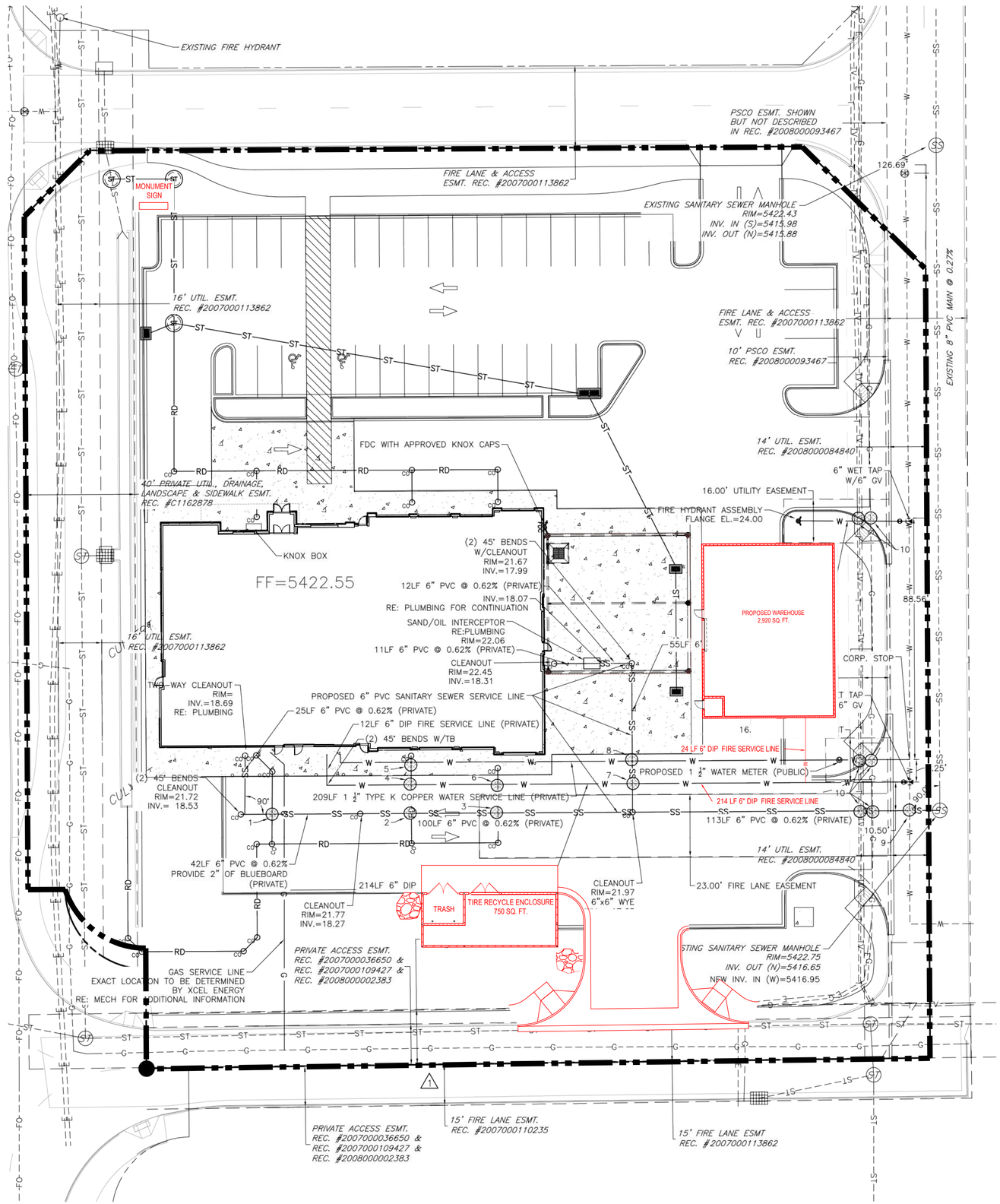

CAD FILE: G:\JANSEN1\23341-Les Schwab 34th and Tower\PLANS\C500 Utility.dwg
Apr 23, 2012 - 3:20pm

N

20 10 0 20 40
SCALE: 1"=20'

TOST = TOP OF STORM SEWER PIPE
BOST = BOTTOM OF STORM SEWER PIPE
BOSS = BOTTOM OF SANITARY SEWER PIPE
BOW = BOTTOM OF WATER LINE
TOW = TOP OF WATER LINE

UTILITY CROSSINGS

#	GROUND	PIPE BELOW	PIPE ABOVE	CLEAR(FT)
1	21.83	TOST(6")=16.74	BOSS(6")=18.47	1.73***
2	21.85	TOST(4")=16.86	BOSS(6")=18.14	1.28***
3	21.87	TOST(4")=17.02	BOSS(6")=17.95	0.93***
4	22.21	BOST(4")=16.58	TOW(6")=15.08	1.50*****
5	22.45	BOST(4")=16.62	TOW(1.5")=15.12	1.50*****
6	22.21	BOST(4")=16.74	TOW(6")=15.24	1.50*****
7	22.04	TOW(6")=16.21	BOSS(6")=17.71	1.50****
8	22.20	TOW(1.5")=16.26	BOSS(6")=17.76	1.50****
9	22.63	TOSS(6")=17.52	BOW(12")=17.13	*
10	**	**	**	**

* CONTRACTOR TO FIELD VERIFY DEPTH OF EXISTING WATER MAIN. IF IN CONFLICT WITH SANITARY SEWER, WATER MAIN TO BE MECHANICALLY LOWERED PER COA STANDARDS AND SPECIFICATIONS (DETAIL 227). IF CLEARANCE CAN BE ACHIEVED, BUT IS LESS THAN 18 INCHES, PROVIDE CONCRETE CRADLE PER COA STANDARD DETAIL AND SPECIFICATIONS (DETAIL 402). CONCRETE ENCASES SANITARY SEWER IF OVER WATER MAIN.

** EXISTING DRY UTILITIES ASSUMED TO HAVE 30" OF COVER. NOTIFY ENGINEER IMMEDIATELY OF ANY CONFLICTS.

*** CONCRETE ENCASE PROPOSED SANITARY SEWER SERVICE LINE OVER ROOF DRAIN LINES PER COA STANDARDS AND SPECIFICATIONS.

**** CONCRETE ENCASE PROPOSED SANITARY SEWER SERVICE LINE OVER WATER LINES PER COA STANDARDS AND SPECIFICATIONS. PROVIDE WATER LINE LOWERINGS PER COA STANDARDS AND SPECIFICATIONS TO PROVIDE MIN. 18" OF CLEARANCE.

***** PROVIDE WATER LINE LOWERINGS PER COA STANDARDS AND SPECIFICATIONS TO PROVIDE MIN. 18' OF CLEARANCE.

NOTES:

1. CONSTRUCTION OF ALL UTILITIES TO BE IN COMPLIANCE WITH CITY OF AURORA STANDARDS AND SPECIFICATIONS.
2. SEE SHEETS C600 & C601 FOR STORM SEWER INFORMATION.
3. ALL PVC TO BE SDR 35.
4. WATER SERVICE LINE TO BE TYPE K COPPER.
5. FIRE SERVICE LINE TO BE DIP.
6. ALL BEDDING MATERIAL TO BE CLASS B BEDDING.
7. PER THE GEOTECH REPORT, SOIL MEASUREMENTS OF ELECTRICAL RESISTIVITY FOR ON-SITE SOILS WERE BETWEEN 4,500 AND 7,000 OHM CENTIMETERS WHICH CORRELATES TO MODERATELY CORROSIVE SOILS.

PROJECT NAME : Les Schwab Tire Center
PROJECT ADDRESS : 3410 Tower Road

CITY OF AURORA UTILITY DEPARTMENT
1470 SOUTH HAVANA STR., AURORA, CO. 80012
TAP APPLICATION OFFICE - 739-7395
PLANS REVIEW - 739-7374 FAX - 739-7491

FAX TO :_____ DATE :_____
ATTEN. :_____ FAX # :_____

FIXTURE UNIT TABLE

EXISTING WATER SAVING FIXTURES ? yes
EXISTING ULTRA LOW FLOW FIXTURE? yes
PROPOSED WATER SAVING FIXTURES ? yes
PROPOSED ULTRA LOW FLOW FIXTURE? no

DATE : BY : OK BY :

FIXTURE	EXISTING PRIVATE		PROPOSED PRIVATE		EXISTING PUBLIC		PROPOSED PUBLIC			STANDARD		LOW FLOW		ULTRA LOW FLOW	
	NUMBER OF FIXTURES	FIXTURE VALUE	NUMBER OF FIXTURES	FIXTURE VALUE	NUMBER OF FIXTURES	FIXTURE VALUE	NUMBER OF FIXTURES	FIXTURE VALUE	UNITS SUBTOTALS	PRIV	PUB	PRIV	PUB	PRIV	PUB
BAR SINK		0.7		0.7		1.4		1.4	0	1	2	0.7	1.4		
BATHTUB (WITH SHOWER)		1.4		1.4		1.8		1.8	0	2	4	1.4	1.8		
DENTAL UNIT		0.7		0.7		0.7		0.7	0	1	1	0.7	0.7		
DRINKING FOUNTAIN		0.7		0.7		1.4	1	1.4	1.4	1	2	0.7	1.4		
HOSE BIBB OR SILL COCK		3		3		5	5	5	25	3	5	3	5		
MOBILE HOME EACH		6		6		6		6	0	6	6	6	6		
LAUNDRY TUB, CLOTHWASHER		2		2		4		4	0	2	4	2	4		
LAVATORY		0.7		0.7		1.4	3	1.4	4.2	1	2	0.7	1.4		
LAVATORY (DENTAL)		0.7		0.7		0.7		0.7	0	1	1	0.7	0.7		
LAWN SPRINKLER EACH HEAD		1		1		1		1	0	1	1	1	1		
SHOWER EACH HEAD		1.4		1.4		2.8		2.8	0	2	4	1.4	2.8		
SINK (PER FAUCET)		0.7		0.7		1.4	1	1.4	1.4	1	2	0.7	1.4		
SINK DISHWASHER		1.4		1.4		2.8		2.8	0	2	4	1.4	2.8		
SINK (FLUSHING RIM)		7		0.7		7		7	0	10	10	7	7		
SINK (WASHUP)		1.4		1.4		1.4	1	1.4	1.4	2	2	1.4	1.4		
SINK (CIRCULAR WASHUP)		2.8		2.8		2.8		2.8	0	4	4	2.8	2.8		
SINK (SERVICE)		2.25		2.25		2.25	1	2.25	2.25	2.25	2.25	2	2		
URINAL (PEDESTAL)		5		10		5		10	0	10	10			5	5
URINAL (STALL)		2.5		5		2.5		5	0	5	5			2.5	2.5
URINAL (WALL)		2.5		5		2.5	1	5	5	5	5			2.5	2.5
URINAL (FLUSH TANK)		1.5		3		2.5		3	0	3	3			1.5	2.5
WATER CLOSET (TANK)		1.5		2.4		2.5		3.5	0	3	5	2.4	3.5	1.5	2.5
WATER CLOSET (VALVE)		3		4.7		5	3	7	21	6	10	4.7	7	3	5
3/8 INCH SUPPLY		1		1		2		2	0	1	2				
1/2 INCH SUPPLY		2		2		4		4	0	2	4				
3/4 INCH SUPPLY		3		3		6		6	0	3	6				
1 INCH SUPPLY		6		6		10		10	0	6	10				

TOTAL 61.65

MAXIMUM FIXTURE UNITS

* IF WATER SAVING AND/OR ULTRA LOW FLOW FIXTURE VALUES ARE USED THEY MUST BE SPECIFIED ON THE BUILDING PLANS PRIOR TO APPROVAL OF THE BUILDING PERMIT.
WATER SAVINGS = 30% REDUCTION ON FAUCETS & 3.5 GALLON WATER CLOSETS
ULTRA LOW FLOW = 1.6 GALLON WATER CLOSETS AND URINALS

METER SIZING TABLE
CURVE NO. 1 FOR FLUSH VALVES
CURVE NO. 2 FOR FLUSH TANKS

HEAD LOSS CALCULATIONS BASE ON HAZEN WILLIAMS COEFFICIENT
COPPER SERVICE C = 130, DUCTILE IRON C = 100
CURVE NO. = 2 HAZEN WILLIAMS C = 130

FIXTURE UNIT TOTAL	FLOW FROM TABLE (GPM)	METER SIZE (INCHES)	VELOCITY (FPS)	LENGTH SERVICE (FT)	HEAD LOSS PSI/100FT	STATIC PRESSURE @ MAIN	PRESSURE @ BLDG. (PSI)
61.65	32.66	1.50	6.07	500	5.20	80	54.01

METER SIZE DIA.	MAX. FLOW (GPM)	FLUSH TANK CURVE # 2	FLUSH VALVE CURVE # 1	Max Flow (GPD)
3/4"	14	20	-	20160
1"	25	41	9	36000
1 1/2"	55	150	60	79200
2"	100	375	246	144000
3"	220	1075	1075	316800
4"	400	2675	2675	576000
6"	900	5500	5500	1296000

UNCC UTILITY NOTIFICATION CENTER OF COLORADO
811 Know what's below. Call before you dig.

CALL 811 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR MARKING OF UNDERGROUND MEMBER UTILITIES

MARTIN/MARTIN ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE SIZE, MATERIAL, HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

Approved for One Year From this Date

City Engineer Date

Aurora Water Department Date

Fire Department Date

GBD ARCHITECTS
1120 NW Couch Street
Suite 300, Portland
OR 97209
Tel: (503) 224.9656
Fax: (503) 299.6273
www.gbdarchitects.com

LES SCHWAB
TOWER ROAD
AURORA, COLORADO

LOT 1, BLOCK 1, GATEWAY EAST AT TOWER SUBDIVISION FILING NO. 1, AMENDMENT NO. 1

MARTIN / MARTIN CONSULTING ENGINEERS
12499 WEST COLFAX AVE.
LAKEWOOD, CO. 80215
(303) 431-6100 FAX 8608-1.4-P1 CDC XAF

01-20-2012
02-08-2012
1 PR #7 04-23-2012

REVISIONS

DATE
12-20-2011

PROJECT NUMBER
20112001

SHEET TITLE
UTILITY PLAN

SCALE
AS NOTED

C500

SHEET 10