



DESIGN REQUIREMENTS FOR FIRE SERVICE 3-INCH AND LARGER AND BACKFLOW ASSEMBLY INSTALLATION

1. Installation shall be in accordance with the Water Agency Standards (WAS) www.sdwas.com
2. A pre-construction meeting with the District is required prior to installation
3. Any installation of District facilities without the benefit of District inspection is subject to rejection and removal
4. Provide a plan view drawing on 8.5 X 11 sheet showing the following:
 - ✓ Pipe layout including pipe size, type, and class
If steel pipe is used, additional submittals may be required
 - ✓ Location and degree of angle for all bends
Thrust/anchor blocks required for all bends, reducers, etc.
 - ✓ Location and size of all thrust/anchor blocks. Design thrust/anchors per WAS

VOLUME 1 - DESIGN GUIDELINES

SECTION 5.0 WATER PIPELINE DESIGN

5.2 Thrust Restraint and Anchor Blocks

VOLUME 2 - STANDARD SPECIFICATIONS

DIVISION 03 CONCRETE

Section 03000 Cast-in-Place Concrete

- ✓ Right-of-Way/Property Lines and Assessor Parcel Number (APN)
 - ✓ Location of assembly in relation to RW/PL, sidewalks, driveways, etc
 - ✓ Registered Engineer Stamp
 - ✓ If pipe installation requires changes in vertical alignment, provide a profile view showing the above bulleted items
 - ✓ A profile view may be required at the District engineer's discretion
5. Use and call out the following WAS standard drawings

VOLUME 3 - STANDARD DRAWINGS

BACKFLOW PREVENTION DETAILS

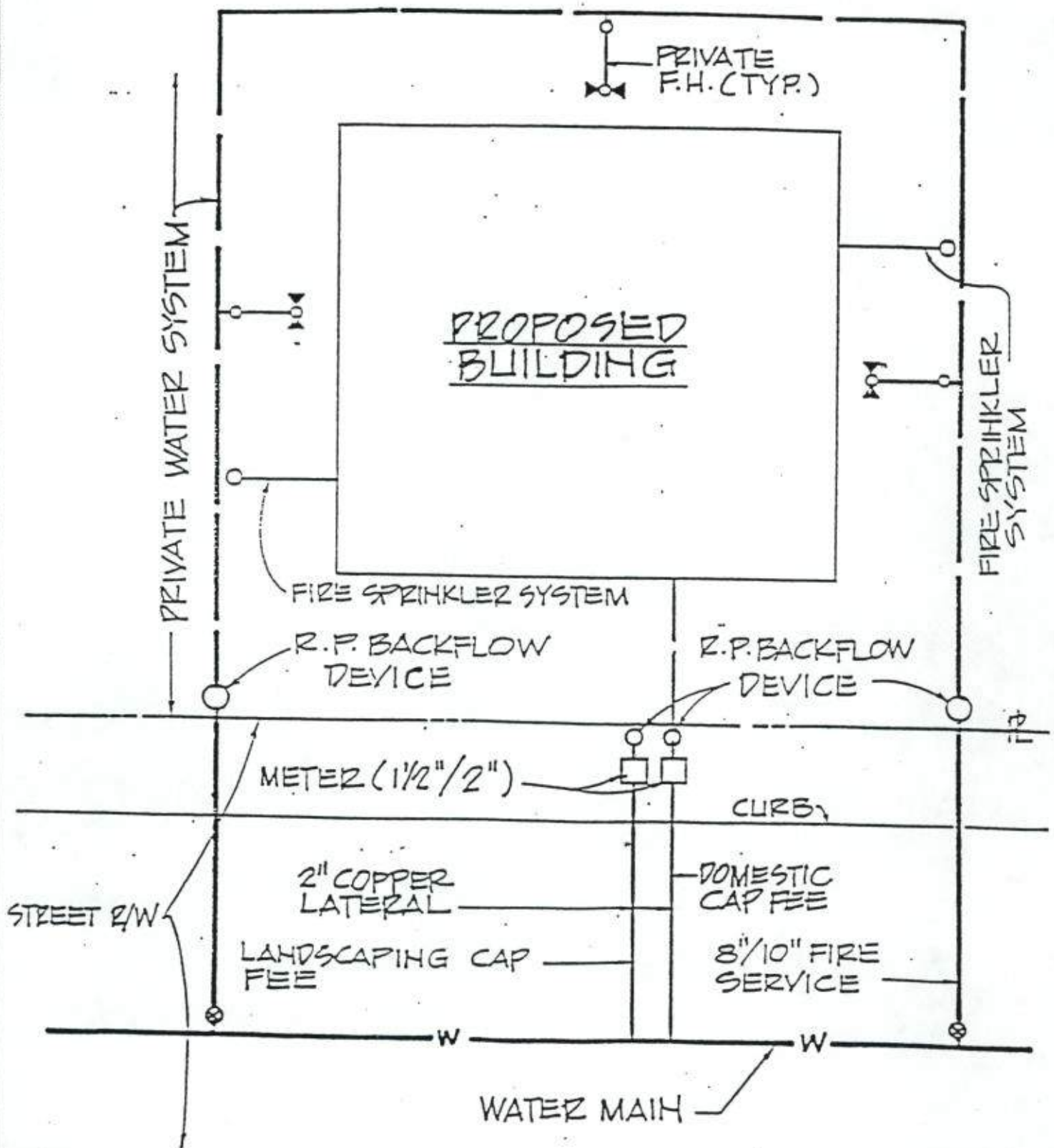
- | | |
|-------|--|
| WR-01 | 19mm through 50mm (3/4" through 2")
Reduced Pressure Backflow Prevention Device |
| WR-02 | 75mm (3") and Larger
Reduced Pressure Backflow Prevention Device |

FIRE HYDRANT AND FIRE SERVICE DETAILS

- | | |
|-------|--|
| WF-05 | 100mm (4") and Larger Fire Service Installation (1 of 2)
100mm (4") and Larger Fire Service Installation Notes (2 of 2) |
|-------|--|

If you have any questions please call Public Services at (619) 670-2241 or e-mail pscounter@otaywater.gov.

SAMPLE
Commercial Fire Service_Backflow Installation Exhibit

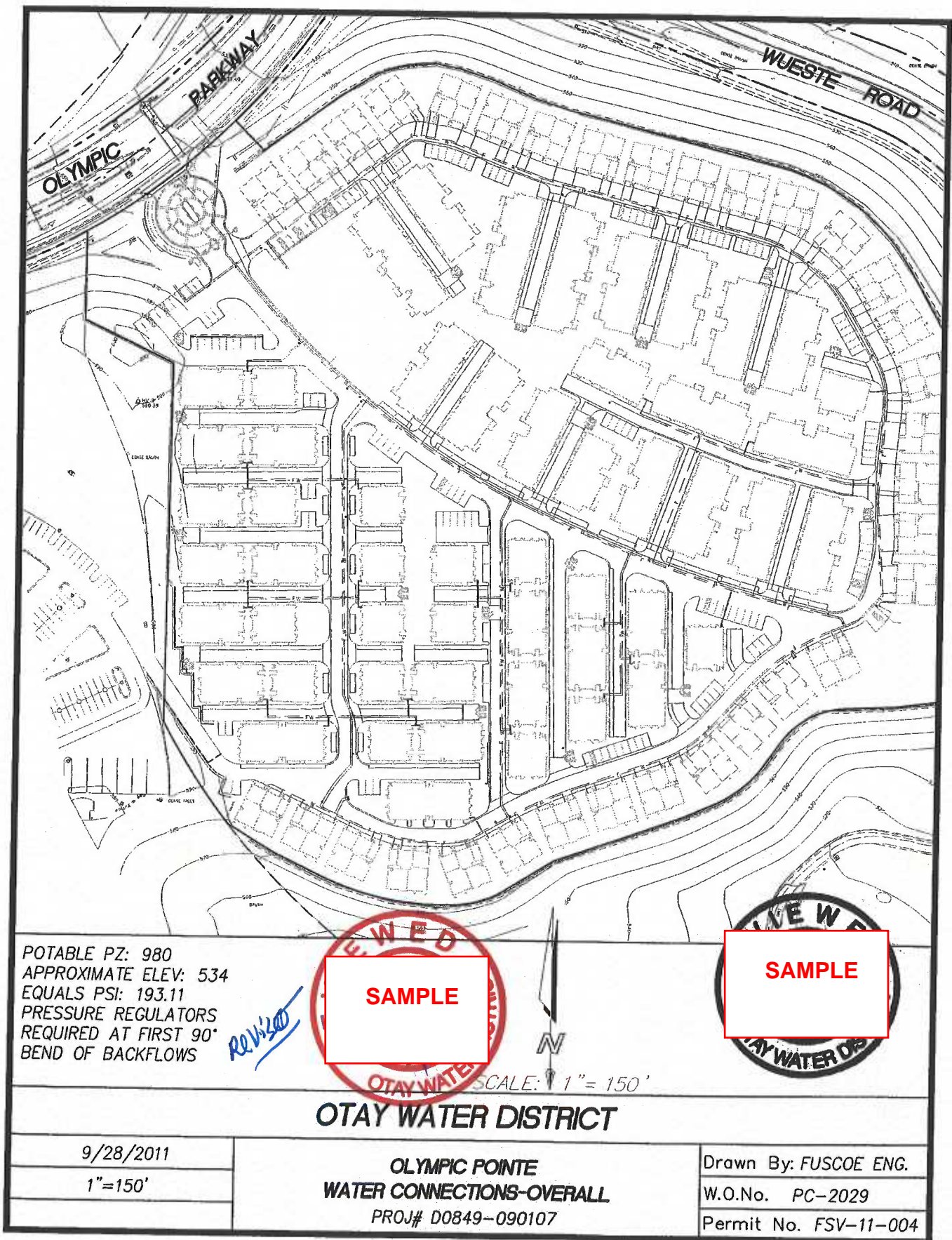


Engineering
Department

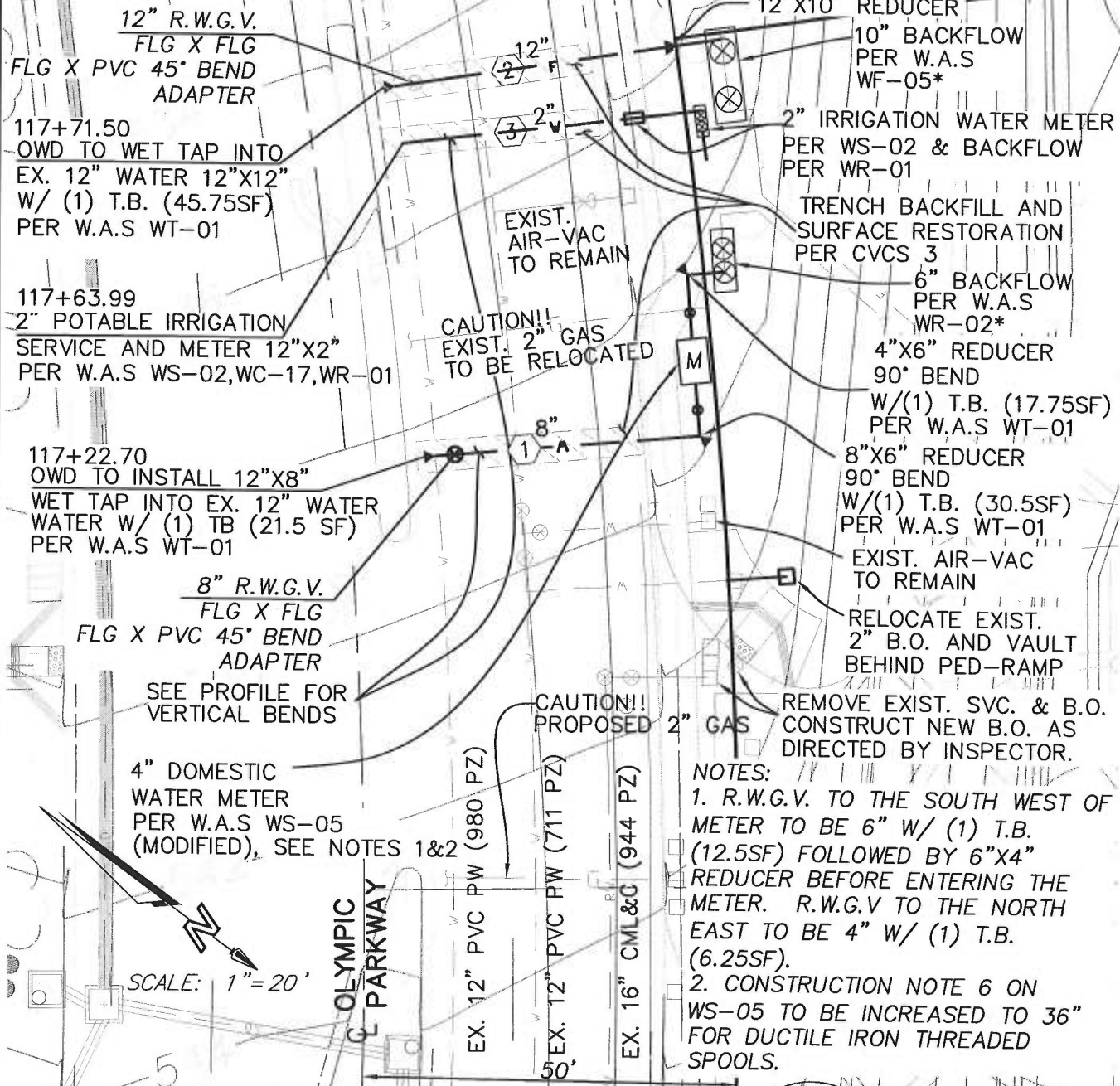
COMMERCIAL/INDUSTRIAL FIRE
SERVICE INSTALLATION

Fig.
1

SAMPLE
MULTI-RESIDENTIAL EXHIBIT



SAMPLE MULTI-RESIDENTIAL EXHIBIT



WATER 305 DR-14 C900

NO.	DELTA/BRG	RADIUS	LENGTH	REMARKS
①	N41°00'46"W	--	35.46'	8" PVC
②	N44°47'41"W	--	44.05'	12" PVC
③	N42°50'28"W	--	43.66'	2" COPPER

*NOTE: BACKFLOW ASSEMBLY TO USE AN ANGLE PRESSURE REDUCING VALVE IN LIEU OF FIRST 90° BEND PER WF-05/WR-02/WR-01.
ALL FITTINGS TO BE FROM W.A.S. APPROVED MATERIALS LIST



WATAY WATER DISTRICT

01/26/2012

1"=20'

SAMPLE

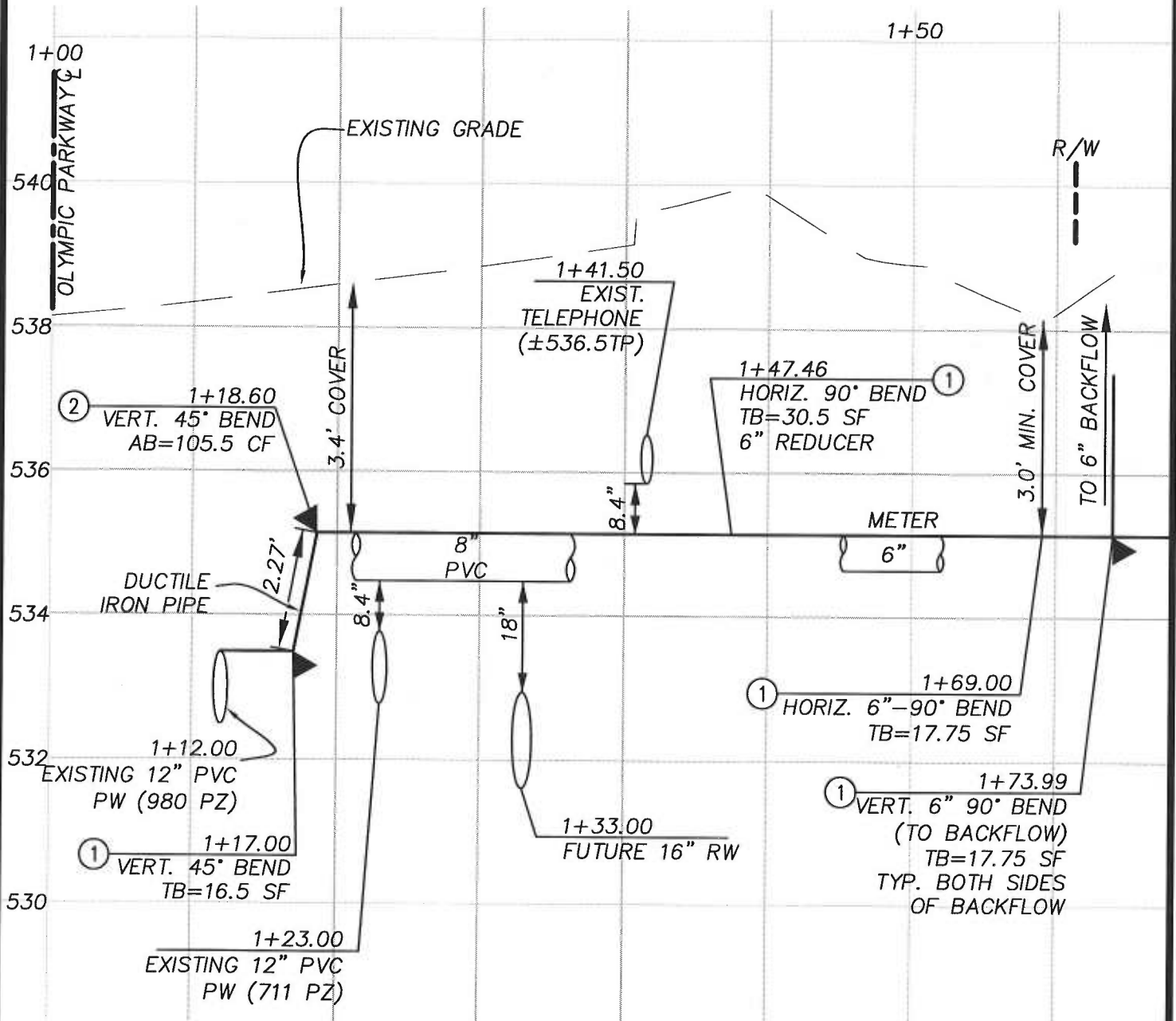
OLYMPIC POINTE
WATER CONNECTIONS
PROJ# D0849-090107

Drawn By: FUSCOE ENG.

W.O.No. PC-2029

Permit No. FSV-11-004

SAMPLE
MULTI-RESIDENTIAL EXHIBIT



NOTES:

- ① THRUST BLOCK PER WT-01
- ② ANCHOR BLOCK PER WT-01

SCALE:
HORIZ. 1"=10'
VERT. 1"=2'

SEE PLAN VIEW FOR HORIZONTAL BENDS

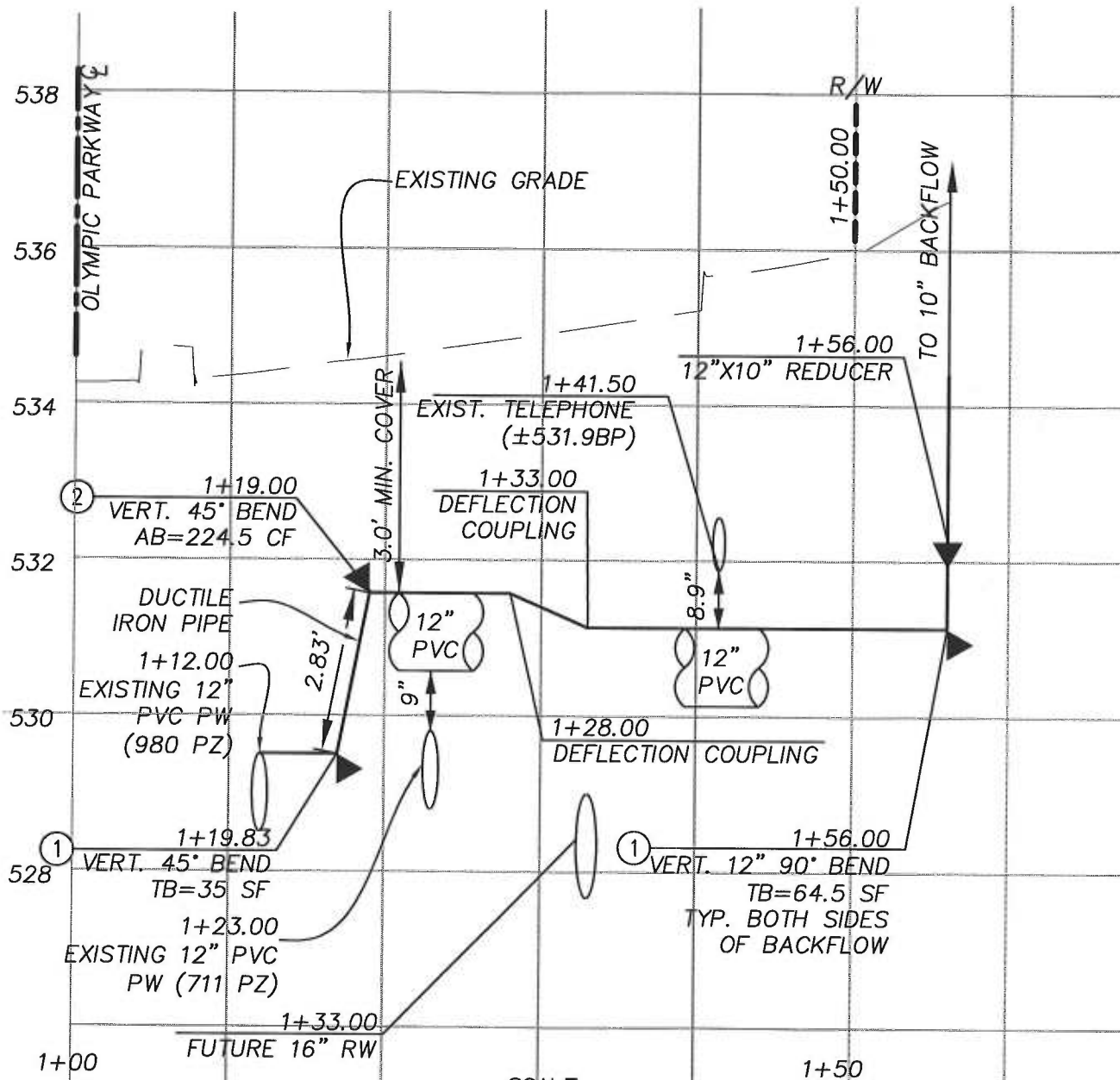
OTAY WATER DISTRICT

OLYMPIC POINTE
WATER CONNECTIONS-DOMESTIC
PROJ# D0849-090107

Drawn By: FUSCOE ENG.
W.O.No. PC-2029
Permit No. FSV-11-004



**SAMPLE
MULTI-RESIDENTIAL EXHIBIT**



NOTES:

- ① THRUST BLOCK PER WT-01
- ② ANCHOR BLOCK PER WT-01

SCALE:
HORIZ. 1"=10'
VERT. 1"=2'

SEE PLAN VIEW FOR HORIZONTAL BENDS

OTAY WATER DISTRICT

01/31/2012

1"=10'

**OLYMPIC POINTE
WATER CONNECTIONS-FIRE
PROJ# D0849-090107**

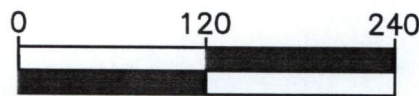
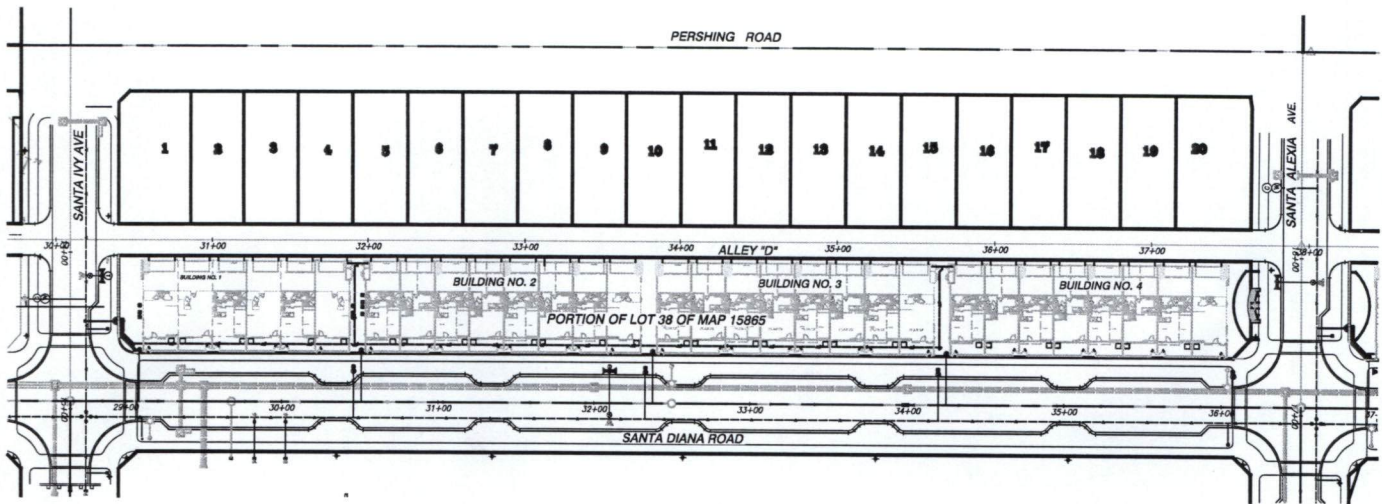
Drawn By: FUSCOE ENG.

W.O.No. PC-2029

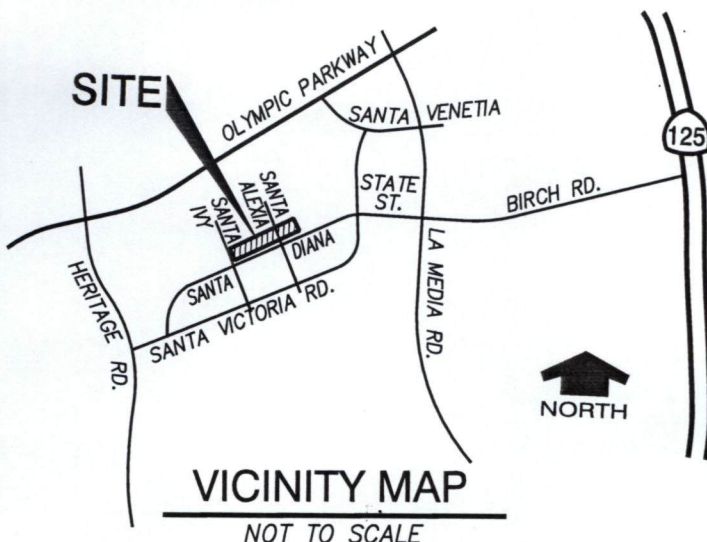
Permit No. FSV-11-004

SAMPLE

SAMPLE
MULTI-RESIDENTIAL FIRE EXHIBIT



SCALE: 1"=120'



WET TAP CONNECTION NOTE:

ALL WET TAP CONNECTIONS TO EXISTING PIPELINES, WHETHER FOR MAINLINE EXTENSION OR SERVICE LATERALS, SHALL BE PERFORMED BY THE DISTRICT. THE CONTRACTOR SHALL FURNISH THE TAPPING SLEEVE OR TEE, VALVES AND OTHER MATERIALS AS CALLED FOR IN THE STANDARD SPECIFICATIONS IN ACCORDANCE WITH THE APPROVED MATERIALS LIST. THE CONTRACTORS SHALL PROVIDE ALL EQUIPMENT AND LABOR REQUIRED FOR THE EXCAVATION AND INSTALLATION OF THE CONNECTION INCLUDING BUT NOT LIMITED TO THRUST BLOCKS, BACKFILL AND PAVEMENT REPLACEMENT.

PROJECT# D0921-090188, REF# FSV-14-004

OTAY WATER DISTRICT

OTAY RANCH VILLAGE 2, NEIGH. R-10

R.P.D.A. ASSEMBLY INSTALLATION

JUNE 19, 2014

SHEET 1 OF 3

J.N. L380-05



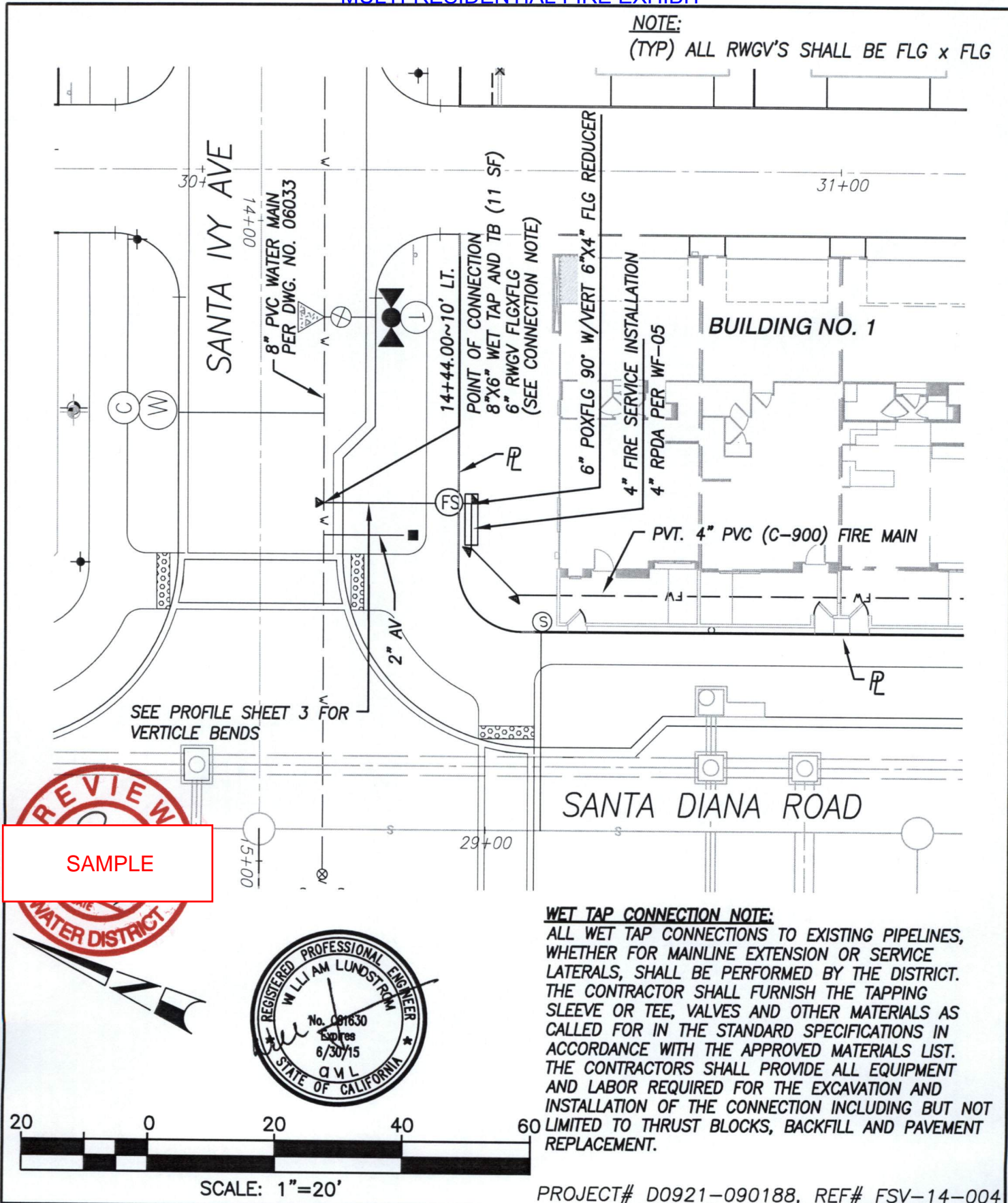
Lundstrom
Engineering and Surveying, Inc.

5333 Mission Center Road #115 • San Diego, CA 92108
Phone (619) 814-1220 • Fax (619) 641-5910

SAMPLE
MULTI-RESIDENTIAL FIRE EXHIBIT

NOTE:

(TYP) ALL RWGV'S SHALL BE FLG x FLG



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Phone (619) 814-1220 • Fax (619) 641-5910

OTAY RANCH VILLAGE 2, NEIGH. R-10

R.P.D.A. ASSEMBLY INSTALLATION

JUNE 19, 2014

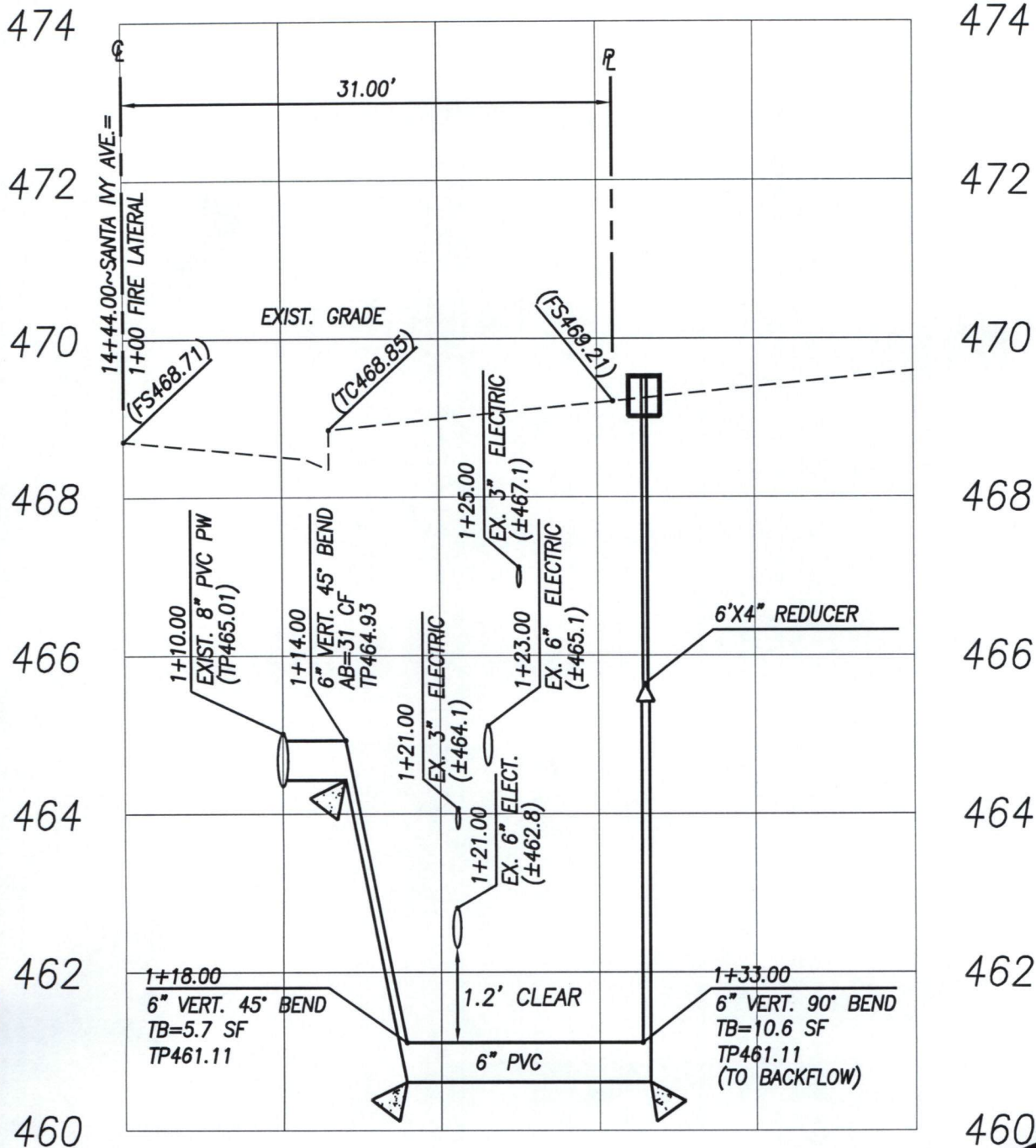
SHEET 2 OF 3

J.N. L380-05

**SAMPLE
MULTI-RESIDENTIAL FIRE EXHIBIT**

NOTE:

(TYP) ALL RWGV'S SHALL BE FLG x FLG



SCALE:
HORIZ.: 1"=10"
VERT.: 1"=2'

REVIEW
SAMPLE

PROFESSIONAL
SAMPLE
STATE OF CALIFORNIA

PROJECT# D0921-090188, REF# FSV-14-004

OTAY WATER DISTRICT

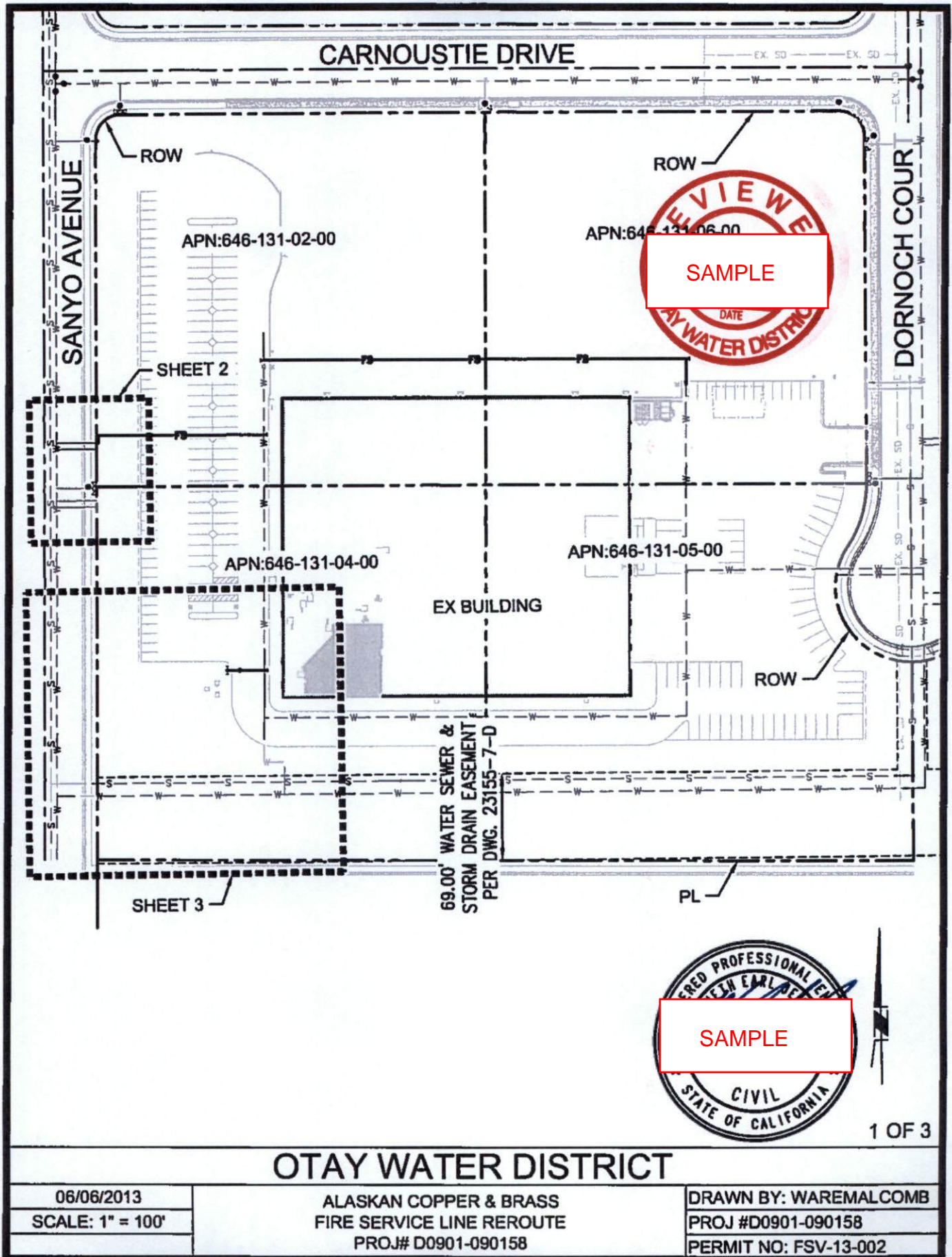
OTAY RANCH VILLAGE 2, NEIGH. R-10

R.P.D.A. ASSEMBLY INSTALLATION

JUNE 19, 2014

SHEET 3 OF 3

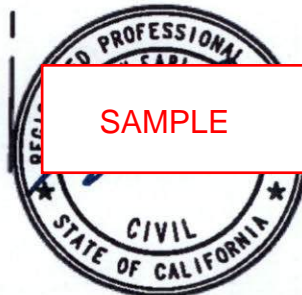
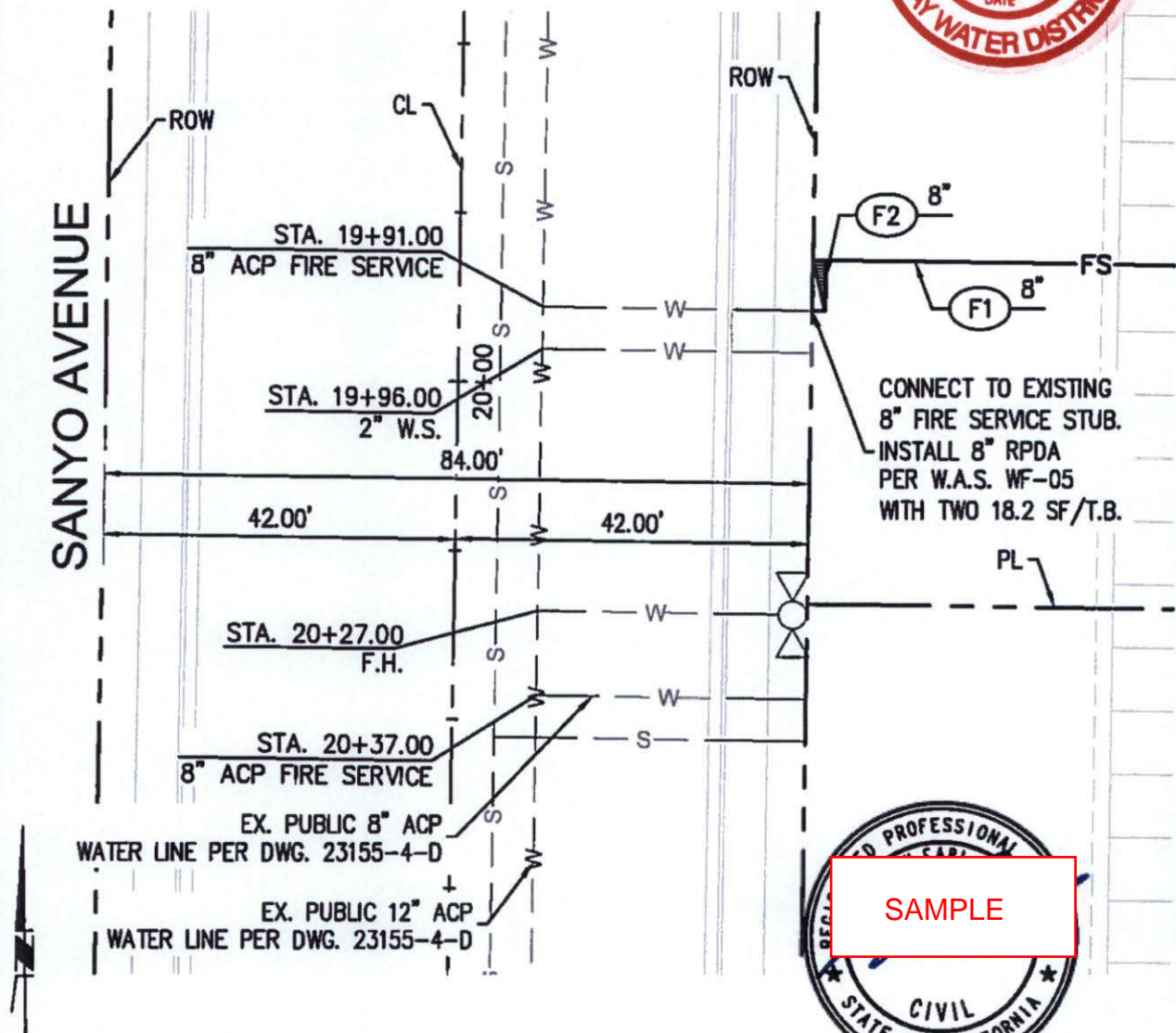
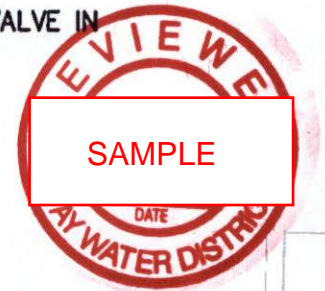
J.N. L380-05



PRIVATE IMPROVEMENTS:

- (F1) PVC (CL200) PIPE SIZE PER PLAN, (TRENCH BEDDING PER WP-02* MINIMUM COVER OVER PIPE IS 36")
- (F2) INSTALL BACK FLOW PREVENTER PER W.A.S. WF-05*

*NOTE: BACKFLOW ASSEMBLY TO USE AND ANGLE PRESSURE REDUCING VALVE IN LIEU OF FIRST 90° BEND PER WF-05/WR-02/WR-01.
ALL FITTINGS TO BE FROM W.A.S. APPROVED MATERIALS LIST.



2 OF 3

OTAY WATER DISTRICT

06/06/2013

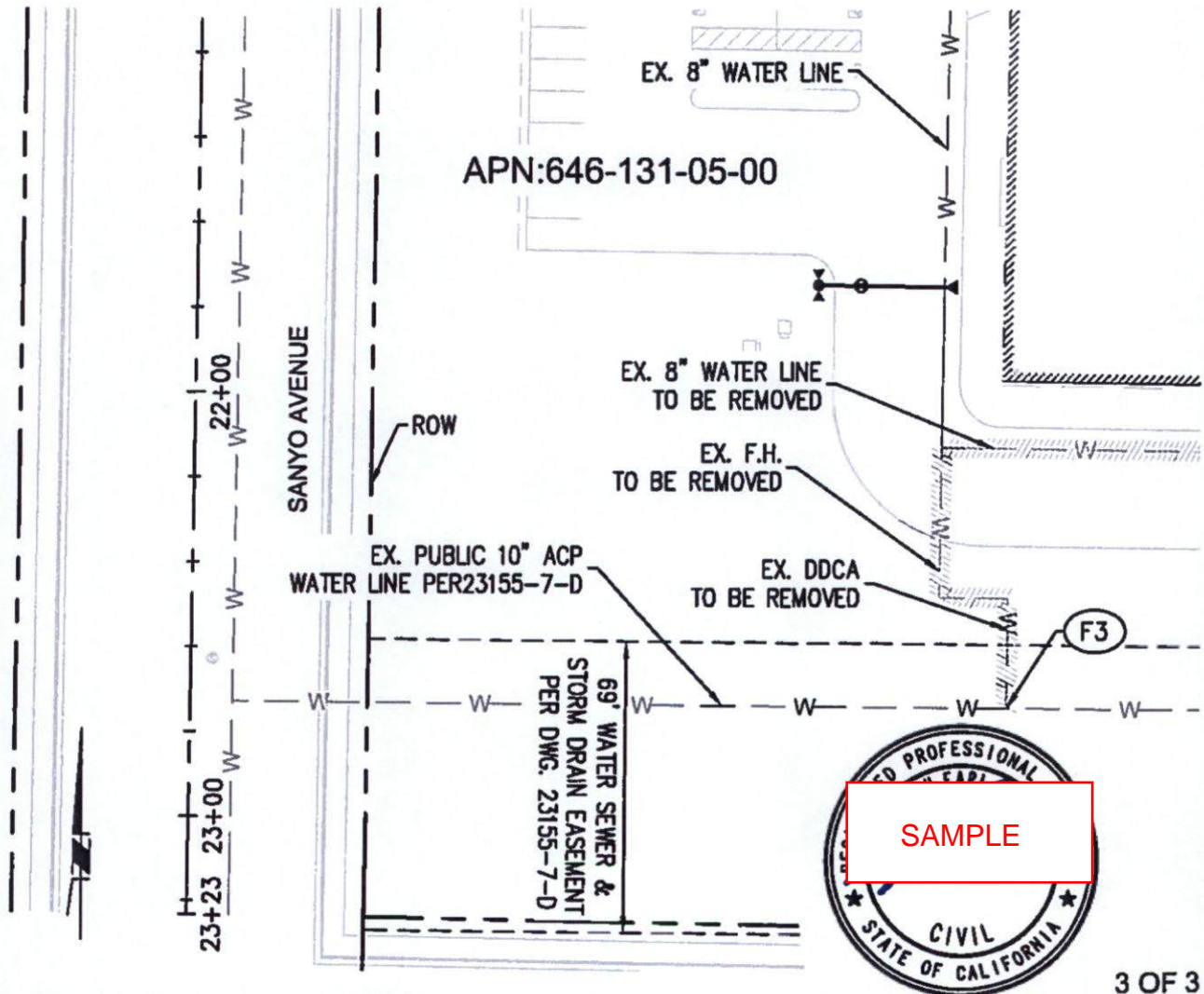
SCALE: 1" = 20'

ALASKAN COPPER & BRASS
FIRE SERVICE LINE REROUTE
PROJ# D0901-090158

DRAWN BY: WAREMALCOMB
PROJ #D0901-090158
PERMIT NO: FSV-13-002

DEMOLITION NOTE:

- (F3) EXISTING FIRE SERVICE TO BE DELETED AT THE FS LATERAL VALVE. INSTALL 8" BLIND FLANGE ON A 8"x8" VALVE OR A END CAP W/ 18.2 SF/T.B. ON THE C-900 FOR 8"x8" PO VALVE.



3 OF 3

OTAY WATER DISTRICT

06/06/2013

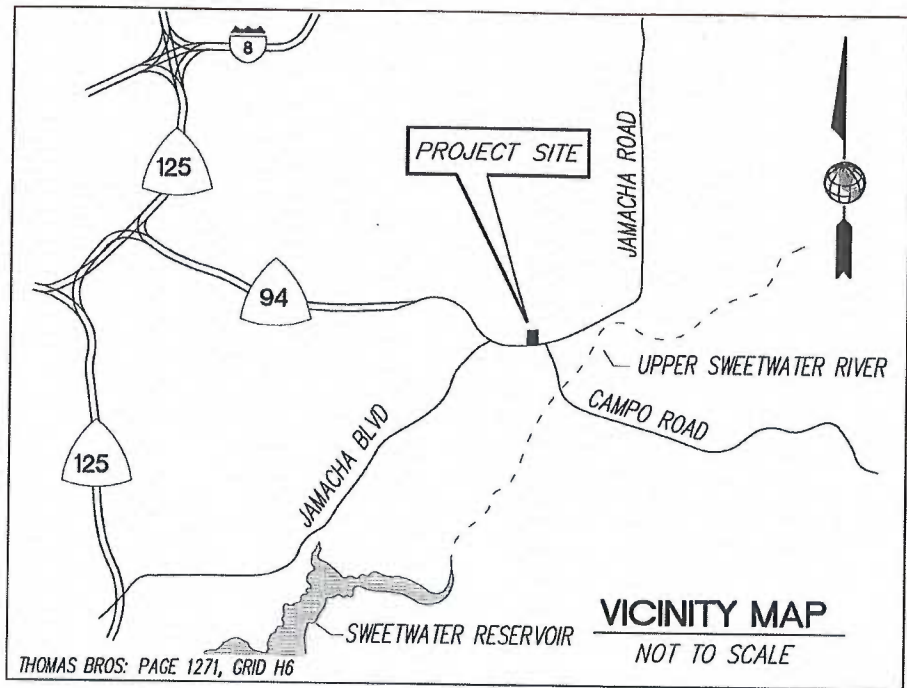
SCALE: 1" = 40'

ALASKAN COPPER & BRASS
FIRE SERVICE LINE REROUTE
PROJ# D0901-090158

DRAWN BY: WAREMALCOMB

PROJ #D0901-090158

PERMIT NO: FSV-13-002



OWNER INFO:

SAMPLE

SITE ADDRESS:

CAMPO RD.
SPRING VALEY, CA 91978

WATER SYSTEM INFO:

PRESSURE ZONE: 520 M.S.L.
APPROX. SITE ELE: 382-417' M.S.L.
APPROX. SITE PRESSURE: 55.0 PSI

X WATER DATA TABLE				
NO.	DELTA OR BRG.	RADIUS	LENGTH	DESCRIPTION:
1	N89°23'24"W	--	111.60'	10" PVC WTR C900 (DR14) CL200 LINE 'A'
2	N89°23'24"W	--	110.00	1" COPPER DOMESTIC WTR LAT. (WS-01)
3	N89°23'24"W	--	110.00'	1" COPPER IRRIGATION WTR LAT. (WS-01)
4	N89°23'24"W	--	107.50'	10" PVC WTR C900 (DR14) CL200 LINE 'B'



SAMPLE

ΩMEGA
ENGINEERING CONSULTANTS
9517 GROSSMONT SUMMIT DRIVE
LA MESA, CALIFORNIA 91941
PH: (619) 741-9456 FAX: (619) 664-4291

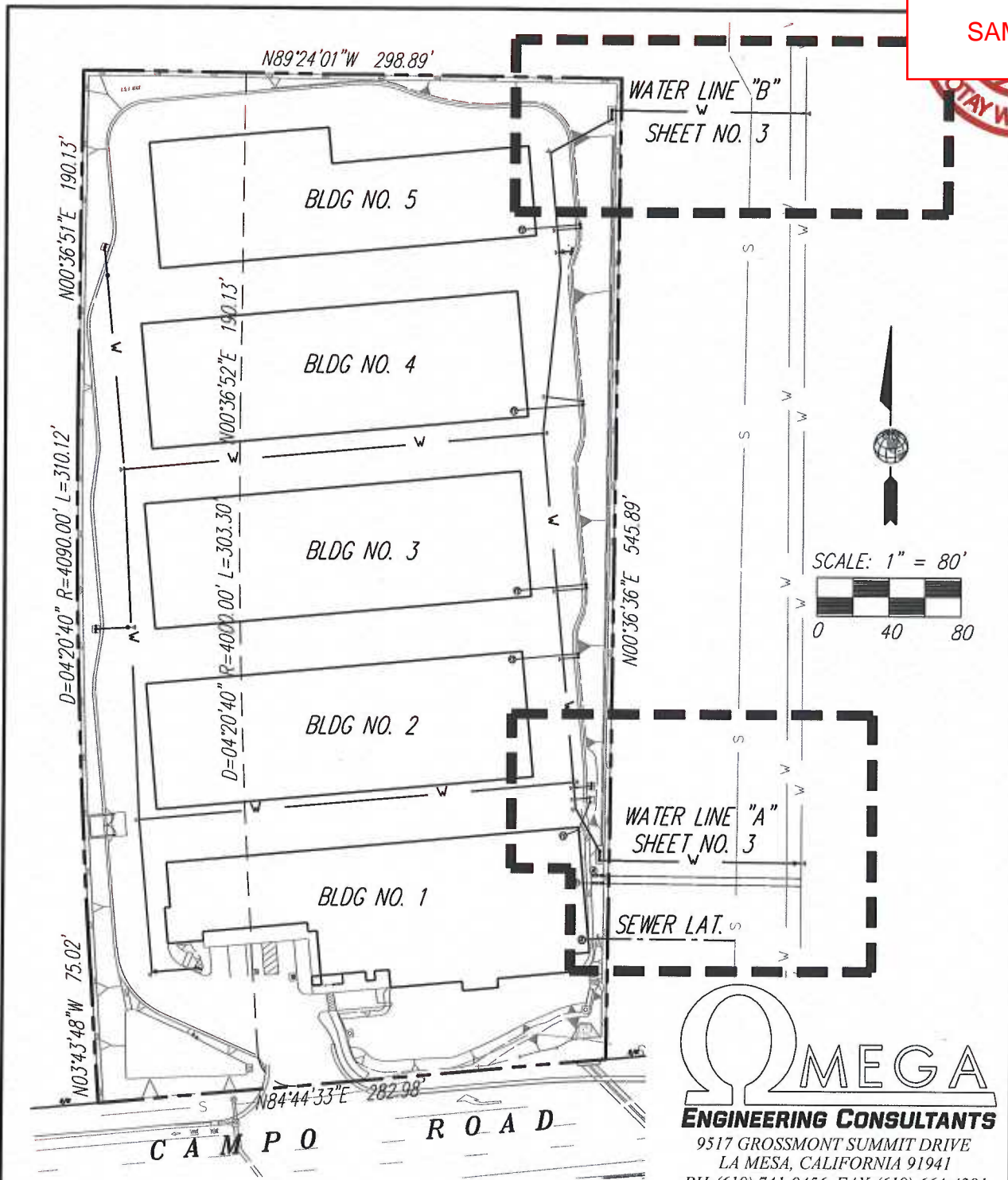
4/4/12
DATE

MY REGISTRATION EXPIRES 6-30-14

OTAY WATER DISTRICT

DATE: 06/14/2012	RANCHO SAN DIEGO SELF-STORAGE FIRE SERVICE CONNECTION	DRAWN BY: OMEGA ENGINEERING
APN: 506-010-62-00, 506-010-65-00		PROJECT NO: D0877-090128
SHEET 1 OF 7		REF. PERMIT NO: FSV-12-005

DATE: 6/14/2012 4:08:29 PM BY: SEAN FILENAME: P:\DWG\OMEGA\0184.RSD SELF STORAGE\OTAY SUBMITTAL\18407AY.DWG

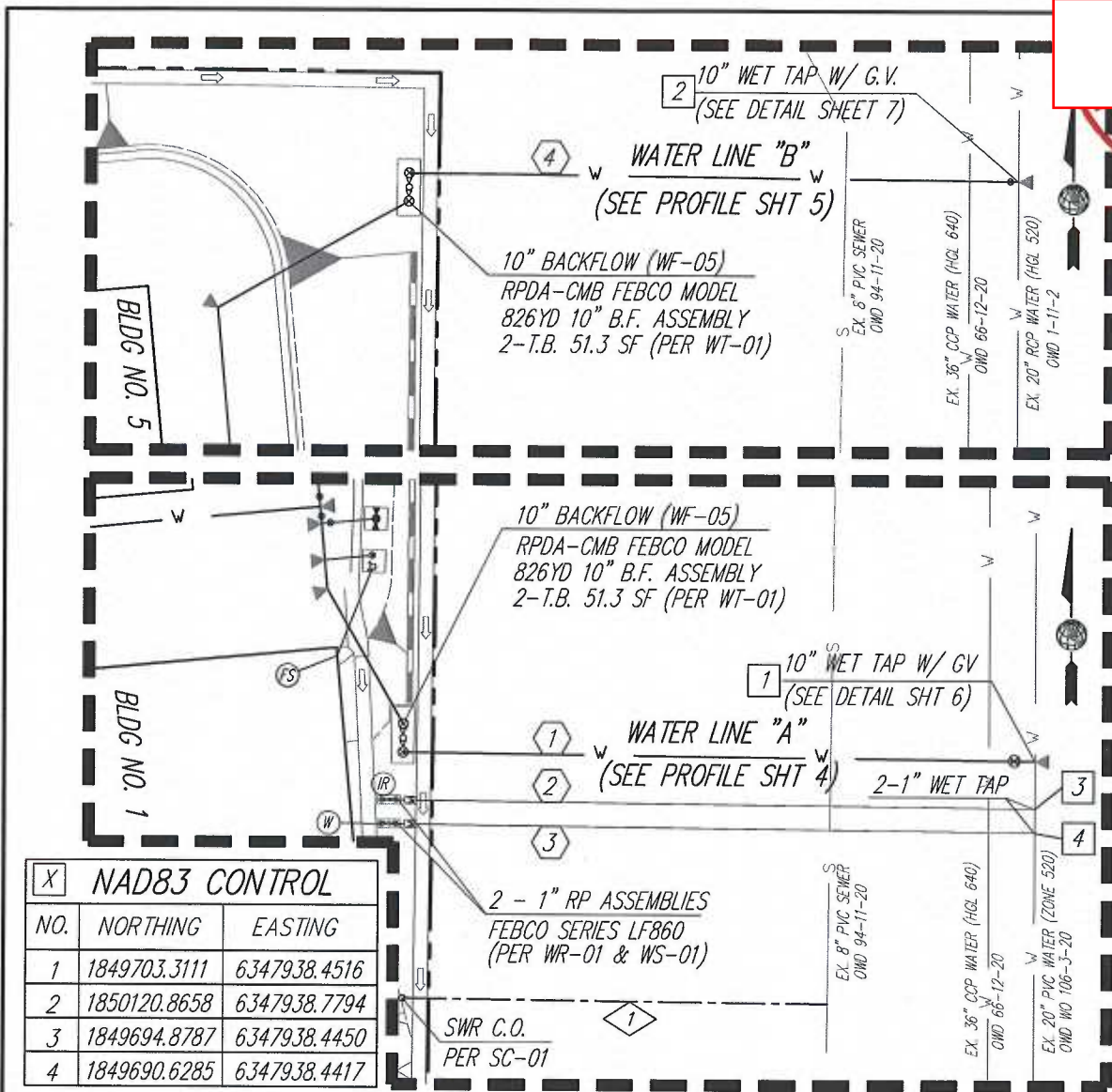


OMEGA
ENGINEERING CONSULTANTS
9517 GROSSMONT SUMMIT DRIVE
LA MESA, CALIFORNIA 91941
PH: (619) 741-9456 FAX: (619) 664-4291

OTAY WATER DISTRICT

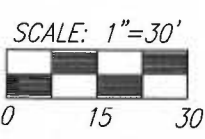
DATE: 06/14/2012	RANCHO SAN DIEGO SELF-STORAGE FIRE SERVICE CONNECTION	DRAWN BY: OMEGA ENGINEERING
APN: 506-010-62-00, 506-010-65-00		PROJECT NO: D0877-090128
SHEET 2 OF 7		REF. PERMIT NO: FSV-12-005

**SAMPLE
COMMERCIAL EXHIBIT**



X NAD83 CONTROL		
NO.	NORTHING	EASTING
1	1849703.3111	6347938.4516
2	1850120.8658	6347938.7794
3	1849694.8787	6347938.4450
4	1849690.6285	6347938.4417

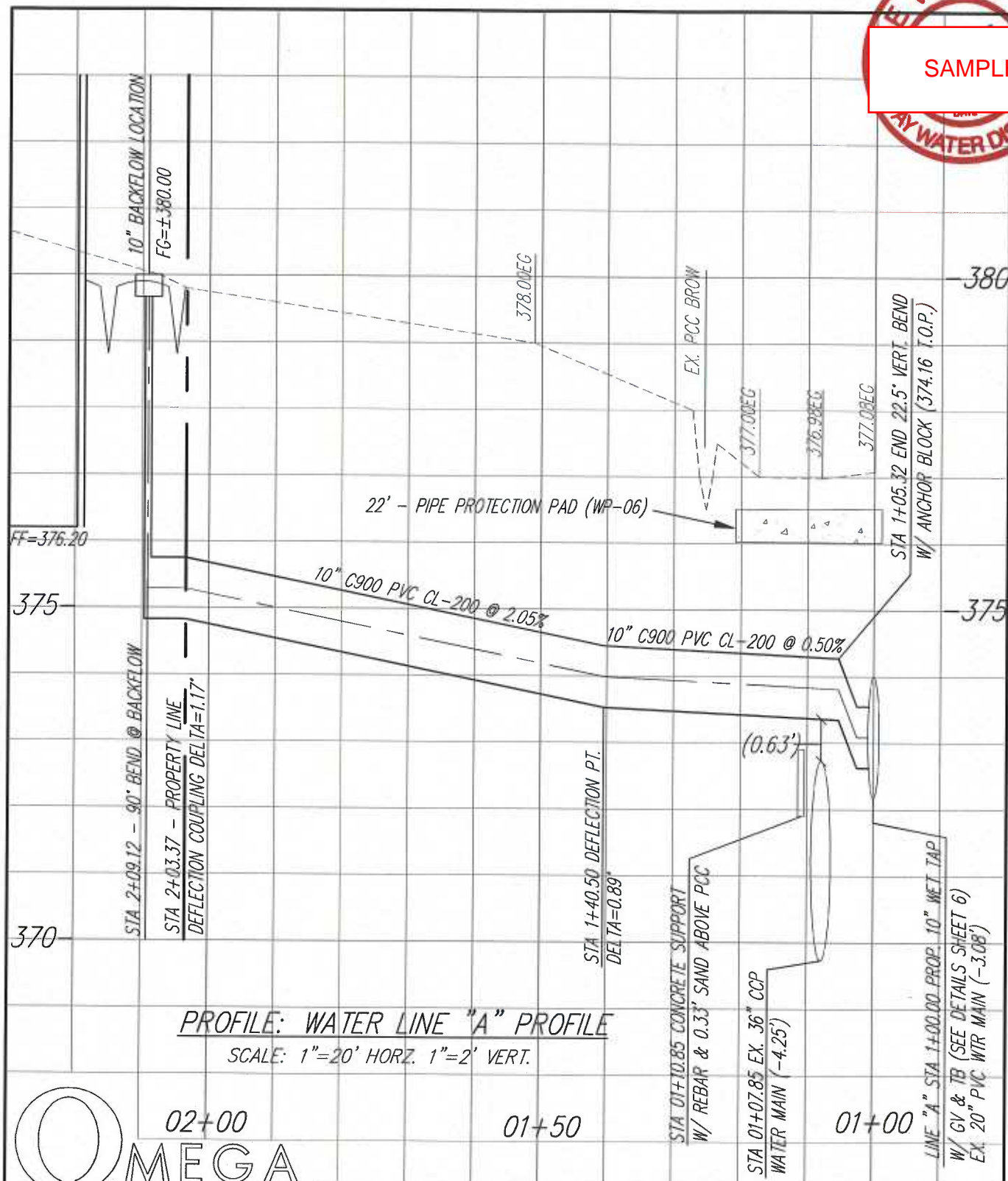
WET TAP CONNECTION NOTE:
 CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL, MATERIALS, SHORING, EXCAVATE FOR, POUR THRUST BLOCK, BACKFILL AND REPAIR/REPLACE ANY PAVEMENT/CONCRETE DISTURBED DURING THIS WORK. OTAY WATER DISTRICT SHALL PERFORM THE INSTALLATION OF THE SADDLE, VALVE, AND THE WET TAP OF THE EXISTING LINE ONLY. THIS WORK WILL BE PERFORMED AT THE CONTRACTORS EXPENSE. ALL OTHER WORK WILL BE PERFORMED BY THE CONTRACTOR.



X SEWER DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	REMARKS
1	N89°23'24"W	--	74.96'	4" SRD 35 SEWER LATERAL (SS-01 & SS-04)

OTAY WATER DISTRICT

DATE: 06/14/2012	RANCHO SAN DIEGO SELF-STORAGE FIRE SERVICE CONNECTION	DRAWN BY: OMEGA ENGINEERING
APN: 506-010-62-00, 506-010-65-00		PROJECT NO: D0877-090128
SHEET 3 OF 7		REF. PERMIT NO: FSV-12-005

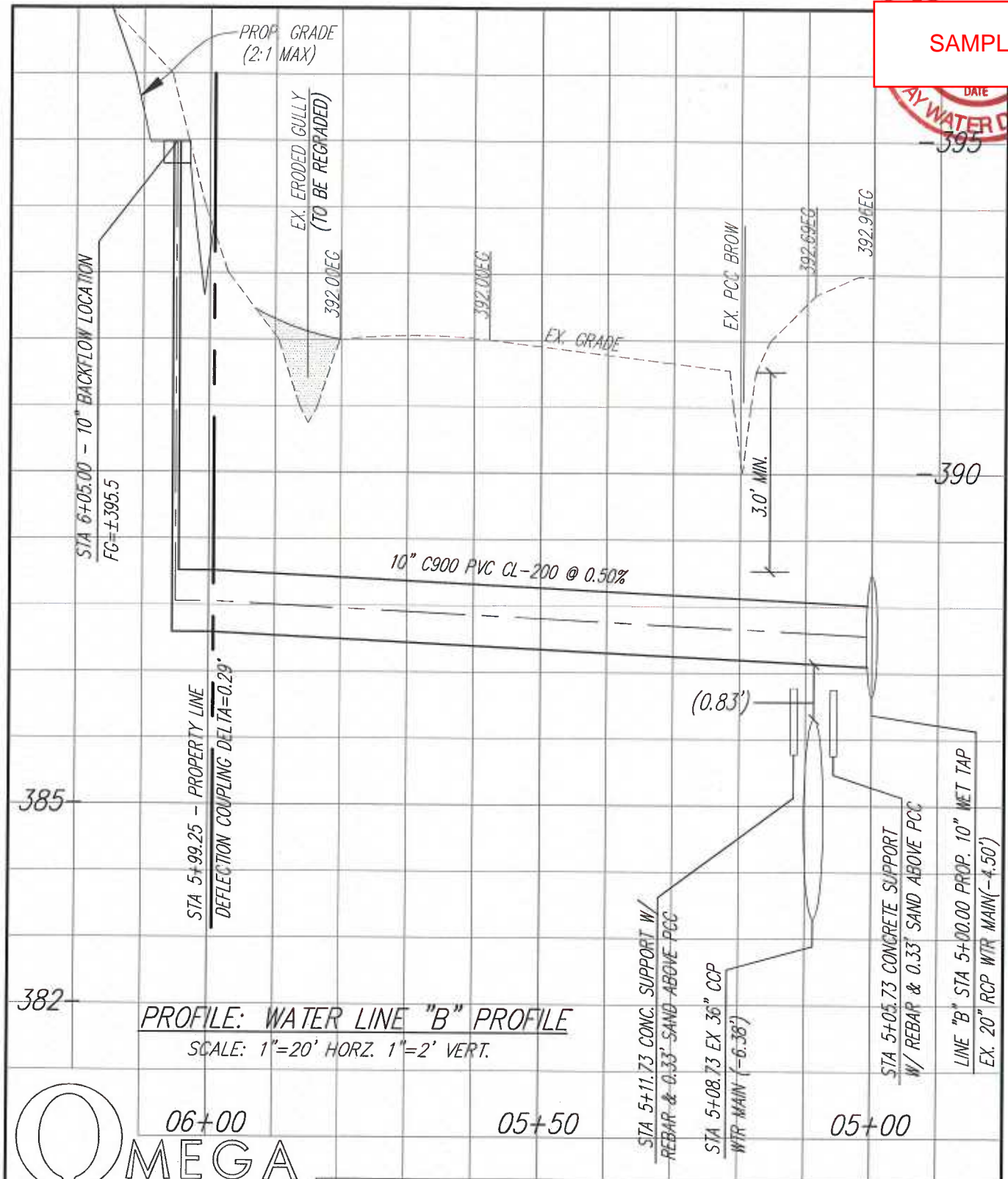


OTAY WATER DISTRICT

DATE: 06/14/2012
APN: 506-010-62-00, 506-010-65-00
SHEET 4 OF 7

RANCHO SAN DIEGO SELF-STORAGE
FIRE SERVICE CONNECTION

DRAWN BY: OMEGA ENGINEERING
PROJECT NO: D0877-090128
REF. PERMIT NO: FSV-12-005



OMEGA
ENGINEERING CONSULTANTS

OTAY WATER DISTRICT

DATE: 06/14/2012

APN: 506-010-62-00, 506-010-65-00

SHEET 5 OF 7

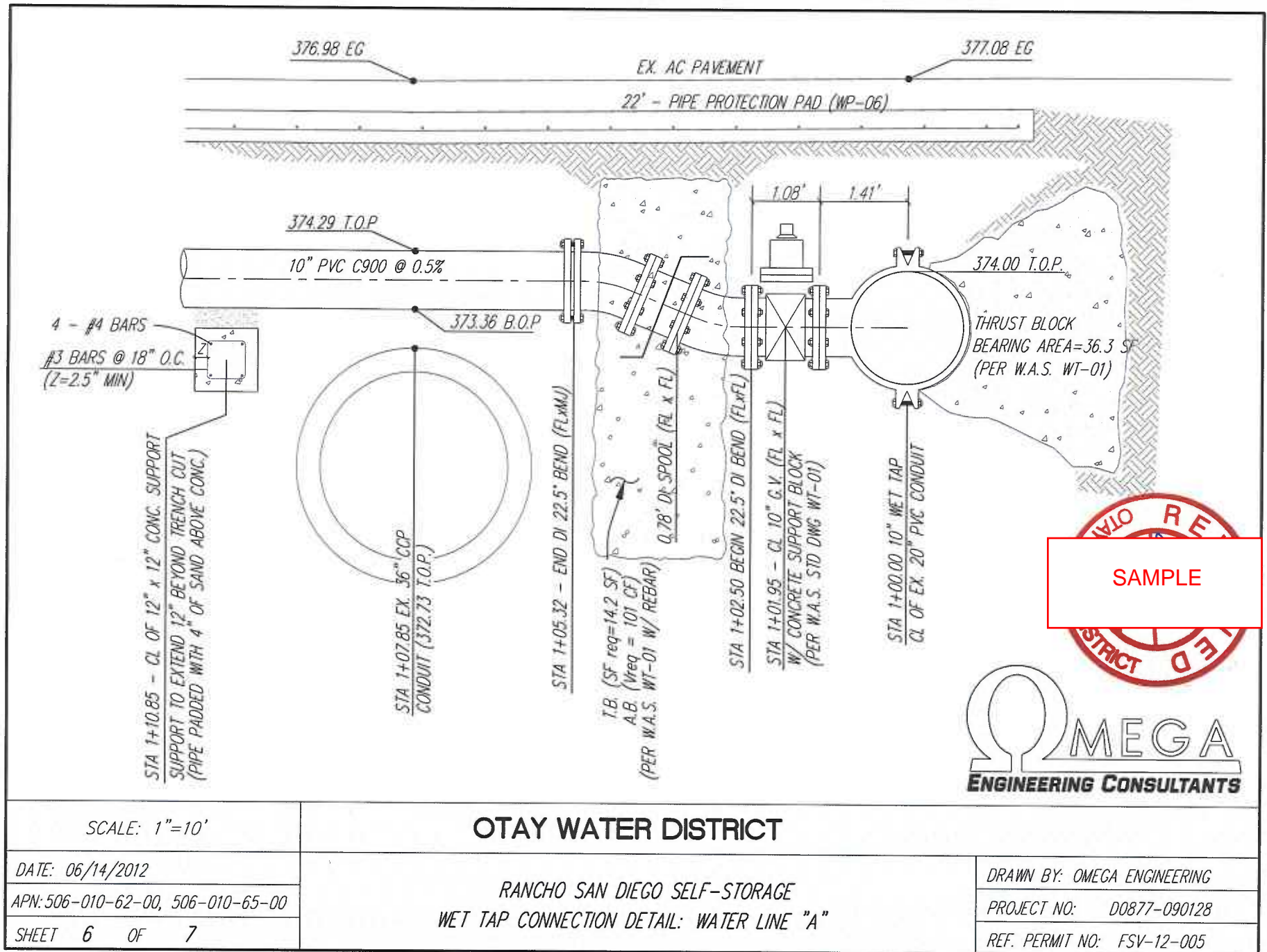
RANCHO SAN DIEGO SELF-STORAGE
FIRE SERVICE CONNECTION

DRAWN BY: OMEGA ENGINEERING

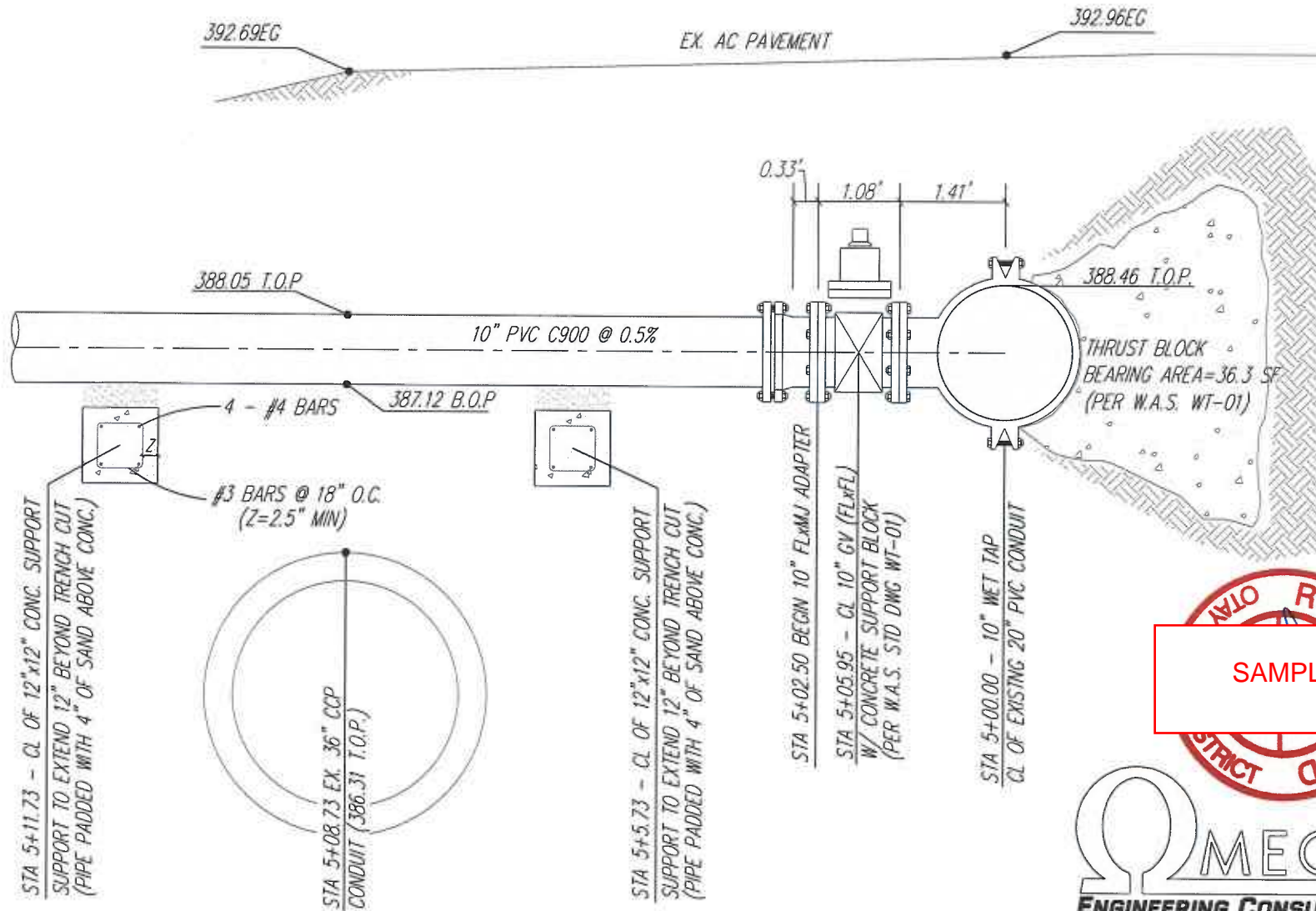
PROJECT NO: D0877-090128

REF. PERMIT NO: FSV-12-005

SAMPLE
COMMERCIAL EXHIBIT



SAMPLE
COMMERCIAL EXHIBIT



SCALE: 1"=10'

OTAY WATER DISTRICT

DATE: 06/14/2012

APN: 506-010-62-00, 506-010-65-00

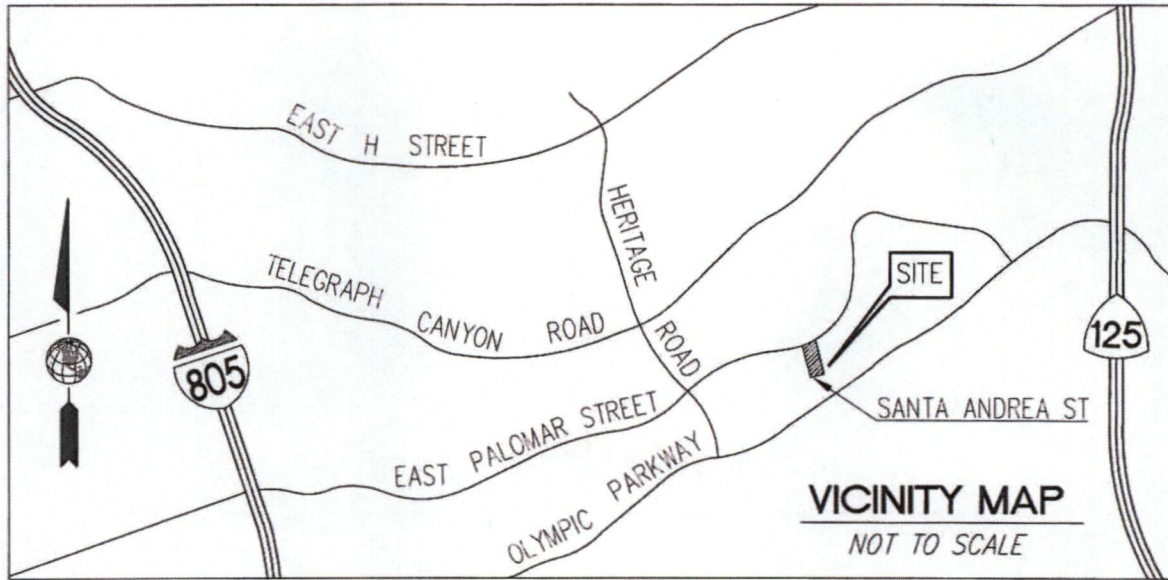
SHEET 7 OF 7

RANCHO SAN DIEGO SELF-STORAGE
WET TAP CONNECTION DETAIL: WATER LINE "B"

DRAWN BY: OMEGA ENGINEERING

PROJECT NO: D0877-090128

REF. PERMIT NO: FSV-12-005



OWNER INFO:

SAMPLE

SITE ADDRESS:

1420 EAST PALOMAR STREET
CHULA VISTA, CA 91913

POTABLE WATER SYSTEM INFO:

PRESSURE ZONE: 711

APPROX. SITE ELE: 498' M.S.L.

APPROXIMATE STATIC SITE PRESSURE: 89 PSI

UTILITY CONNECTION NOTE:

CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL, MATERIALS, SHORING, EXCAVATE FOR, POUR THRUST BLOCK, BACKFILL AND REPAIR/REPLACE ANY PAVEMENT/CONCRETE DISTURBED DURING THIS WORK. OTAY WATER DISTRICT SHALL PERFORM THE INSTALLATION OF THE SADDLE, VALVE, AND THE WET TAP OF THE EXISTING LINE ONLY. THIS WORK WILL BE PERFORMED AT THE CONTRACTORS EXPENSE. ALL OTHER WORK WILL BE PERFORMED BY THE CONTRACTOR.

SAMPLE



SAMPLE

SAMPLE

MY REGISTRATION EXPIRES 9-30-15



ENGINEERING CONSULTANTS

4340 VIEWRIDGE AVE, SUITE B
SAN DIEGO, CALIFORNIA 92123

Phone: (858) 634-8620

OTAY WATER DISTRICT

DATE: 04/28/2014

APN: 642-560-15

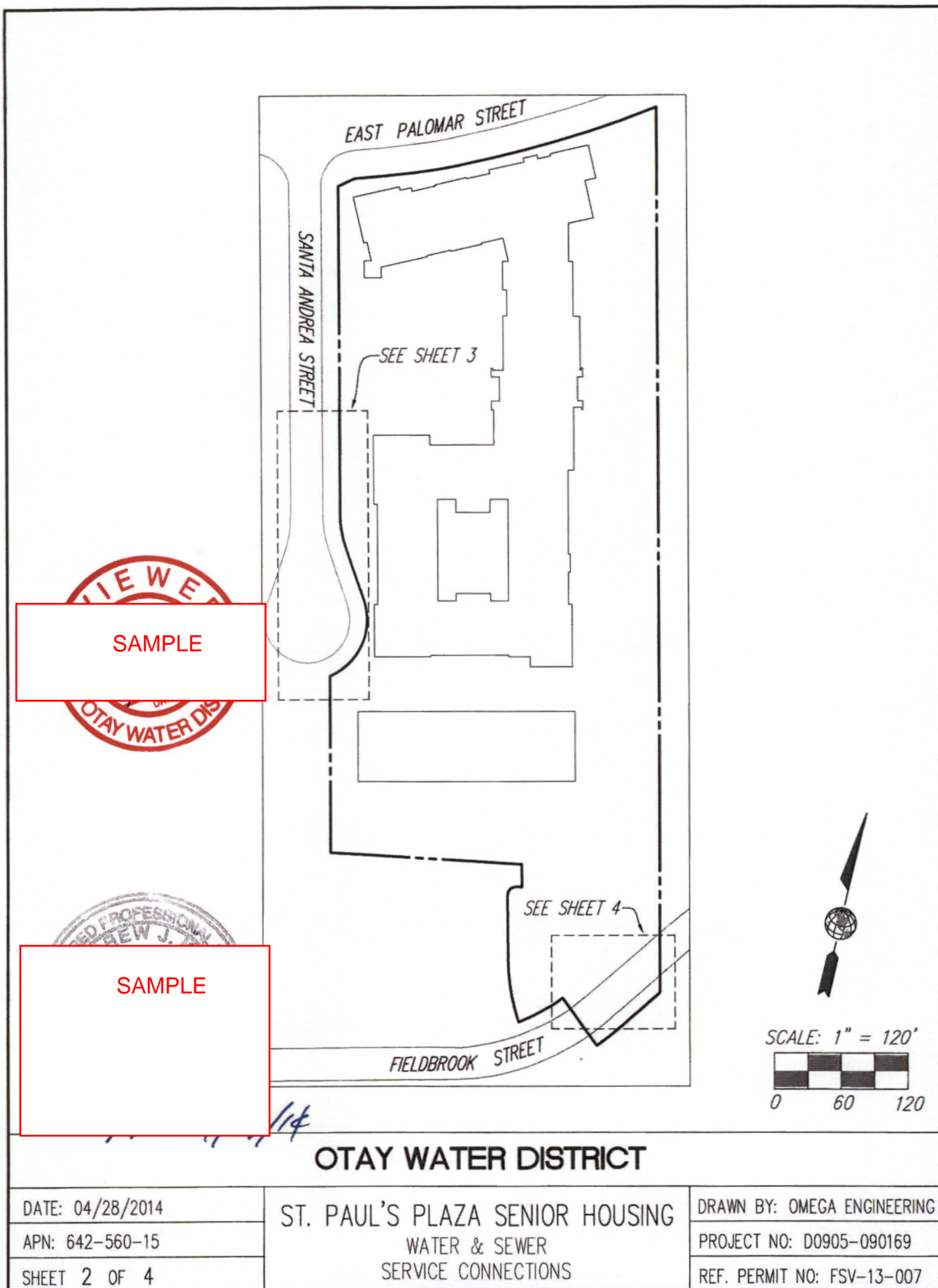
SHEET 1 OF 4

ST. PAUL'S PLAZA SENIOR HOUSING
WATER & SEWER
SERVICE CONNECTIONS

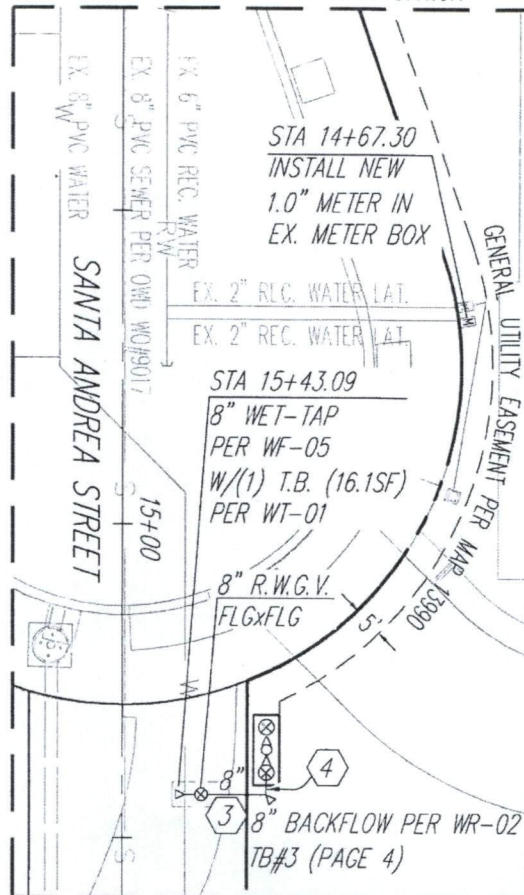
DRAWN BY: OMEGA ENGINEERING

PROJECT NO: D0905-090169

REF. PERMIT NO: FSV-13-007



SEE LOWER LEFT FOR CONTINUATION



WATER DATA TABLE			
NO.	DELTA OR BRG.	LENGTH	SIZE
1	N 76°29'23" E	41.50'	6"
2	N 76°29'23" E	39.00'	6"
3	N 76°29'23" E	13.00'	8"
4	N 13°30'37" W	3.50'	8"
MATERIAL: PVC WTR C900 (DR14) CL305			

SEWER DATA TABLE			
NO.	DELTA OR BRG.	LENGTH	SIZE
1	N 76°29'23" W	26.90'	8"
PIPE MATERIAL: PVC SDR 35			

RESTRAINT NOTE: RESTRAINT HARNESSES
REQUIRED AT EACH COUPLING ON DOMESTIC
LATERAL INCLUDING JOINT RESTRAINTS AT
GATE VALVE AND 90° BEND.

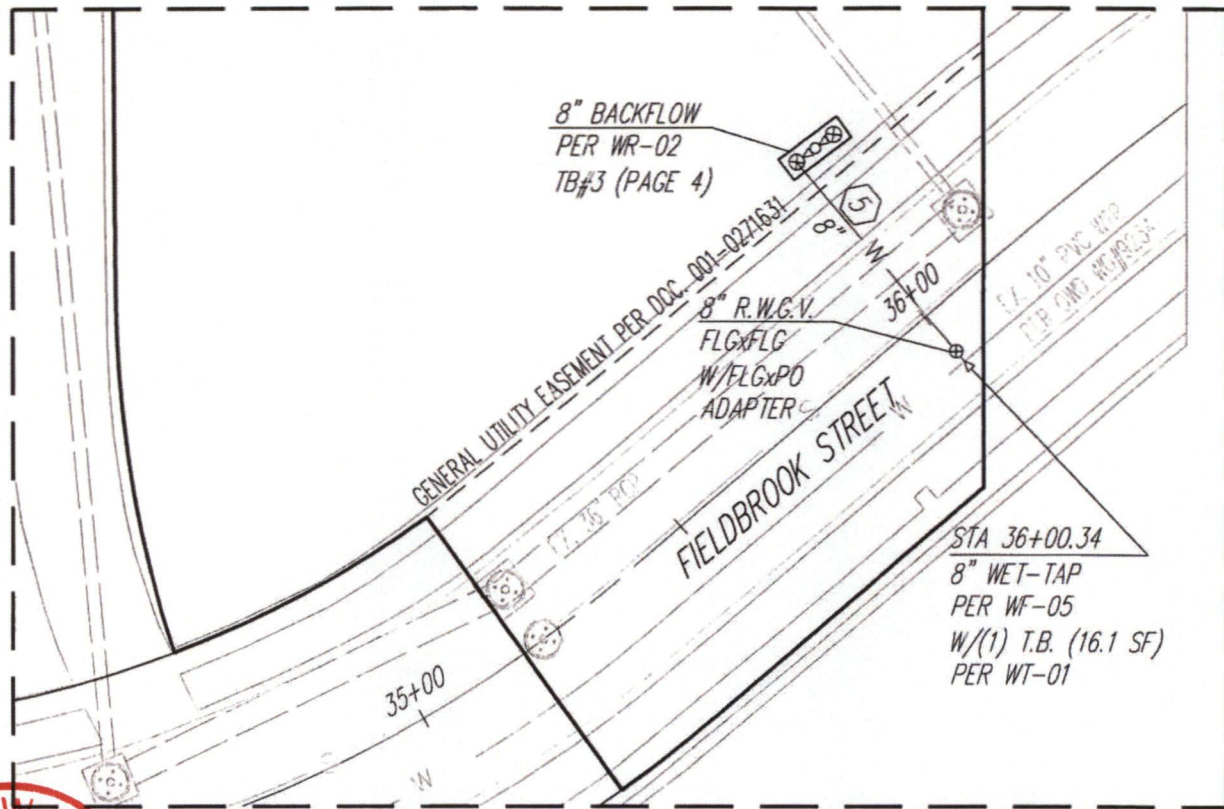
SCALE: 1" = 30'



OTAY WATER DISTRICT

ST. PAUL'S PLAZA SENIOR HOUSING
WATER & SEWER
3/11 SERVICE CONNECTIONS

DRAWN BY: OMEGA ENGINEERING
PROJECT NO: D0905-090169
REF. PERMIT NO: FSV-13-007



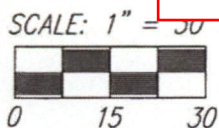
SAMPLE

WATER DATA TABLE			
NO.	DELTA OR BRG.	LENGTH	SIZE
5	N 53°51'42" W	40.54'	8"
MATERIAL: PVC WTR C900 (DR14) CL305			

THRUST BLOCK DATA TABLE			
TB#	DESCRIPTION	TOTAL THRUST	REQUIRED BLOCK AREA
1	3"-90°-BEND	2,271 LBS	4.1 SF
2	6"-90°-BEND	10,576 LBS	15.9 SF
3	8"-90°-BEND	18,194 LBS	27.3 SF

PER WATER AGENCY STANDARDS, SECTION 5.2
SOIL BEARING CAPACITY = 1,000 LB/SF
FACTOR OF SAFETY = 1.5

SAMPLE



OTAY WATER DISTRICT

DATE: 04/28/2014	ST. PAUL'S PLAZA SENIOR HOUSING WATER & SEWER SERVICE CONNECTIONS	DRAWN BY: OMEGA ENGINEERING
APN: 642-560-15		PROJECT NO: D0905-090169
SHEET 4 OF 4		REF. PERMIT NO: FSV-13-007