



Kevin Laut Construction Manager

Capital Planning, Design, and Construction

CSU Office of the Chancellor



BACKGROUND & SCOPE

Provide turn-key Subsurface Utility Mapping Services including the following;

- 1) Review of existing documents and surface site features to compile existing utility information without site disturbance.
- 2) Use of various technologies to identify the locations of underground utilities.
- 3) Excavation and potholing services are required to identify critical utility horizontal and vertical locations.
- 4) Full survey and detailing services to create complied or project specific utility drawings.
- 5) 3-D modeling of underground utilities as required to support project specific coordination efforts.
- 6) Management and coordination of logistics required to complete investigation work.



AWARDED SERVICE PROVIDERS

- 1) McCarthy Building Companies, Inc.
- 2) C-Below, Inc.
- 3) PDM GEL Solutions, Inc.

- Contracts will be posted to the csyou.edu procurement contract store and a CM Technical Bulletin will be sent out with links and additional info.

CSU The California State University

MASTER ENABLING AGREEMENT
UNDERGROUND UTILITY MAPPING SERVICES
For use on any CSU Campus.

☐ SERVICE PROVIDER☐ TRUSTEES

This AGREEMENT is made and entered into this [Day] day of [Month], [Year] pursuant to the Public Contract Code 10700, et seq., by and between the Trustees of the California State University on behalf of

Campus, hereafter referred to as Trustees, and California State University	Amendment No.: N/A	Agreement No.: 123456	Project No.: 123456
Service Provider, hereafter referred to as Service Provider. Service Provider		CSU Vendor ID No.: 123456	License or DIR No.: 123456

WITNESSETH: That the Service Provider in consideration of the statements and conditions herein contained, agrees to furnish labor, materials, and equipment and to perform work necessary to complete, in a skillful manner: Subsurface Utility Mapping Services for multiple projects located at various campuses within the California State University System.

The Service Provider shall provide such services as more fully described in the following Rider and Exhibits, which by this reference are incorporated herein and made part of this Agreement:

Rider	Α	Agreement General Provisions,	consisting of four (4) pages;
Exhibit	Α	Scope of Services (RFP),	consisting of (7) pages;
Exhibit	В	Service Order Authorization to Proceed,	consisting of one (1) page;
Exhibit	$^{\rm C}$	Service Provider Rate Schedule,	consisting of one (1) page;

The term shall begin upon receipt of an executed Agreement from the Trustees and shall end as of [Date], with the option given by the Trustees of extending the Agreement with the same items and conditions for two (2) additional (1) year periods. Work elements started during the term shall continue to their completion and acceptance by the Trustees.

The Service Provider shall not perform services in excess of the Agreement without prior written authorization to proceed from the Trustees.

Service Provider shall report to: California State University, Kevin J. Laut, Construction Manager, Capital Planning, Design and Construction, (562) 951-4994.

The basic services amount to be expended under this Agreement shall be determined by the overall usage of each participating campus and the administrative office of the California State University. Payment shall be made in accordance with Rider A, Exhibit A, Exhibit B, and Exhibit C.

Tru	stees of t	he Calif	ornia Sta	ate U	Iniversit	y			Service Provider					
Campus							Firm Name							
California	State Uni	versity			Service Prov	ider,	Inc.							
By (Trustees' Authorized Signature)							By (Authorize	ed Sig	natur	e)				
Printed Name and Title of Person Signing							Printed Nam	e and	Title o	of Person 8	Signing			
John Smit	th, Campus	Represen	tative				Jack Smith,	Servi	e Pro	vider Au	thorized Sign	natory		
Address of	Campus Pr	oject Admir	istrator				Address of Se	rvice.	Provid	ler				
99999 Loi	rem Ipsum	Drive, Ipsu	ım, CA 999	99			11111 Ipsum Lorem Drive, Lorem CA 11111							
SCO Acct	Fund	Sub Fund	Agency	Yr.	Ref/Item	Category	Program	Elen	nent	Componer	t Chapter	Fiscal Yr.	Legal Ref.	
Data:	123456	123456	123456		123456	123456	123456	123	456	123456	123456	123456	123456	
Fund Name				PS	Account	PS Fund	nd PS Dept. ID PS Program PS Class					PS Proje	ct/Grant	
	123	456		1	23456	12345	56 123456 123456 123456			123456	123456			
Amount End	cumbered 0.00				ipon my per stated aboi		vledge that bu	dgete	d funo	ls are avai	lable for the p	eriod and p	urpose of	
Amount of I	ncrease													
\$	0.00		Signatur	e of A	ccounting	Officer	Dat				Date			
Amount of I	Decrease 0.00		I hereby certify that I have examined the written Agreement and find the same to be in accordance with the requirements of California State University Contract Law. G. ANDREW JONES, General Counsel							vith the				
	nt Encumbere	ed	By Attor	0.017							Date			

This Agreement may be executed in counterparts all of which taken together shall constitute one and the same Agreement. The exchange of copies of this Agreement by electronic mail in "portable document format" (".PDF") form or by other similar electronic means shall constitute effective execution and delivery of this Agreement and shall have the same effect as copies executed and delivered with original signatures.



SERVICE ORDERS

- 1) Identify need for services
- 2) Review the posted proposal and webcast videos to determine which service provider appears to be a best fit for the project
- 3) Contact the preferred service provider to ensure they have availability and coverage for the project
- 4) Coordinate with the service provider to define the following:
- Project specific scope of services
- Quality Level required
- Specific Deliverables
- Schedule
- Cost structure
- 5) Campus to execute project specific Service Order within the parameters of the MEA Rider A, General Provisions and Exhibit C, Service Provider Rate Schedule

Make sure not to allow clarifications that contradict or exclude items in Rider A or rates in excess of the rate schedule

Agreement No. 123456 Service Providei THE CALIFORNIA STATE UNIVERSITY Exhibit B - Service Order and Authorization to Proceed, Subsurface Utility Mapping Services [Date] Service Provider Service Provider, Inc. 11111 Ipsum Lorem Drive Lorem CA, 11111 Dear Service Provider: [Project Name], [Project Number] [Campus] Service Order Authorization Number: [insert] In accordance with the provisions of the Systemwide Master Enabling Agreement Number 1234567, you are hereby authorized to Provide Subsurface Utility Mapping Services for the subject project to the quality levels described in Exhibit A, to the Quality Levels selected below: [Quality Level D] ☐ [Quality Level C & D] ☐ [Quality Level B, C, & D] [Quality Level A, B, C, & D] Per fee schedule, ☐ Hourly with a Not to Exceed limit of: ☐ Fixed fee amount of: Service Provider shall report to: [CSU Campus Name] [Campus Department] [Executive Facility Officer or designated campus Project Manager] [Campus Address] [Campus Project Manager's Phone Number, email] The total amount to be expended under this Service Order shall not exceed [written and numerical dollar value] inclusive of reimbursables. To invoice, submit a single signed invoice per project. On each invoice identify the MEA Agreement Number and Service Order Authorization Number. Direct invoices to the project manager named above. Questions regarding this authorization shall be directed to the above named project manager. Fund: Fund Certified: Approved: [Name] [Name] [Campus Project Manager] [Campus Contracting / Procurement] c: Campus Executive Facility Officer, Chancellor's Office Planner, File

UPCOMING WEBCASTS

CSU Facilities Management Institute Capital Training Program

CM Jumpin' Jeopardy

Tuesday, August 14 – 10:00-11:30AM

McCarthy Building Companies - Subsurface Utility Mapping MEA Webcast

Monday, September 10 - 2:00-3:00PM

Other Upcoming Training, Time and Date TBD

- New & Improved Gordian Program Launch #1&2
- The Law of Design and Construction (Advanced)
- Owner Controlled Insurance Program (OCIP) Program Updates

https://csyou.calstate.edu/Employee-Resources/training/facilities-management-institute/Pages/default.aspx



Chris Loera, CEO

Over 20 years of experience in construction industry. He plans, organizes, directs, and controls the activities of the team on a daily basis. He is also Co-Chair of the Laborers Training Trust that is responsible for training apprentice and journeymen locators

David Mintzer, BDM

Handles new business pursuits, manages quotes, discusses scope and quality levels with clients, and coordinates between departments (sales, operations, dispatch).











POLL QUESTIONS

- 1) Have you ever utilized utility locating services/investigations on any of your projects?
- 2) Have you ever worked on a project where the as-builts or record drawings had inconsistencies?



GONE WRONG

WATER LINE

It began with a small group of people who had experience in quality control, construction management, Utility Locating & GPR.

Responding to clients needs for trained technicians for other locating needs, C Below quickly added additional services such as CCTV, Mapping, and Potholing to it's list of services.

It became clear there was a need for a one stop shop in the construction industry

BRIEF HISTORY



VISION STATEMENT

To provide the Southwest Construction Industry with the tools to make safe, accurate decisions, while putting people first and always doing what is right.

MISSION STATEMENT

We accurately locate utilities to protect our clients and the general public.

We provide highly trained professionals and state of the art equipment to provide the best product possible.

We always do what is right in the eyes of our employees, our clients, and the general



WE ALWAYS

Do what is right Work hard Act and Look Professional
Strive to better ourselves, our company, and our community
Follow company procedures Assist our fellow team members when needed
Treat our clients with respect Treat our team members with respect
Exceed expectations and are the best at what we do

C BELOW

WE NEVER gossip or spread ill will.











Potholing

Supervisor

Locating

Technician

CCTV Technician

Potholing

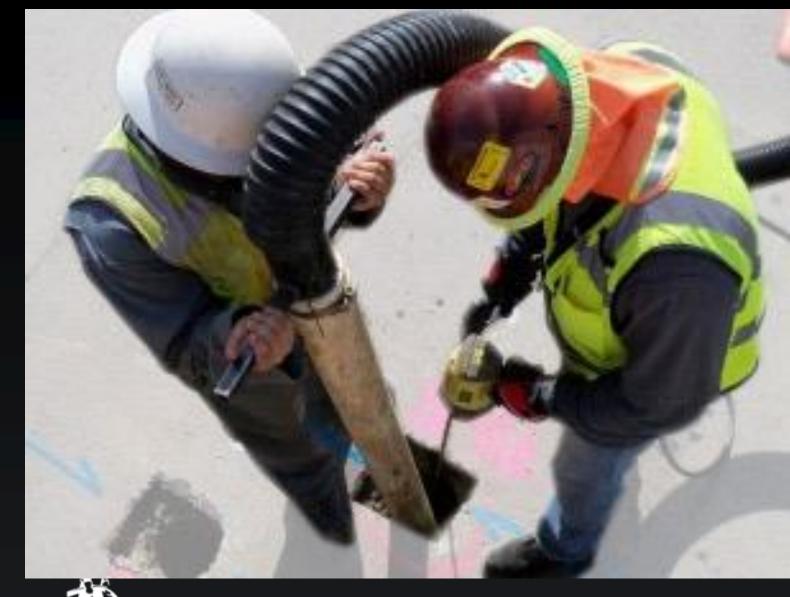
Technician

TECHNICIANS - 2 technicians, cross trained, experience troubleshooting EQUIPMENT - locating crews come out with all necessary equipment MAPPING - Typically follows completion of locating investigation UNIFORMS & MARKED TRUCKS - trucks are marked and technicians wear uniforms

QUALITY SERVICE







GPR

** POTHOLING







MAPPING



Quality Levels

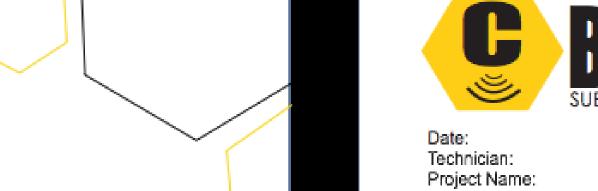
LEVEL A (POTHOLING) - IS THE HIGHEST LEVEL OF ACCURACY AND INVOLVES THE FULL USE OF THE SUBSURFACE UTILITY INVESTIGATION METHOD. IT PROVIDES INFORMATION FOR THE PRECISE PLAN AND PROFILE MAPPING OF UNDERGROUND UTILITIES THROUGH THE NONDESTRUCTIVE EXPOSURE OF UNDERGROUND UTILITIES, AND ALSO PROVIDES THE TYPE, SIZE, CONDITION, MATERIAL AND OTHER CHARACTERISTICS OF UNDERGROUND FEATURES.

LEVEL B (LOCATING INVESTIGATION) - INVOLVES THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND HORIZONTAL POSITION OF VIRTUALLY ALL UTILITIES WITHIN THE PROJECT LIMITS. IT ADDRESSES PROBLEMS CAUSED BY INACCURATE UTILITY RECORDS, ABANDONED OR UNRECORDED FACILITIES, AND LOST REFERENCES. DECISIONS REGARDING LOCATION OF STORM DRAINAGE SYSTEMS, FOOTERS, FOUNDATIONS AND OTHER DESIGN FEATURES CAN BE MADE TO SUCCESSFULLY AVOID CONFLICTS WITH EXISTING UTILITIES. SLIGHT ADJUSTMENTS IN DESIGN CAN PRODUCE SUBSTANTIAL COST SAVINGS BY ELIMINATING UTILITY RELOCATIONS.

LEVEL C - VISIBLE UTILITY FACILITIES (E.G., MANHOLES, VALVE BOXES, ETC.) AND CORRELATING THIS INFORMATION WITH EXISTING UTILITY RECORDS (QL-D INFORMATION). WHEN USING THIS INFORMATION, IT IS NOT UNUSUAL TO FIND THAT MANY UNDERGROUND UTILITIES HAVE BEEN EITHER OMITTED OR ERRONEOUSLY PLOTTED. ITS USEFULNESS, THEREFORE, IS PRIMARILY ON RURAL PROJECTS WHERE UTILITIES ARE NOT PREVALENT, OR ARE NOT TOO EXPENSIVE TO REPAIR OR RELOCATE.

LEVEL D - IS THE MOST BASIC LEVEL OF INFORMATION FOR UTILITY LOCATIONS. IT COMES SOLELY FROM EXISTING UTILITY RECORDS OR VERBAL RECOLLECTIONS, BOTH TYPICALLY UNRELIABLE SOURCES. IT MAY PROVIDE AN OVERALL "FEEL" FOR THE CONGESTION OF UTILITIES, BUT IS OFTEN HIGHLY LIMITED IN TERMS OF COMPREHENSIVENESS AND ACCURACY. QL-D IS USEFUL PRIMARILY FOR PROJECT PLANNING AND ROUTE SELECTION ACTIVITIES.

Utility Locating Radiography Potholing Mapping **GPR**





Date: Technician: Project Name: Project Address: C Below Project No.

January 2, 2017 Ramon Martinez Reclaimed Water Line Potholing Corona, CA 92881 17-0001

www.cbelow.com

1-888-90-BELOW

14280 Euclid Ave. Chino, CA 91710





14280 Euclid Ave Chino, CA 91710 1-888-90-BELOW

January 2, 2017

Ramon Martinez Reclaimed Water Line Potholing

Project Address: Corona, CA 92881

C Below Project No. 17-0001

Project Summary

No.	Utility	Size (in)	Material	Top Depth (ft)	Direction	Location	Surface
1	Reclaimed Water	8	PVC	4.80	N/S	North East of Old Temescal & Fullerton	Asphalt
2	Storm Drain	3 x 6	Concrete	4.00	E/W	North East of Fullerton & Old Temescal	Asphalt
3	Gas	4	Poly	2.96	NW/SE	North East of Old Temescal & Fullerton	Asphalt
4	Water	8	PVC	3.84	N/S	Westbound Old Temascal, East of Fullerton	Asphalt
5	Water	В	PVC	3.90	N/W	North West Comer of Old Temescal Rd. & Turnberry Ln.	Asphalt
6	Gas	2	Poly	3.60	N/S	North East of Intersection of Old Temescal Rd. & Tumberry Ln	Asphalt
7	Camm	(1)4 (2) 2	PVC	3.14 3.10	N/S	North East Corner of Tumberry & Old Temescal	Asphalt
7.1	Storm Drain	82	Concrete	4.60	N/A	North East Corner of Turnberry & Old Temescal	Asphalt

Dipped MH Summary

No.	Utility	Size (in)	Material	Top Depth (ft)	Flow Direction	Location	Surface				
MH 1	Storm Drain	72 84	Concrete	6.16 5.16	W->E	North East of Turnberry & Old Temescal	N/A				
MH 2	Storm Drain	84	Concrete	4.40	W->E	Harvard Circle and Old Temescal	N/A				
MH 3	Storm Drain	96	Concrete	7.76	W->E	North West of Cecilia & Old Temescal	N/A				
MH 4	Storm Drain	96	Concrete	7.52	W⇒E	On Old temescal Between Cecilia & California	N/A				
MH 5	Storm Drain	96 120	Concrete	5.60 3.60	W⇒E	South of Address 1353 Old Temescal	N/A				

Comments: Top depth is measured from ground surface to top of utility. Potholes were performed at locations specified by the client. Utility size and material are based on visual estimates and may vary.







POTHOLING DATA SHEET

14280 EUCLID AVE., CHINO, CA 91710 OFFICE: (888) 902-3569 FAX: (909) 606-6555

Technician Name Ramon Martinez		Date 01/02/2017		C Below Project No. 17-0001			
Project Name Reclaimed Water Line Potholin	9		Project Address Corona, CA 92881				
Client Company C Below			Contact Tiffany Kurimay				
Pothole No. 1	Location North East of Old Ter	mescal & Fullerton					
Surface Type: Asphalt Thickness: 0.60 (fe		file View (not to scale Distance from Finish					
Top: 4.80	(feet)		• F	er USA marks, High Pressure Gas also runs with 8" reclaimed water.			
Bottom: 5.47	(feet)						
Size: 8	(in)						
Utility: Reclaimed Water							
Material: PVC	/i						
Direction: N/S	ŢΓ		_				

			PH	HYSICAL	SWIN	G TIE INFORMATION		000	16	
No. Distance (ft)	Dir.	From Permanent Existing Fadure	No.	Distance (ft)	Oir.	From Permanent Existing Fixture	No.	Distance (ft)	Dir.	From Permanent Existing Fixtur
1 37.40	SW	Reclaimed Water Meter	2	42.90	SW	Air Vent	3	20.40	NE	Sewer MH
					HAND	SKETCH		***	-	
							MI			
		Para Se	A SEE			#	10 m			



No.	Utility	Size (in)	Material	Top Depth (ft)	Direction	Location	Surface
1	Reclaimed Water	8	PVC	4.80	N/S	North East of Old Temescal & Fullerton	Asphalt





Photo 2 Photo 1





Photo 3 Photo 4

Comments:



Utility Locating Radiography Potholing Mapping GPR



Date: Technician: Project Name: Project Address: C Below Project No.:

REPORT SUMMARY

u	E a			The same and the s	
No.¹	Utility	Material	Total Video Length (ft)	Pipe Size (in) ²	Line Condition
SCO 1	Sewer	PVC	256.70	4	Start of sitting water at 5.60 ft. Line filled with 20% capacity of water at 10.50 ft. Camera under water at 28.10 ft. unable to inspect line. End of sitting water a t 36.10 ft. Start of sitting water at 47.60 ft. Siting water at 73.20 ft. Camera under water at 109.40 ft. unable to investigate line. Sitting debris on line at 204.10 ft. Line drops at 256.70 ft. into SMH 4 unable to push past the acute angle.
SCO 2	Sewer	Steel	38.00	4	Line drops at 5.30 ft., Line drops at 38.00 ft. into SMH 7.
SCO 3 East	Sewer	PVC	223.20	6	Line turns left at 71.20 ft. SCO 3.1 lateral on right at 74.80 ft with left turn on line. SCO 3.2 lateral from above at 223.90 ft. line will be continue from 3.0 clean out.
SCO 3.2 North	Sewer	PVC	258.50	6	Clean out SCO 3.3 from above at 154.00 ft. Line drops SCO 3.4 at 258.50 ft.
SCO 3.4	Sewer	PVC	11.70	6	Lateral on right at SCO 3.4 drop to main. Debris and sitting water at entry point. Line is under SMH 7 at 11.70 ft.
SCO 5 South	Sewer	Steel	47.00	4	Line bends left at 18.60 ft. SCO 5 South drops into SMH 8 at 47.00 ft.
SCO6 North	Sewer	PVC	17.40	6	Minimum debris at bottom of line.
SCO6 South West	Sewer	PVC	135.40	4	Line turns left at 39.20 ft. Line into SCO 6.1 drop at 43.30 ft. SCO 6.2 from above at 103.50 ft. Line drops at 106.10 ft. Unable to push past 135.40 ft. will push from SCO 6.2.
SCO 7 South	Sewer	Steel	62.00	4	Debris at entry point. Line drops at 40.40 ft. Debris at 59.70 ft. Line drops into possible septic tank at 59.70 ft.
8	Sewer	Possible PVC	31.80	6	Line under water throughout. Unable to push past 31.80 ft.
	Sewer	Steel	372.70	4	Line turns right at 20.60 ft. Line turns right at 26.50 ft. SCO 10.2 from above at 41.60 ft. Line turns left at 41.90 ft. Lateral form top right at 52.10 ft. with right turn on line. Material changes from steel to PVC at 83.70 ft. Lateral from above at 92.90 ft. Line under water at 133.50 ft. with debris in line. SCO 10.3 lateral on left with right turn on line at 172.00 ft. Material change from PVC to Steel at 325.30 ft. SCO 10.40 on left at 327.70 ft. Unable to push past

¹See schematic for video insertion points.



No.	Utility	Material	Total Video Length (ft)	Pipe Size (in) ²	Line Condition
SCO 10.1 East	Sewer	Steel	372.70	4	Line turns right at 20.60 ft. Line turns right at 26.50 ft. SCO 10.2 from above at 41.60 ft.



Entry point overview



Typical clear line condition



Line turns right at 26.50 ft.



Entry point overview



Line turns right at 20.60 ft.



SCO 10.2 from above at 41.60 ft.

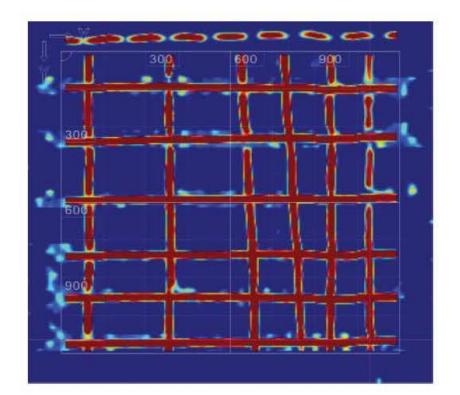




²Estimated pipe sizes are based on visual observations made during video inspection and may vary.

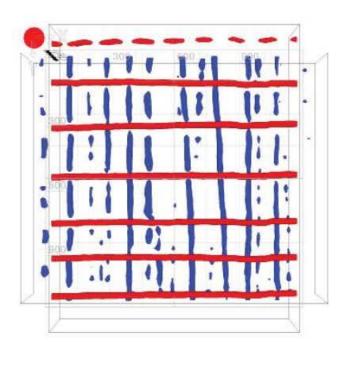
No.	Grid Size	Spacing X Direction (Blue)	Layers X Direction	Spacing Y Direction (Red)	Layers Y Direction	Notes
14	48x48"	6-12"	1	6-12"	1	Single layers noted in each direction. May cause shadowing of layers below.

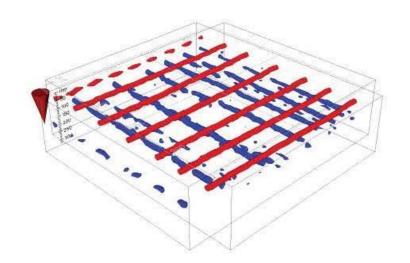




Field Location

2D Scan





3D Top View

3D Diagonal Front/Left



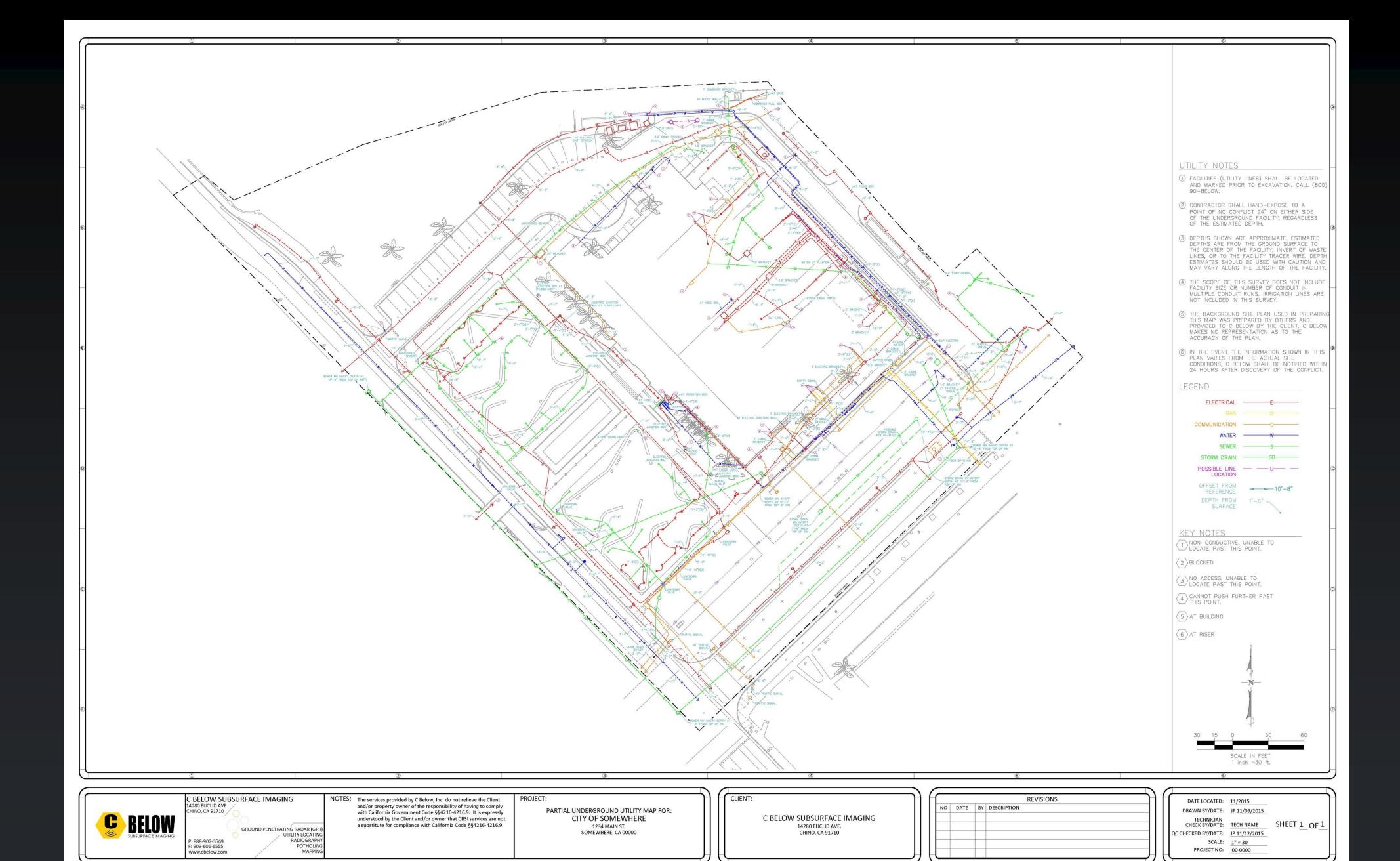


HANDHELD GPR 3D SCANNING

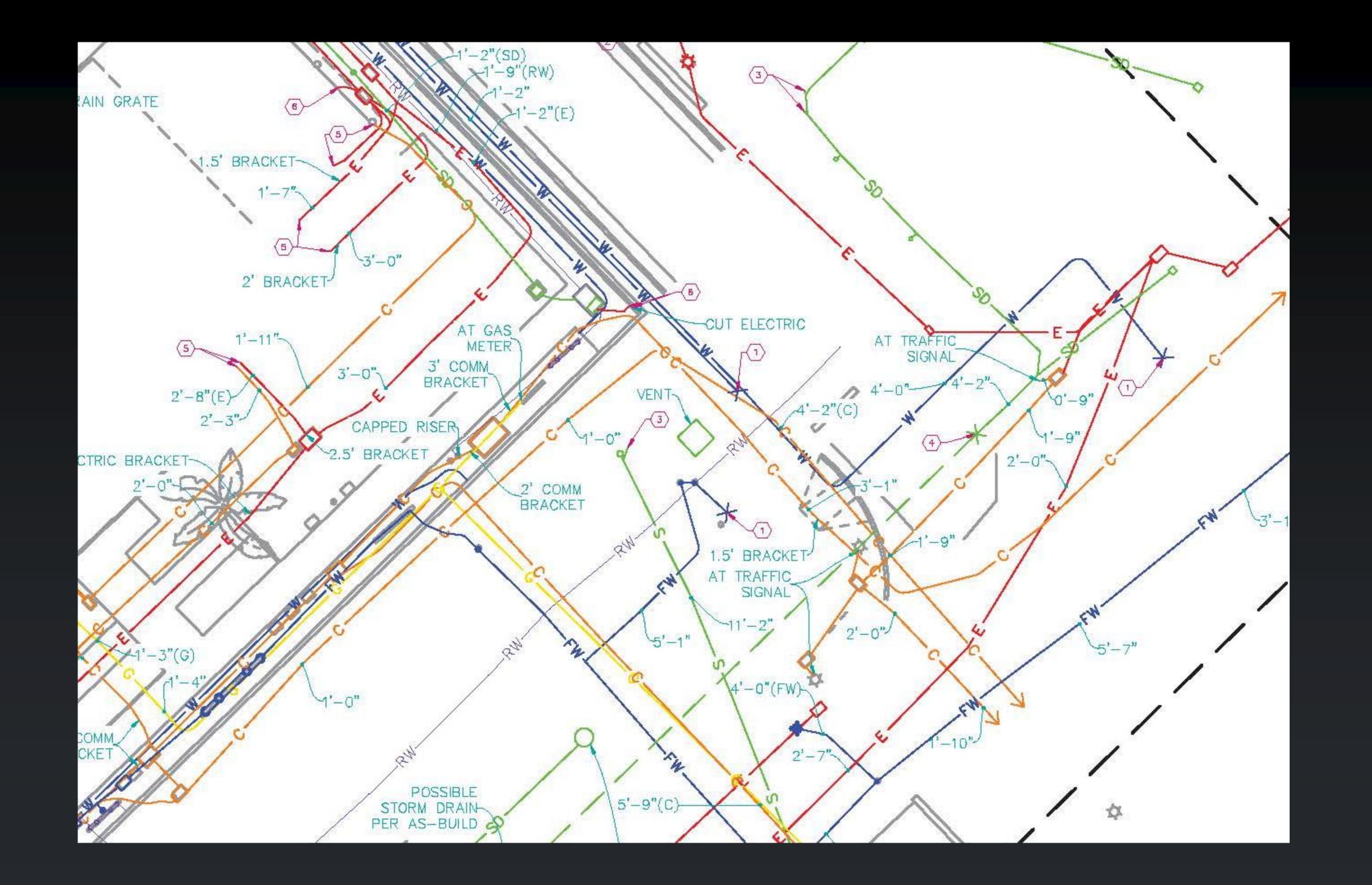


3D MAPPING











ADDITIONAL SERVICES











TRAFFIC CONTROL & PLANS

CITY / COUNTY / CALTRANS PERMITTING

HANDHELD GPR | LOCATE REBAR / PT

ADDITIONAL SURVEY CAPABILITIES











SCHOOLS WHERE SERVICES WERE PERFORMED

COMMUNITY COLLEGES

Long Beach City College Santa Ana College Fullerton College Glendale Community College San Bernardino Valley College Cerritos College Orange Coast College

PRIVATE COLLEGES

Pierce College Chaffey College California Baptist University Biola University Pepperdine University University of Southern California













CA UNIVERSITIES

UC Los Angeles (UCLA) UC Riverside (UCR) UC Irvine (UCI) CSULA, CSUF, CSUDH, CSULB, CSUSB San Diego State University Cal Poly Pomona

SCHOOL DISTRICTS

Torrance USD William Hart USD Moreno Valley USD Chino Valley USD Riverside USD Pomona USD Pasadena USD Newport Mesa USD

Norwalk- La Mirada USD Redondo Beach USD Long Beach USD Los Angeles USD Alhambra USD Centinella Valley USD Santa Ana USD Garden Grove USD

CSU DOMINGUEZ HILLS



College of Business Administration and Public Policy

Locating, Mapping & Potholing 9 days Locating, 4 days Mapping, 20+ Potholes

Science & Innovation Building (Ongoing Project)

Locating, Mapping, & Potholing
3 days Locating, 1 day Mapping, 20 + Potholes

Student Housing Phase III

Locting & Mapping 3 days Locating, 2 days Mapping

Domestic Water & Fire Replacement

Locating & Mapping 5 day Locating, 3 days Mapping

MULTIPLE PROJECTS

CLIENTS: CSUDH, C.W. DRIVER, PCL











CSU LONG BEACH



MSX Utility Infrastructure Utility Investigation

Locating & Mapping

Over 30 days Locating, 12 days Mapping

Athletic Soccer & Softball Locker Room

Locating & Mapping

2.5 days Locating, 1 day Mapping

Track & Field Bleacher Improvement Project

Utility Locating

1/2 day Locating

PH2 Parking Lot E17 Utility Investigation

Locating & Mapping

1 day Locating, 1/2 day Mapping

MULTIPLE PROJECTS

CLIENTS: CSULB, SWINERTON BUILDERS, C.W. DRIVER











CALIFORNIA STATE UNIVERSITY - ADDITIONAL PROJECTS



CSU FULLERTON



CSU LOS ANGELES



CSU SAN BERNARDINO



SAN DIEGO STATE UNIVERSITY



CAL POLY POMONA



CSU NORTHRIDGE



BEFORE THE JOB

Contact C Below BDM

Confirm Scope & Exhibit

C Below provides a quote

CSU to provide Service Order

CSU sends CAD background file Project assigned to operations for scheduling

PROJECT MANAGEMENT

Regular Communication with CSU staff

Manages the schedule and workflow

Coordinate with onsite contact re access (e.g. keys to electrical rooms)

Technician reports sent daily



Quality Control Review

Deliverables Sent: Map, Report, DVD

HOW TO WORK WITH US WHAT TO EXPECT





AT GAS METER 3' COMM BRACKET

CAPPED RISER

2' COMM BRACKET

David Mintzer

Business Development Manager

Ground Penetrating Radar
CCTV Pipe Inspection
Utility Locating
Potholing
Mapping

Office: (888) 90-BELOW

ext. 220

Fax: (909) 606-6555 Mobile: (310) 953-2900

14280 Euclid Ave. Chino, CA 91710 dmintzer@cbelow.com www.cbelow.com





Based on the information shared, how many projects are coming up in the next 12 months on your campus where utility locating services would be useful?

Question & Answers