

LINE LEGEND
PIPING AND INSTRUMENTATION DIAGRAMS
PLAN DRAWINGS

GENERAL NOTES
1. VERIFY SIZE AND LOCATION OF EXISTING OR OTHER DISCIPLINE'S UTILITIES AT ANY PIPE CROSSINGS, OR CONNECTIONS, PRIOR TO CONSTRUCTION.

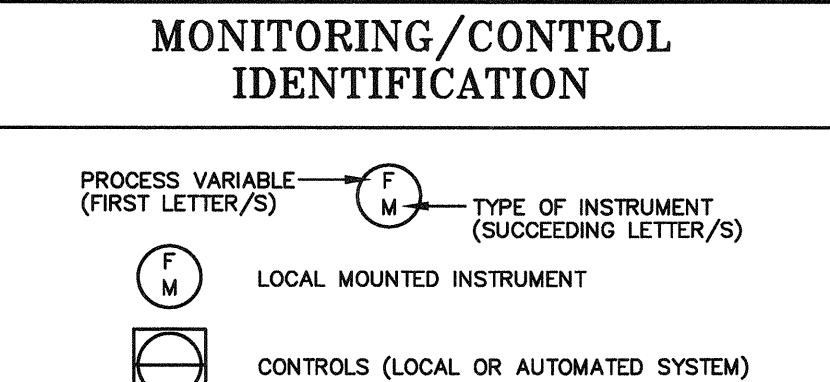
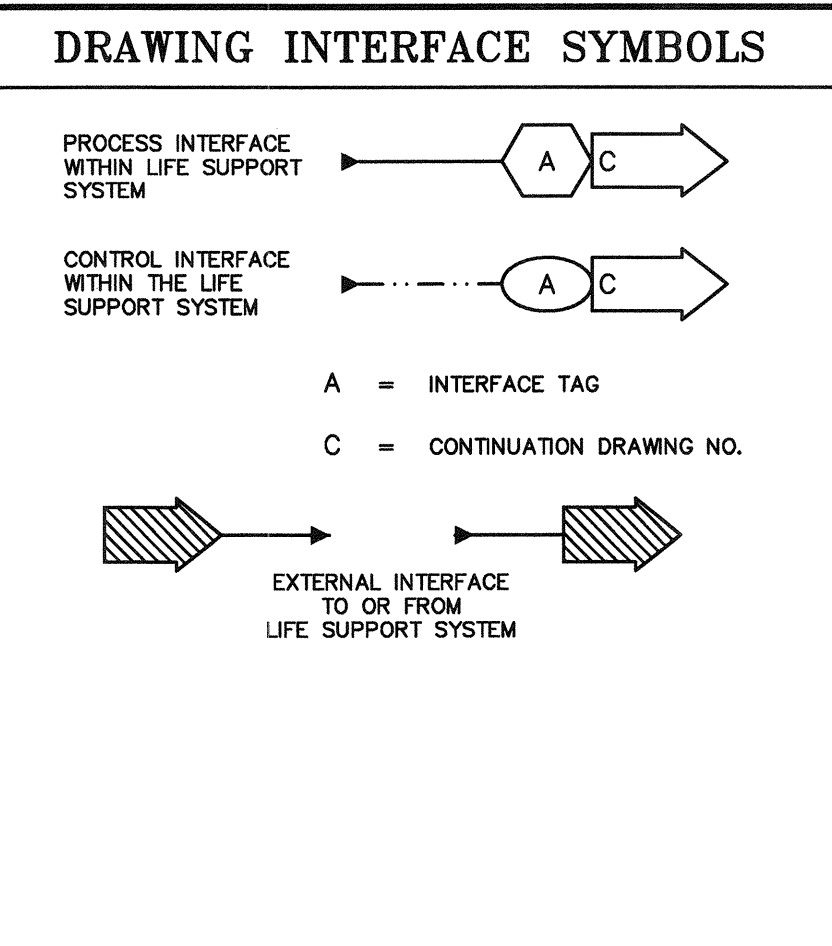
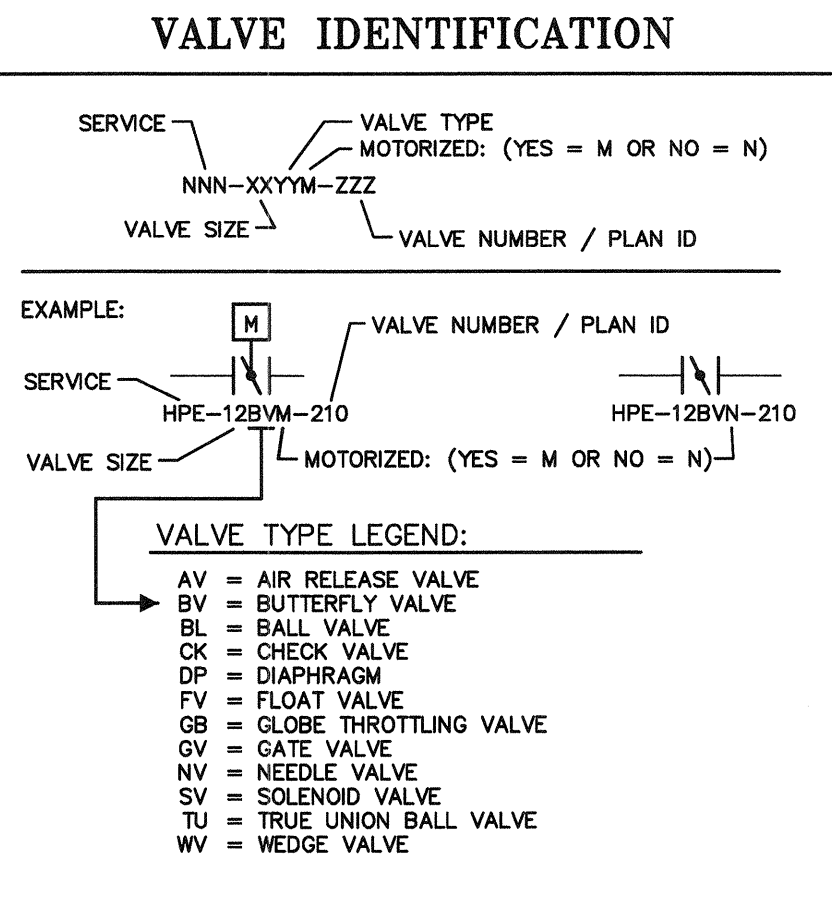
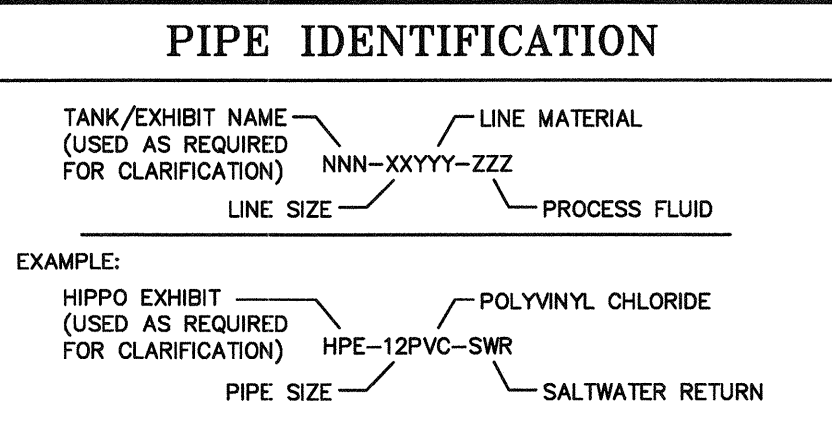
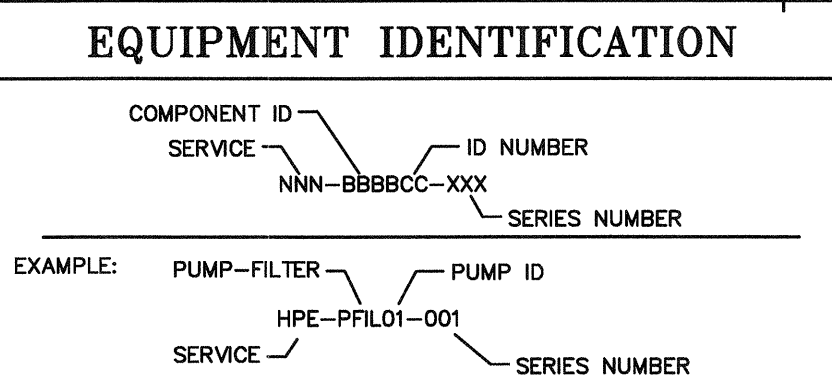
SEISMIC CERTIFICATION
LSS NON-BUILDING STRUCTURES AND/OR NON-STRUCTURAL COMPONENTS SHALL BE DESIGNED, SUPPORTED AND ANCHORED AS INDICATED IN THE CALIFORNIA BUILDING CODE, ASCE 7, CONTRACT DOCUMENTS, OR BY BUILDING OFFICIAL FOR SEISMIC DESIGN CATEGORY D.

MFP COMPONENT ANCHORAGE NOTE
ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2013 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 13, 26 AND 30.

COMPONENT IDENTIFICATION
AB AIR BLOWER
AIR PIPING
BALL VALVE - MANUAL

PIPE IDENTIFICATION
TANK/EXHIBIT NAME (USED AS REQUIRED FOR CLARIFICATION)
LINE MATERIAL
LINE SIZE

VALVE IDENTIFICATION
SERVICE
VALVE TYPE
VALVE SIZE



PROCESS VARIABLE and TYPE OF INSTRUMENT table listing items like ACID, BACKWASH, CHLORINE, etc.

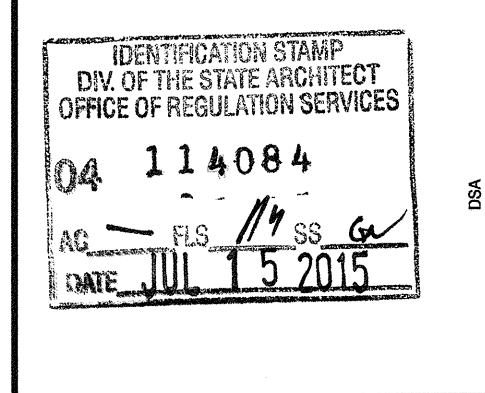
PROCESS FLUID IDENTIFICATION table listing items like AC, BA, BFR, BFI, etc.

SHEET INDEX table with columns for SHT. Count, Dwg. No., Description, Scale, Drawing Issue Date, Revision Number, Previous Issue Date, Previous Revision.

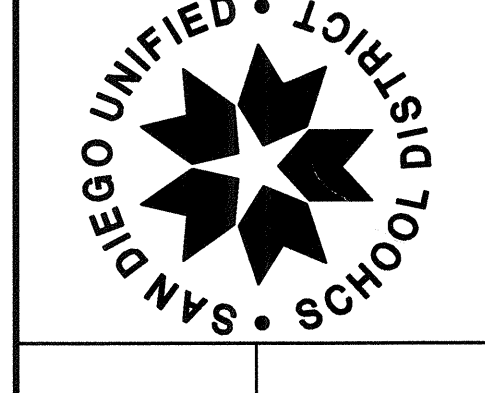
SYMBOLS table listing symbols for PRESSURE RELIEF VALVE, AIR RELIEF VALVE, BALL VALVE, BUTTERFLY VALVE, etc.

ABBREVIATIONS table listing abbreviations for ACS, AFF, ALUM, AVG, etc.

PROJECT INFORMATION table with columns for DATE, EXECUTIVE DIRECTOR, DIRECTOR, DIRECTOR PROJECT MANAGEMENT, DISTRICT ARCHITECT.



Satchell Engineering & Associates, Inc. logo and contact information.



BOARD OF EDUCATION
SAN DIEGO UNIFIED SCHOOL DISTRICT
SAN DIEGO, CALIFORNIA

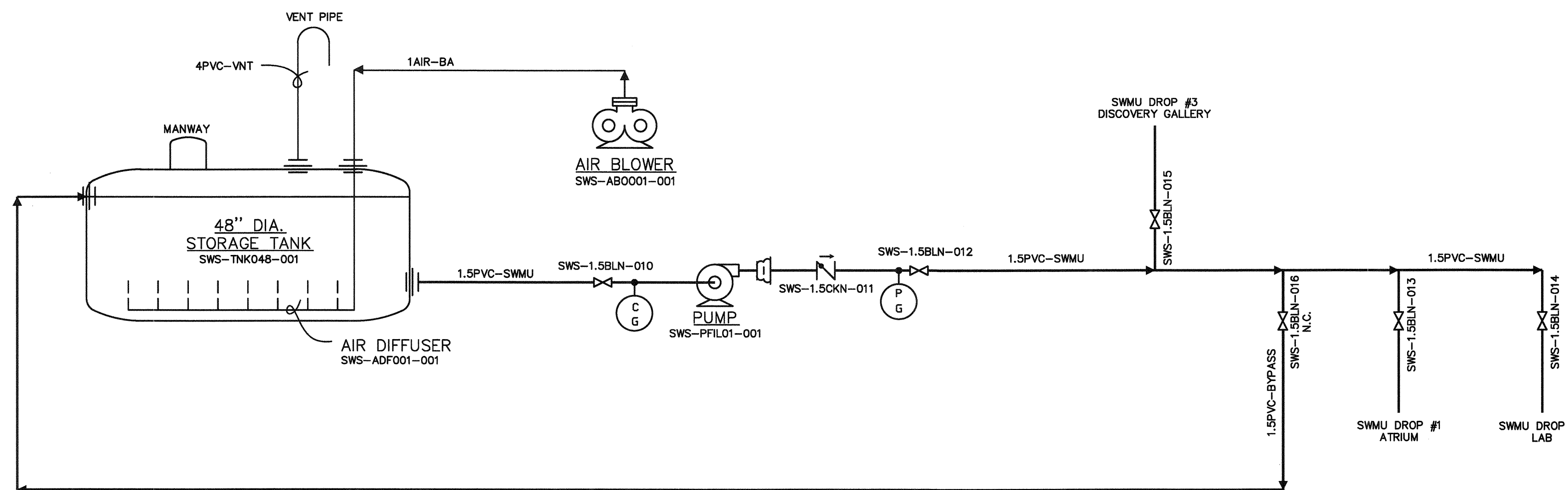
PROJECT INFORMATION: OCEAN DISCOVERY INSTITUTE LIVING LAB, 4255 THORN STREET, SAN DIEGO, CALIFORNIA. SHEET INDEX, SYMBOLS, AND ABBREVIATIONS. PROJECT NO. A.P., FILE NAME OD01W001.dwg, DATE 06/11/15, DRAWN TR, CHECKED RDS/JUS, SHEET NO. LS0.01 OF 1 SHEETS 5.

PUMP SCHEDULE																			
DESIGNATION	SERVICE / FUNCTION	QTY	FLOW (GPM)	TDH (FT)	ORIENTATION	DRIVE TYPE	MATERIAL	TYPE	SIZE	MINIMUM EFFICIENCY (%)	ELECTRICAL (MOTOR)					REMARKS	SPECIFICATION		
											HP	RPM	VOLTS	PHASE	HERTZ			DRIVE SPEED	E-GEN%
SWS-PTRN01-001	SALTWATER SUPPLY / TRANSFER PUMP	1	25	20	HORIZONTAL	CLOSE COUPLED	COMPOSITE	SELF PRIMING END SUCTION CENTRIFUGAL	2 X 2	N/A	3.0	3,500	230	1	60	VARIABLE SPEED	50	SPARUS PUMP W/CONSTANT FLOW TECHNOLOGY. *VOLTAGE REQUIRMENTS: 230V +/- 10% TO MAINTAIN MANUFACTURER'S WARRANTY.	490122

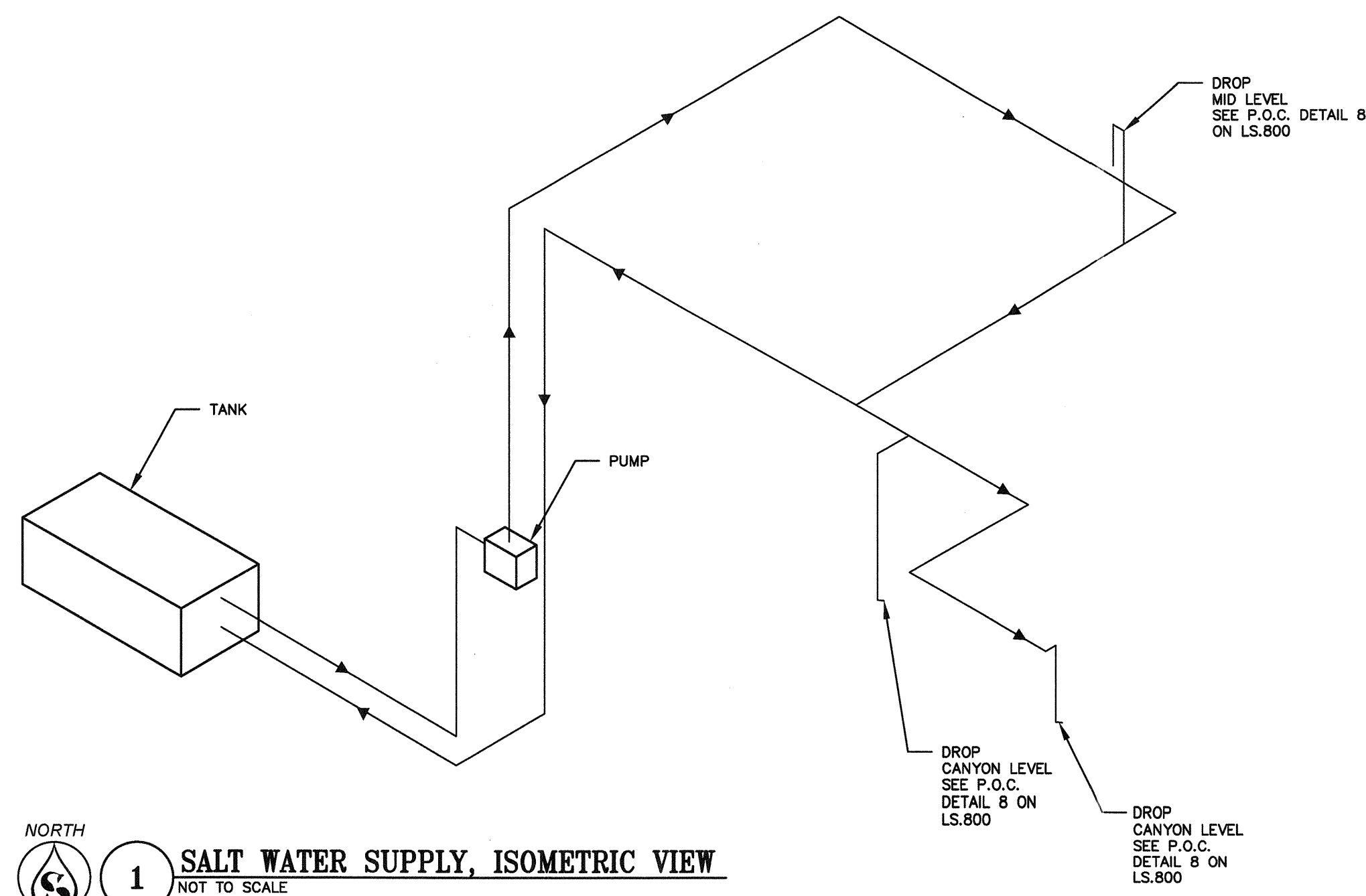
AIR BLOWER SCHEDULE													
DESIGNATION	SERVICE / FUNCTION	QTY	CAPACITY (SCFM)	STATIC PRESSURE (INCH)	OUTLET SIZE (INCH)	SOUND (DB)	ELECTRICAL					REMARKS	SPECIFICATION
							POWER	VOLTS	PHASE	HERTZ	E-GEN%		
SWS-AB001-001	SALTWATER SUPPLY / AIR BLOWER	1	6	110	3/4"	48	190 W	115	1	60	100	PENTAIR AQUATIC ECO-SYSTEMS SWEETWATER LINEAR II DIAPHRAGM PUMP MODEL SL190	N/A

AIR DIFFUSER SCHEDULE													
DESIGNATION	SERVICE / FUNCTION	QTY	LENGTH (FT)	RESISTANCE (INCH)	OUTLET SIZE (INCH)	ELECTRICAL					REMARKS	SPECIFICATION	
						POWER	VOLTS	PHASE	HERTZ	E-GEN%			
SWS-ADF001-001	SALTWATER SUPPLY / AIR DIFFUSER	1	10	20	3/4"	N/A	N/A	N/A	N/A	N/A	N/A	DIFFUSER HOSE BY PENTAIR MODEL BWD100	N/A

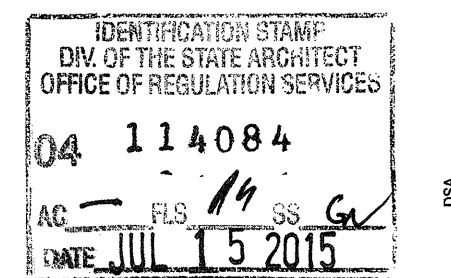
WATER STORAGE TANK												
DESIGNATION	SERVICE / FUNCTION	QTY	DIA (FT)	LENGTH (FT)	ELECTRICAL					REMARKS	SPECIFICATION	
					POWER	VOLTS	PHASE	HERTZ	E-GEN%			
SWS-TNK001-001	POTABLE WATER STORAGE TANK	1	4	16	N/A	N/A	N/A	N/A	N/A	N/A	NSF LISTED UNDERGROUND WATER TANK BY XERXES CO.	N/A



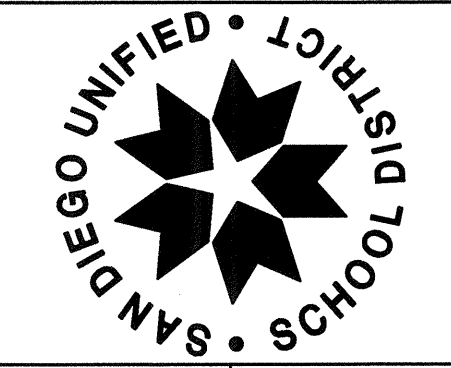
PIPING AND INSTRUMENTATION DIAGRAM AND EQUIPMENT SCHEDULES



EXECUTIVE DIRECTOR PFC	DIRECTOR PFC	DIRECTOR PROJECT MANAGEMENT PFC	DISTRICT ARCHITECT
------------------------	--------------	---------------------------------	--------------------



Satchell Engineering & Associates, Inc.
 2890 South Santa Fe Ave. Suite 106
 San Marcos, CA 92069
 Office +1 760.405.8900
 www.satchellengineering.com
 A CALIFORNIA CORPORATION



PREPARED FOR THE
BOARD OF EDUCATION
 SAN DIEGO UNIFIED SCHOOL DISTRICT
 SAN DIEGO, CALIFORNIA

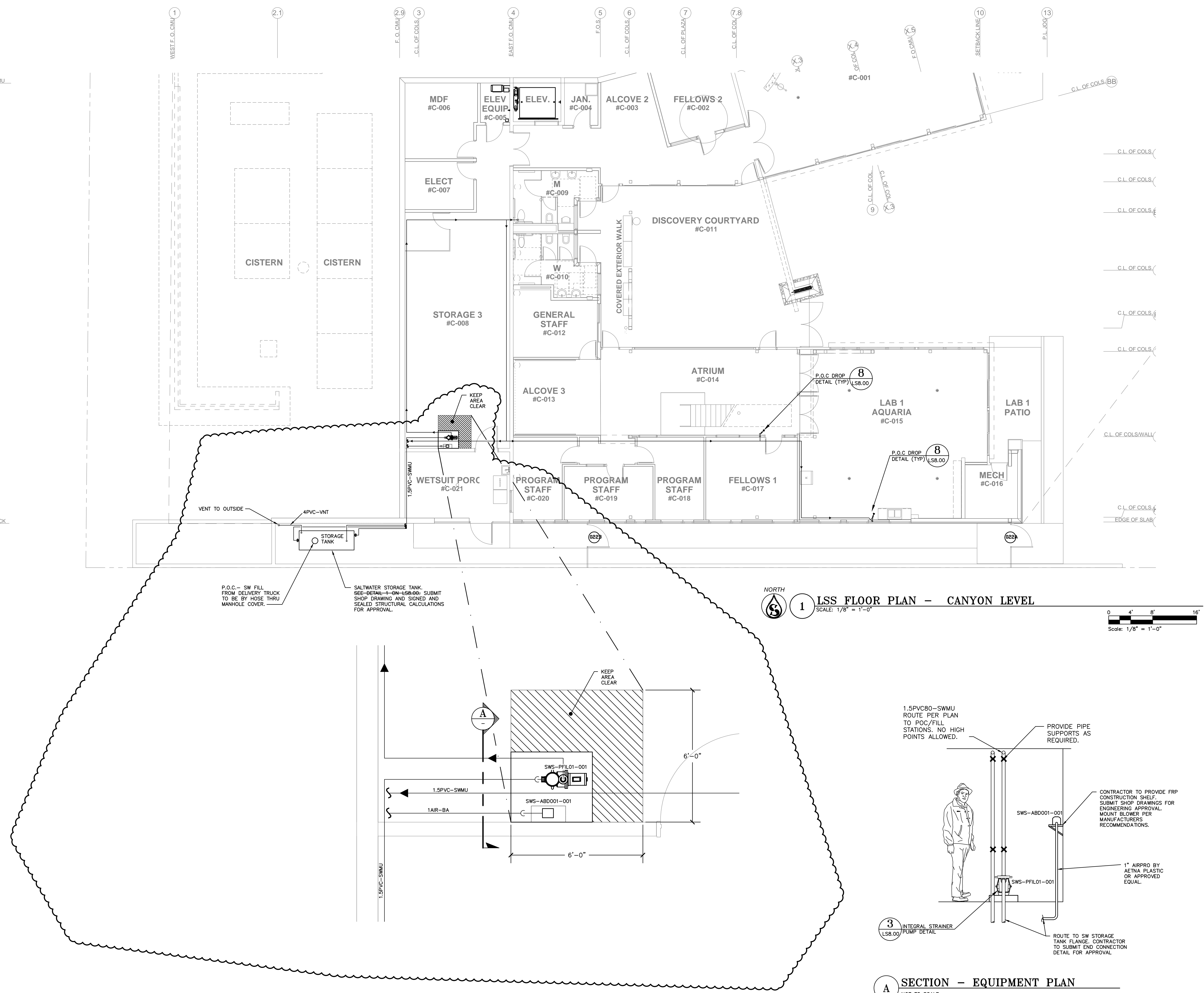
PREPARED BY THE
 FACILITIES PLANNING AND CONSTRUCTION PROJECT
 MANAGEMENT DEPARTMENT

PIPING AND INSTRUMENTATION DIAGRAM AND EQUIPMENT SCHEDULES
OCEAN DISCOVERY INSTITUTE
LIVING LAB
 4255 THORN STREET
 SAN DIEGO, CALIFORNIA

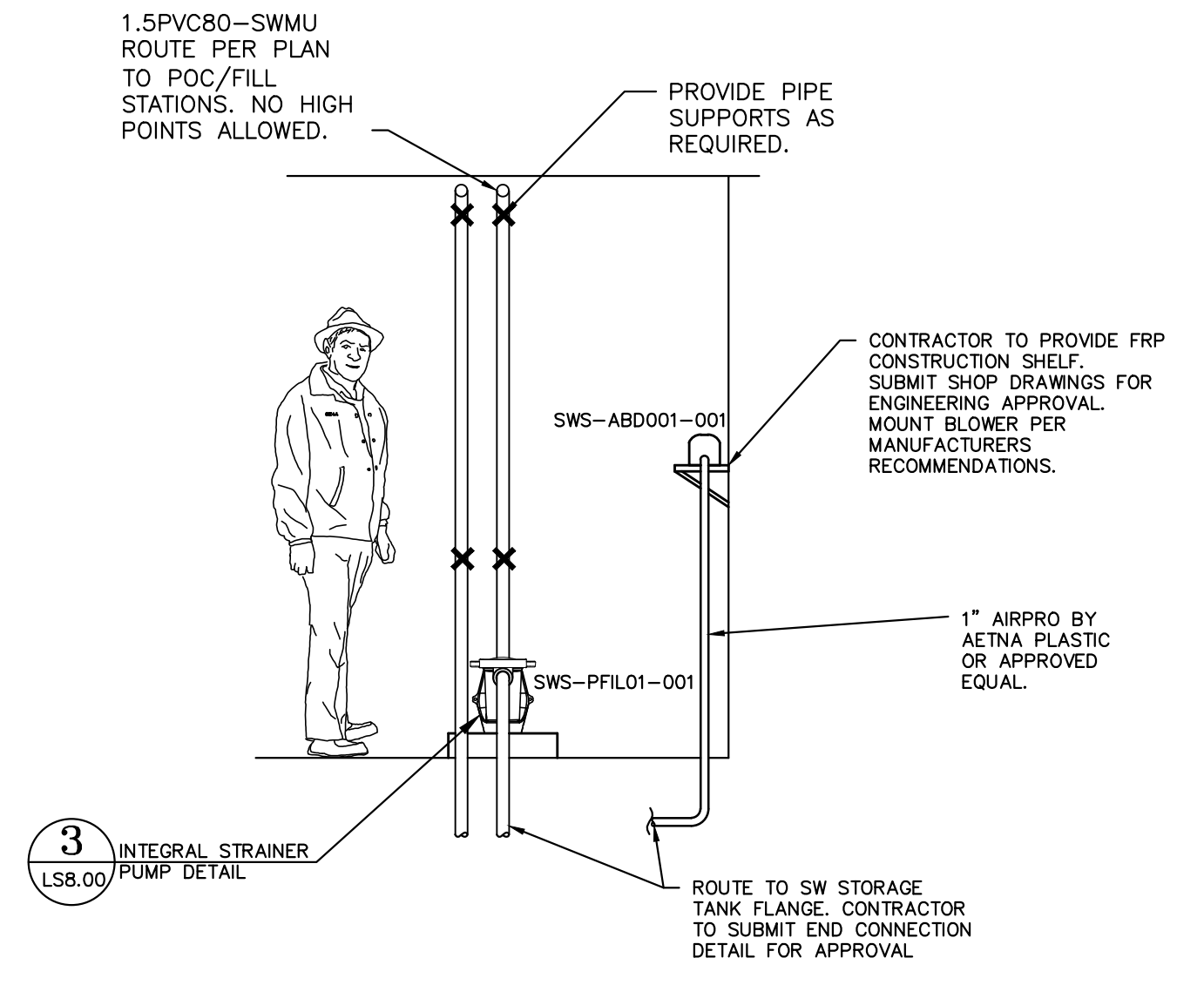
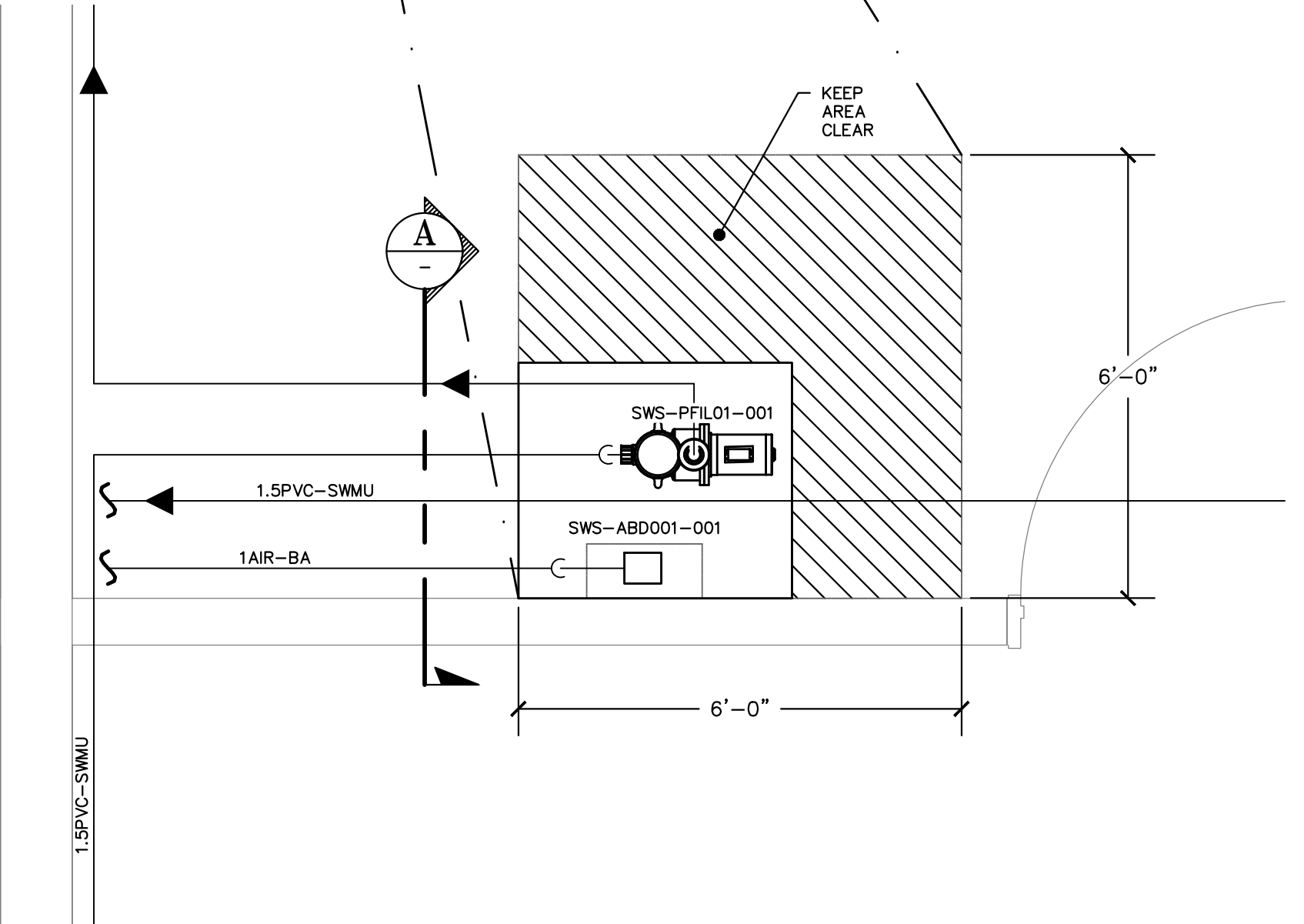
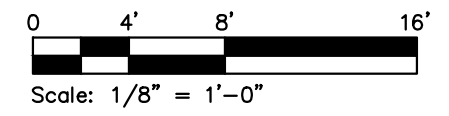
CONSTRUCTION DOCUMENTS

PROJECT NO.	R.S.	A.P.
FILE NAME	OD101W002.dwg	
DATE	06/11/15	DRAWN TR
		CHECKED RDS/SUS
REVISIONS	SHEET NO.	
	LS0.02	
	OF 2 SHEETS 5	

Date: Jun 11, 2015, 12:19 PM - Plot By: Rodriguez - Drawing: H:\OD\101\101\Cad-Doc\OD101W002.dwg - Satchell Engineering & Associates, Inc. A CALIFORNIA CORPORATION - ALL RIGHTS RESERVED COPYRIGHT - 2015



1 LSS FLOOR PLAN - CANYON LEVEL
SCALE: 1/8" = 1'-0"

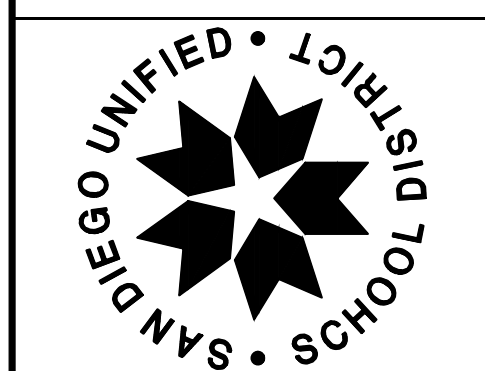
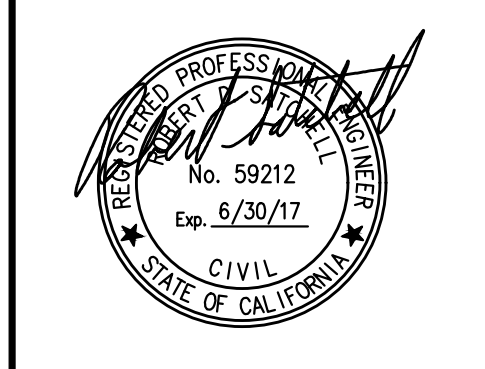


A SECTION - EQUIPMENT PLAN
NOT TO SCALE

EXECUTIVE DIRECTOR PPC	DATE
DIRECTOR PPC	DATE
DIRECTOR PROJECT MANAGEMENT PPC	DATE
DISTRICT ARCHITECT	DATE

REVISED BY

Satchell Engineering & Associates, Inc.
2890 South Santa Fe Ave. Suite 108
San Marcos, CA 92069
Office: +1 760 405 8900
www.satchellengineering.com
A CALIFORNIA CORPORATION



PREPARED FOR THE
BOARD OF EDUCATION
SAN DIEGO UNIFIED SCHOOL DISTRICT
SAN DIEGO, CALIFORNIA

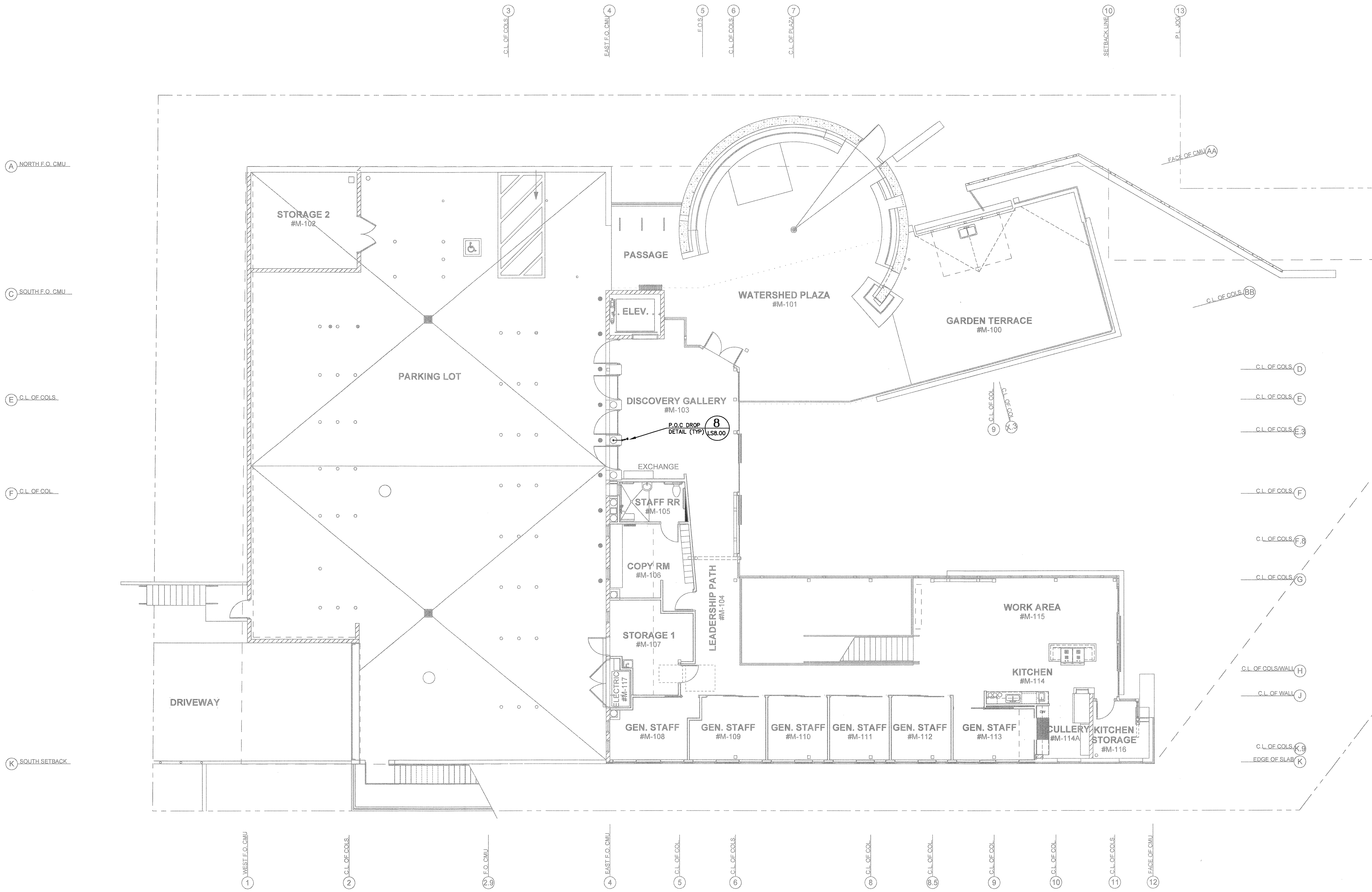
PREPARED BY THE
FACILITIES PLANNING AND CONSTRUCTION PROJECT
MANAGEMENT DEPARTMENT

LSS FLOOR PLAN - CANYON LEVEL
OCEAN DISCOVERY INSTITUTE
LIVING LAB
4255 THORN STREET
SAN DIEGO, CALIFORNIA
CONSTRUCTION DOCUMENTS

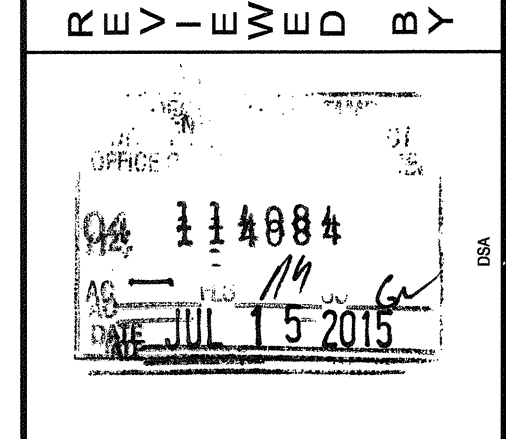
PROJECT NO.	R.S.	A.P.
FILE NAME	ODI01W310.dwg	
DATE	06/11/15	DRAWN TR CHECKED RDS/JS
REVISIONS		SHEET NO.
		LS3.10
		OF 3 SHEETS 5

Date: Nov 28, 2016, 1:28 PM - Plot By: jodriguez - Drawing: H:\ODI\101\Cor-Doc\0101W310.dwg - Satchell Engineering & Associates, Inc. A CALIFORNIA CORPORATION - ALL RIGHTS RESERVED. COPYRIGHT - 2016

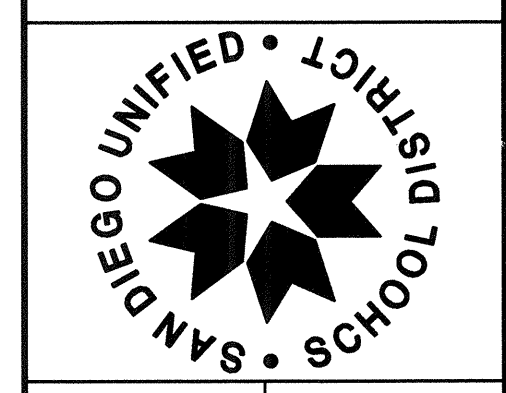
Date: Jun 11, 2015, 12:19 PM - Plot By: Rodriguez - Drawing: H:\ODN\1401\Cad-Dev\0101W320.dwg - Satchell Engineering & Associates, Inc. A CALIFORNIA CORPORATION - ALL RIGHTS RESERVED COPYRIGHT - 2015



EXECUTIVE DIRECTOR FPC	DATE	DIRECTOR FPC	DATE	DIRECTOR PROJECT MANAGEMENT FPC	DATE	DISTRICT ARCHITECT	DATE



Satchell Engineering & Associates, Inc.
 2800 South Santa Fe Ave. Suite 106
 San Marcos, CA 92069
 Office: +1 760.405.8900
 www.satchellengineering.com
 A CALIFORNIA CORPORATION



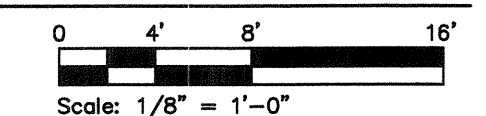
PREPARED FOR THE
BOARD OF EDUCATION
 SAN DIEGO UNIFIED SCHOOL DISTRICT
 SAN DIEGO, CALIFORNIA

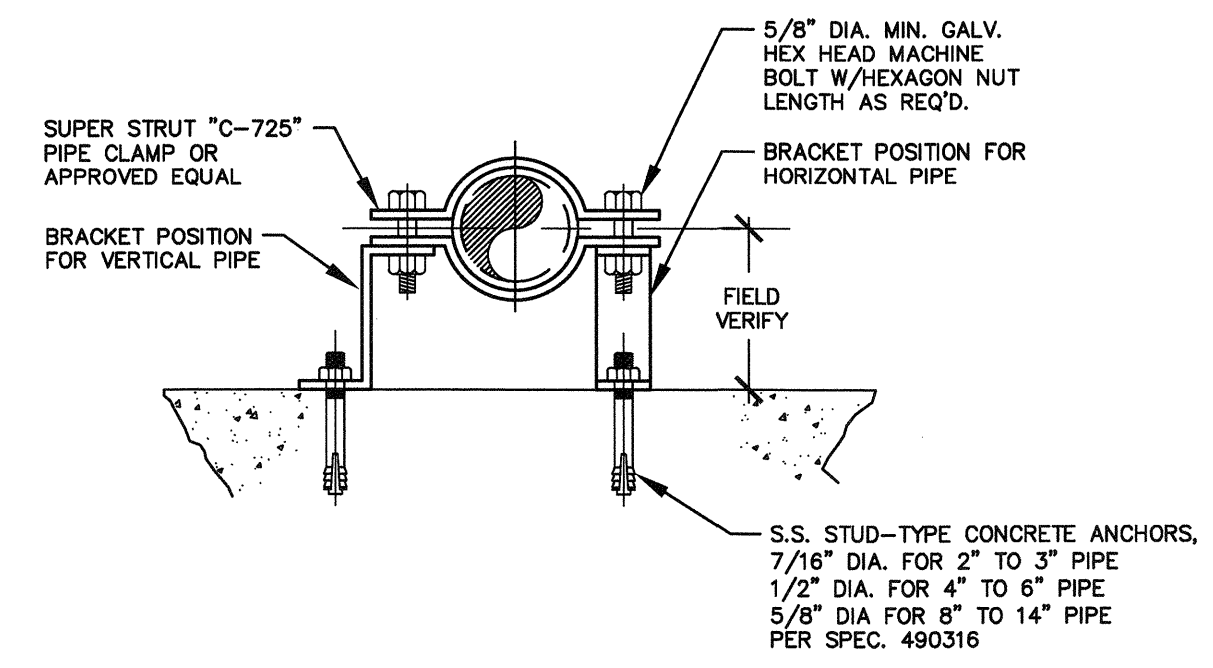
PREPARED BY THE
 FACILITIES PLANNING AND CONSTRUCTION PROJECT
 MANAGEMENT DEPARTMENT

LSS FLOOR PLAN - MID LEVEL
OCEAN DISCOVERY INSTITUTE
LIVING LAB
 4255 THORN STREET
 SAN DIEGO, CALIFORNIA
CONSTRUCTION DOCUMENTS

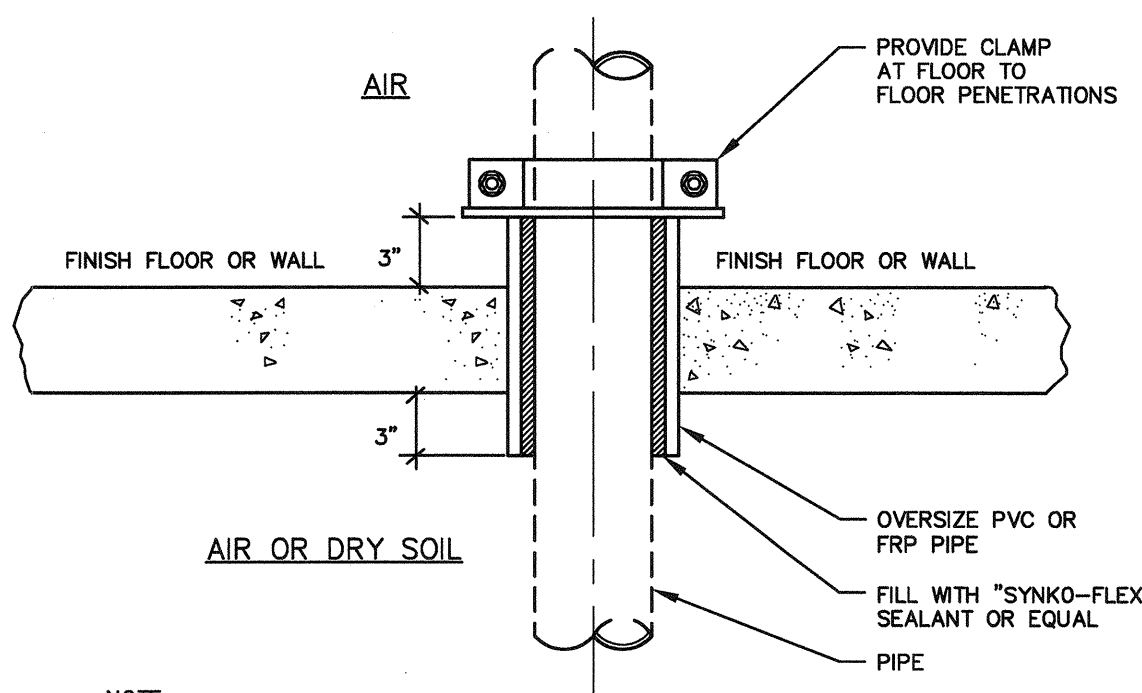
PROJECT NO.	R.S.	A.P.
FILE NAME	OD101W320.dwg	
DATE	DRAWN	TR
06/11/15	CHECKED	RDS/SJS
REVISIONS	SHEET NO.	
	LS3.20	
	OF 4 SHEETS 5	

1 LSS FLOOR PLAN - MID LEVEL
 SCALE: 1/8" = 1'-0"

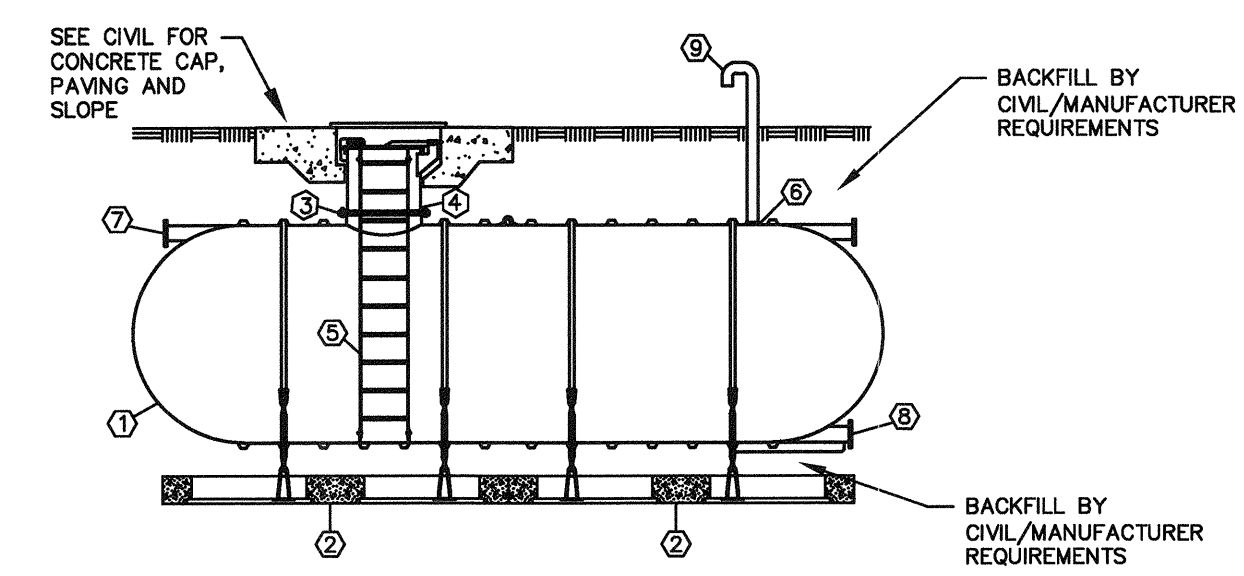




7 PIPE CLAMPING SUPPORT DETAIL
NOT TO SCALE (PER SPEC. 490310)



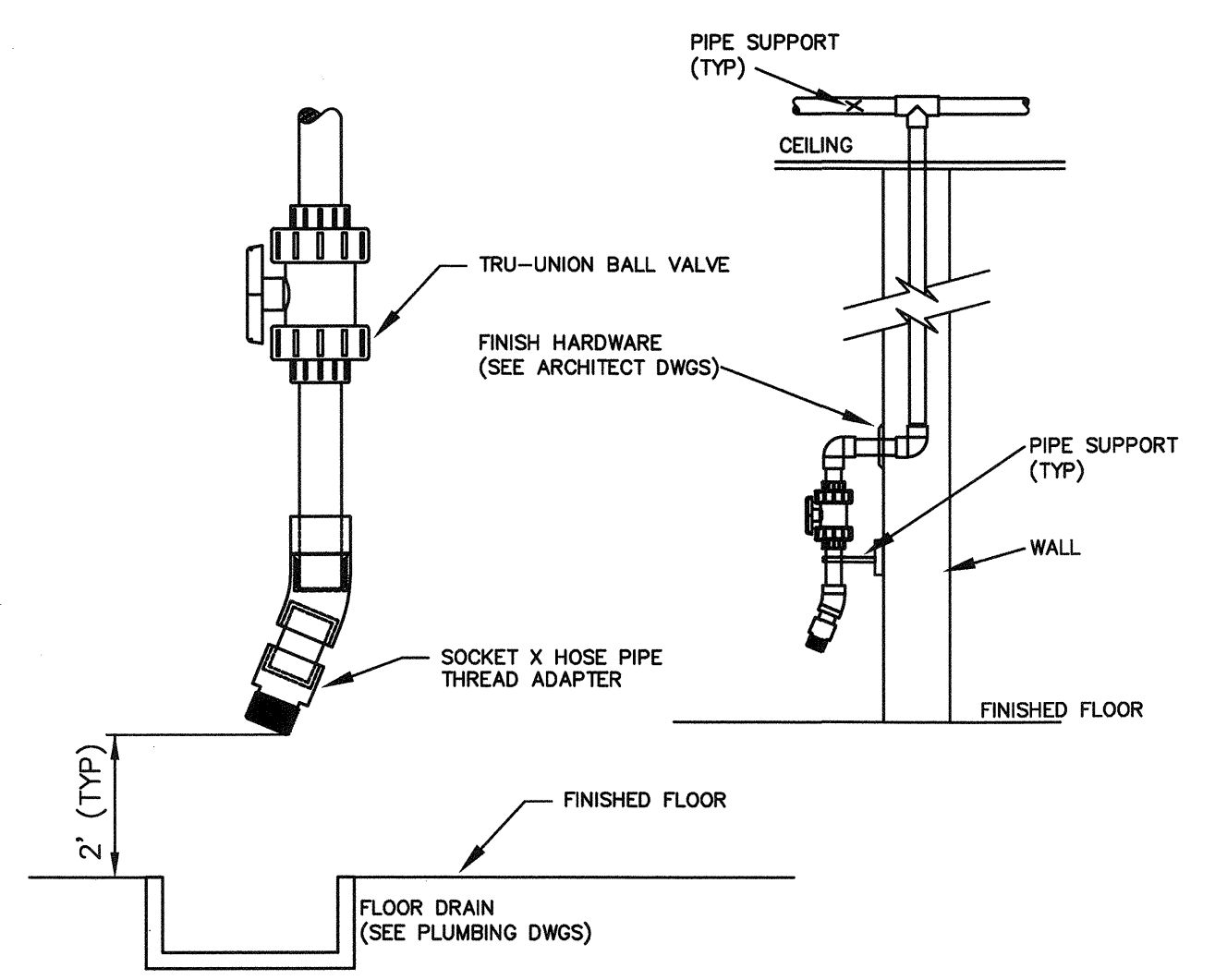
4 FLOOR/WALL SLEEVE DETAIL
NOT TO SCALE



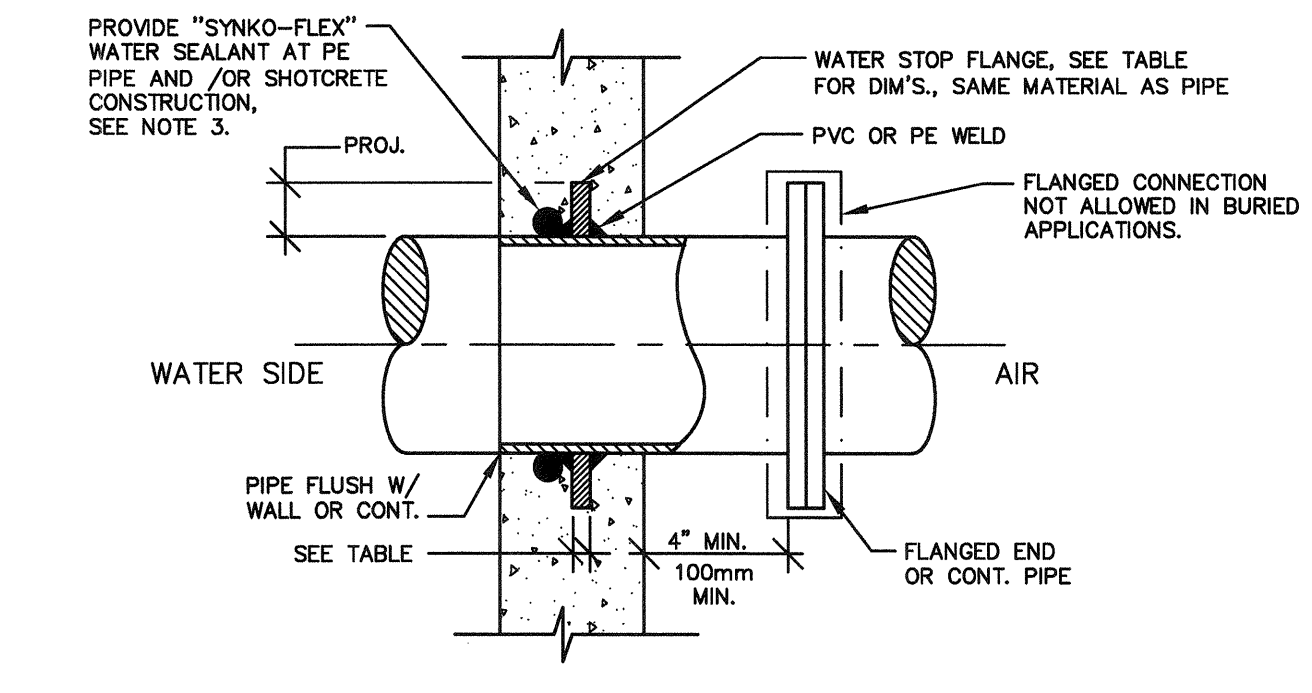
NO.	DESCRIPTION
1	KERXES SINGLE WALL FRP TANK
2	KERXES PRECAST DEADMAN SYSTEM W/ HOLD DOWN STRAP AND TURNBUCKLE ASSEMBLY
3	30" MANWAY WITH (BLANK COVER FOR TANK TESTING ONLY)
4	30" MANWAY EXTENSION ACCESS WITH HINGED & LOCKABLE TOP (UV PROTECTED)
5	NSF APPROVED FRP LADDER
6	4" NPT SERVICE FITTING
7	6" NSF APPROVED TANGENTIAL NOZZLE
8	6" NSF APPROVED TANGENTIAL FULL BOTTOM DRAIN NOZZLE
9	4" VENT PIPE WITH GOOSENECK AND BUG SCREEN, GC TO ROUTE BELOW GRADE TO EDGE OF BUILDING. LOCATION TO BE APPROVED BY OWNER.

- STRAPS SHALL BE FRP ANCHOR STRAPS AS SUPPLIED BY TANK MANUFACTURER.
- THE NUMBER AND LOCATION OF STRAPS SHALL BE SHOWN ON SUBMITTAL DRAWINGS.
- DEADMAN SHALL BE PRE-MANUFACTURED AND SUPPLIED BY TANK MANUFACTURER AND SHALL BE APPROVED BY VENDORS STRUCTURAL ENGINEER.
- TANK IS SHOWN SCHEMATIC. MANUFACTURER SHALL SUBMIT ALL DETAILING AND STRUCTURAL ELEMENTS OF THE TANK FOR APPROVAL.
- CONTRACTOR SHALL SLOPE PAVEMENT AWAY FROM MANWAY COVER AS REQUIRED PER CIVIL DRAWINGS.

1 SALTWATER STORAGE TANK
NOT TO SCALE



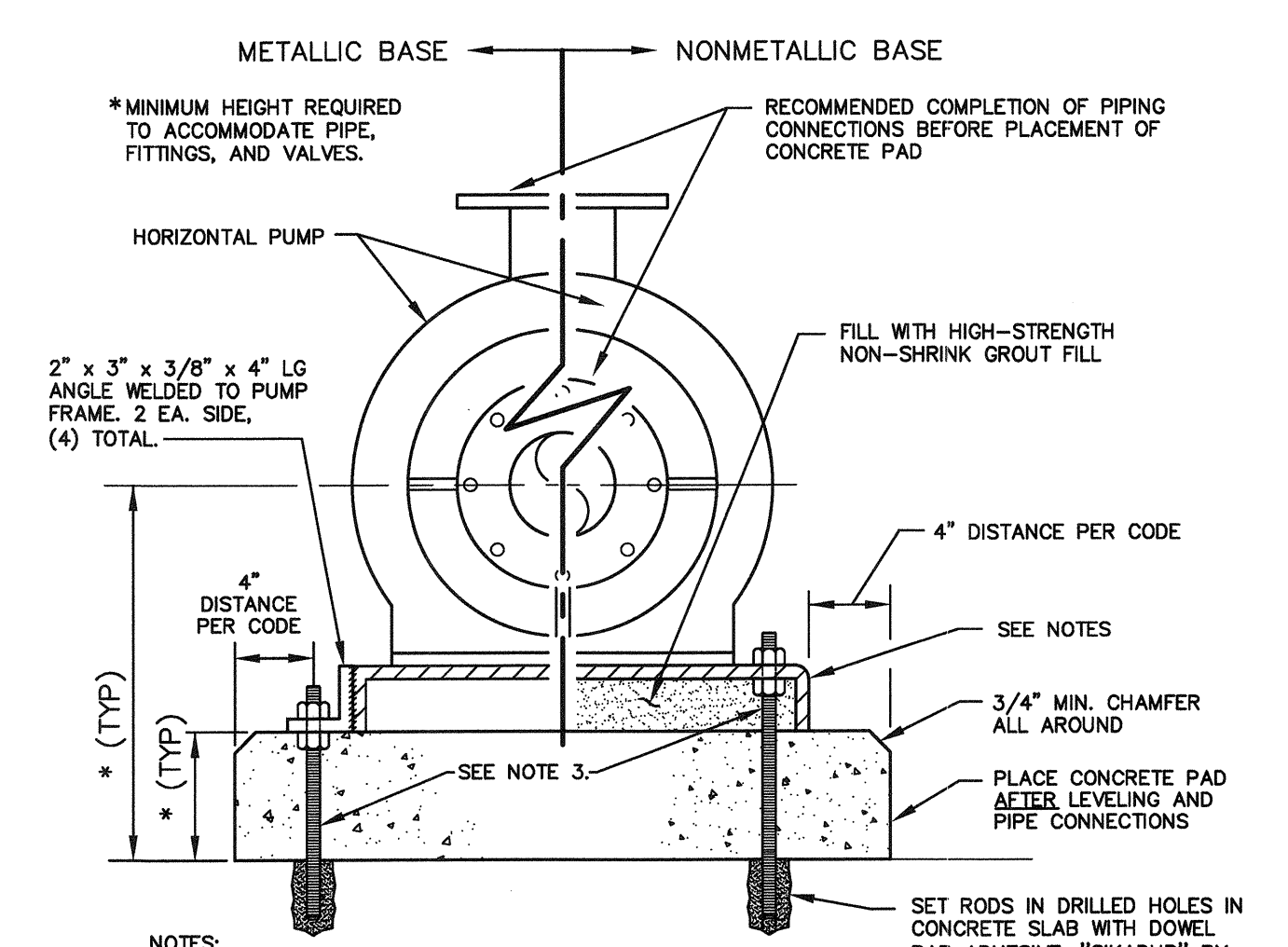
8 P.O.C. DROP DETAIL
NOT TO SCALE



WATER STOP FLANGES		
PIPE DIAMETER	PROJECTION	THICKNESS
12" TO 24"	4" ±1"	0.5"
315 mm - 630 mm	100 mm ±25 mm	13 mm
6" TO 10"	3" ±0.5"	0.375" - 0.5"
150 mm - 250 mm	75 mm ±13 mm	10 mm - 13 mm
2.5" TO 4"	2.5" ±0.5"	0.375"
60 mm - 100 mm	60 mm ±13 mm	10 mm
0.5" TO 2"	2" ±0.5"	0.25" - 0.375"
13 mm - 50 mm	50 mm ±13 mm	6 mm - 10 mm

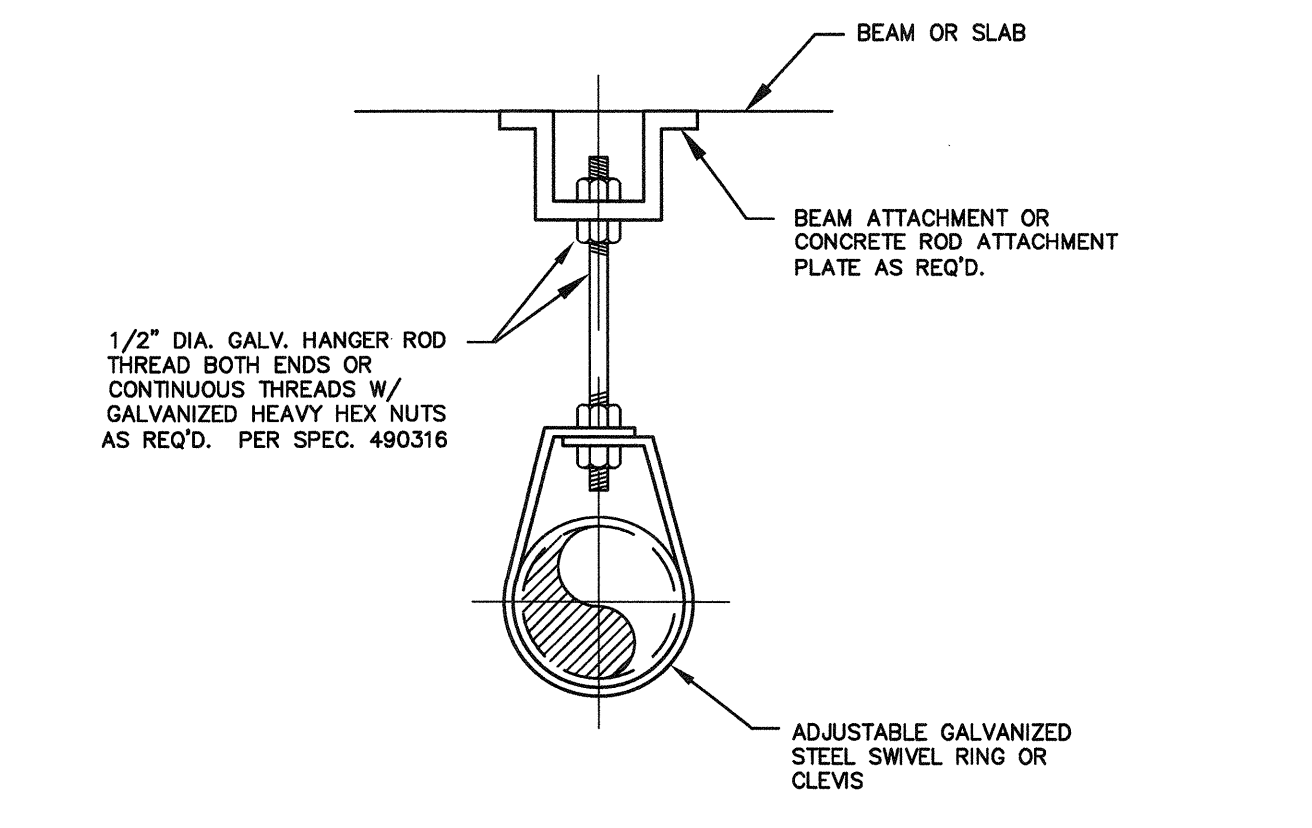
- NOTES:
- THIS DETAIL REQUIRED AT ALL WATER RETAINING STRUCTURES.
 - THIS DETAIL REQUIRED FOR ALL PE PIPE WALL AND FLOOR PENETRATIONS.
 - THE "SYNKO-FLEX" MAY BE OMITTED FOR NON-WATER RETAINING PENETRATIONS AND WHEN NO GROUND WATER WILL BE PRESENT FOR "ANCHOR" TYPE INSTALLATION, CONSULT ENGINEER PRIOR TO POURING CONCRETE IF NEEDED.

5 PIPE WATER STOP/ANCHOR DETAIL
NOT TO SCALE

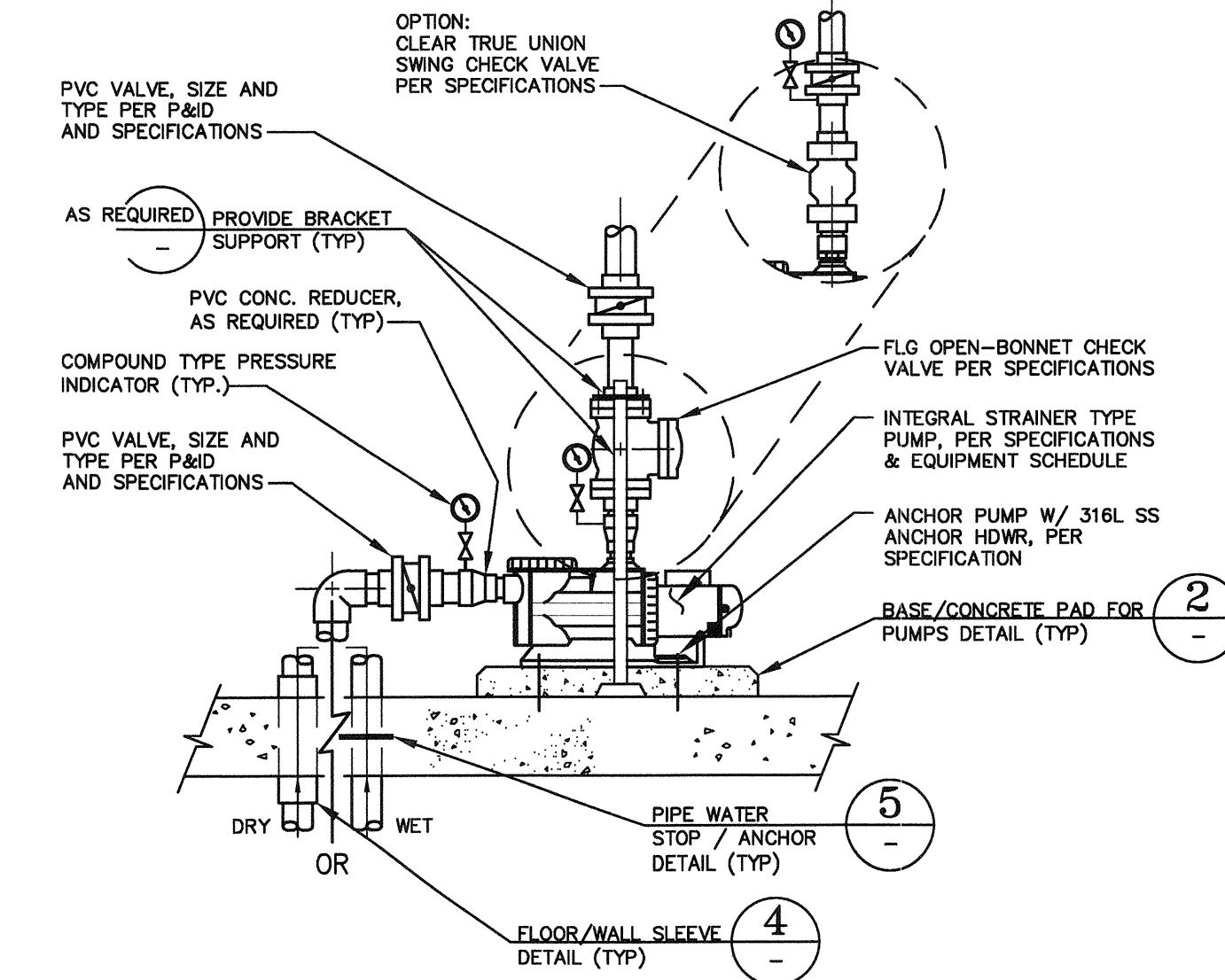


- NOTES:
- NON-METALLIC BASEPLATE (STANDARD)
 - OPTIONAL BASE IF APPROVED BY ENGINEER.
 - A. SOLID CORE NON-METALLIC POLYMER BASEPLATES AND MOUNTING ACCESSORIES BY BASETOK.
B. BASEPLATE SETTING OPTIONS:
(1) MOUNT BASEPLATE ON EPDM WAFFLE PAD, OR
(2) MOUNT BASEPLATE ON WET GROUT SLURRY, OR
(3) FILL GAP SPACE THRU TOP GROUTING HOLE WITH HIGH STRENGTH GROUT
 - 1/2" SERIES 316L SS MACHINERY ANCHOR BOLTS W/LEVELING NUTS. (TYP OF 4) PER SPEC. 490316

2 BASE/CONCRETE PAD FOR PUMPS
NOT TO SCALE



6 PIPE HANGER
NOT TO SCALE (PER SPEC. 490310)



3 INTEGRAL STRAINER PUMP DETAIL
NOT TO SCALE (PER SPEC. 490122)

Date: Jun 11, 2015, 12:20 PM - Plot By: Rodriguez - Drawing: H:\000\101\Cad-Dwg\001W800.dwg - Satchell Engineering & Associates, Inc. A CALIFORNIA CORPORATION - ALL RIGHTS RESERVED COPYRIGHT - 2015

EXECUTIVE DIRECTOR (PFC)	DATE	EXECUTIVE DIRECTOR (PFC)	DATE	EXECUTIVE DIRECTOR (PFC)	DATE	EXECUTIVE DIRECTOR (PFC)	DATE
DIRECTOR (PFC)	DATE	DIRECTOR (PFC)	DATE	DIRECTOR (PFC)	DATE	DIRECTOR (PFC)	DATE
DIRECTOR PROJECT MANAGEMENT (PFC)	DATE	DIRECTOR PROJECT MANAGEMENT (PFC)	DATE	DIRECTOR PROJECT MANAGEMENT (PFC)	DATE	DIRECTOR PROJECT MANAGEMENT (PFC)	DATE
DISTRICT ARCHITECT	DATE	DISTRICT ARCHITECT	DATE	DISTRICT ARCHITECT	DATE	DISTRICT ARCHITECT	DATE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES

No. 59212
Exp. 6/30/17
DATE: JUN 15 2015

Satchell Engineering & Associates, Inc.
2890 South Santa Fe Ave. Suite 106
San Marcos, CA 92069
Office: +1 760 453 9900
www.satchellengineering.com
A CALIFORNIA CORPORATION

No. 59212
Exp. 6/30/17
CIVIL
STATE OF CALIFORNIA

SAN DIEGO UNIFIED SCHOOL DISTRICT
SCHOOL DISTRICT

BOARD OF EDUCATION
SAN DIEGO UNIFIED SCHOOL DISTRICT
SAN DIEGO, CALIFORNIA

PREPARED FOR THE
PREPARED BY THE
FACILITIES PLANNING AND CONSTRUCTION PROJECT MANAGEMENT DEPARTMENT

OCEAN DISCOVERY INSTITUTE
LIVING LAB
4255 THORN STREET
SAN DIEGO, CALIFORNIA

CONSTRUCTION DOCUMENTS

PROJECT NO.	R.S.	A.P.
FILE NAME	O01W800.dwg	
DATE	06/11/15	DRAWN TR CHECKED RDS/SJS
REVISIONS	SHEET NO.	
	LS8.00	
	OF 5 SHEETS 5	