



January 24, 2024

**NOTICE OF BID
BL003-24**

F. Wayne Hill Water Resources Center Recoating Super Structure at Digester Tanks

The Gwinnett County Board of Commissioners is soliciting competitive sealed bids from qualified contractors for the **F. Wayne Hill Water Resources Center Recoating Super Structure at Digester Tanks** for the Gwinnett County Department of Water Resources.

Bid submittal date and location

Bids should be typed or submitted in ink and returned in a sealed container marked on the outside with the BL# and Company Name. Bids will be received until **2:50 P.M. local time on February 29, 2024** at the Gwinnett County Purchasing Division, 75 Langley Drive, Lawrenceville, Georgia 30046. Any bid received after this date and time will not be accepted. Bids will be publicly opened and read at 3:00 P.M. Apparent bid results will be available the following business day on our website www.gwinnettcounty.com.

Pre-Bid Conference

A pre-bid conference is scheduled for **10:00 A.M. on February 08, 2024**, at F. Wayne Hill Water Resources Center (FWHWRC) Conference Room located at 1500 One Water Way, Buford, GA 30519. All interested parties are urged to attend. The pre-bid conference is to be utilized by contractors and subcontractors to ask any questions in order to submit a bid for this project. All bidders are strongly urged to attend.

Project Description

The project tasks include prepping and recoating all of the structural members and crane elements of the digesters super structure. The coated surfaces of the structural steel super structure generally consist of an elevator shaft, 2 stair towers, 3 crane rails and structural framing supporting elevated walkways, platforms, piping, etc. The different members span from an approximate floor elevation of 1074.00 to a max elevated height of approximately el=1146.50 (72.5 feet above the slab elevation).

Safety Protocol

During the pre-bid conference and the bid opening, we ask that you wear a mask and practice social distancing.

Instructions on Submitting Questions

Questions regarding bids should be directed to Brittany Bryant, Purchasing Associate II, at Brittany.Bryant@GwinnettCounty.com or by calling 770-822-7759, **no later than 3:00 P.M. on February 20, 2024**. Bids are legal and binding upon the bidder when submitted. All bids should be submitted in duplicate.

Bonding and Insurance

All contractors must submit with bid, a bid bond, certified check or cashier's check in the amount of five percent (5%) of the total bid. **Failure to submit a bid bond with the proper rating will result in the bid being deemed non-responsive.** Successful contractor will be required to meet insurance requirements, submit a one hundred percent (100%) performance bond and a one hundred percent (100%) payment bond. Insurance and Bonding Company should be licensed to do business by the Georgia Secretary of State, authorized to do business in Georgia by The Georgia Insurance Department, listed in the Department of Treasury's Publication of Companies holding Certificates of Authority as Acceptable Surety on Federal Bonds and as acceptable reinsuring companies. **The bid bond, payment bond, and performance bond must have an A.M. Best rating of A-V or higher.**

Facility Access

Gwinnett County does not discriminate on the basis of disability in the admission or access to its programs or activities. Any requests for reasonable accommodations required by individuals to fully participate in any open meeting, program or activity of Gwinnett County Government should be directed to the ADA Coordinator, Gwinnett County Justice and Administration Center, 770-822-8165.

The written bid documents supersede any verbal or written prior communications between the parties.

Award will be made to the contractors submitting the lowest responsive and responsible bid. Gwinnett County reserves the right to reject any or all bids to waive technicalities and to make an award deemed in its best interest. Bids may be split or awarded in entirety. Gwinnett County reserves the option to negotiate terms, conditions and pricing with the lowest responsive, responsible bidder(s) at its discretion.

Award notification will be posted after award on the County website, www.gwinnettcounty.com and companies submitting a bid will be notified via email.

We look forward to your bid and appreciate your interest in Gwinnett County.

Brittany Bryant, CPPB
Purchasing Associate III

BID CHECKLIST
Documents that should be submitted at the time of bid opening.

ITEM #	DESCRIPTION	PAGE #
1	Bid Schedule	15-16
2	Contractor Information	17
3	Material List	18
4	Bidder's Affidavit	19
5	Form of Non-Collusion Affidavit	20
6	References	21
7	List of Subcontractors	22
8	Bid Bond (MUST BE SUBMITTED WITH BID)	23-24
9	CONTRACTOR AFFIDAVIT AND AGREEMENT	51
10	Code of Ethics	52
11	Paint System Data Sheet <i>(should be provided if submitting an approved equivalent)</i>	170-171
12	Manufacturer's Certificate of Compliance <i>(should be provided if submitting an approved equivalent)</i>	175

1. **Background**

F. Wayne Hill Water Resources Center is located at 1500 One Water Way, Buford, GA 30519. There are currently five egg shaped digesters at F. Wayne Hill Water Resources Center. The digesters and their appurtenances are accessible via a structural steel super structure. This super structure was constructed in two phases. Digesters 1 & 2 and their associated steel framing were constructed around 1998, and Digesters 3, 4, and 5 and their additional steel framing were added in 2003. Since this time, the coatings have begun to fail, showing signs of rust, lichen growth, deterioration, and general fading of color. Similarly, the coatings of the crane structure at the Centrate Pump Station are also deteriorating and need recoating. The location of the Digesters Facility and the Centrate Pump Station are illustrated below in **Figure 1**. The steel record drawings are provided in **Attachment A** for reference. The contractor will be required to submit a project specific safety plan for review and approval to safely access the required surfaces for recoating. General photos of the super structure are included in **Figures 2-8** below.

The Centrate Pump Station crane assembly consists of metal framing and a 1-1/2-ton electric hoist. Photos of the assembly are included in **Figures 9-10**. Additional photos of both structures are included in **Attachment B**.



Figure 1 – F. Wayne Hill WRC Digesters Facility & Centrate Pump Station locations



Figure 2: Wide angle view of Digesters and Steel Super Structure



Figure 3: View of bottom chords looking towards Digester #3.



Figure 4: View from intermediate platform of Digester #1 – bottom chords, platforms, truss bridge/walkway looking towards Digester #2. Top chords and hoist beam also pictured at the top of the photo.



Figure 5: View of elevator tower and truss bridge/walkway between Digesters 4 and 5.



Figure 6: View of elevator tower between Digesters 4 and 5 and staircase pictured on the left.



Figure 7: Note many surfaces not easily accessible from platforms. Also note, some pipe support hangers are coated, and some are galvanized. Coated hangers shall be recoated.



Figure 8: View of catwalk and crane rail looking towards Digester 5.



Figure 9: Centrate Pump Station crane



Figure 10: Centrate Pump Station crane

2. **Project Objectives**

- a) Prepare and recoat the steel super structure elements associated with the Digesters.
- b) Prepare and recoat the 3 hoist cranes and crane elements associated with the Digesters.
- c) Prepare and recoat the crane and support elements at the Centrate Pump Station.

3. **Scope of Work**

The following scope of work tasks are to be completed under this work order. Steel Drawings of the structures are provided in **Attachment A**.

General:

- a) The general intent of this scope of work is for the Contractor to remove all existing deteriorating coatings and recoat all coated steel components of the digester super structure and Centrate Pump Station crane.
- b) Unless specifically mentioned below, all existing equipment, pipes, valves, signs, vents etc. that are not part of the scope shall be protected during the coating/preparation activity.
- c) Contractor shall work with manufacturers to perform work in strict conformance with recommendations, instructions, and standards as stated in the Specifications – **Attachment C**. The contractor shall also consult the coatings manufacturer's instructions and recommended procedures.
- d) Coatings shall be performed in accordance with the manufacturer's guidance and federal, state, and local agencies with jurisdiction.

- e) All surfaces adjacent to the work area shall be protected from damage or accidental coating.
- f) The Contractor shall provide drop cloths to prevent coating/preparation materials from harming nearby surfaces, equipment, and instruments. Special care shall be taken to protect mechanical and electrical equipment.
- g) Openings in motors and gearboxes shall be sealed to prevent ingress of foreign materials during coating/preparation activities.
- h) Prior to blasting or surface cleaning of all surfaces, oil, grease, and other surface contaminants shall be removed in accordance with SSPC-SP1. Acceptable cleaning methods include steam or water with detergent additives followed by clean water rinsing.
- i) The runoff from the coating removal, cleaning and surface preparation activities is to be contained to prevent contaminated liquid discharging to any process pipe or the site stormwater system. Liquid containing coating or coating removal material shall be settled to remove the material. The liquid shall be returned to a drain identified by the Owner. The settled material shall be collected and disposed of by the Contractor off-site at an approved facility.
- j) Flash rust shall be limited to light rust before applying any coating material. Prepare any rusted surface areas as per the attached Coating Specification.
- k) For coatings subject to immersion, the coatings are to be fully cured before immersion can occur.
- l) Coating systems:
 - o The surface preparation and coating application should be applied per the conditions outlined below:
 - **Recoating Rusted Areas:** Metallic areas that display evidence of rusting of the underlying substrate, either by discoloration of the coating or visible exposure of the substrate material, or where the coating is disbonding and exposing the substrate material are to be cleaned using mechanical methods in accordance with SSPC-SP 11, Power Tool Cleaning to Bare Metal. After cleaning, the elements are to be recoated using a primer, followed by an epoxy and a final coat of UV resistant urethane as per coating system S13.
 - **Recoating of Chalking and Peeling Areas:** Areas showing signs of chalking and peeling (but no exposure of the substrate material) shall be cleaned in conformance with SSPC-SP 2, Hand Tool Cleaning and/or SSPC-SP 3, Power Tool Cleaning. Care is to be exercised that only non-adhered material is removed. Following cleaning, the surface shall be pressure washed. The recoating system to be applied shall consist of a spot primer, followed by an epoxy and a final coat of UV resistant urethane as per coating system S14.
 - **Recoating of Undamaged Areas:** Surfaces that do not exhibit any evidence of damaged or deteriorated coating conditions but may exhibit color fading shall be prepared in accordance with the coating manufacturer's requirements to suit application of a primer and UV resistant urethane coating as per coating system S15.

- m) The following proposed colors shall be reviewed and approved by plant staff.
 - o Digesters Super Structure: Tan to match color of Digesters
 - o Digesters Crane Elements: 02SF Lemon/Safety Yellow
 - o Centrate Pump Station Crane Elements: 02SF Lemon/Safety Yellow
 - n) Color samples shall be submitted for approval prior to ordering the materials.
 - o) The Contractor shall submit Product Data Sheets, Product Data Safety Sheets, System Application Methodologies and Schedules, Manufacturer Warranty, and Material Samples for approval by the Engineer prior to commencing any work.
 - p) The Contractor shall submit staff qualifications, Shop Product Information, Field Product Information, Existing Materials Test Reports, High Pressure Water Equipment Description and Operation, Mechanical Cleaning Equipment Description and Procedures and Containment Description during recoating.
 - q) The Contractor shall submit the Manufacturer's Certificate of Proper Installation, as included in **Attachment D**.
 - r) The Contractor shall complete the Contractor's Daily Report included in **Attachment E** and submit it to the Engineer the following morning.
 - s) The Contractor shall complete the Final Contractor's Affidavit included in **Attachment F** upon completion of the project.
 - t) The Contractor in conjunction with plant staff shall develop and submit for review a phase approached schedule to maintain plant process operation.
- 4. Health, Safety, and Environment (HSE):**
- a) Compliance with GCDWR specific safety standards on any GCDWR facility is mandatory.
 - b) All work is to be undertaken in conformance with applicable OSHA safety requirements, and the Contractor's project specific health and safety plan, which shall be submitted for review prior to commencing any on site work.
 - c) All employees of the Contractor are required to wear appropriate protective equipment while on site. Minimum protective equipment consists of steel-toed work boots, hard hat, safety vest, and eye and ear protection as deemed appropriate.
 - d) GCDWR staff and GCDWR construction supervision consultants shall observe and undertake ad-hoc inspections of the Contractor's safety compliance to ensure the safety of construction.
 - e) If any noncompliance is observed, the Contractor's supervisor/foreman will be immediately informed, and all ongoing work stopped until such time as the issue has been rectified. Note that should repeated incidents occur, the Contractor may be requested to remove an individual or team from the site either temporarily or permanently, depending on the seriousness of the incident. Permanent removal from the site will require suitably trained and committed replacement(s) who have completed as a minimum the Contractor's safety training program.
 - f) Prior to commencing work on site, the Contractor is required to complete and submit a Job Hazard Analysis (an example is provided in **Attachment G**) in which the hazards relating to the specific task are identified. As well, the Contractor is to perform field JHA's daily with crews and provide documentation of the same.

- g) Contractor's staff are to confirm at the commencement of the project that they have received the required Contractor's training and are aware of the plant specific requirements by each staff member signing the example form contained in **Attachment H**.
- h) See **Attachment I** "Contract 3 Vol 10 Structural Drawings" Dwg S-401 for allowable Digester Gallery Roof Loading.

5. The following tasks are required:

Task 1: Clean and Prepare Surfaces for Recoating

- a) The Contractor is required to clean and prepare the existing steelwork surfaces for recoating.
- b) Prior to preparation, the Contractor shall inspect current conditions and provide a 7 days' notice to the Engineer before commencing work.
- c) The Contractor shall carefully cover and protect any surfaces, equipment, and instruments to prevent damage from cleaning and surface preparation activities.
- d) The Contractor shall ensure no abrasive media or cleaning fluids enter the treatment process, pipework, drains, motors or equipment.
- e) The edges of fully adhered existing coatings beside areas where the existing coating has been removed during blasting shall be ground or sanded smooth to achieve a uniform transition with the new coating material.

Task 1.1: Prepare Digesters Super Structure

- a) For areas of minor coating damage, high pressure jetting or WAB may be used to remove the existing areas of failing coating, dirt, grime and any other substances attached to the external surface. The pressure of the water is to be set to clean the structure but minimize removing and causing deterioration of the existing coating.
- b) Procedures SSPC-SP-1, SSPC-SP-2, or SSPC-SP-3 shall follow the cleaning activity.
- c) The contractor shall flag off the main ground level when performing elevated work to prevent inadvertent drippings onto workers below.

Task 1.2: Prepare Centrate Pump Station Crane/Support

- a) The steel members require solvent, hand-tool, or power-tool cleaning to prepare the surface for recoating.
- b) Procedures SSPC-SP-1, SSPC-SP-2, and SSPC-SP-3 shall be followed to prepare the pumps and associated pipework for recoating.

Task 2: Recoat Steel Surfaces

Task 2.1: Recoat Digesters Super Structure and Crane Elements

- a) Areas to be coated are also to be cleaned, prepared, dried, and primed as appropriate before coating can be applied in conformance to the Specifications.

- b) A minimum of one primer coat, two coats of epoxy and one UV resistant top coating or as recommended by the coating manufacture shall be applied to achieve the required total DFT for all non-immersed steelwork.
- c) The contractor shall flag off the main ground level when performing elevated work to prevent drippings onto workers below.

Task 2.2: Recoat Digesters Centrate Pump Station Crane

- a) Areas to be coated are also to be cleaned, prepared, dried, and primed as appropriate before coating can be applied in conformance to the Specifications.
- b) A minimum of one primer coat, two coats of epoxy and one UV resistant top coating or as recommended by the coating manufacture shall be applied to achieve the required total DFT for all non-immersed steelwork.

6. Preliminary Quantities and Schedule

The following table provides estimated quantities that could be used in estimating and total duration to complete the works to be provided by the Contractor. Reference is made to the attached drawings for details of the steelwork elements. Quantities are approximate and shall be confirmed by the contractor for estimation purposes.

7. Attachments

Attachment A: Metal Structures Drawings

Attachment B: Additional Photos

Attachment C: GCDWR Coatings Specification (rev 8)-electronic copy only

Attachment D: Manufacturer's Certificate of Proper Installation

Attachment E: Contractor's Daily Report

Attachment F: Final Contractor's Affidavit

Attachment G: Job Hazard Analysis

Attachment H: Project Safety Acknowledgement

Attachment I: Contract 3 Volume 10 Structural Drawings

ITEM #	DESCRIPTION	SIZE INFORMATION	ESTIMATED QUANTITY
DIGESTERS SUPER STRUCTURE			
1	Surface Preparation and Recoating of all steel framing members and appurtenances including but not limited to beams, columns, HSS, posts, stringers, gusset connection plates and tabs, channels, chords, bracing, trusses, platforms, coated pipe hangers, elevator and stair tower structures, cranes and crane elements.	W18x50	315 LF
		W14x176	430 LF
		W14x132	360 LF
		W14x30	360 LF
		W12x65	750 LF
		W12x40	1,850 LF
		W12x35	1,050 LF
		W12x30	350 LF
		W12x26	600 LF
		W10x33	900 LF
		W10x26	200 LF
		W8x21	525 LF
		W8x10	225 LF
		W6x12	150 LF
		WT5x11	1,350
		WT3x8	200
		C12x30	1,175
		C8x11.5	450
		C6x8.2	215
		L6x6x3/8	5,000
L3.5x3.5x5/16	800		
L3x3x1/4	2,575		
HSS3x3x1/4	20		
CENTRATE PUMP STATION			
2	Surface Preparation and Recoating of all steel framing members and appurtenances of the Centrate PS Crane including crane and crane elements.	W12x35	120 LF
		L3x3x3/8	50 LF

FAILURE TO RETURN THIS PAGE AS PART OF YOUR BID DOCUMENT MAY RESULT IN REJECTION.

Bidder submits the following lump sums for the **F. Wayne Hill Water Resources Center Recoating Super Structure at Digester Tanks** identified in Bid Form as part of this Bid.

BID SCHEDULE

ITEM #	DESCRIPTION	LUMP SUM
1.	For all materials, equipment, manufactured components, tools, supplies, labor, mobilization and demobilization, incidentals, permits, general administrative expenses, and all other items required to complete the Surface Preparation and Recoating of all steel framing members and appurtenances including but not limited to beams, columns, HSS, posts, stringers, gusset connection plates and tabs, channels, chords, bracing, trusses, platforms, coated pipe hangers, elevator and stair tower structures, cranes and crane elements. , complete in place, all in conformance with the Contract Documents.	\$ _____
2.	For all materials, equipment, manufactured components, tools, supplies, labor, mobilization and demobilization, incidentals, permits, general administrative expenses, and all other items required to complete the Surface Preparation and Recoating of all steel framing members and appurtenances of the Centrate Pump Station Crane including crane and crane elements. , complete in place, all in conformance with the Contract Documents.	\$ _____
OVERALL TOTAL (ITEMS 1 + 2)		\$ _____

The following is a summary of the preliminary schedule to be completed by the Contractor:

TASK #	DESCRIPTION	ESTIMATED TASK DURATION
1.1	Prepare Digesters Super Structure, Crane, and Crane Elements for Recoating.	_____ WEEKS
1.2	Prepare Centrate Pump Station Crane Support, Crane, and Crane Elements for Recoating.	_____ WEEKS
2.1	Recoat Digesters Super Structure, Crane, and Crane Elements for Recoating.	_____ WEEKS
2.2	Recoat Centrate Pump Station Crane Support, Crane, and Crane Elements for Recoating.	_____ WEEKS
TOTAL PROJECT DURATION		_____ WEEKS

COMPANY NAME _____

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BID SCHEDULE CONTINUED

Pricing shall include all labor, materials, bailing, shoring, removal, a men's and women's temporary trailer (restroom and shower), overhead (Direct and indirect), profit, insurance, bonds, and other costs, to cover all finished Work.

Bidder agrees this Bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after scheduled closing time for receiving bids.

There is enclosed herewith a certified or cashier's check or a Bid Bond to the order of Gwinnett County, Georgia, in the sum of Dollars _____

Check or Bid Bond shall be equal to, not less than, the amount stipulated in NOTICE TO BID and it is understood and agreed that said check or Bid Bond shall be subject to terms and conditions stipulated in Bid Document Package.

Undersigned Bidder hereby agrees to each and every stipulation in Bid Document Package pertaining to the submission of Bids and further, if awarded the Contract, duly agrees to execute and secure the required Contract and Bid Document Package within fifteen (15) days from service of Notice of Award and deliver a surety bond or bonds as required by General Conditions. The name and business address of Bidder to which all formal Notices shall be sent:

Undersigned Bidder states the names and addresses of persons interested as principals in this Bid are as follows:
(Write first name in full):

Bidder shall state on line below, if a corporation, the name of State in which incorporated and the date of said incorporation:

Undersigned Bidder states (he/she/they) (is a/are) citizen(s) of the United States and all partners, associates, or principals interested herein are citizens of the United States, except: (Give full names and addresses):

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CONTRACTOR INFORMATION

The undersigned acknowledges receipt of the following addenda, listed by number and date appearing on each:

Addendum No.	Date	Addendum No.	Date
_____	_____	_____	_____
_____	_____	_____	_____

Certification Of Non-Collusion in Bid Preparation _____
(Signature) (Date)

The County requires that all who enter into a contract for the physical performance of services with the County must satisfy O.C.G.A. § 13-10-91 and Rule 300-10-1-.02, in all manner, and such are conditions of the contract.

In compliance with the attached specifications and O.C.G.A. §36-91-50, the undersigned offers and agrees, if this bid is accepted by the Board of Commissioners within sixty (60) days of the date of bid opening, to furnish any or all of the items upon which prices are quoted, at the price set opposite each item, delivered to the designated point(s) within the time specified in the bid schedule. By submission of this bid, I understand that Gwinnett County uses Electronic Payments for remittance of goods and services. Vendors should select their preferred method of electronic payment upon notice of award. For more information on electronic payments, please refer to the Electronic Payment information in the instructions to bidders.

Legal Business Name _____

Address _____

Does your company currently have a location within Gwinnett County? Yes No

Representative Signature _____

Print Authorized Representative's Name _____

Telephone Number _____ Fax Number _____

E-Mail Address _____

Contact Person (if someone other than the authorized representative listed above) _____

Telephone Number _____ Fax Number _____

E-Mail Address _____

The Contractor shall complete the materials list below:

DESCRIPTION	MANUFACTURER	PRODUCT SYSTEM
Abrasive media		
Coating system S-13 primer		
Coating system S-13 epoxy		
Coating system S-13 UV resistant polyurethane		
Coating system S-14 primer		
Coating system S-14 epoxy		
Coating system S-14 UV resistant polyurethane		
Coating system S-15 primer		
Coating system S-15 UV resistant polyurethane		

BIDDER'S AFFIDAVIT

(This Bidder's Affidavit is part of the Bid Documents)

BID NUMBER: BL003-24

BID DATE: FEBRUARY 29, 2024

PROJECT NAME: RENOVATION OF THE OPERATIONS BUILDING BATHROOM AT F. WAYNE HILL WATER RESOURCES CENTER

STATE OF _____)

COUNTY OF _____)

(Name Printed)

being duly sworn, deposes and says that he resides at _____

that he is the

(Title)

(Name of Bidder)

who signed the above Bid Form, that he was duly authorized to sign and that the Bid is the true offer of the Bidder, that the seal attached is the seal of the Bidder and that all the declarations and statements contained in the Bid are true to the best of his knowledge and belief.

(Affiant)

Subscribed and Sworn to before me this _____ Day of _____ 20 _____

(Notary Public)

My Commission expires _____, 20 _____

(SEAL)

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REFERENCES

Gwinnett County requests a minimum of three (3) references where work of a similar size and scope has been completed.

Note: References should be customized for each project, rather than submitting the same set of references for every project bid. The references listed should be of similar size and scope of the project being bid on. Do not submit a project list in lieu of this form.

1. Company Name _____
Brief Description of Project _____
Completion Date _____
Contract Amount \$ _____ Start Date _____
Contact Person _____ Telephone _____
E-Mail Address _____

2. Company Name _____
Brief Description of Project _____
Completion Date _____
Contract Amount \$ _____ Start Date _____
Contact Person _____ Telephone _____
E-Mail Address _____

3. Company Name _____
Brief Description of Project _____
Completion Date _____
Contract Amount \$ _____ Start Date _____
Contact Person _____ Telephone _____
E-Mail Address _____

Company Name _____

FAILURE TO RETURN THIS PAGE AS PART OF YOUR BID DOCUMENT MAY RESULT IN REJECTION.

LIST OF SUBCONTRACTORS

I do _____, do not _____, propose to subcontract some of the work on this project. I propose to Subcontract work to the following subcontractors:

NAME AND ADDRESS	TYPE OF WORK

Company Name _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____
(Corporation, Partnership or Individual)

hereinafter called Principal, and

(Name of Surety)

(Address of Surety)

a Corporation of the State of _____, and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

Gwinnett County Board of Commissioners
(Name of Obligee)

75 Langley Drive, Lawrenceville, Georgia 30046
(Address of Obligee)

Thereinafter referred to as Obligee: in the penal sum of _____
_____ Dollars

(\$ _____) in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted, to Gwinnett County, Georgia, a proposal for furnishing materials, labor, and equipment for: _____

WHEREAS, the Principal desires to file this Bond in accordance with law in lieu of a certified Bidder's check otherwise required to accompany this Proposal.

NOW, THEREFORE, the conditions of this obligation are such that if the proposal be accepted, the Principal shall within ten days after receipt of notification of the acceptance, execute a Contract in accordance with the Proposal and upon the terms, conditions, and prices set forth in the form and manner required by Gwinnett County, Georgia, and execute a sufficient and satisfactory Performance Bond and Payment Bond payable to Gwinnett County, Georgia, each in the amount of 100% of the total Contract Price, in form and with security satisfactory to said Gwinnett County, Georgia, and otherwise, to be and remain in full force and virtue in law, and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to Gwinnett County, Georgia, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed pursuant to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. § 36-91-1 et seq., and is intended to be and shall be constructed as a bond in compliance with the requirements thereof.

Signed, sealed and dated this _____ day of _____, A.D., 20_____.

ATTEST:

(Principal Secretary)
(SEAL)

(Principal)

By: _____

(Address)

(Witness as to Principal)

(Address)

(Surety)

ATTEST:

By: _____
(Attorney-in-Fact)

Resident or Nonresident Agent
(SEAL)

(Address)

(Witness as to Surety)

(Address)

NOTE: If Contractor is Partnership, all partners should execute Bond. Surety Companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

Principal Secretary, Principal and Witness as to Principal signature lines must be signed by three different individuals. Additionally, Resident or Nonresident Agent, Witness as to Surety, and Attorney-in-fact must be signed by three different individuals.

**GENERAL CONDITIONS
FOR GWINNETT COUNTY CONSTRUCTION CONTRACTS**

GC-1 FAMILIARITY WITH SITE

Execution of this agreement by the Contractor is a representation that the Contractor has visited the site, has become familiar with the local conditions under which the work is to be performed, and has correlated personal observations with the requirements of this agreement.

GC-2 CONTRACT DOCUMENTS

This agreement consists of Gwinnett County's request for proposals, instructions to bidders, Contractor's proposal, construction contract, Performance Bond, Payment Bond, general conditions, special provisions, specifications, plans, drawings, addenda, and written change orders.

GC-3 DEFINITIONS

The following terms as used in this agreement are defined as follows:

Change Order - a written order to the Contractor, prepared by the Engineer and issued by the County for changes in the work within the general scope of the contract documents, adjustment of the contract price, extension of the contract time, or reservation of determination of a time extension.

County - Gwinnett County, Georgia, a political subdivision of the State of Georgia, acting by and through the Chairman of its Board of Commissioners.

Day - a calendar day of twenty-four hours lasting from midnight of one day to midnight the next day.

Notice to Proceed - written communication issued by the County to the Contractor authorizing it to proceed with the work and establishing the date of commencement and completion of the work.

Substantial Completion - the date certified by the engineer when all or a part of the work, identified in the engineer's certification, is sufficiently completed in accordance with the requirements of the contract documents so that the identified portion of the work can be utilized for the purposes for which it is intended.

Work - all of the services specified, indicated, shown or contemplated by the contract documents, and furnishing by the Contractor of all materials, equipment, labor, methods, processes, construction and manufacturing materials and equipment, tools, plans, supplies, power, water, transportation and other things necessary to complete such services in accordance with the contract documents to ensure a functional and complete facility.

GC-4 CODES

All codes, specifications, and standards referenced in the contract documents shall be the latest additions, amendments and revisions of such referenced standards in effect as of the date of the request for proposals for this contract.

GC-5 REVIEW OF CONTRACT DOCUMENTS

Before making its proposal to the County, and continuously after the execution of the agreement, the Contractor shall carefully study and compare the contract documents and shall at once report to the engineer any error, ambiguity, inconsistency or omission that may be discovered, including any requirement which may be contrary to any law, ordinance, rule, or regulation of any public authority bearing on the performance of the work. By submitting its proposal, the Contractor agrees that the contract documents, along with any supplementary written instructions issued by or through the

engineer that have become a part of the contract documents appear accurate, consistent and complete insofar as can be reasonably determined. If the Contractor has reported in writing any error, inconsistency, or omission to the County, has properly stopped the effected work until instructed to proceed, and has otherwise followed the instructions of the engineer, the Contractor shall not be liable to the County for any damage resulting from any such error, inconsistency, or omission in the contract documents. The Contractor shall not perform any portion of the work without the contract documents, approved plans, specifications, products and data, or samples for such portion of the work.

GC-6 STRICT COMPLIANCE

No observation, inspection, test or approval of the County or engineer shall relieve the Contractor from its obligation to perform the work in strict conformity with the contract documents.

GC-7 APPLICABLE LAW

All applicable State laws, County ordinances, and rules and regulations of all authorities having jurisdiction over the construction of the project shall apply to this agreement. All work performed within the right of way of the Georgia Department of Transportation shall be in accordance with DOT regulations, policies and procedures. The Contractor shall comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as specified and the Contractor agrees to indemnify and hold harmless the County, its officers, agents and employees, as well as the engineer, against any claim or liability arising from or based on the violation of any law, ordinance, regulation, order or decree affecting the conduct of the work, whether occasioned by the Contractor, his agents or employees.

GC-8 PERMITS & LICENSES

All permits and licenses necessary for the work shall be secured and paid for by the Contractor. If any permit, license or certificate expires or is revoked, terminated, or suspended as a result of any action on the part of the Contractor, the Contractor shall not be entitled to additional compensation or time.

GC-9 TAXES

The Contractor shall pay all sales, retail, occupational, service, excise, old age benefit and unemployment compensation taxes, consumer, use and other similar taxes, as well as any other taxes or duties on the materials, equipment, and labor for the work provided by the Contractor which are legally enacted by any municipal, county, state or federal authority, department or agency at the time bids are received, whether or not yet effective. The Contractor shall maintain records pertaining to such taxes and levies as well as payment thereof and shall make the same available to the County at all reasonable times for inspection and copying.

GC-10 DELINQUENT CONTRACTORS

The County shall not pay any claim, debt, demand or account whatsoever to any person firm or corporation who is in arrears to the County for taxes. The County shall be entitled to a counterclaim and offset for any such debt in the amount of taxes in arrears, and no assignment or transfer of such debt after the taxes become due shall affect the right of the County to offset any taxes owed against said debt.

GC-11 LIEN WAIVERS

The Contractor shall furnish the County with evidence that all persons who have performed work or furnished materials pursuant to this agreement have been paid in full prior to submitting its demand for final payment pursuant to this agreement. In the event that such evidence is not furnished, the County may retain sufficient sums necessary to meet all lawful claims of such laborers and materialmen. The County assumes no obligation nor in any way undertakes to pay such lawful claims from any funds due or that may become due to the Contractor.

GC-12 MEASUREMENT

All items of work to be paid for per unit of measurement shall be measured and certified by the Engineer.

GC-13 ASSIGNMENT

The Contractor shall not assign any portion of this agreement or moneys due therefrom without the prior written consent of the County. The Contractor shall retain personal control and shall provide personal attention to the fulfillment of its obligations pursuant to this agreement.

GC-14 FOREIGN CONTRACTORS

In the event that the Contractor is a foreign corporation, partnership, or sole proprietorship, the Contractor hereby irrevocably appoints the Secretary of State of Georgia as its agent for service of all legal process for the purpose of this contract only.

GC-15 INDEMNIFICATION

To the fullest extent permitted by law, the Contractor shall, at his sole cost and expense, indemnify, defend, satisfy all judgments, and hold harmless the County, the engineer, and their agents and employees from and against all claims, damages, actions, judgments, costs, penalties, liabilities, losses and expenses, including, but not limited to, attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, action, judgment, cost, penalty, liability, loss or expense (1) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by any act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless whether such claim is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or otherwise reduce any of the rights or obligations of indemnity which would otherwise exist as to any party or person described in this agreement. In any and all claims against the County, the engineer, or any of their agents or employees by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation contained herein shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any subcontractor under Worker's Compensation Acts, disability benefit acts, or other employee benefit acts.

GC-16 SUPERVISION OF WORK

The Contractor shall supervise and direct the work using the Contractor's best skill and attention. The Contractor shall be solely responsible for all construction methods and procedures and shall coordinate all portions of the work pursuant to the contract subject to the overall coordination of the engineer. All work pursuant to this agreement shall be performed in a skillful and workmanlike manner.

GC-17 RESPONSIBILITY FOR WORK

The Contractor shall not be relieved from the Contractor's obligations to perform the work in accordance with the contract documents by the activities or duties of the engineer, including inspections, tests or approvals required or performed pursuant to this agreement.

GC-18 RESPONSIBILITY FOR ACTS OF EMPLOYEES

The Contractor shall be responsible to the County for the acts and omissions of its employees, subcontractors, and agents as well as any other persons performing work pursuant to this agreement. All areas within the limits of the Project which are determined by the Engineer to be unnecessarily damaged, due either directly or indirectly to the process of construction, shall be responsibility of the Contractor to correct and repair. This is not a payment item and shall be done without additional

compensation.

GC-19 PAYMENT FOR LABOR AND MATERIALS

Unless otherwise provided in this agreement, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the execution and completion of the work.

GC-20 DISCIPLINE ON WORK SITE

The Contractor shall enforce strict discipline and good order among its employees and subcontractors at all times during the performance of the work. The Contractor shall not employ any subcontractor who is not skilled in the task assigned to it. The engineer may, by written notice, require the Contractor to remove from the work any subcontractor or employee deemed by the engineer to be incompetent.

GC-21 HOURS OF OPERATION

All work at the construction site shall be performed during regular business hours, except upon the engineer's prior written consent to other work hours.

GC-22 FAMILIARITY WITH WORK CONDITIONS

The Contractor shall take all steps necessary to ascertain the nature and location of the work and the general and local conditions, which may affect the work or the cost thereof. The Contractor's failure to fully acquaint itself with the conditions which may affect the work, including, but not limited to conditions relating to transportation, handling, storage of materials, availability of labor, water, roads, weather, topographic and subsurface conditions, other separate contracts to be entered into by the County relating to the project which may affect the work of the Contractor, applicable provisions of law, and the character and availability of equipment and facilities necessary prior to and during the performance of the work shall not relieve the Contractor of its responsibilities pursuant to this agreement and shall not constitute a basis for an equitable adjustment of the contract terms. The County assumes no responsibility for any understandings or representations concerning conditions of the work made by any of its officers, agents, or employees prior to the execution of this agreement.

GC-23 RIGHT OF ENTRY

The County reserves the right to enter the site of the work by such agent as it may elect for the purpose of inspecting the work or installing such collateral work as the County may desire.

GC-24 NOTICES

Any notice, order, instruction, claim or other written communication required pursuant to this agreement shall be deemed to have been delivered or received as follows:

- (1) Upon personal delivery to the Contractor, its authorized representative, or the engineer on behalf of the County. Personal delivery may be accomplished by in-person hand delivery or bona fide overnight express service.
- (2) Three days after depositing in the United States mail a certified letter addressed to the Contractor, the County, or the engineer. For purposes of mailed notices, the County's mailing address shall be 75 Langley Drive, Lawrenceville, Georgia 30046. The Contractor's mailing address shall be the address stated in its proposal, and the engineer's mailing address shall be its address listed in the Notice to Begin Work.

GC-25 SAFETY

The Contractor shall take all reasonable precautions for the safety of all persons and property associated with the work, and the Contractor shall erect and maintain, as required by existing conditions and the progress of the work, all reasonable safeguards for the safety and protection of persons in the vicinity of the project.

GC-26 BLASTING AND EXCAVATION

The Contractor acknowledges that it is fully aware of the contents and requirements of O.C.G.A. § 25-9-1 through 25-9-12 concerning blasting and excavation near underground gas pipes and facilities and shall fully comply therewith.

GC-27 HIGH VOLTAGE LINES

The Contractor acknowledges that it is fully aware of the contents and requirements O.C.G.A. § 46-3-30 through 46-3-39 concerning safeguards against contact with high voltage lines, and the Contractor shall fully comply with said provisions.

GC-28 SCAFFOLDING AND STAGING

The Contractor acknowledges that it is the person responsible for employing and directing others to perform labor within the meaning of O.C.G.A. § 34-1-1 and agrees to comply with said provisions.

GC-29 CLEAN-UP

The Contractor shall clean up all refuse, rubbish, scrap materials, and debris caused by its operations to the end that the site of the work shall present a neat, orderly and workmanlike appearance at all times.

GC-30 PROTECTION OF WORK

The Contractor shall be responsible for maintenance and protection of the work until final completion of this agreement and acceptance of the work as defined herein. Any portion of the work suffering injury, damage or loss shall be considered defective and shall be corrected or replaced by the Contractor without additional cost to the County.

GC-31 REJECTED WORK

The Contractor shall promptly remove from the project all work rejected by the engineer for failure to comply with the contract documents and the Contractor shall promptly replace and re-execute the work in accordance with the contract documents and without expense to the County. The Contractor shall also bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement.

GC-32 DEFECTIVE WORK

If the Contractor defaults or neglects to carry out any portion of the work in accordance with the contract documents, and fails within three days after receipt of written notice from the County or the engineer to commence and continue correction of such default or neglect with diligence and promptness, the County or the engineer may, after three days following receipt by the Contractor of an additional written notice and without prejudice to any other remedy the County may have, make good such deficiencies and complete all or any portion of any work through such means as the County may select, including the use of a new Contractor. In such case, an appropriate change order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies. In the event the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the County on demand.

GC-33 NEW MATERIALS

The Contractor warrants to the County that all materials and equipment furnished under this contract will be new unless otherwise specified, and the Contractor further warrants that all work will be of good quality, free from faults and defects, and in conformance with the contract documents. The warranty set forth in this paragraph shall survive final acceptance of the work.

GC-34 CONTRACTOR'S WARRANTY

If within one year after the date of substantial completion and final acceptance of the work by the County, or within such longer period of time as may be prescribed by law or by the term of any

applicable special warranty required by the contract documents, any of the work is found to be defective or not in accordance with the contract documents, the Contractor shall correct such work promptly after receipt of written notice from the County to do so. This obligation shall survive both final payment for the work and termination of the contract.

GC-35 ASSIGNMENT OF MANUFACTURERS' WARRANTIES

Without limiting the responsibility or liability of the Contractor pursuant to this agreement, all warranties given by manufacturers on materials or equipment incorporated in the work are hereby assigned by the Contractor to the County. If requested, the Contractor shall execute formal assignments of said manufacturer's warranties to the County. All such warranties shall be directly enforceable by the County.

GC-36 WARRANTIES IMPLIED BY LAW

The warranties contained in this agreement, as well as those warranties implied by law, shall be deemed cumulative and shall not be deemed alternative or exclusive. No one or more of the warranties contained herein shall be deemed to alter or limit any other.

GC-37 STOP WORK ORDERS

In the event that the Contractor fails to correct defective work as required by the contract documents or fails to carry out the work in accordance with contract documents, the County, or the engineer, in writing, may order the Contractor to stop work until the cause for such order has been eliminated. This right of the County or engineer to stop work shall not give rise to any duty on the part of the County or the engineer to execute this right for the benefit of the Contractor or for any other person or entity.

GC-38 TERMINATION FOR CAUSE

If the Contractor is adjudged bankrupt, makes a general assignment for the benefit of creditors, suffers the appointment of a receiver on account of its insolvency, or fails to supply sufficient properly skilled workers, materials, fails to make prompt payment to subcontractors or materialmen, disregards laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction, or is otherwise guilty of a material violation of this agreement and fails within seven days after receipt of written notice to commence and continue correction of such default, neglect, or violation with diligence and promptness, the County may, after ten days following receipt by the Contractor of an additional written notice and without prejudice to any other remedy the County may have, terminate the employment of the Contractor and take possession of the site as well as all materials, equipment, tools, construction equipment and machinery thereon. The County may finish the work by whatever methods the County deems expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is completed. If the unpaid balance of the contract price exceeds the cost of completing the work, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the County on demand. This obligation for payment shall survive the termination of the contract. Termination of this agreement pursuant to this paragraph may result in disqualification of the Contractor from bidding on future County contracts.

GC-39 TERMINATION FOR CONVENIENCE

The County may, at any time upon 30 days written notice to the Contractor, terminate the whole or any portion of the work for the convenience of the County. Said termination shall be without prejudice to any right or remedy of the County provided herein. In addition, in the event this agreement has been terminated due to the default of the Contractor, and if it is later determined that the Contractor was not in default pursuant to the provisions of this agreement at the time of termination, then such termination shall be considered a termination for convenience pursuant to this paragraph.

GC-40 TERMINATION FOR CONVENIENCE - PAYMENT

In the event that the County terminates this agreement for the convenience of the County, the County shall only be liable to the Contractor for those costs reimbursable to the Contractor plus a mark-up of ten percent on the actual fully accounted cost recovered pursuant to this paragraph. In the event that it appears that the Contractor would have sustained a loss on the entire contract had it been completed, no profit shall be included or allowed hereunder and an appropriate adjustment shall be made reducing the amount of settlement to reflect the indicated rate of loss. In the event of termination for the convenience of the County, the County shall pay the Contractor the following amounts determined by the engineer:

- A. An amount for supplies, services, or property accepted by the County for which payment has not previously been made. The price to be paid for these items shall be equivalent to the aggregate price for such supplies or services computed in accordance with the price specified in this agreement appropriately adjusted for any saving of freight or other charges; and
- B. The total of:
 - (1) The costs incurred in the performance of the work terminated, including initial costs and preparatory expenses allocable thereto, but exclusive of any costs attributable to supplies or services previously paid;
 - (2) The costs of settling and paying claims arising pursuant to the termination of the work under said contracts or orders which are properly chargeable to the terminated portion of the contract (exclusive of the amounts paid or payable on account of completed items or equipment delivered or services furnished by a subcontractor or vendor prior to the effective date of the notice of termination, which amounts shall be included in the costs payable pursuant to (A)); and
 - (3) The reasonable costs of settlement, including accounting, legal, clerical, and other expenses reasonable and necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the contract and for the termination and settlement of subcontracts thereunder, together with reasonable storage, transportation, and other costs incurred in connection with the protection or disposition of property allocable to this agreement.

GC-41 TERMINATION FOR CONVENIENCE - PAYMENT LIMITATIONS

In the event of termination for the convenience of the County, the total sum to be paid to the Contractor shall not exceed the contract price as reduced by the amount of payments otherwise made, by the contract price for work not terminated, and as otherwise permitted by the contract. Except for normal spoilage, and except to the extent that the County shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to the Contractor the fair value, as determined by the engineer, of property which is destroyed, lost, stolen or damaged so as to become undeliverable to the County or to another buyer.

GC-42 COST TO CURE

If the County terminates the whole or any part of the work pursuant to this agreement, then the County may procure upon such terms and in such manner as the engineer may deem appropriate, supplies or services similar to those so terminated, and the Contractor shall be liable to the County for any excess costs for such similar supplies or services. The Contractor shall continue the performance of this agreement to the extent not terminated hereunder.

GC-43 ATTORNEY'S FEES

Should the Contractor default pursuant to any of the provisions of this agreement, the Contractor and its surety shall pay to the County such reasonable attorney's fees as the County may expend as a result thereof and all costs, expenses, and filing fees incidental thereto.

GC-44 CONTRACTOR'S RESPONSIBILITIES UPON TERMINATION

After receipt of a notice of termination from the County, and except as otherwise directed by the engineer, the Contractor shall:

1. Stop work under the contract on the date and to the extent specified in the notice of termination;
2. Place no further orders or subcontracts for materials, services or facilities, except as may be necessary for completion of such portion of the work under the agreement as is not terminated;
3. Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the notice of termination;
4. Assign to the County in the manner, at the times, and to the extent directed by the engineer, all of the rights, title and interest of the Contractor under the orders and subcontracts so terminated, in which case the County shall have the right, at its discretion, to settle or pay any and all claims arising out of the termination of such orders or subcontracts;
5. Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the engineer, to the extent the engineer may require, which approval or ratification shall be final for all purposes;
6. Transfer title and deliver to the entity or entities designated by the County, in the manner, at the times, and to the extent, if any, directed by the engineer, and to the extent specifically produced or specifically acquired by the Contractor for the performance of such portion of the work as has been terminated:
 - (a) The fabricated or unfabricated parts, work, and progress, partially completed supplies, and equipment, materials, parts, tools, dyes, jigs, and other fixtures, completed work, supplies, and other material produced as a part of or acquired in connection with the performance of the work terminated by the notice of termination; and
 - (b) The completed or partially completed plans, drawings, information, and other property to the work.
7. Use its best efforts to sell in the manner, at the times, to the extent, and at the prices directed or authorized by the engineer, any property described in Section 6 of this paragraph, provided, however, that the Contractor shall not be required to extend credit to any buyer and further provided that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the County to the Contractor pursuant to this agreement.
8. Complete performance of such part of the work as shall not have been terminated by the notice of termination; and

9. Take such action as may be necessary, or as the engineer may direct, for the protection and preservation of the property related to the agreement which is in the possession of the Contractor and in which the County has or may acquire an interest.

GC-45 RECORDS

The Contractor shall preserve and make available to the County all of its records, books, documents and other evidence bearing on the costs and expenses of the Contractor and any subcontractor pursuant to this agreement upon three days advance notice to the Contractor.

GC-46 DEDUCTIONS

In arriving at any amount due the Contractor pursuant to the terms of this agreement, there shall be deducted all liquidated damages, advance payments made to the Contractor applicable to the termination portion of the contract, the amount of any claim which the County may have against the Contractor, the amount determined by the engineer to be necessary to protect the County against loss due to outstanding potential liens or claims, and the agreed price of any materials acquired or sold by the Contractor and not otherwise recovered by or credited to the County.

GC-47 REIMBURSEMENT OF THE COUNTY

In the event of termination, the Contractor shall refund to the County any amount paid by the County to the Contractor in excess of the costs reimbursable to the Contractor.

GC-48 TERMINATION FOR CONVENIENCE - DELAY

The Contractor shall be entitled to only those damages and that relief from termination by the County as specifically set forth in this agreement. The County or the engineer may issue a written order requiring the Contractor to suspend, delay or interrupt all or any part of the work for such period of time as the County may determine to be appropriate for the convenience of the County. If the performance of the work is interrupted for an unreasonable period of time by an act of the County or engineer in the administration of this agreement, an equitable adjustment shall be made for any increase in the Contractor's costs of performance and any increase in the time required for performance of the work necessarily caused by the unreasonable suspension, delay, or interruption. Any equitable adjustment shall be reduced to writing and shall constitute a modification to this agreement. In no event, however, shall an equitable adjustment be made to the extent that performance of this agreement would have been suspended, delayed or interrupted by any other cause, including the fault or negligence of the Contractor. No claim for an equitable adjustment pursuant to this paragraph shall be permitted before the Contractor shall have notified the engineer in writing of the act or failure to act involved, and no claim shall be allowed unless asserted in writing to the engineer within ten days after the termination of such suspension, delay or interruption.

GC-49 COMMENCEMENT AND DURATION OF WORK

The Contractor shall commence work pursuant to this agreement within ten days of mailing or delivery of written notice to proceed by the County. The Contractor shall diligently prosecute the work to completion within the time specified therefore. The capacity of the Contractor's construction and manufacturing equipment and plan, sequence and method of operation and forces employed, including management and supervisory personnel, shall be such as to ensure completion of the work within the specified time. The Contractor and County hereby agree that the contract time for completion of the work is reasonable taking into consideration the average climatic conditions prevailing in the locality of the work.

GC-50 TIME OF THE ESSENCE

All time limits stated in this agreement are of the essence of this contract.

GC-51 IMPACT DAMAGES

Except as specifically provided pursuant to a stop work order or change order, the Contractor shall not be entitled to payment or compensation of any kind from the County for direct or indirect or impact damages including, but not limited to, costs of acceleration arising because of delay, disruption, interference or hindrance from any cause whatsoever whether such delay, disruption, interference or hindrance is reasonable or unreasonable, foreseeable or unforeseeable, or avoidable, provided, however, that this provision shall not preclude the recovery of damages by the Contractor for hindrances or delays due solely to fraud or bad faith on the part of the County its agents or employees. The Contractor shall be entitled only to extensions in the time required for performance of the work as specifically provided in the contract.

GC-52 DELAY

The Contractor may be entitled to an extension of the contract time, but not an increase in the contract price, for delays arising from unforeseeable causes beyond the control and without the fault or negligence of the Contractor or its subcontractors for labor strikes, acts of God, acts of the public enemy, acts of the state, federal or local government in its sovereign capacity, by acts of another separate contractor, or by an act of neglect of the County with the engineer.

GC-53 INCLEMENT WEATHER

The Contractor shall not be entitled to an extension of the contract time due to normal inclement weather. Unless the Contractor can substantiate to the satisfaction of the engineer that there was greater than normal inclement weather considering the full term of the contract using a ten year average of accumulated mean values for climatological data compiled by the U.S. Department of Commerce for Atlanta, Georgia and that such greater than normal inclement weather actually delayed the work, the Contractor shall not be entitled to an extension of time therefor.

GC-54 NOTICE OF DELAY

The Contractor shall not receive an extension of time unless a notice of a claim is filed with the County and the engineer within ten days of the first instance of such delay, disruption, interference or hindrance and a written statement of the claim is filed with the engineer and the County within 20 days of the first such instance. In the event that the Contractor fails to comply with this provision, it waives any claim, which it may have for an extension of time pursuant to this agreement.

GC-55 NOTICE OF DELAY - CONTENTS

The notice of delay referenced in the preceding paragraph shall include specific information concerning the nature of the delay, the date of commencement of the delay, the construction activities affected by the delay, the person or organization responsible for the delay, the anticipated extent of the delay, and any recommended action to avoid or minimize the delay.

GC-56 PROGRESS OF WORK

To the extent that the Contractor is entitled to additional compensation for delay, an absolute condition precedent to such entitlement shall be strict compliance with all requirements and procedures for entitlement to an extension of time herein. If the work actually in place falls behind the currently updated and approved project network schedule, and it becomes apparent from the current schedule that work will not be completed within the contract time, the Contractor agrees that it will, as necessary, or as directed by the engineer, take action at no additional cost to the County to improve the progress of the work, including increasing manpower, increasing the number of working hours per shift or shifts per working day, increasing the amount of equipment at the site, and any other measure reasonably required to complete the work in a timely fashion.

GC-57 DILIGENCE

The Contractor's failure to substantially comply with the requirements of the preceding paragraph may be grounds for determination by the County or engineer that the Contractor is failing to prosecute the work with such diligence as will ensure its completion within the time specified. In such event, the County shall have the right to furnish such additional labor and materials as may be required to comply with the schedule after 48 hours written notice to the Contractor, and the Contractor shall be liable for such costs incurred by the County.

GC-58 SET-OFFS

Any monies due to the County pursuant to the acceleration provisions of this agreement may be deducted by the County against monies due from the County to the Contractor.

GC-59 ACCELERATION - REMEDIES

The remedies of the County concerning acceleration are in addition to and without prejudice to all of the rights and remedies of the County at law, in equity, or contained in this agreement.

GC-60 TITLE TO MATERIALS

No materials or supplies shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sales contract or other agreement by which any interest is retained by the seller. The Contractor hereby warrants that it has good and marketable title to all materials and supplies used by it in the work, and the Contractor further warrants that all materials and supplies shall be free from all liens, claims, or encumbrances at the time of incorporation in the work.

GC-61 INSPECTION OF MATERIALS

All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with accepted standards and in accordance with the requirements of the contract documents. Additional tests performed after the rejection of materials or equipment shall be at the Contractor's expense.

GC-62 ENGINEER'S PRESENCE DURING TESTING

All tests performed by the Contractor shall be witnessed by the engineer unless the requirement therefor is waived in writing. The engineer may perform additional tests on materials previously tested by the Contractor, and the Contractor shall furnish samples for this purpose as requested.

GC-63 MATERIALS INCORPORATED IN WORK

The Contractor shall furnish all materials and equipment to be incorporated in the work. All such materials or equipment shall be new and of the highest quality available. Manufactured materials and equipment shall be obtained from sources, which are currently manufacturing such materials, except as otherwise specifically approved by the engineer.

GC-64 STORAGE OF MATERIALS

Materials and equipment to be incorporated in the work shall be stored in such a manner as to preserve their quality and fitness for the work and to facilitate inspection.

GC-65 PAYROLL REPORTS

The Contractor shall be required to furnish weekly payroll reports to the engineer certifying conformance with the wage rates listed in the specifications.

GC-66 CONTRACTORS' REPRESENTATIVE

Before beginning work, the Contractor shall notify the engineer in writing of one person within its organization who shall have complete authority to supervise the work, receive orders from the engineer,

and represent the Contractor in all matters arising pursuant to this agreement. The Contractor shall not remove its representative without first designating in writing a new representative. The Contractor's representative shall normally be present at or about the site of work while the work is in progress. When neither the Contractor nor its representative is present at the work site, the superintendent, foreman, or other employee in charge of the work shall be an authorized representative of the Contractor.

GC-67 SPECIALTY SUB-CONTRACTORS

The Contractor may utilize the services of specialty subcontractors on those parts of the project which, under normal contracting practices, are performed by specialty subcontractors. Neither the Contractor nor any subcontractor shall award work to any subcontractor without the prior written consent of the County. The Contractor shall not award more than seventy-five percent of the work to subcontractors.

GC-68 INSPECTION BY ENGINEERS

All work pursuant to this agreement shall be subject to inspection by the engineer for conformity with contract drawings and specifications. The Contractor shall give the engineer reasonable advance notice of operations requiring special inspection of a portion of the work.

GC-69 WORK COVERED PRIOR TO ENGINEER'S INSPECTION

In the event that work is covered or completed without the approval of the engineer, and such approval is required by the specifications or required in advance by the engineer, the Contractor shall bear all costs involved in inspection notwithstanding conformance of such portion of the work to the contract drawings and specifications.

GC-70 ENGINEER'S AUTHORITY

The engineer shall have the authority to decide all questions concerning interpretation and fulfillment of contract requirements, including, without limitation, all questions concerning the prosecution, progress, quality and acceptability of the work. Any oral decision or instruction of the engineer shall be confirmed in writing. All communications between the County and the Contractor shall be made through the engineer. The Contractor shall submit to the engineer a complete schedule of values of various portions of the work, including quantities and unit prices, aggregating the contract price. The schedule shall subdivide the work into component parts in sufficient detail to serve as the basis for progress payments during construction. Each item in the schedule of values shall include its proper share of overhead and profit. The schedule of values, when approved by the engineer, shall be used only as a basis for the Contractor's monthly request for payment and shall not be used for additions to or deductions from the contract amount.

GC-71 PROGRESS ESTIMATES

The Contractor shall also prepare a written report for the engineer's approval, on County forms, of the total amount of value of work performed to the date of submission. No progress estimate or payment shall be considered an approval or acceptance of any work performed, and all estimates and payments shall be subject to correction in subsequent estimates. Progress payments shall be made for all completed activities and for suitably stored materials.

GC-72 PROGRESS PAYMENTS

Upon completion of each monthly estimate of work performed and materials furnished, the engineer shall recommend payment to the Contractor for the estimated value of such work, materials, and equipment, less the amount of all prior payments and all liquidated damages. The Contractor will be paid 100 percent, less retainage, of the cost of materials received and properly stored but not incorporated into the work. Payments for materials or equipment stored on the site shall be conditioned upon submission by the Contractor of bills of sale to establish the County's title to such materials or equipment. No progress estimate or payment need be made when, in the engineer's judgment, the increment in the estimated value

of work performed and materials furnished since the preceding estimate is less than \$10,000.

GC-73 TIME OF PAYMENT

When the contractor has performed in accordance with the provisions of this Agreement, Gwinnett County shall pay to the contractor, within 30 days of receipt by the County of any payment request based upon work completed or service provided pursuant to the contract, the sum so requested, less the retainage stated in this Agreement, if any. In the event that Gwinnett County fails to pay the contractor within 60 days of the County's receipt of a pay request based upon work completed or service provided pursuant to the contract, the County shall pay the contractor interest at the rate of 1/2 percent per month or pro rata fraction thereof beginning the 61st day following the County's receipt of the pay request. The contractor's acceptance of progress payments or final payment shall release all claims for interest on said payments. The provisions of this agreement are intended to supersede all provisions of the Georgia Prompt Pay Act as provided by law.

GC-74 RETAINAGE

Until the payment for Substantial Completion, the County shall withhold retainage in the amount of five percent (5%) from each progress payment. When Substantial Completion is achieved, retainage shall be paid to Contractor with the final payment in accordance with the terms of Section GC-82.

GC-75 PAYMENT OF SUBCONTRACTORS

GC-75.1 GENERAL

The Contractor shall promptly pay each subcontractor upon the receipt of payment from the County. Such payment shall be made from the amount paid to the Contractor pursuant to the subcontractor's work. The Contractor shall also maintain the records of the percentage retained from payments to the Contractor pursuant to such subcontractor's work. The Contractor shall procure agreements from each subcontractor requiring each subcontractor to pay their subcontractors, agents and employees in a similar manner.

GC-75.2 SUBCONTRACTOR RETAINAGE RELEASE

Upon request by Contractor, the County may, in its sole discretion, permit an amount equal to the retainage associated with a subcontractor's work to be released from the retainage held by the County upon completion of the subcontractor's work. To request subcontractor retainage release, Contractor shall submit a written request to the County that (a) certifies the subcontractor's work is complete and specifies the amount of retainage withheld by Contractor, (b) contains a release of all claims by the subcontractor, and (c) is executed by the Contractor, subcontractor, and, if required by the County, the engineer.

GC-76 COUNTY'S RESPONSIBILITIES TO SUBCONTRACTORS

Neither the County nor the engineer shall have any obligation to pay any subcontractor except as otherwise required by law.

GC-77 PROGRESS PAYMENTS - ACCEPTANCE OF WORK

Certification of progress payments, as well as the actual payment thereof, shall not constitute the County's acceptance of work performed pursuant to this agreement.

GC-78 PAYMENTS IN TRUST

All sums paid to the Contractor pursuant to this agreement are hereby declared to constitute trust funds in the hands of the contractor to be applied first to the payment of claims of subcontractors, laborers, and suppliers arising out of the work, to claims for utilities furnished and taxes imposed, and to the payment of premiums on surety and other bonds and on insurance for any other application.

GC-79 JOINT PAYMENTS

The County reserves the right to issue any progress payment or final payment by check jointly to the Contractor and any subcontractor or supplier.

GC-80 RIGHT TO WITHHOLD PAYMENT

The engineer may decline to approve payment and may withhold payment in whole or in part to the extent reasonable and necessary to protect the County against loss due to defective work, probable or actual third party claims, the Contractor's failure to pay subcontractors or materialmen, reasonable evidence that the work will not be completed within the contract time or contract price or damage to the County or any other contractor on the project.

GC-81 CERTIFICATE OF SUBSTANTIAL COMPLETION

Upon the Contractor's submission of a request for a certificate of substantial completion, the engineer shall inspect the work and determine whether the work is substantially complete. If the work is substantially complete, the engineer shall issue a certificate of substantial completion of the work which shall establish the date of substantial completion, shall state the responsibilities of the County and the Contractor for security, maintenance, heat, utilities, damage to the work and insurance, and shall fix the time within which the Contractor shall complete the items submitted by the Contractor as requiring correction or further work. The certificate of substantial completion of the work shall be submitted to the County and the Contractor for their written acceptance of the responsibilities assigned to them pursuant to such certificate.

GC-82 FINAL PAYMENT

GC-82.1 GENERAL

Upon Substantial Completion of the work and upon application by the Contractor and approval by the engineer, the County shall make payment reflecting adjustments and retainage for the work as provided in this agreement.

GC-82.2 AMOUNT TO BE WITHHELD

Upon receipt of an application for final payment, the engineer shall designate amounts to be withheld from the payment for incomplete work and/or defective work to be remedied. The amounts withheld shall equal 200 percent of the value of each item of incomplete work and defective work to be remedied. Such amount shall be withheld until completion and remediation of such work.

GC-83 COMMENCEMENT OF WARRANTIES

Warranties required by this agreement shall commence on the date of final completion of the project unless otherwise provided in the certificate of substantial completion.

GC-84 FINAL PAYMENT - WAIVER OF CLAIMS

The acceptance of the substantial completion payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of application for payment at substantial completion and except for the retainage sums due at final acceptance. Following the engineer's issuance of the certificate of substantial completion and the Contractor's completion of the work pursuant to this agreement, the Contractor shall forward to the engineer a written notice that the work is ready for final inspection and acceptance and shall also forward to the engineer a final application for payment. When the engineer finds the work acceptable and determines that the contract has been fully performed, the engineer shall issue a certificate for payment which shall approve final payment to the Contractor.

GC-85 DOCUMENTATION OF COMPLETION OF WORK

Neither the final payment nor the remaining retainage shall become due until the Contractor submits the following documents to the engineer:

- A. An affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the work have been paid or otherwise satisfied;
- B. The surety's consent to final payment; and
- C. Any other data reasonably required by the County or engineer establishing payment or satisfaction of all such obligations, including releases, waivers of liens, and documents of satisfaction of debts.

In the event that a subcontractor refuses to furnish a release or waiver as required by the County or engineer, the Contractor may furnish a bond satisfactory to the County to indemnify the County against such loss. In the event that any lien or indebtedness remains unsatisfied after all payments are made, the contractor shall refund to the County all moneys that the County may become compelled to pay in discharging such lien or other indebtedness, including all costs and reasonable attorney's fees.

GC-86 GOVERNING LAW

Each and every provision of this agreement shall be construed in accordance with and governed by Georgia law. The parties acknowledge that this contract is executed in Gwinnett County, Georgia and that the contract is to be performed in Gwinnett County, Georgia. Each party hereby consents to the Gwinnett Superior Court's sole jurisdiction over any dispute which arises as a result of the execution or performance of this agreement, and each party hereby waives any and all objections to venue in the Gwinnett Superior Court.

GC-87 CHANGES AND EXTRA WORK

GC-87.1 AUTHORITY FOR CHANGES

The County may make changes in the Drawings or Specifications and in the quantities of Work to be done under the Contract

C-87.2 CHANGE ORDERS

Without invalidating the Contract, the County may at any time or from time to time, by written order, order additions, deletions, or revisions in the Work related to the original scope of the Work. Change Orders will authorize these. Upon receipt of the Change Order, Contractor shall promptly proceed with the work involved. If any price or scope of the Work or an extension or shortening of the Contract Time is involved, an equitable adjustment will be made within the Change Order. In the event the Change Order increases the contract price, the penal amount of the Payment and Performance Bonds shall be increased as provided for in Section GC-15. All changes in the Work authorized by Change Order shall be performed under the applicable Conditions of the Contract Documents.

GC-87.3 WRITTEN NOTICE

The County may, at the request of the Contractor, issue interpretations, clarifications and other instructions as to the intent of the Contract Documents, in the form of Written Notices. The County may also, at any time, make changes in the details of the Work by issuance of a Written Notice. Upon receipt of such a Written Notice containing interpretations, clarifications and other instructions, Contractor shall proceed with the Work and comply with the Written Notice unless Contractor believes that such Written Notice entitles him to a Change in Contract Price or Time or both.

Should Contractor believe that such Written Notice entitles him to change in Contract Price or Time, or both, he shall give the County notice in writing thereof within seven (7) days after receipt of the Written Notice. Thereafter within thirty (30) days, Contractor shall document the basis for the change in Contract Price or Time. The County shall render a timely, written decision on the Contractor's request for a change in Contract Price or Time. Should the County determine that the Contractor is not entitled to a change in Contract Time or Price, the Contractor shall proceed as directed upon receipt of the County's decision. Failure to proceed shall constitute a breach of Contract and shall be a cause for the termination of the Contract. Request for a Change Order arising out of a Written Notice will not be considered without the attachment thereto of a copy of the referenced Written Notice. No claim by Contractor will be allowed if asserted after Final Payment under this Contract.

GC-87.4 EXTRA WORK

Extra work consists of new and unforeseen work determined by the County not to be covered by any of the various items for which there is a bid price or by combination of such items.

GC-87.5 VARIATION IN QUANTITIES

Wherever the estimated quantities of work to be done and materials to be furnished under this Contract are shown in any of the documents including the Proposal, they are given for use in comparing bids and the right is especially reserved except as herein otherwise specifically limited, to increase or diminish them as may be deemed reasonably necessary or desirable by County to complete the Work contemplated by this Contract, and such increase or diminution shall in no way vitiate this Contract, nor shall any such increase or diminution give cause for claims or liability for damages.

GC-88 CHANGE ORDERS

GC-88.1 GENERAL

The Contract Price may only be changed by a Written Change Order. Each change will be set forth in a Change Order prepared by the County and approved by County. Change Orders will specify (a) all additional work to be done and work to be omitted, if any, in connection with the change; (b) the basis of compensation to the Contractor for additional or omitted work; and (c) any adjustment of the time of completion of the Work. If the County determines that a change requiring additional work will cause delay in completion of Work, he will grant an equitable time extension for the changed work, or a subsequent Change Order may be issued at such time as the extent of such delay can be determined.

Upon receipt of a Change Order, Contractor shall comply therewith and perform each item of work set forth therein, furnishing all labor, material, and equipment necessary therefore, in the same manner as if such work were originally included in the Contract. In the absence of a Change Order, Contractor shall not be entitled to payment or an extension of the time of completion on account of any changes made.

GC-88.2 METHODS OF PAYMENT

The value of any work covered by a Change Order or any claim for an increase or decrease in the Contract Price shall be determined by the following method which is most advantageous to County, as determined by the County:

- A. Where the work involved is covered by unit prices contained in Contract Documents, by application of unit prices to the quantities of the items involved.
- B. By mutual acceptance of a lump sum, based on a detailed breakdown of anticipated costs plus Contractor's fee for overhead, small tools, and profit.
- C. On the basis of the actual cost of the work plus a Contractor's fee for overhead, small

tools and profit. This method of payment is herein referred to as force account work. Contractor's fee for force account work performed by his own forces shall be twenty percent (20%) for direct labor and payroll burdens; five percent (5%) for all purchased material; and Contractor's fee for subcontracted work shall be as defined hereinafter.

GC-88.3 LUMP SUM CHANGE ORDER WORK

Contractor shall prepare an estimate of all extra and deleted work as described by Written Notice, using established unit prices where they are stated in the Bidding Documents. Estimates for labor, bonds, insurance, materials, and equipment required shall otherwise be based on the provisions set forth hereinafter.

GC-88.4 CHANGE ORDERS LIMITED

Except as provided herein, no order, statement or conduct of the County or the Construction Program Manager shall be treated as a "Change Order" or entitle the Contractor to any adjustment hereunder of the Contract Price or Contract Time.

GC-88.5 NO WORK STOPPAGE

Nothing in this Article shall excuse the Contractor from proceeding with the Contract as changed.

GC-88.6 CONTRACT AMENDMENT

The amount payable to the Contractor under the Contract, the Contract Time, and the date required for performance of any part of the Work may be changed only by a Change Order to the Contract.

GC-89 FORCE ACCOUNT WORK

Force account work is an Owner-defined emergency, a sudden or unforeseen failure or malfunction of an existing system, which results in the Contractor being obligated to respond to the site of the emergency as Owner-directed. Contractor may perform work on a force account basis and will be paid for properly allocated charges which may include labor, bond premium, supplies and materials, equipment and subcontract billings, incurred in the performance of such force account work as more particularly described below:

- A. Labor: All labor shall be billed at the hourly rates specified in the bid. Regular rates will apply during normal business hours, defined as Monday through Friday, 7a.m.–5p.m. Overtime rates will apply during non-normal business hours. If premium rates apply, then overtime rates shall be defined as Monday through Friday, 5p.m.–8p.m. Accordingly, premium rates, if applicable, shall be defined as Monday through Saturday, 8p.m.–7a.m., all hours on Sundays and all County recognized holidays. A foreman shall not be used where there are fewer than two (2) laborers employed, except with the written consent of the County. Subsistence and travel allowance where required by collective bargaining agreements shall be included.

The charges for labor shall include all classifications through foremen when engaged in the actual and direct performance of the Work. They shall not include charges for such overhead personnel as assistant superintendents, superintendents, office personnel, timekeepers, and maintenance mechanics.

- B. Bonds and Insurance: For bonds and insurance premiums or increases thereto necessitated by the force account work, Contractor shall receive the actual cost to which no percent shall be added. Contractor shall furnish satisfactory evidence of the rate or rates paid for such bond and insurance.

- C. Materials: For materials accepted by the County and used as an integral part of the finished Work, Contractor shall receive the actual cost of such materials delivered on the Work, including transportation charges paid by him, exclusive of machinery rentals as hereinafter set forth.

If materials are procured by Contractor by a method which is not a direct purchase from and a direct billing by the actual supplier, the cost of such materials shall be deemed to be the lowest current wholesale price at which such materials are available in the quantities concerned and delivered to the site of the Work.

For other materials used in the construction which are not an integral part of the finished Work, such as, but not limited to, sheeting, false work and form lumber, Contractor shall be reimbursed in the amount agreed upon by the County before such work is begun. The salvage value of such material will be taken into consideration in determining the amount of reimbursement.

- D. Equipment: Contractor will be paid for the use of Contractor owned or rented equipment at seventy percent (70%) of the suggested monthly rental rates listed for such equipment in the Blue Book Rental Rates for Construction Equipment (published by Equipment Guide-Book Company of Palo Alto), except as modified below, which edition shall be the latest edition in effect at the time of commencement of the force account work. Hourly rental rates shall be calculated by dividing the listed monthly rates as modified above by 176 hours. The rental rate for equipment used in excess of eight (8) hours per day, shall be at the rate of fifty percent (50%) of the hourly rates as calculated above. The rental rates for standby equipment, when authorized by the County, shall be at the rate of fifty percent (50%) of the hourly rate for equipment in use eight (8) hours per day. No payment of rentals for standby equipment will be made for more than eight (8) hours per working day and no payment will be made for weekend days or holidays. If it is deemed necessary by Contractor to use equipment not listed in the applicable edition of the Blue Book Rental Rates, Contractor shall furnish the necessary cost data and paid invoices to the County for its use in establishment of such rental rate(s). Equipment must be in good operating condition. The rental rates paid as above provided shall include the cost of fuel, oil, lubricants, supplies, small tools, necessary attachments, repairs and maintenance of all kinds, depreciation, storage and insurance. Equipment operators will be paid for as stipulated herein.

The rental time to be paid for equipment on the Work site shall be the time the equipment is required for the force account work being performed. The time shall include the time required to move the equipment to the location of the force account work and return it to the original location or to another location requiring no more time than that required to return it to its original location. Moving time will not be paid if the equipment is used at the site of the force account work on other than such force account work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power. No payment for loading and transporting will be made if the equipment is used at the site of the force account work on other than such force account work. Compensation will not be allowed while equipment is inoperative due to breakdown.

For the use of equipment moved in on the work and used exclusively for work paid for on a force account basis, providing the County has agreed to said move, Contractor will be paid the equipment use rates provided for in this clause, for the cost of transporting the equipment to the location of the work and its return to its original location, and for the cost of loading and unloading the equipment, all in accordance with the following provisions:

1. The cost of transporting equipment shall not exceed the applicable minimum

- established rates by the State of Georgia Public Service commission.
2. The equipment use period shall begin at the time the equipment is unloaded at the site of the force account work, shall include each day that the equipment is at the site of the force account work, excluding Saturdays and Sundays and other legal holidays unless the force account work is performed on such days, and shall terminate at the end of the day on which the County instructs Contractor to discontinue the use of such equipment. The maximum time to be paid per day will not exceed eight (8) hours unless the equipment is in operation for a longer time.
- E. Subcontract Work: Where the Change Order applies to work being performed under a subcontract, reimbursement, including the fee for small tools, overhead and profit for the subcontractor's work performed on a force account basis shall be computed in precisely the same manner as if performed by Contractor as indicated herein. One additional allowance of five percent (5%) of the subcontractor's total costs will be granted to Contractor for overhead and profit regardless of the tier of the subcontractor. If the subcontractor elects to contract out change order work to a third (or lower) level contractor or supplier of purchased equipment, he shall not be entitled to fees, overhead or profit for such third (or lower) level work or materials. The County reserves the right to direct the Contractor to contract directly with third (or lower) level subcontractors and suppliers of purchased equipment in order to avoid paying multiple fees, overhead and profit for such third (and lower level) subcontractors and suppliers of purchased equipment. If similar work is not being performed at the Work site, and if required by County, Contractor shall obtain three (3) competitive bids for the requirements of the Change Order and the Contract Documents from Subcontractors acceptable to the County. Selection of the Subcontractor shall be subject to the approval of the County.
- F. Compensation: The compensation as set forth above shall be received by Contractor as payment in full for work done on a force account basis. At the end of each day, Contractor's Representative and Inspector shall compare records of the Work performed including classification of all laborers, ordered on a force account basis.
- G. Statements: No payment will be made for work performed on a force account basis until Contractor furnishes the County itemized statements of the cost of such force account work detailed as to the following:
1. Labor - name, classification, date, daily hours, total hours, rate, and extension of each laborer and foreman.
 2. Equipment - size, type, identification number, dates, daily hours, total hours, rental rate, and extension of each unit of machinery and equipment.
 3. Materials - quantities of supplies and materials, prices, including transportation cost and extensions.
 4. Bonds and insurance premiums.
 5. Subcontract work - force account detail as above, or progress quantities and prices of unit price or lump sum subcontracts.
 6. Payments for items under paragraphs (a) to (f) inclusive shall be conditioned upon Contractor's presentation of original receipted invoices for materials used and transportation charges. If, however, the materials used in the force account work are not specially purchased for such work but are taken from Contractor's stock, then in lieu of the original invoices, the statements shall contain or be accompanied by an affidavit of Contractor which shall certify that such materials were taken from his stock, that the price and transportation of the material as claimed represent actual cost.

- H. If, in the County's opinion, Contractor or any of his subcontractors, in performing force account work, are not making efficient use of labor, material, or equipment and/or are proceeding in a manner which is expensive to the County, the County may request the Contractor to make more efficient use of labor, material and equipment. Contractor shall in good faith comply with such requests as are reasonable. If the Contractor fails to comply with such requests, the County may independently determine the reasonable cost of the work and the Contractor will be entitled only to the reasonable cost so estimated by the County.

GC-90 DISAGREEMENT WITH ORDERS FOR CHANGE

Contractor's written acceptance of a Change Order or other order for changes shall constitute his final and binding agreement to the provisions thereof and a waiver of all claims in connection therewith, whether direct or consequential in nature. Should Contractor disagree with any order for changes, he may submit a notice of potential claim to the County, at such time as the order is set forth in the form of a Change Order. Disagreement with the provisions of an order for changes shall not relieve Contractor of his obligation under Clause GC-88, Change Orders.

GC-91 CHANGED CONDITIONS

Contractor shall notify the County in writing of the following conditions, hereinafter called "changed conditions," promptly upon their discovery and before they are disturbed:

- A. Subsurface or latent physical conditions at the site of Work differing materially from those represented in this Contract; or
- B. Unknown physical conditions at the Site of the Work of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract.

The County will promptly investigate conditions of which it is so notified or conditions discovered by it which appear to be changed conditions, and will, as soon as practicable, issue appropriate orders or instructions. If the County determines that the conditions materially differ and that they will materially increase or decrease the costs of any portion of Work, it will issue a Change Order adjusting the compensation for such portion of Work.

INSURANCE REQUIREMENTS

1. Statutory Workers' Compensation Insurance
 - (a) Employers Liability:
 - ✓ Bodily Injury by Accident - \$100,000 each accident
 - ✓ Bodily Injury by Disease - \$500,000 policy limit
 - ✓ Bodily Injury by Disease - \$100,000 each employee
2. Commercial General Liability Insurance
 - (a) \$500,000 limit of liability per occurrence for bodily injury and property damage
 - (b) The following additional coverage must apply:
 - ✓ 1986 (or later) ISO Commercial General Liability Form
 - ✓ Dedicated Limits per Project Site or Location (CG 25 03 or CG 25 04)
 - ✓ Additional Insured Endorsement (Form B CG 20 10 with a modification for completed operations or a separate endorsement covering Completed Operations)
 - ✓ Blanket Contractual Liability
 - ✓ Broad Form Property Damage
 - ✓ Severability of Interest
 - ✓ Underground, explosion, and collapse coverage
 - ✓ Personal Injury (deleting both contractual and employee exclusions)
 - ✓ Incidental Medical Malpractice
 - ✓ Hostile Fire Pollution Wording
3. Auto Liability Insurance
 - (a) \$500,000 limit of liability per occurrence for bodily injury and property damage
 - (b) Comprehensive form covering all owned, non-owned, leased, hired, and borrowed vehicles
 - (c) Additional Insured Endorsement
 - (d) Contractual Liability
4. Umbrella Liability Insurance - \$1,000,000 limit of liability
 - (a) The following additional coverage must apply
 - ✓ Additional Insured Endorsement
 - ✓ Concurrency of Effective Dates with Primary
 - ✓ Blanket Contractual Liability
 - ✓ Drop Down Feature
 - ✓ Care, Custody, and Control - Follow Form Primary
 - ✓ Aggregates: Apply Where Applicable in Primary
 - ✓ Umbrella Policy must be as broad as the primary policy
5. Gwinnett County Board of Commissioners should be shown as an additional insured on General Liability, Auto Liability and Umbrella Liability policies.
6. The cancellation should provide 10 days notice for nonpayment and 30 days notice of cancellation.
7. Certificate Holder should read:

Gwinnett County Board of Commissioners
75 Langley Drive
Lawrenceville, GA 30046-6935
8. Insurance Company, except Worker' Compensation carrier, must have an A.M. Best Rating of A-5 or higher. Certain Workers' Comp funds may be acceptable by the approval of the Insurance Unit. European markets including those based in London and domestic surplus lines markets that operate on a non-admitted basis are exempt from this requirement provided that the contractor's broker/agent can provide financial data to establish that a market is equal to or exceeds the financial strengths associated with the A.M. Best's rating of A-5 or better.
9. Insurance Company should be licensed to do business by the Georgia Department of Insurance.

10. Certificates of Insurance, and any subsequent renewals, must reference specific bid/contract by project name and project/bid number.
11. The Contractor shall agree to provide complete certified copies of current insurance policy (ies) or a certified letter from the insurance company (ies) if requested by the County to verify the compliance with these insurance requirements.
12. All insurance coverages required to be provided by the Contractor will be primary over any insurance program carried by the County.
13. Contractor shall incorporate a copy of the insurance requirements as herein provided in each and every subcontract with each and every Subcontractor in any tier, and shall require each and every Subcontractor of any tier to comply with all such requirements. Contractor agrees that if for any reason Subcontractor fails to procure and maintain insurance as required, all such required Insurance shall be procured and maintained by Contractor at Contractor's expense.
14. No Contractor or Subcontractor shall commence any work of any kind under this Contract until all insurance requirements contained in this Contract have been complied with and until evidence of such compliance satisfactory to Gwinnett County as to form and content has been filed with Gwinnett County. **The Acord Certificate of Insurance or a preapproved substitute is the required form in all cases where reference is made to a Certificate of Insurance or an approved substitute.**
15. The Contractor shall agree to waive all rights of subrogation against the County, the Board of Commissioners, its officers, officials, employees, and volunteers from losses arising from work performed by the contractor for the County.
16. Special Form Contractors' Equipment and Contents Insurance covering owned, used, and leased equipment, tools, supplies, and contents required to perform the services called for in the Contract. The coverage must be on a replacement cost basis. The County will be included as a Loss Payee in this coverage for County owned equipment, tools, supplies, and contents.
17. The Contractor shall make available to the County, through its records or records of their insurer, information regarding a specific claim related to any County project. Any loss run information available from the contractor or their insurer relating to a County project will be made available to the County upon their request.
18. Compliance by the Contractor and all subcontractors with the foregoing requirements as to carrying insurance shall not relieve the Contractor and all Subcontractors of their liability provisions of the Contract.
19. The Contractor and all Subcontractors are to comply with the Occupational Safety and Health Act of 1970, Public Law 91-956, and any other laws that may apply to this Contract.
20. The Contractor shall at a minimum apply risk management practices accepted by the contractors' industry.

BONDING AND CONTRACT REQUIREMENTS

General Bond Requirements

1. Bid Bonds - Amount of bond should be 5% of contract amount and submitted with your bid. Gwinnett County form Attached. Failure to use Gwinnett County Bid Bond Form may result in bid being deemed non-responsive and automatic rejection may occur.
2. Performance Bond - (Supplied by successful vendor) - Amount of bond should be 100% of contract amount. **(MUST USE COUNTY FORM)**
3. Payment, Labor and Materials Bonds - (Supplied by successful vendor) - Amount of bond should be 100% of contract amount. **(MUST USE COUNTY FORM)**
4. Bonding company must be authorized to do business by the Georgia Insurance Department.
5. An original/certified copy of the Bonding company's Certificate of Authority or Power of Attorney must be attached to bond. The Certificate of Authority may be obtained from the Georgia Insurance Department.
6. Bonding company must have a minimum AM Best rating of A-V or higher as stated in Insurance Requirements. **Failure to submit a bid bond with the proper rating will result in the bid being deemed non-responsive.**
7. Bonding Company must be listed in the Department of the Treasury's publication of companies holding Certificates of Authority as acceptable surety on Federal Bonds and as acceptable reinsuring companies. (Dept. Circular 570; 1992 Revision).
8. After bid opening, vendor has up to forty-eight (48) hours to notify the Gwinnett County Purchasing Office of an obvious error made in calculation of Bid. Withdrawal of Bid Bond for this reason must be done in writing within the forty-eight (48) hour period. Bid Bond may not be withdrawn otherwise.

Contract Requirements

1. Successful vendor is required to do the following within ten (10) days of notification.
 - A. Return to Purchasing Office contract documents executed by the principal of the company and attested by the secretary or assistant secretary.
 - B. Provide Insurance certificates as specified in the bid documents.
 - C. Provide bonding as required by the bid documents.
2. Failure to execute the Contract, Contract Performance Bond and Payment Bond, or furnish satisfactory proof of carriage of the insurance required within ten days after the date of Notice of Award of the Contract may be just cause for the annulment of the award and for the forfeiture of the bid guaranty to Gwinnett County, not as a penalty, but as liquidation of damages sustained. At the discretion of the County, the award may then be made to the next lowest, responsible bidder, or the work may be re-advertised or constructed by County forces. The Contract and Contract Bonds shall be executed in duplicate.

*****Gwinnett County requires that all Contracts between parties be entered into via the following documents. If any exceptions are taken to any part of this document, each must be stated in detail and submitted as part of your proposal/bid document. If no exceptions are noted it is assumed that the party fully agrees to the contract in its entirety. Exceptions to the sample contract provided in this request for proposal will be considered in terms of responsiveness when making award.*****

**SAMPLE
CONTRACT**

This **CONTRACT** made and entered into this _____ day of _____, 20____ by and between Gwinnett County, Georgia (Party of the First Part, hereinafter called the County), and _____, (Party of the Second Part, hereinafter called the Contractor).

WITNESSETH: That the said Contractor has agreed, and by these presets does agree with the said County, for the consideration herein mentioned and under the provision of the Performance Bond and Payment Bond required by the Specifications to furnish all equipment, tools, materials, skill and labor of every description necessary to carry out and complete in a good, firm and substantial and workmanlike manner, the work specified, in strict conformity with the drawings and specifications, together with the foregoing proposal made by the Contractor, the Advertisement, the Instructions to Bidders, General Conditions, and this Contract, shall all form essential parts to this Contract. The work covered by this Contract includes all work shown on plans and specifications and listed in the conditions and specifications to wit:

BL003-24, F. Wayne Hill Water Resources Center Recoating Super Structure at Digester Tanks

The Contractor awarded work under this contract shall commence work within _____ days after the issuance of the Notice to Proceed and shall fully complete all work hereunder within _____ (_____) consecutive calendar days from and after said date.

The County shall pay and the Contractor shall receive the prices stipulated in the proposal hereto attached as full compensation for everything furnished and done by the Contractor under this contract, which shall in no event exceed (\$ _____) based on the proposal which sum shall be paid in the manner and terms specified in the Contract Documents, but before issuance of certificate of payment, if the Contractor shall not have submitted evidence satisfactory to the County that all payrolls, materials bills, and other indebtedness connected with the work have been paid, the County may withhold, in addition to the retained percentages, such amount or amounts as may be necessary to pay just claims for labor and services rendered and materials in and about the work, and such amount or amounts withheld or retained may be applied by the County to the payment of such just claims.

When the Contractor has performed in accordance with the provisions of this Contract, Gwinnett County shall pay to the Contractor, within thirty (30) days of receipt of any payment request based upon work completed or service provided pursuant to the Contract, the sum so requested, less the retainage stated in this Contract, if any. In the event that Gwinnett County fails to pay the Contractor within sixty (60) days of receipt of a pay request based upon work completed or service provided pursuant to the Contract, the County shall pay the Contractor interest at the rate of 1/2% per month or pro rata fraction thereof, beginning the sixty-first (61st) day following receipt of the pay request. The Contractor's acceptance of progress payments or final payment shall release all claims for interest on said payments.

It is further mutually agreed between the Parties hereto that if, at any time after the execution of the Contract and the Performance Bond for its faithful performance and the Payment Bond, the first party shall deem the surety or sureties upon such bond to be inadequate to cover the performance of the work, the second party shall, at its expense, within five (5) days after the receipt of notice from the first party to do so, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the first party. In such event, no further payment to the second party

shall be deemed to be due under this Contract until such new or additional security for the faithful performance of the work shall be furnished in a manner and form satisfactory to the first party.

The parties agree that each of the provisions included in this Contract is separate, distinct and severable from the other and remaining provisions of this Contract, and that the invalidity of any Contract provision shall not affect the validity of any other provision or provisions of this Contract.

(Signatures Next Page)

IN WITNESS WHEREOF, the parties hereto, acting through their duly authorized agents, have caused this **CONTRACT** to be signed, sealed and delivered.

GWINNETT COUNTY, GEORGIA

By: _____
Nicole L. Hendrickson, Chairwoman
Gwinnett County Board of Commissioners

ATTEST:

Signature

Diane Kemp, County Clerk
Board of Commissioners

APPROVED AS TO FORM:

Signature
Gwinnett County Staff Attorney

CONTRACTOR: _____

BY: _____
Signature

Print Name

Title

ATTEST:

Signature

Print Name
Corporate Secretary
(Seal)



BL003-24, F. Wayne Hill Water Resources Center Recoating Super Structure at Digester Tanks

**CONTRACTOR AFFIDAVIT AND AGREEMENT
(THIS FORM SHOULD BE FULLY COMPLETED AND RETURNED WITH YOUR SUBMITTAL)**

By executing this affidavit, the undersigned contractor verifies its compliance with The Illegal Immigration Reform Enhancements for 2013, stating affirmatively that the individual, firm, or corporation which is contracting with the Gwinnett County Board of Commissioners has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act, in accordance with the applicability provisions and deadlines established therein.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services or the performance of labor pursuant to this contract with the Gwinnett County Board of Commissioners, contractor will secure from such subcontractor(s) similar verification of compliance with the Illegal Immigration Reform and Enforcement Act on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Gwinnett County Board of Commissioners at the time the subcontractor(s) is retained to perform such service.

E-Verify * User Identification Number

Date Registered

Legal Company Name

Street Address

City/State/Zip Code

BY: _____
Authorized Officer or Agent
(Contractor Signature)

Date

Title of Authorized Officer or Agent of Contractor

Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE
____ DAY OF _____, 201__

Notary Public
My Commission Expires:_____

For Gwinnett County Use Only:
Document ID # _____
Issue Date: _____
Initials: _____

* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is "E-Verify" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).



BL003-24, F. Wayne Hill Water Resources Center Recoating Super Structure at Digester Tanks

CODE OF ETHICS

**(THIS FORM SHOULD BE FULLY COMPLETED AND RETURNED WITH
YOUR SUBMITTAL AND WILL BE REQUIRED PRIOR TO EVALUATION)**

In accordance with Section 54-33 of the Gwinnett County Code of Ordinances the undersigned bidder/proposer makes the following full and complete disclosure under oath, to the best of his/her knowledge, of the name(s) of all elected officials whom it employs or who have a direct or indirect pecuniary interest in or with the bidder/proposer, its affiliates or its subcontractors:

1. _____
(Company Submitting Bid/Proposal)

2. (Please check **one** box below)

No information to disclose *(complete only section 4 below)*

Disclosed information below *(complete section 3 & section 4 below)*

3. (if additional space is required, please attach list)

_____	_____
Gwinnett County Elected Official Name	Gwinnett County Elected Official Name
_____	_____
Gwinnett County Elected Official Name	Gwinnett County Elected Official Name

4.	Sworn to and subscribed before me this
BY: _____	_____ day of _____, 20____
Authorized Officer or Agent Signature	
_____	_____
Printed Name of Authorized Officer or Agent	Notary Public

Title of Authorized Officer or Agent of Contractor	(seal)

Note: See Gwinnett County Code of Ethics Ordinance E02011, Sec. 54-33. The ordinance will be available to view in its' entirety at www.gwinnettcountry.com

BOND # _____

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____
(Corporation, Partnership or Individual)

hereinafter called Principal, and

(Name of Surety)

(Address of Surety)

a Corporation of the State of _____, and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

Gwinnett County Board of Commissioners

(Name of Obligee)

75 Langley Drive, Lawrenceville, Georgia 30046
(Address of Obligee)

hereinafter called Obligee;

for the use and protection of all subcontractors and all persons supplying labor, services, skill, tools, machinery, materials and/or equipment in the prosecution of the work provided for in the contract hereinafter referred to in the full and just sum of _____

_____ Dollars

(\$ _____) in lawful money of the United States, for the payment of which sum, will and truly to be made, the Principal and Surety bind themselves, their, and each of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such, as whereas the Principal entered into a certain contract, hereto attached, with the Obligee.

NOW, THEREFORE THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall well, truly, and faithfully perform said Contract according to its terms, covenants, and conditions, and shall promptly pay all persons furnishing labor, materials services, skill, tools, machinery and/or equipment for use in the performance of said Contract, then this obligation shall be void; otherwise it shall remain in full force and effect.

ALL persons who have furnished labor, materials, services, skill, tools, machinery and/or equipment for use in the performance of said Contract shall have a direct right of action on this Bond, provided payment has not been made in full within ninety (90) days after the last day on which labor was performed, materials, services, skill, tools, machinery, and equipment furnished or the subcontract completed.

PROVIDED FURTHER, that said Surety to this Bond, for value received, hereby stipulates and agrees that no change, extension of time, alterations, or additions to the terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alterations, or additions to the terms of the Contract or to the work to be performed thereunder.

PROVIDED, HOWEVER, that no suit or action shall be commenced hereunder by any person furnishing labor, materials, services, skill, tools, machinery, and/or equipment having a direct contractual relationship with a subcontractor, but no contractual relationship express or implied with the Principal:

Unless such person shall have given notice to the Principal within ninety (90) days after such person did, or performed the last of the work or labor, or furnished the last of the materials, services, skill, tools, machinery and/or equipment for which claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials, services, skill, tools, machinery and/or equipment were furnished, or for whom the work or labor was done or performed. Such a notice shall be served by mailing the same by registered mail, postage prepaid, in an envelope addressed to the Principal, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the State in which the aforesaid project is located, save that such service need not be made by a public officer, and a copy of such notice shall be delivered to the Obligee, to the person and at the address provided for in the Contract, within five (5) days of the mailing of the notice to the Principal.

PROVIDED, FURTHER, that any suit under this bond must be instituted before the expiration of one (1) year after the acceptance of the public works covered by the Contract by the proper authorities.

PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed pursuant to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. § 36-91-1 et seq., and is intended to be and shall be construed as a bond in compliance with the requirements thereof.

[Signatures Next Page]

ATTEST:

(Principal Secretary)

(SEAL)

(Witness as to Principal)

(Address)

ATTEST:

Resident or Nonresident Agent

(SEAL)

(Witness as to Surety)

(Address)

(Principal)

By:

(Address)

(Surety)

By:

(Attorney-in-Fact)

(Address)

BONDING AGENT CONTACT INFO

Print Name _____

Company Name _____

E-Mail _____

Phone _____

NOTE: If Contractor is Partnership, all partners should execute Bond. Surety Companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

Principal Secretary, Principal and Witness as to Principal signature lines must be signed by three different individuals. Additionally, Resident or Nonresident Agent, Witness as to Surety, and Attorney-in-fact must be signed by three different individuals.

BOND # _____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____
(Corporation, Partnership or Individual)

hereinafter called Principal, and

(Name of Surety)

(Address of Surety)

a Corporation of the State of _____, and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

Gwinnett County Board of Commissioners

(Name of Obligee)

75 Langley Drive, Lawrenceville, Georgia 30046

(Address of Obligee)

hereinafter referred to as Obligee, are held and firmly bound unto said Obligee and all persons doing work or furnishing skill, tools, machinery, supplies, or material under or for the purpose of the Contract hereinafter referred to, in the penal sum of _____

Dollars (\$ _____) in

lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such, as whereas the Principal entered into a certain contract, hereto attached, with the Obligee.

NOW, THEREFORE THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall well, truly, fully and faithfully perform said contract according to its terms, covenants, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Obligee, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreement of any and all duly authorized modifications of said contract that may hereafter be made, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED FURTHER, that said Surety to this Bond, for value received, hereby stipulates and agrees that no change, extension of time, alterations, or additions to the terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alterations, or additions to the terms of the Contract or to the work to be performed thereunder.

PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed pursuant to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. § 36-91-1 et seq., and is intended to be and shall be construed as a bond in compliance with the requirements thereof.

(Signatures Next Page)

ATTEST:

(Principal Secretary)

(SEAL)

(Witness as to Principal)

(Address)

(Principal)

By: _____

(Address)

(Surety)

By: _____

(Attorney-in-Fact)

ATTEST:

Resident or Nonresident Agent

(SEAL)

(Witness as to Surety)

(Address)

(Address)

BONDING AGENT CONTACT INFO

Print Name _____

Company Name _____

E-Mail _____

Phone _____

NOTE: If Contractor is Partnership, all partners should execute Bond. Surety Companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

Principal Secretary, Principal and Witness as to Principal signature lines must be signed by three different individuals. Additionally, Resident or Nonresident Agent, Witness as to Surety, and Attorney-in-fact must be signed by three different individuals.

FAILURE TO RETURN THIS PAGE MAY RESULT IN REMOVAL OF YOUR COMPANY FROM COMMODITY LISTING.

BL003-24
Buyer Initials: BB

IF YOU DESIRE TO SUBMIT A "NO BID" IN RESPONSE TO THIS PACKAGE, PLEASE INDICATE BY CHECKING ONE OR MORE OF THE REASONS LISTED BELOW AND EXPLAIN.

- Do not offer this product or service; remove us from your bidder's list for this item only.
- Specifications too "tight"; geared toward one brand or manufacturer only.
- Specifications are unclear.
- Unable to meet specifications
- Unable to meet bond requirements
- Unable to meet insurance requirements
- Our schedule would not permit us to perform.
- Insufficient time to respond.
- Other

COMPANY NAME _____

AUTHORIZED REPRESENTATIVE _____
SIGNATURE

*****ATTENTION*****

FAILURE TO RETURN THE FOLLOWING DOCUMENTS MAY RESULT IN BID BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION:

1. FAILURE TO USE COUNTY BID SCHEDULE.
2. FAILURE TO RETURN APPLICABLE COMPLIANCE SHEETS/SPECIFICATION SHEETS.
3. FAILURE TO RETURN APPLICABLE ADDENDA.
4. FAILURE TO PROVIDE INFORMATION ON ALTERNATES OR EQUIVALENTS.
5. THE COUNTY SHALL BE THE SOLE DETERMINANT OF TECHNICALITY VS. NON-RESPONSIVE BID.
6. FAILURE TO PROVIDE BID BOND, WHEN REQUIRED, WILL RESULT IN BID BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. BID BONDS ARE NOT REQUIRED ON ALL BIDS. BOND REQUIREMENTS ARE CLEARLY STATED ON THE INVITATION TO BID. IF YOU NEED CLARIFICATION, CONTACT THE PURCHASING ASSOCIATE. **IF BONDS ARE REQUIRED, FORMS WILL BE PROVIDED IN THIS BID DOCUMENT.**
7. FAILURE TO PROVIDE CONTRACTOR AFFIDAVIT AND AGREEMENT, WHEN REQUIRED, MAY RESULT IN BID BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. CONTRACTOR AFFIDAVIT AND AGREEMENT IS NOT REQUIRED ON ALL BIDS. IF YOU NEED CLARIFICATION, CONTACT THE PURCHASING ASSOCIATE.

**GWINNETT COUNTY DEPARTMENT OF FINANCIAL SERVICES – PURCHASING DIVISION
GENERAL INSTRUCTIONS FOR BIDDERS, TERMS AND CONDITIONS**

I. PREPARATION OF BIDS

- A. Each bidder shall examine the drawings, specifications, schedule and all instructions. Failure to do so will be at the bidder's risk, as the bidder will be held accountable for their bid response.
- B. Each bidder shall furnish all information required by the bid form or document. Each bidder shall sign the bid and print or type his or her name on the schedule. The person signing the bid must initial erasures or other changes. An authorized agent of the company must sign bids.
- C. With the exception of solicitations for the sale of real property, individuals, firms and businesses seeking an award of a Gwinnett County contract may not initiate or continue any verbal or written communications regarding a solicitation with any County officer, elected official, employee or other County representative other than the Purchasing Associate named in the solicitation between the date of the issuance of the solicitation and the date of the final contract award by the Board of Commissioners. The Purchasing Director will review violations. If determined that such communication has compromised the competitive process, the offer submitted by the individual, firm or business may be disqualified from consideration for award. Solicitations for the sale of real property may allow for verbal or written communications with the appropriate Gwinnett County representative.
- D. Sample contracts (if pertinent) are attached. These do NOT have to be filled out with the bid/proposal submittal, but are contained for informational purposes only. If awarded, the successful bidder(s) will be required to complete them prior to contract execution.
- E. Effective, July 1, 2013 and in accordance with the Georgia Illegal Immigration Reform Enhancements for 2013, an original signed, notarized and fully completed Contractor Affidavit and Agreement should be included with your bid/proposal submittal, if the solicitation is for the physical performance of services for all labor or service contract(s) that exceed \$2,499.99 (except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia). Failure to provide the Contractor Affidavit and Agreement with your bid/proposal submittal may result in bid/proposal being deemed non-responsive and automatic rejection.

II. DELIVERY

- A. Each bidder should state time of proposed delivery of goods or services.
- B. Words such as "immediate," "as soon as possible," etc. shall not be used. The known earliest date or the minimum number of calendar days required after receipt of order (delivery A.R.O.) shall be stated (if calendar days are used, include Saturday, Sunday and holidays in the number).

III. EXPLANATION TO BIDDERS

Any explanation desired by a bidder regarding the meaning or interpretation of the invitation for bids, drawings, specifications, etc. must be requested by the question cutoff deadline stated in the solicitation in order for a reply to reach all bidders before the close of bid. Any information given to a prospective bidder concerning an invitation for bid will be furnished to all prospective bidders as an addendum to the invitation if such information is necessary or if the lack of such information would be prejudicial to uninformed bidders. The written bid documents supersede any verbal or written communications between parties. Receipt of addendum should be acknowledged in the bid. **It is the bidder's responsibility to ensure that they have all applicable**

addenda prior to bid submittal. This may be accomplished via contact with the assigned Procurement Agent prior to bid submittal.

IV. SUBMISSION OF BIDS

- A. Bids shall be enclosed in sealed envelopes, addressed to the Gwinnett County Purchasing Office with the name of the bidder, the date and hour of opening and the invitation to bid number on the face of the envelope. Telegraphic/faxed bids will not be considered. Any addenda should be enclosed in the sealed envelopes as well.
- B. ADD/DEDUCT: Add or deduct amounts indicated on the outside of the envelope are allowed and will be applied to the lump sum amount. Amount shall be clearly stated and should be initialed by an authorized company representative.
- C. Samples of items, when required, must be submitted within the time specified and, unless otherwise specified by the County, at no expense to the County. Unless otherwise specified, samples will be returned at the bidder's request and expense if items are not destroyed by testing.
- D. Items offered must meet required specifications and must be of a quality, which will adequately serve the use and purpose for which intended.
- E. Full identification of each item bid upon, including brand name, model, catalog number, etc. must be furnished to identify exactly what the bidder is offering. Manufacturer's literature may be furnished.
- F. The bidder must certify that items to be furnished are new and that the quality has not deteriorated so as to impair its usefulness.
- G. Unsigned bids will not be considered except in cases where bid is enclosed with other documents, which have been signed. The County will determine this.
- H. Gwinnett County is exempt from federal excise tax and Georgia sales tax with regard to goods and services purchased directly by Gwinnett County. Suppliers and contractors are responsible for federal excise tax and sales tax, including taxes for materials incorporated in county construction projects. Suppliers and contractors should contact the State of Georgia Sales Tax Division for additional information.
- I. Information submitted by a bidder in the bidding process shall be subject to disclosure after the public opening in accordance with the Georgia Open Records Act.

V. WITHDRAWAL OF BID DUE TO ERRORS

The bidder shall give notice in writing of his claim of right to withdraw his bid without penalty due to an error within two (2) business days after the conclusion of the bid opening procedure. Bids may be withdrawn from consideration if the price was substantially lower than the other bids due solely to a mistake therein, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of the bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and material used in the preparation of the bid sought to be withdrawn. The bidder's original work papers shall be the sole acceptable evidence of error and mistake if he elects to withdraw his bid. If a bid is withdrawn under the authority of this provision, the lowest remaining responsive bid shall be deemed to be low bid.

No bidder who is permitted to withdraw a bid shall, for compensation, supply any material or labor or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn bid was submitted.

Supplier has up to forty-eight (48) hours to notify the Gwinnett County Purchasing Office of an obvious clerical error made in calculation of bid in order to withdraw a bid after bid opening. Withdrawal of bid for this reason must be done in writing within the forty-eight (48) hour period. Suppliers who fail to request withdrawal of bid by the required forty-eight (48) hours shall automatically forfeit bid bond. Bid may not be withdrawn otherwise.

Bid withdrawal is not automatically granted and will be allowed solely at Gwinnett County's discretion.

VI. TESTING AND INSPECTION

Since tests may require several days for completion, the County reserves the right to use a portion of any supplies before the results of the tests are determined. Cost of inspections and tests of any item, which fails to meet the specifications, shall be borne by the bidder.

VII. F.O.B. POINT

Unless otherwise stated in the invitation to bid and any resulting contract, or unless qualified by the bidder, items shall be shipped F.O.B. Destination. The seller shall retain title for the risk of transportation, including the filing for loss or damages. The invoice covering the items is not payable until items are delivered and the contract of carriage has been completed. Unless the F.O.B. clause states otherwise, the seller assumes transportation and related charges either by payment or allowance.

VIII. PATENT INDEMNITY

The contractor guarantees to hold the County, its agents, officers or employees harmless from liability of any nature or kind for use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, articles or appliances furnished or used in the performance of the contract, for which the contractor is not the patentee, assignee or licensee.

IX. BID BONDS AND PAYMENT AND PERFORMANCE BONDS (IF REQUIRED, FORMS WILL BE PROVIDED IN THIS DOCUMENT)

A five percent (5%) bid bond, a one hundred percent (100%) performance bond, and a one hundred percent (100%) payment bond must be furnished to Gwinnett County for any bid as required in bid package or document. **Failure to submit a bid bond with the proper rating will result in the bid being deemed non-responsive.** Bonding company must be authorized to do business in Georgia by the Georgia Insurance Commission, listed in the Department of the Treasury's publication of companies holding certificates of authority as acceptable surety on Federal bonds and as acceptable reinsuring companies, and have an A.M. Best rating as stated in the insurance requirement of the solicitation. **The bid bond, payment bond, and performance bond must have the proper an A.M. Best rating as stated in the bid when required in the bid package or document.**

X. DISCOUNTS

- A. Time payment discounts will be considered in arriving at net prices and in award of bids. Offers of discounts for payment within ten (10) days following the end of the month are preferred.
- B. In connection with any discount offered, time will be computed from the date of delivery and acceptance at destination, or from the date correct invoice or voucher is received, whichever is the later date. Payment is deemed to be made for the purpose of earning the discount, on the date of the County check.

XI. AWARD

- A. Award will be made to the lowest responsive and responsible bidder. The quality of the articles to be supplied, their conformity with the specifications, their suitability to the requirements of the County, and the delivery terms will be taken into consideration in making the award. The County may make such investigations as it deems necessary to determine the ability of the bidder to perform, and the bidder shall furnish to the County all such information and data for this purpose as the County may request. The County reserves the right to reject any bid if the evidence submitted by, or investigation of such bidder fails to satisfy the County that such bidder is properly qualified to carry out the obligations of the contract.
- B. The County reserves the right to reject or accept any or all bids and to waive technicalities, informalities and minor irregularities in bids received.
- C. The County reserves the right to make an award as deemed in its best interest, which may include awarding a bid to a single bidder or multiple bidders; or to award the whole bid, only part of the bid, or none of the bid to single or multiple bidders, based on its sole discretion of its best interest.

XII. DELIVERY FAILURES

Failure of a contractor to deliver within the time specified or within reasonable time as interpreted by the Purchasing Director, or failure to make replacement of rejected articles/services when so requested, immediately or as directed by the Purchasing Director, shall constitute authority for the Purchasing Director to purchase in the open market articles/services of comparable grade to replace the articles/services rejected or not delivered. On all such purchases, the contractor shall reimburse the County within a reasonable time specified by the Purchasing Director for any expense incurred in excess of contract prices, or the County shall have the right to deduct such amount from monies owed the defaulting contractor. Alternatively, the County may penalize the contractor one percent (1%) per day for a period of up to ten (10) days for each day that delivery or replacement is late. Should public necessity demand it, the County reserves the right to use or consume articles delivered which are substandard in quality, subject to an adjustment in price to be determined by the Purchasing Director.

XIII. COUNTY FURNISHED PROPERTY

No material, labor or facilities will be furnished by the County unless so provided in the invitation to bid.

XIV. REJECTION AND WITHDRAWAL OF BIDS

Failure to observe any of the instructions or conditions in this invitation to bid may constitute grounds for rejection of bid.

XV. CONTRACT

Each bid is received with the understanding that the acceptance in writing by the County of the offer to furnish any or all of the commodities or services described therein shall constitute a contract between the bidder and the County which shall bind the bidder on his part to furnish and deliver the articles quoted at the prices stated in accordance with the conditions of said accepted bid. The County, on its part, may order from such contractor, except for cause beyond reasonable control, and to pay for, at the agreed prices, all articles specified and delivered.

Upon receipt of a bid package containing a Gwinnett County "Sample Contract" as part of the requirements, it is understood that the bidder has reviewed the documents with the understanding that Gwinnett County requires that all agreements between the parties must be

entered into via this document. If any exceptions are taken to any part, each must be stated in detail and submitted as part of the bid. If no exceptions are stated, it is assumed that the bidder fully agrees to the provisions contained in the "Sample Contract" in its entirety.

Any Consultant as defined in O.C.G.A. §36-80-28 that is engaged to develop or draft specifications/requirements or serve in a consultative role during the procurement process for any County procurement method, , by entering into such an arrangement or executing a contract that the consultant agrees to: (1) Avoid any appearance of impropriety and shall follow all policies and procedures of the County (2) disclose to the County, any material transaction or relationship pursuant to §36-80-28, considered a conflict of interest, any involvement in litigation or other dispute, relationship or financial interest not disclosed in the ethics affidavit, when ethics affidavit is required or such that may be discovered during the pending contract or arrangement; and (3) Acknowledge that any violation or threatened violation of the agreement may cause irreparable injury to the County, entitling the County, to seek injunctive relief in addition to all other legal remedies. This requirement does not apply to confidential economic development activities pursuant to §50-18-72 or to any development authority for the purpose of promoting the development of trade, commerce, industry, and employment opportunities or for other purposes and, without limiting the generality of the foregoing, shall specifically include all authorities created pursuant to Title 36 Chapter 62; However, per provisions of subparagraph (e)(1)(B) of Code Section 36-62-5 reporting of potential conflicts of interest by development authority board members is required.

When the contractor has performed in accordance with the provisions of this agreement, Gwinnett County shall pay to the contractor, within thirty (30) days of receipt of any department approved payment request and based upon work completed or service provided pursuant to the contract, the sum so requested, less the retainage stated in this agreement, if any. In the event that Gwinnett County fails to pay the contractor within sixty (60) days of receipt of a pay requested based upon work completed or service provided pursuant to the contract, the County shall pay the contractor interest at the rate of ½% per month or pro rata fraction thereof, beginning the sixty-first (61st) day following receipt of pay requests. The contractor's acceptance of progress payments or final payment shall release all claims for interest on said payment.

XVI. NON-COLLUSION

Bidder declares that the bid is not made in connection with any other bidder submitting a bid for the same commodity or commodities, and that the bid is bona fide and is in all respects fair and without collusion or fraud. An affidavit of non-collusion shall be executed by each bidder. Collusion and fraud in bid preparation shall be reported to the State of Georgia Attorney General and the United States Justice Department.

XVII. DEFAULT

The contract may be canceled or annulled by the Purchasing Director in whole or in part by written notice of default to the contractor upon non-performance or violation of contract terms. An award may be made to the next low responsive and responsible bidder, or articles specified may be purchased on the open market similar to those so terminated. In either event, the defaulting contractor (or his surety) shall be liable to the County for costs to the County in excess of the defaulted contract prices; provided, however, that the contractor shall continue the performance of this contract to the extent not terminated under the provisions of this clause. Failure of the contractor to deliver materials or services within the time stipulated on his bid, unless extended in writing by the Purchasing Director, shall constitute contract default.

XVIII. TERMINATION FOR CAUSE

The County may terminate this agreement for cause upon ten days prior written notice to the contractor of the contractor's default in the performance of any term of this agreement. Such termination shall be without prejudice to any of the County's rights or remedies by law.

XIX. TERMINATION FOR CONVENIENCE

The County may terminate this agreement for its convenience at any time upon 30 days written notice to the contractor. In the event of the County's termination of this agreement for convenience, the contractor will be paid for those services actually performed. Partially completed performance of the agreement will be compensated based upon a signed statement of completion to be submitted by the contractor, which shall itemize each element of performance.

XX. DISPUTES

Except as otherwise provided in the contract documents, any dispute concerning a question of fact arising under the contract which is not disposed of shall be decided after a hearing by the Purchasing Director, who shall reduce his/her decision to writing and mail or otherwise furnish a copy thereof to the contractor. The decision of the procurement agent shall be final and binding; however, the contractor shall have the right to appeal said decision to a court of competent jurisdiction.

XXI. SUBSTITUTIONS

Bidders offering and quoting on substitutions or who are deviating from the attached specifications shall list such deviations on a separate sheet to be submitted with their bid. The absence of such a substitution list shall indicate that the bidder has taken no exception to the specifications contained herein.

XXII. INELIGIBLE BIDDERS

The County may choose not to accept the bid of a bidder who is in default on the payment of taxes, licenses or other monies due to the County. Failure to respond to three (3) consecutive times for any given commodity/service may result in removal from the supplier list under that commodity/service.

XXIII. OCCUPATION TAX CERTIFICATE

Each successful bidder shall provide evidence of a valid Gwinnett County occupation tax certificate if the bidder maintains an office within the unincorporated area of Gwinnett County. Incorporated, out of County, and out of State bidders are required to provide evidence of a certificate to do business in any town, County or municipality in the State of Georgia, or as otherwise required by County ordinance or resolution.

XXIV. PURCHASING POLICY AND REVIEW COMMITTEE

The Purchasing Policy and Review Committee has been established to review purchasing procedures and make recommendations for changes; resolve problems regarding the purchasing process; make recommendations for standardization of commodities, schedule buying, qualified products list, annual contracts, supplier performance (Ineligible Source List), and other problems or requirements related to Purchasing. The Purchasing Policy & Review Committee has authority to place suppliers and contractors on the Ineligible Source List for reasons listed in Part 6, Section II of the Gwinnett County Purchasing Ordinance.

XXV. AMERICANS WITH DISABILITIES ACT

All contractors for Gwinnett County are required to comply with all applicable sections of the Americans with Disabilities Act (ADA) as an equal opportunity employer. In compliance with the Americans with Disabilities Act (ADA), Gwinnett County provides reasonable accommodations to permit a qualified applicant with a disability to enjoy the privileges of employment equal to those employees with disabilities. Disabled individuals must satisfy job requirements for education background, employment experience, and must be able to perform those tasks that are essential to the job with or without reasonable accommodations. Any requests for the reasonable accommodations required by individuals to fully participate in any open meeting, program or activity of Gwinnett County should be directed to Susan Canon, ADA Coordinator, 75 Langley Drive, Lawrenceville, Georgia 30046, 770-822-8165.

XXVI. ALTERATIONS OF SOLICITATION AND ASSOCIATED DOCUMENTS

Alterations of County documents are strictly prohibited and will result in automatic disqualification of the firm's solicitation response. If there are "exceptions" or comments to any of the solicitation requirements or other language, then the firm may make notes to those areas, but may not materially alter any document language.

XXVII. TAX LIABILITY

Local and state governmental entities must notify contractors of their use tax liability on public works projects. Under Georgia law, private contractors are responsible for paying a use tax equal to the sales tax rate on material and equipment purchased under a governmental exemption that is incorporated into a government construction project: excluding material and equipment provided for the installation, repair, or expansion of a public water, gas or sewer system when the property is installed for general distribution purposes. To the extent the tangible personal property maintains its character (for example the installation of a kitchen stove), it remains tax-exempt. However, if the installation incorporates the tangible personal property into realty, e.g., the installation of sheetrock, it becomes taxable to the private contractor.

See O.C.G.A. 48-8-3(2) and O.C.G.A. 48-8-63

XXVIII. STATE LAW REGARDING WORKER VERIFICATION

Effective July 1, 2013 State Law requires that all who enter into a contract for the physical performance of services for all labor or service contract(s) that exceed \$2,499.99 (except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia) for the County, must satisfy the Illegal Immigration Reform Enhancements for 2013, in all manner, and such are conditions of the contract.

The Purchasing Division Director with the assistance of the Performance Analysis Division shall be authorized to conduct random audits of a contractor's or subcontractors' compliance with the Illegal Immigration Reform Enhancements for 2013 and the rules and regulations of the Georgia Department of Labor. The contractor and subcontractors shall retain all documents and records of its compliance for a period of five (5) years following completion of the contract. This requirement shall apply to all contracts for all labor or service contracts that exceed \$2,499.99 except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia.

Whenever it appears that a contractor's or subcontractor's records are not sufficient to verify the work eligibility of any individual in the employ of such contractor or subcontractor, the Purchasing Director shall report same to the Department of Homeland Security and may result in termination of the contract if it is determined at any time during the work that the contractor/or subcontractor is no longer in compliance with the Illegal Immigration Reform

Enhancements for 2013.

State Law requires that all who enter into a contract for public works as defined by O.C.G.A. 36-91-2(10) for the County must satisfy the Illegal Immigration Reform Enhancements for 2013, in all manner, and such are conditions of the contract.

By submitting a bid to the County, contractor agrees that, in the event the contractor employs or contracts with any subcontractor(s) in connection with the covered contract, the contractor will secure from the subcontractor(s) such subcontractor(s)' indication of the employee-number category applicable to the subcontractor, as well as attestation(s) from such subcontractor(s) that they are in compliance with the Illegal Immigration Reform Enhancements for 2013. Original signed, notarized Subcontractor Affidavits and Agreements must be submitted to the County.

The Purchasing Division Director with the assistance of the Performance Analysis Division shall be authorized to conduct random audits of a contractor's or subcontractors' compliance with the Illegal Immigration Reform Enhancements for 2013 and the rules and regulations of the Georgia Department of Labor. The contractor and subcontractors shall retain all documents and records of its compliance for a period of three (3) years following completion of the contract. This requirement shall apply to all contracts for the public works as defined by O.C.G.A. 36-91-2(10) where any persons are employed on the County contract.

Whenever it appears that a contractor's or subcontractor's records are not sufficient to verify the work eligibility of any individual in the employ of such contractor or subcontractor, the Purchasing Director shall report same to the Department of Homeland Security.

A contractor's failure to participate in the federal work authorization program as defined by the Illegal Immigration Reform Enhancements for 2013 shall be sanctioned by termination of the contract. If it is determined that a subcontractor is not participating in the federal work authorization program as defined by the Illegal Immigration Reform Enhancements for 2013, Gwinnett County may direct the contractor to terminate that subcontractor. A contractor's failure to follow Gwinnett County's instruction to terminate a subcontractor that is not participating in the federal work authorization program as defined by the Illegal Immigration Reform Enhancements for 2013 may be sanctioned by termination of the contract.

XXIX. SOLID WASTE ORDINANCE

No individual, partnership, corporation or other entity shall engage in solid waste handling except in such a manner as to conform to and comply with the current Gwinnett County Solid Waste Ordinance and all other applicable local, state and federal legislation, rules, regulation and orders.

XXX. GENERAL CONTRACTORS LICENSE

Effective July 1, 2008: All General Contractors must have a current valid license from the State Licensing Board for Residential and General Contractors, unless specifically exempted from holding such license pursuant to Georgia law (O.C.G.A. Section 43-41-17).

XXIX. PRODUCTS MANUFACTURED IN GEORGIA

Gwinnett County, when contracting for or purchasing supplies, materials, equipment, or agricultural products that exceeds \$100,000.00, excluding beverages for immediate consumption, shall give preference as far as may be reasonable and practicable to such supplies, materials, equipment, and agricultural products as may be manufactured or produced

in this state. Such preference shall not sacrifice quality. Gwinnett County Board of Commissioners shall consider, among other factors, information submitted by the bidder which may include the bidder's estimate of the multiplier effect on gross state domestic product and the effect on public revenues of the state and the effect on public revenues of political subdivisions resulting from acceptance of a bid or offer to sell Georgia manufactured or produced goods as opposed to out-of-state manufactured or produced goods. Any such estimates shall be in writing. **(O.C.G.A. Section 36-84-1).**

XXXI. INDEMNIFICATION

To the fullest extent permitted by law, the Contractor shall, at his sole cost and expense, indemnify, defend, satisfy all judgments, and hold harmless the County, the engineer, and their agents and employees from and against all claims, damages, actions, judgments, costs, penalties, liabilities, losses and expenses, including, but not limited to, attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, action, judgment, cost, penalty, liability, loss or expense (1) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by the negligent acts, errors by any act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless whether such claim is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or otherwise reduce any of the rights or obligations of indemnity which would otherwise exist as to any party or person described in this agreement. In any and all claims against the County, the engineer, or any of their agents or employees by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation contained herein shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any subcontractor under Worker's Compensation Acts, disability benefit acts, or other employee benefit acts.

XXXII. CODE OF ETHICS:

"Proposer/Bidder" shall disclose under oath the name of all elected officials whom it employs or who have a direct or indirect pecuniary interest in the business entity, its affiliates, or its subcontractors. The "Proposer/Bidder" shall execute a Code of Ethics affidavit. Failure to submit the affidavit during the bid or proposal process shall render the bid or proposal non-responsive.

The act of submitting false information or omitting material information shall be referred to the Purchasing Policy & Review Committee for action pursuant to the Purchasing Ordinance or to the District Attorney for possible criminal prosecution.

Any business entity holding a contract with Gwinnett County that subsequent to execution of the contract or issuance of the purchase order employs, subcontracts with, or transfers a direct or indirect pecuniary interest in the business entity to an elected official shall within five (5) days disclose such fact in writing under oath to the Clerk of the Board of Commissioners. Failure to comply shall be referred to the Purchasing Policy & Review Committee for action pursuant to the Purchasing Ordinance or to the District Attorney for possible criminal prosecution.

Note: See Gwinnett County Code of Ethics Ordinance E02011, Sec. 54-33. The ordinance will be available to view in its entirety at www.gwinnettcountry.com.

XXXIII. PENDING LITIGATION:

A bid submitted by an individual, firm or business who has litigation pending against the County, or anyone representing a firm or business in litigation against the County, not arising out of the procurement process, will be disqualified.

XXXIV. ELECTRONIC PAYMENT

Vendors accepting procurements should select one of Gwinnett County's electronic payment options.

- A. A vendor may select ePayables payment process which allows acceptance of Gwinnett County's virtual credit card as payment for outstanding invoices. The authorized vendor representative must send an email to: vendorelectronicpayment@gwinnettcounty.com and indicate the desire to enroll in Gwinnett County's virtual credit card payment process.
- B. A vendor may select Direct Deposit payment process and the payment will be deposited directly into an account at their designated financial institution. To securely enroll in Direct Deposit, either access your online [Vendor Login and Registration](#) on the County's web site and update the requested information on the Direct Deposit tab or mail a Direct Deposit Authorization Agreement form.

The County will send a Payment Advice notification via email for both payment types.

For more information about Electronic Payments, please go to the Treasury Division page on the County's Web Site or click here -> [Gwinnett County Electronic Payments](#).

DIRECTIONS TO GJAC BUILDING FROM I-85

Take I-85 to Georgia Highway 316 (Lawrenceville/Athens exit). Exit Highway 120 (Lawrenceville/Duluth exit) and turn right. At seventh traffic light, turn right onto Langley Drive. Cross Highway 29 through the traffic light and cross at the 4-way stop sign. The main public parking lot is on the left or behind the building, Click [Here](#), for additional information about parking. The Purchasing Division is located in the Administrative Wing.

Attachment A: Metal Structures Drawings

NEW DIGESTER #3

LEGEND:
CS = C6x8.2 BEAM
PS = W6x12 POST
E.O.G. = EDGE OF GRATING
V.B.F. = VERTICAL BRACE FRAMING
L3 = L3x3x1/4 (-2) PLAN BRACING

V.B.F. ELEVATION

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

NEW DIGESTER #4

LEGEND:
CS = C6x8.2 BEAM
PS = W6x12 POST
E.O.G. = EDGE OF GRATING
V.B.F. = VERTICAL BRACE FRAMING
L3 = L3x3x1/4 (-2) PLAN BRACING

NEW DIGESTER #5

LEGEND:
CS = C6x8.2 BEAM
PS = W6x12 POST
E.O.G. = EDGE OF GRATING
V.B.F. = VERTICAL BRACE FRAMING
L3 = L3x3x1/4 (-2) PLAN BRACING

1 INTERMEDIATE PLATFORM FRAMING PLAN - DIGESTER #3
SCALE: 1/4" = 1'-0"

2 INTERMEDIATE PLATFORM FRAMING PLAN - DIGESTER #4
SCALE: 1/4" = 1'-0"

3 INTERMEDIATE PLATFORM FRAMING PLAN - DIGESTER #5
SCALE: 1/4" = 1'-0"

ENGINEER:
DETAILS 1/S1, 2/S1, 3/S1 PER CBI PROPOSAL, SECTION 1.3.3

REVISIONS:

NO.	REVISIONS	DATE	BY
2	ISSUE FOR REVIEW	N/A	JON
1	ISSUE FOR APPROVAL	10/24/03	JON

NOTES/LEGEND:

South Carolina Steel Corp.
Delivering your steel solution

TELEPHONE/FAX: (864)244-2860
Ph. (864)244-2860 Fax (864)244-8776

MAILING ADDRESS: P.O. Box 77 Greenville, SC 29602

SHIPPING ADDRESS: 113 E. Warehouse Ct. Taylors, SC 29687

PROJECT:
GWINNETT COUNTY DIGESTER EXPANSION

GEORGIA

DRAWING TITLE:
DIGESTER #3, #4, AND #5 PLATFORM PLANS AT EL. 1119.00'

DESIGNER: C. WALL
DRAWN BY: D. DANN
CHECKED BY: B. CARY
DATE: 8/04/03

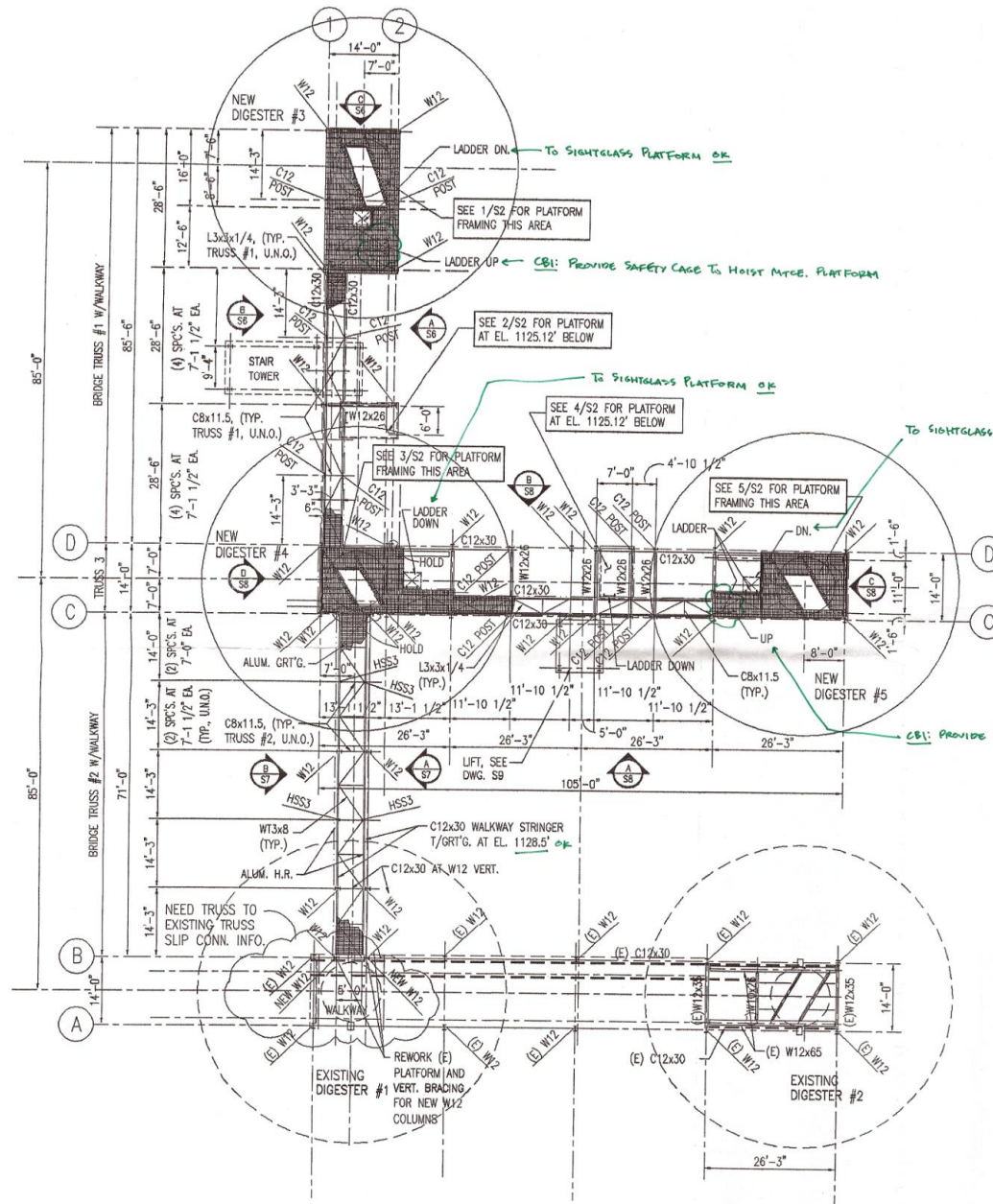
PROJECT NO.: 03249
DRAWING NUMBER: S1
REVISION: 1

SHEET 1 OF 9

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0712-FWHWRC



1 TRUSS BRIDGE WALKWAY PLAN EL. 1128.50' 1/84
 SCALE: 3/32" = 1'-0" NORTH

NO.	REVISIONS	DATE	BY
0	ISSUE FOR REVIEW	11/20/05	JCH
1	ISSUE FOR APPROVAL	11/26/05	JCH

NOTES/LEGEND:

South Carolina Steel Corp.
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 113 E. Worhouse Ct.
 Taylors, SC 29687

MAILING ADDRESS:
 PO Box 71
 Greenville, SC 29602

TELEPHONE/FAX:
 Ph. (864)244-2860
 Fax (864)244-8776

PROJECT
**GWINNETT COUNTY
 DIGESTER
 EXPANSION**

GEORGIA

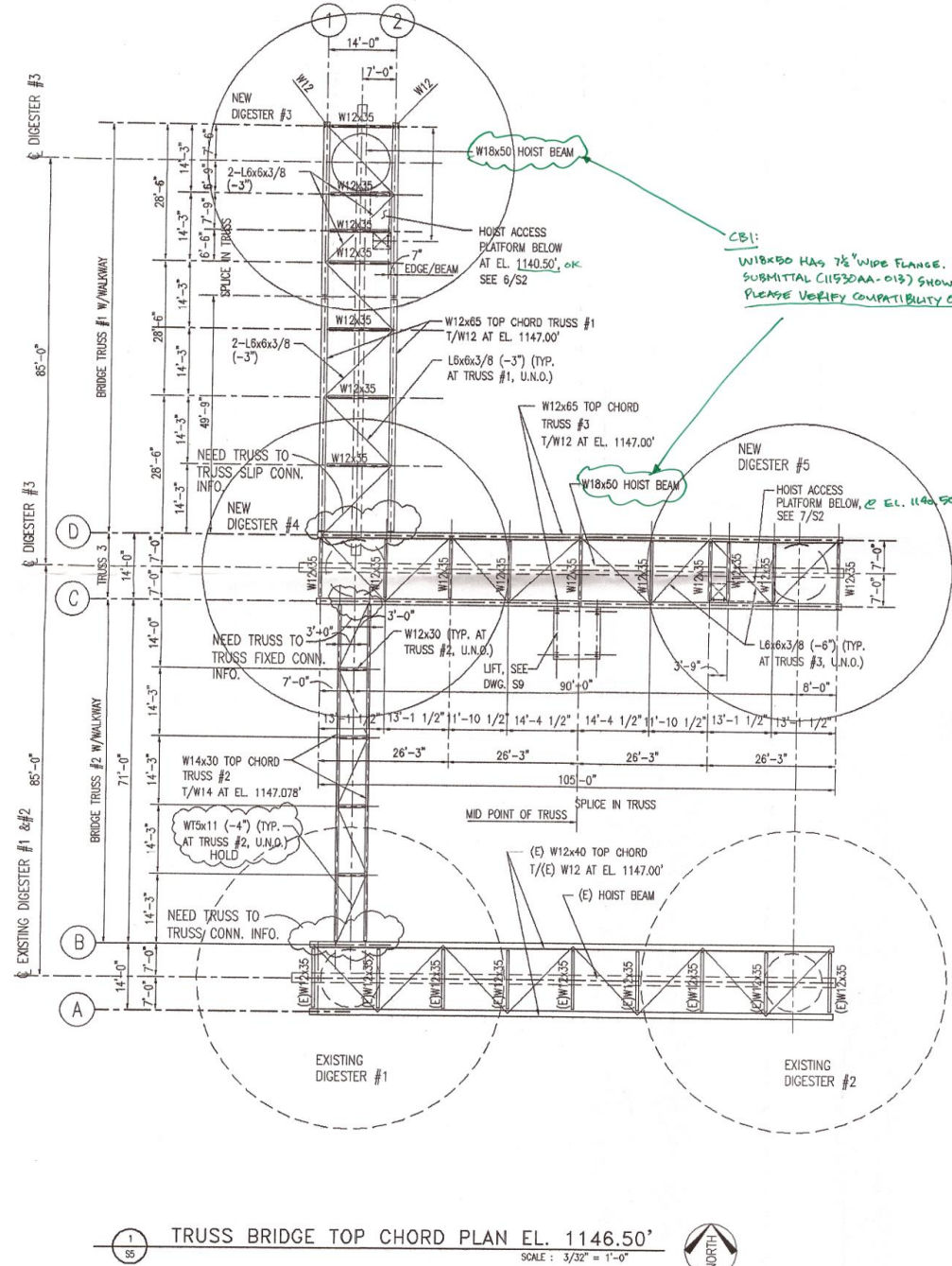
DRAWING TITLE
 TRUSS BRIDGE
 #1, #2, AND #3
 WALKWAY PLAN
 EL. 1128.5'

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DESIGN BY C. WALL	PROJECT NO. 03249
DRAWN BY D. DANN	DRAWING NUMBER S4
CHECKED BY B. CARY	REVISION 1
DATE 8/04/05	SHEET 4 OF 9

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CB1:
 W18x50 HAS 7 1/2" WIDE FLANGE. DWG 23376911 OF HOIST TROLLEY
 SUBMITTAL (1153DAA-013) SHOWS FLANGE CAN BE 4" TO 6 1/2" WIDE.
 PLEASE VERIFY COMPATIBILITY OF TROLLEY.

NO.	REVISIONS	DATE	BY
0	ISSUE FOR REVIEW	9/9/03	JCH
1	ISSUE FOR APPROVAL	8/25/03	JCH

NOTES/LEGEND:

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SCS

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 113 E. Warehouse Ct.
 Taylors, SC 29687

MAILING ADDRESS:
 Po Box 71
 Greenville, SC 29602

TELEPHONE/FAX:
 Ph. (864)244-2860
 Fax (864)244-8776

PROJECT
**GWINNETT COUNTY
 DIGESTER
 EXPANSION**

GEORGIA

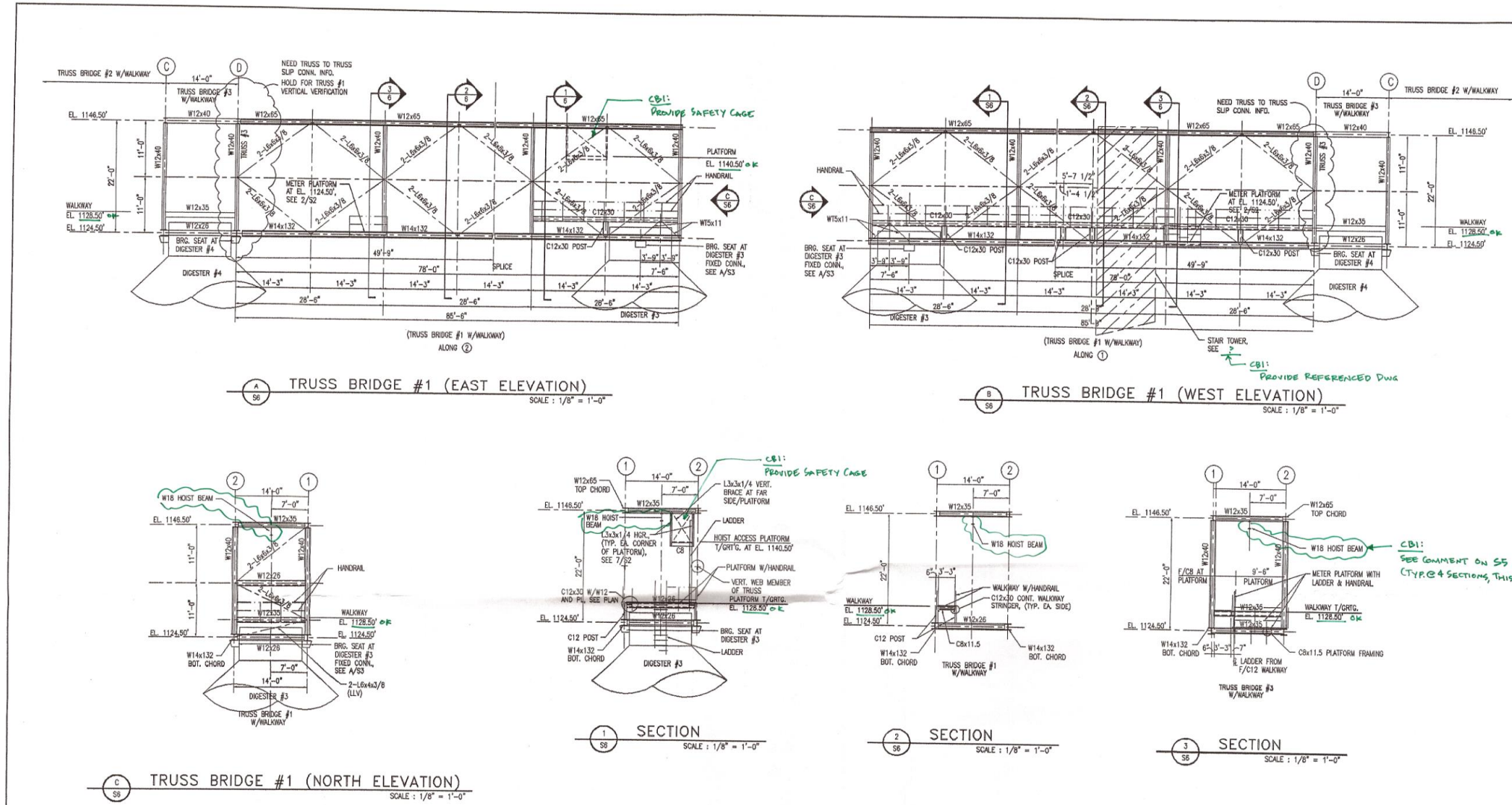
DRAWING TITLE
**TRUSS BRIDGE
 #1, #2, AND #3
 TOP CHORD PLAN
 EL. 1146.5'**

FOR APPROVAL ONLY

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DESIGN BY C. WALL	PROJECT NO. 03249
DRAWN BY D. DANN	DRAWING NUMBER S5
CHECKED BY B. CARY	REVISION 1
DATE MONTH, 03	SHEET 5 OF 9

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NO.	REVISIONS	DATE	BY
0	ISSUE FOR REVIEW	8/24/03	JON
1	ISSUE FOR APPROVAL	8/25/03	JON

NOTES/LEGEND:

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TELEPHONE/FAX:
 Ph. (864)244-2860
 Fax (864)244-8776

MAILING ADDRESS:
 P.O. Box 711 SC 29602
 Greenville, SC

SHIPPING ADDRESS:
 1133 W. Greer Rd. Cl.
 Taylors, SC 29687

PROJECT
**WINNETT COUNTY
 DIGESTER
 EXPANSION**

GEORGIA

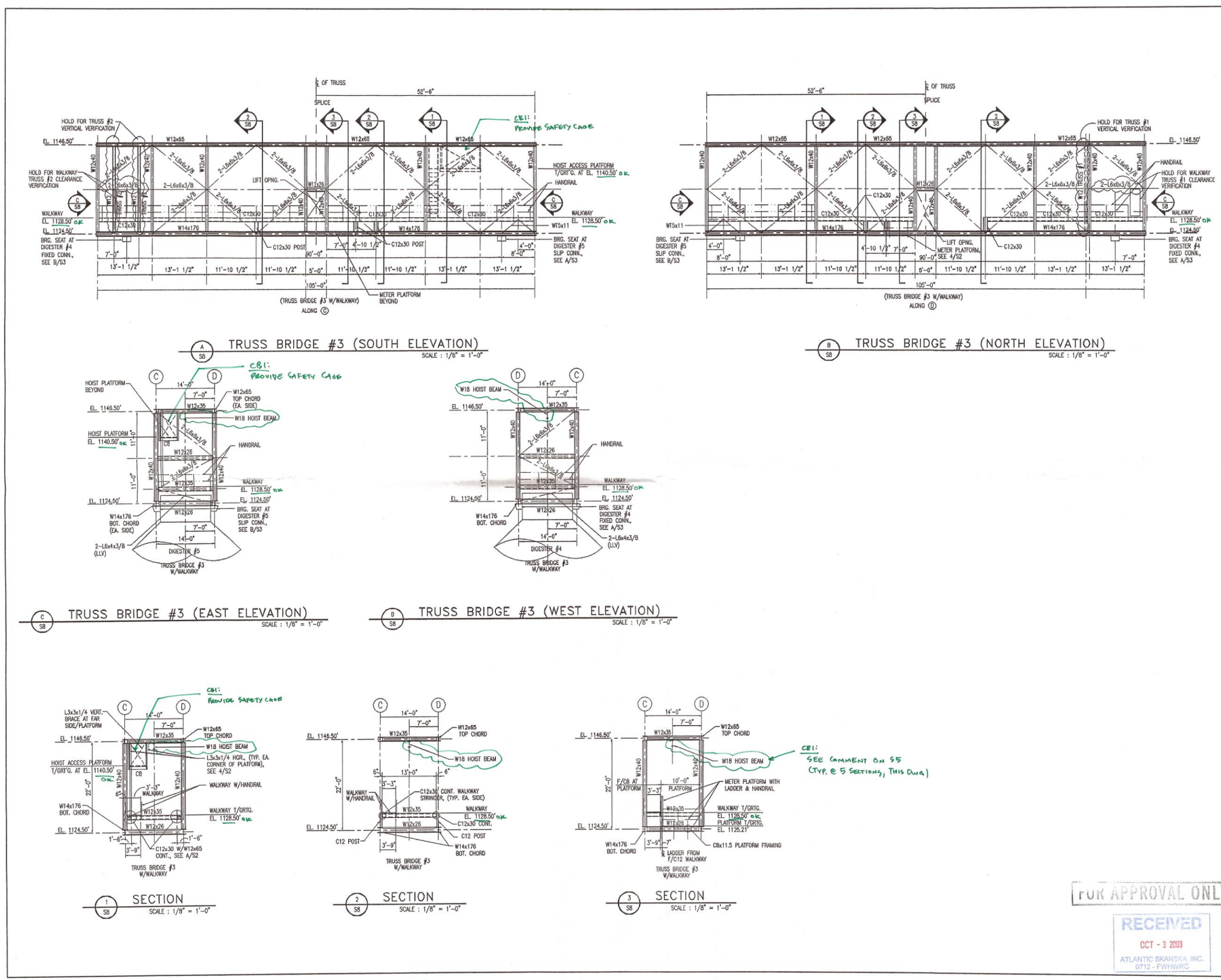
DRAWING TITLE
**TRUSS BRIDGE #1
 ELEVATIONS
 AND SECTIONS**

FOR APPROVAL ONLY

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DESIGN BY C. WALL	PROJECT NO. 03249
DRAWN BY D. DANN	DRAWING NUMBER S6
CHECKED BY B. CARY	REVISION 1
DATE 8/04/03	SHEET 6 OF 9

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NO. REVISIONS

NO.	REVISIONS	DATE	BY
0	ISSUE FOR REVIEW	8/9/03	JCN
1	ISSUE FOR APPROVAL	1/25/03	JCN

NOTES/LEGEND:

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 Taylors, SC 29687

MAILING ADDRESS:
 PO Box 71
 Greenville, SC 29602

TELEPHONE/FAX:
 Ph. (864)244-2860
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PROJECT
GWINNETT COUNTY DIGESTER EXPANSION

GEORGIA

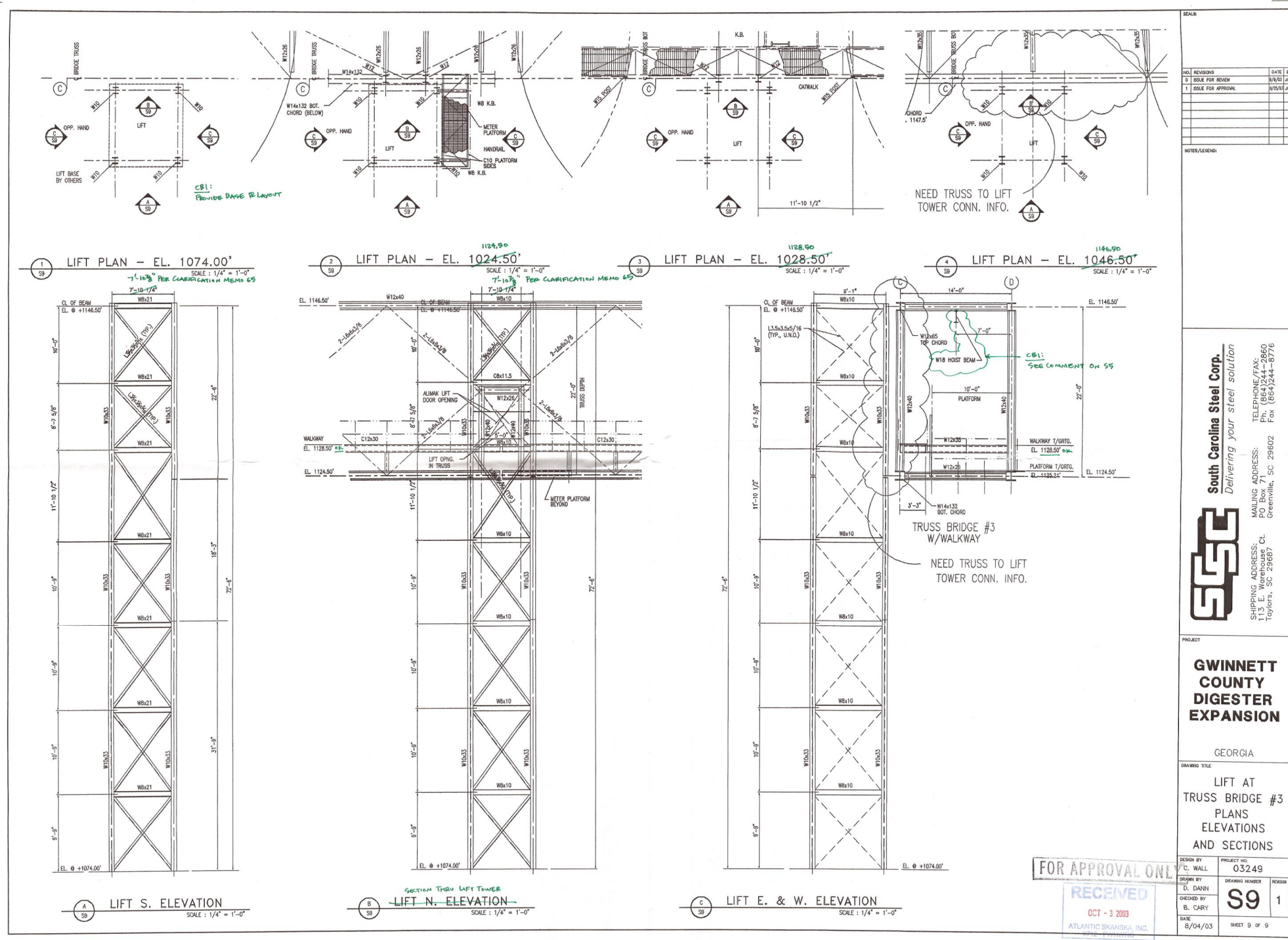
DRAWING TITLE
 TRUSS BRIDGE #3
 ELEVATIONS
 AND SECTIONS

DESIGN BY C. WALL	PROJECT NO. 03249
DRAWN BY D. DANN	DRAWING NUMBER S8
CHECKED BY B. CARY	REVISION 1
DATE 8/04/03	SHEET 8 OF 9

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NO.	REVISIONS	DATE	BY
0	ISSUE FOR REVIEW	8/4/03	JCM
1	ISSUE FOR APPROVAL	8/26/03	JCM

NOTES/LEGEND:

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 Taylors, SC 29687

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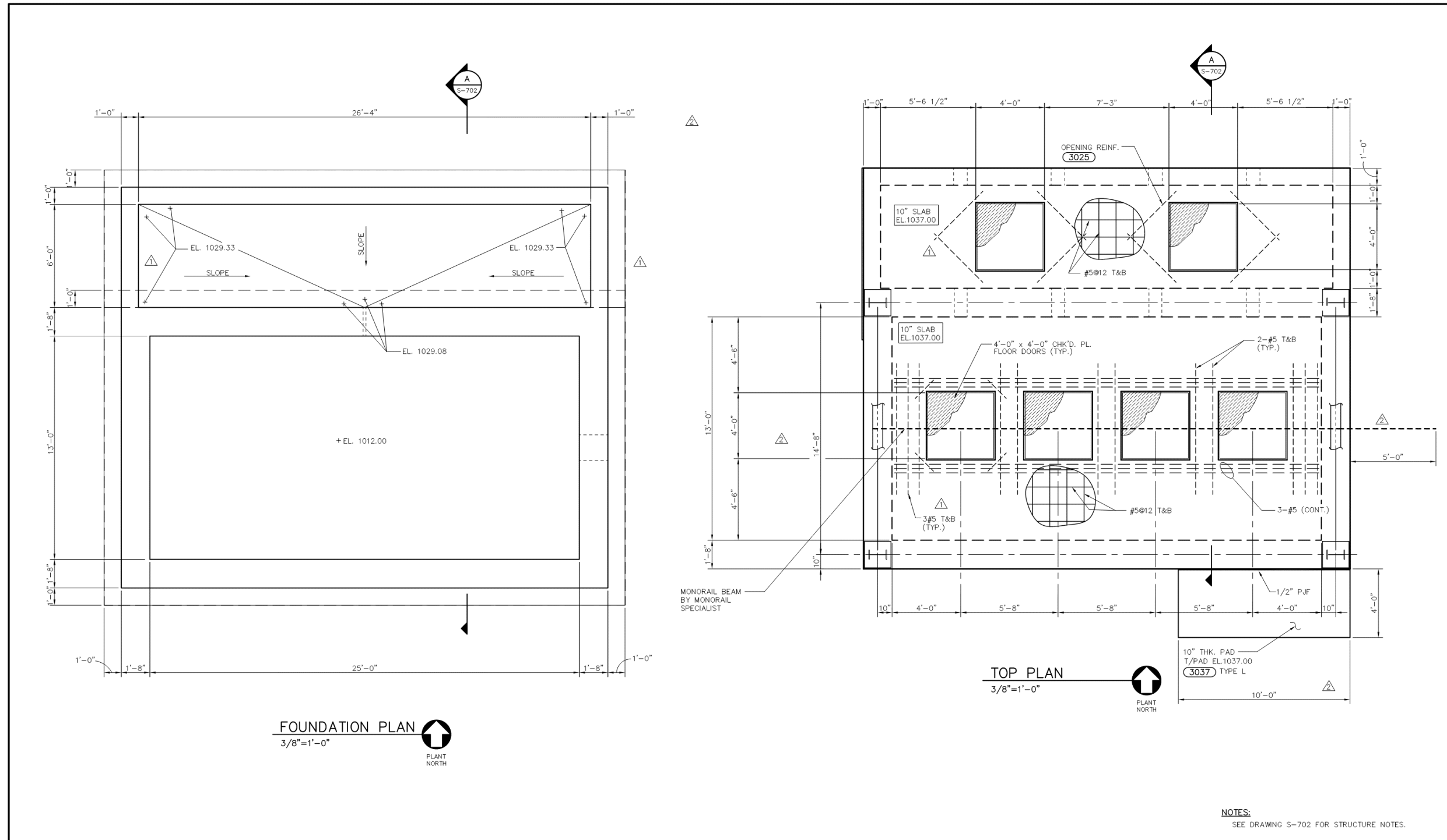
PROJECT
GWINNETT COUNTY DIGESTER EXPANSION

GEORGIA

DRAWING TITLE
 LIFT AT TRUSS BRIDGE #3 PLANS ELEVATIONS AND SECTIONS

DESIGN BY C. WALL	PROJECT NO. 03249
DRAWN BY D. DANN	DRAWING NUMBER S9
CHECKED BY B. CARY	REVISION 1
DATE 8/04/03	SHEET 9 OF 9

RECEIVED
 OCT - 8 2003
 ATLANTIC SKANSKA, INC.
 012-FWHWRC



Jordan, Jones & Goulding CH2M HILL Precision Planning, Inc.		JOB NO. 2074.026 gw2264071s.dwg 08.24.06
NO.	DATE	DESCRIPTION OF REVISION
R	06-07-06	RECORD DRAWINGS
Z	03-20-03	INCORPORATED RFI-143 AND CLM-52
1	04-01-02	AGGENDUM ITEMS INCORPORATED
0	01-03-02	FIRST RELEASE

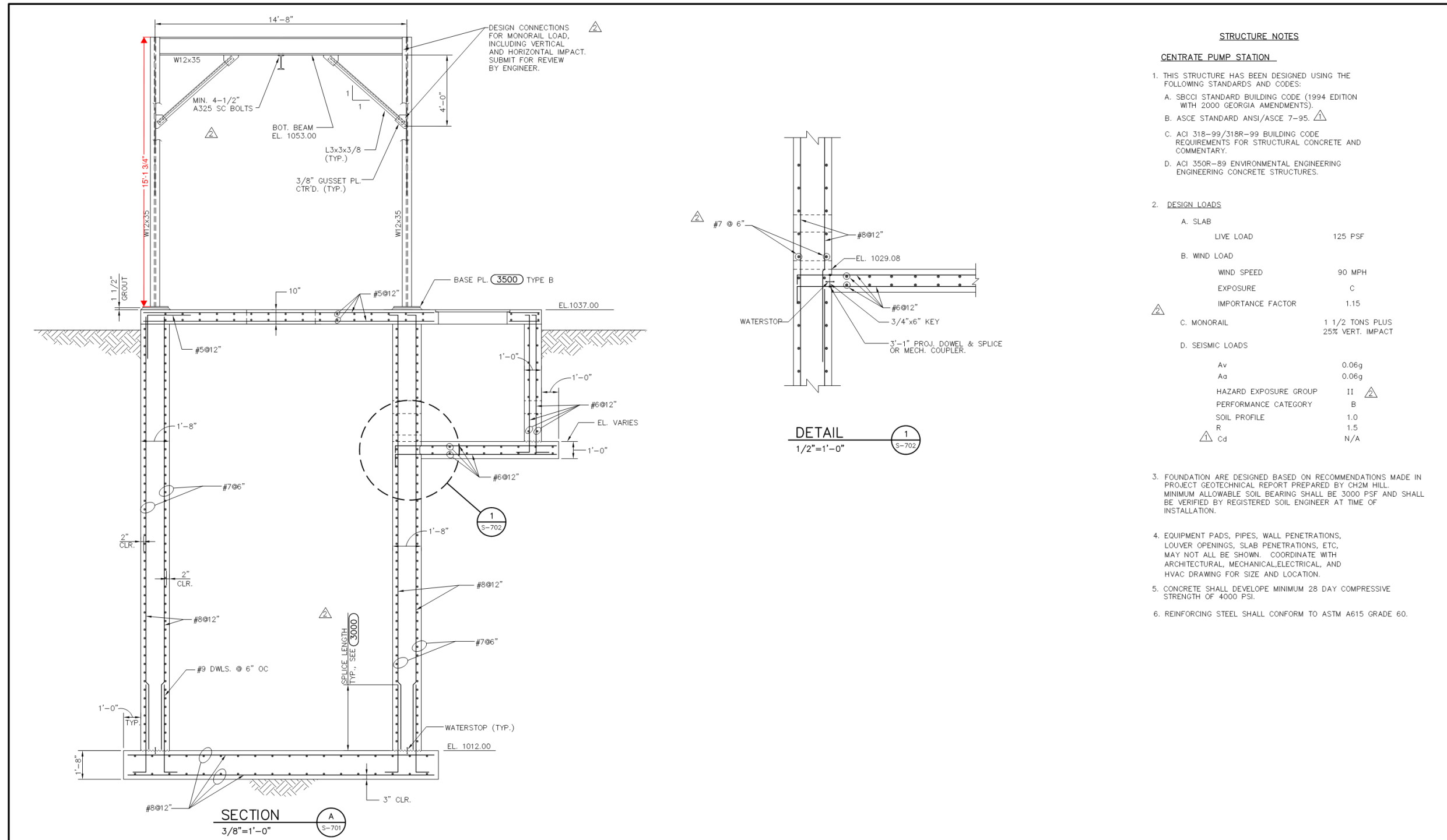


GWINNETT COUNTY, GEORGIA
DEPARTMENT OF PUBLIC UTILITIES
F. WAYNE HILL
WATER RESOURCES CENTER
PHASE 2
3320 FINANCIAL CENTER WAY

RECORD DRAWINGS
 These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

CONTRACT 2 BIOLOGICAL TREATMENT FACILITIES CENTRATE PUMP STATION FOUNDATION PLAN			
DESIGNED: A. LAU	CHECKED:	DATE: JAN 2002	2-40 S-701 R
DRAWN: ASKEW	APP'D.	SCALE: AS SHOWN	DRAWING REV

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE




- STRUCTURE NOTES**
- CENTRATE PUMP STATION**
- THIS STRUCTURE HAS BEEN DESIGNED USING THE FOLLOWING STANDARDS AND CODES:
 - A. SBCCI STANDARD BUILDING CODE (1994 EDITION WITH 2000 GEORGIA AMENDMENTS).
 - B. ASCE STANDARD ANSI/ASCE 7-95.
 - C. ACI 318-99/318R-99 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY.
 - D. ACI 350R-89 ENVIRONMENTAL ENGINEERING ENGINEERING CONCRETE STRUCTURES.
 - DESIGN LOADS**
 - A. SLAB

LIVE LOAD	125 PSF
-----------	---------
 - B. WIND LOAD

WIND SPEED	90 MPH
EXPOSURE	C
IMPORTANCE FACTOR	1.15
 - C. MONORAIL

	1 1/2 TONS PLUS 25% VERT. IMPACT
--	----------------------------------
 - D. SEISMIC LOADS

Av	0.06g
Aa	0.06g
HAZARD EXPOSURE GROUP	II
PERFORMANCE CATEGORY	B
SOIL PROFILE	1.0
R	1.5
Cd	N/A
 - FOUNDATION ARE DESIGNED BASED ON RECOMMENDATIONS MADE IN PROJECT GEOTECHNICAL REPORT PREPARED BY CH2M HILL. MINIMUM ALLOWABLE SOIL BEARING SHALL BE 3000 PSF AND SHALL BE VERIFIED BY REGISTERED SOIL ENGINEER AT TIME OF INSTALLATION.
 - EQUIPMENT PADS, PIPES, WALL PENETRATIONS, LOUVER OPENINGS, SLAB PENETRATIONS, ETC. MAY NOT ALL BE SHOWN. COORDINATE WITH ARCHITECTURAL, MECHANICAL/ELECTRICAL, AND HVAC DRAWING FOR SIZE AND LOCATION.
 - CONCRETE SHALL DEVELOPE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.
 - REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.

<p>Jordan, Jones & Goulding CH2M HILL Precision Planning, Inc.</p>	 <p>GWINNETT COUNTY, GEORGIA DEPARTMENT OF PUBLIC UTILITIES F. WAYNE HILL WATER RESOURCES CENTER PHASE 2 3320 FINANCIAL CENTER WAY</p>	<p>RECORD DRAWINGS</p> <p>These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.</p>	<p>CONTRACT 2 BIOLOGICAL TREATMENT FACILITIES</p> <p>CENTRATE PUMP STATION SECTIONS AND DETAILS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DESIGNED: A. LAU</td> <td>CHECKED:</td> <td>DATE: JAN 2002</td> <td>2-40</td> <td>S-702</td> <td>R</td> </tr> <tr> <td>DRAWN: ASKEW</td> <td>APP'D:</td> <td>SCALE: AS SHOWN</td> <td>DRAWING</td> <td></td> <td>REV</td> </tr> </table>	DESIGNED: A. LAU	CHECKED:	DATE: JAN 2002	2-40	S-702	R	DRAWN: ASKEW	APP'D:	SCALE: AS SHOWN	DRAWING		REV
DESIGNED: A. LAU	CHECKED:	DATE: JAN 2002	2-40	S-702	R										
DRAWN: ASKEW	APP'D:	SCALE: AS SHOWN	DRAWING		REV										

RECORD#3

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

Attachment B: Additional Photos



Bridge truss, crane elements and walkways #1 and #3



Stair tower at bridge truss walkway #1



End of bridge truss, crane elements and walkway #1



Bridge truss, crane elements and walkway #3



Bridge truss, crane elements and walkways #2 and #4



Stair tower at bridge truss and walkway #4



Bridge truss, crane elements and walkway #3



Bridge truss, crane elements and walkway #4



Typical hoist access platform



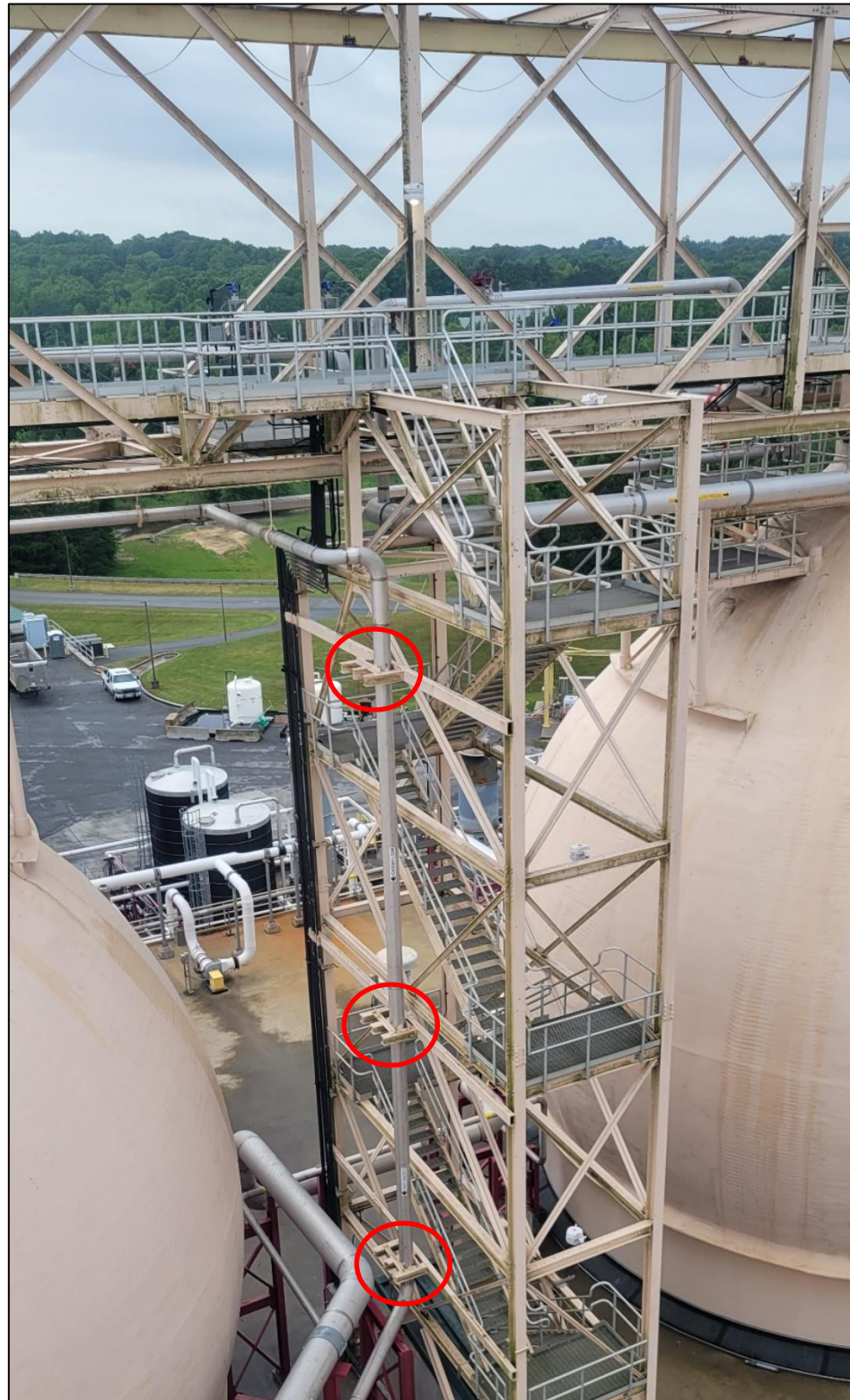
Intermediate platforms typical to Digesters #1 and #2



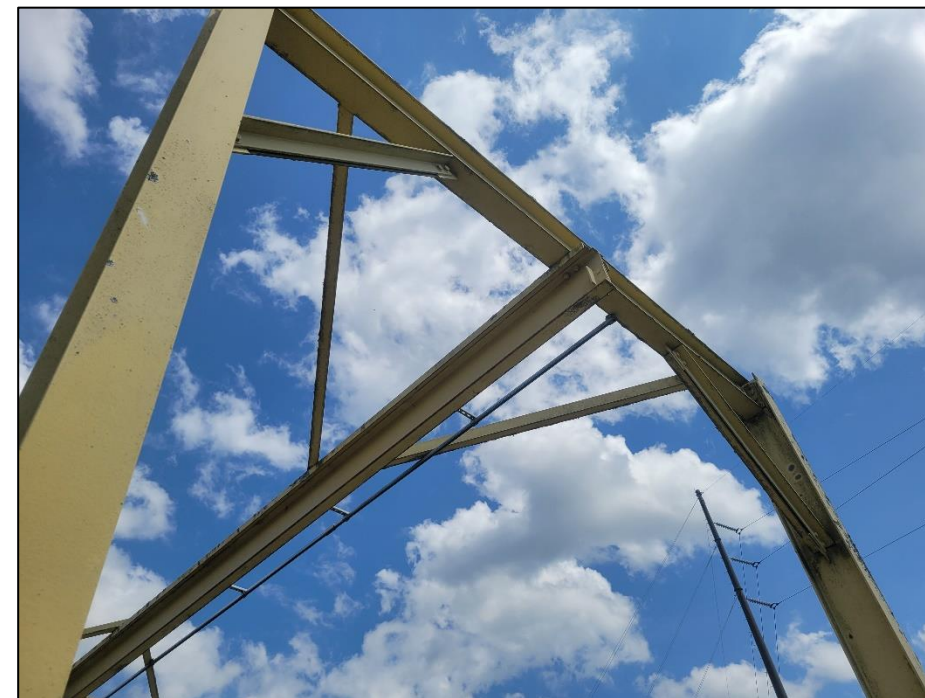
Bridge truss and walkway #2



Bridge truss, crane elements and walkway #1



NOTE: Elevator and stair towers include coated pipe support metals to be included in the recoating scope. Also, miscellaneous pipe hangers that are already coated shall also be recoated.



Additional views of the Centrate Pump Station Crane

Attachment C: GCDWR Division-9 Coatings Specification (Rev 8)

TECHNICAL SPECIFICATIONS

DIVISION 9—FINISHES

09 90 00 COATINGS

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SECTION 09 90 00
COATINGS

PART 1 GENERAL

1.01 SCOPE

- A. This section specifies for all Owner assets within the scope of this Project, the Work and materials associated with the following:
1. Provision of shop primed or shop primed and coated materials.
 2. Field assessment and repair of shop applied coatings and finishes by others.
 3. Field application of primers, coatings and finishes.
 4. Surface preparation.
 5. Quality Control services, testing and inspections.
 6. Coating System Manufacturer (CSM) services.
 7. Coating System Applicator (CSA) qualifications.
 8. Submittals.
 9. Coating systems.
- B. This section requires testing for, removing, containing, collecting and disposing of lead or other dangerous metals in existing paints, primers, in accordance with these Documents. Regardless of these Specifications, it is the responsibility of the Contractor to follow all relevant federal, state and local statutes regarding the handling and disposal of the all project related hazardous waste.
- C. Surface preparation, priming and the costs of specified coating and necessary materials and incidentals are considered part of this Work and are in addition to shop priming and surface pretreatment specified in other sections, unless otherwise indicated or supplied under this Contract.
- D. The costs associated with obtaining, scheduling and providing all required manufacturer's services and services of others related to Work provided under this contract, are to be included in the bid. No related additional costs will be allowed.
- E. Paint all items and surfaces using the appropriate coating system as specified or reasonably inferred herein, except where the surface is specifically noted not to be painted. Coating systems and finish schedules specified or as directed by the Engineer will generally identify the Work. Where these systems or schedules do not necessarily provide sufficient information, or cover all items to be painted, or where the selection of a specific coating system or material for a particular application is not clear, it is the responsibility of the Contractor to request clarification from the Engineer in writing, prior to proceeding with work.

- F. The Contractor shall perform all Work in strict accordance with manufacturer's published recommendations and instructions, and the standards referenced in this section, unless the Engineer determines that approved deviations will be for the benefit of the project. The more stringent of all requirements shall apply unless otherwise directed by the Engineer. Procuring any materials or implementing any procedures related to changes in the coating system requirements prior to receiving written approval is prohibited.
- G. Only personnel who are trained and qualified by the Coating System Manufacturer (CSM) and its respective Coating System Manufacturer's Technical Representative(s) (CTR), and accepted by the Engineer, specifically for this contract shall be allowed to perform the coating system installation specified in this section. Full time supervision by a CSM/CTR qualified person ("responsible party") shall be provided by the Contractor and shall be onsite at all times when work is underway. This person shall be the authorized party, fully and directly responsible for all aspects of the Contractor's quality control and shall monitor and inspect all aspects and phases of the Work continuously to ensure that the coating system is installed as specified.
- H. Materials control, handling, storage, surface preparation and all phases of coating system application, monitoring and testing that does not fully conform in all aspects to the Specifications and manufacturer's recommendations, or is otherwise determined not to be acceptable shall be corrected as specified. In all situations, the more stringent requirements shall apply.
- I. All work shall be done in strict accordance with all relevant federal, state and local statutes regarding safety and environment.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. The following contains a list of references and standards which may be referenced in the following documents. They are a part of this section as specified and modified and are considered to be required where applicable whether specifically called out or not. Where a referenced document contains references to other standards, those documents are deemed to be included as references under this section as if referenced directly. In the event of a conflict between the requirements of this section and those of the listed documents, the more stringent requirements shall prevail.
- B. Unless otherwise specified, references to documents shall mean the documents in effect at the time of the Advertisement for Bids or the Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.

Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued, or replaced.

1. ANSI (American National Standards Institute):
 - a. Z9.4, Exhaust Systems - Abrasive Blasting Operations - Ventilation and Safe Practices.
 - b. ANSI/NSF 61, Drinking Water System Components Health Effects.
 - c. ANSI/NSF 372, Drinking Water System Components – Lead Content.
 - d. B74.18, Grading of Certain Abrasive Grain on Coated Abrasive Products.
2. ASTM (American Society for Testing and Materials):
 - a. B117, Standard Practice for Operating Salt Spray (Fog) Apparatus.
 - b. D16, Standard Terminology for Paint, Related Coatings, Materials, and Applications.
 - c. D522, Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings.
 - d. D1640, Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature.
 - e. D2200 (SSPC-VIS1), Standard Practice for Use of Pictorial Surface Preparation Standards and Guides for Painting Steel Surfaces.
 - f. D3359, Standard Test Methods for Rating Adhesion by Tape Test.
 - g. D3960, Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
 - h. D4060, Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
 - i. D4138), Standard Practices for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive, Cross-Sectioning Means.
 - j. D4262, Standard Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces.
 - k. D4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 - l. D4414, Standard Practice for Measurement of Wet Film Thickness by Notch Gages.
 - m. D4417, Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel.
 - n. D4541, Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
 - o. D4787, Standard Practice for Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates.

- p. D5064, Standard Practice for Conducting a Patch Test to Assess Coating Compatibility.
 - q. D5162, Standard Practice for Discontinuity (Holiday) Testing of Nonconductive Protective Coating on Metallic Substrates.
 - r. D6132, Standard Test Method for Nondestructive Measurement of Dry Film Thickness of Applied Organic Coatings Using an Ultrasonic Coating Thickness Gage.
 - s. D7091, Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals.
 - t. D7127, Standard Test Method for Measurement of Surface Roughness of Abrasive Blast Cleaned Metal Surfaces Using a Portable Stylus Instrument.
 - u. D7234, Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers.
 - v. E337, Standard Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures).
 - w. E1216, Standard Practice for Sampling for Particulate Contamination by Tape Lift.
 - x. F1869, Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
3. AWWA (American Water Works Association):
- a. C116, Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings.
 - b. C203, Standard for Coal-Tar Protective Coatings and Linings for Steel Water Pipelines - Enamel and Tape - Hot Applied.
 - c. C209, Cold-Applied Tape Coatings for Steel Water Pipe, Special Sections, Connections, and Fittings.
 - d. C210, Liquid-Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines.
 - e. C213, Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines.
 - f. C214, Tape Coatings for Steel Water Pipe.
 - g. D102, Coating Steel Water Storage Tanks.
 - h. D610, Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces.
4. Federal Standards: FS 595 C Federal Standard Colors.
5. ICRI (International Concrete Repair Institute):
- a. ICRI Guideline No. 310.1R, Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion.
 - b. ICRI 310.2R-2013 Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair.

6. NACE (National Association of Corrosion Engineers):
 - a. Publication 6D-163 A Manual for Painter Safety.
 - b. Publication 6F-163 Surface Preparation of Steel or Concrete Tank/Interiors.
 - c. Publication 6G-164 A Surface Preparation Abrasives for Industrial Maintenance Painting.
 - d. Publication 6G-168 Surface Preparation of Soluble Salt Contaminated Steel Substrates Prior to Coating.
 - e. Standard SP0178 Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service (Appendix C, Designation C).
 - f. Standard SP0188 Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates.
 - g. Standard SP0287, Field Measurement of Surface Profile of Abrasive Blast-Cleaned Steel Surfaces Using a Replica Tape.
 - h. Standard SP0288 Standard Recommended Practice, Inspection of Linings on Steel and Concrete.
 - i. Standard SP0892 Coatings and Linings over Concrete for Chemical Immersion and Containment Service.
 - j. Publication TPC2 Coatings and Linings for Immersion Service.
7. NAF (National Association of Pipe Fabricators):
 - a. 500-03 Surface Preparation Standard for Ductile Iron Pipe and Cast Ductile Iron Fittings in Exposed Locations Receiving Special External Coatings and/or Special Internal Linings.
 - b. 500-03-01 Solvent Cleaning.
 - c. 500-03-02 Hand Tool Cleaning.
 - d. 500-03-03 Power Tool Cleaning.
 - e. 500-03-04 Abrasive Blast Cleaning for Ductile Iron Pipe.
 - f. 500-03-05 Abrasive Blast Cleaning for Cast Ductile Iron *Fittings*.
8. OSHA (Occupational Safety and Health Administration):
 - a. 1910.144 Safety Color Code for Marking Physical Hazards.
 - b. 1915.35 Standards – 29 CFR – Painting.
9. SSPC (Society for Protective Coatings):
 - a. AB 1 Mineral and Slag Abrasives.
 - b. PA 1 Shop, Field, and Maintenance Painting of Steel.
 - c. PA 2 Procedure for Determining Conformance to Coating Dry Film Thickness Requirements.
 - d. PA 3 Guide to Safety in Paint Applications.
 - e. PA 9 Measurement of Dry Coating Thickness Using Ultrasonic Gages.
 - f. PA Guide 10 Guide to Safety and Health Requirements for Industrial Painting Projects.
 - g. PA Guide 11 Protecting Edges, Crevices, and Irregular Steel Surfaces by Stripe Coating.
 - h. SP1 Solvent Cleaning.
 - i. SP2 Hand Tool Cleaning.
 - j. SP 3 Power Tool Cleaning.

- k. SP5 NACE 1 White Metal Blast Cleaning.
 - l. SP6 / NACE 3 Commercial Blast Cleaning.
 - m. SP7 / NACE 4 Brush-Off Blast Cleaning.
 - n. SP10 / NACE 2 Near-White Blast Cleaning.
 - o. SP11 Power Tool Cleaning to Bare Metal.
 - p. SSPC-SP WJ-4/NACE WJ-4, Waterjet Cleaning of Metals – Light Cleaning
 - q. SP13 / NACE 6 Surface Preparation of Concrete.
 - r. SP14 / NACE 8 Industrial Blast Cleaning.
 - s. S16 Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals.
 - t. AB 1, Mineral and Slag Abrasives.
 - u. AB2 Cleanliness of Recycled Ferrous Metallic Abrasives.
 - v. AB3 Ferrous Metallic Abrasive.
 - w. SSPC Guide 6 Guide for Containing Surface Preparation Debris Generated During Paint Removal Operations.
 - x. SSPC-Guide 12 (Revised) Illumination of Industrial Coatings Projects.
 - y. SSPC Guide 15 Field Methods for Extraction and Analysis of Soluble Salts on Steel and Other Nonporous Substrates.
 - z. SSPC TR 2/NACE 6G198 Wet Abrasive Blast Cleaning.
 - aa. SSPC TR 3/NACE 6A192 Dehumidification and Temperature Control During Surface Preparation, Application, and Curing for Coatings/Linings of Steel Tanks, Vessels, and Other Enclosed Spaces.
 - bb. TU-3 Overcoating.
 - cc. V1 Systems and Specifications: Steel Structures Painting Manual Volume 1.
 - dd. V2 Systems and Specifications: Steel Structures Painting Manual Volume 2.
 - ee. SSPC-VIS 1 Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning.
 - ff. VIS 3 Visual Standard: Guide and Reference Photographs for Steel Surfaces Prepared by Hand and Power Tool Cleaning.
 - gg. VIS 4-NACE VIS 7 Guide and Reference Photographs for Steel Surfaces Prepared by Water Jetting.
 - hh. VIS 5/NACE VIS 9 Visual Standard: Guide and Reference Photographs for Steel Surfaces Prepared by Wet Abrasive Blast Cleaning.
10. WPCF (Water Pollution Control Federation):
- a. WPCF Manual of Practice No. 17 Paints and Protective Coatings for Wastewater Treatment Facilities. Guide and Paint Application Specifications.

1.03 DEFINITIONS AND ABBREVIATIONS

- A. The following contains a list of specific coating terminology/definitions as used or intended in this section.

B. Terminology/Definitions:

1. Abrasive Blasting Media: Material used for blast cleaning, such as sand, grit, shot, shell, or other approved media.
2. Abrasive Blast Cleaning: Cleaning/surface preparation by abrasive propelled at high speed.
3. Anchor Pattern or Anchor Profile: Profile or texture of prepared surface(s).
4. Spent Blast Media: The debris left as a result of surface preparation to existing surfaces, including the existing paint that was removed, the abrasive, dust and any substrate material that was removed as a result of the abrasive blast cleaning.
5. Bug Holes: Small cavities, resulting from the entrapment of air bubbles in the surface of formed concrete during placement and compaction.
6. Catalyzation (Induction period or Sweat-in period): The period of time that is necessary to initiate a chemical reaction between mixed components.
7. Cleanliness: Required degree of particulate removal as determined by ASTM E1216 - 11(2016) Standard Practice for Sampling for Particulate Contamination by Tape Lift (Practice A).
8. Coating /Paint is defined as both paints and coatings including emulsions, enamels, stains, varnishes, sealers, epoxies, polyurethanes, acrylics and other coatings whether organic or inorganic and whether used as prime, intermediate, or finish coats.
9. Coating/Paint/Lining Thickness: The total thickness of the primer, intermediate and/or finish coats.
10. Coating System: A complete system or requirement of the number of coatings and types to be applied to a substrate in accordance with the specifications or procedures.
11. Coating System Applicator (CSA): A generic reference to the specialty subcontractor or subcontractors retained by the Contractor to install the coating systems specified in this section.
12. Coating System Manufacturer (CSM): Refers to the acceptable coating system manufacturer.
13. Coating System Manufacturer's Technical Representative(s) (CTR): Refers to the technical representative(s) of the acceptable Coating System Manufacturer.
14. Concrete Surface Profile (CSP): As defined by the International Concrete Repair Institute.
15. Corrosive: A condition in which an area or item is subject to chemical vapors, chemical liquids, corrosive concentrations of corrosive gases or acids. Areas specifically identified as "corrosive" in the Specifications.
16. Coverage: Total minimum dry film thickness in mils or square feet per gallon.
17. Defects: An unacceptable condition in a coating or the completed coating system film that includes but is not limited to holidays, pinholes, bond failures, lifting, flaking, insufficient milage, failures to cure,

blushing, runs, sags, laps, wrinkles, skips, chalking, cratering, blistering, dry-spray, discoloration, staining, orange peeling or any other condition defined by this Section or industry standards as a “coating defect”.

18. Dew point: Temperature of a given air/water vapor mixture at which condensation starts.
19. Discontinuity: An irregularity, break, lack of cohesion or lack of continuity.
20. Dry Film Thickness (DFT): Depth of cured film, usually expressed in mils (0.001 inch).
21. Drying Time: Time interval between the application and the curing of the material.
22. Dry to Recoat: Time interval between the application of the material and its ability to receive the next coat.
23. Dry to Touch: Time interval between the application of the material and its ability to be touched lightly without damage.
24. Dry to Handle: Time coating application has hardened such that the coated surface or film does not show any unwanted marks, detachment, loosening, wrinkling or other forms of distortion when subjected to tests as specified in ASTM D1640.
25. Exposure: Term refers to the environmental conditions to which different surfaces may be exposed.
26. Fabrication and/or surface finish defects: Conditions defined in NACE Standard SP0178 and NACE Publication TPC2, as unacceptable or not recommended for optimum coating performance. These could include but are not limited to dents, slivers, sharp edges or corners, intermittent welds, etc. (See Weld Splatter and Weld Profile or Contour Defects for additional information).
27. Feather Edging: Reducing the thickness of the edge of the paint.
28. Feathering: Tapering off the edge of a point with a comparatively dry brush.
29. Field Coat: The application or the completion of the application of any portion of the coating system after preparation of the surface at the site of the work.
30. Hold Point: A defined point, specified in this Section, at which work shall be halted for Engineer-observed inspections conducted by the Contractor and other required personnel.
31. Holiday: A discontinuity, skip, void or area of damage in a coating or the completed coating system film that exposes the substrate, or a defect such as an area of insufficient coating film thickness or some similar defective condition.
32. Honeycomb: A segregated condition in hardened concrete due to poor placement or consolidation techniques.
33. Immersed: Surfaces located below a plane 1 foot above maximum liquid surface, or metal surfaces above maximum liquid surface but are a part of immersed equipment. (See Water Immersion for further information. The more stringent requirements shall apply).

34. Incompatibility: Inability of a coating to perform well over another coating due to differences in generic types, differences in formulation or condition of in-place coating resulting in bleeding, poor bonding or lifting of the old coating; inability of a coating to perform well on a substrate as determined by ASTM D5064 and conducted by Contractor, when directed by Engineer.
35. Laitance: A layer of weak, non-durable concrete containing cement fines that is brought to the surface through bleed water because of concrete finishing and/or over-finishing.
36. Mil: 0.001 inch (thousandth of an inch).
37. Overspray: Paint that failed to strike the intended surface.
38. Pinhole: A discontinuity in a coating or coating system film that is typically due to the entrapment of moisture, solvents or other fluids, or by outgassing of air from a void in a concrete substrate, resulting in exposure of the substrate or a void between coats.
39. Pot Life: The length of time in which multiple component coatings or paints can be satisfactorily and properly applied to a surface, beginning after the proper mixing and catalyzation of the components have occurred, and prior to the expiration period of the materials as defined by the CSM's published data.
40. Recoat window: The period beginning at the point at which the coating film has cured enough to be topcoated, and will still allow for a chemical bond, up to the point at which the coating film has hardened in a way that additional coating cannot chemically adhere sufficiently.
41. Resurfacer/Resurfacing Material: A layer of cementitious and/or resin-based material used to fill or otherwise restore surface continuity to worn, damaged or an otherwise unacceptable concrete surface.
42. Shelf Life: The maximum period of time for which an unopened material may be properly stored without losing its usefulness. (CSM's published shelf life for unopened materials will not apply to opened materials and shall be determined by the CSM or Engineer, whichever is more stringent.)
43. Shop Coat: One or more coats applied in a shop or plant prior to shipment to the site of the work, where the field or finishing coat is applied.
44. Spreading Rate: Area covered by a unit volume of paint at a specific thickness.
45. Stripe Coat: A separate and extra coat of paint applied to edges, welds, fasteners, threads, pits, nuts/bolts/washers and all other irregular areas prior to applying the specified full coat, for the purpose of providing the areas with sufficient film build-up to aid in added protection against corrosion. Following the application of the stripe coat, but within the recoat window, the stripe coat shall be allowed to reach a "dry to touch" condition before the full coat system is applied.
46. Surface Saturated Dry (SSD): Refers to a concrete surface condition caused by the concrete surface being saturated through thorough and constant wetting, sufficient to bring the concrete to a point where

surface adsorption can no longer take place without the presence of standing water.

47. Tie Coat: An intermediate coat used to bond different types of paint coats; coatings used to improve the adhesion of a succeeding coat.
48. Touchup Painting: The application of paint to previously painted areas and surfaces that have deteriorated or are defective, or has been damaged, marked or scratched, for the purpose of repairing and restoring the coating film to an unbroken and acceptable condition.
49. Volatile Organic Compound (VOC) Content: The portion of the coating or thinner that is a compound of carbon, is photochemically reactive, has a high vapor pressure and low boiling point and evaporates during drying or curing, expressed in grams per liter (g/l) or pounds per gallon (lb/gal).
50. Water Immersion: An exposure condition in which the coating is in direct contact with water, such as a tank lining coating, wet well, filter bed, etc. (See Immersed for further information. The more stringent requirements shall apply).
51. Weld Splatter: Beads of metal scattered near the seam during welding.
52. Weld Profile or Contour Defects: Weld surface irregularities, protruding welding wire or remaining slag that may prohibit proper performance of the coating system or cause holidays.
53. Wet Film Thickness (WFT): The primer or coating film's thickness immediately following application. Wet film thickness is measured in mils or thousandths of an inch (0.001 inch).

C. Abbreviations:

1. ANSI: American National Standards Institute.
2. ASTM: American Society for Testing and Materials.
3. AWWA: American Water Works Association).
4. CDS: Coating Data Sheet.
5. CSM: Coating System Manufacturer.
6. CSA: Coating System Applicator.
7. CSP: Concrete Surface Profile (CSP).
8. CTR: Coating System Manufacturer's Technical Representative(s).
9. DFT: Dry Film Thickness.
10. FS: Federal Standards.
11. FRP: Fiberglass Reinforced Plastic.
12. HCl: Hydrochloric Acid.
13. ICRI: International Concrete Repair Institute.
14. MDFT: Minimum Dry Film Thickness, mils.
15. MDFTPC: Minimum Dry Film Thickness per Coat, mils.
16. Mil: 0.001 inch (thousandth of an inch).
17. NACE: National Association of Corrosion Engineers.
18. NAPF (National Association of Pipe Fabricators).
19. OSHA: Occupational Safety and Health Administration.
20. PDS: Product Data Sheet.

21. PSDS: Paint System Data Sheet.
22. PVC: Polyvinyl Chloride.
23. SFPG: Square Feet per Gallon.
24. SFPGPC: Square Feet per Gallon per Coat.
25. SP: Surface Preparation.
26. SSPC: The Society for Protective Coatings.
27. SSD: Surface Saturated Dry.
28. TPC: NACE Technical Practice Committee.
29. VOC: Volatile Organic Compound.
30. WFT: Wet Film Thickness.
31. WPCF: Water Pollution Control Federation.

1.04 SUBMITTALS

A. General:

1. Provide a copy of this Specification section, with addendum updates included, and referenced and applicable sections, with addendum updates included, with each paragraph check-marked () to indicate specification compliance or marked to indicate requested deviations from specification requirements or those parts which are to be provided by the Contractor or others. Check marks () shall denote full compliance with a paragraph as a whole.
2. If deviations from the Specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Contractor shall provide on the submittal cover sheet, clear indication that a deviation is being proposed, and shall indicate which part(s) of the submittal are impacted. Failure to provide this clear indication will automatically result in reason for rejection of the proposed deviation. The Owner shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined shall signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up Specification sections, along with justification(s) for requested deviations to the Specification requirements shall be cause for rejection of the entire submittal and no further submittal material will be reviewed.
3. The Engineer reserves the right to require at no additional cost to the Owner, any information for review and approval regarding any material, process, method, schedule or other element or aspect of the Work not listed below, but deemed necessary. Provision of this information is to be immediately provided.

B. Action Submittals:

1. Shop Drawings:

- a. For each paint system, furnish a completed PSDS including, but not limited to:
- 1) Paint System Number (from Specification).
 - 2) Paint System Title (from Specification).
 - 3) CSM and contact information.
 - 4) Representative CTR, representative's NACE CIP Level 3 Peer Review certification number and contact information.
 - 5) Surface Preparation (per Specification).
 - 6) Paint Material Generic Name (separately list for all components of the system including primer, intermediate coats, and finish coats).
 - 7) Product Name/Number (separately list for all components of the system including primer, intermediate coats, and finish coats).
 - 8) (Proprietary) Min. Coats, Coverage (separately list for all components of the system including primer, intermediate coats, and finish coats).
- b. For each product, furnish a completed PDS, the manufacturer's technical data sheets, and paint colors available (where applicable). CSM's current printed recommendations and PDS for coating systems including, but not be limited to:
- 1) Generic name of coating material.
 - 2) VOC data.
 - 3) Percent solids content.
 - 4) Special uses and use limitations.
 - 5) Technical and performance data including but limited to impact, abrasion, adhesion, etc.
 - 6) Surface preparation recommendations.
 - 7) Primer type, where required.
 - 8) Maximum dry and wet-mil thickness per coat.
 - 9) Theoretical coverage.
 - 10) Minimum and maximum curing time between coats, including atmospheric conditions for each.
 - 11) Curing time "to touch", to handle", "to place in service" and "to submerge or immerse".
 - 12) List of cleaning and thinner solutions allowed for use with each coating.
 - 13) Mixing requirements and required induction time.
 - 14) Pot life.
 - 15) Ventilation requirements.
 - 16) Minimum/Maximum atmospheric conditions during which the surface shall be prepared and paint shall be applied.
 - 17) Allowable application methods and requirements.
 - 18) Maximum allowable moisture content of substrate.
 - 19) Maximum shelf life.
 - 20) Storage requirements including temperature, humidity and ventilation.

2. System Application Schedule: Provide a schedule of all items (structures, equipment, pipes, etc.) to be painted prior to the start of work. The schedule shall include detailed list of items to be painted, surface preparation to be performed, the coating system to be applied and the colors for each system as approved by the Owner.
3. Manufacturer Warranty: Submit, prior to the start of Work, a complete written description of the warranty to be provided.
4. Material Samples to be Provided:
 - a. A minimum 5-pound sample for each type of proposed abrasive blasting media be used.
 - b. Samples of spent blasting media taken and preserved for testing.
 - c. A minimum 5-pound sample of non-slip media to be used showing size, color and consistency.

C. Informational Submittals:

1. Qualifications:
 - a. CSM to provide documentation stating that the CSA is fully qualified to apply each coating system, see paragraph 1.05 Quality Assurance.
 - b. Both Contractor and the CSA to provide a list of verifiable references substantiating experience including the size and timeframe of the project, the products and manufacturers used and the method of application as required. Provide the contact name, address and telephone number for each confirmed available contact, see Quality Assurance.
2. Shop Product Information: CSM of shop coating to provide written certification stating factory applied coating system meets or exceeds the more stringent of the requirements of the CSM and those specified in this section and is suitable for the intended use.
3. Field Product Information:
 - a. CSM of the finish system to provide written confirmation that field applied coating system is compatible with shop applied coating.
 - b. CSM to provide affidavits signed and sealed by an officer of the CSM's corporation, attesting to full compliance of each coating system component with current and promulgated federal, state, and local air pollution control regulations and requirements.
 - c. SDS for all materials to be delivered to the jobsite, including all coating system materials, thinners, solvents and abrasive blasting media shall be provided to the Engineer and a copy kept onsite by the Contractor during the duration of the work and shall be made available to all staff and Owner personnel.
 - d. CSM's detailed, written instructions for coating system treatment and graphic details for coating system terminations in or at the structures to be coated including pipe penetrations, metal embedments, gate frames and other terminations to be determined from this section, pre-application site visits or the Contract

- Drawings. This information shall also include details for using the coating system at joints in concrete or masonry construction.
- e. Provide abrasive blasting media manufacturer's detailed information on the material or chemical composition, including heavy and other hazardous material content, hardness, density, particle shape, screen or particle size and impact resistance of abrasive material proposed, and written confirmation of its ability to produce an anchor pattern and a degree of cleanliness that meets the requirements of this section when properly used.
4. Existing Materials Test Report:
 - a. If applicable, the Owner may at its discretion, make available to the Contractor the results of testing performed on the existing surfaces to be coated. Provision of such information is not part of the contract and is considered for general information purposes only.
 - b. Previous testing reports do not relieve the Contractor of independent testing of the abrasive blast media or its containment, collection or disposal in accordance with federal, state and local regulations.
 5. Abrasive Blasting Equipment: Provide description of abrasive blasting equipment including pot, compressor, filters, dryers and closed loop systems where applicable and procedures to be used.
 6. Wet Blasting Equipment and Procedures: Provide description of equipment and procedures to be employed.
 7. Mechanical Cleaning Equipment and Procedures: Provide description of equipment and procedures to be used.
 8. Surface Protection and blasting media containment C:
 - a. Provide list of areas to be protected.
 - b. Provide description of surface protection methods and monitoring to be employed.
 - c. Provide description of blasting media containment equipment, materials and methods to be employed.

1.05 QUALITY ASSURANCE

- A. Contractor shall provide the qualified services of the CSM, CTR, CSA and CSA Responsible Person throughout the duration of the Project.
- B. Qualifications:
 1. CSM:
 - a. CSM shall have a minimum of 10 years' verifiable experience specializing in the manufacture of the coating systems to be used, and shall be able to demonstrate successful performance on comparable projects.
 - b. Single Source Responsibility: Coatings and associated materials shall be compatible products of a single manufacturer. mixing and

matching of different manufacturer systems without prior approval by the Engineer shall not be acceptable.

2. CTR:
 - a. The CTR shall be an employee of the coating manufacturer, having the necessary verifiable qualifications, training and authority to serve as the manufacturer's technical representative and provide to the Contractor during the project, expert, technical support, training and guidance regarding the storage, handling, application and testing of the coating systems to be used.
 - b. The CTR's expertise and level of services provided on the project shall ensure his ability to certify in writing to the Engineer, that the manufacturer's surface preparation and system application requirements have been adhered to, and provide a Certificate of Proper Installation for the Work provided. Manufacturers unwilling or incapable of providing the required support, and written affidavits for their products will not be considered.
 - c. The manufacturer's technical representative shall be certified by NACE as NACE CIP Level 3 Peer Review.
3. CSA:
 - a. The CSA shall be the Contractor's responsible person to ensure all coatings are applied in accordance with manufacturers and this specification requirements.
 - b. The CSA shall be suitably qualified, (by the CSM) trained, experienced, verifiable and equipped to complete this work in an expeditious and acceptable manner, compliant with the requirements of the Contract.
 - c. The CSA shall have successfully installed a minimum of 15,000 square feet of the proposed system with a minimum of 5 years of coating experience on at least ten projects of similar size and complexity as documented by verifiable references.
 - d. The CSA may undertake the work directly or provide direction and oversee work by a lesser experienced but still qualified applicator (as confirmed by the CSM) of the coating system.
 - e. CSA and all application staff must be trained and qualified according to the requirements of this section.
 - f. A qualification letter from the CSM whose product is to be applied, shall be provided, confirming the "responsible persons" and any additional applicators qualifications for the particular product. This letter shall be submitted to the Engineer prior to work commencing onsite.
 - g. The "responsible person" shall not be replaced without written approval of the Engineer and/or Owner.
 - h. The CSA shall be present onsite, during all phases of the work as the full-time "responsible person" and authorized party, fully and directly responsible for all aspects of the Contractor's quality control including but not limited to the following.
 - 1) Provide supervision of additional applicators.

- 2) Ensuring and documenting the prepared surface is in accordance with the manufacturer's requirements and this section.
- 3) Monitoring and documenting the environmental conditions throughout the preparation, application and curing phases of the Work.
- 4) Ensuring and documenting the coating materials are properly mixed, in the correct proportions, and by the proper methods, and allowed to properly catalyze.
- 5) Ensuring the coating remains uniformly mixed throughout use and within the published pot-life period.
- 6) Ensuring and documenting the coatings are applied at the correct application rates and coverage, and undertake tests to verify the above.
- 7) Ensuring and documenting all coatings are applied within the required recoat windows, and allowed to properly cure before handling, testing and use.
- 8) Conducting and documenting all necessary testing for the purpose of confirming to the Engineer that the coatings are ready for inspection, including testing for adhesion, thickness, discontinuities and all other requirements.

C. Meetings:

1. Pre-application Meeting:

- a. A pre-application meeting shall be scheduled and convened a minimum of 2 weeks before the start of any onsite work. The Contractor shall coordinate and propose a meeting date for approval. The attendance of parties directly affecting the work for this Contract, includes, but is not limited to, the Contractor, Engineer, CSA responsible person and approved applicators, CTR, other Contractor QC personnel, and any third-party testing and inspection agencies acting on behalf of the Owner required. The meeting shall be chaired by the Engineer and shall cover at a minimum, the following items:
 - 1) Project communications.
 - 2) Submittals.
 - 3) Responsibility for safety.
 - 4) Responsibilities for Quality Control versus Quality Assurance.
 - 5) Identification of key personnel (Contractor's authorized representative, CSM, CTR, CSA, applicators etc.).
 - 6) Mockups.
 - 7) Hold points.
 - 8) Site access and staging location.
 - 9) Onsite storage facilities.
 - 10) Environmental requirements and measurements.

- 11) Storage, handling, containment, testing and disposal of spent blast media, thinners, coating materials, primers, stains, etc.
- 12) The protection of surfaces not scheduled to be coated under this Contract.
- 13) Manufacturer's services.
- 14) The work to be performed, including, but not limited to surface cleaning and preparation, mixing, catalyzation periods, pot life, curing, the inspection and testing of surfaces, coating system application, coating system testing, the repair of damaged coating systems, supervision, clean-up, and the protection of the completed work.
- 15) Documentation, record keeping and reporting.
- 16) Coordination with plant operations and other work activities.
- 17) Other topics deemed necessary.

D. Mock-Ups/Samples:

1. General:
 - a. Before proceeding with work under this section, mockup samples, as described below shall be provided at no additional cost, for the purpose of demonstrating the Contractor's knowledge of and his ability to meet the quality requirements of all phases of the specified systems, complete. This shall include, but not be limited to, surface cleaning and preparation, selected color, finish texture, material, quality of work and special details. These mockups shall be provided and accepted before application work can proceed and shall serve as the minimum "standard of comparison" for the remaining work. The approved Mock-Ups/Samples shall be protected from damage or deterioration throughout the work.
 - b. Upon request of the Contractor, the use of existing surfaces within the project site for mockups/samples, may be considered at the Engineer's discretion. Contractor is cautioned not to assume this request will be approved.
2. Chemical Resistant System: Three 12-inch by 12-inch samples of each complete Chemical Resistant System proposed for use (consisting of a mixture of liquid resin-based material, setting agent, and filler designed to be troweled into place to cure to a hard state) shall be provided showing thickness, finish surface, color, and texture.
3. Concrete wall, concrete slab, masonry wall: Minimum 4 feet by 4 feet (16 sq. ft.) sample area shall be provided containing all representative conditions to be finished including joints, joint treatments, shapes, textures, and all other physical aspects consistent with the areas to be finished.
4. Non-slip Finishes: Minimum 4 feet by 4 feet (16 sq. ft.) sample area shall be provided using the same substrate material to be finished and

the same non-slip media and coating system specified. The completed mockup shall demonstrate the placement, color, durability and proposed density and pattern of the broadcasted media, including all quality aspects of the completed Work.

5. Structural member: Minimum 20-foot length shall be provided containing all representative conditions to be finished, including but not limited to bolted/welded connections, surface conditions, shapes, areas of limited access, and all other physical aspects that are consistent with the areas to be finished. Size will be as directed by Engineer.
6. Ferrous Metal Pipe: Minimum of one full length of the representative pipe material shall be provided, containing all representative conditions and connections to be finished including joints, joint components, joint conditions, surfaces, attached or closely joined appurtenances, areas of limited access, and all other physical aspects that are consistent with the areas to be finished. Valves, fittings and other components consistent with the areas to be finished shall be represented in the mockup. Diameter will be as directed by Engineer.
7. Non-Ferrous Metal Pipe: Minimum of one full length of the representative pipe material shall be provided, containing all representative conditions and connections to be finished including joints, joint components, joint conditions, surfaces, attached or closely joined appurtenances, areas of limited access, and all other physical aspects that are consistent with the areas to be finished. Valves, fittings and other components consistent with the areas to be finished shall be represented in the mockup. Diameter will be as directed by Engineer.
8. Duct Work (all materials): minimum 20-foot length shall be provided containing all representative conditions to be finished, including but not limited to joints, straps, supports, sealants, diffusers/louvers, flexible boots and all other physical aspects that are consistent with the areas to be finished. Size will be as directed by Engineer.
9. Conduit (all materials): Minimum 20-foot length shall be provided containing all representative conditions to be finished, including but not limited to joints, straps, connectors, supports, boxes, expansion/deflection couplings, areas of limited access, and all other physical aspects that are consistent with the areas to be finished. Diameter will be as directed by Engineer.
10. Abrasive blast cleaning sample plates:
 - a. Sample plates shall be produced by the Contractor, demonstrating pre-cleaning procedures, abrasive cleaning operations and ability to produce the results required by this section. Sample plates shall be provided and accepted in advance of beginning work onsite.
 - b. Individual plates each measuring a minimum of 8-1/2 inches by 11 inches, shall be abrasive blasted to all standards specified.
 - c. Acceptance criteria for the preparation of metallic surfaces shall be based upon the Engineer's comparison of the test plates with SSPC-VIS1-89, ASTM D2200 and ASTM D4417.

- d. Plates determined to demonstrate compliance with the requirements of this section shall be initialed by the Contractor, CTR, CSA and the Engineer and coated with a clear non-yellowing finish. The plates shall be turned over to the Engineer.

E. Manufacturer's Certificate of Compliance:

1. When so specified, a Manufacturer's Certificate of Compliance, a copy of which is attached to this specification, shall be completed in full, signed by entity supplying the product, material, or service, and submitted prior to shipment of product or material or execution of the services.
2. Engineer may permit use of certain materials or assemblies prior to sampling and testing if accompanied by accepted certification of compliance.
3. Such form shall certify proposed product, material, or service complies with that specified. Attach supporting reference data, affidavits, and certifications as appropriate.
4. May reflect recent or previous test results on material or product, if acceptable to Engineer.
5. An example form to be completed is provided in Supplements.

F. Manufacturer's Certificate of Proper Installation:

1. When so specified, a Manufacturer's Certificate of Proper Installation form, a copy of which is attached to this section, shall be completed and signed by manufacturer's representative.
2. Such form shall certify signing party is a duly authorized representative of manufacturer, is empowered by manufacturer to inspect and approve the installation of their product and is authorized to make recommendations required to ensure that surface preparation and application of product is in accordance with manufacturer's standards.
3. An example form to be completed is provided in Supplements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Delivery:

1. CDS including all manufacturer-published storage instructions, shall be provided and kept onsite prior to delivery of materials.
2. Materials shall be delivered in their original, unopened containers. Each container shall be properly labeled.
3. Delivered materials shall be handled and stored in strict accordance with the CSM's published instructions and shall prevent damage to or loss of any label or expiration marking.
4. Coating products, materials, or accessories shall not be delivered to the site prior to obtaining Engineer's written approval.

5. Where coating materials are required to be stored (either onsite or offsite) prior to use, suitable storage facilities shall be in place at the time of material delivery. Provision, maintenance and removal of suitable storage facilities is the responsibility of the Contractor and shall not impact Owner's operations. Use of Owner's facilities for storage is prohibited without written permission.
6. Affidavits of correct storage at any offsite facility shall be provided by the Contractor and approved by the Engineer prior to material delivery.
7. Onsite storage facilities shall be inspected and approved by the Engineer prior to material delivery.
8. Materials delivered prior to complying with these requirements shall not be accepted onsite and for use.
9. All coating materials shall be delivered unused and with a manufacturing date. Partially used or expired materials shall be rejected upon delivery and are to be removed immediately from the site.
10. Opened containers, or improperly or unclearly labeled containers will be rejected upon delivery and shall be removed immediately from the site.
11. Labels on material containers shall clearly show at a minimum, the following information:
 - a. Name or title of product.
 - b. CSM's batch or lot number.
 - c. CSM's name.
 - d. Generic description of material.
 - e. Application and mixing instructions.
 - f. Hazardous material identification label.
 - g. Date of manufacture.
 - h. Shelf life expiration date.

B. Shipping/Handling/Storage:

1. The Contractor shall strictly adhere to the CSM's published instructions regarding the storage and handling of all coating system materials unless otherwise required in this section, with the more stringent requirements applying.
2. Upon delivery, materials and containers shall be inspected for damage due to improper shipping or handling. Materials or containers determined to have been subjected to improper shipping or handling will be rejected.
3. All materials shall be properly stored and protected in secure, enclosed and environmentally controlled structures, protected from the weather. Storage temperatures shall not exceed the limitations stated in the CSM's published data and the Contractor shall continuously monitor, record and document the storage temperatures for all products intended for use in the Work.
4. Abrasive blasting media shall be stored in unopened and undamaged bags in a cool, dry location, off the ground and in a manner, that protects it from temperature extremes, weather and moisture.

5. The Contractor shall monitor and ensure the shelf life and expiration dates of all materials.
6. Any materials that have become diluted or contaminated, have exceeded the shelf life, are from previously opened containers, exposed to conditions that are not in accordance with the CSM's published requirements, have resulted in spillage or are determined to be unacceptable for any other reason, shall not be used and shall be removed from site immediately and replaced at no additional cost to the Owner.
7. Spillage of any stored material shall be immediately cleaned up and the item responsible for the spillage removed from site.
8. Flammable materials shall be stored in accordance with state and local requirements.
9. Containers shall be clearly marked indicating personnel safety hazards associated with the use of, or exposure to the materials.
10. The Contractor shall store and dispose of hazardous waste according to federal, state and local requirements, specifically waste solvents and coatings, spent abrasive media, etc.
11. Shop primed surfaces shall be properly protected and shall not be stored or exposed to weather for more than 2 months before being top coated, or less time if recommended by CSM. Shop coated surfaces damaged by improper or extended storage shall be corrected by the Contractor at no additional cost to the Owner. All corrective work shall be in accordance with the CSM's instructions and subject to all tests and inspections specified in this section.
12. Protect shop coated (primed or primed and painted) surfaces during shipment, handling and storage by suitable provisions including padding, blocking, and use of canvas or nylon slings. Shop coated (primed or primed and painted) surfaces damaged by improper shipment, handling or storage shall be corrected by the Contractor at no additional cost to the Owner. All corrective work shall be in accordance with the more stringent requirements of these specifications and the CSM's instructions. All repairs shall be tested and inspected as specified in this section.

1.07 PROJECT CONDITIONS

A. Environmental Requirements:

1. Surfaces shall not be cleaned or prepared in conditions or weather that is not in compliance with the more stringent requirements of this specification and the CSM's requirements. Such work conducted in these conditions or weather will be rejected.
2. Coatings shall be applied only to surfaces that are dry, unless otherwise required by the CSM.
3. Coatings systems shall not be applied during rainy, misty weather or to surfaces upon which there is frost, moisture, condensation.

4. Coatings systems shall not be applied during periods of airborne dust or pollen, sufficient enough to impact the integrity of the coating system.
5. During damp weather, or when the temperature of a surface to be prepared or coated is within 10 degrees F of the dew point, forced dehumidification equipment shall be used to either (a) maintain the surface temperature a minimum of 10 degrees F above the dew point, or (b) maintain a higher surface temperature if required by the CSM. These conditions shall be maintained for a period of at least 8 hours or longer if recommended by the CSM.
6. Where conditions causing condensation are severe, dehumidification equipment, fans and/or heaters, provided by the Contractor, shall be used inside enclosed areas to maintain the required atmospheric and surface temperature requirements for proper surface preparation or coating application. These same requirements apply to applied systems during the curing process. All necessary precautions and provisions shall be provided at no additional cost to the Owner.
7. Coatings shall not be applied at temperatures lower than the minimum temperature recommended by the CSM. Where coatings are applied during periods of lower ambient temperatures, Contractor and the CSM shall be jointly responsible to ensure that proper application is performed including adherence to all re-coat window requirements. When necessary for proper application, a temporary enclosure shall be erected and kept heated until the coating has fully cured. All necessary precautions and provisions shall be provided at no additional cost to the Owner.
8. Coatings shall not be applied at temperatures higher than the maximum temperature recommended by the coating manufacturer. Where coatings are applied during periods of elevated ambient temperatures, Contractor and the CSM shall be jointly responsible to ensure that proper application is performed including adherence to all re-coat window requirements. Precautions shall be taken to reduce the temperature of the surface application, especially for metal, at elevated temperatures above 100 degrees F (38 degrees C) including shading application area from direct sunlight, applying coating in the evening or at night, and ventilating the area to reduce the humidity and temperature. All necessary precautions and provisions shall be provided at no additional cost to the Owner.
9. Attention shall be given to ambient and substrate temperatures when applying coating systems to concrete to prevent the formation of off-gassing. All necessary precautions and provisions shall be provided at no additional cost to the Owner.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Only manufacturers of paints and protective coatings who are regularly engaged in the production of such materials for essentially identical service conditions will be considered.

- B. Manufacturers must have minimum of 5 years' verifiable experience in manufacture of specified product.
- C. Only manufacturers that meet all specified qualifications and provide all required information and services will be considered.
- D. Preferred manufacturers are listed below:
 - 1. Tnemec
 - 2. Sherwin Williams
 - 3. Madewell Products Corporation
 - 4. BASF
 - 5. Raven Lining Systems
 - 6. Sauereisen Inc.
 - 7. Stonhard
 - 8. or approved equivalent

2.02 ABRASIVE MATERIALS

- A. Only abrasive blasting media produced by manufacturers who are regularly engaged in the production of such materials for essentially identical service conditions will be considered.
- B. Materials provided shall produce the required results, meet the most stringent requirements of this Section and the CSM recommendations for the specific primer and coating system to be applied, including anchor pattern and degree of cleanliness. Materials that do not produce the required results shall be removed from the site immediately and replaced with materials that do.
- C. Material selection shall also be based upon the dust generating characteristics of the abrasive blasting media. If dust generating limitations are required, the Contractor shall provide the abrasive blasting media best suited to meet the requirements.

2.03 PAINT MATERIALS / ACCESSORIES

- A. Notwithstanding the listing of product names in this section, the Contractor shall provide affidavits, signed and sealed by an officer of the CSM's corporation, attesting to full compliance of each coating system component with current and promulgated federal, state, and local air pollution control regulations and requirements. No coatings shall be applied to a surface until the specified affidavits have been submitted and have been reviewed and accepted. Failure to comply with this requirement shall be cause for rejection and removal of such materials from the site and any surfaces to which they were applied under this Contract.
- B. Any components and materials used in the Work that will be in contact with water for human consumption shall comply with the requirements of the Safe Drinking Water Act and other applicable federal, state, and local requirements. The Contractor shall provide certification by the CSM or an accredited

certification organization recognized by the Authority having jurisdiction that components and materials comply with the maximum lead content standard in accordance with NSF/ANSI 61 and NSF/ANSI 372. Use or reuse of components and materials without a traceable certification is prohibited.

- C. Materials and supplies provided shall be the standard products of CSMs and shall be the products of a single CSM.
- D. Materials shall be the manufacturer's highest quality product for the intended service, and from the most recent production run.
- E. Requests for consideration of CSMs other than those specified in this section will be considered, provided the following minimum conditions are met. Such requests are not a substitution for submittals required after the alternative CSMs have been considered and accepted.
 - 1. Comparable quality, color, composition, performance, durability, usefulness and convenience to the CSMs of this section.
 - 2. The proposed coating system shall use an equal or greater number of separate coats to achieve the required total dry film thickness.
 - 3. The proposed coating system shall use coatings of the same generic type as that specified including curing agent type.
 - 4. Requests for consideration of products from CSMs other than those specified in this section shall include information required in this specification, demonstrating that the proposed CSM's product is at a minimum, equal to the specified coating system.
 - 5. The Contractor and the proposed alternate CSM shall provide a list of verifiable references demonstrating a minimum of 5 years' experience specializing in the manufacture of the coating systems proposed for use, and shall be able to demonstrate successful performance on comparable projects. This list shall contain the project name, city, state, owner, current phone number of owner, coating system reference and number from this section, type of facility in which it was used, generic type, and year coating was applied.
 - 6. Proposed alternatives to coating systems used in contact with the production, handling and distribution of potable water shall be NSF 61 certified.
- F. All products to be used for this project shall meet federal, state and local requirements limiting the emission of volatile organic compounds.
- G. The Contractor shall furnish small quantity repair kits for touchup painting, for painting other small areas, and for the preparation of mockups.
- H. Formulate paints with colorants free of lead, lead compounds, or other materials that might be affected by presence of hydrogen sulfide or other gas likely to be present in the location where the coating is to be applied.

- I. The Contractor shall provide and use only coating application accessories, such as thinners, cleaners, driers, other additives, non-slip media and all other necessary accessories and incidentals that are recommended by the CSM and compatible with the relevant coating system.
- J. Accessories and incidentals required for application of specified coatings are to be used in accordance with the CSM's instructions.
- K. Products, accessories and incidentals used in the preparation and application of the coating systems shall be manufactured by, or approved in writing for use by the CSM.
- L. No materials, incidentals or accessories that are prohibited by the CSM or Engineer shall be used.

2.04 MIXING

- A. Multiple-Component Coatings:
 - 1. The Contractor shall prepare coatings using each component as packaged by the CSM.
 - 2. No partial batches or previously opened materials will be permitted.
 - 3. Components shall be prepared, mixed and permitted to catalyze in strict accordance with the CSM published instructions regarding material temperature, material mixing ratio, mixing method, component mixing sequence and time, and induction period requirements. The use of improperly mixed or catalyzed materials will result in the removal and replacement of applied materials to the extent directed by the Engineer.
 - 4. The use of multiple-component coatings that have been mixed beyond their pot life is not permitted. The use of materials beyond their pot life will result in the removal and replacement of applied materials to the extent directed by the Engineer.
 - 5. Intermixing additional components to achieve color or otherwise, even within the same generic type of coatings is not permitted.

2.05 SHOP APPLIED FINISHES

- A. General:
 - 1. Except as otherwise specified, prime coats or prime and finish coats may be shop-applied or field-applied.
 - 2. Surfaces either primed, or primed and finished in the shop shall meet all requirements of this section, unless proposed deviations are clearly identified by the Contractor and explicitly approved by the Engineer.
- B. New Shop-Applied Primer:

1. Shop applied primer systems provided under this Contract shall be applied in strict accordance with the CSM's published requirements and this section.
2. Primer systems shall be compatible with the specified field-applied coating systems, and shall be coordinated by the Contractor and approved by the Engineer. CSM of shop primer to provide written certification stating factory applied coating system meets or exceeds requirements specified, is compatible with the specified field coating and is suitable for the intended use.
3. The Contractor shall provide the Engineer a minimum of 14 days of advanced notice prior to the start of shop surface preparation work and coating application.
4. Shop applied primers shall be applied to surfaces prepared in strict accordance with the CSM's requirements and at the minimum CSM's recommended dry film thickness, unless more stringent requirements are specified in this section.
5. Shop applied primers shall be subjected to documented surface preparation inspection, DFT tests and adhesion tests (ASTM D4541) prior to shipment. These tests shall be conducted and documented by a certified NACE CIP Level 3 Peer Review inspector provided for by the shop applying the primer, and at no additional cost to the Owner.
6. Data sheets/inspection reports confirming the approved shop primer used, and the date of its application shall be provided by the shop applying the primer for submission to the Engineer by the Contractor.
7. Contractor to ensure top coating of surfaces shop-primed under this Contract are completed within the required recoat times.
8. Items provided under this Contract, for which the age of the applied primer is unknown, such as pipe or other normally stocked or "shelf" items, shall have all necessary tests conducted by the CSM for the field applied top coat system to ensure compatibility and proper adhesion of the top coat systems. These tests shall be conducted at no additional cost to the Owner and test report submitted to the Engineer. Any additional surface preparation procedures required by the CSM, shall be provided at no additional cost to the Owner.
9. Damaged, deteriorated, poorly applied or uninspected shop coatings (for the latter requirement unless shop inspection reports are provided or agreement has been provided by the Engineer) which do not meet the requirements of this section shall be removed and the surfaces prepared and recoated at no additional cost to the Owner.
10. If the shop primer coat meets the requirements of this section, field repairs consisting of minor touchup with identical material may still be required at no additional cost to the Owner. Upon completion and approval of all repairs the Contractor shall confirm the primer is compatible with the specified finish coats.

C. Existing Shop-Applied Primer by Others:

1. Existing primer systems applied by others and not under this Contract shall be evaluated by the CSM for both intended use and compatibility with the specified coating to be applied under this Contract.
2. Where the primer system is not compatible with the specified coating system, or is determined to be unsuitable for intended service condition, the CSM shall propose the corrective action for approval by the Engineer. At the Engineer's discretion, the use of a tie-coat between the existing primer system and the specified field coating may be considered, provided it is covered as part of the warranty to be provided by the CSM for the specified field applied coating system.
3. Damaged, deteriorated or evidence of poorly applied shop coatings shall be documented and reported to the Engineer before any remedial measures are undertaken, together with remedial measures to address the issues. After observation and evaluation by the Engineer, the Contractor will be advised of the remedial measures to be undertaken.
4. The costs of remedial measures to primer coats may be considered as additional work subject to the Contractor demonstrating to the Engineers satisfaction that it was not possible to determine the condition of the primer from the information provided as part of the Contract.

D. New Shop-Applied Finish Coat(s):

1. The Contractor shall provide the Engineer a minimum of 7 days of advanced notice prior to the start of shop surface preparation work and coating application.
2. CSM of shop applied primer and finish coat system shall provide written certification stating the factory applied coating system meets or exceeds requirements specified and is suitable for the intended use.
3. Data sheets/inspection reports identifying the shop primer and finish coats used and the date of application shall be provided.
4. Shop applied primer and finish coats provided under this contract shall be applied to surfaces prepared in strict accordance with the CSM's requirements and this section, and at the minimum CSM's recommended dry film thickness, unless more stringent requirements are specified.
5. Shop applied primer and finish coats shall be subjected to inspection of shop surface preparation, coating mixing and application processes, DFT tests (procedure based on the substrate material), adhesion tests (ASTM D4541) and holiday tests, prior to shipment. These tests shall be conducted and documented by a certified NACE CIP Level 3 Peer Review inspector provided for by the shop applying the primer and finish coats, and at no additional cost to the Owner.

6. Damaged, deteriorated, poorly applied or uninspected shop coatings that do not meet the requirements of this section shall be removed and the surfaces prepared and recoated at no additional cost to the Owner. This applies to applications that are not supplied with the required shop inspection reports. If the shop applied system meets the requirements of this section, field repairs consisting of minor touchup with identical materials may still be required at no additional cost to the Owner. Upon completion and approval of all repairs the Contractor shall confirm the finish coats meets the Specification requirements.

2.06 FIELD APPLIED FINISHES

A. Field Applied Finish Coats:

1. Field applied finish coats shall consist of one or more applications of the approved material(s) to build up and complete the coating system to the specified dry film thickness, holiday free condition and any other specified criteria. The required number of coats of finish material shall be applied regardless of the thickness of the primer.
2. Unless otherwise specified, or required by recoat time periods, finish coats shall not be applied until other work in the area is complete and until previous coats have been inspected and verified to be compliant with this section.
3. Top coats to the shop applied materials will ensure the Owner of the field applicator's acceptance of the shop applied system complete, and shall incorporate, at no additional cost to the Owner, any necessary additional work should the recoat window expire.

2.07 SHOP/FIELD APPLIED FINISH SCHEDULE

- A. Non- Immersed Equipment: Unless otherwise specified, items of equipment, that are not immersed in service, shall be shop primed and then finish coated in the field after installation with the specified or acceptable color. If the shop primer requires top coating within a specified period, the equipment shall be finish coated in the shop and then touchup painted after installation. If equipment removal and reinstallation is required for the Project, touchup coating work shall be performed in the field following installation.
- B. Immersed Equipment: Unless otherwise specified, items or parts of equipment, and other surfaces specified, that are immersed when in service, shall have all surface preparation and coating system application work performed in the field. Upon written approval of the Engineer, items with specialized, factory applied coatings may be exempt from this requirement, but remain subject to all quality control requirements and supporting documentation as specified herein. Special attention is required to ensure all surface and fabrication conditions shall be suitable to provide for a properly adhered, pin hole free coating, of specified thickness.

- C. Corrosive Environment Equipment: Unless otherwise specified, items of equipment, or parts and surfaces of equipment that are installed in areas defined as, or specified to be corrosive environments shall have all surface preparation and coating system application work performed in the field. Upon written approval of the Engineer, items with specialized, factory applied coatings may be exempt from this requirement, but remain subject to all quality control requirements and supporting documentation as specified herein. Special attention is required to ensure all surface and fabrication conditions shall be suitable to provide for a properly adhered, pin hole free coating, of specified thickness.

PART 3 EXECUTION

3.01 GENERAL

- A. The intention of these Specifications is for all metal surfaces to be painted, except as specified otherwise. Concrete surfaces shall be painted as required or specified.
- B. Extent of Coating (Immersion): Unless otherwise specified, coatings for immersed or water immersion service shall be applied as defined and specified elsewhere in this section, including internal vessel and pipe surfaces, nozzle bores, flange gasket sealing surfaces, carbon steel internals, and stainless-steel internal.
- C. For coatings subject to immersion, obtain full cure for completed system before placing into service. Consult coatings manufacturer's written instructions for these requirements.
- D. Equipment and other items located adjacent to walls, floors, equipment pads and other surfaces required to be cleaned and coated shall be disconnected and moved to permit the cleaning and application of coating systems required. Upon completion of painting work, all items shall be replaced and reconnected. Maintenance of plant operation shall be provided for and coordinated with the Owner.
- E. Apply coatings in accordance with these Specifications the paint manufacturers' printed recommendations and special details. The more stringent requirements shall apply. Allow sufficient time between coats to assure thorough drying of previously applied paint.
- F. Vacuum clean surfaces free of loose particles. Use tack cloth and conduct specified confirmation tests just prior to applying next coat. Test and confirm particulate removal as specified.
- G. In general, items to be painted include, but are not limited to:
1. All exposed exterior and interior surfaces including:

- a. Wall surfaces of all materials and in all spaces, including concrete block.
- b. Interior finished concrete floors.
- c. Containment areas.
- d. Columns, beams, equipment pads and supports.
- e. Pipes, tubing, hangars and supports, valves, fittings, insulation, hydrants and appurtenances.
- f. Ductwork and appurtenances.
- g. Electrical conduit, boxes, hangars and supports and appurtenances.
- h. Interior and exterior surfaces of ferrous metal tankage and appurtenances.
- i. Interior and exterior surfaces of concrete tankage, basins, pre-cast concrete structures and appurtenances.
- j. Any other ferrous metals (including galvanized, plated or primed steel).
- k. Factory-primed steel doors, frames, hatches, ladders and equipment.
- l. Untreated wood.
- m. Any other surfaces subject to corrosion or deterioration due to environmental exposure, dissimilar material contact, or that require color coding, banding or safety marking.
- n. Piping, equipment and associated appurtenances required to receive color coding and identification. Equipment and appurtenances shall be the same color as the piping system, unless otherwise required by the Engineer.
- o. Equipment that does not have an approved final coat or does not have the appropriate finished color, thickness or quality as directed by the Engineer.
- p. Hazard warning/markings/identification in accordance with OSHA 1910.144 Safety Color Code for Marking Physical Hazards.

3.02 EXAMINATION

A. Factory Finished Items:

1. All coating products to be installed under this Contract may be inspected at the manufacturer's facilities or plant for compliance with these specifications by an independent testing laboratory provided by the Owner. The cost for the facility or plant inspections shall be paid for by the Owner. Contractor shall provide to Owner and Engineer, a minimum of 14-day notification of the factory's firm schedule for start of factory applied coating system work. Owner will be reimbursed by Contractor for costs associated with changes in schedule if Owner made prior arrangements to conduct facility or plant inspections.
2. Inspections of the coating products and materials may also be made by representatives of the Owner after delivery.

3. Schedule inspection with Engineer in advance of starting any repairs to damaged factory finishes delivered to Site.
4. Repair abraded or otherwise damaged areas on factory-finished items as recommended by CSM and these specifications. Carefully blend repaired areas into original finish. If required to match colors, provide full finish coat in field. In all cases apply the more stringent requirements.
5. If found to not meet the requirements of this section, the products, materials and workmanship delivered to the project shall be subject to rejection at any time. This option is at the Engineer's discretion and is enforceable regardless of whether earlier samples or observations may have been deemed satisfactory at the place of manufacturing.
6. Materials rejected after delivery shall be marked for identification and removed from the site immediately and replaced with compliant Work, at no additional cost to the Owner.

B. Surface Preparation Verification:

1. Inspect and provide substrate surfaces prepared in accordance with these Specifications and printed directions and recommendations of the CSM whose product is to be applied. The more stringent requirements shall apply. Inspections shall be conducted and documented as required elsewhere in this section.
2. Examine areas and conditions under which the coating systems are to be applied. Notify the Engineer in writing about areas or conditions that are unsuitable. Do not begin surface preparation or coating application until unsuitable areas or conditions have been corrected.
3. Surface conditions beyond those required to be corrected as part of this Work such as severely corroded, deteriorated or weakened substrate materials shall be reported to the Engineer in writing. Continuing surface preparation beyond that required to determine the above conditions exist, precludes any subsequent claims that such areas or conditions were unsuitable for the specified surface preparation or coating application.
4. Conditions that are to be repaired as part of this Work would include those resulting from fabrication processes and assembly, including but not limited to imperfections, sharp corners, weld spatter, unacceptable weld patterns, unacceptable weld contours, reamed, sheared or drilled edges, closely assembled surfaces, threaded and other types of fastener assemblies, or any other condition not conducive to a continuous (discontinuity free) coating. All ferrous metal surfaces shall have all welds ground smooth and free of all defects in accordance with NACE Standard SP0178, Appendix C, Designation C and sharp edges ground smooth, if not previously prepared in the shop. All welds shall be ground smooth to ensure satisfactory compliant coating continuity and adhesion.

5. Where deemed necessary by the Owner's representative, a NACE CIP Level 3 Peer Review certified coatings inspector, provided by the Owner, will inspect and approve surfaces to be coated before application of a coating. Surface defects identified by the NACE CIP Level 3 Peer Review inspector shall be corrected by the Contractor at no additional cost to the Owner. Any inspection by the Owner does not replace or diminish any responsibilities of the Contractor, CSA or CSM stated in this section.

3.03 PROTECTION OF ITEMS NOT TO BE PAINTED

- A. Cleaning and painting activities shall be scheduled, to allow sufficient time to adequately protect all adjacent surfaces and constantly monitor to ensure that dust, moisture, overspray from the cleaning and application processes does not fall on wet, newly coated surfaces.
- B. Remove, mask, cover, or otherwise protect surfaces not specified elsewhere to be painted. In general, items NOT to be painted include, but are not limited to:
 1. Items with an Engineer-approved factory finish (except for touchup and repair).
 2. Stainless steel surfaces except:
 - a. Piping or tubing and appurtenances.
 - b. Flashings and counter flashings where required to be painted.
 - c. Where specifically noted to be painted.
 3. Aluminum surfaces except:
 - a. Where embedded in or in contact with concrete or masonry.
 - b. Where in contact with dissimilar metals or materials.
 - c. Piping or tubing and appurtenances.
 - d. Where specifically noted to be painted.
 4. Fiberglass surfaces, unless specifically noted to be painted.
 5. The interior of pipes, ductwork, and conduit unless specifically noted to be painted.
 6. Parts of mechanical units where painting would interfere with the operation or integrity of the unit such as machined surfaces, couplings, shafts, bearings, seals, nameplates, Zerk fittings etc.
 7. Parts of electrical units where painting would interfere with the operation or integrity of the unit.
 8. Code labels and equipment identification, data tags and rating plates.
 9. The interior and exterior of concrete basins, vaults, tanks and pre-cast concrete structures, unless specifically noted to be painted.
 10. Face brick (except for sealing if required), ceramic tile, flooring materials and plastic laminate.
 11. Concealed deck except where specifically noted to be painted.
 12. Nickel or chromium surfaces, unless specifically noted to be painted.
 13. Pre-finished metal (except for touchup and repair).
 14. Rubber surfaces, unless specifically noted to be painted.

15. Miscellaneous finished surfaces such as hardware, hardware accessories, lighting fixtures, switch plates unless specifically noted to be painted.
 16. Fire and safety equipment such as sprinklers, first aid cabinets, fire extinguisher cabinets, etc.
- C. The Contractor shall erect and maintain protective enclosures and coverings per these specifications and as stipulated per SSPC-Guide 6 Guide for Containing Debris Generated During Paint Removal Operations, applying the most stringent of the requirements, adequately protecting all items or adjacent surfaces not requiring painting. At a minimum, provide all necessary drop cloths and additional appropriate protection to prevent paint materials from falling on, being tracked on or transferred to, staining or marring adjacent surfaces.
 - D. Surfaces adjacent to or downwind of Work area that could be impacted by the work shall be identified and protected from drifting or windblown overspray.
 - E. Provide and maintain at all times, protection of working parts and machined surfaces of mechanical and electrical equipment from damage during surface preparation and painting process.
 - F. Protect, at all times, openings in motors, electrical equipment, control panels and other items of equipment in a manner that prevents paint, dust, vapors and other materials from entering. Methods of protection provided shall be done in a manner that does not impede airflow and ensures the equipment operates within the environmental parameters required by the equipment manufacturer.
 - G. Upon completion of each phase of work, inspect motors and other equipment and certify that no damage occurred from surface cleaning and preparation, and coating application. If damage occurred, certify the proper remedial action was taken. The Contractor shall be solely responsible for costs associated with the restoration of any areas, equipment, structures, or surfaces, public or private, impacted by overspray, drips, spills, splatter, stains or any other cause resulting from the application of coatings.

3.04 SURFACE PREPARATION

- A. Prior to the start of surface preparation, have onsite, the necessary equipment to assess and document acceptable conditions provided in accordance with ASTM D4417 (Methods A, B and C) and as follows. These provisions shall include all applicable SSPC/NACE VIS Guides and ICRI Surface Finish Comparators, an illuminated visual comparison magnifier with appropriate standard plates for each surface preparation method included within the work, and a replica-tape kit complete with the required grades of tape, burnishing tools and thickness gauge. Guides, visual comparator plates, and equipment shall be in new or like new condition, and shall be available to the Engineer at all times.
- B. Field Abrasive Blasting:
1. The minimum degree of surface preparation required shall meet the more stringent requirements of either these specifications, the CSM's recommendations or the industry standards referenced.
 2. The abrasive type and size selected shall produce the degree of cleanliness and the anchor pattern required by this section and the CSM's recommendations for specific primer and coating system to be applied. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
 3. The profile depth, anchor pattern and cleanliness of the surface to be coated shall verified measured and documented by Methods A, B and C of ASTM D4417 and ASTM E1216 as applicable.
 4. The use of iron or steel grit abrasives is prohibited on non-ferrous metals.
- C. Metal Surface Preparation:
1. Prepare metal surfaces in accordance with this section and the CSM's instructions. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
 2. Pre-Clean surfaces to remove oil, grease, welding fluxes, dirt, rust, loose mill scale and other surface contaminants by methods which may include but are not limited to the following:
 - a. Steam.
 - b. Open flame.
 - c. Hot or cold water with appropriate detergent additives followed with clean water rinsing.
 - d. Solvent cleaning of small isolated areas with suitable solvent and clean cloth.

3. Surface conditions for welds, connections, and adjacent areas for immersed, exterior exposed and corrosive environments shall be prepared in accordance with NACE Standard SP0178 Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service (Appendix C, Designation C). Intermittent welded connections shall be sealed with an approved sealant suitable for the service conditions and compatible with the coating system. At all locations grind embedded pieces of electrode or wire flush with adjacent surface of weld bead and ensure all welds and surfaces are prepared such that there is:
 - a. No undercutting, porosity, slag or reverse ridges on weld bead.
 - b. No weld spatter on or adjacent to weld or any area to be painted.
 - c. No sharp peaks or ridges along weld bead.
 - d. No arc strikes on adjacent surfaces.
 4. Abrasive Blast Cleaning General Requirements:
 - a. Oil, grease, welding fluxes, dirt, rust, loose mill scale and other adhered surface contaminants and foreign substances shall be removed before abrasive blast cleaning is started.
 - b. Equipment, abrasive blasting media and speed of travel shall be designed to obtain specified degree of cleanliness and required profile, and suitable for use on the substrate material being cleaned.
 - c. Contamination of non-ferrous metals resulting from the use of improper abrasive blasting media is prohibited. Contamination of non-ferrous surfaces shall be corrected at the Contractor's expense.
 - d. Abrasive blasting media used shall be washed, graded and free from contaminants and moisture that might interfere with the adhesion of the coatings.
 - e. Use only dry blast cleaning methods.
 - f. Clean surfaces of dust and residual particles from cleaning operations by dry (no oil or water vapor) air blast cleaning or other method prior to painting.
 - g. Vacuum clean enclosed areas and other areas where dust settling is a problem and wipe with a tack cloth.
 - h. Re-blast surfaces that have started to rust before they are coated.
- D. Galvanized Metal, Copper, and Nonferrous Metal Alloy Surface Preparation:
1. Prepare galvanized metal, copper, and nonferrous metal alloy surfaces in accordance with this section and the CSM's instructions. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
 2. Remove soil, concrete/cement/mortar spatter, and other heavy surface contaminants from all surfaces with appropriate hand or power tools.
 3. Remove oxide, oil, and grease and other contaminants from all surfaces by wiping or scrubbing surface with suitable solvent, rag, and brush. Use clean solvent and clean rag for final wiping to avoid contaminating surface.

4. Where possible, galvanized surfaces shall be allowed to weather a minimum of six months prior to coating. When weathering is not possible, solvent clean and test prime for adhesion. If adhesion is poor, brush blast in accordance with CSM's directions.
5. Galvanized surfaces shall be thoroughly rinsed with clean water following any chemical pre-treatment process.
6. Do not damage or remove the galvanizing.
7. Stainless steel surfaces shall be solvent cleaned and then abrasive blast cleaned with suitable media, leaving a clean, uniform appearance with a minimum, uniform surface profile of 1.5 to 2.5 mils.
8. Support shall be provided to thin sections or cold-rolled material to avoid distortion or damage during blasting. Cleaning methods and materials selected and used to clean stainless steel shall ensure the prevention of stress-corrosion cracking and surface contamination.

E. Cast Iron Surface Preparation:

1. Prepare cast iron surfaces in accordance with this section and the CSM's instructions. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
2. Clean surfaces in strict accordance with the CSM's requirements.
3. Caution shall be taken to avoid "over-blasting" the exterior surface of cast iron surfaces.
4. Apply an approved brush or knife-applied filler to fill superficial gas holes, or porosity. Cracks shall be immediately reported to the Engineer before coating system application.
5. Meet all necessary requirements to ensure complete removal of any absorbed liquids from the metal prior to coating.

F. Ductile Iron Surface Preparation:

1. Prepare ductile iron surfaces in accordance with this section and the CSM's instructions. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
2. Prepare surfaces in accordance with the requirements of NAPF 500-03-04 and NAPF 500-03.
3. Caution shall be taken to avoid "over-blasting" the exterior surface of ductile iron surfaces. SSPC-SP7 / NACE 4 Brush-Off Blast Cleaning is recommended. When viewed without magnification, the surface shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose coating. Tightly adherent mill scale, rust, and coating may remain on the surface. Mill scale, rust, and coating are considered tightly adherent if they cannot be removed by lifting with a dull putty knife.
4. Prior to blast cleaning, grind smooth surface imperfections, including, but not limited to delaminating metal or oxide layers.
5. Asphaltic varnish shall be removed prior to performing specified surface preparation.

G. Concrete Surface Preparation:

1. Prepare concrete surfaces in accordance with this section and the CSM's instructions. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
2. Do not begin surface preparation or application work until a minimum of 30 days have elapsed after concrete has been placed.
3. Thoroughly clean and inspect concrete surfaces prior to surface preparation. All surface preparation shall be performed in accordance with these specifications, SSPC-SP 13 (also called NACE 6), ICRI CSP standards and the respective recommendations of the CSM, with the more stringent requirements applying.
4. Remove all fins, form marks, protrusions, rough edges, unsound concrete, and correcting all defects, including but not limited to cracks, bug holes, surface embedded items of exposed metal and all other conditions requiring resurfacing or correction. The Engineer's non-objection shall be obtained before disturbing exposed metal surfaces associated with the structural integrity of the concrete.
5. Perform detailed treatment including but not limited to terminating any edges per CSM recommendations. This shall precede surface preparation for deep cleaning and profile establishment.
6. Surface preparation of concrete substrates for deep cleaning and profile establishment shall be accomplished using methods such as dry abrasive blast cleaning, high, or ultra-high-pressure water blast cleaning in accordance with SSPC-SP-13. The selected cleaning method shall produce the requirements set forth below.
 - a. The surface profile shall be at least equivalent to the profile of No. 80 grit flint sandpaper and meet the requirements of ICRI 03732 unless otherwise required by the CSM. The more stringent requirements shall apply.
 - b. All air voids or bug holes shall be fully opened to expose their complete perimeter. Leaving shelled over, hidden air voids beneath the exposed concrete surface is not acceptable.
 - 1) Areas of degraded or deteriorated concrete shall be removed to a sound, clean substrate free of calcium sulfate, loose coarse or fine aggregate, microfractured materials, laitance, loose hydrated cement paste and other deleterious substances. Exposed pieces of embedded metal shall be chipped back and removed. Should abrasive blast cleaning or high or ultrahigh pressure water blasting not produce the required results, chipping or other abrading tools shall be used.
7. Where corrosion of the reinforcing steel (rebar) exists, direction shall be obtained from the CSM and non-objection from the Engineer regarding removal of concrete along the corroded steel and other areas adjacent to the evidence of corrosion-induced damage.

8. Corrective action of conditions that would inhibit bonding of repair material shall be corrected in accordance with ICRI Guideline No. 310.1R, Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion, unless otherwise directed.
9. Concrete surfaces requiring repair shall be re-inspected for required surface profile and cleanliness prior to application of the coating system.
10. Prepared concrete surfaces shall have a minimum pH of 8.0 as confirmed by surface pH testing. If after surface preparation, the surface pH remains below 8.0, additional water blasting, cleaning or abrasive blast cleaning shall be performed until additional pH testing indicates an acceptable pH level.
11. Following surface preparation, thoroughly clean surfaces by scrubbing with a stiff bristle brush followed by vacuuming to remove all loose dirt, contaminants and spent abrasive leaving a dust free, sound concrete substrate.
12. Concrete walls to be coated shall be tested at least once for every 500 square feet for moisture content in accordance with ASTM D4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method. The presence of any moisture on the plastic sheet, shall constitute a non-acceptable result requiring the need to correct the failing conditions and conduct additional retests until the required results are obtained.
13. Concrete floors to be coated shall be tested at least once for every 500 square feet for moisture content in accordance with ASTM F1869, Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. The presence of any moisture, in excess of that allowed by the CSM, shall constitute a non-acceptable result requiring the need to correct the failing conditions and conduct additional retests until the required results are obtained.
14. Concrete surfaces to be coated which are on the negative or back side of concrete walls or structures exposed to soils (back filled) or immersed and waterproofed, shall have calcium chloride tests performed in accordance with ASTM F1869 once for each 500 square feet of surface area to be coated. Comply with the CSM's written recommendations regarding acceptance/non- acceptance of moisture vapor emissions.
15. Concrete substrate must be dry prior to the application of filler/surface or coating system materials, unless otherwise required by the CSM.
16. Prior to applying the coating system to concrete substrates, the Contractor shall apply a complete skim coat of the specified filler/surfacer material over the entire substrate after proper surface preparation and spot repairs are complete.
17. Leave a surface that has a uniform texture and is free of surface imperfections that would impair intended finished appearance.

H. Plastic and FRP Surface Preparation:

1. Prepare plastic and FRP surfaces in accordance with this section and the CSM's instructions. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
2. Prepare FRP surfaces by sanding with medium grit sandpaper to establish uniform surface roughness and to remove gloss from the resin in the FRP.
3. Vacuum clean the surface to remove loose FRP dust, dirt, and other materials, followed by wiping with a tack cloth.
4. Solvent clean the surface using clean white rags and allow solvent to evaporate completely before the application of coating materials.
5. Ensure surfaces to be coated are clean, dry, and free of oil, grease, dirt, dust and other contaminants.

I. Masonry Surface Preparation:

1. Prepare masonry surfaces in accordance with this section and the CSM's instructions. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
2. Complete and cure masonry construction for a minimum of 14 days before starting surface preparation or application work.
3. Prepare surfaces by means of solvent or detergent washing, or other suitable cleaning methods to remove chalk, efflorescence, loose dirt, dried mortar splatter, grout spillage, dust, peeling or loose existing coatings, or other surface deposits and deleterious substances, leaving a clean, sound substrate.
4. Do not damage masonry mortar joints or adjacent surfaces. Any mortar joints requiring repair shall be completed and cured prior to painting.
5. Surfaces are to be dry prior to coating application. If pressure washing or low-pressure water blast cleaning is used for preparation, allow the masonry to dry for at least 5 days under dry weather conditions or when the minimum ambient temperature is 70 degrees F prior to conducting moisture tests in preparation for coating application work.
6. Moisture content of masonry to be coated shall be tested in accordance with ASTM D4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method, at least once for every 500 square feet minimum, of surface area to be coated. The presence of any moisture on the plastic sheet, shall constitute a non-acceptable result requiring the need to correct the failing conditions and conduct retests until the required results are obtained.
7. Leave a surface that has a uniform texture and is free of surface imperfections that would impair intended finished appearance.
8. For masonry surfaces to be clear coated, leave the surface free of discolorations and uniform in texture after cleaning.

J. Wood Surface Preparation:

1. Prepare wood surfaces in accordance with this section and the CSM's instructions. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
2. Ensure surfaces are clean, dry and free of oil, grease, dirt, dust, surface deposits of sap or pitch and other contaminants, surface irregularities or other conditions not conducive to providing an acceptable coating application and surface finish.
3. Seal knots and pitch pockets. Sand rough spots along the grain of the wood.
4. Fill cracks and holes or otherwise unacceptable surfaces or conditions with putty approved by paint manufacturer for paint system before or after prime coat, depending on material compatibility and the putty manufacturer's recommendations.
5. For natural finishes, color of any repair wood putty shall match color of finished wood.
6. For stained wood surfaces use cellulose type putty.
7. Sand the putty flush with the wood once it is hard.
8. Round sharp edges by light sanding prior to priming.
9. Wipe all surfaces with a tack cloth prior to applying finishes.

K. Gypsum Board Surface Preparation:

1. Prepare gypsum wall board surfaces in accordance with this section and the CSM's instructions. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
2. Confirm required "level of finish" has been accepted.
3. Ensure surfaces are clean, dry and free of oil, grease, dirt, dust, powdery residue and other contaminants.
4. Ensure all joint compound is dry.
5. Verify all joint compound sanding is complete and edges have been feathered to a smooth surface.
6. Verify heavy sanding has not raised the nap of the paper covering.
7. Do not apply putty, patching pencils, caulking or masking tape to drywall surfaces to be painted.

L. Plaster Surface Preparation:

1. Prepare plaster surfaces in accordance with this section and the CSM's instructions. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
2. Ensure surfaces are clean, dry and free of oil, grease, dirt, dust and other contaminants.
3. Ensure all plaster is cured and allowed to dry out for a minimum of 28 days before coating.
4. Do not coat over plaster containing free water, lime or other soluble alkaline salts.
5. Remove all plastic nibs and other protrusions.

6. Patch voids and cracks with approved materials and after drying sand flush with the surface.
7. Ensure all patching materials are cured and allowed to dry.

M. Existing Painted Surfaces to be Repainted:

1. Prepare existing painted surfaces in accordance with this section and the CSM's instructions. Unless otherwise instructed by the Engineer, the more stringent requirements shall apply.
2. Existing equipment and metalwork shall be prepared and coated in accordance with the appropriate coating system specified for new work in this section.
3. Modifications to existing areas, equipment or materials shall receive the full coating system including all required cleaning and surface preparation as required by this section and as recommended by the CSM, and shall match adjacent surfaces or connecting equipment as required. Areas involving minor corrections or isolated repairs shall be cleaned, prepared, primed and finish coated as necessary to provide the required degree of protection and acceptable workmanship. In the case of a conflict, the Engineer shall determine the extent of work required.
4. Contractor shall demonstrate that the existing coating is compatible with field coating by performing the compatibility and adhesion test specified in this section. If unacceptable test results are obtained, the Contractor shall follow the CSM's written instructions as to the necessity of complete system removal and replacement or the application of a tie coat to provide a satisfactory long-term bond between the existing coating and the specified field coating. Abrasive blasting, in accordance with the requirements of this section, shall only be used in conjunction with other means necessary to clean concrete wall surfaces, floors and ceilings of existing structures to be coated.

3.05 SURFACE CLEANING

- A. No coatings or surface treatments shall be applied over oil, grease, dirt, rust, loose mill scale, old weathered coating, moistures and other foreign substances or surface contaminants that might interfere with the performance, integrity, durability, appearance and adhesion of the coating system or treatments.
- B. All surfaces shall be cleaned prior to the start of and after surface preparation, for the purpose of removing all loose foreign substances and surface contaminants regardless of the initial condition of the surface.
- C. The application of a coating or surface treatment constitutes the acceptance of the surface by the applicator in terms of the Specifications and CSM requirements.

3.06 APPLICATION

A. Prerequisites:

1. Pre-application meetings, schedules, certifications, affidavits, qualifications and material approvals shall be completed and approved prior to start of any application.
2. Personnel shall not be engaged in any production work until they have received the required training, been certified by the CSM and the Engineer has approved the required documentation.
3. All applicable mock ups shall be provided in a timely manner and the quality of work accepted by the CSM and the Engineer prior to the start of any related activity.
4. Schedule and confirm onsite presence of the CSM and CTR before starting work and provide the Engineer minimum 7 days' advance notice to start of any applicator qualification demonstrations, or surface preparation work and coating application work.

B. General:

1. Coatings shall only be applied to surfaces that are clean, dry and properly prepared in accordance with this section.
2. Apply all primers, intermediate and finish coats as appropriate for the substrate and exposure conditions shall be applied in accordance with this section and the requirements of the CSM, as confirmed by the Engineer.
3. Where equipment, pipes or other items have been dismantled or removed during the surface cleaning and preparation stage, or for newly manufactured items, apply final finish coats to units, surfaces or components to be bolted together or joined closely, prior to assembly or installation. Fully coat surfaces under all straps, supports, hangers and other attachments prior to installation, where applicable.
4. For areas that remain accessible after installation, apply all but the final finish coat to interior units, surfaces or components prior to installation. Exterior units shall receive all coats prior to assembly or installation.
5. Coated surfaces shall be free from runs, drips, ridges, waves, laps, brush marks and other visual imperfections.
6. All surfaces shall be completely coated to ensure film integrity and continuity. Prior to applying the first specified full coat, stripe coat all corners, edges, joints, fastener assemblies, threads, cut-outs, crevices, pits, surface defects and all other irregular or complex steel shapes for the purpose of providing the areas with sufficient film build-up to aid in protection against corrosion and eliminating discontinuities. Stripe coating by spray application is not permitted.
7. Onsite lighting shall, at a minimum, be in accordance with SSPC Guide 12 and must provide safe, sufficient and effective illumination of all areas as required to complete all phases of the work.

8. Supply fresh air continuously to restricted or contained spaces through the combined use of existing openings, forced draft fans and temporary ducts to the outside or direct air supply to individual workers. Exhaust paint fumes to the outside from the lowest level in the contained space. Provide explosion-proof electrical fans, if in contact with explosive dust, fumes or vapors.
9. Work within confined spaces shall comply with relevant OSHA standards, the specific facility requirements and the policy of the Contractor. Specific onsite assessment and training shall be provided before undertaking work within confined spaces.
10. The Contractor's equipment shall be designed for application of the materials specified. Compressors shall have suitable traps and filters to remove moisture and oil from the air. A paper blotter test shall be regularly performed by the Contractor to confirm compliance, and when requested by the Engineer to determine if the air is free of oil and moisture so as not to produce deteriorating effects on the coating system. The amount of oil and moisture in spray air shall be less than the amount required by the CSM. Spray equipment shall be equipped with mechanical agitators, pressure gages, pressure regulators and spray nozzles of the proper sizes.
11. Coating shall not be applied or cured in the same areas that dry blasting, water blasting or pressure washing operations are being performed, or in conditions or environments deemed not suitable for the particular coating.
12. Each coat of coating shall be applied evenly at the spreading rates and thicknesses specified in this section or by the CSM and sharply cut to line.
13. Coating application methods shall be limited to only those methods recommended by the CSM and confirmed by the Engineer.
14. Without exceeding CSM's published recoat windows, allow each coat to dry thoroughly, according to the CSM's printed instructions, prior to recoating. Glossy undercoats shall be lightly sanded to provide a surface suitable for the proper application and adhesion of subsequent coats.
15. Vary the color for each successive coat for coating systems of more than one coat whenever possible.
16. Coating material containers shall be tightly closed when not in use to avoid contamination and deterioration of the contents.

C. Coating Properties, Thinning and Mixing:

1. Coatings, when properly mixed and applied, shall produce a smooth, even film of uniform thickness.
2. When approved, thinning of the coating shall be done as recommended by the CSM, and immediately prior to use.
3. Thinning shall be done in compliance with all applicable air quality regulations.
4. Onsite coating materials shall be thoroughly stirred, combined, mixed, catalyzed, strained and kept at a uniform consistency and proper

temperature in accordance with the CSM's instructions during application. The recommended pot life of coatings shall not be exceeded. Any coating materials that have exceeded their pot life shall be immediately be removed from site and disposed of properly.

5. The volatile organic content (VOC) of the coating as applied shall comply with prevailing air pollution control regulations.

D. Metal Surfaces:

1. Faying surfaces associated with structural friction-type connections shall not be primed or painted. Assembled structural friction connections and high tensile bolts and nuts shall not be coated until erection and structural inspections are complete.
2. Areas damaged during erection shall be hand-cleaned or power-tool cleaned and recoated with primer coat prior to the application of subsequent coats.
3. Except for those to be filled with grout, the underside of equipment bases and supports that have not been coated shall be coated with at least two coats of specified primer prior to setting the equipment in place. Coating system terminations at the leading edges and transitions to other substrates shall be provided in accordance with this section and the CSM's recommendations. The terminations shall allow all applied coatings to reach an appropriately dry condition as required by the CSM before handling. Coatings damaged by early handling will be removed and repaired in accordance with this section.
4. Areas where welding is required shall not be painted until the welding is complete and has been inspected. Hold back coating applications a minimum of 2 inches from all areas to be welded, unless otherwise agreed with the Engineer.

E. Galvanized Metal, Copper, and Nonferrous Metal Alloy Surface: Concealed galvanized, copper, and nonferrous metal alloy surfaces (behind building panels or walls) do not require painting, unless Instructed by the Engineer.

F. Concrete and Masonry Surfaces:

1. Surfaces required to receive water base coating shall be damp, but free of running water, just prior to application of coating.
2. Surfaces required or recommended to receive a primer shall be primed with the primer recommended by the CSM.
3. The particular application requirements for concrete under rising or falling temperatures shall be in accordance with this section and the requirements of the CSM as listed below:
 - a. When surface temperatures of the concrete substrates to be coated are rising, or when these substrates are in direct sunlight, coating applications shall be avoided in order to prevent outgassing result

in bubbling, pinhole formations, and/or blistering in the coating system.

- b. The application of the filler/surface and the coating system shall only be allowed during periods of falling ambient and substrate temperatures, requiring the application of the filler/surface and coating system to only occur during the cooler evening hours, or other acceptable conditions. Contractor shall include any additional costs for working outside of normal hours within the proposal.
 - c. Should bubbles, pinholes or discontinuities form in the applied coating system or filler/surfacer material, they shall be repaired as recommended by the CSM and agreed with the Engineer.
 - d. Pinholes shall be opened completely, exposing fully the air void behind or beneath the pinhole. These voids shall be completely filled with the specified filler/surfacer material and the coated area around the pinhole repair abraded and the coating re-applied over that area.
- G. Wood Surface: Wood shall be sanded lightly between coats to achieve required finish.
- H. Electrical and Instrumentation Equipment, Panels and Materials:
1. Finish: Electrical equipment shall be treated with zinc phosphate, bonderized or otherwise given a rust-preventive treatment. Equipment shall be primed, coated with enamel and baked. Minimum dry film thickness shall be 3 mils.
 2. Before final acceptance, the Contractor shall touchup scratches on equipment, panels and materials with identical color and type of coating. Finish shall be smooth, free of runs, and match existing finish. Prior to touching up scratches, Contractor shall fill them with an appropriate filler material approved by the CSM. Repairs producing unacceptable results shall require complete recoating of item at no additional cost to the Owner.
- I. Film Thickness and Coverage:
1. Number of Coats:
 - a. Contractor shall apply the minimum number of individual coats required by this section without regard to total system coating thickness, even if the total-system milage is exceeded. Additional coats shall be required, at no additional cost to the Owner, to obtain minimum required paint thickness, depending on variables such as, but not limited to, substrate properties, methods of application, differences in manufacturers' products, atmospheric conditions, etc.

- b. On metal surfaces, the first coat, or “prime coat”, refers to the first full paint coat and not to solvent wash, grease emulsifiers or other pretreatment and cleaning applications.
 - c. Apply additional coats as required to achieve complete hiding of underlying coats. Hiding shall be so complete that additional coats would not increase the hiding.
2. Application Thickness:
- a. CSM’s minimum and maximum WFT requirements per coat shall be adhered to and verified during application per this section to achieve the total thickness specified in this section.
 - b. The surface area covered per gallon (SFPGPC) of coating for various types of surfaces shall neither exceed nor be less than those recommended by the CSM.
 - c. Coatings shall be applied to the minimum total thickness specified.
3. Visual inspection
- a. During application, Contractor shall ensure:
 - 1) Surfaces remain free of contaminants.
 - 2) Necessary intercoat repairs are identified and completed in accordance with CSM’s requirements.
 - b. Prior to requesting Engineer’s inspection after application of the coating, Contractor shall ensure.
 - 1) Proper and complete coverage has been attained, eliminating all visual defects and imperfections such as, but not limited to light or missed spots, runs, drips, sags, wrinkles, cracking, skinning, peeling, delaminations, chalking, blushing, cratering, etc.
 - 2) Applied coatings trapping surface contaminants shall be removed as necessary to eliminate the trapped material and recoated properly.
 - 3) Colors are consistent with those approved for the application.

J. Film Thickness Measurements:

- 1. During application, Contractor, through the use of WFT gauges, shall confirm that the wet film thickness of each coat neither exceeds nor is less than those recommended by the CSM.
- 2. Prior to requesting Engineer’s inspection after application, Contractor shall through the use of properly calibrated gauges and instruments depending upon the substrate, shall measure and record the total system DFT.
- 3. During and after application, particular attention shall be given to edges, angles, flanges, corners and other similar areas, where insufficient film thicknesses are likely to be present, and ensure proper millage in these areas. Measurements shall be taken to confirm the thickness requirements have been met.

4. Contractor to document all measurements and submit to Engineer prior to requesting inspection.

K. Electrical Inspection of Coated Surfaces:

1. Prior to requesting Engineer's inspection, Contractor shall through the use of properly calibrated equipment test completed system for continuity.
2. Particular attention shall be given to edges, angles, flanges, welds, corners, fasteners and other similar areas, where holidays are likely to be present, and ensure complete film continuity, proper coverage and continuous protection in these areas.
3. Pinholes and holidays once identified, shall be repaired as agreed with the Engineer and retested.

L. Adhesion:

1. Prior to requesting Engineer's inspection, Contractor, through the use of qualified personnel using properly calibrated equipment, shall confirm proper adhesion of coating system.
2. Submit a report to Engineer including at a minimum, the following:
 - a. Personnel doing tests.
 - b. Equipment used (serial number, model, calibration information).
 - c. Results of tests.
 - d. Location of tests.
 - e. Coating tensile strength comparison with the product data provided by the CSM.
3. Any failures shall be analyzed and remedial measured proposed in conjunction with the CSM and report provided to Engineer for review and approval.
4. Failures shall be repaired as agreed with the Engineer and retested until the required adhesion is obtained.

3.07 CLEANUP/PROTECTION OF COATED SURFACES

- A. Upon completion of the coating, the Contractor shall remove surplus materials, temporary storage facilities, protective coverings, masking materials and accumulated rubbish and trash, and thoroughly clean surfaces and repair overspray or other coating-related damages.
- B. All adjacent as well as newly primed and finished surfaces shall be protected against scratches, damage, deterioration, moisture or other contaminants. The protection of these surfaces is the responsibility of the Contractor, until final acceptance by the Owner. Any damages incurred prior to final acceptance shall be corrected by the Contractor at no additional cost to the Owner.

- C. Place cloths and other waste that might constitute a fire hazard in an approved closed metal container. Comply with federal, state, local and other applicable requirements.
- D. Upon completion of the work, and all required inspection and testing, remove staging, lighting, ventilation, scaffolding and other equipment and containers from the work area and Site, leaving them in equal to or better than original condition. Comply with federal, state, local and other applicable requirements.
- E. Clean splattered surfaces, paint spots, overspray, drips, stains and oil spots by washing, scraping or other methods approved by the CSM.

3.08 COATING SYSTEMS

- A. The coating systems to be applied to substrates under different service conditions are summarized in the tables in Supplement 1.
- B. For the Approved Manufacturers and Preferred Coating Systems stated in Supplement 1, “or equivalent” alternatives may be proposed and submitted to the Engineer for approval.

3.09 COLORS

- A. Typical colors to be used for all top or final coats are listed in Supplement 2. Confirmation of the color shall be confirmed with the Engineer prior to ordering the coating.
- B. Colors, where not specified, shall be selected by the Owner.
- C. All colors shall be submitted and approved before application.
- D. Electrical and instrumentation equipment and materials shall be coated by the equipment manufacturer. Exterior color of electrical equipment shall be FS 26463 (ANSI/NSF 61) light gray. Interior shall be painted FS 27880 white. Nonmetallic electrical enclosures and equipment shall be the equipment manufacturer's standard gray color. Exterior color of instrumentation panels and cabinets mounted indoors shall be FS 26463 light gray; unless otherwise specified, exterior color for cabinets mounted outdoors shall be FS 27722 white. Cabinet interiors shall be FS 27880 white.
- E. Pipe supports shall be painted light gray, as approved by the Engineer.
- F. Valve operators and hydrants shall be painted the same color as specified for the service pipe.

3.10 PIPE IDENTIFICATION

- A. General:

1. Identification to indicate pipe Service ID and direction of flow.
2. Identification to be located at connections to equipment, valves, changes in direction at branching fittings, and at wall boundaries.
3. At least one identification in each horizontal and vertical run of pipe.
4. For longer runs of pipe, place identification at intervals no greater than 18 feet.
5. Identification letters to be in all CAPS. Letter height to be in accordance with ASME A13.1, where height varies based on outer diameter of pipe or pipe insulation.
6. Identification to be oriented on the pipe such that the lettering and arrows can be seen from the operating floor.

B. Exposed Pipe:

1. Painted pipe:
 - a. Apply Pipe System Color Code as specified and in accordance with the painting system identified in Supplement 2.
 - b. Using a stencil, identify pipe using paint that is suitable for use with the finished pipe coating system. Identification paint to be white or black, whichever provides the better contrast against the pipe's Pipe System Color Code.
 - c. Results are to be clean and legible. Excess running of paint, smudges, incomplete lettering, etc. as identified by the Engineer is to be fixed at no additional cost to the Owner.
2. Unpainted metal pipe, insulated pipe, plastic pipe, and rubber tubing: Provide Strap Pipe Labels in accordance with Section 10 14 00, Signage.

C. Strap Pipe Labels:

1. Snap-on, reversible type with lettering and directional arrows, sized for outside diameter of pipe and insulation.
2. Provided with ties or straps for pipes of 6 inches and over diameter.
3. Designed to firmly grip pipe so labels remain fixed in vertical pipe runs.
4. Material: Heavy-duty vinyl or polyester, suitable for exterior use, long lasting, and resistance to moisture, grease, and oils.
5. Letters, Arrows, Color Field and Letter height: Meet ASME A13.1.
6. Message: Piping service name as indicated on Piping Schedule.
7. Manufacturers and Products:
 - a. Brady Signmark; B-915 BradySnap-On and Strap-On Pipe Markers.
 - b. Seton Identification Products; Ultra-mark Pipe Markers.
 - c. Or equal as confirmed by the Engineer.

3.11 EQUIPMENT LABELS

- A. Applies to all replacement labels for equipment with assigned tag numbers, including but not limited to process equipment, valves, gates, HVAC equipment, plumbing equipment, electrical equipment, panels, and instrumentation.
- B. Placement:
 - 1. When possible, label to be applied directly to the piece of equipment where easily viewed.
 - 2. When not possible to apply directly to equipment, provide stainless steel jack chain to tie the label to the piece of equipment.
 - 3. At Engineer's discretion, tag may be applied to the structure adjacent to the equipment.
 - 4. Final placement to be determined during Construction.
- C. Black background, white engraved letters, 3/4 inch minimum letter height.
- D. Material- Stainless steel with baked-on finish suitable for use on wet, oily, exposed, abrasive, and corrosive areas.
- E. Message:
 - 1. Tag Number where defined in the Scope of Work.
 - 2. Equipment name as shown in the Scope of Work, or a Description to be determined during Construction.
 - 3. Other Message- Include any other labeling requirements stated elsewhere in the Scope of Work, or additional messages required by Owner or Engineer as determined during Construction.
- F. Size:
 - 1. As needed to accommodate message and letter height requirements.
 - 2. Use consistent size for the same series of equipment.
- G. Manufacturers:
 - 1. Brady Signmark.
 - 2. Seton Identification Products.

3.12 FIELD QUALITY CONTROL

- A. Daily Report:
 - 1. Contractor shall submit daily written reports in accordance with these specifications. Reported information shall include but not be limited to Contractor's verification, documentation and reporting of the following equipment and personnel onsite:

- a. work accomplished versus work scheduled/planned.
- b. causes for delays, if any.
- c. weather and relevant environmental conditions.
- d. results of all tests, inspections and measurements undertaken as applicable.
- e. all substrate and surface preparation inspections by the CSM, Engineer and Contractors certified representative.
- f. list of materials to be stored overnight, shelf life of all stored materials, mixing regime, catalyzation, application, pot life and curing of material.
- g. confirmation that the application of multiple coats are within the CSM's recoat window.
- h. results of post application visual inspections o including but not limited to any film characteristics or defects that would adversely affect coating system performance and repairs to any defects.

B. Testing Equipment:

1. In addition to any equipment necessary for Contractor's use to comply with quality requirements, furnish and make available to the Engineer the following calibrated testing equipment for the Engineer's use at all times when field painting or surface preparation is in progress.
2. Testing equipment shall be new and have valid calibration certificates, unless otherwise agreed with the Engineer. Equipment that is considered to be unacceptable due to damage, wear, or for any other reasonable concern, shall be replaced immediately at no additional cost to the Owner. Work that is dependent upon unavailable or unacceptable test equipment shall not be conducted.
3. Calibration Test Certifications traceable to N.I.S.T., shall be current and furnished where applicable for all testing equipment:
 - a. Wet film gauge.
 - b. Surface thermometer or infrared thermometer.
 - c. Dial type paint thermometer.
 - d. Hi/Lo thermometer.
 - e. Keane-Tator surface profile comparator with standards.
 - f. All applicable SSPC/NACE VIS Guides and ICRI Surface Finish Comparators.
 - g. Digital surface profile gauge.
 - h. Testex Press-O-Film replica tape kit.
 - i. Holiday detectors (low and high voltage).
 - j. Approved electronic dew point meter.
 - k. Dry film thickness gauges (based on substrate material).
 - l. pH testing equipment.
 - m. Surface moisture test kit.
 - n. Surface soluble salt test kit (Chlor Test CSN Salts or Engineer approved equal) should the scope include coating repairs to steel.

4. Compressor air discharge shall be tested at least twice daily using paper blotters for oil and moisture contamination in accordance with ASTM D4285.

C. Testing:

1. Surface Profile and Cleanliness Testing:
 - a. Contractor's qualified personnel shall verify, measure and document the anchor profile, profile depth and surface cleanliness of blast cleaned surfaces in accordance with:
 - 1) ASTM D4417, Method A shall be used to visually compare and assess the surface profile of the abrasive blasted metal surfaces to the applicable standard plates. Surface cleanliness is to be visually assessed at the same time.
 - 2) ASTM D4417, Method B shall be used to measure the surface profile of the abrasive blasted metal surfaces.
 - 3) ASTM D4417, Method C shall be used to document the measured surface profile of the abrasive blasted metal surfaces. The tape shall include the measured reading and be provided to the Engineer to document the surface profile provided.
 - 4) ASTM D7127, shall be used to measure the surface roughness of the abrasive blasted metal surfaces through the use of a portable stylus instrument.
 - 5) ASTM E1216 (Practice A) shall be used to assess the particulate contamination of the surfaces prior to coating application. Surfaces shall be clean and free of amounts of surface contamination determined to be detrimental by the CSM and Engineer. The tape and its evaluation shall be provided to the Engineer as part of the project documentation.
2. Thickness Testing:
 - a. Contractor's qualified personnel shall measure the applied coating thickness in mils as indicated below. Each coat shall be checked for:
 - 1) Wet Film Thickness: Measure coating thickness per ASTM D4414. Check each coat for correct millage.
 - 2) Dry film thickness:
 - a) Measure coating thickness on ferrous metal surfaces with a magnetic type, dry film thickness gauge, in accordance with SSPC PA 2.
 - b) Measure coating thickness on non-ferrous surfaces in accordance with ASTM D7091.
 - c) Measure coating thickness (0-80 mils thick) on concrete surfaces in accordance with ASTM D4138, or;

- d) Measure coating thickness on concrete, masonry or other non-conductive substrates and surfaces in accordance with ASTM D6132.
3. Continuity Testing:
 - a. Contractor's qualified personnel shall holiday test coatings up to or less than 20 mils thick dry, except zinc primer and galvanizing, with low voltage wet sponge electrical holiday detector in accordance with NACE SP0188.
 - b. Contractor's qualified personnel shall holiday test coatings in excess of 20 mils dry with high voltage spark tester as recommended by coating manufacturer and in accordance with NACE SP0188. Tester to be set for the coating milage as directed by the tester manufacturer.
 4. Adhesion Testing:
 - a. Adhesion testing shall be undertaken by a contractor appointed independent NACE CIP Level 3 Peer Review certified independent party in the presence of the Engineers appointed coating inspector.
 - b. Contractor's qualified personnel shall perform an adhesion test after proper cure in accordance with ASTM D4541 for metal surfaces and ASTM D7234 for concrete surfaces, to demonstrate that (1) the prime coat (shop or field applied) adheres to the substrate, and (2) the specified top coatings adhere to the prime coat. The tensile strength of the coating shall meet the CSM's published performance results for the system applied.
 - c. Concrete surfaces scheduled to be coated which are on the negative or back side of concrete walls or structures and exposed to soils (back filled) or immersed and waterproofed, shall have the coating system adhesion verified by ASTM D7234 Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers. The tensile strength of the coating shall meet the CSM's published performance results for the system applied.
 5. Testing for Soluble Salt Contamination of Metallic Substrates:

Contractor's qualified personnel shall test in accordance with SSPC Technology Guide 15 (SSPC Guide 15) metallic substrates to be coated that have been exposed to sources of soluble chlorides (such as wastewater exposure).

 - a. A surface contamination analysis test shall be performed every 500 square feet by means of a Chlor Test CSN Salts or approved equivalent.
 - b. Surface with chloride levels exceeding 3 µg/square centimeter for submerged surfaces and 5 µg/square centimeter for exposed surfaces shall be treated with a liquid soluble salt remover equivalent to CHLOR*RID (CHLOR*RID International, Chandler, AZ).

- c. Follow manufacturer's recommendations and procedures for the use of this product to remove the surface contamination.
- d. Retesting shall be conducted until acceptable results are obtained.

D. Inspections:

1. General:

- a. All staging and lighting shall be left in place until the Engineer has inspected each surface or coating application. Provide additional staging and lighting as requested by Engineer where additional access is required.
- b. Provide ventilation, environmental monitoring, fall protection and all other necessary provisions required by Engineer to safely inspect any phase of the Work. At a minimum, provisions shall be in accordance with all applicable federal, state and local regulations, and SSPC PA Guide 10.
- c. Maintain all provisions for inspection until Engineer approves removal. Early removal of equipment will require reinstallation and provision at no additional cost to Owner.

2. Inspections by Contractor:

- a. Contractor is solely responsible for complete and total compliance with this Specification, and is fully obligated to perform all required and necessary Quality Control of its work.
- b. Contractor shall, through the services of qualified personnel, conduct all quality control related observations, inspections, testing and reporting required by this section, prior to requesting Engineer's inspection of any phase of the Work.
- c. If Engineer determines that Contractor has failed to properly, effectively and thoroughly conduct all required quality control procedures, Contractor will be directed to immediately reimplement the necessary procedures to ensure the Work is compliant before Engineer will resume any verification inspections/observations.
- d. Perform tests on a daily basis and at regular or required intervals approved by the Engineer, and document the results for submittal to the Engineer at the end of each day's work.

3. Observations/Inspections by Owner:

- a. Observations/Inspections by the Owner or others employed or contracted by the Owner neither supplement, replace, relieve, limit or otherwise alter the Contractor's or CSA's responsibilities for quality workmanship and quality control enforcement as specified or as determined necessary.
- b. The Owner or Engineer may, at its discretion, perform, or contract with an inspection agency to perform, quality control assurance observations, verifications and testing of the coating work covered by this section in addition to any quality control inspections or tests required to be performed by the Contractor. These observations may include, but not be limited to the following:

- 1) Review of reports to ensure completeness and accuracy.
 - 2) Review of delivered materials to ensure that they are supplied by the CSM, in new containers, have not been previously opened, and are within the stated shelf life.
 - 3) Review of the storage and handling of the coating system materials, solvents and abrasives verifying that all is accordance with the applicable manufacturer and this section.
 - 4) Review of the substrate cleanliness.
 - 5) Review of the substrate profile (anchor pattern).
 - 6) Review of the pH of the concrete and metal substrates.
 - 7) Verification of the ambient air and substrate temperature.
 - 8) Verification of the relative humidity and dew point.
 - 9) Check for the presence of substrate moisture in the concrete.
 - 10) Verification that the correct mixing and catalyzation of the coating system materials is performed in accordance with CSM's instructions.
 - 11) Verification that the "pot life" of coating system materials is not exceeded during the installation.
 - 12) Verification that the recoat limitations for coating materials are not exceeded.
 - 13) Verification of wet film thickness during coating application
 - 14) Verification of proper coating material adhesion.
 - 15) Verification of dry film thickness of the coating system.
 - 16) Verify the proper curing of the coating system is in accordance with the CSM's instructions.
 - 17) Perform holiday or continuity testing for coatings that will be immersed or coatings which will be exposed to aggressively corrosive conditions.
4. Hold Point Inspections:
- a. Contractor shall continuously conduct all required inspections at Hold Points.
 - b. Results of these inspections shall be documented on the Inspection Checklist found in Supplement 6, and submitted to the Engineer.
 - c. Contractor shall provide reasonable and timely coordination with the Engineer on Hold Point inspections such that the Engineer may observe the Contractor's inspections on a scheduled basis. The Contractor shall provide the Engineer a minimum of 24 hours' notice prior to conducting Hold Point Inspections. The Engineer, at its discretion may reduce or increase its involvement in observing the Contractor's Hold Point inspections.
 - d. The Hold Points for observation and evaluation of Contractor compliance shall be as follows:
 - 1) Environment and Site Conditions:
 - a) Prior to commencing an activity associated with surface preparation, coating system application and curing, Contractor shall measure, record, and confirm

the acceptability of the ambient air temperature, substrate surface temperature, wind speed, relative humidity and dew point as well as all other outside conditions necessary to ensure Work is done in accordance with this section and the published requirements of the CSM. The acceptability of the environmental conditions within a structure or protective enclosure shall also be continuously measured, monitored and confirmed to remain within acceptable ranges as specified, and as required by the CSM. All measurements shall be documented and reported to the Engineer.

- 2) Surface Conditions Prior to Surface Preparation:
 - a) Prior to commencing surface preparation, Contractor shall observe, record, and confirm that all surface contaminants, including, but not limited to dirt, mud, loose paint, mill scale, oil, grease, soluble salts, efflorescence, acids and all other detrimental or foreign substances, have been removed from the surface.
 - b) Surface conditions, which are not conducive to proper coating cover and performance, resulting from fabrication processes, material defects, improper handling or storage, or any other cause, shall be corrected to comply with this section and the requirements of the CSM.
- 3) Protection of Adjacent Areas/Surfaces:
 - a) Prior to commencing surface preparation, Contractor shall have in place all necessary provisions to protect all adjacent areas and surfaces from debris, abrasive blasting media, media rebound, dust, moisture, vapors, chemicals, compressed air streams, coating materials or any other substances or conditions caused by the Work. All such protection shall be monitored and maintained. Vacuum blasting, or closed loop blasting methods shall be used in areas where dust or contamination created by abrasive blasting cannot be tolerated.
 - b) In addition, prior to commencing coating material applications, all adjacent areas and surfaces shall be protected from inadvertent drifting or windblown overspray, drips, spills, splatter, stains, or any other conditions caused by the Work. The potential for all such conditions shall be identified and the necessary protection be provided prior to the start of work, and continuously maintained and monitored until the work is accepted.

- c) Protection measures are to be reviewed by the Engineer prior to commencing work.
5. Monitoring of Surface Preparation: Contractor shall observe, record, and confirm acceptability of all surface conditions related to fabrication/erection processes, the degree and maintenance of cleanliness, anchor pattern, surface pH testing, moisture content where applicable and all other elements or aspects upon which compliant work and coating integrity is dependent. In addition, the compressed air used for surface preparation or blow down cleaning shall be continuously monitored to confirm it is free from oil and moisture. Any conditions that result in the deterioration of prepared surfaces shall be corrected and acceptable conditions reestablished.
6. Containment and Sampling of Spent Abrasive Blast Media:
 - a. All spent blast media is assumed to be hazardous until proven otherwise. Contractor shall ensure that spent abrasive blast media is being contained within the work site in accordance with all local, state and federal laws, and shall not be allowed to escape into the surrounding area. Any blast media that does escape the work site shall be immediately collected in its entirety at the Contractor's expense.
 - b. All spent blast media shall be collected and containerized in a suitable container and shall not be disposed of until it has been tested by both the Contractor at an independent testing facility and the results submitted to the Engineer. Blast media that has been tested and found to be hazardous must be properly transferred to containers appropriate for hazardous waste transfer and disposal at the Contractor's expense. All unused and spent blast media shall be disposed of by the Contractor and shall not be disposed of until the Engineer has provided written permission allowing for the disposal of the spent blast media in accordance with all local, state and federal laws. Copies of all required documentation resulting from the Contractor's proper handling, transportation and disposal of spent materials shall be provided to the Engineer.
 - c. Proper sampling of spent abrasive blast media for evaluation shall be demonstrated.
7. Post-Surface Examination/Preparation:
 - a. Upon completion of the surface preparation, Contractor shall confirm complete removal of traces of grit, dust, dirt, rust scale, friable material, loose corrosion products or embedded abrasive from the substrate by vacuum cleaning, followed by wiping down surface with a tack cloth. Contractor shall perform visual inspection and a tape test to verify surface cleanliness prior to coating application by conducting surface contaminant testing per ASTM E1216 and document the results.

- b. Contractor shall measure and inspect surface profile for compliance with this section and CSM's published instructions. Contractor shall measure and document surface profile by means of replica tape, providing the tabs to the Engineer in an acceptable manner. All flash rusting or rust-back shall be removed from ferrous metal surfaces and all acceptable surface conditions shall be protected from any deterioration. In all cases the more stringent requirements apply.
8. **Mixing of Coatings:** Contractor shall demonstrate and document strict adherence to CSM's published instructions regarding material temperature, pre-mixing, material mixing ratio, mixing method, component mixing sequence, mixing time, intermittent mixing requirements during use and induction period requirements. Improperly mixed or catalyzed materials shall not be used.
9. **Monitoring of Coatings Application:** Contractor shall continuously inspect, measure, and record the wet film thickness and monitor general film quality (visual inspection) for lack of runs, sags, pinholes, holidays, etc. as the application work proceeds. Recoat windows shall be monitored, documented and adhered to when multi-coat applications are provided. Coating applications outside the recoat window shall incorporate the required surface preparation as directed by the CSM and this section.
10. **Curing:** Contractor shall continuously monitor and document high/low temperatures, humidity and all other environmental conditions that impact proper curing. No coating system shall be subjected to handling or service until the system is fully cured in accordance with the CSM's published requirements and this section.
11. **Post-Cure Evaluation:** Contractor shall confirm cured-system compliance with visual surface requirements (no runs, sags, etc.), and shall measure and inspect the overall dry film thickness, correct any defects found and confirm the integrity of the applied system. Contractor shall conduct a DFT survey, as well as perform adhesion testing, holiday detection or cure testing as required in this section and/or in the CSM's written instructions. The results of all tests shall be documented and submitted to the Engineer within 24 hours of the system being fully cured.
12. **Follow-up to Corrective Actions:** Contractor shall re-test, re-inspect and document the corrective action taken to repair defects identified at prior Hold Point inspections. This activity also includes final visual inspection along with any necessary follow-up tests such as, but not limited to holiday detection, adhesion tests, and DFT surveys.
13. **Final Inspection:**
 - a. Contractor shall conduct a final inspection to determine whether the coating system work meets the requirements of the specifications and document the results in a report provided to the Engineer.

- b. Upon notification that Contractor has completed a thorough preliminary final inspection, the Engineer will conduct a joint final inspection with the Contractor to determine if the work is in conformance with the requirements of this section.
 - c. Any rework required shall be marked and such areas shall be re-cleaned, repaired and retested at no additional cost to the Owner.
14. One-Year Follow-Up Inspection:
- a. The Owner shall set the date for the inspection of the coating systems at a date approximately one year from the date of final acceptance of the work, and shall occur at least one month prior to the expiration of the coatings warranty.
 - b. The access and inspection equipment to be provided by the Contractor shall be agreed at the final inspection.
 - c. The inspection shall be attended by the Owner, Contractor, CSA, Engineer and the CTR.
 - d. The Owner shall make the areas operationally safe for access and inspection.
 - e. The Contractor shall provide all necessary provisions for safe and suitable access to observe the work. These provisions shall include but not be limited to all equipment, ladders, scaffolding, lifts, ventilation, lighting, environmental monitoring, fall protection and any other services or equipment needed to conduct any evaluation testing required by the Owner or Engineer in accordance with the recommendations of the manufacturers, all applicable federal, state and local regulations, and SSPC PA Guide 10.
 - f. This activity shall include visual inspection, but may require additional test should defects be observed. Contractors holiday detection, adhesion testing, and DFT equipment shall be on hand for use during the inspections.
 - g. The above is understood to be at no additional cost to the Owner.

E. Unsatisfactory Application:

- 1. All coatings that display degradation of the specified performance requirements and are showing premature signs of failure shall be repaired by the Contractor.
- 2. All required testing to assess the mode of failure and subsequent repairs shall be conducted and documented by Contractor in accordance with this section.
- 3. Coatings that exhibit unsatisfactory characteristics that includes but is not limited to improper finish color, discontinuities, pinholes, holidays, insufficient milage or film thickness, bond failure, runs, bridges, shiners, laps, or any other deficiency, defect or imperfection that would adversely affect the performance or appearance of the coating systems shall be undertaken by the Contractor at no additional cost to the Owner.

4. All corrective action shall be in strict accordance with this section and the CSM's requirements and agreed with the Engineer.
5. Repaired coatings shall be visibly identical to adjacent surfaces. The entire surface may require touchup where the repairs result in a visibly different appearance, either in sheen, texture or color.
6. All repairs shall be retested until proven acceptable and the results documented by Contractor in accordance with this section.

3.13 WARRANTY

- A. Warrant all labor, paint, primer and additives installed for a minimum period of one year, unless longer periods are specified, beginning from the date of final acceptance. During the warrantee period, the Contractor shall unconditionally repair or replace and retest at no cost to the Owner, all defects or deficiencies discovered in the coating system, as determined by the Owner or the Engineer.
- B. Warranty shall be without restrictions or conditions, and shall provide for correction, or at the option of the Owner, removal and replacement that is found to be defective or deficient during the warranty period.

3.14 MANUFACTURER'S SERVICES

- A. Coating System Manufacturer (CSM): CSM shall provide a qualified and approved Coating System Technical Representative (CTR) as required by these specifications to provide at a minimum, the required services. Should a manufacturer be unwilling or incapable of providing the required support, meet all specified requirements and provide all services and documentation required by these specifications, their products will not be considered.
- B. Coating System Technical Representative (CTR):
 1. The CTR shall during required site visits, perform the following activities to confirm acceptability and conformance with the more stringent of the specifications and CSM's requirements.
 2. Provide minimum of 8 hours of classroom and off-site training for Contractor's and CSA's application personnel, a minimum of supervisory personnel from the CSA (including the "responsible person").
 3. One CTR can provide training for up to fourteen application personnel and three supervisory personnel at one time. The training shall include the following as a minimum:
 - a. A detailed explanation of mixing, application, curing and termination details.
 - b. A hands-on demonstration of how to mix and apply the coating systems.
 - c. A detailed explanation of the ambient condition requirements (temperature, humidity and dew point) and surface preparation

- requirements for the application of the coating system as well as a detailed explanation of re-coat times, cure times, and related ambient condition requirements.
- d. When training is performed, the CTR shall provide a written letter stating that training was satisfactorily completed by the personnel listed by name in the letter.
4. Alternatively, the CTR shall provide a written letter from the CSM stating that the application personnel (listed by name) who shall perform the coating work are qualified by the CSM without further or additional training.
 5. Provide onsite expert and technical support and guidance to Contractor's personnel on items such as but not limited to:
 - a. Proper storage, handling and monitoring of products/materials stored for use on the Project.
 - b. Proper environmental requirements and preparation of surfaces required to be coated on the Project.
 - c. Proper mixing, catalyzation and application of products/materials being used on the Project.
 - d. Proper monitoring of recoat windows and curing conditions.
 - e. Proper monitoring and testing of prepared surfaces, materials, material application thicknesses and coverage rates, curing environments and post application tests.
 6. Provide sufficient oversight and inspection as required to confirm acceptability and conformance with the more stringent of the specifications and CSM's requirements.
 7. Provide the written site visit and Final Reports (see Reports below)
 8. Ensure all required testing and evaluation services are conducted properly to ensure optimum performance and integrity of applied system. Note that the inspections, which are required of the CTR, are in addition to the inspections performed by the Contractor in accordance with this section and any additional testing performed by third-party testing and inspection agencies acting on behalf of the Owner.
 9. At a minimum, CTR shall be present at the following milestones/ events:
 - a. During the initial inspections of the existing coating at the pre-bid conference.
 - b. At project startup/kick off meeting.
 - c. At all hold point inspections in the presence of the Engineer

- d. During initial surface preparation, first application of system materials and testing and evaluation of cured system necessary to provide the following required observations and reports:
- 1) Following each site visit the CTR shall provide a written Site Visit Report documenting all observations, recommendations and corrective actions taken or required, confirming the CSA's conformance with the Specifications and the CSM's requirements and recommendations as well as the acceptability of the observed site activities as related to all phases of the preparation and coating work. These shall include, at a minimum, verification the following activities:
 - a) Proper storage, handling and monitoring of products/materials stored for use on the Project.
 - b) All onsite personnel performing work have been qualified by the CSM and based on the activities observed, have successfully and properly performed all required activities as required.
 - c) Surfaces to be coated are free from surface fabrication imperfections, sharp edges, weld spatter, unacceptable weld patterns (intermittent welds), unacceptable weld contours or any other condition not conducive to a continuous (discontinuity free) coating.
 - d) the required surface preparation procedures were properly completed.
 - e) The required degree of cleanliness and surface profile of substrates, surface pH and moisture content for concrete and masonry substrates was tested and is acceptable.
 - f) Proper application of the filler/surface materials for concrete and masonry substrates.
 - g) Proper surface preparation of substrates where the coating systems will terminate or will be applied for compliance with the specified application criteria.
 - h) Proper preparation and application of coating treatment at joints, acute angle edges, embedded items etc.
 - i) The environmental conditions were measured, monitored, maintained and documented during surface preparation and coating system application and are within the requirements of the coating system.
 - j) Proper mixing and catalyzation of the coating materials.
 - k) Correct application of the coating system components including but limited to:
 - (1) Surface temperature.
 - (2) Application processes.
 - (3) Stripe coating.

- (4) Wet film thickness.
 - (5) Visual defects corrected/prevented (runs, sags, etc.).
 - (6) Pot life.
 - (7) Recoat window.
 - l) Any corrective action was properly taken if recoat windows were exceeded.
 - m) Proper curing conditions and durations.
 - n) All necessary quality control inspections and tests were properly conducted to ensure the quality of the Work, including but not limited to:
 - (1) Dry film thickness testing.
 - (2) Adhesion testing.
 - (3) Continuity (holiday) testing.
 - (4) Visual testing (free of blisters, sags, drips, runs, etc.).
 - o) Proper repair and retesting of any defective work.
 - p) Conduct a final review of the completed coating system installation for conformance to the Specifications.
- 2) Upon completion of the coating work for the project, the CTR shall prepare a Final Report. This report shall summarize the findings and observations during all site visits, all test data, drawings, and photographs to be submitted to the Owner. Include documentation of substrate conditions, ambient conditions and application procedures observed during the CTR's site visits. Include an unqualified statement that the completed work was performed in accordance with the requirements of this section and the CSM's recommendations and confirms the completed Work is at a warrantable level and will provide optimum service and performance.

3.15 APPLICATION SCHEDULE

- A. The Contractor shall provide a schedule for undertaking the works as detailed in the Scope of Work document.

3.16 SPARE MATERIALS

- A. Spare Materials/Supplies:
 - 1. The Contractor shall provide from the most recent production run closest to the acceptance date of the Work, the following.
 - 2. All materials/supplies provided shall be as approved or accepted for the Work and shall be in new, unblemished containers, properly and clearly labeled, marked and identified. These spare materials/supplies shall be

properly stored as required until delivery to the location designated by the Owner, and as requested by the Engineer.

- a. One unopened gallon container of each thinner, solvent or additive used in the Work.
 - b. One unopened gallon container of each color and type of paint used in the Work.
 - c. One unopened gallon container of each color and type of stain, sealer or preservative used in the Work.
 - d. One unopened standard kit of filler/surfacer materials used in the Work.
 - e. One spare package of non-slip additive used in the Work.
 - f. Pipe label templates/stencils, labels, banding etc. are to be handed over to the Owner upon completion of pipe labeling/identification.
3. All materials shall be clearly identified as the location where they are to be used, and include technical data sheets, SDS, surface preparation and application instructions.

3.17 SUPPLEMENTS

A. The Supplements listed below, following “End of Section” are a part of this Specification.

1. Coating Systems (Tables 1 through 10). Note revisions to previous Tables shown in **red**.
2. Service Colors (Table 11).
3. Paint System Data Sheet (PSDS).
4. Paint Product Data Sheet (PPDS).
5. Daily Coating Inspection Report.
6. Coating System Checklist.
7. Manufacturers Certificate of Compliance.
8. Manufacturers Certificate of Proper Installation.
9. Pipe Coatings Hazardous Waste Assessment (if applicable).

END OF SECTION

COATING SYSTEMS

Table 1: Steel Coating System

SUBSTRATE TO BE COATED-STEEL					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM-TO BE CONFIRMED BY MANUFACTURER
S-1	Interior/Exterior	Polyamidoamine Epoxy	10 mils DFT	Tnemec	Series N69
S-2	Interior/Exterior	HDP Acrylic Polymer	6 to 8 mils DFT	Tnemec	Series 1028/1029
S-3	Interior	Polyamidoamine Epoxy	8.5-13.5 mils DFT	Tnemec	Series N69
S-4	Interior	Modified Polyamidoamine Epoxy	6.5 -9.0 mils DFT	Tnemec	Series 135
S-5	Interior/Exterior	Modified Polyamine Epoxy	15.0 to 40.0 mils DFT	Tnemec	Series G435
S-6	Interior/Exterior	Polyamidoamine Epoxy	6 to 8 mils DFT	Tnemec	Series N140
S-7	Exterior	Aliphatic Acrylic Polyurethane	10-13 mils DFT	Tnemec	Series 1095
S-8	Buried	Polyamidoamine Epoxy	16 mils DFT	Tnemec	Series N69
S-9	Buried	Wax Tape/putty	N/A	Trenton	Wax Tape #1
S-10	Concrete encased	Polyamidoamine Epoxy	16 mils DFT	Tnemec	Series N69
S-11	Temperatures up to 400° F (204°C) Interior/Exterior	Aluminum pigment, petroleum resin	1-1.5 mils DFT	Sherwin Williams	Silver-Brite Aluminum
S-12	Continuous service up to 1000°F (538°C) with spikes up to 1200°F (648°C)	Silicon hybrid resin	1.5-2 mils DFT	Sherwin Williams	Heat-Flex Hi-Temp 1000

SUBSTRATE TO BE COATED-STEEL					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM-TO BE CONFIRMED BY MANUFACTURER
S-13	Exterior	Primer	2.5-3.5 mils DFT	Tnemec	Series 1
		Epoxy	2-4 mils DFT		Series N69
		UV Resistant Polyurethane	2-4 mils DFT		Series 1095
S-14	Exterior	Spot primer	2.5-3.5 mils DFT	Tnemec	Series 1
		Epoxy	3-4 mils DFT		Series 135
		UV Resistant Polyurethane	2-4 mils DFT		Series 1095
S-15	Exterior	Spot primer	2.5-3.5 mils DFT	Tnemec	Series 1
		UV Resistant Polyurethane	2-4 mils DFT		Series 1095
S-16	Exterior where condensation exists	Spot primer	2.5-3.5 mils DFT	Tnemec	Series 1
		UV Resistant Polyurethane	2-4 mils DFT		Series 1095
S-17	Interior structural steel	Primer	2-3 mils DFT	Sherwin Williams	Pro Industrial Pro Cryl Primer
		Epoxy	2-3 mils DFT		Pro Industrial Precatalyzed Waterbased Epoxy
S-18	Interior	Aliphatic Urethane	4-6 mild DFT	Sherwin Williams	Corothane 1 MIO-Aluminum
			4-6 mils DFT	Sherwin Williams	Armorseal Rexthane II
S-19	Interior	Aliphatic Urethane	4-9 mils DFT	Sherwin Williams	Armorseal Rexthane II
S-20	Interior pipes, ferrous materials	Epoxy	10-20 mils DFT	Sherwin Williams	Macropoxy 646 Fast Cure Epoxy (2 coats)

Table 2: Galvanized Steel Coating System

SUBSTRATE TO BE COATED-GALVANIZED STEEL					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM TO BE CONFIRMED BY MANUFACTURER
GM-I	Interior	Polyamidoamine Epoxy	8.5-11.5 mils DFT	Tnemec	Series N69
GM-E	Exterior	Aliphatic Acrylic Polyurethane	8.0-12.5 mils DFT	Tnemec	Series 1095

Table 3: Aluminum Coating System

SUBSTRATE TO BE COATED-ALUMINUM					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM TO BE CONFIRMED BY MANUFACTURER
A-1	Interior	Polyamidoamine Epoxy	4-6 mils DFT	Tnemec	Series N69

Table 4: Ductile Iron Coating System

SUBSTRATE TO BE COATED-DUCTILE IRON					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM- TO BE CONFIRMED BY MANUFACTURER
DI-1	Interior/Exterior	Polyamidoamine Epoxy	10 mils DFT	Tnemec	Series N69
DI-2	Interior	Polyamidoamine Epoxy	8.5-13.5 mils DFT	Tnemec	Series N69
DI-3	Exterior	Aliphatic Acrylic Polyurethane	9-14 mils DFT	Tnemec	Series 1095
DI-4	Interior/Exterior	Polyamidoamine epoxy	See PDS	Sherwin Williams	Macropoxy 5500
DI-5	Interior/Exterior	Polyamidoamine Epoxy	12-18 mils DFT	Tnemec	Series N140
DI-6	Exterior	Aliphatic Acrylic Polyurethane	2-5 mils DFT	Tnemec	Series 1095
DI-7	Exterior	Modified Polyamine Epoxy	15-40 mils DFT	Tnemec	Series G435
DI-8	Buried	Polyamide Epoxy-Coal Tar	16-20 mils DFT	Tnemec	Series 46H-413
DI-9	Buried	Wax Tape/Putty	N/A	Trenton	Wax Tape #1
DI-10	Concrete Encased	Polyamidoamine Epoxy	16 mils DFT	Tnemec	Series N69
DI-11	Interior	Modified Polyamine Ceramic Epoxy	40 mils DFT	Tnemec	Series 431 Perma-shield PL
DI-12	Exterior	Primer	2.5-3.5 mils DFT	Tnemec	Series 1
		Epoxy	2-4 mils DFT		Series N69
		UV Resistant Polyurethane	2-4 mils DFT		Series 1095

SUBSTRATE TO BE COATED-DUCTILE IRON					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM-TO BE CONFIRMED BY MANUFACTURER
DI-13	Exterior	Spot primer	2.5-3.5 mils DFT	Tnemec	Series 1
		Epoxy	3-4 mils DFT		Series 135
		UV Resistant Polyurethane	2-4 mils DFT		Series 1095
DI-14	Exterior	Spot primer	2.5-3.5 mils DFT	Tnemec	Series 1
		UV Resistant Polyurethane	2-4 mils DFT		Series 1095
DI-15	Interior	Aliphatic Urethane	4-6 mils DFT	Sherwin Williams	Corothane 1 MIO-Aluminum
			4-9 mils DFT		Armorseal Rexthane II
DI-16	Interior	Epoxy	10-20 mils DFT	Sherwin Williams	Macropoxy 646 Fast Cure Epoxy (2 coats)
DI-17	Interior	Primer Aliphatic Urethane	3.5-10.5 mils DFT	Sherwin Williams	Dura Plate 301K
			2-3mils DFT		Armorseal Rexthane II

Table 5: Concrete Coating System

SUBSTRATE TO BE COATED-CONCRETE					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM TO BE CONFIRMED BY MANUFACTURER
INTERIOR					
CI-1	Mildly corrosive sumps, vaults, tanks, chemical facilities, equipment rooms	Polyamidoamine Epoxy/ Epoxy	Thickness varies per product.	Tnemec Raven Lining System Sauereisen Sherwin-Williams	Series N69 Hi-Build Epoxoline II Raven 404 Sewergard 210G Cor Cote HP
CI-2A	Equipment rooms-walls and ceilings	Polyamidoamine Epoxy	10 mils DFT	Tnemec	Series N69
CI-2B	Equipment rooms- floors	Epoxy	12-24 mils DFT	Tnemec	Epoxoprime 201, 280
CI-3	Storage tanks, reservoirs and sumps	Epoxy	15 mils DFT	Sherwin-Williams	Macropoxy 646 PW
CI-4	Mildly corrosive sumps, vaults, tanks, equipment rooms	Epoxy	60 mils DFT in addition to the parge coat	Tnemec	Series 218, G435
CI-5	Mildly corrosive sumps, vaults, tanks, equipment rooms	Epoxy	125 mils DFT (or 1/8 inch) in addition to the parge coat	Tnemec	Series 218, 434, G435
CI-6	Severely corrosive sumps, vaults, tanks, chemical facilities, equipment rooms	Epoxy	140 to 145 mils DFT in addition to the parge coat	Tnemec Raven Lining Systems Sauereisen Sherwin-Williams Madewell	Series 434, G435,436 (Epoxytec CPP Sprayliner MH) Raven 405 Sewergard 210X Top coat Cor Cote FRE with Cor Coat SC Mainstay DS-5

SUBSTRATE TO BE COATED-CONCRETE					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM TO BE CONFIRMED BY MANUFACTURER
INTERIOR					
CI-7	Secondary containment areas	Epoxy	Per manufacturer recommendations based on service conditions and exposure	Tnemec	Series 239MCK System
CI-8	Mildly corrosive sumps, vaults, tanks, equipment rooms where joint movement is anticipated	Epoxy	35-50 mils DFT in addition to the parge coat	Sherwin-Williams	Dura-Plate 235 PW Sherflex
CI-9	Mildly corrosive sumps, vaults, tanks, chemical facilities, equipment rooms where joint movement expected	Polyurethane	50-75 mils DFT	Tnemec	Series 264
CI-10	Equipment rooms	Acrylic Latex	4 mils DFT	Tnemec	Series 1028 or 1029
CI-11	Medium corrosive sumps, vaults, tanks			Tnemec Raven Lining Systems Sauereisen Stonhard Sherwin-Williams	Series G435 Perma-glaze Raven 400 Sewergard 210S Stonchem 510 Cor Cote SC
CI-12	Interior walls	Acrylic Epoxy	4-6 mils DFT	Sherwin-Williams	ProIndustrial Catalyzed Waterborne Epoxy (2 coats)

SUBSTRATE TO BE COATED-CONCRETE					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM TO BE CONFIRMED BY MANUFACTURER
EXTERIOR					
CE-1	Mildly corrosive sumps, vaults, tanks, chemical facilities, equipment rooms	Cycloaliphatic Amine Epoxy	16 to 20 mils DFT	Tnemec	Series 104
CE-2	Mildly corrosive sumps, vaults, tanks, equipment rooms where joint movement is anticipated	Epoxy	35-50 mils DFT in addition to the parge coat	Sherwin-Williams	Dura-Plate 235 PW Sherflex
CE-3	Mildly corrosive sumps, vaults, tanks, chemical facilities, equipment rooms where joint movement expected	Polyurethane	50-75 mils DFT	Tnemec	Series 264
CE-4	Equipment rooms	Acrylic Latex	2.6 - 4 mils DFT	Tnemec Sherwin Williams	Series 1028 or 1029 (2 coats) A100 (2 coats)
BURIED					
CB-1	External surface/below grade	Polyamidoamine Epoxy	16 mils DFT	Tnemec	Series N69

SUBSTRATE TO BE COATED-CONCRETE					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM TO BE CONFIRMED BY MANUFACTURER
FLOORING SYSTEM					
CF-1	Mildly corrosive environment, light traffic, non slip	Epoxy	125 mils DFT	Tnemec	Double Broadcast Series 241, 222, 284 Clear Finish
CF-2	Mildly corrosive environment, light and heavy traffic, non slip	Epoxy	250 mils DFT	Tnemec	Series 238, 242, 280
CF-3	Mildly corrosive environment, light and heavy traffic, non slip	Epoxy	6-20 mils WFT 10-30 mils WFT	Sherwin Williams	General Polymers 3579 High Performance Epoxy with 20/40 Mesh Sand Broadcast General Polymers 3746 High Performance Epoxy Seal coat
CF-4	Mildly corrosive environment, light and heavy traffic, non slip	Aliphatic moisture cure urethane	1.5-2.0 mils DFT 2-3 mils DFT	Sherwin Williams	ArmorSeal 1000 HS Amorseal Rexthane I
SEALERS/STAINS					
CS-1	Exterior, exposed to sunlight	Acrylic Stain	200 square feet per gallon maximum or as recommended by the manufacturer	Tnemec	Series 617 (2 coats)
CS-2	Interior and exterior, water repellent	Sealer	Per manufacturer recommendations	Tnemec	Series 636
CS-3	Exterior, water repellent, protectant against graffiti	Silicone Rubber	Per manufacturer recommendations	Tnemec	Series V-626

Table 6: Prestressed Concrete Tank Coating System

SUBSTRATE TO BE COATED-PRESTRESSED CONCRETE TANKS					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM TO BE CONFIRMED BY MANUFACTURER
WASTEWATER TANKS					
PC-1	Interior primer/sealer	Penetrating epoxy	Per CSM	Madewell	Madewell 927
PC-2	Interior corrosion barrier	Epoxy	Minimum of 100 mils in 1 or 2 coats	Madewell	Mainstay DS-5 Ultra High Build Epoxy
PC-3	Interior/Exterior concrete finish coating	Dry polymer modified Portland cement-based	Confirm with Manufacturer	BASF	MasterSeal 583 White (Super Thoroseal)
PC-4	Interior/Exterior concrete finish coating	Heavy, cement base, waterproof, and decorative coating, textured	Confirm with Manufacturer	BASF	MasterSeal 584 (Thoroseal Plaster Mix)
PC-5	Exterior primer	Polymer modified Portland cement	Minimum nominal cured thickness 1/16"	BASF	MasterSeal 581
PC-6	Exterior primer	Waterborne Modified Polyamine Epoxy	1.5 mils	Tnemec	Series 151
PC-7	Exterior finish waterproofing coat	Modified Waterborne Acrylate	12 mils DFT	Tnemec	Series 156
PC-8	Exterior finish waterproofing coat	High build waterproofing coating	13-16.8 mils	Sherwin Williams	Loxon XP
POTABLE WATER TANKS					
PC-9	Interior	Polyamidoamine Epoxy	Per CSM	Tnemec	Series N140
PC-10	Exterior finish color coat	Modified Waterborne Acrylate	4-8 mils DFT	Tnemec	Series 156
PC-11	Exterior primer	Portland cement-based coating	Minimum nominal cured thickness 1/16"	BASF	MasterSeal 581

Table 7: Masonry Coating System

SUBSTRATE TO BE COATED-MASONRY					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM TO BE CONFIRMED BY MANUFACTURER
INTERIOR					
MI-1	Mildly corrosive vaults, chemical facilities, equipment rooms	Polyamidoamine Epoxy	16 mils DFT	Tnemec	Series 69
MI-2	Mildly corrosive vaults, equipment rooms where joint movement is anticipated	Elastomeric Polyurethane	35-50 mils DFT in addition to primer	Sherwin Williams	Sherflex
MI-3	Equipment rooms	HDP Acrylic Polymer	8 mils DFT	Tnemec	Series 1028
MI-4	Interior walls	Acrylic Emulsion	4-8 mils DFT plus block filler and tie coat per CSM	Tnemec	Series 180
MI-5	Interior walls	Acrylic Emulsion	6-9 mils DFT plus block filler and tie coat per CSM	Tnemec	Series 181
MI-6	Interior Walls	Acrylic-Epoxy	8.0 - 12.0 mils DFT	Tnemec	Series 114 H.B.
MI-7	Interior walls heavy abuse mildly corrosive	100% Solids Fiber-Reinforced Epoxy	32.0 - 41.0 mils DFT	Tnemec	Series 280
MI-8	Interior walls	Polyamine Epoxy	4 -10 mils DFT	Sherwin Williams	Pro Industrial Waterbased Catalyzed Epoxy
MI-9	Interior walls heavy abuse mildly corrosive	100% Solids Fiber-Reinforced Epoxy	32.0 - 41.0 mils DFT	Sherwin Williams	Pro Industrial DTM Acrylic

SUBSTRATE TO BE COATED-MASONRY					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM TO BE CONFIRMED BY MANUFACTURER
EXTERIOR					
ME-1	Mildly corrosive vaults, chemical facilities, equipment rooms	Cycloaliphatic Amine Epoxy	16 - 20 mils DFT	Tnemec	Series 104
ME-2	Mildly corrosive vaults, equipment rooms where joint movement is anticipated	Elastomeric Polyurethane	35-50 mils DFT in addition to primer	Sherwin Williams	Sherflex
ME-3	Equipment rooms	HDP Acrylic Polymer	8 mils DFT	Tnemec	Series 1028
ME-4	Exterior walls	Modified Waterborne Acrylate	8-16 mils DFT	Tnemec	Series 156
ME-5	Exterior walls	Modified Waterborne Acrylate	6-9 mils DFT	Tnemec	Series 157
ME-6	Exterior Walls	Acrylic-Epoxy	8.0 - 12.0 mils DFT	Tnemec	Series 114 H.B.
ME-7	Exterior Walls	Acrylic	8.0 - 12.0 mils DFT	Sherwin Williams	Pro Industrial DTM Acrylic
ME-8	Exterior Walls	Acrylic	8.0 - 12.0 mils DFT	Sherwin Williams	Pro Industrial DTM Acrylic

SUBSTRATE TO BE COATED-MASONRY					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM TO BE CONFIRMED BY MANUFACTURER
BURIED					
MB-1	Below grade	Polyamidoamine Epoxy	16 mils DFT	Tnemec	Series N69
SEALERS/STAINS					
MS-1	Interior and exterior, above grade water repellent	Silane/Siloxane blend	Porous CMU: 50-75 sq.ft/gal. Normal: 75-125 sq.ft/gal	Tnemec	Series 636
MS-2	Exterior, water repellent, protectant against graffiti	Silicone Rubber	65-85 sq.ft / gallon	Tnemec	Series V-626
FILLER/SURFACER					
MF-1	Mildly corrosive vaults, equipment rooms	Epoxy	Parge Coat: 1/16"-1/4" per lift; maximum 1/2" thickness	Tnemec	Series 218
MF-2	Severely corrosive vaults, chemical facilities, equipment rooms	Epoxy	1/8 inch or 125 mils minimum	Tnemec	Series 434

Table 8: Plaster and Sheetrock Coating System

SUBSTRATE TO BE COATED-PLASTER AND SHEETROCK					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM TO BE CONFIRMED BY MANUFACTURER
PLASTER					
P-1	Interior/Exterior Surfaces	Modified Waterborne Acrylate	Per CSM	Tnemec	Series 156
SHEETROCK					
SR-1	Interior Walls/Ceilings	Waterborne Acrylic Epoxy	5.0 to 8.0 mils plus filler	Tnemec	Series 113 H.B.

Table 9: Polyvinyl Chloride and Fiber Reinforced Plastic Coating System

SUBSTRATE TO BE COATED-POLYVINYL CHLORIDE AND FIBER REINFORCED PLASTIC					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM-TO BE CONFIRMED BY MANUFACTURER
POLYVINYL CHLORIDE					
PF-1	Exterior	Aliphatic Acrylic Polyurethane	4-6 mils DFT	Tnemec	Series 1095
PF-2	Exterior	Acrylic polymer	2-3 mils DFT	Tnemec	Series 1028
PF-3	Interior/Exterior	Epoxy	5 mils DFT	Sherwin Williams	Macropoxy 646 (2 coats)
PF-4	Interior	Epoxy	4-6 mils DFT	Tnemec	Series N69
FIBER REINFORCED PLASTIC					
PF-1	Exterior	Aliphatic Acrylic Polyurethane	4-6 mils DFT	Tnemec	Series 1095
PF-3	Interior/Exterior	Epoxy	5 mils DFT	Sherwin Williams	Macropoxy 646
PF-4	Interior	Epoxy	4-6 mils DFT	Tnemec	Series N69
PF-5	Exterior	Acrylic Polyurethane	2-3 mils DFT	Sherwin Williams	Acrolon Ultra

Table 10: Wood Coating System

SUBSTRATE TO BE COATED-WOOD					
COATING REFERENCE	GENERAL USE	MATERIAL	SYSTEM TOTAL THICKNESS	MANUFACTURER OR APPROVED EQUIVALENT	PREFERRED SYSTEM-TO BE CONFIRMED BY MANUFACTURER
W-1	Interior/Exterior Primer	Modified Alkyd	2-3.5 mils DFT	Tnemec	Series 10-99W
W-2	Interior/Exterior	HDP Acrylic Polymer	3-5 mils DFT	Tnemec	Series 1029

Table 11: Service Colors

Service	Color	Color Code	Service	Color	Color Code
Water Production Facilities			Water Reclamation Facilities		
Finished or Potable Water	Dark Blue	11SF	W1 – No. 1 (potable water)	Clear sky	26BL
Nonpotable Water	Dark Blue	11SF	W2 - No. 2 BFV Protected W1	Clear sky	26BL
			W3 - No. 3 Water	Purple Mountain Majesty	13SF
			W5 - No. 5 Water (Fire Protection Service)	Aluminum or equal silver	57GR
Raw Water	Olive Green	110G N			
Settled or Clarified Water	Aqua	10GN			
Water lines for heating digesters or buildings	Dark Blue				
Chemical Process					
Alum/Ferric or Primary Coagulant	Orange	04SF			
Ammonia	White				
Carbon Slurry	Black	35GR			
Caustic (sodium hypochlorite)	Yellow	02SF			
Chlorine (gas or solution)	Yellow	02SF			
Fluoride	Light blue	25BL			
Lime Slurry	Lime green	38GN			
Ozone	Yellow	02SF			
Phosphate Compounds	Light green	38GN			
Polymer or Coagulant Aids	Orange	04SF			
Potassium Permanganate	Violet	14SF			
Soda Ash	Light green	38GN			
Sulfuric Acid	Yellow				
Sulfur Dioxide	Light green				
Wastewater Service					
Backwash Waste	Twine	68BR			
Grit	Gray	33GR			
Raw Sludge	Brown	15SF			

Service	Color	Color Code	Service	Color	Color Code
Water Production Facilities			Water Reclamation Facilities		
Reclaimed Water (Existing Standard)	Rec Water Purple	16SF			
Scum	Gray	33GR	Surface Waste Activated Scum	Ash White	01WH
			Secondary Scum	Cash Color	48GN
Sewerage	Gray	33GR	Secondary Effluent	Merlin	06GN
Sewage Effluent (Existing Standard)	Red	07RD	Plant Effluent	Horizon Blue	17BL
Sewer (Sanitary or Other)	Black	34GR	Sanitary Sewer	Briquet	49GR
			Plant Drain	Briquet	49GR
			Raw waste	#2 Pencil	47GR
			Septage	#2 Pencil	47GR
Sludge	Brown	84BR			
Sludge Draw Off	Brown	15SF			
Sludge Gas	Orange	05SF			
Sludge Recirculation (RAS)	Brown	15SF	Return activated Sludge	Candy Apple Red	06SF
Sludge Recirculation Discharge (WAS)	Brown	15SF	Waste Activated Sludge	Ash White	01WH
			Thickened Waste Activated Sludge	Blue grass	14GN
			Mixed Liquor	Cavalier	38BR
			Decant	Chocolate	42BR
			Filtrate	Chocolate	42BR
Force Main	Spearmint Green	09SF			
Other Service & Safety					
Fire Protection	Red	06SF			
Fuel Oil/Diesel	Red	06SF			
Oil – Hydraulic	Black	35GR			
Gas/Propane	Red	28RD			
Compressed Air	Dark Green	91GN			
Hoist/Trolley	Yellow	02SF			
Plumbing Drains/Vents	Black	35GR			
Steam	Orange	04SF			
Other Lines	Light Gray	32GR			
Unguarded edges of platforms, elevated door, edges, bollards,	Yellow	02SF			

Service	Color	Color Code	Service	Color	Color Code
Water Production Facilities			Water Reclamation Facilities		
pulley blocks, material handling equipment					
Exposed box housing, exposed edges of pulleys, gears, etc., safety starting buttons	Orange	04SF			
First Aid Kits, First Aid Signs, First Aid Dispensaries, Drinking Water Stations	Light Green	09SF			
Buildings -Exterior Doors					
			FWHWRC	Yellow River door Green	G7638
Buildings - Exterior Walls					
Lanier FP: Sherwin Williams A-100	Off White	A82W 00151			
Building Process Areas					
Lanier FP: interior walls Sherwin Williams 7015	Repose gray	B66W 01151			
Lanier FP ceilings Sherwin Williams 7008	Alabaster	B66W 01251			
Wastewater Pump Stations					
Light Poles	Medium Bronze	85BR	Force Mains and Non-Submerged Pipes	Fairway	21 GN
Doors	Medium Bronze	85R	Submerged Pipe (wet well) – standard slightly lighter shade of green than 21GN	Green	Series 431 Green
Roof Panels	Medium Bronze	85BR	Bridge Crane Structure	Washed Khaki	03BR
Bollards	Lemon Safety Yellow	02SF	Bridges	Lemon Safety Yellow	02SF
Pedestal Operators	Gray	33GR	Crane	True Blue/ Safety	11SF

PAINT SYSTEM DATA SHEET

Complete this PSDS for each coating system, include all components of the system (surface preparation, primer, intermediate coats, and finish coats). Include all components of a given coating system on a single PSDS.

Paint System Number (from Spec.):		
Paint System Title (from Spec.):		
Coating Supplier:		
Representative Name and NACE CIP Level 3 Peer Review Certification Number:		
Surface Preparation:		
Paint Material (Generic)	Product Name/Number (Proprietary)	Min. Coats, Coverage

PAINT PRODUCT DATA SHEET

GCDWR007
MARCH 30, 2022

COATING (REV 8)
09 99 00 - 83

PRODUCT: _____

Complete and attach manufacturer’s Technical Data Sheet to this PDS for each product submitted. Provide manufacturer’s recommendations for the following parameters at temperature (F)/relative humidity:

Temperature/RH	50/50	70/30	90/25
Induction Time			
Pot Life			
Shelf Life			
Drying Time			
Curing Time			
Min. Recoat Time			
Max. Recoat Time			

Provide manufacturer’s recommendations for the following:

Mixing Ratio: _____

Maximum Permissible Thinning: _____

Ambient Temperature Limitations: min.: _____ max.: _____

Surface Temperature Limitations: min.: _____ max.: _____

Surface Profile Requirements: min.: _____ max.: _____

[Attach additional sheets detailing manufacturer’s recommended storage requirements and holiday testing procedures.]

DAILY COATING INSPECTION REPORT

Paint Inspection:
Daily Coating Inspection Report

Date: / / M T W Th F S Su						Pg. Of	
Project #:						COPY To:	
Inspector:						<input type="checkbox"/> QC Mgr <input type="checkbox"/> Owner <input type="checkbox"/> Contr <input type="checkbox"/> _____	
Project/Client:						Attachments:	
Location:						<input type="checkbox"/> DFT Sheet <input type="checkbox"/> NCR/CAR <input type="checkbox"/> _____	
Description:							
Requirements:							
Contractor:						Revision #	
Spec #							
Description of Areas & Work Performed				Hold Point Inspections Performed			
				<input type="checkbox"/> 1 Pre Surface Prep/Condition & Cleanliness <input type="checkbox"/> 2 Surface Preparation Monitoring <input type="checkbox"/> 3 Post Surface Preparation/Cleanliness & Profile <input type="checkbox"/> 4 Pre Application Prep/Surface Cleanliness <input type="checkbox"/> 5 Application Monitoring/Wet Film Thickness (WFT) <input type="checkbox"/> 6 Post Application/Application Defects <input type="checkbox"/> 7 Post Cure/Dry Film Thickness (DFT) <input type="checkbox"/> 8 Nonconformance/Corrective Actions Follow-up <input type="checkbox"/> 9 Final Inspection Approved By: _____			
Surface Conditions				Ambient Conditions			
<input type="checkbox"/> New <input type="checkbox"/> Maint <input type="checkbox"/> Primer/Paint <input type="checkbox"/> Age/Dry/Cure <input type="checkbox"/> Steel <input type="checkbox"/> Galvanize <input type="checkbox"/> Concrete <input type="checkbox"/> Other <input type="checkbox"/> Hazard _____ <input type="checkbox"/> Sample Report # _____ <input type="checkbox"/> Degree of contamination: _____ Test: <input type="checkbox"/> Cl _____ µg/cm ² / ppm <input type="checkbox"/> Fe _____ ppm <input type="checkbox"/> pH _____ <input type="checkbox"/> Degree of Corrosion: _____ <input type="checkbox"/> Scale <input type="checkbox"/> Pitting/Holes <input type="checkbox"/> Crevices <input type="checkbox"/> Sharp Edges <input type="checkbox"/> Weld _____ <input type="checkbox"/> Moisture <input type="checkbox"/> Oils <input type="checkbox"/> Other _____ <input type="checkbox"/> Painted Surface Condition: _____ Dry to: <input type="checkbox"/> Touch <input type="checkbox"/> Handle <input type="checkbox"/> Recoat <input type="checkbox"/> Dry/Over Spray <input type="checkbox"/> Runs/Sags <input type="checkbox"/> Pinholes <input type="checkbox"/> Holidays <input type="checkbox"/> Abrasion <input type="checkbox"/> Fall Out <input type="checkbox"/> Other _____				Time (Indicate AM or PM) : : : : Dry Bulb Temp ^o (C/F) : 0 : 0 : 0 : 0 Wet Bulb Temp ^o (C/F) : 0 : 0 : 0 : 0 % Relative Humidity : % : % : % : % Surface Temp ^o (C/F) Min/Max : / 0 : / 0 : / 0 : / 0 Dew Point Temp ^o (C/F) : 0 : 0 : 0 : 0 Wind Direction/Speed Weather Conditions:			
Surface Preparation				Application			
Start Time: _____ Finish Time: _____ Est Sq/ft: _____ <input type="checkbox"/> Solvent Clean <input type="checkbox"/> Hand Tool <input type="checkbox"/> Power Tool <input type="checkbox"/> HP Wash PSI _____ <input type="checkbox"/> Other _____ <input type="checkbox"/> Abrasive Blast <input type="checkbox"/> Abrasive Type _____ <input type="checkbox"/> Sample <input type="checkbox"/> Blast Hose Size _____ <input type="checkbox"/> Nozzle Size / PSI _____ <input type="checkbox"/> Air Supply CFM _____ <input type="checkbox"/> Air Supply Cleanliness <input type="checkbox"/> Water/Oil Trap Check <input type="checkbox"/> Equipment Condition Check				Start Time : _____ Finish Time : _____ Est. Sq/ft. _____ <input type="checkbox"/> Primer <input type="checkbox"/> Intermediate <input type="checkbox"/> Topcoat <input type="checkbox"/> Touch-up Generic Type: _____ Qty Mixed: _____ Manuf.: _____ Mix Ratio: _____ Prod Name: _____ Mix Method: _____ Prod #: _____ Strain/Screen: _____ Color: _____ Material Temp: _____ 0 F Kit Sz/Cond.: _____ Sweat-in Time: _____ Min/Hrs Shelf Life: _____ Pot Life: _____ Min/Hrs Batch #'s (A) _____ Qty Added: _____ Pts/Qtz/Gal (B) _____ % by Vol: _____ % (C) _____ Specified WFT Avg: _____ Mils Reducer: _____ Achieved WFT Avg: _____ Mils <input type="checkbox"/> Airless/Conv. Spray <input type="checkbox"/> Brush <input type="checkbox"/> Roller <input type="checkbox"/> Other _____ Pump Pot _____ Hose Dia. _____ Air Check _____ Ratio/Size _____ Hose Lng. _____ SEP/Trap _____ GPM/CFM _____ Spray Gun _____ Filter _____ PSI _____ Tip Sz. _____ Agitator _____			
Surface Cleanliness & Profile Measurement							
<input type="checkbox"/> Job Specification <input type="checkbox"/> SSPC/NACE - SP- _____ <input type="checkbox"/> SSPC/NACE Spec / Visual Stds <input type="checkbox"/> _____ Profile Check: <input type="checkbox"/> Disc <input type="checkbox"/> Tape <input type="checkbox"/> Gauge <input type="checkbox"/> Specified _____ mils avg. / Achieved _____ mils <input type="checkbox"/> Surface effect on DFT Gauge/BMR _____ mils							
Dry Film Thickness							
Gage Type / Model	Gage Serial #	Gage Calib Verified	Spec Avg DFT	Total Avg DFT	DFT Last Coat	DFT This Coat	
Inspector's Signature						Date	



COATING SYSTEM CHECKLIST

Project Name			Project Number		
Client/Owner			Coating System Manufacturer (CSM)		
General Contractor (GC)			Coating System Applicator (CSA)		
Structure/Area of Coating			Location Within Structure/Area		
Coating System			Coating Type (E.g. Epoxy, etc.)		
Step	Description		Name	Signature	Date
1	Completion of cleaning and substrate decontamination prior to abrasive blast cleaning.	GC QC			
		CSM QC			
		CSA QC			
2	Installation of protective enclosure of structure or area and protection of adjacent surfaces or structures that are not to be coated.	GC QC			
		CSM QC			
		CSA QC			
3	Completion of ambient condition control in structure or building area and acceptance of ventilation methods in structure or area.	GC QC			
		CSM QC			
		CSA QC			
4	Completion of surface preparation for substrates to be coated.	GC QC			
		CSM QC			
		CSA QC			
5	Completion of primer application.	GC QC			
		CSM QC			
		CSA QC			
6	Completion of concrete repairs if required and related surface preparation rework prior to coating system application.	GC QC			
		CSM QC			
		CSA QC			
7	Completion of concrete filler/ surface application to concrete.	GC QC			
		CSM QC			
		CSA QC			
8	Completion of first finish coat application and of	GC QC			
		CSM QC			

	detail treatment at transitions or terminations.	CSA QC			
Step	Description		Name	Signature	Date
9	Completion of second finish coat application and of detail treatment at transitions and termination.	GC QC			
		CSM QC			
		CSA QC			
10	Completion of full and proper cure of coating system.	GC QC			
		CSM QC			
		CSA QC			
11	Completion of testing of cured coating system including adhesion, holiday (continuity) testing and dry film thickness.	GC QC			
		CSM QC			
		CSA QC			
12	Completion of localized repairs to coating system following testing.	GC QC			
		CSM QC			
		CSA QC			
13	Final acceptance of coating system installation including final clean-up complying with specification requirements and the CMS's quality requirements.	GC QC			
		CSM QC			
		CSA QC			

MANUFACTURER'S CERTIFICATE OF COMPLIANCE

OWNER: _____ PRODUCT, MATERIAL, OR SERVICE
SUBMITTED: _____

PROJECT NAME: _____

PROJECT NO: _____

Comments: _____

I hereby certify that the above-referenced product, material, or service called for by the Contract for the named Project will be furnished in accordance with all applicable requirements. I further certify that the product, material, or service are of the quality specified and conform in all respects with the Contract requirements, and are in the quantity shown.

Date of Execution: _____, 20__

Manufacturer: _____

Manufacturer's Authorized Representative (*print*): _____

(NACE Certification and NACE Certification number)

(Authorized Signature)

MANUFACTURER’S CERTIFICATE OF PROPER INSTALLATION

OWNER _____

PROJECT NAME: _____ PRODUCT: _____

PROJECT NO: _____ SPEC. SECTION: _____

I hereby certify that the above-referenced product or material:

(Check Applicable)

- Surface preparation in accordance with Manufacturer’s recommendations.
- Installed in accordance with Manufacturer’s recommendations.
- Inspected, tested, and checked.
- Manufacturer’s representative has witnessed all aspects of product installation.

Note: Attach any documentation from thickness and continuity testing.

Comments:

I, the undersigned Manufacturer’s Representative, hereby certify that I am (i) a duly authorized representative of the manufacturer, (ii) empowered by the manufacturer to inspect and approve the installation of their product, (iii), and is authorized to make recommendations required to ensure that surface preparation and installation of product is in accordance with manufacturer’s standards. I further certify that all information contained herein is true and accurate.

Date: _____, 20__

Manufacturer: _____

By Manufacturer’s Authorized Representative: _____

(NACE Certification and NACE Certification number)

(Authorized Signature)

Attachment D: Manufacturer's Certificate of Proper Installation



Manufacturer's Certificate of Proper Installation CL016

To Engineer:	
Project:	Project No:
Owner:	
Coating System:	Spec Section:
Coating Location:	Coating Substrate:
Manufacturer's Authorized Representative:	

I hereby certify that the above-referenced coating system has been (check applicable):

- Existing coating prepared in accordance with manufacturer's recommendations.
- Surface prepared, inspected, checked and signed off.
- Environmental conditions monitored and within requirements during application.
- Coating applied in accordance with manufacturers recommendations and standards.
- Tests completed during application, recorded and are in accordance with manufacturers requirements.
- Curing conditions monitored and in accordance with manufacturers requirements.
- Complete coating system applied in accordance with manufacturers recommendations and in compliance with the specifications.

Comments:
I, the undersigned Manufacturer's Representative, hereby certify that I am (i) a duly authorized representative of the manufacturer, (ii) empowered by the manufacturer to inspect, approve, and apply coatings and (iii) authorized to make recommendations required to assure that the coatings furnished by the manufacturer are complete and applied in accordance with recommendations, except as may be otherwise indicated herein. I further certify that all information contained herein is true and accurate.
Date:
Manufacturer:
By Manufacturer's Authorized Representative:
Contractor
By Contractor's Authorized Representative: _____
Signature

Copy distribution: Contractor PC / WS Original, second copy - CM / Engineer, third copy - Owner.

Attachment E: Contractor's Daily Report

CONTRACTOR'S DAILY REPORT

WORK ORDER # _____

WORK ORDER DESCRIPTION: _____

CONTRACTOR: _____

DAY:	DATE:	CONTRACTOR'S WORK PERIOD:	FROM:	AM PM	TO:	AM PM
WEATHER:	TEMP. MAX:	MIN.		PRECIPITATION		

CONTRACTOR'S PERSONNEL			
NO.	NAME	CLASSIFICATION	HOURS WORKED
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

MAJOR EQUIPMENT ON PROJECT AND HOURS OPERATED				
NO.	DESCRIPTION	SIZE/ CAPACITY	HOURS OF OPERATION	RENT/ OWNED
1				
2				
3				
4				
5				
6				
7				

SUBCONTRACTORS		
NO.	NAME	
1		SEE ATTACHED SUBCONTRACTOR'S DAILY REPORT
2		SEE ATTACHED SUBCONTRACTOR'S DAILY REPORT
3		SEE ATTACHED SUBCONTRACTOR'S DAILY REPORT
4		
5		

Attachment F: Final Contractor's Affidavit

FINAL CONTRACTOR'S AFFIDAVIT

STATE OF _____

COUNTY OF _____

Personally appeared before me, a notary public duly authorized to administer oaths under the laws of the State of Georgia, the undersigned _____, who deposes and says that he/she is the _____ of _____, (the "Contractor") and that he/she is authorized to and does make this affidavit on behalf of said Contractor. The undersigned further deposes and says:

1. THAT pursuant to a certain contract (the "Contract") _____

dated _____, by and between Contractor and GWINNETT COUNTY (the "Owner"), Contractor agreed with Owner to construct and has completed the construction according to said Contract.

2. THAT, in connection with said Contract, all work is complete and has been performed in accordance with the terms of the Contract, that the Contractor alone has made all sub-contracts, and that the Contractor and his sub-contractors have purchased all materials and fixtures and employed all labor furnished in connection with the Contract were furnished and performed at Contractor's instance.
3. THAT all laborers, materialmen, mechanics, manufacturers, suppliers, and sub-contractors who have furnished services, labor, fixtures or materials of any one of these items have been paid and satisfied in full for all work performed, materials, fixtures or services supplied; and that said Contractor is not indebted to any person or entity for labor or materials used in connection with such construction job in any amount whatsoever.

4. THAT there are no outstanding claims of any nature, contractual or otherwise, or for any personal injury, death or property damage, arising from or associated with the performance of the Contractor which might be the basis of any claim, suit, lien, or demand that could be asserted against either the Owner or the Contractor.

5. THIS AFFIDAVIT is made pursuant to Section 44-14-361.2 of the Code of Georgia Annotated for the purpose of inducing the Owner to make final payment, and the acceptance of such final payment by Contractor shall release the Owner from any further liability under the Contract.

Made and given this _____ day of _____, 20xx.

(Contractor)

By _____

Title: _____

Sworn to and subscribed before me this _____ day of _____, 2006.

(Notary Public)

My commission expires: _____

(SEAL)

Attachment G: Job Hazard Analysis Template

JHA (Job Hazard Analysis)

Project: _____ Date: _____ Contractor: _____ Page ____ of ____
 Description of Work: _____ JSA# _____
 Prepared By: _____

Safety and Health Considerations - Check Box(s) That Apply

Falls from Elevation:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Underground Utilities:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Energized Systems/LOTO:	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Confined Space(s):	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Line Breaking:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Health Hazards:	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Respiratory Protection:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	High Voltage Work:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Scaffolding/Aerial Lifts:	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Excavating/Trenching:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Work Permits:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Asbestos and/or Lead:	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Public Exposure:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	MEP Issues:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Hazardous Materials/Waste:	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Hot Work:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Cranes/Rigging:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Working over Water:	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Description of Steps to be Performed	Hazards Associated with Each Step	Required to Eliminate or Control the Hazard

JHA (Con't)		
Description of Steps to be Performed	Hazards Associated with Each Step	Required to Eliminate or Control the Hazard

REVIEW SIGNATURES AND DATE

_____ Originator	_____ Date
_____ Contractor Superintendent/Engineer	_____ Date
_____ Contractor Superintendent/Engineer	_____ Date

Attachment H: Project Safety Acknowledgement

Project Name: _____

Location: _____

Company/Contractor: _____

I, _____ confirm that I will be working on the above project and have received and completed Company safety training and that I have been made aware of the Facility specific safety requirements.

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

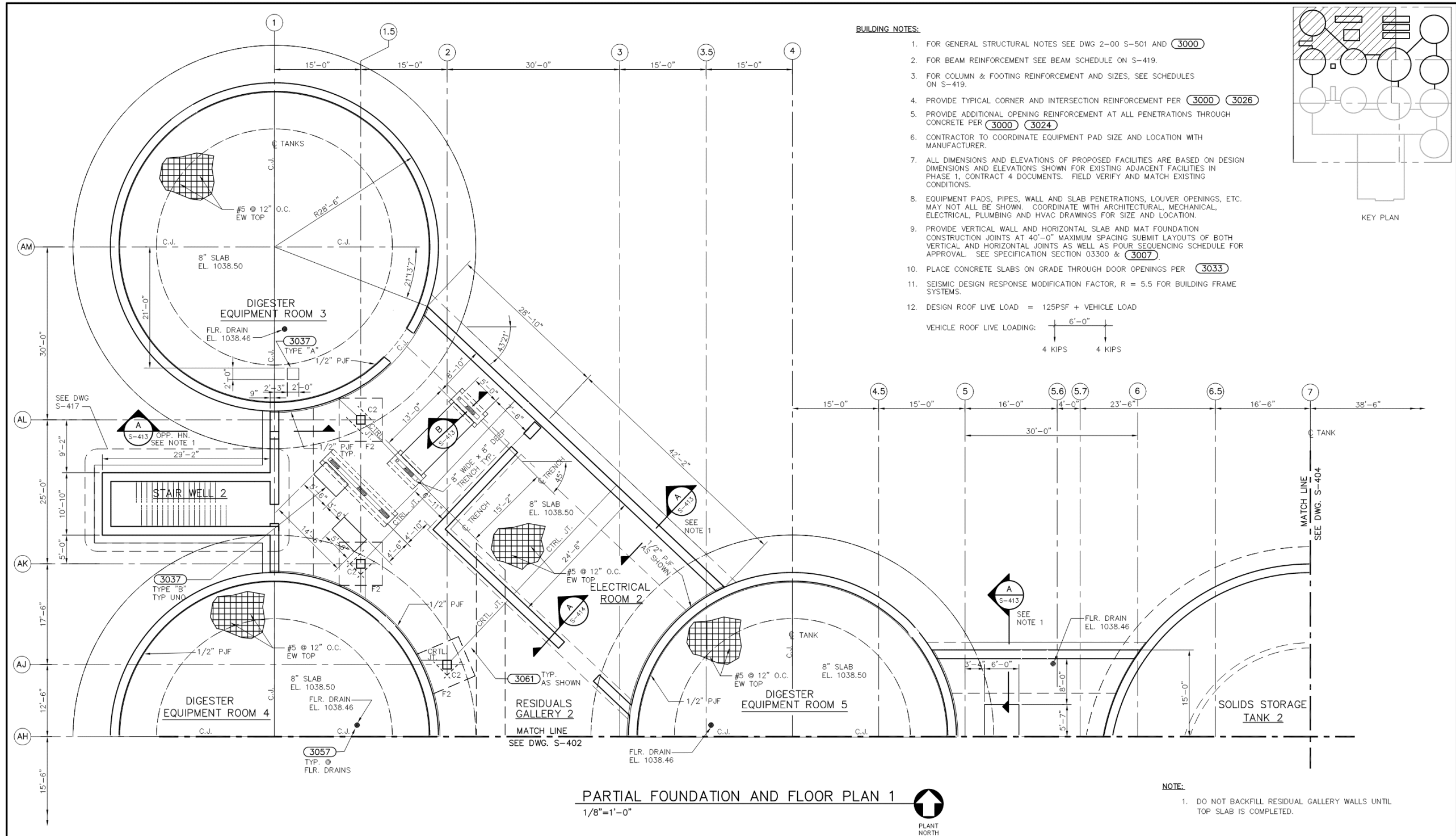
Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____



Jordan, Jones & Gouling
CH2M HILL
Precision Planning, Inc.

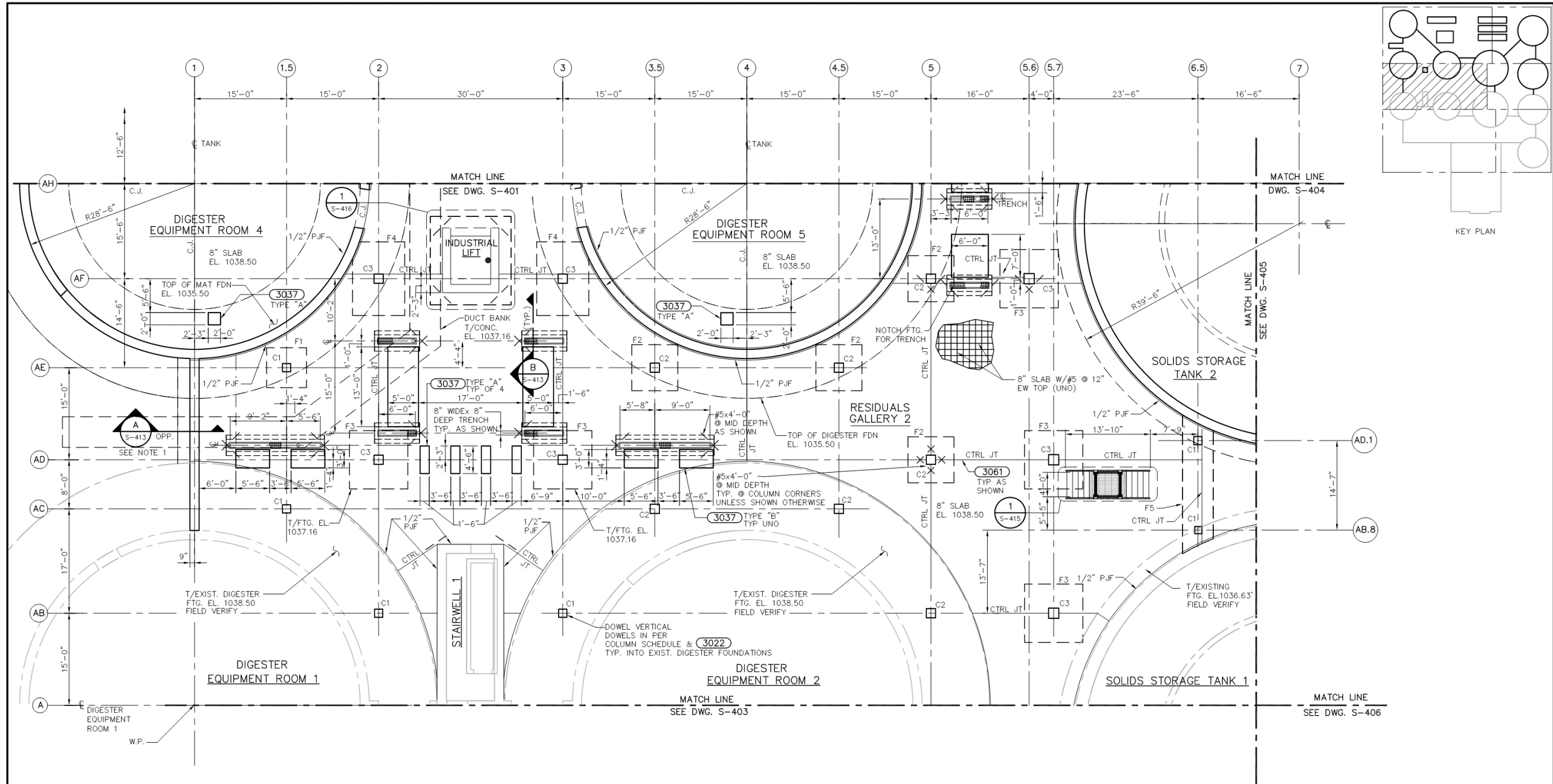
NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
O	08-08-02	FIRST RELEASE



GWINNETT COUNTY, GEORGIA
DEPARTMENT OF PUBLIC UTILITIES
F. WAYNE HILL
WATER RESOURCES CENTER
PHASE 2
3320 FINANCIAL CENTER WAY

RECORD DRAWINGS
These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY PARTIAL FOUNDATION AND FLOOR PLAN 1			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-401
DRAWN: ASKEW	APP'D.:	SCALE: AS SHOWN	DRAWING
			R REV



PARTIAL FOUNDATION AND FLOOR PLAN 2
 1/8"=1'-0"



- NOTE:**
- DO NOT BACKFILL RESIDUAL GALLERY WALLS UNTIL TOP SLAB IS COMPLETED.
 - FOR BUILDING NOTES SEE DWG. S-401.

Jordan, Jones & Goulding
CH2M HILL
Precision Planning, Inc.

NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
O	08-08-02	FIRST RELEASE

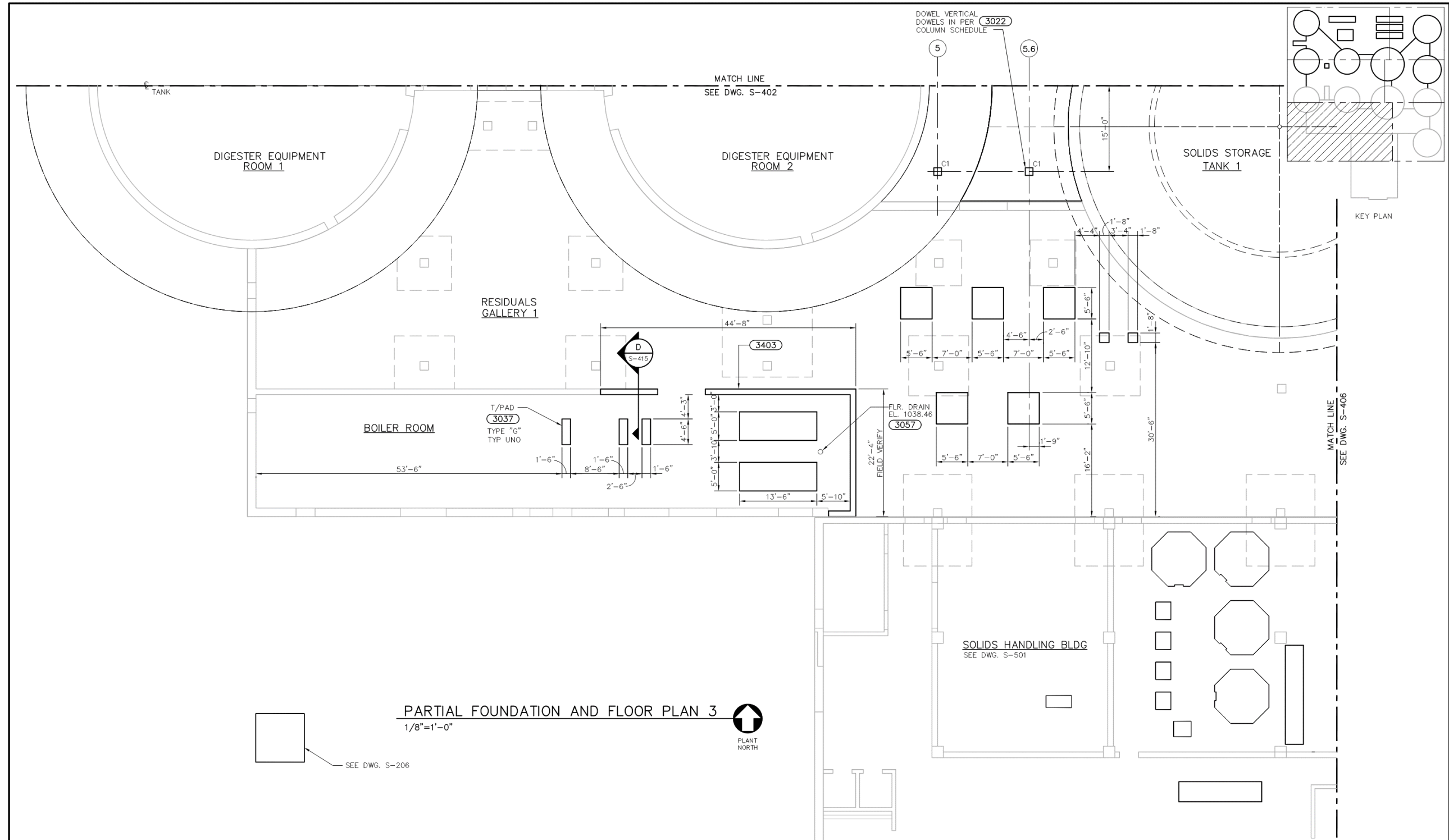


GWINNETT COUNTY, GEORGIA
DEPARTMENT OF PUBLIC UTILITIES
F. WAYNE HILL
WATER RESOURCES CENTER
PHASE 2
3320 FINANCIAL CENTER WAY

RECORD DRAWINGS
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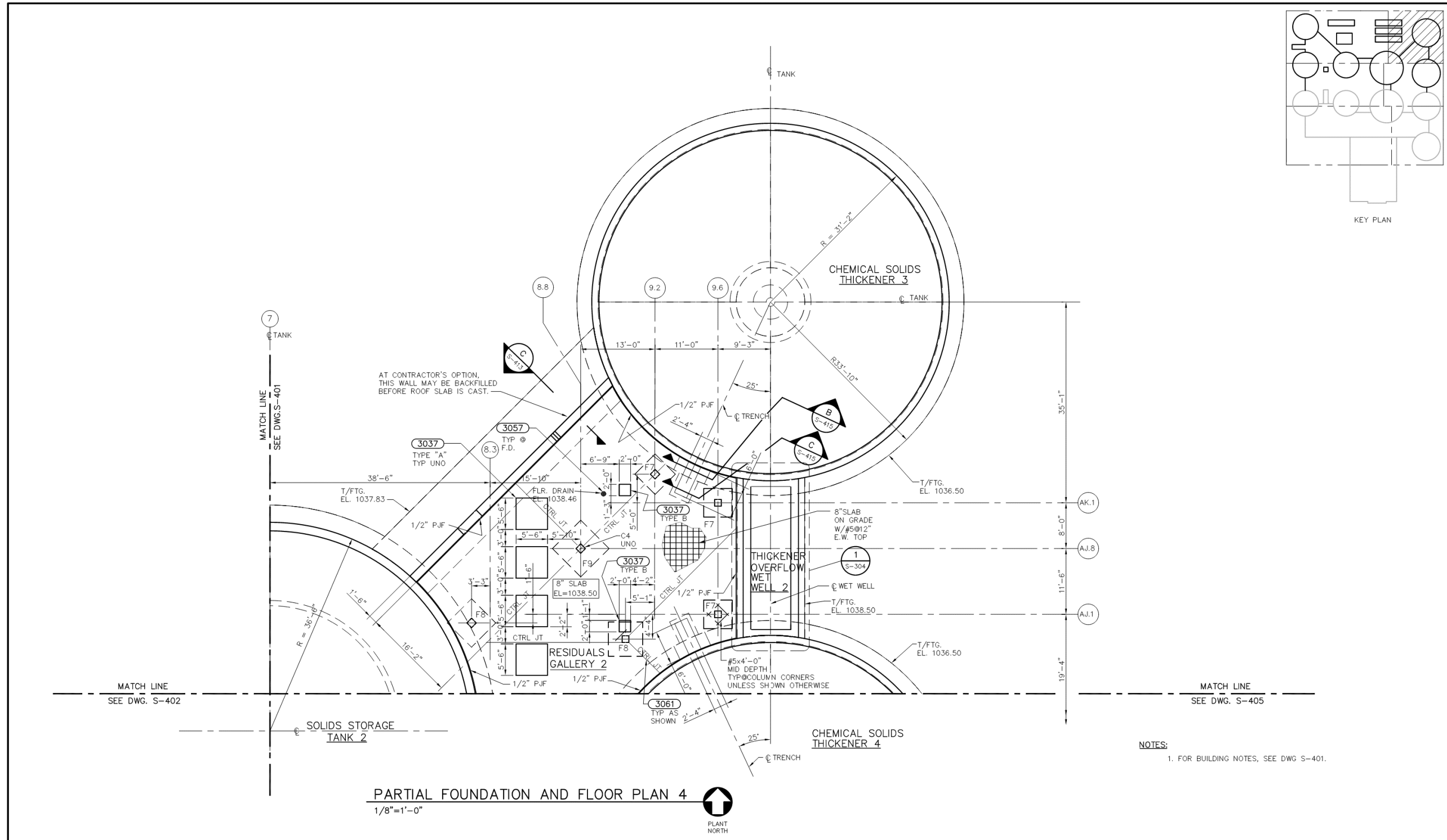
CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY PARTIAL FOUNDATION AND FLOOR PLAN 2			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-402
DRAWN: ASKEW	APP'D.:	SCALE: AS SHOWN	DRAWING
			R REV

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PARTIAL FOUNDATION AND FLOOR PLAN 3
1/8"=1'-0"
SEE DWG. S-206
PLANT NORTH

Jordan, Jones & Goulding CH2M HILL Precision Planning, Inc.	RECORD DRAWINGS THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THIS DOCUMENT AS A RESULT.		CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES	
	GWINNETT COUNTY, GEORGIA DEPARTMENT OF PUBLIC UTILITIES F. WAYNE HILL WATER RESOURCES CENTER PHASE 2 3320 FINANCIAL CENTER WAY		RESIDUALS GALLERY PARTIAL FOUNDATION AND FLOOR PLAN 3	
JOB NO. 2074.026 gw3264027s.dwg 08.28.06	NO. DATE DESCRIPTION OF REVISION	DESIGNED: DWS DRAWN: ASKEW	CHECKED: APP'D:	DATE: OCT 2002 SCALE: AS SHOWN 2-40 S-403 DRAWING R REV



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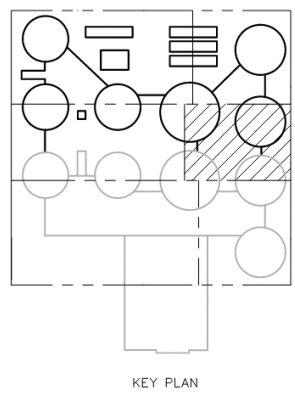
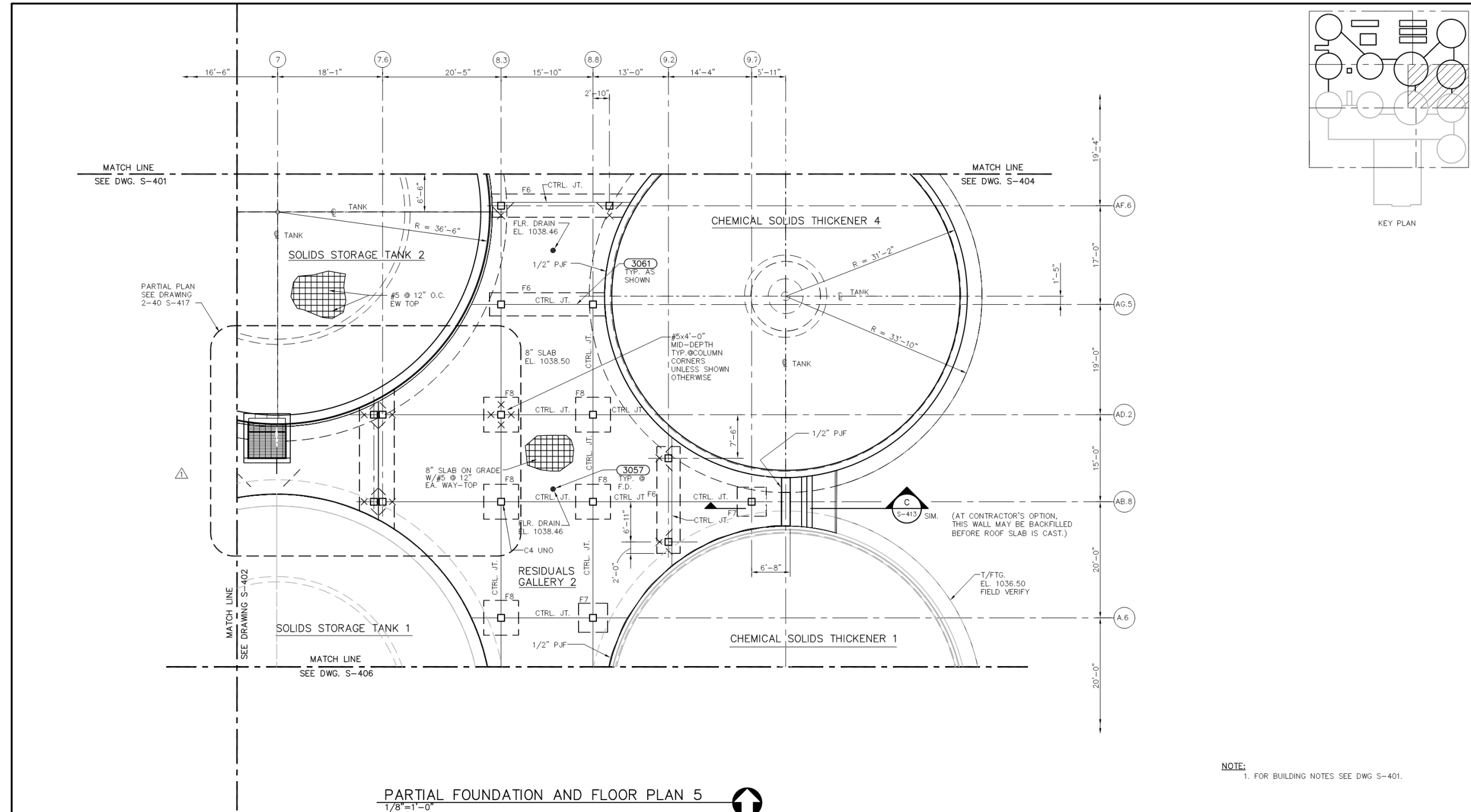
NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
D	08-08-02	FIRST RELEASE



GWINNETT COUNTY, GEORGIA
DEPARTMENT OF PUBLIC UTILITIES
F. WAYNE HILL
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CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY PARTIAL FOUNDATION AND FLOOR PLAN 4			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-404
DRAWN: ASKEW	APP'D.	SCALE: AS SHOWN	DRAWING
			R
			REV



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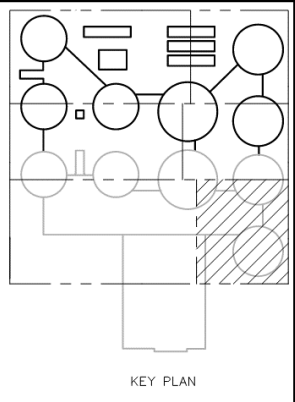
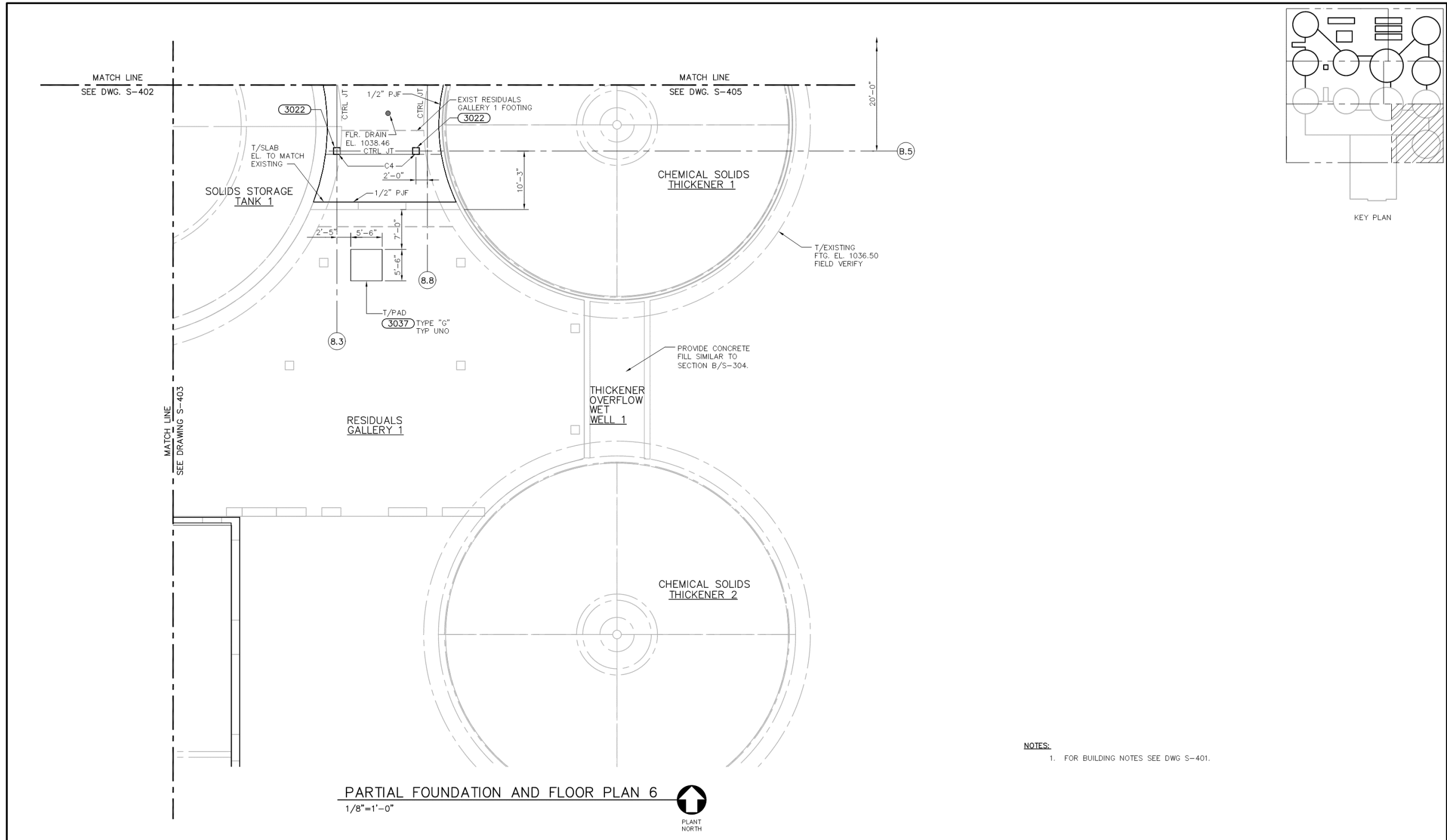
NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
1	04-18-03	REVISED VALVE VAULT AND ADDED PARTIAL PLAN
0	08-08-02	FIRST RELEASE




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F. WAYNE HILL
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CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY PARTIAL FOUNDATION AND FLOOR PLAN 5			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-405
DRAWN: ASKEW	APP'D.	SCALE: AS SHOWN	DRAWING
			R REV



NOTES:
1. FOR BUILDING NOTES SEE DWG S-401.

PARTIAL FOUNDATION AND FLOOR PLAN 6
1/8"=1'-0" 
PLANT NORTH

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NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
0	08-08-02	FIRST RELEASE

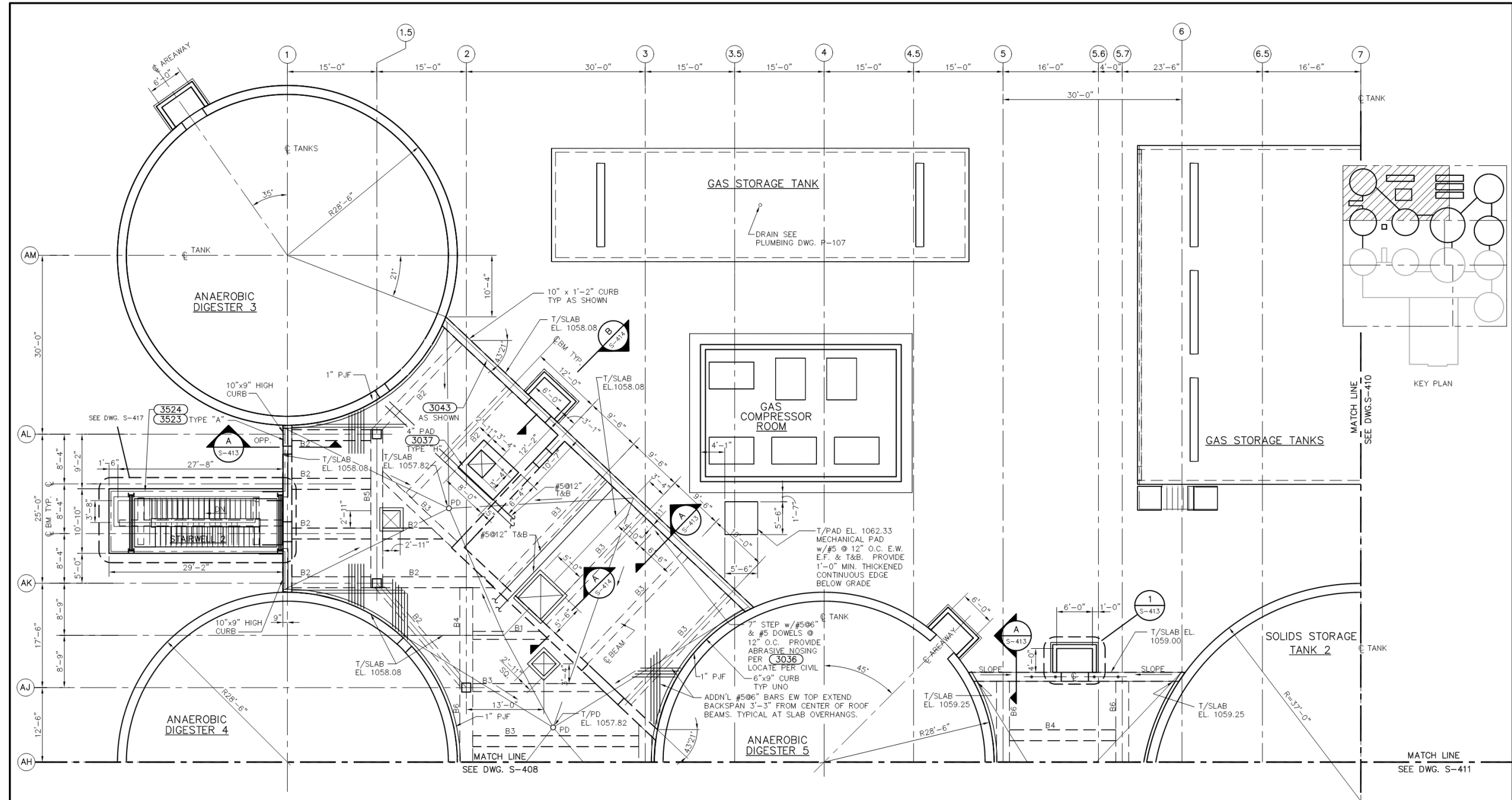


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DEPARTMENT OF PUBLIC UTILITIES
F. WAYNE HILL
WATER RESOURCES CENTER
PHASE 2
3320 FINANCIAL CENTER WAY

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CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY PARTIAL FOUNDATION AND FLOOR PLAN 6			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-406
DRAWN: ASKEW	APP'D.:	SCALE: AS SHOWN	DRAWING
			R REV

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PARTIAL ROOF PLAN 1
1/8"=1'-0"
PLANT NORTH

NOTES:
1. DO NOT BACKFILL RESIDUAL GALLERY WALLS UNTIL TOP SLAB IS COMPLETED.
2. FOR BUILDING NOTES SEE DWG S-401.

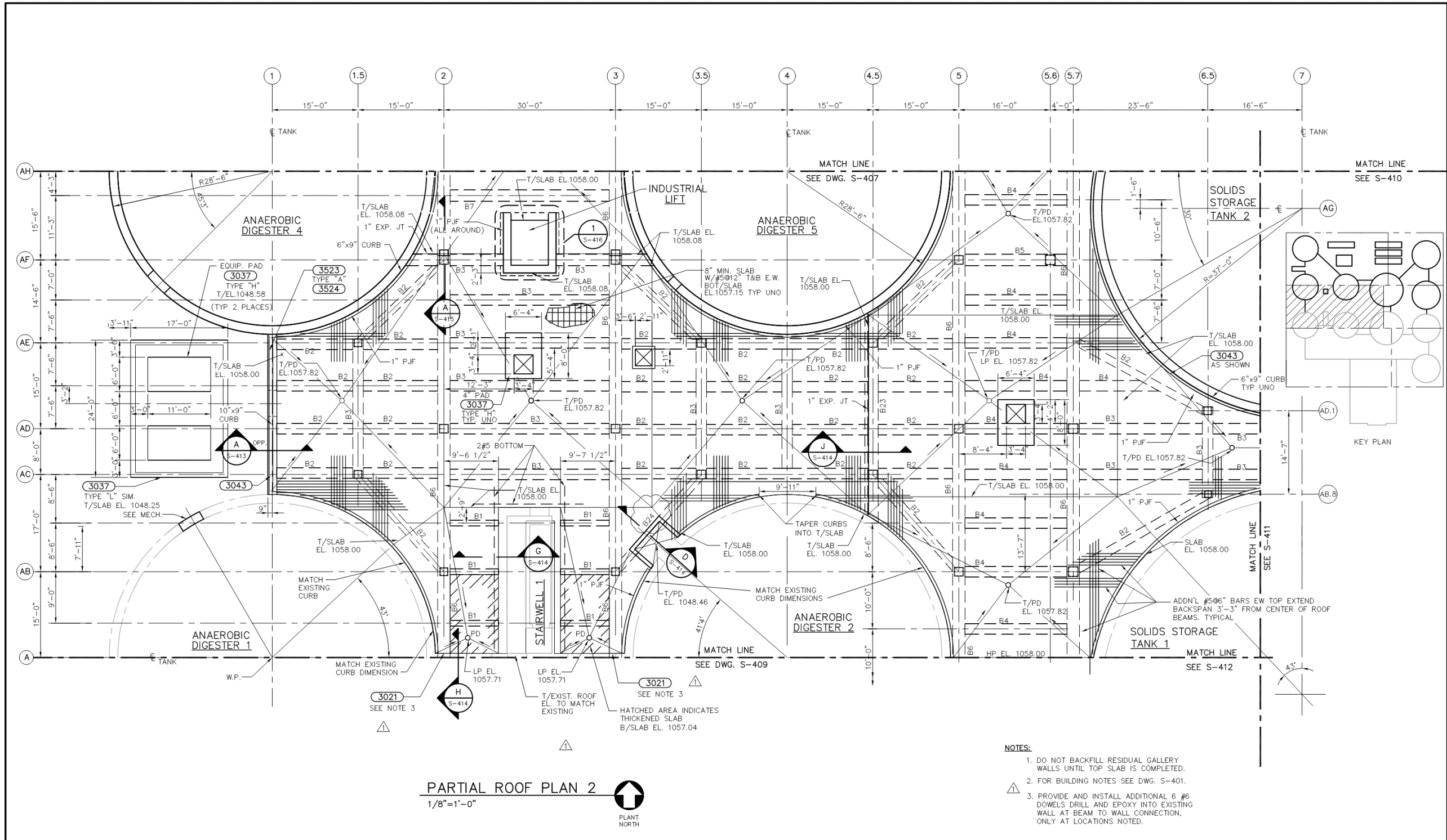
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Precision Planning, Inc.		
R	06-26-06	RECORD DRAWINGS
0	08-08-02	FIRST RELEASE
NO.	DATE	DESCRIPTION OF REVISION



GWINNETT COUNTY, GEORGIA
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F. WAYNE HILL
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CONTRACT 3			
SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY			
PARTIAL ROOF PLAN 1			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-407
DRAWN: ASKEW	APP'D.	SCALE: AS SHOWN	R REV



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NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
1	02-17-03	ADDED NOTES
0	08-08-02	FIRST RELEASE

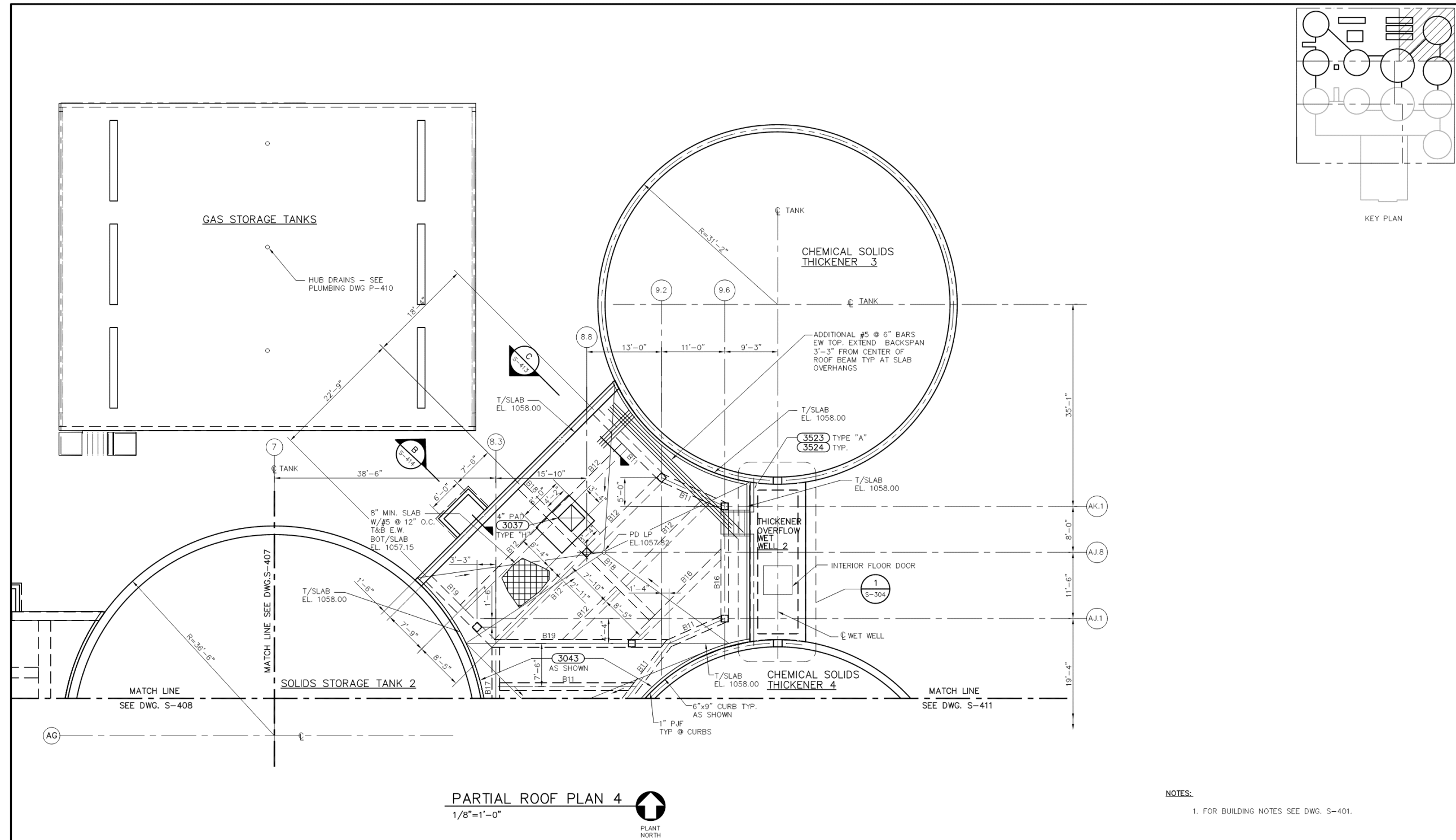


GWINNETT COUNTY, GEORGIA
DEPARTMENT OF PUBLIC UTILITIES
F. WAYNE HILL
WATER RESOURCES CENTER
PHASE 2
3320 FINANCIAL CENTER WAY

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CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY PARTIAL ROOF PLAN 2			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-408
DRAWN: ASKEW	APP'D.	SCALE: AS SHOWN	DRAWING REV



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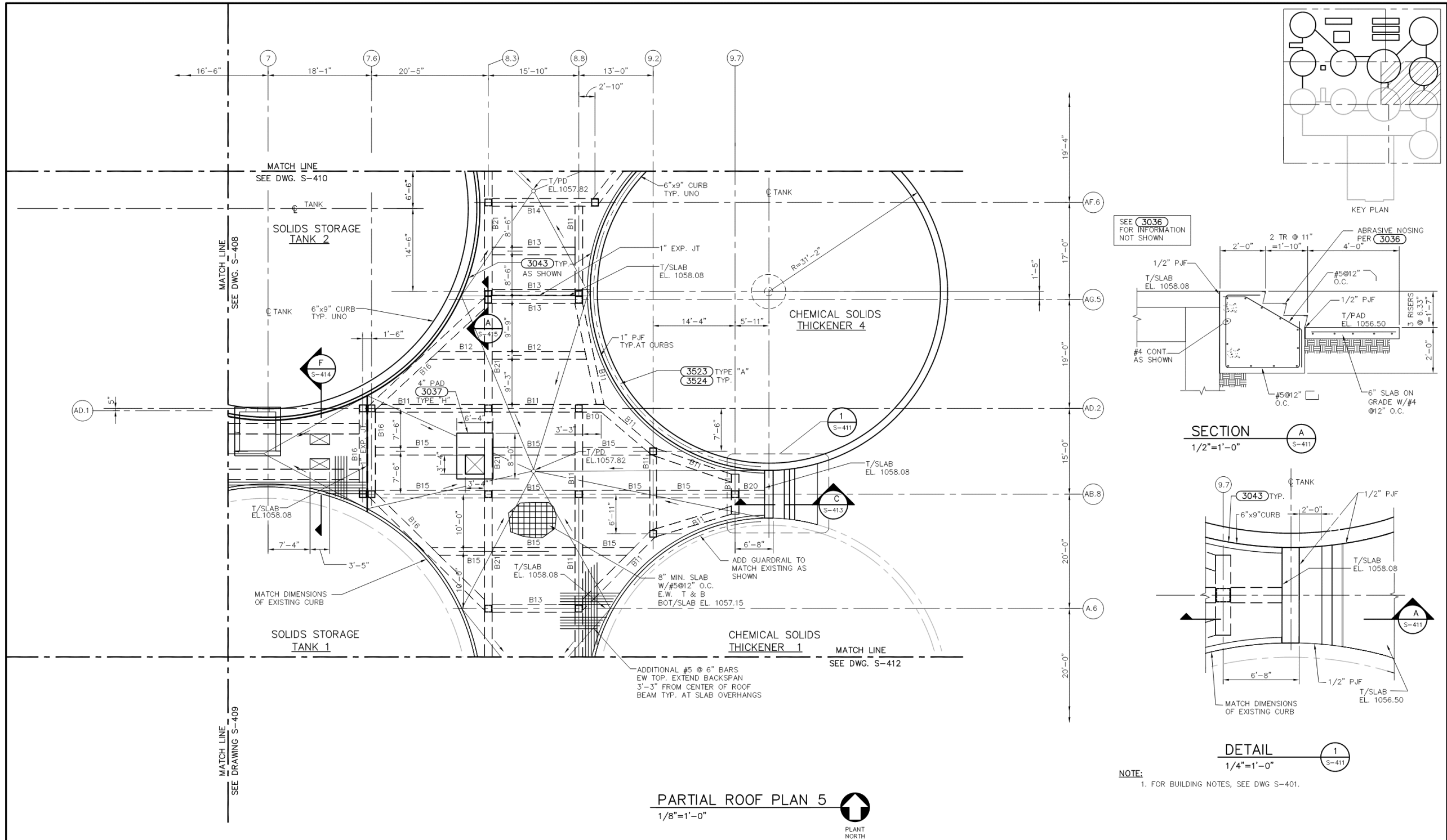
NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
0	08-08-02	FIRST RELEASE



GWINNETT COUNTY, GEORGIA
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F. WAYNE HILL
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PHASE 2
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RECORD DRAWINGS --
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CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY PARTIAL ROOF PLAN 4			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-410
DRAWN: ASKEW	APP'D.	SCALE: AS SHOWN	DRAWING
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R	06-26-06	RECORD DRAWINGS
O	08-08-02	FIRST RELEASE

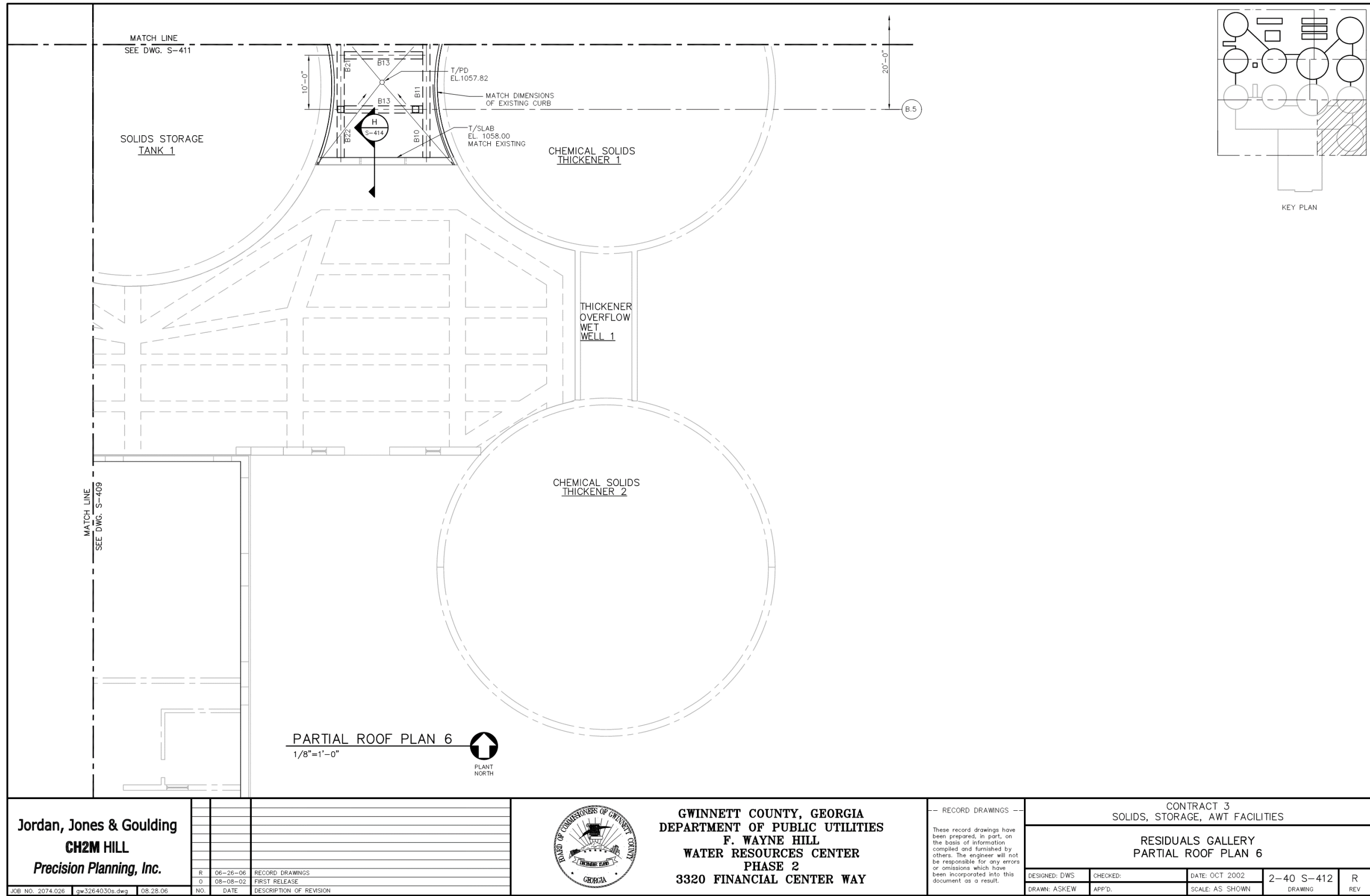


GWINNETT COUNTY, GEORGIA
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 F. WAYNE HILL
 WATER RESOURCES CENTER
 PHASE 2
 3320 FINANCIAL CENTER WAY

RECORD DRAWINGS

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CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY PARTIAL ROOF PLAN 5			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-411
DRAWN: ASKEW	APP'D.:	SCALE: AS SHOWN	DRAWING



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Precision Planning, Inc.

NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
O	08-08-02	FIRST RELEASE

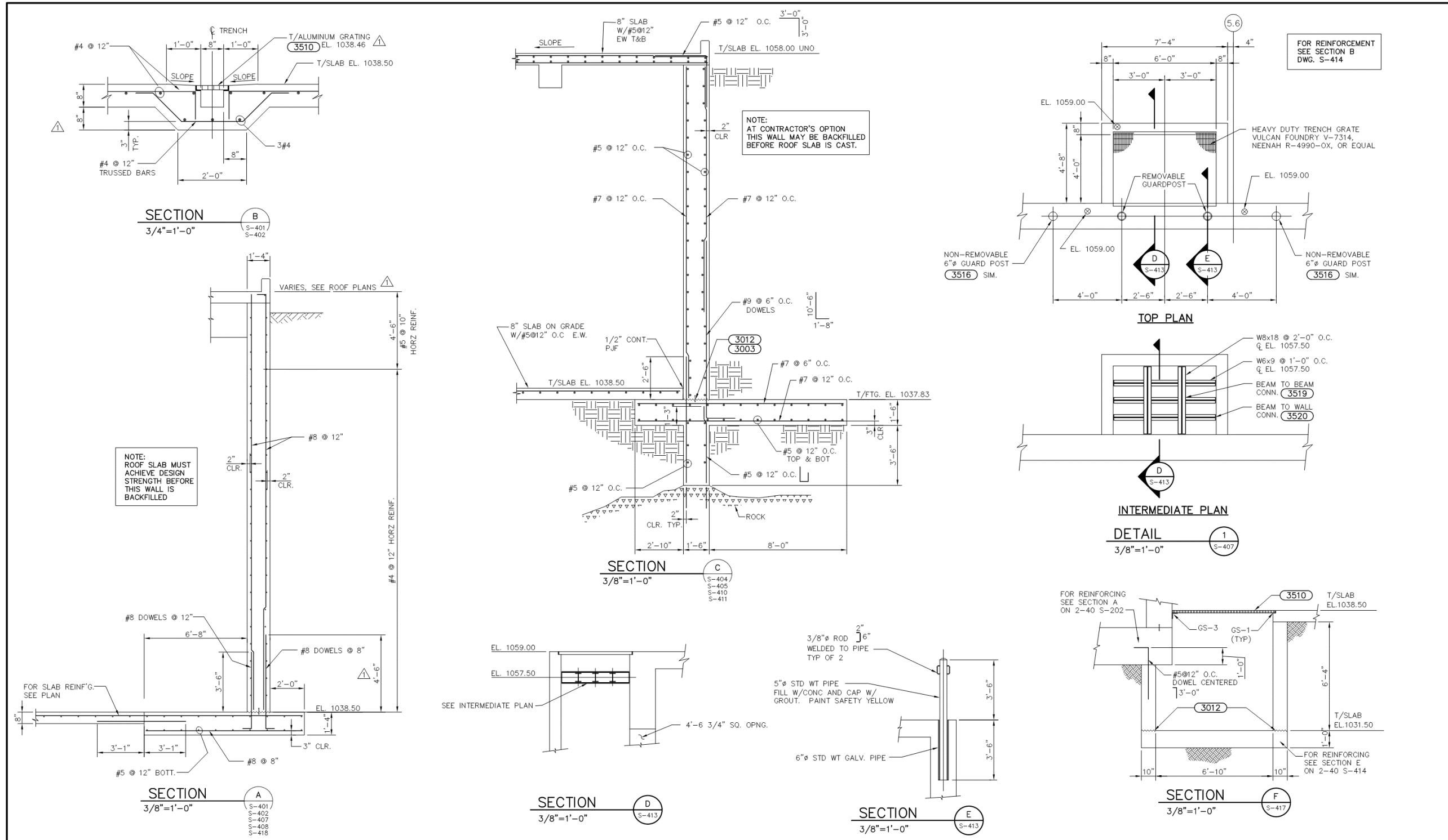


GWINNETT COUNTY, GEORGIA
DEPARTMENT OF PUBLIC UTILITIES
F. WAYNE HILL
WATER RESOURCES CENTER
PHASE 2
3320 FINANCIAL CENTER WAY

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CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY PARTIAL ROOF PLAN 6			
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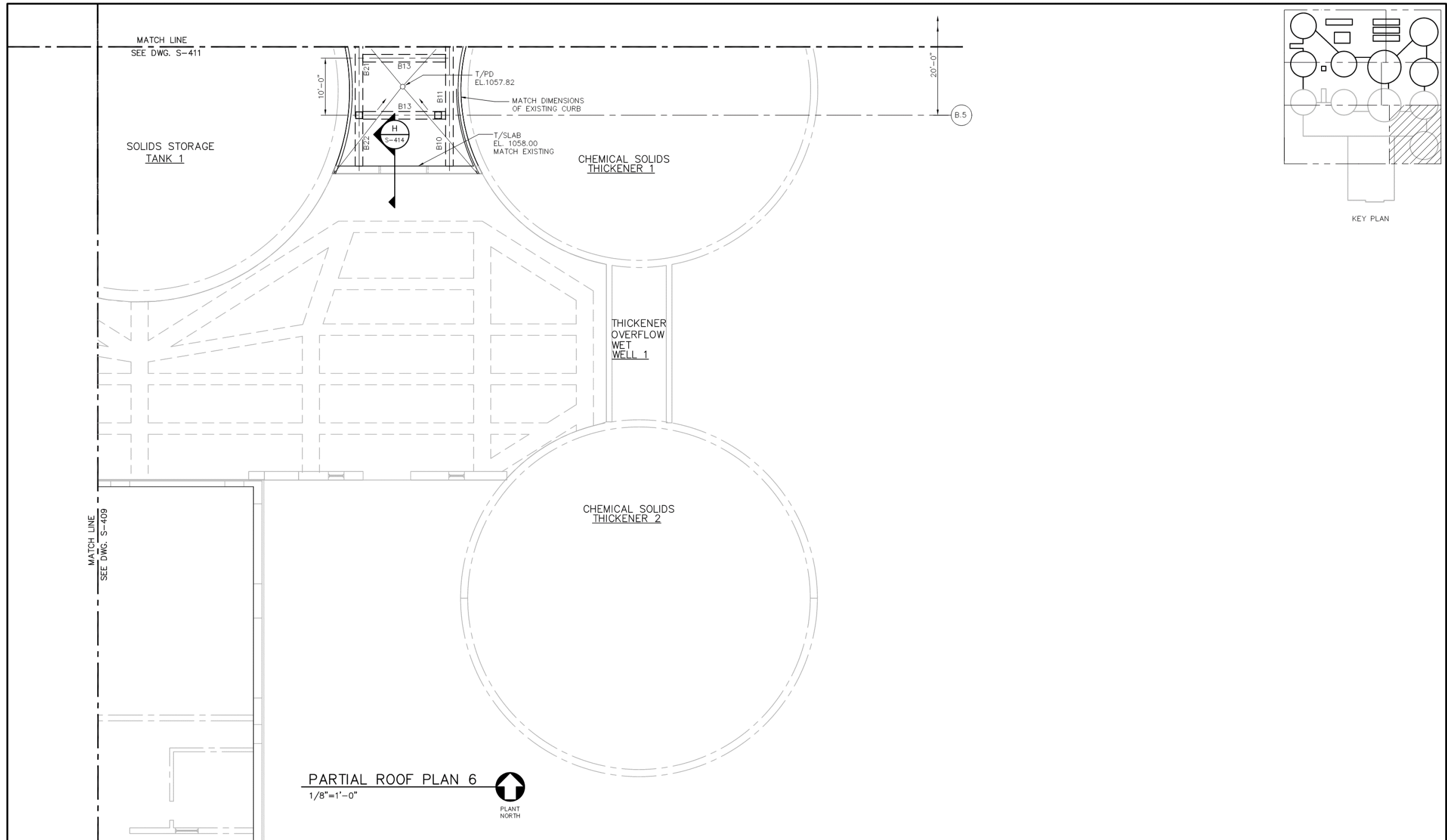
Jordan, Jones & Goulding CH2M HILL Precision Planning, Inc.	CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES	
	RESIDUALS GALLERY SECTIONS AND DETAILS	
JOB NO. 2074.026 gw3264006s.dwg 08.28.06	NO. DATE DESCRIPTION OF REVISION	DESIGNED: DWS CHECKED: DATE: OCT 2002 2-40 S-413 R DRAWN: ASKEW APP'D: SCALE: AS SHOWN DRAWING REV



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F. WAYNE HILL
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PHASE 2
3320 FINANCIAL CENTER WAY

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NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
0	08-08-02	FIRST RELEASE

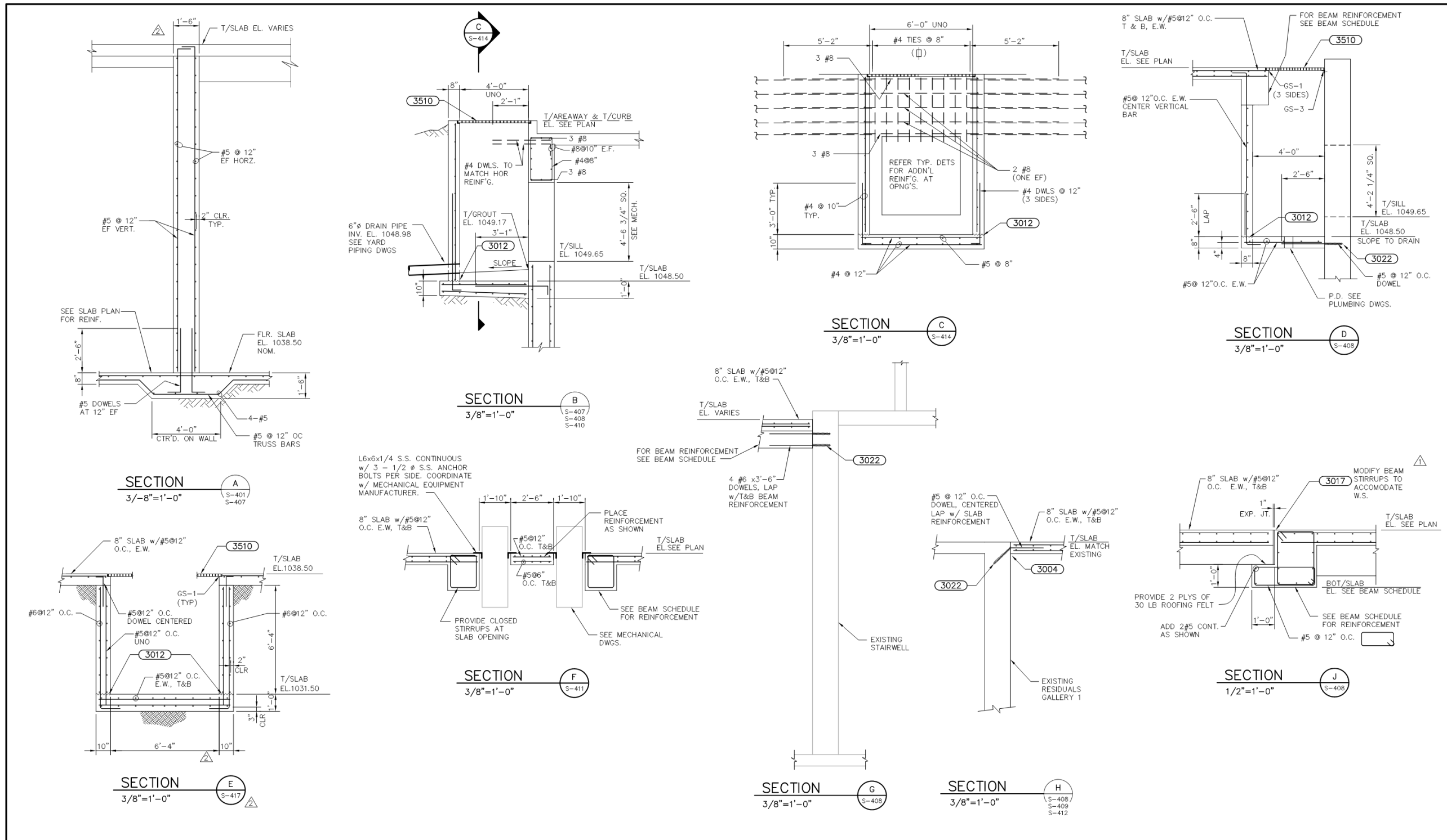


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WATER RESOURCES CENTER
PHASE 2
3320 FINANCIAL CENTER WAY

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RESIDUALS GALLERY PARTIAL ROOF PLAN 6			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-412
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NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
2	04-18-03	REVISED SECTION E AND INCORPORATED CLM-28
1	02-17-03	PLANNING AND DEVELOPMENT COMMENTS INCORPORATED
0	08-08-02	FIRST RELEASE



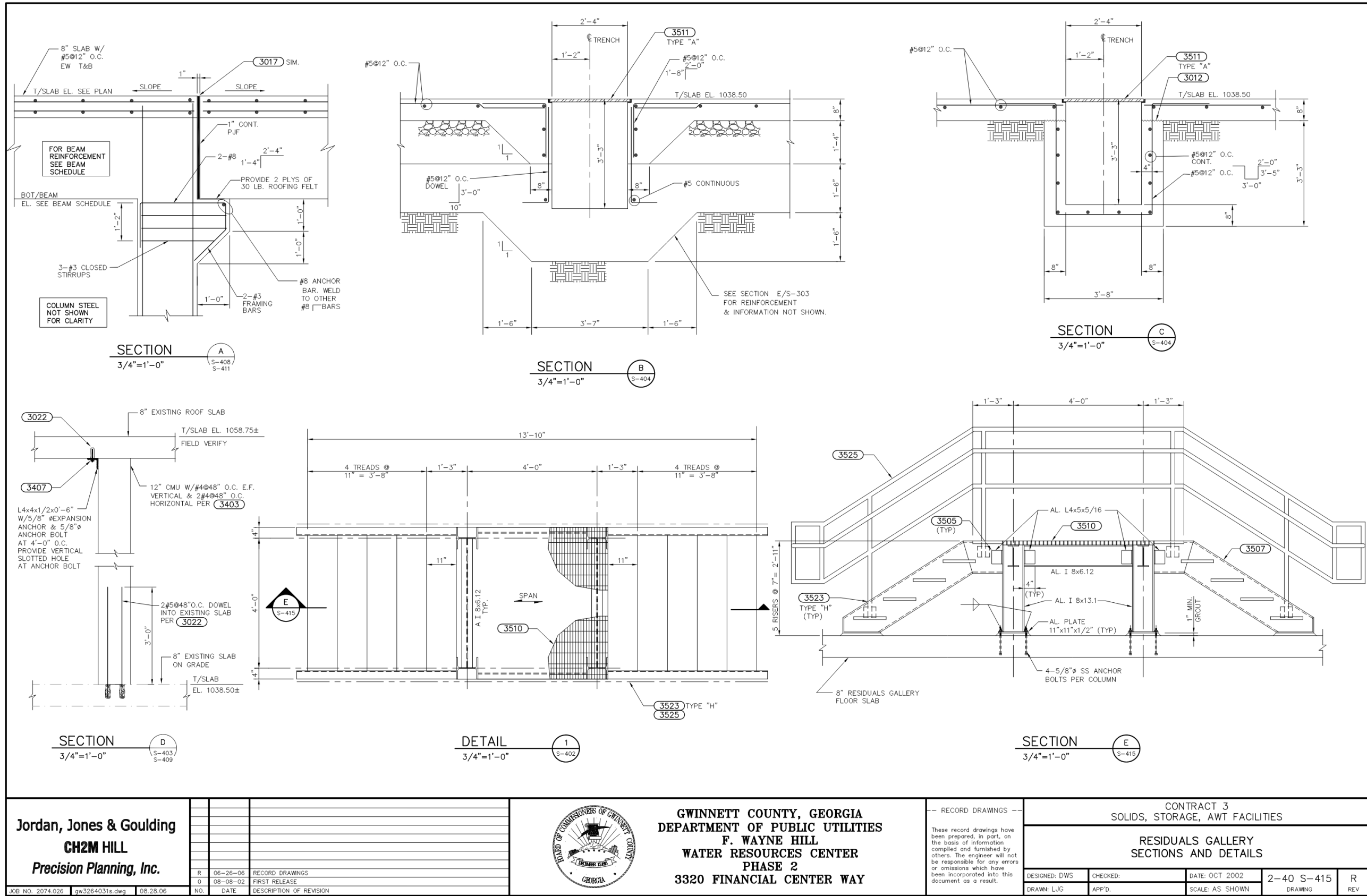
GWINNETT COUNTY, GEORGIA
DEPARTMENT OF PUBLIC UTILITIES
F. WAYNE HILL
WATER RESOURCES CENTER
PHASE 2
3320 FINANCIAL CENTER WAY

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CONTRACT 3
 SOLIDS, STORAGE, AWT FACILITIES
RESIDUALS GALLERY
SECTIONS AND DETAILS

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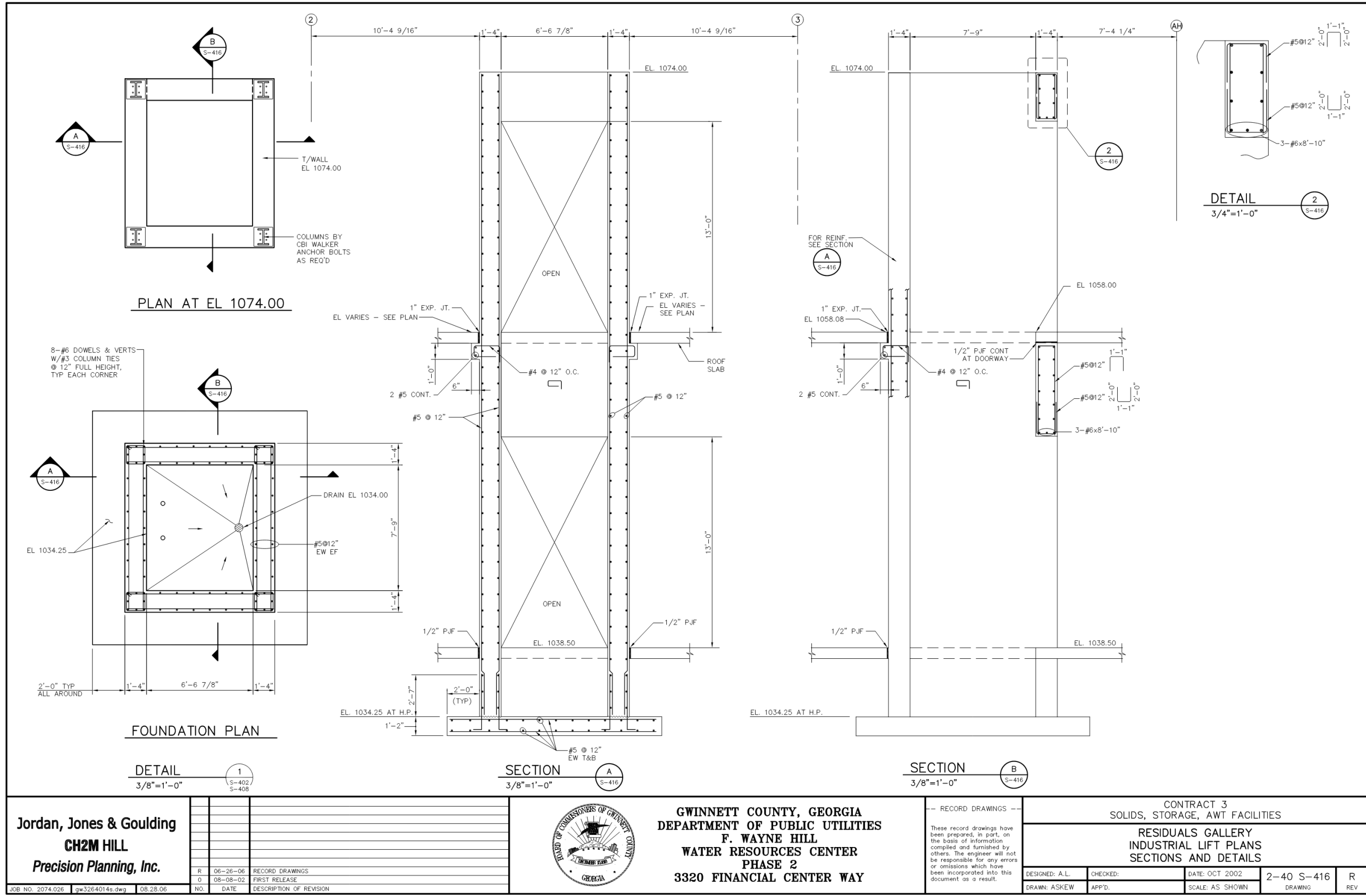
NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
0	08-08-02	FIRST RELEASE

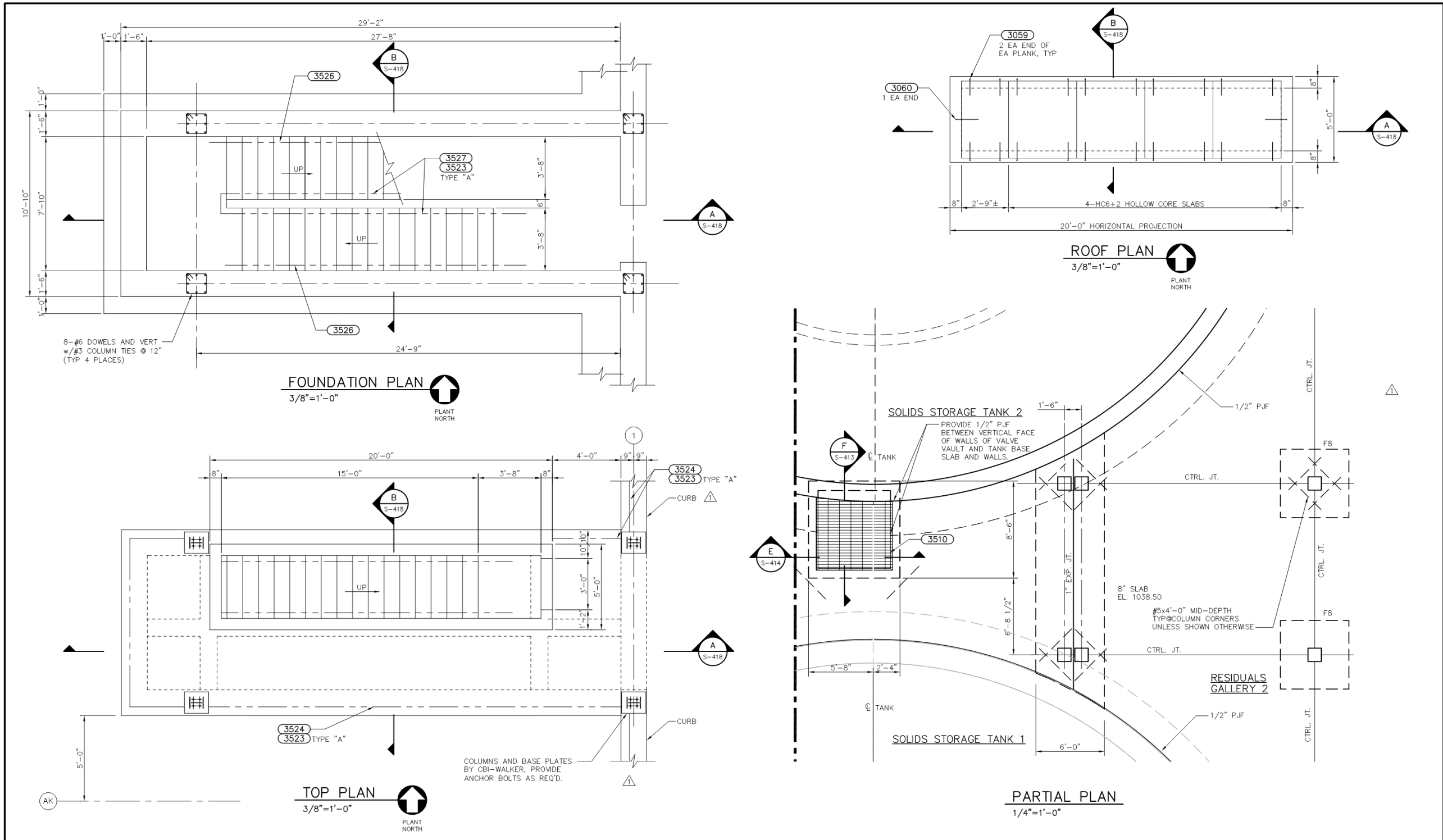


GWINNETT COUNTY, GEORGIA
DEPARTMENT OF PUBLIC UTILITIES
F. WAYNE HILL
WATER RESOURCES CENTER
PHASE 2
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CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY SECTIONS AND DETAILS			
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NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
1	04-18-03	ADDED PARTIAL PLAN AND INCORPORATED CLM-28
0	08-08-02	FIRST RELEASE

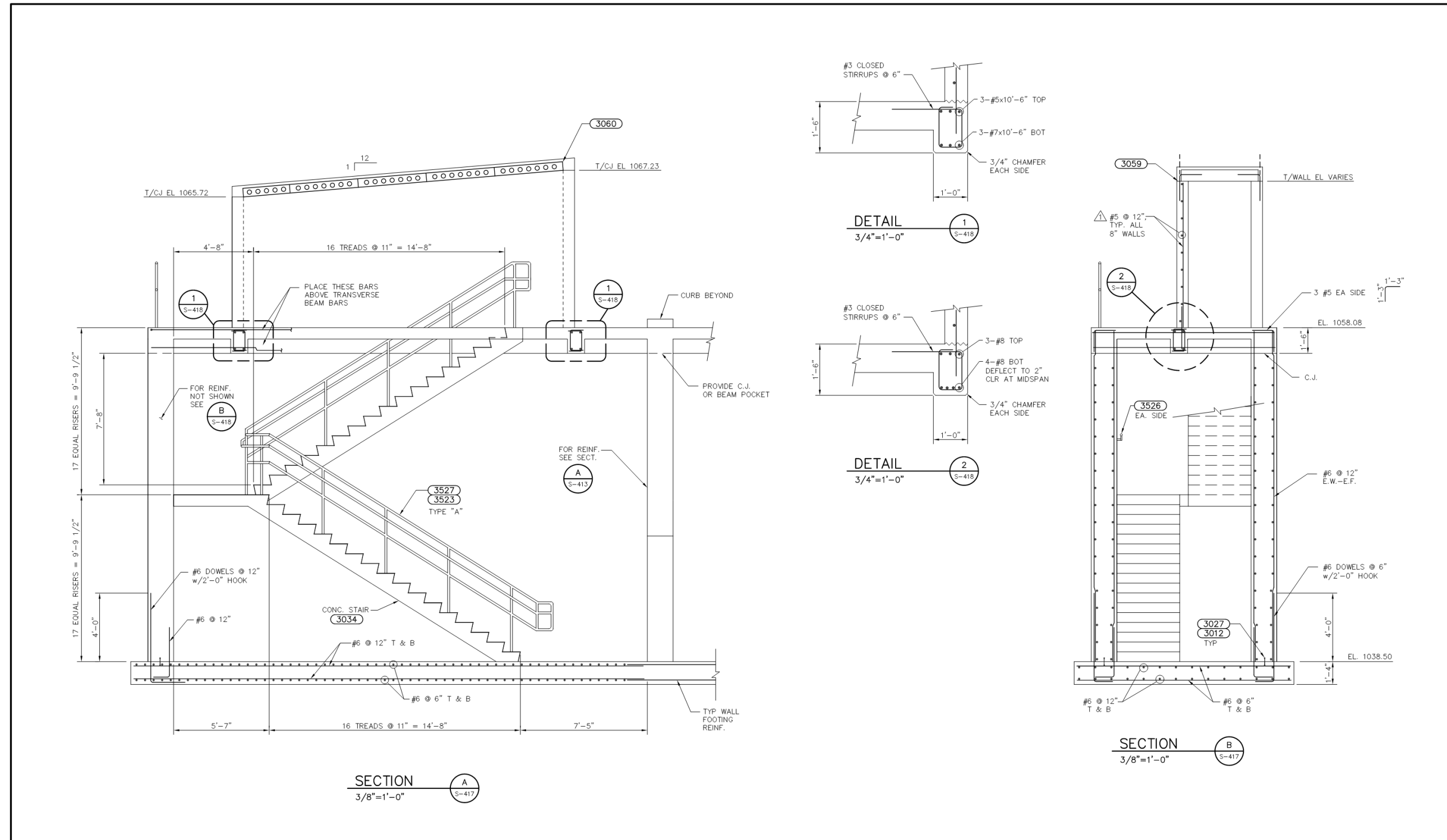


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CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY STAIRWELL NO. 2, PLANS			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-417
DRAWN: ASKEW	APP'D.:	SCALE: AS SHOWN	R REV

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R	06-26-06	RECORD DRAWINGS	
1	10-28-02	ADDENDUM ITEMS INCORPORATED	
0	08-08-02	FIRST RELEASE	



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CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY STAIRWELL NO. 2 SECTIONS AND DETAILS			
DESIGNED: DWS	CHECKED:	DATE: OCT 2002	2-40 S-418
DRAWN: ASKEW	APP'D.	SCALE: AS SHOWN	DRAWING REV

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BEAM REINFORCING SCHEDULE													
BEAM NO. (SEE PLANS)	SIZE		BOTTOM BEAM ELEVATION	TOP REINF AT LEFT SUPPORT		BOTTOM REINF		* TOP REINF AT RIGHT SUPPORT		S BARS (1/2"EF)	SHEAR REINF		REMARKS
	W	D		T	TC	B	BC	T	TC		NO. SIZE	SPACING FROM LEFT SUPPORT	
	B1	12"		16"	1056.49	-	2 # 6	-	3 # 6		-	2 # 6	
B2	22"	24"	1055.82	-	5 # 8	-	4 # 8	-	5 # 8	2 # 5	# 3	1 @ 2", 10 @ 5", R @ 10"	
B3	22"	26"	1055.65	-	5 # 8	-	5 # 8	-	5 # 8	2 # 5	# 4	1 @ 2", 10 @ 5.5", R @ 10"	
B4	22"	18"	1056.32	-	3 # 8	-	6 # 8	-	3 # 8	2 # 5	# 3	1 @ 2", 10 @ 3.5", R @ 7.5"	
B5	24"	32"	1055.15	-	7 # 9	-	4 # 9	-	7 # 9	4 # 5	# 4	1 @ 2", 8 @ 3", 6 @ 6", R @ 12" @ 3" IN CANTILEVER	EXTEND TOP & BOT STEEL INTO CANTILEVER. FABRICATE CONTINUOUS.
B6	26"	38"	1054.65	-	7 # 9	-	6 # 9	-	7 # 9	4 # 5	# 4	1 @ 2", 10 @ 8", R @ 16"	SEE NOTE 3 ON S-408
B7	24"	26"	1055.65	-	3 # 9	-	5 # 9	-	3 # 9	2 # 5	# 4	1 @ 2", 10 @ 5.5", R @ 11"	
B8	22"	26"	1055.65	-	5 # 8	-	5 # 8	-	5 # 8	2 # 5	# 4	1 @ 2", 10 @ 5.5", R @ 10"	FABRICATE TOP STEEL CONTINUOUS
B9	24"	26"	1055.65	-	3 # 9	-	5 # 9	-	3 # 9	2 # 5	# 4	1 @ 2", 10 @ 5.5", R @ 11"	FABRICATE TOP STEEL CONTINUOUS
B10	16"	26"	1055.65	-	4 # 8	-	4 # 8	-	4 # 8	4 # 5	# 3	@ 12"	EXTEND TOP STEEL INTO ADJACENT BEAM. FABRICATE CONTINUOUS
B11	16"	26"	1055.65 *	-	4 # 8	-	4 # 8	-	4 # 8	2 # 5	# 3	@ 12"	
B12	16"	24"	1055.82	-	4 # 8	-	4 # 7	-	4 # 8	2 # 5	# 3	@ 10"	
B13	16"	24"	1055.82	-	3 # 5	-	4 # 8	-	3 # 5	2 # 5	# 3	@ 10"	
B14	16"	26"	1054.65 *	-	3 # 5	-	4 # 8	-	3 # 5	2 # 5	# 3	10 @ 6" RIGHT, R @ 10"	
B15	16"	24"	1054.82 *	-	4 # 7	-	4 # 7	-	4 # 7	2 # 5	# 3	@ 10"	
B16	16"	32"	1055.15	-	3 # 5	-	4 # 8	-	3 # 5	4 # 5	# 4	@ 12"	
B17	16"	32"	1055.15	-	4 # 8	-	4 # 8	-	3 # 5	4 # 5	# 4	@ 12"	
B18	16"	32"	1055.15	-	5 # 8	-	4 # 8	-	5 # 8	4 # 5	# 4	@ 12"	
B19	16"	32"	1055.15	-	5 # 8	-	4 # 8	-	5 # 8	4 # 5	# 4	@ 12"	EXTEND TOP & BOT STEEL INTO ADJACENT CANTILEVER. FABRICATE CONTINUOUS.
B20	16"	26"	1055.65	-	4 # 7	-	4 # 8	-	4 # 7	2 # 5	# 3	@ 12"	EXTEND TOP STEEL INTO ADJACENT BEAM. FABRICATE CONTINUOUS.
B21	16"	32"	1055.15	-	4 # 8	-	4 # 8	-	4 # 8	4 # 5	# 3	@ 12"	
B22	16"	32"	1055.15	-	4 # 8	-	4 # 8	-	4 # 8	4 # 5	# 3	@ 12"	EXTEND TOP STEEL INTO ADJACENT BEAM. FABRICATE CONTINUOUS.
B23	22"	36"	1054.82	-	5 # 8	-	5 # 8	-	5 # 8	4 # 5	# 4	1 @ 2", 10 @ 5.5", R @ 10"	PROVIDE 12" LEDGE PER SECTION
B24	18"	24"	1055.82	-	4 # 8	-	4 # 8	-	4 # 8	2 # 5	# 3	1 @ 2", 10 @ 5", R @ 10"	

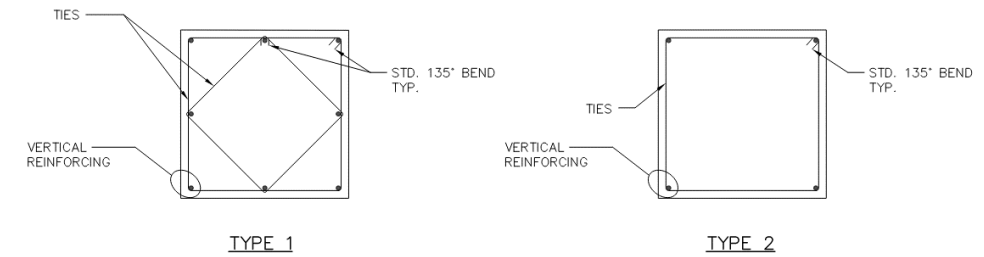
NOTES:

- FOR BEAM REINFORCING DETAILS, SEE 3040
- PLACE 1/2 OF TOTAL "S" BARS ON EACH FACE
- TOP REINF. MAY BE CALLED OUT TWICE IN SCHEDULE. (I.E. "TOP REINF. AT RIGHT SUPPORT" OF BEAM THAT IS CONTINUOUS OVER THE RIGHT SUPPORT IS CALLED OUT AS "TOP REINF. AT LEFT SUPPORT" OF ADJACENT BEAM.)
- LEFT SUPPORT IS DESIGNATED AS THE SUPPORT CLOSEST TO THE LEFT SIDE OR BOTTOM OF SHEET ON WHICH FRAMING PLAN IS DRAWN, UNLESS NOTED OTHERWISE ON PLAN.
- (*) INDICATES BARS TO BE PLACED IN 2ND. LAYER.
- PROVIDE CLOSED STIRRUPS FOR ALL PERIMETER/EDGE BEAMS.
- EXTEND TOP STEEL INTO SLAB THE REQUIRED DEVELOPMENT LENGTH AT ALL SKEWED BEAMS.

COLUMN REINFORCEMENT SCHEDULE							
COLUMN	SIZE	VERTICAL REINFORCING	TIES (SYMMETRICAL TO MID SPAN)		TYPE	DOWELS	REMARKS
			BAR #	SPACING FROM JOINT FACE			
C1	16" x 16"	8 #8	#3	1 @ 4", 6 @ 8", R @ 16"	1	4 #6	
C2	18" x 18"	4 #9	#3	1 @ 4.5", 5 @ 9", R @ 18"	2	4 #6	
C3	20" x 20"	4 #9	#3	1 @ 4.5", 5 @ 9", R @ 18"	2	4 #7	
C4	14" x 14"	8 #6	#3	@ 12"	1	4 #7	

NOTES:

- LAP VERTICAL STEELS WITH DOWELS USING A MINIMUM LAP SPLICE LENGTH OF THE LARGER BAR.
- SEE DETAILS FOR TIE PLACING.



FOOTING REINFORCEMENT SCHEDULE								
FOOTING	DIMENSION			TOP OF FOOTING ELEVATION (U.N.O.)	REINFORCEMENT (T&B)		DOWELS	REMARKS
	S.W.	L.W.	THICK.		S.W.	L.W.		
F1	6'-6"	6'-6"	1'-6"	EL. 1037.83	#6 @ 9"	#6 @ 9"	4 #6	
F2	7'-6"	7'-6"	1'-6"	EL. 1037.83	#6 @ 9"	#6 @ 9"	4 #6	
F3	9'-6"	9'-6"	1'-6"	EL. 1037.83	#6 @ 9"	#6 @ 9"	4 #7	
F4	8'-6"	12'-0"	1'-8"	EL. 1037.83	#8 @ 8"	#8 @ 11"	4 #7	
F5	5'-0"	SEE PLAN	1'-6"	EL. 1037.83	#8 @ 10"	#8 @ 18"	4 #6	
F6	4'-0"	SEE PLAN	1'-4"	EL. 1037.83	#7 @ 12"	#7 @ 12"	4 #7	
F7	5'-0"	2'-6"	1'-4"	EL. 1037.83	#7 @ 12"	#7 @ 12"	4 #7	
F8	6'-0"	6'-0"	1'-4"	EL. 1037.83	#7 @ 12"	#7 @ 12"	4 #7	
F9	7'-0"	7'-0"	1'-8"	EL. 1037.83	#7 @ 12"	#7 @ 12"	4 #7	

Jordan, Jones & Goulding
CH2M HILL
Precision Planning, Inc.

JOB NO. 2074.026 | gw3264007s.dwg | 08.28.06

NO.	DATE	DESCRIPTION OF REVISION
R	06-26-06	RECORD DRAWINGS
1	02-17-03	ADDED NOTE TO B6
0	08-08-02	FIRST RELEASE



GWINNETT COUNTY, GEORGIA
DEPARTMENT OF PUBLIC UTILITIES
F. WAYNE HILL
WATER RESOURCES CENTER
PHASE 2
3320 FINANCIAL CENTER WAY

RECORD DRAWINGS

These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

CONTRACT 3 SOLIDS, STORAGE, AWT FACILITIES			
RESIDUALS GALLERY BEAM AND COLUMN REINFORCING SCHEDULE			
DESIGNED: W. WEST	CHECKED:	DATE: OCT 2002	2-40 S-419
DRAWN: ASKEW	APP'D.	SCALE: AS SHOWN	DRAWING

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE