YATES CONSTRUCTION

115 Main Street, Biloxi, Mississippi 39530
Phone: (228) 374-6011 Email: jwold@wgyates.com

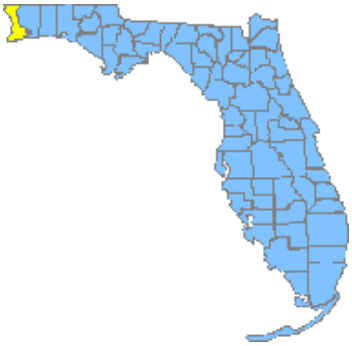
# ESCAMBIA COUNTY FLORIDA
# REQUEST FOR PROPOSALS
## DESIGN-BUILD - STAGE 2 - DESIGN PROPOSALS

Design-Build Services for the New Escambia County Correctional Facility - Pensacola, Florida
Solicitation Identification Number: PD 16-17.004

## PDF COPY

**PUBLIC RECORD / NO FINANCIAL DOCUMENTS ENCLOSED**

**June 23, 2017, 3:00 P.M. CST**



ESCAMBIA COUNTY FLORIDA

ESCAMBIA COUNTY CORRECTIONS FL

ROSSER

BTA Bullock Tice Associates

June 23, 2017

Paul R. Nobles, CPPO, CPPB, FCN, FCCM
Purchasing Manager
Office of Purchasing
Matt Langley Bell, III Building, 2nd Floor, Room 11.101
213 Palafox Place
Pensacola, Florida 32502

Re: Request for Proposal: Design-Build Services for the New Escambia County Correctional Facility
Pensacola, Florida; Stage 2 - Design Proposals - Solicitation Identification Number: PD 16-17.004

Dear Mr. Nobles:

Thank you for allowing Yates and Rosser International, Inc., with Bullock Tice Associates this great opportunity. Please find enclosed our Stage 2 Design Proposal for the Design-Build Services for the new Escambia County Correctional Facility project in Pensacola, Florida. We are confident this response illustrates how Escambia County can rely on the tremendous amount of experience and knowledge Yates and Rosser, with Bullock Tice Associates, provide designing contextually responsive buildings and complex governmental facilities within a design-build delivery model.

### *Why Yates & Rosser/Bullock Tice Associates?*

- ✓ LOCAL DESIGN-BUILD EXPERIENCE: The Yates Team has extensive experience designing and constructing facilities in coastal environments. Our team has had a local office in nearby Destin, Florida for over 20 years and has designed and constructed in excess of 50 buildings in the Florida panhandle in recent years. We understand the intricacies of designing and constructing weather tight facilities in this harsh environment and will bring that expertise to the Escambia County team.

- ✓ DESIGN EXCELLENCE: Rosser International, Architect of Record, is teaming with Pensacola-based Bullock Tice Associates, Associate Architect, to provide the design/build team and Escambia County the best of both worlds – internationally recognized expertise in correctional design combined with locally based knowledge and experience in the nuances of local and state regulations, and in servicing Escambia County facility planning and correctional departments. The design team's organizational philosophy is to provide Escambia County with a seamless team engagement experience of an Architect of Record with a strong integrated local branch.

- ✓ PROVEN TEAM WITH GOVERNMENTAL & CORRECTIONAL FACILITY EXPERTISE: Our team is proven. Yates and Rosser successfully completed the Lubbock County Jail in Lubbock, Texas. The 1,500-bed, maximum capacity detention center became the largest jail in the state to pass the Texas Jail Standard Commission Inspection on the first attempt. Yates also successfully teamed with Bullock Tice Associates to complete 16 multi-facility design-build governmental contracts including 'Outstanding' rated projects at Eglin Air Force Base, Florida, Hurlburt Field, Florida, and MacDill Air Force Base, Florida.

- ✓ SAFETY: Safety is our first core value at Yates, and our safety record continues to top industry standards. We recently received the 2015 National Pinnacle Safety Award from the Associated Builders & Contractors-awarded to only 9 contractors annually.

- ✓ SUSTAINABILITY: Our team focuses on sustainability and is dedicated to providing high performance buildings and services based on environmentally-conscious principles. Our team has experience with numerous LEED Projects including the Federal Bureau of Prisons LEED Gold Certified U.S. Penitentiary in Yazoo City, Mississippi, and the Federal Bureau of Prisons LEED Silver Certified Federal Correctional Institution in Aliceville, Alabama.

We are very excited about Escambia County's new correctional facility in Pensacola and would be extremely honored to be considered for this project. With our local presence, design-build experience, and extraordinary project team, we know Yates and Rosser with Bullock Tice Associates is the perfect Design-Build Team for your project. I feel confident that we will meet and exceed your needs and expectations on this project.

Respectfully,

Jason Wold
Vice President

CONTACT INFO: JASON WOLD, VICE PRESIDENT; Address: 115 Main Street, Biloxi, Mississippi 39530
Phone: (228) 374-6011 Fax: (228) 374-0294 Email: jwold@wgyates.com

# TABLE OF CONTENTS


## SECTION A — FORMS & SUPPORTING DOCUMENTS

1: Document 00 4200 (Proposal Form)
2: Document 00 4316 (Proposal Security)
3: Document 00 4330 (Subcontractors List)
4: Document 00 4516 (Design-Build Entity Certifications)
5: Document 00 4520 (Non-Collusion Declaration)
6: Letter from Surety
7: Letter from Insurer
8: Material Changes List

## SECTION B — TECHNICAL PROPOSAL SUBMISSION

A: Proposed Staffing and Designated Subcontractors
B: Proposed Design and Design Approach; Life Cycle Costs
C: Draft Project Management Plan
D: Preliminary Baseline Design / Construction Schedule, including Staffing Plan
E: Potential Design-Build Entity-Provided Builder's Risk Insurance

## SECTION C — APPENDIX

A: Building Program Report - Spreadsheet
B: HVAC Appendices - Energy Reduction Analysis & Life Cycle Cost Analysis
C: Site / Civil Appendix

## SECTION D — VOLUNTARY ENHANCEMENTS

# SECTION A FORMS & SUPPORTING DOCUMENTS

1. Document 00 4200 (Proposal Form)
2: Document 00 4316 (Proposal Security)
3: Document 00 4330 (Subcontractors List)
4: Document 00 4516 (Design-Build Entity Certifications)
5: Document 00 4520 (Non-Collusion Declaration)
6: Letter from Surety
7: Letter from Insurer
8: Material Changes List

# 1. DOCUMENT 00 4200 (PROPOSAL FORM)

***Document 00 4200 (Proposal Form).***
***a. The Proposal Form must be completed as indicated therein. Proposers must provide information for all items, including Alternates (Schedule 1-A). Information regarding Voluntary Enhancements must be included in Proposer's Technical Proposal Submission.***

Please see the following completed Document 00 4200 Proposal Form.

# 1. DOCUMENT 00 4200 (PROPOSAL FORM)



**DOCUMENT 00 4200**

**PROPOSAL FORM**

Owner will receive sealed Proposals at the Escambia County Office of Purchasing, Room 11.101, 213 South Palafox Place, Pensacola, FL 32502, on June 23, 2017. Proposals shall be due before 3:00 p.m. (Central Time zone), as determined by time and date stamp clock in the Escambia County Purchasing Department.

THE PROPOSAL FORM CONTAINING THE SCHEDULE OF PROPOSED PRICES AND SCHEDULE 1A – ALTERNATES SHOULD BE PLACED IN A SEPARATE SEALED ENVELOPE. PROVIDE A LABEL ON THE EXTERIOR NOTING THE CONTENTS WITHIN EACH ENVELOPE.

THIS PROPOSAL FORM IS **NOT** TO BE INCLUDED IN THE ELECTRONIC COPY OF THE DBE PROPOSAL PROVIDED TO THE COUNTY.

NEW ESCAMBIA COUNTY CORRECTIONAL FACILITY
PENSACOLA, FLORIDA
Project No. PD 16-17.004

**TO ESCAMBIA COUNTY:** JUNE 23, 2017, ATTENTION: MR. PAUL NOBLES

**THIS PROPOSAL IS SUBMITTED BY:** W.G. YATES SONS CONSTRUCTION COMPANY

**1.01 Submission of Proposal.** The undersigned Design-Build Entity proposes and agrees, if this Proposal is accepted, to enter into an agreement with ESCAMBIA COUNTY, a public entity ("**Owner**") in the form included in the Contract Documents, Document 00 5200 (Agreement), to perform and furnish the Work specified of the Contract Documents and this Proposal. This Proposal consists of this Document 00 4200 and the following documents:

| Date | Description |
|---|---|
| 6/23/2017 | DOCUMENT 00 4316 (PROPOSAL SECURITY) |
| 6/23/2017 | DOCUMENT 00 4330 (SUBCONTRACTORS LIST) |
| 6/23/2017 | DOCUMENT 00 4516 (DESIGN-BUILD ENTITY CERTIFICATIONS) |
| 6/23/2017 | DOCUMENT 00 4520 (NON-COLLUSION DECLARATION) |
| 6/1/2017; 6/23/2017 | LETTER FROM SURETY / LETTER FROM INSURER |

**1.02 Documents Comprising Proposal.** This Proposal consists of this Proposal Form and documents required identified in Document 00 1119 (Request for Proposals), submitted herewith.

**1.03 Time Period for Acceptance of Proposal.** This Proposal will remain subject to acceptance for ninety (90) calendar days after the day of Proposal opening, unless a greater period is authorized by the Board of County Commissioners, and may not be withdrawn during that time period. If this Proposal is accepted, Design-Build Entity will sign and submit the Agreement, bonds and other documents required by these Contract Documents.

**1.04 In Submitting this Proposal, Proposer Represents:**

a. Proposer has examined all of the Criteria and Contract Documents and the following Addenda (receipt of all of which is hereby acknowledged).

| Addendum Number | Addendum Date | Signature of Proposer |
|---|---|---|
| 4 | 4/3/2017 | |
| 5 | 4/18/2017 | |
| 6 | 4/29/2017 | |
| 7 | 5/6/2017 | |
| 8 | 5/6/2017 | |
| 9 | 5/6/2017 | |

***Please see Page # for Addenda 10-15.*

b. Proposer acknowledges receipt of Pre-Proposal Conference minutes, if any.

c. Proposer has visited the Site and performed all tasks, research, investigation, reviews, examinations, and analysis and given notices, regarding the Project and the Site, as set forth in Document 00 5200 (Agreement), Article 5 and Document 00 7200 (General Terms and Conditions).

d. Proposer has given the Owner prompt written notice of all conflicts, errors, ambiguities, or discrepancies that it has discovered in or among the Criteria Documents or other Proposal Documents and as-built drawings and actual conditions and the written resolution thereof through Addenda issued by the Owner is acceptable to Design-Build Entity.

e. Proposer acknowledges that different methods will be used determine (1) the number of points that Proposer may receive on account of this Proposal; and (2) the exact scope of Work of Contract Documents and associated Contract Sum. Proposer acknowledges that Proposer's ultimate scope of Work and associated Contract Sum (if it is awarded the Contract) may be different than any amount or specific combination of Work indicated in this Proposal.

**1.05 Schedule of Proposal Prices:** Based on the foregoing, Proposer proposes and agrees to fully perform the Work within the time stated and in strict accordance with the Contract Documents for the following sums of money listed in the following Schedule 1 of Proposal Prices, and to perform the ~~Additive Enhancements~~ Alternates included in Schedule 1-A and ~~Voluntary Enhancements included in Schedule 1-B,~~ respectively, attached hereto, for the sums of money specified therein.

All Proposal items, including lump sums, ~~unit prices~~ Division Subtotals, and ~~Enhancements~~ Alternates must be filled in completely. Certain Proposal items are described in Section 01 1100 (Summary of Work); others are described in Criteria Documents or elsewhere in Contract Documents. Quote in figures only, unless words are specifically requested.

# 1. DOCUMENT 00 4200 (PROPOSAL FORM)

New Escambia County Correctional Facility
Pensacola, FL

PD 16-17.004

~~**PART I – Base Project**~~ **Schedule1 of Proposed Prices**

| CSI Division Number | Description | Division Cost Subtotals |
|---|---|---|
| 01 | General Requirements | $ |
| | Insurance | $ |
| 02 | Existing Conditions | $ |
| 03 | Concrete | $ |
| 04 | Masonry | $ |
| 05 | Metals | $ |
| 06 | Wood, Plastics, and Composites | $ |
| 07 | Thermal and Moisture protection | $ |
| 08 | Openings | $ |
| 09 | Finishes | $ |
| 10 | Specialties | $ |
| 11 | Equipment | $ |
| 12 | Furnishings | $ |
| 13 | Special Construction | $ |
| 14 | Conveying Equipment | $ |
| 21 | Fire Suppression | $ |
| 22 | Plumbing | $ |
| 23 | Heating, Ventilating, and Air Conditioning | $ |
| 26 | Electrical | $ |
| 27 | Communications | $ |
| 28 | Electronic Safety and Security | $ |
| 31 | Earthwork | $ |
| 32 | Exterior Improvements | $ |
| 33 | Utilities | $ |
| | **Total Cost:** Includes Design, Construction fees and all of the requirements of the RFP. | **$** |

****Please see Schedule 1 of Proposed Prices in the Separate Sealed Envelope.****

# 1. DOCUMENT 00 4200 (PROPOSAL FORM)

New Escambia County Correctional Facility
Pensacola, FL

PD 16-17.004

~~PART III~~ Schedule 1A~~—~~Alternates

****Please see Schedule 1A - Alternates in the Separate Sealed Envelope.****

| Alternate Number | Description (refer to section 012300) | Cost Subtotals |
|---|---|---|
| 01 | Enter Description | $ |
| 02 | Enter Description | $ |
| 03 | Enter Description | $ |
| 04 | Enter Description | $ |
| 05 | Enter Description | $ |
| 06 | Enter Description | $ |
| 07 | Enter Description | $ |
| 08 | Enter Description | $ |
| 09 | Enter Description | $ |
| 10 | Enter Description | $ |
| 11 | Enter Description | $ |
| 12 | Enter Description | $ |
| 13 | Enter Description | $ |
| 13.1 | Enter Description for sub-alternate | $ |
| 13.2 | Enter Description for sub-alternate | $ |
| 14 | Enter Description | $ |
| | **Total Cost:** | **$** |

**1.06 Owner Right to Reject this Proposal.** The undersigned understands that Owner reserves the right to reject this Proposal, or all Proposals, in its sole discretion.

**1.07 Acceptance of this Proposal.** If written notice of the acceptance of this Proposal, referred to as the Notice of Award, is mailed or delivered to the undersigned within the time described in the documents listed in Document 00 1119 (Request for Proposals) as a condition of award, all within the time and in the manner specified above and in these Contract Documents. Notice of Award or request for additional information may be addressed to the undersigned at the address set forth below.

**1.08 Proposal Security.** The undersigned encloses a certified check or cashier's check of a responsible bank in the United States, or a corporate surety bond furnished by a surety authorized to do a surety business in the State of Florida, made payable to the COUNTY OF ESCAMBIA. Refer to section 00 4316 for the bond amount required.

**1.09 Principals.** The names of all persons interested in the foregoing Proposal as principals are:
(IMPORTANT NOTICE: If Design-Build Entity or other interested person (including any partner or joint venturer of any partnership or joint venture Design-Build Entity, respectively) is a corporation, give the legal name of corporation, state where incorporated, and names of president and secretary thereof; if a partnership, give name of the firm and names of all individual co-partners composing the firm; if Design-Build Entity or other interested person is an individual, give first and last names in full).

W.G. Yates Sons Construction Company, State of Incorporation: Mississippi, President: William Yates, III, Secretary: Alinda Goss, Vice President: Jason Wold
Rosser International, Inc., State of Incorporation: Georgia, President: Eric Robinson, Secretary: Raymond Ashe, Vice President: Mark Van Allen
Bullock Tice Associates, Inc., State of Incorporation: Florida, President: John P. Tice, Jr., FAIA, Secretary: Michael C. Richardson, AIA, Vice President: John R. Molloy, AIA

**ADDENDUM #015, June 7, 2017**

# 1. DOCUMENT 00 4200 (PROPOSAL FORM)



Licensed in accordance with Florida registration requirements, and with contractor license number:

CGC016099.

**1.10** This Proposal is subject to the terms and conditions in Document 00 1119 (Request for Proposals), and is submitted by:

W.G. Yates & Sons Construction Company
[Name of Design-Build Entity]

By: Jason Wold

Title: Vice President

STATE OF MISSISSIPPI NOTARY PUBLIC ID # 115447 MICHELLE KING Commission Expires Feb. 28, 2020 HARRISON COUNTY

NOTE: If the Design-Build Entity is a corporation, set forth the legal name of the corporation together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If the Design-Build Entity is a partnership, set forth the name of the firm together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership. All signer(s) represent and warrant that they are authorized to sign this Proposal on behalf of Design-Build Entity.

Business Address: 115 Main Street
Biloxi, Mississippi 39530

Telephone Number: 228-374-6011

Fax Number: 228-374-0294

E-Mail Address: jwold@wgyates.com

Date of Proposal: 6/23/2017

**END OF DOCUMENT**

# 1. DOCUMENT 00 4200 (PROPOSAL FORM)

***From Page 00 4200-2: Acknowledgment of Addenda continued.***

| Addendum Number | Addendum Date | Signature of Proposer |
|---|---|---|
| 10 | 5/12/2017 | |
| 11 | 5/9/2017 | |
| 12 | 6/3/2017 | |
| 13 | 6/3/2017 | |
| 14 | 6/9/2017 | |
| 15 | 6/9/2017 | |

***** Please note: Addenda 1 - 3 were acknowledged and provided in the Request for Qualifications document on December 19, 2016.***

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 4

**BOARD OF COUNTY COMMISSIONERS**
**ESCAMBIA COUNTY, FLORIDA**

**OFFICE OF PURCHASING**
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

CLAUDIA SIMMONS
*Purchasing Manager*

April 3, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 4:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Bidders:

We recently sent you a Request for Proposal on the above mentioned specification.

This Addendum #4 provides for:

Digital Data Licensing Agreement
This document must be signed and returned no later than close of business Monday, April 3, 2017 (relative to AutoCAD files of the Design Criteria Conceptual Plans - EscambiaDCP-ConceptualPlans_032017.zip).

Additional Information
McDonald Shopping Center Topo Survey – TopoSurvey.zip
AutoCAD files of the Design Criteria Conceptual Plans - EscambiaDCP-ConceptualPlans_032017.zip

This Addendum Number 4 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Senior Purchasing Coordinator

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 4

AIA® Document C106™ – 2013

## *Digital Data Licensing Agreement*

**AGREEMENT** made as of the 31st day of March in the year Twenty Seventeen
*(In words, indicate day, month and year.)*

**BETWEEN** the Party transmitting Digital Data ("Transmitting Party"):
*(Name, address and contact information, including electronic addresses)*

DLR Group inc. (a Florida corporation)
100 East Pine Street
Suite 404
Orlando, FL 32801
Telephone Number: (407) 648-1331
Fax Number: (407) 648-1433

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

and the Party receiving the Digital Data ("Receiving Party"):
*(Name, address and contact information, including electronic addresses)*

for the following Project:
*(Name and location or address)*

New Escambia County Correctional Facility
Pensacola, Florida

The Transmitting Party and Receiving Party agree as follows.

**TABLE OF ARTICLES**


1 GENERAL PROVISIONS

2 TRANSMISSION OF DIGITAL DATA

3 LICENSE CONDITIONS

4 LICENSING FEE OR OTHER COMPENSATION

5 DIGITAL DATA


**ARTICLE 1 GENERAL PROVISIONS**

**§ 1.1** The purpose of this Agreement is to grant a license from the Transmitting Party to the Receiving Party for the Receiving Party's use of Digital Data on the Project, and to set forth the license terms.


Init. /

**AIA Document C106™ – 2013.** Copyright © 2007 and 2013 by The American Institute of Architects. **All rights reserved.** WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:26:25 on 03/31/2017 under Order No.2038184618_1 which expires on 04/27/2017, and is not for resale.
**User Notes:** (859994165)

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 4

**§ 1.2** This Agreement is the entire and integrated agreement between the parties. Except as specifically set forth herein, this Agreement does not create any other contractual relationship between the parties.

**§ 1.3** For purposes of this Agreement, the term Digital Data is defined to include only those items identified in Article 5 below.

**§ 1.3.1** Confidential Digital Data is defined as Digital Data containing confidential or business proprietary information that the Transmitting Party designates and clearly marks as "confidential."

**ARTICLE 2 TRANSMISSION OF DIGITAL DATA**

**§ 2.1** The Transmitting Party grants to the Receiving Party a nonexclusive limited license to use the Digital Data identified in Article 5 solely and exclusively to perform services for, or construction of, the Project in accordance with the terms and conditions set forth in this Agreement.

**§ 2.2** The transmission of Digital Data constitutes a warranty by the Transmitting Party to the Receiving Party that the Transmitting Party is the copyright owner of the Digital Data, or otherwise has permission to transmit the Digital Data to the Receiving Party for its use on the Project in accordance with the terms and conditions of this Agreement.

**§ 2.3** If the Transmitting Party transmits Confidential Digital Data, the transmission of such Confidential Digital Data constitutes a warranty to the Receiving Party that the Transmitting Party is authorized to transmit the Confidential Digital Data. If the Receiving Party receives Confidential Digital Data, the Receiving Party shall keep the Confidential Digital Data strictly confidential and shall not disclose it to any other person or entity except as set forth in Section 2.3.1.

**§ 2.3.1** The Receiving Party may disclose the Confidential Digital Data as required by law or court order, including a subpoena or other form of compulsory legal process issued by a court or governmental entity. The Receiving Party may also disclose the Confidential Digital Data to its employees, consultants or contractors in order to perform services or work solely and exclusively for the Project, provided those employees, consultants and contractors are subject to the restrictions on the disclosure and use of Confidential Digital Data as set forth in this Agreement.

**§ 2.4** The Transmitting Party retains its rights in the Digital Data. By transmitting the Digital Data, the Transmitting Party does not grant to the Receiving Party an assignment of those rights; nor does the Transmitting Party convey to the Receiving Party any right in the software used to generate the Digital Data.

**§ 2.5** To the fullest extent permitted by law, the Receiving Party shall indemnify and defend the Transmitting Party from and against all claims arising from or related to the Receiving Party's modification to, or unlicensed use of, the Digital Data.

**ARTICLE 3 LICENSE CONDITIONS**

The parties agree to the following conditions on the limited license granted in Section 2.1:
*(State below rights or restrictions applicable to the Receiving Party's use of the Digital Data, requirements for data format, transmission method or other conditions on data to be transmitted.)*

Design Criteria Professional (DCP) makes no representation as to the compatibility of the Computer Aided Drafting/Building Information Model (CAD/BIM) files with any hardware or software.

DCP makes no representation regarding the accuracy, completeness, or permanence of CAD/BIM files, nor for their merchantability or fitness for a particular purpose. Addenda information or revisions made after the date indicated on the CAD/BIM files may not have been incorporated. It is the Owner, Contractor, or Third Party's (OCT) responsibility to determine if any conflicts exist. The CAD/BIM files shall not be considered to be Contract Documents as defined by the General Conditions of the Contract for Construction.

The use of CAD/BIM files prepared by the DCP shall not in any way obviate the OCT's responsibility for the proper checking and coordination of dimensions, details, member sizes and gage, and quantities of materials as required to facilitate complete and accurate fabrication and erection.

This Agreement shall be governed by the laws of the principal place of business of the DCP.

Init.
/

**AIA Document C106™ – 2013.** Copyright © 2007 and 2013 by The American Institute of Architects. **All rights reserved.** WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:26:25 on 03/31/2017 under Order No.2038184618_1 which expires on 04/27/2017, and is not for resale.
**User Notes:** (859994165)

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 4

**ARTICLE 4 LICENSING FEE OR OTHER COMPENSATION**

~~The Receiving Party agrees to pay the Transmitting Party the following fee or other compensation for the Receiving Party's use of the Digital Data:~~

~~*(State the fee, in dollars, or other method by which the Receiving Party will compensate the Transmitting Party for the Receiving Party's use of the Digital Data.)*~~

**§ 4.1 There is no charge to the Owner receiving Design Criteria Professional generated Digital Data for its internal facility management use.**

**ARTICLE 5 DIGITAL DATA**

The Parties agree that the following items constitute the Digital Data subject to the license granted in Section 2.1:
*(Identify below, in detail, the information created or stored in digital form the parties intend to be subject to this Agreement.)*

The Transmitting Party will provide the Digital Data, dated March 20, 2017, for the following drawings:

Conceptual Floor Plans for Levels 1, 2, and 3 and Tier Levels 1, 2, and 3.

Drawings were prepared on the following:

Computer Software: AutoCAD/ Version: 2016

This Agreement is entered into as of the day and year first written above and will terminate upon Substantial Completion of the Project, as that term is defined in AIA Document A201™–2007, General Conditions of the Contract for Construction, unless otherwise agreed by the parties and set forth below.
*(Indicate when this Agreement will terminate, if other than the date of Substantial Completion.)*

| | |
|---|---|
| **TRANSMITTING PARTY** *(Signature)* | **RECEIVING PARTY** *(Signature)* |
| Timothy A. Gibson, AIA, President<br>DLR Group inc. (a Florida corporation) | Jason Wold, Vice President<br>W.G. Yates & Sons Construction Company |
| *(Printed name and title)* | *(Printed name and title)* |

Init. /

**AIA Document C106™ – 2013.** Copyright © 2007 and 2013 by The American Institute of Architects. **All rights reserved.** WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 11:26:25 on 03/31/2017 under Order No.2038184618_1 which expires on 04/27/2017, and is not for resale.
**User Notes:** (859994165)

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 5

**BOARD OF COUNTY COMMISSIONERS**
**ESCAMBIA COUNTY, FLORIDA**

**OFFICE OF PURCHASING**
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

Paul R. Nobles
Senior Purchasing Coordinator

April 18, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 5:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Bidders:

We recently sent you a Request for Proposal on the above mentioned specification.

This Addendum #5 provides for:

1. Question - We would like to request a Revit model of the design drawings if there is one available.

   Response - A Revit model will not be provided. AutoCAD drawings has been provided of conceptual floor plans.

2. Question - Section 2C, Agreement 00 5200, Section 5.A. indicates that there will be liquidated damages assessed for late completion. Please provide the amount per day of liquidated damages.

   Response - The liquidated damages will be $18,000 per day.

3. Question - Specification Section 00 5000, article 1.02.B states the bid bond form to use is AIA A310. However, Specification Section 00 4316 "Bond Accompanying Proposal" form is provided as the bid bond form. Which form are we to submit?

   Response - Use the form found in section 00 4316. Specification sections will be revised to show this requirement.

4. Question - Specification Section 00 6536 "Guaranty" states that Design-Build Entity is to provide a 10 year unconditional warranty. Is this correct or should this be 1 year?

   Response - This section is not applicable. Please disregard.

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 5

5. Question - What is the order of precedence between sections 2B, 2C, 2D, 2E and 3?

   Response - There is no order of precedence. When discrepancy is found between sections, higher quality or higher quantity prevails.

6. Question - Specification Sections 00 0102 and 00 4316 of Section 2C states that the DB will provide a bid bond in the amount of $500,000. Specification Section 00 1119 page 4 of Section 2C states DB will provide Proposal Security in the amount of $1,000,000. Which is correct?

   Response - $500,000 is required by Escambia County, Specification sections will be revised to show this requirement.

7. Question - In reviewing the RFP documents there does not appear to be any mention of adult female or juvenile female facilities. Can you confirm that this will be an all-male facility and the DB is not required to incorporate design elements to accommodate either female adult or juvenile inmates?

   Response - The jail facility will contain both male and female adult and juvenile detainees. Current planning direction designates that the entire third level adult housing will be utilized for female housing. A female juvenile detainee is a very rare occurrence currently and any female juveniles will be housed in the medical infirmary area where full site/sound separation can be achieved.

8. Question - Section 2B - Narratives, page 2B-100, states that detention hardware "will be as manufactured by Southern Folger." Section 2C – Performance Specifications, page 2C-DC D59-3, states that locks will be "equal to the Southern Steel 10120AMD". The Section 2C reads to allow or equal products to those manufactured by Southern Folger. Is detention hardware as manufactured by R.R. Brink or Airteq Systems allowable equal products to those manufactured by Southern Folger?

   Response - Yes, Brink and Airteq detention hardware products are allowed as equal products for mechanical and electro-mechanical locks.

9. Question - The detention door schedules starting on drawing A9.02 indicates hardware set designations. However; there are no hardware sets delineated in the narratives or the specifications. Please provide the hardware sets corresponding to the sets in the schedule.

   Response - Hardware sets can be found in Section 2A on drawing sheet SE0.00

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 5

10. Question - Section 2B – Narratives, page 2B-100, states that "Dayroom frames shall be designed so the inmate side of a frame that is as flush to the glass as possible to eliminate a "ledge" for setting objects or climbing upon." Is there a product known to meet this requirement? How are frames to be designed for locations where inmates will have access to both sides of the frame such as at the outdoor recreation yards?

    Response - Detention frames can be designed to have an asymmetrical side that is more flush and limits the ability for inmates to use as a shelf or climbing system. In the cases where the inmate has access to both sides, the owner will make the determination as to which side poses the greater risk (if any) for climbing.

This Addendum Number 5 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Senior Purchasing Coordinator

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 6

**BOARD OF COUNTY COMMISSIONERS**
**ESCAMBIA COUNTY, FLORIDA**

**OFFICE OF PURCHASING**
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

Paul R. Nobles
Senior Purchasing Coordinator

April 29, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 6:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Proposers:

We recently sent you a Request for Proposal on the above mentioned specification.

This Addendum #6 provides for:

1. Revised Proposal Form (PDF 00 4200 Proposal Form-Add#6)
2. Civil Engineering Narrative (PDF 01 CivilEngineeringNarrative-Add#6)
3. Electrical Engineering Narrative (PDF 04 electrical Engineering Narrative-Add#6
4. Pump Station, ECSO Central Booking & Detention (PDF 1310-PumpStation-OFA-Add#6)
5. Enlarged Food Service Plan (PDF A2-02 – ENLARGED FOOD SERVICE PLAN)
6. Section DCD58 Networks and Radio (PDF DC D58 USER-NETWORK AND RADIO)
7. Response to RFI's (PDF DCR – ResponseLog)

**Note:** Please use the attached form 01 2600.1 Document Clarification Request to assure your Requests for Information are documented and responded to.

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 6

This Addendum Number 6 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Senior Purchasing Coordinator

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

## *Document Clarification Request*

**To:**
Escambia County Approved
Project Manager

**From:**
Design-Build Entity Name

**Project:**
Escambia County Correctional Facility
Pensacola, FL

**Issue Date:**

**DCR No.**

**Project Number:**

PD 16-17.004

**Requested Reply Date:**

**Copies To:**

**DCR DESCRIPTION:** *(Fully describe the question or type of information requested.)*

**REFERENCES/ATTACHMENTS:** *(List specific documents researched when seeking the information requested).*
***SPECIFICATIONS**:* ***DRAWINGS**:* ***OTHER**:*

**SENDER'S RECOMMENTATION**: (*If DCR concerns a site or construction condition, the sender may provide a recommended solution, including cost and/or schedule considerations.)*

**RECEIVER'S REPLY:** *(Provide answer to DCR, including cost and/or schedule considerations.)*

**BY** **DATE** **COPIES TO**

**Note:** This reply is not an authorization to proceed with work involving additional cost, time or both. If any reply requires a change to the Contract Documents, a Change Order, Construction Change Directive or a Minor Change in the work must be executed in accordance with the Contract Documents.

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 7


BOARD OF COUNTY COMMISSIONERS
ESCAMBIA COUNTY, FLORIDA

OFFICE OF PURCHASING
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

Paul R. Nobles
Senior Purchasing Coordinator


May 6, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 7:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Proposers:

We recently sent you a Request for Proposal on the above mentioned specification.

This Addendum #7 provides for:

1. Revised Drawings (Addendum_007_050117.zip)
2. This addendum reduces some requirements for security envelopes in the building and contains security and commercial door revisions.
3. Response to RFI's (DCR-ResponseLog07_050117.pdf)

This Addendum Number 7 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Senior Purchasing Coordinator

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 8

BOARD OF COUNTY COMMISSIONERS
ESCAMBIA COUNTY, FLORIDA

OFFICE OF PURCHASING
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

Paul R. Nobles
Senior Purchasing Coordinator

May 6, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 8:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Proposers:

We recently sent you a Request for Proposal on the above mentioned specification.

This Addendum #8 provides for response to RFI's (DCR ResponseLog_ADD8_050417.pdf)

This Addendum Number 8 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Senior Purchasing Coordinator

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 9

**BOARD OF COUNTY COMMISSIONERS**
**ESCAMBIA COUNTY, FLORIDA**

**OFFICE OF PURCHASING**
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

Paul R. Nobles
Senior Purchasing Coordinator

May 6, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 9:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Proposers:

We recently sent you a Request for Proposal on the above mentioned specification.

This Addendum #9 provides for response to RFI's (DCR-ResponseLog_Add9_050517.pdf)

This Addendum Number 9 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Senior Purchasing Coordinator

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 10

**BOARD OF COUNTY COMMISSIONERS**
**ESCAMBIA COUNTY, FLORIDA**

**OFFICE OF PURCHASING**
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

Paul R. Nobles
Senior Purchasing Coordinator

May 12, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 10:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Proposers:

We recently sent you a Request for Proposal on the above mentioned specification.

This Addendum #10 provides for:

1. MCDONALD SHOPPING CENTER SCOPE OF WORK SUMMARY.pdf
2. Attached file - 07832209SB_NEW ESC CNTY CORRECTIONAL FACILITY HAZ MAT ABATEMENT & DEMO PLAN_FINAL 050517.pdf

This Addendum Number 10 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Senior Purchasing Coordinator

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 11

BOARD OF COUNTY COMMISSIONERS
ESCAMBIA COUNTY, FLORIDA

OFFICE OF PURCHASING
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

Paul R. Nobles
Senior Purchasing Coordinator

May 9, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 11:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Proposers:

We recently sent you a Request for Proposal on the above mentioned specification.

This Addendum #11 provides for:

The Project Manual and Drawings for the above referenced project are hereby amended as follows:

DESCRIPTION OF REVISION: The attached Design Criteria Document Volume 2E Facility Program:
Room Data Sheets supersedes the prior version dated March 20, 2017. This document has been updated to reflect the effort to reduce the security levels of construction as illustrated in the revised security separation drawings (issued in Addendum 007).

Also included is an Audit Trail Log Report that documents the revisions from the prior version to this one. Please note that revised FF&E items were not tracked in this Audit Report.

Files Attached:

- Addendum_011_050817.pdf
- Escambia Volume 2E AuditTrailReport_Add011_050817.pdf
- Escambia Volume 2E_Add011_ 050817.pdf

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 11

This Addendum Number 11 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Senior Purchasing Coordinator

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 12

BOARD OF COUNTY COMMISSIONERS
ESCAMBIA COUNTY, FLORIDA

OFFICE OF PURCHASING
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

Paul R. Nobles
Purchasing Manager

June 3, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 12:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Proposers:

We recently sent you a Request for Proposal on the above mentioned specification.

- This Addendum #12 provides for response to RFI's (DCR-ResponseLog_ADD12_052517.zip).

This Addendum Number 12 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Purchasing Manager

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 13

BOARD OF COUNTY COMMISSIONERS
ESCAMBIA COUNTY, FLORIDA

OFFICE OF PURCHASING
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

Paul R. Nobles
Purchasing Manager

June 3, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 13:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Proposers:

We recently sent you a Request for Proposal on the above mentioned specification.

- This Addendum #13 provides for response to RFI's (Addendum_013_053117.zip).

This Addendum Number 13 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Purchasing Manager

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 14


BOARD OF COUNTY COMMISSIONERS
ESCAMBIA COUNTY, FLORIDA

OFFICE OF PURCHASING
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

Paul R. Nobles
Purchasing Manager


June 9, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 14:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Proposers:

We recently sent you a Request for Proposal on the above mentioned specification.

- This Addendum #14 provides for response to RFI's (Addendum_014_060517.zip).

This Addendum Number 14 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Purchasing Manager

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

# ACKNOWLEDGEMENT OF ADDENDUM NUMBER 15


BOARD OF COUNTY COMMISSIONERS
ESCAMBIA COUNTY, FLORIDA

OFFICE OF PURCHASING
213 PALAFOX PLACE, 2nd Floor
P.O. BOX 1591
PENSACOLA, FL 32591-1591
TELEPHONE (850)595-4980
(SUNCOM) 695-4980
TELEFAX (850)595-4805
http://www.myescambia.com/business/solicitations

Paul R. Nobles
Purchasing Manager


June 9, 2017

To: All Known Prospective Proposers

**ADDENDUM NUMBER 15:**

Re: Stage II, Design-Build Services for the New Escambia County Correctional Facility
Specification Number: PD 16-17.004

Proposers:

We recently sent you a Request for Proposal on the above mentioned specification.

- This Addendum #15 provides for response to RFI's (Addendum_015_060517.zip).

This Addendum Number 15 is furnished to all known prospective Proposers. Please sign and return one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same. You may photo copy for your record.

Sincerely,

Paul Nobles, CPPO, CPPB, FCCM, FCN
Purchasing Manager

SIGNED: _____ Jason Wold, Vice President

COMPANY: W.G. Yates & Sons Construction Company

PRN

# 2. DOCUMENT 00 4316 (PROPOSAL SECURITY)

***Proposal Security.***
***a. Proposers must submit with their Proposals cash, a certified check or cashier's check from a responsible bank in the United States, or a corporate surety bond furnished by a surety authorized to do surety business in the State of Florida, of not less than $500,000, payable to Escambia County.***
***b. Corporate surety bonds must be in form of Document 00 4316 (Bond Accompanying Proposal).***
***c. Owner will reject as non-responsive any Proposal submitted without the necessary Proposal security. Owner may retain all Proposal securities and Proposal bonds until the later of 60 days after Proposal opening or execution of the Contract and deposit of all necessary bonds and other items, at which time Owner shall return the Proposal securities and Proposal bonds of any non-defaulting Proposer.***

Please see the following completed Document 00 4316 Proposal Security.

# 2. DOCUMENT 00 4316 (PROPOSAL SECURITY)

New Escambia County Correctional Facility
Pensacola, FL

PD 16-17.004

**DOCUMENT 00 4316**

**BOND ACCOMPANYING PROPOSAL**

KNOW ALL BY THESE PRESENTS:

That the undersigned
W. G. Yates & Sons Construction Company

(Name of Contractor)

as Principal and the undersigned as Surety are held and firmly bound unto Owner, Escambia County, as obligee, in the penal sum of Five Hundred Thousand Dollars **($500,000.00)** lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal is submitting a Proposal for the Escambia County Correctional Facility.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Proposal submitted by the said Principal be accepted and the Contract be awarded to said Principal and said Principal shall within the required periods enter into the Contract so awarded, execute Document 00 5200 (Agreement) and provide the required Performance Bond, Payment Bond, insurance certificates, Guarantee, and all other endorsements, forms, and documents required under Document 00 1119 (Request for Proposals), then this obligation shall be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument this 23rd day of June, 20 17.
(Month)

W. G. Yates & Sons Construction Company

(Corporate Seal)

By _____
Principal Brandon Dunn, CFO

By Fidelity & Deposit Company of Maryland
Surety

(Corporate Seal)

By _____
Attorney in Fact George F. Burnett

**END OF DOCUMENT**

**ZURICH AMERICAN INSURANCE COMPANY**
**COLONIAL AMERICAN CASUALTY AND SURETY COMPANY**
**FIDELITY AND DEPOSIT COMPANY OF MARYLAND**
**POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **MICHAEL BOND, Vice President,** in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **George F. BURNETT, John C KING, Allen D. HARDY and Susan Joyner BOBO, all of Philadelphia, Mississippi, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 22nd day of September, A.D. 2016.

**ATTEST:**

**ZURICH AMERICAN INSURANCE COMPANY**
**COLONIAL AMERICAN CASUALTY AND SURETY COMPANY**
**FIDELITY AND DEPOSIT COMPANY OF MARYLAND**

By: _____
*Secretary*
*Eric D. Barnes*

_____
*Vice President*
*Michael Bond*

**State of** Maryland
County of Baltimore

On this 22nd day of September, A.D. 2016, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **MICHAEL BOND, Vice President, and ERIC D. BARNES, Secretary,** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

_____
Constance A. Dunn, Notary Public
My Commission Expires: July 9, 2019

POA-F 164-3753B

**EXTRACT FROM BY-LAWS OF THE COMPANIES**

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

**CERTIFICATE**

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 23rd day of June, 20 17.

Gerald F. Haley

Gerald F. Haley, Vice President

**TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT ALL REQUIRED INFORMATION TO:**

Zurich American Insurance Co.
Attn: Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056

# 3. DOCUMENT 00 4330 (SUBCONTRACTORS LIST)

***3. Document 00 4330 (Subcontractors List), identifying all Subcontractors who will participate in the Contract which are known as of the Proposal date. Only <u>one</u> subcontractor will be allowed to be listed for each sub-trade.***

Please see the following completed Document 00 4330 Subcontractors List.

SECTION 00 4330

SUBCONTRACTORS LIST

1.01 SUBCONTRACTOR LISTING AT PROPOSAL SUBMITTAL

As specified in the Request for Proposals, the Design-Builder, at the time of Proposal submittal, must list below on this Form 00 4330 any Subcontractor that meets either of the following criteria:

1 Any Subcontractor that, at the time of Proposal submittal, the Design-Builder elects to list as a Subcontractor to perform work or labor or render service to the Design-Builder in or about the construction of the work, in an amount in excess of one-half of one percent (0.5%) of the Design-Builder's Base Price Proposal, or who under subcontract to the Design-Builder specially fabricates and installs a portion of the work of improvement according to detailed drawings contained in the Scoping Documents in an amount in excess of one-half of one percent (0.5%) of the Design-Builder's Base Price Proposal, or;

2. Any Subcontractor performing a portion of the Work that the Request for Proposals specifies must be performed by a Subcontractor listed at the time of Proposal submittal.

For each such listed Subcontractor, the Design-Builder is required to identify the Subcontractor's name, license number, and the portion of the work to be performed.

1.02 SUBCONTRACTOR LISTING AFTER CONTRACT AWARD

In addition to the subcontractor-listing information submitted by the Design-Builder on this Form 00 4330 at the time of Proposal submittal, the Design-Builder, as specified in Article ~~7.1 , Advertising, Solicitation, and Award of Construction Subcontracts~~ 3.2 Subcontractor/Supplier Contracts, of Section 00 7200, General Terms and Conditions, of the Project Manual, shall submit to the County's Project Manager, within thirty (30) days of award of any subcontract with a value in excess of one-half of one percent (0.5%) of the Design-Builder's Base Price Proposal, an updated List of Subcontractors on this Form 00 04 30. ~~Subcontractors that will perform work with a value in excess of one-half of one percent (0.5%) of the Design-Builder's Base Price Proposal that were not listed by the Design-Builder at the time of Proposal submittal shall be awarded by the Design-Builder in accordance with the advertising requirements and best value selection process outlined in Subsections 7.1.2 and 7.1.3 of the above-referenced Article 7.1~~. The updated List of Subcontractors shall include for all such Subcontractors: the Subcontractor's name, license number, business address, telephone number, e-mail address, and the portion of the Work to be performed by the Subcontractor.

No Design-Builder shall substitute any subcontractor in place of the Subcontractor listed, nor shall any subcontract be assigned or transferred except as provided for in the above .

# 3. DOCUMENT 00 4330 (SUBCONTRACTORS LIST)



LIST OF SUBCONTRACTORS

The following is a list of the Design-Builder's Subcontractors, identifying the required information as to each listed Subcontractor.

| NAME/BUSINESS ADDRESS/ TELEPHONE NUMBER/ E-MAIL ADDRESS | LICENSE NUMBER | PORTION OF WORK TO BE PERFORMED |
|---|---|---|
| Cornerstone Detention<br>14000 Highway 20<br><br>Madison, AL 35756<br>256-560-4237<br><br>scopeland@cornerstonedetention.com | #EF0001126 | DETENTION / SECURITY |
| Northern Electric Inc.<br>12789 Emerson Street<br><br>Thornton, CO 80241<br>303-428-6969<br><br>dkreutz@northernelec.com | #EC13003248 | ELECTRICAL |
| L. Pugh & Associates, Inc.<br>10108 North Palafox Hwy.<br><br>Pensacola, FL 32534<br>850-478-2777<br><br>jlarson@lpugh.com | #02210300011978 | FIRE PROTECTION |

**Addendum 015, June 7, 2017**

New Escambia County Correctional Facility
Pensacola, FL

PD 16-17.004

COMMUNITY BUSINESS ENTERPRISES (CBE) PARTICIPATION FORM

Contractors are required to indicate their good faith effort in CBE participation by indicating on this form their proposed involvement on this project. CBEs are Minority/Women/Disadvantaged/Disabled Veteran owned Business Enterprises (MBE/WBE/DBE/DVBE). This form shall be provided to the COUNTY at the time of Proposal submittal.

LIST OF CBE PARTICIPATION

The following is a list of certified CBE Subcontractors that the Proposer elects to list as a Subcontractor to perform a portion or portions of this Work, and known suppliers from whom Proposer proposes to procure materials and/or equipment for the Work.

| NAME/ADDRESS | TYPE OF WORK OR PRODUCT | INDICATE MBE/ WBE/DBE OR DVBE | PERCENTAGE OF BASE PRICE PROPOSAL |
|---|---|---|---|
| Anderson Environmental Service Inc.<br>870 Foley Street<br>Jackson, MS 39202 | Abatement | 8A | .05% |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**Addendum 015, June 7, 2017**

# COMMUNITY BUSINESS ENTERPRISES SUBCONTRACTING PLAN

**W. G. Yates & Sons Construction Company**
**1 Gully Avenue**
**Philadelphia, Mississippi 39350**

**Design-Build Services for the New Escambia County Correctional Facility**
**Specification Number PD 16-17.004**

**Board of County Commissioners**
**Escambia County, Florida**

**June 20, 2017**

**PLAN SUBMITTED BY:**

**Signature:** **Date: June 20, 2017**

**Printed Name: Diana McGraw**
**Title: Small Business Liaison**

**ACCEPTED:**

_____ _____

**Board of County Commissioners** **Date**
**Escambia County, Florida Representative**

# COMMUNITY BUSINESS ENTERPRISES SUBCONTRACTING PLAN

W.G. Yates & Sons Construction Company (Yates) has established a policy to afford Community Business Enterprises (CBE) opportunities to participate in all contracts. CBE include Minority Business Enterprises (MBEs), Women Business Enterprises (WBEs), Disadvantaged Business Enterprises (DBEs), and Disabled Veteran Business Enterprises (DVBEs).

1. **BASE BID ONLY:** The following percentage goals (expressed in terms of a percentage of total planned subcontracting dollars) and dollar amounts are applicable to the contract cited above or to the contract awarded under the solicitation cited.

   **Total Estimated Base Bid Value is $X00,000.00.**

   a. Total Planned Subcontracting Dollars: **67.00%** or **$XX0,000.**

   b. Community Business Enterprises (CBEs): **15.0%** or **$XX0,000** of total planned subcontracting dollars under this contract will be awarded to subcontractors who are SB.

   c. Minority Business Enterprise (MBEs): **5.0%** or **$XX0,000** of total planned subcontracting dollars under this contract will be awarded to subcontractors who are owned and controlled by socially disadvantaged individuals. This percentage is included in the percentage shown under 1 (a)(i) above, as a subset.

   d. Women-Owned Business Enterprise (WBEs): **5.0%** or **$XX0,000** of total planned subcontracting dollars under this contract will be awarded to subcontractors who are owned and controlled by women. This percentage is included in the percentage shown under 1.(a)(i) above, as a subset.

   e. Disadvantaged Business Enterprise (DBEs): **3.0%** or **$XX0,000** of total planned subcontracting dollars under this contract will be awarded to subcontractors who are owned and controlled by economically disadvantaged individuals. This percentage is included in the percentage shown under 1 (a)(i) above, as a subset.

   f. Disabled Veteran-Owned Business Enterprise (DVBEs): **3.0%** or **$XX0,000** of total planned subcontracting dollars under this contract will be awarded to subcontractors who are DVBE. This percentage is included in the percentage shown under 1 (a) (i) above.)

   **Note: Please see the Bid Form in Separate Sealed Envelope. Subcontracting Plan percentages will be calculated based on final contract amount.**

2. The following principal products and/or services will be subcontracted under the Base Bid of this contract, and the distribution among Large Business, CBEs, MBEs, WBEs, DVBEs, and DBEs may be as follows: (Check all that apply).

| Product or Service | Large Business | CBE | MBE | WBE | DVBE | DBE |
|---|---|---|---|---|---|---|
| Construction Waste & Disposal | | X | | | | |
| Concrete Materials | | X | X | | | |
| Site Concrete | | X | | | | X |
| Masonry | X | X | | | | X |
| Steel Erector | X | | | | | |
| Steel Fabrication | X | | | | | |
| Carpentry / Millwork | | X | | X | | |
| Thermal/Moisture Protection | | X | | | | X |

# COMMUNITY BUSINESS ENTERPRISES SUBCONTRACTING PLAN

| Product or Service | Large Business | CBE | MBE | WBE | DVBE | DBE |
|---|---|---|---|---|---|---|
| Roofing | | X | | | | |
| Joint Sealants | | X | X | | | |
| Doors and Frames | X | X | | | X | |
| Door Hardware | X | X | | | X | |
| Windows / Glass / Glazing | | X | | X | | |
| Drywall | | X | X | | | |
| Tile Flooring / Resilient Flooring | | X | | | X | |
| Paint / Coatings | | X | X | X | | |
| Framing, Drywall & Ceilings | | X | | | | |
| Air Barrier | | X | | | | |
| Sitework | | X | | | | |
| Surveying | | X | | | | |
| Testing | | X | | | | |
| Specialties | | X | X | X | | |
| Fire Alarm | | X | | | | |
| Fire Sprinkler | | X | | | | |
| Plumbing | | X | | | | |
| HVAC | X | | | | | |
| Mechanical | X | | | | | |
| Electrical | X | | | | | |
| Earthwork | | X | | | | |
| Asphalt / Aggregate Paving | | X | | | | |
| Fencing | | X | X | X | | X |
| Landscape | | X | | | X | |
| Utilities | X | X | | | | |

3. The following method was used in developing subcontract goals (i.e., Statement explaining how the product and service areas to be subcontracted were established, how the areas to be subcontracted to CBEs' capabilities were determined, to include identification of source lists utilized in making those determinations. Also a statement as to what efforts will be taken to improve on past goals and how CBE firms will be included in areas without previous CBE involvement).

Yates has developed the proposed subcontracting goals based on our previous performance on construction projects that are similar in nature to this solicitation. These goals have been established based on contact with the area subcontractors who are qualified to comply with the requirements of the solicitation, procure the necessary manpower and perform the specified work of the solicitation. These goals are also based on previous experience and success of meeting past small business subcontracting plans.

4. The following method was used to identify potential sources for solicitation purposes.

Yates utilized existing company source lists, Small Business Dynamic Search, and System for Award Management (SAM), veteran service organizations, and local Procurement Technical Assistance Centers database.

5. Indirect and overhead costs have not been included in the goals specified in section 1 and 2 above.

6. The following individual is employed by Yates and will administer Yates's subcontracting program:

NAME: Diana Lyn McGraw
ADDRESS: 200 Bendix Road, Suite 300, Virginia Beach, Virginia 23452
TELEPHONE NO.: 757-554-0273 FAX NO.: 757-687-3678
EMAIL: dmcgraw@wolriv.com TITLE: Small Business Liaison

This individual's specific duties, as they relate to the firm's subcontracting plan, are general overall responsibility for this company's CBE Program. Diana McGraw has knowledge of federal and private procurement standards in the industry. The administrator is responsible for the development, preparation and execution of this subcontracting plan, and for monitoring performance relative to contractual subcontracting requirements contained in this plan, including, but not limited to:

a. Act as an advocate for CBEs and help build long range relationships
b. Developing and maintaining bidders lists of CBEs from all possible sources.
c. Ensuring that procurement packages are structured to permit the CBEs to participate to the maximum extent possible.
d. Assuring inclusion of CBEs in all solicitations for products or services, which they are capable of providing.
e. Reviewing solicitations to remove statements, clauses, etc., which may tend to restrict or prohibit CBE participation.
f. Ensuring periodic rotation of potential subcontractors on bidders lists.
g. Ensuring that the bid proposal review board documents its reasons for not selecting low bids submitted by the small business community.
h. Ensuring the establishment and maintenance of records of solicitations and subcontract award activity.
i. Attending or arranging for attendance of company counselors at Business Opportunity Workshops, Minority Business Enterprise Seminars, Trade Fairs, etc.
j. Conducting or arranging for the motivational training for purchasing personnel.
k. Monitoring attainment of proposed goals.
l. Preparing and submitting required periodic subcontracting reports.
m. Coordinating contractor's activities during the conducting of compliance reviews.
n. Coordinating the conduct of contractor's activities involving its CBE subcontracting program.

7. The following efforts will be taken to assure that CBEs will have an equitable opportunity to compete for subcontracts, including items not traditionally awarded to small business firms:

(a) Outreach efforts will be made by:

1. Contacts with minority and small business trade associations such as veteran service organizations, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce.
2. Contacts with business development organizations.
3. Attendance at small and minority business procurement conferences and trade fairs.
4. Sources will be requested from Small Business Administration's Small Business Source System.
5. Reviews to determine the competence, ability, experience and capacity available from SB and SDB firms and providing technical assistance to same.
6. Evaluations of our CBE award performance and program effectiveness against goals

established company-wide.

7. Continually mentor CBEs throughout our company to impart knowledge and capability through the use of the following activities: project information meetings to discuss bid packages, project requirements, and scope of work; bid preparation seminars to review bid requirements, insurance, and bonding; meet and greet seminars to encourage networking and long range relationships.

(b) The following internal efforts will be made to guide and encourage buyers:

(1) Workshops, seminars and training programs will be conducted.
(2) Solicit CBEs early in the acquisition process to allow them sufficient time to submit a timely offer for the subcontract.
(3) To provide CBEs with adequate and timely information about the plans, specifications, and requirements for performance of the prime contract to assist them in a timely offer for the subcontract.
(4) Negotiate in good faith with interested small businesses.
(5) Direct small businesses that need additional assistance to SBA and local APTAC offices.
(6) Encourage joint ventures.
(7) Activities will be monitored to evaluate compliance with this subcontracting plan, evaluating CBE award performance and program effectiveness.

(c) Describe how your small business data base, source lists, guides, and other data will be maintained and utilized by buyers in soliciting subcontracts; e.g., rotation of firms in the data base, keeping data base current and useful, etc.

Yates's CBE database and source lists will be maintained on a regular basis. Subcontractors and vendors will be asked to update their information every six months to ensure we have the most current information. We will ensure that CBEs will have maximum practical opportunities to participate.

Yates will conduct market research to identify CBE subcontractors and suppliers through all reasonable means such as using CCR, participation in local business matchmaking events, and attending small business conferences. These small business concerns will then be asked to complete all required forms to be placed in our database. Their capabilities will be listed so that during the procurement process they can then be notified in a timely manner of any opportunities that are available.

12. Yates will take the following steps to demonstrate compliance with a good faith effort in achieving CBE subcontracting goals:

Yates delivers a proactive corporate approach to CBE utilization. As a company we CBE utilization is extremely important to not only this project, but the development of the local community and economic growth. To provide for a robust CBE utilization program, Yates has put in place several specific tools in our corporate approach to aid in our CBE efforts, including, but without limitation:

1. Employing a small business liaison whose primary responsibility is to manage and support CBE utilization and be an advocate for CBEs looking for subcontracting opportunities.
2. Provide regular reports for the project management and procurement team so that they may make proactive decisions.
3. Provide internal training that promotes the utilization of CBEs though the promotion of joint ventures, providing manageable scopes of work and informing the procurement team about Yates procurement process and documentation requirements.
4. Attendance at outreach events, industry days and conferences.
5. Setting the expectation that all CBE goals are to be met by project completion.

Yates is very proud of our commitment to and utilization of CBEs. Yates has established a policy to afford CBEs maximum practical opportunities.

Yates has demonstrated outstanding performance of its utilization of CBEs on its contracts. Yates does set

the expectation at the beginning of the project that all CBE utilization goals are to be met by the completion of the project. During the internal pre-construction meeting for the project, the CBE goals are reviewed and the procurement plan to meet the set goals is discussed to ensure that the team and all procuring agents understands the importance of their purchasing decisions.

The Small Business Liaison for Yates, Diana McGraw, plays a vital role in monitoring progress and working with the project management team to ensure that they understand their current status, planned procurement, and the effect it will have on the subcontracting values (if they are required by the contract) that are reported to the client. Diana McGraw provides regular reports so that the team is fully informed and able to make proactive decisions to provide maximum practical opportunities to the CBE community. Specifically these reports are tied to Yates's accounting system to ensure that the information is always up to date including any recent change orders or modifications to the subcontracts.

In addition to this monitoring, Yates also participates in conferences, outreach events, and local seminars to promote the use of small businesses and inform the community of opportunities that are available on current and future projects. An outreach event is held after the award of each project to help ensure that CBEs have maximum practical opportunities to participate in the procurement process. The company also sends representatives to attend many local events to help create new relationships with subcontractors and build on the current relationships including events organized by local PTAC offices and federal agencies.

Internal training is also conducted to promote the use of CBEs and review the contract requirements for CBE utilization and reporting. During these training sessions, the procurement team is encouraged to break packages into manageable workloads for small businesses, joint ventures are promoted, and CBEs are solicited early in the acquisition process to provide sufficient time for the submission of their offer. These are a few examples of additional methods that are utilized to provide CBEs with maximum practical opportunities. Yates holds this company wide training on a biannual basis and also provides a strong training program that is available as necessary.

# 4. DOCUMENT 00 4516 (DESIGN-BUILD ENTITY CERTIFICATIONS)

***Document 00 4516 (Design-Build Entity Certifications), signed and completed (and including any appendices) as indicated therein.***

Please see the following completed Document 00 4516 Design-Build Entity Certifications.

**DOCUMENT 00 4516**

**DESIGN-BUILD ENTITY CERTIFICATIONS**

TO BE EXECUTED BY DESIGN-BUILD ENTITY AND SUBMITTED WITH PROPOSAL

**The undersigned Design-Build Entity certifies to Owner as set forth in sections 1 through 12 below.**

**1. Certification Regarding Key Personnel**

The undersigned Design-Build Entity certifies and affirms to the County of Escambia, a public entity ("Owner"), that if awarded this Contract, Design-Build Entity will prosecute the work with the key personnel identified in its Pre-Qualification Process submittals and acknowledges that if there are any substitutions to said key personnel that are not approved by Owner prior to submission of Proposal, they may result in (a) Owner's determination that this Proposal is non-responsive, and/or (b) the imposition of Liquidated Damages.

**2. Certification of Worker's Compensation Insurance**

By my signature hereunder, as the Design-Build Entity, I certify that I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract.

**3. Certification of Adequacy of Contract Amount**

By my signature hereunder, as the Design-Build Entity, I certify that, if awarded the Contract based on the undersigned's Proposal, the Contract will include funds sufficient to allow the Design-Build Entity to comply with all applicable local, state, and federal laws or regulations governing the labor or services to be provided. I understand that Owner will be relying on this certification if it awards the Contract to the undersigned.

**8. Certification of Acceptable Safety Record**

**[Please check and/or complete one of the following]**

__X__ By my signature hereunder, as the Design-Build Entity, I certify that the Proposer's experience modification rate for the most recent three-year period is an average of 1.00 or less, and its average Total Recordable Injury/Illness rate and average lost work rate for the most recent three year period does not exceed the applicable statistical standards for its business category or the Proposer is a party to an alternative dispute resolution system.

_____ By my signature hereunder, as the Design-Build Entity, except as provided in Appendix _, consisting of _____ pages, attached hereto, I certify that the Proposer's experience modification rate for the most recent three-year period is an average of 1.00 or less, and its average Total Recordable Injury/Illness rate and average lost work rate for the most recent three-year period does not exceed the applicable statistical standards. Proposer must attach an Appendix, identifying and explaining all exceptions to this certification, if this item is checked.

**9. Certifications Regarding Selection Process**

# 4. DOCUMENT 00 4516 (DESIGN-BUILD ENTITY CERTIFICATIONS)

New Escambia County Correctional Facility
Pensacola, FL

PD 16-17.004

**[Please check and/or complete one of the following]**

_X_ The undersigned confirms it has no objections or protests to any Design-Build Entity selection procedure, process or requirement, or any other any aspect of the Design-Build Entity selection process, and does not object to any aspect of the Design-Build Entity selection process.

_____ Attached as Appendix __, consisting of _____ pages, is a detailed description of all objections and protests the undersigned has regarding any aspect of the Design-Build Entity selection process. Proposer must attach an Appendix if this item is checked.

**10. Certification Regarding Material Changes**

**[Please check and/or complete one of the following]**

_X_ The undersigned certifies that all information it submitted to Owner in connection with the PreQualification Process, including without limitation any modifications, amendments or supplements thereto ("Pre-Qualification Information") remains true and correct in all material respects as of the date of submitting its Proposal.

_____ Except as provided on the Material Changes List, submitted as provided in Document 00 1119 (Request for Proposals), the undersigned certifies that all information it submitted to Owner in connection with the Pre-Qualification Process, including without limitation any modifications, amendments or supplements thereto ("Pre-Qualification Information") remains true and correct in all material respects as of the date of submitting its Proposal. Proposer must include a Material Changes List with its Proposal if this item is checked.

**11. Definitions**

All capitalized terms not otherwise defined in these Design-Build Entity Certifications shall have the meanings provided in Document 00 1119 (Request for Proposals) or Section 01 4200 (References and Definitions).

**DESIGN-BUILD ENTITY**: W.G. YATES & SONS CONSTRUCTION COMPANY
(Name of Design-Build Entity)

Date: JUNE 23, 2017, **[2017]** By: _____
(Signature)

STATE OF MISSISSIPPI NOTARY PUBLIC ID # 115447 MICHELLE KING Commission Expires Feb. 28, 2020 HARRISON COUNTY

Name: JASON WOLD
(Print Name)

Its: VICE PRESIDENT
(Title)

**END OF DOCUMENT**

# 5. DOCUMENT 00 4520 (NON-COLLUSION DECLARATION)

***Document 00 4519 (Non-Collusion Declaration), subscribed and sworn before a notary public. No Proposer may make or file or be interested in more than one Proposal for the same supplies, services or both.***

Please see the following completed Document 00 4520 Non-Collusion Declaration.

# 5. DOCUMENT 00 4520 (NON-COLLUSION DECLARATION)

New Escambia County Correctional Facility
Pensacola, FL

PD 16-17.004

**DOCUMENT 00 4520**

**NON-COLLUSION DECLARATION**
TO BE EXECUTED BY PROPOSER AND SUBMITTED WITH PROPOSAL

PROJECT TITLE: ESCAMBIA COUNTY CORRECTIONAL FACILITY

The undersigned declares:

I am the Chairman (Office of Affiant) of W. G. Yates & Sons Construction Company (Name of Proposer) the party making the foregoing Proposal.

The Proposal is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The Proposal is genuine and not collusive or sham. The Proposer has not directly or indirectly induced or solicited any other proposer to put in a false or sham Proposal. The Proposer has not directly or indirectly colluded, conspired, connived or agreed with any proposer or anyone else to put in a sham Proposal, or to refrain from proposing. The Proposer has not in any manner, directly or indirectly, sought by agreement, communication or conference with anyone to fix the Proposal price of Proposer or any other proposer, or to fix any overhead, profit or cost element of the Proposal price, or of that of any other proposer. All statements contained in the Proposal are true. The Proposer has not, directly or indirectly, submitted his or her price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, Proposal depository, or to any member or agent thereof to effectuate a collusive or sham Proposal, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a Proposer that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the Proposer.

I declare under penalty of perjury under the laws of the State of Florida that the foregoing is true and correct and that this declaration is executed on June 19 (Date), 2017, at Philadelphia (City), Mississippi (State).

W.G. Yates & Sons Construction Company
(Name of Proposer)

William G. Yates, Jr.

(Signature of Principal)

**NOTE:** If Proposer is a partnership or a joint venture, this declaration must be signed and sworn to by every member of the partnership or venture.

**NOTE:** If Proposer [including any partner or venturer of a partnership or joint venture] is a corporation, this declaration must be signed by the Chairman, President, or Vice President and by the Secretary, Assistant Secretary, Chief Financial Officer, or Assistant Treasurer.

**NOTE:** If Proposer's declaration on this form is made outside the State of Florida, the official position of the person making such declaration shall be certified according to law.

**END OF DOCUMENT**

NON-COLLUSION DECLARATION 00 4520 - 1

# 5. DOCUMENT 00 4520 (NON-COLLUSION DECLARATION)

State of Mississippi
County of Neshoba

On this 19th Day of June, 2017, before me, the undersigned notary public, personally appeared William G. Yates, Jr., known to me to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Notary Public

# 5. DOCUMENT 00 4520 (NON-COLLUSION DECLARATION)

New Escambia County Correctional Facility
Pensacola, FL

PD 16-17.004

**DOCUMENT 00 4520**

**NON-COLLUSION DECLARATION**
TO BE EXECUTED BY PROPOSER AND SUBMITTED WITH PROPOSAL

PROJECT TITLE: ESCAMBIA COUNTY CORRECTIONAL FACILITY

The undersigned declares:

I am the Treasurer and CFO (Office of Affiant) of W.G. Yates & Sons Construction Company (Name of Proposer) the party making the foregoing Proposal.

The Proposal is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The Proposal is genuine and not collusive or sham. The Proposer has not directly or indirectly induced or solicited any other proposer to put in a false or sham Proposal. The Proposer has not directly or indirectly colluded, conspired, connived or agreed with any proposer or anyone else to put in a sham Proposal, or to refrain from proposing. The Proposer has not in any manner, directly or indirectly, sought by agreement, communication or conference with anyone to fix the Proposal price of Proposer or any other proposer, or to fix any overhead, profit or cost element of the Proposal price, or of that of any other proposer. All statements contained in the Proposal are true. The Proposer has not, directly or indirectly, submitted his or her price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, Proposal depository, or to any member or agent thereof to effectuate a collusive or sham Proposal, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a Proposer that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the Proposer.

I declare under penalty of perjury under the laws of the State of Florida that the foregoing is true and correct and that this declaration is executed on June 20 (Date), 2017, at Philadelphia (City), Mississippi (State).

Chet Hailey
(Name of Proposer)

Chet Hail
(Signature of Principal)

**NOTE:** If Proposer is a partnership or a joint venture, this declaration must be signed and sworn to by every member of the partnership or venture.

**NOTE:** If Proposer [including any partner or venturer of a partnership or joint venture] is a corporation, this declaration must be signed by the Chairman, President, or Vice President and by the Secretary, Assistant Secretary, Chief Financial Officer, or Assistant Treasurer.

**NOTE:** If Proposer's declaration on this form is made outside the State of Florida, the official position of the person making such declaration shall be certified according to law.

**END OF DOCUMENT**

# 5. DOCUMENT 00 4520 (NON-COLLUSION DECLARATION)

State of Mississippi
County of Neshoba

On this 20th Day of June, 2017, before me, the undersigned notary public, personally appeared Chet Hailey, known to me to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Notary Public

# 6. LETTER FROM SURETY

***Letter from Surety. A letter from a surety duly licensed to do business in the State of Florida, having a financial rating from A. M. Best Company of A-, VII or better, confirming that surety has agreed to provide Design-Build Entity with performance and payment bonds in accordance with the requirements set forth in the Contract Documents 00 6113.13 (County Performance Bond) and 00 6113.16 (County Payment Bond Forms) with minimum penal sums in the amounts set forth therein.***

Please see the following Letter from Surety.

# 6. LETTER FROM SURETY

PSI

PHILADELPHIA - SECURITY INSURANCE

*All Forms of Insurance*

June 1, 2017

W. G. Yates & Sons Construction Company
One Gully Avenue
Philadelphia, MS 39350

Re: Escambia County Florida
Design-Build Services for the New Escambia
County Correctional Facility
Solicitation Identification Number PD 16-17.004

Gentlemen:

It is our understanding that W. G. Yates & Sons Construction Company is in the process of qualifying to bid the above referenced project and need assurance that, if awarded a contract, the Company would have the available bonding capacity to be able to furnish performance and payment bonds, if required.

The Zurich American Insurance Company and/or its subsidiary, The Fidelity & Deposit Company of Maryland, and co-surety partner, Travelers Casualty and Surety Company of America, have the privilege of providing surety bonds for W. G. Yates & Sons Construction Company. The available bonding capacity on individual projects is in excess of $300,000,000 with an aggregate program exceeding $2,500,000,000.

In our opinion, Yates is one of the finest, best managed construction firms in the Country. Yates has handled each of its projects in a professional manner and completed all satisfactorily.

If W. G. Yates & Sons Construction Company accepts an award of a contract by Esccambia County Florida for the construction work at the referenced project and W. G. Yates & Sons Construction Company requests that we provide the necessary Performance and/or Payment Bonds for their contract with Escambia County Florida covering the construction work, we anticipate being able to provides the bonds subject to our review and acceptance of the contract terms and conditions, bond forms and dual obligee riders, appropriate contract funding and any other underwriting considerations at the time of the request.

P. O. BOX 89
802 KOSCIUSKO ROAD • PHILADELPHIA, MS 39350
TEL: (601) 656-4401 • FAX: (601) 656-1565

# 6. LETTER FROM SURETY

This letter does not constitute an assumption of liability. The issuance of bonds in connection with this project is a matter solely between its sureties and W. G. Yates & Sons Construction Company.

Sincerely,

FIDELITY& DEPOSIT COMPANY OF MARYLAND
ZURICH AMERICAN INSURANCE COMPANY
A.M. Best Rating A+ XV

TRAVELERS CASUALTY & SURETY COMPANY OF AMERICA
A.M. Best Rating A++g XV

George F. Burnett, Attorney-in-Fact

GFB/sjb

Sworn to and subscribed before me this the 1st day of June, 2017.

STATE OF MISSISSIPPI
SUSAN JOYNER BOBO
ID No
13983
NOTARY PUBLIC
Comm Expires
December 21, 2019
NESHOBA COUNTY

Susan Joyner Bobo

My commission expires: 12/21/2019

**ZURICH AMERICAN INSURANCE COMPANY**
**COLONIAL AMERICAN CASUALTY AND SURETY COMPANY**
**FIDELITY AND DEPOSIT COMPANY OF MARYLAND**
**POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **MICHAEL BOND, Vice President,** in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **George F. BURNETT, John C KING, Allen D. HARDY and Susan Joyner BOBO, all of Philadelphia, Mississippi, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 22nd day of September, A.D. 2016.

**ATTEST:**

**ZURICH AMERICAN INSURANCE COMPANY**
**COLONIAL AMERICAN CASUALTY AND SURETY COMPANY**
**FIDELITY AND DEPOSIT COMPANY OF MARYLAND**

By: _____
*Secretary*
*Eric D. Barnes*

_____
*Vice President*
*Michael Bond*

**State of** Maryland
County of Baltimore

On this 22nd day of September, A.D. 2016, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **MICHAEL BOND, Vice President, and ERIC D. BARNES, Secretary,** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

_____
Constance A. Dunn, Notary Public
My Commission Expires: July 9, 2019

POA-F 164-3753B

# 6. LETTER FROM SURETY

**EXTRACT FROM BY-LAWS OF THE COMPANIES**

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

**CERTIFICATE**

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 1st day of June, 20 17.

Gerald F. Haley

Gerald F. Haley, Vice President

**TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT ALL REQUIRED INFORMATION TO:**

Zurich American Insurance Co.
Attn: Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056

# 6. LETTER FROM SURETY

WARNING: THIS POWER OF ATTORNEY IS INVALID WITHOUT THE RED BORDER

TRAVELERS

**POWER OF ATTORNEY**

**Farmington Casualty Company**
**Fidelity and Guaranty Insurance Company**
**Fidelity and Guaranty Insurance Underwriters, Inc.**
**St. Paul Fire and Marine Insurance Company**
**St. Paul Guardian Insurance Company**
**St. Paul Mercury Insurance Company**
**Travelers Casualty and Surety Company**
**Travelers Casualty and Surety Company of America**
**United States Fidelity and Guaranty Company**

**Attorney-In Fact No.** 231378 **Certificate No.** 007212887

**KNOW ALL MEN BY THESE PRESENTS**: That Farmington Casualty Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company are corporations duly organized under the laws of the State of Connecticut, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc., is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

George F. Burnett, Allen D. Hardy, John C. King, and Susan Joyner Bobo

of the City of Philadelphia, State of Mississippi, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

**IN WITNESS WHEREOF**, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 2nd day of May, 2017.

**Farmington Casualty Company**
**Fidelity and Guaranty Insurance Company**
**Fidelity and Guaranty Insurance Underwriters, Inc.**
**St. Paul Fire and Marine Insurance Company**
**St. Paul Guardian Insurance Company**
**St. Paul Mercury Insurance Company**
**Travelers Casualty and Surety Company**
**Travelers Casualty and Surety Company of America**
**United States Fidelity and Guaranty Company**

State of Connecticut
City of Hartford ss.

By: _____
Robert L. Raney, Senior Vice President

On this the 2nd day of May, 2017, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

**In Witness Whereof,** I hereunto set my hand and official seal.
My Commission expires the 30th day of June, 2021.

MARIE C. TETREAULT NOTARY PUBLIC CONNECTICUT

Marie C. Tetreault
Marie C. Tetreault, Notary Public

58440-5-16 Printed in U.S.A.

WARNING: THIS POWER OF ATTORNEY IS INVALID WITHOUT THE RED BORDER

# 6. LETTER FROM SURETY

WARNING: THIS POWER OF ATTORNEY IS INVALID WITHOUT THE RED BORDER

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

**IN TESTIMONY WHEREOF**, I have hereunto set my hand and affixed the seals of said Companies this 1st day of June, 20 17.

Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.

WARNING: THIS POWER OF ATTORNEY IS INVALID WITHOUT THE RED BORDER

# 7. LETTER FROM INSURER

***7. Letter from Insurer. A letter from an insurance underwriter, having a financial rating identified in Document 00 7316 (Supplementary General Conditions – Insurance and Indemnification), confirming that the insurer will provide the coverages and amounts required for Design-Build Entity specified in the Contract Documents.***

Please see the following Letter from Insurer.

# 7. LETTER FROM INSURER

Arthur J. Gallagher & Co.

June 21, 2017

Escambia County
Office of Purchasing
Attn: Paul R. Nobles, CPPO, CPPB, FCN, FCCM
P.O. Box 1591
Pensacola, FL 32597

RE: W. G. Yates & Sons Construction Co.

Mr. Nobles:

Our office is the insurance broker for W. G. Yates & Sons Construction Co. and can confirm that the policies and limits evidenced on the attached certificates of insurance are in place.

Also, please find attached Insurance Company Ratings to confirm that the insurance ratings meet requirements.

Further, we have reviewed the requirements for the Builders Risk insurance policy that may be required of this contractor and can confirm that we will be able to place such insurance covering the project if awarded to W.G. Yates & Sons Construction Co.

Should you have any questions or need any additional information, please contact our office.

Sincerely,

Ali Sims
Client Service Manager
601-863-3193

Arthur J. Gallagher Risk Management Services, Inc.
P. O. Drawer 16447, Jackson, MS 39236-6447 | 750 Woodlands Parkway, Suite 200
Ridgeland, MS 39157

m 601.956.5810
f 601.957.7098
ajg.com

## W.G. Yates & Sons Construction Co.

### Insurance Company Ratings

| PROPOSED INSURANCE COMPANIES | A.M. BEST'S RATING |
|---|---|
| Arch Specialty Insurance Company | A++, XV |
| Travelers Property Casualty Co. of A | A++, XV |
| Travelers Indemnity Company | A++, XV |
| Starr Indemnity & Liability Company | A, XIV |
| Tokio Marine Specialty Ins. Co | A++, XV |

Guide to Best Ratings

**Rating Levels and Categories**

| LEVEL | CATEGORY |
|---|---|
| A++, A+ | Superior |
| A, A- | Excellent |
| B++, B+ | Good |
| B, B- | Fair |
| C++, C+ | Marginal |
| C, C- | Weak |
| D | Poor |
| E | Under Regulatory Supervision |
| F | In Liquidation |
| S | Suspended |

Financial Size Categories

*(In $000 of Reported Policyholders' Surplus Plus Conditional Reserve Funds)*

| | | | |
|---|---|---|---|
| FSC I | Up to 1,000 | FSC IX | 250,000 to 500,000 |
| FSC II | 1,000 to 2,000 | FSC X | 500,000 to 750,000 |
| FSC III | 2,000 to 5,000 | FSC XI | 750,000 to 1,00,000 |
| FSC IV | 5,000 to 10,000 | FSC XII | 1,000,000 to 1,250,000 |
| FSC V | 10,000 to 25,000 | FSC XIII | 1,250,000 to 1,500,000 |
| FSC VI | 25,000 to 50,000 | FSC XIV | 1,500,000 to 2,000,000 |
| FSC VII | 50,000 to 100,000 | FSC XV | 2,000,000 or more |
| FSC VIII | 100,000 to 250,000 | | |

Best's Insurance Reports, published annually by A.M. Best Company, Inc., presents comprehensive reports on the financial position, history, and transactions of insurance companies operating in the United States and Canada. Companies licensed to do business in the United States are assigned a Best's Rating which attempts to measure the comparative position of the company or association against industry averages.

A Best's Financial Strength Rating opinion addresses the relative ability of an insurer to meet its ongoing insurance obligations. It is not a warranty of a company's financial strength and ability to meet its obligations to policyholders. View the A.M. Best Important Notice: Best's Credit Ratings for a disclaimer notice and complete details at http://www.ambest.com/ratings/notice.

Best's Credit Ratings are under continuous review and subject to change and/or affirmation. For the latest Best's Credit Ratings and Best Credit Reports (which include Best Ratings), visit the A.M. Best website at http://www.ambest.com. See Guide to Best's Credit Ratings for explanation of use and charges. Copies of the Best's Insurance Reports for carriers listed above are also available upon request of your Gallagher representative.

Best's Credit Ratings reproduced herein appear under license from A.M. Best and do not constitute, either expressly or impliedly, an endorsement of (Licensee's publication or service) or its recommendations, formulas, criteria or comparisons to any other ratings, rating scales or rating organizations which are published or referenced herein. A.M. Best is not responsible for transcription errors made in presenting Best's Credit Ratings. Best's Credit Ratings are proprietary and may not be reproduced or distributed without the express written permission of A.M. Best Company.

Gallagher companies use A.M. Best Company's rating services to evaluate the financial condition of insurers whose policies we propose to deliver. Gallagher companies make no representations and warranties concerning the solvency of any carrier, nor does it make any representation or warranty concerning the rating of the carrier which may change.

Arthur J. Gallagher Risk Management Services, Inc.

## W. G. Yates & Sons Construction Co.

### Insurance Company Ratings

**BEST'S FINANCIAL STRENGTH RATING GUIDE – (FSR)**

A Best's Financial Strength Rating (FSR) is an independent opinion of an insurer's financial strength and ability to meet its ongoing insurance policy and contract obligations. An FSR is not assigned to specific insurance policies or contracts and does not address any other risk, including, but not limited to, an insurer's claims-payment policies or procedures; the ability of the insurer to dispute or deny claims payment on grounds of misrepresentation or fraud; or any specific liability contractually borne by the policy or contract holder. An FSR is not a recommendation to purchase, hold or terminate any insurance policy, contract or any other financial obligation issued by an insurer, nor does it address the suitability of any particular policy or contract for a specific purpose or purchaser. In addition, an FSR may be displayed with a rating identifier, modifier or affiliation code that denotes a unique aspect of the opinion.

**Best's Financial Strength Rating (FSR) Scale**

| Rating Categories | Rating Symbols | Rating Notches* | Category Definitions |
|---|---|---|---|
| Superior | A+ | A++ | Assigned to insurance companies that have, in our opinion, a superior ability to meet their ongoing insurance obligations. |
| Excellent | A | A- | Assigned to insurance companies that have, in our opinion, an excellent ability to meet their ongoing insurance obligations. |
| Good | B+ | B++ | Assigned to insurance companies that have, in our opinion, a good ability to meet their ongoing insurance obligations. |
| Fair | B | B- | Assigned to insurance companies that have, in our opinion, a fair ability to meet their ongoing insurance obligations. Financial strength is vulnerable to adverse changes in underwriting and economic conditions. |
| Marginal | C+ | C++ | Assigned to insurance companies that have, in our opinion, a marginal ability to meet their ongoing insurance obligations. Financial strength is vulnerable to adverse changes in underwriting and economic conditions. |
| Weak | C | C- | Assigned to insurance companies that have, in our opinion, a weak ability to meet their ongoing insurance obligations. Financial strength is very vulnerable to adverse changes in underwriting and economic conditions. |
| Poor | D | - | Assigned to insurance companies that have, in our opinion, a poor ability to meet their ongoing insurance obligations. Financial strength is extremely vulnerable to adverse changes in underwriting and economic conditions. |

** Each Best's Financial Strength Rating Category from "A+" to "C" includes a Rating Notch to reflect a gradation of financial strength within the category. A Rating Notch is expressed with either a second plus "+" or a minus "-".*

**FSR Non-Rating Designations**

| Designation Symbols | Designation Definitions |
|---|---|
| E | Status assigned to insurance companies that are publicly placed under a significant form of regulatory supervision, control or restraint - including cease and desist orders, conservatorship or rehabilitation, but not liquidation - that prevents conduct of normal ongoing insurance operations; an impaired insurer. |
| F | Status assigned to insurance companies that are publicly placed in liquidation by a court of law or by a forced liquidation; an impaired insurer. |
| S | Status assigned to rated insurance companies to suspend the outstanding FSR when sudden and significant events impact operations and rating implications cannot be evaluated due to a lack of timely or adequate information; or in cases where continued maintenance of the previously published rating opinion is in violation of evolving regulatory requirements. |
| NR | Status assigned to insurance companies that are not rated; may include previously rated insurance companies or insurance companies that have never been rated by AMBRS. |

**Rating Disclosure – Use and Limitations**

A Best's Credit Rating (BCR) is a forward-looking independent and objective opinion regarding an insurer's, issuer's or financial obligation's relative creditworthiness. The opinion represents a comprehensive analysis consisting of a quantitative and qualitative evaluation of balance sheet strength, operating performance and business profile or, where appropriate, the specific nature and details of a security. Because a BCR is a forward-looking opinion as of the date it is released, it cannot be considered as a fact or guarantee of future credit quality and therefore cannot be described as accurate or inaccurate. A BCR is a relative measure of risk that implies credit quality and is assigned using a scale with a defined population of categories and notches. Entities or obligations assigned the same BCR symbol developed using the same scale, should not be viewed as completely identical in terms of credit quality. Alternatively, they are alike in category (or notches within a category), but given there is a prescribed progression of categories (and notches) used in assigning the ratings of a much larger population of entities or obligations, the categories (notches) cannot mirror the precise subtleties of risk that are inherent within similarly rated entities or obligations. While a BCR reflects the opinion of A.M. Best Rating Services, Inc. (AMBRS) of relative creditworthiness, it is not an indicator or predictor of defined impairment or default probability with respect to any specific insurer, issuer or financial obligation. A BCR is not investment advice, nor should it be construed as a consulting or advisory service, as such; it is not intended to be utilized as a recommendation to purchase, hold or terminate any insurance policy, contract, security or any other financial obligation, nor does it address the suitability of any particular policy or contract for a specific purpose or purchaser. Users of a BCR should not rely on it in making any investment decision; however, if used, the BCR must be considered as only one factor. Users must make their own evaluation of each investment decision. A BCR opinion is provided on an "as is" basis without any expressed or implied warranty. In addition, a BCR may be changed, suspended or withdrawn at any time for any reason at the sole discretion of AMBRS.

BCRs are distributed via the AMBRS website at www.ambest.com. For additional information regarding the development of a BCR and other rating-related information and definitions, including outlooks, modifiers, identifiers and affiliation codes, please refer to the report titled "Understanding Best's Credit Ratings" available at no charge on the AMBRS website. BCRs are proprietary and may not be reproduced without permission.

Copyright © 2016 by A.M. Best Company, Inc. and/or its affiliates. ALL RIGHTS RESERVED.

Version 090116

# 7. LETTER FROM INSURER

ACORD®

## CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/2/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | |
|---|---|
| PRODUCER<br>Arthur J. Gallagher Risk Management Services, Inc.<br>750 Woodlands Parkway, Suite 200<br>Ridgeland MS 39157 | CONTACT NAME: Belinda Pinion<br>PHONE (A/C, No, Ext): 601-863-3169 FAX (A/C, No): 601-812-6224<br>E-MAIL ADDRESS: belinda_pinion@ajg.com |
| INSURED WGYATES-01<br>W. G. Yates & Sons Construction Co<br>P. O. Box 456<br>Philadelphia, MS 39350 | INSURER(S) AFFORDING COVERAGE — NAIC #<br>INSURER A : Arch Specialty Insurance Company — 21199<br>INSURER B :<br>INSURER C :<br>INSURER D :<br>INSURER E :<br>INSURER F : |

COVERAGES CERTIFICATE NUMBER: 1583213311 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| | COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE OCCUR<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>POLICY PRO-JECT LOC<br>OTHER: | | | | | | EACH OCCURRENCE | $ |
| | | | | | | | DAMAGE TO RENTED PREMISES (Ea occurrence) | $ |
| | | | | | | | MED EXP (Any one person) | $ |
| | | | | | | | PERSONAL & ADV INJURY | $ |
| | | | | | | | GENERAL AGGREGATE | $ |
| | | | | | | | PRODUCTS - COMP/OP AGG | $ |
| | | | | | | | | $ |
| | AUTOMOBILE LIABILITY<br>ANY AUTO<br>ALL OWNED AUTOS<br>SCHEDULED AUTOS<br>HIRED AUTOS<br>NON-OWNED AUTOS | | | | | | COMBINED SINGLE LIMIT (Ea accident) | $ |
| | | | | | | | BODILY INJURY (Per person) | $ |
| | | | | | | | BODILY INJURY (Per accident) | $ |
| | | | | | | | PROPERTY DAMAGE (Per accident) | $ |
| | | | | | | | | $ |
| | UMBRELLA LIAB OCCUR<br>EXCESS LIAB CLAIMS-MADE<br>DED RETENTION $ | | | | | | EACH OCCURRENCE | $ |
| | | | | | | | AGGREGATE | $ |
| | | | | | | | | $ |
| | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N N/A<br>(Mandatory in NH)<br>If yes, describe under DESCRIPTION OF OPERATIONS below | | | | | | PER STATUTE OTH-ER | |
| | | | | | | | E.L. EACH ACCIDENT | $ |
| | | | | | | | E.L. DISEASE - EA EMPLOYEE | $ |
| | | | | | | | E.L. DISEASE - POLICY LIMIT | $ |
| A | Contractor Professional Liability | | | CPP0055671-03 | 8/15/2016 | 8/15/2017 | Each Claim<br>Aggregate | $5,000,000<br>$5,000,000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Design Build Services for The New Escambia County Correctional Facility, Solicitation #PD 16-17.004
Carrier will provide 30 day notice of cancellation for reasons other than non-payment to certificate holder

| CERTIFICATE HOLDER | CANCELLATION |
|---|---|
| Escambia County<br>Office of Purchasing<br>Attn: P. Nobles, CPPO,CPPB,FCN,FCCM<br>P O Box 1591<br>Pensacola FL 32597 | SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.<br>AUTHORIZED REPRESENTATIVE |

© 1988-2014 ACORD CORPORATION. All rights reserved.

ACORD 25 (2014/01) The ACORD name and logo are registered marks of ACORD

# 7. LETTER FROM INSURER

ACORD®

## CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/2/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | |
|---|---|
| PRODUCER<br>Arthur J. Gallagher Risk Management Services, Inc.<br>750 Woodlands Parkway, Suite 200<br>Ridgeland MS 39157 | CONTACT NAME: Belinda Pinion<br>PHONE (A/C, No, Ext): 601-863-3169 FAX (A/C, No): 601-812-6224<br>E-MAIL ADDRESS: belinda_pinion@ajg.com |
| INSURED<br>W. G. Yates & Sons Construction Co<br>P. O. Box 456<br>Philadelphia, MS 39350 | WGYATES-01 |

| INSURER(S) AFFORDING COVERAGE | NAIC # |
|---|---|
| INSURER A: Travelers Property Casualty Co of A | 25674 |
| INSURER B: Starr Indemnity & Liability Company | 38318 |
| INSURER C: Travelers Indemnity Company | 25658 |
| INSURER D: | |
| INSURER E: | |
| INSURER F: | |

COVERAGES CERTIFICATE NUMBER: 1632474111 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| A | X COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE X OCCUR<br>X XCU Cov Incl.<br>X Contractual Liab<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>POLICY X PRO-JECT LOC<br>OTHER: | Y | Y | VTC2JCO5787B693TIL16 | 11/30/2016 | 11/30/2017 | EACH OCCURRENCE<br>DAMAGE TO RENTED PREMISES (Ea occurrence)<br>MED EXP (Any one person)<br>PERSONAL & ADV INJURY<br>GENERAL AGGREGATE<br>PRODUCTS - COMP/OP AGG<br>$ | $2,000,000<br>$1,000,000<br>$10,000<br>$2,000,000<br>$4,000,000<br>$4,000,000 |
| A | AUTOMOBILE LIABILITY<br>X ANY AUTO<br>OWNED AUTOS ONLY<br>HIRED AUTOS ONLY<br>SCHEDULED AUTOS<br>NON-OWNED AUTOS ONLY | Y | Y | VTC2JCAP5787B700TIL16 | 11/30/2016 | 11/30/2017 | COMBINED SINGLE LIMIT (Ea accident)<br>BODILY INJURY (Per person)<br>BODILY INJURY (Per accident)<br>PROPERTY DAMAGE (Per accident)<br>$ | $2,000,000<br>$<br>$<br>$<br>$ |
| B | UMBRELLA LIAB X OCCUR<br>X EXCESS LIAB CLAIMS-MADE<br>DED RETENTION $ | Y | Y | 1000023220 | 11/30/2016 | 11/30/2017 | EACH OCCURRENCE<br>AGGREGATE<br>$ | $5,000,000<br>$5,000,000<br>$ |
| C | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N<br>If yes, describe under DESCRIPTION OF OPERATIONS below | N/A | Y | VTC2KUB5787B68116 | 11/30/2016 | 11/30/2017 | X PER STATUTE OTH-ER<br>E.L. EACH ACCIDENT<br>E.L. DISEASE - EA EMPLOYEE<br>E.L. DISEASE - POLICY LIMIT | $1,000,000<br>$1,000,000<br>$1,000,000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Design Build Services for The New Escambia County Correctional Facility, Solicitation #PD 16-17.004
Escambia County is included as additional insured on a primary and non-contributory basis on all policies except workers comp via form CGD604 0813 on gen liab and CAT474 0212 on auto liab with waiver of subrogation in their favor on all policies as respects insured's operation as required by written contract.
Carriers will provide 30 day notice of cancellation for statutorily permitted reasons other than
See Attached...

CERTIFICATE HOLDER

Escambia County
Office of Purchasing
Attn: P. Nobles, CPPO,CPPB,FCN,FCCM
P O Box 1591
Pensacola FL 32597

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

© 1988-2015 ACORD CORPORATION. All rights reserved.

ACORD 25 (2016/03) The ACORD name and logo are registered marks of ACORD

# 7. LETTER FROM INSURER

AGENCY CUSTOMER ID: WGYATES-01
LOC #:

ACORD®

## ADDITIONAL REMARKS SCHEDULE

Page 1 of 1

| AGENCY | NAMED INSURED |
|---|---|
| Arthur J. Gallagher Risk Management Services, Inc. | W. G. Yates & Sons Construction Co<br>P. O. Box 456<br>Philadelphia, MS 39350 |
| POLICY NUMBER | |
| CARRIER / NAIC CODE | EFFECTIVE DATE: |

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: 25 FORM TITLE: CERTIFICATE OF LIABILITY INSURANCE

non-payment of premium to certificate holder. Workers Comp policy includes State of Florida Excess liability is follow form of the underlying policies

ACORD 101 (2008/01)

© 2008 ACORD CORPORATION. All rights reserved.
The ACORD name and logo are registered marks of ACORD

# 7. LETTER FROM INSURER

POLICY NUMBER: VTC2J-CAP-5787B700-TIL-16 COMMERCIAL AUTO

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## BLANKET ADDITIONAL INSURED – PRIMARY AND NON-CONTRIBUTORY WITH OTHER INSURANCE

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by this endorsement.

PROVISIONS

A. The following is added to Paragraph c. in A. 1., Who Is An Insured, of SECTION II – LIABILITY COVERAGE:

Any person or organization who is required under a written contract or agreement between you and that person or organization, that is signed and executed by you before the "bodily injury" or "property damage" occurs and that is in effect during the policy period, to be named as an additional insured is an "insured" for Liability Coverage, but only for damages to which this insurance applies and only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured provision contained in Section II.

B. The following is added to Paragraph 5., Other Insurance, in B. General Conditions of SECTION IV – BUSINESS AUTO CONDITIONS:

Regardless of the provisions of paragraph a. and paragraph d. of this part 5. Other Insurance, this insurance is primary to and non-contributory with applicable other insurance under which an additional insured person or organization is the first named insured when the written contract or agreement between you and that person or organization, that is signed and executed by you before the "bodily injury" or "property damage" occurs and that is in effect during the policy period, requires this insurance to be primary and non-contributory.

CA T4 74 02 12

© 2012 The Travelers Indemnity Company. All rights reserved.
Includes copyrighted material of Insurance Services Office, Inc. with its permission.

Page 1 of 1

# 7. LETTER FROM INSURER

POLICY NUMBER: VTC2J-CAP-5707B700-TIL-16 ISSUE DATE: 11-10-16

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## DESIGNATED ENTITY – NOTICE OF CANCELLATION PROVIDED BY US

This endorsement modifies insurance provided under the following:
ALL COVERAGE PARTS INCLUDED IN THIS POLICY

SCHEDULE

CANCELLATION: Number of Days Notice of Cancellation: 30

PERSON OR ORGANIZATION:

ANY PERSON OR ORGANIZATION TO WHOM YOU HAVE AGREED IN A WRITTEN CONTRACT THAT NOTICE OF CANCELLATION, NONRENEWAL OR MATERIAL LIMITATION OF THIS POLICY WILL BE GIVEN, BUT ONLY IF:
1. YOU SEND US A WRITTEN REQUEST TO PROVIDE SUCH NOTICE, INCLUDING THE NAME AND ADDRESS OF SUCH PERSON OR ORGANIZATION, AFTER THE FIRST NAMED INSURED RECEIVES NOTICE FROM US OF THE CANCELLATION, NONRENEWAL OR MATERIAL LIMITATION OF THIS POLICY; AND
2. WE RECEIVE SUCH WRITTEN REQUEST AT LEAST 14 DAYS BEFORE THE BEGINNING OF THE APPLICABLE NUMBER OF DAYS SHOWN IN THIS ENDORSEMENT

ADDRESS:

THE ADDRESS FOR THAT PERSON OR ORGANIZATION INCLUDED IN SUCH WRITTEN REQUEST FROM YOU TO US.

PROVISIONS:

If we cancel this policy for any statutorily permitted reason other than nonpayment of premium, and a number of days is shown for cancellation in the schedule above, we will mail notice of cancellation to the person or organization shown in the schedule above. We will mail such notice to the address shown in the schedule above at least the number of days shown for cancellation in the schedule above before the effective date of cancellation.

IL T4 05 03 11 ©2011 The Travelers Indemnity Company. All rights reserved. Page 1 of 1

POLICY NUMBER: VTC2J-CAP-5707B700-TIL-16 COMMERCIAL AUTO

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

# BUSINESS AUTO EXTENSION ENDORSEMENT

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

GENERAL DESCRIPTION OF COVERAGE – This endorsement broadens coverage. However, coverage for any injury, damage or medical expenses described in any of the provisions of this endorsement may be excluded or limited by another endorsement to the Coverage Part, and these coverage broadening provisions do not apply to the extent that coverage is excluded or limited by such an endorsement. The following listing is a general coverage description only. Limitations and exclusions may apply to these coverages. Read all the provisions of this endorsement and the rest of your policy carefully to determine rights, duties, and what is and is not covered.

A. BROAD FORM NAMED INSURED
B. BLANKET ADDITIONAL INSURED
C. EMPLOYEE HIRED AUTO
D. EMPLOYEES AS INSURED
E. SUPPLEMENTARY PAYMENTS – INCREASED LIMITS
F. HIRED AUTO – LIMITED WORLDWIDE COVERAGE – INDEMNITY BASIS
G. WAIVER OF DEDUCTIBLE – GLASS
H. HIRED AUTO PHYSICAL DAMAGE – LOSS OF USE – INCREASED LIMIT
I. PHYSICAL DAMAGE – TRANSPORTATION EXPENSES – INCREASED LIMIT
J. PERSONAL PROPERTY
K. AIRBAGS
L. NOTICE AND KNOWLEDGE OF ACCIDENT OR LOSS
M. BLANKET WAIVER OF SUBROGATION
N. UNINTENTIONAL ERRORS OR OMISSIONS

PROVISIONS

A. BROAD FORM NAMED INSURED

The following is added to Paragraph A.1., Who Is An Insured, of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

Any organization you newly acquire or form during the policy period over which you maintain 50% or more ownership interest and that is not separately insured for Business Auto Coverage. Coverage under this provision is afforded only until the 180th day after you acquire or form the organization or the end of the policy period, whichever is earlier.

B. BLANKET ADDITIONAL INSURED

The following is added to Paragraph c. in A.1., Who Is An Insured, of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

Any person or organization who is required under a written contract or agreement between you and that person or organization, that is signed and executed by you before the "bodily injury" or "property damage" occurs and that is in effect during the policy period, to be named as an additional insured is an "insured" for Covered Autos Liability Coverage, but only for damages to which this insurance applies and only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured provision contained in Section II.

C. EMPLOYEE HIRED AUTO

1. The following is added to Paragraph A.1., Who Is An Insured, of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

An "employee" of yours is an "insured" while operating an "auto" hired or rented under a contract or agreement in an "employee's" name, with your permission, while performing duties related to the conduct of your business.

2. The following replaces Paragraph b. in B.5., Other Insurance, of SECTION IV – BUSINESS AUTO CONDITIONS:

b. For Hired Auto Physical Damage Coverage, the following are deemed to be covered "autos" you own:

(1) Any covered "auto" you lease, hire, rent or borrow; and

(2) Any covered "auto" hired or rented by your "employee" under a contract in an "employee's" name, with your


© 2015 The Travelers Indemnity Company. All rights reserved.
Includes copyrighted material of Insurance Services Office, Inc. with its permission.

permission, while performing duties related to the conduct of your business.

However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

D. EMPLOYEES AS INSURED

The following is added to Paragraph A.1., Who Is An Insured, of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

Any "employee" of yours is an "insured" while using a covered "auto" you don't own, hire or borrow in your business or your personal affairs.

E. SUPPLEMENTARY PAYMENTS – INCREASED LIMITS

1. The following replaces Paragraph A.2.a.(2), of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

   (2) Up to $3,000 for cost of bail bonds (including bonds for related traffic law violations) required because of an "accident" we cover. We do not have to furnish these bonds.

2. The following replaces Paragraph A.2.a.(4), of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

   (4) All reasonable expenses incurred by the "insured" at our request, including actual loss of earnings up to $500 a day because of time off from work.

F. HIRED AUTO – LIMITED WORLDWIDE COVERAGE – INDEMNITY BASIS

The following replaces Subparagraph (5) in Paragraph B.7., Policy Period, Coverage Territory, of SECTION IV – BUSINESS AUTO CONDITIONS:

(5) Anywhere in the world, except any country or jurisdiction while any trade sanction, embargo, or similar regulation imposed by the United States of America applies to and prohibits the transaction of business with or within such country or jurisdiction, for Covered Autos Liability Coverage for any covered "auto" that you lease, hire, rent or borrow without a driver for a period of 30 days or less and that is not an "auto" you lease, hire, rent or borrow from any of your "employees", partners (if you are a partnership), members (if you are a limited liability company) or members of their households.

(a) With respect to any claim made or "suit" brought outside the United States of America, the territories and possessions of the United States of America, Puerto Rico and Canada:

   (i) You must arrange to defend the "insured" against, and investigate or settle any such claim or "suit" and keep us advised of all proceedings and actions.

   (ii) Neither you nor any other involved "insured" will make any settlement without our consent.

   (iii) We may, at our discretion, participate in defending the "insured" against, or in the settlement of, any claim or "suit".

   (iv) We will reimburse the "insured" for sums that the "insured" legally must pay as damages because of "bodily injury" or "property damage" to which this insurance applies, that the "insured" pays with our consent, but only up to the limit described in Paragraph C., Limits Of Insurance, of SECTION II – COVERED AUTOS LIABILITY COVERAGE.

   (v) We will reimburse the "insured" for the reasonable expenses incurred with our consent for your investigation of such claims and your defense of the "insured" against any such "suit", but only up to and included within the limit described in Paragraph C., Limits Of Insurance, of SECTION II – COVERED AUTOS LIABILITY COVERAGE, and not in addition to such limit. Our duty to make such payments ends when we have used up the applicable limit of insurance in payments for damages, settlements or defense expenses.

(b) This insurance is excess over any valid and collectible other insurance available to the "insured" whether primary, excess, contingent or on any other basis.

(c) This insurance is not a substitute for required or compulsory insurance in any country outside the United States, its territories and possessions, Puerto Rico and Canada.



© 2015 The Travelers Indemnity Company. All rights reserved.
Includes copyrighted material of Insurance Services Office, Inc. with its permission.

# 7. LETTER FROM INSURER



You agree to maintain all required or compulsory insurance in any such country up to the minimum limits required by local law. Your failure to comply with compulsory insurance requirements will not invalidate the coverage afforded by this policy, but we will only be liable to the same extent we would have been liable had you complied with the compulsory insurance requirements.

(d) It is understood that we are not an admitted or authorized insurer outside the United States of America, its territories and possessions, Puerto Rico and Canada. We assume no responsibility for the furnishing of certificates of insurance, or for compliance in any way with the laws of other countries relating to insurance.

G. WAIVER OF DEDUCTIBLE – GLASS

The following is added to Paragraph D., Deductible, of SECTION III – PHYSICAL DAMAGE COVERAGE:

No deductible for a covered "auto" will apply to glass damage if the glass is repaired rather than replaced.

H. HIRED AUTO PHYSICAL DAMAGE – LOSS OF USE – INCREASED LIMIT

The following replaces the last sentence of Paragraph A.4.b., Loss Of Use Expenses, of SECTION III – PHYSICAL DAMAGE COVERAGE:

However, the most we will pay for any expenses for loss of use is $65 per day, to a maximum of $750 for any one "accident".

I. PHYSICAL DAMAGE – TRANSPORTATION EXPENSES – INCREASED LIMIT

The following replaces the first sentence in Paragraph A.4.a., Transportation Expenses, of SECTION III – PHYSICAL DAMAGE COVERAGE:

We will pay up to $50 per day to a maximum of $1,500 for temporary transportation expense incurred by you because of the total theft of a covered "auto" of the private passenger type.

J. PERSONAL PROPERTY

The following is added to Paragraph A.4., Coverage Extensions, of SECTION III – PHYSICAL DAMAGE COVERAGE:

Personal Property

We will pay up to $400 for "loss" to wearing apparel and other personal property which is:

(1) Owned by an "insured"; and

(2) In or on your covered "auto".

This coverage applies only in the event of a total theft of your covered "auto".

No deductibles apply to this Personal Property coverage.

K. AIRBAGS

The following is added to Paragraph B.3., Exclusions, of SECTION III – PHYSICAL DAMAGE COVERAGE:

Exclusion 3.a. does not apply to "loss" to one or more airbags in a covered "auto" you own that inflate due to a cause other than a cause of "loss" set forth in Paragraphs A.1.b. and A.1.c., but only:

a. If that "auto" is a covered "auto" for Comprehensive Coverage under this policy;

b. The airbags are not covered under any warranty; and

c. The airbags were not intentionally inflated.

We will pay up to a maximum of $1,000 for any one "loss".

L. NOTICE AND KNOWLEDGE OF ACCIDENT OR LOSS

The following is added to Paragraph A.2.a., of SECTION IV – BUSINESS AUTO CONDITIONS:

Your duty to give us or our authorized representative prompt notice of the "accident" or "loss" applies only when the "accident" or "loss" is known to:

(a) You (if you are an individual);

(b) A partner (if you are a partnership);

(c) A member (if you are a limited liability company);

(d) An executive officer, director or insurance manager (if you are a corporation or other organization); or

(e) Any "employee" authorized by you to give notice of the "accident" or "loss".

M. BLANKET WAIVER OF SUBROGATION

The following replaces Paragraph A.5., Transfer Of Rights Of Recovery Against Others To Us, of SECTION IV – BUSINESS AUTO CONDITIONS:

5. Transfer Of Rights Of Recovery Against Others To Us

We waive any right of recovery we may have against any person or organization to the extent required of you by a written contract signed and executed prior to any "accident" or "loss", provided that the "accident" or "loss" arises out of operations contemplated by


© 2015 The Travelers Indemnity Company. All rights reserved.
Includes copyrighted material of Insurance Services Office, Inc. with its permission.

COMMERCIAL AUTO

such contract. The waiver applies only to the person or organization designated in such contract.

N. UNINTENTIONAL ERRORS OR OMISSIONS

The following is added to Paragraph B.2., Concealment, Misrepresentation, Or Fraud, of SECTION IV – BUSINESS AUTO CONDITIONS:

The unintentional omission of, or unintentional error in, any information given by you shall not prejudice your rights under this insurance. However this provision does not affect our right to collect additional premium or exercise our right of cancellation or non-renewal.

Page 4 of 4

© 2015 The Travelers Indemnity Company. All rights reserved.
Includes copyrighted material of Insurance Services Office, Inc. with its permission.

CA T3 53 02 15

POLICY NUMBER: VTC2J-CO-5787B693-TIL-16 COMMERCIAL GENERAL LIABILITY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

# BLANKET ADDITIONAL INSURED – AUTOMATIC STATUS IF REQUIRED BY WRITTEN CONTRACT (CONTRACTORS)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

1. The following is added to SECTION II – WHO IS AN INSURED:

   Any person or organization that:

   a. You agree in a "written contract requiring insurance" to include as an additional insured on this Coverage Part; and

   b. Has not been added as an additional insured for the same project by attachment of an endorsement under this Coverage Part which includes such person or organization in the endorsement's schedule;

   Is an insured, but:

   a. Only with respect to liability for "bodily injury", "property damage" or "personal injury"; and

   b. Only as described in Paragraph (1), (2) or (3) below, whichever applies:

      (1) If the "written contract requiring insurance" specifically requires you to provide additional insured coverage to that person or organization by the use of:

         (a) The Additional Insured – Owners, Lessees or Contractors – (Form B) endorsement CG 20 10 11 85; or

         (b) Either or both of the following: the Additional Insured – Owners, Lessees or Contractors – Scheduled Person Or Organization endorsement CG 20 10 10 01, or the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37 10 01;

         the person or organization is an additional insured only if the injury or damage arises out of "your work" to which the "written contract requiring insurance" applies;

      (2) If the "written contract requiring insurance" specifically requires you to provide additional insured coverage to that person or organization by the use of:

         (a) The Additional Insured – Owners, Lessees or Contractors – Scheduled Person or Organization endorsement CG 20 10 07 04 or CG 20 10 04 13, the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37 07 04 or CG 20 37 04 13, or both of such endorsements with either of those edition dates; or

         (b) Either or both of the following: the Additional Insured – Owners, Lessees or Contractors – Scheduled Person Or Organization endorsement CG 20 10, or the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37, without an edition date of such endorsement specified;

         the person or organization is an additional insured only if the injury or damage is caused, in whole or in part, by acts or omissions of you or your subcontractor in the performance of "your work" to which the "written contract requiring insurance" applies; or

      (3) If neither Paragraph (1) nor (2) above applies:

         (a) The person or organization is an additional insured only if, and to the extent that, the injury or damage is caused by acts or omissions of you or your subcontractor in the performance of "your work" to which the "written contract requiring insurance" applies; and

         (b) The person or organization does not qualify as an additional insured with respect to the independent acts or omissions of such person or organization.

CG D6 04 08 13 © 2013 The Travelers Indemnity Company. All rights reserved. Page 1 of 3

COMMERCIAL GENERAL LIABILITY

2. The insurance provided to the additional insured by this endorsement is limited as follows:
   a. If the Limits of Insurance of this Coverage Part shown in the Declarations exceed the minimum limits of liability required by the "written contract requiring insurance", the insurance provided to the additional insured will be limited to such minimum required limits of liability. For the purposes of determining whether this limitation applies, the minimum limits of liability required by the "written contract requiring insurance" will be considered to include the minimum limits of liability of any Umbrella or Excess liability coverage required for the additional insured by that "written contract requiring insurance". This endorsement will not increase the limits of insurance described in Section III – Limits Of Insurance.
   b. The insurance provided to the additional insured does not apply to "bodily injury", "property damage" or "personal injury" arising out of the rendering of, or failure to render, any professional architectural, engineering or surveying services, including:
      (1) The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders or change orders, or the preparing, approving, or failing to prepare or approve, drawings and specifications; and
      (2) Supervisory, inspection, architectural or engineering activities.
   c. The insurance provided to the additional insured does not apply to "bodily injury" or "property damage" caused by "your work" and included in the "products-completed operations hazard" unless the "written contract requiring insurance" specifically requires you to provide such coverage for that additional insured during the policy period.
3. The insurance provided to the additional insured by this endorsement is excess over any valid and collectible other insurance, whether primary, excess, contingent or on any other basis, that is available to the additional insured. However, if the "written contract requiring insurance" specifically requires that this insurance apply on a primary basis or a primary and non-contributory basis, this insurance is primary to other insurance available to the additional insured under which that person or organization qualifies as a named insured, and we will not share with that other insurance. But the insurance provided to the additional insured by this endorsement still is excess over any valid and collectible other insurance, whether primary, excess, contingent or on any other basis, that is available to the additional insured when that person or organization is an additional insured, or is any other insured that does not qualify as a named insured, under such other insurance.
4. As a condition of coverage provided to the additional insured by this endorsement:
   a. The additional insured must give us written notice as soon as practicable of an "occurrence" or an offense which may result in a claim. To the extent possible, such notice should include:
      (1) How, when and where the "occurrence" or offense took place;
      (2) The names and addresses of any injured persons and witnesses; and
      (3) The nature and location of any injury or damage arising out of the "occurrence" or offense.
   b. If a claim is made or "suit" is brought against the additional insured, the additional insured must:
      (1) Immediately record the specifics of the claim or "suit" and the date received; and
      (2) Notify us as soon as practicable.

      The additional insured must see to it that we receive written notice of the claim or "suit" as soon as practicable.
   c. The additional insured must immediately send us copies of all legal papers received in connection with the claim or "suit", cooperate with us in the investigation or settlement of the claim or defense against the "suit", and otherwise comply with all policy conditions.
   d. The additional insured must tender the defense and indemnity of any claim or "suit" to any provider of other insurance which would cover the additional insured for a loss we cover under this endorsement. However, this condition does not affect whether the insurance provided to the additional insured by this endorsement is primary to other insurance available to the additional insured which covers that person or organization as a named insured as described in Paragraph 3. above.
5. The following is added to the DEFINITIONS Section:

   "Written contract requiring insurance" means that part of any written contract or agreement under which you are required to include a person or or-

Page 2 of 3

© 2013 The Travelers Indemnity Company. All rights reserved.

CG D6 04 08 13

ganization as an additional insured on this Coverage Part, provided that the "bodily injury" and "property damage" occurs, and the "personal injury" is caused by an offense committed, during the policy period and:

a. After the signing and execution of the contract or agreement by you; and

b. While that part of the contract or agreement is in effect.



© 2013 The Travelers Indemnity Company. All rights reserved.

# 7. LETTER FROM INSURER

POLICY NUMBER: VTC2J-CO-5787B693-TIL-16 GENERAL PURPOSE ENDORSEMENT

BLANKET NOTICE FOR CANCELLATIONS, NONRENEWALS AND MATERIAL LIMITATIONS

This endorsement modifies insurance provided under the following:

ALL COVERAGE PARTS INCLUDED IN THIS POLICY

Endorsement IL T3 54 03 98, DESIGNATED ENTITY - EARLIER NOTICE OF CANCELLATION/NONRENEWAL PROVIDED BY US, IS AMENDED TO READ AS FOLLOWS:

CANCELLATION: NUMBER OF DAYS NOTICE:30
WHEN WE DO NOT RENEW (NONRENEWAL): NUMBER OF DAYS NOTICE:30

Any person or organization to whom you have agreed in a written contract that notice of cancellation, nonrenewal or material limitation of this policy will be given, but only if:

1. You send us a written request to provide such notice, including the name and address of such person or organization, after the first Named Insured receives notice from us of the cancellation, nonrenewal or material limitation of this policy; and

2. We receive such written request at least 14 days before the beginning of the applicable number of days shown in this endorsement.

ADDRESS: The address for that person or organization included in such written request from you to us.

IL T8 03 Page 1

# 7. LETTER FROM INSURER

POLICY NUMBER: VTC2J-CO-5787B693-TIL-16

COMMERCIAL GENERAL LIABILITY
GENERAL PURPOSE ENDORSEMENT

AMENDMENT OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US CONDITION

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

The following replaces Paragraph 8., Transfer Of Rights Of Recovery Against Others To Us, of SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS:

If the insured has rights to recover all or part of any payment we have made under this Coverage Part, those rights are transferred to us. The insured must do nothing to impair them. At our request, the insured will bring "suit" or transfer those rights to us and help us enforce them.

However, if you have agreed in a written contract or agreement to waive your right of recovery against any person or organization, we waive our right of recovery against such person or organization, but only for payments we make because of:

a. "Bodily injury" or "property damage" that occurs; or

b. "Personal injury" or "advertising injury" caused by an offense that is committed; subsequent to the execution of that contract or agreement.

Copyright 2012 The Travelers Indemnity Company. All rights reserved.

CG T8 08

# 7. LETTER FROM INSURER

TRAVELERS

ONE TOWER SQUARE
HARTFORD, CT 06183

WORKERS COMPENSATION
AND
EMPLOYERS LIABILITY POLICY
ENDORSEMENT WC 99 06 R5 (00)

POLICY NUMBER: (VTC2KUB-5787B68-1-16 )

## NOTICE OF CANCELLATION, NONRENEWAL OR MATERIAL COVERAGE REDUCTION TO DESIGNATED PERSONS OR ORGANIZATIONS

The following is added to PART SIX – CONDITIONS:

Notice Of Cancellation, Nonrenewal Or Material Coverage Reduction To Designated Persons Or Organizations

If we cancel or non-renew this policy for any reason other than non-payment of premium by you, we will provide notice of such cancellation or non-renewal to each person or organization designated in the Schedule below. We will mail or deliver such notice to each person or organization at its listed address at least the number of days shown for that person or organization before the cancellation or nonrenewal is to take effect.

In the event of a change that materially reduces or restricts the coverage afforded by this policy, other than reduction of limits of liability through payment of claims, we will provide notice of such coverage reduction to each person or organization designated in the Schedule below. We will mail or deliver such notice to each person or organization at its listed address at least the number of days shown for that person or organization before the reduction is to take effect.

You are responsible for providing us with the information necessary to accurately complete the Schedule below. If we cannot mail or deliver a notice of cancellation, nonrenewal or material coverage reduction to a designated person or organization because the name or address of such designated person or organization provided to us is not accurate or complete, we have no responsibility to mail, deliver or otherwise notify such designated person or organization of the cancellation, nonrenewal or reduction.

SCHEDULE

| Name and Address of Designated Persons or Organizations: | Number of Days Notice |
|---|---|
| ANY PERSON OR ORGANIZATION WITH WHOM YOU HAVE AGREED IN A WRITTEN CONTRACT THAT NOTICE OF CANCELLATION, NONRENEWAL OR MATERIAL REDUCTION IN COVERAGE OF THIS POLICY WILL BE GIVEN, BUT ONLY IF:<br>1. YOU SEE TO IT THAT WE RECEIVE A WRITTEN REQUEST TO PROVIDE SUCH NOTICE, INCLUDING THE NAME AND ADDRESS OF SUCH PERSON OR ORGANIZATION, AFTER THE FIRST NAMED INSURED RECEIVES NOTICE FROM US OF THE CANCELLATION OR MATERIAL LIMITATION OF THIS POLICY; AND<br>2. WE RECEIVE SUCH WRITTEN REQUEST AT LEAST 14 DAYS BEFORE THE BEGINNING OF THE APPLICABLE NUMBER OF DAYS SHOWN IN THIS ENDORSEMENT.<br><br>ADDRESS: THE ADDRESS FOR THAT PERSON OR ORGANIZATION INCLUDED IN SUCH WRITTEN REQUEST FROM YOU TO US. | 30 |

DATE OF ISSUE: 11-10-16 ST ASSIGN:

© 2013 The Travelers Indemnity Company. All rights reserved.

# 7. LETTER FROM INSURER

TRAVELERS

ONE TOWER SQUARE
HARTFORD, CT 06103

WORKERS COMPENSATION
AND
EMPLOYERS LIABILITY POLICY

ENDORSEMENT WC 00 03 13 (00)-01

POLICY NUMBER: ('VTC2KUB-5787B68-1-16 )

## WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit any one not named in the Schedule.

SCHEDULE

DESIGNATED PERSON:

DESIGNATED ORGANIZATION:

ANY PERSON OR ORGANIZATION FOR WHICH THE INSURED HAS AGREED BY WRITTEN CONTRACT EXECUTED PRIOR TO LOSS TO FURNISH THIS WAIVER.

DATE OF ISSUE: 11-10-16 ST ASSIGN:

# 7. LETTER FROM INSURER

ACORD®

## CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 6/8/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | |
|---|---|
| PRODUCER<br>Arthur J. Gallagher Risk Management Services, Inc.<br>750 Woodlands Parkway, Suite 200<br>Ridgeland MS 39157 | CONTACT NAME: Belinda Pinion<br>PHONE (A/C, No, Ext): 601-863-3169 FAX (A/C, No): 601-812-6224<br>E-MAIL ADDRESS: belinda_pinion@ajg.com |
| INSURED WGYATES-01<br>W. G. Yates & Sons Construction Co<br>P. O. Box 456<br>Philadelphia, MS 39350 | INSURER(S) AFFORDING COVERAGE — NAIC #<br>INSURER A: Tokio Marine Specialty Ins Co — 23850<br>INSURER B:<br>INSURER C:<br>INSURER D:<br>INSURER E:<br>INSURER F: |

COVERAGES CERTIFICATE NUMBER: 564176256 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS |
|---|---|---|---|---|---|---|---|
| | COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE OCCUR<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>POLICY PRO-JECT LOC<br>OTHER: | | | | | | EACH OCCURRENCE $<br>DAMAGE TO RENTED PREMISES (Ea occurrence) $<br>MED EXP (Any one person) $<br>PERSONAL & ADV INJURY $<br>GENERAL AGGREGATE $<br>PRODUCTS - COMP/OP AGG $<br>$ |
| | AUTOMOBILE LIABILITY<br>ANY AUTO<br>OWNED AUTOS ONLY SCHEDULED AUTOS<br>HIRED AUTOS ONLY NON-OWNED AUTOS ONLY | | | | | | COMBINED SINGLE LIMIT (Ea accident) $<br>BODILY INJURY (Per person) $<br>BODILY INJURY (Per accident) $<br>PROPERTY DAMAGE (Per accident) $<br>$ |
| | UMBRELLA LIAB OCCUR<br>EXCESS LIAB CLAIMS-MADE<br>DED RETENTION $ | | | | | | EACH OCCURRENCE $<br>AGGREGATE $<br>$ |
| | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N N/A<br>If yes, describe under DESCRIPTION OF OPERATIONS below | | | | | | PER STATUTE OTH-ER<br>E.L. EACH ACCIDENT $<br>E.L. DISEASE - EA EMPLOYEE $<br>E.L. DISEASE - POLICY LIMIT $ |
| A | Contractor Pollution Liability | | | PPK1593411 | 12/30/2016 | 12/30/2017 | Per Contamination<br>Incident $5,000,000<br>Aggregate $5,000,000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Design Build Services for The New Escambia County Correctional Facility, Solicitation #PD 16-17.004
Escambia County is included as additional insured on a primary and non-contributory basis with waiver of subrogation in their favor as respects insured's operation as required by written contract
Carrier will provide 30 day notice of cancellation for reasons other than non-payment to certificate holder

| CERTIFICATE HOLDER | CANCELLATION |
|---|---|
| Escambia County<br>Office of Purchasing<br>Attn: P. Nobles, CPPO,CPPB,FCN,FCCM<br>P O Box 1591<br>Pensacola FL 32597 | SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.<br>AUTHORIZED REPRESENTATIVE |

© 1988-2015 ACORD CORPORATION. All rights reserved.

ACORD 25 (2016/03) The ACORD name and logo are registered marks of ACORD

# 8. MATERIAL CHANGES LIST

***8. Material Changes List. If Proposer is unable to certify in Document 00 4516 that all information it submitted to Owner in connection with the Pre-Qualification Process remains true and correct in all material respects as of the date of submitting its Proposal, a list of all such changes ("Material Changes List"), accompanied by the same types of information that Proposer was required to submit for as part of the Pre-Qualification Process.***

W.G. Yates & Sons Construction Company is able to certify in Document 00 4516 that all information submitted to Owner in connection with the Pre-Qualification remains true and correct in all material respects as of the date of proposal submission, June 23, 2017.

# SECTION B TECHNICAL PROPOSAL SUBMISSION

A: Proposed Staffing and Designated Subcontractors
B: Proposed Design and Design Approach; Life Cycle Costs
C: Draft Project Management Plan
D: Preliminary Baseline Design / Construction Schedule\ including Staffing Plan
E: Potential Design-Build Entity-Provided Builder's Risk Insurance

YATES CONSTRUCTION ROSSER BTA Bullock Tice Associates

# A. PROPOSED STAFFING & DESIGNATED SUBCONTRACTORS

***1. Submit a list of the proposed staffing for the Project; the listing must include all key tea personnel previously approved in the Pre-Qualification Process, and include at a minimum the specific positions indicated below, and such others as Owner may request before Proposal date ("Key Personnel"). Substitutions will not be permitted without prior approval of the County. Additional staff required but not part of the Pre-Qualification Process should be added. See also paragraph 3.02D below.***

***a. Overall Project Manager***
***b. Design Manager***
***c. General Superintendent***
***d. Superintendent***
***e. Architect of Record***
***f. Design Architect***
***g. Lead Engineers (all disciplines)***

***2. All Subcontractors who are known to be performing portions of the Work on Proposal day (Designated Subcontractors) must be identified in Document 00 4330 (Subcontractors List) limited to one per sub-trade. Designated Subcontractors will not require public bidding beyond this RFP process.***

***3. All Subcontractors working on Project Site, whether included in Proposal or otherwise, must have an Experience Modification Rate (EMR) of 1.00 or less.***

| PROPOSED STAFFING FOR THE PROJECT | | |
|---|---|---|
| POSITION | NAME | COMPANY |
| Project Executive | Chet Nadolski | Yates Construction |
| Design Principal | William Golson, AIA, NCARB | Rosser International, Inc. |
| Construction Principal | William Yates | Yates Construction |
| Overall Project Manager / Construction Project Manager | Alex Teague | Yates Construction |
| Construction Design Manager | Jim Brown | Yates Construction |
| General Superintendent | Barry Gray | Yates Construction |
| Superintendent | Grant Lowe | Yates Construction |
| Quality Control Manager | Patrik Lazzari, LEED AP, PE, CIE | Yates Construction |
| Project Controls Manager | Larry Mize | Yates Construction |
| Safety Manager | Scott Huber | Yates Construction |
| Design Project Manager | Jim Brown | Yates Construction |
| Associate Project Manager | Jon Mollloy, AIA | Bullock Tice Associates |
| Architect of Record & Design Architect | William Golson, AIA, NCARB | Rosser International, Inc. |
| Project Manager | Mark Van Allen, AIA, NCARB, LEED AP | Rosser International, Inc. |
| Project Architect | Mike Kennedy | Rosser International, Inc. |
| Associate Project Architect | Paul Ritz, NCARB, CGC, LEED AP | Bullock Tice Associates |
| Sustainability Manager | Mason Statham, LEED AP, CM-Lean | Yates Construction |

# A. PROPOSED STAFFING & DESIGNATED SUBCONTRACTORS

| PROPOSED STAFFING FOR THE PROJECT continued | | |
|---|---|---|
| POSITION | NAME | COMPANY |
| Building Code Consultant | George Bushey | Rosser International, Inc. |
| Civil Engineer | Jason Ripley, PE | Atkins North America, Inc. |
| Structural Engineering | John Bumgardner | Rosser International, Inc. |
| Mechanical Engineering | Will Curry | Rosser International, Inc. |
| Electrical Engineering | Floyd Keels | Rosser International, Inc. |
| Environmental Engineer/Scientist | Hamp Sterling, LEED AP, PE, CIE | Yates Construction |
| Low Voltage Designer/Systems Engineer | Dave White | Rosser International, Inc. |
| Plumbing Engineering | Darren Hoyle | Rosser International, Inc. |
| Fire Protection Engineering | Dale Gaines | Rosser International, Inc. |
| Electronic Security Systems Designer | Larry Latimer | Rosser International, Inc. |
| Physical Security | Paul Whitaker | Rosser International, Inc. |
| Food Service Equipment Designer | James Camacho | Camacho Associates, Inc. |

OUR PROPOSED TEAM
HAS EXPERIENCE
WORKING TOGETHER
& HAS EXTENSIVE KNOWLEDGE OF
THE DESIGN & CONSTRUCTION OF
PRISONS & CORRECTIONAL FACILITIES

***B. Proposed Design and Design Approach; Life-Cycle Costs***
***1. General: Prepare written documents listed below to depict the Proposer's design in response to the County's requirements. The submittal requirements listed below are minimum requirements. Proposer may submit additional materials in their ECCF Proposal. Additional materials submitted by the Proposer may or may not be reviewed by the County at the County's sole discretion. Internet links to websites are not permitted. Design narrative may include diagrams, graphic illustrations, conceptual sketches and ideas, exhibits, and photographic images. 8 ½" x 11" Format. (Site plans, conceptual floor plans, grading plans, etc. to be scaled to fit standard drawing sheet size (30" x 42") with ½ size sheets required for submittal).***

The Yates/Rosser/BTA team has developed a design for the Escambia County Correctional Facility that meets all the requirements of the RFP. It contains innovative features that solve the challenges unique to this project and includes enhancement features that improve the RFP Concept Design. This architectural design approach will discuss these features and illustrate the following:

The design:

- is safe and secure
- provides a creative solution to a constrained site
- creates a civic image that rejuvenates the community
- increases usable space over programmed space
- minimizes non-usable space
- is easy to build
- is easy to expand
- is easy to maintain
- is sustainable
- is cost effective

**Methodology:**
Our team evaluated the requirements for the Escambia County Correctional Facility using a process that has proven successful on multiple projects of similar scope and complexity. This process involved a multi-stage approach.

**Stage One:**
The first stage involved a thorough review of the Design Criteria Package dated March 20, 2017, including conceptual plans, design narratives, performance specifications, facility program, component requirements, room data sheets, existing conditions reports, and other pertinent criteria.

**Stage Two**
The second stage involved the application of the requirements of applicable standards and codes such as state and national building codes, accessibility codes, energy codes, and state jail standards.

**Stage Three**
The third stage involved the development of multiple design schemes.

**Stage Four**
The fourth stage involved the analysis of each design scheme for function, constructability, and cost resulting in a recommendation for the scheme that best satisfies county requirements and budgetary constraints.

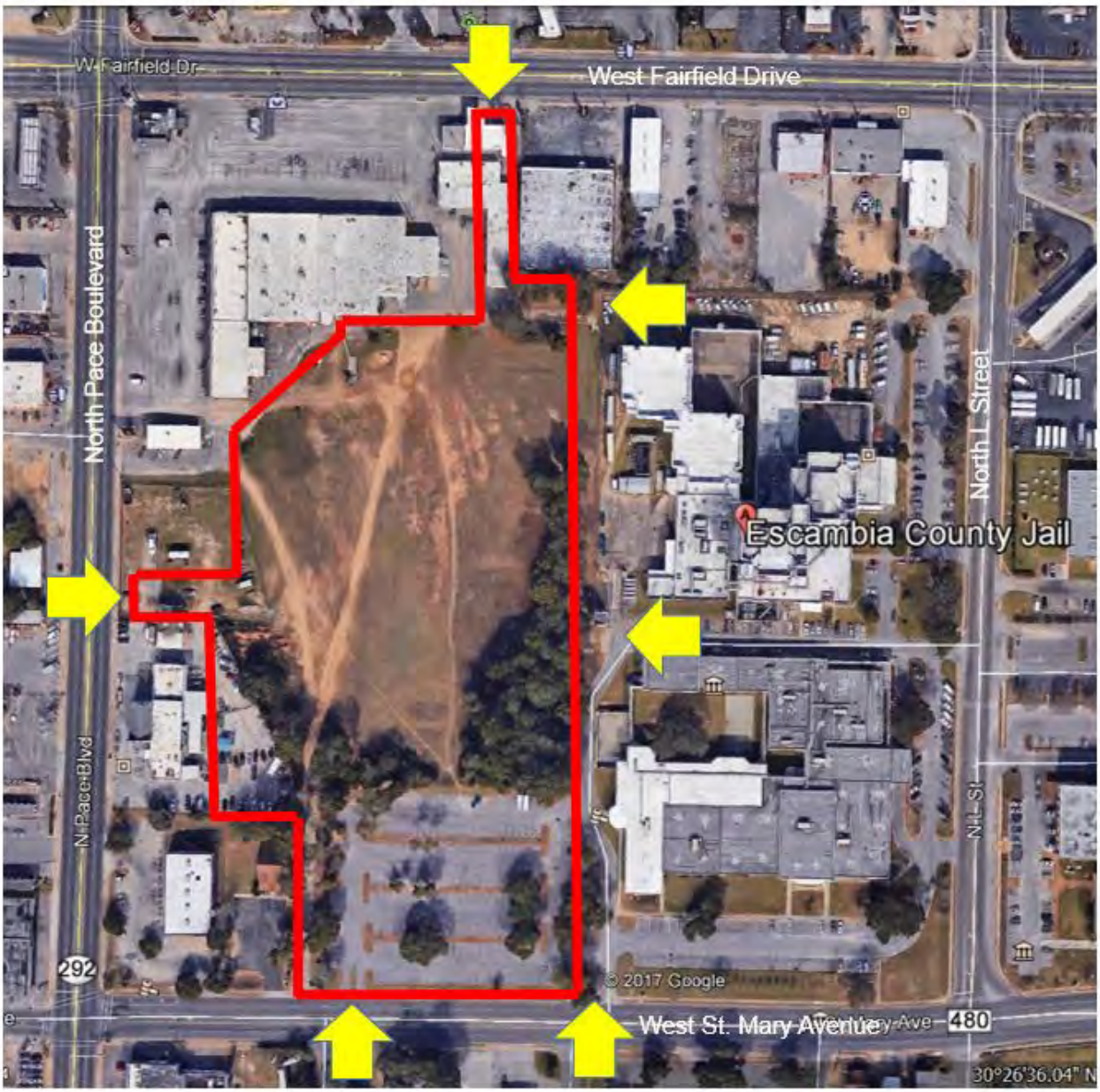
**CRITICAL ISSUES:**

From our review of the requirements of the Design Criteria Package, we identified critical issues that must be addressed in the development of the architectural design. Among those issues are:

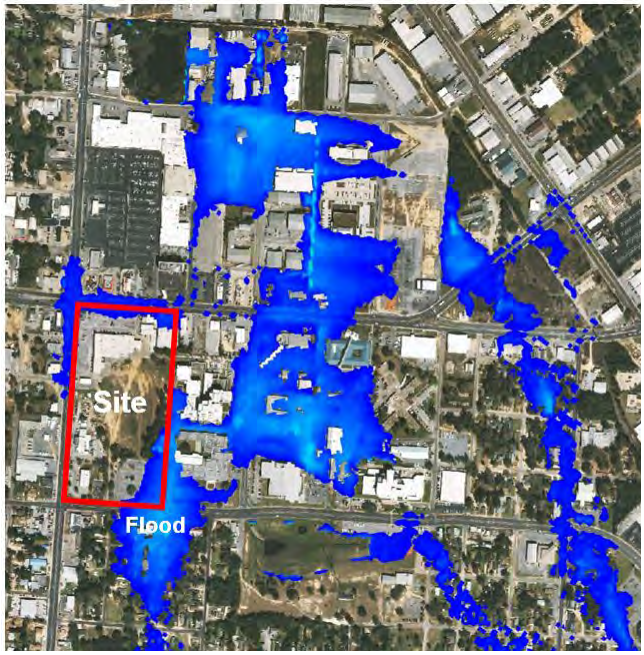
**Size Limitation of the Site:**

Due to the size of the site, accommodating the requirements of the project will require a vertical jail. There is not sufficient land area for a single-story design. This condition will necessitate the stacking of jail functions. Stacking configurations should be limited to the stacking of compatible functions such as housing to minimize lower floor water damage from inmate toilet overflow and to provide safe and efficient vertical movement for inmates and staff.

**Site Access:**
The site is bordered by West Fairfield Drive on the north, North Pace Boulevard on the west, and West St. Mary Avenue on the south, and by the existing Escambia County Jail on the east. East of the Escambia County Jail is North L Street. West Fairfield Drive and North Pace Boulevard are primary arteries with West Fairfield Drive connecting West Pensacola to Interstate 110 east of the jail and North Pace Boulevard connecting North Pensacola and the jail to the downtown business district. West St. Mary Avenue and North L Street are secondary arteries primarily serving North Pensacola. Public access from major arteries is important in civic buildings. The master plan calls for the future development of retail space along most of the frontage of West Fairfield Drive and North Pace Boulevard, significantly limiting access from those streets. This requirement will significantly impact site access and onsite circulation.



**Site Drainage and Water Management:**
The site is subject to periodic flooding. Surface and subsurface water management systems will be required. This requirement exacerbates the problem of limited space on a restricted site. Efficiently designed surface water management systems necessitate location at the lowest elevation of the site. This condition will have a major impact on site design and building placement.




**Future Bed Additions:**
The building program calls for the future addition of beds. Based on the limited size of the site this goal may require stacking of the future beds on top of the first phase housing. This requirement will influence the placement of the building on the site.

**Parking Requirements:**
A total of 261 parking spaces is required for the project. This requirement specifies the type of vehicle and its location relative to building functional components. Parking for the adjacent Juvenile Justice Center is currently located on the project site. In addition to the 261 cars required for the Phase I jail, half of the Juvenile Justice Center parking spaces are required to remain after completion of Phase I. These requirements will have a major impact on the location of building components and the overall parking design.

**Development of New Retail Buildings at the Property Edge:**
The project program calls for a Phase II development of new retail buildings at the edge of the property line that will face most of West Pace Boulevard and a portion of Fairfield Drive. Parking for this development is to be located on the east and south sides of these buildings respectively. The result of this master plan further restricts the building site for the jail and will significantly influence building and parking placement.

**Connection to Existing Jail:**
At the completion of the Phase I development of the new jail, the existing jail will remain operational. Both the new and existing jails will house inmates in a secure environment requiring a secure

connection between the two buildings. To provide an efficient, secure, and cost effective connection, the point of entry at the new and existing jails for this connection must be proximate. This condition will have a major impact on the secure portion of the new jail.

**Service Location at Existing Jail:**
The main jail service yard is located west of the existing jail and accessed from the existing service drives connecting to St. Mary Avenue and North L Street. The existing service yard is the primary secure service point for the existing jail and is secured by security fencing and controlled vehicular gates. A secure common service yard for both the existing and the new jails will substantially aid in the staff efficient management of deliveries. This arrangement suggests the optimal location of the service function of the new jail.

**Stacking of Housing Units**
In a multi-story jail, housing is usually stacked by locating housing units on top of each other. This simplifies the structural support and the gravity plumbing system serving cells. Often inmates will stop up toilets causing flooding of the floor beneath. Therefore, it is unwise to locate functions critical to water damage beneath cells. This arrangement will have a major impact on the layout of the building, especially the vertical alignment of various functional components.

**Separation of Inmate Types**
There are numerous inmate types housed in the new jail. Among those are a variety of differing custody levels including: male adults, female adults, and juvenile offenders of both sexes. It is good practice to separate adult male and female offenders to control cross viewing in housing units. It is also good practice, and in some cases required by statutes, to separate adult and juvenile offenders to control both cross viewing and also sound communication. This requirement makes the movement of juveniles throughout the jail difficult to manage and can dictate the location of juvenile processing and housing components.

**RFP CONCEPT DESIGN**
The Design Criteria Package contains a conceptual site development plan, conceptual floor plans, and security drawings, as well as other graphic materials. We will refer to these documents in this narrative as the **RFP Concept Design**. We will refer to the design proposed by our team in this narrative as the **DBE Proposed Design.** It is understood that the RFP Concept Design is for guide purposes only; however, it is helpful to our design team as a graphic illustration of the owner's intent of the building program. It is also respectfully understood that many important decisions went into the preparation of the RFP Concept Design and that it represents substantial effort on part of the entire jail planning team. Our approach in developing the DBE Proposed Design is to analyze the RFP Concept Design, relate it to the project requirements, and to investigate improvement opportunities while retaining the core of the important and positive decisions already made.

The RFP Concept Design responds well to the project requirements and solves most of the critical issues through a variety of innovative design features. Among the features contained in the RFP Concept Design retained by the DBE Proposed Design include the following:

**Site**

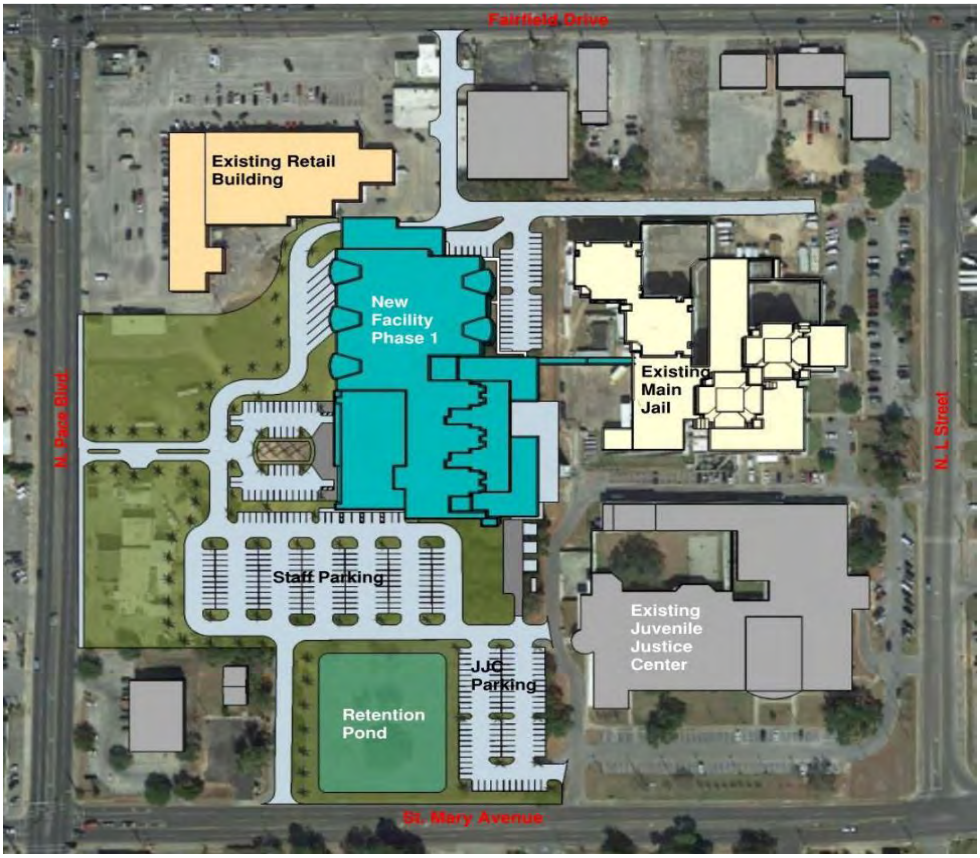
- The main access is from a major street, providing a formal site entrance for the public and emphasizing the public entrance to the jail. This feature promotes ease of way finding and creates a civil space that reflects seriousness of purpose.
- Service and staff access is provided from secondary streets currently used for similar access to the

existing jail.

- The site layout responds well to the requirement for future retail construction, allocating adequate space for building and parking construction.
- The new building is well positioned near the connecting point at the existing jail for easy access and sharing of service functions.
- Parking is arranged for good access to associated building functions.
- Provisions are made for surface water management.
- Future bed addition is adjacent to the Phase I building for ease of future interior circulation.

**Building**

- The elongated rectangle shape of the building responds well to the need for onsite parking and other required site development components.
- The building is located to allow sharing of the service function at the existing jail and to provide proximate access to the existing jail connection point. Service and secure components inside the building are situated to facilitate these features.
- Building access for public, staff, inmate, and service is located at separate points at the building periphery and is related to associated parking and vehicular access. This design provides for the separation of non-compatible circulation paths such as inmate vehicles interfacing public, etc.
- The building is multi-story to conserve site surface for other site development.
- Housing is concentrated near the processing component, allowing for compact movement of inmates and promoting staffing efficiency.
- The building is zoned to separate secure and non-secure functional components, promoting efficient inmate management and allowing ease of staff movement in and out of the building.
- Circulation and building systems are arranged to allow for efficient and cost effective bed additions.



## IMPROVEMENT OPPORTUNITIES

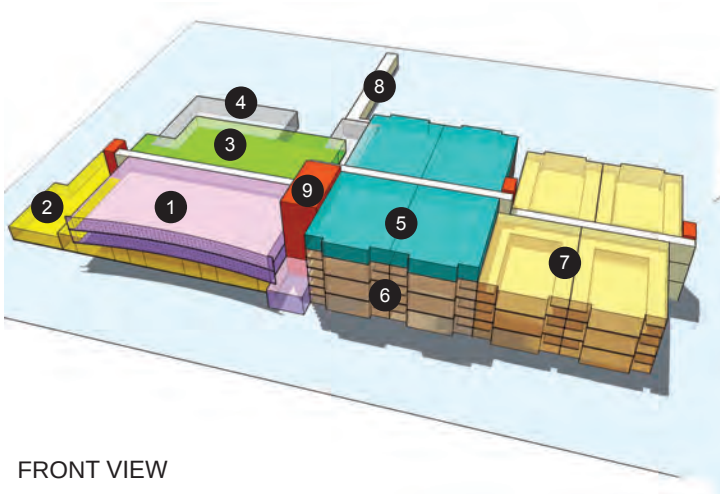
In the review of the RFP Concept Design, our team has identified other design features that provide opportunities for improvement. The DBE Proposed Design incorporates these improvement features. See **Proposed Design Solution** for a description of how those features are integrated into our proposed design. Among those are the following:

- **Reduction in Building Volume**
  The DBE Proposed Design reduces the volume of the building by over 940,000 cubic feet.
- **Relocation of Juvenile Housing**
  The DBE Proposed Design relocates juvenile housing for improved juvenile/adult isolation, toilet flooding potential, and a decrease in exterior walls.
- **Relocation of Surface Water Management System**
  The DBE Proposed Design relocates the surface water management system to the lowest elevation of the site.
- **Addition of Central Stair**
  The DBE Proposed Design adds a stair at housing floor for enhanced staff circulation and a decrease in response times.
- **Relocation of Large Training Room and Large Muster Room**
  The DBE Proposed Design locates the Large Muster Room to an exterior wall for natural lighting.

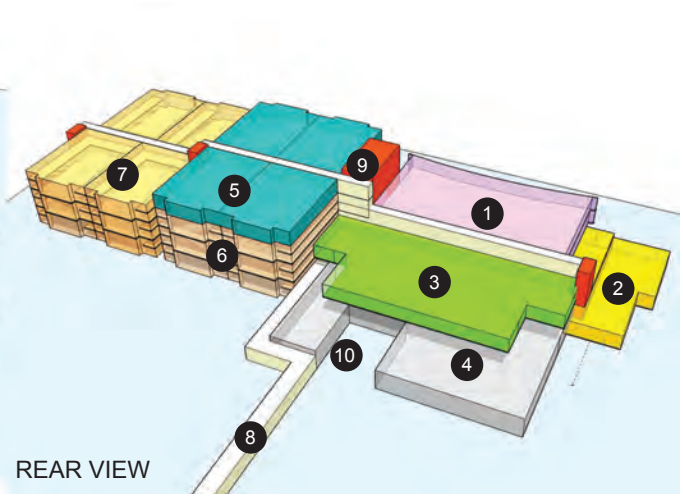
### Development of Multiple Designs

The DBE design team developed multiple designs to address the opportunities for improving the RFP Concept Design. A description of the advantages and disadvantages of these designs follows.

### DESIGN A




FRONT VIEW




REAR VIEW

1. ADMINISTRATION
2. ADMISSIONS/ CLASSIFICATION/ RELEASE
3. MEDICAL HEALTH SERVICES
4. BUILDING SERVICES
5. JUVENILE HOUSING
6. ADULT HOUSING
7. FUTURE HOUSING
8. CONNECTION TO EXISTING JAIL
9. VERTICAL CIRCULATION
10. LOADING DOCK

Design A addresses the issue of the location of housing units above non-housing functions. It provides the following features:

- All housing units extend to the ground.
- All housing units including juvenile housing are in one compact housing tower.
- Intake is in the same location as the RFP design.
- The staff function is on the second floor above Intake.
- The lobby is located on the first floor.
- Administration is on the third level above the staff function.
- Juvenile housing in on the fourth floor of the housing tower.
- Building support functions such as maintenance, warehouse, food service, and laundry service are moved to a new location to make room for housing.
- Future housing is located adjacent to and south of the housing tower.

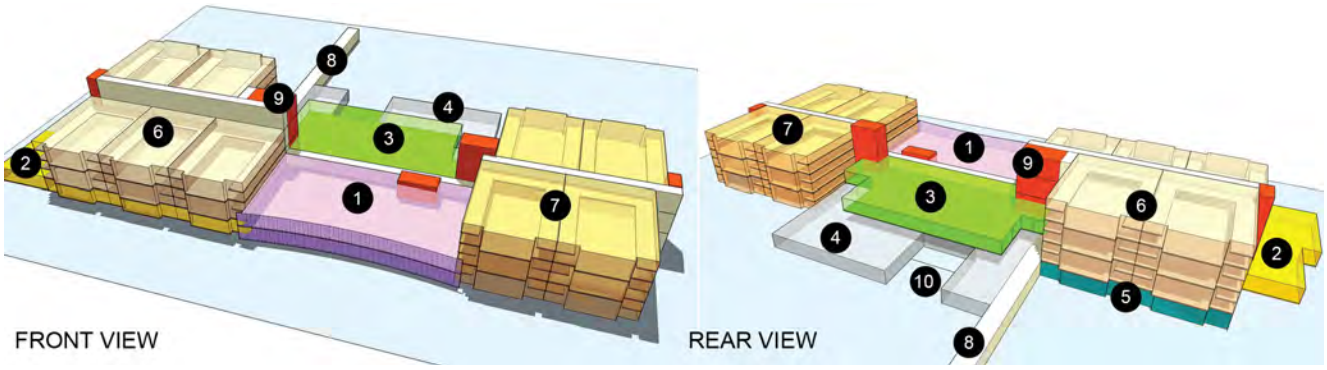
**Advantages**

- Retains the basic functional adjacencies and programmatic requirements of the RFP design except for administration.
- Housing is located above other housing, addressing potential flooding and maintenance issues. This location also simplifies the structural system for housing, allowing the stacking of common structural elements and eliminating expensive horizontal load transfer beams.
- Future housing is adjacent to Phase I housing, providing a more compact and unified future housing component. This simplifies vertical transportation and improves staff response time.

**Disadvantages**

- To provide site surface area for housing the support function (warehouse, maintenance, food service, laundry service and central plant) must be moved to the north side of the new-existing connection. The new service yard must be adjacent to the new support function. The result of this move is the isolation of the new service yard from the service yard of the existing jail. A substantial elevation of the new-existing connector would be required to reconnect the two yards. This feature, requiring truck clearance, elevators, and stairs is not cost effective when compared to the advantage gained from bringing housing to ground.
- The administrative function is located on the third floor remote from the public lobby.

## DESIGN B




1. ADMINISTRATION
2. ADMISSIONS/ CLASSIFICATION/ RELEASE
3. MEDICAL HEALTH SERVICES
4. BUILDING SERVICES
5. JUVENILE HOUSING
6. ADULT HOUSING
7. FUTURE HOUSING
8. CONNECTION TO EXISTING JAIL
9. VERTICAL CIRCULATION
10. LOADING DOCK

Design B addresses the issues of reduction in building volume, relocation of juvenile housing, relocation of surface water management system, improved vertical circulation, and enhanced staff space. It provides the following features:

- Mechanical mezzanines serving juvenile housing are relocated to the first floor near Intake.
- Mechanical mezzanines serving medical, administration, and staff support are relocated to a penthouse on the roof at the second floor above staff support and medical.
- Interstitial space over intake, administration, staff support, building support, and medical is reduced by 6 feet with associated reductions to exterior walls.
- Juvenile housing is relocated to the first floor near intake.
- An additional stair is located at all housing floors.
- The surface water management system is relocated to the lowest elevation of the site.
- The Large Muster Room is relocated to the west window wall for enhanced natural light.
- Future housing is located adjacent to and south of the building.

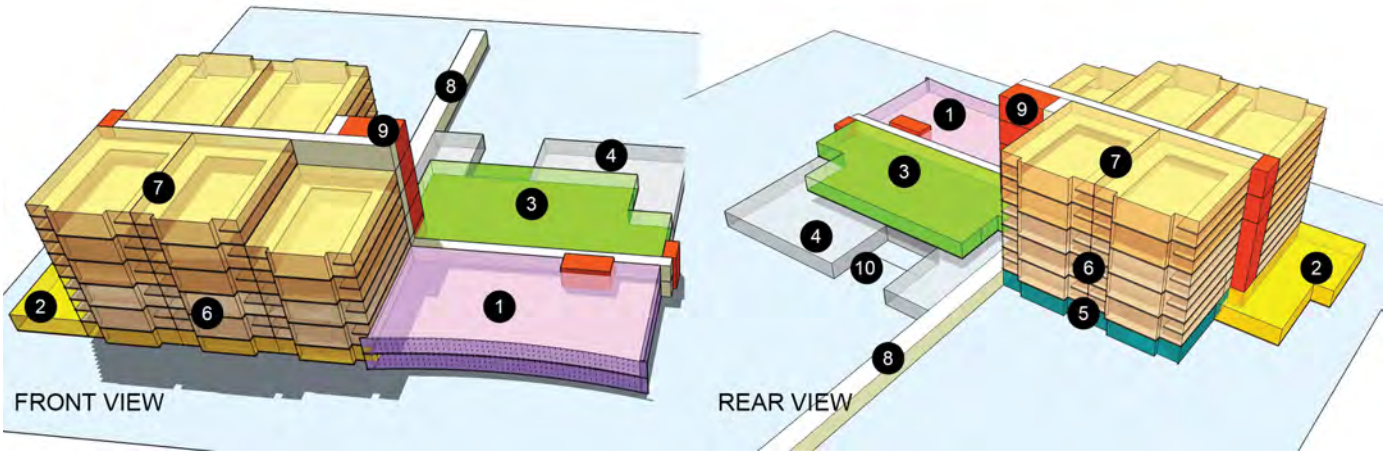
**Advantages**

- Retains the basic functional adjacencies and programmatic requirements of the RFP design.
- Removes over **940,800** cubic feet of unusable interstitial space. Associated with the reduction in the height of the interstitial space is a reduction of **13,120** square feet of exterior wall.
- Allows juvenile detainees to access the building without entering adult space.
- Juvenile housing is not located above non-housing functions.
- Prevents visual communication between juvenile sleeping rooms.
- Provides increased natural light in juvenile housing dayrooms.
- Provides maintenance access to juvenile plumbing fixtures without entering housing units.
- Additional stair at housing floors affords enhanced circulation and decreased response time.
- Location of surface water management system at lowest elevation on the site provides substantial reduction of site cost.
- Staff support environment is enhanced by the introduction of natural light in the Large Muster Room.

**Disadvantages**

- Housing units are located over non-housing functions in the case of the 8-person dormitory housing units over the Intake area. While this configuration is preferable to housing over administration space or electrical rooms, for example, it may still present maintenance problems with flooding of inmate toilet rooms.
- Reduced natural light in juvenile sleeping rooms.
- Future bed addition will require the demolition of site work constructed in Phase I.

## Design B1




1. ADMINISTRATION
2. ADMISSIONS/ CLASSIFICATION/ RELEASE
3. MEDICAL HEALTH SERVICES
4. BUILDING SERVICES
5. JUVENILE HOUSING
6. ADULT HOUSING
7. FUTURE HOUSING
8. CONNECTION TO EXISTING JAIL
9. VERTICAL CIRCULATION
10. LOADING DOCK

Design B1 is identical to Design B except for the location of future housing. It provides the following alternative features:

- Instead of locating the future housing units to the south of the building, it places the addition of beds on top of Phase I housing in a high-rise configuration.

**Advantages**

- Demolition of Phase I site work is not required.
- Phase I staff parking can remain near staff building entrance in Phase II.
- At the completion of Phase II, all housing will be in a single compact tower.
- Foundations for the future beds are not required.
- Phase II bed additions are more cost effective.

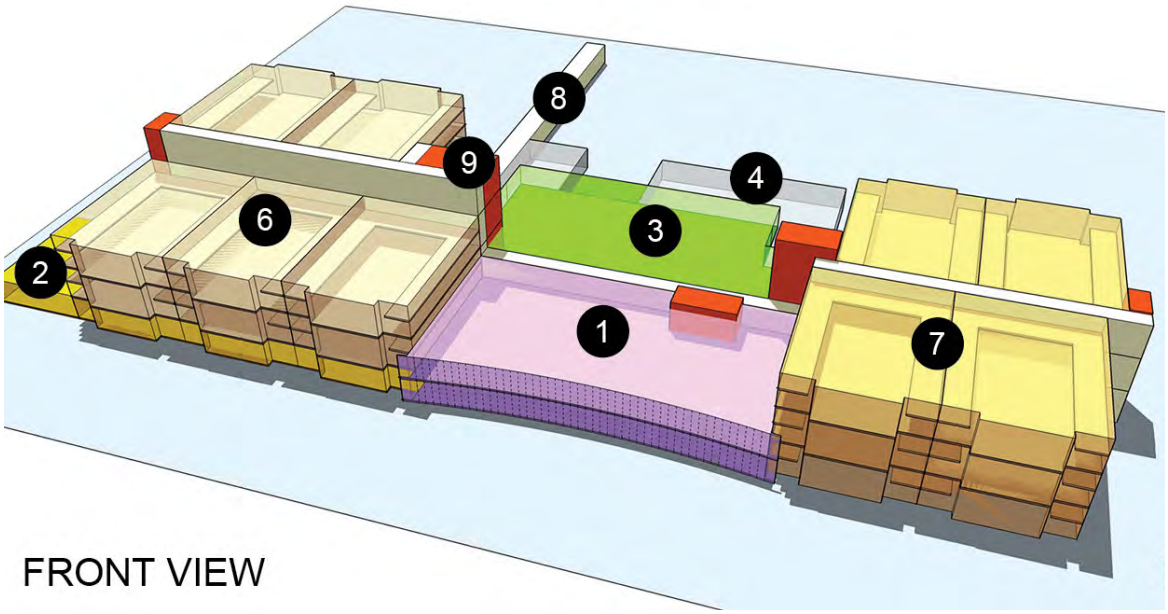
**Disadvantages**

- Initial cost premium for foundations to support future tower addition.
- Initial cost premium for building construction upgrades required by high-rise code designation.

**Recommendation**

The Design Build Entity has selected **Design B** as the DBE Proposed Design for the following reasons discussed in detail above:

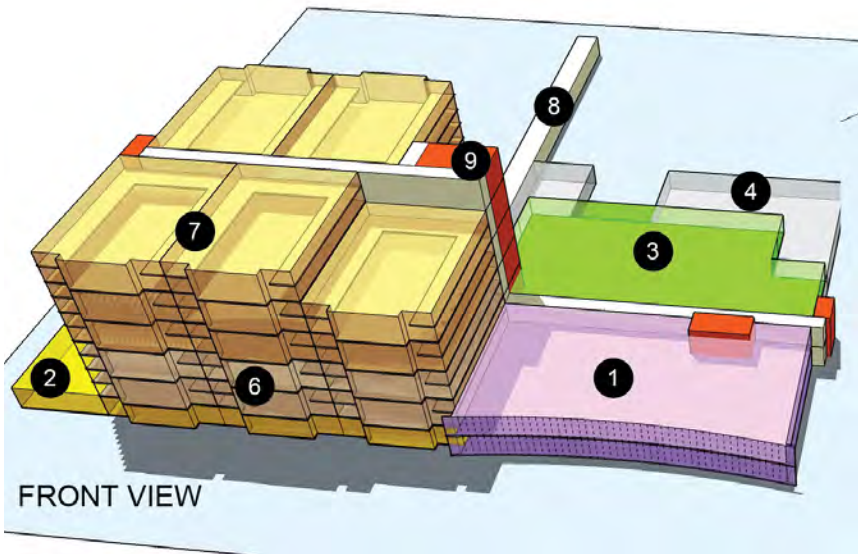
1. It provides all the advantages contained in the RFP design.
2. It reduces cost by deleting unusable interior portions of the building and minimizing exterior walls.
3. It minimizes adult juvenile interface.
4. It provides a more cost effective site water management solution.
5. It improves interior staff circulation at inmate housing.
6. It enhances the staff environment.




1. ADMINISTRATION
2. ADMISSIONS/ CLASSIFICATION/ RELEASE
3. MEDICAL HEALTH SERVICES
4. BUILDING SERVICES
5. JUVENILE HOUSING
6. ADULT HOUSING
7. FUTURE HOUSING
8. CONNECTION TO EXISTING JAIL
9. VERTICAL CIRCULATION
10. LOADING DOCK

DBE PROPOSED DESIGN

Design B1 should be considered as an alternative for future additions and should be analyzed in further detail during the Phase I design process.



**DBE Proposed Design Description**

A description of the DBE Proposed Design is as follows:

General:

Features of the DBE Proposed Design and the RFP Concept Design are identical except for the improvement features. See the following diagrams explaining the improvement features:

**REDUCTION OF BUILDING VOLUME**

In the RFP Concept Design, mechanical mezzanines are located on the tier levels between all floors. To provide clearance for a mezzanine, the required floor to floor distance for the entire floor results in space above the ceiling that is substantially more than is necessary. This results in the construction of a substantial amount of building volume that is not used. The relocation of some of the mechanical mezzanines, especially at the two-story portion of the building, will result in lowering the floor to floor distance and delete the unused building volume.

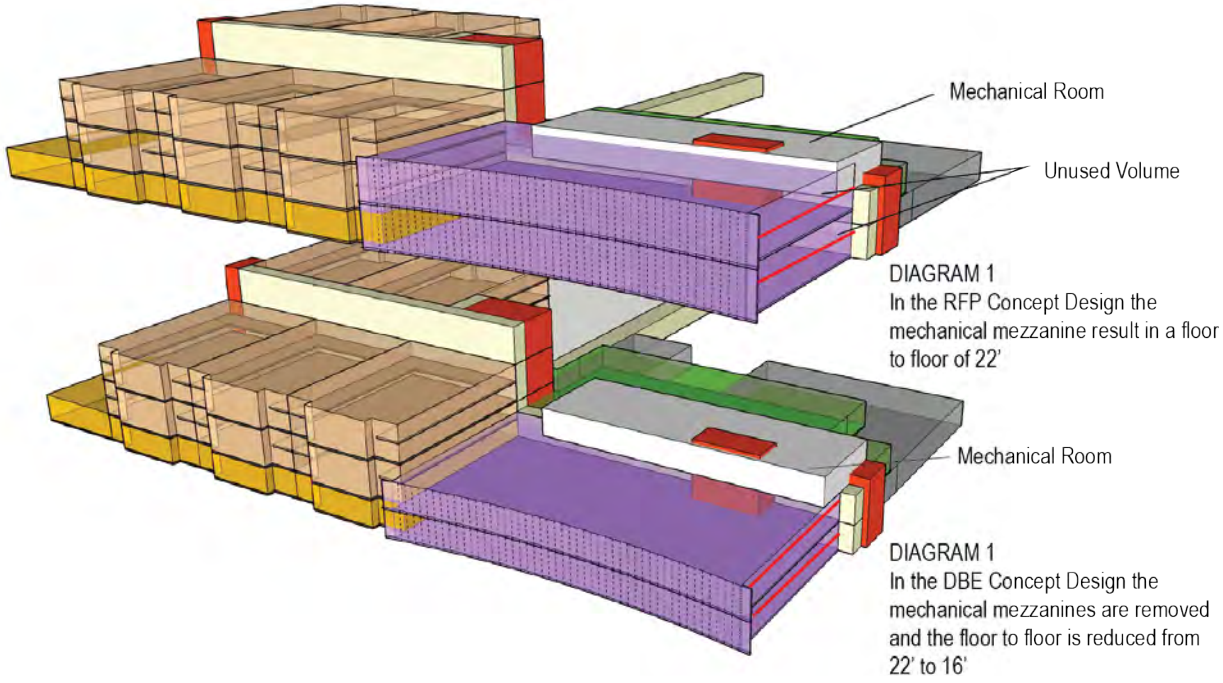



DIAGRAM 1
In the RFP Concept Design the mechanical mezzanine result in a floor to floor of 22'

DIAGRAM 1
In the DBE Concept Design the mechanical mezzanines are removed and the floor to floor is reduced from 22' to 16'

**FIRST FLOOR**

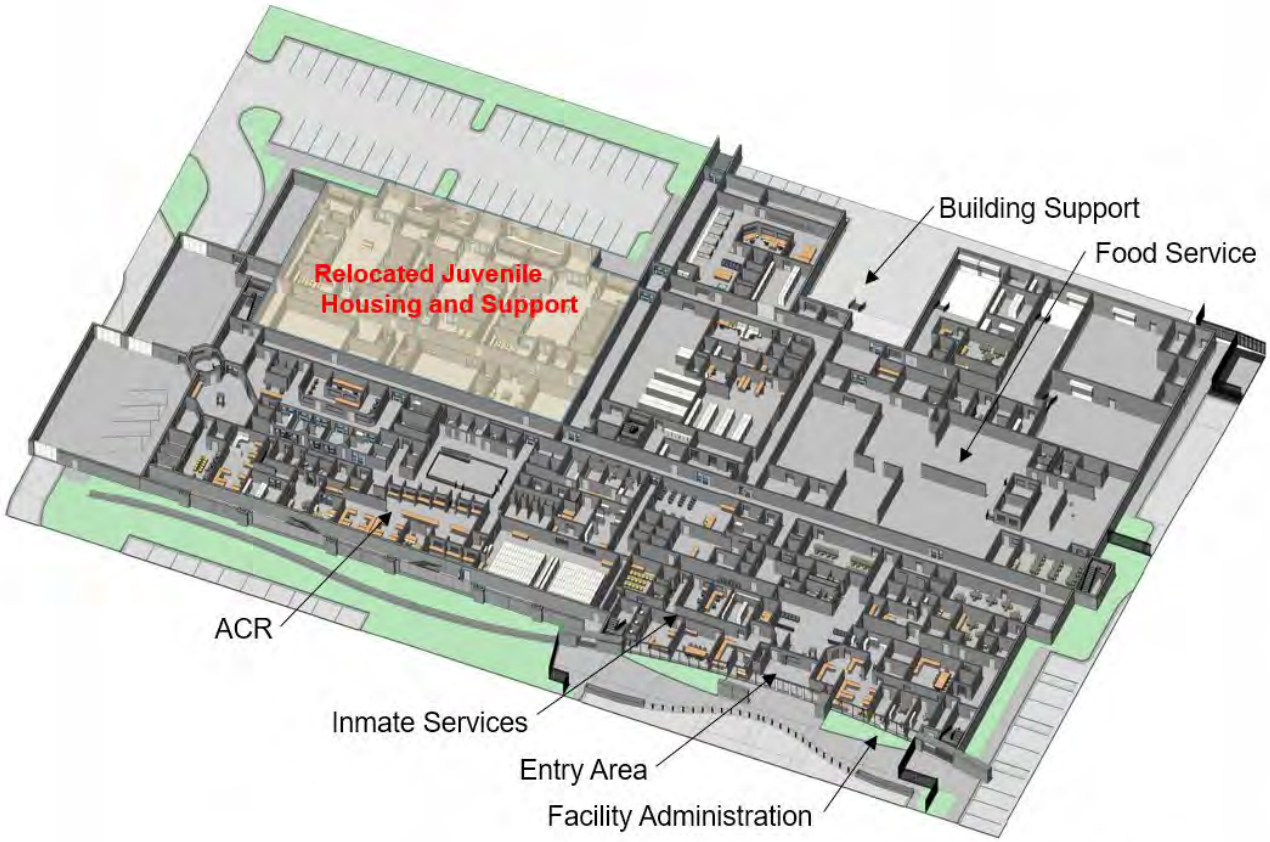
The reduction in volume is possible for the entire First Floor for a total of **647,800** cubic feet.

**SECOND FLOOR**

The reduction in volume is possible for a portion of the Second Floor for a total of **299,000** cubic feet.

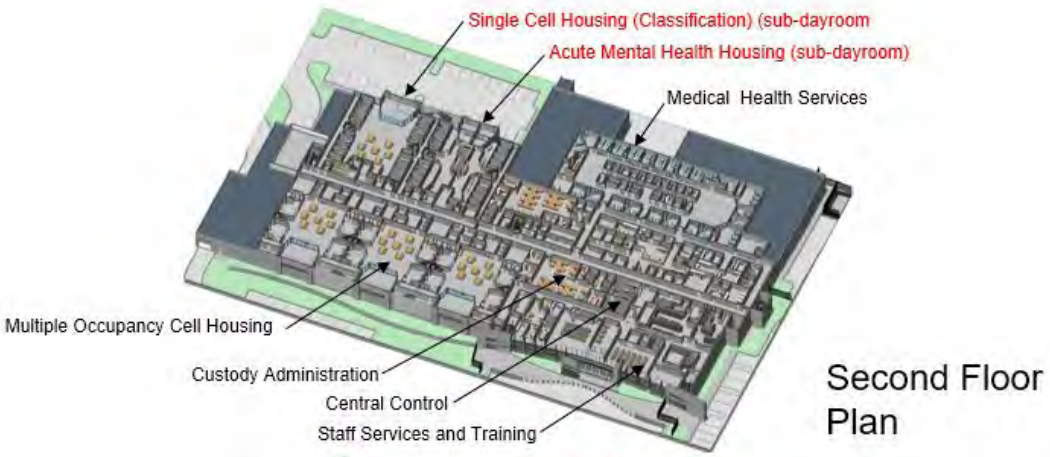
**RELOCATION OF JUVENILE HOUSING**

In the RFP Concept Design, juvenile housing is located on the 3rd floor. This location requires the movement of juveniles through adult corridors. Sight and sound separation between adult and juvenile detainees is required by the Florida Model Jail Standards. To provide this separation, adults would need to be removed from any corridor during juvenile movement. In the RFP Concept Design, the juvenile housing unit is located above the medical unit. Juveniles are prone to acting out and often cause flooding at their sleeping rooms. This location creates a potential maintenance and disruption issue for the medical component. The relocation of the juvenile housing unit closer to processing and on the first floor will address these issues. It would also provide the opportunities for juveniles to enter the jail without entering adult inmate occupied areas.



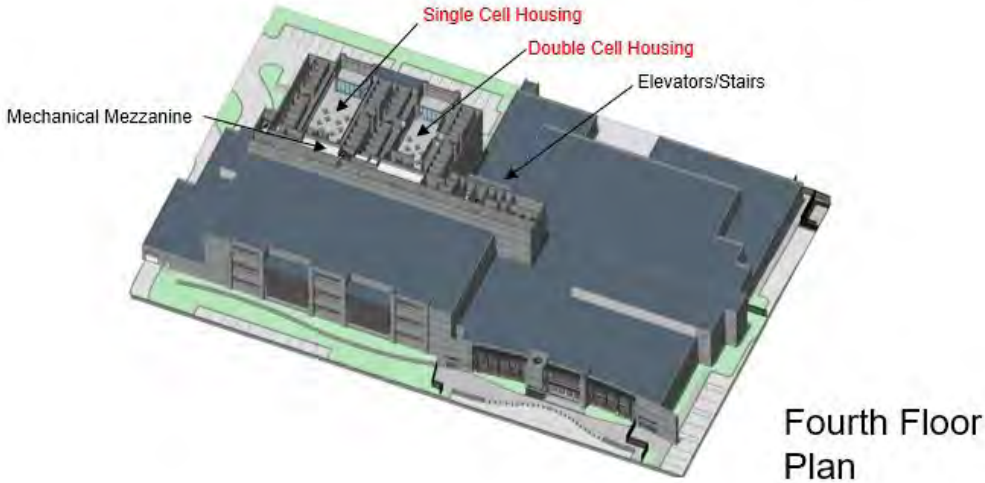

First Floor Plan

**HOUSING REDISTRIBUTION -** After location of juvenile housing on the first floor, the remaining housing was redistributed as below.




Second Floor Plan

Third Floor Plan




Fourth Floor Plan

Natural light is particularly important in juvenile housing units. Juveniles are more prone to acting out and tend to be more sensitive to their environment than adults. Case studies show that access to natural light has a calming effect and aids in inmate management. The DBE Proposed Design provides increased natural lighting in dayrooms. It also moves the windows from the rear of the sleeping room to the front. This feature, combined with the relocation of the plumbing chase from the front of the sleeping room to the rear of the sleeping room, has a number of advantages over the configuration in the RFP Concept Design.

- It allows for larger windows, which can capture more borrowed light from the dayroom.
- It prevents viewing between sleeping rooms.
- It allows maintenance of plumbing fixtures by maintenance staff without entering the housing unit.

JUVENILE HOUSING UNITS First Floor Plan

**RELOCATION OF SURFACE WATER MANAGEMENT SYSTEM**

In the RFP Concept Design, the surface water management system is in the southwestern portion of the site, west of the existing Juvenile Justice Center parking lot. This zone is not at the lowest elevation of the site. This results in increased cost of the surface and subsurface water management systems. Relocation to the southeastern corner of the site directly adjacent to the existing Juvenile Justice Center will address this issue.

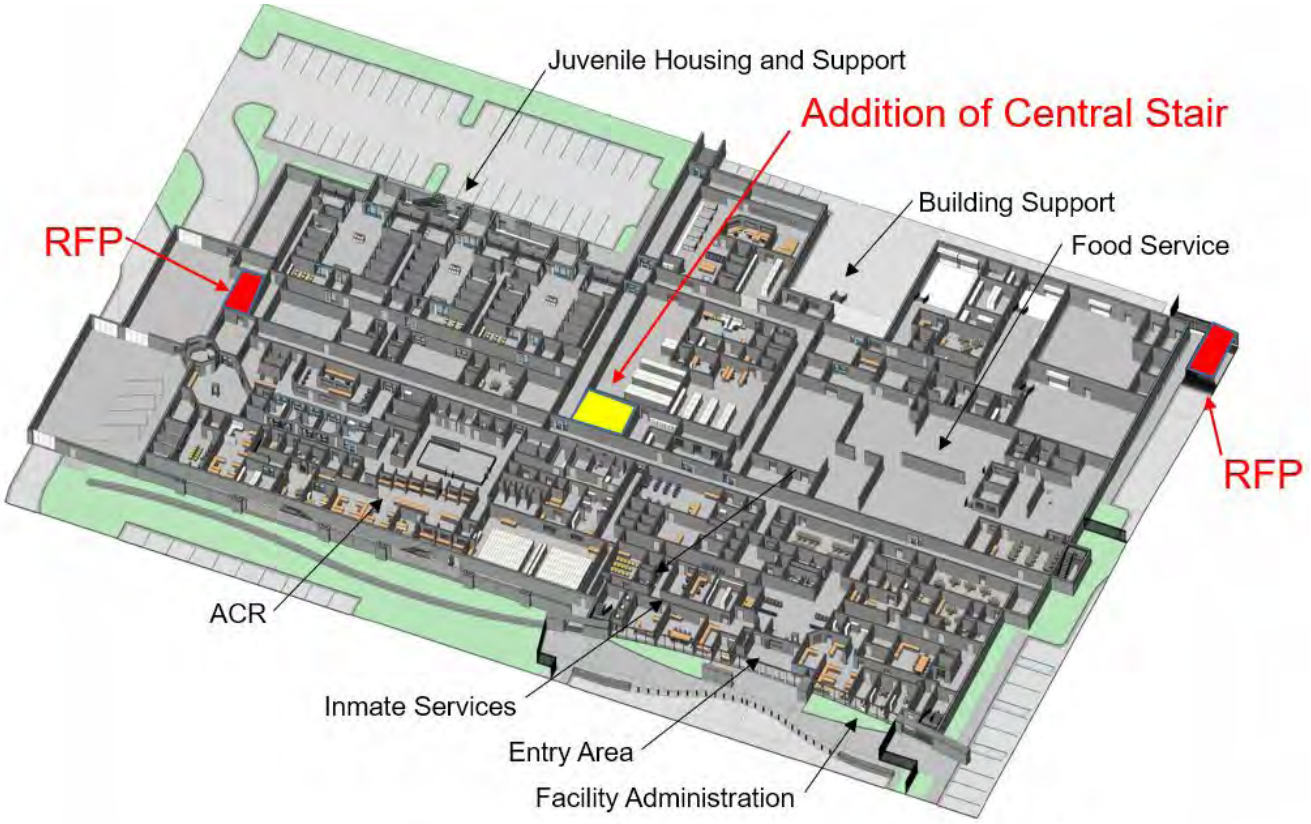
**SURFACE WATER MANAGEMENT SYSTEM SITE PLAN**

DESIGN RFP LOCATION

DBE PROPOSED
DESIGN LOCATION

**ADDITION OF CENTRAL STAIR**

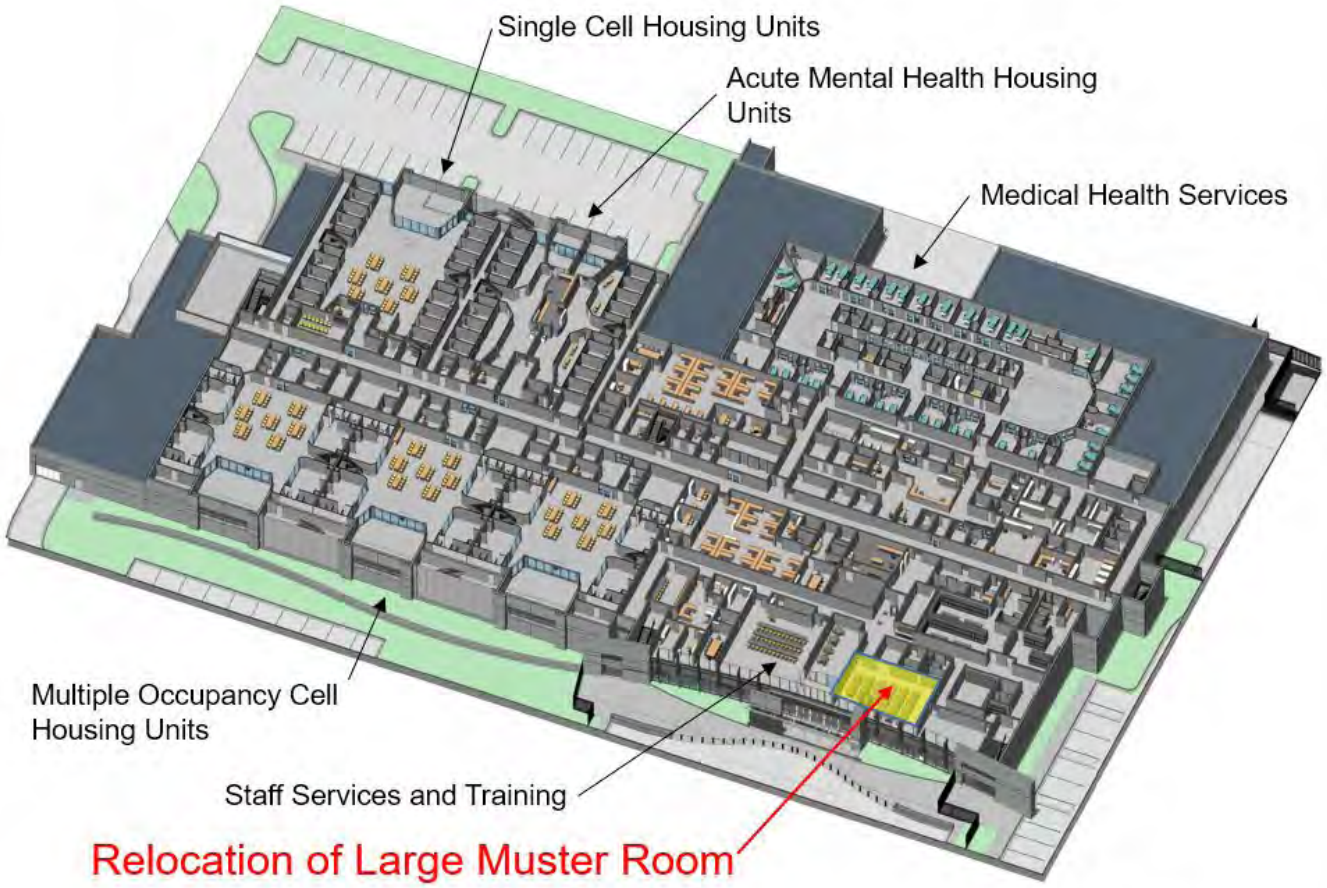
In the RFP Conceptual Design, stairs serving the detention portion of the building are located at the northern and southern ends of each floor. Although elevators serve these floors and will be used for normal floor to floor circulation, staff often use stairs to shorten incident response times. The northern stair is near the adult housing floors. The southern stair is more than 400 feet distant. Adding an additional stair near the adult housing will provide an additional staff access from floor to floor with a substantial decrease in response time and will decrease the length of travel for fire exiting.




First Floor Plan

**RELOCATION OF LARGE MUSTER ROOM**

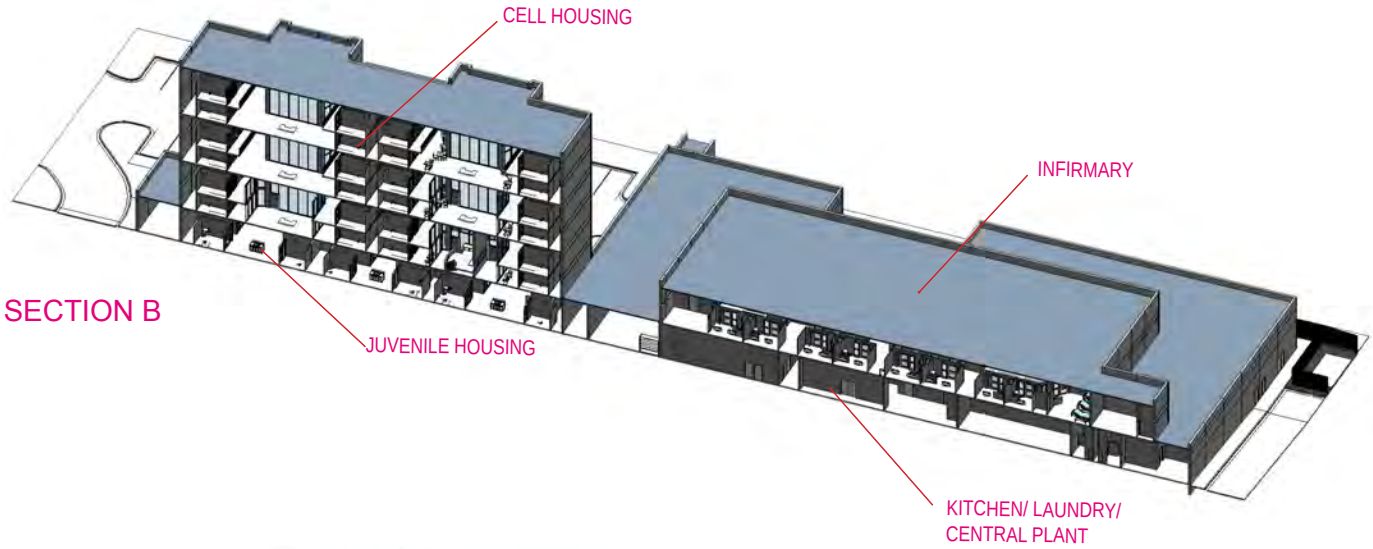
In the RFP Conceptual Design, the staff lockers and toilets are located on an exterior wall. Typically, these functions do not require natural light. The large muster room is in the interior of the building. Although not specifically required by the building program, natural light will enhance the staff environment for large group assembly. Interchanging the location of these two functions will address this issue. It will further combine all training functions and unify the training component.



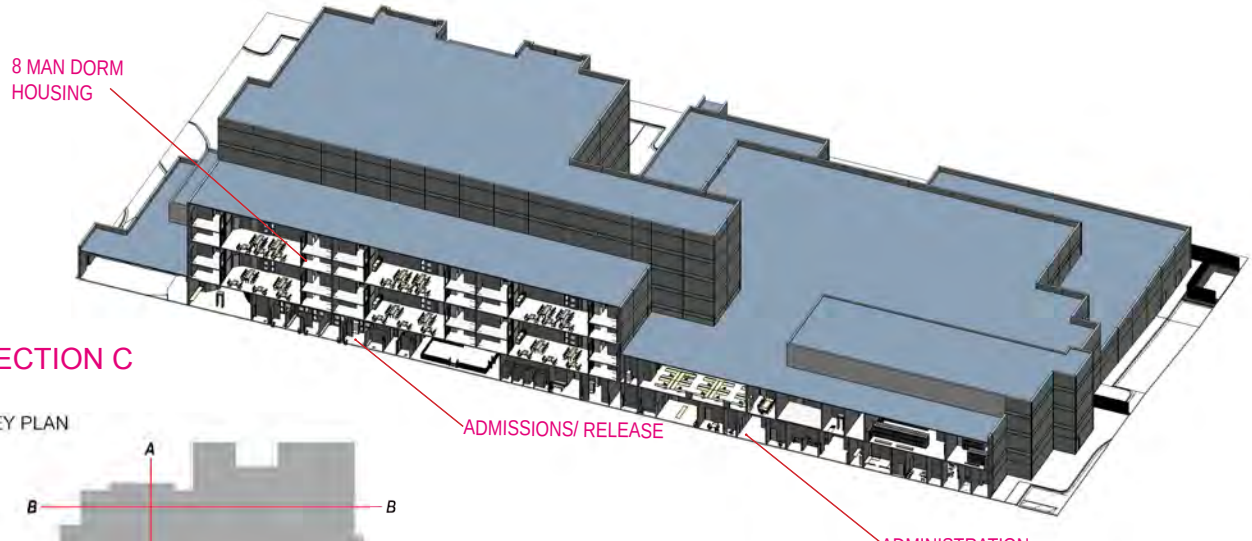

Second Floor Plan

## BUILDING SECTIONS

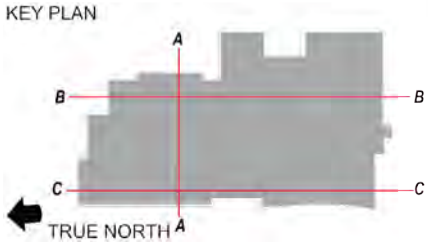
SECTION A




SECTION B




SECTION C



**SITE PLAN**

W FAIRFIELD DR
STAFF ENTRANCE
BUS PARKING
LANDSCAPING PROVIDES A VISUAL BARRIER AT SITE EDGE
STAFF PARKING
MAJOR ENTRANCE
PUBLIC PARKING
N PACE BLVD
STAFF PARKING
STAFF PARKING
JUVENILE JUSTICE CENTER PARKING
SURFACE WATER MANAGEMENT SYSTEM
LANDSCAPING PROVIDES A VISUAL BARRIER AT SITE EDGE
W ST MARY AVE

**Building Image:**
A jail is a complicated building type.

- It must be secure.
- It must be easy to maintain.
- It must be open to the public.
- It must be long lasting.
- It is a symbol of justice and accountability for the community.
- It is a small city where people live.
- It is a place where people work.

The image that a jail projects to the community is likewise complicated. It must exhibit an air of seriousness, fairness, strength and civil stability. But it also must have an open and friendly appearance associated with easy public access. The DBE Proposed design is sensitive to these attributes. The housing portion communicates seriousness without being overbearing. The public portion is welcoming and normative. The intent of the architectural presence is to reflect the values of Escambia County and to be a catalyst of true public architecture that represents strength and vitality.

**Context:**
In establishing the appropriate architectural "look", we examined some of the County's significant "civic" buildings and the surrounding context to ascertain proper materials, rhythm and scale. In particular, the Blanchard Judicial Building, adorned in architectural precast concrete and ribbons of glazing, consists of concrete masses that are punctuated and arranged to appeal to human scale. The Sheriff's Office, cladded in like fashion – architectural precast concrete, is highlighted by a 2-story colonnade – a strong civic gesture.

A jail must relate well to its surroundings. It should be a welcomed addition to the civic fabric of the community and a good neighbor. The site for the Escambia County Jail is in a transitional area. As such there are buildings that are at the end of life as well as newer buildings. The DBE Proposed Design will act as a rejuvenating influence for the replacement of older buildings and a good visual neighbor to those buildings that will remain.

**Massing:**
The massing of a multi-story jail can be overwhelming. By its size and security function, it can be austere, overpowering and lacking in human scale. The DBE Proposed design addresses these issues in several ways:

- The facades of the building element containing the housing function are faceted with multiple offsets that reduce the massive scale to more easily understood forms.
- The public access portion of the building is articulated as a lower two story building mass and

separated from the housing portion. The floor to floor distance at the public portion of the building has been reduced as compared to the housing portion resulting in improved human scale. The result is a more inviting arrival space for the public.

**Use of Materials:**

The selection of the appropriate materials for the building exterior is the most important factor in articulating the building image. Materials should be long lasting and easy to maintain. Colors should be muted with moderate detail articulation. Materials at the housing unit should express strength and security. Materials at the public access should express openness and transparency and should reflect a more normal building type. We have selected precast concrete panels for the major exterior building material. The finish of the concrete is a light sand blast surface requiring little maintenance. We have selected a window wall glazing system for the public access portion of the façade. It has the appearance of a normal office building with tinted glass and spandrel panels.

**Compliance with Design Criteria**
All requirements of the Design Criteria Package relating to architecture are met by the DBE Proposed Design with the following exceptions:

2A RFP Concept Design
All requirements are met. (See enhancements above.)
2B Design Narratives
All requirements are met.
2C Performance Specifications
All requirements are met.
2D Facility Program
See Building Program Report for space deviations.
2E Room Data Sheets
All requirements are met.

***2. Building Program Report: Spreadsheet format indicating all proposed program spaces with both net and gross square footages as compared to the required building program and gross square footages of the Project. Deviations from the required building program gross square footages are to be clearly indicated with % Delta. The DBE will be allowed to deviate only a maximum of 10% net area per space and only a 5% deviation for the overall program component. In some instances, the area listed for an individual room may be a code minimum for ADA compliance or a mandated minimum area to comply with Florida Model Jail Standards.***

**Building Program Report**
The Building Program Report is provided in ***Section C - Appendix A***. The report is formatted as a spreadsheet. It includes net area for each space in the DBE Proposed Design, the corresponding net area for the same space in the Facility Program and the difference between these values expressed as a number and a percentage difference. The gross area of each space is not included as the elements such as building circulation, mechanical and electrical spaces that comprises gross building area are located throughout the building and not assigned to specific spaces. For the same reason, gross area for functional components is not included. Instead, the report sums the total gross area of the DBE Proposed Design and compares that number to the total gross area in the Facility Program.

**Summary**

**Net area of program spaces:**
There are NO spaces in the DBE Proposed Design that provide LESS than 90% of the Facility Program net space area. There are, however, SOME spaces in the Proposed Design that provide MORE than 10% of the Facility Program net space area as indicated on the Building Program and the following floor plans shown in green. Spaces shown in blue on the floor plans are within 10% of the Facility Program net area. Spaces shown in grey and white on the floor plans are component and building circulation.

**FIRST FLOOR**

- Entry Area: This component is larger due to an increase the size of the Entry Vestibule, an enhancement to public arrival space.
- Inmate Services and Programs: This component is larger due to enhanced staff offices and work area, in part a result of building image features.
- Laundry: This component is larger due to an increase in worker activity and break spaces.

**SECOND FLOOR**

- Custody Administration: This component is larger due to an enhanced work area for staff offices and Lieutenant's office.
- Single Cell Housing Units: These components are larger due to increased dayrooms required by the stacking of the Double Cell Housing Unit Dayroom above sized for 64 inmates rather than 32 inmates.

**THIRD FLOOR**

**FOURTH FLOOR**

- Single Cell Housing Units: These components are larger due to increased dayrooms required by the stacking of the Double Cell Housing Unit Dayroom above sized for 64 inmates rather than 32 inmates.

It should be noted that although the DBE Proposed Design exceeds 5% of the Facility Program in five of the twenty program components, it exceeds that requirement by only 0.8% when compared to the total net area of all of the components.

The total gross area of the DBE Proposed Design is 300,044 GSF as compared to 305,680 GSF in the Facility Program. Both areas exclude the connecting corridor to the existing jail.

The total net area of the DBE Proposed Design is 191,876 NSF as compared to 181,454 NSF in the Facility Program.

**Therefore, the DBE Proposed Design provides 9,873 NSF or 5.4% more useable space and 5,636 GSF or a 1.9% reduction in gross building area as compared to the Facility Program.**

***3. Additions to the County's issued Criteria Specifications are to be clearly noted. 8 ½" x 11" Format.***

***4. Prepare conceptual drawings that illustrate the character (design theme for the ECCF Project), including conceptual drawings and preliminary additional Voluntary Enhancements as necessary to describe the Architect's design intent.***

Please see *ISSUED FOR PROPOSAL DRAWING DOCUMENTS*.

***a. Site Plan: Overall site plan including the size and locations of the proposed elements, and all landscape, and hardscape (including parking), connection to existing jail facilities, access and security. Provide conceptual drawings to assure visual unity between areas, site components and building forms.***

Please see *ISSUED FOR PROPOSAL DRAWING DOCUMENTS*.

***b. Conceptual Floor Plans (for new construction): 1/16" = 1'-0" Scale (minimum) overall plans and 1/8" = 1'-0" scale zone/area plans of the proposed building elements. All rooms to have a room number that matches the corresponding number within the building program and indicates the program area and actual area within each room.***

Please see *ISSUED FOR PROPOSAL DRAWING DOCUMENTS*.

***c. Existing Building areas of renovation: Provide 1/8" = 1'-0" plans for all areas of the existing jail to be renovated to accommodate the connection to the new building and relocation of central control room controls.***

Please see *ISSUED FOR PROPOSAL DRAWING DOCUMENTS.*

***d. Enlarged Cell Plans: Large scale plans of each type of cell with all furnishings and equipment included. Include elevations for all interior walls.***

Please see *ISSUED FOR PROPOSAL DRAWING DOCUMENTS.*

***e. Enlarged Food Service Area: Large Scale plans indicating all proposed food service equipment.***

Please see *ISSUED FOR PROPOSAL DRAWING DOCUMENTS.*

***f. Building Elevations: Overall building elevations for all exposed faces of the structure.***

Please see *ISSUED FOR PROPOSAL DRAWING DOCUMENTS.*

***g. Building Sections: Overall building sections and wall sections to demonstrate the general exterior wall construction.***

Please see *ISSUED FOR PROPOSAL DRAWING DOCUMENTS.*

***h. Exterior view renderings: Provide a minimum of two high resolution color exterior renderings demonstrating the architectural character of the facility. One view must provide the perspective from the corner of Fairfield Street and Pace Blvd.***

Please see *ISSUED FOR PROPOSAL DRAWING DOCUMENTS.*

# B. PROPOSED DESIGN & DESIGN APPROACH; LIFE CYCLE COSTS

***5. Technical Approach Plans for the ECCF, including Central Plant, and Site including backup documentation as appropriate, to identify the proposed types, integration, and operations of systems for the facility illustrating the best value for the County. Technical approach plans are to include:***

***a. Narrative(s) detailing the basic approach.***

***b. Conceptual layout(s) of building systems in large scale.***

***c. Proposed systems including a description of types, efficiencies, quantities and capacities.***

***d. Approach to maintaining and servicing proposed systems.***

***e. Narrative(s) outlining the proven track record(s) of the proposed systems and vendors including tried and tested processes, systems and capabilities.***

## STRUCTURAL BUILDING SYSTEM DESCRIPTION

All four (4) building quadrants are to be structural steel framing with concrete slabs on metal deck. The building will be braced frames combined with load bearing shear walls.

The foundation of the taller west quadrant housing units will be on a reinforced earth “Geopier” foundation at approximately 8 ksf safe bearing.

The foundation of the east quadrant service and admin east buildings will be at approximately 2.50 ksf safe bearing.

West, north, and south quadrant housing buildings:

- 1st floors are to be ground floor
- 2nd floor housing at 16 feet,
  Mezzanine at 27 feet
- 3rd floor housing at 38 feet,
  Mezzanine at 49 feet
- 4th floor housing north west quadrant at 60 feet,
  Mezzanine for south west quadrant at 71 feet
- Roof of south west quadrant at 60 feet
- Roof of north west quadrant @ 82 feet

Northeast quadrant services building and Southeast quadrant administrative building:

- 2nd floor at 16 feet
- Roof at 32 feet

The 22-foot floor-to-floor of the upper housing levels allows for a stacked cell construction using grout filled metal panels.

Interior mezzanines and interior security walls will be 8-inch reinforced and grouted walls supporting 2-hour floors.

Stair and elevator walls for the east buildings will be 8-inch load bearing walls, either concrete or CMU reinforced walls. Stair and elevator and main hallway walls for the west midrise buildings will be 12-inch load bearing walls, either concrete or CMU reinforced walls.

Floors for all levels and cells will be 2-hour rated, 6-inch concrete on metal deck.

The roofs will be 1-hour rated, 5-inch concrete on metal deck.

All exposed steel construction will be either 6000 psi concrete filled steel tubes or spray-fireproofed exposed steel wide flanges.

There will be an expansion joint between the West Quadrant Mid-rise Housing Buildings and the East Quadrant Low-rise Service and Administration Buildings.

**Codes and Standards**

1. The structural design of the project shall be based on and conform to the following codes and standards:
   a. Florida Building Code (FBC), 5th Edition (2014) Building.
   b. Florida Model Jail Standard, 2017 edition.
   c. American Society of Civil Engineers – Minimum Design Loads for Buildings and Other Structures (ASCE 7-10)
   d. American Concrete Institute – Building Code Requirements for Structural Concrete (ACI 318-11)
   e. American Institute of Steel Construction – Steel Construction Manual (AISC 360-10)
   f. American Institute of Steel Construction – Seismic Provisions for Structural Steel Buildings (AISC 341-10)
   g. American Welding Society AWS D-1.1, "Structural Welding Code-Steel," latest edition
   h. American Welding Society AWS D-1.3, "Structural Welding Code-Sheet Steel," latest edition
   i. American Iron and Steel Institute – Specification for the Design of Cold-Formed Steel Structural Members (AISI S1007/S2-10)
   j. ASTM sections as listed, latest edition.

2. American Correctional Association (ACA):
   a. Standards for Adult Correctional Institutions.
   b. Standards for Juvenile Detention Facilities.

3. Publication Dates: Where the date of issue of a Reference Code or Standard is not specified, comply with the Code or Standard in effect as of the date of the contract documents.

**BASIS OF DESIGN**

**General Design Criteria**

The structural design of the project shall be based on the following design criteria:

- **Roof and Floor Dead Loads:** Dead loads for design shall be the actual weights of materials of construction and fixed service equipment plus a minimum miscellaneous superimposed dead load of 3 psf.
- **Roof Live Loads**
  - 20 psf minimum
  - Rooftop unit weights
  - No live load reductions
- **Floor Live Loads**
  - ASCE 7-10, Chapter 4
  - Cell Blocks: 40 psf
  - Mezzanines: 40 psf
  - Corridors: 80 psf
  - Mechanical Rooms: 125 psf
  - Storage Rooms: 125 psf
- **Wind Loads**
  - ASCE 7-10, Chapters 26-30
  - Directional Procedure (ASCE 7-10, Chapter 27)
  - Risk Category III (ASCE 7-10, Table 1.5-1)
  - 160 mph Ultimate Wind Speed (3-sec gust) (ASCE 7-10, Figure 26.5-1B)
  - Exposure Category C (ASCE 7-10, Section 26.7.3)
  - Enclosure Classification: Enclosed

- **Seismic Loads**
  - ASCE 7-10, Chapters 11 and 12
  - Site Class D (Preliminary, subject to confirmation by the final geotechnical report)
  - Ss = 0.091
  - S1 = 0.054
  - Fa = 1.6
  - Fv = 2.4
  - Seismic Design Category B
  - Importance Factor, Ie – 1.25

**Materials**

- **Structural Steel**
  - Wide flange shapes shall conform to ASTM A992 Grade 50
  - Channels and angles shall conform to ASTM A36
  - Round Hollow Structural Sections (HSS) shall conform to ASTM A500 Grade B (Fy = 42 ksi, Fu = 58 ksi)
  - Square and Rectangular Hollow Structural Sections (HSS) shall conform to ASTM A500 Grade B (Fy = 46, Fu = 58 ksi)
  - Angles and structural plates shall conform to ASTM A36
  - High strength bolts shall conform to ATM A325, Type 1
  - Threaded rods shall conform to ASTM A36
  - Anchor rods shall conform to ASTM F1554 Grade 55, weldable
  - Base plates shall conform to ASTM A36
- **Precast Concrete**
  - Precast concrete shall be 5000 psi NWT
  - Mild Reinforcing Steel shall conform to ASTM A615, Grade 60
  - Prestressing Tendons shall be uncoated, 7-wire, stress-relieved strang ASTM A416, Grade 270
  - Deformed bar anchors shall conform to ASTM A496 (Fy = 70 ksi)
  - Weldable Reinforcing Steel shall conform to ASTM 706
  - Headed stud anchors shall conform to ASTM A108 (Fu = 60 ksi)
- **Cast-In-Place Concrete**
  - Reinforcing Steel: All reinforcing steel shall conform to ASTM A615, Grade 60 unless noted otherwise on the drawings.
  - All concrete is normal weight concrete.
  - Exposure categories per ACI 318-11, Chapter 4
  - Deformed bar anchors shall conform to ASTM A496 (Fy = 70 ksi)
  - Weldable Reinforcing Steel shall conform to ASTM A706
  - Headed stud anchors shall conform to ASTM A108 (Fu = 60 ksi)
  - Minimum concrete strength f'c = 4000 psi
- **Structural Masonry**
  - Reinforcing Steel: All reinforcing steel shall conform to ASTM A615, Grade 60 unless noted otherwise on the drawings.
  - F'm = 2000 psi minimum
  - Masonry units shall conform to ASTM C90. Masonry units for construction below grade shall be normal weight units. Other masonry units may be normal weight or lightweight units.

**Structural Specifications**

- 033000 Cast-In-Place Concrete
- 034100 Precast Structural Concrete
- 042000 Unit Masonry
- 051200 Structural Steel Framing
- 052100 Steel Joist Framing
- 053100 Steel Decking
- 316316 Auger Cast Piles

## MECHANICAL SYSTEMS

**Narrative**

To determine the type of HVAC equipment to design, we were asked to perform both an energy reduction analysis and a Life Cycle Cost Analysis. The goal of the energy reduction analysis is to show that the design has at least a 30% reduction in energy usage over similar buildings. The goal of the Life Cycle Cost Analysis is to show that the design has the lowest life cycle cost over a period of time as compared to other reasonable system choices.

Energy Reduction analysis: For this analysis, we compared the proposed design (based on the design as described in the RFP) versus the standard building of this size and type as defined by ASHRAE 90.1 appendix G. Electrical rates have not yet been provided, so this analysis uses a rate of $0.05/kwh for peak times of the day and $0.03/kwh for off peak times of the day. Gas rates are per the RFP of $0.70/therm for December through March and $0.60/therm for the rest of the year. Per our calculations, the design as described in the RFP will achieve a 30.7% reduction. In addition, the site energy utilization index goal for this project is 50kBtu/sf/yr. The calculations show that the proposed system will have site energy utilization of 99kBtuh/sf/yr. This number can be fine-tuned once the actual energy costs are accounted for. See Appendix titled “Energy Reduction Analysis.”

Life Cycle Cost Analysis: Further, the RFP asked for ways to improve the life cycle cost by adding more improvements to the HVAC systems. (Maintenance costs are from the ASHRAE guidelines found online which indicate that a building of this size in this area has a maintenance cost of $0.324/SF. Energy costs are the same used for the Energy Reduction Analysis.) We analyzed several Life Cycle reduction options, the following is a summary of the results. For more data, see Appendix titled “Life Cycle Cost Analysis.”

Solar hot water preheat: The system provides for panels to be installed on the roof that use solar energy to preheat the domestic hot water. Using this method will meet the exception in the energy that requires the chiller to provide domestic water preheating. For this analysis, we considered the reduction in cost for eliminating the chiller domestic water preheating. The analysis shows that the payback for using solar hot water preheating is 10 years. See plumbing analysis for more information.

Total energy recovery devices: As per the RFP, the air units serving the cell housing areas will have energy recovery devices. This option provides for total energy recovery devices on all the larger air units. It is likely that the mechanical rooms housing these units would need to be adjusted to accommodate the additional equipment. The analysis shows that there is not a payback for adding more total energy recovery wheels.

Run around coils at all large air handlers: In this option, a “run around” coils would be added to all the large air handlers to increase the energy recovery. These are less costly that an energy wheel but are also less efficient. The analysis shows that there is not a payback for adding “run around” coils.

Domestic water preheat: Per the Florida Energy Code, provide a plate and frame heat exchanger to preheat the domestic water to 85°F. A branch line from the Condenser water supply to chillers shall have an inline pump the is control based on the leaving water temperature on the domestic side. Pump shall be 500 GPM. If solar preheat is utilized and meets the exception in the energy code, this heat exchanger and pump would

be omitted.

Smoke Control: Each dayroom will have a dedicated smoke control system that includes all the cells attached to it. The smoke control system will be separate from the exhaust system. (This will require each cell to have a separate smoke removal grille that is separate from the general exhaust grille.) All components of the smoke control system shall be UL listed to be in compliance with UL 864. The smoke control system shall utilize the pressurization method which calls for the zone that is in alarm to become overly negative while the adjacent spaces are overly positive. The strategy calls for each "zone" to have a smoke exhaust fan and a path for makeup air; exhaust will be from high in the dayroom while the makeup will be as low as possible and as far as possible from the exhaust. The level of smoke exhaust will be at 12 air changes as a minimum. All air units will have the ability to go to 100% outside air to ensure positive pressurization of the adjacent spaces. Each housing pod shall be a smoke zone.

Humidity control: The systems will be designed so that sufficient moisture is removed from the outside to ensure the space humidity does not exceed the requirements. For areas that have a minimum humidity requirement, calculations will be performed to determine if humidifiers are required.

Demand control: To prevent excessive outside air from being brought into the building when it is not required, co2 sensors will be installed in densely populated areas. The co2 sensor will provide feedback when the room is lightly occupied and automatically reduce the outside air.

Thermal comfort zones: Zoning of the air units and VAV boxes will be such that all associated rooms have the same thermal requirements. In no case will more than 4 offices be on a single thermostat. Corner offices, conference rooms, and training rooms will have their own thermostat.

Chillers: Chillers shall be water cooled centrifugal type. There shall be three chillers, each sized at 50% of total building capacity. Under Alternate #2 the total plant capacity shall include either back feeding the existing building or allowing for the future expansion, whichever is greater.

Cooling Towers shall be the forced draft counter flow type. Towers shall be piped so that any chiller can use any condenser water pump to utilize any tower. Each tower shall be sized for 50% of the total building load. Boilers: Boilers will be 98% efficient condensing type boilers. The RFP requests that there be 4 boilers, each sized for 33% of the total load. However, condensing boilers are currently not available from the approved list of manufacturers in the sizes required that meet all the criteria. (The building load is approximately 5,500,000 BTUH.) To meet the intention of the RFP, there will be 5 boilers, each sized for 25% of the load. In this way, there will be extra capacity available in a fully standby boiler. All boilers will have cascading control from the manufacturer. It is not possible to provide dual fuel burners for condensing boilers at this size, so boilers will be selected for natural gas only. See the Plumbing narrative for options related to dual fuel. If alternate manufacturers are approved, the size and number of boilers will be re-evaluated.

Alternate #2 – This alternate accounts for the new HVAC system to back feed and provide chilled water and hot water to the existing building. If this option is taken, a meter will be installed to measure the chilled water and hot water flows and temperatures provided to the existing facility.

- Alternate #2 Boilers – The RFP has indicated that the existing facility is served by two boilers at 200 HP each. This equates to 6,700,000 BTUH. Due to this very large capacity, we must assume the 1 boiler is completely redundant. Under this alternate, 5 additional boilers would be needed.
- Alternate #2 Pumps – Under alternate #2 the chilled water shall be changed to be primary-secondary type with the existing facility having its own secondary loop.
- Alternate #2 Chillers – The three chillers will increase in capacity to handle the additional load. Under this alternate, the chilled water system shall be a primary-secondary type system.

Kitchen: Freezers and coolers shall be water cooled and utilize the chilled water system for heat rejection. The grease hood shall have a dedicate grease exhaust fan with filtered makeup air unit, both mounted on the roof.

Facilities area: Office/conference room and electronics shop will be heated and conditioned with a fan coil; shop areas will be heated and ventilated with an additional large ceiling HVLS fan for air circulation.

**Codes and Standards**

1. The mechanical equipment and installation shall conform to the following codes:
    a. Florida Building Code (FBC), 5th Edition (2014) Accessibility.
    b. Florida Building Code (FBC), 5th Edition (2014) Building.
    c. Florida Building Code (FBC), 5th Edition (2014) Energy Conservation.
    d. Florida Building Code (FBC), 5th Edition (2014) Fuel Gas.
    e. Florida Building Code (FBC), 5th Edition (2014) Mechanical.
    f. Florida Building Code (FBC), 5th Edition (2014) Plumbing.
    g. Florida Building Code (FBC), 5th Edition (2014) Fire Prevention.
    h. Florida Model Jail Standard, 2017 edition.

2. The mechanical equipment and installation shall conform to the following standards:
    a. Associated Air Balance Council (AABC):
        i. National Standard for Total System Balance.
    b. American Society of Heating, Refrigerating, and Air Conditioning Engineers
        i. Standard 62, Ventilation for Acceptable Indoor Air Quality

3. National Fire Protection Association (NFPA):
    a. Standard 13, Installation of Sprinkler Systems.
    b. Standard 14, Installation of Standpipe and Hose Systems.
    c. Standard 20, Installation of Centrifugal Fire Pumps.
    d. Standard 24, Installation of Private Service Fire Mains and Their Appurtenances.
    e. Standard 70, National Electric Code.
    f. Standard 90A, Installation of Air Conditioning and Ventilating Systems.
    g. Standard 90B, Installation of Warm Air Heating and Air Conditioning Systems.
    h. Standard 91, Installation of Blower and Exhaust Systems.
    i. Standard 92A, Smoke-Control Systems.
    j. Standard 92B, Smoke Management Systems in Malls, Atria, and Large Areas.
    k. Standard 96, Ventilation Control and Fire Protection of Commercial Cooking Operations.
    l. Standard 101, Safety to Life from Fire in Buildings and Structures.

4. American Correctional Association (ACA):
    a. Standards for Adult Correctional Institutions.
    b. Standards for Juvenile Detention Facilities.

5. Publication Dates: Where the date of issue of a Reference Code or Standard is not specified, comply with the Code or Standard in effect as of the date of the contract documents.

**Design Parameters**

1. Design Conditions:
   a. Summer:

| Building or Area Served | Indoor | | Outdoor | |
|---|---|---|---|---|
| | DB(°F) | RH% | DB(°F) | WB(°F) |
| Administration | 75 | 60 | 91.7 | 77.3 |
| Housing | 75 | 60 | 91.7 | 77.3 |
| Maintenance/Laundry/ Inmate Prop Storage | 78 | 60 | 91.7 | 77.3 |
| Electrical/ Mech Rooms | 106 | N/A | 91.7 | 77.3 |
| Data/Tele/Sec Elec | 68 | 30%(min) | 91.7 | 77.3 |
| Elevator Equip | 72 | 60 | 91.7 | 77.3 |

   b. Winter:

| Building or Area Served | Indoor | | Outdoor |
|---|---|---|---|
| | DB(°F) | RH% | DB(°F) |
| Administration | 70 | N/A | 33.7 |
| Housing | 70 | 60 | 33.7 |
| Maintenance/Laundry/ Inmate Prop Storage | 68 | 60 | 33.7 |
| Electrical/Mech Rooms | 68 | N/A | 33.7 |
| Data/Tele/Sec Elec | 68 | 30%(min) | 33.7 |

2. Outside Air Requirements:
   a. Outside air quantities will comply with ASHRAE 62.

3. Exhaust/ Ventilation Rates:
   a. Ventilation:

| Service | Rate |
|---|---|
| Electrical Rooms w/o transformers | 10 ach per hr |
| Air Handling Unit Rooms | 10 ach per hr |
| Evidence/Property Storage | Supply plus 10% |
| Smoke Control | 12 ach per hr |

b. Exhaust (min):

| Service | Rate |
|---|---|
| Toilet Rooms | 2 cfm per sf |
| Janitors Closets | 2 cfm per sf |
| Staff Lockers/ Showers | 0.5 cfm per sf |
| Inmate Cells | 50 cfm |
| Inmate Showers | 100 cfm per shower |
| Inmate Toilets | 2 cfm per sf |
| Kitchen Hood | per manufacturer's requirements |
| Dishwasher | per manufacturer's requirements |

4. Pipe Sizing Parameters:
Isolation valves will be installed at entrance to each major area. No piping will be below ¾".

a. Velocity:

| System | Velocity |
|---|---|
| Water 3" and larger | 8 fps |
| Water 2.5" and smaller | 5 fps |

b. Pressure Drop:

| Service | Drop Per 100 Ft |
|---|---|
| Chilled Water | 4 |
| Hot Water | 4 |
| Condenser Water | 4 |

5. Duct Sizing Parameters:

a. Velocity:

| System | Velocity |
|---|---|
| Supply/Return Air –Low Pressure (2" pressure class and below) | 1500 fpm |
| Supply Air –Medium Pressure (3" pressure class) | 1800 fpm |
| Supply Air –Medium Pressure (4" pressure class) | 2000 fpm |
| Supply Air –Medium Pressure (6" and above pressure class) | 2500 fpm |
| Exhaust Air – low pressure (3" pressure class) | 1800 fpm |
| Exhaust Air – Grease | 1500 fpm |
| Exhaust Air – smoke control | 2500 fpm |

b. Pressure Drop:

| Service | Drop Per 100 Ft |
|---|---|
| Supply Air –Low Pressure | 0.08" |
| Supply Air –Medium Pressure | 0.20" |
| Return Air | 0.08" |
| Exhaust Air | 0.08" |
| Outdoor Air | 0.06" |

6. Acoustical Parameters:
   a. Space Criteria:

| Space Type | RC Level (dB) |
|---|---|
| Halls, Corridors, and Lobbies | 35-45 |
| Executive and Private Offices | 25-35 |
| Conference Rooms | 25-35 |
| Teleconference Rooms | 25 |
| Open Plan Offices | 30-40 |
| Classrooms | 40 |
| Libraries | 30-40 |
| Cells | 25 -35 |
| Dayrooms | 30 -40 |

**Conditioned Areas**

1. Areas indicated above, where no space cooling temperature is shown, will be heated and ventilated. Areas indicated above, where both space heating and cooling temperatures are given, will be heated and air-conditioned.

2. Regardless of whether the area is cooled or heated the following rooms will be conditioned as stated below:
   a. Mechanical rooms will be heated and ventilated only.
   b. Electrical rooms without transformers will be unconditioned.
   c. Electrical rooms with transformers will be ventilated.
   d. Electronic security equipment rooms will be cooled.
   e. Telephone/data equipment rooms will be cooled.

**System Narratives**

1. Cooling Source
   a. Cooling will be provided by a central chilled water system. Three chillers will be used to produce chilled water at 44°F leaving water temperature and a 12°F rise. Chillers shall be high efficiency with magnetic bearings and variable speed drives. Approximate chiller capacities will be:

| Unit Designation | Capacity (Tons) |
|---|---|
| CH-01 | 400 |
| CH-02 | 400 |
| CH-03 | 400 |
| CH-01 (alt#2) | 800 |
| CH-02 (alt#2) | 800 |
| CH-03 (alt#2) | 800 |

b. Heat of rejection from the chillers will be accomplished by a condenser water system with exterior cooling towers. Cooling towers will be piped so that any chiller can utilize any tower.

c. Condenser water will be pumped to the cooling towers by a constant volume pumping system with head pressure control valves at the chillers and diverting valve at the cooling tower. There will be three pumps, each sized for 50% of the load with a third pump as standby.

Approximate pump capacities will be:

| Unit Designation | Service | Flow (GPM) | Head (FT) |
|---|---|---|---|
| CWP-01 | Horizontal split case | 1200 | 75 |
| CWP-02 | Horizontal split case | 1200 | 75 |
| CWP-02 | Horizontal split case | 1200 | 75 |
| CWP-01 (alt#2) | Horizontal split case | 2400 | 75 |
| CWP-02 (alt#2) | Horizontal split case | 2400 | 75 |
| CWP-02 (alt#2) | Horizontal split case | 2400 | 75 |

d. Chilled water will be pumped to the air handling equipment by a “primary only” pumping system with two-way control valves at the air handling equipment. There will be two pumps each sized for 50% of the load with a third pump as standby. Flow modulation in the secondary loop will be accomplished by varying the speed of the pumps. A bypass line will be installed to ensure minimum flow though the chillers. Under alternate #2, chilled water piping will be primary-secondary instead of “primary only” and the existing facility shall have a dedicated set of secondary pumps; each chiller shall have a dedicated primary pump.

Approximate pump capacities will be:

| Unit Designation | Service | Flow (GPM) | Head (FT) |
|---|---|---|---|
| CHP-01 | Horizontal split case | 800 | 200 |
| CHP-02 | Horizontal split case | 800 | 200 |
| CHP-03 | Horizontal split case | 800 | 200 |
| SCHP-01 (alt#2) | Horizontal split case | 1600 | 275 |
| SCHP-02 (alt#2) | Horizontal split case | 1600 | 275 |
| SCHP-03 (alt#2) | Horizontal split case | 800 | 275 |
| SCHP-04 (alt#2) | Horizontal split case | 800 | 275 |
| PCHP-01 (alt#2) | End suction | 1600 | 50 |
| PCHP-02 (alt#2) | End suction | 1600 | 50 |
| PCHP-03 (alt#2) | End suction | 1600 | 50 |

e. Chilled water distribution between buildings will be a manufacturer's pre-fabricated underground system with jacket, insulation, and carrier pipe.
f. Condenser water distribution between the building and the cooling towers will be underground. Make up water will be freeze protected.
g. Chemical treatment for the chilled water system shall be the manual shot feed type.
h. Chemical treatment for the condenser water system shall be a feed and bleed system with inhibitor and alternating biocide injection.

2. Heat Source
   a. Heating will be provided by a central hot water system. 5 condensing boilers will be used to produce hot water at 180°F leaving water temperature and a 35°F drop. Each boiler will be sized for 25% of the heating demand. Approximate boiler capacities will be:

| Unit Designation | Capacity BTUH OUTPUT |
|---|---|
| HWB-01 | 1,440,000 |
| HWB-02 | 1,440,000 |
| HWB-03 | 1,440,000 |
| HWB-04 | 1,440,000 |
| HWB-05 | 1,440,000 |
| HWB-06 (alt#2, additional boiler) | 1,440,000 |
| HWB-07 (alt#2, additional boiler) | 1,440,000 |
| HWB-08 (alt#2, additional boiler) | 1,440,000 |
| HWB-09 (alt#2, additional boiler) | 1,440,000 |
| HWB-10 (alt#2, additional boiler) | 1,440,000 |

b. Hot water will be pumped to the air handling equipment by a primary-secondary pumping system with two-way control valves at the air handling equipment. There will be one primary pump for each boiler and two secondary pumps, each sized for 100% of the load. Flow modulation in the secondary loop will be accomplished by varying the speed of the secondary pumps. Pump capacities will be approximately:

| Unit Designation | Service | Flow (GPM) | Head (FT) |
|---|---|---|---|
| PHWP-01 | Vertical inline | 45 | 30 |
| PHWP-02 | Vertical inline | 45 | 30 |
| PHWP-03 | Vertical inline | 45 | 30 |
| PHWP-04 | Vertical inline | 45 | 30 |
| PHWP-05 | Vertical inline | 45 | 30 |
| PHWP-06 | Vertical inline (alt#2 only) | 45 | 30 |
| PHWP-07 | Vertical inline (alt#2 only) | 45 | 30 |
| PHWP-08 | Vertical inline (alt#2 only) | 45 | 30 |
| PHWP-09 | Vertical inline (alt#2 only) | 45 | 30 |
| PHWP-10 | Vertical inline (alt#2 only) | 45 | 30 |
| | | | |
| SHWP-01 | Horizontal split case | 400 | 150 |
| SHWP-01 | Horizontal split case | 400 | 150 |

c. Hot water distribution between buildings will be a manufacturer's pre-fabricated system with jacket, insulation, and carrier pipe.

d. Chemical treatment for the hot water system shall be manual injection shot feed type.

3. Air Handling Systems

a. Air handling unit types will be selected to match the occupancy and environmental needs of the various areas of the facility.

b. Air handling systems for "Intake", "Administration level 1", "Administration level 2", "Medical offices", "Inmate Medical", and "Inmate Dormitory Housing" will be the constant temperature/variable volume type in conjunction with medium pressure air distribution and variable air volume boxes. VAV boxes will have hot water heating coils. Units shall be provided with multiple supply fans; this will be through either two centrifugal fans, each sized for 100% capacity, or through a set of 4 panel type fans, each sized for 33% capacity. In either case, if one fan fails the remaining fan(s) can provide full air flow. Unit shall have a hot water preheat coil and a chilled water cooling coil. Air modulation will be achieved by variable speed motor drive. Return air shall be fully ducted; unit shall have a return fan. Outside air control shall be though airflow station; densely occupied spaces shall also have co2 sensors to allow for Demand Control Ventilation.

c. Air handling systems for "Dayrooms" and "Kitchen" will be the Single Zone type variable volume/variable temperature type in conjunction with low pressure air distribution. Units shall be provided with multiple supply fans; this will be through either two centrifugal fans, each sized for 100% capacity, or through a set of 4 panel type fans, each sized for 33% capacity. In either case, if one fan fails the remaining fan(s) can provide full air flow. Air modulation will be achieved by variable speed motor drive. Unit shall have a hot water preheat coil, a chilled water cooling coil, and a hot water reheat coil for humidity control. Outside air control shall be though airflow station;

densely occupied spaces shall also have co2 sensors to allow for Demand Control Ventilation. As part of the smoke control system, each dayroom shall have a smoke damper.

d. Air handling systems for "cell housing" will be the constant volume/ variable temperature type with cold deck, neutral deck, and hot deck sections, and multi-zone dampers. Each "wing" of cells shall be a zone. As part of the smoke control system, each zone shall have a smoke damper. Units shall be provided with multiple supply fans; this will be through either two centrifugal fans, each sized for 100% capacity, or through a set of 4 panel type fans, each sized for 33% capacity. In either case, if one fan fails the remaining fan(s) can provide full air flow. Air modulation test and balance will be achieved by variable speed motor drive. Units shall be 100% outside air and have a total energy recovery wheel.

e. Air handling systems for "Master Control" and "Main Security Electronics" will be the constant volume/variable temperature, fan-coil type in conjunction with low pressure air distribution and chilled water coils. In addition, each space shall also have a split system heat pump with condenser located nearby for 100% fully redundant backup.

f. Air handling systems for "Commissary", "Commissary Storage", "Bulk Dry Storage", "Laundry", "Electronics Shop", and "Maintenance Office" will be the constant volume/variable temperature, fan-coil type in conjunction with low pressure air distribution and chilled water coil and hot water coil.

4. Exhaust/Ventilation Systems
   a. Fan types will be selected to match the occupancy and physical needs of the various areas of the facility.
   b. Special Ventilation and Exhaust Systems will be required for the following systems:
      1) Kitchen Hood Exhaust and Supply
      2) Dishwasher Exhaust
      3) Carbon Monoxide Exhaust

5. Control Systems
   a. Mechanical system controls shall be the DDC type.
   b. Smoke control will include automatic activation as well as manual activation.

**Seismic Restraints**

1. System
   a. Per the Florida Building Code, the following seismic criteria apply:
      - Site Class D (Preliminary, subject to confirmation by the final geotechnical report)
      - Ss = 0.091
      - S1 = 0.054
      - Fa = 1.6
      - Fv = 2.4
      - Seismic Design Category B
      - Importance Factor, Ie = 1.25
      - ASCE 7-10, Chapters 11 and 12

   b. Per SMACNA Seismic Restraint Manual Guidelines for Mechanical Systems and the above code calculations, seismic restraints of mechanical system are not required.

## ELECTRICAL SYSTEM

A. Codes and Standards

1. The Electrical power and lighting equipment and installation shall conform with the following codes:
   a. The 2014 Florida Building Code
   b. The 2014 Energy Conservation Code
   c. The 2014 Florida Fire Prevention Code

2. The Electrical power and lighting equipment and installation shall conform with the following standards:
   a. National Fire Protection Association (NFPA):
      1) Standard 70, National Electrical Code (2011)
      2) Standard 110, Code for Safety to Life from Fire in Buildings and Structures
   b. Illuminating Engineering Society of North America (IES)
   c. National Electrical Manufacturer's Association (NEMA)
   d. American Correctional Association (ACA):
      1) Standards for Adult Correctional Institutions.
      2) Standards for Adult Local Detention Facilities.
      3) Standards for Juvenile Detention Facilities.
      4) Standards for Juvenile Training Facilities.

3. Publication Dates: Where the date of issue of a Reference Code or Standard is not specified, comply with the Code or Standard in effect as of the date of the contract documents.

B. Design Narratives

The new facility will be served with a new 5000 Amp, 480V, 3-phase electrical service and main distribution switchboard. The new electrical service shall consist of conductors installed underground, originating at a pad mounted transformer and terminating in a distribution type switchboard in the main electrical room. Surge protection devices will be provided at the main service switchboard. The main electrical switchboard shall be ground fault protected and service entrance rated. The building electrical service will be metered, and record demand, usage and power factor, and the meter location will be coordinated with the utility company. The electrical system shall be tested and approved, once completed. All electrical equipment shall be installed per the design criteria and manufacturer's recommendations.

Standby power and emergency power will be provided for the operation of equipment critical to the operation of the facility by a new diesel power 2000kW generator. The engine generator set will be located outside, adjacent to the building, in a weatherproof outdoor enclosure. The generator will have three automatic transfer switches: (1) Emergency automatic transfer switch, (1) Legally required automatic transfer switch, and (1) Optional standby automatic transfer switch. The automatic transfer switches shall be bypass-isolation type. The generator remote annunciator panel will be located in the Central Control room. The main emergency electrical switchboard shall be ground fault protected.

From the main electrical room, downstream electrical rooms will be provided for power and lighting distribution. Dry type transformers will be used to reduce the voltage to 208/120V for connections of general purpose receptacles and other plumbing, HVAC, and security/communications equipment.

The power system will be distributed through a system of circuit breaker panelboards, dry type transformers, disconnect switches, receptacle boxes, junction boxes, conduit, and conductors. Electrical equipment capacities will be determined as the building operating systems and equipment are designed.

Panelboards will be specified for sequence phase connection to evenly balance electrical loads on each phase. Bus bars shall be copper. Loads up to 400 amperes shall utilize panelboards. Loads 400 to 1200 amperes shall utilize distribution boards. Loads above 1200 amperes shall utilize switchboards. Circuit breakers are to be molded case, bolt-on type. Panelboards shall have 25 percent spare capacity and 20 percent spare breakers. A detailed short-circuit analysis shall be prepared during the design phase, and all overcurrent devices shall be coordinated so that downstream devices will trip to clear any fault. The anticipated available fault current at the utility secondary is 65,000 amps.

Panelboards shall have full-size neutrals and ground bars, copper bus, with thermal magnetic type molded case main and branch circuit breakers. Bolt on type circuit breakers only for panelboards. All lighting and HVAC panels shall be rated for a minimum of 100A at 480/277V and 225A shall be rated for a minimum at 208/120V.

All panelboards shall be in electrical rooms unless they are areas of high electrical load density, for example: food service areas, servers, and maintenance rooms. Separate surge protection device will be provided for panelboards serving IT and other sensitive equipment that will not be integral to the panelboards.

Lighting System: Lighting system will include LED light source for the creation of artificial light in structures and on the site. In general, LED sources will be applied for exterior and perimeter site lighting and interior lighting. The long life, energy efficiency, and minimum maintenance within the facility is the driving factor of using LED lighting. The luminaries for the facility will source a 4000K at a CRI of 80.

Egress lighting will comply with Florida Building Code and provide no less than 1 foot-candle of illumination for all emergency egress paths, offices, and other areas. All egress lighting will be backed up by inverters, which will be backed up by the generator. The inverters will provide an uninterruptible power supply for egress lighting for 90 minutes.

The light sources will operate on 277V except where 277V is not feasible, e.g., undercabinet lighting.

Lighting calculations are based on IES and ACA for both interior and exterior.

Light fixtures, consisting of linear luminaries and downlights, will be commercial grade in areas of the facility that will have no inmate presence.

Maximum security type luminaries will be installed in areas, such as cells, where inmates will have constant unsupervised access to the luminaries. Maximum security fixtures shall have 12 ga. cold rolled steel housing and frame, seam welded and ground smooth. The hinge shall be 12 ga. cold rolled steel continuous piano hinge welded at each end. All internal lens brackets and retainers shall be 12 ga. cold rolled steel. The lens composite shall be 0.500” thick polycarbonate, outer and 0.125” acrylic prismatic, inner. No clam shell maximum security fixtures are acceptable. Emergency and egress lighting will be installed as required by code.

Medium security, vandal resistant fixtures will be used in areas where inmates have supervised access to the lighting equipment. Medium security fixtures shall have 14 ga. cold rolled steel housing and frame, seam welded and ground smooth. The hinge shall be 14 ga. cold rolled steel continuous piano hinge welded at each end. All internal lens brackets and retainers shall be 14 ga. cold rolled steel. The lens composite shall be 0.375” thick polycarbonate, outer, and 0.125” acrylic prismatic, inner. No clam shell maximum security fixtures are acceptable. Emergency and egress lighting will be installed as required by code.

Lighting control will follow the current adopted energy code. Occupancy/vacancy sensors will be used for localized control in offices, storage, janitors, and other spaces less than 100 square feet. Corridors will be run through relay control panels with localized override switches located away from inmate access in secure areas. Daylight sensors will be utilized in non-secured areas which will provide energy savings, where applicable.

Each cell will be individually controlled from the officer's station and the night light within the cell's light fixture will be separately controlled. Dorm rooms will have multiple relay control serving the area for flexible lighting control.

Branch circuits: Branch circuits shall be provided with the necessary power for electrical receptacles, devices, disconnects, hard wired devices, conduit, wiring, and overcurrent devices. Offices will be provided with 1 double duplex receptacle and 2 duplex receptacles, spaced 12 linear feet from a wall or partition. Storage, mechanical, and electrical rooms shall receive 1 duplex receptacle for every 100 square feet. Medical areas shall receive GFCI receptacle every 8 linear feet, with a minimum of 4 in each area. Control rooms shall have 1 duplex receptacle every 6 linear feet, with a minimum of 8 receptacles per room. Corridors shall have a receptacle every 50 linear feet, on center. For all other areas 1 receptacle shall be located every 20 linear feet. HVAC equipment shall have a receptacle within 25 feet. Cell chases shall receive 1 receptacle every 25 linear feet, to be on standby power. A weatherproof and GFCI receptacle shall be located every 200 linear feet on the building's exterior.

Only ADA cells will receive a GFCI receptacle, which will be on relay controlled and switched at the officer's station. Dayrooms will receive 1 GFCI receptacle for haircutting and it will be controlled at the officer's station.

All GFCI will not be feed through type.

All conduits shall be concealed and no surface mounted raceways in secured areas, unless provided with a stainless steel top hat over the RMC.

All circuits shall be enclosed in raceways.

Underground conduits shall be PVC schedule 80. PVC is not allowed in concrete pad or slabs and transition to EMT or RNC from PVC in these areas.

Device plates shall be unbreakable nylon. In kitchen areas, the device plates shall be stainless steel. All device plates in inmate accessible areas shall be provide with tamper proof fasteners.

C. Alternates

Alternate #1 – No electrical, only plumbing.
Alternate #2 – New Central Plant to be revised to 800 ton chillers.

The new size of the 3 chillers will go from 400 tons to 800 tons. This change will require a separate 480V, 4000-amp service to feed directly to the chillers. The switchboard will be 4000 amps with a feeder of 12 sets of 4#600 Kcmil with a conduit size of 3"C. The grounding for the switchboard will be 3/0. The feeder sizes to the chillers will each be 4 sets of copper 3#350 Kcmil, 1#3/0G, 2-1/2"C. Copper is being utilized due to the possibility of a void of warranty using aluminum conductors.

Alternate #3 – Inmate Plumbing Control System

Provide and install a double duplex for the plumbing control system computer. The control system electronic controllers shall be low voltage.

## PLUMBING SYSTEMS

A. Codes and Standards
   1. The plumbing equipment and installation will conform to the following codes:
      a. The Florida Building Code, 5th Edition (2014) Accessibility
      b. The Florida Building Code, 5th Edition (2014) Building
      c. The Florida Building Code, 5th Edition (2014) Fuel Gas
      d. The Florida Building Code, 5th Edition (2014) Energy Conservation
      e. The Florida Building Code, 5th Edition (2014) Plumbing
      f. The Florida Building Code, 5th Edition (2014) Mechanical
      g. Florida Model Jail Standard, Edition (2017)
   2. The plumbing equipment and installation will conform to the following standards:
      a. National Fire Protection Association (NFPA):
         1) Standard 70, National Electric Code.
      b. American Correctional Association (ACA):
         1) Standards for Adult Local Detention Facilities.
         2) Standards for Juvenile Detention Facilities.
   3. Publication Dates: Where the date of issue of a Reference Code or Standard is not specified, comply with the Code or Standard in effect as of the date of the contract documents.

B. Design Criteria
   1. Domestic Water Design Temperatures:
      a. Service inlet:
         Summer: 60°F
         Winter: 40°F
      b. Hot Water:
         Inmate Housing: 110°F
         General Service: 120°F
         Kitchen: 140°F
         Dishwashing: 180°F (via a booster heater)
         Laundry: 160°F
   2. Domestic Water Design Pressures:
      a. Building Service: 40 psig
      b. Minimum at Water Closet: 35 psig
   3. Domestic Water Design Velocity: 5 ft/sec
   4. Roof Drainage Design Flow Rate: 4.6 in./hr.

C. System Narratives
   1. Sanitary Systems
      a. The building sanitary systems will be routed from west to east with multiple building exit points.
      b. Housing Area - One sanitary main will serve the housing area including Intake on the first floor and Minimum Security Housing on the second floor. This sanitary main will exit the building at the Maintenance Management Parking Lot. At the parking lot the housing sanitary line will be routed through a debris interceptor with screen before being connected to the site sanitary system.

c. Admin/Public: The second sanitary main will serve the Administration /Public area, the Inmate storage area, the Laundry area, the second floor Admin/Staff area, and the second floor Medical area. This sanitary main will exit the building at the Laundry area on the east side of the building. The sanitary line will be connected to the site sanitary system.
d. Kitchen - Waste piping from the kitchen equipment and floor drains will be routed through a combination waste and vent piping system. The waste line will extend outside into an underground grease interceptor located in the Maintenance Management Parking Lot. Discharge from the interceptor will be extended to the site sanitary drainage system.
e. Laundry - Waste from the washers will be through two trench drains located behind and/or under the washers. One trench drain will extend to the water recycling system and accept the water from the washer rinse cycle. From The second trench drain will exit the building on the east side and connect to the site sanitary system. Each trench will be approximately 12 inches wide running the full length of the washer area. The trench bottom will slope from one end to the other ends. At the low end of both trench drains a lint interceptor will be installed. The Wash Cycle trench drain will connect to the Admin area sanitary main and exit the east side of the building. The sanitary line will be connected to the site sanitary.
f. Central Plant/Maintenance – Waste piping from the Central Plant and Maintenance areas will exit the building on the east side and be connected to the site sanitary system.
g. Vent piping from each system will be collected above ceiling or floor, and extended up through the building roof.
h. Clean-outs will be provided in all waste piping systems every 75 feet. Clean-outs will extend up flush with finish floor or grade in all underground or below floor piping.
i. Floor drains will be provided as indicated in the RFP and at locations required for equipment drainage.

2. Roof Drainage Systems
   a. Roof drainage system will be provided using roof drains, canopy drains, and deck drains as required. The roof drain leaders will be routed through the building with multiple exit points around the building.
   b. Roof overflow system will be provided using roof drains routed to exterior walls and terminated above grade with a wall outlet.
   c. Horizontal storm drains inside the building will be insulated.

3. Domestic Water Systems
   a. A 6” domestic cold water piping system will enter the buildings inside the Central Plant. From the service entrance, the domestic water line will be routed to a packaged booster pump unit with three variable speed pumps. One pump will be redundant. Upon leaving the booster pump, the domestic water service will extend to all fixtures and equipment requiring water. A valved and capped branch will be included for extension to the future housing.
   b. In addition, the domestic water branch serving the domestic water heaters will be routed through a chiller mounted or independent mounted heat exchanger for pre-heat. We analyzed the use of a solar pre-heat system as an alternate to the chiller auxiliary pre-heat. The solar analysis was based on satisfying 60 percent of the domestic hot water demand by the solar collector system. The solar alternative resulted in a 10-year payback. Based on our engineering judgement the 10-year payback is undesirable; therefore, the condenser water heat recovery approach was deemed more advantageous. The basis of our design is the condenser heat recovery approach.

c. Based on Water Flow Tests conducted by ECUA, the available water pressure at East Fairmont is approximately 52 psig static and 48 psig residual at a flow of 920 gpm. Accounting for exterior pipe length and elevation changes, we estimate the service pressure at the building of 31 psig. Using the estimated service pressure and 35 psig residual at the top floor water closet, we estimate that the booster requirement is 475 gpm at a 54 psig pump head with a leaving pressure of 85 psig. The 85 psig pump discharge pressure is above the RFP limit of 75 psig. During design, we will work with the Civil Engineer to see if a higher service pressure can be achieved plus we will work with the building piping design to see if we can reduce the pressure loss in the building. At this time, we anticipate that the first floor will, most likely, require pressure reducing valves to limit the discharge pressure to 75 pisg.
d. Mechanical equipment requiring cold water makeup will be provided with reduced pressure backflow preventer upstream of any connections to the mechanical equipment.
e. Isolation valves will be provided in each supply branch line to each battery of plumbing fixtures, single fixtures, and each piece of equipment. Valves located above solid ceilings will be provided with access panels. Valves above ceilings will be located as close as possible for ease of operation.
f. All piping will be insulated throughout.
g. Hose bibbs (single temp and dual temp) will be located per the room data sheets and as needed for equipment cleaning or draining.
h. Wall hydrants will be located on the exterior of the building to meet the RFP spacing limits.

4. Domestic Hot Water Systems
   a. The domestic water heaters will be located in the Central Plant Boiler Room along with the space heating boilers. The design will have one dual fuel heater that serves the Laundry with a stored water temperature of 160°F. Two dual fuel domestic water heaters will serve the remainder of the building with a stored water temperature of 140°F. The two water heaters will be interconnected to hot water storage tanks to satisfy the building load. Space for a third heater and storage tank will be included to handle the future housing or the existing jail backfeed. All domestic water heaters will use natural gas or liquified petroleum as the fuel source with manual transfer.
   b. The 160°F Laundry supply will be routed to the Laundry washers with a separate pumped return line to the heater. In addition, a tie line with shut-off valve will be located between the Laundry heater supply pipe and the Building heaters supply pipe.
   c. The 140°F Building supply will be routed to the remainder of the building including the Kitchen. At the various areas of the building, thermostatic mixing valve assemblies will be provided to serve a specific area and temperature – either with 110° for housing or 120°F for other areas Note this deviates from the RFP which indicates a 120°F distribution temperature. The logic behind using a 140°F distribution is that you achieve better control with a 20°F or 30°F temperature differential through the thermostatic mixing valves. From the thermostatic mixing valves, hot water will be piped to the plumbing fixtures in the area served with a hot water return piped to the thermostatic mixing valve assembly for that area. In addition, the zone recirculation piping will be connected to the main distribution hot water return line. Zone thermostatic mixing valve assemblies will have multiple mixing valves and two circulation pumps for redundancy. The main 140°F return line to the heaters will have one primary and on redundant circulating pump.
   d. Isolation valves will be provided in each branch line serving single or battery fixtures requiring hot water supply. Valves located above solid ceilings will be provided with access panels.
   e. All hot water and hot water return piping will be insulated.

f. Water quality information from ECUA did not include water hardness information, the design team researched federal and state documents for information about water quality in Escambia County. Both federal and state, along with some private research, indicates that Escambia County should have water hardness between 6 and 10 grains/gallon. Based on the RFP requirements, no water softening system is anticipated at this time.

5. Natural Gas Systems
   a. The natural gas service will be enter the new Jail at the Central Plant. A natural gas regulator and meter will be located on the service outside of the building. From the meter and regulator, the natural gas piping will be routed to the space heating boilers, the domestic water heaters, the Laundry Dryers, and the gas fired kitchen equipment. Line regulators will be installed based on equipment pressure requirements.

6. Liquified Petroleum Gas Systems
   a. The existing liquid petroleum gas system serving the existing jail will be modified to include additional tanks for the new jail building. The existing gasification equipment and piping will be enhanced to accommodate the additions tanks. We anticipate locating the additional tanks to the west of the existing tanks and on the other side of the current dock access rood. From the re-worked gasification piping, a new liquid petroleum line will be extended to the new Jail Central Plant. Once in the central plant the piping will extend to the space heating boilers, the domestic water heaters, the Laundry Dryers, and the gas fired kitchen equipment. Line regulators will be installed based on equipment pressure requirements**.**

7. Dental Systems
   a. The dental system will include a dental air compressor unit with dual compressors mounted above the single air storage tank, a dental vacuum unit with dual vacuum pumps mounted beside the single vacuum waste tank, and a domestic water filter unit. The dental air compressor unit and the vacuum unit will be selected based on a maximum of two dental chairs.
   b. From the dental equipment the vacuum, air, and water piping will be routed under the floor to the dental chairs. If required, the dental air and water piping will be installed in a 4 to 6 inch conduit for protection.

8. Dialysis System
   a. The dialysis suite will be equipped with two wall mounted dialysis boxes. The boxes will have one drain and tone or two water connections dependent on the type of dialysis equipment that is to be used. The waste piping will be routed to a dilution/interceptor unit prior to being connected to the building sanitary system.

9. Building Management System
   a. Rather than have a separate building management system for the plumbing system, we propose to incorporate the control and monitoring of the plumbing equipment into the HVAC building management system.

10. Alternate #2
    a. In accordance with the RFP, if alternate #2 is accepted we will remove the existing Jail domestic water heaters and backfeed the existing Jail hot water from the new Central Plant. The third water heater and storage tank indicated above will be installed to satisfy the additional load. Domestic 140°F water (with submeter) will be routed from the new Central Plant to the existing domestic hot water storage tank within the existing Jail. The exiting Jail hot water recirculation system will be extended to the new Jail domestic water heating system.

b. Preliminary calculations indicate that the required pressure to deliver hot water to the farthest and highest fixture in the existing jail might require that the domestic water booster pump in the new jail Central Plant be sized for up to 100 psig discharge. The increase in pressure would require additional pressure reducing valves in the existing jail for lower floors.

11. Alternate #3
    a. In accordance with the RFP, if alternate #3 is accepted we will provide a water management system to allow the staff to control water supply at inmate housing fixtures (showers and water closets). The water management system will be the distributed controller design with fixture control modules, master control modules, and interconnecting communication to the central server and one other user station.

12. Plumbing Fixtures
    a. Public/Staff Fixtures:
    Water Closets – vitreous china, floor mounted, floor outlet, siphon jet type with elongated bowl and infra-red flush valve (1.28 gpf).
    Urinals – vitreous china, wall hung, siphon jet or washout type with infra-red flushvalve (one pint per flush).
    Lavatories – vitreous china, wall hung or counter mounted type with 0.5 gpm flow control and infra-red faucets.
    Mop Basins – floor mounted molded stone mop receptor with wall hung mixing faucet, mop hanger and hose.
    Drinking Fountains – stainless steel, hi-lo type, with refrigeration unit.
    Sinks – stainless steel with faucets and spouts. Type of faucet spout and handles will be based on RFP and engineering judgement.
    Showers – Wall mounted stainless steel shower panels with thermostatic mixing valve and 0.5 gal/min flow shower head.
    b. Inmate Fixtures:
    Combination Units – stainless steel, floor mounted, back outlet, blowout type water closet and oval bowl with separate waste, pushbutton flush valve, hot and cold push button metered faucet, and flood control feature. Unit waste pipe shall include a cleanout tee with pin hook.
    Water Closets – stainless steel, floor mounted, back outlet, blowout type with elongated bowl, pushbutton flush valve and flood control feature. Unit waste pipe shall include a cleanout tee with pin hook.
    Urinals – stainless steel, wall hung, siphon jet or washout type with metered push button flush valve and concealed trap.
    Lavatories – stainless steel, wall with hung metered push button faucets and concealed traps.
    Drinking Fountains – stainless steel, non-refrigerated unit.
    Sinks – stainless steel with faucets and spouts. Type of faucet spout and handles will be based on RFP and engineering judgement.
    Showers – Wall mounted stainless steel shower panels with single temperature push button and metered valve.

13. Sanitary Piping Systems
    a. Below Floor: Cast iron hub and spigot pipe with gasket joints.
    b. Above Floor: Cast iron no hub pipe with stainless steel bands or PVC.
    c. Floor drains: Cast Iron.

14. Storm Drainage Piping Systems
    a. Below Floor: PVC.
    b. Above Floor: PVC.

15. Domestic Hot and Cold Water System
    a. Hard drawn copper tubing, Type “K” with soldered joints for underground service piping.
    b. Hard drawn copper tubing, Type ‘L’, with soldered joints for all piping above floor slab.
    c. Soft drawn copper tubing, Type ‘L’, with soldered joints for small piping under slab to trap primers.
    d. CPVC piping with solvent cement socket joints.

16. Natural Gas System
    a. Stainless steel flexible braided pipe without joints, for connection to equipment where applicable.
    b. Schedule 40 black steel pipe with welded joints, size 2-1/2” and larger.
    c. Schedule 40 black steel pipe with screwed joints, size 1/2” thru 2”.

17. Water Heaters
    a. Dual Fuel (Natural / Propane) with storage tank.

18. Pumps
    a. Primary hot water circulation pumps will be close coupled inline pumps, single stage, frame mounted centrifugal type with cast iron casing, bronze trim, and mechanical seals. Pump will be designed for mounting either vertically or horizontally. The main circulation pumps will be variable speed.
    b. Zone circulation pumps will be constant speed based on an average flow of 1 gpm or less.

19. Domestic Water Pressure Booster System
    a. Constant pressure package booster system will include variable speed pumps, controls, shutoff valves plus supply and discharge headers. One pump in package will be redundant.

D. Seismic Restraints

1. System
    a. Per the Florida Building Code, the following seismic criteria apply:
        - Site Class D (Preliminary, subject to confirmation by the final geotechnical report)
        - Ss = 0.091
        - S1 = 0.054
        - Fa = 1.6
        - Fv = 2.4
        - Seismic Design Category B
        - Importance Factor, Ie = 1.25
        - ASCE 7-10, Chapters 11 and 12
    b. Per SMACNA Seismic Restraint Manual Guidelines for Mechanical Systems and the above code calculations, seismic restraints of the plumbing system are not required.

## FIRE SUPPRESSION SYSTEMS

A. Codes and Standards

1. The fire protection equipment and installation shall conform to the following codes:
   a. The Florida Building Code, 5th Edition (2014) Building
   b. The Florida Building Code, 5th Edition (2014) Fire Prevention
2. The fire suppression equipment and installation shall conform to the following standards:
   a. National Fire Protection Association (NFPA):
      1) Standard 13, Installation of Sprinkler Systems (2016).
      2) Standard 14, Installation of Standpipe and Hose Systems (2016).
      3) Standard 17, Dry Chemical Extinguishing Systems (2013).
      4) Standard 20, Installation of Stationary Pumps for Fire Protection (2016).
   b. American Correctional Association (ACA):
      1) Standards for Adult Local Detention Facilities.
      2) Standards for Juvenile Detention Facilities.
3. Publication Dates: Where the date of issue of a Reference Code or Standard is not specified, comply with the Code or Standard in effect as of the date of the contract documents.

B. Design Parameters

| Area Served | Design Area (sf) | Design Flow Density (gpm) | Inside Hose Demand (gpm) | Outside Hose Demand (gpm) |
|---|---|---|---|---|
| Administration | 1500 | 0.10 | 100 | 100 |
| Inmate Housing | 1500 | 0.10 | 100 | 100 |
| Medical | 1500 | 0.10 | 100 | 100 |
| Kitchen | 1500 | 0.15 | 100 | 250 |
| Laundry | 1500 | 0.15 | 100 | 250 |
| Central Plant | 1500 | 0.15 | 100 | 250 |
| Mechanical/Electrical Rooms | 1500 | 0.10 | 100 | 100 |
| Storage | 1500 | 0.15 | 100 | 250 |
| Other | 1500 | As Required | 100 | As required |

C. System Narratives

1. Fire Service
   a. The fire service will enter in the fire pump room within the central plant. Once inside the building, the fire service will be routed to a fire pump assembly. The fire pump assembly will include: a bypass with flow meter; a branch to an exterior wall mounted test header; and, a branch to the exterior fire department connection.
   b. The fire pump and jockey pump control panel and transfer switch will be either wall mounted or frame mounted on the fire pump factory assembly. The fire pump and jockey pump will be wired to the emergency generator for backup due to power failure.
   c. Based on Fire Flow Tests conducted by ECUA, the available water pressure at E. Fairmont is approximately 52 psig static and 48 psig residual at a flow of 920 gpm. Accounting for exterior pipe length and elevation changes, we estimate the service pressure at the building of just under 40 psig. Using the estimated service pressure and 100 psig at the top floor outlet, we estimate that the fire pump requirement is 1000 gpm at a 126 psig pump head with a leaving pressure of 165 psig. The 165 psig pump discharge pressure is below the 175 psig

system limit; however, the lower floors will, most likely, require pressure reducing valves to limit the discharge pressure at the hose valve or sprinkler systems to 100 pisg.

2. Standpipe System
   a. From the fire pump discharge, the wet standpipe system will be routed to the main corridor and the three stairwells that connect to the main corridor. At the south end of the main corridor, a branch pipe will have a shutoff valve and capped end for extension to the future housing unit. The standpipe branch to the stairwells will include a shutoff valve so that each stairwell riser can be isolated for maintenance while the other risers remain active. The standpipe risers at each stairwell will be routed vertically to each floor of the building. A 2-1/2 inch hose valve will be installed on the riser at each floor landing. One standpipe riser will extend through the roof and terminate with a roof manifold.
   b. In addition to the 2-1/2 inch hose valve in the stairwells, additional hose valves will be located in the various areas of the building as required to meet the maximum hose and spray requirements. These additional valves will be 2-1/2 with a reducer to 1-1/2 inch. In secure areas, the hose valve will be housed in a locked valve box (wall recessed) without a hose. In administration, public, and support areas the hose valve will be housed in an industry standard wall cabinet (wall recessed).

3. Sprinkler Systems
   a. At each floor of the building, one or more sprinkler branch assemblies will be connected to the standpipe in the stairwell. Where it is not convenient to locate the sprinkler branch assembly at the stairwell, branches will be connected to the standpipe service above the main corridor. Each sprinkler branch assembly will include a monitored shut-off valve, a flow switch, and an inspector's test connection. From the sprinkler branch assemblies, wet pipe sprinkler systems will be routed to each area of the building. The sprinkler systems will be arranged to match the smoke control and fire alarm zones.
   b. The sprinkler systems will be light or ordinary hazard classification as indicated herein before. Sprinkler heads in lay-in ceilings will be located in the center of the ceiling tile or 1/2 tile.
   c. Sprinkler heads types will be based on the Room Data Sheet requirements of the RFP. In general sprinkler heads will be:

| Application | Ceiling Type | Sprinkler Type |
|---|---|---|
| Administration/Public | Lay-in Tiles | Concealed Pendant |
| Administration/Public | Solid Ceilings | Concealed Pendant |
| Inmate Housing | Lay-in Tiles | Pendant |
| Inmate Housing | Solid Ceilings | Security Pendant |
| Medical | Lay-in Tiles | Concealed Pendant |
| Medical | Solid Ceilings | Security Pendant |
| Medical | Security Ceilings | Security Pendant/Wall |
| Kitchen | All | Pendant |
| Laundry | All | Pendant |
| Central Plant | No Ceiling | Upright |
| Mechanical/Electrical Rooms | No Ceiling | Upright |
| Storage | All | Pendant or Upright |
| Support | Lay-in Tiles | Pendant |
| Support | Solid Ceilings | Pendant |
| Other | All | As required |

d. For the Master Control Room, Control Rooms, Data Equipment Rooms, and Security Electronic Rooms, either pre-action wet pipe systems or waterless fire suppression systems will be used. The pre-action valve assembly and air compressor or the waterless tanks will be located in a closet adjacent to the room served or a mechanical room in the vicinity.

D. Seismic Restraints

1. System

a. Per the Florida Building Code, the following seismic criteria apply:
- Site Class D (Preliminary, subject to confirmation by the final geotechnical report)
- Ss = 0.091
- S1 = 0.054
- Fa = 1.6
- Fv = 2.4
- Seismic Design Category B
- Importance Factor, Ie = 1.25
- ASCE 7-10, Chapters 11 and 12

b. Per NFPA 13, the sprinkler system is a “designated seismic component” with an importance factor of 1.5. Seismic restraints of fire suppression system are required.

## DIVISION 27 DESIGN NARRATIVE

Codes and Standards

- NFPA 70 (National Electrical Code) 2011
- EIA/TIA 568, 569, 606, 607
- NFPA 72 (Fire Alarm System Standards)
- NFPA 101 (Life Safety Code)
- FBC (Florida Building Code) 2014
- Florida Fire Prevention Code 2014
- Florida Jail Standards
- BICSI (Building Industry Consulting Services International)
- NEMA (National Electrical Manufacturer’s Association)

**Definitions**

| | |
|---|---|
| • ACS | Access Control System |
| • ANSI | American National Standards Institute |
| • ASHRAE | American Society of Heating, Refrig., and Air-Conditioning Engineers |
| • AVBS | Active Vehicle Barrier System |
| • AWS | American Wire Size |
| • BACnet | Building Automation Control Network (protocol) |
| • BAS | Building Automation System |
| • BICSI | Building Industry Consulting Services International |
| • BMS | Building Management System |
| • CAT | Category |
| • CCD | Charge Coupled Device (camera imager) |
| • CCTV | Closed Circuit Television |
| • CIS | Common Intelligibility Scale (for audio messages) |
| • CPU | Central Processing Unit (computer) |
| • DACT | Digital Alarm Communication Transmitter |
| • EIA | Electronic Industries Association |

- FACP Fire Alarm Control Panel
- FAS Fire Alarm System
- FOC Fiber Optic Cable
- GUI Graphical User Interface
- H.264 Video Compression Codec
- HVAC Heating, Ventilating, Air-Conditioning
- IC Intercommunication
- IDF Telecommunication Intermediate Distribution Frame (room)
- IEC International Electrotechnical Commission
- IMO Information Media Outlet (voice data outlet)
- IEEE Institute of Electrical and Electronic Engineers
- IP Internet Protocol
- ISO International Organization for Standardization
- LAN Local Area Network
- MATV Master Antenna Television System
- MDF Telecommunication Main Distribution Frame (room)
- MM Multi-Mode Fiber Optic Cable
- MP Mega-Pixel (high resolution camera)
- MTR Main Telecommunication Room
- NAS Network Attached Storage (video storage device)
- NEMA National Electrical Manufacturer's Association
- NFPA National Fire Protection Association
- OSP Outside Plant (telecommunication wiring)
- PA Public Address System
- PACS Physical Access Control System
- PoE Power over Ethernet
- PTZ Pan, Tilt, Zoom (CCTV camera motion control)
- RAID Redundant Array of Independent Discs (high security hard drive)
- RAP Fire Alarm Remote Annunciator Panel
- SM Single Mode Fiber Optic Cable
- TCP/IP Transmission Control Protocol/Internet Protocol
- TR Telecommunication Room
- TSDS Television Signal Distribution System
- UPS Uninterruptable Power Supply
- UTP Unshielded Twisted Pair
- VMS Video Management System (video system software)
- VoIP Voice over Internet Protocol

**Structured Cabling System (SCS) Infrastructure (DC D51)**

General

- All material furnished and/or installed shall meet the Florida Building Code, 5th Edition (2014).
- All cabling shall conform to the latest versions of applicable ANSI/TIA, National Electric Code and the Building Industry Consulting Services International (BICSI) best practices standards, such as, but not limited to, the Telecommunications Distribution Methods Manual.
- Cabling shall be installed via a Hierarchal Star Topology with Fiber Optic Cable (FOC) as inter-building and intra-building backbone cabling and Category 6 UTP horizontal cabling.

- All telecommunications cabling shall be installed in conduit or other raceway as proved by the County, unless otherwise noted (UON) or accepted. All conduit and/or raceways (pathways) shall be attached to the building structure. No cabling or cabling pathway shall be installed directly on top of ceiling tiles.
- The cabling infrastructure shall fully support voice communications and network data for each venue as well as all Staff Accommodation user workstations, copy/print/plot rooms, and community areas.
- Cable installation pulling tensions shall not exceed manufacturer and/or BICSI limitations.
- **Voice over Internet Protocol (VoIP)** is expected to be the basis of design for the voice system and shall be installed in a separate channel in the cable tray apart from the Data Network, Audio-Visual, Backbone and PA cabling.
- Although the **staff voice system** shall be designed for VOIP application, a 25-pair copper Category 3 cable shall be installed between the MTR (MDF) and each TR (IDF) for analog voice communications.
- The **staff Local Area Network (LAN)** shall be separate from all other cable types/systems.
- The **inmate educational LAN** shall be separate from all other cable types/systems.
- The **IP Camera Video LAN** shall be separate from all other cable types/systems.
- Cables transmitting AC and DC power shall be separated from fiber, audio-video and data cables.
- Cables and conduits may separate cable types/functions based on owner preference and/or requirements due to secure/non-secure cable.
- **Grounding and Bonding** shall be in strict adherence to manufacturer's recommendations, local electrical codes and industry standards. The Contractor shall eliminate or correct all potential ground-loop issues in a manner approved by the County.
- All devices, conduit and equipment accessible to inmates shall be installed using security screws.
- Active equipment, such as Network Switches, Routers, Computers, Printers, Copiers, Multifunction Devices, Telephone Handsets, etc. are NOT included in this SOW. The Owner will provide **Cisco switches** for WAN/LAN networks.

Main Telecommunications Rooms (MTR) / Telecommunications Rooms (TR)

- Main Distribution Frame (MDF) and Intermediate Distribution Frame (IDF) are dated terms when telephone wiring represented the whole of technology and all telephone wiring was terminated onto "frame" units.
- Main Telecommunications Room (MTR) and all Telecommunications Rooms (TR's) shall be appropriately sized per the NEC and outfitted per BICSI Standards to support the required number of full-height 2- or 4-post Equipment Racks, Server Cabinets or any combination of racks/cabinets to include spare racks/cabinets for future expansion.
- The MTR shall distribute multipair copper and FOC backbone cabling to each Telecommunications Room (TR) and each Telecommunications Enclosure (TE).
- The MTR shall distribute FOC backbone cabling to each guard tower.
- The MTR, TR and TE's shall provide Cat 6 UTP horizontal cabling to each user workstation IMO/ device.
- All wires and cables shall be properly laced and dressed vertically & horizontally and at right angles to the enclosure surfaces to prevent mechanical stress on electrical connections. No wire or cable shall be supported by its point of connection.

Pathways

- **Cable conveyance** shall be accomplished via conduit and open ladder type, aluminum cable tray 12-/18-24-inch wide x 3-/6-high cable tray (as warranted by cable maximum fill constraints) and shall be installed to support a minimum of 200-lbs of uniformly distributed load. All direction changes (bends, turns and elevations) shall be done via manufactured curved sections of the cable tray, installed per the written manufacturer's instructions. Use of a 2-tier trapeze to secure the cable tray from ceiling supports is acceptable.
- Conduits shall be sized to meet all minimum cable **fill ratios** and installed via industry best practices outline the appropriate BICSI Manual.
- All conduits shall have a plastic bushing installed prior to any cable installed in the conduit. Any cable installed in a conduit without a bushing on BOTH ends shall be considered damaged and shall be replaced complete end-to-end at no additional charge to the project.

Fiber Optic Cable (VoIP and Data Network Backbone Cabling)

- All FOC shall be manufactured by **Corning**. All Outside Plant (OSP) FOC shall be installed within Maxcell inner sleeve. All inside plant FOC shall be installed within appropriately sized conventional inner-duct. All FOC shall conform to the minimum bend radius not less than twelve (12) times the diameter of the cable or manufacturers recommended minimum bending radius, during installation and/or as finally installed.
- FOC shall be furnished in the strand-count, cable type (multimode 50-µm / 62.5-µm or single-mode) and connector type (ST, SC, LC) as identified in the Drawings / Specifications and as directed by the Owner.
- Fiber Optic Patch panels shall utilize cassette type housings with fusion-spliced pig-tails directly onto the FOC.
- All FOC installation and testing shall be supervised by a BICSI Registered Communications Distribution Designer (RCDD). A **FOC installation plan** shall be submitted as an official submittal required by the Contract Documents. The installation plan shall include all pulling locations, splice locations, termination locations and cable distances.

Category 3 Multipair Copper Cable (Telephone)

- All multipair copper cabling between buildings shall be protected via a primary building protector block fully loaded with solid-state protector modules.
- One (1) 25-pair Cat 3 multipair copper cable shall be routed between the MTR and each TR/TE with each pair landing on a Cat 3 66- or 110-block, per the Owner's direction. Option 1 is to land each 25-pair cable in the TR/TE directly onto a 24-port voice patch panel to eliminate physical constraints during adds, moves and changes.

Category 6 UTP Cable (Voice & Data Horizontal Distribution Cabling)

- No UTP cable shall exceed the distance limitation of 295-feet (90-meters), per applicable guidelines.
- All Category 6 UTP Cabling shall meet 100% of all **Permanent Link testing** parameters for the cable rating installed. No required test(s) shall be omitted, nor shall they have parameters modified.
- All horizontal cabling shall be Category 6 **Plenum-rated** UTP.
- All Cat 6 UTP cabling shall be terminated in the MTR/TR on Cat 6 UTP forty-eight (48) port Category 6 UTP patch panels and terminated at the User Workstation IMO on RJ-45 Modular Jacks housed in single or double-gang faceplates.

- Typically, each Information Management Outlet (IMO/faceplate) shall be equipped with two (2) or more Category 6 UTP jacks (two is the standard configuration). Ideally, each office is expected to have a minimum of two (2) IMO locations on opposing or adjacent walls. Depending on specific equipment needs, multiple IMO's may be placed on the same wall or additional jacks added to the faceplate(s).
- The **room data sheets** indicate the minimum number of IMO's required based on proposed occupancy. Additional Modular Jacks and/or IMO's may be required where furniture layout is flexible by design.
  - Each **printer / copier** locations shall be equipped with a minimum of three (3) Cat 6 UTP RJ-45 Modular Jacks on a single IMO faceplate.
  - Each **Wireless Access Point (WAP)** location shall be equipped with one (1) Cat 6 UTP RJ-45 Modular Jack on a single IMO faceplate, unless otherwise noted (UON). All WAP cabling will incorporate a service loop for relocation of the WAP to achieve best placement performance characteristics.
  - Each **IP addressable camera** location shall be equipped with one (1) Cat 6 UTP RJ- 45 Modular Jack on a single IMO faceplate, unless otherwise noted (UON).
  - Conference Rooms shall be equipped with two (2) or more Cat 6 UTP Modular Jacks in a common floor box collateral with AC power and one or more auxiliary connections such as HDMI and/or VGA connections to the wall-mounted display/TV.
  - Per DC D58, Paragraph 2.08, G Products: Provide a minimum of four (4) Cat 6 UTP RJ-45 Modular Jacks on a single faceplate for each of the following user workstations:
    - Magnetometer
    - Package x-ray
    - Body Scan System
    - Inmate Kiosk
    - Classrooms
- Cables shall be attached to the cable tray utilizing dielectric Velcro type ties, so as to maintain straight runs and adequate separation of cables.

<u>Labeling</u>

- Communications cable identifiers shall comply with TIA-606. All cables shall be clearly identified with permanent labels wrapped the full circumference on each end of the cable.
- All wires and cables shall be identified utilizing heat-shrink, machine-printed, polyolefin wire markers. Hand written tags are NOT acceptable. Correlate the number designated on the associated Shop or Field Drawings. Assign cable designations consistently throughout the given system. Each cable shall carry the same labeled designation over its entire run, regardless of intermediate terminations.
- All FOC and UTP patch panels shall be identified with permanently attached engraved Lamacoid labels of consistent form, color and typeface throughout the system. Design, color, font and layout shall be coordinated with, and approved by the County.
- All cables, wires, wiring forms, terminal blocks and terminals shall be identified by labels, tags or other permanent markings.

<u>Wireless Access Points (WAP's)</u>

- A needs assessment and wireless survey of existing facility to determine design requirements including wireless services, coverage, capacity, existing signal strength and building constraints shall be performed. This survey will also identify and locate sources of interference and provide the link budget calculations. This survey will be used to determine the ideal configuration with WAP quantities and placement to achieve optimum performance.

- WAP's are typically installed on support structures in the High Bay areas and in the ceiling spaces in the office areas.

**Telephone System (DC D54)**

- The telephone system will be designed to connect to the existing telephone system in the existing facility and/or service and to accommodate a new service connection (future).
- Voice-Over-Internet-Protocol (VOIP) **Staff Telephones** shall be provided and installed by the County. Each workstation shall be outfitted with three (3) Cat 6 RJ-45 Modular Jacks on a single IMO faceplate.
- **Inmate telephones** shall be provided and installed by the County's Vendor. A separate cabling system to support the inmate telephone system will include Cat 6 UTP cabling separated from the Staff phone/data structured cabling system and shall comprise of a single Cat 6 RJ-45 Modular Jack on a single IMO faceplate at the front outside cell area. The expected procedure would be to connect a portable phone to the jack and pass the phone through the cuff port to the inmate.
- **Video Visitation and Video Arraignment Systems** to include all cabling and equipment shall be provided and installed by the County's Vendor. If required, wall and or rack space shall be allocated for this system during this design process.
- **Commissary Kiosk** to include all cabling and equipment shall be provided and installed by the County's Vendor. If required, wall and or rack space shall be allocated for this system during this design process.
- Cat 6 UTP cabling and Cat 6 RJ-45 Modular Jacks on a single IMO faceplate shall be added in **Medical areas** to provide both portable visitation station(s) and portable commissary kiosk station(s).
- Cat 3 UTP cabling infrastructure and RJ-45 Modular jacks on a single IMO faceplate shall be furnished and installed at all **Fax Lines**.

**Cable Television (CATV) – (DC D55)**

- The design is anticipated to include a complete and operational CATV System as required in the Drawings and Specifications per the quantities and locations as directed by the owner.
- Appropriate **Headend equipment** to include ALL related electronics, cabling and patch cords shall be provided and installed to accommodate ALL channels as directed by the Owner. Amplifiers and equipment shall be manufactured by Blonder Tongue. All splitters, taps, directional couplers and conditioning equipment as required to provide proper signal distribution shall be provided and installed as part of this complete CATV system.
- **Agile modulators** for each channel shall be provided and installed, as well as three (3) additional modulators for Owner provided signal sources.
- Suitable **amplifiers** shall be provided and installed in each area of adequate size to provide television signals to each television outlet with a signal strength of approximately 4dB at each modular jack. Amplifiers shall be upsized appropriately to provide 25% spare for future outlets/TV's.
- Each **Staff Control Station (TCS)** in each housing unit shall have the ability to turn power off to the local television sets.
- CATV outlets shall also be provided and installed in:
  - Dayrooms
  - Training Rooms
  - Multi-purpose Rooms
  - Offices (as directed by the Owner)

- Classrooms: Connections shall be provided and installed at the **Teachers desk** to connect media directly to ports on the back of the television set. Connections will include HMDI, Component Video, VGA and two (2) Cat 6 UTP RJ-45 Modular Jacks to provide Educational LAN connectivity.

**Raceway and Raceway/Wiring Systems**

Video Visitation System

- An IP video based visitation system will be provided by the owner for routine inmate visits and attorney visits.
- Raceway and wiring will be provided for the Video Visitation system.
- The Video Visitation system will have an isolated Cat 6 UTP network for its use only Passive components of the network system will be provided.
- The owner, via the system provider, will furnish and install all active components including the video visitation stations and head end equipment.

Inmate Telephone System

- Raceway and wiring will be provided for the Inmate Telephone system.
- The Inmate Telephone system will be wired with Cat 6 UTP to RJ-45 jacks.
- The inmate telephone system will be by the owner via the system service provider.
- System architecture will allow the owner the option of the use of an analog or digital (VoIP) based Inmate Telephone System.

**Life Safety System (DC D56)**

- Fire Alarm System
  - A code compliant analog addressable facility wide fire alarm system will be provided.
  - Remote Annunciation will be provided at each Control Station via Remote Annunciation Panels.
  - All housing units and adjacent corridor systems will be protected by smoke detectors.
  - Equipment rooms, Kitchen and Laundry will be protected by heat detectors.
  - A Central Graphical User Interface (GUI) proprietary supervising station and interface computer will be supplied for Master Control.
  - Master Fire Alarm Panel will be located in the Fire Command Room.
  - Remote Fire Alarm Panels will be located in Security Equipment Rooms throughout the facility.
  - Smoke Control and Air Handling Unit (AHU) Fire Control Panel will be located in the Fire Command Room.

**Testing**

- All network and voice cabling systems will be tested to EIA/|TIA Fiber Optic Test Procedures (FOTP) and TIA-568 B.2, Addendum 1 for Category 6 UTP. Testing will be performed by a BICSI Technician certified on the testing equipment utilized and supervised by a BICSI RCDD.

**Training and Closeout**

- Operational and Maintenance training for County personnel will be performed for each component of Division 27 systems. Training sessions will be recorded to DVD disk. Approximately 80 hours of training will be required at project close out with an additional 40 hours to be utilized at the County's pleasure.

## DIVISION 28 DESIGN NARRATIVE

Codes and Standards

- NFPA 70 (National Electrical Code) 2011
- EIA/TIA 568, 569, 606, 607
- NFPA 72 (Fire Alarm System Standards)
- NFPA 101 (Life Safety Code)
- FBC (Florida Building Code) 2014
- Florida Fire Prevention Code 2014
- Florida Jail Standards
- BICSI (Building Industry Consulting Services International)
- NEMA (National Electrical Manufacturer's Association)

**Definitions**

| | |
|---|---|
| • ACS | Access Control System |
| • ANSI | American National Standards Institute |
| • ASHRAE | American Society of Heating, Refrig. and Air-Conditioning Engineers |
| • AVBS | Active Vehicle Barrier System |
| • AWS | American Wire Size |
| • BACnet | Building Automation Control Network (protocol) |
| • BAS | Building Automation System |
| • BICSI | Building Industry Consulting Services International |
| • BMS | Building Management System |
| • CAT | Category |
| • CCD | Charge Coupled Device (camera imager) |
| • CCTV | Closed Circuit Television |
| • CIS | Common Intelligibility Scale (for audio messages) |
| • CPU | Central Processing Unit (computer) |
| • DACT | Digital Alarm Communication Transmitter |
| • EIA | Electronic Industries Association |
| • FACP | Fire Alarm Control Panel |
| • FAS | Fire Alarm System |
| • FOC | Fiber Optic Cable |
| • GUI | Graphical User Interface |
| • H.264 | Video Compression Codec |
| • HVAC | Heating, Ventilating, Air-Conditioning |
| • IC | Intercommunication |
| • IDF | Telecommunication Intermediate Distribution Frame (room) |
| • IEC | International Electrotechnical Commission |
| • IMO | Information Media Outlet (voice data outlet) |
| • IEEE | Institute of Electrical and Electronic Engineers |
| • IP | Internet Protocol |
| • ISO | International Organization for Standardization |
| • LAN | Local Area Network |
| • MATV | Master Antenna Television System |
| • MDF | Telecommunication Main Distribution Frame (room) |
| • MM | Multi-Mode Fiber Optic Cable |
| • MP | Mega-Pixel (high resolution camera) |
| • MTR | Main Telecommunication Room |

- NAS Network Attached Storage (video storage device)
- NEMA National Electrical Manufacturer's Association
- NFPA National Fire Protection Association
- OSP Outside Plant (telecommunication wiring)
- PA Public Address System
- PACS Physical Access Control System
- PoE Power over Ethernet
- PTZ Pan, Tilt, Zoom (CCTV camera motion control)
- RAID Redundant Array of Independent Discs (high security hard drive)
- RAP Fire Alarm Remote Annunciator Panel
- SM Single Mode Fiber Optic Cable
- TCP/IP Transmission Control Protocol/Internet Protocol
- TR Telecommunication Room
- TSDS Television Signal Distribution System
- UPS Uninterruptable Power Supply
- UTP Unshielded Twisted Pair
- VMS Video Management System (video system software)
- VoIP Voice over Internet Protocol

[redacted]

- **Paging Zones:** Provide and install all wiring, cabling, equipment and programming to page into individual zones as well as group and all-call for the following:
  - Programming room by area. Refer to Room Data Sheets for additional requirements.
  - Speakers shall be provided that meet the design requirements and have a frequency range of at least 30 – 18,000 Hz.
  - Speakers located in an outdoor environment shall be vandal-proof, weather-proof and corrosion-resistant.
  - Office areas will typically have ceiling-mounted speakers.
  - High-Bay areas will typically have ceiling- or wall-mounted speakers.
  - Each workstation will be provided with access to the local public address system. Each of these systems will be interconnected to form a facility wide system. The local workstations shall be capable of paging into the local zones. Master Control shall be capable of paging into all zones. The system will also provide audio monitoring to the workstations.
  - **Harding DXL** Intercom/Paging system will be utilized. Each workstation will have a VOIP master station with Push To Talk button and flush mounted microphone. Selecting a paging zone will connect the talk path – activating the PTT button will allow announcements to be made throughout the zone.
  - Heavy duty abuse resistant speakers will be utilized in inmate accessible areas. In dayrooms Sound Sphere speakers will be used for quality voice transmission.
  - Public Address system will be supplied and installed by the Division 28 integrator.

[redacted]

***6. On- and Off-Site Civil and Utilities Systems***

***1. Provide a narrative description and where applicable, conceptual drawings of the proposed civil engineering design and approach, including the proposed unique design features, conformance with the Contractors Storm Water Pollution Prevention Plan, sustainability features and energy conservation for the best value for the County.***

## PROPOSED CIVIL-SITE DESIGN APPROACH

Introduction

Escambia County Florida is replacing the jail facility lost in the gas explosion at the 697-bed Central Booking and Detention (CBD) facility in Pensacola, Florida in April 2014. Historic flooding in the area of the detention facility was a major contributing factor in the explosion. This project will not only replace the lost jail facility but will also deal with replacing the aging existing Main Jail facility which has a capacity of 779 beds. Taken together, the overall project is to provide a capacity of 1,476 beds (697 + 779 = 1,476). The overall project will be undertaken in two construction phases.

- Phase 1 will be the first 720+ beds and the central core of administration, program, and support spaces for the full buildout of approximately 1,500 beds.
- Phase 2 will be the addition of the remaining beds to replace the lost total capacity of 1,476 beds. Prior to construction of Phase 2, the County intends to continue use of the housing units in the existing Main Jail.

The County provided a survey of the site which was prepared by Pitman Glaze and Association (PGA) along with a preliminary soil investigation performed by Larry M. Jacobs & Associates, Inc. DLR Group developed a concept plan utilizing the survey data as a guideline for the Design-Build teams.

The Civil-Site Design approach utilizes the concepts and design criteria developed by the Design Criteria Professional Team, DLR Group to develop the proposed concept design. A discussion is provided below regarding specifics of the civil/site design approach.

### Section 1 - Drainage/Hydraulic Design

a. Design Requirements

Historic flooding in the area of the detention facility was a major contributing factor in the explosion of the existing facility, and as a result, Escambia County and DLR Group has specifically raised the drainage design requirements beyond current Land Development Codes and County Design Standards to accommodate the 500-year design storm.

Elevated drainage design requirements for this project include the following:

- Full retention and treatment of stormwater runoff for the 500-year, 24-hour storm event
- Conveyance system and inlet capacity must meet a 500-year storm event with a minimum pipe flow velocity of 2 feet/sec. However, no pipes shall be installed with slopes greater than 5%.
- Vertical walls will be allowed in ponds subject to approval by the County Engineer
- No climb fence shall be used around the retention pond (primarily due to the depth of the proposed ponds)
- Fortification around the ponds with vertical walls shall be used to prevent vehicles from entering.

b. Design Team Stormwater Management Goals:
    - Meet the enhanced stormwater management design criteria (500-year design storm)
    - Secure all drainage entitlements for the future outparcel developments assuming full development of 85% impervious and Phase II jail construction
    - Minimize the stormwater pond footprint to the extent possible thereby maximizing parking capabilities for Phase I as well as Phase II expansion
    - Provide opportunity for Low Impact Development (LID) areas and enhanced landscape areas
    - Minimize impervious area to reduce stormwater runoff volume
    - Maximize contributing drainage area and correct localized flooding in the low areas on the parcel east of the project site containing juvenile justice center.

c. Drainage Design Approach - To achieve the goals stated above, the Design team calculated the total retention volume necessary to meet the 500-year design criteria for the entire site including outparcels. While this is a wise decision to maximize on-site storage to retain as much volume as possible to an area that discharges to stormwater conveyance system for the Longhollow Basin, this decision only impacts about 19 acres of the basin, which is approximately 3,100 acres in size, and should not be expected to solve the overall flooding problems that are associated with Longhollow and the downstream impacts of an elevated tailwater condition must be evaluated for the extreme events. These improvements will, however, improve drainage conditions and reduce flooding potential in the immediate vicinity of the jail. The enhanced retention requirements will also reduce the demand on the system and work in conjunction with the future improvements that are proposed as a result of the Delano Street Drainage Improvements that are intended to provide the global fix that is needed for the region.

    The initial step in the design process was to establish the existing flood elevation of the 500-year event. In order to do this, the design team accessed the XPSWMM model that was prepared by Atkins for the Longhollow Basin and modeled the system for the 500-year rainfall of 23.3 inches according to the National Oceanographic and Atmospheric Administration (NOAA).

**PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)[1]**

| Duration | Average recurrence interval (years) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | 0.570 (0.488-0.673) | 0.657 (0.561-0.776) | 0.796 (0.677-0.943) | 0.908 (0.767-1.08) | 1.06 (0.853-1.29) | 1.17 (0.918-1.45) | 1.28 (0.961-1.63) | 1.38 (0.988-1.82) | 1.52 (1.03-2.06) | 1.62 (1.07-2.24) |
| 10-min | 0.835 (0.715-0.986) | 0.962 (0.822-1.14) | 1.17 (0.991-1.38) | 1.33 (1.12-1.58) | 1.55 (1.25-1.89) | 1.71 (1.34-2.13) | 1.87 (1.41-2.38) | 2.03 (1.45-2.66) | 2.23 (1.52-3.01) | 2.37 (1.57-3.27) |
| 15-min | 1.02 (0.871-1.20) | 1.17 (1.00-1.39) | 1.42 (1.21-1.68) | 1.62 (1.37-1.93) | 1.89 (1.52-2.31) | 2.09 (1.64-2.59) | 2.28 (1.72-2.91) | 2.47 (1.77-3.24) | 2.72 (1.85-3.67) | 2.89 (1.91-3.99) |
| 30-min | 1.57 (1.34-1.85) | 1.78 (1.52-2.10) | 2.13 (1.81-2.52) | 2.43 (2.05-2.89) | 2.85 (2.31-3.51) | 3.18 (2.51-3.97) | 3.52 (2.65-4.51) | 3.86 (2.77-5.10) | 4.33 (2.96-5.88) | 4.69 (3.10-6.48) |
| 60-min | 2.15 (1.84-2.54) | 2.43 (2.08-2.87) | 2.91 (2.47-3.44) | 3.32 (2.80-3.95) | 3.92 (3.18-4.84) | 4.40 (3.47-5.51) | 4.90 (3.70-6.30) | 5.43 (3.90-7.19) | 6.17 (4.22-8.40) | 6.74 (4.46-9.31) |
| 2-hr | 2.74 (2.36-3.22) | 3.09 (2.65-3.62) | 3.68 (3.15-4.33) | 4.21 (3.57-4.97) | 4.98 (4.08-6.13) | 5.62 (4.46-7.01) | 6.29 (4.78-8.05) | 7.00 (5.06-9.22) | 8.00 (5.51-10.8) | 8.80 (5.85-12.1) |
| 3-hr | 3.12 (2.69-3.65) | 3.52 (3.03-4.11) | 4.21 (3.61-4.94) | 4.84 (4.12-5.70) | 5.78 (4.76-7.11) | 6.57 (5.24-8.18) | 7.40 (5.66-9.46) | 8.30 (6.02-10.9) | 9.57 (6.62-12.9) | 10.6 (7.07-14.5) |
| 6-hr | 3.78 (3.27-4.38) | 4.28 (3.70-4.97) | 5.21 (4.49-6.07) | 6.08 (5.20-7.11) | 7.42 (6.17-9.14) | 8.58 (6.90-10.7) | 9.83 (7.57-12.5) | 11.2 (8.20-14.7) | 13.2 (9.19-17.8) | 14.8 (9.94-20.1) |
| 12-hr | 4.43 (3.85-5.10) | 5.07 (4.41-5.85) | 6.32 (5.47-7.31) | 7.52 (6.47-8.74) | 9.44 (7.92-11.6) | 11.1 (9.01-13.8) | 13.0 (10.1-16.5) | 15.0 (11.1-19.7) | 18.1 (12.7-24.3) | 20.6 (13.9-27.7) |
| 24-hr | 5.11 (4.47-5.85) | 5.94 (5.19-6.80) | 7.55 (6.57-8.67) | 9.13 (7.89-10.5) | 11.7 (9.86-14.3) | 13.9 (11.3-17.2) | 16.4 (12.8-20.8) | 19.2 (14.2-25.0) | 23.3 (16.5-31.1) | 26.7 (18.1-35.7) |
| 2-day | 5.90 (5.19-6.71) | 6.88 (6.05-7.83) | 8.80 (7.70-10.0) | 10.7 (9.28-12.2) | 13.7 (11.6-16.7) | 16.4 (13.4-20.1) | 19.3 (15.2-24.4) | 22.7 (16.9-29.3) | 27.5 (19.6-36.5) | 31.5 (21.6-42.0) |
| 3-day | 6.46 (5.70-7.32) | 7.44 (6.56-8.43) | 9.38 (8.23-10.7) | 11.3 (9.86-12.9) | 14.4 (12.3-17.6) | 17.2 (14.2-21.2) | 20.4 (16.1-25.6) | 23.9 (17.9-30.8) | 29.0 (20.8-38.4) | 33.3 (22.9-44.2) |
| 4-day | 6.93 (6.12-7.82) | 7.89 (6.96-8.91) | 9.82 (8.63-11.1) | 11.8 (10.3-13.4) | 14.9 (12.8-18.1) | 17.8 (14.7-21.7) | 20.9 (16.6-26.2) | 24.5 (18.5-31.6) | 29.8 (21.4-39.3) | 34.2 (23.6-45.2) |
| 7-day | 8.06 (7.16-9.05) | 9.05 (8.03-10.2) | 11.0 (9.74-12.4) | 13.0 (11.4-14.7) | 16.2 (13.9-19.5) | 19.1 (15.8-23.2) | 22.3 (17.7-27.7) | 25.9 (19.6-33.0) | 31.2 (22.5-40.9) | 35.6 (24.7-46.8) |
| 10-day | 9.03 (8.03-10.1) | 10.1 (8.98-11.3) | 12.2 (10.8-13.7) | 14.2 (12.5-16.0) | 17.4 (14.9-20.8) | 20.2 (16.8-24.4) | 23.4 (18.6-28.9) | 26.9 (20.4-34.1) | 32.0 (23.1-41.7) | 36.2 (25.2-47.4) |
| 20-day | 11.7 (10.5-13.0) | 13.1 (11.7-14.6) | 15.6 (13.9-17.4) | 17.8 (15.7-19.9) | 21.0 (18.0-24.6) | 23.7 (19.7-28.1) | 26.6 (21.2-32.3) | 29.6 (22.5-37.1) | 34.0 (24.6-43.7) | 37.4 (26.2-48.7) |
| 30-day | 13.9 (12.5-15.4) | 15.6 (14.0-17.3) | 18.5 (16.5-20.5) | 20.9 (18.5-23.3) | 24.3 (20.7-28.0) | 27.0 (22.4-31.6) | 29.7 (23.7-35.7) | 32.5 (24.7-40.3) | 36.4 (26.4-46.4) | 39.3 (27.7-51.0) |
| 45-day | 16.7 (15.0-18.4) | 18.8 (16.9-20.8) | 22.2 (19.9-24.6) | 25.0 (22.2-27.8) | 28.7 (24.5-32.8) | 31.5 (26.2-36.6) | 34.2 (27.3-40.8) | 37.0 (28.1-45.4) | 40.5 (29.4-51.2) | 43.0 (30.4-55.6) |
| 60-day | 19.1 (17.2-21.0) | 21.6 (19.4-23.7) | 25.5 (22.9-28.1) | 28.6 (25.5-31.7) | 32.7 (27.9-37.1) | 35.7 (29.7-41.2) | 38.5 (30.8-45.7) | 41.3 (31.5-50.4) | 44.8 (32.6-56.3) | 47.2 (33.4-60.8) |

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Estimates from the table in CSV format: Precipitation frequency estimates Submit

XPSWMM is a modeling software that is enhanced with 2-dimensional surface capabilities for the calculation of surface flows due to flooding, which are the predominant conveyance during storms of this magnitude as the majority of underground conveyance systems are not designed to handle the flow from events of this magnitude.

The peak stages for the existing condition were recorded and then compared to the peak stages of a proposed model that completely removed all runoff from the basin, shown as Basin 2811AAA945B in the figure below, of the proposed Correctional Facility in order to replicate the design criteria of full retention.

Results from the XPSWMM simulations show a minimal reduction of the peak stage along St. Mary Avenue, shown as Node 2811AAA940N, from Elevation 75.219 to Elevation 75.009 demonstrating that an elevated tailwater condition may be present until more regional solutions to the area are incorporated. Based on this result, a time versus stage rating curve of the flooding on St. Mary Avenue was developed and incorporated into the proposed model of the on-site drainage system to ensure that no flooding proposed facility will occur even in the worst conditions.

Following the evaluation of the downstream condition, the proposed on-site basins were delineated. These proposed basins included future development of the outparcels that front Pace Boulevard and Fairfield Drive assuming the maximum allowed impervious area of 85% of the site. It should be noted that the basins for the outparcels have been extended to the roadway right-of-way assuming all of the runoff volume will be accommodated by the proposed stormwater management system for the Correctional Facility. In addition to the future outparcels, the existing drainage system to the east of the proposed site that conveys water from the low area adjacent to the Juvenile Justice Center was intercepted and will be conveyed to the proposed retention pond. This results in approximately 1.4 acres of basin area being removed from the adjacent low and also provides an emergency outfall in the ditch bottom inlet that will be placed in the existing roadway. This inlet has a top elevation of 72.4 and will collect any surface flooding in the street in the event that the existing downstream conveyance system becomes surcharged.

Calculations resulted in a required 33.54 Ac-ft. of runoff volume for the approximately 18.9-acre site. The volume calculations are provided in **Section C – Appendix C** . To meet the storage requirements for the jail and outparcels, allow sufficient parking for Phase I & II, necessary landscape areas, and appropriate traffic circulation, the Design

Team has chosen to use a combination of stormwater retention methods. A primary stormwater management pond will be supplemented by an underground concrete storage vault. Benefits of using the underground storage are that it maximizes the storage volume available on-site without sacrificing the limited land area that is available to accommodate other necessary features for the site design. This Low Impact Development approach provide the opportunity to maximize the pervious area and keep the runoff volume to a minimum. As a result, the proposed development is comprised of 29% pervious area.

The proposed stormwater management system was modeled using ICPR version 3 with perc pack and the analysis was performed under two scenarios. The first scenario was to evaluate the site isolated from the potential downstream flooding related to the Longhollow. This scenario ensures that proposed system meets the design criteria of providing adequate storage volume for zero discharge during the 500-year storm event. This scenario also represents the future condition where the benefits of the regional approach from the Delano Street Drainage Improvement project are realized the downstream condition is no longer present. The second scenario is to model the system allowing the existing tailwater downstream of the site to inundate the proposed system to evaluate the effects of the hydraulic grade line in the conveyance system and ensure that the proposed facility will not be impacted.

Another benefit of the underground storage vault is that it acts as a separate retention pond that is upstream of the traditional dry retention pond adjacent to St. Mary Avenue and operates at a slightly higher elevation. This allows the vault, which receives over 50% of the runoff volume of the site, to not only retain the majority of the runoff volume, but provide attenuation the excess runoff that discharges to the dry retention pond, which results in a delay of the peak stage in the pond when compared to the time vs stage relationship of the tailwater condition at St. Mary Avenue. This is vital to the overall benefit to the region as the proposed dry retention will provide additional storage volume that is available to the surrounding area along St. Mary Avenue as well as in the low area to the east adjacent to the Juvenile Justice Center. The effects of this can be seen the ICPR model of the check storm scenario that incorporates the downstream tailwater impact and a graph showing the comparison of the peak stages is provided in **Section C – Appendix C.**

The Design team has chosen to re-position the pond to the east from what was shown on the RFP Concept to allow a better fit with the existing grades. The pond will hold approximately 15.41 acre-feet below the top of pond elevation 73 and 14.79 acre-feet below elevation 72.4, which is the pop off to the adjacent low area to the east. The supplemental underground concrete storage system will hold an additional 12.36 acre-feet and will allow a reduction in the depth of the primary pond. Calculations for the dual system is included in **Section C – Appendix C.** Only the dry retention pond was model assuming infiltration during the storm event even though additional infiltration will occur through the vault bottom. The infiltration rates for the retention pond were obtained from the preliminary geotechnical report and applied an additional factor of safety of 2. Additionally, horizontal infiltration was limited to only one side of the pond to account for the impacts of the sheet pile wall. Although, it was not taken advantage of in the model, another benefit of utilizing the underground storage vault is the impact on infiltration as it reduces the demand on groundwater mounding by increasing in overall infiltration area as well as the distance of the infiltration surface to groundwater. The pond was

designed to maintain 1 foot of freeboard below the pop off elevation of the structure that was discharge water to the adjacent low to the east of the site.

The Design team has also calculated the benefits of providing Pervious Concrete Pavement in the parking areas as shown on sheet C8.00 of the proposed plans (Alternate 11). Implementing pervious paving will reduce the overall required storage volume by ½ acre-feet and result in a reduction of the proposed pond depth by 1 foot setting the pond bottom at Elevation 56. Calculations for the pervious pavement are also provided in **Section C – Appendix C.**

The Finished Floor Elevation is set at 82 feet which is consistent with the RFP concept although the southeast portion of the building where the Central Plant and Maintenance rooms are location were recessed to have a FFE of 77 feet to adjust for the change in existing elevation. The ICPR model shows the FFE of 82 being over 2 feet above the 500-year hydraulic grade line in the worst-case scenario that accounts for the tailwater from offsite surcharging the system. The nearest inlets adjacent to Central Plant area have a peak stage of 75.4.

Stormwater Treatment is required for the entire site. The required treatment of ½ inch over the entire site is 0.79 acre-feet; however, the state's requirement for Environmental Resource Permitting is greater by requiring runoff from 1" rainfall. Therefore, the required treatment volume for the entire site 1.21 acre-feet, which will be recovered in the required 72 hours. Additionally, all the shallow dry retention rain garden systems have been sized to provide the required treatment volumes for their respective basins. The stormwater treatment calculations are met using the above dual system.

Pipes were designed to accommodate the conveyance requirements for a 500-year storm. All sub-basins were assumed to have a time of concentration of 10 minutes and used the corresponding intensity for the 500-year event of 13.38 inches per hour. The conveyance pipe system as developed to date vary from 18-inch diameter pipe to 36-inch diameter pipe. Inlet capacity of all ditch bottom inlets were also check again the 500-year storm to ensure that no runoff bypass will occur and that all runoff will remain on-site and conveyed to the retention areas. A conceptual grading plan has been provided to ensure the site fits within the existing topography and that all proposed slopes on the parking area are at a minimum of 1% slope. The outparcels can connect to the proposed drainage system via dedicated storm structures S-110A, S-117, and S-124.

## Section 2 - FDOT Project Specific Requirements

### a. Roadway Description

Functional Classification

Pace Boulevard (SR 292) (48050000) – Urban Minor Arterial
Fairfield Drive (SR 295) (48004000) – Urban Other Principal Arterial
St. Mary Avenue (48500003) – Urban Collector

Speed Limit:

- Pace Boulevard – 40 mph
- Fairfield Drive – 40 mph
- St. Mary Avenue – 35mph

AADT

- Pace Boulevard – 18,200 (2016)
- Fairfield Drive – 32,000 (2016), 34,000 (2015)
- St. Mary Avenue – 5,000 (2016)

**b. FDOT Access Management Requirements**

Minimum connection spacing is 125 ft. of Fairfield Dr. and 245 ft. on Pace Blvd. at this location (minimum allowable distance between conforming connections, measured from the closest edge of pavement of the proposed connection to the closest edge of pavement along the edge of the traveled way). Spacing between existing signals along Pace not sufficient to add new signal.

Signal Spacing

- Pace Boulevard: St. Mary Avenue and Fairfield Drive - Distance = 1341 feet (.254 miles)
- Fairfield Drive: Pace Boulevard and L Street – Distance = 1278 feet (.242 miles)
- FDOT Access Management Standards require a minimum signal spacing = 1320 feet (.25 miles) - **Not enough space between existing signals to consider adding a new signal to Fairfield Drive or Pace Boulevard.**

| Class | Medians | Median Openings | | Signal | Connection | |
|---|---|---|---|---|---|---|
| | | Full | Directional | | More than 45 mph Posted Speed | 45 mph and less Posted Speed |
| 2 | Restrictive w/Service Roads | 2,640 | 1,320 | 2,640 | 1,320 | 660 |
| 3 | Restrictive | 2,640 | 1,320 | 2,640 | 660 | 440 |
| 4 | Non-Restrictive | | | 2,640 | 660 | 440 |
| 5 | Restrictive | 2,640 at greater than 45 mph Posted Speed<br>1,320 At 45 mph or less Posted Speed | 660 | 2,640 at greater than 45 mph Posted Speed<br>1,320 At 45 mph or less Posted Speed | 440 | 245 |
| 6 | Non-Restrictive | | | 1,320 | 440 | 245 |
| 7 | Both Median Types | 660 | 330 | 1,320 | 125 | 125 |

**Table 1: FDOT Access Management Standards from Rule 14-97**

**c. Summary of FDOT Pre-Application Review Meeting**

Meeting held on February 16, 2017 between county agents and FDOT. The FDOT requirements are summarized below along with the Design team's response in italics.

- Close all existing curb cuts and existing driveways by removal to the nearest joint, within limits of project. Restore State Right of Way where driveways are removed by installing new curb and sidewalk to match existing adjacent conditions. - *Numerous driveways are being removed as part of the jail construction plans. New ADA*

*compliant sidewalk and curb and gutter will replace old driveway locations along both Pace Boulevard and Fairfield Drive. A landscape buffer will be provided behind the sidewalks. Overall, the traffic flow along Pace Boulevard and Fairfield Drive should be enhanced long term by applying new access connection standards. The ADA accessibility will be much improved as well as the overall aesthetics.*

**Figure 1 – Looking North on Pace Boulevard (Project must close all driveways and build new curb and gutter and sidewalks)**

**Figure 2 – Looking East along Fairfield Drive – Project requires closing driveways and adding curb & gutter plus sidewalk**

- All new driveways shall meet minimum connection spacing requirement for that roadway - *This is accomplished with the proposed jail plans.*
- Install one driveway on Fairfield Drive and install one driveway on Pace Boulevard**.** *DLR masterplan shows one primary driveway into the jail from Fairfield Drive and one primary driveway into the jail from Pace Boulevard, along with two additional driveways connecting to the out parcels from Fairfield Drive. The proposed jail plans will only construct one driveway along Pace Boulevard and one new driveway along Fairfield Driveway. To accommodate temporary access to the Family Dollar store during construction and until the lease agreement ends, selected existing driveways from Fairfield Drive will need to remain in place at least until the one primary driveway is constructed. Due to the high through traffic volumes along Fairfield Drive, a right turn lane will be constructed into the Fairfield Drive driveway entrance.*
- Driveways shall use a minimum 35ft radius return @ max. 24ft wide. – *A 35-foot minimum radius is provided; however, driveway width will be wider than 24 feet to include a narrow median to enhance aesthetics at the entrance to the jail.*
- Design driveways to allow shared access for future development of adjacent parcels. *DLR masterplan shows one shared access for future developments along Fairfield*

*Drive. No shared access is shown on the master plan for Pace Boulevard, but that is not to say they couldn't be connected in the future; however, if only one access point is provided, and not three, a right turn lane should be evaluated.*

- Submit a Driveway/Connection Application Form 850-040-15, Driveway/Connection Permit Form 850-040-18 with supporting documentation, i.e., land survey, warranty deed, utility notification letters, etc. – *The driveway connection application will be submitted after the D/B selection process is completed.*
- Driveway Permit Application Fee is not required - Acknowledged
- Drainage for the development will need to meet Florida Administrative Rule 14-86, post development shall not exceed pre-development. Submit an FDOT Drainage Permit or submit a signed/sealed Drainage Exemption/Disqualification statement with supporting data, i.e., contour lines, proposed storm water plan sheet – *Because of the county requirement to meet a 500-year design storm for the entire site, jail and outparcels, Rule 14-86 will not be an issue. A drainage exemption statement will be submitted after D/B selection.*
- The applicant will provide documentation by a Professional Engineer registered in the State of Florida that construction was accomplished in accordance with the requirements set out in the permit. This documentation shall include a statement that necessary inspections, test, and physical measurements have been made, that construction was accomplished in accordance with the design information included with the connection permit in accordance with Rule Chapter 14-96, F.A.C., and that all materials entering into the work conform to the specifications in the connection permit, conform to the applicable specifications contained in the Standard Specifications for Road and Bridge Construction, or otherwise conform to or meet generally accepted professional practices. - *Acknowledged, FDOT standard specifications will be used for FDOT related work efforts.*
- The Department will review ALL lane closure, detour, and lane shift requests separately from the permit process. FDOT approval is required before commencement of work involving the closure, detour, or lane shift for work along the State highway system. If a lane closure is needed, submit a written request with proposed dates/times/MOT indices or plan. *Lane closures will be required to remove driveways and replace with curb and gutter and sidewalks for both Pace Boulevard and Fairfield Drive. A "Draft" lane closure analysis was prepared for both Pace Boulevard and Fairfield Drive.*
  *Fairfield Drive: It is anticipated that no lane closures will be allowed by FDOT between 7:30am -6:30pm. So, if lane closures required then night work will be required along Fairfield Drive. Pace Boulevard: It is anticipated that no lane closures will be allowed by FDOT between 12:00pm (noon) and 6:30pm.*

**d. Lane Closure Analysis for Maintenance of Traffic along State Roads (Pace and Fairfield)**

A "Draft" lane closure analysis was prepared for both Pace Boulevard and Fairfield Drive.

- Fairfield Drive: It is anticipated that no lane closures will be allowed by FDOT between 7:30am-6:30pm. If lane closures are needed to construct curbing and sidewalk, then night work will be required along Fairfield Drive.

- Pace Boulevard: It is anticipated that no lane closures will be allowed by FDOT between 12:00pm (noon) and 6:30pm.

**e. Right Turn Lane Analysis – Escambia County Jail Correctional Facility**

Pace Boulevard (SR 292)

- Use two FDOT Count Stations for traffic: Station 5111 (south of SR 95) & Station 4023 (South of Jordan Street)
- AM Peak (7:15 AM) WB Direction = 559 veh/hour
- PM Peak (4:45 PM) WB Direction = 831 veh/hour
- There will be multiple entrances into the jail from Pace Blvd, Fairfield Drive, L Street and St. Mary Avenue
- The only visitor entrance will be off of Pace Boulevard with parking for only 40 visitors (video visits accommodated at another location)
- Only two primary entrances for staff - Pace Boulevard and St. Mary Avenue. Due to the low traffic volumes on St. Mary Avenue, **our design team recommends that the primary staff entrance should be from St. Mary Avenue.** Should be much safer with reduced frequency of conflicts.

AM (Morning Peak) (Jail Traffic Only)

For the purpose of the Right Turn Lane Analysis we are assuming 45 turning vehicles during the morning peak hour (40 staff, 0 visitors & 5 other vehicles: bus or other correctional vehicles) entering from Northbound Pace Boulevard, thereby right turning into the Main entrance. No deliveries will be allowed through this entrance. Visiting hours are 9:00am – 8:00pm with current Lobby hours 8:30am - 8:30pm so no visitors during morning peak hour traffic.
The primary staff parking area should be accessed from St. Mary Avenue even though the Design Guidelines state that staff parking entrance will be via Pace Boulevard. We have assumed 40 staff will travel north bound along Pace Boulevard and make a right into the main entrance. Given the estimated North Bound Right Turn Lane numbers**, the right turn lane is not warranted for AM Peak hour (Figure 1).**

INPUT

| Roadway geometry: | 4-lane roadway |
|---|---|
| Variable | Value |
| Major-road speed, mph: | 40 |
| Major-road volume (one direction), veh/h: | 559 |
| Right-turn volume, veh/h: | 45 |

OUTPUT

| Variable | Value |
|---|---|
| Limiting right-turn volume, veh/h: | 159 |
| Guidance for determining the need for a major-road right-turn bay for a 4-lane roadway: | |
| Do NOT add right-turn bay. | |

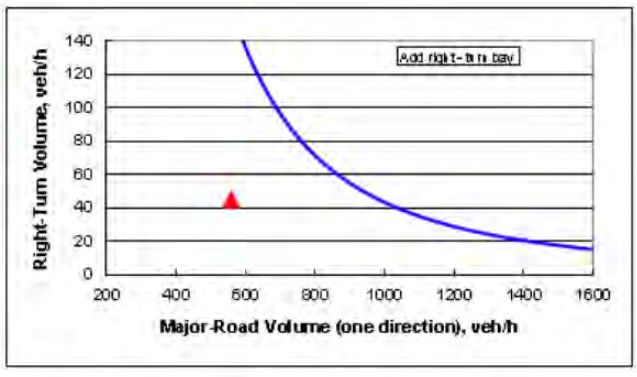
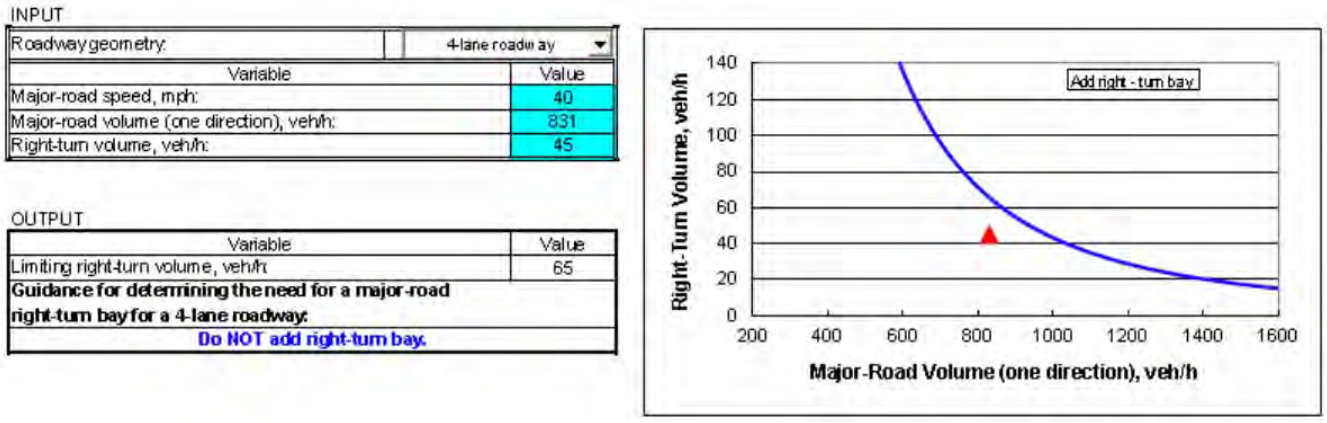



**Figure 1 – AM Peak Analysis (Pace Boulevard)**

PM (Afternoon Peak) (Jail Only) (Outparcels handled separately per DLR Masterplan – Figure 4)

For the purpose of the Right Turn Lane Analysis we are assuming 45 turning vehicles during the afternoon peak (10 staff, 30 after- work visitors, and 5 other correctional vehicles). Again, we are designing staff parking to be accessed from St. Mary Avenue, not Pace Boulevard. We would anticipate after work visitors during this time period, although visiting attorneys will be during normal attorney business hours and not during the PM peak time period. Given the estimated North Bound Right Turn Lane numbers, **the right turn lane is not warranted for PM Peak Hour (Figure 2).**



INPUT

| Roadway geometry: | 4-lane roadway |
|---|---|
| Variable | Value |
| Major-road speed, mph: | 40 |
| Major-road volume (one direction), veh/h: | 831 |
| Right-turn volume, veh/h: | 45 |

OUTPUT

| Variable | Value |
|---|---|
| Limiting right-turn volume, veh/h | 65 |
| **Guidance for determining the need for a major-road right-turn bay for a 4-lane roadway:** | |
| **Do NOT add right-turn bay.** | |



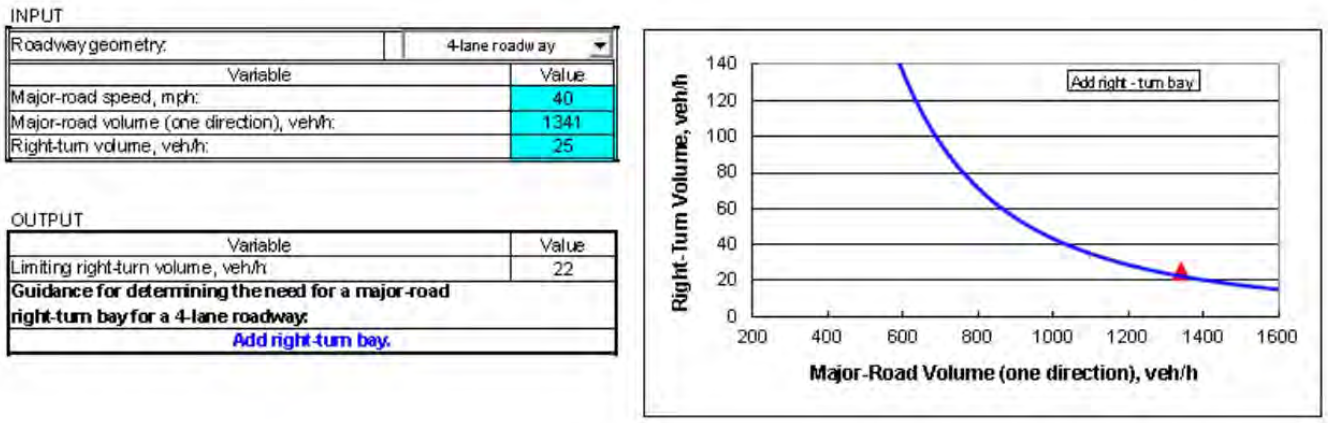
**Figure 2 - PM Peak Analysis (Pace Boulevard)**

Fairfield Drive (SR 295)

- Use FDOT count station 5113 (650' E of SR 292 – Pace Blvd)
- AM Peak (7:15am) – 1341 veh/hour
- PM Peak (3:00pm) – 1255 veh/hour
- Minor staff entering from Fairfield Drive or L-Street

AM (Morning) Peak (Jail only)

For the purpose of the Right Turn Lane Analysis we are assuming 25 turning vehicles during the morning peak hour (20 staff, 0 visitors, & 5 other vehicles: bus or other correctional vehicles) entering from East Bound Fairfield Drive. Based on the turning movements and high directional traffic on Fairfield Drive, **a right turn lane is justified. The Right turn lane becomes even more important when the outparcels are developed per the proposed master plan (Figure 3 below).**



INPUT

| Roadway geometry: | 4-lane roadway |
|---|---|
| Variable | Value |
| Major-road speed, mph: | 40 |
| Major-road volume (one direction), veh/h: | 1341 |
| Right-turn volume, veh/h: | 25 |

OUTPUT

| Variable | Value |
|---|---|
| Limiting right-turn volume, veh/h | 22 |
| **Guidance for determining the need for a major-road right-turn bay for a 4-lane roadway:** | |
| Add right-turn bay. | |



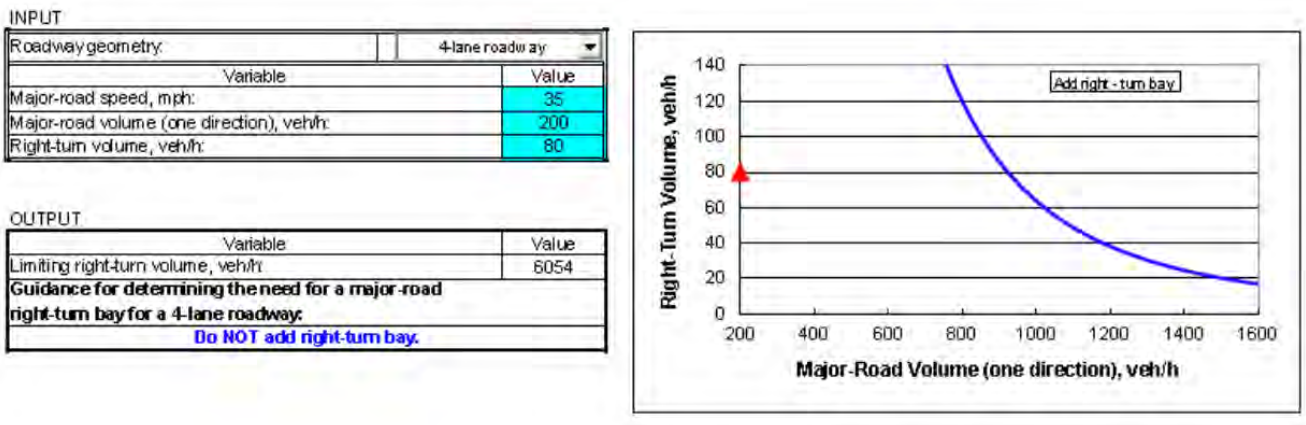
**Figure 3 - AM Peak Analysis (Fairfield Drive)**

St Mary Avenue

- Use FDOT count station 5118 (500' E of SR 292 – Pace Blvd)
- AM Peak (8:45am) – 153 veh/hour
- PM Peak (3:00pm) – 295 veh/hour

AM and PM Peak (Jail only)

The proposed design calls for the staff parking to be located along the south side of the Jail parcel and should be readily accessible from St. Mary Avenue. For the purpose of the Right Turn Lane Analysis we are assuming 80 turning vehicles during the morning peak hour (80 staff, 0 visitors, & 0 other vehicles: bus or other correctional vehicles) entering from West Bound St. Mary Avenue. We are estimating 60 turning vehicles (night shift) entering the PM peak. Based on the turning movements and low directional traffic on Fairfield Drive, **a right turn lane is not justified for either the AM or PM Peak periods.**



INPUT

| Roadway geometry: | 4-lane roadway |
|---|---|
| Variable | Value |
| Major-road speed, mph: | 35 |
| Major-road volume (one direction), veh/h: | 200 |
| Right-turn volume, veh/h: | 80 |

OUTPUT

| Variable | Value |
|---|---|
| Limiting right-turn volume, veh/h: | 6054 |
| **Guidance for determining the need for a major-road right-turn bay for a 4-lane roadway:** | |
| Do NOT add right-turn bay. | |



**Figure 3 - AM Peak Analysis (St. Mary Avenue)**

INPUT

| Roadway geometry: | 4-lane roadway |
|---|---|
| Variable | Value |
| Major-road speed, mph: | 35 |
| Major-road volume (one direction), veh/h: | 295 |
| Right-turn volume, veh/h: | 60 |

OUTPUT

| Variable | Value |
|---|---|
| Limiting right-turn volume, veh/h: | 2017 |
| **Guidance for determining the need for a major-road right-turn bay for a 4-lane roadway:** | |
| **Do NOT add right-turn bay.** | |

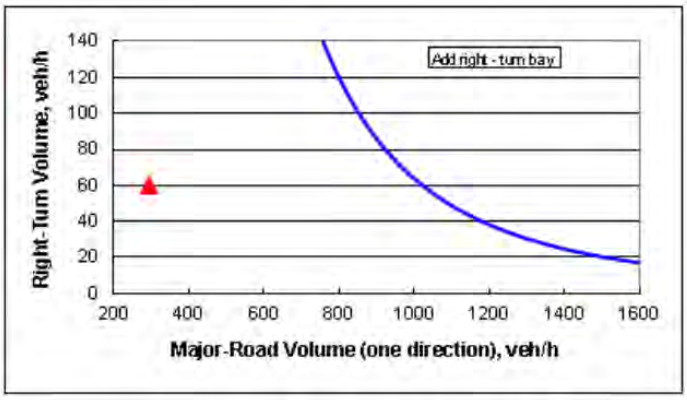



**Figure 3 - PM Peak Analysis (St. Mary Avenue)**

**Figure 4– DLR Group Proposed Masterplan**

**AM – Peak Turning Distribution**

Estimate 220 staff and County personnel entering site + 45 additional vehicles (vendors)

**Visiting hours are not until 9:00am so no visitors traffic during AM peak**

**Parking total = 260**

- Official Vehicle Parking – 40
- Staff Parking – 150
- Public Parking – 40 (no visitors during AM peak)
- Facility Management Parking – 27
- Corrections Maintenance Parking - 3
- Service Yard & Loading Dock – Institutional, vendor vehicles, trash bays

**Figure 5 – AM Peak Turning Distribution**

**Section 3 – Pavement Design**

Calculate Equivalent Single Axle Loadings

Design Life = 20 years (2020 – 2040)

Expected Traffic – Vendors/Garbage Trucks at back entrance to Jail

Deliveries from vendors will be at the back of the jail along with ECUA garbage trucks.

- Garbage Trucks – Twice a week = 104/year
- Vendor Delivery (18 wheelers) - Estimate 20/day or 140/week = 7280/year
- Vendor Delivery (Single Unit Trucks) - Estimate 20/day or 140/week = 7280/year
- Prison vehicles – Estimate 120/day or 840/week = 43,680/year

Total Traffic on back entrance from St. Mary Avenue to behind new jail and old jail = 58,344 X 2 (one way in and one way out) = 116,688 or AADT = 320

Use 320 AADT from 2020 – 2030

Use 640 AADT from 2031 – 2040 (Includes Phase II)

$T_{24}$ = 25%

Accumulated ESAL (20-year Design) = 831,616 Round up to 900,000 ESAL

Expected Traffic at Main entrance off of Pace Boulevard – Visitors, Prisoner Transfers via Bus

Bus usage – 30 buses/day

Visitor Trips (Visiting hours are 9:00am – 8:00pm) or 11 hours: 40 visitors/hour X 11 =440/day

Staff Trips – 150 trips/day

AADT = 620 from 2020 – 2030

Use 1040 AADT from 2031 – 2040 (Includes Phase II)

$T_{24}$ = 5%

Accumulated ESAL (20-year Design) = 279,695 Round up to 300,000 ESAL

Expected Traffic at Fairfield Drive entrance

- Garbage Trucks – Twice a week = 104/year
- Vendor Delivery (18 wheelers) - Estimate 5/day or 35/week = 7280/year
- Vendor Delivery (Single Unit Trucks)- Estimate 10/day or 50/week = 1820/year
- Prison vehicles – Estimate 40/day or 280/week = 14,560/year
- Outparcel shopping center traffic (i.e., Family Dollar initially, then others) = Weekday average rate is 42.7 per 1000 sf gross leasable area. Based on 120,000 total Gross Feet = 5,124 trips/weekday + Saturday (49.7 per1000sf) or 5964 trips/Saturday = Sunday (25.24 trips per 1000 sf) or 3028 trip/Sunday for total Weekly trips generated of 34,612 trips/week. Assume half of these trips will move through the Fairfield Drive entrance and half via Pace Boulevard entrances (to be determined). Directional Distribution of 50% entering and leaving so 8653/week X 52 weeks = 449,956
- Total traffic = 5000 AADT
- $T_{24}$ = 2%
- Accumulated ESAL = 682,185

ESAL Calculations

| Vendor & Garbage Truck Pick Up and Delivery | | | | |
|---|---|---|---|---|
| Year | AADT | $L_T$ | Annual ESAL | Accumulated ESAL |
| 2020 | 320 | 1 | 25988 | 25988 |
| 2021 | 320 | 1 | 25988 | 51976 |
| 2022 | 320 | 1 | 25988 | 77964 |
| 2023 | 320 | 1 | 25988 | 103952 |
| 2024 | 320 | 1 | 25988 | 129940 |
| 2025 | 320 | 1 | 25988 | 155928 |
| 2026 | 320 | 1 | 25988 | 181916 |
| 2027 | 320 | 1 | 25988 | 207904 |
| 2028 | 320 | 1 | 25988 | 233892 |
| 2029 | 320 | 1 | 25988 | 259880 |
| 2030 | 640 | 1 | 51976 | 311856 |
| 2031 | 640 | 1 | 51976 | 363832 |
| 2032 | 640 | 1 | 51976 | 415808 |
| 2033 | 640 | 1 | 51976 | 467784 |
| 2034 | 640 | 1 | 51976 | 519760 |
| 2035 | 640 | 1 | 51976 | 571736 |
| 2036 | 640 | 1 | 51976 | 623712 |
| 2037 | 640 | 1 | 51976 | 675688 |
| 2038 | 640 | 1 | 51976 | 727664 |
| 2039 | 640 | 1 | 51976 | 779640 |
| 2040 | 640 | 1 | 51976 | 831616 |

| Parking Areas | | | | |
|---|---|---|---|---|
| Year | AADT | $L_T$ | Annual ESAL | Accumulated ESAL |
| 2020 | 300 | 1 | 4872.75 | 4872.75 |
| 2021 | 300 | 1 | 4872.75 | 9745.5 |
| 2022 | 300 | 1 | 4872.75 | 14618.25 |
| 2023 | 300 | 1 | 4872.75 | 19491 |
| 2024 | 300 | 1 | 4872.75 | 24363.75 |
| 2025 | 300 | 1 | 4872.75 | 29236.5 |
| 2026 | 300 | 1 | 4872.75 | 34109.25 |
| 2027 | 300 | 1 | 4872.75 | 38982 |
| 2028 | 300 | 1 | 4872.75 | 43854.75 |
| 2029 | 300 | 1 | 4872.75 | 48727.5 |
| 2030 | 300 | 1 | 4872.75 | 53600.25 |
| 2031 | 450 | 1 | 7309.125 | 60909.375 |
| 2032 | 450 | 1 | 7309.125 | 68218.5 |
| 2033 | 450 | 1 | 7309.125 | 75527.625 |
| 2034 | 450 | 1 | 7309.125 | 82836.75 |
| 2035 | 450 | 1 | 7309.125 | 90145.875 |
| 2036 | 450 | 1 | 7309.125 | 97455 |
| 2037 | 450 | 1 | 7309.125 | 104764.125 |
| 2038 | 450 | 1 | 7309.125 | 112073.25 |
| 2039 | 450 | 1 | 7309.125 | 119382.375 |
| 2040 | 450 | 1 | 7309.125 | 126691.5 |

| Pace Boulevard Entrance/Bus Delivery of Prisoners | | | | |
|---|---|---|---|---|
| Year | AADT | $L_T$ | Annual ESAL | Accumulated ESAL |
| 2020 | 620 | 1 | 10070.35 | 10070.35 |
| 2021 | 620 | 1 | 10070.35 | 20140.7 |
| 2022 | 620 | 1 | 10070.35 | 30211.05 |
| 2023 | 620 | 1 | 10070.35 | 40281.4 |
| 2024 | 620 | 1 | 10070.35 | 50351.75 |
| 2025 | 620 | 1 | 10070.35 | 60422.1 |
| 2026 | 620 | 1 | 10070.35 | 70492.45 |
| 2027 | 620 | 1 | 10070.35 | 80562.8 |
| 2028 | 620 | 1 | 10070.35 | 90633.15 |
| 2029 | 620 | 1 | 10070.35 | 100703.5 |
| 2030 | 620 | 1 | 10070.35 | 110773.85 |
| 2031 | 1040 | 1 | 16892.2 | 127666.05 |
| 2032 | 1040 | 1 | 16892.2 | 144558.25 |
| 2033 | 1040 | 1 | 16892.2 | 161450.45 |
| 2034 | 1040 | 1 | 16892.2 | 178342.65 |
| 2035 | 1040 | 1 | 16892.2 | 195234.85 |
| 2036 | 1040 | 1 | 16892.2 | 212127.05 |
| 2037 | 1040 | 1 | 16892.2 | 229019.25 |
| 2038 | 1040 | 1 | 16892.2 | 245911.45 |
| 2039 | 1040 | 1 | 16892.2 | 262803.65 |
| 2040 | 1040 | 1 | 16892.2 | 279695.85 |

| Fairfield Drive Entrance | | | | |
|---|---|---|---|---|
| Year | AADT | $L_T$ | Annual ESAL | Accumulated ESAL |
| 2020 | 5000 | 1 | 32485 | 32485 |
| 2021 | 5000 | 1 | 32485 | 64970 |
| 2022 | 5000 | 1 | 32485 | 97455 |
| 2023 | 5000 | 1 | 32485 | 129940 |
| 2024 | 5000 | 1 | 32485 | 162425 |
| 2025 | 5000 | 1 | 32485 | 194910 |
| 2026 | 5000 | 1 | 32485 | 227395 |
| 2027 | 5000 | 1 | 32485 | 259880 |
| 2028 | 5000 | 1 | 32485 | 292365 |
| 2029 | 5000 | 1 | 32485 | 324850 |
| 2030 | 5000 | 1 | 32485 | 357335 |
| 2031 | 5000 | 1 | 32485 | 389820 |
| 2032 | 5000 | 1 | 32485 | 422305 |
| 2033 | 5000 | 1 | 32485 | 454790 |
| 2034 | 5000 | 1 | 32485 | 487275 |
| 2035 | 5000 | 1 | 32485 | 519760 |
| 2036 | 5000 | 1 | 32485 | 552245 |
| 2037 | 5000 | 1 | 32485 | 584730 |
| 2038 | 5000 | 1 | 32485 | 617215 |
| 2039 | 5000 | 1 | 32485 | 649700 |
| 2040 | 5000 | 1 | 32485 | 682185 |

Calculate Required Structural Numbers

Limerock Bearing Ratio (LBR) = 30 (From Mitch Smith, Tierra)

Resilient Modulus ($M_R$) = 10,000 PSI

Reliability (%R) (Collector Road) = 75%

Base Clearance to Seasonal High Water > 3 feet so no adjustment to Design Resilient Modulus

**Required Structural Number ($SN_R$) for Back Entrance Road = 2.75**

**Required Structural Number ($SN_R$) for Main Entrance Road = 2.29**

**Required Structural Number ($SN_R$) for Staff Parking Areas = 2.04**

**Required Structural Number ($SN_R$) for Fairfield Drive Entrance = 2.64**

**TABLE A.1A**

**REQUIRED STRUCTURAL NUMBER ($SN_R$)**
**75% RELIABILITY (%R)**
**RESILIENT MODULUS ($M_R$) RANGE 4,000 PSI TO 18,000 PSI**

**RESILIENT MODULUS ($M_R$), (PSI x 1000)**

| $ESAL_6$ | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 000 | 2.72 | 2.50 | 2.33 | 2.19 | 2.08 | 1.99 | [illegible] | 1.83 | 1.77 | 1.71 | 1.66 | 1.62 | 1.57 | 1.53 | 1.50 |
| 150 000 | [illegible] | | | | | | 2.04 | 1.97 | 1.90 | 1.84 | 1.79 | 1.74 | 1.69 | 1.65 | 1.61 |
| 200 000 | 3.05 | 2.80 | 2.61 | 2.46 | 2.34 | 2.23 | 2.14 | 2.07 | 2.00 | 1.93 | 1.88 | 1.83 | 1.78 | 1.74 | 1.70 |
| 250 000 | 3.17 | 2.91 | 2.71 | 2.55 | 2.43 | 2.32 | 2.23 | 2.14 | 2.07 | 2.01 | 1.95 | 1.90 | 1.85 | 1.81 | 1.76 |
| 300 000 | [illegible] | | | | | | 2.29 | 2.21 | 2.14 | 2.07 | 2.01 | 1.96 | 1.91 | 1.86 | 1.82 |
| 350 000 | 3.35 | 3.08 | 2.87 | 2.70 | 2.57 | 2.45 | [illegible] | 2.27 | 2.19 | 2.13 | 2.07 | 2.01 | 1.96 | 1.91 | 1.87 |
| 400 000 | 3.42 | 3.14 | 2.93 | 2.76 | 2.62 | 2.51 | 2.41 | 2.32 | 2.24 | 2.17 | 2.11 | 2.06 | 2.00 | 1.96 | 1.91 |
| 450 000 | 3.49 | 3.21 | 2.99 | 2.82 | 2.68 | 2.56 | 2.46 | 2.37 | 2.29 | 2.22 | 2.15 | 2.10 | 2.04 | 2.00 | 1.95 |
| 500 000 | 3.55 | 3.26 | 3.04 | 2.87 | 2.72 | 2.60 | 2.50 | 2.41 | 2.33 | 2.26 | 2.19 | 2.13 | 2.08 | 2.03 | 1.99 |
| 600 000 | 3.66 | 3.36 | 3.14 | 2.95 | 2.81 | 2.68 | 2.58 | 2.48 | 2.40 | 2.33 | 2.26 | 2.20 | 2.15 | 2.10 | 2.05 |
| 700 000 | [illegible] | | | | | | 2.64 | 2.55 | 2.46 | 2.39 | 2.32 | 2.26 | 2.20 | 2.15 | 2.10 |
| 800 000 | 3.83 | 3.52 | 3.29 | 3.10 | 2.94 | 2.81 | [illegible] | 2.60 | 2.52 | 2.44 | 2.37 | 2.31 | 2.25 | 2.20 | 2.15 |
| 900 000 | [illegible] | | | | | | 2.75 | 2.66 | 2.57 | 2.49 | 2.42 | 2.36 | 2.30 | 2.24 | 2.19 |
| 1 000 000 | 3.97 | 3.65 | 3.41 | 3.22 | 3.06 | 2.92 | [illegible] | 2.70 | 2.61 | 2.53 | 2.46 | 2.40 | 2.34 | 2.28 | 2.23 |
| 1 500 000 | 4.23 | 3.90 | 3.64 | 3.44 | 3.27 | 3.12 | 3.00 | 2.89 | 2.80 | 2.71 | 2.63 | 2.57 | 2.50 | 2.44 | 2.39 |
| 2 000 000 | 4.42 | 4.08 | 3.82 | 3.60 | 3.43 | 3.27 | 3.15 | 3.03 | 2.93 | 2.84 | 2.76 | 2.69 | 2.62 | 2.56 | 2.51 |
| 2 500 000 | 4.57 | 4.23 | 3.96 | 3.74 | 3.55 | 3.40 | 3.26 | 3.15 | 3.04 | 2.95 | 2.87 | 2.79 | 2.72 | 2.66 | 2.60 |
| 3 000 000 | 4.70 | 4.35 | 4.07 | 3.85 | 3.66 | 3.50 | 3.36 | 3.24 | 3.14 | 3.04 | 2.96 | 2.88 | 2.81 | 2.74 | 2.68 |
| 3 500 000 | 4.80 | 4.45 | 4.17 | 3.94 | 3.75 | 3.59 | 3.45 | 3.33 | 3.22 | 3.12 | 3.03 | 2.95 | 2.88 | 2.81 | 2.75 |
| 4 000 000 | 4.90 | 4.54 | 4.26 | 4.03 | 3.83 | 3.67 | 3.53 | 3.40 | 3.29 | 3.19 | 3.10 | 3.02 | 2.94 | 2.88 | 2.81 |
| 4 500 000 | 4.98 | 4.62 | 4.33 | 4.10 | 3.91 | 3.74 | 3.59 | 3.47 | 3.35 | 3.25 | 3.16 | 3.08 | 3.00 | 2.93 | 2.87 |
| 5 000 000 | 5.06 | 4.69 | 4.40 | 4.17 | 3.97 | 3.80 | 3.66 | 3.53 | 3.41 | 3.31 | 3.22 | 3.13 | 3.06 | 2.99 | 2.92 |
| 6 000 000 | 5.19 | 4.82 | 4.53 | 4.29 | 4.09 | 3.91 | 3.76 | 3.63 | 3.52 | 3.41 | 3.31 | 3.23 | 3.15 | 3.08 | 3.01 |
| 7 000 000 | 5.30 | 4.93 | 4.63 | 4.39 | 4.19 | 4.01 | 3.86 | 3.72 | 3.60 | 3.50 | 3.40 | 3.31 | 3.23 | 3.16 | 3.09 |
| 8 000 000 | 5.40 | 5.02 | 4.72 | 4.48 | 4.27 | 4.10 | 3.94 | 3.81 | 3.68 | 3.57 | 3.48 | 3.39 | 3.30 | 3.23 | 3.16 |
| 9 000 000 | 5.49 | 5.11 | 4.81 | 4.56 | 4.35 | 4.17 | 4.02 | 3.88 | 3.75 | 3.64 | 3.54 | 3.45 | 3.37 | 3.29 | 3.22 |
| 10 000 000 | 5.57 | 5.18 | 4.88 | 4.63 | 4.42 | 4.24 | 4.08 | 3.94 | 3.82 | 3.71 | 3.60 | 3.51 | 3.43 | 3.35 | 3.28 |
| 15 000 000 | 5.88 | 5.48 | 5.17 | 4.91 | 4.70 | 4.51 | 4.35 | 4.20 | 4.07 | 3.95 | 3.85 | 3.75 | 3.66 | 3.58 | 3.50 |
| 20 000 000 | 6.11 | 5.70 | 5.38 | 5.12 | 4.90 | 4.71 | 4.54 | 4.39 | 4.26 | 4.14 | 4.03 | 3.93 | 3.83 | 3.75 | 3.67 |
| 25 000 000 | 6.29 | 5.88 | 5.55 | 5.28 | 5.06 | 4.86 | 4.69 | 4.54 | 4.40 | 4.28 | 4.17 | 4.07 | 3.97 | 3.88 | 3.80 |
| 30 000 000 | 6.44 | 6.02 | 5.69 | 5.42 | 5.19 | 4.99 | 4.82 | 4.67 | 4.53 | 4.40 | 4.29 | 4.18 | 4.09 | 4.00 | 3.92 |
| 35 000 000 | 6.57 | 6.14 | 5.81 | 5.53 | 5.30 | 5.10 | 4.93 | 4.77 | 4.63 | 4.51 | 4.39 | 4.28 | 4.19 | 4.10 | 4.01 |
| 40 000 000 | 6.68 | 6.25 | 5.91 | 5.63 | 5.40 | 5.20 | 5.02 | 4.87 | 4.72 | 4.60 | 4.48 | 4.37 | 4.27 | 4.18 | 4.10 |
| 45 000 000 | 6.78 | 6.35 | 6.01 | 5.73 | 5.49 | 5.29 | 5.11 | 4.95 | 4.81 | 4.68 | 4.56 | 4.45 | 4.35 | 4.26 | 4.17 |
| 50 000 000 | 6.88 | 6.43 | 6.09 | 5.81 | 5.57 | 5.36 | 5.18 | 5.02 | 4.88 | 4.75 | 4.63 | 4.52 | 4.42 | 4.33 | 4.24 |
| 60 000 000 | 7.04 | 6.59 | 6.24 | 5.95 | 5.71 | 5.50 | 5.32 | 5.16 | 5.01 | 4.88 | 4.76 | 4.65 | 4.55 | 4.45 | 4.36 |
| 70 000 000 | 7.17 | 6.72 | 6.36 | 6.07 | 5.83 | 5.62 | 5.43 | 5.27 | 5.12 | 4.99 | 4.87 | 4.75 | 4.65 | 4.55 | 4.46 |
| 80 000 000 | 7.29 | 6.83 | 6.47 | 6.18 | 5.93 | 5.72 | 5.53 | 5.37 | 5.22 | 5.08 | 4.96 | 4.85 | 4.74 | 4.65 | 4.55 |
| 90 000 000 | 7.40 | 6.94 | 6.57 | 6.28 | 6.03 | 5.81 | 5.62 | 5.45 | 5.30 | 5.17 | 5.04 | 4.93 | 4.82 | 4.73 | 4.64 |
| 100 000 000 | 7.50 | 7.03 | 6.66 | 6.36 | 6.11 | 5.89 | 5.70 | 5.53 | 5.38 | 5.25 | 5.12 | 5.01 | 4.90 | 4.80 | 4.71 |

**Layer Thickness Calculations**

$SN_C = (a_1 \times D_1) + (a_2 \times D_2) + (a_3 \times D_3)$
$A_N$ = Layer coefficient of the $N_{th}$ layer
$D_N$ = Layer thickness in inches of the $N_{th}$ layer

Layer coefficients
Type B Stabilization (LBR 40) = .08
Graded Aggregate (LBR 100) = .15
Sand Clay (LBR 75) = .12
Superpave Type SP (SP – 9.5, SP – 12.5) = .44

No Friction course required (Low speed Local Roadways)
12-inch Type B Stabilized Subgrade = 12 inches x .08 = .96”
Back Entrance Road
$2.75 (SN_C) - .96 = (a_2 X D_2) + (a_3 + D_3)$
$1.79 = (a_2 X D_2) + (a_3 + D_3)$

Possible combinations using required minimum thicknesses for new construction
Structural Course Minimum – 2”
Minimum Base Group – 6 (ESAL’s between 300,000 and 3,500,000)
Optional Base Group 6 with 2.0 inch of structural course = 1.35 in + .88 = 2.23 inches > 1.79 inches required
11 inches of Sand Clay (LBR 75) with 2.0 inches of structural course = 1.32in + .88 = 2.2 inches
Optional Base Group 6 with 1.5 inches of structural course = 1.35 + .66 = 2.01 inches

**Recommended Pavement Design for Vendor Road**
**12-inch Type B Stabilization (LBR 40)**
**9-inch Graded Aggregate (OBG 6)**
**2-inch SP Structural Course**

**Recommended Pavement Design for Main Entrance Road (Use minimum 300,000 ESAL)**
Structural Course Minimum = 2 inches
Minimum Base Group – 6 (> 300,000 ESAL)

$2.29 (SN_{C)} - .96 = (a_2 X D_2) + (a_3 + D_3)$
$1.33 = (a_2 X D_2) + (a_3 + D_3)$
Optional Base Group 6 with 2.0 inch of structural course = 1.35 in + .88 = 2.23 inches > 1.33 inch

**Recommended Pavement Design**
**12-inch Type B Stabilization (LBR 40)**
**9-inch Graded Aggregate (OBG 6)**
**2-inch SP 12.5 Structural Course**

**Recommended Pavement Design for Visitors Parking and Staff Parking Areas (< 300,000 ESAL’s)**
$2.04 (SN_{C)} - .96 = (a_2 X D_2) + (a_3 + D_3)$
$1.08 = (a_2 X D_2) + (a_3 + D_3)$
Optional Base Group 3 with 1 ½ inch of Structural Course = .975 in + .66in = 1.635 inch >1.08 inch

**12-inch Type B Stabilization (LBR 40)**
**6-1/2-inch Graded Aggregate (OBG 3)**
**1–½-inch SP 12.5 Structural Course**

## ESAL Calculations

ESAL Calculations

| Vendor & Garbage Truck Pick Up and Delivery | | | | |
|---|---|---|---|---|
| Year | AADT | $L_F$ | Annual ESAL | Accumulated ESAL |
| 2020 | 320 | 1 | 25868 | 25868 |
| 2021 | 320 | 1 | 25868 | 51976 |
| 2022 | 320 | 1 | 25868 | 77964 |
| 2023 | 320 | 1 | 25868 | 103952 |
| 2024 | 320 | 1 | 25868 | 129940 |
| 2025 | 320 | 1 | 25868 | 155928 |
| 2026 | 320 | 1 | 25868 | 181916 |
| 2027 | 320 | 1 | 25868 | 207904 |
| 2028 | 320 | 1 | 25868 | 233892 |
| 2029 | 320 | 1 | 25868 | 259880 |
| 2030 | 640 | 1 | 51976 | 311856 |
| 2031 | 640 | 1 | 51976 | 363832 |
| 2032 | 640 | 1 | 51976 | 415808 |
| 2033 | 640 | 1 | 51976 | 467784 |
| 2034 | 640 | 1 | 51976 | 519760 |
| 2035 | 640 | 1 | 51976 | 571736 |
| 2036 | 640 | 1 | 51976 | 623712 |
| 2037 | 640 | 1 | 51976 | 675688 |
| 2038 | 640 | 1 | 51976 | 727664 |
| 2039 | 640 | 1 | 51976 | 779640 |
| 2040 | 640 | 1 | 51976 | 831616 |

| Parking Areas | | | | |
|---|---|---|---|---|
| Year | AADT | $L_F$ | Annual ESAL | Accumulated ESAL |
| 2020 | 300 | 1 | 4872.75 | 4872.75 |
| 2021 | 300 | 1 | 4872.75 | 9745.5 |
| 2022 | 300 | 1 | 4872.75 | 14618.25 |
| 2023 | 300 | 1 | 4872.75 | 19491 |
| 2024 | 300 | 1 | 4872.75 | 24363.75 |
| 2025 | 300 | 1 | 4872.75 | 29236.5 |
| 2026 | 300 | 1 | 4872.75 | 34109.25 |
| 2027 | 300 | 1 | 4872.75 | 38982 |
| 2028 | 300 | 1 | 4872.75 | 43854.75 |
| 2029 | 300 | 1 | 4872.75 | 48727.5 |
| 2030 | 300 | 1 | 4872.75 | 53600.25 |
| 2031 | 450 | 1 | 7309.125 | 60909.375 |
| 2032 | 450 | 1 | 7309.125 | 68218.5 |
| 2033 | 450 | 1 | 7309.125 | 75527.625 |
| 2034 | 450 | 1 | 7309.125 | 82836.75 |
| 2035 | 450 | 1 | 7309.125 | 90145.875 |
| 2036 | 450 | 1 | 7309.125 | 97455 |
| 2037 | 450 | 1 | 7309.125 | 104764.125 |
| 2038 | 450 | 1 | 7309.125 | 112073.25 |
| 2039 | 450 | 1 | 7309.125 | 119382.375 |
| 2040 | 450 | 1 | 7309.125 | 126691.5 |

| Pace Boulevard Entrance/Bus Delivery of Prisoners | | | | |
|---|---|---|---|---|
| Year | AADT | $L_F$ | Annual ESAL | Accumulated ESAL |
| 2020 | 620 | 1 | 10070.35 | 10070.35 |
| 2021 | 620 | 1 | 10070.35 | 20140.7 |
| 2022 | 620 | 1 | 10070.35 | 30211.05 |
| 2023 | 620 | 1 | 10070.35 | 40281.4 |
| 2024 | 620 | 1 | 10070.35 | 50351.75 |
| 2025 | 620 | 1 | 10070.35 | 60422.1 |
| 2026 | 620 | 1 | 10070.35 | 70492.45 |
| 2027 | 620 | 1 | 10070.35 | 80562.8 |
| 2028 | 620 | 1 | 10070.35 | 90633.15 |
| 2029 | 620 | 1 | 10070.35 | 100703.5 |
| 2030 | 620 | 1 | 10070.35 | 110773.85 |
| 2031 | 1040 | 1 | 16892.2 | 127666.05 |
| 2032 | 1040 | 1 | 16892.2 | 144558.25 |
| 2033 | 1040 | 1 | 16892.2 | 161450.45 |
| 2034 | 1040 | 1 | 16892.2 | 178342.65 |
| 2035 | 1040 | 1 | 16892.2 | 195234.85 |
| 2036 | 1040 | 1 | 16892.2 | 212127.05 |
| 2037 | 1040 | 1 | 16892.2 | 229019.25 |
| 2038 | 1040 | 1 | 16892.2 | 245911.45 |
| 2039 | 1040 | 1 | 16892.2 | 262803.65 |
| 2040 | 1040 | 1 | 16892.2 | 279695.85 |

| Fairfield Drive Entrance | | | | |
|---|---|---|---|---|
| Year | AADT | $L_F$ | Annual ESAL | Accumulated ESAL |
| 2020 | 5000 | 1 | 32485 | 32485 |
| 2021 | 5000 | 1 | 32485 | 64970 |
| 2022 | 5000 | 1 | 32485 | 97455 |
| 2023 | 5000 | 1 | 32485 | 129940 |
| 2024 | 5000 | 1 | 32485 | 162425 |
| 2025 | 5000 | 1 | 32485 | 194910 |
| 2026 | 5000 | 1 | 32485 | 227395 |
| 2027 | 5000 | 1 | 32485 | 259880 |
| 2028 | 5000 | 1 | 32485 | 292365 |
| 2029 | 5000 | 1 | 32485 | 324850 |
| 2030 | 5000 | 1 | 32485 | 357335 |
| 2031 | 5000 | 1 | 32485 | 389820 |
| 2032 | 5000 | 1 | 32485 | 422305 |
| 2033 | 5000 | 1 | 32485 | 454790 |
| 2034 | 5000 | 1 | 32485 | 487275 |
| 2035 | 5000 | 1 | 32485 | 519760 |
| 2036 | 5000 | 1 | 32485 | 552245 |
| 2037 | 5000 | 1 | 32485 | 584730 |
| 2038 | 5000 | 1 | 32485 | 617215 |
| 2039 | 5000 | 1 | 32485 | 649700 |
| 2040 | 5000 | 1 | 32485 | 682185 |

## Section 4 - Landscape Design/ Low Impact Development (LID)/Erosion Control

Landscape Plant Plan:

1. Native and highly adaptable plants are used for low maintenance, sustainable water use.
2. Evergreen Yew Pines are used between the facility and future retail development on the Northwest and West side of the project. Yew Pines, live oaks, understory trees, and shrubs provide heavy buffer to the project.
3. Golden Trumpet Trees are used as accent trees in the triangular landscape island. They provide shade during summer to reduce heat island effect on site.

4. Symmetrical tree layout in the central island of public parking to give visitors a visual direction to the building facility.
5. Rain gardens are used on site with large landscape areas to receive stormwater runoff from surrounding roadway and parking. They slow down the rush of stormwater and hold the water for a short period to allow the stormwater to naturally infiltrate into the ground.
6. The linear landscape strips on site are used vegetated swales to lower stormwater impact on site.
7. Live oaks are used in the parking islands to provide shade during summer to minimize heat island impact.
8. Dry pond on project north side is surrounded by low maintenance native plants. Bahia sod area provides evacuation space.

Irrigation:

1. The irrigation system will use rain sensor and soil moisture sensors to “smart control” irrigation cycle during a rain event and will resume watering once the soil moisture in the soil allows the system to resume watering.
2. Once the plants are established, the planting areas will limit to use irrigation system.

Safety:

1. 15’ heavy buffer is used along northwest and west between the facility and future retail development.
2. 8’ heavy buffer is used along north and west of the employee parking
3. 8’ heavy buffer is used on the south side of the project.
4. Low shrubs and groundcover adjacent to the building and in the parking islands to provide safety and views into the site.

Maintenance:

1. Using native and highly adaptable plants on site to minimize the maintenance once the plants are established.
2. Using minimum 3” depth layer of mulch in all planting beds to minimize weed growth and provide moisture retention, and to reduce maintenance.
3. Planting beds will be edged with a heavy-duty aluminum edge to reduce maintenance.

Low Impact Development Opportunities:

The proposed design plan provides several opportunities to incorporate Low Impact Development principles into the overall site design.

- Rain Gardens are proposed at three (3) locations
- Underground retentions systems are utilized to augment the stormwater pond
- Permeable Pavers are shown as an alternate. Using the permeable pavers reduces the depth in the primary pond by one foot.
- Tree placement in parking areas to reduce the Heat Island effect.
- Florida friendly landscaping proposed throughout site
- Vegetated buffers have been included around perimeter of site
- Bike racks will be provided.
- Pedestrian and ADA access will be accommodated on site and existing sidewalks along Fairfield Drive and Pace Boulevard that are currently ADA deficient will be replaced with new ADA compliant sidewalks with minimal driveways.
- A few parking spots will be set up for potential electric vehicle charging stations

Erosion Control:
The site includes approximately 18.9 acres of construction. It will be extremely important to keep the site stabilized throughout construction. A preliminary Stormwater Pollution and Prevention Plan (SWPPP) has been included with the plans; however, a more detailed plan showing specific Best Management Practice (BMP) locations will be added during final plans preparation. A National Pollution Discharge Elimination System (NPDES) permit will be required for this project site. Key features of a successful Erosion Control Plan will include the following:

In addition, a plan for extreme storm events (Tropical Storms, Hurricanes, extreme rain events) will be prepared to protect the site and adjacent properties. The Design team may incorporate the county purchased pumps (for the Juvenile Justice area) as part of the extreme event management plan during construction.
Key features of a successful Erosion/Sediment Control Plan will include the following:

- Stabilize construction areas on site as soon as possible
- Protect slopes and channels
- Reduce impervious surfaces and promote infiltration
- Control the perimeter of the site
- Protect receiving waters or drainage structures adjacent to the construction site. **The primary purpose of erosion and sediment controls is to protect surface waters.**
- Follow pollution prevention measures
- Minimize the area and duration of soils exposed throughout construction of the jail, i.e., construction phasing.
- Include BMP's for wind erosion, i.e., dust control.
- Protect any trees that can and should be saved.
- Establish stabilized construction ingress/egress locations
- Waste Management Plan for solid/construction waste, sanitary/septic waste, hazardous materials
- Inspect and maintain erosion/sediment controls

Temporary Drainage Control concept and grading activities will consist of building the retention pond first during phase I and use excavation as fill for rough grading of the parking areas and jail facility as needed with the excess material being hauled off. Contractor may use the area designated for the rain garden in the northwest portion of the site for a potential trailer location and/or staging area during the demolition and construction of the building. Installation of the storm vault and stormwater conveyance system, and utilities will follow with the fine grading, surface treatments and landscaping to be the final component. Contractor may utilize accessible pumps to drawdown the temporary pond to conveyance system along St. Mary Avenue if needed until the retention facility is constructed to meet its full volume. Contractor will follow appropriate guidelines per the NPDES permit for any discharge activities should it be needed.

**Section 5 – Utilities**

One of the key aspects of the utility coordination during jai construction is actually maintaining utilities to the Family Dollar store during construction. This means isolating and protecting all utilities, power, gas, water, sewer and telecommunications connecting to the Family Dollar to allow normal functioning, without interruption throughout construction. These utilities have been identified and prior to construction these utilities will be will be clearly marked for protection.

The Design team met with Emerald Coast Utility Authority, Pensacola Gas and Gulf Power Company to discuss the utility connections to the proposed jail. In summary, there should be no issues in providing required utility services and meeting required capacities for the proposed jail. Gulf Power – There are two or three options for connecting power to the jail and they vary in cost depending on the level of redundancy provided. Power can be provided from St. Mary Avenue or from Fairfield Drive or both. The cost varies depending on the design option selected.

ECUA – Based on our meeting with ECUA they investigated the site and found out that they have an existing easement that was not shown on the DLR Concept. ECUA sent the Design Team a copy of the easement, the easement has been added to the plans.
Sewer: ECUA will provide sewer service to the new jail via this easement. Currently an 8 inch PVC gravity sewer line runs along the back of the existing jail and flows towards St. Mary Street. Sections of this line will be replaced to accommodate the new jail elevations; however, the line will still be gravity fed. Because ECUA prohibits any structures on or over their easements, design coordination with ECUA will be necessary, specifically regarding the proposed jail connection structure between the existing jail and the new jail to address and mitigate concerns by ECUA. The plans also show the location for Alternate #12, Grinder Pump Station as an alternate to the gravity sewer.

Water: ECUA's preference is to provide water and fire protection lines from Fairfield Drive via 8" and 6" PVC lines.

Pensacola Energy – There is an existing 2-inch gas main feeding the site from Fairfield Drive; however, Pensacola Energy indicated they would remove and replace (modernize) this line.

Telephone/IT – Connectivity will be provided via either Fairfield Drive or St Mary Avenue with the required connectivity between existing and new jail.

Temporary utility connections will be coordinated with utility companies during final design.

***7. Provide a conceptual Grading Plan, including a narrative and backup documentation as appropriate, to address the approach and sequence of grading activities. Indicate how the design addresses Escambia County's Low Impact Design (LID) requirements. Include your approach to efficiently design and install building pads.***

Please see Grading Plan in Issued for Proposal Document Drawings. The narratives are addressed in the Civil / Site Approach.

***8. Prepare conceptual Site Utility Plans with points of connection including: Sanitary Sewer, telephone/IT, Domestic and Fire Water, Storm Drain, Gas and Electrical services.***

*Please see ISSUED FOR PROPOSAL DRAWING DOCUMENTS.*

***9. Submit a Life-Cycle Cost (LCC) analysis of proposed systems describing the Proposer's approach for evaluating alternatives and developing cost effective designs, systems and components as part of sustainable design. Life-cycle benefit analyses must be shown as present value amounts using a 5.5% discount rate, 30 year life-cycle period, 3% energy costs escalation rate, 3% personnel/staff escalation rate and 2% maintenance cost escalation rate.***

Please see the HVAC narrative for Life-Cycle Cost System Description.

# C. DRAFT PROJECT MANAGEMENT PLAN

***Submit a draft Project Management Plan that addresses all the following: (in no particular order):***
***1. Communication Plan, including:***
***a. Proposer's Organization and Lines of Communication***
***b. Electronic Communications, including requirements for a Site Project website (to be provided by Design-Build Entity)***
***c. Meetings and Conferences***

Yates Construction brings a deep bench of resources and a superior level of expertise to Escambia County for the execution of the Escambia County Correctional Facility. With nearly 10,000 employees to draw from and a strong resume in constructing correctional facilities, justice centers, and courthouses, our team will ensure that Escambia County receives the most value in our execution of this project, starting with the preconstruction phase. Not only do we have extensive resources, but Escambia County has been assigned a team with a superior competence in this product type and many of those team members have successfully executed correctional facility projects together in the past. We have experience, and we will work collaboratively with the project team during the preconstruction phase. Yates is the right partner for Escambia County for this project.

Our approach offers a team where personalities mesh to form a cohesive and collaborative group with a single purpose of delivering a completed project that meets the needs of Escambia County. The Yates design-build team is the most qualified team for the new Escambia County Correctional Facility project for the following reasons:

- ✓ The Yates Team, collectively, has ***successfully completed over $8 billion utilizing the design-build delivery method.***
- ✓ The Yates Team, collectively, has ***successfully completed over $3 billion worth of detention and government projects.***
- ✓ The Yates Team, collectively, has ***successfully completed over $5 billion in the State of Florida.***

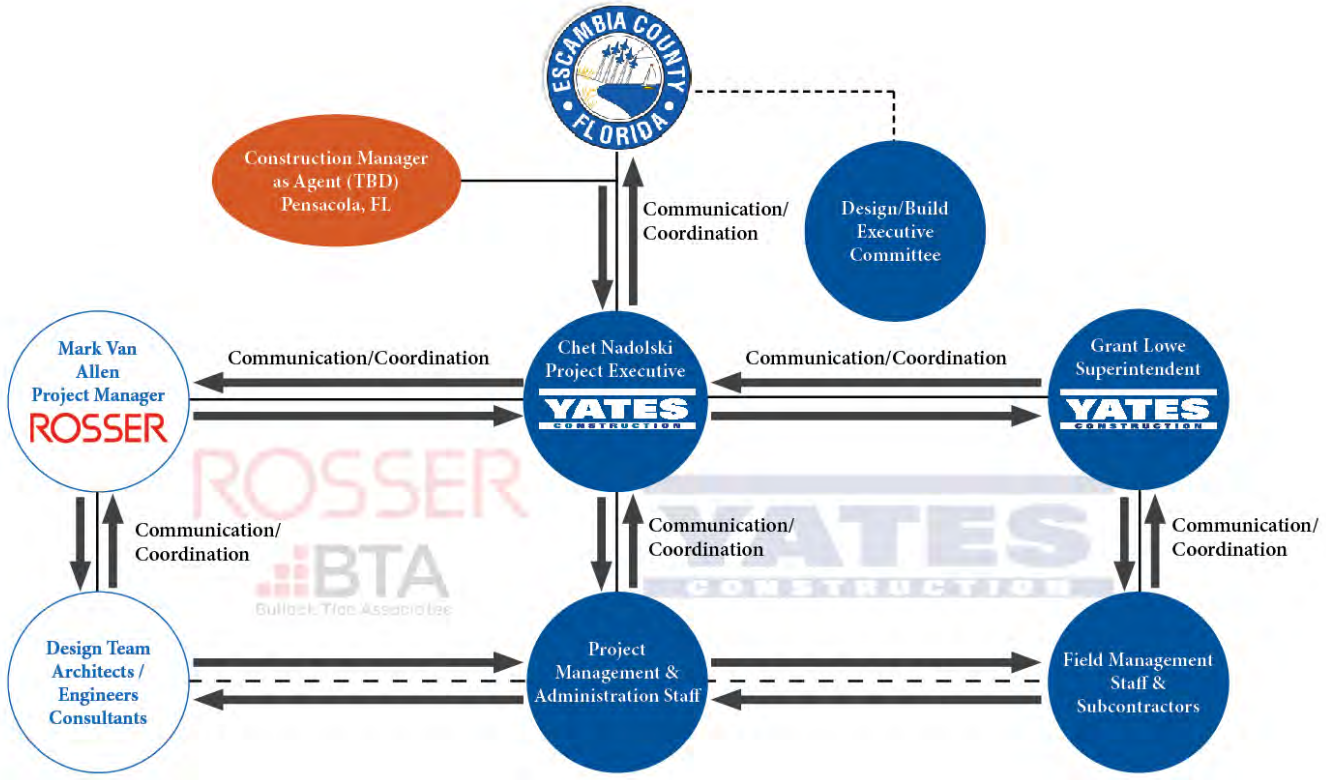
**Organizational Structure**
Yates Construction will serve as the lead Design-Build Entity (DBE) and will contract directly with Escambia County. Yates brings a wealth of detention experience to the design-build team and has had a local office in the Florida Panhandle for over 15 years that has constructed in excess of 50 buildings throughout the region in recent years. Our team has consistently ranked amongst the top Yates will be the County's single point of contact. Our team will work hand in hand with Rosser and BTA to coordinate all design and construction related activities. Yates will subcontract work to subcontractors with an emphasis on qualifications, local experience, and price.

Rosser International Inc. will serve as the Architect of Record and will contract directly with Yates. Rosser is one of the nation's leading full-service practitioners of justice planning, programming, consulting, architectural, engineering, and security design. The firm has completed more than 800 justice projects in 38 states, focusing on courts, juvenile, correctional and detention facilities. Rosser's established planning and design principles provide an integrated approach to facility design, incorporating the use of architectural materials, engineered systems, landscaping, and other design and construction aspects that promote sustainability. Rosser is one of the few firms in the country that retains an in-house detention security systems and justice technology design studio expressly to provide their clients the most responsive and informed security consultation.

Bullock-Tice & Associates, Inc. (BTA) will serve as the Associate Architect for the project. BTA was founded in Pensacola, Florida in 1958 and their practice profile includes the planning and design of correctional

facilities including the first privatized jail in the US, in Panama City. BTA offers an in-depth knowledge and experience base in applying Escambia County/Florida codes and regulations, in serving Escambia County government including the jail, and in addressing the many environmental challenges associated with designing and construction facilities in the North Gulf Coast Region. BTA has successfully implemented over 50 facilities under the design-build delivery method including 16 with Yates Construction.

At Yates, we know that we are only as good as the collective effort and results of the collective team. This team encompasses Yates Construction, Rosser, Bullock Tice Associates, and our subcontractors. Yates' philosophy is "each team member accepts responsibility for every other team member's success" and we will work tirelessly to exceed Escambia County's expectations. This places ownership and accountability into each team member's hands for their work and the combined accomplishments of the entire team. We look forward to utilizing these proven successful approaches on the Escambia County Correctional Facility. Organizational communication will flow as follows:




Through our work on other projects, past and present, we have learned that many project challenges can be effectively resolved by awareness of, and scheduling allowances for, required protocol up front. In order to help Escambia County make well-informed and schedule-sensitive decisions, Yates will proactively incorporate your preferred processes for communication and decision-making, especially since timely, effective collaboration is essential to the success of a project of this scope. Regarding electronic communications, Yates utilizes Viewpoint for Project Collaboration (VPC) which is a web-based portal that allows the entire project team to be able to access all relevant project information (submittals, RFI's, meeting minutes, change orders, etc.) in a centralized location. We have VPC to be an effective tool for enhancing the timeliness of communication between team members, wherever they are geographically located.

Effective communication amongst the entire team is paramount to the success of our projects. Upon project award, we will conduct a partnering session with all project participants to establish the communication protocols moving forward. Multiple meetings and conferences will be held at designated design iterations

so as to solicit and incorporate feedback from Escambia County into the design.

**Organizational Communication**

After assembling the right design partner, our next step was to ensure an "A-Team" of detention professionals. As depicted in the organizational chart as well as the personnel resumes, the team members proposed for this project have extensive experience successfully executing detention facilities in their role, but more importantly they have experience working together in the past.

William Yates will serve as the Construction Principal for this project and is the President and CEO of Yates Construction. He will be responsible for the overall project at the corporate level, providing the direction, resources, and support necessary to ensure the project's success.

William Yates will be complemented by William Golson of Rosser International, Inc. who will serve as the Design Principal for the project. William Golson will work collaboratively with the entire design-build team to ensure the necessary resources are made available to ensure a successful design for the project.

Chet Nadolski will serve as the Project Executive for this project and is a Senior Vice President of Yates Construction. He will ensure continuity between design and construction teams. This project will be his responsibility from start to finish and he will be the Senior Manager of the design and construction of the project. He will be seamlessly involved during the preconstruction and construction phases of the project.

The Construction Project Manager's role will be filled by Alex Teague. Alex brings a wealth of detention experience to the project team, and he will provide the necessary oversight for the entire construction team. He will be located onsite fulltime and will collaborate with the Design Project Manager. Alex will report to Chet Nadolski.

Barry Gray will execute the role of General Superintendent on the project and has proven experience executing detention facilities with both Chet Nadolski and Alex Teague. He will be onsite and responsible for managing all field and work activities of the project supervision team and its subcontractors. Barry will hold daily and weekly subcontractor meetings with subcontractors and suppliers. He will be responsible for the quality of production and will be the primary point of contact for scheduling and sequencing work. Barry will be complemented by Grant Lowe who will perform the Superintendent role of the project.

Patrik Lazzari will serve as the project Quality Control Manager and will provide oversight of Yates' quality control program execution on the project. Hamp will oversee the formulation and maintenance of the quality control objectives with construction to maximize reliability and minimize costs. He will work collaboratively with the team in both the preconstruction as well as construction phases to ensure a proper implementation. Patrik will report to Alex Teague.

Scott Huber will serve the project as the Safety Manager. Scott will be responsible for monitoring Yates' safety program on-site, performing regular safety inspections, as well as providing ongoing education and direction to the subcontracting trades throughout the course of the project. Scott will report to Alex Teague.

Larry Mize will serve as the Project Controls Manager. He will oversee all accounting items including owner billings, subcontract payment applications, and purchase orders. He will also oversee the team's utilization of Viewpoint for Project Collaboration which will serve as a holistic project management tool for the entire project team starting day one of the project.

Jim Brown will be the Design Project Manager and Construction Design Manager for the project. Jim has over 34 years of construction experience and has been involved with numerous detention facilities totaling in excess of $1 billion. He has proven experience collaborating with Rosser on multiple detention facilities. Jim will facilitate communications between the design and construction teams and will be instrumental in facilitating a seamless design and construction process.

William Golson with Rosser will serve the project as the Architect of Record and the Design Architect.

Mike Kennedy of Rosser will serve the project as the Project Architect.

**MEETINGS AND CONFERENCES**

This list of meetings is not intended to be inclusive of all meetings needed for the Project but is provided as a representative tool for coordinating the project.

- Weekly Owner / Design-Build Team meeting
- Weekly safety meetings with subcontractors
- Weekly schedule and quality control meetings with the project team
- Budget meetings
- Subcontractor pre-construction meeting prior to commencement of work
- Weekly subcontractor coordination meeting
- Weekly Coordination Calls
- BERM (Building Envelope Review Meeting)
- PERT (Project Evaluation Review Team) meeting
- LEED meeting (as needed)
- Monthly owner/architect/contractor (OAC) meeting
- Other site specific project team meetings as needed
- Other Owner meetings as needed

### *2. Contract Administration and Procedures*

Contract administration of the subcontractor selection process will be a process that Escambia County will be a part of. Finding competent, qualified subcontracting partners is critical to the project's success. Having constructed in excess of 50 buildings throughout the Florida Panhandle, Yates has a subcontractor database which includes qualified subcontractors that have the resources and experience to provide seamless services to Escambia County. All subcontractors will be evaluated and selected based on price and other established criteria. Some of the evaluation criteria will include their past performance on like and similar project as well as their safety performance with regard to their EMR. Competency, quality and ability to provide the necessary resources to meet the project schedule will also be prerequisites before we consider pricing.

### *3. Collaboration and Coordination*

Yates Construction and our design-build team truly believe that effective collaboration is an absolute necessity at all levels and intervals of the project. That includes collaboration between the Yates team and Escambia County, between Yates and our design partners, between Yates and our subcontractors, and between Yates and the authorities having jurisdiction. We firmly believe in implementing LEAN principals such as the last planner system to facilitate collaboration in the planning of our projects.

Our team is very experienced with cooperative efforts and has completed numerous projects with this approach. Whether it be a Design-Build, Construction Manager at Risk, Project Management, Design Assist, or Joint Venture (JV), we have successfully completed a number of projects both nationally and internationally. One of the many things that sets Yates apart within our collaborative efforts is our partnering approach. We prefer to have a series of meetings with all team members on a regular basis in order to get feedback, discover potential problems, minimize risk, and then incorporate those findings into our construction plan. This system provides a streamlined method of project delivery in which the owner executes a single contract with one entity (design/builder) to provide architectural/engineering and construction services. We subscribe to an open book approach and the fundamental principles of honesty, fairness and lawfulness. The ultimate project cost, occupancy date and quality of the finished project are controllable risk issues for our clients.

# C. DRAFT PROJECT MANAGEMENT PLAN

This approach also provides undivided accountability to ensure defects or non-performance are the design-builder's responsibility. That singularized responsibility inherent in design/build is a powerful quality motivator. Traditional methods rely upon restrictive contract language, adversarial audits, inspections, and a legal system to ensure quality, whereas as a more collaborative approach affords those parties involved a clear sense of responsibility and task management. Some of the many benefits to a collaborative approach are:

### QUALITY

- Undivided accountability ensures defects or non-performance are the design-builder's responsibility
- Singularized responsibility inherent in design/build is powerful quality motivator
- Traditional method relies upon restrictive contract language, adversarial audit, inspection and legal system to insure quality

### EARLY IDENTIFICATION OF COSTS

- Design/Build approach allows guaranteed project cost early on and virtually eliminates change orders
- Guaranteed project performance before owner accepts facility
- Can accurately conceptualize project at early stages
- Design-builder simultaneously estimates construction costs during design
- Decision to proceed with project is made with firm knowledge of the final cost and scope of work

### COST SAVINGS

- Open book policy
- Design and construction teams works as one
- Ability to evaluate alternative designs, materials, and methods efficiently and accurately
- Value engineering and constructability are utilized continuously

### TIME SAVINGS

- Design and construction can be overlapped
- Redesign is eliminated
- Material and long-lead items can be procured early on
- Time savings translates into lower costs
- Earlier occupancy of completed facility

Because our approach is single source, we can reduce the administrative burden to our clients because design/build is only resource-intensive during the early stages.

### SUBJECT MATTER EXPERTS (SMES)

Perhaps one of the most unique differentiators of Yates Construction is that through access to The Yates Companies, Inc., the firm has the capabilities to self-perform the following trades: heavy, civil, concrete, masonry, electrical, mechanical, steel fabrication, asphalt/paving, security and utilities. Extensive value will be realized by the entire project team during the preconstruction phase in that Yates will call upon our internal Subject Matter Experts (SMEs) from the above disciplines to assist in the estimating efforts as the design progresses. These personnel are in the marketplace every day and know exactly what the pricing implications are for various systems and provide cost effective alternatives in our value engineering exercise. They also provide insight into various alternatives during our constructability reviews which ultimately save our clients' money. It is our intent to utilize the local subcontractors to the maximum extent possible, but the input of Yates' internal resources during the preconstruction phase will be an invaluable resource to the project team.

### *4. Quality Assurance / Quality Control*

Yates believes that well-managed construction, properly sequenced and coordinated, provided on a team basis with a motivated work force will result in quality work. The Yates team will use this approach for this project. Quality of construction and constructability will be agenda items in all meetings with the design team and will be major focus items of all document reviews at every stage of design. Combined with continuous value engineering this will assure the Owner of the greatest value for their investment. Each Yates team member will sign the Yates Commitment to Quality form before beginning work.

Yates has adopted a Quality Control Process based on the government's three phases of Quality Assurance.

- Preparatory: A pre-construction meeting with each subcontractor will be attended by the General Superintendent, Project Manager, and Quality Control Manager during which quality will be a major topic. The Yates requirement for quality will be explained in detail to each subcontractor.
- Initial Inspection: Upon the start of work, a subcontractor initializes a body of work which will be reviewed by the QC Manager to determine the quality of work and conformance to the contract documents. Upon acceptance, the sub will continue with the installation.
- Follow-Up Inspection: Through the course of construction, the QC Manager, Project Manager, and Superintendent will periodically inspect the work to ensure the quality is maintained.

Among other things, the Yates Quality Control/Quality Assurance Program will require:

- Shop drawings be reviewed with special attention given to constructability issues. Any discovered issues will be addressed at that time.
- Preconstruction meetings with every subcontractor with mandatory attendance by the principal, project manager, project superintendent, and key foremen. Each will sign the Commitment to Quality form.
- Mock-ups, where possible, will be used for approval of materials setting workmanship standards.
- A clean job site.
- Weekly subcontractor meetings, led by the Yates superintendent, will include discussions on quality and a review of any nonconforming reports and their current status.
- Weekly quality reviews on site led by the project manager.
- A Systems Check team led by the project manager near the project's completion to ensure all inspections are complete and operations and maintenance procedures and manuals are properly prepared.
- Any deficiencies be corrected immediately.
- A comprehensive final inspection by the Yates team with all items corrected before the architect's inspection.

#### PERSONNEL

Yates will assign a Quality Control professional, who has a "boots on the ground" approach to Quality Control that helps promote a pro-active response from team members. Our goal as a team is to identify concerns and issues early enough to be addressed and minimize any impact to production, schedule and performance of the finished project. Once issues or concerns are identified, our team will work to properly document and communicate the issue to the design team, suppliers, subcontractors, and manufacturers to ensure that future installations are corrected and that inspections are not relied upon to develop QC punch list. Our estimators, project managers, and superintendents will coordinate meetings with permitting and licensing authorities and facilitate cooperation from them.

#### PROCEDURES

Some of the most unique differentiators to the Yates Team are the quality control procedures that we have

implemented through our extensive experience constructing project product type facilities. Our QA/QC program will utilize these procedures that are designed to engage subcontractors, vendors, and manufactures in the QA/QC process and develop clear and concise standards, protocol, and results.

Upon execution of subcontracts and purchase orders we require completion of a “Commitment to Quality Pledge” that we feel helps bind team members to the project. Prior to commencement of any work on-site, subcontractors are required to attend a pre-construction meeting to specifically discuss the quality and safety requirements of their work. We find that it is critical in this meeting to establish a clear expectation for the quality of the work and define the self-assessment required by their company prior to asking for review or acceptance by others.

We ask that all key project team members inclusive of Yates employees, Rosser employees, BTA employees, and all exterior building envelopment subcontractors and manufacturer’s representatives attend a Building Envelope Review Meeting (BERM ) to review all components of the building envelope including scopes and sequencing of trades and materials to ensure they are properly installed and functioning in accordance with the design intent and manufacturer’s recommendations.

We will implement the USACE (United States Army Corp of Engineers) three step Quality Control Inspection Program (preparatory, initial, and follow-up.) We will require that all requests for inspections be submitted in writing accompanied by a signed statement from the subcontractor indicating that they have personally inspected the work and found it to be in compliance with the project plans, specifications, and QC standards. We require that field supervision personally take responsibility for all concrete pours by completing Concrete Pour Cards to document placement location, mix designs, weather conditions, and completion of work by others. In addition, we also require that a concrete placement checklist be completed that requires a detailed step by step check of equipment, form work, personnel, embeds, reinforcement, and testing requirements before each pour.

## KEYS TO SUCCESS

- Quality Control/Quality Assurance starts from Day One
- Provide a committed team consistent throughout the life of the project
- Provide a detailed project specific QA/QC plan that addresses the specific project requirements
- Ensure buy-in and “Commitment to Quality Pledge” is enforced
- Be proactive and provide solutions early on to issues identified
- Communicate, Communicate, Communicate

## QUALITY CONTROL PROCEDURES

Yates has developed multiple quality control procedures over the years that are unique to our firm. Our Building Envelope Review Meeting (BERM) is a collaborative process where we bring all project participants together to review the exterior envelope details during the design, procurement, and execution phases of the project. The meeting encourages a partnering concept and full cooperation from all parties is requested in order to produce the best possible end product achievable for the owner. There are three steps in the BERM process.

# C. DRAFT PROJECT MANAGEMENT PLAN

1) The first consists of a thorough review of all contract drawings and associated details pertaining to the exterior of the building. The entire team conducts a constructability review of every detail to determine the feasibility and constructability of the details. The meeting is an open forum to discuss the advantages and disadvantages of the given details. Often, the details are modified for the owners' benefit at the request of the contractor through the RFI process, thereby being incorporated into the contract documents.

2) Once the details are incorporated into the contract documents, a second meeting is held on site to familiarize the on-site supervision of the various trade contractors with the details and the required sequence of construction to ensure the building envelope is in accordance with the design standards. Topics such as material compatibility, sequencing of work, and scope of work are the focus of this collaborative meeting. The most intricate details revealed during this meeting are represented thereafter in mock-ups built on-site, where all the parties involved will have a chance to further review the installation and interaction of the components involved.

3) Upon the successful completion of the second meeting, the implementation of the U.S. Army Corps of Engineers three phase construction quality control system is incorporated and construction of the building envelope commences. This BERM process has been successfully utilized on a variety of product types and is a Yates internal requirement on all of our projects.

*Patrik Lazarri, collaborating with the project team during a BERM meeting.*

*Mobile Federal Courthouse Project team incorporating details outlined in the BERM meeting into an onsite mockup.*

This is an invaluable tool that focuses on the intersection of dissimilar materials for compatibility as well as proper sequencing for installation. We have had great success with this process on other governmental projects and look forward to implementing it on the Escambia County Correctional Facility project.

### PERT

Another added value of the Yates team to ensure successful projects is our PERT Review (Project Evaluation and Review Team). We will utilize other corporate seasoned construction personnel to assess the projects strengths and weaknesses throughout the course of the project to ensure that the project is being properly managed. This added level of corporate participation helps us to proactively monitor quality, budget, and schedule concerns early, ensuring that the proper resources are being supplied from the corporate level and that the project stays on track. One of the most important aspects of the PERT team is the interaction they have with the client. The PERT team will solicit feedback from the owner's representative and develop actionable items for the on-site project team to act upon to ensure the owner's complete satisfaction.

### UNIT COST PRODUCTION TRACKING

Unit cost production tracking is another innovative technique we have found helpful in ensuring the contract award amount and project schedule are maintained. Yates' management and field personnel use current real time data to establish unit production rates as well as unit costs for different aspects of the subcontractors work. This data is utilized throughout the construction process to ensure that the work is being performed as

efficiently as possible and that the subcontractors maintain the project schedule. This system has the ability to track production and cost daily and plot trend lines for cost and productivity enhancement.

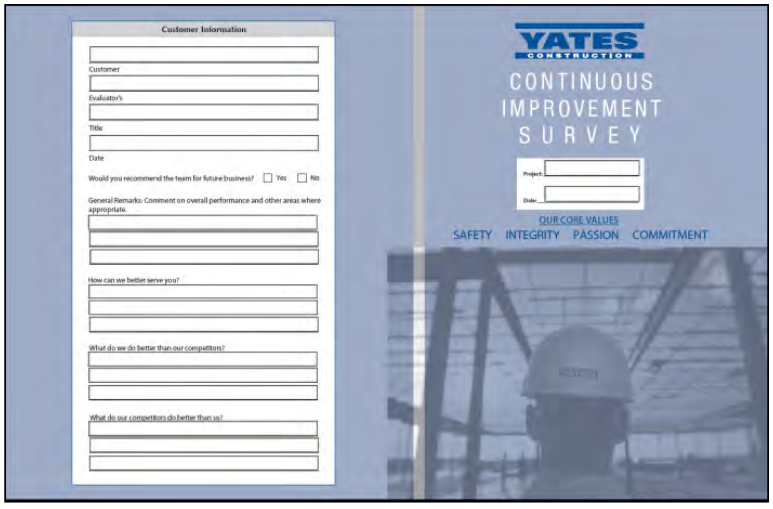
### PRODUCTION CHARTS

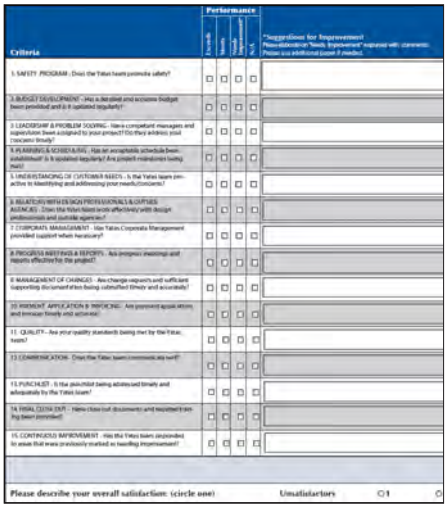
One of the more innovative tools we will use in project location is production score boards that utilize real time production unit data for select trades. We will identify critical trade activities, develop daily production levels, graph them in linear fashion as compared to the Baseline Schedule and post them at the entrance of the building or in the area on site where the work is occurring. As an example, the exterior envelope is a critical path activity for dry-in of the building on the project name. The team, along with the subcontractors' participation, develops production rates, baseline them, graph them, and post them. Daily production rates are plotted on the board at the end of each day and posted in plain sight where everyone can see them. A quick glance at the board depicts the trend line. This technique has been successfully utilized with exterior finishes, concrete, masonry, curtain wall, drywall and fixture installation. This technique also allows the field personnel to see on a daily basis how their contributions to the project help in maintaining the project schedule. But more importantly than knowing the "Score", the boards are early indicators if a problem exists. If the specific metric that we are tracking is trending downward or below the baseline, it shows up immediately and allows the team to take proactive measures to mitigate the problem before it is too late.

*Production charts being utilized to give project personnel real time production data.*

### CIS (Continuous Improvement Survey)

Another tool our team utilizes is our Continuous Improvement Survey (CIS). In order to keep track of how our project team is performing, we will utilize the CIS which keeps us aware of the project's progress and Escambia County's satisfaction. The value in this process is that feedback is sought at multiple intervals during the construction process instead of waiting until the end of the project so that our team can implement necessary adjustments to meet Escambia County's needs. We will utilize this when selected as your design-build partner and continually asses where we stand throughout the project. In this, we will request your feedback through the CIS to make sure we are addressing your needs and meeting your expectations. This information is immediately shared with William Yates and the executive committee. If certain items need improvements or modifications, we act immediately to revise our processes to make sure that we are delivering on our promise.



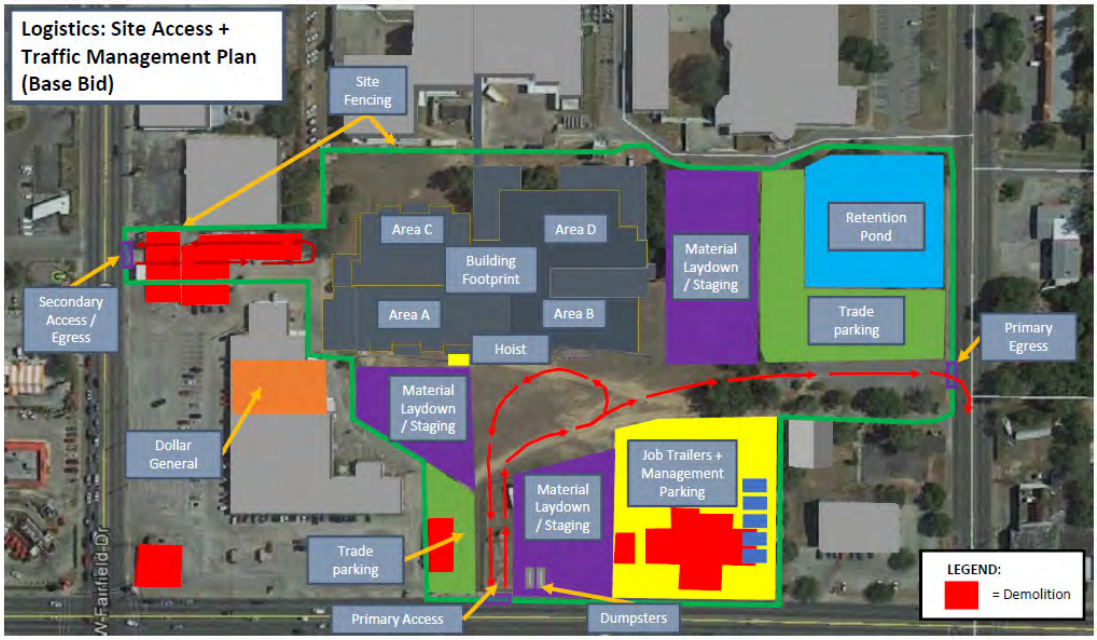

*Continuous Improvement Survey*

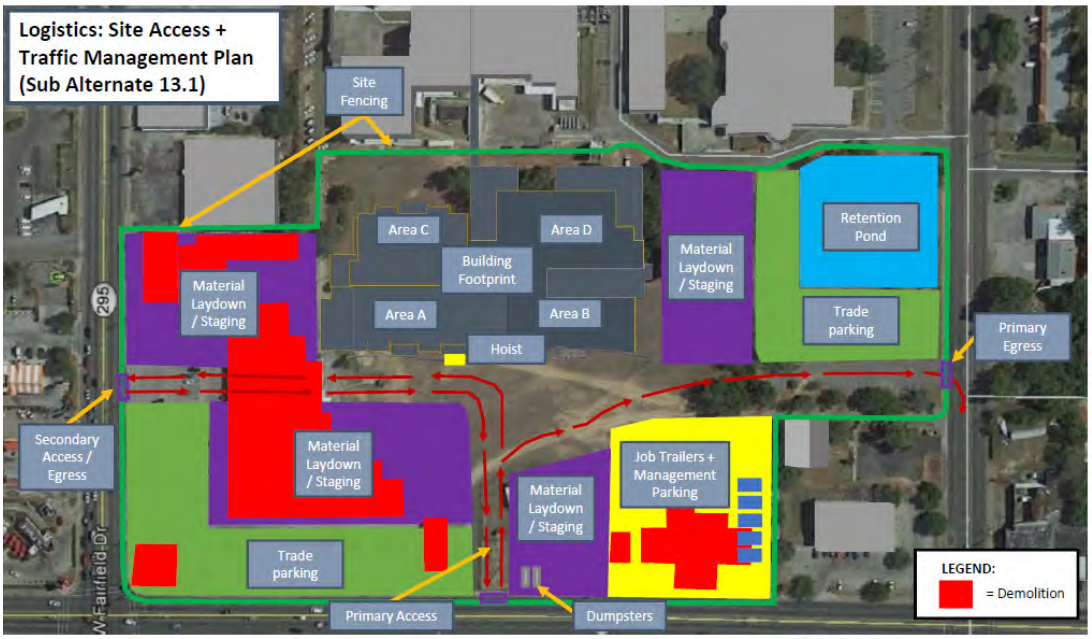
# C. DRAFT PROJECT MANAGEMENT PLAN

A paramount focus of Yates is the quality of service we provide to our clients. Our number one goal is to bring value to our clients and provide them with a job well done.

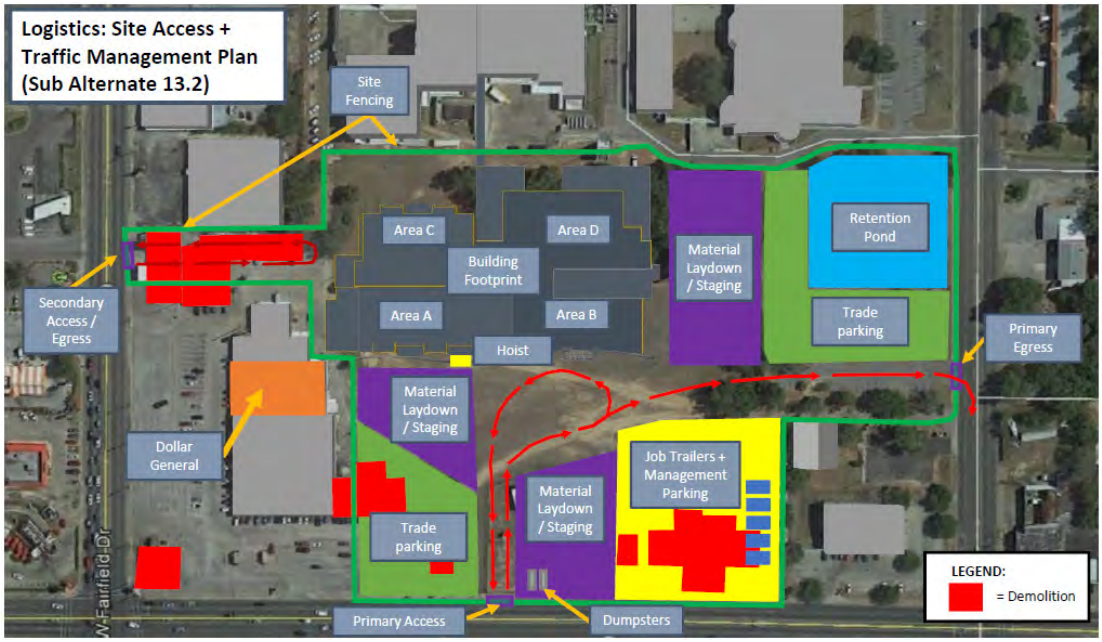
### *5. Construction Traffic Management*

Effective utilization of the project site throughout the course of construction is an important focus for our team. Our construction traffic management plan takes into account primary site access coming off of North Pace Boulevard on the western boundary of the site with patrons and trucks exiting the site on the southern boundary onto West St. Mary Avenue. A secondary access/egress point will be available off of West Fairfield Drive. Our site access and traffic management plan are displayed below which show the variation in our approach between the base estimate, sub-alternate 13.1, and sub-alternate 13.2.



# C. DRAFT PROJECT MANAGEMENT PLAN




### *6. Storm Water Pollution Prevention*

Construction Stormwater Permits (NPDES) are required for sites disturbing greater than one acre. Yates Construction has a dedicated environmental staff that oversees compliance with all local, state, and federal regulations. They review and ensure implementation of all site stormwater pollution prevention plans (SWPPP) across the company. Their expertise helps expedite permitting and prevents compliance issues for both ourselves and our clients.

### *7. EIR Mitigation Measure implementation and monitoring*

Yates Construction is one of very few construction service providers that have a dedicated environmental department. Upon commencing work in Escambia County, the environmental department will work with the design-build team and Escambia County personnel to fully review the EIR and formulate a mitigation plan which will include monitoring for the project site. This plan will outline how it will be implemented, who is responsible for its implementation, where on the site it will occur and when it will occur. The environmental department's responsibility is to ensure the coordination of the necessary applications in order to expedite the permitting process. The experience and training of the department extends well into numerous environmental issues and is second to none. The department's director, Hamp Sterling, is a registered environmental engineer and is a Florida Qualified Stormwater Management Instructor. The relationships that Yates has established with multiple environmental agencies throughout the southern United States allows for open communication which we believe is crucial when procuring environmental permits.

### *8. Systems/Design Confirmation*

Yates' design build team is designing all components of the project using Revit which will allow the team to implement clash detection during the design process. This will ensure the constructability and interrelation of the project components. The MEP systems will be commissioned during the course of the project which will ensure they meet the design intent.

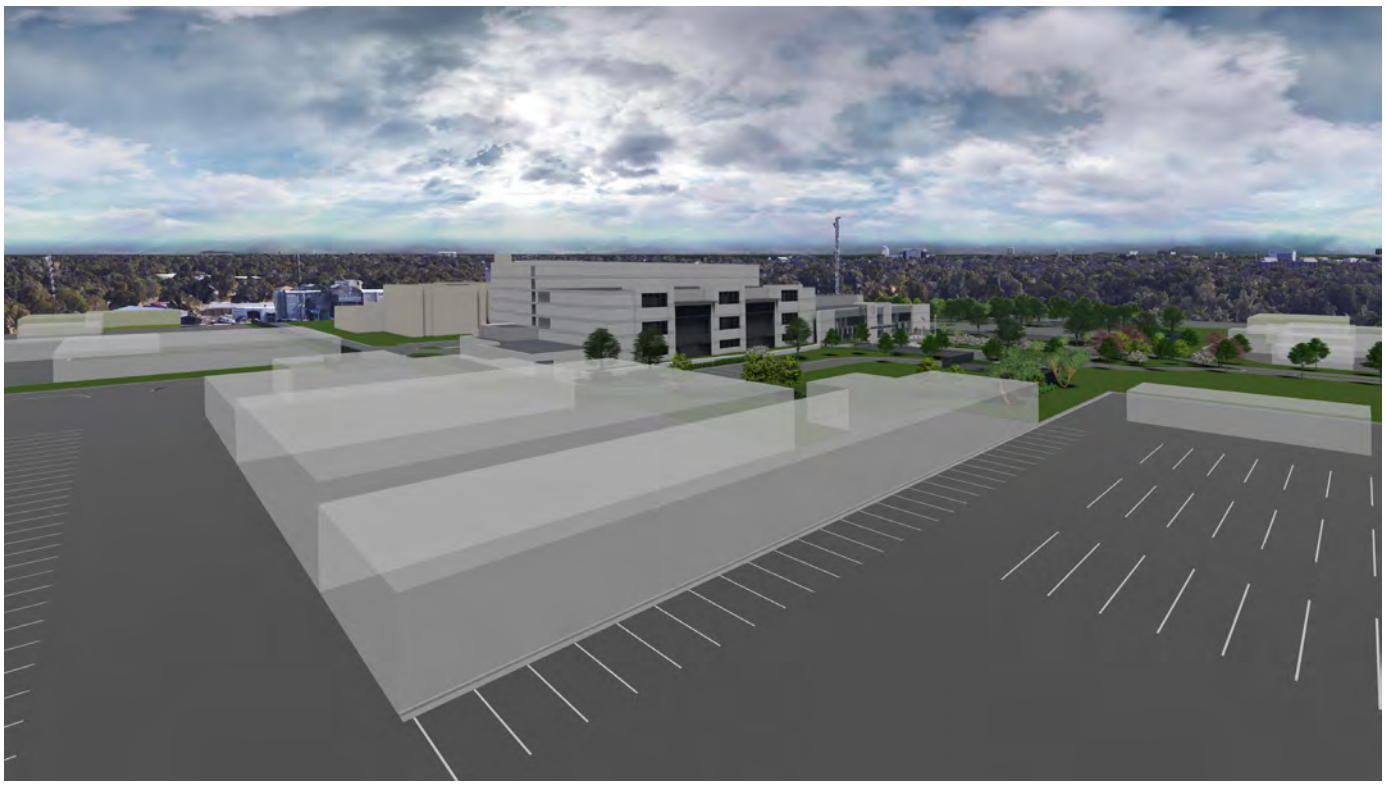
# C. DRAFT PROJECT MANAGEMENT PLAN

### *9. "For Construction" Document Development*

The completion of the construction documents will be a collaborative effort between Escambia County, Yates Construction, Rosser, Bullock Tice and the balance of the project consultants. Our team has made a diligent effort to meet the design intent laid out by DLR through the process to date. The next step is for our team to come together and finalize the construction documents through multiple meetings and design reviews which will take place during the preconstruction process.

### *10. Waste Management*

During the construction process, a rigorous sorting and recycling plan will be implemented. All concrete, steel, cardboard, wood, masonry and plastic waste will be sorted in various dumpsters and sent to local recycling entities. Throughout the entire process, the recycled waste and the waste sent to landfill will be documented and tracked on a monthly basis. In order to maximize sorting and recycling, Yates will implement signage, training of subcontractors, and various forms of incentives. Yates is committed to ensuring that a portion of all waste generated is reused or recycled and diverted from disposal in a landfill.



***11. Safety Plan***

## SAFETY CULTURE & FOCUS

Safety is number one, and we establish a project safety plan on each project which is championed by our onsite Project Team and a designated representative from each of the trade subcontractors. This team is responsible for providing a safe working environment for both the employees and the public. The Yates Corporate Safety Group will assist the project team with the creation of a project specific safety plan. This plan will include a site-specific Accident Prevention Plan (APP) in accordance with Appendix A of EM 385-1-1. Our plan and organization structure includes a dedicated full-time Site Safety and Health Office (SSHO) with the required years of experience and reporting structure in accordance with the solicitation. Ultimately, the responsibility for the adherence to and enforcement of the established company safety program and project specific safety plan lies with our Project Team and onsite Safety Personnel but every employee is obligated to ensure that each project we build is completed safely.

YATES CONSTRUCTION

**has an AWARD-WINNING SAFETY PROGRAM with over 75 *SAFETY EXCELLENCE AWARDS***

## SAFETY PROGRAM

Yates' safety program consistently exceeds national averages for experience modification rates, lost work time, and incidence rates. As one of the largest general contractors in the United States, it is imperative that Yates have an impeccable safety record. Our projects vary in size and nature, including vertical and horizontal construction for private and public clients in both the commercial and industrial markets. These projects range in size from several hundred thousand dollars upward to over $1 billion. Yates employs unique safety practices and programs that have consistently resulted in incident rates approximately six times lower than the national average, as well as maintaining a low EMR which is currently 0.56 (national average is 1.0). Using multiple tools such as Behavioral Based Safety (BBS), Safety Task Assessments (STA's) and Self-Assessment Checklists (SAC's), Yates Construction is committed to providing an environment that motivates employees to perform safely.

## FAMILY PHOTO BOARDS

Another unique way Yates will promote safety is the inclusion of Family Photo Boards on-site to make sure the families are involved in safety and encourage safe practices in the behavior of our workers. We will also hold safety cookouts, encourage workers to have their families sign safety pledges, and provide other family oriented safety incentives to ensure the employees are working safely. Our Project Teams hold mandatory safety meetings weekly which require attendance by everyone working on the project site. Additionally, each trade subcontractor is also responsible for holding task specific weekly, sometimes daily, safety meetings.

*Example of Family Photo Board*

*Safety Board on a Project*

## BEHAVIORAL BASED SAFETY PROGRAM

Yates is one of the few contractors that use a formal BBS with thousands of observations performed weekly. BBS is an employee-driven program that is non-punitive. The employees of Yates have embraced and taken ownership of the BBS program, providing management with actual data about the behaviors of individuals. This program enables the employees to provide peer employees with non-threatening, non-punitive feedback, thereby modifying the safety behavior of the individual. The overall outcome of this program is a workforce that operates safely. No single group of individuals is solely responsible for safety; every employee shares responsibility.

Having a good site safety culture and providing a safe workplace for employees are two of the main factors that help to prevent accidents and to increase productivity. BBS has been widely accepted as addressing an important need as part of an organization's total health, safety and environmental effort. BBS programs have a proven track record of effectiveness in hospitality/gaming, office, residential, retail and healthcare construction.

The key principle of BBS is deceptively simple - identify the key behaviors that cause accidents and then reduce them. It involves promoting safe behavior in the workplace by using employee involvement to initially identify practices (behaviors) critical to reducing the risk of injury. When used in conjunction with and integrated into a total safety program, BBS is an effective way to involve employees, to promote teamwork and to increase morale.

## BROTHER'S KEEPER

The Brother's Keeper program was created so that employees can have a positive impact on assuring that everyone works safely and goes home to his/her family each day. By signing a commitment form, the employee willingly pledges to be their "Brother's Keeper" by personally encouraging others to follow all company safety rules and regulations. After signing the form, each employee receives a sticker for their hard had and a high visibility t-shirt to proudly display their commitment and participation.

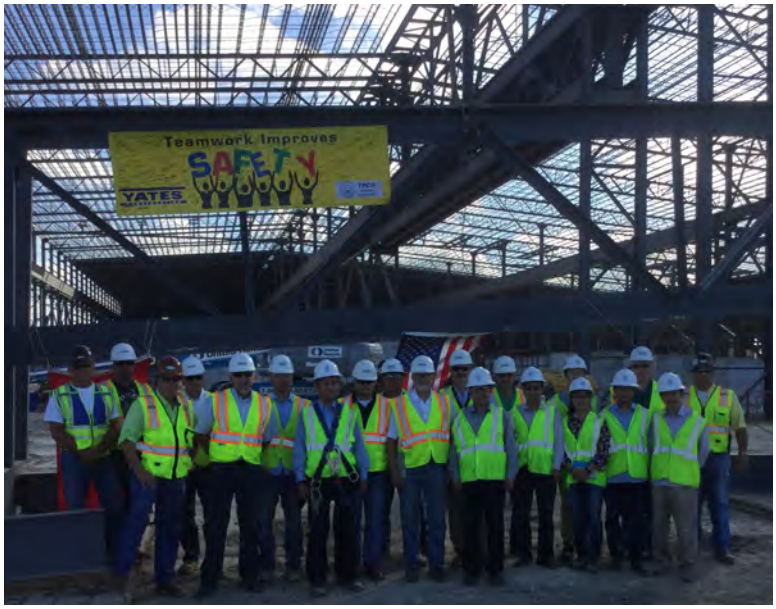
## SELF-ASSESSMENT CHECKLIST

The Self-Assessment Checklist is intended to provide a tool by which the individual employee can provide feedback to the Project Management on safety related concerns and observations concerning his/her work area as well as the safety process. It is also intended to be used to provide an employee a checklist or guide for them to ensure that they have the proper personal protective equipment necessary for performing an

assigned task given to them by the Superintendent or his/her designee. It takes into account that the individual employee may be required to perform multiple tasks during the day, hence the AM, PM, NA check off blocks. It also provides a tool to receive input about the safety process and ideas or comments on improvement.

### TRAINING AND SAFETY EDUCATION PROGRAMS USED

Yates Construction provides safety training as needed, as required, and as mandated by safety codes, regulations, and standards. Employees are informed of the safety company policy through routine conference calls, safety meetings, and corporate training programs. Employees also have access to the company Safety & Health Manual which is available on the Yates Construction Intranet site. Yates implements and executes the following training and safety education programs:




- Introduced & implemented Click Safety which is an online program for all employees.
- Approximately 1500 courses have been completed since induction.
- Behavioral Based Safety Process (BBSP) – An employee-driven safety observation program.
- Yates Boot Camp – New hire orientation program for superintendents and above that takes place over a 4-1/2 day period.
- 30 Hour OSHA class – 96% of foreman level and up have completed this course.
- 10 Hour OSHA class – 90% of all employees below the level of foreman have completed this course.
- New Hire Orientation CD – English and Spanish interactive safety CD.
- Annual Safety Conference – held over a 2-1/2 day period
- Friday and Monday Morning Management Conference Calls – Various Safety Topics are discussed.
- Tuesday Morning Safety Conference Call – Mandatory attendance for all safety personnel.
- Safety and Health Manual completely rewritten and revised. Sites celebrating safety milestones with dinners including employees and their families.
- Media Library established – standardized safety training throughout the corporation.
- 23 OTI 500 Instructors on staff, 11 CPR / First Aid trainers on staff.
- Provide Qualified Signal Person and Qualified Rigger Level I and II in accordance with 29 CFR 1926 Subpart CC
- Provide 40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training and 8-Hour Annual Refresher Course
- Provide MSHA New Minor, Experienced Miner and Annual Refresher training.
- Provide CPR/First Aid/AED training.
- Provide all other training required by State and Federal Codes, Standards and Regulations.
- Use of Safety Task Assessments (STA) for pre-work hazard analysis.
- Self Assessment Checklist (SAC) used for individual review of safety prep for work.
- Mandatory equipment operator qualification required.
- Training database established and maintained.
- Write, implement, and maintain all “Site Specific Safety Plans” and Emergency Action Plans for Projects.
- Involved in the Construction Industry Institute’s “Best Practices.”
- Provide training on OSHA’s new Hazardous Communications (HazCom) standard.

### PROJECT SPECIFIC SAFETY PLAN

Yates will develop a project specific safety plan that includes a dedicated on-site safety team along with a detailed project safety manual. Safety is our NUMBER ONE PRIORITY for the entire team and will be communicated and enforced through all levels of the project to include the subcontractors, suppliers and consultants. Our goal will be “ZERO INJURIES” and we will strive to meet that goal every day.

### *12. Commissioning*

Yates has worked with a multitude of commission agencies on multiple projects. Currently, we have approximately 70 engineering professionals on staff that are familiar with commissioning on complex projects dealing with extensive MEP systems. Our construction teams are experienced with the overall commissioning process and able to provide the level of detail for any commissioning scope. Our team will provide the commissioning agent(s) with all the information required by the commissioning plan. Our team will actively participate in the commissioning meeting and require all of the affected trades, vendor, and manufactures' representatives to attend the meetings. We will also promptly address any issues discovered during the commissioning process and ensure that all issues are corrected in a time frame that will ensure the project schedule and completion date is achieved. Upon completion of the project, we will continue to work with the commissioning agent for any re-commissioning activities and provide the needed information for the final systems manual.

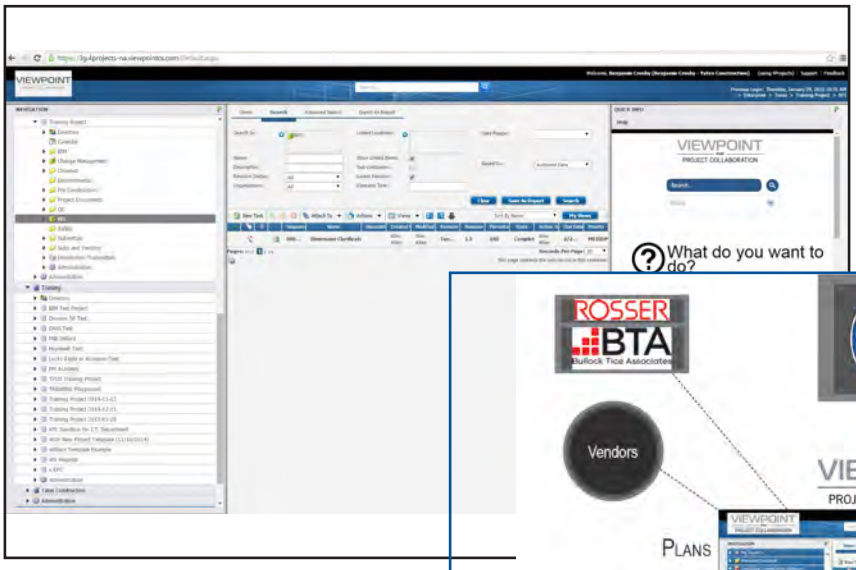
Our experience has shown that the commissioning process is a valuable addition to the project team and results in reduced energy use, lower operating cost, reduced contractor callbacks, better operations and maintenance systems manuals and insures that the owner's projects requirements are achieved.

.

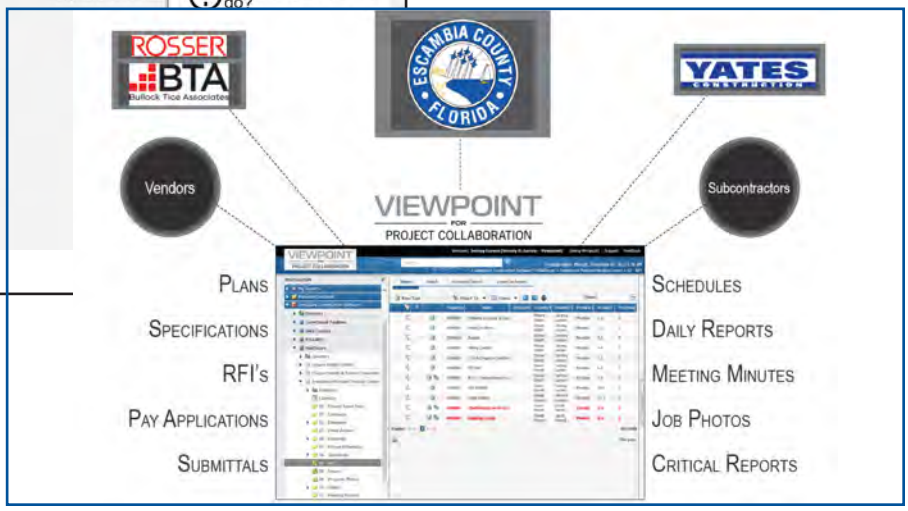
### *13. Record Documents*

#### VIEWPOINT FOR PROJECT COLLABORATION (VPC) SOFTWARE

During the project, we plan on using Yates Viewpoint for Project Collaboration (VPC) software which can be used for project documentation. Our team and the subcontractors will be able to use the software as a collaborative tool for the project. This software allows the design team to upload changes to design documents so that the field will have the most updated information. Submittals, RFI's, Meeting Minutes, Change Orders, etc. can be tracked with the software. Once all of the parties are set up on the software, notifications will be submitted to the various parties identified for certain items, and they can automatically pull up the document for review and reply if needed. We look forward to sharing this information with you as we feel that this is a very important tool for the Escambia County Correctional Facility project.




*VPC Sample Screenshot*



# C. DRAFT PROJECT MANAGEMENT PLAN

## DOCUMENT CONTROL

Whether the need is to simply manage documents for a specific project or implement a more effective document collaboration solution across an entire business, Viewpoint For Project Collaboration is capable of any level of collaborative document management.

Share, control, and manage large quantities of documents such as RFIs, submittals, schedules, daily logs, job photos, health/safety, meeting minutes and mission critical reports. And, for storing, reviewing and revising documents, you can be assured everyone is looking at the same document - establishing one version of the truth.

Key benefits of Document Control include:

- Easily distribute drawings or documents and create, track and manage your core PM documents such as RFIs, Submittals, Issues, etc.
- Effectively manage, track, review and approve change orders to ensure you are always in control of this critical work stream.
- Easily design and implement workflows where individuals that need to take action are notified when the time is right.
- View and mark-up drawings, documents and photographs even without access to the software in which they were created.
- Easily brand and configure eForms and produce custom reports based on the information captured.

## DRAWING MANAGEMENT

Drawings are a major component of today's complex projects and making sure that all stakeholders are viewing the most recent version is essential to any project's success. With Drawing Management, a key feature of Viewpoint For Project Collaboration, you'll eliminate the need for manual updates of offline issue sheets or drawing registers and provides project teams control where it's needed most.

Drawing Management benefits include:

- Access to the very latest drawing versions and previous drawings as required.
- Ability to distribute drawing information to the wider team, including full history of receipt logged in the audit trail.
- Simple ways to create workflows for automation and management of collaborative review or distribution processes.
- Ability to edit documents and photographs even without access to the software in which they were created.
- Ways to organize by grouping "as-built" drawings together for use during the asset and facilities management stage.
- Ability to capture and control drawings that are an important part of any O&M (Operation and Maintenance) file.

## WORKFLOW

Project teams can relax and have complete confidence that items entering a workflow will follow a predefined sequence where the individuals that need to take action are notified when the time is right. With workflow you can easily automate and control the review and approval process for drawings, submittals, change orders and other construction documents, avoiding delays and reducing risk on projects. With the drag-and-drop feature, it's easy to create new or modify existing workflows, assign reviewers by individual or by group and view a timeline of when items are due with needed actions. Workflow is a powerful feature that ensures consistent processes, keeps tasks on schedule and gives you more control with your projects.

## MARKUPS & REDLINING

With the Markup and Redline feature, you can easily make changes to documents. The document or portions of the document can be put into the workflow for others to overlay their changes and markups. With this feature you have complete transparency and collaboration with your documents.

### EFORMS

eForms enable you to create a series of form templates, utilizing commonly shared sections and controls and use these templates to create completed forms within documents, all without the need to upload pre-existing files from your machine.

### PRE-CONSTRUCTION

Pre-construction enhances project team efficiencies and provides transparency in the project design, build and bidding process.

Key benefits of Pre-construction include:

- Enables bid teams to work together to create and manage their bid submissions and meet demanding timelines.
- Easily create tender packages, control inquiries and bid submissions.
- Capture your supply chain information in one place.

### PERSONAL WORK CENTER

The Personal Work Center is an area specifically for your email inbox, personal calendar, reports and other items that are important to you. Plus, if you work for multiple companies or choose to move to another company that uses Viewpoint For Project Collaboration, your Personal Work Center will follow you wherever you go. Additionally, the dashboard makes it easy for project teams and individuals to visualize the tasks and activities that require their action.

### 14. *Scheduling*

Yates believes that a good construction schedule helps the project team manage the project successfully and understand the risks and resources needed during both the preconstruction and construction phases of the project. Once we lose a day- it is gone forever. It is important to develop the schedule and properly plan the work from the very beginning of the project. When reviewing the project schedule, regularly scheduled meetings are critical. These meetings must ensure all parties “buy in” to the schedule and are working towards the same goals. These meetings also allow for quicker resolution of outstanding issues. We believe the CPM schedule should drive the project, not the other way around. We will develop the schedule with input from all the appropriate parties, monitor it, and communicate the results to the appropriate parties.

A CPM schedule that is updated regularly and used by the project team will save time and money, create a partnering environment, and even help prevent claims. It is a basic, fundamental tool that must be used for successful project management, and will be used by Yates on the Escambia County Correctional Facility project.

Yates will adhere to the following guidelines in developing and executing the CPM schedule:

- Understand the value of the schedule- it’s more than just a contract requirement.
- Plan with all key parties involved including Escambia County, the design team, Yates personnel, and subcontractors.
- Maintain the schedule accuracy and update weekly.
- Communicate and distribute the schedule updates to all appropriate parties.
- Address potential delays as soon as possible when shown on schedule updates.

Another advantage in using CPM scheduling is it gives you the ability to “Fast-Track” a project. CPM scheduling focuses on the critical path and enables the team to analyze the critical path and see which activities can be expedited for early completion. For example, when you incorporate the design deliverables into the schedule, you can “Fast-Track” certain design packages such as foundations which will allow the project to be started earlier.

# C. DRAFT PROJECT MANAGEMENT PLAN

We currently Primavera 6 Version 16.1 for most schedules, but are capable of producing the schedule in any format or version of Primavera including P3 or Suretrak. The newer version gives us even more powerful tools that allow us to communicate to all parties more easily via a web based interface.

Our approach to creating a schedule is to develop a high level "Build Strategy" at a very early stage through meetings with the owner, designers, key subcontractors, and any other project stakeholders. This allows us to fully understand the expectations and specific project goals of the owner and to create a total team approach for the project. Once all parties are comfortable with the basic strategy, the detailed master schedule is created using the build strategy. The master schedule will be a fully integrated project schedule with engineering, architectural, shop drawings, submittals, procurement, construction, commissioning, and final completion activities. This schedule becomes a total project management tool.

A detailed Work Breakdown Structure (WBS) will be developed to allow us to segregate the work into manageable areas. The schedule WBS also includes coding for individual trades or subcontractors. All of these functions of the WBS allow us to filter or sort the schedule at any level, for any area, by craft or trade. These filters and sorts become very useful for individual subcontractor meetings, as well as focusing in on problem areas. Our schedules are developed using as much detail as required to allow most durations to be less than one week. We update each week and this helps with the accuracy and eliminates much of the subjectivity sometimes encountered with long durations. All activities with longer durations will have an effective form of measurement for accuracy in reporting status. Schedules can be cost and resource loaded at either a detailed level or summary level depending on Owner preference.

All schedules are base-lined and monitored for progress against the original plan which allows early recognition of potential problems. We hold weekly schedule meetings on site and use rolling three-week look ahead schedules for day-to-day management.

### *15. Monthly Report*

Yates Construction creates a document control system for all projects which is managed by an information management system. This system receives, documents, records and distributes all pertinent information. The system will perform the following functions:

1. Maintaining and distribute drawings and specifications
2. Compile and distribute submittals
3. Record and maintain Request for Information: (RFI) logs
4. Record and maintain consultant classification logs
5. Receive, maintain and distribute punch lists
6. Receive and maintain letter logs. This system is organized around a data base, which is accessible both manually and electronically.

The records that are maintained throughout the project are incorporated into reports and monitoring systems \ currently in place. A monthly monitoring report on the project is used for review and discussion during the monthly meetings. This report has sections addressing the following:

1. Review of contract cost status, cost projections and status of contingencies. This section will also address exposures that have been uncovered and potential costs associated with the item.
2. Subcontractor/purchase costs associated with the item.
3. Schedule status and areas of concern.
4. Progress report indicating work completed in each division
5. Action list
6. Change order status
7. Progress photographs
8. MWBE status report

# C. DRAFT PROJECT MANAGEMENT PLAN

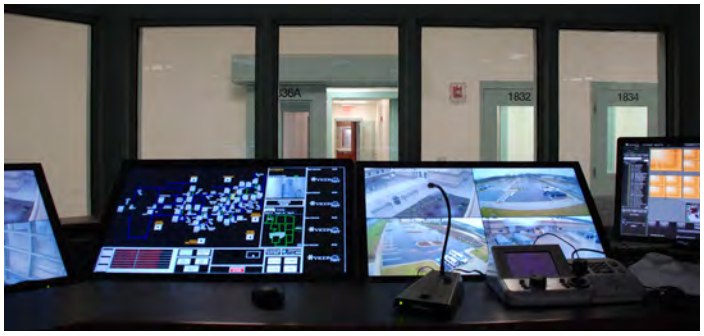
***16. Conflict Resolution Procedures***

Claims are a matter of last resort. Most claims can be avoided by employing good business practices and timely communication. Understanding expectations and then delivering results is the best way to avoid claims. However, problems will still arise and must be dealt with in a timely manner. The Yates team avoids claims by taking the following steps:

- Make sure all team members understand and comply with the contract documents.
- Keep good records and documentation.
- Inspect quality and schedule progress at regular intervals.
- Be sure design information is getting to the field timely.
- Be sure that Owner approvals are received timely.
- Communicate....Communicate.....Communicate.
- Be proactive and deal with issues timely and fairly - Claims can be avoided by dealing directly with the issue on the front end.

The key conflict resolution is to identify the problem, notify the right people, and get them involved early to ensure the problem doesn't escalate. Yates will be proactive and address any and all conflicts early on to ensure the problem is resolved. Communication is the key and will be extremely important in resolving any issues.

.



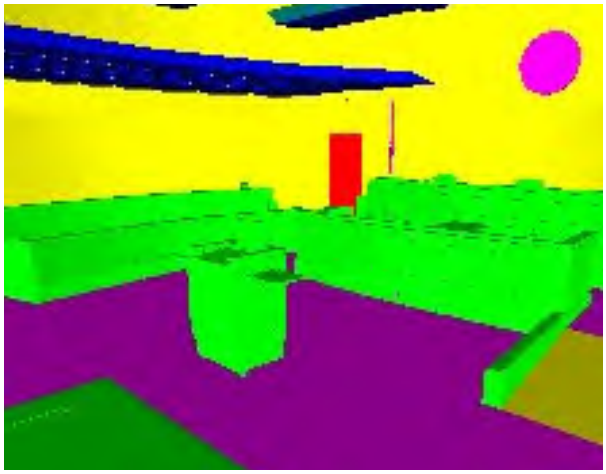
OUR TEAM UNDERSTANDS THE
COMPLEXITIES
OF A CORRECTIONAL FACILITY PROJECT.

***17. BIM Execution***

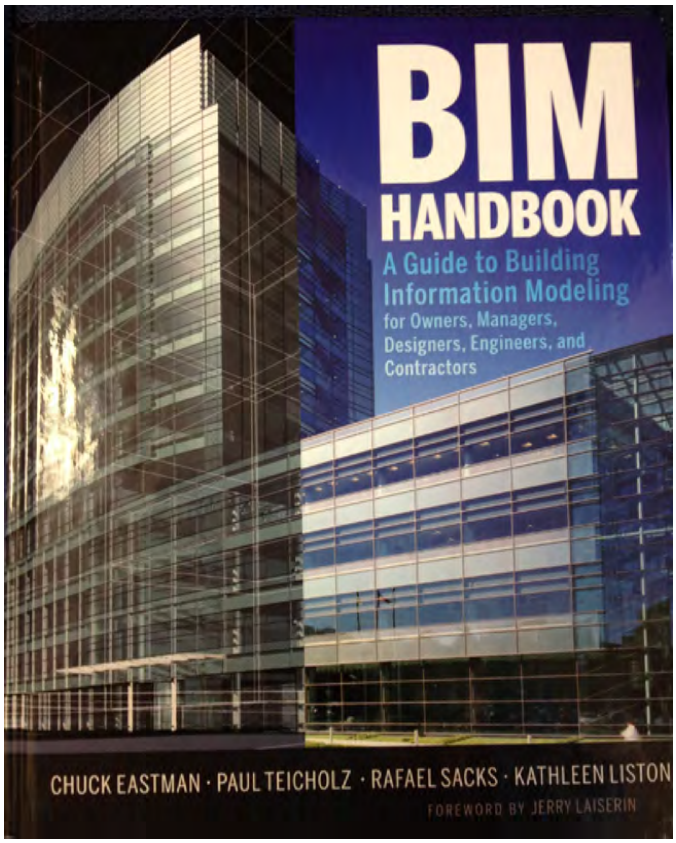
## BUILDING INFORMATION MODELING / VIRTUAL DESIGN & CONSTRUCTION

Yates Construction has been very active in the implementation of the Building Information Modeling (BIM) process for construction since 2005. From the start, Yates' BIM focus has been efficiency and productivity, and every aspect of BIM we use on our projects ties back to client value. Engaging BIM is more than an additional feature on a project, it is a way to design, construct, and commission a project. By using 3D models to coordinate project information, the collaboration and communication on the project is greatly increased. It becomes much faster and easier to understand the design, schedule, cost, and construction of the project. Creating the design with models allows for greater coordination between disciplines and opens the door for a faster construction process. When the design focuses on the models and creates the 2D drawing as a reporting function, the model reliability is high enough that many quantities and scopes of work can be pulled to create faster estimates. In turn, visual comparisons of cost changes make it easier to control scope and associated costs. Using reliable design models makes creation of 4D schedules possible. Using a 4D schedule makes the entire project schedule easier to understand and coordinate with the owner, designers, and trades. Implementing BIM allows construction trades to produce fabrication models and modularize many aspects of their work. Prefabrication and modularization have been used by many trade contractors across the United States to greatly reduce project costs.

Relevant projects where Yates has successfully utilized BIM include the award-winning GSA Jackson Federal Courthouse, CenturyLink Technology Center of Excellence Headquarters, Tarrant County Courthouse, Bay County Courthouse, and the GSA Mobile Federal Courthouse as well as multiple other facilities across the United States.



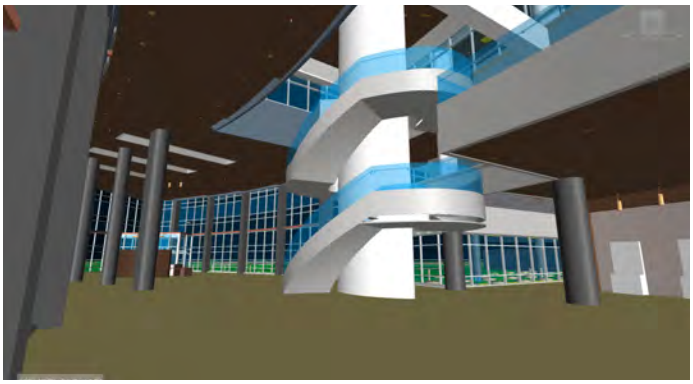
**GSA JACKSON FEDERAL COURTHOUSE PROJECT FEATURED IN THE *BIM HANDBOOK,* AS A CASE STUDY FOR GSA'S BIM PROGRAM**



# C. DRAFT PROJECT MANAGEMENT PLAN

**BENEFITS OF UTILIZING BIM:**

- ✓ Reduced Risk
- ✓ Options Analysis
- ✓ Reduced Change Orders
- ✓ Better Design
- ✓ Reduced RFIs
- ✓ Accelerated Project Delivery
- ✓ Informational As-Built Model
- ✓ Facilities Management Tool

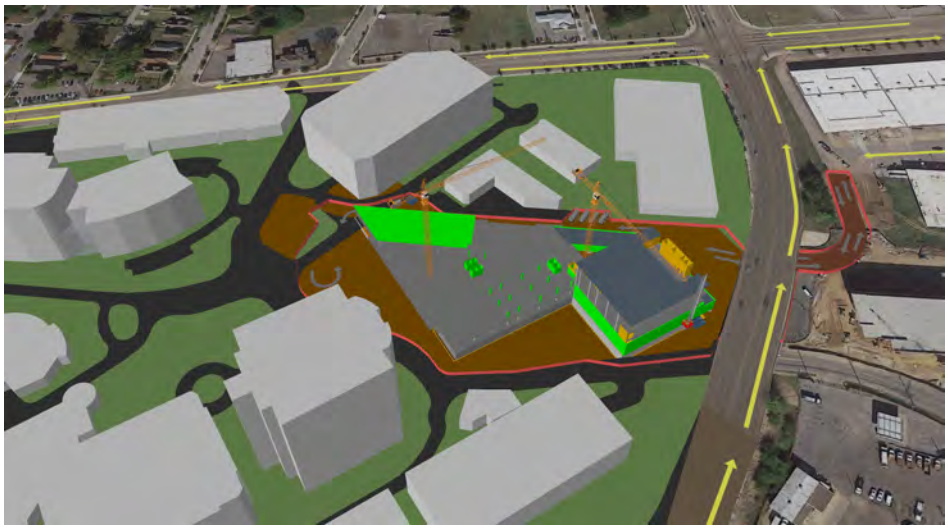


*CenturyLink Technology Center of Excellence 3D Model*

*CenturyLink Technology Center of Excellence Actual Image*

## 4D SCHEDULING

A technology tool that our team has found extremely helpful in the planning and execution of our projects is tying in the fourth dimension of time into the BIM model to produce a 4D schedule. When we animate the construction sequence, it allows the entire construction team and stakeholders to visually see how the construction process will unfold and is a great collaboration tool we utilize throughout the project. Creating a 4D schedule raises the communication levels dramatically. We have found 4D scheduling has enhanced the collaboration process by:



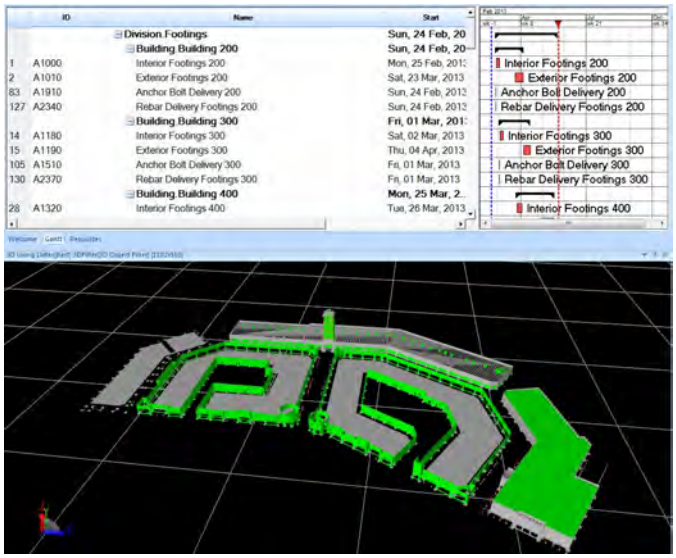
*4D Scheduling being utilized on a Yates project*

- Eliminating hours normally spent analyzing and understanding the construction schedule.
- Allowing the progression of construction to be easily seen by associating the schedule with areas of work and installation of equipment. This is exceptionally important for occupied and adjacent buildings and communicating how those existing areas will be affected.
- Using the schedule sequencing video in meetings enables people who may not be familiar with bar charts to understand and provide the necessary feedback to make the project highly successful.

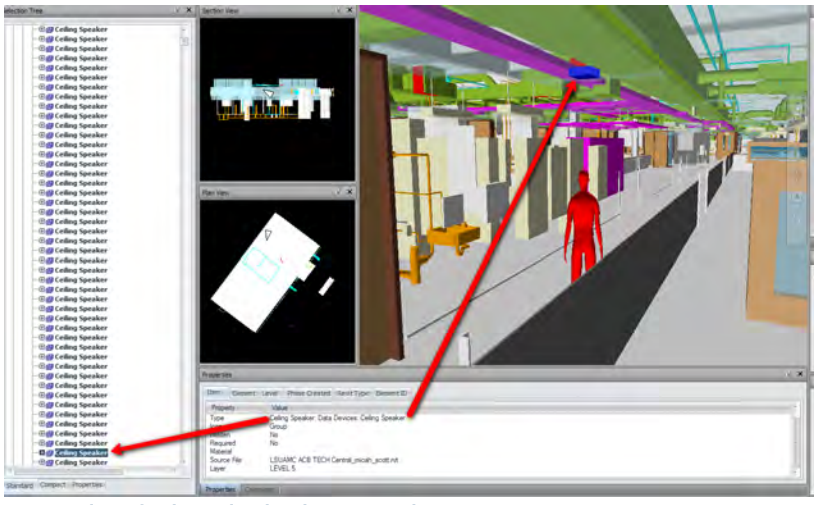
## CLASH DETECTION

The utilization of BIM technology to determine where conflicts will occur in the field prior to any physical work taking place has been a tremendous differentiator for how we execute our projects. Yates will take all available information and establish a 3D coordination process, which is improved through the use of design models, but can be completed even if design models are not available. The clash detection process creates two major benefits for the project:

- Allows for issues to be discovered much sooner, thus reducing the overall cost of correcting problems, translating into reduced cost to the owner.
- Establishes confidence in the coordination and installation process and opens the way for prefabrication and modularization.




*Example of 4D Schedule*



*Example of Virtual Clash Detection*

***18. Transition and Close-out***

## PUNCHLIST MANAGEMENT AND PROJECT CLOSEOUT

It is the policy of Yates to proactively plan and administer Project Closeout activities. The Project Manager and Superintendent are jointly responsible for the timely closeout of each project. It is critical to close the project out as quickly as possible so that the client gets information needed for the project and so that Yates promptly receives final payment.

The Project Closeout will begin at the start of a new project. A Project Closeout plan will be developed specific to each project and will be submitted to the Division Manager within 60 days after notice to proceed. This plan will include a sequence plan and schedule and will be developed in accordance with the following guideline and forms. The Viewpoint Construction Software package should be used.

## PUNCH LIST

The CQC Systems Manager, Project Manager and Superintendent are responsible for the implementation of the following punch list procedures while each subcontractor is responsible for their performance and obtaining final acceptance of punch list items. It is very important to ensure that subcontractors perform their own punch list work for items in their scope. The following procedures will be adhered to:

- The field staff for Yates will perform an inspection of all areas prior to the Architect's inspection and have all deficiencies corrected to the extent possible.
- The Project Manager will coordinate the inspection performed by the Architect and any consultants.
- Yates will publish and formally distribute the punch list with dates by which items should be corrected.
- All items on the punch list will be addressed and/or corrected. Any items not part of the scope of work will be identified and notice provided to the Architect prior to final inspection.
- The field staff will inspect all items submitted by subcontractors as complete prior to the Architect's final inspection.
- Any items not completed by subcontractors will be documented and the subcontractor will be notified in writing accordingly. After the correct contract notice and no response from the subcontractor, it will be corrected by Yates and back-charged to the subcontractor.
- Upon completion of all items, the Project Manager will notify Architect and coordinate a final inspection.
- A final punch list will be generated and formally submitted to all subcontractors with dates of completion. Upon completion, the Architect will be notified.

## SUBCONTRACTOR CLOSEOUT

The project management staff is responsible for closing out each subcontract. This procedure will begin immediately after the Closeout plan has been developed.

- Review with each subcontractor after award all closeout requirements identified in the plans and specifications, especially as-builts.
- Review with each subcontractor all closeout requirements of Yates in addition to items above.
- All items identified above are to be included on the Subcontractor Closeout form provided.
- This form is to be updated regularly and completed in accordance with the Closeout plan.
- The punch list and Subcontractor Closeout must be complete in order to complete the Project Closeout. The Subcontractor as-builts should be reviewed before being incorporated into the final as-built.
- As-built drawings submitted by subcontractors are to be incorporated into a final as-built set by the project staff.
- The Owner should sign receipt of all transmitted closeout data.
- All documents required for turnover to the Owner are to be collected and transmitted by the field staff. All training should be formally documented and a list of attendees submitted as part of closeout documents.
- The Project Manager will coordinate all owner training.

## FINAL PROJECT CLOSEOUT

The Project Manager is responsible for the final Project Closeout. This procedure is to be completed within thirty (30) days after substantial completion. This is the final phase of the Project Closeout plan and should include the following:

- A detailed checklist of items necessary to demobilize, insure contract compliance and satisfy the additional needs of the Owner. A sample checklist is provided but should be modified for each project. The Certificate of Substantial Completion is particularly important as it usually is the date from which

warranty periods start. Please note that the building is “substantially complete” when it is ready for its intended use and/or generally complete. The punch list does not have to be 100 % complete for the project to be “substantially complete”. Additionally, the project is usually “substantially complete” if it is occupied by the Owner.

- A thorough review of each subcontractor’s closeout requirements and accountability for all documents.
- A thorough review of the contract documents to ensure turnover requirements. Final maintenance such as HVAC filter replacement and replacing light bulbs should be completed by the responsible Subcontractor prior to project close out.
- A record of all documents, equipment, spare parts, O & M manuals, warranties, systems, documents and attic stock forwarded to Owner as well as copies of all transmittals. A turnover meeting with the Owner should be held and a signed transmittal from the Owner authorizing receipt should be obtained.
- A contact sheet forwarded to the Owner containing contact names and phone numbers for all Yates and Subcontractor personnel on the project.
- A contact sheet containing the company name, contact person, address, phone number, beginning date and ending date for all warranties, guarantees and bonds.
- Closeout of all subcontractors.
- Completion of the Project Closeout Checklist.
- All records boxed, labeled and properly stored.
- Final Invoice to Owner and final payment from Owner.
- Final job cost report.

# C. DRAFT PROJECT MANAGEMENT PLAN

***19. Warranty follow-up @ 11 months after Substantial Completion***

Yates will provide superior service to Escambia County during the warranty process. Yates will be able to respond within hours of any warranty calls and will have the necessary warranty information available including immediate access to the subcontractor and supplier responsible in order to ensure Escambia County receives the agreed upon warranty response and service from all team members. We will provide the Owner with a point of contact who will be available 24 hours a day to address any issues that may arise.

**OUR MISSION: TO DELIVER THE BEST JAIL IN THE STATE**

## D. PRELIMINARY BASELINE DESIGN/CONSTRUCTION SCHEDULE / STAFFING PLAN

***1. Submit a preliminary baseline design/construction schedule to complete the Work – "Escambia County Correctional Facility Project Proposal Schedule" - incorporating critical milestones and events known or understood by the Project Proposer, i.e. coordination with other projects planned at the site. The schedule must represent the Project Proposer's intended plan for completing the Work within the contract time, and comply with Section 01 3200 Progress Schedules and Reports paragraph 2.03C.***

***2. The preliminary schedule shall include a Key Personnel staffing schedule, indicating all periods when each of the Key Personnel (as defined in paragraph 3.02A above) are anticipated to be committed to working on the Project, and other information in Section 01 3200 paragraph 3.02C.3.***

***3. In developing the Preliminary Baseline Design/Construction Schedule the Project Proposer should consider activities, logic, durations, and milestones related to the following:***

***a. Systems/Design Confirmation***
***Completion/confirmation / review and approval by building department and Fire Marshal in addition to all Authorities Having Jurisdiction of design activities for each project component as necessary to document Design-build Entity's specific approach to meet the design guidelines and performance requirements required by Criteria Documents, and as required to construct the ECCF Project including, but not limited to:***
***1. On and off-site utilities***
***2. Site grading and geotechnical requirements***
***3. Main facility design and construction***
***4. Central Plant Design and Construction***

***b. ECCF Stakeholder Reviews***
***Proposed review and confirmation activities and durations for ECCF stakeholder team during program confirmation, systems confirmation, design development and finalization, construction documents, submittal review, start-up and testing, commissioning, and project close-out. Stakeholder may include, but are not limited to:***
***1. Escambia County Corrections Department (including facility maintenance, security, information technology, medical services and food service)***
***2. Escambia County Facilities Services Division***
***3. Escambia County IT Division***
***4. Escambia County Fire Department***
***5. Design Criteria Professional***

***c. Regulatory Agency Reviews***
***Proposed review and approval activities and durations during design, construction, commissioning, and project close-out including, but not limited to:***
***1. Fire Marshal (Fire, Life Safety)***
***2. Escambia County Building Inspection Department***
***3. Escambia County Public Works***
***4. Northwest Florida Water Management District***
***5. Florida Department of Transportation (FDOT)***
***6. All additional Authorities Having Jurisdiction***
***7. FEMA***

***d. Coordination with Other ECCF Projects at the Site***
***Other ECCF project planned to occur concurrent with the ECCF Project include:***
***1. Demolition of existing buildings on site.***

***e. In planning the project activities, durations, and milestones, the Proposer should consider the following:***
***Review and approvals periods required by federal, state county and other authorities having jurisdiction, regulatory review and approvals.***

## D. PRELIMINARY BASELINE DESIGN/CONSTRUCTION SCHEDULE / STAFFING PLAN

***1. Assume 10 work day turn-around for ECCF Stakeholder reviews of major submittals including submittals required by regulatory agencies.***
***2. Include strategies to support phased turnover of facilities to accommodate ECCF use prior to overall project completion. This phased turn-over would not include inmate occupancy but would support installation of FF&E, staff training, etc.***
***3. Include requirements for building commissioning.***

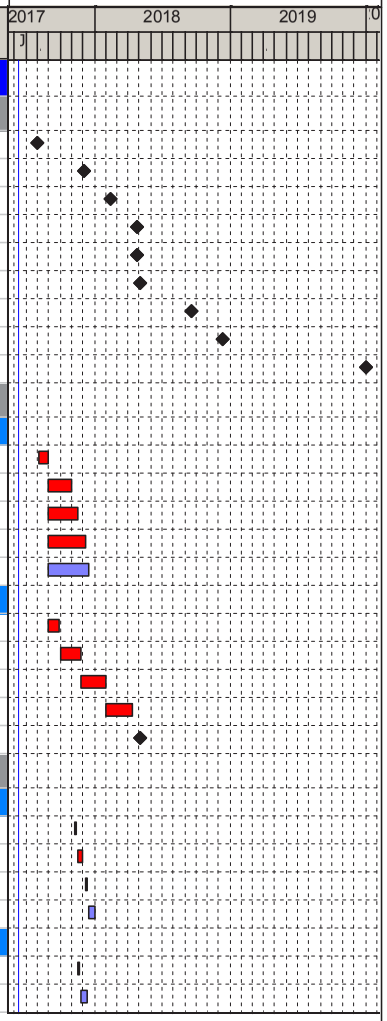
Please see the following preliminary baseline design/construction schedule and Key Personnel Staffing Schedule.

YATES ROSSER BTA Bullock Tice Associates

# ESCAMBIA COUNTY CORRECTIONAL FACILITY
## PRELIMINARY CONSTRUCTION MANAGEMENT SCHEDULE

YATES ROSSER BTA Bullock Tice Associates

| Activity ID | Activity Name | Original Duration | Start | Finish |
|---|---|---|---|---|
| **ESCAMBIA COUNTY CORRECTIONAL FACILITY** | | 615 | 08-01-17 | 12-31-19 |
| **MAJOR MILESTONES** | | 615 | 08-01-17 | 12-31-19 |
| M-1 | CONTRACT AWARD | 0 | 08-01-17* | |
| M-2 | START OF CONSTRUCTION | 0 | 12-04-17* | |
| M-7 | 65% CONSTRUCTION DOCUMENTS COMPLETE | 0 | | 02-14-18 |
| M-3 | SRTUCTURAL STEEL START | 0 | 04-25-18 | |
| M-8 | 90% CONSTRUCTION DOCUMENTS COMPLETE | 0 | | 04-27-18 |
| M-9 | 100% CONSTRUCTION DOCUMENTS COMPLETE | 0 | | 05-04-18 |
| M-4 | SRUCTURE COMPLETE | 0 | | 09-19-18 |
| M-5 | BUILDING DRY IN | 0 | | 12-12-18 |
| M-6 | SUBSTANTIAL COMPLETION | 0 | | 12-31-19 |
| **DESIGN SCHEDULE** | | 191 | 08-03-17 | 05-04-18 |
| **FAST TRACK DESIGN PACKAGES** | | 95 | 08-03-17 | 12-15-17 |
| D-100 | DESIGN CONCEPT REVIEW & APPROVAL | 20 | 08-03-17 | 08-30-17 |
| D-101 | FOUNDATIONS & SOG DESIGN | 45 | 08-31-17 | 11-02-17 |
| D-102 | STRUCTURAL STEEL DESIGN | 55 | 08-31-17 | 11-16-17 |
| D-103 | SITE DESIGN | 70 | 08-31-17 | 12-08-17 |
| D-104 | MEP FOR SOG DESIGN | 75 | 08-31-17 | 12-15-17 |
| **BALANCE OF DESIGN** | | 171 | 08-31-17 | 05-04-18 |
| D-105 | SCHEMATIC DESIGN | 21 | 08-31-17 | 09-29-17 |
| D-106 | DESIGN DEVELOPMENT DOCUMENTS | 40 | 10-02-17 | 11-24-17 |
| D-107 | 65 % CONSTRUCTION DOCUMENTS | 44 | 11-27-17 | 01-31-18 |
| D-108 | 90% CONSTRUCTION DOCUMENTS | 51 | 02-01-18 | 04-13-18 |
| D-109 | FINAL ISSUED FOR CONSTRUCTION DOCUMENTS | 0 | | 05-04-18 |
| **PRECONSTRUCTION SCHEDULE** | | 118 | 11-08-17 | 04-27-18 |
| **FAST TRACK PRECONSTRUCTION** | | 37 | 11-08-17 | 01-03-18 |
| PC-100 | INTERNAL DESIGN REVIEW - FAST TRACK STRUCTURAL DESIGN | 5 | 11-08-17 | 11-15-17 |
| PC-102 | FAST TRACK STRUCTURAL DESIGN STAKEHOLDER REVIEW & APPROVAL | 10 | 11-17-17 | 12-01-17 |
| PC-103 | INTERNAL DESIGN REVIEW - FAST TRACK MEP & SITE DESIGN | 5 | 12-07-17 | 12-14-17 |
| PC-101 | FAST TRACK SITE & MEP DESIGN STAKEHOLDER REVIEW & APPROVAL | 10 | 12-18-17 | 01-03-18 |
| **BALANCE OF PRECONSTRUCTION** | | 112 | 11-16-17 | 04-27-18 |
| PC-105 | INTERNAL DESIGN REVIEW - DESIGN DEVELOPMENT PACKAGE | 5 | 11-16-17 | 11-23-17 |
| PC-104 | DESIGN DEVELOPMENT BUDGET REVIEW | 10 | 11-27-17 | 12-11-17 |

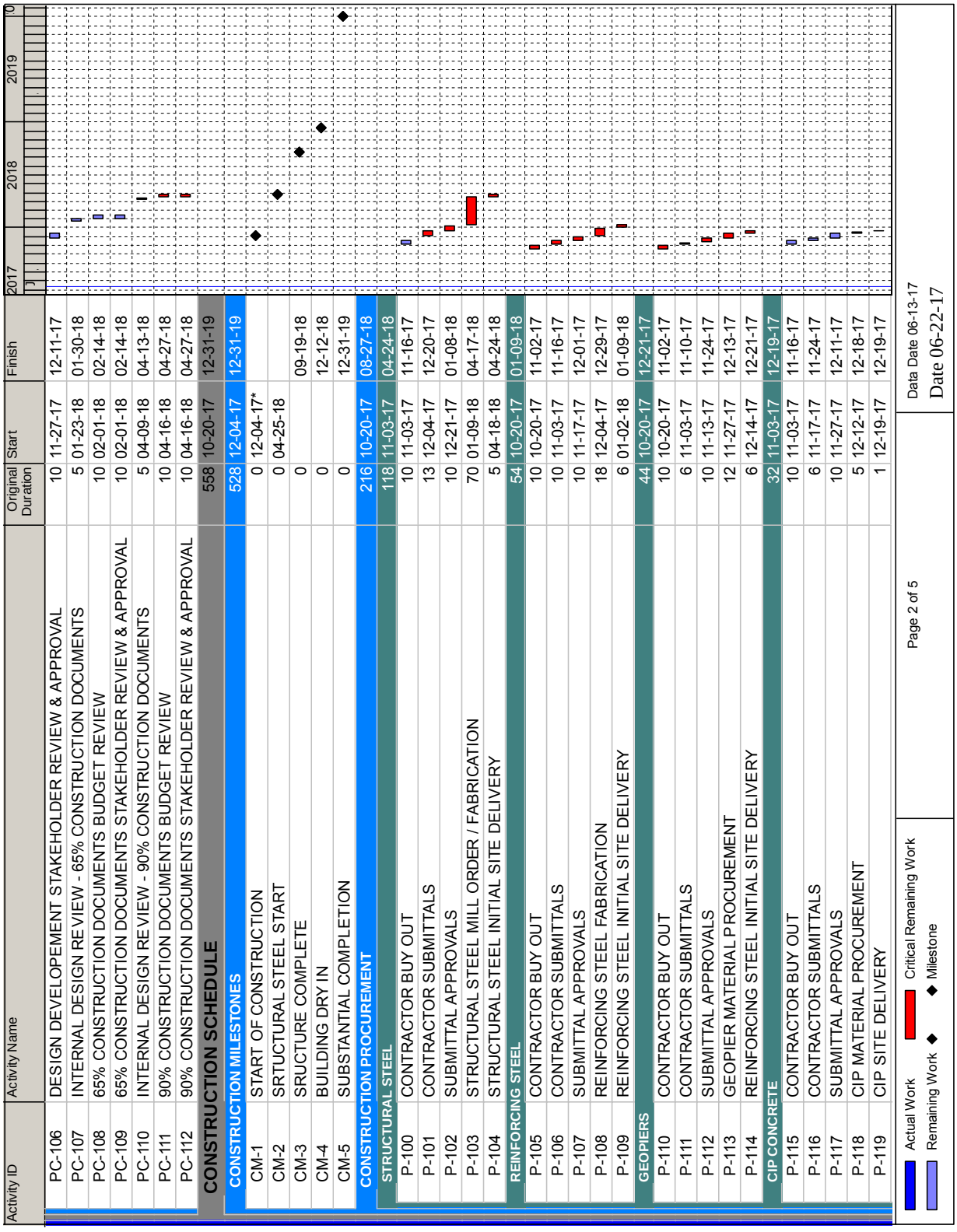



Actual Work
Remaining Work
Critical Remaining Work
Milestone



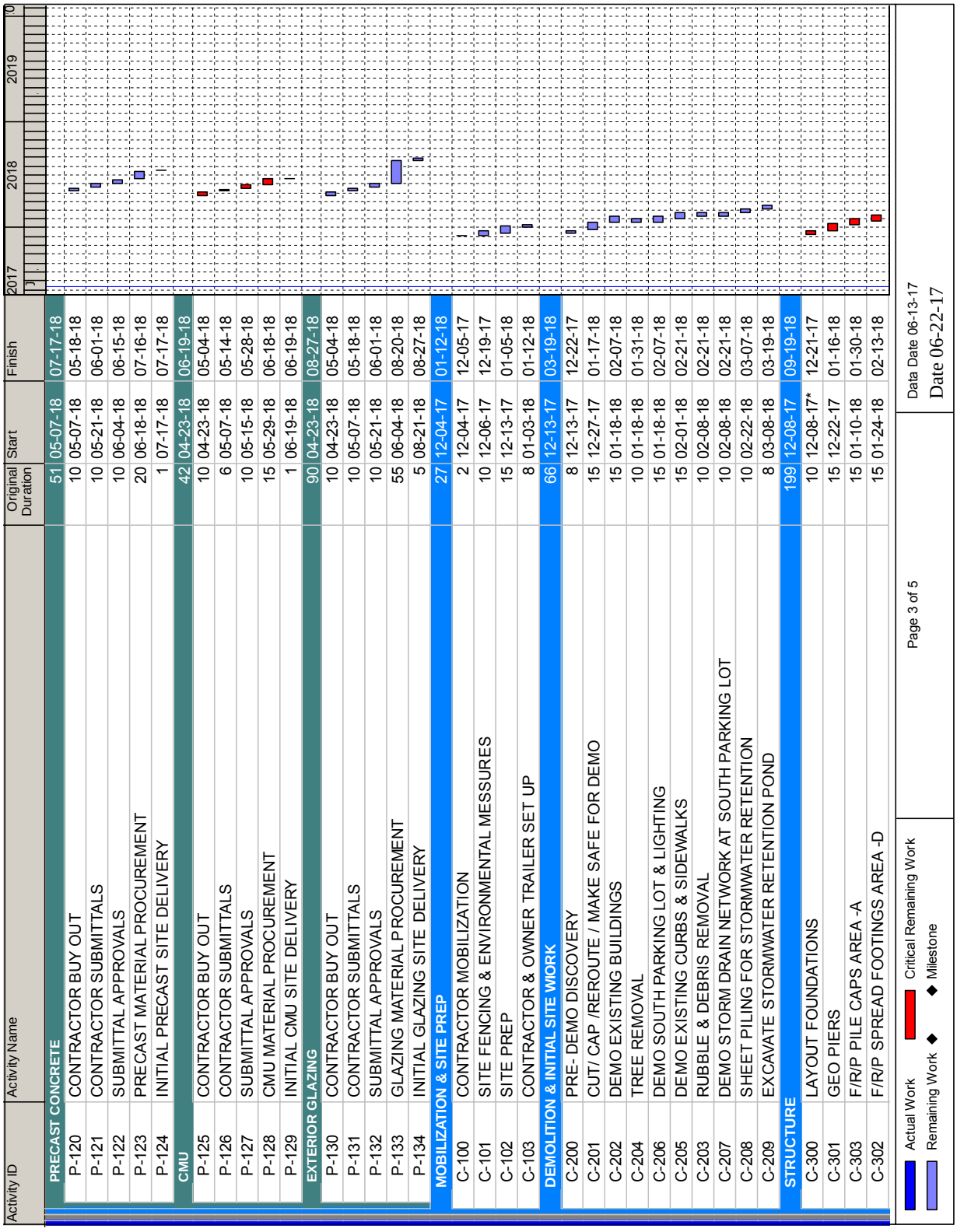
Data Date 06-13-17
Date 06-22-17

# D. PRELIMINARY BASELINE DESIGN/CONSTRUCTION SCHEDULE / STAFFING PLAN

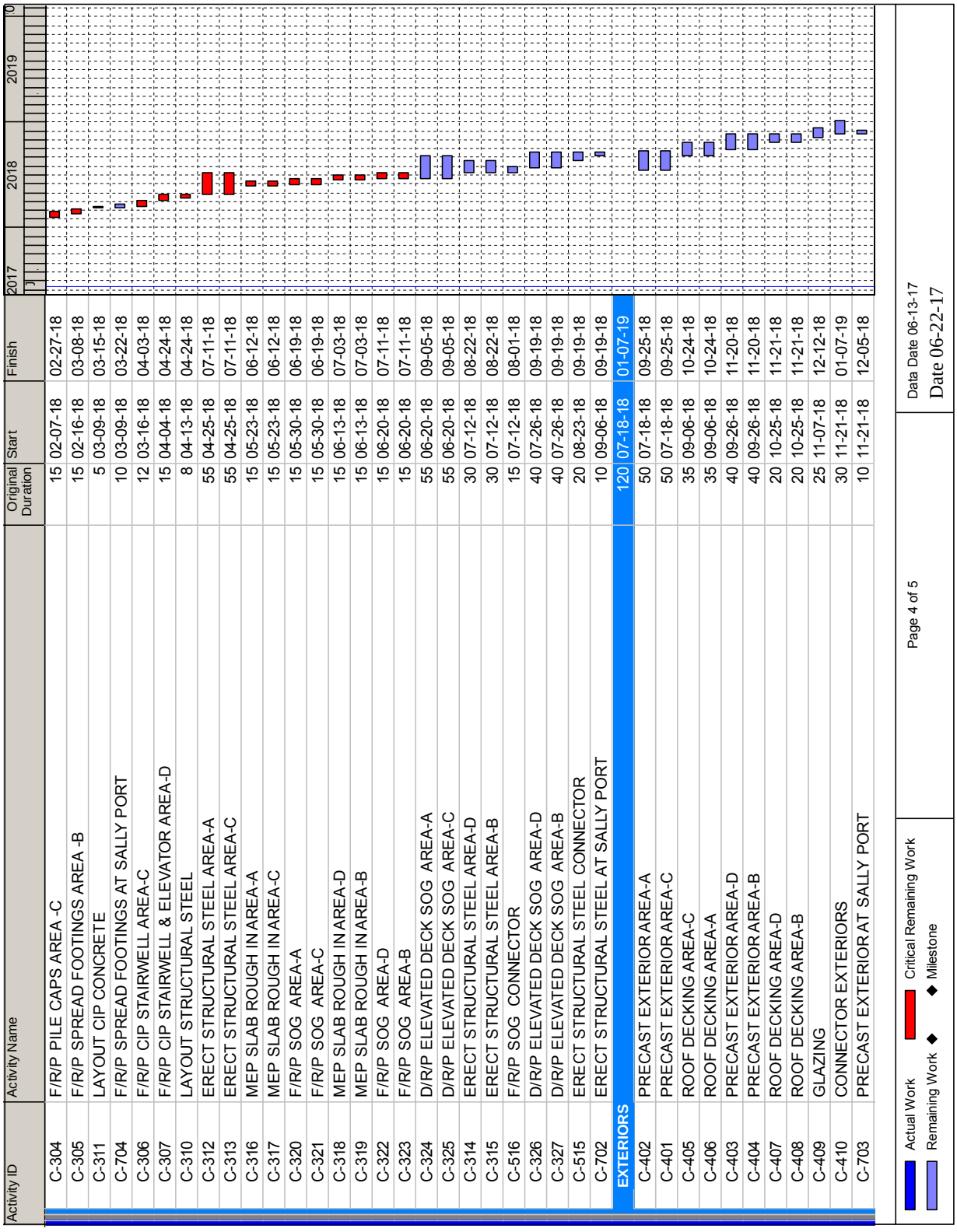


| Activity ID | Activity Name | Original Duration | Start | Finish |
|---|---|---|---|---|
| PC-106 | DESIGN DEVELOPEMENT STAKEHOLDER REVIEW & APPROVAL | 10 | 11-27-17 | 12-11-17 |
| PC-107 | INTERNAL DESIGN REVIEW - 65% CONSTRUCTION DOCUMENTS | 5 | 01-23-18 | 01-30-18 |
| PC-108 | 65% CONSTRUCTION DOCUMENTS BUDGET REVIEW | 10 | 02-01-18 | 02-14-18 |
| PC-109 | 65% CONSTRUCTION DOCUMENTS STAKEHOLDER REVIEW & APPROVAL | 10 | 02-01-18 | 02-14-18 |
| PC-110 | INTERNAL DESIGN REVIEW - 90% CONSTRUCTION DOCUMENTS | 5 | 04-09-18 | 04-13-18 |
| PC-111 | 90% CONSTRUCTION DOCUMENTS BUDGET REVIEW | 10 | 04-16-18 | 04-27-18 |
| PC-112 | 90% CONSTRUCTION DOCUMENTS STAKEHOLDER REVIEW & APPROVAL | 10 | 04-16-18 | 04-27-18 |
| **CONSTRUCTION SCHEDULE** | | 558 | 10-20-17 | 12-31-19 |
| **CONSTRUCTION MILESTONES** | | 528 | 12-04-17 | 12-31-19 |
| CM-1 | START OF CONSTRUCTION | 0 | 12-04-17* | |
| CM-2 | SRTUCTURAL STEEL START | 0 | 04-25-18 | |
| CM-3 | SRUCTURE COMPLETE | 0 | | 09-19-18 |
| CM-4 | BUILDING DRY IN | 0 | | 12-12-18 |
| CM-5 | SUBSTANTIAL COMPLETION | 0 | | 12-31-19 |
| **CONSTRUCTION PROCUREMENT** | | 216 | 10-20-17 | 08-27-18 |
| **STRUCTURAL STEEL** | | 118 | 11-03-17 | 04-24-18 |
| P-100 | CONTRACTOR BUY OUT | 10 | 11-03-17 | 11-16-17 |
| P-101 | CONTRACTOR SUBMITTALS | 13 | 12-04-17 | 12-20-17 |
| P-102 | SUBMITTAL APPROVALS | 10 | 12-21-17 | 01-08-18 |
| P-103 | STRUCTURAL STEEL MILL ORDER / FABRICATION | 70 | 01-09-18 | 04-17-18 |
| P-104 | STRUCTURAL STEEL INITIAL SITE DELIVERY | 5 | 04-18-18 | 04-24-18 |
| **REINFORCING STEEL** | | 54 | 10-20-17 | 01-09-18 |
| P-105 | CONTRACTOR BUY OUT | 10 | 10-20-17 | 11-02-17 |
| P-106 | CONTRACTOR SUBMITTALS | 10 | 11-03-17 | 11-16-17 |
| P-107 | SUBMITTAL APPROVALS | 10 | 11-17-17 | 12-01-17 |
| P-108 | REINFORCING STEEL FABRICATION | 18 | 12-04-17 | 12-29-17 |
| P-109 | REINFORCING STEEL INITIAL SITE DELIVERY | 6 | 01-02-18 | 01-09-18 |
| **GEOPIERS** | | 44 | 10-20-17 | 12-21-17 |
| P-110 | CONTRACTOR BUY OUT | 10 | 10-20-17 | 11-02-17 |
| P-111 | CONTRACTOR SUBMITTALS | 6 | 11-03-17 | 11-10-17 |
| P-112 | SUBMITTAL APPROVALS | 10 | 11-13-17 | 11-24-17 |
| P-113 | GEOPIER MATERIAL PROCUREMENT | 12 | 11-27-17 | 12-13-17 |
| P-114 | REINFORCING STEEL INITIAL SITE DELIVERY | 6 | 12-14-17 | 12-21-17 |
| **CIP CONCRETE** | | 32 | 11-03-17 | 12-19-17 |
| P-115 | CONTRACTOR BUY OUT | 10 | 11-03-17 | 11-16-17 |
| P-116 | CONTRACTOR SUBMITTALS | 6 | 11-17-17 | 11-24-17 |
| P-117 | SUBMITTAL APPROVALS | 10 | 11-27-17 | 12-11-17 |
| P-118 | CIP MATERIAL PROCUREMENT | 5 | 12-12-17 | 12-18-17 |
| P-119 | CIP SITE DELIVERY | 1 | 12-19-17 | 12-19-17 |

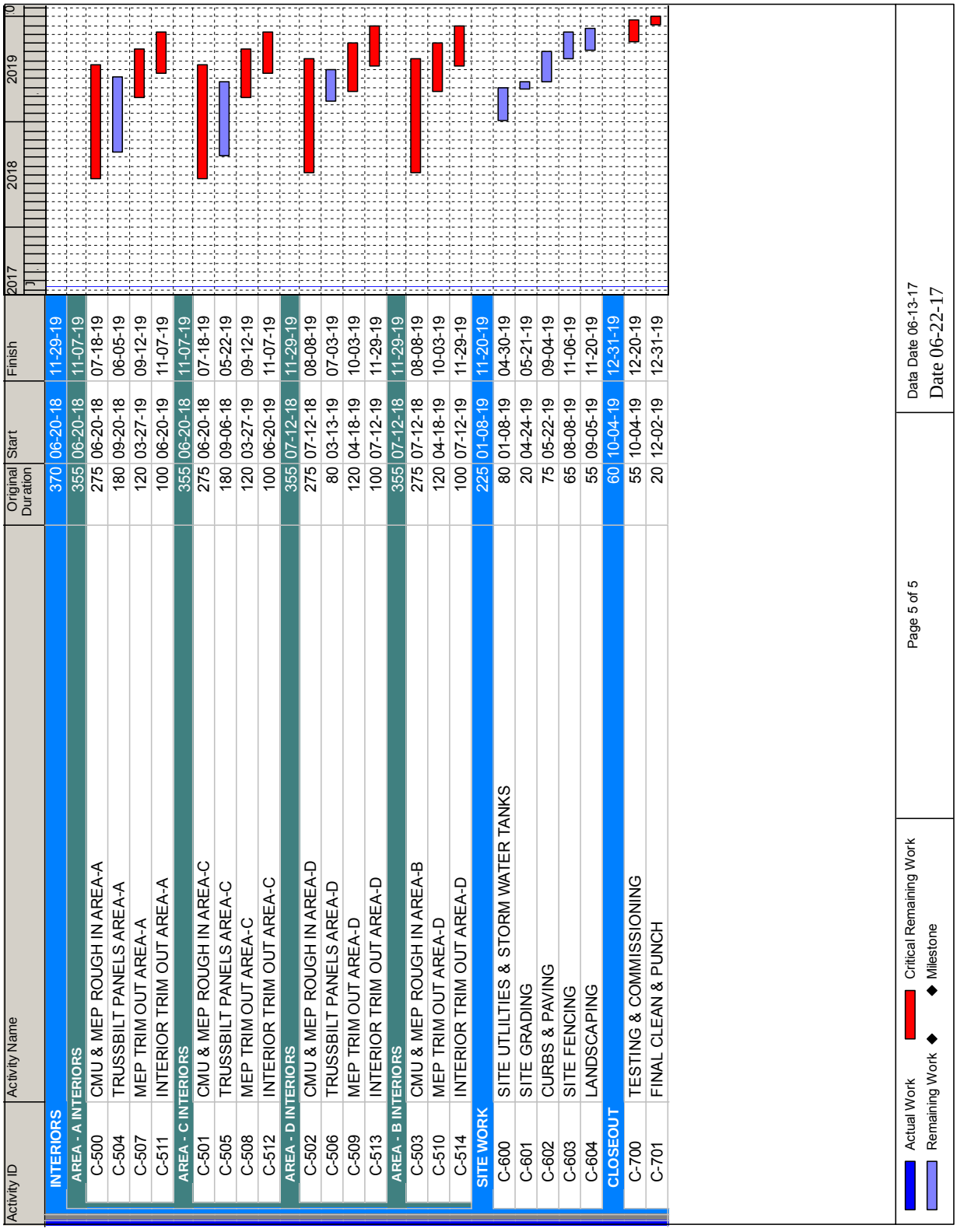
# D. PRELIMINARY BASELINE DESIGN/CONSTRUCTION SCHEDULE / STAFFING PLAN



# D. PRELIMINARY BASELINE DESIGN/CONSTRUCTION SCHEDULE / STAFFING PLAN



# D. PRELIMINARY BASELINE DESIGN/CONSTRUCTION SCHEDULE / STAFFING PLAN



**JANUARY 2018:**
The Yates team has mobilized onto the project site where the limits of site fencing have been established. Demolition as well as foundations are ongoing in areas A and D.

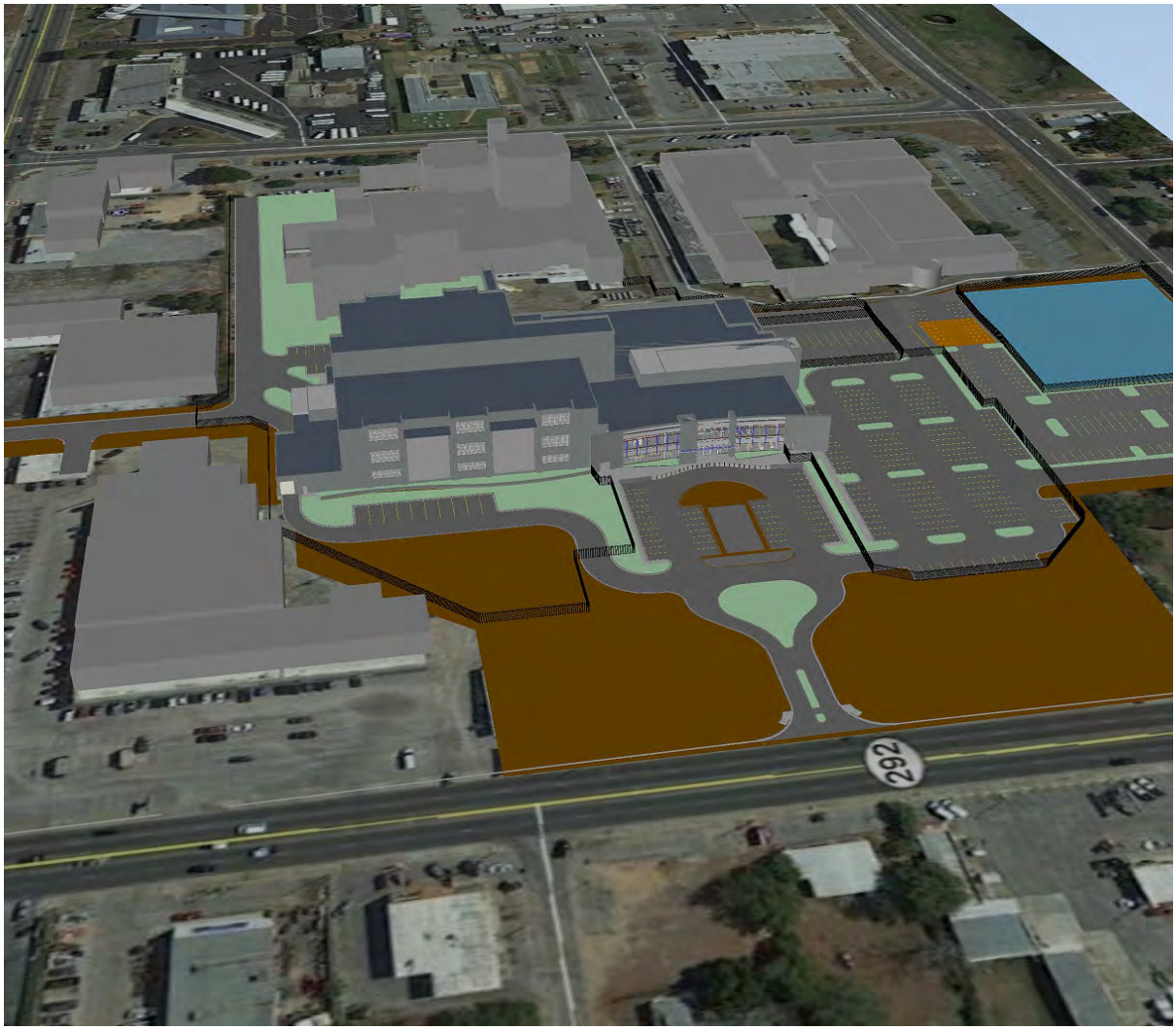
**JUNE 2018:**
Foundations are complete the CIP elevator and stair cores are in place. The slab on grade is complete on areas A and C and structural steel is being erected from west to east. The stormwater retention pond has been completed.

**DECEMBER 2018:**

The material hoist has been erected on the southern portion of the structure. The façade installation is ongoing and the building is now dried in so finishes can commence. The CMU and Trussbilt panels continue to be installed throughout the building.

**MAY 2019:**

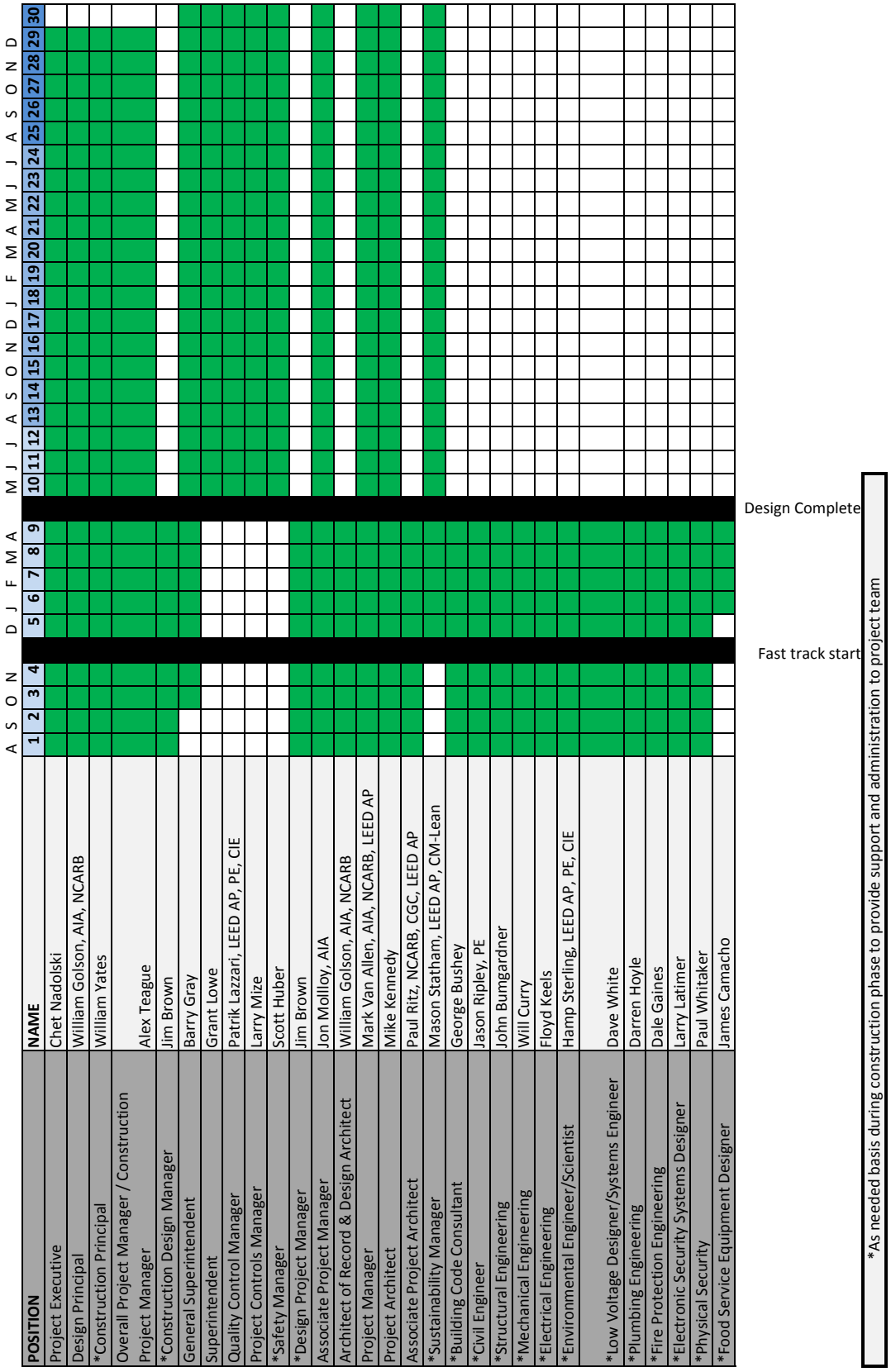
Foundations are complete and structural steel is being erected from west to east. Sitework is ongoing and the curb and gutter is being installed. The Trussbilt panels, CMU erection and MEP installation is still ongoing throughout the building.




**DECEMBER 31, 2019:**
The building has reached substantial completion.

# D. PRELIMINARY BASELINE DESIGN/CONSTRUCTION SCHEDULE / STAFFING PLAN

## KEY PERSONNEL STAFFING SCHEDULE




| POSITION | NAME |
|---|---|
| Project Executive | Chet Nadolski |
| Design Principal | William Golson, AIA, NCARB |
| *Construction Principal | William Yates |
| Overall Project Manager / Construction Project Manager | Alex Teague |
| *Construction Design Manager | Jim Brown |
| General Superintendent | Barry Gray |
| Superintendent | Grant Lowe |
| Quality Control Manager | Patrik Lazzari, LEED AP, PE, CIE |
| Project Controls Manager | Larry Mize |
| *Safety Manager | Scott Huber |
| *Design Project Manager | Jim Brown |
| Associate Project Manager | Jon Molloy, AIA |
| Architect of Record & Design Architect | William Golson, AIA, NCARB |
| Project Manager | Mark Van Allen, AIA, NCARB, LEED AP |
| Project Architect | Mike Kennedy |
| Associate Project Architect | Paul Ritz, NCARB, CGC, LEED AP |
| *Sustainability Manager | Mason Statham, LEED AP, CM-Lean |
| *Building Code Consultant | George Bushey |
| *Civil Engineer | Jason Ripley, PE |
| *Structural Engineering | John Bumgardner |
| *Mechanical Engineering | Will Curry |
| *Electrical Engineering | Floyd Keels |
| *Environmental Engineer/Scientist | Hamp Sterling, LEED AP, PE, CIE |
| *Low Voltage Designer/Systems Engineer | Dave White |
| *Plumbing Engineering | Darren Hoyle |
| *Fire Protection Engineering | Dale Gaines |
| *Electronic Security Systems Designer | Larry Latimer |
| *Physical Security | Paul Whitaker |
| *Food Service Equipment Designer | James Camacho |

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

***1. If requested by Owner before execution of Document 00 5200 (Agreement), Design-Build Entity shall secure and maintain or cause to be secured and maintained (i) fire, lightning and extended coverage insurance on the Project, in the form of a builder's risk policy providing coverage in an amount not less than the construction costs expended for the Project (except that such insurance may be subject to a deductible clause not to exceed Five million dollars ($5,000,000) for any one loss), and (ii) earthquake insurance (if such insurance is available on the open market from reputable insurance companies at a reasonable cost) on any structure comprising part of the Project in an amount equal to the full insurable value of such structure (except that such insurance may be subject to a deductible clause not to exceed two million five hundred thousand dollars ($2,500,000) for any one loss). The extended coverage endorsement shall, as nearly as practicable, cover loss or damage by explosion, windstorm, riot, aircraft, vehicle damage, smoke, vandalism and malicious mischief and such other hazards as are normally covered by such endorsement.***

***2. Such insurance shall (i) Include an endorsement naming Escambia County and County's board members, officials, officers, agents, employees departments, officials, representatives, inspectors, consultants and agents and volunteers, including, but not limited to DBE, Criteria Architect and each Owner Representative, and the Department of Corrections and each of their respective officers, governing members, directors, officials, employees, subcontractors, and consultants, as additional insureds; and (ii) primary and no other insurance or self-insured retention carried or held by Owner shall be called upon to contribute to a loss covered by this insurance.***

Please see the following Letter from Insurer verifying the ability to secure the required Builder's Risk Policy for W.G. Yates & Sons Construction Company upon award of the project.

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

Arthur J. Gallagher & Co.

June 21, 2017

Escambia County
Office of Purchasing
Attn: Paul R. Nobles, CPPO, CPPB, FCN, FCCM
P.O. Box 1591
Pensacola, FL 32597

RE: W. G. Yates & Sons Construction Co.

Mr. Nobles:

Our office is the insurance broker for W. G. Yates & Sons Construction Co. and can confirm that the policies and limits evidenced on the attached certificates of insurance are in place.

Also, please find attached Insurance Company Ratings to confirm that the insurance ratings meet requirements.

Further, we have reviewed the requirements for the Builders Risk insurance policy that may be required of this contractor and can confirm that we will be able to place such insurance covering the project if awarded to W.G. Yates & Sons Construction Co.

Should you have any questions or need any additional information, please contact our office.

Sincerely,

Ali Sims
Client Service Manager
601-863-3193

Arthur J. Gallagher Risk Management Services, Inc.
P. O. Drawer 16447, Jackson, MS 39236-6447 | 750 Woodlands Parkway, Suite 200
Ridgeland, MS 39157

m 601.956.5810
f 601.957.7098
ajg.com

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

## W.G. Yates & Sons Construction Co.

### Insurance Company Ratings

| PROPOSED INSURANCE COMPANIES | A.M. BEST'S RATING |
|---|---|
| Arch Specialty Insurance Company | A++, XV |
| Travelers Property Casualty Co. of A | A++, XV |
| Travelers Indemnity Company | A++, XV |
| Starr Indemnity & Liability Company | A, XIV |
| Tokio Marine Specialty Ins. Co | A++, XV |

Guide to Best Ratings

**Rating Levels and Categories**

| LEVEL | CATEGORY |
|---|---|
| A++, A+ | Superior |
| A, A- | Excellent |
| B++, B+ | Good |
| B, B- | Fair |
| C++, C+ | Marginal |
| C, C- | Weak |
| D | Poor |
| E | Under Regulatory Supervision |
| F | In Liquidation |
| S | Suspended |

Financial Size Categories

*(In $000 of Reported Policyholders' Surplus Plus Conditional Reserve Funds)*

| | | | |
|---|---|---|---|
| FSC I | Up to 1,000 | FSC IX | 250,000 to 500,000 |
| FSC II | 1,000 to 2,000 | FSC X | 500,000 to 750,000 |
| FSC III | 2,000 to 5,000 | FSC XI | 750,000 to 1,00,000 |
| FSC IV | 5,000 to 10,000 | FSC XII | 1,000,000 to 1,250,000 |
| FSC V | 10,000 to 25,000 | FSC XIII | 1,250,000 to 1,500,000 |
| FSC VI | 25,000 to 50,000 | FSC XIV | 1,500,000 to 2,000,000 |
| FSC VII | 50,000 to 100,000 | FSC XV | 2,000,000 or more |
| FSC VIII | 100,000 to 250,000 | | |

Best's Insurance Reports, published annually by A.M. Best Company, Inc., presents comprehensive reports on the financial position, history, and transactions of insurance companies operating in the United States and Canada. Companies licensed to do business in the United States are assigned a Best's Rating which attempts to measure the comparative position of the company or association against industry averages.

A Best's Financial Strength Rating opinion addresses the relative ability of an insurer to meet its ongoing insurance obligations. It is not a warranty of a company's financial strength and ability to meet its obligations to policyholders. View the A.M. Best Important Notice: Best's Credit Ratings for a disclaimer notice and complete details at http://www.ambest.com/ratings/notice.

Best's Credit Ratings are under continuous review and subject to change and/or affirmation. For the latest Best's Credit Ratings and Best Credit Reports (which include Best Ratings), visit the A.M. Best website at http://www.ambest.com. See Guide to Best's Credit Ratings for explanation of use and charges. Copies of the Best's Insurance Reports for carriers listed above are also available upon request of your Gallagher representative.

Best's Credit Ratings reproduced herein appear under license from A.M. Best and do not constitute, either expressly or impliedly, an endorsement of (Licensee's publication or service) or its recommendations, formulas, criteria or comparisons to any other ratings, rating scales or rating organizations which are published or referenced herein. A.M. Best is not responsible for transcription errors made in presenting Best's Credit Ratings. Best's Credit Ratings are proprietary and may not be reproduced or distributed without the express written permission of A.M. Best Company.

Gallagher companies use A.M. Best Company's rating services to evaluate the financial condition of insurers whose policies we propose to deliver. Gallagher companies make no representations and warranties concerning the solvency of any carrier, nor does it make any representation or warranty concerning the rating of the carrier which may change.

## W. G. Yates & Sons Construction Co.

### Insurance Company Ratings

**BEST'S FINANCIAL STRENGTH RATING GUIDE – (FSR)**

A Best's Financial Strength Rating (FSR) is an independent opinion of an insurer's financial strength and ability to meet its ongoing insurance policy and contract obligations. An FSR is not assigned to specific insurance policies or contracts and does not address any other risk, including, but not limited to, an insurer's claims-payment policies or procedures; the ability of the insurer to dispute or deny claims payment on grounds of misrepresentation or fraud; or any specific liability contractually borne by the policy or contract holder. An FSR is not a recommendation to purchase, hold or terminate any insurance policy, contract or any other financial obligation issued by an insurer, nor does it address the suitability of any particular policy or contract for a specific purpose or purchaser. In addition, an FSR may be displayed with a rating identifier, modifier or affiliation code that denotes a unique aspect of the opinion.

**Best's Financial Strength Rating (FSR) Scale**

| Rating Categories | Rating Symbols | Rating Notches* | Category Definitions |
|---|---|---|---|
| Superior | A+ | A++ | Assigned to insurance companies that have, in our opinion, a superior ability to meet their ongoing insurance obligations. |
| Excellent | A | A- | Assigned to insurance companies that have, in our opinion, an excellent ability to meet their ongoing insurance obligations. |
| Good | B+ | B++ | Assigned to insurance companies that have, in our opinion, a good ability to meet their ongoing insurance obligations. |
| Fair | B | B- | Assigned to insurance companies that have, in our opinion, a fair ability to meet their ongoing insurance obligations. Financial strength is vulnerable to adverse changes in underwriting and economic conditions. |
| Marginal | C+ | C++ | Assigned to insurance companies that have, in our opinion, a marginal ability to meet their ongoing insurance obligations. Financial strength is vulnerable to adverse changes in underwriting and economic conditions. |
| Weak | C | C- | Assigned to insurance companies that have, in our opinion, a weak ability to meet their ongoing insurance obligations. Financial strength is very vulnerable to adverse changes in underwriting and economic conditions. |
| Poor | D | - | Assigned to insurance companies that have, in our opinion, a poor ability to meet their ongoing insurance obligations. Financial strength is extremely vulnerable to adverse changes in underwriting and economic conditions. |

** Each Best's Financial Strength Rating Category from "A+" to "C" includes a Rating Notch to reflect a gradation of financial strength within the category. A Rating Notch is expressed with either a second plus "+" or a minus "-".*

**FSR Non-Rating Designations**

| Designation Symbols | Designation Definitions |
|---|---|
| E | Status assigned to insurance companies that are publicly placed under a significant form of regulatory supervision, control or restraint - including cease and desist orders, conservatorship or rehabilitation, but not liquidation - that prevents conduct of normal ongoing insurance operations; an impaired insurer. |
| F | Status assigned to insurance companies that are publicly placed in liquidation by a court of law or by a forced liquidation; an impaired insurer. |
| S | Status assigned to rated insurance companies to suspend the outstanding FSR when sudden and significant events impact operations and rating implications cannot be evaluated due to a lack of timely or adequate information; or in cases where continued maintenance of the previously published rating opinion is in violation of evolving regulatory requirements. |
| NR | Status assigned to insurance companies that are not rated; may include previously rated insurance companies or insurance companies that have never been rated by AMBRS. |

**Rating Disclosure – Use and Limitations**

A Best's Credit Rating (BCR) is a forward-looking independent and objective opinion regarding an insurer's, issuer's or financial obligation's relative creditworthiness. The opinion represents a comprehensive analysis consisting of a quantitative and qualitative evaluation of balance sheet strength, operating performance and business profile or, where appropriate, the specific nature and details of a security. Because a BCR is a forward-looking opinion as of the date it is released, it cannot be considered as a fact or guarantee of future credit quality and therefore cannot be described as accurate or inaccurate. A BCR is a relative measure of risk that implies credit quality and is assigned using a scale with a defined population of categories and notches. Entities or obligations assigned the same BCR symbol developed using the same scale, should not be viewed as completely identical in terms of credit quality. Alternatively, they are alike in category (or notches within a category), but given there is a prescribed progression of categories (and notches) used in assigning the ratings of a much larger population of entities or obligations, the categories (notches) cannot mirror the precise subtleties of risk that are inherent within similarly rated entities or obligations. While a BCR reflects the opinion of A.M. Best Rating Services, Inc. (AMBRS) of relative creditworthiness, it is not an indicator or predictor of defined impairment or default probability with respect to any specific insurer, issuer or financial obligation. A BCR is not investment advice, nor should it be construed as a consulting or advisory service, as such; it is not intended to be utilized as a recommendation to purchase, hold or terminate any insurance policy, contract, security or any other financial obligation, nor does it address the suitability of any particular policy or contract for a specific purpose or purchaser. Users of a BCR should not rely on it in making any investment decision; however, if used, the BCR must be considered as only one factor. Users must make their own evaluation of each investment decision. A BCR opinion is provided on an "as is" basis without any expressed or implied warranty. In addition, a BCR may be changed, suspended or withdrawn at any time for any reason at the sole discretion of AMBRS.

BCRs are distributed via the AMBRS website at www.ambest.com. For additional information regarding the development of a BCR and other rating-related information and definitions, including outlooks, modifiers, identifiers and affiliation codes, please refer to the report titled "Understanding Best's Credit Ratings" available at no charge on the AMBRS website. BCRs are proprietary and may not be reproduced without permission.

Copyright © 2016 by A.M. Best Company, Inc. and/or its affiliates. ALL RIGHTS RESERVED.

Version 090116

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

ACORD®

## CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/2/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | |
|---|---|
| PRODUCER<br>Arthur J. Gallagher Risk Management Services, Inc.<br>750 Woodlands Parkway, Suite 200<br>Ridgeland MS 39157 | CONTACT NAME: Belinda Pinion<br>PHONE (A/C, No, Ext): 601-863-3169 FAX (A/C, No): 601-812-6224<br>E-MAIL ADDRESS: belinda_pinion@ajg.com |
| INSURED<br>W. G. Yates & Sons Construction Co<br>P. O. Box 456<br>Philadelphia, MS 39350 | INSURER(S) AFFORDING COVERAGE — NAIC #<br>INSURER A : Arch Specialty Insurance Company — 21199<br>INSURER B :<br>INSURER C :<br>INSURER D :<br>INSURER E :<br>INSURER F : |

WGYATES-01

**COVERAGES** **CERTIFICATE NUMBER:** 1583213311 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| | COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE OCCUR<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>POLICY PRO-JECT LOC<br>OTHER: | | | | | | EACH OCCURRENCE<br>DAMAGE TO RENTED PREMISES (Ea occurrence)<br>MED EXP (Any one person)<br>PERSONAL & ADV INJURY<br>GENERAL AGGREGATE<br>PRODUCTS - COMP/OP AGG | $<br>$<br>$<br>$<br>$<br>$ |
| | AUTOMOBILE LIABILITY<br>ANY AUTO<br>ALL OWNED AUTOS<br>SCHEDULED AUTOS<br>HIRED AUTOS<br>NON-OWNED AUTOS | | | | | | COMBINED SINGLE LIMIT (Ea accident)<br>BODILY INJURY (Per person)<br>BODILY INJURY (Per accident)<br>PROPERTY DAMAGE (Per accident) | $<br>$<br>$<br>$ |
| | UMBRELLA LIAB OCCUR<br>EXCESS LIAB CLAIMS-MADE<br>DED RETENTION $ | | | | | | EACH OCCURRENCE<br>AGGREGATE | $<br>$ |
| | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N N/A<br>If yes, describe under DESCRIPTION OF OPERATIONS below | | | | | | PER STATUTE OTH-ER<br>E.L. EACH ACCIDENT<br>E.L. DISEASE - EA EMPLOYEE<br>E.L. DISEASE - POLICY LIMIT | $<br>$<br>$ |
| A | Contractor Professional Liability | | | CPP0055671-03 | 8/15/2016 | 8/15/2017 | Each Claim<br>Aggregate | $5,000,000<br>$5,000,000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Design Build Services for The New Escambia County Correctional Facility, Solicitation #PD 16-17.004
Carrier will provide 30 day notice of cancellation for reasons other than non-payment to certificate holder

**CERTIFICATE HOLDER**

Escambia County
Office of Purchasing
Attn: P. Nobles, CPPO,CPPB,FCN,FCCM
P O Box 1591
Pensacola FL 32597

**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

© 1988-2014 ACORD CORPORATION. All rights reserved.

ACORD 25 (2014/01) The ACORD name and logo are registered marks of ACORD

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

ACORD®

## CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/2/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | |
|---|---|
| PRODUCER<br>Arthur J. Gallagher Risk Management Services, Inc.<br>750 Woodlands Parkway, Suite 200<br>Ridgeland MS 39157 | CONTACT NAME: Belinda Pinion<br>PHONE (A/C, No, Ext): 601-863-3169 FAX (A/C, No): 601-812-6224<br>E-MAIL ADDRESS: belinda_pinion@ajg.com |
| INSURED<br>W. G. Yates & Sons Construction Co<br>P. O. Box 456<br>Philadelphia, MS 39350 | WGYATES-01 |

| INSURER(S) AFFORDING COVERAGE | NAIC # |
|---|---|
| INSURER A: Travelers Property Casualty Co of A | 25674 |
| INSURER B: Starr Indemnity & Liability Company | 38318 |
| INSURER C: Travelers Indemnity Company | 25658 |
| INSURER D: | |
| INSURER E: | |
| INSURER F: | |

COVERAGES CERTIFICATE NUMBER: 1632474111 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| A | X COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE X OCCUR<br>X XCU Cov Incl.<br>X Contractual Liab<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>POLICY X PRO-JECT LOC<br>OTHER: | Y | Y | VTC2JCO5787B693TIL16 | 11/30/2016 | 11/30/2017 | EACH OCCURRENCE<br>DAMAGE TO RENTED PREMISES (Ea occurrence)<br>MED EXP (Any one person)<br>PERSONAL & ADV INJURY<br>GENERAL AGGREGATE<br>PRODUCTS - COMP/OP AGG<br>$ | $2,000,000<br>$1,000,000<br>$10,000<br>$2,000,000<br>$4,000,000<br>$4,000,000 |
| A | AUTOMOBILE LIABILITY<br>X ANY AUTO<br>OWNED AUTOS ONLY<br>HIRED AUTOS ONLY<br>SCHEDULED AUTOS<br>NON-OWNED AUTOS ONLY | Y | Y | VTC2JCAP5787B700TIL16 | 11/30/2016 | 11/30/2017 | COMBINED SINGLE LIMIT (Ea accident)<br>BODILY INJURY (Per person)<br>BODILY INJURY (Per accident)<br>PROPERTY DAMAGE (Per accident)<br>$ | $2,000,000<br>$<br>$<br>$<br>$ |
| B | UMBRELLA LIAB X OCCUR<br>X EXCESS LIAB CLAIMS-MADE<br>DED RETENTION $ | Y | Y | 1000023220 | 11/30/2016 | 11/30/2017 | EACH OCCURRENCE<br>AGGREGATE<br>$ | $5,000,000<br>$5,000,000<br>$ |
| C | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N<br>If yes, describe under DESCRIPTION OF OPERATIONS below | N/A | Y | VTC2KUB5787B68116 | 11/30/2016 | 11/30/2017 | X PER STATUTE OTH-ER<br>E.L. EACH ACCIDENT<br>E.L. DISEASE - EA EMPLOYEE<br>E.L. DISEASE - POLICY LIMIT | <br>$1,000,000<br>$1,000,000<br>$1,000,000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Design Build Services for The New Escambia County Correctional Facility, Solicitation #PD 16-17.004
Escambia County is included as additional insured on a primary and non-contributory basis on all policies except workers comp via form CGD604 0813 on gen liab and CAT474 0212 on auto liab with waiver of subrogation in their favor on all policies as respects insured's operation as required by written contract.
Carriers will provide 30 day notice of cancellation for statutorily permitted reasons other than
See Attached...

| CERTIFICATE HOLDER | CANCELLATION |
|---|---|
| Escambia County<br>Office of Purchasing<br>Attn: P. Nobles, CPPO,CPPB,FCN,FCCM<br>P O Box 1591<br>Pensacola FL 32597 | SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.<br>AUTHORIZED REPRESENTATIVE |

© 1988-2015 ACORD CORPORATION. All rights reserved.

ACORD 25 (2016/03) The ACORD name and logo are registered marks of ACORD

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

AGENCY CUSTOMER ID: WGYATES-01
LOC #:

ACORD

## ADDITIONAL REMARKS SCHEDULE

Page 1 of 1

| | |
|---|---|
| AGENCY<br>Arthur J. Gallagher Risk Management Services, Inc. | NAMED INSURED<br>W. G. Yates & Sons Construction Co<br>P. O. Box 456<br>Philadelphia, MS 39350 |
| POLICY NUMBER | |
| CARRIER / NAIC CODE | EFFECTIVE DATE: |

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: 25 FORM TITLE: CERTIFICATE OF LIABILITY INSURANCE

non-payment of premium to certificate holder. Workers Comp policy includes State of Florida Excess liability is follow form of the underlying policies

ACORD 101 (2008/01)

© 2008 ACORD CORPORATION. All rights reserved.
The ACORD name and logo are registered marks of ACORD

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

POLICY NUMBER: VTC2J-CAP-5787B700-TIL-16 COMMERCIAL AUTO

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## BLANKET ADDITIONAL INSURED – PRIMARY AND NON-CONTRIBUTORY WITH OTHER INSURANCE

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by this endorsement.

PROVISIONS

A. The following is added to Paragraph c. in A. 1., Who Is An Insured, of SECTION II – LIABILITY COVERAGE:

Any person or organization who is required under a written contract or agreement between you and that person or organization, that is signed and executed by you before the "bodily injury" or "property damage" occurs and that is in effect during the policy period, to be named as an additional insured is an "insured" for Liability Coverage, but only for damages to which this insurance applies and only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured provision contained in Section II.

B. The following is added to Paragraph 5., Other Insurance, in B. General Conditions of SECTION IV – BUSINESS AUTO CONDITIONS:

Regardless of the provisions of paragraph a. and paragraph d. of this part 5. Other Insurance, this insurance is primary to and non-contributory with applicable other insurance under which an additional insured person or organization is the first named insured when the written contract or agreement between you and that person or organization, that is signed and executed by you before the "bodily injury" or "property damage" occurs and that is in effect during the policy period, requires this insurance to be primary and non-contributory.

CA T4 74 02 12

© 2012 The Travelers Indemnity Company. All rights reserved.
Includes copyrighted material of Insurance Services Office, Inc. with its permission.

Page 1 of 1

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

POLICY NUMBER: VTC2J-CAP-5707B700-TIL-16 ISSUE DATE: 11-10-16

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## DESIGNATED ENTITY – NOTICE OF CANCELLATION PROVIDED BY US

This endorsement modifies insurance provided under the following:
ALL COVERAGE PARTS INCLUDED IN THIS POLICY

SCHEDULE

CANCELLATION: Number of Days Notice of Cancellation: 30

PERSON OR ORGANIZATION:

ANY PERSON OR ORGANIZATION TO WHOM YOU HAVE AGREED IN A WRITTEN CONTRACT THAT NOTICE OF CANCELLATION, NONRENEWAL OR MATERIAL LIMITATION OF THIS POLICY WILL BE GIVEN, BUT ONLY IF:
1. YOU SEND US A WRITTEN REQUEST TO PROVIDE SUCH NOTICE, INCLUDING THE NAME AND ADDRESS OF SUCH PERSON OR ORGANIZATION, AFTER THE FIRST NAMED INSURED RECEIVES NOTICE FROM US OF THE CANCELLATION, NONRENEWAL OR MATERIAL LIMITATION OF THIS POLICY; AND
2. WE RECEIVE SUCH WRITTEN REQUEST AT LEAST 14 DAYS BEFORE THE BEGINNING OF THE APPLICABLE NUMBER OF DAYS SHOWN IN THIS ENDORSEMENT

ADDRESS:

THE ADDRESS FOR THAT PERSON OR ORGANIZATION INCLUDED IN SUCH WRITTEN REQUEST FROM YOU TO US.

PROVISIONS:

If we cancel this policy for any statutorily permitted reason other than nonpayment of premium, and a number of days is shown for cancellation in the schedule above, we will mail notice of cancellation to the person or organization shown in the schedule above. We will mail such notice to the address shown in the schedule above at least the number of days shown for cancellation in the schedule above before the effective date of cancellation.

IL T4 05 03 11 ©2011 The Travelers Indemnity Company. All rights reserved. Page 1 of 1

POLICY NUMBER: VTC2J-CAP-5707B700-TIL-16 COMMERCIAL AUTO

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

# BUSINESS AUTO EXTENSION ENDORSEMENT

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

GENERAL DESCRIPTION OF COVERAGE – This endorsement broadens coverage. However, coverage for any injury, damage or medical expenses described in any of the provisions of this endorsement may be excluded or limited by another endorsement to the Coverage Part, and these coverage broadening provisions do not apply to the extent that coverage is excluded or limited by such an endorsement. The following listing is a general coverage description only. Limitations and exclusions may apply to these coverages. Read all the provisions of this endorsement and the rest of your policy carefully to determine rights, duties, and what is and is not covered.

A. BROAD FORM NAMED INSURED
B. BLANKET ADDITIONAL INSURED
C. EMPLOYEE HIRED AUTO
D. EMPLOYEES AS INSURED
E. SUPPLEMENTARY PAYMENTS – INCREASED LIMITS
F. HIRED AUTO – LIMITED WORLDWIDE COVERAGE – INDEMNITY BASIS
G. WAIVER OF DEDUCTIBLE – GLASS
H. HIRED AUTO PHYSICAL DAMAGE – LOSS OF USE – INCREASED LIMIT
I. PHYSICAL DAMAGE – TRANSPORTATION EXPENSES – INCREASED LIMIT
J. PERSONAL PROPERTY
K. AIRBAGS
L. NOTICE AND KNOWLEDGE OF ACCIDENT OR LOSS
M. BLANKET WAIVER OF SUBROGATION
N. UNINTENTIONAL ERRORS OR OMISSIONS

PROVISIONS

A. BROAD FORM NAMED INSURED

The following is added to Paragraph A.1., Who Is An Insured, of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

Any organization you newly acquire or form during the policy period over which you maintain 50% or more ownership interest and that is not separately insured for Business Auto Coverage. Coverage under this provision is afforded only until the 180th day after you acquire or form the organization or the end of the policy period, whichever is earlier.

B. BLANKET ADDITIONAL INSURED

The following is added to Paragraph c. in A.1., Who Is An Insured, of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

Any person or organization who is required under a written contract or agreement between you and that person or organization, that is signed and executed by you before the "bodily injury" or "property damage" occurs and that is in effect during the policy period, to be named as an additional insured is an "insured" for Covered Autos Liability Coverage, but only for damages to which this insurance applies and only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured provision contained in Section II.

C. EMPLOYEE HIRED AUTO

1. The following is added to Paragraph A.1., Who Is An Insured, of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

An "employee" of yours is an "insured" while operating an "auto" hired or rented under a contract or agreement in an "employee's" name, with your permission, while performing duties related to the conduct of your business.

2. The following replaces Paragraph b. in B.5., Other Insurance, of SECTION IV – BUSINESS AUTO CONDITIONS:

b. For Hired Auto Physical Damage Coverage, the following are deemed to be covered "autos" you own:

(1) Any covered "auto" you lease, hire, rent or borrow; and

(2) Any covered "auto" hired or rented by your "employee" under a contract in an "employee's" name, with your


© 2015 The Travelers Indemnity Company. All rights reserved.
Includes copyrighted material of Insurance Services Office, Inc. with its permission.

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE



permission, while performing duties related to the conduct of your business.

However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

D. EMPLOYEES AS INSURED

The following is added to Paragraph A.1., Who Is An Insured, of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

Any "employee" of yours is an "insured" while using a covered "auto" you don't own, hire or borrow in your business or your personal affairs.

E. SUPPLEMENTARY PAYMENTS – INCREASED LIMITS

1. The following replaces Paragraph A.2.a.(2), of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

   (2) Up to $3,000 for cost of bail bonds (including bonds for related traffic law violations) required because of an "accident" we cover. We do not have to furnish these bonds.

2. The following replaces Paragraph A.2.a.(4), of SECTION II – COVERED AUTOS LIABILITY COVERAGE:

   (4) All reasonable expenses incurred by the "insured" at our request, including actual loss of earnings up to $500 a day because of time off from work.

F. HIRED AUTO – LIMITED WORLDWIDE COVERAGE – INDEMNITY BASIS

The following replaces Subparagraph (5) in Paragraph B.7., Policy Period, Coverage Territory, of SECTION IV – BUSINESS AUTO CONDITIONS:

(5) Anywhere in the world, except any country or jurisdiction while any trade sanction, embargo, or similar regulation imposed by the United States of America applies to and prohibits the transaction of business with or within such country or jurisdiction, for Covered Autos Liability Coverage for any covered "auto" that you lease, hire, rent or borrow without a driver for a period of 30 days or less and that is not an "auto" you lease, hire, rent or borrow from any of your "employees", partners (if you are a partnership), members (if you are a limited liability company) or members of their households.

(a) With respect to any claim made or "suit" brought outside the United States of America, the territories and possessions of the United States of America, Puerto Rico and Canada:

   (i) You must arrange to defend the "insured" against, and investigate or settle any such claim or "suit" and keep us advised of all proceedings and actions.

   (ii) Neither you nor any other involved "insured" will make any settlement without our consent.

   (iii) We may, at our discretion, participate in defending the "insured" against, or in the settlement of, any claim or "suit".

   (iv) We will reimburse the "insured" for sums that the "insured" legally must pay as damages because of "bodily injury" or "property damage" to which this insurance applies, that the "insured" pays with our consent, but only up to the limit described in Paragraph C., Limits Of Insurance, of SECTION II – COVERED AUTOS LIABILITY COVERAGE.

   (v) We will reimburse the "insured" for the reasonable expenses incurred with our consent for your investigation of such claims and your defense of the "insured" against any such "suit", but only up to and included within the limit described in Paragraph C., Limits Of Insurance, of SECTION II – COVERED AUTOS LIABILITY COVERAGE, and not in addition to such limit. Our duty to make such payments ends when we have used up the applicable limit of insurance in payments for damages, settlements or defense expenses.

(b) This insurance is excess over any valid and collectible other insurance available to the "insured" whether primary, excess, contingent or on any other basis.

(c) This insurance is not a substitute for required or compulsory insurance in any country outside the United States, its territories and possessions, Puerto Rico and Canada.



© 2015 The Travelers Indemnity Company. All rights reserved.
Includes copyrighted material of Insurance Services Office, Inc. with its permission.

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE



You agree to maintain all required or compulsory insurance in any such country up to the minimum limits required by local law. Your failure to comply with compulsory insurance requirements will not invalidate the coverage afforded by this policy, but we will only be liable to the same extent we would have been liable had you complied with the compulsory insurance requirements.

(d) It is understood that we are not an admitted or authorized insurer outside the United States of America, its territories and possessions, Puerto Rico and Canada. We assume no responsibility for the furnishing of certificates of insurance, or for compliance in any way with the laws of other countries relating to insurance.

G. WAIVER OF DEDUCTIBLE – GLASS

The following is added to Paragraph D., Deductible, of SECTION III – PHYSICAL DAMAGE COVERAGE:

No deductible for a covered "auto" will apply to glass damage if the glass is repaired rather than replaced.

H. HIRED AUTO PHYSICAL DAMAGE – LOSS OF USE – INCREASED LIMIT

The following replaces the last sentence of Paragraph A.4.b., Loss Of Use Expenses, of SECTION III – PHYSICAL DAMAGE COVERAGE:

However, the most we will pay for any expenses for loss of use is $65 per day, to a maximum of $750 for any one "accident".

I. PHYSICAL DAMAGE – TRANSPORTATION EXPENSES – INCREASED LIMIT

The following replaces the first sentence in Paragraph A.4.a., Transportation Expenses, of SECTION III – PHYSICAL DAMAGE COVERAGE:

We will pay up to $50 per day to a maximum of $1,500 for temporary transportation expense incurred by you because of the total theft of a covered "auto" of the private passenger type.

J. PERSONAL PROPERTY

The following is added to Paragraph A.4., Coverage Extensions, of SECTION III – PHYSICAL DAMAGE COVERAGE:

Personal Property

We will pay up to $400 for "loss" to wearing apparel and other personal property which is:

(1) Owned by an "insured"; and

(2) In or on your covered "auto".

This coverage applies only in the event of a total theft of your covered "auto".

No deductibles apply to this Personal Property coverage.

K. AIRBAGS

The following is added to Paragraph B.3., Exclusions, of SECTION III – PHYSICAL DAMAGE COVERAGE:

Exclusion 3.a. does not apply to "loss" to one or more airbags in a covered "auto" you own that inflate due to a cause other than a cause of "loss" set forth in Paragraphs A.1.b. and A.1.c., but only:

a. If that "auto" is a covered "auto" for Comprehensive Coverage under this policy;

b. The airbags are not covered under any warranty; and

c. The airbags were not intentionally inflated.

We will pay up to a maximum of $1,000 for any one "loss".

L. NOTICE AND KNOWLEDGE OF ACCIDENT OR LOSS

The following is added to Paragraph A.2.a., of SECTION IV – BUSINESS AUTO CONDITIONS:

Your duty to give us or our authorized representative prompt notice of the "accident" or "loss" applies only when the "accident" or "loss" is known to:

(a) You (if you are an individual);

(b) A partner (if you are a partnership);

(c) A member (if you are a limited liability company);

(d) An executive officer, director or insurance manager (if you are a corporation or other organization); or

(e) Any "employee" authorized by you to give notice of the "accident" or "loss".

M. BLANKET WAIVER OF SUBROGATION

The following replaces Paragraph A.5., Transfer Of Rights Of Recovery Against Others To Us, of SECTION IV – BUSINESS AUTO CONDITIONS:

5. Transfer Of Rights Of Recovery Against Others To Us

We waive any right of recovery we may have against any person or organization to the extent required of you by a written contract signed and executed prior to any "accident" or "loss", provided that the "accident" or "loss" arises out of operations contemplated by


© 2015 The Travelers Indemnity Company. All rights reserved.
Includes copyrighted material of Insurance Services Office, Inc. with its permission.

such contract. The waiver applies only to the person or organization designated in such contract.

N. UNINTENTIONAL ERRORS OR OMISSIONS

The following is added to Paragraph B.2., Concealment, Misrepresentation, Or Fraud, of SECTION IV – BUSINESS AUTO CONDITIONS:

The unintentional omission of, or unintentional error in, any information given by you shall not prejudice your rights under this insurance. However this provision does not affect our right to collect additional premium or exercise our right of cancellation or non-renewal.



© 2015 The Travelers Indemnity Company. All rights reserved.
Includes copyrighted material of Insurance Services Office, Inc. with its permission.

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

POLICY NUMBER: VTC2J-CO-5787B693-TIL-16

COMMERCIAL GENERAL LIABILITY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## BLANKET ADDITIONAL INSURED – AUTOMATIC STATUS IF REQUIRED BY WRITTEN CONTRACT (CONTRACTORS)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

1. The following is added to SECTION II – WHO IS AN INSURED:

   Any person or organization that:

   a. You agree in a "written contract requiring insurance" to include as an additional insured on this Coverage Part; and

   b. Has not been added as an additional insured for the same project by attachment of an endorsement under this Coverage Part which includes such person or organization in the endorsement's schedule;

   Is an insured, but:

   a. Only with respect to liability for "bodily injury", "property damage" or "personal injury"; and

   b. Only as described in Paragraph (1), (2) or (3) below, whichever applies:

      (1) If the "written contract requiring insurance" specifically requires you to provide additional insured coverage to that person or organization by the use of:

         (a) The Additional Insured – Owners, Lessees or Contractors – (Form B) endorsement CG 20 10 11 85; or

         (b) Either or both of the following: the Additional Insured – Owners, Lessees or Contractors – Scheduled Person Or Organization endorsement CG 20 10 10 01, or the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37 10 01;

         the person or organization is an additional insured only if the injury or damage arises out of "your work" to which the "written contract requiring insurance" applies;

      (2) If the "written contract requiring insurance" specifically requires you to provide additional insured coverage to that person or organization by the use of:

         (a) The Additional Insured – Owners, Lessees or Contractors – Scheduled Person or Organization endorsement CG 20 10 07 04 or CG 20 10 04 13, the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37 07 04 or CG 20 37 04 13, or both of such endorsements with either of those edition dates; or

         (b) Either or both of the following: the Additional Insured – Owners, Lessees or Contractors – Scheduled Person Or Organization endorsement CG 20 10, or the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37, without an edition date of such endorsement specified;

         the person or organization is an additional insured only if the injury or damage is caused, in whole or in part, by acts or omissions of you or your subcontractor in the performance of "your work" to which the "written contract requiring insurance" applies; or

      (3) If neither Paragraph (1) nor (2) above applies:

         (a) The person or organization is an additional insured only if, and to the extent that, the injury or damage is caused by acts or omissions of you or your subcontractor in the performance of "your work" to which the "written contract requiring insurance" applies; and

         (b) The person or organization does not qualify as an additional insured with respect to the independent acts or omissions of such person or organization.

CG D6 04 08 13

© 2013 The Travelers Indemnity Company. All rights reserved.

COMMERCIAL GENERAL LIABILITY

2. The insurance provided to the additional insured by this endorsement is limited as follows:
   a. If the Limits of Insurance of this Coverage Part shown in the Declarations exceed the minimum limits of liability required by the "written contract requiring insurance", the insurance provided to the additional insured will be limited to such minimum required limits of liability. For the purposes of determining whether this limitation applies, the minimum limits of liability required by the "written contract requiring insurance" will be considered to include the minimum limits of liability of any Umbrella or Excess liability coverage required for the additional insured by that "written contract requiring insurance". This endorsement will not increase the limits of insurance described in Section III – Limits Of Insurance.
   b. The insurance provided to the additional insured does not apply to "bodily injury", "property damage" or "personal injury" arising out of the rendering of, or failure to render, any professional architectural, engineering or surveying services, including:
      (1) The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders or change orders, or the preparing, approving, or failing to prepare or approve, drawings and specifications; and
      (2) Supervisory, inspection, architectural or engineering activities.
   c. The insurance provided to the additional insured does not apply to "bodily injury" or "property damage" caused by "your work" and included in the "products-completed operations hazard" unless the "written contract requiring insurance" specifically requires you to provide such coverage for that additional insured during the policy period.
3. The insurance provided to the additional insured by this endorsement is excess over any valid and collectible other insurance, whether primary, excess, contingent or on any other basis, that is available to the additional insured. However, if the "written contract requiring insurance" specifically requires that this insurance apply on a primary basis or a primary and non-contributory basis, this insurance is primary to other insurance available to the additional insured under which that person or organization qualifies as a named insured, and we will not share with that other insurance. But the insurance provided to the additional insured by this endorsement still is excess over any valid and collectible other insurance, whether primary, excess, contingent or on any other basis, that is available to the additional insured when that person or organization is an additional insured, or is any other insured that does not qualify as a named insured, under such other insurance.
4. As a condition of coverage provided to the additional insured by this endorsement:
   a. The additional insured must give us written notice as soon as practicable of an "occurrence" or an offense which may result in a claim. To the extent possible, such notice should include:
      (1) How, when and where the "occurrence" or offense took place;
      (2) The names and addresses of any injured persons and witnesses; and
      (3) The nature and location of any injury or damage arising out of the "occurrence" or offense.
   b. If a claim is made or "suit" is brought against the additional insured, the additional insured must:
      (1) Immediately record the specifics of the claim or "suit" and the date received; and
      (2) Notify us as soon as practicable.

      The additional insured must see to it that we receive written notice of the claim or "suit" as soon as practicable.
   c. The additional insured must immediately send us copies of all legal papers received in connection with the claim or "suit", cooperate with us in the investigation or settlement of the claim or defense against the "suit", and otherwise comply with all policy conditions.
   d. The additional insured must tender the defense and indemnity of any claim or "suit" to any provider of other insurance which would cover the additional insured for a loss we cover under this endorsement. However, this condition does not affect whether the insurance provided to the additional insured by this endorsement is primary to other insurance available to the additional insured which covers that person or organization as a named insured as described in Paragraph 3. above.
5. The following is added to the DEFINITIONS Section:

   "Written contract requiring insurance" means that part of any written contract or agreement under which you are required to include a person or or-


© 2013 The Travelers Indemnity Company. All rights reserved.

ganization as an additional insured on this Coverage Part, provided that the "bodily injury" and "property damage" occurs, and the "personal injury" is caused by an offense committed, during the policy period and:

a. After the signing and execution of the contract or agreement by you; and

b. While that part of the contract or agreement is in effect.



© 2013 The Travelers Indemnity Company. All rights reserved.

POLICY NUMBER: VTC2J-CO-5787B693-TIL-16 GENERAL PURPOSE ENDORSEMENT

BLANKET NOTICE FOR CANCELLATIONS, NONRENEWALS AND MATERIAL LIMITATIONS

This endorsement modifies insurance provided under the following:

ALL COVERAGE PARTS INCLUDED IN THIS POLICY

Endorsement IL T3 54 03 98, DESIGNATED ENTITY - EARLIER NOTICE OF CANCELLATION/NONRENEWAL PROVIDED BY US, IS AMENDED TO READ AS FOLLOWS:

CANCELLATION: NUMBER OF DAYS NOTICE:30
WHEN WE DO NOT RENEW (NONRENEWAL): NUMBER OF DAYS NOTICE:30

Any person or organization to whom you have agreed in a written contract that notice of cancellation, nonrenewal or material limitation of this policy will be given, but only if:

1. You send us a written request to provide such notice, including the name and address of such person or organization, after the first Named Insured receives notice from us of the cancellation, nonrenewal or material limitation of this policy; and

2. We receive such written request at least 14 days before the beginning of the applicable number of days shown in this endorsement.

ADDRESS: The address for that person or organization included in such written request from you to us.

IL T8 03 Page 1

POLICY NUMBER: VTC2J-CO-5787B693-TIL-16

COMMERCIAL GENERAL LIABILITY
GENERAL PURPOSE ENDORSEMENT

AMENDMENT OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US CONDITION

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

The following replaces Paragraph 8., Transfer Of Rights Of Recovery Against Others To Us, of SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS:

If the insured has rights to recover all or part of any payment we have made under this Coverage Part, those rights are transferred to us. The insured must do nothing to impair them. At our request, the insured will bring "suit" or transfer those rights to us and help us enforce them.

However, if you have agreed in a written contract or agreement to waive your right of recovery against any person or organization, we waive our right of recovery against such person or organization, but only for payments we make because of:

a. "Bodily injury" or "property damage" that occurs; or

b. "Personal injury" or "advertising injury" caused by an offense that is committed; subsequent to the execution of that contract or agreement.

Copyright 2012 The Travelers Indemnity Company. All rights reserved.

CG T8 08

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

TRAVELERS

ONE TOWER SQUARE
HARTFORD, CT 06183

WORKERS COMPENSATION
AND
EMPLOYERS LIABILITY POLICY
ENDORSEMENT WC 99 06 R5 (00)

POLICY NUMBER: (VTC2KUB-5787B68-1-16 )

## NOTICE OF CANCELLATION, NONRENEWAL OR MATERIAL COVERAGE REDUCTION TO DESIGNATED PERSONS OR ORGANIZATIONS

The following is added to PART SIX – CONDITIONS:

Notice Of Cancellation, Nonrenewal Or Material Coverage Reduction To Designated Persons Or Organizations

If we cancel or non-renew this policy for any reason other than non-payment of premium by you, we will provide notice of such cancellation or non-renewal to each person or organization designated in the Schedule below. We will mail or deliver such notice to each person or organization at its listed address at least the number of days shown for that person or organization before the cancellation or nonrenewal is to take effect.

In the event of a change that materially reduces or restricts the coverage afforded by this policy, other than reduction of limits of liability through payment of claims, we will provide notice of such coverage reduction to each person or organization designated in the Schedule below. We will mail or deliver such notice to each person or organization at its listed address at least the number of days shown for that person or organization before the reduction is to take effect.

You are responsible for providing us with the information necessary to accurately complete the Schedule below. If we cannot mail or deliver a notice of cancellation, nonrenewal or material coverage reduction to a designated person or organization because the name or address of such designated person or organization provided to us is not accurate or complete, we have no responsibility to mail, deliver or otherwise notify such designated person or organization of the cancellation, nonrenewal or reduction.

SCHEDULE

| Name and Address of Designated Persons or Organizations: | Number of Days Notice |
|---|---|
| ANY PERSON OR ORGANIZATION WITH WHOM YOU HAVE AGREED IN A WRITTEN CONTRACT THAT NOTICE OF CANCELLATION, NONRENEWAL OR MATERIAL REDUCTION IN COVERAGE OF THIS POLICY WILL BE GIVEN, BUT ONLY IF:<br>1. YOU SEE TO IT THAT WE RECEIVE A WRITTEN REQUEST TO PROVIDE SUCH NOTICE, INCLUDING THE NAME AND ADDRESS OF SUCH PERSON OR ORGANIZATION, AFTER THE FIRST NAMED INSURED RECEIVES NOTICE FROM US OF THE CANCELLATION OR MATERIAL LIMITATION OF THIS POLICY; AND<br>2. WE RECEIVE SUCH WRITTEN REQUEST AT LEAST 14 DAYS BEFORE THE BEGINNING OF THE APPLICABLE NUMBER OF DAYS SHOWN IN THIS ENDORSEMENT.<br><br>ADDRESS: THE ADDRESS FOR THAT PERSON OR ORGANIZATION INCLUDED IN SUCH WRITTEN REQUEST FROM YOU TO US. | 30 |

DATE OF ISSUE: 11-10-16 ST ASSIGN:

© 2013 The Travelers Indemnity Company. All rights reserved.

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

TRAVELERS

ONE TOWER SQUARE
HARTFORD, CT 06103

WORKERS COMPENSATION
AND
EMPLOYERS LIABILITY POLICY

ENDORSEMENT WC 00 03 13 (00)-01

POLICY NUMBER: (VTC2KUB-5787B68-1-16 )

## WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit any one not named in the Schedule.

SCHEDULE

DESIGNATED PERSON:

DESIGNATED ORGANIZATION:

ANY PERSON OR ORGANIZATION FOR WHICH THE INSURED HAS AGREED BY WRITTEN CONTRACT EXECUTED PRIOR TO LOSS TO FURNISH THIS WAIVER.

DATE OF ISSUE: 11-10-16 ST ASSIGN:

# E. POTENTIAL DESIGN-BUILD ENTITY-PROVIDED BUILDER'S RISK INSURANCE

ACORD®

## CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 6/8/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| PRODUCER | CONTACT NAME: Belinda Pinion |
|---|---|
| Arthur J. Gallagher Risk Management Services, Inc.<br>750 Woodlands Parkway, Suite 200<br>Ridgeland MS 39157 | PHONE (A/C, No, Ext): 601-863-3169 FAX (A/C, No): 601-812-6224<br>E-MAIL ADDRESS: belinda_pinion@ajg.com |
| | INSURER(S) AFFORDING COVERAGE — NAIC # |
| INSURED: WGYATES-01<br>W. G. Yates & Sons Construction Co<br>P. O. Box 456<br>Philadelphia, MS 39350 | INSURER A: Tokio Marine Specialty Ins Co — 23850<br>INSURER B:<br>INSURER C:<br>INSURER D:<br>INSURER E:<br>INSURER F: |

COVERAGES — CERTIFICATE NUMBER: 564176256 — REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS |
|---|---|---|---|---|---|---|---|
| | COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE / OCCUR<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>POLICY / PRO-JECT / LOC<br>OTHER: | | | | | | EACH OCCURRENCE $<br>DAMAGE TO RENTED PREMISES (Ea occurrence) $<br>MED EXP (Any one person) $<br>PERSONAL & ADV INJURY $<br>GENERAL AGGREGATE $<br>PRODUCTS - COMP/OP AGG $ |
| | AUTOMOBILE LIABILITY<br>ANY AUTO<br>OWNED AUTOS ONLY / SCHEDULED AUTOS<br>HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY | | | | | | COMBINED SINGLE LIMIT (Ea accident) $<br>BODILY INJURY (Per person) $<br>BODILY INJURY (Per accident) $<br>PROPERTY DAMAGE (Per accident) $ |
| | UMBRELLA LIAB / OCCUR<br>EXCESS LIAB / CLAIMS-MADE<br>DED / RETENTION $ | | | | | | EACH OCCURRENCE $<br>AGGREGATE $ |
| | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N / N/A<br>If yes, describe under DESCRIPTION OF OPERATIONS below | | | | | | PER STATUTE / OTH-ER<br>E.L. EACH ACCIDENT $<br>E.L. DISEASE - EA EMPLOYEE $<br>E.L. DISEASE - POLICY LIMIT $ |
| A | Contractor Pollution Liability | | | PPK1593411 | 12/30/2016 | 12/30/2017 | Per Contamination<br>Incident $5,000,000<br>Aggregate $5,000,000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Design Build Services for The New Escambia County Correctional Facility, Solicitation #PD 16-17.004
Escambia County is included as additional insured on a primary and non-contributory basis with waiver of subrogation in their favor as respects insured's operation as required by written contract
Carrier will provide 30 day notice of cancellation for reasons other than non-payment to certificate holder

| CERTIFICATE HOLDER | CANCELLATION |
|---|---|
| Escambia County<br>Office of Purchasing<br>Attn: P. Nobles, CPPO,CPPB,FCN,FCCM<br>P O Box 1591<br>Pensacola FL 32597 | SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.<br>AUTHORIZED REPRESENTATIVE |

© 1988-2015 ACORD CORPORATION. All rights reserved.

ACORD 25 (2016/03) — The ACORD name and logo are registered marks of ACORD

# SECTION C

## APPENDIX

A: Building Program Report - Spreadsheet
B. HVAC Appendices - Energy Reduction Analysis & Life Cycle Cost Analysis
C: Site / Civil Appendix

# APPENDIX A:

# BUILDING PROGRAM REPORT

# SPREADSHEET

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| ROOM NUMBER | ROOM NAME | ROOM AREA | PROGRAM REQUIRED AREA | PERCENT DIFFERENCE |
|---|---|---|---|---|
| **01 ENTRY AREA** | | | | |
| 1.01 | ENTRY VESTIBULE | 381 SF | 180 SF | 112.0% |
| 1.02 | LOBBY | 625 SF | 600 SF | 4.0% |
| 1.03 | WEAPONS LOCKERS | 10 SF | 10 SF | 0.0% |
| 1.04 | RECEPTION DESK | 120 SF | 120 SF | 0.0% |
| 1.05 | SECURITY SCREENING | 50 SF | 50 SF | 0.0% |
| 1.06 | ADULT RAPID INTAKE AREA | 200 SF | 180 SF | 11.0% |
| 1.07 | JUVENILE RAPID INTAKE AREA | 200 SF | 180 SF | 11.0% |
| 1.08 | OFFICIAL VISITOR WAITING | 80 SF | 80 SF | 0.0% |
| 1.09 | VISITOR LOCKERS | 20 SF | 20 SF | 0.0% |
| 1.1 | PUBLIC RESTROOM | 140 SF | 140 SF | 0.0% |
| 1.1 | PUBLIC RESTROOM | 140 SF | 140 SF | 0.0% |
| 1.11 | SECURITY VESTIBLE | 240 SF | 240 SF | 0.0% |
| **01 ENTRY AREA** | | 2205 SF | 1940 SF | 13.6% |
| **02 FACILITY ADMINISTRATION** | | | | |
| 2.01 | ADMINISTRATOR | 180 SF | 180 SF | 0.0% |
| 2.01 | ADMINISTRATOR | 172 SF | 180 SF | -5.0% |
| 2.02 | ADMIN ASSITANT/ RECEPTION | 176 SF | 120 SF | 46.0% |
| 2.03 | PROFESSIONAL STAFF | 160 SF | 160 SF | 0.0% |
| 2.04 | SUPPORT STAFF | 96 SF | 96 SF | 0.0% |
| 2.05 | WORK ROOM | 124 SF | 120 SF | 4.0% |
| 2.06 | INFORMATION TECHNOLOGY | 120 SF | 120 SF | 0.0% |
| 2.07 | SERVER ROOM | 150 SF | 150 SF | 0.0% |
| 2.08 | CONFERENCE/ INCIDENT ROOM | 440 SF | 440 SF | 0.0% |
| 2.09 | BREAK ROOM | 300 SF | 300 SF | 0.0% |
| 2.1 | MAIL ROOM | 140 SF | 140 SF | 0.0% |
| 2.11 | STAFF TOILET | 60 SF | 60 SF | 0.0% |
| 2.11 | STAFF TOILET | 60 SF | 60 SF | 0.0% |
| 2.12 | JANITOR'S CLOSET | 104 SF | 100 SF | 4.0% |
| | | 2282 SF | 2226 SF | 2.5% |
| **ACCREDITATION** | | | | |
| 2.13 | ACCREDITATION SUPERVISOR | 80 SF | 80 SF | 0.0% |
| 2.14 | ACCREDITATION OFFICER | 64 SF | 64 SF | 0.0% |
| 2.15 | ADMIN ASSISTANTS | 96 SF | 96 SF | 0.0% |
| 2.16 | FACILITY INSPECTOR OFFICE | 120 SF | 120 SF | 0.0% |
| 2.17 | FILES | 80 SF | 80 SF | 0.0% |
| | | 440 SF | 440 SF | 0.0% |
| **INTERNAL AFFAIRS** | | | | |
| 2.18 | INTERNAL AFFAIRS SUPERVISOR | 100 SF | 100 SF | 0.0% |
| 2.19 | IA OFFICER (SGT) | 64 SF | 64 SF | 0.0% |
| 2.2 | IA ADMIN ASSISTANT | 48 SF | 48 SF | 0.0% |
| 2.21 | SPECIAL INTERVIEW ROOM | 120 SF | 120 SF | 0.0% |
| 2.21 | SPECIAL INTERVIEW ROOM | 120 SF | 120 SF | 0.0% |
| 2.22 | EQUIPMENT ROOM | 40 SF | 40 SF | 0.0% |
| 2.23 | FILE/WORK ROOM | 80 SF | 80 SF | 0.0% |
| | | 572 SF | 572 SF | 0.0% |
| **02 FACILITY ADMINISTRATION** | | 3294 SF | 3238 SF | 1.7% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | |
|---|---|---|---|---|---|---|
| **03 STAFF SERVICES & TRAINING** | | | | | | |
| **03 STAFF LOCKERS** | | | | | | 0.0% |
| 3.01 | STAFF ENTRY VESTIBULE | 140 SF | 140 SF | | | 0.0% |
| 3.02 | PERSONAL WEAPONS LOCKERS | 40 SF | 40 SF | | | 0.0% |
| 3.03 | CIVILIAN LOCKERS | 30 SF | 30 SF | | | 0.0% |
| 3.04 | MALE STAFF LOCKERS | 1060 SF | 1060 SF | | | 0.0% |
| 3.05 | MALE TOILET/ SHOWERS | 280 SF | 280 SF | | | -4.0% |
| 3.06 | PHYSICAL TRAINING ROOM | 463 SF | 480 SF | | | 3.0% |
| 3.07 | FEMALE STAFF LOCKERS | 616 SF | 600 SF | | | 0.0% |
| 3.08 | FEMALE TOILET/ SHOWERS | 221 SF | 220 SF | | | 0.0% |
| | | 2852 SF | 2850 SF | | | 0.0% |
| **03 TRAINING AREAS** | | | | | | 0.0% |
| 3.09 | TRAINING SUPERVISION | 100 SF | 100 SF | | | 0.0% |
| 3.1 | TRAINING SERGEANT | 80 SF | 80 SF | | | 0.0% |
| 3.11 | CLERICAL SUPPORT | 64 SF | 64 SF | | | 0.0% |
| 3.12 | FIELD TRAINING OFFICER | 60 SF | 60 SF | | | 0.0% |
| 3.13 | FILE/WORK ROOM | 120 SF | 120 SF | | | 0.0% |
| 3.14 | TRAINING STORAGE | 150 SF | 150 SF | | | 0.0% |
| 3.15 | CONFERENCE ROOM | 180 SF | 180 SF | | | 0.0% |
| 3.16 | COMPUTER TRAINING CLASSROOM | 360 SF | 360 SF | | | -8.0% |
| 3.17 | LARGE TRAINING/ MUSTER ROOM | 999 SF | 1080 SF | | | 0.0% |
| 3.18 | MOCK UP CELL | 70 SF | 70 SF | | | 0.0% |
| 3.19 | LARGE TRAINING ROOM STORAGE | 150 SF | 150 SF | | | -5.0% |
| 3.2 | FORCE ON FORCE TRAINING | 1421 SF | 1500 SF | | | 0.0% |
| 3.21 | STAFF BREAK OUT AREA/ KITCHENETTE | 580 SF | 580 SF | | | 0.0% |
| 3.22 | MALE STAFF TOILET | 120 SF | 120 SF | | | 0.0% |
| 3.23 | FEMALE STAFF TOILET | 120 SF | 120 SF | | | 0.0% |
| 3.24 | JANITOR'S CLOSET | 40 SF | 40 SF | | | 0.0% |
| | | 4613 SF | 4774 SF | | | -3.4% |
| **03 STAFF SERVICES & TRAINING** | | 7464 SF | 7624 SF | | | -2.1% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| 04 ADMISSIONS/CLASSIFICATION/RELEASE | | | | | | |
|---|---|---|---|---|---|---|
| **01 VEHICULAR/ENTRY AREA** | | | | | | |
| 4.01 | SECURE VEHICULAR TRANSFER | 4608 SF | 4760 SF | | | -3.0% |
| 4.02 | ACR SCREENING AREA | 811 SF | 800 SF | | | 1.0% |
| 4.03 | STAFF TOILET | 50 SF | 50 SF | | | 0.0% |
| | | 5469 SF | 5610 SF | | | -2.5% |
| **02 LAW ENFORCEMENT AREA** | | | | | | |
| 4.04 | ARRESTEE SERCURITY VESTIBULE | 218 SF | 200 SF | | | 9.0% |
| 4.05 | LAW ENFORCEMENT REPORT ROOM | 423 SF | 420 SF | | | 1.0% |
| 4.06 | BREATHALYZER | 30 SF | 30 SF | | | 0.0% |
| 4.06 | BREATHALYZER | 30 SF | 30 SF | | | 0.0% |
| 4.07 | SEARCH ROOM/TOILET | 80 SF | 80 SF | | | 0.0% |
| 4.08 | SMALL HOLDING CELL (ADA) | 103 SF | 70 SF | | | 47.0% |
| 4.09 | SMALL HOLDING CELL | 81 SF | 60 SF | | | 35.0% |
| 4.09 | SMALL HOLDING CELL | 81 SF | 60 SF | | | 35.0% |
| | | 1045 SF | 950 SF | | | 10.0% |
| **03 BOOKING/INTAKE AREA** | | | | | | |
| 4.1 | BOOKING COUNTER | 420 SF | 420 SF | | | 0.0% |
| 4.11 | BOOKING AREA (ADA) | 50 SF | 50 SF | | | 0.0% |
| 4.11 | BOOKING AREA (ADA) | 50 SF | 50 SF | | | 0.0% |
| 4.12 | BACK COUNTER | 600 SF | 600 SF | | | 0.0% |
| 4.13 | ID STATION | 80 SF | 80 SF | | | 0.0% |
| 4.14 | MEDICAL INTERVIEW/ EVALUATION | 110 SF | 110 SF | | | 0.0% |
| 4.15 | SHIFT SUPERVISOR OFFICE | 180 SF | 180 SF | | | 0.0% |
| 4.15 | SHIFT SUPERVISOR OFFICE | 180 SF | 180 SF | | | 0.0% |
| 4.16 | STAFF WORKSTATIONS | 48 SF | 48 SF | | | 0.0% |
| 4.16 | STAFF WORKSTATIONS | 48 SF | 48 SF | | | 0.0% |
| 4.16 | STAFF WORKSTATIONS | 48 SF | 48 SF | | | 0.0% |
| 4.16 | STAFF WORKSTATIONS | 48 SF | 48 SF | | | 0.0% |
| 4.16 | STAFF WORKSTATIONS | 48 SF | 48 SF | | | 0.0% |
| 4.16 | STAFF WORKSTATIONS | 48 SF | 48 SF | | | 0.0% |
| 4.16 | STAFF WORKSTATIONS | 48 SF | 48 SF | | | 0.0% |
| 4.17 | BOND OFFICE | 599 SF | 600 SF | | | 0.0% |
| 4.18 | PUBLIC BOND LOBBY | 250 SF | 250 SF | | | 0.0% |
| 4.19 | SECURE VISITING BOOTH | 80 SF | 80 SF | | | 0.0% |
| 4.2 | OPEN SEATING | 560 SF | 560 SF | | | 0.0% |
| 4.21 | TOILET | 60 SF | 60 SF | | | 0.0% |
| 4.21 | TOILET | 60 SF | 60 SF | | | 0.0% |
| 4.22 | SOBERING CELL | 70 SF | 70 SF | | | 0.0% |
| 4.22 | SOBERING CELL | 70 SF | 70 SF | | | 0.0% |
| 4.23 | SAFETY CELL | 50 SF | 50 SF | | | 0.0% |
| 4.23 | SAFETY CELL | 50 SF | 50 SF | | | 0.0% |
| 4.24 | SMALL HOLDING CELL (ADA) | 70 SF | 70 SF | | | 0.0% |
| 4.25 | SMALL HOLDING CELL | 60 SF | 60 SF | | | 0.0% |
| 4.25 | SMALL HOLDING CELL | 60 SF | 60 SF | | | 0.0% |
| 4.26 | MEDIUM STAGING CELL | 120 SF | 120 SF | | | 0.0% |
| 4.27 | MEDIUM STAGING CELL (ADA) | 130 SF | 130 SF | | | 0.0% |
| | | 4343 SF | 4344 SF | | | 0.0% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **04 CLASSIFICATION/RECORDS/SUPPORT AREAS** | | | | | | | |
| 4.28 | SUPERVISOR | 80 SF | 80 SF | 80 SF | 80 SF | 80 SF | 0.0% |
| 4.29 | CLASSIFICATION OFFICE | 350 SF | 350 SF | 350 SF | 350 SF | 350 SF | 0.0% |
| 4.3 | INMATE/PUBLIC RECORDS | 280 SF | 280 SF | 280 SF | 280 SF | 280 SF | 0.0% |
| 4.31 | STAFF TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 4.31 | STAFF TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 4.32 | BREAK ROOM | 308 SF | 308 SF | 308 SF | 308 SF | 300 SF | 3.0% |
| 4.33 | JANITOR'S CLOSET | 40 SF | 40 SF | 40 SF | 40 SF | 40 SF | 0.0% |
| 4.34 | PRETRIAL INTERVIEW | 80 SF | 80 SF | 80 SF | 80 SF | 80 SF | 0.0% |
| 4.34 | PRETRIAL INTERVIEW | 80 SF | 80 SF | 80 SF | 80 SF | 80 SF | 0.0% |
| | | 1338 SF | 1338 SF | 1338 SF | 1338 SF | 1330 SF | 0.6% |
| **05 DRESS IN/DRESS OUT/RELEASE** | | | | | | | |
| 4.35 | CLOTHING/ BEDDING ISSUE | 240 SF | 240 SF | 240 SF | 240 SF | 240 SF | 0.0% |
| 4.36 | DRESS IN/ DRESS OUT WORK AREA | 220 SF | 220 SF | 220 SF | 220 SF | 220 SF | 0.0% |
| 4.37 | DRESS IN CUBICLE | 40 SF | 40 SF | 40 SF | 40 SF | 40 SF | 0.0% |
| 4.37 | DRESS IN CUBICLE | 40 SF | 40 SF | 40 SF | 40 SF | 40 SF | 0.0% |
| 4.37 | DRESS IN CUBICLE | 40 SF | 40 SF | 40 SF | 40 SF | 40 SF | 0.0% |
| 4.38 | DRESS IN CUBICLE (ADA) | 50 SF | 50 SF | 50 SF | 50 SF | 50 SF | 0.0% |
| 4.39 | MEDIUM STAGING PEN | 120 SF | 120 SF | 120 SF | 120 SF | 120 SF | 0.0% |
| 4.4 | DRESS OUT CUBICLE | 40 SF | 40 SF | 40 SF | 40 SF | 40 SF | 0.0% |
| 4.4 | DRESS OUT CUBICLE | 40 SF | 40 SF | 40 SF | 40 SF | 40 SF | 0.0% |
| 4.4 | DRESS OUT CUBICLE | 40 SF | 40 SF | 40 SF | 40 SF | 40 SF | 0.0% |
| 4.41 | DRESS OUT CUBICLE (ADA) | 50 SF | 50 SF | 50 SF | 50 SF | 50 SF | 0.0% |
| 4.42 | RELEASE COUNTER | 198 SF | 198 SF | 198 SF | 198 SF | 200 SF | -1.0% |
| | | 1118 SF | 1118 SF | 1118 SF | 1118 SF | 1120 SF | -0.2% |
| **06 INMATE PROPERTY AREA** | | | | | | | |
| 4.43 | PROPERTY INTAKE COUNTER | 140 SF | 140 SF | 140 SF | 140 SF | 140 SF | 0.0% |
| 4.44 | INMATE PROPERTY ROOM | 2041 SF | 2041 SF | 2041 SF | 2041 SF | 2000 SF | 2.0% |
| 4.45 | CLOTHING STORAGE | 40 SF | 40 SF | 40 SF | 40 SF | 40 SF | 0.0% |
| 4.46 | RELEASE CORRIDOR | 160 SF | 160 SF | 160 SF | 160 SF | 160 SF | 0.0% |
| | | 2381 SF | 2381 SF | 2381 SF | 2381 SF | 2340 SF | 1.8% |
| **07 TRANSFER/TEMPORARY RELEASE** | | | | | | | |
| 4.47 | TRANSPORTATION SUPERVISOR | 160 SF | 160 SF | 160 SF | 160 SF | 160 SF | 0.0% |
| 4.48 | TRANSPORTATION SUPPORT AREA | 500 SF | 500 SF | 500 SF | 500 SF | 480 SF | 4.0% |
| 4.49 | STAGING/ CHAIN WALL | 240 SF | 240 SF | 240 SF | 240 SF | 240 SF | 0.0% |
| 4.5 | LARGE STAGING CELL | 140 SF | 140 SF | 140 SF | 140 SF | 140 SF | 0.0% |
| 4.5 | LARGE STAGING CELL | 140 SF | 140 SF | 140 SF | 140 SF | 140 SF | 0.0% |
| 4.5 | LARGE STAGING CELL | 150 SF | 150 SF | 150 SF | 150 SF | 140 SF | 7.0% |
| 4.51 | LARGE STAGING CELL | 150 SF | 150 SF | 150 SF | 150 SF | 140 SF | 7.0% |
| 4.51 | MEDIUM STAGING CELL | 105 SF | 105 SF | 105 SF | 105 SF | 100 SF | 5.0% |
| 4.51 | MEDIUM STAGING CELL | 105 SF | 105 SF | 105 SF | 105 SF | 100 SF | 5.0% |
| 4.51 | MEDIUM STAGING CELL | 105 SF | 105 SF | 105 SF | 105 SF | 100 SF | 5.0% |
| 4.52 | SMALL STAGING CELL | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 4.52 | SMALL STAGING CELL | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 4.53 | ACR CONTROL ROOM | 205 SF | 205 SF | 205 SF | 205 SF | 200 SF | 3.0% |
| 4.54 | RESTRAINT STORAGE | 41 SF | 41 SF | 41 SF | 41 SF | 40 SF | 2.0% |
| 4.55 | TRANSFER SECURITY VESTIBULE | 410 SF | 410 SF | 410 SF | 410 SF | 400 SF | 2.0% |
| 4.56 | MOVEMENT CONTROL DESK | 80 SF | 80 SF | 80 SF | 80 SF | 80 SF | 0.0% |
| | | 2651 SF | 2651 SF | 2651 SF | 2651 SF | 2580 SF | 2.8% |

| | | | | | | |
|---|---|---|---|---|---|---|
| **08 VIDEO APPEARANCE/COURTROOM** | | | | | | |
| 4.58 | PUBLIC ACCESS SALLYPORT | 160 SF | 160 SF | | | 0.0% |
| 4.59 | ATTORNEY WAITING/ WORK AREA | 399 SF | 400 SF | | | 0.0% |
| 4.6 | PROFESSIONAL INTERVIEW | 60 SF | 60 SF | | | 0.0% |
| 4.6 | PROFESSIONAL INTERVIEW | 60 SF | 60 SF | | | 0.0% |
| 4.6 | PROFESSIONAL INTERVIEW | 40 SF | 40 SF | | | 0.0% |
| 4.6 | PROFESSIONAL INTERVIEW | 40 SF | 40 SF | | | 0.0% |
| 4.6 | PROFESSIONAL INTERVIEW | 40 SF | 40 SF | | | 0.0% |
| 4.6 | PROFESSIONAL INTERVIEW | 40 SF | 40 SF | | | 0.0% |
| 4.61 | CONTROL DESK | 40 SF | 40 SF | | | 0.0% |
| 4.62 | MEDIUM STAGING PEN | 120 SF | 120 SF | | | 0.0% |
| 4.63 | LARGE STAGING PEN | 160 SF | 160 SF | | | 0.0% |
| 4.63 | LARGE STAGING PEN | 160 SF | 160 SF | | | 0.0% |
| 4.64 | VIDEO APPEARANCE/ COURTROOM | 840 SF | 840 SF | | | 0.0% |
| 4.65 | VIDEO EQUIPMENT ROOM | 40 SF | 40 SF | | | 0.0% |
| 4.66 | STAFF TOILET | 60 SF | 60 SF | | | 0.0% |
| 4.66 | STAFF TOILET | 60 SF | 60 SF | | | 0.0% |
| 4.67 | JANITOR'S CLOSET | 40 SF | 40 SF | | | 0.0% |
| 4.68 | STAFF OFFICE | 120 SF | 120 SF | | | 0.0% |
| 4.69 | CLERK WORK AREA | 100 SF | 100 SF | | | 0.0% |
| | | 2578 SF | 2580 SF | | | -0.1% |
| **04 ADMISSIONS/CLASSIFICATION/RELEASE** | | 20924 SF | 20854 SF | | | 0.3% |
| **05 CUSTODY ADMINISTRATION** | | | | | | |
| 5.01 | WATCH COMMANDER | 200 SF | 200 SF | | | 0.0% |
| 5.01 | WATCH COMMANDER | 200 SF | 200 SF | | | 0.0% |
| 5.02 | CONFERENCE ROOM | 240 SF | 240 SF | | | 0.0% |
| 5.03 | STAFF WORK AREA | 1394 SF | 960 SF | | | 45.0% |
| 5.04 | CERT LOCKERS | 340 SF | 340 SF | | | 0.0% |
| 5.05 | LOGISTICS AREA | 120 SF | 120 SF | | | 0.0% |
| 5.06 | INTERNAL MAIL | 40 SF | 40 SF | | | 0.0% |
| 5.07 | STAFF TOILET | 60 SF | 60 SF | | | 0.0% |
| 5.07 | STAFF TOILET | 60 SF | 60 SF | | | 0.0% |
| 5.08 | COFFEE STATION | 40 SF | 40 SF | | | 0.0% |
| 5.09 | LIEUTENANT | 122 SF | 100 SF | | | 22.0% |
| 5.1 | JANITOR'S CLOSET | 40 SF | 40 SF | | | 0.0% |
| 5.11 | FILE/ STORAGE ALCOVE | 70 SF | 70 SF | | | 0.0% |
| **05 CUSTODY ADMINISTRATION** | | 2926 SF | 2470 SF | | | 18.5% |
| **06 CENTRAL CONTROL** | | | | | | |
| 6.01 | MAIN SECURITY VESTIBULE | 360 SF | 360 SF | | | 0.0% |
| 6.02 | MASTER CONTROL ROOM | 400 SF | 400 SF | | | 0.0% |
| 6.03 | CONTROL ROOM TOILET | 60 SF | 60 SF | | | 0.0% |
| 6.04 | CONTROL SECURITY VESTIBULE | 116 SF | 100 SF | | | 16.0% |
| 6.05 | SECURITY ELECTRONICS | 380 SF | 380 SF | | | 0.0% |
| 6.06 | ARMORY | 240 SF | 240 SF | | | 0.0% |
| 6.07 | TRAINING ARMORY | 198 SF | 200 SF | | | -1.0% |
| 6.08 | SCREENING AREA | 180 SF | 180 SF | | | 0.0% |
| **06 CENTRAL CONTROL** | | 1934 SF | 1920 SF | | | 0.7% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | |
|---|---|---|---|---|---|---|
| **07 INMATE SERVICES & PROGRAMS** | | | | | | |
| 7.01 | INMATE SERVICES SUPERVISOR | 80 SF | 80 SF | | | 0.0% |
| 7.02 | CLERICAL STAFF | 145 SF | 96 SF | | | 51.0% |
| 7.03 | CONFERENCE ROOM | 313 SF | 280 SF | | | 12.0% |
| 7.04 | CHAPLAINS | 294 SF | 192 SF | | | 53.0% |
| 7.05 | STORAGE | 24 SF | 20 SF | | | 21.0% |
| 7.05 | STORAGE | 24 SF | 20 SF | | | 19.0% |
| 7.05 | STORAGE | 24 SF | 20 SF | | | 19.0% |
| 7.06 | VOLUNTEER WORK ROOM | 120 SF | 120 SF | | | 0.0% |
| 7.07 | LIBRARY/LAW LIBRARY DEPOSITORY | 280 SF | 280 SF | | | 0.0% |
| 7.08 | COPIER/ SUPPLY ROOM | 66 SF | 60 SF | | | 10.0% |
| 7.09 | MULTI-PURPOSE/ MEDIA ROOM | 300 SF | 300 SF | | | 0.0% |
| 7.1 | MULTI-PURPOSE EQUIPMENT | 84 SF | 20 SF | | | 320.0% |
| 7.11 | ART CLASSROOM | 400 SF | 400 SF | | | 0.0% |
| 7.12 | INMATE TOILET | 60 SF | 60 SF | | | 0.0% |
| 7.13 | STAFF TOILET | 60 SF | 60 SF | | | 0.0% |
| 7.13 | STAFF TOILET | 60 SF | 60 SF | | | 0.0% |
| 7.14 | JANITOR'S CLOSET | 43 SF | 40 SF | | | 7.0% |
| **07 INMATE SERVICES & PROGRAMS** | | 2377 SF | 2108 SF | | | 12.7% |
| **08 VISITATION** | | | | | | |
| 8.01 | VISITOR WAITING AREA | 200 SF | 200 SF | | | 0.0% |
| 8.02 | VIDEO EQUIP. | 40 SF | 40 SF | | | 0.0% |
| 8.03 | ATTORNEY VV | 55 SF | 40 SF | | | 37.0% |
| 8.03 | ATTORNEY VV | 61 SF | 50 SF | | | 21.0% |
| 8.03 | ATTORNEY VV | 40 SF | 40 SF | | | 0.0% |
| 8.03 | ATTORNEY VV | 40 SF | 40 SF | | | 0.0% |
| 8.03 | ATTORNEY VV | 40 SF | 40 SF | | | 0.0% |
| **08 VISITATION** | | 475 SF | 450 SF | | | 5.6% |
| **09 HEALTH SERVICES** | | | | | | |
| **01 HEALTH SERVICES ADMINISTRATION** | | | | | | |
| 9.01 | HEALTH SERVICE DIRECTOR | 140 SF | 140 SF | | | 0.0% |
| 9.02 | DOCTOR OFFICE | 120 SF | 120 SF | | | 0.0% |
| 9.03 | SUPERVISING NURSE | 120 SF | 120 SF | | | 0.0% |
| 9.04 | STAFF OFFICE | 64 SF | 64 SF | | | 0.0% |
| 9.04 | STAFF OFFICE | 64 SF | 64 SF | | | 0.0% |
| 9.04 | STAFF OFFICE | 64 SF | 64 SF | | | 0.0% |
| 9.04 | STAFF OFFICE | 64 SF | 64 SF | | | 0.0% |
| 9.05 | CLERICAL WKST | 48 SF | 48 SF | | | 0.0% |
| 9.05 | CLERICAL WKST | 48 SF | 48 SF | | | 0.0% |
| 9.05 | CLERICAL WKST | 48 SF | 48 SF | | | 0.0% |
| 9.05 | CLERICAL WKST | 48 SF | 48 SF | | | 0.0% |
| 9.05 | CLERICAL WKST | 48 SF | 48 SF | | | 0.0% |
| 9.05 | CLERICAL WKST | 48 SF | 48 SF | | | 0.0% |
| 9.06 | MEDICAL RECORDS | 93 SF | 100 SF | | | -7.0% |
| 9.07 | HEALTH SERVICE DIRECTOR | 120 SF | 120 SF | | | 0.0% |
| 9.08 | CONFERENCE/ BREAK ROOM | 189 SF | 180 SF | | | 5.0% |
| | | 1326 SF | 1324 SF | | | 0.2% |

| | | | | | | |
|---|---|---|---|---|---|---|
| **02 OUTPATIENT CLINIC** | | | | | | |
| 9.09 | SECURITY VESTIBULE | 80 SF | 80 SF | | | 0.0% |
| 9.1 | INMATE WAITNG | 120 SF | 120 SF | | | 0.0% |
| 9.11 | SMALL HOLDING CELL | 50 SF | 50 SF | | | 0.0% |
| 9.12 | HOLDING | 100 SF | 100 SF | | | 0.0% |
| 9.12 | HOLDING | 100 SF | 100 SF | | | 0.0% |
| 9.13 | SECURITY STATION | 40 SF | 40 SF | | | 0.0% |
| 9.14 | NURSES STATION | 220 SF | 220 SF | | | 0.0% |
| 9.15 | TREATMENT ALCOVE | 40 SF | 40 SF | | | 0.0% |
| 9.15 | TREATMENT ALCOVE | 40 SF | 40 SF | | | 0.0% |
| 9.16 | WORK ROOM | 200 SF | 200 SF | | | 0.0% |
| 9.17 | ACTIVE RECORDS STORAGE | 100 SF | 100 SF | | | 0.0% |
| 9.18 | STAFF OFFICE | 100 SF | 100 SF | | | 0.0% |
| 9.19 | EXAM ROOM | 115 SF | 115 SF | | | 0.0% |
| 9.19 | EXAM ROOM | 115 SF | 115 SF | | | 0.0% |
| 9.2 | EMERGENCY/ TRIAGE | 220 SF | 220 SF | | | 0.0% |
| 9.21 | DIALYSIS | 120 SF | 120 SF | | | 0.0% |
| 9.22 | DIALYSIS EQUIPMENT | 40 SF | 40 SF | | | 0.0% |
| 9.23 | SPECIALTY CLINIC | 120 SF | 120 SF | | | 0.0% |
| 9.23 | SPECIALTY CLINIC | 120 SF | 120 SF | | | 0.0% |
| 9.24 | MH INTERVIEW | 80 SF | 80 SF | | | 0.0% |
| 9.25 | PHLEBOTYOMY/ LAB | 125 SF | 125 SF | | | 0.0% |
| 9.26 | INMATE TOILET | 60 SF | 60 SF | | | 0.0% |
| 9.27 | PHARMACY STORAGE/ PREPARATION | 250 SF | 250 SF | | | 0.0% |
| 9.28 | CARTS | 220 SF | 220 SF | | | 0.0% |
| 9.29 | RADIOLOGY | 150 SF | 150 SF | | | 0.0% |
| 9.3 | ACCU CHECK | 80 SF | 80 SF | | | 0.0% |
| 9.31 | JANITOR'S CLOSET | 60 SF | 60 SF | | | 0.0% |
| 9.32 | PANTRY | 40 SF | 40 SF | | | 0.0% |
| | | 3107 SF | 3105 SF | | | |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **03 INPATIENT INFIRMARY** | | | | | | | |
| 9.33 | SINGLE PATIENT ROOM (ADA) | 170 SF | 170 SF | 170 SF | 170 SF | 0.0% | 0.0% |
| 9.33 | SINGLE PATIENT ROOM (ADA) | 170 SF | 170 SF | 170 SF | 170 SF | 0.0% | 0.0% |
| 9.33 | SINGLE PATIENT ROOM (ADA) | 170 SF | 170 SF | 170 SF | 170 SF | 0.0% | 0.0% |
| 9.33 | SINGLE PATIENT ROOM (ADA) | 176 SF | 177 SF | 170 SF | 170 SF | 4.0% | 4.0% |
| 9.33 | SINGLE PATIENT ROOM (ADA) | 177 SF | 170 SF | 170 SF | 170 SF | 4.0% | 4.0% |
| 9.33 | SINGLE PATIENT ROOM (ADA) | 170 SF | 170 SF | 170 SF | 170 SF | 0.0% | 0.0% |
| 9.33 | SINGLE PATIENT ROOM (ADA) | 170 SF | 170 SF | 170 SF | 170 SF | 0.0% | 0.0% |
| 9.33 | SINGLE PATIENT ROOM (ADA) | 170 SF | 170 SF | 170 SF | 170 SF | 0.0% | 0.0% |
| 9.34 | DOUBLE PATIENT ROOM (ADA) | 210 SF | 210 SF | 210 SF | 210 SF | 0.0% | 0.0% |
| 9.34 | DOUBLE PATIENT ROOM (ADA) | 210 SF | 210 SF | 210 SF | 210 SF | 0.0% | 0.0% |
| 9.34 | DOUBLE PATIENT ROOM (ADA) | 210 SF | 210 SF | 210 SF | 210 SF | 0.0% | 0.0% |
| 9.34 | DOUBLE PATIENT ROOM (ADA) | 210 SF | 210 SF | 210 SF | 210 SF | 0.0% | 0.0% |
| 9.34 | DOUBLE PATIENT ROOM (ADA) | 210 SF | 210 SF | 210 SF | 210 SF | 0.0% | 0.0% |
| 9.34 | DOUBLE PATIENT ROOM (ADA) | 210 SF | 210 SF | 210 SF | 210 SF | 0.0% | 0.0% |
| 9.34 | DOUBLE PATIENT ROOM (ADA) | 210 SF | 210 SF | 210 SF | 210 SF | 0.0% | 0.0% |
| 9.35 | 4-BED WARD | 477 SF | 440 SF | 440 SF | 440 SF | 8.0% | 8.0% |
| 9.35 | 4-BED WARD | 458 SF | 440 SF | 440 SF | 440 SF | 4.0% | 4.0% |
| 9.36 | PATIENT SHOWER (ADA) | 64 SF | 60 SF | 60 SF | 60 SF | 6.0% | 6.0% |
| 9.36 | PATIENT SHOWER (ADA) | 63 SF | 60 SF | 60 SF | 60 SF | 5.0% | 5.0% |
| 9.36 | PATIENT SHOWER (ADA) | 63 SF | 60 SF | 60 SF | 60 SF | 5.0% | 5.0% |
| 9.37 | PATIENT TUB ROOM | 70 SF | 70 SF | 70 SF | 70 SF | 0.0% | 0.0% |
| 9.38 | DAYROOM | 350 SF | 350 SF | 350 SF | 350 SF | 0.0% | 0.0% |
| 9.39 | OUTDOOR COURTYARD | 197 SF | 175 SF | 175 SF | 175 SF | 13.0% | 13.0% |
| 9.4 | NEGATIVE PRESSURE SINGLE ROOM (ADA) | 199 SF | 200 SF | 200 SF | 200 SF | 0.0% | 0.0% |
| 9.4 | NEGATIVE PRESSURE SINGLE ROOM (ADA) | 226 SF | 200 SF | 200 SF | 200 SF | 13.0% | 13.0% |
| 9.41 | NEGATIVE PRESSURE DOUBLE ROOM (ADA) | 319 SF | 240 SF | 240 SF | 240 SF | 33.0% | 33.0% |
| 9.41 | NEGATIVE PRESSURE DOUBLE ROOM (ADA) | 284 SF | 240 SF | 240 SF | 240 SF | 18.0% | 18.0% |
| 9.42 | ANTEROOM | 120 SF | 120 SF | 120 SF | 120 SF | 0.0% | 0.0% |
| 9.42 | ANTEROOM | 120 SF | 120 SF | 120 SF | 120 SF | 0.0% | 0.0% |
| 9.43 | INTERVIEW/ CONSULTATION | 70 SF | 70 SF | 70 SF | 70 SF | 0.0% | 0.0% |
| 9.43 | INTERVIEW/ CONSULTATION | 76 SF | 70 SF | 70 SF | 70 SF | 8.0% | 8.0% |
| 9.44 | PORTABLE VIDEO VISITING EQUIP | 44 SF | 40 SF | 40 SF | 40 SF | 9.0% | 9.0% |
| 9.45 | INFIRMARY/ NURSES | 259 SF | 260 SF | 260 SF | 260 SF | 0.0% | 0.0% |
| 9.45 | INFIRMARY/ NURSES | 259 SF | 260 SF | 260 SF | 260 SF | 0.0% | 0.0% |
| 9.46 | STAFF TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% | 0.0% |
| 9.46 | STAFF TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% | 0.0% |
| 9.47 | SUPPLY STORAGE | 77 SF | 70 SF | 70 SF | 70 SF | 9.0% | 9.0% |
| 9.48 | MEDICAL WASTE | 25 SF | 25 SF | 25 SF | 25 SF | 0.0% | 0.0% |
| 9.49 | PANTRY | 105 SF | 80 SF | 80 SF | 80 SF | 32.0% | 32.0% |
| | | 7307 SF | 7020 SF | | | 4.1% | |
| **04 DENTAL SUITE** | | | | | | | |
| 9.5 | DENTAL OP/ EXAM | 200 SF | 200 SF | 200 SF | 200 SF | 0.0% | 0.0% |
| 9.51 | DENTIST OFFICE | 76 SF | 80 SF | 80 SF | 80 SF | -4.0% | -4.0% |
| 9.52 | DENTAL EQUIPMENT | 40 SF | 40 SF | 40 SF | 40 SF | 0.0% | 0.0% |
| | | 316 SF | 320 SF | | | -2.2% | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **05 SHARED SUPPORT AREA** | | | | | | |
| 9.53 | CLEAN UTILITY | 120 SF | 120 SF | 120 SF | | 0.0% |
| 9.54 | SOILED UTILITY | 120 SF | 120 SF | 120 SF | | 0.0% |
| 9.55 | GENERAL STORAGE | 239 SF | 240 SF | 240 SF | | 0.0% |
| 9.56 | JAN SUPPLY | 100 SF | 100 SF | 100 SF | | 0.0% |
| 9.57 | MEDICAL SUPPLY STORAGE | 240 SF | 240 SF | 240 SF | | 0.0% |
| 9.58 | MEDICAL WASTE HOLDING | 60 SF | 60 SF | 60 SF | | 0.0% |
| 9.59 | CONFERENCE/ BREAKROOM | 400 SF | 400 SF | 400 SF | | 0.0% |
| 9.6 | KITCHENETTE | 40 SF | 40 SF | 40 SF | | 0.0% |
| 9.61 | STAFF TOILET | 140 SF | 140 SF | 140 SF | | 0.0% |
| 9.61 | STAFF TOILET | 140 SF | 140 SF | 140 SF | | 0.0% |
| | | 1600 SF | 1600 SF | 1600 SF | | 0.0% |
| **09 HEALTH SERVICES** | | 13657 SF | 13369 SF | | | 2.2% |
| **10 MENTAL HEALTH SERVICES** | | | | | | |
| **01 MENTAL HEALTH ADMINISTRATION** | | | | | | |
| 10.01 | MENTAL HEALTH DIRECTOR | 120 SF | 120 SF | | | 0.0% |
| 10.02 | PSYCHOLOGIST | 110 SF | 110 SF | | | 0.0% |
| 10.03 | STAFF WKST | 64 SF | 64 SF | | | 0.0% |
| 10.03 | STAFF WKST | 64 SF | 64 SF | | | 0.0% |
| 10.03 | STAFF WKST | 64 SF | 64 SF | | | 0.0% |
| 10.03 | STAFF WKST | 64 SF | 64 SF | | | 0.0% |
| 10.03 | STAFF WKST | 64 SF | 64 SF | | | 0.0% |
| 10.03 | STAFF WKST | 64 SF | 64 SF | | | 0.0% |
| 10.03 | STAFF WKST | 64 SF | 64 SF | | | 0.0% |
| 10.04 | COPY AND FILE ROOM | 75 SF | 80 SF | | | -6.0% |
| 10.05 | OFFICER STATION | 80 SF | 80 SF | | | 0.0% |
| 10.06 | NURSE'S STATION | 80 SF | 80 SF | | | 0.0% |
| 10.07 | SUICIDE WATCH | 70 SF | 70 SF | | | 0.0% |
| 10.07 | SUICIDE WATCH | 70 SF | 70 SF | | | 0.0% |
| 10.07 | SUICIDE WATCH | 70 SF | 70 SF | | | 0.0% |
| 10.07 | SUICIDE WATCH | 70 SF | 70 SF | | | 0.0% |
| 10.07 | SUICIDE WATCH | 70 SF | 70 SF | | | 0.0% |
| 10.07 | SUICIDE WATCH | 70 SF | 70 SF | | | 0.0% |
| 10.08 | SUICIDE WATCH (ADA) | 100 SF | 100 SF | | | 0.0% |
| 10.09 | SAFETY CELL | 48 SF | 48 SF | | | 0.0% |
| 10.09 | SAFETY CELL | 55 SF | 48 SF | | | 15.0% |
| 10.1 | INMATE SHOWER (ADA) | 62 SF | 60 SF | | | 4.0% |
| 10.11 | EQUIPMENT STORAGE | 40 SF | 40 SF | | | 0.0% |
| 10.12 | JANITOR'S CLOSET | 40 SF | 40 SF | | | 0.0% |
| **10 MENTAL HEALTH SERVICES** | | 1750 SF | 1744 SF | | | 0.3% |
| **11 COMMISSARY** | | | | | | |
| 11.01 | COMMISSARY OFFICE | 80 SF | 80 SF | | | 0.0% |
| 11.02 | CLERICAL SUPPORT | 180 SF | 180 SF | | | 0.0% |
| 11.03 | COMMISSARY STORAGE | 1100 SF | 1100 SF | | | 0.0% |
| 11.04 | COMMISSARY PROCESSING AREA | 400 SF | 400 SF | | | 0.0% |
| 11.05 | INMATE TOILET | 42 SF | 40 SF | | | 4.0% |
| **11 COMMISSARY** | | 1802 SF | 1800 SF | | | 0.0% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | |
|---|---|---|---|---|---|---|
| **12 FOOD SERVICE** | | | | | | |
| **01 STORAGE** | | | | | | |
| 12.01 | BULK DRY FOOD STORAGE | 1793 SF | 1800 SF | | | 0.0% |
| 12.02 | SECURE FOOD STORAGE | 300 SF | 300 SF | | | 0.0% |
| 12.03 | NON-FOOD STORAGE | 200 SF | 200 SF | | | 0.0% |
| 12.04 | BULK FREEZER STORAGE | 450 SF | 450 SF | | | 0.0% |
| 12.05 | THAW COOLER | 280 SF | 280 SF | | | 0.0% |
| 12.06 | BULK VEGETABLE/ DAIRY COOLER | 280 SF | 280 SF | | | 0.0% |
| | | 3303 SF | 3310 SF | | | -0.2% |
| **02 KITCHEN AREA** | | | | | | |
| 12.07 | VEGETABLE/ COLD FOOD PREP | 808 SF | 800 SF | | | 1.0% |
| 12.08 | TRAY ASSEMBLY AREA | 1000 SF | 1000 SF | | | 0.0% |
| 12.09 | CART PARKING | 450 SF | 450 SF | | | 0.0% |
| 12.1 | INMATE BREAK AREA | 100 SF | 100 SF | | | 0.0% |
| 12.11 | KITCHEN OFFICE | 144 SF | 140 SF | | | 3.0% |
| 12.11 | KITCHEN OFFICE | 144 SF | 140 SF | | | 3.0% |
| 12.12 | TOOL CLOSET | 40 SF | 40 SF | | | 0.0% |
| 12.13 | STORAGE COOLERS | 407 SF | 400 SF | | | 2.0% |
| 12.14 | STAFF TOILET AND LOCKERS | 132 SF | 120 SF | | | 10.0% |
| 12.14 | STAFF TOILET AND LOCKERS | 132 SF | 120 SF | | | 10.0% |
| 12.15 | INMATE TOILET | 50 SF | 50 SF | | | 0.0% |
| 12.16 | MAIN COOKING AREA | 1809 SF | 1800 SF | | | 0.0% |
| 12.17 | DIET AREA | 200 SF | 200 SF | | | 0.0% |
| 12.18 | COOKS COOLER | 170 SF | 170 SF | | | 0.0% |
| 12.19 | SECURED SPICE CAGE | 40 SF | 40 SF | | | 0.0% |
| | | 5625 SF | 5570 SF | | | 1.0% |
| **03 STAFF AREA** | | | | | | |
| 12.2 | EMPLOYEE BREAK/DINING AREA | 580 SF | 580 SF | | | 0.0% |
| 12.21 | SERVING LINE | 80 SF | 80 SF | | | 0.0% |
| 12.22 | JANITOR'S CLOSET | 40 SF | 40 SF | | | 0.0% |
| | | 700 SF | 700 SF | | | 0.0% |
| **04 WARE WASHING/ WASTE HANDLING** | | | | | | |
| 12.23 | POT WASHING AREA | 429 SF | 400 SF | | | 7.0% |
| 12.24 | CHEMICAL STORAGE | 100 SF | 100 SF | | | 0.0% |
| 12.25 | DISH WASHING AREA | 721 SF | 700 SF | | | 3.0% |
| 12.26 | CART WASHING | 100 SF | 100 SF | | | 0.0% |
| 12.27 | TRASH ROOM | 300 SF | 300 SF | | | 0.0% |
| | | 1649 SF | 1600 SF | | | 3.1% |
| **12 FOOD SERVICE** | | 11277 SF | 11180 SF | | | 0.9% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | |
|---|---|---|---|---|---|---|
| **13 LAUNDRY** | | | | | | |
| 13.01 | CLEAN LAUNDRY STORAGE | 606 SF | 600 SF | 1.0% | | |
| 13.02 | CHEMICAL/ DETERGENT STORAGE | 83 SF | 80 SF | 4.0% | | |
| 13.03 | CART STORAGE/ STORING AREA | 415 SF | 400 SF | 4.0% | | |
| 13.04 | WATER RE-USE SYSTEM | 230 SF | 220 SF | 5.0% | | |
| 13.05 | WASHING AREA | 699 SF | 500 SF | 40.0% | | |
| 13.06 | DRYER CHASE | 424 SF | 400 SF | 6.0% | | |
| 13.07 | FOLDING | 412 SF | 400 SF | 3.0% | | |
| 13.08 | OPEN INMATE BREAK AREA | 150 SF | 80 SF | 88.0% | | |
| 13.09 | STAFF OFFICE | 305 SF | 300 SF | 2.0% | | |
| 13.1 | STAFF TOILET | 60 SF | 60 SF | 0.0% | | |
| 13.11 | STAFF TOILET | 60 SF | 60 SF | 0.0% | | |
| 13.12 | INMATE TOILET | 60 SF | 60 SF | 0.0% | | |
| 13.13 | JANITOR'S CLOSET | 40 SF | 40 SF | 0.0% | | |
| | SOILED RECEIVING/ SORTING | 251 SF | 250 SF | 0.0% | | |
| **13 LAUNDRY** | | 3797 SF | 3450 SF | 10.1% | | |
| **14 BUILDING SUPPORT** | | | | | | |
| **01 FACILITY WAREHOUSE** | | | | | | |
| 14.01 | WAREHOUSE MGR OFFICE | 100 SF | 100 SF | 0.0% | | |
| 14.02 | WORK AREA | 416 SF | 400 SF | 4.0% | | |
| 14.03 | CUSTODIAL SUPPLIES | 184 SF | 180 SF | 2.0% | | |
| 14.03 | CUSTODIAL SUPPLIES | 326 SF | 320 SF | 2.0% | | |
| 14.04 | GENERAL STORAGE | 2388 SF | 2400 SF | -1.0% | | |
| 14.05 | SECURE STORAGE | 100 SF | 100 SF | 0.0% | | |
| 14.06 | STAFF TOILET | 60 SF | 60 SF | 0.0% | | |
| 14.06 | STAFF TOILET | 60 SF | 60 SF | 0.0% | | |
| 14.07 | JANITOR'S CLOSET | 40 SF | 40 SF | 0.0% | | |
| 14.08 | LOADING DOCK/ STAGING AREA | 896 SF | 860 SF | 4.0% | | |
| 14.09 | SERVICE SALLY PORT | 461 SF | 450 SF | 2.0% | | |
| 14.1 | INMATE TOILET | 60 SF | 60 SF | 0.0% | | |
| 14.1 | INMATE TOILET | 60 SF | 60 SF | 0.0% | | |
| 14.11 | RECYCLABLE | 131 SF | 125 SF | 5.0% | | |
| 14.12 | TRASH | 137 SF | 125 SF | 9.0% | | |
| 14.13 | SERVICE COUNTER | 100 SF | 100 SF | 0.0% | | |
| 14.14 | DRESSING ROOM | 60 SF | 60 SF | 0.0% | | |
| 14.14 | DRESSING ROOM | 60 SF | 60 SF | 0.0% | | |
| | | 5639 SF | 5560 SF | 1.4% | | |
| **02 CORRECTIONS MAINTENANCE** | | | | | | |
| 14.15 | CORRECTIONS MAINTENANCE OFFICE | 128 SF | 120 SF | 7.0% | | |
| 14.16 | STAFF TOILET | 60 SF | 60 SF | 0.0% | | |
| 14.17 | INMATE TOILET | 40 SF | 40 SF | 0.0% | | |
| 14.18 | CORRECTIONS MAINTENACE GARAGE/ SHOPS | 1163 SF | 1200 SF | -3.0% | | |
| 14.19 | VOLATILE STORAGE | 126 SF | 120 SF | 5.0% | | |
| | | 1517 SF | 1540 SF | -1.2% | | |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | |
|---|---|---|---|---|---|
| **03 FACILITY MANAGEMENT** | | | | | |
| 14.21 | MAINTENANCE OFFICE | 151 SF | 150 SF | | 0.0% |
| 14.22 | MAINTENANCE SHOPS | 1602 SF | 1600 SF | | 0.0% |
| 14.23 | SHOP STORAGE | 200 SF | 200 SF | | 0.0% |
| 14.24 | SECURE TOOL STORAGE | 87 SF | 80 SF | | 8.0% |
| 14.25 | CONFERENCE/ BREAK ROOM | 401 SF | 400 SF | | 0.0% |
| 14.26 | LOCKER ROOM | 499 SF | 500 SF | | 0.0% |
| 14.27 | INSIDE TOOL CART STORAGE | 120 SF | 120 SF | | 0.0% |
| 14.28 | FIRE SAFETY SHOP | 140 SF | 140 SF | | 0.0% |
| | | 3199 SF | 3190 SF | | 0.3% |
| **04 CENTRAL PLANT** | | | | | |
| 14.3 | CENTRAL PLANT | 4839 SF | 5000 SF | | -3.0% |
| 14.33 | FIRE | 127 SF | 120 SF | | 6.0% |
| | | 4966 SF | 5120 SF | | -3.0% |
| **14 BUILDING SUPPORT** | | 15504 SF | 15410 SF | | 0.6% |

| | | | | |
|---|---|---|---|---|
| **15 SINGLE CELL HOUSING UNITS** | | | | |
| 15.01 | SECURITY VESTIBULE | 267 SF | 240 SF | 11.0% |
| 15.01 | SECURITY VESTIBULE | 280 SF | 240 SF | 17.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 101 SF | 90 SF | 12.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 101 SF | 90 SF | 12.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 101 SF | 90 SF | 12.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 101 SF | 101 SF | 12.0% | 12.0% | 12.0% | 12.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.02 | SINGLE CELL HOUSING | 90 SF | 90 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.03 | SINGLE CELL HOUSING (ADA) | 101 SF | 100 SF | 1.0% | 1.0% | 1.0% | 1.0% |
| 15.03 | SINGLE CELL HOUSING (ADA) | 101 SF | 100 SF | 1.0% | 1.0% | 1.0% | 1.0% |
| 15.03 | SINGLE CELL HOUSING (ADA) | 101 SF | 100 SF | 1.0% | 1.0% | 1.0% | 1.0% |
| 15.03 | SINGLE CELL HOUSING (ADA) | 101 SF | 100 SF | 1.0% | 1.0% | 1.0% | 1.0% |
| 15.04 | INMATE SHOWER | 43 SF | 40 SF | 6.0% | 6.0% | 6.0% | 6.0% |
| 15.04 | INMATE SHOWER | 43 SF | 40 SF | 6.0% | 6.0% | 6.0% | 6.0% |
| 15.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% | 8.0% | 8.0% | 8.0% |
| 15.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% | 8.0% | 8.0% | 8.0% |
| 15.04 | INMATE SHOWER | 43 SF | 40 SF | 6.0% | 6.0% | 6.0% | 6.0% |
| 15.04 | INMATE SHOWER | 50 SF | 40 SF | 25.0% | 25.0% | 25.0% | 25.0% |
| 15.04 | INMATE SHOWER | 43 SF | 40 SF | 6.0% | 6.0% | 6.0% | 6.0% |
| 15.04 | INMATE SHOWER | 50 SF | 40 SF | 25.0% | 25.0% | 25.0% | 25.0% |
| 15.04 | INMATE SHOWER | 51 SF | 40 SF | 27.0% | 27.0% | 27.0% | 27.0% |
| 15.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% | 8.0% | 8.0% | 8.0% |
| 15.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% | 8.0% | 8.0% | 8.0% |
| 15.04 | INMATE SHOWER | 51 SF | 40 SF | 27.0% | 27.0% | 27.0% | 27.0% |
| 15.05 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.05 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.05 | INMATE SHOWER (ADA) | 51 SF | 50 SF | 2.0% | 2.0% | 2.0% | 2.0% |
| 15.05 | INMATE SHOWER (ADA) | 51 SF | 50 SF | 2.0% | 2.0% | 2.0% | 2.0% |
| 15.06 | OFFICER STATION | 40 SF | 40 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.06 | OFFICER STATION | 40 SF | 40 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.07 | SINGLE BUNK CELL HOUSING HIGH-SECURITY DAYROOM | 2238 SF | 1120 SF | 200.0% | 200.0% | 200.0% | 200.0% |
| 15.07 | SINGLE BUNK CELL HOUSING HIGH-SECURITY DAYROOM | 1616 SF | 1120 SF | 44.3% | 44.3% | 44.3% | 44.3% |
| 15.08 | FOOD STAGING | 20 SF | 20 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.08 | FOOD STAGING | 20 SF | 20 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.09 | VIDEO VISIT | 36 SF | 35 SF | 2.0% | 2.0% | 2.0% | 2.0% |
| 15.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.1 | JANITOR/ STORAGE | 80 SF | 80 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.1 | JANITOR/ STORAGE | 83 SF | 80 SF | 4.0% | 4.0% | 4.0% | 4.0% |
| 15.11 | EXAM/ INTERVIEW | 110 SF | 110 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.11 | EXAM/ INTERVIEW | 110 SF | 110 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.12 | MULTI-PURPOSE | 320 SF | 320 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.12 | MULTI-PURPOSE | 320 SF | 320 SF | 0.0% | 0.0% | 0.0% | 0.0% |
| 15.13 | RECREATION COURTYARD | 744 SF | 450 SF | 65.0% | 65.0% | 65.0% | 65.0% |
| 15.13 | RECREATION COURTYARD | 744 SF | 450 SF | 65.0% | 65.0% | 65.0% | 65.0% |
| **15** | **SINGLE CELL HOUSING UNITS** | **14055 SF** | **11555 SF** | | | | **21.6%** |

| 16 ACUTE MENTAL HEALTH HOUSING UNIT | | | | |
|---|---|---|---|---|
| 16.01 | SECURITY VESTIBULE | 309 SF | 260 SF | 19.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 101 SF | 90 SF | 12.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 101 SF | 90 SF | 12.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.02 | SINGLE CELL AMH | 90 SF | 90 SF | 0.0% |
| 16.03 | SINGLE CELL AMH (ADA) | 101 SF | 100 SF | 1.0% |
| 16.03 | SINGLE CELL AMH (ADA) | 101 SF | 100 SF | 1.0% |
| 16.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% |
| 16.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% |
| 16.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% |
| 16.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% |
| 16.04 | INMATE SHOWER | 51 SF | 40 SF | 27.0% |
| 16.04 | INMATE SHOWER | 51 SF | 40 SF | 27.0% |
| 16.05 | INMATE SHOWER (ADA) | 51 SF | 50 SF | 2.0% |
| 16.05 | INMATE SHOWER (ADA) | 51 SF | 50 SF | 2.0% |
| 16.06 | OFFICER STATION | 327 SF | 320 SF | 2.0% |
| 16.07 | MALE DAYROOM ACUTE MENTAL HEALTH | 614 SF | 560 SF | 10.0% |
| 16.07 | MALE DAYROOM ACUTE MENTAL HEALTH | 615 SF | 560 SF | 9.0% |
| 16.08 | FOOD STAGING | 20 SF | 20 SF | 0.0% |
| 16.08 | FOOD STAGING | 20 SF | 20 SF | 0.0% |
| 16.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% |
| 16.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% |
| 16.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% |
| 16.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% |
| 16.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% |
| 16.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% |
| 16.1 | JANITOR/ STORAGE | 80 SF | 80 SF | 0.0% |
| 16.11 | EXAM/ INTERVIEW | 144 SF | 110 SF | 31.0% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | |
|---|---|---|---|---|---|---|
| 16.12 | CONFERENCE/ SMALL GROUP | 166 SF | 160 SF | | | 4.0% |
| 16.12 | CONFERENCE/ SMALL GROUP | 166 SF | 160 SF | | | 4.0% |
| 16.13 | VIDEO VISIT (ADA) | 60 SF | 60 SF | | | 0.0% |
| 16.13 | VIDEO VISIT (ADA) | 60 SF | 60 SF | | | 0.0% |
| 16.14 | RECREATION COURTYARD | 198 SF | 190 SF | | | 4.0% |
| 16.14 | RECREATION COURTYARD | 198 SF | 190 SF | | | 4.0% |
| **16 ACUTE MENTAL HEALTH HOUSING UNIT** | | 6496 SF | 6200 SF | | | 4.8% |

| 17 DOUBLE CELL HOUSING UNITS | | | | |
|---|---|---|---|---|
| 17.01 | SECURITY VESTIBULE | 267 SF | 240 SF | 11.0% |
| 17.01 | SECURITY VESTIBULE | 267 SF | 240 SF | 11.0% |
| 17.01 | SECURITY VESTIBULE | 279 SF | 240 SF | 16.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 101 SF | 90 SF | 12.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 101 SF | 90 SF | 12.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | |
|---|---|---|---|---|
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 101 SF | 90 SF | 12.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 101 SF | 90 SF | 12.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 101 SF | 90 SF | 12.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 101 SF | 90 SF | 12.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.02 | DOUBLE CELL GEN POP | 90 SF | 90 SF | 0.0% |
| 17.03 | DOUBLE CELL GEN POP (ADA) | 101 SF | 100 SF | 1.0% |
| 17.03 | DOUBLE CELL GEN POP (ADA) | 101 SF | 100 SF | 1.0% |
| 17.03 | DOUBLE CELL GEN POP (ADA) | 101 SF | 100 SF | 1.0% |
| 17.03 | DOUBLE CELL GEN POP (ADA) | 101 SF | 100 SF | 1.0% |
| 17.03 | DOUBLE CELL GEN POP (ADA) | 101 SF | 100 SF | 1.0% |
| 17.03 | DOUBLE CELL GEN POP (ADA) | 101 SF | 100 SF | 1.0% |
| 17.04 | INMATE SHOWER | 43 SF | 40 SF | 6.0% |
| 17.04 | INMATE SHOWER | 43 SF | 40 SF | 6.0% |
| 17.04 | INMATE SHOWER | 43 SF | 40 SF | 6.0% |
| 17.04 | INMATE SHOWER | 50 SF | 40 SF | 25.0% |
| 17.04 | INMATE SHOWER | 43 SF | 40 SF | 6.0% |
| 17.04 | INMATE SHOWER | 50 SF | 40 SF | 25.0% |
| 17.04 | INMATE SHOWER | 41 SF | 40 SF | 3.0% |
| 17.04 | INMATE SHOWER | 41 SF | 40 SF | 3.0% |
| 17.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% |
| 17.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% |
| 17.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% |
| 17.04 | INMATE SHOWER | 51 SF | 40 SF | 27.0% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | |
|---|---|---|---|---|---|---|
| 17.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% | | |
| 17.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% | | |
| 17.04 | INMATE SHOWER | 43 SF | 40 SF | 8.0% | | |
| 17.04 | INMATE SHOWER | 51 SF | 40 SF | 27.0% | | |
| 17.04 | INMATE SHOWER | 51 SF | 40 SF | 27.0% | | |
| 17.04 | INMATE SHOWER | 51 SF | 40 SF | 27.0% | | |
| 17.05 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% | | |
| 17.05 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% | | |
| 17.05 | INMATE SHOWER (ADA) | 48 SF | 50 SF | -3.0% | | |
| 17.05 | INMATE SHOWER (ADA) | 48 SF | 50 SF | -3.0% | | |
| 17.05 | INMATE SHOWER (ADA) | 51 SF | 50 SF | 2.0% | | |
| 17.05 | INMATE SHOWER (ADA) | 51 SF | 50 SF | 2.0% | | |
| 17.06 | OFFICER STATION | 40 SF | 40 SF | 0.0% | | |
| 17.06 | OFFICER STATION | 40 SF | 40 SF | 0.0% | | |
| 17.06 | OFFICER STATION | 40 SF | 40 SF | 0.0% | | |
| 17.07 | DOUBLE BUNK CELL HOUSING DAYROOM | 2712 SF | 2240 SF | 2.7% | | |
| 17.07 | DOUBLE BUNK CELL HOUSING DAYROOM | 2238 SF | 2240 SF | 0.0% | | |
| 17.07 | DOUBLE BUNK CELL HOUSING DAYROOM | 2283 SF | 2240 SF | 2.0% | | |
| 17.08 | FOOD STAGING | 20 SF | 20 SF | 0.0% | | |
| 17.08 | FOOD STAGING | 20 SF | 20 SF | 0.0% | | |
| 17.08 | FOOD STAGING | 20 SF | 20 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.09 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | | |
| 17.1 | JANITOR/ STORAGE | 80 SF | 80 SF | 0.0% | | |
| 17.1 | JANITOR/ STORAGE | 80 SF | 80 SF | 0.0% | | |
| 17.1 | JANITOR/ STORAGE | 83 SF | 80 SF | 4.0% | | |
| 17.11 | EXAM/ INTERVIEW | 110 SF | 110 SF | 0.0% | | |
| 17.11 | EXAM/ INTERVIEW | 110 SF | 110 SF | 0.0% | | |
| 17.11 | EXAM/ INTERVIEW | 115 SF | 110 SF | 4.0% | | |
| 17.12 | MULTI-PURPOSE | 320 SF | 320 SF | 0.0% | | |
| 17.12 | MULTI-PURPOSE | 320 SF | 320 SF | 0.0% | | |
| 17.12 | MULTI-PURPOSE | 320 SF | 320 SF | 0.0% | | |
| 17.13 | RECREATION COURTYARD | 744 SF | 450 SF | 65.0% | | |
| 17.13 | RECREATION COURTYARD | 744 SF | 450 SF | 65.0% | | |
| 17.13 | RECREATION COURTYARD | 744 SF | 450 SF | 65.0% | | |
| **17 DOUBLE CELL HOUSING UNITS** | | | 21859 SF | | 20640 SF | 5.9% |

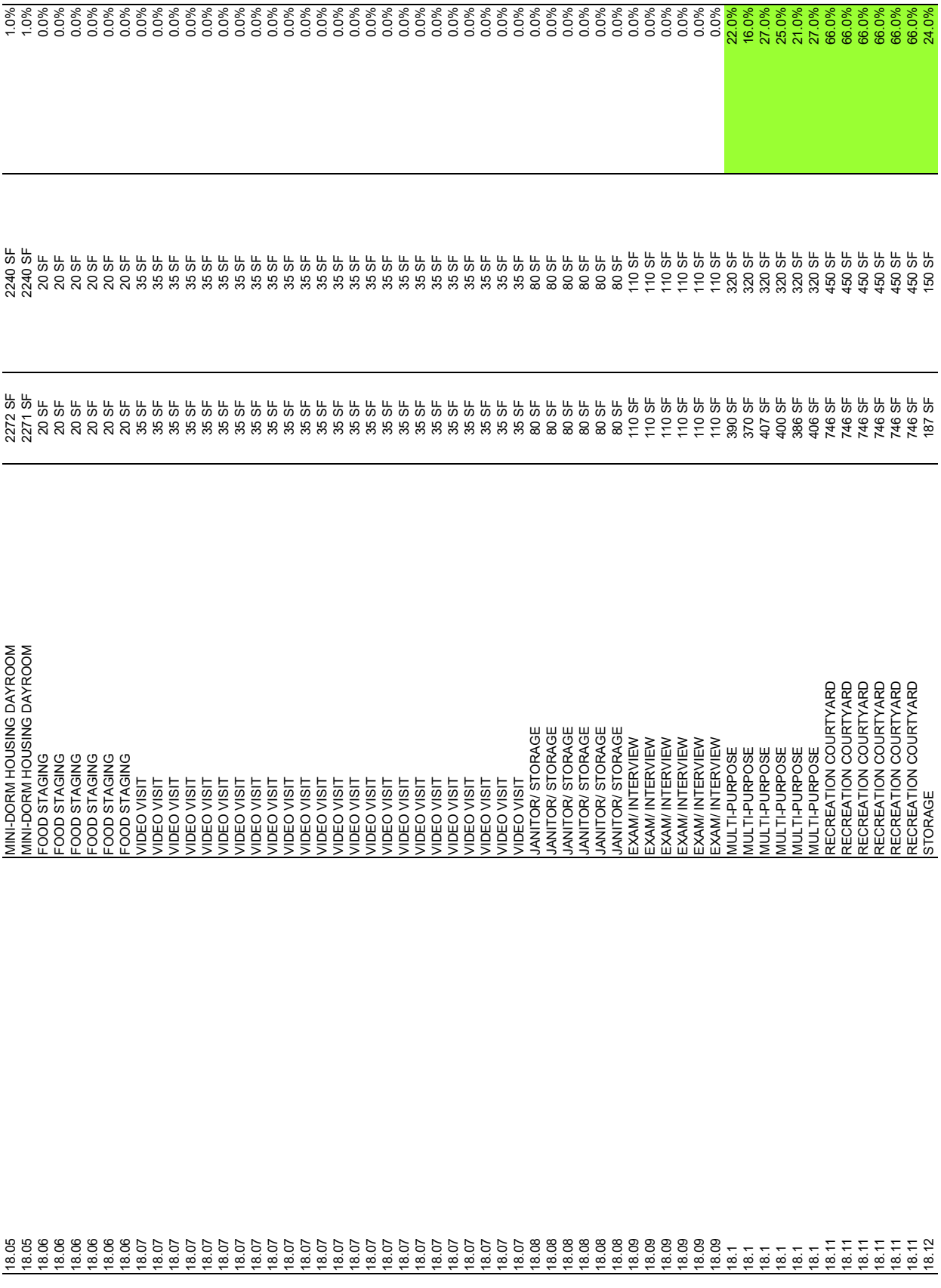
# A. BUILDING PROGRAM REPORT - SPREADSHEET

| 18 8-PERSON MULTIPLE OCCUPANCY CELL HOUSING UNITS | | | | | |
|---|---|---|---|---|---|
| 18 | SECURITY VESTIBULE | 239 SF | 240 SF | 0.0% | |
| 18 | SECURITY VESTIBULE | 240 SF | 240 SF | 0.0% | |
| 18 | SECURITY VESTIBULE | 240 SF | 240 SF | 0.0% | |
| 18 | SECURITY VESTIBULE | 239 SF | 240 SF | 0.0% | |
| 18 | SECURITY VESTIBULE | 240 SF | 240 SF | 0.0% | |
| 18 | SECURITY VESTIBULE | 240 SF | 240 SF | 0.0% | |
| 18.01 | 8-PERSON MINI-DORM | 324 SF | 320 SF | 1.0% | |
| 18.01 | 8-PERSON MINI-DORM | 324 SF | 320 SF | 1.0% | |
| 18.01 | 8-PERSON MINI-DORM | 343 SF | 320 SF | 7.0% | |
| 18.01 | 8-PERSON MINI-DORM | 343 SF | 320 SF | 7.0% | |
| 18.01 | 8-PERSON MINI-DORM | 353 SF | 320 SF | 10.0% | |
| 18.01 | 8-PERSON MINI-DORM | 353 SF | 320 SF | 10.0% | |
| 18.01 | 8-PERSON MINI-DORM | 343 SF | 320 SF | 7.0% | |
| 18.01 | 8-PERSON MINI-DORM | 343 SF | 320 SF | 7.0% | |
| 18.01 | 8-PERSON MINI-DORM | 343 SF | 320 SF | 7.0% | |
| 18.01 | 8-PERSON MINI-DORM | 324 SF | 320 SF | 1.0% | |
| 18.01 | 8-PERSON MINI-DORM | 324 SF | 320 SF | 1.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 326 SF | 320 SF | 2.0% | |
| 18.01 | 8-PERSON MINI-DORM | 326 SF | 320 SF | 2.0% | |
| 18.01 | 8-PERSON MINI-DORM | 326 SF | 320 SF | 2.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 324 SF | 320 SF | 1.0% | |
| 18.01 | 8-PERSON MINI-DORM | 324 SF | 320 SF | 1.0% | |
| 18.01 | 8-PERSON MINI-DORM | 343 SF | 320 SF | 7.0% | |
| 18.01 | 8-PERSON MINI-DORM | 343 SF | 320 SF | 7.0% | |
| 18.01 | 8-PERSON MINI-DORM | 353 SF | 320 SF | 10.0% | |
| 18.01 | 8-PERSON MINI-DORM | 353 SF | 320 SF | 10.0% | |
| 18.01 | 8-PERSON MINI-DORM | 342 SF | 320 SF | 7.0% | |
| 18.01 | 8-PERSON MINI-DORM | 342 SF | 320 SF | 7.0% | |
| 18.01 | 8-PERSON MINI-DORM | 343 SF | 320 SF | 7.0% | |
| 18.01 | 8-PERSON MINI-DORM | 343 SF | 320 SF | 7.0% | |
| 18.01 | 8-PERSON MINI-DORM | 324 SF | 320 SF | 1.0% | |
| 18.01 | 8-PERSON MINI-DORM | 324 SF | 320 SF | 1.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 326 SF | 320 SF | 2.0% | |
| 18.01 | 8-PERSON MINI-DORM | 326 SF | 320 SF | 2.0% | |
| 18.01 | 8-PERSON MINI-DORM | 326 SF | 320 SF | 2.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |
| 18.01 | 8-PERSON MINI-DORM | 355 SF | 320 SF | 11.0% | |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

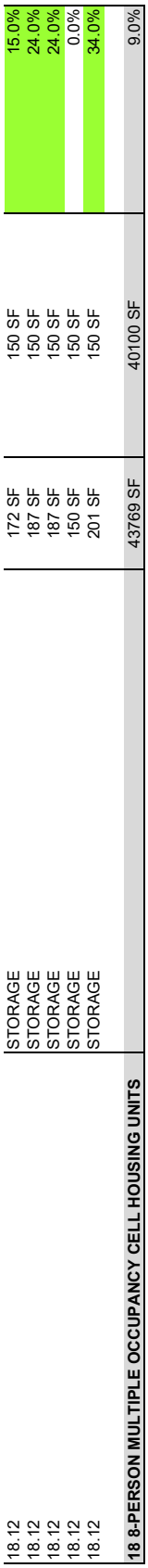
| | | | | |
|---|---|---|---|---|
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.02 | INMATE SHOWER | 40 SF | 40 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.03 | INMATE SHOWER (ADA) | 50 SF | 50 SF | 0.0% |
| 18.04 | OFFICER STATION | 40 SF | 40 SF | 0.0% |
| 18.04 | OFFICER STATION | 40 SF | 40 SF | 0.0% |
| 18.04 | OFFICER STATION | 40 SF | 40 SF | 0.0% |
| 18.04 | OFFICER STATION | 40 SF | 40 SF | 0.0% |
| 18.04 | OFFICER STATION | 40 SF | 40 SF | 0.0% |
| 18.04 | OFFICER STATION | 40 SF | 40 SF | 0.0% |
| 18.05 | MINI-DORM HOUSING DAYROOM | 2273 SF | 2240 SF | 1.0% |
| 18.05 | MINI-DORM HOUSING DAYROOM | 2272 SF | 2240 SF | 1.0% |
| 18.05 | MINI-DORM HOUSING DAYROOM | 2272 SF | 2240 SF | 1.0% |
| 18.05 | MINI-DORM HOUSING DAYROOM | 2273 SF | 2240 SF | 1.0% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 18.05 | MINI-DORM HOUSING DAYROOM | 2272 SF | 2240 SF | 1.0% | 22.0% | | |
| 18.05 | MINI-DORM HOUSING DAYROOM | 2271 SF | 2240 SF | 1.0% | 16.0% | | |
| 18.06 | FOOD STAGING | 20 SF | 20 SF | 0.0% | 27.0% | | |
| 18.06 | FOOD STAGING | 20 SF | 20 SF | 0.0% | 25.0% | | |
| 18.06 | FOOD STAGING | 20 SF | 20 SF | 0.0% | 21.0% | | |
| 18.06 | FOOD STAGING | 20 SF | 20 SF | 0.0% | 27.0% | | |
| 18.06 | FOOD STAGING | 20 SF | 20 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.07 | VIDEO VISIT | 35 SF | 35 SF | 0.0% | 66.0% | | |
| 18.08 | JANITOR/ STORAGE | 80 SF | 80 SF | 0.0% | 66.0% | | |
| 18.08 | JANITOR/ STORAGE | 80 SF | 80 SF | 0.0% | 66.0% | | |
| 18.08 | JANITOR/ STORAGE | 80 SF | 80 SF | 0.0% | 66.0% | | |
| 18.08 | JANITOR/ STORAGE | 80 SF | 80 SF | 0.0% | 66.0% | | |
| 18.08 | JANITOR/ STORAGE | 80 SF | 80 SF | 0.0% | 66.0% | | |
| 18.09 | EXAM/ INTERVIEW | 110 SF | 110 SF | 0.0% | 66.0% | | |
| 18.09 | EXAM/ INTERVIEW | 110 SF | 110 SF | 0.0% | 66.0% | | |
| 18.09 | EXAM/ INTERVIEW | 110 SF | 110 SF | 0.0% | 66.0% | | |
| 18.09 | EXAM/ INTERVIEW | 110 SF | 110 SF | 0.0% | 66.0% | | |
| 18.09 | EXAM/ INTERVIEW | 110 SF | 110 SF | 0.0% | 66.0% | | |
| 18.1 | MULTI-PURPOSE | 390 SF | 320 SF | 0.0% | 66.0% | | |
| 18.1 | MULTI-PURPOSE | 370 SF | 320 SF | 0.0% | 66.0% | | |
| 18.1 | MULTI-PURPOSE | 407 SF | 320 SF | 0.0% | 66.0% | | |
| 18.1 | MULTI-PURPOSE | 400 SF | 320 SF | 0.0% | 66.0% | | |
| 18.1 | MULTI-PURPOSE | 386 SF | 320 SF | 0.0% | 66.0% | | |
| 18.1 | MULTI-PURPOSE | 406 SF | 320 SF | 0.0% | 66.0% | | |
| 18.11 | RECREATION COURTYARD | 746 SF | 450 SF | 0.0% | 66.0% | | |
| 18.11 | RECREATION COURTYARD | 746 SF | 450 SF | 0.0% | 66.0% | | |
| 18.11 | RECREATION COURTYARD | 746 SF | 450 SF | 0.0% | 66.0% | | |
| 18.11 | RECREATION COURTYARD | 746 SF | 450 SF | 0.0% | 66.0% | | |
| 18.11 | RECREATION COURTYARD | 746 SF | 450 SF | 0.0% | 66.0% | | |
| 18.12 | STORAGE | 187 SF | 150 SF | 0.0% | 24.0% | | |

# A. BUILDING PROGRAM REPORT - SPREADSHEET



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 18.12 | **18 8-PERSON MULTIPLE OCCUPANCY CELL HOUSING UNITS** | | | | | | 9.0% |
| 18.12 | | STORAGE | 172 SF | | 43769 SF | 40100 SF | 15.0% |
| 18.12 | | STORAGE | 187 SF | 150 SF | | | 24.0% |
| 18.12 | | STORAGE | 187 SF | 150 SF | | | 24.0% |
| 18.12 | | STORAGE | 150 SF | 150 SF | | | 0.0% |
| 18.12 | | STORAGE | 201 SF | 150 SF | | | 34.0% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | |
|---|---|---|---|---|---|---|
| **19 JUVENILES CHARGED AS ADULTS HOUSING UNIT** | | | | | | |
| **01 COMMON AREAS** | | | | | | |
| 19.01 | SERVICE VESTIBULE | 240 SF | 240 SF | | | 0.0% |
| 19.02 | STAFF TOILET | 60 SF | 60 SF | | | 0.0% |
| 19.02 | STAFF TOILET | 60 SF | 60 SF | | | 0.0% |
| 19.03 | ZONE STORAGE | 235 SF | 200 SF | | | 17.0% |
| 19.04 | JANITOR'S CLOSET | 40 SF | 40 SF | | | 0.0% |
| 19.05 | EXAM/ INTERVIEW | 110 SF | 110 SF | | | 0.0% |
| | | 745 SF | 710 SF | | | 4.9% |
| **02 16-BED HOUSING AREA** | | | | | | |
| 19.06 | OFFICER STATION | 40 SF | 40 SF | | | 0.0% |
| 19.06 | OFFICER STATION | 40 SF | 40 SF | | | 0.0% |
| 19.06 | OFFICER STATION | 40 SF | 40 SF | | | 0.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.07 | JUVENILE SINGLE CELL | 74 SF | 63 SF | | | 17.0% |
| 19.08 | JUVENILE SINGLE CELL (ADA) | 100 SF | 100 SF | | | 0.0% |
| 19.08 | JUVENILE SINGLE CELL (ADA) | 100 SF | 100 SF | | | 0.0% |
| 19.08 | JUVENILE SINGLE CELL (ADA) | 100 SF | 100 SF | | | 0.0% |
| 19.09 | 4-PERSON MINI-DORM | 242 SF | 220 SF | | | 10.0% |
| 19.09 | 4-PERSON MINI-DORM | 242 SF | 220 SF | | | 10.0% |
| 19.09 | 4-PERSON MINI-DORM | 241 SF | 220 SF | | | 10.0% |
| 19.09 | 4-PERSON MINI-DORM | 241 SF | 220 SF | | | 10.0% |
| 19.09 | 4-PERSON MINI-DORM | 242 SF | 220 SF | | | 10.0% |
| 19.09 | 4-PERSON MINI-DORM | 236 SF | 220 SF | | | 7.0% |
| 19.1 | INMATE SHOWER | 37 SF | 40 SF | | | -7.0% |
| 19.1 | INMATE SHOWER | 37 SF | 40 SF | | | -7.0% |
| 19.1 | INMATE SHOWER | 37 SF | 40 SF | | | -7.0% |
| 19.11 | INMATE SHOWER (ADA) | 51 SF | 50 SF | | | 2.0% |
| 19.11 | INMATE SHOWER (ADA) | 51 SF | 50 SF | | | 2.0% |
| 19.11 | INMATE SHOWER (ADA) | 51 SF | 50 SF | | | 2.0% |
| 19.12 | DAYROOM | 610 SF | 560 SF | | | 9.0% |
| 19.12 | DAYROOM | 592 SF | 560 SF | | | 6.0% |
| 19.12 | DAYROOM | 575 SF | 560 SF | | | 3.0% |
| 19.13 | BEVERAGE STATION | 20 SF | 20 SF | | | 0.0% |
| 19.13 | BEVERAGE STATION | 20 SF | 20 SF | | | 0.0% |

| | | | | | |
|---|---|---|---|---|---|
| 19.13 | BEVERAGE STATION | 20 SF | 20 SF | | 0.0% |
| 19.14 | VIDEO VISIT | 35 SF | 35 SF | | 0.0% |
| 19.14 | VIDEO VISIT | 35 SF | 35 SF | | 0.0% |
| 19.14 | VIDEO VISIT | 35 SF | 35 SF | | 0.0% |
| 19.15 | MULTI-PURPOSE | 260 SF | 260 SF | | 0.0% |
| 19.15 | MULTI-PURPOSE | 260 SF | 260 SF | | 0.0% |
| 19.15 | MULTI-PURPOSE | 260 SF | 260 SF | | 0.0% |
| 19.16 | RECREATION COURTYARD | 183 SF | 200 SF | | -9.0% |
| 19.16 | RECREATION COURTYARD | 198 SF | 200 SF | | -1.0% |
| 19.16 | RECREATION COURTYARD | 198 SF | 200 SF | | -1.0% |
| | | 6971 SF | 6558 SF | | 6.3% |
| | **03 SUPPORT AREA** | | | | |
| 19.17 | SERGEANT OFFICE | 120 SF | 120 SF | | 0.0% |
| 19.18 | STAFF COMPUTER STATIONS | 140 SF | 140 SF | | 0.0% |
| 19.2 | CERTIFIED TESTING CLASSROOM | 672 SF | 672 SF | | 0.0% |
| 19.21 | INMATE TOILET | 60 SF | 60 SF | | 0.0% |
| | | 992 SF | 992 SF | | 0.0% |
| | **19 JUVENILES CHARGED AS ADULTS HOUSING UNIT** | 8705 SF | 8260 SF | | 5.4% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **20 DIRECT HOUSING SUPPORT** | | | | | | | |
| **01 MAIN HOUSING FLOORS** | | | | | | | |
| 20.01 | ZONE OFFICE | 120 SF | 120 SF | 120 SF | 120 SF | 120 SF | 0.0% |
| 20.01 | ZONE OFFICE | 120 SF | 120 SF | 120 SF | 120 SF | 120 SF | 0.0% |
| 20.02 | ATTORNEY VISIT | 150 SF | 150 SF | 150 SF | 150 SF | 150 SF | 0.0% |
| 20.02 | ATTORNEY VISIT | 150 SF | 150 SF | 150 SF | 150 SF | 150 SF | 0.0% |
| 20.03 | PROGRAM SERVICES | 200 SF | 200 SF | 200 SF | 200 SF | 200 SF | 0.0% |
| 20.03 | PROGRAM SERVICES | 200 SF | 200 SF | 200 SF | 200 SF | 200 SF | 0.0% |
| 20.04 | INTERVIEW | 80 SF | 80 SF | 80 SF | 80 SF | 80 SF | 0.0% |
| 20.04 | INTERVIEW | 80 SF | 80 SF | 80 SF | 80 SF | 80 SF | 0.0% |
| 20.06 | HOLDING | 70 SF | 70 SF | 70 SF | 70 SF | 70 SF | 0.0% |
| 20.06 | HOLDING | 70 SF | 70 SF | 70 SF | 70 SF | 70 SF | 0.0% |
| 20.06 | HOLDING | 70 SF | 70 SF | 70 SF | 70 SF | 70 SF | 0.0% |
| 20.06 | HOLDING | 70 SF | 70 SF | 70 SF | 70 SF | 70 SF | 0.0% |
| 20.07 | STAFF TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 20.07 | STAFF TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 20.07 | STAFF TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 20.07 | STAFF TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 20.07 | STAFF TOILET | 65 SF | 60 SF | 60 SF | 60 SF | 60 SF | 8.0% |
| 20.07 | STAFF TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 20.07 | STAFF TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 20.07 | STAFF TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 20.08 | BREAKROOM | 160 SF | 160 SF | 160 SF | 160 SF | 160 SF | 0.0% |
| 20.08 | BREAKROOM | 160 SF | 160 SF | 160 SF | 160 SF | 160 SF | 0.0% |
| 20.09 | PROGRAM ROOM | 361 SF | 360 SF | 360 SF | 360 SF | 360 SF | 0.0% |
| 20.09 | PROGRAM ROOM | 360 SF | 360 SF | 360 SF | 360 SF | 360 SF | 0.0% |
| 20.1 | CLASSROOM | 484 SF | 484 SF | 520 SF | 520 SF | 520 SF | -7.0% |
| 20.1 | CLASSROOM | 520 SF | 520 SF | 520 SF | 520 SF | 520 SF | 0.0% |
| 20.11 | INMATE TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 20.11 | INMATE TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 20.11 | INMATE TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 20.11 | INMATE TOILET | 60 SF | 60 SF | 60 SF | 60 SF | 60 SF | 0.0% |
| 20.12 | TRASH | 75 SF | 75 SF | 80 SF | 80 SF | 80 SF | -7.0% |
| 20.12 | TRASH | 75 SF | 75 SF | 80 SF | 80 SF | 80 SF | -7.0% |
| 20.13 | JANITOR'S CLOSET | 84 SF | 80 SF | 80 SF | 80 SF | 80 SF | 5.0% |
| 20.13 | JANITOR'S CLOSET | 80 SF | 80 SF | 80 SF | 80 SF | 80 SF | 0.0% |
| 20.14 | ZONE STORAGE | 100 SF | 100 SF | 100 SF | 100 SF | 100 SF | 0.0% |
| 20.14 | ZONE STORAGE | 100 SF | 100 SF | 100 SF | 100 SF | 100 SF | 0.0% |
| | | 4662 SF | 4662 SF | 4700 SF | 4700 SF | 4700 SF | -0.8% |

# A. BUILDING PROGRAM REPORT - SPREADSHEET

| | | | | | | |
|---|---|---|---|---|---|---|
| **02 LIMITED HOUSING FLOOR** | | | | | | |
| 20.15 | ZONE OFFICE | 100 SF | 100 SF | 100 SF | | 0.0% |
| 20.16 | ATTORNEY VISIT | 100 SF | 100 SF | 100 SF | | 0.0% |
| 20.17 | INTERVIEW ROOM | 62 SF | 60 SF | 60 SF | | 3.0% |
| 20.18 | ZONE STAGING/ HOLDING CELL | 157 SF | 80 SF | 80 SF | | 96.0% |
| 20.19 | STAFF TOILET | 60 SF | 60 SF | 60 SF | | 0.0% |
| 20.19 | STAFF TOILET | 60 SF | 60 SF | 60 SF | | 0.0% |
| 20.19 | STAFF TOILET | 60 SF | 60 SF | 60 SF | | 0.0% |
| 20.19 | STAFF TOILET | 60 SF | 60 SF | 60 SF | | 0.0% |
| 20.19 | STAFF TOILET | 65 SF | 60 SF | 60 SF | | 0.0% |
| 20.19 | STAFF TOILET | 60 SF | 60 SF | 60 SF | | 0.0% |
| 20.2 | CONFERENCE/ BREAKROOM | 702 SF | 700 SF | 700 SF | | 0.0% |
| 20.21 | CERTIFIED TESTING CLASSROOM | 675 SF | 672 SF | 672 SF | | 0.0% |
| 20.22 | INMATE TOILET | 60 SF | 60 SF | 60 SF | | 0.0% |
| 20.23 | JANITOR'S CLOSET/ STORAGE | 119 SF | 100 SF | 100 SF | | 19.0% |
| 20.24 | CONFERENCE STORAGE | 94 SF | 90 SF | 90 SF | | 5.0% |
| 20.25 | ZONE STORAGE | 120 SF | 120 SF | 120 SF | | 0.0% |
| | | 2553 SF | 2442 SF | 2442 SF | | 4.5% |
| **20 DIRECT HOUSING SUPPORT** | | 7215 SF | 7142 SF | 7142 SF | | 1.0% |
| **NET SF** | | **191327 SF** | **181454 SF** | | | **5.4%** |

# HVAC APPENDIX B

# ENERGY REDUCTION ANALYSIS

## LEED Energy Performance Summary Report

By ROSSER INTERNATIONAL

### Section 1.1 - General Information

| | |
|---|---|
| **Simulation Program:** | TRACE™ 700 v6.3.1 |
| **Principle Heating Source:** | Fossil Fuel |
| **Energy Code Used:** | ASHRAE 90.1-2007 |
| **Weather File:** | Mobile, Alabama (Reduced Year) |
| **Climate Zone:** | 2A |
| **New Construction Percent:** | 100 % |
| **Existing Renovation Percent:** | 0 % |
| **Quantity of Floors:** | 4 |
| **Proposed:** | Alternative 1 - PER RFP |
| **Baseline:** | Alternative 2 - ASHRAE Baseline 90.1-10 Climate Zone 2A |

## LEED Energy Performance Summary Report

By ROSSER INTERNATIONAL

### Section 1.2 - Space Summary

| Building Use (Occupancy Type) | Space Area ($ft^2$) | Regularly Occupied Area ($ft^2$) | Unconditioned Area ($ft^2$) |
|---|---|---|---|
| office | 29,610.00 | 29,610.00 | 0.00 |
| corridor | 46,134.00 | 46,134.00 | 0.00 |
| classroom | 5,287.00 | 5,287.00 | 0.00 |
| dayroom | 38,486.00 | 38,486.00 | 0.00 |
| cell | 13,019.00 | 13,019.00 | 0.00 |
| unoccupied | 30,873.00 | 30,873.00 | 0.00 |
| restroom/shower | 13,565.00 | 13,565.00 | 0.00 |
| storage | 20,147.00 | 20,147.00 | 0.00 |
| waiting | 336.00 | 336.00 | 0.00 |
| conference/MP | 8,523.00 | 8,523.00 | 0.00 |
| kitchen | 6,401.00 | 6,401.00 | 0.00 |
| laundry | 853.00 | 853.00 | 0.00 |
| maintenace/shops | 3,314.00 | 3,314.00 | 0.00 |
| mech room | 12,723.00 | 12,723.00 | 0.00 |
| Electronics | 5,431.00 | 5,431.00 | 0.00 |
| cell2 | 9,710.00 | 9,710.00 | 0.00 |
| cell4 | 1,510.00 | 1,510.00 | 0.00 |
| cell8 | 14,139.00 | 14,139.00 | 0.00 |
| cell non100%oa | 6,218.00 | 6,218.00 | 0.00 |
| **Total** | **266,279.00** | **266,279.00** | **0.00** |

Project Name:
Dataset Name: OPTB_ESCAMBIA.TRC

TRACE® 700 v6.3.1 calculated at 09:20 AM on 06/07/2017

## LEED Energy Performance Summary Report

By ROSSER INTERNATIONAL

### Section 1.4 - Comparison of Proposed Design Versus Baseline Design

| Input Parameter | Proposed Design Input | Baseline Design Input |
|---|---|---|
| Exterior Wall Construction | Escambia<br>U-factor: 0.080 Btu/h·ft²·°F | 90.1-10 Min Wall Nonres Zone 1 & 2<br>U-factor: 0.124 Btu/h·ft²·°F |
| Roof Construction | 90.1-10 Min Roof Nonres Zone 2-3<br>U-factor: 0.048 Btu/h·ft²·°F<br>Reflectivity: 0.55 | 90.1-10 Min Roof Nonres Zone 2-3<br>U-factor: 0.048 Btu/h·ft²·°F<br>Reflectivity: 0.55 |
| Window-to-gross wall ratio | 16.0 % | 16.0 % |
| Fenestration Type | Escambia Window<br>U-factor: 0.360 Btu/h·ft²·°F SHGC: 0.19<br>Visible Transmissivity: 0.420 | 90.1 Window Zone 2 Nonmetal Frame<br>U-factor: 0.750 Btu/h·ft²·°F SHGC: 0.25<br>Visible Transmissivity: 0.900 |
| Interior Light Power Density | Lighting Compliance: Space-By-Space Method<br>Daylighting Controls: No<br>Building: 0.54 W/ft² | Lighting Compliance: Space-By-Space Method<br>Daylighting Controls: No<br>Building: 0.83 W/ft² |
| Interior Light Power Density | Room Type:<br>office - 0.70 W/ft²<br>corridor - 0.60 W/ft²<br>classroom - 0.70 W/ft²<br>dayroom - 0.70 W/ft²<br>cell - 0.60 W/ft² | Room Type:<br>office - 1.11 W/ft²<br>corridor - 0.66 W/ft²<br>classroom - 1.34 W/ft²<br>dayroom - 1.23 W/ft²<br>cell - 1.10 W/ft² |
| Interior Light Power Density | Room Type:<br>unoccupied - 0.00 W/ft²<br>restroom/shower - 0.60 W/ft²<br>storage - 0.60 W/ft²<br>waiting - 0.70 W/ft²<br>conference/MP - 0.70 W/ft² | Room Type:<br>unoccupied - 0.00 W/ft²<br>restroom/shower - 0.40 W/ft²<br>storage - 0.95 W/ft²<br>waiting - 0.90 W/ft²<br>conference/MP - 1.23 W/ft² |
| Interior Light Power Density | Room Type:<br>kitchen - 0.70 W/ft²<br>laundry - 0.70 W/ft²<br>maintenace/shops - 0.70 W/ft²<br>mech room - 0.00 W/ft²<br>Electronics - 0.70 W/ft² | Room Type:<br>kitchen - 0.99 W/ft²<br>laundry - 1.59 W/ft²<br>maintenace/shops - 1.59 W/ft²<br>mech room - 0.00 W/ft²<br>Electronics - 0.95 W/ft² |
| Interior Light Power Density | Room Type:<br>cell2 - 0.60 W/ft²<br>cell4 - 0.60 W/ft²<br>cell8 - 0.60 W/ft²<br>cell non100%oa - 0.60 W/ft² | Room Type:<br>cell2 - 1.10 W/ft²<br>cell4 - 1.10 W/ft²<br>cell8 - 1.10 W/ft²<br>cell non100%oa - 1.10 W/ft² |
| Receptacle Equip Power Density | 1.62 W/ft² | 1.62 W/ft² |

Project Name:

Dataset Name: OPTB_ESCAMBIA.TRC

TRACE® 700 v6.3.1 calculated at 09:20 AM on 06/07/2017

## LEED Energy Performance Summary Report

By ROSSER INTERNATIONAL

### Section 1.4 - Comparison of Proposed Design Versus Baseline Design

| Input Parameter | Proposed Design Input | Baseline Design Input |
|---|---|---|
| HVAC System Type | VAV - Single Zone<br>Single Zone Variable Air Volume<br>Uses: Heat recov<br>Supply vol: 37630 cfm Fan power: 30.79 kW | Heat Vent Only<br>System 10 - 2010 - Heating Only & Ventilation, Electric<br>Supply vol: 1368 cfm Fan power: 0.41 kW |
| HVAC System Type | FAN COILS<br>Fan Coil<br>Supply vol: 32610 cfm Fan power: 11.73 kW | VAV-FPB<br>System 8 - 2007/2010 - VAV Reheat PFP, Chilled Water & Electric<br>Supply vol: 230670 cfm Fan power: 232.54 kW |
| HVAC System Type | MZ- TRIPLE DECK<br>Triple Deck Multizone<br>Uses: Heat recov<br>Supply vol: 21456 cfm Fan power: 9.54 kW | |
| HVAC System Type | HEAT VENT ONLY<br>Ventilation and Heating<br>Supply vol: 3446 cfm Fan power: 1.30 kW | |
| HVAC System Type | VAV Systems<br>Variable Volume Reheat (30% Min Flow Default)<br>Supply vol: 126652 cfm Fan power: 133.26 kW | |
| Cooling Equipment | Plant: Cooling plant - 001<br>Type: YORK High Eff<br>Category: Water-cooled chiller<br>Clg Cap: 50 % Plant Capacity Engy Rate: 0.566 kW/ton<br>HR Cap: 50 % Plant Capacity Engy Rate: 0.566 kW/ton | Plant: Cooling plant - 001<br>Type: 90.1-10 Min Cent Chl 300-600 tons Path B<br>Category: Water-cooled chiller<br>Clg Cap: 50 % Plant Capacity Engy Rate: 0.6 kW/ton<br>Quantity: 2 |
| Cooling Equipment | Plant: Cooling plant - 001<br>Type: YORK High Eff<br>Category: Water-cooled chiller<br>Clg Cap: 50 % Plant Capacity Engy Rate: 0.566 kW/ton<br>Quantity: 2 | |
| Chilled Water Pump | | Type: 90.1 Min CV Chilled Water pump<br>Full load consumption: 22 Watt/gpm<br>Quantity: 2 |
| Condenser Water Pump | Type: CV Cond Wtr Pump (12 F Delta T)<br>Full load consumption: 40 ft water<br>Quantity: 3 | Type: 90.1 Min CV Cond Water Pump<br>Full load consumption: 22 Watt/gpm<br>Quantity: 2 |
| Secondary Distribution Pump | Type: Eq5003 - Var vol chill water pump<br>Full load consumption: 100 ft water | Type: 90.1 Pump Riding the Pump Curve<br>Full load consumption: 22 Watt/gpm |

Project Name:

Dataset Name: OPTB_ESCAMBIA.TRC

TRACE® 700 v6.3.1 calculated at 09:20 AM on 06/07/2017

## LEED Energy Performance Summary Report

By ROSSER INTERNATIONAL

### Section 1.4 - Comparison of Proposed Design Versus Baseline Design

| Input Parameter | Proposed Design Input | Baseline Design Input |
|---|---|---|
| Heat Rejection Parameters | Type: Cooling Tower w/ VFD<br>HR Type: Cooling tower (Marley)<br>Energy Consumption: 0.066000 kW/ton<br>Quantity: 3 | Type: 90.1 Min Cooling Tower<br>HR Type: Cooling tower (DOE)<br>Energy Consumption: 0.063700 kW/ton<br>Quantity: 2 |
| Heating Equipment | Plant: Heating plant - 002<br>Type: 90.1-10 Min Boiler, HW, Gas 300-2500 MBh<br>Category: Boiler<br>Capacity: 33 % Plant Capacity Energy Rate: 90 Percent efficient<br>Quantity: 4 | Plant: Heating plant - 002<br>Type: Electric Resistance Heat<br>Category: Electric resistance<br>Capacity: Design Energy Rate: 100 Percent efficient |
| Heating Equipment | Plant: Service water heating<br>Type: Purchased District Hot Water<br>Category: Boiler<br>Capacity: Design Energy Rate: 100 Percent efficient | |
| Hot Water Pump | Type: Heating water circ pump<br>Full load consumption: 20 ft water<br>Quantity: 4 | |
| Hot Water Pump | Type: Heating water circ pump<br>Full load consumption: 0 ft water | |
| Thermal Energy Storage | No | No |
| Base Utility | Type: Domestic Hot Water Load<br>Description: Domestic Hot Water Load<br>Energy Type: Process hot water load<br>Hourly Consumption: 100.0 gpm<br>Schedule: Available (100%) | Type: Domestic Hot Water Load<br>Description: Domestic Hot Water Load<br>Energy Type: Process hot water load<br>Hourly Consumption: 100.0 gpm<br>Schedule: Available (100%) |

### Section 1.5 - Energy Type Summary (Proposed)

| Energy Type | Utility Rate Description | Units |
|---|---|---|
| Electric Consumption | Escambia | kWh |
| Electric Demand | Escambia | kW |
| Gas | Escambia | therms |

Project Name:
Dataset Name: OPTB_ESCAMBIA.TRC

TRACE® 700 v6.3.1 calculated at 09:20 AM on 06/07/2017

## LEED Energy Performance Summary Report

By ROSSER INTERNATIONAL

### Section 1.6 Baseline Performance - Performance Rating Method Compliance

| End Use | Process | Baseline Design Energy Type | Units of Annual Energy & Peak Demand | Baseline (0 deg rotation) | Baseline (90 deg rotation) | Baseline (180 deg rotation) | Baseline (270 deg rotation) | Baseline Design |
|---|---|---|---|---|---|---|---|---|
| Space Heating | No | Electricity | Energy Use (kWh) | 698,283 | 708,276 | 716,086 | 709,168 | 707,953 |
| | | | Demand (kW) | 558.7 | 557.5 | 603.8 | 583.9 | 576.0 |
| Space Cooling | No | Electricity | Energy Use (kWh) | 1,317,259 | 1,315,263 | 1,312,148 | 1,316,041 | 1,315,178 |
| | | | Demand (kW) | 608.4 | 595.3 | 587.8 | 588.5 | 595.0 |
| Pumps | No | Electricity | Energy Use (kWh) | 692,575 | 683,255 | 671,900 | 673,396 | 680,281 |
| | | | Demand (kW) | 163.1 | 158.0 | 155.6 | 155.6 | 158.1 |
| Heat Rejection | No | Electricity | Energy Use (kWh) | 279,769 | 278,440 | 274,679 | 274,144 | 276,758 |
| | | | Demand (kW) | 82.7 | 79.7 | 78.4 | 78.4 | 79.8 |
| Fans - Interior | No | Electricity | Energy Use (kWh) | 1,036,729 | 1,035,485 | 1,030,396 | 1,042,454 | 1,036,266 |
| | | | Demand (kW) | 205.3 | 212.7 | 204.1 | 212.7 | 208.7 |
| Receptacle Equipment | Yes | Electricity | Energy Use (kWh) | 3,312,294 | 3,312,294 | 3,312,294 | 3,312,294 | 3,312,294 |
| | | | Demand (kW) | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 |
| Interior Lighting | No | Electricity | Energy Use (kWh) | 1,236,944 | 1,236,944 | 1,236,944 | 1,236,944 | 1,236,944 |
| | | | Demand (kW) | 218.6 | 218.6 | 218.6 | 218.6 | 218.6 |
| Space Heating | No | Gas | Energy Use (therms) | 0 | 0 | 0 | 0 | 0 |
| | | | Demand (therms/hr) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Baseline Energy Totals:** | | | Energy Use (MMBtu/yr) | **29,262.3** | **29,249.0** | **29,196.1** | **29,230.2** | **29,234.4** |
| | | | Process (MMBtu/yr) | **11,304.8** | **11,304.8** | **11,304.8** | **11,304.8** | **11,304.8** |

### Section 1.6 Proposed Performance - Performance Rating Method Compliance

| End Use | Process | Proposed Design Energy Type | Units of Annual Energy & Peak Demand | Proposed Design |
|---|---|---|---|---|
| Space Heating | No | Electricity | Energy Use (kWh) | 4,380 |
| | | | Demand (kW) | 1.0 |
| Space Cooling | No | Electricity | Energy Use (kWh) | 646,395 |
| | | | Demand (kW) | 194.5 |
| Pumps | No | Electricity | Energy Use (kWh) | 121,283 |
| | | | Demand (kW) | 27.4 |
| Heat Rejection | No | Electricity | Energy Use (kWh) | 189,345 |
| | | | Demand (kW) | 44.7 |

Project Name:
Dataset Name: OPTB_ESCAMBIA.TRC

TRACE® 700 v6.3.1 calculated at 09:20 AM on 06/07/2017

## LEED Energy Performance Summary Report

By ROSSER INTERNATIONAL

### Section 1.6 Proposed Performance - Performance Rating Method Compliance

| End Use | Process | Proposed Design Energy Type | Units of Annual Energy & Peak Demand | Proposed Design |
|---|---|---|---|---|
| Fans - Interior | No | Electricity | Energy Use (kWh) | 648,873 |
| | | | Demand (kW) | 122.2 |
| Receptacle Equipment | Yes | Electricity | Energy Use (kWh) | 3,312,294 |
| | | | Demand (kW) | 421.9 |
| Interior Lighting | No | Electricity | Energy Use (kWh) | 857,392 |
| | | | Demand (kW) | 142.4 |
| Space Heating | No | Gas | Energy Use (therms\hr) | 11,673 |
| | | | Demand (therms/hr) | 19.4 |
| **Proposed Energy Totals:** | | | Energy Use (MMBtu/yr) | **20,894.12** |
| | | | Process (MMBtu/yr) | **11,304.76** |

Project Name:
Dataset Name: OPTB_ESCAMBIA.TRC

TRACE® 700 v6.3.1 calculated at 09:20 AM on 06/07/2017

## LEED Energy Performance Summary Report

By ROSSER INTERNATIONAL

### Table 1.6 Table EAp2-9 Energy Cost Summary (Manual Cost Input) - Baseline Case

| Energy Type | Baseline Cost (0° rotation) | Baseline Cost (90° rotation) | Baseline Cost (180° rotation) | Baseline Cost (270° rotation) | Average |
|---|---|---|---|---|---|
| Electric Consumption | $428,689 | $428,494 | $427,719 | $428,218 | $428,280 |
| Gas | $0 | $0 | $0 | $0 | $0 |

### Table 1.6 Table EAp2-9 Energy Cost Summary (Manual Cost Input) - Proposed Case

| Energy Type | Proposed Cost |
|---|---|
| Electric Consumption | $288,996 |
| Gas | $7,893 |

**Proposed building economic cost improvement over baseline building: 30.7 %**

Project Name:
Dataset Name: OPTB_ESCAMBIA.TRC

TRACE® 700 v6.3.1 calculated at 09:20 AM on 06/07/2017

# ENERGY CONSUMPTION SUMMARY

By ROSSER INTERNATIONAL

| | Elect Cons. (kWh) | Gas Cons. (kBtu) | Water Cons. (1000 gals) | % of Total Building Energy | Total Building Energy (kBtu/yr) | Total Source Energy* (kBtu/yr) |
|---|---|---|---|---|---|---|
| **Alternative 1** | | | | | | |
| **Primary heating** | | | | | | |
| Primary heating | | 1,167,283 | | 5.6 % | 1,167,283 | 1,228,719 |
| Other Htg Accessories | 4,380 | | 69 | 0.1 % | 14,949 | 44,851 |
| **Heating Subtotal** | **4,380** | **1,167,283** | **69** | **5.7 %** | **1,182,232** | **1,273,571** |
| **Primary cooling** | | | | | | |
| Cooling Compressor | 646,389 | | | 10.6 % | 2,206,127 | 6,619,041 |
| Tower/Cond Fans | 189,344 | | 5,822 | 3.1 % | 646,230 | 1,938,885 |
| Condenser Pump | 66,864 | | | 1.1 % | 228,206 | 684,687 |
| Other Clg Accessories | | | | 0.0 % | 0 | 0 |
| **Cooling Subtotal....** | **902,597** | | **5,822** | **14.7 %** | **3,080,563** | **9,242,613** |
| **Auxiliary** | | | | | | |
| Supply Fans | 648,868 | | | 10.6 % | 2,214,585 | 6,644,421 |
| Pumps | 54,419 | | | 0.9 % | 185,731 | 557,248 |
| Stand-alone Base Utilities | | | | 0.0 % | 0 | 0 |
| Aux Subtotal.... | 703,286 | | | 11.5 % | 2,400,316 | 7,201,669 |
| **Lighting** | | | | | | |
| Lighting | 857,385 | | | 14.0 % | 2,926,255 | 8,779,643 |
| **Receptacle** | | | | | | |
| Receptacles | 3,312,266 | | | 54.1 % | 11,304,762 | 33,917,676 |
| **Cogeneration** | | | | | | |
| Cogeneration | | | | 0.0 % | 0 | 0 |
| **Totals** | | | | | | |
| **Totals**** | **5,779,914** | **1,167,283** | **5,891** | **100.0 %** | **20,894,130** | **60,415,176** |

* Note: Resource Utilization factors are included in the Total Source Energy value.
** Note: This report can display a maximum of 7 utilities. If additional utilities are used, they will be included in the total.

Project Name:
Dataset Name: OPTB_ESCAMBIA.TRC

TRACE® 700 v6.3.1 calculated at 09:20 AM on 06/07/2017
Alternative - 1 Energy Consumption Summary report page 1

# ENERGY CONSUMPTION SUMMARY

By ROSSER INTERNATIONAL

| | Elect Cons. (kWh) | Water Cons. (1000 gals) | % of Total Building Energy | Total Building Energy (kBtu/yr) | Total Source Energy* (kBtu/yr) |
|---|---|---|---|---|---|
| **Alternative 2** | | | | | |
| **Primary heating** | | | | | |
| Primary heating | 698,277 | | 8.1 % | 2,383,218 | 7,150,369 |
| Other Htg Accessories | | | 0.0 % | 0 | 0 |
| **Heating Subtotal** | **698,277** | | **8.1 %** | **2,383,218** | **7,150,369** |
| **Primary cooling** | | | | | |
| Cooling Compressor | 1,308,259 | | 15.3 % | 4,465,089 | 13,396,607 |
| Tower/Cond Fans | 279,766 | 7,056 | 3.3 % | 954,842 | 2,864,814 |
| Condenser Pump | 308,171 | | 3.6 % | 1,051,787 | 3,155,676 |
| Other Clg Accessories | 8,988 | | 0.1 % | 30,676 | 92,037 |
| **Cooling Subtotal....** | **1,905,185** | **7,056** | **22.2 %** | **6,502,395** | **19,509,134** |
| **Auxiliary** | | | | | |
| Supply Fans | 1,036,720 | | 12.1 % | 3,538,326 | 10,616,040 |
| Pumps | 384,399 | | 4.5 % | 1,311,953 | 3,936,252 |
| Stand-alone Base Utilities | | | 0.0 % | 0 | 0 |
| Aux Subtotal.... | 1,421,119 | | 16.6 % | 4,850,279 | 14,552,292 |
| **Lighting** | | | | | |
| Lighting | 1,236,933 | | 14.4 % | 4,221,654 | 12,666,227 |
| **Receptacle** | | | | | |
| Receptacles | 3,312,266 | | 38.6 % | 11,304,763 | 33,917,680 |
| **Cogeneration** | | | | | |
| Cogeneration | | | 0.0 % | 0 | 0 |
| **Totals** | | | | | |
| **Totals**** | **8,573,779** | **7,056** | **100.0 %** | **29,262,308** | **87,795,696** |

* Note: Resource Utilization factors are included in the Total Source Energy value.
** Note: This report can display a maximum of 7 utilities. If additional utilities are used, they will be included in the total.

Project Name:
Dataset Name: OPTB_ESCAMBIA.TRC

TRACE® 700 v6.3.1 calculated at 09:20 AM on 06/07/2017
Alternative - 2 Energy Consumption Summary report page 1

# Performance Rating Details

By ROSSER INTERNATIONAL

| Project Name: | Date: June 07, 2017 |
|---|---|
| City: | Weather Data: Mobile, Alabama |

**Performance Rating Method Alternative: Alt-2 ASHRAE Baseline 90.1-10 Climate Zone 2A**

| | | 0° Rotation | | 90° Rotation | | 180° Rotation | | 270° Rotation | | Average | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Energy 10^6 Btu/yr | Peak kBtuh | Energy 10^6 Btu/yr | Peak kBtuh | Energy 10^6 Btu/yr | Peak kBtuh | Energy 10^6 Btu/yr | Peak kBtuh | Energy 10^6 Btu/yr | Peak kBtuh |
| **Lighting - Conditioned** | Electricity | 4,221.7 | 746 | 4,221.7 | 746 | 4,221.7 | 746 | 4,221.7 | 746 | 4,221.7 | 746 |
| **Space Heating** | Electricity | 2,383.2 | 1,907 | 2,417.3 | 1,903 | 2,444.0 | 2,061 | 2,420.4 | 1,993 | 2,416.2 | 1,966 |
| **Space Cooling** | Electricity | 4,495.8 | 2,076 | 4,489.0 | 2,032 | 4,478.3 | 2,006 | 4,491.6 | 2,009 | 4,488.7 | 2,031 |
| **Pumps** | Electricity | 2,363.7 | 557 | 2,331.9 | 539 | 2,293.2 | 531 | 2,298.3 | 531 | 2,321.8 | 540 |
| **Heat Rejection** | Electricity | 954.8 | 282 | 950.3 | 272 | 937.5 | 268 | 935.6 | 268 | 944.6 | 272 |
| **Fans - Conditioned** | Electricity | 3,538.3 | 701 | 3,534.1 | 726 | 3,516.7 | 697 | 3,557.9 | 726 | 3,536.8 | 712 |
| **Receptacles - Conditioned** | Electricity | 11,304.8 | 1,440 | 11,304.8 | 1,440 | 11,304.8 | 1,440 | 11,304.8 | 1,440 | 11,304.8 | 1,440 |
| **Total Building Consumption** | | **29,262.3** | **7,709** | **29,249.0** | **7,658** | **29,196.1** | **7,748** | **29,230.2** | **7,712** | **29,234.4** | **7,707** |

| | 0° Rotation | 90° Rotation | 180° Rotation | 270° Rotation | Average |
|---|---|---|---|---|---|
| **Electric ($)** | $428,689 | $428,494 | $427,719 | $428,218 | $428,280 |
| **Total Building Cost ($)** | **$428,689** | **$428,494** | **$427,719** | **$428,218** | **$428,280** |

# Energy Cost Budget / PRM Summary

By ROSSER INTERNATIONAL

| Project Name: | Date: June 07, 2017 |
|---|---|
| City: | Weather Data: Mobile, Alabama |

Note: The percentage displayed for the "Proposed/ Base %" column of the base case is actually the percentage of the total energy consumption.

* Denotes the base alternative for the ECB study.

| | | * Alt-2 ASHRAE Baseline 90.1-1 | | | Alt-1 PER RFP | | |
|---|---|---|---|---|---|---|---|
| | | Energy 10^6 Btu/yr | Proposed / Base % | Peak kBtuh | Energy 10^6 Btu/yr | Proposed / Base % | Peak kBtuh |
| **Lighting - Conditioned** | Electricity | 4,221.7 | 14 | 746 | 2,926.3 | 69 | 486 |
| **Space Heating** | Electricity | 2,416.2 | 8 | 1,966 | 14.9 | 1 | 3 |
| | Gas | 0.0 | 0 | 0 | 1,167.3 | 0 | 1,943 |
| **Space Cooling** | Electricity | 4,488.7 | 15 | 2,031 | 2,206.1 | 49 | 664 |
| **Pumps** | Electricity | 2,321.8 | 8 | 540 | 413.9 | 18 | 93 |
| **Heat Rejection** | Electricity | 944.6 | 3 | 272 | 646.2 | 68 | 152 |
| **Fans - Conditioned** | Electricity | 3,536.7 | 12 | 712 | 2,214.6 | 63 | 417 |
| **Receptacles - Conditioned** | Electricity | 11,304.8 | 39 | 1,440 | 11,304.8 | 100 | 1,440 |
| **Total Building Consumption** | | **29,234.4** | | | **20,894.1** | | |

| | | * Alt-2 ASHRAE Baseline 90.1-1 | Alt-1 PER RFP |
|---|---|---|---|
| **Total** | **Number of hours heating load not met** | 0 | 552 |
| | **Number of hours cooling load not met** | 0 | 0 |

| | * Alt-2 ASHRAE Baseline 90.1-1 | | Alt-1 PER RFP | |
|---|---|---|---|---|
| | Energy 10^6 Btu/yr | Cost/yr $/yr | Energy 10^6 Btu/yr | Cost/yr $/yr |
| **Electricity** | 29,234.4 | 428,280 | 19,726.8 | 288,996 |
| **Gas** | 0.0 | 0 | 1,167.3 | 7,893 |
| **Total** | **29,234** | **428,280** | **20,894** | **296,889** |

# MONTHLY ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

------- Monthly Energy Consumption -------

| Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alternative: 1** | **PER RFP** | | | | | | | | | | | | |
| Electric | | | | | | | | | | | | | |
| On-Pk Cons. (kWh) | 431,030 | 391,761 | 454,308 | 474,777 | 510,013 | 528,141 | 549,820 | 554,063 | 516,421 | 473,779 | 448,427 | 447,373 | 5,779,914 |
| On-Pk Demand (kW) | 692 | 704 | 733 | 825 | 889 | 908 | 915 | 925 | 914 | 842 | 802 | 750 | 925 |
| Gas | | | | | | | | | | | | | |
| On-Pk Cons. (therms) | 5,041 | 2,060 | 800 | 428 | 333 | 236 | 235 | 224 | 259 | 453 | 611 | 994 | 11,673 |
| On-Pk Demand (therms/hr) | 19 | 9 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 19 |
| Water | | | | | | | | | | | | | |
| Cons. (1000gal) | 219 | 226 | 334 | 501 | 587 | 707 | 765 | 783 | 657 | 430 | 370 | 314 | 5,891 |

## Energy Consumption

| | | |
|---|---|---|
| Building | 78,464 | Btu/(ft2-year) |
| Source | 226,879 | Btu/(ft2-year) |
| Floor Area | 266,288 | ft2 |

## Environmental Impact Analysis

| | |
|---|---|
| CO2 | 7,649,542 lbm/year |
| SO2 | 36,476 gm/year |
| NOX | 10,211 gm/year |

# MONTHLY ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

------- Monthly Energy Consumption -------

| Utility | | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alternative: 2** | **ASHRAE Baseline 90.1-10 Climate Zone 2A** | | | | | | | | | | | | | |
| Electric | | | | | | | | | | | | | | |
| | On-Pk Cons. (kWh) | 702,378 | 604,861 | 622,567 | 669,696 | 739,571 | 817,678 | 877,164 | 892,643 | 776,279 | 636,394 | 606,566 | 619,804 | 8,565,600 |
| | On-Pk Demand (kW) | 1,142 | 1,259 | 1,063 | 1,212 | 1,388 | 1,569 | 1,599 | 1,626 | 1,481 | 1,136 | 1,090 | 1,020 | 1,626 |
| Water | | | | | | | | | | | | | | |
| | Cons. (1000gal) | 35 | 30 | 223 | 614 | 770 | 1,109 | 1,245 | 1,293 | 964 | 373 | 273 | 121 | 7,050 |

| Energy Consumption | | |
|---|---|---|
| Building | 109,785 | Btu/(ft2-year) |
| Source | 329,387 | Btu/(ft2-year) |
| Floor Area | 266,288 | ft2 |

| Environmental Impact Analysis | |
|---|---|
| CO2 | 11,347,139 lbm/year |
| SO2 | 54,107 gm/year |
| NOX | 15,147 gm/year |

# EQUIPMENT ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

Alternative: 1 PER RFP

------- Monthly Consumption -------

| Equipment - Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Lights** | | | | | | | | | | | | | |
| Electric (kWh) | 72,705.8 | 65,677.2 | 73,170.1 | 70,285.6 | 72,938.0 | 70,749.8 | 72,473.7 | 73,170.1 | 70,285.6 | 72,937.9 | 70,517.7 | 72,473.7 | 857,385.1 |
| Peak (kW) | 142.4 | 142.4 | 142.4 | 142.4 | 142.4 | 142.4 | 142.4 | 142.4 | 142.4 | 142.4 | 142.4 | 142.4 | 142.4 |
| **Misc. Ld** | | | | | | | | | | | | | |
| Electric (kWh) | 281,073.0 | 253,888.5 | 282,067.9 | 271,845.9 | 281,570.6 | 272,840.5 | 280,575.7 | 282,067.9 | 271,845.9 | 281,570.6 | 272,343.2 | 280,575.7 | 3,312,265.3 |
| Peak (kW) | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 |
| **Cooling Coil Condensate** | | | | | | | | | | | | | |
| Recoverable Water (1000gal) | 0.4 | 0.6 | 2.0 | 29.5 | 38.7 | 66.6 | 80.5 | 83.4 | 55.0 | 11.9 | 8.9 | 2.9 | 380.3 |
| Peak (1000gal/Hr) | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 |
| **Bsu 1: Domestic Hot Water Load** | | | | | | | | | | | | | |
| Proc. Hot Water (therms) | 18,614.9 | 16,813.4 | 18,614.9 | 18,014.4 | 18,614.9 | 18,014.4 | 18,614.9 | 18,614.9 | 18,014.4 | 18,614.9 | 18,014.4 | 18,614.9 | 219,175.1 |
| Peak (therms/Hr) | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| **Cpl 1: Cooling plant - 001 [Sum of dsn coil capacities=583.1 tons]** | | | | | | | | | | | | | |
| **Water-cooled chiller - 001 (50%) [Clg Nominal Capacity/F.L.Rate=291.5 tons / 165.0 kW] (Cooling Equipment)** | | | | | | | | | | | | | |
| Electric (kWh) | 14,742.9 | 15,465.4 | 25,826.0 | 53,738.2 | 70,225.8 | 86,313.7 | 93,719.0 | 94,009.1 | 82,231.9 | 39,595.6 | 30,956.5 | 23,400.4 | 630,224.4 |
| Peak (kW) | 31.5 | 38.2 | 57.0 | 143.4 | 165.0 | 165.0 | 165.0 | 165.0 | 165.0 | 147.5 | 111.2 | 70.1 | 165.0 |
| **Cooling Tower w/ VFD [Design Heat Rejection/F.L.Rate=338.5 tons / 22.34 kW]** | | | | | | | | | | | | | |
| Electric (kWh) | 4,144.2 | 3,350.7 | 12,333.2 | 16,084.3 | 16,620.5 | 16,084.3 | 16,620.5 | 16,620.5 | 16,084.3 | 15,672.9 | 14,310.4 | 10,411.1 | 158,336.8 |
| Peak (kW) | 16.7 | 18.1 | 22.3 | 22.3 | 22.3 | 22.3 | 22.3 | 22.3 | 22.3 | 22.3 | 22.3 | 22.3 | 22.3 |
| **Cooling Tower w/ VFD** | | | | | | | | | | | | | |
| Make Up Water (1000gal) | 213.0 | 220.7 | 328.6 | 495.1 | 580.2 | 645.1 | 689.2 | 690.7 | 628.7 | 423.8 | 363.9 | 307.8 | 5,586.8 |
| Peak (1000gal/Hr) | 0.4 | 0.5 | 0.6 | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 0.9 | 0.7 | 1.1 |
| **CV Cond Wtr Pump (12 F Delta T) [F.L.Rate=6.59 kW] (Misc Accessory Equipment)** | | | | | | | | | | | | | |
| Electric (kWh) | 4,902.1 | 4,427.7 | 4,902.1 | 4,744.0 | 4,902.1 | 4,744.0 | 4,902.1 | 4,902.1 | 4,744.0 | 4,902.1 | 4,744.0 | 4,902.1 | 57,718.4 |
| Peak (kW) | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| **Cond energy transfer pump [F.L.Rate=2.46 kW] (Misc Accessory Equipment)** | | | | | | | | | | | | | |
| Electric (kWh) | 216.2 | 225.4 | 363.4 | 767.7 | 1,014.9 | 1,260.9 | 1,373.0 | 1,377.4 | 1,198.6 | 556.4 | 432.6 | 332.8 | 9,119.1 |
| Peak (kW) | 0.4 | 0.5 | 0.8 | 2.1 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.2 | 1.6 | 1.0 | 2.5 |

# EQUIPMENT ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

Alternative: 1 PER RFP

| Equipment - Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ------- Monthly Consumption ------- | | | | | | | | | | | | |
| **Cpl 1: Cooling plant - 001 [Sum of dsn coil capacities=583.1 tons]** | | | | | | | | | | | | | |
| Eq5003 - Var vol chill water pump [F.L.Rate=49.24 kW] (Cooling Plant Circulation Pump) | | | | | | | | | | | | | |
| Electric (kWh) | 1,744.4 | 1,729.9 | 2,372.9 | 3,256.3 | 3,738.6 | 4,517.1 | 4,892.5 | 5,054.2 | 4,153.4 | 2,894.5 | 2,552.5 | 2,259.0 | 39,165.3 |
| Peak (kW) | 3.1 | 3.4 | 4.1 | 6.2 | 7.3 | 9.3 | 9.7 | 10.3 | 9.0 | 6.3 | 5.5 | 4.5 | 10.3 |
| Water-cooled chiller - 002 (50%) [Clg Nominal Capacity/F.L.Rate=291.5 tons / 165.0 kW] (Cooling Equipment) | | | | | | | | | | | | | |
| Electric (kWh) | 0.0 | 0.0 | 0.0 | 0.0 | 6.1 | 3,916.6 | 4,796.5 | 5,847.1 | 1,598.5 | 0.0 | 0.0 | 0.0 | 16,164.8 |
| Peak (kW) | 0.0 | 0.0 | 0.0 | 0.0 | 5.8 | 19.7 | 23.8 | 29.4 | 18.3 | 0.0 | 0.0 | 0.0 | 29.4 |
| Cooling Tower w/ VFD [Design Heat Rejection/F.L.Rate=338.5 tons / 22.34 kW] | | | | | | | | | | | | | |
| Electric (kWh) | 0.0 | 0.0 | 0.0 | 0.0 | 1,161.7 | 7,863.5 | 8,310.2 | 8,310.2 | 5,361.4 | 0.0 | 0.0 | 0.0 | 31,007.0 |
| Peak (kW) | 0.0 | 0.0 | 0.0 | 0.0 | 22.3 | 22.3 | 22.3 | 22.3 | 22.3 | 0.0 | 0.0 | 0.0 | 22.3 |
| Cooling Tower w/ VFD | | | | | | | | | | | | | |
| Make Up Water (1000gal) | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 55.9 | 69.6 | 86.2 | 23.0 | 0.0 | 0.0 | 0.0 | 235.3 |
| Peak (1000gal/Hr) | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.3 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 |
| CV Cond Wtr Pump (12 F Delta T) [F.L.Rate=6.59 kW] (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Electric (kWh) | 0.0 | 0.0 | 0.0 | 0.0 | 342.6 | 2,319.3 | 2,451.1 | 2,451.1 | 1,581.3 | 0.0 | 0.0 | 0.0 | 9,145.3 |
| Peak (kW) | 0.0 | 0.0 | 0.0 | 0.0 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 0.0 | 0.0 | 0.0 | 6.6 |
| **Hpl 1: Heating plant - 001 [Sum of dsn coil capacities=4,602 mbh]** | | | | | | | | | | | | | |
| Boiler - 001 - 33% [Nominal Capacity/F.L.Rate=1,518 mbh / 16.88 Therms] (Heating Equipment) | | | | | | | | | | | | | |
| Gas (therms) | 5,041.0 | 2,060.2 | 800.3 | 427.8 | 332.6 | 235.8 | 234.9 | 223.6 | 258.8 | 453.0 | 611.4 | 993.6 | 11,672.8 |
| Peak (therms/Hr) | 16.6 | 9.4 | 2.3 | 0.7 | 0.5 | 0.4 | 0.4 | 0.4 | 0.5 | 0.8 | 1.1 | 1.8 | 16.6 |
| Heating water circ pump [F.L.Rate=0.70 kW] (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Electric (kWh) | 519.8 | 469.5 | 519.8 | 503.1 | 519.8 | 503.1 | 519.8 | 519.8 | 503.1 | 519.8 | 503.1 | 519.8 | 6,120.7 |
| Peak (kW) | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| Make-up water - 5.18e-006 gal/btu (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Make Up Water (1000gal) | 5.9 | 5.3 | 5.9 | 5.7 | 5.9 | 5.7 | 5.9 | 5.9 | 5.7 | 5.9 | 5.7 | 5.9 | 68.9 |
| Peak (1000gal/Hr) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cntl panel & interlocks - 0.5 KW [F.L.Rate=0.50 kW] (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Electric (kWh) | 372.0 | 336.0 | 372.0 | 360.0 | 372.0 | 360.0 | 372.0 | 372.0 | 360.0 | 372.0 | 360.0 | 372.0 | 4,380.0 |
| Peak (kW) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |

# EQUIPMENT ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

Alternative: 1 PER RFP

| Equipment - Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ------- Monthly Consumption ------- | | | | | | | | | | | | |
| **Hpl 1: Heating plant - 001 [Sum of dsn coil capacities=4,602 mbh]** | | | | | | | | | | | | | |
| 90.1-10 Min Var Vol HW Pump [F.L.Rate=0.15 kW] (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Electric (kWh) | 5.2 | 2.4 | 1.0 | 0.6 | 0.5 | 0.3 | 0.3 | 0.3 | 0.4 | 0.6 | 0.8 | 1.2 | 13.6 |
| Peak (kW) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Boiler - 002 - 33% [Nominal Capacity/F.L.Rate=1,518 mbh / 16.88 Therms] (Heating Equipment) | | | | | | | | | | | | | |
| Peak (therms/Hr) | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.8 |
| Heating water circ pump [F.L.Rate=0.70 kW] (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Peak (kW) | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 |
| Make-up water - 5.18e-006 gal/btu (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Peak (1000gal/Hr) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cntl panel & interlocks - 0.5 KW [F.L.Rate=0.50 kW] (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Peak (kW) | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 |
| **Hpl 2: Service water heating [Sum of dsn coil capacities=0 mbh]** | | | | | | | | | | | | | |
| **Sys 1: VAV Systems** | | | | | | | | | | | | | |
| 90.1-07 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=126,651 cfm / 61.92 kW] (Main Clg Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 15,714.9 | 14,833.8 | 17,318.6 | 17,596.0 | 18,674.1 | 18,757.9 | 19,477.9 | 19,801.8 | 18,947.8 | 18,432.7 | 17,316.8 | 17,196.0 | 214,068.2 |
| Peak (kW) | 24.4 | 25.4 | 27.3 | 30.8 | 33.0 | 36.5 | 38.6 | 39.3 | 38.8 | 34.0 | 30.8 | 29.1 | 39.3 |
| FC Centrifugal const vol [DsnAirflow/F.L.Rate=26,327 cfm / 9.94 kW] (Room Exhaust Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 1,667.7 | 1,311.1 | 1,386.2 | 1,312.7 | 1,343.2 | 1,288.9 | 1,328.6 | 1,322.5 | 1,279.3 | 1,351.1 | 1,324.8 | 1,396.2 | 16,312.2 |
| Peak (kW) | 2.8 | 2.3 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.3 | 2.8 |
| 90.1-07 Min VAV FC Centrifugal [DsnAirflow/F.L.Rate=126,651 cfm / 49.39 kW] (Main Return Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 10,796.8 | 10,424.0 | 12,244.6 | 12,503.5 | 13,298.1 | 13,390.5 | 13,920.4 | 14,173.9 | 13,553.9 | 13,101.6 | 12,274.6 | 12,144.7 | 151,826.5 |
| Peak (kW) | 17.4 | 18.2 | 19.5 | 22.3 | 24.1 | 26.9 | 28.6 | 29.2 | 28.8 | 25.0 | 22.4 | 20.9 | 29.2 |
| FC Centrifugal disch dmprs [DsnAirflow/F.L.Rate=30,862 cfm / 12.00 kW] (System Exhaust Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 5,191.4 | 4,154.2 | 4,573.7 | 4,487.8 | 4,680.1 | 4,580.0 | 4,741.3 | 4,765.5 | 4,599.5 | 4,657.7 | 4,473.1 | 4,582.9 | 55,487.2 |
| Peak (kW) | 8.3 | 8.3 | 6.6 | 6.8 | 6.9 | 7.1 | 7.3 | 7.3 | 7.3 | 7.0 | 6.9 | 8.5 | 8.5 |
| **Sys 2: VAV - Single Zone** | | | | | | | | | | | | | |
| Fixed-plate HX (OA preconditioning) [Stage 1 Sensible Energy Recovery] | | | | | | | | | | | | | |
| Energy Recovered (therms) | 144.8 | 94.0 | 0.0 | 3.8 | 27.6 | 61.7 | 51.5 | 64.8 | 40.7 | 0.0 | 0.0 | 0.0 | 488.9 |
| Peak (therms/Hr) | 0.9 | 1.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 1.0 |

# EQUIPMENT ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

Alternative: 1 PER RFP

| Equipment - Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ------- Monthly Consumption ------- | | | | | | | | | | | | |
| **Sys 2: VAV - Single Zone** | | | | | | | | | | | | | |
| 90.1-07 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=37,629 cfm / 26.22 kW] (Main Clg Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 2,637.9 | 2,382.6 | 2,637.8 | 3,336.6 | 3,920.3 | 4,277.4 | 4,446.8 | 4,381.9 | 3,794.6 | 3,037.1 | 2,584.6 | 2,637.8 | 40,075.3 |
| Peak (kW) | 3.9 | 3.9 | 3.9 | 8.5 | 10.1 | 16.0 | 19.1 | 20.4 | 14.6 | 12.3 | 10.9 | 5.9 | 20.4 |
| FC Centrifugal const vol [DsnAirflow/F.L.Rate=6,937 cfm / 4.58 kW] (System Exhaust Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 1,568.7 | 1,316.7 | 1,191.4 | 1,259.9 | 1,531.7 | 1,591.8 | 1,691.5 | 1,693.9 | 1,542.6 | 1,149.8 | 1,125.6 | 1,140.6 | 16,804.2 |
| Peak (kW) | 3.8 | 3.8 | 3.5 | 3.4 | 3.3 | 3.5 | 3.1 | 3.2 | 3.3 | 3.7 | 2.4 | 1.8 | 3.8 |
| **Sys 3: MZ- TRIPLE DECK** | | | | | | | | | | | | | |
| Total-energy wheel (OA precondition) [Stage 1 Sensible Energy Recovery] | | | | | | | | | | | | | |
| Energy Recovered (therms) | 0.0 | 0.0 | 0.0 | 1.5 | 5.3 | 10.8 | 9.7 | 11.7 | 7.4 | 0.0 | 0.0 | 0.0 | 46.5 |
| Peak (therms/Hr) | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| Total-energy wheel (OA precondition) [Stage 1 Parasitics] | | | | | | | | | | | | | |
| Electric (kWh) | 0.0 | 0.0 | 0.0 | 78.4 | 111.6 | 156.0 | 161.2 | 173.6 | 132.0 | 0.0 | 0.0 | 0.0 | 812.8 |
| Peak (kW) | 0.0 | 0.0 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.0 | 0.4 |
| AF Centrifugal const vol [DsnAirflow/F.L.Rate=21,456 cfm / 9.54 kW] (Main Clg Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 3,326.5 | 3,004.6 | 3,326.5 | 3,229.5 | 3,340.7 | 3,238.3 | 3,345.8 | 3,347.4 | 3,235.1 | 3,326.5 | 3,219.2 | 3,326.5 | 39,266.3 |
| Peak (kW) | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |
| **Sys 4: HEAT VENT ONLY** | | | | | | | | | | | | | |
| FC Centrifugal const vol [DsnAirflow/F.L.Rate=3,445 cfm / 1.30 kW] (Main Htg Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 968.2 | 874.5 | 968.2 | 937.0 | 968.2 | 937.0 | 968.2 | 968.2 | 937.0 | 968.2 | 937.0 | 968.2 | 11,399.6 |
| Peak (kW) | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| FC Centrifugal const vol [DsnAirflow/F.L.Rate=19.19 cfm / 0.01 kW] (System Exhaust Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 5.1 | 4.6 | 5.1 | 4.9 | 5.1 | 4.9 | 5.1 | 5.1 | 4.9 | 5.1 | 4.9 | 5.1 | 60.0 |
| Peak (kW) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Sys 5: FAN COILS** | | | | | | | | | | | | | |
| FC Centrifugal const vol [DsnAirflow/F.L.Rate=32,610 cfm / 11.63 kW] (Main Clg Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 8,653.5 | 7,816.0 | 8,653.5 | 8,374.3 | 8,653.5 | 8,374.3 | 8,653.5 | 8,653.5 | 8,374.3 | 8,653.5 | 8,374.3 | 8,653.5 | 101,887.5 |
| Peak (kW) | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 |

# EQUIPMENT ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

Alternative: 1 PER RFP

| Equipment - Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ------- Monthly Consumption ------- | | | | | | | | | | | | |
| Sys 5: FAN COILS | | | | | | | | | | | | | |
| FC Centrifugal const vol [DsnAirflow/F.L.Rate=277.8 cfm / 0.10 kW] (System Exhaust Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 73.7 | 66.6 | 73.7 | 71.3 | 73.7 | 71.3 | 73.7 | 73.7 | 71.3 | 73.7 | 71.3 | 73.7 | 867.9 |
| Peak (kW) | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

# EQUIPMENT ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

Alternative: 2 ASHRAE Baseline 90.1-10 Climate Zone 2A

| Equipment - Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ------- Monthly Consumption ------- | | | | | | | | | | | | |
| **Lights** | | | | | | | | | | | | | |
| Electric (kWh) | 104,875.0 | 94,737.8 | 105,611.3 | 101,373.3 | 105,243.2 | 102,109.5 | 104,506.9 | 105,611.3 | 101,373.4 | 105,243.2 | 101,741.4 | 104,507.0 | 1,236,933.3 |
| Peak (kW) | 218.6 | 218.6 | 218.6 | 218.6 | 218.6 | 218.6 | 218.6 | 218.6 | 218.6 | 218.6 | 218.6 | 218.6 | 218.6 |
| **Misc. Ld** | | | | | | | | | | | | | |
| Electric (kWh) | 281,073.0 | 253,888.5 | 282,067.9 | 271,845.9 | 281,570.6 | 272,840.5 | 280,575.8 | 282,067.9 | 271,846.0 | 281,570.7 | 272,343.2 | 280,575.8 | 3,312,265.5 |
| Peak (kW) | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 | 421.9 |
| **Cooling Coil Condensate** | | | | | | | | | | | | | |
| Recoverable Water (1000gal) | 0.8 | 1.2 | 8.2 | 100.4 | 134.3 | 238.8 | 292.3 | 303.0 | 198.0 | 35.4 | 26.6 | 5.4 | 1,344.2 |
| Peak (1000gal/Hr) | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.5 | 0.6 | 0.6 | 0.5 | 0.2 | 0.2 | 0.0 | 0.6 |
| **Bsu 1: Domestic Hot Water Load** | | | | | | | | | | | | | |
| Proc. Hot Water (therms) | 18,614.9 | 16,813.4 | 18,614.9 | 18,014.4 | 18,614.9 | 18,014.4 | 18,614.9 | 18,614.9 | 18,014.4 | 18,614.9 | 18,014.4 | 18,614.9 | 219,175.1 |
| Peak (therms/Hr) | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| **Cpl 1: Cooling plant - 001 [Sum of dsn coil capacities=1,109 tons]** | | | | | | | | | | | | | |
| **Water-cooled chiller - 001 [Clg Nominal Capacity/F.L.Rate=554.7 tons / 332.8 kW] (Cooling Equipment)** | | | | | | | | | | | | | |
| Electric (kWh) | 8,128.8 | 7,119.5 | 41,697.9 | 106,589.8 | 110,422.1 | 146,786.8 | 151,635.9 | 150,245.3 | 135,598.2 | 65,140.5 | 49,101.1 | 24,881.8 | 997,347.6 |
| Peak (kW) | 75.9 | 76.9 | 136.3 | 265.4 | 305.2 | 306.0 | 311.2 | 315.0 | 328.7 | 200.3 | 152.8 | 111.3 | 328.7 |
| **90.1 Min Cooling Tower [Design Heat Rejection/F.L.Rate=649.4 tons / 41.37 kW]** | | | | | | | | | | | | | |
| Electric (kWh) | 1,657.1 | 1,428.4 | 8,319.9 | 24,416.2 | 26,754.3 | 29,470.5 | 30,775.6 | 30,775.7 | 28,314.0 | 16,458.8 | 11,651.7 | 4,056.3 | 214,078.6 |
| Peak (kW) | 7.7 | 6.2 | 33.0 | 41.4 | 41.4 | 41.4 | 41.4 | 41.4 | 41.4 | 41.4 | 41.4 | 20.2 | 41.4 |
| **90.1 Min Cooling Tower** | | | | | | | | | | | | | |
| Make Up Water (1000gal) | 35.3 | 30.9 | 223.8 | 614.0 | 626.4 | 785.5 | 800.7 | 789.9 | 740.4 | 374.7 | 274.6 | 122.3 | 5,418.6 |
| Peak (1000gal/Hr) | 0.4 | 0.4 | 0.9 | 1.5 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.2 | 1.0 | 0.7 | 1.6 |
| **90.1 Min CV Chilled Water pump [F.L.Rate=24.41 kW] (Misc Accessory Equipment)** | | | | | | | | | | | | | |
| Electric (kWh) | 7,663.9 | 6,834.1 | 15,718.3 | 17,573.2 | 18,159.0 | 17,573.2 | 18,159.1 | 18,159.0 | 17,573.3 | 17,011.9 | 15,181.3 | 11,007.7 | 180,614.0 |
| Peak (kW) | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 |
| **90.1 Min CV Cond Water Pump [F.L.Rate=34.29 kW] (Misc Accessory Equipment)** | | | | | | | | | | | | | |
| Electric (kWh) | 10,766.1 | 9,600.3 | 22,080.8 | 24,686.6 | 25,509.5 | 24,686.6 | 25,509.4 | 25,509.5 | 24,686.6 | 23,897.9 | 21,326.5 | 15,463.4 | 253,723.1 |
| Peak (kW) | 34.3 | 34.3 | 34.3 | 34.3 | 34.3 | 34.3 | 34.3 | 34.3 | 34.3 | 34.3 | 34.3 | 34.3 | 34.3 |

# EQUIPMENT ENERGY CONSUMPTION
By ROSSER INTERNATIONAL

Alternative: 2 ASHRAE Baseline 90.1-10 Climate Zone 2A

| Equipment - Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ------- Monthly Consumption ------- | | | | | | | | | | | | |
| **Cpl 1: Cooling plant - 001 [Sum of dsn coil capacities=1,109 tons]** | | | | | | | | | | | | | |
| Cntl panel & interlocks - 1 KW [F.L.Rate=1 kW] (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Electric (kWh) | 314.0 | 280.0 | 644.0 | 720.0 | 744.0 | 720.0 | 744.0 | 744.0 | 720.0 | 697.0 | 622.0 | 451.0 | 7,400.0 |
| Peak (kW) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 90.1 Pump Riding the Pump Curve [F.L.Rate=48.81 kW] (Cooling Plant Circulation Pump) | | | | | | | | | | | | | |
| Electric (kWh) | 1,312.0 | 1,153.1 | 7,534.3 | 16,199.3 | 18,763.2 | 23,272.9 | 25,378.0 | 25,846.4 | 21,276.8 | 11,173.5 | 8,758.8 | 4,357.7 | 165,025.9 |
| Peak (kW) | 13.8 | 14.1 | 23.7 | 32.5 | 37.4 | 44.2 | 45.0 | 45.7 | 41.5 | 29.1 | 25.6 | 20.4 | 45.7 |
| Water-cooled chiller - 002 [Clg Nominal Capacity/F.L.Rate=554.7 tons / 332.8 kW] (Cooling Equipment) | | | | | | | | | | | | | |
| Electric (kWh) | 0.0 | 0.0 | 0.0 | 0.0 | 25,569.3 | 61,137.7 | 85,395.5 | 97,021.8 | 41,787.4 | 0.0 | 0.0 | 0.0 | 310,911.8 |
| Peak (kW) | 0.0 | 0.0 | 0.0 | 0.0 | 167.4 | 251.2 | 264.3 | 277.7 | 209.0 | 0.0 | 0.0 | 0.0 | 277.7 |
| 90.1 Min Cooling Tower [Design Heat Rejection/F.L.Rate=649.4 tons / 41.37 kW] | | | | | | | | | | | | | |
| Electric (kWh) | 0.0 | 0.0 | 0.0 | 0.0 | 7,156.2 | 12,409.5 | 17,497.4 | 19,234.8 | 9,389.9 | 0.0 | 0.0 | 0.0 | 65,687.7 |
| Peak (kW) | 0.0 | 0.0 | 0.0 | 0.0 | 41.4 | 41.4 | 41.4 | 41.4 | 41.4 | 0.0 | 0.0 | 0.0 | 41.4 |
| 90.1 Min Cooling Tower | | | | | | | | | | | | | |
| Make Up Water (1000gal) | 0.0 | 0.0 | 0.0 | 0.0 | 141.9 | 322.9 | 444.8 | 502.9 | 225.0 | 0.0 | 0.0 | 0.0 | 1,637.5 |
| Peak (1000gal/Hr) | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 1.3 | 1.3 | 1.4 | 1.1 | 0.0 | 0.0 | 0.0 | 1.4 |
| 90.1 Min CV Chilled Water pump [F.L.Rate=24.41 kW] (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Electric (kWh) | 0.0 | 0.0 | 0.0 | 0.0 | 4,222.5 | 7,322.2 | 10,324.3 | 11,349.4 | 5,540.5 | 0.0 | 0.0 | 0.0 | 38,758.8 |
| Peak (kW) | 0.0 | 0.0 | 0.0 | 0.0 | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 | 0.0 | 0.0 | 0.0 | 24.4 |
| 90.1 Min CV Cond Water Pump [F.L.Rate=34.29 kW] (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Electric (kWh) | 0.0 | 0.0 | 0.0 | 0.0 | 5,931.6 | 10,286.1 | 14,503.4 | 15,943.4 | 7,783.1 | 0.0 | 0.0 | 0.0 | 54,447.6 |
| Peak (kW) | 0.0 | 0.0 | 0.0 | 0.0 | 34.3 | 34.3 | 34.3 | 34.3 | 34.3 | 0.0 | 0.0 | 0.0 | 34.3 |
| Cntl panel & interlocks - 1 KW [F.L.Rate=1 kW] (Misc Accessory Equipment) | | | | | | | | | | | | | |
| Electric (kWh) | 0.0 | 0.0 | 0.0 | 0.0 | 173.0 | 300.0 | 423.0 | 465.0 | 227.0 | 0.0 | 0.0 | 0.0 | 1,588.0 |
| Peak (kW) | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 1.0 |
| **Hpl 1: Heating plant - 002 [Sum of dsn coil capacities=11,445 mbh]** | | | | | | | | | | | | | |
| Electric Resistance - 001 [Nominal Capacity/F.L.Rate=11,445 mbh / 3,353 kW] (Heating Equipment) | | | | | | | | | | | | | |
| Electric (kWh) | 200,159.1 | 150,714.8 | 56,430.3 | 24,559.4 | 21,883.1 | 19,019.3 | 19,797.6 | 19,460.7 | 20,061.2 | 31,907.2 | 44,744.9 | 89,539.3 | 698,276.6 |
| Peak (kW) | 558.7 | 532.1 | 234.7 | 63.2 | 48.8 | 51.5 | 49.7 | 51.0 | 48.8 | 90.0 | 166.8 | 359.5 | 558.7 |
| **Sys 1: VAV-FPB** | | | | | | | | | | | | | |

# EQUIPMENT ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

Alternative: 2 ASHRAE Baseline 90.1-10 Climate Zone 2A

| Equipment - Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ------- Monthly Consumption ------- | | | | | | | | | | | | |
| **Sys 1: VAV-FPB** | | | | | | | | | | | | | |
| 90.1-07 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=230,669 cfm / 232.5 kW (**Orig F.L.Rate=394.7 kW (Main Clg Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 73,138.6 | 67,673.1 | 79,380.7 | 81,100.6 | 86,348.0 | 87,265.0 | 90,352.0 | 91,559.1 | 88,345.8 | 82,991.8 | 78,763.3 | 78,957.8 | 985,875.8 |
| Peak (kW) | 118.6 | 126.7 | 133.7 | 146.4 | 158.1 | 170.6 | 177.9 | 178.9 | 177.2 | 157.9 | 150.0 | 142.3 | 178.9 |
| Parallel Fan Powered VAV [DsnAirflow/F.L.Rate=171,080 cfm / 72.46 kW (**Orig F.L.Rate=72.46 kW)] (Main Htg Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 11,867.5 | 7,681.2 | 4,263.5 | 2,189.1 | 1,934.8 | 1,661.7 | 1,733.1 | 1,691.1 | 1,759.6 | 2,763.8 | 3,585.4 | 6,117.6 | 47,248.4 |
| Peak (kW) | 26.0 | 20.3 | 13.4 | 5.4 | 4.1 | 4.2 | 4.2 | 4.4 | 4.2 | 7.9 | 11.2 | 15.8 | 26.0 |
| **Sys 2: Heat Vent Only** | | | | | | | | | | | | | |
| FC Centrifugal Const Vol [DsnAirflow/F.L.Rate=1,368 cfm / 0.41 kW (**Orig F.L.Rate=2.07 kW)] (Main Htg Fan) | | | | | | | | | | | | | |
| Electric (kWh) | 305.4 | 275.9 | 305.4 | 295.6 | 305.4 | 295.6 | 305.4 | 305.4 | 295.6 | 305.4 | 295.6 | 305.4 | 3,596.1 |
| Peak (kW) | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |

# HVAC APPENDIX B

# LIFE CYCLE COST ANALYSIS

## Economic Summary

### Project Information

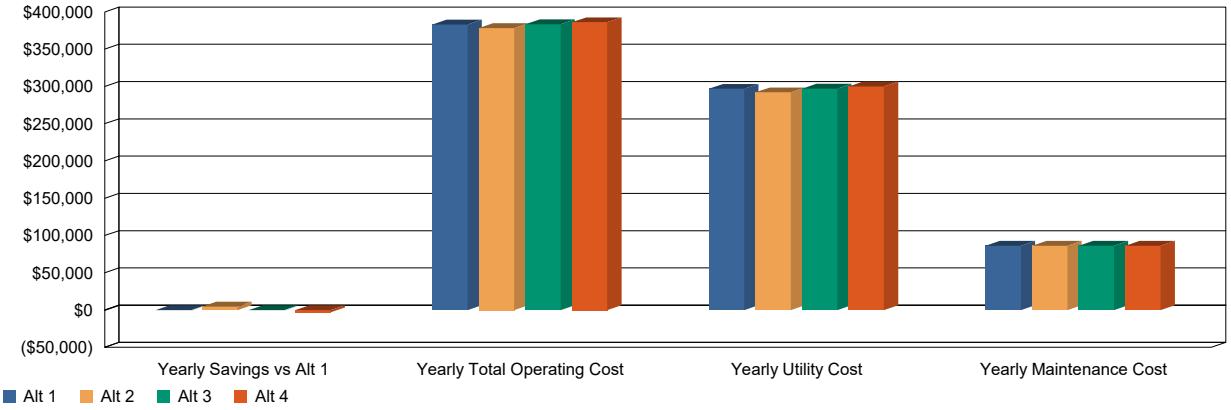
Location
Project Name
User
Company
Comments TRACE 700 v6_2_7 - gbXML imported on Friday, May 19, 2017 at 10:48 AM

Study Life: 20 years
Cost of Capital: 10 %
Alternative 1: BASELINE
Alternative 2: Solar Domestic preheat
Alternative 3: Run around coils at all AHU
Alternative 4: Energy Wheels

### Economic Comparison of Alternatives

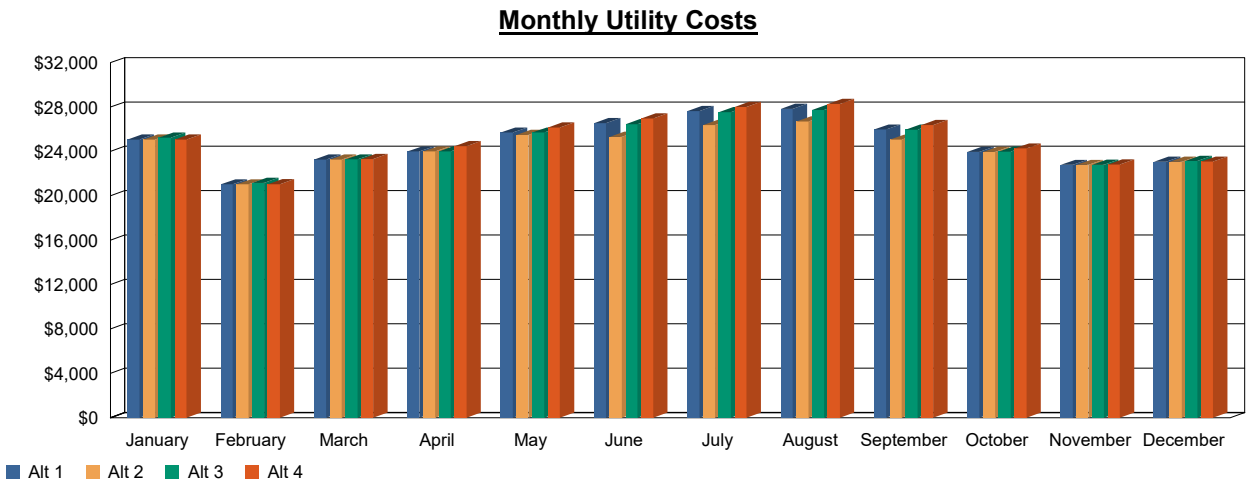
| | Yearly Savings ($) | First Cost Difference ($) | Cumulative Cash Flow Difference ($) | Simple Payback (yrs.) | Net Present Value ($) | Life Cycle Payback (yrs.) | Internal Rate of Return (%) | Life Cycle Cost |
|---|---|---|---|---|---|---|---|---|
| Alt 2 vs Alt 1 | 4,756 | 250,000 | 1,884,848 | 52.6 | 365,533 | 10.0 | 19.6 | 365,532.90 |
| Alt 3 vs Alt 1 | -132 | 385,000 | -388,559 | No Payback | -386,384 | No Payback | Does Not Payback | -386,384.20 |
| Alt 4 vs Alt 1 | -2,998 | 700,000 | -780,560 | No Payback | -731,332 | No Payback | Does Not Payback | -731,331.70 |
| Alt 3 vs Alt 2 | -4,888 | 135,000 | -2,273,407 | No Payback | -751,917 | No Payback | Does Not Payback | -751,917.10 |
| Alt 4 vs Alt 2 | -7,754 | 450,000 | -2,665,409 | No Payback | -1,096,865 | No Payback | Does Not Payback | -1,096,865.00 |
| Alt 4 vs Alt 3 | -2,866 | 315,000 | -392,001 | No Payback | -344,948 | No Payback | Does Not Payback | -344,947.50 |

### Annual Operating Costs




| | Yearly Savings vs Alt 1 | Yearly Total Operating Cost ($) | Yearly Utility Cost ($) | Yearly Maintenance Cost ($) | Plant kWh/ton-hr |
|---|---|---|---|---|---|
| Alt 1 | 0 | 383,166 | 296,889 | 86,277 | 0.581 |
| Alt 2 | 4,756 | 378,411 | 292,133 | 86,277 | 0.523 |
| Alt 3 | -132 | 383,299 | 297,021 | 86,277 | 0.586 |
| Alt 4 | -2,998 | 386,164 | 299,887 | 86,277 | 0.584 |

# B. HVAC APPENDIX - LIFE CYCLE COST ANALYSIS




Project Name:
Dataset Name: OPTB_ESCAMBIA-LCC.TRC

TRACE 700 6.3.1
calculated at 02:05 PM on 06/19/2017

## ALTERNATIVE COMPARISON

By ROSSER INTERNATIONAL

### Alternative 2 vs Alternative 1

| | |
|---|---|
| First Cost Difference | 250,000.00 |
| Down Payment Difference | 250,000.00 |
| Net Present Value of Incremental Cash Flows | 365,532.89 |
| Life Cycle Cost Difference | 365,532.89 |
| Revenue Penalty Difference | 0.00 |
| Simple Payback on Investment | 52.6 years |
| Life Cycle Payback on Investment | 10.0 years |
| Internal Rate of Return | 19.6 % |
| Cost of capital (%) | 10.0 |

| Year | Cash Flow Difference | Cumulative Cash Flow Difference | Present Value of Flow Difference | Net Present Value |
|---|---|---|---|---|
| 0 | -250,000.00 | -250,000.00 | -250,000.00 | -250,000.00 |
| 1 | 4,755.53 | -245,244.47 | 4,323.21 | -245,676.79 |
| 2 | 13,662.19 | -231,582.28 | 11,291.07 | -234,385.72 |
| 3 | 22,836.06 | -208,746.22 | 17,157.07 | -217,228.66 |
| 4 | 32,285.13 | -176,461.09 | 22,051.18 | -195,177.48 |
| 5 | 42,017.70 | -134,443.39 | 26,089.68 | -169,087.79 |
| 6 | 52,042.21 | -82,401.17 | 29,376.47 | -139,711.32 |
| 7 | 62,367.49 | -20,033.69 | 32,004.38 | -107,706.95 |
| 8 | 73,002.51 | 52,968.82 | 34,056.20 | -73,650.74 |
| 9 | 83,956.59 | 136,925.41 | 35,605.78 | -38,044.96 |
| 10 | 95,239.29 | 232,164.70 | 36,718.86 | -1,326.11 |
| 11 | 106,860.47 | 339,025.16 | 37,453.93 | 36,127.83 |
| 12 | 118,830.26 | 457,855.43 | 37,862.97 | 73,990.80 |
| 13 | 131,159.18 | 589,014.61 | 37,992.13 | 111,982.93 |
| 14 | 143,857.94 | 732,872.55 | 37,882.28 | 149,865.21 |
| 15 | 156,937.70 | 889,810.25 | 37,569.63 | 187,434.84 |
| 16 | 170,409.81 | 1,060,220.05 | 37,086.12 | 224,520.96 |
| 17 | 184,286.13 | 1,244,506.18 | 36,460.01 | 260,980.97 |
| 18 | 198,578.69 | 1,443,084.88 | 35,716.11 | 296,697.08 |
| 19 | 213,300.07 | 1,656,384.94 | 34,876.25 | 331,573.33 |
| 20 | 228,463.06 | 1,884,848.01 | 33,959.56 | 365,532.89 |

## ALTERNATIVE COMPARISON

By ROSSER INTERNATIONAL

### Alternative 3 vs Alternative 1

| | |
|---|---|
| First Cost Difference | 385,000.00 |
| Down Payment Difference | 385,000.00 |
| Net Present Value of Incremental Cash Flows | -386,384.23 |
| Life Cycle Cost Difference | -386,384.23 |
| Revenue Penalty Difference | 0.00 |
| Simple Payback on Investment | Does not pay back |
| Life Cycle Payback on Investment | Does not pay back |
| Internal Rate of Return | Does not pay back |
| Cost of capital (%) | 10.0 |

| Year | Cash Flow Difference | Cumulative Cash Flow Difference | Present Value of Flow Difference | Net Present Value |
|---|---|---|---|---|
| 0 | -385,000.00 | -385,000.00 | -385,000.00 | -385,000.00 |
| 1 | -132.46 | -385,132.46 | -120.42 | -385,120.42 |
| 2 | -136.43 | -385,268.89 | -112.75 | -385,233.17 |
| 3 | -140.52 | -385,409.41 | -105.58 | -385,338.74 |
| 4 | -144.74 | -385,554.15 | -98.86 | -385,437.60 |
| 5 | -149.08 | -385,703.23 | -92.57 | -385,530.17 |
| 6 | -153.55 | -385,856.78 | -86.68 | -385,616.85 |
| 7 | -158.16 | -386,014.94 | -81.16 | -385,698.01 |
| 8 | -162.90 | -386,177.85 | -76.00 | -385,774.00 |
| 9 | -167.79 | -386,345.64 | -71.16 | -385,845.16 |
| 10 | -172.83 | -386,518.47 | -66.63 | -385,911.80 |
| 11 | -178.01 | -386,696.48 | -62.39 | -385,974.19 |
| 12 | -183.35 | -386,879.83 | -58.42 | -386,032.61 |
| 13 | -188.85 | -387,068.68 | -54.70 | -386,087.31 |
| 14 | -194.52 | -387,263.20 | -51.22 | -386,138.54 |
| 15 | -200.35 | -387,463.55 | -47.96 | -386,186.50 |
| 16 | -206.36 | -387,669.91 | -44.91 | -386,231.41 |
| 17 | -212.55 | -387,882.46 | -42.05 | -386,273.46 |
| 18 | -218.93 | -388,101.39 | -39.38 | -386,312.84 |
| 19 | -225.50 | -388,326.89 | -36.87 | -386,349.71 |
| 20 | -232.26 | -388,559.16 | -34.52 | -386,384.23 |

# ALTERNATIVE COMPARISON

By ROSSER INTERNATIONAL

## Alternative 3 vs Alternative 2

| | |
|---|---|
| First Cost Difference | 135,000.00 |
| Down Payment Difference | 135,000.00 |
| Net Present Value of Incremental Cash Flows | -751,917.12 |
| Life Cycle Cost Difference | -751,917.12 |
| Revenue Penalty Difference | 0.00 |
| Simple Payback on Investment | Does not pay back |
| Life Cycle Payback on Investment | Does not pay back |
| Internal Rate of Return | Does not pay back |
| Cost of capital (%) | 10.0 |

| Year | Cash Flow Difference | Cumulative Cash Flow Difference | Present Value of Flow Difference | Net Present Value |
|---|---|---|---|---|
| 0 | -135,000.00 | -135,000.00 | -135,000.00 | -135,000.00 |
| 1 | -4,887.99 | -139,887.99 | -4,443.63 | -139,443.63 |
| 2 | -13,798.62 | -153,686.61 | -11,403.82 | -150,847.44 |
| 3 | -22,976.58 | -176,663.19 | -17,262.64 | -168,110.09 |
| 4 | -32,429.87 | -209,093.06 | -22,150.04 | -190,260.13 |
| 5 | -42,166.78 | -251,259.84 | -26,182.25 | -216,442.38 |
| 6 | -52,195.77 | -303,455.61 | -29,463.15 | -245,905.52 |
| 7 | -62,525.65 | -365,981.25 | -32,085.54 | -277,991.06 |
| 8 | -73,165.41 | -439,146.67 | -34,132.20 | -312,123.26 |
| 9 | -84,124.38 | -523,271.05 | -35,676.94 | -347,800.20 |
| 10 | -95,412.11 | -618,683.16 | -36,785.49 | -384,585.69 |
| 11 | -107,038.48 | -725,721.64 | -37,516.32 | -422,102.02 |
| 12 | -119,013.61 | -844,735.26 | -37,921.39 | -460,023.41 |
| 13 | -131,348.03 | -976,083.29 | -38,046.84 | -498,070.24 |
| 14 | -144,052.46 | -1,120,135.74 | -37,933.50 | -536,003.75 |
| 15 | -157,138.05 | -1,277,273.79 | -37,617.59 | -573,621.34 |
| 16 | -170,616.17 | -1,447,889.96 | -37,131.03 | -610,752.37 |
| 17 | -184,498.68 | -1,632,388.65 | -36,502.07 | -647,254.43 |
| 18 | -198,797.62 | -1,831,186.27 | -35,755.48 | -683,009.92 |
| 19 | -213,525.57 | -2,044,711.84 | -34,913.12 | -717,923.04 |
| 20 | -228,695.33 | -2,273,407.16 | -33,994.09 | -751,917.12 |

## ALTERNATIVE COMPARISON

By ROSSER INTERNATIONAL

### Alternative 4 vs Alternative 1

| | |
|---|---|
| First Cost Difference | 700,000.00 |
| Down Payment Difference | 700,000.00 |
| Net Present Value of Incremental Cash Flows | -731,331.70 |
| Life Cycle Cost Difference | -731,331.70 |
| Revenue Penalty Difference | 0.00 |
| Simple Payback on Investment | Does not pay back |
| Life Cycle Payback on Investment | Does not pay back |
| Internal Rate of Return | Does not pay back |
| Cost of capital (%) | 10.0 |

| Year | Cash Flow Difference | Cumulative Cash Flow Difference | Present Value of Flow Difference | Net Present Value |
|---|---|---|---|---|
| 0 | -700,000.00 | -700,000.00 | -700,000.00 | -700,000.00 |
| 1 | -2,998.11 | -702,998.11 | -2,725.56 | -702,725.56 |
| 2 | -3,088.06 | -706,086.17 | -2,552.11 | -705,277.67 |
| 3 | -3,180.70 | -709,266.87 | -2,389.71 | -707,667.38 |
| 4 | -3,276.12 | -712,542.99 | -2,237.63 | -709,905.01 |
| 5 | -3,374.40 | -715,917.40 | -2,095.24 | -712,000.25 |
| 6 | -3,475.64 | -719,393.03 | -1,961.91 | -713,962.16 |
| 7 | -3,579.90 | -722,972.94 | -1,837.06 | -715,799.21 |
| 8 | -3,687.30 | -726,660.24 | -1,720.15 | -717,519.37 |
| 9 | -3,797.92 | -730,458.16 | -1,610.69 | -719,130.06 |
| 10 | -3,911.86 | -734,370.02 | -1,508.19 | -720,638.25 |
| 11 | -4,029.21 | -738,399.23 | -1,412.21 | -722,050.46 |
| 12 | -4,150.09 | -742,549.32 | -1,322.35 | -723,372.81 |
| 13 | -4,274.59 | -746,823.92 | -1,238.20 | -724,611.01 |
| 14 | -4,402.83 | -751,226.75 | -1,159.40 | -725,770.41 |
| 15 | -4,534.92 | -755,761.67 | -1,085.62 | -726,856.03 |
| 16 | -4,670.96 | -760,432.63 | -1,016.54 | -727,872.57 |
| 17 | -4,811.09 | -765,243.72 | -951.85 | -728,824.42 |
| 18 | -4,955.43 | -770,199.15 | -891.28 | -729,715.69 |
| 19 | -5,104.09 | -775,303.24 | -834.56 | -730,550.25 |
| 20 | -5,257.21 | -780,560.45 | -781.45 | -731,331.70 |

## ALTERNATIVE COMPARISON

By ROSSER INTERNATIONAL

### Alternative 4 vs Alternative 2

| | |
|---|---|
| First Cost Difference | 450,000.00 |
| Down Payment Difference | 450,000.00 |
| Net Present Value of Incremental Cash Flows | -1,096,864.59 |
| Life Cycle Cost Difference | -1,096,864.59 |
| Revenue Penalty Difference | 0.00 |
| Simple Payback on Investment | Does not pay back |
| Life Cycle Payback on Investment | Does not pay back |
| Internal Rate of Return | Does not pay back |
| Cost of capital (%) | 10.0 |

| Year | Cash Flow Difference | Cumulative Cash Flow Difference | Present Value of Flow Difference | Net Present Value |
|---|---|---|---|---|
| 0 | -450,000.00 | -450,000.00 | -450,000.00 | -450,000.00 |
| 1 | -7,753.65 | -457,753.65 | -7,048.77 | -457,048.77 |
| 2 | -16,750.25 | -474,503.89 | -13,843.18 | -470,891.95 |
| 3 | -26,016.76 | -500,520.65 | -19,546.77 | -490,438.72 |
| 4 | -35,561.25 | -536,081.91 | -24,288.81 | -514,727.54 |
| 5 | -45,392.10 | -581,474.01 | -28,184.92 | -542,912.46 |
| 6 | -55,517.85 | -636,991.86 | -31,338.38 | -574,250.83 |
| 7 | -65,947.39 | -702,939.25 | -33,841.43 | -608,092.27 |
| 8 | -76,689.81 | -779,629.06 | -35,776.36 | -643,868.62 |
| 9 | -87,754.51 | -867,383.57 | -37,216.47 | -681,085.09 |
| 10 | -99,151.14 | -966,534.71 | -38,227.05 | -719,312.14 |
| 11 | -110,889.68 | -1,077,424.40 | -38,866.15 | -758,178.29 |
| 12 | -122,980.35 | -1,200,404.75 | -39,185.32 | -797,363.61 |
| 13 | -135,433.77 | -1,335,838.53 | -39,230.33 | -836,593.94 |
| 14 | -148,260.77 | -1,484,099.30 | -39,041.68 | -875,635.62 |
| 15 | -161,472.61 | -1,645,571.91 | -38,655.25 | -914,290.87 |
| 16 | -175,080.77 | -1,820,652.68 | -38,102.66 | -952,393.53 |
| 17 | -189,097.22 | -2,009,749.90 | -37,411.86 | -989,805.39 |
| 18 | -203,534.12 | -2,213,284.02 | -36,607.38 | -1,026,412.77 |
| 19 | -218,404.16 | -2,431,688.18 | -35,710.81 | -1,062,123.58 |
| 20 | -233,720.27 | -2,665,408.45 | -34,741.01 | -1,096,864.59 |

# ALTERNATIVE COMPARISON

By ROSSER INTERNATIONAL

## Alternative 4 vs Alternative 3

| | |
|---|---|
| First Cost Difference | 315,000.00 |
| Down Payment Difference | 315,000.00 |
| Net Present Value of Incremental Cash Flows | -344,947.47 |
| Life Cycle Cost Difference | -344,947.47 |
| Revenue Penalty Difference | 0.00 |
| Simple Payback on Investment | Does not pay back |
| Life Cycle Payback on Investment | Does not pay back |
| Internal Rate of Return | Does not pay back |
| Cost of capital (%) | 10.0 |

| Year | Cash Flow Difference | Cumulative Cash Flow Difference | Present Value of Flow Difference | Net Present Value |
|---|---|---|---|---|
| 0 | -315,000.00 | -315,000.00 | -315,000.00 | -315,000.00 |
| 1 | -2,865.66 | -317,865.66 | -2,605.14 | -317,605.14 |
| 2 | -2,951.63 | -320,817.29 | -2,439.36 | -320,044.50 |
| 3 | -3,040.18 | -323,857.46 | -2,284.13 | -322,328.63 |
| 4 | -3,131.38 | -326,988.84 | -2,138.78 | -324,467.41 |
| 5 | -3,225.32 | -330,214.17 | -2,002.67 | -326,470.08 |
| 6 | -3,322.08 | -333,536.25 | -1,875.23 | -328,345.31 |
| 7 | -3,421.74 | -336,957.99 | -1,755.90 | -330,101.21 |
| 8 | -3,524.40 | -340,482.39 | -1,644.16 | -331,745.36 |
| 9 | -3,630.13 | -344,112.52 | -1,539.53 | -333,284.89 |
| 10 | -3,739.03 | -347,851.55 | -1,441.56 | -334,726.45 |
| 11 | -3,851.20 | -351,702.76 | -1,349.82 | -336,076.27 |
| 12 | -3,966.74 | -355,669.50 | -1,263.93 | -337,340.20 |
| 13 | -4,085.74 | -359,755.24 | -1,183.49 | -338,523.69 |
| 14 | -4,208.31 | -363,963.55 | -1,108.18 | -339,631.87 |
| 15 | -4,334.56 | -368,298.12 | -1,037.66 | -340,669.53 |
| 16 | -4,464.60 | -372,762.72 | -971.63 | -341,641.16 |
| 17 | -4,598.54 | -377,361.26 | -909.80 | -342,550.96 |
| 18 | -4,736.49 | -382,097.75 | -851.90 | -343,402.86 |
| 19 | -4,878.59 | -386,976.34 | -797.69 | -344,200.54 |
| 20 | -5,024.95 | -392,001.29 | -746.93 | -344,947.47 |

# B. HVAC APPENDIX - LIFE CYCLE COST ANALYSIS

## YEARLY CASH FLOW

By ROSSER INTERNATIONAL

Alternative: 1
Life Cycle Cost: $14,604,267.96

| Year | Utility Cost ($) | Maint. Cost ($) | Interest Cost ($) | Principal Cost ($) | Property Taxes ($) | Insurance Cost ($) | Revenue Penalty ($) | Replace. Expenses ($) | Deprec. Tax ($) | Cash Flow Effect ($) | Present Value ($) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 10,600,000 | 0 | 0 | 0 | 0 | 0 | 10,600,000 | 10,600,000 |
| 1 | 296,889 | 86,277 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 383,166 | 348,333 |
| 2 | 305,796 | 88,866 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 394,661 | 326,166 |
| 3 | 314,969 | 91,532 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 406,501 | 305,410 |
| 4 | 324,419 | 94,278 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 418,696 | 285,975 |
| 5 | 334,151 | 97,106 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 431,257 | 267,777 |
| 6 | 344,176 | 100,019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 444,195 | 250,736 |
| 7 | 354,501 | 103,020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 457,521 | 234,780 |
| 8 | 365,136 | 106,110 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 471,246 | 219,840 |
| 9 | 376,090 | 109,294 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 485,384 | 205,850 |
| 10 | 387,373 | 112,572 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 499,945 | 192,750 |
| 11 | 398,994 | 115,950 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 514,943 | 180,484 |
| 12 | 410,964 | 119,428 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 530,392 | 168,999 |
| 13 | 423,293 | 123,011 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 546,303 | 158,245 |
| 14 | 435,991 | 126,701 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 562,693 | 148,174 |
| 15 | 449,071 | 130,502 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 579,573 | 138,745 |
| 16 | 462,543 | 134,417 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 596,961 | 129,916 |
| 17 | 476,420 | 138,450 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 614,869 | 121,649 |
| 18 | 490,712 | 142,603 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 633,315 | 113,907 |
| 19 | 505,433 | 146,881 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 652,315 | 106,659 |
| 20 | 520,596 | 151,288 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 671,884 | 99,871 |

Alternative: 2
Life Cycle Cost: $14,238,735.07

| Year | Utility Cost ($) | Maint. Cost ($) | Interest Cost ($) | Principal Cost ($) | Property Taxes ($) | Insurance Cost ($) | Revenue Penalty ($) | Replace. Expenses ($) | Deprec. Tax ($) | Cash Flow Effect ($) | Present Value ($) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 10,850,000 | 0 | 0 | 0 | 0 | 0 | 10,850,000 | 10,850,000 |
| 1 | 292,133 | 86,277 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 378,411 | 344,010 |
| 2 | 292,133 | 88,866 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 380,999 | 314,875 |
| 3 | 292,133 | 91,532 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 383,665 | 288,253 |
| 4 | 292,133 | 94,278 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 386,411 | 263,924 |
| 5 | 292,133 | 97,106 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 389,239 | 241,687 |
| 6 | 292,133 | 100,019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 392,153 | 221,360 |
| 7 | 292,133 | 103,020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 395,153 | 202,776 |
| 8 | 292,133 | 106,110 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 398,244 | 185,784 |
| 9 | 292,133 | 109,294 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 401,427 | 170,244 |
| 10 | 292,133 | 112,572 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 404,706 | 156,032 |
| 11 | 292,133 | 115,950 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 408,083 | 143,031 |
| 12 | 292,133 | 119,428 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 411,561 | 131,136 |
| 13 | 292,133 | 123,011 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 415,144 | 120,252 |
| 14 | 292,133 | 126,701 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 418,835 | 110,292 |
| 15 | 292,133 | 130,502 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 422,636 | 101,176 |
| 16 | 292,133 | 134,417 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 426,551 | 92,830 |
| 17 | 292,133 | 138,450 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 430,583 | 85,189 |
| 18 | 292,133 | 142,603 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 434,737 | 78,191 |
| 19 | 292,133 | 146,881 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 439,015 | 71,782 |
| 20 | 292,133 | 151,288 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 443,421 | 65,912 |

Project Name:
Dataset Name: OPTB_ESCAMBIA-LCC.TRC

TRACE® 700 v6.3.1 calculated at 02:05 PM on 06/19/2017
Yearly Cash Flow report Page 1 of 3

## YEARLY CASH FLOW

By ROSSER INTERNATIONAL

Alternative: 3
Life Cycle Cost: $14,990,652.19

| Year | Utility Cost ($) | Maint. Cost ($) | Interest Cost ($) | Principal Cost ($) | Property Taxes ($) | Insurance Cost ($) | Revenue Penalty ($) | Replace. Expenses ($) | Deprec. Tax ($) | Cash Flow Effect ($) | Present Value ($) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 10,985,000 | 0 | 0 | 0 | 0 | 0 | 10,985,000 | 10,985,000 |
| 1 | 297,021 | 86,277 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 383,299 | 348,453 |
| 2 | 305,932 | 88,866 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 394,798 | 326,279 |
| 3 | 315,110 | 91,532 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 406,642 | 305,516 |
| 4 | 324,563 | 94,278 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 418,841 | 286,074 |
| 5 | 334,300 | 97,106 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 431,406 | 267,869 |
| 6 | 344,329 | 100,019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 444,348 | 250,823 |
| 7 | 354,659 | 103,020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 457,679 | 234,862 |
| 8 | 365,299 | 106,110 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 471,409 | 219,916 |
| 9 | 376,258 | 109,294 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 485,551 | 205,921 |
| 10 | 387,546 | 112,572 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500,118 | 192,817 |
| 11 | 399,172 | 115,950 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 515,121 | 180,547 |
| 12 | 411,147 | 119,428 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 530,575 | 169,058 |
| 13 | 423,481 | 123,011 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 546,492 | 158,299 |
| 14 | 436,186 | 126,701 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 562,887 | 148,226 |
| 15 | 449,271 | 130,502 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 579,774 | 138,793 |
| 16 | 462,750 | 134,417 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 597,167 | 129,961 |
| 17 | 476,632 | 138,450 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 615,082 | 121,691 |
| 18 | 490,931 | 142,603 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 633,534 | 113,947 |
| 19 | 505,659 | 146,881 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 652,540 | 106,696 |
| 20 | 520,829 | 151,288 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 672,117 | 99,906 |

Alternative: 4
Life Cycle Cost: $15,335,599.66

| Year | Utility Cost ($) | Maint. Cost ($) | Interest Cost ($) | Principal Cost ($) | Property Taxes ($) | Insurance Cost ($) | Revenue Penalty ($) | Replace. Expenses ($) | Deprec. Tax ($) | Cash Flow Effect ($) | Present Value ($) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 11,300,000 | 0 | 0 | 0 | 0 | 0 | 11,300,000 | 11,300,000 |
| 1 | 299,887 | 86,277 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 386,164 | 351,059 |
| 2 | 308,884 | 88,866 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 397,749 | 328,718 |
| 3 | 318,150 | 91,532 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 409,682 | 307,800 |
| 4 | 327,695 | 94,278 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 421,972 | 288,213 |
| 5 | 337,525 | 97,106 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 434,631 | 269,872 |
| 6 | 347,651 | 100,019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 447,670 | 252,698 |
| 7 | 358,081 | 103,020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 461,100 | 236,617 |
| 8 | 368,823 | 106,110 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 474,934 | 221,560 |
| 9 | 379,888 | 109,294 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 489,182 | 207,461 |
| 10 | 391,285 | 112,572 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 503,857 | 194,259 |
| 11 | 403,023 | 115,950 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 518,973 | 181,897 |
| 12 | 415,114 | 119,428 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 534,542 | 170,321 |
| 13 | 427,567 | 123,011 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 550,578 | 159,483 |
| 14 | 440,394 | 126,701 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 567,095 | 149,334 |
| 15 | 453,606 | 130,502 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 584,108 | 139,831 |
| 16 | 467,214 | 134,417 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 601,632 | 130,932 |
| 17 | 481,231 | 138,450 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 619,680 | 122,600 |
| 18 | 495,668 | 142,603 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 638,271 | 114,799 |
| 19 | 510,538 | 146,881 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 657,419 | 107,493 |
| 20 | 525,854 | 151,288 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 677,142 | 100,653 |

Project Name:
Dataset Name: OPTB_ESCAMBIA-LCC.TRC

TRACE® 700 v6.3.1 calculated at 02:05 PM on 06/19/2017
Yearly Cash Flow report Page 2 of 3

## YEARLY CASH FLOW

By ROSSER INTERNATIONAL

# MONTHLY UTILITY COSTS

By ROSSER INTERNATIONAL

| Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ------- Monthly Utility Costs ------- | | | | | | | | | | | | |
| **Alternative 1** | | | | | | | | | | | | | |
| Electric | | | | | | | | | | | | | |
| On-Pk Cons. ($) | 21,552 | 19,588 | 22,715 | 23,739 | 25,501 | 26,407 | 27,491 | 27,703 | 25,821 | 23,689 | 22,421 | 22,369 | 288,996 |
| Gas | | | | | | | | | | | | | |
| On-Pk Cons. ($) | 3,529 | 1,442 | 560 | 257 | 200 | 141 | 141 | 134 | 155 | 272 | 367 | 696 | 7,893 |
| Monthly Total ($): | 25,080 | 21,030 | 23,276 | 23,996 | 25,700 | 26,549 | 27,632 | 27,837 | 25,976 | 23,961 | 22,788 | 23,064 | 296,889 |

Building Area = 266,288 ft²
Utility Cost Per Area = 1.11 $/ft²

| Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alternative 2** | | | | | | | | | | | | | |
| Electric | | | | | | | | | | | | | |
| On-Pk Cons. ($) | 21,552 | 19,588 | 22,715 | 23,739 | 25,284 | 25,169 | 26,248 | 26,563 | 24,904 | 23,689 | 22,421 | 22,369 | 284,240 |
| Gas | | | | | | | | | | | | | |
| On-Pk Cons. ($) | 3,529 | 1,442 | 560 | 257 | 200 | 141 | 141 | 134 | 155 | 272 | 367 | 696 | 7,893 |
| Monthly Total ($): | 25,080 | 21,030 | 23,276 | 23,996 | 25,484 | 25,311 | 26,389 | 26,697 | 25,059 | 23,961 | 22,788 | 23,064 | 292,133 |

Building Area = 266,288 ft²
Utility Cost Per Area = 1.10 $/ft²

Project Name:
Dataset Name: OPTB_ESCAMBIA-LCC.TRC

TRACE® 700 v6.3.1 calculated at 02:05 PM on 06/19/2017
Monthly Utility Costs report Page 1 of 2

# MONTHLY UTILITY COSTS

By ROSSER INTERNATIONAL

| Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ------- Monthly Utility Costs ------- | | | | | | | | | | | | |
| **Alternative 3** | | | | | | | | | | | | | |
| Electric | | | | | | | | | | | | | |
| On-Pk Cons. ($) | 21,628 | 19,653 | 22,720 | 23,750 | 25,504 | 26,313 | 27,395 | 27,599 | 25,811 | 23,711 | 22,434 | 22,451 | 288,969 |
| Gas | | | | | | | | | | | | | |
| On-Pk Cons. ($) | 3,616 | 1,511 | 560 | 257 | 200 | 142 | 142 | 135 | 156 | 272 | 367 | 696 | 8,053 |
| Monthly Total ($): | 25,243 | 21,164 | 23,280 | 24,006 | 25,704 | 26,455 | 27,536 | 27,734 | 25,967 | 23,983 | 22,801 | 23,147 | 297,021 |

Building Area = 266,288 ft²
Utility Cost Per Area = 1.12 $/ft²

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alternative 4** | | | | | | | | | | | | | |
| Electric | | | | | | | | | | | | | |
| On-Pk Cons. ($) | 21,653 | 19,657 | 22,796 | 24,240 | 25,983 | 26,852 | 27,884 | 28,160 | 26,237 | 24,019 | 22,495 | 22,437 | 292,413 |
| Gas | | | | | | | | | | | | | |
| On-Pk Cons. ($) | 3,412 | 1,391 | 517 | 233 | 180 | 127 | 126 | 120 | 140 | 250 | 336 | 643 | 7,474 |
| Monthly Total ($): | 25,064 | 21,048 | 23,312 | 24,473 | 26,163 | 26,979 | 28,010 | 28,281 | 26,377 | 24,269 | 22,831 | 23,080 | 299,887 |

Building Area = 266,288 ft²
Utility Cost Per Area = 1.13 $/ft²

## ECONOMIC PARAMETERS

By ROSSER INTERNATIONAL

**Project Name:**
**Location:**
**Building Owner:**
**Program User:**
**Company:**
**Comments:** TRACE 700 v6_2_7 - gbXML imported on Friday, May 19, 2017 at 10:48 AM

| | | | |
|---|---|---|---|
| Study Life: | 20 Yrs | Income Tax Rate: | 0.000 % |
| Mortgage Life: | 20 Yrs | Cost of Capital: | 10.000 % |
| Depreciation Life: | 20 Yrs | Property tax rate: | 0.000 % |
| Mortgage Interest Rate: | 5.000 % | Insurance Expense rate: | 0.000 % |
| Percent Financed: | 0.0 % | | |
| Depreciation Method: | None | Annual Inflation Rate Of | |
| Declining Balance Taxes: | 100.0 % | Maintenance Expense | 3.000 % |
| | | Replacement Expense | 3.000 % |
| | | Property Taxes | 3.000 % |
| | | Insurance Expense | 3.000 % |

| Alt # | First Cost ($/ton) | First Cost ($/ft²) | Additional First Cost | Total First Cost | Maintenance Cost ($/ton) | Maintenance Cost ($/ft²) | Total Maint. Cost | Total Alt. Cost |
|---|---|---|---|---|---|---|---|---|
| 4 | 19,912.13 | 39.81 | 700,000.00 | 11,300,000.00 | 162.07 | 0.32 | 86,277.39 | 11,386,277.39 |
| 3 | 18,765.50 | 39.81 | 385,000.00 | 10,985,000.00 | 152.74 | 0.32 | 86,277.39 | 11,071,277.39 |
| 2 | 18,179.18 | 39.81 | 250,000.00 | 10,850,000.00 | 147.97 | 0.32 | 86,277.39 | 10,936,277.39 |
| 1 | 18,179.18 | 39.81 | 0.00 | 10,600,000.00 | 147.97 | 0.32 | 86,277.39 | 10,686,277.39 |

# ENERGY CONSUMPTION SUMMARY

By ROSSER INTERNATIONAL

| | Elect Cons. (kWh) | Gas Cons. (kBtu) | Water Cons. (1000 gals) | % of Total Building Energy | Total Building Energy (kBtu/yr) | Total Source Energy* (kBtu/yr) |
|---|---|---|---|---|---|---|
| **Alternative 1** | | | | | | |
| **Primary heating** | | | | | | |
| Primary heating | | 1,167,283 | | 5.6 % | 1,167,283 | 1,228,719 |
| Other Htg Accessories | 4,380 | | 69 | 0.1 % | 14,949 | 44,851 |
| **Heating Subtotal** | **4,380** | **1,167,283** | **69** | **5.7 %** | **1,182,232** | **1,273,571** |
| **Primary cooling** | | | | | | |
| Cooling Compressor | 646,389 | | | 10.6 % | 2,206,127 | 6,619,041 |
| Tower/Cond Fans | 189,344 | | 5,822 | 3.1 % | 646,230 | 1,938,885 |
| Condenser Pump | 66,864 | | | 1.1 % | 228,206 | 684,687 |
| Other Clg Accessories | | | | 0.0 % | 0 | 0 |
| **Cooling Subtotal....** | **902,597** | | **5,822** | **14.7 %** | **3,080,563** | **9,242,613** |
| **Auxiliary** | | | | | | |
| Supply Fans | 648,868 | | | 10.6 % | 2,214,585 | 6,644,421 |
| Pumps | 54,419 | | | 0.9 % | 185,731 | 557,248 |
| Stand-alone Base Utilities | | | | 0.0 % | 0 | 0 |
| Aux Subtotal.... | 703,286 | | | 11.5 % | 2,400,316 | 7,201,669 |
| **Lighting** | | | | | | |
| Lighting | 857,385 | | | 14.0 % | 2,926,255 | 8,779,643 |
| **Receptacle** | | | | | | |
| Receptacles | 3,312,266 | | | 54.1 % | 11,304,762 | 33,917,676 |
| **Cogeneration** | | | | | | |
| Cogeneration | | | | 0.0 % | 0 | 0 |
| **Totals** | | | | | | |
| **Totals**** | **5,779,914** | **1,167,283** | **5,891** | **100.0 %** | **20,894,130** | **60,415,176** |

* Note: Resource Utilization factors are included in the Total Source Energy value .
** Note: This report can display a maximum of 7 utilities. If additional utilities are used, they will be included in the total.

Project Name:
Dataset Name: OPTB_ESCAMBIA-LCC.TRC

TRACE® 700 v6.3.1 calculated at 02:05 PM on 06/19/2017
Alternative - 1 Energy Consumption Summary report page 1

# ENERGY CONSUMPTION SUMMARY

By ROSSER INTERNATIONAL

| | Elect Cons. (kWh) | Gas Cons. (kBtu) | Water Cons. (1000 gals) | % of Total Building Energy | Total Building Energy (kBtu/yr) | Total Source Energy* (kBtu/yr) |
|---|---|---|---|---|---|---|
| **Alternative 2** | | | | | | |
| **Primary heating** | | | | | | |
| Primary heating | | 1,167,283 | | 5.7 % | 1,167,283 | 1,228,719 |
| Other Htg Accessories | 4,380 | | 69 | 0.1 % | 14,949 | 44,851 |
| **Heating Subtotal** | **4,380** | **1,167,283** | **69** | **5.8 %** | **1,182,232** | **1,273,571** |
| **Primary cooling** | | | | | | |
| Cooling Compressor | 553,623 | | | 9.2 % | 1,889,516 | 5,669,116 |
| Tower/Cond Fans | 189,344 | | 5,738 | 3.1 % | 646,230 | 1,938,885 |
| Condenser Pump | 66,864 | | | 1.1 % | 228,206 | 684,687 |
| Other Clg Accessories | | | | 0.0 % | 0 | 0 |
| **Cooling Subtotal....** | **809,831** | | **5,738** | **13.4 %** | **2,763,953** | **8,292,688** |
| **Auxiliary** | | | | | | |
| Supply Fans | 648,868 | | | 10.8 % | 2,214,585 | 6,644,421 |
| Pumps | 52,074 | | | 0.9 % | 177,730 | 533,243 |
| Stand-alone Base Utilities | | | | 0.0 % | 0 | 0 |
| Aux Subtotal.... | 700,942 | | | 11.6 % | 2,392,315 | 7,177,663 |
| **Lighting** | | | | | | |
| Lighting | 857,385 | | | 14.2 % | 2,926,255 | 8,779,643 |
| **Receptacle** | | | | | | |
| Receptacles | 3,312,266 | | | 55.0 % | 11,304,762 | 33,917,676 |
| **Cogeneration** | | | | | | |
| Cogeneration | | | | 0.0 % | 0 | 0 |
| **Totals** | | | | | | |
| **Totals**** | **5,684,804** | **1,167,283** | **5,807** | **100.0 %** | **20,569,518** | **59,441,240** |

* Note: Resource Utilization factors are included in the Total Source Energy value .
** Note: This report can display a maximum of 7 utilities. If additional utilities are used, they will be included in the total.

Project Name:
Dataset Name: OPTB_ESCAMBIA-LCC.TRC

TRACE® 700 v6.3.1 calculated at 02:05 PM on 06/19/2017
Alternative - 2 Energy Consumption Summary report page 1

# ENERGY CONSUMPTION SUMMARY

By ROSSER INTERNATIONAL

| | Elect Cons. (kWh) | Gas Cons. (kBtu) | Water Cons. (1000 gals) | % of Total Building Energy | Total Building Energy (kBtu/yr) | Total Source Energy* (kBtu/yr) |
|---|---|---|---|---|---|---|
| **Alternative 3** | | | | | | |
| **Primary heating** | | | | | | |
| Primary heating | | 1,190,138 | | 5.7 % | 1,190,138 | 1,252,777 |
| Other Htg Accessories | 4,389 | | 62 | 0.1 % | 14,978 | 44,938 |
| **Heating Subtotal** | **4,389** | **1,190,138** | **62** | **5.8 %** | **1,205,116** | **1,297,715** |
| **Primary cooling** | | | | | | |
| Cooling Compressor | 637,576 | | | 10.4 % | 2,176,048 | 6,528,796 |
| Tower/Cond Fans | 200,690 | | 5,772 | 3.3 % | 684,956 | 2,055,074 |
| Condenser Pump | 65,100 | | | 1.1 % | 222,187 | 666,627 |
| Other Clg Accessories | | | | 0.0 % | 0 | 0 |
| **Cooling Subtotal....** | **903,367** | | **5,772** | **14.7 %** | **3,083,191** | **9,250,497** |
| **Auxiliary** | | | | | | |
| Supply Fans | 648,518 | | | 10.6 % | 2,213,393 | 6,640,842 |
| Pumps | 53,451 | | | 0.9 % | 182,428 | 547,337 |
| Stand-alone Base Utilities | | | | 0.0 % | 0 | 0 |
| Aux Subtotal.... | 701,969 | | | 11.5 % | 2,395,820 | 7,188,179 |
| **Lighting** | | | | | | |
| Lighting | 857,385 | | | 14.0 % | 2,926,255 | 8,779,643 |
| **Receptacle** | | | | | | |
| Receptacles | 3,312,266 | | | 54.1 % | 11,304,762 | 33,917,676 |
| **Cogeneration** | | | | | | |
| Cogeneration | | | | 0.0 % | 0 | 0 |
| **Totals** | | | | | | |
| **Totals**** | **5,779,375** | **1,190,138** | **5,834** | **100.0 %** | **20,915,145** | **60,433,712** |

* Note: Resource Utilization factors are included in the Total Source Energy value .
** Note: This report can display a maximum of 7 utilities. If additional utilities are used, they will be included in the total.

Project Name:
Dataset Name: OPTB_ESCAMBIA-LCC.TRC

TRACE® 700 v6.3.1 calculated at 02:05 PM on 06/19/2017
Alternative - 3 Energy Consumption Summary report page 1

# ENERGY CONSUMPTION SUMMARY

By ROSSER INTERNATIONAL

| | Elect Cons. (kWh) | Gas Cons. (kBtu) | Water Cons. (1000 gals) | % of Total Building Energy | Total Building Energy (kBtu/yr) | Total Source Energy* (kBtu/yr) |
|---|---|---|---|---|---|---|
| **Alternative 4** | | | | | | |
| **Primary heating** | | | | | | |
| Primary heating | | 1,103,637 | | 5.2 % | 1,103,637 | 1,161,723 |
| Other Htg Accessories | 4,389 | | 61 | 0.1 % | 14,978 | 44,938 |
| **Heating Subtotal** | **4,389** | **1,103,637** | **61** | **5.3 %** | **1,118,615** | **1,206,661** |
| **Primary cooling** | | | | | | |
| Cooling Compressor | 609,869 | | | 9.9 % | 2,081,481 | 6,245,068 |
| Tower/Cond Fans | 172,985 | | 5,425 | 2.8 % | 590,397 | 1,771,369 |
| Condenser Pump | 60,389 | | | 1.0 % | 206,107 | 618,384 |
| Other Clg Accessories | | | | 0.0 % | 0 | 0 |
| **Cooling Subtotal....** | **843,242** | | **5,425** | **13.7 %** | **2,877,986** | **8,634,821** |
| **Auxiliary** | | | | | | |
| Supply Fans | 780,793 | | | 12.7 % | 2,664,847 | 7,995,339 |
| Pumps | 50,195 | | | 0.8 % | 171,315 | 513,996 |
| Stand-alone Base Utilities | | | | 0.0 % | 0 | 0 |
| Aux Subtotal.... | 830,988 | | | 13.5 % | 2,836,161 | 8,509,335 |
| **Lighting** | | | | | | |
| Lighting | 857,385 | | | 13.9 % | 2,926,255 | 8,779,643 |
| **Receptacle** | | | | | | |
| Receptacles | 3,312,266 | | | 53.7 % | 11,304,762 | 33,917,676 |
| **Cogeneration** | | | | | | |
| Cogeneration | | | | 0.0 % | 0 | 0 |
| **Totals** | | | | | | |
| **Totals**** | **5,848,269** | **1,103,637** | **5,486** | **100.0 %** | **21,063,779** | **61,048,136** |

* Note: Resource Utilization factors are included in the Total Source Energy value .
** Note: This report can display a maximum of 7 utilities. If additional utilities are used, they will be included in the total.

Project Name:
Dataset Name: OPTB_ESCAMBIA-LCC.TRC

TRACE® 700 v6.3.1 calculated at 02:05 PM on 06/19/2017
Alternative - 4 Energy Consumption Summary report page 1

# MONTHLY ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

------- Monthly Energy Consumption -------

| Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alternative: 1** | **BASELINE** | | | | | | | | | | | | |
| Electric | | | | | | | | | | | | | |
| On-Pk Cons. (kWh) | 431,030 | 391,761 | 454,308 | 474,777 | 510,013 | 528,141 | 549,820 | 554,063 | 516,421 | 473,779 | 448,427 | 447,373 | 5,779,914 |
| On-Pk Demand (kW) | 692 | 704 | 733 | 825 | 889 | 908 | 915 | 925 | 914 | 842 | 802 | 750 | 925 |
| Gas | | | | | | | | | | | | | |
| On-Pk Cons. (therms) | 5,041 | 2,060 | 800 | 428 | 333 | 236 | 235 | 224 | 259 | 453 | 611 | 994 | 11,673 |
| On-Pk Demand (therms/hr) | 19 | 9 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 19 |
| Water | | | | | | | | | | | | | |
| Cons. (1000gal) | 219 | 226 | 334 | 501 | 587 | 707 | 765 | 783 | 657 | 430 | 370 | 314 | 5,891 |

## Energy Consumption

| | | |
|---|---|---|
| Building | 78,464 | Btu/(ft2-year) |
| Source | 226,879 | Btu/(ft2-year) |
| Floor Area | 266,288 | ft2 |

## Environmental Impact Analysis

| | |
|---|---|
| CO2 | 7,649,542 lbm/year |
| SO2 | 36,476 gm/year |
| NOX | 10,211 gm/year |

# MONTHLY ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

------- Monthly Energy Consumption -------

| Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alternative: 2** | **Solar Domestic preheat** | | | | | | | | | | | | |
| Electric | | | | | | | | | | | | | |
| On-Pk Cons. (kWh) | 431,030 | 391,761 | 454,308 | 474,777 | 505,681 | 503,383 | 524,954 | 531,260 | 498,071 | 473,779 | 448,427 | 447,373 | 5,684,805 |
| On-Pk Demand (kW) | 692 | 704 | 733 | 825 | 850 | 856 | 868 | 884 | 859 | 842 | 802 | 750 | 884 |
| Gas | | | | | | | | | | | | | |
| On-Pk Cons. (therms) | 5,041 | 2,060 | 800 | 428 | 333 | 236 | 235 | 224 | 259 | 453 | 611 | 994 | 11,673 |
| On-Pk Demand (therms/hr) | 19 | 9 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 19 |
| Water | | | | | | | | | | | | | |
| Cons. (1000gal) | 219 | 226 | 334 | 501 | 583 | 685 | 743 | 763 | 641 | 430 | 370 | 314 | 5,807 |

## Energy Consumption

| | | |
|---|---|---|
| Building | 77,245 | Btu/(ft2-year) |
| Source | 223,222 | Btu/(ft2-year) |
| Floor Area | 266,288 | ft2 |

## Environmental Impact Analysis

| | |
|---|---|
| CO2 | 7,523,668 lbm/year |
| SO2 | 35,876 gm/year |
| NOX | 10,043 gm/year |

# MONTHLY ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

------- Monthly Energy Consumption -------

| Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alternative: 3** | **Run around coils at all AHU** | | | | | | | | | | | | |
| Electric | | | | | | | | | | | | | |
| On-Pk Cons. (kWh) | 432,559 | 393,061 | 454,401 | 474,995 | 510,085 | 526,252 | 547,890 | 551,982 | 516,218 | 474,227 | 448,677 | 449,029 | 5,779,375 |
| On-Pk Demand (kW) | 694 | 706 | 732 | 826 | 879 | 898 | 905 | 915 | 906 | 839 | 802 | 751 | 915 |
| Gas | | | | | | | | | | | | | |
| On-Pk Cons. (therms) | 5,165 | 2,159 | 800 | 428 | 333 | 237 | 236 | 225 | 260 | 453 | 612 | 994 | 11,901 |
| On-Pk Demand (therms/hr) | 19 | 10 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 19 |
| Water | | | | | | | | | | | | | |
| Cons. (1000gal) | 215 | 220 | 334 | 499 | 581 | 696 | 755 | 772 | 650 | 430 | 370 | 313 | 5,834 |

## Energy Consumption

| | | |
|---|---|---|
| Building | 78,543 | Btu/(ft2-year) |
| Source | 226,949 | Btu/(ft2-year) |
| Floor Area | 266,288 | ft2 |

## Environmental Impact Analysis

| | |
|---|---|
| CO2 | 7,648,829 lbm/year |
| SO2 | 36,472 gm/year |
| NOX | 10,210 gm/year |

# MONTHLY ENERGY CONSUMPTION

By ROSSER INTERNATIONAL

------- Monthly Energy Consumption -------

| Utility | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alternative: 4** | **Energy Wheels** | | | | | | | | | | | | |
| Electric | | | | | | | | | | | | | |
| On-Pk Cons. (kWh) | 433,053 | 393,144 | 455,910 | 484,801 | 519,663 | 537,043 | 557,679 | 563,210 | 524,741 | 480,376 | 449,907 | 448,742 | 5,848,270 |
| On-Pk Demand (kW) | 697 | 710 | 778 | 858 | 913 | 933 | 945 | 949 | 944 | 894 | 855 | 755 | 949 |
| Gas | | | | | | | | | | | | | |
| On-Pk Cons. (therms) | 4,874 | 1,987 | 738 | 389 | 299 | 211 | 210 | 200 | 234 | 416 | 559 | 918 | 11,036 |
| On-Pk Demand (therms/hr) | 19 | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 19 |
| Water | | | | | | | | | | | | | |
| Cons. (1000gal) | 212 | 222 | 329 | 476 | 549 | 634 | 681 | 693 | 601 | 421 | 361 | 306 | 5,486 |

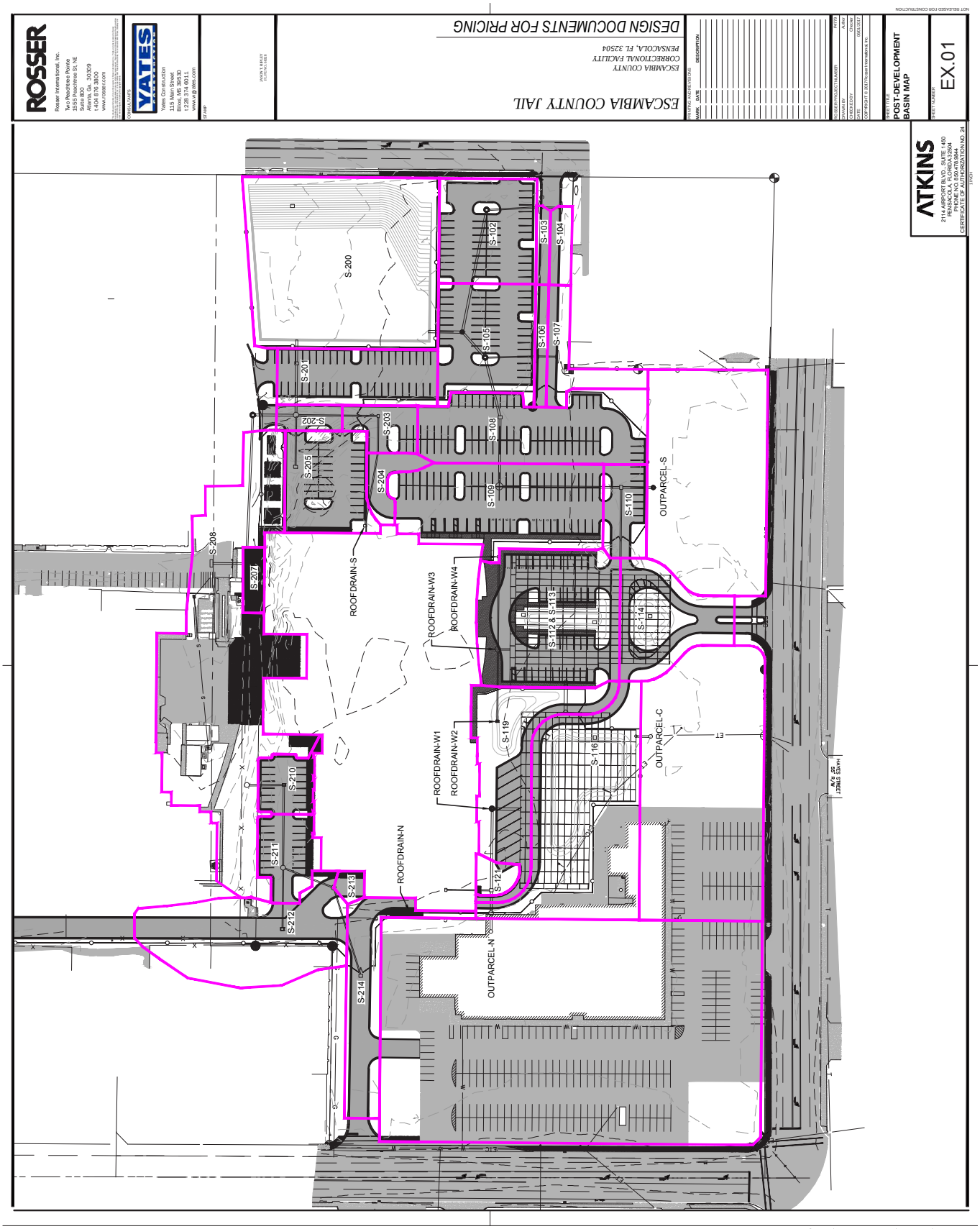
| Energy Consumption | | |
|---|---|---|
| Building | 79,101 | Btu/(ft2-year) |
| Source | 229,256 | Btu/(ft2-year) |
| Floor Area | 266,288 | ft2 |

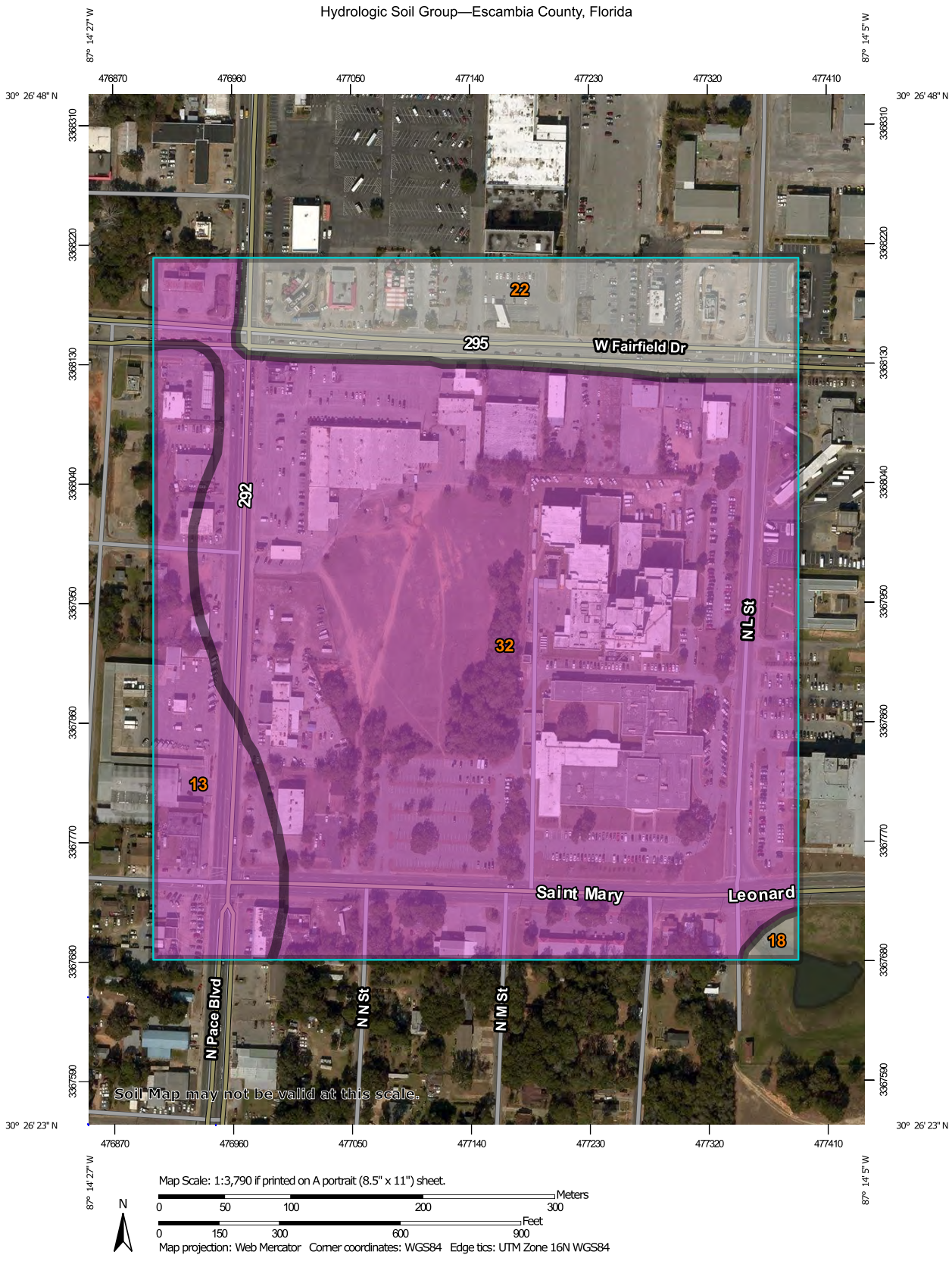
| Environmental Impact Analysis | |
|---|---|
| CO2 | 7,740,009 lbm/year |
| SO2 | 36,907 gm/year |
| NOX | 10,332 gm/year |

# APPENDIX C:

# SITE / CIVIL

# C. SITE / CIVIL APPENDIX






USDA **Natural Resources Conservation Service** | Web Soil Survey, National Cooperative Soil Survey | 6/21/2017 Page 1 of 4

Hydrologic Soil Group—Escambia County, Florida

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

**Soil Rating Lines**
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

**Soil Rating Points**
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Escambia County, Florida
Survey Area Data: Version 14, Sep 23, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 31, 2015—Mar 7, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

| Hydrologic Soil Group— Summary by Map Unit — Escambia County, Florida (FL033) | | | | |
|---|---|---|---|---|
| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
| 13 | Lakeland sand, 0 to 5 percent slopes | A | 7.0 | 10.9% |
| 18 | Pits | | 0.3 | 0.4% |
| 22 | Urban land | | 8.7 | 13.5% |
| 32 | Troup sand, 0 to 5 percent slopes | A | 48.2 | 75.2% |
| **Totals for Area of Interest** | | | **64.1** | **100.0%** |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Higher

POST DEVELOPMENT DRAINAGE AREA SUMMARY - BASE BID
ESCAMBIA COUNTY JAIL
ESCAMBIA COUNTY, FLORIDA

| MAJOR BASIN NAME | STRUCTURE NO. | SUB BASIN NAME | HYDROLOGIC SOIL GROUP | BASIN (ACRES) | PERVIOUS-GRASS (ACRES) | IMPERVIOUS (ACRES) | ASPHALT PARKING (ACRES) | IMPERVIOUS POND (@NWL) | COMPOSITE C | COMPOSITE CN |
|---|---|---|---|---|---|---|---|---|---|---|
| STORM-TRAP | S-112 & S-113 | S-112 & S-113 | A | 0.737 | 0.144 | 0.436 | 0.157 | | 0.80 | 88.43 |
| | S-114 | S-114 | A | 0.375 | 0.198 | 0.177 | | | 0.55 | 72.13 |
| | S-116 | S-116 | A | 0.933 | 0.814 | 0.119 | | | 0.30 | 55.25 |
| | S-117 | OUTPARCEL-C | A | 1.266 | 0.190 | 1.076 | | | 0.84 | 90.65 |
| | S-118A | ROOFDRAIN-W3 | A | 0.498 | | 0.498 | | | 0.95 | 98.00 |
| | S-118RD | ROOFDRAIN-W4 | A | 0.397 | | 0.397 | | | 0.95 | 98.00 |
| | S-119 | S-119 | A | 0.494 | 0.246 | 0.248 | | | 0.58 | 73.60 |
| | S-119RD | ROOFDRAIN-W2 | A | 0.533 | | 0.533 | | | 0.95 | 98.00 |
| | S-120RD | ROOFDRAIN-W1 | A | 0.553 | | 0.553 | | | 0.95 | 98.00 |
| | S-121 | S-121 | A | 0.053 | 0.049 | 0.004 | | | 0.26 | 52.70 |
| | S-123 | ROOFDRAIN-N | A | 0.558 | | 0.558 | | | 0.95 | 98.00 |
| | S-124 | OUTPARCEL-N | A | 3.296 | 0.494 | 2.802 | | | 0.84 | 90.66 |
| **SUB-TOTAL** | | | | **9.69** | **2.135** | **7.401** | **0.157** | **0.000** | **0.79** | **87.21** |
| 100 SERIES | S-102 | S-102 | A | 0.395 | 0.054 | 0.192 | 0.149 | | 0.85 | 91.30 |
| | S-103 | S-103 | A | 0.040 | 0.009 | 0.031 | | | 0.78 | 86.98 |
| | S-104 | S-104 | A | 0.066 | 0.035 | 0.031 | | | 0.55 | 72.02 |
| | S-105 | S-105 | A | 0.421 | 0.077 | 0.195 | 0.149 | | 0.81 | 89.04 |
| | S-106 | S-106 | A | 0.059 | 0.009 | 0.050 | | | 0.84 | 90.53 |
| | S-107 | S-107 | A | 0.163 | 0.113 | 0.050 | | | 0.43 | 64.03 |
| | S-108 | S-108 | A | 0.599 | 0.096 | 0.301 | 0.202 | | 0.83 | 90.15 |
| | S-109 | S-109 | A | 0.668 | 0.114 | 0.273 | 0.281 | | 0.82 | 89.64 |
| | S-110 | S-110 | A | 0.156 | 0.039 | 0.086 | 0.031 | | 0.76 | 85.75 |
| | S-110A | OUTPARCEL-S | A | 1.004 | 0.151 | 0.853 | | | 0.84 | 90.63 |
| **SUB-TOTAL** | | | | **3.571** | **0.697** | **2.062** | **0.812** | **0.000** | **0.80** | **88.44** |
| 200 SERIES | S-201 | S-201 | A | 0.349 | 0.056 | 0.132 | 0.161 | | 0.83 | 90.14 |
| | S-202 | S-202 | A | 0.066 | 0.006 | 0.060 | | | 0.88 | 93.55 |
| | S-203 | S-203 | A | 0.117 | 0.012 | 0.086 | 0.019 | | 0.87 | 92.97 |
| | S-204 | S-204 | A | 0.088 | 0.008 | 0.080 | | | 0.88 | 93.55 |
| | S-204A | ROOFDRAIN-S | A | 0.587 | | 0.587 | | | 0.95 | 98.00 |
| | S-205 | S-205 | A | 0.332 | 0.043 | 0.189 | 0.100 | | 0.85 | 91.65 |
| | S-207 | S-207 | A | 0.054 | | 0.054 | | | 0.95 | 98.00 |
| | S-208 | S-208 | A | 1.439 | 0.664 | 0.775 | | | 0.60 | 75.39 |
| | S-210 | S-210 | A | 0.130 | 0.010 | 0.068 | 0.052 | | 0.89 | 94.23 |
| | S-211 | S-211 | A | 0.180 | 0.032 | 0.088 | 0.060 | | 0.82 | 89.29 |
| | S-212 | S-212 | A | 0.633 | 0.389 | 0.244 | | | 0.49 | 67.89 |
| | S-213 | S-213 | A | 0.031 | 0.003 | 0.028 | | | 0.88 | 93.26 |
| | S-214 | S-214 | A | 0.336 | 0.117 | 0.219 | | | 0.69 | 80.94 |
| **SUB-TOTAL** | | | | **4.342** | **1.340** | **2.610** | **0.392** | **0.000** | **0.72** | **82.88** |
| POND AREA | S-200 | S-200 | A | 1.261 | 0.445 | | | 0.816 | 0.72 | 82.00 |
| **TOTAL BASIN** | | | | **18.867** | **4.617** | **12.073** | **1.361** | **0.816** | **0.77** | **86.10** |

| RUNOFF COEFFICIENT | | | CURVE NUMBER - SOILS => A | | |
|---|---|---|---|---|---|
| A | 0.2 | PERVIOUS GRASS | CN | 49 | PERVIOUS GRASS |
| | 0.95 | IMPERVIOUS (PVMT) | | 98 | IMPERVIOUS (PVMT) |
| | 0.95 | ASPHALT PARKING | | 98 | ASPHALT PARKING |
| | 1.00 | IMPERVIOUS @ NWL | | 100 | IMPERVIOUS @ NWL |

POST DEVELOPMENT RUNOFF VOLUME CALCULATIONS - BASE BID
ESCAMBIA COUNTY JAIL
ESCAMBIA COUNTY, FLORIDA

| MAJOR BASIN NAME | STRUCTURE NO. | SUB BASIN NAME | HYDROLOGIC SOIL GROUP | BASIN (ACRES) | COMPOSITE C | COMPOSITE CN | POTENTIAL ABSTRACTION | RUNOFF DEPTH 23.3 INCHES OF RAINFALL (Inches) | RUNOFF DEPTH 23.3 INCHES OF RAINFALL (Ft.) | RUNOFF VOLUME (Ac-Ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| STORM-TRAP | S-112 & S-113 | S-112 & S-113 | A | 0.737 | 0.80 | 88.43 | 1.31 | 21.80 | 1.82 | 1.34 |
| | S-114 | S-114 | A | 0.375 | 0.55 | 72.13 | 3.86 | 19.23 | 1.60 | 0.60 |
| | S-116 | S-116 | A | 0.933 | 0.30 | 55.25 | 8.10 | 15.78 | 1.32 | 1.23 |
| | S-117 | OUTPARCEL-C | A | 1.266 | 0.84 | 90.65 | 1.03 | 22.11 | 1.84 | 2.33 |
| | S-118A | ROOFDRAIN-W3 | A | 0.498 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 0.96 |
| | S-118RD | ROOFDRAIN-W4 | A | 0.397 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 0.76 |
| | S-119 | S-119 | A | 0.494 | 0.58 | 73.60 | 3.59 | 19.49 | 1.62 | 0.80 |
| | S-119RD | ROOFDRAIN-W2 | A | 0.533 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 1.02 |
| | S-120RD | ROOFDRAIN-W1 | A | 0.553 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 1.06 |
| | S-121 | S-121 | A | 0.053 | 0.26 | 52.70 | 8.98 | 15.17 | 1.26 | 0.07 |
| | S-123 | ROOFDRAIN-N | A | 0.558 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 1.07 |
| | S-124 | OUTPARCEL-N | A | 3.296 | 0.84 | 90.66 | 1.03 | 22.11 | 1.84 | 6.07 |
| **SUB-TOTAL** | | | | **9.69** | **0.79** | **87.21** | | | | **17.32** |
| | | | | | | | | | | |
| 100 SERIES | S-102 | S-102 | A | 0.395 | 0.85 | 91.30 | 0.95 | 22.19 | 1.85 | 0.73 |
| | S-103 | S-103 | A | 0.040 | 0.78 | 86.98 | 1.50 | 21.59 | 1.80 | 0.07 |
| | S-104 | S-104 | A | 0.066 | 0.55 | 72.02 | 3.89 | 19.21 | 1.60 | 0.11 |
| | S-105 | S-105 | A | 0.421 | 0.81 | 89.04 | 1.23 | 21.89 | 1.82 | 0.77 |
| | S-106 | S-106 | A | 0.059 | 0.84 | 90.53 | 1.05 | 22.09 | 1.84 | 0.11 |
| | S-107 | S-107 | A | 0.163 | 0.43 | 64.03 | 5.62 | 17.69 | 1.47 | 0.24 |
| | S-108 | S-108 | A | 0.599 | 0.83 | 90.15 | 1.09 | 22.04 | 1.84 | 1.10 |
| | S-109 | S-109 | A | 0.668 | 0.82 | 89.64 | 1.16 | 21.97 | 1.83 | 1.22 |
| | S-110 | S-110 | A | 0.156 | 0.76 | 85.75 | 1.66 | 21.42 | 1.78 | 0.28 |
| | S-110A | OUTPARCEL-S | A | 1.004 | 0.84 | 90.63 | 1.03 | 22.10 | 1.84 | 1.85 |
| **SUB-TOTAL** | | | | **3.571** | **0.80** | **88.44** | | | | **6.48** |
| | | | | | | | | | | |
| 200 SERIES | S-201 | S-201 | A | 0.349 | 0.83 | 90.14 | 1.09 | 22.04 | 1.84 | 0.64 |
| | S-202 | S-202 | A | 0.066 | 0.88 | 93.55 | 0.69 | 22.49 | 1.87 | 0.12 |
| | S-203 | S-203 | A | 0.117 | 0.87 | 92.97 | 0.76 | 22.42 | 1.87 | 0.22 |
| | S-204 | S-204 | A | 0.088 | 0.88 | 93.55 | 0.69 | 22.49 | 1.87 | 0.17 |
| | S-204A | ROOFDRAIN-S | A | 0.587 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 1.13 |
| | S-205 | S-205 | A | 0.332 | 0.85 | 91.65 | 0.91 | 22.24 | 1.85 | 0.62 |
| | S-207 | S-207 | A | 0.054 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 0.10 |
| | S-208 | S-208 | A | 1.439 | 0.60 | 75.39 | 3.26 | 19.79 | 1.65 | 2.37 |
| | S-210 | S-210 | A | 0.130 | 0.89 | 94.23 | 0.61 | 22.58 | 1.88 | 0.25 |
| | S-211 | S-211 | A | 0.180 | 0.82 | 89.29 | 1.20 | 21.92 | 1.83 | 0.33 |
| | S-212 | S-212 | A | 0.633 | 0.49 | 67.89 | 4.73 | 18.45 | 1.54 | 0.97 |
| | S-213 | S-213 | A | 0.031 | 0.88 | 93.26 | 0.72 | 22.45 | 1.87 | 0.06 |
| | S-214 | S-214 | A | 0.336 | 0.69 | 80.94 | 2.36 | 20.69 | 1.72 | 0.58 |
| **SUB-TOTAL** | | | | **4.342** | **0.72** | **82.88** | | | | **7.55** |
| | | | | | | | | | | |
| POND AREA | S-200 | S-200 | A | 1.261 | 0.72 | 82.00 | 2.19 | 20.86 | 1.74 | **2.19** |
| | | | | | | | | | | |
| **TOTAL BASIN** | | | | **18.867** | 0.77 | 86.10 | 1.61 | 21.47 | 1.79 | **33.54** |

POST DEVELOPMENT DRAINAGE AREA SUMMARY - PAVER ALTERNATE
ESCAMBIA COUNTY JAIL
ESCAMBIA COUNTY, FLORIDA

| MAJOR BASIN NAME | STRUCTURE NO. | SUB BASIN NAME | HYDROLOGIC SOIL GROUP | BASIN (ACRES) | PERVIOUS-GRASS (ACRES) | IMPERVIOUS (ACRES) | SEMI PERVIOUS PAVERS (ACRES) | IMPERVIOUS POND (@NWL) | COMPOSITE C | COMPOSITE CN |
|---|---|---|---|---|---|---|---|---|---|---|
| STORM-TRAP | S-112 & S-113 | S-112 & S-113 | A | 0.737 | 0.144 | 0.436 | 0.157 | | 0.75 | 82.46 |
| | S-114 | S-114 | A | 0.375 | 0.198 | 0.177 | | | 0.55 | 72.13 |
| | S-116 | S-116 | A | 0.933 | 0.814 | 0.119 | | | 0.30 | 55.25 |
| | S-117 | OUTPARCEL-C | A | 1.266 | 0.190 | 1.076 | | | 0.84 | 90.65 |
| | S-118A | ROOFDRAIN-W3 | A | 0.498 | | 0.498 | | | 0.95 | 98.00 |
| | S-118RD | ROOFDRAIN-W4 | A | 0.397 | | 0.397 | | | 0.95 | 98.00 |
| | S-119 | S-119 | A | 0.494 | 0.246 | 0.248 | | | 0.58 | 73.60 |
| | S-119RD | ROOFDRAIN-W2 | A | 0.533 | | 0.533 | | | 0.95 | 98.00 |
| | S-120RD | ROOFDRAIN-W1 | A | 0.553 | | 0.553 | | | 0.95 | 98.00 |
| | S-121 | S-121 | A | 0.053 | 0.049 | 0.004 | | | 0.26 | 52.70 |
| | S-123 | ROOFDRAIN-N | A | 0.558 | | 0.558 | | | 0.95 | 98.00 |
| | S-124 | OUTPARCEL-N | A | 3.296 | 0.494 | 2.802 | | | 0.84 | 90.66 |
| **SUB-TOTAL** | | | | **9.69** | **2.135** | **7.401** | **0.157** | **0.000** | **0.78** | **86.75** |
| 100 SERIES | S-102 | S-102 | A | 0.395 | 0.054 | 0.192 | 0.149 | | 0.75 | 80.74 |
| | S-103 | S-103 | A | 0.040 | 0.009 | 0.031 | | | 0.78 | 86.98 |
| | S-104 | S-104 | A | 0.066 | 0.035 | 0.031 | | | 0.55 | 72.02 |
| | S-105 | S-105 | A | 0.421 | 0.077 | 0.195 | 0.149 | | 0.72 | 79.13 |
| | S-106 | S-106 | A | 0.059 | 0.009 | 0.050 | | | 0.84 | 90.53 |
| | S-107 | S-107 | A | 0.163 | 0.113 | 0.050 | | | 0.43 | 64.03 |
| | S-108 | S-108 | A | 0.599 | 0.096 | 0.301 | 0.202 | | 0.75 | 80.71 |
| | S-109 | S-109 | A | 0.668 | 0.114 | 0.273 | 0.281 | | 0.72 | 77.86 |
| | S-110 | S-110 | A | 0.156 | 0.039 | 0.086 | 0.031 | | 0.71 | 80.19 |
| | S-110A | OUTPARCEL-S | A | 1.004 | 0.151 | 0.853 | | | 0.84 | 90.63 |
| **SUB-TOTAL** | | | | **3.571** | **0.697** | **2.062** | **0.812** | **0.000** | **0.75** | **82.07** |
| 200 SERIES | S-201 | S-201 | A | 0.349 | 0.056 | 0.132 | 0.161 | | 0.71 | 77.22 |
| | S-202 | S-202 | A | 0.066 | 0.006 | 0.060 | | | 0.88 | 93.55 |
| | S-203 | S-203 | A | 0.117 | 0.012 | 0.086 | 0.019 | | 0.83 | 88.43 |
| | S-204 | S-204 | A | 0.088 | 0.008 | 0.080 | | | 0.88 | 93.55 |
| | S-204A | ROOFDRAIN-S | A | 0.587 | | 0.587 | | | 0.95 | 98.00 |
| | S-205 | S-205 | A | 0.332 | 0.043 | 0.189 | 0.100 | | 0.78 | 83.22 |
| | S-207 | S-207 | A | 0.054 | | 0.054 | | | 0.95 | 98.00 |
| | S-208 | S-208 | A | 1.439 | 0.664 | 0.775 | | | 0.60 | 75.39 |
| | S-210 | S-210 | A | 0.130 | 0.010 | 0.068 | 0.052 | | 0.79 | 83.03 |
| | S-211 | S-211 | A | 0.180 | 0.032 | 0.088 | 0.060 | | 0.73 | 79.96 |
| | S-212 | S-212 | A | 0.633 | 0.389 | 0.244 | | | 0.49 | 67.89 |
| | S-213 | S-213 | A | 0.031 | 0.003 | 0.028 | | | 0.88 | 93.26 |
| | S-214 | S-214 | A | 0.336 | 0.117 | 0.219 | | | 0.69 | 80.94 |
| **SUB-TOTAL** | | | | **4.342** | **1.340** | **2.610** | **0.392** | **0.000** | **0.70** | **80.35** |
| POND AREA | S-200 | S-200 | A | 1.261 | 0.445 | | | 0.816 | 0.72 | 82.00 |
| **TOTAL BASIN** | | | | **18.867** | **4.617** | **12.073** | **1.361** | **0.816** | **0.75** | **84.08** |

| RUNOFF COEFFICIENT | | | CURVE NUMBER - SOILS => A | | |
|---|---|---|---|---|---|
| A | 0.2 | PERVIOUS GRASS | CN | 49 | PERVIOUS GRASS |
| | 0.95 | IMPERVIOUS (PVMT) | | 98 | IMPERVIOUS (PVMT) |
| | 0.7 | SEMI PERVIOUS PAVERS | | 70 | SEMI PERVIOUS PAVERS |
| | 1.00 | IMPERVIOUS @ NWL | | 100 | IMPERVIOUS @ NWL |

POST DEVELOPMENT RUNOFF VOLUME CALCULATIONS - PAVER ALTERNATE
ESCAMBIA COUNTY JAIL
ESCAMBIA COUNTY, FLORIDA

| MAJOR BASIN NAME | STRUCTURE NO. | SUB BASIN NAME | HYDROLOGIC SOIL GROUP | BASIN (ACRES) | COMPOSITE C | COMPOSITE CN | POTENTIAL ABSTRACTION | RUNOFF DEPTH 23.3 INCHES OF RAINFALL | | RUNOFF VOLUME (Ac-Ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | (Inches) | (Ft.) | |
| STORM-TRAP | S-112 & S-113 | S-112 & S-113 | A | 0.737 | 0.75 | 82.46 | 2.13 | 20.93 | 1.74 | 1.29 |
| | S-114 | S-114 | A | 0.375 | 0.55 | 72.13 | 3.86 | 19.23 | 1.60 | 0.60 |
| | S-116 | S-116 | A | 0.933 | 0.30 | 55.25 | 8.10 | 15.78 | 1.32 | 1.23 |
| | S-117 | OUTPARCEL-C | A | 1.266 | 0.84 | 90.65 | 1.03 | 22.11 | 1.84 | 2.33 |
| | S-118A | ROOFDRAIN-W3 | A | 0.498 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 0.96 |
| | S-118RD | ROOFDRAIN-W4 | A | 0.397 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 0.76 |
| | S-119 | S-119 | A | 0.494 | 0.58 | 73.60 | 3.59 | 19.49 | 1.62 | 0.80 |
| | S-119RD | ROOFDRAIN-W2 | A | 0.533 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 1.02 |
| | S-120RD | ROOFDRAIN-W1 | A | 0.553 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 1.06 |
| | S-121 | S-121 | A | 0.053 | 0.26 | 52.70 | 8.98 | 15.17 | 1.26 | 0.07 |
| | S-123 | ROOFDRAIN-N | A | 0.558 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 1.07 |
| | S-124 | OUTPARCEL-N | A | 3.296 | 0.84 | 90.66 | 1.03 | 22.11 | 1.84 | 6.07 |
| **SUB-TOTAL** | | | | **9.69** | **0.78** | **86.75** | | | | **17.27** |
| | | | | | | | | | | |
| 100 SERIES | S-102 | S-102 | A | 0.395 | 0.75 | 80.74 | 2.39 | 20.66 | 1.72 | 0.68 |
| | S-103 | S-103 | A | 0.040 | 0.78 | 86.98 | 1.50 | 21.59 | 1.80 | 0.07 |
| | S-104 | S-104 | A | 0.066 | 0.55 | 72.02 | 3.89 | 19.21 | 1.60 | 0.11 |
| | S-105 | S-105 | A | 0.421 | 0.72 | 79.13 | 2.64 | 20.41 | 1.70 | 0.72 |
| | S-106 | S-106 | A | 0.059 | 0.84 | 90.53 | 1.05 | 22.09 | 1.84 | 0.11 |
| | S-107 | S-107 | A | 0.163 | 0.43 | 64.03 | 5.62 | 17.69 | 1.47 | 0.24 |
| | S-108 | S-108 | A | 0.599 | 0.75 | 80.71 | 2.39 | 20.66 | 1.72 | 1.03 |
| | S-109 | S-109 | A | 0.668 | 0.72 | 77.86 | 2.84 | 20.20 | 1.68 | 1.13 |
| | S-110 | S-110 | A | 0.156 | 0.71 | 80.19 | 2.47 | 20.58 | 1.71 | 0.27 |
| | S-110A | OUTPARCEL-S | A | 1.004 | 0.84 | 90.63 | 1.03 | 22.10 | 1.84 | 1.85 |
| **SUB-TOTAL** | | | | **3.571** | **0.75** | **82.07** | | | | **6.20** |
| | | | | | | | | | | |
| 200 SERIES | S-201 | S-201 | A | 0.349 | 0.71 | 77.22 | 2.95 | 20.10 | 1.67 | 0.59 |
| | S-202 | S-202 | A | 0.066 | 0.88 | 93.55 | 0.69 | 22.49 | 1.87 | 0.12 |
| | S-203 | S-203 | A | 0.117 | 0.83 | 88.43 | 1.31 | 21.80 | 1.82 | 0.21 |
| | S-204 | S-204 | A | 0.088 | 0.88 | 93.55 | 0.69 | 22.49 | 1.87 | 0.17 |
| | S-204A | ROOFDRAIN-S | A | 0.587 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 1.13 |
| | S-205 | S-205 | A | 0.332 | 0.78 | 83.22 | 2.02 | 21.04 | 1.75 | 0.58 |
| | S-207 | S-207 | A | 0.054 | 0.95 | 98.00 | 0.20 | 23.06 | 1.92 | 0.10 |
| | S-208 | S-208 | A | 1.439 | 0.60 | 75.39 | 3.26 | 19.79 | 1.65 | 2.37 |
| | S-210 | S-210 | A | 0.130 | 0.79 | 83.03 | 2.04 | 21.02 | 1.75 | 0.23 |
| | S-211 | S-211 | A | 0.180 | 0.73 | 79.96 | 2.51 | 20.54 | 1.71 | 0.31 |
| | S-212 | S-212 | A | 0.633 | 0.49 | 67.89 | 4.73 | 18.45 | 1.54 | 0.97 |
| | S-213 | S-213 | A | 0.031 | 0.88 | 93.26 | 0.72 | 22.45 | 1.87 | 0.06 |
| | S-214 | S-214 | A | 0.336 | 0.69 | 80.94 | 2.36 | 20.69 | 1.72 | 0.58 |
| **SUB-TOTAL** | | | | **4.342** | **0.70** | **80.35** | | | | **7.42** |
| | | | | 0.000 | 0 | 0 | | | | |
| POND AREA | S-200 | S-200 | A | 1.261 | 0.72 | 82.00 | 2.19 | 20.86 | 1.74 | **2.19** |
| | | | | | | | | | | |
| **TOTAL BASIN** | | | | **18.867** | 0.77 | 86.10 | 1.61 | 21.47 | 1.79 | **33.07** |

# INLET CALCULATIONS

POST DEVELOPMENT - DITCH BOTTOM INLET CAPACITY SUMMARY
ESCAMBIA COUNTY JAIL
ESCAMBIA COUNTY, FLORIDA

| MAJOR BASIN NAME | STRUCTURE NO. | SUB BASIN NAME | HYDROLOGIC SOIL GROUP | Inlet Type | Top Elevation | Peak Flow | Peak Stage | Bypass Elevation | Freeboard |
|---|---|---|---|---|---|---|---|---|---|
| STORM-TRAP | S-112 & S-113 | S-112 & S-113 | A | Type D | 79.50 | 7.92 | 79.88 | 80.73 | 1.23 |
| | S-114 | S-114 | A | Type D | 79.50 | 2.78 | 79.60 | 80.73 | 1.23 |
| | S-116 | S-116 | A | Type D | 79.50 | 3.70 | 79.66 | 80.73 | 1.23 |
| | S-119 | S-119 | A | Type C | 78.41 | 3.81 | 78.73 | 80.73 | 2.32 |
| | S-121 | S-121 | A | Type C | 81.20 | 0.18 | 81.20 | 81.90 | 0.70 |
| 100-SERIES | S-102 | S-102 | A | Type D | 75.25 | 4.48 | 75.45 | 76.20 | 0.95 |
| | S-105 | S-105 | A | Type D | 75.40 | 4.58 | 75.60 | 75.86 | 0.46 |
| | S-108 | S-108 | A | Type D | 77.18 | 6.65 | 77.50 | 77.71 | 0.53 |
| | S-109 | S-109 | A | Type D | 78.41 | 7.35 | 78.75 | 79.09 | 0.68 |
| | S-110 | S-110 | A | Type C | 79.32 | 1.59 | 79.44 | 79.70 | 0.38 |
| 200-SERIES | S-201 | S-201 | A | Type D | 73.23 | 3.88 | 73.39 | 73.59 | 0.36 |
| | S-202 | S-202 | A | Type C | 75.13 | 0.78 | 75.17 | 75.26 | 0.13 |
| | S-203 | S-203 | A | Type C | 76.65 | 1.37 | 76.75 | 76.77 | 0.12 |
| | S-204 | S-204 | A | Type C | 78.06 | 1.04 | 78.12 | 78.06 | 0.00 |
| | S-205 | S-205 | A | Type D | 75.10 | 3.79 | 75.26 | 75.23 | 0.13 |
| | S-207 | S-207 | A | Type D | 76.10 | 0.69 | 76.10 | 76.40 | 0.30 |
| | S-210 | S-210 | A | Type C | 79.34 | 1.55 | 79.44 | 80.10 | 0.76 |
| | S-211 | S-211 | A | Type C | 79.80 | 1.97 | 79.96 | 80.20 | 0.40 |
| | S-212 | S-212 | A | Type D | 79.57 | 4.14 | 79.75 | 80.60 | 1.03 |
| | S-213 | S-213 | A | Type C | 81.05 | 0.36 | 81.05 | 81.05 | 0.00 |
| | S-214 | S-214 | A | Type D | 80.00 | 3.10 | 80.12 | 80.60 | 0.60 |

| | | | |
|---|---|---|---|
| Structure: | S-102 | Basin Area (AC) = | 0.395 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.85 |
| Top Elevation | 75.25 | Surface Flow Peak (cfs) = | 4.48 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 75.45 | |
| Bypass Elevation = | 76.2 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 75.25 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 75.27 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 75.29 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 75.31 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 75.33 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 75.35 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 75.37 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 75.39 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 75.41 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 75.43 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 75.45 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 75.47 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 75.49 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 75.51 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 75.53 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 75.55 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 75.57 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 75.59 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 75.61 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 75.63 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 75.65 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 75.67 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 75.69 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 75.71 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 75.73 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 75.75 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 75.77 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 75.79 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 75.81 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 75.83 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 75.85 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 75.87 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 75.89 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 75.91 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 75.93 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 75.95 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 75.97 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 75.99 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 76.01 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 76.03 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 76.05 |

| | | | |
|---|---|---|---|
| Structure: | S-105 | Basin Area (AC) = | 0.421 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.81 |
| Top Elevation | 75.4 | Surface Flow Peak (cfs) = | 4.58 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 75.6 | |
| Bypass Elevation = | 75.86 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 75.40 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 75.42 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 75.44 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 75.46 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 75.48 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 75.50 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 75.52 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 75.54 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 75.56 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 75.58 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 75.60 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 75.62 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 75.64 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 75.66 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 75.68 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 75.70 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 75.72 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 75.74 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 75.76 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 75.78 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 75.80 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 75.82 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 75.84 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 75.86 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 75.88 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 75.90 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 75.92 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 75.94 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 75.96 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 75.98 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 76.00 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 76.02 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 76.04 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 76.06 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 76.08 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 76.10 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 76.12 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 76.14 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 76.16 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 76.18 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 76.20 |

| | | | |
|---|---|---|---|
| Structure: | S-108 | Basin Area (AC) = | 0.599 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.83 |
| Top Elevation | 77.18 | Surface Flow Peak (cfs) = | 6.65 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 77.5 | |
| Bypass Elevation = | 77.71 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 77.18 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 77.20 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 77.22 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 77.24 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 77.26 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 77.28 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 77.30 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 77.32 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 77.34 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 77.36 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 77.38 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 77.40 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 77.42 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 77.44 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 77.46 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 77.48 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 77.50 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 77.52 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 77.54 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 77.56 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 77.58 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 77.60 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 77.62 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 77.64 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 77.66 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 77.68 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 77.70 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 77.72 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 77.74 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 77.76 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 77.78 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 77.80 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 77.82 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 77.84 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 77.86 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 77.88 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 77.90 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 77.92 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 77.94 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 77.96 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 77.98 |

| | | | |
|---|---|---|---|
| Structure: | S-109 | Basin Area (AC) = | 0.668 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.82 |
| Top Elevation | 78.41 | Surface Flow Peak (cfs) = | 7.35 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 78.75 | |
| Bypass Elevation = | 79.09 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 78.41 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 78.43 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 78.45 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 78.47 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 78.49 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 78.51 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 78.53 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 78.55 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 78.57 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 78.59 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 78.61 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 78.63 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 78.65 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 78.67 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 78.69 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 78.71 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 78.73 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 78.75 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 78.77 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 78.79 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 78.81 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 78.83 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 78.85 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 78.87 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 78.89 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 78.91 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 78.93 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 78.95 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 78.97 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 78.99 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 79.01 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 79.03 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 79.05 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 79.07 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 79.09 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 79.11 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 79.13 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 79.15 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 79.17 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 79.19 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 79.21 |

| | |
|---|---|
| Structure: | S-110 |
| Inlet Type: | Type C |
| Grate: | Reticuline |
| Top Elevation | 79.32 |

| | |
|---|---|
| Basin Area (AC) = | 0.156 |
| Intensity (iph) = | 13.38 |
| Runoff Coefficient = | 0.76 |
| Surface Flow Peak (cfs) = | 1.59 |

| | |
|---|---|
| Blockage is assumed to be (%) = | 50 |
| Head increment = | 0.02 |

| | | |
|---|---|---|
| Open Area (sq in)= | 790 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 28 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 7.02 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 10.69 | |
| Hydraulic diameter (ft)= | 2.63 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 4.71 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 2.35 | |

| | |
|---|---|
| Peak Stage = | 79.44 |
| Bypass Elevation = | 79.7 |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 79.32 |
| 0.02 | 0.01 | 0.2142 | 1.14 | 0.18 | 0.02 | 0.49 | 79.34 |
| 0.04 | 0.02 | 0.2272 | 1.72 | 0.19 | 0.04 | 0.73 | 79.36 |
| 0.06 | 0.02 | 0.2402 | 2.22 | 0.20 | 0.06 | 0.94 | 79.38 |
| 0.08 | 0.03 | 0.2532 | 2.70 | 0.22 | 0.08 | 1.15 | 79.40 |
| 0.1 | 0.04 | 0.2662 | 3.18 | 0.23 | 0.1 | 1.35 | 79.42 |
| 0.12 | 0.05 | 0.2793 | 3.65 | 0.24 | 0.12 | 1.55 | 79.44 |
| 0.14 | 0.05 | 0.2923 | 4.13 | 0.25 | 0.14 | 1.75 | 79.46 |
| 0.16 | 0.06 | 0.3053 | 4.61 | 0.26 | 0.16 | 1.96 | 79.48 |
| 0.18 | 0.07 | 0.3183 | 5.10 | 0.27 | 0.18 | 2.17 | 79.50 |
| 0.2 | 0.08 | 0.3313 | 5.59 | 0.28 | 0.2 | 2.38 | 79.52 |
| 0.22 | 0.08 | 0.3443 | 6.09 | 0.29 | 0.22 | 2.59 | 79.54 |
| 0.24 | 0.09 | 0.3573 | 6.61 | 0.30 | 0.24 | 2.81 | 79.56 |
| 0.26 | 0.10 | 0.3703 | 7.13 | 0.31 | 0.26 | 3.03 | 79.58 |
| 0.28 | 0.11 | 0.3833 | 7.66 | 0.33 | 0.28 | 3.25 | 79.60 |
| 0.3 | 0.11 | 0.3963 | 8.19 | 0.34 | 0.3 | 3.48 | 79.62 |
| 0.32 | 0.12 | 0.4093 | 8.74 | 0.35 | 0.32 | 3.71 | 79.64 |
| 0.34 | 0.13 | 0.4224 | 9.29 | 0.36 | 0.34 | 3.95 | 79.66 |
| 0.36 | 0.14 | 0.4354 | 9.86 | 0.37 | 0.36 | 4.19 | 79.68 |
| 0.38 | 0.14 | 0.4484 | 10.43 | 0.38 | 0.38 | 4.43 | 79.70 |
| 0.4 | 0.15 | 0.4614 | 11.01 | 0.39 | 0.4 | 4.68 | 79.72 |
| 0.42 | 0.16 | 0.4744 | 11.60 | 0.40 | 0.42 | 4.93 | 79.74 |
| 0.44 | 0.17 | 0.4874 | 12.20 | 0.41 | 0.44 | 5.19 | 79.76 |
| 0.46 | 0.17 | 0.5004 | 12.81 | 0.43 | 0.46 | 5.44 | 79.78 |
| 0.48 | 0.18 | 0.5134 | 13.42 | 0.44 | 0.48 | 5.71 | 79.80 |
| 0.5 | 0.19 | 0.5264 | 14.05 | 0.45 | 0.5 | 5.97 | 79.82 |
| 0.52 | 0.20 | 0.5394 | 14.68 | 0.46 | 0.52 | 6.24 | 79.84 |
| 0.54 | 0.21 | 0.5524 | 15.32 | 0.47 | 0.54 | 6.51 | 79.86 |
| 0.56 | 0.21 | 0.5654 | 15.97 | 0.48 | 0.56 | 6.79 | 79.88 |
| 0.58 | 0.22 | 0.5785 | 16.63 | 0.49 | 0.58 | 7.07 | 79.90 |
| 0.6 | 0.23 | 0.5915 | 17.29 | 0.50 | 0.6 | 7.35 | 79.92 |
| 0.62 | 0.24 | 0.6045 | 17.96 | 0.51 | 0.62 | 7.63 | 79.94 |
| 0.64 | 0.24 | 0.6175 | 18.64 | 0.52 | 0.64 | 7.92 | 79.96 |
| 0.66 | 0.25 | 0.6305 | 19.33 | 0.54 | 0.66 | 8.22 | 79.98 |
| 0.68 | 0.26 | 0.6435 | 20.03 | 0.55 | 0.68 | 8.51 | 80.00 |
| 0.7 | 0.27 | 0.6565 | 20.73 | 0.56 | 0.7 | 8.81 | 80.02 |
| 0.72 | 0.27 | 0.6695 | 21.44 | 0.57 | 0.72 | 9.11 | 80.04 |
| 0.74 | 0.28 | 0.6810 | 22.11 | 0.58 | 0.74 | 9.40 | 80.06 |
| 0.76 | 0.29 | 0.6862 | 22.58 | 0.58 | 0.76 | 9.60 | 80.08 |
| 0.78 | 0.30 | 0.6915 | 23.05 | 0.59 | 0.78 | 9.80 | 80.10 |
| 0.8 | 0.30 | 0.6967 | 23.52 | 0.59 | 0.8 | 10.00 | 80.12 |

| | | | |
|---|---|---|---|
| Structure: | S-112 & S-113 | Basin Area (AC) = | 0.737 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.80 |
| Top Elevation | 79.5 | Surface Flow Peak (cfs) = | 7.92 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 79.88 | |
| Bypass Elevation = | 80.73 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 79.50 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 79.52 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 79.54 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 79.56 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 79.58 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 79.60 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 79.62 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 79.64 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 79.66 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 79.68 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 79.70 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 79.72 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 79.74 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 79.76 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 79.78 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 79.80 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 79.82 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 79.84 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 79.86 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 79.88 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 79.90 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 79.92 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 79.94 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 79.96 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 79.98 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 80.00 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 80.02 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 80.04 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 80.06 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 80.08 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 80.10 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 80.12 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 80.14 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 80.16 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 80.18 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 80.20 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 80.22 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 80.24 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 80.26 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 80.28 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 80.30 |

| | | | |
|---|---|---|---|
| Structure: | S-114 | Basin Area (AC) = | 0.375 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.55 |
| Top Elevation | 79.5 | Surface Flow Peak (cfs) = | 2.78 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 79.6 | |
| Bypass Elevation = | 80.73 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 79.50 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 79.52 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 79.54 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 79.56 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 79.58 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 79.60 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 79.62 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 79.64 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 79.66 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 79.68 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 79.70 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 79.72 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 79.74 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 79.76 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 79.78 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 79.80 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 79.82 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 79.84 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 79.86 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 79.88 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 79.90 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 79.92 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 79.94 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 79.96 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 79.98 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 80.00 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 80.02 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 80.04 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 80.06 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 80.08 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 80.10 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 80.12 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 80.14 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 80.16 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 80.18 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 80.20 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 80.22 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 80.24 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 80.26 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 80.28 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 80.30 |

| | | | |
|---|---|---|---|
| Structure: | S-116 | Basin Area (AC) = | 0.933 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.30 |
| Top Elevation | 79.5 | Surface Flow Peak (cfs) = | 3.70 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 79.66 | |
| Bypass Elevation = | 80.73 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 79.50 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 79.52 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 79.54 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 79.56 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 79.58 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 79.60 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 79.62 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 79.64 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 79.66 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 79.68 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 79.70 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 79.72 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 79.74 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 79.76 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 79.78 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 79.80 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 79.82 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 79.84 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 79.86 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 79.88 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 79.90 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 79.92 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 79.94 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 79.96 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 79.98 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 80.00 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 80.02 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 80.04 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 80.06 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 80.08 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 80.10 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 80.12 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 80.14 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 80.16 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 80.18 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 80.20 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 80.22 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 80.24 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 80.26 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 80.28 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 80.30 |

| | | | |
|---|---|---|---|
| Structure: | S-119 | Basin Area (AC) = | 0.494 |
| Inlet Type: | Type C | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.58 |
| Top Elevation | 78.41 | Surface Flow Peak (cfs) = | 3.81 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 790 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 28 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 7.02 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 10.69 | |
| Hydraulic diameter (ft)= | 2.63 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 4.71 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 2.35 | |
| Peak Stage = | 78.73 | |
| Bypass Elevation = | 80.73 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 78.41 |
| 0.02 | 0.01 | 0.2142 | 1.14 | 0.18 | 0.02 | 0.49 | 78.43 |
| 0.04 | 0.02 | 0.2272 | 1.72 | 0.19 | 0.04 | 0.73 | 78.45 |
| 0.06 | 0.02 | 0.2402 | 2.22 | 0.20 | 0.06 | 0.94 | 78.47 |
| 0.08 | 0.03 | 0.2532 | 2.70 | 0.22 | 0.08 | 1.15 | 78.49 |
| 0.1 | 0.04 | 0.2662 | 3.18 | 0.23 | 0.1 | 1.35 | 78.51 |
| 0.12 | 0.05 | 0.2793 | 3.65 | 0.24 | 0.12 | 1.55 | 78.53 |
| 0.14 | 0.05 | 0.2923 | 4.13 | 0.25 | 0.14 | 1.75 | 78.55 |
| 0.16 | 0.06 | 0.3053 | 4.61 | 0.26 | 0.16 | 1.96 | 78.57 |
| 0.18 | 0.07 | 0.3183 | 5.10 | 0.27 | 0.18 | 2.17 | 78.59 |
| 0.2 | 0.08 | 0.3313 | 5.59 | 0.28 | 0.2 | 2.38 | 78.61 |
| 0.22 | 0.08 | 0.3443 | 6.09 | 0.29 | 0.22 | 2.59 | 78.63 |
| 0.24 | 0.09 | 0.3573 | 6.61 | 0.30 | 0.24 | 2.81 | 78.65 |
| 0.26 | 0.10 | 0.3703 | 7.13 | 0.31 | 0.26 | 3.03 | 78.67 |
| 0.28 | 0.11 | 0.3833 | 7.66 | 0.33 | 0.28 | 3.25 | 78.69 |
| 0.3 | 0.11 | 0.3963 | 8.19 | 0.34 | 0.3 | 3.48 | 78.71 |
| 0.32 | 0.12 | 0.4093 | 8.74 | 0.35 | 0.32 | 3.71 | 78.73 |
| 0.34 | 0.13 | 0.4224 | 9.29 | 0.36 | 0.34 | 3.95 | 78.75 |
| 0.36 | 0.14 | 0.4354 | 9.86 | 0.37 | 0.36 | 4.19 | 78.77 |
| 0.38 | 0.14 | 0.4484 | 10.43 | 0.38 | 0.38 | 4.43 | 78.79 |
| 0.4 | 0.15 | 0.4614 | 11.01 | 0.39 | 0.4 | 4.68 | 78.81 |
| 0.42 | 0.16 | 0.4744 | 11.60 | 0.40 | 0.42 | 4.93 | 78.83 |
| 0.44 | 0.17 | 0.4874 | 12.20 | 0.41 | 0.44 | 5.19 | 78.85 |
| 0.46 | 0.17 | 0.5004 | 12.81 | 0.43 | 0.46 | 5.44 | 78.87 |
| 0.48 | 0.18 | 0.5134 | 13.42 | 0.44 | 0.48 | 5.71 | 78.89 |
| 0.5 | 0.19 | 0.5264 | 14.05 | 0.45 | 0.5 | 5.97 | 78.91 |
| 0.52 | 0.20 | 0.5394 | 14.68 | 0.46 | 0.52 | 6.24 | 78.93 |
| 0.54 | 0.21 | 0.5524 | 15.32 | 0.47 | 0.54 | 6.51 | 78.95 |
| 0.56 | 0.21 | 0.5654 | 15.97 | 0.48 | 0.56 | 6.79 | 78.97 |
| 0.58 | 0.22 | 0.5785 | 16.63 | 0.49 | 0.58 | 7.07 | 78.99 |
| 0.6 | 0.23 | 0.5915 | 17.29 | 0.50 | 0.6 | 7.35 | 79.01 |
| 0.62 | 0.24 | 0.6045 | 17.96 | 0.51 | 0.62 | 7.63 | 79.03 |
| 0.64 | 0.24 | 0.6175 | 18.64 | 0.52 | 0.64 | 7.92 | 79.05 |
| 0.66 | 0.25 | 0.6305 | 19.33 | 0.54 | 0.66 | 8.22 | 79.07 |
| 0.68 | 0.26 | 0.6435 | 20.03 | 0.55 | 0.68 | 8.51 | 79.09 |
| 0.7 | 0.27 | 0.6565 | 20.73 | 0.56 | 0.7 | 8.81 | 79.11 |
| 0.72 | 0.27 | 0.6695 | 21.44 | 0.57 | 0.72 | 9.11 | 79.13 |
| 0.74 | 0.28 | 0.6810 | 22.11 | 0.58 | 0.74 | 9.40 | 79.15 |
| 0.76 | 0.29 | 0.6862 | 22.58 | 0.58 | 0.76 | 9.60 | 79.17 |
| 0.78 | 0.30 | 0.6915 | 23.05 | 0.59 | 0.78 | 9.80 | 79.19 |
| 0.8 | 0.30 | 0.6967 | 23.52 | 0.59 | 0.8 | 10.00 | 79.21 |

| | | | |
|---|---|---|---|
| Structure: | S-121 | Basin Area (AC) = | 0.053 |
| Inlet Type: | Type C | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.26 |
| Top Elevation | 81.2 | Surface Flow Peak (cfs) = | 0.18 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 790 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 28 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 7.02 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 10.69 | |
| Hydraulic diameter (ft)= | 2.63 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 4.71 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 2.35 | |
| Peak Stage = | 81.2 | |
| Bypass Elevation = | 81.9 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 81.20 |
| 0.02 | 0.01 | 0.2142 | 1.14 | 0.18 | 0.02 | 0.49 | 81.22 |
| 0.04 | 0.02 | 0.2272 | 1.72 | 0.19 | 0.04 | 0.73 | 81.24 |
| 0.06 | 0.02 | 0.2402 | 2.22 | 0.20 | 0.06 | 0.94 | 81.26 |
| 0.08 | 0.03 | 0.2532 | 2.70 | 0.22 | 0.08 | 1.15 | 81.28 |
| 0.1 | 0.04 | 0.2662 | 3.18 | 0.23 | 0.1 | 1.35 | 81.30 |
| 0.12 | 0.05 | 0.2793 | 3.65 | 0.24 | 0.12 | 1.55 | 81.32 |
| 0.14 | 0.05 | 0.2923 | 4.13 | 0.25 | 0.14 | 1.75 | 81.34 |
| 0.16 | 0.06 | 0.3053 | 4.61 | 0.26 | 0.16 | 1.96 | 81.36 |
| 0.18 | 0.07 | 0.3183 | 5.10 | 0.27 | 0.18 | 2.17 | 81.38 |
| 0.2 | 0.08 | 0.3313 | 5.59 | 0.28 | 0.2 | 2.38 | 81.40 |
| 0.22 | 0.08 | 0.3443 | 6.09 | 0.29 | 0.22 | 2.59 | 81.42 |
| 0.24 | 0.09 | 0.3573 | 6.61 | 0.30 | 0.24 | 2.81 | 81.44 |
| 0.26 | 0.10 | 0.3703 | 7.13 | 0.31 | 0.26 | 3.03 | 81.46 |
| 0.28 | 0.11 | 0.3833 | 7.66 | 0.33 | 0.28 | 3.25 | 81.48 |
| 0.3 | 0.11 | 0.3963 | 8.19 | 0.34 | 0.3 | 3.48 | 81.50 |
| 0.32 | 0.12 | 0.4093 | 8.74 | 0.35 | 0.32 | 3.71 | 81.52 |
| 0.34 | 0.13 | 0.4224 | 9.29 | 0.36 | 0.34 | 3.95 | 81.54 |
| 0.36 | 0.14 | 0.4354 | 9.86 | 0.37 | 0.36 | 4.19 | 81.56 |
| 0.38 | 0.14 | 0.4484 | 10.43 | 0.38 | 0.38 | 4.43 | 81.58 |
| 0.4 | 0.15 | 0.4614 | 11.01 | 0.39 | 0.4 | 4.68 | 81.60 |
| 0.42 | 0.16 | 0.4744 | 11.60 | 0.40 | 0.42 | 4.93 | 81.62 |
| 0.44 | 0.17 | 0.4874 | 12.20 | 0.41 | 0.44 | 5.19 | 81.64 |
| 0.46 | 0.17 | 0.5004 | 12.81 | 0.43 | 0.46 | 5.44 | 81.66 |
| 0.48 | 0.18 | 0.5134 | 13.42 | 0.44 | 0.48 | 5.71 | 81.68 |
| 0.5 | 0.19 | 0.5264 | 14.05 | 0.45 | 0.5 | 5.97 | 81.70 |
| 0.52 | 0.20 | 0.5394 | 14.68 | 0.46 | 0.52 | 6.24 | 81.72 |
| 0.54 | 0.21 | 0.5524 | 15.32 | 0.47 | 0.54 | 6.51 | 81.74 |
| 0.56 | 0.21 | 0.5654 | 15.97 | 0.48 | 0.56 | 6.79 | 81.76 |
| 0.58 | 0.22 | 0.5785 | 16.63 | 0.49 | 0.58 | 7.07 | 81.78 |
| 0.6 | 0.23 | 0.5915 | 17.29 | 0.50 | 0.6 | 7.35 | 81.80 |
| 0.62 | 0.24 | 0.6045 | 17.96 | 0.51 | 0.62 | 7.63 | 81.82 |
| 0.64 | 0.24 | 0.6175 | 18.64 | 0.52 | 0.64 | 7.92 | 81.84 |
| 0.66 | 0.25 | 0.6305 | 19.33 | 0.54 | 0.66 | 8.22 | 81.86 |
| 0.68 | 0.26 | 0.6435 | 20.03 | 0.55 | 0.68 | 8.51 | 81.88 |
| 0.7 | 0.27 | 0.6565 | 20.73 | 0.56 | 0.7 | 8.81 | 81.90 |
| 0.72 | 0.27 | 0.6695 | 21.44 | 0.57 | 0.72 | 9.11 | 81.92 |
| 0.74 | 0.28 | 0.6810 | 22.11 | 0.58 | 0.74 | 9.40 | 81.94 |
| 0.76 | 0.29 | 0.6862 | 22.58 | 0.58 | 0.76 | 9.60 | 81.96 |
| 0.78 | 0.30 | 0.6915 | 23.05 | 0.59 | 0.78 | 9.80 | 81.98 |
| 0.8 | 0.30 | 0.6967 | 23.52 | 0.59 | 0.8 | 10.00 | 82.00 |

| | | | |
|---|---|---|---|
| Structure: | S-201 | Basin Area (AC) = | 0.349 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.83 |
| Top Elevation | 73.23 | Surface Flow Peak (cfs) = | 3.88 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 73.39 | |
| Bypass Elevation = | 73.59 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 73.23 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 73.25 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 73.27 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 73.29 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 73.31 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 73.33 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 73.35 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 73.37 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 73.39 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 73.41 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 73.43 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 73.45 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 73.47 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 73.49 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 73.51 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 73.53 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 73.55 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 73.57 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 73.59 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 73.61 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 73.63 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 73.65 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 73.67 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 73.69 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 73.71 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 73.73 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 73.75 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 73.77 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 73.79 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 73.81 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 73.83 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 73.85 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 73.87 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 73.89 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 73.91 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 73.93 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 73.95 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 73.97 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 73.99 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 74.01 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 74.03 |

| | |
|---|---|
| Structure: | S-202 |
| Inlet Type: | Type C |
| Grate: | Reticuline |
| Top Elevation | 75.13 |

| | |
|---|---|
| Basin Area (AC) = | 0.066 |
| Intensity (iph) = | 13.38 |
| Runoff Coefficient = | 0.88 |
| Surface Flow Peak (cfs) = | 0.78 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 790 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 28 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 7.02 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 10.69 | |
| Hydraulic diameter (ft)= | 2.63 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 4.71 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 2.35 | |
| Peak Stage = | 75.17 | |
| Bypass Elevation = | 75.26 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 75.13 |
| 0.02 | 0.01 | 0.2142 | 1.14 | 0.18 | 0.02 | 0.49 | 75.15 |
| 0.04 | 0.02 | 0.2272 | 1.72 | 0.19 | 0.04 | 0.73 | 75.17 |
| 0.06 | 0.02 | 0.2402 | 2.22 | 0.20 | 0.06 | 0.94 | 75.19 |
| 0.08 | 0.03 | 0.2532 | 2.70 | 0.22 | 0.08 | 1.15 | 75.21 |
| 0.1 | 0.04 | 0.2662 | 3.18 | 0.23 | 0.1 | 1.35 | 75.23 |
| 0.12 | 0.05 | 0.2793 | 3.65 | 0.24 | 0.12 | 1.55 | 75.25 |
| 0.14 | 0.05 | 0.2923 | 4.13 | 0.25 | 0.14 | 1.75 | 75.27 |
| 0.16 | 0.06 | 0.3053 | 4.61 | 0.26 | 0.16 | 1.96 | 75.29 |
| 0.18 | 0.07 | 0.3183 | 5.10 | 0.27 | 0.18 | 2.17 | 75.31 |
| 0.2 | 0.08 | 0.3313 | 5.59 | 0.28 | 0.2 | 2.38 | 75.33 |
| 0.22 | 0.08 | 0.3443 | 6.09 | 0.29 | 0.22 | 2.59 | 75.35 |
| 0.24 | 0.09 | 0.3573 | 6.61 | 0.30 | 0.24 | 2.81 | 75.37 |
| 0.26 | 0.10 | 0.3703 | 7.13 | 0.31 | 0.26 | 3.03 | 75.39 |
| 0.28 | 0.11 | 0.3833 | 7.66 | 0.33 | 0.28 | 3.25 | 75.41 |
| 0.3 | 0.11 | 0.3963 | 8.19 | 0.34 | 0.3 | 3.48 | 75.43 |
| 0.32 | 0.12 | 0.4093 | 8.74 | 0.35 | 0.32 | 3.71 | 75.45 |
| 0.34 | 0.13 | 0.4224 | 9.29 | 0.36 | 0.34 | 3.95 | 75.47 |
| 0.36 | 0.14 | 0.4354 | 9.86 | 0.37 | 0.36 | 4.19 | 75.49 |
| 0.38 | 0.14 | 0.4484 | 10.43 | 0.38 | 0.38 | 4.43 | 75.51 |
| 0.4 | 0.15 | 0.4614 | 11.01 | 0.39 | 0.4 | 4.68 | 75.53 |
| 0.42 | 0.16 | 0.4744 | 11.60 | 0.40 | 0.42 | 4.93 | 75.55 |
| 0.44 | 0.17 | 0.4874 | 12.20 | 0.41 | 0.44 | 5.19 | 75.57 |
| 0.46 | 0.17 | 0.5004 | 12.81 | 0.43 | 0.46 | 5.44 | 75.59 |
| 0.48 | 0.18 | 0.5134 | 13.42 | 0.44 | 0.48 | 5.71 | 75.61 |
| 0.5 | 0.19 | 0.5264 | 14.05 | 0.45 | 0.5 | 5.97 | 75.63 |
| 0.52 | 0.20 | 0.5394 | 14.68 | 0.46 | 0.52 | 6.24 | 75.65 |
| 0.54 | 0.21 | 0.5524 | 15.32 | 0.47 | 0.54 | 6.51 | 75.67 |
| 0.56 | 0.21 | 0.5654 | 15.97 | 0.48 | 0.56 | 6.79 | 75.69 |
| 0.58 | 0.22 | 0.5785 | 16.63 | 0.49 | 0.58 | 7.07 | 75.71 |
| 0.6 | 0.23 | 0.5915 | 17.29 | 0.50 | 0.6 | 7.35 | 75.73 |
| 0.62 | 0.24 | 0.6045 | 17.96 | 0.51 | 0.62 | 7.63 | 75.75 |
| 0.64 | 0.24 | 0.6175 | 18.64 | 0.52 | 0.64 | 7.92 | 75.77 |
| 0.66 | 0.25 | 0.6305 | 19.33 | 0.54 | 0.66 | 8.22 | 75.79 |
| 0.68 | 0.26 | 0.6435 | 20.03 | 0.55 | 0.68 | 8.51 | 75.81 |
| 0.7 | 0.27 | 0.6565 | 20.73 | 0.56 | 0.7 | 8.81 | 75.83 |
| 0.72 | 0.27 | 0.6695 | 21.44 | 0.57 | 0.72 | 9.11 | 75.85 |
| 0.74 | 0.28 | 0.6810 | 22.11 | 0.58 | 0.74 | 9.40 | 75.87 |
| 0.76 | 0.29 | 0.6862 | 22.58 | 0.58 | 0.76 | 9.60 | 75.89 |
| 0.78 | 0.30 | 0.6915 | 23.05 | 0.59 | 0.78 | 9.80 | 75.91 |
| 0.8 | 0.30 | 0.6967 | 23.52 | 0.59 | 0.8 | 10.00 | 75.93 |

| | | | |
|---|---|---|---|
| Structure: | S-203 | Basin Area (AC) = | 0.117 |
| Inlet Type: | Type C | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.87 |
| Top Elevation | 76.65 | Surface Flow Peak (cfs) = | 1.37 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 790 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 28 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 7.02 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 10.69 | |
| Hydraulic diameter (ft)= | 2.63 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 4.71 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 2.35 | |
| Peak Stage = | 76.75 | |
| Bypass Elevation = | 76.77 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 76.65 |
| 0.02 | 0.01 | 0.2142 | 1.14 | 0.18 | 0.02 | 0.49 | 76.67 |
| 0.04 | 0.02 | 0.2272 | 1.72 | 0.19 | 0.04 | 0.73 | 76.69 |
| 0.06 | 0.02 | 0.2402 | 2.22 | 0.20 | 0.06 | 0.94 | 76.71 |
| 0.08 | 0.03 | 0.2532 | 2.70 | 0.22 | 0.08 | 1.15 | 76.73 |
| 0.1 | 0.04 | 0.2662 | 3.18 | 0.23 | 0.1 | 1.35 | 76.75 |
| 0.12 | 0.05 | 0.2793 | 3.65 | 0.24 | 0.12 | 1.55 | 76.77 |
| 0.14 | 0.05 | 0.2923 | 4.13 | 0.25 | 0.14 | 1.75 | 76.79 |
| 0.16 | 0.06 | 0.3053 | 4.61 | 0.26 | 0.16 | 1.96 | 76.81 |
| 0.18 | 0.07 | 0.3183 | 5.10 | 0.27 | 0.18 | 2.17 | 76.83 |
| 0.2 | 0.08 | 0.3313 | 5.59 | 0.28 | 0.2 | 2.38 | 76.85 |
| 0.22 | 0.08 | 0.3443 | 6.09 | 0.29 | 0.22 | 2.59 | 76.87 |
| 0.24 | 0.09 | 0.3573 | 6.61 | 0.30 | 0.24 | 2.81 | 76.89 |
| 0.26 | 0.10 | 0.3703 | 7.13 | 0.31 | 0.26 | 3.03 | 76.91 |
| 0.28 | 0.11 | 0.3833 | 7.66 | 0.33 | 0.28 | 3.25 | 76.93 |
| 0.3 | 0.11 | 0.3963 | 8.19 | 0.34 | 0.3 | 3.48 | 76.95 |
| 0.32 | 0.12 | 0.4093 | 8.74 | 0.35 | 0.32 | 3.71 | 76.97 |
| 0.34 | 0.13 | 0.4224 | 9.29 | 0.36 | 0.34 | 3.95 | 76.99 |
| 0.36 | 0.14 | 0.4354 | 9.86 | 0.37 | 0.36 | 4.19 | 77.01 |
| 0.38 | 0.14 | 0.4484 | 10.43 | 0.38 | 0.38 | 4.43 | 77.03 |
| 0.4 | 0.15 | 0.4614 | 11.01 | 0.39 | 0.4 | 4.68 | 77.05 |
| 0.42 | 0.16 | 0.4744 | 11.60 | 0.40 | 0.42 | 4.93 | 77.07 |
| 0.44 | 0.17 | 0.4874 | 12.20 | 0.41 | 0.44 | 5.19 | 77.09 |
| 0.46 | 0.17 | 0.5004 | 12.81 | 0.43 | 0.46 | 5.44 | 77.11 |
| 0.48 | 0.18 | 0.5134 | 13.42 | 0.44 | 0.48 | 5.71 | 77.13 |
| 0.5 | 0.19 | 0.5264 | 14.05 | 0.45 | 0.5 | 5.97 | 77.15 |
| 0.52 | 0.20 | 0.5394 | 14.68 | 0.46 | 0.52 | 6.24 | 77.17 |
| 0.54 | 0.21 | 0.5524 | 15.32 | 0.47 | 0.54 | 6.51 | 77.19 |
| 0.56 | 0.21 | 0.5654 | 15.97 | 0.48 | 0.56 | 6.79 | 77.21 |
| 0.58 | 0.22 | 0.5785 | 16.63 | 0.49 | 0.58 | 7.07 | 77.23 |
| 0.6 | 0.23 | 0.5915 | 17.29 | 0.50 | 0.6 | 7.35 | 77.25 |
| 0.62 | 0.24 | 0.6045 | 17.96 | 0.51 | 0.62 | 7.63 | 77.27 |
| 0.64 | 0.24 | 0.6175 | 18.64 | 0.52 | 0.64 | 7.92 | 77.29 |
| 0.66 | 0.25 | 0.6305 | 19.33 | 0.54 | 0.66 | 8.22 | 77.31 |
| 0.68 | 0.26 | 0.6435 | 20.03 | 0.55 | 0.68 | 8.51 | 77.33 |
| 0.7 | 0.27 | 0.6565 | 20.73 | 0.56 | 0.7 | 8.81 | 77.35 |
| 0.72 | 0.27 | 0.6695 | 21.44 | 0.57 | 0.72 | 9.11 | 77.37 |
| 0.74 | 0.28 | 0.6810 | 22.11 | 0.58 | 0.74 | 9.40 | 77.39 |
| 0.76 | 0.29 | 0.6862 | 22.58 | 0.58 | 0.76 | 9.60 | 77.41 |
| 0.78 | 0.30 | 0.6915 | 23.05 | 0.59 | 0.78 | 9.80 | 77.43 |
| 0.8 | 0.30 | 0.6967 | 23.52 | 0.59 | 0.8 | 10.00 | 77.45 |

| | |
|---|---|
| Structure: | S-204 |
| Inlet Type: | Type C |
| Grate: | Reticuline |
| Top Elevation | 78.06 |

| | |
|---|---|
| Basin Area (AC) = | 0.088 |
| Intensity (iph) = | 13.38 |
| Runoff Coefficient = | 0.88 |
| Surface Flow Peak (cfs) = | 1.04 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 790 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 28 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 7.02 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 10.69 | |
| Hydraulic diameter (ft)= | 2.63 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 4.71 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 2.35 | |
| Peak Stage = | 78.12 | |
| Bypass Elevation = | 78.06 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 78.06 |
| 0.02 | 0.01 | 0.2142 | 1.14 | 0.18 | 0.02 | 0.49 | 78.08 |
| 0.04 | 0.02 | 0.2272 | 1.72 | 0.19 | 0.04 | 0.73 | 78.10 |
| 0.06 | 0.02 | 0.2402 | 2.22 | 0.20 | 0.06 | 0.94 | 78.12 |
| 0.08 | 0.03 | 0.2532 | 2.70 | 0.22 | 0.08 | 1.15 | 78.14 |
| 0.1 | 0.04 | 0.2662 | 3.18 | 0.23 | 0.1 | 1.35 | 78.16 |
| 0.12 | 0.05 | 0.2793 | 3.65 | 0.24 | 0.12 | 1.55 | 78.18 |
| 0.14 | 0.05 | 0.2923 | 4.13 | 0.25 | 0.14 | 1.75 | 78.20 |
| 0.16 | 0.06 | 0.3053 | 4.61 | 0.26 | 0.16 | 1.96 | 78.22 |
| 0.18 | 0.07 | 0.3183 | 5.10 | 0.27 | 0.18 | 2.17 | 78.24 |
| 0.2 | 0.08 | 0.3313 | 5.59 | 0.28 | 0.2 | 2.38 | 78.26 |
| 0.22 | 0.08 | 0.3443 | 6.09 | 0.29 | 0.22 | 2.59 | 78.28 |
| 0.24 | 0.09 | 0.3573 | 6.61 | 0.30 | 0.24 | 2.81 | 78.30 |
| 0.26 | 0.10 | 0.3703 | 7.13 | 0.31 | 0.26 | 3.03 | 78.32 |
| 0.28 | 0.11 | 0.3833 | 7.66 | 0.33 | 0.28 | 3.25 | 78.34 |
| 0.3 | 0.11 | 0.3963 | 8.19 | 0.34 | 0.3 | 3.48 | 78.36 |
| 0.32 | 0.12 | 0.4093 | 8.74 | 0.35 | 0.32 | 3.71 | 78.38 |
| 0.34 | 0.13 | 0.4224 | 9.29 | 0.36 | 0.34 | 3.95 | 78.40 |
| 0.36 | 0.14 | 0.4354 | 9.86 | 0.37 | 0.36 | 4.19 | 78.42 |
| 0.38 | 0.14 | 0.4484 | 10.43 | 0.38 | 0.38 | 4.43 | 78.44 |
| 0.4 | 0.15 | 0.4614 | 11.01 | 0.39 | 0.4 | 4.68 | 78.46 |
| 0.42 | 0.16 | 0.4744 | 11.60 | 0.40 | 0.42 | 4.93 | 78.48 |
| 0.44 | 0.17 | 0.4874 | 12.20 | 0.41 | 0.44 | 5.19 | 78.50 |
| 0.46 | 0.17 | 0.5004 | 12.81 | 0.43 | 0.46 | 5.44 | 78.52 |
| 0.48 | 0.18 | 0.5134 | 13.42 | 0.44 | 0.48 | 5.71 | 78.54 |
| 0.5 | 0.19 | 0.5264 | 14.05 | 0.45 | 0.5 | 5.97 | 78.56 |
| 0.52 | 0.20 | 0.5394 | 14.68 | 0.46 | 0.52 | 6.24 | 78.58 |
| 0.54 | 0.21 | 0.5524 | 15.32 | 0.47 | 0.54 | 6.51 | 78.60 |
| 0.56 | 0.21 | 0.5654 | 15.97 | 0.48 | 0.56 | 6.79 | 78.62 |
| 0.58 | 0.22 | 0.5785 | 16.63 | 0.49 | 0.58 | 7.07 | 78.64 |
| 0.6 | 0.23 | 0.5915 | 17.29 | 0.50 | 0.6 | 7.35 | 78.66 |
| 0.62 | 0.24 | 0.6045 | 17.96 | 0.51 | 0.62 | 7.63 | 78.68 |
| 0.64 | 0.24 | 0.6175 | 18.64 | 0.52 | 0.64 | 7.92 | 78.70 |
| 0.66 | 0.25 | 0.6305 | 19.33 | 0.54 | 0.66 | 8.22 | 78.72 |
| 0.68 | 0.26 | 0.6435 | 20.03 | 0.55 | 0.68 | 8.51 | 78.74 |
| 0.7 | 0.27 | 0.6565 | 20.73 | 0.56 | 0.7 | 8.81 | 78.76 |
| 0.72 | 0.27 | 0.6695 | 21.44 | 0.57 | 0.72 | 9.11 | 78.78 |
| 0.74 | 0.28 | 0.6810 | 22.11 | 0.58 | 0.74 | 9.40 | 78.80 |
| 0.76 | 0.29 | 0.6862 | 22.58 | 0.58 | 0.76 | 9.60 | 78.82 |
| 0.78 | 0.30 | 0.6915 | 23.05 | 0.59 | 0.78 | 9.80 | 78.84 |
| 0.8 | 0.30 | 0.6967 | 23.52 | 0.59 | 0.8 | 10.00 | 78.86 |

| | | | |
|---|---|---|---|
| Structure: | S-205 | Basin Area (AC) = | 0.332 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.85 |
| Top Elevation | 75.1 | Surface Flow Peak (cfs) = | 3.79 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 75.26 | |
| Bypass Elevation = | 75.23 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 75.10 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 75.12 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 75.14 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 75.16 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 75.18 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 75.20 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 75.22 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 75.24 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 75.26 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 75.28 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 75.30 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 75.32 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 75.34 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 75.36 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 75.38 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 75.40 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 75.42 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 75.44 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 75.46 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 75.48 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 75.50 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 75.52 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 75.54 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 75.56 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 75.58 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 75.60 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 75.62 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 75.64 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 75.66 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 75.68 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 75.70 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 75.72 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 75.74 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 75.76 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 75.78 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 75.80 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 75.82 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 75.84 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 75.86 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 75.88 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 75.90 |

| | | | |
|---|---|---|---|
| Structure: | S-207 | Basin Area (AC) = | 0.054 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.95 |
| Top Elevation | 76.1 | Surface Flow Peak (cfs) = | 0.69 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 76.1 | |
| Bypass Elevation = | 76.4 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 76.10 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 76.12 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 76.14 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 76.16 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 76.18 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 76.20 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 76.22 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 76.24 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 76.26 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 76.28 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 76.30 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 76.32 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 76.34 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 76.36 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 76.38 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 76.40 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 76.42 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 76.44 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 76.46 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 76.48 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 76.50 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 76.52 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 76.54 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 76.56 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 76.58 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 76.60 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 76.62 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 76.64 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 76.66 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 76.68 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 76.70 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 76.72 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 76.74 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 76.76 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 76.78 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 76.80 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 76.82 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 76.84 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 76.86 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 76.88 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 76.90 |

| | | | |
|---|---|---|---|
| Structure: | S-208 | Basin Area (AC) = | 1.439 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.60 |
| Top Elevation | 72.4 | Surface Flow Peak (cfs) = | 11.63 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.296 | |
| Open Area/ Nom area | 0.78344 | |
| Perimeter (ft)= | 14.8542 | |
| Hydraulic diameter (ft)= | 3.58041 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63322 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | 0 | |
| Flow Area after blockage (sq ft) = | 4.81661 | |
| Peak Stage = | 72.96 | |
| Bypass Elevation = | | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 72.40 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 72.42 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 72.44 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 72.46 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 72.48 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 72.50 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 72.52 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 72.54 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 72.56 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 72.58 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 72.60 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 72.62 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 72.64 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 72.66 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 72.68 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 72.70 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 72.72 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 72.74 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 72.76 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 72.78 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 72.80 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 72.82 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 72.84 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 72.86 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 72.88 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 72.90 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 72.92 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 72.94 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 72.96 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 72.98 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 73.00 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 73.02 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 73.04 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 73.06 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 73.08 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 73.10 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 73.12 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 73.14 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 73.16 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 73.18 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 73.20 |

| | | | |
|---|---|---|---|
| Structure: | S-210 | Basin Area (AC) = | 0.13 |
| Inlet Type: | Type C | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.89 |
| Top Elevation | 79.34 | Surface Flow Peak (cfs) = | 1.55 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 790 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 28 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 7.02 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 10.69 | |
| Hydraulic diameter (ft)= | 2.63 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 4.71 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 2.35 | |
| Peak Stage = | 79.44 | |
| Bypass Elevation = | 80.1 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 79.34 |
| 0.02 | 0.01 | 0.2142 | 1.14 | 0.18 | 0.02 | 0.49 | 79.36 |
| 0.04 | 0.02 | 0.2272 | 1.72 | 0.19 | 0.04 | 0.73 | 79.38 |
| 0.06 | 0.02 | 0.2402 | 2.22 | 0.20 | 0.06 | 0.94 | 79.40 |
| 0.08 | 0.03 | 0.2532 | 2.70 | 0.22 | 0.08 | 1.15 | 79.42 |
| 0.1 | 0.04 | 0.2662 | 3.18 | 0.23 | 0.1 | 1.35 | 79.44 |
| 0.12 | 0.05 | 0.2793 | 3.65 | 0.24 | 0.12 | 1.55 | 79.46 |
| 0.14 | 0.05 | 0.2923 | 4.13 | 0.25 | 0.14 | 1.75 | 79.48 |
| 0.16 | 0.06 | 0.3053 | 4.61 | 0.26 | 0.16 | 1.96 | 79.50 |
| 0.18 | 0.07 | 0.3183 | 5.10 | 0.27 | 0.18 | 2.17 | 79.52 |
| 0.2 | 0.08 | 0.3313 | 5.59 | 0.28 | 0.2 | 2.38 | 79.54 |
| 0.22 | 0.08 | 0.3443 | 6.09 | 0.29 | 0.22 | 2.59 | 79.56 |
| 0.24 | 0.09 | 0.3573 | 6.61 | 0.30 | 0.24 | 2.81 | 79.58 |
| 0.26 | 0.10 | 0.3703 | 7.13 | 0.31 | 0.26 | 3.03 | 79.60 |
| 0.28 | 0.11 | 0.3833 | 7.66 | 0.33 | 0.28 | 3.25 | 79.62 |
| 0.3 | 0.11 | 0.3963 | 8.19 | 0.34 | 0.3 | 3.48 | 79.64 |
| 0.32 | 0.12 | 0.4093 | 8.74 | 0.35 | 0.32 | 3.71 | 79.66 |
| 0.34 | 0.13 | 0.4224 | 9.29 | 0.36 | 0.34 | 3.95 | 79.68 |
| 0.36 | 0.14 | 0.4354 | 9.86 | 0.37 | 0.36 | 4.19 | 79.70 |
| 0.38 | 0.14 | 0.4484 | 10.43 | 0.38 | 0.38 | 4.43 | 79.72 |
| 0.4 | 0.15 | 0.4614 | 11.01 | 0.39 | 0.4 | 4.68 | 79.74 |
| 0.42 | 0.16 | 0.4744 | 11.60 | 0.40 | 0.42 | 4.93 | 79.76 |
| 0.44 | 0.17 | 0.4874 | 12.20 | 0.41 | 0.44 | 5.19 | 79.78 |
| 0.46 | 0.17 | 0.5004 | 12.81 | 0.43 | 0.46 | 5.44 | 79.80 |
| 0.48 | 0.18 | 0.5134 | 13.42 | 0.44 | 0.48 | 5.71 | 79.82 |
| 0.5 | 0.19 | 0.5264 | 14.05 | 0.45 | 0.5 | 5.97 | 79.84 |
| 0.52 | 0.20 | 0.5394 | 14.68 | 0.46 | 0.52 | 6.24 | 79.86 |
| 0.54 | 0.21 | 0.5524 | 15.32 | 0.47 | 0.54 | 6.51 | 79.88 |
| 0.56 | 0.21 | 0.5654 | 15.97 | 0.48 | 0.56 | 6.79 | 79.90 |
| 0.58 | 0.22 | 0.5785 | 16.63 | 0.49 | 0.58 | 7.07 | 79.92 |
| 0.6 | 0.23 | 0.5915 | 17.29 | 0.50 | 0.6 | 7.35 | 79.94 |
| 0.62 | 0.24 | 0.6045 | 17.96 | 0.51 | 0.62 | 7.63 | 79.96 |
| 0.64 | 0.24 | 0.6175 | 18.64 | 0.52 | 0.64 | 7.92 | 79.98 |
| 0.66 | 0.25 | 0.6305 | 19.33 | 0.54 | 0.66 | 8.22 | 80.00 |
| 0.68 | 0.26 | 0.6435 | 20.03 | 0.55 | 0.68 | 8.51 | 80.02 |
| 0.7 | 0.27 | 0.6565 | 20.73 | 0.56 | 0.7 | 8.81 | 80.04 |
| 0.72 | 0.27 | 0.6695 | 21.44 | 0.57 | 0.72 | 9.11 | 80.06 |
| 0.74 | 0.28 | 0.6810 | 22.11 | 0.58 | 0.74 | 9.40 | 80.08 |
| 0.76 | 0.29 | 0.6862 | 22.58 | 0.58 | 0.76 | 9.60 | 80.10 |
| 0.78 | 0.30 | 0.6915 | 23.05 | 0.59 | 0.78 | 9.80 | 80.12 |
| 0.8 | 0.30 | 0.6967 | 23.52 | 0.59 | 0.8 | 10.00 | 80.14 |

| | | | |
|---|---|---|---|
| Structure: | S-211 | Basin Area (AC) = | 0.18 |
| Inlet Type: | Type C | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.82 |
| Top Elevation | 79.8 | Surface Flow Peak (cfs) = | 1.97 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 790 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 28 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 7.02 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 10.69 | |
| Hydraulic diameter (ft)= | 2.63 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 4.71 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 2.35 | |
| Peak Stage = | 79.96 | |
| Bypass Elevation = | 80.2 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 79.80 |
| 0.02 | 0.01 | 0.2142 | 1.14 | 0.18 | 0.02 | 0.49 | 79.82 |
| 0.04 | 0.02 | 0.2272 | 1.72 | 0.19 | 0.04 | 0.73 | 79.84 |
| 0.06 | 0.02 | 0.2402 | 2.22 | 0.20 | 0.06 | 0.94 | 79.86 |
| 0.08 | 0.03 | 0.2532 | 2.70 | 0.22 | 0.08 | 1.15 | 79.88 |
| 0.1 | 0.04 | 0.2662 | 3.18 | 0.23 | 0.1 | 1.35 | 79.90 |
| 0.12 | 0.05 | 0.2793 | 3.65 | 0.24 | 0.12 | 1.55 | 79.92 |
| 0.14 | 0.05 | 0.2923 | 4.13 | 0.25 | 0.14 | 1.75 | 79.94 |
| 0.16 | 0.06 | 0.3053 | 4.61 | 0.26 | 0.16 | 1.96 | 79.96 |
| 0.18 | 0.07 | 0.3183 | 5.10 | 0.27 | 0.18 | 2.17 | 79.98 |
| 0.2 | 0.08 | 0.3313 | 5.59 | 0.28 | 0.2 | 2.38 | 80.00 |
| 0.22 | 0.08 | 0.3443 | 6.09 | 0.29 | 0.22 | 2.59 | 80.02 |
| 0.24 | 0.09 | 0.3573 | 6.61 | 0.30 | 0.24 | 2.81 | 80.04 |
| 0.26 | 0.10 | 0.3703 | 7.13 | 0.31 | 0.26 | 3.03 | 80.06 |
| 0.28 | 0.11 | 0.3833 | 7.66 | 0.33 | 0.28 | 3.25 | 80.08 |
| 0.3 | 0.11 | 0.3963 | 8.19 | 0.34 | 0.3 | 3.48 | 80.10 |
| 0.32 | 0.12 | 0.4093 | 8.74 | 0.35 | 0.32 | 3.71 | 80.12 |
| 0.34 | 0.13 | 0.4224 | 9.29 | 0.36 | 0.34 | 3.95 | 80.14 |
| 0.36 | 0.14 | 0.4354 | 9.86 | 0.37 | 0.36 | 4.19 | 80.16 |
| 0.38 | 0.14 | 0.4484 | 10.43 | 0.38 | 0.38 | 4.43 | 80.18 |
| 0.4 | 0.15 | 0.4614 | 11.01 | 0.39 | 0.4 | 4.68 | 80.20 |
| 0.42 | 0.16 | 0.4744 | 11.60 | 0.40 | 0.42 | 4.93 | 80.22 |
| 0.44 | 0.17 | 0.4874 | 12.20 | 0.41 | 0.44 | 5.19 | 80.24 |
| 0.46 | 0.17 | 0.5004 | 12.81 | 0.43 | 0.46 | 5.44 | 80.26 |
| 0.48 | 0.18 | 0.5134 | 13.42 | 0.44 | 0.48 | 5.71 | 80.28 |
| 0.5 | 0.19 | 0.5264 | 14.05 | 0.45 | 0.5 | 5.97 | 80.30 |
| 0.52 | 0.20 | 0.5394 | 14.68 | 0.46 | 0.52 | 6.24 | 80.32 |
| 0.54 | 0.21 | 0.5524 | 15.32 | 0.47 | 0.54 | 6.51 | 80.34 |
| 0.56 | 0.21 | 0.5654 | 15.97 | 0.48 | 0.56 | 6.79 | 80.36 |
| 0.58 | 0.22 | 0.5785 | 16.63 | 0.49 | 0.58 | 7.07 | 80.38 |
| 0.6 | 0.23 | 0.5915 | 17.29 | 0.50 | 0.6 | 7.35 | 80.40 |
| 0.62 | 0.24 | 0.6045 | 17.96 | 0.51 | 0.62 | 7.63 | 80.42 |
| 0.64 | 0.24 | 0.6175 | 18.64 | 0.52 | 0.64 | 7.92 | 80.44 |
| 0.66 | 0.25 | 0.6305 | 19.33 | 0.54 | 0.66 | 8.22 | 80.46 |
| 0.68 | 0.26 | 0.6435 | 20.03 | 0.55 | 0.68 | 8.51 | 80.48 |
| 0.7 | 0.27 | 0.6565 | 20.73 | 0.56 | 0.7 | 8.81 | 80.50 |
| 0.72 | 0.27 | 0.6695 | 21.44 | 0.57 | 0.72 | 9.11 | 80.52 |
| 0.74 | 0.28 | 0.6810 | 22.11 | 0.58 | 0.74 | 9.40 | 80.54 |
| 0.76 | 0.29 | 0.6862 | 22.58 | 0.58 | 0.76 | 9.60 | 80.56 |
| 0.78 | 0.30 | 0.6915 | 23.05 | 0.59 | 0.78 | 9.80 | 80.58 |
| 0.8 | 0.30 | 0.6967 | 23.52 | 0.59 | 0.8 | 10.00 | 80.60 |

| | | | |
|---|---|---|---|
| Structure: | S-212 | Basin Area (AC) = | 0.633 |
| Inlet Type: | Type D | Intensity (iph) = | 13.38 |
| Grate: | Reticuline | Runoff Coefficient = | 0.49 |
| Top Elevation | 79.57 | Surface Flow Peak (cfs) = | 4.14 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 79.75 | |
| Bypass Elevation = | 80.6 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 79.57 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 79.59 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 79.61 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 79.63 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 79.65 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 79.67 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 79.69 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 79.71 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 79.73 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 79.75 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 79.77 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 79.79 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 79.81 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 79.83 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 79.85 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 79.87 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 79.89 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 79.91 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 79.93 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 79.95 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 79.97 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 79.99 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 80.01 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 80.03 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 80.05 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 80.07 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 80.09 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 80.11 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 80.13 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 80.15 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 80.17 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 80.19 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 80.21 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 80.23 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 80.25 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 80.27 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 80.29 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 80.31 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 80.33 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 80.35 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 80.37 |

| | |
|---|---|
| Structure: | S-213 |
| Inlet Type: | Type C |
| Grate: | Reticuline |
| Top Elevation | 81.05 |

| | |
|---|---|
| Basin Area (AC) = | 0.031 |
| Intensity (iph) = | 13.38 |
| Runoff Coefficient = | 0.88 |
| Surface Flow Peak (cfs) = | 0.36 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 790 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 28 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 7.02 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 10.69 | |
| Hydraulic diameter (ft)= | 2.63 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 4.71 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 2.35 | |
| Peak Stage = | 81.05 | |
| Bypass Elevation = | 81.05 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 81.05 |
| 0.02 | 0.01 | 0.2142 | 1.14 | 0.18 | 0.02 | 0.49 | 81.07 |
| 0.04 | 0.02 | 0.2272 | 1.72 | 0.19 | 0.04 | 0.73 | 81.09 |
| 0.06 | 0.02 | 0.2402 | 2.22 | 0.20 | 0.06 | 0.94 | 81.11 |
| 0.08 | 0.03 | 0.2532 | 2.70 | 0.22 | 0.08 | 1.15 | 81.13 |
| 0.1 | 0.04 | 0.2662 | 3.18 | 0.23 | 0.1 | 1.35 | 81.15 |
| 0.12 | 0.05 | 0.2793 | 3.65 | 0.24 | 0.12 | 1.55 | 81.17 |
| 0.14 | 0.05 | 0.2923 | 4.13 | 0.25 | 0.14 | 1.75 | 81.19 |
| 0.16 | 0.06 | 0.3053 | 4.61 | 0.26 | 0.16 | 1.96 | 81.21 |
| 0.18 | 0.07 | 0.3183 | 5.10 | 0.27 | 0.18 | 2.17 | 81.23 |
| 0.2 | 0.08 | 0.3313 | 5.59 | 0.28 | 0.2 | 2.38 | 81.25 |
| 0.22 | 0.08 | 0.3443 | 6.09 | 0.29 | 0.22 | 2.59 | 81.27 |
| 0.24 | 0.09 | 0.3573 | 6.61 | 0.30 | 0.24 | 2.81 | 81.29 |
| 0.26 | 0.10 | 0.3703 | 7.13 | 0.31 | 0.26 | 3.03 | 81.31 |
| 0.28 | 0.11 | 0.3833 | 7.66 | 0.33 | 0.28 | 3.25 | 81.33 |
| 0.3 | 0.11 | 0.3963 | 8.19 | 0.34 | 0.3 | 3.48 | 81.35 |
| 0.32 | 0.12 | 0.4093 | 8.74 | 0.35 | 0.32 | 3.71 | 81.37 |
| 0.34 | 0.13 | 0.4224 | 9.29 | 0.36 | 0.34 | 3.95 | 81.39 |
| 0.36 | 0.14 | 0.4354 | 9.86 | 0.37 | 0.36 | 4.19 | 81.41 |
| 0.38 | 0.14 | 0.4484 | 10.43 | 0.38 | 0.38 | 4.43 | 81.43 |
| 0.4 | 0.15 | 0.4614 | 11.01 | 0.39 | 0.4 | 4.68 | 81.45 |
| 0.42 | 0.16 | 0.4744 | 11.60 | 0.40 | 0.42 | 4.93 | 81.47 |
| 0.44 | 0.17 | 0.4874 | 12.20 | 0.41 | 0.44 | 5.19 | 81.49 |
| 0.46 | 0.17 | 0.5004 | 12.81 | 0.43 | 0.46 | 5.44 | 81.51 |
| 0.48 | 0.18 | 0.5134 | 13.42 | 0.44 | 0.48 | 5.71 | 81.53 |
| 0.5 | 0.19 | 0.5264 | 14.05 | 0.45 | 0.5 | 5.97 | 81.55 |
| 0.52 | 0.20 | 0.5394 | 14.68 | 0.46 | 0.52 | 6.24 | 81.57 |
| 0.54 | 0.21 | 0.5524 | 15.32 | 0.47 | 0.54 | 6.51 | 81.59 |
| 0.56 | 0.21 | 0.5654 | 15.97 | 0.48 | 0.56 | 6.79 | 81.61 |
| 0.58 | 0.22 | 0.5785 | 16.63 | 0.49 | 0.58 | 7.07 | 81.63 |
| 0.6 | 0.23 | 0.5915 | 17.29 | 0.50 | 0.6 | 7.35 | 81.65 |
| 0.62 | 0.24 | 0.6045 | 17.96 | 0.51 | 0.62 | 7.63 | 81.67 |
| 0.64 | 0.24 | 0.6175 | 18.64 | 0.52 | 0.64 | 7.92 | 81.69 |
| 0.66 | 0.25 | 0.6305 | 19.33 | 0.54 | 0.66 | 8.22 | 81.71 |
| 0.68 | 0.26 | 0.6435 | 20.03 | 0.55 | 0.68 | 8.51 | 81.73 |
| 0.7 | 0.27 | 0.6565 | 20.73 | 0.56 | 0.7 | 8.81 | 81.75 |
| 0.72 | 0.27 | 0.6695 | 21.44 | 0.57 | 0.72 | 9.11 | 81.77 |
| 0.74 | 0.28 | 0.6810 | 22.11 | 0.58 | 0.74 | 9.40 | 81.79 |
| 0.76 | 0.29 | 0.6862 | 22.58 | 0.58 | 0.76 | 9.60 | 81.81 |
| 0.78 | 0.30 | 0.6915 | 23.05 | 0.59 | 0.78 | 9.80 | 81.83 |
| 0.8 | 0.30 | 0.6967 | 23.52 | 0.59 | 0.8 | 10.00 | 81.85 |

| | |
|---|---|
| Structure: | S-214 |
| Inlet Type: | Type D |
| Grate: | Reticuline |
| Top Elevation | 80 |

| | |
|---|---|
| Basin Area (AC) = | 0.336 |
| Intensity (iph) = | 13.38 |
| Runoff Coefficient = | 0.69 |
| Surface Flow Peak (cfs) = | 3.10 |

| | | |
|---|---|---|
| Blockage is assumed to be (%) = | 50 | |
| Head increment = | 0.02 | |
| Open Area (sq in)= | 1500 | Open area from U.S Foundry catalog |
| *Grate Length (in)= | 53 | *Use Total dimensions if multiple grates |
| *Grate Width (in)= | 36.125 | |
| Area, Nominal (ft)= | 13.30 | |
| Open Area/ Nom area | 0.78 | |
| Perimeter (ft)= | 14.85 | |
| Hydraulic diameter (ft)= | 3.58 | |
| **Grate Seat Area, Total (ft)= | 1 | ** Assumes precast where precast permitt |
| Actual Flow Area (sq ft) = | 9.63 | If seat does not encroach, shown as "z |
| (Anom-GSA)x(OA/144/Anom) | | |
| Flow Area after blockage (sq ft) = | 4.82 | |
| Peak Stage = | 80.12 | |
| Bypass Elevation = | 80.6 | |

| Head | Sub Head | CD UnBlkd | Q UnBlkd | CD Bkld | Head | Q BLKD | Elevation |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.2012 | 0.00 | 0.17 | 0 | 0.00 | 80.00 |
| 0.02 | 0.01 | 0.2108 | 2.30 | 0.18 | 0.02 | 0.98 | 80.02 |
| 0.04 | 0.01 | 0.2203 | 3.40 | 0.19 | 0.04 | 1.45 | 80.04 |
| 0.06 | 0.02 | 0.2299 | 4.35 | 0.20 | 0.06 | 1.85 | 80.06 |
| 0.08 | 0.02 | 0.2394 | 5.23 | 0.20 | 0.08 | 2.22 | 80.08 |
| 0.1 | 0.03 | 0.2490 | 6.08 | 0.21 | 0.1 | 2.59 | 80.10 |
| 0.12 | 0.03 | 0.2585 | 6.92 | 0.22 | 0.12 | 2.94 | 80.12 |
| 0.14 | 0.04 | 0.2681 | 7.75 | 0.23 | 0.14 | 3.29 | 80.14 |
| 0.16 | 0.04 | 0.2776 | 8.58 | 0.24 | 0.16 | 3.65 | 80.16 |
| 0.18 | 0.05 | 0.2872 | 9.41 | 0.24 | 0.18 | 4.00 | 80.18 |
| 0.2 | 0.06 | 0.2967 | 10.25 | 0.25 | 0.2 | 4.36 | 80.20 |
| 0.22 | 0.06 | 0.3063 | 11.10 | 0.26 | 0.22 | 4.72 | 80.22 |
| 0.24 | 0.07 | 0.3158 | 11.96 | 0.27 | 0.24 | 5.08 | 80.24 |
| 0.26 | 0.07 | 0.3254 | 12.82 | 0.28 | 0.26 | 5.45 | 80.26 |
| 0.28 | 0.08 | 0.3349 | 13.69 | 0.28 | 0.28 | 5.82 | 80.28 |
| 0.3 | 0.08 | 0.3445 | 14.58 | 0.29 | 0.3 | 6.20 | 80.30 |
| 0.32 | 0.09 | 0.3540 | 15.47 | 0.30 | 0.32 | 6.58 | 80.32 |
| 0.34 | 0.09 | 0.3636 | 16.38 | 0.31 | 0.34 | 6.96 | 80.34 |
| 0.36 | 0.10 | 0.3731 | 17.30 | 0.32 | 0.36 | 7.35 | 80.36 |
| 0.38 | 0.11 | 0.3827 | 18.23 | 0.33 | 0.38 | 7.75 | 80.38 |
| 0.4 | 0.11 | 0.3922 | 19.17 | 0.33 | 0.4 | 8.15 | 80.40 |
| 0.42 | 0.12 | 0.4018 | 20.12 | 0.34 | 0.42 | 8.55 | 80.42 |
| 0.44 | 0.12 | 0.4113 | 21.08 | 0.35 | 0.44 | 8.96 | 80.44 |
| 0.46 | 0.13 | 0.4209 | 22.06 | 0.36 | 0.46 | 9.37 | 80.46 |
| 0.48 | 0.13 | 0.4304 | 23.04 | 0.37 | 0.48 | 9.79 | 80.48 |
| 0.5 | 0.14 | 0.4400 | 24.04 | 0.37 | 0.5 | 10.22 | 80.50 |
| 0.52 | 0.15 | 0.4496 | 25.05 | 0.38 | 0.52 | 10.65 | 80.52 |
| 0.54 | 0.15 | 0.4591 | 26.07 | 0.39 | 0.54 | 11.08 | 80.54 |
| 0.56 | 0.16 | 0.4687 | 27.10 | 0.40 | 0.56 | 11.52 | 80.56 |
| 0.58 | 0.16 | 0.4782 | 28.14 | 0.41 | 0.58 | 11.96 | 80.58 |
| 0.6 | 0.17 | 0.4878 | 29.19 | 0.41 | 0.6 | 12.41 | 80.60 |
| 0.62 | 0.17 | 0.4973 | 30.26 | 0.42 | 0.62 | 12.86 | 80.62 |
| 0.64 | 0.18 | 0.5069 | 31.33 | 0.43 | 0.64 | 13.32 | 80.64 |
| 0.66 | 0.18 | 0.5164 | 32.42 | 0.44 | 0.66 | 13.78 | 80.66 |
| 0.68 | 0.19 | 0.5260 | 33.51 | 0.45 | 0.68 | 14.24 | 80.68 |
| 0.7 | 0.20 | 0.5355 | 34.62 | 0.46 | 0.7 | 14.71 | 80.70 |
| 0.72 | 0.20 | 0.5451 | 35.74 | 0.46 | 0.72 | 15.19 | 80.72 |
| 0.74 | 0.21 | 0.5546 | 36.87 | 0.47 | 0.74 | 15.67 | 80.74 |
| 0.76 | 0.21 | 0.5642 | 38.00 | 0.48 | 0.76 | 16.15 | 80.76 |
| 0.78 | 0.22 | 0.5737 | 39.15 | 0.49 | 0.78 | 16.64 | 80.78 |
| 0.8 | 0.22 | 0.5833 | 40.31 | 0.50 | 0.8 | 17.13 | 80.80 |

# STORM CONVEYANCE TABULATIONS

# STORM SEWER TABULATION

Notes:

ATKINS
2114 Airport Blvd., Suite 1450
Pensacola, FL 32504

BY: JTR
Jun-17
6/21/2017

PROJECT NO.

PROJECT: Escambia County Correctional Facility

**Main Trunk Line**

| STRUCT. TYPE | STRUCT. NO. | LENGTH (FT) | DRAINAGE AREA (AC.) C pvmnt = 0.95, C grass = 0.2, C = 0 — INCRE-MENT | DRAINAGE AREA (AC.) — SUB TOTAL | SUB TOTAL (CA.) | Tc (MIN.) | TIME OF FLOW IN SECTION (MIN) | INTENSITY (in./HR) | TOTAL (CA) | Q TOTAL RUNOFF (CFS) | MANHOLE OR INLET TOP ELEVATION (FT.) | ELEV. OF H.G. / CROWN ELEVATION / FLOW LINE EL. — UPPER | LOWER | FALL (FT.) | EQ. HEIGHT DIAM. / TYPE — DIAM. (IN.) | HGL PIPE — SLOPE (%) | ACTUAL FULL — Velocity | ACTUAL FULL — Capacity (CFS) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | Pensacola, Florida |
| | | | | | | | | | | | | | | | | | | | | Freq = 500 yr. |
| | | | | | | | | | | | | | | | | | | | | Tailwater = 58.4 |
| | | | | | | | | | | | | | | | | | | | | Exit Loss (k=1.0) 1.0 |
| | | | | | | | | | | | | | | | | | | | | Remarks |
| | | | 0.853 | 0.85 | 0.810 | | | | | | | 74.50 | 73.14 | 0.03 | | 0.06 | 2.29 | 11.25 | Minor Loss = | 0.000 |
| DBI | S-110A | 40 | 0.151 | 0.15 | 0.030 | 10.00 | 0.29 | 13.38 | 0.84 | 11.25 | 81.19 | 74.50 | 72.70 | 1.80 | 30 | | | | Loss Coeff. = | 0.00 |
| | S-110 | | | 0.00 | 0.00 | | | | | | | 72.00 | 70.20 | 1.80 | RCP | 4.50 | 19.20 | 94.26 | | |
| | | | 0.000 | 0.00 | 0.000 | | | | | | | 76.50 | 73.14 | 0.00 | | 0.00 | 0.00 | 0.00 | Minor Loss = | 0.000 |
| DBI | S-111A | 112 | 0.000 | 0.00 | 0.000 | 10.00 | #DIV/0! | 13.38 | 0.00 | 0.00 | 81.40 | 76.50 | 72.70 | 3.80 | 18 | | | | Loss Coeff. = | 0.00 |
| | S-110 | | | 0.00 | 0.00 | | | | | | | 75.00 | 71.20 | 3.80 | RCP | 3.39 | 11.86 | 20.96 | | |
| | | | 0.117 | 0.97 | 0.922 | | | | | | | 73.14 | 72.91 | 0.13 | | 0.08 | 2.62 | 12.84 | Minor Loss = | 0.096 |
| DBI | S-110 | 154 | 0.039 | 0.19 | 0.038 | 10.00 | 0.98 | 13.38 | 0.96 | 12.84 | 79.32 | 72.70 | 72.60 | 0.10 | 30 | | | | Loss Coeff. = | 0.90 |
| | S-109 | | | 0.00 | 0.00 | | | | | | | 70.20 | 70.10 | 0.10 | RCP | 0.06 | 2.31 | 11.32 | | |
| | | | 0.554 | 1.52 | 1.448 | | | | | | | 72.91 | 72.50 | 0.18 | | 0.21 | 4.11 | 20.19 | Minor Loss = | 0.236 |
| DBI | S-109 | 86 | 0.114 | 0.30 | 0.061 | 10.00 | 0.35 | 13.38 | 1.51 | 20.19 | 78.41 | 72.60 | 72.50 | 0.10 | 30 | | | | Loss Coeff. = | 0.90 |
| | S-108 | | | 0.00 | 0.00 | | | | | | | 70.10 | 70.00 | 0.10 | RCP | 0.12 | 3.09 | 15.15 | | |
| | | | 0.503 | 2.03 | 1.926 | | | | | | | 72.50 | 70.15 | 0.28 | | 0.36 | 5.47 | 26.84 | Minor Loss = | 0.278 |
| DBI | S-108 | 77 | 0.096 | 0.40 | 0.080 | 10.00 | 0.23 | 13.38 | 2.01 | 26.84 | 77.18 | 72.50 | 70.15 | 2.35 | 30 | | | | Loss Coeff. = | 0.60 |
| | S-105 | | | 0.00 | 0.00 | | | | | | | 70.00 | 67.65 | 2.35 | RCP | 3.05 | 15.81 | 77.63 | | |
| | | | 0.050 | 0.05 | 0.048 | | | | | | | 73.70 | 73.60 | 0.00 | | 0.01 | 0.53 | 0.94 | Minor Loss = | 0.000 |
| Curb Inlet | S-107 | 25 | 0.113 | 0.11 | 0.023 | 10.00 | 0.79 | 13.38 | 0.07 | 0.94 | 76.08 | 73.70 | 73.60 | 0.10 | 18 | | | | Loss Coeff. = | 0.00 |
| | S-106 | | | 0.00 | 0.00 | | | | | | | 72.20 | 72.10 | 0.10 | RCP | 0.40 | 4.07 | 7.20 | | |
| | | | 0.050 | 0.10 | 0.095 | | | | | | | 73.60 | 73.20 | 0.01 | | 0.02 | 0.90 | 1.60 | Minor Loss = | 0.006 |
| Curb Inlet | S-106 | 64 | 0.009 | 0.12 | 0.024 | 10.00 | 1.18 | 13.38 | 0.12 | 1.60 | 76.46 | 73.60 | 73.20 | 0.40 | 18 | | | | Loss Coeff. = | 0.50 |
| | S-105 | | | 0.00 | 0.00 | | | | | | | 72.10 | 71.70 | 0.40 | RCP | 0.62 | 5.09 | 9.00 | | |
| | | | 0.344 | 2.47 | 2.347 | | | | | | | 69.50 | 68.50 | 0.23 | | 0.55 | 6.73 | 33.01 | Minor Loss = | 0.492 |
| DBI | S-105 | 42 | 0.077 | 0.60 | 0.120 | 10.00 | 0.10 | 13.38 | 2.47 | 33.01 | 75.40 | 69.50 | 68.50 | 1.00 | 30 | | | | Loss Coeff. = | 0.70 |
| | S-101 | | | 0.00 | 0.00 | | | | | | | 67.00 | 66.00 | 1.00 | RCP | 2.38 | 13.97 | 68.57 | | |
| | | | 0.031 | 0.03 | 0.029 | | | | | | | 73.90 | 73.80 | 0.00 | | 0.00 | 0.28 | 0.49 | Minor Loss = | 0.000 |
| Curb Inlet | S-104 | 25 | 0.035 | 0.04 | 0.007 | 10.00 | 1.51 | 13.38 | 0.04 | 0.49 | 76.46 | 73.90 | 73.80 | 0.10 | 18 | | | | Loss Coeff. = | 0.00 |
| | S-103 | | | 0.00 | 0.00 | | | | | | | 72.40 | 72.30 | 0.10 | RCP | 0.40 | 4.07 | 7.20 | | |
| | | | 0.031 | 0.06 | 0.059 | | | | | | | 73.80 | 73.20 | 0.00 | | 0.01 | 0.51 | 0.91 | Minor Loss = | 0.002 |
| Curb Inlet | S-103 | 66 | 0.009 | 0.04 | 0.009 | 10.00 | 2.15 | 13.38 | 0.07 | 0.91 | 76.46 | 73.80 | 73.20 | 0.60 | 18 | | | | Loss Coeff. = | 0.50 |
| | S-102 | | | 0.00 | 0.00 | | | | | | | 72.30 | 71.70 | 0.60 | RCP | 0.91 | 6.14 | 10.85 | | |
| | | | 0.341 | 0.40 | 0.383 | | | | | | | 69.50 | 60.25 | 0.02 | | 0.01 | 1.10 | 5.38 | Minor Loss = | 0.011 |
| DBI | S-102 | 159 | 0.054 | 0.10 | 0.020 | 10.00 | 2.42 | 13.38 | 0.40 | 5.38 | 75.25 | 69.50 | 68.50 | 1.00 | 30 | | | | Loss Coeff. = | 0.60 |
| | S-101 | | | 0.00 | 0.00 | | | | | | | 67.00 | 66.00 | 1.00 | RCP | 0.63 | 7.18 | 35.24 | | |
| | | | 0.000 | 2.87 | 2.730 | | | | | | | 60.25 | 59.36 | 0.32 | | 0.75 | 7.82 | 38.40 | Minor Loss = | 0.570 |
| MH | S-101 | 43 | 0.000 | 0.70 | 0.139 | 10.00 | 0.09 | 13.38 | 2.87 | 38.40 | 76.16 | 58.00 | 57.50 | 0.50 | 30 | | | | Loss Coeff. = | 0.60 |
| | S-100 | | | 0.00 | 0.00 | | | | | | | 55.50 | 55.00 | 0.50 | RCP | 1.16 | 9.76 | 47.92 | | |

# STORM SEWER TABULATION

Notes:

ATKINS
2114 Airport Blvd., Suite 1450
Pensacola, FL 32504

BY: JTR
Jun-17
6/21/2017

PROJECT NO.

PROJECT: Escambia County Correctional Facility

**Main Trunk Line**

| STRUCT. TYPE | STRUCT. NO. | LENGTH (FT) | DRAINAGE AREA (AC.) C pvmnt = 0.95, C grass = 0.2, C = 0 — INCRE-MENT | DRAINAGE AREA (AC.) — SUB TOTAL | SUB TOTAL (CA.) | Tc (MIN.) | TIME OF FLOW IN SECTION (MIN) | INTENSITY (in./HR) | TOTAL (CA) | Q TOTAL RUNOFF (CFS) | MANHOLE OR INLET TOP ELEVATION (FT.) | ELEV. OF H.G. CROWN ELEVATION / FLOW LINE EL. — UPPER | LOWER | FALL (FT.) | EQ. HEIGHT DIAM. / TYPE — DIAM. (IN.) | HGL PIPE — SLOPE (%) | ACTUAL FULL — Velocity | ACTUAL FULL — Capacity (CFS) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | Pensacola, Florida |
| | | | | | | | | | | | | | | | | | | | | Freq = 500 yr. |
| | | | | | | | | | | | | | | | | | | | | Tailwater = 68.7 |
| | | | | | | | | | | | | | | | | | | | | Exit Loss (k=1.0) 0.3 |
| | | | | | | | | | | | | | | | | | | | | Remarks |
| | | | 1.076 | 1.08 | 1.02 | | | | | | | 73.32 | 73.10 | 0.06 | | 0.34 | 4.52 | 14.19 | Minor Loss = | 0.16 |
| MH | S-117 | 19 | 0.19 | 0.19 | 0.04 | 10.00 | 0.07 | 13.38 | 1.06 | 14.19 | 77.02 | 74.00 | 73.10 | 0.90 | 24 | | | | Loss Coeff. = | 0.50 |
| | S-115B | | | 0.00 | 0.00 | | | | | | | 72.00 | 71.10 | 0.90 | RCP | 4.74 | 16.98 | 53.34 | | |

# STORM SEWER TABULATION

Notes:

ATKINS
2114 Airport Blvd., Suite 1450
Pensacola, FL 32504

BY: JTR
Jun-17
6/21/2017

PROJECT NO.

PROJECT: Escambia County Correctional Facility

**Main Trunk Line**

| STRUCT. TYPE | STRUCT. NO. | LENGTH (FT) | DRAINAGE AREA (AC.) C pvmnt = 0.95, C grass = 0.2, C = 0 — INCRE-MENT | DRAINAGE AREA (AC.) — SUB TOTAL | SUB TOTAL (CA.) | Tc (MIN.) | TIME OF FLOW IN SECTION (MIN) | INTENSITY (in./HR) | TOTAL (CA) | Q TOTAL RUNOFF (CFS) | MANHOLE OR INLET TOP ELEVATION (FT.) | ELEV. OF H.G. CROWN ELEVATION FLOW LINE EL. — UPPER | LOWER | FALL (FT.) | EQ. HEIGHT DIAM. TYPE — DIAM. (IN.) | HGL PIPE — SLOPE (%) | ACTUAL FULL — Velocity | ACTUAL FULL — Capacity (CFS) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | **Pensacola, Florida** |
| | | | | | | | | | | | | | | | | | | | | **Freq = 500 yr.** |
| | | | | | | | | | | | | | | | | | | | | **Tailwater =** 68.7 |
| | | | | | | | | | | | | | | | | | | | | **Exit Loss (k=1.0)** 0.8 |
| | | | | | | | | | | | | | | | | | | | | **Remarks** |
| | | | 0.781 | 0.78 | 0.742 | | | | | | | 77.58 | 76.40 | 0.80 | | 0.87 | 5.99 | 10.59 | Minor Loss = | 0.390 |
| DBI | S-119 | 92 | 0.246 | 0.25 | 0.049 | 10.00 | 0.26 | 13.38 | 0.79 | 10.59 | 77.31 | 76.20 | 76.10 | 0.10 | 18 | | | | Loss Coeff. = | 0.70 |
| | S-118A | | | 0.00 | 0.00 | | | | | | | 74.70 | 74.60 | 0.10 | RCP | 0.11 | 2.12 | 3.75 | | |
| | | | 0.397 | 0.40 | 0.377 | | | | | | | 76.40 | 76.10 | 0.23 | | 0.20 | 2.86 | 5.05 | Minor Loss = | 0.063 |
| MH | S-118 | 119 | 0.000 | 0.00 | 0.000 | 10.00 | 0.69 | 13.38 | 0.38 | 5.05 | 80.00 | 76.30 | 76.10 | 0.20 | 18 | | | | Loss Coeff. = | 0.50 |
| | S-118A | | | 0.00 | 0.00 | | | | | | | 74.80 | 74.60 | 0.20 | RCP | 0.17 | 2.64 | 4.67 | | |
| | | | 0.498 | 1.68 | 1.59 | | | | | | | 76.10 | 75.50 | 0.12 | | 0.80 | 6.99 | 21.96 | Minor Loss = | 0.38 |
| MH | S-118A | 15 | | 0.25 | 0.05 | 10.00 | 0.04 | 13.38 | 1.64 | 21.96 | 81.71 | 76.10 | 75.50 | 0.60 | 24 | | | | Loss Coeff. = | 0.50 |
| | S-111C | | | 0.00 | 0.00 | | | | | | | 74.10 | 73.50 | 0.60 | RCP | 4.00 | 15.60 | 49.02 | | |

# STORM SEWER TABULATION

ATKINS
2114 Airport Blvd., Suite 1450
Pensacola, FL 32504

Notes:

BY: JTR
Jun-17
6/21/2017

PROJECT NO.

PROJECT: Escambia County Correctional Facility

**Main Trunk Line**

| STRUCT. TYPE | STRUCT. NO. | LENGTH (FT) | DRAINAGE AREA (AC.) C pvmnt = 0.95, C grass = 0.2, C = 0 — INCRE-MENT | DRAINAGE AREA (AC.) — SUB TOTAL | SUB TOTAL (CA.) | Tc (MIN.) | TIME OF FLOW IN SECTION (MIN) | INTENSITY (in./HR) | TOTAL (CA) | Q TOTAL RUNOFF (CFS) | MANHOLE OR INLET TOP ELEVATION (FT.) | ELEV. OF H.G. — CROWN ELEVATION / FLOW LINE EL. — UPPER | LOWER | FALL (FT.) | EQ. HEIGHT — DIAM. / TYPE — DIAM. (IN.) | HGL — PIPE — SLOPE (%) | ACTUAL — FULL — Velocity | ACTUAL — FULL — Capacity (CFS) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | **Pensacola, Florida** |
| | | | | | | | | | | | | | | | | | | | | **Freq = 500 yr.** |
| | | | | | | | | | | | | | | | | | | | | **Tailwater = 68.7** |
| | | | | | | | | | | | | | | | | | | | | **Exit Loss (k=1.0) 0.8** |
| | | | | | | | | | | | | | | | | | | | | **Remarks** |
| | | | 2.802 | 2.80 | 2.662 | | | | | | | 80.15 | 79.57 | 0.15 | | 0.69 | 7.52 | 36.94 | Minor Loss = | 0.440 |
| MH | S-124 | 21 | 0.494 | 0.49 | 0.099 | 10.00 | 0.05 | 13.38 | 2.76 | 36.94 | 82.00 | 76.40 | 76.30 | 0.10 | 30 | | | | Loss Coeff. = | 0.50 |
| | S-122 | | | 0.00 | 0.00 | | | | | | | 73.90 | 73.80 | 0.10 | RCP | 0.48 | 6.25 | 30.66 | | |
| | | | 0.558 | 0.56 | 0.530 | | | | | | | 80.10 | 79.57 | 0.41 | | 0.39 | 4.01 | 7.09 | Minor Loss = | 0.125 |
| DBI | S-123 | 105 | 0.000 | 0.00 | 0.000 | 10.00 | 0.44 | 13.38 | 0.53 | 7.09 | 84.46 | 76.50 | 76.30 | 0.20 | 18 | | | | Loss Coeff. = | 0.50 |
| | S-122 | | | 0.00 | 0.00 | | | | | | | 75.00 | 74.80 | 0.20 | RCP | 0.19 | 2.81 | 4.97 | | |
| | | | 0.000 | 3.36 | 3.192 | | | | | | | 79.57 | 78.41 | 0.28 | | 0.98 | 8.97 | 44.03 | Minor Loss = | 0.875 |
| MH | S-122 | 29 | 0.000 | 0.49 | 0.099 | 10.00 | 0.05 | 13.38 | 3.29 | 44.03 | 81.07 | 76.30 | 76.20 | 0.10 | 30 | | | | Loss Coeff. = | 0.70 |
| | S-121 | | | 0.00 | 0.00 | | | | | | | 73.80 | 73.70 | 0.10 | RCP | 0.34 | 5.32 | 26.09 | | |
| | | | 0.004 | 3.36 | 3.196 | | | | | | | 78.41 | 76.75 | 1.03 | | 0.99 | 9.01 | 44.21 | Minor Loss = | 0.630 |
| DBI | S-121 | 104 | 0.049 | 0.54 | 0.109 | 10.00 | 0.19 | 13.38 | 3.30 | 44.21 | 83.12 | 76.20 | 76.10 | 0.10 | 30 | | | | Loss Coeff. = | 0.50 |
| | S-120 | | | 0.00 | 0.00 | | | | | | | 73.70 | 73.60 | 0.10 | RCP | 0.10 | 2.81 | 13.78 | | |
| | | | 0.553 | 3.92 | 3.72 | | | | | | | 76.75 | 76.00 | 0.18 | | 0.50 | 7.25 | 51.24 | Minor Loss = | 0.57 |
| MH | S-120 | 35 | | 0.54 | 0.11 | 10.00 | 0.08 | 13.38 | 3.83 | 51.24 | 82.18 | 76.10 | 76.00 | 0.10 | 36 | | | | Loss Coeff. = | 0.70 |
| | S-115C | | | 0.00 | 0.00 | | | | | | | 73.10 | 73.00 | 0.10 | RCP | 0.29 | 5.46 | 38.62 | | |

# STORM SEWER TABULATION

Notes:

ATKINS
2114 Airport Blvd., Suite 1450
Pensacola, FL 32504

BY: JTR
Jun-17
6/21/2017

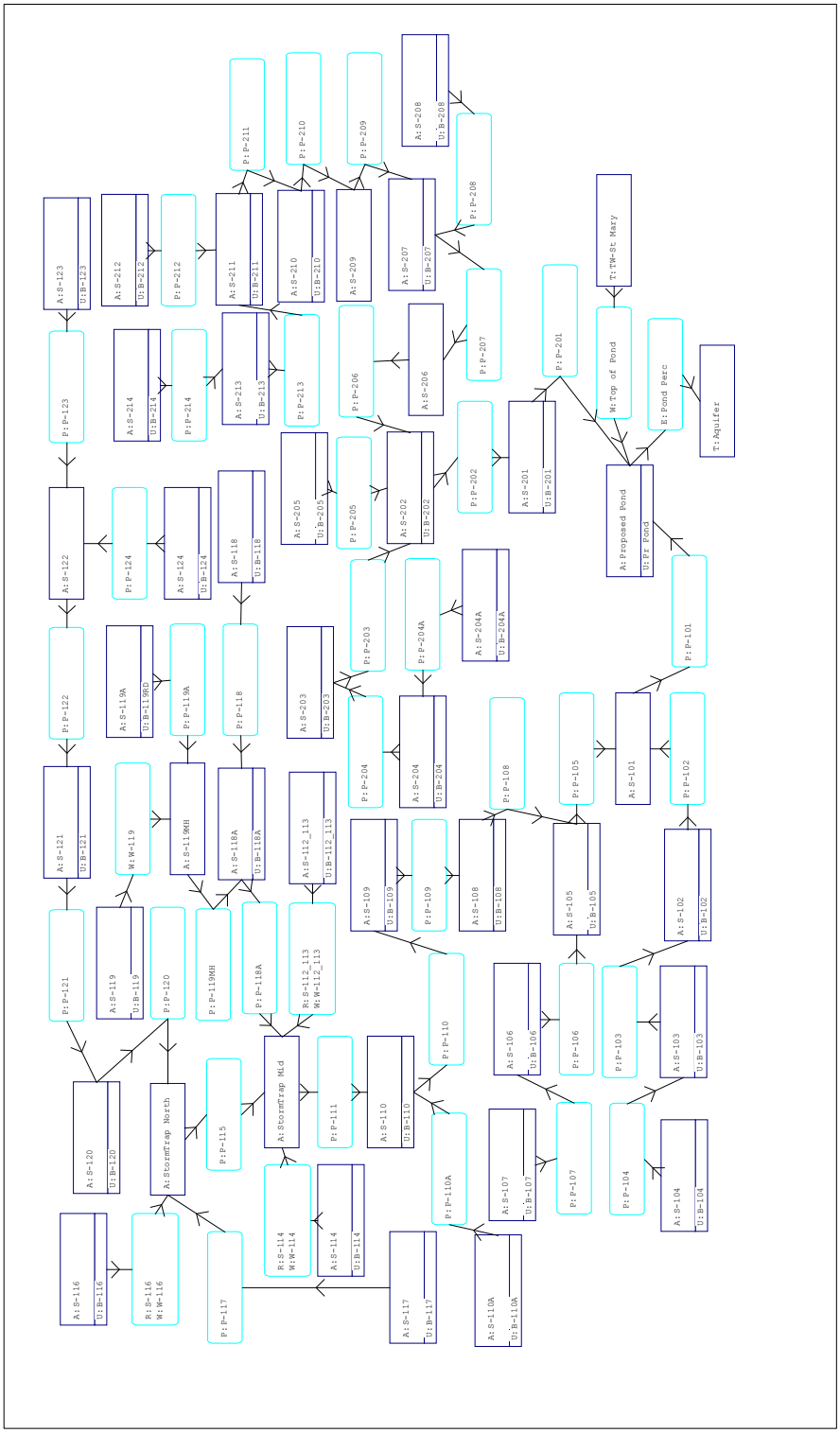
PROJECT NO.

PROJECT: Escambia County Correctional Facility

**Main Trunk Line**

| STRUCT. TYPE | STRUCT. NO. | LENGTH (FT) | DRAINAGE AREA (AC.) C pvmnt = 0.95, C grass = 0.2, C = 0 — INCRE-MENT | DRAINAGE AREA (AC.) — SUB TOTAL | SUB TOTAL (CA.) | Tc (MIN.) | TIME OF FLOW IN SECTION (MIN) | INTENSITY (in./HR) | TOTAL (CA) | Q TOTAL RUNOFF (CFS) | MANHOLE OR INLET TOP ELEVATION (FT.) | ELEV. OF H.G. CROWN ELEVATION / FLOW LINE EL. — UPPER | LOWER | FALL (FT.) | EQ. HEIGHT DIAM. / TYPE — DIAM. (IN.) | HGL PIPE — SLOPE (%) | ACTUAL FULL — Velocity | ACTUAL FULL — Capacity (CFS) | Notes: Pensacola, Florida; Freq = 500 yr.; Tailwater = 58.4; Exit Loss (k=1.0) 1.1; Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.219 | 0.22 | 0.208 | | | | | | | 77.90 | 75.50 | 0.09 | | 0.07 | 1.75 | 3.10 | Minor Loss = 0.024 |
| | S-214 | 117 | 0.117 | 0.12 | 0.023 | | 1.11 | 13.38 | 0.23 | 3.10 | 80.00 | 77.90 | 74.90 | 3.00 | 18 | | | | Loss Coeff. = 0.50 |
| | S-213 | | | 0.00 | 0.00 | | | | | | | 76.40 | 73.40 | 3.00 | RCP | 2.56 | 10.31 | 18.22 | |
| | | | 0.028 | 0.25 | 0.235 | | | | | | | 75.50 | 75.39 | 0.06 | | 0.09 | 1.96 | 3.46 | Minor Loss = 0.042 |
| | S-213 | 68 | 0.003 | 0.12 | 0.024 | | 0.58 | 13.38 | 0.26 | 3.46 | 81.05 | 74.90 | 74.80 | 0.10 | 18 | | | | Loss Coeff. = 0.70 |
| | S-211 | | | 0.00 | 0.00 | | | | | | | 73.40 | 73.30 | 0.10 | RCP | 0.15 | 2.47 | 4.36 | |
| | | | 0.244 | 0.24 | 0.232 | | | | | | | 75.54 | 75.39 | 0.10 | | 0.13 | 2.34 | 4.14 | Minor Loss = 0.043 |
| | S-212 | 77 | 0.389 | 0.39 | 0.078 | | 0.55 | 13.38 | 0.31 | 4.14 | 79.57 | 74.90 | 74.80 | 0.10 | 18 | | | | Loss Coeff. = 0.50 |
| | S-211 | | | 0.00 | 0.00 | | | | | | | 73.40 | 73.30 | 0.10 | RCP | 0.13 | 2.32 | 4.10 | |
| | | | 0.148 | 0.64 | 0.607 | | | | | | | 75.39 | 75.10 | 0.16 | | 0.15 | 3.05 | 9.57 | Minor Loss = 0.130 |
| | S-211 | 106 | 0.032 | 0.54 | 0.108 | | 0.58 | 13.38 | 0.72 | 9.57 | 79.80 | 75.30 | 75.10 | 0.20 | 24 | | | | Loss Coeff. = 0.90 |
| | S-210 | | | 0.00 | 0.00 | | | | | | | 73.30 | 73.10 | 0.20 | RCP | 0.19 | 3.39 | 10.65 | |
| | | | 0.120 | 0.76 | 0.721 | | | | | | | 74.69 | 74.46 | 0.09 | | 0.21 | 3.54 | 11.12 | Minor Loss = 0.136 |
| | S-210 | 46 | 0.010 | 0.55 | 0.110 | | 0.22 | 13.38 | 0.83 | 11.12 | 79.34 | 74.60 | 74.46 | 0.14 | 24 | | | | Loss Coeff. = 0.70 |
| | S-209 | | | 0.00 | 0.00 | | | | | | | 72.60 | 72.46 | 0.14 | RCP | 0.30 | 4.30 | 13.52 | |
| | | | 0.000 | 0.76 | 0.721 | | | | | | | 74.46 | 70.77 | 0.59 | | 0.21 | 3.54 | 11.12 | Minor Loss = 0.136 |
| | S-209 | 285 | 0.000 | 0.55 | 0.110 | | 1.34 | 13.38 | 0.83 | 11.12 | 77.52 | 74.46 | 73.30 | 1.16 | 24 | | | | Loss Coeff. = 0.70 |
| | S-207 | | | 0.00 | 0.00 | | | | | | | 72.46 | 71.30 | 1.16 | RCP | 0.41 | 4.98 | 15.64 | |
| | | | 0.775 | 0.78 | 0.736 | | | | | | | 70.98 | 70.77 | 0.10 | | 0.23 | 3.70 | 11.63 | Minor Loss = 0.106 |
| | S-208 | 45 | 0.664 | 0.66 | 0.133 | | 0.20 | 13.38 | 0.87 | 11.63 | 72.39 | 68.00 | 67.60 | 0.40 | 24 | | | | Loss Coeff. = 0.50 |
| | S-207 | | | 0.00 | 0.00 | | | | | | | 66.00 | 65.60 | 0.40 | RCP | 0.89 | 7.35 | 23.11 | |
| | | | 0.054 | 1.59 | 1.509 | | | | | | | 70.77 | 69.99 | 0.53 | | 0.28 | 4.77 | 23.44 | Minor Loss = 0.248 |
| | S-207 | 191 | 0.000 | 1.22 | 0.243 | | 0.67 | 13.38 | 1.75 | 23.44 | 76.10 | 68.10 | 67.90 | 0.20 | 30 | | | | Loss Coeff. = 0.70 |
| | S-206 | | | 0.00 | 0.00 | | | | | | | 65.60 | 65.40 | 0.20 | RCP | 0.10 | 2.93 | 14.38 | |
| | | | 0.000 | 1.59 | 1.509 | | | | | | | 69.99 | 69.60 | 0.14 | | 0.28 | 4.77 | 23.44 | Minor Loss = 0.248 |
| | S-206 | 52 | 0.000 | 1.22 | 0.243 | | 0.18 | 13.38 | 1.75 | 23.44 | 72.85 | 67.90 | 67.80 | 0.10 | 30 | | | | Loss Coeff. = 0.70 |
| | S-202 | | | 0.00 | 0.00 | | | | | | | 65.40 | 65.30 | 0.10 | RCP | 0.19 | 3.97 | 19.49 | |
| | | | 0.289 | 0.29 | 0.275 | | | | | | | 69.70 | 69.60 | 0.07 | | 0.11 | 2.14 | 3.79 | Minor Loss = 0.036 |
| | S-205 | 64 | 0.043 | 0.04 | 0.009 | | 0.50 | 13.38 | 0.28 | 3.79 | 75.10 | 67.40 | 67.30 | 0.10 | 18 | | | | Loss Coeff. = 0.50 |
| | S-202 | | | 0.00 | 0.00 | | | | | | | 65.90 | 65.80 | 0.10 | RCP | 0.16 | 2.55 | 4.50 | |
| | | | 0.587 | 0.59 | 0.558 | | | | | | | 73.50 | 71.17 | 0.41 | | 0.43 | 4.23 | 7.47 | Minor Loss = 0.139 |
| | S-204A | 96 | | 0.00 | 0.000 | | 0.38 | 13.38 | 0.56 | 7.47 | 78.17 | 73.50 | 69.50 | 4.00 | 18 | | | | Loss Coeff. = 0.50 |
| | S-204 | | | 0.00 | 0.00 | | | | | | | 72.00 | 68.00 | 4.00 | RCP | 4.17 | 13.14 | 23.23 | |
| | | | 0.080 | 0.67 | 0.634 | | | | | | | 71.17 | 70.73 | 0.27 | | 0.56 | 4.81 | 8.51 | Minor Loss = 0.180 |
| | S-204 | 48 | 0.008 | 0.01 | 0.002 | | 0.17 | 13.38 | 0.64 | 8.51 | 78.06 | 67.50 | 67.40 | 0.10 | 18 | | | | Loss Coeff. = 0.50 |
| | S-203 | | | 0.00 | 0.00 | | | | | | | 66.00 | 65.90 | 0.10 | RCP | 0.21 | 2.94 | 5.19 | |
| | | | 0.105 | 0.77 | 0.734 | | | | | | | 70.73 | 69.60 | 0.79 | | 0.75 | 5.59 | 9.87 | Minor Loss = 0.339 |
| | S-203 | 105 | 0.012 | 0.02 | 0.004 | | 0.31 | 13.38 | 0.74 | 9.87 | 76.65 | 67.40 | 67.30 | 0.10 | 18 | | | | Loss Coeff. = 0.70 |
| | S-202 | | | 0.00 | 0.00 | | | | | | | 65.90 | 65.80 | 0.10 | RCP | 0.10 | 1.99 | 3.51 | |
| | | | 0.060 | 2.71 | 2.574 | | | | | | | 69.60 | 68.20 | 0.47 | | 0.73 | 7.72 | 37.88 | Minor Loss = 0.924 |
| | S-202 | 65 | 0.006 | 1.28 | 0.257 | | 0.14 | 13.38 | 2.83 | 37.88 | 75.13 | 68.30 | 68.20 | 0.10 | 30 | | | | Loss Coeff. = 1.00 |
| | S-201 | | | 0.00 | 0.00 | | | | | | | 65.80 | 65.70 | 0.10 | RCP | 0.15 | 3.55 | 17.43 | |
| | | | 0.293 | 3.00 | 2.85 | | | | | | | 65.34 | 64.50 | 0.27 | | 0.88 | 8.51 | 41.75 | Minor Loss = 0.56 |
| | S-201 | 31 | 0.06 | 1.34 | 0.27 | | 0.06 | 13.38 | 3.12 | 41.75 | 73.30 | 64.60 | 64.50 | 0.10 | 30 | | | | Loss Coeff. = 0.50 |
| | S-200 | | | 0.00 | 0.00 | | | | | | | 62.10 | 62.00 | 0.10 | RCP | 0.32 | 5.14 | 25.24 | |

# ICPR MODEL




Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench

Interconnected Channel and Pond Routing Model (ICPR) ©2002 Streamline Technologies, Inc.

# BASE BID DESIGN

## ASSUMING NO OFFSITE TAILWATER IMPACTS

# INPUT DATA

Base Bid without Tailwater Impact

```
================================================================================
==== Basins ====================================================================
================================================================================

        Name: B-102                   Node: S-102                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                   Peaking Factor: 323.0
        Rainfall File:                 Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
          Area(ac): 0.395                  Time Shift(hrs): 0.00
       Curve Number: 91.30             Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: B-103                   Node: S-103                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                   Peaking Factor: 323.0
        Rainfall File:                 Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
          Area(ac): 0.040                  Time Shift(hrs): 0.00
       Curve Number: 86.98             Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: B-104                   Node: S-104                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                   Peaking Factor: 323.0
        Rainfall File:                 Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
          Area(ac): 0.066                  Time Shift(hrs): 0.00
       Curve Number: 72.02             Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: B-105                   Node: S-105                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                   Peaking Factor: 323.0
        Rainfall File:                 Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
          Area(ac): 0.421                  Time Shift(hrs): 0.00
       Curve Number: 89.04             Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: B-106                   Node: S-106                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                   Peaking Factor: 323.0
        Rainfall File:                 Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
          Area(ac): 0.059                  Time Shift(hrs): 0.00
       Curve Number: 90.53             Max Allowable Q(cfs): 999999.000
```

DCIA(%): 0.00

---

Name: B-107 Node: S-107 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.163 Time Shift(hrs): 0.00
Curve Number: 64.03 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-108 Node: S-108 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.599 Time Shift(hrs): 0.00
Curve Number: 90.15 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-109 Node: S-109 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.668 Time Shift(hrs): 0.00
Curve Number: 89.64 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-110 Node: S-110 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.156 Time Shift(hrs): 0.00
Curve Number: 85.75 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-110A Node: S-110A Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.004 Time Shift(hrs): 0.00
Curve Number: 90.63 Max Allowable Q(cfs): 999999.000

Base Bid without Tailwater Impact

---

DCIA(%): 0.00

---

Name: B-112_113 Node: S-112_113 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.737 Time Shift(hrs): 0.00
Curve Number: 88.43 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-114 Node: S-114 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.375 Time Shift(hrs): 0.00
Curve Number: 72.13 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-116 Node: S-116 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.933 Time Shift(hrs): 0.00
Curve Number: 55.25 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-117 Node: S-117 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.266 Time Shift(hrs): 0.00
Curve Number: 90.65 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-118 Node: S-118 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.397 Time Shift(hrs): 0.00
Curve Number: 98.00 Max Allowable Q(cfs): 999999.000

---

Base Bid without Tailwater Impact

---

```
               DCIA(%): 0.00


--------------------------------------------------------------------------------------------------
         Name: B-118A                  Node: S-118A                Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.498                    Time Shift(hrs): 0.00
         Curve Number: 98.00                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------------------------
         Name: B-119                   Node: S-119                 Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.494                    Time Shift(hrs): 0.00
         Curve Number: 73.60                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------------------------
         Name: B-119RD                 Node: S-119A                Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.533                    Time Shift(hrs): 0.00
         Curve Number: 98.00                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------------------------
         Name: B-120                   Node: S-120                 Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.553                    Time Shift(hrs): 0.00
         Curve Number: 98.00                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------------------------
         Name: B-121                   Node: S-121                 Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.053                    Time Shift(hrs): 0.00
         Curve Number: 52.70                Max Allowable Q(cfs): 999999.000
```

---

```
               DCIA(%): 0.00


------------------------------------------------------------------------------------------------
         Name: B-123                   Node: S-123                   Status: Onsite
        Group: Base                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.558                    Time Shift(hrs): 0.00
         Curve Number: 98.00                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


------------------------------------------------------------------------------------------------
         Name: B-124                   Node: S-124                   Status: Onsite
        Group: Base                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 3.296                    Time Shift(hrs): 0.00
         Curve Number: 90.66                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


------------------------------------------------------------------------------------------------
         Name: B-201                   Node: S-201                   Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.349                    Time Shift(hrs): 0.00
         Curve Number: 90.14                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


------------------------------------------------------------------------------------------------
         Name: B-202                   Node: S-202                   Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.066                    Time Shift(hrs): 0.00
         Curve Number: 93.55                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


------------------------------------------------------------------------------------------------
         Name: B-203                   Node: S-203                   Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.117                    Time Shift(hrs): 0.00
         Curve Number: 92.97                Max Allowable Q(cfs): 999999.000
```

Base Bid without Tailwater Impact

DCIA(%): 0.00

---

Name: B-204 Node: S-204 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.088 Time Shift(hrs): 0.00
Curve Number: 93.55 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-204A Node: S-204A Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.587 Time Shift(hrs): 0.00
Curve Number: 98.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-205 Node: S-205 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.332 Time Shift(hrs): 0.00
Curve Number: 91.65 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-207 Node: S-207 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.054 Time Shift(hrs): 0.00
Curve Number: 98.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-208 Node: S-208 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.439 Time Shift(hrs): 0.00
Curve Number: 75.39 Max Allowable Q(cfs): 999999.000

```
               DCIA(%): 0.00


------------------------------------------------------------------------------------------------
         Name: B-210                   Node: S-210                   Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.130                    Time Shift(hrs): 0.00
         Curve Number: 94.23                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


------------------------------------------------------------------------------------------------
         Name: B-211                   Node: S-211                   Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.180                    Time Shift(hrs): 0.00
         Curve Number: 89.29                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


------------------------------------------------------------------------------------------------
         Name: B-212                   Node: S-212                   Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.633                    Time Shift(hrs): 0.00
         Curve Number: 67.89                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


------------------------------------------------------------------------------------------------
         Name: B-213                   Node: S-213                   Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.031                    Time Shift(hrs): 0.00
         Curve Number: 93.26                Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


------------------------------------------------------------------------------------------------
         Name: B-214                   Node: S-214                   Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 0.336                    Time Shift(hrs): 0.00
         Curve Number: 80.94                Max Allowable Q(cfs): 999999.000
```

Base Bid without Tailwater Impact

DCIA(%): 0.00

---

Name: Pr Pond | Node: Proposed Pond | Status: Onsite
Group: Base | Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 | Peaking Factor: 323.0
Rainfall File: | Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00
Area(ac): 1.261 | Time Shift(hrs): 0.00
Curve Number: 82.00 | Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

==========
==== Nodes ==========
==========

Name: Aquifer | Base Flow(cfs): 0.000 | Init Stage(ft): 45.000
Group: Base | Warn Stage(ft): 46.000
Type: Time/Stage

| Time(hrs) | Stage(ft) |
|---|---|
| 0.00 | 45.000 |
| 240.00 | 45.000 |

---

Name: Proposed Pond | Base Flow(cfs): 0.000 | Init Stage(ft): 55.000
Group: Base | Warn Stage(ft): 72.400
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|
| 55.000 | 0.6700 |
| 56.000 | 0.6910 |
| 57.000 | 0.7120 |
| 58.000 | 0.7330 |
| 59.000 | 0.7540 |
| 60.000 | 0.7750 |
| 61.000 | 0.7950 |
| 62.000 | 0.8160 |
| 63.000 | 0.8370 |
| 64.000 | 0.8570 |
| 65.000 | 0.8770 |
| 66.000 | 0.8980 |
| 67.000 | 0.9180 |
| 68.000 | 0.9380 |
| 69.000 | 0.9580 |
| 70.000 | 0.9780 |
| 71.000 | 0.9980 |
| 72.000 | 1.0180 |
| 73.000 | 1.0380 |
| 74.000 | 1.0580 |

---

Name: S-101 | Base Flow(cfs): 0.000 | Init Stage(ft): 55.000
Group: Base | Warn Stage(ft): 76.160

Base Bid without Tailwater Impact

---

Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-102 Base Flow(cfs): 0.000 Init Stage(ft): 67.000
Group: Base Warn Stage(ft): 75.500
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|
| 64.900 | 0.0000 |
| 75.250 | 0.0000 |
| 75.500 | 0.0100 |
| 75.600 | 0.0300 |

---

Name: S-103 Base Flow(cfs): 0.000 Init Stage(ft): 72.300
Group: Base Warn Stage(ft): 76.460
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-104 Base Flow(cfs): 0.000 Init Stage(ft): 72.400
Group: Base Warn Stage(ft): 76.460
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-105 Base Flow(cfs): 0.000 Init Stage(ft): 67.000
Group: Base Warn Stage(ft): 75.500
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|
| 65.000 | 0.0000 |
| 75.285 | 0.0000 |
| 75.500 | 0.0200 |
| 75.600 | 0.0300 |

---

Name: S-106 Base Flow(cfs): 0.000 Init Stage(ft): 72.100
Group: Base Warn Stage(ft): 76.460
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

Base Bid without Tailwater Impact

---

Name: S-107 Base Flow(cfs): 0.000 Init Stage(ft): 72.200
Group: Base Warn Stage(ft): 76.080
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-108 Base Flow(cfs): 0.000 Init Stage(ft): 70.000
Group: Base Warn Stage(ft): 77.180
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-109 Base Flow(cfs): 0.000 Init Stage(ft): 70.100
Group: Base Warn Stage(ft): 78.410
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-110 Base Flow(cfs): 0.000 Init Stage(ft): 70.200
Group: Base Warn Stage(ft): 79.320
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-110A Base Flow(cfs): 0.000 Init Stage(ft): 72.000
Group: Base Warn Stage(ft): 81.190
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-112_113 Base Flow(cfs): 0.000 Init Stage(ft): 78.500
Group: Base Warn Stage(ft): 80.000
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|
| 78.500 | 0.0240 |
| 79.000 | 0.0340 |
| 80.000 | 0.0620 |
| 80.500 | 0.0960 |
| 80.600 | 0.2500 |
| 80.700 | 0.3000 |

Base Bid without Tailwater Impact

| | |
|---|---|
| 80.800 | 0.3400 |
| 80.900 | 0.3900 |
| 81.000 | 0.4400 |

Name: S-114 Base Flow(cfs): 0.000 Init Stage(ft): 78.500
Group: Base Warn Stage(ft): 80.000
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|
| 78.500 | 0.0190 |
| 79.000 | 0.0370 |
| 80.000 | 0.0610 |
| 80.500 | 0.0960 |
| 80.600 | 0.1150 |
| 80.700 | 0.1380 |
| 80.800 | 0.1610 |
| 80.900 | 0.1730 |
| 81.000 | 0.1890 |

Name: S-116 Base Flow(cfs): 0.000 Init Stage(ft): 78.500
Group: Base Warn Stage(ft): 80.000
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|
| 78.500 | 0.1900 |
| 79.000 | 0.2200 |
| 80.000 | 0.2840 |
| 80.500 | 0.3300 |

Name: S-117 Base Flow(cfs): 0.000 Init Stage(ft): 72.000
Group: Base Warn Stage(ft): 77.040
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

Name: S-118 Base Flow(cfs): 0.000 Init Stage(ft): 74.800
Group: Base Warn Stage(ft): 81.970
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

Name: S-118A Base Flow(cfs): 0.000 Init Stage(ft): 74.100
Group: Base Warn Stage(ft): 81.710
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

Base Bid without Tailwater Impact

---

---

---

Name: S-119 Base Flow(cfs): 0.000 Init Stage(ft): 78.500
Group: Base Warn Stage(ft): 80.000
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|
| 78.500 | 0.0330 |
| 79.000 | 0.0500 |
| 80.000 | 0.0910 |
| 80.500 | 0.1130 |

---

Name: S-119A Base Flow(cfs): 0.000 Init Stage(ft): 79.000
Group: Base Warn Stage(ft): 82.000
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-119MH Base Flow(cfs): 0.000 Init Stage(ft): 74.700
Group: Base Warn Stage(ft): 79.500
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-120 Base Flow(cfs): 0.000 Init Stage(ft): 73.100
Group: Base Warn Stage(ft): 82.180
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-121 Base Flow(cfs): 0.000 Init Stage(ft): 73.700
Group: Base Warn Stage(ft): 83.120
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-122 Base Flow(cfs): 0.000 Init Stage(ft): 73.800
Group: Base Warn Stage(ft): 81.040
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

Base Bid without Tailwater Impact

---

Name: S-123 Base Flow(cfs): 0.000 Init Stage(ft): 75.000
Group: Base Warn Stage(ft): 84.460
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-124 Base Flow(cfs): 0.000 Init Stage(ft): 73.900
Group: Base Warn Stage(ft): 78.840
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-201 Base Flow(cfs): 0.000 Init Stage(ft): 62.100
Group: Base Warn Stage(ft): 73.230
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-202 Base Flow(cfs): 0.000 Init Stage(ft): 65.800
Group: Base Warn Stage(ft): 75.130
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-203 Base Flow(cfs): 0.000 Init Stage(ft): 65.900
Group: Base Warn Stage(ft): 76.650
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-204 Base Flow(cfs): 0.000 Init Stage(ft): 66.000
Group: Base Warn Stage(ft): 78.060
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-204A Base Flow(cfs): 0.000 Init Stage(ft): 72.000
Group: Base Warn Stage(ft): 82.000
Type: Stage/Area

Base Bid without Tailwater Impact

| Stage(ft) | Area(ac) |
|---|---|

Name: S-205 Base Flow(cfs): 0.000 Init Stage(ft): 65.900
Group: Base Warn Stage(ft): 75.100
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

Name: S-206 Base Flow(cfs): 0.000 Init Stage(ft): 65.400
Group: Base Warn Stage(ft): 76.640
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

Name: S-207 Base Flow(cfs): 0.000 Init Stage(ft): 65.600
Group: Base Warn Stage(ft): 76.100
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

Name: S-208 Base Flow(cfs): 0.000 Init Stage(ft): 66.000
Group: Base Warn Stage(ft): 72.400
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

Name: S-209 Base Flow(cfs): 0.000 Init Stage(ft): 72.460
Group: Base Warn Stage(ft): 77.520
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

Name: S-210 Base Flow(cfs): 0.000 Init Stage(ft): 72.600
Group: Base Warn Stage(ft): 79.340
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

Base Bid without Tailwater Impact

---

Name: S-211 Base Flow(cfs): 0.000 Init Stage(ft): 73.300
Group: Base Warn Stage(ft): 79.800
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-212 Base Flow(cfs): 0.000 Init Stage(ft): 73.400
Group: Base Warn Stage(ft): 79.570
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-213 Base Flow(cfs): 0.000 Init Stage(ft): 73.400
Group: Base Warn Stage(ft): 81.050
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: S-214 Base Flow(cfs): 0.000 Init Stage(ft): 76.400
Group: Base Warn Stage(ft): 80.000
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|

---

Name: StormTrap Mid Base Flow(cfs): 0.000 Init Stage(ft): 65.570
Group: Base Warn Stage(ft): 76.900
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|
| 65.570 | 0.5694 |
| 76.900 | 0.5694 |
| 76.910 | 0.0000 |

---

Name: StormTrap North Base Flow(cfs): 0.000 Init Stage(ft): 65.570
Group: Base Warn Stage(ft): 76.900
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|
| 65.570 | 0.5147 |
| 76.900 | 0.5147 |

Base Bid without Tailwater Impact

---

76.910 0.0000

---

Name: TW-St Mary Base Flow(cfs): 0.000 Init Stage(ft): 65.550
Group: Base Warn Stage(ft): 76.000
Type: Time/Stage

| Time(hrs) | Stage(ft) |
|---|---|
| 0.00 | 65.550 |
| 0.08 | 65.550 |
| 0.17 | 65.550 |
| 0.25 | 65.550 |
| 0.33 | 65.550 |
| 0.42 | 65.550 |
| 0.50 | 65.550 |
| 0.58 | 65.550 |
| 0.67 | 65.550 |
| 0.75 | 65.550 |
| 0.83 | 65.550 |
| 0.92 | 65.550 |
| 1.00 | 65.550 |
| 1.08 | 65.550 |
| 1.17 | 65.550 |
| 1.25 | 65.550 |
| 1.33 | 65.550 |
| 1.42 | 65.550 |
| 1.50 | 65.550 |
| 1.58 | 65.550 |
| 1.67 | 65.550 |
| 1.75 | 65.550 |
| 1.83 | 65.550 |
| 1.92 | 65.550 |
| 2.00 | 65.550 |
| 2.07 | 65.550 |
| 2.15 | 65.550 |
| 2.22 | 65.550 |
| 2.30 | 65.553 |
| 2.38 | 65.593 |
| 2.47 | 65.701 |
| 2.55 | 65.768 |
| 2.63 | 65.827 |
| 2.72 | 65.883 |
| 2.80 | 65.929 |
| 2.88 | 65.976 |
| 2.97 | 66.023 |
| 3.05 | 66.069 |
| 3.13 | 66.114 |
| 3.22 | 66.159 |
| 3.30 | 66.204 |
| 3.38 | 66.248 |
| 3.47 | 66.291 |
| 3.55 | 66.335 |
| 3.63 | 66.377 |
| 3.72 | 66.419 |
| 3.80 | 66.460 |
| 3.88 | 66.501 |
| 3.97 | 66.541 |
| 4.03 | 66.577 |
| 4.12 | 66.609 |
| 4.18 | 66.640 |
| 4.25 | 66.670 |
| 4.32 | 66.700 |

Base Bid without Tailwater Impact

| | |
|---|---|
| 4.38 | 66.729 |
| 4.45 | 66.757 |
| 4.52 | 66.785 |
| 4.60 | 66.816 |
| 4.68 | 66.849 |
| 4.77 | 66.880 |
| 4.85 | 66.911 |
| 4.93 | 66.941 |
| 5.02 | 66.970 |
| 5.10 | 66.999 |
| 5.18 | 67.041 |
| 5.27 | 67.109 |
| 5.35 | 67.203 |
| 5.43 | 67.299 |
| 5.52 | 67.392 |
| 5.60 | 67.478 |
| 5.68 | 67.557 |
| 5.77 | 67.631 |
| 5.85 | 67.703 |
| 5.93 | 67.779 |
| 6.02 | 67.898 |
| 6.10 | 68.140 |
| 6.18 | 68.445 |
| 6.27 | 68.701 |
| 6.35 | 69.130 |
| 6.43 | 69.524 |
| 6.52 | 69.916 |
| 6.60 | 70.216 |
| 6.68 | 70.543 |
| 6.77 | 70.877 |
| 6.85 | 71.207 |
| 6.93 | 71.490 |
| 7.02 | 71.701 |
| 7.10 | 71.774 |
| 7.18 | 71.925 |
| 7.27 | 71.977 |
| 7.35 | 72.097 |
| 7.43 | 72.136 |
| 7.52 | 72.152 |
| 7.60 | 72.172 |
| 7.68 | 72.192 |
| 7.77 | 72.270 |
| 7.85 | 72.331 |
| 7.93 | 72.397 |
| 8.02 | 72.468 |
| 8.08 | 72.528 |
| 8.15 | 72.579 |
| 8.22 | 72.656 |
| 8.28 | 72.735 |
| 8.35 | 72.820 |
| 8.43 | 72.897 |
| 8.50 | 72.972 |
| 8.57 | 73.039 |
| 8.63 | 73.112 |
| 8.70 | 73.178 |
| 8.77 | 73.238 |
| 8.83 | 73.294 |
| 8.90 | 73.349 |
| 8.98 | 73.396 |
| 9.05 | 73.446 |
| 9.12 | 73.495 |
| 9.20 | 73.554 |
| 9.28 | 73.611 |
| 9.37 | 73.663 |
| 9.45 | 73.713 |

Base Bid without Tailwater Impact

| | |
|---|---|
| 9.53 | 73.762 |
| 9.62 | 73.802 |
| 9.70 | 73.843 |
| 9.78 | 73.880 |
| 9.87 | 73.915 |
| 9.95 | 73.947 |
| 10.03 | 73.980 |
| 10.12 | 74.013 |
| 10.20 | 74.046 |
| 10.28 | 74.080 |
| 10.37 | 74.116 |
| 10.45 | 74.156 |
| 10.53 | 74.199 |
| 10.62 | 74.244 |
| 10.70 | 74.290 |
| 10.78 | 74.337 |
| 10.87 | 74.384 |
| 10.95 | 74.431 |
| 11.03 | 74.477 |
| 11.12 | 74.521 |
| 11.20 | 74.566 |
| 11.28 | 74.611 |
| 11.37 | 74.658 |
| 11.45 | 74.706 |
| 11.53 | 74.755 |
| 11.62 | 74.800 |
| 11.70 | 74.847 |
| 11.78 | 74.893 |
| 11.87 | 74.938 |
| 11.95 | 74.981 |
| 12.03 | 75.022 |
| 12.12 | 75.061 |
| 12.20 | 75.097 |
| 12.28 | 75.128 |
| 12.37 | 75.154 |
| 12.45 | 75.173 |
| 12.53 | 75.188 |
| 12.62 | 75.199 |
| 12.70 | 75.206 |
| 12.78 | 75.212 |
| 12.87 | 75.215 |
| 12.95 | 75.218 |
| 13.03 | 75.218 |
| 13.12 | 75.218 |
| 13.20 | 75.216 |
| 13.28 | 75.212 |
| 13.37 | 75.207 |
| 13.45 | 75.200 |
| 13.53 | 75.192 |
| 13.62 | 75.183 |
| 13.70 | 75.173 |
| 13.78 | 75.164 |
| 13.87 | 75.154 |
| 13.95 | 75.145 |
| 14.03 | 75.135 |
| 14.12 | 75.127 |
| 14.20 | 75.118 |
| 14.28 | 75.110 |
| 14.37 | 75.102 |
| 14.45 | 75.094 |
| 14.53 | 75.087 |
| 14.62 | 75.081 |
| 14.70 | 75.074 |
| 14.78 | 75.069 |
| 14.87 | 75.063 |

Base Bid without Tailwater Impact

| | |
|---|---|
| 14.95 | 75.058 |
| 15.03 | 75.053 |
| 15.12 | 75.049 |
| 15.20 | 75.044 |
| 15.28 | 75.039 |
| 15.37 | 75.033 |
| 15.45 | 75.026 |
| 15.53 | 75.018 |
| 15.62 | 75.009 |
| 15.70 | 75.001 |
| 15.78 | 74.991 |
| 15.87 | 74.982 |
| 15.95 | 74.973 |
| 16.03 | 74.965 |
| 16.10 | 74.958 |
| 16.17 | 74.951 |
| 16.23 | 74.943 |
| 16.30 | 74.934 |
| 16.37 | 74.925 |
| 16.43 | 74.915 |
| 16.50 | 74.904 |
| 16.58 | 74.893 |
| 16.65 | 74.881 |
| 16.72 | 74.870 |
| 16.78 | 74.858 |
| 16.85 | 74.846 |
| 16.92 | 74.834 |
| 16.98 | 74.822 |
| 17.05 | 74.811 |
| 17.13 | 74.800 |
| 17.20 | 74.789 |
| 17.27 | 74.779 |
| 17.33 | 74.769 |
| 17.40 | 74.759 |
| 17.47 | 74.750 |
| 17.53 | 74.741 |
| 17.60 | 74.732 |
| 17.67 | 74.724 |
| 17.73 | 74.716 |
| 17.82 | 74.709 |
| 17.88 | 74.701 |
| 17.95 | 74.694 |
| 18.02 | 74.688 |
| 18.08 | 74.681 |
| 18.15 | 74.675 |
| 18.23 | 74.669 |
| 18.32 | 74.663 |
| 18.40 | 74.656 |
| 18.48 | 74.650 |
| 18.57 | 74.645 |
| 18.65 | 74.640 |
| 18.73 | 74.635 |
| 18.82 | 74.630 |
| 18.90 | 74.626 |
| 18.98 | 74.622 |
| 19.07 | 74.618 |
| 19.15 | 74.615 |
| 19.23 | 74.611 |
| 19.32 | 74.605 |
| 19.40 | 74.599 |
| 19.48 | 74.591 |
| 19.57 | 74.582 |
| 19.65 | 74.573 |
| 19.73 | 74.562 |
| 19.82 | 74.552 |

| | |
|---|---|
| 19.90 | 74.542 |
| 19.98 | 74.532 |
| 20.07 | 74.522 |
| 20.15 | 74.512 |
| 20.23 | 74.502 |
| 20.32 | 74.493 |
| 20.40 | 74.484 |
| 20.48 | 74.475 |
| 20.57 | 74.466 |
| 20.65 | 74.458 |
| 20.73 | 74.450 |
| 20.82 | 74.443 |
| 20.90 | 74.436 |
| 20.98 | 74.429 |
| 21.07 | 74.423 |
| 21.15 | 74.417 |
| 21.23 | 74.411 |
| 21.32 | 74.403 |
| 21.40 | 74.393 |
| 21.48 | 74.383 |
| 21.57 | 74.371 |
| 21.65 | 74.359 |
| 21.73 | 74.347 |
| 21.82 | 74.334 |
| 21.90 | 74.322 |
| 21.98 | 74.310 |
| 22.07 | 74.298 |
| 22.15 | 74.286 |
| 22.23 | 74.274 |
| 22.32 | 74.260 |
| 22.40 | 74.245 |
| 22.48 | 74.229 |
| 22.57 | 74.212 |
| 22.65 | 74.194 |
| 22.73 | 74.176 |
| 22.82 | 74.157 |
| 22.90 | 74.139 |
| 22.98 | 74.121 |
| 23.07 | 74.104 |

==========
==== Cross Sections ====
==========

Name: St Marys Group: BASE
Encroachment: No

| Station(ft) | Elevation(ft) | Manning's N |
|---|---|---|
| 0.000 | 74.520 | 0.030000 |
| 4.400 | 74.440 | 0.030000 |
| 27.510 | 74.060 | 0.030000 |
| 54.790 | 73.660 | 0.030000 |
| 79.930 | 73.260 | 0.030000 |
| 104.910 | 73.000 | 0.030000 |
| 131.870 | 72.690 | 0.030000 |
| 154.710 | 72.520 | 0.030000 |
| 171.540 | 72.430 | 0.030000 |
| 199.250 | 72.420 | 0.030000 |
| 202.140 | 72.350 | 0.030000 |
| 219.030 | 71.920 | 0.030000 |
| 219.360 | 71.900 | 0.030000 |
| 219.950 | 71.910 | 0.030000 |

| | | |
|---|---|---|
| 220.730 | 71.910 | 0.030000 |
| 221.050 | 72.010 | 0.030000 |
| 223.320 | 72.000 | 0.030000 |
| 225.850 | 72.000 | 0.030000 |
| 228.170 | 72.000 | 0.030000 |
| 229.440 | 72.000 | 0.030000 |
| 230.020 | 72.000 | 0.030000 |
| 231.230 | 72.000 | 0.030000 |
| 232.790 | 72.000 | 0.030000 |
| 241.140 | 72.000 | 0.030000 |
| 242.910 | 72.000 | 0.030000 |
| 243.210 | 72.000 | 0.030000 |
| 245.770 | 72.000 | 0.030000 |
| 245.980 | 72.000 | 0.030000 |
| 251.390 | 72.120 | 0.030000 |
| 261.600 | 72.200 | 0.030000 |
| 272.980 | 72.270 | 0.030000 |
| 281.710 | 72.250 | 0.030000 |
| 290.500 | 72.280 | 0.030000 |
| 297.740 | 72.300 | 0.030000 |
| 305.060 | 72.370 | 0.030000 |
| 311.240 | 72.530 | 0.030000 |
| 318.770 | 72.580 | 0.030000 |
| 320.010 | 72.600 | 0.030000 |
| 321.450 | 72.640 | 0.030000 |
| 327.980 | 72.820 | 0.030000 |
| 330.750 | 72.840 | 0.030000 |
| 332.070 | 72.880 | 0.030000 |
| 333.210 | 72.890 | 0.030000 |
| 334.190 | 72.890 | 0.030000 |
| 335.460 | 72.900 | 0.030000 |
| 336.440 | 72.880 | 0.030000 |
| 337.340 | 72.840 | 0.030000 |
| 346.530 | 72.890 | 0.030000 |
| 357.350 | 73.000 | 0.030000 |
| 357.480 | 73.000 | 0.030000 |
| 357.500 | 73.000 | 0.030000 |
| 360.130 | 73.000 | 0.030000 |
| 361.180 | 73.000 | 0.030000 |
| 364.980 | 73.000 | 0.030000 |
| 367.550 | 73.000 | 0.030000 |
| 368.770 | 73.000 | 0.030000 |
| 372.100 | 73.000 | 0.030000 |
| 374.760 | 73.000 | 0.030000 |
| 375.210 | 73.000 | 0.030000 |
| 379.180 | 73.190 | 0.030000 |
| 412.040 | 73.340 | 0.030000 |
| 418.000 | 73.360 | 0.030000 |
| 419.890 | 73.360 | 0.030000 |

==========
==== Operating Tables ==========
==========

Name: Type D Inlet Group: BASE
Type: Rating Curve
Function: Head vs. Discharge

| Head(ft) | Discharge(cfs) |
|---|---|
| 0.00 | 0.00 |
| 0.20 | 4.36 |
| 0.40 | 8.15 |

Base Bid without Tailwater Impact

| | |
|---|---|
| 0.60 | 12.41 |
| 0.80 | 17.13 |
| 1.00 | 22.29 |
| 1.20 | 25.83 |
| 1.40 | 29.39 |
| 1.60 | 33.01 |
| 1.80 | 36.71 |
| 2.00 | 40.48 |

==========
==== Pipes ====
==========

| | | | |
|---|---|---|---|
| Name: P-101 | From Node: S-101 | Length(ft): | 43.00 |
| Group: Base | To Node: Proposed Pond | Count: | 1 |
| | | Friction Equation: | Automatic |
| UPSTREAM | DOWNSTREAM | Solution Algorithm: | Most Restrictive |
| Geometry: Circular | Circular | Flow: | Both |
| Span(in): 36.00 | 36.00 | Entrance Loss Coef: | 0.50 |
| Rise(in): 36.00 | 36.00 | Exit Loss Coef: | 1.00 |
| Invert(ft): 55.500 | 55.000 | Bend Loss Coef: | 0.00 |
| Manning's N: 0.012000 | 0.012000 | Outlet Ctrl Spec: | Use dc or tw |
| Top Clip(in): 0.000 | 0.000 | Inlet Ctrl Spec: | Use dc |
| Bot Clip(in): 0.000 | 0.000 | Stabilizer Option: | None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: P-102 | From Node: S-102 | Length(ft): | 159.00 |
| Group: Base | To Node: S-101 | Count: | 1 |
| | | Friction Equation: | Automatic |
| UPSTREAM | DOWNSTREAM | Solution Algorithm: | Most Restrictive |
| Geometry: Circular | Circular | Flow: | Both |
| Span(in): 30.00 | 30.00 | Entrance Loss Coef: | 0.50 |
| Rise(in): 30.00 | 30.00 | Exit Loss Coef: | 1.00 |
| Invert(ft): 67.000 | 66.000 | Bend Loss Coef: | 0.00 |
| Manning's N: 0.012000 | 0.012000 | Outlet Ctrl Spec: | Use dc or tw |
| Top Clip(in): 0.000 | 0.000 | Inlet Ctrl Spec: | Use dc |
| Bot Clip(in): 0.000 | 0.000 | Stabilizer Option: | None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: P-103 | From Node: S-103 | Length(ft): | 66.00 |
| Group: Base | To Node: S-102 | Count: | 1 |
| | | Friction Equation: | Automatic |
| UPSTREAM | DOWNSTREAM | Solution Algorithm: | Most Restrictive |
| Geometry: Circular | Circular | Flow: | Both |
| Span(in): 18.00 | 18.00 | Entrance Loss Coef: | 0.50 |

Base Bid without Tailwater Impact

---

| | | | |
|---|---|---|---|
| Rise(in): | 18.00 | 18.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 72.300 | 71.700 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: | P-104 | From Node: S-104 | Length(ft): 25.00 |
| Group: | Base | To Node: S-103 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 18.00 | 18.00 | Entrance Loss Coef: 0.00 |
| Rise(in): | 18.00 | 18.00 | Exit Loss Coef: 1.00 |
| Invert(ft): | 72.400 | 72.300 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: | P-105 | From Node: S-105 | Length(ft): 42.00 |
| Group: | Base | To Node: S-101 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 30.00 | 30.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 30.00 | 30.00 | Exit Loss Coef: 1.00 |
| Invert(ft): | 67.000 | 66.000 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: | P-106 | From Node: S-106 | Length(ft): 64.00 |
| Group: | Base | To Node: S-105 | Count: 1 |

Base Bid without Tailwater Impact

---

| | UPSTREAM | DOWNSTREAM | | |
|---|---|---|---|---|
| Geometry: | Circular | Circular | Friction Equation: | Automatic |
| Span(in): | 18.00 | 18.00 | Solution Algorithm: | Most Restrictive |
| Rise(in): | 18.00 | 18.00 | Flow: | Both |
| Invert(ft): | 72.100 | 71.700 | Entrance Loss Coef: | 0.50 |
| Manning's N: | 0.012000 | 0.012000 | Exit Loss Coef: | 1.00 |
| Top Clip(in): | 0.000 | 0.000 | Bend Loss Coef: | 0.00 |
| Bot Clip(in): | 0.000 | 0.000 | Outlet Ctrl Spec: | Use dc or tw |
| | | | Inlet Ctrl Spec: | Use dc |
| | | | Stabilizer Option: | None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | | |
|---|---|---|---|---|
| Name: | P-107 | From Node: S-107 | Length(ft): | 25.00 |
| Group: | Base | To Node: S-106 | Count: | 1 |

| | UPSTREAM | DOWNSTREAM | | |
|---|---|---|---|---|
| Geometry: | Circular | Circular | Friction Equation: | Automatic |
| Span(in): | 18.00 | 18.00 | Solution Algorithm: | Most Restrictive |
| Rise(in): | 18.00 | 18.00 | Flow: | Both |
| Invert(ft): | 72.200 | 72.100 | Entrance Loss Coef: | 0.50 |
| Manning's N: | 0.012000 | 0.012000 | Exit Loss Coef: | 0.00 |
| Top Clip(in): | 0.000 | 0.000 | Bend Loss Coef: | 0.00 |
| Bot Clip(in): | 0.000 | 0.000 | Outlet Ctrl Spec: | Use dc or tw |
| | | | Inlet Ctrl Spec: | Use dc |
| | | | Stabilizer Option: | None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | | |
|---|---|---|---|---|
| Name: | P-108 | From Node: S-108 | Length(ft): | 77.00 |
| Group: | Base | To Node: S-105 | Count: | 1 |

| | UPSTREAM | DOWNSTREAM | | |
|---|---|---|---|---|
| Geometry: | Circular | Circular | Friction Equation: | Automatic |
| Span(in): | 30.00 | 30.00 | Solution Algorithm: | Most Restrictive |
| Rise(in): | 30.00 | 30.00 | Flow: | Both |
| Invert(ft): | 70.000 | 67.650 | Entrance Loss Coef: | 0.50 |
| Manning's N: | 0.012000 | 0.012000 | Exit Loss Coef: | 1.00 |
| Top Clip(in): | 0.000 | 0.000 | Bend Loss Coef: | 0.00 |
| Bot Clip(in): | 0.000 | 0.000 | Outlet Ctrl Spec: | Use dc or tw |
| | | | Inlet Ctrl Spec: | Use dc |
| | | | Stabilizer Option: | None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Base Bid without Tailwater Impact

---

| | | | |
|---|---|---|---|
| Name: P-109 | From Node: S-109 | Length(ft): 86.00 | |
| Group: Base | To Node: S-108 | Count: 1 | |
| | | Friction Equation: Automatic | |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 30.00 | 30.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 30.00 | 30.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 70.100 | 70.000 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

| | | | |
|---|---|---|---|
| Name: P-110 | From Node: S-110 | Length(ft): 154.00 | |
| Group: Base | To Node: S-109 | Count: 1 | |
| | | Friction Equation: Automatic | |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 30.00 | 30.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 30.00 | 30.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 70.200 | 70.100 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

| | | | |
|---|---|---|---|
| Name: P-110A | From Node: S-110A | Length(ft): 40.00 | |
| Group: Base | To Node: S-110 | Count: 1 | |
| | | Friction Equation: Automatic | |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 30.00 | 30.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 30.00 | 30.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 72.000 | 70.200 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Base Bid without Tailwater Impact

---

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: P-111 | From Node: StormTrap Mid | Length(ft): | 112.00 |
| Group: Base | To Node: S-110 | Count: | 1 |
| | | Friction Equation: | Automatic |
| UPSTREAM | DOWNSTREAM | Solution Algorithm: | Most Restrictive |
| Geometry: Horz Ellipse | Horz Ellipse | Flow: | Both |
| Span(in): 23.00 | 23.00 | Entrance Loss Coef: | 0.50 |
| Rise(in): 14.00 | 14.00 | Exit Loss Coef: | 0.00 |
| Invert(ft): 75.000 | 71.200 | Bend Loss Coef: | 0.00 |
| Manning's N: 0.012000 | 0.012000 | Outlet Ctrl Spec: | Use dc or tw |
| Top Clip(in): 0.000 | 0.000 | Inlet Ctrl Spec: | Use dc |
| Bot Clip(in): 0.000 | 0.000 | Stabilizer Option: | None |

Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

---

| | | | |
|---|---|---|---|
| Name: P-115 | From Node: StormTrap North | Length(ft): | 39.00 |
| Group: Base | To Node: StormTrap Mid | Count: | 1 |
| | | Friction Equation: | Automatic |
| UPSTREAM | DOWNSTREAM | Solution Algorithm: | Most Restrictive |
| Geometry: Circular | Circular | Flow: | Both |
| Span(in): 48.00 | 48.00 | Entrance Loss Coef: | 0.50 |
| Rise(in): 48.00 | 48.00 | Exit Loss Coef: | 0.00 |
| Invert(ft): 66.500 | 66.000 | Bend Loss Coef: | 0.00 |
| Manning's N: 0.012000 | 0.012000 | Outlet Ctrl Spec: | Use dc or tw |
| Top Clip(in): 0.000 | 0.000 | Inlet Ctrl Spec: | Use dc |
| Bot Clip(in): 0.000 | 0.000 | Stabilizer Option: | None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: P-117 | From Node: S-117 | Length(ft): | 19.00 |
| Group: Base | To Node: StormTrap North | Count: | 1 |
| | | Friction Equation: | Automatic |
| UPSTREAM | DOWNSTREAM | Solution Algorithm: | Most Restrictive |
| Geometry: Circular | Circular | Flow: | Both |
| Span(in): 24.00 | 24.00 | Entrance Loss Coef: | 0.50 |
| Rise(in): 24.00 | 24.00 | Exit Loss Coef: | 0.00 |
| Invert(ft): 72.000 | 71.100 | Bend Loss Coef: | 0.00 |
| Manning's N: 0.012000 | 0.012000 | Outlet Ctrl Spec: | Use dc or tw |
| Top Clip(in): 0.000 | 0.000 | Inlet Ctrl Spec: | Use dc |
| Bot Clip(in): 0.000 | 0.000 | Stabilizer Option: | None |

Base Bid without Tailwater Impact

---

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | | |
|---|---|---|---|---|
| Name: P-118 | | From Node: S-118 | Length(ft): | 119.00 |
| Group: Base | | To Node: S-118A | Count: | 1 |
| | | | Friction Equation: | Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: | Most Restrictive |
| Geometry: | Circular | Circular | Flow: | Both |
| Span(in): | 18.00 | 18.00 | Entrance Loss Coef: | 0.50 |
| Rise(in): | 18.00 | 18.00 | Exit Loss Coef: | 0.00 |
| Invert(ft): | 74.800 | 74.600 | Bend Loss Coef: | 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: | Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: | Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: | None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | | |
|---|---|---|---|---|
| Name: P-118A | | From Node: S-118A | Length(ft): | 15.00 |
| Group: Base | | To Node: StormTrap Mid | Count: | 1 |
| | | | Friction Equation: | Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: | Most Restrictive |
| Geometry: | Circular | Circular | Flow: | Both |
| Span(in): | 24.00 | 24.00 | Entrance Loss Coef: | 0.50 |
| Rise(in): | 24.00 | 24.00 | Exit Loss Coef: | 0.00 |
| Invert(ft): | 74.100 | 73.500 | Bend Loss Coef: | 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: | Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: | Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: | None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | | |
|---|---|---|---|---|
| Name: P-119A | | From Node: S-119A | Length(ft): | 34.00 |
| Group: Base | | To Node: S-119MH | Count: | 1 |
| | | | Friction Equation: | Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: | Most Restrictive |
| Geometry: | Circular | Circular | Flow: | Both |
| Span(in): | 12.00 | 12.00 | Entrance Loss Coef: | 0.50 |
| Rise(in): | 12.00 | 12.00 | Exit Loss Coef: | 0.00 |
| Invert(ft): | 79.000 | 75.700 | Bend Loss Coef: | 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: | Use dc or tw |

Base Bid without Tailwater Impact

---

```
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                   Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


-------------------------------------------------------------------------------------------------
        Name: P-119MH             From Node: S-119MH           Length(ft): 92.00
       Group: Base                  To Node: S-118A                Count: 1
                                                          Friction Equation: Automatic
              UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
    Geometry: Circular       Circular                              Flow: Both
    Span(in): 18.00          18.00                      Entrance Loss Coef: 0.50
    Rise(in): 18.00          18.00                          Exit Loss Coef: 0.00
  Invert(ft): 74.700         74.600                         Bend Loss Coef: 0.00
 Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000         0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000         0.000                     Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


-------------------------------------------------------------------------------------------------
        Name: P-120               From Node: S-120             Length(ft): 35.00
       Group: Base                  To Node: StormTrap North       Count: 1
                                                          Friction Equation: Automatic
              UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
    Geometry: Circular       Circular                              Flow: Both
    Span(in): 36.00          36.00                      Entrance Loss Coef: 0.50
    Rise(in): 36.00          36.00                          Exit Loss Coef: 1.00
  Invert(ft): 73.100         73.000                         Bend Loss Coef: 0.00
 Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000         0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000         0.000                     Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


-------------------------------------------------------------------------------------------------
        Name: P-121               From Node: S-121             Length(ft): 104.00
       Group: Base                  To Node: S-120                 Count: 1
                                                          Friction Equation: Automatic
              UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
    Geometry: Circular       Circular                              Flow: Both
```

Base Bid without Tailwater Impact

---

| | | | |
|---|---|---|---|
| Span(in): | 30.00 | 30.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 30.00 | 30.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 73.700 | 73.600 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: | P-122 | From Node: S-122 | Length(ft): 29.00 |
| Group: | Base | To Node: S-121 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 30.00 | 30.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 30.00 | 30.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 73.800 | 73.700 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: | P-123 | From Node: S-123 | Length(ft): 105.00 |
| Group: | Base | To Node: S-122 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 18.00 | 18.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 18.00 | 18.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 75.000 | 74.800 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: | P-124 | From Node: S-124 | Length(ft): 21.00 |

Base Bid without Tailwater Impact

---

| | | | |
|---|---|---|---|
| Group: Base | | To Node: S-122 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 30.00 | 30.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 30.00 | 30.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 73.900 | 73.800 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: P-201 | | From Node: S-201 | Length(ft): 31.00 |
| Group: Base | | To Node: Proposed Pond | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 30.00 | 30.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 30.00 | 30.00 | Exit Loss Coef: 1.00 |
| Invert(ft): | 62.100 | 62.000 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: P-202 | | From Node: S-202 | Length(ft): 65.00 |
| Group: Base | | To Node: S-201 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 30.00 | 30.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 30.00 | 30.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 65.800 | 65.700 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Base Bid without Tailwater Impact

---

| | | | |
|---|---|---|---|
| Name: | P-203 | From Node: S-203 | Length(ft): 105.00 |
| Group: | Base | To Node: S-202 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 18.00 | 18.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 18.00 | 18.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 65.900 | 65.800 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

| | | | |
|---|---|---|---|
| Name: | P-204 | From Node: S-204 | Length(ft): 48.00 |
| Group: | Base | To Node: S-203 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 18.00 | 18.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 18.00 | 18.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 66.000 | 65.900 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

| | | | |
|---|---|---|---|
| Name: | P-204A | From Node: S-204A | Length(ft): 96.00 |
| Group: | Base | To Node: S-204 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 18.00 | 18.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 18.00 | 18.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 72.000 | 68.000 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Base Bid without Tailwater Impact

---

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

| | | | | |
|---|---|---|---|---|
| Name: | P-205 | From Node: | S-205 | Length(ft): 64.00 |
| Group: | Base | To Node: | S-202 | Count: 1 |
| | | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | | Flow: Both |
| Span(in): | 18.00 | 18.00 | | Entrance Loss Coef: 0.50 |
| Rise(in): | 18.00 | 18.00 | | Exit Loss Coef: 0.00 |
| Invert(ft): | 65.900 | 65.800 | | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

| | | | | |
|---|---|---|---|---|
| Name: | P-206 | From Node: | S-206 | Length(ft): 52.00 |
| Group: | Base | To Node: | S-202 | Count: 1 |
| | | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | | Flow: Both |
| Span(in): | 30.00 | 30.00 | | Entrance Loss Coef: 0.50 |
| Rise(in): | 30.00 | 30.00 | | Exit Loss Coef: 0.00 |
| Invert(ft): | 65.400 | 65.300 | | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

| | | | | |
|---|---|---|---|---|
| Name: | P-207 | From Node: | S-207 | Length(ft): 191.00 |
| Group: | Base | To Node: | S-206 | Count: 1 |
| | | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | | Flow: Both |
| Span(in): | 30.00 | 30.00 | | Entrance Loss Coef: 0.50 |
| Rise(in): | 30.00 | 30.00 | | Exit Loss Coef: 0.00 |
| Invert(ft): | 65.600 | 65.400 | | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | | Stabilizer Option: None |

Base Bid without Tailwater Impact

---

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | | |
|---|---|---|---|---|
| Name: | P-208 | From Node: | S-208 | Length(ft): 45.00 |
| Group: | Base | To Node: | S-207 | Count: 1 |
| | | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | | Flow: Both |
| Span(in): | 24.00 | 24.00 | | Entrance Loss Coef: 0.50 |
| Rise(in): | 24.00 | 24.00 | | Exit Loss Coef: 0.00 |
| Invert(ft): | 66.000 | 65.600 | | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | | |
|---|---|---|---|---|
| Name: | P-209 | From Node: | S-209 | Length(ft): 285.00 |
| Group: | Base | To Node: | S-207 | Count: 1 |
| | | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | | Flow: Both |
| Span(in): | 24.00 | 24.00 | | Entrance Loss Coef: 0.50 |
| Rise(in): | 24.00 | 24.00 | | Exit Loss Coef: 0.00 |
| Invert(ft): | 72.460 | 72.300 | | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | | |
|---|---|---|---|---|
| Name: | P-210 | From Node: | S-210 | Length(ft): 46.00 |
| Group: | Base | To Node: | S-209 | Count: 1 |
| | | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | | Flow: Both |
| Span(in): | 24.00 | 24.00 | | Entrance Loss Coef: 0.50 |
| Rise(in): | 24.00 | 24.00 | | Exit Loss Coef: 0.00 |
| Invert(ft): | 72.600 | 72.460 | | Bend Loss Coef: 0.00 |

Base Bid without Tailwater Impact

| | | | |
|---|---|---|---|
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: | P-211 | From Node: S-211 | Length(ft): 106.00 |
| Group: | Base | To Node: S-210 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 24.00 | 24.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 24.00 | 24.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 73.300 | 73.100 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: | P-212 | From Node: S-212 | Length(ft): 77.00 |
| Group: | Base | To Node: S-211 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 18.00 | 18.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 18.00 | 18.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 73.400 | 73.300 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: | P-213 | From Node: S-213 | Length(ft): 68.00 |
| Group: | Base | To Node: S-211 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |

Base Bid without Tailwater Impact

---

| | | | |
|---|---|---|---|
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 18.00 | 18.00 | Entrance Loss Coef: 0.00 |
| Rise(in): | 18.00 | 18.00 | Exit Loss Coef: 1.00 |
| Invert(ft): | 73.400 | 73.300 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

---

| | | | |
|---|---|---|---|
| Name: | P-214 | From Node: S-214 | Length(ft): 117.00 |
| Group: | Base | To Node: S-213 | Count: 1 |
| | | | Friction Equation: Automatic |
| | UPSTREAM | DOWNSTREAM | Solution Algorithm: Most Restrictive |
| Geometry: | Circular | Circular | Flow: Both |
| Span(in): | 18.00 | 18.00 | Entrance Loss Coef: 0.50 |
| Rise(in): | 18.00 | 18.00 | Exit Loss Coef: 0.00 |
| Invert(ft): | 76.400 | 73.400 | Bend Loss Coef: 0.00 |
| Manning's N: | 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): | 0.000 | 0.000 | Inlet Ctrl Spec: Use dc |
| Bot Clip(in): | 0.000 | 0.000 | Stabilizer Option: None |

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

==========
==== Weirs ==========
==========

| | | | |
|---|---|---|---|
| Name: | Top of Pond | From Node: | TW-St Mary |
| Group: | Base | To Node: | Proposed Pond |
| Flow: | None | Count: | 1 |
| Type: | Vertical: Fread | Geometry: | Irregular |

| | |
|---|---|
| XSec: | St Marys |
| Invert(ft): | 72.000 |
| Control Elevation(ft): | 72.000 |
| Struct Opening Dim(ft): | 9999.00 |
| | TABLE |
| Bottom Clip(ft): | 0.000 |
| Top Clip(ft): | 0.000 |
| Weir Discharge Coef: | 3.200 |
| Orifice Discharge Coef: | 0.600 |

---

| | | | |
|---|---|---|---|
| Name: | W-112_113 | From Node: | S-112_113 |
| Group: | Base | To Node: | StormTrap Mid |

Base Bid without Tailwater Impact

---

```
        Flow: Both                    Count: 1
        Type: Horizontal           Geometry: Rectangular

                    Span(in): 37.00
                    Rise(in): 49.00
                  Invert(ft): 79.500
         Control Elevation(ft): 79.500
                                          TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
           Weir Discharge Coef: 3.200
        Orifice Discharge Coef: 0.600


-------------------------------------------------------------------------------------------------
        Name: W-114               From Node: S-114
       Group: Base                  To Node: StormTrap Mid
        Flow: Both                    Count: 1
        Type: Horizontal           Geometry: Rectangular

                    Span(in): 37.00
                    Rise(in): 49.00
                  Invert(ft): 79.500
         Control Elevation(ft): 79.500
                                          TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
           Weir Discharge Coef: 3.200
        Orifice Discharge Coef: 0.600


-------------------------------------------------------------------------------------------------
        Name: W-116               From Node: S-116
       Group: Base                  To Node: StormTrap North
        Flow: Both                    Count: 1
        Type: Horizontal           Geometry: Rectangular

                    Span(in): 37.00
                    Rise(in): 49.00
                  Invert(ft): 79.500
         Control Elevation(ft): 79.500
                                          TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
           Weir Discharge Coef: 3.200
        Orifice Discharge Coef: 0.600


-------------------------------------------------------------------------------------------------
        Name: W-119               From Node: S-119
       Group: Base                  To Node: S-119MH
        Flow: Both                    Count: 1
        Type: Horizontal           Geometry: Rectangular

                    Span(in): 37.00
                    Rise(in): 49.00
                  Invert(ft): 79.500
         Control Elevation(ft): 79.500
                                          TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
           Weir Discharge Coef: 3.200
```

Base Bid without Tailwater Impact

Orifice Discharge Coef: 0.600

==========
==== Rating Curves ==========
==========

Name: S-112_113 From Node: S-112_113 Count: 1
Group: Base To Node: StormTrap Mid Flow: None

| | TABLE | ELEV ON(ft) | ELEV OFF(ft) |
|---|---|---|---|
| #1: | Type D Inlet | 79.510 | 79.500 |
| #2: | | 0.000 | 0.000 |
| #3: | | 0.000 | 0.000 |
| #4: | | 0.000 | 0.000 |

---

Name: S-114 From Node: S-114 Count: 1
Group: Base To Node: StormTrap Mid Flow: None

| | TABLE | ELEV ON(ft) | ELEV OFF(ft) |
|---|---|---|---|
| #1: | Type D Inlet | 79.510 | 79.500 |
| #2: | | 0.000 | 0.000 |
| #3: | | 0.000 | 0.000 |
| #4: | | 0.000 | 0.000 |

---

Name: S-116 From Node: S-116 Count: 1
Group: Base To Node: StormTrap North Flow: None

| | TABLE | ELEV ON(ft) | ELEV OFF(ft) |
|---|---|---|---|
| #1: | Type D Inlet | 79.510 | 79.500 |
| #2: | | 0.000 | 0.000 |
| #3: | | 0.000 | 0.000 |
| #4: | | 0.000 | 0.000 |

==========
==== Percolation Links ==========
==========

Name: Pond Perc From Node: Proposed Pond Flow: Both
Group: Base To Node: Aquifer Count: 1

Surface Area Option: Use 1st Point in Stage/Area Table
Vertical Flow Termination: Horizontal Flow Algorithm
Aquifer Base Elev(ft): 10.000 Perimeter 1(ft): 647.000
Water Table Elev(ft): 45.000 Perimeter 2(ft): 932.000
Ann Recharge Rate(in/year): 0.000 Perimeter 3(ft): 2227.000
Horiz Conductivity(ft/day): 30.000 Distance 1 to 2(ft): 50.000
Vert Conductivity(ft/day): 20.000 Distance 2 to 3(ft): 450.000
Effective Porosity(dec): 0.200 Num Cells 1 to 2: 10
Suction Head(in): 4.170 Num Cells 2 to 3: 45
Layer Thickness(ft): 22.000

==========

Base Bid without Tailwater Impact

---

```
         Name: 500yr_001hr
     Filename: T:\Escambia County Correctional Facility - Yates-Rosser-BTA\DrainageDesign\ICPR\Current\Base Bid\Without tailwater impact\500yr_001hr.R32

      Override Defaults: Yes
    Storm Duration(hrs): 1.00
          Rainfall File: Fdot-1
    Rainfall Amount(in): 6.17

Time(hrs)       Print Inc(min)
--------------- ---------------
2.000           2.00
10.000          15.00

-------------------------------------------------------------------------------------------------
         Name: 500yr_008hr
     Filename: T:\Escambia County Correctional Facility - Yates-Rosser-BTA\DrainageDesign\ICPR\Current\Base Bid\Without tailwater impact\500yr_008hr.R32

      Override Defaults: Yes
    Storm Duration(hrs): 8.00
          Rainfall File: Fdot-8
    Rainfall Amount(in): 14.83

Time(hrs)       Print Inc(min)
--------------- ---------------
3.500           15.00
6.000           2.00
10.000          15.00

-------------------------------------------------------------------------------------------------
         Name: 500yr_024hr
     Filename: T:\Escambia County Correctional Facility - Yates-Rosser-BTA\DrainageDesign\ICPR\Current\Base Bid\Without tailwater impact\500yr_024hr.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Fdot-24
    Rainfall Amount(in): 23.30

Time(hrs)       Print Inc(min)
--------------- ---------------
9.000           15.00
35.000          2.00
48.000          15.00
```

Base Bid without Tailwater Impact

---

```
         Name: 500yr_001hr         Hydrology Sim: 500yr_001hr
     Filename: T:\Escambia County Correctional Facility - Yates-Rosser-BTA\DrainageDesign\ICPR\Current\Base Bid\Without tailwater impact\500yr_001hr.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 5.00
     Min Calc Time(sec): 0.3000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
5.000           2.000

Group           Run
--------------- -----
BASE            Yes


-------------------------------------------------------------------------------------------------
         Name: 500yr_008hr         Hydrology Sim: 500yr_008hr
     Filename: T:\Escambia County Correctional Facility - Yates-Rosser-BTA\DrainageDesign\ICPR\Current\Base Bid\Without tailwater impact\500yr_008hr.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 12.00
     Min Calc Time(sec): 0.3000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
24.000          2.000

Group           Run
--------------- -----
Base            Yes


-------------------------------------------------------------------------------------------------
         Name: 500yr_024hr         Hydrology Sim: 500yr_024hr
     Filename: T:\Escambia County Correctional Facility - Yates-Rosser-BTA\DrainageDesign\ICPR\Current\Base Bid\Without tailwater impact\500yr_024hr.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 48.00
     Min Calc Time(sec): 0.3000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
48.000          2.000
```

Base Bid without Tailwater Impact

| Group | Run |
|---|---|
| Base | Yes |

# OUTPUT

Base Bid without Tailwater Impact

| Name | Group | Simulation | Max Time Stage hrs | Max Stage ft | Warning Stage ft | Max Delta Stage ft | Max Surf Area ft2 | Max Time Inflow hrs | Max Inflow cfs | Max Time Outflow hrs | Max Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aquifer | BASE | 500yr_001hr | 0.00 | 45.000 | 46.000 | 0.0000 | 0 | 0.38 | 13.533 | 0.00 | 0.000 |
| Aquifer | Base | 500yr_008hr | 0.00 | 45.000 | 46.000 | 0.0000 | 0 | 4.29 | 10.763 | 0.00 | 0.000 |
| Aquifer | Base | 500yr_024hr | 0.00 | 45.000 | 46.000 | 0.0000 | 0 | 3.45 | 7.551 | 0.00 | 0.000 |
| Proposed Pond | BASE | 500yr_001hr | 1.21 | 58.409 | 72.400 | 0.0031 | 32348 | 0.68 | 77.203 | 0.38 | 13.533 |
| Proposed Pond | Base | 500yr_008hr | 8.06 | 62.957 | 72.400 | 0.0031 | 36461 | 4.00 | 54.800 | 4.29 | 10.763 |
| Proposed Pond | Base | 500yr_024hr | 24.45 | 71.413 | 72.400 | 0.0025 | 43838 | 12.00 | 20.863 | 3.45 | 7.551 |
| S-102 | BASE | 500yr_001hr | 0.65 | 67.962 | 75.500 | 0.0012 | 340 | 0.63 | 4.627 | 0.65 | 4.615 |
| S-102 | Base | 500yr_008hr | 4.00 | 67.773 | 75.500 | 0.0010 | 329 | 4.00 | 3.074 | 3.98 | 3.072 |
| S-102 | Base | 500yr_024hr | 24.41 | 71.420 | 75.500 | 0.0015 | 137 | 12.00 | 1.160 | 19.07 | 1.685 |
| S-103 | BASE | 500yr_001hr | 0.68 | 72.738 | 76.460 | 0.0006 | 173 | 0.67 | 0.780 | 0.68 | 0.776 |
| S-103 | Base | 500yr_008hr | 4.01 | 72.687 | 76.460 | 0.0004 | 171 | 4.00 | 0.617 | 3.99 | 0.616 |
| S-103 | Base | 500yr_024hr | 12.00 | 72.534 | 76.460 | 0.0002 | 159 | 12.00 | 0.238 | 11.98 | 0.237 |
| S-104 | BASE | 500yr_001hr | 0.68 | 72.757 | 76.460 | 0.0006 | 129 | 0.67 | 0.425 | 0.68 | 0.421 |
| S-104 | Base | 500yr_008hr | 4.00 | 72.711 | 76.460 | 0.0004 | 128 | 4.00 | 0.372 | 4.00 | 0.371 |
| S-104 | Base | 500yr_024hr | 11.96 | 72.584 | 76.460 | 0.0001 | 125 | 12.00 | 0.145 | 11.96 | 0.145 |
| S-105 | BASE | 500yr_001hr | 0.66 | 69.977 | 75.500 | 0.0036 | 242 | 0.65 | 28.411 | 0.66 | 28.400 |
| S-105 | Base | 500yr_008hr | 4.00 | 69.198 | 75.500 | 0.0026 | 281 | 4.00 | 18.855 | 4.00 | 18.852 |
| S-105 | Base | 500yr_024hr | 24.33 | 71.436 | 75.500 | 0.0035 | 161 | 19.00 | 11.435 | 19.04 | 11.461 |
| S-106 | BASE | 500yr_001hr | 0.68 | 72.696 | 76.460 | 0.0006 | 177 | 0.67 | 1.369 | 0.68 | 1.364 |
| S-106 | Base | 500yr_008hr | 4.01 | 72.658 | 76.460 | 0.0006 | 176 | 4.00 | 1.211 | 4.00 | 1.209 |
| S-106 | Base | 500yr_024hr | 12.00 | 72.440 | 76.460 | -0.0003 | 166 | 12.00 | 0.476 | 12.00 | 0.476 |
| S-107 | BASE | 500yr_001hr | 0.68 | 72.718 | 76.080 | 0.0011 | 131 | 0.67 | 0.816 | 0.70 | 0.814 |
| S-107 | Base | 500yr_008hr | 4.01 | 72.688 | 76.080 | 0.0007 | 131 | 4.00 | 0.846 | 4.00 | 0.845 |
| S-107 | Base | 500yr_024hr | 12.00 | 72.486 | 76.080 | 0.0002 | 127 | 12.00 | 0.339 | 12.00 | 0.339 |
| S-108 | BASE | 500yr_001hr | 0.65 | 72.533 | 77.180 | 0.0032 | 145 | 0.65 | 23.125 | 0.65 | 23.123 |
| S-108 | Base | 500yr_008hr | 4.00 | 71.882 | 77.180 | 0.0023 | 290 | 4.00 | 15.043 | 4.00 | 15.042 |
| S-108 | Base | 500yr_024hr | 19.01 | 71.532 | 77.180 | -0.0026 | 308 | 19.00 | 10.841 | 19.00 | 10.840 |
| S-109 | BASE | 500yr_001hr | 0.65 | 72.788 | 78.410 | 0.0033 | 128 | 0.64 | 17.399 | 0.65 | 17.396 |
| S-109 | Base | 500yr_008hr | 4.00 | 72.013 | 78.410 | 0.0020 | 368 | 4.00 | 11.328 | 4.00 | 11.327 |
| S-109 | Base | 500yr_024hr | 19.02 | 71.712 | 78.410 | 0.0014 | 399 | 19.01 | 10.281 | 19.02 | 10.281 |
| S-110 | BASE | 500yr_001hr | 0.65 | 72.982 | 79.320 | 0.0032 | 142 | 0.64 | 11.090 | 0.65 | 11.063 |
| S-110 | Base | 500yr_008hr | 4.00 | 72.084 | 79.320 | 0.0024 | 396 | 4.00 | 7.192 | 4.00 | 7.191 |
| S-110 | Base | 500yr_024hr | 19.02 | 71.905 | 79.320 | 0.0020 | 403 | 19.01 | 9.657 | 19.03 | 9.657 |
| S-110A | BASE | 500yr_001hr | 0.65 | 73.582 | 81.190 | 0.0020 | 150 | 0.63 | 9.747 | 0.64 | 9.706 |
| S-110A | Base | 500yr_008hr | 4.00 | 73.103 | 81.190 | 0.0023 | 161 | 4.00 | 6.237 | 4.00 | 6.237 |
| S-110A | Base | 500yr_024hr | 12.00 | 72.621 | 81.190 | -0.0012 | 153 | 12.00 | 2.343 | 11.82 | 2.343 |
| S-112_113 | BASE | 500yr_001hr | 0.65 | 79.781 | 80.000 | 0.0024 | 2434 | 0.63 | 6.887 | 0.65 | 6.844 |
| S-112_113 | Base | 500yr_008hr | 4.00 | 79.714 | 80.000 | 0.0022 | 2352 | 4.00 | 4.551 | 4.00 | 4.549 |
| S-112_113 | Base | 500yr_024hr | 12.00 | 79.612 | 80.000 | 0.0010 | 2227 | 12.00 | 1.714 | 12.00 | 1.714 |
| S-114 | BASE | 500yr_001hr | 0.75 | 79.632 | 80.000 | 0.0015 | 2273 | 0.67 | 2.421 | 0.75 | 2.210 |
| S-114 | Base | 500yr_008hr | 4.01 | 79.628 | 80.000 | 0.0013 | 2269 | 4.00 | 2.114 | 4.01 | 2.109 |
| S-114 | Base | 500yr_024hr | 12.00 | 79.569 | 80.000 | 0.0007 | 2206 | 12.00 | 0.824 | 12.00 | 0.823 |
| S-116 | BASE | 500yr_001hr | 1.80 | 79.111 | 80.000 | 0.0005 | 9893 | 0.70 | 3.278 | 0.00 | 0.000 |
| S-116 | Base | 500yr_008hr | 4.11 | 79.681 | 80.000 | 0.0008 | 11483 | 4.00 | 4.258 | 4.11 | 3.544 |
| S-116 | Base | 500yr_024hr | 12.04 | 79.614 | 80.000 | 0.0004 | 11294 | 12.00 | 1.774 | 12.04 | 1.760 |
| S-117 | BASE | 500yr_001hr | 0.63 | 73.902 | 77.040 | 0.0025 | 124 | 0.63 | 12.294 | 0.63 | 12.285 |
| S-117 | Base | 500yr_008hr | 11.99 | 74.944 | 77.040 | -0.0112 | 114 | 4.00 | 7.866 | 3.99 | 7.865 |

Base Bid without Tailwater Impact

| Name | Group | Simulation | Max Time Stage hrs | Max Stage ft | Warning Stage ft | Max Delta Stage ft | Max Surf Area ft2 | Max Time Inflow hrs | Max Inflow cfs | Max Time Outflow hrs | Max Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S-117 | Base | 500yr_024hr | 19.08 | 76.662 | 77.040 | -0.0110 | 114 | 12.00 | 2.954 | 12.21 | 7.228 |
| S-118 | BASE | 500yr_001hr | 0.72 | 76.667 | 81.970 | 0.0040 | 117 | 0.60 | 4.260 | 0.63 | 4.238 |
| S-118 | Base | 500yr_008hr | 4.00 | 76.020 | 81.970 | 0.0025 | 178 | 3.97 | 2.493 | 4.00 | 2.491 |
| S-118 | Base | 500yr_024hr | 19.07 | 76.663 | 81.970 | 0.0021 | 117 | 11.97 | 0.932 | 14.11 | 1.184 |
| S-118A | BASE | 500yr_001hr | 0.73 | 76.436 | 81.710 | 0.0049 | 125 | 0.73 | 16.028 | 0.73 | 16.023 |
| S-118A | Base | 500yr_008hr | 4.00 | 75.952 | 81.710 | 0.0031 | 211 | 4.00 | 11.771 | 4.00 | 11.770 |
| S-118A | Base | 500yr_024hr | 19.08 | 76.661 | 81.710 | -0.0049 | 122 | 12.00 | 4.445 | 14.11 | 7.259 |
| S-119 | BASE | 500yr_001hr | 0.78 | 79.659 | 80.000 | 0.0015 | 3354 | 0.67 | 3.320 | 0.78 | 2.897 |
| S-119 | Base | 500yr_008hr | 4.01 | 79.655 | 80.000 | 0.0013 | 3348 | 4.00 | 2.819 | 4.01 | 2.809 |
| S-119 | Base | 500yr_024hr | 12.00 | 79.583 | 80.000 | 0.0007 | 3219 | 12.00 | 1.093 | 12.00 | 1.093 |
| S-119A | BASE | 500yr_001hr | 0.64 | 81.709 | 82.000 | 0.0049 | 118 | 0.60 | 5.719 | 0.64 | 5.688 |
| S-119A | Base | 500yr_008hr | 3.99 | 80.344 | 82.000 | 0.0023 | 118 | 3.97 | 3.347 | 3.99 | 3.347 |
| S-119A | Base | 500yr_024hr | 11.84 | 79.631 | 82.000 | 0.0015 | 129 | 11.97 | 1.251 | 11.84 | 1.252 |
| S-120 | BASE | 500yr_001hr | 0.66 | 77.004 | 82.180 | 0.0048 | 133 | 0.65 | 43.514 | 0.66 | 43.514 |
| S-120 | Base | 500yr_008hr | 4.00 | 76.042 | 82.180 | 0.0038 | 168 | 4.00 | 27.679 | 4.00 | 27.678 |
| S-120 | Base | 500yr_024hr | 19.07 | 76.668 | 82.180 | 0.0023 | 122 | 11.94 | 10.397 | 12.00 | 10.397 |
| S-121 | BASE | 500yr_001hr | 0.66 | 79.128 | 83.120 | 0.0050 | 121 | 0.65 | 37.707 | 0.66 | 37.702 |
| S-121 | Base | 500yr_008hr | 4.00 | 76.526 | 83.120 | 0.0037 | 129 | 4.00 | 24.207 | 4.00 | 24.207 |
| S-121 | Base | 500yr_024hr | 19.04 | 76.687 | 83.120 | -0.0042 | 121 | 11.98 | 9.099 | 11.93 | 9.099 |
| S-122 | BASE | 500yr_001hr | 0.66 | 80.699 | 81.040 | 0.0050 | 120 | 0.64 | 37.611 | 0.65 | 37.552 |
| S-122 | Base | 500yr_008hr | 4.00 | 77.167 | 81.040 | -0.0044 | 120 | 4.00 | 23.978 | 4.00 | 23.977 |
| S-122 | Base | 500yr_024hr | 19.03 | 76.701 | 81.040 | 0.0069 | 120 | 11.98 | 9.002 | 11.98 | 9.001 |
| S-123 | BASE | 500yr_001hr | 0.66 | 81.233 | 84.460 | 0.0050 | 117 | 0.60 | 5.987 | 0.68 | 5.876 |
| S-123 | Base | 500yr_008hr | 4.00 | 77.358 | 84.460 | -0.0046 | 117 | 3.97 | 3.504 | 4.12 | 3.562 |
| S-123 | Base | 500yr_024hr | 19.03 | 76.705 | 84.460 | 0.0025 | 117 | 11.97 | 1.310 | 11.84 | 1.311 |
| S-124 | BASE | 500yr_001hr | 0.65 | 81.780 | 78.840 | -0.0050 | 114 | 0.63 | 32.014 | 0.64 | 31.826 |
| S-124 | Base | 500yr_008hr | 4.00 | 77.617 | 78.840 | -0.0050 | 114 | 4.00 | 20.478 | 4.00 | 20.476 |
| S-124 | Base | 500yr_024hr | 19.03 | 76.711 | 78.840 | 0.0062 | 114 | 12.00 | 7.691 | 12.00 | 7.691 |
| S-201 | BASE | 500yr_001hr | 0.70 | 65.879 | 73.230 | 0.0046 | 126 | 0.70 | 34.258 | 0.70 | 34.253 |
| S-201 | Base | 500yr_008hr | 4.01 | 65.209 | 73.230 | 0.0030 | 127 | 4.00 | 25.732 | 4.01 | 25.730 |
| S-201 | Base | 500yr_024hr | 24.44 | 71.415 | 73.230 | -0.0047 | 119 | 11.94 | 9.875 | 12.00 | 9.850 |
| S-202 | BASE | 500yr_001hr | 0.71 | 69.072 | 75.130 | -0.0045 | 127 | 0.70 | 31.120 | 0.71 | 31.116 |
| S-202 | Base | 500yr_008hr | 4.01 | 68.406 | 75.130 | -0.0045 | 127 | 4.01 | 23.575 | 4.01 | 23.574 |
| S-202 | Base | 500yr_024hr | 24.42 | 71.411 | 75.130 | 0.0068 | 127 | 12.03 | 10.364 | 11.94 | 9.061 |
| S-203 | BASE | 500yr_001hr | 0.69 | 70.040 | 76.650 | -0.0036 | 119 | 0.65 | 8.059 | 0.67 | 7.940 |
| S-203 | Base | 500yr_008hr | 4.01 | 68.788 | 76.650 | 0.0044 | 119 | 4.00 | 4.959 | 4.01 | 4.955 |
| S-203 | Base | 500yr_024hr | 24.42 | 71.415 | 76.650 | 0.0035 | 119 | 11.94 | 1.905 | 12.03 | 1.984 |
| S-204 | BASE | 500yr_001hr | 0.69 | 70.558 | 78.060 | 0.0043 | 174 | 0.61 | 7.183 | 0.65 | 6.893 |
| S-204 | Base | 500yr_008hr | 4.01 | 68.988 | 78.060 | -0.0050 | 179 | 3.99 | 4.237 | 4.00 | 4.229 |
| S-204 | Base | 500yr_024hr | 24.41 | 71.415 | 78.060 | 0.0022 | 137 | 11.97 | 1.585 | 11.94 | 1.631 |
| S-204A | BASE | 500yr_001hr | 0.61 | 73.484 | 82.000 | 0.0046 | 141 | 0.60 | 6.299 | 0.61 | 6.291 |
| S-204A | Base | 500yr_008hr | 3.98 | 73.031 | 82.000 | 0.0023 | 179 | 3.97 | 3.686 | 3.98 | 3.687 |
| S-204A | Base | 500yr_024hr | 11.98 | 72.573 | 82.000 | 0.0016 | 179 | 11.97 | 1.378 | 11.80 | 1.379 |
| S-205 | BASE | 500yr_001hr | 0.70 | 69.187 | 75.100 | 0.0035 | 115 | 0.63 | 3.277 | 0.67 | 3.127 |
| S-205 | Base | 500yr_008hr | 4.01 | 68.458 | 75.100 | -0.0050 | 115 | 4.00 | 2.067 | 4.00 | 2.063 |
| S-205 | Base | 500yr_024hr | 24.42 | 71.415 | 75.100 | -0.0050 | 115 | 12.00 | 0.776 | 12.03 | 1.484 |

Base Bid without Tailwater Impact

| Name | Group | Simulation | Max Time Stage hrs | Max Stage ft | Warning Stage ft | Max Delta Stage ft | Max Surf Area ft2 | Max Time Inflow hrs | Max Inflow cfs | Max Time Outflow hrs | Max Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S-206 | BASE | 500yr_001hr | 0.71 | 69.547 | 76.640 | -0.0048 | 128 | 0.72 | 19.640 | 0.72 | 19.665 |
| S-206 | Base | 500yr_008hr | 4.01 | 68.727 | 76.640 | 0.0050 | 128 | 4.01 | 16.155 | 4.02 | 16.156 |
| S-206 | Base | 500yr_024hr | 24.41 | 71.417 | 76.640 | 0.0048 | 128 | 11.94 | 6.294 | 12.03 | 6.742 |
| S-207 | BASE | 500yr_001hr | 0.71 | 70.293 | 76.100 | 0.0043 | 376 | 0.68 | 19.788 | 0.72 | 19.640 |
| S-207 | Base | 500yr_008hr | 4.01 | 69.232 | 76.100 | -0.0039 | 398 | 4.00 | 16.180 | 4.01 | 16.155 |
| S-207 | Base | 500yr_024hr | 24.39 | 71.415 | 76.100 | 0.0023 | 273 | 11.98 | 6.283 | 11.94 | 6.294 |
| S-208 | BASE | 500yr_001hr | 0.71 | 70.588 | 72.400 | 0.0056 | 115 | 0.67 | 10.130 | 0.67 | 9.927 |
| S-208 | Base | 500yr_008hr | 4.01 | 69.446 | 72.400 | -0.0049 | 115 | 4.00 | 8.323 | 4.00 | 8.312 |
| S-208 | Base | 500yr_024hr | 24.39 | 71.416 | 72.400 | -0.0046 | 115 | 12.00 | 3.213 | 11.98 | 3.242 |
| S-209 | BASE | 500yr_001hr | 0.70 | 74.325 | 77.520 | 0.0019 | 314 | 0.69 | 9.431 | 0.70 | 9.400 |
| S-209 | Base | 500yr_008hr | 4.02 | 74.053 | 77.520 | 0.0016 | 394 | 4.01 | 7.541 | 4.02 | 7.537 |
| S-209 | Base | 500yr_024hr | 12.01 | 73.408 | 77.520 | 0.0006 | 437 | 12.00 | 2.915 | 12.01 | 2.915 |
| S-210 | BASE | 500yr_001hr | 0.70 | 74.457 | 79.340 | 0.0018 | 235 | 0.67 | 9.496 | 0.69 | 9.431 |
| S-210 | Base | 500yr_008hr | 4.02 | 74.159 | 79.340 | 0.0016 | 255 | 4.00 | 7.547 | 4.01 | 7.541 |
| S-210 | Base | 500yr_024hr | 12.01 | 73.468 | 79.340 | 0.0006 | 260 | 11.98 | 2.916 | 12.00 | 2.915 |
| S-211 | BASE | 500yr_001hr | 0.68 | 74.789 | 79.800 | 0.0020 | 224 | 0.67 | 8.220 | 0.68 | 8.211 |
| S-211 | Base | 500yr_008hr | 4.01 | 74.618 | 79.800 | 0.0013 | 287 | 4.00 | 6.740 | 4.00 | 6.735 |
| S-211 | Base | 500yr_024hr | 12.00 | 74.069 | 79.800 | -0.0006 | 324 | 12.00 | 2.612 | 11.98 | 2.611 |
| S-212 | BASE | 500yr_001hr | 0.68 | 74.894 | 79.570 | 0.0021 | 119 | 0.67 | 3.605 | 0.68 | 3.583 |
| S-212 | Base | 500yr_008hr | 4.00 | 74.714 | 79.570 | 0.0014 | 151 | 4.00 | 3.431 | 4.00 | 3.427 |
| S-212 | Base | 500yr_024hr | 12.00 | 74.128 | 79.570 | -0.0006 | 171 | 12.00 | 1.355 | 12.00 | 1.354 |
| S-213 | BASE | 500yr_001hr | 0.68 | 74.876 | 81.050 | 0.0019 | 204 | 0.67 | 2.997 | 0.68 | 2.975 |
| S-213 | Base | 500yr_008hr | 4.01 | 74.667 | 81.050 | 0.0013 | 226 | 4.00 | 2.204 | 4.01 | 2.203 |
| S-213 | Base | 500yr_024hr | 12.01 | 74.095 | 81.050 | -0.0006 | 229 | 11.97 | 0.839 | 12.02 | 0.839 |
| S-214 | BASE | 500yr_001hr | 0.67 | 77.260 | 80.000 | 0.0013 | 197 | 0.67 | 2.692 | 0.67 | 2.690 |
| S-214 | Base | 500yr_008hr | 4.00 | 77.125 | 80.000 | 0.0011 | 197 | 4.00 | 2.011 | 3.99 | 2.010 |
| S-214 | Base | 500yr_024hr | 12.00 | 76.822 | 80.000 | -0.0003 | 187 | 12.00 | 0.767 | 11.95 | 0.766 |
| StormTrap Mid | BASE | 500yr_001hr | 5.00 | 68.883 | 76.900 | 0.0021 | 24878 | 0.84 | 45.750 | 0.00 | 0.000 |
| StormTrap Mid | Base | 500yr_008hr | 12.00 | 74.944 | 76.900 | 0.0033 | 24824 | 3.43 | 38.929 | 0.00 | 0.000 |
| StormTrap Mid | Base | 500yr_024hr | 19.10 | 76.653 | 76.900 | 0.0029 | 24836 | 14.11 | 11.945 | 19.10 | 8.580 |
| StormTrap North | BASE | 500yr_001hr | 5.00 | 68.883 | 76.900 | 0.0030 | 22498 | 0.65 | 55.747 | 0.93 | 27.724 |
| StormTrap North | Base | 500yr_008hr | 12.00 | 74.944 | 76.900 | 0.0030 | 22477 | 4.01 | 38.447 | 3.43 | 22.820 |
| StormTrap North | Base | 500yr_024hr | 19.09 | 76.659 | 76.900 | 0.0024 | 22429 | 12.21 | 17.517 | 6.78 | 8.767 |
| TW-St Mary | Base | 500yr_008hr | 12.00 | 75.007 | 76.000 | 0.0052 | 0 | 0.00 | 0.000 | 0.00 | 0.000 |

# BASE BID DESIGN

## ASSUMING IMPACT FROM OFFSITE TAILWATER

# INPUT DATA

(ONLY INPUT DATA THAT VARIES FROM BASE BID MODEL WITHOUT TAILWATER IS PROVIDED)

Base Bid with Tailwater Impact

---

```
         Name: Top of Pond          From Node: TW-St Mary
        Group: Base                   To Node: Proposed Pond
         Flow: Both                     Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                        XSec: St Marys
                  Invert(ft): 72.000
       Control Elevation(ft): 72.000
    Struct Opening Dim(ft): 9999.00
                                          TABLE
            Bottom Clip(ft): 0.000
               Top Clip(ft): 0.000
       Weir Discharge Coef: 3.200
    Orifice Discharge Coef: 0.600
```

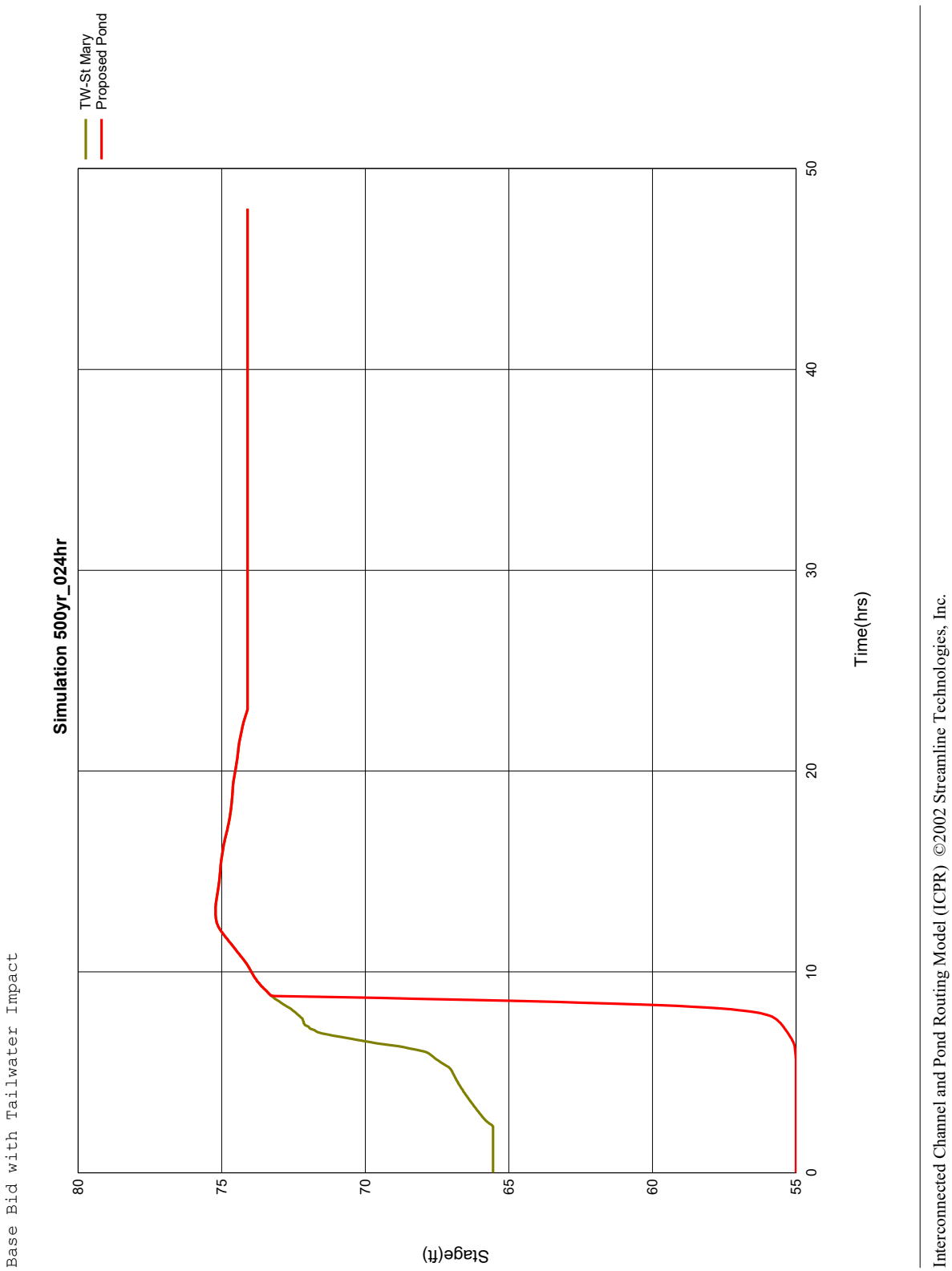
# OUTPUT

Base Bid with Tailwater Impact

| Name | Group | Simulation | Max Time Stage hrs | Max Stage ft | Warning Stage ft | Max Delta Stage ft | Max Surf Area ft2 | Max Time Inflow hrs | Max Inflow cfs | Max Time Outflow hrs | Max Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aquifer | Base | 500yr_024hr | 0.00 | 45.000 | 46.000 | 0.0000 | 0 | 8.92 | 19.158 | 0.00 | 0.000 |
| Proposed Pond | Base | 500yr_024hr | 13.01 | 75.218 | 72.400 | 0.0050 | 47153 | 8.79 | 505.331 | 8.92 | 19.158 |
| S-102 | Base | 500yr_024hr | 13.00 | 75.236 | 75.500 | 0.0049 | 125 | 11.53 | 1.609 | 12.33 | 2.705 |
| S-103 | Base | 500yr_024hr | 13.00 | 75.241 | 76.460 | 0.0034 | 116 | 11.54 | 0.817 | 12.28 | 0.755 |
| S-104 | Base | 500yr_024hr | 13.00 | 75.240 | 76.460 | 0.0041 | 114 | 12.00 | 0.145 | 12.33 | 0.747 |
| S-105 | Base | 500yr_024hr | 13.00 | 75.257 | 75.500 | 0.0050 | 123 | 19.00 | 11.760 | 19.00 | 11.433 |
| S-106 | Base | 500yr_024hr | 13.00 | 75.259 | 76.460 | 0.0029 | 116 | 12.00 | 0.479 | 27.80 | 0.553 |
| S-107 | Base | 500yr_024hr | 13.00 | 75.260 | 76.080 | 0.0038 | 114 | 12.00 | 0.339 | 9.38 | 0.359 |
| S-108 | Base | 500yr_024hr | 15.70 | 75.339 | 77.180 | 0.0047 | 123 | 19.00 | 10.903 | 19.00 | 10.928 |
| S-109 | Base | 500yr_024hr | 15.72 | 75.459 | 78.410 | 0.0050 | 128 | 19.00 | 10.340 | 19.01 | 10.342 |
| S-110 | Base | 500yr_024hr | 16.02 | 75.593 | 79.320 | 0.0140 | 130 | 8.90 | 10.124 | 19.02 | 9.716 |
| S-110A | Base | 500yr_024hr | 16.02 | 75.594 | 81.190 | -0.0159 | 116 | 12.00 | 2.343 | 8.90 | 9.914 |
| S-112_113 | Base | 500yr_024hr | 12.00 | 79.612 | 80.000 | 0.0010 | 2227 | 12.00 | 1.714 | 12.00 | 1.714 |
| S-114 | Base | 500yr_024hr | 12.00 | 79.569 | 80.000 | 0.0007 | 2206 | 12.00 | 0.824 | 12.00 | 0.823 |
| S-116 | Base | 500yr_024hr | 12.04 | 79.614 | 80.000 | 0.0003 | 11294 | 12.00 | 1.774 | 12.04 | 1.760 |
| S-117 | Base | 500yr_024hr | 19.07 | 76.673 | 77.040 | -0.0110 | 114 | 12.00 | 2.954 | 12.21 | 7.229 |
| S-118 | Base | 500yr_024hr | 19.07 | 76.674 | 81.970 | 0.0021 | 117 | 11.97 | 0.932 | 14.05 | 1.184 |
| S-118A | Base | 500yr_024hr | 19.07 | 76.672 | 81.710 | -0.0047 | 122 | 11.99 | 4.445 | 14.05 | 7.224 |
| S-119 | Base | 500yr_024hr | 12.00 | 79.583 | 80.000 | 0.0007 | 3219 | 12.00 | 1.093 | 12.00 | 1.093 |
| S-119A | Base | 500yr_024hr | 11.99 | 79.631 | 82.000 | 0.0015 | 129 | 11.97 | 1.251 | 11.80 | 1.252 |
| S-120 | Base | 500yr_024hr | 19.07 | 76.679 | 82.180 | 0.0023 | 122 | 12.00 | 10.397 | 12.00 | 10.397 |
| S-121 | Base | 500yr_024hr | 19.04 | 76.698 | 83.120 | 0.0034 | 121 | 12.00 | 9.099 | 12.00 | 9.099 |
| S-122 | Base | 500yr_024hr | 19.03 | 76.713 | 81.040 | 0.0071 | 120 | 12.00 | 9.001 | 12.00 | 9.001 |
| S-123 | Base | 500yr_024hr | 19.03 | 76.717 | 84.460 | 0.0025 | 117 | 11.97 | 1.310 | 11.77 | 1.310 |
| S-124 | Base | 500yr_024hr | 19.03 | 76.723 | 78.840 | 0.0050 | 114 | 12.00 | 7.691 | 12.00 | 7.691 |
| S-201 | Base | 500yr_024hr | 13.00 | 75.272 | 73.230 | 0.0049 | 119 | 12.00 | 9.618 | 12.00 | 9.601 |
| S-202 | Base | 500yr_024hr | 13.00 | 75.325 | 75.130 | 0.0050 | 127 | 12.00 | 8.823 | 12.00 | 8.805 |
| S-203 | Base | 500yr_024hr | 13.00 | 75.352 | 76.650 | 0.0042 | 119 | 11.87 | 1.824 | 11.87 | 1.807 |
| S-204 | Base | 500yr_024hr | 13.00 | 75.365 | 78.060 | 0.0042 | 118 | 11.87 | 1.568 | 11.87 | 1.551 |
| S-204A | Base | 500yr_024hr | 13.00 | 75.379 | 82.000 | 0.0028 | 117 | 11.97 | 1.378 | 11.87 | 1.362 |
| S-205 | Base | 500yr_024hr | 13.00 | 75.329 | 75.100 | -0.0047 | 115 | 12.00 | 0.776 | 11.77 | 0.761 |

Base Bid with Tailwater Impact

| Name | Group | Simulation | Max Time Stage hrs | Max Stage ft | Warning Stage ft | Max Delta Stage ft | Max Surf Area ft2 | Max Time Inflow hrs | Max Inflow cfs | Max Time Outflow hrs | Max Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S-206 | Base | 500yr_024hr | 13.00 | 75.349 | 76.640 | 0.0048 | 128 | 12.00 | 6.121 | 12.00 | 6.102 |
| S-207 | Base | 500yr_024hr | 13.00 | 75.387 | 76.100 | 0.0046 | 141 | 12.00 | 6.141 | 12.00 | 6.121 |
| S-208 | Base | 500yr_024hr | 13.00 | 75.403 | 72.400 | 0.0047 | 115 | 12.00 | 3.213 | 12.00 | 3.196 |
| S-209 | Base | 500yr_024hr | 13.01 | 75.417 | 77.520 | -0.0014 | 130 | 12.02 | 2.839 | 12.05 | 2.825 |
| S-210 | Base | 500yr_024hr | 12.07 | 75.435 | 79.340 | 0.0013 | 121 | 12.00 | 2.855 | 12.02 | 2.839 |
| S-211 | Base | 500yr_024hr | 12.07 | 75.461 | 79.800 | -0.0012 | 124 | 12.00 | 2.569 | 12.01 | 2.551 |
| S-212 | Base | 500yr_024hr | 12.07 | 75.484 | 79.570 | 0.0009 | 116 | 12.00 | 1.355 | 12.00 | 1.337 |
| S-213 | Base | 500yr_024hr | 12.07 | 75.468 | 81.050 | 0.0005 | 181 | 11.97 | 0.839 | 12.05 | 0.818 |
| S-214 | Base | 500yr_024hr | 12.00 | 76.822 | 80.000 | 0.0002 | 187 | 12.00 | 0.767 | 11.96 | 0.766 |
| StormTrap Mid | Base | 500yr_024hr | 19.09 | 76.664 | 76.900 | 0.0029 | 24836 | 14.05 | 11.867 | 19.09 | 8.633 |
| StormTrap North | Base | 500yr_024hr | 19.09 | 76.670 | 76.900 | 0.0011 | 22429 | 12.21 | 17.554 | 6.78 | 8.767 |


TW-St Mary
Proposed Pond
Simulation 500yr_024hr
Stage(ft)
80
75
70
65
60
55
0
10
20
30
40
50
Time(hrs)
Base Bid with Tailwater Impact
Interconnected Channel and Pond Routing Model (ICPR) ©2002 Streamline Technologies, Inc.

# PAVER ALTERNATE DESIGN

## ASSUMING NO OFFSITE TAILWATER IMPACTS

# INPUT DATA

(ONLY INPUT DATA THAT VARIES FROM BASE BID MODEL WITHOUT TAILWATER IS PROVIDED)

Paver Alternate without Tailwater Impacts

```
        Name: B-102                  Node: S-102                 Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

    Unit Hydrograph: Uh323                 Peaking Factor: 323.0
      Rainfall File:                 Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
           Area(ac): 0.395               Time Shift(hrs): 0.00
       Curve Number: 80.74           Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: B-103                  Node: S-103                 Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

    Unit Hydrograph: Uh323                 Peaking Factor: 323.0
      Rainfall File:                 Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
           Area(ac): 0.040               Time Shift(hrs): 0.00
       Curve Number: 86.98           Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: B-104                  Node: S-104                 Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

    Unit Hydrograph: Uh323                 Peaking Factor: 323.0
      Rainfall File:                 Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
           Area(ac): 0.066               Time Shift(hrs): 0.00
       Curve Number: 72.02           Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: B-105                  Node: S-105                 Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

    Unit Hydrograph: Uh323                 Peaking Factor: 323.0
      Rainfall File:                 Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
           Area(ac): 0.421               Time Shift(hrs): 0.00
       Curve Number: 79.13           Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
        Name: B-106                  Node: S-106                 Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

    Unit Hydrograph: Uh323                 Peaking Factor: 323.0
      Rainfall File:                 Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
           Area(ac): 0.059               Time Shift(hrs): 0.00
       Curve Number: 90.53           Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00


--------------------------------------------------------------------------------
```

Paver Alternate without Tailwater Impacts

---

```
        Name: B-107                   Node: S-107                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.163                 Time Shift(hrs): 0.00
        Curve Number: 64.03              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-108                   Node: S-108                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.599                 Time Shift(hrs): 0.00
        Curve Number: 80.71              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-109                   Node: S-109                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.668                 Time Shift(hrs): 0.00
        Curve Number: 77.86              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-110                   Node: S-110                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.156                 Time Shift(hrs): 0.00
        Curve Number: 80.19              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-110A                  Node: S-110A                Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 1.004                 Time Shift(hrs): 0.00
        Curve Number: 90.63              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

Paver Alternate without Tailwater Impacts

---

```
        Name: B-112_113               Node: S-112_113             Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.737                 Time Shift(hrs): 0.00
        Curve Number: 82.46             Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-114                   Node: S-114                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.375                 Time Shift(hrs): 0.00
        Curve Number: 72.13             Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-116                   Node: S-116                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.933                 Time Shift(hrs): 0.00
        Curve Number: 55.25             Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-117                   Node: S-117                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 1.266                 Time Shift(hrs): 0.00
        Curve Number: 90.65             Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-118                   Node: S-118                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.397                 Time Shift(hrs): 0.00
        Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

Paver Alternate without Tailwater Impacts

---

| | | | |
|---|---|---|---|
| Name: B-118A | | Node: S-118A | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.498 | Time Shift(hrs): | 0.00 |
| Curve Number: | 98.00 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-119 | | Node: S-119 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.494 | Time Shift(hrs): | 0.00 |
| Curve Number: | 73.60 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-119RD | | Node: S-119A | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.533 | Time Shift(hrs): | 0.00 |
| Curve Number: | 98.00 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-120 | | Node: S-120 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.553 | Time Shift(hrs): | 0.00 |
| Curve Number: | 98.00 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-121 | | Node: S-121 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.053 | Time Shift(hrs): | 0.00 |
| Curve Number: | 52.70 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

Paver Alternate without Tailwater Impacts

---

| | | | |
|---|---|---|---|
| Name: B-123 | | Node: S-123 | Status: Onsite |
| Group: Base | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.558 | Time Shift(hrs): | 0.00 |
| Curve Number: | 98.00 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-124 | | Node: S-124 | Status: Onsite |
| Group: Base | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 3.296 | Time Shift(hrs): | 0.00 |
| Curve Number: | 90.66 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-201 | | Node: S-201 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.349 | Time Shift(hrs): | 0.00 |
| Curve Number: | 77.22 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-202 | | Node: S-202 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.066 | Time Shift(hrs): | 0.00 |
| Curve Number: | 93.55 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-203 | | Node: S-203 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.117 | Time Shift(hrs): | 0.00 |
| Curve Number: | 88.43 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

Paver Alternate without Tailwater Impacts

---

```
        Name: B-204                  Node: S-204                 Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                   Peaking Factor: 323.0
       Rainfall File:                  Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.088                Time Shift(hrs): 0.00
        Curve Number: 93.55            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-204A                 Node: S-204A                Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                   Peaking Factor: 323.0
       Rainfall File:                  Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.587                Time Shift(hrs): 0.00
        Curve Number: 98.00            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-205                  Node: S-205                 Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                   Peaking Factor: 323.0
       Rainfall File:                  Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.332                Time Shift(hrs): 0.00
        Curve Number: 83.22            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-207                  Node: S-207                 Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                   Peaking Factor: 323.0
       Rainfall File:                  Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.054                Time Shift(hrs): 0.00
        Curve Number: 98.00            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-208                  Node: S-208                 Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                   Peaking Factor: 323.0
       Rainfall File:                  Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 1.439                Time Shift(hrs): 0.00
        Curve Number: 75.39            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

Paver Alternate without Tailwater Impacts

---

```
        Name: B-210                   Node: S-210                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.130                   Time Shift(hrs): 0.00
        Curve Number: 83.03               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-211                   Node: S-211                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.180                   Time Shift(hrs): 0.00
        Curve Number: 79.96               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-212                   Node: S-212                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.633                   Time Shift(hrs): 0.00
        Curve Number: 67.89               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-213                   Node: S-213                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.031                   Time Shift(hrs): 0.00
        Curve Number: 93.26               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-214                   Node: S-214                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.336                   Time Shift(hrs): 0.00
        Curve Number: 80.94               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

Paver Alternate without Tailwater Impacts

| | | | |
|---|---|---|---|
| Name: | Pr Pond | Node: | Proposed Pond |
| Group: | Base | Type: | SCS Unit Hydrograph CN |
| Status: | Onsite | | |

| | | | |
|---|---|---|---|
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 1.261 | Time Shift(hrs): | 0.00 |
| Curve Number: | 82.00 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

Paver Alternate without Tailwater Impacts

| | | | |
|---|---|---|---|
| Name: | Top of Pond | From Node: | TW-St Mary |
| Group: | Base | To Node: | Proposed Pond |
| Flow: | None | Count: | 1 |
| Type: | Vertical: Fread | Geometry: | Irregular |

| | |
|---|---|
| XSec: | St Marys |
| Invert(ft): | 72.000 |
| Control Elevation(ft): | 72.000 |
| Struct Opening Dim(ft): | 9999.00 |
| | TABLE |
| Bottom Clip(ft): | 0.000 |
| Top Clip(ft): | 0.000 |
| Weir Discharge Coef: | 3.200 |
| Orifice Discharge Coef: | 0.600 |

Paver Alternate without Tailwater Impacts

Name: Proposed Pond  Base Flow(cfs): 0.000  Init Stage(ft): 56.000
Group: Base  Warn Stage(ft): 72.400
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|
| 56.000 | 0.6910 |
| 57.000 | 0.7120 |
| 58.000 | 0.7330 |
| 59.000 | 0.7540 |
| 60.000 | 0.7750 |
| 61.000 | 0.7950 |
| 62.000 | 0.8160 |
| 63.000 | 0.8370 |
| 64.000 | 0.8570 |
| 65.000 | 0.8770 |
| 66.000 | 0.8980 |
| 67.000 | 0.9180 |
| 68.000 | 0.9380 |
| 69.000 | 0.9580 |
| 70.000 | 0.9780 |
| 71.000 | 0.9980 |
| 72.000 | 1.0180 |
| 73.000 | 1.0380 |
| 74.000 | 1.0580 |

# OUTPUT

Paver Alternate without Tailwater Impacts

| Name | Group | Simulation | Max Time Stage hrs | Max Stage ft | Warning Stage ft | Max Delta Stage ft | Max Surf Area ft2 | Max Time Inflow hrs | Max Inflow cfs | Max Time Outflow hrs | Max Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aquifer | BASE | 500yr_001hr | 0.00 | 45.000 | 46.000 | 0.0000 | 0 | 0.31 | 78.156 | 0.00 | 0.000 |
| Aquifer | Base | 500yr_008hr | 0.00 | 45.000 | 46.000 | 0.0000 | 0 | 4.69 | 10.782 | 0.00 | 0.000 |
| Aquifer | Base | 500yr_024hr | 0.00 | 45.000 | 46.000 | 0.0000 | 0 | 1.54 | 29.555 | 0.00 | 0.000 |
| Proposed Pond | BASE | 500yr_001hr | 1.20 | 58.946 | 72.400 | -0.0046 | 32835 | 0.68 | 71.541 | 0.31 | 78.156 |
| Proposed Pond | Base | 500yr_008hr | 8.02 | 63.158 | 72.400 | 0.0049 | 36640 | 4.00 | 53.971 | 4.69 | 10.782 |
| Proposed Pond | Base | 500yr_024hr | 24.45 | 71.461 | 72.400 | -0.0048 | 43879 | 12.00 | 20.672 | 1.54 | 29.555 |
| S-102 | BASE | 500yr_001hr | 0.67 | 67.880 | 75.500 | 0.0013 | 337 | 0.67 | 3.925 | 0.67 | 3.915 |
| S-102 | Base | 500yr_008hr | 4.00 | 67.760 | 75.500 | 0.0009 | 328 | 4.00 | 2.978 | 4.00 | 2.976 |
| S-102 | Base | 500yr_024hr | 24.41 | 71.467 | 75.500 | 0.0015 | 137 | 12.00 | 1.138 | 19.57 | 1.713 |
| S-103 | BASE | 500yr_001hr | 0.68 | 72.738 | 76.460 | 0.0005 | 173 | 0.67 | 0.780 | 0.68 | 0.776 |
| S-103 | Base | 500yr_008hr | 4.01 | 72.687 | 76.460 | 0.0005 | 171 | 4.00 | 0.617 | 3.99 | 0.616 |
| S-103 | Base | 500yr_024hr | 12.00 | 72.534 | 76.460 | 0.0002 | 159 | 12.00 | 0.238 | 11.94 | 0.237 |
| S-104 | BASE | 500yr_001hr | 0.68 | 72.757 | 76.460 | 0.0004 | 129 | 0.67 | 0.425 | 0.68 | 0.422 |
| S-104 | Base | 500yr_008hr | 4.00 | 72.711 | 76.460 | 0.0004 | 128 | 4.00 | 0.372 | 4.00 | 0.371 |
| S-104 | Base | 500yr_024hr | 11.97 | 72.584 | 76.460 | -0.0001 | 125 | 12.00 | 0.145 | 11.97 | 0.145 |
| S-105 | BASE | 500yr_001hr | 0.67 | 69.709 | 75.500 | 0.0043 | 252 | 0.67 | 25.200 | 0.67 | 25.185 |
| S-105 | Base | 500yr_008hr | 4.00 | 69.159 | 75.500 | 0.0027 | 282 | 4.00 | 18.365 | 4.00 | 18.360 |
| S-105 | Base | 500yr_024hr | 24.33 | 71.484 | 75.500 | 0.0034 | 161 | 19.01 | 11.385 | 18.83 | 11.396 |
| S-106 | BASE | 500yr_001hr | 0.68 | 72.696 | 76.460 | 0.0005 | 177 | 0.67 | 1.369 | 0.68 | 1.364 |
| S-106 | Base | 500yr_008hr | 4.01 | 72.658 | 76.460 | 0.0007 | 176 | 4.00 | 1.211 | 4.00 | 1.209 |
| S-106 | Base | 500yr_024hr | 12.00 | 72.440 | 76.460 | -0.0003 | 166 | 12.00 | 0.476 | 12.00 | 0.476 |
| S-107 | BASE | 500yr_001hr | 0.68 | 72.718 | 76.080 | 0.0007 | 131 | 0.67 | 0.815 | 0.70 | 0.814 |
| S-107 | Base | 500yr_008hr | 4.01 | 72.688 | 76.080 | 0.0006 | 131 | 4.00 | 0.846 | 4.00 | 0.845 |
| S-107 | Base | 500yr_024hr | 12.00 | 72.486 | 76.080 | -0.0002 | 127 | 12.00 | 0.339 | 11.98 | 0.339 |
| S-108 | BASE | 500yr_001hr | 0.67 | 72.330 | 77.180 | 0.0037 | 223 | 0.67 | 20.608 | 0.67 | 20.603 |
| S-108 | Base | 500yr_008hr | 4.00 | 71.851 | 77.180 | 0.0024 | 292 | 4.00 | 14.665 | 4.00 | 14.661 |
| S-108 | Base | 500yr_024hr | 19.01 | 71.528 | 77.180 | -0.0026 | 309 | 19.01 | 10.795 | 19.01 | 10.795 |
| S-109 | BASE | 500yr_001hr | 0.67 | 72.514 | 78.410 | 0.0030 | 224 | 0.65 | 15.848 | 0.66 | 15.833 |
| S-109 | Base | 500yr_008hr | 4.00 | 71.981 | 78.410 | 0.0023 | 373 | 4.00 | 11.089 | 4.01 | 11.085 |
| S-109 | Base | 500yr_024hr | 19.02 | 71.708 | 78.410 | 0.0011 | 400 | 19.01 | 10.241 | 19.02 | 10.241 |
| S-110 | BASE | 500yr_001hr | 0.67 | 72.634 | 79.320 | 0.0023 | 206 | 0.64 | 10.947 | 0.65 | 10.872 |
| S-110 | Base | 500yr_008hr | 4.00 | 72.055 | 79.320 | 0.0023 | 401 | 4.00 | 7.167 | 4.00 | 7.162 |
| S-110 | Base | 500yr_024hr | 19.02 | 71.901 | 79.320 | 0.0016 | 403 | 19.01 | 9.625 | 19.03 | 9.625 |
| S-110A | BASE | 500yr_001hr | 0.64 | 73.475 | 81.190 | 0.0020 | 154 | 0.63 | 9.747 | 0.64 | 9.721 |
| S-110A | Base | 500yr_008hr | 4.00 | 73.102 | 81.190 | -0.0021 | 161 | 4.00 | 6.237 | 4.00 | 6.237 |
| S-110A | Base | 500yr_024hr | 11.99 | 72.621 | 81.190 | -0.0009 | 153 | 12.00 | 2.343 | 11.90 | 2.343 |
| S-112_113 | BASE | 500yr_001hr | 0.67 | 79.760 | 80.000 | 0.0016 | 2408 | 0.63 | 6.103 | 0.67 | 6.079 |
| S-112_113 | Base | 500yr_008hr | 4.00 | 79.711 | 80.000 | 0.0021 | 2348 | 4.00 | 4.446 | 4.00 | 4.442 |
| S-112_113 | Base | 500yr_024hr | 12.00 | 79.611 | 80.000 | 0.0010 | 2226 | 12.00 | 1.690 | 12.00 | 1.689 |
| S-114 | BASE | 500yr_001hr | 0.75 | 79.632 | 80.000 | 0.0015 | 2273 | 0.67 | 2.421 | 0.75 | 2.210 |
| S-114 | Base | 500yr_008hr | 4.01 | 79.628 | 80.000 | 0.0013 | 2269 | 4.00 | 2.114 | 4.01 | 2.109 |
| S-114 | Base | 500yr_024hr | 12.00 | 79.569 | 80.000 | 0.0007 | 2206 | 12.00 | 0.824 | 12.00 | 0.823 |
| S-116 | BASE | 500yr_001hr | 1.80 | 79.111 | 80.000 | 0.0005 | 9893 | 0.70 | 3.278 | 0.00 | 0.000 |
| S-116 | Base | 500yr_008hr | 4.11 | 79.681 | 80.000 | 0.0008 | 11483 | 4.00 | 4.258 | 4.11 | 3.544 |
| S-116 | Base | 500yr_024hr | 12.04 | 79.614 | 80.000 | 0.0004 | 11294 | 12.00 | 1.774 | 12.04 | 1.760 |
| S-117 | BASE | 500yr_001hr | 0.64 | 73.902 | 77.040 | 0.0025 | 124 | 0.63 | 12.295 | 0.63 | 12.285 |
| S-117 | Base | 500yr_008hr | 12.00 | 74.899 | 77.040 | -0.0114 | 114 | 4.00 | 7.866 | 4.00 | 7.865 |

Paver Alternate without Tailwater Impacts

| Name | Group | Simulation | Max Time Stage hrs | Max Stage ft | Warning Stage ft | Max Delta Stage ft | Max Surf Area ft2 | Max Time Inflow hrs | Max Inflow cfs | Max Time Outflow hrs | Max Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S-117 | Base | 500yr_024hr | 19.08 | 76.656 | 77.040 | -0.0111 | 114 | 12.00 | 2.954 | 12.24 | 7.197 |
| S-118 | BASE | 500yr_001hr | 0.72 | 76.667 | 81.970 | 0.0040 | 117 | 0.60 | 4.260 | 0.63 | 4.239 |
| S-118 | Base | 500yr_008hr | 4.00 | 76.020 | 81.970 | 0.0017 | 178 | 3.97 | 2.493 | 4.00 | 2.491 |
| S-118 | Base | 500yr_024hr | 19.07 | 76.657 | 81.970 | 0.0013 | 117 | 11.97 | 0.932 | 14.15 | 1.183 |
| S-118A | BASE | 500yr_001hr | 0.73 | 76.436 | 81.710 | 0.0049 | 125 | 0.73 | 16.028 | 0.73 | 16.022 |
| S-118A | Base | 500yr_008hr | 4.00 | 75.952 | 81.710 | 0.0025 | 211 | 4.00 | 11.771 | 4.00 | 11.769 |
| S-118A | Base | 500yr_024hr | 19.08 | 76.655 | 81.710 | -0.0049 | 122 | 12.00 | 4.445 | 14.15 | 7.258 |
| S-119 | BASE | 500yr_001hr | 0.78 | 79.659 | 80.000 | 0.0015 | 3354 | 0.67 | 3.320 | 0.78 | 2.897 |
| S-119 | Base | 500yr_008hr | 4.01 | 79.655 | 80.000 | 0.0013 | 3348 | 4.00 | 2.819 | 4.01 | 2.809 |
| S-119 | Base | 500yr_024hr | 12.00 | 79.583 | 80.000 | 0.0007 | 3219 | 12.00 | 1.093 | 12.00 | 1.093 |
| S-119A | BASE | 500yr_001hr | 0.64 | 81.709 | 82.000 | 0.0049 | 118 | 0.60 | 5.719 | 0.64 | 5.688 |
| S-119A | Base | 500yr_008hr | 3.99 | 80.344 | 82.000 | 0.0018 | 118 | 3.97 | 3.347 | 3.99 | 3.347 |
| S-119A | Base | 500yr_024hr | 11.91 | 79.631 | 82.000 | 0.0010 | 129 | 11.97 | 1.251 | 11.79 | 1.251 |
| S-120 | BASE | 500yr_001hr | 0.66 | 77.004 | 82.180 | 0.0047 | 133 | 0.65 | 43.514 | 0.66 | 43.514 |
| S-120 | Base | 500yr_008hr | 4.00 | 76.042 | 82.180 | 0.0040 | 168 | 4.00 | 27.679 | 4.00 | 27.678 |
| S-120 | Base | 500yr_024hr | 19.07 | 76.661 | 82.180 | 0.0022 | 122 | 11.96 | 10.397 | 11.99 | 10.397 |
| S-121 | BASE | 500yr_001hr | 0.66 | 79.128 | 83.120 | 0.0050 | 121 | 0.65 | 37.707 | 0.66 | 37.702 |
| S-121 | Base | 500yr_008hr | 4.00 | 76.526 | 83.120 | 0.0034 | 129 | 4.00 | 24.207 | 4.00 | 24.207 |
| S-121 | Base | 500yr_024hr | 19.04 | 76.680 | 83.120 | -0.0038 | 121 | 11.98 | 9.099 | 11.95 | 9.099 |
| S-122 | BASE | 500yr_001hr | 0.66 | 80.699 | 81.040 | 0.0049 | 120 | 0.64 | 37.611 | 0.65 | 37.552 |
| S-122 | Base | 500yr_008hr | 4.00 | 77.167 | 81.040 | -0.0044 | 120 | 4.00 | 23.979 | 4.00 | 23.977 |
| S-122 | Base | 500yr_024hr | 19.03 | 76.695 | 81.040 | 0.0069 | 120 | 11.98 | 9.002 | 11.98 | 9.002 |
| S-123 | BASE | 500yr_001hr | 0.66 | 81.233 | 84.460 | 0.0050 | 117 | 0.60 | 5.987 | 0.68 | 5.876 |
| S-123 | Base | 500yr_008hr | 4.00 | 77.358 | 84.460 | -0.0049 | 117 | 3.97 | 3.504 | 4.12 | 3.540 |
| S-123 | Base | 500yr_024hr | 19.03 | 76.699 | 84.460 | 0.0015 | 117 | 11.97 | 1.310 | 11.85 | 1.311 |
| S-124 | BASE | 500yr_001hr | 0.65 | 81.780 | 78.840 | -0.0050 | 114 | 0.63 | 32.014 | 0.64 | 31.826 |
| S-124 | Base | 500yr_008hr | 4.00 | 77.617 | 78.840 | -0.0050 | 114 | 4.00 | 20.478 | 4.00 | 20.476 |
| S-124 | Base | 500yr_024hr | 19.03 | 76.705 | 78.840 | 0.0056 | 114 | 12.00 | 7.691 | 11.98 | 7.691 |
| S-201 | BASE | 500yr_001hr | 0.71 | 65.744 | 73.230 | 0.0040 | 127 | 0.71 | 32.568 | 0.71 | 32.564 |
| S-201 | Base | 500yr_008hr | 4.01 | 65.188 | 73.230 | 0.0037 | 127 | 4.01 | 25.469 | 4.01 | 25.473 |
| S-201 | Base | 500yr_024hr | 24.44 | 71.463 | 73.230 | -0.0041 | 119 | 12.02 | 9.814 | 12.00 | 9.790 |
| S-202 | BASE | 500yr_001hr | 0.71 | 68.970 | 75.130 | -0.0036 | 127 | 0.71 | 30.105 | 0.71 | 30.101 |
| S-202 | Base | 500yr_008hr | 4.01 | 68.394 | 75.130 | -0.0048 | 127 | 4.01 | 23.433 | 4.01 | 23.431 |
| S-202 | Base | 500yr_024hr | 24.42 | 71.459 | 75.130 | 0.0067 | 127 | 11.57 | 10.153 | 12.02 | 9.033 |
| S-203 | BASE | 500yr_001hr | 0.70 | 69.913 | 76.650 | 0.0032 | 119 | 0.65 | 7.974 | 0.67 | 7.853 |
| S-203 | Base | 500yr_008hr | 4.01 | 68.775 | 76.650 | 0.0047 | 119 | 4.00 | 4.951 | 4.01 | 4.946 |
| S-203 | Base | 500yr_024hr | 24.41 | 71.463 | 76.650 | 0.0018 | 119 | 11.73 | 1.897 | 11.86 | 1.965 |
| S-204 | BASE | 500yr_001hr | 0.69 | 70.429 | 78.060 | 0.0043 | 174 | 0.62 | 7.182 | 0.65 | 6.887 |
| S-204 | Base | 500yr_008hr | 4.01 | 68.975 | 78.060 | -0.0050 | 179 | 3.99 | 4.237 | 4.00 | 4.229 |
| S-204 | Base | 500yr_024hr | 24.40 | 71.462 | 78.060 | 0.0012 | 137 | 11.97 | 1.584 | 11.73 | 1.625 |
| S-204A | BASE | 500yr_001hr | 0.61 | 73.484 | 82.000 | 0.0047 | 141 | 0.60 | 6.299 | 0.61 | 6.291 |
| S-204A | Base | 500yr_008hr | 3.97 | 73.031 | 82.000 | 0.0015 | 179 | 3.97 | 3.686 | 3.96 | 3.687 |
| S-204A | Base | 500yr_024hr | 11.90 | 72.573 | 82.000 | 0.0009 | 179 | 11.97 | 1.378 | 11.78 | 1.378 |
| S-205 | BASE | 500yr_001hr | 0.71 | 69.057 | 75.100 | 0.0029 | 115 | 0.63 | 2.796 | 0.67 | 2.687 |
| S-205 | Base | 500yr_008hr | 4.01 | 68.444 | 75.100 | -0.0050 | 115 | 4.00 | 2.010 | 4.00 | 2.005 |
| S-205 | Base | 500yr_024hr | 24.42 | 71.462 | 75.100 | -0.0050 | 115 | 12.00 | 0.763 | 11.57 | 1.459 |

Paver Alternate without Tailwater Impacts

| Name | Group | Simulation | Max Time Stage hrs | Max Stage ft | Warning Stage ft | Max Delta Stage ft | Max Surf Area ft2 | Max Time Inflow hrs | Max Inflow cfs | Max Time Outflow hrs | Max Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S-206 | BASE | 500yr_001hr | 0.71 | 69.419 | 76.640 | -0.0040 | 128 | 0.72 | 19.122 | 0.72 | 19.143 |
| S-206 | Base | 500yr_008hr | 4.01 | 68.712 | 76.640 | 0.0047 | 128 | 4.01 | 16.079 | 4.02 | 16.080 |
| S-206 | Base | 500yr_024hr | 24.40 | 71.464 | 76.640 | 0.0046 | 128 | 12.02 | 6.275 | 11.86 | 6.639 |
| S-207 | BASE | 500yr_001hr | 0.71 | 70.127 | 76.100 | 0.0042 | 385 | 0.69 | 19.272 | 0.72 | 19.122 |
| S-207 | Base | 500yr_008hr | 4.01 | 69.213 | 76.100 | 0.0040 | 399 | 4.00 | 16.106 | 4.01 | 16.079 |
| S-207 | Base | 500yr_024hr | 24.39 | 71.463 | 76.100 | 0.0019 | 274 | 11.86 | 6.248 | 12.02 | 6.275 |
| S-208 | BASE | 500yr_001hr | 0.71 | 70.420 | 72.400 | 0.0063 | 115 | 0.67 | 10.129 | 0.67 | 9.922 |
| S-208 | Base | 500yr_008hr | 4.01 | 69.426 | 72.400 | -0.0055 | 115 | 4.00 | 8.323 | 4.00 | 8.311 |
| S-208 | Base | 500yr_024hr | 24.38 | 71.464 | 72.400 | -0.0038 | 115 | 12.00 | 3.213 | 11.86 | 3.231 |
| S-209 | BASE | 500yr_001hr | 0.71 | 74.247 | 77.520 | 0.0020 | 345 | 0.69 | 8.947 | 0.71 | 8.919 |
| S-209 | Base | 500yr_008hr | 4.02 | 74.044 | 77.520 | 0.0018 | 395 | 4.01 | 7.471 | 4.02 | 7.465 |
| S-209 | Base | 500yr_024hr | 12.01 | 73.405 | 77.520 | 0.0006 | 437 | 12.00 | 2.900 | 12.01 | 2.899 |
| S-210 | BASE | 500yr_001hr | 0.70 | 74.371 | 79.340 | 0.0016 | 242 | 0.68 | 9.004 | 0.69 | 8.947 |
| S-210 | Base | 500yr_008hr | 4.02 | 74.149 | 79.340 | 0.0019 | 255 | 4.01 | 7.477 | 4.01 | 7.471 |
| S-210 | Base | 500yr_024hr | 12.01 | 73.465 | 79.340 | 0.0007 | 260 | 12.00 | 2.900 | 12.00 | 2.900 |
| S-211 | BASE | 500yr_001hr | 0.68 | 74.757 | 79.800 | 0.0015 | 246 | 0.67 | 7.944 | 0.68 | 7.934 |
| S-211 | Base | 500yr_008hr | 4.01 | 74.612 | 79.800 | 0.0016 | 288 | 4.00 | 6.697 | 4.01 | 6.693 |
| S-211 | Base | 500yr_024hr | 12.00 | 74.068 | 79.800 | -0.0006 | 324 | 12.00 | 2.602 | 11.99 | 2.601 |
| S-212 | BASE | 500yr_001hr | 0.68 | 74.857 | 79.570 | 0.0015 | 132 | 0.67 | 3.605 | 0.68 | 3.579 |
| S-212 | Base | 500yr_008hr | 4.00 | 74.709 | 79.570 | 0.0016 | 151 | 4.00 | 3.431 | 4.00 | 3.427 |
| S-212 | Base | 500yr_024hr | 12.00 | 74.127 | 79.570 | -0.0006 | 171 | 12.00 | 1.355 | 12.00 | 1.354 |
| S-213 | BASE | 500yr_001hr | 0.68 | 74.842 | 81.050 | 0.0014 | 211 | 0.66 | 2.997 | 0.68 | 2.969 |
| S-213 | Base | 500yr_008hr | 4.01 | 74.662 | 81.050 | 0.0016 | 226 | 4.00 | 2.204 | 4.01 | 2.202 |
| S-213 | Base | 500yr_024hr | 12.01 | 74.094 | 81.050 | -0.0006 | 229 | 11.99 | 0.839 | 12.01 | 0.839 |
| S-214 | BASE | 500yr_001hr | 0.67 | 77.260 | 80.000 | 0.0013 | 197 | 0.67 | 2.692 | 0.67 | 2.690 |
| S-214 | Base | 500yr_008hr | 4.00 | 77.125 | 80.000 | 0.0010 | 197 | 4.00 | 2.011 | 4.00 | 2.011 |
| S-214 | Base | 500yr_024hr | 11.99 | 76.822 | 80.000 | -0.0004 | 187 | 12.00 | 0.767 | 11.99 | 0.767 |
| StormTrap Mid | BASE | 500yr_001hr | 5.00 | 68.846 | 76.900 | 0.0021 | 24879 | 0.84 | 45.345 | 0.00 | 0.000 |
| StormTrap Mid | Base | 500yr_008hr | 11.99 | 74.900 | 76.900 | 0.0033 | 24824 | 3.45 | 39.342 | 0.00 | 0.000 |
| StormTrap Mid | Base | 500yr_024hr | 19.10 | 76.647 | 76.900 | 0.0023 | 24836 | 14.15 | 11.937 | 19.10 | 8.549 |
| StormTrap North | BASE | 500yr_001hr | 5.00 | 68.846 | 76.900 | 0.0030 | 22498 | 0.65 | 55.748 | 0.93 | 27.721 |
| StormTrap North | Base | 500yr_008hr | 12.00 | 74.900 | 76.900 | 0.0030 | 22477 | 4.01 | 38.446 | 3.45 | 23.251 |
| StormTrap North | Base | 500yr_024hr | 19.10 | 76.652 | 76.900 | 0.0019 | 22429 | 12.24 | 17.210 | 6.83 | 8.817 |
| TW-St Mary | Base | 500yr_008hr | 12.00 | 75.007 | 76.000 | 0.0052 | 0 | 0.00 | 0.000 | 0.00 | 0.000 |

# PAVER ALTERNATE DESIGN

## ASSUMING IMPACT FROM OFFSITE TAILWATER

# INPUT DATA

(ONLY INPUT DATA THAT VARIES FROM BASE BID MODEL WITHOUT TAILWATER IS PROVIDED)

Pavers Alternate with Tailwater Impact

---

| | | | |
|---|---|---|---|
| Name: B-102 | Node: S-102 | Status: Onsite | |
| Group: BASE | Type: SCS Unit Hydrograph CN | | |
| Unit Hydrograph: Uh323 | Peaking Factor: 323.0 | | |
| Rainfall File: | Storm Duration(hrs): 0.00 | | |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00 | | |
| Area(ac): 0.395 | Time Shift(hrs): 0.00 | | |
| Curve Number: 83.34 | Max Allowable Q(cfs): 999999.000 | | |
| DCIA(%): 0.00 | | | |

---

| | | | |
|---|---|---|---|
| Name: B-103 | Node: S-103 | Status: Onsite | |
| Group: BASE | Type: SCS Unit Hydrograph CN | | |
| Unit Hydrograph: Uh323 | Peaking Factor: 323.0 | | |
| Rainfall File: | Storm Duration(hrs): 0.00 | | |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00 | | |
| Area(ac): 0.040 | Time Shift(hrs): 0.00 | | |
| Curve Number: 91.25 | Max Allowable Q(cfs): 999999.000 | | |
| DCIA(%): 0.00 | | | |

---

| | | | |
|---|---|---|---|
| Name: B-104 | Node: S-104 | Status: Onsite | |
| Group: BASE | Type: SCS Unit Hydrograph CN | | |
| Unit Hydrograph: Uh323 | Peaking Factor: 323.0 | | |
| Rainfall File: | Storm Duration(hrs): 0.00 | | |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00 | | |
| Area(ac): 0.066 | Time Shift(hrs): 0.00 | | |
| Curve Number: 82.09 | Max Allowable Q(cfs): 999999.000 | | |
| DCIA(%): 0.00 | | | |

---

| | | | |
|---|---|---|---|
| Name: B-105 | Node: S-105 | Status: Onsite | |
| Group: BASE | Type: SCS Unit Hydrograph CN | | |
| Unit Hydrograph: Uh323 | Peaking Factor: 323.0 | | |
| Rainfall File: | Storm Duration(hrs): 0.00 | | |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00 | | |
| Area(ac): 0.421 | Time Shift(hrs): 0.00 | | |
| Curve Number: 82.60 | Max Allowable Q(cfs): 999999.000 | | |
| DCIA(%): 0.00 | | | |

---

| | | | |
|---|---|---|---|
| Name: B-106 | Node: S-106 | Status: Onsite | |
| Group: BASE | Type: SCS Unit Hydrograph CN | | |
| Unit Hydrograph: Uh323 | Peaking Factor: 323.0 | | |
| Rainfall File: | Storm Duration(hrs): 0.00 | | |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00 | | |
| Area(ac): 0.059 | Time Shift(hrs): 0.00 | | |
| Curve Number: 93.42 | Max Allowable Q(cfs): 999999.000 | | |
| DCIA(%): 0.00 | | | |

---

Pavers Alternate with Tailwater Impact

---

Name: B-107 Node: S-107 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.163 Time Shift(hrs): 0.00
Curve Number: 77.20 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-108 Node: S-108 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.599 Time Shift(hrs): 0.00
Curve Number: 83.75 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-109 Node: S-109 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.668 Time Shift(hrs): 0.00
Curve Number: 81.10 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-110 Node: S-110 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.156 Time Shift(hrs): 0.00
Curve Number: 84.94 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-110A Node: S-110A Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.004 Time Shift(hrs): 0.00
Curve Number: 93.49 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Pavers Alternate with Tailwater Impact

---

Name: B-112_113 Node: S-112_113 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.737 Time Shift(hrs): 0.00
Curve Number: 86.17 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-114 Node: S-114 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.375 Time Shift(hrs): 0.00
Curve Number: 82.16 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-116 Node: S-116 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.933 Time Shift(hrs): 0.00
Curve Number: 71.83 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-117 Node: S-117 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.266 Time Shift(hrs): 0.00
Curve Number: 93.50 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Name: B-118 Node: S-118 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.397 Time Shift(hrs): 0.00
Curve Number: 98.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

---

Pavers Alternate with Tailwater Impact

---

```
        Name: B-118A                  Node: S-118A                Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.498                   Time Shift(hrs): 0.00
        Curve Number: 98.00               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-119                   Node: S-119                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.494                   Time Shift(hrs): 0.00
        Curve Number: 83.06               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-119RD                 Node: S-119A                Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.533                   Time Shift(hrs): 0.00
        Curve Number: 98.00               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-120                   Node: S-120                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.553                   Time Shift(hrs): 0.00
        Curve Number: 98.00               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-121                   Node: S-121                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.053                   Time Shift(hrs): 0.00
        Curve Number: 70.26               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

Pavers Alternate with Tailwater Impact

---

| | | | |
|---|---|---|---|
| Name: B-123 | | Node: S-123 | Status: Onsite |
| Group: Base | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.558 | Time Shift(hrs): | 0.00 |
| Curve Number: | 98.00 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-124 | | Node: S-124 | Status: Onsite |
| Group: Base | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 3.296 | Time Shift(hrs): | 0.00 |
| Curve Number: | 93.50 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-201 | | Node: S-201 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.349 | Time Shift(hrs): | 0.00 |
| Curve Number: | 80.27 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-202 | | Node: S-202 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.066 | Time Shift(hrs): | 0.00 |
| Curve Number: | 95.27 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-203 | | Node: S-203 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.117 | Time Shift(hrs): | 0.00 |
| Curve Number: | 90.38 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

Pavers Alternate with Tailwater Impact

---

```
        Name: B-204                   Node: S-204                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.088                 Time Shift(hrs): 0.00
        Curve Number: 95.27              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-204A                  Node: S-204A                Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.587                 Time Shift(hrs): 0.00
        Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-205                   Node: S-205                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.332                 Time Shift(hrs): 0.00
        Curve Number: 85.68              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-207                   Node: S-207                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.054                 Time Shift(hrs): 0.00
        Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

```
        Name: B-208                   Node: S-208                 Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

     Unit Hydrograph: Uh323                    Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 1.439                 Time Shift(hrs): 0.00
        Curve Number: 84.16              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

---

Pavers Alternate with Tailwater Impact

---

| | | | |
|---|---|---|---|
| Name: B-210 | | Node: S-210 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.130 | Time Shift(hrs): | 0.00 |
| Curve Number: | 84.49 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-211 | | Node: S-211 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.180 | Time Shift(hrs): | 0.00 |
| Curve Number: | 83.33 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-212 | | Node: S-212 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.633 | Time Shift(hrs): | 0.00 |
| Curve Number: | 79.56 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-213 | | Node: S-213 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.031 | Time Shift(hrs): | 0.00 |
| Curve Number: | 95.10 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

| | | | |
|---|---|---|---|
| Name: B-214 | | Node: S-214 | Status: Onsite |
| Group: BASE | | Type: SCS Unit Hydrograph CN | |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 0.336 | Time Shift(hrs): | 0.00 |
| Curve Number: | 87.55 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

---

Pavers Alternate with Tailwater Impact

| | | | |
|---|---|---|---|
| Name: | Pr Pond | Node: | Proposed Pond |
| Group: | Base | Type: | SCS Unit Hydrograph CN |
| Unit Hydrograph: | Uh323 | Peaking Factor: | 323.0 |
| Rainfall File: | | Storm Duration(hrs): | 0.00 |
| Rainfall Amount(in): | 0.000 | Time of Conc(min): | 10.00 |
| Area(ac): | 1.261 | Time Shift(hrs): | 0.00 |
| Curve Number: | 88.71 | Max Allowable Q(cfs): | 999999.000 |
| DCIA(%): | 0.00 | | |

Pavers Alternate with Tailwater Impact

---

| | | | |
|---|---|---|---|
| Name: | Top of Pond | From Node: | TW-St Mary |
| Group: | Base | To Node: | Proposed Pond |
| Flow: | Both | Count: | 1 |
| Type: | Vertical: Fread | Geometry: | Irregular |

| | |
|---|---|
| XSec: | St Marys |
| Invert(ft): | 72.000 |
| Control Elevation(ft): | 72.000 |
| Struct Opening Dim(ft): | 9999.00 |
| | TABLE |
| Bottom Clip(ft): | 0.000 |
| Top Clip(ft): | 0.000 |
| Weir Discharge Coef: | 3.200 |
| Orifice Discharge Coef: | 0.600 |

Pavers Alternate with Tailwater Impact

Name: Proposed Pond  Base Flow(cfs): 0.000  Init Stage(ft): 56.000
Group: Base  Warn Stage(ft): 72.400
Type: Stage/Area

| Stage(ft) | Area(ac) |
|---|---|
| 56.000 | 0.6910 |
| 57.000 | 0.7120 |
| 58.000 | 0.7330 |
| 59.000 | 0.7540 |
| 60.000 | 0.7750 |
| 61.000 | 0.7950 |
| 62.000 | 0.8160 |
| 63.000 | 0.8370 |
| 64.000 | 0.8570 |
| 65.000 | 0.8770 |
| 66.000 | 0.8980 |
| 67.000 | 0.9180 |
| 68.000 | 0.9380 |
| 69.000 | 0.9580 |
| 70.000 | 0.9780 |
| 71.000 | 0.9980 |
| 72.000 | 1.0180 |
| 73.000 | 1.0380 |
| 74.000 | 1.0580 |

# OUTPUT

Pavers Alternate with Tailwater Impact

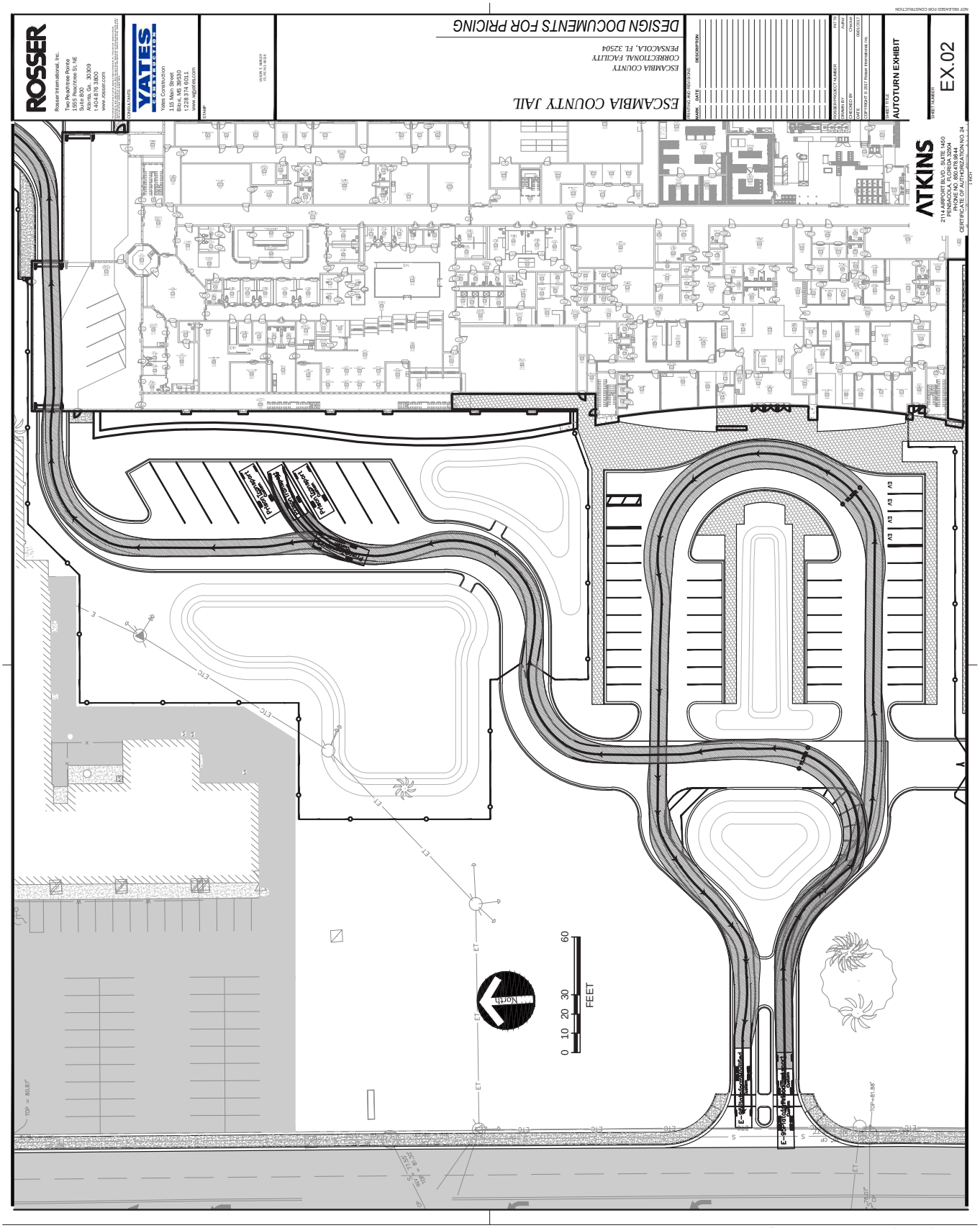
| Name | Group | Simulation | Max Time Stage hrs | Max Stage ft | Warning Stage ft | Max Delta Stage ft | Max Surf Area ft2 | Max Time Inflow hrs | Max Inflow cfs | Max Time Outflow hrs | Max Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aquifer | Base | 500yr_024hr | 0.00 | 45.000 | 46.000 | 0.0000 | 0 | 1.40 | 38.486 | 0.00 | 0.000 |
| Proposed Pond | Base | 500yr_024hr | 13.01 | 75.218 | 72.400 | 0.0050 | 47153 | 8.78 | 492.183 | 1.40 | 38.486 |
| S-102 | Base | 500yr_024hr | 13.00 | 75.235 | 75.500 | 0.0047 | 125 | 11.54 | 1.599 | 12.28 | 2.695 |
| S-103 | Base | 500yr_024hr | 13.00 | 75.241 | 76.460 | 0.0033 | 116 | 12.08 | 0.822 | 12.30 | 0.763 |
| S-104 | Base | 500yr_024hr | 13.00 | 75.240 | 76.460 | 0.0039 | 114 | 12.00 | 0.151 | 12.28 | 0.748 |
| S-105 | Base | 500yr_024hr | 15.00 | 75.268 | 75.500 | 0.0053 | 123 | 18.11 | 11.945 | 18.11 | 12.035 |
| S-106 | Base | 500yr_024hr | 15.00 | 75.269 | 76.460 | 0.0030 | 116 | 16.34 | 0.519 | 27.85 | 0.553 |
| S-107 | Base | 500yr_024hr | 15.00 | 75.269 | 76.080 | 0.0036 | 114 | 12.00 | 0.367 | 18.99 | 0.463 |
| S-108 | Base | 500yr_024hr | 15.05 | 75.403 | 77.180 | 0.0046 | 123 | 18.11 | 11.351 | 18.11 | 11.344 |
| S-109 | Base | 500yr_024hr | 15.07 | 75.522 | 78.410 | 0.0049 | 128 | 18.10 | 10.829 | 18.11 | 10.793 |
| S-110 | Base | 500yr_024hr | 16.01 | 75.656 | 79.320 | 0.0140 | 130 | 18.06 | 11.629 | 18.10 | 10.208 |
| S-110A | Base | 500yr_024hr | 16.01 | 75.658 | 81.190 | -0.0159 | 116 | 11.97 | 2.351 | 8.91 | 9.926 |
| S-112_113 | Base | 500yr_024hr | 12.00 | 79.611 | 80.000 | 0.0012 | 2227 | 12.00 | 1.706 | 12.00 | 1.706 |
| S-114 | Base | 500yr_024hr | 12.00 | 79.571 | 80.000 | 0.0006 | 2208 | 12.00 | 0.859 | 12.00 | 0.859 |
| S-116 | Base | 500yr_024hr | 12.02 | 79.625 | 80.000 | 0.0004 | 11327 | 12.00 | 2.046 | 12.02 | 2.038 |
| S-117 | Base | 500yr_024hr | 18.09 | 76.767 | 77.040 | -0.0105 | 114 | 11.97 | 2.964 | 11.97 | 7.539 |
| S-118 | Base | 500yr_024hr | 18.07 | 76.768 | 81.970 | 0.0011 | 117 | 11.97 | 0.932 | 13.65 | 1.190 |
| S-118A | Base | 500yr_024hr | 18.07 | 76.765 | 81.710 | -0.0047 | 122 | 11.97 | 4.487 | 13.65 | 7.239 |
| S-119 | Base | 500yr_024hr | 12.00 | 79.585 | 80.000 | 0.0006 | 3223 | 12.00 | 1.134 | 12.00 | 1.134 |
| S-119A | Base | 500yr_024hr | 11.92 | 79.631 | 82.000 | 0.0010 | 129 | 11.97 | 1.251 | 11.79 | 1.251 |
| S-120 | Base | 500yr_024hr | 18.09 | 76.773 | 82.180 | 0.0023 | 122 | 11.99 | 10.441 | 12.00 | 10.441 |
| S-121 | Base | 500yr_024hr | 18.09 | 76.793 | 83.120 | -0.0042 | 121 | 12.00 | 9.143 | 11.99 | 9.143 |
| S-122 | Base | 500yr_024hr | 18.09 | 76.807 | 81.040 | 0.0069 | 120 | 12.00 | 9.028 | 12.00 | 9.028 |
| S-123 | Base | 500yr_024hr | 18.09 | 76.812 | 84.460 | 0.0013 | 117 | 11.97 | 1.310 | 11.92 | 1.311 |
| S-124 | Base | 500yr_024hr | 18.09 | 76.818 | 78.840 | 0.0049 | 114 | 11.97 | 7.717 | 12.00 | 7.717 |
| S-201 | Base | 500yr_024hr | 13.00 | 75.274 | 73.230 | 0.0050 | 119 | 12.00 | 9.780 | 12.00 | 9.763 |
| S-202 | Base | 500yr_024hr | 13.00 | 75.328 | 75.130 | 0.0050 | 127 | 12.00 | 9.004 | 12.00 | 8.986 |
| S-203 | Base | 500yr_024hr | 13.00 | 75.355 | 76.650 | 0.0042 | 119 | 11.87 | 1.824 | 11.87 | 1.807 |
| S-204 | Base | 500yr_024hr | 13.00 | 75.368 | 78.060 | 0.0041 | 118 | 11.87 | 1.568 | 11.87 | 1.551 |
| S-204A | Base | 500yr_024hr | 13.00 | 75.382 | 82.000 | 0.0027 | 117 | 11.97 | 1.378 | 11.87 | 1.362 |
| S-205 | Base | 500yr_024hr | 13.00 | 75.332 | 75.100 | -0.0050 | 115 | 12.00 | 0.768 | 7.05 | 0.754 |

Pavers Alternate with Tailwater Impact

| Name | Group | Simulation | Max Time Stage hrs | Max Stage ft | Warning Stage ft | Max Delta Stage ft | Max Surf Area ft2 | Max Time Inflow hrs | Max Inflow cfs | Max Time Outflow hrs | Max Outflow cfs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S-206 | Base | 500yr_024hr | 13.00 | 75.354 | 76.640 | 0.0045 | 128 | 12.00 | 6.310 | 12.00 | 6.292 |
| S-207 | Base | 500yr_024hr | 13.00 | 75.393 | 76.100 | 0.0045 | 141 | 12.00 | 6.330 | 12.00 | 6.310 |
| S-208 | Base | 500yr_024hr | 13.00 | 75.410 | 72.400 | 0.0045 | 115 | 12.00 | 3.315 | 11.73 | 3.303 |
| S-209 | Base | 500yr_024hr | 12.07 | 75.428 | 77.520 | 0.0010 | 130 | 12.01 | 2.925 | 12.05 | 2.911 |
| S-210 | Base | 500yr_024hr | 12.07 | 75.454 | 79.340 | -0.0019 | 121 | 12.00 | 2.942 | 12.01 | 2.925 |
| S-211 | Base | 500yr_024hr | 12.07 | 75.483 | 79.800 | 0.0020 | 124 | 12.00 | 2.660 | 12.00 | 2.642 |
| S-212 | Base | 500yr_024hr | 12.07 | 75.509 | 79.570 | 0.0007 | 116 | 12.00 | 1.438 | 12.00 | 1.421 |
| S-213 | Base | 500yr_024hr | 12.07 | 75.490 | 81.050 | 0.0005 | 181 | 11.97 | 0.853 | 12.06 | 0.832 |
| S-214 | Base | 500yr_024hr | 11.95 | 76.826 | 80.000 | 0.0002 | 188 | 12.00 | 0.780 | 11.95 | 0.780 |
| StormTrap Mid | Base | 500yr_024hr | 18.06 | 76.757 | 76.900 | 0.0023 | 24811 | 11.98 | 12.035 | 18.06 | 9.065 |
| StormTrap North | Base | 500yr_024hr | 18.09 | 76.763 | 76.900 | 0.0011 | 22429 | 11.97 | 20.015 | 6.54 | 8.797 |

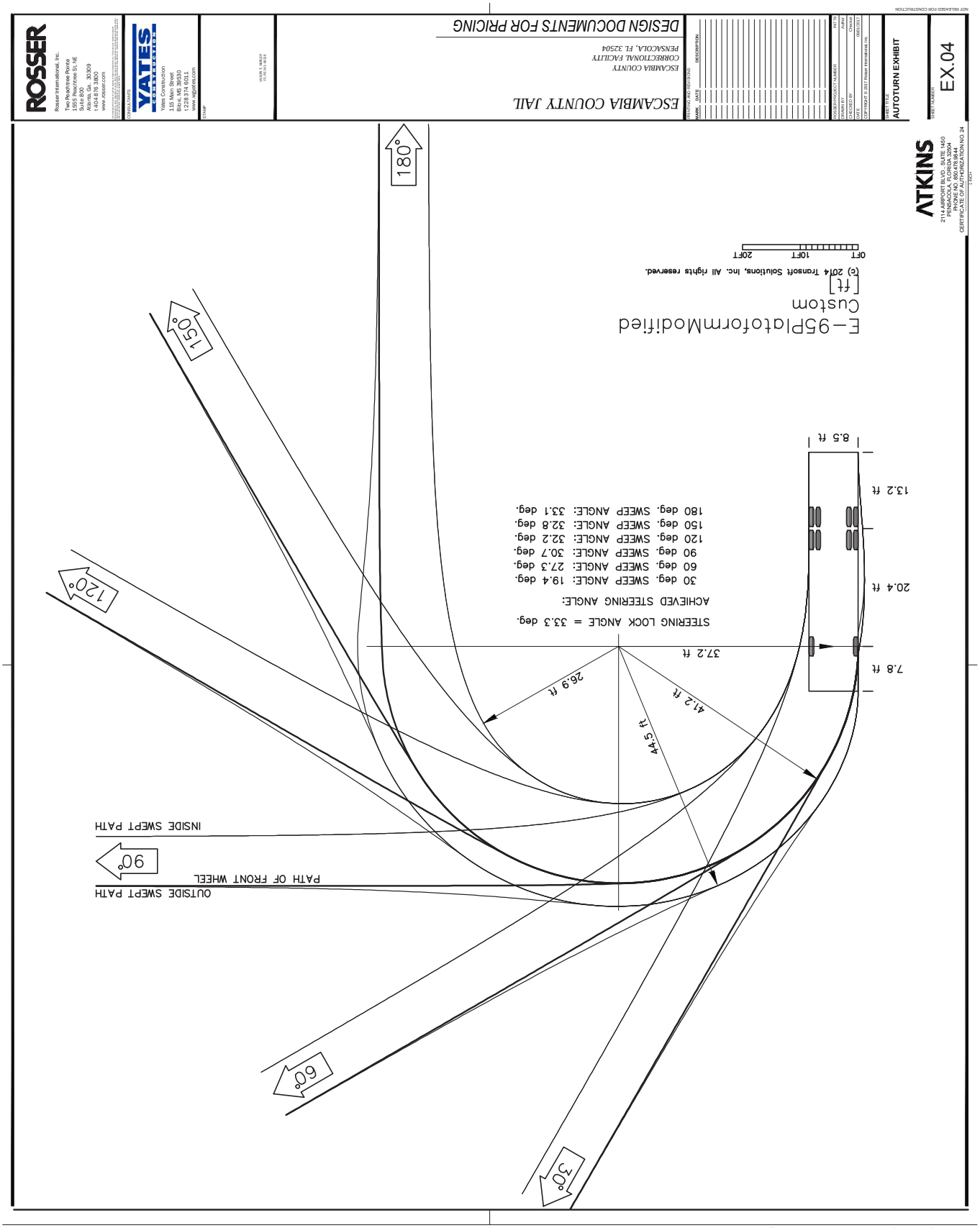
# AUTO TURN EXHIBITS

# C. SITE / CIVIL APPENDIX



ESCAMBIA COUNTY JAIL
ESCAMBIA COUNTY
CORRECTIONAL FACILITY
PENSACOLA, FL 32504
DESIGN DOCUMENTS FOR PRICING
AUTOTURN EXHIBIT
EX.03
ROSSER
YATES CONSTRUCTION
ATKINS
Prison Transport
Custom
[ft]
0FT 10FT 20FT
(c) 2014 Transoft Solutions, Inc. All rights reserved.
180°
150°
120°
90°
60°
30°
OUTSIDE SWEPT PATH
PATH OF FRONT WHEEL
INSIDE SWEPT PATH
44.3 ft
36.5 ft
48.4 ft
49.3 ft
2.9 ft
17.2 ft
8.4 ft
8.5 ft
STEERING LOCK ANGLE = 22.9 deg.
ACHIEVED STEERING ANGLE:
30 deg. SWEEP ANGLE: 16.6 deg.
60 deg. SWEEP ANGLE: 21.1 deg.
90 deg. SWEEP ANGLE: 22.4 deg.
120 deg. SWEEP ANGLE: 22.8 deg.
150 deg. SWEEP ANGLE: 22.9 deg.
180 deg. SWEEP ANGLE: 22.9 deg.

# C. SITE / CIVIL APPENDIX



# SECTION D

## VOLUNTARY ENHANCEMENTS

June 23, 2017

# New Escambia County Jail Correctional Facility

## VALUE ENGINEERING LOG

| | |
|---|---|
| Current Budget: See Bid Form | |
| Budget Total with Accepted VE: | $0 |

| Item | Description | Value | R = Rejected<br>P = Pending<br>A = Accepted | Rejected | Pending Savings | Accepted | Total | Trade | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Use vertical hydraulic door in lieu of bi-fold hydraulic | (194,733) | P | 0 | (194,733) | 0 | 0 | All | Cannot be taken with VE 2 |
| 2 | Change hydraulic bi-fold doors at vehicular sallyport to high speed roll-up doors. | (196,760) | P | 0 | (196,760) | 0 | 0 | Openings | Cannot be taken with VE 1 |
| 3 | Use hydraulic elevators for 3 3,500 lbs. rated passenger elevators in lieu of MRL. Balance of elevators will remain MRL. | (32,392) | P | 0 | (32,392) | 0 | 0 | | |
| 4 | Reduce the amount of window wall at public entrance | (44,100) | P | 0 | (44,100) | 0 | 0 | Openings | |
| 5 | Eliminate the exterior architectural element at the public entrance. | (140,000) | P | 0 | (140,000) | 0 | 0 | Precast | |
| 6 | Eliminate architectural reveals in precast panels. | (57,000) | P | 0 | (57,000) | 0 | 0 | Precast | |
| 7 | Eliminate fencing around employee parking area and storm retention pond. | (356,334) | P | 0 | (356,334) | 0 | 0 | Sitework | |
| 8 | Replace parking area west of the retention pond with grass area. | (160,805) | P | 0 | (160,805) | 0 | 0 | Sitework | |
| 9 | Reduce the amount of landscaping by 50% and replace with hydroseeding. | (180,000) | P | 0 | (180,000) | 0 | 0 | Landscaping | |
| 10 | Delete the requirement for a 1.0 PERM rating for the precast concrete in accordance with DC C2. | (53,000) | P | 0 | (53,000) | 0 | 0 | Precast | |
| 11 | Eliminate powder coat finish and use plastic laminate on cabinetry. | (10,000) | P | 0 | (10,000) | 0 | 0 | Finishes | |
| 12 | Delete security ceilings in circulation areas with ceiling height above 12' | (854,675) | P | 0 | (854,675) | 0 | 0 | Equipment | Cannot be taken with VE 17 |
| 13 | Delete skirts at lower bunks. | (87,551) | P | 0 | (87,551) | 0 | 0 | Equipment | |
| 14 | Provide food service equipment for current project in lieu of including for Phase II. | (150,000) | P | 0 | (150,000) | 0 | 0 | Equipment | The value of this VE may be adjusted based upon review with county personnel regarding actual needs. |
| 15 | Remove the roof elements from the vehicular sallyport and create an open air space in lieu of enclosed. | (180,000) | P | 0 | (180,000) | 0 | 0 | Roofing | Cannot be taken with VE 16 or VE19 |
| 16 | Eliminate the Inmate Transfer vehicle Sallyport, modify the intake vehicle sallyport and move the penthouse that was previously located on the roof to a location adjacent to the building on the ground. | (269,199) | P | 0 | (269,199) | 0 | 0 | All | Cannot be take with VE 15 but **CAN** be taken with VE 19. |

June 23, 2017

YATES CONSTRUCTION

## New Escambia County Jail Correctional Facility

### VALUE ENGINEERING LOG

Current Budget: See Bid Form
Budget Total with Accepted VE: $0

| Item | Description | Value | R = Rejected<br>P = Pending<br>A = Accepted | Rejected | Pending Savings | Accepted | Total | Trade | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 17 | Change security ceilings in circulation areas to ACT where ceilings are above 12'. | (734,675) | P | 0 | (734,675) | 0 | 0 | Equipment | Cannot be taken with VE 20 |
| 18 | Utilize insulation in security metal wall panels in lieu grout fill. | (460,000) | P | 0 | (460,000) | 0 | 0 | Equipment | |
| 19 | Delete the roof element for the compact vehicle sallyport as discussed in VE 24. | (138,000) | P | 0 | (138,000) | 0 | 0 | Roofing | Cannot be taken with VE 15 but CAN be taken with VE 16 |
| 20 | Eliminate sub-dayrooms at single cell housing units. | (113,866) | P | 0 | (113,866) | 0 | 0 | Equipment | |
| 21 | Eliminate sub-dayrooms at single cell housing units. | (113,866) | P | 0 | (113,866) | 0 | 0 | Equipment | |
| 22 | Use 30 days of video storage in lieu of 60 days. | (52,210) | P | 0 | (52,210) | 0 | 0 | Equipment | |
| 23 | 10% reduction in CCTV cameras. | (72,715) | P | 0 | (72,715) | 0 | 0 | Equipment | |
| 24 | Reduce the redundancy on the boilers from 4 boilers @ 33% to three boilers @ 50%. | (28,000) | P | 0 | (28,000) | 0 | 0 | Equipment | |
| 25 | Reduce the redundancy on the chillers from 3 chillers @ 50% go to 2 chillers @ 75%. | (58,000) | P | 0 | (58,000) | 0 | 0 | ? | |
| 26 | Delete the redundant supply air fans going to a single centrifigal supply fan. | (20,000) | P | 0 | (20,000) | 0 | 0 | ? | |
| 27 | Delete the air side economizer sections from all air handlers | (14,100) | P | 0 | (14,100) | 0 | 0 | ? | |
| 28 | Delete the energy wheel from the multizone units. | (40,000) | P | 0 | (40,000) | 0 | 0 | ? | |
| 29 | Allow the exhaust system and the smoke control system to share the same ducts. | (108,000) | P | 0 | (108,000) | 0 | 0 | ? | |
| 30 | Add the work required to be performed during Phase I to stack the Phase II housing on top of the Phase I housing should the county desire to go to a high rise solution. | 3,200,000 | P | 0 | 3,200,000 | 0 | 0 | ? | |
| 31 | | 0 | P | 0 | 0 | 0 | 0 | ? | |
| **TOTALS** | | **(1,719,981)** | | **0** | **(1,719,981)** | **0** | **0** | | |