# CITY OF O'FALLON, MISSOURI
## *PURCHASING DEPARTMENT*
**100 North Main Street**
**O'Fallon, MO 63366**

**T: (636) 379-5527** **Fax: (636) 978-4144**


| FURNISH AND DELIVER BID | | | |
|---|---|---|---|
| **INVITATION TO BID:** | **20-038** | **BID ISSUE DATE:** | **05/22/2020** |
| **BID DESCRIPTION:** | **WWTP OLD UV BUILDING CLEANING AND RESTORATION** | | |
| **BID OPENING DATE:** | **06/11/2020** | **BID OPENING TIME:** | **3:00 P.M. CDT** |
| **COPIES REQUIRED:** | **1 ORIGINAL** | **BID BOND REQUIRED:** | **NO** |

BID RESPONSES MUST BE RECEIVED AND TIME STAMPED NO LATER THAN THE PUBLIC BID OPENING DATE AND TIME (LOCAL TIME) SPECIFIED ABOVE. BIDS WILL BE OPENED AND READ ALOUD AT THAT TIME IN THE COUNCILMEN'S CONFERENCE ROOM ON THE FIRST FLOOR OF THE MUNICIPAL CENTER. LATE BIDS WILL NOT BE OPENED OR CONSIDERED.

## TO ALL PROSPECTIVE BIDDERS:

You are hereby invited to submit your bid for the item(s) to be furnished and delivered, shipped F.O.B. delivered, to the address specified herein on the forms supplied. **Do not staple or submit bid in any type of binder**; binder clips are acceptable.

The original bid, along with the bid bond (if applicable), must be received in a sealed envelope that has your company name and address in the upper left corner and the attached label filled in and pasted on the lower left corner.

All bids are subject to staff analysis. The City of O'Fallon, Missouri reserves the right to accept or reject any and all bids received and waive any and all technicalities.

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| QUESTIONS SHOULD BE SUBMITTED IN WRITING VIA E-MAIL OR FAX BY 12:00 P.M. on 06/04/2020 TO THE PURCHASING AGENT. QUESTIONS WILL ONLY BE ANSWERED BY END OF DAY ON 06/05/2020.<br>Addendum information is available over the Internet at www.ofallon.mo.us. We strongly suggest that you check for any addenda a minimum forty-eight hours (48) in advance of the bid deadline. | PURCHASING AGENT:<br>JULIE MOELLERING | |
| | PHONE:<br>E-MAIL:<br>FAX: | 636.379.5527<br>jmoellering@ofallon.mo.us<br>636.978.4144 |

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|---|---|
| **BIDS MUST BE DELIVERED AND TIME STAMPED, PRIOR TO THE PUBLIC BID OPENING DATE AND TIME, TO:** | **CITY OF O'FALLON**<br>**ATTN: JULIE MOELLERING, PURCHASING AGENT**<br>**100 NORTH MAIN STREET**<br>**O'FALLON, MO 63366** |

| | |
|---|---|
| FULL NAME OF BIDDER | |
| BID CONTACT PERSON | |
| TELEPHONE NUMBER | |

**FACSIMILE AND/OR E-MAIL TRANSMITTED BIDS WILL NOT BE ACCEPTED**

# INSTRUCTIONS TO BIDDERS

**BID REQUIREMENTS:**
The City of O'Fallon, Missouri (the "City") **requires** all bids be submitted on the blank bid form furnished with these contract documents and shall conform to the terms and conditions set forth in the "Instructions to Bidders", "General Conditions" and "Special Conditions" of the contract. Please make and retain a copy of this bid for your records. The bid must be enclosed in a sealed envelope bearing the bid number and the printed title of the bid. Bidders must sign, in ink, the bid form and all other documents where indicated.

Where applicable, the Bidder shall furnish with the bid, one set of all available literature pertaining to the equipment and/or material to be furnished under the bid.

Bidder shall acknowledge receipt of each addendum issued in the space provided on the bid form.

The total price quoted by the Bidder must be the total cost delivered to the location(s) stated in the "Special Conditions" or "Specifications". Bidder must not qualify his bid by stating a F.O.B. location other than such stated location(s).

In the specifications, whenever an article or material is defined by brand name, the name and catalog number of a particular manufacturer, vendor or a limited description, the term "OR APPROVED EQUAL" is written. Any reference to a particular manufacturer's product either by brand name or limited description is only for purposes of setting a standard of performance, quality, composition, construction or size. If there is any deviation in the pack, source, quality, etc., of an item bid, from that prescribed in the specifications, the appropriate line in the specifications will be ruled out and the substitution clearly indicated.

However, if "OR APPROVED EQUAL" is not written and you cannot bid the specified item, the Bidder may submit an alternate bid. The City will consider the bids covering the specified article or material first.

The City, for cost effective measures, standardizes on specific items; those bids will contain the language "no substitution," and any alternative will not be considered.

**ALTERNATE/EQUAL BIDS:**
The City recognizes the expertise provided by many bidders and encourages creativity in bidding. Alternates may be considered if the bid submitted clearly indicates what will be furnished and how it will benefit the City. Alternates will be compared to the lowest responsive, responsible bid as specified.

The City reserves the right to approve any material the Bidder proposes to furnish which contains variations from specification requirements but which may substantially comply.

**BONDS:**
No bonds are required to be submitted with this bid.

**CONTRACT AWARD INFORMATION:**
Award notification will be sent to the vendor receiving the award via mail or email.

Response summaries will be available at www.ofallon.mo.us under Bid Opportunities. This summary of information will include bids that were delivered by the required bid opening date and time.

**CONTRACT DOCUMENT COMPONENT PARTS:**
The contract documents herein named include all of the following component parts, all of which are fully a part of this contract as if herein set out verbatim, or, if not attached, as if hereto attached.
1) Instructions to Bidders
2) General Conditions
3) Special Conditions
4) Bid Form
5) References
6) Specifications
7) Pricing/Signatures
8) Any and all addenda to the foregoing

All documents are or will be on file in the office of the City Clerk, City of O'Fallon, MO, 100 North Main, O'Fallon, MO 63366.

**DEVIATIONS AND EXCEPTIONS:**
Deviations and exceptions shall be described fully, on the Bidder's letterhead, signed, and attached to the Bid Form. In the absence of such statement, the bid shall be considered as if submitted in strict compliance with all terms, conditions, and specifications; the Bidder shall be held liable. Bidders are cautioned to avoid making deviations and exceptions to the specifications, which may result in rejection of their bid.

**EXAMINATION BY BIDDER:**
The Bidder shall, before submitting his bid, carefully examine the bid, specifications and contract documents.

If his bid is accepted, he will be responsible for all errors in his bid resulting from his failure or neglect to comply with these instructions.

Unless otherwise provided in the SPECIAL CONDITIONS, when the specifications include information pertaining to preliminary investigations made by the City, such information represents only the opinion of the City as to the location, character or quantity of the materials encountered. That information is only included for the convenience of the Contractor. The City assumes no responsibility whatsoever with respect to the sufficiency or accuracy of the information.

**FACSIMILE/E-MAIL TRANSMITTALS:**
Facsimile and/or e-mail transmitted bids will not be accepted by the City.

**INDEMNITY:**
The Contractor shall, at all times, fully indemnify, hold harmless, and defend the City and its officers, members, agents, and employees from and against any and all claims and demands, actions, causes of action, and cost and fees of any character whatsoever made by anyone whomsoever on account of or in any way growing out of the performance of this contract by the Contractor and its employees, or because of any act or omission, neglect or misconduct of the Contractor, its employees and agents or its subcontractors including, but not limited to, any claims that may be made by the employees themselves for injuries to their person or property or otherwise.

Such indemnity shall not be limited by reason of the enumeration of any insurance coverage herein provided.

Nothing contained herein shall be construed as prohibiting the City, its directors, officers, agents, or its employees, from defending through the selection and use of their own agents, attorneys and experts, any claims, actions or suits brought against them.

The Contractor shall likewise be liable for the cost, fees and expenses incurred in the City's or the Contractor's defense of any such claims, actions, or suits.

**INTERPRETATION OF CONTRACT DOCUMENTS:**
If a potential Bidder is uncertain as to the meaning of any part of the specifications or other contract documents, the bidder is expected to submit questions to the Purchasing Agent. The Purchasing Agent is the point of contact for this bid. All communications regarding this bid packet must be directed to the Purchasing Agent. All contact with the City should be channeled through the Purchasing Agent. No contact with other City employees, officials, or City Council members is to be made by responding proposers throughout the entire process.

If a question can be answered by directing the questioner to a specific section of the bid packet, then the Purchasing Agent may answer the question over the telephone. Other questions may be more complex and may require a written amendment to the specifications. The Purchasing Agent will make this determination. Oral communication is considered unofficial and non-binding on the City. If an amendment to the specifications is issued, it will be provided to all offerors that were issued a copy of the bid packet and to those that have requested a copy of the bid packet from the Purchasing Agent.

Julie Moellering, Purchasing Agent
Fax: 636-978-4144
E-mail: jmoellering@ofallon.mo.us

Only questions answered by formal written addenda will be binding. Oral and interpretations or clarifications will be without legal affect.

**PREPARATION OF BIDS:**
The Bidder shall return his bid on the attached bid forms**. Bids must be returned with all pages intact.** Please make and retain a copy of this bid for your records. Unless otherwise stated, all blank spaces on the bid page or pages, applicable to the subject specification, shall be correctly filled in. Either a unit price or a lump sum price, or both as the case may be, shall be stated for each and every item, either typed in or printed in ink, in figures, and if required in words. Bidder shall acknowledge receipt of each addendum issued in the space provided on the bid form.

All prices quoted by the Bidder shall be F.O.B. delivered and shall include any and all freight costs to the delivery location(s) specified. The Bidder must not qualify the bid by stating F.O.B. a location other than such stated location(s).

When a bid consists of a number of items, prices must be submitted for all items, unless otherwise directed in the Special Conditions.

Where unit prices are to be bid, and/or where bids are to be made on more than one item, the Bidder shall extend the unit price(s) bid in the places provided on the pricing pages for the approximate quantities, shall compute the total amount of the bid and shall indicate same on the bid page. The Bidder must bid in accordance with the unit(s) of measure called for. If an item is listed by each, the bid price must be entered by each, not dozen or hundred. All extensions and total sums are subject to verification by the City and the correct extensions and sums will be used in the comparison of bids.

Where unit prices are requested, the quantities stated are approximate only. The quantities for all items on which bids are to be received on a unit price basis, will not be used in establishing final payment due the Contractor. Bids will be compared on the basis of number of units stated in the Bid Pricing Section. Contract payment for unit price items will be based on the actual number of units installed in the completed work within the proposed scope of work.

All extensions and total sums are subject to verification by the City and the correct extensions and sums will be used in the comparison of bids. If a discrepancy exists between the unit prices and totals, the unit prices shall prevail. If a discrepancy exists between the total base bid and the true sum of the individual bid items, the true sum shall prevail.

In certain cases, amounts are to be shown in both words and figures. When discrepancies occur between the "Written in Words" and the "In Figures" amounts for the total lump sum bid amount, the "Written in Words" shall govern.

Bidders are warned against making any erasures or alterations of any kind, and bids, that contain omissions, erasures, conditions, alterations, or additions not called for may be rejected. The bidder must fill in all blanks. Use "N/A" or "None" where applicable.

**The bid shall be signed by a company officer empowered to bind the company. Failure to sign the bid may cause the bid to be determined to be non-responsive and the bid may be rejected.**

**SUBMISSION OF BIDS:**
All bids must be received in sealed envelopes that have your name and address in the UPPER left corner and the attached label filled in and pasted on the LOWER left corner.

Bids mailed "EXPRESS MAIL" must have bid number and due date on the outside of the EXPRESS MAIL envelope.

The Bidder shall be responsible for delivery of bids to the Purchasing Agent before the date and hour set for the opening of bids. The City assumes no responsibility for delays caused by any delivery service. Postmarking by due date will not substitute for actual receipt by the City. Late bids will not be opened or considered.

**BID OPENING PROCEDURE:**
In response to COVID-19, the City of O'Fallon is implementing special procedures for the bid opening. During these times, the City is committed to doing everything possible to minimize the risk of exposure to oneself, co-workers, bidders, and the public while continuing to provide services to the residents and visitors.

To make deliveries (including deliveries of the bids for this project), the delivery vendor or bidder must call (636) 240-2000 when they arrive at City Hall. The delivery is to be left outside the building while City staff are inside watching. Once the bidder or delivery driver steps away from the package, City staff will open the door to take safe delivery of the package. Do not leave deliveries or bids at City Hall without confirmation from City staff.

Due to COVID-19 concerns, members of the public, including Bidders, Contractors, Sub-Contractors, and others, may not appear in person for the bid opening at City Hall. The bid opening will be streamed live on the City's website at: https://www.ofallon.mo.us/ofallontv. The City will make every effort to post the "as read" bid opening results on the City's website by the close of business that same day. The "Bid Opportunities" page within the "Services" tab on the City website is where the bid results will be available. A link to the video may be obtained by contacting Julie Moellering, Purchasing Agent at jmoellering@ofallon.mo.us or (636) 379-5527. Please allow up to 48 hours to receive the link.

## END OF INSTRUCTIONS TO BIDDERS

# GENERAL CONDITIONS

**ADDENDUM AND SUPPLEMENT TO REQUEST:**
If it becomes necessary to revise any part of this request or if additional data is necessary to enable the exact interpretation of provisions of this request, revisions will be provided in the form of an Addendum. If revisions are necessary after any mandatory Pre-Bid conference, the revisions will be provided only to those Contractors who will have attended the Pre-Bid conference.

**CHANGES:**
All changes to this Bid Document shall be amended in written form (Addenda). The Purchasing Agent prior to the scheduled bid opening shall issue such amendments.

The City reserves the right to make any desired change in the specifications after the same shall have been put under contract; but the change so made, with the price to be added or deducted from the contract price, therefore, shall be agreed upon in advance between City and the successful Contractor.

The City shall issue to the successful Contractor a written change order to the original contract; such change orders shall be binding upon both parties thereto and shall in no way invalidate or make void the terms of the original contract not modified by such change.

No claim based on oral changes will be allowed.

**CONTRACTOR PERFORMANCE:**
The Instructions to Bidders, Bid Form, General Conditions, Special Conditions, contract specifications and attached exhibits shall together constitute the Contract. The Contractor hereby asserts that it has read the specifications, and that it is thoroughly informed and familiar as to their contents and requirements. All items shall be supplied in strict accordance with the specifications. The Contractor's performance under the terms of this Contract shall be to the satisfaction of the City.

**DISCLAIMER:**
RESERVED BY OWNER
The City reserves the right to reject any or all bids failing to meet the City's specifications or requirements and to waive technicalities. If in the City's opinion, the lowest bid is not the most responsible bid, considering value received for monies expended, the right is reserved to make awards as determined solely by the judgment of the City. In determining the lowest responsible bidder, the City shall take into consideration the qualities of the articles supplied, their conformity with the specifications, and their suitability to the requirements of the City and the delivery terms. Intangible factors, such as the Contractor's reputation and past performance, will also be weighed.

The Contractor's failure to meet the mandatory requirements will result in the disqualification of the Contractor's bid from further considerations.

The City further reserves the right to reject all bids and obtain goods or services through intergovernmental or cooperative agreements.

Submission of a bid confers no rights on the Contractor to a selection or to a subsequent contract. This Invitation to Bid process is for the City's benefit only and is intended to provide the City with competitive information to assist in selection of services. All decisions on compliance, evaluation, terms and conditions shall be made solely at the City's discretion and shall be made to favor the City.

**DRUG FREE WORKPLACE:**
The Contractor (whether an individual or company) agrees to provide a drug free workplace.

**ENDORSEMENTS:**
Contractor shall not use the City in any form of endorsement to any third-party without the Buyer's written permission.

**EXECUTION OF CONTRACT:**
The bidder to whom the contract has been awarded shall sign one (1) copy of the contract and return it to the City within seven (7) calendar days after receipt of the contract. Failure to execute the contract and return it to the City within seven (7) calendar days after receipt of the contract shall be cause for the annulment of the contract award and the forfeiture of the bid security to the City.

If circumstances beyond the Contractor's control prohibit a timely execution of this contract, prior written approval must be requested by the Contractor and receive approval from the City for an extension to the delivery date.

**SAFETY DATA SHEETS:**
If applicable, Contractor shall furnish and submit, to the City, Safety Data Sheets for their products upon award of Contract.

**LIQUIDATED DAMAGES:**
Liquidated damages shall be assessed against the Contractor for failure to commence the project within ten (10) calendar days from the written notice to proceed date and/or complete the project on the designated completion date in the amount of Two Hundred Fifty Dollars ($250.00) per consecutive calendar day. Written notice for the commencement of liquidated damages will not be required.

**F.O.B.:**
All goods are to be shipped prepaid, F.O.B. destination. Shipments sent C.O.D. without City's written consent will not be accepted and will at Contractor's risk and expense, be returned to Contractor. Unauthorized shipments are subject to rejection and return at Contractor's expense.

**HOLDING OF BIDS:**
Contractor may withdraw their bids at any time prior to the time specified as the closing time for the receipt of bids. However, no Contractor shall withdraw or cancel his bid for a period of ninety (90) calendar days after said closing time for the receipt of bids.

**LAW GOVERNING:**
All State of Missouri and/or Federal Laws shall be hereby specifically made a part of this contract as set forth herein.

**LIENS, CLAIMS, AND ENCUMBRANCES:**
Contractor warrants and represents that all the goods and materials ordered herein are free and clear of all liens, claims, or encumbrances of any kind.

**MISCELLANEOUS REQUIREMENTS:**
The City will not be responsible for any expenses incurred by the Contractor in preparing and submitting a Bid. All Bids shall provide a straightforward, concise delineation of your capabilities to satisfy the requirements of this request. Emphasis should be on completeness and clarity of content.

The Contractor is prohibited from assigning, transferring, conveying, subletting, or otherwise disposing of this agreement or its rights, title of interest therein or its power to execute such agreement to any other person, company or corporation without the previous consent and approval in writing by the City.

**NON-DISCRIMINATING:**
The Contractor, its employees and subcontractors, agree not to commit unlawful discrimination and agree to comply with applicable provisions of the, the U.S. Civil Rights Act and Section 504 of the Federal Rehabilitation Act, and rules applicable to each.

Firm shall comply with Section 285.525 – 285.550 RSMo regarding enrollment in a federal work authorization program. **A signed, notarized affidavit (attached) and supporting documentation affirming enrollment in a federal work authorization program must be submitted with proposal. Failure to comply with this provision may result in rejection of proposal.**

**E-VERIFY:**
Company shall be E-verify compliant and shall provide documentation to support this requirement within the proposal including the memorandum of understanding (MOU) and the electronic signature page completed in its entirety.

**NON-EXCLUSIVITY:**
Nothing herein is intended nor shall be construed as creating any exclusive arrangement with Vendor.

**PATENTS:**
Contractor undertakes and agrees to defend at Contractor's own expense, all suits, actions, or proceedings against buyer, in which City, and of Contractor's suppliers, contractors, distributors or dealers, or the users of any of Contractor's products are made defendants for actual or alleged infringement of any U.S. or foreign letters patent resulting from the use or sale of the items purchased hereunder. Contractor shall inform the City whenever infringement will result from Contractor's adherence to specifications supplied by the City or by an authorized City Representative. Contractor further agrees to pay and discharge any and all judgments or decrees, which may be rendered in any such suit, action or proceedings against City therein.

**PAYMENT:**
The goal of the City is to pay properly submitted Contractor invoices within thirty (30) days of receipt, providing goods have been delivered, approved, and accepted by an authorized City Representative. Original invoices must be presented for payment in accordance with instructions contained on the Purchase Order including reference to Purchase Order number and submitted to the correct address for processing.

**TAX:**
The City is not responsible for and will not pay local, Federal Excise Tax or Missouri Sales Tax. A copy of the exemption letter is available upon written request.

**TERMS/CANCELLATION AND DAMAGES:**
This contract may be terminated by either or both parties upon thirty (30) days written notice or upon mutual agreement of both parties.

If the City because of the Contractor's breach terminates this Contract, the City shall have the right to purchase equipment elsewhere and to charge the Contractor with any additional cost incurred.

Notwithstanding the above, the Contractor shall not be relieved of any liability to the City for damages sustained by the City by virtue of any breach of this contract by the Contractor and the City may withhold any payments to the Contractor until such time as the amount of such damages due the City from the Contractor shall be determined.

**TRANSFER OF OWNERSHIP OR ASSIGNMENT:**
The terms and conditions of this contract shall be binding upon and shall enure to the benefit of the parties hereto and their respective successors and assigns.

Prior to any sales or assignments the City must be notified and approve same in writing. The City shall have right of first refusal.

## END OF GENERAL CONDITIONS

# SPECIAL CONDITIONS

**DELIVERY REQUIREMENTS:**

In this contract, time is of the essence. All freight and delivery charges are to be included in the costs entered on the bid pricing page. Under no circumstances will the City be liable for additional delivery charges.

The successful bidder's performance under the terms and conditions of this contract shall be satisfactory to the City.

All deliveries shall be made Monday – Friday between the hours of 8:00 a.m. and 5:00 p.m. unless other arrangements have been made.

**PREVAILING WAGE LAWS:**

This project shall follow the prevailing wage requirements listed in the general provisions; however, if the bid is less than $75,000.00 prevailing wage will not be required.

A. State of Missouri: On projects involving Public Works or Public Funds, it is the statutory policy of the State of Missouri that "a wage of not less than the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed, shall be paid to all workmen employed by or on behalf of any public body, engaged in Public Works, exclusive of maintenance work." In compliance with Missouri State Law, the following stipulations are made a part of this contract:

   1. The schedule of occupational classifications and minimum hourly wage rates applicable to this project are to be attached and made a part of the Contract Documents.

   2. The general prevailing rate for legal holidays and overtime work, as determined by the Industrial Commission, and as attached herein, shall be paid all workmen.

   3. The CONTRACTOR shall forfeit as a penalty to the state, county, city, town, district, or other political subdivision on whose behalf the contract is made or awarded $10.00 for each workman employed, for each calendar day, or portion thereof, such workman is paid less than the said stipulated rates for any work done under this contract, by him or by any subcontractor under him. Section 290.250, RSMo.

   4. All bonds furnished by this CONTRACTOR shall include such provisions as will guarantee the faithful performance of the prevailing hourly wage clause as provided by this Contract.

   5. A clearly legible statement of all prevailing hourly wage rates to be paid all workmen employed in order to execute this Contract and employed on this project shall be kept posted in a prominent and easily accessible place at the site thereof by each CONTRACTOR and subcontractor engaged in this project under the Prevailing Wage Law Section 290.210 through 290.340 as amended R.S. No. 1994, effective October 13, 1994; and each notice shall remain posted during the full time that any such workmen shall be employed on the project.

   6. Upon completion of construction and before final payment can be made from this project; the CONTRACTOR shall file an "Affidavit of Compliance with the Prevailing Wage Law". No payment can be made unless and until this affidavit is filed in proper order.

B. The Prevailing Wage document to be utilized throughout the duration of the construction contract is the one that is "In Effect" as posted with the Missouri Department of Labor and Industrial Relations at the time of the first day of the project Advertisement.

   The Prevailing Wage document as attached to these specifications, for all intents and purposes is meant to reflect the most current version at the time of the bid opening and if for some reason the one included with these specifications is out-of-date, then one that would have been in effect at the time of the advertisement will prevail.

# END OF SPECIAL CONDITIONS

# INSURANCE REQUIREMENTS

**GENERAL:**

The Vendor shall respond to these specifications as an independent contractor and not as an employee of the City of O'Fallon. An original Certificate of Insurance from the company or authorized agent of record must be furnished to the City, provide that the City of O'Fallon is an "Additional Insured" on the Vendor's Commercial General Liability policy during the Term of the Agreement, and a copy of such "Additional Insured" endorsement must accompany the insurance certificate. This requirement of insurance does not limit the Vendor's liability under the Agreement in any manner.

**WORKER'S COMPENSATION INSURANCE:**

The Vendor shall procure and shall maintain during the Term of the Agreement, Worker's Compensation Insurance for all of its employees to be engaged and perform work under the Agreement, and in case such work is sublet, the Concessionaire shall require the subcontractor similarly to provide Worker's Compensation Insurance for all such employees to be engaged by the Vendor for such work unless such employees are covered by the protection afforded by the Vendor's Worker's Compensation Insurance. In the event any class of employees engaged in hazardous work under the Agreement is not protected under the Worker's Compensation statute, the Vendor shall provide and shall cause such subcontractor to provide adequate Employer's Liability insurance for the protection of its employees not otherwise protected.

**Commercial General Liability Insurance:**

The Vendor shall carry public and property damage insurance which shall include bodily injury and accidental death to any person and subject at the minimum limits set forth below:

| | |
|---|---|
| Liability Limits | $1,000,000/Per Occurrence<br>$3,000,000/General Aggregate<br>$3,000,000 Products/Completed Operations aggregate<br>Additional Insured status must be provided to the City and confirmed by copy of such endorsement.<br>An umbrella/excess liability policy can be used to attain the required limits. |

**Commercial Automobile Liability Insurance:**

The Vendor shall maintain Commercial Automobile Liability Insurance Coverage in the amounts not less than the minimum limits set forth below:

| | |
|---|---|
| Bodily Injury and Property Damage | $3,000,000 Combined Single Liability Limit<br>An umbrella/excess liability policy can be used to attain the required limits. |

**CHANGES IN INSURANCE COVERAGE:**

The Contractor shall notify the City of changes in insurance coverage in writing within thirty (30) days.

**INDEMNITY:**

The Contractor shall, at all times, fully indemnify, hold harmless, and defend the City and its officers, members, agents, and employees from and against any and all claims and demands, actions, causes of action, and cost and fees of any character whatsoever made by anyone whomsoever on account of or in any way growing out of the performance of this contract by the Contractor and its employees, or because of any act or omission, neglect or misconduct of the Contractor, its employees and agents or its subcontractors including, but not limited to, any claims that may be made by the employees themselves for injuries to their person or property or otherwise. Such indemnity shall not be limited by reason of the enumeration of any insurance coverage herein provided.

Nothing contained herein shall be construed as prohibiting the City, its directors, officers, agents, or its employees, from defending through the selection and use of their own agents, attorneys and experts, any claims, actions or suits brought against them.

The Contractor shall likewise be liable for the cost, fees and expenses incurred in the City's or the Contractor's defense of any such claims, actions, or suits.

The Contractor shall be responsible for any damages incurred as a result of its errors, omissions or negligent acts and for any losses or costs to repair or remedy construction as a result of its errors, omissions or negligent acts.

**INSURANCE RATING:**
All of the above-specified types of insurance shall be obtained from companies that have at least an A-VII rating in Best's Guide or the equivalent.

**SURVIVAL OF INDEMNIFICATION:**
The indemnification described above shall not be limited by reason of the enumeration of any insurance coverage herein provided, and it shall survive the termination of the Contract for claims arising from events occurring while the Contract is in force.

**NOTICE OF LAWSUIT:**
Within sixty (60) days of service of process, the City shall notify the Contractor of any lawsuit involving the indemnification provided for above. Failure to provide such notice shall not relieve the Contractor of its obligation to provide indemnification. However, the City shall be responsible for any additional costs of defense incurred due to their failure to provide such notice within sixty (60) days.

**CHOICE OF LEGAL COUNSEL:**
The contractor shall provide coverage as stipulated in the contract. In the event of a proceeding, the City retains the right to approve legal counsel for claims brought against the City.

**DISPUTES:**
Any dispute arising out of this agreement will be resolved under the laws of the State of Missouri.

## END OF INSURANCE REQUIREMENTS

# SIGNATURE AND IDENTITY OF BIDDER

(PLEASE TYPE OR PRINT THE FOLLOWING INFORMATION)

| | |
|---|---|
| Full Name of Bidder | |
| Main Business Address | |
| City, State, Zip Code | |
| Telephone Number | |
| Fax Number | |
| Bid Contact Person | |
| Email Address | |

TO: Julie Moellering, Purchasing Agent

The undersigned, being duly sworn, certifies that he is:

❑ the Owner/Sole Proprietor ❑ a Member of the Partnership ❑ an Officer of the Corporation ❑ a Member of the Joint Venture

herein after called the Bidder and that the members of the Partnership or Officers of the Corporation are as follows:

_____ (President or Partner)

_____ (Vice-President or Partner)

_____ (Secretary or Partner)

_____ (Treasurer or Partner)

Further, as Contractor, declares that the only person or parties interested in this bid as principals are those named herein; that this bid is made without collusion with any other person, firm or corporation; that he has fully examined the proposed forms of agreement and the contract specifications for the above designated purchase, all of which are on file in the office of the City Clerk, 100 North Main Street, O'Fallon, Missouri 63366, and all other documents referred to or mentioned in the contract documents, specifications and attached exhibits, including Addenda No. _____, _____, and _____ issued thereto;

Further, the Contractor proposes and agrees, if this bid is accepted, to provide all necessary machinery, tools, apparatus and other means of construction, including transportation services necessary to furnish all the materials and equipment specified or referred to in the contract documents in the manner and time therein prescribed.

Further, the undersigned certifies and warrants that he is duly authorized to execute this certification/affidavit on behalf of the Bidder and in accordance with the Partnership Agreement or by-laws of the Corporation, and the laws of the State of Missouri and that this Certification is binding upon the Bidder and is true and accurate. Further, the undersigned certifies that the Bidder is not barred from bidding on this contract as a result of a violation of either bid rigging or bid-rotating.

The affiant deposes and says that he has examined and carefully prepared this bid and has checked the same in detail before submitting this bid, and that the statements contained herein are true and correct.

If a Corporation, the undersigned further certifies that the recitals and resolutions attached hereto and made a part hereof were properly adopted by the Board of Directors of the Corporation at a meeting of said Board of Directors duly called and held and have not been repealed, nor modified and that the same remain in full force and effect. *(Attach a copy of the corporate resolution granting the individual executing the contract documents authority to do so.)*

Finally, the Contractor agrees to do all other things required of the Contractor by the contract documents, and that he will take in full payment therefore the sums set forth in the bidding schedule.

Signature of Bidder authorizes the City to verify business references.

The undersigned states that the correct LEGAL NAME and ADDRESS of (1) the individual Bidder, (2) each partner or joint venture (whether individuals or corporations, and whether doing business under a fictitious name), or (3) the corporation (with the City in which it is incorporated) are shown below; that (if not signing with the intention of binding himself to become the responsible and sole contractor) he is the agent of, and duly authorized in writing to sign for the Bidder or Bidders; and that he is signing and executing this (as indicated in the proper spaces below) as the proposal of a

( ) sole individual ( ) partnership ( ) joint venture

( ) corporation, incorporated under laws of State of _____

Date Business Established: _____

Dated: _____

City of O'Fallon Business License ID*:_____
(*If located within City limits)

| Name of individual, all partners, or joint ventures: | Address of each: |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

doing business under the name of:

| | Address of principal place of business in Missouri |
|---|---|
| _____ | _____ |
| (If using a fictitious name, show this name above in addition to legal names) | |
| _____ | _____ |
| (If a corporation, show its name above) | |

ATTEST: (SEAL)

| | |
|---|---|
| _____ | _____ |
| Secretary | Title |

(NOTE: If the Bidder is doing business under a FICTITIOUS NAME, the Proposal shall be executed in the legal name of the individual, partners, joint ventures, or corporation, with the legal address shown, and REGISTRATION OF FICTITIOUS NAME filed with the Secretary of State, as required by Sections 417.200 to 417.230, RS Mo. If the Bidder is a CORPORATION NOT ORGANIZED UNDER THE LAWS OF MISSOURI, it shall procure a CERTIFICATE OF AUTHORITY TO DO BUSINESS IN MISSOURI, as required by Section 351.570 and following, RS Mo. A CERTIFIED COPY of such Registration of Fictitious Name or Certificate of Authority to do Business in Missouri shall be included with this bid.

# REFERENCES

The bidder must list four (4) references, listing firm name, address, telephone number and contact person to whom they have provided similar equipment, material or services for a period of not less than six (6) months.

The bidder verifies that they have provided equipment, material, or services described in this contract to the following parties with needs similar to that of City and authorizes the City to verify references of business and credit at its option.

| | |
|---|---|
| **COMPANY NAME:** | |
| **ADDRESS:** | |
| | |
| | |
| **CONTACT PERSON:** | |
| **TELEPHONE NUMBER:** | |

| | |
|---|---|
| **COMPANY NAME:** | |
| **ADDRESS:** | |
| | |
| | |
| **CONTACT PERSON:** | |
| **TELEPHONE NUMBER:** | |

| | |
|---|---|
| **COMPANY NAME:** | |
| **ADDRESS:** | |
| | |
| | |
| **CONTACT PERSON:** | |
| **TELEPHONE NUMBER:** | |

| | |
|---|---|
| **COMPANY NAME:** | |
| **ADDRESS:** | |
| | |
| | |
| **CONTACT PERSON:** | |
| **TELEPHONE NUMBER:** | |

State the number of years in business _____ State the current number of personnel on staff _____

## ANTI-COLLUSION STATEMENT

**STATE OF MISSOURI**

**CITY/COUNTY OF**_____

_____

_____ being first duly sworn, deposes and says that he is

_____
*Title of Person Signing*

of _____

_____
*Name of Bidder*

that all statements made and facts set out in the proposal for the above project are true and correct; and the bidder (The person, firm, association, or corporation making said bid) has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with said bid or any contract which may result from its acceptance.

Affiant further certifies that bidder is not financially interested in, or financially affiliated with, any other bidder for the above project.

BY_____

BY_____

BY_____

*SWORN* to before me this _____ day of _____ 20 ___.

_____
*Notary Public*

My Commission Expires_____

# PREFERENCE IN PURCHASING PRODUCTS

DATE: _____

THE BIDDERS ATTENTION IS DIRECTED TO Section 34.076 RSMo 2000 which gives preference to Missouri corporations, firms, and individuals when letting contracts or purchasing products.

Bids received will be evaluated on the basis of this legislation.

**All vendors submitting a bid must furnish all information requested below.**

**FOR CORPORATIONS:**

State in which incorporated: _____

**FOR OTHERS:**

State of domicile: _____

**FOR ALL VENDORS:**

List address of Missouri offices or places of business:

_____
_____
_____
_____
_____

**THIS SECTION MUST BE COMPLETED AND SIGNED:**

FIRM NAME:_____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

BY (signature required): _____

Federal Tax ID #: _____ if no Federal Tax ID # list SS #: _____

*For bid to be considered, the Preference in Purchasing Products form must be filled out and submitted for each bid and dated in the current calendar year.*

## WORKER ELIGIBILITY VERIFICATION AFFIDAVIT

STATE OF _____ )
) ss
COUNTY OF _____ )

On the _____ day of _____, 20____, before me appeared _____,
Affiant name

personally known to me or proved to me on the basis of satisfactory evidence to be a person whose name is subscribed to this affidavit, who being by me duly sworn, stated as follows:

- I, the Affiant, am of sound mind, capable of making this affidavit, and personally certify the facts herein stated, as required by Section 285.530, RSMo, to enter into any contract agreement with the City to perform any job, task, employment, labor, personal services, or any other activity for which compensation is provided, expected, or due, including but not limited to all activities conducted by business entities.
- I, the Affiant, am the _____ of _____, and I am duly
title business name

authorized, directed, and/or empowered to act officially and properly on behalf of this business entity.

- I, the Affiant, hereby affirm and warrant that the aforementioned business entity is enrolled in a federal work authorization program operated by the United States Department of Homeland Security, and the aforementioned business entity shall participate in said program to verify the employment eligibility of newly hired employees working in connection with any services contracted by the City of O'Fallon. I have attached documentation to this affidavit to evidence enrollment/participation by the aforementioned business entity in a federal work authorization program, as required by Section 285.530, RSMo.
- I, the Affiant, also hereby affirm and warrant that the aforementioned business entity does not and shall not knowingly employ, in connection with any services contracted by the City, any alien who does not have the legal right or authorization under federal law to work in the United States, as defined in 8 U.S.C. § 1324a(h)(3).
- I, the Affiant, am aware and recognize that, unless certain contract and affidavit conditions are satisfied pursuant to Section 285.530, RSMo, the aforementioned business entity may be held liable under Sections 285.525 through 285.550, RSMo, for subcontractors that knowingly employ or continue to employ any unauthorized alien to work within the state of Missouri.
- I, the Affiant, acknowledge that I am signing this affidavit as a free act and deed of the aforementioned business entity and not under duress.

_____
Affiant Signature

Subscribed and sworn to before me in _____, _____, the day and year first above-written.
city (or county) state

My commission expires: _____
Notary Public

***[Attach documentation of enrollment/participation in a federal work authorization program]***

# Specifications

The City of O'Fallon, MO ("City") is soliciting sealed bids for services at the Wastewater Treatment Plant (WWTP) located at 150 Firma Road, O'Fallon, MO 63366 related to the following projects:

- GENERAL CLEANING AND RESTORATION
- ALTERNATE NO. 1 – EQUIPMENT DECONTAMINATION

On March 2nd, 2020 a fire occurred inside the WWTP Old UV Building that requires cleaning, restoration and equipment decontamination, including complete removal and proper disposal of all debris. The fire occurred at and around an existing HVAC unit creating smoke and soot damage to the interior of the building.

Original construction plans to the WWTP Old UV Building and recent pictures of the building are included for reference. Modifications to the equipment and/or building have been made since the original construction and the Bidder will be responsible for verifying current conditions of the building. This information is provided for reference only and the City accepts no responsibility or liability for the accuracy or the completeness of this reference information.

To view the facility, contact Shawn Singer, Senior Plant Engineer at 636-379-2312.

The Bidder must meet all federal, state and local requirements and certifications.

The Bidder shall be responsible for all labor, materials, chemical, supplies, supervision, tools, equipment for both safety and cleaning purposes, transportation and disposal, temporary scaffolding and incidentals required for the following key activities:

1. BASE BID – GENERAL CLEANING AND RESTORATION: Removing all soot and debris, deodorizing, deep cleaning and removing stains at the WWTP Old UV Building, including, but not limited to the following:
   a. Window and Doors
      i. Clean all windows, doors, frames, hardware, openings, and appurtenances.
      ii. Paint all windows, doors and frames – two (2) coats per side.
   b. Floor
      i. Clean all floors, stairs, balustrades, handrails and appurtenances.
   c. Walls
      i. Clean all walls, piping, louvers, exhaust fan, conduits, outlets, switches and appurtenances.
      ii. Seal/Prime all walls.
      iii. Paint all walls – two (2) coats.
      iv. Remove and replace all fluorescent light fixtures and bulbs with equivalent LED replacements.
      v. Remove and replace all emergency lights with equivalent LED replacements.
      vi. Remove and replace all exit lights with equivalent LED replacements.
   d. Ceiling
      i. Clean all metal beams and ceiling void after grid is removed and appurtenances.
      ii. Seal and paint all metal beams.

iii. Remove and replace hand chain block with electric trolley.
iv. Remove and replace suspended ceiling grid (2' x 4').
v. Remove and replace all suspended ceiling tiles (2' x 4').
vi. Remove and replace all fluorescent light fixtures and bulbs with equivalent LED replacements.
vii. Remove and replace two (2) hanging heaters.

2. ALTERNATE NO. 1 – EQUIPMENT DECONTAMINATION: Removing all soot and other contaminants deposited on the existing equipment located within the WWTP Old UV Building, including, but not limited to the following: disassembly; equipment decontamination utilizing full aqueous decontamination, modified aqueous decontamination or modified dry decontamination; and reassembly of the existing equipment and appurtenances.

a. Perform professional decontamination services with respect to the existing electrical equipment listed below:

| Equipment Name/Label | Equipment Description |
|---|---|
| UVP 480/277V FEED FROM BLDG 36 | 480/277V Panelboard/Load Center |
| UVP2 480/277V FEED FROM UVP#37,39,41 | 480/277V Panelboard/Load Center |
| IO CABINET 120V UVL #5 | Remote I/O Cabinet |
| UVL 208/120V FEED FROM 15KVA TRANSFORMER | 208/120V Panelboard/Load Center |
| EXHAUST FAN CONTROLS 480/120V | Exhaust Fan Control Panel |
| EXHAUST FAN 480V UVP2 #8,10,12 | Exhaust Fan Safety Switch |

b. Replacement of the following electrical equipment is scheduled to be replaced by others and do not require decontamination.

| Equipment Name/Label | Equipment Description |
|---|---|
| 1 | Effluent Pump #1 VFD |
| 2 | Effluent Pump #2 VFD |
| 3 | Effluent Pump #3 VFD |
| 4 | Effluent Pump #4 VFD |
| SUPPLY FAN CONTROLS 480/120V | Supply Fan Control Panel |
| SUPPLY FAN UVP2 #7,9,11 | Supply Fan Safety Switch |
| DUCT HEATER UVP #1, | Duct Heater Safety Switch |

c. The City will provide reasonable access to the equipment in order to perform the services in an efficient and cost-effective manner; provide all required technical information regarding the equipment, including, all safety precautions necessary or advisable to observe in performing the services; and assist in coordinating any services that may be required from manufacturers or authorized third party service providers of the equipment in order to complete the services.

PICTURES OF THE OLD UV BUILDING:

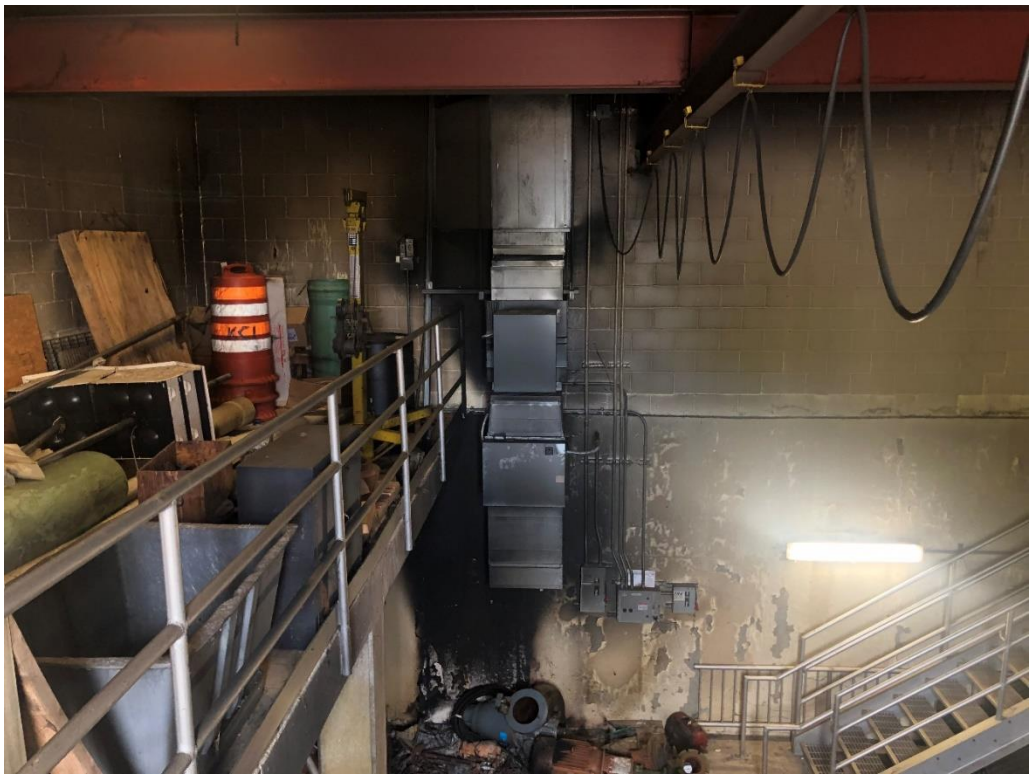
*Picture 1: Old UV Building Front*

*Picture 2: Old UV Building North Side*

*Picture 3: Old UV Building Back*

*Picture 4: Old UV Building South Side*

*Picture 5: Old UV Building Interior*



*Picture 6: Old UV Building Interior*

*Picture 7: Old UV Building Interior*

*Picture 8: Old UV Building Interior*

*Picture 9: Old UV Building Interior*

*Picture 10: UVP 480/277V Panel/Load Center*

*Picture 11: UVP 480/277V Panel/Load Center Interior*

*Picture 12: UVP2 480/277V Panel/Load Center*

*Picture 13: UVP2 480/277V Panel/Load Center Interior*

*Picture 14: I/O Cabinet*

*Picture 15: I/O Cabinet Interior*

*Picture 16: UVL 208/120V Panel/Load Center*

*Picture 17: UVL 208/120V Panel/Load Center Interior*

*Picture 18: Exhaust Fan Control Panel and Safety Switch*

# PROPOSAL/BID FORM

The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

In submitting this Bid, BIDDER represents that:

1. BIDDER has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents and the following Addenda receipt of all which is hereby acknowledged.

   No. _____ Dated _____

   No. _____ Dated _____

   No. _____ Dated _____

2. BIDDER has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

3. BIDDER is familiar with and is satisfied as to all Federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

4. BIDDER has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by BIDDER, including applying the specific means, methods, techniques, sequences, and procedures of construction required by the Bidding Documents to be employed by BIDDER, and safety precautions and programs incident thereto.

5. BIDDER does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid or performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

6. BIDDER has given OWNER written notice of all conflicts, errors, ambiguities, or discrepancies that BIDDER has discovered in the Bidding Documents, and the written resolution thereof by OWNER is acceptable to BIDDER.

7. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

8. BIDDER further represents that this Bid is genuine and is not made in the Interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; BIDDER has not directly or indirectly induced or solicited any other BIDDER to submit a false or sham Bid; BIDDER has not solicited or induced any individual or entity to refrain from bidding; and BIDDER has not sought by collusion to obtain

for itself any advantage over any other BIDDER or over OWNER. Moreover, BIDDER has completed and submitted with his bid an Anti-Collusion Affidavit.

9. All estimated quantities stipulated in the Bid Form are approximate and are to be used only (a) as a basis for estimating the value of the Work for making partial payments, (b) for computing the cost of change orders and (c) for the purpose of comparing the bids submitted for the Work.

10. BIDDER will complete the Work for the following unit prices. BIDDER acknowledges that estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and that final payment for all Unit Price Bid items will be based on quantities provided, determined as provided in the Contract Documents.

CONTRACTOR NAME: _____

# WWTP Old UV Building Cleaning and Restoration
## BID #: 20-038
### BID FORM

**BASE BID**

| Item No. | Description | Units | Quantity | Unit Price |
|---|---|---|---|---|
| 1 | General Cleaning and Restoration | 1 | Lump Sum | |

**TOTAL BID (In Figures)** **$_____**

**TOTAL BID (As Written)**

_____

_____

The above Lump Sum shall include the cost of all labor, equipment, materials, removals, overhead, profit, insurance and other incidental items required to cover the completion of each such item of work in accordance with the Drawings, Specifications, and Contract Documents.

**ALTERNATE BID NO. 1 OF 1**

Should the Bidder be required to furnish all material, labor and equipment necessary for the following:

Bid Alternate 1 work includes decontamination of the existing electrical equipment by the Contractor.

| Description | Unit | Quantity | Unit Price |
|---|---|---|---|
| Equipment Decontamination | Lump Sum | 1 | |

TOTAL ALTERNATE #1 COST $_____

AS WRITTEN:

_____

_____

Check One: _____Add ____Deduct ____No Bid

_____No Change: Bidder will perform this Alternate without change to Contract Sum. (if this is checked, then do not provide a cost, but write 'zero dollars/no cost' in the spaces provided)

The above cost shall include the cost of all labor, equipment, materials, shoring, removals, overhead, profit, insurance and other incidental items required to cover the completion of each such item of work in accordance with the Drawings, Specifications, and Contract Documents.

No extension of time will be granted if this Alternate is accepted.

City of O'Fallon reserves the right to accept this Alternate within thirty (30) calendar days after the date the City of O'Fallon signs the Agreement.

## Attach required state and county licenses and certifications

# SAMPLE AGREEMENT

THIS AGREEMENT is made and entered into this ___ day of _____, 20_____, by and between the City of O'Fallon, Missouri (CITY) and _____ (VENDOR). The parties agree as follows:

1. VENDOR agrees to provide the CITY with products or services in accordance with the bid documents and specifications entitled _____ with a public bid opening held on ____<date>____. Said bid documents and specifications shall be incorporated into this contract by this reference.
2. The CITY in accordance with the attached Proposal will pay VENDOR an amount not to exceed $ _____ upon completion of the work noted above.
3. VENDOR agrees to begin work within ten (10) days after receiving written notice to start work from the CITY and to complete the work by **sixty (60) calendar days.**
4. In conformity with the GENERAL CONDITIONS and BID FORM, the amount of liquidated damages for the Contract shall be **two hundred fifty dollars ($250.00)** per consecutive calendar day.
5. VENDOR shall provide and bill for only those services associated with this project. No additional charges will be allowed without prior approval. All work performed shall be identified and quantified on each invoice.
6. VENDOR is an independent contractor and nothing contained herein shall constitute or designate VENDOR or any of its agents or employees as agents or employees of the CITY.
7. VENDOR agrees in the performance of this agreement that it will not discriminate against any employee of applicant for employment because of race, creed, color, age, sex, national origin, ancestry, religion or political opinion or affiliation.
8. VENDOR shall maintain during the life of this Agreement and furnish to the CITY the appropriate Professional Liability, Commercial General Liability, and Workers Compensation insurance certificates in amounts as detailed in the bid specifications. VENDOR shall provide 30 days written notice prior to any change in insurance.
9. VENDOR agrees to indemnify the CITY, its' officials, and employees from any loss, damage, costs, charges or expenses to person or property by reason of any action or omission on the part of any person or company involved in this agreement.
10. VENDOR has verified the U.S. Citizenship or lawful status of all its workers employed on the Project.
11. VENDOR certifies that, to the extent applicable by law, it is in compliance with Federal Law requiring an accredited apprenticeship program if applicable.

VENDOR:

_____
Company Name

_____
Signature Date

_____
Print Name

CITY OF O'FALLON, MISSOURI

_____
Michael Snowden, City Administrator Date

ATTEST:

_____
Pamela Clement, City Clerk Date

Signature of bidder indicates that bidder understands and will comply with all terms and conditions and all other specifications made a part of this invitation to bid and any subsequent award of contract. All terms, conditions and representations made in the invitation will become an integral part of the contract.

## BID AWARD CRITERIA:

This bid will be awarded to the lowest responsive, responsible bidder meeting specifications based upon the total lump sum base bid amount.

The Contractor agrees to provide the equipment, service and supplies described above and in the contract specifications under the conditions outlined in attached documents for the amount stated above.

**X**_____ **CORPORATE SEAL**

**(Signature and Title)** **(If available)**

**BID MUST BE SIGNED FOR CONSIDERATION**

Subscribed and Sworn to before me this _____day of _____ AD, 2020

_____ My Commission Expires: _____

(Notary Public)

**CITY OF O'FALLON, MISSOURI**
***PURCHASING DEPARTMENT***
**100 North Main Street**
**O'Fallon, MO 63366**
**T: (636) 379-5527** **Fax: (636) 978-4144**

# *LATE BIDS CANNOT BE ACCEPTED!*

| **SEALED BID** | |
|---|---|
| **INVITATION #:** | **20-038** |
| **OPENING DATE:** | **06/11/2020** |
| **OPENING TIME:** | **3:00 P.M. CDT** |
| **DESCRIPTION:** | **WWTP OLD UV BUILDING CLEANING AND RESTORATION** |
| **DATED MATERIAL-DELIVER IMMEDIATELY** | |

PLEASE CUT OUT AND AFFIX THIS BID LABEL (ABOVE) TO THE OUTERMOST ENVELOPE OF YOUR BID TO HELP ENSURE PROPER DELIVERY!

# LATE BIDS CANNOT BE ACCEPTED!

PLANS FOR

GENERAL CONSTRUCTION

# ULTRAVIOLET (UV) DISINFECTION SYSTEM AT THE WASTEWATER TREATMENT PLANT

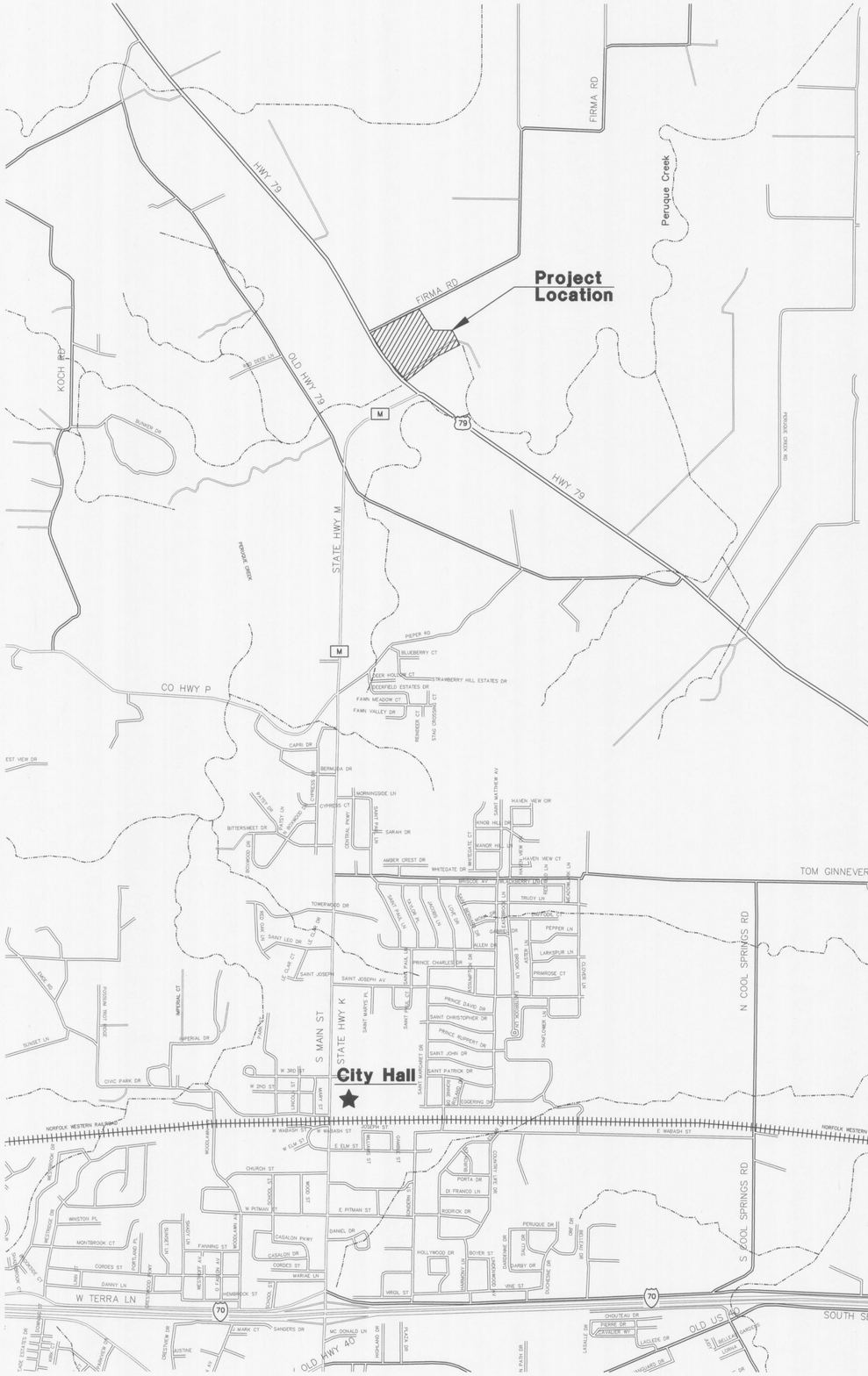
## JANUARY 4, 2004

FOR THE

CITY OF O'FALLON, MISSOURI

Kenneth G. Morgan, P.E.
Managing Director of Community Development

GBA
GEORGE BUTLER ASSOCIATES, INC.
Engineers • Architects
Kansas • Missouri • Illinois
GBA PROJECT NO. 9234.32


Project Location
City Hall
HWY 79
FIRMA RD
Peruque Creek
KOCH RD
OLD HWY 79
STATE HWY M
CO HWY P
PIEPER RD
BLUEBERRY CT
STRAWBERRY HILL ESTATES DR
DEERFIELD ESTATES DR
FAWN MEADOW CT
FAWN VALLEY DR
CAPRI DR
BERMUDA DR
CYPRESS CT
MORNINGSIDE LN
SARAH DR
AMBER CREST DR
WHITEGATE DR
KNOB HILL DR
HAVEN VIEW DR
HAVEN VIEW CT
MANOR HILL DR
BITTERSWEET DR
BOXWOOD DR
TOWERWOOD DR
SAINT LEO DR
SAINT JOSEPH
SAINT JOSEPH AV
PRINCE CHARLES DR
PRINCE DAVID DR
SAINT CHRISTOPHER DR
PRINCE RUPPERT DR
SAINT JOHN DR
SAINT PATRICK DR
SAINT MARGARET DR
SAINT MARTIN PL
SAINT PAUL CT
SAINT MATTHEW AV
SAINT MATTHEW DR
SAINT MARK DR
SAINT LUKE DR
SAINT JOSEPH DR
SAINT BRIDGET DR
SAINT BRIDGET CT
SAINT BRIDGET LN
SAINT BRIDGET AV
SAINT BRIDGET DR
TRUDY LN
PEPPER LN
LARKSPUR LN
PRIMROSE CT
ALLEN DR
GARDEN DR
SUNFLOWER LN
SUNSET LN
DARE RD
IMPERIAL CT
IMPERIAL DR
CIVIC PARK DR
W 3RD ST
W 2ND ST
S MAIN ST
STATE HWY K
LINCOLN ST
LEVEE ST
NORFOLK WESTERN RAILROAD
W WABASH ST
E WABASH ST
W ELM ST
E ELM ST
CHURCH ST
W PITMAN ST
E PITMAN ST
SCHOOL ST
DANIEL DR
WINSTON PL
MONTBROOK CT
CORDES ST
DANNY LN
W TERRA LN
E TERRA LN
WESTBROOK DR
WESTWOOD PKWY
PORTLAND PL
KT JOSEPH
FANNING ST
WESTBURY AV
KT CAROL AV
CASALON PKWY
CASALON DR
MARIAE LN
WOODLAWN DR
WOODLAWN PL
KT MARY
KT ANN
KT KAY
KT JOHN
KT PETER
KT EDWARD
KT DAVID
KT ELMER
KT ROBERT
KT ESTHER
KT ROSE
KT ROBERT
KT ROBERT CT
KT ROBERT LN
KT ROBERT DR
KT ROBERT AV
KT ROBERT PL

**DESCRIPTION – CONTROL POINT #1**
Mag Nail On The West Shoulder Of Highway 79 In Line With The Centerline Of Firma Road.

**TIES**
West – 5.1 feet to West Edge of Asphalt Sholder

North Northwest – 48.6 Feet to Center of Wood Post with City Limits of O'Fallon & Speed Limit Sign on Post

Northeast – 55.6 feet to Center of Post with Stop Sign

**DESCRIPTION – CONTROL POINT #2**
Mag Nail in the Centerline of Drive "A" South of Centerline of Firma Road.

**TIES**
West – 34.4 feet to Center of Mailbox with 150 on it

South 3.0 feet to Concrete & Asphalt Edge

East – 19.8 feet to Center of Water Valve Cover

North – 11.75 feet to centerline Firma Road

**DESCRIPTION – CONTROL POINT #3**
Mag Nail In The South Shoulder of Firma Road.

**TIES**
Southeast – 19.0 feet to Railroad Spike in NE Side of 48–inch Oak

West – 39.1 feet to a Duplex Nail in NE Face of 40–inch Oak

North – 14.3 feet to Centerline of Firma Road

West – 9.0 feet to Centerline Gravel Drive to Police Firing Range

Survey Control Line

CONTROL POINT #2
N 62962.0713
E 46864.9654

FIRMA ROAD

N62°55'56"E
592.52'

TBM #2

N61°55'47"E
730.15'

CONTROL POINT #1
N 62692.4497
E 46337.3442

CONTROL POINT #3
N 63305.6469
E 47509.2284

TBM #1 (DISTURBED)

| STRUC. ID | STRUCTURE DESCRIPTION |
|---|---|
| 1 | POND NO. 1 |
| 2 | POND NO. 2 |
| 3 | NORTH LIFT STATION |
| 4 | HEADWORKS BUILDING |
| 5 | GRIT TANK |
| 6 | BAR SCREEN, COMMINUTOR AND METER VAULT |
| 7 | DISTRIBUTION BOX NO. 1 |
| 8 | PRIMARY CLARIFIER NO.1 |
| 9 | PRIMARY CLARIFIER NO.2 |
| 10 | PRIMARY CLARIFIER NO.3 |
| 11 | PRIMARY CLARIFIER NO.4 |
| 12 | JUNCTION BOX NO. 4 |
| 13 | JUNCTION BOX NO. 1 |
| 14 | PRIMARY SLUDGE PUMP STATION NO. 1 |
| 15 | PRIMARY SLUDGE PUMP STATION NO. 2 |
| 16 | BIO–FILTER COMPLEX |
| 17 | JUNCTION BOX NO. 2 |
| 18 | AERATION JUNCTION BOX NO. 5 |
| 19 | DISTRIBUTION BOX NO. 2 |
| 20 | AERATION DISTRIBUTION BOX NO. 4 |
| 21 | WAS VALVE VAULT |
| 22 | AERATION TANK NO. 1 |
| 23 | AERATION TANK NO. 2 |
| 24 | AERATION TANK NO. 3 |
| 25 | AERATION TANK NO. 4 |
| 26 | NOT USED |
| 27 | DISTRIBUTION BOX NO. 3 |
| 28 | FINAL CLARIFIER NO. 1 |
| 29 | FINAL CLARIFIER NO. 2 |
| 30 | FINAL CLARIFIER NO. 3 |
| 31 | FINAL CLARIFIER NO. 4 |
| 32 | JUNCTION BOX NO. 3 |
| 33 | EFFLUENT CONTROL STRUCTURE |
| 34 | EFFLUENT PUMP STATION |
| 35 | GRAVITY BYPASS VALVE VAULT |
| 36 | ELECTRICAL/CHLORINE BUILDING |
| 37 | PROCESS WATER PUMP STATION |
| 38 | SEPTAGE RECEIVING STATION |
| 39 | PARSHALL FLUME |
| 40 | WAS HOLDING TANK |
| 41 | SLUDGE BLEND TANK |
| 42 | BIO–SOLIDS TREATMENT BUILDING |
| 43 | BIO–SOLIDS STORAGE BUILDING |
| 44 | BFD FEED PUMP STATION |
| 45 | GBT FEED PUMP STATION |
| 46 | BLOWER BUILDING |
| 47 | GARAGE |
| 48 | MAIN OFFICE BUILDING |
| 49 | NOT USED |
| 50 | 30" FORCE MAIN DIVERSION STRUCTURE |
| 51 | ULTRAVIOLET (UV) DISINFECTION SYSTEM |

NOTES:
1. The Hydraulic Gradient Profile for the Main Plant Process is illustrated on sheet G0.04.

STORAGE LOT

Widen Driveway to 18' wide
R= 5.5'

9'

Full Length Saw Cut
Dowel Into Existing Pavement

S28°13'26"E
595.59'

Archeological Site
(Do Not Disturb)

Air Release Manhole

Temporary and Permanent Fence

N/F
City of O'Fallon

N/F
City of O'Fallon

CONTROL POINT #4
N 62437.2161
E 47146.6708

**DESCRIPTION – CONTROL POINT #4**
Cut "+" In The Intersection Of Drive "A" And Drive "B".

**TIES**
South – 19.95 feet to "+" on Top of Curb

West – 32.15 feet to "+" on Top of Curb @ Curb Return into Process Water Pump Station

North Northeast – 87.75 feet to Top Center of Fire Hydrant

TBM FIRMA #2

## BENCHMARK INFO

TBM #1 – RR Spike in North Face of 1st Pole South of Intersection of Firma Road on West Side of Highway 79
ELEV. 446.03 (Disturbed)

TBM #2 – RR Spike in NE Face of Large Oak Tree in Front of Treatment Plant, S. Firma Road
ELEV. 443.17

TBM FIRMA #2 – RR Spike in North Face of 48" Oak Tree, South Side of Firma Road, Just East of Entrance to Police Firing Range.
ELEV. 441.45

## LEGEND

- 450 — Proposed Contour
- 450 — Existing Contour
- Construction Limits
- Proposed Fence
- Existing Fence
- Siltation Control
- Proposed Pavement
- Proposed Additions

GENERAL NOTES:
1. All Permits and Approvals Shall be Obtained by the Contractor from the City of O'Fallon Before Transporting any Fill to or from the Site.
2. Coordinate Values for Individual Structures, See Pertaining Plan Sheets.
3. All Misc. Items not Listed in the Contract Documents, Required for Construction, shall be Incidental to the Contract.

## GENERAL SITE LAYOUT, CONTROL, GRADING AND PAVING PLAN

SCALE : 1" = 50'

The existence and location of any underground utility pipes, lines, or structures shown on these drawings are obtained by a search of the available records. The contractor is required to take due precautionary measures to protect the utility lines shown, and all other lines not of record or not shown on these drawings by verification of their location in the field prior to the initiation of the actual portion of work. Contractor shall immediately repair any damaged utility caused by his activities at no additional cost to Owner.

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STATE OF MISSOURI
ROBERT J. RUSSINA
NUMBER E-2000147824
PROFESSIONAL ENGINEER
1/4/04

WASTEWATER TREATMENT PLANT
GENERAL SITE LAYOUT
SURVEY CONTROL
CITY OF OFALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004
DESIGNED BY: CRH/RJR
DRAWN BY: DMH
CHECKED BY: RJR/TMS
SHEET NUMBER
G0.03

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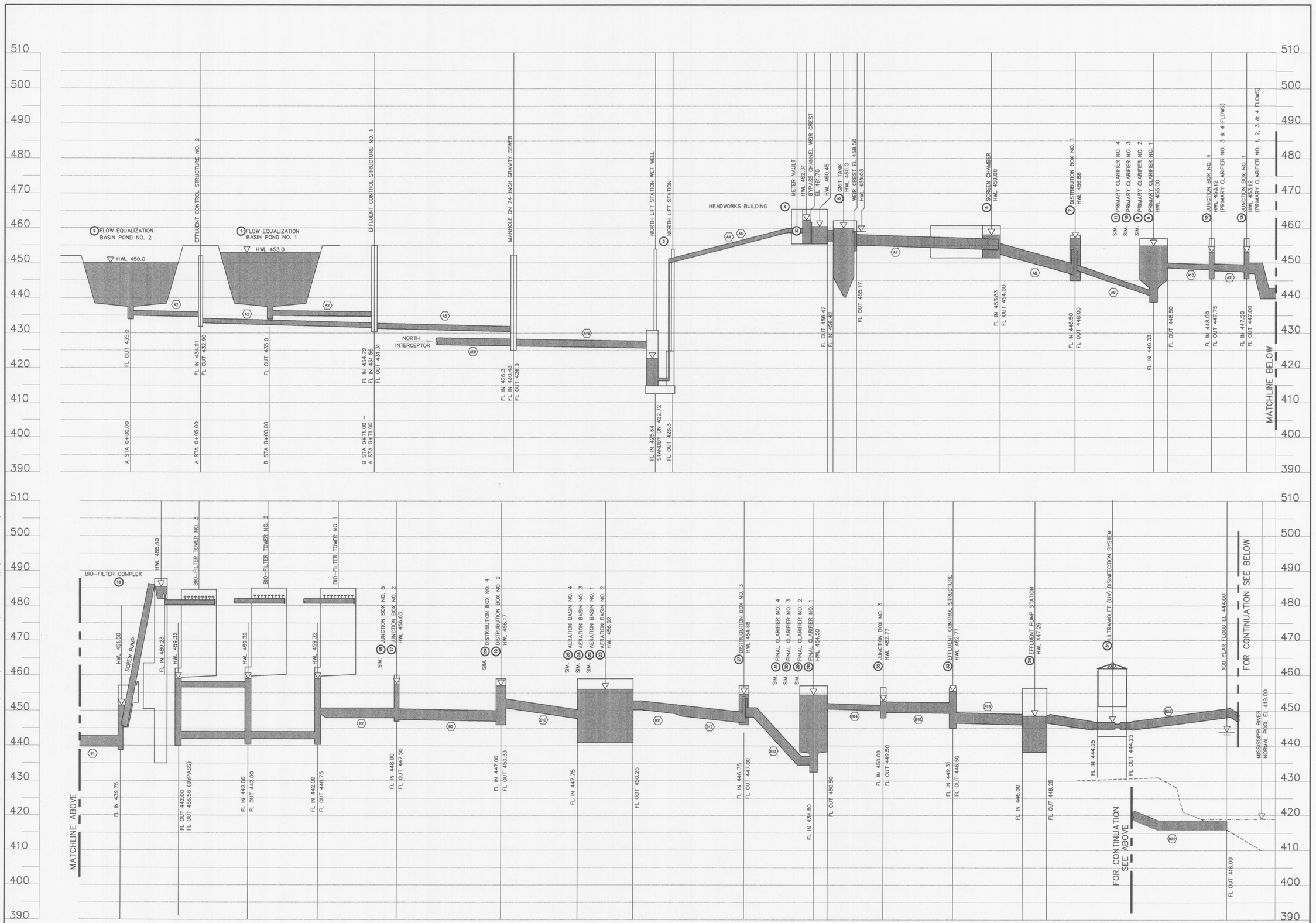


WATER LEVELS BASED ON: MAXIMUM FLOW = 16.0 MGD

NOTES:
1. HORIZONTALLY NOT TO SCALE.
2. FOR STRUCTURE DESCRIPTIONS REFER TO SHEET G0.03.
3. FOR PIPING LEGEND REFER TO SHEET G0.05.

ULTRAVIOLET (UV) DISINFECTION SYSTEM

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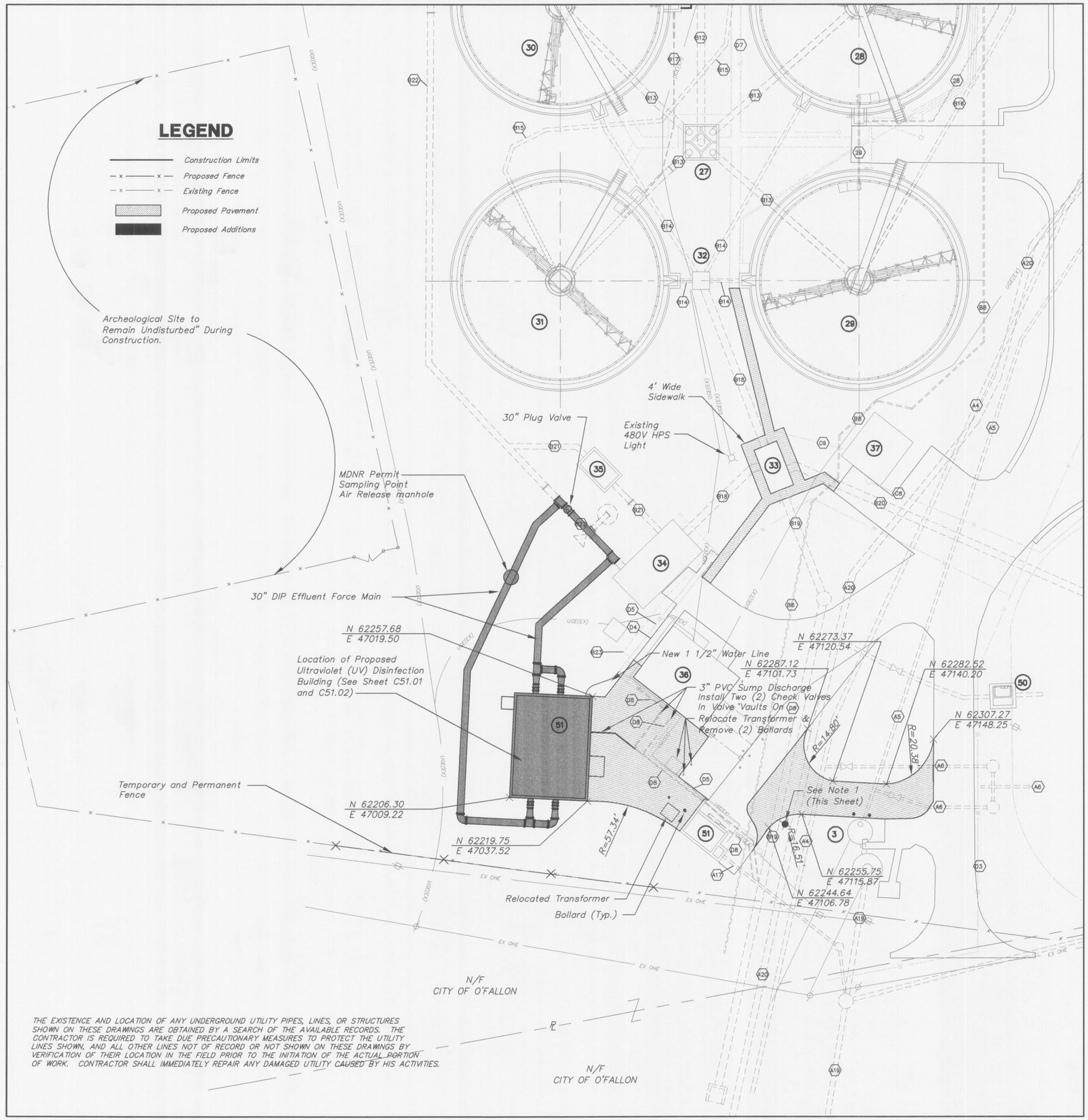
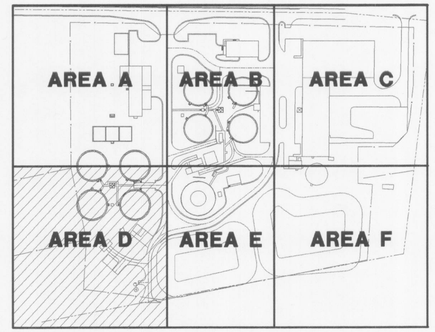
STATE OF MISSOURI
ROBERT J. RUSSINA
NUMBER E-2000147824
PROFESSIONAL ENGINEER
1/23/04

# WASTEWATER TREATMENT PLANT
## MAIN PLANT PROCESS HYDRAULIC GRADIENT PROFILE
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004
DESIGNED BY: TMS/RJR
DRAWN BY: DMH
CHECKED BY: RJR/TMS
SHEET NUMBER
**G0.04**




## SITE MAP INDEX KEY

## PIPING LEGEND (For Continuation See G0.03)

| PROCESS | ITEM | SIZE | TYPE | DESCRIPTION |
|---|---|---|---|---|
| PRIMARY TREATMENT | A2 | 16 | DIP | FLOW EQUALIZATION BASIN DRAIN LINE |
| PRIMARY TREATMENT | A3 | 18 | DIP | FLOW EQUALIZATION BASIN DRAIN LINE |
| PRIMARY TREATMENT | A4 | 20 | DIP | INFLUENT FORCE MAIN |
| PRIMARY TREATMENT | A5 | 14 | DIP | INFLUENT FORCE MAIN |
| PRIMARY TREATMENT | A6 | 12 | DIP | FLOW EQUALIZATION INLET |
| PRIMARY TREATMENT | A17 | 12 | DIP | SEPTAGE RECEIVING STATION DISCHARGE |
| PRIMARY TREATMENT | A18 | 8 | DIP | SLUDGE DISCHARGE FORCE MAIN |
| PRIMARY TREATMENT | A19 | 24 | DIP | INFLUENT GRAVITY SEWER |
| PRIMARY TREATMENT | A20 | 30 | DIP | INFLUENT FORCE MAIN |
| FINAL TREATMENT | B8 | 6 | DIP | DIGESTED SLUDGE DISCHARGE |
| FINAL TREATMENT | B12 | 36 | DIP | AERATION BASIN EFFLUENT |
| FINAL TREATMENT | B13 | 30 | DIP | FINAL CLARIFIER INFLUENT |
| FINAL TREATMENT | B14 | 18 | DIP | FINAL CLARIFIER EFFLUENT |
| FINAL TREATMENT | B15 | 16 | DIP | RETURN ACTIVATED SLUDGE |
| FINAL TREATMENT | B16 | 3 | PVC | FINAL CLARIFIER SCUM DISCHARGE |
| FINAL TREATMENT | B17 | 3 | PVC | FINAL CLARIFIER SCUM DISCHARGE |
| FINAL TREATMENT | B18 | 36 | DIP | PLANT EFFLUENT |
| FINAL TREATMENT | B19 | 36 | DIP | ABANDON IN PLACE |
| FINAL TREATMENT | B20 | 36 | DIP | PLANT EFFLUENT OVERFLOW |
| FINAL TREATMENT | B21 | 24 | DIP | GRAVITY BY-PASS |
| FINAL TREATMENT | B22 | 30 | DIP | OUTFALL FORCE MAIN |
| FINAL TREATMENT | B23 | 1 1/2 | PVC | CHLORINE SOLUTION LINE |
| BIOSOLIDS TREATMENT | C8 | 10 | DIP | PROCESS WATER |
| BIOSOLIDS TREATMENT | C9 | 16 | DIP | PROCESS WATER |
| MISC. SITE PIPING | D3 | 8 | DIP | CITY WATER |
| MISC. SITE PIPING | D4 | 3 | PVC | CITY WATER |
| MISC. SITE PIPING | D5 | 2 | PVC | CITY WATER |
| MISC. SITE PIPING | D7 | 1 | PVC | CITY WATER |
| MISC. SITE PIPING | D8 | 4 | DIP | DRAIN LINE |

Notes:

1. Furnish and install one (1) exterior site luminaire with dark bronze finish; single square head with square sharp cut-off light distribution; 1000 Watt high pressure sodium lamp; 480-Volt auto-regulated ballast (low temperature); 39 foot round tapered steel pole with base cover, weatherproof duplex receptacle near base, hand hole, and dark bronze finish; tempered glass lens; one piece reflector; and all required mounting hardware. Circuit shall originate from Panelboard "L1" located in the Biofilter Building Electrical room or Chlorine Building Electrical Room. Site luminaire shall be KIM "Type V" No. 55Q-314/DB-E/PHQ-39/DB-ADE, Hi-Tek (Division of Lithonia Lighting) or approved equal. Type 'V' is from previous expansion project, field verify and match existing.

Luminaire base shall be tie anchored bolted to a 2'-0" diameter x 7'-0" deep structure constructed from 3000 psi concrete containing four (4) #5 rebar (8" o.c. vertical position), conduit and #8 copper ground rod and wire. Grout and bolt circle as directed by Manufacturer.

## GENERAL SITE MAP - AREA D

SCALE: = 1" = 20'

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STATE OF MISSOURI
ROBERT J. RUSSINA
NUMBER E-2000147824
REGISTERED PROFESSIONAL ENGINEER

WASTEWATER TREATMENT PLANT

# GENERAL SITE MAP AREA D

CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: RJR
DRAWN BY: RJR
CHECKED BY: RJR

SHEET NUMBER

G0.05

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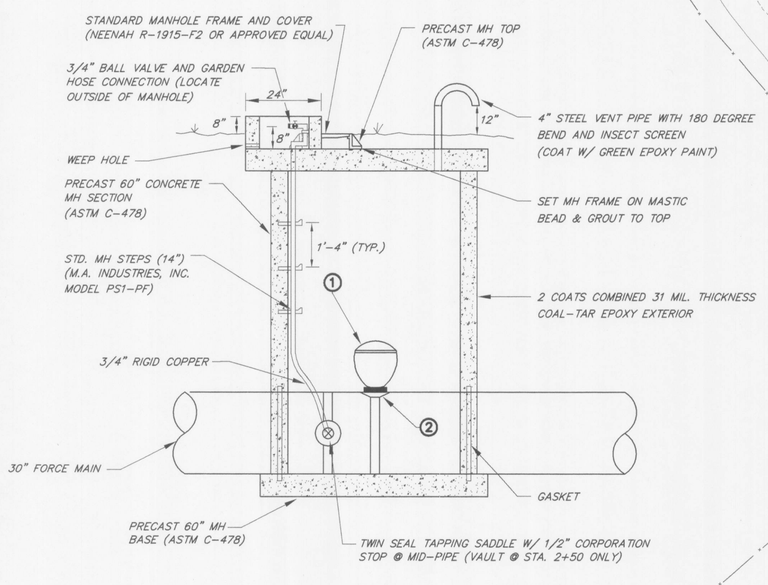
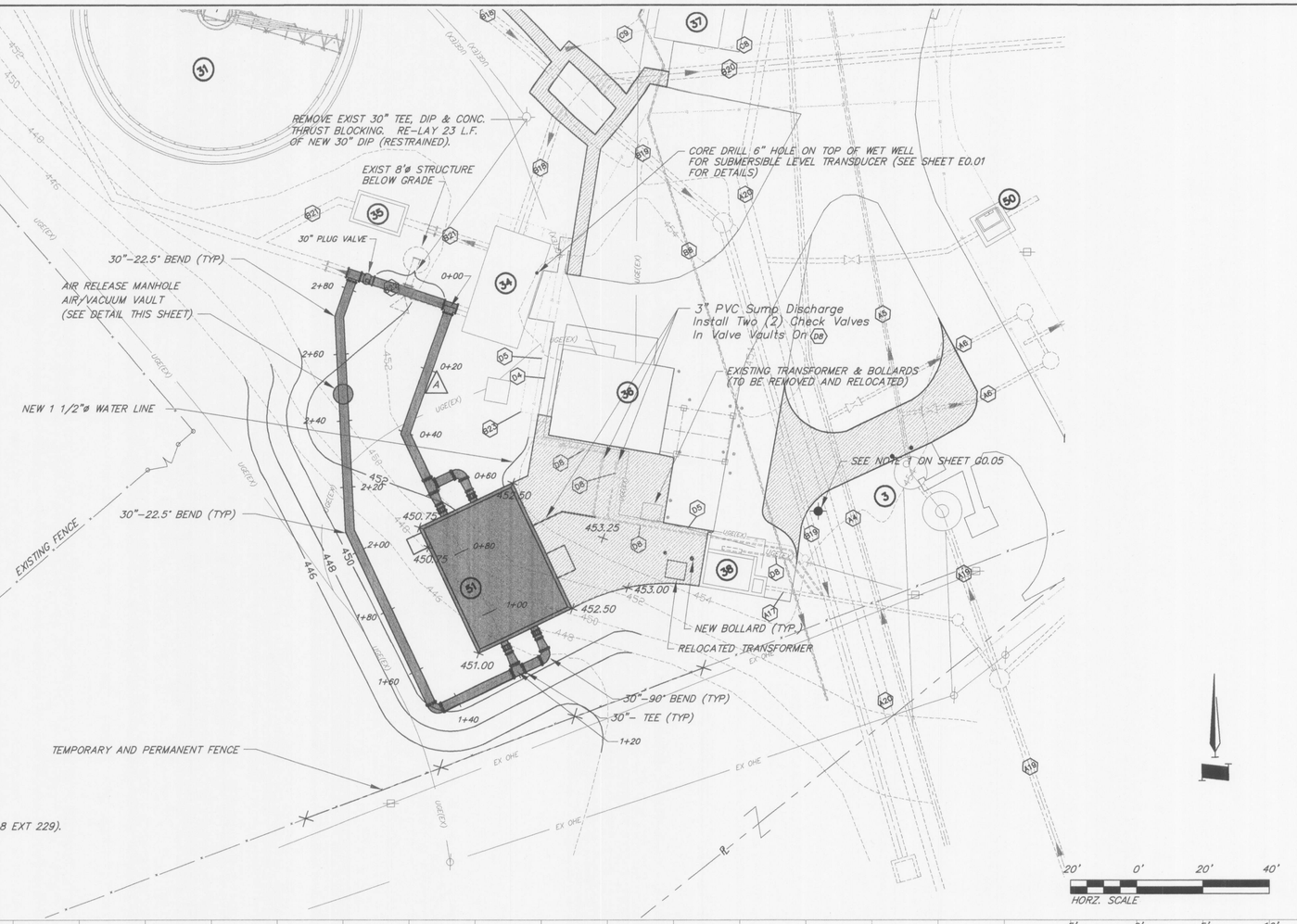
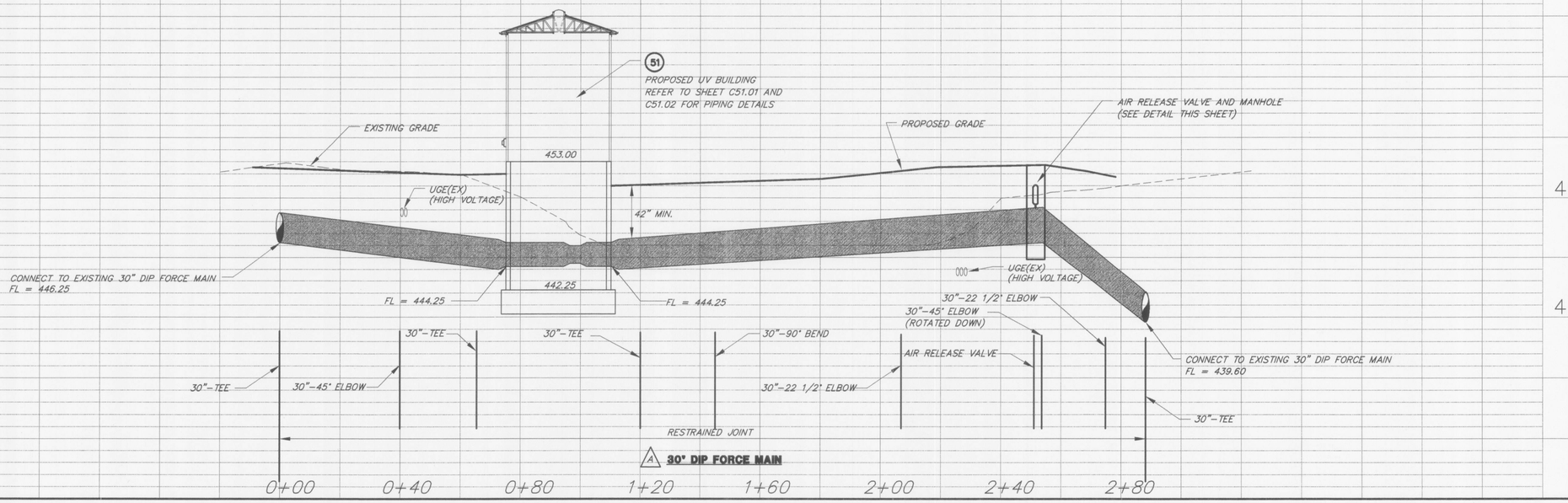



**AIR/VACUUM VALVE AND VAULT**
N.T.S.

NOTES:

1. THE MAXIMUM AMOUNT OF TIME THE WASTEWATER TREATMENT PLANT IS ALLOWED TO BE OUT OF SERVICE IS 6 HOURS. DETAILS OF CONTSTRUCTION PHASING OF THE EFFLUENT FORCE MAIN AND ASSOCIATED PIPING SHALL BE SUBMITTED FROM THE CONTRACTOR TO THE ENGINEER FOR APPROVAL. THIS APPROVAL MUST BE RECEIVED FROM THE ENGINEER PRIOR TO BEGINNING CONSTRUCTION OF THE EFFLUENT FORCE MAIN AND PIPING IMPROVEMENTS. ALL WWTP SHUT-DOWNS SHALL BE COORDINATED THROUGH RICK STEPHAN, WASTEWATER SUPERINTENDENT, ALLIANCE WATER RESOURCES (PHONE: (636) 272-6818 EXT 229).
2. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES, LINES, OR STRUCTURES SHOWN ON THESE DRAWINGS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN, AND ALL OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE DRAWINGS BY VERIFICATION OF THEIR LOCATION IN THE FIELD PRIOR TO THE INITIATION OF THE ACTUAL PORTION OF WORK. CONTRACTOR SHALL IMMEDIATELY REPAIR ANY DAMAGED UTILITY CAUSED BY HIS ACTIVITIES.

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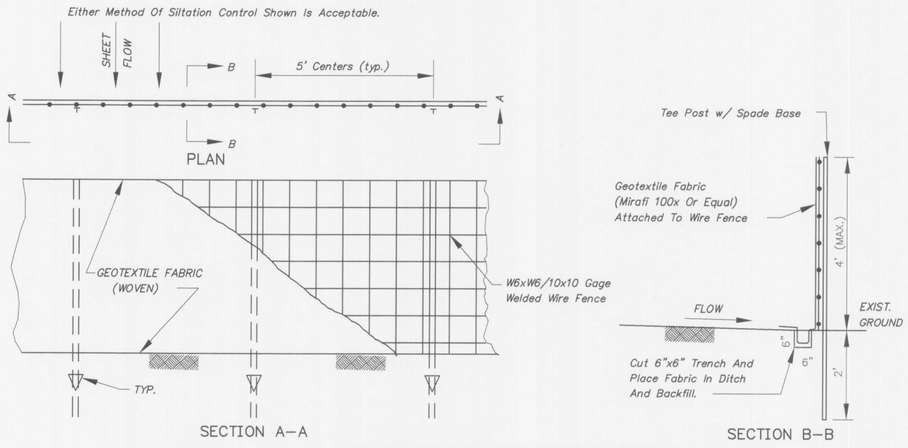
STATE OF MISSOURI
ROBERT J. RUSSINA NUMBER E-2000147824
REGISTERED PROFESSIONAL ENGINEER

# WASTEWATER TREATMENT PLANT
# EFFLUENT FORCE MAIN RELOCATION
# PLAN AND PROFILE
CITY OF O'FALLON, MISSOURI

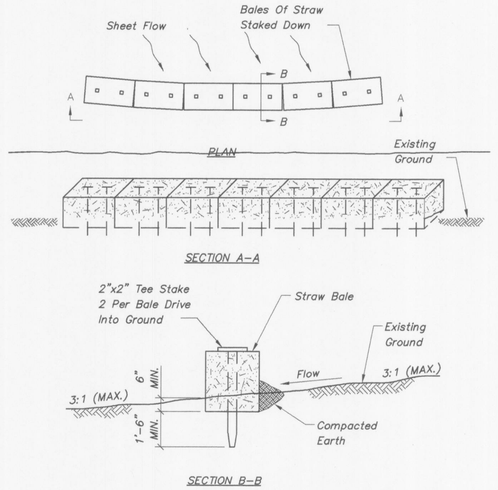
JOB NO.: 9234.32
DATE: JANUARY 4, 2004
DESIGNED BY: RJR, CRH
DRAWN BY: RJR
CHECKED BY: RJR, CRH
SHEET NUMBER
**G0.06**

GENERAL NOTES FOR SILTATION CONTROL DEVICES:

1. Siltation Control Devices To Remain In Place Until Adequate Vegetative Growth Insures No Further Erosion Of The Soil.
2. Siltation Fences Shall Be Inspected Periodically For Damage And For The Amount Of Sedimentation Which Has Accumulated. Removal Of Sediment Will Be Required When It Reaches 1/2 Of The Height Of The Siltation Fence.
3. Straw Bales Shall Be Inspected Periodically For Deterioration. Bales Which Have Rotted Or Failed Shall Be Replaced As Directed By The Engineer.
4. Attachment Of Welded Wire Fence And Geotextile Fabric To Be In Accordance With The Manufacturer's Recommendation.
5. Either Method Of Siltation Control Shown Is Acceptable.



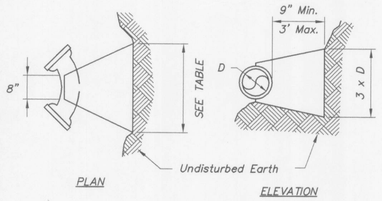

## SILTATION FENCE DETAILS




## STRAW BALE DETAIL

## SILTATION CONTROL DEVICES

SCALE : N.T.S.



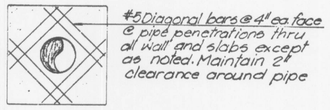

| MIN. BEARING AREA S.F. | | | | | | |
|---|---|---|---|---|---|---|
| PIPE SIZE | 11 1/4° BEND | FITTING 22 1/2° BEND | 45° BEND | 90° BEND | TEE | DEAD END |
| 4" | 1.0 | 2.5 | 4.5 | 8.0 | 5.5 | 5.5 |
| 8" | 2.0 | 4.0 | 7.5 | 14.0 | 10.0 | 10.0 |
| 10" | 2.5 | 5.0 | 9.0 | 22.0 | 16.0 | 16.0 |
| 12" | 4.0 | 8.0 | 16.0 | 29.0 | 20.5 | 20.5 |
| 20" | 13.0 | 20.0 | 36.0 | 45.0 | 45.0 | 45.0 |
| 24" | 18.0 | 24.0 | 42.0 | 58.0 | 52.0 | 52.0 |
| 30" | 20.0 | 26.0 | 44.0 | 60.0 | 54.0 | 54.0 |

Minimum Bearing Areas Are Based On Soil With An Allowable Lateral Bearing Pressure Of 2000 Psf. Revise Bearing Area For Soil With A Lesser Allowable Bearing Pressure.

## FORCE MAIN FITTING THRUST BLOCK DETAILS

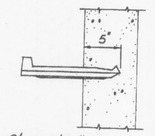
SCALE : N.T.S.

| | D | E | F | H | J | N | P | R |
|---|---|---|---|---|---|---|---|---|
| Primary Clarifiers (75'LO) | 7'-6⅜" | 21 | 1⅜" | 2 | 1'-7⅜" | 11'-9 17/32" | 7'-5⅝" | 3'-11⅜" |
| Final Clarifiers (80'LO) | 11'-3⅜" | 32 | 1⅜" | 4 | 1'-5⅜" | 11'-3⅜" | 11'-1 21/32" | 3'- |

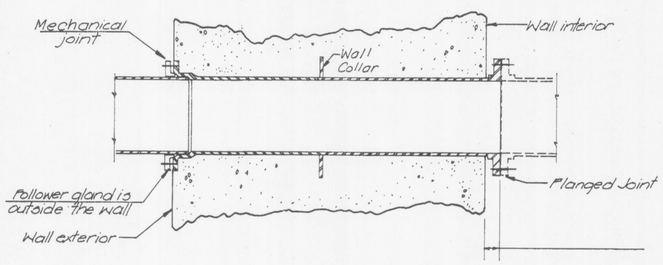



## PIPE PENETRATION REINFORCING

SCALE : N.T.S.



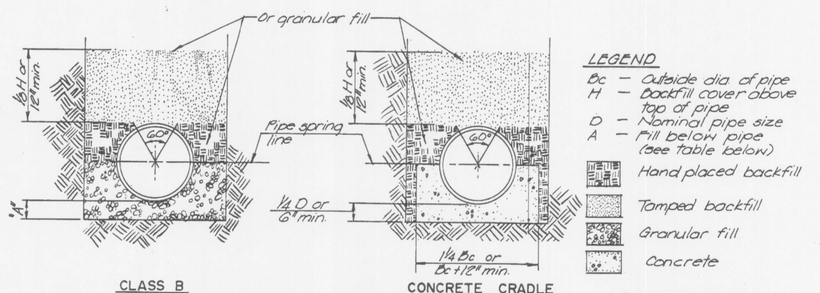

Step shall be placed into wet concrete wall during manufacture or mortared into holes after concrete has set. Steps shall be placed uniformly along wall. See individual structure details for spacing.




(Typical for pipes penetrating new walls of all structures unless otherwise noted.)

## NEW WALL PENETRATION W/ WALL PIPE DETAIL

SCALE : N.T.S.



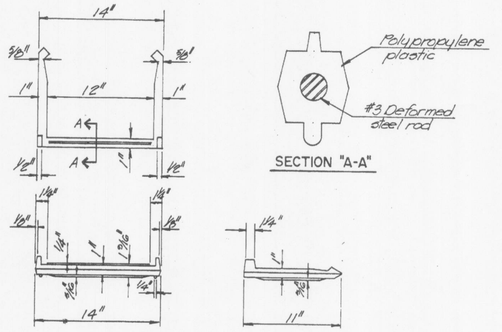

## BEDDING DETAILS

SCALE : 1" = 1'-0"

| TABLE OF FILL BELOW PIPE | |
|---|---|
| "D" | "A" min. |
| 27" & Smaller | 3" |
| 30" to 60" | 4" |
| 66" & larger | 6" |

NOTES

1. GRANULAR FILL to be crushed stone or pea gravel with not less 95% passing 1/2" and not less than 95% to be retained on a #4, to be placed in not more than 6" layers and compacted by slicing with a shovel. (1/2" & #4 refers to sieve size)
2. TAMPED BACKFILL shall be finely divided job excavated material free from debris, organic material and stones, compacted to 95% maximum density as determined by AASHO Standard Method T-99 Granular fill may be substituted for tamped backfill to top of the pipe.
3. HAND PLACED BACKFILL shall be finely divided material free from debris and stones.
4. All bedding details apply to building sewer service lines as well as other sewers.
5. Concrete cradle shall be used when trench width exceeds 24" plus the pipe diameter.




## TYPICAL MANHOLE STEP DETAIL

SCALE : N.T.S.




SECTION "A-A"

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ROBERT J. RUSSINA NUMBER E-2000147824 STATE OF MISSOURI REGISTERED ENGINEER

WASTEWATER TREATMENT PLANT
ULTRAVIOLET DISINFECTION SYSTEM
MISCELLANEOUS DETAILS NO. 1
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004
DESIGNED BY: RJR
DRAWN BY: TWE
CHECKED BY: RJR
SHEET NUMBER
G0.07

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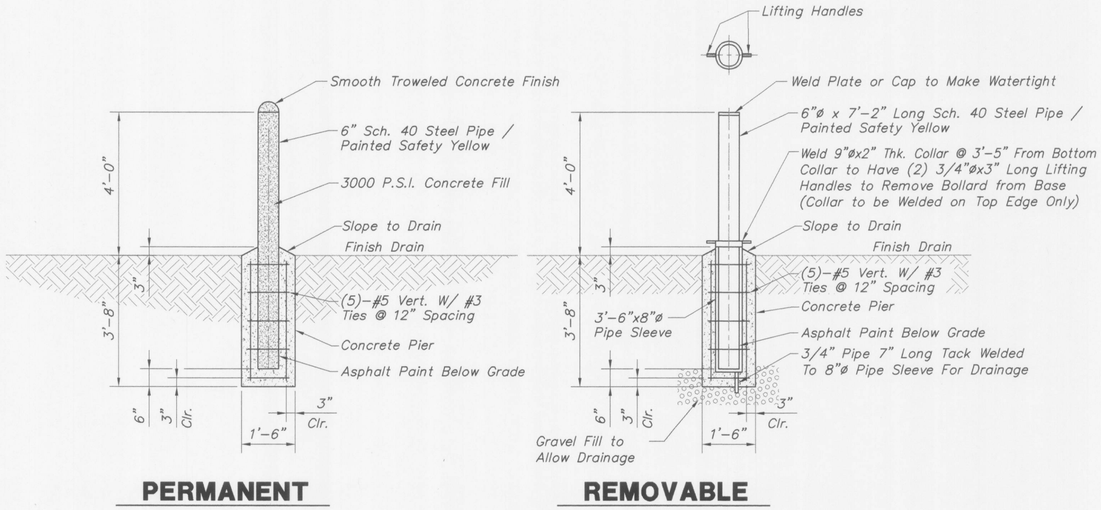
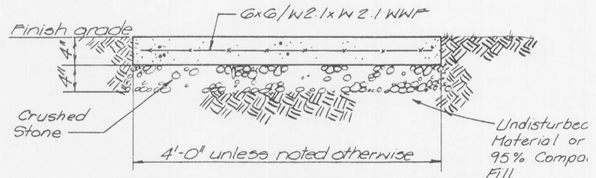



**PERMANENT** **REMOVABLE**

## BOLLARD DETAILS

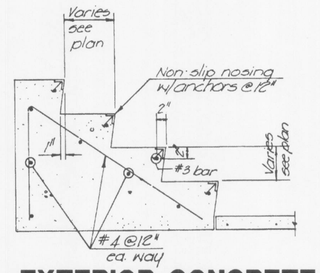
SCALE : 1/2" = 1'-0"




## TYPICAL SIDEWALK DETAIL

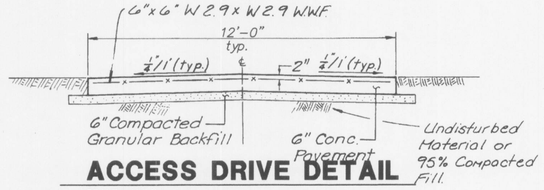
SCALE : 1' = 1'-0"

NOTES: 1.) Slabs to be poured in maximum lengths of 6'-0" separated by ½" expan. joint material.
2.) Edges to be tooled, surface to be broom finished.




## EXTERIOR CONCRETE STEPS DETAIL

SCALE : N.T.S.




## ACCESS DRIVE DETAIL

SCALE : N.T.S.




## TYPICAL FENCE DETAIL

SCALE : N.T.S.

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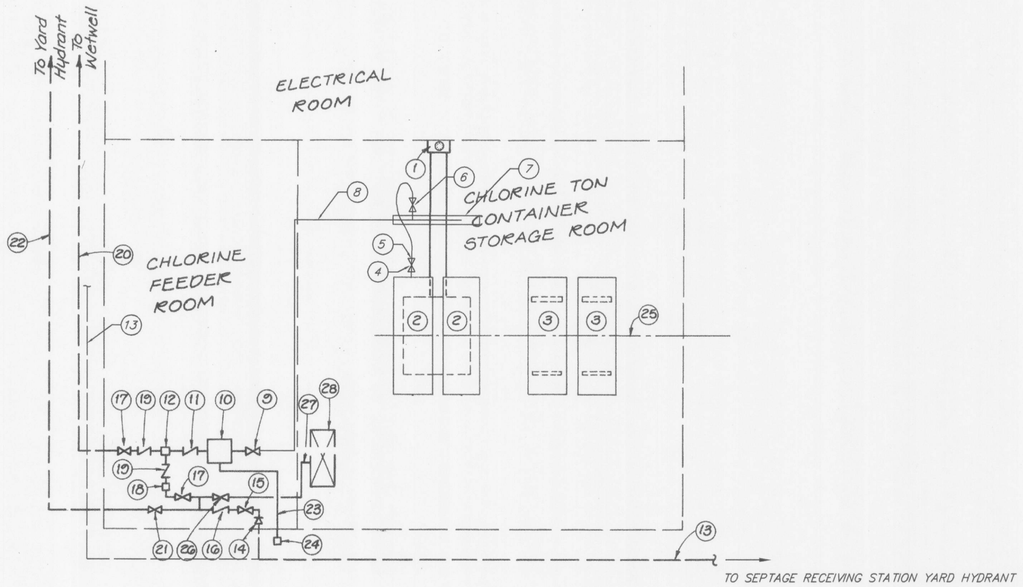
STATE OF MISSOURI
ROBERT J. RUSSINA
NUMBER E-2000147824
REGISTERED PROFESSIONAL ENGINEER
1/23/04

WASTEWATER TREATMENT PLANT
**ULTRAVIOLET DISINFECTION SYSTEM**
**MISCELLANEOUS DETAILS NO. 2**
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

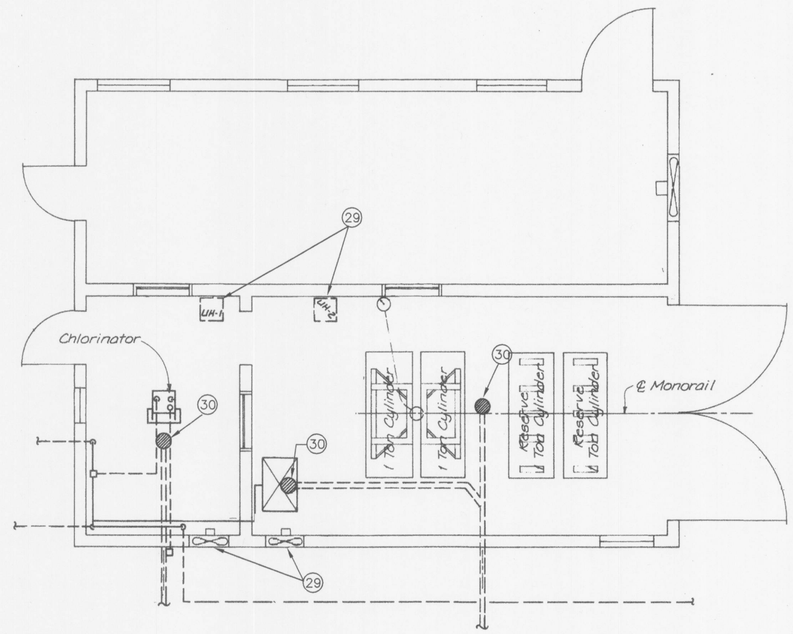
DESIGNED BY: RJR
DRAWN BY: TWE
CHECKED BY: RJR

SHEET NUMBER
**G0.08**




## CHLORINE FEEDING SYSTEM SCHEMATIC DIAGRAM

SCALE : N.T.S.




## CHLORINE BUILDING MECHANICAL PLAN

SCALE : 1/4" = 1'-0"

### LEGEND

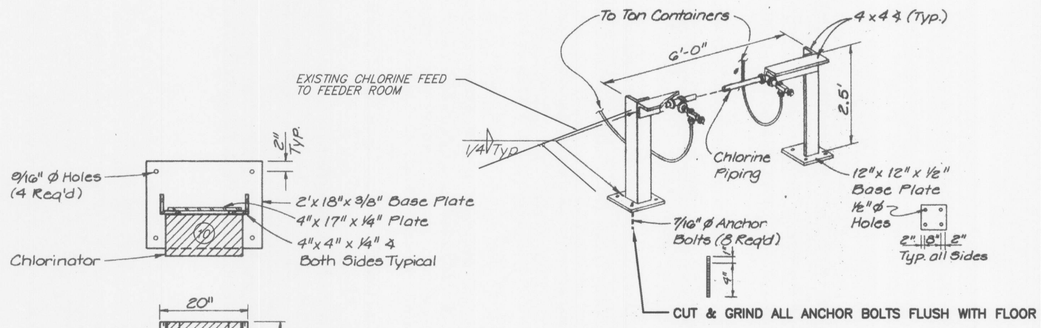
1. TWO-CONTAINER HYDRAULIC LOAD CELL SCALE (4 TON CAPACITY)(REMOVE AS DIRECTED BY OWNER)
2. ONE-TON CHLORINE CONTAINERS (IN USE) (RETURN TO SUPPLIER)
3. ONE-TON CHLORINE CONTAINERS (IN RESERVE)(RETURN TO SUPPLIER)
4. AUTOMATIC SWITCHOVER CHLORINE PRESSURE REDUCING VALVE W/HEATER, DRIP LEG, CAPTIVE YOKE AUXILIARY VALVE FOR USE ON TON CONTAINERS.(DISMANTLE & DISPOSE)
5. 3/4" FLEXIBLE CONNECTION (DISMANTLE & DISPOSE)
6. 3/4" HEADER VALVE (DISMANTLE & DISPOSE)
7. HEADER GUARD (DISMANTLE & DISPOSE)
8. CHLORINATOR SUCTION LINE - 1" SCHEDULE 40 PVC PIPE W/SOLVENT CEMENTED FITTINGS (DISMANTLE & DISPOSE)
9. 1" SHUT-OFF VALVE (DISMANTLE & DISPOSE)
10. 500 LBS/DAY CHLORINATOR W/500 LBS./DAY ROTAMETER (WALL MOUNTED) (DISMANTLE & DISPOSE)
11. 3/4" PVC CHECK VALVE (DISMANTLE & DISPOSE)
12. 1" INJECTOR W/VARIABLE THROAT (DISMANTLE & DISPOSE)
13. 3" WATER SUPPLY - SCHEDULE 40 PVC (LEAVE IN SERVICE)
14. 2" x 3" REDUCER (LEAVE IN SERVICE)
15. 2" SHUT-OFF VALVE (LEAVE IN SERVICE)
16. 2" REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER (LEAVE IN SERVICE)
17. 1 1/2" SHUT-OFF VALVE (DISMANTLE & DISPOSE)
18. 1 1/2" STRAINER (DISMANTLE & DISPOSE)
19. 1 1/2" PVC CHECK VALVES (DISMANTLE & DISPOSE)
20. 1 1/2" SCHEDULE 40 PVC CHLORINE SOLUTION PIPE (FLUSH W/ WATER ABANDON IN PLACE)
21. 2" SHUT-OFF VALVE (LEAVE IN SERVICE)
22. 2" WATER (TO NEW YARD HYDRANT NEAR PUMP STATION) (LEAVE IN SERVICE)
23. 3/4" PVC VENT TO OUTDOORS (DISMANTLE & DISPOSE)
24. SCREEN (DISMANTLE & DISPOSE)
25. TWO-TON CAPACITY MONORAIL W/ELECTRIC CHAINHOIST, MOTORIZED TROLLEY, AND ONE-TON CONTAINER LIFTING DEVICE (LEAVE IN SERVICE)
26. 1 1/4" SHUT-OFF VALVE (LEAVE IN SERVICE)
27. 1 1/4" SCHEDULE 40 PVC (LEAVE IN SERVICE)
28. COMB. DRENCH SHOWER/EYE-WASH UNIT (LEAVE IN SERVICE)
29. EXHAUST FANS, LOUVERS, & DAMPERS (LEAVE IN SERVICE)
30. DRAINS (LEAVE IN SERVICE)

*NOTES:*

1. *The existence and location of any underground utility pipes, lines, or structures shown on these drawings are obtained by a search of the available records. The contractor is required to take due precautionary measures to protect the utility lines shown, and all other lines not of record or not shown on these drawings by verification of their location in the field prior to the initiation of the actual portion of work. Contractor shall immediately repair any damaged utility caused by his activities.*
2. *All Chlorination and Related Equipment, Unless Noted Otherwise, Shall be Dismantled and Disposed of in Accordance with All Applicable Local, State and Federal Regulations. All piping exposed to chlorine shall be purged with water before disassembling and disposal.*
3. *Refer to Drawing E36.01 for Proper Termination of Electrical and Mechanical Equipment.*
4. *The Existing Chlorination System shall remain in Service Until the UV system becomes operational.*

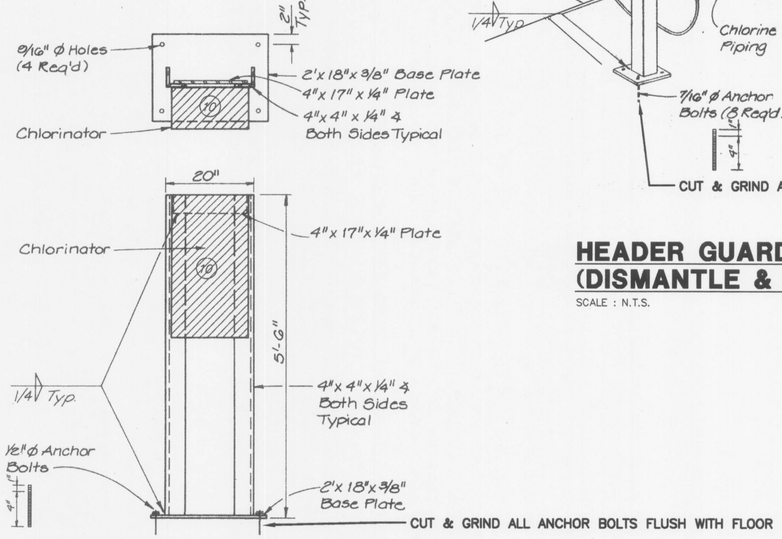
*CONSTRUCTION SEQUENCE:*

1. *Maintain Chlorine Disinfection during Construction of the UV. Normal disinfection period is required from April 1st through October 31st.*
2. *Locate all utilities.*
3. *Construct Concrete Slab/Foundation Walls for the UV Building.*
4. *Construct Effluent Force Main.*
5. *Install UV System.*
6. *Finish Roof / Electrical (Including Variable Frequency Drives).*
7. *Conduct Startup of UV System.*
8. *Dismantle Chlorine System after UV System is Functional.*




## HEADER GUARD DETAIL (DISMANTLE & DISPOSE)

SCALE : N.T.S.




## CHLORINATOR STAND DETAIL (DISMANTLE & DISPOSE)

SCALE : N.T.S.

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STATE OF MISSOURI
ROBERT J. RUSSINA
NUMBER E-2000147824
REGISTERED PROFESSIONAL ENGINEER

# WASTEWATER TREATMENT PLANT
# CHLORINE FACILITIES MODIFICATIONS
# PLAN AND DETAILS
## CITY OF O'FALLON, MISSOURI

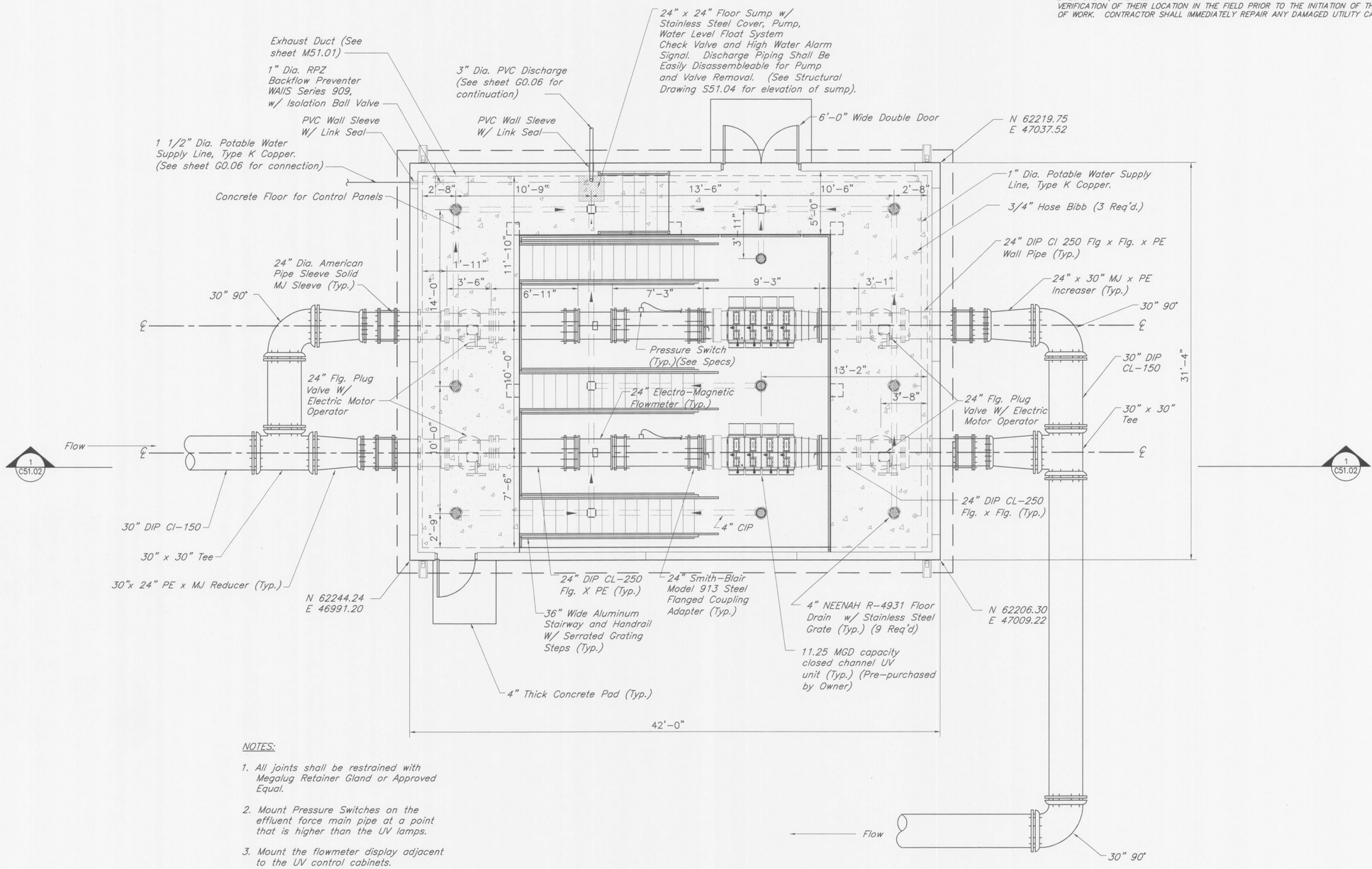
JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: ESK
DRAWN BY: ESK
CHECKED BY: RJR

SHEET NUMBER
**C36.01**

K:\PROJ\9234\9234.32\UV Bid Docs\92347402.dwg Layout: Layout1 -- Thursday, January 22, 2004, 4:33pm -- Copyright 2004, George Butler Associates, Inc.

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES, LINES, OR STRUCTURES SHOWN ON THESE DRAWINGS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN, AND ALL OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE DRAWINGS BY VERIFICATION OF THEIR LOCATION IN THE FIELD PRIOR TO THE INITIATION OF THE ACTUAL PORTION OF WORK. CONTRACTOR SHALL IMMEDIATELY REPAIR ANY DAMAGED UTILITY CAUSED BY HIS ACTIVITIES.




NOTES:

1. All joints shall be restrained with Megalug Retainer Gland or Approved Equal.
2. Mount Pressure Switches on the effluent force main pipe at a point that is higher than the UV lamps.
3. Mount the flowmeter display adjacent to the UV control cabinets.
4. Provide one (1) 3000 lbs Capacity 36"x60" Heavy Duty Wagon Truck as Manufactured by Little Giant (Model No. CH-3660-16P) or approved equal.

## FLOOR PLAN (EL. 453.00)

SCALE: 1/4" = 1'-0"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STATE OF MISSOURI
ROBERT J. RUSSINA
NUMBER E-2000147824
REGISTERED PROFESSIONAL ENGINEER

WASTEWATER TREATMENT PLANT EXPANSION
# ULTRAVIOLET (UV) DISINFECTION BUILDING LAYOUT
CITY OF O'FALLON, MISSOURI

| | |
|---|---|
| JOB NO.: | 9234.32 |
| DATE: | January 4, 2004 |
| DESIGNED BY: | CRH,RJR |
| DRAWN BY: | MKH,RJR |
| CHECKED BY: | CRH,RJR |

SHEET NUMBER

**C51.01**


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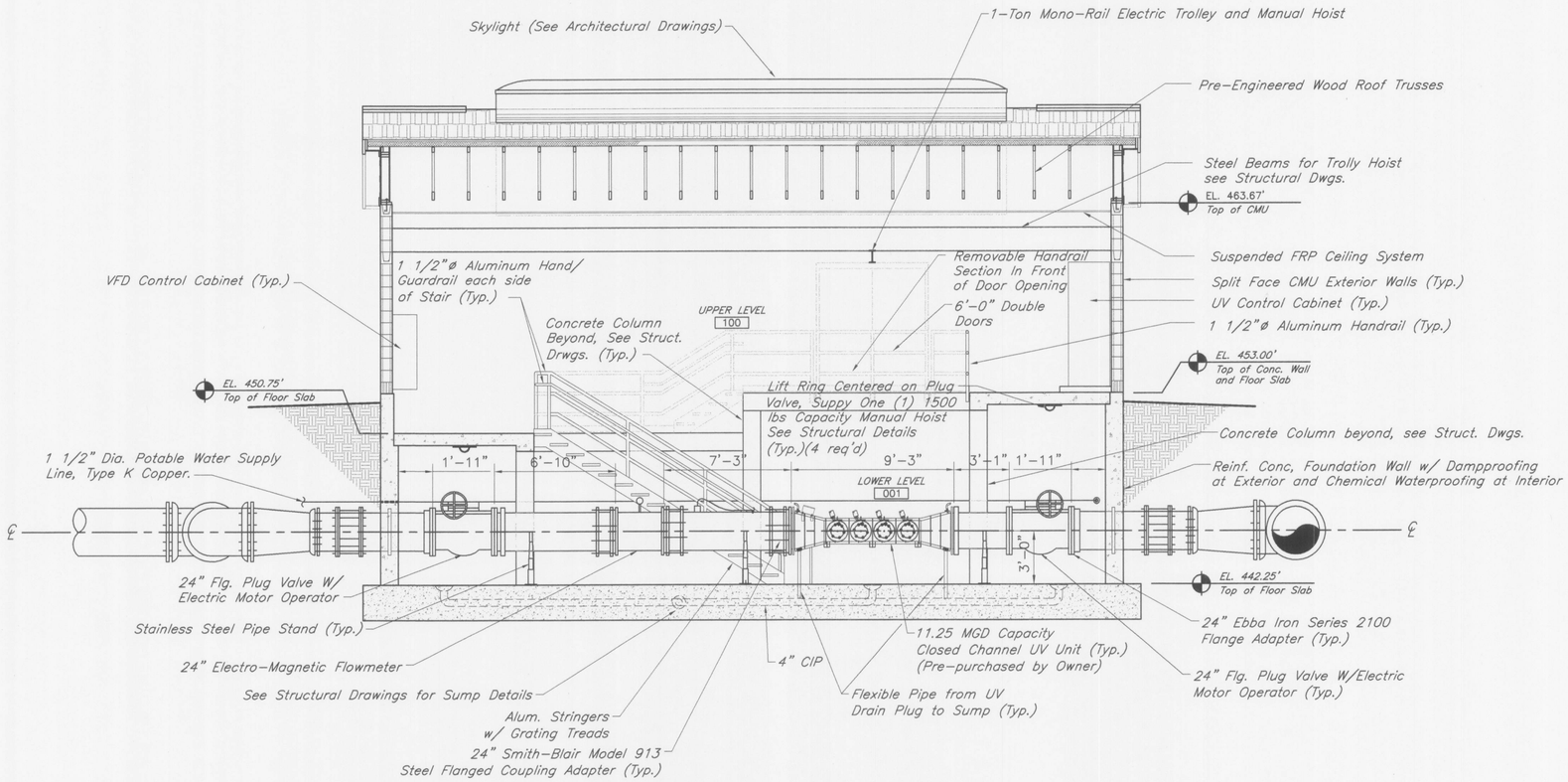
THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES, LINES, OR STRUCTURES SHOWN ON THESE DRAWINGS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN, AND ALL OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE DRAWINGS BY VERIFICATION OF THEIR LOCATION IN THE FIELD PRIOR TO THE INITIATION OF THE ACTUAL PORTION OF WORK. CONTRACTOR SHALL IMMEDIATELY REPAIR ANY DAMAGED UTILITY CAUSED BY HIS ACTIVITIES.




NOTE:
1. All joints shall be restrained with Megalug Retainer Gland or Approved Equal.

SECTION (1/C51.02)
SCALE: 1/4" = 1'-0"

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Kansas • Missouri • Illinois

STATE OF MISSOURI
ROBERT J. RUSSINA
NUMBER E-2000147824
REGISTERED PROFESSIONAL ENGINEER

WASTEWATER TREATMENT PLANT EXPANSION
**ULTRAVIOLET (UV) DISINFECTION**
**BUILDING SECTION**
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: January 4, 2004
DESIGNED BY: CRH,RJR
DRAWN BY: MKH,RJR
CHECKED BY: CRH,RJR
SHEET NUMBER
**C51.02**

# GENERAL NOTES

GENERAL NOTES – STRUCTURAL

Design Specifications: ACI 318R–02, ASD 9th Edition

Governing Building Code: 1999 BOCA

Design Loading:

| | |
|---|---|
| Roof Dead Load | = 25psf |
| Roof Live Load | = 20psf (Snow) |
| Snow drift loading in accordance with governing building code | |
| Floor Live Load | = 100psf |
| Seismic Zone: Aa=.10, Av=.10 | |
| Windspeed | = 70mph |
| Exposure | = C |

General:

1. The Contractor shall notify the Engineer of any observed discrepancies in dimensions, detailing, or other items as shown on the plans or specified prior to proceeding with work relating to said discrepancies.

2. The Contractor shall not alter or modify work shown on the structural drawings without receiving written approval from the Engineer.

3. The Contractor shall be responsible for supplying shop drawings for wood joists & trusses, structural steel, reinforcing steel, concrete masonry units and accessories, mortar and grout, and concrete mix designs. Shop drawings must be reviewed for conformance with the means, methods, techniques, sequences, and operations of construction, and safety precautions and programs incidental thereto, all of which are the sole responsibility of the Contractor, and shall be stamped "approved" by the Contractor prior to submittal. Shop drawings submitted without the Contractor's stamped approval will be returned rejected. All shop drawings shall be reviewed by the Structural Engineer prior to construction.

Slab On Grade:

1. Welded wire fabric shall be supplied in sheets only. Rolls will not be permitted.

2. Welded wire fabric, when used, shall be supported on chairs or blocks prior to concrete placement. Mesh shall not be hooked and pulled up during concrete placement.

3. Welded wire fabric shall have end and edge laps of one full mesh plus 2" between cross wires. Wire all laps securely together.

4. Welded wire fabric shall conform to ASTM A185.

Foundations:

1. Foundations for this project have been designed in accordance with requirements set forth in a soils report prepared by SCI Engineering, Inc., April 2001, 2000–0337.10. Footings have been designed for an allowable soil bearing value of 2000psf. The Contractor shall refer to Soil Report for all requirements and recommendations pertinent to this project.

2. Anchor bolts shall conform to ASTM A307 and shall be located by means of a template. Provide a nut above and below template to assure proper vertical alignment.

3. All foundations shall be square and level.

4. Grout below column base plates. Grout shall be dry and stiff to prevent shrinkage, with a minimum compressive strength of 4000 psi. Thoroughly compact grout beneath base plate.

Concrete and Reinforcing Steel:

1. Concrete mix designs shall meet the following requirements:
(Taken from ACI Manual of Concrete–1990, 211.1)

| Location | Minimum Compressive Strength (PSI) | Maximum Aggregate Size | Min. Cement Lbs. | Maximum Water/Cement Ratio | Maximum Slump (in.) | Air Entrainment Percent (%) |
|---|---|---|---|---|---|---|
| Concrete | 5000 | 3/4" | 658 | .45 | 4 | 6 ± 1% |

2. Fly ash shall not be used unless approved in writing by the Engineer. Fly ash, if approved, shall conform to ASTM C618 and shall not exceed 15% of the total cement volume.

3. All concrete is reinforced unless specifically called out as unreinforced. Reinforce all concrete not otherwise shown with same steel as in similar sections or areas.

4. No aluminum items shall be embedded in any concrete or placed in contact with concrete.

5. Reinforcing bars #4 and larger (except ties and stirrups) shall meet ASTM A615 with Supplementary Requirements (S1), Grade 60. Smaller bars shall be Grade 40.

6. Concrete coverage of reinforcement shall have the following clear distances unless noted otherwise on the drawings:

Cast against earth _____ 3"

Formed concrete exposed to earth or weather _____ 2"

Not exposed to earth or weather _____ 1" Slabs, 1–1/2" Beams and columns

7. Embedded and all reinforcing bars marked continuous shall be embedded to develop the full tension capacity of the bar. Laps shall be Class B tension laps unless specified otherwise on the drawings. Unless shown otherwise, splice top bars near midspan and splice bottom bars over supports.

8. Supply corner bars 4'–0" long (min. 2'–0" in each direction) in outside face of wall at corners of all walls and grade beams, matching size and spacing of horizontal bars. Where there are no vertical bars in outside face of wall, supply three (3)–#4 vertical support bars for corner bars.

9. All bars are to be supported in forms and spaced with wire bar supports per ACI "Manual of Standard Practice for Detailing Concrete Structures" (latest edition). Bars shall be securely wired per latest edition of CRSI's "Recommended Practice for Placing Reinforcing Bars." Accessories for exposed concrete shall be plastic or have plastic–tipped feet.

10. Concrete placed during cold weather shall conform to the requirements of ACI 306R–91. Cold weather is defined as a period when, for more than 3 successive days, the mean daily temperature drops below 40°F.

11. Concrete placed during hot weather shall conform to the requirements of ACI 305R–91. Hot weather is defined as that combination of air temperature, relative humidity and wind speed that will cause a rate of evaporation of 0.2 lb/sq.ft./hr. or more as defined by Figure 2.1.5 of ACI 305R–91.

12. Do not add water to concrete during delivery, at Project Site, or during placement, unless approved by the Engineer.

Masonry:

1. Mortar shall be Type S for all masonry work and must achieve a minimum compressive strength of 1800 psi at 28–day test. Masonry shall have a minimum strength of f'm= 1500 psi.

2. Masonry grout shall be a coarse type grout and must achieve a minimum compressive strength of 2000 psi at 28–day test. Slump shall range from 8" minimum to 10" maximum. Grout materials and proportions shall conform to ASTM C476.

3. All masonry shall be reinforced with horizontal 9 gage ladder or truss type reinforcement at 16" o.c. vertical or as shown on the drawings.

4. Vertical reinforcing shall be installed as noted on the drawings. Reinforcing bars shall be lapped as specified on the design drawings. If no lap length is shown, contact the Engineer.

5. Vertical control joints in masonry shall be 3/8" wide, full height of wall at locations shown on the Architectural drawings. Joints shall be spaced at a maximum of 25'–0" apart and coordinated with the Architect. All horizontal joint reinforcing shall be discontinuous at masonry control joints.

6. Lintels over openings shall be installed as indicated on the drawings. If no lintels are indicated, notify the Engineer.

Structural Steel:

1. All structural steel shall conform to the following:

| | |
|---|---|
| Structural Steel Wide Flanges | – ASTM A572, Grade 50 |
| Miscellaneous Steel | – ASTM A36 |

2. Connections not shown shall be designed by the fabricator. Non–composite beam connections shall develop 50% of the total uniform load capacity as given in the tables for "Allowable Loads on Beams," for given size, span and grade of the connected member, unless noted otherwise. Composite beam connections shall develop 75% of the uniform load capacity for the given size, span and grade of the connected member, unless noted otherwise. Bolts shall be as follows:

| | |
|---|---|
| Connection Bolts | – ASTM A325 |
| Anchor Bolts | – ASTM A307 or ASTM A325 |

3. Welding shall conform to the latest publication of applicable codes set forth by the American Welding Society. Welding electrodes shall be E70XX.

Rough Carpentry:

1. All roof and wall sheathing shall be APA rated, with exterior glue. Roof sheathing shall have a panel identification index of 24/16. Floor sheathing shall have an identification index of 48/24.

2. Plywood sheathing shall be attached to framing members as described below:

| Location | Plywood Thickness | Tongue and Groove | Nail Size | Nail Type | Min. Penetra. into Support | Nail Spacing @ Panel Edges | Nail Spacing @ Inter. Support | Blocked |
|---|---|---|---|---|---|---|---|---|
| Roof | 5/8 | No | 8d | Common | 1½" | 6 | 12 | No |
| Walls | – | – | – | – | – | – | – | – |

3. All dimension lumber used in load–bearing walls, floor joists, exterior lintels, interior lintels, all bearing and jamb studs, columns and beams, shall have the following minimum design values:

| | | |
|---|---|---|
| Fb | = | 875 psi |
| Fv | = | 95 psi |
| Fc (perp) | = | 625 psi |
| Fc | = | 1,300 psi |
| E | = | 1,600,000 psi |

These values are based on allowable stresses provided in the NDS (1991) and do not include adjustment Factors.

The following species and commercial grades conform to the above minimum design values:

| | |
|---|---|
| Douglas Fir – Larch | – No. 2 |
| Southern pine | – No. 2, or approved equal |
| Spruce–Pine–Fir | – No. 2, or approved equal |

4. C.C.A. lumber shall be used in all locations where lumber is exposed to weather, moisture, or is in contact with concrete.

Prefabricated Wood Trusses:

1. Roof trusses shall be factory–manufactured wood trusses using metal connector plates. Trusses shall be designed for the loads shown on the construction drawings. Truss manufacturers shall provide design calculations, shop drawings and erection drawings for review by the Engineer prior to construction. Contractor shall install all blocking, load transfer assemblies, hangers, accessories, etc. as recommended by the truss manufacturer, Truss Plate Institute, or these construction drawings.

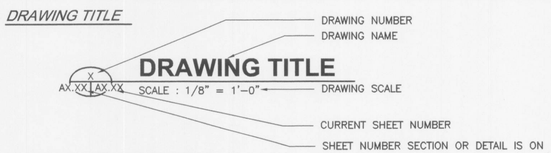
2. Roof trusses shall be designed by a Professional Engineer. All calculations and shop drawings shall bear the seal of a Professional Engineer registered in the state in which the trusses are to be used.

# ABBREVIATIONS

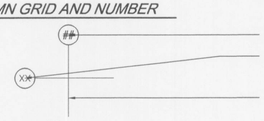
1. F.B.E. = FOOTING BEARING ELEVATION
2. C.J. = CONTROL JOINT
3. W.W.F. = WELDED WIRE FABRIC
4. T.O.S. = TOP OF STEEL

# SYMBOLS

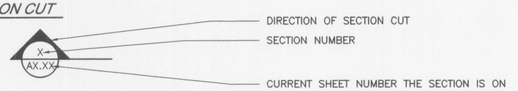
*DRAWING TITLE*



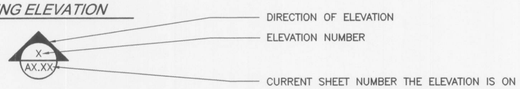

*COLUMN GRID AND NUMBER*



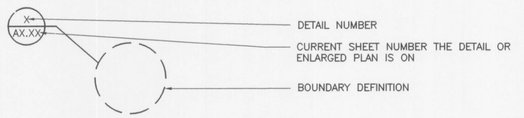

*SECTION CUT*




*BUILDING ELEVATION*




*DETAIL OR ENLARGED PLAN REFERENCE*




*REVISION BUBBLE*

*REVISION SYMBOL*

GEORGE BUTLER ASSOCIATES, INC.
Engineers • Architects
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GBA

WASTEWATER TREATMENT PLANT
ULTRAVIOLET (UV) DISINFECTION
GENERAL NOTES AND TYP. SECTIONS
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: RLS
DRAWN BY: RJF
CHECKED BY: JNH

SHEET NUMBER
**S51.00**

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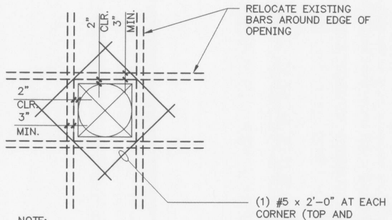
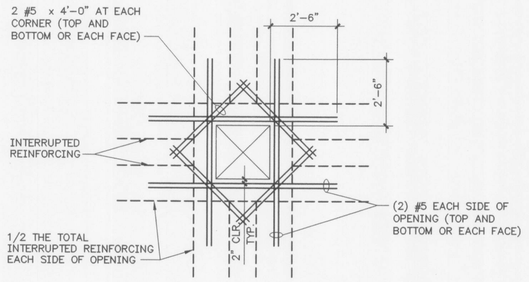


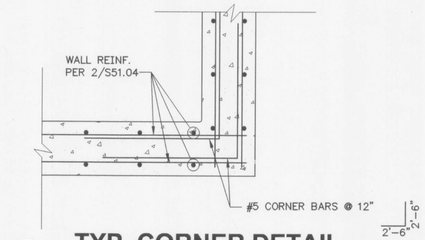

NOTE:
OCCURS AT OPENINGS SMALLER THAN TWICE (2x) THE SPACING OF REINFORCEMENT (18" MAX. OPENING)




NOTE:
OCCURS AT OPENINGS LARGER THAN TWICE (2x) THE SPACING OF REINFORCEMENT

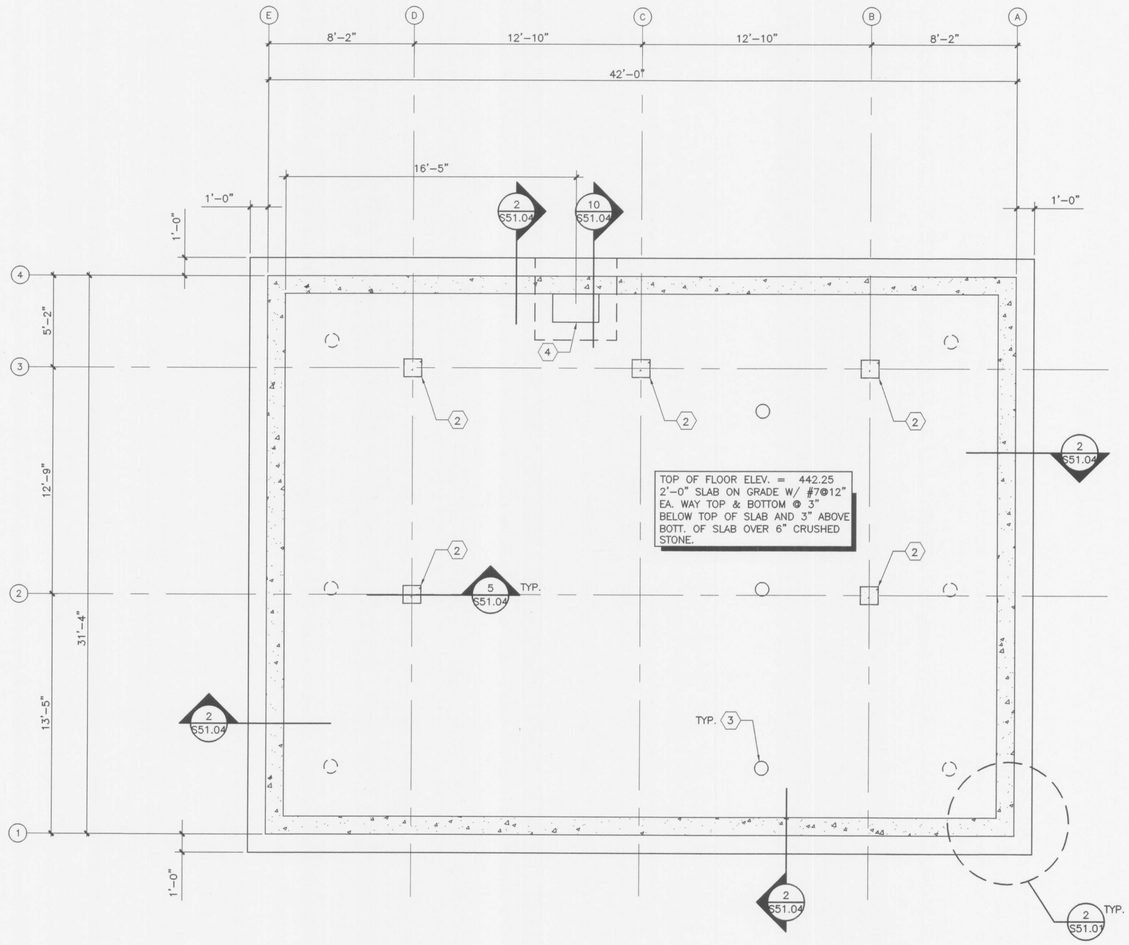
## ADDITIONAL REINF. AT OPENINGS IN WALLS AND SLABS

SCALE: N.T.S.




## TYP. CORNER DETAIL

2 / S51.01 SCALE : N.T.S.




## FOUNDATION PLAN

1 / S51.01 SCALE : 1/4" = 1'-0"

NOTES:

1. SLOPE FLOOR TO FLOOR DRAINS.
2. 1'-0"x1'-0" CONCRETE COLUMN.
3. FLOOR DRAINS– SEE CIVIL DRAWING C51.01 FOR LOCATIONS.
4. SUMP PIT PER C51.01. COORDINATE OPENING REQUIREMENTS IN COVER PLATE W/ ELECTRICAL CONTRACTOR.

GEORGE BUTLER ASSOCIATES, INC.
Engineers • Architects
Kansas • Missouri • Illinois

WASTEWATER TREATMENT PLANT
# ULTRAVIOLET (UV) DISINFECTION FOUNDATION PLAN
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: RLS
DRAWN BY: RJF
CHECKED BY: JNH

SHEET NUMBER
**S51.01**

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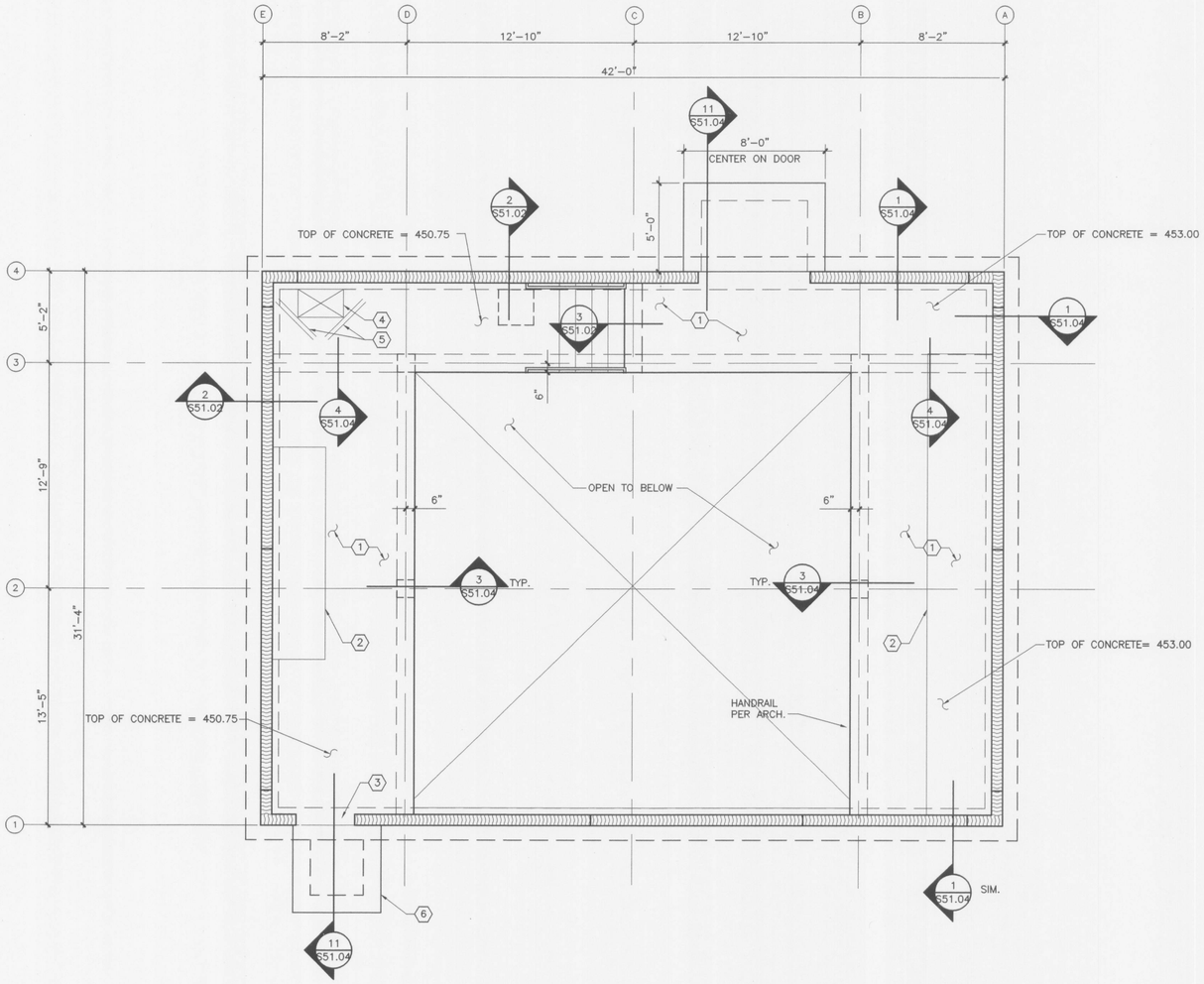
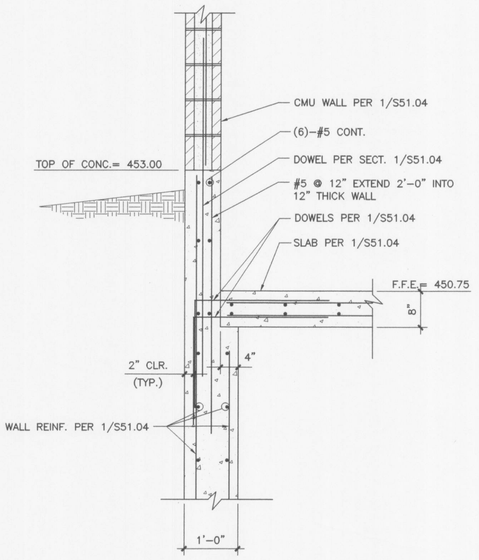



## FLOOR PLAN

1 S51.02 | S51.02 SCALE : 1/4" = 1'-0"

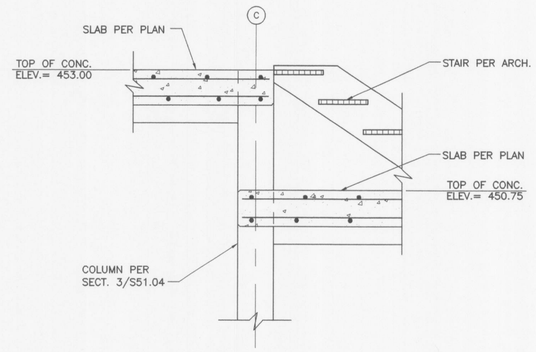
NOTES:

1. 8" THICK SLAB REINF. w/ #5@12" EA. WAY 2 INCHES FROM BOTTOM OF SLAB AND #4@16" EA. WAY 2 INCHES FROM TOP OF SLAB.
2. HOUSEKEEPING PAD PER SHEET S51.04. REFER TO ELECTRICAL DRAWINGS FOR EXTENTS.
3. PROVIDE OPENING IN CONCRETE WALL FOR DOOR OPENING. TOP OF WALL ELEV.= 450.083.
4. SLAB OPENING. REFER TO MECHANICAL FOR SIZE AND LOCATION.
5. (2) #5x4'-0" DIAG. @ 2" FROM TOP OF SLAB.
6. REF. ARCH. DWG. FOR STOOP LOCATION AND SIZE.




## SECTION

2 S51.02 | S51.02 SCALE : 3/4" = 1'-0"




## SECTION

3 S51.02 | S51.02 SCALE : 3/4" = 1'-0"

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STATE OF MISSOURI
JONATHAN D. HAGEROTT
NUMBER E-28903
REGISTERED PROFESSIONAL ENGINEER
12.31.03

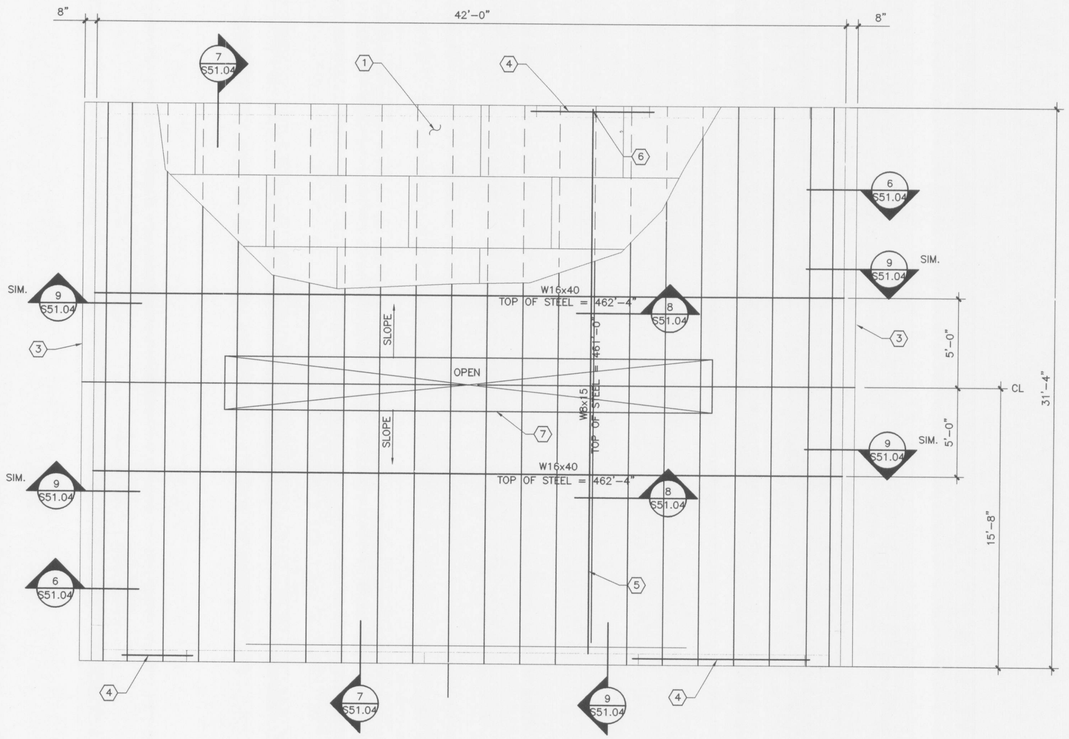
# WASTEWATER TREATMENT PLANT
# ULTRAVIOLET (UV) DISINFECTION FLOOR PLAN
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: RLS
DRAWN BY: RJF
CHECKED BY: JNH

SHEET NUMBER
**S51.02**

K:\Client\OFallon\9234_32\STRUCT\9234S5102.dwg Layout: S51.02 -- Tuesday December 23, 2003, 1:38pm -- Copyright 2003, George Butler Associates, Inc.

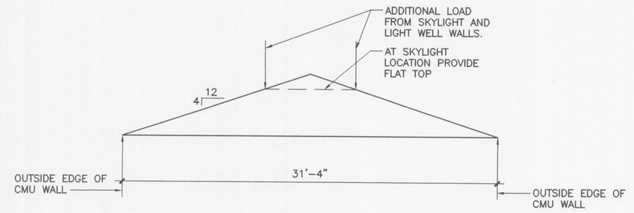



## ROOF PLAN

S51.03 | 1 | S51.03 SCALE : 1/4" = 1'-0"

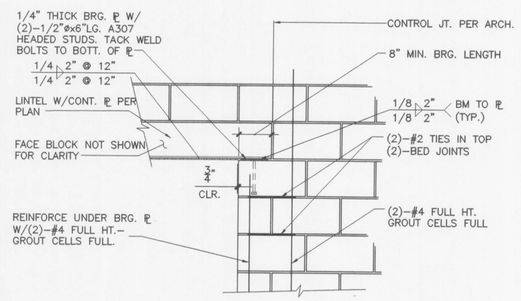
NOTES:

1. 5/8" EXTERIOR GRADE PLYWOOD SHEATHING. SEE SHEET S51.00 FOR NAILING REQUIREMENTS.
2. SEE SHEET S51.03 FOR ROOF TRUSS DIAGRAM.
3. 2x4 @ 16" WALL w/ 5/8" EXT. GRADE PLYWOOD ABOVE CMU WALL.
4. GALVANIZED W8x15 LINTEL w/ 3/8"x7" GALVANIZED BOTTOM PLATE.
5. CENTER BEAM IN DOOR OPENING.
6. PROVIDE STANDARD AISC SHEAR CONNECTION TO LINTEL.
7. SKYLIGHT PER ARCH.




## ROOF TRUSS

SCALE : 1/4" = 1'-0"




## TYP. LINTEL BEARING DETAIL (NO CONTROL JOINT)

NOT TO SCALE

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JONATHAN N. HAGEROTT
NUMBER E-28903
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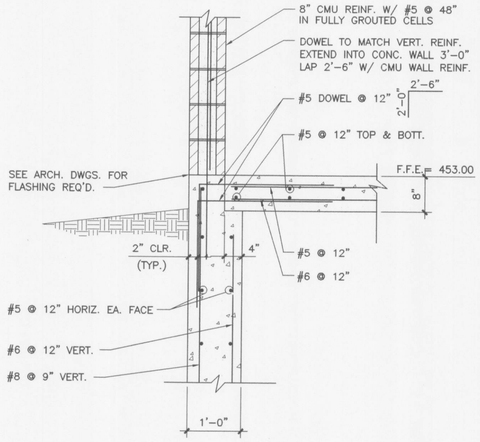
12.31.03

# WASTEWATER TREATMENT PLANT
# ULTRAVIOLET (UV) DISINFECTION
# ROOF PLAN
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004
DESIGNED BY: RLS
DRAWN BY: RJF
CHECKED BY: JNH
SHEET NUMBER
**S51.03**

K:\Client\OFallon\9234_32\STRUCT\9234S5103.dwg Layout: S51.03 -- Tuesday December 23, 2003, 11:17am -- Copyright 2003, George Butler Associates, Inc.



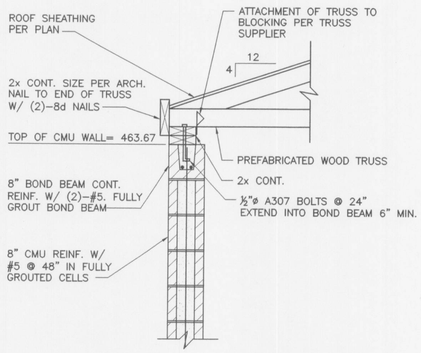

## SECTION

1 S51.02 | S51.04 SCALE : 3/4" = 1'-0"



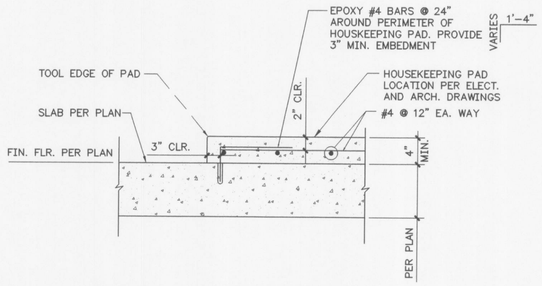

## SECTION

4 S51.02 | S51.04 SCALE : 3/4" = 1'-0"



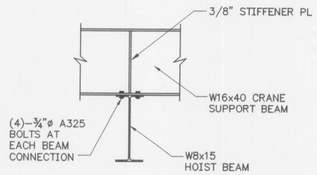

## SECTION

7 S51.03 | S51.04 SCALE : 3/4" = 1'-0"



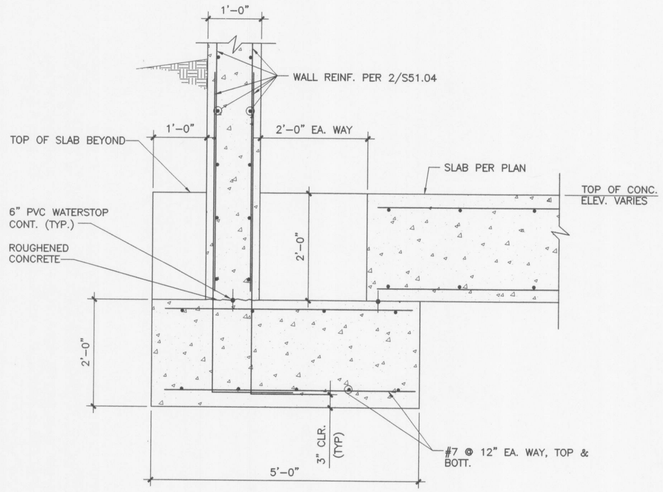

## TYP. HOUSEKEEPING PAD

SCALE: N.T.S.



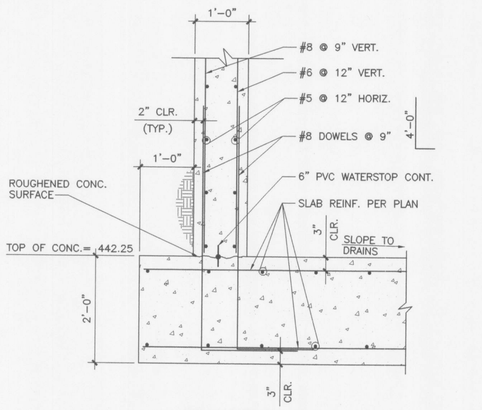

## SECTION

8 S51.03 | S51.04 SCALE : 3/4" = 1'-0"



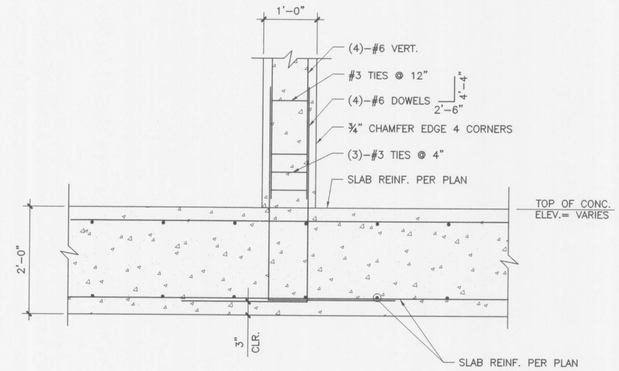

## SECTION

10 S51.01 | S51.04 SCALE : 3/4" = 1'-0"



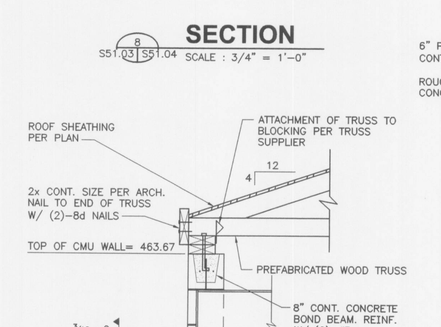

## SECTION

2 S51.01 | S51.04 SCALE : 3/4" = 1'-0"




## SECTION

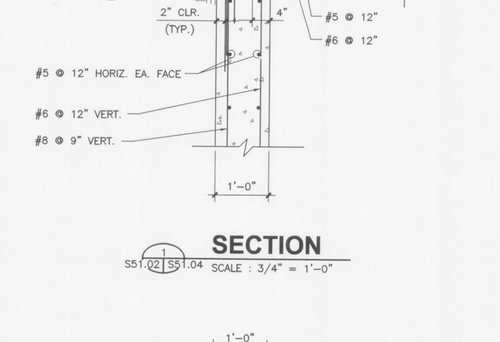
5 S51.01 | S51.04 SCALE : 3/4" = 1'-0"




@ SIM: ROOF FRAMING PER SECTION 6/S51.04

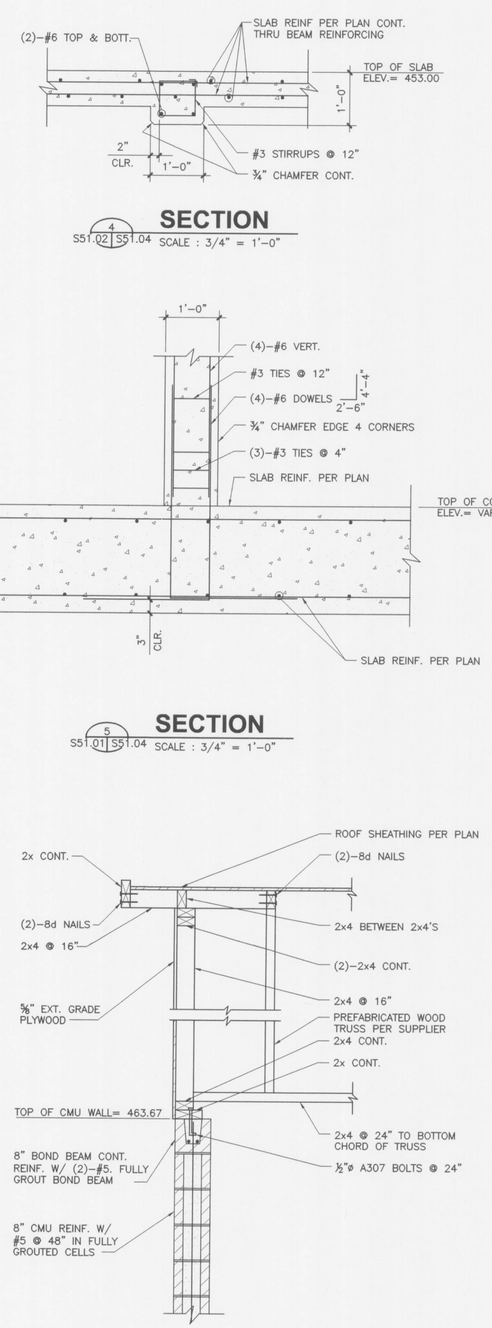
## SECTION

9 S51.03 | S51.04 SCALE : 3/4" = 1'-0"




## SECTION

3 S51.02 | S51.04 SCALE : 3/4" = 1'-0"




## SECTION

6 S51.03 | S51.04 SCALE : 3/4" = 1'-0"




## SECTION

11 S51.01 | S51.04 SCALE : 3/4" = 1'-0"

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JONATHAN N. HAGEROTT
NUMBER E-28903
REGISTERED PROFESSIONAL ENGINEER
12.31.03

# WASTEWATER TREATMENT PLANT
# ULTRAVIOLET (UV) DISINFECTION SECTIONS
CITY OF O'FALLON, MISSOURI

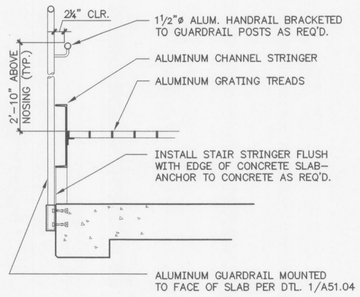
JOB NO.: 9234.32
DATE: JANUARY 4, 2004

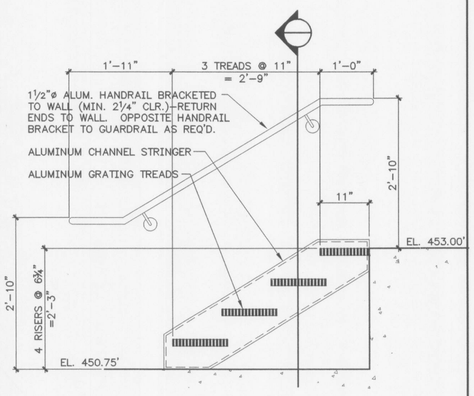
DESIGNED BY: RLS
DRAWN BY: RJF
CHECKED BY: JNH

SHEET NUMBER

**S51.04**

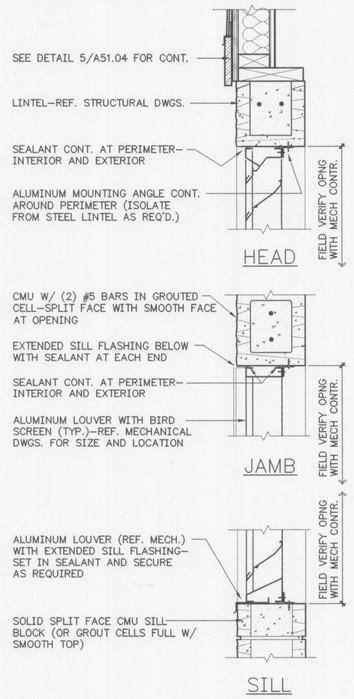
K:\Client\OFallon\9234_32\STRUCT\9234S5104.dwg Layout: S51.04 -- Tuesday, December 23, 2003, 1:40pm -- Copyright 2003, George Butler Associates, Inc.




## STAIR DETAILS

3 / A51.01 A51.01 SCALE : 3/4" = 1'-0"




## LOUVER DETAIL

2 / A51.02 A51.01 SCALE : 1 1/2" = 1'-0"

### CODE ANALYSIS

1997 BOCA NATIONAL BUILDING CODE

PROJECT DESCRIPTION:

A NEW BUILDING HOUSING A WASTE WATER TREATMENT PLANT (ULTRA VIOLET DISINFECTION SYSTEM)
FLOOR AREA:
GROUND LEVEL = 607 S.F.
BASEMENT LEVEL = 1174 S.F.

OCCUPANCY CLASSIFICATION: F2

FACTORY AND INDUSTRIAL USE GROUP—LOW HAZARD

TYPE OF CONSTRUCTION

TYPE 5B COMBUSTIBLE UNPROTECTED
ALLOWABLE HEIGHT 2 STORY/ 30'
ALLOWABLE AREA 7200 S.F. > ACT.

FIRE RESISTANCE RATINGS (TABLE 602)

| | |
|---|---|
| EXTERIOR WALLS | |
| LOADBEARING | 0* |
| NON LOADBEARING | 0* |
| *SEPARATION | > 10' |
| FIRE WALLS | N.A. |
| FIRE SEPARATION ASSEMBLIES | N.A. |
| FIRE PARTITIONS | N.A. |
| SMOKE BARRIERS | N.A. |
| NON LOADING PARTITIONS | N.A. |
| INTERIOR LOAD BEARING PARTITIONS | N.A. |
| STRUCT. MEMBERS SUPPORTING WALL | N.A. |
| FLOOR CONST. INCLUDING BEAMS | 0 |
| ROOF CONSTRUCTION | 0 |

STAIR CONSTRUCTION

NON COMBUSTIBLE

MEANS OF EGRESS

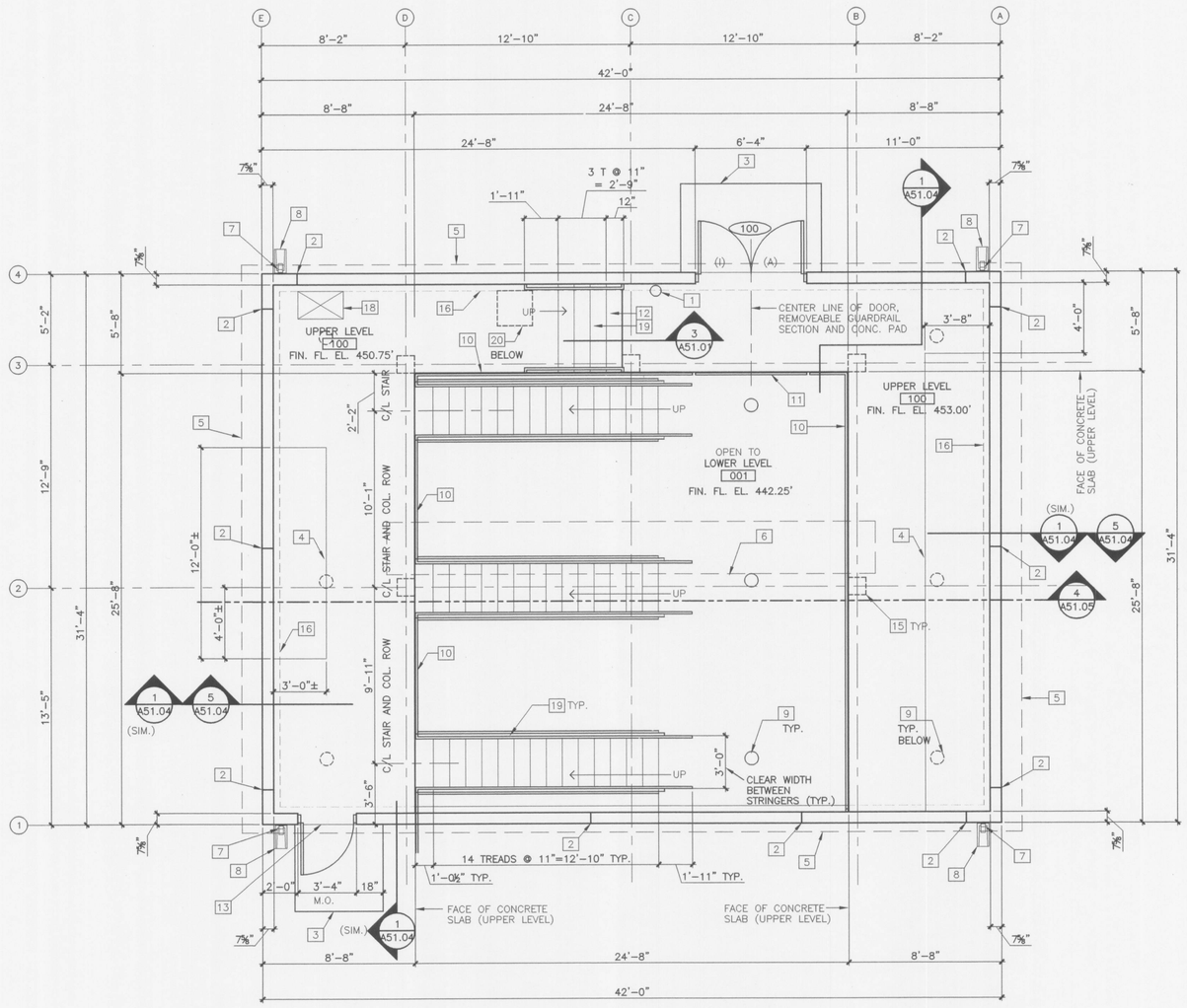
ACTUAL NUMBER OF OCCUPANTS — 0
OCCUPANCY COUNT BY TABLE 1008.1.2
300 S.F. / OCCUPANT GROSS
GROUND FLOOR— 3
BASEMENT— 4
NUMBER IN COMBINATION— 7 TOTAL

EGRESS WIDTH
DOORS @ .2 ALL 3.8" — 32" MIN.
STAIRS @ .3 ALL 5.7" — 36" MIN.

NUMBER OF EXITS REQUIRED: 2
(1) EXIT REQ'D. BY OCCUPANT LOAD
(1) EXIT REQ'D. BY TRAVEL DISTANCE

TRAVEL DISTANCE: 75' ALLOWABLE (MAX)

MIN. STAIR WIDTH: 36" (SECTION 1014.3, EXCEPTION 4)




## GROUND FLOOR PLAN

1 / A51.01 SCALE : 1/4" = 1'-0"

PLAN NORTH

TOP OF GROUND FLOOR SLAB: EL. 453.00' AND 450.75' (REF. PLAN)
TOP OF BASEMENT FLOOR SLAB: EL. 442.25'

### CONSTRUCTION NOTES

1. BRACKET MOUNTED FIRE EXTINGUISHER. MOUNT EXTINGUISHER WITH HANDLE AT +48" AFF AND AS DIRECTED BY LOCAL AUTHORITY HAVING JURISDICTION. EXTINGUISHER SHALL BE MULTI—PURPOSE DRY CHEMICAL TYPE WITH A MINIMUM 4A:60B:C UL RATING. PROVIDE A WALL MOUNTED SIGN STATING "FIRE EXTINGUISHER" MOUNTED ABOVE EXTINGUISHER WITH TOP OF SIGN AT +7'—0" AFF AT EACH EXTINGUISHER LOCATION. VERIFY EXTINGUISHER QUANTITY, RATING REQUIREMENTS, AND INSTALLATION LOCATIONS WITH LOCAL AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION.
2. CONTROL JOINT, SEE BUILDING ELEVATIONS SHEET A51.02 AND DETAIL 4/A51.04.
3. 5' x 5' AND 5' x 8' REINF. CONC. PADS WITH MEDIUM TROWEL BROOM FINISH. SLOPE 1/4" PER 12" TO DRAIN. SEE DETAIL 1/A51.05 AND STRUCTURAL DRAWINGS.
4. 4" HEIGHT REINF. CONC. HOUSEKEEPING PAD WITH STEEL TROWEL FINISH. TOOL EDGES. FIELD VERIFY DIMENSIONAL REQUIREMENTS WITH ELECTRICAL CONTRACTOR FOR EQUIPMENT TO BE INSTALLED.
5. PROFILE AT ROOF LINE ABOVE. SEE ROOF PLAN SHEET A51.03.
6. PROFILE AT SKYLIGHT LIGHTWELL ABOVE. SEE REFLECTED CEILING PLAN SHEET A51.03 AND BUILDING SECTION SHEET A51.05.
7. PREFINISHED SHEET METAL DOWNSPOUT. SEE DETAIL 1/A51.04
8. PRECAST CONCRETE BLOCK SPLASH BLOCK. (WHERE DOWNSPOUT DISCHARGES ONTO NON—PAVED LOCATION—VERIFY)
9. FLOOR DRAIN. SEE CIVIL DRAWINGS
10. ALUMINUM HANDRAIL, 42" HEIGHT, MOUNTED AT FACE OF GROUND FLOOR SLAB. PROVIDE WITH 4" HEIGHT "TOE BOARD".
11. REMOVABLE ALUMINUM HANDRAIL (HIGH) SECTION, 6'—4" LONG. SEE TYPICAL HIGH HANDRAIL DESCRIPTION AT NOTE 10 ABOVE. (6'—8" CLEAR OPENING)
12. ALUMINUM GRATING TREAD WITH TOP FLUSH WITH CONCRETE FLOOR SLAB—REF. DETAIL 3/A51.01
13. 3'—5" OPENING WIDTH IN CONCRETE FOUNDATION WALL FOR DOOR INSTALLATION—REF. STRUCTURAL DWGS.
14. *(NOT USED)*
15. CONCRETE COLUMN BELOW. SEE STRUCTURAL DRAWINGS. PAINT.
16. PROFILE AT PERIMETER OF LOWER LEVEL (FOUNDATION WALL) BELOW. SEE STRUCTURAL DRAWINGS.
17. *(NOT USED)*
18. MECHANICAL DUCT OPENING THROUGH FLOOR SLAB. FIELD VERIFY SIZE AND LOCATION WITH MECHANICAL CONTRACTOR. TOOL EXPOSED EDGES. SEE STRUCTURAL DRAWINGS FOR REINFORCEMENT AT OPENING EDGES.
19. ALUMINUM FRAMED STAIR WITH GRATING TREADS AND ALUMINUM TUBE HANDRAILS (LOW AND HIGH)
20. SUMP PIT (BELOW). SEE STRUCTURAL AND CIVIL DRAWINGS.

### GENERAL NOTES

1. "A" = ACTIVE LEAF
"I" = INACTIVE LEAF

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STATE OF MISSOURI
MICHAEL WAYNE SYDER
NUMBER A-6249
REGISTERED ARCHITECT
12.9.03

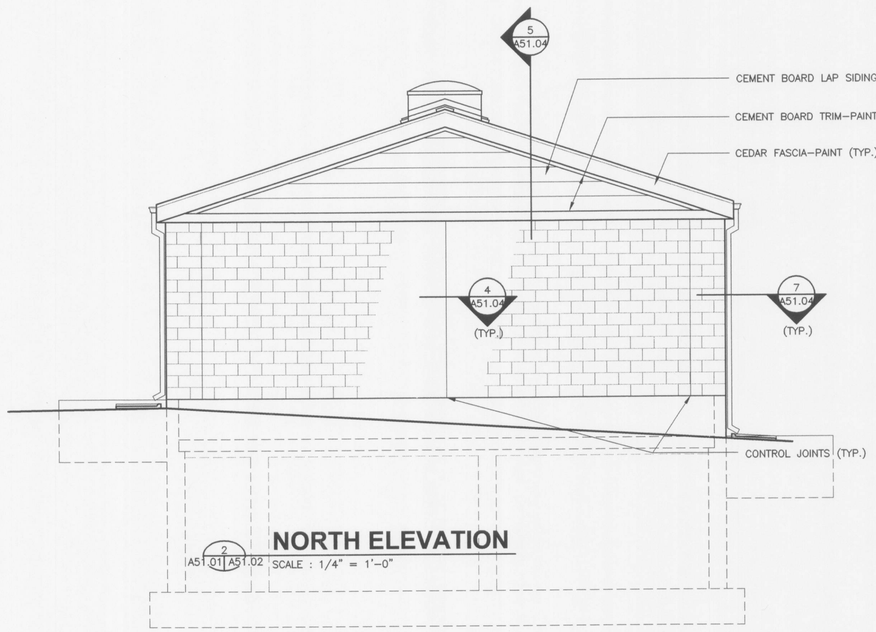
# WASTEWATER TREATMENT PLANT
# ULTRAVIOLET (UV) DISINFECTION
# FLOOR PLAN
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: RJR
DRAWN BY: RTH
CHECKED BY: JRH

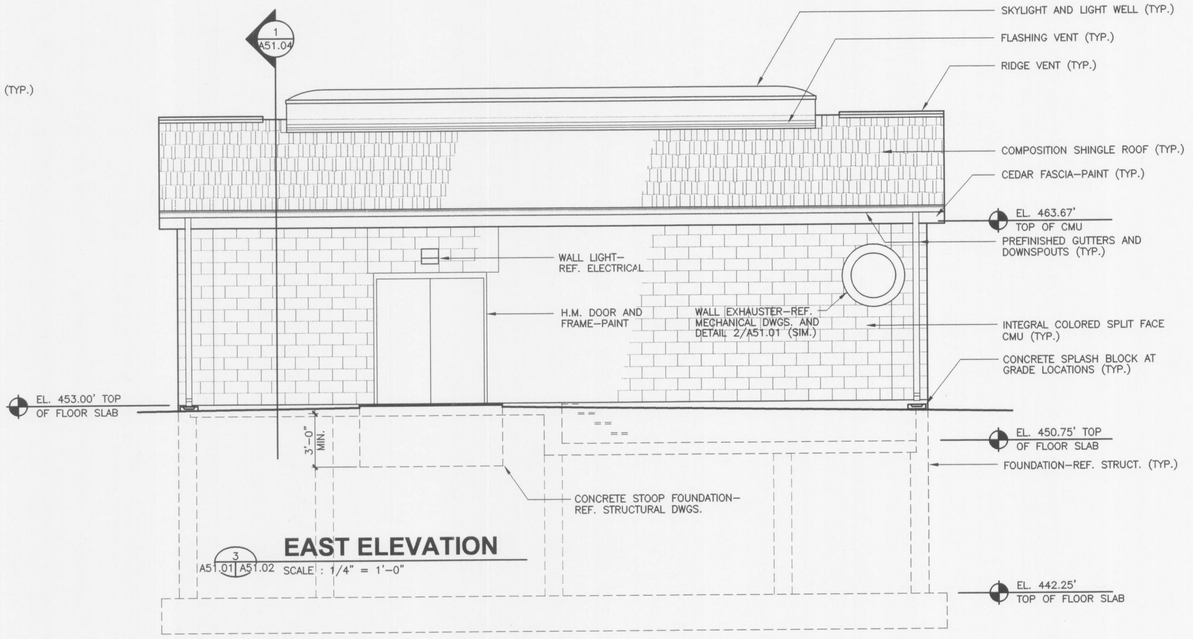
SHEET NUMBER
**A51.01**

K:\Client\OFallon\9234_32\ARCH\9234A100.dwg Layout: A5101 -- Monday December 22, 2003, 3:28pm -- Copyright 2003, George Butler Associates, Inc.



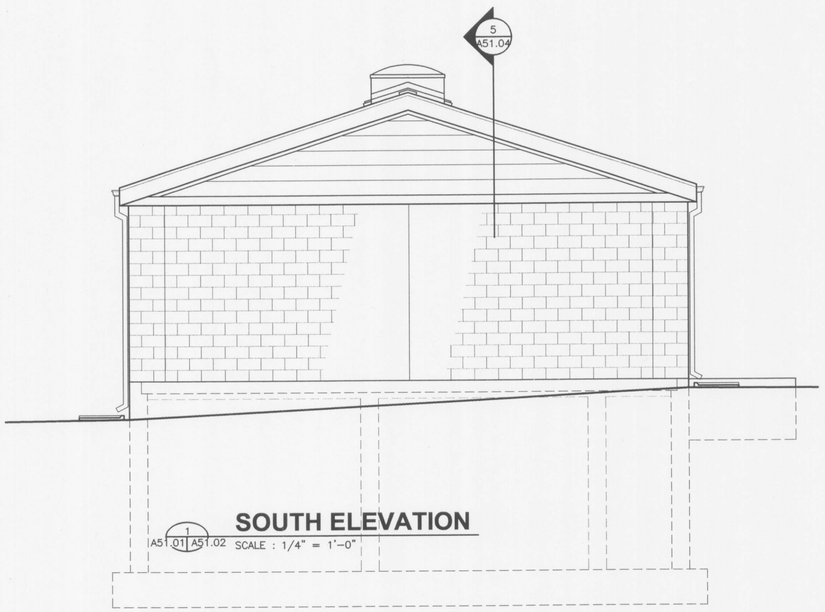

## NORTH ELEVATION

2 A51.01 A51.02 SCALE : 1/4" = 1'–0"



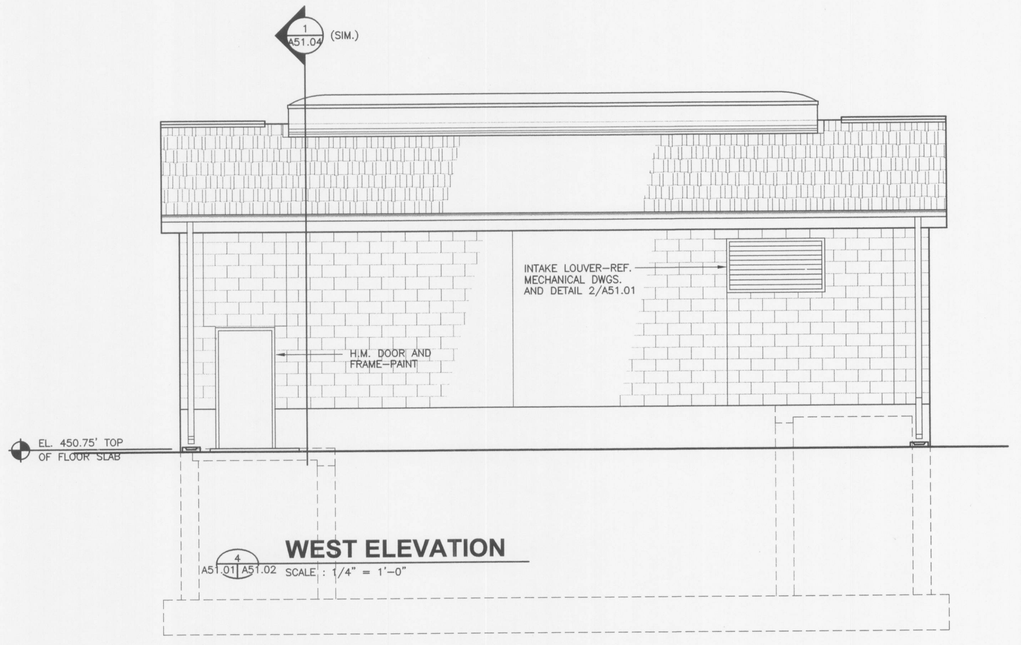

## EAST ELEVATION

3 A51.01 A51.02 SCALE : 1/4" = 1'–0"




## SOUTH ELEVATION

1 A51.01 A51.02 SCALE : 1/4" = 1'–0"




## WEST ELEVATION

4 A51.01 A51.02 SCALE : 1/4" = 1'–0"

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STATE OF MISSOURI
MICHAEL WAYNE
RYDER
NUMBER
A8003043
REGISTERED ARCHITECT
12.31.03

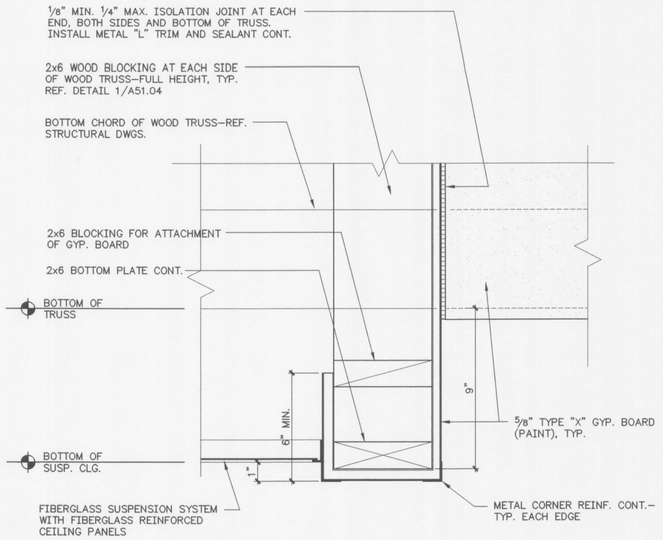
WASTEWATER TREATMENT PLANT
**ULTRAVIOLET (UV) DISINFECTION**
**BUILDING ELEVATIONS**
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: RJR
DRAWN BY: RTH
CHECKED BY: JRH

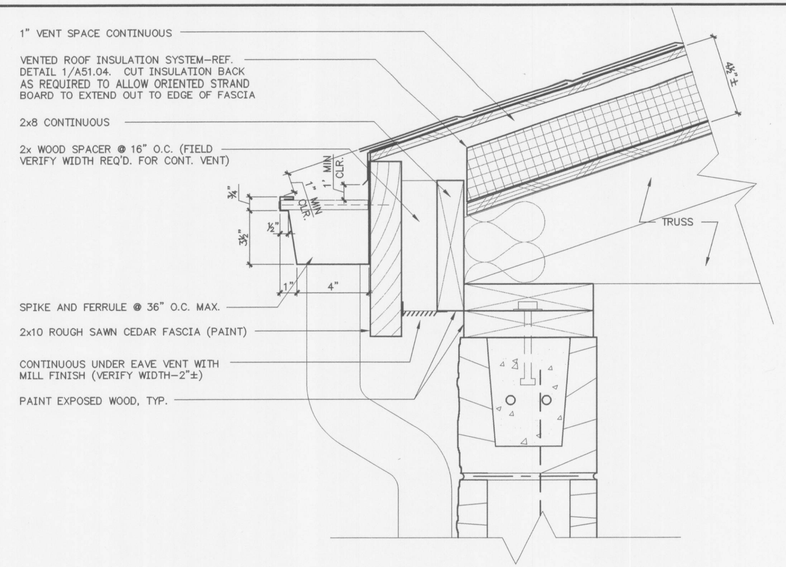
SHEET NUMBER
**A51.02**

K:\Client\OFallon\9234_32\ARCH\9234A101.dwg Layout: A5102 -- Monday, December 22, 2003, 3:28pm -- Copyright 2003, George Butler Associates, Inc.



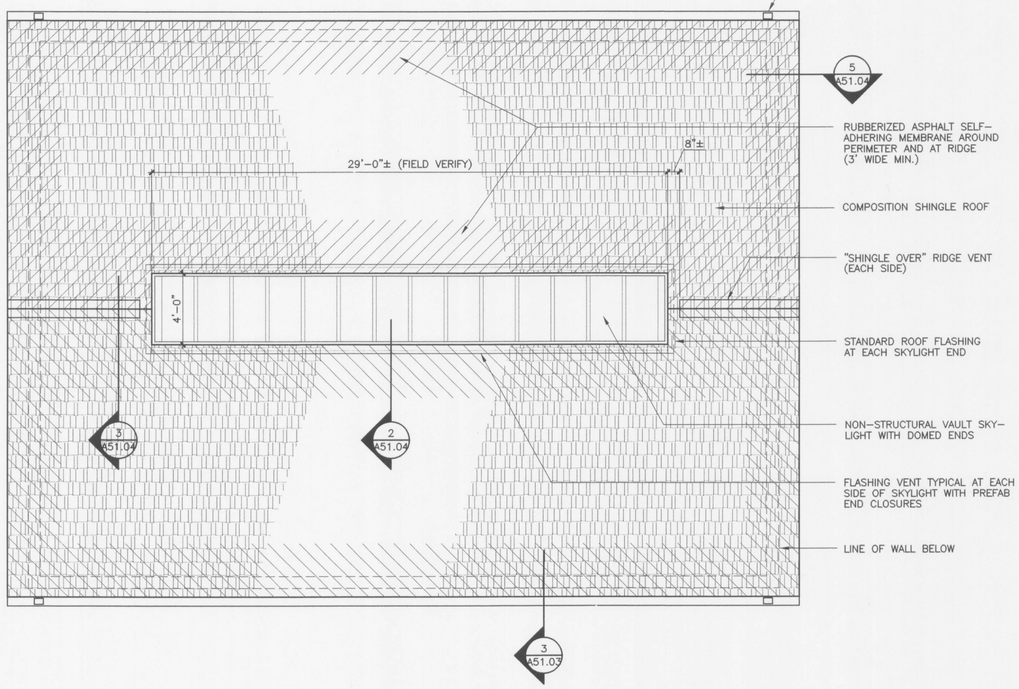

## LIGHT WELL DETAIL

4 / A51.04 | A51.03 SCALE : 3" = 1'–0"



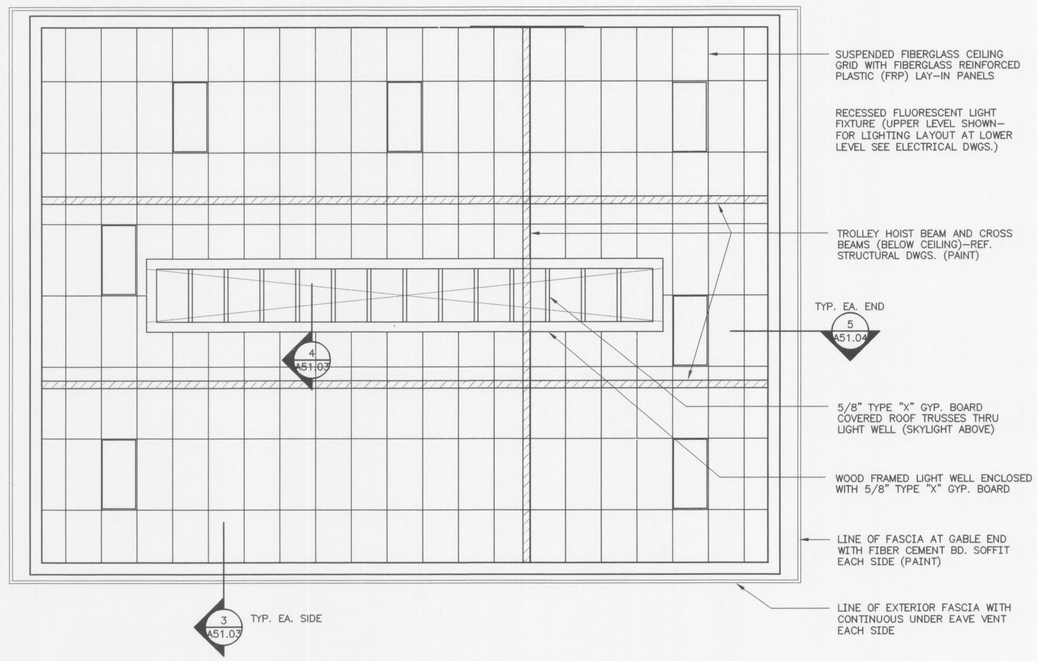

## FASCIA DETAIL

3 / A51.04 | A51.03 SCALE : 3" = 1'–0"




## ROOF PLAN

2 / A51.03 | A51.03 SCALE : 1/4" = 1'–0"




## REFLECTED CEILING PLAN

1 / A51.03 | A51.03 SCALE : 1/4" = 1'–0"

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STATE OF MISSOURI
MICHAEL WAYNE RYDER
NUMBER A-RC03043
REGISTERED ARCHITECT
12.31.03

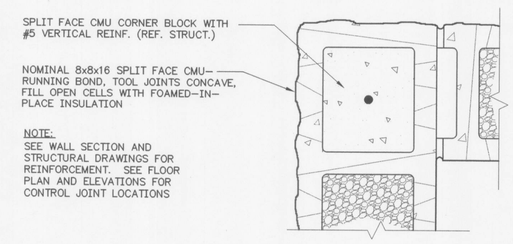
# WASTEWATER TREATMENT PLANT
# ULTRAVIOLET (UV) DISINFECTION
# REFLECTED CLG. & ROOF PLAN
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: RJR
DRAWN BY: RTH
CHECKED BY: JRH

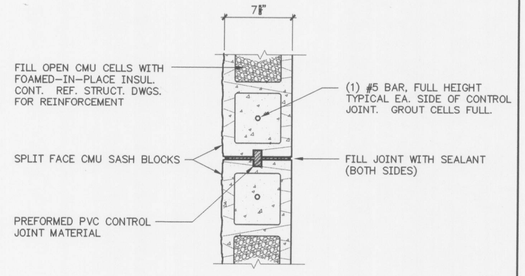
SHEET NUMBER
**A51.03**

K:\Client\OFallon\9234_32\ARCH\9234A102.dwg Layout: A5103 -- Monday December 22, 2003, 3:28pm -- Copyright 2003, George Butler Associates, Inc.



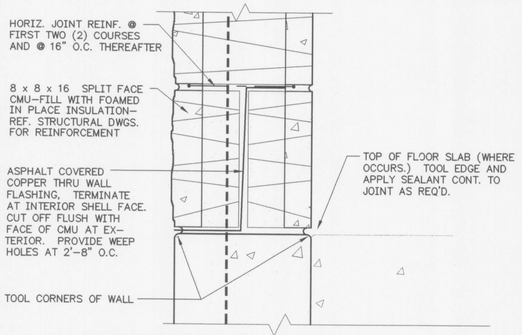

## TYP. CORNER DETAIL

7 A51.01 | A51.04 SCALE : 3" = 1'–0"



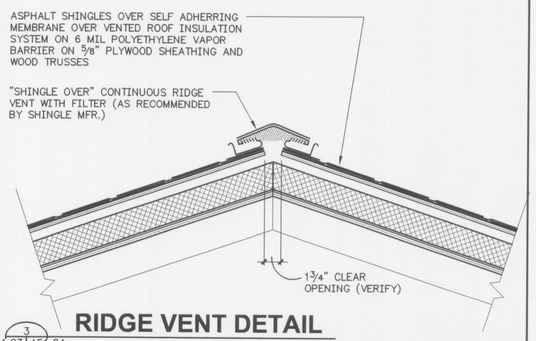

## CONTROL JOINT DETAIL

4 A51.01 | A51.04 SCALE : 1 1/2" = 1'–0"



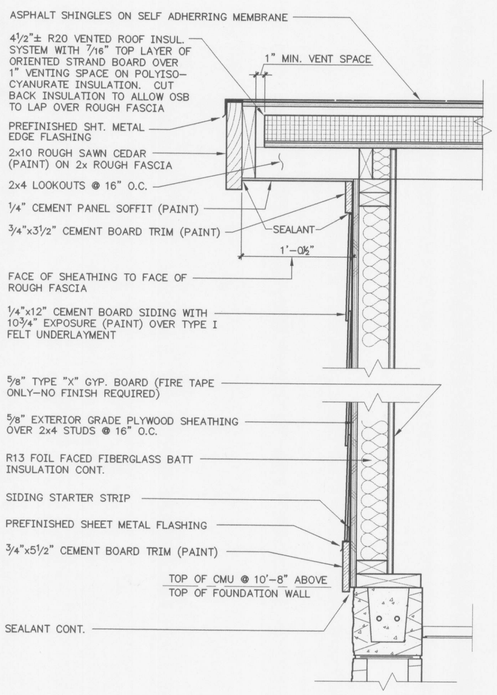

## BASE FLASHING DETAIL

6 A51.04 | A51.04 SCALE : 3" = 1'–0"



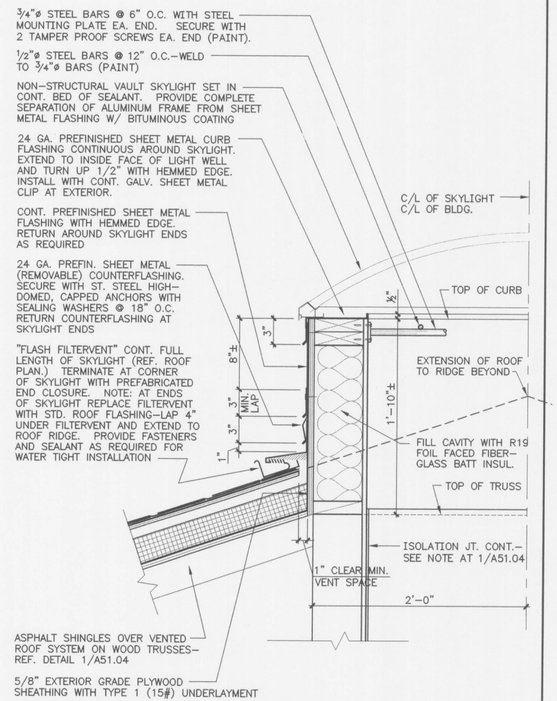

## RIDGE VENT DETAIL

3 A51.03 | A51.04 SCALE : 1 1/2" = 1'–0"



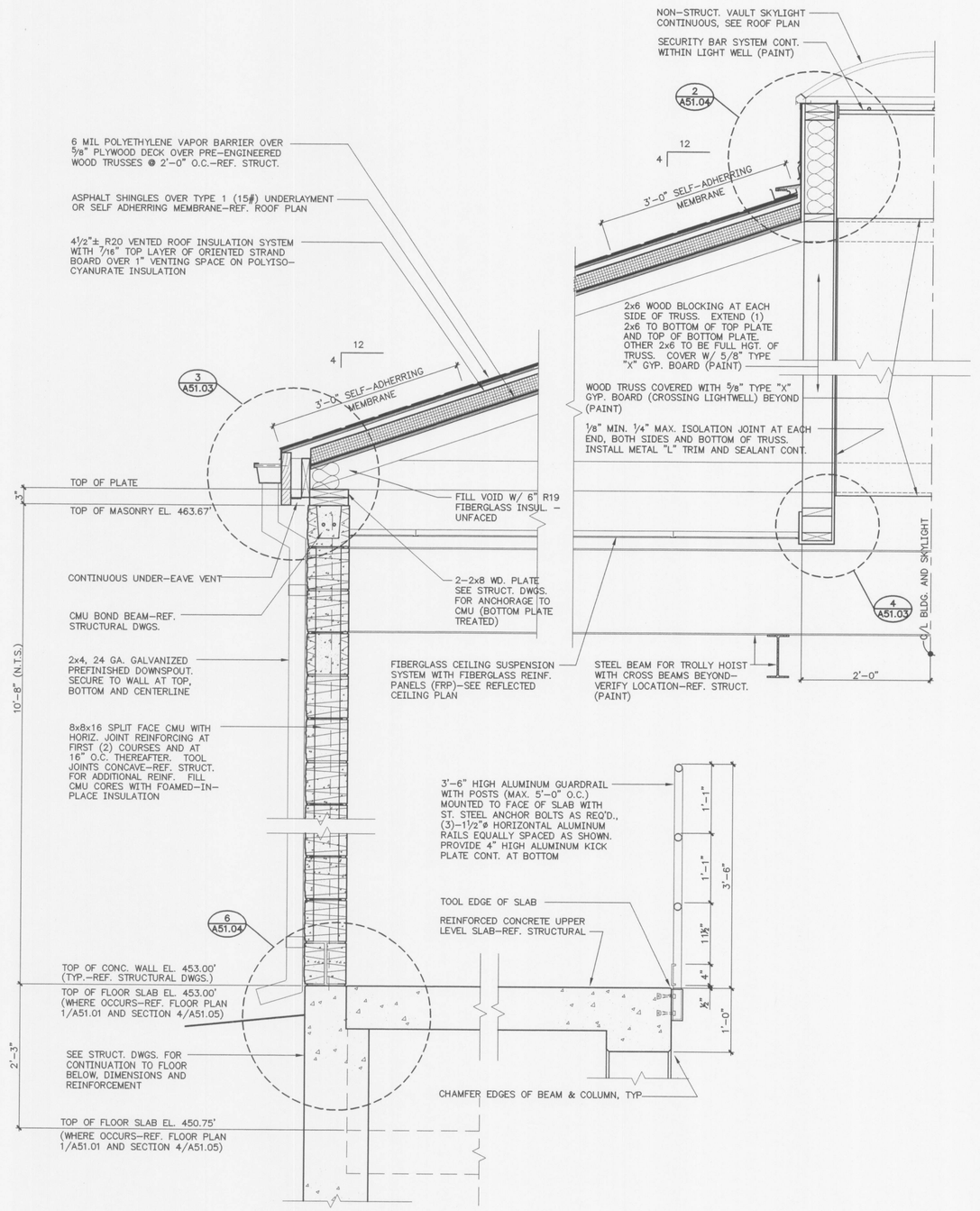

## PARTIAL WALL SECTION

5 A51.02 | A51.04 SCALE : 1 1/2" = 1'–0"




## VENT/SKYLIGHT FLASHING DETAIL

2 A51.04 | A51.04 SCALE : 1 1/2" = 1'–0"




## TYPICAL WALL SECTION

1 A51.01 | A51.04 SCALE : 1" = 1'–0"

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STATE OF MISSOURI
MICHAEL WAYNE RYDER
NUMBER A2002345
REGISTERED ARCHITECT
12.31.03

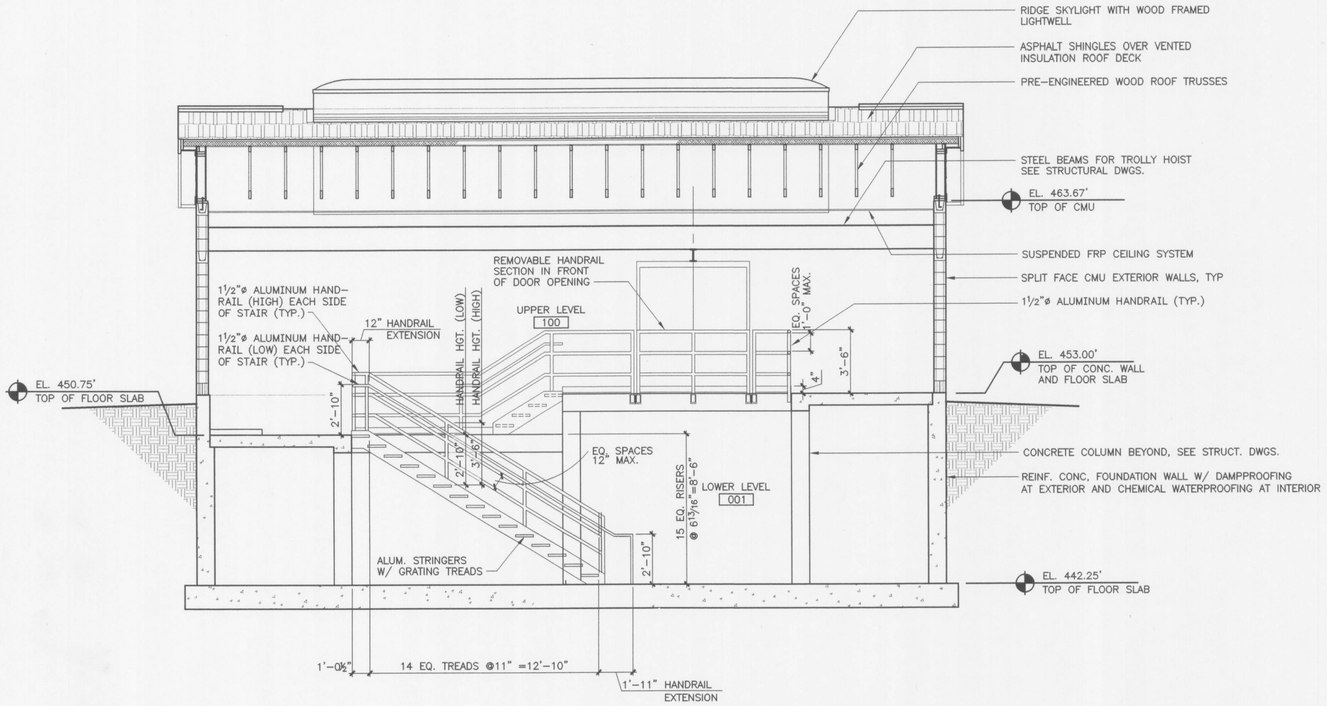
# WASTEWATER TREATMENT PLANT
# ULTRAVIOLET (UV) DISINFECTION
# WALL SECTION & DTLS.
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: RHR
DRAWN BY: RTH
CHECKED BY: JRH

SHEET NUMBER
**A51.04**

K:\Client\OFallon\9234_32\ARCH\9234A103.dwg Layout: A5104 -- Monday December 22, 2003, 3:28pm -- Copyright 2003, George Butler Associates, Inc.

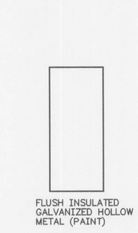



## BUILDING SECTION

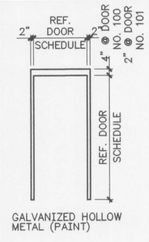
4 / A51.01 | A51.05 SCALE : 1/4" = 1'-0"

## DOOR SCHEDULE

| NUM. | DOOR SIZE (W. x H. x T.) | TYPE | MAT | FRAME TYPE | FRAME MAT. | DETAILS (REF. THIS SHT.) HEAD | JAMB | SILL | HW. SET | UL FIRE RATING | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | (PR.) 3'-0" x 7'-0" x 1¾" | 1 | H.M. | A | H.M. | 3 | 2 | 1 | 2 | – | 1, 2 |
| 101 | 3'-0" x 6'-8" x 1¾" | 1 | H.M. | A | H.M. | 3A | 2 | 1 | 3 | – | 1, 2 |
| | | | | | | | | | | | |




1
**DOOR TYPE**




A
**FRAME TYPE**

### NOTES:

1. EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, SPECIAL KNOWLEDGE OR EFFORT.
2. DOOR OPENING FORCE SHALL COMPLY WITH ANSI A117.86, SECTION 4.13.11.

### REMARKS

1. SEE FLOOR PLAN FOR DESIGNATION OF ACTIVE (A) AND INACTIVE (I) LEAFS.
2. PROVIDE METAL ASTRAGAL AT INTERIOR FACE

### MATERIAL LEGEND

H.M. HOLLOW METAL

## ROOM FINISH SCHEDULE

| NO. | NAME | FL. | BASE N | BASE E | BASE S | BASE W | WALLS N | WALLS E | WALLS S | WALLS W | CEILING MAT. | CEILING HGT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | GROUND LEVEL | 1 | A | A | A | A | 1/2 | 1/2 | 1 | 1/2 | A,C,D | VARIES | 1, 2 |
| 001 | LOWER LEVEL | 1 | A | A | A | A | 2 | 2 | 2 | 2 | B | VARIES | 2, 3, 4 |
| | | | | | | | | | | | | | |

### FLOOR FINISHES

1. SEALED CONCRETE WITH NON-SLIP FINISH

### BASE FINISHES

A. 6" HIGH PAINTED BASE (CONTRASTING COLOR, AS SELECTED BY ARCHITECT/ENGINEER)

### WALL FINISHES

1. CONC. MASONRY UNITS-PAINT
2. CONCRETE-PAINT

### CEILING FINISHES

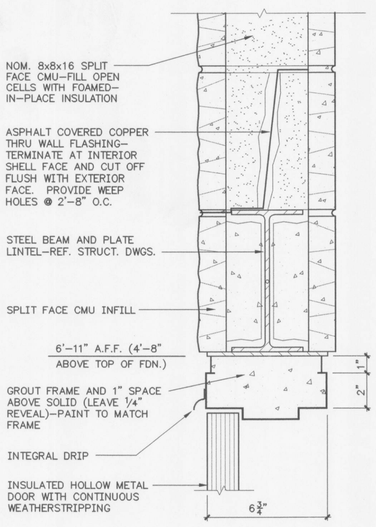
A. GYPSUM WALL BOARD-PAINT
B. CONCRETE-PAINT
C. EXPOSED STEEL STRUCTURE-PAINT
D. FIBERGLASS SUSPENSION GRID WITH FRP PANELS

### GENERAL NOTES

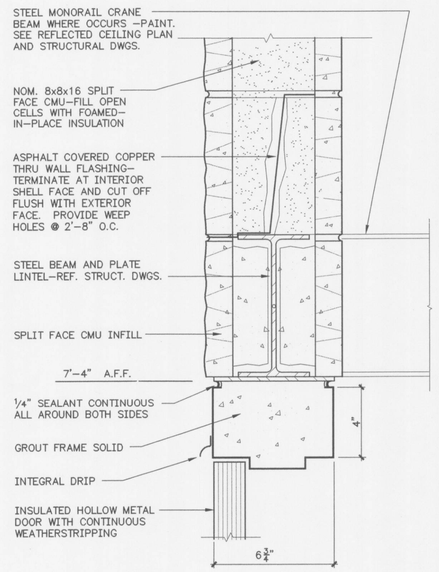
1. SEE SPECIFICATIONS FOR PAINT TYPES AND GLOSS.

### REMARKS

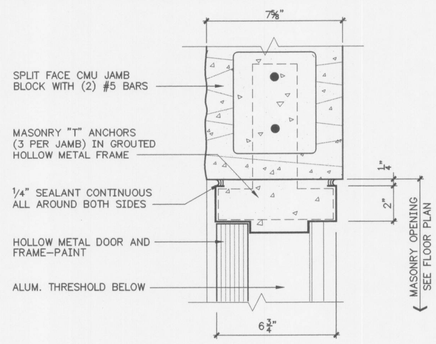
1. PAINT GYPSUM BOARD LIGHTWELL PERIMETER AND COVERED TRUSSES
2. SEE SPECIFICATIONS FOR PAINTING REQUIREMENTS OF PIPING, CONDUIT, DUCTWORK ETC.
3. INTERIOR WALLS OF LOWER LEVEL ARE TO BE COATED WITH APPLIED CHEMICAL WATERPROOFING PRIOR TO PAINTING
4. PAINT CONCRETE COLUMNS TO MATCH WALLS



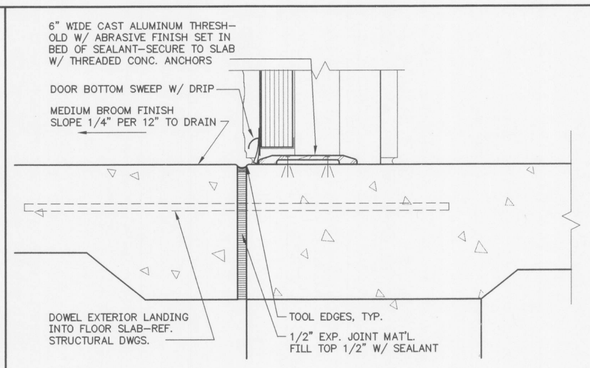

3A / A51.05 | A51.05 SCALE : 3" = 1'-0"
**DOOR HEAD DTL.**




3 / A51.05 | A51.05 SCALE : 3" = 1'-0"
**DOOR HEAD DTL.**




2 / A51.05 | A51.05 SCALE : 3" = 1'-0"
**DOOR JAMB DTL.**




1 / A51.05 | A51.05 SCALE : 3" = 1'-0"
**DOOR SILL DTL.**

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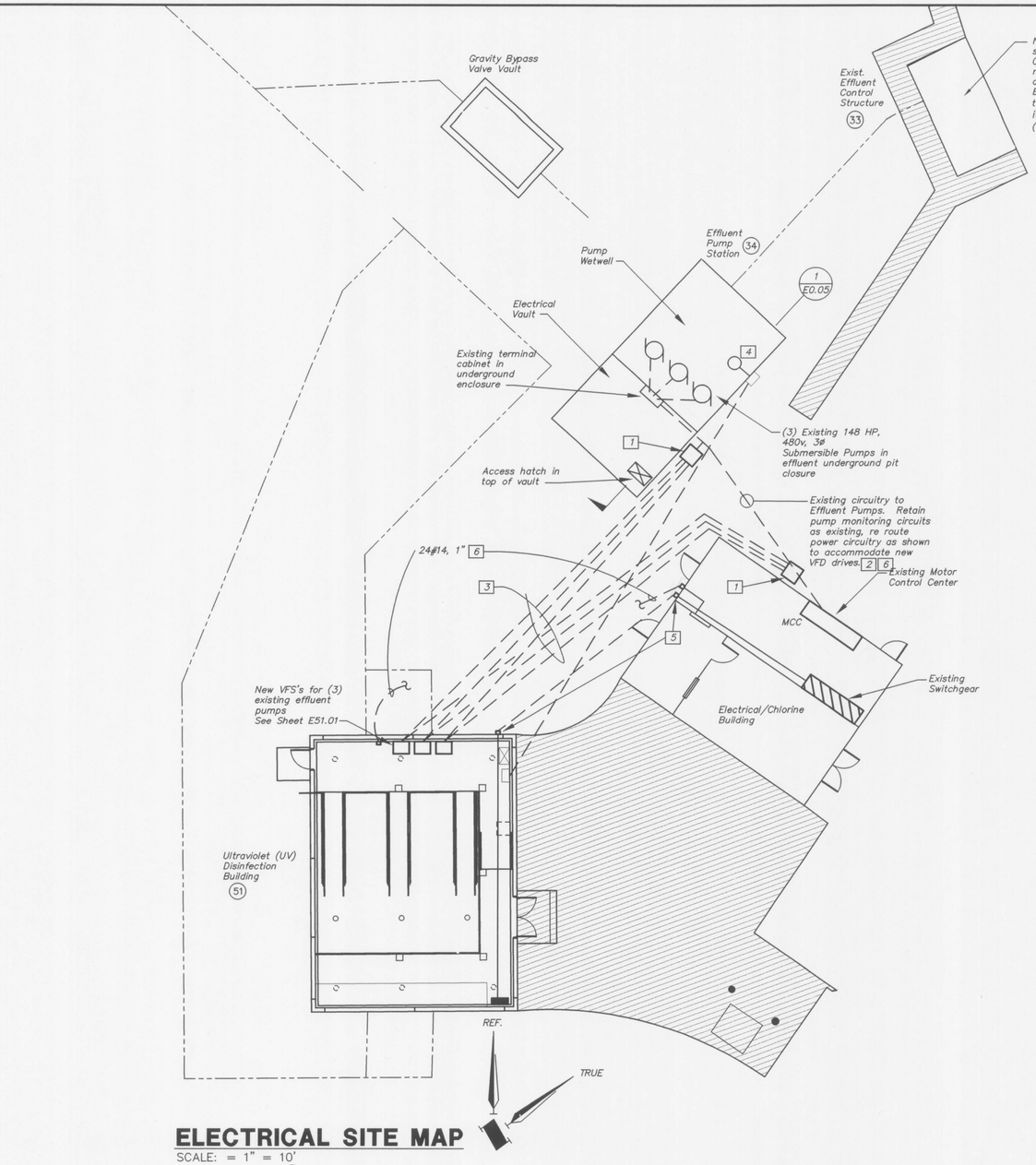
STATE OF MISSOURI
MICHAEL WAYNE RYDER
NUMBER A2009943
REGISTERED ARCHITECT
12.31.03

WASTEWATER TREATMENT PLANT
**ULTRAVIOLET (UV) DISINFECTION**
**BUILDING SECTION & DETAILS**
CITY OF O'FALLON, MISSOURI

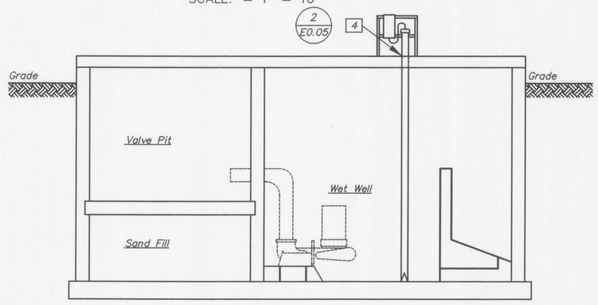
JOB NO.: 9234.32
DATE: JANUARY 4, 2004
DESIGNED BY: RJR
DRAWN BY: RTH
CHECKED BY: JRH
SHEET NUMBER
**A51.05**

K:\Client\OFallon\9234_32\ARCH\9234A104.dwg Layout: A5105 --- Monday December 22, 2003, 3:28pm --- Copyright 2003, George Butler Associates, Inc.



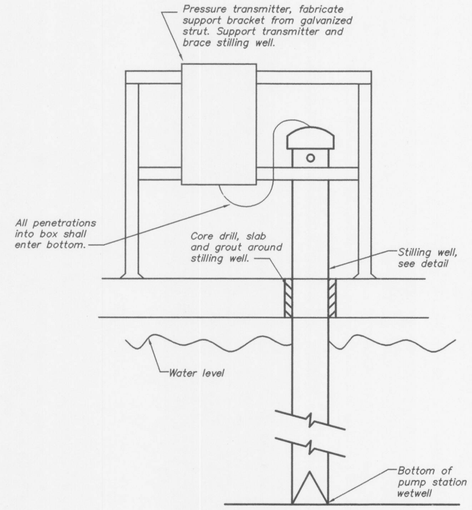

## ELECTRICAL SITE MAP

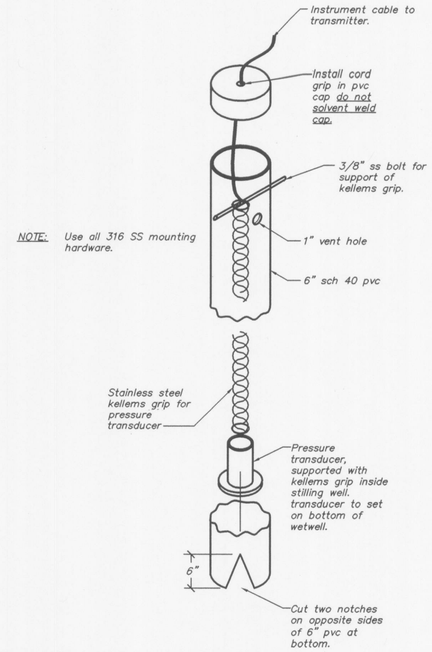
SCALE: = 1" = 10'




1 E0.05 **EFFLUENT PUMP STATION EXISTING**

SCALE: = 3/16" = 1'-0"

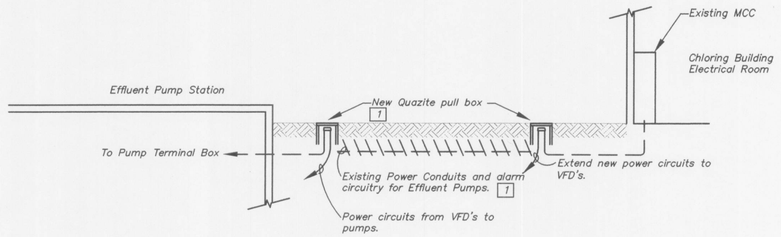



NOTE: Use all 316 SS mounting hardware.

2 E0.05 **PRESSURE TRANSDUCER IN STILLING WELL**

NO SCALE




3 E0.05 **POWER CONDUITS**

SCALE: = NS

*General Notes:*

1. *UV Building (Bldg 51) is new, for furnishing in this contract. Existing buildings are indicated as such and shall be modified as indicated.*

*Notes:*

1. *Intercept existing conduit and power circuitry to pumps. Install Quazite precast polymer-concrete pullbox (2 min) number PG3636BA 36 with heavy duty cover, number PG3636HA0017 (with logo "ELECTRIC" in lid.) Install Quazite box atop min. of 6" of clean 1" crushed stone, over compacted earth, per manufacturers recommendations.*
2. *Contractor shall hand excavate where required to prevent damage to pump circuitry. Power circuit modifications shall be performed one at a time to ensure pumping capability is maintained during construction.*
3. *Cords to submersible pumps terminate in noted cabinet in electrical vault. Cords shall remain as existing, new power cables from MCC to VFD's and on to terminal cabinet shall be furnished and installed hereunder. See sheet E36.02 and detail 3 this sheet.*
4. *Core drill top slab of Effluent Pump Stateion and install PVC stilling well. Coordinate exact location with Owners Representative.*
5. *Install pull box/LB as required for feeder to new UV Building panelboard. See one-line for circuitry.*
6. *Extend pump alarm circuitry, high temp. and moisture detection to VFD's in UV Building. Pump alarms shall be incorporated into VFD controls to ensure drives are shut down in event of pump problems (alarms). Alarm box may be retained in existing Chlorine Building.*

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STATE OF MISSOURI REGISTERED STEVEN LEE CHRISTENSEN NUMBER PROFESSIONAL ENGINEER
12/31/03

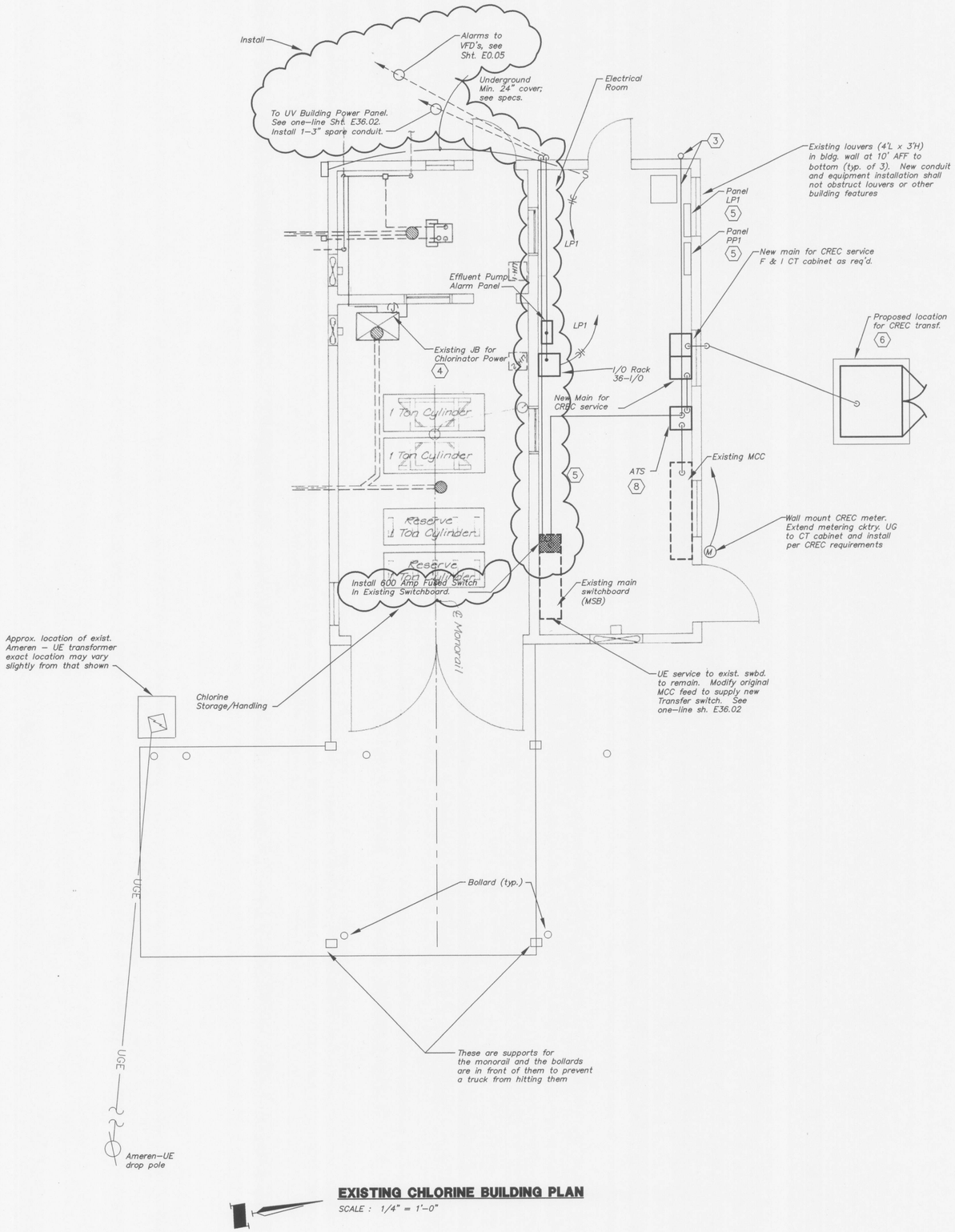
# WASTEWATER TREATMENT PLANT
# ULTRAVIOLET (UV) DISINFECTION
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: RWS
DRAWN BY: KRC
CHECKED BY: SLC
SHEET NUMBER

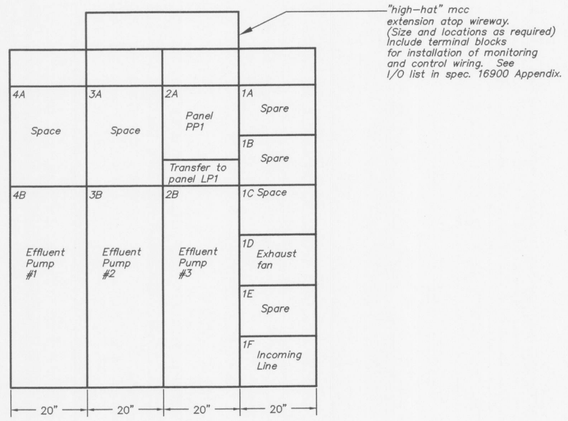
**E0.01**

K:\Client\OFallon\9234_32\ELEC\9234E001.dwg Layout: 9234e1504 -- Wednesday, December 31, 2003, 4:29pm -- Copyright 2003, George Butler Associates, Inc.




**EXISTING CHLORINE BUILDING PLAN**

SCALE : 1/4" = 1'-0"




General Notes:

1. Work required on this sheet for this project is indicated in "clouded" areas only. Information shown but not clouded is existing and shown for information only.

Notes:

1. All conduit used in this area shall be PVC coated rigid steel.
2. Not Used
3. Extend UG circuitry up wall, penetrate well and continue to mcc. Grout repair wall and paint to match existing.
4. Not Used
5. Existing breakers 5(3P-15) and 7(3P-20) in panel PP1 are used for power to Final Clarifier 3 drive and scum pump respectively. Equipment power to be relocated (Re:E16.02), disconnect and remove wiring, abandon conduit in place.
6. Exact location of equipment may vary slightly from that shown. Cuivre River Electric Cooperative (CREC) to F & I transformer, pad, and primary circuitry. This contractor shall F & I secondary metering equipment and circuitry per CREC requirements.
7. Not Used
8. Transfer switch at this facility shall operate automatically.

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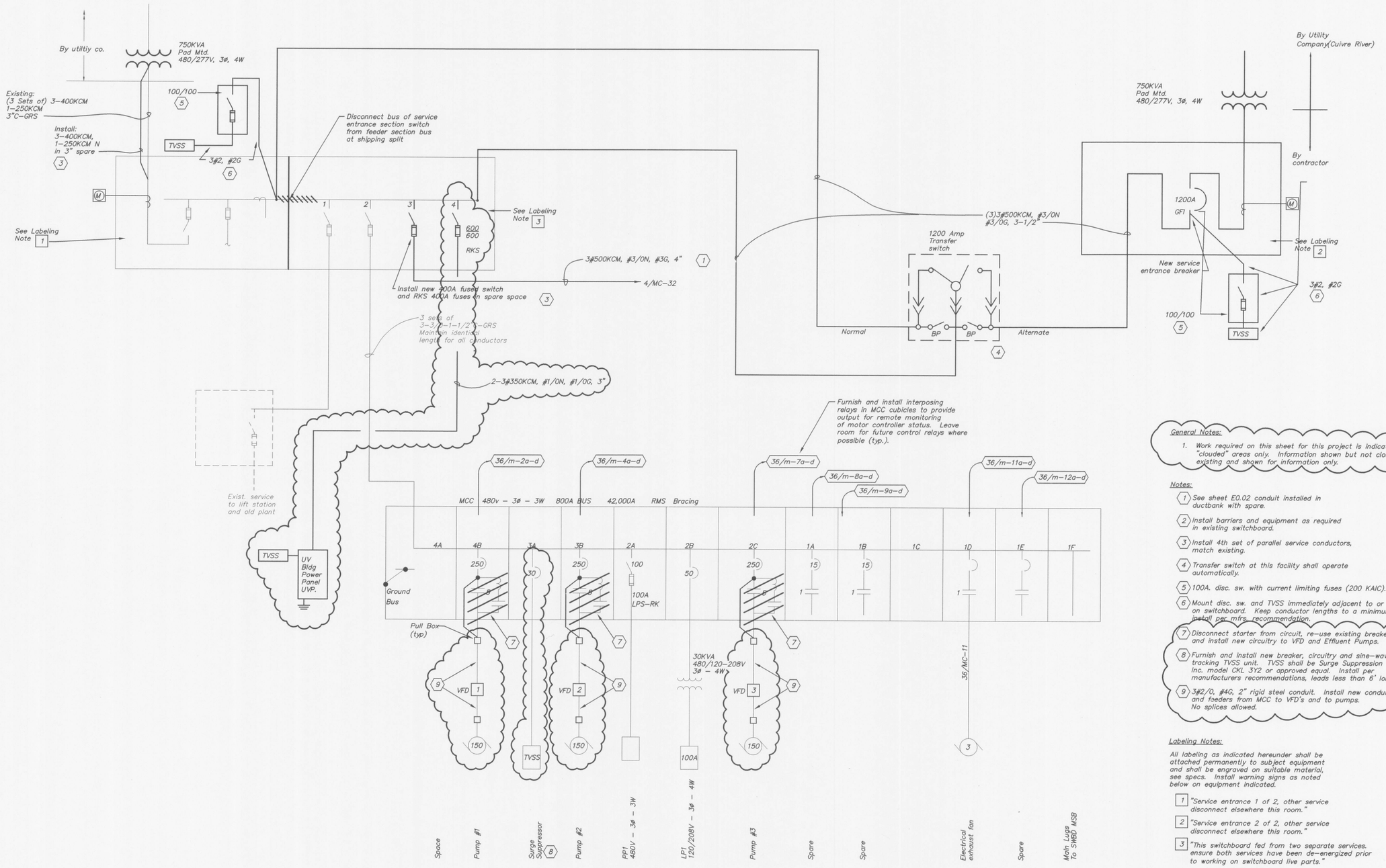
STATE OF MISSOURI
STEVEN LEE CHRISTENSEN
E-19999
PROFESSIONAL ENGINEER
12/31/03

WASTEWATER TREATMENT PLANT
**ULTRAVIOLET (UV) DISINFECTION BUILDING LAYOUT**
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004
DESIGNED BY: SLC
DRAWN BY: TAM
CHECKED BY: SLC
SHEET NUMBER
**E36.01**

K:\Client\OFallon\9234_32\ELEC\9234E3601.dwg Layout: E36.01 -- Tuesday January 06, 2004, 10:09am -- Copyright 2004, George Butler Associates, Inc.




**CHLORINE/ELECT. RM MCC ONE-LINE**

* Equipment and systems shown with heavy line shall be F&I hereunder U.N.O.

General Notes:

1. Work required on this sheet for this project is indicated in "clouded" areas only. Information shown but not clouded is existing and shown for information only.

Notes:

1. See sheet E0.02 conduit installed in ductbank with spare.
2. Install barriers and equipment as required in existing switchboard.
3. Install 4th set of parallel service conductors, match existing.
4. Transfer switch at this facility shall operate automatically.
5. 100A. disc. sw. with current limiting fuses (200 KAIC).
6. Mount disc. sw. and TVSS immediately adjacent to or on switchboard. Keep conductor lengths to a minimum, install per mfrs. recommendation.
7. Disconnect starter from circuit, re–use existing breaker and install new circuitry to VFD and Effluent Pumps.
8. Furnish and install new breaker, circuitry and sine–wave tracking TVSS unit. TVSS shall be Surge Suppression Inc. model CKL 3Y2 or approved equal. Install per manufacturers recommendations, leads less than 6' long.
9. 3#2/0, #4G, 2" rigid steel conduit. Install new conduit and feeders from MCC to VFD's and to pumps. No splices allowed.

Labeling Notes:

All labeling as indicated hereunder shall be attached permanently to subject equipment and shall be engraved on suitable material, see specs. Install warning signs as noted below on equipment indicated.

1. "Service entrance 1 of 2, other service disconnect elsewhere this room."
2. "Service entrance 2 of 2, other service disconnect elsewhere this room."
3. "This switchboard fed from two separate services. ensure both services have been de–energized prior to working on switchboard live parts."

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STEVEN L. CHRISTIANSEN NUMBER PROFESSIONAL ENGINEER STATE OF MISSOURI
12/5/03

# WASTEWATER TREATMENT PLANT
# ULTRAVIOLET (UV) DISINFECTION
# BUILDING LAYOUT
## CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: SLC
DRAWN BY: TAM
CHECKED BY: SLC

SHEET NUMBER
**E36.02**

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PANEL: UVP
LOCATION: UV Building
480/277V, 3 PHASE, 4 WIRE

KAIC: 22 (Fully Rated)
MAIN: 600A Main Breaker
FED FROM: Chlorine Building Main Switchgear
MOUNTING: SURFACE
BUS RATING: 400A

| EQUIPMENT DESCRIPTION | LOAD KVA | C/B | CCT | PH | CCT | C/B | LOAD KVA | EQUIPMENT DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | A | 2 | | | |
| Duct Htr DH–1 | 60 | 90 | 3 | B | 4 | 30 | – | TVSS |
| | | | 5 | C | 6 | | | |
| | | | 7 | A | 8 | | | |
| U–V Cabinet 1–1 | 24 | 50 | 9 | B | 10 | 50 | 24 | U–V Cabinet 2–1 |
| | | | 11 | C | 12 | | | |
| | | | 13 | A | 14 | | | |
| U–V Cabinet 1–2 | 24 | 50 | 15 | B | 16 | 50 | 24 | U–V Cabinet 2–2 |
| | | | 17 | C | 18 | | | |
| | | | 19 | A | 20 | | | |
| U–V Cabinet 1–3 | 24 | 50 | 21 | B | 22 | 50 | 24 | U–V Cabinet 2–3 |
| | | | 23 | C | 24 | | | |
| | | | 25 | A | 26 | | | |
| U–V Cabinet 1–4 | 24 | 50 | 27 | B | 28 | 50 | 24 | U–V Cabinet 2–4 |
| | | | 29 | C | 30 | | | |
| | | | 31 | A | 32 | | | |
| Lighting Panel 15 KVA Transformer "UVL" | 15 | 30 | 33 | B | 34 | 50 | 4 | Spare |
| | | | 35 | C | 36 | | | |
| | | | 37 | A | 38 | | | |
| Panel UVP2 | | 100 | 39 | B | 40 | 20 | 10 | Unit Heaters UH–1, UH–2 |
| | | | 41 | C | 42 | | | |

TOTAL CONNECTED LOAD = 284 DIVERSITY = 50% DIVERSIFIED LOAD = 142

PANEL: UVP2
LOCATION: UV Building
480/277V, 3 PHASE, 4 WIRE

KAIC: 22 (Fully Rated)
MAIN: 100A MLO
FED FROM: UVP
MOUNTING: SURFACE
BUS RATING: 100A

| EQUIPMENT DESCRIPTION | LOAD KVA | C/B | CCT | PH | CCT | C/B | LOAD KVA | EQUIPMENT DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | A | 2 | | | |
| Effluent Plug Valves | 2 | 20 | 3 | B | 4 | 20 | 2 | Inffluent Plug Valves |
| | | | 5 | C | 6 | | | |
| | | | 7 | A | 8 | | | |
| Exhaust Fan | 2 | 20 | 9 | B | 10 | 20 | 3 | Supply Fan |
| | | | 11 | C | 12 | | | |
| | | | 13 | A | 14 | | | |
| | | | 15 | B | 16 | | | |
| | | | 17 | C | 18 | | | |
| | | | 19 | A | 20 | | | |
| | | | 21 | B | 22 | | | |
| | | | 23 | C | 24 | | | |

TOTAL CONNECTED LOAD = 284 DIVERSITY = 50% DIVERSIFIED LOAD = 142

## Power Panels

*General Notes:*

1. All work shown this sheet is new, for furnishing and installation under this contract, see specs.
2. All receptacles shall be mounted 48" aff.
3. Exact locations of equipment and electrical connection points may vary slightly from those shown..
4. Conduit installation shall not span nor cross open area between building levels.
5. See I/O list in Specification 16900 Appendix. Contractor shall furnish and install I/O wiring, conduit, hardware and accessories for a complete and properaly operating system.

*Electrical Notes:*

1. UV Chamber, Power And Control Wiring By UV Chamber Supplier.
2. Install TVSS Unit On Power Panel. Surge Suppression Inc. Model CSE 3Y2 or Approved Equal.
3. Provide 15 kVA transformer (480–120/208V, 3ø, 4W).
4. Contractor shall F&I encapsulated float switch in UV building sump adjacent to sump pump to provide signal for "Sump High–Level". High–level signal shall be transmitted to the Central control system via I/O panel. Float switch shall be similar to Roto–Float, model 47732, normally open, close on high level. Float shall be installed such that alarm contact closes at 6 inches below top of sump. "Roto–Float" switch is available through USA Blue Book. Similar float switches may be acceptable subject to Engineers approval. Contractor shall coordinate with supplier of sump cover plate to ensure that plate is properly notched to allow entrance of high level float switch and sump pump power cords.
5. Install cable tray as noted below upper level floor slab at El. 450.75 to bottom of tray. Provide radius at tees and install complete with all splices, supports, hangers, clamps, clips, hardware and appurtenances for a complete installation. Support from steel cinch anchors installed in upper floor. Tray shall be for use by UV equipment supplier for cabling from UV power panels to individual modules. See sheet E51.02 table for optional conduit installation.
6. Furnish and install motor starter for exhaust fan (1–speed) & supply fan (2–speed). Provide overload sized for motors, coordinate with Mechanical equipment supplier. Provide HOA switches for both fans (Supply fan on ("High when in Hand position). Interlock operation of fans & thermostat provide control per Mechanical drawing sequence of operation.
7. Install exit lights for maximum visibility. Coordinate with City of O'Fallon Fire Department and provide additional exit and emergency fixtures in number and locations as required by authority having jurisdiction (AHJ).
8. Exact location of pressure switches may vary, coordinate with equipment installer

PANEL: UVL
LOCATION: UV Building
208/120V, 3 PHASE, 4 WIRE

KAIC: 14
MAIN: 50A Main Breaker
FED FROM: UVP
MOUNTING: SURFACE
BUS RATING: 60A

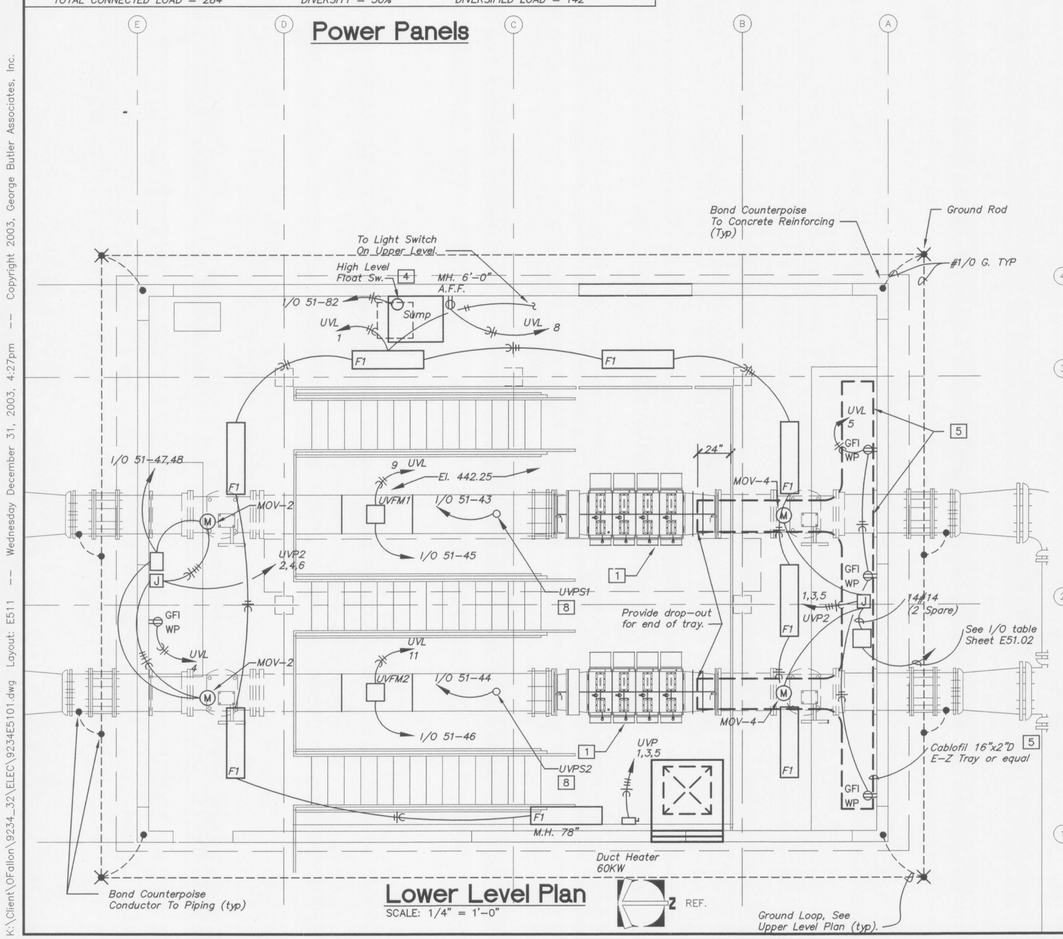
| EQUIPMENT DESCRIPTION | LOAD VA | C/B | CCT | PH | CCT | C/B | LOAD VA | EQUIPMENT DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| Lights | 1250 | 20 | 1 | A | 2 | 20 | 360 | Receptacles |
| Receptacles | 360 | 20 | 3 | B | 4 | 20 | 360 | Receptacles |
| Receptacles | 540 | 20 | 5 | C | 6 | 20 | 200 | Instrumentation Terminal Cabinet |
| Overhead Hoist | 800 | 20 | 7 | A | 8 | 20 | 180 | Receptacle |
| Flow Meter UVFM1 | 100 | 20 | 9 | B | 10 | 20 | – | Spare |
| Flow Meter UVFM2 | 100 | 20 | 11 | C | 12 | 20 | – | Spare |
| Space | | | 13 | A | 14 | | | Space |
| Space | | | 15 | B | 16 | | | Space |
| Space | | | 17 | C | 18 | | | Space |
| Space | | | 19 | A | 20 | | | Space |
| Space | | | 21 | B | 22 | | | Space |
| Space | | | 23 | C | 24 | | | Space |

TOTAL CONNECTED LOAD = 4250 DIVERSITY = 50% DIVERSIFIED LOAD = 2125

## Low Voltage Panel

## LIGHT FIXTURE SCHEDULE

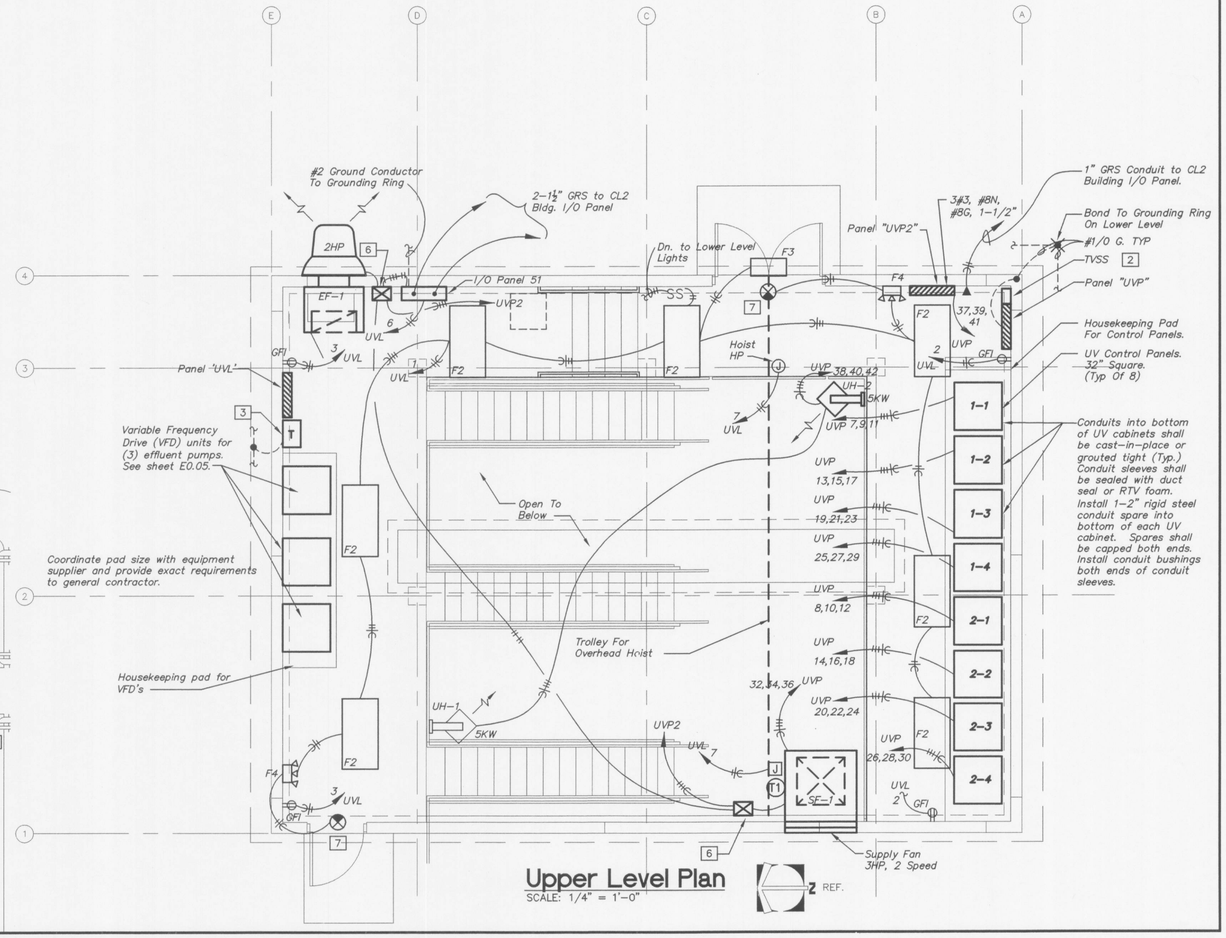
| MARK | LAMP/VOLTAGE | DESCRIPTION AND MOUNTING | CATALOG |
|---|---|---|---|
| F1 | (2)–T8 F32T8 4100K–120V | 4' Fluorescent enclosed and gasketed with Electronic Ballast. | Williams #92–4–2320C–A–120 or Engineer Approved Equal |
| F2 | (3)–T8 F32T8/SPX35 4100K–120V | 2'x4' Lay–In Troffer, Electronic Ballast and 3 Lamps. | Williams #50C–S24–3320C–SWKA125–120 or Engineer Approved Equal |
| F3 | (1) 70W HPS 120V | 11"x10"x8" Die Cast Aluminum Unit, Wall Pack with Integral Photo Electric Contol. | Lithonia TWA–70S–120–DNA–PE (National Aluminum) or Engineer Approved Equal |
| F4 | (3) Par 36 12W(H)/12V | Wall unit battery pack, 12V, 3 heads. | Lithonia #IND1250–R3–H1212 or Engineer Approved Equal |
| F5 | LED 120V | Thermoplastic housing with long life LED feature. | Lithonia #LEQ–S–W–1–R–120/277–ELN Or Engineer Approved Equal |




## Lower Level Plan

SCALE: 1/4" = 1'–0"

REF.




## Upper Level Plan

SCALE: 1/4" = 1'–0"

REF.

GEORGE BUTLER ASSOCIATES, INC.
Engineers • Architects
Kansas • Missouri • Illinois
GBA

STATE OF MISSOURI
STEVEN LEE CHRISTENSEN
NUMBER E-19738
PROFESSIONAL ENGINEER
12/31/03

# WASTEWATER TREATMENT PLANT
# ULTRAVIOLET (UV) DISINFECTION
# BUILDING LAYOUT
## CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: SLC
DRAWN BY: TAM
CHECKED BY: SLC

SHEET NUMBER

**E51.01**

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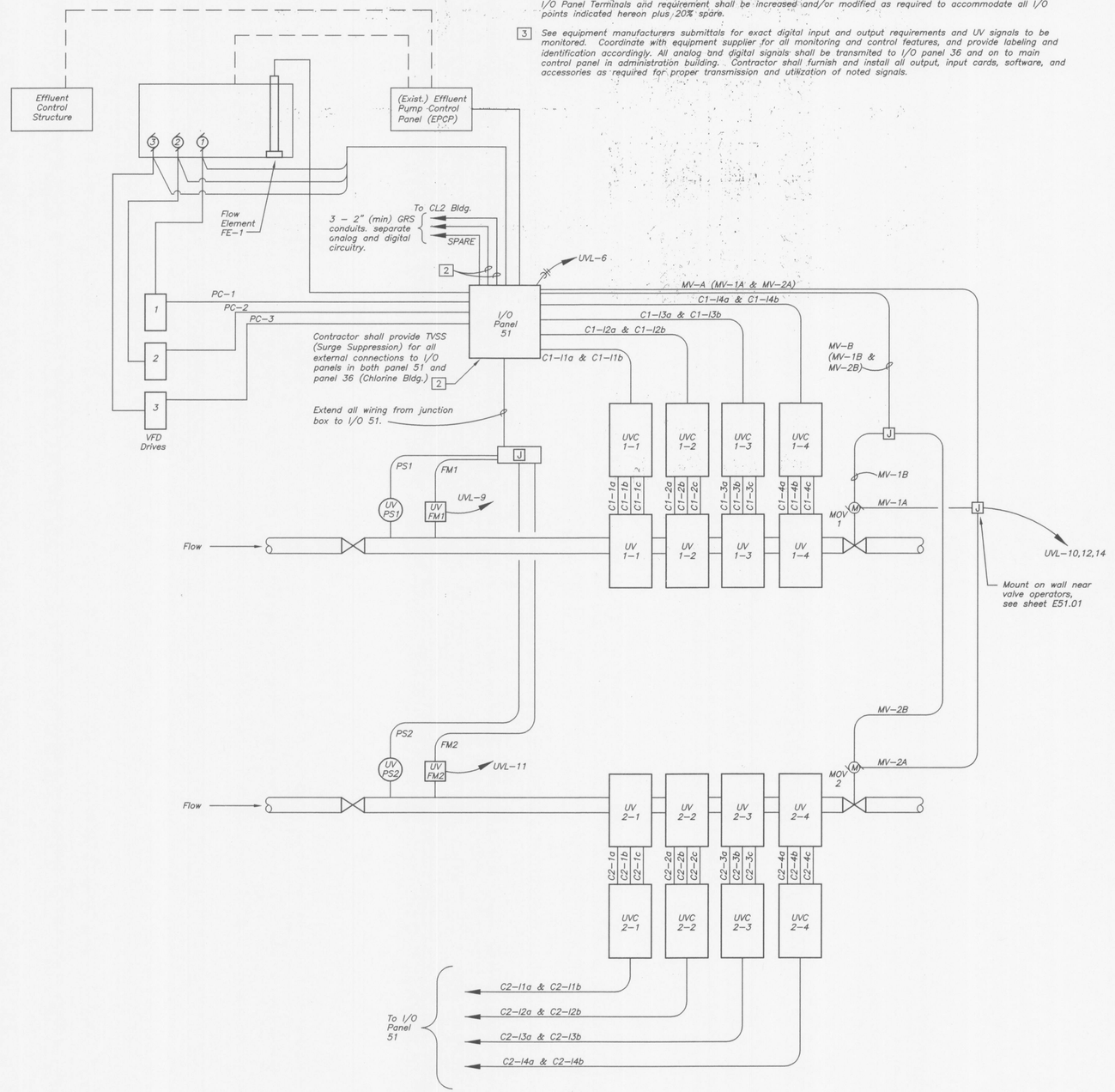
*General Instrumentation/Control Notes:*

1. *For clarity, circuitry indicated on this sheet is not all shown on floorplans.. Contractor shall furnish and install conduits and circuitry as shown hereon and per specification 16900 Appendix unless noted otherwise.*
2. *Bldg. 51 I/O Panel is for consolidation of all instrument and control wiring for UV system. All analog and digital signals shown/noted hereon shall be continued to existing Chlorine Building (Bldg. 36) and terminated on Bldg. 36, I/O Panel. Interconnection of I/O panels 51 and 36 shall be via fiber optic cable, hardware and cable shall be identical to existing system. All equipment, material and installation shall be as per specifications. Building 36 I/O Panel Terminals and requirement shall be increased and/or modified as required to accommodate all I/O points indicated hereon plus 20% spare.*
3. *See equipment manufacturers submittals for exact digital input and output requirements and UV signals to be monitored. Coordinate with equipment supplier for all monitoring and control features, and provide labeling and identification accordingly. All analog and digital signals shall be transmited to I/O panel 36 and on to main control panel in administration building. Contractor shall furnish and install all output, input cards, software, and accessories as required for proper transmission and utilization of noted signals.*




## UV EQUIPMENT RISER DIAGRAM

SCALE: N.T.S.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Kansas • Missouri • Illinois
GBA


STATE OF MISSOURI
STEVEN L. CHRISTENSEN
NUMBER E-19
PROFESSIONAL ENGINEER
12/31/03

WASTEWATER TREATMENT PLANT
**ULTRAVIOLET (UV) DISINFECTION**
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: RWS
DRAWN BY: KRC
CHECKED BY: SLC
SHEET NUMBER

**E51.02**


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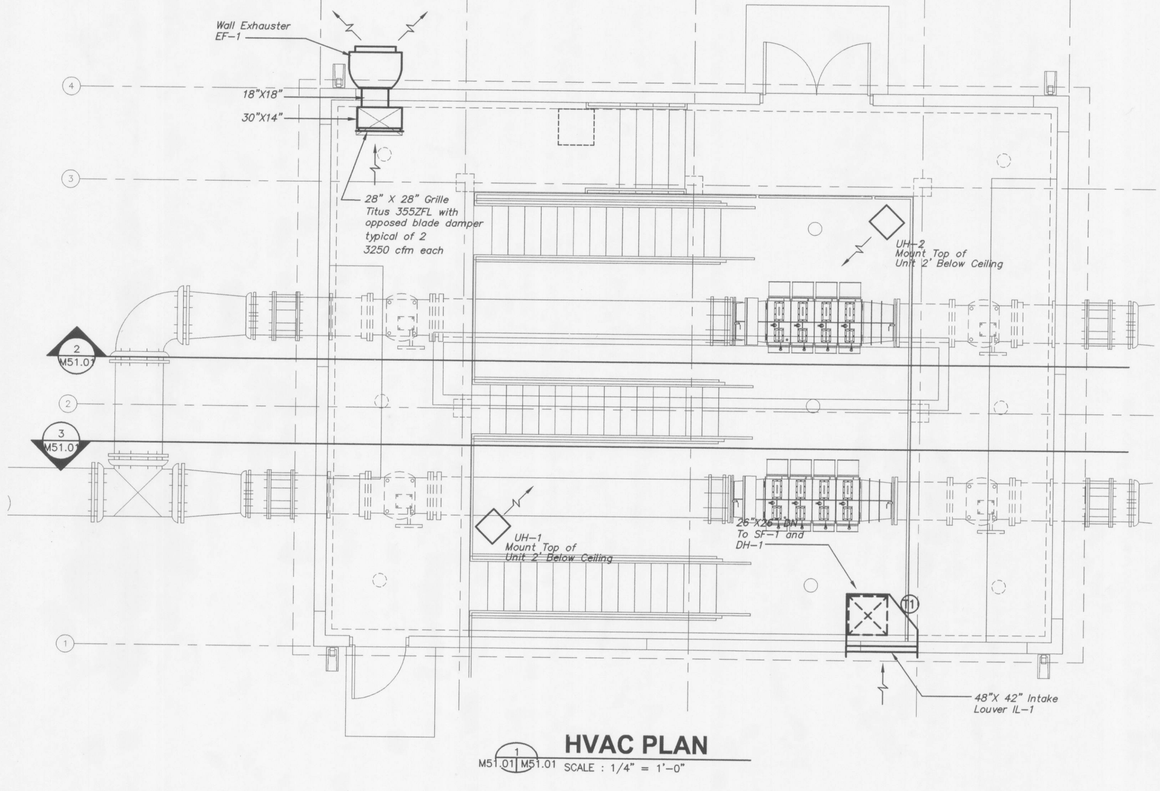



## HVAC PLAN

1 M51.01 M51.01 SCALE : 1/4" = 1'-0"

### LOUVER SCHEDULE

| Designation | Type | W X H | CFM | Press. Drop | Notes |
|---|---|---|---|---|---|
| IL-1 | 1 | 48" X 42" | 5560 | 0.220 IN. | |

### FAN SCHEDULE

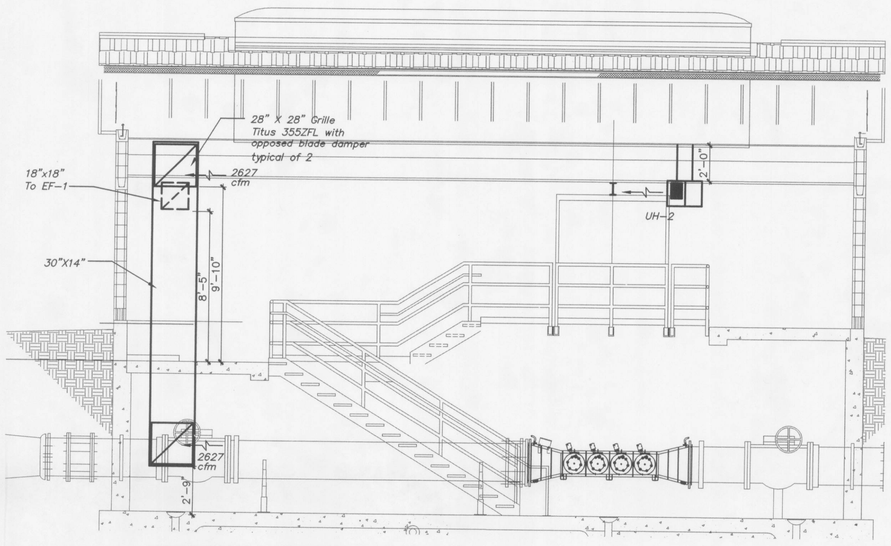
| Designation | Manufacturer | Model # | HP | CFM | S.P. | Voltage | Mount | Motor | Notes |
|---|---|---|---|---|---|---|---|---|---|
| EF-1 | Greenheck | CWB-200-20 | 2 | 5560 | 0.5 | 480/3 | Wall | 1 SPEED | 1,10 |
| SF-1 | Greenheck | BSQ-180-30 | 3 | 5560 | 0.5 | 480/3 | Vertical | 2 SPEED, 2 WINDING | 1,6,10,11 |

### UNIT HEATER SCHEDULE

| Designation | Manufacturer | Model # | KW | Heater | BTUH Output | Inlet CFM | Voltage | | Notes |
|---|---|---|---|---|---|---|---|---|---|
| UH-1 | Brasch | 5-4803 | 5.0 | 2-STEP | 17060 | 315 | 480/3 | | 5,7,10,12 |
| UH-2 | Brasch | 5-4803 | 5.0 | 2-STEP | 17060 | 315 | 480/3 | | 5,7,10,12 |

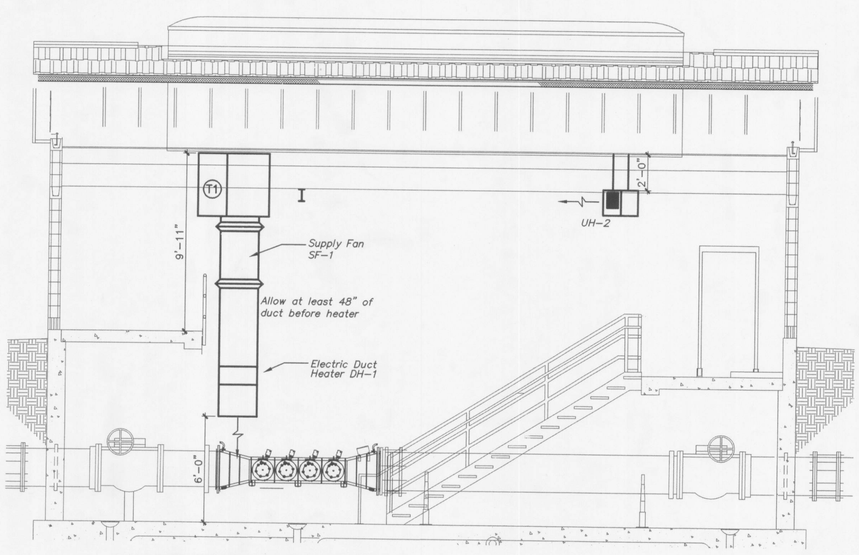
### DUCT HEATER SCHEDULE

| Designation | Manufacturer | Type | Construction | W X H | KW | Air Flow | Overhang | Voltage | Control Option | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| DH-1 | INDEECO | FINNED TUBULAR TFQU | 2 STAGE/SLIP IN | 26" X 26" | 50 | DOWN | LEFT | 480/3 | G | 1,2,3,4 |




## HVAC EXHAUST SECTION

2 M51.01 M51.01 SCALE : 1/4"=1'-0"




## HVAC SUPPLY SECTION

3 M51.01 M51.01 SCALE : 1/4" = 1'-0"

NOTES:

1. Furnish with an integral disconnect switch per NEC.
2. Furnish automatic and manual reset thermal cutouts.
3. Furnish a differential pressure airflow switch to de-energize the heater control circuit upon loss of air flow.
4. Furnish magnetic contactors for each heater stage.
5. Furnish unit mounted thermostat.
6. Mount SF-1 per manufacturers recommendations.
7. UH-1 and UH-2 to be complete with rod hanger kit.
8. Ductwork shall be G90 galvanized steel metal, standing seam construction, and constructed per SMACNA standards.
9. Monorail to have stop to prevent interference with ductwork.
10. Furnish with appropriate anti-vibration systems.
11. Furnish thermostat. Installation and wiring by division 16.
12. Secure UH-1 and UH-2 to roof framing. Extend supports through ceiling and connect to unit heater.

SEQUENCE OF OPERATION:

Ventialation Fans:
EF-1 and SF-1 will be interlocked and run continuously. SF-1 shall operate on high speed when the outside air temperature is above 65°F, and on low speed when the outside air temperature is below 65°F. Furnish a wall mounted over-ride shut-off.

Duct Heater (DH-1):
Duct heater will be controlled by duct mounted, two stage thermostat (T1). The thermostat will have two set points (adjustable). When the outside air temperature reaches 50°F, one stage of the duct heater will energize. When the outside air temperature reaches 40°F, the second stage of the duct heater will energize.

Unit Heaters (UH-1 & UH-2):
Unit heater will be controlled by a unit mounted thermostat. When the temperature falls below 50°F (adj), the unit heater and fan motor will be energized.

STATE OF MISSOURI
JEFFREY J. MILLER
NUMBER E-2004009951
REGISTERED PROFESSIONAL ENGINEER
1/4/04

# WASTEWATER TREATMENT PLANT
# ULTRAVIOLET (UV) DISINFECTION
# MECHANICAL PLAN AND DETAILS
CITY OF O'FALLON, MISSOURI

JOB NO.: 9234.32
DATE: JANUARY 4, 2004

DESIGNED BY: JTM
DRAWN BY: JLN
CHECKED BY: JTM

SHEET NUMBER
**M51.01**