



**AGENDA
CITY OF HARRISONVILLE
BOARD OF ALDERMEN
REGULAR MEETING
CITY HALL
NOVEMBER 19, 2018
7:00 PM**

- 1. Call to Order**
 - A. Roll Call**
- 2. Pledge of Allegiance**
- 3. Ceremonial Matters**

Officer Doug Rose – 20 years
- 4. Public Participation**
- 5. Approval of Minutes**
 - A. Board of Aldermen - Regular Meeting - Nov 5, 2018 7:00 PM**
- 6. Agenda Items**
 - A. Christmas on the Square Special Event Permit**
 - B. Council Bill 70: 2nd Reading - Fiscal Year 2019 Budget AN ORDINANCE ADOPTING AN OPERATING BUDGET FOR THE CITY OF HARRISONVILLE, MISSOURI, FOR THE FISCAL YEAR JANUARY 1, 2019 THROUGH DECEMBER 31, 2019.**
 - C. Council Bill 71: A Resolution of the Board of Aldermen of the City of Harrisonville, Missouri Authorizing and Directing the City Administrator to Enter into Amendment 6 on Behalf of the City with Burns and McDonnell Engineering Company, Inc. to Make Improvements to City Water Treatment Plant for an Amount Not to Exceed \$7,329.56**
 - D. Council Bill 72: A Resolution of the Board of Aldermen of the City of Harrisonville, Missouri Authorizing and Directing the City Administrator to Enter into a Change Order Agreement on Behalf of the City with KAT Excavating, Inc. to Make Improvements to City Water Treatment Plant for an Amount of \$18,918.75.**

- E. Council Bill 73: A RESOLUTION OF THE BOARD OF ALDERMEN OF THE CITY OF HARRISONVILLE, MISSOURI, AUTHORIZING AND DIRECTING THE CITY ADMINISTRATOR TO ENTER INTO AN AGREEMENT WITH SHADE TREE SERVICE CO., FOR THE ELECTRIC DEPARTMENT TREE TRIMMING PROJECT, AND ESTABLISHING AN EFFECTIVE DATE.**
 - F. Council Bill 74: A RESOLUTION BY THE BOARD OF ALDERMEN OF THE CITY OF HARRISONVILLE, MISSOURI, AUTHORIZING AND DIRECTING THE CITY ADMINISTRATOR TO ENTER INTO AN AGREEMENT WITH MICHAEL NEWMAN TO CONTRACT AS AIRPORT MANAGER FOR THE LAWRENCE SMITH MEMORIAL AIRPORT, AND ESTABLISHING AN EFFECTIVE DATE.**
- 7. Aldermen and Committee Reports**
 - 8. Report from the City Administrator**
 - 9. Report from the Mayor**
 - 10. Adjourn to Executive Session/closed session 610.021 (1) Legal actions, causes of litigation (2) Leasing, purchasing or sale of real estate**
 - 11. Adjourn From Regular Session**

Posted on City Hall Bulletin Board this 15th day of November, 2018

Randall K. Jones, City Clerk

The Board of Aldermen meeting is an open meeting but is not a meeting of the public. There is a place on the agenda for comments of citizens under PUBLIC PARTICIPATION. Our rule is that comments by any individual or group shall not exceed (4) minutes. The Board of Aldermen request that concerns be initially addressed at the appropriate action level before coming to the Board of Alderman



DRAFT
MINUTES
CITY OF HARRISONVILLE
BOARD OF ALDERMEN
REGULAR MEETING
CITY HALL
NOVEMBER 5, 2018
7:00 PM

1. Call to Order

The meeting was called to order at 7:01 PM by Mayor Brian Hasek

Attendee Name	Organization	Title	Status	Arrived
Judy Bowman	Harrisonville	Board Member	Present	
Clint Long	Harrisonville	Board Member	Present	
Jessica Levsen	Harrisonville	Board Member	Present	
David Dickerson	Harrisonville	Board Member	Present	
Matt Turner	Harrisonville	Board Member	Present	
Marcia Milner	Harrisonville	Board Member	Present	
Judy Reece	Harrisonville	Board Member	Absent	
Brad Bockelman	Harrisonville	Board Member	Present	
Brian Hasek	Harrisonville	Mayor	Present	

Others in attendance were: City Attorney John Fairfield, City Administrator Happy Welch, Finance Director Marcella McCoy, Police Chief John Hofer, Parks & Recreation Director Chris Deal, Public Information Officer Daniel Barnett and City Clerk Randall Jones, Recording.

2. Pledge of Allegiance

3. Ceremonial Matters

A. Small Business Saturday

Mayor Hasek read proclamation designating November 24, 2018 as Small Business Saturday.

4. Public Participation

John Foster, 2619 Duncan Circle, addressed Mayor and Board about agenda item 6B in regard to gravel parking areas. He stated that the owner of 501 Main should not vote on this matter since he is an Alderman and has a new building with a gravel driveway. He suggested that this should

be tabled and work out an agreement with the Beck Event Space owners. Mr. Foster also asked about the WalMart Distribution Center and the bonds that were involved there. He mentioned the new truck wash at the end of South Commercial and questioned the \$20,000 for an impact fee that he heard they were quoted for a 600 amp electric upgrade.

Steve Tiedeman and Bill Anderson with the American Legion announced that the Vietnam Wall Memorial would be in Harrisonville from June 27 through July 1, 2019. Steve went over the requirements needed and stated that if anyone would like to volunteer, they would appreciate it. Bill Anderson of Windsor, gave a report on how it was handled in their city in 2016.

Scott Beck with Beck Event Space stated that the Beck Event Space did not own the parking lot but that they did sign the agreement.

Mike Freeland with Beck Event Space distributed photographs of unpaved parking lots/areas around the Square. He reviewed some of the charitable events that the Space contributes to. They have looked at various options and bids to improve the parking space. Alderman Milner asked who the owners of the lot were. The reply was that another company owned it, but that Scott and Mike are both part of said company. Alderman Bowman asked about possibly signing a new special use permit extending the time with the intent to pave the lot. Mayor Hasek stated it was not just the Beck Event Space parking lot in question. Scott Beck said that they had no intention of misleading anyone. Mike Freeland gave a timeline of when they came to Harrisonville.

5. Approval of Minutes

A. Board of Aldermen - Regular Meeting - Oct 15, 2018 7:00 PM

RESULT:	ACCEPTED [UNANIMOUS]
MOVER:	David Dickerson, Board Member
SECONDER:	Jessica Levsen, Board Member
AYES:	Bowman, Long, Levsen, Dickerson, Turner, Milner, Bockelman
ABSENT:	Judy Reece

6. Agenda Items

A. AN ORDINANCE OF THE BOARD OF ALDERMEN OF THE CITY OF HARRISONVILLE, MISSOURI, REPEALING CODE SECTION 405.550 D. ACCESSORY DETACHED BUILDINGS OF THE CITY CODE AND ENACTING IN LIEU THEREOF A NEW SECTION 405.550 D. TO ALLOW DETACHED ACCESSORY BUILDINGS IN THE C-1, CBD-1, C-2, AND CBD-2 ZONING DISTRICTS.

Staff report presented by City Planner Roger Kroh. Alderman Milner asked if Planning & Zoning had approved of the smaller storage containers that were added. Kroh answered no. Alderman Turner said if they were screened behind a building then no one would see them. Alderman Long asked if this included semi-trailers in lots used for storage. Alderman Levsen did not think that shipping containers should be considered. Motion to approve Council Bill 69 with amendments as presented except for leaving the maximum

allowed 150 square feet by Alderman Dickerson and second by Alderman Bowman. Motion for amendment carried. Roll call vote was taken: Alderman Bowman aye, Alderman Bockelman aye, Alderman Reece absent, Alderman Milner aye, Alderman Dickerson aye, Alderman Long aye, Alderman Turner aye, Alderman Levsen aye. Bill 69 read for second time by title only as amended. Roll call vote was taken: Alderman Bowman aye, Alderman Bockelman aye, Alderman Reece absent, Alderman Milner aye, Alderman Dickerson aye, Alderman Long aye, Alderman Turner aye, Alderman Levsen aye. Upon passage, Mayor Hasek designated it be Ordinance #3451.

RESULT:	ADOPTED AS AMENDED [UNANIMOUS]
MOVER:	David Dickerson, Board Member
SECONDER:	Judy Bowman, Board Member
AYES:	Bowman, Long, Levsen, Dickerson, Turner, Milner, Bockelman
ABSENT:	Judy Reece

B. AN ORDINANCE OF THE BOARD OF ALDERMEN OF THE CITY OF HARRISONVILLE, MISSOURI, REPEALING CODE SECTION 405.565.D.1 IMPROVEMENT OF PARKING AREAS IN THE CITY CODE AND ENACTING IN LIEU THEREOF A NEW SECTION 405.565.D.1 TO ALLOW GREATER USE OF GRAVEL INSTEAD OF CONCRETE AND ASPHALT.

Staff report presented by City Planner Roger Kroh. Alderman Bowman asked how many inquiries the City had from builders in regard to this. Kroh answered he would have to check with the Building Official. Alderman Milner asked about new buildings and if they would have a concrete drive. She agreed that Beck Event parking lot was purchased as gravel but would like to see it hard surfaced at some point. Alderman Bowman reported there had been three requests for variances on this ordinance. She stated that instead of changing the ordinance, why not review the Beck Event Space permit and grant an extension. Alderman Dickerson stated that if the city wants businesses to come in then they should not require hard surface lots. Mayor Hasek agreed that if an existing lot is gravel then it should be grandfathered in. Alderman Levsen stated that it was not about the Beck Event Space and that she was in favor of the changes. Mayor Hasek said there was not a conflict with Alderman Bockelman because he had already been granted a variance for his property. Motion to approve Council Bill 68 with amendments as presented by Alderman Dickerson and second by Alderman Long. Motion for amendments carried. Roll call vote was taken: Alderman Bowman aye, Alderman Bockelman aye, Alderman Reece absent, Alderman Milner aye, Alderman Dickerson aye, Alderman Long aye, Alderman Turner aye, Alderman Levsen aye. Bill 68 read for second time by title only as amended. Roll call vote was taken: Alderman Bowman aye, Alderman Bockelman aye, Alderman Reece absent, Alderman Milner aye, Alderman Dickerson aye, Alderman Long aye, Alderman Turner aye, Alderman Levsen aye. Upon passage, Mayor Hasek designated it be Ordinance #3452.

RESULT:	ADOPTED AS AMENDED [UNANIMOUS]
MOVER:	David Dickerson, Board Member
SECONDER:	Clint Long, Board Member
AYES:	Bowman, Long, Levsen, Dickerson, Turner, Milner, Bockelman
ABSENT:	Judy Reece

C. Fiscal Year 2019 Budget

Staff report was presented by Finance Director Marcella McCoy. Alderman Long asked about the money that was owed to the City by the Cass County Justice Center. McCoy

stated she would check on that. Mayor Hasek stated that the budget work sessions went very well this year and he commended the Board for their efforts.

RESULT: FIRST READING

Next: 11/19/2018 7:00 PM

7. Aldermen and Committee Reports

Alderman Bowman stated she was wearing Wildcat Blue because the Harrisonville teams were doing so well. She extended a thank you to Tim Scott and John Johnson from the Electric Department for some tree trimming they completed for a resident. Alderman Bowman reminded everyone to vote on November 6th.

Alderman Milner reported that the Wildcats would be playing on November 6th.

Alderman Dickerson extended a thank you to the rest of the Board for voting on allowing gravel parking lots.

Alderman Turner invited everyone to the Cass County Rescue Mission Thanksgiving dinner this weekend.

Alderman Levsen stated she agreed with Alderman Dickerson and also reminded everyone to vote.

8. Report from the City Administrator

City Administrator Happy Welch reported that the City had received acceptance from the MoDNR Brownfield Project for the old water/electric building.

9. Report from the Mayor

Mayor Hasek extended a thank you to staff for assistance with the brush drop off last weekend. He reminded everyone to vote on November 6th and also invited everyone to attend the Veterans Day ceremonies at the Beck Event Space and Courthouse. Alderman Bowman stated that Katie's Cafe would be providing the breakfast. City Administrator Welch said to be sure and check out the City's Facebook page with the daily spotlight on local WWI Veterans. Alderman Milner stated she appreciated Public Information Officer Daniel Barnett and the work he has been doing on Facebook and social media.

10. Adjourn From Regular Session

Welch Motion to adjourn was made by Alderman Dickerson with a second by Alderman Milner. Motion carried. Meeting adjourned at 8:40 p.m.

Minutes Acceptance: Minutes of Nov 5, 2018 7:00 PM (Approval of Minutes)

Regular Meeting**Monday, November 5, 2018****7:00 PM**

Brian Hasek, Mayor & Ex-Officio
Chairman of the Board of Aldermen

ATTEST:

Randall K. Jones, City Clerk

Minutes Acceptance: Minutes of Nov 5, 2018 7:00 PM (Approval of Minutes)



STAFF REPORT

TO: Board of Aldermen
FROM: John Hofer, Director
DATE: November 8, 2018
SUBJECT: Christmas on the Square

Type of Item: *Approval*

Issue:

Blockage of all four streets in the Square on December 8, 2018 from 2:00 pm until 7:00 pm for Love the Harrisonville Square activities/Mayor's Tree Lighting Ceremony, etc.

Background:

This has become an annual event for Love the Square and has grown to include more than the Christmas tree lighting ceremony. Details are still being worked out but there will be Christmas carolers strolling the streets, carriage rides starting at St. Peter's Episcopal Church, the Rotary Train looping the square, hot chocolate, chili and hot dogs from the Chamber of Commerce and a Christmas pageant at the County Courthouse.

There have been similar events in the past with no noted complaints or concerns. I still have safety concerns with the carriage rides loop on the unblocked areas of Wall and Pearl Streets. The carriage ride vendor will be reminded to be aware of vehicular and pedestrian traffic in the area.

The City will stage the necessary road blockage materials in the area and the applicant has agreed to setup

and disassemble all needed materials. The cost to the city for this event will be personnel and the total will be \$263.61 in wages and equipment.

Recommendation:

Noting no complaints or concerns associated with the prior events I would recommend approval for this event as long as all State Laws, City Ordinances, and event regulations are followed. Additionally, if required, licenses for food vendors will be obtained from the Cass County Health Department.

A. Action Item (ID # 3049)

Christmas on the Square

Attachments:

Christmas on the Sq. 2017 (PDF)

SPECIAL EVENTS APPLICATION

A. **FILING PERIOD:** An application for an event permit shall be filed not less than seven (7) days prior to the meeting of the Board of Alderman at time applicant desires the issuance of a permit. Applicant must realize that, dependent upon the nature of the event and the scope of services being required of the City, the Board of Alderman may require additional time to review the permit application.

B. **CONTENTS:** The application for an event permit shall set forth the following information.

1. Organization: Love the Square
2. Name of Applicant: Happy Welch
 Address: 300 E. Pearl St. Harrisonville, MO 64701
 Phone: 816-380-8919 Cell: _____
3. Purpose of Event: Christmas activities & Mayor's Christmas Tree Lighting
4. Proposed date(s) and time(s) of Event: Dec. 8, 2017
5. Location(s) where event will be held: Pearl, Lexington, Wall, Independence
6. Anticipated crowd size: 500
7. City services requested: (Please check all that apply) Provide detailed letter for these requests.
☐ Electricity ☐ Police Protection ☐ Traffic Control ☐ Ambulance Standby
☒ Cones ☒ Barricades ☒ Street or parking lot clean up
8. Any additional information: The whole square will be used for carriage rides, Rotary train, music performances, crafts for kids, chile dinner, tours & more.

APPROVED this _____ day of _____, 20____.

Chief of Police

City Clerk

Attachment: Christmas on the Sq. 2017 (Christmas on the Square)



TO: Board of Aldermen
FROM: Marcella McCoy, Director
DATE: October 31, 2018
SUBJECT: Fiscal Year 2019 Budget

Type of Item: *Budget*

Council Bill No. 70**Ordinance No.**

**Fiscal Year 2019 Budget AN ORDINANCE ADOPTING AN OPERATING
BUDGET FOR THE CITY OF HARRISONVILLE, MISSOURI, FOR THE
FISCAL YEAR JANUARY 1, 2019 THROUGH DECEMBER 31, 2019.**

AN ORDINANCE ADOPTING AN OPERATING BUDGET FOR THE CITY OF HARRISONVILLE, MISSOURI, FOR THE FISCAL YEAR JANUARY 1, 2019 THROUGH DECEMBER 31, 2019.

Whereas, the Board of Aldermen of the City of Harrisonville, Missouri (“Board”) shall pass a budget for the Fiscal Year of 2019 (January 1, 2019 to December 31, 2019);

Whereas, the budget is to be adopted in November as required by Section 130.010 and become effective January first (1st) following the adoption date;

Whereas, the Board conducted public budget meetings on September 24, 2018 and October 8, 2018 and determined the budget amounts to be appropriated for Fiscal Year 2019;

Whereas, the Board of Aldermen after careful and due deliberation find that the presented budget is in the best interest of the City of Harrisonville and that the Board shall adopt said budget to begin January 1, 2019.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF ALDERMEN OF THE CITY OF HARRISONVILLE, MISSOURI AS FOLLOWS:

Section 1: That the annual operating budget for the City of Harrisonville, Missouri, for the fiscal year beginning January 1, 2019, and ending on December 31, 2019, a copy of which is appended hereto and made a part hereof, is hereby adopted. Maximum amounts to be expended by fund are as follows:

FUND	BUDGETED REVENUE	BUDGETED EXPENDITURES
GENERAL	\$ 9,524,570	\$ 9,524,570
PARK	547,680	547,680
COMMUNITY CENTER	2,163,960	2,163,960
EMERGENCY SERVICES	4,123,240	4,123,240
DEBT SERVICE	841,740	841,740
REFUSE	593,790	593,790
ELECTRIC	12,885,340	12,885,340
CWSS	4,881,680	4,881,680
AQUATIC CENTER	168,045	168,045
	35,730,045	35,730,045

Section 2: That the City Administrator is hereby authorized to amend the line items of the budget as needed, but in no event shall more funds be expended for any particular fund than that authorized by this budget without prior approval of the Board of Aldermen. In addition, any monies set aside for capital outlays shall not be used for any other purposes without prior approval of the Board of Aldermen.

Section 3: That this ordinance shall become effective January 1, 2019 upon its passage and approval.

Vote taken as follows:

Ayes:

Nays:

Absent:

Abstain:

Read for the first time by title only on the 5th day of November 2018. Read for the second time by title only on the _____ day of November 2018.

Brian Hasek, Mayor & Ex-Officio
Chairman of the Board of Aldermen

ATTEST:

Randall K Jones, City Clerk

APPROVED by the Mayor this _____ day of November 2018



300 E. Pearl Street, P.O. Box 367 • Tel: 816-380-8900 • Fax: 816-380-8906 • Harrisonville, MO 64701

November 5, 2018

Honorable Mayor
Members of the Board of Aldermen
City of Harrisonville

INTRODUCTION

Submitted for your consideration is the proposed Fiscal Year 2019 budget for the City of Harrisonville. The annual budget for FY 2019, as proposed, represents the administrative and financial plan for the City of Harrisonville. This budget is the product of a comprehensive team effort of the municipal organization.

Department heads submitted requests to meet the overall department responsibilities and capital requests. Departmental submissions were reviewed, streamlined, and adjusted during individual department review by the Department Director, Finance Director and City Administrator in an effort to balance financial constraints and service delivery mandates. This process has been thorough in order to maintain cost effective delivery of City services, but does not end with adoption of the budget document. The 2019 budget presents a balanced program of services and cost control measures, which will be monitored throughout the year to provide the quality programs and services important to the citizens of Harrisonville.

This document begins with an outline of the proposed Fiscal Year 2019 budget in summary. First, is presented a proposed balanced budget for the entire Fiscal Year 2019 across all funds. Next, will be an outline of each fund including request for capital purchases, objectives as proposed, and operating transfers recommended. Finally, is the detail line item report that includes actuals for 2018, 2016, & 2017 along with the 2018 adopted budget, 2018 year-to-date actuals, and proposed 2019 budget.

DISCUSSION

Harrisonville is a full service city that offers services including Police, Fire, Emergency Services (Ambulance), Streets, Storm Water Management, Airport, Solid Waste Services, Electric, Water and Sewer services along with an expansive Parks system. The following table is a summary of projected revenue compared to expenditures for each fund showing revenue equaling expenditures in each fund. The expenditures include operations and planned capital purchases presented with each division and fund. Also included are any projected increases in insurance costs, retirement costs, and other general operating costs to maintain benefits and service levels.

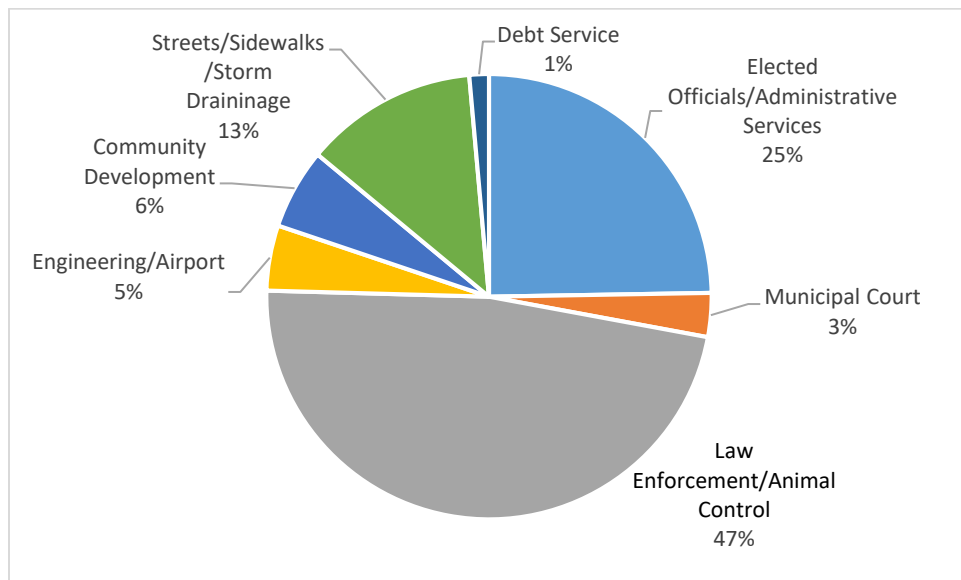
Fund	Revenue	Expenditures
General	\$ 9,524,570	\$ 9,524,570
Refuse	\$ 593,790	\$ 593,790
Electric	\$ 12,885,340	\$ 12,885,340
CWSS	\$ 4,881,680	\$ 4,881,680
Park	\$ 547,680	\$ 547,680
Aquatics	\$ 168,045	\$ 168,045
Community Center	\$ 2,163,960	\$ 2,163,960
Emergency Services	\$ 4,123,240	\$ 4,123,240
Debt Service	\$ 841,740	\$ 841,740
	\$ 35,730,045	\$ 35,730,045

The table above, presents a complete balanced budget as required by Missouri State Statute. There is projected money available in General Fund designated for capital projects and/or operating transfers as needed to other funds. The Electric and CWSS funds have sufficient operating revenues over expenses to cover capital requests. The remaining funds use fund balance or include an operating transfer from other funds to cover the shortages. The Community Center Fund now includes the Park Sales Tax that was previously presented in Fund 12, Sales Tax Fund. The Board of Alderman took action in Fiscal Year 2018 to eliminate the Sales Tax Fund that recorded collection of the Park Sales Tax and the transfer to debt service to make the Community Center bond payment. The next several pages outline individual funds showing the revenue sources and proposed expenditures.

GENERAL FUND

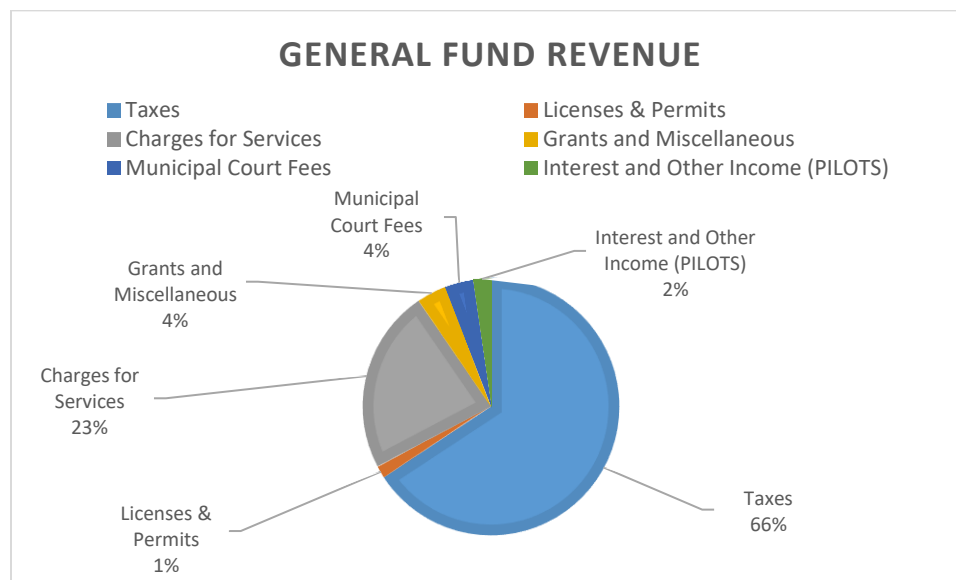
Let's begin with the General Fund, the general operating fund for the City. General Fund includes all basic operations for the City to function. Divisions are listed with the proposed expenditures for the fiscal year in the following table.

GENEARL FUND OPERATING EXPENDITURES	
Elected Officials	174,900
Administration & Legal	648,930
Finance/Customer Services/Building Maintenance/IT	918,535
Municipal Court	224,460
Law Enforcement/Dispatch/Patrol	3,084,285
Animal Control	264,430
Engineering	113,280
Community Development & Economic Development	411,880
Streets/Sidewalks/Storm Drainage	884,945
Airport	220,490
Debt Service - Towne Center TIF	100,000
Transfers Out (Operating Support)	693,040
Total Operating Expenditures	7,739,175



General Fund operations are typically covered with tax revenue. There are other revenue sources including licenses and permits, charges for services, administrative fees, court costs and fines, a small amount of interest income and the School Resource Officer funding, as well. The following table outlines the revenue sources for General Fund.

GENERAL FUND REVENUE	
Sales Taxes	\$ 2,341,400
Property Taxes	772,040
Other Taxes- Motor Fuel Tax/Road & Bridge Tax	662,855
Franchise Fees	1,590,250
Licenses & Permits	123,000
Charges for Services	180,900
Administrative Services Fee	1,710,165
Misc. Income	116,600
Intergovernmental	193,050
Municipal Court	286,550
Interest	99,320
Payment in Lieu of Taxes	84,900
Total Operating Revenues	8,161,030



The City generates more revenue than operating expenditures. The above table only includes operating revenues and does not reflect the use of fund balance needed to cover capital and transfers out. There is no current dedicated source of revenue for capital projects or equipment for operations. The additional \$421,855 revenue over expenditures is recommended to be used to fund capital projects and equipment requested. Operating transfers out include \$239,860 to the Park Fund to support our park system and \$453,180 to Emergency Services to support fire and ambulance.

Projected Capital Expenditures

The following table outlines the recommended Capital items and transfers from General Fund for capital purchases to other funds. The table lists each item or project with the projected costs. This utilizes the available revenue projection of \$421,855 plus use of fund balance in the amount of \$1,363,540.

Requested Capital			
CIP Program		Police	
Sidewalks	350,000	SIG Rifles for Detectives	7,200
Stormwater	100,000	Replace Patrol Radar	5,300
Asphalt	400,000	Replace In-Car Video	7,895
Recommended CIP	850,000	Locker Room	20,000
		Pole Camera	7,495
Streets		Crosswalk Flashers	15,000
Flood Barriers for Stockpile	10,000	Detective Vehicle	26,000
		Patrol Vehicles (2)	77,950
Airport			166,840
Main Hanger Roof	30,000		
		Community Development	
Finance		SUV- Vehicle Replacement	24,000
INCODE Software Upgrade (3yr Proj)	60,000		
City Hall Interior Improvements	33,000	Streets	
	93,000	1 Ton Dumptruck/Plow	58,555
		10 Foot Salt Spreader	12,500
			71,055
		Total Capital Equipment	261,895
Total Requested Capital Project and Equipment			1,244,895
Transfers Out for Capital Items			
Parks - Capital Equipment	27,500		
EMS - Capital Equipment	433,000		
Community Center - Capital	80,000		
Total Requested Capital Transfers Out			540,500

Fund Balance

Fiscal Year 2019 projected beginning fund balance is \$5,575,276 based upon receipt and expenditure of the revised Fiscal Year 2018 budget. The City does not currently have a formal adopted fund balance policy. The last several years the recommendation is to maintain fifty percent of operating expenditures in fund balance. To achieve this goal for 2019, the ending undesignated fund balance projection needs to be \$3,523,070. However, if we factor in six months of Park and Emergency Services with General Fund, this is not enough fund balance to meet the recommended six months as a reserve.

ENTERPRISE FUNDS

Enterprise funds are funds that operate most like a business. These funds are service-based funds and the revenue is generated by user rates. The user rates are set to be sufficient to meet all operational and debt costs for the fund. The three funds included in this section are the Refuse, Electric and CWSS Funds. The Aquatic Center Fund is also considered an Enterprise Fund, however, it is presented along with the other two Park funds.

REFUSE FUND

The Fiscal Year 2019 Refuse Fund budget is proposed as a balanced budget. In 2017, requests for proposals were completed and a new trash collection provider selected. There was an increase in the cost of each residential pickup with the award of a new contract in 2018. The 2018 budget included this increase. There is no further increase in cost projected in the 2019 Refuse Fund budget. The service provided has met expectations.

The refuse collection fee covers the cost of the contract for trash and recycle collection service, the Household Hazardous Waste program, and, beginning in 2016, the City-Wide Cleanup event. The City-Wide Cleanup event has a successful addition to the refuse services provided. In 2018, the Administrative Service Charge was recalculated with a 7.5% allocation to Refuse compared to 20% in prior years. This is based on the utility service bills including refuse, CWSS, and electric charges. The 2019 budget maintains the revised calculation for Administrative Service Charge.

The projected cash balance for year ending 2018 is \$37,778 based on 100% collection of charges included in the budget and expenditures exactly meeting budget. The 2019 proposed budget does not increase the cash reserve for the fund. Based on 50% of annual expenditures, the cash reserve balance needs to be \$296,895. It will take a significant increase in revenue over expenditures to increase the cash balance to this level. The table on the following page is a summary of revenue compared to expenses for Fiscal Year 2019.

REFUSE FUND						
Operating Revenues:						
	Charges for Services					593,540
	Misc. Income					-
	Interest					250
	Total Operating Revenues					593,790
Operating Expenditures:						
	Administrative Service Charge					29,805
	Contractual Services					563,985
	Total Operating Expenditures					593,790

ELECTRIC FUND

The 2019 Electric Fund Budget is presented as a balanced budget using \$61,410 from reserve for truck purchases and maintaining the increase in the tree trimming division for contract services for tree trimming. The trimming program is expected to increase reliability of services and reduce outages related to downed tree limbs. The 2018 Budget included a rate study that will be presented to the Board upon completion. There is no projected increase in electric sales revenue nor is there a proposed increase in electric rates.

Debt in the Electric Fund is nearly paid in full. There is a payment in 2019 of \$246,375 and the final payment in 2020 is \$261,250.

The 2019 proposed budget includes \$199,500 in capital equipment requests for trucks, transformers, lighting and cameras for the substations. These items were discussed during Budget Work Sessions with the Board of Aldermen and are included in the detail pages.

The table on the following page is a summary of revenue compared to expenses proposed for Fiscal Year 2019 including detail of capital expenses proposed.

ELECTRIC FUND				
Operating Revenues:				
	Charges for Services			12,624,880
	Misc. Income			144,050
	Interest			55,000
	Other Rev. Sources/Transfers			61,410
		Total Operating Revenues		12,885,340
Operating Expenditures:				
	Administration			11,417,510
	Distribution			684,990
	Debt Service			
	Meter Reading			27,695
	Tree Trimming			555,645
	Transfer to reserve			-
		Total Operating Expenditures		12,685,840
Capital Expenditures:				
	Office Rehab			3,500
	Transformers, Lighting, Cameras			46,000
	Replace F750 Truck with F550			50,000
	Bucket Truck Bed			100,000
	Capital Equipment			199,500
	Capital Projects			-
		Total Capital Expenditures		199,500
		Total Requirements		12,885,340
	Revenue Over(Under) Expenses			-

COMBINED WATER SEWERAGE SYSTEM

The CWSS Fund is presented as a balanced budget. Fiscal Year 2019 has no major capital projects included. There are no changes in staff levels and no proposed increase in water or sewer rates at this time. Staff will continue to monitor expenses compared to revenue throughout the year. Over the past several years there has been a trend of less water consumption with the use of more efficient appliances and through conservation measures. The following table is a history of rates. Rates have not changed since 2016.

	2016 Rates	2017 Rates	2018 Rates	2019 Rates
Water				
Base (1st 1000 Gal)	\$13.89	\$13.89	\$13.89	\$13.89
Each Additional 1000 Gal.	\$8.71	\$8.71	\$8.71	\$8.71
Sewer				
Base (1st 1000 Gal)	\$10.45	\$10.45	\$10.45	\$10.45
Each Additional 1000 Gal.	\$6.80	\$6.80	\$6.80	\$6.80

The following table is a summary of revenue compared to expenses proposed for Fiscal Year 2019 including detail of capital expenses proposed.

COMBINED WATER SEWERAGE SYSTEM FUND				
Operating Revenues:				
	Licenses & Permits			5,500
	Charges for Services			4,681,715
	Misc. Income			61,965
	Intergovernmental			-
	Interest			132,500
	Other Rev. Sources/Transfers			-
	Total Operating Revenues			4,881,680
Operating Expenditures:				
	Administration			1,030,683
	Water Plant			749,485
	Distribution			677,290
	Debt Service			1,421,637
	Wastewater Treatment Plant			735,585
	Total Operating Expenditures			4,614,680
Capital Expenditures:				
	Capital Equipment -- pump motors			32,000
	Annual Waterline replacement			100,000
	I-49 Waterline Crossing			110,000
	Sewer Plant pump replacement			25,000
	Total Capital Projects			235,000
	Total Capital Expenditures			267,000
	Total Requirements			4,881,680
	Revenue Over(Under) Expenses			-

PARK FUND

The Park Fund continues to be a “maintenance fund” with few changes from the previous (current-2018) budget year. Some of the key points are listed below:

REVENUE

- Real Estate Taxes have increased by \$3,910 over the current budget and \$6,250 increase over the current budget in total taxes.
- Recreation Programs has decreased by approximately \$4,000. With the second year of competitive baseball, the “actual participation level” is now budgeted. Expenses were reduced as well, so the overall net is close to the same. The overall sports program numbers remain the same.
- Transfer in from General Fund revenue is necessary for operations of the Park Fund (traditionally), as well as for the purchase of a Boom Mower for \$20,000, Aquatic Weed treatment for \$25,000 and \$7,500 for a Flash Cam Crime Deterrent camera for City Park. Total transfer in from the General Fund is \$256,680. This is an increase of \$7,500 over last year.

EXPENSE

- There is a decrease in the salaries line item because we did not replace a full time position (Gideon Lockett) and part of that salary percentage was coming out of Parks. The rest of the positions in maintenance remain the same.
- Other Contractual increased by \$20,024. There is a \$25,000 increase with the addition of the Aquatic Weed removal process. There is also an increase in the July 4th fireworks by \$1,000, but there is a decrease in sports contractual services, which is subtracted from this line item increase. Competitive Baseball numbers are lower with “actual participation level” revealed from the first year.
- Machinery & Equipment budget increased by \$27,500, which includes the replacement of the Boom Mower at \$20,000 and addition of the Flash Cam security camera for Parks at \$7,500.

Bottom line for the Park Fund is <0>.

The following table outlines the projected 2019 revenue compared to expenditures for the Park Fund including transfers in from General Fund.

PARK FUND					
Operating Revenues:					
	Property Taxes				183,800
	Charges for Services				27,045
	Recreation Programs				55,525
	Misc. Income				13,750
	Intergovernmental				-
	Interest				200
	Other Rev. Sources- Transfers Supporting Operations				239,860
		Total Operating Revenues			520,180
Operating Expenditures:					
	Park Maintenance				520,180
Capital Revenues: Transfers Supporting Capital					
	Total Operating and Capital Revenue				27,500
					547,680
Capital Expenditures:					
	New Boom Mower				20,000
	Flash Cam				7,500
	Capital Equipment				27,500
		Total Capital Expenditures			27,500
		Total Requirements			547,680
	Revenue Over(Under) Expenditures				-

AQUATIC CENTER FUND

The Aquatic Center Fund (Outdoor Pool) is also in a maintenance mode with little change on expenses. However, there is a recommended increase in the Family pass, from \$3 to \$4 dollars, which is the same fee as our Day Care Pass. Other fees remain the same as last year. Also, \$10,040 from the Park Board Directed Reserve is budgeted up front in order to balance this fund for 2019.

As previously stated to the Board of Alderman by staff, the Park Board Directed Reserve funding is getting towards the end, with approximately \$6,000 remaining for 2019. However, this amount may be less with the necessary repairs to the Outdoor Pool in 2018. The Aquatic Fund is dependent on good weather, along with no major maintenance issues, which is difficult to project with a 21 year old pool.

REVENUE

- Revenue is projected by looking at the last few years' average and taking into account the year to date actual. Total increase for the pool use fee is \$2,600 over last year.
- Miscellaneous Income was increased by \$5,225 with the growth of the AquaCats Swim Team and sponsorships.
- Transfer from Reserve is the same as last year at \$10,040. This is the Park Board Directed Reserve which has been used in the past to balance the budget at year end. It is placed in the proposed 2019 operational budget in order to produce a balanced budget

projection. The amount remaining in the Park Board Directed Reserve after the 2019 budget year is approximately \$6,000.

EXPENSE

- Part-time salaries increased by \$1,000 with “actual use” of lifeguards in 2018. Overtime was reduced to zero with the addition of lifeguard regular hours. Staff will work to use regular staff hours versus overtime pay.
- Utilities ran high in 2017 at approximately \$30,000. The actual was lower this year (estimated \$25,000 year end) but staff is budgeting the utilities at the same level as the 2017 actual to be safe.
- The remaining expenses are close to last year’s numbers.

Bottom line for the Aquatic Center Fund (Outdoor Pool) is <0>.

The table on the following page provides a summary of the revenue compared to expense projected for the Aquatic Center Fund.

AQUATIC CENTER FUND						
Operating Revenues:						
	Charges for Services					111,240
	Misc. Income					45,665
	Interest					1,100
	Other Rev. Sources: Transfers in Support of Operations					10,040
	Total Operating Revenues					168,045
Operating Expenditures:						
	Aquatic Center					168,045
	Total Operating Expenditures					168,045
	Revenue Over(Under) Expenses					-

COMMUNITY CENTER FUND

The Community Center Fund is also in “maintenance mode”. Membership has held steady in 2018. There is no fee increase budgeted for Fiscal Year 2019 and membership rates are consistent with the metro average for Community Centers.

REVENUE

- The Park Sales Tax is now distributed into the Community Center Fund. The Bond payment will come out of the Community Center Fund, which is \$839,830. This leaves \$182,145 going into operations, which is a consistent amount as compared to previous years.

- Annual Memberships are budgeted the same as last year, along with the entire Charge for Services category. This projection is based on YTD actual and year end projections.
- Summer Camp has increased in numbers this year and projecting a \$24,650 increase for 2019, based on 2018 actuals.
- Before and After School will increase by \$28,500, based on 2018 projections.
- Youth Volleyball will increase by \$3,900 based on growth in this program.
- Transfer from Other Funds was increased to \$80,000 with the recommendation of \$60,000 to repair the front entrance of the Community Center, and, \$20,000 for the purchase of a van or small school bus for Day Camp transportation.
- The Debt Service Fund Balance for 2019 is approximately \$240,000. As the Park Board is aware, the Fund Balance has been used in the past for emergency funds needed. However, the Fund Balance is mainly reserved to assist in the final bond payment for the Community Center, in 2022.

EXPENSE

- Personnel Services increased by \$18,860 with an increase in part-time staff from the Summer Day Camp and Before and After School Program growth. Revenues offset this increase. Salaries also increased from employee annual increases and benefits. In addition, an hourly increase is included for the Front Desk and Morning Lifeguard facility openers. No additional full-time positions were added.
- Computer Equipment has been added this year with an increase of \$1,250 over last year.
- Administrative Fee under Office Facilities and Service has increased by \$5,700 for 2019.
- Also under Other Charges is the Transfer to Debt Service. As stated above, the \$839,830 is the bond payment for the Community Center. The last payment will be in 2022.
- Capital Outlay under Administration shows \$20,000 for the Day Camp Van or Bus.
- Aquatic Center expenses are close to the same as last year.
- Recreation Programs Personnel Services (salaries) increase by \$9,215 with the addition increase in Day Camp and Before and After School programs.
- Equipment and Equipment Maintenance has some funding that can be used for accessible fitness equipment for the disabled. The exact kind of equipment will be determined by asking future users of this equipment.
- Buildings and Grounds Capital Projects shows \$60,000, which is for the repair and replacement of the front entrance of the Community Center.

Bottom line for the Community Center Fund is <0>.

The table on the following page provides a summary of proposed revenue compared to expenditures.

COMMUNITY CENTER FUND						
Operating Revenues:						
	Parks Sales Tax					1,021,975
	Charges for Services					818,650
	Recreation Programs					209,185
	Misc. Income					32,650
	Interest					1,500
	Transfer from Other Funds					-
	Transfers in Support of Operations from Debt Service Fund					-
	Total Operating Revenues					2,083,960
Capital Revenues						
	Transfer from General Fund - Capital Improvement					80,000
	Total Capital Revenues					80,000
	Revenues					2,163,960
Operating Expenditures:						
	Administration					421,255
	Aquatics Center					147,555
	Recreation Programs					230,875
	Debt Service					858,760
	Buildings & Grounds					425,515
	Total Operating Expenditures					2,083,960
Capital Expenditures:						
	Capital Equipment - replace SUV with 15 passenger Van					20,000
	Capital Projects - Front Entrance Improvement					60,000
	Total Capital Expenditures					80,000
	Total Requirements					2,163,960
	Revenue Over(Under) Expenditures					-

EMERGENCY SERVICES FUND

The Fiscal Year 2019 proposed budget for Emergency Services is presented as a balanced budget with revenue meeting expenditures with a transfer of operations from General Fund in the amount of \$453,180. This is just for operations and does not include any capital items. The requested capital items total \$433,000 and is presented as a transfer from General Fund to provide for these capital purchases.

Revenue is generated through the public safety sales tax, charges for services, and some miscellaneous income for sales of surplus equipment and educational classes offered. Expenditures are operational costs including personnel, supplies, and maintenance just to name a few.

Capital Outlay: \$433,000 is requested for capital that includes an ambulance, a lease payment on a fire truck and several other items listed in the detail pages and in the table below.

The following table provides a summary of proposed revenue compared to expenses

EMERGENCY SERVICE FUND				
Operating Revenues:				
	Sales Taxes			\$ 505,000
	Charges for Services			2,691,240
	Misc. Income			40,820
	Interest			-
	Transfer In (General Fund Operating Support)			453,180
	Total Operating Revenues			3,690,240
	Capital Revenues: Transfers Supporting Capital			433,000
	Total Operating and Capital Revenue			4,123,240
Operating Expenditures:				
	Fire and Ambulance			3,690,240
	Total Operating Expenditures			3,690,240
Capital Expenditures:				
	Type 1 Ambulance Replace M2			230,000
	Fire Truck Replace E20 (Lease Payment)			55,000
	LP15 Replace LP12			27,000
	Replace HVAC Unit (Admin Area)			35,000
	New 3" & 4" Fire Hose			10,000
	Lucus Chest Compression Device			28,000
	Bunker Gear (7) @ \$5,000 ea			35,000
	Copier (Billing Area)			8,000
	Security Cameras			5,000
	Total Capital Equipment			433,000
	Total Requirements			4,123,240
	Revenue Over(Under) Expenditures			-

DEBT SERVICE FUND

The Fiscal Year 2019 budget proposed for the Debt Service Fund is presented as a balanced budget. The Debt Service Fund currently reflects only the debt associated with the Community Center certificates of participation issued in 2012. The Community Center Fund collects the Park Sales Tax that is transferred into this fund for the annual debt payment. The following table outlines the transfers and debt payments.

DEBT SERVICE FUND					
Operating Revenues:					
	Transfer from Park Sales Tax				839,830
	Interest				1,910
	Other Rev. Sources/Transfers				-
	Total Operating Revenues				841,740
Operating Expenditures:					
	Transfer out to Community Center Fund				-
	Debt Service				841,740
	Total Operating Expenditures				841,740

ACTION REQUESTED/RECOMMENDATION

In conclusion, I thank each department director for their diligence in putting together this document. Each has presented their division and/or fund to the Board of Aldermen in order to provide a good foundation of operational responsibilities and the need for capital purchases.

At this time, the proposed budget is recommended for approval by the Board of Alderman.



TO: Board of Aldermen
FROM: Eric Patterson, Director
DATE: November 8, 2018
SUBJECT: Amendment #6 WTP Engineering Contract

Type of Item: *Amendment*

Background - This amendment #6 is to reimburse Burns & McDonnell for extra time they spent doing shop drawing reviews. The \$7,329.56 has already been deducted from Change Order #3 line 1.5 from KAT.

Staff is recommending approval of amendment #6.

Council Bill No. 71

Resolution No.

**A Resolution of the Board of Aldermen of the City of Harrisonville, Missouri
Authorizing and Directing the City Administrator to Enter into Amendment 6 on
Behalf of the City with Burns and McDonnell Engineering Company, Inc. to Make
Improvements to City Water Treatment Plant for an Amount Not to Exceed
\$7,329.56**

WHEREAS, the City of Harrisonville, Missouri ("City") has an agreement with Burns and McDonnell Engineering Company, Inc. ("Burns and McDonnell") dated January 24, 2013, to review the adequacy of the City's raw water infrastructure and the City's ability to provide quality water (the "Agreement"), and;

WHEREAS, in order to secure Missouri Dept. of Natural Resources State Revolving Loan Fund (SRF) monies for upgrades to the City's water treatment plant ("Plant"), the City is required by that agency to add the attached sixth amendment to the Agreement with Burns and McDonnell;

WHEREAS, this shall be the sixth amendment ("Amendment") to the City's Agreement with Burns and McDonnell;

WHEREAS, this Amendment will allow completion of the construction phase at a not to exceed additional cost of \$7,329.56; and

WHEREAS, the Board of Aldermen of the City upon review and consideration determine the cost of \$7,329.56 described in the Amendment to be necessary and reasonable and in the best interests of the City;

NOW, THEREFORE, Be It Resolved by the Board of Aldermen of the City of Harrisonville, Missouri as Follows:

Section 1: That the City Administrator is hereby authorized and directed to include and execute the attached Amendment #6 to the City's Agreement with Burns and McDonnell.

Section 2: That this resolution shall become effective immediately upon its passage and approval.

PASSED AND RESOLVED by the Board of Aldermen and **APPROVED** by the Mayor of the City of Harrisonville, Missouri, this 19th day of November 2018.

Brian Hasek, Mayor and Ex-Officio
Chairman of the Board of Aldermen

ATTEST:

Randy Jones, City Clerk

WITNESS my hand and seal this 19th day of November 2018



November 7, 2018

Mr. Eric Patterson, P.E.
Director of Public Works
City of Harrisonville
300 East Pearl Street
Harrisonville, Missouri 64701

Re: Water Treatment Plant Filter Rehabilitation
Additional Services for Additional Shop Drawing Reviews
BMCD PN 80935

Dear Mr. Patterson:

This letter addresses the Amendment 6 for the Contractor back charges for reviews of additional submittal and substitutions. We charged \$7,329 for this work which was deducted from the Contractor in Change Order 3.

We are available to discuss at your convenience.

Sincerely,

A handwritten signature in black ink that reads "L. Jeffrey Klein". The signature is written in a cursive, flowing style.

L. Jeffrey, Klein, P.E.
Project Manager

Attachment: 11-08-18 Additional Eng Services 110718 (Amendment #6 WTP Engineering Contract)



STAFF REPORT

TO: Board of Aldermen
FROM: Eric Patterson, Director
DATE: November 8, 2018
SUBJECT: Change Order #3 Final for the Water Treatment Plant

Type of Item: *Change Order*

The below noted modification(s) to subject Contract are directed by Owner and accepted by Contractor (any applicable attachments are specifically identified):

- Modify door hardware in Filter Building. Reference Change Request (CR) 18
- Add sample pumps to chlorine and ozone monitoring systems. Reference CR 19 - Addition of \$19,479.23 and 45 days.
- Modify drive access to coordinate with sidewalk and curb improvements under separate contract. Reference CR 20 - Addition of \$5,596.75 and 2 days.
- Add chlorine analyzer drain lines. Reference CR 21 - Addition of \$1,172.33 and 2 days.
- Deduct Engineer's review time for additional submittals - Deduct of \$7,329.56.
- Adjustment of Final Completion date to November 30th - Addition of 89 days for final payment.

Attachments: Change Request Documentation

As a result of the modification(s) described above:

The revised Contract Price is:

Original Contract Price \$ 8,189,598.11
 Total net amount of all previous Change Orders (+ or -). \$ 38,074.69 Total net
 amount of all previous variable quantity adjustments (+ or -). \$ 0 Total net amount of this
 Change Order..... (+ or -). \$ 18,918.75

Current Contract Price, including this Change Order..... \$ 8,246,591.55 The
revised Contract Time is:

Substantial Ready for
Completion Final Payment

Original Completion Date(s)..... 4/15/18 5/15/18
 Total net time adjustment* of all previous Change Orders(+ or -) 61 61 Total net time adjustment*
 of this Change Order.....(+ or -) 49 138

* Time adjustment is specified in: Working Days Calendar Days Other
Current Completion Date(s), including this Change Order 8/3/18 11/30/18

Council Bill No. 72

Resolution No.

**A Resolution of the Board of Aldermen of the City of Harrisonville, Missouri
Authorizing and Directing the City Administrator to Enter into a Change Order
Agreement on Behalf of the City with KAT Excavating, Inc. to Make Improvements
to City Water Treatment Plant for an Amount of \$18,918.75.**

WHEREAS, the City of Harrisonville ("City") previously entered into Contract No. 3252 ("Contract") with KAT Excavating, Inc. ("Contractor") to make repairs to the City Water Treatment Plant ("Plant");

WHEREAS, City staff has determined that change order #3 ("Change Order") to the Contract is necessary to properly make improvements to the Plant;

WHEREAS, the Contractor has submitted the required Change Request Documentation ("Documents");

WHEREAS, the Public Works Department reviewed the Documents and recommended sending the bids to the Board for approval;

WHEREAS, the Board of Aldermen have reviewed the Documents presented by City staff and believe it to be in the best interests of the City to approve the Change Order;

NOW THEREFORE BE IT RESOLVED BY THE HARRISONVILLE BOARD OF ALDERMEN THAT:

Section 1: The City Administrator is hereby authorized and directed to enter into the Change Order #3 Agreement on behalf of the City with KAT Excavating, Inc. to make the improvements described in the Change Order Documents for an amount of \$18,918.75.

Section 2: That this resolution shall become effective immediately upon its passage and approval.

PASSED AND RESOLVED by the Board of Aldermen and **APPROVED** by the Mayor of the City of Harrisonville, Missouri this 19th day of November 2018.

Brian Hasek, Mayor & Ex Officio

Chairman of the Board of Aldermen

ATTEST:

Randall K. Jones, City Clerk

WITNESS my hand and seal this 19th day of November 2018

CHANGE ORDER NO. 3
For Contract between Owner and Contractor

Project Name: Harrisonville WTP Improvements BMcD Project No. 80935
 Owner: City of Harrisonville Client Project No. N/A
 Contractor: KAT Excavation, Inc. Contract No. 3252

The below noted modification(s) to subject Contract are directed by Owner and accepted by Contractor (any applicable attachments are specifically identified):

- 1.1 Modify door hardware in Filter Building. Reference Change Request (CR) 18
- 1.2 Add sample pumps to chlorine and ozone monitoring systems. Reference CR 19 – Addition of \$19,479.23 and 45 days.
- 1.3 Modify drive access to coordinate with sidewalk and curb improvements under separate contract. Reference CR 20 – Addition of \$5,596.75 and 2 days.
- 1.4 Add chlorine analyzer drain lines. Reference CR 21 – Addition of \$1,172.33 and 2 days.
- 1.5 Deduct Engineer's review time for additional submittals – Deduct of \$7,329.56.
- 1.6 Adjustment of Final Completion date to November 30th – Addition of 89 days for final payment.

Attachments: Change Request Documentation

As a result of the modification(s) described above:

The revised Contract Price is:

Original Contract Price	\$ 8,189,598.11
Total net amount of all previous Change Orders	(+ or -) \$ 38,074.69
Total net amount of all previous variable quantity adjustments	(+ or -) \$ 0
Total net amount of this Change Order.....	(+ or -) \$ 18,918.75
Current Contract Price, including this Change Order.....	\$ 8,246,591.55

The revised Contract Time is:

	<u>Substantial Completion</u>	<u>Ready for Final Payment</u>
Original Completion Date(s).....	<u>4/15/18</u>	<u>5/15/18</u>
Total net time adjustment* of all previous Change Orders(+ or -)	<u>61</u>	<u>61</u>
Total net time adjustment* of this Change Order.....(+ or -)	<u>49</u>	<u>138</u>
* Time adjustment is specified in: ☐ Working Days ☒ Calendar Days ☐ Other _____		
Current Completion Date(s), including this Change Order	<u>8/3/18</u>	<u>11/30/18</u>

The price and/or time extension set forth in this Change Order is full compensation for all costs and delays, direct and indirect, incurred in connection with the conditions giving rise to this Change Order, the work specified herein, and any consequential costs, delays, or effects on unchanged work resulting therefrom.

This Change Order, when executed, constitutes a modification to the Contract and all provisions of the Contract, except as modified above and by any previous Change Orders, shall apply hereto.



01/01/2015 Form CO-2

OWNER

CONTRACTOR

By _____

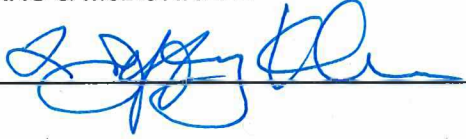
By Bart Fisher

Date _____

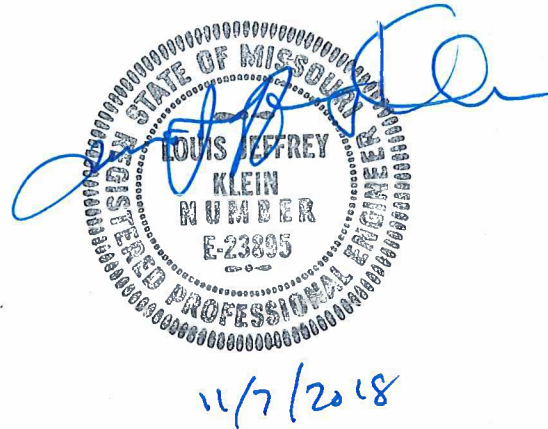
Date 11/08/2018

The conditions of the Change Order are noted for compliance and payment.

BURNS & McDONNELL

By 

Date 11/7/2018



Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

Attachment 1.1 of Change Order No. 3
Change Request 18



June 15, 2018

VIA ELECTRONIC MAIL
wtshoemaker@burnsmcd.com

Burns & McDonnell Engineering Company ("BMCD")
 9400 Ward Parkway
 Kansas City, MO 64114

Attn: Mr. Tyler Shoemaker
 Re: Harrisonville WTP Improvements
 City of Harrisonville, MO ("Owner")
 BMCD Project #: 80935 ("Project")
Change Request #18 – Door Hardware

Dear Mr. Shoemaker,

KAT Excavation, Inc. ("KAT") received a request from the Owner to price door hardware changes to the project as further detailed in the Engineer's email string, last dated June 13, 2018.

To make these change(s), KAT respectfully request a Change Order from the Owner as follows:

Item 1: Door Hardware

Cost of Work = \$985.00

- DCI = \$985.00

Subcontractor Fee = 15% = Included

Contractor Fee = 5% = \$49.25

Bond Fee = 1.5% = \$15.51

Total Request for Change = \$1,049.76

**KAT/DCI agreed to
 provide change to Owner
 at no cost on 7/30/18.**

~~**CHANGE REQUEST TOTAL: \$1,049.76**~~
DAYS TO CONTRACT: 1 Calendar Days

NOTES AND EXCLUSIONS

Notes:

1. For supporting information, please refer to Exhibit(s) 1-2, which are attached to this letter.

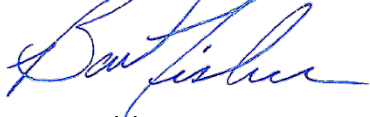
Exclusions: *None unless otherwise included in the attached exhibit(s).*

June 15, 2018

KAT will await a response from Burns & McDonnell and/or the City of Harrisonville. In the interim, if you have any questions or comments, please feel free to contact me at 816-690-4611.

Sincerely,

KAT EXCAVATION, INC.



Bart Fisher
Senior Project Manager

Cc: Mr. Steve Bailey
Mr. Troy Ailor
Mr. Eric Patterson
Mr. Ted Martin
Mr. Mike O'Keefe
(with enclosures and attachments)

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

EXHIBIT

1

From: Shoemaker, William T (Tyler)
To: [Bart Fisher](#)
Cc: [Troy Ailor](#)
Subject: Re: Harrisonville Door Hardware
Date: Wednesday, June 13, 2018 6:02:09 PM

Eric wants to replace both handles (option #1 and #2).

Tyler Shoemaker

On Jun 8, 2018, at 5:14 PM, Bart Fisher <bfisher@katexcavation.com> wrote:

Tyler,

Please review the attached, I assume this is the pricing breakout you wanted to see. I will obviously have my standard markup for this, but if you would figure out which option the Owner is wanting to go, I will formalize the Change Request with that option.

Thanks.

BART FISHER

Chief Estimator

Senior Project Manager

p: 816.690.4611 | f: 816.690.7416 | direct: 816.466.7002

KATexcavation.com

From: Dowell Construction Co. Inc. <dowellconstruction@comcast.net>
Sent: Friday, June 8, 2018 9:17 AM
To: Bart Fisher <bfisher@katexcavation.com>
Subject: Re: Harrisonville Door Hardware

Thanks,
Brent Dowell

Dowell Construction Co. Inc
316 Spring Circle, Suite B
Odessa, MO 64076
816.230.5535 Ph.
816.230.5545 Fax
816.985.4091 Cell
dowellconstruction@comcast.net

On Jun 7, 2018, at 5:50 PM, Bart Fisher <bfisher@katexcavation.com>

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

wrote:

Brent,

Did you review this based upon the options provided below? Three different prices requested.

Thanks.

BART FISHER

Chief Estimator

Senior Project Manager

p: 816.690.4611 | f: 816.690.7416 | direct: 816.466.7002

KATexcavation.com

From: Dowell Construction Co. Inc. <dowellconstruction@comcast.net>

Sent: Thursday, June 7, 2018 4:30 PM

To: Bart Fisher <bfisher@katexcavation.com>

Cc: Troy Ailor <taylor@katexcavation.com>

Subject: Re: Harrisonville Door Hardware

Thanks,
Brent Dowell

Dowell Construction Co. Inc
316 Spring Circle, Suite B
Odessa, MO 64076
816.230.5535 Ph.
816.230.5545 Fax
816.985.4091 Cell
dowellconstruction@comcast.net

On Jun 5, 2018, at 2:20 PM, Bart Fisher
<bfisher@katexcavation.com> wrote:

Brent,

Could you prepare a proposal for me regarding
the below request for the HWTP project?

Thanks.

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

BART FISHER*Chief Estimator**Senior Project Manager*

p: 816.690.4611 | f: 816.690.7416 | direct: 816.466.7002

KATexcavation.com

From: Shoemaker, William T (Tyler)
 <wtshoemaker@burnsmcd.com>
Sent: Tuesday, June 5, 2018 1:44 PM
To: Bart Fisher <bfisher@katexcavation.com>
Cc: 80935 <80935@burnsmcd.com>; Klein, Jeff
 <jklein@burnsmcd.com>
Subject: FW: Harrisonville Door Hardware

Bart,

The City would like to look at reconfiguring some of the new locksets on the doors at the plant; could you provide pricing for the following modifications:

- Option 1 – Replace hardware on door 203 with ND10S passage lock
- Option 2 – Replace hardware on door 204 with ND92PD entrance lock
- Option 3 – Swap the door hardware between doors 204 and 106 (mainly labor I would assume)

We can discuss tomorrow, if you'd like.

Thanks,

Tyler Shoemaker
 Burns & McDonnell
 Direct: 816-844-4643
wtshoemaker@burnsmcd.com
www.burnsmcd.com

From: Elliott, Haley K
Sent: Monday, June 4, 2018 3:35 PM
To: Shoemaker, William T (Tyler)
 <wtshoemaker@burnsmcd.com>
Subject: Harrisonville Door Hardware

Tyler,

Both doors 203 and 204 currently have ND80PD Storeroom

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

Lockset that requires a key to unlock.

The lockset on the closet door, door 203, could be replaced with the Schlage ND10S Passage Lock. This door just latches and doesn't have a lock.

The lockset on the door to the basement, door 204, could be replaced with Schlage ND92PD Entrance Lock. This lockset has a push/turn bottom that can be left either locked or unlocked. It is always open on the push button side and when locked can be unlocked with a key from the other side. This can either be purchased new or can be swapped out with the lock on door 106 in the Ozone Room of the new Ozone Building. Door 106 would then require a key to be used, but there is another door to the Ozone Room on the same side that could be left unlocked for ease of operator access.

Best,

Haley Elliott \ Burns & McDonnell

Assistant Architect \ Water Global Practice

o 816-605-7846

hkelliott@burnsmcd.com \ burnsmcd.com

9400 Ward Parkway \ Kansas City, MO 64114

Proud to be one of *FORTUNE*'s 100 Best Companies to Work For

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<DCI Proposal - Hardware Options.pdf>

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)



Dowell Construction Co., Inc.
316B Spring Circle
Odessa, Missouri 64076
Office: (816) 230-5535
Fax: (816) 230-5545

Door Hardware - Revision Extra Costs

Job: Harrisonville WTP

Date: 6-7-18

OPTION #1: Replace Hardware on door 203 with ND10S

Material:

ND10S	\$226
Keying	\$75
Mark-up 10%	\$30

Labor

1 Hours @ \$108.50	\$108
--------------------	-------

Total \$439

OPTION #2: Replace Hardware on door 204 with ND92PD

Material:

ND10S	\$324
Keying	\$75
Mark-up 10%	\$39

Labor

1 Hours @ \$108.50	\$108
--------------------	-------

Total \$546

OPTION #3: Swap hardware between doors 204 & 106

Labor

2 Hours @ \$108.50	\$216
--------------------	-------

Total \$216

Attachment 1.2 of Change Order No. 3
Change Request 19



July 23, 2018

VIA ELECTRONIC MAIL
wtschoemaker@burnsmcd.com

Burns & McDonnell Engineering Company ("BMCD")
 9400 Ward Parkway
 Kansas City, MO 64114

Attn: Mr. Tyler Shoemaker
 Re: Harrisonville WTP Improvements
 City of Harrisonville, MO ("Owner")
 BMCD Project #: 80935 ("Project")
Change Request #19 – ECN 006 re: Sample Pumps

Dear Mr. Shoemaker,

KAT Excavation, Inc. ("KAT") received a request to provide a proposal regarding ECN 006 from the Engineer and Owner, as shown on the attached Exhibits. To make these change(s), KAT respectfully request a Change Order from the Owner as follows:

Item 1: Equipment, Materials, and Installation

Cost of Work = \$14,306.92

- HEC x 1 LS @ \$11,150.00/LS = \$11,150.00
- Labor x 32 hours @ \$53.08/HR = \$1,698.56
- Small Tools and Equipment x 1 LS @ \$250.00/LS = \$250.00
- 12" Tapping Saddle x 1 EA @ \$155.00/EA = \$155.00
- ¾" x ½" SS Bushing x 1 EA @ \$3.00/EA = \$3.00
- ½" x Male Compression Fitting x 12 EA @ \$15.45/EA = \$185.40
- ½" Compression Tee x 4 EA @ \$35.47/EA = \$141.88
- ½" Compression Couplers x 4 EA @ \$17.67/EA = \$70.68
- ½" SS Flexible Tubing x 100 LF @ \$2.80/LF = \$280.00
- ½" PTFE Tubing x 20 LF @ \$5.00/LF = \$100.00
- ½" Sch 80 PVC x 40 LF @ \$0.31/LF = \$12.40
- ½" Sch 40 PVC Misc. fittings and glue x 1 LS @ \$60.00/LS = \$60.00
- Misc. Materials x 1 LS @ \$200.00/LS = \$200.00
- Credit 3 Solenoid Valves and Associated Wiring = (\$500.00)
- Add (1) Sludge Judge at Clarifier = \$500.00

Contractor Fee = 15% = \$2,146.04

Bond Fee = 1.5% = \$246.79

Total Request for Change = \$16,699.75

Item 2: Subcontractor Changes

Cost of Work = \$2,608.00

- Yates Electric = \$2,608.00

Subcontractor Fee = 15% = Included

Contractor Fee = 5% = \$130.40

Bond Fee = 1.5% = \$41.08

Total Request for Change = \$2,779.48

CHANGE REQUEST TOTAL: \$19,479.23
DAYS TO CONTRACT: 45 Calendar Day(s)
(from Change Order and/or Submittal Approval due to lead times)

NOTES AND EXCLUSIONS

Notes:

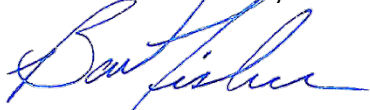
1. For supporting information, please refer to Exhibit(s) 1 - 4, which are attached to this letter.
2. **If an emailed approval is provided by Engineer or Owner for the materials supplied in this Change Request, the time extension for this change can commence upon receipt.**

Exclusions: *None unless otherwise included in the attached exhibit(s).*

KAT will await a response from Burns & McDonnell and/or the City of Harrisonville. In the interim, if you have any questions or comments, please feel free to contact me at 816-690-4611.

Sincerely,

KAT EXCAVATION, INC.



Bart Fisher

Senior Project Manager

Cc: Mr. Steve Bailey
Mr. Troy Ailor
Mr. Eric Patterson
Mr. Ted Martin
Mr. Mike O'Keefe
(with enclosures and attachments)

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

EXHIBIT 1



Engineering Change Notice

City of Harrisonville, Missouri Harrisonville WTP Improvements 80935

Notification from: Tyler Shoemaker Burns & McDonnell Issued to: Bart Fisher KAT Excavation, Inc. 309 North Oak Street Bates City, MO 64011	Engineering Change Notice: ECN 006 Initial Notification by: T. Shoemaker Date of Notification: 5/15/18 Approved by Owner: E. Patterson Date Approved by Owner: 6/12/18 Issued to Contractor by: T. Shoemaker Date Issued to Contractor: 7/11/18
Subject: 1. Add sample pumps for chlorine analyzers in the filter basement and ozone analyzer in ozone building.	
Drawing Reference: 1. P009-1 2. P013-0 3. P014-1 4. E008-3 5. E022-3 6. E023-1 7. E027-2	
Specification Reference: 1. SECTION 260519 – LOW VOLTAGE ELECTRICAL CONDUCTORS AND CABLES 2. SECTION 409635 – PROCESS CONTROL SOFTWARE PROGRAMMING AND REPORTS	
Reason for Change (Check all that apply): ☒ [x] Modify current detail or spec ☐ [] Addition to current documents	
<u>Description - Initial Notification of Issue</u> <u>Drawing Changes:</u> 1. Replace P009-1, “OZONE INJECTION P&ID” with attached P009-2. 2. Replace P013-0, YARD P&ID” with attached P013-1. 3. Replace P014-1, “FILTER P&ID SHEET 1” with attached P014-2. 4. Replace E008-3, “PANELBOARD SCHEDULES SHEET 1” with attached E008-4.	

z:\clients\wtr\harrisonvmo\80935_wtpimprov\const\admin\process\ecns\ecn006\ecn006.docx

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

5. Replace E022-3, “EXISTING FILTER BUILDING – LOWER LEVEL POWER AND CONTROLS PLANT” with attached E022-4.
6. Replace E023-1, “EXISTING FILTER BUILDING – LOWER LEVEL LIGHTING AND SMALL POWER PLAN” with attached E023-2.
7. Replace E027-2, “OZONE BUILDING LIGHTING AND SMALL POWER PLAN” with attached E027-3.

Specification Changes:

1. Modify the Cable Schedule located at the end of SECTION 260519 as follows:
 - a. Delete cable “C-FLT-S-300-01”
 - b. Delete cable “C-FLT-S-305-01”
 - c. Delete cable “C-FLT-S-310-01”
2. Replace paragraph 3.26 of SECTION 409635 with attached.
3. Modify the IO List located at the end of the of SECTION 409635 as follows:
 - a. Delete digital output (DO) tag number: “FLT-AIT-XS-300”
 - b. Delete digital output (DO) tag number: “FLT-AIT-XS-305”
 - c. Delete digital output (DO) tag number: “FLT-AIT-XS-310”

Total number of pages, including any revised drawings and specifications: 12

SECTION 409635 – Process Control Software Programming and Reports:

3.26 FINISHED WATER QUALITY (WET PANEL NO. 1):

A. System Components and Functions:

1. Chlorine Analyzer and Indicating Transmitter FLT-AIT-300.
 - a. Measures free chlorine of the combined filter effluent.
2. Chlorine Analyzer and Indicating Transmitter FLT-AIT-305.
 - a. Measures free chlorine of the combined filter effluent after sodium hypochlorite is added.
3. Chlorine Analyzer and Indicating Transmitter FLT-AIT-310.
 - a. Measures total chlorine of the finished water.
4. Clearwell Level Transmitter CLW-PIT-400.
 - a. Operates as an air bubbler system.
 - b. Measures the water level in the Clearwell based through back pressure. Readings to the operator shall be displayed in PSI and Feet (water level).
5. Turbidity Analyzer and Transmitter FLT-AIT-301.
 - a. Measures turbidity of the combined filter effluent.
6. Flow Control Solenoid:
 - ~~a. Solenoid FLT-S-300:~~
~~(1) Controlling flow from Filter 1 to analyzer FLT-AIT-300.~~
 - ~~b-a. Solenoid FLT-S-301:~~
~~(1) Controlling flow from Filter 1 to turbidimeter FLT-AIT-301.~~
 - ~~c. Solenoid FLT-S-305:~~
~~(1) Controlling flow from Filter 1 to analyzer FLT-AIT-305.~~
 - ~~d. Solenoid FLT-S-310:~~
~~(1) Controlling flow from Filter 1 to analyzer FLT-AIT-310.~~

7.

B. Description of Operation:

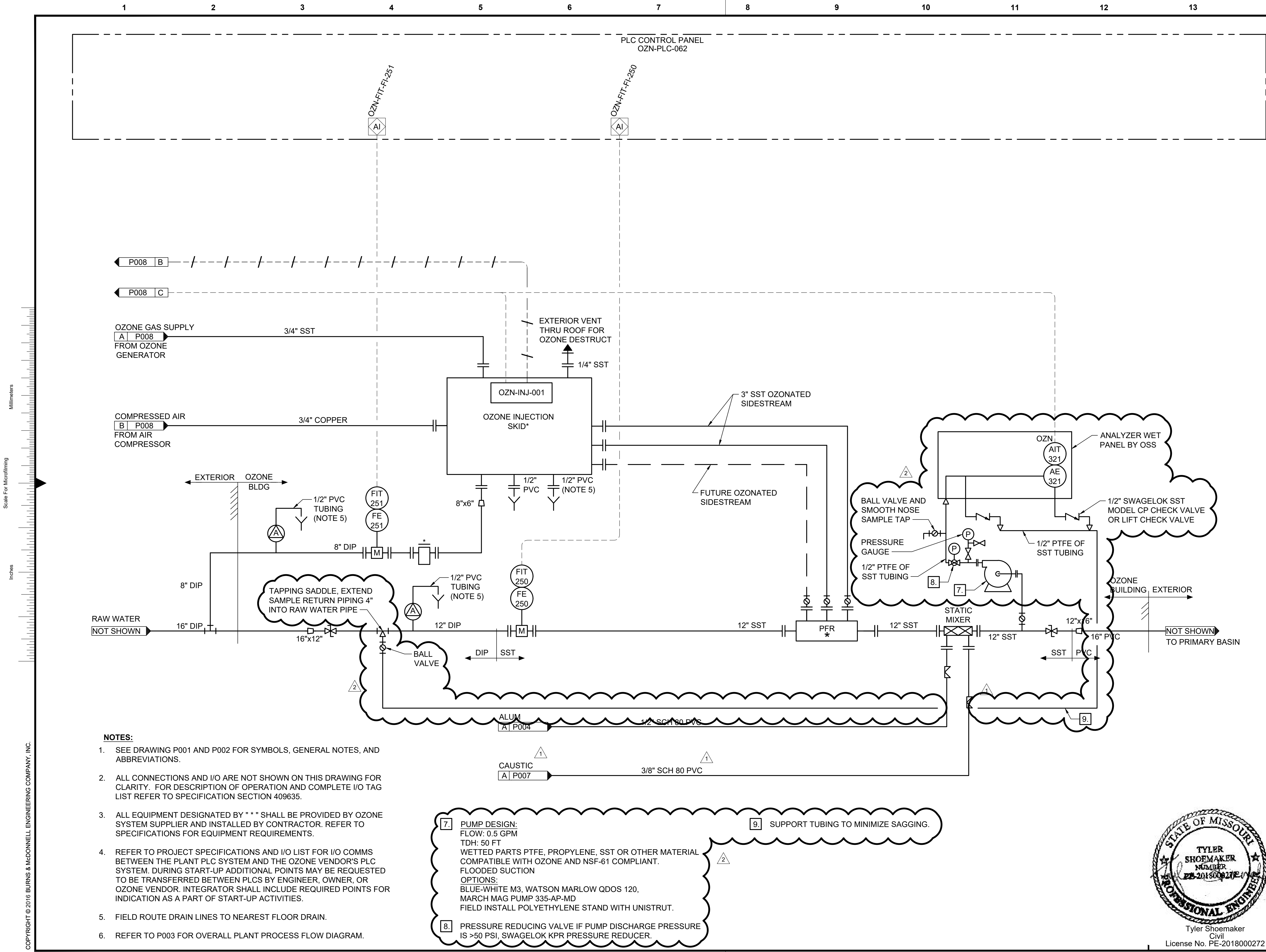
1. Filtered Effluent Chlorine Analysis:
 - a. The free chlorine residual of the combined filter effluent water shall be measured by chlorine analyzer and indicating transmitter FLT-AIT-300.
 - b. The free chlorine residual shall be displayed on the operator workstation and high, low, and loss of signal alarms shall be set.
 - c. The free chlorine residual shall be trended.
2. Filtered Effluent Chlorine Analysis:
 - a. The free chlorine residual of the combined filter effluent water shall be measured by chlorine analyzer and indicating transmitter FLT-AIT-305.
 - b. The free chlorine residual shall be displayed on the operator workstation and high, low, and loss of signal alarms shall be set.
 - c. The free chlorine residual shall be trended.
3. Finished Water Chlorine Analysis:
 - a. The total chlorine residual of the finished water shall be measured by chlorine analyzer and indicating transmitter FLT-AIT-310.
 - b. The total chlorine residual shall be displayed on the operator workstation and high, low, and loss of signal alarms shall be set.
 - c. The total chlorine residual shall be trended.
4. Clearwell Water Level:
 - a. The water level in the finished water Clearwell shall be measured by pressure indicating transmitter CLW-PIT-400.
 - b. The water level shall be displayed on the operator workstation and high, low, and loss of signal alarms shall be set.
 - c. The water level shall be trended.

SECTION 409635 – Process Control Software Programming and Reports:

5. Filtered Effluent Turbidity Analysis:
 - a. The turbidity in the combined filter effluent water shall be measured by turbidity analyzer and indicating transmitter FLT-AIT-301.
 - b. The turbidity shall be displayed on the operator workstation and high and loss of signal alarms shall be set.
 - c. The turbidity shall be trended.
 6. Solenoid controls:
 - a. ~~FLT-S-300, FLT-S-301, FLT-S-305, FLT-S-310~~ shall be closed when the filter effluent valves (FLT-VFV-212, FLT-VFV-222, FLT-VFV-232, and FLT-VFV-242) are closed. When at least one filter is put in service ~~these four (4)~~ this solenoid shall open and remain open while at least filter is in operation. When the last filter is taken out of service the solenoids shall close when the filter effluent valves are closed.
- C. Set Points and Ranges:
1. Chlorine Analyzer and Indicating Transmitter FLT-AIT-300.
 - a. Chlorine Residual transmitter with integral display.
 - b. Refer to Section 409100 for calibration ranges.
 2. Chlorine Analyzer and Indicating Transmitter FLT-AIT-305.
 - a. Chlorine Residual transmitter with integral display.
 - b. Refer to Section 409100 for calibration ranges.
 3. Chlorine Analyzer and Indicating Transmitter FLT-AIT-310.
 - a. Chlorine Residual transmitter with integral display.
 - b. Refer to Section 409100 for calibration ranges.
 4. Clearwell Level Transmitter CLW-PIT-400.
 - a. Contractor to recalibrate and match existing set points and ranges.
 5. Turbidity Analyzer and Transmitter FLT-AIT-301.
 - a. Turbidity transmitter with integral display.
 - b. Refer to Section 409100 for calibration ranges.
 6. Operator Workstation:
 - a. FLT-AIT-300:
 - (1) Display range of 0-5 mg/L for FLT-AIT-300.
 - (2) High free chlorine residual alarm adjustable between 0-5.0 mg/L initially set at 4 mg/L.
 - (3) Low free chlorine residual alarm adjustable between 0-5.0 mg/L initially set at 1 mg/L.
 - b. FLT-AIT-305:
 - (1) Display range of 0-5 mg/L for FLT-AIT-305.
 - (2) High free chlorine residual alarm adjustable between 0-5.0 mg/L initially set at 4 mg/L.
 - (3) Low free chlorine residual alarm adjustable between 0-5.0 mg/L initially set at 1 mg/L.
 - c. FLT-AIT-310:
 - (1) Display range of 0-5 mg/L for FLT-AIT-310.
 - (2) High total chlorine residual alarm adjustable between 0-5.0 mg/L initially set at 4 mg/L.
 - (3) Low total chlorine residual alarm adjustable between 0-5.0 mg/L initially set at 2 mg/L.
 - d. CLW-PIT-400:
 - (1) Display range of 0-13 ft for CLW-PIT-400.
 - (2) High level alarm adjustable between 6-13 ft initially set at 9.25 ft.
 - (3) Low level alarm adjustable between 0-6 ft initially set at 2 ft.

SECTION 409635 – Process Control Software Programming and Reports:

- e. Display range of 0-5 NTU for FLT-AIT-301.
 - f. High NTU alarm adjustable between 0.1-0.3 mg/L initially set at 0.1 mg/L.
- D. System Upsets and Procedures for Recovery:
 - 1. If the free chlorine residual, turbidity, or level signals are lost, the control system shall alarm the operator via the operator workstation.



no.	date	by	ckd	description
0	5/18/16	WTS	MJO	ISSUED FOR BID
	11/11/16	WTS		ISSUED FOR CONSTRUCTION
1	6/7/17	RLD	MJO	ISSUED PER ECN 003
2	7/05/18	MJC		REVISED PER ECN 006
	7/11/18	RLD	DLB	ISSUED PER ECN 006



9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 000165

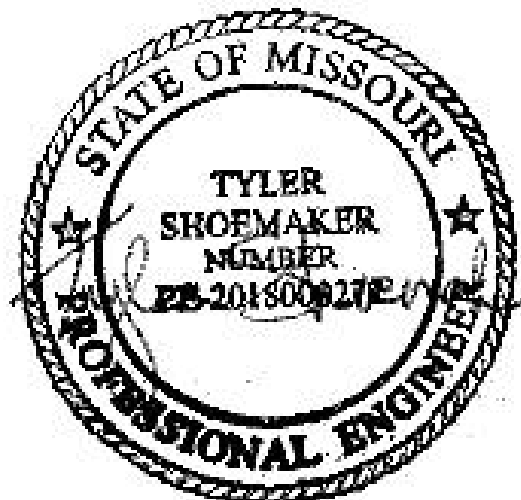
date MAY 20, 2015	detailed W. PYLE
designed T. SHOEMAKER	checked M. O'CONNELL



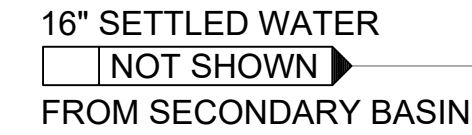
Cass County, Missouri

**HARRISONVILLE WTP
IMPROVEMENTS**
OZONE INJECTION P&ID

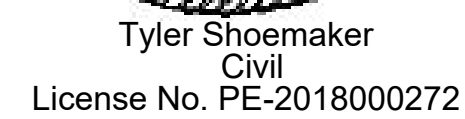
project 80935	contract
drawing P009	rev. 2
sheet file 80935_P009.DWG	of sheets



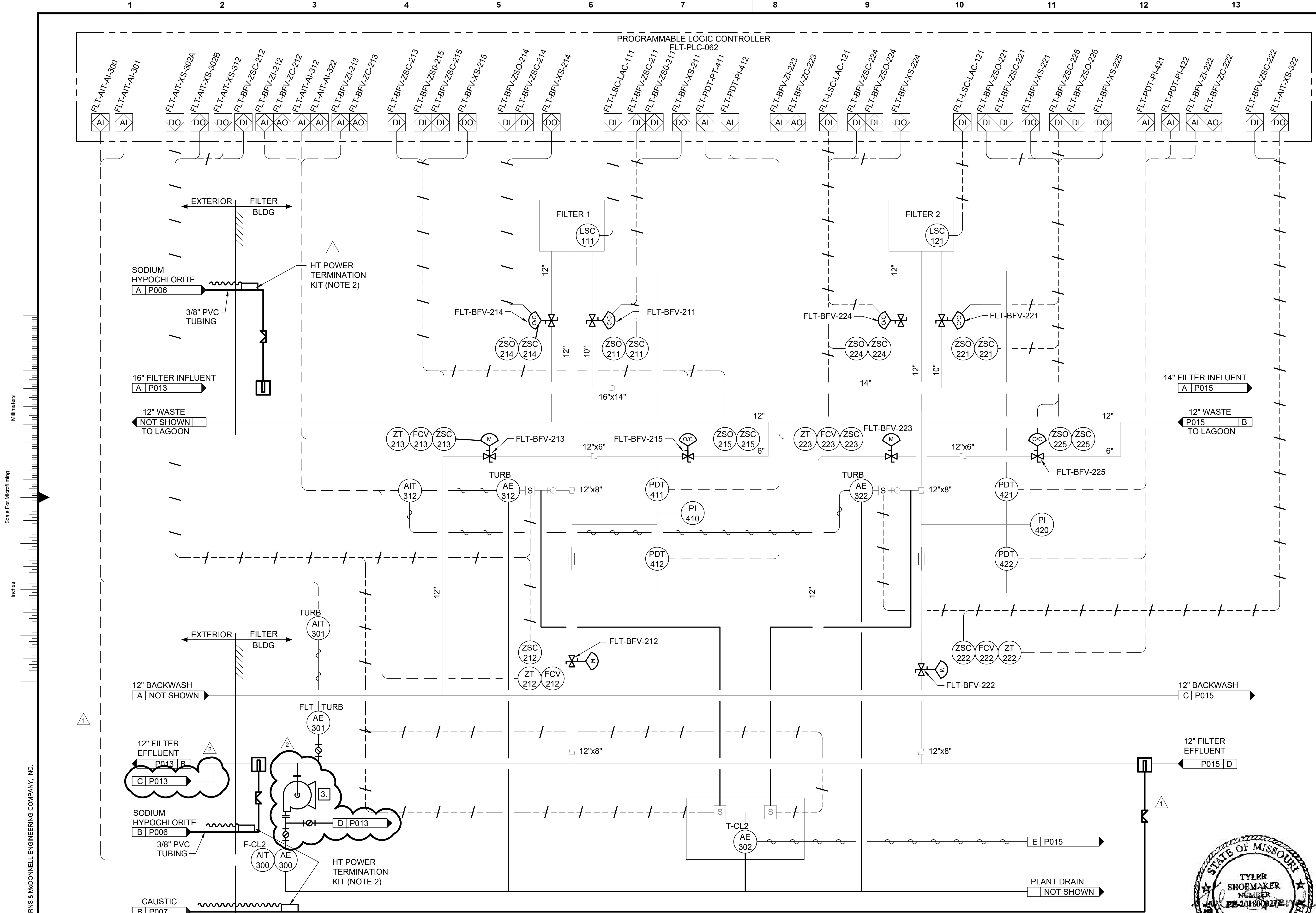
Tyler Shoemaker
Civil
License No. PE-2018000272



5. PUMP DESIGN (2 TYPICAL): 
FLOW: 85 GPD
STENNER PERISTALTIC MODEL 85MP5 OR APPROVED EQUAL,
WETTED PARTS NSF-61 COMPLIANT
FIELD INSTALL POLYETHYLENE STAND AND UNISTRUT.



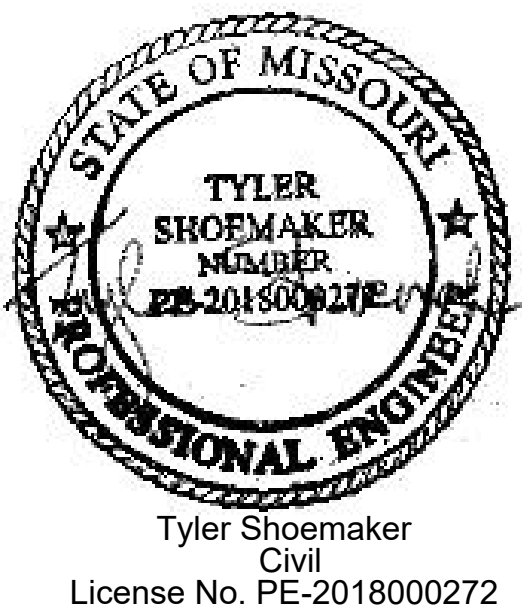
 City of Harrisonville Missouri	
Cass County, Missouri	
HARRISONVILLE WTP IMPROVEMENTS YARD P&ID	
project 80935	contract
drawing P013 — 1	rev.
sheet file 80935	of P013.DWG
sheets	



NOTES:

- COMPRESSED AIR PIPING NOT SHOWN FOR CLARITY. SEE P001 AND "M" DWGS FOR COMPRESSED AIR CONNECTIONS AND ROUTING.
- EXTERIOR PIPING SHALL BE INSULATED, HEAT-TRACED CHEMICAL TUBING BUNDLE. INSTALL TERMINATION KIT ON INTERIOR SIDE OF EXTERIOR/INTERIOR INTERFACE. TERMINATE AS SPECIFIED AND PER ELECTRICAL DRAWING AND MANUFACTURER RECOMMENDATIONS.

- PUMP DESIGN:
FLOW: 85 GPD
STENNER PERISTALTIC MODEL 85MP5 OR APPROVED EQUAL
WETTED PARTS NSF-61 COMPLIANT
FIELD INSTALL POLYETHYLENE STAND WITH UNISTRUT.



no.	date	by	ckd	description
0	5/18/16	WTS	MJO	ISSUED FOR BID
	11/11/16	WTS		ISSUED FOR CONSTRUCTION
1	6/30/17	RLD	MJO	ISSUED PER ECN 003
2	7/05/18	MJC		REVISED PER ECN 006
	7/11/18	WTS	DLB	ISSUED PER ECN 006



9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 000165

date	NOVEMBER 29, 2015	detailed	W. PYLE
designed	T. SHOEMAKER	checked	M. O'CONNELL



Cass County, Missouri

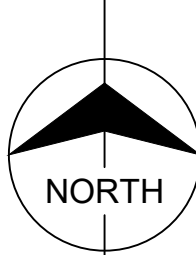
**HARRISONVILLE WTP
IMPROVEMENTS**
FILTER P&ID SHEET 1

project	80935	contract	
drawing	P014	rev.	2
sheet	of	sheets	
file	80935_P014.DWG		

Millimeters
Inches
Scale For Microfinning

1		2		3		4		5		6	
PANEL BOARD FLT-PNL-020 2 480/277 VOLTS 3 PHASE 4 WIRE 250 AMP. MAINS											
△ 5 225 AMP. MAIN BKR. 65,000 SYM. A.I.C. MIN. WALL MOUNTED											
POLE NO.	CIRCUIT NO.	TRIP AMPS	WIRE SIZE	LOAD SERVED	LOAD - VA Ø A Ø B Ø C	POLE NO.	CIRCUIT NO.	TRIP AMPS	WIRE SIZE	LOAD SERVED	
1	-	20	-	SPARE	17946	2	-	175	2/0	PANEL L1 XFR FLT-XFR-040	
3	-	20	-	SPARE	16180	4	-	20	-	SPARE	
5	-	20	-	SPARE	13914	6	-	20	-	SPARE	
7	-	20	-	SPARE	4430	8	-	20	12	AIR COMPRESSOR (ON TANK) FLT-AC-081	
9	-	20	-	SPARE	4430	10	-	20	-	SPARE	
11	-	20	-	SPARE	4430	12	-	20	-	SPARE	
13	13	20	12	AIR COMPRESSOR (ON FLOOR) FLT-AC-082	4430 5152	14	14	30	10	EAST UPSTAIRS HEATER, FLT-EUH-082	
15	-	20	-	SPARE	4430 5152	16	-	20	-	SPARE	
17	-	20	-	SPARE	4430 5152	18	-	20	-	SPARE	
19	19	30	10	LOWER LEVEL HEAT, FLT-EUH-081	6666 4300	20	20	20	10	ROOFTOP UNIT - FLT-RTU-081	
21	-	20	-	SPARE	6666 4300	22	-	20	-	SPARE	
23	-	20	-	SPARE	6666 4300	24	-	20	-	SPARE	
25	-	20	-	SPARE	-	26	-	-	-	SPACE	
27	-	20	-	SPARE	-	28	-	-	-	SPACE	
29	-	20	-	SPARE	-	30	-	-	-	SPACE	
31	-	20	-	SPARE	-	32	-	-	-	SPACE	
33	-	20	-	SPARE	-	34	-	-	-	SPACE	
35	-	20	-	SPARE	-	36	-	-	-	SPACE	
37	-	-	-	SPACE	-	38	-	20	-	SPACE	
39	-	-	-	SPACE	-	40	-	20	-	SPACE	
41	-	-	-	SPACE	-	42	-	20	-	SPACE	
TOTAL CONNECTED LOAD: 155.0 AMPS (MAX Ø) 123.0 KVA △ 1 △ 3					429244115838892						

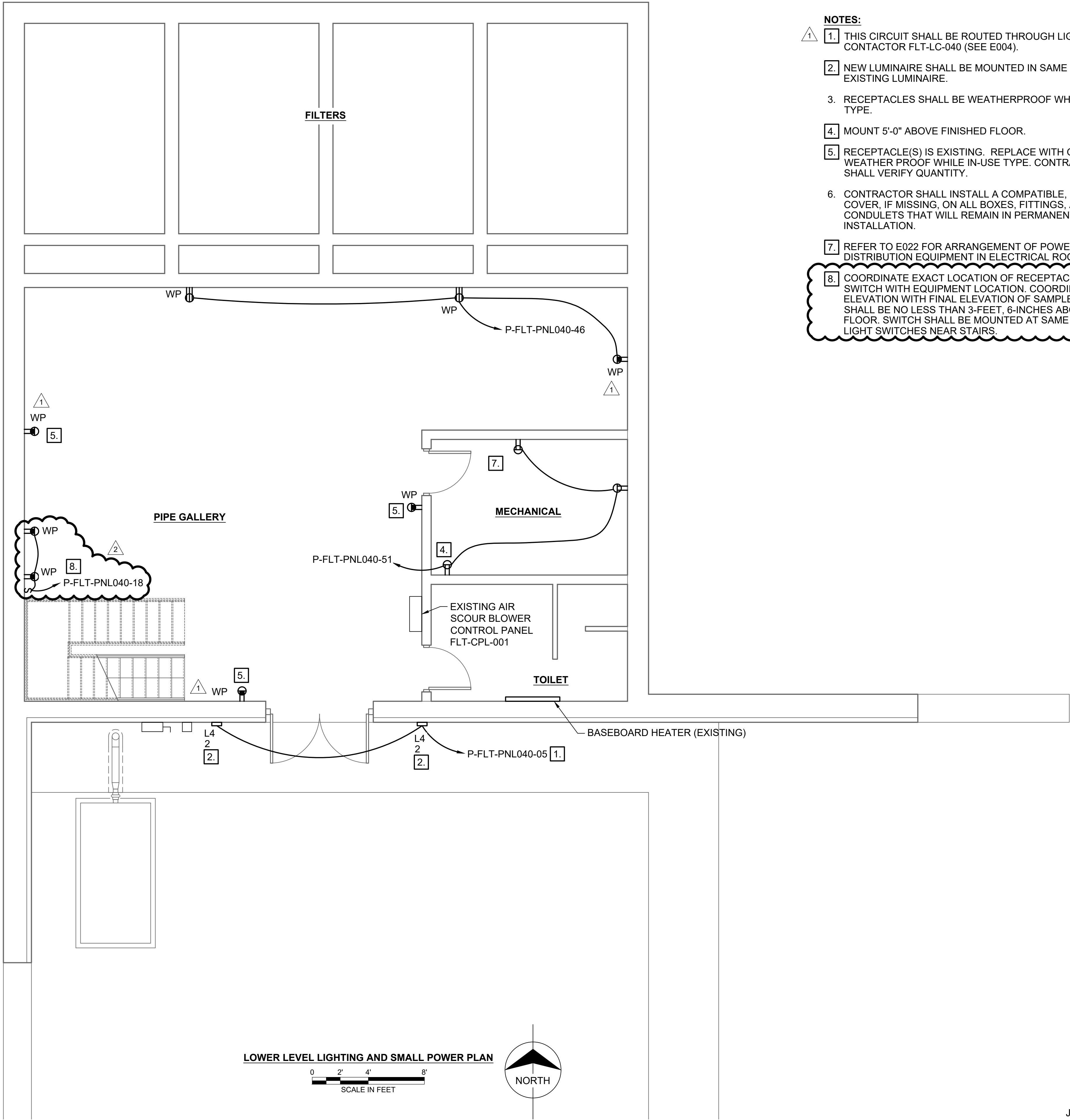
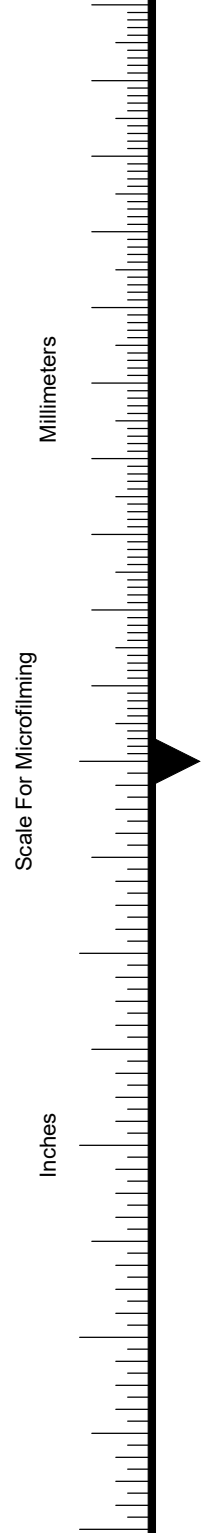
PANEL BOARD FLT-PNL-040 1 208Y/120 VOLTS 3 PHASE 4 WIRE 225 AMP. MAINS											
225 AMP. MAIN BKR. 22,000 SYM. A.I.C. MIN. WALL MOUNTED											
POLE NO.	CIRCUIT NO.	TRIP AMPS	WIRE SIZE	LOAD SERVED	LOAD - VA Ø A Ø B Ø C	POLE NO.	CIRCUIT NO.	TRIP AMPS	WIRE SIZE	LOAD SERVED	
1	1	20	12	LIGHTING - FILTER AREA	420	2	-	20	-	SPARE	
3	3	20	-	BASEMENT LIGHTS	1000	4	-	20	-	SPARE	
5	5	20	12	LIGHTING - EXTERIOR	184	6	-	20	-	SPARE	
7	-	20	-	SPARE	-	8	-	30	-	SPARE	
9	9	20	12	BASEMENT LIGHTS	1000	10	-	30	-	SPARE	
11	11	20	12	BASEMENT LIGHTS	1000 1080	12	12	20	1	BASEMENT RECEPTACLES	
13	13	20	12	FLT-PLC-062	1650 600	14	14	20	10	LIGHTING - PUMP HOUSE YARD	
15	-	20	-	SPARE	-	16	16	20	-	EXHAUST FANS UPPER & LOWER LEV.	
17	-	20	-	SPARE	-	18	18	20	12	SAMPLE PUMP RECEPTACLE	
19	-	20	-	SPARE	-	20	-	20	-	SPARE	
21	-	20	-	SPACE	-	22	-	20	-	SPACE	
23	23	20	12	LIGHTING - OPERATOR AREA	870 500	24	24	20	-	BATHROOM LIGHT & RECEPT.	
25	25	20	12	LIGHTING - STAIRS	86 750	26	26	20	-	MECHANICAL ROOM LIGHTS	
27	-	20	-	SPARE	-	28	28	20	-	SLUDGE MANHOLE HEATER	
29	-	-	-	SPACE	1440	30	-	20	-	SPACE	
31	-	-	-	SPACE	-	32	32	20	-	BATHROOM HEATER	
33	-	-	-	SPACE	2000	34	-	20	-	SPACE	
35	35	20	12	RECEP - UPSTAIRS FILTER AREA	2000	36	36	50	6	WATER HEATER, FLT-WH-081	
37	37	20	12	RECEP - UPSTAIRS WORKSTATIONS	1000 4500	38	-	20	-	SPACE	
39	39	20	12	RECEP - REFRIDGERATOR	1800 180	40	40	20	12	RECEP - MICROWAVE	
41	41	20	12	RECEP - KITCHEN COUNTERTOP	360 720	42	42	20	12	RECEP - SE OPERATORS AREA	
43	43	20	12	RECEP - SOUTH WALL	540	44	44	20	8	GATE OPERATOR WTP-GOP-002	
45	45	20	12	RECEP - LAB	1620 900	46	46	20	12	RECEP - FILTER GALLERY	
47	47	20	12	RECEP - LAB	-	48	-	20	-	SPACE	
49	49	20	12	RECEP - LAB FRIDGE	1800 4500	50	50	20	12	FLT-CMS-082	
51	51	20	12	RECEP - MECHANICAL ROOM	540 4500	52	-	30	-	SPACE	
53	53	30	10	CAUSTIC FEED LINE HEAT TRACE	1100	54	-	30	-	SPACE	
55	55	20	12	CAU-HTP-001	100	56	-	30	-	SPACE	
57	57	20	12	HYP-HTP-001	100 1100	58	58	30	10	HYPO FEED LINE HT	
59	-	-	-	SPACE	-	60	60	30	10	HYPO FEED LINE HT	
MAX PHASE CONNECTED LOAD: 150 AMPS (MAX Ø) 48.8 KVA △ 2 △ 4 △ 1					179461618014726						



- | no. | date | by | ckd | description |
|-----|----------|-----|-----|--------------------------------|
| 0 | 5/18/16 | JMS | ST | ISSUED FOR BID |
| 1 | 9/12/16 | JMS | ST | ISSUED FOR
ADDENDUM NO. 003 |
| | 11/11/16 | JMS | ST | ISSUED FOR
CONSTRUCTION |
| 2 | 6/23/17 | AMG | JMS | REVISED PER
ECN003 |
| 3 | 9/24/17 | JMS | CSH | REVISED PER
ECN005 |
| 4 | 7/11/18 | JMS | CAB | REVISED PER
ECN006 |

file 80935 E022.DWG

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- NOTES:**
1. THIS CIRCUIT SHALL BE ROUTED THROUGH LIGHTING CONTACTOR FLT-LC-040 (SEE E004).
 2. NEW LUMINAIRE SHALL BE MOUNTED IN SAME LOCATION AS EXISTING LUMINAIRE.
 3. RECEPTACLES SHALL BE WEATHERPROOF WHILE-IN-USE TYPE.
 4. MOUNT 5'-0" ABOVE FINISHED FLOOR.
 5. RECEPTACLE(S) IS EXISTING. REPLACE WITH GFCI WEATHER PROOF WHILE IN-USE TYPE. CONTRACTOR SHALL VERIFY QUANTITY.
 6. CONTRACTOR SHALL INSTALL A COMPATIBLE, LISTED COVER, IF MISSING, ON ALL BOXES, FITTINGS, AND CONDULETS THAT WILL REMAIN IN PERMANENT INSTALLATION.
 7. REFER TO E022 FOR ARRANGEMENT OF POWER DISTRIBUTION EQUIPMENT IN ELECTRICAL ROOM.
 8. COORDINATE EXACT LOCATION OF RECEPTACLES AND SWITCH WITH EQUIPMENT LOCATION. COORDINATE ELEVATION WITH FINAL ELEVATION OF SAMPLE PUMPS, BUT SHALL BE NO LESS THAN 3-FEET, 6-INCHES ABOVE FINISHED FLOOR. SWITCH SHALL BE MOUNTED AT SAME HEIGHT AS LIGHT SWITCHES NEAR STAIRS.

no.	date	by	ckd	description
0	5/18/16	JMS	ST	ISSUED FOR BID
1	9/12/16	JMS	ST	ISSUED FOR ADDENDUM NO. 003
	11/11/16	JMS	ST	ISSUED FOR CONSTRUCTION
2	7/11/18	JMS	CAB	REVISED PER ECN006



9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 000165

date	OCTOBER 8, 2015	detailed	R. BRUNER
designed	J. SCHAEFER	checked	R. KILLEEN

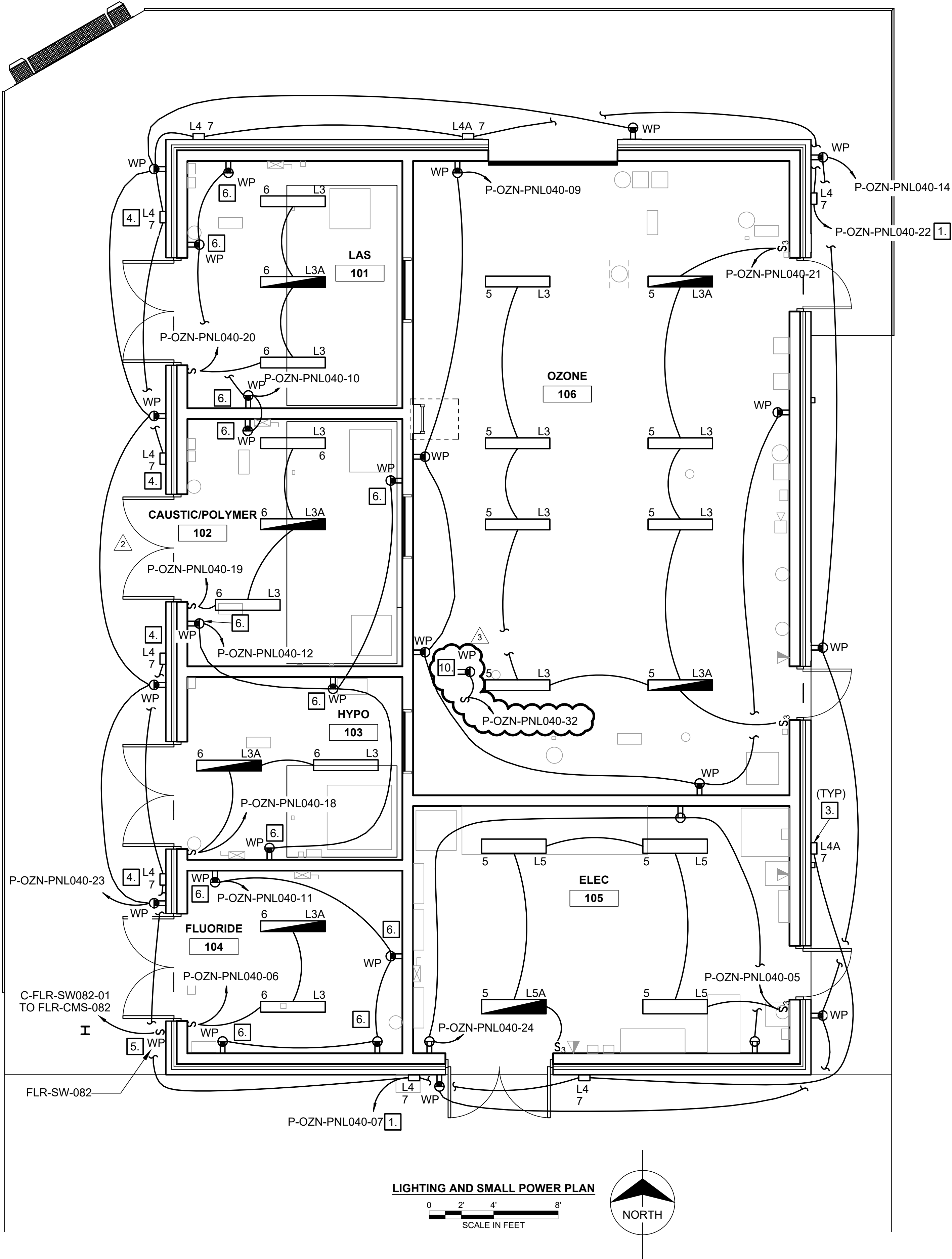
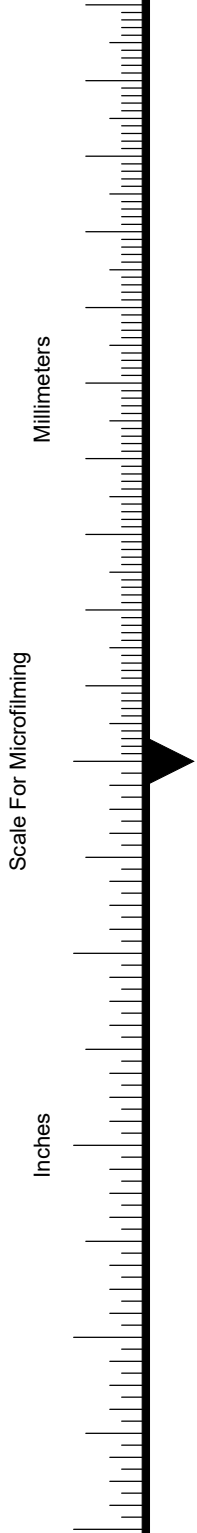


Cass County, Missouri

HARRISONVILLE WTP IMPROVEMENTS

EXISTING FILTER BUILDING - LOWER LEVEL LIGHTING AND SMALL POWER PLAN			
project	80935	contract	
drawing	E023 - 2		rev.
sheet	of	sheets	
file	80935 E023.DWG		

JOSEPH M. SCHAEFER
ELECTRICAL
PE-2014000079



- NOTES:**
- THIS CIRCUITS SHALL BE ROUTED THROUGH LIGHTING CONTACTOR OZN-LC-040 (SEE E044).
 - ALL LUMINAIRES IN THIS BUILDING ARE MOUNTED TO BOTTOM OF PRECAST DOUBLETEES. COORDINATE LUMINAIRE LOCATIONS WITH PRECAST MANUFACTURER TO PREVENT DAMAGE DURING INSTALLATION. REFER TO NOTES ON DRAWING S013.
 - MOUNT LUMINAIRE AT 10'-0" AFF UNLESS OTHERWISE NOTED. LUMINAIRE MOUNTING HEIGHTS ARE TO BOTTOM OF FIXTURE.
 - MOUNT LUMINAIRES ON WEST SIDE OF BUILDING AT 7' 6" AFF. LUMINAIRE MOUNTING HIGHTS ARE TO BOTTOM OF FIXTURE.
 - WEATHERPROOF SWITCH TO BE INSTALLED OUTSIDE OF DOOR AND WIRED TO FLR-CMS-082. SWITCH TO BE USED AS AN OCCUPANCY SWITCH TO ACTIVATE HVAC PRIOR TO ENTERING SPACE. REFER TO E047.
 - MOUNT RECEPTACLE 4'-0" ABOVE FINISHED FLOOR.
 - NO WIRING OR CONDUIT SHALL PENETRATE WALL OR SLAB OF CONTAINMENT AREAS.
 - ALL AREAS ON THIS DRAWING ARE DAMP AREAS. WATERPROOF CONDUIT HUBS SHALL BE USED.
 - ALL INTEGRAL FIXTURE EMERGENCY BATTERY PACKS SHALL BE CONNECTED TO AN UNSWITCHED LEG ON SAME CIRCUIT.
 - COORDINATE EXACT LOCATION OF RECEPTACLE WITH PLACEMENT OF NEW SAMPLE PUMP. MOUNT RECEPTACLE ON VERTICAL STRUT, MINIMUM OF 24-INCHES ABOVE FINISHED FLOOR. CONDUIT ROUTED TO RECEPTACLE SHALL NOT OBSTRUCT WALKWAYS OR ACCESS.

no.	date	by	ckd	description
0	5/18/16	JMS	RK	ISSUED FOR BID
1	9/12/16	JMS	ST	ISSUED FOR ADDENDUM NO. 003
	11/11/16	JMS	ST	ISSUED FOR CONSTRUCTION
2	6/23/17	AMG	JMS	REVISED PER ECN003
3	7/11/18	JMS	CAB	REVISED PER ECN006

9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 000165

date OCTOBER 8, 2015	detailed R. BRUNER
designed J. SCHAEFER	checked R. KILLEEN

Cass County, Missouri

HARRISONVILLE WTP IMPROVEMENTS

OZONE BUILDING LIGHTING AND SMALL POWER PLAN

project 80935	contract
drawing E027	rev. 3
sheet file 80935 E027-ECN006.DWG	of sheets

15725 Pflumm Road
 Olathe, Kansas 66062
 Phone: 913-782-4962
 Fax: 913-782-5894
 Web: www.haynesequip.com
 Email: jbellerive@haynesequip.com



July 20, 2018

EXHIBIT
2

TO: KAT – Bart Fisher

RE: Harrisonville, MO WTP – ECN 006

Dear Bart:

Haynes Equipment Company is pleased to offer the following equipment to insert sample pumps into the ozone system per ECN 006:

Qty	Description
(1)	Blue-White M3 Peristaltic Metering Pump (M-324-NKL)
(2)	Spare tubes
(1)	Quick Disconnect Valve Kit for M3
(2)	Stainless steel pump brackets for M3 mounting
(1)	Unistrut frames for mounting for floor mounting of SS pump brackets
(2)	½" Sch. 80 PVC Ball Valves
(2)	½" Sch. 80 PVC Unions
(2)	½" Sch. 80 PVC Ball Valves for gauge
(1)	¼" NPT Pressure Gauges 0-100 psi; glycerin filled
(2)	½" True Union Ball Check Valves SST (Swagelok CP)
(1)	½" Pressure Reducing Valves (Swagelok KPR)
(4)	Stenner classic series Santoprene model
(2)	½" True Union Sch. 80 PVC Ball check valves

Startup and Freight Included

NOT INCLUDED:

Pump starter panel (not needed with M3 pumps at 120V), tapping saddle, analyzer, analyzer wet panel, piping, tubing, fittings switches, installation, installation supervision, etc.

TOTAL ADDER: \$ 11,150.00

Estimated Delivery Time:

Approximately 6 weeks after submittal approval and change order execution.

If you have any questions concerning this project, please don't hesitate to contact me.

Best Regards,
 HAYNES EQUIPMENT COMPANY, INC.
 James Bellerive

"IF WE SUPPLY IT, WE MAKE IT WORK!"

Harrisonville, MO WTP Improvements

Submittal

EXHIBIT**3**

**Blue-White M3 Peristaltic Pumps
Stenner Classic Series Santoprene
Chemtrol Ball Valves
Griffco Gauges
Swagelok Check Valve
Swagelok Pressure Reducing Valve
Stainless Steel Pump Brackets**

CONTRACTOR:

**KAT Excavation, Inc.
309 N. Oak Street
Bates City, MO 64011**

ENGINEER:

**Burns and McDonnell
9400 Ward Parkway
Kansas City, MO 64114**

MANUFACTURER'S REP.:

**HAYNES EQUIPMENT COMPANY, INC
15725 PFLUMM ROAD
OLATHE, KS 66062**

Job # 217-2297

**July 2018
REV 1**

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

FLEX-PRO® M-3 & M-4

10,000:1 Turndown ratio
Tube Failure Detection
Revolution Count Display & Alarm
Brushless DC Motor
NEMA 4X (IP 66) Washdown
NSF Listed Std. 61
5 Year Warranty



Model M-324-MNK

Model M-424-BNL

Sold and serviced exclusively by highly skilled, factory authorized technicians.



NEMA 4X

Patents: 4,496,295, 7,001,153, 8,418,364 and other patents pending

Applications:

- Municipal Water Treatment
- Municipal Wastewater Treatment
- Chemical Metering
- Chlorination
- Chloramination
- Fluoridation
- Polymer Injection
- Acid Injection
- Alum Injection
- PAC Injection
- Caustic Injection

Features:

- Peristaltic pump design does not have valves that can clog requiring maintenance.
- Self priming - even against maximum line pressure. By-pass valves are not required. Cannot vapor lock or lose prime.
- Output rates to: 158.5 GPH (600 LPH) and pressures to 125 PSI (8.6 Bar).
- 10,000:1 turndown ratio with high resolution motor speed adjustment.
- No maintenance brushless variable speed motor.
- Specially engineered tubing for long life at high pressures.
- Patented Tube Failure Detection (TFD) system. Senses tube failure by detecting chemical in the pump head. No false triggering from condensation or washdown.
- Control Inputs include: 4-20mA, 0-10Vdc, and Pulse inputs for remote external speed or batch control and 0-30 VDC / contact closure remote start/stop.
- Revolution count display with user programmable alarm set-point for tube maintenance.
- VGA Graphic multi-color backlit LCD displays remote/local control status, motor speed, output rate, input signal values, service and alarm status in three easy to see colors.
- Outputs include: Scalable 4-20mA or pulse, one 250V/6A relay and three 115V/1A contact closures assignable to monitor various pump functions including TFD, FVS, revolution counter, remote/local, forward/reverse, input signals, output signals, motor on, motor fault, operating mode setting, and others.
- Two CNC precision machined squeeze rollers and two alignment rollers provide factory calibrated optimum squeeze for unparalleled accuracy and extra long tube life.
- Heavy duty rotor - single piece plastic rotor means no flexing and increased accuracy with no metal springs or hinges to corrode.
- Inject at maximum pressure in either direction (clockwise or counter clockwise).
- Compatible with Blue-White's output Flow Verification Sensor (FVS) system.

Engineering and Technical Data

Engineering Specifications:

Maximum working pressure (excluding pump tubes):

125 psig (8.6 bar)

Note: see individual pump tube assembly maximum pressure ratings.

Maximum Fluid temperature (excluding pump tubes):

3/8" OD x 1/4" ID tubing connections: 130°F (54°C)

M/NPT connections: 185°F (85°C)

Note: see individual pump tube assembly maximum temperature ratings.

Ambient Operating Temperature

14°F to 115°F (-10°C to 46°C)

Ambient Storage Temperature

-40°F to 158°F (-40°C to 70°C)

Operating Voltage:

M-3 MODELS: 96 to 264VAC-50/60Hz, 220 VA

M-4 MODELS: 96 to 264VAC-50/60Hz, 350 VA

Power Cord Options:

115V60Hz = NEMA 5/15 (USA)

230V60Hz = NEMA 6/15 (USA)

220V50Hz = CEE 7/VII (EU)

240V50Hz = AS 3112 (Australia/New Zealand)

Enclosure:

NEMA 4X (IP66), Polyester powder coated aluminum.

Maximum Overall Dimensions:

M-3 models: 8-1/8"W x 10-3/4"H x 15-1/4"D (20.6W x 27.3H x 38.9D cm)

M-4 models: 12-1/8"W x 14-1/4"H x 18-5/8"D (30.8W x 36.1H x 47.3D cm)

Approximate shipping wt:

M-3 models: 33 lb. (15.0 Kg)

M-4 models: 58 lb. (26.3 Kg)

Motor:

Brushless DC, 1/4 H.P.

Motor speed adjustment range

10,000:1 (0.001% - 100% motor speed)

Motor speed adjustment resolution

0.1% increments > 10% motor speed

0.01% increments > 1% motor speed and < 10%

0.001% increments < 1% motor speed

Maximum viscosity

12,000 Centipoise

Maximum suction lift:

30 ft. Water, 0 psig (4.5 m, 0 bar)

Display

3 color VGA backlit LCD, UV resistant.

Display resolution

0.0 > 10% motor speed

0.00 > 1% motor speed and < 10%

0.000 < 1% motor speed

Display languages

English, Spanish, French or German selectable.

Keypad

Eleven button positive action tactile switch keypad.

Security

Programmable 4-digit password.

Materials of Construction:

Wetted components:

Pump Tube Assembly (Model Specific - 2 provided):

Tubing: Flex-A-Prene®, Flex-A-Chem®, or Flex-A-Thane®

Adapter fittings: .PVDF

Recommended Ancillary Items Sold Separately:

Injection / Back-flow Check valve:

Body & insert: PVDF

Check Ball: Ceramic

Spring: Hastelloy C-276

Ball Seat O-ring: TFE/P (optional EP)

Static Seal O-ring: TFE/P (optional EP)

For "S" tubing type connections only:

(Available on M3 only)

Suction Tubing: 3/8" OD x 1/4" ID x 10' Clear PVC

Discharge Tubing: 3/8" OD x 1/4" ID x 10' Polyethylene (LLDPE)

Suction Strainer: PVDF

For "B" barb tubing and "M" M/NPT connections only:

(Available on ND, NKL, NK, NGG, NEE and M-4 only)

Suction Strainer:

Body: PVDF

Check Ball: Ceramic

Ball Seat O-ring: TFE/P (optional EP)

For "C" Tri-clamp and "Q" Quick Disconnect connections* only:

(Available on ND, NKL, NK, NGG, and NEE only)

Suction Strainer: PVDF

*Quick Disconnect Valves sold separately

Non-Wetted components:

Enclosure:

413 Aluminum (Polyester powder coated)

Pump Head:

Valox® (PBT) thermoplastic

Pump Head Cover:

Polycarbonate for added strength and chemical resistance.

Permanently lubricated sealed motor shaft support ball bearing.

Cover Screws:

Stainless Steel

Roller Assembly:

Rotor:.....Valox® (PBT)

Rollers:.....Nylon

Roller Bearings:.....SS Ball Bearings

Motor Shaft:

Chrome plated steel

TFD System Sensor pins:

Hastelloy C-276

Power Cord:

3 conductor, SJTW-A Water-resistant

Tube Installation Tool:

Glass Filled Nylon

Mounting Brackets and Hardware:

316 Stainless Steel

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

Engineering and Technical Data

Output Specifications:

Output Range			Max Speed	Max Pressure	Max Temperature	M-3 Model Numbers		
Flex-A-Prene® M-3 Tube Pumps								
Listed under NSF Std. 61 Meets FDA criteria for food Excellent chemical resistance CIP SIP								
GPH	LPH	ML/MIN	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC
.0002 - 2.10	.0007 - 7.92	.0132 - 132	125	125 (8.6)	185 (85)	M-324-*ND	M-325-*ND	M-326-*ND
.0025 - 25.3	.0096 - 96.0	.1596 - 1596	125	125 (8.6)	185 (85)	M-324-*NJ	M-325-*NJ	M-326-*NJ
.0033 - 33.3	.0126 - 126	.2100 - 2100	125	125 (8.6)	185 (85)	M-324-*NK	M-325-*NK	M-326-*NK
.0033 - 33.3	.0126 - 126	.2100 - 2100	125	30 (2.1)	185 (85)	M-324-*NKL	M-325-*NKL	M-326-*NKL
Flex-A-Prene® M-3 Tube Pumps								
Listed under NSF Std. 61 Meets FDA criteria for food Excellent chemical resistance Extra long life at low pressure								
GPH	LPH	ML/MIN	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC
.0005 - 4.8	.0018 - 18.0	.03 - 300	125	110 (7.6)	185 (85)	M-324-*NEE	M-325-*NEE	M-326-*NEE
.0019 - 19.0	.0072 - 72.0	.12 - 1200	125	110 (7.6)	185 (85)	M-324-*NGG	M-325-*NGG	M-326-*NGG
Flex-A-Chem® M-3 Tube Pumps								
Listed under NSF Std. 61 Meets FDA criteria for food Superior chemical resistance								
GPH	LPH	ML/MIN	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC
.0014 - 14.5	.0055 - 55.1	.0920 - 920	125	50 (3.4)	130 (54)	M-324-*TH	M-325-*TH	M-326-*TH
.0028 - 28.5	.0108 - 108	.1800 - 1800	125	50 (3.4)	130 (54)	M-324-*TK	M-325-*TK	M-326-*TK
Flex-A-Thane® M-3 Tube Pumps								
Meets FDA criteria for food Resistant to oils, greases and fuels								
GPH	LPH	ML/MIN	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC
.0004 - 4.60	.0017 - 17.4	.0290 - 290	125	65 (4.5)	130 (54)	M-324-*GE	M-325-*GE	M-326-*GE
.0010 - 10.1	.0038 - 38.4	.0637 - 637	125	65 (4.5)	130 (54)	M-324-*GG	M-325-*GG	M-326-*GG
.0024 - 24.9	.0094 - 94.2	.1570 - 1570	125	65 (4.5)	130 (54)	M-324-*GH	M-325-*GH	M-326-*GH
.0028 - 28.5	.0108 - 108	.1800 - 1800	125	65 (4.5)	130 (54)	M-324-*GK	M-325-*GK	M-326-*GK

Output Range			Max Speed	Max Pressure	Max Temperature	M-4 Model Numbers		
Flex-A-Prene® M-4 Tube Pumps								
Listed under NSF Std. 61 Meets FDA criteria for food Excellent chemical resistance CIP SIP								
GPH	LPH	ML/MIN	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC
.0028 - 28.5	.0108 - 108	.180 - 1800	125	125 (8.6)	185 (85)	M-424-*NH	M-425-*NH	M-426-*NH
.0044 - 44.4	.0168 - 168	.280 - 2800	125	100 (6.9)	185 (85)	M-424-*NJ	M-425-*NJ	M-426-*NJ
.0050 - 50.7	.0192 - 192	.320 - 3200	125	80 (5.5)	185 (85)	M-424-*NK	M-425-*NK	M-426-*NK
.0054 - 54.0	.0204 - 204	.340 - 3400	125	100 (6.9)	185 (85)	M-424-*NHH	M-425-*NHH	M-426-*NHH
.010 - 100.0	.0378 - 378	.630 - 6300	125	50 (3.4)	185 (85)	M-424-*NL	M-425-*NL	M-426-*NL
.015 - 158.5	.0600 - 600	1.00 - 10000	125	30 (2.0)	185 (85)	M-424-*NP	M-425-*NP	M-426-*NP
Flex-A-Prene® M-4 Low Pressure Tube Pumps								
Listed under NSF Std. 61 Meets FDA criteria for food Excellent chemical resistance Extra long life at low pressure								
GPH	LPH	ML/MIN	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC
.012 - 123.0	.219 - 219.0	.365 - 3650	125	30 (2.1)	185 (85)	M-424-*NKL	M-425-*NKL	M-426-*NKL
.578 - 57.8	.047 - 465.6	.776 - 7760	125	30 (2.1)	185 (85)	M-424-*NKKL	M-425-*NKKL	M-426-*NKKL
Flex-A-Chem® M-4 Tube Pumps								
Listed under NSF Std. 61 Meets FDA criteria for food Superior chemical resistance								
GPH	LPH	ML/MIN	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC
.0020 - 20.6	.0078 - 78.0	.130 - 1300	125	30 (2.1)	130 (54)	M-424-*TH	M-425-*TH	M-426-*TH
.0042 - 42.8	.0162 - 162	.270 - 2700	125	30 (2.1)	130 (54)	M-424-*TK	M-425-*TK	M-426-*TK
.0050 - 50.7	.0192 - 192	.320 - 3200	125	30 (2.1)	130 (54)	M-424-*THH	M-425-*THH	M-426-*THH
Flex-A-Thane® M-4 Tube Pumps								
Meets FDA criteria for food Resistant to oils, greases and fuels								
GPH	LPH	ML/MIN	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC
.0039 - 39.6	.0150 - 150	.250 - 2500	125	65 (4.5)	130 (54)	M-424-*GH	M-425-*GH	M-426-*GH
.0055 - 55.5	.0210 - 210	.350 - 3500	125	65 (4.5)	130 (54)	M-424-*GK	M-425-*GK	M-426-*GK
.010 - 100.0	.0378 - 378	.630 - 6300	125	65 (4.5)	130 (54)	M-424-*GKK	M-425-*GKK	M-426-*GKK

* Inlet/outlet connection types available: **S** = 3/8" OD x 1/4" ID flexible tubing with compression type connections (M-3 models only), **M** = 1/2" male NPT, **B** = 1/2" ID tubing barb type connections (ND, NK, NKL, NEE, NGG and M-4 models only), **C** = 3/4" tri-clamp connections (ND, NK, NKL, NEE, and NGG only), **Q** = Quick Disconnect (ND, NK, NKL, NEE, and NGG only) (**Valves sold separately**) Note: output volumes based on testing with water at 72 degrees F, 5 foot suction lift, atmospheric conditions at sea level.

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

Engineering and Technical Data

Chemical Resistance of Tubing:

Flex-A-Prene® Tubing

Meets FDA criteria for food | Excellent chemical resistance

Alcohol general	Citric Acid 50%	Hydrochloric acid 33%	Potassium hydroxide
Aluminum Sulfate (Alum)	Ethylene glycol	Hydrocyanic acid	Potassium permanganate 40%
Ammonium chloride	Ferric chloride	Hydrogen peroxide	Propylene glycol
Ammonium hydroxide	Ferric nitrate	Hypochlorous acid	Sodium hydroxide 50%
Ammonium Sulfate (LAS)	Ferric sulfate	Iodine	Sodium Bisulfite
Benzyl alcohol	Ferrous chloride - 43% in water	Magnesium chloride	Sodium Chlorite 12%
Bleach	Ferrous sulfate	Magnesium sulfate	Sodium Hypochlorite 12.5%
Brine solutions	Fluosilicic Acid (up to 25%)	Phosphoric acid	Sodium sulfide
Calcium Hydroxide 10% (Lime Slurry)	Formic acid	Plating solutions	Sulfuric acid up to 50%
Calcium hypochlorite 20%	Glucose	Polyaluminum Chloride (PAC)	Tannic acid

Flex-A-Chem® - Ultra smooth plasticizer-free bore (inner liner)

Meets FDA criteria for food | Superior chemical resistance

Ferrous Chloride (up to 40%)	Phosphoric Acid (up to 85%)	Bases	Applications:
Fluoboric Acid (up to 48%)	Potassium Hypochlorite (up to 70%)	Salts	Ink and solvent production
Fluosilicic Acid (up to 25%)	Sodium Phosphate (up to 30%)	Ketones	Battery acid filling
Hydrofluoric Acid (up to 48%)	Sulfuric Acid (up to 98%)	Alcohols	Specialty chemical production / processing
Nitric Acid (up to 71%)		Isobutyl Alcohol	Sensitive fluid transfer

Flex-A-Thane® Tubing

Meets FDA criteria for food | Resistant to oils, greases and fuels

Cyclohexane	Kerosene	Oils:	Oils:
Diesel Fuel	Lard	ASTM reference No.1,2,3	Linseed
Fatty acids	Mineral spirits	Castor	Lubricating
Gasoline	Soap solutions	Coconut	Mineral
Heptane	Turpentine	Fuel	
Hexane			

Pump Tube Assembly Output Specifications:

Model M-3 - Available Pump Tubes and Output Ranges

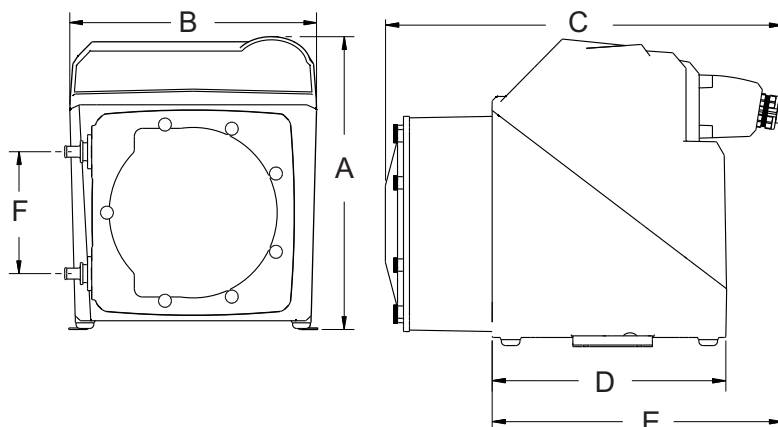
Tube Material	Tube Size	Max Output Pressure	Max Temp	Required Roller Part Number	Output Range		
Material	Code	PSI (bar)	F (C)		GPH	LPH	ML/Min
Flex-A-Prene	ND	125 (8.6)	185 (85)	A3-SND-R	.0002 - 2.10	.0007 - 7.92	.0132 - 132
Flex-A-Prene	NEE	110 (7.6)	185 (85)	A3-SNEE-R	.0005 - 4.8	.0018 - 18.0	.03 - 300
Flex-A-Prene	NGG	110 (7.6)	185 (85)	A3-SNGG-R	.0019 - 19.0	.0072 - 72.0	.12 - 1200
Flex-A-Prene	NJ	125 (8.6)	185 (85)	A3-SNH-R	.0025 - 25.3	.0096 - 96.0	.1596 - 1596
Flex-A-Prene	NK	125 (8.6)	185 (85)	A3-SNH-R	.0033 - 33.3	.0126 - 126	.2100 - 2100
Flex-A-Prene	NKL	30 (2.1)	185 (85)	A3-SNH-R	.0033 - 33.3	.0126 - 126	.2100 - 2100
Flex-A-Chem	TH	50 (3.4)	130 (54)	A3-STH-R	.0014 - 14.5	.0055 - 55.1	.0920 - 920
Flex-A-Chem	TK	50 (3.4)	130 (54)	A3-STH-R	.0028 - 28.5	.0108 - 108	.1800 - 1800
Flex-A-Thane	GE	65 (4.5)	130 (54)	A3-SGE-R	.0004 - 4.60	.0017 - 17.4	.0290 - 290
Flex-A-Thane	GG	65 (4.5)	130 (54)	A3-SGE-R	.0010 - 10.1	.0038 - 38.4	.0637 - 637
Flex-A-Thane	GH	65 (4.5)	130 (54)	A3-SGE-R	.0024 - 24.9	.0094 - 94.2	.1570 - 1570
Flex-A-Thane	GK	65 (4.5)	130 (54)	A3-SGE-R	.0028 - 28.5	.0108 - 108	.1800 - 1800

Model M-4 - Available Pump Tubes and Output Ranges

Tube Material	Tube Size	Max Output Pressure	Max Temp	Required Roller Part Number	Output Range		
Material	Code	PSI (bar)	F (C)		GPH	LPH	ML/Min
Flex-A-Prene	NH	125 (8.6)	185 (85)	A4-MNH-R	.0028 - 28.5	.0108 - 108	.1800 - 1800
Flex-A-Prene	NJ	100 (6.9)	185 (85)	A4-MNH-R	.0044 - 44.4	.0168 - 168	.2800 - 2800
Flex-A-Prene	NK	80 (5.5)	185 (85)	A4-MNH-R	.0050 - 50.7	.0192 - 192	.3200 - 3200
Flex-A-Prene	NHH	100 (6.9)	185 (85)	A4-MNH-R	.0054 - 54.0	.0204 - 204	.3400 - 3400
Flex-A-Prene	NL	50 (3.4)	185 (85)	A4-MNL-R	.0100 - 100.0	.0378 - 378	.6300 - 6300
Flex-A-Prene	NP	30 (2.1)	185 (85)	A4-MNL-R	.0158 - 158.5	.0600 - 600	1.00 - 10000
Flex-A-Prene	NKL	30 (2.1)	185 (85)	A4-MNH-R	.0050 - 50.7	.0192 - 192	.3200 - 3200
Flex-A-Prene	NKKL	30 (2.1)	185 (85)	A4-MNH-R	.0111 - 111.0	.0420 - 420	.7000 - 7000
Flex-A-Chem	TH	30 (2.1)	130 (54)	A4-MTH-R	.0020 - 20.6	.0078 - 78.0	.1300 - 1300
Flex-A-Chem	TK	30 (2.1)	130 (54)	A4-MTH-R	.0042 - 42.8	.0162 - 162	.2700 - 2700
Flex-A-Chem	THH	30 (2.1)	130 (54)	A4-MTH-R	.0050 - 50.7	.0192 - 192	.3200 - 3200
Flex-A-Thane	GH	65 (4.5)	130 (54)	A4-MGH-R	.0039 - 39.6	.0150 - 150	.2500 - 2500
Flex-A-Thane	GK	65 (4.5)	130 (54)	A4-MGH-R	.0055 - 55.5	.0210 - 210	.3500 - 3500
Flex-A-Thane	GKK	65 (4.5)	130 (54)	A4-MGH-R	.0100 - 100.0	.0378 - 378	.6300 - 6300

Engineering and Technical Data

Dimensions:



Dim	M-3 Series		M-4 Series	
	Inches	cm	Inches	cm
A	10-3/4"	27.3	14-1/4"	36.1
B	8-1/8"	20.6	12-1/8"	30.8
C	15-1/4"	38.9	18-5/8"	47.3
D	10"	25.4	11"	27.9
E	12-1/4"	31.0	13-5/8"	34.6
F	4-1/4"	10.7	6"	15.2

Model Number Matrix:

M	Flex-Pro® ProSeries-M® Model Number																	
Maximum Output Range																		
3	Flex-Pro M-3 maximum output 33.3 GPH(126 LPH)																	
4	Flex-Pro M-4 maximum output 158.5 GPH (600 LPH)																	
Maximum Motor Speed																		
2	125 RPM (maximum rotor rotation speed)																	
Power Cord (operating voltage requirement 96VAC to 264VAC)																		
4	115V / 60Hz, power cord NEMA 5/15 plug (US)																	
5	230V / 60Hz, power cord NEMA 6/15 plug (US)																	
6	220V / 50HZ, power cord CEE 7/VII plug (EU)																	
8	240V / 50HZ, power cord AS 3112 plug (Australia/New zealand)																	
X	No Power Cord																	
Inlet/Outlet Connection Size, Connection Type, Connection Material																		
S	3/8" OD x 1/4" ID Tube Compression Fitting, Natural PVDF (Kynar), available for M-3 models only																	
M	½" Male NPT Fitting, Natural PVDF (Kynar), available for M-3 and M-4 models																	
B	½" ID Tubing Barb Fitting, Natural PVDF (Kynar), available for ND, NK, NKL, NEE, NGG and M-4 models only																	
C	1/2" - 3/4" Tri-clamp connections, Natural PVDF (Kynar), available for ND, NK, NKL, NEE, and NGG only																	
Q	Quick Disconnect, Natural PVDF (Kynar), available for ND, NK, NKL, NEE, and NGG only (Valves sold separately)																	
Pump Tube Material, Pump Tube Size																		
M	-	4	2	4	-	M	ND	Flex-A-Prene® .075 ID, M-3 models only	THH	Flex-A-Chem® .250 ID (Dual Tube), M-4 models only								
							NH	Flex-A-Prene® .250 ID - M-4 models only	TK	Flex-A-Chem® .375 ID								
							NHL	Flex-A-Prene® .250 ID (65 PSI max pressure - longer life) M-4 only	TKK	Flex-A-Chem® .375 ID (Dual Tube), M-4 models only								
							NHH	Flex-A-Prene® .250 ID (Dual Tube), M-4 models only	GE	Flex-A-Thane® .125 ID, M-3 models only								
							NJ	Flex-A-Prene® .312 ID	GG	Flex-A-Thane® .187 ID, M-3 models only								
							NK	Flex-A-Prene® .375 ID	GH	Flex-A-Thane® .250 ID								
							NKL	Flex-A-Prene® .375 ID (30 PSI max pressure - longer life)	GHH	Flex-A-Thane® .250 ID (Dual Tube), M-4 models only								
							NKKL	Flex-A-Prene® .375 ID (30 PSI max - Dual Tube), M-4 models only	GK	Flex-A-Thane® .375 ID								
							NL	Flex-A-Prene® .500 ID, M-4 models only	GKK	Flex-A-Thane® .375 ID (Dual Tube), M-4 models only								
							NP	Flex-A-Prene® .750 ID, M-4 models only	NEE	Flex-A-Prene® .093 ID (Dual Tube), M-3 models only								
							TH	Flex-A-Chem® .250 ID	NGG	Flex-A-Prene® .187 ID (Dual Tube), M-3 models only								
														R	Right facing pump head, input / output (Left facing fluid input / output is standard)			
														D	Down facing pump head, input / output (Left facing fluid input / output is standard)			
M	-	4	2	4	-	M	N	H	Sample Model Number									

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

Features list:

Features

TFD (Tube Failure Detection) System Alarm
FVS (Flow Verification System) Alarm - Requires Micro-Flo Sensor (sold separately)
10,000:1 turndown reversible motor.
Three position pump head rotation
Tube Life revolution counter with user programmable alarm set-point.
Set maximum motor RPM limit.
Power interruption re-start options.
Four output contacts can be triggered by the status of the TFD system, FVS system, general alarm, rotor direction, motor run/stop, revolution count, motor fail, remote/local setting, input signal failure, output signal failure, and currently active operating mode.
Output: One, 6 amp alarm relay
Output: Three, dry contact or maximum 30VDC/115VAC 1 amp contact closures
Output: Programmable 4-20mA signal or high speed pulse, proportional to pump output
Input: One, contact closure (remote start / stop)
Input: Remote speed control via 4-20mA, 0-10VDC, high speed digital pulse, contact closure pulse
Remote/Local control settings
Password protection
Display: Motor speed, Tube life revolutions, Tube Failure Detection (TFD) system and Flow Verification System (FVS) alarm status
Display: Output in ml/min, oz/min, L/hr, Gal/hr, Gal/day, RPM, and input signal values
Automated PPM chemical dosing system

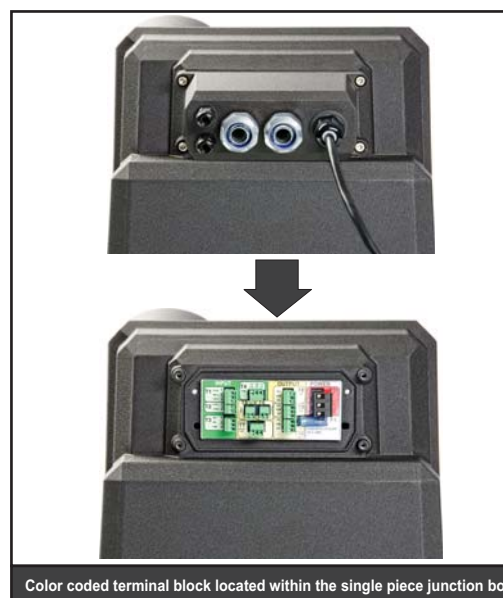
Available Operating Modes:

Manual (local): speed adjustment
Remote input: 4-20mA
Remote input: 0-10 VDC
Remote input: high speed frequency (pulse) input
Remote input: pulse triggered batch dispensing
Remote input: proportional PPM (parts per million) dosing with high speed frequency (pulse) input
Manual (local): batch dispensing
Manual (local): repeating cycle timer
Manual (local): fixed speed PPM (parts per million) dosing

Quick-Disconnect Valve Kits (Sold Separately)

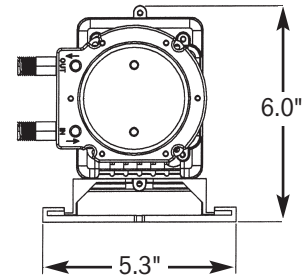
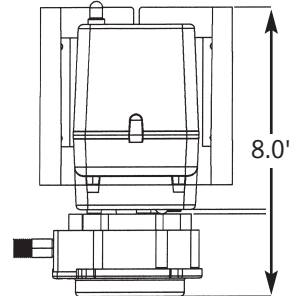
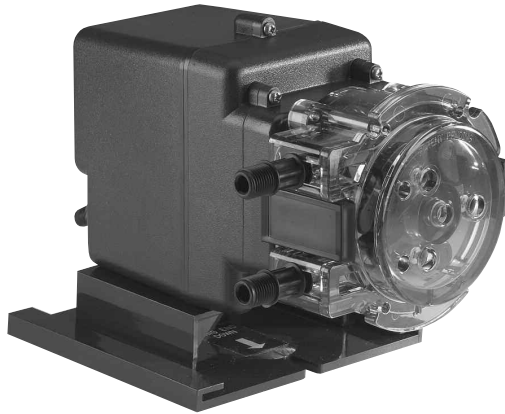
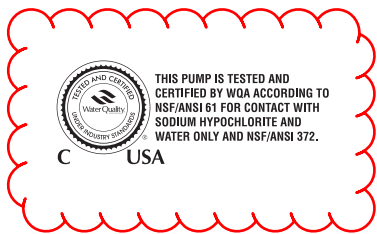
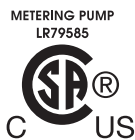
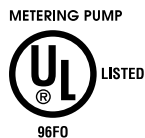
For use with the Quick-Disconnect Flex-A-Prene Tube Assembly

3/8" OD, 1/4" Tubing		1/2" Hose Barb		1/2" M/NPT	
					
Part #	O-ring	Part #	O-ring	Part #	O-ring
KIT-QSV	FKM	KIT-QBV	FKM	KIT-QMV	FKM
KIT-QSE	EP	KIT-QBE	EP	KIT-QME	EP



Color coded terminal block located within the single piece junction box

CLASSIC SERIES SINGLE HEAD FIXED SPECIFICATIONS

STENNER PUMPS®

SHIPPING WEIGHT 8 lbs (3.4 kg)


Agency listings vary by model. Contact factory for details.

FEATURES

- 3-point roller design assists in anti-siphon protection
- Pump head requires no valves, allows for easy maintenance
- Self-priming against maximum working pressure, foot valve not required
- Pump does not lose prime or vapor lock
- Pumps off-gassing solutions and can run dry
- Output volume is not affected by back pressure
- Injection check valve included with models rated up to 100 psi (6.9 bar) maximum
- Easy to change pump tube; lubrication is not required
- Pump tubes and pump heads interchange between models
- Models (Santoprene® only) tested by Water Quality Association to conform to ANSI/NSF STD 61
- Fixed output models (Santoprene® only) tested by ETL to conform to ANSI/NSF STD 50 only when used with ANSI/NSF STD 50 listed controllers

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

CLASSIC SERIES SINGLE HEAD FIXED SPECIFICATIONS

STENNER PUMPS®

FLOW RATE OUTPUT CONTROL

Fixed output

MAXIMUM WORKING PRESSURE

25 psi (1.7 bar), 100 psi (6.9 bar)

MAXIMUM OPERATING TEMPERATURE

125°F (52°C)

MAXIMUM SUCTION LIFT

25 ft (7.6 m) vertical lift, based on water

MOTOR TYPE 1/30 HP, shaded pole, class B**SHAFT RPM (average maximum)** 26 or 44**DUTY CYCLE** Continuous

MOTOR VOLTAGE (Amp Draw)

120V 60Hz 1PH (1.7)

220V 60Hz 1PH (0.9)

230V 50Hz 1PH (0.9)

250V 50Hz 1PH (0.9)

POWER CORD TYPE

120V 60Hz, 220V 60Hz: SJTOW

230V 50Hz, 250V 50Hz: H05VV-F

POWER CORD PLUG END

120V 60Hz NEMA 5-15P

220V 60Hz NEMA 6-15P

230V 50Hz CEE CEE7/7

250V 50Hz CEE CEE7/7

MATERIALS OF CONSTRUCTION

All Housings Polycarbonate

Pump Tube

Santoprene®, FDA approved or Versilon®

Check Valve Duckbill

Santoprene®, FDA approved or Pellethane®†

Pump Head Rollers Polyethylene**Roller Bushings** Oil impregnated bronze

Suction/Discharge Tubing, Ferrules

Polyethylene, FDA approved

Tube and Injection Fittings

PVC or Polypropylene, NSF listed

Connecting Nuts PVC, NSF listed

Suction Line Strainer and Cap

PVC or Polypropylene, NSF Listed, with Ceramic Weight

All Fasteners Stainless steel**Pump Head Latches** Polypropylene

ACCESSORY KIT SHIPPED WITH EACH PUMP

3 Connecting nuts 1/4" or 3/8"**3** Ferrules 1/4" or 6 mm *Europe***1** Injection check valve 100 psi (6.9 bar) max.
OR **1** Injection fitting 25 psi (1.7 bar) max.**1** Weighted suction line strainer
1/4", 3/8" or 6 mm *Europe***1** 20' Roll suction/discharge tubing
1/4" or 3/8", white or UV blackOR 6 mm White *Europe***1** Additional pump tube**2** Additional latches**1** Mounting bracket**1** Manual

* Santoprene® is a registered trademark of Exxon Mobil Corporation.

** Versilon® is a registered trademark of Saint-Gobain Performance Plastics.

† Pellethane® is a registered trademark of Lubrizol Advanced Materials, Inc.

FLOW RATE OUTPUT CHART

Single Head Fixed - Flow Rate Output Chart 25 psi (1.7 bar) maximum

	Model	Item Number Prefix	Pump Tube	Gallons per Day	Gallons per Hour	Ounces per Minute	Liters per Day	Liters per Hour	Milliliters per Minute	Liters per Day	Liters per Hour	Milliliters per Minute
45 SERIES	45MP1	45MFL1	1	3.0	0.13	0.27	11.4	0.48	7.92	9.1	0.38	6.32
	45MP2	45MFL2	2	10.0	0.42	0.89	37.9	1.58	26.32	30.3	1.26	21.04
	45MP3	45MFL3	3	22.0	0.92	1.96	83.3	3.47	57.85	66.6	2.78	46.25
	45MP4	45MFL4	4	35.0	1.46	3.11	132.5	5.52	92.01	106.0	4.42	73.61
	45MP5	45MFL5	5	50.0	2.08	4.44	189.3	7.89	131.43	151.4	6.31	105.14
85 SERIES	85MP1	85MFL1	1	5.0	0.21	0.44	18.9	0.79	13.13	15.1	0.63	10.49
	85MP2	85MFL2	2	17.0	0.71	1.51	64.4	2.68	44.65	51.5	2.15	35.76
	85MP3	85MFL3	3	40.0	1.67	3.55	151.4	6.31	105.14	121.1	5.05	84.10
	85MP4	85MFL4	4	60.0	2.50	5.33	227.1	9.46	157.71	181.7	7.57	126.18
	85MP5	85MFL5	5	85.0	3.54	7.55	321.8	13.40	223.40	257.4	10.73	178.75
Approximate Output @ 60Hz										Approximate Output @ 50Hz		

Single Head Fixed - Flow Rate Output Chart 100 psi (6.9 bar) maximum

	Model	Item Number Prefix	Pump Tube	Gallons per Day	Gallons per Hour	Ounces per Minute	Liters per Day	Liters per Hour	Milliliters per Minute	Liters per Day	Liters per Hour	Milliliters per Minute
45 SERIES	45MPHP2	45MFH1	1	3.0	0.13	0.27	11.4	0.48	7.92	9.1	0.38	6.32
	45MPHP10	45MFH2	2	10.0	0.42	0.89	37.9	1.58	26.32	30.3	1.26	21.04
	45MPHP22	45MFH7	7	22.0	0.92	1.96	83.3	3.47	57.85	66.6	2.78	46.25
85 SERIES	85MPHP5	85MFH1	1	5.0	0.21	0.44	18.9	0.79	13.13	15.1	0.63	10.49
	85MPHP17	85MFH2	2	17.0	0.71	1.51	64.4	2.68	44.65	51.5	2.15	35.76
	85MPHP40	85MFH7	7	40.0	1.67	3.55	151.4	6.31	105.14	121.1	5.05	84.10
Approximate Output @ 60Hz										Approximate Output @ 50Hz		

* Injection check valve included with pumps rated 100 psi (6.9 bar) maximum.



NOTICE: The information within this chart is solely intended for use as a guide. The output data is an approximation based on pumping water under a controlled testing environment. Many variables can affect the output of the pump. Stenner Pump Company recommends that all metering pumps undergo field calibration by means of analytical testing to confirm their outputs. The information contained in this flyer is not intended for specific application purposes. Stenner Pump Company reserves the right to make changes to prices, products, and specifications at any time without prior notice.

Chemtrol® True Union Ball Valves



Chemtrol® Tru-Bloc™ PVC, CPVC, PP and PVDF True Union Ball Valves 1/2" through 4" Sizes

Industry Leaders in Design

The True Union feature, an exclusive Chemtrol® introduction over twenty years ago, has become an industry standard. Coupled with its other features, the Chemtrol® Tru-Bloc™ True Union Ball Valve adds up to great versatility and significant savings in operating and maintenance costs.

Reliable Heavy-Duty Design

Chemtrol® Tru-Bloc™ True Union Ball Valve's heavy-duty stub-acme thread-seal carrier retaining ring provides more reliability than other designs. Double-block design stops flow in either direction - upstream and downstream - when the alternate union is removed for servicing of the system.

Features

- Pressure rating - 150 psi @ 70° F
- Rated for full vacuum service
- PTFE seats for reduced wear and smooth operation
- Viton® or EPDM seals
- Dual End Connectors 1/2" - 2" for PVC and CPVC
- Flanged valves available

Options

- Electric and pneumatic actuators
- Stem extension kits
- Spring return handles
- Lockout handle kits
- Square operation nuts

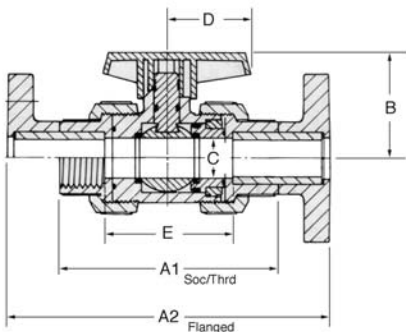
Chemtrol®
Chemtrol® is a brand of NIBCO



Chemtrol® Tru-Bloc™ Ball Valves Part Number / Price Each

Material Connection	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	3"	4"
PVC / EPDM Dual Ends	U45TB-E-005 \$	U45TB-E-007 \$	U45TB-E-010 \$	U45TB-E-012 \$	U45TB-E-015 \$	U45TB-E-020 \$	S45TB-E-030 \$	S45TB-E-040 \$
PVC / Viton® Dual Ends	U45TB-V-005 .	U45TB-V-007 .	U45TB-V-010 .	U45TB-V-012 .	U45TB-V-015 .	U45TB-V-020 .	S45TB-V-030 .	S45TB-V-040 .
CPVC / Viton® Dual Ends	U51TB-V-005 .	U51TB-V-007 .	U51TB-V-010 .	U51TB-V-012 .	U51TB-V-015 .	U51TB-V-020 .	S51TB-V-030 .	S51TB-V-040 .
Black PP / Viton® Threaded	T61TU-V-005 .	T61TU-V-007 .	T61TB-V-010 .	T61TB-V-012 .	T61TB-V-015 .	T61TB-V-020 .	T61TB-V-030 .	T61TB-V-040 .
PVDF / Viton® Threaded	T66TB-V-005 .	T66TB-V-007 .	T66TB-V-010 .	N/A -	T66TB-V-015 .	T66TB-V-020 .	N/A -	N/A -

Note: 3" or 4" - PVC and CPVC valves must be specified either socket or threaded - part number shown above is for socket end connections



Chemtrol® Ball Valve - Dimensions

Cv Factors and Dimensions

Size	A1	A2	B	C	D	E	Cv
1/2"	1.19"	1.19"	2.44"	2.44"	2.44"	2.44"	22
3/4"	2.25"	2.25"	2.75"	2.75"	2.75"	2.75"	55
1"	2.50"	2.50"	2.88"	2.88"	2.88"	2.88"	112
1-1/4"	3.06"	3.06"	3.25"	3.25"	3.25"	3.25"	178
1-1/2"	3.50"	3.50"	3.50"	3.50"	3.50"	3.50"	285
2"	4.25"	4.25"	4.75"	4.75"	4.75"	4.75"	540
3"	6.19"	6.19"	6.88"	6.88"	6.88"	6.88"	1348
4"	7.50"	7.50"	6.88"	6.88"	6.88"	6.88"	2602

PVC and CPVC True Union Ball Check, Foot, and Vent Valves

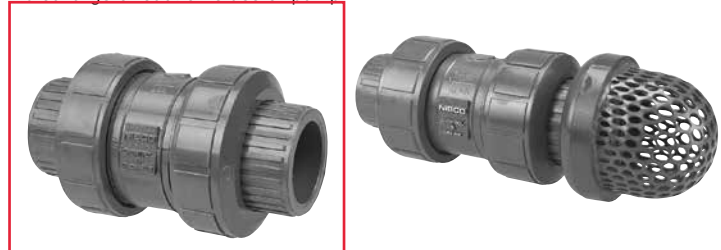
Chemtrol Figure Numbers

Type Valve	End Conn	Elastomeric Trim	Materials	
Ball Check Valve			PVC	CPVC
	Soc.	FKM EPDM	U45BC-V ¹ U45BC-E ¹	U51BC-V ¹ U51BC-E ¹
	Thd.	FKM EPDM	U45BC-V ¹ U45BC-E ¹	U51BC-V ¹ U51BC-E ¹
	Flgd.	FKM EPDM	F45BC-V F45BC-E	F51BC-V F51BC-E

¹ 1/2"–2" PVC and CPVC TU ball check figures are supplied with universal connection components (i.e., a set of both socket and threaded end connectors). For 3" and 4" sizes of PVC and CPVC BC valves, replace U in the figure no. with S or T for socket or threaded units respectively.

Features

- Rated at 150 psi with non-shock service at 73°F.
- Gravity ball check may be converted for air or gas venting by replacement of standard ball with natural polypropylene floater ball. Then install valve upside down for fluid to lift ball into seat.
- For foot valve, replace inlet end connection with a foot valve screen housing assembly.
- Free oscillation of ball in guide ribs facilitates full port flow with minimum turbulence and chatter.
- Equally effective in checking back flows from head pressure on the discharge or suction sides of pump.



Construction Materials

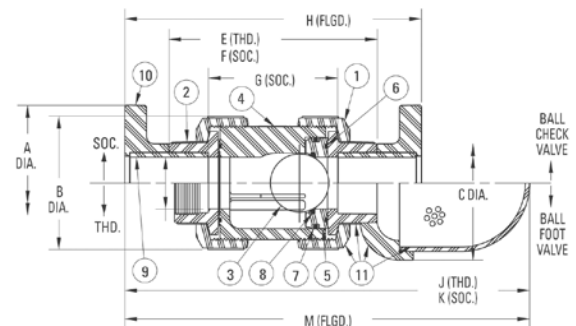
Components ¹	PVC	CPVC
1. Union Nut	PVC	CPVC
2. End Connector	PVC	CPVC
3. Ball	PVC	CPVC
	– Standard for Check or Foot Valve	Natural PP Floater Ball
4. Body ¹	PVC	CPVC
	– Floater Ball for Vent Valve ²	
5. C.V. Seat-Carrier	PVC	CPVC
6. O-ring ³ Body & Carrier; End Seal	FKM or EPDM	
7. O-ring ³ Seat-Carrier, OD Seal	FKM or EPDM	
8. O-ring ³ Seat Seal	FKM or EPDM	
9. Plain End Pipe Nipple for Flanged Valve	PVC	CPVC
10. Flange–Socket for Flanged Valve	PVC	CPVC
11. Foot Valve Screen Housing Assembly ⁴	PVC	CPVC

¹ All components except valve bodies are available as replacement parts.

² Gravity ball check valves are converted to vent valves by replacing the standard ball with a floater ball and inverting the valve at installation—with seat up.

³ Each replacement O-ring kit contains all the O-rings required to refurbish any True Union Check or Ball Valve (regardless of model or style), or a minimum of two pipe unions.

⁴ Gravity ball check valves are converted to foot valves by replacing the union nut and end connector on the receiving end – seat end – of the body with an F.V. screen housing assembly.



Dimensions¹–Weights³–Fluid Flow Coefficients

Valve Size	Ball Check/Foot				Ball Check Valve					Ball Foot Valve				Seating Head Ft – H ₂ O		Fluid Flow Coefficient
	A	B	C	D	E Thd.	F Soc.	G Soc.	H Flgd.	Approx. ² Wt. Lbs.	J Thd.	K Soc.	M Flgd.	Approx. ³ Wt. Lbs.	Vert.	Horiz.	C _v ³
1/2	3.50	1.98	2.63	0.50	3.94	4.13	2.36	6.27	0.42	6.13	6.19	7.25	0.23	6	7	5
3/4	3.88	2.44	2.63	0.75	4.65	5.02	3.00	7.38	0.72	6.88	7.13	8.25	0.29	6	7	10
1	4.26	2.83	3.63	1.00	5.08	5.40	3.12	7.99	1.05	8.13	8.25	9.63	0.37	4	5	19
1 1/4	4.62	4.08	5.50	1.25	6.38	6.75	4.22	9.65	2.46	11.13	11.25	12.75	1.34	4	5	37
1 1/2	5.00	4.08	5.50	1.50	6.38	6.99	4.21	10.18	2.62	11.13	11.50	13.13	1.34	4	5	56
2	6.00	5.23	5.50	2.00	7.36	8.02	4.99	11.45	4.76	11.75	12.13	13.75	1.88	4	5	101
3	7.50	7.17	5.50	3.00	9.98	9.98	6.17	14.22	9.21	13.38	13.38	15.63	3.00	3	4	251
4 ⁴	9.00	7.17	5.50	3.00	20.76	20.76	16.20	16.14	14.18	18.50	18.50	16.25	3.00	3	4	251

¹ Foot valve screen housing assemblies are available for the field conversion of PVC and CPVC TU ball check valves in sizes 1/2" - 4".

² Weights shown for ball valve figures are PVC threaded models. For an approximation of CPVC check valve weights, the PVC weight may be multiplied by factor of 1.123. Weights shown for foot valves are actually those for PVC F.V. screen housing assemblies. So, the weight for a CPVC F.V. screen housing assy. may be found by multiplying the PVC weight by the 1.123 factor. These must be added to check valve weight for full foot valve weight.

³ C_v values are based on the basic valve laying length (G).

⁴ The 4" PVC and CPVC check valves are fabricated by solvent cementing either reducing flanges or reducing couplings onto the ends of a 3" valve with plain-end nipples.



Griffco Valve Inc.
6010 North Bailey Ave, Ste 1B
Amherst, NY 14226
Phone: 1 716 835-0891
Fax: 1 716 835-0893

6.D.a

Gauge and Instrument Guards



Griffco diaphragm gauge and instrument isolators are designed to enhance the performance of chemical feed systems. The addition of gauges to the system ensure optimal pressures are maintained. Diaphragm isolators protect instruments against chemical attack.

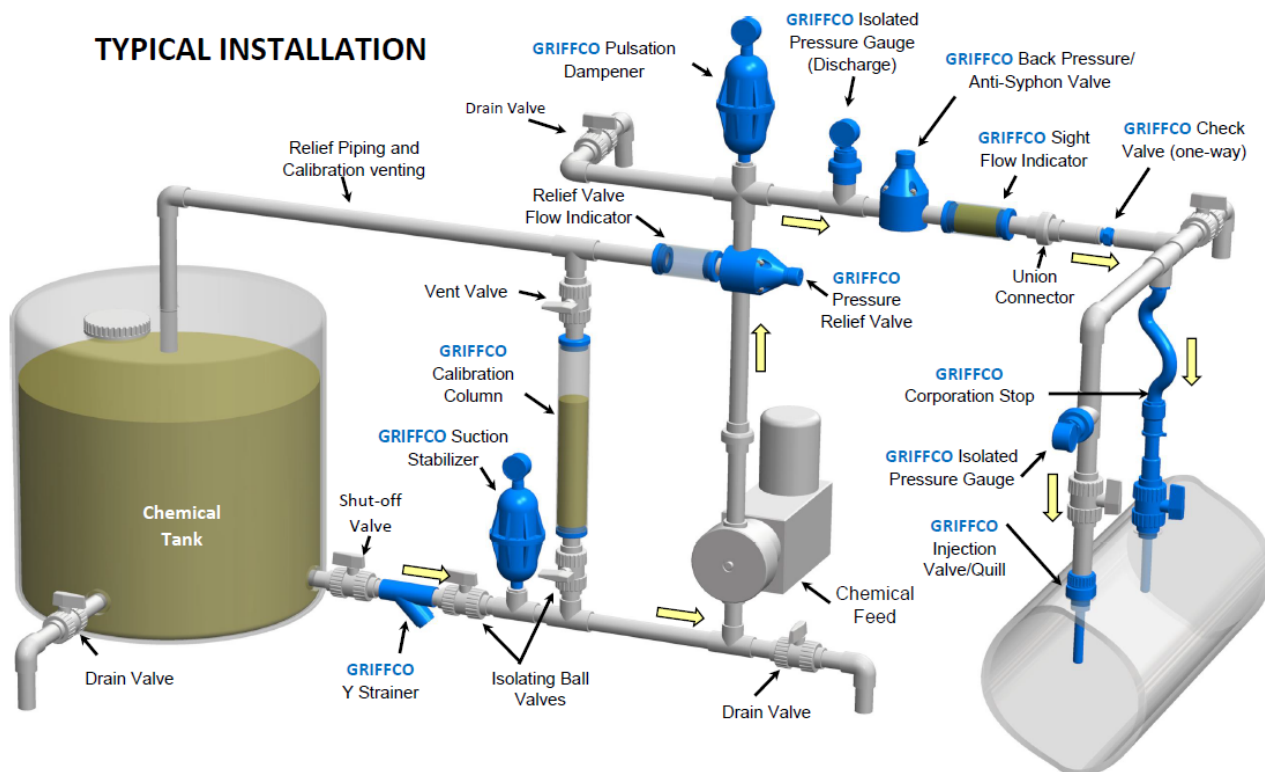
Features:

- Reliable Instrument Protection
- Will Perform in Any Position
- Molded Noryl Top
- 316 SS Gauge Connection
- Wide Range of Materials
- Calibration Screw for Zeroing
- Multiple Diaphragm Options
- Available With or Without Gauge
- No Metal Fasteners

Principles of Operation:

- 1 – A Griffco Valve gauge guard assembled with a vacuum mechanism must be filled with a proper fill fluid. (e.g. glycerine, mineral oil).
- 2 – The gauge guard diaphragm is an elastic wall that precludes the process fluid from entering the gauge or pressure device.
- 3 – Pressure on the process side of the diaphragm pushes against the fill liquid transferring the pressure to the device.
- 4 – Conversely, vacuum causes the diaphragm to flex in the reverse direction, producing a vacuum in the fill liquid, which triggers the device.

TYPICAL INSTALLATION

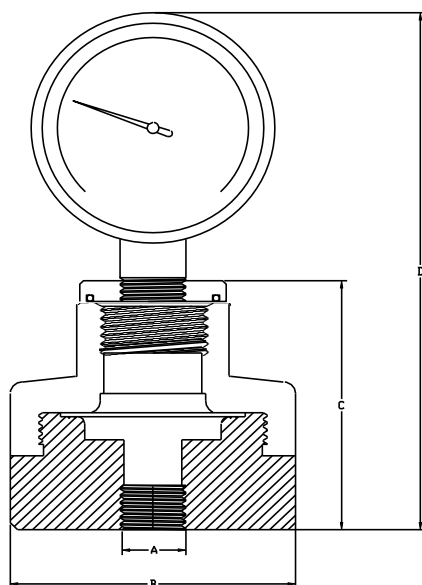


TECHNICAL DATA:

6.D.a

Materials of Construction:	Body: PVC, CPVC, PP, PTFE, PVDF, 316 SS. Top: Noryl	
Connection Sizes:	1/4", 3/8" and 1/2"	
Connections:	NPT, BSPT, Socket, Union, Flange	
Gauge Port Sizes	1/4" Standard, Optional: 1/8", 1/2"	
Max Temperature:	PVC: 140°F (60°C) ; CPVC & PP 190° (87°C); PVDF: 300° (150°C)	
Max Operating Pressure(psi) @ 70 Deg. F	250 PSI	
O-Ring Material	Viton	
Diaphragm Material	Standard: Viton. Optional: PTFE, Hypalon, Kalrez	
Gauge Accuracy	± 2%	
Optional Gauges	Standard: 0 – 160 PSI, 0 – 60 PSI, 0 – 100 psi, 0 – 200 psi	

DIMENSIONS:



Size (A)	B (in)	C (in)	D (in)
1/4"	2.35	2.15	4.75
3/8"	2.35	2.15	4.75
1/2"	2.35	2.15	4.75



Product Codes for Ordering:

GG

GGU

With Union Connection

1

2

3

4

5

1 - Size

025 - 1/4"
038 - 3/8"
050 - 1/2"

2 - Material

P - PVC
CP - CPVC
PP - Polypro
T - PTFE
K - PVDF
S - 316 SS

3 - Gauge Class

0 - No Gauge
1 - Economy
2 - Mid-Range
3 - Premium

4 - Pressure Range

1 - 0 – 160 psi
2 - 0 – 60 psi
3 - 0 – 100 psi
4 - 0 – 200 psi

5 - Options

T - PTFE Diaphragm
H - Hypalon Diaphragm
B - BSP Connections

Check Valves



C, CA, CH, CP, and CPA Series

- Working pressures up to 6000 psig (413 bar)
- Adjustable and fixed cracking pressures
- Variety of end connections
- 316 stainless steel and brass materials

Contents

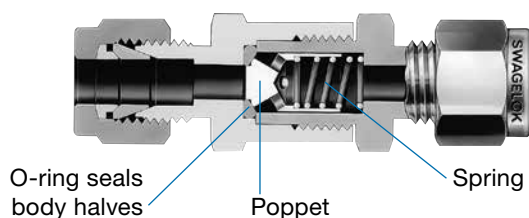
Features	2	Testing	10
Technical Data	3	Cleaning and Packaging	10
Pressure-Temperature Ratings	3	Ordering Information and Dimensions	11
Cracking and Reseal Pressures	4	Options and Accessories	14
Materials of Construction	5	Maintenance Kits	15
Flow Data	7		

Features

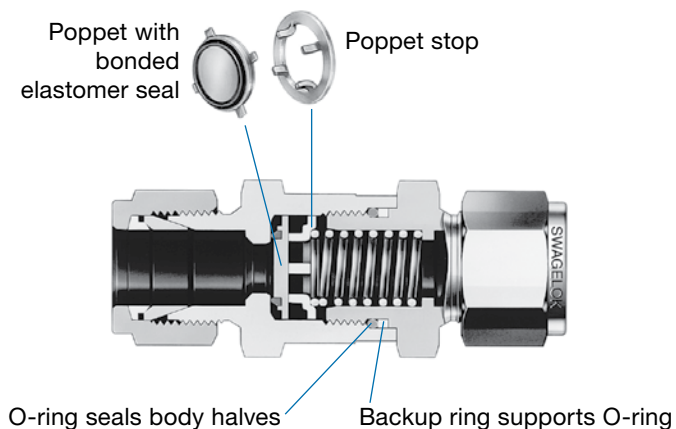
Fixed Cracking Pressures

From 1/3 to 25 psi (0.03 to 1.8 bar)

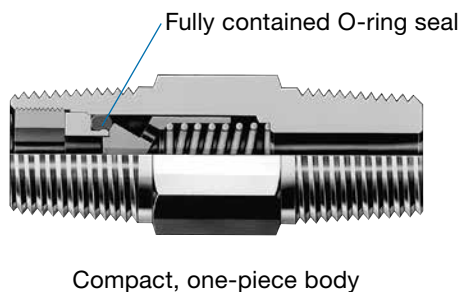
C Series



CH Series



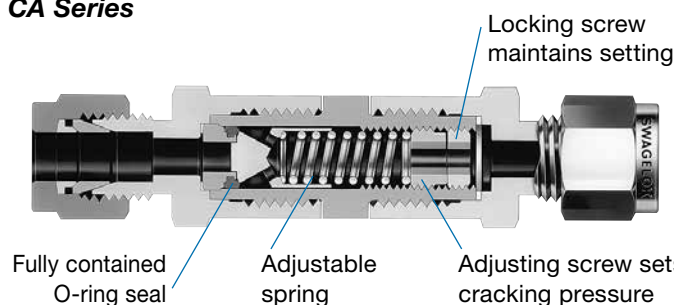
CP Series



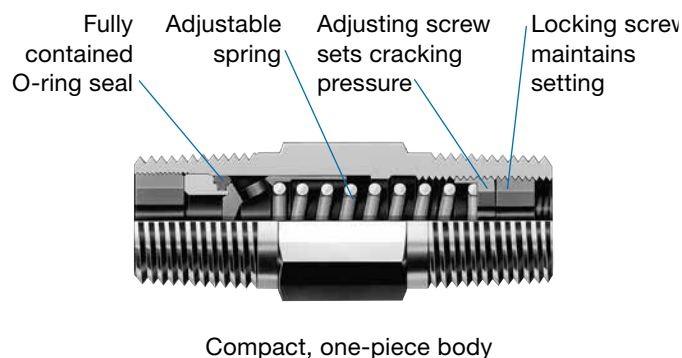
Adjustable Cracking Pressures

From 3 to 600 psi (0.21 to 41.4 bar)

CA Series



CPA Series



Cracking and Reseal Pressures at 70°F (20°C)

Cracking pressure—the inlet pressure at which the first indication of flow occurs (steady stream of bubbles).

Reseal pressure—the pressure at which there is no indication of flow.

Back pressure—the differential pressure between the inlet and outlet pressures.

⚠ For valves not actuated for a period of time, initial cracking pressure may be higher than the set cracking pressure.

C Series

Nominal Cracking Pressure psi (bar)	Cracking Pressure Range psi (bar)	Reseal Pressure psi (bar)
1/3 (0.03)	Up to 3 (0.21)	Up to 6 (0.42) back pressure
1 (0.07)	Up to 4 (0.28)	Up to 6 (0.42) back pressure
10 (0.69)	7 to 15 (0.49 to 1.1)	3 (0.21) or more inlet pressure
25 (1.8)	20 to 30 (1.4 to 2.1)	17 (1.2) or more inlet pressure

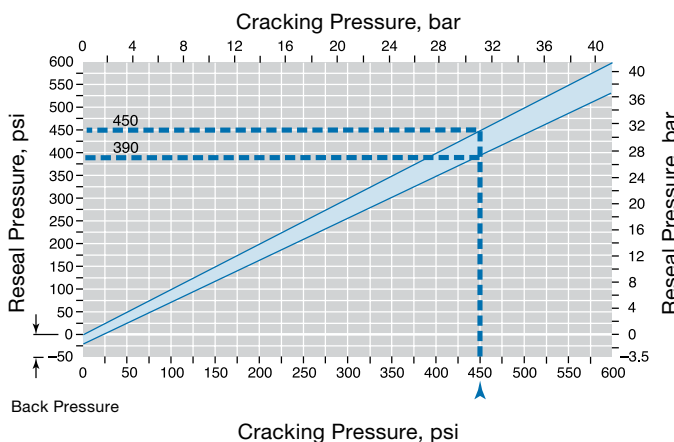
CH Series

Nominal Cracking Pressure psi (bar)	Cracking Pressure Range psi (bar)	Reseal Pressure psi (bar)
1/3 (0.03)	Up to 3 (0.21)	Up to 6 (0.42) back pressure
1 (0.07)	Up to 4 (0.28)	Up to 5 (0.35) back pressure
5 (0.35)	3 to 9 (0.21 to 0.63)	Up to 2 (0.14) back pressure
10 (0.69)	7 to 15 (0.49 to 1.1)	3 (0.21) or more inlet pressure
25 (1.8)	20 to 30 (1.4 to 2.1)	17 (1.2) or more inlet pressure

CP Series

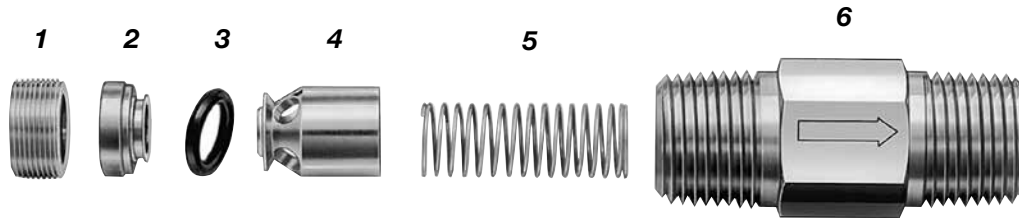
Nominal Cracking Pressure psi (bar)	Cracking Pressure Range psi (bar)	Reseal Pressure psi (bar)
1/3 (0.03)	Up to 3 (0.21)	Up to 20 (1.4) back pressure
1 (0.07)	Up to 4 (0.28)	Up to 20 (1.4) back pressure
10 (0.69)	7 to 13 (0.49 to 0.90)	Up to 10 (0.69) back pressure
25 (1.8)	21 to 29 (1.5 to 2.0)	5 (0.35) or more inlet pressure

CA and CPA Series

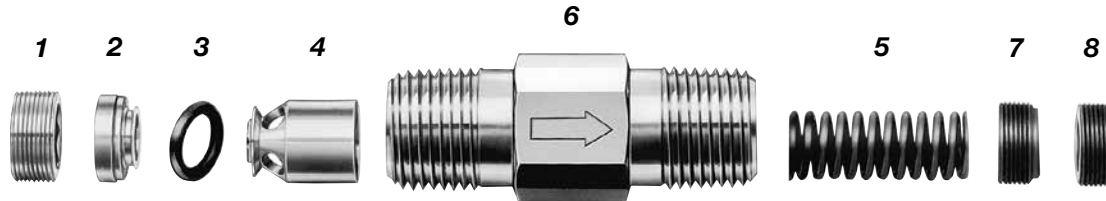


Materials of Construction

CP Series



CPA Series



Component	Valve Body Materials				
	316 SS	Brass			
		4CP	8CP	4CPA	8CPA
			Material Grade/Specification		
1 Insert lock screw	316 SS/ASTM A276 or A479	Brass CW710R/ EN 12163	Brass 360/ ASTM B16	Brass CW710R/ EN 12163	Brass 360/ ASTM B16
2 Insert	316 SS/ASTM A479				
3 O-ring	Fluorocarbon FKM	Buna N			
4 Poppet	316 SS/ASTM A479	Brass 360/ASTM B16			
5 Spring		302 SS ^① /ASTM A313			
6 Body	316 SS/ASTM A479	Brass 360/ASTM B16			
7 Adjusting screw (CPA series)	316 SS/ASTM A276	—		316 SS/ ASTM A276	Brass 360 ^② / ASTM B16
8 Locking screw (CPA series)					
Lubricant	Silicone-based and PTFE-based (CP series) PTFE-based (CPA series)	Silicone-based and PTFE-based		PTFE-based	

Wetted components listed in *italics*.

① Spring in 316 SS and brass 8CPA series valves is PTFE coated.

② Adjusting screw in valve with 150 or 350 psi (10.4 or 24.2 bar) spring is 316 SS.

Flow Data at 70°F (20°C)

The flow curves shown here were generated in optimal laboratory conditions. Flow results in individual applications may vary due to specific system parameters.

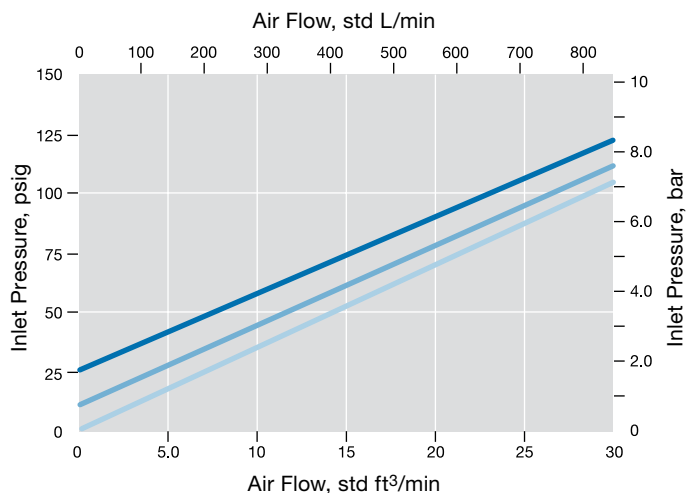
CP Series

Nominal Cracking Pressures

— 1 psi (0.07 bar) — 10 psi (0.69 bar) — 25 psi (1.8 bar)

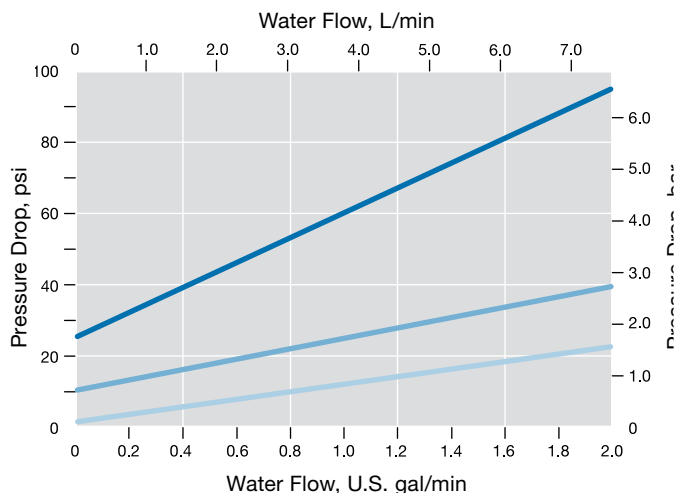
Air

4CP Series

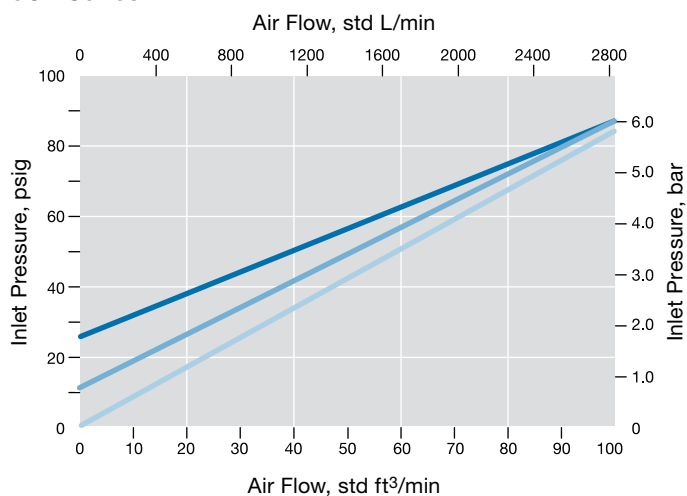


Water

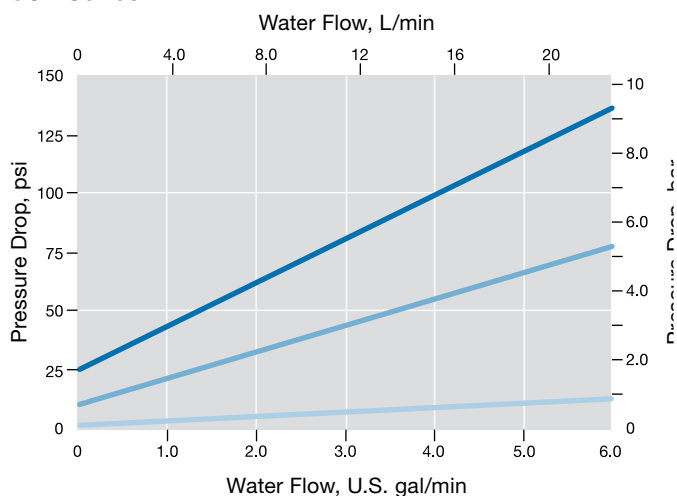
4CP Series



8CP Series



8CP Series



Testing

Every C, CA, CH, CP, and CPA series check valve is factory tested for crack and reseal performance with a liquid leak detector.

Check valves with fixed cracking pressures, C, CP, and CH series, are cycled six times prior to testing. Every valve is tested to ensure it seals within 5 seconds at the appropriate reseal pressure.

Check valves with adjustable cracking pressures, CA and CPA series, are tested at two pressure points. Every valve is tested at a low-pressure setting and at a high-pressure setting. All valves must seal within 5 seconds at the appropriate reseal pressure.

Cleaning and Packaging

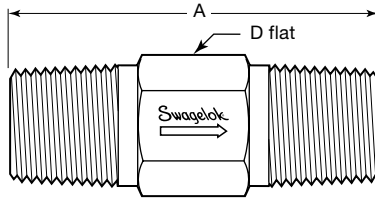
Every C, CA, and CH series check valve with VCR® or VCO® end connections is processed in accordance with Swagelok *Special Cleaning and Packaging (SC-11)* (MS-06-63), to ensure compliance with product cleanliness requirements as stated in ASTM G93 Level C.

All other C, CA, and CH series check valves, as well as every CP and CPA series check valve, are cleaned in accordance with Swagelok *Standard Cleaning and Packaging (SC-10)* (MS-06-62).

Dimensions

Dimensions, shown with Swagelok tube fitting nuts finger-tight, are for reference only and are subject to change.

CP and CPA Series



End Connections		Basic Ordering Number	Series	Dimensions, in. (mm)	
Inlet/Outlet	Size			A	D
Fixed Cracking Pressure, CP Series					
Female NPT	1/4 in.	SS-4CP4-	4CP	2.41 (61.2)	3/4
	1/2 in.	SS-8CP4-	8CP	3.71 (94.2)	1 1/16
Male NPT	1/4 in.	SS-4CP2-	4CP	1.62 (41.1)	9/16
	1/2 in.	SS-8CP2-	8CP	2.28 (57.9)	7/8
Female/male NPT	1/4 in.	SS-4CP6-	4CP	2.29 (58.2)	3/4
Male/female NPT	1/4 in.	SS-4CP5-		1.75 (44.4)	3/4
	1/2 in.	SS-8CP5-	8CP	2.83 (71.9)	1 1/16
Female ISO ^①	1/4 in.	SS-4CP4-RT-	4CP	2.54 (64.5)	3/4
Male ISO ^①	1/4 in.	SS-4CP2-RT-		1.62 (41.1)	9/16
Adjustable Cracking Pressure, CPA Series					
Female NPT	1/4 in.	SS-4CPA4-	4CPA	2.98 (75.7)	3/4
Male NPT	1/4 in.	SS-4CPA2-		1.62 (41.1)	9/16
	1/2 in.	SS-8CPA2-	8CPA	2.56 (65.0)	7/8
Male ISO ^①	1/4 in.	SS-4CPA2-RT-	4CPA	1.62 (41.1)	9/16
	1/2 in.	SS-8CPA2-RT-	8CPA	2.56 (65.0)	7/8

^① See specifications ISO 7/1, BS EN 10226-1, DIN 2999, and JIS B0203.

Ordering Information

Basic ordering numbers specify stainless steel material. To order brass, replace **SS** with **B** in the basic ordering number.

Example: **B-4CP4-**

CP Series

To order, add a cracking pressure designator to the basic ordering number.

Cracking Pressure psi (bar)	Designator
1/3 (0.03)	1/3
1 (0.07)	1
10 (0.69)	10
25 (1.8)	25

Example: **B-4CP4-1/3**

CPA Series

To order, add a cracking pressure range designator to the basic ordering number.

Cracking Pressure psi (bar)	Designator
3 to 50 (0.21 to 3.5)	3
50 to 150 (3.5 to 10.4)	50
150 to 350 (10.4 to 24.2)	150
350 to 600 (24.2 to 41.4)	350

Example: **SS-4CPA4-3**

⚠ Check valves are designed for directional flow control only. Swagelok check valves should never be used as code safety relief devices.

Options and Accessories

Seal Materials (All Series)

Fluorocarbon FKM O-rings are standard in 316 stainless steel valves; Buna N O-rings are standard in brass valves. Other elastomer seals (poppet bonding material and O-ring) are available. To order, insert the seal material designator into the valve ordering number.

Seal Material	Designator	Temperature Rating °F (°C)
Buna N	-BU	-10 to 250 (-23 to 121)
Ethylene propylene	-EP	-50 to 300 (-45 to 148)
Fluorocarbon FKM	-VI	-10 to 375 (-23 to 190) ^①
Neoprene	-NE	-40 to 250 (-40 to 121)

① -10 to 400°F (-23 to 204°C) for CH series.

Example: B-2C-**VI**-1/3

Additional seal materials are available. Contact your authorized Swagelok representative for details.

Special Alloys (All Series)

Springs of alloy 400 or alloy C-276 are available in some sizes. Valve bodies of alloy 400, carbon steel, aluminum, or other alloys are available in some sizes. Contact your authorized Swagelok representative for more information.

PTFE-Coated Springs (C, CA, CP, and CPA Series)

Springs with PTFE coating are available in some sizes. Contact your authorized Swagelok representative for more information.

Inlet Gaskets (2C, 4C, 6C, and 8C Series)

PTFE-coated 316 stainless steel inlet gaskets are available for 2C, 4C, 6C, and 8C series valves to reduce the possibility of dislodging the O-ring in systems where pressure surges, shock, or pulses occur. Gaskets are standard for select valves; see the table below for details.

Cracking Pressure psig (bar)	Inlet Gasket		
	2C, 4C Series	6C, 8C Series	12C, 16C Series
< 50 (3.5)	Optional	Optional	Standard
> 50 (3.5)	Optional	Standard	Standard

To order an inlet gasket, if it is not standard, insert **-FG** into the valve ordering number.

Example: SS-4C-**FG**-1

Deflector Caps (4C, 8C, CP, and CPA Series)

A polyethylene deflector cap is available for 4C, 8C, CP, and CPA series valves with male NPT end connections. The deflector cap deflects flow from direct contact with personnel and prevents atmospheric contaminants from entering the valve. The deflector cap screws easily onto the male NPT outlet end of the valve. Maximum rating is 300 psig at 100°F (20.6 bar at 37°C).

To order, insert **-DG** for a green cap or **-DR** for a red cap into the ordering number.

Example: SS-4CPA2-**DR**-3



Sour Gas Valves (CH Series)

CH series valves are available for sour gas service. Materials are selected in accordance with NACE MR0175/ISO 15156.

Technical Data

Pressure Rating at 70°F (20°C)

5000 psig (344 bar)

Temperature Rating

-50 to 300°F (-45 to 148°C)

Nominal Cracking Pressures

1/3, 1, and 5 psi (0.03, 0.07, and 0.35 bar)

End Connections

1/4, 3/8, and 1/2 in. Swagelok tube fittings

Materials of Construction

Body, poppet—alloy 400/B164

Seals—ethylene propylene

Backup ring—PTFE

Spring—alloy X-750/AMS 5699

All other materials and lubricant same as standard product.

See **Materials of Construction**, page 5.

Ordering Information

To order, replace **SS** with **M** and insert **-SG** into the ordering number.

Example: **M**-CHS4-**SG**-1/3

Valves With ECE R110-Type Approval (CH Series)

Stainless steel CH series check valves with Buna C seals are available with ECE R110-type approval for use in alternative fuel service.

- Temperature rating: -40 to 185°F (-40 to 85°C)
- Pressure rating within the range: 3770 psig (260 bar)

To order, add **-11670** to a standard valve ordering number.

Example: SS-CHS8-1/3-**11670**

Special Cleaning and Packaging (SC-11)

Every C, CA, and CH series check valve with VCR or VCO end connections is processed in accordance with Swagelok *Special Cleaning and Packaging (SC-11)* (MS-06-63), to ensure compliance with product cleanliness requirements stated in ASTM G93 Level C.

To order special cleaning and packaging for C, CA, and CH series check valves with other end connections, add **-SC11** to the ordering number.

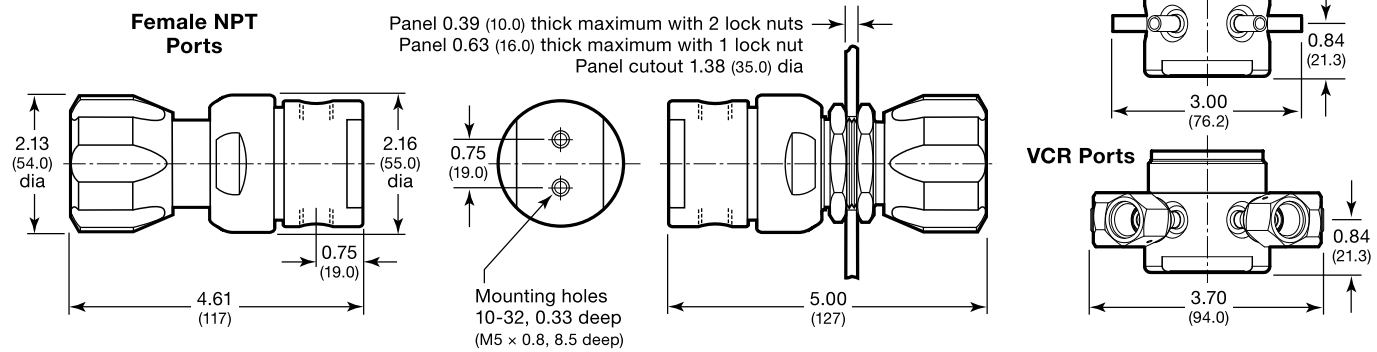
Example: SS-2C-1/3-**SC11**

Oxygen Service Hazards

For more information about hazards and risks of oxygen-enriched systems, see the Swagelok *Oxygen System Safety* technical report (MS-06-13).

Dimensions

Dimensions, in inches (millimeters), are for reference only and are subject to change.



Ordering Information

Build a KPR series regulator ordering number by combining the designators in the sequence shown below.

4 5 6 7 8 9 10 11 12 13 14 15 16
 KPR 1 F R F 4 1 2 A 2 0 0 0 0

4 Body Material

- 1 = 316 SS**
 2 = Brass CW721R
 4 = Alloy 400
 5 = Alloy C-276
 A = 316 SS, ASTM G93 Level E-cleaned
 B = Brass, ASTM G93 Level E-cleaned
 C = 316 SS, SC-11-cleaned
 D = Brass, SC-11-cleaned

5 Pressure Control Range

- C = 0 to 10 psig (0 to 0.68 bar)^①
 D = 0 to 25 psig (0 to 1.7 bar)^①
E = 0 to 50 psig (0 to 3.4 bar)
 F = 0 to 100 psig (0 to 6.8 bar)
 G = 0 to 250 psig (0 to 17.2 bar)
 J = 0 to 500 psig (0 to 34.4 bar)
^① Select 0.02 or 0.06 flow coefficient if maximum inlet pressure is 4351 psig (300 bar) or 6000 psig (413 bar).

6 Maximum Inlet Pressure^{①②}

- F = 100 psig (6.8 bar)
J = 500 psig (34.4 bar)
 L = 1000 psig (68.9 bar)
 P = 3000 psig (206 bar)
 R = 3600 psig (248 bar)
 T = 4351 psig (300 bar)^③
 W = 6000 psig (413 bar)^{③④}

- ^① For better resolution and control, select a pressure that closely matches system pressure.
^② Cylinder Connections and Hose accessories may limit inlet pressure ratings, see pages 53 and 56.
^③ Available only with 316 SS body material and PEEK seat material. Not available with SC-11 cleaning.
^④ Not available for regulators assembled with isolation valves.

7 Port Configuration

- A, B, C, E, F, H, K, L, M, N
 See **Port Configurations**, page 52.

8 Ports

- 4 = 1/4 in. female NPT**
 T = 1/4 in. × 0.035 in. tube butt weld^①
 V = 1/4 in. VCR gland, no nuts^{①②}
 X = 1/4 in. rotatable female VCR fitting^①
 Y = 1/4 in. rotatable male VCR fitting^①

- ^① Available only with 316 SS body material in A and F port configurations; does not contain a filter. Not available with maximum inlet pressure greater than 3600 psig (248 bar). Not available ASTM G93 Level E-cleaned.
^② For use with VCR split-nuts, which can be ordered separately. See the Swagelok VCR Metal Gasket Face Seal Fittings catalog (MS-01-24).

9 Seat Material

- 1 = PCTFE**
 2 = PEEK

10 Flow Coefficient (C_v)

- 1 = 0.02** 5 = 0.20
2 = 0.06 7 = 0.50

11 Sensing Mechanism, Vent

- A = Alloy X-750 diaphragm, no vent**
 C = Alloy X-750 diaphragm, self vent^①
 E = Alloy X-750 diaphragm, captured vent, no self vent
 F = Alloy X-750 diaphragm, self and captured vent^①
 H = Alloy C-276 diaphragm, no vent

- ^① Available only with 316 SS and brass body materials and 0.06 and 0.20 C_v.

12 Handle, Mounting

- 2 = Knob**
 3 = 316 SS antitamper nut
 6 = Knob, panel mount
 7 = 316 SS antitamper nut, panel mount
 For knob handle color options, see page 56.

13 Isolation and Relief Valves

- 0 = No valves**
 For isolation and relief valve options, see page 54.

14 Cylinder Connections

- 0 = No connections**
 For cylinder connection options and pressure ratings, see page 53.

15 Gauges

- 0 = No gauges**
 For inlet and outlet gauge options, see page 54.

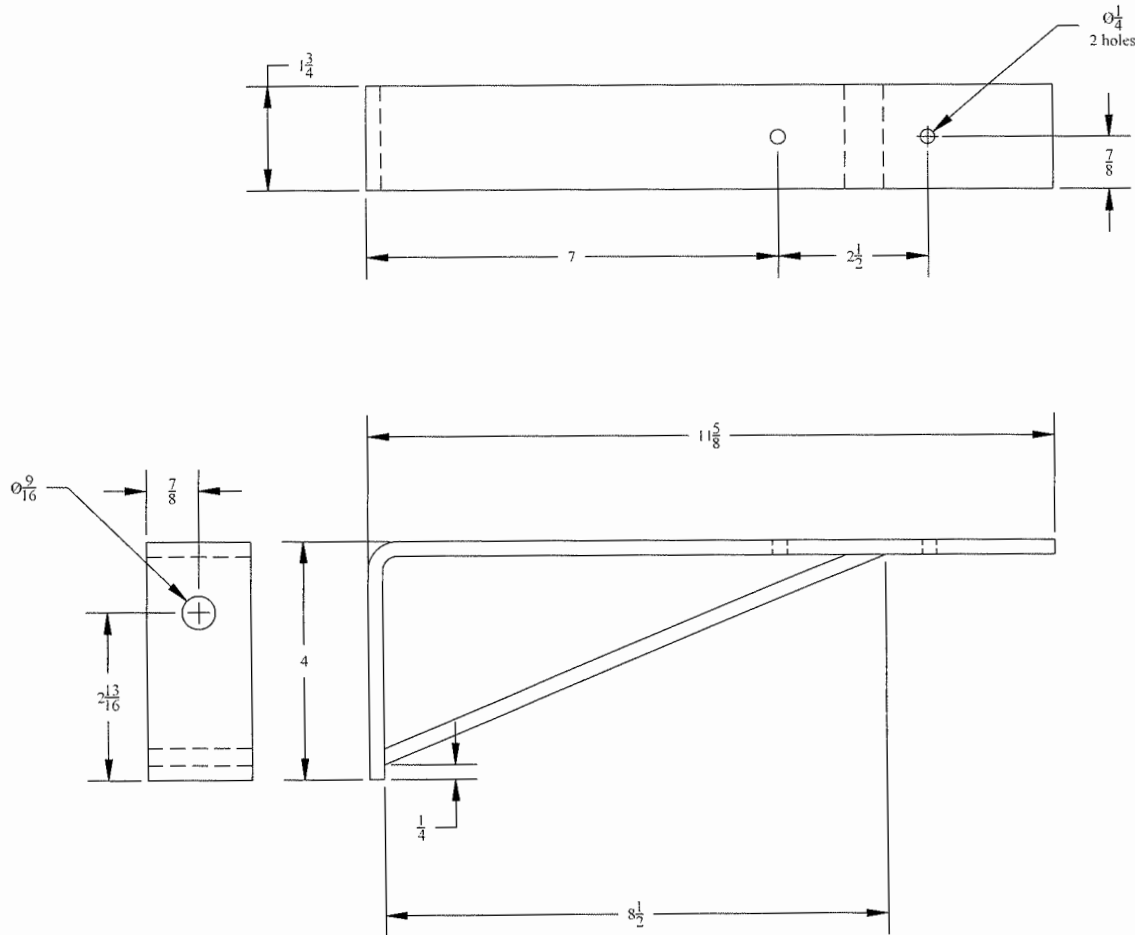
16 Options

- 0 = No options**
 H = Inboard helium leak test to a maximum leak rate of 1 × 10⁻⁵ std cm³/s^①
 3 = 3 ft, 1/4 in. FX series metal flexible hose, 1/4 in. female NPT inlet^①
 4 = 3 ft, 1/4 in. TH series PTFE-lined, stainless steel braided hose, 1/4 in. female NPT inlet^②

For hose options and pressure ratings, see page 56.

- ^① Not available with self vent.
^② Not available for ASTM G93 Level E-cleaned and SC-11-cleaned regulators.

Select KPR series regulators are available that meet the testing requirements of ASTM G175, "Standard Test Method for Evaluating the Ignition Sensitivity and Fault Tolerance of Oxygen Regulators Used for Medical and Emergency Applications." Contact your authorized Swagelok sales and service representative.



Material: 1/4" x 1 3/4" Type 304SS strap



Support Bracket for Blue White Ind. Series M2 Metering Pump			
Haynes Equipment Co., Inc 15725 So. Plumm Rd. Olathe, KS 66062 Ph (913) 782-4962 Fax (913) 782-5894			
SIZE B	DATE: 5/14/18	DWG. NO. 5142018	REV
SCALE: 1/2		SHEET:	
2 brackets per pump required			

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



EXHIBIT

4

Yates Electric Company, Inc.

1401 Burlington
 North Kansas City, MO. 64116
 Ph. 816.421.8343
 Fx. 816.421.1863

CONTRACTOR'S REQUEST FOR QUOTE RESPONSE

To: Kat Excavation

Request for Quotation

Requested By: Yates Electric

Date: 6/19/18

RE: Harrisonville WTP ECN006

Specification Reference: NA

Drawing Reference: E008, 023,027

Subject: ___ Discrepancy ___ Clarification ___ Pricing X

REQUEST:

ECN006

Total Cost: \$2,608.00

Architect's Response: This information is provided as an interpretation of the Contract Documents for implementation. It shall not be authorization for change to the Contract Sum or Completion Date. Should this information result in a claim for a change, the contractor will notify the Architect prior to implementation.

Signed: _____ Date: _____

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

Estimate Report

Estimate: HARRISONVILLE EXTRAS

06/19/18 1:22:39 PM

Estimated by: Shawn Baney

File: HARRISONVILLE EXTRAS.bhs

Page 3

Worksheet Location: ECN 06(Sheet 6)

DB #	Ph. Description	Quantity	Mat. Cost U	Tot. Mat. Lab. Hrs. U	Tot. Hrs.
	0 ADD CIRCUITS, RECEPS, AND SWITCHING				
	0 WE WILL TIE INTO EXISTING CONDUITS WHERE WE CAN				
	0 E023				
I 3702	1 GR-3/4 GRC-CONDUIT	40.00	168.00 C	67.20	6.50 C 2.60
I 3742	1 GR-3/4 GRC-90-ELLS	4.00	409.39 C	16.38	0.30 E 1.20
I 3722	1 GR-3/4 GR-COUPPLING	2.00	118.79 C	2.38	0.00 C 0.00
I 8188	3 WC-THHN-STRA #12	210.00	122.00 M	25.62	5.25 M 1.10
I 386	6 BE-BELL BOX 3/4 1G	3.00	8.28 C	0.25	0.63 E 1.89
I 394	6 BE-BELL DUPLEX REC HORZ	2.00	18.48 E	36.96	0.00 E 0.00
I 400	6 BE-BELL WP SW COVER	1.00	457.84 C	4.58	0.00 E 0.00
I 970	6 DE2-20A SP SWITCH IV-HBL	1.00	4.17 E	4.17	20.00 C 0.20
I 1108	6 DE2-20A IV GFI RECEPT	2.00	14.21 E	28.42	30.00 C 0.60
I 434	31 BL-CHNL 1 5/8 14GA SLOT	10.00	228.00 C	22.80	10.00 C 1.00
I 476	1 BL-3/4 CONDUIT STRAP	6.00	0.84 E	5.04	2.50 C 0.15
I 322	30 AN-1/4X2-1/4 RAWL-STUD	14.00	68.23 C	9.55	10.00 C 1.40
F	0 TERMINATE AT PANEL	1.00	0.00 E	0.00	0.48 E 0.48
F	0 ASSIST WITH START UP	1.00	0.00 E	0.00	1.28 E 1.28
	0 E027 (SPECS CALL FOR PVC COATED RIGID)				
I 10201	1 PB-3/4 PRC CONDUIT	30.00	768.93 C	230.68	7.75 C 2.33
I 10213	1 PB-3/4 PRC COND ELLS	2.00	2355.63 C	47.11	0.35 E 0.70
I 10237	1 PB-3/4" PRC COND COUP	2.00	657.90 C	13.16	0.00 E 0.00
I 10366	1 PB-3/4" PRC KO HUB ST	1.00	51.09 E	51.09	0.70 E 0.70
I 8188	3 WC-THHN-STRA #12	210.00	122.00 M	25.62	5.25 M 1.10
I 3194	1 FS-1G 3/4 SIN/TOP	1.00	28.60 E	28.60	0.63 E 0.63
I 3214	1 FS-COVER TOGGLE SW	1.00	22.68 E	22.68	0.00 E 0.00
I 3216	1 FS-COVER DUPLEX	1.00	18.48 E	18.48	0.00 E 0.00
I 970	6 DE2-20A SP SWITCH IV-HBL	1.00	4.17 E	4.17	20.00 C 0.20
I 1108	6 DE2-20A IV GFI RECEPT	1.00	14.21 E	14.21	30.00 C 0.30
I 434	31 BL-CHNL 1 5/8 14GA SLOT	10.00	228.00 C	22.80	10.00 C 1.00
I 476	1 BL-3/4 CONDUIT STRAP	6.00	0.84 E	5.04	2.50 C 0.15
I 322	30 AN-1/4X2-1/4 RAWL-STUD	12.00	68.23 C	8.19	10.00 C 1.20
F	0 TERMINATE AT PANEL	1.00	0.00 E	0.00	0.48 E 0.48
F	0 ASSIST WITH START UP	1.00	0.00 E	0.00	1.28 E 1.28

Regular Worksheet Page

Page Multiplier = 1

Material Multiplier = 1

Labor Multiplier = 1

Phase = 0 : Phase Multiplier = 1

Page is Active.

Raw Material Total = \$715.17

Raw Labor Hours = 21.97 Hours

$$\begin{aligned}
 & \times 15\% = \$822 \\
 & \times 70\% \times 15\% = \$11786 \\
 & \hline
 & \$21608
 \end{aligned}$$

Confidential Information, Property of Yates Electric

Printout from BHSEstimator (c) - BHS, Inc., Bolivar, Missouri, USA

Attachment 1.3 of Change Order No. 3
Change Request 20



July 13, 2018

VIA ELECTRONIC MAIL
wtschoemaker@burnsmcd.com

Burns & McDonnell Engineering Company ("BMcD")
 9400 Ward Parkway
 Kansas City, MO 64114

Attn: Mr. Tyler Shoemaker
 Re: Harrisonville WTP Improvements
 City of Harrisonville, MO ("Owner")
 BMcD Project #: 80935 ("Project")
Change Request #20 – Sidewalk and Curb @ North and South Entrances

Dear Mr. Shoemaker,

KAT Excavation, Inc. ("KAT") is providing a proposal involving additional work as directed by the Owner to furnish and install additional sidewalks and curb on a Time and Material Cost Plus on the Project. Since this work is now complete, KAT respectfully request a Change Order from the Owner as follows:

Item 1: Materials, Equipment, and Installation

Cost of Work = \$4,794.82

- Materials = \$1,396.80
- PC 88 Excavator x 2 Hours @ \$119.60/HR = \$239.20
- Labor x 57 hours @ \$53.08/HR = \$3,025.56
- Operator x 2 Hours @ \$66.63/HR = \$133.26

Contractor Fee = 15% = \$719.22

Bond Fee = 1.5% = \$82.71

Total Request for Change = \$5,596.75

CHANGE REQUEST TOTAL: \$5,596.75
DAYS TO CONTRACT: 2 Calendar Day(s)

NOTES AND EXCLUSIONS

Notes:

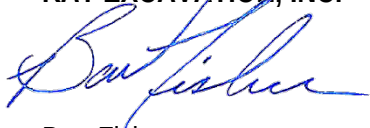
1. For supporting information, please refer to Exhibit(s) 1, which are attached to this letter.

Exclusions: *None unless otherwise included in the attached exhibit(s).*

KAT will await a response from Burns & McDonnell and/or the City of Harrisonville. In the interim, if you have any questions or comments, please feel free to contact me at 816-690-4611.

Sincerely,

KAT EXCAVATION, INC.



Bart Fisher
Senior Project Manager

Cc: Mr. Steve Bailey
Mr. Troy Ailor
Mr. Eric Patterson
Mr. Ted Martin
Mr. Mike O'Keefe
(with enclosures and attachments)

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)



EXCAVATION, INC

309 N. OAK

BATES CITY, MO 64011

EXHIBIT

1

TIME AND MATERIALS

6.D.a

JOB NAME:

Harrisonville Water Treatment Plant

BILL TO:

CUSTOMER NAME: City of Harrisonville
ADDRESS: 2010 South Jefferson Parkway
Harrisonville, Mo. 64701
Sidewalk + Curb @ North + South Entrances

TOTALS: MATERIAL: 1396.80
LABOR: 3,158.82
EQUIPMENT: 239.20
SUB TOTAL: 4794.82
BOND FEE @ 1.5 %: 71.92
PROFIT / OVERHEAD @ 15.0 %: 730.01
INVOICE TOTAL: 5,596.75

MATERIALS:

Material Description	Quantity	Cost Per Item	Total	Notes
4500 # Concrete (Curb)	(4)	97.00	388.00	
4500 # Concrete (Sidewalk)	8	97.00	776.00	
#4 Rebar 20' pcs	22	6.00	132.00	
6" Expansion 1/2"	140'	1.724	100.80	

Materials Total: 1396.80

LABOR:

Labor Description	Hours	Cost Per Hour	Total	Notes
operator	2	66.63	133.26	
LABORER	57	53.08	3,025.56	4 guys 14.25 hr

Labor Total: 3,158.82

EQUIPMENT:

Equipment Type	Hours	Cost Per Hour	Total	Notes
PL 88 Excavator	2	119.60	239.20	

Equipment Total: 239.20

Print Name: Mike OKeefe

Customer Signature: [Signature]

Date: 6/21/18

KAT Excavation, Inc: [Signature]

Date: 6/21/18

Attachment 1.4 of Change Order No. 3
Change Request 21



September 10, 2018

VIA ELECTRONIC MAIL
wtschoemaker@burnsmcd.com

Burns & McDonnell Engineering Company ("BMCD")
 9400 Ward Parkway
 Kansas City, MO 64114

Attn: Mr. Tyler Shoemaker
 Re: Harrisonville WTP Improvements
 City of Harrisonville, MO ("Owner")
 BMCD Project #: 80935 ("Project")
Change Request #21 – Chlorine Analyzer Drain Lines

Dear Mr. Shoemaker,

KAT Excavation, Inc. ("KAT") received a request to provide a proposal regarding the furnish and installation of Chlorine Analyzer Drain Lines. To make these change(s), KAT respectfully request a Change Order from the Owner as follows:

Item 1: Chlorine Analyzer Drain Lines

Cost of Work = \$1,100.00
 • D&M Plumbing = \$1,100.00
 Subcontractor Fee = 15% = \$0.00 (Included)
 Contractor Fee = 5% = \$55.00
 Bond Fee = 1.5% = \$17.33
Total Request for Change = \$1,172.33

CHANGE REQUEST TOTAL: \$1,172.33
DAYS TO CONTRACT: 2 Calendar Day(s)

NOTES AND EXCLUSIONS

Notes:

1. For supporting information, please refer to Exhibit(s) 1-3, which are attached to this letter.

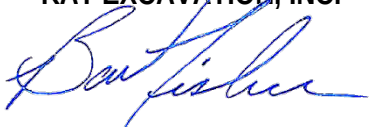
Exclusions: *None unless otherwise included in the attached exhibit(s).*

September 10, 2018

KAT will await a response from Burns & McDonnell and/or the City of Harrisonville. In the interim, if you have any questions or comments, please feel free to contact me at 816-690-4611.

Sincerely,

KAT EXCAVATION, INC.



Bart Fisher
Senior Project Manager

Cc: Mr. Steve Bailey
Mr. Troy Ailor
Mr. Eric Patterson
Mr. Ted Martin
Mr. Mike O'Keefe
(with enclosures and attachments)

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

D&M PLUMBING LLC

PO BOX 798

WARRENSBURG, MO 64093

660-747-7808 OFFICE

660-909-1242 CELL

EXHIBIT

1

ESTIMATE

6.D.a

Estimate #

9/7/2018

DM3165

Name / Address

KAT EXCAVATION, INC
309 N OAK
BATES CITY MO
64011

ACCEPTANCE OF PROPOSAL:

THE BELOW PRICES, SPECIFICATIONS AND
CONDITIONS ARE SATISFACTORY AND ARE
HEREBY ACCEPTED. YOU ARE AUTHORIZED TO
DO THE WORK AS SPECIFIED.

ACCEPTED _____

SIGNATURE _____

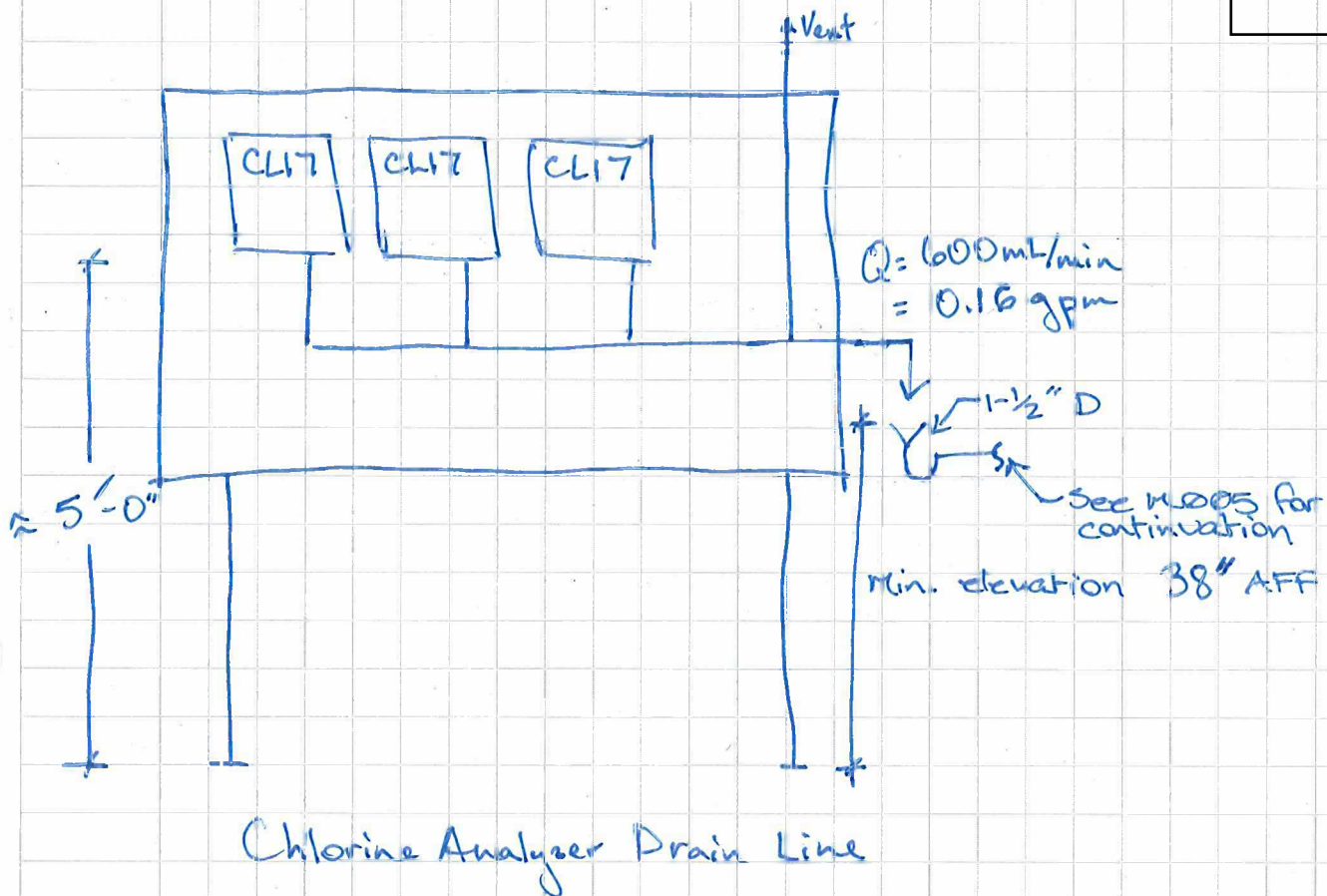
DATE _____

Project

Description	Qty	Rate	Total
HARRISONVILLE WATER TREATMENT PLANT THIS BID IS FOR RUNNING A DRAIN FROM CONDENSATE DRAINS ON THE OTHER SIDE OF THE ROOM TO THE FLOOR DRAIN. INCLUDES BORING A HOLE THROUGH A BLOCK WALL TO RUN THE LINE AND HANGING STRUT OFF THE WALL.		1,100.00	1,100.00
ALL ROCK NOT DIGABLE WITH RUBBER TIRE BACKHOE WILL BE EXTRA		Total	\$1,100.00

Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

**EXHIBIT
2**

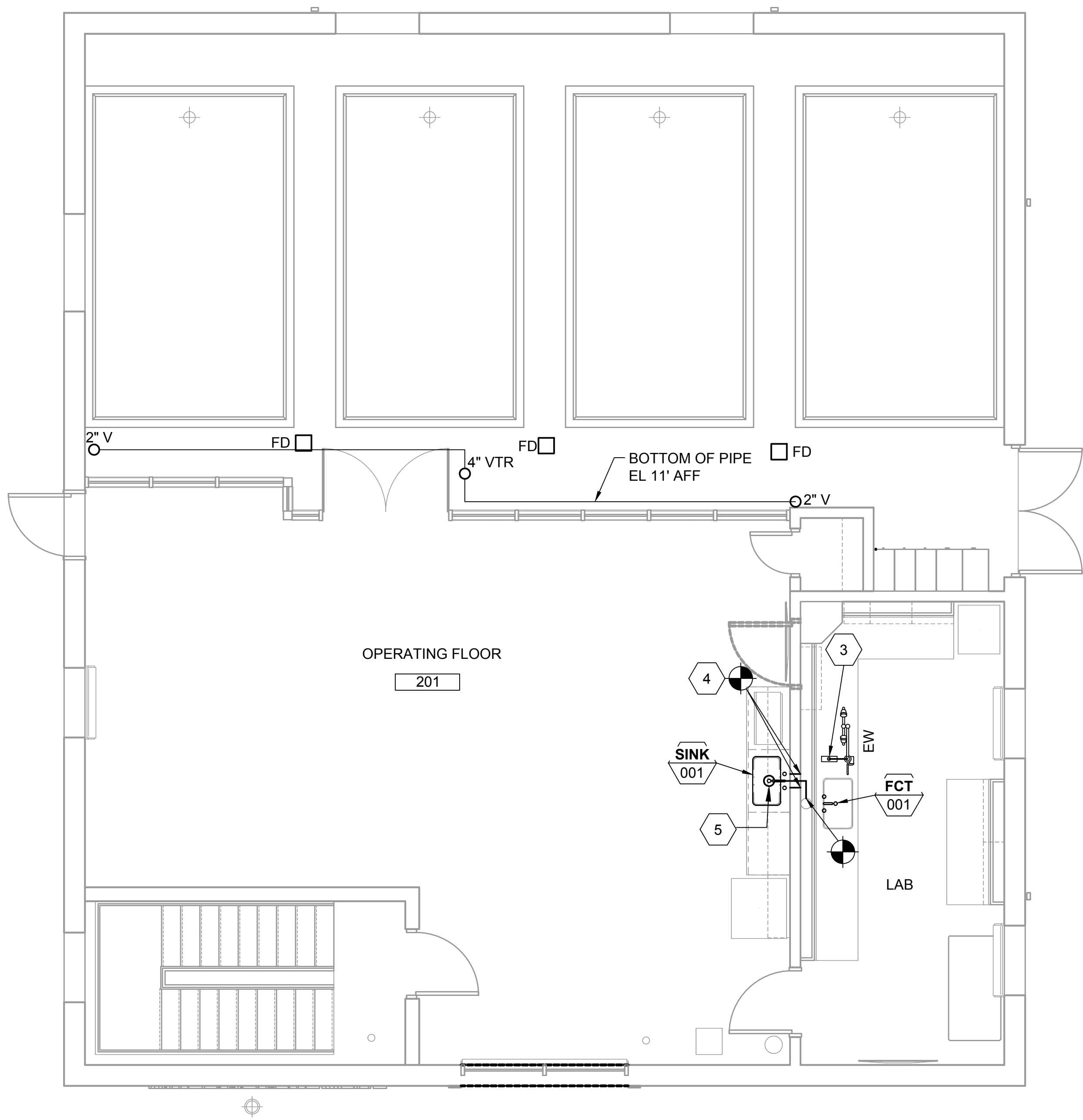


Attachment: Change Order No. 3 - FINAL - KAT Signed (Change Order #3 Final for the Water Treatment Plant)

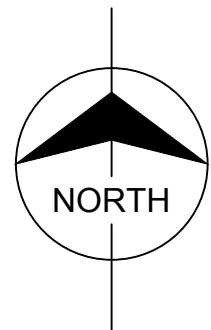


no.	date	by	ckd	description
0	5/18/16	WGW	BJD	ISSUED FOR BID

EXHIBIT
3

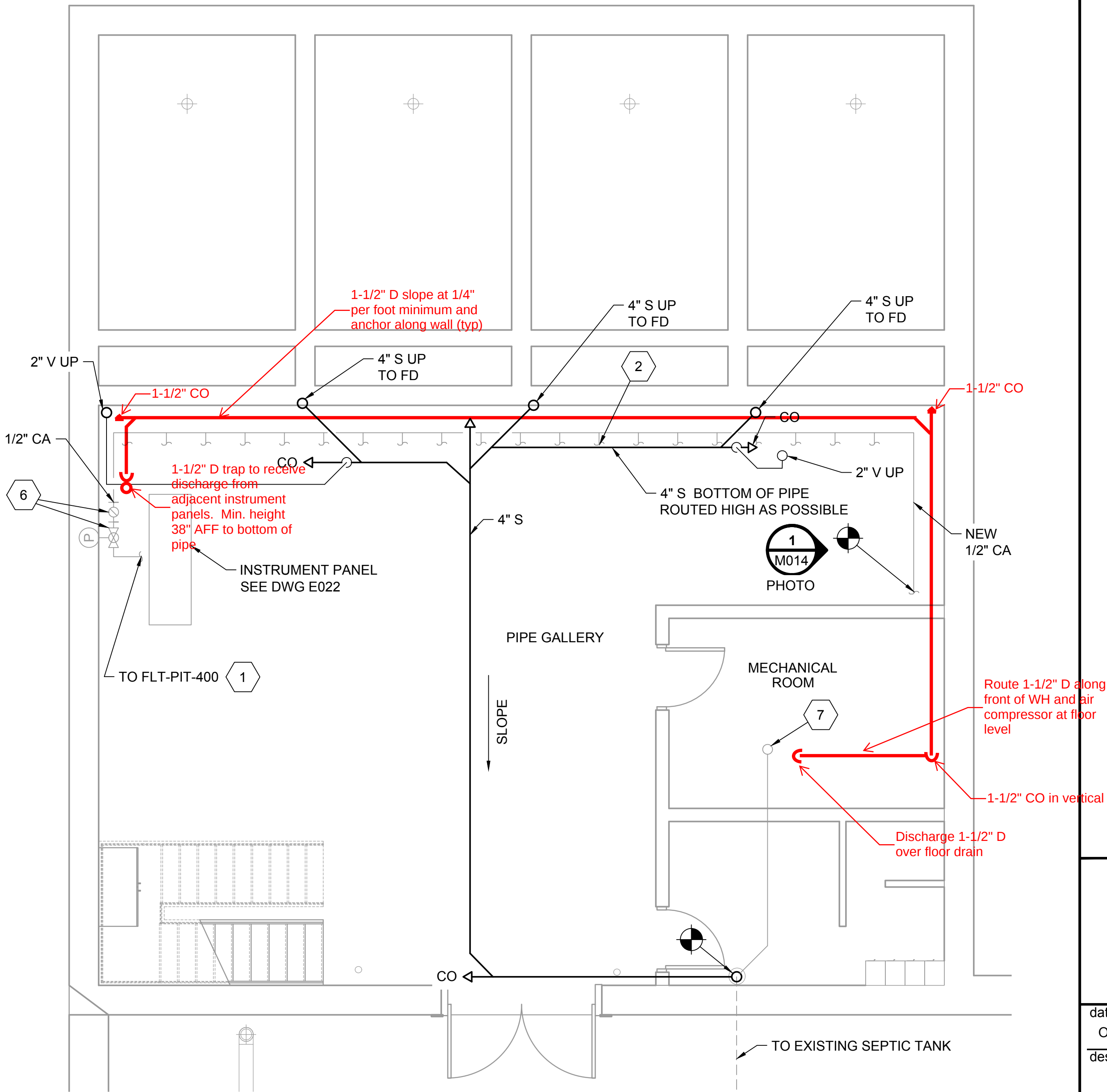


UPPER LEVEL PLUMBING PLAN

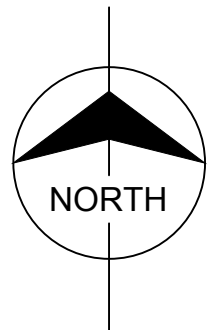


- KEYED NOTES:**
- FROM NEW CA HEADER, ROUTE COPPER TUBE UP TO INSTRUMENT PANEL AND CONNECT TO FLT-PIT-400 PER ELECTRICAL DETAIL.
 - CONNECT NEW FLEXIBLE CA TUBING TO NEW FILTER VALVES PER MANUFACTURER REQUIREMENTS.
 - CONNECT EMERGENCY EYEWASH'S INTEGRAL THERMOSTATIC MIXING VALVE TO EXISTING COLD AND HOT WATER SUPPLY.

- CORE DRILL EXIST CMU WALL, INSTALL SLEEVE WITH MULTI-SECTIONAL MECHANICAL SEAL, USE ROLLED SHEET METAL FOR SLEEVE. CONNECT NEW CW AND HW SUPPLIES TO EXISTING CW AND HW IN WALL.
- CONNECT SINK DRAIN TO EXISTING 1 1/2" VERTICAL DRAIN UNDER LAB SINK.
- COORDINATE WITH DIV 26 AND DIV 40 FOR NEW PRESSURE/FLOW SETPOINTS FOR RELOCATED INSTRUMENTATION. INSTALL PRESSURE REGULATING VALVE IN PIPING AT SAME ELEVATION AS RELOCATED INSTRUMENT.



LOWER LEVEL PLUMBING PLAN



- EXISTING 4" S UP TO SINKS.



9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 000165

date OCTOBER 26, 2015	detailed W. PYLE
designed W. WILLIAMS	checked B. DICKMEYER



Cass County, Missouri

**HARRISONVILLE WTP
IMPROVEMENTS**

FILTER BUILDING PLUMBING
PLAN

project 80935	contract
drawing M005	rev. 0
sheet file 80935_M005.DWG	of sheets

Bryce Dickmeyer
Mechanical
License No. 2012018058

Attachment 1.5 of Change Order No. 3
Engineer's Additional Submittal Review Time

Harrisonville WTP - Additional Submittal Reviews
80935-3.6

Date	Hours	Submittal No. / Name	Name	Cost
3-Feb-17	0.25	263353 / UPS Submittal	Schaefer, Joseph M. (Joseph)	\$ 47.99
24-Mar-17	0.5	260533 / Precast handholes	Schaefer, Joseph M. (Joseph)	\$ 95.98
19-Apr-17	2	262416 / Panelboards	Schaefer, Joseph M. (Joseph)	\$ 383.90
20-Apr-17	5	262416 / Panelboards	Schaefer, Joseph M. (Joseph)	\$ 959.75
21-Apr-17	2	262416 / Panelboards	Schaefer, Joseph M. (Joseph)	\$ 383.90
25-Apr-17	4	262416 / Panelboards	Schaefer, Joseph M. (Joseph)	\$ 767.80
27-Apr-17	1	262416 / Panelboards	Schaefer, Joseph M. (Joseph)	\$ 191.95
29-Mar-17	1	333100 / Gravity Pipe (Alternative Supplier)	Shoemaker, William T. (Tyler)	\$ 160.95
16-May-17	2	260543-01-2, 262726-01-2, Ozone	Schaefer, Joseph M. (Joseph)	\$ 383.90
31-May-17	2	463013 / Ozone	Schaefer, Joseph M. (Joseph)	\$ 383.90
2-Jun-17	0.5	265100, 265600 / Lighting	Schaefer, Joseph M. (Joseph)	\$ 95.98
14-Jun-17	0.5	265000 / Lighting	Schaefer, Joseph M. (Joseph)	\$ 95.98
16-Jun-17	0.5	265000 / Lighting	Schaefer, Joseph M. (Joseph)	\$ 95.98
23-Jun-17	0.25	221123.13	Schaefer, Joseph M. (Joseph)	\$ 47.99
23-Jun-17	0.75	262416	Schaefer, Joseph M. (Joseph)	\$ 143.96
18-Jul-17	0.25	260526	Schaefer, Joseph M. (Joseph)	\$ 47.99
19-Jul-17	0.5	221123.13	Schaefer, Joseph M. (Joseph)	\$ 95.98
19-Jul-17	1	262913	Schaefer, Joseph M. (Joseph)	\$ 191.95
7-Aug-17	0.75	333226 / HSPS	Schaefer, Joseph M. (Joseph)	\$ 143.96
9-Aug-17	0.75	333226 / HSPS	Schaefer, Joseph M. (Joseph)	\$ 143.96
9-Aug-17	0.5	433201	Schaefer, Joseph M. (Joseph)	\$ 95.98
11-Aug-17	0.5	323113	Schaefer, Joseph M. (Joseph)	\$ 95.98
11-Aug-17	1	260533	Schaefer, Joseph M. (Joseph)	\$ 191.95
19-Aug-17	0.5	433201	Schaefer, Joseph M. (Joseph)	\$ 95.98
22-Aug-17	0.375	238239	Schaefer, Joseph M. (Joseph)	\$ 71.98
22-Aug-17	0.375	237433	Schaefer, Joseph M. (Joseph)	\$ 71.98
28-Aug-17	0.25	463644	Schaefer, Joseph M. (Joseph)	\$ 47.99
28-Aug-17	0.5	331216 / Pneumatic BFV	Shoemaker, William T. (Tyler)	\$ 80.48
29-Aug-17	0.5	333226 / HSPS	Shoemaker, William T. (Tyler)	\$ 80.48

30-Aug-17	0.5	464321 / SCC	Shoemaker, William T. (Tyler)	\$ 80.48
30-Aug-17	1.25	263213	Schaefer, Joseph M. (Joseph)	\$ 239.94
30-Aug-17	0.5	333226 / HSPS	Schaefer, Joseph M. (Joseph)	\$ 95.98
31-Aug-17	0.5	463644 / Fluoride Saturator	Shoemaker, William T. (Tyler)	\$ 80.48
1-Nov-17	1	262413	Schaefer, Joseph M. (Joseph)	\$ 191.95
3-Nov-17	0.5	221123.13	Schaefer, Joseph M. (Joseph)	\$ 95.98
6-Nov-17	0.5	221123.13 - Fluid - Domestic Water Booster	Shoemaker, William T. (Tyler)	\$ 80.48
6-Nov-17	0.5	262413	Schaefer, Joseph M. (Joseph)	\$ 95.98
4-Dec-17	0.75	262913	Schaefer, Joseph M. (Joseph)	\$ 143.96
2-Jan-18	0.5	262413	Schaefer, Joseph M. (Joseph)	\$ 95.98
8-Feb-18	0.5	260553	Schaefer, Joseph M. (Joseph)	\$ 95.98
13-Feb-18	0.75	262416	Schaefer, Joseph M. (Joseph)	\$ 143.96
20-Feb-18	0.25	262416	Schaefer, Joseph M. (Joseph)	\$ 47.99
13-Mar-18	0.25	260553	Schaefer, Joseph M. (Joseph)	\$ 47.99
13-Mar-18	0.5	262913	Schaefer, Joseph M. (Joseph)	\$ 95.98
				\$ -
			Sum =	\$ 7,329.56



STAFF REPORT

TO: Board of Aldermen
FROM: Eric Patterson, Director
DATE: November 13, 2018
SUBJECT: Tree Trimming Contract

Type of Item: *Contract*

Staff Report

The Electric Department received 2 bids for the Electric Transmission and Distribution Vegetation Management, Trimming and Removal Services. Asplundh Tree Expert, LLC and Shade Tree Service Company.

Shade Tree Services is the preferred tree removal contractor for multiple reasons: One is past performance with several jobs with the City of Harrisonville. We also have an emergency contract with them for storm and other related problems. Some of the previous contracts include ice storm recovery, Hazardous Tree Project which was a FEMA project, 2 projects at the City of Harrisonville Memorial Airport and a right of way maintenance project with the railroad.

The City of Harrisonville did have issues with Asplundh Tree Expert, LLC on a past project and they were asked to leave the property before the contract was fulfilled. We also have concerns with the pay structure table presented by Asplundh where the crew foreman would be the 2nd lowest paid crew member on this contract.

Shade Tree also had a more “complete” bid, in the fact that they limit their foreman to 4 hours or less per week to our project. Asplundh did not limit their foreman’s time on our project.

Council Bill No. 73

Resolution No.

Resolution A RESOLUTION OF THE BOARD OF ALDERMEN OF THE CITY OF HARRISONVILLE, MISSOURI, AUTHORIZING AND DIRECTING THE CITY ADMINISTRATOR TO ENTER INTO AN AGREEMENT WITH SHADE TREE SERVICE CO., FOR THE ELECTRIC DEPARTMENT TREE TRIMMING PROJECT, AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, the City of Harrisonville ("City") will begin an Electric Transmission and Distribution Vegetation Management, Trimming and Removal Services ("Tree Trimming") for various locations around the city;

WHEREAS, the Tree Trimming will be a an intensive program to remove limbs and vines that could interrupt electric service because of age or due to winter/summer storm damage;

WHEREAS, a notice was posted and bids were accepted from 2 contractors;

WHEREAS, the City advertised for bids and those bids were opened on November 8, 2018;

WHEREAS, Shade Tree Service Company was determined to be the lowest and best bidder due to some previous issues with the other bidder;

WHEREAS, work will be coordinated between Shade Tree Service Company and the City of Harrisonville;

WHEREAS, the Board of Aldermen have reviewed the staff report presented and believe it to be in the best interests of the City to approve the bid for the Tree Trimming Services in the combined hourly amount equal to or lower than \$355.00 per hour for regular time per crew and \$445 per hour for overtime per crew with a total contract amount of \$250,000;

NOW THEREFORE BE IT RESOLVED BY THE HARRISONVILLE BOARD OF ALDERMEN THAT:

Section 1: The City Administrator is hereby authorized and directed by the Board of Aldermen to enter into an agreement on behalf of the City of Harrisonville, Missouri, with Shade Tree Service Company of Fenton, Missouri, for the Electric Transmission and Distribution Vegetation Management, Trimming and Removal Services contract for the City of Harrisonville at a crew cost not to exceed \$355.00 per hour and \$445 per hour for overtime and at a total cost of \$250,000.

Section 2: That this resolution shall become effective immediately upon its passage and approval.

PASSED AND RESOLVED by the Board of Aldermen and **APPROVED** by the Mayor of the City of Harrisonville, Missouri this 19th day of November 2018.

Brian Hasek, Mayor & Ex Officio
Chairman of the Board of Aldermen

ATTEST:

Randall K. Jones, City Clerk

WITNESS my hand and seal this 19th day of November 2018



STAFF REPORT

TO: Board of Aldermen
FROM: Happy Welch, City Administrator
DATE: November 15, 2018
SUBJECT: Airport Manager Contract

Type of Item: *Approval***Issue:**

Airport Manager James Green is leaving at the end of November to go to work for the federal government in St. Louis. This will leave us with an open position for the airport. Staff would like to fill this position with a contract employee in lieu of a full-time employee and contract out other parts of the job performed by Mr. Green.

Background:

Mr. Green has overseen maintenance for the airport facility, cut grass, filed the necessary reports, checked the fuel tank regularly and maintained that equipment in his time with Harrisonville. He has submitted for grants with MoDOT and the FAA as well as watched over the lighting system, weather recording system, and kept the trees trimmed when necessary.

Recommendation:

Staff believes a full time manager is not needed and daily operations can be maintained by a contracted manager such as they have in Butler, MO. We will contract out grass cutting, we have engineers on call for any necessary FAA paperwork, and save the city the expense of a full time employee.

Mark Newman is currently leasing hangar space for his airplane repair business at the airport and is our choice to manage the airport. He is there everyday at his business, has been shown the duties performed by Mr. Green, and is a competent individual to oversee the airport.

Council Bill No. 74

Resolution No.

Resolution A RESOLUTION BY THE BOARD OF ALDERMEN OF THE CITY OF HARRISONVILLE, MISSOURI, AUTHORIZING AND DIRECTING THE CITY ADMINISTRATOR TO ENTER INTO AN AGREEMENT WITH MICHAEL NEWMAN TO CONTRACT AS AIRPORT MANAGER FOR THE LAWRENCE SMITH MEMORIAL AIRPORT, AND ESTABLISHING AN EFFECTIVE DATE.

Whereas, the City of Harrisonville ("City") is losing its current fulltime Airport Manager ("Manager");

Whereas, the City has reviewed the need for a fulltime manager and has determined that it would be best suited with a contracted Manager at Lawrence Smith Memorial Airport ("Airport");

Whereas, the City wishes to engage with Michael Newman, an airplane mechanic with facilities at the Airport;

Whereas, Mr. Newman is willing and can perform all of the duties required for a contracted Manager;

Whereas, City staff has reviewed and recommend approving the agreement;

Whereas, the Board of Aldermen have reviewed the staff recommendation and believe it to be in the best interests of the City to approve the contract with Michael Newman for \$415.00 per month as a contracted Airport Manager for the City of Harrisonville;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ALDERMEN OF THE CITY OF HARRISONVILLE, MISSOURI, AS FOLLOWS:

Section 1: That the City Administrator of the City of Harrisonville, Missouri is hereby authorized and directed by the Board of Aldermen to enter into the proposed Agreement with Michael Newman as the contracted Airport Manager for Lawrence Smith Memorial Airport for \$415.00 per month.

Section 2: That this resolution shall become effective immediately upon its passage and approval.

PASSED AND RESOLVED BY THE BOARD OF ALDERMEN AND APPROVED BY THE MAYOR OF THE CITY OF HARRISONVILLE, MISSOURI, ON THIS 19TH DAY OF NOVEMBER 2018.

Brian Hasek, Mayor and Ex-Officio
Chairman of the Board of Aldermen

ATTEST:

Randall K. Jones, City Clerk

WITNESS my hand and seal this 19th day of November 2018

AIRPORT MANAGER AGREEMENT City of Harrisonville, Missouri

THIS AGREEMENT, made and entered into this ____ day of _____, 2018, by and between the City of Harrisonville, Missouri, herein after referred to as **City**, and Michael Newman, hereinafter referred to as **Airport Manager**:

WITNES SETH, That,

WHEREAS, the **City** desires to contract with Michael Newman to manage and operate the Lawrence Smith Memorial Airport under the terms of this Agreement; and

WHEREAS, Michael Newman desires to enter into an Agreement to manage and operate the **Airport** for the **City**.

NOW, THEREFORE, IT IS UNDERSTOOD AND MUTUALLY AGREED BY AND BETWEEN THE PARTIES THAT:

1. **Term.**

The term of this **Agreement** shall be for a period of ONE (1) YEAR commencing as of the **Effective Date**, subject to the provisions for early termination set forth below. The Effective Date shall be _____. This Agreement shall automatically renew annually unless terminated by one of the parties hereto as specified in Section 2.

2. **Termination.**

It is agreed by both parties that either party may terminate this **Agreement** by giving a written notice thirty (30) days in advance to the other party.

3. **Designated Airport Manager.**

The **City** hereby contracts with and designates **Michael Newman** the **Airport Manager** to manage and operate the Lawrence Smith Memorial Airport ("**Airport**") for a period commencing on the Effective Date under the terms contained in this Agreement.

4. **Airport Manager Is an Independent Contractor.**

It is understood and agreed that the intention of the parties is that **Airport Manager** is an independent contractor. Furthermore, this **Agreement** does not cause **Airport Manager** to be an employee, agent, or partner of **City** for any reason whatsoever. **Airport Manager** also hereby agrees that he/she/it is solely responsible for their acts and the acts of **Airport Manager's Agents** while **Airport Manager** is engaged in the performance of services under this **Agreement**. As an independent contractor, the **Airport Manager** warrants that he will be liable for all taxes relating to businesses conducted or Employees hired by the **Airport Manager** on the premises. The **Airport Manager** shall further maintain workers compensation insurance as he may by law be required. The **Airport Manager** shall indemnify and hold **City** harmless from any claims or damages, including reasonable attorney fees, arising out of, or relating to, the use or occupation of the premises by the MANAGER, his assigns or sub lessee.

5. Airport Manager General Duties.

The **Airport Manager** will run the day-to-day activities of the **Airport** and generally protect the city's interest thereon. The general duties of the **Manager** shall include, but not be limited to, the following:

- 5.1. shall be accountable for all City property entrusted to him, minus an allowance for normal, wear and tear;
- 5.2. to supervise all activity at the airport and to assume responsibility for all activities thereon;
- 5.3. shall enforce and observe the regulations of the **City** that no intoxicating liquor shall be brought onto or be consumed on the **Airport** premises and no person in an intoxicated condition will be permitted to remain on the premises;
- 5.4. shall maintain, but not repair the runways, taxiways, and apron;
- 5.5. to maintain the airport records as may be required by the **City Public Works Director** and/or by other authorized governmental agencies;
- 5.6. manage the airport in such manner that all airport facilities are available to the public;
- 5.7. to regularly inspect, and correct or report to the **Public Works Director** any condition at the airport which may require correction, repair or alteration;
- 5.8. correct or report to the **Public Works Director** all violations of the ordinances of the city, state law and regulations of the Federal Aviation Administration;
- 5.9. The **Manager** shall make every effort to provide information for and promote goodwill with all airport visitors;
- 5.10. The **Manager** shall notify the Federal Aviation Administration in case of field closings, hazardous conditions and any emergencies; and
- 5.11. to perform such other duties as may, from time to time, be assigned by the **Public Works Director** or which may reasonably be required for the proper and safe operation and maintenance of the airport

6. Manager Specific Duties.

In addition to the **Airport Manager's** general duties, the **Airport Manager** shall reasonably and perform the following specific duties in a timely manner:

- 6.1. Mow and trim around main airport hangar;
- 6.2. Keep track of Fuel tank level and report when level is low;
- 6.3. Maintain the fuel tank for proper operation;

- 6.4. Prioritize the removal of snow/ice from in front of main hangar for LifeFlight helicopter ambulance safe operation and snow plow the main drive from Highway 7 to the office building;
- 6.5. to operate and properly inspect the airport lighting system;
- 6.6. maintain the main hangar and office building and grounds in a clean and orderly manner;
- 6.7. maintain a daily journal record of fuel sales and such other airport records as may be required by the Airport;
- 6.8. be available on as “as needed” basis for airport issues;
- 6.9. be responsible for the maintenance and security of the main hangar, office building and their contents;

Provided, however, that the Airport Manager shall not employ any individual or business, or assign any of the Airport manager’s duties described herein without the written pre-approval of the Public Works Director.

7. **Manager Compensation.**

As compensation for such services, the **City** agrees to pay the Airport Manager \$415.00 per month.

8. **Airport Manager Shall Permit Public Use.**

The **Airport Manager** shall not deny any person the use of the airport or its facilities for any activity connected with flying or airplanes, provided that such person complies with the appropriate Federal Aviation Administration Regulations; the rules and regulations of the **Public Works Director** ordinances of the **City**; and the terms of any contract relating to the management or operation of the airport.

9. **The City Reserves Certain Rights.**

The City and/or the City through the Public Works Director or such other authorized representative reserves the following:

- 9.1. the right, but shall not be obligated to the **Airport Manager**, to maintain and keep in repair the landing area of the **Airport** and all publicly owned facility of the **Airport**, together with the right to direct and control all activities of the **Airport Manager** in this regard.
- 9.2. the right to further develop or improve the landing area and all publicly owned air navigation facilities of the airport as it sees fit, regardless of the desires or views of the **Airport Manager**, and without interference or hindrance by the **Airport Manager**.
- 9.3. the right to take any action it considers necessary to protect the aerial approaches of the airport against obstruction, together with the right to prevent the **Airport Manager** from erecting, or permitting to be erected, any building or other structure on the airport which, in the opinion of the **City**, would limit the usefulness of the airport or constitutes a hazard to aircraft.

- 9.4. to the **City**, its successors and assigns, for the use and benefit of the public, a free and unrestricted flight for the passage of aircraft in the airspace above the surface of the premises described in this Agreement, together with the right to cause in such airspace any noise as may be inherent in the operation of aircraft, now known or hereafter used for navigation of or flight in the air, using the airspace or landing at, taking off from or operating on or about the airport.

10. **Military or Naval Aircraft Use.**

The **City** shall have the right to enter into an agreement with the United States Government for military aircraft or naval use of part or all of the landing area, the publicly owned air navigation facilities and/or other areas or facilities of the airport. If any such agreement is executed, the provisions of this Agreement, insofar as they are inconsistent, with the provisions of the agreement with the government, shall be suspended or modified to be consistent.

11. **United States, Generally.**

The Agreement shall be subordinate to the provisions of any existing or future agreement between the **City** and the United States relative to the operation or maintenance of the **Airport**, the execution of which has been, or may be, required as a condition precedent to the expenditure of federal funds for the development of the **Airport**.

12. **Agreement Shall Not Interfere with Airport.**

It is understood and agreed that the rights granted by this **Agreement** will not be exercised in such a way as to interfere with or adversely affect the use, operation, maintenance or development of the airport.

13. **City Shall Maintain Insurance.**

The **City** shall maintain fire and extended casualty insurance coverage upon the maintenance hangar. The **Airport Manager** shall maintain such insurance as he may desire on any personal property of the **Airport Manager**. The **City** shall bear no liability to the **Airport Manager** or to any third parties for bodily injury or damage to property relating to the use or occupation of the premises by the **Airport Manager**.

14. **Public Works Director Is Agent of the City.**

The **Public Works Director** shall be the agent and officer of the **City** in the operation of this Agreement, and all reports, accountings and notices provided herein shall be made to the **Public Works Director**.

15. **Notice.**

All notices to be provided regarding this **Agreement** shall be in writing and shall be given by personal delivery or by regular mail and, if to the **City** shall be addressed to the Harrisonville City Administrator, 300 E. Pearl Street, Harrisonville, Missouri, 64701, and if to the **Airport Manager** shall be addressed to Michael Newman at _____, Harrisonville, Missouri, 64701.

16. Sovereign Immunity.

Nothing in this **Agreement** shall be interpreted or construed as waiving the **City's** sovereign immunity granted under applicable Missouri Law.

17. Assignment.

The parties shall not assign this **Agreement** or any part thereof in any manner whatsoever or assign any of the privileges recited herein without the prior written consent of the non-assigning party. In the event of an assignment without the written consent of the non-assigning party, the assigning party shall remain liable for the remainder of the term of the **Agreement**.

18. Equal Employment/Affirmative Action/Non-Discrimination.

In the event of a breach of any of the non-discrimination or equal opportunity covenants, the **City** shall have the right to terminate this **Agreement**.

18.1. Equal Employment Opportunity.

The **Airport Manager** will not, on the grounds of race, creed, color, sex or national origin, discriminate or permit discrimination against any person or group of persons in any manner.

18.2. Non-Discrimination.

Airport Manager, for itself/himself/herself, its successors in interest and assigns, as a part of the consideration hereof, does hereby covenant and agree, that (1) no person, on the grounds of race, color, sex or national origin, shall be excluded from participation or denied the benefits of, or be otherwise subjected to discrimination in the performance by **Airport Manager** of this **Agreement**. **Airport Manager** further agrees to furnish all services required by this **Agreement** on a fair, equal and not unjustly discriminatory basis to all users thereof.

The parties hereto understand and agree that the **City** may, from time to time, be required by the United States Government, the State of Missouri or its agencies to adopt additional or amended provisions, including discrimination provisions, concerning the performance of this **Agreement** and **Airport Manager** agrees that it does adopt such requirements as a part of this **Agreement**.

19. Miscellaneous.

19.1. Cooperate to Accomplish Purpose:

The parties hereto shall cooperate to accomplish the intended purpose of this **Agreement**, including but not limited to, the signing and endorsement of any document or writing of any type whatsoever necessary to accomplish the intended purpose of this **Agreement**.

19.2. Compliance with Laws.

Each party shall comply with all municipal, township, county, state and federal laws, rules and regulations which pertain to the performance of such party's duties under this **Agreement**.

19.3. Headings; Construction.

The headings that have been used throughout this **Agreement** have been inserted for convenience of reference only and do not constitute matter to be construed in interpreting this

Agreement. Words of any gender used in this **Agreement** shall be held and construed to include any other gender and words in the singular number shall be held to include the plural, and vice versa, unless the context requires otherwise. The words “herein,” “hereof,” “hereunder” and other similar compounds of the word “here” when used in this **Agreement** shall refer to the entire **Agreement** and not to any particular provision or section.

19.4. Invalidity or Severability.

If any one or more of the provisions of this **Agreement**, or the applicability of any such provision to a specific situation, shall be held invalid or unenforceable, such provision shall be modified to the minimum extent necessary to make it or its application valid and enforceable, and the validity and enforceability of all other provisions of this **Agreement** and all other applications of any such provision shall not be affected thereby.

19.5. Waiver.

No waiver of any default by **Airport Manager** hereunder shall be implied from any omission by **City** to take any action on account of such default if such default persists or is repeated.

19.6. Governing Law.

All matters relating to the interpretation, construction, validity and enforcement of this **Agreement** shall be governed by the internal laws of the State of Missouri, without giving effect to any choice of law provisions thereof.

19.7. Binding Effect.

The covenants, obligations and conditions contained herein shall be binding on and inure to the benefit of the legal representatives, successors and permitted assigns of the parties hereto.

19.8. Time of Essence.

Time shall be of the essence in the performance of each and every covenant by each party pursuant to the terms of this **Agreement**.

19.9. Entire Agreement, Amendment and Modification.

This **Agreement** contains the entire agreement between the parties with respect to the subject matter hereof. All promises, representation, understandings, agreements and prior agreements are merged herein and superseded hereby. No amendment or modification of this **Agreement** shall be valid or binding unless reduced to writing and signed by the parties hereto. No course of dealing between the parties will modify, amend, waive or terminate any provision of this **Agreement** or any rights or obligations of any party under or by reason of this **Agreement**.

19.10. Counterparts.

To facilitate execution, this **Agreement** may be executed in as many counterparts as may be convenient or required. It shall not be necessary that the signature or acknowledgment of, or on behalf of, each party, or that the signature of all persons required to bind any party, or the acknowledgment of such party, appear on each counterpart. All counterparts shall collectively constitute a single instrument.

IN WITNESS WHEREOF, the parties hereto have caused this **Agreement** to be executed as of the date set forth above.

Michael Newman, and individual and
resident of the State of Missouri

City of Harrisonville, Missouri
a Missouri municipal corporation

By: Michael Newman

By: Happy Welch,
Title: City Administrator

Date: _____

Date: _____

Attachment: 11-15-18 Airport Manager Agreement - JF rev 5 CLEAN [Revision 1] (Airport Manager Contract)



STAFF REPORT

TO: Board of Aldermen
FROM: Happy Welch, City Administrator
DATE: November 15, 2018
SUBJECT: City Admin Rpt 11-19-18

Type of Item: *Report*

CITY ADMINISTRATOR REPORT

November 19, 2018

1. Our household hazardous waste collection for 2018 compares pretty well with our neighbors in Cass County. Harrisonville collected a total of 29,084 pounds at the mobile collection in June and from drop offs in Kansas City and Lee's Summit. Belton had a total of 26,201 pounds, Raymore had 22,030 pounds and the Garden City total was 2,147 pounds. The cost for our participation in 2019 will be \$10,810.21.
2. Winter is here and street staff was busy on Monday (11/12) as the snow fell. Crews were out from 6a to 3p that day and then back out Tuesday morning to fix some other slick spots.
3. The new Winter Market starts this Saturday at Mill Walk Mall. Amanda Stites who organizes the Farmer's Market on the Square is organizing this winter activity for home vendors and crafters. They open at 9a.
4. The Love the Harrisonville Square/Missouri Main St. Town Hall meeting is scheduled for Tuesday, November 27, 6p at the Beck Event Space. The community is invited to share their thoughts as to revitalizing the Square and what their vision is of future businesses, services, events look like for the Courthouse Square. Refreshments will be served.
5. City offices will be closed on Thursday and Friday, November 22 & 23 for the Thanksgiving Holiday.

A. Action Item (ID # 3055)

City Admin Rpt 11-19-18