

FORCED MAIN IMPROVEMENT PLAN FOR:

# TRACT No. 28987

**GENERAL NOTES**

- 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.
- 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.
- 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.
- 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.
- QUANTITIES SHOWN ARE FOR INFORMATION ONLY AND THE CITY OF RIVERSIDE IS NOT RESPONSIBLE FOR THEIR ACCURACY.
- 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.
- ALL FLAGGED ELEVATIONS SHALL BE STAKED IN THE FIELD BY THE PRIVATE ENGINEER.
- 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.
- CONTRACTOR IS TO VERIFY EXISTING SEWER ELEVATION PRIOR TO CONSTRUCTION.
- LOCATION OF LATERALS TO BE DETERMINED IN THE FIELD AT THE DIRECTION OF THE OWNER. AVOID CONFLICT WITH PROPOSED AND/OR EXISTING FACILITIES.
- 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.
- 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.
- CONCRETE SUBJECT TO CONTINUOUS OR INTERMITTENT SUBMERGENCE IN SEWAGE, INCLUDING ALL INTERIOR SURFACES OF THE WET WELL AND EMERGENCE STORAGE TANK, SHALL RECEIVE THE FOLLOWING SURFACE PREPARATION AND COATING. SANCON 100, OR APPROVED EQUAL.
  - SURFACE PREPARATION.**  
ALL SURFACES SHALL BE THOROUGHLY CLEANED BY SANDBLASTING IN CONFORMANCE WITH SSPC-SP13/NACE 6, ICRI CSP 5 SURFACE PREPARATION OF CONCRETE OR OTHER APPROVED METHODS, REMOVING ALL TRACES OF PREVIOUS MATERIALS. REMOVE ALL LOOSE CONCRETE BY CHIPPING, ETC. TO LEAVE ONLY SOUND FIRMLY BONDED CONCRETE. ALL CRACKS AND VOIDS SHALL BE FILLED WITH THE SPECIFIED EPOXY FILLER AND SURFACER. FINAL SURFACE SHALL BE SMOOTH AND FREE OF VOIDS, CAVITIES, DIRT, DUST, OILS, GREASE, LAITANCE OR OTHER CONTAMINANTS.
  - APPLICATION.**  
APPLICATION SHALL BE BY SPRAY-ON AND SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. THE MINIMUM AND MAXIMUM REQUIRED TIMES BETWEEN COATS SHALL BE PER THE MANUFACTURER'S PRODUCT DATA SHEET. IF RECOATING IS REQUIRED TO CORRECT PINHOLES OR INSUFFICIENT SYSTEM COATING THICKNESS, SURFACES SHALL BE BRUSH-BLASTED PRIOR TO RECOAT.
  - COATING SYSTEM.**  
THE COATING SYSTEM SHALL BE SPECIFICALLY MANUFACTURED FOR HIGHLY CORROSIVE ENVIRONMENTS CAUSED BY IMMERSION AND INTERMITTENT IMMERSION IN MUNICIPAL WASTEWATER. MINIMUM TOTAL DRY FILM THICKNESS OF THE COATING SYSTEM SHALL BE 130 MILS. COATING SYSTEM SHALL BE PROVIDED WITH A FIVE (5) YEAR WARRANTY.
- CONCRETE SUBJECT TO CONTINUOUS OR INTERMITTENT SUBMERGENCE IN WATER, INCLUDING ALL EXTERIOR SURFACES OF THE WET WELL AND EMERGENCE STORAGE TANK, SHALL RECEIVE THE FOLLOWING SURFACE PREPARATION AND COATING. CONSEAL-55, OR APPROVED EQUAL.
  - SURFACE PREPARATION.**  
ALL CURING AGENTS, HARDENERS, OIL, GREASE, FORM RELEASE OIL, DIRT, LAITANCE, CONCRETE DUST OR OTHER CONTAMINANTS MUST BE REMOVED PRIOR TO BEGINNING COATING PROCESSES. SURFACE PREPARATION METHODS SHOULD RESULT IN CLEAN CONCRETE, DEVOID OF CONTAMINATED SURFACES WITH IDEALLY AN ADEQUATE SURFACE PROFILE (SURFACE SIMILAR TO MEDIUM GRADE SANDPAPER). INSPECT SURFACE FOR SOUNDNESS. REPAIR OR REMOVE ANY SURFACE IRREGULARITIES AND LOOSE CONCRETE. USE AN APPROVED CRACK FILLER ON HOLES AND CRACKS.
  - APPLICATION.**  
STIR THOROUGHLY BEFORE APPLYING. PRODUCT MAY BE THINNED WITH WATER IF REQUIRED. CS-55 MAY BE APPLIED BY SPRAYING, ROLLERS OR BY BRUSH. IF APPLYING BY AIRLESS SPRAY A SPRAY TIP OF 0.011"-0.013" TIP IS RECOMMENDED.

**SEWAGE SPILL CONTAINMENT PLAN**

CHAPTER 14.12.295 OF THE RIVERSIDE MUNICIPAL CODE PROHIBITS THE DISCHARGE OF ANY POLLUTANT TO A STORM DRAIN OR ANY SURFACE, PIPE, OR WATERWAY LEADING TO A STORM DRAIN. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE INSPECTOR FOR REVIEW A SEWAGE SPILL CONTAINMENT PLAN. NO WORK WILL BE PERMITTED ON THE EXISTING SEWER SYSTEM UNTIL THE REVIEW IS COMPLETED. A COPY OF THIS PLAN SHALL BE KEPT ON THE PROJECT SITE DURING CONSTRUCTION. THIS PLAN SHALL DESCRIBE THE METHODS TO BE USED TO PREVENT OR CONTAIN SEWAGE SPILLS. AT A MINIMUM, THE PLAN SHALL PROVIDE:

A SCALED DRAWING SHOWING ANY PROPOSED EMERGENCY CONTAINMENT AREA(S) AND THE METHODS USED TO CONSTRUCT THEM. THIS PLAN SHALL ALSO SHOW ANY STORM DRAIN INLETS THAT COULD BE AFFECTED BY AN ACCIDENTAL SPILL AND METHODS TO BE USED TO PREVENT THE INLETS FROM ACCEPTING ANY SEWAGE. IN ADDITION, SHOW THE CONTROLS TO BE USED TO LIMIT ACCESS TO THE SPILL AREA BY THE PUBLIC.

DESCRIBE THE METHODS TO BE USED FOR REMOVING SEWAGE AND CLEANING OF THE STORM DRAIN INLETS, STORM DRAINS, CANALS, AND ARROYOS. THIS DESCRIPTION SHALL INCLUDE METHODS FOR SOLIDS REMOVAL.

DESCRIBING DISINFECTING AND DISINFECTION CLEAN UP METHODS. THESE METHODS SHALL SHOW HOW DISINFECTING MATERIALS WILL BE PREVENTED FROM ENTERING STORM DRAINS, CANALS, AND ARROYOS.

A SCALED DRAWING(S) SHOWING ANY PROPOSED SEWAGE BY-PASS PIPES. THIS DRAWING SHALL INDICATE ANY SEWER MANHOLES PROPOSED TO BE PLUGGED AND THE DAY AND TIME OF DAY THIS OPERATION WILL OCCUR.

THE SIZE AND MATERIAL OF ANY BY-PASS PIPES.

THE METHODS TO BE USED TO CONNECT THE BY-PASS PIPE(S) TO THE EXISTING SEWER SYSTEM.

IF PUMPING IS PROPOSED, DESCRIBE THE NUMBER AND CAPACITY OF THE PUMPS. EACH PUMP, AT A MINIMUM, MUST BE CAPABLE OF PASSING A 3-INCH DIAMETER SOLID.

IF STORAGE IS PROPOSED, PROVIDE THE METHODS TO BE USED FOR THE SEWAGE STORAGE AND REMOVAL FROM THE SITE. IF A TRUCK WITH A STORAGE TANK IS TO BE USED, PROVIDE THE CAPACITY OF THE TANK. IF A WATER TRUCK IS PROPOSED FOR THIS PURPOSE, IT MUST BE DEDICATED ONLY FOR THIS OPERATION.

IN THE EVENT OF A SPILL, THE CONTRACTOR SHALL CONTACT THE ENGINEER AND FIELD MAINTENANCE TECHNICIAN, CELL 951-906-9068 (IF NOT AVAILABLE CONTACT THE WASTE WATER TREATMENT PLANT AT 951-351-6140). THE CONTRACTOR SHALL DOCUMENT THE SPILL BY PHOTOGRAPHING ITS EXTENT. THESE PHOTOGRAPHS SHALL BE SUBMITTED TO THE CITY FOR INCLUSION IN THE SPILL REPORT.

**LEGEND**

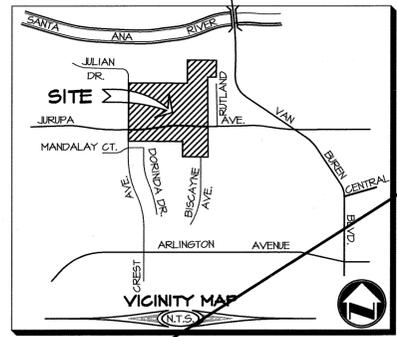
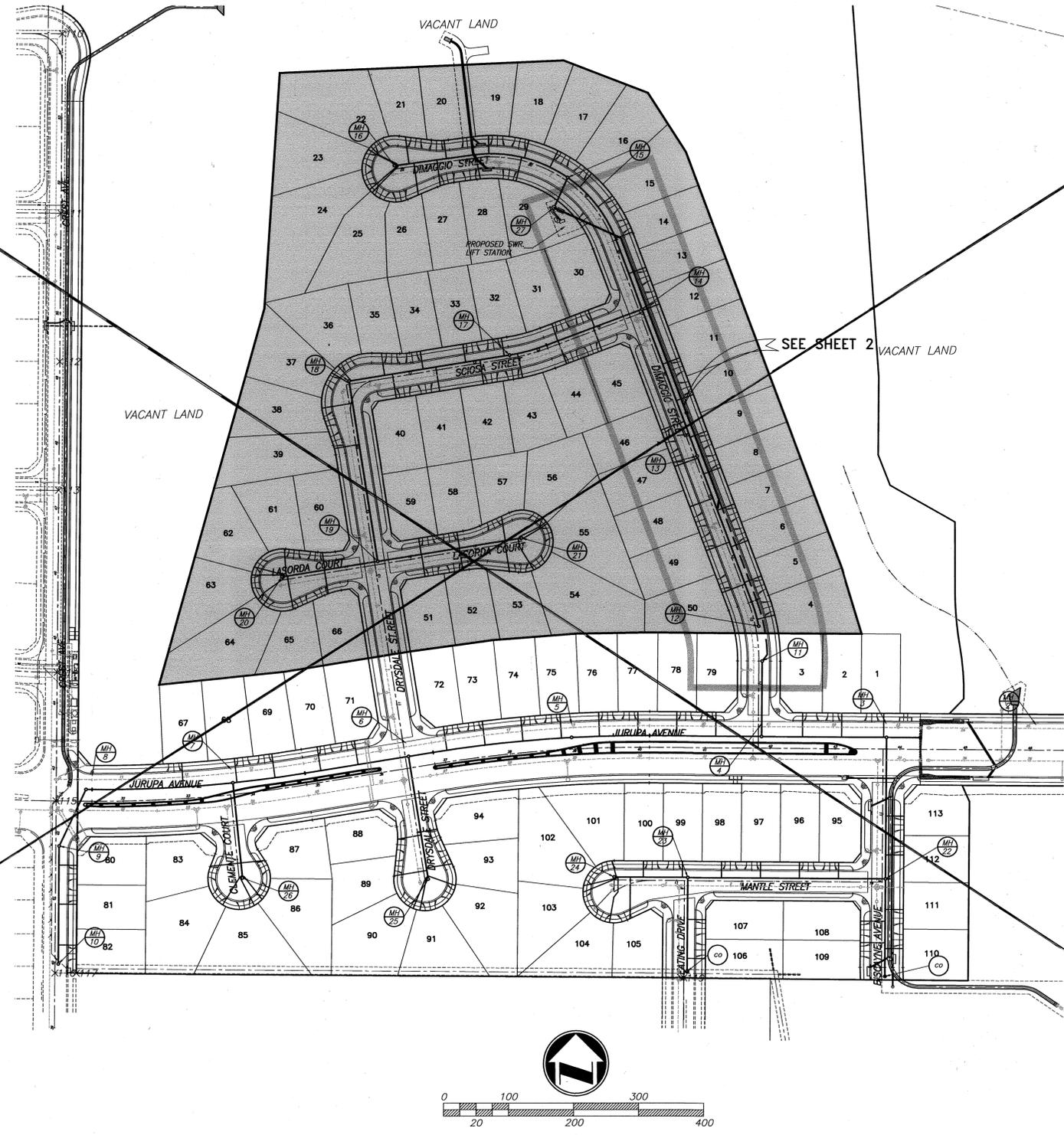
|     |                   |
|-----|-------------------|
| C   | .....CENTERLINE   |
| R/W | .....RIGHT OF WAY |
| MH  | .....MANHOLE      |
| FM  | .....FORCE MAIN   |
| S   | .....SEPTIC       |

**CONSTRUCTION NOTES + QUANTITY**

|   |   |        |
|---|---|--------|
| ① | CONSTRUCT 4" DIA. D.I. SEWER FORCE MAIN, CLASS 150, CLASS 53 THICKNESS CONFORMING TO ANSI/AWWA, PER CITY OF RIVERSIDE STD. 452, CASE II BEDDING | 801 LF |
| ② | CONSTRUCT WET WELL PER CITY. STD. DWG. 500  | 1 EA   |
| ③ | CONSTRUCT PRECAST CONCRETE FORCE MAIN CLEANOUT PER CITY OF RIVERSIDE STANDARD DRAWING NO. 559 (4" PIPE)   | 1 EA   |
| ④ | CONSTRUCT 6" TALL FENCE IS TO BE BLACK POWDER COAT FINISH TUBULAR STEEL   | 150 LF |
| ⑤ | CONSTRUCT DRIVEWAY APPROACH PER CITY OF RIVERSIDE STANDARD DRAWING NO. 302, W=10.0'   | 1 EA   |

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- LOCATION OF LATERALS TO BE DETERMINED IN THE FIELD AT THE DIRECTION OF THE OWNER. AVOID CONFLICT WITH PROPOSED AND/OR EXISTING FACILITIES.
- 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.
- THE SEWER CONTRACTOR SHALL ADJUST MANHOLES TO FINAL GRADE AFTER PAVING IS COMPLETED.



SEE SHEET 1A

CITY OF RIVERSIDE WATER DEPT.  
 REVIEWED FOR CONFLICTS BY: *[Signature]* DATE: 7-17-2014



**adkan ENGINEERS**  
 CIVIL ENGINEERING • SURVEYING • PLANNING  
 6879 AIRPORT DRIVE, RIVERSIDE, CA 92504  
 TEL: (951) 689-0241 • FAX: (951) 343-9870  
 DATE: 6/30/14  
 UNDER THE SUPERVISION OF: P.C.E. 53390 6/30/14

PLAN PREPARED BY: **adkan ENGINEERS**  
 CITY OF RIVERSIDE  
 BENCHMARK: H3-D3  
 DATUM: 1929  
 ELEVATION: 726.212

|              |                                      |           |      |
|--------------|--------------------------------------|-----------|------|
| MARK         | REV PUMP STA. LOC. & FORCED MAIN SWR | APPR.     | DATE |
|              |                                      |           |      |
|              |                                      |           |      |
|              |                                      |           |      |
| DESIGNED BY: | RDR                                  | DRAWN BY: | AT   |
| CHECKED BY:  | C                                    |           |      |

**CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT**  
 APPROVED BY: *[Signature]* DATE: 7/16/14  
 ENGINEERING MANAGER  
 CAPITAL PROJECTS

**SEWER PLAN AND PROFILE**  
**TRACT 28987**  
 INDEX SHEET  
 PUMP STATION AND SEWER FORCE MAIN SYSTEM  
 HORIZ. SCALE: AS SHOWN VERT. SCALE: N/A  
 J.N. 8499

|              |             |
|--------------|-------------|
| PW13-0372    | ACCOUNT NO. |
| S-1988       |             |
| SHEET 1 OF 6 |             |

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TRACT No. 28987

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THE SIZE AND MATERIAL OF ANY BY-PASS PIPES.

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LEGEND

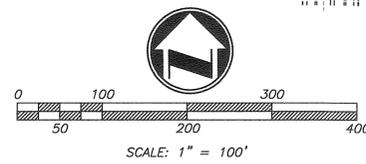
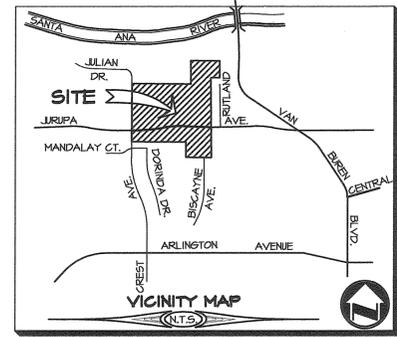
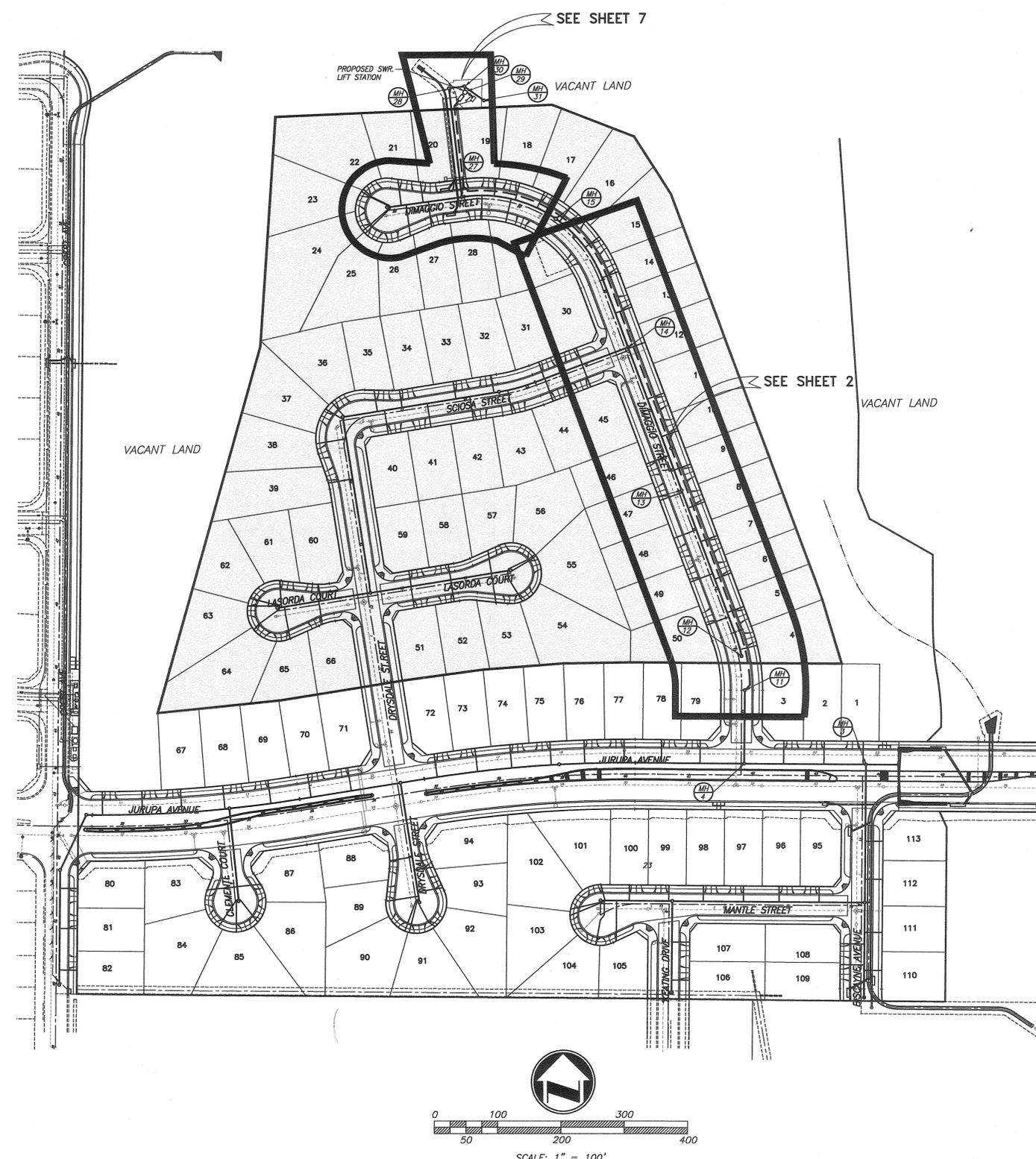
- CL ..... CENTERLINE
- R/W ..... RIGHT OF WAY
- MH ..... MANHOLE
- FM ..... FORCE MAIN
- S ..... SEPTIC

CONSTRUCTION NOTES + QUANTITY

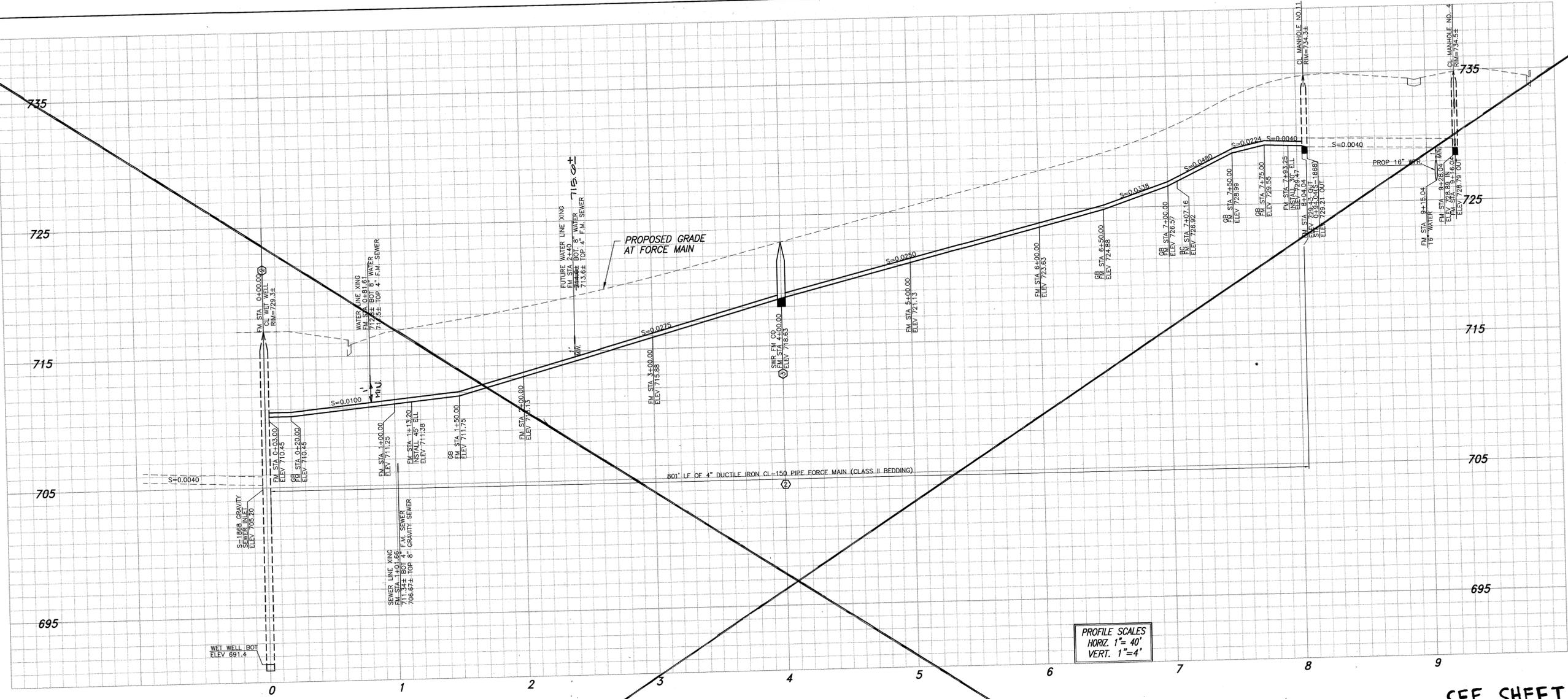
1. CONSTRUCT 4" DIA. PVC SEWER FORCE MAIN, CLASS 165, CONFORMING TO ANSI/AWWA, PER CITY OF RIVERSIDE STD. 452, CASE 1 BEDDING. 1,135 LF
2. CONSTRUCT WET WELL PER CITY STD. DWG. 500 1 EA
3. CONSTRUCT PRECAST CONCRETE FORCE MAIN CLEANOUT PER CITY OF RIVERSIDE STANDARD DRAWING NO. 559 (4" PIPE) 1 EA
4. CONSTRUCT 6" BLOCK WALL PER RIVERSIDE CITY BUILDING FREE STANDING BLOCK WALL STANDARD OR APPROVED EQUAL 148 LF
5. CONSTRUCT DRIVEWAY APPROACH PER CITY OF RIVERSIDE STANDARD DRAWING NO. 302, W=10.0' 1 EA
6. INSTALL 6" TALL X 15' WIDE DRIVE GATE AND 6" TALL X 3' WIDE MAINTENANCE GATE WITH PADLOCKS. GATES ARE TO BE BLACK POWDER COAT FINISH TUBULAR STEEL (AMERISTAR IMPASSE II TRIDENT 3-RAIL SYSTEM OR APPROVED EQUAL) 1 EA
7. INSTALL 3/4" HOSE BIB INSTALLED PER CITY SPECIFICATIONS. 1 EA
8. INSTALL 1" PRIVATE WATER SERVICE 160 LF
9. INSTALL 2"x2' INLET PER DETAIL ON SHEET 7 1 EA

SEWER CONSTRUCTION GENERAL NOTES

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- THE SEWER CONTRACTOR SHALL ADJUST MANHOLES TO FINAL GRADE AFTER PAVING IS COMPLETED.



|   |  |  |   |   |   |  |   |
|---|--|--|---|---|---|--|---|
| CITY OF RIVERSIDE WATER DEPT.<br>REVIEWED FOR CONFLICTS BY: <i>Matthew B...</i> DATE: 2/10/17 |  |  | PLAN PREPARED BY:<br><b>adkan ENGINEERS</b><br>CIVIL ENGINEERING • SURVEYING • PLANNING<br>6870 AIRPORT DRIVE, RIVERSIDE, CA 92504<br>TEL: (951) 985-0241 FAX: (951) 943-8370<br>DATE: 1/11/17<br>UNDER THE SUPERVISION OF: <i>[Signature]</i> R.C.E. 33390 6/30/14 | BENCHMARK: H3-D3<br>CITY OF RIVERSIDE<br>BENCHMARK TRANSFER:<br>SET CHISEL "X" IN THE TOP OF EASTERLY BASE BOLT OF AN 18" DIAMETER TRAFFIC SIGNAL POLE AT THE NORTHEASTERLY CURB RETURN OF JURUPA AVENUE AND VAN BUREN BOULEVARD.<br>H3-D3-TRANSFER.<br>DATUM: 1929<br>ELEVATION: 726.212 | <b>CITY OF RIVERSIDE</b><br>PUBLIC WORKS DEPARTMENT<br>APPROVED BY: <i>[Signature]</i> DATE: 2/10/17<br>ENGINEERING MANAGER<br>CAPITAL PROJECTS | APPROVED BY: <i>[Signature]</i> DATE: 10/2/17<br>CITY ENGINEER / P.W. DIRECTOR | PW13-0372<br>ACCOUNT NO.<br><b>TRACT 28987</b><br>INDEX SHEET<br><b>S-1988</b><br>PUMP STATION AND SEWER FORCE MAIN SYSTEM<br>SHEET 1A OF 7<br>HORIZ. SCALE: AS SHOWN VERT. SCALE: N/A<br>J.N. 8489<br>FILE NAME: U:\Projects\Cox-FRA\Sewer Improvements\Force Main\FM_01.dwg |
|---|--|--|---|---|---|--|---|



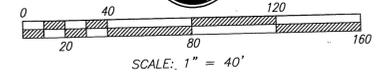
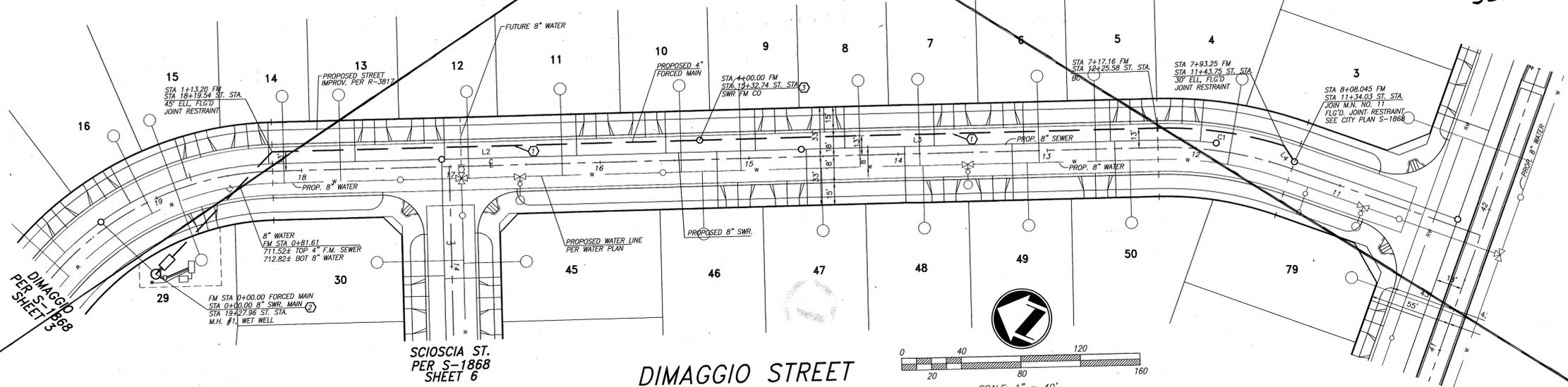
PROFILE SCALES  
HORIZ. 1" = 40'  
VERT. 1" = 4'

SEE SHEET 2A

| Line Table |         |             |
|------------|---------|-------------|
| Line #     | Length  | Direction   |
| L3         | 307.16' | S20°38'25"E |
| L4         | 12.86'  | S37°41'28"W |
| L1         | 97.50'  | S65°38'25"E |
| L2         | 286.80' | S20°38'25"E |

| Curve Table |        |         |           |
|-------------|--------|---------|-----------|
| Curve #     | Length | Radius  | Delta     |
| C1          | 86.09' | 263.00' | 18°45'19" |



CITY OF RIVERSIDE WATER DEPT.  
REVIEWED FOR CONFLICTS BY: *Matthew B...* DATE: 7-17-2014



CITY OF RIVERSIDE, BUSINESS TAX ACCT.#058833 EXP. 1/1/15  
PLAN PREPARED BY:  
**adkan ENGINEERS**  
CIVIL ENGINEERING • SURVEYING • PLANNING  
6879 AIRPORT DRIVE, RIVERSIDE, CA 92504  
TEL: (951) 508-0241 FAX: (951) 343-9370  
DATE: 1/20/14  
UNWR 1/4 SUPERVISION OF: *[Signature]* NO. 55390 8/30/15

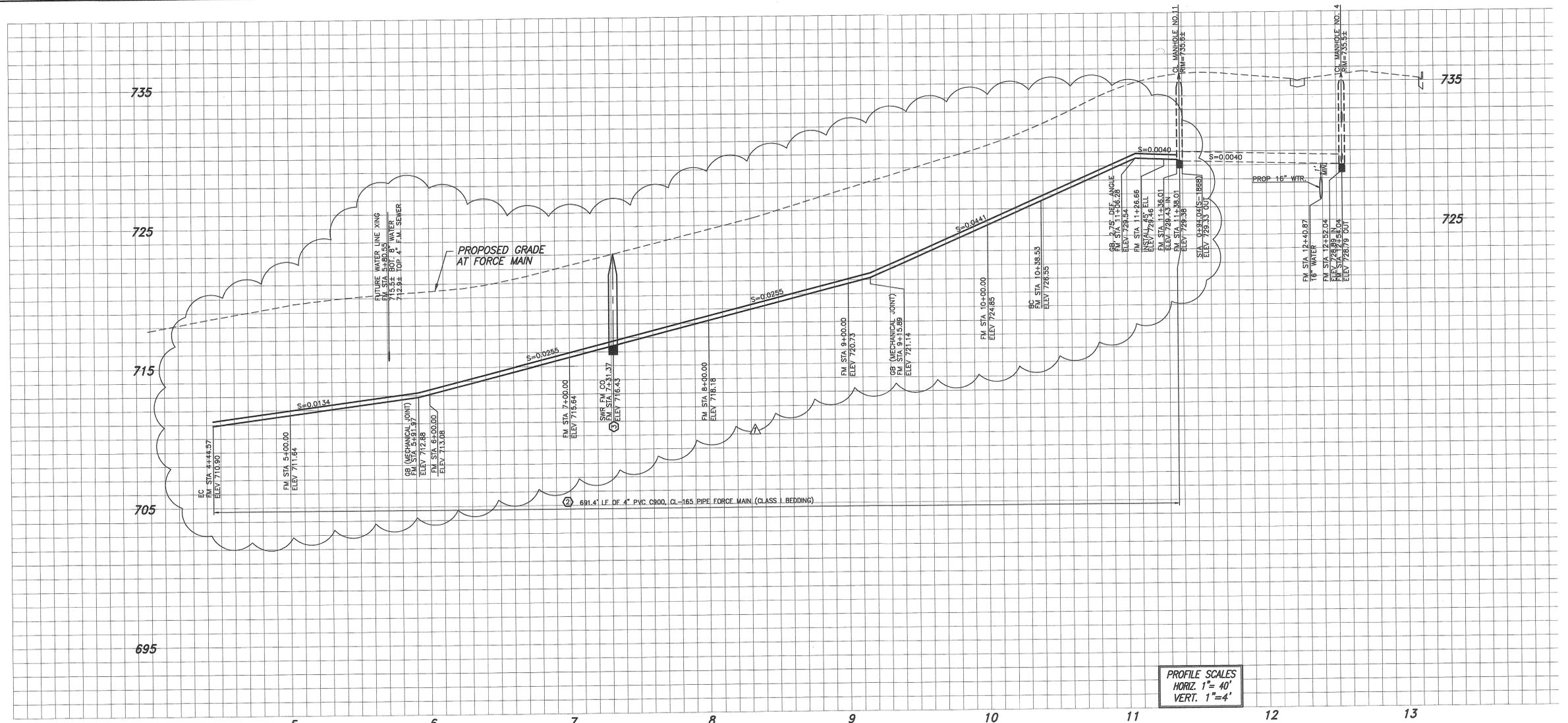
BENCHMARK: H3-D3  
CITY OF RIVERSIDE  
BENCH MARK TRANSFER:  
SET CHISEL "X" IN THE TOP OF EASTERLY BASE  
BOLT OF AN 18" DIAMETER TRAFFIC SIGNAL POLE  
AT THE NORTHEASTERLY CURB RETURN OF JURUPA  
AVENUE AND VAN BUREN BOULEVARD.  
H3-D3-TRANSFER. DATUM: 1929  
ELEVATION: 726.212

| MARK                                  | REVISIONS | APPR. | DATE |
|---------------------------------------|-----------|-------|------|
| REV. PUMP STA. LOC. & FORCED MAIN SWR |           |       |      |

**CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT**  
APPROVED BY: *[Signature]* DATE: 2/27/2015  
ENGINEERING MANAGER  
CAPITAL PROJECTS  
CITY ENGINEER / P.W. DIRECTOR  
DATE: 2/27/2015

SEWER PLAN AND PROFILE  
**TRACT 28987 DIMAGGIO ST.**  
SEWER FORCE MAIN SYSTEM  
HORIZ. SCALE: AS SHOWN VERT. SCALE: N/A  
FILE NAME: U:\Projects\Cox-FRA\Sewer Improvements\Force Main\FM\_02.dwg

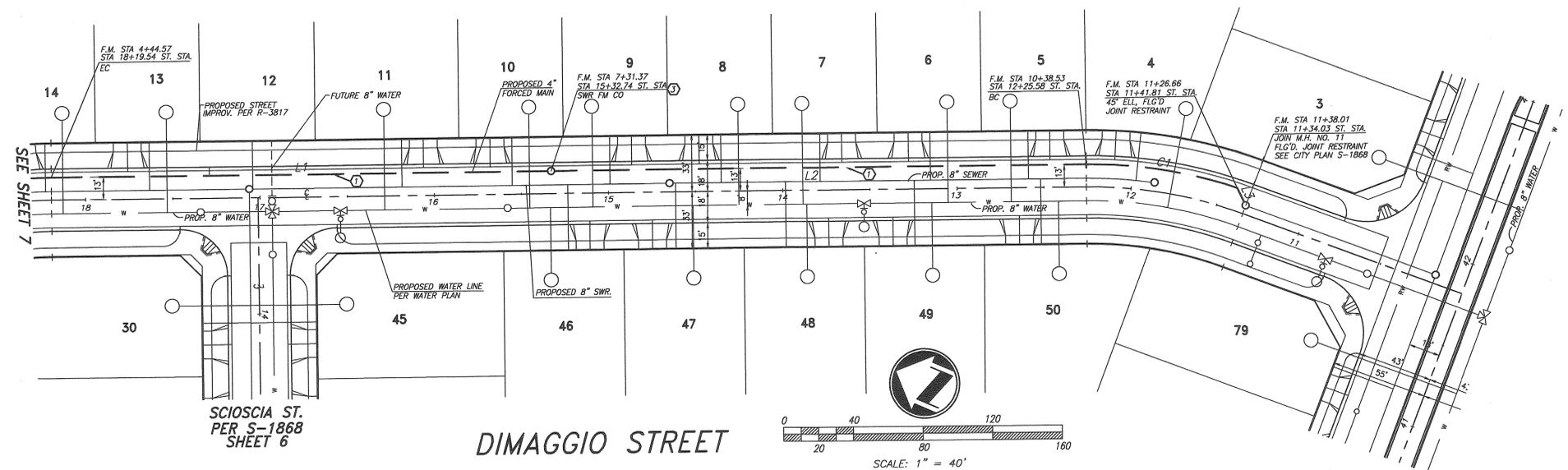
PW13-0372  
ACCOUNT NO.  
**S-1988**  
SHEET 2 OF 6  
J.N. 8489



PROFILE SCALES  
 HORIZ. 1" = 40'  
 VERT. 1" = 4'

| Line Table |         |             |
|------------|---------|-------------|
| Line #     | Length  | Direction   |
| L1         | 286.80' | N20°38'25"W |
| L2         | 307.16' | N20°38'25"W |
| L3         | 9.35'   | N44°14'17"E |

| Curve Table |        |         |           |
|-------------|--------|---------|-----------|
| Curve #     | Length | Radius  | Delta     |
| C1          | 88.13' | 263.00' | 19°12'00" |



**CONSTRUCTION NOTES**

- ① CONSTRUCT 4" DIA. PVC C900 SEWER FORCE MAIN, CLASS 165 CONFORMING TO ANSI/AWWA, PER CITY OF RIVERSIDE STD. 452, CASE 1 BEDDING.
- ② CONSTRUCT PRECAST CONCRETE FORCE MAIN CLEANOUT PER CITY OF RIVERSIDE STANDARD DRAWING NO. 559 (4" PIPE)

CITY OF RIVERSIDE WATER DEPT.  
 REVIEWED FOR CONFLICTS BY: *Arthur B...* DATE: 2/10/2017



PLAN PREPARED BY:  
**adkan ENGINEERS**  
 CIVIL ENGINEERING • SURVEYING • PLANNING  
 6870 AIRPORT DRIVE, RIVERSIDE, CA 92504  
 TEL: (951) 988-0241 • FAX: (951) 988-0370  
 DATE: 1/11/17  
 UNDER THE SUPERVISION OF: *[Signature]* P.C.E. 53390 8/20/17

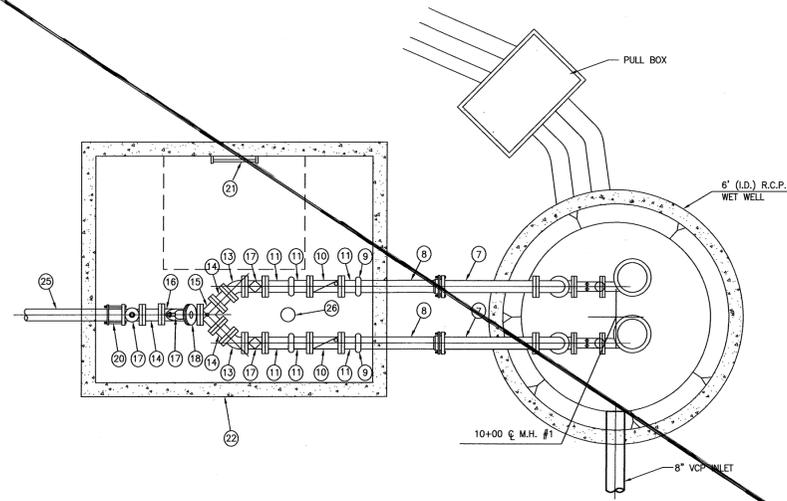
BENCHMARK: H3-D3  
 CITY OF RIVERSIDE  
 BENCH MARK TRANSFER:  
 SET CHISEL "X" IN THE TOP OF EASTERLY BASE  
 BOLT OF AN 18" DIAMETER TRAFFIC SIGNAL POLE  
 AT THE NORTHEASTERLY CURB RETURN OF JURUPA  
 AVENUE AND VAN BUREN BOULEVARD.  
 H3-D3 TRANSFER. DATUM: 1929  
 ELEVATION: 726.212

DESIGNED BY: EAA DRAWN BY: EAA CHECKED BY: C  
 REVISIONS: 1. REVISED FORCE MAIN SEWER LINE  
 2. DATE: 1/11/17

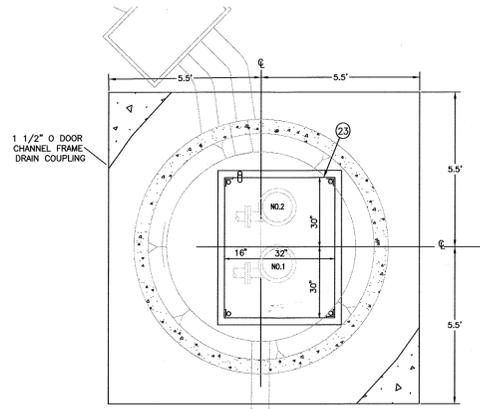
**CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT**  
 APPROVED BY: *[Signature]* DATE: 10/2/17  
 ENGINEERING MANAGER  
 CAPITAL PROJECTS  
 APPROVED BY: *[Signature]* DATE: 10/2/17  
 CITY ENGINEER / P.W. DIRECTOR

SEWER PLAN AND PROFILE  
 TRACT 28987  
 DIMAGGIO ST.  
 SEWER FORCE MAIN SYSTEM  
 HORIZ. SCALE: AS SHOWN VERT. SCALE: N/A  
 FILE NAME: U:\Projects\Cox-FRA\Sewer Improvements\Force Main\FM\_02A.dwg

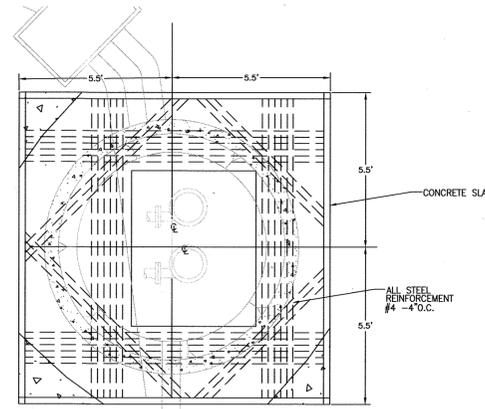
PW13-0372  
 ACCOUNT NO.  
 S-1988  
 SHEET 2A OF 7  
 J.N. 8489  
 PLOT DATE: 1/11/2017



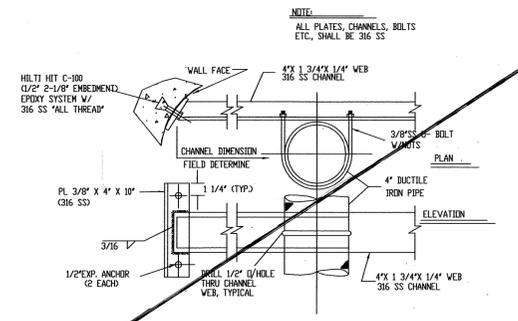
TOP VIEW PROPOSED WET WELL & PIPING  
NOT TO SCALE



COVER PLAN  
SCALE 1" = 3'-0"  
DETAIL "A"

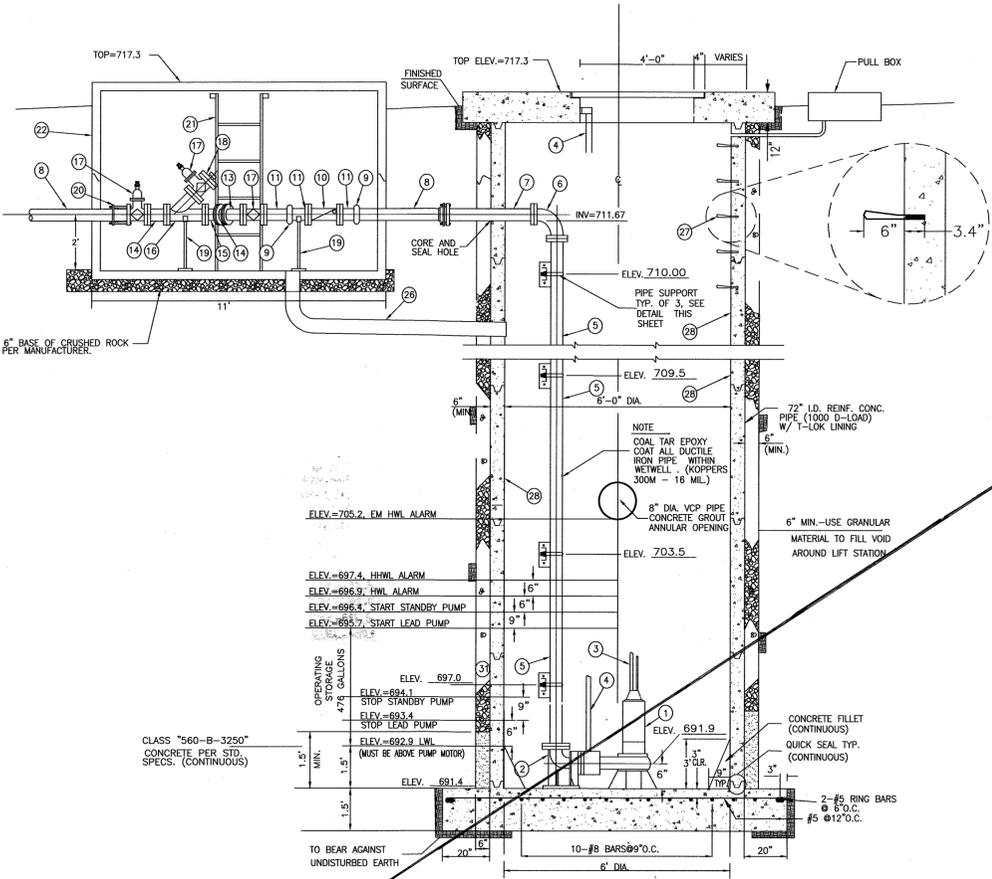


COVER REINFORCING PLAN  
NOT TO SCALE  
DETAIL "B"

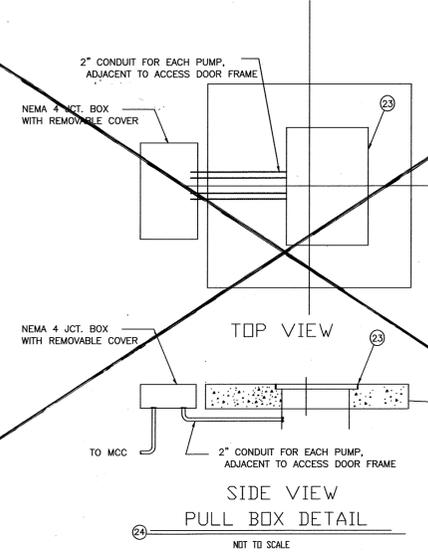


TYPICAL PIPE SUPPORT BRACKET DETAILS  
NOT TO SCALE  
DETAIL "C"

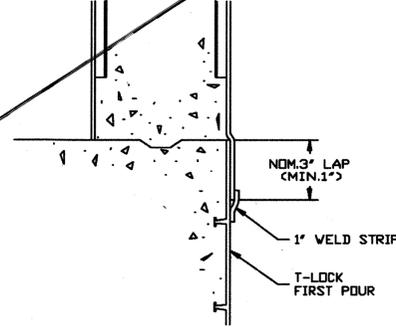
| MATERIALS DESCRIPTION |  | NOTE: O.A.E. (OR APPROVED EQUAL) |
|-----------------------|--|----------------------------------|
| 1                     | SUBMERSIBLE SEWAGE PUMP [HP=10KW,TDH=60',GPM=127,RPM=1750] WEMCO 3X11C1E O.A.E. OPEN FAN IMPELLER  |                                  |
| 2                     | MATING 90° ELBOW FOR SLIDE-AWAY COUPLING   |                                  |
| 3                     | 1/4" X 5/16" STAINLESS STEEL NYLON COVERED LIFTING CABLE WITH STAINLESS STEEL EYEBOLT  |                                  |
| 4                     | 1 1/2" SCHEDULE 40 316S.S. STAINLESS STEEL PIPE GUIDE RAILS, AS SUPPLIED BY PUMP MFG. (TO BE ADJUSTED AS NECESSARY PER PUMP MFG. SPEC.)  |                                  |
| 5                     | 4" SCHEDULE 40 316 STAINLESS STEEL PIPE WITH FLANGED ENDS INSIDE WET WELL  |                                  |
| 6                     | 4" X 90° SCHEDULE 40 316 STAINLESS STEEL FLANGED ELBOW (LONG RADIUS)   |                                  |
| 7                     | 4" X 36" LONG, FLANGED X PLAIN END SCHEDULE 40 316 STAINLESS STEEL SPOOL   |                                  |
| 8                     | 4" DUCTILE IRON PIPE, RESTRAINED MECHANICAL JOINT X VICTAULIC END, CLASS 150   |                                  |
| 9                     | 4" VICTAULIC COUPLING  |                                  |
| 10                    | 4" VERTICAL LOADED FLANGED EXTERNAL ARM SWING CHECK VALVE, CLASS 150   |                                  |
| 11                    | 4" DUCTILE IRON FLANGED X VICTAULIC SPOOL, CLASS 150   |                                  |
| 12                    | 4" X 45" DUCTILE IRON FLANGED ELBOW, CLASS 150   |                                  |
| 13                    | 4" DUCTILE IRON FLANGED SPOOL, CLASS 150   |                                  |
| 14                    | 4" X 4" X 4" DUCTILE IRON TRUE WYE (FLANGED), CLASS 150  |                                  |
| 15                    | 4" X 4" X 4" DUCTILE IRON 45° WYE (FLANGED), CLASS 150   |                                  |
| 16                    | 4" X 4" X 4" DUCTILE IRON 45° WYE (FLANGED), CLASS 150   |                                  |
| 17                    | 4" FLANGED PLUG VALVE, CLASS 150 - VALMATIC SURGE-STOP CHECK VALVE VMC 7202BFM1  |                                  |
| 18                    | 2" X 4" O.D. CAST IRON REDUCING FLANGE, CLASS 150 (WITH 2" TREADED PLUG)   |                                  |
| 19                    | PIPE SUPPORT PER DETAIL (THIS SHEET)   |                                  |
| 20                    | 4" CAST IRON COUPLING ADAPTER, DRESSER STYLE 127 (O.A.E.)  |                                  |
| 21                    | 6.5' GALVANIZED VAULT LADDER PER ALHAMBRA BOUNDARY A-3400 (O.A.E.)   |                                  |
| 22                    | JANSEN PRODUCTS 810 SERIES PRECAST VAULT (96" W X 120" L X 97" D INSIDE DIMENSIONS) WITH ARMORED TOP SECTION & 4' W X 5' L VAULT OPENING. INSTALL ON 6" CRUSHED ROCK PER MANUFACTURER'S RECOMMENDATIONS. |                                  |
| 23                    | 5'-0" WIDE X 4'-0" LONG DOUBLE LEAF ALUMINUM ACCESS DOOR WITH STAINLESS STEEL HARDWARE AND COMPRESSION SPRING OPERATORS  |                                  |
| 24                    | BILCO TYPE "JD" AL-H-20, INSTALL PER MFG. RECOMMENDATIONS.   |                                  |
| 25                    | BROOKS PRODUCTS 67PB PRECAST PULL BOX (24" X 36" X 24" DEEP) WITH TRAFFIC COVER (O.A.E.)   |                                  |
| 26                    | 4" PVC FORCE MAIN, PER C/RV. STD.  |                                  |
| 27                    | 4" PVC DRAIN PIPE  |                                  |
| 28                    | 1/2" DIA. ENCAPSULATED WITH PLASTIC STEEL STEP. PRECAST OR GROUTED IN PLACE @ 15" O.C.   |                                  |
| 29                    | ALL WET WELL INTERIOR CONCRETE TO BE ZEBRON LINED  |                                  |



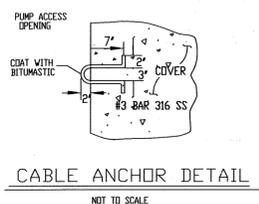
SIDE VIEW PROPOSED WET WELL  
DETAIL "D"  
NOT TO SCALE



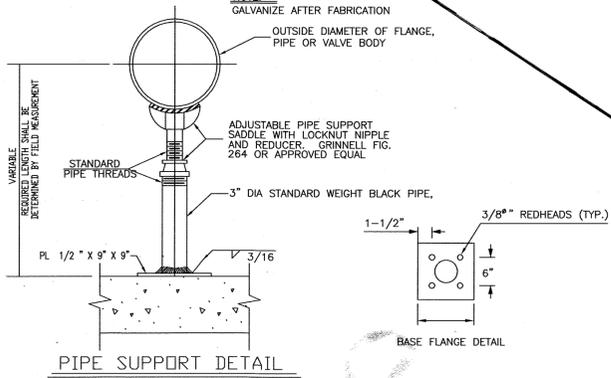
PULL BOX DETAIL  
NOT TO SCALE



T-LOK JOINT WELDING DETAIL  
NOT TO SCALE



CABLE ANCHOR DETAIL  
NOT TO SCALE



PIPE SUPPORT DETAIL  
NOT TO SCALE  
DETAIL "E"

ABBREVIATIONS:

|        |                        |
|--------|------------------------|
| O.D.   | OUTSIDE DIAMETER       |
| I.D.   | INSIDE DIAMETER        |
| O.C.   | ON CENTER              |
| O.A.E. | OR APPROVED EQUAL      |
| INV.   | INVERT                 |
| N.P.T. | NATIONAL PIPE THREAD   |
| P.V.C. | POLYVINYL CHLORIDE     |
| N.E.C. | NATIONAL ELECTRIC CODE |

NOTE:  
CONTRACTOR SHALL OBTAIN SERVICES OF PUMP MANUFACTURER'S ENGINEERING REPRESENTATIVE TO REVIEW AND APPROVE INSTALLATION OF PUMPS.  
CONTRACTOR SHALL DEMONSTRATE REMOVAL AND REPLACEMENT OF BOTH PUMPS AS PART OF INSTRUCTION OF OWNER'S PERSONNEL.  
IF THE CONTRACTOR ENCOUNTERS GROUNDWATER DURING THE CONSTRUCTION OF SUBSURFACE INFRASTRUCTURES, THE CONTRACTOR SHALL PROTECT ALL STRUCTURES AGAINST GROUNDWATER INTRUSION BY MEANS OF WATERPROOFING THE EXTERIOR OF THE STRUCTURES UP TO 12" HIGHER THAN THE GROUNDWATER LEVEL.

SEE SHEET 3A

NOTE: ACCEPTANCE FOR MAINTENANCE RESPONSIBILITY OF THE SEWER PUMP STATION BY THE CITY OF RIVERSIDE WILL BE CONTINGENT UPON THE COMPLETION OF ALL HOME CONSTRUCTION WITHIN TRACT MAP 28987 AND SUBSEQUENT INITIAL HOMEOWNER OCCUPANCY OF ALL HOMES.

CITY OF RIVERSIDE WATER DEPT.  
Matthew B. [Signature]  
REVIEWED FOR CONFLICTS BY: [Signature] DATE: 7-17-2014



811 Know what's below. Call before you dig.

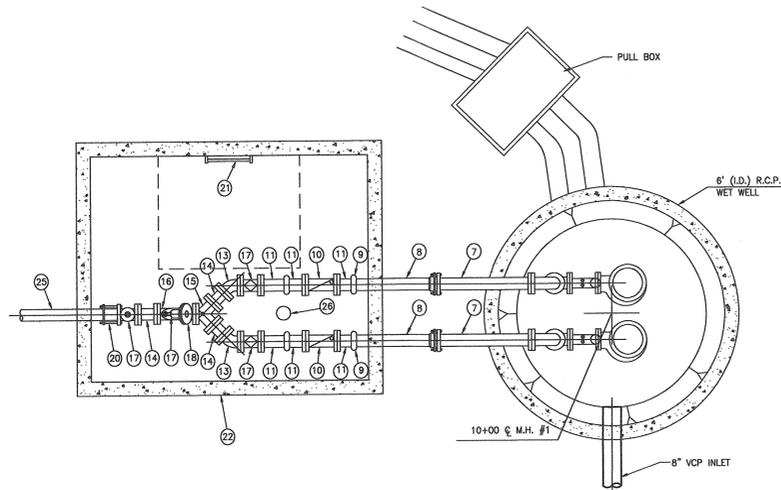
PLAN PREPARED BY: **adkan ENGINEERS**  
CIVIL ENGINEERING • SURVEYING • PLANNING  
6879 AIRPORT DRIVE, RIVERSIDE, CA 92504  
TEL: (951) 889-0241 FAX: (951) 843-9370  
DATE: 6/30/14  
UNDER THE SUPERVISION OF: P.C.E. 53390 6/30/14

BENCHMARK: H3-D3  
CITY OF RIVERSIDE  
BENCH MARK TRANSFER:  
SET CHISEL "C" IN THE TOP OF EASTERLY BASE BOLT OF AN 18" DIAMETER TRAFFIC SIGNAL POLE AT THE NORTHEASTERLY CURB RETURN OF JURUPA AVENUE AND VAN BUREN BOULEVARD.  
H3-D3-TRANSFER. DATUM: 1929  
ELEVATION: 726.212

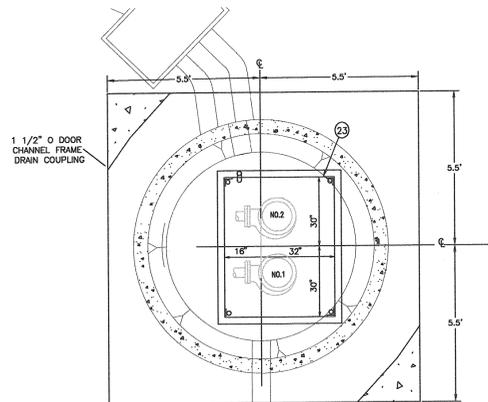
| MARK | REVISIONS                             | APPR. | DATE |
|------|---------------------------------------|-------|------|
| Δ    | REV. PUMP STA. LOC. & SWR FORCED MAIN |       |      |

CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT  
APPROVED BY: [Signature] DATE: 2/27/2015  
ENGINEERING MANAGER: [Signature]  
CAPITAL PROJECTS

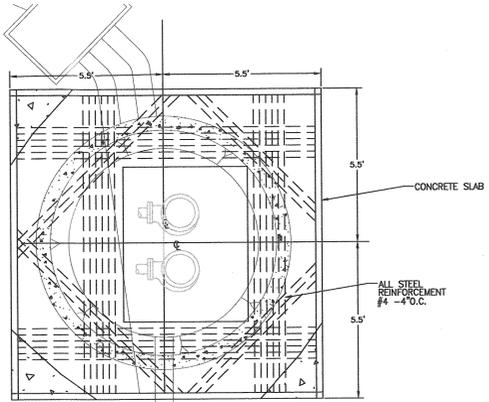
| SEWER PLAN AND PROFILE                  |  | PW13-0372    |
|---|--|--------------|
| TRACT 28987<br>DIMAGGIO ST.             |  | ACCOUNT NO.  |
| PUMP STATION                            |  | S-1988       |
| HORIZ. SCALE: AS SHOWN VERT. SCALE: N/A |  | SHEET 3 OF 6 |
| J.N. 8/28/09                            |  |              |



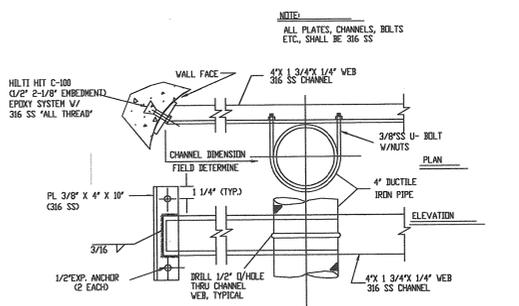
TOP VIEW PROPOSED WET WELL & PIPING  
NOT TO SCALE



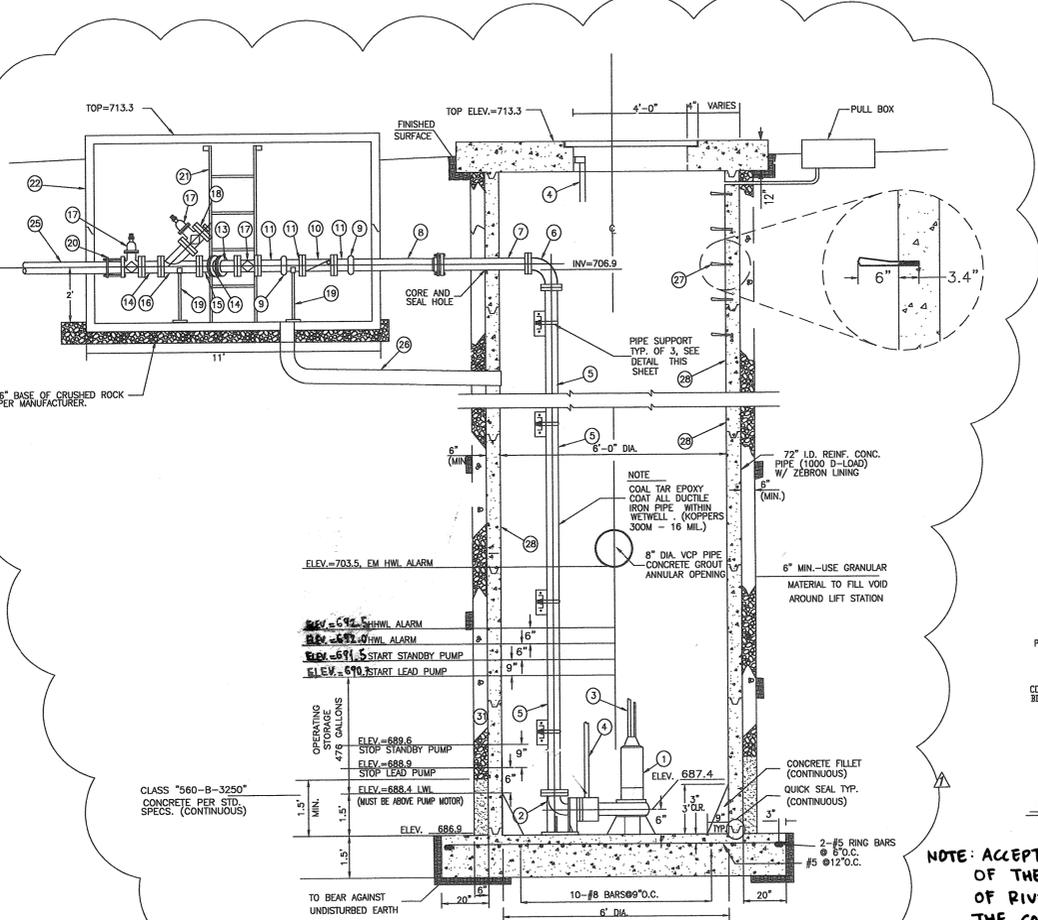
COVER PLAN  
SCALE 1" = 3'-0"  
DETAIL "A"



COVER REINFORCING PLAN  
NOT TO SCALE  
DETAIL "B"

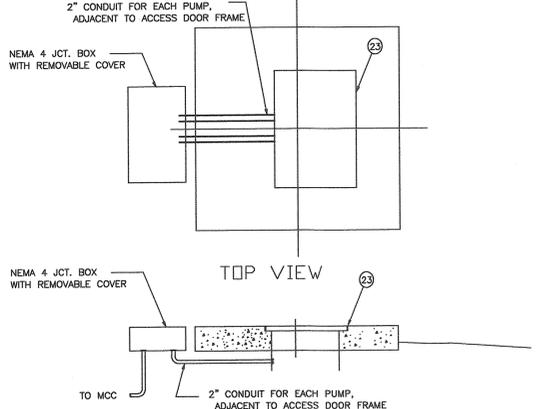


TYPICAL PIPE SUPPORT BRACKET DETAILS  
NOT TO SCALE  
DETAIL "C"

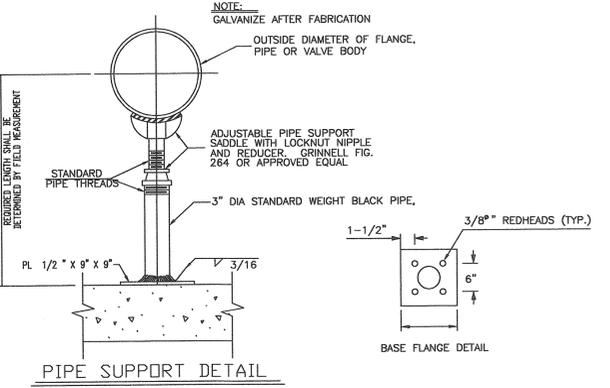


SIDE VIEW PROPOSED WET WELL  
DETAIL "D"  
NOT TO SCALE

**NOTE: ACCEPTANCE FOR MAINTENANCE RESPONSIBILITY OF THE SEWER PUMP STATION BY THE CITY OF RIVERSIDE WILL BE CONTINGENT UPON THE COMPLETION OF ALL HOME CONSTRUCTION WITHIN TRACT MAP 28987 AND SUBSEQUENT INITIAL HOMEOWNER OCCUPANCY OF ALL HOMES.**



PULL BOX DETAIL  
NOT TO SCALE



PIPE SUPPORT DETAIL  
NOT TO SCALE  
DETAIL "E"

| MATERIALS DESCRIPTION |  | NOTE: O.A.E. (OR APPROVED EQUAL) |
|-----------------------|--|----------------------------------|
| 1                     | SUBMERSIBLE SEWAGE PUMP [HP=1.5, TD=12, RPM=1800, VOLTAGE=3-44 MODEL]  |                                  |
| 2                     | MATING 90° ELBOW FOR SLIDE-AWAY COUPLING   |                                  |
| 3                     | 1/4" X 5/16" STAINLESS STEEL NYLON COVERED LIFTING CABLE WITH STAINLESS STEEL EYEBOLT (316SS)  |                                  |
| 4                     | 1 1/2" SCHEDULE 40 316SS. STAINLESS STEEL PIPE GUIDE RAILS, AS SUPPLIED BY PUMP MFG. (TO BE ADJUSTED AS NECESSARY PER PUMP MFG. SPEC.)   |                                  |
| 5                     | 4" SCHEDULE 40 316 STAINLESS STEEL PIPE WITH FLANGED ENDS INSIDE WET WELL  |                                  |
| 6                     | 4" X 90° SCHEDULE 40 316 STAINLESS STEEL FLANGED ELBOW (LONG RADII)  |                                  |
| 7                     | 4" X 36" LONG, FLANGED X PLAIN END SCHEDULE 40 316 STAINLESS STEEL SPOOL   |                                  |
| 8                     | 4" DUCTILE IRON PIPE, RESTRAINED MECHANICAL JOINT X VICTAULIC END, CLASS 150   |                                  |
| 9                     | 4" VICTAULIC COUPLING  |                                  |
| 10                    | 4" VALMATIC SURGEBUSTER CHECK VALVE DWG. NO. VMC-7202  |                                  |
| 11                    | 4" DUCTILE IRON FLANGED X VICTAULIC SPOOL, CLASS 150   |                                  |
| 12                    | 4" X 45° DUCTILE IRON FLANGED ELBOW, CLASS 150   |                                  |
| 13                    | 4" DUCTILE IRON FLANGED SPOOL, CLASS 150   |                                  |
| 14                    | 4" X 4" X 4" DUCTILE IRON TRUE WYE (FLANGED), CLASS 150  |                                  |
| 15                    | 4" X 4" X 4" DUCTILE IRON 45° WYE (FLANGED), CLASS 150   |                                  |
| 16                    | 4" FLANGED PLUG VALVE, CLASS 150 VALMATIC SURGEBUSTER CHECK VALVE DWG. NO. VMC-7202BPMI  |                                  |
| 17                    | 2" X 4" O.D. CAST IRON REDUCING FLANGE, CLASS 150 (WITH 2" TREADED PLUG)   |                                  |
| 18                    | PIPE SUPPORT PER DETAIL (THIS SHEET)   |                                  |
| 19                    | 4" CAST IRON COUPLING ADAPTER, DRESSER STYLE 127 (O.A.E.)  |                                  |
| 20                    | 6.5" GALVANIZED VAULT LADDER PER ALHAMBRA FOUNDRY A-3400 (O.A.E.)  |                                  |
| 21                    | JANSEN PRODUCTS 810 SERIES PRECAST VAULT (96" W X 120" L X 97" D INSIDE DIMENSIONS) WITH ARMORED TOP SECTION & 4' W X 5' L VAULT OPENING. INSTALL ON 6" GRUSHED ROCK PER MANUFACTURER'S RECOMMENDATIONS. |                                  |
| 22                    | 5'-0" WIDE X 4'-0" LONG DOUBLE LEAF ALUMINUM ACCESS DOOR WITH STAINLESS STEEL HARDWARE AND COMPRESSION SPRING OPERATORS. BILCO TYPE "JD" AL H-20, INSTALL PER MFG. RECOMMENDATIONS.                      |                                  |
| 23                    | BROOKS PRODUCTS 67PB PRECAST PULL BOX (24" X 36" X 24" DEEP) WITH TRAFFIC COVER (O.A.E.)   |                                  |
| 24                    | 4" PVC C900 FORCE MAIN, CLASS 165, PER C/RV. STD.  |                                  |
| 25                    | 4" PVC DRAIN PIPE  |                                  |
| 26                    | 1/2" DIA. ENCAPSULATED WITH PLASTIC STEEL STEP. PRECAST OR GROUTED IN PLACE @ 15" O.C.   |                                  |
| 27                    | ALL WET WELL INTERIOR CONCRETE TO BE ZEBRON LINED  |                                  |

**ABBREVIATIONS:**  
 O.D. - OUTSIDE DIAMETER  
 I.D. - INSIDE DIAMETER  
 O.C. - ON CENTER  
 O.A.E. - OR APPROVED EQUAL  
 INV. - INVERT  
 N.P.T. - NATIONAL PIPE THREAD  
 P.V.C. - POLYVINYL CHLORIDE  
 N.E.C. - NATIONAL ELECTRIC CODE

**NOTE:**  
 CONTRACTOR SHALL OBTAIN SERVICES OF PUMP MANUFACTURER'S ENGINEERING REPRESENTATIVE TO REVIEW AND APPROVE INSTALLATION OF PUMPS.  
 CONTRACTOR SHALL DEMONSTRATE REMOVAL AND REPLACEMENT OF BOTH PUMPS AS PART OF INSTRUCTION OF OWNER'S PERSONNEL.  
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CITY OF RIVERSIDE WATER DEPT.  
 REVIEWED FOR CONFLICTS BY: *cg* DATE: 2/10/2017



CITY OF RIVERSIDE BUSINESS TAX ACCT.#058833 EXP. 1/31/17  
 PLAN PREPARED BY: **adkan ENGINEERS**  
 CIVIL ENGINEERING • SURVEYING • PLANNING  
 6879 AIRPORT DRIVE, RIVERSIDE, CA 92504  
 TEL: (951) 699-0241 • FAX: (951) 343-9870  
 DATE: 1/11/17  
 UNDER THE SUPERVISION OF: R.C.E. #5390 6/30/17

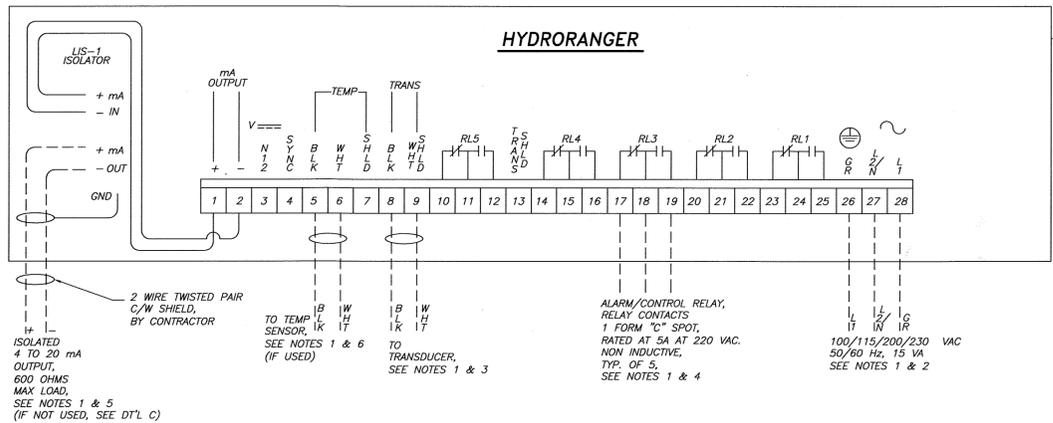
BENCHMARK: H3-D3  
 CITY OF RIVERSIDE  
 BENCHMARK TRANSFER:  
 SET CHISEL "X" IN THE TOP OF EASTERLY BASE BOLT OF AN 18" DIAMETER TRAFFIC SIGNAL POLE AT THE NORTHEASTERLY CURB RETURN OF JURUPA AVENUE AND VAN BUREN BOULEVARD.  
 H3-D3-TRANSFER. DATUM: 1929  
 ELEVATION: 726.212

DESIGNED BY: EAA DRAWN BY: EAA CHECKED BY: C-  
 REVISIONS: MARK, DATE  
 APPROVED BY: *JA Lynch* DATE: 1/11/17  
 CAPITAL PROJECTS

**CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT**  
 APPROVED BY: *John* DATE: 10/2/17  
 ENGINEERING MANAGER  
 CITY ENGINEER / P.W. DIRECTOR

SEWER PLAN AND PROFILE  
**TRACT 28987**  
 DIMAGGIO ST.  
 PUMP STATION  
 HORIZ. SCALE: AS SHOWN VERT. SCALE: N/A  
 FILE NAME: U:\Projects\Cox-FRA\Sewer Improvements\Force Main\FM\_03A.dwg

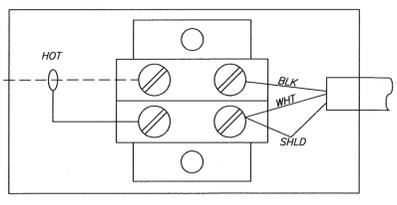
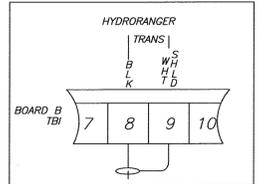
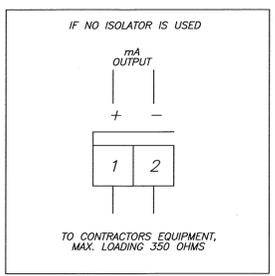
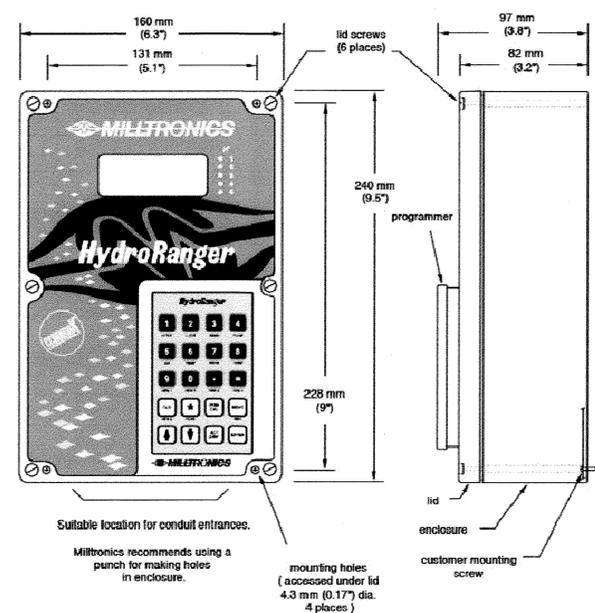
PW13-0372  
 ACCOUNT NO.  
**S-1988**  
 SHEET **3A** OF **7**  
 J.N. 8489



**NOTES:**

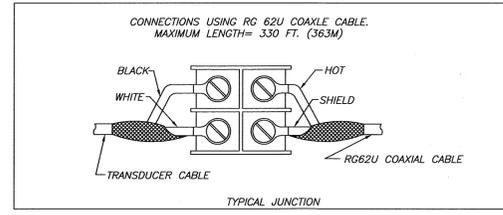
1. \_\_\_\_\_ DENOTES WIRING BY MILLTRONICS
2. \_\_\_\_\_ DENOTES WIRING BY CONTRACTOR
3. ALL WIRING MUST BE DONE IN CONJUNCTION WITH APPROVED CONDUIT BOXES AND FITTINGS, AND TO PROCEDURES IN ACCORDANCE WITH ALL GOVERNING REGULATIONS.
4. SELECT CORRECT VOLTAGE VIA SELECTOR SWITCH ON BOARD B, BY CONTRACTOR.
5. TRANSDUCER CABLE, COAXIAL RG-62U OR EQUIVALENT, MUST BE RUN IN A GROUNDED METAL CONDUIT OR EMT WITH NO OTHER ELECTRICAL CIRCUITS. GROUND SHIELD AT THE MULTIRANGER ONLY. FOR CABLE RUNS LONGER THAN THE TRANSDUCER CABLE SEE DETAIL "A". INSULATE SHIELD AT JUNCTIONS TO PREVENT INADVERTENT GROUNDING.
6. CONTACTS OF RELAYS SHOWN IN DE-ENERGIZED ALARM CONDITION. ALL RELAYS ARE CERTIFIED FOR USE IN EQUIPMENT WHERE SHORT CIRCUIT CAPACITY OF THE CIRCUITS IN WHICH THEY ARE CONNECTED IS LIMITED BY FUSES HAVING RATINGS NOT EXCEEDING THE RATINGS OF THE RELAYS.
7. ROUTE 4-20 mA CABLE IN A SEPARATE CONDUIT, ENTERING THE ENCLOSURE AS NEAR AS POSSIBLE TO THE ISOLATOR. KEEP WIRING AS SHORT AS POSSIBLE. DO NOT ROUTE CABLE ALONG TERMINAL BLOCK. KEEP SHIELD INTACT UP TO OUTPUT TERMINALS.
8. CHANGE SW2 POSITION IF USING A SEPARATE TEMPERATURE SENSOR. TEMPERATURE SENSOR CABLE, BELDEN 8760 OR EQUIVALENT, MAY BE RUN IN CONDUIT WITH THE TRANSDUCER CABLE. FOR CABLE RUNS LONGER THAN THE TEMPERATURE SENSOR CABLE SEE DETAIL "B". CHANGE SW2 POSITION BACK IF THE TEMPERATURE SENSOR IS REMOVED.
9. CONTRACTOR TO VERIFY THAT THE DC INPUT VOLTAGE CONFORMS TO THE VOLTAGE STATED ON THE VOLTAGE INPUT STICKER (ON MOTHERBOARD).
10. FOR FURTHER INFORMATION REFER TO THE HYDRORANGER INSTRUCTION MANUAL OR CONTACT THE NEAREST MILLTRONICS REPRESENTATIVE.

SEE INSTRUCTION MANUAL FOR PROPER OPERATION



**HYDRORANGER TO BE MOUNTED IN MCC**

1. TRANSDUCER CABLE CONNECTIONS MAY BE SOLDERED OR ASSEMBLED ON A TERMINAL STRIP.
2. ALL PULL BOXES, CONDUITS, AND JUNCTION BOXES MUST BE GROUNDED TO THE CONDUIT.
3. TRANSDUCER CABLE MUST BE RUN IN A GROUNDED CONDUIT SYSTEM WITH NO OTHER ELECTRICAL CIRCUITS.
4. ROUTE CONDUIT FOR LOWEST EMF INTERFERENCE FROM MOTOR DRIVES, POWER BUSES, ETC.
5. OBSERVE STANDARD WORK PRACTICES, THE NEC, AND LOCAL REGULATIONS.



| Model | XPS - 10                            | XPS - 15      | XPS - 30      | XPS - 40      | XCT - B       | XCT - 12      |
|-------|-------------------------------------|---------------|---------------|---------------|---------------|---------------|
| A     | 86 mm (3.4")                        | 119 mm (4.7") | 173 mm (6.8") | 206 mm (8.1") | 86 mm (3.4")  | 119 mm (4.7") |
| B     | 122 mm (4.8")                       | 132 mm (5.2") | 198 mm (7.8") | 229 mm (9.0") | 122 mm (4.8") | 132 mm (5.2") |
| C     | to suit ANSI, DIN and JIS standards |               |               |               |               |               |
| D*    | 128 mm (5.0")                       | 138 mm (5.4") | 204 mm (8.0") | 235 mm (9.2") | 128 mm (5.0") | 138 mm (5.4") |
| E     | 124 mm (4.9")                       | 158 mm (6.2") | n/a           | n/a           | n/a           | n/a           |
| F     | 152 mm (6.0")                       | 198 mm (7.8") | n/a           | n/a           | n/a           | n/a           |

STANDARD TRANSDUCER

CITY OF RIVERSIDE WATER DEPT.  
REVIEWED FOR CONFLICTS BY: *Matthew B...* DATE: 7-17-2014



PLAN PREPARED BY: **adkan ENGINEERS**  
CIVIL ENGINEERING • SURVEYING • PLANNING  
6579 AIRPORT DRIVE, RIVERSIDE, CA 92504  
TEL: (951) 698-0241 FAX: (951) 343-9370  
DATE: 6/20/14  
UNDER THE SUPERVISION OF: *[Signature]* P.C.E. 53390 6/20/14

BENCHMARK: H3-D3  
CITY OF RIVERSIDE  
BENCHMARK TRANSFER:  
SET CHISEL "X" IN THE TOP OF EASTERLY BASE  
BOLT OF AN 18" DIAMETER TRAFFIC SIGNAL POLE  
AT THE NORTHEASTERLY CURB RETURN OF JURUPA  
AVENUE AND VAN BUREN BOULEVARD.  
H3-D3-TRANSFER. DATUM: 1929  
ELEVATION: 726.212

| MARK | REVISIONS | APPR. | DATE |
|------|-----------|-------|------|
|      |           |       |      |

**CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT**

APPROVED BY: *[Signature]* DATE: 2/27/2015  
ENGINEERING MANAGER  
CAPITAL PROJECTS

APPROVED BY: *[Signature]* DATE: 2/27/2015  
CITY ENGINEER / P.W. DIRECTOR

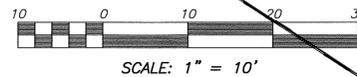
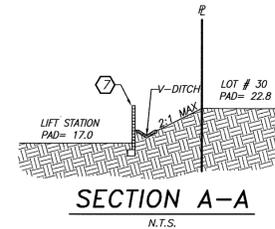
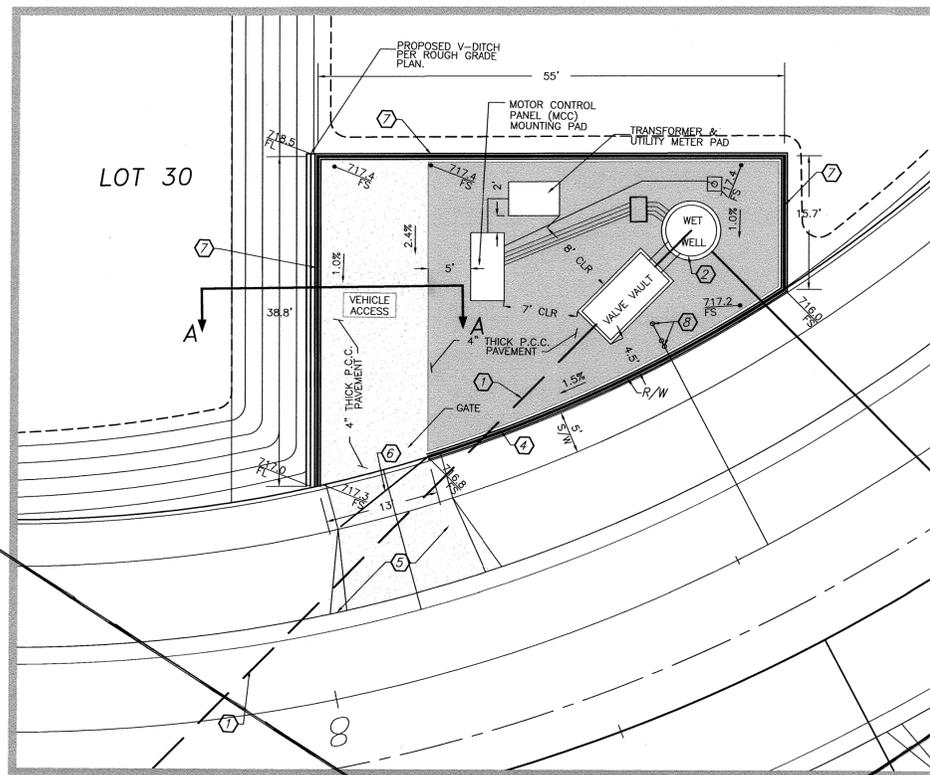
DESIGNED BY: RDR DRAWN BY: AT CHECKED BY: C-

SEWER PLAN AND PROFILE  
**TRACT 28987 SEWER PUMP STATION DETAILS**

ACCOUNT NO. PW13-0372  
S-1988  
SHEET 4 OF 67  
HORIZ. SCALE: AS SHOWN VERT. SCALE: N/A  
J.N. 8489

**CONSTRUCTION NOTES**

1. CONSTRUCT 4" DIA. D.I. SEWER FORCE MAIN, CLASS 150, CLASS 53 THICKNESS CONFORMING TO ANS/AWWA, PER CITY OF RIVERSIDE STD., CASE II BEDDING
2. CONSTRUCT WET WELL PER C/RV. STD. DWG. 500
3. CONSTRUCT PRECAST CONCRETE FORCE MAIN CLEANOUT PER CITY OF RIVERSIDE STANDARD DRAWING NO. 559 (4" PIPE)
4. INSTALL 6' TALL FENCE ATOP RETAINING WALL. FENCE TO BE BLACK POWDER COAT FINISH TUBULAR STEEL (AMERISTAR IMPASSE II TRIDENT 3-RAIL SYSTEM)
5. CONSTRUCT DRIVEWAY APPROACH PER CITY OF RIVERSIDE STANDARD DRAWING NO. 302, 10.0'
6. INSTALL 6' TALL X 13' WIDE GATE WITH PADLOCK. GATE IS TO BE BLACK POWDER COAT FINISH TUBULAR STEEL (AMERISTAR IMPASSE II TRIDENT 3-RAIL SYSTEM)
7. CONSTRUCT 6' BLOCK WALL ON TOP OF RETAINING WALL PER RIVERSIDE CITY STD. 704, OR APPROVED EQUAL
8. INSTALL 2" SERVICE WITH WAITS SERIES 009 BACKFLOW PREVENTER MODEL NO. 50M/4 WITH 3/4" HOSE BIB INSTALLED BY VAULT, CLEARANCE PER CITY SPECIFICATIONS



**LIFT STATION PLAN**  
N.T.S.

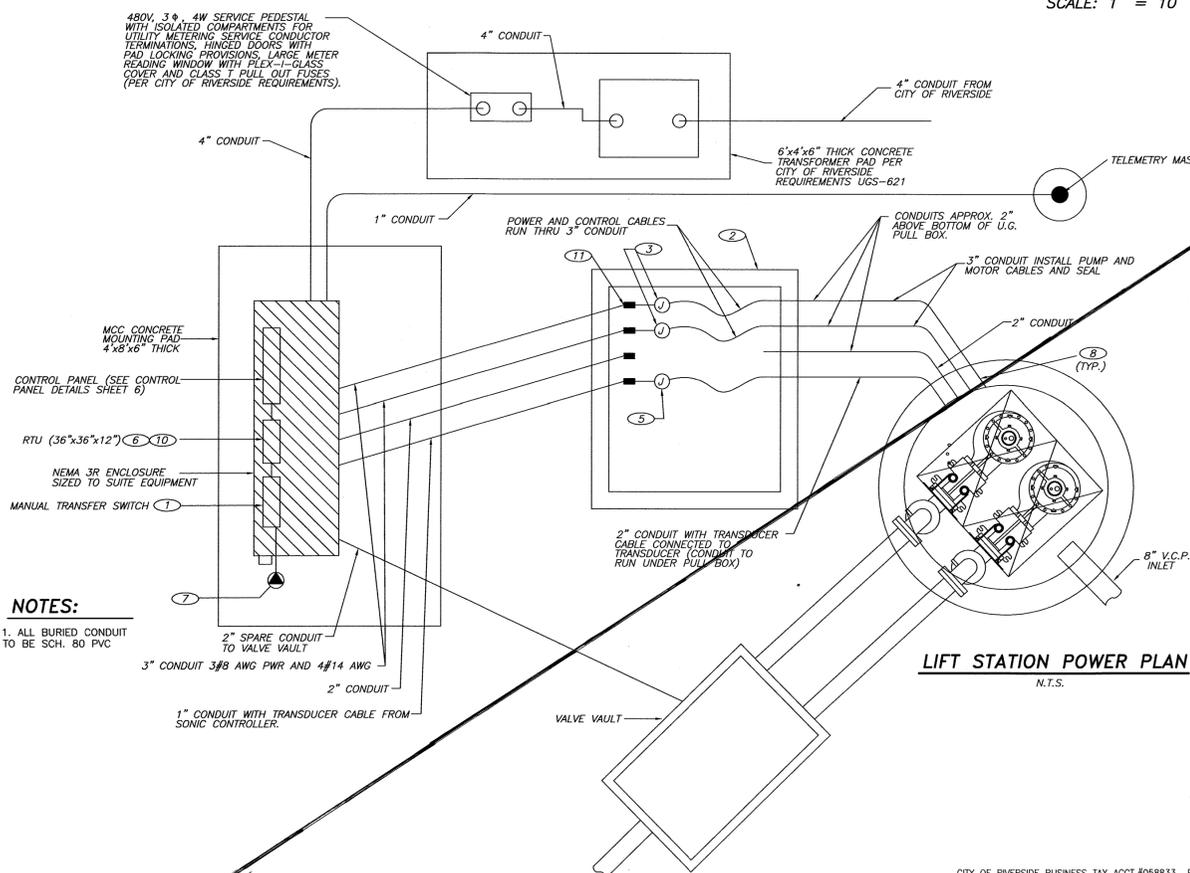
**GENERAL NOTES:**

1. PROVIDE ALL NECESSARY CONDUITS AND REQUIRED WIRING FROM CONTROL PANEL TO THE ELECTRICAL EQUIPMENT IN THE WET WELL, AS SHOWN AND AS REQUIRED.
2. TERMINAL BLOCK(S) FOR EQUIPMENT STATUS, FAILURE ALARMS, ETC. ARE TO BE FURNISHED AND INSTALLED AT THE DEVELOPER'S EXPENSE. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CITY OF RIVERSIDE.
3. THE CONTRACTOR SHALL SUBMIT MAINTENANCE AND MANUFACTURERS RECOMMENDED SPARE PARTS FOR ALL ELECTRICAL AND INSTRUMENTATION COMPONENTS. A COMPLETE PARTS LISTING WITH THE NAME, ADDRESS, AND TELEPHONE NUMBER FOR THE SUPPLIES MUST BE PROVIDED.
4. THE CONTRACTOR SHALL PROVIDE THE MANUFACTURER RECOMMENDED SPARE PARTS TO THE CITY.
5. THE CONTRACTOR SHALL PROVIDE COMPLETE AS-BUILT DRAWINGS OF THE ELECTRICAL SYSTEM. THIS INCLUDES THE GENERAL WIRING AND THE INTERNAL WIRING OF ALL THE CONTROL PANEL COMPONENTS. MOSCAD SPECIFICATIONS WILL BE PROVIDED BY THE CITY. EQUIPMENT TO BE PURCHASED BY THE DEVELOPER AND INSTALLED BY THE CITY APPROVED CONTRACTOR. THE CITY WILL REVIEW AND APPROVE THE DRAWINGS. THE CONTRACTOR WILL MAKE ANY CHANGES AND SUBMIT FINAL SETS TO THE CITY.
6. 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.
7. THE PUMP STATION WET WELL IS A CLASS 1, DIV.1 HAZARDOUS AREA. ALL WORK AND EQUIPMENT MUST CONFORM TO THIS CLASSIFICATION.
8. 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 WET 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.
9. THE CONTRACTOR SHALL PROVIDE ALL MOUNTING HARDWARE FOR TRANSDUCER, FLOATS, MOUNTING SUPPORTS FOR ALL WET WELL CABLES, ETC.
10. PROVIDE A WIDE SIZE GROUND WIRE IN ALL CONDUITS.
11. CONDUIT AND WIRING WITHIN THE CONTROL PANEL IS NOT SHOWN. PROVIDE AND INSTALL AS REQUIRED.
12. PROVIDE AUXILIARY CONTACT BLOCKS FOR H-O-A SW'S TO MONITOR SWITCH POSITION.
13. THE CONTRACTOR SHALL REVIEW AND CONFIRM WITH THE CITY THE EQUIPMENT TO BE PROVIDED.
14. CONTRACTOR TO FURNISH AND INSTALL TELEMETRY MAST PER THE REQUIREMENTS DETERMINED BY A RADIO SURVEY PERFORMED AND PAID FOR BY THE DEVELOPER.
15. DEVELOPER SHALL CONTRACT WITH A CITY APPROVED CONTRACTOR TO INSTALL THE MOSCAD RTU AND INTEGRATE INTO THE CITY'S SCADA SYSTEM. (MUST BE A CITY APPROVED CONTRACTOR)
16. CONSTRUCT BLOCK WALL PER RIVERSIDE CITY STANDARD 704 OR APPROVED DESIGNS (SEE PLAN FOR HEIGHT(S)).  
TYPE/COLOR OF BLOCK BRCK - BROWN MORTAR COLOR TO MATCH BLOCK OTHER SPLIT FACE, 2 SIDES  
SIZE 8"x8"x16" TYPE/COLOR CAP TO MATCH BLOCK  
PLASTERS TO MATCH BLOCK, 1/2"x6"x12", 50' ON CENTER  
THIS WALL REQUIRES A PERMIT AND INSPECTION FROM THE PUBLIC WORKS ENGINEERING DIVISION.

**SPECIFIC NOTES:**

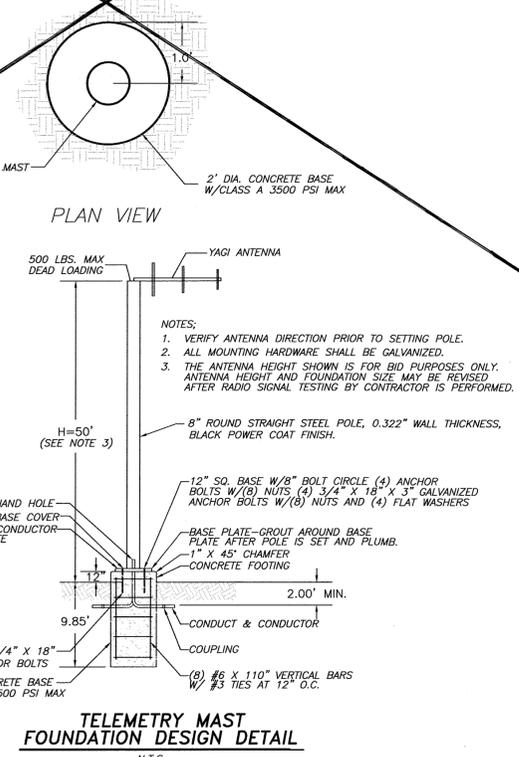
1. 100AMP, 480V, NON FUSIBLE DOUBLE THROW TRANSFER SWITCH CULTER HAMMER, TYPE DTK IN NEMA 1 ENCLOSURE.
2. UNDERGROUND PRECAST PULL BOX, 24"x36"x24". BROOKS PRODUCTS OR EQUAL WITH TRAFFIC COVER. PROVIDE 3' MIN. CABLE SLACK (COILED) IN BOX.
3. EXPLOSION PROOF JUNCTION BOX (SIZE AS REQUIRED) GROUSE-HINDS TYPE EJB WITH HINGED COVER AND SUBMERSIBLE RESIN-CAST SPLICES (WIRING TYP. OF 2). PROVIDE CABLE GRIPS FOR CONDS. (SEE DETAIL THIS SHEET)
4. EXPLOSION PROOF JUNCTION BOX WITH SEALING COVER FOR TRANSDUCER CABLE (NO SPLICES). (SEE DETAIL THIS SHEET)
5. MOTOROLA MOSCAD, PAID FOR BY DEVELOPER, AND INSTALLED BY CONTRACTOR IN A SEPARATE CABINET INSIDE THE CONTROL PANEL.
6. PROVIDE GENERATOR RECEPTACLE, KILLARK 8581/21-407 AND 8581/22-407 PLUG. PROVIDE 30' MIN. SJO POWER CORD.
7. PROVIDE CABLE BUSHINGS FOR CONDUITS INTO WET WELL.
8. CONTRACTOR SHALL PROVIDE SUITABLE YAGI ANTENNA WITH MAST FOR RTU.
9. THE RTU SHALL BE PROVIDED WITH THE MANUFACTURER'S RECOMMENDED 12V BATTERY BACKUP.
10. XP CONDUIT SEAL.

SEE SHEET 5A

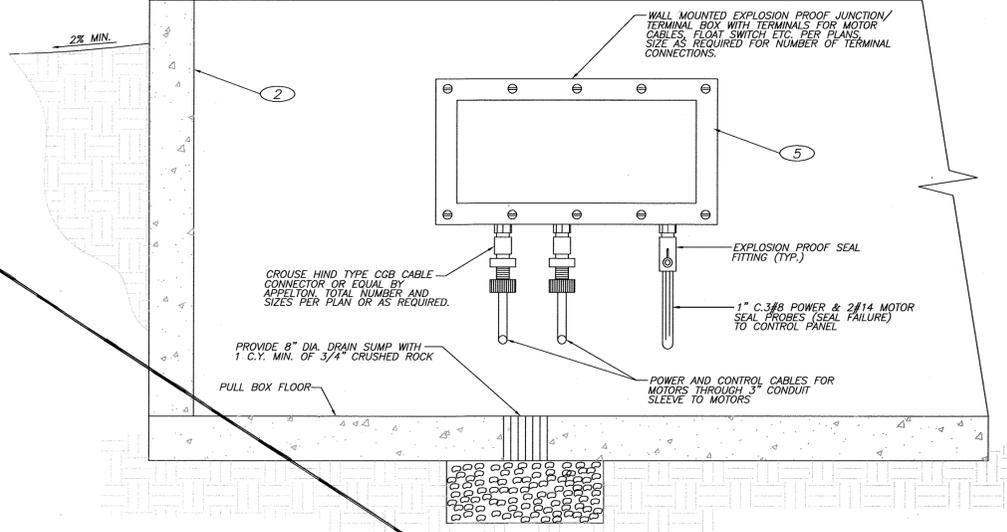


**LIFT STATION POWER PLAN**  
N.T.S.

- NOTES:**
1. ALL BURIED CONDUIT TO BE SCH. 80 PVC



**TELEMETRY MAST FOUNDATION DESIGN DETAIL**  
N.T.S.



**TYP. EXPLOSION PROOF JUNCTION/TERMINAL BOX DETAIL IN UNDERGROUND PULL BOX**  
N.T.S.

CITY OF RIVERSIDE WATER DEPT.  
DATE: 7-17-2014



**adkan ENGINEERS**  
CIVIL ENGINEERING • SURVEYING • PLANNING  
6879 AIRPORT DRIVE, RIVERSIDE, CA 92504  
TEL: (951) 689-0241 FAX: (951) 343-9370  
DATE: 6/30/14  
UNDER THE SUPERVISION OF: R.C.E. 53390 6/30/14

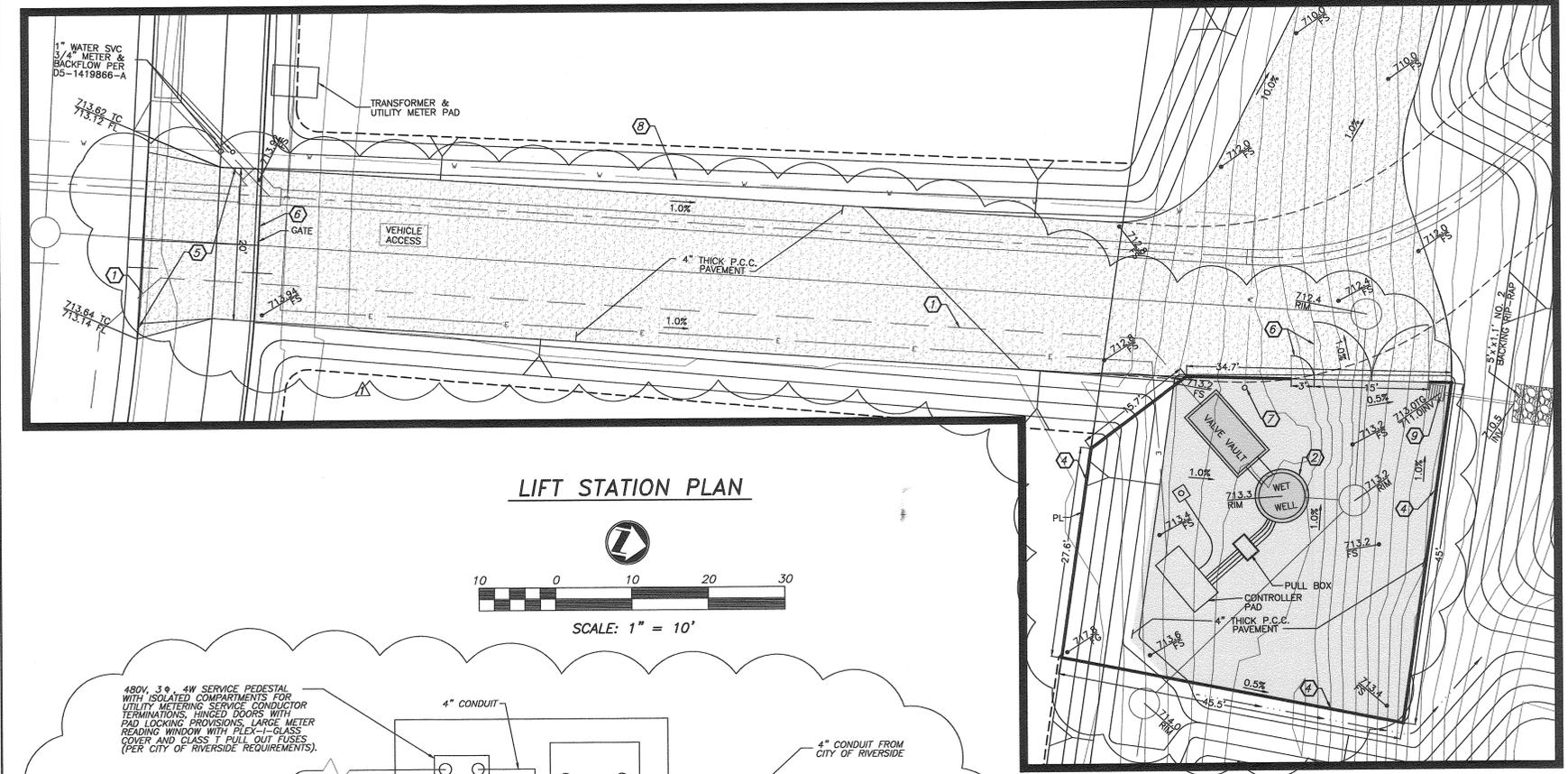
BENCHMARK: H3-D3  
CITY OF RIVERSIDE  
BENCH MARK TRANSFER:  
SET CHISLED "X" IN THE TOP OF EASTERLY BASE BOLT OF AN 18" DIAMETER TRAFFIC SIGNAL POLE AT THE NORTHEASTERLY CURB RETURN OF JURUPA AVENUE AND VAN BUREN BOULEVARD.  
H3-D3-TRANSFER. DATUM: 1929  
ELEVATION: 726.212

|                  |              |                |
|------------------|--------------|----------------|
| DESIGNED BY: RDR | DRAWN BY: AT | CHECKED BY: C- |
|------------------|--------------|----------------|

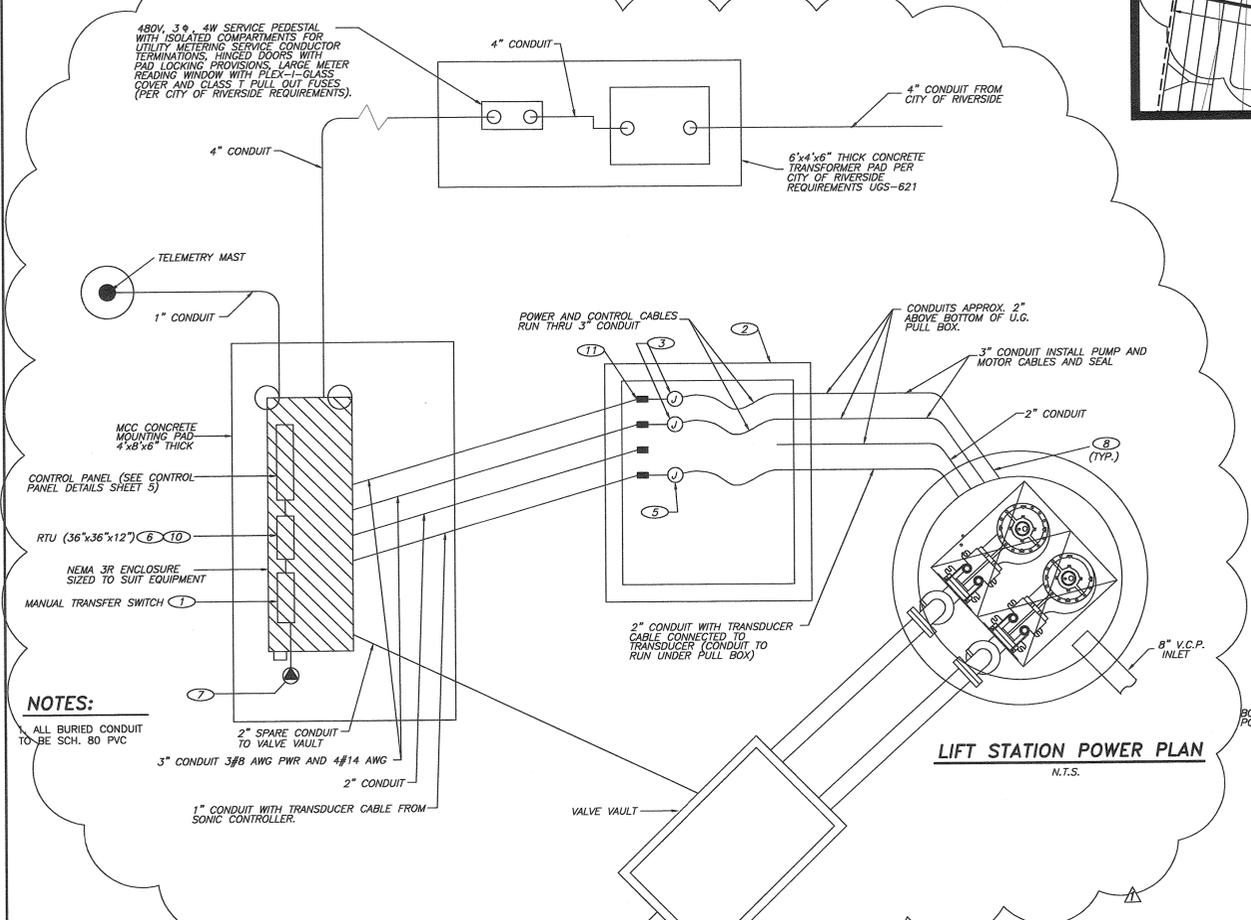
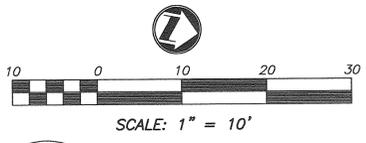
**CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT**

|                          |                  |                               |               |
|--------------------------|------------------|-------------------------------|---------------|
| APPROVED BY: [Signature] | DATE: 2/24/15    | BY: [Signature]               | DATE: 2/24/15 |
| ENGINEERING MANAGER      | CAPITAL PROJECTS | CITY ENGINEER / P.W. DIRECTOR |               |

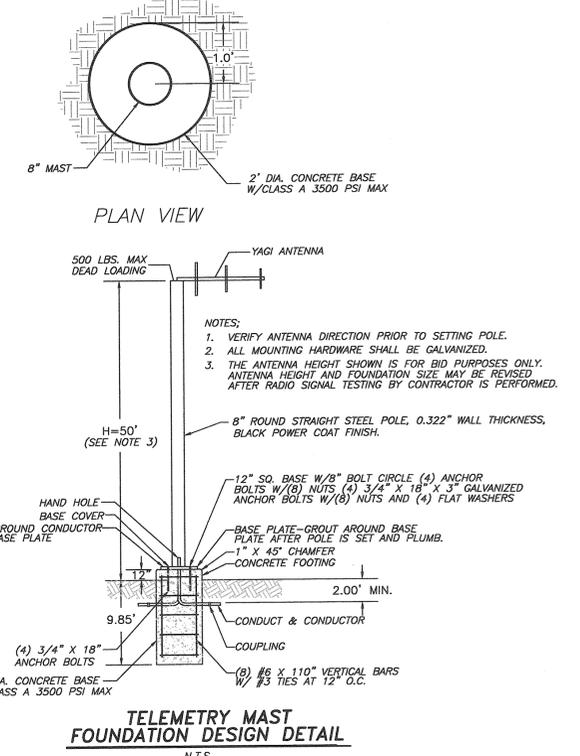
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| SEWER PLAN AND PROFILE                  |  | PW13-0372   |
| TRACT 28987 SEWER PUMP STATION DETAILS  |  | ACCOUNT NO. |
| SHEET 5 OF 6                            |  | S-1988      |
| HORIZ. SCALE: AS SHOWN VERT. SCALE: N/A |  | J.N. 8489   |



**LIFT STATION PLAN**



**LIFT STATION POWER PLAN**  
N.T.S.



**TELEMETRY MAST FOUNDATION DESIGN DETAIL**  
N.T.S.

**GENERAL NOTES:**

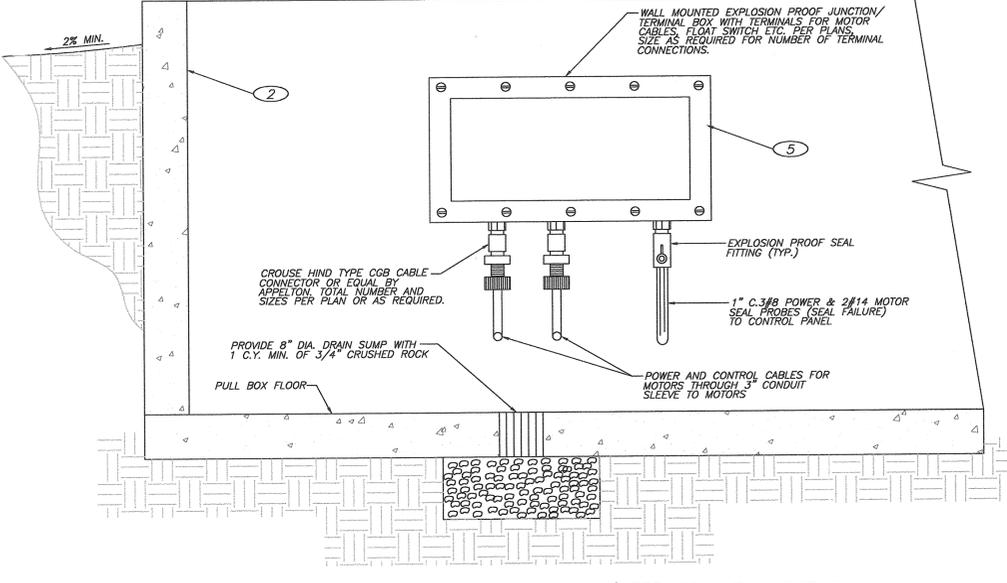
1. PROVIDE ALL NECESSARY CONDUITS AND REQUIRED WIRING FROM CONTROL PANEL TO THE ELECTRICAL EQUIPMENT IN THE WET WELL, AS SHOWN AND AS REQUIRED.
2. TERMINAL BLOCK(S) FOR EQUIPMENT STATUS, FAILURE ALARMS, ETC. ARE TO BE FURNISHED AND INSTALLED AT THE DEVELOPER'S EXPENSE. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CITY OF RIVERSIDE.
3. THE CONTRACTOR SHALL SUBMIT MAINTENANCE AND MANUFACTURER'S RECOMMENDED SPARE PARTS FOR ALL ELECTRICAL AND INSTRUMENTATION COMPONENTS. A COMPLETE PARTS LISTING WITH THE NAME, ADDRESS, AND TELEPHONE NUMBER FOR THE SUPPLIES MUST BE PROVIDED.
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8. 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 WELLS 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.
9. THE CONTRACTOR SHALL PROVIDE ALL MOUNTING HARDWARE FOR TRANSDUCER, FLOATS, MOUNTING SUPPORTS FOR ALL WET WELL CABLES, ETC.
10. PROVIDE A CODE SIZE GROUND WIRE IN ALL CONDUITS.
11. CONDUIT AND WIRING WITHIN THE CONTROL PANEL IS NOT SHOWN. PROVIDE AND INSTALL AS REQUIRED.
12. PROVIDE AUXILIARY CONTACT BLOCKS FOR H-O-A SWS TO MONITOR SWITCH POSITION.
13. THE CONTRACTOR SHALL REVIEW AND CONFIRM WITH THE CITY THE EQUIPMENT TO BE PROVIDED.
14. CONTRACTOR TO FURNISH AND INSTALL TELEMETRY MAST PER THE REQUIREMENTS DETERMINED BY A RADIO SURVEY PERFORMED AND PAID FOR BY THE DEVELOPER.
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20. CONSTRUCT BLOCK WALL PER RIVERSIDE CITY STANDARD 704 OR APPROVED DESIGN (SEE PLAN FOR HEIGHT(S)).  
TYPE/COLOR OF BLOCK ORCD - BROWN MORTAR COLOR TO MATCH BLOCK OTHER SPILL FACE 2 SIDES.  
SIZE 6"X24"X12" CAP TO MATCH BLOCK.  
PLASTER TO MATCH BLOCK, 12"X6"X12", 50' ON CENTER.  
THIS WALL REQUIRES A PERMIT AND INSPECTION FROM THE PUBLIC WORKS ENGINEERING DIVISION.

**SPECIFIC NOTES:**

1. 100AMP, 480V, NON FUSIBLE DOUBLE THROW TRANSFER SWITCH CUTLER HAMMER, TYPE DTK IN NEMA 1 ENCLOSURE.
2. UNDERGROUND PRECAST PULLBOX, 24"X36"X24"D. BROOKS PRODUCTS OR EQUAL WITH TRAFFIC COVER. PROVIDE 3" MIN. CABLE SLACK (COOLED) IN BOX.
3. 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. (SEE DETAIL THIS SHEET)
4. EXPLOSION PROOF JUNCTION BOX WITH SEALING COVER FOR TRANSDUCER CABLE (NO SPLICES). (SEE DETAIL THIS SHEET)
5. MOTOROLA MOSCAD, PAID FOR BY DEVELOPER, AND INSTALLED BY CONTRACTOR IN A SEPARATE CABINET INSIDE THE CONTROL PANEL.
6. PROVIDE GENERATOR RECEPTACLE, KILLARK 8581/21-407 AND 8581/22-407 PLUG. PROVIDE 30' MIN. SJO POWER CORD.
7. PROVIDE CABLE BUSHINGS FOR CONDUITS INTO WET WELL.
8. CONTRACTOR SHALL PROVIDE SUITABLE YAGI ANTENNA WITH MAST FOR RTU.
9. THE RTU SHALL BE PROVIDED WITH THE MANUFACTURER'S RECOMMENDED 12V BATTERY BACKUP.
10. XP CONDUIT SEAL.

**CONSTRUCTION NOTES**

1. CONSTRUCT 4" DIA. PVC C900 SEWER FORCE MAIN, CLASS 165, CONFORMING TO ANSI/AWWA PER CITY OF RIVERSIDE STD., CASE II BEDDING
2. CONSTRUCT WET WELL PER C/RIV. STD. DWG. 500
3. CONSTRUCT PRECAST CONCRETE FORCE MAIN CLEANDOUT PER CITY OF RIVERSIDE STANDARD DRAWING NO. 559 (4" PIPE)
4. CONSTRUCT 6" BLOCK WALL PER RIVERSIDE CITY BUILDING FREE STANDING BLOCK WALL STANDARD OR APPROVED EQUAL
5. CONSTRUCT DRIVEWAY APPROACH PER CITY OF RIVERSIDE STANDARD DRAWING NO. 302, W=20.0'
6. INSTALL 6" TALL X 15' WIDE DRIVE GATE AND 6" TALL X 3' WIDE MAINTENANCE GATE WITH PADLOCKS. GATES ARE TO BE BLACK POWDER COAT FINISH TUBULAR STEEL (AMERISTAR IMPASSE II TRIDENT 3-RAIL SYSTEM OR APPROVED EQUAL)
7. INSTALL 3/4" HOSE BIB INSTALLED PER CITY SPECIFICATIONS.
8. INSTALL 1" PRIVATE WATER SERVICE
9. INSTALL 2"x2" INLET PER DETAIL ON SHEET 7



**TYP. EXPLOSION PROOF JUNCTION/ TERMINAL BOX DETAIL**  
IN UNDERGROUND PULL BOX  
N.T.S.

CITY OF RIVERSIDE WATER DEPT.  
REVIEWED FOR CONFLICTS BY: *Matthew Bob* DATE: 2/10/2017



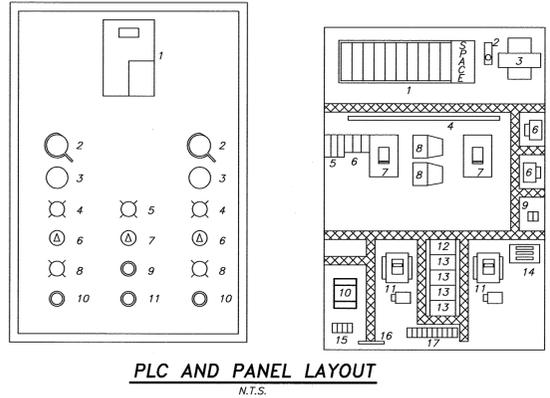
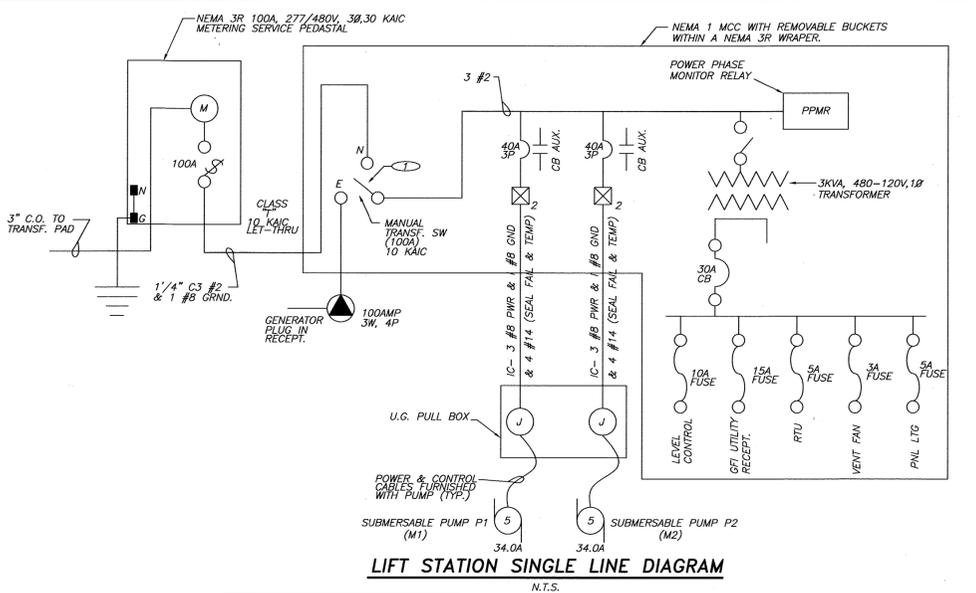
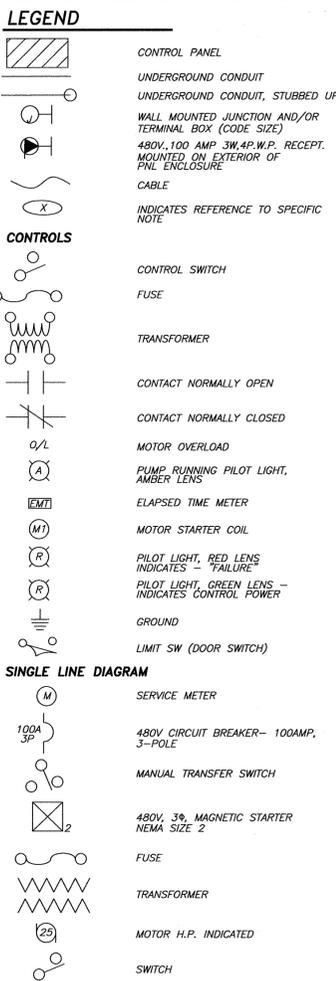
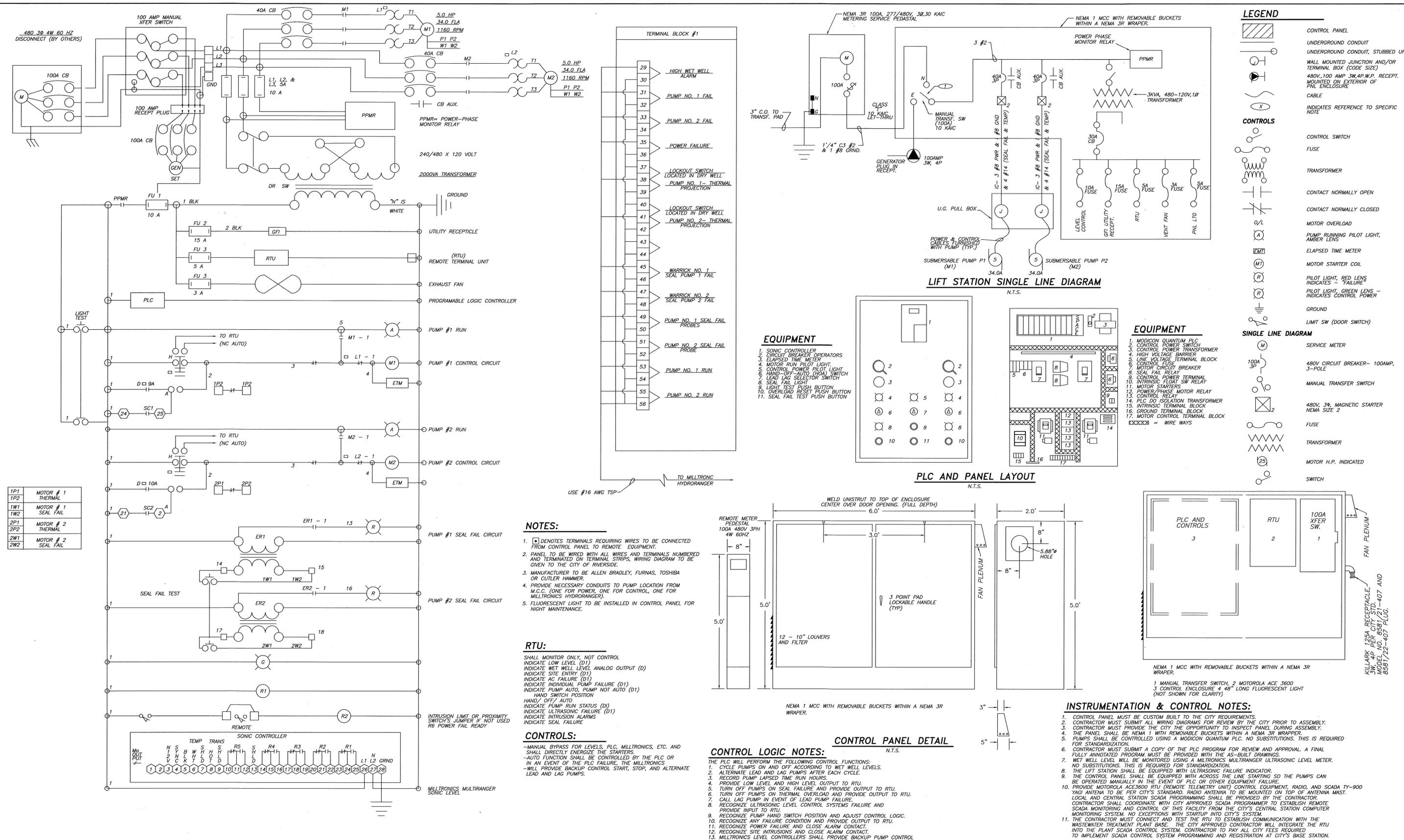
CITY OF RIVERSIDE BUSINESS TAX ACCT. #058833 EXP. 1/31/17  
PLAN PREPARED BY: **adkan ENGINEERS**  
CIVIL ENGINEERING • SURVEYING • PLANNING  
6879 AIRPORT DRIVE, RIVERSIDE, CA 92504  
TEL: (951) 988-9241 • FAX: (951) 948-9970  
DATE: 1/11/17  
UNDER THE SUPERVISION OF: R.C.E. 53390 8/30/17

BENCHMARK: H3-D3  
CITY OF RIVERSIDE  
BENCH MARK TRANSFER:  
SET ORIGED "X" IN THE TOP OF EASTERLY BASE BOLT OF AN 18" DIAMETER TRAFFIC SIGNAL POLE AT THE NORTHEASTERLY CURB RETURN OF JURUPA AVENUE AND VAN BUREN BOULEVARD.  
H3-D3-TRANSFER.  
DATUM: 1929  
ELEVATION: 726.212  
DESIGNED BY: EAA DRAWN BY: EAA CHECKED BY: C-

**CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT**  
APPROVED BY: [Signature] DATE: 10/2/17  
ENGINEERING MANAGER  
CAPITAL PROJECTS

PW13-0372  
ACCOUNT NO.  
S-1988  
SHEET 5A OF 7  
J.N. 8489  
HORIZ. SCALE: AS SHOWN VERT. SCALE: N/A  
FILE NAME: U:\Projects\Cox-FRA\Sewer Improvements\Force Main\FM\_05A.dwg

PLOT DATE: 1/17/2017



- EQUIPMENT**
1. SONIC CONTROLLER
  2. CIRCUIT BREAKER OPERATORS
  3. ELAPSED TIME METER
  4. MOTOR RUN PILOT LIGHT
  5. CONTROL POWER PILOT LIGHT
  6. HAND-OFF-AUTO (HOA) SWITCH
  7. LEAD LAG SELECTOR SWITCH
  8. SEAL FAIL LIGHT
  9. LIGHT TEST PUSH BUTTON
  10. OVERLOAD RESET PUSH BUTTON
  11. SEAL FAIL TEST PUSH BUTTON

- EQUIPMENT**
1. MODICON QUANTUM PLC
  2. CONTROL POWER SWITCH
  3. CONTROL POWER TRANSFORMER
  4. HIGH VOLTAGE BARRIER
  5. LINE VOLTAGE TERMINAL BLOCK
  6. CONTROL FUSE
  7. MOTOR CIRCUIT BREAKER
  8. SEAL FAIL RELAY
  9. CONTROL POWER TERMINAL
  10. INTRINSIC FLOAT SW RELAY
  11. MOTOR STARTERS
  12. POWER/PHASE MOTOR RELAY
  13. CONTROL RELAY
  14. PLC DO ISOLATION TRANSFORMER
  15. INTRINSIC TERMINAL BLOCK
  16. GROUND TERMINAL BLOCK
  17. MOTOR CONTROL TERMINAL BLOCK

|     |           |
|-----|-----------|
| 1P1 | MOTOR # 1 |
| 1P2 | THERMAL   |
| 1W1 | MOTOR # 1 |
| 1W2 | SEAL FAIL |
| 2P1 | MOTOR # 2 |
| 2P2 | THERMAL   |
| 2W1 | MOTOR # 2 |
| 2W2 | SEAL FAIL |

**NOTES:**

1. [ ] DENOTES TERMINALS REQUIRING WIRES TO BE CONNECTED FROM CONTROL PANEL TO REMOTE EQUIPMENT.
2. PANEL TO BE WIRED WITH ALL WIRES AND TERMINALS NUMBERED AND TERMINATED ON TERMINAL STRIPS, WIRING DIAGRAM TO BE GIVEN TO THE CITY OF RIVERSIDE.
3. MANUFACTURER TO BE ALLEN BRADLEY, FURNAS, TOSHIBA OR CUTLER HAMMER.
4. PROVIDE NECESSARY CONDUITS TO PUMP LOCATION FROM M.C.C. (ONE FOR POWER, ONE FOR CONTROL, ONE FOR MILLTRONICS HYDRORANGER).
5. FLUORESCENT LIGHT TO BE INSTALLED IN CONTROL PANEL FOR NIGHT MAINTENANCE.

**RTU:**

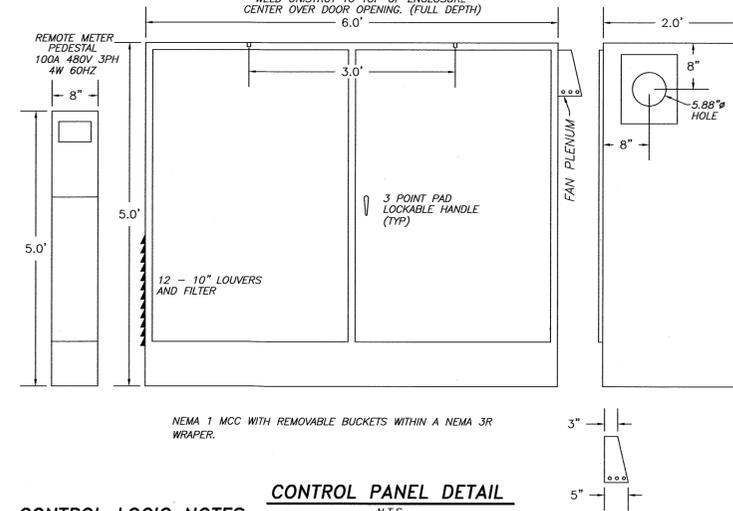
- SHALL MONITOR ONLY, NOT CONTROL.
- INDICATE LOW LEVEL (D1)
  - INDICATE WET WELL LEVEL ANALOG OUTPUT (D)
  - INDICATE SITE ENTRY (D1)
  - INDICATE AC FAILURE (D1)
  - INDICATE INDIVIDUAL PUMP FAILURE (D1)
  - INDICATE PUMP AUTO, PUMP NOT AUTO (D1)
  - HAND SWITCH POSITION
  - HANDY/OFF/AUTO
  - INDICATE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

**CONTROLS:**

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

**CONTROL LOGIC NOTES:**

- THE PLC WILL PERFORM THE FOLLOWING CONTROL FUNCTIONS:
1. CYCLE PUMPS ON AND OFF ACCORDING TO WET WELL LEVELS.
  2. ALTERNATE LEAD AND LAG PUMPS AFTER EACH CYCLE.
  3. RECORD PUMP LAPPED TIME RUN HOURS.
  4. PROVIDE LOW LEVEL AND HIGH LEVEL OUTPUT TO RTU.
  5. TURN OFF PUMPS ON SEAL FAILURE AND PROVIDE OUTPUT TO RTU.
  6. TURN OFF PUMPS ON THERMAL OVERLOAD AND PROVIDE OUTPUT TO RTU.
  7. CALL LAG PUMP IN EVENT OF LEAD PUMP FAILURE.
  8. RECOGNIZE ULTRASONIC LEVEL CONTROL SYSTEMS FAILURE AND PROVIDE INPUT TO RTU.
  9. RECOGNIZE PUMP HAND SWITCH POSITION AND ADJUST CONTROL LOGIC.
  10. RECOGNIZE ANY FAILURE CONDITION AND PROVIDE OUTPUT TO RTU.
  11. RECOGNIZE POWER FAILURE AND CLOSE ALARM CONTACT.
  12. RECOGNIZE SITE INTRUSIONS AND CLOSE ALARM CONTACT.
  13. MILLTRONICS LEVEL CONTROLLERS SHALL PROVIDE BACKUP PUMP CONTROL IN EVENT OF PLC FAILURE. ALL ALARM CONTACTS AND SIGNALS TO THE RTU WILL BE CONTROLLED BY THE PLC.



**INSTRUMENTATION & CONTROL NOTES:**

1. CONTROL PANEL MUST BE CUSTOM BUILT TO THE CITY REQUIREMENTS.
2. CONTRACTOR MUST SUBMIT ALL WIRING DIAGRAMS FOR REVIEW BY THE CITY PRIOR TO ASSEMBLY.
3. CONTRACTOR MUST PROVIDE THE CITY THE OPPORTUNITY TO INSPECT PANEL DURING ASSEMBLY.
4. THE PANEL SHALL BE NEMA 1 WITH REMOVABLE BUCKETS WITHIN A NEMA 3R WRAPPER.
5. PUMPS SHALL BE CONTROLLED USING A MODICON QUANTUM PLC. NO SUBSTITUTIONS. THIS IS REQUIRED FOR STANDARDIZATION.
6. 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.
7. WET WELL LEVEL WILL BE MONITORED USING A MILLTRONICS MULTIRANGER ULTRASONIC LEVEL METER. NO SUBSTITUTIONS. THIS IS REQUIRED FOR STANDARDIZATION.
8. THE LIFT STATION SHALL BE EQUIPPED WITH ULTRASONIC FAILURE INDICATOR.
9. 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.
10. CONTRACTOR SHALL COORDINATE WITH CITY APPROVED SCADA PROGRAMMER TO ESTABLISH REMOTE SCADA MONITORING AND CONTROL OF THIS FACILITY FROM THE CITY'S CENTRAL STATION COMPUTER MONITORING SYSTEM. NO EXCEPTIONS WITH STARTUP INTO CITY'S SYSTEM.
11. THE CONTRACTOR MUST CONNECT AND TEST THE RTU TO ESTABLISH COMMUNICATION WITH THE WASTEWATER TREATMENT PLANT BASE. THE CITY APPROVED CONTRACTOR WILL INTEGRATE THE RTU INTO THE PLANT SCADA CONTROL SYSTEM. CONTRACTOR TO PAY ALL CITY FEES REQUIRED TO IMPLEMENT SCADA CONTROL SYSTEM PROGRAMMING AND REGISTRATION AT CITY'S BASE STATION.

CITY OF RIVERSIDE BUSINESS TAX ACCT.#058833 EXP. 1/1/15

PLAN PREPARED BY: **adkan ENGINEERS** CIVIL ENGINEERING • SURVEYING • PLANNING 6879 AIRPORT DRIVE, RIVERSIDE, CA 92504 TEL: (951) 684-0241 FAX: (951) 343-9570

BENCHMARK: H3-D3  
CITY OF RIVERSIDE  
BENCH MARK TRANSFER- SET CHISLED "X" IN THE TOP OF EASTERLY BASE BOLT OF AN 18" DIAMETER TRAFFIC SIGNAL POLE AT THE NORTHEASTERLY CURB RETURN OF JURUPA AVENUE AND VAN BUREN BOULEVARD. H3-D3-TRANSFER. DATUM: 1929 ELEVATION: 726.212

CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT  
APPROVED BY: [Signature] DATE: 2/27/2015  
CITY ENGINEER / P.W. DIRECTOR

SEWER PLAN AND PROFILE  
TRACT 28987  
SEWER PUMP STATION  
DETAILS

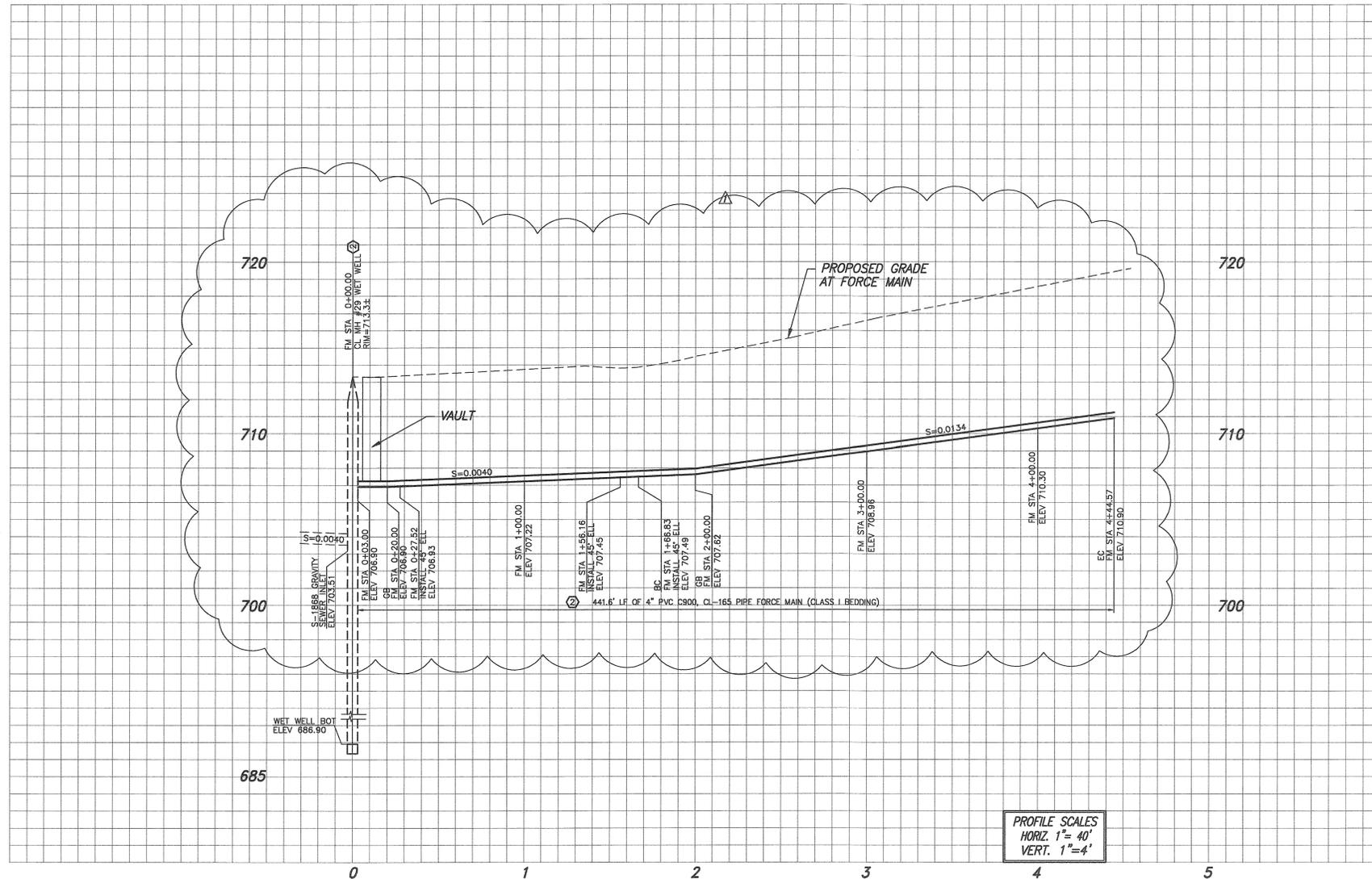
ACCOUNT NO. PW13-0372  
S-1988  
SHEET 6 OF 87  
J.N. 8489

REVIEWED FOR CONFLICTS BY: [Signature] DATE: 7-17-2014

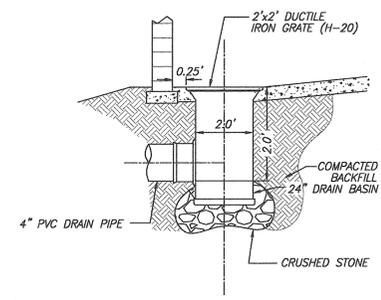
REGISTERED PROFESSIONAL ENGINEER  
CALIFORNIA J.A. LEON  
NO. 53390  
EXP. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

811 Know what's below. Call before you dig.

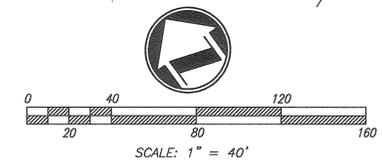
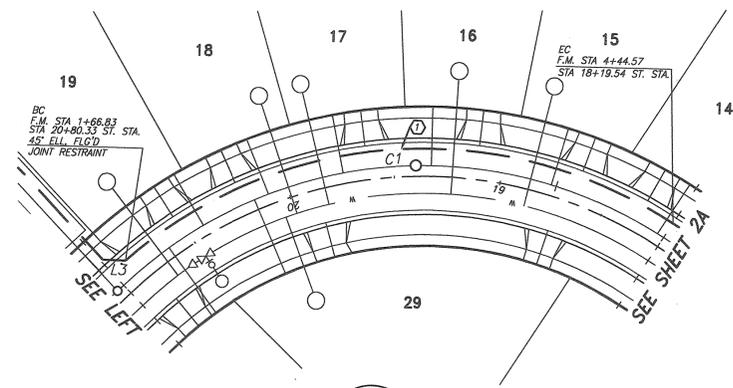
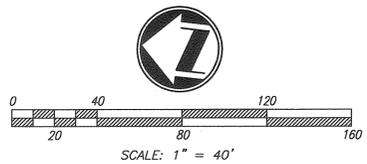
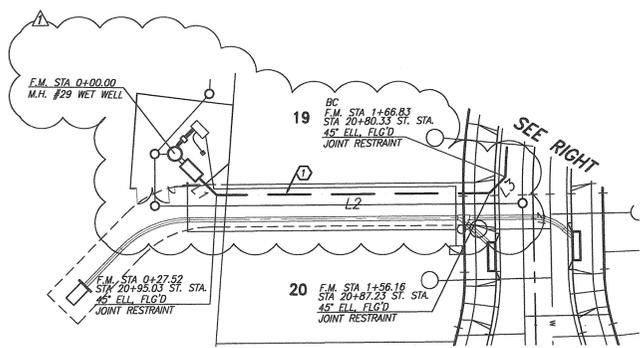
FILE NAME: U:\Projects\Cox-FRA\Sewer Improvements\Force Main\FM\_06.dwg



PROFILE SCALES  
 HORIZ. 1" = 40'  
 VERT. 1" = 4'



2' X 2' DRAIN INLET DETAIL  
 NOT TO SCALE



| Line Table |         |             |
|------------|---------|-------------|
| Line #     | Length  | Direction   |
| L1         | 27.52'  | N38°11'09"E |
| L2         | 128.64' | N6°48'51"W  |
| L3         | 10.67'  | N51°48'51"W |

| Curve Table |         |         |           |
|-------------|---------|---------|-----------|
| Curve #     | Length  | Radius  | Delta     |
| C1          | 277.74' | 213.00' | 74°42'36" |

- CONSTRUCTION NOTES**
- ① CONSTRUCT 4" DIA. PVC C900 SEWER FORCE MAIN, CLASS 165 CONFORMING TO ANSI/AWWA, PER CITY OF RIVERSIDE STD. 452, CASE I BEDDING.
  - ② CONSTRUCT WET WELL PER CITY. STD. DWG. 500

CITY OF RIVERSIDE WATER DEPT.  
 REVIEWED FOR CONFLICTS BY: *Matthew B...* DATE: 2/10/2017



CITY OF RIVERSIDE BUSINESS TAX ACCT. #058833 EXP. 1/31/17  
**adkan ENGINEERS**  
 CIVIL ENGINEERING • SURVEYING • PLANNING  
 6879 AIRPORT DRIVE, RIVERSIDE, CA 92504  
 TEL: (951) 596-9241 • FAX: (951) 343-9370  
 DATE: 1/11/17  
 UNDER THE SUPERVISION OF: R.C.S. 55390 6/30/17

BENCHMARK: H3-D3  
 CITY OF RIVERSIDE  
 BENCH MARK TRANSFER:  
 SET ORISED "X" IN THE TOP OF EASTERLY BASE BOLT OF AN 18" DIAMETER TRAFFIC SIGNAL POLE AT THE NORTHEASTERLY CURB RETURN OF JURUPA AVENUE AND VAN BUREN BOULEVARD.  
 H3-D3-TRANSFER. DATUM: 1929  
 ELEVATION: 726.212

| REVISIONS                     | DATE    |
|-------------------------------|---------|
| REVISED FORCE MAIN SEWER LINE | 1/11/17 |

**CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT**  
 APPROVED BY: *[Signature]* DATE: 1/2/17  
 ENGINEERING MANAGER  
 CAPITAL PROJECTS  
 APPROVED BY: *[Signature]* DATE: 1/2/17  
 CHY. ENGINEER / P.W. DIRECTOR

PW13-0372  
 ACCOUNT NO.  
**TRACT 28987**  
 DIMAGGIO ST.  
**SEWER FORCE MAIN SYSTEM**  
 S-1988  
 SHEET 7 OF 7  
 HORIZ. SCALE: AS SHOWN VERT. SCALE: N/A  
 J.N. 8489  
 FILE NAME: U:\Projects\Cox-FRA\Sewer Improvements\Force Main\FM\_07.dwg

PLOT DATE: 1/11/2017