

**LEXINGTON-FAYETTE URBAN COUNTY
 GOVERNMENT CONTRACT CHANGE ORDER**
 Page 1 of 2

Date:	January 19, 2017
Project:	Investigation/Design Services for Town Branch WWTP Primary Digester Complex Improvements
Location:	Town Branch WWTP

To (Consultant): Strand Associates, Inc. 1525 Bull Lea Road Lexington, KY 40511	Contract No.	58-2015
	Original Contract Amt.	\$474,522.00
	Cumulative Amount of Previous Change Orders	\$0.00
	Percent Change - Previous Change Orders	0.00%
	Total Contract Amount Prior to this Change Order	\$474,522.00
	Change Order No.	1

You are hereby requested to comply with the following changes from the contract plans and specification;

Current Change Order

Item No.	Description of changes-quantities, unit prices, change in completion date, etc.	Decrease in contract price	Increase in contract price
1	Increase in design/scope cost to bring the existing Primary Digester Building Complex into compliance with NFPA 820. (See Attached Back-Up)		\$131,113.00
	Total decrease	\$0.00	
	Total increase		\$131,113.00
	Net Amount of this Change Order	\$131,113.00	
	New Contract Amount Including this Change Order	\$605,635.00	
	Percent Change - This Change Order		27.63%
	Percent Change - All Change Orders		27.63%

The time provided for the completion in the contract and all provisions of the contract will apply hereto.

Recommended by _____ (Proj. Engr.) Date _____
 Accepted by _____ (Consultant) Date _____
 Approved by *[Signature]* (Director) Date *1-30-17*
 Approved by *[Signature]* (Commissioner) Date _____
 Approved by _____ (Mayor or CAO) Date *23-Feb-2017*

**LEXINGTON-FAYETTE URBAN COUNTY
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1	Increase in design/scope cost to bring the existing Primary Digester Building Complex into compliance with NFPA 820. (See Attached Back-Up)		\$131,113.00	
	Total decrease	\$0.00		
	Total increase		\$131,113.00	
	Net Amount of this Change Order	\$131,113.00		
	New Contract Amount Including this Change Order	\$605,635.00		
	Percent Change - This Change Order			27.63%
	Percent Change - All Change Orders			27.63%

The time provided for the completion in the contract and all provisions of the contract will apply hereto.

Recommended by *L. H. [Signature]* (Proj. Engr.) Date 2/21/17
 Accepted by *[Signature]* (Consultant) Date 2/9/17
 Approved by *[Signature]* (Director) Date 1-30-17
 Approved by _____ (Commissioner) Date _____
 Approved by _____ (Mayor or CAO) Date _____

JUSTIFICATION FOR CHANGE

PROJECT: Investigation/Design Services Town Branch WWTP Primary Digester Complex Improvements

CONTRACT NO. 58-2015

CHANGE ORDER: 1

1. Necessity for change: Increase in design cost to bring the existing Primary Digester Building Complex into compliance with NFPA 820. (See Attached Back-Up)
2. Is proposed change an alternate bid? ___ Yes X No
3. Will proposed change alter the physical size of the project? ___ Yes X No
If "Yes", explain.
4. Effect of this change on other prime contractors: N/A
5. Has consent of surety been obtained? ___ Yes X Not Necessary
6. Will this change affect expiration or extent of insurance coverage? ___ Yes X No
If "Yes", will the policies be extended? ___ Yes ___ No
7. Effect on operation and maintenance costs: N/A
8. Effect on contract completion date: None



Mayor23-Feb-17

Date



December 21, 2016

Tiffany Rank, P.E.
Lexington-Fayette Urban County Government
301 Lisle Industrial Avenue
Lexington, KY 40511

Re: Town Branch Primary Digester Complex Improvements

Dear Tiffany:

This letter documents the proposed change in project scope for making improvements to your existing facilities to comply with NFPA 820 (Standard for Fire Protection in Wastewater Treatment and Collection Facilities, published by National Fire Protection Association). NFPA 820 was first authored in 1990 and updated several times with the latest version dated 2016. Anaerobic Digesters and related structures and equipment are included in Chapter 4, Table 4.2 of NFPA 820 with specific recommendations for best design practices. NFPA 820 has not been adopted in Kentucky, but is used by design professionals as a guide for designing wastewater facilities. We have discussed this pending change and our compliance approach in several meetings.

The existing anaerobic primary digester complex does not meet the standards promoted by NFPA 820. During this complete upgrade to the Primary Digester Complex, we recommend LFUCG make certain improvements to bring your facilities into conformance with NFPA 820 recommendations. These improvements include:

- Locating the HVAC air supply equipment outside of the hazard classification areas.
- Closing up doors and windows to separate nonhazardous areas from hazardous classified areas.
- Extending the northwest entrance into the building to be outside of the 10-foot external digester radius.
- Isolating the three digester gas handling equipment rooms from other spaces through structural barriers and providing separate access for these rooms.
- Eliminating roof penetrations within 10 feet of any digester.
- One additional consequence of these changes is to relocate the sludge hot water heaters (boilers) to the existing Engine/Blower building.

Our construction cost opinion for these changes increases the capital costs from about \$9.4M to \$10.4M.

In addition to the higher construction costs, we are requesting an amendment to our engineering agreement for the additional design scope. The following table summarizes the requested scope change amendment. Details are attached with this letter.

Tiffany Rank, P.E.
 Lexington-Fayette Urban County Government
 Page 2
 December 21, 2016


Task	Change to Strand Contract	Change to Magna Contract	Change to Cornerstore Contract	Total Change
Code review, compliance strategy, and meetings	\$9,700	\$0	\$0	\$9,700
Relocate Boilers to Engine/blower Building	\$22,200	\$0	\$0	\$22,200
NFPA 820 Structural Design changes	\$0	\$0	\$57,643	\$57,643
Additional Structural Design	\$0	\$0	\$35,570	\$35,570
Additional subconsultant interaction	\$6,000	\$0	\$0	\$6,000
Total Change	\$37,900	\$0	\$93,213	\$131,113

Thank you for your consideration of these improvements and amendment. We are available to meet and discuss these recommendations further. We will continue design of the elements that are not impacted by these changes in scope. We can have the improvements designed and ready for bidding ten weeks after approval of the amendment.

Sincerely,

STRAND ASSOCIATES, INC.*


 Michael L. Davis, P.E.


 Mark A. Sneve, P.E.

Attachment

Rev 2 – Feb 9, 2017

Mr. Mark Sneve, P.E.
Senior Associate
Strand Associates, Inc.
325 West Main Street, Suite 710
Louisville, KY 40202

Re: LFUCG Town Branch WWTP Primary Digester Complex Improvement Project - Structural Engineering Services Proposal – Additional Scope – Rev 1: Fees itemized as indicated []

Dear Mr. Sneve,

Per request, we are pleased to submit this proposal for providing our Structural Engineering and Architectural Services for the Additional Scope on the above referenced project. Our additional scope consists of two major parts. Part I includes items associated with NFPA Classified Area separations as outlined per the meeting at your office on November 16. Part II includes design of detailed structural repairs as described in our preliminary engineering report (PER).

Part I - Architectural and Structural Design Phase Services associated with NFPA Classified Area separations.

1) New Two Story Entrance and Exterior Stair to Mezzanine level: [\$20,025.00]

We will require the input information from the owner with regard to planning. We assume the foundation system to be a shallow foundation and of poured-in-place reinforced concrete. The load bearing walls will be of reinforced block masonry with brick veneer. The 2nd floor and roof structures will be of hollow core concrete planks. Also included is an adjacent exterior (open) stair from grade level to the Mezzanine level. New openings are required through the existing exterior wall at the Mezzanine level which may require structural reinforcements.

Our scope also includes design of architectural elements (roofing, flashings, brick veneer, doors etc.)

2) New stair from first floor to basement: [\$3,962.00]

An opening through the existing first floor structural slab is required which will require structural reinforcement. Design of the stair is included in our scope.

Other items include:

3) Close off existing stair well between 1st floor and Mezzanine level. [\$2,610.00]

4) Infill roof hatch and mechanical openings. [\$3,116.00]

5) Investigation of [possible] load bearing masonry walls at boiler room which are to be removed and design of permanent shoring. [\$6,622.00]

6) Infill of various door & window openings. [\$3,050.00]

7) Analysis of existing roof structure to support new HVAC unit and design of steel supports to distribute load. [\$6,655.00]

8) Infill material and new slabs at existing pits at generator building for equipment support. [\$1,610.00]

9) Attend Progress Meetings, coordination, etc. [Included above.]

10) Three Site visits. [Included above.]

Our fee to perform the above Design Phase scope of Part I is \$47,650.00 [See itemized fees for each item.]

Bid Phase Services:

We will address bidders' questions raised during the bidding process and prepare addenda as required for Structural Scope and send our responses to Strand.

Our fee to perform the above Bid Phase Services scope of Part I is \$838.00. [Minimum fee for Bid Phase.]

Construction Phase Services:

We will answer (7) RFIs [\$3,400.], perform four (4) site structural inspections and provide reports summarizing inspection findings [\$3,200], shop drawings review, and correspond through emails and phone calls during construction phase [\$2,605.]

Our fee to perform the above Construction Phase Services scope of Part I is \$9,205.00 [Itemized above.]

Total PART I = \$57,643.

Part II - Design of Structural Rehabilitation Repairs

These include the following:

- a) Structural reinforcement of stairwell walls where extensive cracking has occurred. [\$10,403.00]
- b) Apparent cracks and seepage at digester tank pipe penetrations and other locations. [\$11,450.00]
- c) Brick and copings on digester tanks. [\$8,738.00]
- d) Cracks and deteriorating lintels in building brick. [\$2,845.00]
- e) Deterioration at south walkway and steps. [\$2,134.00]

We will provide necessary design, CAD drawings and specification for the scope included in this proposal. Also, we will perform one site visit at the beginning of the design phase and perform internal QA/QC review and address any review comments received.

Our fee to perform the above Design Phase scope of Part II is \$35,570. [See itemized fee for each item.]

Bid Phase Services:

We will address bidders' questions raised during the bidding process and prepare addenda as required for Structural Scope and send our responses to Strand.

Our fee to perform the above Bid Phase Services scope is \$711.00 [Minimum fee for Bid Phase.]

Construction Phase Services:

We will answer (4) RFIs [\$1,943.], perform four (4) site structural inspections and provide reports summarizing inspection findings [\$3,200], shop drawings review, and correspond through emails and phone calls during construction phase [\$1,950].

Our fee to perform the above Construction Phase Services scope of Part II is \$7,093.00 [Itemized above.]

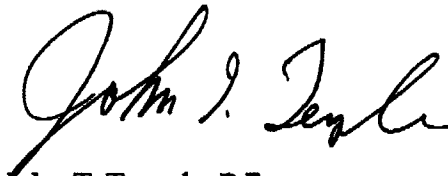
Total PART II = \$35,570.

Scope not included:

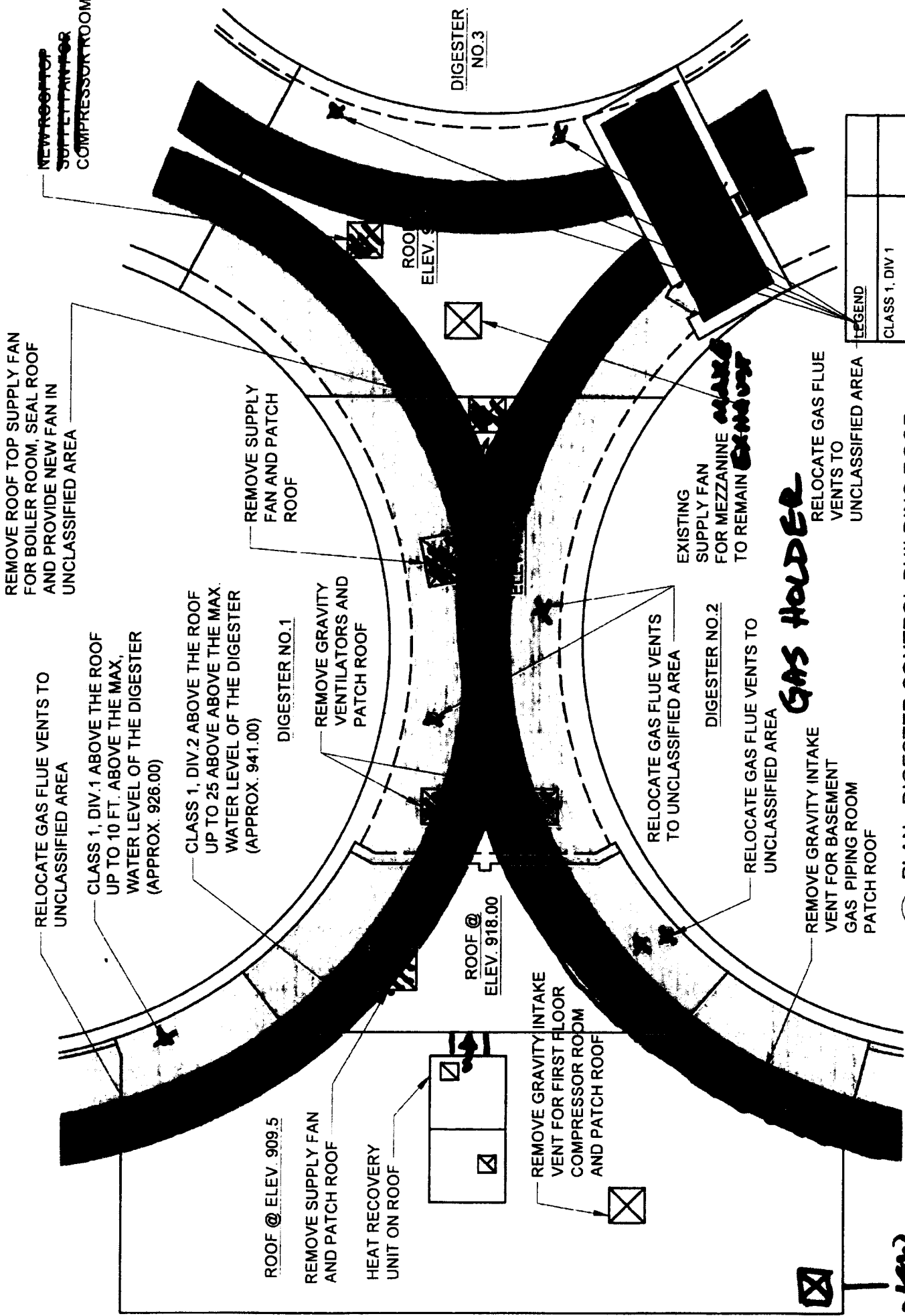
Strand will provide all necessary Process, Civil and Survey base CAD drawings and we will be responsible for the Structural and Architectural services only. Geotechnical services are not included in our services.

Thank you for the opportunity to submit this proposal for our services on this project. If you have any questions, please feel free to contact me at (502) 493-2717.

Sincerely,



John T. Temple, P.E.
Senior Structural Engineer



REMOVE ROOF TOP SUPPLY FAN FOR BOILER ROOM, SEAL ROOF AND PROVIDE NEW FAN IN UNCLASSIFIED AREA

RELOCATE GAS FLUE VENTS TO UNCLASSIFIED AREA

CLASS 1, DIV. 1 ABOVE THE ROOF UP TO 10 FT. ABOVE THE MAX. WATER LEVEL OF THE DIGESTER (APPROX. 926.00)

CLASS 1, DIV. 2 ABOVE THE ROOF UP TO 25 ABOVE ABOVE THE MAX. WATER LEVEL OF THE DIGESTER (APPROX. 941.00)

ROOF @ ELEV. 909.5
REMOVE SUPPLY FAN AND PATCH ROOF

HEAT RECOVERY UNIT ON ROOF

REMOVE GRAVITY INTAKE VENT FOR FIRST FLOOR COMPRESSOR ROOM AND PATCH ROOF

REMOVE SUPPLY FAN AND PATCH ROOF

REMOVE GRAVITY VENTILATORS AND PATCH ROOF

ROOF @ ELEV. 918.00

RELOCATE GAS FLUE VENTS TO UNCLASSIFIED AREA

DIGESTER NO. 2

RELOCATE GAS FLUE VENTS TO UNCLASSIFIED AREA

GAS HOLDER

REMOVE GRAVITY INTAKE VENT FOR BASEMENT GAS PIPING ROOM PATCH ROOF

RELOCATE GAS FLUE VENTS TO UNCLASSIFIED AREA

EXISTING SUPPLY FAN FOR MEZZANINE ~~AREA~~ TO REMAIN ~~EXISTING~~

DIGESTER NO. 3

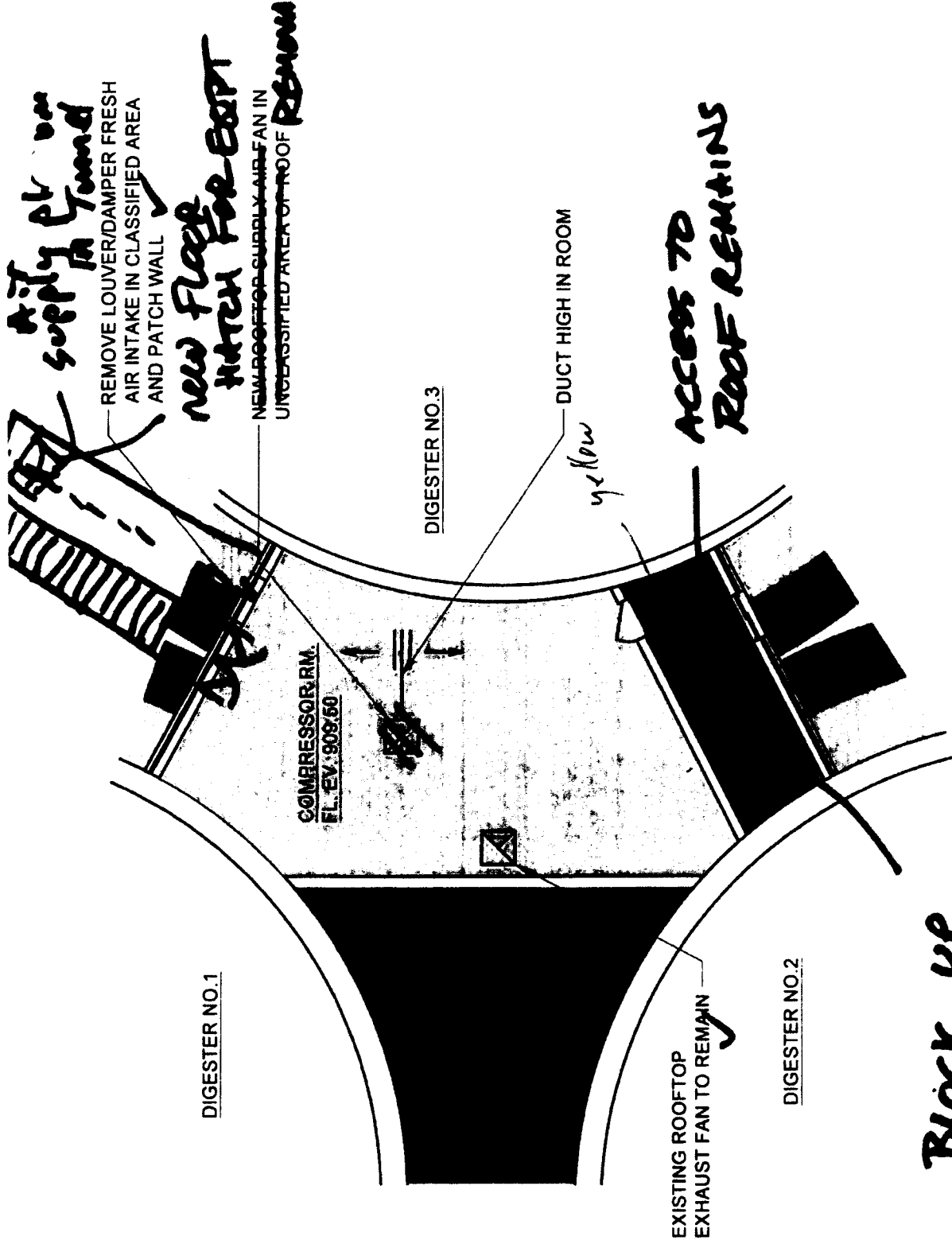
ROOF ELEV. 918.00

NEW ROOF TOP SUPPLY FAN FOR COMPRESSOR ROOM

LEGEND	
[White Box]	CLASS 1, DIV 1
[Light Gray Box]	CLASS 1, DIV 2
[Dark Gray Box]	UNCLASSIFIED WHEN VENTILATED GAS

1 PLAN - DIGESTER CONTROL BUILDING ROOF

NEW EXHAUST



Supply air on supply in tunnel

REMOVE LOUVER/DAMPER FRESH AIR INTAKE IN CLASSIFIED AREA AND PATCH WALL

new floor hatch for east
 new rooftop supply air fan in unclassified area of roof remains

EXISTING ROOFTOP EXHAUST FAN TO REMAIN

ACCESS TO ROOF REMAINS

DUCT HIGH IN ROOM

yellow

DIGESTER NO. 1

DIGESTER NO. 3

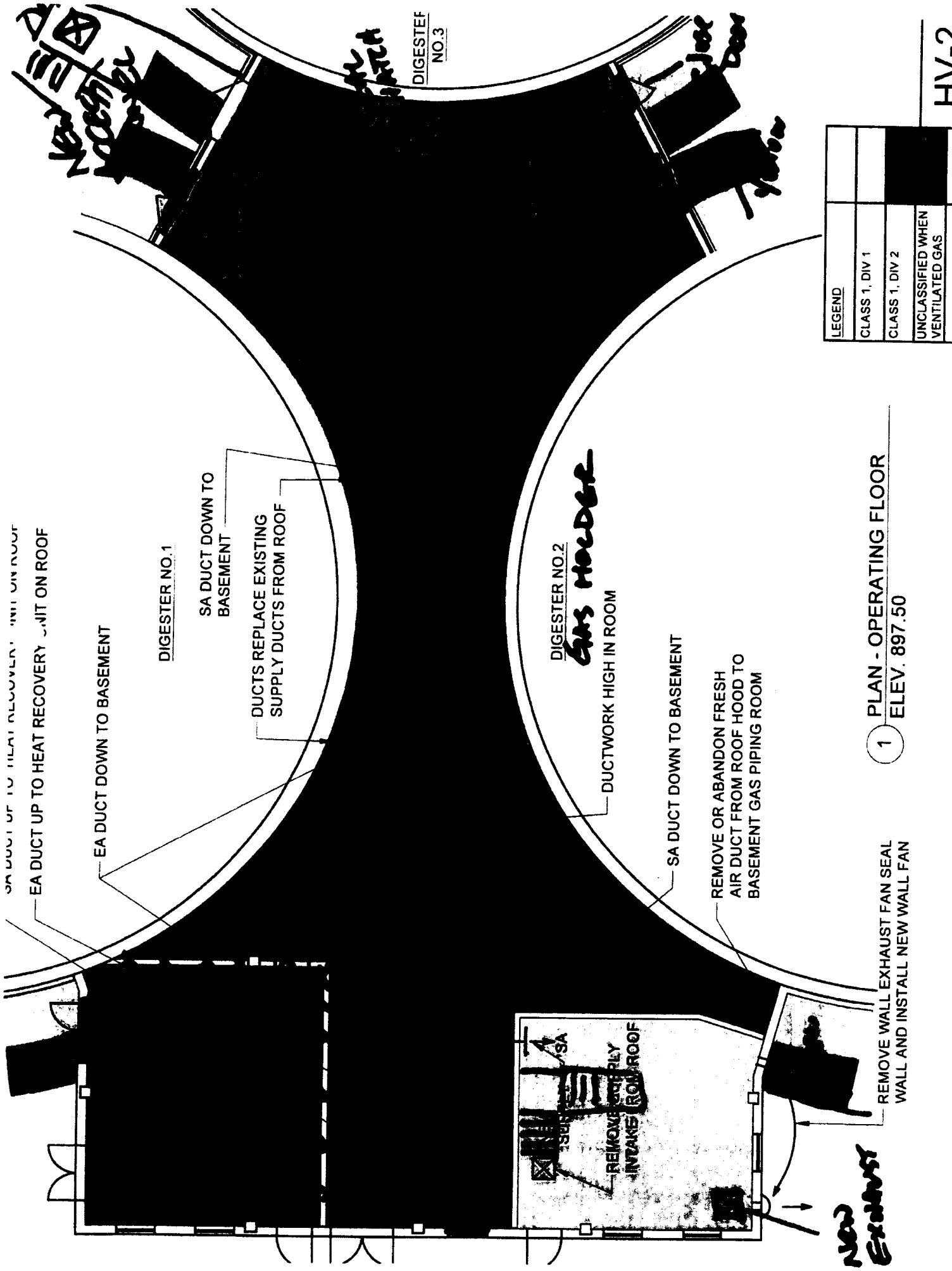
DIGESTER NO. 2

COMPRESSOR RM.
 FL. EV. 909.50

Block up STAIRWELL FLOOR TO SEPARATE SPACES

1 PLAN - MEZZANINE FLOOR COMPRESSOR ROOM
 ELEV. 909.50

LEGEND	
CLASS 1, DIV 1	
CLASS 1, DIV 2	
UNCLASSIFIED WHEN VENTILATED GAS	



SA DUCT UP TO HEAT RECOVERY UNIT ON ROOF
 EA DUCT UP TO HEAT RECOVERY UNIT ON ROOF

EA DUCT DOWN TO BASEMENT

DIGESTER NO. 1

SA DUCT DOWN TO BASEMENT

DUCTS REPLACE EXISTING SUPPLY DUCTS FROM ROOF

Close Door

DIGESTER NO. 3

DIGESTER NO. 2

Gas Holder

DUCTWORK HIGH IN ROOM

SA DUCT DOWN TO BASEMENT

REMOVE OR ABANDON FRESH AIR DUCT FROM ROOF HOOD TO BASEMENT GAS PIPING ROOM

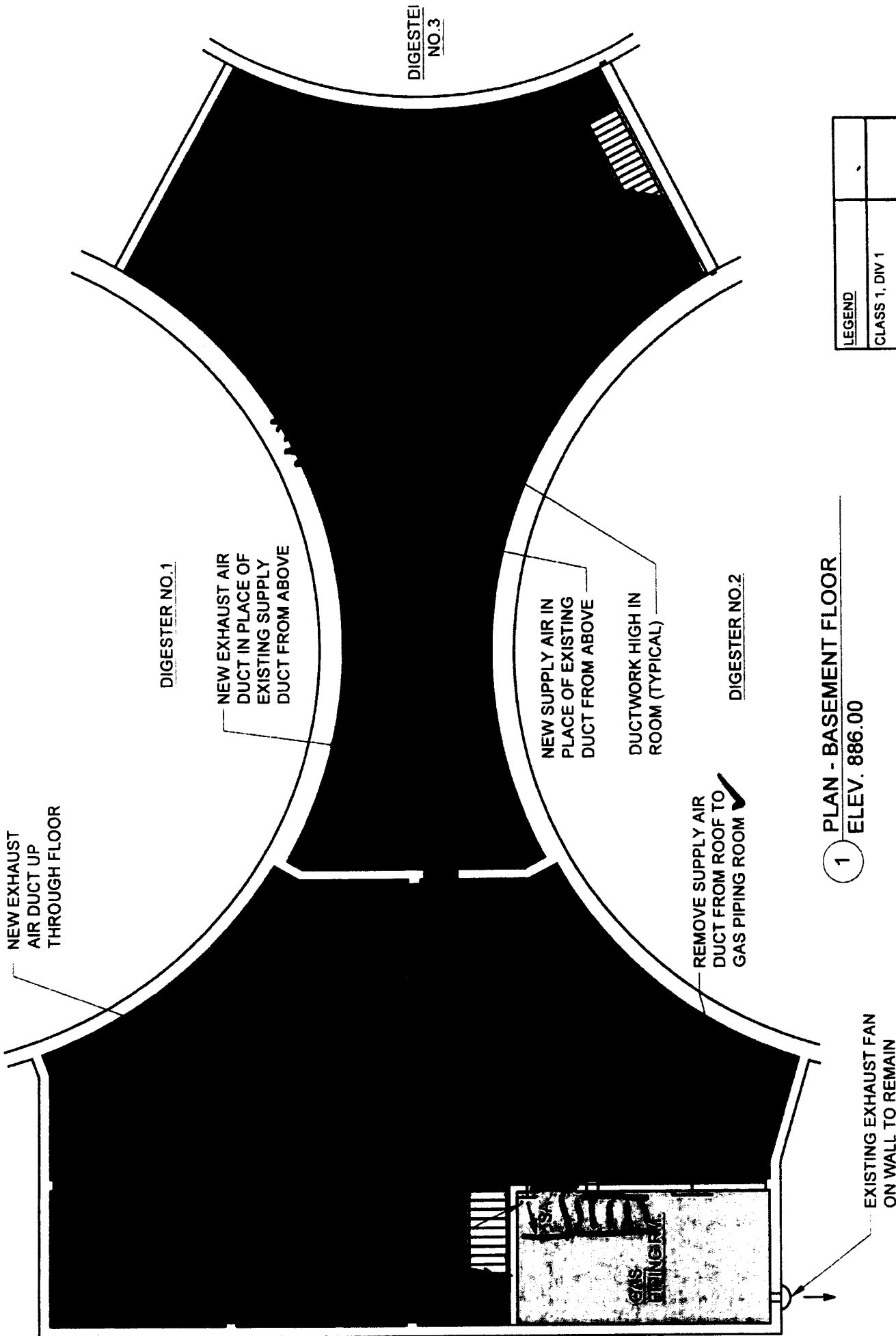
New Exhaust

REMOVE WALL EXHAUST FAN SEAL WALL AND INSTALL NEW WALL FAN

LEGEND	
CLASS 1, DIV 1	
CLASS 1, DIV 2	
UNCLASSIFIED WHEN VENTILATED GAS	

1 PLAN - OPERATING FLOOR
 ELEV. 897.50

HV-2



DIGESTER
NO. 3

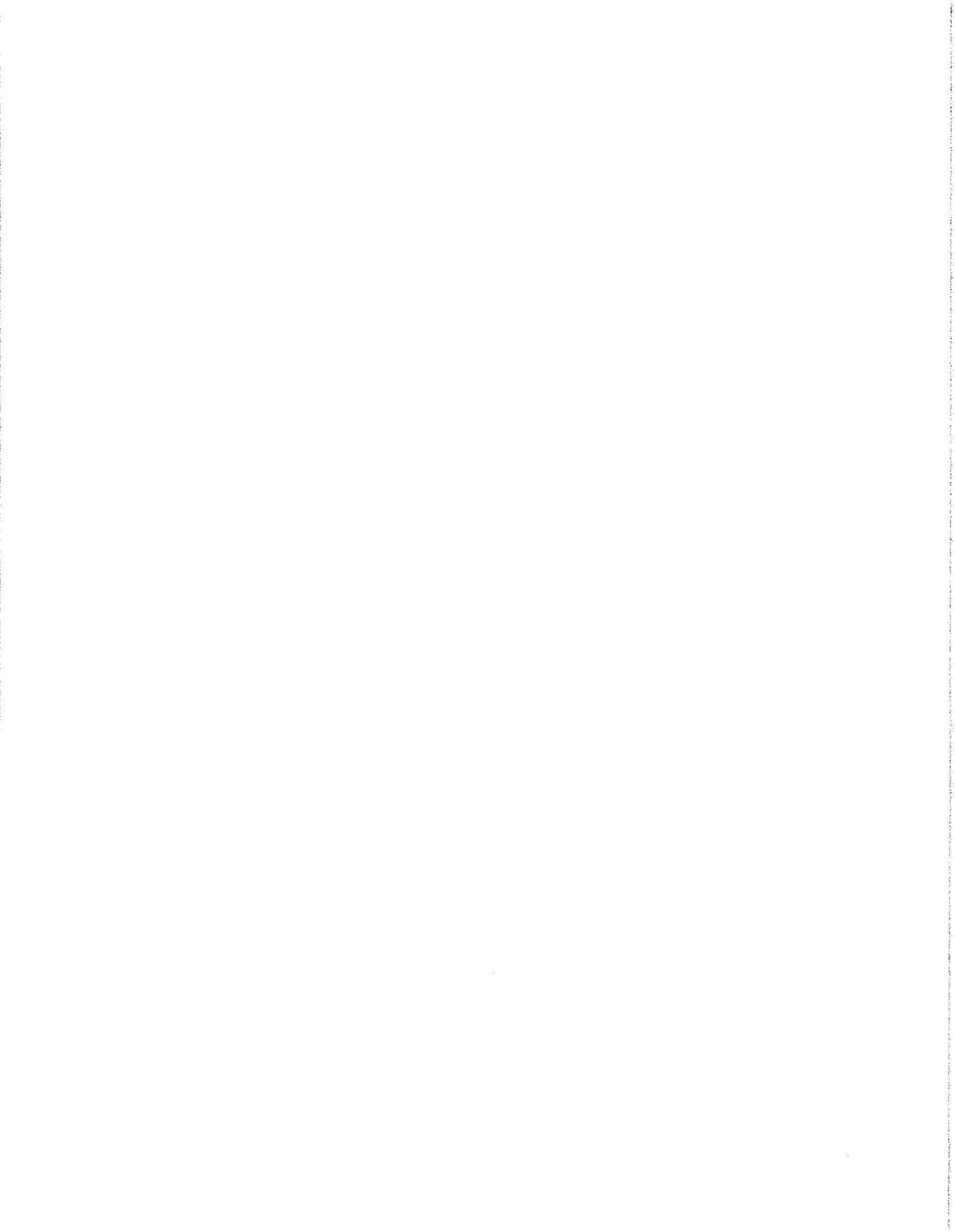
DIGESTER NO. 1

DIGESTER NO. 2

1 PLAN - BASEMENT FLOOR
ELEV. 886.00

LEGEND	
CLASS 1, DIV 1	
CLASS 1, DIV 2	
UNCLASSIFIED WHEN VENTILATED GAS	

HV-1



**SUMMARY COST ESTIMATE
Town Branch Treatment Plant**

28-Nov

2016

Line Item	Item	Subcontract Amount	G. C. Overhead	G.C. Profit	Total
A	REPAIRS and REHABILITATION				
A1	North stairwell - Concrete masonry wall repairs.	36,000	2%	35%	49,572
					-
A2	Brick repairs - Digester tanks (and copings) , Lintels and cracks in building brick.	201,000	2%	35%	276,777
					-
A3	Digester tanks - Repairs at pipe penetrations and other locations of seepage.	146,000	2%	35%	201,042
					-
A4	Repairs at covered walkway along south side of 1960 building portion.	25,000	2%	35%	34,425
					-
A5	Roof - Complete replacement.	95,000	2%	35%	130,815
					-
A6	Replace doors.	53,000	2%	35%	72,981
					-
A7	Replace windows.	8,000	2%	35%	11,016
					-
A8	(open)				-
					-
A9	GC Mobilie / De-mobilze / Closeout	5,000	8%	35%	7,290

**SUMMARY COST ESTIMATE
Town Branch Treatment Plant**
28-Nov 2016

Line Item	Item	Subcontract Amount	G. C. Overhead	G.C. Profit	Total
B	NFPA COMPLIANCE				
B1	New Entrance Tunnel and Exterior stair.	180,000	2%	35%	247,860
					-
B2	Seal off north stairwell between first floor and mezzanine level.	17,000	2%	35%	23,409
					-
B3	New stair from compressor room at 1st floor to gas piping room in basement.	37,000	2%	35%	50,949
					-
B4	Remove masonry walls at boiler room and compressor room.	49,000	2%	35%	67,473
					-
B5	Seal off stair hatch and mechanical openings at roof and mezzanine level.	14,000	2%	35%	19,278
					-
B6	Structural supports for new HVAC unit at roof.	22,000	2%	35%	30,294
					-
B7	Existing Generator building - Masonry wall, 1 hr ceiling, (2) doors through outside walls	-	2%	35%	-
					-
B8	Existing Generator building - Backfill pits and cover with 8 inch thick reinforced slab.	28,000	2%	35%	38,556
					-
B9	GC Mobilie / De-mobilize / Closeout	5,000	8%	35%	7,290



CONSTRUCTION COST ESTIMATE

Project:	Town Branch WWTP Digester Improvements		
Owner:	LFUCG		
Project No.:	021-16-002		
Date:	05-Jan-17	Dwg. No.:	N/A
Estimator:	JLM	Type:	30%

Description	Number of Units	Units of Measure	Unit Cost	Total Cost
TITLE				
Heat Recovery Unit	1	EA	\$60,000.00	\$60,000
Stainless Steel Ductwork	5,000	LBS	\$14.40	\$72,000
Mezz Compressor Rm Sup Fan	1	EA	\$4,500.00	\$4,500
Gas Piping Rm Supply Fan	1	EA	\$3,300.00	\$3,300
Oper. Floor Comp Rm Sup Fan	1	EA	\$4,300.00	\$4,300
Remove Rooftop Vent w/curb	6	EA	\$1,200.00	\$7,200
SSTL Registers	17	EA	\$300.00	\$5,100
Test and Balance	1	Lot	\$7,600.00	\$7,600
Miscellaneous Controls	1	Lot	\$7,200.00	\$7,200
Remove gas unit htrs & vents	12	EA	\$1,000.00	\$12,000
				\$0
Sub Contr OH & P @ 20%	1	Lot	\$36,640.00	\$36,640
				\$0
				\$0
				\$0
TOTAL MECH				\$219,840


MAYOR JIM GRAY



LEXINGTON

CHARLES H. MARTIN, P.E.
DIRECTOR
WATER QUALITY

TO: Mayor Jim Gray
Urban County Council

FROM: 
Charles H. Martin, P.E., Director
Division of Water Quality

DATE: January 19, 2017

SUBJECT: Change Order #1; Town Branch WWTP Primary Digester Complex Improvements

Request

The Division of Water Quality request approval of Change Order #1, to Strand Associates, Inc.; the design consultant for the Town Branch WWTP Primary Digester Improvements.

Purpose of Request

The increase to the contract includes additional design cost and scope changes for making improvements to the existing Primary Digester Complex to comply with NFPA 820 (Standard for Fire Protection in Wastewater Treatment and Collection Facilities, published by National Fire Protection Association). The existing primary digester complex was completed in 1989. NFPA 820 was authored in 1990. The non-compliance became apparent when reviewing the scope with mechanical engineers. The issues that will be corrected include the relocation of air supply equipment, separating nonhazardous and hazardous classified areas, isolating digester gas handling equipment, and relocating boilers.

Project Cost in FY17 Budget and Future Budget Years

FY17 – Approval of this change order results in an increase of \$ 131,113.00 to the contract. The revised contract amount including this change order will be \$605,635.00 representing a 27.63% increase of the original contract amount.

Future Budget Impact –This change order will not have an impact on future budget years but the overall change in project scope will increase the construction costs for the project. The RMP schedule construction cost estimate is \$3,525,000. Meeting the NFPA 820 standard will escalate the project cost to an estimated \$10.5 M.

Are Funds Budgeted

Funds are Budgeted in: 4003 303401 3401 92711 TBWWTP_RMP/CONSENT_DE

Martin/Hoskins-Squier

