

**CITY OF TURLOCK
STANISLAUS COUNTY, CALIFORNIA**



ADDENDUM NO. 3

TO

**CONTRACT DOCUMENTS FOR THE CONSTRUCTION OF THE
TURLOCK REGIONAL WATER QUALITY CONTROL FACILITY
SECONDARY CLARIFIER NO. 5 AND DENITRIFICATION PROJECT**

CITY PROJECT NO. 15-39C

May 26, 2017



ADDENDUM NO. 3

Turlock Regional Water Quality Control Facility Secondary Clarifier No. 5 and Denitrification Project

Project No. 15-39C

City of Turlock, California

THIS ADDENDUM IS NOW INCORPORATED AS A PART OF THE CONTRACT DOCUMENTS AND MODIFIES THE ORIGINAL PLANS AND SPECIFICATIONS AS NOTED HEREIN. BY SUBMISSION OF A BID FOR THIS PROJECT, THE BIDDER IS ACKNOWLEDGING THAT THE BIDDER HAS CONFIRMED THAT HE OR SHE HAS RECEIVED ALL ADDENDA ISSUED FOR THAT PROJECT AND HAS INCLUDED COSTS FOR SUCH IN THE BID SUBMITTED.

While we believe the plans and specifications to be accurate, they are disseminated in accordance with law and are to be relied upon only at user's risk. The user should be advised to contact the City for updates on any material they receive to ensure that they have the latest/most current information.

It shall be the responsibility of the prime bidder to inform any affected sub bidder of the content of this Addendum.

SPECIFICATIONS (VOLUME 1 OF 3 – DIVISIONS 0 THROUGH 11)

1. DOCUMENT 02300 - EARTHWORK

A. Page 02300-6, Paragraph 3.03.B.3.b.3.

1. Delete paragraph 3 and replace with the following: "*3. Stockpile screened materials meeting the requirements of suitable native materials and not required by the Contract Documents for fill or backfill on the project site at a location approximately 300 feet south of Secondary Effluent Equalization Basin No. 2. Coordinate exact stockpile location with Owner.*"

B. Page 02300-7, Paragraph 3.03.B.4.

1. After paragraph d. add new paragraph e. that reads as follows:

"e. For bidding purposes, assume the existing landfill debris stockpiles can be characterized as follows:

1) 10% of the excavated weight will consist of debris that will need to be disposed at a Class III landfill.

2) 5% of the excavated weight will consist of concrete and rubble.

3) The remaining 85% of the excavated weight will be 3/4-inch minus soil material."

2. DOCUMENT 09960 - HIGH-PERFORMANCE COATINGS

A. Page 09960-20, Paragraph 3.19.D.3.

1. Insert new paragraph l after paragraph k that reads as follows: "l. Secondary clarifier equipment: All metal surfaces, except stainless steel and aluminum."

3. DOCUMENT 11353B - HIGH-PERFORMANCE COATINGS

A. Page 11353B-23, Paragraph 2.05.B.1.

1. After "Sludge collector mechanisms" insert the following: ", walkway bridge, and clarifier accessories".

SPECIFICATIONS (VOLUME 2 OF 3 – DIVISIONS 13 THROUGH 17)

1. DOCUMENT 17050 - COMMON WORK RESULTS FOR PROCESS CONTROL AND INSTRUMENTATION SYSTEMS

A. Page 17050-11, Paragraph 1.04.E.4.c.

1. Delete Table 1 and replace with new Table 1 as follows:

Table 1 Turlock: Secondary Clarifier No. 5 and Denitrification Project					
Control System Component	Furnish	Field Install	Program/ Configure	Test and Startup	Remarks
All RTUs (New and Modified)					
Hardware					
PCM RTU Enclosure	S	C	S	S	
RTU	S	S NA	S	S	Includes processor, IO modules, and necessary communication modules
HMI	S	S NA	S	S	
Ethernet Switch	S	S NA	S	S	
Fiber Patch Panel	S	S NA	NA	S	
Media Converter	S	S NA	S	S	
Fiber Patch Cables	S	S NA	NA	S	
Copper Patch Cables	S	S NA	NA	S	
Wiring Inside PCM RTU Panel	S	S NA	NA	S	Includes landing field wires to field terminals and all internal panel wiring
Battery Backup or UPS	S	S NA	S	S	

Table 1 Turlock: Secondary Clarifier No. 5 and Denitrification Project					
Control System Component	Furnish	Field Install	Program/Configure	Test and Startup	Remarks
Fiber optic cable and fiber terminations to other RTU panels Field wire/cable terminations at PCM	C	C	NA	C	Includes power, signal, I/O, and communication
Software					
Program RTU	S	S	S	S	
Program Ethernet Switches	S	S	S	S	
Program PCIS & HMIs	S	S	S	S	
Design					
Existing RTU Modifications	S	S	S	S	Prior to procurement or construction, SCADA Subcontractor to perform field visit to confirm existing panels are capable of modifications shown in Design Documents
Miscellaneous					
Hardware					
Other Equipment or Devices Not Noted above	C	C	C	C	
Legend: C = CONTRACTOR responsibility S = SCADA SUBCONTRACTOR (HSQ Technology) NA = Not applicable					

2. Add Appendix A (Existing Aeration Basin Diffuser Shop Drawings) to the end of Volume 2 after Division 17, attached.

DRAWINGS (VOLUME 3 OF 3)

1. Sheet Number 76 of 201, Drawing No. 03S01

A. Delete Key Note 1 and replace with the following: "ATTACH STAIR STRINGER TO PLATFORM AS SHOWN ON SECTION V OF DETAIL A220/TYPICAL."

B. Add new Key Note 3 with the following: "PROVIDE 6'-0" x 6'-0" CONCRETE PAD CENTERED UNDERNEATH PLATFORM. TOP OF CONCRETE PAD ELEVATION SHALL BE 97.75. REINFORCE CONCRETE PAD WITH #5@12" EW T&B SIMILAR TO CONCRETE SLAB SHOWN ON DETAIL A235/TYPICAL."

C. TOP PLAN B:

1. Delete callout for Typical Detail A220 and replace with callout for Typical Detail A230. Add Key Note 1 and Key Note 3 callouts to the Typical Detail A230 callout.

ATTACHMENTS:

1. APPENDIX A - EXISTING AERATION BASIN DIFFUSER SHOP DRAWINGS (15 pages)
-

This Addendum No. 3 shall become part of the Contract and all provisions of the Contract shall apply thereto. This addendum has been prepared by or under, the direction of the following Registered Engineers:



5/26/2017

James Wickstrom, P.E. California Civil C-57732

CIVIL ENGINEERING

Carollo Engineers, Inc., 2700 Ygnacio Valley Rd., Suite 300
Walnut Creek, CA 94598, Telephone: 925-932-1710



5/26/2017

Robert Hunt, P.E. California Civil C-73037

CIVIL ENGINEERING

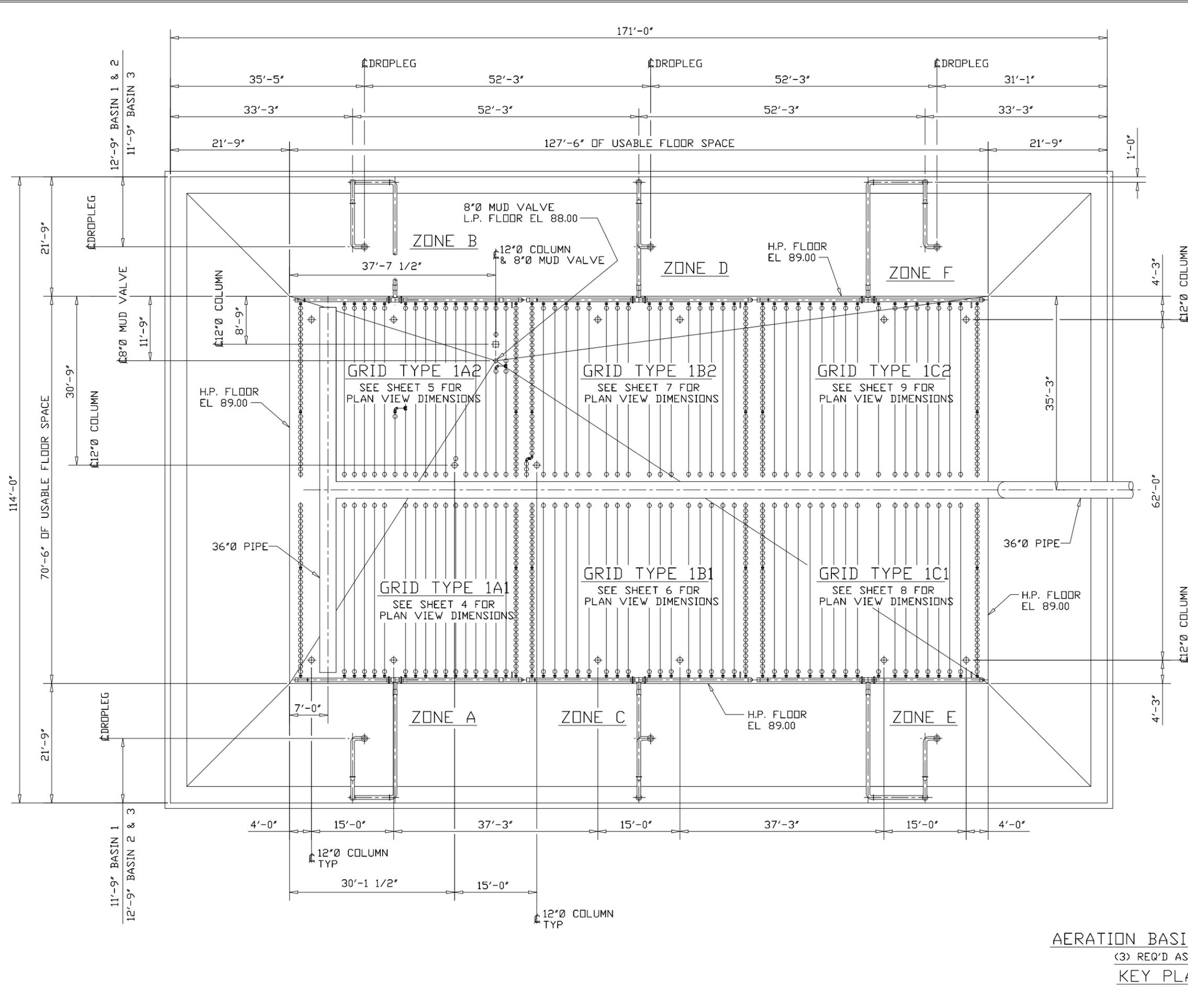
Carollo Engineers, Inc., 2700 Ygnacio Valley Rd., Suite 300
Walnut Creek, CA 94598, Telephone: 925-932-1710

ATTACHMENT 1

(15 pages)

APPENDIX A - EXISTING AERATION BASIN DIFFUSER SHOP DRAWINGS

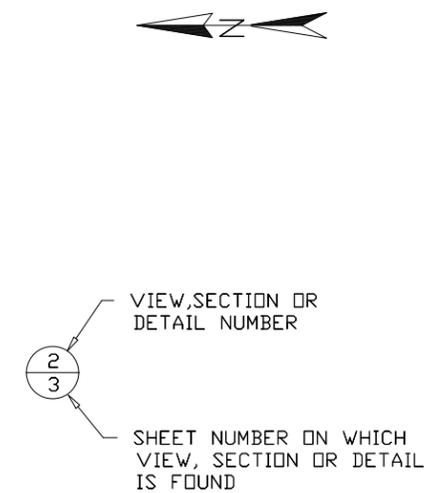
APPENDIX A
EXISTING AERATION BASIN DIFFUSER SHOP DRAWINGS



10/89 MEMBRANE DISC AERATION MATERIAL AND MANUFACTURING SPECIFICATIONS

ITEM	MATERIAL SPECIFICATION	MANUFACTURING SPECIFICATION	NOTES
DROPLEG	304L STAINLESS STEEL ASTM A240	FITTINGS: TUBULAR PRODUCTS: ASTM A778 ASTM A530	150# DRILLING FOR FLANGE AT TOP OF DROPLEG
SUPPORTS	304L STAINLESS STEEL		1" GRADE NOT REQUIRED FOR NON-WELDED PARTS
BOLTS, NUTS, WASHERS	304 STAINLESS STEEL		
FIXED JOINT O-RING	NATURAL RUBBER/SBR		45 ± 5 DUROMETER SHORE A COMPRESSION SET 5% MAX.
EXPANSION JOINT O-RING	NATURAL RUBBER/SBR		40 ± 5 DUROMETER SHORE A 0.45 COEFFICIENT OF FRICTION MAX.
AIR MANIFOLD	PVC, ASTM D1784 COMPOUND 12454-2	PIPE: FITTINGS: ASTM D1785 ASTM D2467	
AIR HEADERS	PVC, ASTM D3915 COMPOUND 12452-4	PIPE & FITTINGS: ASTM D3034	MINIMUM 2% TITANIUM DIOXIDE
DIFFUSER HOLDER	PVC, ASTM D3915 COMPOUND 12452-4		MINIMUM 2% TITANIUM DIOXIDE
DIFFUSER ELEMENT	EPDM		
PVC SOLVENT WELDING	ASTM D2564	ASTM D2855	

HEADER DIAMETER INCHES	WALL THICKNESS INCHES	FABRICATION:
30"	0.175	FACTORY WELD ONLY WITH MIG, TIG OR PLASMA-ARC WELDING. INERT GAS PROCESSES, FULL PENETRATION BUTT WELDS, ER 316L FILLER WIRE. PICKLE BY IMMERSION IN 10% NITRIC ACID AND 3% HYDROFLUORIC ACID IN A WATER BATH AT 140 F FOR 15 MINUTES. SCRUB AS REQUIRED, IMMEDIATE FINAL THROUGH RINSE IN CLEAN HOT WATER AND LET DRY. ALL SURFACES TO CONFORM TO AIST N1.20 FINISH.
20" - 24"	0.140	
18" & LESS	0.148	



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CITY OF TURLOCK, CALIFORNIA
WATER QUALITY CONTROL FACILITY

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AERATION BASINS 1, 2 & 3

KEY PLAN

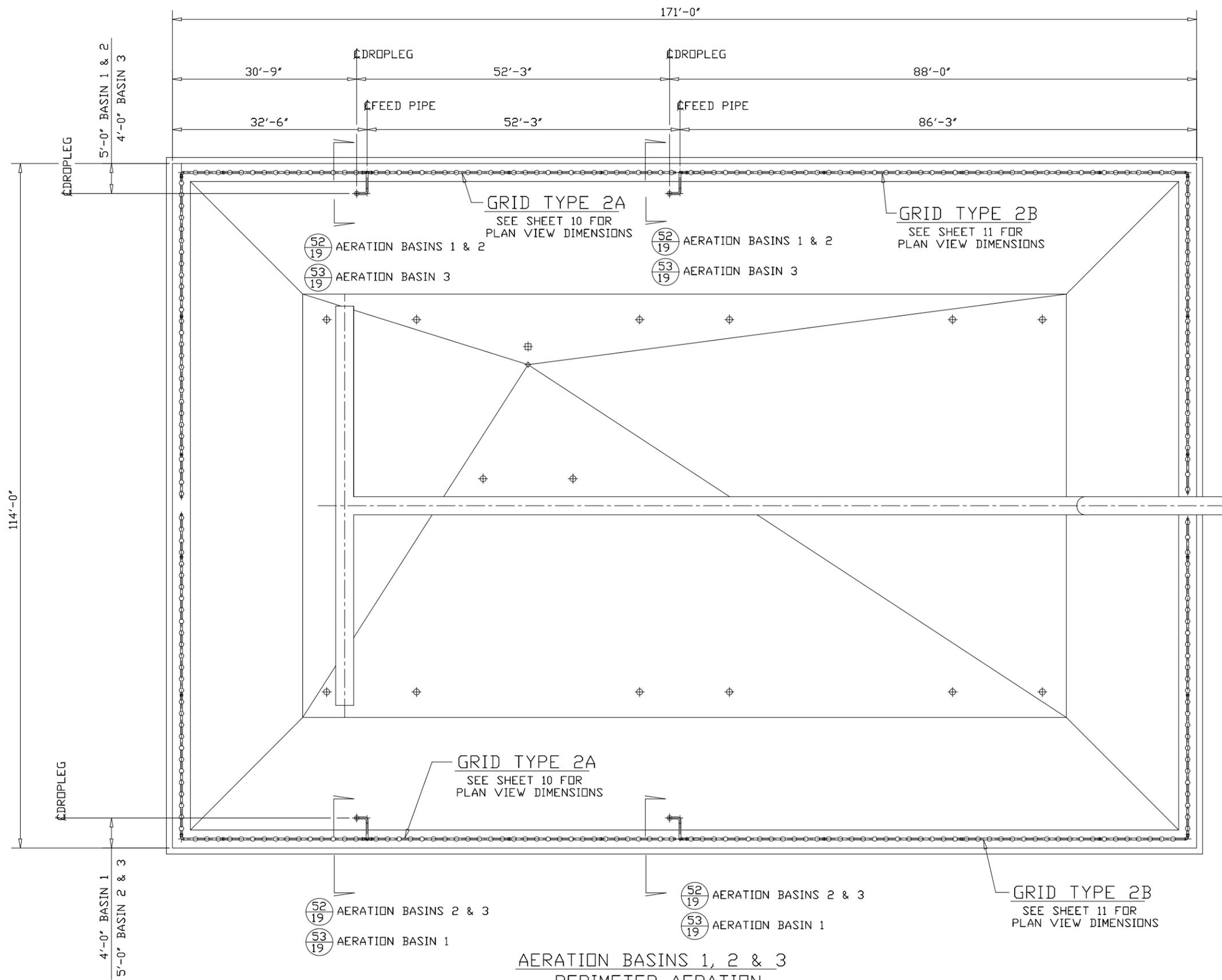
Sanitaire Corporation

ITT Industries

BANITAIRE[®] BROWN DEER, WISCONSIN 53223 ABJ[™]

DRWN BY RH	DATE 10-18-00	EQUIP. MEN	JOB 00-4507S
CHKD BY DE	DATE 10-24-00	STD.	27
APPVD BY	DATE	SIZE D	REV. DWG E-1

AERATION BASINS 1, 2 & 3
(3) REQ'D AS SHOWN
KEY PLAN 1



$\frac{52}{19}$ AERATION BASINS 1 & 2
 $\frac{53}{19}$ AERATION BASIN 3

$\frac{52}{19}$ AERATION BASINS 1 & 2
 $\frac{53}{19}$ AERATION BASIN 3

$\frac{52}{19}$ AERATION BASINS 2 & 3
 $\frac{53}{19}$ AERATION BASIN 1

$\frac{52}{19}$ AERATION BASINS 2 & 3
 $\frac{53}{19}$ AERATION BASIN 1

AERATION BASINS 1, 2 & 3
 PERIMETER AERATION
 (3) REQ'D AS SHOWN
 KEY PLAN $\frac{3}{8}$



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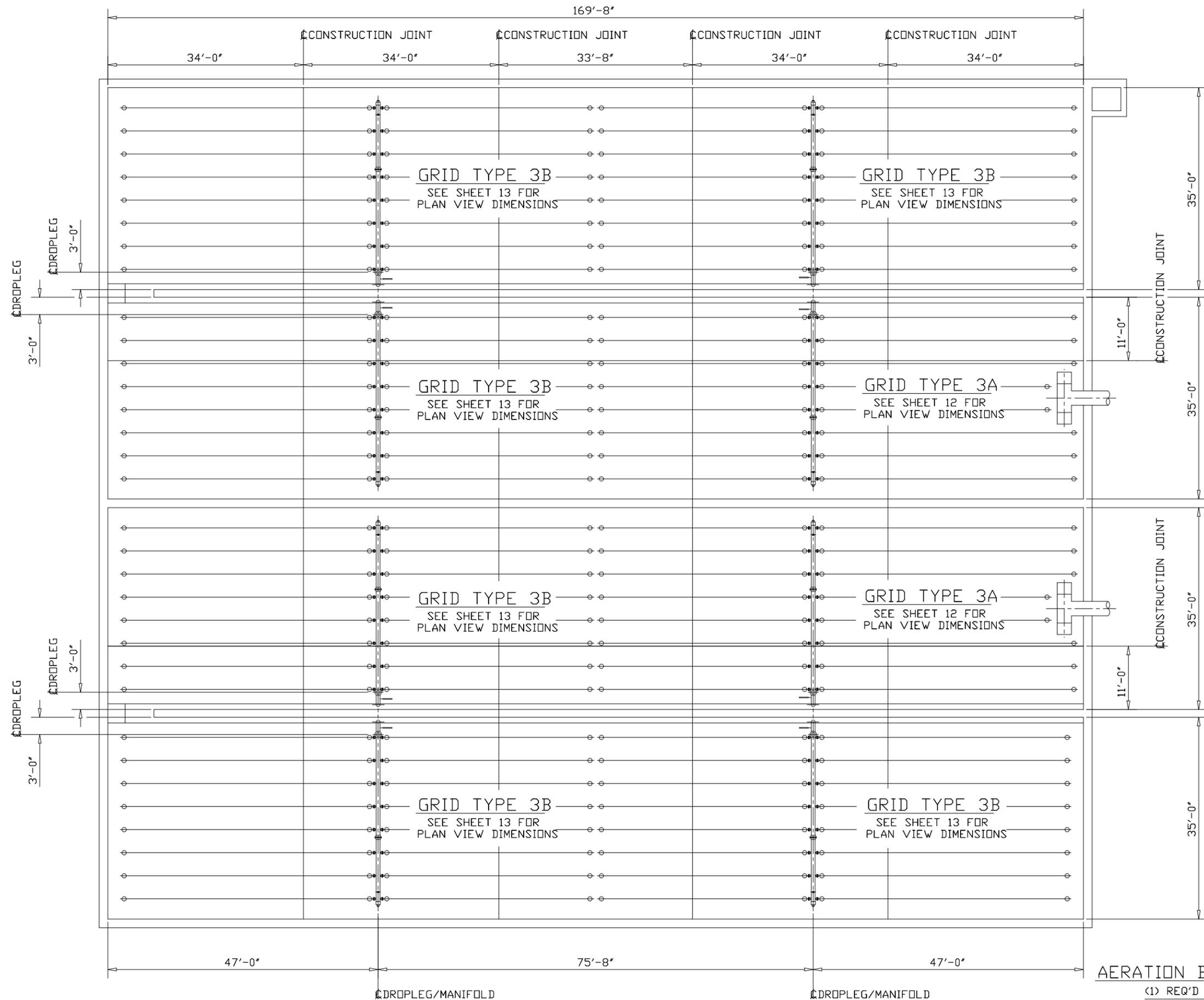
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AERATION BASINS 1, 2 & 3
 PERIMETER AERATION
 KEY PLAN

Sanitaire Corporation
 ITT Industries
 BANITAIRE® BROWN DEER, WISCONSIN 53223 **ABJ**

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CHKD BY DE	DATE 10-24-00	STD.		OF 27
APPVD BY	DATE	SIZE D	REV. DWG E-2	



AERATION BASIN 5

AERATION BASIN 4

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AERATION BASINS 4 & 5

KEY PLAN

AERATION BASINS 4 & 5

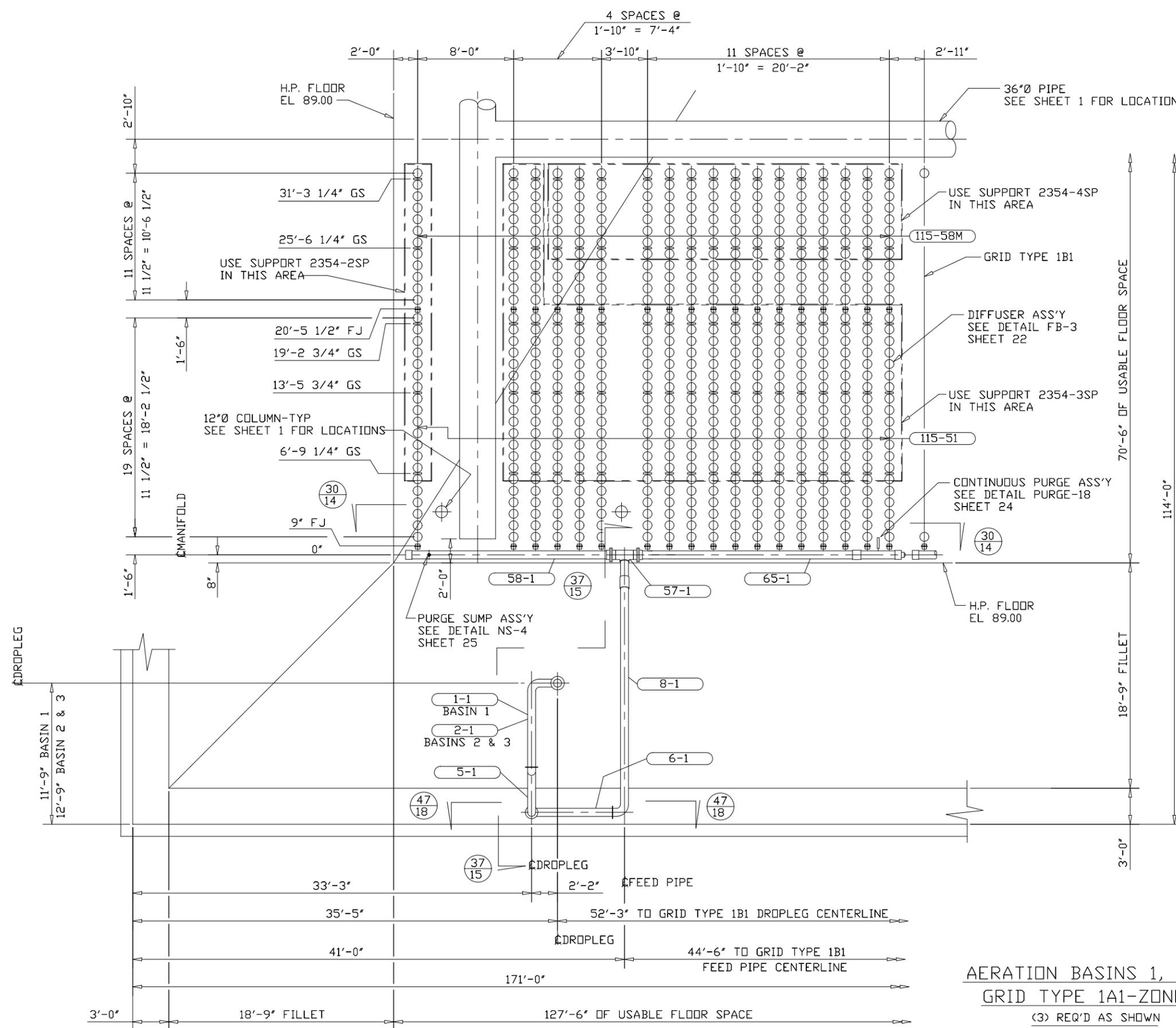
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KEY PLAN 5

Sanitaire Corporation
ITT Industries
BROWNSVILLE, TEXAS 77802

DRWN BY RH DATE 10-18-00 EQUIP. MEN JOB 00-4507S
CHKD BY DE DATE 10-24-00 STD. SIZE D REV. DWG E-3

ABJ
SHT 3 OF 27



NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed $\pm 3/4"$.

- LEGEND**
- FJ - FIXED JOINT
SEE DETAIL FB-10A
SHEET-22
 - GS - GUIDE SUPPORT
SEE DETAIL SUP-2
SHEET-23
 - FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAIL FB-22B
SHEET-21

NOTE:
SITE ENGINEER TO DETERMINE
LOCATIONS OF BLANK DIFFUSERS
SEE DETAIL FB-5B
SHEET 22

- GRID TYPE 1A1**
- 3 - TANK(S)
 - 1 - GRID(S) PER TANK
 - 18 - AIR DISTRIBUTORS PER GRID
 - 32 - DIFFUSER HOLDERS PER AIR DISTRIBUTOR
 - 29 - DIFFUSER ELEMENTS PER AIR DISTRIBUTOR
 - 522 - DIFFUSER ELEMENTS INSTALLED PER GRID
 - 1566 - TOTAL DIFFUSER ELEMENTS INSTALLED FOR THIS GRID TYPE
 - 54 - TOTAL BLANKS INSTALLED PER GRID

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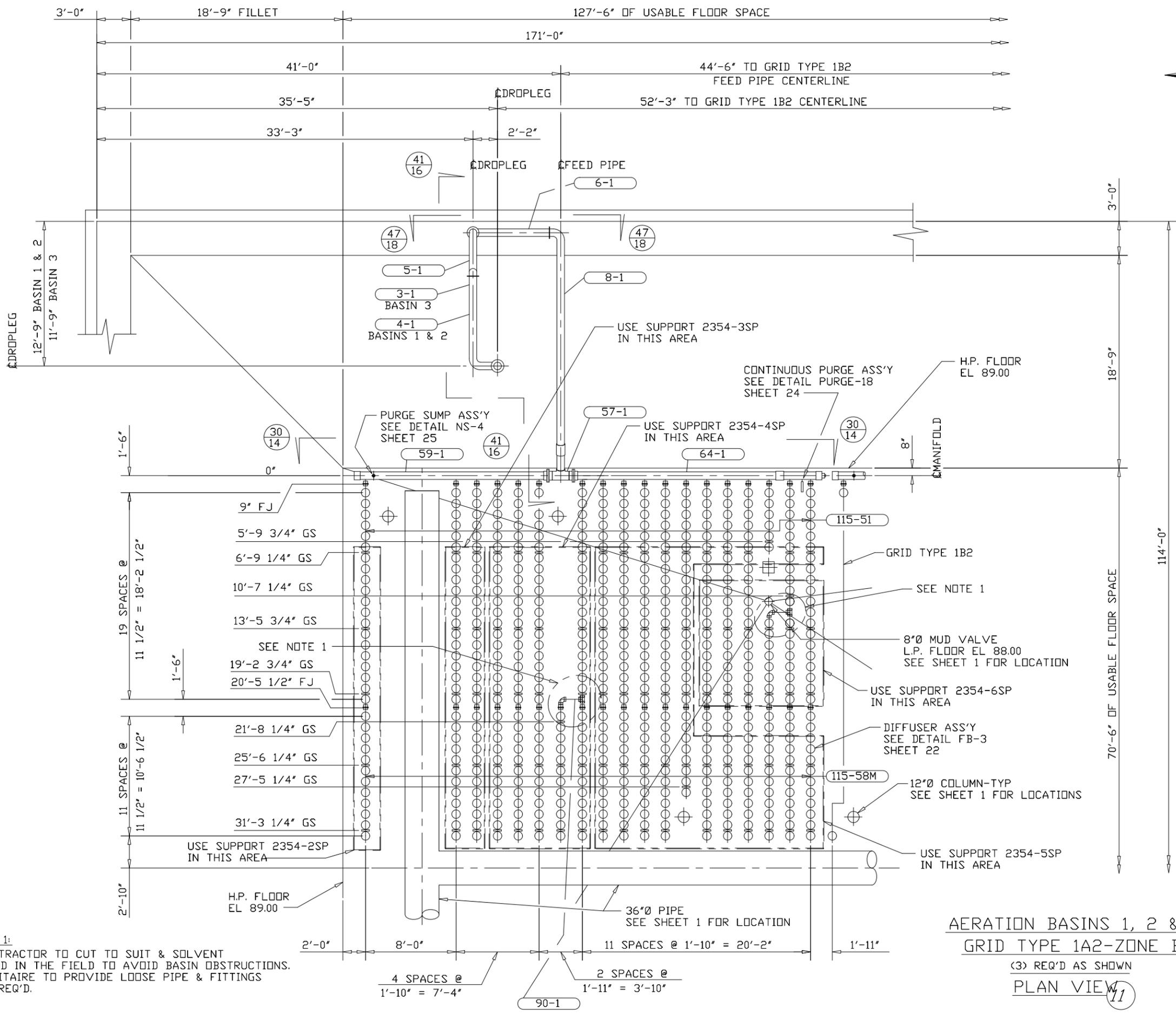
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AERATION BASINS 1, 2 & 3
GRID TYPE 1A1-ZONE A
PLAN VIEW

Sanitaire Corporation		ITT Industries		ABJ	
<small>BANITAIRE® BROWN DEER, WISCONSIN 53223</small>					
DRWN BY RH	DATE 10-18-00	EQUIP. MEN	JOB 00-4507S		
CHKD BY DE	DATE 10-24-00	STD.	4 OF 27		
APPVD BY	DATE	SIZE D	REV.	DWG E-4	

AERATION BASINS 1, 2 & 3
GRID TYPE 1A1-ZONE A
(3) REQ'D AS SHOWN
PLAN VIEW



NOTE: SUPPORT SPACING

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SEE DETAIL FB-10A
SHEET-22
 - GS - GUIDE SUPPORT
SEE DETAIL SUP-2
SHEET-23
 - FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAILFB-22B
SHEET-21

NOTE:
SITE ENGINEER TO DETERMINE
LOCATIONS OF BLANK DIFFUSERS
SEE DETAIL FB-5B
SHEET 22

- GRID TYPE 1A2**
- 3-TANK(S)
 - 1-GRID(S) PER TANK
 - 18-AIR DISTRIBUTORS PER GRID
 - VARIABLE-DIFFUSER HOLDERS PER AIR DISTRIBUTOR
 - VARIABLE-DIFFUSER ELEMENTS PER AIR DISTRIBUTOR
 - 522-DIFFUSER ELEMENTS INSTALLED PER GRID
 - 1566-TOTAL DIFFUSER ELEMENTS INSTALLED FOR THIS GRID TYPE
 - 54-TOTAL BLANKS INSTALLED PER GRID

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CITY OF TURLOCK, CALIFORNIA
WATER QUALITY CONTROL FACILITY

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AERATION BASINS 1, 2 & 3
GRID TYPE 1A2-ZONE B
PLAN VIEW

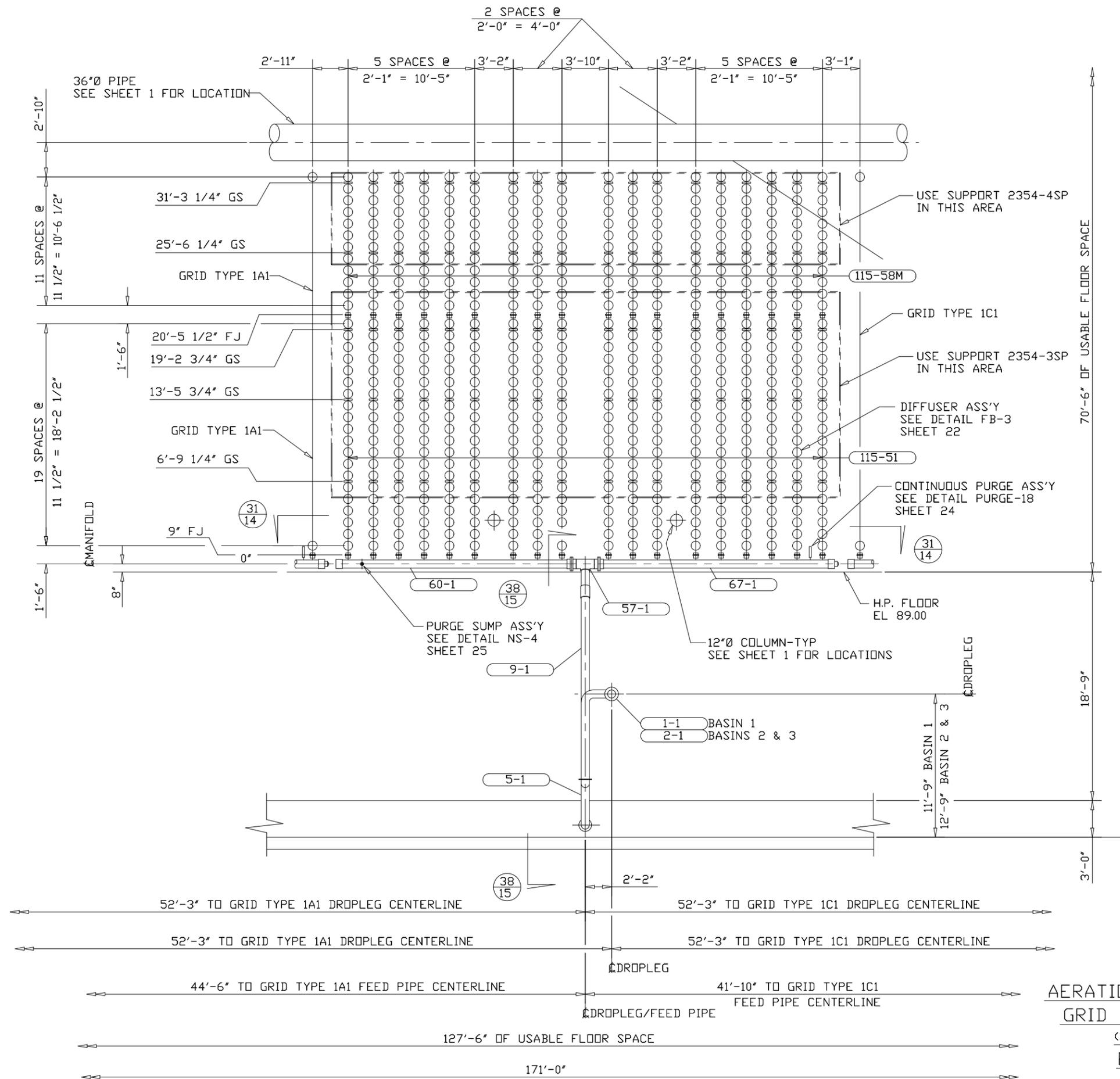
Sanitaire Corporation
ITT Industries
SANITAIRE® BROWN DEER, WISCONSIN 53223 **ABJ**

DRWN BY RH	DATE 10-18-00	EQUIP. MEN	JOB 00-4507S	SHEET 5
CHKD BY DE	DATE 10-24-00	STD.		OF 27
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NOTE 1:
CONTRACTOR TO CUT TO SUIT & SOLVENT WELD IN THE FIELD TO AVOID BASIN OBSTRUCTIONS. SANITAIRE TO PROVIDE LOOSE PIPE & FITTINGS AS REQ'D.

AERATION BASINS 1, 2 & 3
GRID TYPE 1A2-ZONE B
(3) REQ'D AS SHOWN
PLAN VIEW

11



NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed ± 3/4".

LEGEND

- FJ - FIXED JOINT
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SHEET-22
- GS - GUIDE SUPPORT
SEE DETAIL SUP-2
SHEET-23
- FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAIL FB-22B
SHEET-21

NOTE:
SITE ENGINEER TO DETERMINE
LOCATIONS OF BLANK DIFFUSERS
SEE DETAIL FB-5B
SHEET 22

GRID TYPE 1B1

- 3 -TANK(S)
- 1-GRID(S) PER TANK
- 18 -AIR DISTRIBUTORS PER GRID
- 32 -DIFFUSER HOLDERS PER AIR DISTRIBUTOR
- 29 -DIFFUSER ELEMENTS PER AIR DISTRIBUTOR
- 522 -DIFFUSER ELEMENTS INSTALLED PER GRID
- 1566 -TOTAL DIFFUSER ELEMENTS INSTALLED FOR THIS GRID TYPE
- 54 -TOTAL BLANKS INSTALLED PER GRID

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WATER QUALITY CONTROL FACILITY

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AERATION BASINS 1, 2 & 3
GRID TYPE 1B1-ZONE C
PLAN VIEW

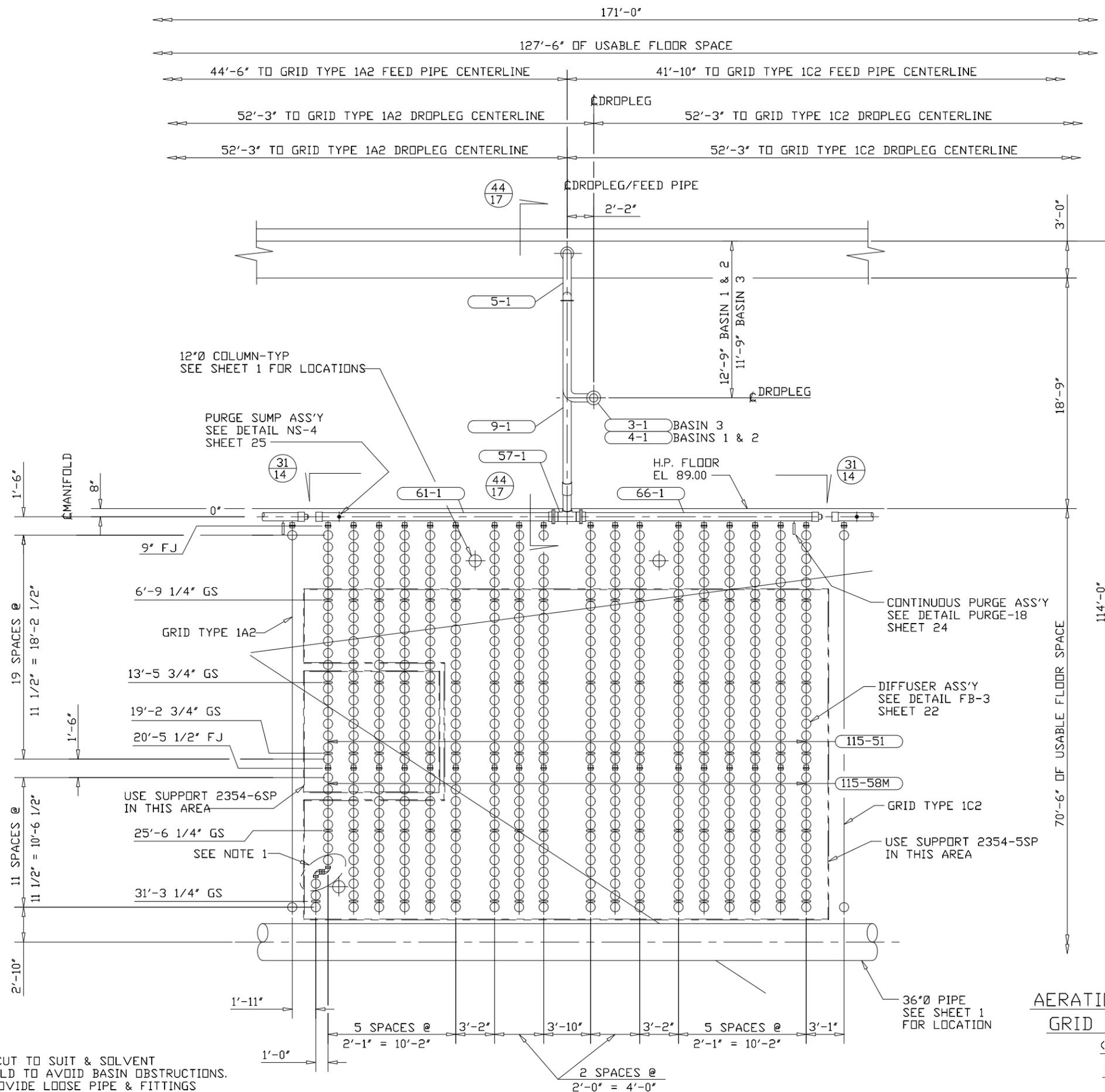
Sanitaire Corporation
ITT Industries

BANITAIRE® BROWN DEER, WISCONSIN 53223 ABJ™

DRWN BY RH	DATE 7-5-00	EQUIP. MEN	JOB 00-4507S	SHT. 6
CHKD BY DE	DATE 10-24-00	STD.		OF 27
APPVD BY	DATE	SIZE D	REV.	DWG E-6

AERATION BASINS 1, 2 & 3
GRID TYPE 1B1-ZONE C
PLAN VIEW

(3) REQ'D AS SHOWN



NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

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SHEET-22
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SHEET-23
 - FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAIL FB-22B
SHEET-21

NOTE:
SITE ENGINEER TO DETERMINE
LOCATIONS OF BLANK DIFFUSERS
SEE DETAIL FB-5B
SHEET 22

- GRID TYPE 1B2**
- 3 - TANK(S)
 - 1 - GRID(S) PER TANK
 - 18 - AIR DISTRIBUTORS PER GRID
 - 32 - DIFFUSER HOLDERS PER AIR DISTRIBUTOR
 - 29 - DIFFUSER ELEMENTS PER AIR DISTRIBUTOR
 - 522 - DIFFUSER ELEMENTS INSTALLED PER GRID
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 - 54 - TOTAL BLANKS INSTALLED PER GRID

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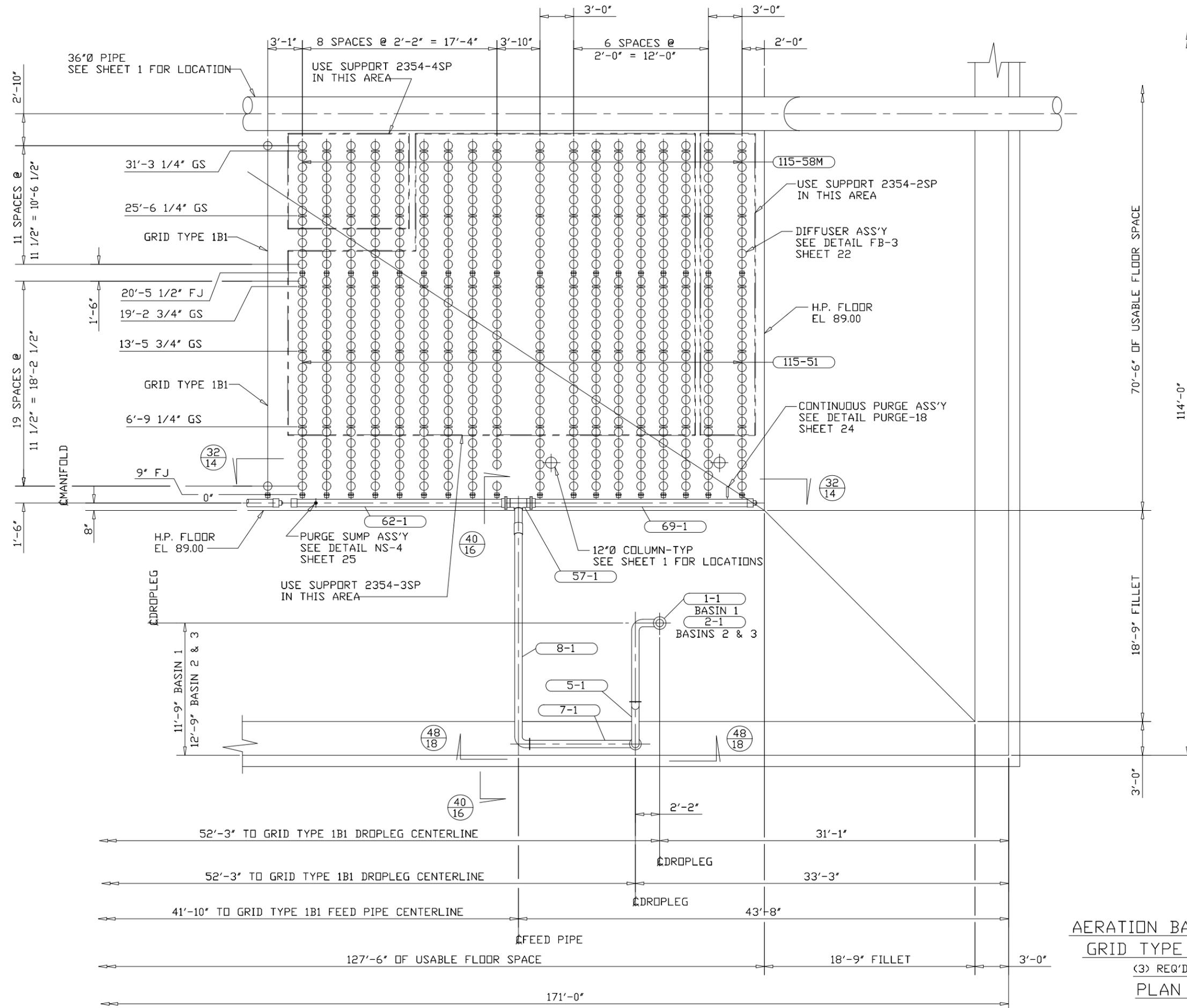
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AERATION BASINS 1, 2 & 3
GRID TYPE 1B2-ZONE D
PLAN VIEW

Sanitaire Corporation		ITT Industries		ABJ	
DRWN BY RH	DATE 10-18-00	EQUIP. MEN	JOB 00-4507S		
CHKD BY DE	DATE 10-24-00	STD.	SHEET 7 OF 27		
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AERATION BASINS 1, 2 & 3
GRID TYPE 1B2-ZONE D
(3) REQ'D AS SHOWN
PLAN VIEW 15



NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

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- FJ - FIXED JOINT
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SHEET-22
 - GS - GUIDE SUPPORT
SEE DETAIL SUP-2
SHEET-23
 - FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAIL FB-22B
SHEET-21

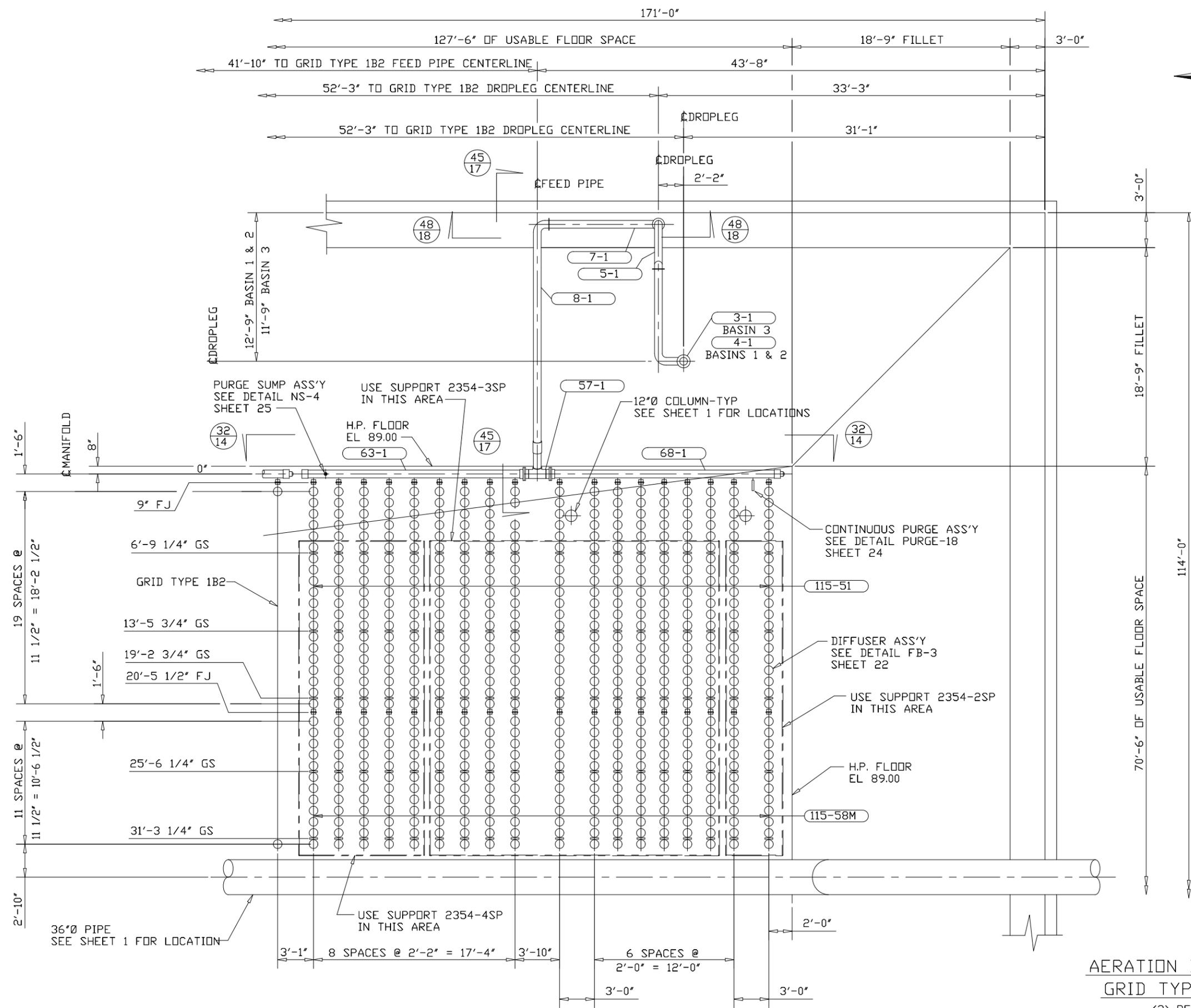
NOTE:

SITE ENGINEER TO DETERMINE LOCATIONS OF BLANK DIFFUSERS
SEE DETAIL FB-5B
SHEET 22

- GRID TYPE 1C1**
- 3 - TANK(S)
 - 1 - GRID(S) PER TANK
 - 18 - AIR DISTRIBUTORS PER GRID
 - 32 - DIFFUSER HOLDERS PER AIR DISTRIBUTOR
 - 29 - DIFFUSER ELEMENTS PER AIR DISTRIBUTOR
 - 522 - DIFFUSER ELEMENTS INSTALLED PER GRID
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CITY OF TURLOCK, CALIFORNIA WATER QUALITY CONTROL FACILITY				
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AERATION BASINS 1, 2 & 3 GRID TYPE 1C1-ZONE E PLAN VIEW				
Sanitaire Corporation ITT Industries				
BANITAIRE® BROWN DEER, WISCONSIN 53223 ABJ™				
DRWN BY RH	DATE 10-18-00	EQUIP. MEN	JOB 00-4507S	
CHKD BY DE	DATE 10-24-00	STD.	SHT 8 OF 27	
APPVD BY	DATE	SIZE D	REV.	DWG E-8

AERATION BASINS 1, 2 & 3
GRID TYPE 1C1-ZONE E
(3) REQ'D AS SHOWN
PLAN VIEW



NOTE: SUPPORT SPACING

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LEGEND

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SHEET-23
- FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAILFB-22B
SHEET-21

NOTE:

SITE ENGINEER TO DETERMINE LOCATIONS OF BLANK DIFFUSERS
SEE DETAIL FB-5B
SHEET 22

GRID TYPE 1C2

- 3-TANK(S)
- 1-GRID(S) PER TANK
- 18-AIR DISTRIBUTORS PER GRID
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NO.	DATE	REVISION	BY

CITY OF TURLOCK, CALIFORNIA
WATER QUALITY CONTROL FACILITY

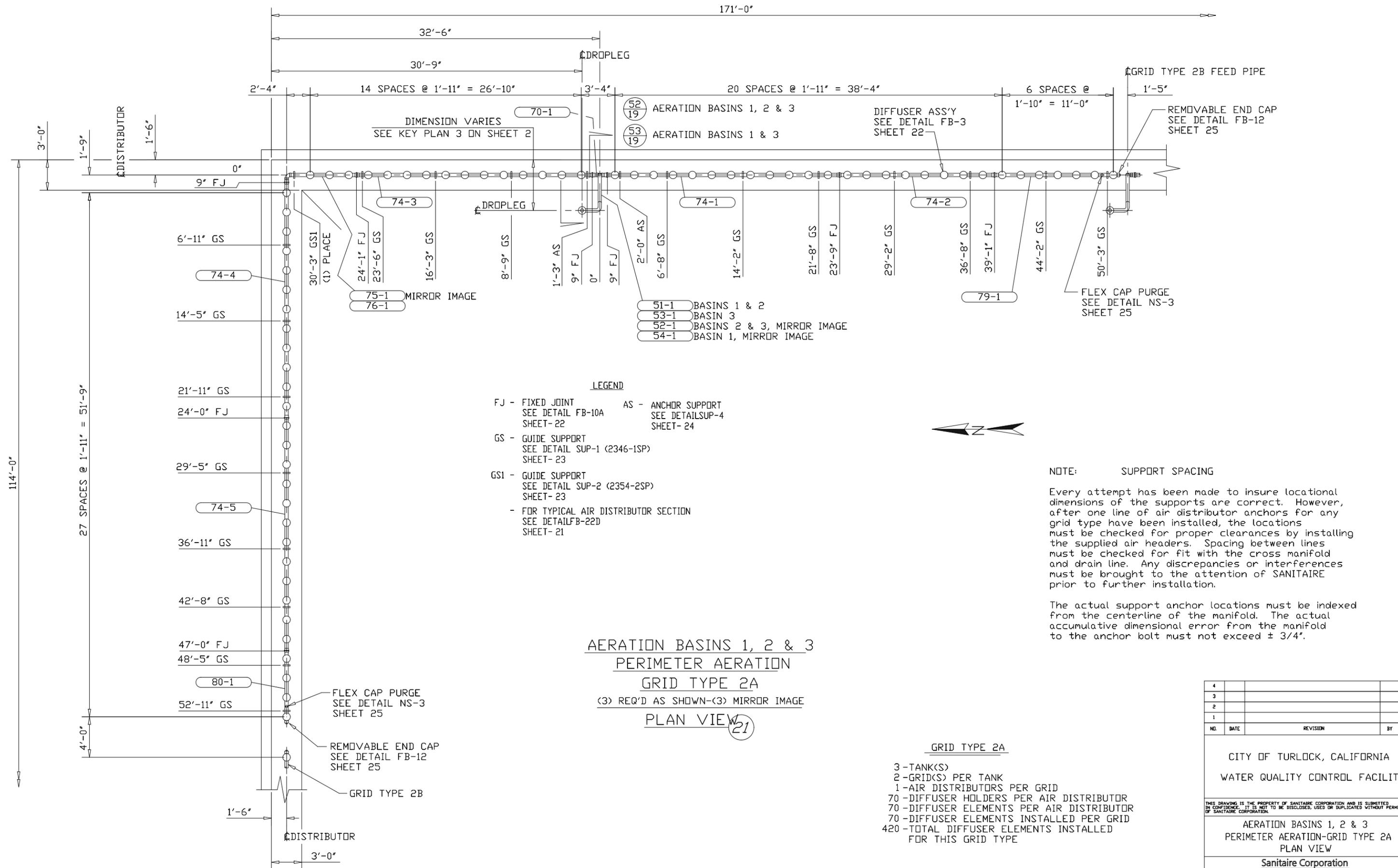
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AERATION BASINS 1, 2 & 3
GRID TYPE 1C2-ZONE F
PLAN VIEW

Sanitaire Corporation
ITT Industries
BROWNSVILLE, WISCONSIN 53223

DRWN BY RH	DATE 10-18-00	EQUIP. MEN	JOB 00-4507S	SHT 9
CHKD BY DE	DATE 10-24-00	STD.		OF 27
APPVD BY	DATE	SIZE D	REV. DWG E-9	

AERATION BASINS 1, 2 & 3
GRID TYPE 1C2-ZONE F
(3) REQ'D AS SHOWN
PLAN VIEW



LEGEND

- FJ - FIXED JOINT
SEE DETAIL FB-10A
SHEET- 22
- AS - ANCHOR SUPPORT
SEE DETAILSUP-4
SHEET- 24
- GS - GUIDE SUPPORT
SEE DETAIL SUP-1 (2346-1SP)
SHEET- 23
- GSI - GUIDE SUPPORT
SEE DETAIL SUP-2 (2354-2SP)
SHEET- 23
- FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAILFB-22D
SHEET- 21

AERATION BASINS 1, 2 & 3
PERIMETER AERATION
GRID TYPE 2A
 (3) REQ'D AS SHOWN-(3) MIRROR IMAGE
PLAN VIEW 21



NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed ± 3/4".

- GRID TYPE 2A**
- 3 -TANK(S)
 - 2 -GRID(S) PER TANK
 - 1 -AIR DISTRIBUTORS PER GRID
 - 70 -DIFFUSER HOLDERS PER AIR DISTRIBUTOR
 - 70 -DIFFUSER ELEMENTS PER AIR DISTRIBUTOR
 - 70 -DIFFUSER ELEMENTS INSTALLED PER GRID
 - 420 -TOTAL DIFFUSER ELEMENTS INSTALLED FOR THIS GRID TYPE

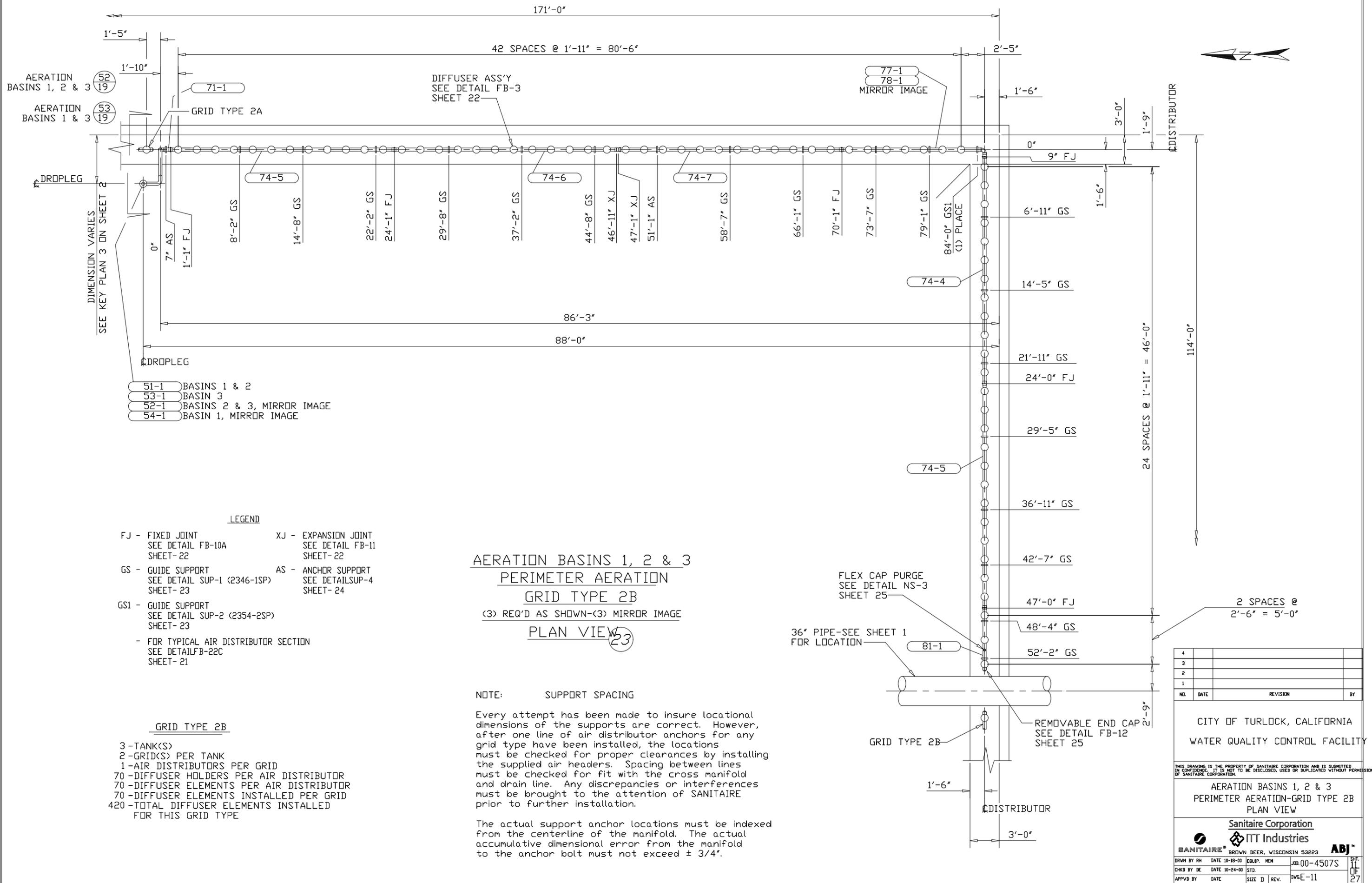
4			
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NO.	DATE	REVISION	BY

CITY OF TURLOCK, CALIFORNIA
 WATER QUALITY CONTROL FACILITY

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AERATION BASINS 1, 2 & 3
 PERIMETER AERATION-GRID TYPE 2A
 PLAN VIEW

DRWN BY RH DATE 10-18-00 EQUIP. MEN JOB 00-4507S
 CHKD BY DE DATE 10-24-00 STD. SHEET NO. 10 OF 27
 APPVD BY DATE SIZE D REV. DWG E-10



AERATION BASINS 1, 2 & 3
 AERATION BASINS 1 & 3

DIFFUSER ASS'Y
 SEE DETAIL FB-3
 SHEET 22

77-1
 78-1
 MIRROR IMAGE

- 51-1 BASINS 1 & 2
- 53-1 BASIN 3
- 52-1 BASINS 2 & 3, MIRROR IMAGE
- 54-1 BASIN 1, MIRROR IMAGE

LEGEND

- FJ - FIXED JOINT
SEE DETAIL FB-10A
SHEET-22
- GS - GUIDE SUPPORT
SEE DETAIL SUP-1 (2346-1SP)
SHEET-23
- GSI - GUIDE SUPPORT
SEE DETAIL SUP-2 (2354-2SP)
SHEET-23
- FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAILFB-22C
SHEET-21
- XJ - EXPANSION JOINT
SEE DETAIL FB-11
SHEET-22
- AS - ANCHOR SUPPORT
SEE DETAILSUP-4
SHEET-24

GRID TYPE 2B

- 3-TANK(S)
- 2-GRID(S) PER TANK
- 1-AIR DISTRIBUTORS PER GRID
- 70-DIFFUSER HOLDERS PER AIR DISTRIBUTOR
- 70-DIFFUSER ELEMENTS PER AIR DISTRIBUTOR
- 70-DIFFUSER ELEMENTS INSTALLED PER GRID
- 420-TOTAL DIFFUSER ELEMENTS INSTALLED FOR THIS GRID TYPE

**AERATION BASINS 1, 2 & 3
 PERIMETER AERATION
 GRID TYPE 2B
 (3) REQ'D AS SHOWN-(3) MIRROR IMAGE
 PLAN VIEW**

NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed ± 3/4".

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NO.	DATE	REVISION	BY

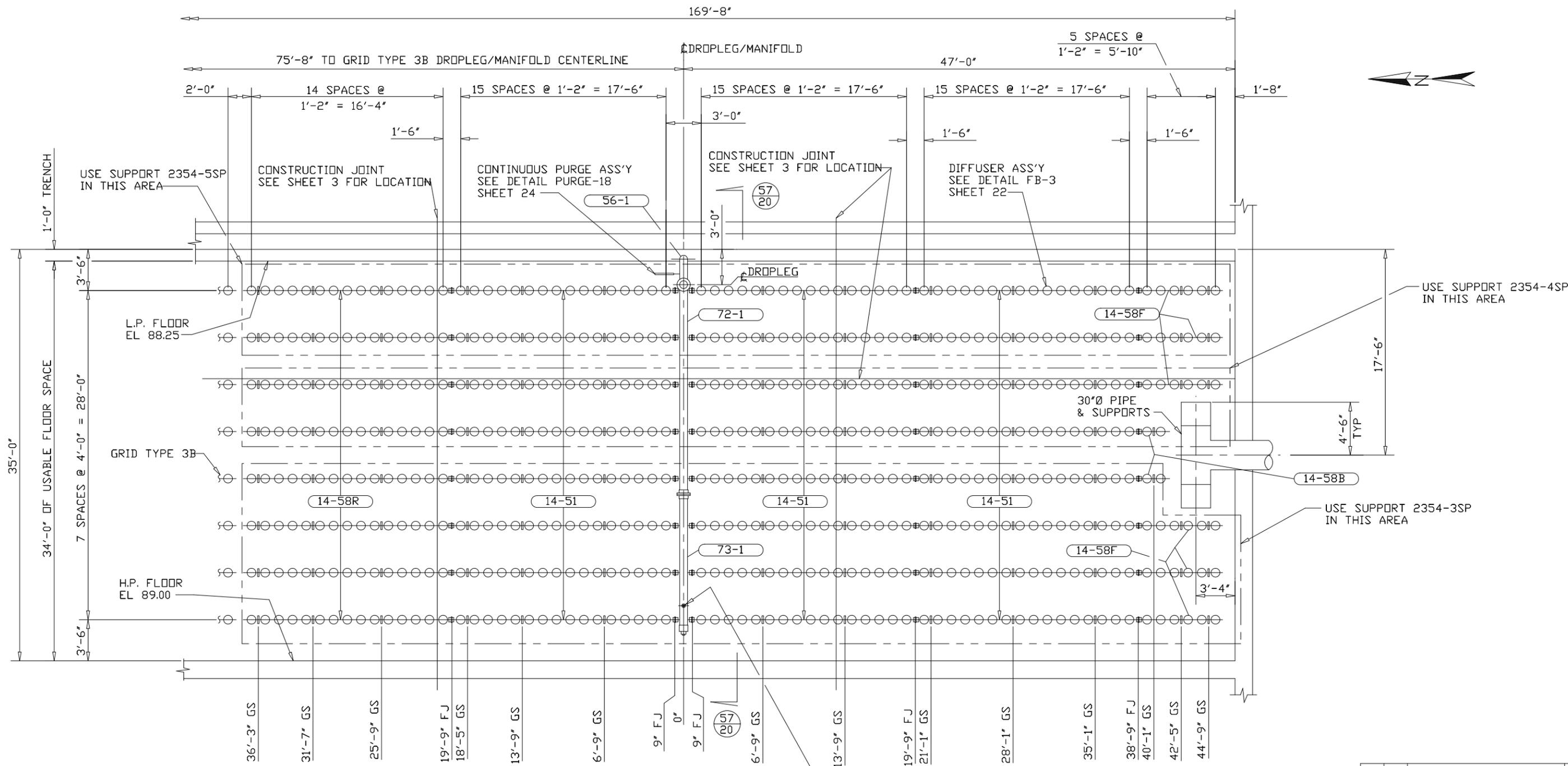
CITY OF TURLOCK, CALIFORNIA
 WATER QUALITY CONTROL FACILITY

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AERATION BASINS 1, 2 & 3
 PERIMETER AERATION-GRID TYPE 2B
 PLAN VIEW

Sanitaire Corporation
 ITT Industries
 BANITAIRE® BROWN DEER, WISCONSIN 53223 ABJ™

DRWN BY RH	DATE 10-18-00	EQUIP. MEN	JOB 00-4507S	SHT. 11
CHKD BY DE	DATE 10-24-00	STD.		OF 27
APPVD BY	DATE	SIZE D	REV.	DWG E-11



NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed $\pm 3/4"$.

LEGEND

- FJ - FIXED JOINT
SEE DETAIL FB-10A
SHEET-22
- GS - GUIDE SUPPORT
SEE DETAIL SUP-2
SHEET-23
- FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAIL FB-22A
SHEET-20

AERATION BASINS 4 & 5
GRID TYPE 3A
(1) REQ'D AS SHOWN-(1) MIRROR IMAGE
PLAN VIEW

NOTE:

SITE ENGINEER TO DETERMINE LOCATIONS OF BLANK DIFFUSERS SEE DETAIL FB-5B SHEET 22

GRID TYPE 3A

- 2-TANK(S)
- 1-GRID(S) PER TANK
- 8-AIR DISTRIBUTORS PER GRID
- VARIES-DIFFUSER HOLDERS PER AIR DISTRIBUTOR
- 61-DIFFUSER ELEMENTS PER AIR DISTRIBUTOR
- 488-DIFFUSER ELEMENTS INSTALLED PER GRID
- 976-TOTAL DIFFUSER ELEMENTS INSTALLED FOR THIS GRID TYPE
- 56-TOTAL BLANKS INSTALLED PER GRID

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NO.	DATE	REVISION	BY

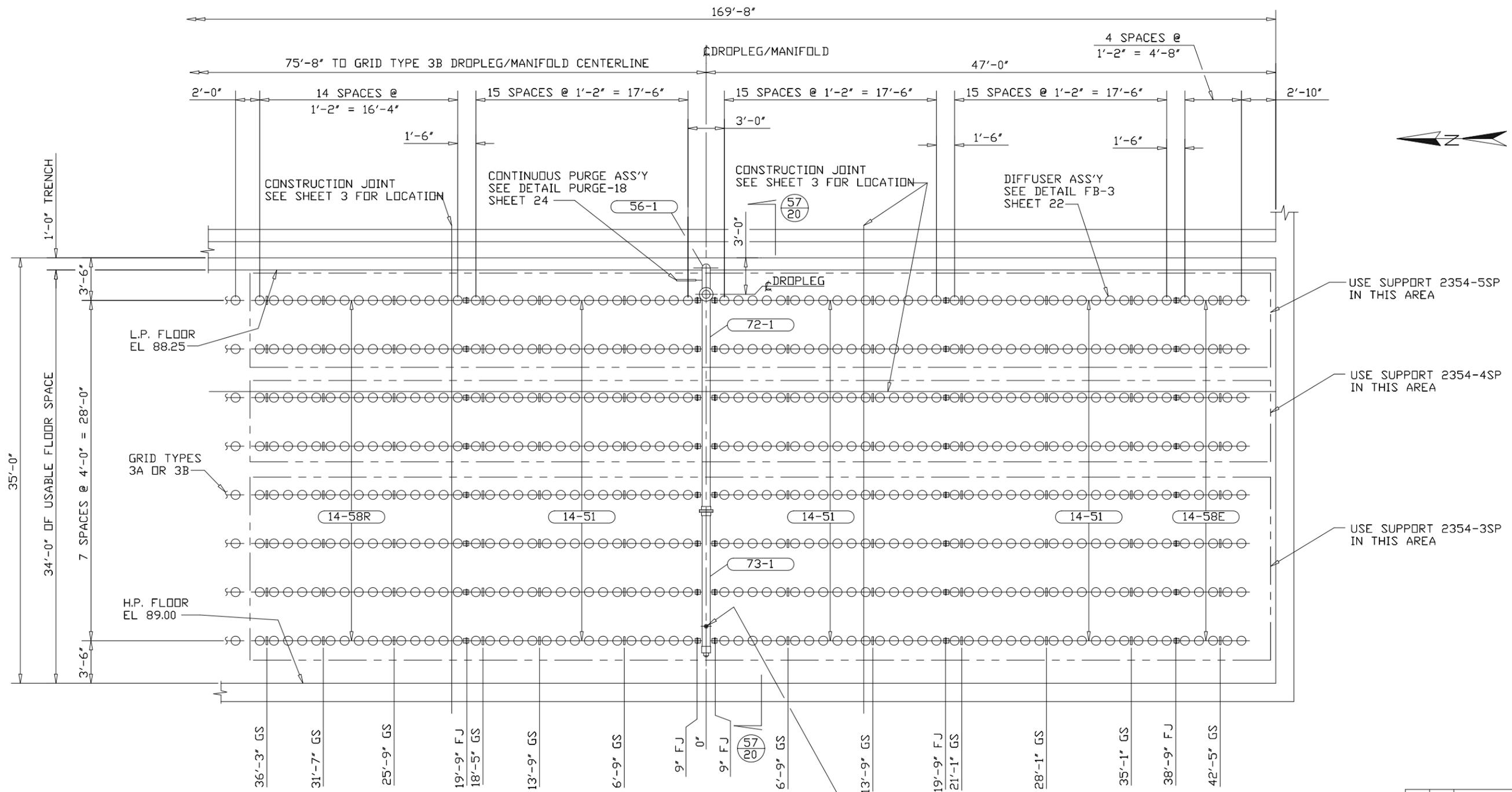
CITY OF TURLOCK, CALIFORNIA
WATER QUALITY CONTROL FACILITY

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AERATION BASINS 4 & 5
GRID TYPE 3A
PLAN VIEW



DRWN BY RH	DATE 10-18-00	EQUIP. MEN	JOB 00-4507S	SHT 12
CHKD BY DE	DATE 10-24-00	STD.		OF 27
APPVD BY	DATE	SIZE D	REV. DWG E-12	



NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed $\pm 3/4"$.

**AERATION BASINS 4 & 5
GRID TYPE 3B
(3) REQ'D AS SHOWN-(3) MIRROR IMAGE
PLAN VIEW**

- LEGEND**
- FJ - FIXED JOINT
SEE DETAIL FB-10A
SHEET-22
 - GS - GUIDE SUPPORT
SEE DETAIL SUP-2
SHEET-23
 - FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAILFB-22A
SHEET-20

NOTE:
SITE ENGINEER TO DETERMINE
LOCATIONS OF BLANK DIFFUSERS
SEE DETAIL FB-5B
SHEET 22

- GRID TYPE 3B**
- 2 -TANK(S)
 - 3-GRID(S) PER TANK
 - 8-AIR DISTRIBUTORS PER GRID
 - 68-DIFFUSER HOLDERS PER AIR DISTRIBUTOR
 - 61-DIFFUSER ELEMENTS PER AIR DISTRIBUTOR
 - 488-DIFFUSER ELEMENTS INSTALLED PER GRID
 - 2928-TOTAL DIFFUSER ELEMENTS INSTALLED FOR THIS GRID TYPE
 - 56-TOTAL BLANKS INSTALLED PER GRID

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NO.	DATE	REVISION	BY

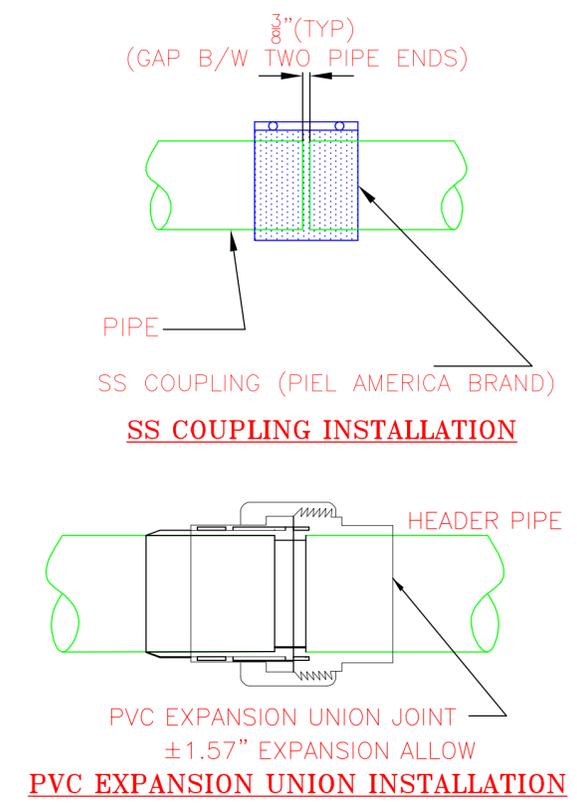
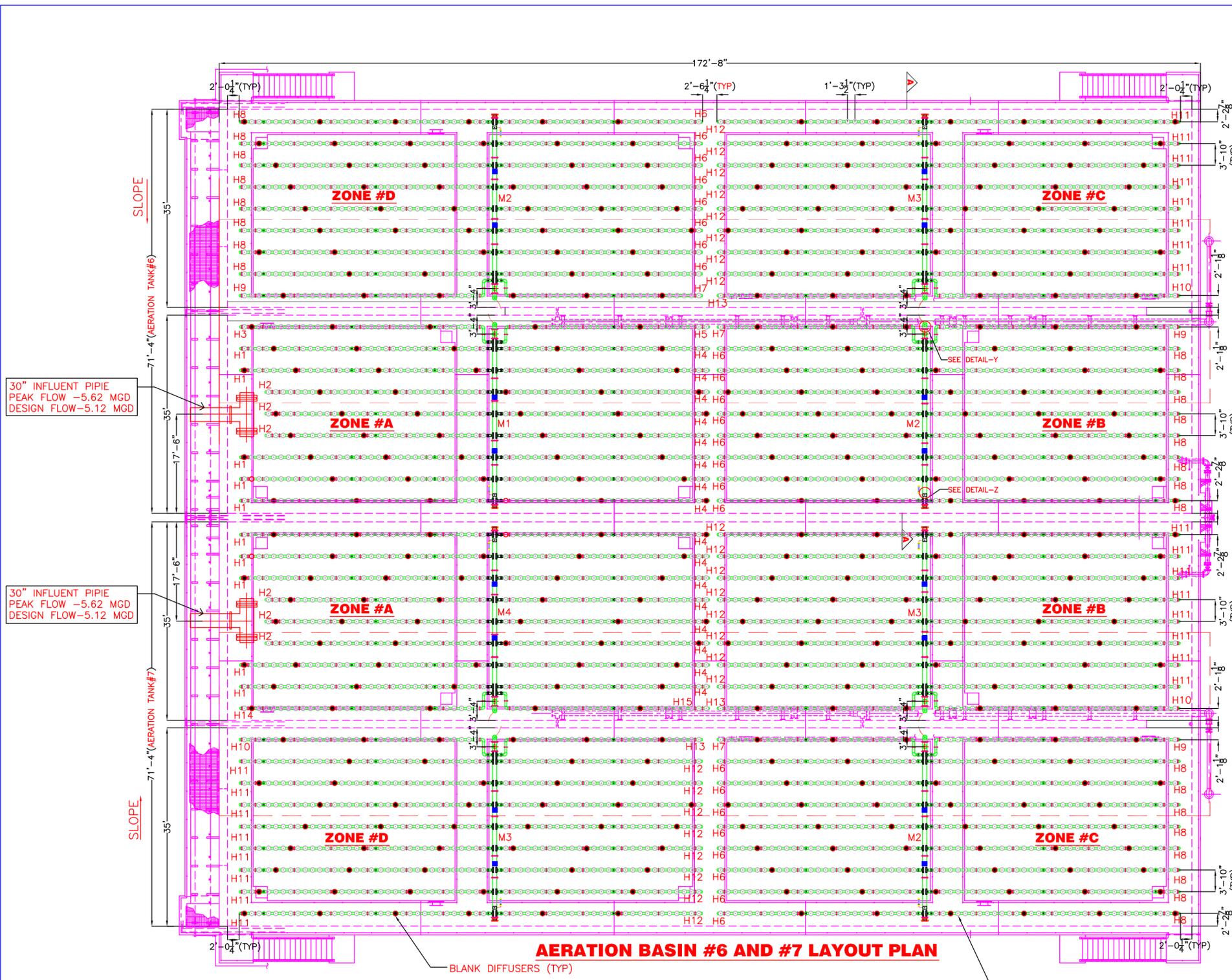
CITY OF TURLOCK, CALIFORNIA
WATER QUALITY CONTROL FACILITY

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AERATION BASINS 4 & 5
GRID TYPE 3B
PLAN VIEW

Sanitaire Corporation
ITT Industries
BANAIRE® BROWN DEER, WISCONSIN 53223 **ABJ**

DRWN BY RH	DATE 10-18-00	EQUIP. MEN	JOB 00-4507S	SHT 3
CHKD BY DE	DATE 10-24-00	STD.		OF 27
APPVD BY	DATE	SIZE D	REV. DWG E-13	



FOR BASIN#6

ZONE	NUMBER OF GRIDS/TANK	EPDM MEMBRANE DIFFUSERS/GRID	NUMBER OF BLANKS/GRID	DIAMETER OF MANIFOLD (PVC SCH.80)	DIAMETER OF HEADER (PVC SDR.26)
#A	1	489PCS	50PCS	ø8"	ø4"
#B	1	488PCS	50PCS	ø8"	ø4"
#C	1	488PCS	50PCS	ø8"	ø4"
#D	1	488PCS	50PCS	ø8"	ø4"

TOTAL NUMBER OF EPDM DIFFUSERS FOR BASIN#6 = 1,952PCS

TOTAL NUMBER OF BLANKS FOR BASIN#6 = 200 PCS

FOR BASIN#7

ZONE	NUMBER OF GRIDS/TANK	PTFE MEMBRANE DIFFUSERS/GRID	NUMBER OF BLANKS/GRID	DIAMETER OF MANIFOLD (PVC SCH.80)	DIAMETER OF HEADER (PVC SDR.26)
#A	1	488PCS	50PCS	ø8"	ø4"
#B	1	488PCS	50PCS	ø8"	ø4"
#C	1	488PCS	50PCS	ø8"	ø4"
#D	1	488PCS	50PCS	ø8"	ø4"

TOTAL NUMBER OF PTFE DIFFUSERS FOR BASIN#7 = 1,952PCS

TOTAL NUMBER OF BLANKS FOR BASIN#7 = 200 PCS

REV	DESCRIPTION	DATE	BY
5	O & M MANUAL ISSUE	06/30/13	KUMAR
4	ISSUED FOR SUBMITTAL(UPDATED SS COUPLINGS ON MANIFOLD)	03/20/13	KUMAR
3	ISSUED FOR SUBMITTAL(UPDATED MANIFOLD AND COUPLINGS)	02/19/13	KUMAR
2	ISSUED FOR SUBMITTAL(SUPPORTS WITH BRACING)	11/21/12	KUMAR
1	ISSUED FOR SUBMITTAL(UPDATED PER ENGINEER COMMENTS)	09/20/12	KUMAR
0	ISSUED FOR SUBMITTAL	08/01/12	KUMAR

SSI-AFD270(9") FINE BUBBLE DISC DIFFUSERS WITH COMPRESSION MOLDED EPDM & PTFE MEMBRANE c/w Q.C SADDLE

TURLOCK WWTP

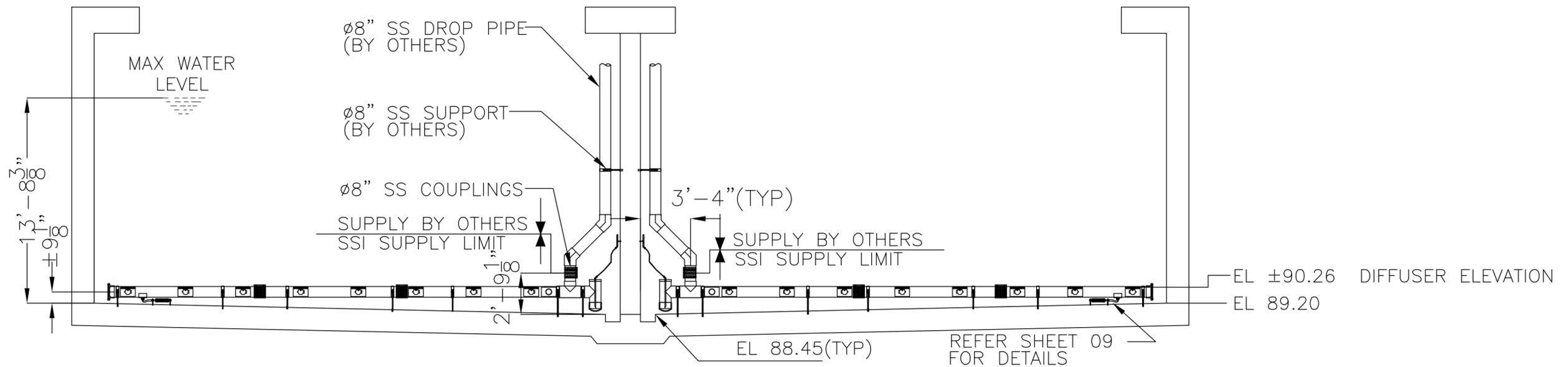
71'-4" x 172'-8" x 13.8' (SWD) AERATION BASINS - 2 NO.S LAYOUT PLAN

**SSI Aeration, Inc
CLEAR WATER DEPT.**

SUBMITTED:
SCALE:
DATE: JULY, 2012

DESIGNED BY: NOMAN
DRAWN BY: KUMAR
SHEET NO. 1 OF 11
O & M MANUAL ISSUE

DWG.No:#11048_Turlock_Aeration_Basin_AFD270_D01_Rev[5]



SECTION - AA

AERATION BASIN#6

ZONE #A

SSI		NO.OF BASINS: 1	NO.OF GRIDS: NIL	MATERIAL LIST FOR THE SYSTEM		
ITEM	QT'Y	DESCRIPTION	MATERIAL	WEIGHT (lbs)	VOLUME (cft)	APPLICATION
1)	1	8" SS COUPLING	SS	8.5 X 1 = 8.5	0.472 X 1 = 0.47	LOWER DROP PIPE
2)	1	8" PVC TEEJOINTS	PVC	11.43 X 1 = 11.43	0.824 X 1 = 0.82	MANIFOLD
3)	35'	8" SCH.80 PVC PIPE	PVC	8.52 X 35 = 298.2	0.4057 X 35 = 14.2	MANIFOLD
4)	7	8" MEDIUM DUTY SUPPORTS	304SS	4.5 X 7 = 31.5	0.15 X 7 = 1.05	MANIFOLD
5)	2	8" PVC COUPLINGS	PVC	4 X 2 = 8	0.472 X 2 = 0.94	MANIFOLD
6)	1	8" REMOVABLE ENDCAPS	PVC	4.35 X 1 = 4.35	0.25 X 1 = 0.25	MANIFOLD
7)	18	8"x4" PVC SADDLES	PVC	2.13 X 18 = 38.34	0.118 X 18 = 2.12	MANIFOLD
8)	715'	4" SDR.26 PVC PIPE	PVC	1.494 X 715 = 1069	0.1094 X 715 = 79	HEADERS
9)	68	4" NORMAL SUPPORTS	304SS	2.1 X 68 = 143	0.074 X 68 = 5.04	HEADERS
10)	57	4" MEDIUM DUTY SUPPORTS	304SS	2.5 X 57 = 143	0.074 X 57 = 4.3	HEADERS
11)	24	4" MEDIUM DUTY SUPPORT WITH BRACING	304SS	2.8 X 24 = 67.2	0.074 X 24 = 1.8	HEADERS
12)	42	4" UNION JOINTS	PVC	1.8 X 42 = 75.6	0.049 X 42 = 2.058	HEADERS
13)	4	4" ELBOWS	PVC	0.62 X 4 = 2.48	0.03 X 4 = 0.12	HEADERS
14)	18	4" ENDCAPS	PVC	0.75 X 18 = 13.5	0.036 X 18 = 0.65	HEADERS
15)	488 PCS	AFD270(9") DISC DIFFUSERS	PP/EPDM	1.5 X 488 = 732	0.03 X 488 = 14.64	HEADERS
16)	538 PCS	Q.C SADDLES	PP	0.5 X 538 = 269	0.01 X 538 = 5.38	HEADERS
17)	50 PCS	BLANK DIFFUSERS	PP	0.3 X 50 = 15	0.01 X 50 = 0.5	HEADERS
18)	1	MOISTURE PURGE SYSTEM	PVC	0.214/FT X 1 = 1.34	0.036/FT X 1 = 0.22	MANIFOLD
19)	1	CONTINUOUS PURGE SYSTEM	PVC	2.25 X 1 = 2.25	0.45 X 1 = 0.45	MANIFOLD

APPROX. SHIPPING WEIGHT FOR ZONE #A - 3,200 LBS
 APPROX. SHIPPING VOLUME FOR ZONE #A - 145 CFT
 APPROX. SHIPPING WEIGHT FOR BASIN#6 - 12,800 LBS
 APPROX. SHIPPING VOLUME FOR BASIN#6 - 580 CFT

ZONE #B, C & D

SSI		NO.OF BASINS: 1	NO.OF GRIDS: NIL	MATERIAL LIST FOR THE SYSTEM		
ITEM	QT'Y	DESCRIPTION	MATERIAL	WEIGHT (lbs)	VOLUME (cft)	APPLICATION
1)	1	8" SS COUPLING	SS	8.5 X 1 = 8.5	0.472 X 1 = 0.47	LOWER DROP PIPE
2)	1	8" PVC TEEJOINTS	PVC	11.43 X 1 = 11.43	0.824 X 1 = 0.82	MANIFOLD
3)	35'	8" SCH.80 PVC PIPE	PVC	8.52 X 35 = 298.2	0.4057 X 35 = 14.2	MANIFOLD
4)	7	8" MEDIUM DUTY SUPPORTS	304SS	4.5 X 7 = 31.5	0.15 X 7 = 1.05	MANIFOLD
5)	2	8" PVC COUPLINGS	PVC	4 X 2 = 8	0.472 X 2 = 0.94	MANIFOLD
6)	1	8" REMOVABLE ENDCAPS	PVC	4.35 X 1 = 4.35	0.25 X 1 = 0.25	MANIFOLD
7)	18	8"x4" PVC SADDLES	PVC	2.13 X 18 = 38.34	0.118 X 18 = 2.12	MANIFOLD
8)	730'	4" SDR.26 PVC PIPE	PVC	1.494 X 730 = 1100	0.1094 X 730 = 80	HEADERS
9)	70	4" NORMAL SUPPORTS	304SS	2.5 X 70 = 175	0.074 X 70 = 5.18	HEADERS
10)	58	4" MEDIUM DUTY SUPPORTS	304SS	2.1 X 58 = 121.8	0.074 X 58 = 4.3	HEADERS
11)	45	4" UNION JOINTS	PVC	1.8 X 45 = 81	0.049 X 45 = 2.2	HEADERS
12)	4	4" ELBOWS	PVC	0.62 X 4 = 2.48	0.03 X 4 = 0.12	HEADERS
13)	18	4" ENDCAPS	PVC	0.75 X 18 = 13.5	0.036 X 18 = 0.65	HEADERS
14)	488 PCS	AFD270(9") DISC DIFFUSERS	PP/EPDM	1.5 X 488 = 732	0.03 X 488 = 14.64	HEADERS
15)	538 PCS	Q.C SADDLES	PP	0.5 X 538 = 269	0.01 X 538 = 5.38	HEADERS
16)	50 PCS	BLANK DIFFUSERS	PP	0.3 X 50 = 15	0.01 X 50 = 0.5	HEADERS
17)	1	MOISTURE PURGE SYSTEM	PVC	0.214/FT X 1 = 1.34	0.036/FT X 1 = 0.22	MANIFOLD
18)	1	CONTINUOUS PURGE SYSTEM	PVC	2.25 X 1 = 2.25	0.45 X 1 = 0.45	MANIFOLD

APPROX. SHIPPING WEIGHT FOR ZONE #B - 3,200 LBS APPROX. SHIPPING WEIGHT FOR ZONE #D - 3,200 LBS
 APPROX. SHIPPING VOLUME FOR ZONE #B - 145 CFT APPROX. SHIPPING VOLUME FOR ZONE #D - 145 CFT
 APPROX. SHIPPING WEIGHT FOR ZONE #C - 3,200 LBS
 APPROX. SHIPPING VOLUME FOR ZONE #C - 145 CFT

REV	DESCRIPTION	DATE	BY	SSI-AFD270(9") FINE BUBBLE DISC DIFFUSERS WITH COMPRESSION MOLDED EPDM & PTFE MEMBRANE c/w Q.C SADDLE TURLOCK WWTP 71'-4" x 172'-8" x 13.8' (SWD) AERATION BASINS - 2 NO.S SECTION AND BOM		SSI Aeration, Inc CLEAR WATER DEPT. SUBMITTED: _____ SCALE: _____ DATE: JULY, 2012 DESIGNED BY: NOMAN DRAWN BY: KUMAR SHEET NO. 2 OF 11 O & M MANUAL ISSUE			
5	O & M MANUAL ISSUE	06/30/13	KUMAR					DWG.No:#11048_Turlock_Aeration Basin_AFD270_D01_Rev[5]	
4	ISSUED FOR SUBMITTAL(UPDATED SS COUPLINGS ON MANIFOLD)	03/20/13	KUMAR						
3	ISSUED FOR SUBMITTAL(UPDATED MANIFOLD AND COUPLINGS)	02/19/13	KUMAR						
2	ISSUED FOR SUBMITTAL(SUPPORTS WITH BRACING)	11/21/12	KUMAR						
1	ISSUED FOR SUBMITTAL(UPDATED PER ENGINEER COMMENTS)	09/20/12	KUMAR						
0	ISSUED FOR SUBMITTAL	08/01/12	KUMAR						