CITY OF RIVERSIDE

SEWER IMPROVEMENT PLANS

FOR

18876 VAN BUREN BLVD

GENERAL NOTES:

1. NO PERSON SHALL PERFORM ANY CONSTRUCTION ACTIVITY OR INSTALL ANY OBJECTS WITHIN THE PUBLIC RIGHT-OF-WAY OR EASEMENTS OF THE CITY OF RIVERSIDE WITHOUT A VALID CONSTRUCTION PERMIT OR, A STREET OPENING PERMIT OR AN ENCROACHMENT PERMIT ISSUED BY THE CITY'S PUBLIC WORKS DEPARTMENT.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAR THE RIGHT OF WAY IN ACCORDANCE WITH THE PROVISIONS OF LAW AS IT AFFECTS EACH UTILITY INCLUDING IRRIGATION LINES AND APPURTENANCES AND AT NO COST TO THE CITY.
3. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF RIVERSIDE DEPARTMENT OF PUBLIC WORKS, STANDARD DRAWINGS, ITS SUPPLEMENTAL NOTES AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CURRENT EDITION.
4. THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE WORK HEREON. IN THE EVENT OF DISCREPANCIES ARISING DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE CITY (THIS NOTE REQUIRED ON ALL PLANS.)
5. QUANTITIES SHOWN ARE FOR INFORMATION ONLY AND THE CITY OF RIVERSIDE IS NOT RESPONSIBLE FOR THEIR ACCURACY.
6. THE DEVELOPER SHALL BE RESPONSIBLE FOR PRESERVING OR REESTABLISHING AND REFERENCING SURVEY MONUMENTS DESTROYED, DISTURBED OR BURIED AS A RESULT OF CONSTRUCTION SHOWN HEREON.
7. ALL FLAGGED ELEVATIONS SHALL BE STAKED IN THE FIELD BY THE PRIVATE ENGINEER.
8. THE CONTRACTOR SHALL CALL IN A LOCATION REQUEST TO UNDERGROUND SERVICE ALERT (USA),PHONE # 1-800-422-4133, TWO WORKING DAYS BEFORE DIGGING. NO CONSTRUCTION PERMIT WILL BE ISSUED BY THE PUBLIC WORKS DEPARTMENT INVOLVING EXCAVATION FOR UNDERGROUND FACILITIES UNLESS THE APPLICANT HAS BEEN PROVIDED AN INQUIRY IDENTIFICATION NUMBER BY U.S.A.
9. CONTRACTOR IS TO VERIFY EXISTING SEWER ELEVATION PRIOR TO CONSTRUCTION.
10. LOCATION OF LATERALS TO BE DETERMINED IN THE FIELD AT THE DIRECTION OF THE OWNER. AVOID CONFLICT WITH PROPOSED AND/OR EXISTING FACILITIES.
11. NO FINISHED FLOOR ELEVATION SHALL BE LESS THAN 6" ABOVE THE UPPER MANHOLE RIM ELEVATION OF THE SEWER LINE SEGMENT BEING CONNECTED TO, WITHOUT HAVING A PROPER BACKWATER VALVE INSTALLED IN THE LATERAL.
12. A PLUG SHALL BE INSTALLED AND WILL REMAIN IN PLACE WHERE THE NEW SEWER CONNECTS WITH THE EXISTING SEWER UNTIL THE NEW SEWER IS ACCEPTED BY THE CITY.
13. THE SEWER CONTRACTOR SHALL ADJUST MANHOLES TO FINAL GRADE AFTER PAVING IS COMPLETED.
14. THE CONTRACTOR SHALL COORDINATE TRENCHING FOR CABLE TELEVISION WITH OTHER TRENCHING WITHIN THE SUBDIVISION.

ENGINEER'S NOTICE TO CONTRACTORS:

1. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. THESE LOCATIONS ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR, SO THAT ANY NECESSARY ADJUSTMENT CAN BE MADE IN ALIGNMENT AND/OR GRADE OF THE PROPOSED IMPROVEMENT. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ANY UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

2. CARE SHOULD BE TAKEN TO PREVENT GRADED DITCHES AND SWALES FROM UNDERMINING STREET IMPROVEMENTS. UPON INSPECTION OF THE SITES, THE CITY ENGINEER MAY REQUIRE TEMPORARY GUNITE SWALES, ENTERING OR

3. ALL AREAS SHALL SLOPE A MINIMUM OF 1.0% TO STREETS, DRIVE OR SWALE UNLESS OTHERWISE NOTED.

4. QUANTITIES SHOWN HERE ARE FOR PLAN CHECKING PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE TO PERFORM HIS OWN QUANTITIES TAKEOFF.

5. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS; DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THE REQUIREMENTS SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE CITY OF RIVERSIDE AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CITY OF RIVERSIDE OR THE ENGINEER.

NOTICE TO CONTRACTORS:

CONTRACTOR SHALL POTHOLE AT THE TIE-IN STATIONS AND AT ANY OTHER POINTS OF POTENTIAL CONFLICTS WITH UNDERGROUND FACILITIES BEFORE STARTING CONSTRUCTION. EXISTING SUBSURFACE UTILITY DATA ON DRAWINGS WERE COMPILED FROM INFORMATION FURNISHED BY VARIOUS SOURCES. NEITHER THE ACCURACY NOR THE COMPLETENESS OF THE INFORMATION SHOWN IS GUARANTEED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING WATER MAINS, GAS MAINS, SANITARY SEWERS, STORM DRAINS, ELECTRIC CONDUITS, TELEPHONE LINES AND ANY OTHER UTILITIES WHICH MAY CONFLICT WITH THE DESIGN AND CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. RIM ELEVATIONS SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. THE RING AND COVER SHALL BE ADJUSTED IN THE FIELD TO MATCH THE FINISHED SURFACE OF THE PAVEMENT TO FORM A SMOOTH DRIVING SURFACE. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ANY UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COSTS FOR THE REPAIR OF ANY AND ALL DAMAGE TO THE CONTRACT WORK OR TO ANY UTILITY (WHETHER PREVIOUSLY KNOWN OR DISCLOSED DURING THE WORK) AS MAY BE CAUSED BY HIS OPERATIONS. UTILITIES NOT SHOWN ON THE DRAWING TO BE RELOCATED OR ALTERED BY OTHERS SHALL BE MAINTAINED BY THE CONTRACTOR. AT THE COMPLETION OF THE CONTRACT WORK, THE CONTRACTOR SHALL LEAVE ALL UTILITIES AND APPURTENANCES IN A CONDITION SATISFACTORY TO THE OWNERS AND THE CITY.

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CALL TOLL FREE
48 HOURS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT
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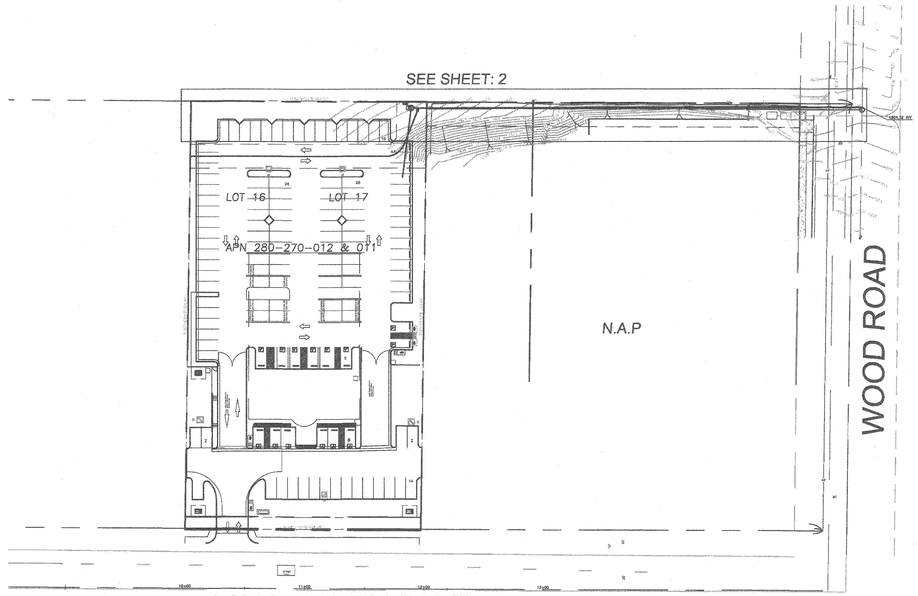


80 0 80 160
1 inch =80 ft.
INDEX MAP

EMERGENCY PHONE NUMBERS:

CITY OF RIVERSIDE FIRE DEPARTMENT	(951) 826-5321	GOODHEW AMBULANCE	(951) 684-5520
CITY OF RIVERSIDE POLICE ALERT	(951) 826-5700	PACIFIC BELL TELEPHONE	(800) 303-3000
CITY OF RIVERSIDE TRAFFIC DIVISION	(951) 826-5366	CITY OF RIVERSIDE ELECTRIC DEPT.	(951) 687-0791
CITY OF RIVERSIDE TRAFFIC SIGNALS	(951) 351-6096	SOUTHERN CALIFORNIA GAS COMPANY	(800) 427-2200
STREET SUPERINTENDENT	(951) 351-6127	UNDERGROUND SERVICE	(800) 227-2600
RIVERSIDE SCHOOLS	(951) 788-7132		

NOTICE TO ENGINEER:

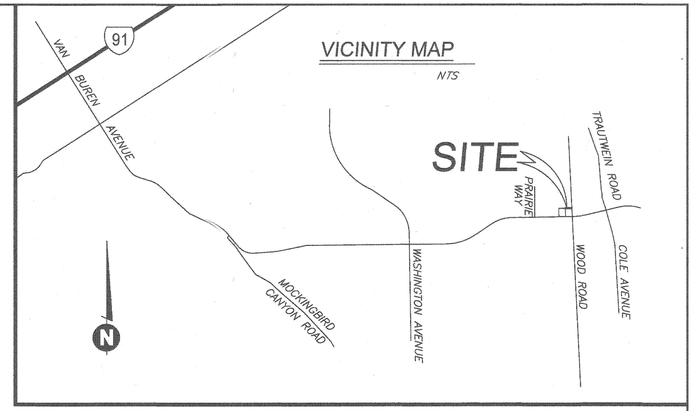
1. EXISTING 20' SEWER EASEMENT.
   -MUST BE ACCESSIBLE I.E., NO SLOPES & OBSTRUCTIONS.
2. FORCE MAIN & PUMP MUST BE DESIGNED PER CITY STD. & GUIDELINES.
   -SEE ATTACHED LIFT STATION & FORCE MAIN GUIDELINES.
3. LIFT STATION SITE- REQUIRE PARCEL TO BE DEEDED TO CITY & DESIGN PER CITY STD. & GUIDELINES.

E/ONE
SEWER SYSTEM
JOE TORTORELLO
(949) 548-1125 OFFICE
(949) 302-6275 CELL

LEGEND

ITEM	EXISTING	PROPOSED
END CAP W/BO		
FIRE HYDRANT		
TAP SLEEVE		
TRACT BOUNDARY		
WATER LINE	8" W	
WATER SERVICE		
WATER SERVICE (BY CITY FORCES)		T
WATER VALVE		

CABLE TV	CTV
ELECTRIC	E
GAS	6" G
SEWER	8" S
STORM DRAIN	18" SD
TELEPHONE	T



ENGINEER:

SAKE ENGINEERS, INC.
400 S. RAMONA AVE. SSTE. 202
CORONA, CA 92879
(951) 279-4041 PH.
(951) 279-2830 FAX

SOILS ENGINEER:

GEOMAT TESTING LABORATRIES,INC.
9980 INDIANA AVENUE, SUITE 14
RIVERSIDE, CA 92503
(951) 688-5200 PH.
EMAIL: GEOMATLABS@SBCGLOBAL.NET

SOURCE OF TOPOGRAPHY:

ON POINT LAND SURVEYING, INC.
1910 ORANGE TREE LANNE, #344
REDLANDS, CA 92374
(909) 792-2221 PH.

OWNER/DEVELOPER:

SS COMMERCIAL PROPEERTIES LLC,
8502 E CHAPMAN AVE. #412
ORANGE, CA 92869
(714) 425-1040 PH.

LEGAL DESCRIPTION:

LOT 16 AND 17 OF OLIVE GROVE PARK TRACT No. 2 AS SHOWN BY MAP ON FILLE IN BOOK 12, PAGE 80 OF MAPS RECORDED COUNTY, CALIFORNIA ON IN THE OFFICE OF THE COUNTY RECORDER OF RIVERSIDE.

BASIS OF BEARINGS & ELEVATIONS:

CENTERLINE OF VAN BUREN BOULEVARD, BETWEEN PRAIRIE WAY AND WOODD ROAD. BEARING BEING N 89°44'57" W PER RSS 82/16.

POINT I.D.: G1-K3
P.K. NAIL AND CITY ENGINEER TAG IN THE TOP OF CURB OF THE NORTHERLY WING OF A CATCH BASIN, ALONG THE WESTERLY CURB OF MITCHELL AVENUE, 290 FEET NORTHERLY OF GRAMERCY PLACE
ELEV.: 736.645 (1929))

UTILITIES:

ELECTRIC	CITY OF RIVERSIDE
GAS	SO. CAL. GAS CO.
WATER	CITY OF RIVERSIDE
SEWER	CITY OF RIVERSIDE
TELEPHONE	PACIFIC TELEPHONE

NOTE:
ELEVATIONS SHOWN HERE ARE FROM RECORD DATA AND REQUIRE FIELLD VERIFICATION. CONTRACTOR SHAALL EXPOSE ALL JOIN POINTS AND UTILITIES CROSSING PRIOR TO COMMENCEMENT OF WORK AND NOTIFY THE ENGINEER FOR ANY DISCREPANCIES.

NOTE:
SEWER SYSTEEM SHOWN ON LOT 16 & 17 IS TO BEE PRIVATELY MAINTAINED BY PROPERTIY OWNER OF APN 280-270-0111 (LOT 16) & 280-270-0112 (LOT 17).

EXP 2159

CITY OF RIVERSIDE BUSINESS TAX ACCOUNT #74172 EXP. 7/31/19

CITY OF RIVERSIDE
ELECTRIC DIVISION
APPROVED BY — DATE 10/18/18

REVIEWED BY:
WESTERN MUNICIPAL WATER DISTRICT
FOR NON-INTERFERENCE COMPLIANCE
SHEET 1 THROUGH 4
DEREK KAWAI
DIRECTOR OF ENGINEERING
DATE: 10/15/2018

REGISTERED PROFESSIONAL ENGINEER SAM AKBARPOUR C053038 Exp. 6/30/19 CIVIL STATE OF CALIFORNIA
R.C.E. No. — DATE 9-14-18

SAKE ENGINEERS, INC.
www.SakeEngineers.com
ENGINEERING • SURVEYING • LAND DEVELOPMENT
400 S. RAMONA AVE., STE. 202
CORONA, CALIFORNIA 92879
(951) 279-4041 FAX: (951) 279-2830
File Name: \\SERVER\projects\CI RIVERSIDE\JN3101 Sinjae\CIVIL\SEWER.dwg Layout: COVER 1
PREPARED BY: R.C.E. NO. 53038
DATE: Sep. 14, 2018

MARK		APPR.	DATE
1	REVISED LOCATION OF (E) 8" SEWERLINE		

DESIGNED BY SA DRAWN BY RL CHECKED BY SA

BENCHMARK:
POINT I.D.: G1-K3
P.K. NAIL AND CITY ENGINEER TAG IN THE TOP OF CURB OF THE NORTHERLY WING OF A CATCH BASIN, ALONG THE WESTERLY CURB OF MITCHELL AVENUE, 290 FEET NORTHERLY OF GRAMERCY PLACE
ELEV.: 736.645 (1929)

CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	TJ	10/19/18
ENGINEERING MANAGER		
TRAFFIC DIVISION		

APPROVED BY
CITY ENGINEER
DATE 11/05/2018

SEWER IMPROVEMENT PLANS
18876 VAN BUREN BLVD
COVER SHEET
HORIZ. SCALE: NONE VERT. SCALE: NONE

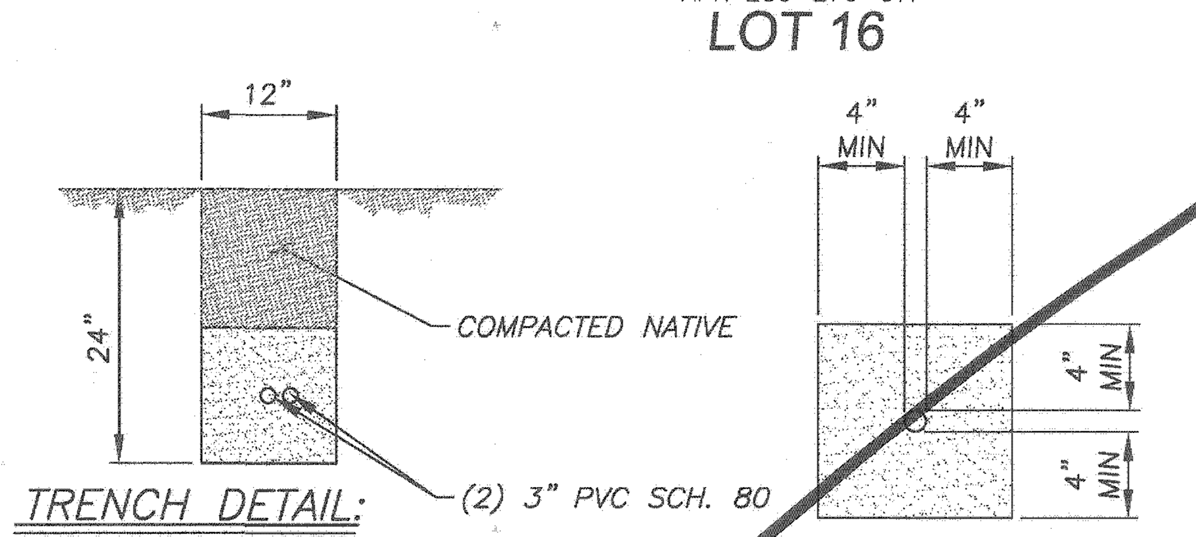
PROJECT NO. PW17-0765
S-2159
SHEET 1 SHEET 4
FILE NO.

S2159-1

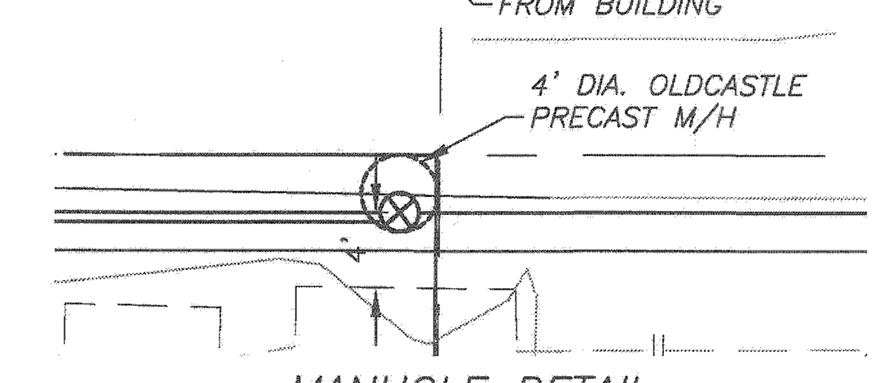
NOTE: SEWER FORCE MAIN TO BE MAINTAINED BY CITY FORCES. (COST TO REPAIR SEWER FORCE MAIN SHALL BE REIMBURSED BY PROPERTY OWNER OF LOT 16–APN 280-270-011 & LOT 17 APN 280-270-012 PER RECORDED COVENANT & AGREEMENT BETWEEN PROPERTY OWNER AND CITY.)

NOTE: INSTALLATION MUST BE PER MANUFACTURER'S RECOMMENDATION.

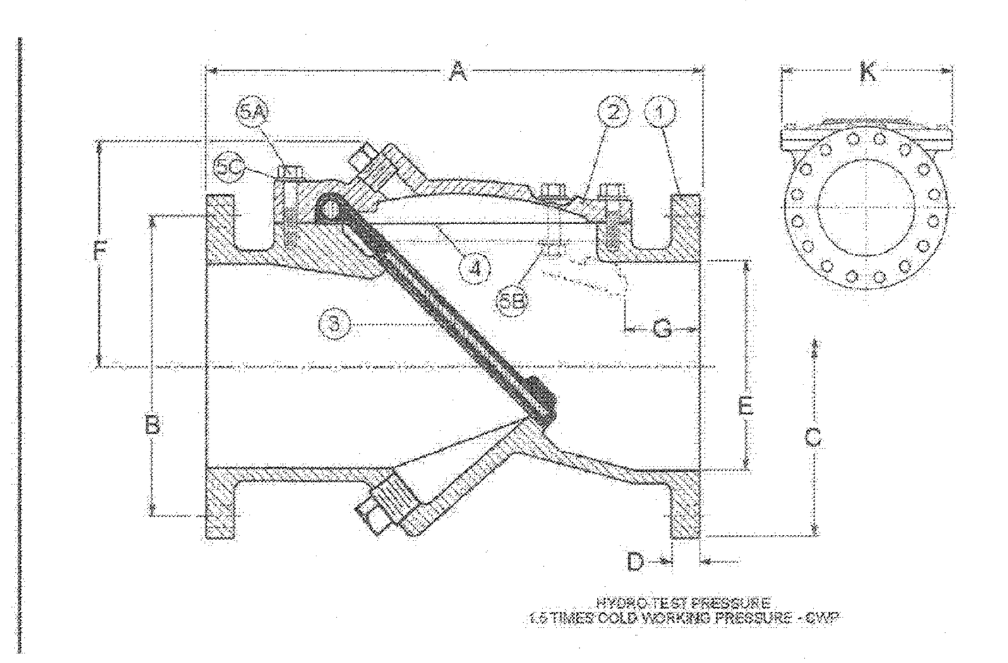
NOTE: ALL WORK TO COMPLY WITH 2016 CALIFORNIA PLUMBING CODE.



TRENCH DETAIL: N.T.S.



MANHOLE DETAIL: 1"=10'



SEE DRAWING NO. VM-502A-M FOR STANDARD MATERIALS OF CONSTRUCTION.

ANSI CLASS 125													
VALVE SIZE	MODEL NO.	CWP (PSI)	A	B	C	D	E	F	G	K	BOLT SIZE	NO. OF BOLTS	SHPG WT.
2	502A	250	8.00	4.75	6.00	0.63	2.00	3.38	1.63	5.18	5/8	4	25
2 1/2	525A	250	8.50	5.50	7.00	0.68	2.50	3.38	1.63	5.18	5/8	4	30
3	503A	250	9.50	6.00	7.50	0.75	3.00	5.12	1.63	7.50	[illegible]	[illegible]	43

CONSTRUCTION NOTES:

1. CONST. 3" PVC SCH. 80 FORCE MAIN SEWER LINE PER MANUFATURE SPEC'S (MIN 2' DEEP)
2. CONST. 6" SEWER LATERAL (NO JOINTS WITHIN TEN FEET FROM EITHER SIDE OF EXIST. 12" & 24" WATER MAIN) PER CITY RIVERSIDE STD. DWG. 562. OUTSIDE WALLS OF THE SEWER LATERAL SHOULD BE ENCLOSED IN A CONTINUOUS SLEEVE.
3. INSTALL 6" PVC SEWER LATERAL
4. INSTALL PSI PUMP PER DETAIL ON SHT. 3
5. INSTALL CHECK VALVE PER DETAIL HEREON
6. CONST. BACK UP 3" PVC SCH. 80 PARALLEL TO FORCE MAIN SEWER LINE (0.5' MIN HORIZONTAL SEPARATION) PLUG BOTH ENDS.
7. CONST. SEALED SEWER MANHOLE PER ARMOROCK'S 48" POLYMER MANHOLE OR EQUIVALENT.

20 0 20 40
1 inch =20 ft.

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CALL TOLL FREE
48 HOURS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT
1-800-422-4133

CURVE TABLE

CURVE	LENGTH	RADIUS
1	51.57'	10.00'
2	16.33'	15.76'

NOTE:
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CONTRACTOR SHALL EXPOSE ALL JOIN POINTS AND UTILITIES CROSSING PRIOR TO COMMENCEMENT OF WORK AND NOTIFY THE ENGINEER FOR ANY DISCREPANCIES.

NOTE:
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CITY OF RIVERSIDE BUSINESS TAX ACCOUNT #74172 EXP. 7/31/19

CITY OF RIVERSIDE
ELECTRIC DIVISION
APPROVED BY 10/18/18 DATE

REVIEWED BY:
WESTERN MUNICIPAL WATER DISTRICT
FOR NON-INTERFERENCE COMPLIANCE
SHEET 1 THROUGH 4
DEREK KAWAII
DIRECTOR OF ENGINEERING
DATE: 10/15/2018

REGISTERED PROFESSIONAL ENGINEER
SAM AKBARPOUR
C053038
Exp. 6/30/19
CIVIL
STATE OF CALIFORNIA
R.C.E. No. 9-14-18 DATE

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(951) 279-4041 FAX: (951) 279-2830
File Name: \\SERVER\projects\CI RIVERSIDE\JN3101 Simjee\CIVIL\SEWER.dwg Layout: SEWER 2
PREPARED BY: R.C.E. NO. 53038
DATE: Sep. 14, 2018

MARK | APPR. | DATE
DESIGNED BY SA DRAWN BY RL CHECKED BY SA

BENCHMARK:
POINT I.D.: G1-K3
P.K. NAIL AND CITY ENGINEER TAG IN THE TOP OF CURB OF THE NORTHERLY WING OF A CATCH BASIN, ALONG THE WESTERLY CURB OF MITCHELL AVENUE, 290 FEET NORTHERLY OF GRAMERCY PLACE
ELEV.: 736.645 (1929)

CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	TN	10/19
ENGINEERING MANAGER		
TRAFFIC DIVISION		

APPROVED BY
CITY ENGINEER
DATE 11/05/2019

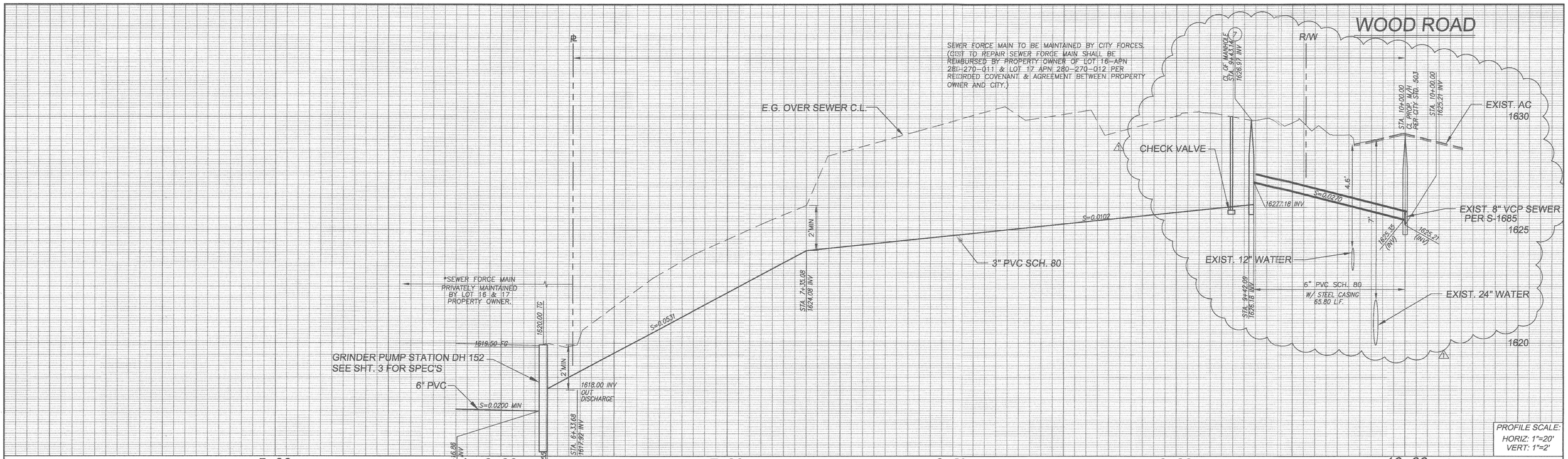
SEWER IMPROVEMENT PLANS
18876 VAN BUREN BLVD
PLAN AND PROFILE
HORIZ. SCALE: NONE VERT. SCALE: NONE

PROJECT NO. PW17-0765
S-2159
SHEET 2 SHEET 4
FILE NO.

"SUPERSEDED"
SEE SHEET NO. 2A

S2159-2

\\SERVER\projects\CI RIVERSIDE\JN3101 Simjee\CIVIL\SEWER.dwg, 9/14/2018 8:21:01 AM, DWG To PDF.pc3, 1:20



NOTE:
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NOTE:
INSTALLATION MUST BE PER MANUFACTURER'S RECOMMENDATION.

NOTE:
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CONSTRUCTION NOTES:

1. CONST. 3" PVC SCH. 80 FORCE MAIN SEWER LINE PER MANUFATURE SPEC'S (MINN 2' DEEP)
2. CONST. 6" SEWER LATERAL (NO JOINTS WITHIN TEN FEET FROM EITHER SIDE OF EXIST. 12" & 24" WATER MAIN) PER CITY RIVERSIDE STD. DWG. 562. OUTSIDE WALLS OF THE SEWER LATERAL SHOULD BE ENCLOSED IN A CONTINUOUS SLEEVE.
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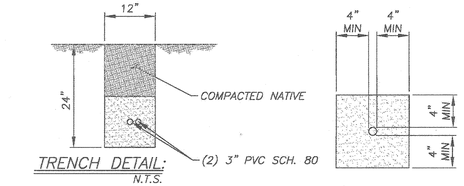
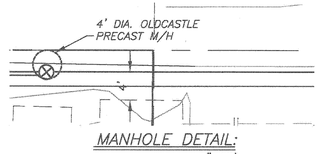
6. CONST. BACK UP 3" PVC SCH. 80 PARALLEL TO FORCE MAIN SEWER LINE (0.5' MMIN HORIZONTAL SEPARATION) PLUG BOTH ENDS.
7. CONST. PRECAST CONC. SEWER MANHOLE PER CITY STD. 500

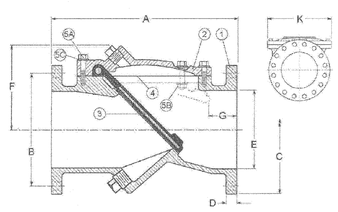


TRENCH DETAIL:
N.T.S.

PROVIDE 4" MIN. SAND AROUND THE FORCE LINE



MANHOLE DETAIL:
1"=10'



SEE DRAWING NO: VM-6024-M FOR STANDARD MATERIALS OF CONSTRUCTION

ANSI CLASS 125

VALVE SIZE	MODEL NO.	CV WP (PSI)	A	B	C	D	E	F	G	K	BOLT DIA.	NO. OF BOLTS	GMPG WT.
2"	602A	250	8.00	4.75	8.00	0.63	2.00	3.38	1.63	5.18	5/8	4	25
2 1/2"	626A	250	8.50	5.50	7.00	0.68	2.50	3.38	1.63	5.18	5/8	4	30
3"	500A	250	9.50	6.00	7.50	0.75	3.00	5.12	1.63	7.50	5/8	4	43

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1 inch =20 ft.

CITY OF RIVERSIDE BUSINESS TAX ACCOUNT #74172 EXP. 7/31/19

CITY OF RIVERSIDE
ELECTRIC DIVISION
APPROVED BY _____ DATE 10/15/18

REVIEWED BY:
WESTERN MUNICIPAL WATER DISTRICT
FOR NON-INTERFERENCE COMPLIANCE
SHEET 1 THROUGH 4
DEREK KAWAII
DIRECTOR OF ENGINEERING
DATE: 10/15/2018

REGISTERED PROFESSIONAL ENGINEER
SAM AKBARPOUR
C053038
Exp. 6/30/19
CIVIL
STATE OF CALIFORNIA
R.C.E. No. _____ DATE 12-18-18

SAKE ENGINEERS, INC.
http://s.akeengineers.com
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400 S. RAMONA AVE., STE. 202
CORONA, CALIFORNIA 92879
(951) 279-4041 FAX: (951) 279-2830
PREPARED BY: _____ R.C.E. NO. 53038
DATE: Dec. 18, 2018
File Name: \\SERVER\projects\CI RIVERSIDE\JN3101 Sinijen\CIVIL\SEWER REVISION.dwg Layout: SEWER 2

MARK		APPR.	DATE
1	REVISED LOCATION OF (E) 8" SEWERLINE		

DESIGNED BY SA DRAWN BY RL CHECKED BY SA

BENCHMARK:
POINT I.D.: G1–K3
P.K. NAIL AND CITY ENGINEER TAG IN THE TOP OF CURB OF THE NORTHERLY WING OF A CATCH BASIN, ALONG THE WESTERLY CURB OF MITCHELL AVENUE, 290 FEET NORTHERLY OF GRAMERCY PLACE
ELEV.: 736.645 (1929)

CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		
ENGINEERING MANAGER	T.N.	10/19
TRAFFIC DIVISION		

APPROVED BY _____ CITY ENGINEER
DATE 10/15/2018

SEWER IMPROVEMENT PLANS
18876 VAN BUREN BLVD
PLAN AND PLOT
HORIZ. SCALE: NONE VERT. SCALE: NONE

PROJECT NO. PW17-0765
S–2159
SHEET 2A SHEET 4
FILE NO.

Exp 6/2019

S2159-3

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PACKAGED SEWAGE CUTTER LIFT STATION - MEDICAL PLAZA RIVERSIDE

SCOPE OF SUPPLY:

Furnish and install complete pre-packaged sewage cutter pump lift station model #PSI-SAK41318 as manufactured by Pacific Southwest Industries, (national phone# 800-358-9095). No exceptions to this specification may be taken.

The pre-packaged Lift Station, in its entirety, is to be non-corrosive and shall incorporate a quick removal system manufactured by the pump manufacturer. The pump(s) shall be guided to the discharge base elbow by stainless steel guide rails. The rails shall extend from the discharge base elbow to the upper guide bracket mounted on fiberglass channel just below the basin cover. Stainless steel lifting chain or cable shall be supplied and properly installed to remove the pump from the wet well. The internal discharge piping shall be completely pre-plumbed in PVC pipe and extend 12" beyond the wet well side wall for contractor connection to the force main piping. The pump(s) discharge pipe shall have a check and ball valve installed on each discharge line. The Lift Station shall include four liquid level controls on a removable float tree and a control panel suitable for surface mounting. The pump(s), quick removal system and the level sensors shall be housed in a fiberglass wet well (basin) and shall be of sufficient length to maintain the rim of the wet well at grade.

PUMPS:
Each Tsurumi cutter model# TOS80C22.2 shall be capable of delivering 150 G.P.M. at 33.5 Feet TDH.

The pump(s) shall be designed to pump wastewater, sewage or effluent containing solids without damage during operation. The pump(s) shall be designed so that the shaft power required (BHP)/(KW) shall not exceed the motor rated output throughout the entire operating range of the pump performance curve. Pump unit(s) shall be designed so that cavitation will not occur at open discharge. The pump discharge size shall be 3inch.

MATERIALS OF CONSTRUCTION:
Construction of major parts of the pumping unit(s) including casing, impeller,and discharge elbow shall be manufactured from gray cast iron, ASTM A48 CLASS 35. Unit(s) shall have a field adjustable and/or replaceable, high chrome cast iron cutter plate. Internal and external surfaces coming into contact with the pumpage shall be protected by a fused polymer coating. All exposed fasteners shall be stainless steel. All units shall be furnished with a discharge elbow with 150 lb. (10 Kg./Cm2) flat face flange and NPT companion flange. Impellers shall be of the single-vane or two-vane, semi-open, solids handling design, equipped with tungsten carbide vane tip and shall be slip fit to the shaft and key driven.
The pumps casing shall incorporate an air relief valve.

MECHANICAL SEAL:
All units shall be furnished with a dual inside mechanical shaft seal located completely out of the pumpage, running in a separate oil filled chamber and further protected by an exclusionary oil seal located between the bottom seal faces and the fluid being pumped. Unit 2 Hp. and above shall be fitted with a device that shall provide positive lubrication of top mechanical seal, (down to one third of the standard oil level). The device shall not consume any additional electrical power. Mechanical seals shall be rated to preclude the incursion of water up to 42.6 PSI. (98.4 Ft.). Units shall have a silicone carbide mechanical seal faces. Mechanical seal hardware shall be stainless steel. Units designed to exceed 42.6 PSI at shut off head shall incorporate seal pressure relief ports.

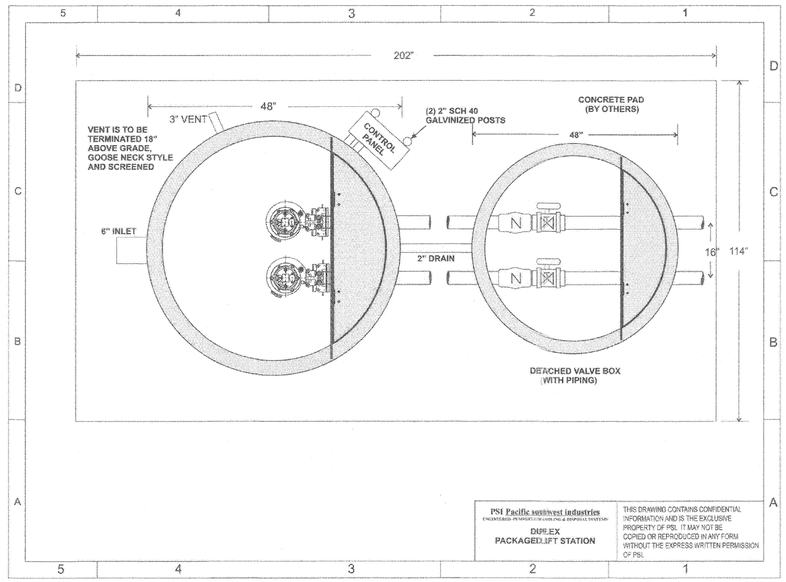
MOTOR:
The pump motor(s) shall be 3 Hp., 230V., 3 Phase and shall be NEMA MG-1, Design Type B equivalent. Motor(s) shall be rated at 9.8 full load amps. Motor(s) shall have a 1.15 service factor and shall be rated for 20 starts per hour. Motor(s) shall be air filled, copper wound, class E, B, or F insulated with built in thermal protection for each winding. Motor shaft shall be 420 or 403 stainless steel and shall be supported by two permanently lubricated, high temperature ball bearings, with a B-10 life rating at best efficiency point of 60,000 hours. On units up to 10 Hp. (7.5 kW), the bottom bearing shall be single row, double shielded, C3, deep groove type ball bearings. The top bearing on all units shall be single row, double shielded, C3, deep groove type ball bearings. Motor housing and bearing housing shall be gray cast iron, ASTM A48 CLASS 30. Motors shall be D.O.L. or Star-delta start (15 Hp. and above), and shall be suitable for across the line start variable speed applications, utilizing a properly sized variable frequency drive.

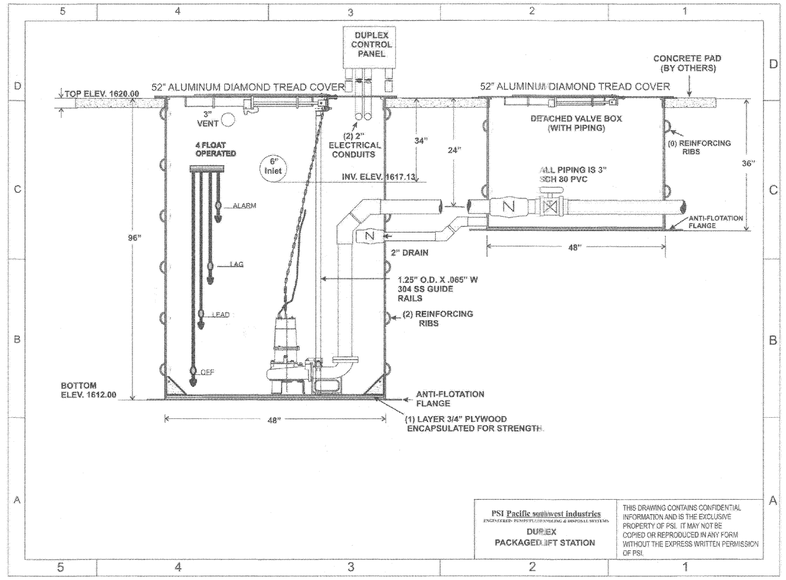
POWER CABLE AND CABLE ENTRANCE:
The pump power cable shall be suitable for submersible pump applications and shall be field replaceable utilizing standard submersible pump cable. The cable entrance shall incorporate built-in strain relief and a combination three-way mechanical compression sealing with a fatigue reducing/thermal expansion boot. The cable entrance assembly shall contain an anti-wicking block to eliminate water incursion into the motor due to capillary wicking should the power cable be accidentally damaged.

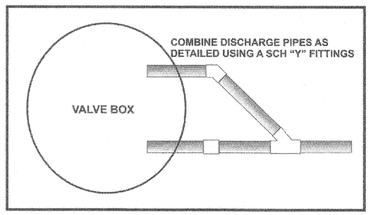
DUPLEX ALTERNATING CONTROL PANEL:
The control panel shall have a NEMA 4X door -in -door dead front lockable fiberglass enclosure suitable for wall mounting. A integral motor starter with short circuit protection and over load protection shall be provided for each pump . An alternating relay shall be provided to alternate pumps on each successive cycle of operation. The starter shall have auxiliary contacts to operate both pumps in an override condition. The control circuit shall not be affected in the event that either pump trips the pump circuit breaker. H.O.A. switches, run lights for each pump, motor overload light for each pump, elapsed time meter for each pump, control circuit breaker or fuse, 15 amp convenience outlet breaker, 2KVA control circuit transformer with fused primary, 15 amp 120 volt convenience outlet (GFI) grounded and bonded and mounted on inner door, lighting arrester, surge capacitor, phase monitor, time delay for no simultaneous pump starting and alarm test switch for light and buzzer operation only (no contact closure)shall be provide as a minimum. A terminal strip shall be provided to terminate all incoming power, pump, level sensors and remote alarm wiring. The control panel shall offer a high water alarm light, top mounted for 360 degree visibility. An external push button shall be provided to silence the audible alarm.

FIBERGLASS WET WELLAND VALVE BOX:
The fiberglass wet well shall be suitable for high water table installations and shall have an anti-flotation flange, 2 reinforcing ribs, one layer of 3/4" marine plywood to prevent the bottom from separating from the side walls under pressure. The wet well shall be no less than 48" inside diameter and be 96" in length. The fiberglass wet well shall be manufactured using a process that insures that the bottom of the basin will be fabricated at the same time as the sidewalls, eliminating the possibility of any joints or seams in the wet well in the area of greatest stress concentration. The laminate shall have a barcol hardness of a least 90% of the resin manufactures minimum specified hardness for cured resin on both the interior and exterior surfaces. The minimum wall thickness of the wet well shall not be less than 3/16". The wet well manufacturer shall encapsulate in the bottom of the wet well a steel base plate with stainless steel studs for the mounting of the quick removal system. The top rim flange must be no less than 4" wider than the ID of the wet well (52" O.D.) The wet well must be provided with an 8" inlet fitting for field installation by the contractor at the elevation and location as indicated on the plans. All other penetrations shall be sealed by using "Uniseal" fitting or "Flex boot" fittings. The valve box shall be manufactured with the same process as the wet well with (0) reinforcing ribs, and an anti-flotation flange. The valve box shall have an inside diameter of 48" with a depth of 36". The valve box shall include two non-slamming check valves, two true double union ball valves and emergency by pass piping with shut off valves and appropriate cam-lock fittings. The valve box must be pre-plumbed by the system manufacturer.

ALUMINUM DIAMOND TREAD COVER W/HATCH:
The cover of the wet well shall be no less than 1/4" thick and shall be suitable for foot traffic loads. The cover shall be solid with an opening hatch for easy access and shall be secured to the rim of the wet well with steel hardware.







NOTICE TO THE CONTRACTOR

This lift station and controls will be Wal*Mart specified, contractor furnished, and delivered to the site. The successful bidder will furnish all other materials and labor to install the lift station and its controls and ensure its proper operation. It is the contractor's responsibility to install the lift station per this plan as indicated and make all connections, plumbing and electrical, in an approved manner as required by this drawing and local codes. The contractor's responsibilities are as follows: receiving the lift station and off loading, excavation and setting, all plumbing connections (inlet, vent, wet well to valve box, force main run thereafter to the point of city connection of receiving manhole or force main), all electrical conduit from the wet well to control panel, provide proper backfill and compaction procedures. The contractor will be required to lower the pumps into place and check for proper rotation. A startup procedure form will be provided and it must be filled out and returned to the lift station supplier prior to Wal-Mart's possession date via fax or email. Fax #951-674-9444 email- info@psipumps.com

RECEIVING / OFFLOADING INSTRUCTIONS AND PREPARATION BEFORE SETTING

RECEIVING THE LIFT STATION

Inspect the entire shipment for damage before the lift station is taken off the truck. If there is damage, note as specifically as possible including clear photos of damage on the bill of lading as to any damage, then offload. Contact the shipper at once and have the bill of lading with you. Call 800-358-9095 for further instructions.

PREPARING THE LIFT STATION

The lift station has been made ready to travel several hundreed miles. The main wet well will contain bracing that needs to be removed before it is set in place. The lift station is to remain horizontal and on the pallet until the day it is to be set in place. On that day open the main hatch and remove the control panel, basin fittings, transducer housing and float tree. Remove all lumber bracing, wire ties and duct tape. Check all flange bolts and tighten as necessary. Check all flange bolts in the valve box as well, tighten as necessary.

SETTING THE LIFT STATION

The best way to set the wet well is to use two cinch straps of equal length. Place the straps right under the rim so they will tighten as the wet well is lifted. If the straps are properly positioned the wet will hang level and secure. If you have experience in this area use your own discretion.

BASIN INSTALLATION INSTRUCTIONS
(WITH EXISTING HIGH WATER TABLE)

1. Excavation Dimensions:

   Excavation shall be 6" deeper than the depth of the basin, below finish grade and done in such a manner as to preserve the undisturbed state of bearing soils at the bottom. Diameter of excavation shall be sufficient to allow for necessary external pipe connections with a minimum 12" greater than the basin diameter.

2. Backfill Materials:

   a. The backfill materials shall be in inert, free flowing granular soil such as clean sand or gravel (1/4" mesh or finer).

   b. Acceptable backfill includes "stone dust" from rock crushing operation provided it possesses all the characteristics of free flowing sand and contains less than 20% by weight passing the No. 200 mesh sieve. Soil fines must be non-plastic.

   c. Silts, clays, organic soil, granulated cinder, slag and similar corrosive material shall not be used. Backfill shall be free of organic material, loam, trash, snow, ice, stones, rubble, etc.

3. Pipe Connections:

   a. Make necessary pipe connection in approved mannner. Note: connection may be threaded, caulked lead joints or other specified approved method.

4. Backfill as follows:

   a. If the hole is flooded, the water level shall be pumpped down to a maximum depth of 3 inches before preparing the bed and placing the basin. Water level shall be maintained below bottom of the basin until the excavation is backfilled and until there is adequate safety against uplift.

   b. The first layer of backfill is the base for the basin and shall be at least 6" thick.

   c. Place the basin on the bed and after aligning and leveling, push additional fill under and around the basin and compact by tamping to a uniform depth of 12" around the basin. This insures that the established grade and level of the basin will be maintained during remainder of the backfilling operation.

   d. Backfill shall be continued in one foot layers with specified sand backfill uniformly distributed around the basin and compacted around the basin.

   e. Concrete encasement may be used in lieu of backfill as described above, if the whole excavation does not exceed 12" in diameter larger than the basin to be installed.

5. Cover: The cover shall be bolted in place with an approved gasket material to effect a gas-tight seal.

INSTRUCTIONS TO REMOVE A REINFORCING RIB TO INSTALL THE INLET

THIS PROCEDURE IS REQUIRED ONLY IF THE GRAVITY INLET LANDS ON A RIB!

Measure the length of the rib to be removed. Using a sawzaall cut the rib lengthwise on the top and bottom of the rib. Keep in mind that the rib is hollow. Make the end cut between the top and bottom of the rib. Note: take care not to damage the underlying wall of the wet well. Remove the cut rib and the foam underneath. Use a circular sander to reduce the ridges left by the removal of the rib. What should remain is the uniform wall thickness of the wet well where the inlet is to be installed. Note: it is ok to remove a little more rib than to just fit the inlet fitting. Six inches on each side of the inlet is fine.

SEWAGE LIFT STATION PROFILE & CALCULATIONS	
MEDICAL PLAZA SEWAGE RIVERSIDE CA	
FIXED CONDITIONS	
STATIC HEAD	15' STATIC
LENGTH OF RUN	350 Ft.
TYPE OF PIPE	PLASTIC
SIZE OF FORCE MAIN	3 INCH.
TYPE OF FLUID	RAW SEWAGE
VOLTAGE	230/3
PHASE	3
GRAVITY INLET SIZE	6 INCH
INLET ELEVATION BELOW GRADE	34 INCHES
CALCULATIONS	
STATIC HEAD	15 Ft.
PIPING FRICTION LOSS	15.55 Ft.
FITTING FRICTION LOSS	1.96 Ft.
VELOCITY HEAD LOSS	0.66 Ft.
TOTAL FRICTION HEAD	18.17 Ft.
CALCULATED TOTAL DYNAMIC HEAD	33.5 Ft.
MAINTAINED VELOCITY OF	6.51 Ft./s @ 150 GPM

MEDICAL PLAZA SEWAGE RIVERSIDE, CA

PSI Pacific Southwest Industries
ENGINEERED PUMPS/FLUID HANDLING & DISPOSAL SYSTEMS
18541 Collier Ave. Lake Elsinore, CA 92530-2705
(800) 358-9095 (951) 674-2144 fax (951) 674-9444 CSL #583052
www.psipumps.com Email: info@psipumps.com

No.	Description	Date

LIFT STATION DETAILS
MEDICAL PLAZA SEWAGE
RIVERSIDE, CA

Date: 4/19/18 Scale: NTS
Drawn by: OR Sheet No. 1 OF 2
Checked by: SR

LSD-1

CITY OF RIVERSIDE BUSINESS TAX ACCOUNT #74172 EXP. 7/31/19

CITY OF RIVERSIDE
ELECTRIC DIVISION
APPROVED BY — DATE 10/15/18

REVIEWED BY:
WESTERN MUNICIPAL WATER DISTRICT
FOR NON-INTERFERENCE COMPLIANCE
SHEET 1 THROUGH 4
DEREK KAWAII
DIRECTOR OF ENGINEERING
DATE: 10/15/2018

REGISTERED PROFESSIONAL ENGINEER — SAM A.KBARPOUR — C053038 Exp. 6/30/19 — CIVIL — STATE OF CALIFORNIA
R.C.E. No. — 9-14-18 DATE

SAKE ENGINEERS, INC.
www.sakengineers.com
ENGINEERING ● SURVEYING ● LAND DEVELOPMENT
400 S. RAMONA AVE., STE. 202
CORONA, CALIFORNIA 92879
(951) 279-4041 FAX: (951) 279-2830
File Name: \\SEWER\projects\CI RIVERSIDE\JN3101 Simjee\CIVIL\SEWER.dwg Layout: SEWER 3
PREPARED BY: R.C.E. NO. 53038
DATE: Sep. 14, 2018

MARK	APPR.	DATE
DESIGNED BY SA	DRAWN BY RL	CHECKED BY SA

BENCHMARK:

POINT I.D.: G1-K3
P.K. NAIL AND CITY ENGINEER TAG IN THE TOP OF CURB OF THE NORTHERLY WING OF A CATCH BASIN, ALONG THE WESTERLY CURB OF MITCHELL AVENUE, 290 FEET NORTHERLY OF GRAMERCY PLACE
ELEV.: 736.845 (1929)

CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	TM	10/17
ENGINEERING MANAGER		
TRAFFIC DIVISION		

APPROVED BY — CITY ENGINEER — DATE 11/05/2018

SEWER IMPROVEMENT PLANS
18876 VAN BUREN BLVD
PLAN AND PROFILE
EMP 2089
HORIZ. SCALE: NONE VERT. SCALE: NONE

PROJECT NO. PW17-0765
S-2159
SHEET 3 SHEET 4
FILE NO.

S2159-4

CONTROL PANEL PLACEMENT AND MOUNTING INSTRUCTIONS

THE CONTROL PANEL IS TO BE MOUNTED ON NO LESS THAN TWO INCHES IN DIA. STEEL GALVANIZED POSTS WITH CROSS MEMBER SUPPORT. CREATE A BACKBOARD THAT WILL FIT THE CONTROL PANEL AND THE SERVICE DISCONNECT. THE POSTS ARE TO BE CEMENTED IN THE GROUND AT LEAST TWO FEET DEEP. THE CONTROL PANEL IS TO BE PLACED A MINIMUM OF 3 FEET AWAY FROM THE OUTSIDE RIM OF THE WET WELL AND MAXIMUM OF 6 FEET. THE BOTTOM OF THE CONTROL PANEL IS TO BE A MINIMUM OF 48 INCHES ABOVE GRADE. A THREE PHASE SERVICE DISCONNECT IS TO BE MOUNTED AHEAD OF THE CONTROL PANEL AND SUPPLIED BY THE ELECTRICIAN. INSTALL VAPOR BARRIERS ON ALL CONDUITS BETWEEN THE WET WELL AND CONTROL PANEL. THE ELECTRICIAN IS TO PROVIDE A GROUNDING ROD BETWEEN THE SUPPORT POSTS PER LOCAL CODES.

May. 10 60-PC-C-06

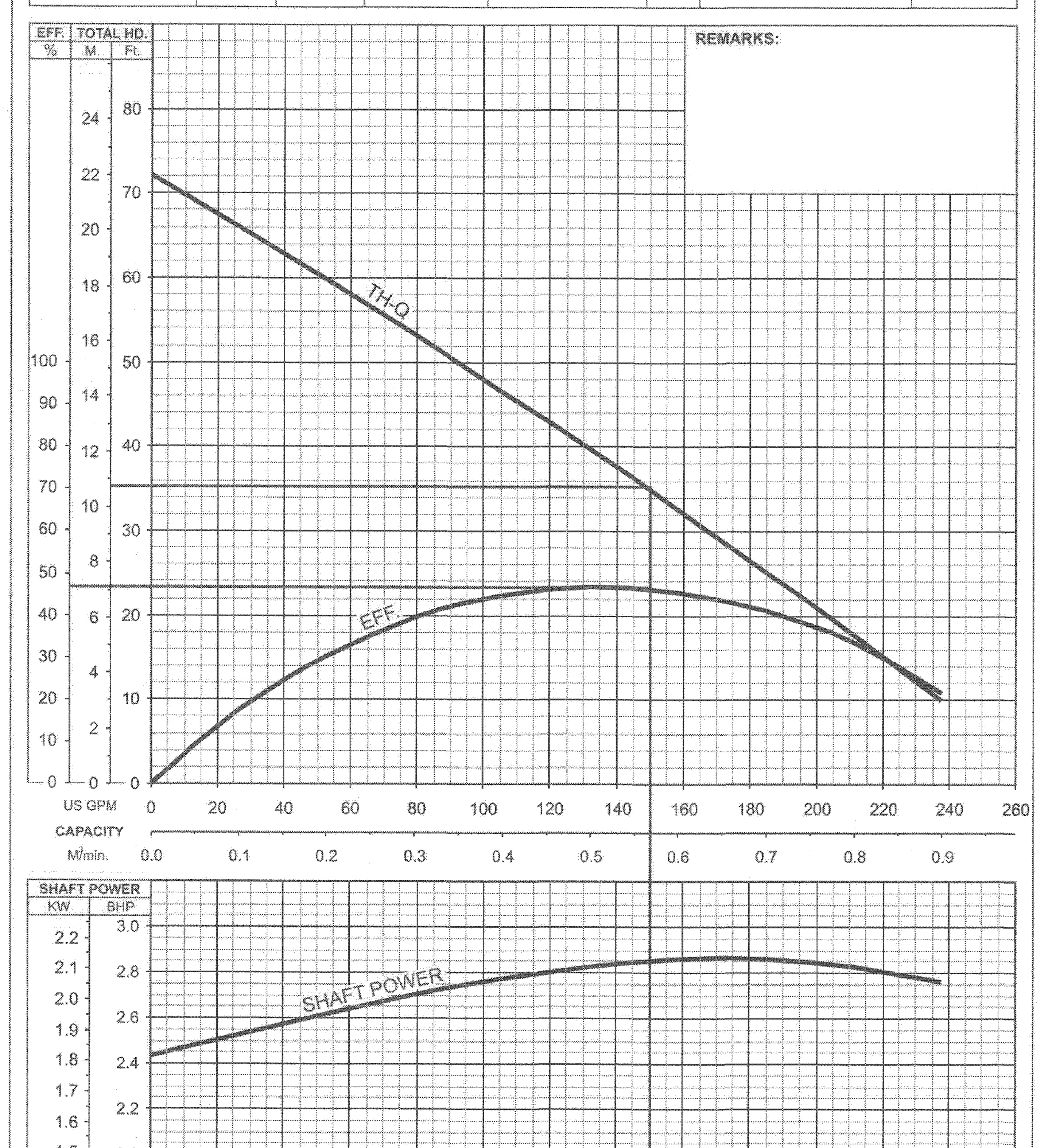
TSURUMI

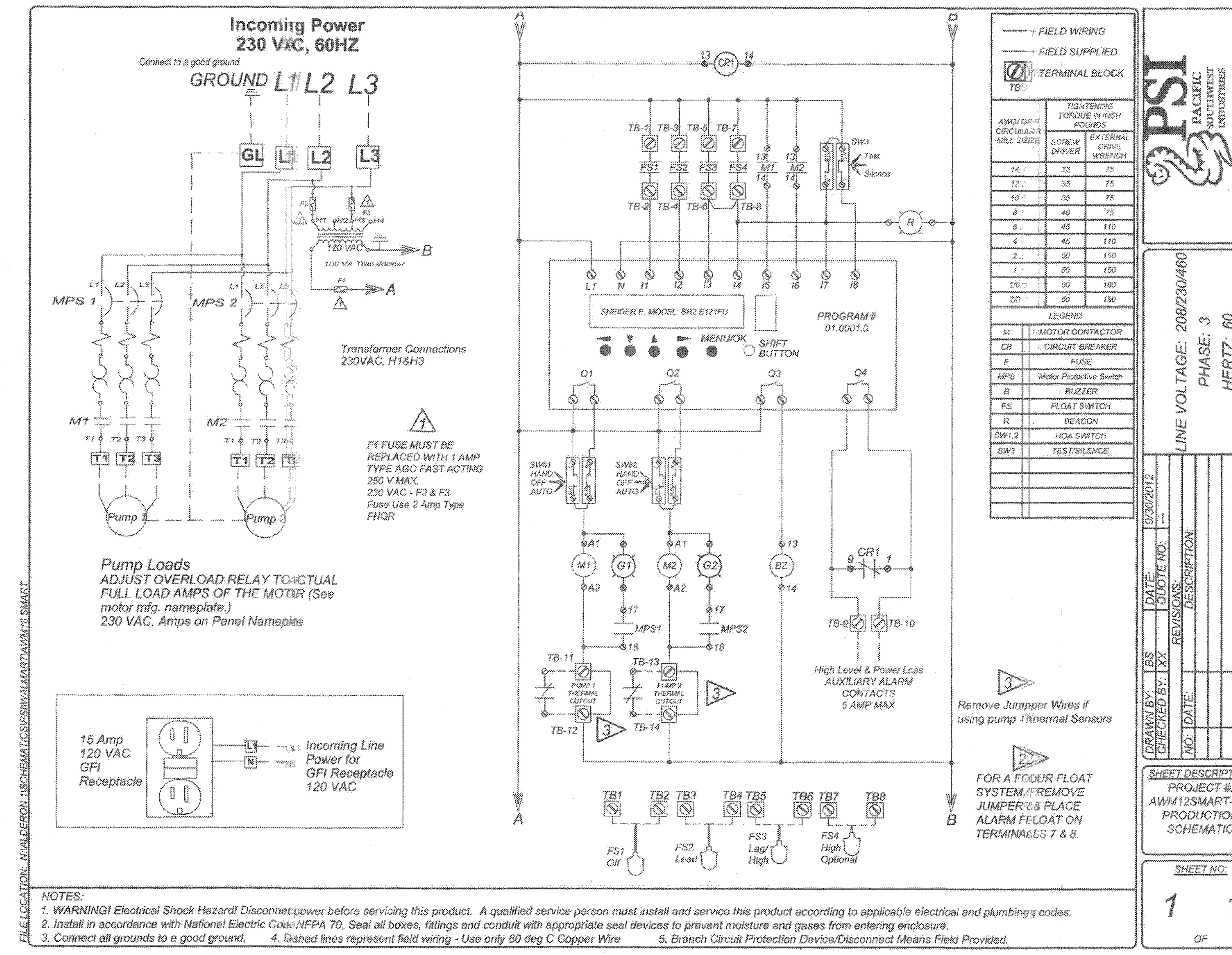
C - SERIES

CUTTER-TYPE - SEWAGE & WASTEWATER PUMPS

PERFORMANCE CURVE

MODEL		BORE	HP	KW	RPM	SOLIDS DIA	LIQUID	SG.	VISCOSITY	TEMP.
(TOS) 80C22.2-CR -61		3"/80mm	3	2.2	3490	0.79"/20mm	Water	1.0	1.123 cSt.	60F
PUMP TYPE		PHASE	VOLTAGE	AMPERAGE		HZ	STARTING METHOD		INS. CLASS	
Cutter-Type - Sewage & Wastewater		3	208-230/460/575	10.0 - 9.8 / 4.9 / 3.8		60	Direct On Line		F	
CURVE No.	DATE	PHASE	VOLTAGE	AMPERAGE		HZ	STARTING METHOD		INS. CLASS	
-	-	-	-	-		-	-		-	

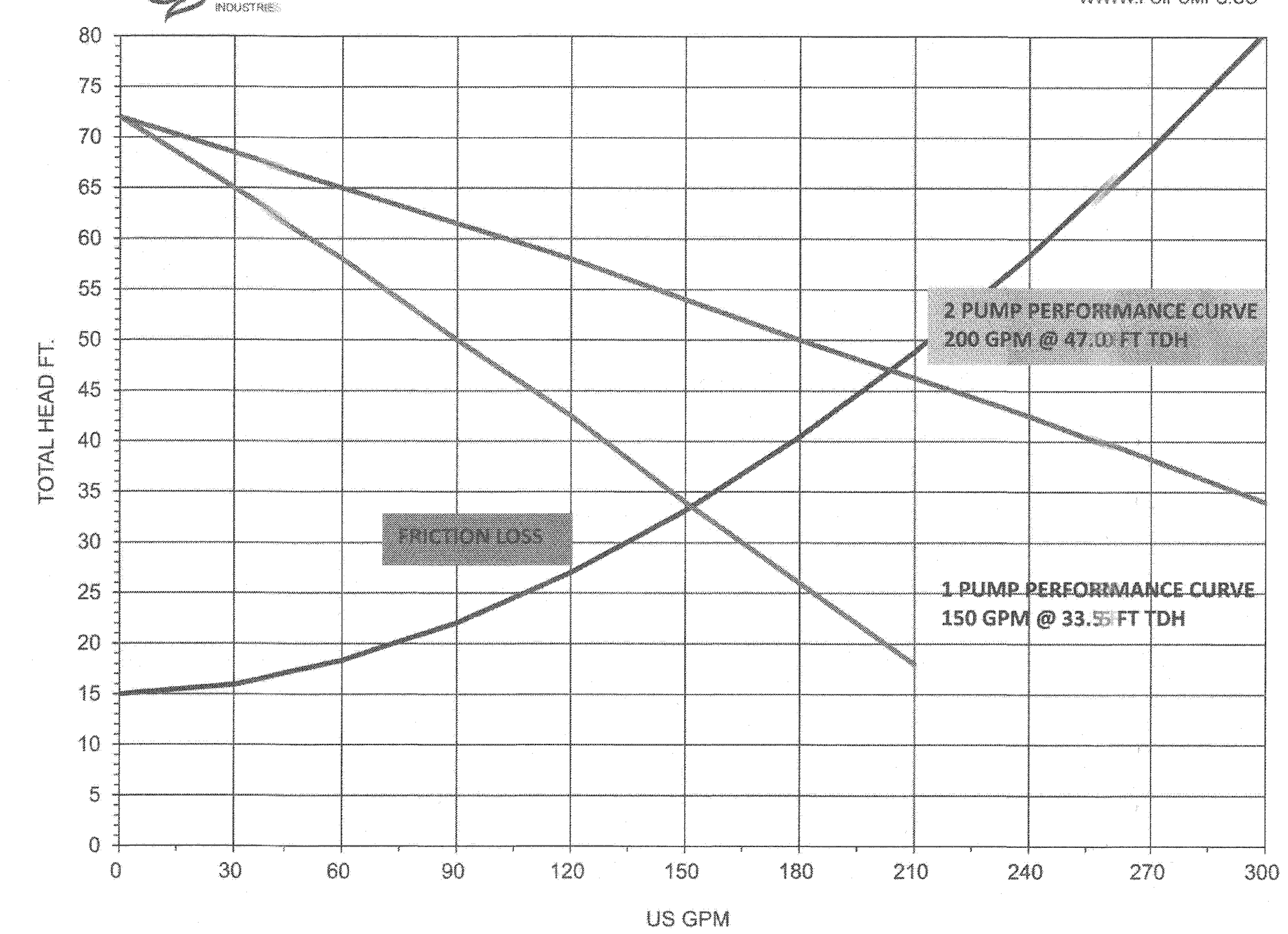




PSI PACIFIC SOUTHWEST INDUSTRIES

SYSTEM HEAD CURVE
MEDICAL PLAZA

18541 COLLIER AVE
LAKE ELSINORE,
CA. 92530
PH: (800) 358-9095
WWW.PSIPUMPS.CO



MEDICAL PLAZA RIVERSIDE, CA

PSI pacific southwest industries

LIFT STATION DETAILS
MEDICAL PLAZA
RIVERSIDE, CA

Date:	4/19/18
Drawn by:	OR
Checked by:	SR
Scale:	NTS
Sheet No.	2 OF 2

LSD-2

IMPORTANT NOTICE
Section 4216/4217 of the Government Code requires a Dig Alert Identification Number to be issued before a "Permit to Excavate" will be valid. For your Dig Alert I.D. Number call
CALL TOLL FREE
48 HOURS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT
1-800-422-4133

CITY OF RIVERSIDE BUSINESS TAX ACCOUNT #74172 EXP. 7/31/19

CITY OF RIVERSIDE
ELECTRIC DIVISION
APPROVED BY DATE 10/18/18

REVIEWED BY:
WESTERN MUNICIPAL WATER DISTRICT
FOR NON-INTERFERENCE COMPLIANCE
SHEET 1 THROUGH 4
DEREK KAWAII
DIRECTOR OF ENGINEERING
DATE: 10/15/2018

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R.C.E. No. DATE 9-14-18

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PREPARED BY: R.C.E. NO. 53038
DATE: Sep. 14, 2018

MARK | APPR. | DATE
DESIGNED BY SA DRAWN BY RL CHECKED BY SA

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ELEV.: 736.645 (1929)

CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	TN	10/12/18
ENGINEERING MANAGER		
TRAFFIC DIVISION		

APPROVED BY
CITY ENGINEER
DATE 11/05/2018

SEWER IMPROVEMENT PLANS
18876 VAN BUREN BLVD
PLAN AND PROFILE
HORIZ. SCALE: NONE VERT. SCALE: NONE

PROJECT NO. PW17-0765
S-2159
SHEET 4 SHEET 4
FILE NO.

EMP 21289

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