

# SEWER LIFT STATION PLANS FOR TRACT 31755 CITY OF RIVERSIDE

## GENERAL NOTES— PUBLIC WORKS

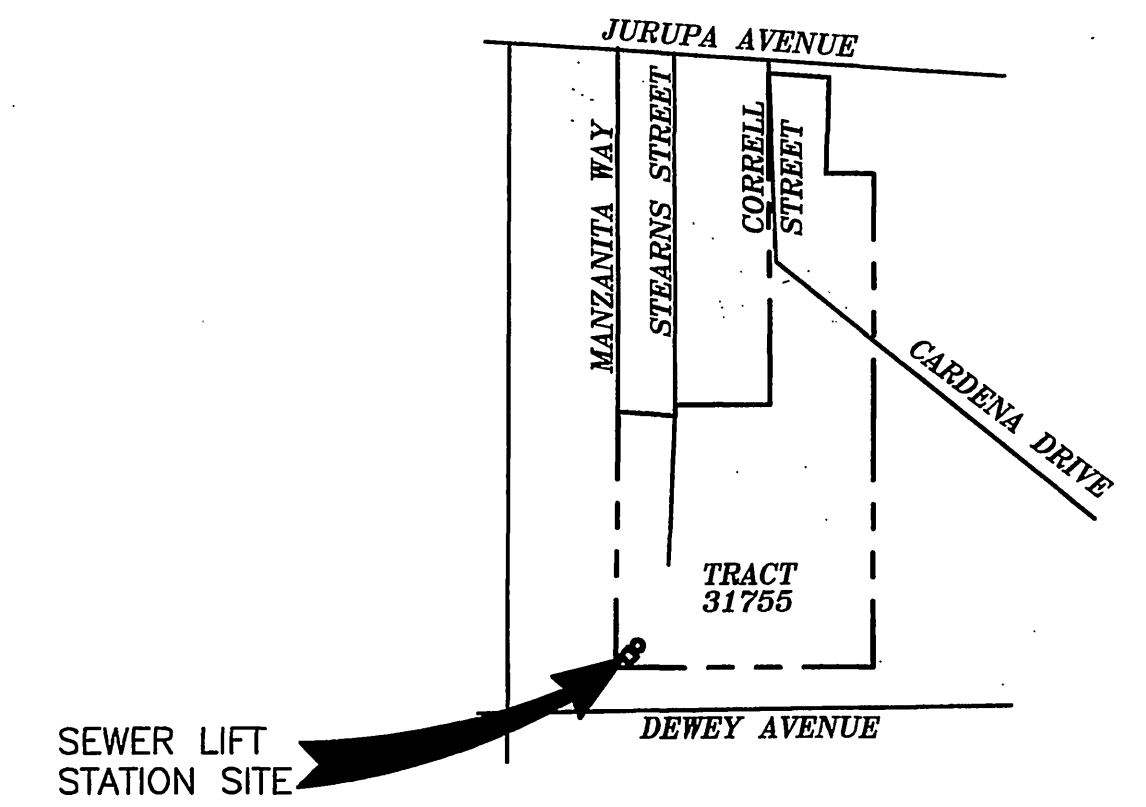
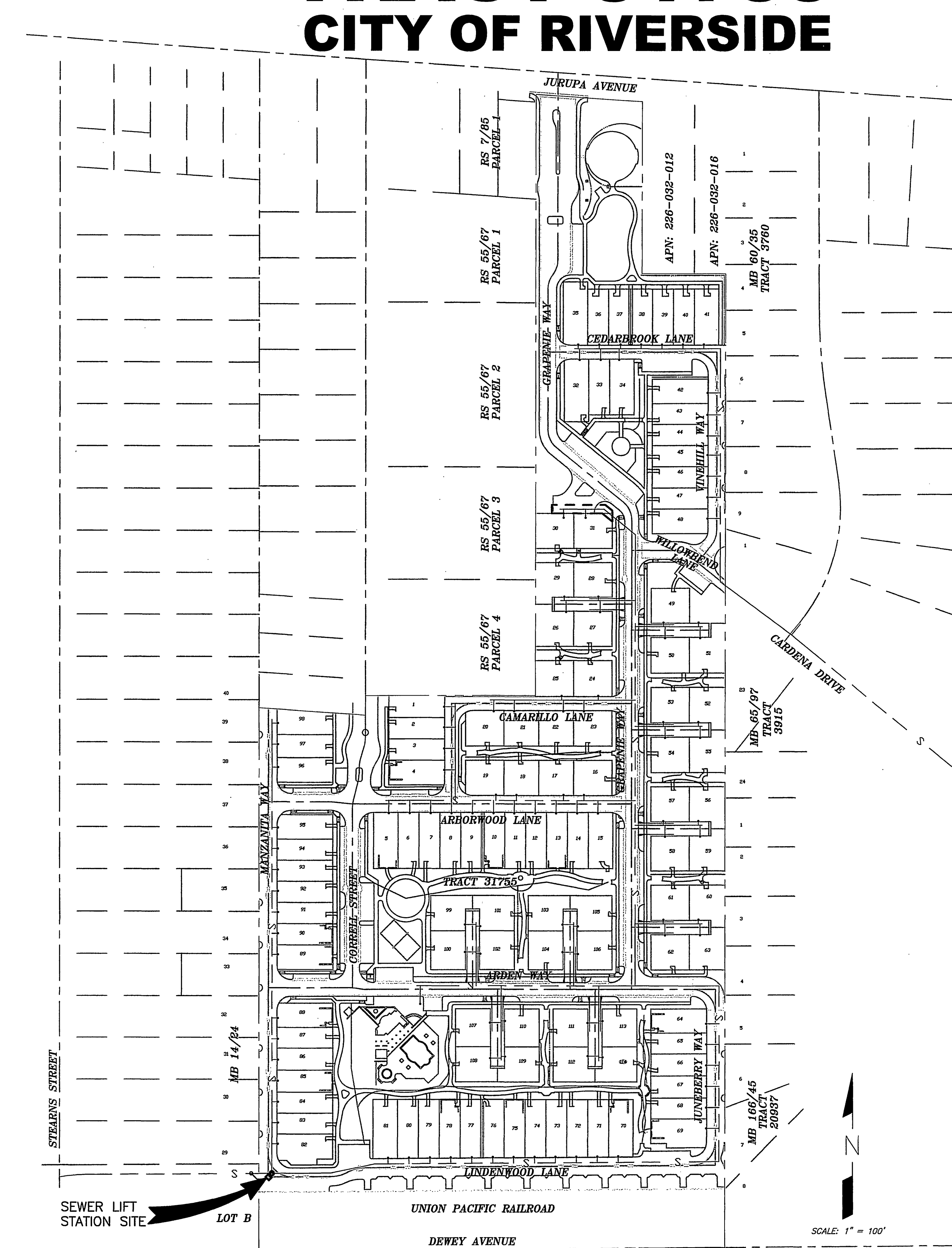
1. NO PERSON SHALL PERFORM ANY CONSTRUCTION ACTIVITY OR INSTALL ANY OBJECTS WITHIN THE PUBLIC RIGHTS-OF-WAY OR EASEMENTS OF THE CITY OF RIVERSIDE WITHOUT A VALID CONSTRUCTION PERMIT OR, A STREET OPENING PERMIT OR AN ENCROACHMENT PERMIT ISSUED BY THE CITY'S PUBLIC WORKS DEPARTMENT.
2. IT SHALL BE THE 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 THE DISCREPANCIES ARISING DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE CITY.
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 RE-ESTABLISHING 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 #1-800-227-2600, 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 THE 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.

## NOTICE

BEFORE PROCEEDING WITH THIS WORK, THE CONTRACTOR SHALL CAREFULLY CHECK, AND VERIFY ALL CONDITIONS, QUANTITIES, DIMENSIONS, AND GRADE ELEVATIONS, AND SHALL REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

## PRIVATE ENGINEER'S NOTES TO CONTRACTOR

1. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS, TO THE BEST OF OUR KNOWLEDGE THERE ARE NO EXISTING UTILITIES EXPECT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN ON THESE DRAWINGS. THE CONTRACTOR FURTHER ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR THE UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN OR NOT SHOWN ON THIS DRAWING.
2. 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 THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE CITY, THE OWNER, AND THE ENGINEER HARMLESS FROM ANY 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 OWNER OR ENGINEER.
3. UNAUTHORIZED CHANGED & USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE.



VICINITY MAP  
SCALE 1" = 100'

## OWNER/APPLICANT

RIV INFILL LLC  
CORMAN LEIGH COMMUNITIES(MANAGING MEMBER)  
32823 HWY. 79 SOUTH  
TEMECULA, CA 92590 (909) 296-5070

## ENGINEER

DEXTER WILSON ENGINEERING, INC.  
703 PALOMAR AIRPORT RD. SUITE 300  
CARLSBAD, CA 92011  
(760) 438-4422

## UTILITIES

SEWER AND WATER  
CITY OF RIVERSIDE  
3460 ORANGE STREET  
RIVERSIDE, CA 92501  
(951) 427-2200

## GAS

SOUTHERN CALIFORNIA GAS COMPANY  
1981 WEST LUGONIA  
REDLANDS, CA 92374  
(909) 995-7847

## ELECTRIC

CITY OF RIVERSIDE  
3460 ORANGE STREET  
RIVERSIDE, CA 92501  
(951) 427-2200

## TELEPHONE

PACIFIC BELL  
3939 EAST COLORADO STREET  
ANAHEIM, CA 92807  
(800) 310-2355

## TOPOGRAPHY

AERIAL & FIELD TOPOGRAPHY BY THOMSON INC.  
DATED 8/11/03

## LEGAL DESCRIPTION

BEING SUBDIVISION OF A PORTION OF SECTIONS 28 AND 33 OF T.2.S., R.5W., S.B.B.M.

## SHEET INDEX

SHEET	DWG. NO.	TITLE
1	C-1	TITLE SHEET
2	C-1	LIFT STATION PLAN
3	M-1	MECH. PLAN & SECTION
4	M-2	DETAILS
5	E-1	ELECTRICAL PLAN
6	E-2	ELECTRICAL DETAILS

INDEX MAP  
SCALE 1" = 100'

CITY TAX CERT. # 119064 EXP. 1/24/06



UNDERGROUND  
SERVICE  
ALERT

CALL: TOLL FREE  
1-800-227-2600

TWO WORKING DAYS BEFORE YOU DIG

BENCHMARK  
U.S.G.S. BRASS DISK W/LY  
END OF HEADWALL SO'W  
STEARNS PRODUCED 32'N  
CL DEWEY,  
U.S.G.S. B.M. Z-1142  
RIV. CO. B.M. 602-5-69  
ELEVATION= 785.382



DEXTER WILSON ENGINEERING, INC.  
CONSULTING ENGINEERS  
703 PALOMAR AIRPORT ROAD, SUITE 300  
CARLSBAD, CA 92009 (760) 438-4422

MARK DESIGNED BY SMN REVISIONS DRAWN BY BJ APPR. DATE CHECKED BY SMN

City of Riverside, California  
PUBLIC WORKS DEPARTMENT

APPROVED BY: [Signature] DATE APPROVED BY: [Signature]

PRINCIPAL ENGINEER

TRAFFIC DIVISION

SURVEYOR

STREET SERVICES

CITY ENGINEER

DATE 1/5/06

Sewer Improvement Plan  
Tract 31755  
TITLE SHEET

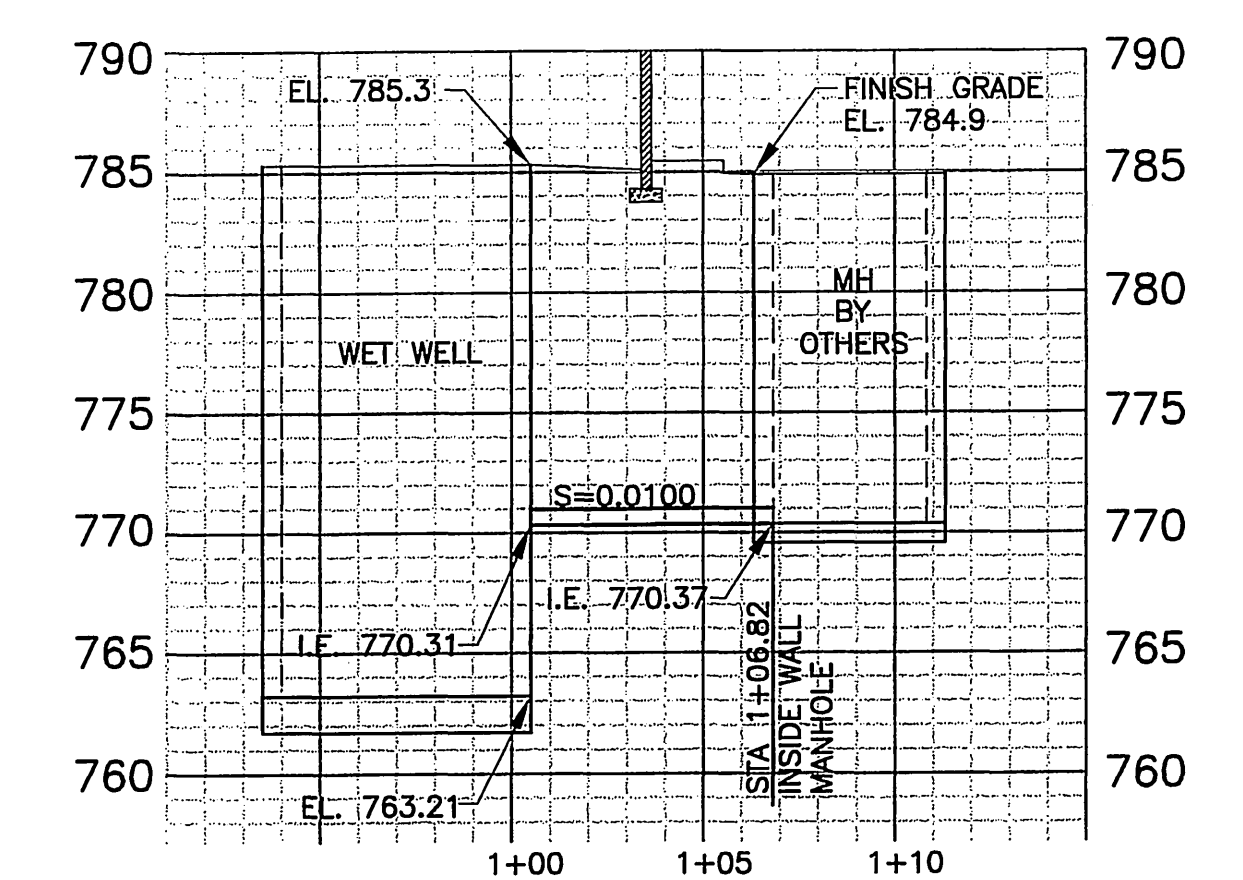
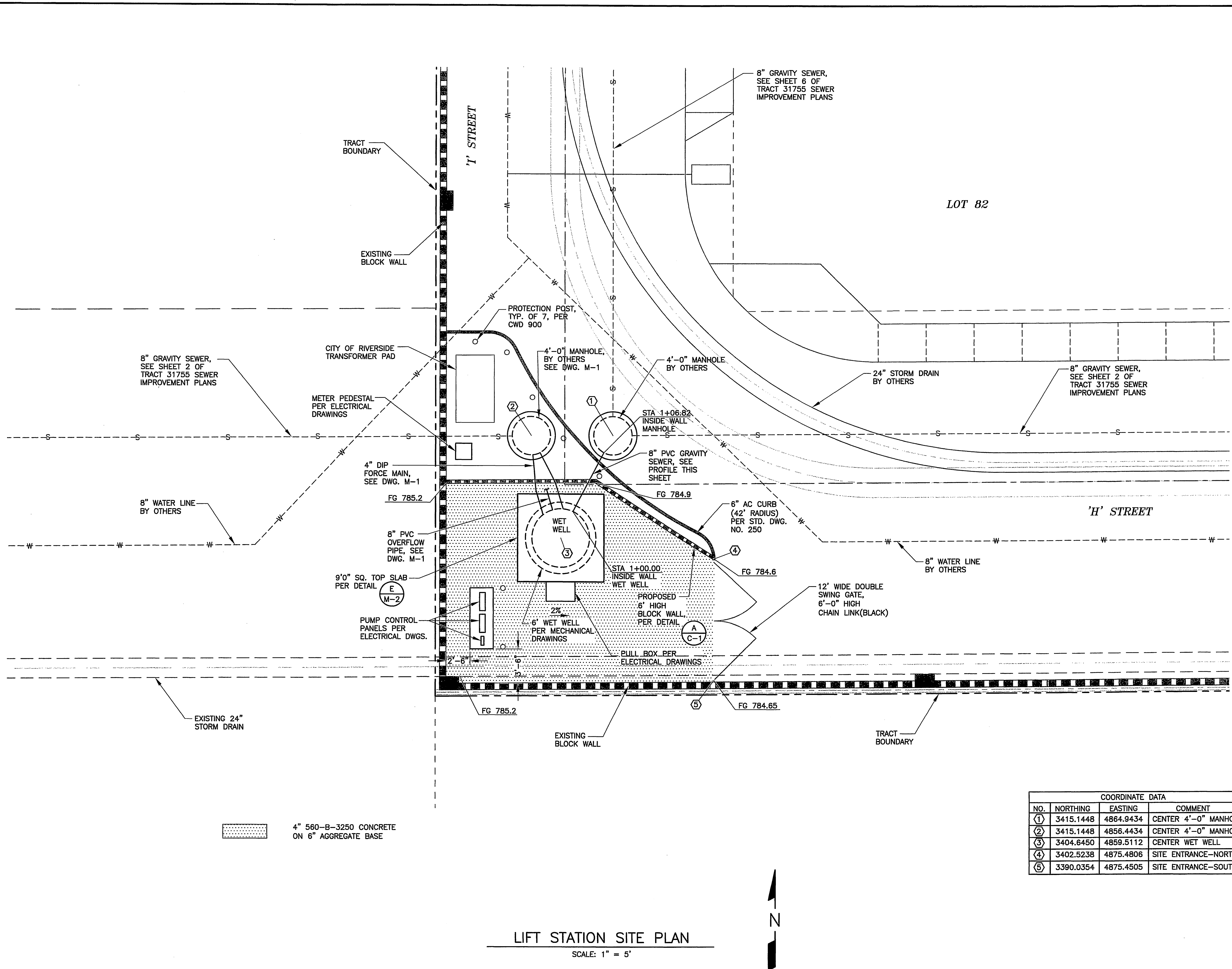
ACCOUNT NO. PWS-0592

5-1938  
G-1

SHEET 1 OF 6 SHEETS

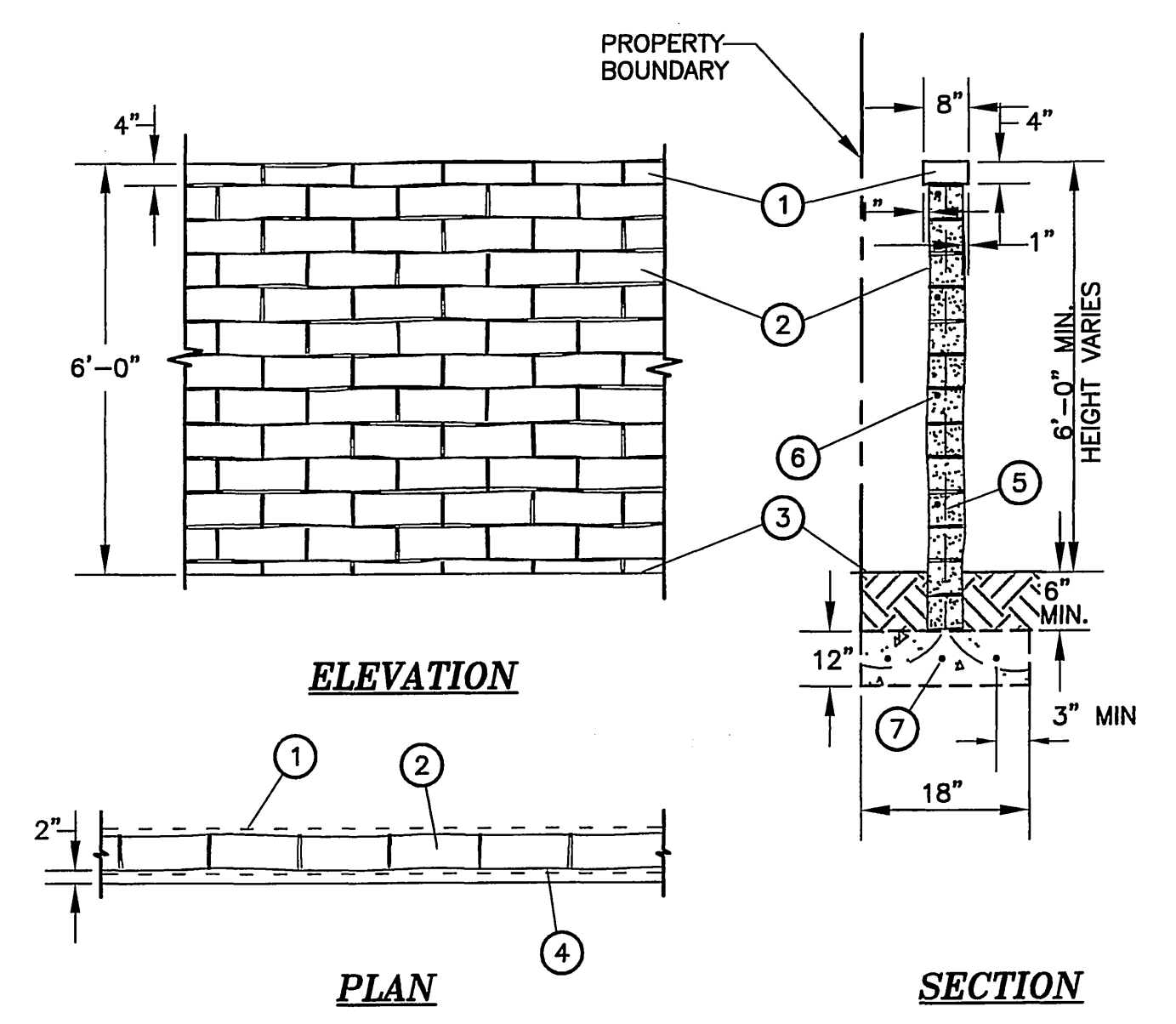
HORIZ. SCALE: AS NOTED VERT. SCALE: AS NOTED

INDEXED 1-10-06 JH



**8" PVC SDR35 GRAVITY SEWER**

SCALE: HORIZ. 1" = 5'  
VERT. 1" = 8'



**ELEVATION**

**PLAN**

**SECTION**

**LEGEND**

- ① 8x4x16 SPLIT FACE CAP
- ② 6x8x16 T & G SPLIT FACE BLOCK, TWO SIDES GROUT ALL CELLS.
- ③ FINISH GRADE
- ④ ALIGN FACE OF FOOTING TO PROPERTY LINE
- ⑤ # 5 REBAR - VERT. @ 32" O.C. (ALTERNATE BENDS AT FOOTING)
- ⑥ # 5 REBAR - HORIZ. @ 32" O.C.
- ⑦ # 5 REBAR - HORIZ. @ 6" O.C.

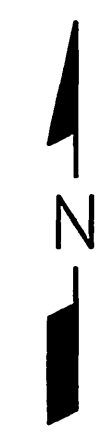
**BLOCK WALL DETAILS**

SCALE: 1" = 5'

COORDINATE DATA			
NO.	NORTHING	EASTING	COMMENT
①	3415.1448	4864.9434	CENTER 4'-0" MANHOLE
②	3415.1448	4856.4434	CENTER 4'-0" MANHOLE
③	3404.6450	4859.5112	CENTER WET WELL
④	3402.5238	4875.4806	SITE ENTRANCE-NORTH
⑤	3390.0354	4875.4505	SITE ENTRANCE-SOUTH

**LIFT STATION SITE PLAN**

SCALE: 1" = 5'



CITY TAX CERT. # 119064 EXP. 1/24/06

**UNDERGROUND SERVICE ALERT**  
CALL: TOLL FREE 1-800-227-2600  
TWO WORKING DAYS BEFORE YOU DIG

BENCHMARK  
U.S.G.S. BRASS DISK W/LY  
END OF HEADWALL 30'W  
STEARNS PRODUCED 32'W  
CL DEWEY,  
U.S.G.S. B.M. Z-1142  
RIV. CO. B.M. 602-5-69  
ELEVATION= 785.382



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CONSULTING ENGINEERS  
703 PALOMAR AIRPORT ROAD, SUITE 300  
CARLSBAD, CA 92011 (760) 438-4422

MARK	DESIGNED BY SMN	REVISIONS	DRAWN BY RD	APPR DATE	CHECKED BY SMN
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**City of Riverside, California**  
PUBLIC WORKS DEPARTMENT

APPROVED BY: [Signature]  
DATE: 1/5/06

PRINCIPAL ENGINEER: [Signature]  
TRAFFIC DIVISION: [Signature]  
SURVEYOR: [Signature]  
STREET SERVICES: [Signature]

CITY ENGINEER: [Signature]  
DATE: 1/5/06

**Sewer Improvement Plan**  
Tract 31755  
**LIFT STATION PLAN**

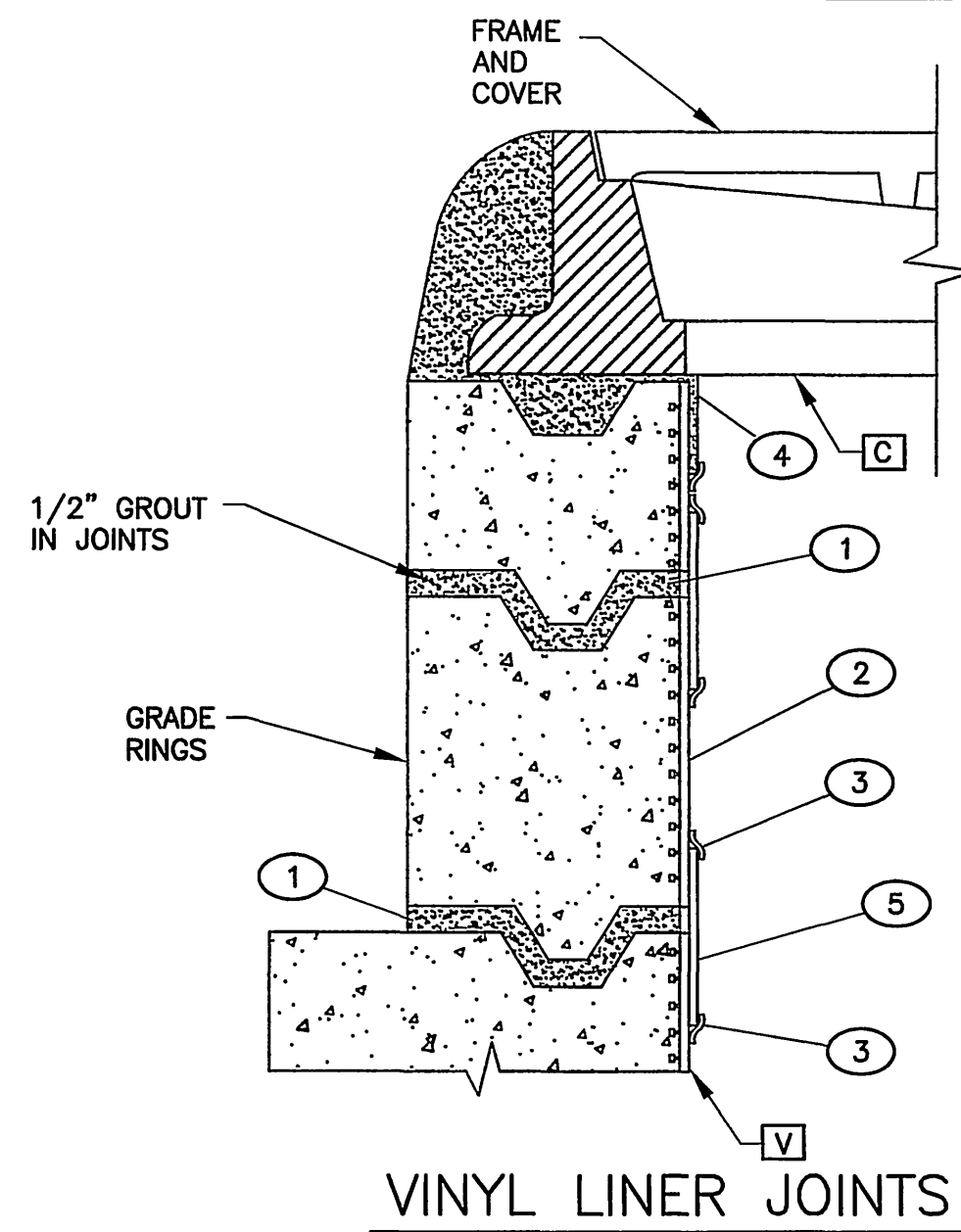
ACCOUNT NO. PW05-0392  
S-1938  
C-1  
SHEET 2 OF 6 SHEETS  
FILE NO.

HORIZ. SCALE: AS NOTED VERT. SCALE: AS NOTED

INDEXED 1-10-06 LK

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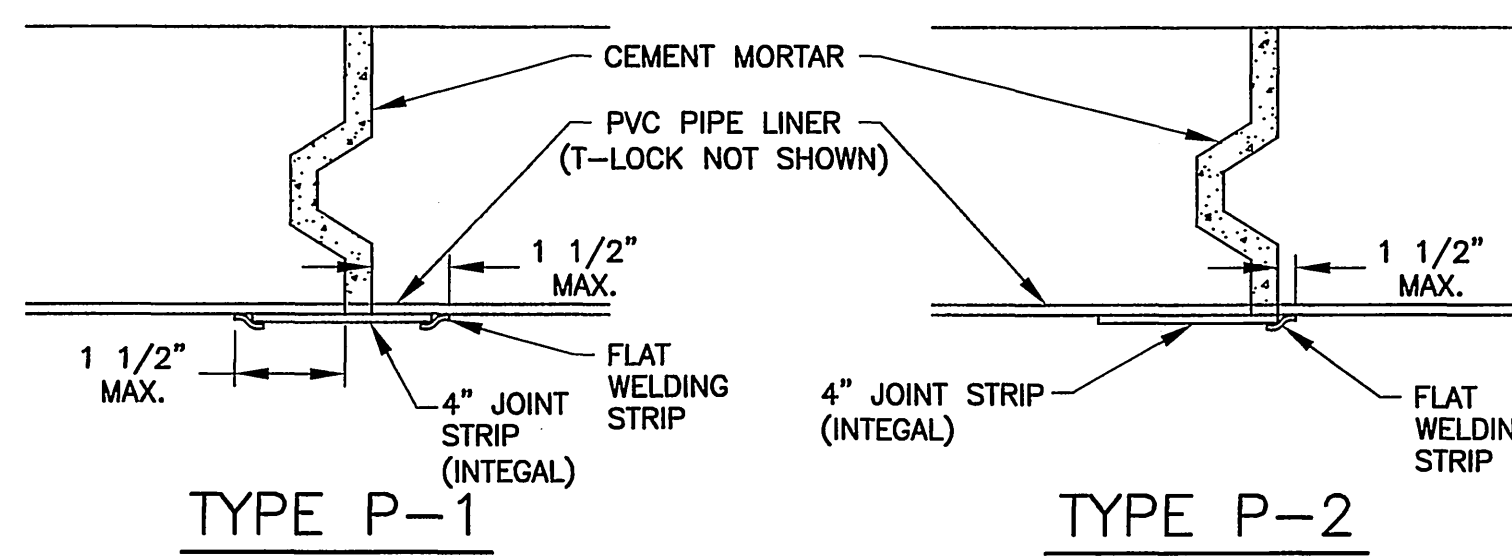
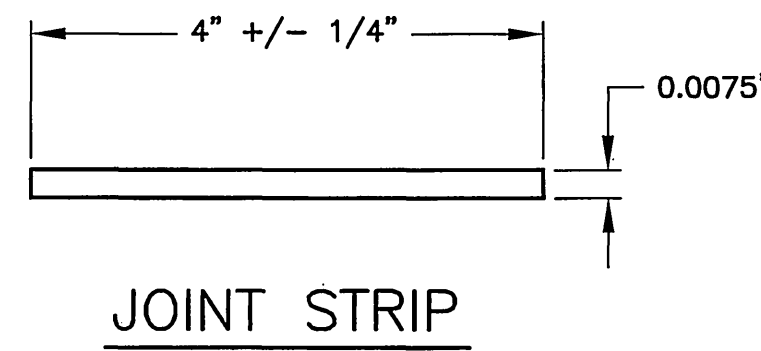
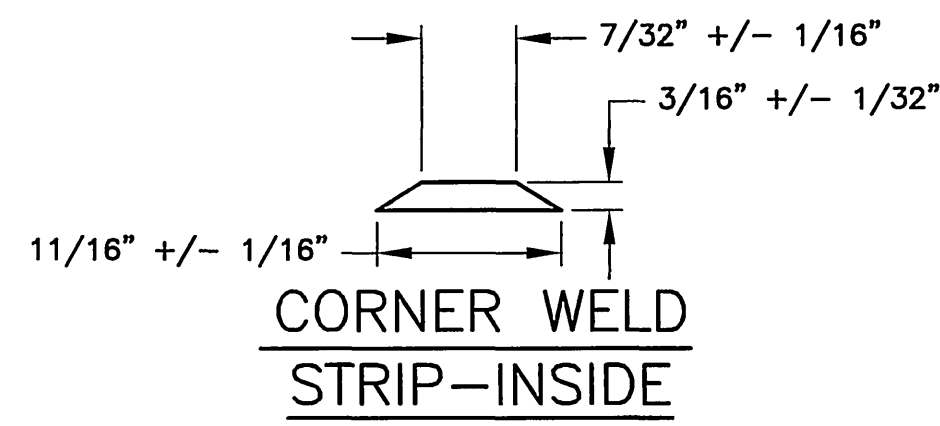
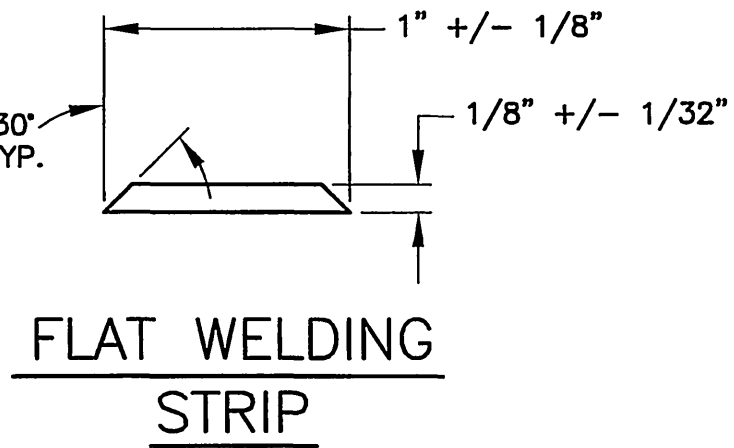
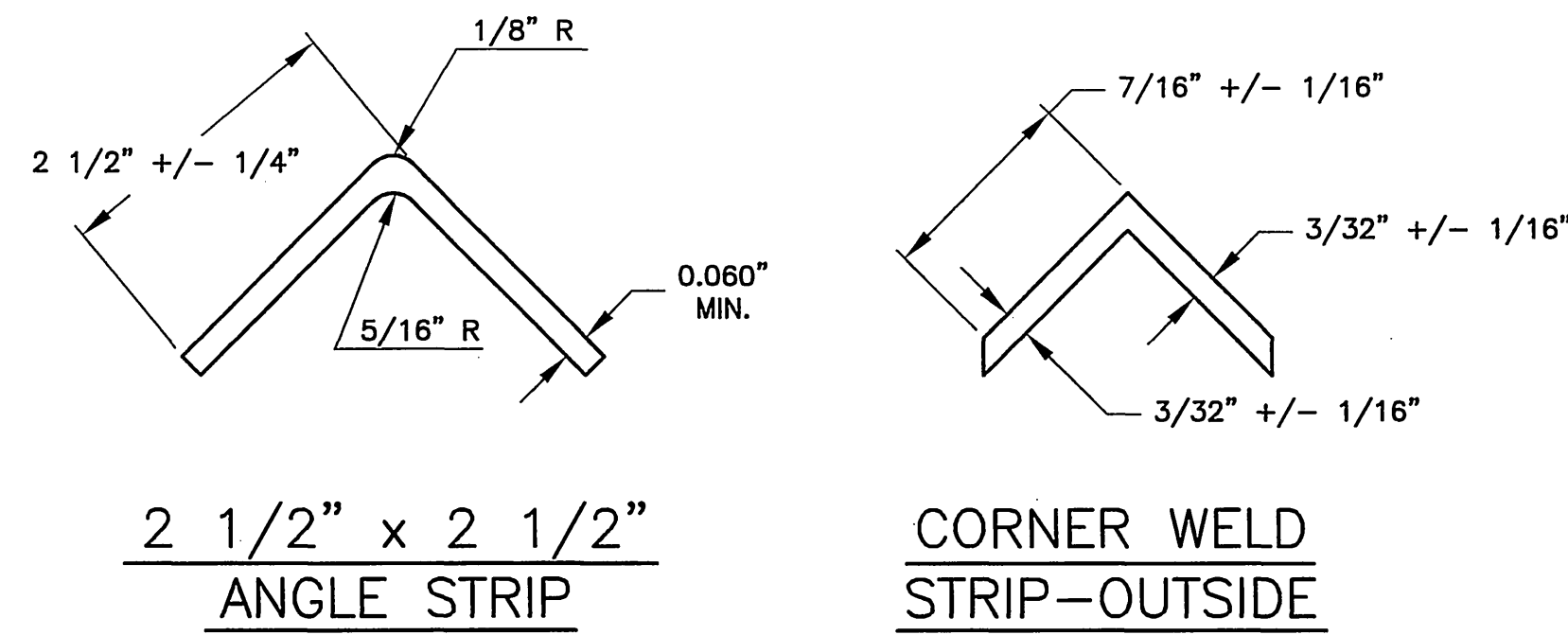




- ① SET WET WELL SHAFT AND GRADE RINGS IN CEMENT GROUT ON TOP OF PVC LINER
- ② T-LOCK PVC LINER INSTALLED IN PIPE BY FABRICATOR
- ③ 1-INCH WELD STRIP
- ④ 2 1/2" x 2 1/2" ANGLE STRIP
- ⑤ 4" +/- 1/4" JOINT STRIP

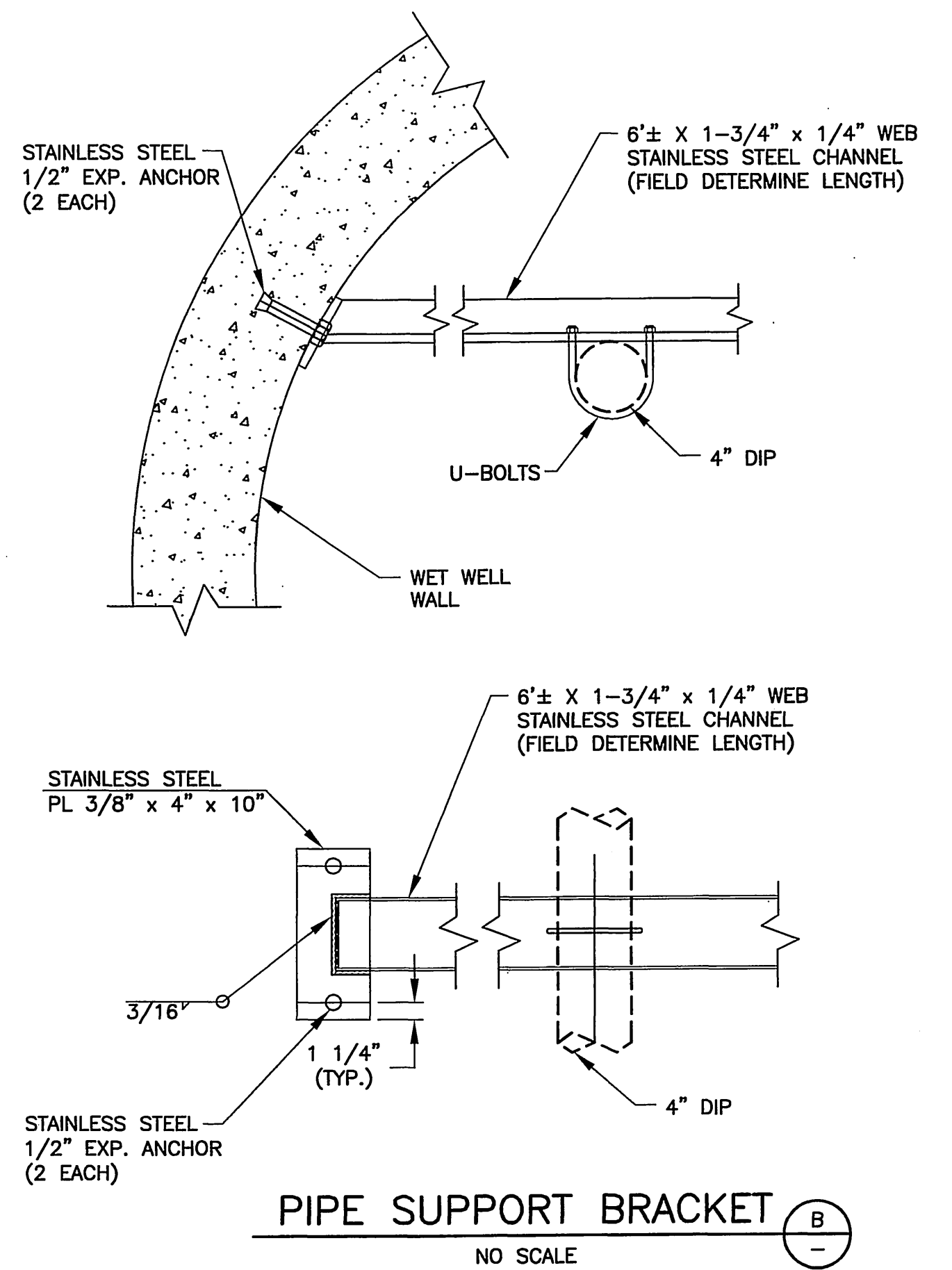
**COATING AND LINING SCHEDULE**

- C** ALL EXPOSED INTERIOR SURFACES OF WET WELL BASE, RINGS, FRAME AND COVER TO BE COATED WITH SANCON 100 EPOXY PRIMER/POLY-URETHANE TOP COAT SYSTEM PER MANUFACTURER'S RECOMMENDATIONS, OR CITY APPROVED EQUAL.
- V** ALL EXPOSED INTERIOR SURFACES OF WET WELL SHAFT TO BE LINED WITH "T-LOCK AMER PLATE" (WHITE) AS MANUFACTURED BY AMERON PROTECTIVE COATING DIVISION OR CITY APPROVED EQUAL.

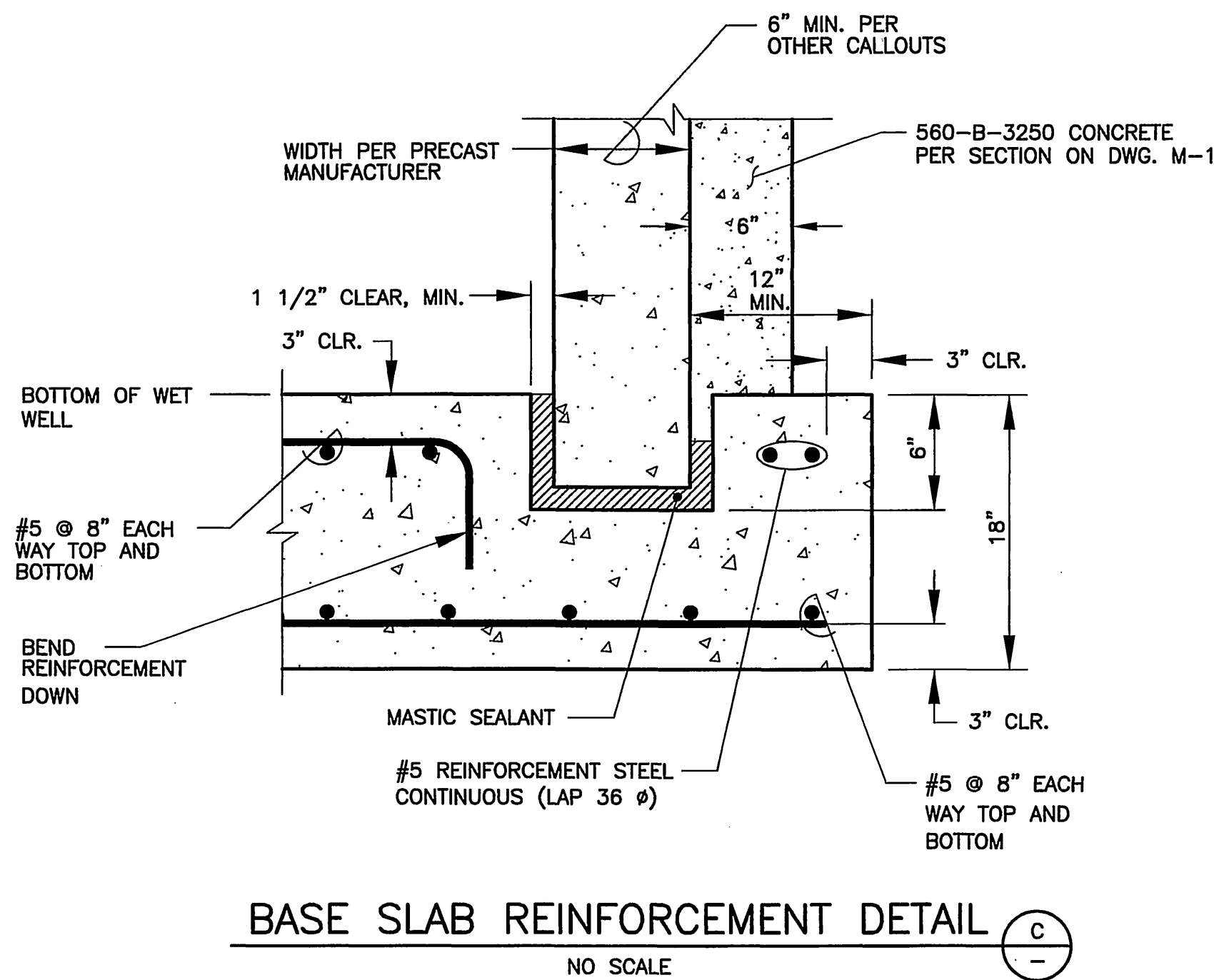


**P.V.C. LINER JOINTS**

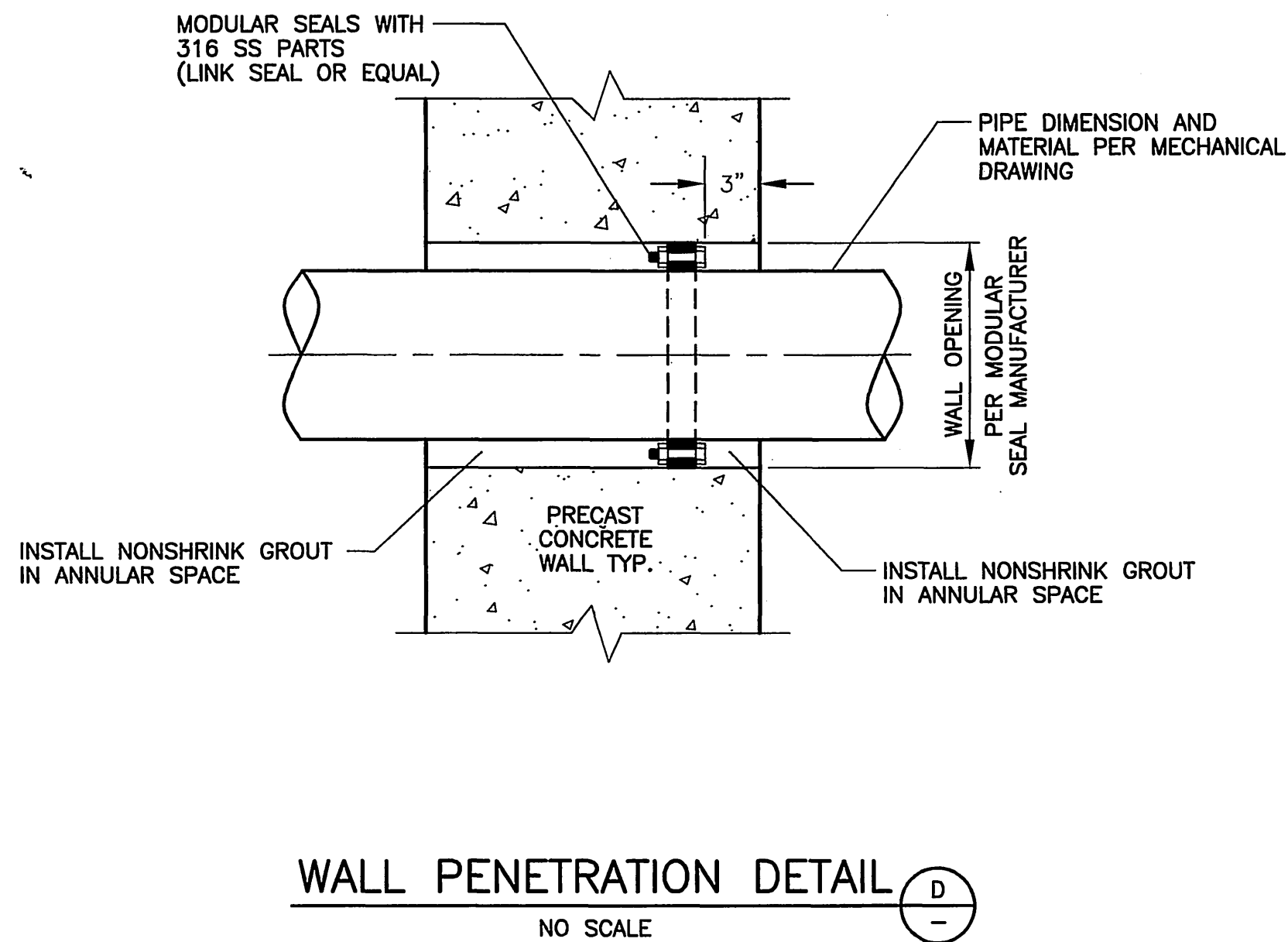
**VINYL LINING DETAIL**



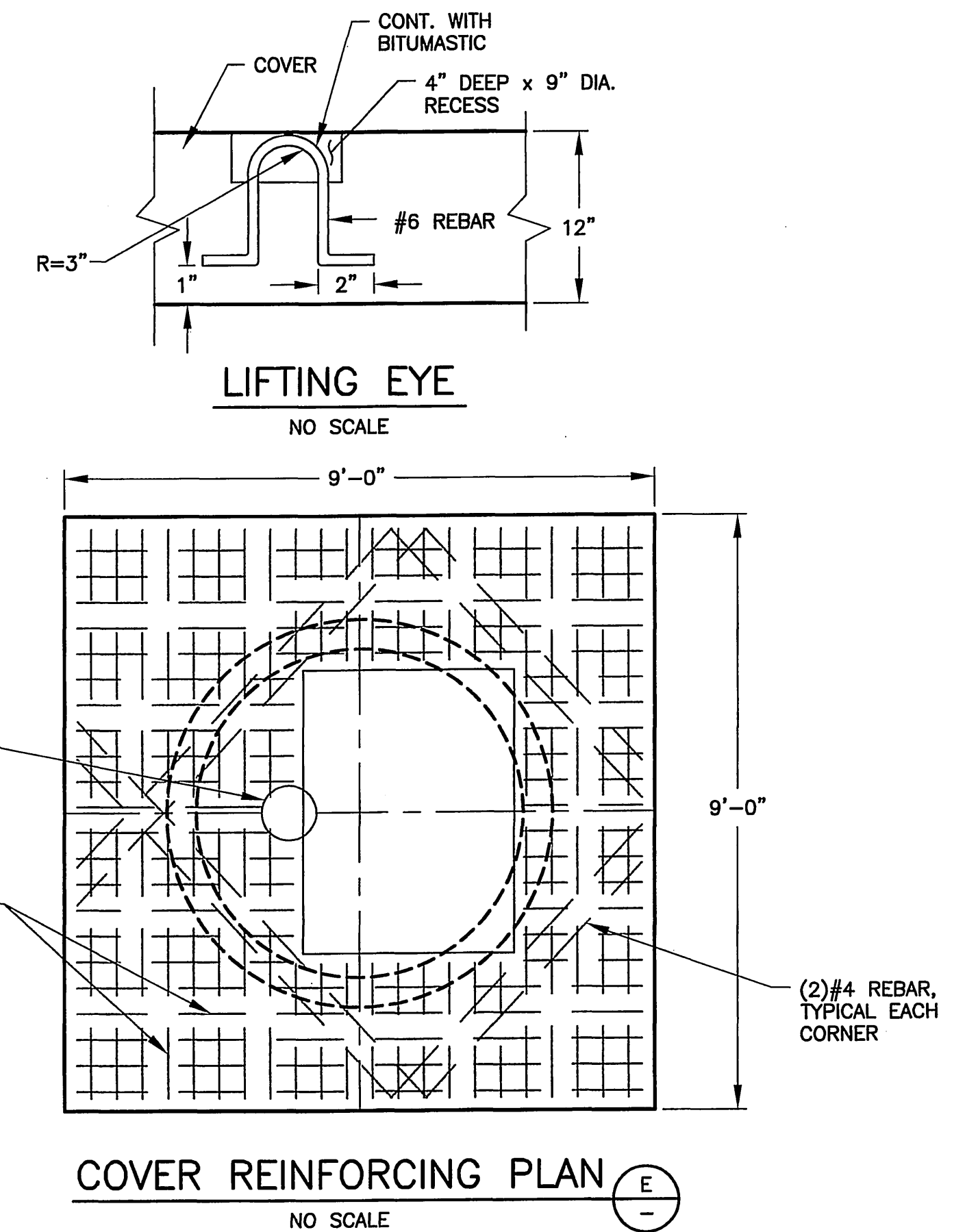
**PIPE SUPPORT BRACKET**



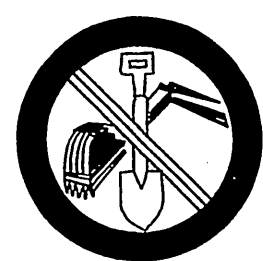
**BASE SLAB REINFORCEMENT DETAIL**



**WALL PENETRATION DETAIL**



**COVER REINFORCING PLAN**



**UNDERGROUND SERVICE ALERT**  
CALL: TOLL FREE 1-800-227-2600  
TWO WORKING DAYS BEFORE

CITY TAX CERT. # 119064 EXP. 1/24/06  
BENCHMARK U.S.G.S. BRASS DISK W/LY END OF HEADWALL 30'W STEARNS PRODUCED 32'N CL DEWEY. U.S.G.S. B.M. Z-1142 RIV. CD. B.M. 602-5-69  
REGISTRATION = 785.382



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CARLSBAD, CA 92011 (760) 438-4422

MARK	DESIGNED BY: SMN	REVISIONS	DRAWN BY: BJ	APPR. DATE	CHECKED BY: SMN
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**City of Riverside, California**  
PUBLIC WORKS DEPARTMENT  
APPROVED BY: [Signature]  
DATE: 1/15/06

**Sewer Improvement Plan**  
Tract 31755  
**LIFT STATION DETAILS**

ACCOUNT NO. PW05-0392  
S-1938  
M-2  
SHEET 4 OF 6 SHEETS  
FILE NO.

**GENERAL NOTES**

- CONTROL PANEL IS TO BE COMPLETELY WIRED WITH ALL WIRES AND TERMINALS NUMBERED AND TERMINATED ON TERMINAL STRIPS, INCLUDING ALL WIRING BETWEEN ALL COMPONENTS COMPRISING THE ENTIRE CONTROL PANEL. WIRING DIAGRAMS ARE TO BE GIVEN TO THE CITY OF RIVERSIDE.
- MANUFACTURER OF EQUIPMENT TO BE ALLEN-BRADLEY, FURNAS, TOSHIBA, OR CUTLER-HAMMER.
- PROVIDE ALL NECESSARY CONDUITS AND REQUIRED WIRING FROM CONTROL PANEL TO THE ELECTRICAL EQUIPMENT IN THE WET WELL, AS SHOWN AND AS REQUIRED.
- TERMINAL BLOCK(S) FOR EQUIPMENT STATUS, FAILURE ALARMS, ETC. ARE TO BE FURNISHED AND INSTALLED BY THE CITY OF RIVERSIDE AT THE DEVELOPERS EXPENSE. THE CONTRACTOR SHALL COORDINATE THIS WORK AND EQUIPMENT WITH THE CITY OF RIVERSIDE AND INCLUDE ALL COSTS IN THIS BID.
- THE CONTRACTOR MUST SUBMIT MAINTENANCE AND RECOMMENDED SPARE PARTS FOR ALL ELECTRICAL AND INSTRUMENTATION COMPONENTS. A COMPLETE PARTS LISTING WITH THE NAME, ADDRESS, AND TELEPHONE NUMBER FOR ALL THE SUPPLIERS MUST BE PROVIDED.
- THE CONTRACTOR MUST PROVIDE THE RECOMMENDED SPARE PARTS.
- THE CONTRACTOR MUST PROVIDE COMPLETE AS-BUILT DRAWINGS OF THE ELECTRICAL SYSTEM. THIS INCLUDES THE GENERAL WIRING AND THE INTERNAL WIRING OF ALL THE CONTROL PANEL COMPONENTS. THE CITY WILL REVIEW AND APPROVE THE DRAWINGS. THE CONTRACTOR WILL MAKE ANY CHANGES AND SUBMIT FINAL SETS. COMPLETED RECORDED DRAWINGS ARE REQUIRED BEFORE FINAL PAYMENT IS RECEIVED BY THE CONTRACTOR.
- ALL WIRES MUST BE INDIVIDUALLY TAGGED AT EVERY TERMINATION AND INSIDE EVERY JUNCTION BOX. WIRE NUMBERING AND TAGGING SYSTEMS MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL.
- THE LIFT STATION WET WELL IS A CLASS 1, DIV. 1 HAZARDOUS AREA. ALL WORK AND EQUIPMENT MUST CONFORM TO THIS CLASSIFICATION.
- THE AREA WITHIN THE U.G. PRECAST CONCRETE PULL BOX IS ALSO CLASSIFIED AS A CLASS 1, DIV. 1 HAZARDOUS AREA AND IS CONSIDERED AS AN EXTENSION OF THE WELL BY VIRTUE OF THE UNDERGROUND CONDUIT SYSTEMS WHICH ARE TO REMAIN OPEN AND NOT SEALED, FOR THE PURPOSE OF EASILY REMOVING AND INSTALLING THE CABLE SYSTEMS IN THE WET WELL.
- THE CONTRACTOR SHALL PROVIDE ALL MOUNTING HARDWARE FOR TRANSDUCER, MOUNTING SUPPORTS FOR ALL WET WELL CABLES, ETC.
- PROVIDE A CODE SIZE GROUND WIRE IN ALL CONDUITS.
- CONDUIT AND WIRING WITHIN THE CONTROL PANEL IS NOT SHOWN. PROVIDE AND INSTALL AS REQUIRED.
- PROVIDE AUX. CONTACT BLOCKS FOR H-O-A SWITCHES TO MONITOR SWITCH POSITION.
- THE CONTRACTOR SHALL REVIEW AND CONFIRM WITH THE CITY THE EQUIPMENT TO BE PROVIDED. THE EQUIPMENT IS DESCRIBED IN SPECS. FURNISHED BY THE CITY.
- CONTRACTOR TO FURNISH AND INSTALL TELEMETRY MAST PER CITY REQUIREMENTS.

**SPECIFIC NOTES**

- 100 AMP, 480V, NON-FUSABLE DOUBLE THROW TRANSFER SWITCH, CUTLET HAMMER, TYPE DTK IN NEMA 1 ENCLOSURE.
- UNDERGROUND PRECAST PULLBOX. 24" L X 36" W X 24" D. BROOKS PRODUCTS OR EQUAL WITH TRAFFIC COVER. PROVIDE 3' MIN. CABLE SLACK (COILED IN BOX).
- EXPLOSION PROOF JUNCTION BOX (SIZE AS REQUIRED, CROUSE-HINDS TYPE EJB WITH HINGED COVER AND SUBMERSIBLE RESIN-CAST SPLICES (WIRING, TYP. OF 2). PROVIDE CABLE GRIPS FOR CORDS.
- NOT USED.
- EXPLOSION PROOF JUNCTION BOX WITH SEALING COVER FOR TRANSDUCER CABLE (NO SPLICES).
- MOTOROLA MOSCAD, SUPPLIED BY CITY OF RIVERSIDE, PAID FOR BY DEVELOPER, AND INSTALLED BY CONTRACTOR IN SEPARATE CABINET INSIDE THE CONTROL PANEL.
- PROVIDE GENERATOR RECEPTACLE, KILLARK 8581/21-407 AND 8581/22-407 PLUG. PROVIDE 30' MINIMUM SJO POWER CORD.
- PROVIDE CABLE BUSHINGS FOR CONDUITS INTO WETWELL.
- CONTRACTOR SHALL PROVIDE SUITABLE YAGI ANTENNA WITH MAST FOR RTU.
- THE RTU SHALL BE PROVIDED WITH 12V BATTERY BACKUP.
- XP CONDUIT SEAL.
- 480V, 3Ø, 4W SERVICE METER PEDESTAL W/ISOLATED COMPARTMENTS FOR UTILITY METERING SERVICE CONDUCTOR TERMINATIONS. HINGED DOORS WITH PADLOCKING PROVISIONS, LARGE METER READING WINDOW WITH PLEX-I-GLAS COVER AND CLASS T PULL-OUT FUSES (PER CITY OF RIVERSIDE REQUIREMENTS).

**LEGEND**

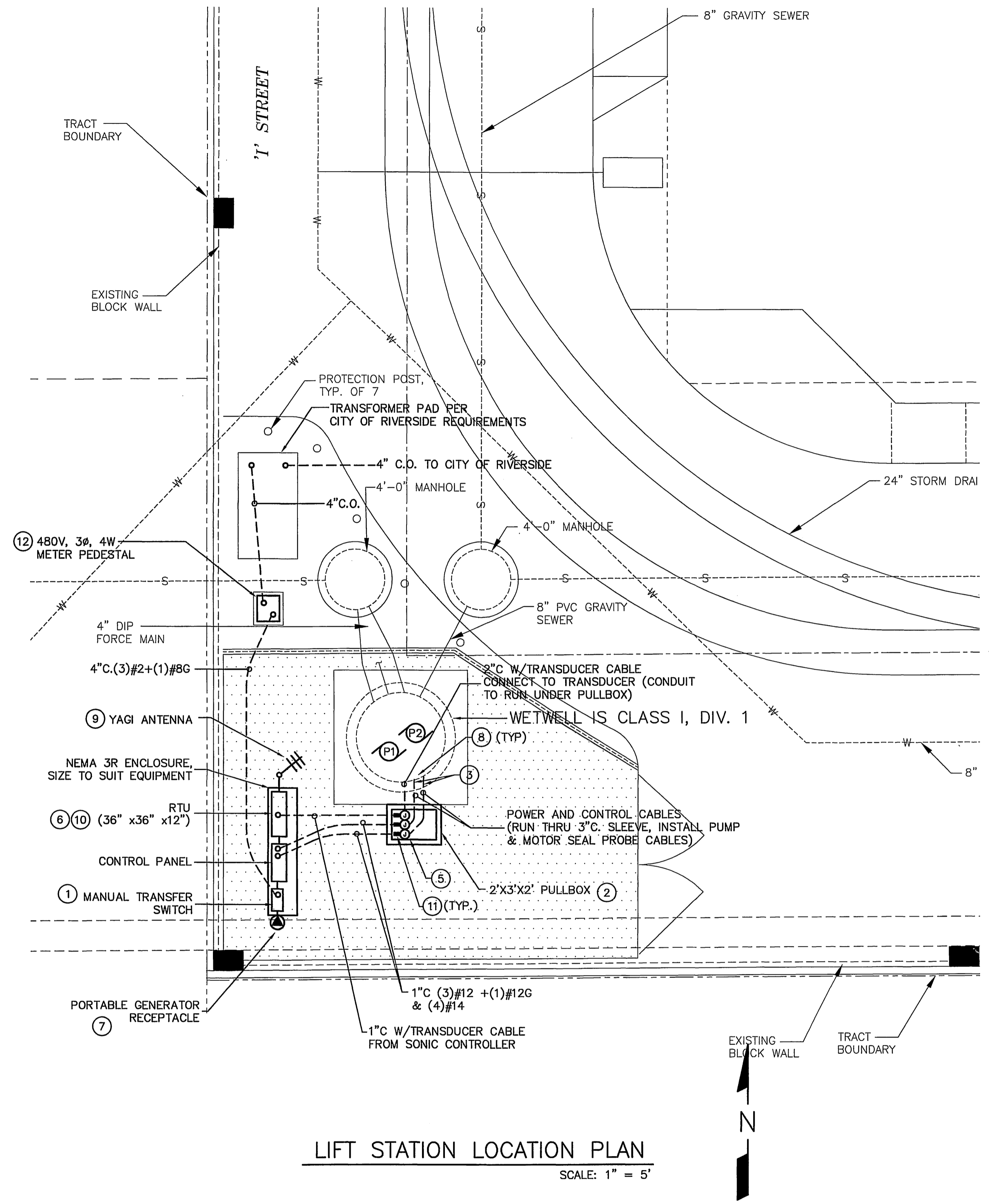
- PLAN**
- [Symbol] CONTROL PANEL
  - [Symbol] UNDERGROUND CONDUIT,
  - [Symbol] UNDERGROUND CONDUIT, STUBBED UP
  - [Symbol] WALL MOUNTED JUNCTION AND/OR TERMINAL BOX (CODE SIZE)
  - [Symbol] 480V., 100AMP 3W, 4P. W.P. RECEPTACLE. MOUNTED ON EXTERIOR OF PANEL ENCLOSURE
  - [Symbol] CABLE
  - [Symbol] INDICATES REFERENCE TO SPECIFIC NOTE

**CONTROLS**

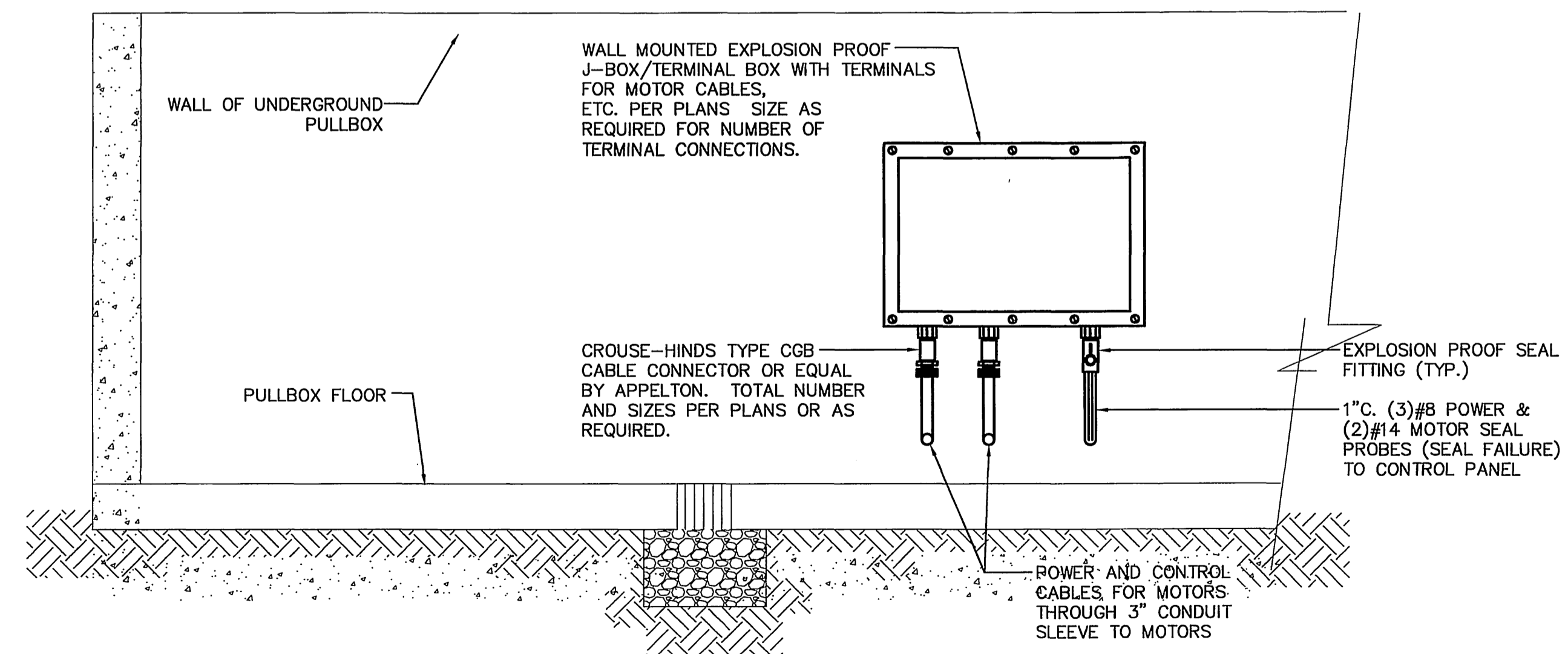
- [Symbol] CONTROL SWITCH
- [Symbol] FUSE
- [Symbol] TRANSFORMER
- [Symbol] CONTACT NORMALLY OPEN
- [Symbol] CONTACT NORMALLY CLOSED
- [Symbol] NORMALLY OPEN, MOMENTARY CONTACT PUSH BUTTON
- [Symbol] MOTOR OVERLOAD
- [Symbol] PUMP RUNNING PILOT LIGHT, AMBER LENS
- [Symbol] ELAPSED TIME METER
- [Symbol] MOTOR STATOR COIL
- [Symbol] PILOT LIGHT, RED LENS - INDICATES "FAILURE"
- [Symbol] PILOT LIGHT, GREEN LENS - INDICATES CONTROL POWER IS "ON"
- [Symbol] RELAY, R1 INDICATES RELAY DESIGNATION
- [Symbol] GROUND
- [Symbol] LIMIT SWITCH (DOOR SWITCH)

**SINGLE LINE DIAGRAM**

- [Symbol] SERVICE METER
- [Symbol] 100A 3P CIRCUIT BREAKER - 100AMP, 3 POLE
- [Symbol] MANUAL TRANSFER SWITCH
- [Symbol] 480V, 3Ø, MAGNETIC STARTER, NEMA SIZE 12
- [Symbol] TRANSFORMER
- [Symbol] MOTOR, HP, INDICATED
- [Symbol] SWITCH
- [Symbol] FUSE



**LIFT STATION LOCATION PLAN**  
SCALE: 1" = 5'



**TYPICAL EXPLOSION PROOF J-BOX/ TERMINAL BOX DETAIL IN UNDERGROUND PULL BOX**  
N.T.S.

**UNDERGROUND SERVICE ALERT**

CALL: TOLL FREE 1-800-227-2600  
TWO WORKING DAYS BEFORE YOU DIG

**BENCHMARK**  
U.S.G.S. BRASS DISK W/LY END OF HEADWALL 50'W STEARNS PRODUCED 32'N CL. DEWEY,  
U.S.G.S. B.M. Z-1142 RIV. CO. B.M. 602-5-69  
ELEVATION= 785.340

**JOSEPH M. MORAES**  
REGISTERED PROFESSIONAL ENGINEER  
No. E11023  
Exp. 6/30/07  
ELECTRICAL  
STATE OF CALIFORNIA  
12/21/05

**MPA MORAES/PHAM & ASSOCIATES**  
CONSULTING ELECTRICAL & MECHANICAL ENGINEERS  
2131 PALOMAR AIRPORT RD., STE. 120  
CARLSBAD CA. 92009  
(760) 431-7177

**City of Riverside, California**  
PUBLIC WORKS DEPARTMENT

APPROVED BY: [Signature]  
BY DATE APPROVED BY: [Signature]  
PRINCIPAL ENGINEER [Signature]  
TRAFFIC DIVISION [Signature]  
SURVEYOR [Signature]  
STREET SERVICES [Signature]

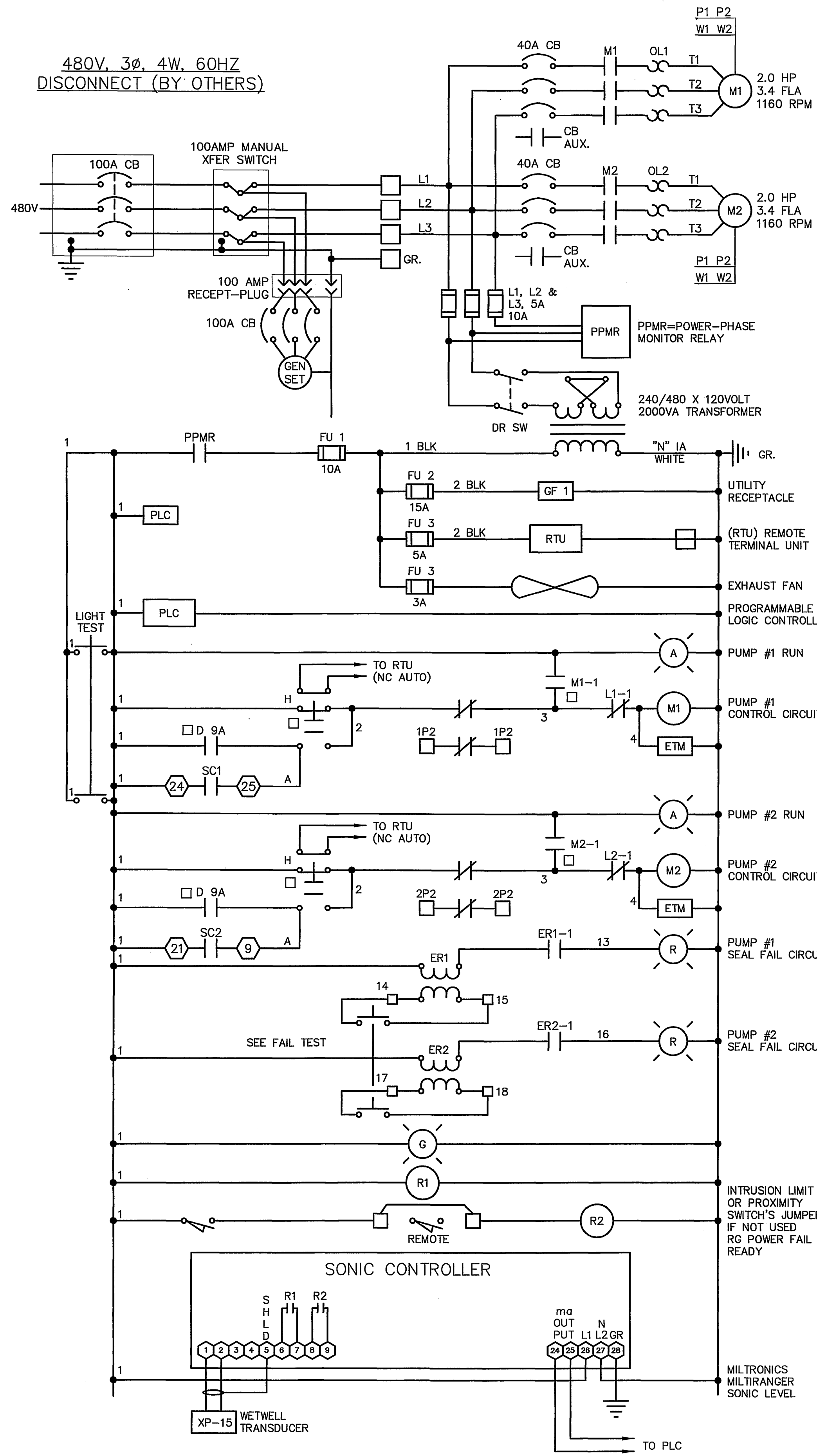
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**Sewer Improvement Plan**  
Tract 31755  
**LIFT STATION PLAN**

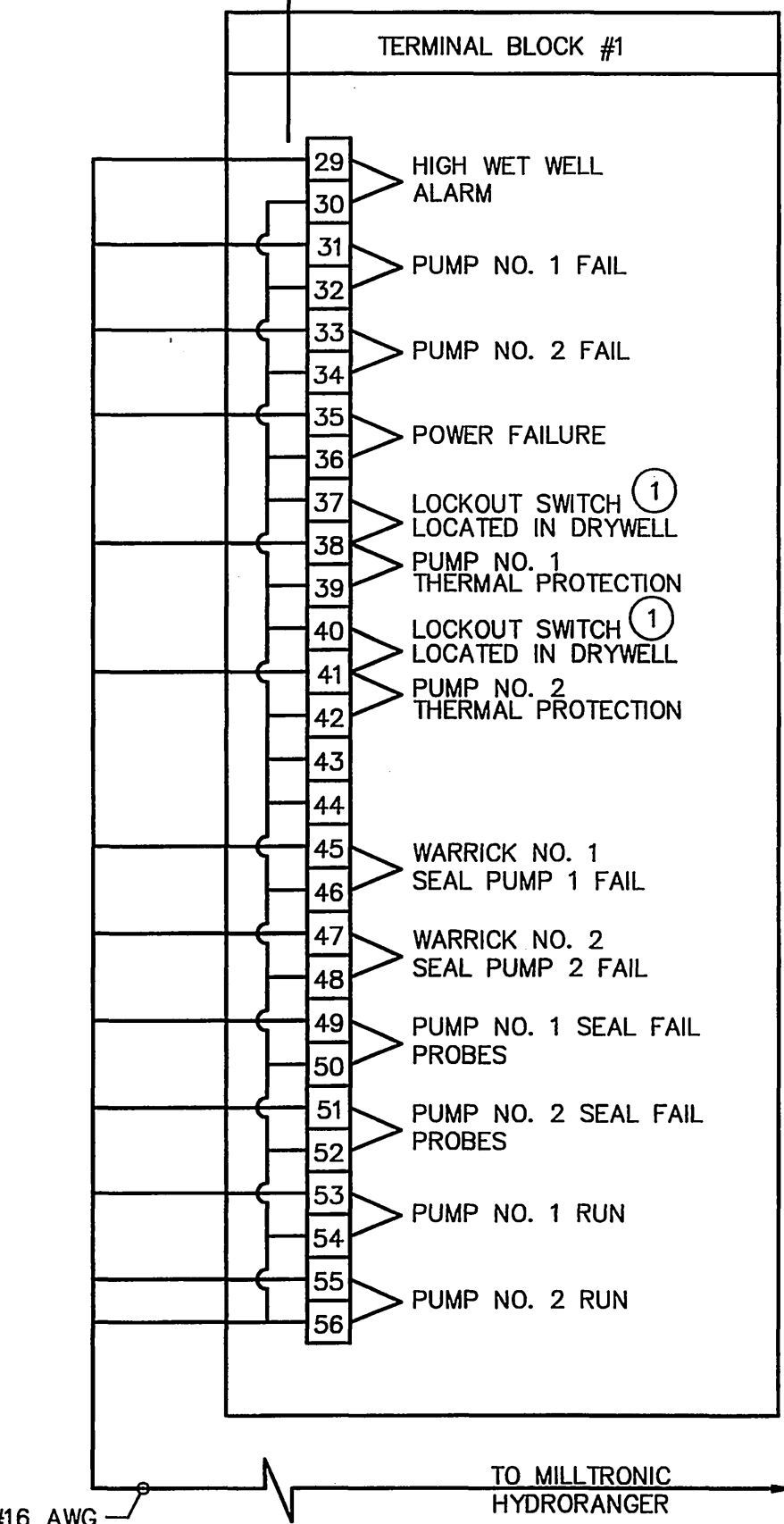
ACCOUNT NO. 1405-0392  
5-1938  
E-1  
SHEET 5 OF 6 SHEETS  
FILE NO.

HORIZ. SCALE: AS NOTED VERT. SCALE: AS NOTED

480V, 3Ø, 4W, 60HZ  
DISCONNECT (BY OTHERS)



BY CITY OF RIVERSIDE, SEE NOTE #6



NOTES:

- DENOTES TERMINALS REQUIRING WIRES TO BE CONNECTED FROM CONTROL PANEL TO REMOTE EQUIPMENT.
- PANEL TO BE COMPLETELY WIRED WITH ALL WIRES AND TERMINALS NUMBERED AND TERMINATED ON TERMINAL STRIPS. WIRING DIAGRAM TO BE GIVEN TO CITY OF RIVERSIDE.
- MANUFACTURER TO BE ALLEN BRADLEY, FURNAS, TOSHIBA OR CUTLER HAMMER.
- PROVIDE NECESSARY CONDUITS TO PUMP LOCATION FROM MCC (ONE FOR POWER, ONE FOR CONTROL, ONE FOR MILLTRONIC HYDRORANGER)
- SEPARATE LEADS TO WARRICK RELAY NO. 1 AND NO. 2 COMING FROM SEAL PROBES AND RUN IN 3/4" CONDUIT.
- ITEMS TO BE FURNISHED AND INSTALLED BY CITY OF RIVERSIDE AT DEVELOPERS EXPENSE INDICATED BY: □
- FLUORESCENT LIGHT TO BE INSTALLED IN CONTROL PANEL FOR NIGHT MAINTENANCE.

RTU:

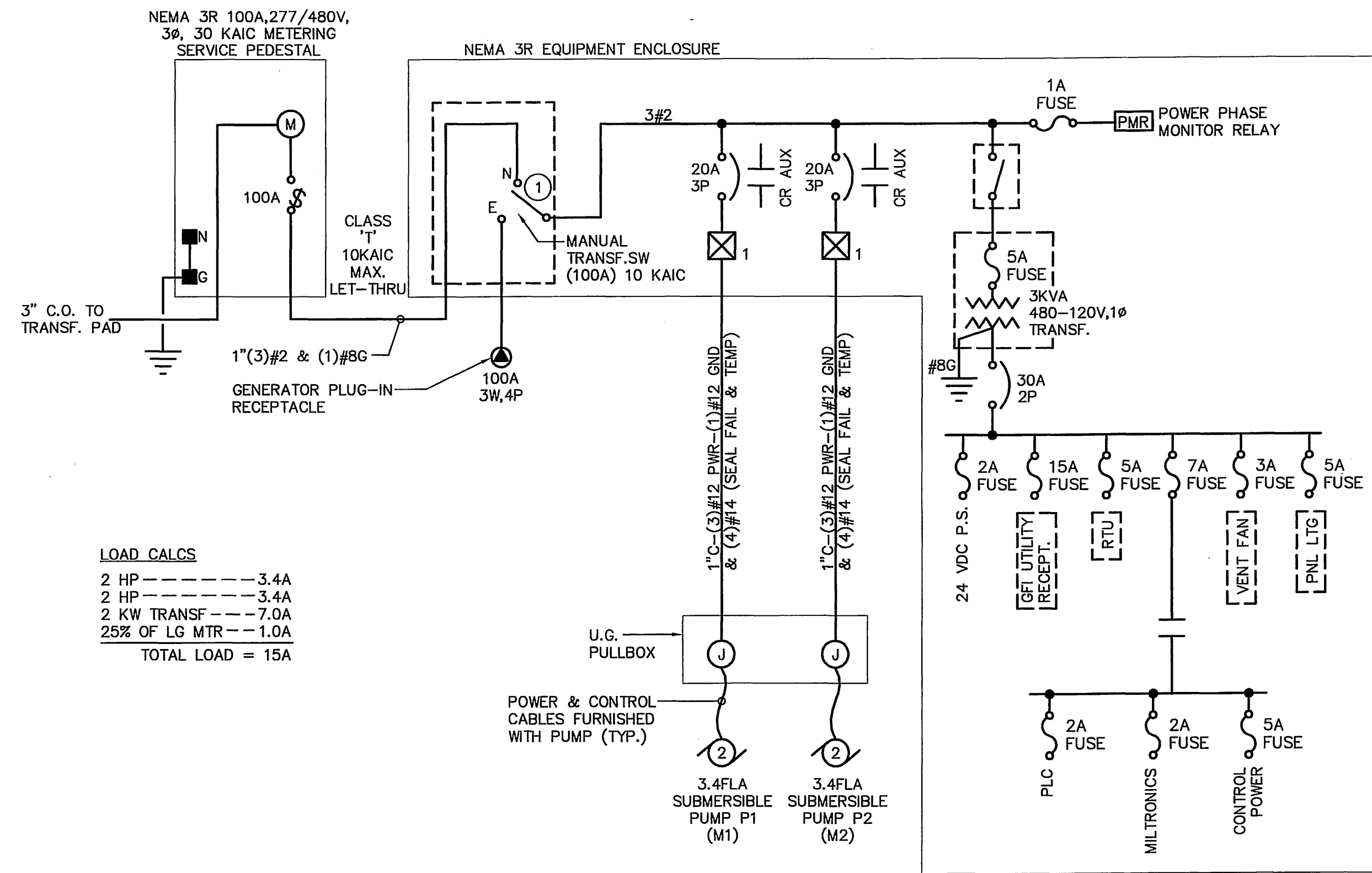
- SHALL MONITOR ONLY, NOT CONTROL
- INDICATE LOW LEVEL (D1)
  - INDICATE WET WELL LEVEL ANALOG OUTPUT (D)
  - INDICATE SITE ENTRY (D1)
  - INDICATE AC FAILURE (D1)
  - INDICATE INDIVIDUAL PUMP FAILURE (D1)
  - INDICATE PUMP AUTO, PUMP NOT AUTO (D1)
  - HAND SWITCH POSITION - HAND/OFF/AUTO
  - INDICATE PUMP RUN STATUS (D)
  - INDICATE ULTRASONIC FAILURE (D1)

CONTROLS:

- HAND SHALL BYPASS: LEVELS, PLC, MILTRONICS, ETC. AND SHALL DIRECTLY ENERGIZE THE STARTERS
- AUTO FUNCTION SHALL BE CONTROLLED BY THE PLC OR IN EVENT OF THE PLC FAILURE, THE MILTRONICS
- WILL PROVIDE BACKUP CONTROL START, STOP AND ALTERNATE LEAD AND LAG PUMPS.

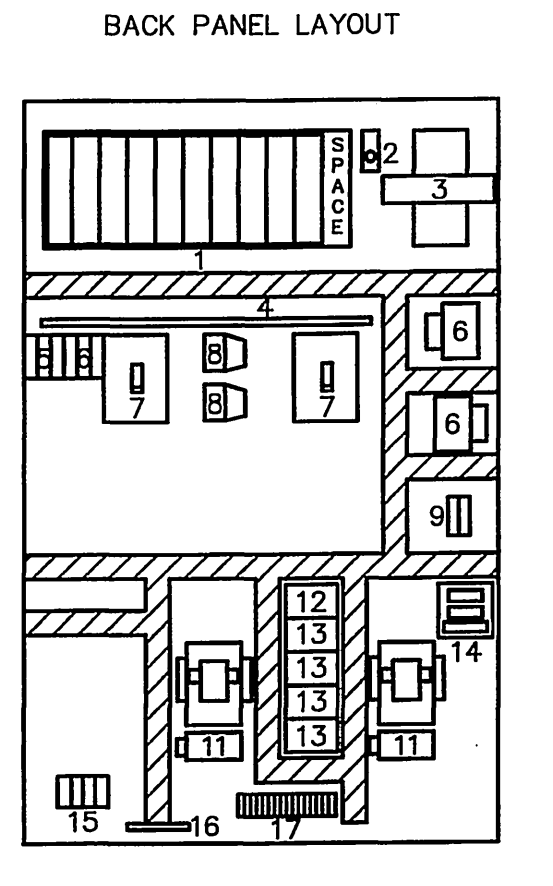
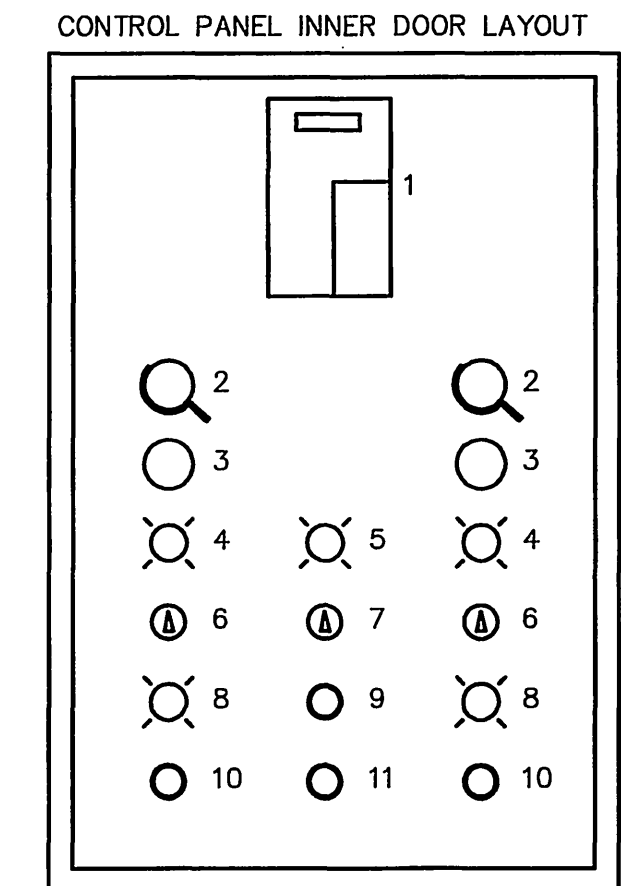
CONTROL LOGIC NOTES:

- THE PLC WILL PERFORM THE FOLLOWING CONTROL FUNCTIONS:
- CYCLE PUMPS ON AND OFF ACCORDING TO WET WELL LEVELS.
- ALTERNATE LEAD AND LAG PUMPS EVERY 24 HOURS.
- RECORD PUMP LAPSED TIME RUN HOURS.
- PROVIDE LOW LEVEL AND HIGH LEVEL ALARMS.
- TURN OFF PUMPS ON SEAL FAILURE.
- TURN OFF PUMPS ON THERMAL OVERLOAD.
- CALL LAG PUMP IN EVENT OF LEAD PUMP FAILURE.
- RECOGNIZE ULTRASONIC LEVEL CONTROL SYSTEM FAILURE AND CLOSE ALARM CONTACT.
- RECOGNIZE PUMP HAND SWITCH POSITION AND ADJUST CONTROL LOGIC.
- RECOGNIZE ANY FAILURE CONDITION AND CLOSE BEACON LIGHT CONTACT.
- RECOGNIZE POWER FAILURE AND CLOSE ALARM CONTACT.
- RECOGNIZE SITE ENTRIES AND CLOSE ALARM CONTACT.
- MILTRONICS LEVEL CONTROLLERS SHALL PROVIDE BACKUP PUMP CONTROL IN EVENT OF PLC FAILURE.
- ALL ALARM CONTACTS AND SIGNAL TO THE RTU WILL BE CONTROLLED BY THE PLC.



LOAD CALCS  
2 HP ----- 3.4A  
2 HP ----- 3.4A  
2 KW TRANSF --- 7.0A  
25% OF LG MTR --- 1.0A  
TOTAL LOAD = 15A

LIFT STATION SINGLE LINE DIAGRAM  
N.T.S.



PLC AND CONTROLS PANEL LAYOUT  
N.T.S.

LIFT STATION NOTES:

- GENERAL NOTES:
- ALL HATCHES AND HATCH HARDWARE SHALL BE STAINLESS STEEL (NOTE ON PLANS).
  - THE INTERIOR OF THE WET WELL NEEDS TO BE CORROSION PROTECTED.
  - THE CONTRACTOR MUST SUBMIT MAINTENANCE AND SPARE PARTS INFORMATION FOR THE PUMPS, VALVES, ELECTRICAL AND INSTRUMENTATION COMPONENTS. MECHANICAL COMPONENTS MUST HAVE SECTION VIEWS, EXPLODED VIEWS, AND A COMPLETE PARTS LISTING. THE NAME, ADDRESS, AND TELEPHONE NUMBER FOR ALL SUPPLIERS MUST BE PROVIDED.
  - THE CONTRACTOR MUST PROVIDE SPARE PARTS.
  - THREE PHASE POWER IS REQUIRED FOR LIFT STATION (480 VOLT).
  - THE PUMP MOTORS MUST BE SIZE NOT TO EXCEED THEIR RATED HORSE POWER AT ANY POINT ON THE PUMP CURVE.
  - THE CONTRACTOR MUST PROVIDE A 20 FOOT (MIN.) JUMPER FROM THE CONTROL PANEL TO THE GENERATOR FOR EMERGENCY POWER CONNECTION. ACTUAL LENGTH WILL BE DETERMINED BY AVAILABILITY OF GENERATOR PARKING.
  - CONTRACTOR MUST PROVIDE COMPLETE AS-BUILT DRAWINGS OF THE ELECTRICAL SYSTEM, THIS INCLUDES THE GENERAL WIRING AND THE INTERNAL WIRING OF THE PANELS. THE CITY WILL REVIEW AND APPROVE THE DRAWINGS. THE CONTRACTOR WILL MAKE ANY CHANGES AND SUBMIT FINAL SETS. COMPLETED RECORDED DRAWINGS ARE REQUIRED BEFORE FINAL PAYMENT IS RECEIVED BY THE CONTRACTOR.
  - ALL WIRES MUST BE INDIVIDUALLY TAGGED. THEY MUST BE TAGGED AT EVERY TERMINATION AND INSIDE EVERY JUNCTION BOX. WIRE NUMBERING AND TAGGING SYSTEMS MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL.

INSTRUMENTATION & CONTROL NOTES:

- CONTROL PANEL MUST BE CUSTOM BUILT TO THE CITY REQUIREMENTS.
- CONTRACTOR MUST SUBMIT ALL WIRING DIAGRAMS FOR REVIEW BY THE CITY PRIOR TO ASSEMBLY.
- CONTRACTOR MUST PROVIDE THE CITY THE OPPORTUNITY TO INSPECT PANEL DURING ASSEMBLY.
- THE PANEL SHALL BE NEMA 4X.
- PUMPS SHALL BE CONTROLLED USING A SQUARE D PLC. NO SUBSTITUTIONS. THIS IS REQUIRED FOR STANDARDIZATION.
- CONTRACTOR MUST SUBMIT A COPY OF THE PLC PROGRAM FOR REVIEW AND APPROVAL. A FINAL FULLY ANNOTATED PROGRAM MUST BE PROVIDED WITH THE AS-BUILT DRAWINGS.
- WET WELL LEVEL MUST BE MONITORED USING A MILTRONICS MULTIRANGER ULTRASONIC LEVEL METER. NO SUBSTITUTIONS. THIS IS REQUIRED FOR STANDARDIZATION.
- THE LIFT STATION SHALL BE EQUIPPED WITH ULTRASONIC FAILURE INDICATOR.
- THE CONTROL PANEL SHALL BE EQUIPPED WITH ACROSS THE LINE STARTING SO THE PUMPS CAN BE OPERATED MANUALLY IN THE EVENT OF PLC OR OTHER EQUIPMENT FAILURE.
- THE CONTROL PANEL MUST BE EQUIPPED WITH MOTOROLA INTRAC 2000 RTU. THE RTU WILL COMMUNICATE WITH THE INTRAC BASE STATION AT THE WASTEWATER TREATMENT PLANT.
- THE CONTRACTOR MUST CONNECT AND TEST THE RTU TO ESTABLISH COMMUNICATION WITH THE WASTEWATER TREATMENT PLANT BASE. THE CITY WILL INTEGRATE THE RTU INTO PLANT SCADA CONTROL SYSTEM.

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U.S.G.S. B.M. Z-1142 RIV. CO. B.M. 602-5-69  
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CONSULTING ELECTRICAL & MECHANICAL ENGINEERS  
2131 PALOMAR AIRPORT RD., STE. 120 CARLSBAD CA. 92009 (760) 431-7177

REGISTERED PROFESSIONAL ENGINEER  
JAMES M. MORAES  
No. E11023  
Exp. 6/30/07  
ELECTRICAL  
STATE OF CALIFORNIA  
12/21/05

**City of Riverside, California**  
PUBLIC WORKS DEPARTMENT

APPROVED BY: [Signature]  
DATE: 11/6/05

DESIGNED BY: JMM  
DRAWN BY: CAD  
CHECKED BY: JMM

**Sewer Improvement Plan**  
Tract 31755  
**LIFT STATION PLAN**

ACCOUNT NO. PWS-0392  
S-1938  
E-2

SHEET 6 OF 6 SHEETS  
FILE NO.

HORIZ. SCALE: AS NOTED  
VERT. SCALE: AS NOTED

INDEXED 1-10-06 JH