

The Beginning of Enterprise GIS at Alamo Colleges

ESRI User Conference

Alamo Community College District & LAN

June 29, 2016

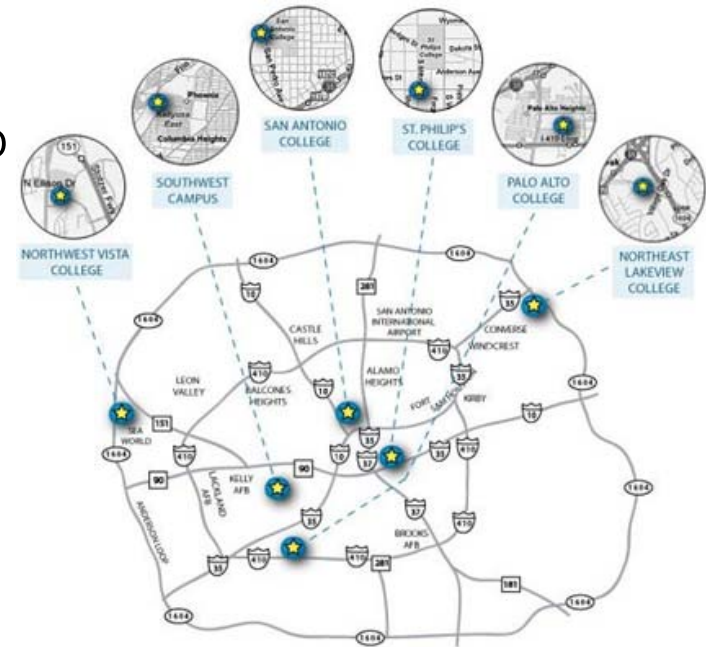
Presentation Agenda

- Alamo College Introduction
- Facilities history of Alamo Colleges
- First Step Towards an Asset Management GIS
- Leverage Existing Data
- Finding ROI
- Looking to the Future



Alamo College Background

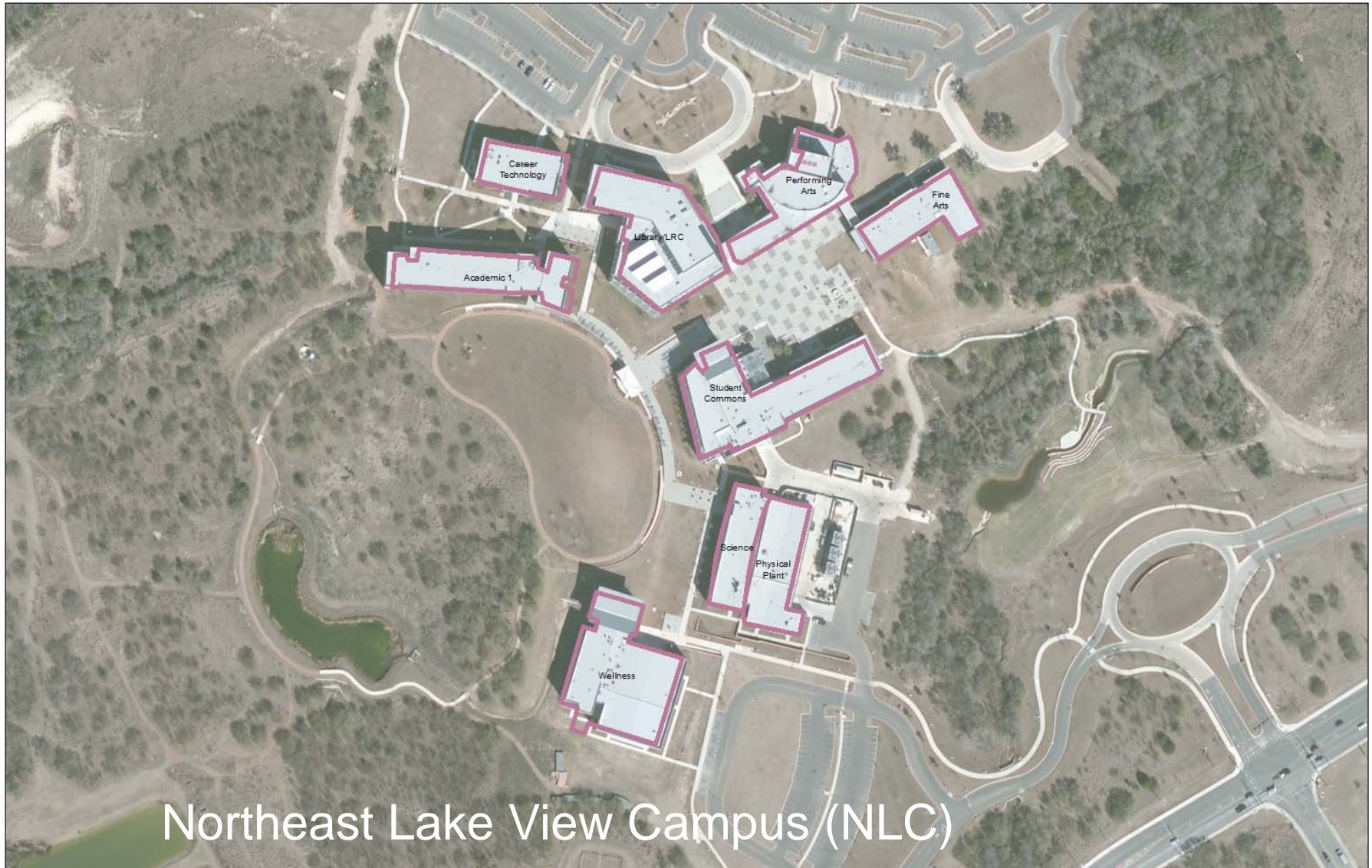
- Six Campuses Across San Antonio
 - San Antonio
 - St. Philip's
 - Palo Alto
 - Northeast Lakeview
 - Northwest Vista
 - Southwest
- 64,000 Students
- \$450 Million Facilities CIP
- 24 New Buildings
- 5.6 Million Square Feet of Facilities



Start with a Needs Assessment

- Develop a Phased Approach
 - Phase I - the Pilot Project
 - Northeast Lake View Campus (NLC)
- Undertake a Full Needs Analysis
 - Get to Know the Organization
 - Discover the Current Assets
 - Develop Long and Short Term Plans





Northeast Lake View Campus (NLC)

Assessment Methodology

- Assess the Existing Organization
 - Identify the GIS Champions
 - Interview Key Staff
 - Document Workflows and Procedures
 - Inventory the Current Assets
 - Perform a Gap Analysis



Assessment Methodology

- Develop a Strategic Plan
 - Define the Long Term Mission
 - Establish an Organizational Structure
 - Develop Long Term Goals
 - Establish a Timeline



Assessment Methodology

- Develop a Tactical Plan
 - Step-by-Step Plan
 - Leverage Current Business Practices
 - Develop GIS Schema
 - Standardize Documentation
 - Work Orders
 - Asset Condition



Leveraging Existing Asset Data for GIS

- Catalog What's on Hand
- Discover Obvious Spatial Relationships
- Not Currently a Large Expenditure



What Data Is Readily Available?

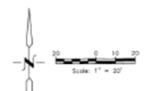
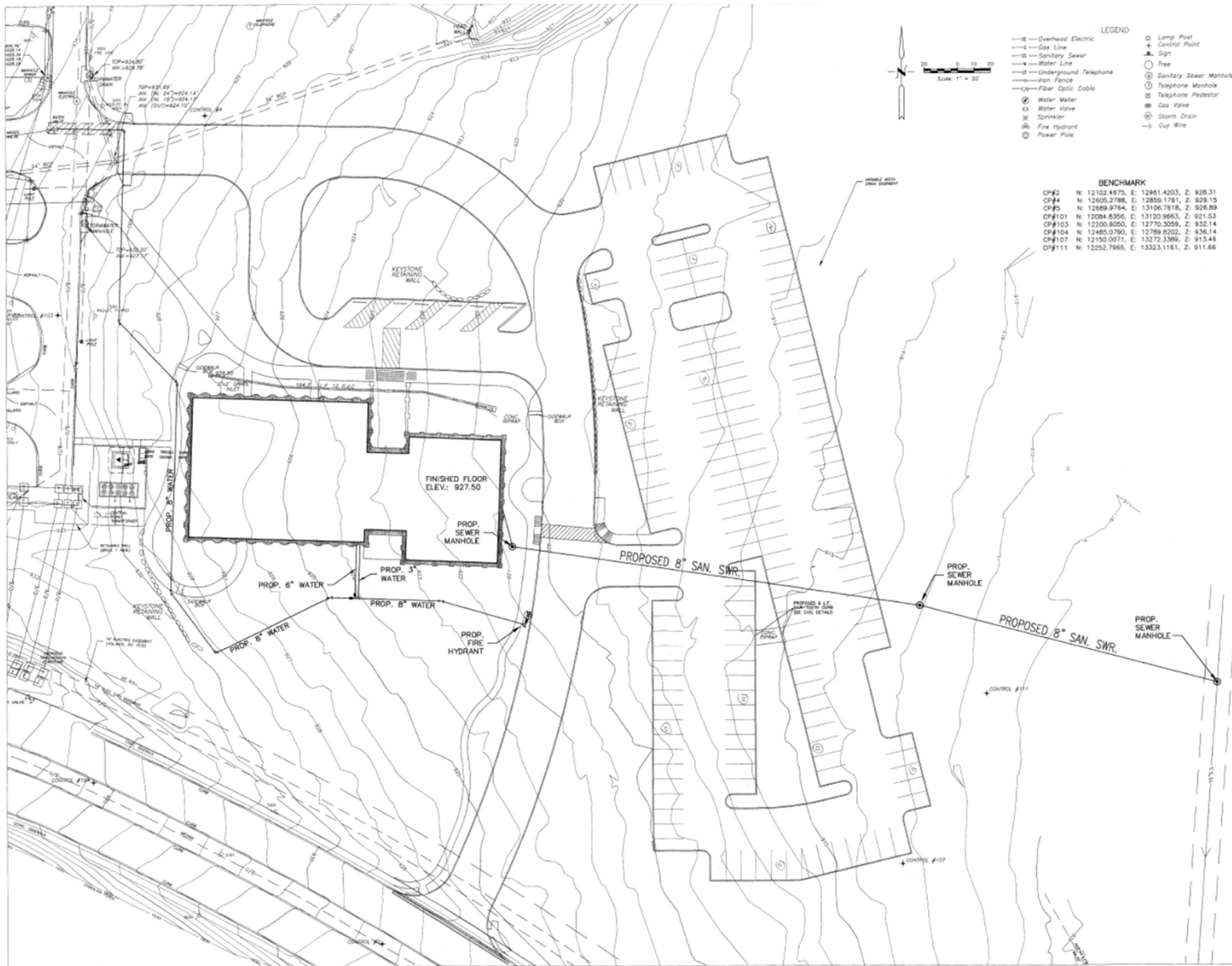
- Facility Condition Indices of Alamo Colleges
- Work Order History
- AutoCAD Drawings of all the Facilities
 - Architectural
 - Civil
 - Mechanical
 - Structural
 - Landscape
- Fire Evacuation Routes



Data Summary at NLC

- 13 Buildings with an Average Age of 7 Years
- 35,596 Work Orders
- 828 AutoCAD Drawings





- LEGEND**
- Overhead Electric
 - Gas Line
 - Sanitary Sewer
 - Water Line
 - Underground Telephone
 - Metal Fence
 - Fiber Optic Cable
 - Water Meter
 - Water Valve
 - Sprinkler
 - Fire Hydrant
 - Power Pole
 - Lamp Post
 - + Control Point
 - ▲ Sign
 - Tree
 - Sanitary Sewer Manhole
 - Telephone Manhole
 - Telephone Hydrant
 - Gas Valve
 - Storm Drain
 - Guy Wire

BENCHMARK

CP#2	N: 12102.4875, E: 12961.4203, Z: 928.31
CP#4	N: 12605.2788, E: 12856.1791, Z: 929.15
CP#5	N: 12689.9784, E: 13106.7618, Z: 926.89
CP#01	N: 12004.8356, E: 13102.8663, Z: 921.53
CP#103	N: 12200.8050, E: 12770.3059, Z: 932.14
CP#04	N: 12485.0790, E: 12789.8222, Z: 936.14
CP#107	N: 12150.0071, E: 13272.3386, Z: 913.48
CP#111	N: 12252.7965, E: 13323.1181, Z: 911.66

3D/MM
A DIVISION OF WARD & ASSOCIATES, P.C.
 700 North St. West, Suite 1800
 Fort Worth, Texas 76102

PROJECT

OWNER
RAIN MEDINA RAIN, INC.
ENGINEER & ARCHITECT
 2008 Central Parkway South
 Fort Worth, Texas 76102
 817/494-7229

DATE

6/16/16

CLIENT
Alamo Community College District
1111 West University Avenue
 San Antonio, Texas 78244-1429
 (210) 388-8200

PROJECT TITLE
Northwest Vista Advanced Technology Center
SAN ANTONIO, TEXAS
 MULTI-CAMPUS CONSTRUCTION
VOLUME I

DESIGNED BY
 132-006

DRAWN BY
 RBM

CHECKED BY
 CB

PROJECT TITLE
Overall Utility Plan

DATE
 June 2, 2016

PROJECT NUMBER
C2.1

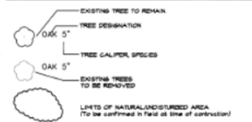


June 29, 2016

12



2. LEGEND

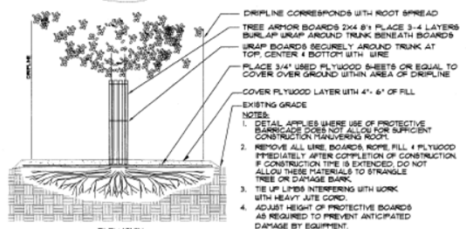
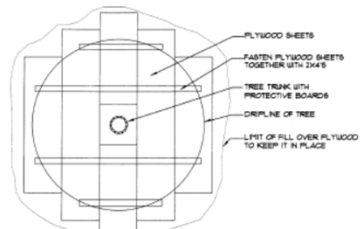
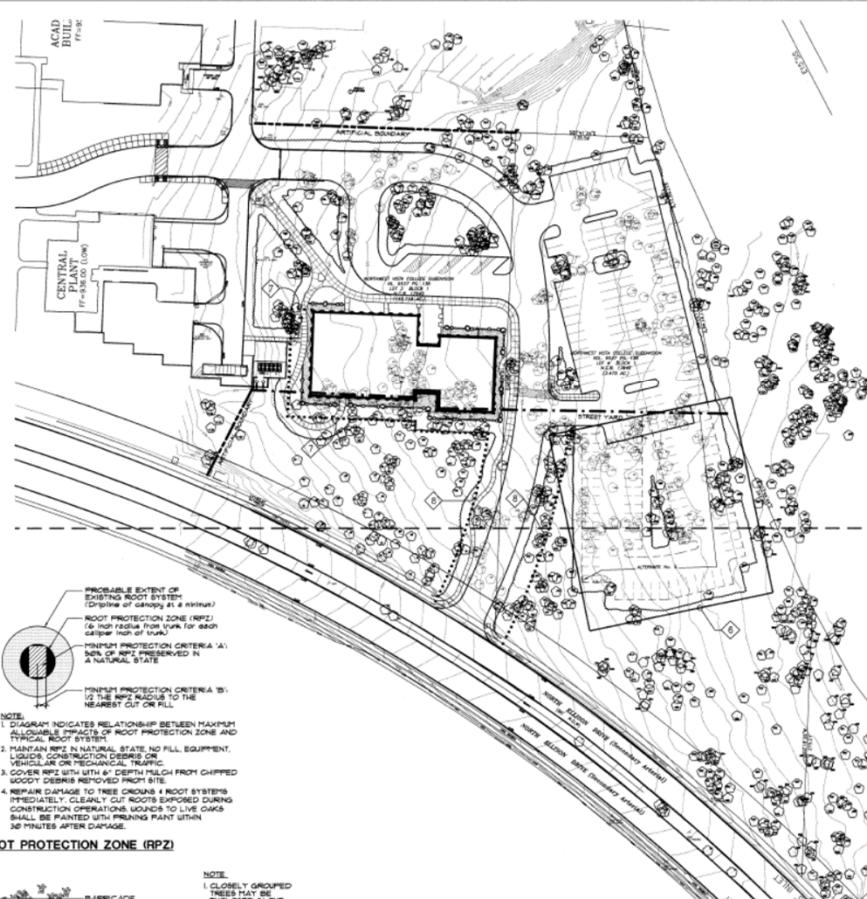


3. NOTES: (Keyed Notes)

- Tree survey information is based on site survey prepared by Ben Heide-Burr, Inc., San Antonio, TX.
- All conditions necessitating the removal or pruning of a tree shall be reviewed by Landscape Architect & Owner's Representative. The location of any interventions with the location of existing trees shall be established prior to the field work.
- Barbwire fencing shall be placed 60' or more to remain within 100' of any construction. Refer to Det. 10.1.2 for tree protection fencing.
- Existing trees to remain as indicated or as detailed in field. Plan may include a table of trees to be preserved. Consideration may be given to removing additional trees under the following conditions after prior review and approval by Owner & Landscape Architect:
 - Caliper greater than four (4) inches to base beneath the origin of a tree's main trunk at the root protection zone (RPZ) is defined as having a diameter equal in feet to twice the number of inches of tree trunk diameter (e.g., 4" caliper = 8" diameter).
- Construction of a building or other improvements required the removal of more than 50% of the mature portion of a tree crown.
 - Refer to sheet L1.0 for details relating to tree preservation.
 - Areas to remain undisturbed/mechanical areas under construction.
 - Work and Selective Clearing Zone 30'-0" from base of building (necessary to be selectively cleared by cutting off secondary fall off of any mature grass/vegetation that will grow). Existing trees within this zone and all structures shall be tree shelter per sheet L1.0. Any trees or any area identified to be saved indicated with both symbols.
 - Selective clearing zone 20'-0" from curb. Reference Note-1.

4. TREE PRESERVATION SUMMARY

TOTAL SURVIVANT INCHES ON SITE (8" CALIPER & LARGER)	6497 INCHES
40% INCHES REQUIRED TO BE PRESERVED	2598.8 INCHES
INCHES TO REMAIN	2599 INCHES
(8" & 4" CALIPER)	
(8" & 4" CALIPER)	4007 INCHES
INCHES TO BE REMOVED	3900 INCHES
PERCENTAGE RETAINED	40.0%
(8" & 4" CALIPER)	
TOTAL HERITABLE INCHES ON SITE (2" CALIPER & LARGER)	208 INCHES
40% INCHES REQUIRED TO BE PRESERVED	83.2 INCHES
INCHES TO REMAIN	83 INCHES
PERCENTAGE RETAINED	39.9%
(2" - 7" CALIPER)	
(2" - 7" CALIPER)	34.2 INCHES
INCHES TO BE REMOVED	173.8 INCHES
PERCENTAGE RETAINED	39.9%
TOTAL SURVIVANT INCHES ON SITE (2" CALIPER to 4")	58 INCHES
40% INCHES REQUIRED TO BE PRESERVED	23.2 INCHES
INCHES TO REMAIN	23 INCHES
PERCENTAGE RETAINED	39.7%
(2" - 4" CALIPER)	
(2" - 4" CALIPER)	34.2 INCHES
INCHES TO BE REMOVED	24.8 INCHES
PERCENTAGE RETAINED	60%
TOTAL SURVIVANT INCHES ON SITE (2" CALIPER & LARGER)	40 INCHES
40% INCHES REQUIRED TO BE PRESERVED	16 INCHES
INCHES TO REMAIN	16 INCHES
PERCENTAGE RETAINED	40%
(2" - 4" CALIPER)	
(2" - 4" CALIPER)	40 INCHES
INCHES TO BE REMOVED	24 INCHES
PERCENTAGE RETAINED	60%
TOTAL UNDERSTORY MITIGATION EQUIPMENT	10' PORTLAND CEMENT
TREES PROVIDED	SEE L1.0
1 - CROWNING 2" CAL.	30'
1 - CROWNING 4" CAL.	30'
1 - MEXICAN PLUM 2" CAL.	30'
1 - REDWOOD 2" CAL.	30'

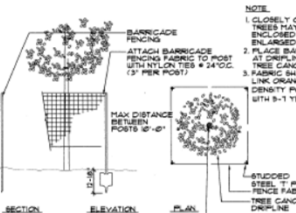


5. TREE ARMOR

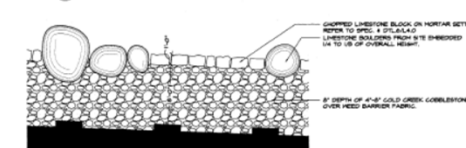


- NOTE:**
- DIAGRAM INDICATES RELATIONSHIP BETWEEN MAXIMUM ALLOWABLE IMPACTS OF ROOT PROTECTION ZONE AND TYPICAL ROOT SYSTEM.
 - MAINTAIN RPZ IN NATURAL STATE. NO FILL EQUIPMENT, LIQUIDS, CONSTRUCTION DEBRIS OR VEHICULAR OR MECHANICAL TRAFFIC.
 - COVER RPZ WITH 6" DEPTH PULG FROM CHIPPED LOGGY DEBRIS REMOVED FROM SITE.
 - REPAIR DAMAGE TO TREE CROWN & ROOT SYSTEMS IMMEDIATELY. CLEANLY CUT ROOTS EXPOSED DURING CONSTRUCTION OPERATIONS SHOULD BE LIVE CARDS. SHALL BE PAINTED WITH PRUNING PAINT WITHIN 30 MINUTES AFTER DAMAGE.

6. ROOT PROTECTION ZONE (RPZ)



1. EXISTING TREE PRESERVATION/DEMO SITE PLAN



8. COBBLESTONE ROCK BED - ENLARGED PLAN (TYP)

3D/MM
 300 North St. 8th Fl., Suite 1000
 San Antonio, Texas 78205
 Tel: (214) 221-1932
 Fax: (214) 221-1942

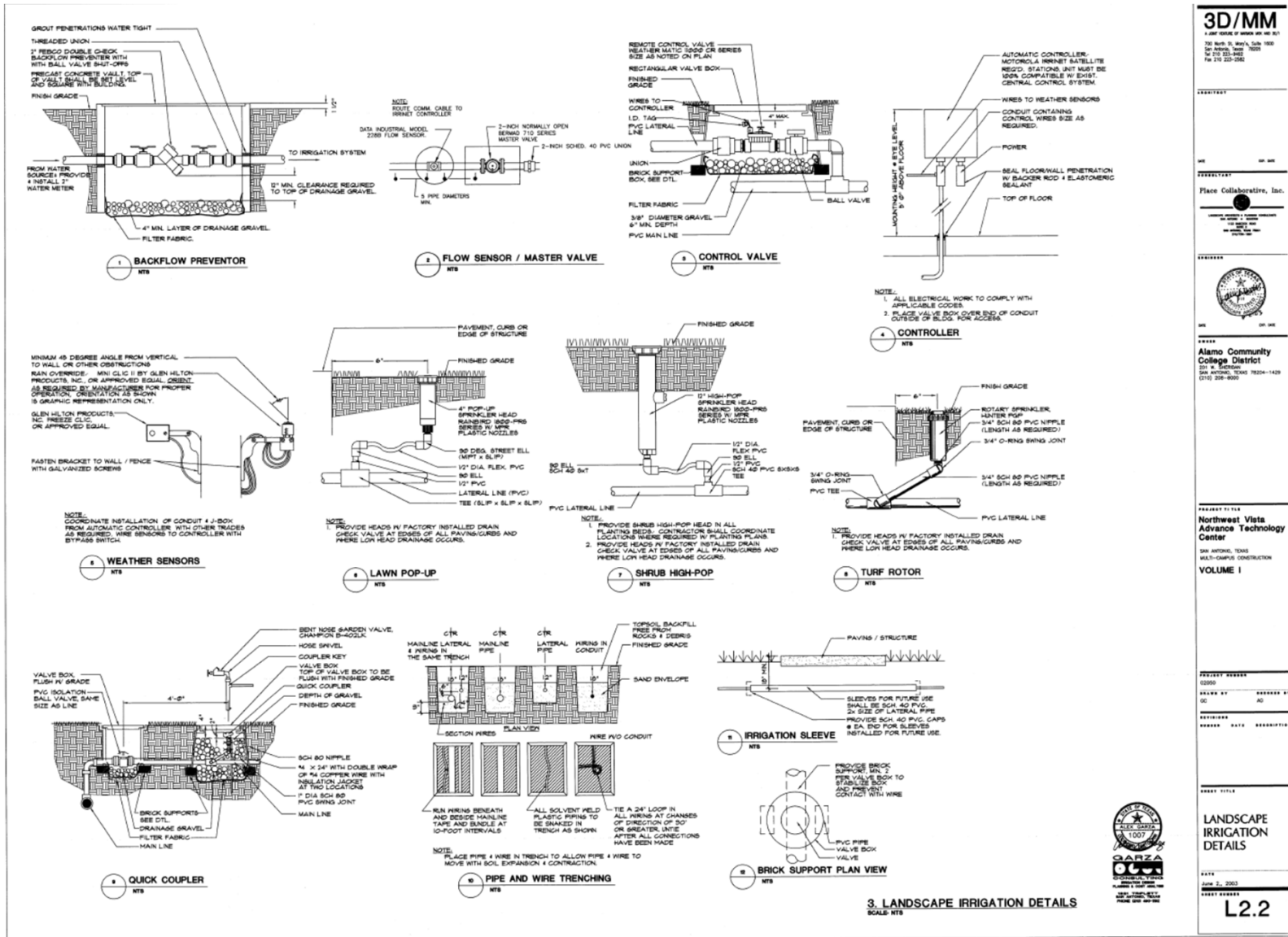
Place Collaborative, Inc.
 1000 North St. 8th Fl., Suite 1000
 San Antonio, Texas 78205
 Tel: (214) 221-1932
 Fax: (214) 221-1942

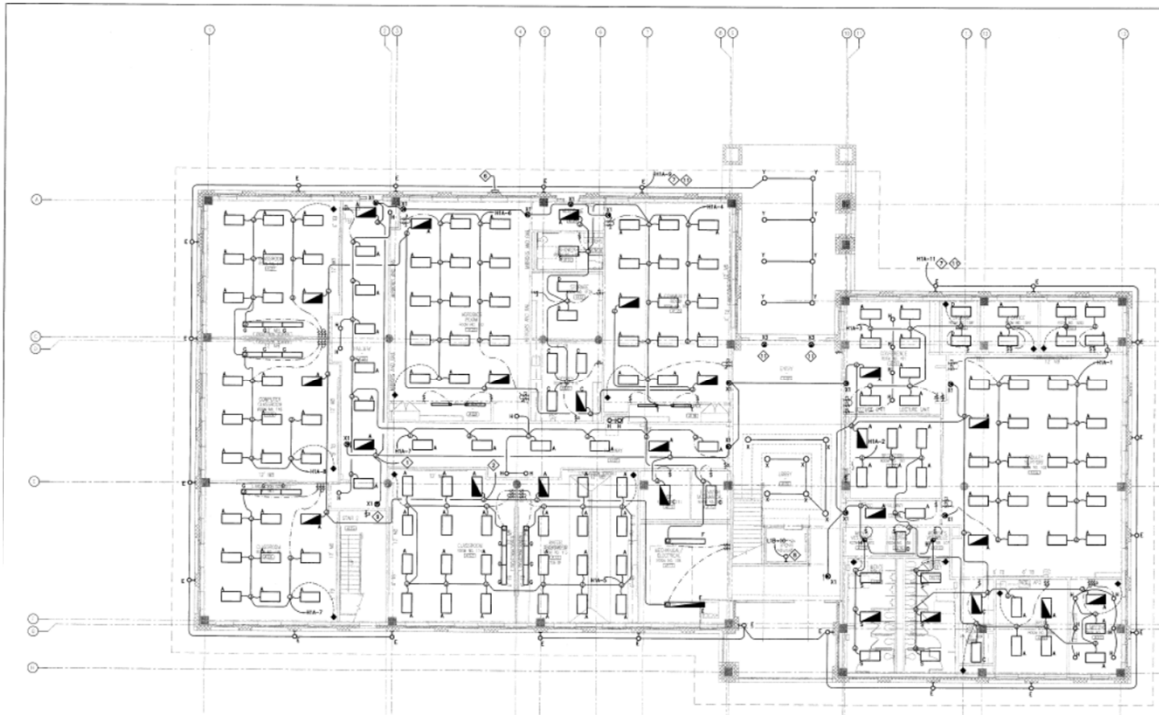
Alamo Community College District
 201 W. 37th Street
 San Antonio, Texas 78204-1423
 (214) 338-8300

Northwest Vista Advance Technology Center
 San Antonio, Texas
 Multi-phased construction
VOLUME I

EXISTING TREE PRESERVATION/DEMO PLAN

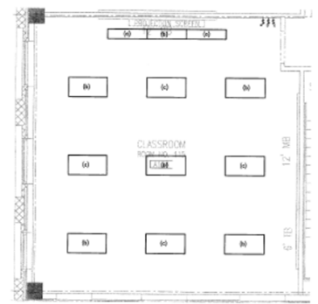
DATE: JUNE 3, 2013
SCALE: L1.0





- GENERAL NOTES**
- ALL CLASSROOM/LAB LIGHTING TO BE SWITCHED PER DETAIL, SEE E1.01.
 - NO L-BOARDS FOR PANEL LOCATIONS.
 - GENERAL NOTES: ALL SWITCHES TO BE LIGHTING UPS. CONNECTION TO SWITCH ASSEMBLIES AND INCLUSIVE SWITCHED LOCATIONS AS SHOWN IN ATTACHED UPS TO EACH ROOM. THE WOLF GROUP HAS PROVIDED OUTPUT CIRCUIT BREAKERS REFER TO THESE WOLF SHEETS 01-07 AND 01-08.
- NOTES:**
- CONNECT TO SUPPLY CIRCUIT BREAKER #1 IN LIGHTING UPS SYSTEM. GENERAL NOTES: ALL SWITCHES TO BE SELECTED CONNECT TO 200V UP IN NEAREST LIGHTING PANEL.
 - CONNECT TO SUPPLY CIRCUIT BREAKER #1 IN LIGHTING UPS SYSTEM. GENERAL NOTES: ALL SWITCHES TO BE SELECTED CONNECT TO 200V UP IN NEAREST LIGHTING PANEL.
 - NOT USED.
 - WOLF GROUP 3/4" IS WITH PULL STUDS FROM LIGHTING UPS TO SUPPLY LIGHTING ASSEMBLY #1 & 2. CONNECT TO SUPPLY CIRCUIT BREAKER #1 & 2. GENERAL NOTES: ALL SWITCHES TO BE SELECTED CONNECT TO 200V UP IN NEAREST LIGHTING PANEL.
 - GENERAL LIGHTING PANEL CHECK SHEET, NO. 01-001 FOR ADDITIONAL REQUIREMENTS.
 - GENERAL LIGHTING GENERAL PROTOCOL, REVISION, 1/14/10, SCALE 1/4" = 1'-0" A17.
 - WOLF GROUP THROUGH LIGHTING CONTRACTOR, REVISION, 1/14/10, SCALE 1/4" = 1'-0" A17.
 - GENERAL NOTES: THE FIXTURES WITH WOLF GROUP WOLF GROUP AND SWITCH WOLF GROUP AS REQUIRED.
 - CONNECT TO STANWELL LIGHTING CREDIT.
 - NOT USED.
 - COORDINATE WITH ARCHITECT ON EXISTING LIGHTING FIXTURES FOR ALL PORTIONS OF THE TYPE.

1 FIRST FLOOR LIGHTING PLAN
SCALE: 1/4" = 1'-0"



2 CLASSROOM LIGHTING SWITCHING DIAGRAM
SCALE: 1/4" = 1'-0"

3D/MM
A LAMP HOUSE OF WOLF GROUP INC. 2011
100 WOLF GROUP WAY, SUITE 1000
DALLAS, TEXAS 75243
TEL: 214-343-1000
FAX: 214-343-1000

PROJECT:
NO. 01-001
DATE: 06/02/2013



Alamo Community College District
201 W. UNIVERSITY BLVD. FLORENCE, TEXAS 78121
(512) 308-8000

PROJECT TITLE
**Northwest Vista
Advance Technology
Center**

DAW, ANTONIO, TEXAS
MULTI-CAMPUS CONSTRUCTION
VOLUME I

PROJECT NUMBER
03C-004
DESIGNED BY
G. CHINE
CHECKED BY
M. WESTON
REVISIONS
DATE DESCRIPTION

PROJECT TITLE
**FIRST FLOOR
LIGHTING
PLAN**

DATE
June 2, 2013

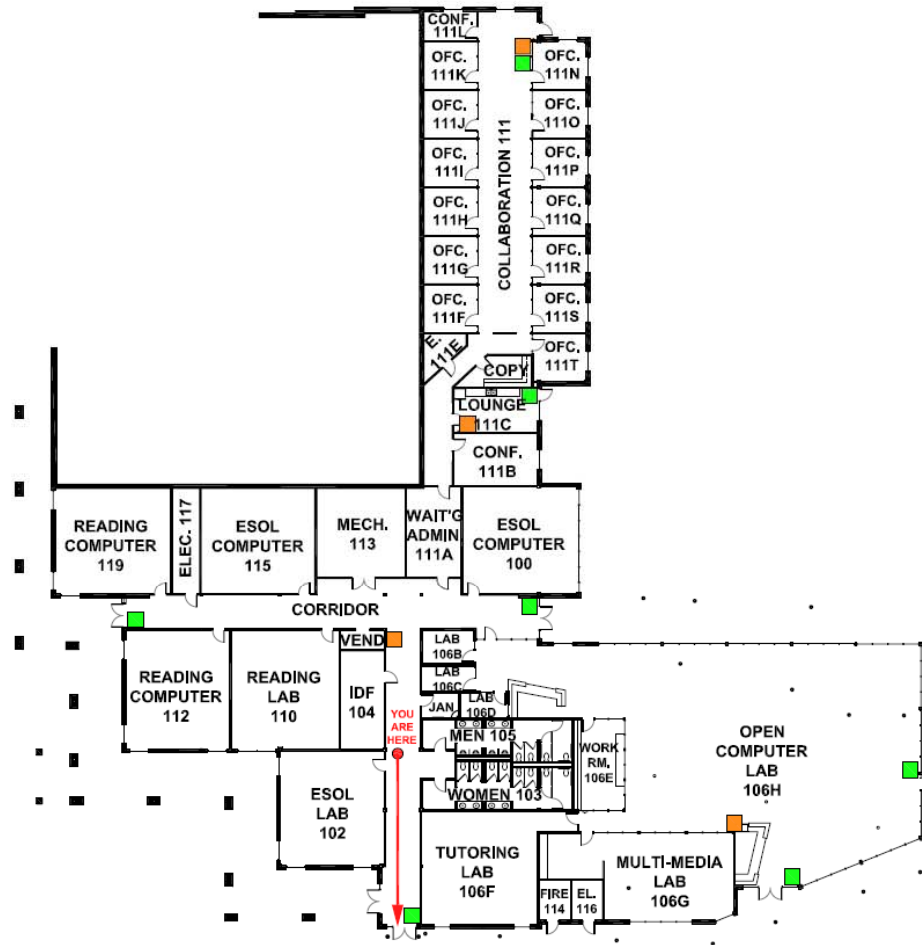
E1.01



LIGHTING FIXTURE SCHEDULE

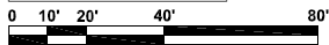
TYPE	MANUFACTURER	CATALOG NUMBER	LAMP QTY.	LAMP TYPE	MOUNTING	VOLTAGE	DESCRIPTION
A	Day-Brite	2P3GS332-38SL-277-1/3EB	3	F32-T8	SUSPENDED CEILING	277	2' X 4' FLUORESCENT TROFFER, (1) 3-LAMP ELECTRONIC BALLAST, STEEL FRAME, 3XB CELL, PARABOLIC LOUVER
AA	Celetial Lighting	MBL-500-TF	1	F25-28	COVE SURFACE	277	COVE LIGHT, LOW PROFILE, REMOTE BALLAST, FIXTURE LENGTH 36"
B	Day-Brite	2P3GS232-28SL-277-1/2EB	2	F32-T8	SUSPENDED CEILING	277	2' X 4' FLUORESCENT TROFFER, (1) 2-LAMP ELECTRONIC BALLAST, STEEL FRAME, 2XB CELL, PARABOLIC LOUVER
BB	Celetial Lighting	MBL-500-BXO	AS REQ.	F55-T5	COVE SURFACE	277	COVE LIGHT, LOW PROFILE, SHADOW FREE OVER LAPPED LAMPS, REMOTE ELECTRONIC BALLAST, FIXTURE LENGTH 84"
C	Day-Brite	2DPG332-FS21-277-1/3EB	3	F32-T8	SUSPENDED CEILING	277	2' X 4' FLUORESCENT TROFFER, (1) 3-LAMP ELECTRONIC BALLAST, WHITE, FLAT STEEL FRAME, 0.125" ACRYLIC LENS
CC	Celetial Lighting	MBL-5000-BXO	AS REQ.	F55-T5	COVE SURFACE	277	COVE LIGHT, LOW PROFILE, SHADOW FREE OVER LAPPED LAMPS, REMOTE ELECTRONIC BALLAST, FIXTURE LENGTH 96"
D	Day-Brite	2DPG232-FS21-277-1/2EB	2	F32-T8	SUSPENDED CEILING	277	2' X 4' FLUORESCENT TROFFER, (1) 2-LAMP ELECTRONIC BALLAST, WHITE, FLAT STEEL FRAME, 0.125" ACRYLIC LENS
E	Spaulding	PA-M100PS-MT-DBZ	1	100W PSMH	RECESSED WALL	277	RECTANGULAR RECESSED WALL LUMINAIRE, HPF CWA BALLAST, PULSE START LAMP AND BALLAST
F	Day-Brite	1F232-PP-277-1/2EB / FL-123	2	F32-T8	PENDANT CHAIN MOUNT	277	8" INDUSTRIAL STRIP FIXTURE, 10% UPLIGHT, W/ WIRE GUARD, (1) 2-LAMP ELECTRONIC BALLAST
G	Day-Brite	MSAG228-W-277-1/1EB	1	F28-T5	SUSPENDED CEILING	277	ASYMMETRIC WALL WASHER FOR CLASSROOM MARKERBOARDS
H	Ocean State	FLH-8-2/13BX-PW-277	2	CFM13W/GX24	SUSPENDED CEILING	277	COMPACT FLUORESCENT DOWNLIGHT, NOMINAL 8" DIAMETER, WHITE TRIM, W/ ELECTRONIC BALLAST
J	Ocean State	FLH-8-2/13BX-PW-277	2	CFM13W/GX24	SUSPENDED CEILING	277	COMPACT FLUORESCENT DOWNLIGHT, NOMINAL 8" DIAMETER, WHITE TRIM, W/ ELECTRONIC BALLAST, ADJUSTABLE WALL WASHER
M	Rave / Paria	CB6378-1F27-277V-BA	1	27W 2G11 CFL	WALL MOUNT	277	WALL SCONCE, BRUSHED SOLID ALUMINUM FINISH, TEMPERED GLASS, ELECTRONIC BALLAST
N	McGraw-Edison	GSMAM-400MH-FTFG-OC	1	400W MH	POLE MOUNT	480	POLE-MOUNTED SHOEBOX TYPE CUTOFF FIXTURE, DARK BRONZE, SPUN ALUMINUM REFLECTOR TWO HEADS, 180 DEG. APART, WITH MCGRAW-EDISON 30' POLE
O	McGraw-Edison	GSMAM-400MH-FTFG-OA	1	400W MH	POLE MOUNT	480	POLE-MOUNTED SHOEBOX TYPE CUTOFF FIXTURE, DARK BRONZE, SPUN ALUMINUM REFLECTOR WITH MCGRAW-EDISON 30' POLE
P	McGraw-Edison	GSMAM-400MH-3FFG-OD	1	400W MH	POLE MOUNT	480	POLE-MOUNTED SHOEBOX TYPE CUTOFF FIXTURE, DARK BRONZE, SPUN ALUMINUM REFLECTOR WITH MCGRAW-EDISON 30' POLE
Q	McGraw-Edison	GSMAM-1250MG2-FFG-OB	1	250W MH	POLE MOUNT	480	POLE-MOUNTED SHOEBOX TYPE CUTOFF FIXTURE, DARK BRONZE, SPUN ALUMINUM REFLECTOR WITH MCGRAW-EDISON 12' POLE
R	Day-Brite	AW-N-2-32-277	2	F32 T8	CEILING SURFACE	277	SURFACE MOUNT WRAP, ACRYLIC LENS, ELECTRONIC BALLAST
S	Day-Brite	2DPF232-FS21-277-1/2EB	2	F32 T8	DRYWALL CEILING	277	2' X 4' FLUORESCENT TROFFER, (1) 2-LAMP ELECTRONIC BALLAST, WHITE, FLAT STEEL FRAME, 0.125" ACRYLIC LENS
T	Metallux	CL-1-15T8-EB81-277	1	F15-T8	SURFACE	277	SURFACE MOUNT FLUORESCENT, ACRYLIC WARP LENS, NO RECEPTACLE, ELECTRONIC BALLAST
U	Prisma	072121-26W-CF-277V-TITANIUM	1	26W G24Q-3	WALL SURFACE	277	EXTERIOR WALL SCONCE, DIE CAST ALUMINUM BODY, EXTRUDED ALUMINUM COVER, ELECTRONIC BALLAST, ALUMINUM REFLECTOR
V	Lightolier	40423723CCC	1	42W 3T CFL	PENDANT	277	12" SPUN ALUMINUM REFLECTOR, APERTURE DISC, COILED CORD, IRIDESCENT FREE FINISH
W	HALO	MD7-780-7700-BB-TRM7-P	1	150W MH	CEILING RECESSED	277	RECESSED HID DOWNLIGHT, 6" NOMINAL DIAMETER, ELECTRONIC BALLAST, BLACK BAFFLE
X	HALO	MD7-720-7700-BB-TRM7-P	1	50W MH	CEILING RECESSED	277	RECESSED HID DOWNLIGHT, 6" NOMINAL DIAMETER, ELECTRONIC BALLAST, BLACK BAFFLE
X1	mcPhibben	ER45VL-1-RC-XX		LED	CEILING RECESSED	277	SINGLE FACE EXIT EDGE LIT RED
X2	mcPhibben	ER45VL-2-RC-XX		LED	CEILING RECESSED	277	DOUBLE FACE EXIT EDGE LIT RED
X3	mcPhibben	SL-R-20-S-W		N/A	WALL SURFACE	N/A	SINGLE FACE EXIT FOR GLASS WALL (SELF-LUMINOUS)





LEGEND

- FIRE EXTINGUISHER
- PULL STATION
- EMERGENCY PHONE
- YOU ARE HERE



**JUNIPER HALL
 EMERGENCY EVACUATION PLAN
 BUILDING 5 - FLOOR 1**



Data Related Issues

- Different Data Integrity Rules
- Limited Common Attributes
- Noisy Work Order Data
- Varying Spatial Resolution
- Varying Temporal Resolution



How to Handle Data Cleanup

- Heavy Data Review
- Attribute Research
- Find Common Attributes
- Semi Automated Scripting



Current and Desired Data

- Current Data
 - Digital Floor Plans
 - High Spatial Resolution
 - Work Order History
- Desired Data
 - Investment Spending at Classroom and Building Level
 - Utility and Energy Usage at Building Level



Demonstrating Return on Investment

- Justifies the Undertaking
- ACCD Uses ESRI Software in the Classroom
- Educational License Agreement
 - Allows for Administrative Use
 - Unlimited Seats
- Leverage Data in CAD Files
 - Build GIS
 - Create Facilities Database
 - Locate Assets
- Share Data with Other Campus Operations
 - Emergency Management
 - Planning



Cost Savings Through Better Management

- Manage Campus Buildings and Facilities
- Manage Work Orders and Provide Reports
- Visualize Asset Location
- Maintain Regulatory Compliance
- Track Financial Information Associated with Assets



Looking To the Future

- Implement Phase I
- Improved Facility and Asset Mapping



Looking To the Future

- Leverage the GIS for Other Services
 - Create campus maps
 - Environmental compliance
 - Incident mapping and emergency response planning
 - Landscape management



Looking To the Future

- Leverage the GIS for Other Services
 - Locate and manage assets
 - Manage physical accessibility
 - Americans with Disabilities Act
 - Campus Lighting
 - Evacuation Routes
 - Mobile apps for students
 - Report Maintenance Issues
 - Incident Reporting



Looking To the Future

- Leverage the GIS for Other Services
 - Space and move management
 - Student commute analysis



Contact Information

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713-821-0366



ALAMO
COLLEGES

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June 29, 2016