH), along with the Gorman Rupp pump model numbers and pump serial numbers can be found in Table 6.1. Additional pump and motor data can be found in the Gorman-Rupp operation and maintenance manuals for each individual lift station.

TABLE 6.1
LIFT STATION PUMP AND MOTOR DATA

Location	Design Characteristics	Pump Model#	Pump Serial#	Impeller Diameter	Motor Horsepower
1199 O'Callaghan	150 gpm @ 25.5'	T4A3-B	98-5023-AM	9.75"	7.5 HP
1102 Spice Island Drive	250 gpm @ 25'	T4A3-B	96-4545-AM	9.75"	5 HP
2102 East Greg Street	420 gpm @ 33'	T4A3-B	97-4865-AM	9.75"	7.5 HP
300 Howard Drive	200 gpm @ 27'	T4A3-B	99-5434-AM	9.75"	5 HP
1152 Bayshore Drive	350 gpm @ 53'	T6A3-B	01-5992	9.75"	25 HP
Golden Eagle	180 gpm @ 20'	T3A3-B	07-7234-AM	8.75"	3 HP

Independent pump flow rates can be determined from flow meters if installed in the particular lift station. If no flow meter exists the individual pump flow can be determined by the following procedure:

1. Determine inflow rate into the wet well. This is accomplished by measuring the time it takes to fill a known volume in the wet well. Dividing the known volume (gallons) by the time (decimal minutes) produces flow rate (gpm).
2. Turn on the desired pump and measure the time it takes the pump to draw the wet well down a known volume. Dividing that volume (gallons) by the time (decimal minutes) yields an average evacuation rate (gpm). It is also desirable to record pressure as close to the pump discharge as possible when the pump first comes on and again just prior to the pump shutting off. The wet well volume can be determined from the tables in appendix B.
3. Add the flow rate calculated in 1 above to the evacuation rate calculated in 2 above. This is the average pump flow rate. Also, the measured pump discharge pressures should be averaged.
4. Compare the calculated flow rate and pressure to the predicted flow rates and pressures shown in the manufacturer's pump curves.

Because the pump flow rate is dependent on the water elevation in the wet well, it is important to know the water elevation in the wet well during the test. The pressure readings should decrease 1 psi for each 2.3 foot decrease in wet well depth.

Example: Estimate pump flow rate.

Step No. 1

Select wet well water elevations that the test is to be performed under. In this example let's perform the test at wet well water depths from 3 to 6 feet in a 4' diameter wet well. Pump the wet well down to below 3 feet and shut pump down. Measure the time it takes to fill the wet well from 3 to 6 feet. From Appendix B we know the wet well volume between 3 and 6 feet is 282 gallons. Assume we measured 4 minutes and 47 seconds (4.78 minutes) to fill the wet well from 3 to 6 feet. The inflow into the wet well is therefore:

$$\text{Inflow} = \frac{282 \text{ gallons}}{4.78 \text{ minutes}} = 59 \text{ gpm}$$

Step No. 2

Immediately after performing step 1, let the water elevation in the wet well rise to a little above 6 feet. Turn one pump on. Measure the time it takes to pump the wet well down from 6 to 3 feet which we know contains a volume of 282 gallons. Also record the pressure as close to the pump discharge as practical at 5 feet and then again at 3 feet. Assume the time was 2 minutes and 43 seconds (2.72 minutes). Shut the pump off.

The calculated evacuation rate is:

$$\text{Evacuation Rate} = \frac{282 \text{ gallons}}{2.72 \text{ minutes}} = 116 \text{ gpm}$$

Step No. 3

Calculate pump flow rate (Evacuation + Inflow)

$$59 \text{ gpm} + 116 \text{ gpm} = 175 \text{ gpm}$$

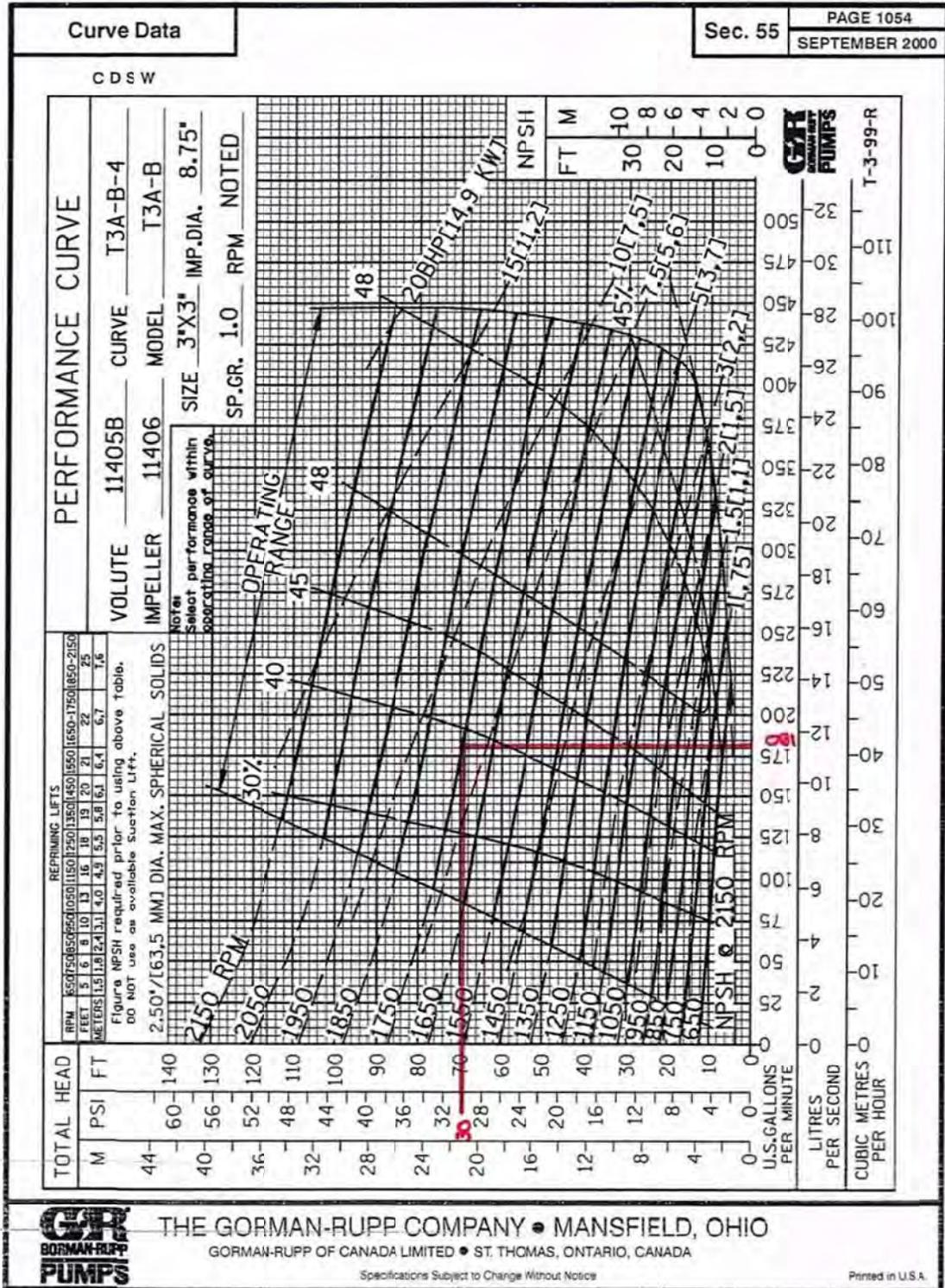
The pressures read at the pump discharge were 29.3 and 30.7 psi at wet well elevations of 6 and 3 feet respectively.

Step No. 4

From the pump performance curve on the following page the expected pump flow rate for the pump based on the average of the recorded pressures is approximately 180 gpm (h=65.3 feet). Since the calculated flow rate in step 3 above (175 gpm) is close to what is expected, the pump is performing as it should.

The average pump pressure was calculated as follows:

$$\begin{aligned} \text{Head} &= \frac{29.3 \text{ psi} + 30.7 \text{ psi}}{2} \times 2.31 (\text{conversion to feet}) \\ &= 69.3 \text{ feet} \end{aligned}$$



Obviously, the more times the test is run for a particular pump, the more reliable the test results become.

If the pump(s) flow rate is not what is expected, something is wrong and every effort should be made to remedy the problem as soon as possible. In order to troubleshoot the system in an effort to identify the cause of the problem, the following should be performed in the order presented.

1. Refer to the appropriate pump curves in Appendix D. Plot the actual calculated flow rate (gpm) and the actual average head (psi x 2.31 = ft) on the curve. If this plotted point falls fairly close to the pump curve then the problem is not with the pump and the operator should proceed to Step 2 below. If, however, the point falls below the pump curve it is likely that there is a problem with the pump and it is not performing as it should. One or more of the following may be the cause of the problem:
 - Obstructed Impeller, noise and vibration will probably be present (pull & inspect)
 - Worn Impeller (pull & inspect)
 - Worn electrical motor (check amperage under full load)

2. An increase in head has caused the pump to “back up on its curve” meaning the flow is reduced. However, the pump is operating properly because it is operating on or very close to its pump curve. The head may have increased for any one or more of the following reasons:
 - Pump suction piping is partially obstructed. This normally can be heard as unusual pump noises and/or vibrations.

- Air or gas pockets in force main.
- Partial obstruction somewhere in discharge piping (can be difficult to locate, initially investigate those pipes having the lowest velocities and steepest grades).
- Solids have accumulated in entire force main.

7.0 RECOMMENDED FACILITY MAINTENANCE

The recommended maintenance schedule can be found in Appendix C. This table summarizes in one page, for operator convenience, the routine maintenance tasks to be performed at the City of Sparks Gorman – Rupp lift stations. This maintenance schedule is not intended to replace suggested maintenance in the Gorman – Rupp operation and maintenance manual but rather to supplement it in a convenient, easy to use location.

Recording information about the lift station on a daily or weekly basis can be invaluable in diagnosing station performance problems and in maintaining the equipment in peak operating condition.

The minimum information which needs to be recorded is the following:

- Daily total flow
- Maximum and minimum inflow rate
- Pump(s) run hours
- Pump(s) flow rate
- Pump(s) cycles

A daily facility log should also be completed and filled out. A suggested facility log is shown in Table 7.1.

**TABLE 7.1
FACILITY LOG**

Month	Year				Station	Maintenance Performed	
Date	Pump Amperages				Initial	Description (Task No. & Other Maintenance)	
	1	2	3	4			
1							
2							
3							
4							
5							
6							
7							
8							
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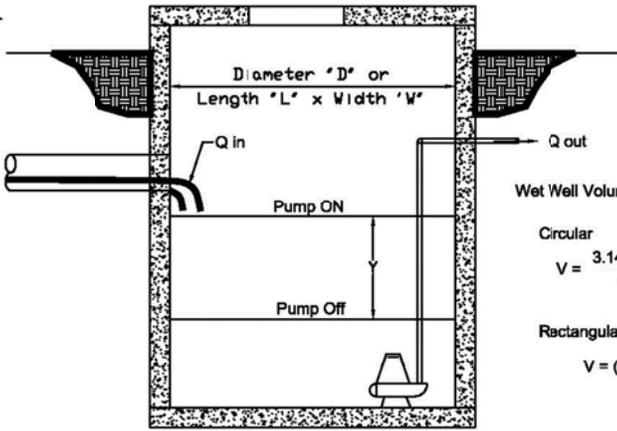
APPENDIX "A"

Pump Station Worksheet

City of Sparks
Public Works Department

Sewage Lift Station
Operation and Maintenance Manual

WET WELL GEOMETRY



Wet Well Volume per Foot of Depth:

Circular
 $V = \frac{3.14(D^2)}{4} \times 7.48$

Rectangular
 $V = (W) \times (L) \times 7.48$

EXAMPLE

Step 1 - Calculate Q in
 Measure the time t requires to fill the wet well from the pump OFF elevation to the pump ON elevation

Example:

Given:
 Distance between pump OFF and pump ON (Y) = 4 feet
 Time measured between OFF and ON = 30 minutes
 Wet well diameter = 5'

Calculation:
 $Q_{in} = (4 \text{ ft} \times 146.9 \text{ gallons/ft}) / 30 \text{ minutes} = \boxed{19.6 \text{ gpm}}$

Step 2 - Calculate Q out
 Measure the time t requires to pump the wet well from the pump ON elevation to the pump OFF elevation

Example:

Given:
 Distance between pump ON and pump OFF (L) = 4 feet
 Time measured between ON and OFF = 15 minutes
 $Q_{in} = 19.6 \text{ gpm}$

Calculation:
 $Q_{ir} = ((4 \text{ ft} \times 146.9 \text{ gallons/ft}) + (19.6 \text{ gpm} \times 15 \text{ minutes})) / 15 \text{ minutes} = \boxed{58.8 \text{ gpm}}$

WORKSHEET

Step 1 - Calculate Q in
 Measure the time it requires to fill the wet well from the pump OFF elevation to the pump ON elevation

Field Measurement

Distance between pump OFF and pump ON = _____ (feet)
 Time measured between OFF and ON = _____ (minutes)

Calculations

Step 2 - Calculate Q out
 Measure the time it requires to pump the wet well from the pump ON elevation to the pump OFF elevation

Field Measurement

Distance between pump ON and pump OFF = _____ (feet)
 Time measured between ON and OFF = _____ (minutes)

Calculations

PUMP FLOW RATE DETERMINATION WORKSHEET

APPENDIX “B”

Wet Well Volumes

TABLE B.1
WET WELL VOLUMES (4' Diameter)

Depth in Wet Well (ft)	Bubbler Reading ² (ft)	Total Volume in Wet Well (gallons)	Difference (gallons)
3.0	2.0	282	---
4.0	3.0	376	94
5.0	4.0	470	94
6.0	5.0	564	94
7.0	6.0	658	94
8.0	7.0	752	94
9.0	8.0	846	94
10.0	9.0	940	94

1. Assumes bubbler tube installed at one foot above finish floor elevation in wet well.
2. Invert in occurs @ +/- 4.75' (O'Callaghan Lift Station)

Wet wells shall be considered a hazardous environment, classified as NEC Class I, Division I for explosive gases.

TABLE B.2
WET WELL VOLUMES (5' Diameter)

Depth in Wet Well (ft)	Bubbler Reading ² (ft)	Total Volume in Wet Well (gallons)	Difference (gallons)
3.0	2.0	441	---
4.0	3.0	588	147
5.0	4.0	734	146
6.0	5.0	881	147
7.0	6.0	1028	147
8.0	7.0	1175	147
9.0	8.0	1322	147
10.0	9.0	1469	147

TABLE B.3
WET WELL VOLUMES (6' Diameter)

Depth in Wet Well (ft)	Bubbler Reading ² (ft)	Total Volume in Wet Well (gallons)	Difference (gallons)
3.0	2.0	634	---
4.0	3.0	846	212
5.0	4.0	1057	211
6.0	5.0	1269	212
7.0	6.0	1480	211
8.0	7.0	1692	212
9.0	8.0	1903	211
10.0	9.0	2115	212

TABLE B.4
WET WELL VOLUMES (10-Square)

Depth in Wet Well (ft)	Bubbler Reading ² (ft)	Total Volume in Wet Well (gallons)	Difference (gallons)
2.0	1.0	1496	---
3.0	2.0	2244	748
4.0	3.0	2992	748
5.0	4.0	3740	748
6.0	5.0	4488	748
7.0	6.0	5236	748

APPENDIX "C"

Maintenance Schedule

City of Sparks Goman - Rupp Lift Station

Operation and Maintenance Schedule

Item	Daily	Weekly	Monthly	Quarter	Semi Annual	Annual	As Req'd	Comments
Site Piping & Valves								
Inspect manholes for backups			X					
Exercise valves					X			
Clean out valve boxes					X			
Check enclosure interior for grease/oil, loose nuts/bolts				X				
Clean force main							X	Both Pumps 0n
Enclosure/Wetwells/Site								
General housekeeping		X						Should be performed by qualified and experienced personal with main off
Inspect inside wet wells for any foreign objects & remove as required			X					
Clean wet well walls			X					
Clean dust out of electrical/control panels			X					
Verify all floats working			X					
Verify level control settings			X					
Discharge/Suction gauges							X	Replace upon failure
Calculate pump flow rates				X				
Exercise plug valves			X					
Inspect/lubricate air release valve			X					
Check discharge check valve for proper operation			X					
Suction check valve							X	Replace when badly worn
Air Bubbler System								
Alternate Air Pumps		X						
Clean Air Piping/Tubing		X						
Check for Leaks			X					
Replace or Clean Air Bubbler Filters					X			Increase frequency in severe dust conditions
Liquid Level Controller								No scheduled maintenance
Inspect Condensate Accumulator		X						Drain when half full
Visually inspect Crane and Winch							X	Prior to Each Use
Pumps								
Check Pumps for unusual noise/vibration		X						Refer to Equipment O&M Manual
Inspect High Temperature Shutdown Thermostats for Damage						X		Refer to Equipment O&M Manual
Lubricate Clutch Jackshaft Bearings					X			
Lubricate Shaft Seals/Bearings						X		
Change Oil in Pump Seal & Bearing Chamber						X		Or every 4,000 hours
Adjust Impeller Wear Plate Clearance					X			
Inspect Pump Casing PRV						X		Replace upon activation by pump overheat/pump overhaul

Item	Daily	Weekly	Monthly	Quarter	Semi Annual	Annual	As Req'd	Comments
AC Motors								
Check for Unusual Noise/Vibration		X						
Check/Adjust Belt Tension			X				X	Refer to Equipment O&M Manual
Inspect/Tighten Electrical Connections				X			X	Refer to Equipment O&M Manual
Check Motor Winding Resistance						X		Refer to Equipment O&M Manual
Change Ball Bearing Oil						X		Refer to Equipment O&M Manual
Inspect/Clean Motor Vent Openings						X		
Check Terminal Contacts							X	Refer to Equipment O&M Manual
Check Overload Protection/Other Protections							X	Refer to Equipment O&M Manual
Keep Apparatus Clean and Dry		X						
Motor Controls/Alarms								
Inspect for any Loose Nuts/Bolts, Dust, Grease, Oil, Metal Discoloration						X		Increase frequency in harsh environment
Test & Calibrate Overload Relays							X	Outsourced every 1 to 3 years
Inspect for Frayed Wires, Proper Spring Pressure						X		Increase frequency in harsh environment
Test Alarms for Proper Operation						X		Increase frequency in harsh environment
Valve Vaults								
General Housekeeping		X						
Clean Out & Sweep Vault			X					
Exercise Valves						X		

PREVENTIVE MAINTENANCE SCHEDULE

WEEKLY

- record suction/discharge gauge readings for both pumps.
- record elapsed time meter readings.
- check air flow indicator to ensure proper bubbler system air flow.
- monitor station during at least one pump down cycle to check for proper pump and control operation along with leaks.
- check oil levels in seal and bearing chambers.
- check belts for wear and tension.
- check sump pump, bower, and dehumidifier for proper operation.
- make sure back-up air pump works.
- switch to the back up air pump only when the lead air pump quits.
- check air release valves for proper operation. Grease, if necessary.

MONTHLY

- exercise plug valves.
- make sure check valves open and close properly (clean the seat area if necessary).
- lubricate air release valves and check for proper operation.
- retention and align belt drives if necessary (after initial run/tension intervals).

SEMI-ANNUALLY

- adjust impeller to wear plate clearance (depending on application this may need to be done quarterly).
- clean air pump filter.

ANNUALLY

- change oil in pump seal chamber and bearing chamber or every 4,000 hrs., whichever ever comes first.
- grease motor bearings, in accordance with motor manufacturer's recommended schedule
- test alarms for proper operation.

CONTROLS

With the exception of the air pumps, the controls do not require maintenance. Contacts and relays should be replaced only as needed.

PUMPS

Once all shims have been removed between the pump casing and bearing housing (due to impeller to wear plate clearance adjustment), the wear plate should be replaced. If the impeller is noticeably worn, it should be replaced as well.

Depending upon the application and operation, the complete rotating element should be rebuilt after approximately five to ten years of service. This would include replacement of bearings, lip seals, mechanical seal, shaft sleeve, o-rings and gaskets.

GORMAN-RUPP LIFT STATION MAINTENANCE PROCEDURES

FILL IN ALL BLOCKS WITH THE CORRECT INFORMATION REQUIRED

LOCATION

CUSTOMER DATA:

Pump Location: _____
 Address: _____
 Contact Person: _____
 Phone No. (_____) _____

DISTRIBUTOR DATA:

Name: _____
 Address: _____
 Contact Person: _____
 Phone No. (_____) _____

CONFIGURATION

Discharge Check Valve

Suction Gauge
Reading Dynamic
(Pump Running)

Discharge Gauge
Reading Dynamic
(Pump Running)

Pump Speed (Taken
During Pump
Operation)
DON'T GUESS

Suction Line

Pump Model No.	Pump Serial No.
----------------	-----------------

GAUGES

SUCTION GAUGE CALIBRATION SCALE:

Pounds per square inch (P.S.I.): _____
 Feet of water (ft): _____
 Inches of mercury (In Hg): _____

DISCHARGE GAUGE CALIBRATION SCALE:

Pounds per square inch (P.S.I.): _____
 Feet of water (ft): _____
 Put a check to indicate your gauge scale.



PREVENTIVE MAINTENANCE CHECK LIST								
STATION: _____								
Pump No. 1 S/N: _____				Pump No. 2 S/N: _____				
G.P.M. _____				T.D.H. _____				
	MON.	TUE.	WED.	THU.	FRI.	SAT.	SUN.	COMMENTS:
CHECKED BY:								
DATE:								
TIME:								
Hours								
Suction Gauge								
Discharge Gauge								
R.P.M.								
Seal Oil								
Bearing Oil								
Belts								
Hours								
Suction Gauge								
Discharge Gauge								
R.P.M.								
Seal Oil								
Bearing Oil								
Belts								
Air Flow Indicator								
Monitor 1 Pump Cycle								
Sump Pump								
Blower								
Dehumidifier								
Air Pump								
Back-up Air Pump								
Air Release Valve								
Exercise Plug Valves								
Check Valve								
Lubricate A.R.V.								
Retension V-Drive								
Adjust Imp./Wear plate								
Clean Air Pump Filter								
Recalibrate Transducer								
Grease Motor Bearings								
Locks								
Lights								
Heater								

**Take Gauge Reading While Pumps Are Running
And At The OFF Level.**

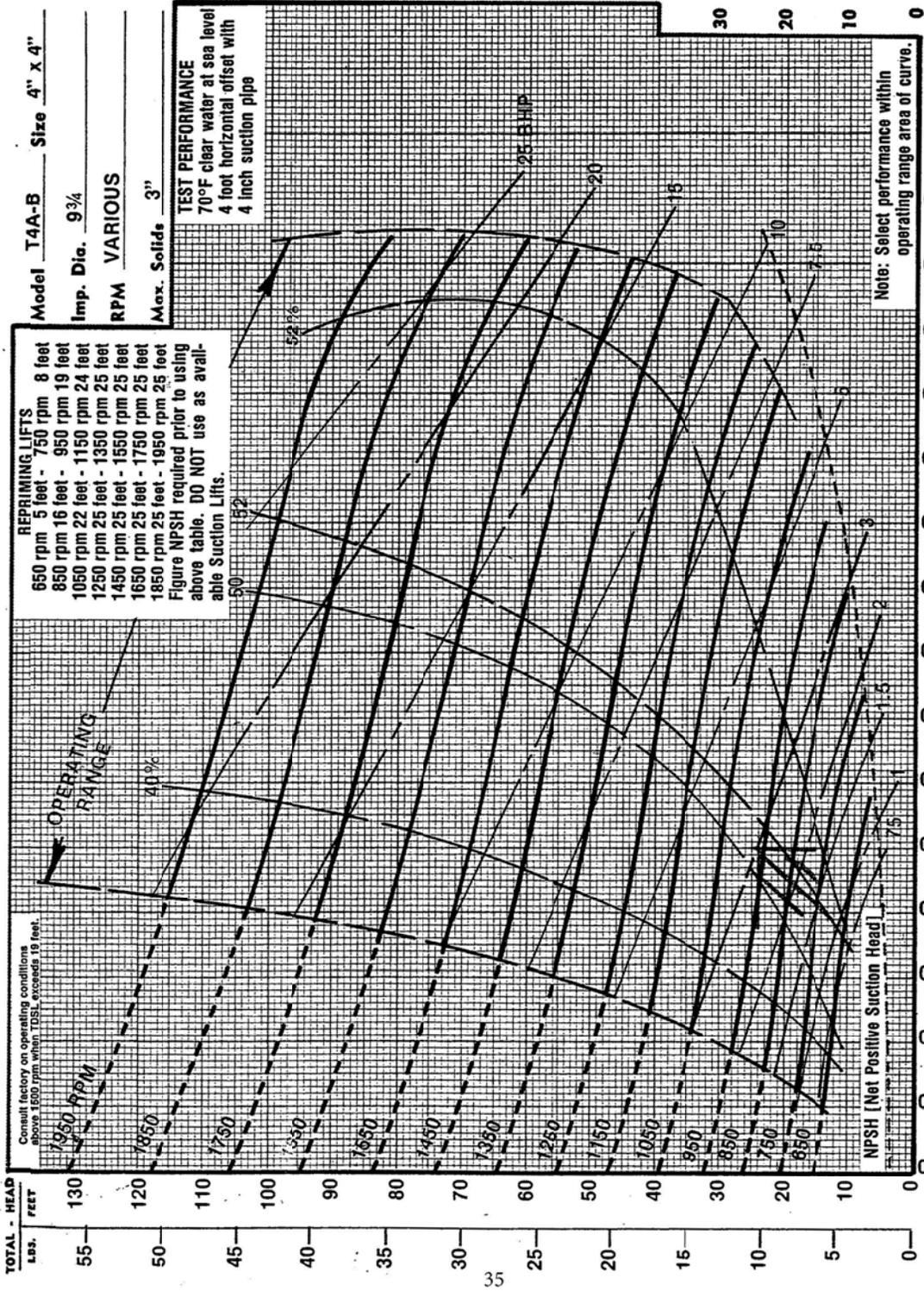


APPENDIX "D"

Pump Performance Curves

PERFORMANCE CHART NO. T4A-4 2-21-79

SECTION 55 PAGE 1154
REQUIRED NPSH



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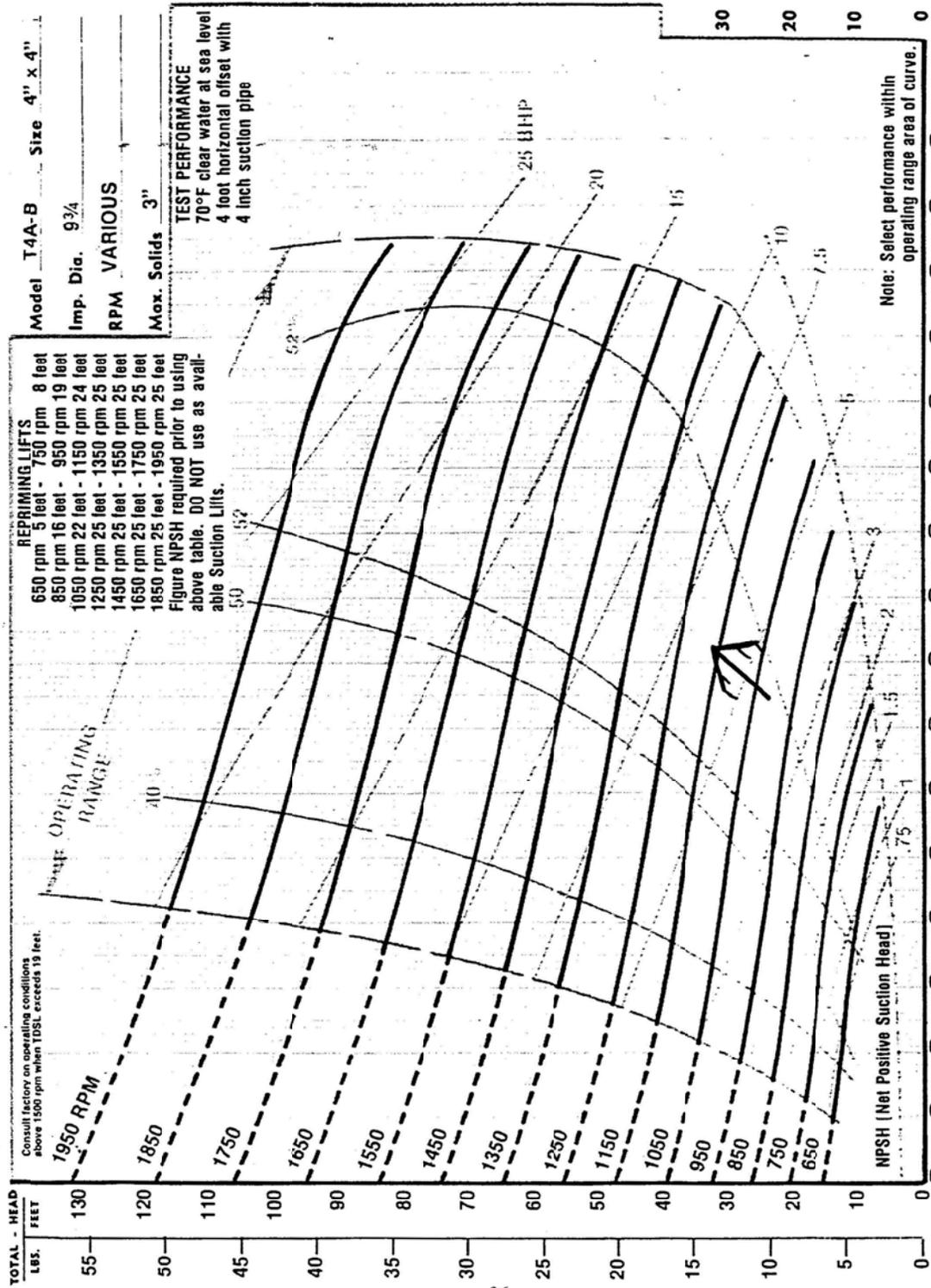
U.S. GALLONS PER MINUTE

Contact the factory on special applications or applications exceeding priming or other performance limitations indicated. For Pump Performance Certification Apply to the Company.

PERFORMANCE CHART NO. T4A-4

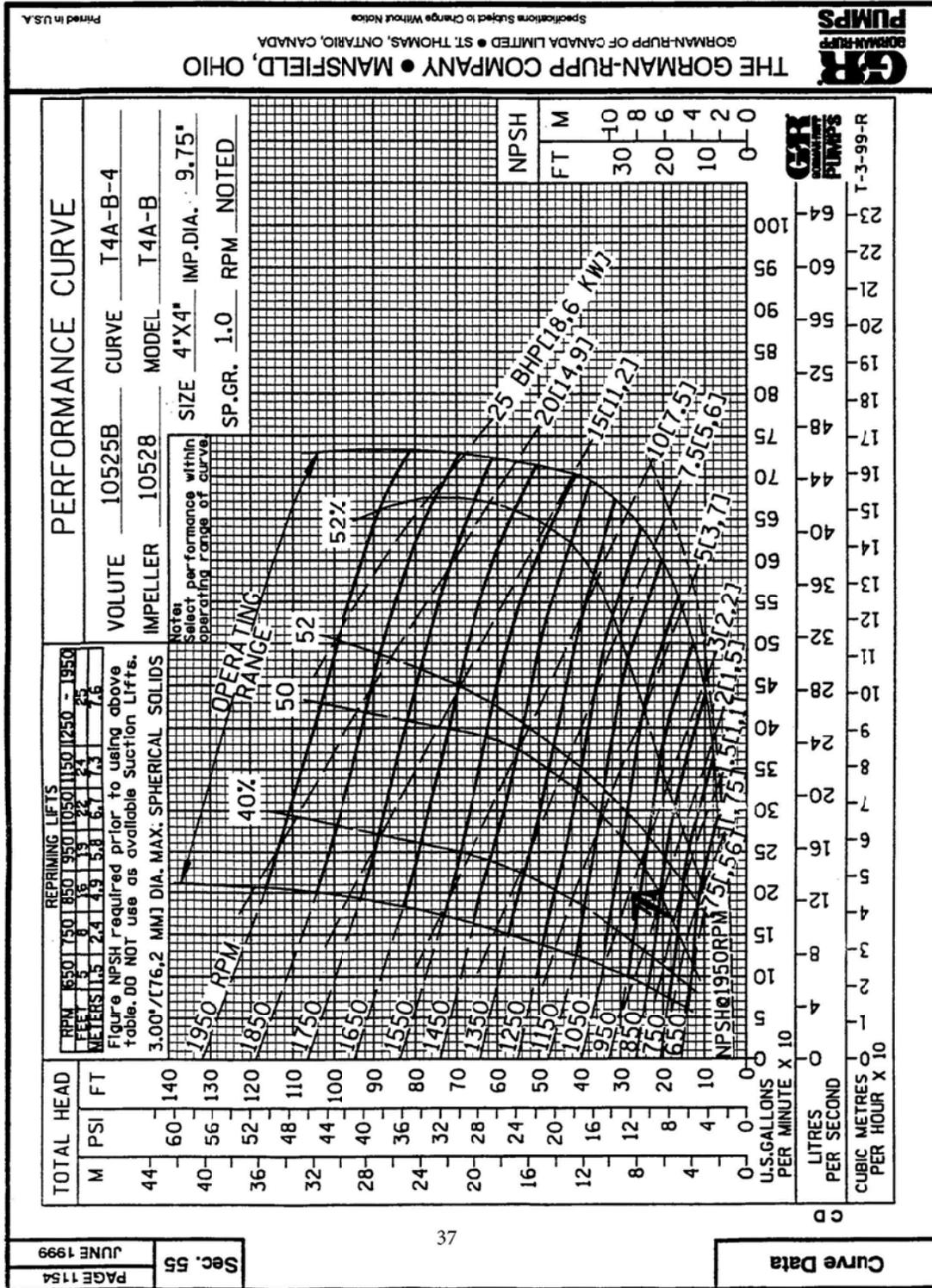
2-21-79

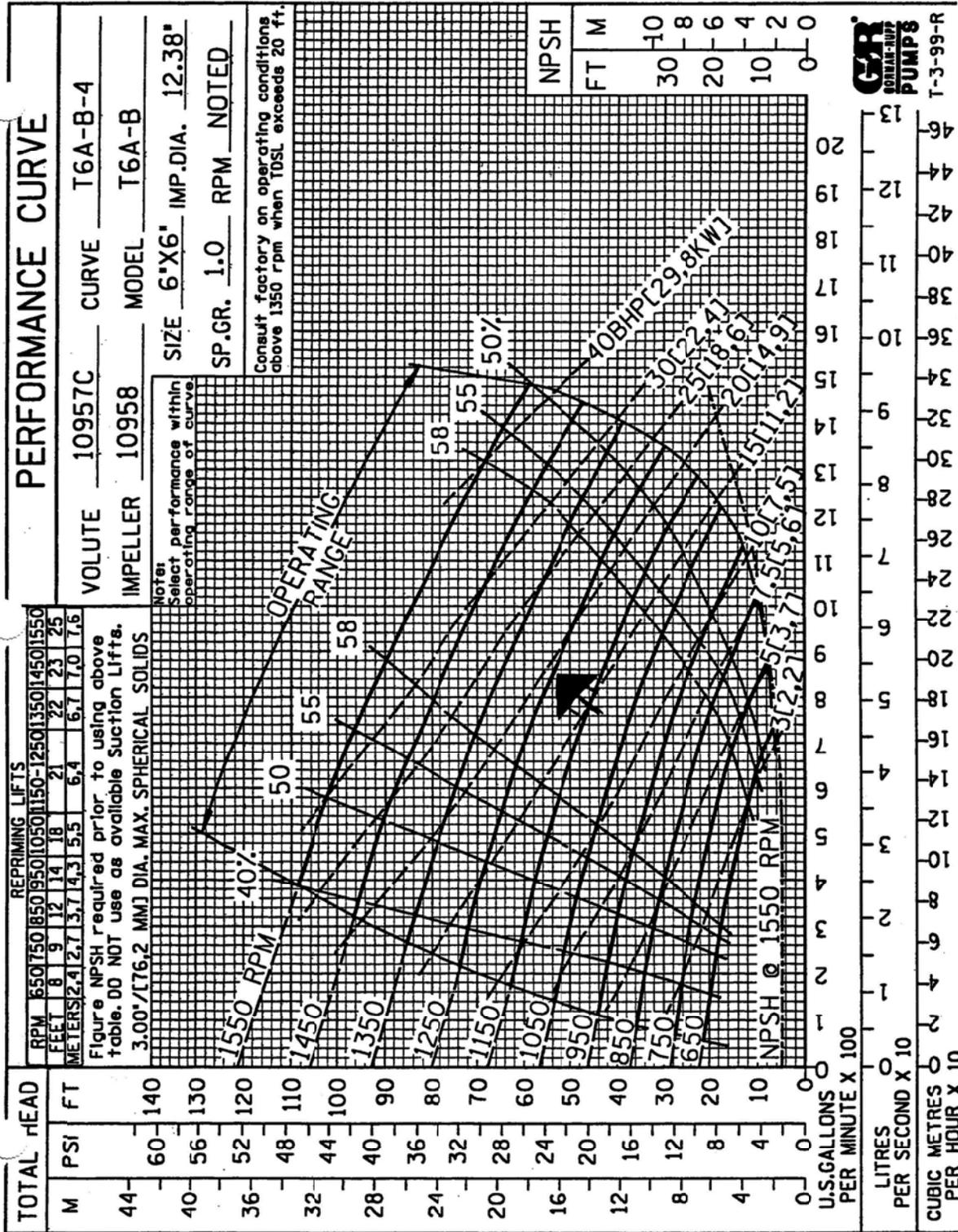
SECTION 55 PAGE 1154
REQUIRED NPSH



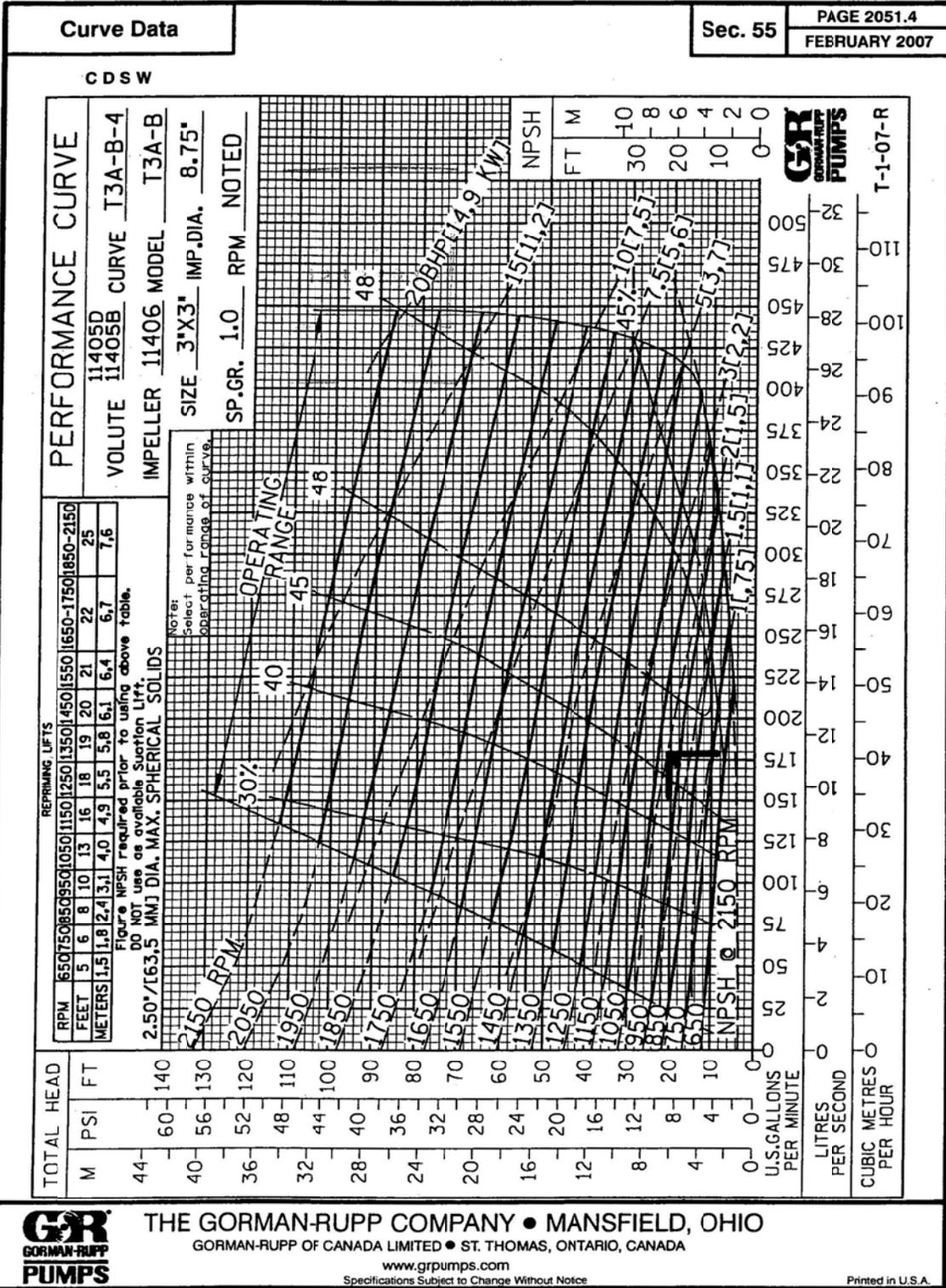
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Contact the factory on special applications or applications exceeding priming or other performance limitations indicated. Performance Certification Apply to the Company.





T-3-99-R



APPENDIX “E”

Parlanti Lane Lift Station

Parlanti Lane Lift Station

1.0 General

The Parlanti Lane Lift Station was constructed in 2010 as a replacement to an aging Smith and Loveless packaged lift station. The Parlanti Lane lift station differs from the majority of the lift stations in use by the City of Sparks in that the pumps are submersed in the wet well rather than housed separately in an enclosure placed either above ground or in a separate below grade structure, both, located near the wet well.

Functionality wise, a submersible lift station operates similarly to a self-priming centrifugal pump lift station but without the necessity for priming. Since the submersible pumps are normally submerged there is no need to prime them. They are highly efficient centrifugal pumps and normally do not require frequent maintenance. However, since the pumps are submerged in corrosive environments care must be taken to assure the seals are maintained so that liquid does not seep into the motors.

This appendix is included for use in conjunction with the Operation and Maintenance Manual provided by Peavine Construction entitled "Operations and Maintenance Manuals for the Parlanti Lane Lift Station Rehabilitation PWP – WA-2012-75 Contract #C-1291. Routine maintenance requirements not listed in this appendix can be found in Appendix C under the corresponding heading(s).

2.0 Pumps/Motors

The pumps supplied and installed at the Parlanti Lane Lift Station are 3-phase, 2.7 HP Flygt FP-3068.090, serial numbers 1230031 and 1230032. The F indicates a chopper type pump and the P indicates that the installation is a semi-permanent wet well installation with twin guide bars on a discharge connection. The supplied pumps were specified to provide a flow rate of 112gpm at 16' of total dynamic head (TDH). The pump curve is included in this appendix for

reference.

Care must be taken to assure the pumps are not run in an unsubmerged state or they will overheat. A suggested maintenance frequency list is included in this Appendix. It is important to note that the repair frequency is based on a normal operating environment. Should the circumstances dictate, the inspection/maintenance frequency may need to be revised. The operator will need to use his judgment to determine this. Recording the pump run time is a valuable tool to assist with determining the proper maintenance schedule.

During the annual inspection or any time the pumps are removed from the wet well the operator should visually inspect the power cables and cable holders especially where the cable flexes, make sure the cables are free of strain and well supported, make sure power cables are clear of control wires, visually inspect external pump components, and visually inspect the impeller for wear. Also pay attention to how the pump comes up the rails and also how it re-seats on the discharge elbow upon installation.

If the pump needs to be removed from the site for repairs make note of the wire connections by numbering them for reconnection. If this is missed the impeller rotational direction will need to be checked. The proper rotation for the pumps is clockwise as looking from above down at the top of the pump. Additionally the pump name plate will have either an "L" or an "R" on the pump data plate to indicate direction of rotation.

2.0 Electrical Components

The maintenance list gives the recommended frequency intervals for checking the electrical system components. In general amperage changes give some insight into component wear. Voltage changes indicate quality of power and possible phase imbalance. The Flygt motors must be maintained within +/- 5% of rated voltage to not make the warranty invalid. Phase voltage imbalance must be kept to 1% or lower to operate the motors.

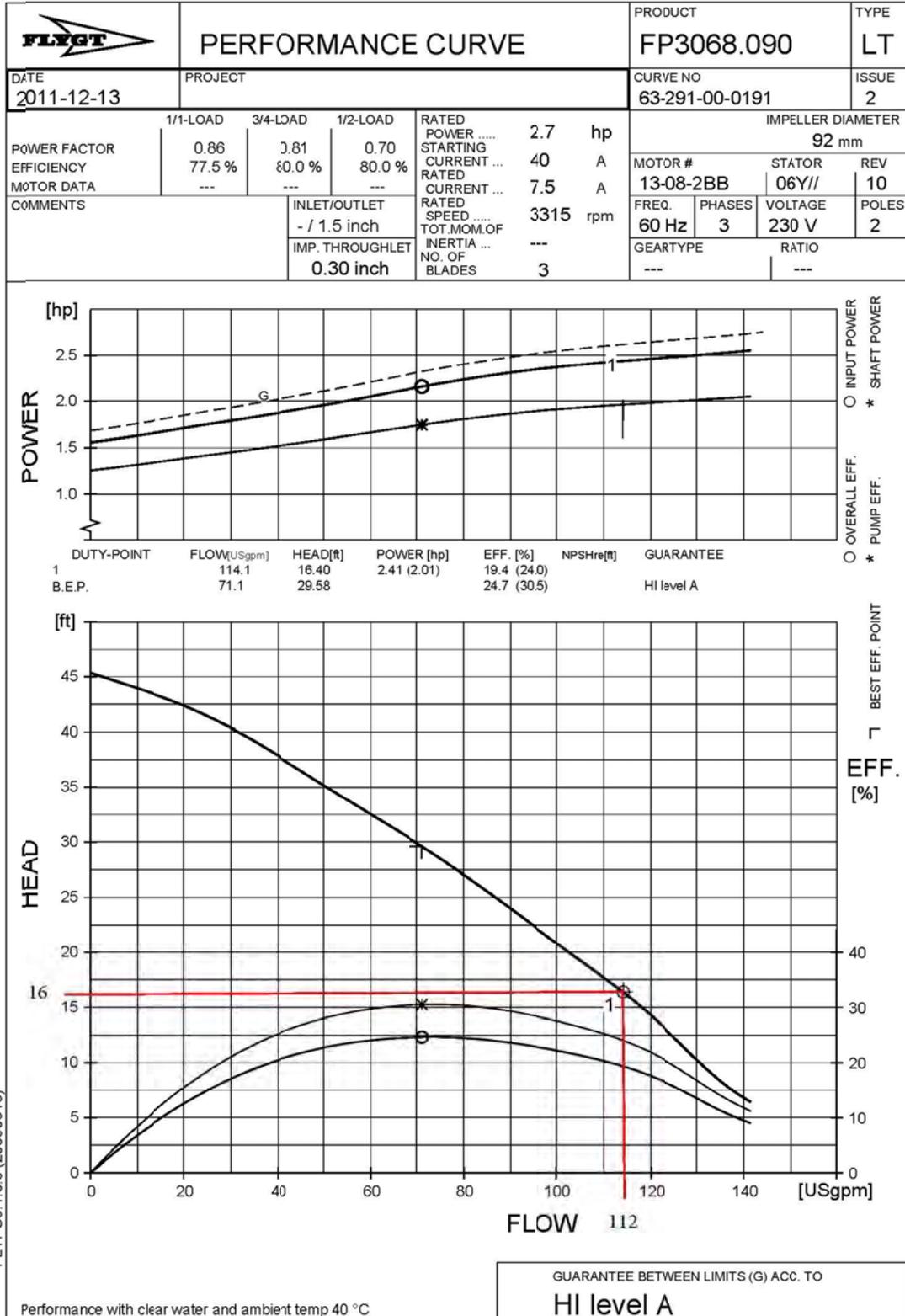
The level control system should be briefly inspected once a month. This inspection should include making sure the pumps turn on and off at the correct levels and that the pumps are alternating. A more thorough check should be done every year. The annual inspection should include verifying that the alarms activate when called to, that the pumps are turning on and off, and again that the alternation pattern is being followed. The level sensor installed at the Parlanti Lane Lift Station is not serviceable; however, it may need to be cleaned occasionally. The secondary high water alarm consists of a mercury float switch that during normal operation (suspended) creates an open circuit with therefore infinite resistance. As the float becomes unsusended by increasing water levels the circuit closes and the resistance goes to zero creating a closed circuit calling the alarm. This float should be checked for proper operation at least once a year.

The mag meter installed at the Parlanti Lane Lift Station is virtually maintenance free due to their lack of moving parts. If having a high level of accuracy is required for the flow rate than checking the calibration of the meter should become part of the routine maintenance. Calibration should be done per the manufacturer's recommendations.

3.0 Wet Well

During the yearly inspection the wet well should be looked at to determine the condition of the concrete and/or the condition of the concrete lining. The wet well is a corrosive environment and structural degradation can occur. Initial visual inspections can be done from the surface. Any evidence found supporting possible damage should be investigated further. The wet well is a confined space and should not be entered until bypass pumping is in place and the proper precautions have been taken including atmospheric testing and having the proper personal protective equipment (PPE) in place and in use.

The wet well walls should be cleaned during the yearly maintenance routine and the hatch and fall protection grating should be inspected for proper operation. Check that all hardware is structurally sound and tight before relying on the fall protection grating.



FLYPS3.1.6.6 (20090313)

City of Sparks Parilanti Lane Lift Station

Operation and Maintenance Schedule

Item	Daily	Weekly	Monthly	Quarter	Semi Annual	Annual	As Req'd	Comments
Site Piping & Valves								
Inspect manholes for backups			X					
Exercise valves					X			
Clean out valve boxes					X			
Check enclosure interior for grease/oil, loose nuts/bolts				X				
Clean force main							X	Both Pumps On
Wet Well Hatch and Fall Protection Grate					X			Check for proper unrestricted operation
Enclosure/Wetwells/Site								
General housekeeping		X						Should be performed by qualified and experienced personnel with main off
Inspect inside wet wells for any foreign objects & remove as required			X					
Clean wet well walls			X					
Clean dust out of electrical/control panels			X					
Verify high water alarm float is working			X					
Verify level control settings			X					
Calculate pump flow rates				X				
Exercise plug valves					X			
Check discharge check valve for proper operation			X					
Pumps/Motors								
Check Cables for Jacket Damage and Pinches						X		Refer to Equipment O&M Manual
Inspect High Temperature Shutdown Thermostats for Damage						X		Refer to Equipment O&M Manual
Power Connections and other Connections						X		
Drain Stator Housing/Check Leak Sensor						X		Leak sensor dry resistance approx 1500ohms, alarm approx. 430 ohms
Check Motor Insulation - Phase to Phase and Phase to Ground						X		Phase to ground should be greater than 5 megadms
Operating, Overload & Other Protections						X		Check overload protection trips at proper amperage, Check running Voltage & Amperage
Oil System					X			Replace oil plug O-Rings, entrance or junction cover O-Rings, Grease new O-Rings. Check for leaks after 1 week, fill as necessary
Thermal Contacts						X		Check leakage sensor resistance. Normally closed circuit: interval 0-1 ohm
Adjust Impeller Wear Plate Clearance						X		
Motor Controls/Alarms								
Inspect for any Loose Nuts/Bolts, Dust, Grease, Oil, Metal Discoloration						X		Increase frequency in harsh environment
Test & Calibrate Overload Relays							X	Outsourced every 1 to 3 years
Inspect for Frayed Wires, Proper Spring Pressure						X		Increase frequency in harsh environment
Test Alarms for Proper Operation						X		Increase frequency in harsh environment
Valve Vaults								
General Housekeeping		X						
Clean Out & Sweep Vault			X					

END

OF

REPORT

Forms

(to be used following award of bid)

- 1) Contract Form**
- 2) Performance Bond**
- 3) Payment Bond**



**GENERAL SERVICE CONTRACT
CITY OF SPARKS, NEVADA**

THIS CONTRACT made and entered into on this ___ day of _____, 20____, by and between the City of Sparks, Nevada, a municipal corporation, existing under and by virtue of the laws of the State of Nevada, hereinafter called "City", and _____, a qualified vendor in the class of work required, hereinafter called "Vendor".

W I T N E S E T H

WHEREAS, the City has awarded a contract to Vendor for performing the work hereinafter mentioned in accordance with the proposal of said Vendor;

WHEREAS, the Vendor will perform the work for the compensation stated in said proposal, for an amount which has been arrived at after negotiations between the parties;

WHEREAS, each party is willing to and does assume joint liability for the contents of this Contract, and each party accordingly agrees that it shall not be construed against any party as a drafting party;

NOW, THEREFORE, IT IS AGREED as follows:

1. Scope of Work:

The scope of work for this contract is generally defined as (INSERT PROJECT TITLE). The City's Contract Documents and Vendor's Entire Proposal are on file with the City of Sparks. All terms, conditions and requirements contained in these Documents, including any and all addenda issued by the City, are hereby incorporated into this Contract.

The Vendor shall perform within the time stipulated, the Contract as herein defined and shall provide and furnish any and all of the labor, materials, methods or processes, equipment implements, tools, machinery and equipment, and all utility, transportation and other services required to construct, install and put in complete order for use in a good and workmanlike manner all of the work covered by the Contract in connection with strict accordance with the plans and specifications therefore, which were approved by said City and are on file with the City, including any and all addenda issued by the City, and with the other contract documents hereinafter enumerated.

2. Payment for Services

As full consideration for the Services to be performed by Vendor, City agrees to pay Vendor as set forth in accordance with the Fee Schedule set forth in the proposal, bid or quotation and not to exceed fee of _____. The City will not hire or directly compensate the Vendor's employees, assistants or subcontractors, if any. It is expressly understood and agreed that all work done by Vendor shall be subject to review as to its result by the City at the City's discretion. Payment of any invoice shall not be taken to mean that the City is satisfied with Vendor's services to the date of payment and shall not forfeit City's right to require the correction of any deficiencies.



3. Term (Check One)

- This is a One-Time Service, or**
- This is a term contract from (MO/DY/YR) to (MO/DY/YR)**

The Vendor shall perform the services called for in the specifications/proposal and within the time specified and in accordance with the terms of the contract. The Vendor shall not alter or vary any terms or conditions contained or incorporated herein, including but not limited to, the quantity, price, delivery date or date designated as After Receipt of Order (ARO) or date for commencement or completion of services as mutually agreed upon, unless such alteration or variation is consented to in writing by a duly authorized representative of the City.

The City reserves the right to cancel resultant Contract upon ten days written notice in the event the type and quality of the work performance is unsatisfactory or in default, subject to Vendor's right to cure as outlined in termination clause.

This is a non-exclusive Contract and the City reserves the right to acquire the services at its discretion, from other sources during the term of this Contract.

4. No Unfair Employment Practices:

In connection with the performance of work under this Agreement, Vendor agrees not to discriminate against any employee or applicant because of race, creed, color, national origin, disability, sex, sexual orientation or age. Such agreement shall include, but not be limited to, the following: recruitment or recruitment advertising, rates or pay or other forms of compensation, and selection. Any violation of these provisions by Vendor shall constitute a material breach of contract.

5. No Illegal Harassment:

Violation of the City's harassment policy, which is incorporated by reference and available from the Human Resource Division, by the Vendor, its officers, employees, agents, consultants, subcontractors and anyone from whom it is legally liable, while performing or failing to perform Vendor's duties under this Contract shall be considered a material breach of contract.

6. Lawful Performance:

Vendor shall abide by all Federal, State and Local Laws, Ordinances, Regulations, and Statutes as may be related to the performance of duties under this agreement. In addition, all applicable permits and licenses required shall be obtained by the vendor, at vendor's sole expense.

7. Acceptance by the City:

It is expressly understood and agreed that all materials provided and/or work done by the Vendor shall be subject to inspection and acceptance by the City at its discretion, and that any progress inspections and approval by the City of any item or work shall not forfeit the right of the City to require the correction of faulty workmanship or material at any time during the course of the work, although previously approved by oversight. Nothing herein contained shall relieve the Vendor of the responsibility for proper construction and maintenance of the work, materials and equipment required under the terms of this Contract until all work has been completed and accepted by the City.



8. Waiver:

No waiver of any term, provision or condition of this Contract, whether by conduct or otherwise, in any one or more instances, shall be deemed to be nor shall it be construed as a further or continuing waiver of any such term, provision or condition of this Contract. No waiver shall be effective unless it is in writing and signed by the party making it.

9. Notices:

All notices required to be given in writing by this Contract shall be deemed to be received (i) upon delivery if personally delivered, or (ii) when receipt is signed for if mailed by certified or registered mail, postage prepaid, or by express delivery service or courier, when addressed as follows (or sent to such other address as a Party may specify in a notice to the others):

PURCHASING MANAGER
CITY OF SPARKS
431 PRATER WAY
PO BOX 857
SPARKS, NV 89432-0857

VENDOR:

10. Jurisdiction and Venue:

Any action or proceeding seeking to do so must be brought in the courts of the State of Nevada, County of Washoe, or if the party can acquire subject-matter jurisdiction, in the United States District Court for the District of Nevada in the City of Reno. Each of the parties consents to the personal jurisdiction of such courts (and of the appropriate appellate courts) in any such action or proceeding and waives any objection to venue laid therein. Process in any action or proceeding referred to in the preceding sentence may be served on either party by sending it certified mail to the respective addresses designated for notice.

11. Indemnity:

Vendor agrees to hold harmless, indemnify, and defend City, its officers, agents, employees, and volunteers from any loss or liability, financial or otherwise resulting from any and all claims, demands, suits, actions, or causes of action, caused by any action, either direct or passive, the omission, failure to act, or negligence on the part of Vendor, its employees, agents, representatives, or Subcontractors arising out of the performance of work under this Agreement by Vendor, or by others under the direction or supervision of Vendor.

If City’s personnel are involved in defending such actions, Vendor shall reimburse City for the time and costs spent by such personnel at the rate charged City for such services by private professionals.

In determining the nature of the claim against City, the incident underlying the claim shall determine the nature of the claim, notwithstanding the form of the allegations against City.

Nothing in this contract shall be interpreted to waive nor does the City, by entering into this contract, waive any of the provisions found in Chapter 41 of the Nevada Revised Statutes.

12. Licenses and Permits:

The Vendor shall procure at his own expense all necessary licenses and permits and shall adhere to all the



laws, regulations and ordinances applicable to the performance of this Contract.

All vendors doing business within the City of Sparks are required to obtain a current business license from the City of Sparks prior to commencement of this contract. Per Sparks Municipal Code Section 5.08.020A: "It is unlawful for any person to transact business in the City without first having obtained a license from the City to do so and without complying with all applicable provisions of this title and paying the fee therefore."

13. Insurance:

Vendor shall provide proof of Commercial General Liability Insurance and Automobile Liability, Professional Liability and Workers' Compensation if applicable prior to initiation of any services under Bid, Proposal or Contract. Coverage shall be from a company authorized to transact business in the State of Nevada and the City of Sparks and shall meet the following minimum specifications:

VENDOR'S ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW. IT IS HIGHLY RECOMMENDED THAT VENDORS CONFER WITH THEIR RESPECTIVE INSURANCE CARRIERS OR BROKERS TO DETERMINE IN ADVANCE OF BID SUBMISSION THE AVAILABILITY OF INSURANCE CERTIFICATES AND ENDORSEMENTS AS PRESCRIBED AND PROVIDED HEREIN. IF ANY VENDOR FAILS TO COMPLY STRICTLY WITH THE INSURANCE REQUIREMENTS, THAT VENDOR MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

INDUSTRIAL INSURANCE

It is understood and agreed that there shall be no Industrial Insurance coverage provided for Vendor or any Sub-Contractor of the Vendor by the City. Vendor agrees, as a precondition to the performance of any work under this Agreement and as a precondition to any obligation of the City to make any payment under this Agreement to provide City with a certificate issued by an insurer in accordance with NRS 616B.627 and with a certificate of an insurer showing coverage pursuant to NRS 617.210.

It is further understood and agreed by and between City and Vendor that Vendor shall procure, pay for, and maintain the above mentioned industrial insurance coverage at Vendor's sole cost and expense.

Should Vendor be self-funded for Industrial Insurance, Vendor shall so notify City in writing prior to the signing of this Contract. City reserves the right to approve said retentions, and may request additional documentation, financial or otherwise, for review prior to the signing of this Contract.

MINIMUM LIMITS OF INSURANCE

Vendor shall maintain coverages and limits no less than:

1. General Liability: \$1,000,000 (or amount customarily carried by Vendor, whichever is greater) combined single limit per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, the general aggregate limit shall be increased to equal twice the required occurrence limit or revised to apply separately to this project or location.



2. Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage. No aggregate limit may apply.
3. Workers' Compensation: Consultant shall provide proof of worker's compensation insurance as required by NRS 616B.627 or proof that compliance with the provisions of Nevada Revised Statutes, Chapters 616A-D and all other related chapters is not required.

Vendor will maintain Vendor liability insurance during the term of this Agreement and for a period of three (3) years from the date of substantial completion of the project. In the event that Vendor goes out of business during the term of this Agreement or the three (3) year period described above, Vendor shall purchase Extended Reporting Coverage for claims arising out of Vendor's negligent acts, errors and omissions committed during the term of the Vendor Liability Policy.

Should City and Vendor agree that higher Vendor Coverage limits are needed warranting a project policy, project coverage shall be purchased and the premium for limits exceeding the above amount shall be borne by City. City retains the option to purchase project insurance through Vendor's insurer or its own source.

OTHER INSURANCE PROVISIONS

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverages

- a. City, its officers, agents, employees, and volunteers are to be included as insureds as respects damages and defense arising from: activities performed by or on behalf of Vendor, including the insured's general supervision of Vendor; products and completed operations of Vendor; premises owned, occupied, or used by Vendor; or automobiles owned, leased, hired, or borrowed by the Vendor. The coverage shall contain no special limitations on the scope of protection afforded to City, its officers, employees, or volunteers.
- b. Vendor's insurance coverage shall be Primary insurance as respects City, its officers, agents, employees, and volunteers. Any insurance or self-insurance maintained by City, its officers, employees, or volunteers shall be excess of Vendor's insurance and shall not contribute with it in any way.
- c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to City, its officers, agents, employees, or volunteers.
- d. Vendor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2. All Coverages

Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled, or non-renewed by either Vendor or by the insurer, reduced in coverage or in limits except after thirty (30) days' prior written



notice by certified mail, return receipt requested, has been given to City except for nonpayment of premium.

ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with a Best's rating of no less than A-: VII. City, with the approval of the Risk Manager, may accept coverage with carriers having lower Best's ratings upon review of financial information concerning Vendor and insurance carrier. City reserves the right to require that Vendor's insurer be a licensed and admitted insurer in the State of Nevada, or on the Insurance Commissioner's approved but not admitted list.

VERIFICATION OF COVERAGE

Vendor shall furnish City with certificates of insurance and with original endorsements affecting coverage required by this contract. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf.

Prior to the start of any Work, Vendor must provide the following documents to City of Sparks, Attention: Purchasing Division, P.O. Box 857, Sparks, NV 89432-0857:

- A. Certificate of Insurance.** Vendor must provide a Certificate of Insurance form to the City of Sparks to evidence the insurance policies and coverage required of Vendor.
- B. Additional Insured Endorsements.** An original Additional Insured Endorsement, signed by an authorized insurance company representative, must be submitted to City of Sparks, by attachment to the Certificate of Insurance, to evidence the endorsement of City of Sparks as additional insured.
- C. Policy Cancellation Endorsement.** Except for ten days notice for non-payment of premium, each insurance policy shall be endorsed to specify that without thirty (30) days prior written notice to City of Sparks, the policy shall not be cancelled, non-renewal or coverage and/or limits reduced or materially altered, and shall provide that notices required by this paragraph shall be sent by certified mailed to the address specified above. A copy of this signed endorsement must be attached to the Certificate of Insurance.
- D. Bonds (as Applicable).** Bonds as required and/or defined in the original bid documents.

All certificates and endorsements are to be addressed to the City of Sparks, Purchasing Division and be received and approved by City before work commences. The City reserves the right to require complete certified copies of all required insurance policies at any time.

SUBCONTRACTORS

Vendor shall include all Subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each Subcontractor. All coverages for Subcontractors shall be subject to all of the requirements stated herein.

MISCELLANEOUS CONDITIONS



1. Vendor shall be responsible for and remedy all damage or loss to any property, including property of City, caused in whole or in part by Vendor, any subcontractor, or anyone employed, directed, or supervised by Vendor.
2. Nothing herein contained shall be construed as limiting in any way the extent to which Vendor may be held responsible for payment of damages to persons or property resulting from its operations or the operations of any subcontractor under it.
3. In addition to any other remedies City may have if Vendor fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time herein required, City may, at its sole option:
 - a. Purchase such insurance to cover any risk for which City may be liable through the operations of Vendor under this Agreement and deduct or retain the amount of the premiums for such insurance from any sums due under the Agreement;
 - b. Order Vendor to stop work under this Agreement and/or withhold any payments which become due Vendor here under until Vendor demonstrates compliance with the requirements hereof; or,
 - c. Terminate the Agreement.

14. Liquidated Damages (This Section IS IS NOT Applicable to this Contract):

If the service is not completed within the time stipulated in the bid, the Vendor shall pay to the City of Sparks as fixed, agreed and liquidated damages for delay and not as a penalty (it being impossible to determine the actual damages occasioned by the delay) \$_____ for each calendar day of delay until delivery is completed; the Vendor shall be liable to the City of Sparks for the amount herein. This amount may be deducted from money due or to become due to the Vendor as compensation under this proposal in the event the Vendor fails to meet delivery schedules or product specifications.

15. Material Breach of Contract:

In the event Vendor fails in their delivery of services as contracted for herein, to the satisfaction of the City of Sparks or otherwise fails to perform any provisions of this Contract, the City, after providing five (5) days written notice and vendor's failure to cure such breach, may without waiving any other remedy, make good the deficiencies and deduct the actual cost of providing alternative services from payment due the Vendor. Non-performance after the first notice of non-performance shall be considered a material breach of contract.

16. Force Majeure:

Neither party to the Contract shall be held responsible for delay or default caused by fire, riot, acts of God, and/or war which is beyond that party's reasonable control. City may terminate the Contract upon written notice after determining such delay or default will reasonably prevent successful performance of the Contract.

17. Termination:

Failure to Cure:

The City may terminate the Contract for material breach of contract upon ten (10) days written notice and recover all damages, deducting any amount still due the Vendor from damages owed to the City, or seek other remedy including action against all bonds. The Vendor may terminate the Contract for



material breach of contract upon thirty (30) days written notice to the City.

Non-Funding:

Continuance of this contract beyond the fiscal year (July – June) in which the contract was initiated shall be contingent upon appropriation of the requisite funds in the ensuing fiscal year(s) and the termination of this contract due to lack of appropriation shall be without penalty.

Convenience:

The City may terminate this agreement for any reason without penalty upon giving thirty (30) days written notice to the Vendor. In the event of termination, the full extent of City liability shall be limited to an equitable adjustment and payment for materials and related services authorized by and received to the satisfaction of the City prior to termination.

18. Assignment:

All of the terms, conditions and provisions of this Contract, and any amendments thereto, shall inure to the benefit of and be binding upon the parties hereto, and their respective successors and assigns. The Vendor shall not assign this Contract without the written consent of the City which will not be unreasonably withheld.

19. Entire Contract:

This Contract constitutes the entire agreement of the parties and shall supersede all prior offers, negotiations, agreements and contracts whether written or oral. Any modifications to the terms and conditions of this Contract must be in writing and signed by both parties.

20. Severability:

If any part of this Contract is found to be void it will not affect the validity of the remaining terms of this Contract which will remain in full force and effect.

21. Headings:

Paragraph titles or captions contained in this Contract are inserted only as a matter of convenience and for reference only, and in no way define, limit, extend, or describe the scope of this Contract or the intent of any provision thereof.

22. Singular Includes the Plural; Gender; Title Reference:

Whenever the singular number is used in this Contract and when required by the context, the same shall include the plural, and the use of any gender, be it masculine, feminine or neuter, shall include all of the genders, and the word “person” or “entity” shall include corporation, firm, partnership, or any other combination or association.

The use of the title “Bidder”, “Vendor”, “Contractor” or “Consultant” within this contract or associated bid document shall be deemed interchangeable and shall refer to the person or entity with whom the City of Sparks is contracting for the service or product referenced within this contract.



23. Execution:

The parties agree to execute such additional documents and to take such additional actions as are reasonably necessary or desirable to carry out the purposes hereof. They also agree, acknowledge and represent that all corporate authorizations have been obtained for the execution of this Contract and for the compliance with each and every term hereof. Each undersigned officer, representative or employee represents that he or she has the authority to execute this Contract on behalf of the party for whom he or she is signing.

IN WITNESS WHEREOF, the City of Sparks has caused this Contract to be executed by its officers thereunto duly authorized and the Consultant has subscribed same, all on the day and year first above written.

(Vendor)

CITY OF SPARKS, NEVADA
A Municipal Corporation

By: _____

By: _____
(Authorized Signature)

(Title)

APPROVED AS TO FORM

ATTEST:

City Attorney

City Clerk (As Required)



Attachment A

THIS (optional) SPACE TO BE USED TO ATTACH VENDOR PROPOSAL OR TO DEFINE THE SPECIFIC SCOPE OF WORK FOR THIS CONTRACT

CITY OF SPARKS, NEVADA - BOND OF FAITHFUL PERFORMANCE

Bid #: _____

Bond #: _____

Surety Rating: _____

NV License #: _____

Appt. Agent Countersigning - List below with address

KNOW ALL MEN BY THESE PRESENTS: That WHEREAS, the City of Sparks in the State of Nevada has awarded to **(CONTRACTOR NAME)** hereinafter designated as the "Principal" a contract for Bid # **BID NUMBER**, PWP # **PWP NUMBER**, for the **PROJECT TITLE** and

WHEREAS, said Principal is required under the terms of said contract to furnish a bond for the faithful and proper performance of the Contract and the Bonding Company has an "A" or better rating with Moody's or A.M. Best and T-Listed with the U.S. Treasury Department;

NOW, THEREFORE, we the Principal and _____ as Surety, are held and firmly bound unto the City of Sparks in the State of Nevada, in the penal sum of **(WRITTEN COST)** dollars (\$_____), lawful money of the United States, being not less than one hundred percent (100%) of the estimated contract cost of the work, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bound Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and faithfully perform the covenants, conditions and agreements in the said contract and any alterations made as therein provided on his or their part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the City of Sparks in the State of Nevada, its officers and agents as therein stipulated, then this obligation shall become null and void; otherwise, it shall be and remain in full force and virtue.

As a condition precedent to the satisfactory completion of the said contract, the above obligation shall hold good for a period of one (1) year after the completion and acceptance of the said work, during which time, if the above bounden principal, his or its heirs, executors, administrators, successors or assigns shall fail to make full, complete and satisfactory repair and replacements or totally protect the said City of Sparks in the State of Nevada from loss or damage made evident during said period of one (1) year from the date of acceptance of said works, and resulting from or caused by defective materials or faulty workmanship in the prosecution of the work done, the obligation in the said sum of **(WRITTEN COST)** dollars (\$_____) shall remain in full force and virtue; otherwise the above obligation shall be void.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in anyway effect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the contract, to the work or to the specifications.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their seals this ____ day of _____, 20____, the name and corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Principal

By _____

Surety
By _____

CITY OF SPARKS, NEVADA – Payment Bond – Labor & Materials

Bid #: _____

Bond #: _____

Surety Rating: _____

NV License #: _____

Appt. Agent Countersigning - List below with address

KNOW ALL MEN BY THESE PRESENTS: That WHEREAS, the City of Sparks in the State of Nevada, has awarded to **CONTRACTOR**, hereinafter designated as the “Principal” a Contract for Bid # **BID NUMBER**, PWP # **PWP NUMBER**, for the **PROJECT TITLE** and

WHEREAS, said Principal is required under the terms of said contract to furnish a Bond for the faithful and proper performance of the Contract and the Bonding Company has an “A” or better rating with Moody’s or A.M. Best and T-Listed with the U.S. Treasury Department;

NOW, THEREFORE, we, the Principal, and _____ as Surety, are held and firmly bound unto the City of Sparks in the State of Nevada, in the penal sum of **WRITTEN AMOUNT** dollars (\$_____), lawful money of the United States, being not less than one hundred percent (100%) of the estimated contract cost of the work for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally firmly by these presents.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bounden principal, his or its heirs, executors, administrators, successors, or assigns, shall fail to pay for any materials, provisions, provender or other supplies, implements, or machinery used in, upon, for, or about the performance of the work contracted to be done or for any work or labor thereon of any kind, or for amounts due under the Unemployment Compensation Law with respect to such work or labor as required by the provisions of NRS 612, and provided that the claimant shall have complied with the provisions of said law, the Surety hereon will pay for the same within thirty (30) calendar days an amount not exceeding the sum specified in this bond, then the above obligation shall be null and void; otherwise to remain in full force and account. In case suit is brought upon this bond, the said Surety agrees to pay a reasonable attorney’s fees to be fixed by the Court.

The Bond shall insure to the benefit of any and all persons, companies and corporations entitled to file claims under NRS 339 as to give a right of action to them or their assigns in any suit brought upon this Bond.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their seals this ____ day of _____, 20____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Principal

By _____

Surety

By _____