

**LEGEND**

CL	CENTER LINE
WLE	WATERLINE EASEMENT
PUE	PUBLIC UTILITY EASEMENT
DE	DRAINAGE EASEMENT
SLE	SEWERLINE EASEMENT
BC	BACK OF CURB
WTR	WATER
SWR	SEWER
P	PAVEMENT
R/W	RIGHT-OF-WAY
⊙	SURVEY MONUMENT
⊕	WATER VALVE
⊕	FIRE HYDRANT
⊕	SEWER MANHOLE
(X)	CONSTRUCTION NOTES
—	SEWER LINE
—	SEWER CLEANOUT
—	SEWER TAP
—	SEWER TAP ENCASEMENT
—	WATER LINE
—	WATER METER
◆	GEOTECHNICAL BORE LOCATION (REFER TO SPECS)
●	POTHOLE LOCATION (REFER TO SPECS)

# BUCKSKIN SANITARY DISTRICT PHASE 4 WASTEWATER CONVEYANCE SYSTEM & WWTP IMPROVEMENTS

SITUATED IN PORTIONS OF:  
SECTIONS 1, 11, 12, 14 AND 15, TOWNSHIP 10 NORTH, RANGE 19 WEST,  
SECTION 31, TOWNSHIP 11 NORTH, RANGE 18 WEST,  
AND SECTION 6, TOWNSHIP 10 NORTH, RANGE 18 WEST  
OF THE GILA AND SALT RIVER BASE MERIDIAN, LA PAZ COUNTY, ARIZONA

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56-57	80-81	DESERT STAR
58-59	82-83	PLANTATION / PATRIA FLATS PARK
60-62	84-86	JOLLY KNIGHT
63	87	BRANSON'S RESORT / RIVER'S EDGE
64	88	RIVER'S EDGE
65-67	89-91	BRANSON'S RESORT
68	92	ROADRUNNER / K-STORAGE
69	93	ROADRUNNER
70	94	K-STORAGE
71	95	ARETE ROAD / DIAN LANE
72	96	DIAN LANE
73	97	ARETE ROAD
74	98	MARINA VILLAGE

**PROJECT CONTROL**

BEARINGS & COORDINATES SHOWN HEREON ARE BASED UPON GRID COORDINATES (CONVERTED TO GROUND) AS LISTED AS SECONDARY CONTROL BEING SHOWN IN THE RIGHT-OF-WAY PLANS OF THE PARKER BUSINESS ROUTE SR85B, SR 95B TURNBACK, 095B LA 148 H4696 01R, S B95-A-800 PREPARED FOR THE ARIZONA DEPARTMENT OF TRANSPORTATION BY ARCADIS GERAGHTY 7 MILLER, PROJECT NO. AZ 000838, DRAWING NO. D-15\_T-015 HAVING A STAMP DATE OF 7/15/03.

ELEVATIONS SHOWN HEREON ARE BASED ON AN ADOT ALUMINUM CAP LOCATED AT STATION 236+70.9 AS SHOWN ON THE SURVEY CONTROL SHEET CREATED BY STANLEY CONSULTANTS PREPARED FOR THE BUCKSKIN SANITARY DISTRICT ON SHEET 6 OF 80, PROJECT NO. 17471.02.00 HAVING PRINT DATE OF 2/9/07. ELEVATION = 390.81 ADOT (NGVD 29)

**APPROXIMATE GEOGRAPHIC PROJECT LOCATION**

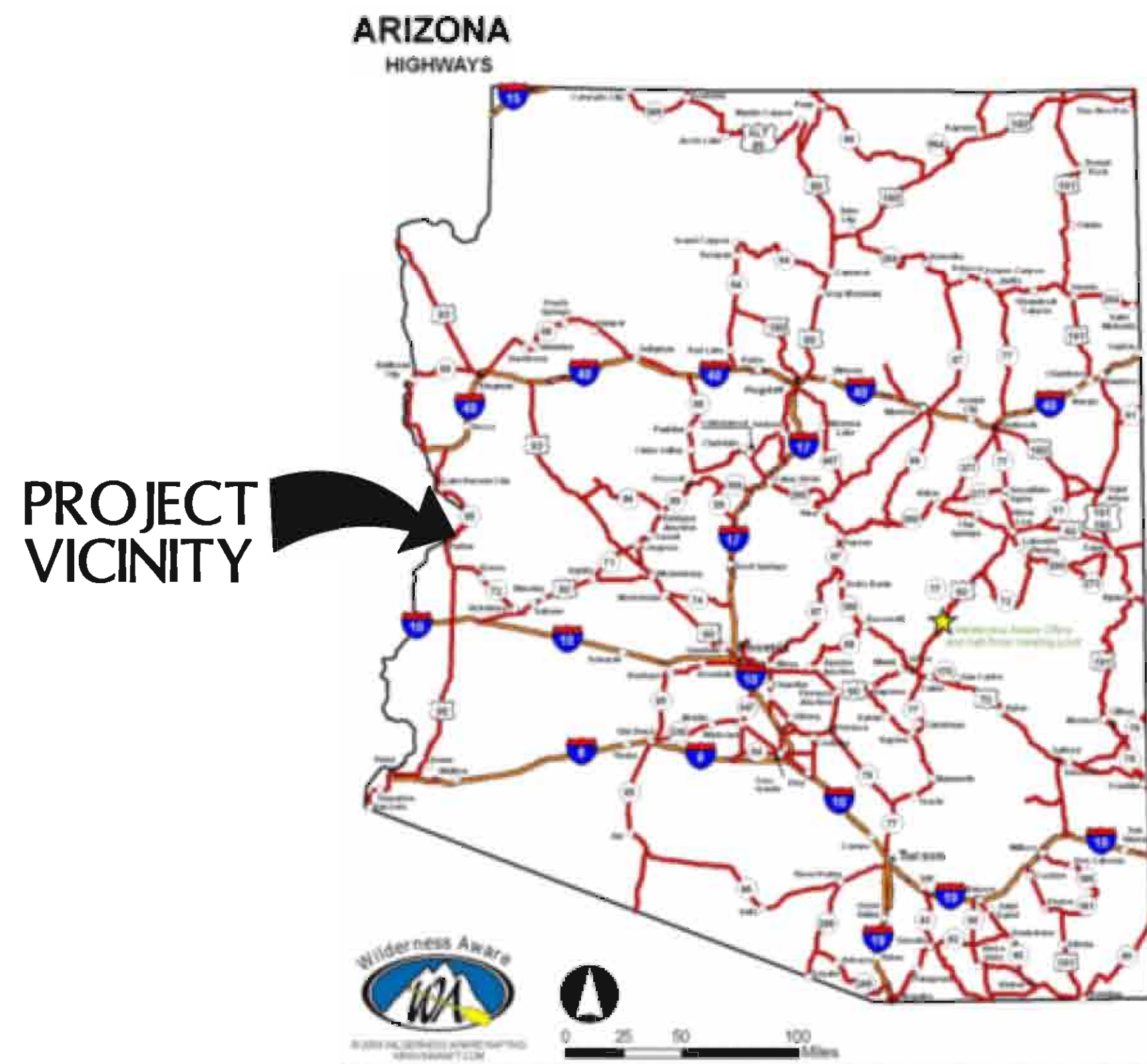
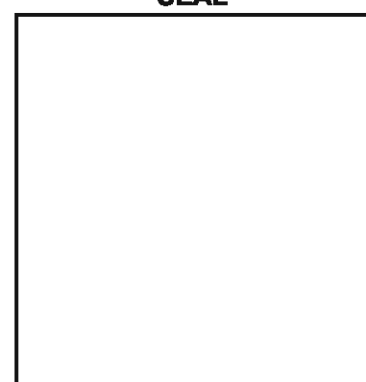
THIS APPROXIMATE GEOGRAPHIC LOCATION REPRESENTS THE EXISTING BUCKSKIN SANITARY DISTRICT WASTE WATER TREATMENT PLANT SERVING THIS PHASE 4 PROJECT.

LATITUDE: 34° 12' 18.47"N  
LONGITUDE: 114° 13' 4.93"W

**SEWER "AS BUILT" CERTIFICATION:**

I HEREBY CERTIFY THAT THE "AS-BUILT" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED, AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AFTER DUE REVIEW. ADDITIONALLY, I HEREBY CERTIFY THAT ALL MAINS AND SERVICES HAVE BEEN INSTALLED WITHIN THE LIMITS OF EASEMENTS DEDICATED TO BUCKSKIN SANITARY DISTRICT OR INSIDE DEDICATED STREET RIGHTS-OF-WAYS OR PUBLIC UTILITY EASEMENTS.

SEAL



**LOCATION MAP**  
N.T.S.

**UTILITY SERVICES**

SEWER	BUCKSKIN SANITARY DISTRICT
WATER	BROOKE UTILITIES
GAS	SOUTHWEST GAS
ELECTRICITY	A.P.S.
COMMUNICATIONS	FRONTIER COMMUNICATIONS
COMMUNICATIONS	SUDENLINK COMMUNICATIONS
POLICE	LA PAZ COUNTY SHERIFF
FIRE	BUCKSKIN FIRE DEPT
STORM DRAINAGE	LA PAZ COUNTY

**UTILITY NOTIFICATION:**

THESE PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES, WHERE THE WORK TO BE DONE CONFLICTS WITH ANY OF THESE UTILITIES, THE CONFLICTS SHALL BE RESOLVED AS SPECIFIED AS NOTED ON THESE PLANS. CONFLICTS ARISING DURING THE COURSE OF CONSTRUCTION FROM UNFORSEEN CIRCUMSTANCES SHALL BE REPORTED TO THE INTERESTED UTILITY COMPANY AND BE RESOLVED BY THEM AND THE DESIGN ENGINEER.

BROOKE UTILITIES  
A.P.S.  
FRONTIER COMMUNICATIONS  
SUDENLINK COMMUNICATIONS  
SOUTHWEST GAS

**SEWER OWNER/OPERATOR**

BUCKSKIN SANITARY DISTRICT  
8832 RIVERSIDE DRIVE #4  
PARKER, ARIZONA 85344  
PHONE: (928) 667-7197  
FAX: (928) 667-1797  
CONTACT: WAYNE POSEY, DISTRICT MANAGER

**CIVIL ENGINEER**

ENERGY AND WATER SOLUTIONS  
4241 E. HANO STREET  
PHOENIX, AZ 85044  
PHONE: (602) 309-3824  
FAX: (480) 656-9778  
CONTACT: GLENN PANARO, PE.

**STRUCTURAL ENGINEER**

OLIDEN ENGINEERING  
3144 E. WILDWOOD DR.  
PHOENIX, AZ 85048  
PHONE: (602) 421-2025  
CONTACT: OSCAR OLIDEN, PE.

**SURVEYOR**

JG ELLIS LAND SURVEYING SERVICES  
3238 NORTH 81ST PLACE  
SCOTTSDALE, AZ 85251  
PHONE: (602) 970-6265  
FAX: (602) 970-6271  
CONTACT: JAMES ELLIS, RLS

**GEOTECHNICAL ENGINEER**

WESTERN TECHNOLOGIES, INC.  
1524 EAST DRINDA WAY #113  
FORT MOHAVE, AZ 86426  
PHONE: (928) 758-8378  
FAX: (928) 727-1776  
CONTACT: DENNIS ROBERTS

**ELECTRICAL ENGINEER**

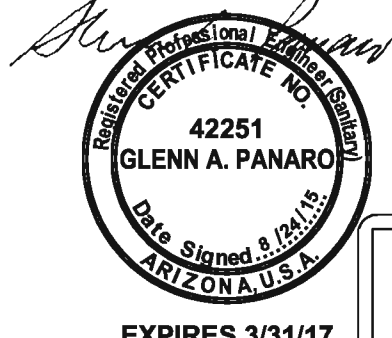
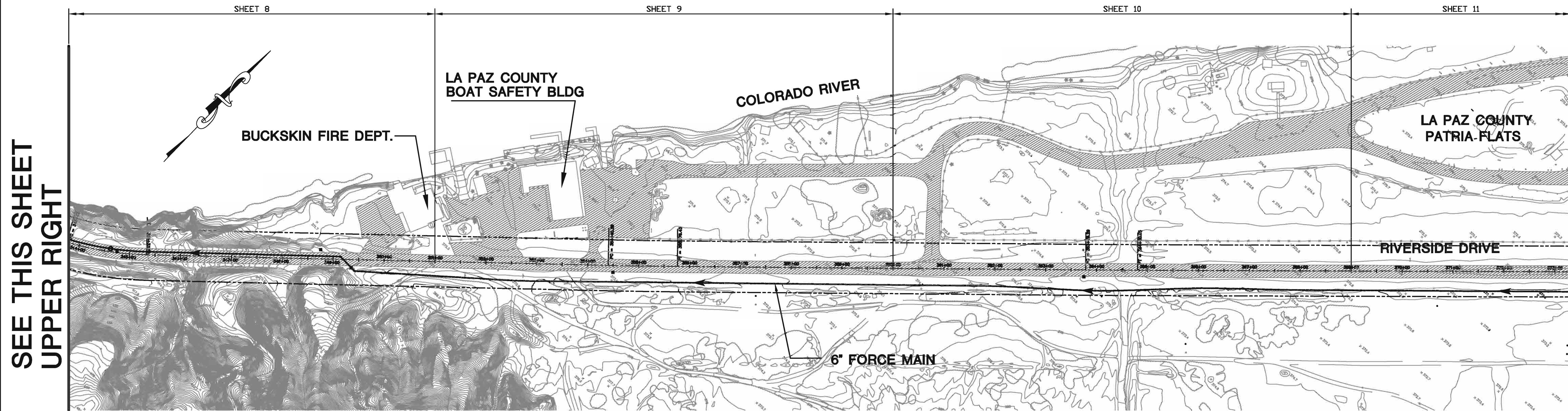
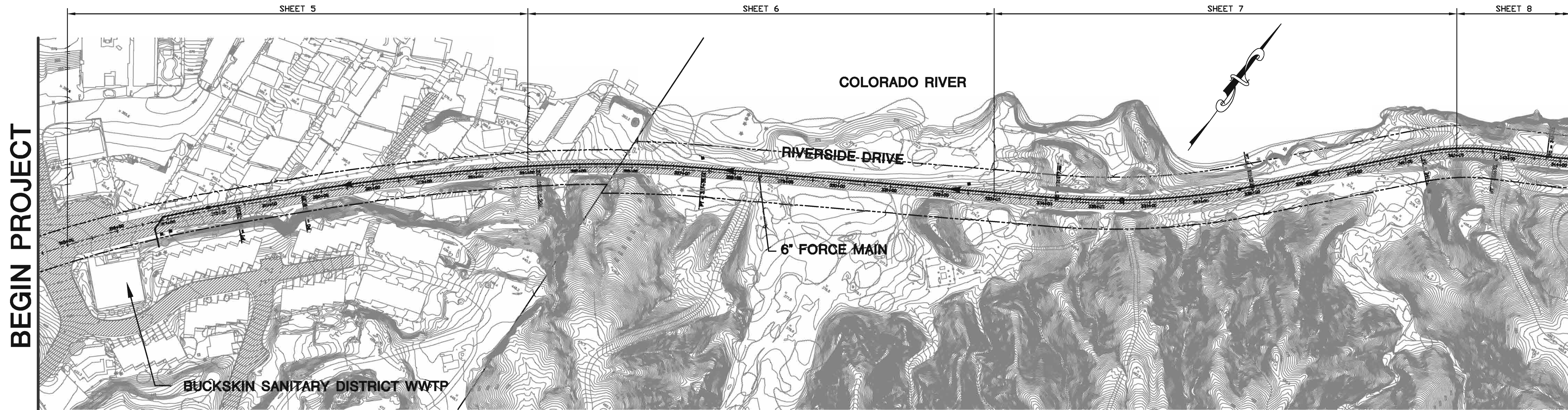
WRIGHT ENGINEERING CORP.  
165 EAST CHILTON DRIVE  
CHANDLER, AZ 85225  
PHONE: (480) 497-5829  
FAX: (480) 497-5807  
CONTACT: WADE WILLIAMS, PE.

**APPROVALS:**

BUCKSKIN SANITARY DISTRICT  
ARIZONA DEPT. OF ENVIRONMENTAL QUALITY  
LA PAZ COUNTY, ARIZONA



REVISIONS	BY	DATE



CALL TWO WORKING DAYS BEFORE YOU DIG  
**602-263-1100**  
**1-800-STAKE-IT**  
(OUTSIDE MARICOPA COUNTY)

**ENERGY AND WATER SOLUTIONS, LLC**  
 CIVIL ENGINEERING LAND DEVELOPMENT WATER RESOURCES

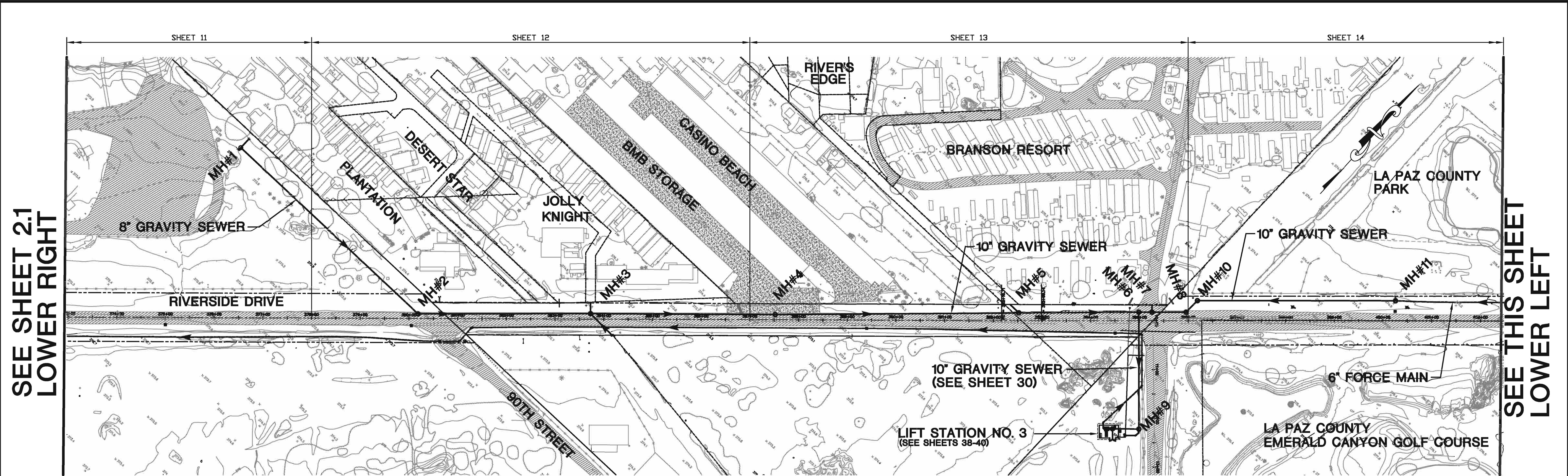
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
 PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
 DATE: 10/31/13  
 SCALE: N.T.S.

REVISIONS	BY	DATE

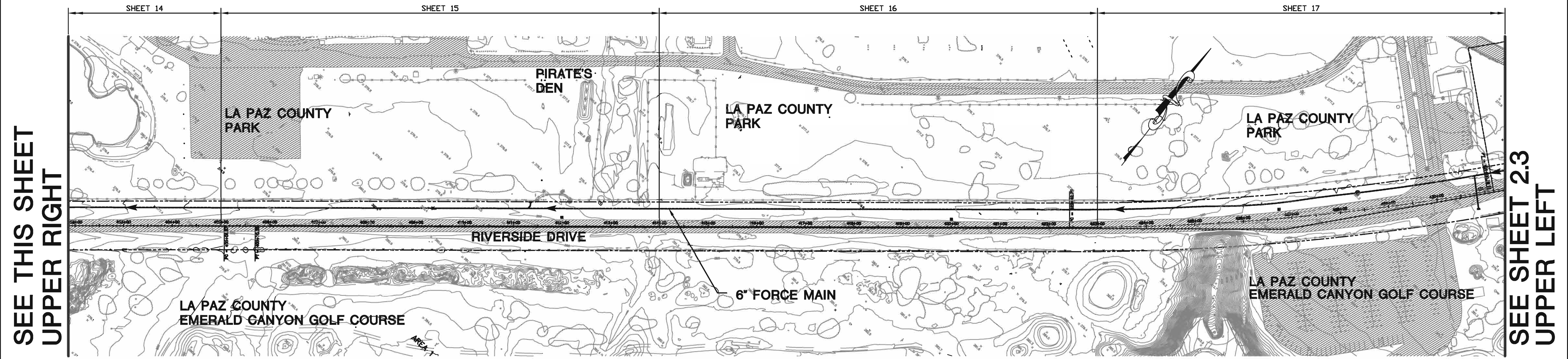
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**KEYMAP**

**SHEET 2.1**



SEE SHEET 2.1  
LOWER RIGHT

SEE THIS SHEET  
LOWER LEFT



SEE THIS SHEET  
UPPER RIGHT

SEE SHEET 2.3  
UPPER LEFT



EXPIRES 3/31/17

CALL TWO WORKING DAYS BEFORE YOU DIG  
602-263-1100  
1-800-STAKE-IT  
(OUTSIDE MARICOPA COUNTY)

**ENERGY AND WATER SOLUTIONS, LLC**  
CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

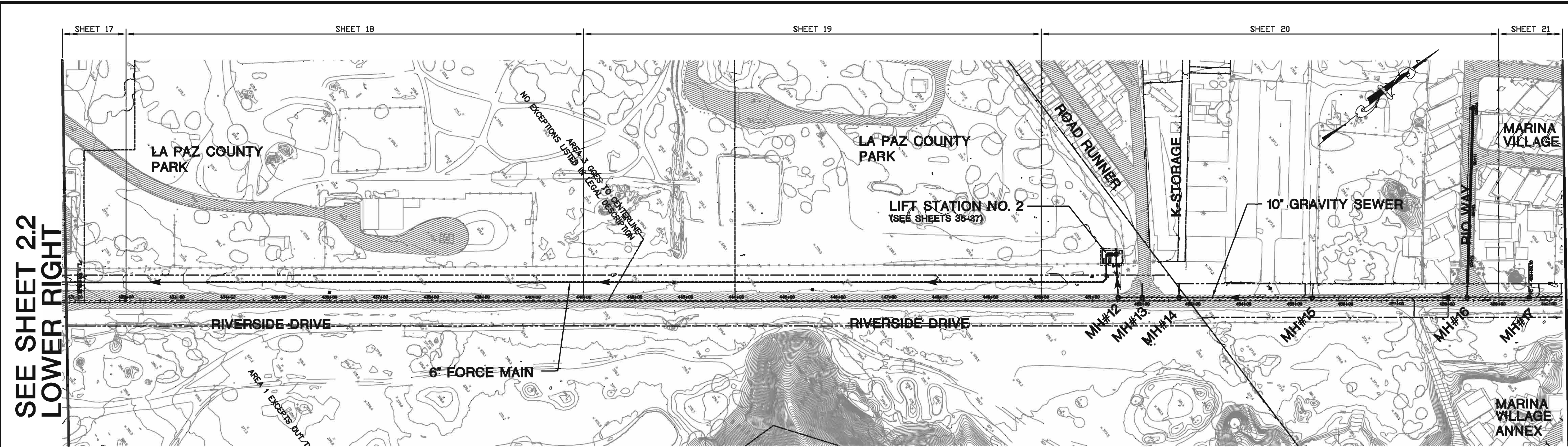
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JOB #:    REVISIONS    BY    DATE  
DATE: 10/31/13  
SCALE: N.T.S.

REVISIONS	BY	DATE

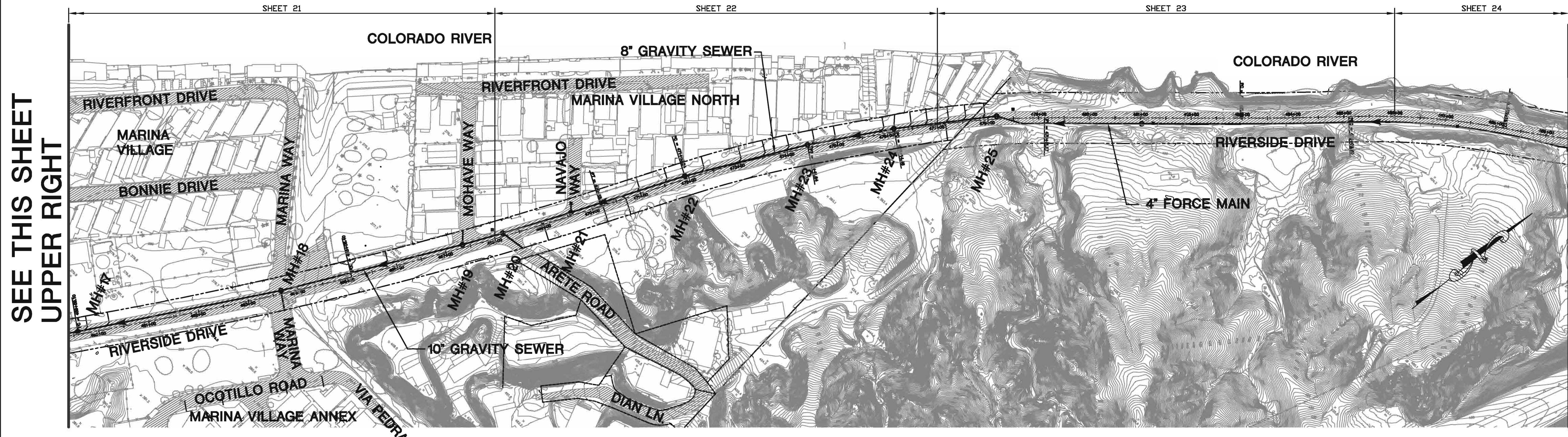
**BUCKSKIN SANITARY DISTRICT**  
PHASE 4 SEWER  
KEYMAP

SHEET 2.2



SEE SHEET 2.2  
LOWER RIGHT

SEE THIS SHEET  
LOWER LEFT



SEE THIS SHEET  
UPPER RIGHT

SEE SHEET 2.4  
UPPER LEFT



CALL TWO WORKING DAYS  
BEFORE YOU DIG  
**602-263-1100**  
**1-800-STAKE-IT**  
(OUTSIDE MARICOPA COUNTY)

**ENERGY AND WATER SOLUTIONS, LLC**  
CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

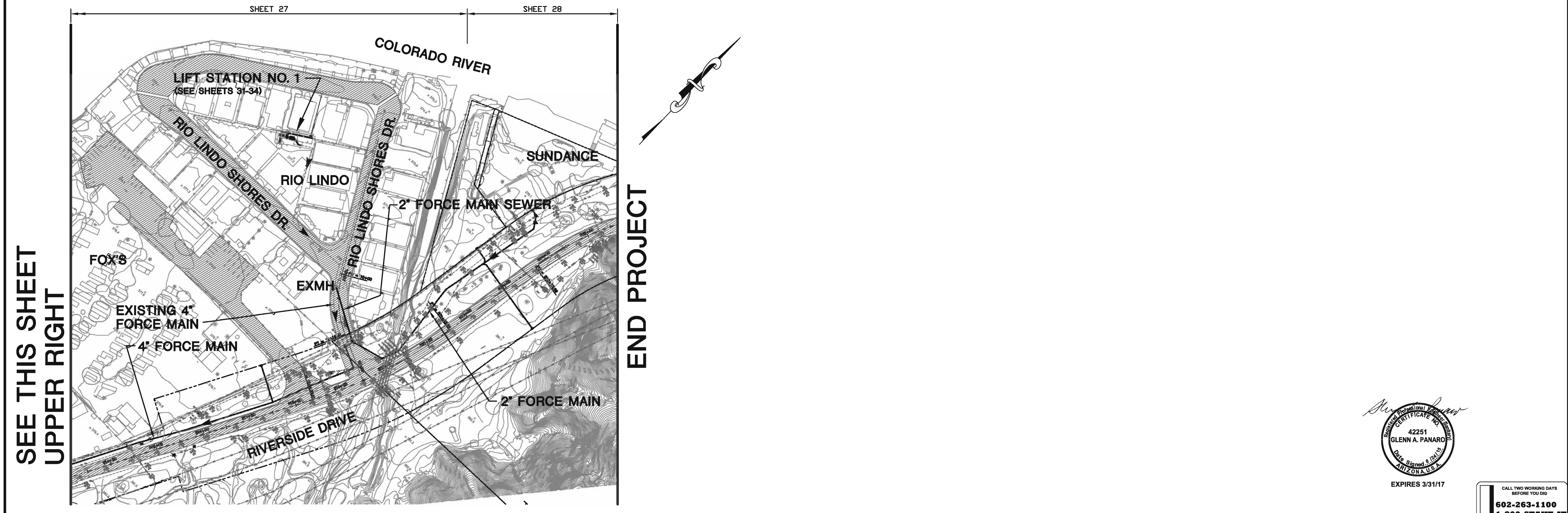
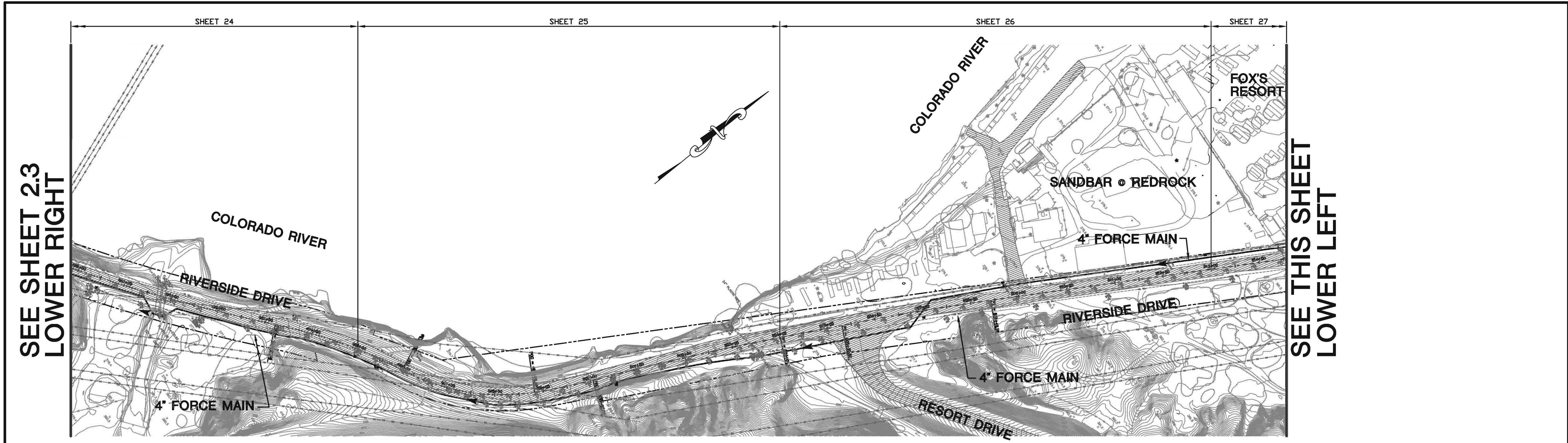
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JOB #: \_\_\_\_\_  
DATE: 10/31/13  
SCALE: N.T.S.

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**KEYMAP**

**SHEET 2.3**



CALL TWO WORKING DAYS BEFORE YOU DIG  
**602-263-1100**  
**1-800-STAKE-IT**  
(OUTSIDE MARICOPA COUNTY)

**ENERGY AND WATER SOLUTIONS, LLC**  
 CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
 PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
 DATE: 10/31/13  
 SCALE: N.T.S.

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**KEYMAP**

**SHEET 2.4**



**BUCKSKIN SANITARY DISTRICT - TYPICAL SEWER NOTES**

- ALL CONSTRUCTION SHALL CONFORM TO THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, MARICOPA ASSOCIATION OF GOVERNMENTS AND THE UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, MARICOPA ASSOCIATION OF GOVERNMENTS MOST RECENT ADDITION (MAG SPECS & MAG DETAILS); THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING BULLETIN NO. 11; AND REQUIREMENT OF THE BUCKSKIN SANITARY DISTRICT, WHICHEVER IS MOST STRINGENT.
- BEDDING MATERIAL SHALL NOT BE LARGER THAN 3/4" INCH IN SIZE.
- ALL FACILITIES, MATERIALS, AND WORKMANSHIP ARE SUBJECT TO THE APPROVAL AND ACCEPTANCE OF THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE IN ORDER TO ASSURE THE INTEGRITY OF THE SANITARY DISTRICT'S COLLECTION SYSTEM.
- ANY WORK PERFORMED WITHOUT THE APPROVAL OF THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE AND/OR ALL WORK AND MATERIALS NOT IN CONFORMANCE WITH THE SPECIFICATIONS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- ANY DEVIATION FROM THE PLANS AND SPECIFICATIONS MUST BE APPROVED IN WRITING BY THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE PRIOR TO ACCEPTANCE.
- THE CONTRACTOR MUST OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM BUCKSKIN SANITARY DISTRICT, LA PAZ COUNTY AND ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY AND ANY OTHER ENTITY HAVING JURISDICTION PRIOR TO CONSTRUCTION. THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE SHALL BE NOTIFIED 24 HOURS PRIOR TO THE DIFFERENT PHASES OF CONSTRUCTION FOR SCHEDULING INSPECTIONS.
- THE CONTRACTOR WILL UNCOVER ALL EXISTING LINES BEING TIED INTO TO VERIFY THEIR LOCATION PRIOR TO TRENCHING. THE CONTRACTOR WILL LOCATE OR HAVE LOCATED ALL EXISTING UNDERGROUND PIPELINES, TELEPHONE AND ELECTRIC CONDUITS, AND STRUCTURES IN ADVANCE OF CONSTRUCTION AND WILL OBSERVE ALL POSSIBLE PRECAUTIONS TO AVOID DAMAGE TO THE SAME.
- TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH MAG SPECIFICATION 401, MANUAL OF TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (LATEST EDITION), AND THE REQUIREMENTS FOR SIGNING AND BARRICADES OF THE LA PAZ COUNTY TRANSPORTATION DEPARTMENT.
- BACKFILLING SHALL NOT BE STARTED UNTIL ALL LINES ARE APPROVED BY THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE.
- LOCATIONS AND FREQUENCY OF COMPACTION TESTING WILL BE CONDUCTED IN ACCORDANCE THE SPECIFICATIONS. COPIES OF THE TEST RESULTS SHALL BE SENT TO THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE. IF ANY TEST FAILURES ARE EXPERIENCED, THE DISTRICT RESERVES THE RIGHT TO REQUIRE ADDITIONAL TESTING AT NO EXPENSE TO THE DISTRICT.
- WHEN A SEWER CROSSES A WATER PIPE AT A POINT AT WHICH THE SEWER IS LESS THAN 2 FEET BELOW THE WATER PIPE, THE SEWER SHALL BE ENCASED IN CONCRETE, OR CONSTRUCTED OF DUCTILE IRONPIPE WITH MECHANICAL JOINTS, FOR A DISTANCE OF AT LEAST 6 FEET IN EACH DIRECTION FROM THE CROSSING, EXCEPT IN THE CASE OF A FORCE MAIN WHERE THE DISTANCE IS 10 FEET. WHEN THE SEWER IS A 4 OR 6 INCH HOUSE CONNECTION, NO PROTECTION IS REQUIRED IF THE VERTICAL SEPARATION IS 12 INCHES OR GREATER BELOW THE WATER PIPE.
- ALL SEWER TAP LATERALS SHALL BE CONSTRUCTED TO THE LOT LINE OR INTERIOR EDGE OF THE PUE WHICHEVER IS FURTHER ONTO THE PROPERTY. A PLUG OR CAP MUST BE INSTALLED AT THE END OF EACH LATERAL WITH A 2X4 INSTALLED VERTICALLY FROM THE PLUG OR CAP UP TO 2 FEET ABOVE GRADE. THESE 2X4'S SHALL HAVE #10 STEEL WIRE WRAPPED AROUND THEM TO AID IN LOCATING THE LATERAL. THE 2X4 SHALL BE PAINTED GREEN AND THE DEPTH OF THE SERVICES (FROM GRADE TO TOP OF CAP OR PLUG) SHALL BE MARKED ON THE 2X4. METAL 2X4'S WITHOUT WIRE ARE ALSO ACCEPTABLE.
- ALL SEWER STUBS SHALL END WITH A PLUG OR CAP AND MUST HAVE A 2X6 INSTALLED FROM THE END OF THE PLUG OR CAP UP TO 2 FEET ABOVE GRADE. THE 2X6 SHALL HAVE #10 WIRE WRAPPED AROUND IT TO ASSIST IN LOCATING THE STUB IN CASE THE 2X6 IS BROKEN OFF AT GRADE. 2X6'S MUST BE PAINTED GREEN. METAL 2X6'S WITHOUT WIRE ARE ALSO ACCEPTABLE ACCEPT IN TRAVEL WAYS.
- ALL SEWER LINES WILL BE AIR TESTED IN ACCORDANCE WITH MAG SPEC. SECTION 02722, PART 2.13-B. ALL MANHOLES WILL BE WATER TESTED IN ACCORDANCE WITH ADEQ ENGINEERING BULLETIN NO. 11 OR TESTED WITH NEGATIVE AIR PRESSURE IN ACCORDANCE WITH ASTM C 1244-93. A LETTER CERTIFYING THE PASSING TEST RESULTS MUST BE RECEIVED BY THE DISTRICT OR DULY AUTHORIZED REPRESENTATIVE PRIOR TO ACCEPTANCE.
- ANY PREVIOUSLY TESTED SEWER LINES BROKEN DURING THE INSTALLATION OF OTHER ADJACENT UTILITIES WILL BE REPAIRED AND RETESTED TO THE SATISFACTION OF THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE.
- ACCEPTANCE OF THE COMPLETED IMPROVEMENTS WILL NOT BE GIVEN UNTIL FULL SIZE PHOTO MYLAR REPRODUCIBLE "AS-BUILTS" HAVE BEEN SUBMITTED BY A REGISTERED ARIZONA PROFESSIONAL ENGINEER AND APPROVED BY THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE, ALONG WITH ELECTRONIC FILES IN PDF FORMAT OF ALL AS-BUILTS SHEETS.
- NON-SHRINK GROUT SHALL BE USED IN THE CONSTRUCTION OF ALL MANHOLES.
- ALL SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC), UNLESS OTHERWISE NOTED, IN ACCORDANCE WITH MAG SPECIFICATIONS. A CERTIFICATE SHALL BE FURNISHED FROM THE MANUFACTURER ATTESTING THAT THE PIPE MEETS THE REQUIRED ASTM REQUIREMENTS, PVC PIPE SDR 35, ASTM D 3034.
- ALL CLEANOUTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DISTRICT'S STANDARD DESIGN.
- COMPLIANCE WITH ALL COUNTY, STATE AND FEDERAL RULES AND REGULATIONS PERTAINING TO JOB SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE INSIDE OF ALL NEW MANHOLES SHALL BE COATED WITH INSECTICIDE PAINT IN ACCORDANCE WITH THE SPECIFICATIONS. USE EITHER INSECTA OR SUPER IQ. APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. A LETTER CERTIFYING THAT THE APPLICATION IS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ALONG WITH A TWO YEAR WARRANTY SHALL BE PROVIDED TO THE DISTRICT.

**GENERAL NOTES:**

- THE ENGINEERING DESIGN OF THESE PLANS ARE ONLY APPROVED BY BUCKSKIN SANITARY DISTRICT IN SCOPE AND NOT IN DETAIL. CONSTRUCTION QUANTITIES ON THESE PLANS ARE NOT VERIFIED BY BUCKSKIN SANITARY DISTRICT. APPROVAL OF THESE PLANS ARE FOR PERMIT PURPOSES ONLY AND SHALL NOT PREVENT BUCKSKIN SANITARY DISTRICT FROM REQUIRING CORRECTION OF ERRORS IN THE PLANS WHERE SUCH ERRORS ARE SUBSEQUENTLY FOUND TO BE IN VIOLATION OF ANY LAW.
- AN APPROVED SET OF PLANS SHALL BE LOCATED ON THE SITE DURING CONSTRUCTION AND INSPECTION.
- A COPY OF ALL PERMITS AND THE DUST CONTROL INFORMATION SIGN MUST BE ON SITE AT ALL TIMES.
- ALL WORK AND MATERIALS WHICH DO NOT CONFORM TO THE SPECIFICATIONS ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- INSPECTION IS TO BE DONE BY THE BUCKSKIN SANITARY DISTRICT OR A DULY AUTHORIZED REPRESENTATIVE OF THE DISTRICT.

**GENERAL NOTES: (CONTINUED)**

- ANY WORK PERFORMED WITHOUT THE KNOWLEDGE OF THE ENGINEER OR THE BUCKSKIN SANITARY DISTRICT REPRESENTATIVE IS SUBJECT TO REMOVAL AND REPLACEMENT OF SAME TO BE DONE AT THE CONTRACTORS EXPENSE.
- THE LA PAZ COUNTY ENGINEERING DEPARTMENT AND BUCKSKIN SANITARY DISTRICT SHALL BE NOTIFIED AT LEAST 4 WORKING DAYS PRIOR TO STARTING WORK.
- THE ENGINEER OF RECORD SHALL BE NOTIFIED AT LEAST 4 WORKING DAYS IN ADVANCE OF ANY CONSTRUCTION.
- FACILITIES WHICH ARE NOT SPECIFICALLY LOCATED WITH ACTUAL HORIZONTAL AND VERTICAL CONTROLS ARE LOCATED APPROXIMATELY AND TO THE BEST AVAILABLE INFORMATION.
- EXISTING UTILITIES AND OTHER FACILITIES HAVE BEEN PLACED ON THE PLANS FROM FIELD SURVEYS, EXISTING MAPS, AND OTHER CURRENT PLANS WITHIN THE AREA OF THIS PROJECT. THE CONTRACTOR WILL DETERMINE THE EXACT LOCATION AND/OR ELEVATION OF EXISTING UTILITIES WHICH PERTAIN TO AND AFFECT THE CONSTRUCTION OF THIS PROJECT.
- CONTRACTOR MUST PROTECT THE ADJACENT PROPERTIES AND IMPROVEMENTS THERETO FROM ANY DAMAGE DURING CONSTRUCTION. ANY DAMAGE TO ADJACENT PROPERTIES OR IMPROVEMENTS MUST BE REPAIRED OR REPLACED TO THE PROPERTY OWNER'S SATISFACTION, AT THE CONTRACTOR'S EXPENSE.
- WHEREVER THE CONTRACTORS WORK REQUIRES THE REMOVAL OF EXISTING CONCRETE OR ASPHALTIC CONCRETE PAVEMENT, THE PAVEMENT SHALL BE SAWCUT TO ACHIEVE A NEAT AND UNIFORM JOINT WITH THE REPLACED PAVEMENT.
- WHENEVER EXCAVATION IS TO BE DONE, THE CONTRACTOR SHALL CALL THE "BLUE STAKE CENTER" AT 1-800-STAKE-IT.
- DISPOSAL OF ALL WASTE MATERIAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY THE INVERTS AND HORIZONTAL LOCATIONS OF ALL EXISTING SEWER PRIOR TO ANY SEWER CONSTRUCTION. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF SANITARY SEWER, BY OTHERS, FOR COMPATIBILITY WITH WORK AND FOR ORDERING MATERIALS. WHEN REQUIRED, THE CONTRACTOR SHALL REMOVE EXISTING BULKHEAD. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF THE EXISTING BULKHEAD AND PREVENTING ANY FLOODING FROM ANY INCOMING FLOWS. CONTRACTOR SHALL PROTECT THE SITE DURING CONSTRUCTION FROM ANY INCOMING FLOWS FROM EXISTING SANITARY SEWER. IF THE SANITARY SEWER BY OTHERS IS NOT COMPLETE AT THE TIME OF GRAVITY SEWER CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A TEMPORARY BULKHEAD.
- TRENCHING SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND MAG SPECIFICATIONS.
- ALL FRAMES, COVERS, VALVE BOXES AND MANHOLES SHALL BE ADJUSTED TO FINISHED GRADE UPON COMPLETION OF PAVING OR RELATED CONSTRUCTION.
- ALL ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIREMENTS FOR THE CONSTRUCTION AND TESTING OF SEWER SHALL BE COMPLIED WITH.
- THE TOTAL LENGTH OF EACH SEWER SEGMENT SHALL BE TESTED TO INSURE UNIFORM SLOPE BY CCTV CAMERA PRIOR TO ACCEPTANCE. A COPY OF THE RESULTS FOR EACH SEGMENT SHALL BE PROVIDED TO BUCKSKIN SANITARY DISTRICT ON DVD IN A FORMAT READABLE BY THE DISTRICT PRIOR TO FINAL ACCEPTANCE.
- ALL COMPACTION AND BACKFILL WITHIN COUNTY RIGHT-OF-WAY SHALL CONFORM TO LA PAZ COUNTY REQUIREMENTS FOR THE INSTALLATION OF UNDERGROUND UTILITIES AND THE PROJECT SPECIFICATIONS. BACKFILL UNDER ANY EXISTING OR PROPOSED PAVEMENT, CURB, GUTTER OR WITHIN TWO (2) FEET OR LESS FROM THE EDGE OF PAVEMENT SHALL CONSIST OF AGGREGATE BASE COURSE (ABC) MATERIAL.
- ALL STRUCTURES, SUCH AS MANHOLES, VALVE BOX & COVERS, AND MONITORING WELLS MUST BE MARKED WITH AT LEAST TWO REFLECTORIZED YELLOW FLEX POST WHEN STRUCTURES ARE LOCATED OUTSIDE THE TRAVELED WAY AND WITHIN THE RIGHT-OF-WAY. (\*APPLIES ONLY WHEN THERE IS NO CURB.')
- ALL EXISTING PAVEMENT MARKING, TRAFFIC SIGNS AND SIGNAL EQUIPMENT THAT NEEDS TO BE REMOVED, REPLACED, RELOCATED OR REPAIRED BECAUSE OF CONTRACTOR'S WORK WILL BE DONE BY THE CONTRACTOR AT HIS EXPENSE. ALL TRAFFIC SIGNS THAT ARE REMOVED SHALL BE STOCKPILED ON THE PROJECT SITE AND THE CONTRACTOR IS TO NOTIFY THE INSPECTOR WHEN ALL SIGNS HAVE BEEN REMOVED. ALL NEW STREET NAME SIGNS SHALL BE PROVIDED AND INSTALLED BY PERMITEE AT NO EXPENSE TO BUCKSKIN SANITARY DISTRICT.
- PAVEMENT MARKING, SIGNING, AND SIGNAL WORK WILL BE INSPECTED AND WILL HAVE TO MEET COUNTY STANDARDS BEFORE RELEASE OF BOND.
- ANY EXCAVATION BY CONTRACTOR THAT UNCOVERS AN HISTORICAL OR ARCHEOLOGICAL ARTIFACT OR HUMAN REMAINS SHALL BE IMMEDIATELY REPORTED TO THE OWNER AND A REPRESENTATIVE AGENCY. CONSTRUCTION SHALL BE TEMPORARILY HALTED PENDING THE NOTIFICATION PROCESS AND FURTHER DIRECTIONS ISSUED BY AGENCY AFTER CONSULTATION WITH THE STATE HISTORIC PRESERVATION OFFICE (SHPO).
- PRIOR TO MOVING OR DESTROYING PROTECTED NATIVE PLANT SPECIES, THE CONTRACTOR SHALL FILE A FORMAL NOTICE OF INTENT WITH THE ARIZONA DEPARTMENT OF AGRICULTURE NATIVE PLANTS (602) 542-3292.
- EXCEPT UNDER EMERGENCY CONDITIONS, ROADS SHALL NOT BE CLOSED FROM CONSTRUCTION ACTIVITY UNLESS PRIOR APPROVAL IS OBTAINED FROM LA PAZ COUNTY PUBLIC WORKS DIRECTOR.

**ENGINEER NOTES:**

- THE CONTRACTOR SHALL CALL THE BLUE STAKE CENTER (602) 263-1100 OR 1-800-STAKE-IT OUTSIDE OF MARICOPA COUNTY) TWO WORKING DAYS PRIOR TO ANY EXCAVATION TO LOCATE ALL UNDERGROUND UTILITIES.
- THE ENGINEER HAS ATTEMPTED TO SHOW ALL PERTINENT EXISTING UNDERGROND UTILITIES AND STRUCTURES. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE PRESENCE OF AND TO PROTECT ANY OVERHEAD AND UNDERGROUND UTILITIES OR STRUCTURES PRIOR TO COMMENCEMENT OF CONSTRUCTION, WHETHER OR NOT SAID UTILITIES ARE SHOWN ON THESE PLANS. WHERE REQUIRED, CONTRACTOR SHALL MAKE EXPLORATORY EXCACATIONS TO LOCATE UNDERGROUND UTILITIES OR STRUCTURES.
- WHERE EXISTING UTILITIES ARE EXPOSED, CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY FOR INSPECTION PRIOR TO BACKFILLING.
- THE CONTRACTOR SHALL TAKE NO ADVANTAGE OF ANY APPARENT ERROR OR OMISSION IN THESE PLANS. IN THE EVENT THE CONTRACTOR DISCOVERS SUCH AN ERROR OR OMISSION, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER.
- THE ENGINEER WILL DECIDE ALL QUESTIONS WHICH MAY ARISE AS TO THE INTERPRETATION OF THE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL MAKE ALL EFFORTS TO REVIEW THESE PLANS AND CONTACT THE ENGINEER WITH QUESTIONS OR CLARIFICATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY QUESTIONS REGARDING THESE PLANS SHALL BE PRESENTED TO THE ENGINEER. WHEN NECESSARY THE ENGINEER SHALL ISSUE REVISED PLANS, DETAILS OR SPECIFICATIONS. THE ENGINEER ASSUMES NO REPONSIBILITY FOR ANY REVISIONS TO PLANS, DETAILS OR SPECIFICATIONS MADE BY ANY PARTY WITHOUT THE CONSENT AND APPROVAL OF THE ENGINEER.
- QUANTITIES LISTED ON THESE PLANS ARE ESTIMATES ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL QUANTITIES BEFORE SUBMITTING A BID FOR THIS WORK.

**ENGINEER NOTES:**

- ALL CONSTRUCTION WATER AND POWER SHALL BE OBTAINED AND HANDLED BY THE CONTRACTOR AT HIS OWN EXPENSE. THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS TO PROVIDE WATER AND TRANSPORT WATER TO THE CONSTRUCTION SITE. ALL TEMPORARY FACILITIES SHALL BE REMOVED PRIOR TO FINAL ACCEPTANCE BY THE DISTRICT.
- ALL ASPHALT CONCRETE ROADWAY PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH MAG SECTIONS 336 AND 601. ALL ASPHALT CONCRETE SHALL RECEIVE A PRESERVATIVE SEAL IN ACCORDANCE WITH M.A.G. SPEC. SECTION 334.
- WHERE THERE IS A CONFLICT BETWEEN THE DISTRICT SPECIFICATIONS, M.A.G. SPECIFICATIONS OR THE PROJECT SPECIFICATIONS, THE MOST STRINGENT SHALL GOVERN.
- CONTRACTOR PERFORMING CONSTRUCTION OR EXCAVATING OPERATIONS IS RESPONSIBLE FOR LOCATING, RELOCATING AND/OR PROTECTING ALL UTILITIES IN CONFLICT OR WITHIN THE CLEAR ZONE, AT NO EXPENSE TO BUCKSKIN SANITARY DISTRICT.
- THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR FOR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK, AND WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK.
- THE CONTRACTOR MUST FURNISH AND INSTALL ALL NECESSARY APPURTENANCES INCLUDING BUT NOT LIMITED TO: NUTS, BOLTS, GASKETS, FLANGES, TAPS, BUSHES, ADAPTERS, HADWHEELS, GEAR OPERATORS, SUPPORTS, RESTRAINTS, ETC. TO ACHIEVE COMPLETE AND FUNCTIONING PIPING SYSTEMS, WHETHER OR NOT SUCH INCIDENTAL ITEMS ARE INDICATED ON THE DRAWINGS OR SPECIFIED. PLUG VALVES SHALL BE INSTALLED WITH THEIR MAIN PLUG SHAFTS HORIZONTAL.
- THE CONTRACTOR SHALL USE EXTREME CAUTION IN THE AREA OF OVERHEAD ELECTRIC LINES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO USE APPROPRIATE SAFETY MEASURES. ALL WORK SHALL BE IN ACCORDANCE WITH CHAPTER 181, ARTICLE 6.4, ARS 40-360.41-45 (THE OVERHEAD POWERLINE SAFETY LAW).
- THE CONTRACTOR IS TO UNCOVER ALL EXISTING LINES BEING TIED INTO AND VERIFY GRADES BEFORE ANY OTHER CONSTRUCTION.
- CONTRACTOR SHALL VERIFY ALL QUANTITIES SHOWN ON THESE PLANS AND MAKE HIS BID BASED UPON THOSE VERIFICATIONS. IF ANY DISCREPANCY IN QUANTITIES IS FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UNDERGROUND PIPELINE, TELEPHONE AND ELECTRICAL CONDUITS AND STRUCTURES IN ADVANCE OF ANY CONSTRUCTION; AND WILL TAKE ALL POSSIBLE PRECAUTIONS TO AVOID ANY DAMAGE TO SUCH. THE ENGINEER AND/OR OWNER WILL NOT GUARANTEE ANY LOCATIONS AS SHOWN ON THESE PLANS OR THOSE OMITTED FROM SAME.
- ALL PLANS, SIGNED BY THE BUCKSKIN SANITARY DISTRICT ENGINEER OR REPRESENTATIVE IN CHARGE, ARE NULL AND VOID ONE YEAR FROM DATE OF SIGNATURE IF CONSTRUCTION HAS NOT STARTED.
- CONTRACTOR SHALL VERIFY LOCATIONS OF ALL SERVICE LATERALS WITH HOMEOWNERS PRIOR TO INSTALLATION. ALL SERVICE CONNECTIONS SHALL BE INSTALLED TO PROPERTY LINE/RIGHT-OF-WAY OR SEWER EASEMENT, WHICHEVER GOVERNS.

NOTE:  
HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES ARE SHOWN ON THE PLANS, WHERE AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE PRESENCE OF ALL UTILITIES AND TO PROTECT ANY OVERHEAD AND UNDERGROUND UTILITIES OR STRUCTURES PRIOR TO COMMENCEMENT OF CONSTRUCTION, WHETHER OR NOT SAID UTILITIES ARE SHOWN ON THESE PLANS. WHERE REQUIRED, THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS TO LOCATE UNDERGROUND UTILITIES OR STRUCTURES AT HIS OWN EXPENSE.



EXPIRES 3/31/17

CALL TWO WORKING DAYS BEFORE YOU DIG  
**602-263-1100**  
**1-800-STAKE-IT**  
(OUTSIDE MARICOPA COUNTY)

REVISIONS	BY	DATE

**PRECAST CONCRETE NOTES:**

1. WETWELLS AND VALVE VAULTS SHALL BE PRECAST.
2. ALL PRECAST AND ASSOCIATED CAST-IN-PLACE CONCRETE SHALL BE DESIGNED IN ACCORDANCE WITH MAG SPECIFICATIONS AND STANDARDS (SEE SEWER SYSTEM MATERIAL SPECIFICATIONS) AND THE GEOTECHNICAL REPORT RECOMMENDATIONS.
3. THE PRECAST FABRICATOR SHALL BE RESPONSIBLE FOR THE DESIGN AND DETAILING OF ALL PRECAST UNITS AND APPURTENANCES INCLUDING BUT NOT LIMITED TO: PRECAST WETWELLS, PRECAST VALVE VAULTS, CAST-IN-PLACE BASES AND PRECAST VALVE VAULT AND WETWELL TOPS.
4. ALL DESIGN DETAILS AND CALCULATIONS SHALL BE SEALED BY A REGISTERED ENGINEER LICENSED IN THE STATE OF ARIZONA AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS INDICATING JOINT ANCHORAGE AND PIPE PENETRATION LOCATIONS AND DETAILS FOR WETWELLS AND VALVE VAULTS.

**BUCKSKIN SANITARY DISTRICT  
SEWER SYSTEM MATERIAL SPECS**

- COLLECTION MAINS - SDR35 PVC SEWER PIPE IN ACCORDANCE WITH M.A.G. SPECIFICATIONS, ASTM D-3034, AND ASTM F-679 OR US PIPE PROTECTO 401 CERAMIC EPOXY DUCTILE IRON PIPE. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE WRAPPED FOR THE ENTIRE LENGTH IN ACCORDANCE WITH M.A.G. SECTION 610.6.
- SEWER SERVICE - SDR35 PVC SEWER PIPE IN ACCORDANCE WITH M.A.G. SPECIFICATIONS AND ASTM D-3034.
- MANHOLE - PRECAST CONCRETE IN ACCORDANCE WITH M.A.G. SPEC. SECTION 625, EXCEPT THAT ALL MANHOLES SHALL HAVE NO STEPS INSTALLED. MANHOLES SHALL BE TREATED WITH "INSECTA" INSECT TREATMENT AS SOON AS MANHOLE IS RAISED TO GRADE AND PRIOR TO FINAL ACCEPTANCE. MANHOLES SUSCEPTIBLE TO HYDROGEN SULFIDE SHALL BE LINED WITH SAUERREISEN OR APPROVED EQUAL AS INDICATED ON THE DRAWINGS.
- MANHOLE COVER - IN ACCORDANCE WITH M.A.G. SPECIFICATIONS. LID TO BE STAMPED "BUCKSKIN SANITARY DISTRICT" IN ACCORDANCE WITH M.A.G. DETAILS 423-1,2 AND 424-1,2.
- ALL OTHER ITEMS - IN ACCORDANCE WITH M.A.G. SPECIFICATIONS.
- FORCE MAINS - PVC PRESSURE PIPE IN ACCORDANCE WITH AWWA C900 OR C905, DUCTILE IRON PIPE CLASS 53, MIN. PRESSURE CLASS 150. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE WRAPPED FOR THE ENTIRE LENGTH IN ACCORDANCE WITH M.A.G. SPEC. SECTION 610.6 AND LINED AND COATED PER PROJECT SPECIFICATIONS.

**FORCE MAIN NOTES:**

1. FORCE MAINS SHALL BE PROVIDED WITH RESTRAINED JOINTS WHERE INDICATED ON THE PLANS CONFORMING TO REQUIREMENTS OF FORCE MAIN PIPE MATERIAL SPECIFICATIONS.
2. INSTALL RESTRAINED JOINTS FOR LENGTH OF PIPE ON BOTH SIDES OF EACH BEND OR FITTING FOR FULL LENGTH AS SHOWN ON THE PLANS.
3. HORIZONTAL AND VERTICAL BENDS BETWEEN ZERO AND TEN DEGREES DEFLECTION ANGLE WILL NOT REQUIRE RESTRAINED JOINTS UNLESS OTHERWISE SHOWN ON THE PLANS.
4. HORIZONTAL AND VERTICAL BENDS BETWEEN 11 AND 90 DEGREES DEFLECTION ANGLE SHALL HAVE THRUST RESTRAINT AS SHOWN ON THE PLANS.
5. ALL BURIED DUCTILE IRON PIPE WITHIN THE LIFT STATION SITES SHALL HAVE RESTRAINED JOINTS FOR THE FORCE MAINS UNLESS INDICATED OTHERWISE ON THE PLANS.
6. A MAXIMUM OF ONE DEGREE OF AXIAL GASKETED JOINT DEFLECTION WILL BE ALLOWED FOR PVC AND D.I. PIPE. IF GREATER CURVATURE OR JOINT DEFLECTION IS REQUIRED, THE CONTRACTOR SHALL USE SPECIAL FITTINGS.
7. CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF DIVISION 15 - MECHANICAL AS IT PERTAINS TO THE FURNISHING AND INSTALLATION OF ALL LABOR, EQUIPMENT AND MATERIALS AND NECESSARY TO INSTALL ALL PIPING, FITTINGS, AND ACCESSORIES REQUIRED FOR THE COMPLETION OF FORCE MAIN PIPING WORK AS SHOWN ON THE CONTRACT DRAWINGS OR SPECIFIED HEREIN.
8. UNDERGROUND WARNING TAPE AND TRACER WIRE SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 15265 - PLASTIC PIPING AND TUBING.

**LIFT STATION NOTES:**

1.0 GENERAL:

LIFT STATIONS SHALL CONSIST OF A WET WELL, SUBMERSIBLE PUMPS, DRY VALVE VAULT, ELECTRICAL CONTROL PANEL, EMERGENCY GENERATOR AND OTHER RELATED ACCESSORIES. THE LIFT STATIONS SHALL CONFORM TO BUCKSKIN SANITARY DISTRICT'S SANITARY SEWER SYSTEM STANDARDS AND SPECIFICATIONS (SEE CHAPTER 2, SECTION T.6). ALL STATIONS SHALL CONTAIN AT LEAST TWO (2) PUMPS, EACH WITH 100% DESIGN CAPACITY.

2.0 WET WELLS:

- 2.1 THE WET WELL FOR EACH LIFT STATION SHALL BE REINFORCED POLYMER CONCRETE MEETING ASTM C478-02A (OR LATEST REVISION) STANDARD SPECIFICATION FOR PRE-CAST REINFORCED CONCRETE MANHOLE SECTIONS AND SHALL CONFORM WITH THE REQUIREMENTS OF SECTION 3410-PRECAST POLYMER AND CONCRETE STRUCTURES.
- 2.2 WALL PENETRATIONS THRU THE WET WELLS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 15200 - PIPE CONNECTING AND RESTRAINTS DEVICES. OPENINGS IN THE WALLS OF THE WET WELL SHALL BE THOROUGHLY FILLED WITH NON-SHRINKING GROUT AFTER INSTALLATION OF THE PIPES UNLESS MANUFACTURER RECOMMENDS OTHERWISE. SPECIAL CARE SHALL BE TAKEN TO INSURE A WATERTIGHT CONNECTION AT THESE POINTS.
- 2.3 THE PUMPS AND/OR ACCESSORIES SHALL BE SECURED TO THE CONCRETE BASE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM DESIGN FOR ADEQUACY OF BASE AND TOP SLAB REINFORCEMENT IS FOR MASHTO H-20 TRUCK LOADING. THE CONCRETE BASE SHALL EXTEND A MINIMUM OF 6" BEYOND THE EDGE OF THE BODY OF THE WET WELL.
- 2.4 THE WET WELL SHALL CONTAIN STAINLESS STEEL GUIDE RAILS FOR THE PUMPS, SECURELY FASTENED AT THE TOP OPENING OF THE WET WELL TO ALLOW THE PUMPS TO ACCURATELY MATE WITH THE PUMP BASES, WHICH SHALL BE SECURED TO THE BOTTOM WITH STAINLESS STEEL BOLTS IN ACCORDANCE WITH PART 2.3 (B) OF SECTION 11400 OF THE SPECIFICATIONS.

- 2.5 THE WET WELL SHALL HAVE A 3" MINIMUM DIAMETER DUCTILE IRON OR STAINLESS STEEL AIR VENT EXTENDING THROUGH THE TOP SLAB. THE VENT PIPE WILL BE ATTACHED TO THE ODOR CONTROL UNIT IN ACCORDANCE WITH THE PLANS.
- 2.6 THE WET WELL SHALL BE INSTALLED PLUMB AND LEVEL ON A 12" THICK (MINIMUM) COMPACTED ROCK/STONE BED IN ACCORDANCE WITH THE PLANS.
- 2.7 A SIGN MUST BE POSTED ON THE WET WELL STATING "CONFINED SPACE."

3.0 PIPING INSIDE LIFT STATIONS:

- 3.1 PIPING INSIDE THE STATION WET WELL AND ABOVE GROUND PIPING SHALL BE DUCTILE IRON WITH FLANGED JOINTS. FLANGES SHALL BE EITHER WELDED OR THREADED TO THE CONNECTING PIPES. ALL FASTENERS INSIDE THE WET WELL AND VALVE VAULT SHALL BE STAINLESS STEEL.
- 3.2 DUCTILE IRON PIPE SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST REVISION OF ANSI/AWWA C150/A21.50 FOR A MINIMUM 150 PSI RATED WORKING PRESSURE PLUS A 100 PSI SURGE ALLOWANCE; A 2 TO 1 FACTOR OF SAFETY ON THE SUM OF WORKING PRESSURE PLUS SURGE PRESSURE;
- 3.3 DUCTILE IRON PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST REVISION OF ANSI/AWWA C151/A21.51. EACH PIPE SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST OF AT LEAST 500 PSI AT THE POINT OF MANUFACTURE.
- 3.4 DUCTILE IRON PIPE SHALL BE COATED AND LINED IN ACCORDANCE WITH SECTION 15251 - DUCTILE IRON PIPE.
- 3.5 THE CLASS OR NOMINAL THICKNESS, NET WEIGHT WITHOUT LINING, AND CASTING PERIOD SHALL BE CLEARLY MARKED ON EACH LENGTH OF PIPE. ADDITIONALLY, THE MANUFACTURER'S MARK, COUNTRY WHERE CAST, YEAR IN WHICH THE PIPE WAS PRODUCED, AND THE LETTERS "DI" OR "DUCTILE" SHALL BE CAST OR STAMPED ON THE PIPE.
- 3.6 FITTINGS SHALL BE DUCTILE IRON. FITTINGS SHALL CONFORM TO THE LATEST REVISION OF EITHER ANSI/AWWA CI 10/A21.10 OR ANSI/AWWA C153/A21.53. FITTINGS AND ACCESSORIES SHALL BE FURNISHED WITH MECHANICAL TYPE JOINTS IN ACCORDANCE WITH ANSI/AWWA CI 11/A21.11, OF LATEST REVISION.
- 3.7 ALL PIPE, FITTINGS AND ACCESSORIES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LATEST REVISION OF ANSI/AWWA C600.

4.0 PUMPS AND MOTORS:

- 4.1 THE PUMP AND MOTOR UNITS SHALL BE THE SUBMERSIBLE TYPE TO DELIVER THE DESIGN FLOW THROUGH THE DISCHARGE FORCE MAIN AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF SECTION 11400 - PUMPS.
- 4.2 THE DISCHARGE CONNECTION ELBOWS SHALL BE PERMANENTLY INSTALLED IN THE WET WELL AND THE PUMPS SHALL BE AUTOMATICALLY CONNECTED TO THE DISCHARGE CONNECTION WHEN LOWERED INTO PLACE AND SHALL BE EASILY REMOVED FOR INSPECTION OR SERVICE BY MEANS OF STAINLESS STEEL LIFTING CHAINS. THERE SHALL BE NO NEED FOR PERSONNEL TO ENTER THE WET WELL.
- 4.3 EACH PUMP SHALL BE FITTED WITH A STAINLESS STEEL LIFTING CHAIN OF ADEQUATE STRENGTH AND LENGTH TO PERMIT RAISING AND LOWERING THE PUMP FOR INSPECTION AND REMOVAL. THE LIFTING SYSTEM MUST PERMIT THE PUMP TO BE REMOVED IN ONE CONTINUOUS MOTION, WITHOUT INTERMEDIATE HOOKING.

5.0 VALVE VAULTS:

- 5.1 THE VALVE VAULT FOR EACH LIFT STATION SHALL BE REINFORCED CONCRETE MEETING ASTM C478-02A (OR LATEST REVISION) STANDARD SPECIFICATION FOR PRE-CAST REINFORCED CONCRETE MANHOLE SECTIONS AND SHALL CONFORM WITH THE REQUIREMENTS OF SECTION 3410-PRECAST CONCRETE STRUCTURES.
- 5.2 ALL VALVE VAULTS SHALL BE SIZED TO PROVIDE AT LEAST 12 INCHES OF CLEARANCE (TOP, BOTTOM, SIDES) BETWEEN THE WALLS OF THE BOX AND INTERNAL COMPONENTS
- 5.3 VALVE VAULTS FOR EACH LIFT STATION SHALL CONSIST OF A PRE-CAST BOX WITH AN APPROVED ALUMINUM ACCESS HATCH AND STEPS, THE SAME AS FOR THE WET WELL. THE VALVE VAULT SHALL CONTAIN TWO DISCHARGE LINES FROM THE PUMPS IN ACCORDANCE WITH THE PLANS. EACH DISCHARGE LINE SHALL HAVE A CHECK VALVE AND A GATE VALVE INSTALLED IN ACCORDANCE WITH SECTION 15100 - VALVES AND THE DRAWINGS.
- 5.4 ALL PIPING AND ALL FITTINGS SHALL BE FLANGED DUCTILE IRON AND ALL PIPING SHALL BE PROPERLY SUPPORTED. THE CONNECTION TO THE PVC FORCE MAIN OUTSIDE THE VALVE VAULT SHALL BE MADE WITH A RESTRAINED FLANGE ADAPTER, SERIES 2100 MEGAFLANGE, BY EBAA IRON, INC. OR EQUAL. PROVISIONS SHALL BE MADE FOR THE REMOVAL AND REPLACEMENT OF ALL PIPING, VALVES AND FITTINGS.
- 5.5 PIPES AND VALVES SHALL BE ALIGNED HORIZONTALLY WITH THE CHECK VALVE PRECEDING THE GATE VALVE.
- 5.6 THE FLOOR OF THE VALVE VAULT SHALL BE SHAPED OR SLOPED TO DRAIN TOWARD THE WET WELL. A 2" SCHEDULE 80 PVC DRAIN PIPE SHALL BE INSTALLED TO DRAIN ANY LIQUID CONTENTS OF THE VALVE VAULT TO THE WET WELL. A TIDEFLEX CHECK VALVE OR EQUAL SHALL BE INSTALLED ON THE DISCHARGE END OF THE DRAINAGE PIPE TO PREVENT THE WET WELL CONTENTS FROM ENTERING THE VALVE VAULT.

6.0 VALVES AND FITTINGS

ALL VALVES, FITTINGS AND ACCESSORIES FOR THE LIFT STATIONS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 15100 - VALVES.

7.0 ACCESS FRAME AND COVER

7.1 A DOOR ACCESS FRAME ASSEMBLY SHALL BE FURNISHED FOR THE WET WELL AND VALVE VAULT AT EACH LIFT STATION IN ACCORDANCE WITH THE DIMENSIONS SHOWN ON THE DRAWINGS. THE FRAME COVER SHALL BE CAPABLE OF BEARING A 300 POUNDS PER SQUARE FOOT (PSF) LIVE LOAD.

- 7.2 THE ACCESS COVER SHALL CONSIST OF 1/4-INCH (6.4MM) ALUMINUM DIAMOND PLATE COVER EQUIPPED WITH CAST ALUMINUM FLUSH LIFTING HANDLE AND 316 STAINLESS STEEL HOLD-OPEN ARM WITH RED VINYL GRIP THAT AUTOMATICALLY KEEPS THE COVER IN ITS OPEN/UPRIGHT POSITION. DOOR SHALL LOCK IN THE 90-DEGREE POSITION.
- 7.3 THE FRAME SHALL CONSIST OF EXTRUDED ALUMINUM WITH INTEGRAL ANCHOR FLANGE AND DOOR SEAT ON ALL FOUR SIDES. THE HARDWARE SHALL BE MADE OF 316 STAINLESS STEEL HINGES AND TAMPER RESISTANT BOLTS/LOCK NUTS.

7.4 THE ENTRANCE LATCH SHALL BE CONSTRUCTED AND FABRICATED TO COMPLY WITH OSHA STANDARDS. 7.5 ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER, APPROVED ALKALI RESISTANT PAINT OR OTHER APPROVED PROTECTIVE COATING. COVER MUST BE COMPATIBLE WITH PUMPS AND GUIDE RAIL SYSTEM. ALL HARDWARE, INCLUDING ANCHORS, BOLTS, HASPS, HINGES, GUIDES AND CABLE HOLDERS SHALL BE STAINLESS STEEL.

7.6 EACH ACCESS FRAME AND COVER SYSTEM SHALL BE EQUIPPED WITH FLYGT "SAFE-HATCH" FALL THROUGH PREVENTION SYSTEM, MDOEL FLEC(D)-SH, ADHERING TO OSHA SAFETY STANDARDS.

7.7 EACH ACCESS HATCH SHALL HAVE EXPOSED PADLOCK CLIP AND AN ALUMINUM LIFT HANDLE WHICH IS FLUSH WITH TOP OF DIAMOND PLATE.

7.8 A YALE MODEL 945, OR APPROVED EQUAL, SOLID BRASS PAD LOCK FOR EACH HATCH COVER SHALL BE SUPPLIED. LOCKS SHALL BE KEYED ALIKE WITH A MINIMUM OF 5 KEYS PROVIDED TO THE OWNER.

7.9 MANUFACTURER SHALL GUARANTEE AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF TEN YEARS.

8.0 CONTROL PANELS AND ELECTRICAL EQUIPMENT

THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL HARDWARE, SOFTWARE, LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO PROVIDE A COMPLETE CONTROL PANEL, IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS. THE CONTROL PANEL SHALL BE LOCATED AT A SAFE DISTANCE FROM THE WET WELL AS SHOWN ON THE PLANS.

9.0 PORTABLE HOISTS (LIFT STATION NO. 1 ONLY)

PROVIDE AND INSTALL SURFACE-MOUNTED STAINLESS STEEL FLOOR SOCKETS FOR THE PORTABLE HOISTS AT APPROPRIATE LOCATIONS SUCH THAT ALL PUMPS UNDER THIS SECTION MAY BE REMOVED BY INSERTION OF THE PORTABLE HOIST INTO FLOOR SOCKETS. ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL. PORTABLE HOIST FLOOR SOCKETS SHALL BE FURNISHED TO MATCH THE PORTABLE HOIST THE DISTRICT PRESENTLY USES FOR MAINTENANCE.

**RESTRAINED JOINT LENGTHS:**

HORIZONTAL RESTRAINT LENGTH				
BEND ANGLE (DEGREES)	4-INCH PVC PIPE (FEET)	6-INCH PVC PIPE (FEET)	4-INCH D.I. PIPE (FEET)	6-INCH D.I. PIPE (FEET)
90	18	24	20	27
45	8	10	8	12
22.5	4	5	4	6
11.25	2	3	2	3

VERTICAL RESTRAINT LENGTH								
BEND ANGLE (DEGREES)	4-INCH PVC PIPE (FEET)		6-INCH PVC PIPE (FEET)		4-INCH D.I. PIPE (FEET)		6-INCH D.I. PIPE (FEET)	
	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
45	22	8	31	10	32	8	45	12
22.5	11	4	15	5	16	4	22	6
11.25	6	2	8	3	8	2	11	3

CRITERIA

PIPE MATERIAL	PVC/D.I.
SOIL TYPE	GP/GM
SAFETY FACTOR	1.5
TRENCH TYPE	5
DEPTH OF BURY	3 FT
TEST PRESSURE	200

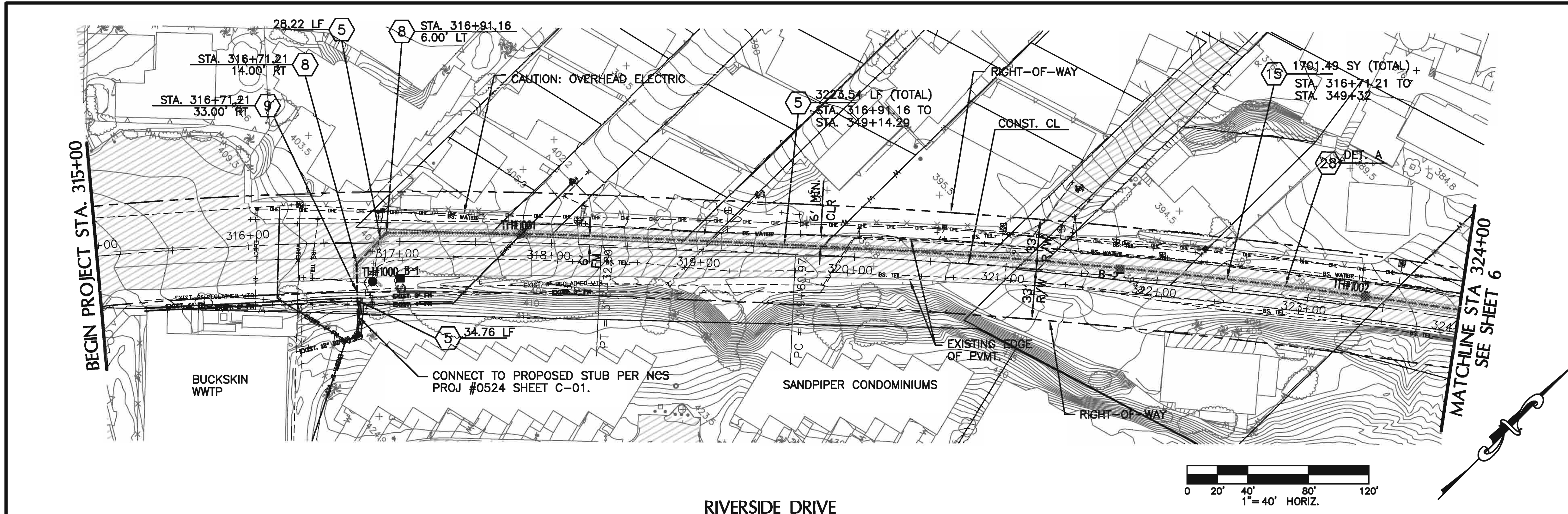


EXPIRES 3/31/17

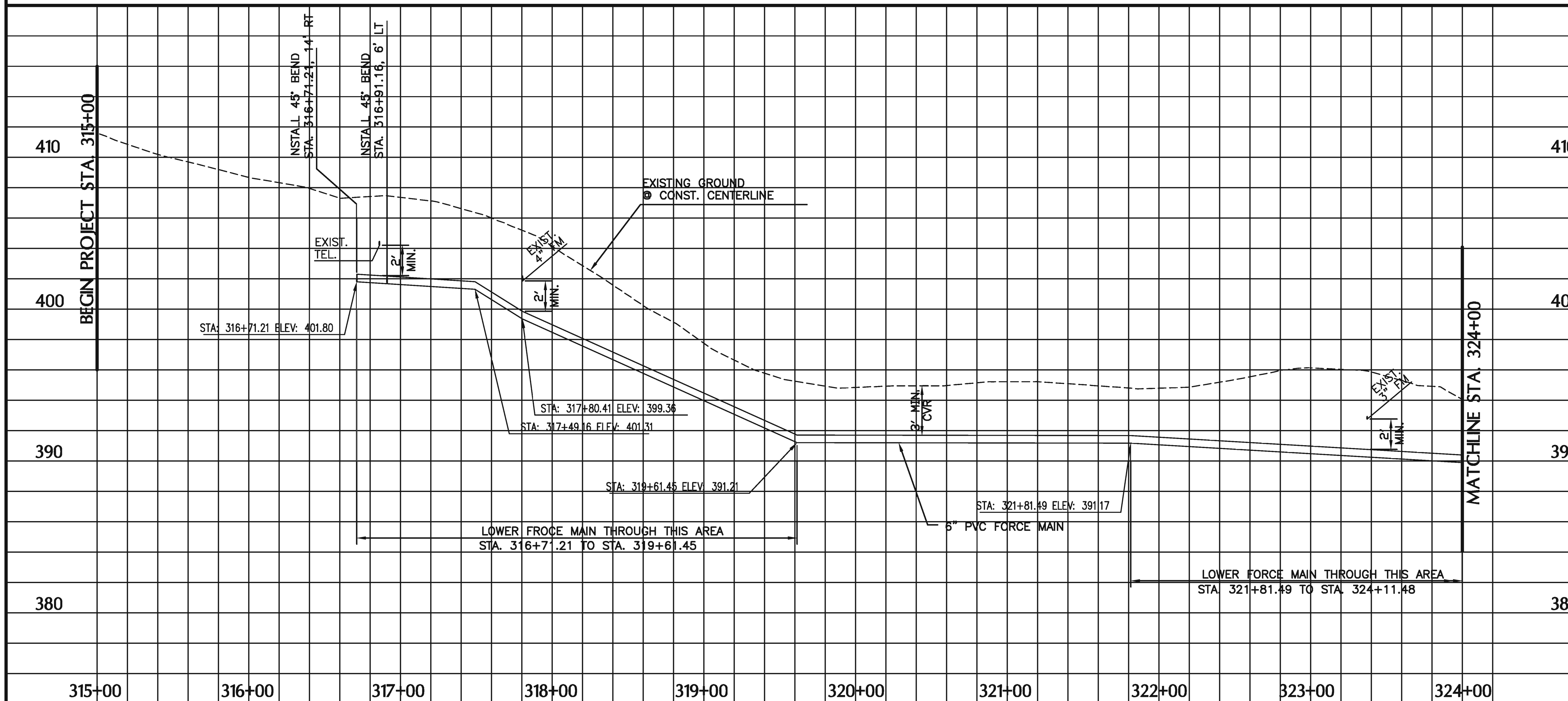
CALL TWO WORKING DAYS BEFORE YOU DIG  
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**1-800-STAKE-IT**  
(OUTSIDE MARICOPA COUNTY)

REVISIONS	BY	DATE

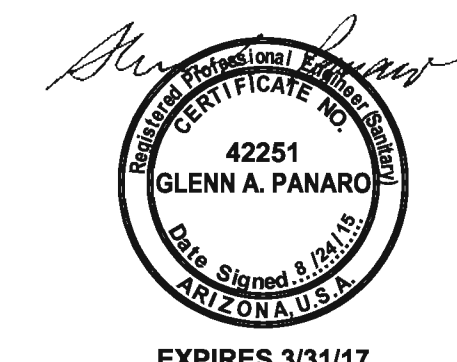




- SEWER CONSTRUCTION NOTES**
- (5) INSTALL 6" PVC FORCE MAIN
  - (8) INSTALL 45° BEND W/ JT. RESTRAINT
  - (9) INSTALL 11.25° BEND W/ JT. RESTRAINT
  - (15) SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
  - (28) TRENCH PER DTL. ON SHEET 44.



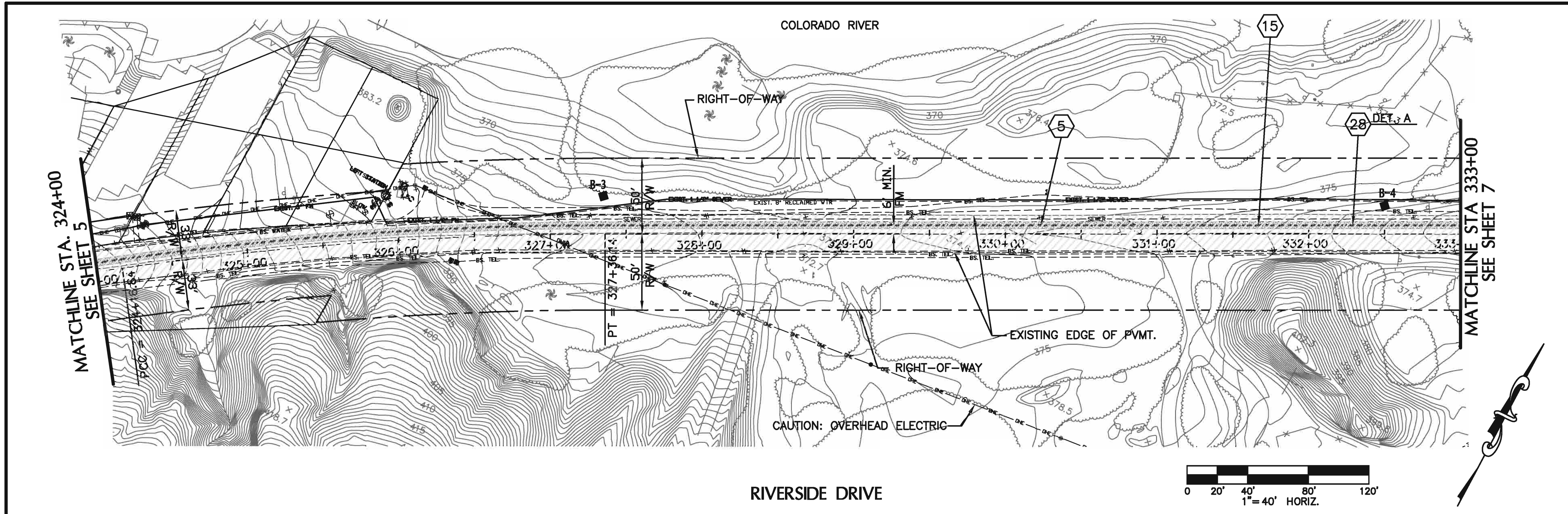
NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



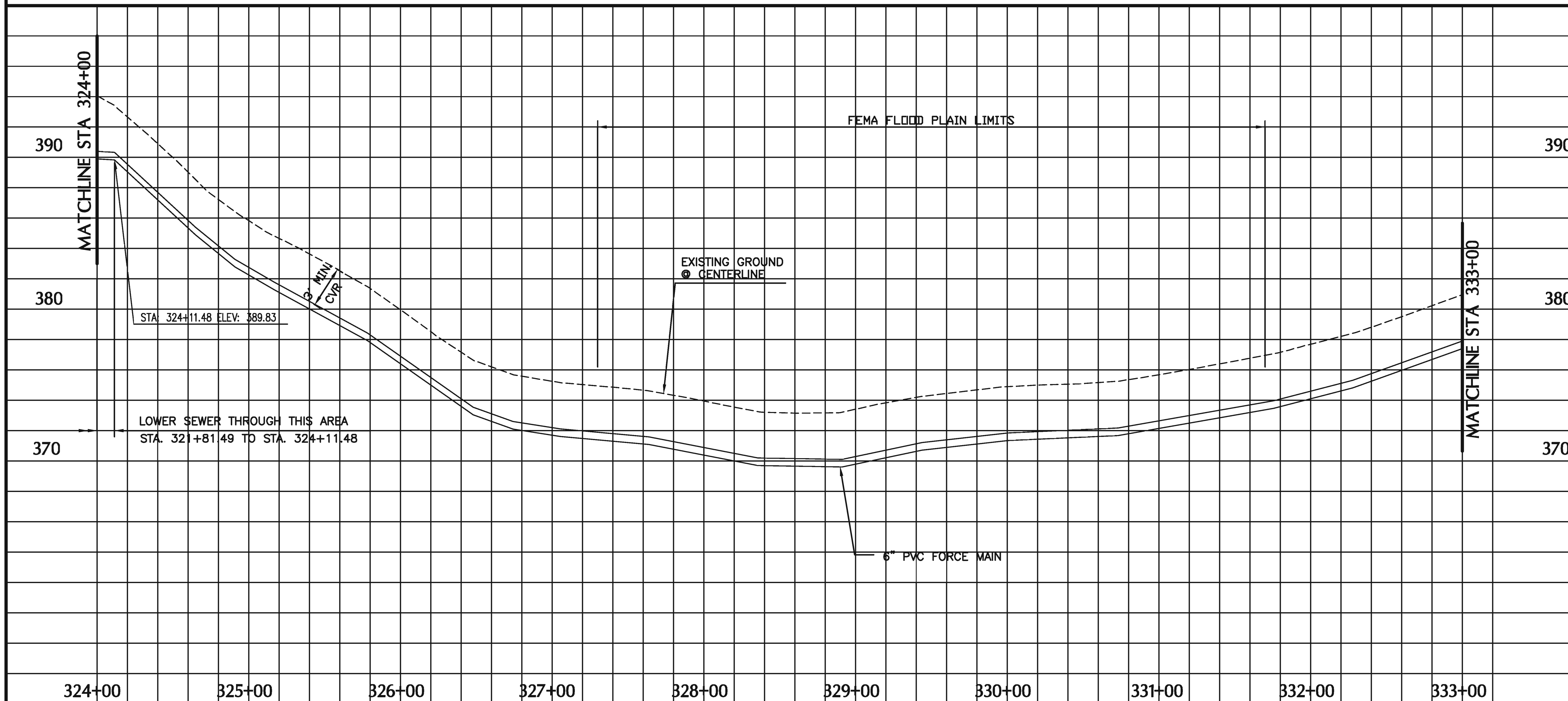
EXPIRES 3/31/17

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1-800-STAKE-IT  
(OUTSIDE MARICOPA COUNTY)

REVISIONS	BY	DATE



- SEWER CONSTRUCTION NOTES**
- 5 INSTALL 6" PVC FORCE MAIN
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
  - 28 TRENCH PER DTL. ON SHEET 44



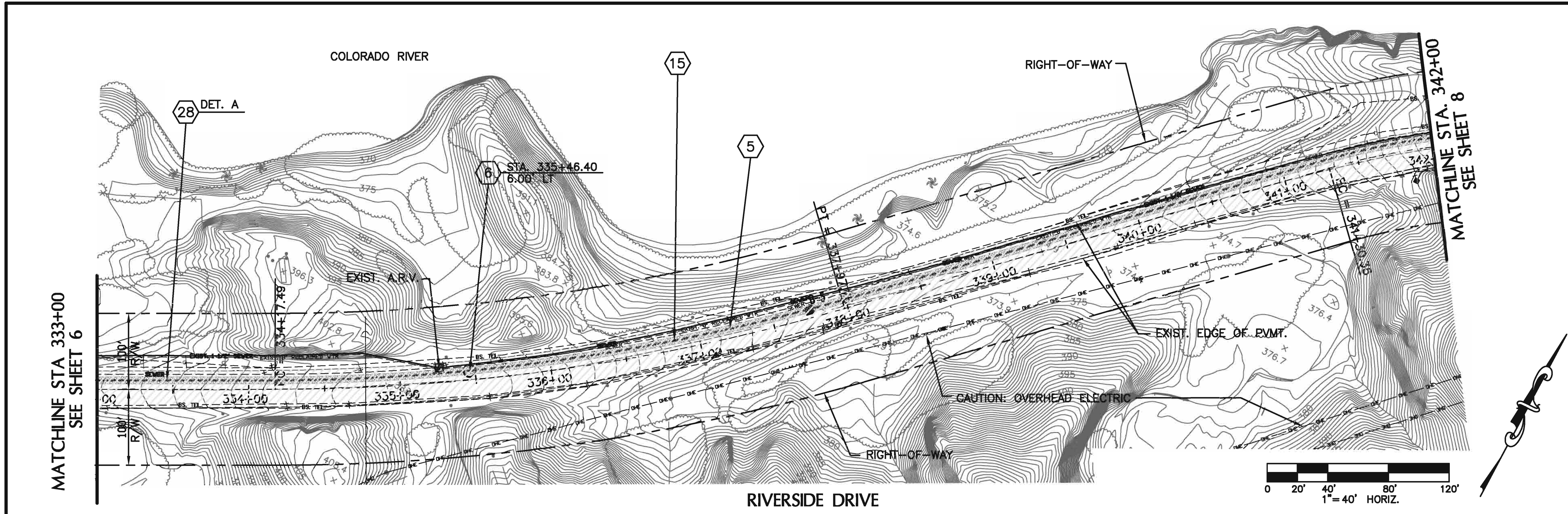
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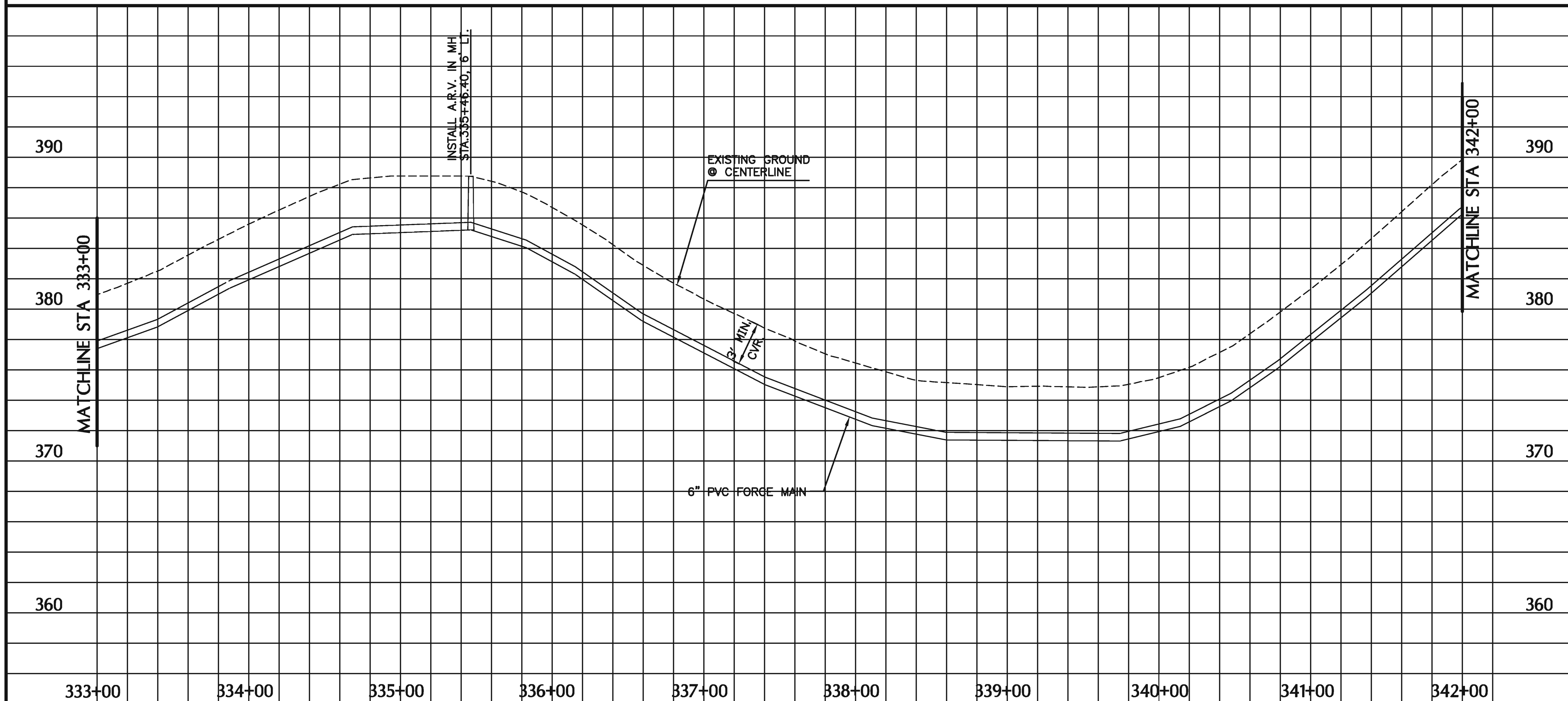
EXPIRES 3/31/17

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(OUTSIDE MARICOPA COUNTY)

REVISIONS	BY	DATE



- SEWER CONSTRUCTION NOTES**
- 5 INSTALL 6" PVC FORCE MAIN
  - 6 INSTALL A.R.V. AND MH PER DTL. ON SHEET 45
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
  - 28 TRENCH PER DTL. ON SHEET 44

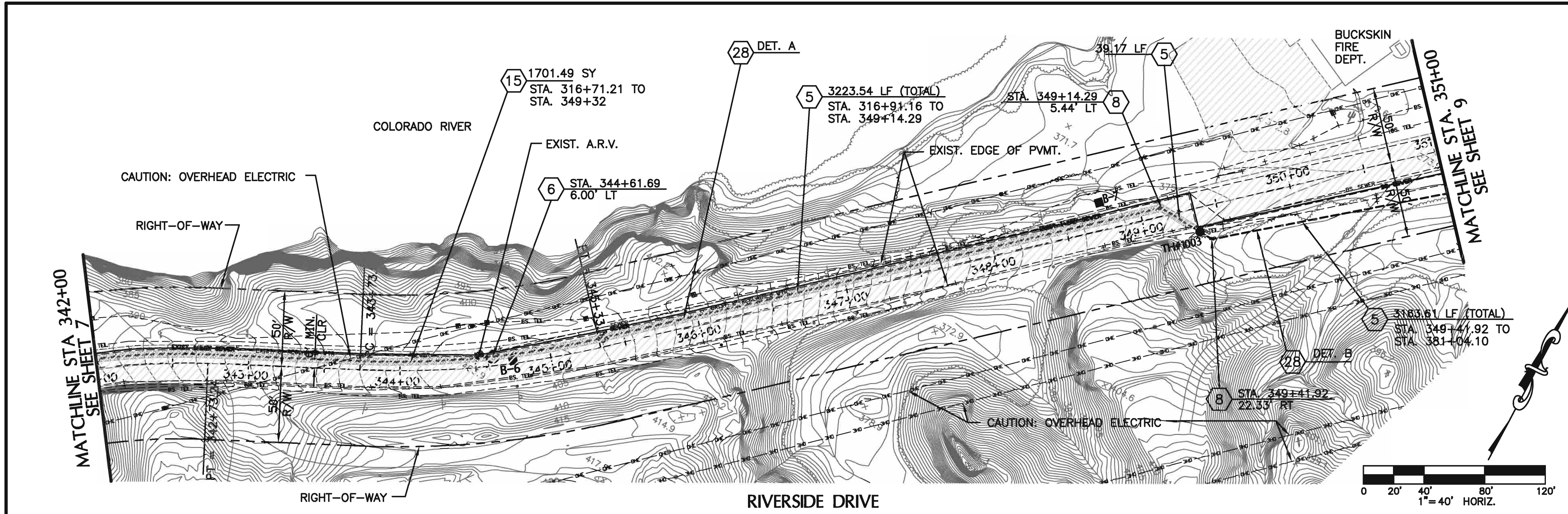


NOTE:  
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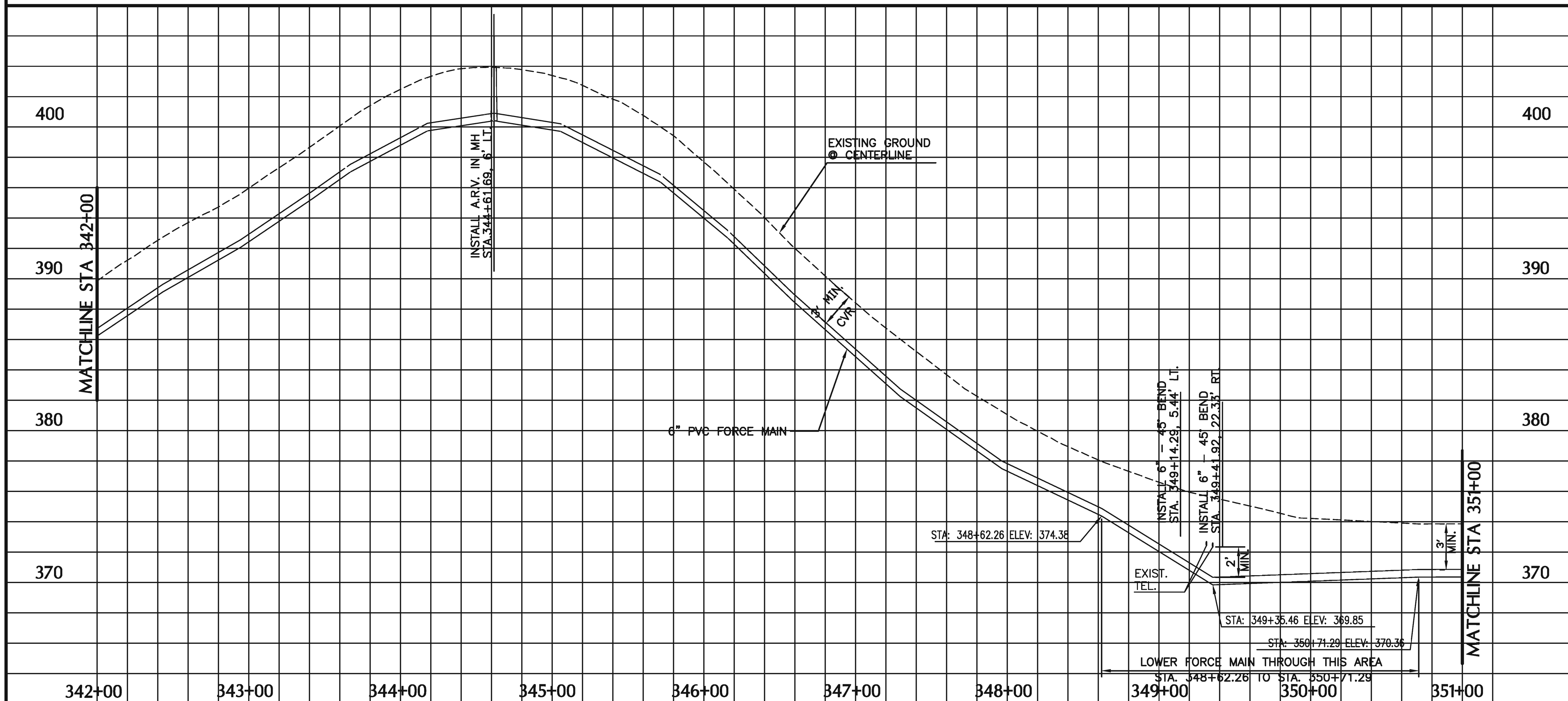


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(OUTSIDE MARICOPA COUNTY)

REVISIONS	BY	DATE



- SEWER CONSTRUCTION NOTES**
- 5 INSTALL 6" PVC FORCE MAIN
  - 6 INSTALL A.R.V AND MH PER DTL. ON SHEET 45
  - 8 INSTALL 45° BEND W/ JOINT RESTRAINT
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
  - 28 TRENCH PER DTL. ON SHEET 44



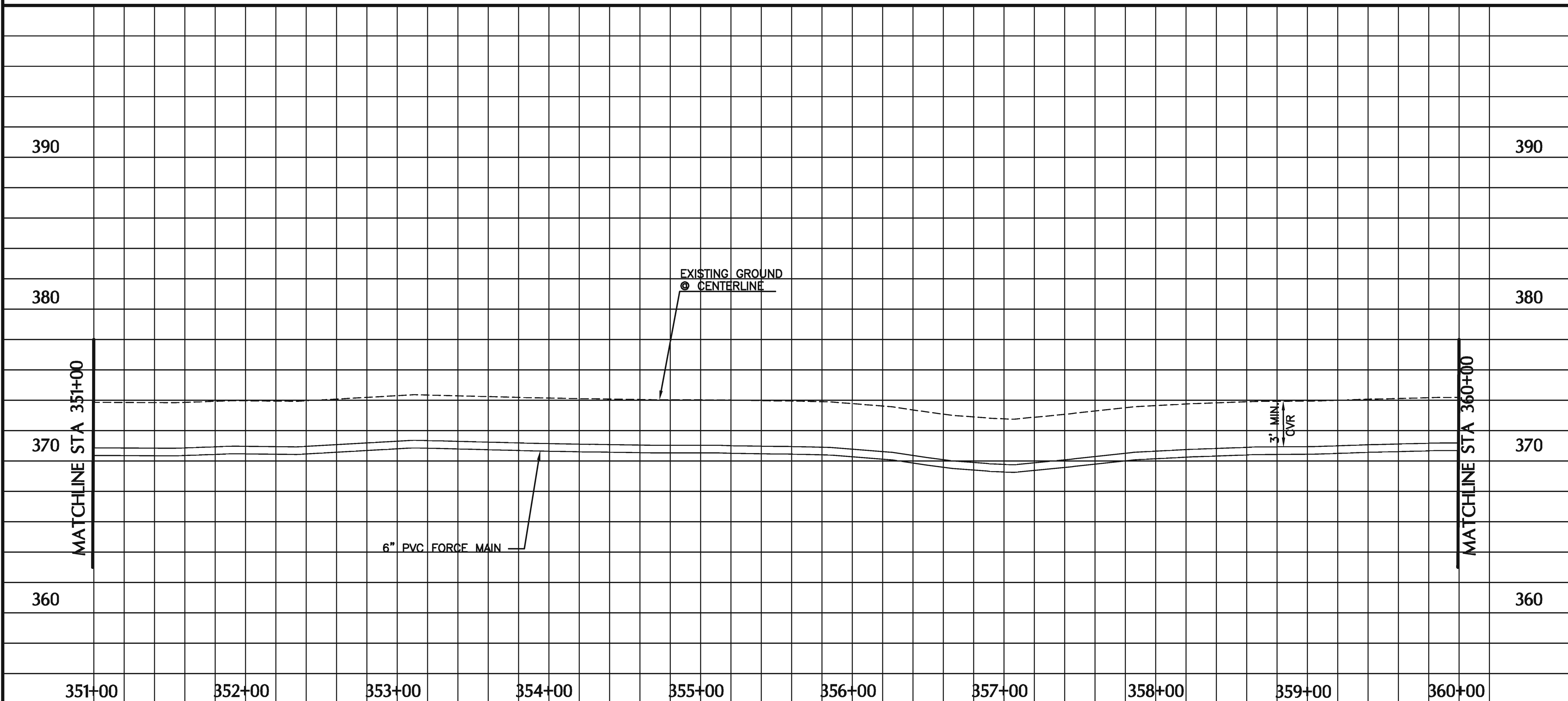
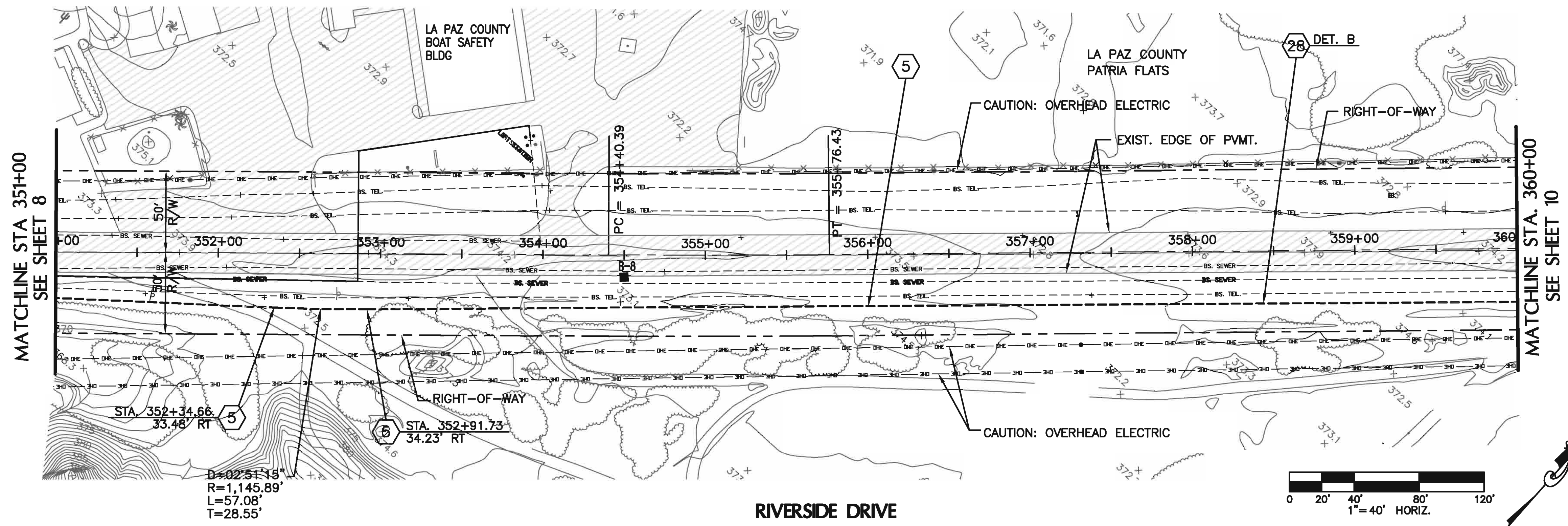
NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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**SEWER CONSTRUCTION NOTES**

- 5 INSTALL 6" PVC FORCE MAIN
- 28 TRENCH PER DTL. ON SHEET 44



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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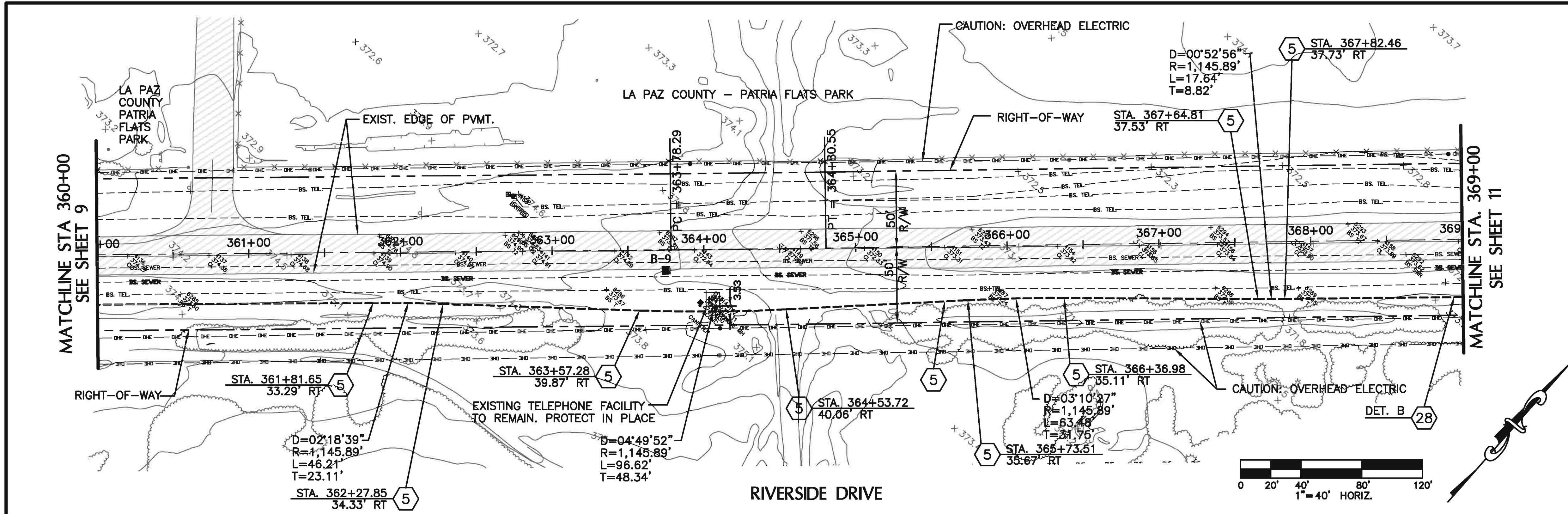
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
DATE: 10/31/13  
SCALE: 1"=40'

REVISIONS	BY	DATE

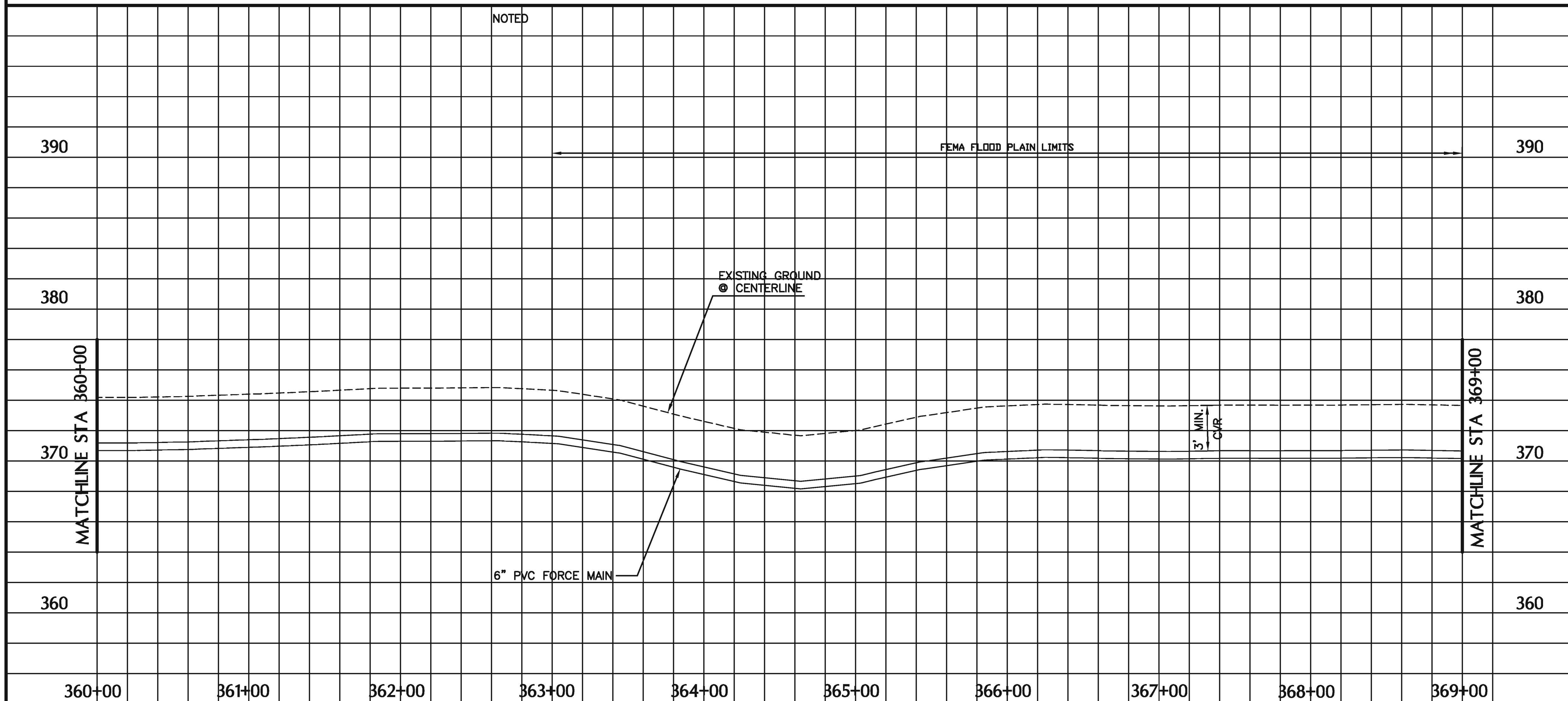
**BUCKSKIN SANITARY DISTRICT**  
PHASE 4 SEWER  
STA. 351+00 TO STA. 360+00

**SHEET 9**



**SEWER CONSTRUCTION NOTES**

- 5 INSTALL 6" PVC FORCE MAIN
- 28 TRENCH PER DTL. ON SHEET 44



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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JOB #:    REVISIONS    BY    DATE  
DATE: 10/31/13  
SCALE: 1"=40'

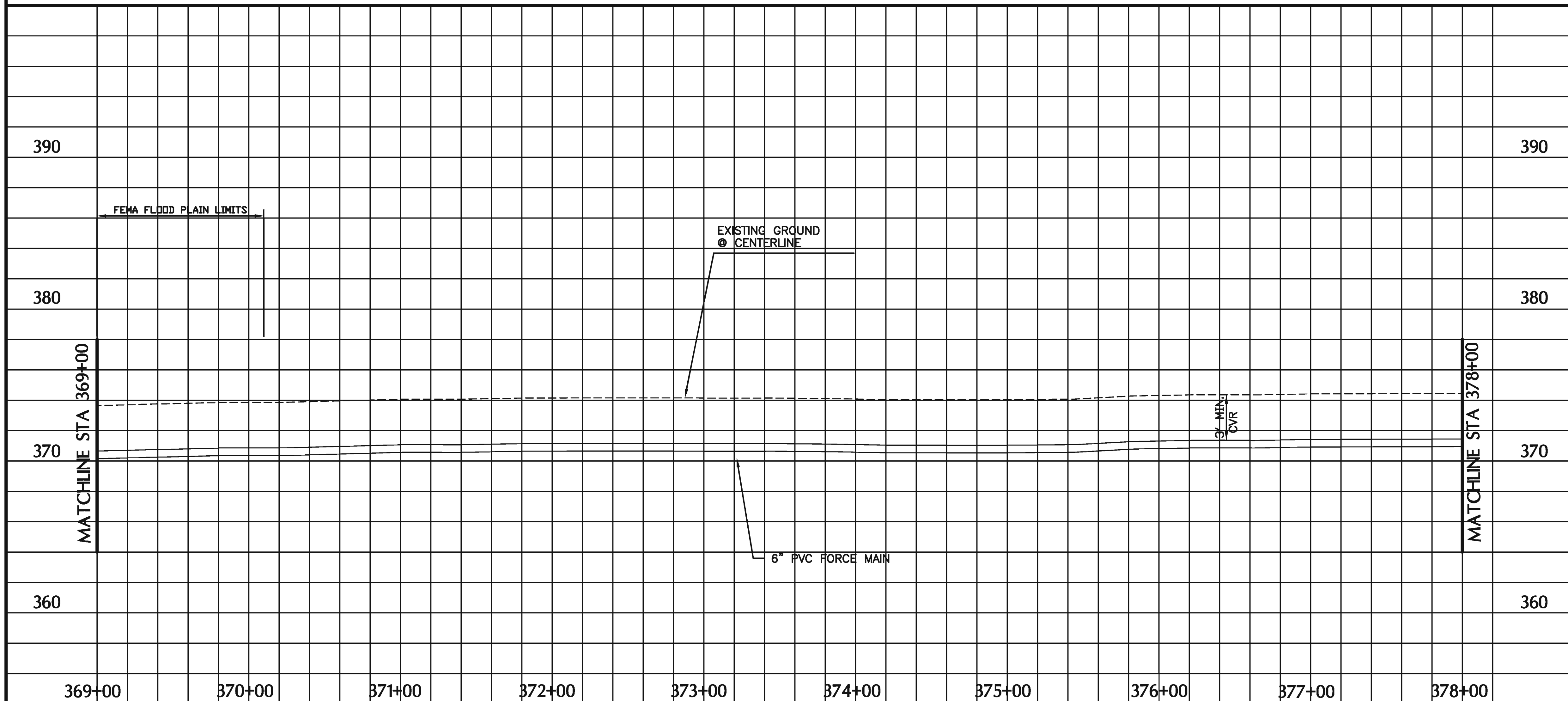
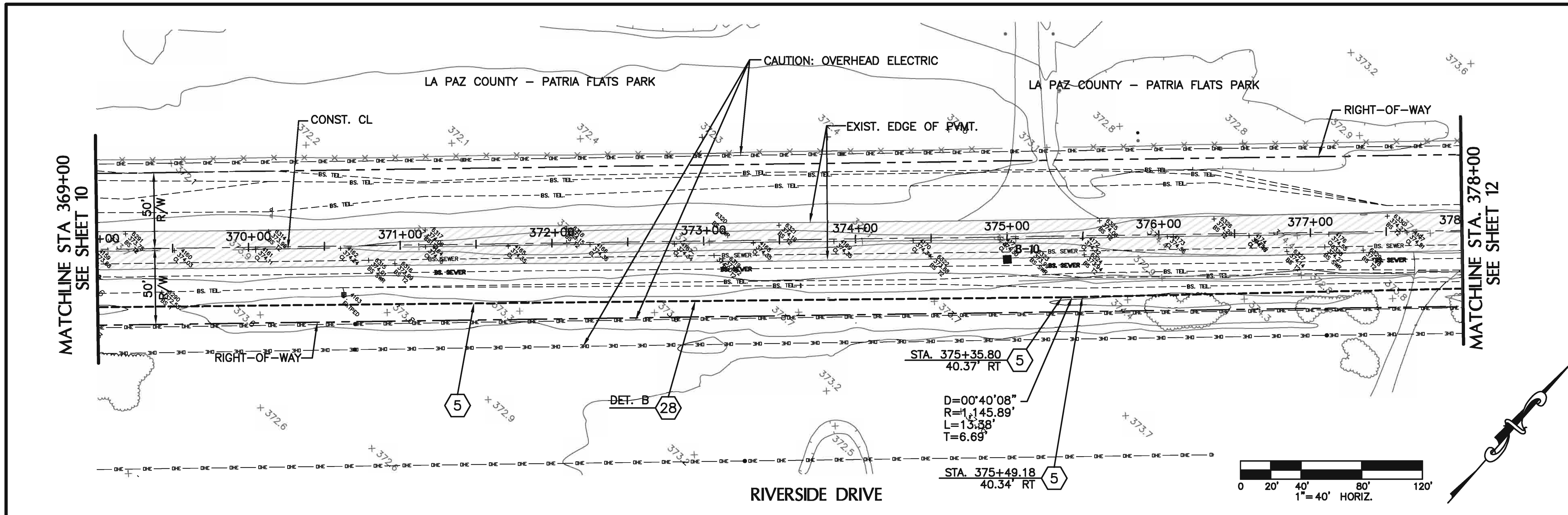
REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**STA. 360+00 TO STA. 369+00**

**SHEET 10**

**SEWER CONSTRUCTION NOTES**

- 5 INSTALL 6" PVC FORCE MAIN
- 28 TRENCH PER DTL. ON SHEET 44

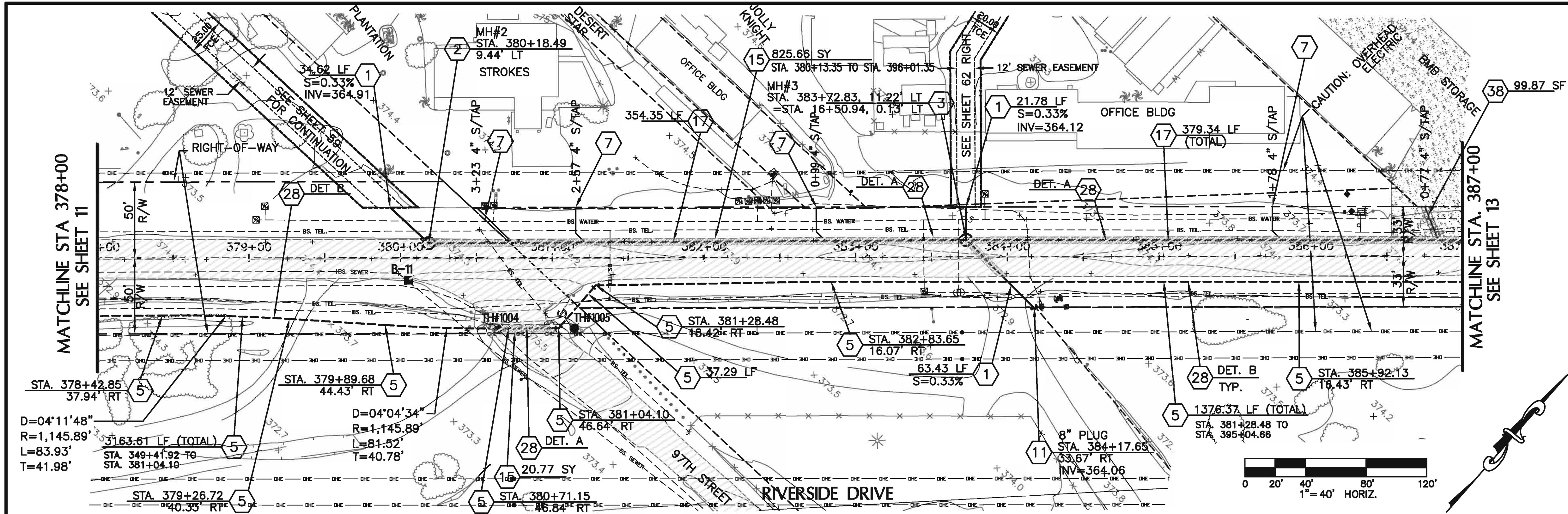


NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN  
IDENTIFYING, UNCOVERING AND HANDLING ALL  
UTILITIES.

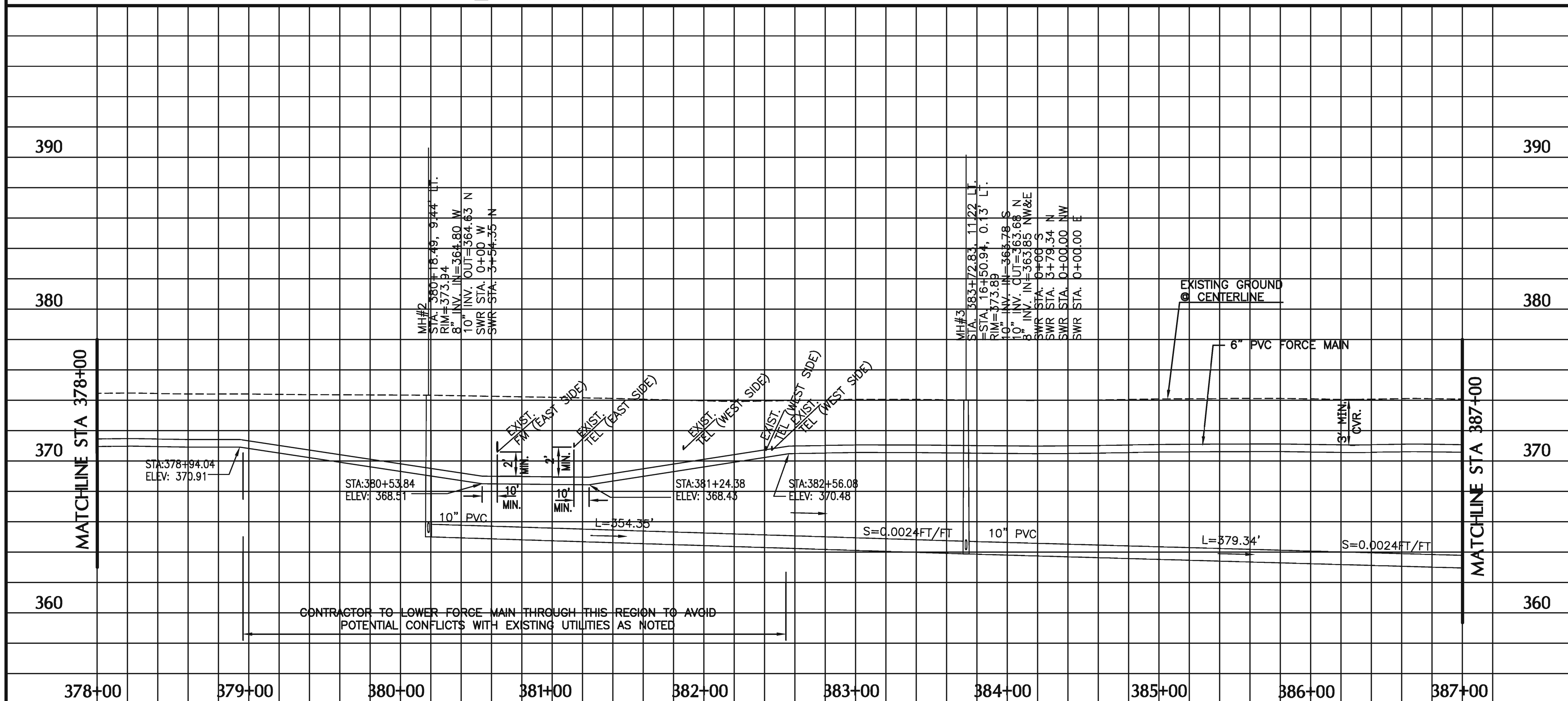
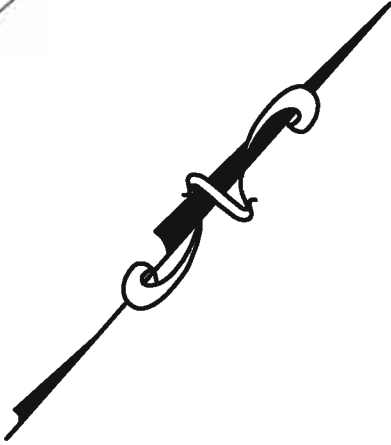
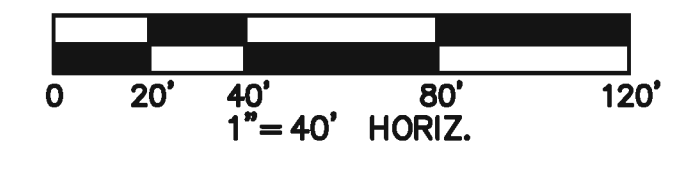


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(OUTSIDE MARICOPA COUNTY)

REVISIONS	BY	DATE



- ### SEWER CONSTRUCTION NOTES
- 1 INSTALL 8" PVC SEWER
  - 2 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. FRAME & COVER PER MAG STD. 423-1
  - 3 INSTALL 5' DIA. MH PER MAG STD. 420-1,2 W/ 30" DIA. FRAME & COVER PER MAG STD. 423-2
  - 5 INSTALL 6" PVC FORCE MAIN
  - 7 INSTALL 4" BLDG CONNECTION PER DTL. ON SHT 45.
  - 11 INSTALL PLUG PER MAG STD. 427, SEE PLAN FOR SIZE
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP.
  - 17 INSTALL 10" PVC SEWER
  - 28 TRENCH PER DTL. ON SHEET 44
  - 41 SAWCUT, REMOVE, REPLACE CONCRETE PER DET. D ON SHEET 44.



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

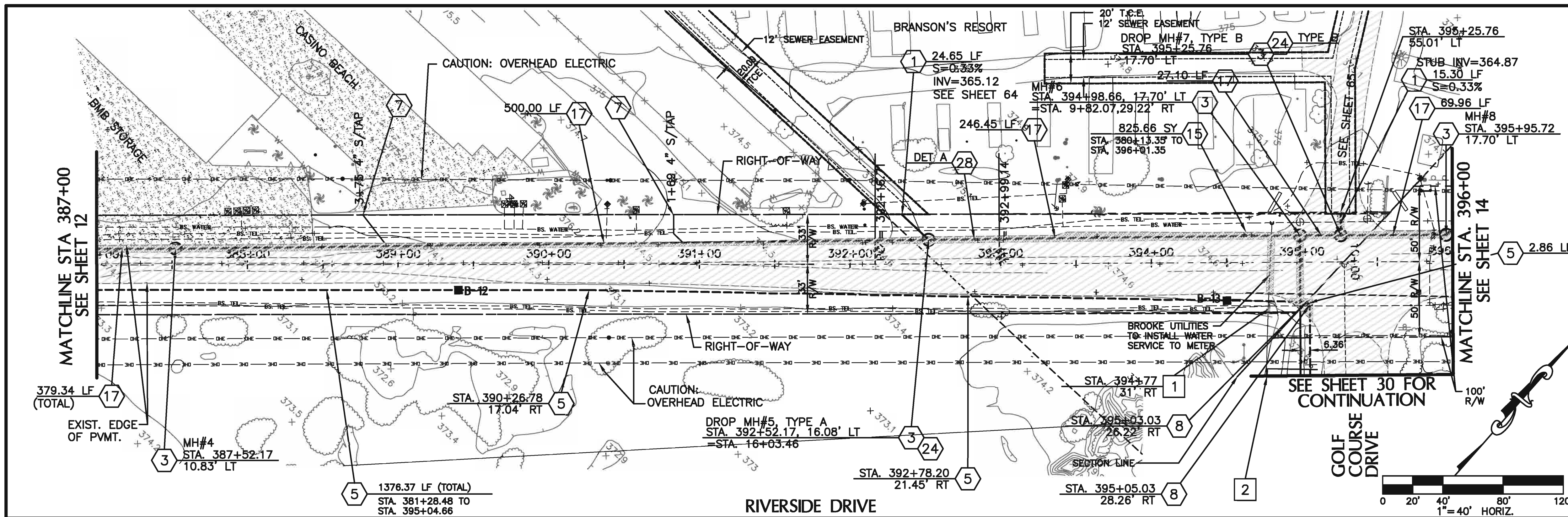
JOB #: \_\_\_\_\_  
DATE: 10/31/13  
SCALE: 1"=40'

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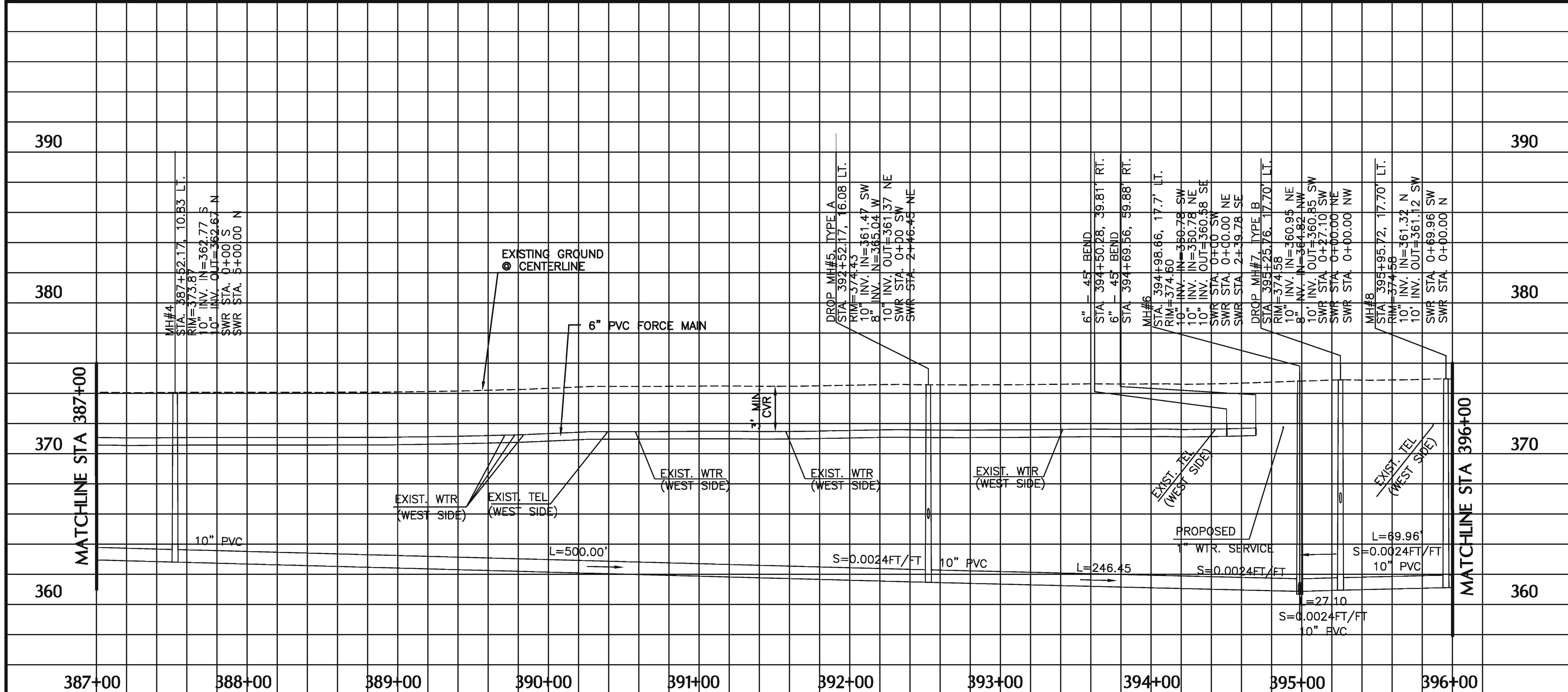
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**STA. 378+00 TO STA. 387+00**

**SHEET 12**





- ### SEWER CONSTRUCTION NOTES
- 1 INSTALL 8" PVC SEWER
  - 3 INSTALL 5' DIA. MH PER MAG STD. 420-1,2 W/ 30" DIA. FRAME & COVER PER MAG STD. 423-2
  - 5 INSTALL 6" PVC FORCE MAIN
  - 7 INSTALL 4" BLDG CONNECTION PER DTL ON SHT 45.
  - 8 INSTALL 45° BEND WITH JOINT RESTRAINT
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
  - 17 INSTALL 10" PVC SEWER
  - 24 CONSTRUCT A DROP SEWER CONNECTION PER MAG STD. DET 426, TYPE A OR B, SEE PLAN
  - 28 TRENCH PER DTL. ON SHEET 44



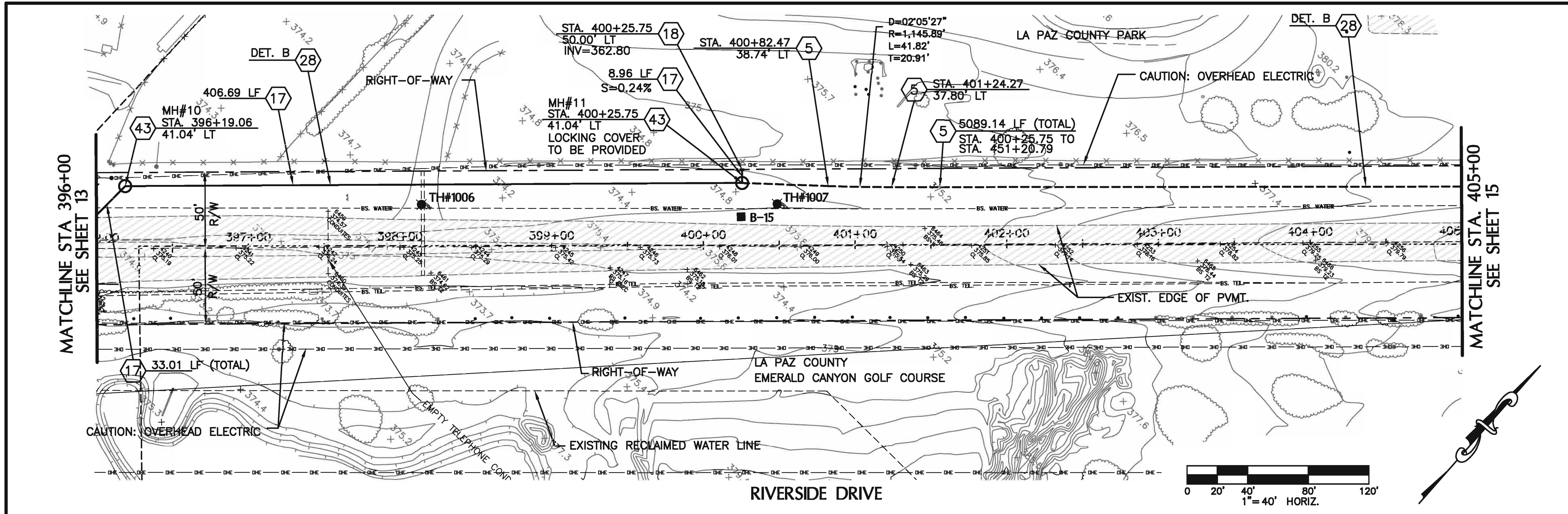
- ### WATER CONSTRUCTION NOTES
- (COSTS FOR THESE ITEMS ARE INCLUDED WITH LUMP SUM BID ITEM FOR LIFT STATION)
- 1 INSTALL 1" SINGLE WATER SERVICE AND BACKFLOW ASSEMBLY PER BROOKE UTILITIES STANDARDS.
  - 2 INSTALL 1" WATER LINE

NOTE: CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.

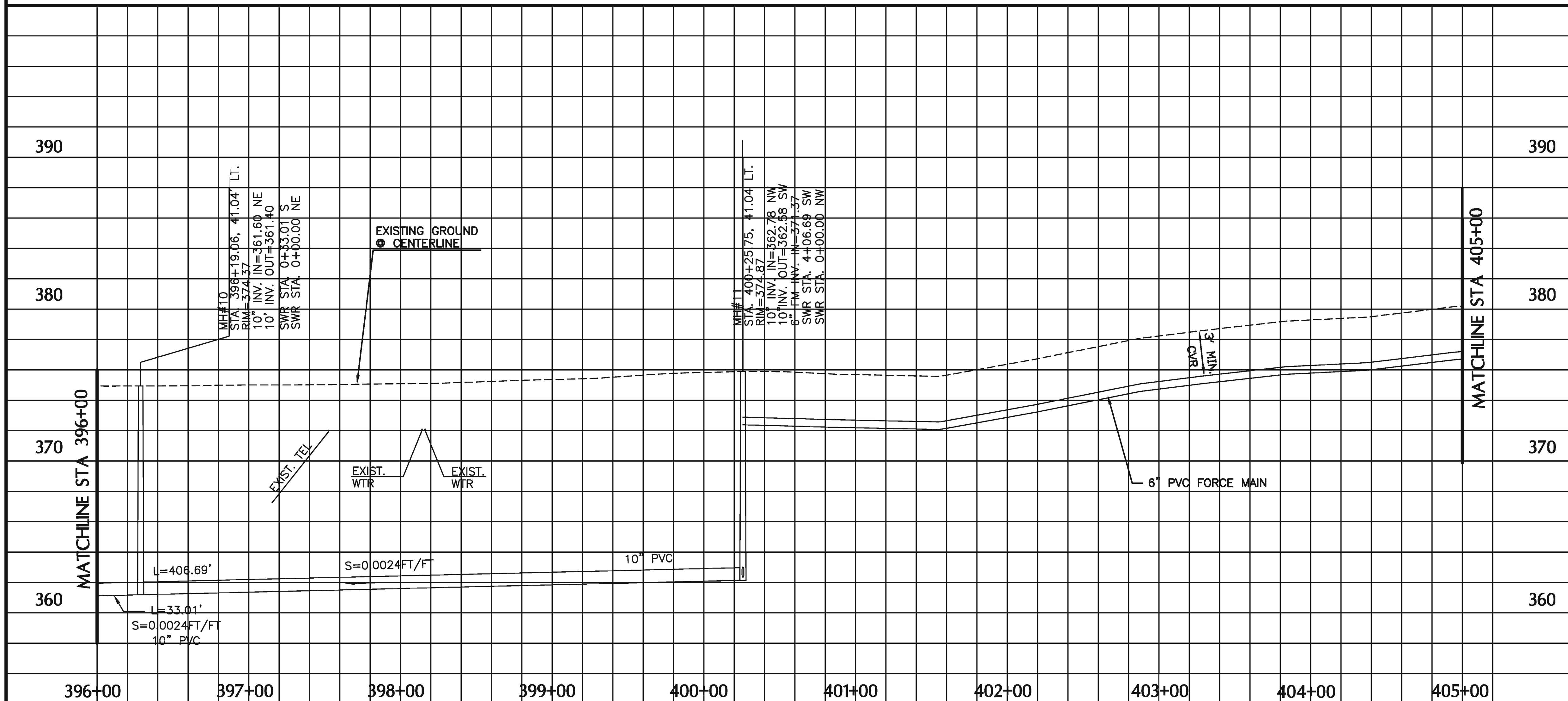


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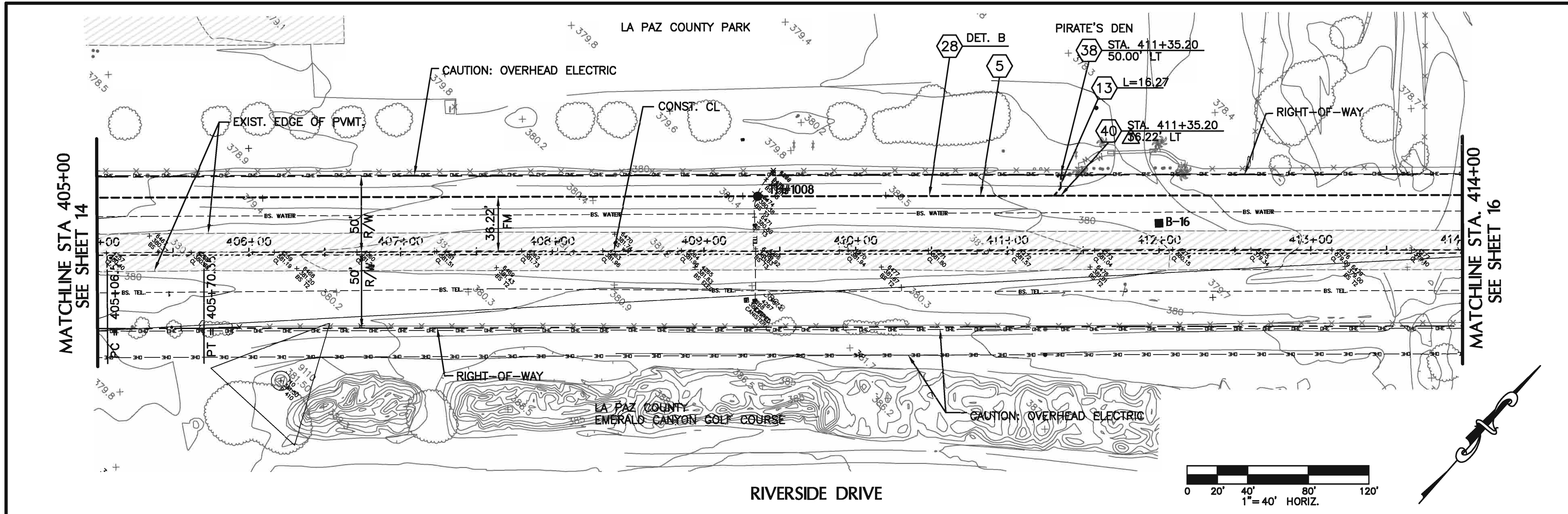
- SEWER CONSTRUCTION NOTES**
- 5 INSTALL 6" PVC FORCE MAIN
  - 17 INSTALL 10" PVC SEWER
  - 18 INSTALL 10" PLUG PER MAG STD. 427
  - 28 TRENCH PER DTL. ON SHEET 44
  - 43 INSTALL 5' DIA. POLYMER MH W/ 30" DIA. WATERTIGHT FRAME AND COVER PER SECTION 10020 OF SPECS.



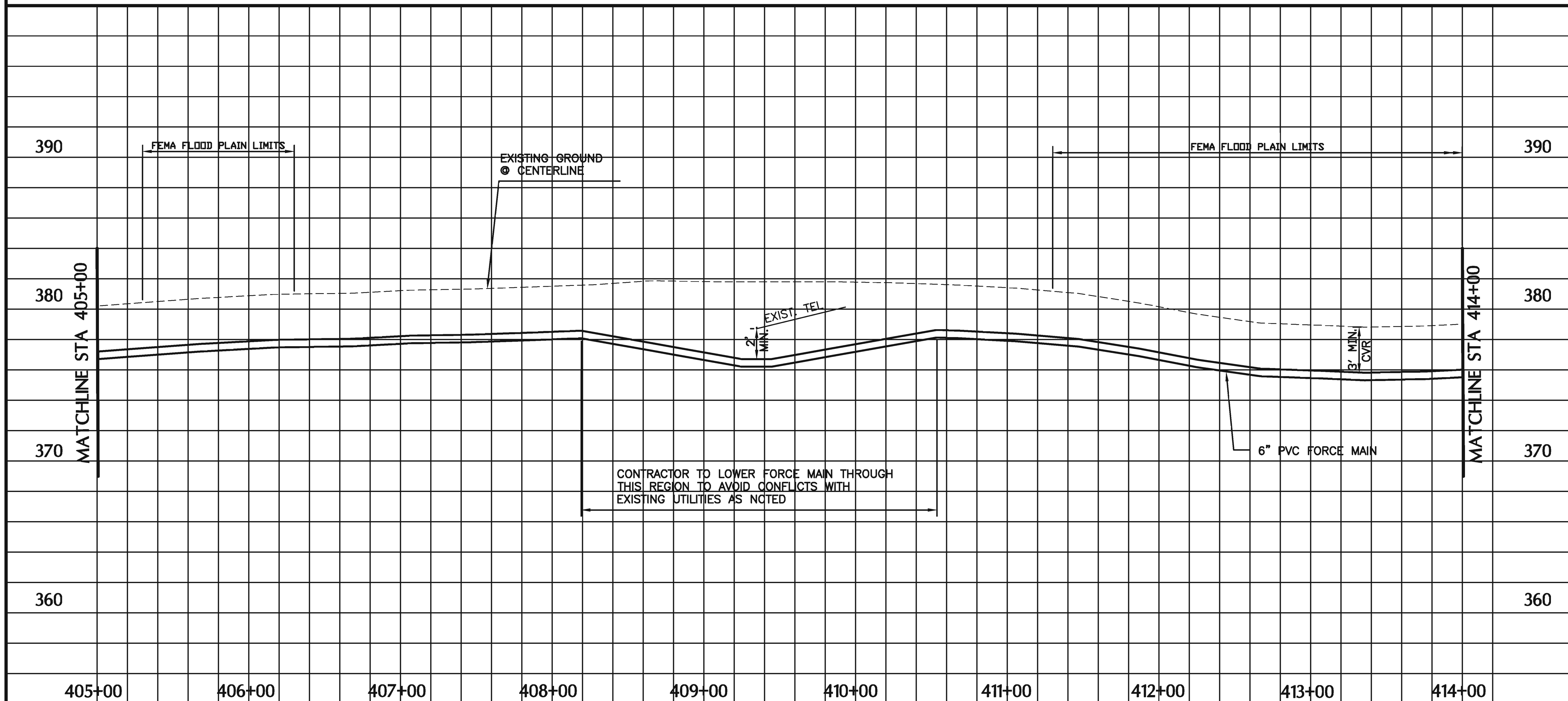
NOTE:  
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- SEWER CONSTRUCTION NOTES**
- 5 INSTALL 6" PVC FORCE MAIN
  - 13 INSTALL 2" PVC FORCE MAIN
  - 28 TRENCH PER DTL. ON SHEET 44
  - 38 CONTRACTOR SHALL INSTALL A CURB BOX CONTAINING A PVC BALL VALVE IN ACCORDANCE WITH SPECIFICATION SECTION 15100, PART 2.5.
  - 40 2-INCH CONNECTION TO FORCE MAIN SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 15200, PART 2.5



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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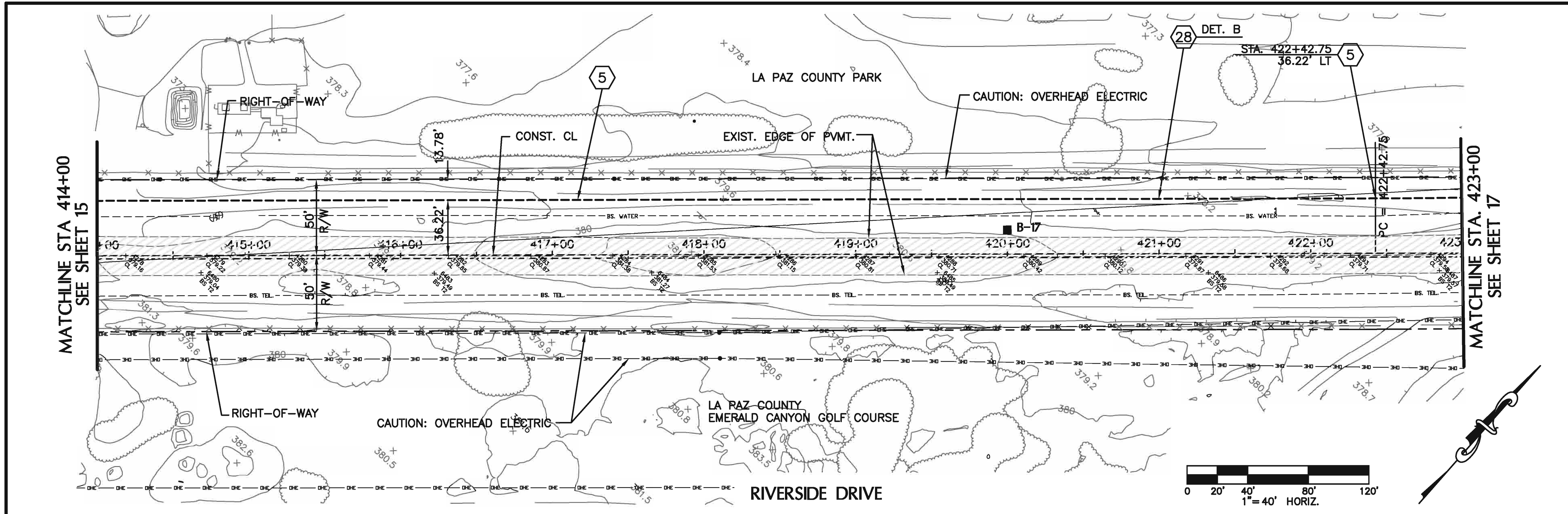
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #:  
DATE: 10/31/13  
SCALE: 1"=40'

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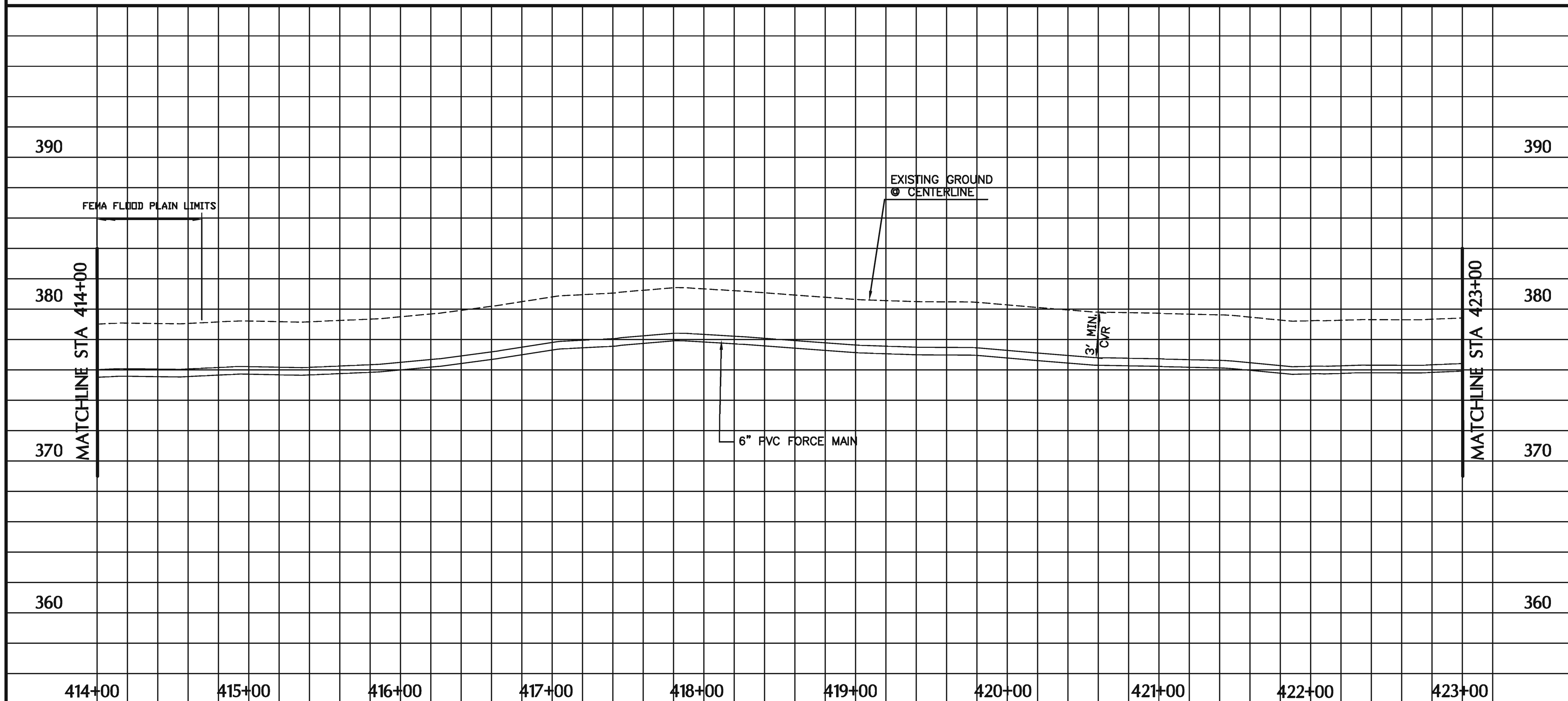
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**STA. 405+00 TO STA. 414+00**

**SHEET 15**

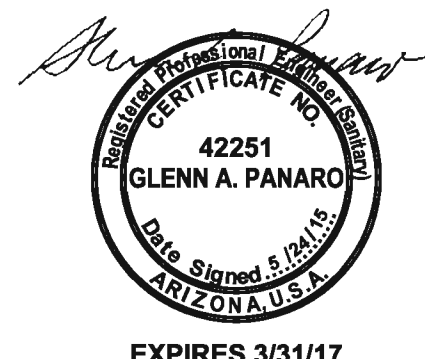


**SEWER CONSTRUCTION NOTES**

- 5 INSTALL 6" PVC FORCE MAIN
- 28 TRENCH PER DTL. ON SHEET 44



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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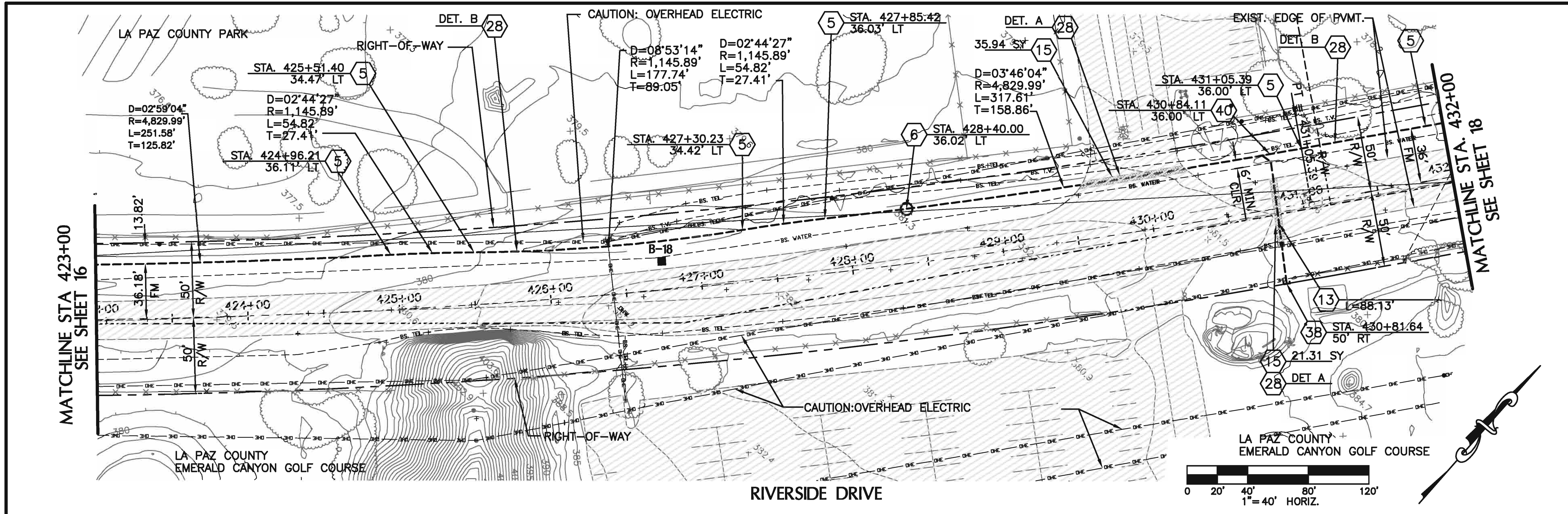
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JOB #: \_\_\_\_\_  
DATE: 10/31/13  
SCALE: 1"=40'

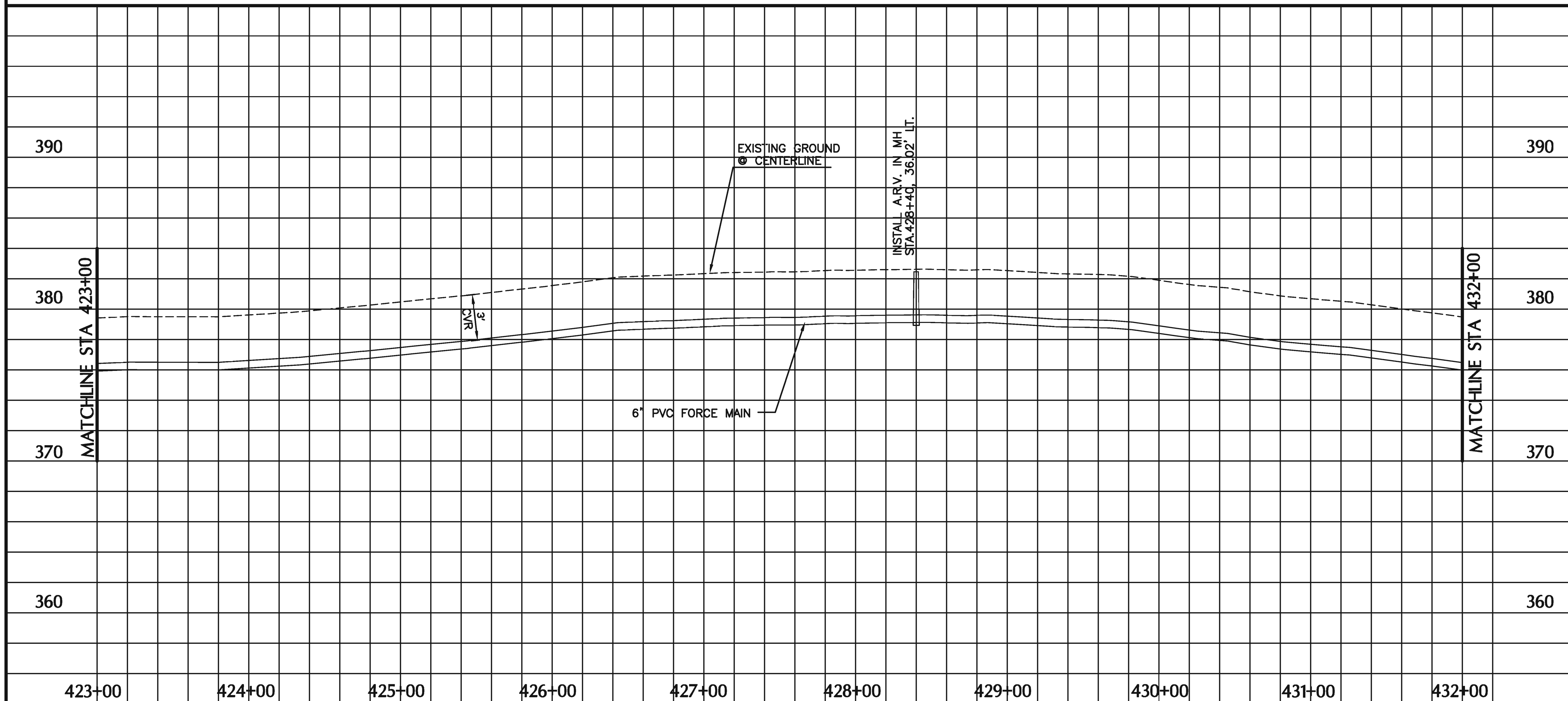
REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
PHASE 4 SEWER  
STA. 414+00 TO STA. 423+00

**SHEET 16**



- SEWER CONSTRUCTION NOTES**
- (5) INSTALL 6" PVC FORCE MAIN
  - (6) INSTALL A.R.V. AND MH PER DTL. ON SHEET 45
  - (13) 2-INCH PVC FORCE MAIN
  - (15) SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP.
  - (28) TRENCH PER DTL. ON SHEET 44
  - (38) CONTRACTOR SHALL INSTALL A CURB BOX CONTAINING A PVC BALL VALVE IN ACCORDANCE WITH SPECIFICATION SECTION 15100, PART 2.5.
  - (40) 2-INCH CONNECTION TO FORCE MAIN SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 15200, PART 2.5.



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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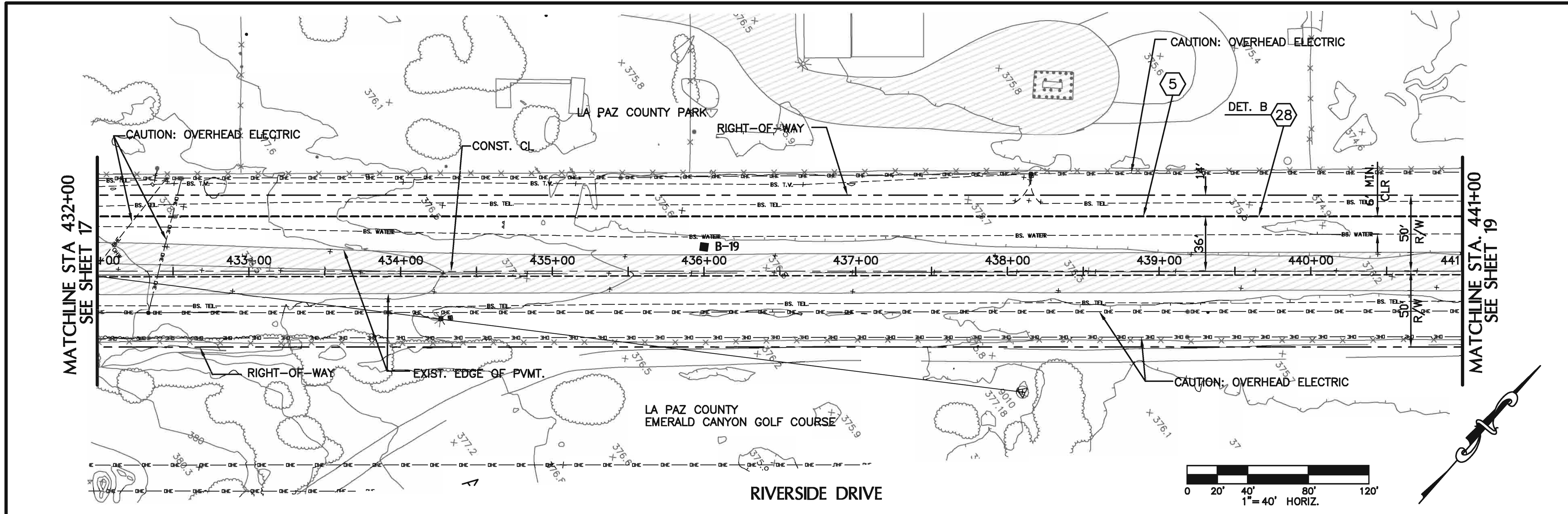
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DATE: 10/31/13  
SCALE: 1"=40'

REVISIONS	BY	DATE

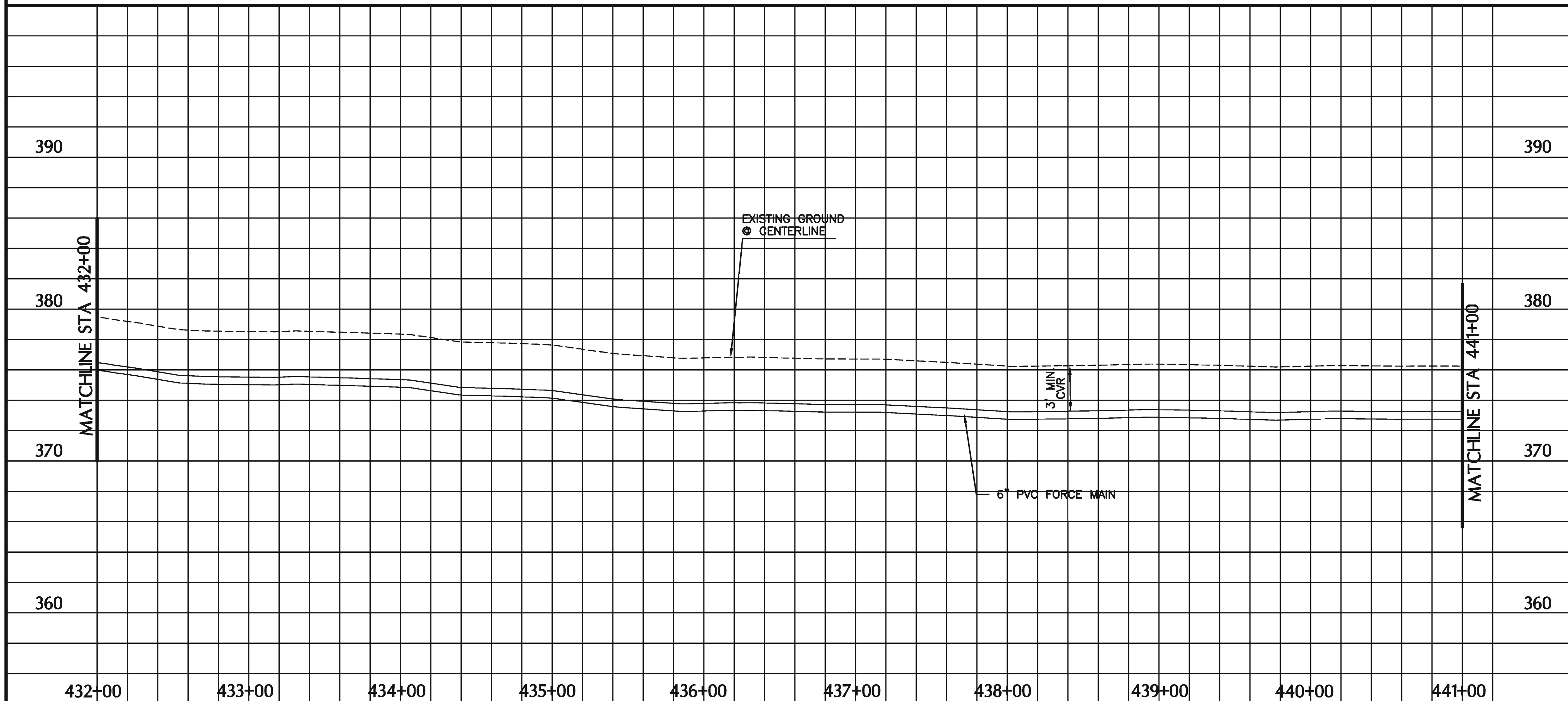
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**STA. 423+00 TO STA. 432+00**

**SHEETS 17**



**SEWER CONSTRUCTION NOTES**

- ⑤ INSTALL 6" PVC FORCE MAIN
- ②⑧ TRENCH PER DTL. ON SHEET 44



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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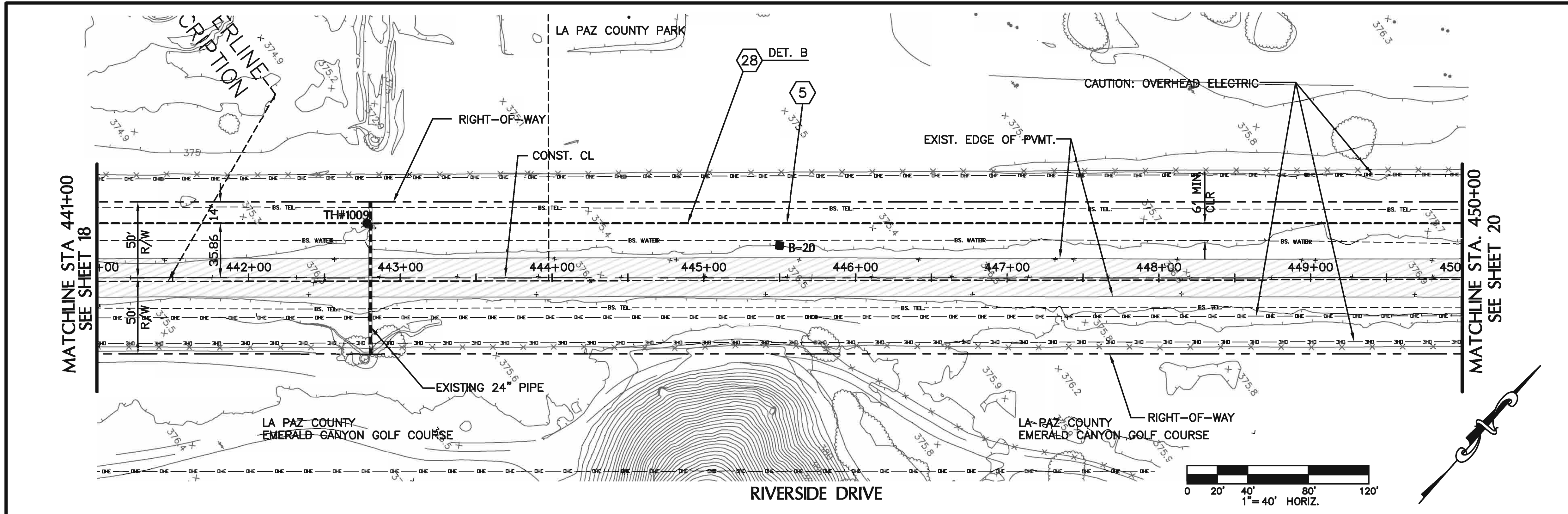
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PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #:  
DATE: 10/31/13  
SCALE: 1"=40'

REVISIONS	BY	DATE

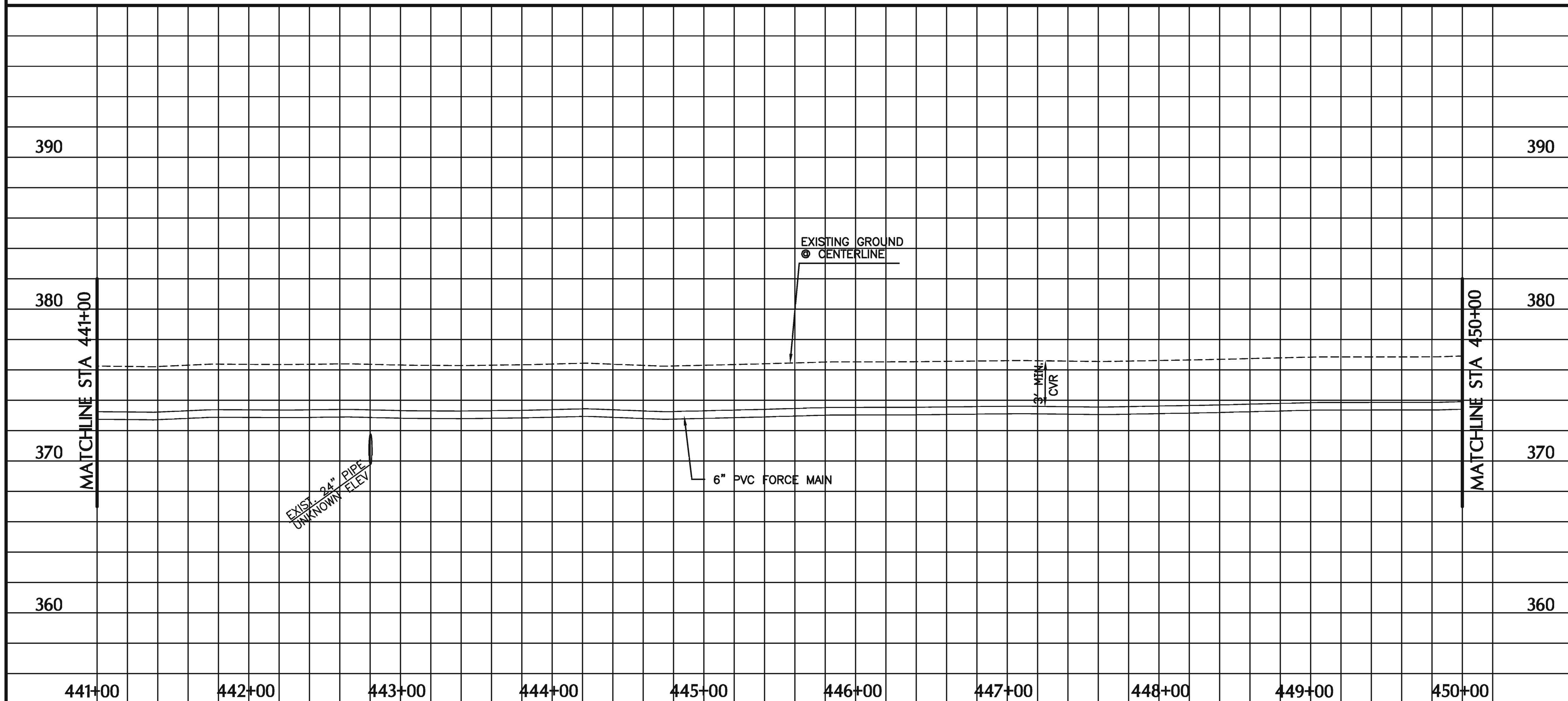
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**STA. 432+00 TO STA. 441+00**

**SHEET 18**



**SEWER CONSTRUCTION NOTES**

- 5 INSTALL 6" PVC FORCE MAIN
- 28 TRENCH PER DTL. ON SHEET 44



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN  
IDENTIFYING, UNCOVERING AND HANDLING ALL  
UTILITIES.



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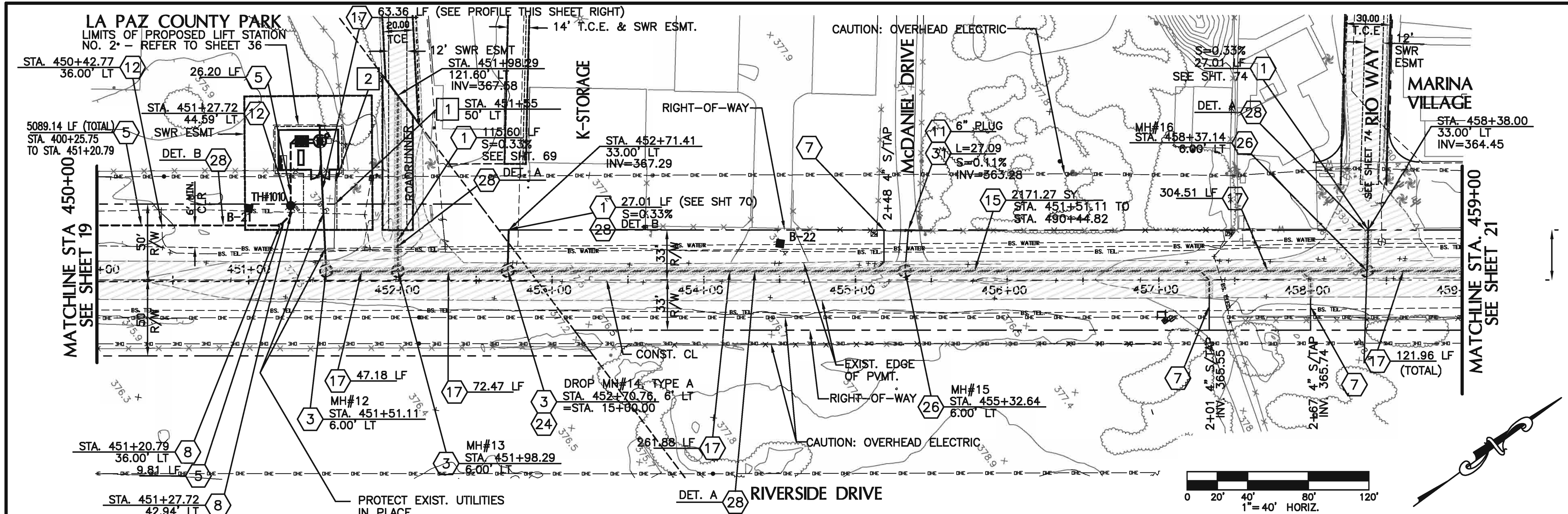
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JOB #: \_\_\_\_\_  
DATE: 10/31/13  
SCALE: 1"=40'

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**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**STA. 441+00 TO STA. 450+00**

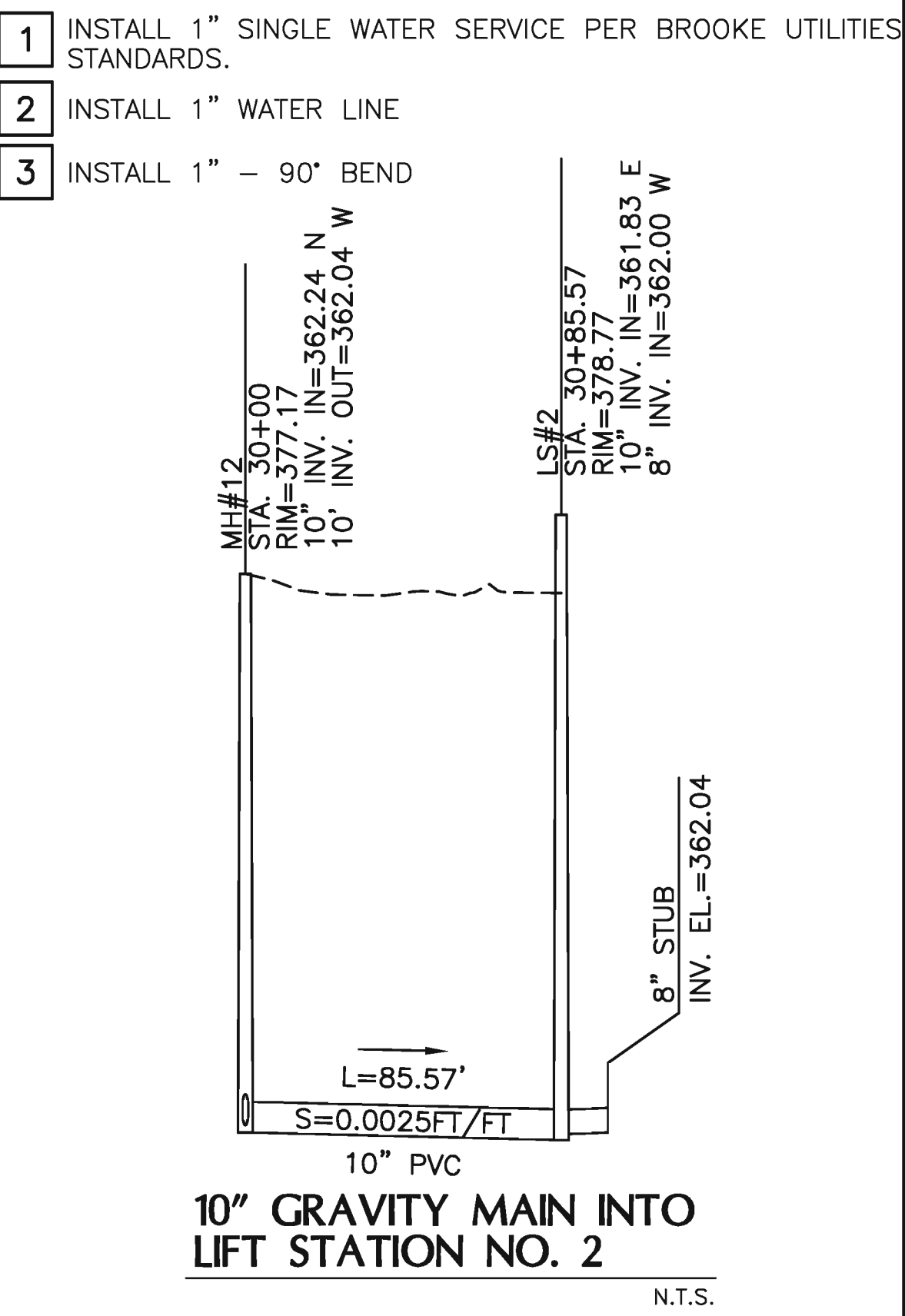
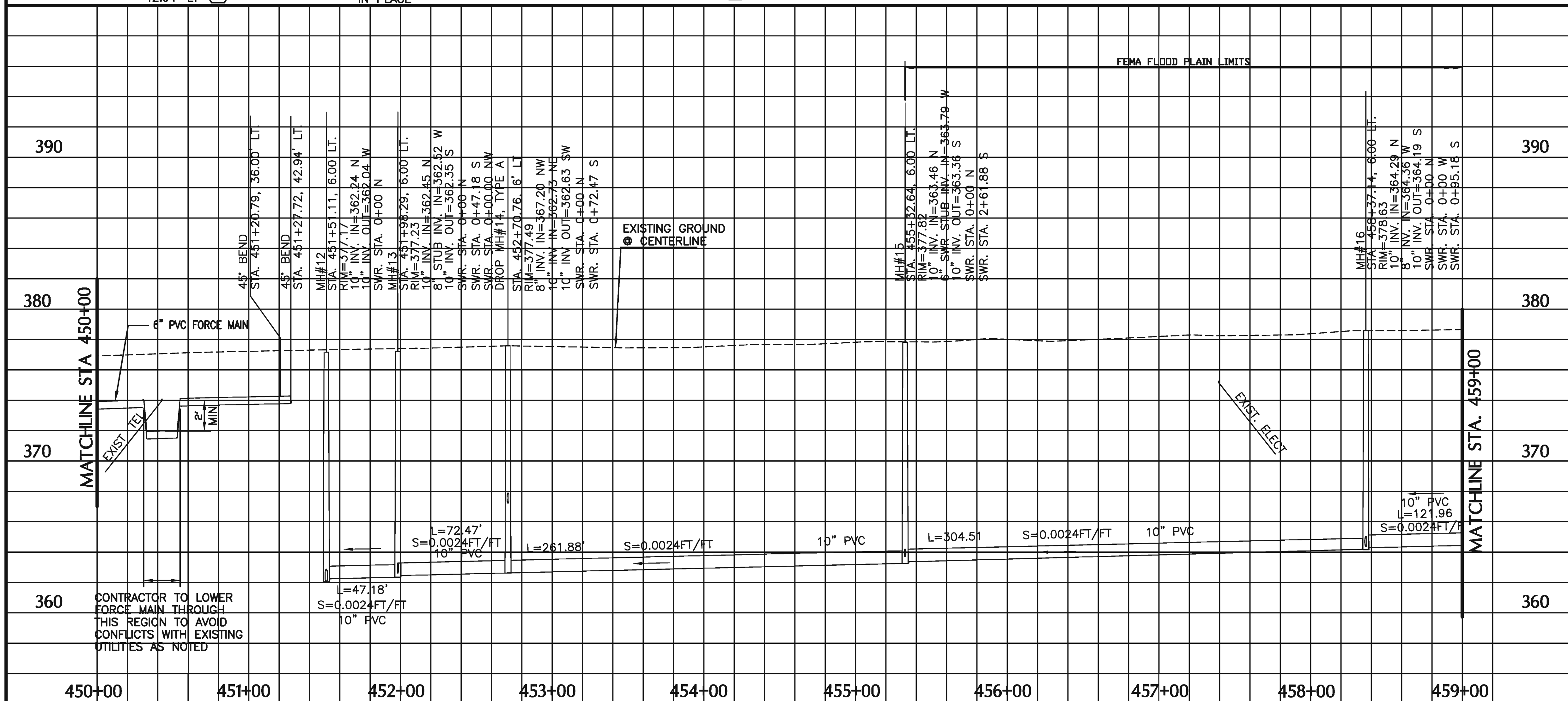
**SHEET 19**



- ### SEWER CONSTRUCTION NOTES
- 1 INSTALL 8" PVC SEWER
  - 3 INSTALL 5' DIA. MH PER MAG STD. 420-1.2 W/ 30" DIA. FRAME & COVER PER MAG STD. 423-2
  - 5 INSTALL 6" PVC FORCE MAIN
  - 7 INSTALL 4" BLDG CONNECTION PER DTL. ON SHEET 45
  - 8 INSTALL 45° BEND W/ RESTRAINED JOINT
  - 11 INSTALL PLUG PER MAG STD. 427. SEE PLAN FOR SIZE
  - 12 VERT. RE-ALIGNMENT PER DET. ON SHT. 45 AS REQ'D. CONTRACTOR TO FIELD VERIFY HORIZ. AND VERT. LOCATION PRIOR TO CONST. RESTRAINED JOINTS REQ'D. LENGTHS PER SHEET 4.2.
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
  - 17 INSTALL 10" PVC SEWER
  - 24 CONSTRUCT A DROP SEWER CONNECTION PER MAG STD. DET. 426, TYPE A OR B, SEE PLAN
  - 26 INSTALL 5' DIA. MH PER MAG STD. 420-1.2 W/ 30" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-2
  - 28 TRENCH PER DTL. ON SHEET 44
  - 31 INSTALL 6" PVC SEWER

NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.

- ### WATER CONSTRUCTION NOTES
- (COSTS FOR THESE ITEMS ARE INCLUDED WITH LUMP SUM BID ITEM FOR LIFT STATION NO. 2)
- 1 INSTALL 1" SINGLE WATER SERVICE PER BROOKE UTILITIES STANDARDS.
  - 2 INSTALL 1" WATER LINE
  - 3 INSTALL 1" - 90° BEND

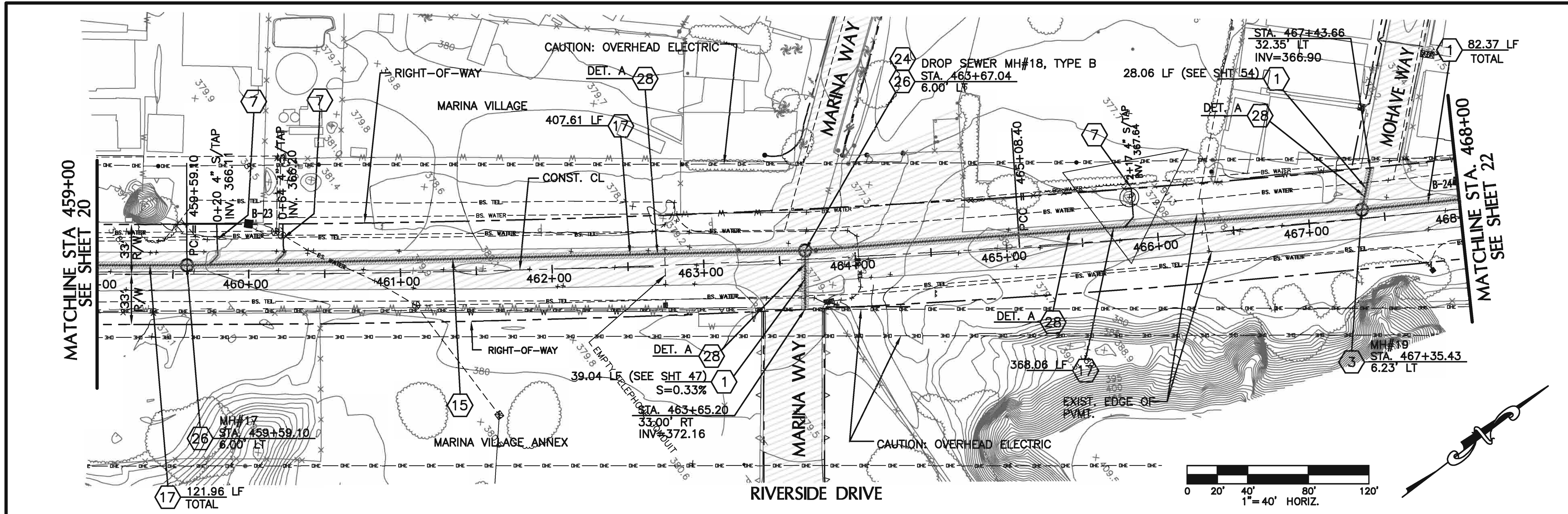


10" GRAVITY MAIN INTO LIFT STATION NO. 2  
N.T.S.

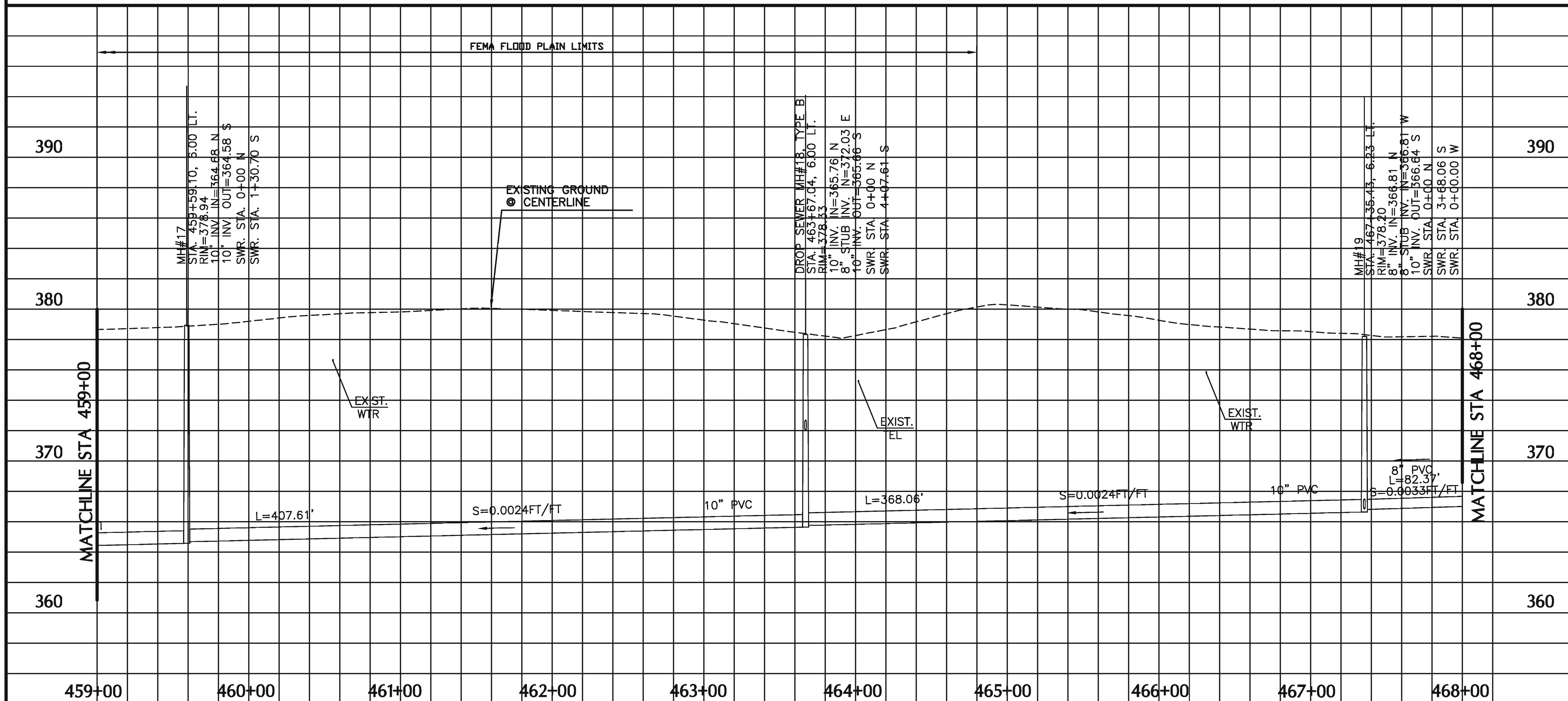
*Glenn A. Panaro*  
Professional Engineer  
No. 42251  
Glenn A. Panaro  
Date Signed: 10/31/13  
Arizona, U.S.A.  
EXPIRES 3/31/17

CALL TWO WORKING DAYS BEFORE YOU DIG  
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1-800-STAKE-IT  
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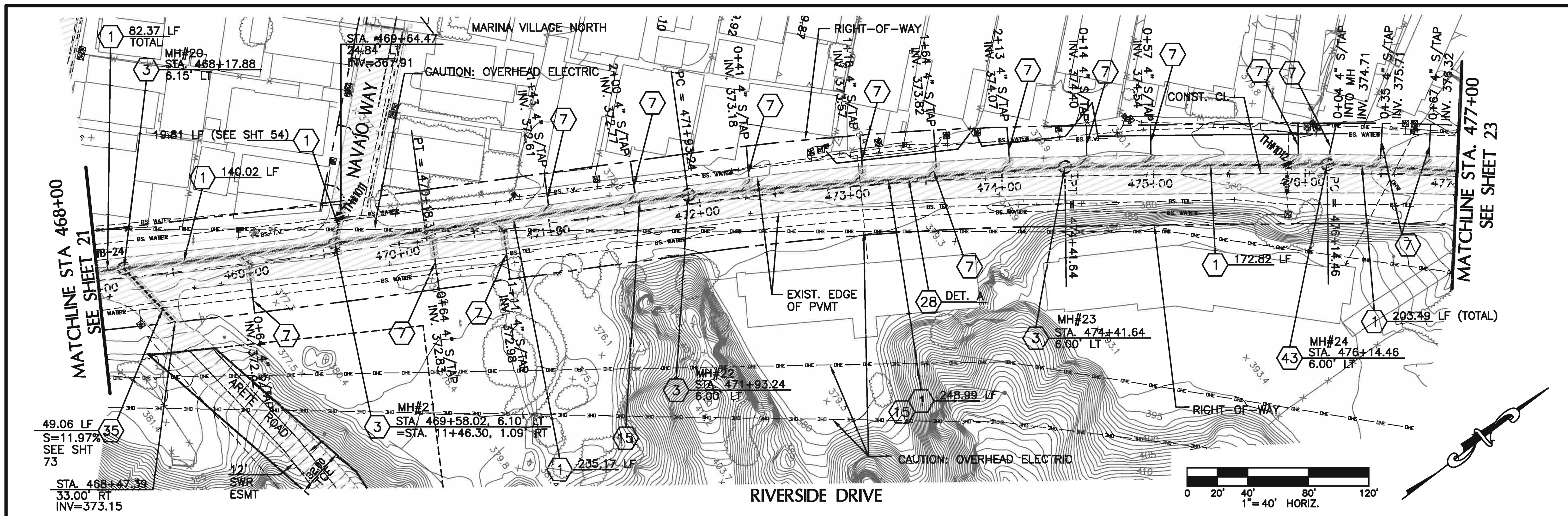
- ### SEWER CONSTRUCTION NOTES
- 1 INSTALL 8" PVC SEWER
  - 3 INSTALL 5' DIA. MH PER MAG STD. 420-1,2 W/ 30" DIA. FRAME & COVER PER MAG STD. 423-2
  - 7 INSTALL 4" BLDG CONNECTION PER DTL ON SHEET 45
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
  - 17 INSTALL 10" PVC SEWER
  - 24 CONSTRUCT DROP SEWER CONNECTION PER M.A.G. STD. DTL. 426, TYPE A OR B, SEE PLAN
  - 26 INSTALL 5' DIA. MH PER MAG STD. 420-1,2 W/ 30" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-2
  - 28 TRENCH PER DTL. ON SHEET 44.



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.

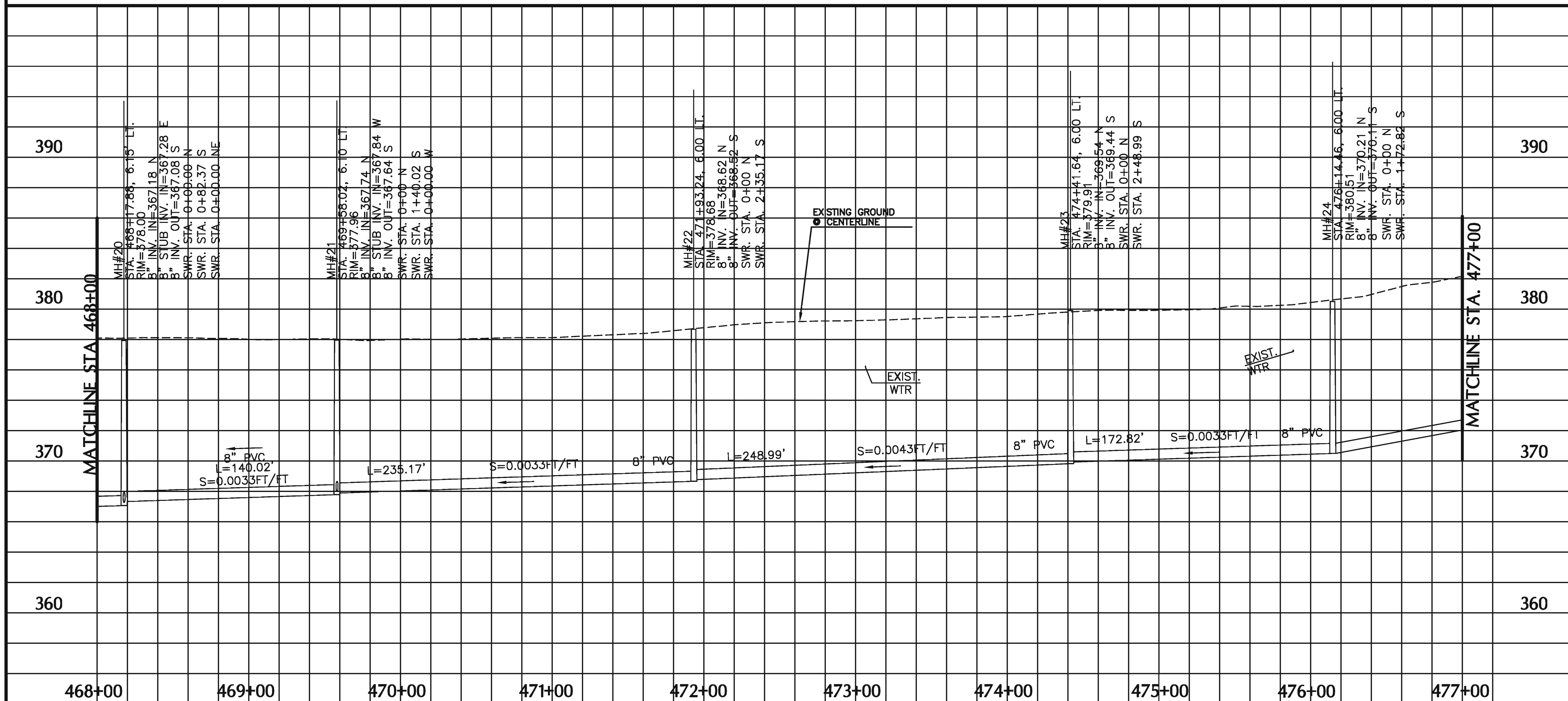


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**SEWER CONSTRUCTION NOTES**

- 1 INSTALL 8" PVC SEWER
- 3 INSTALL 5' DIA. MH PER MAG STD. 420-1,2 W/ 30" DIA. FRAME & COVER PER MAG STD. 423-2
- 7 INSTALL 4" BLDG CONNECTION PER DTL ON SHT 45
- 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
- 28 TRENCH PER DTL. ON SHEET 44
- 35 INSTALL 8" EPOXY LINED DUCTILE IRON PIPE
- 43 INSTALL 5' DIA POLYMER MH W/ 30" DIA. WATERTIGHT FRAME AND COVER PER SECTION 10020 OF SPECS

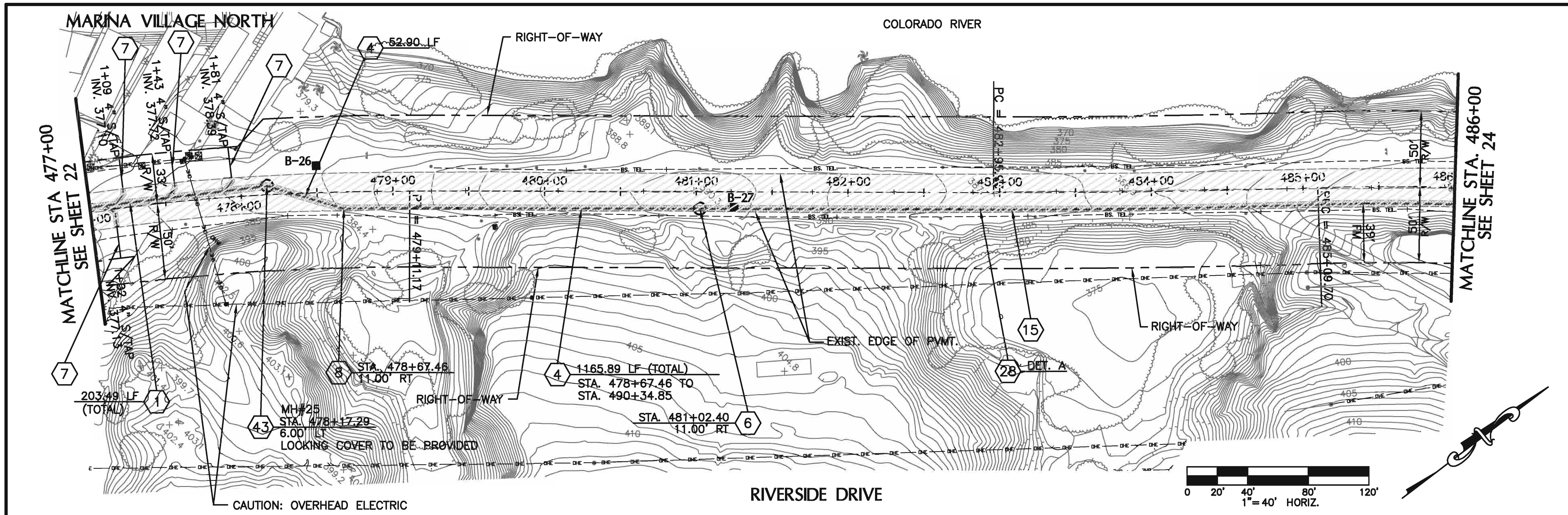


NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



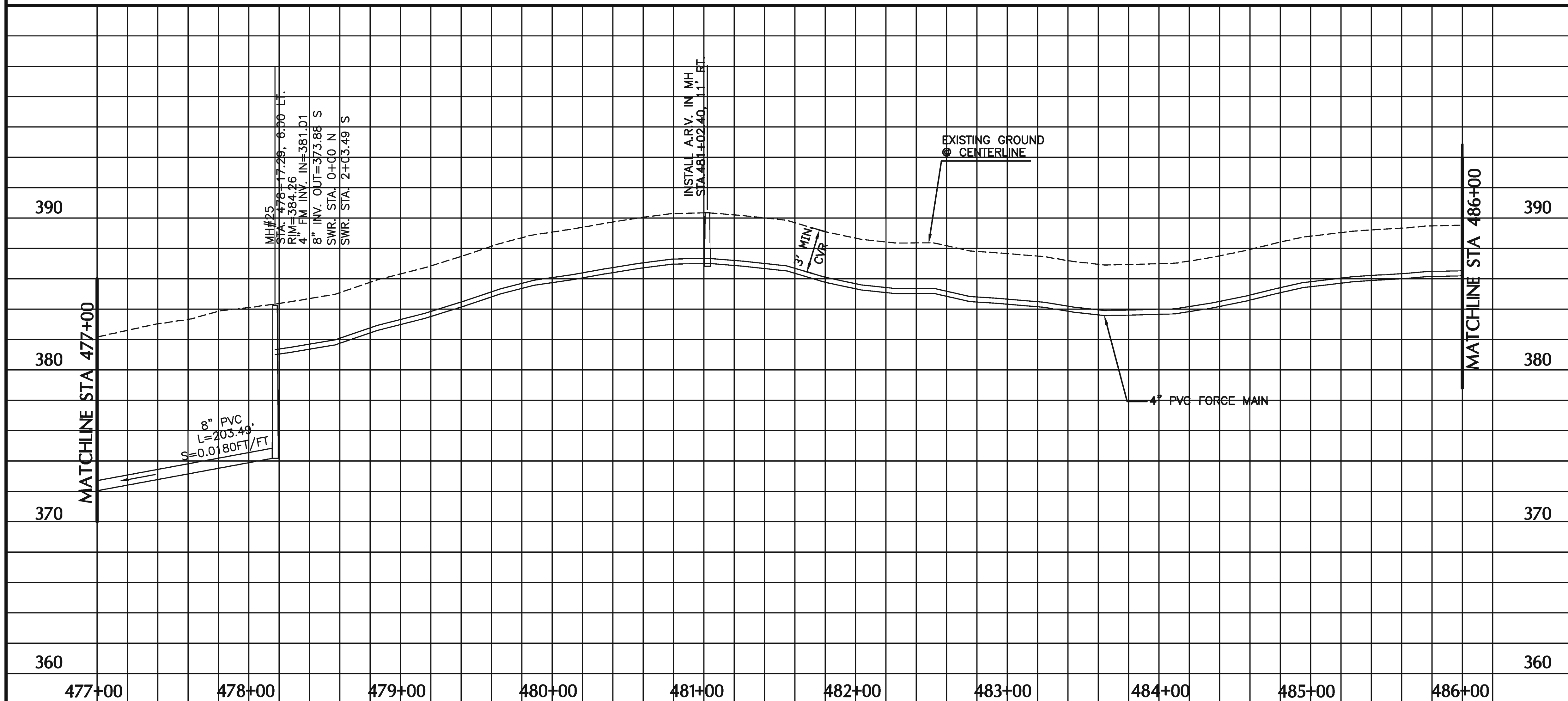
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(OUTSIDE MARICOPA COUNTY)

REVISIONS	BY	DATE



**SEWER CONSTRUCTION NOTES**

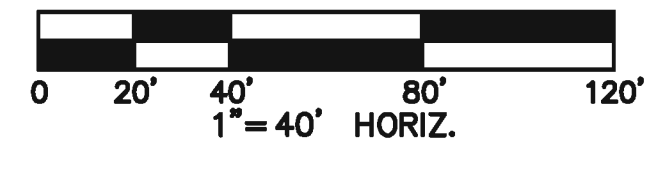
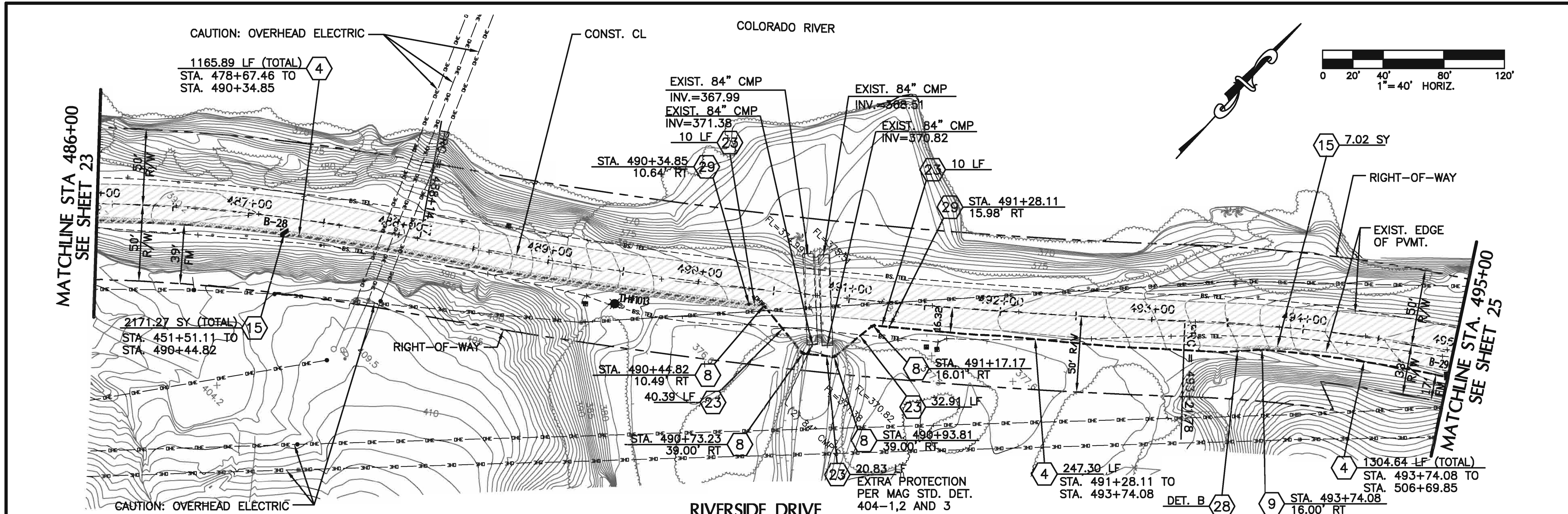
- 1 INSTALL 8" PVC SEWER
- 4 INSTALL 4" PVC FORCE MAIN
- 6 INSTALL A.R.V AND MH PER DTL. ON SHEET 45
- 7 INSTALL 4" BLDG CONNECTION PER DTL. ON SHT. 45
- 8 INSTALL 45' BEND W/ RESTRAINED JOINT
- 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, "T" TOP.
- 28 TRENCH PER DTL. ON SHEET 44
- 43 INSTALL 5' DIA. POLYMER MH W/ 30' DIA. WATERTIGHT FRAME AND COVER PER SECTION 10020 OF SPECS.



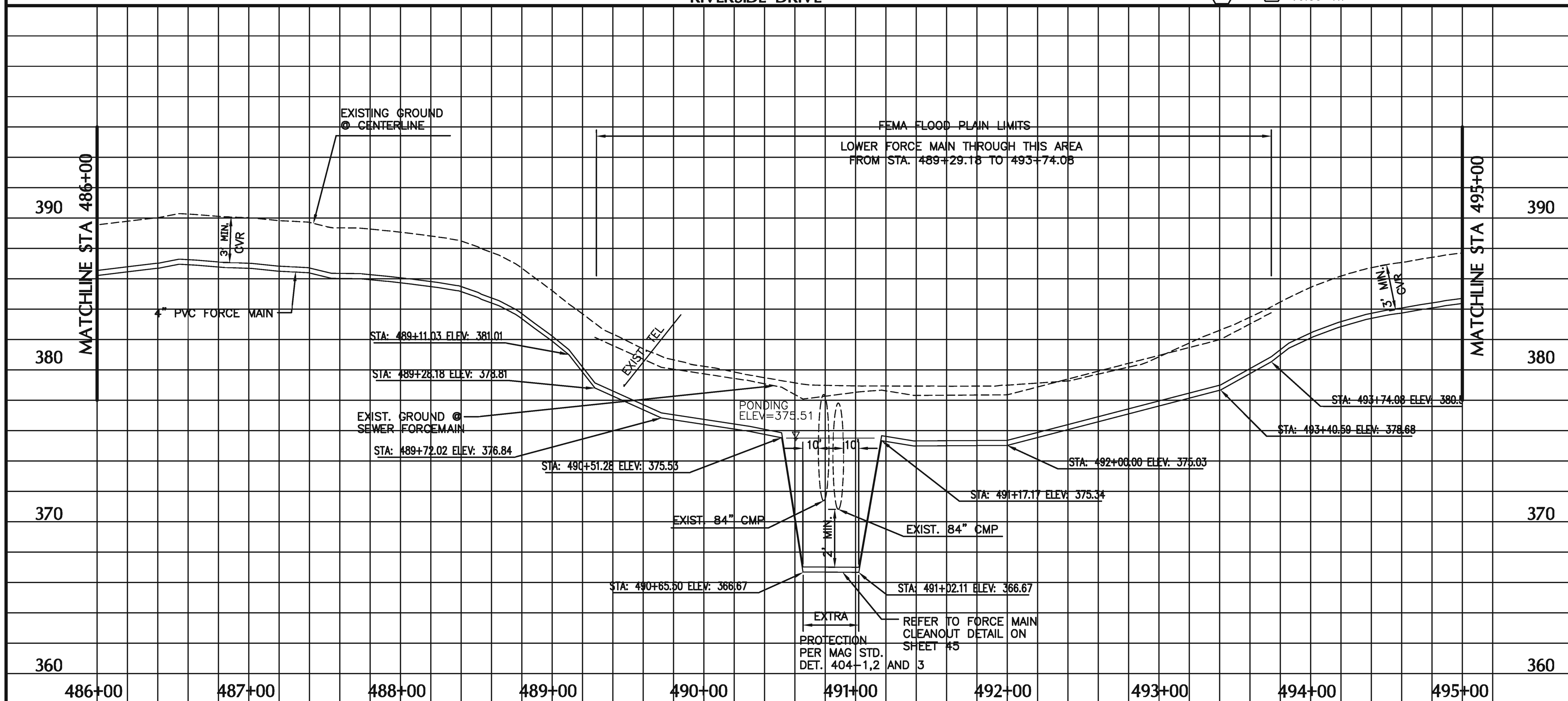
NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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- SEWER CONSTRUCTION NOTES**
- 4 INSTALL 4" PVC FORCE MAIN
  - 8 INSTALL 45' BEND W/ RESTRAINED JOINT
  - 9 INSTALL 11.25' BEND W/ RESTRAINED JOINT
  - 10 INSTALL 22.50' BEND W/ RESTRAINED JOINT
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
  - 23 INSTALL 4" EPOXY LINED DUCTILE IRON PIPE
  - 28 TRENCH PER DTL. ON SHEET 44
  - 29 MEGA-COUPLING SERIES 3800 BY EBAA IRON, INC. OR APPROVED EQUAL



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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**ENERGY AND WATER SOLUTIONS, LLC**  
CIVIL ENGINEERING LAND DEVELOPMENT WATER RESOURCES

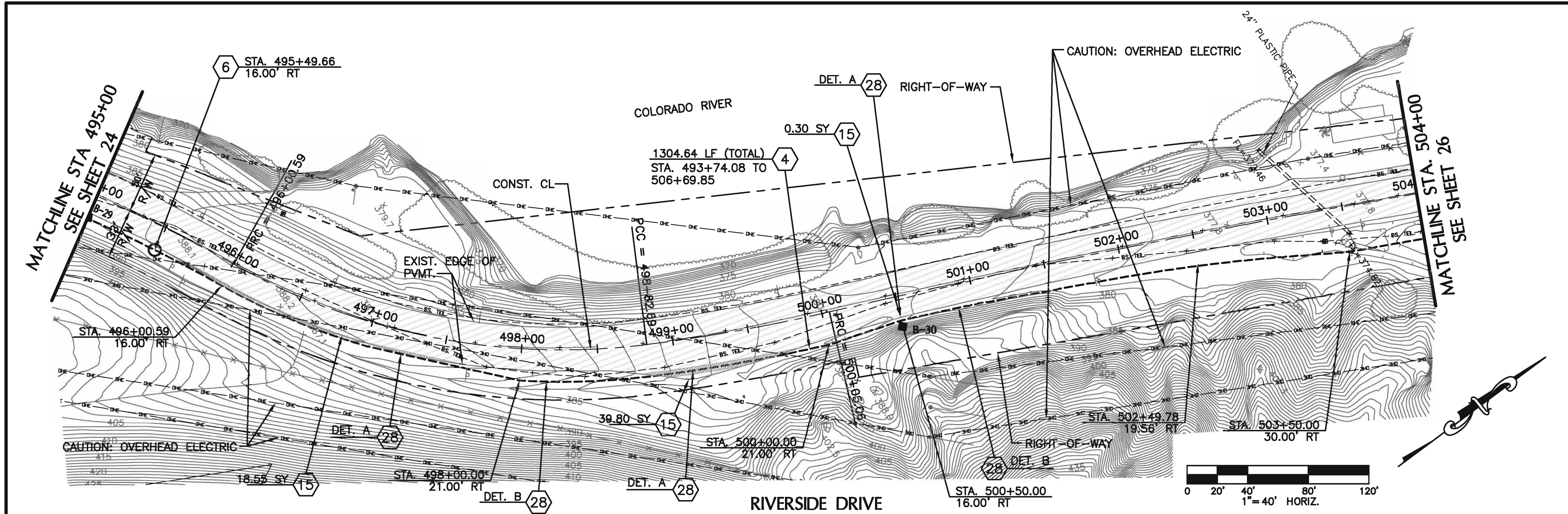
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #:  
DATE: 10/31/13  
SCALE: 1"=40'

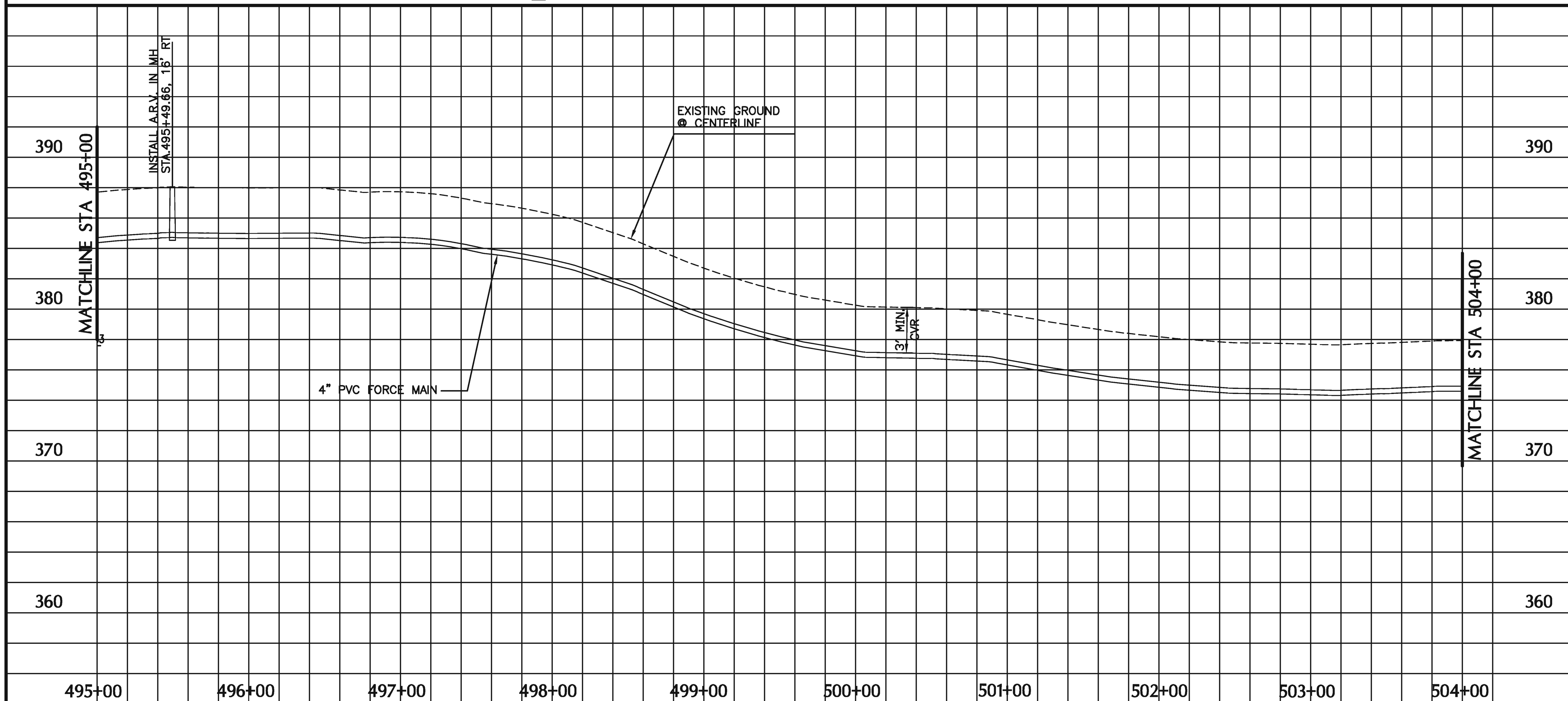
REVISIONS BY DATE

**BUCKSKIN SANITARY DISTRICT**  
PHASE 4 SEWER  
STA. 486+00 TO STA. 495+00

**SHEETS 24**



- SEWER CONSTRUCTION NOTES**
- 4 INSTALL 4" PVC FORCE MAIN
  - 6 INSTALL A.R.V. AND MH PER DTL. ON SHEET 45
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
  - 28 TRENCH PER DTL. ON SHEET 44



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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**ENERGY AND WATER SOLUTIONS, LLC**  
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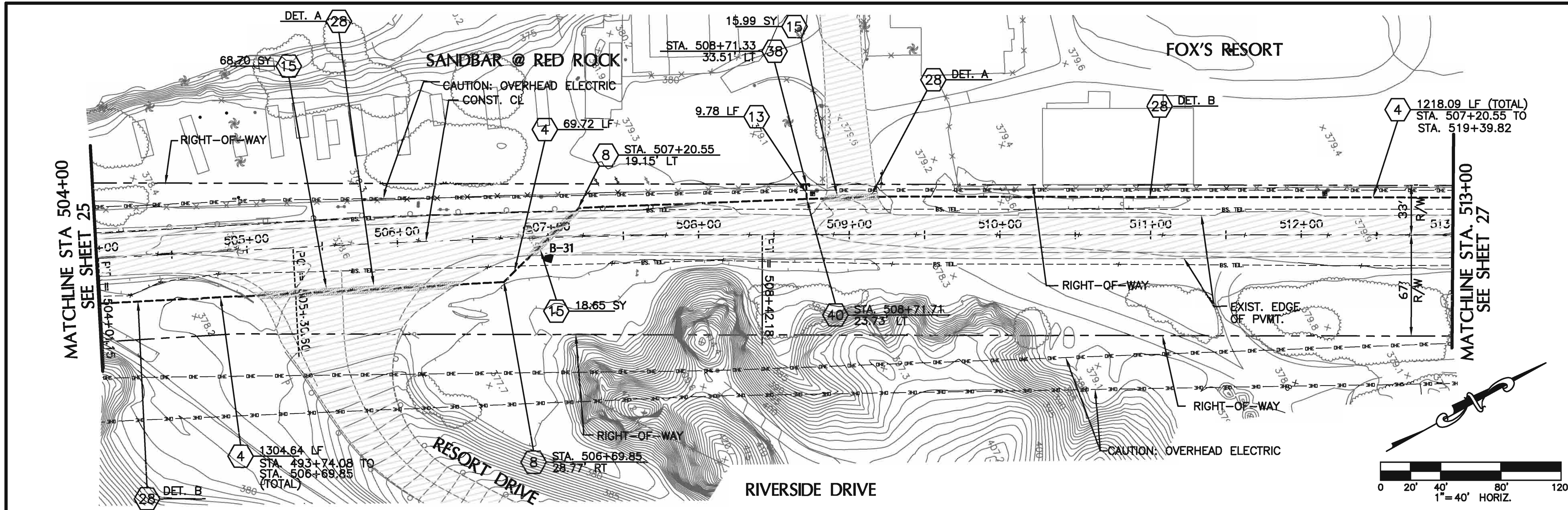
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

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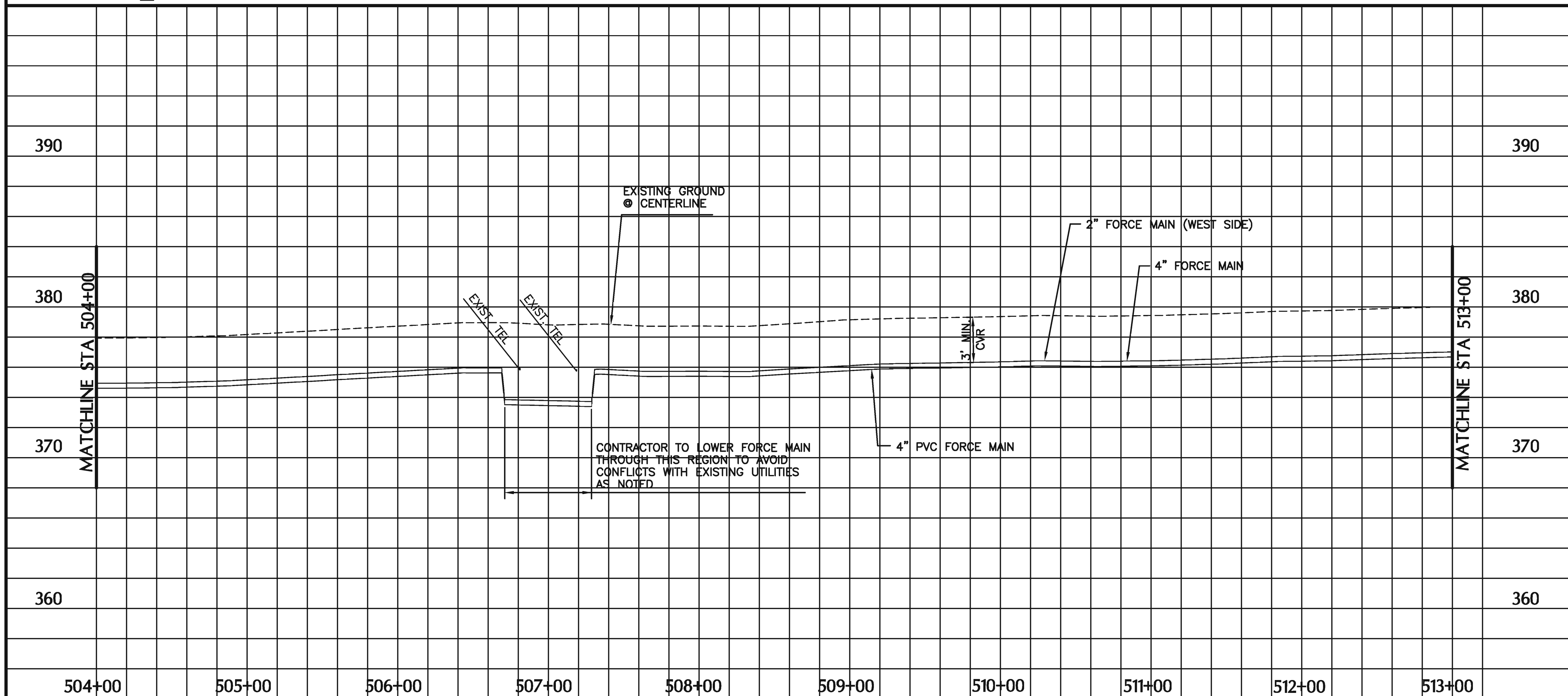
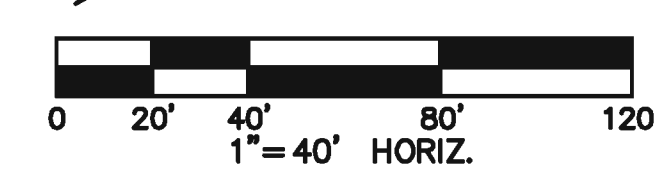
REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
PHASE 4 SEWER  
STA. 495+00 TO STA. 504+00

**SHEETS**  
25



- SEWER CONSTRUCTION NOTES**
- 4 INSTALL 4" PVC FORCE MAIN
  - 8 INSTALL 45° BEND W/ JT. RESTRAINT
  - 13 INSTALL 2" FORCE MAIN
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
  - 28 TRENCH PER DTL. ON SHEET 44
  - 38 CONTRACTOR SHALL INSTALL A CURB BOX CONTAINING A PVC BALL VALVE IN ACCORDANCE WITH SPECIFICATION SECTION 15100, PART 2.5.
  - 40 2-INCH CONNECTION TO FORCE MAIN SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 15200, PART 2.5.



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #:  
DATE: 10/31/13  
SCALE: 1"=40'

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**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**STA. 504+00 TO STA. 513+00**

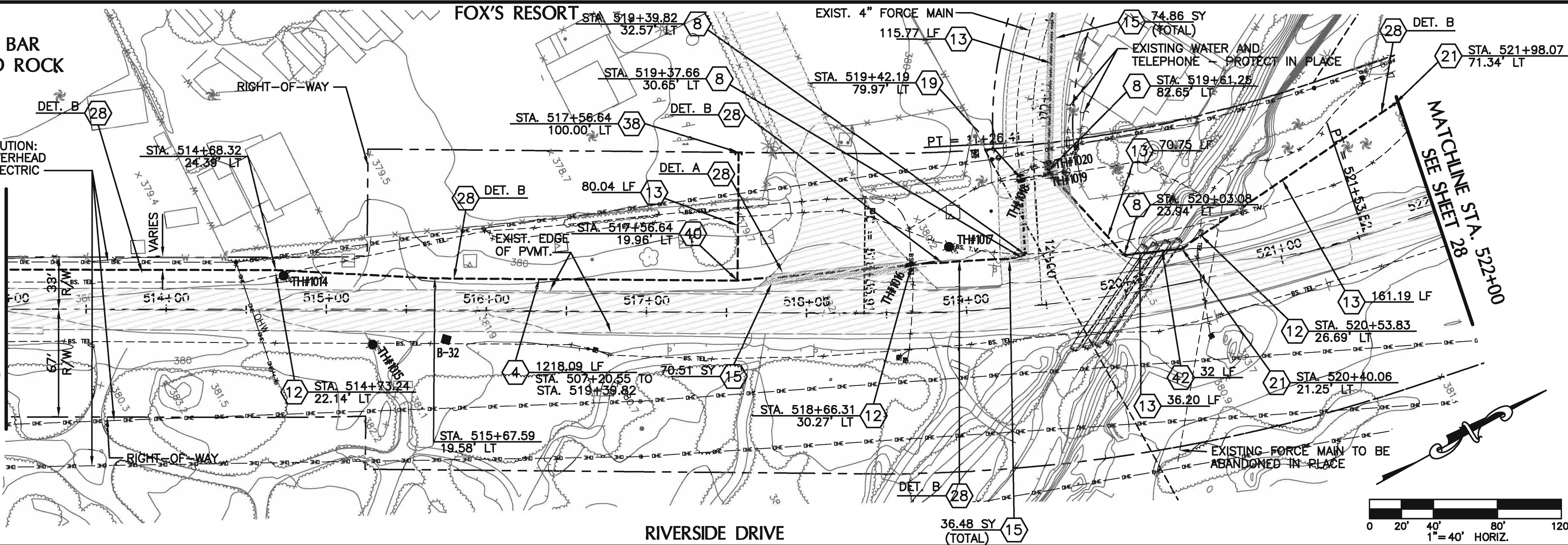
**SHEETS**  
**26**

SAND BAR  
@ RED ROCK

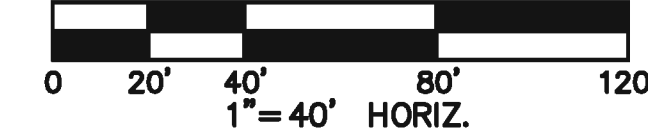
FOX'S RESORT

CAUTION:  
OVERHEAD  
ELECTRIC

MATCHLINE STA 513+00  
SEE SHEET 26

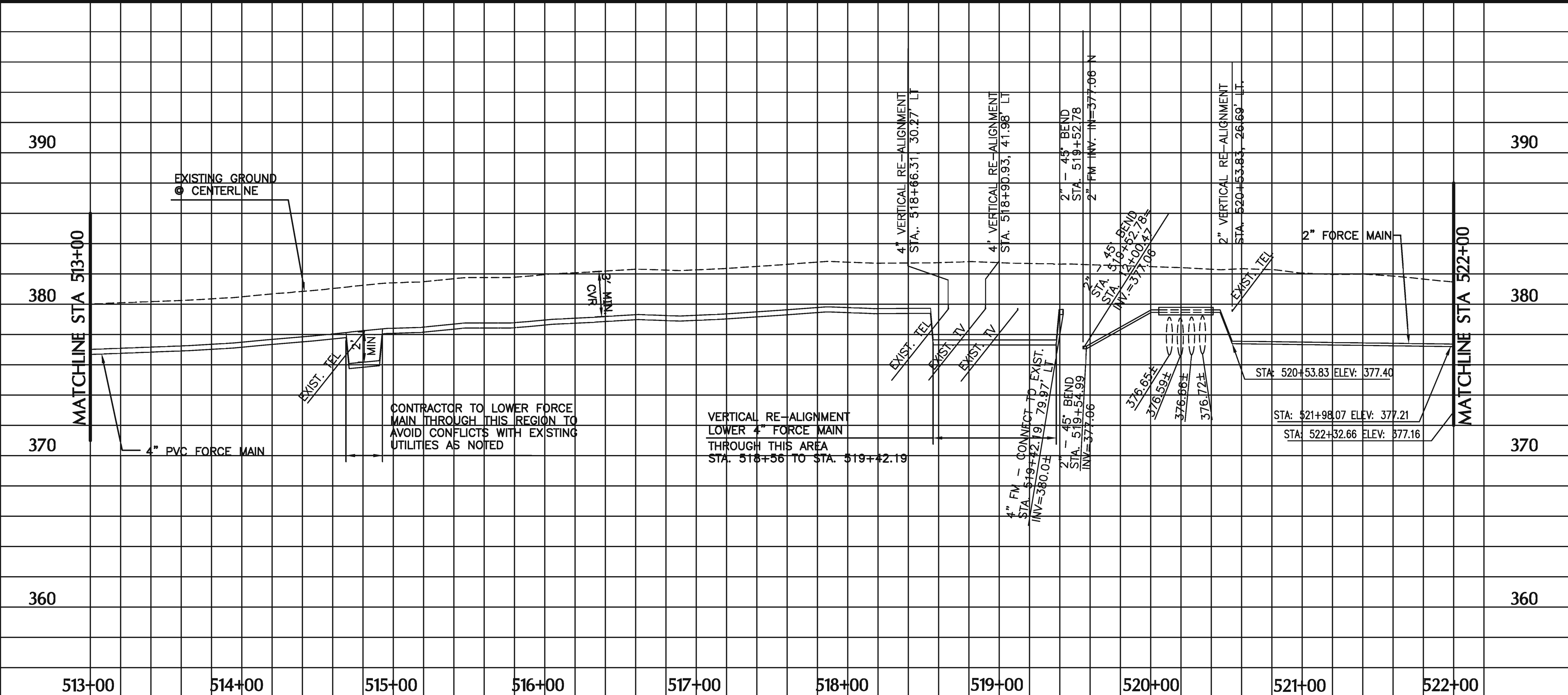


RIVERSIDE DRIVE



**SEWER CONSTRUCTION NOTES**

- 4 INSTALL 4" PVC FORCE MAIN
- 8 INSTALL 45° BEND W/ JT. RESTRAINT
- 12 VERT. RE-ALIGNMENT PER MAG STD. DET. 370 AS REQ'D. CONTRACTOR TO FIELD VERIFY HORIZ. AND VERT. LOCATION PRIOR TO CONST.
- 13 INSTALL 2" FORCE MAIN
- 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
- 19 CONTRACTOR TO FIELD VERIFY EXISTING HORIZ. AND VERT. LOCATION OF EXISTING 4" FORCE MAIN. CONTRACTOR TO CUT EXISTING FORCE MAIN AND TIE PROPOSED 4" FORCE MAIN INTO EXISTING FORCE MAIN USING MEGA-COUPLING SERIES 3300 BY EBAA IRON, INC OR APPROVED EQUAL.
- 21 INSTALL 2" - 22.5" BEND
- 22 ONCE EXISTING FORCE MAIN IS ABANDONED. CONTRACTOR SHALL UTILIZE EXISTING FORCE MAIN UNDER WASH AS A CARRIER PIPE FOR PROPOSED 2" FORCE MAIN.
- 28 TRENCH PER DTL. ON SHEET 44.
- 38 CONTRACTOR SHALL INSTALL A CURB BOX CONTAINING A PVC BALL VALVE IN ACCORDANCE WITH SPECIFICATION SECTION 15100, PART 2.5
- 40 2-INCH CONNECTION TO FORCE MAIN SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 15200, PART 2.5.
- 42 INSTALL 6" D.I.P. CARRIER PIPE



NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



EXPIRES 3/31/17

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**ENERGY AND WATER SOLUTIONS, LLC**  
CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

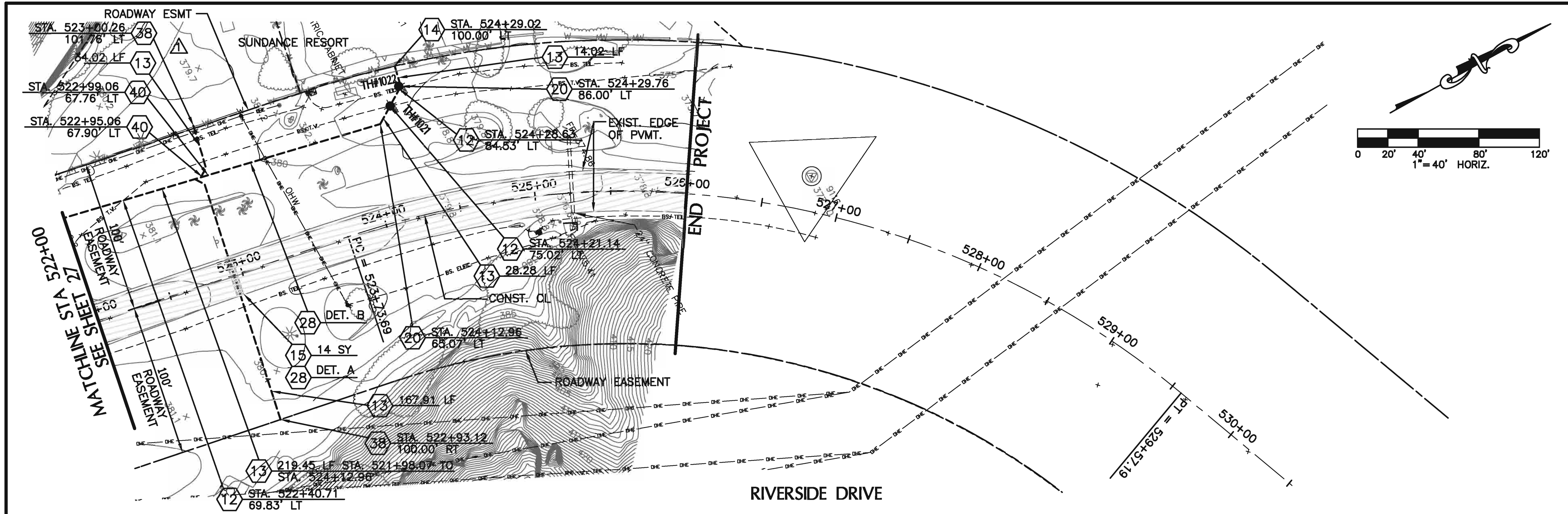
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #:  
DATE: 10/31/13  
SCALE: 1"=40'

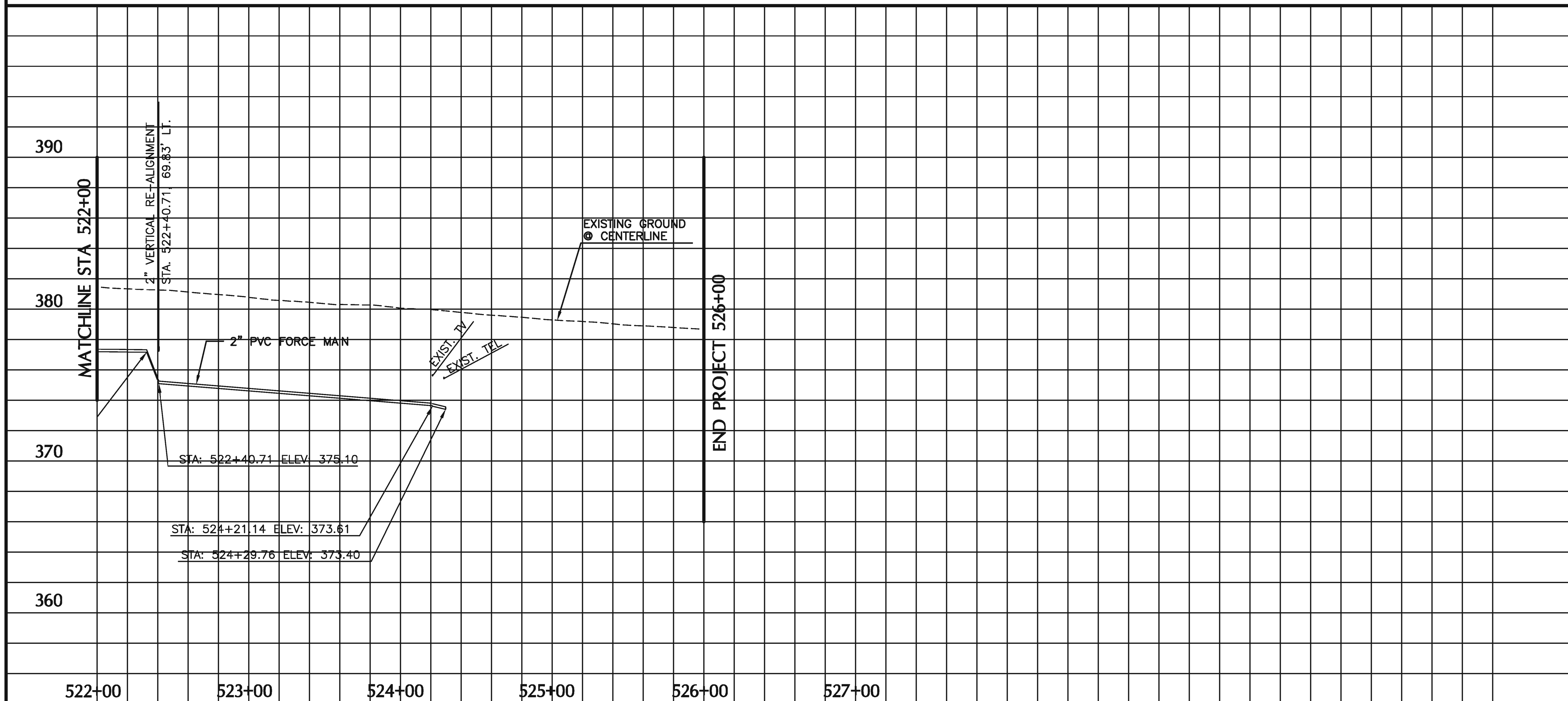
REVISIONS BY DATE

**BUCKSKIN SANITARY DISTRICT**  
PHASE 4 SEWER  
STA. 513+00 TO STA. 522+00

**SHEETS**  
27



- ### SEWER CONSTRUCTION NOTES
- 12 VERT. RE-ALIGNMENT PER MAG STD. DET. 370 AS REQ'D. CONTRACTOR TO FIELD VERIFY HORIZ. AND VERT. LOCATION PRIOR TO CONST.
  - 13 INSTALL 2" FORCE MAIN
  - 14 INSTALL 2" PLUG PER MAG. STD. 427
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DETAIL ON SHEET 44, T-TOP.
  - 20 INSTALL 2" - 45° BEND
  - 28 TRENCH PER DTL. ON SHEET 44
  - 38 CONTRACTOR SHALL INSTALL A CURB BOX CONTAINING A PVC BALL VALVE IN ACCORDANCE WITH SPECIFICATION SECTION 15100, PART 2.5.
  - 40 2-INCH CONNECTION TO FORCE MAIN SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 15200, PART 2.5



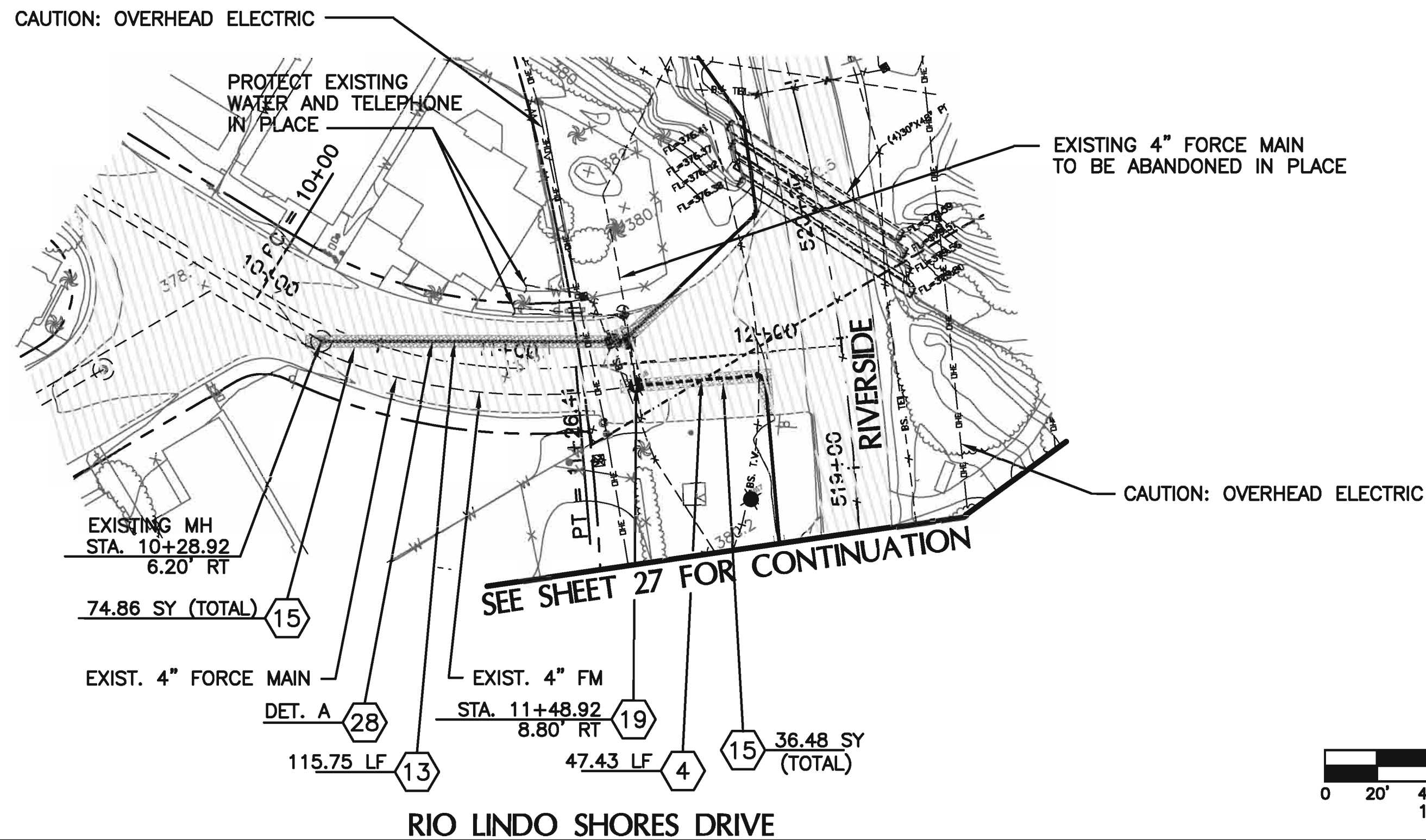
NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



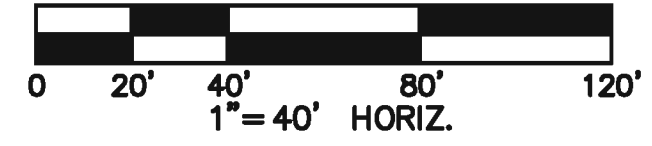
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REVISIONS	BY	DATE





NOTE:  
SEE SHEETS 31-34 AND 41  
FOR LIFT STATION NO. 1



**SEWER CONSTRUCTION NOTES**

- 4 INSTALL 4" PVC FORCE MAIN
- 8 INSTALL 45° BEND W/ JT. RESTRAINT
- 13 INSTALL 2" FORCE MAIN
- 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP.
- 19 CONTRACTOR TO FIELD VERIFY EXISTING HORIZ. AND VERT. LOCATION OF EXISTING 4" FORCE MAIN. CONTRACTOR TO CUT EXISTING FORCE MAIN AND TIE PROPOSED 4" FORCE MAIN INTO EXISTING FORCE MAIN USING MEGA-COUPLING SERIES 3300 BY EBAA IRON, INC OR APPROVED EQUAL.
- 20 INSTALL 2" - 45° BEND
- 28 TRENCH PER DTL. ON SHEET 44

NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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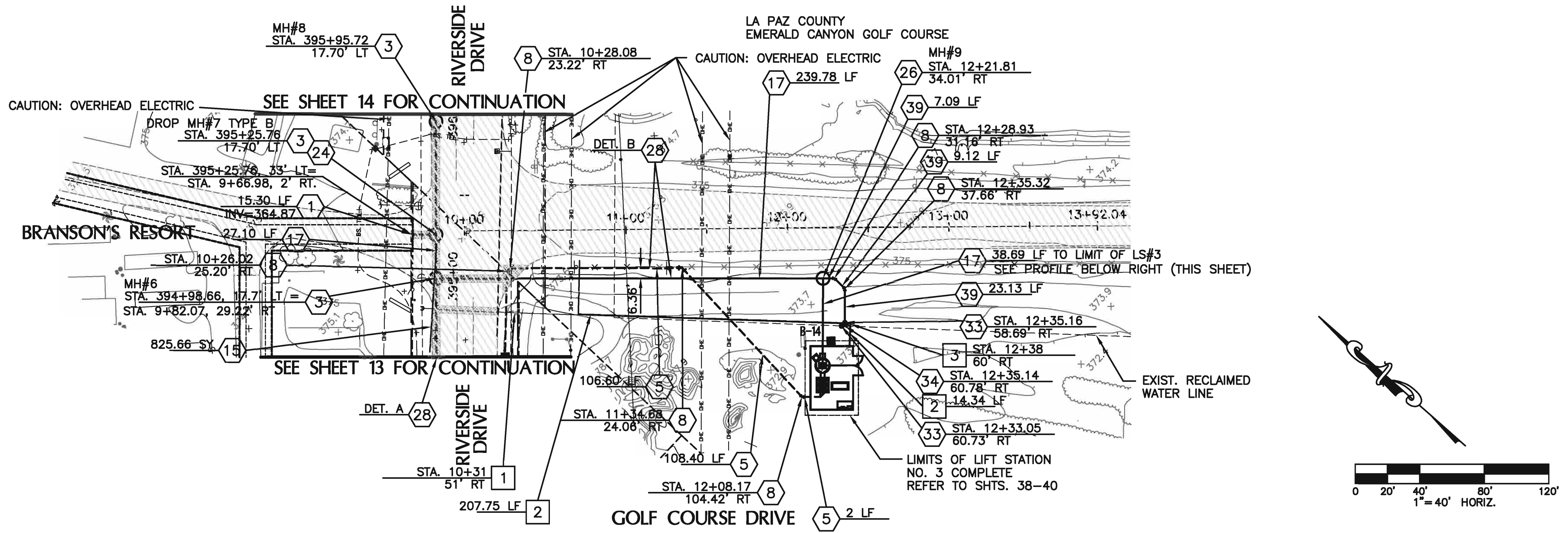
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CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824    FAX: 480.656.9778    EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
DATE: 10/31/13  
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**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**STA. 10+28.92 TO STA. 11+83.02**



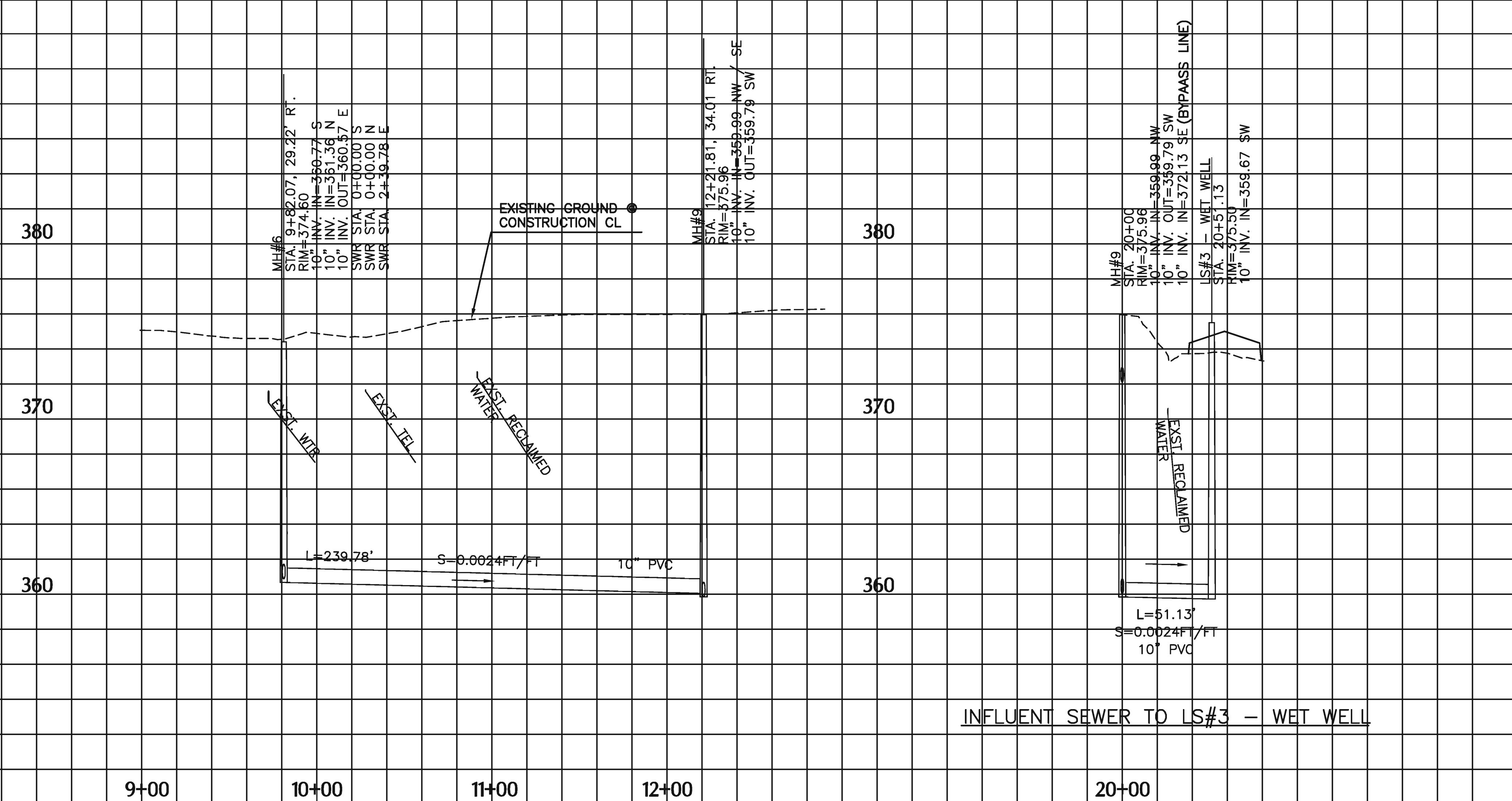
**SEWER CONSTRUCTION NOTES**

- 1 INSTALL 8" PVC SEWER
- 3 INSTALL 5' DIA. MH PER MAG STD. 420-1,2 W/ 30" DIA. FRAME & COVER PER MAG STD. 423-2
- 5 INSTALL 6" PVC FORCE MAIN
- 8 INSTALL 45° BEND W/ JT. RESTRAINT
- 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, T-TOP (INCLUDES STUBS AND TAPS WHERE APPLICABLE).
- 17 INSTALL 10" PVC SEWER
- 26 INSTALL 5' DIA. MH PER MAG STD. 420-1,2 W/ 30" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-2
- 28 TRENCH PER DTL. ON SHEET 44
- 33 INSTALL 10" GATE VALVE
- 34 INSTALL 10" X 10" TEE
- 39 INSTALL 10-INCH C-900 PVC BYPASS LINE PER TYPICAL FORCE MAIN DISCHARGE DETAIL ON SHEET 45.

**WATER CONSTRUCTION NOTES**

- THE PAY LIMITS OF LIFT STATION NO. 3 SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE INSTALLATION OF THE WATER LINE, WATER SERVICE PER BROOKE UTILITIES STANDARDS, TELEPHONE SERVICES AND ALL COSTS OF CONSTRUCTION OF THE ACCESS ROAD.
- 1 INSTALL 1" SINGLE WATER SERVICE PER BROOKE UTILITIES STANDARDS.
  - 2 INSTALL 1" WATER LINE
  - 3 INSTALL 1" - 90° BEND

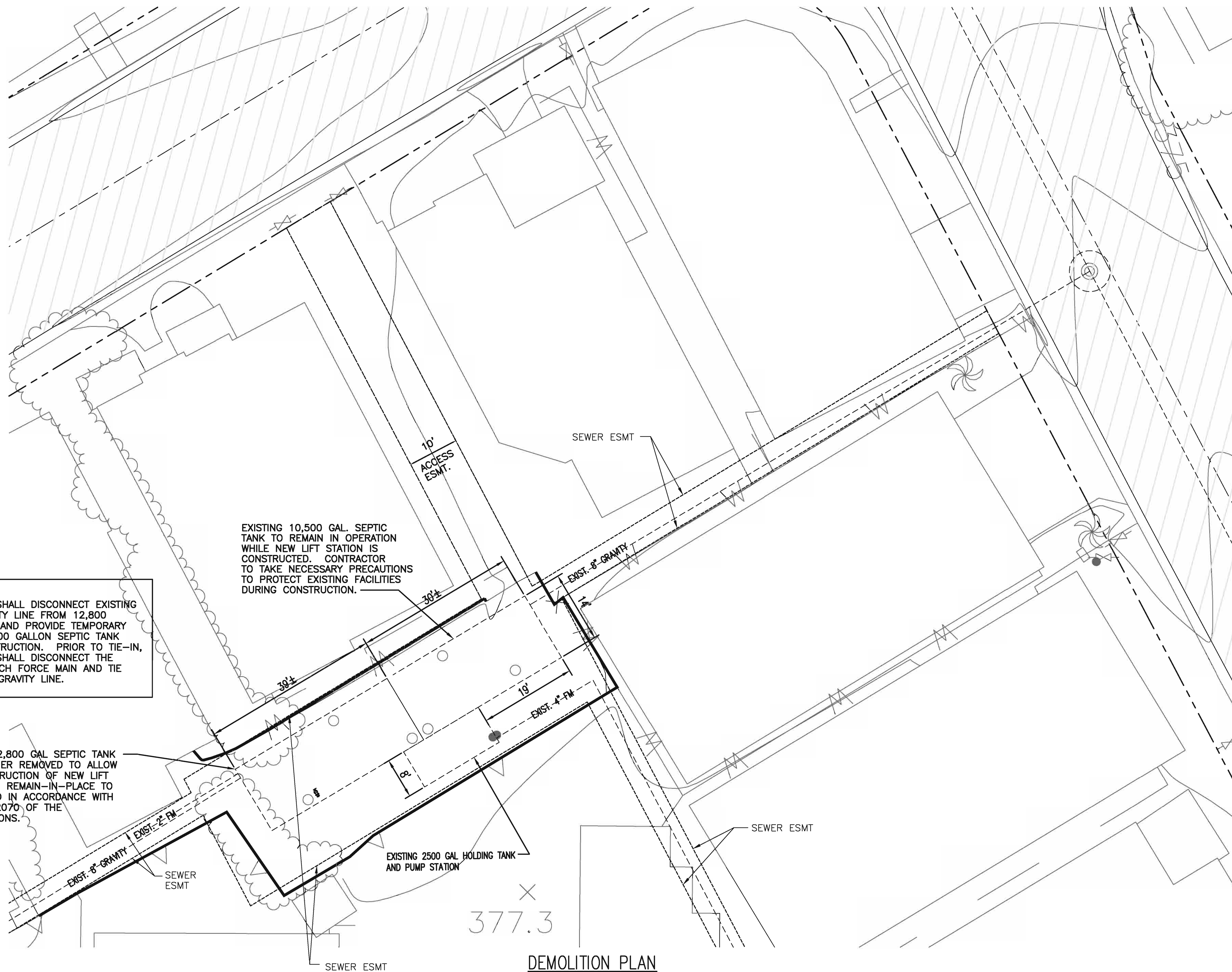
NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.



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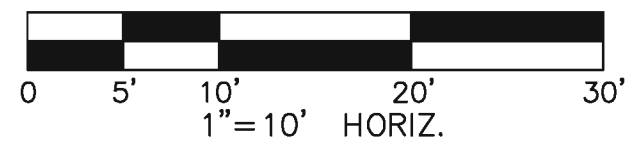
NOTE:  
 CONTRACTOR SHALL DISCONNECT EXISTING 8-INCH GRAVITY LINE FROM 12,800 GALLON TANK AND PROVIDE TEMPORARY TIE INTO 10,500 GALLON SEPTIC TANK DURING CONSTRUCTION. PRIOR TO TIE-IN, CONTRACTOR SHALL DISCONNECT THE EXISTING 2-INCH FORCE MAIN AND TIE INTO 8-INCH GRAVITY LINE.

EXISTING 10,500 GAL. SEPTIC TANK TO REMAIN IN OPERATION WHILE NEW LIFT STATION IS CONSTRUCTED. CONTRACTOR TO TAKE NECESSARY PRECAUTIONS TO PROTECT EXISTING FACILITIES DURING CONSTRUCTION.

EXISTING 12,800 GAL SEPTIC TANK TO BE EITHER REMOVED TO ALLOW FOR CONSTRUCTION OF NEW LIFT STATION OR REMAIN-IN-PLACE TO BE UTILIZED IN ACCORDANCE WITH SECTION 02070 OF THE SPECIFICATIONS.

NOTE:  
 CONTRACTOR SHALL FIELD VERIFY THE DEPTH OF EXISTING TANKS PRIOR TO CONSTRUCTION AND TO NOTIFY ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.

NOTE:  
 REFER TO SPEC. SECT. 2070, MODIFICATION TO EXISTING PUMPING STATION



EXPIRES 3/31/17

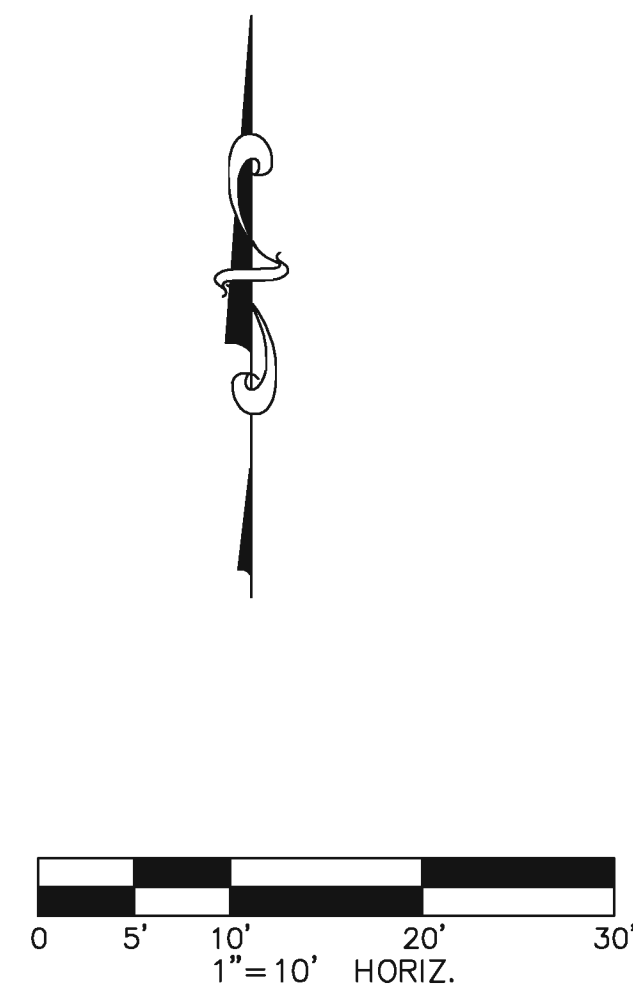
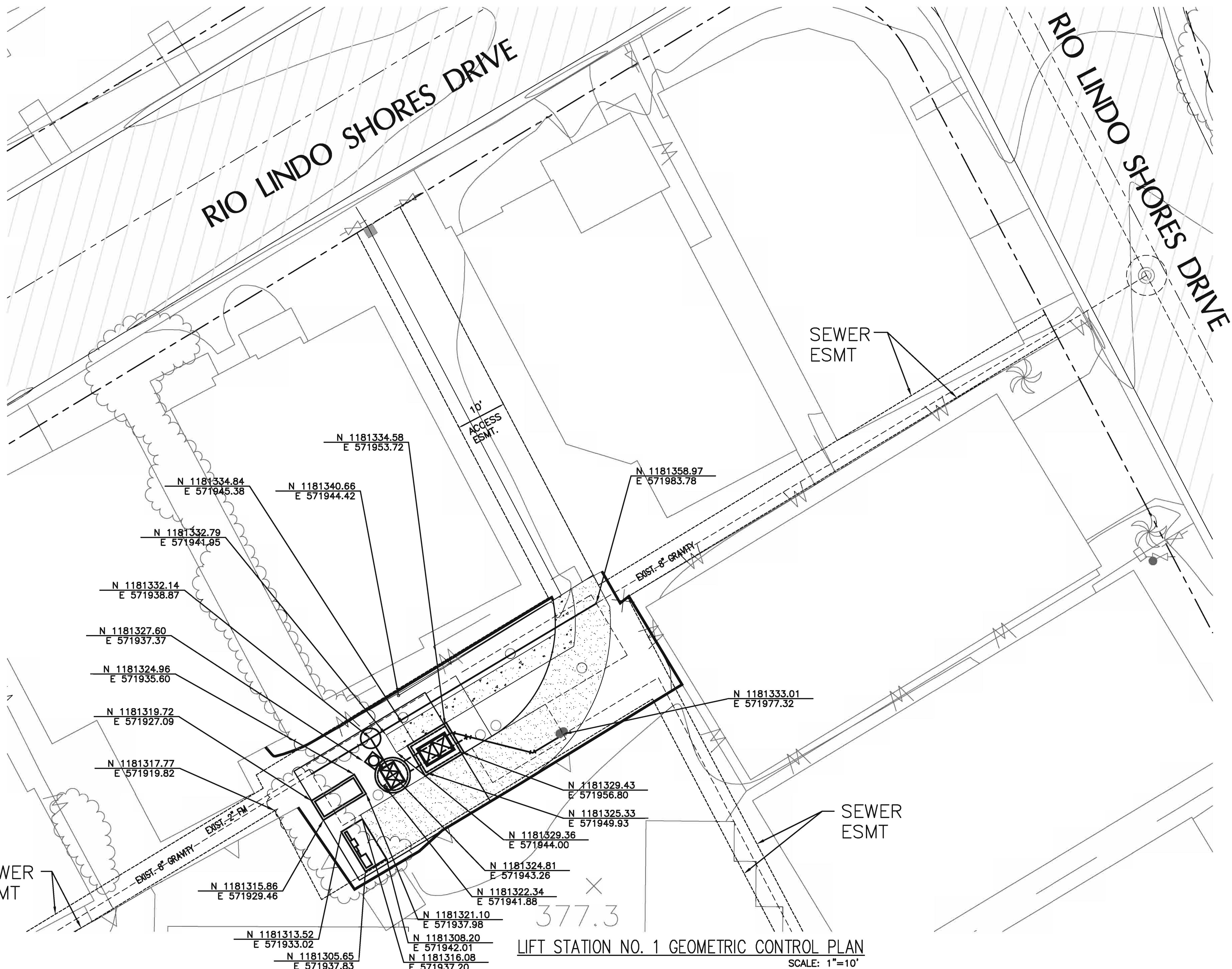
377.3

**DEMOLITION PLAN**

SCALE: 1"=10'

CALL TWO WORKING DAYS BEFORE YOU DIG  
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(OUTSIDE MARICOPA COUNTY)

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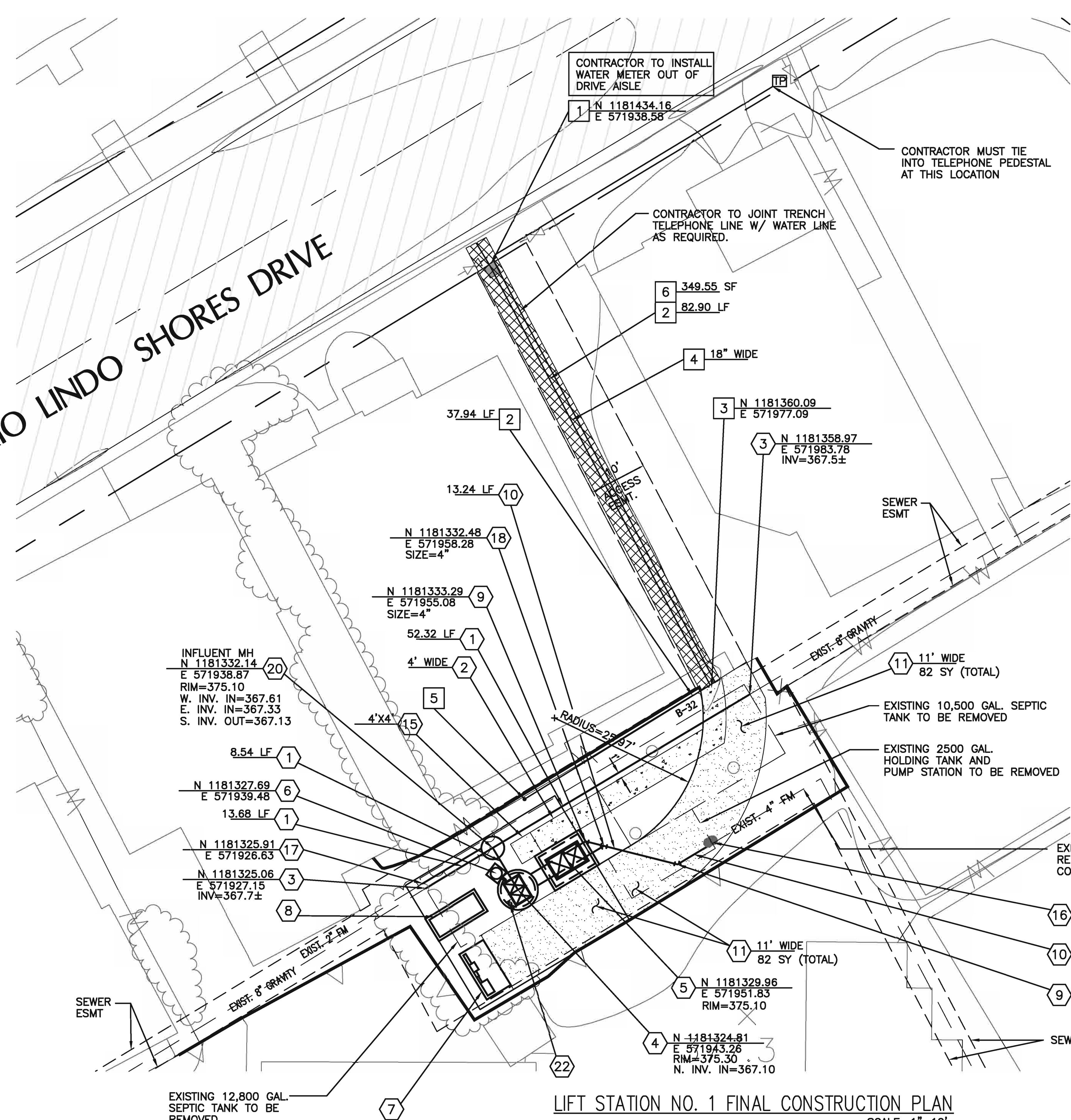
NOTE:  
REFER TO SPEC SECT 2070,  
MODIFICATION TO EXISTING  
PUMPING STATION



LIFT STATION NO. 1 GEOMETRIC CONTROL PLAN  
SCALE: 1"=10'

REVISIONS	BY	DATE

RIO LINDO SHORES DRIVE



CONTRACTOR TO INSTALL WATER METER OUT OF DRIVE AISLE  
 1 N 1181434.16  
 E 571938.58

CONTRACTOR MUST TIE INTO TELEPHONE PEDESTAL AT THIS LOCATION

CONTRACTOR TO JOINT TRENCH TELEPHONE LINE W/ WATER LINE AS REQUIRED.

6 349.55 SF  
 2 82.90 LF

4 18" WIDE

3 N 1181360.09  
 E 571977.09

3 N 1181358.97  
 E 571983.78  
 INV=367.5±

N 1181332.48  
 E 571958.28  
 SIZE=4"

N 1181333.29  
 E 571955.08  
 SIZE=4"

INFLUENT MH  
 N 1181332.14  
 E 571938.87  
 RIM=375.10  
 W. INV. IN=367.61  
 E. INV. IN=367.33  
 S. INV. OUT=367.13

N 1181327.69  
 E 571939.48

N 1181325.91  
 E 571926.63

N 1181325.06  
 E 571927.15  
 INV=367.7±

4 N 1181324.81  
 E 571943.26  
 RIM=375.30  
 N. INV. IN=367.10

5 N 1181329.96  
 E 571951.83  
 RIM=375.10

GENERAL NOTES TO CONTRACTOR:

- CONTRACTOR TO SUPPLY ENGINEER AND SANITARY DISTRICT WITH A WORK PLAN AND SCHEDULE PRIOR TO CONSTRUCTION IDENTIFYING HOW CONTRACTOR PROPOSES TO DECOMMISSION EXISTING SEPTIC TANKS AND PUMPING STATION TO ALLOW FOR CONSTRUCTION OF PROPOSED LIFT STATION WHILE AVOIDING INTERRUPTION OF SERVICE TO EXISTING RESIDENCES CONNECTED TO EXISTING FACILITIES.
- CONTRACTOR SHOULD ATTEMPT TO AVOID CONSTRUCTION IN THE RIO LINDO SHORES COMMUNITY DURING MAJOR HOLIDAY WEEKENDS WHEN RESIDENCES IN COMMUNITY ARE HEAVILY POPULATED.
- CONTRACTOR SHALL KEEP ACCESS EASEMENT TO LIFT STATION AREA OPEN AND CLEAR OF OBSTRUCTIONS AT THE END OF EACH DAY TO ALLOW EXISTING RESIDENTS TO ACCESS THEIR GARAGE. WORK HOURS SHALL COMPLY WITH COUNTY STANDARDS WHEN WORKING ADJACENT TO EXISTING RESIDENCES.
- CONTRACTOR SHALL REPLACE GATE AND ANY FENCING DAMAGED DURING CONSTRUCTION.

NOTE:  
 ALL WORK DESIGNATED ON THIS SHEET IS WITHIN THE "LIMITS OF LIFT STATION NO. 1" INCLUDING ALL COSTS ASSOCIATED WITH THE INSTALLATION OF THE WATER LINE, WATER SERVICE PER BROOKE UTILITIES STANDARDS, TELEPHONE SERVICE, AND ALL COSTS OF REPAIRING ACCESS EASEMENT.

NOTE:  
 CONTRACTOR IS ADVISED THAT THE SEWER CONSTRUCTION NOTES FOR THE LIFT STATIONS (SHEETS 33, 36, AND 39) DIFFER FROM THE NOTES FOR THE PLAN & PROFILE SHEETS

NOTE:  
 SEE SHEET 41 FOR LIFT STATION NO. 1 DETAILS.

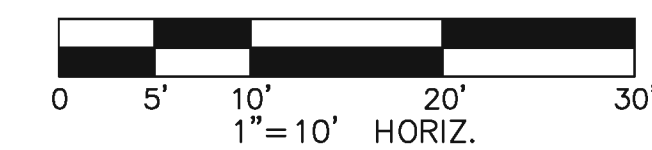
NOTE:  
 REFER TO SPEC SECT 2070, MODIFICATION TO EXISTING PUMPING STATION

SEWER CONSTRUCTION NOTES

- INSTALL 8" PVC SEWER
- CONSTRUCT 4' WIDE CONC. SIDEWALK PER MAG STD. DET. 230.
- CONNECT EXISTING 8" GRAVITY SEWER TO NEW 8" GRAVITY SEWER
- INSTALL 6' DIA. WET WELL
- INSTALL 6'x8' VALVE VAULT
- INSTALL ODOR CONTROL UNIT ON 2.5' SQ. CONC. PAD
- INSTALL ELECTRICAL CONTROL PANEL
- INSTALL EMERGENCY GENERATOR
- INSTALL 45° BEND, SIZE PER PLAN W/ JT. RESTRAINT
- INSTALL 4" PVC FORCE MAIN
- CONSTRUCT ACCESS ROAD PER DTL. ON SHT. 45 3" D.G. OVER 6" ABC, WIDTH PER PLAN
- CONSTRUCT CONC. CHEMICAL PAD, SIZE PER PLAN
- CONNECT NEW 4" FORCE MAIN TO EXISTING 4" FORCE MAIN USING MEGA COUPLING SERIES 3300 BY EBAA IRON, INC., OR APPROVED EQUAL
- CONNECT EXISTING 2" FORCE MAIN TO FM DISCHARGE MH, SEE DETAIL SHEET 45
- INSTALL FLANGED WYE CONNECTION, SIZE PER PLAN
- INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA FRAME & COVER PER MAG STD. DET. 423-1.
- INSTALL SEWER QUICK BY-PASS CONNECTION PER DTL. ON SHEET 41

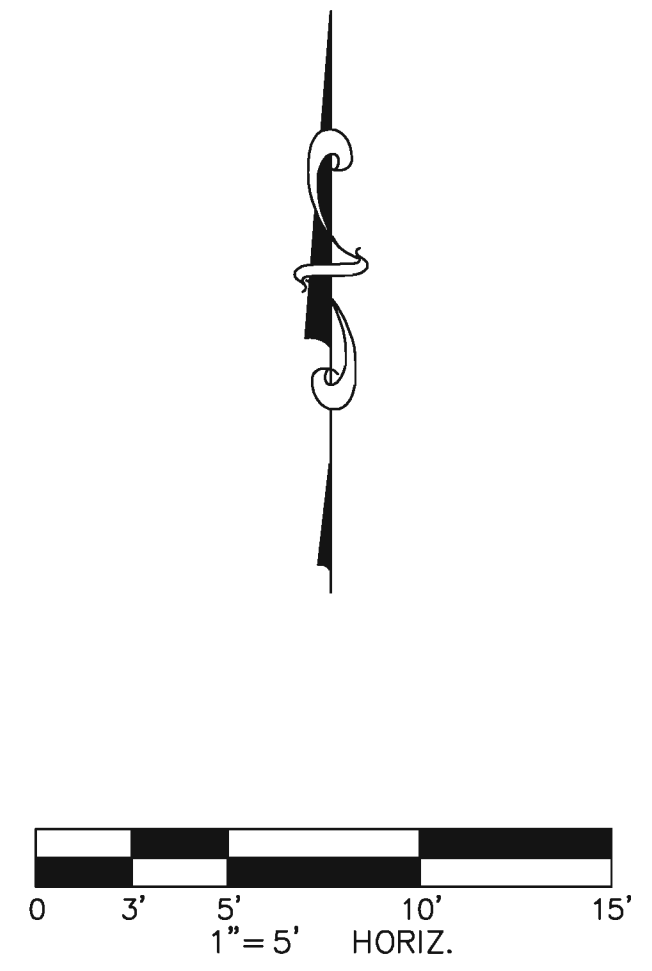
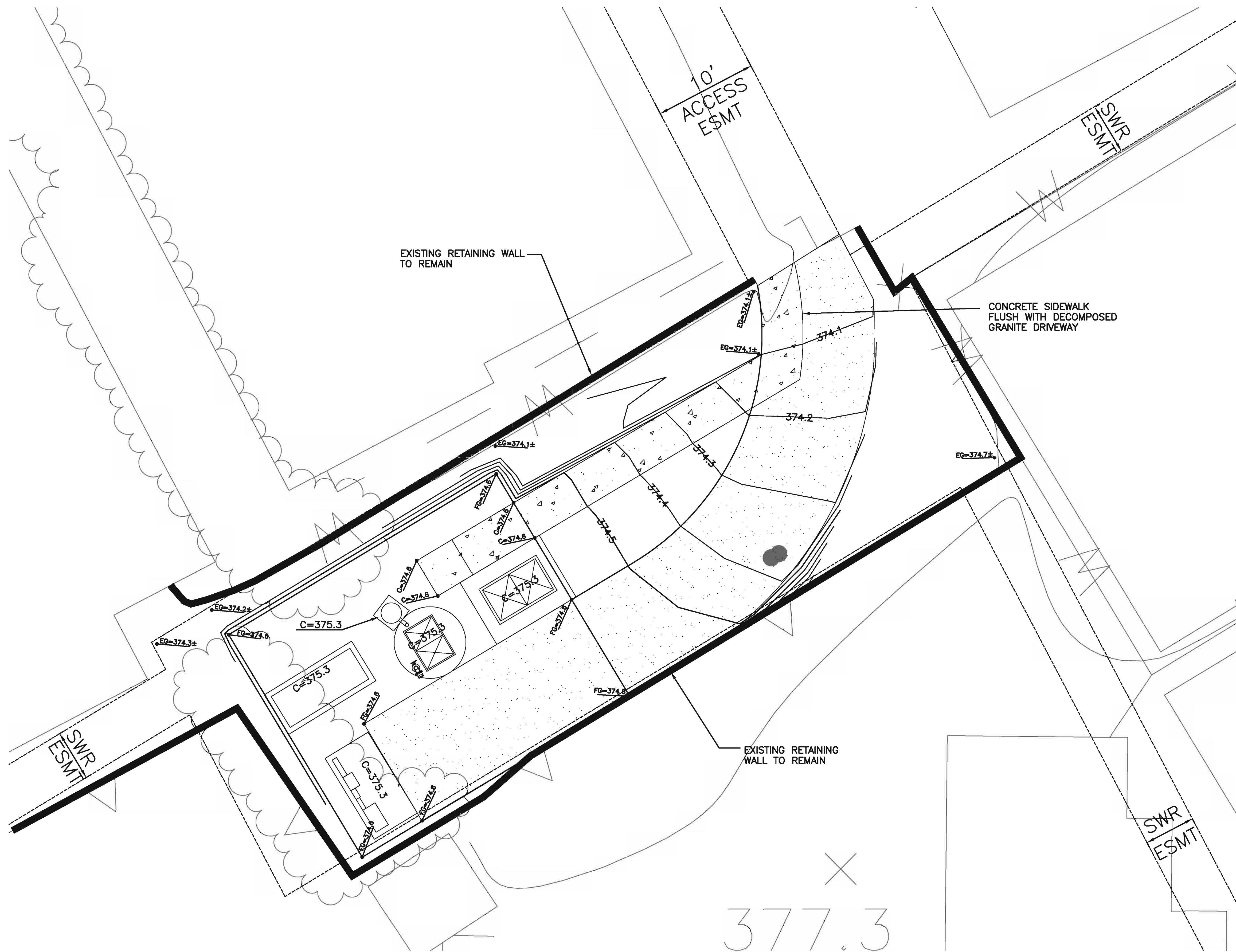
WATER CONSTRUCTION NOTES

- INSTALL 1" SINGLE WATER SERVICE PER BROOKE UTILITIES STANDARDS
- INSTALL 1" WATER LINE
- INSTALL 1" - 90° BEND
- SAWCUT, REMOVE AND REPLACE EXISTING CONC. AS REQUIRED
- INSTALL 1" HOSE BIB ATTACHED TO WALL
- SAWCUT, REMOVE AND REPLACE CONCRETE AS REQUIRED TO INSTALL WATER LINE PER WATER COMPANY STANDARDS



LIFT STATION NO. 1 FINAL CONSTRUCTION PLAN  
 SCALE: 1"=10'

REVISIONS	BY	DATE



LIFT STATION NO. 1 FINAL GRADING AND DRAINAGE PLAN  
SCALE: 1"=5'



CALL TWO WORKING DAYS BEFORE YOU DIG  
602-263-1100  
1-800-STAKE-IT  
(OUTSIDE MARICOPA COUNTY)

**ENERGY AND WATER SOLUTIONS, LLC**  
CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

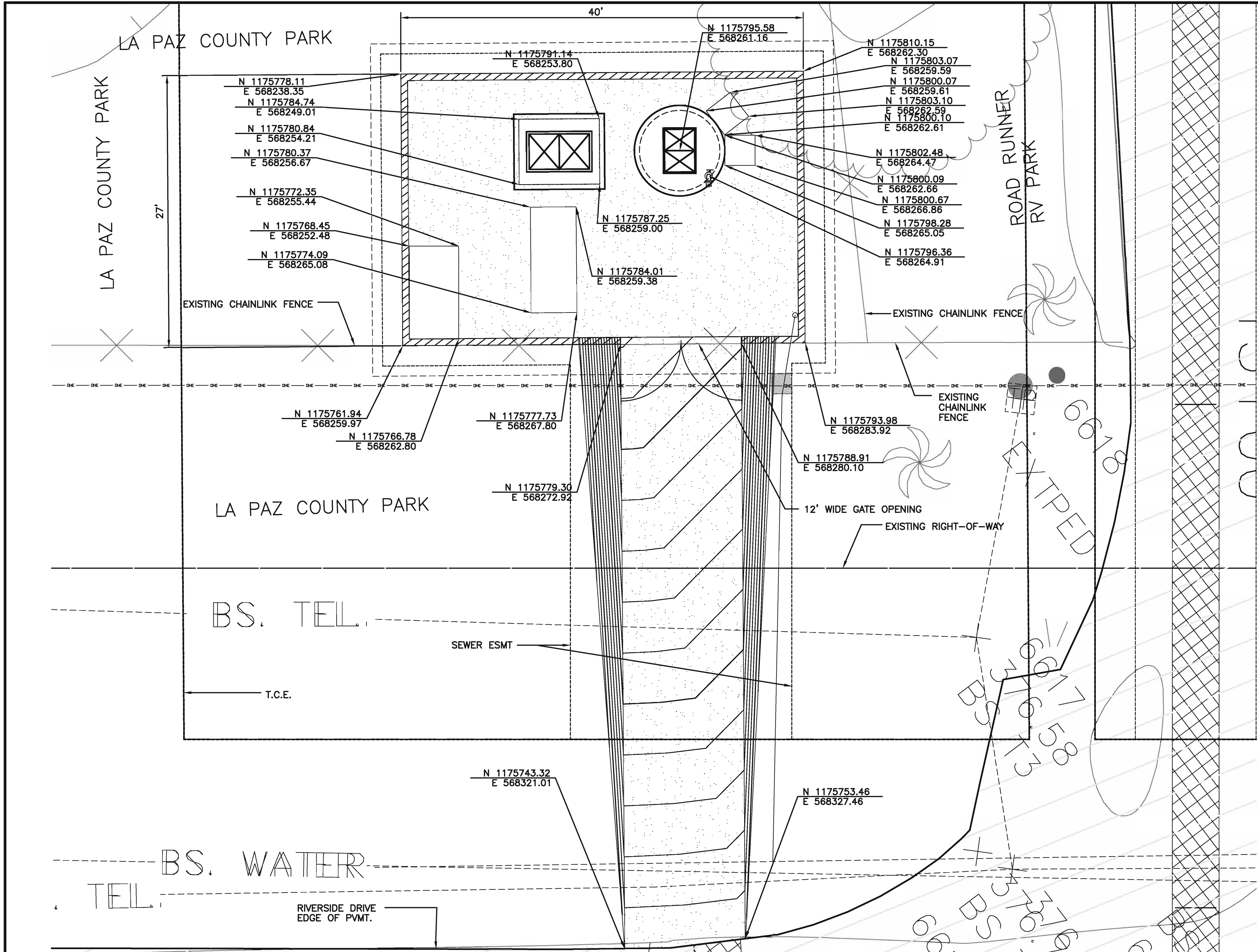
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
DATE: 10/31/13  
SCALE: 1"=5'

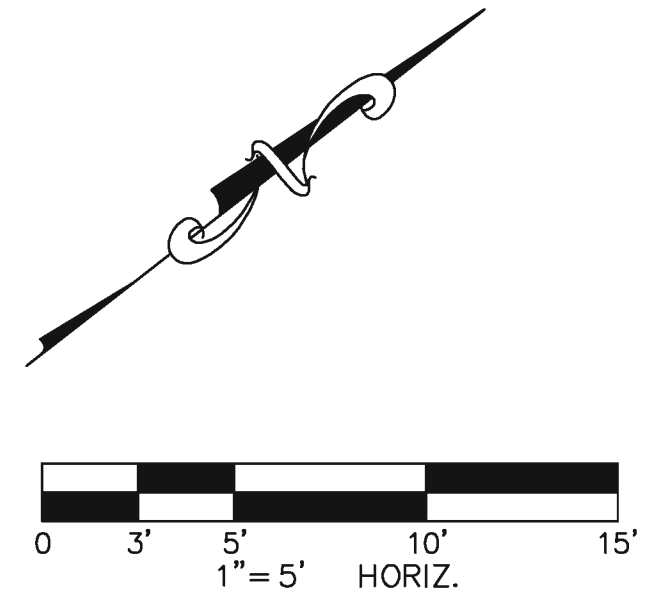
REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
PHASE 4 SEWER  
LIFT STATION NO. 1

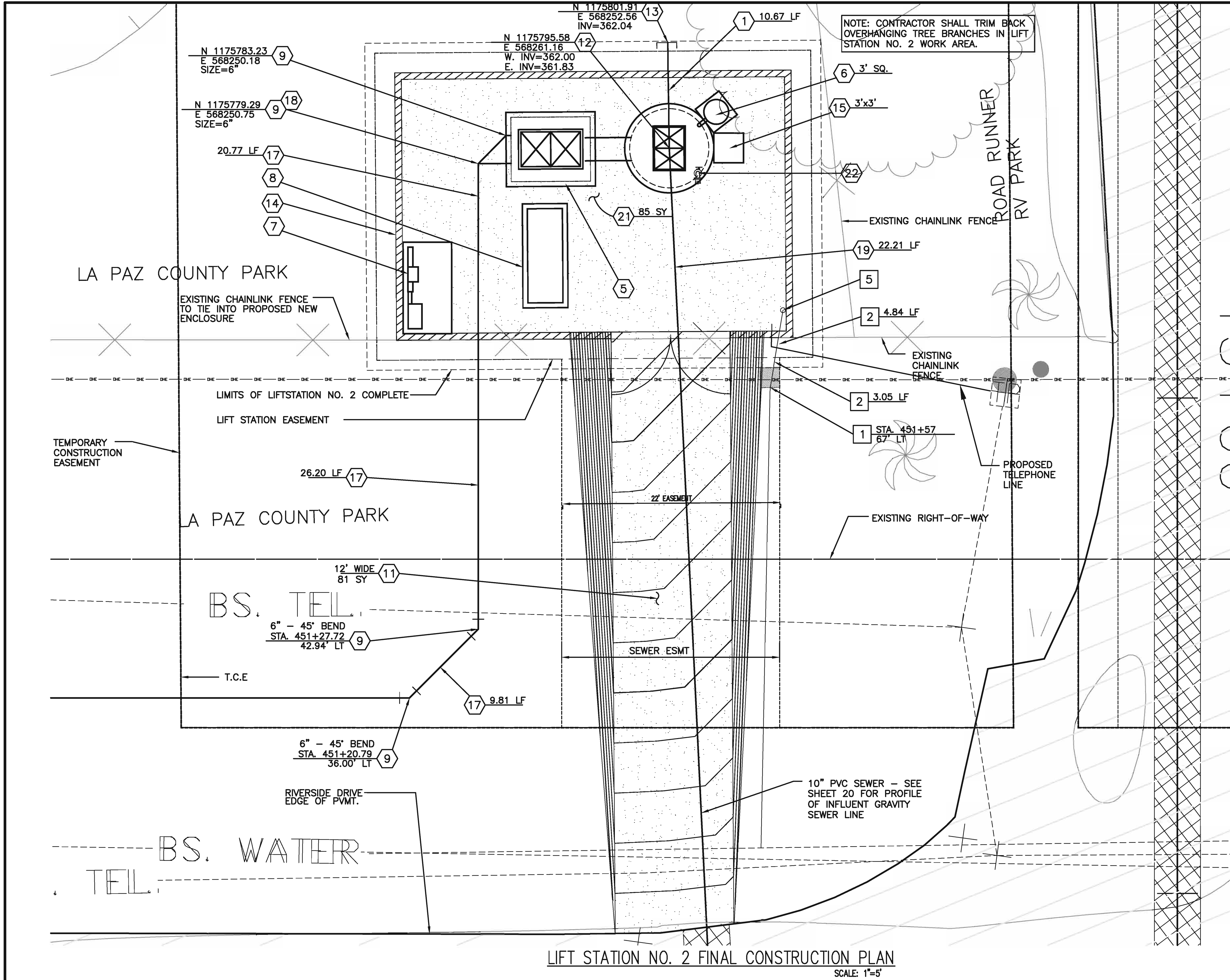
SHEET 34



LIFT STATION NO. 2 GEOMETRIC CONTROL PLAN  
SCALE: 1"=5'



REVISIONS	BY	DATE



**SEWER CONSTRUCTION NOTES**

- 1 INSTALL 8" PVC SEWER
- 5 INSTALL 6'x8' VALVE VAULT
- 6 INSTALL ODOR CONTROL UNIT ON CONC. PAD, SIZE PER PLAN
- 7 INSTALL ELECTRICAL CONTROL PANEL
- 8 INSTALL EMERGENCY GENERATOR
- 9 INSTALL 45° BEND, SIZE PER PLAN.
- 11 CONSTRUCT ACCESS ROAD PER DTL. ON SHT. 45 3" D.G. OVER 6" ABC, WIDTH PER PLAN
- 12 INSTALL 8' DIA. WET WELL
- 13 INSTALL 8" PLUG PER MAG STD. DTL 427
- 14 CONSTRUCT LIFT STATION ENCLOSURE REFER TO SHEETS S1.1 THROUGH S1.6
- 15 CONSTRUCT CONC. CHEMICAL PAD, SIZE PER PLAN
- 17 INSTALL 6" PVC FORCE MAIN
- 18 INSTALL FLANGED WYE CONNECTION, SIZE PER PLAN
- 19 INSTALL 10" PVC SEWER
- 21 INSTALL 3" D.G. OVER 6" ABC
- 22 INSTALL SEWER QUICK BY-PASS CONNECTION PER DET. ON SHEET 42

NOTE:  
THE PAY LIMITS FOR LIFT STATION NO. 2 SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE INSTALLATION OF THE WATER LINE, WATER SERVICE PER BROOKE UTILITIES STANDARDS, TELEPHONE SERVICE, AND ALL COSTS OF CONST. OF THE ACCESS ROAD

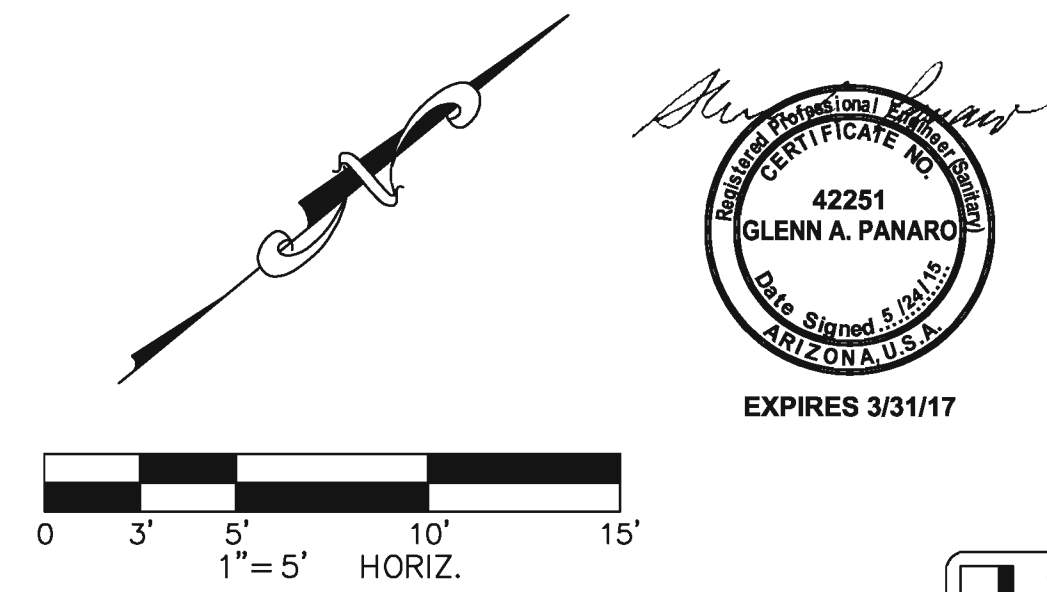
**WATER CONSTRUCTION NOTES**

- 1 INSTALL 1" SINGLE WATER SERVICE PER BROOKE UTILITIES STANDARDS
- 2 INSTALL 1" WATER LINE
- 5 INSTALL 1" HOSE BIB ATTACHED TO WALL

NOTE:  
SEE SHEET 42 FOR LIFT STATION NO. 2 DETAILS.

NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.

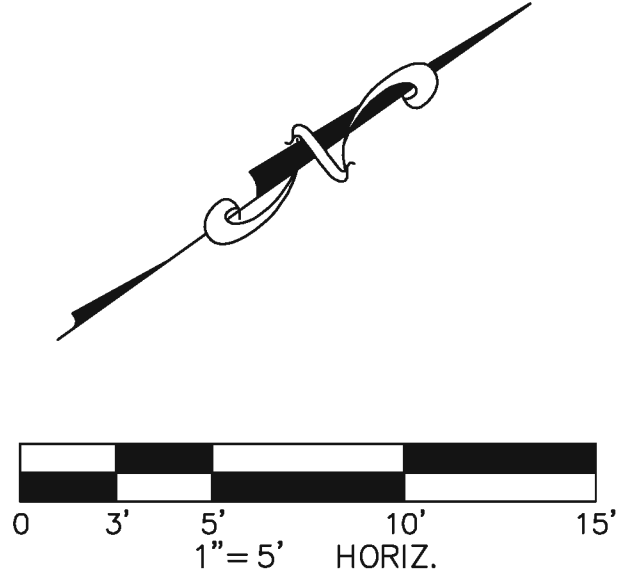
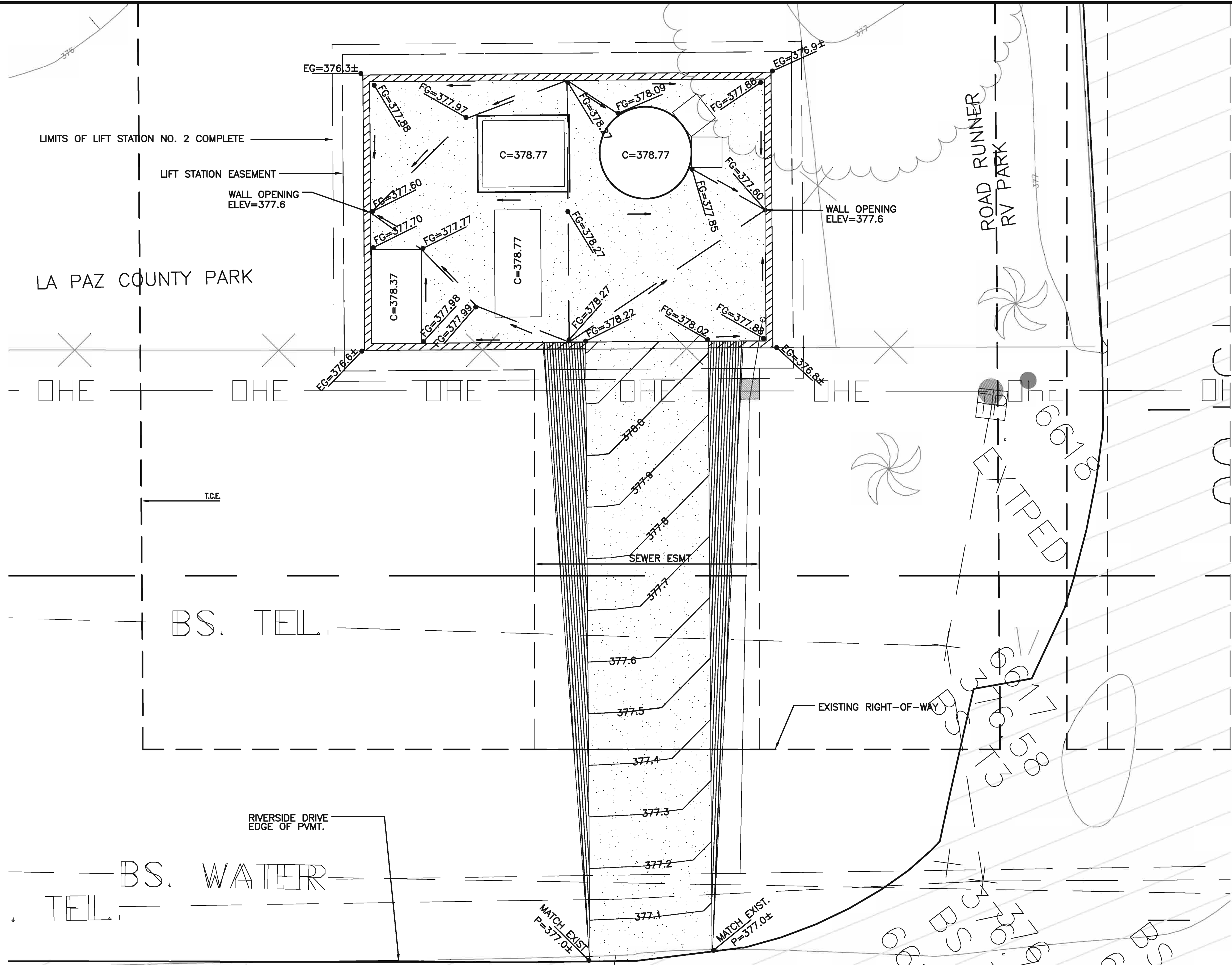
NOTE:  
CONTRACTOR IS ADVISED THAT THE SEWER CONSTRUCTION NOTES FOR THE LIFT STATIONS (SHEETS 33, 36, AND 39) DIFFER FROM THE NOTES FOR THE PLAN & PROFILE SHEETS



LIFT STATION NO. 2 FINAL CONSTRUCTION PLAN  
SCALE: 1"=5'

REVISIONS	BY	DATE





LIFT STATION NO. 2 FINAL GRADING AND DRAINAGE PLAN  
SCALE: 1"=5'

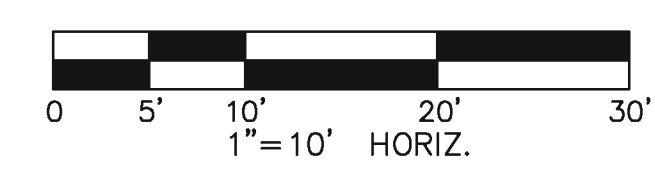
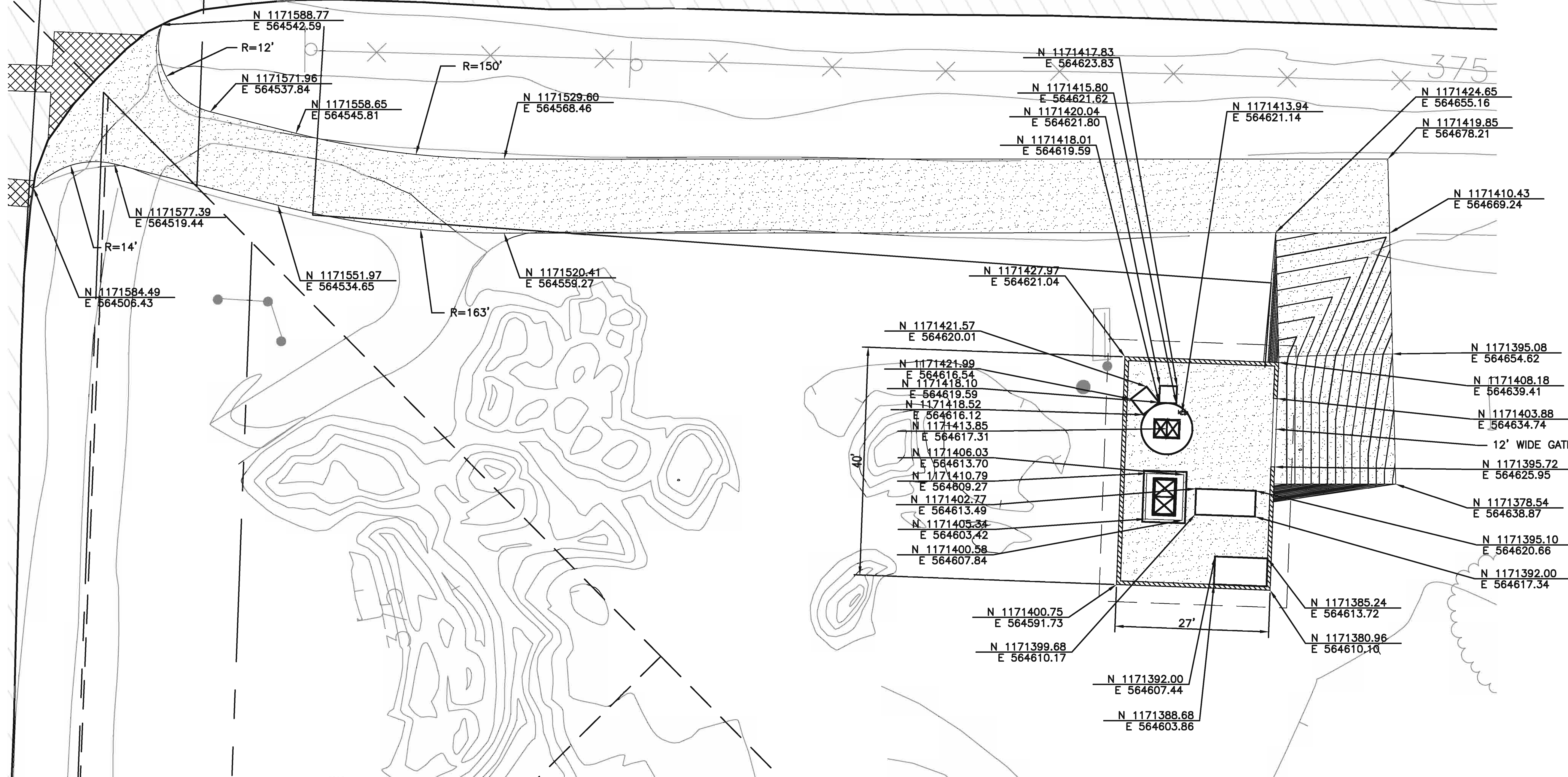
# GOLF COURSE DRIVE

11+00

12+00

375

375



LIFT STATION NO. 3 GEOMETRIC CONTROL PLAN  
SCALE: 1"=10'



REVISIONS	BY	DATE

RIVERSIDE DRIVE

GOLF COURSE DRIVE

11+00

12+00

SEE SHEET 30 FOR PLAN & PROFILE OF 10" GRAVITY SEWER LINE

SEWER CONSTRUCTION NOTES

- 1 INSTALL 8" PVC SEWER
- 5 INSTALL 6'x8' VALVE VAULT
- 6 INSTALL ODOR CONTROL UNIT ON 2.5' SQ. CONC. PAD
- 7 INSTALL ELECTRICAL CONTROL PANEL
- 8 INSTALL EMERGENCY GENERATOR
- 9 INSTALL 45° BEND, SIZE PER PLAN. W/ JOINT RESTRAINT
- 11 CONSTRUCT ACCESS ROAD PER DTL. ON SHT. 45 3" D.G. OVER 6" ABC, WIDTH PER PLAN
- 12 INSTALL 8' DIA. WET WELL
- 13 INSTALL 8" PLUG PER MAG STD. DTL 427
- 14 CONSTRUCT LIFT STATION ENCLOSURE REFER TO SHEETS S1.1 THROUGH S1.6
- 15 CONSTRUCT CONC. CHEMICAL PAD, SIZE PER PLAN
- 17 INSTALL 6" PVC FORCE MAIN
- 18 INSTALL FLANGED WYE CONNECTION, SIZE PER PLAN
- 19 INSTALL 10" PVC SEWER
- 21 INSTALL 3" D.G. OVER 6" ABC
- 22 INSTALL SEWER QUICK BY-PASS CONNECTION PER DET. ON SHEET 43
- 33 INSTALL 10" GATE VALVE
- 34 INSTALL 10" X 10" TEE
- 37 INSTALL 90° BEND W/ JOINT RESTRAINT
- 39 INSTALL 10-INCH C-900 PVC BYPASS LINE

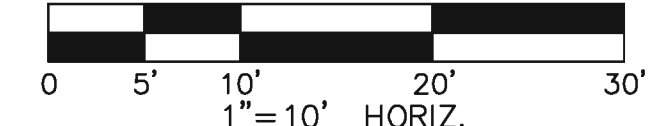
WATER CONSTRUCTION NOTES

- 1 INSTALL 1" SINGLE WATER SERVICE PER BROOKE UTILITIES STANDARDS
- 2 INSTALL 1" WATER LINE
- 3 INSTALL 1" - 90° BEND
- 4 INSTALL 1" HOSE BIB ATTACHED TO WALL PER DTL. ON SHEET 45

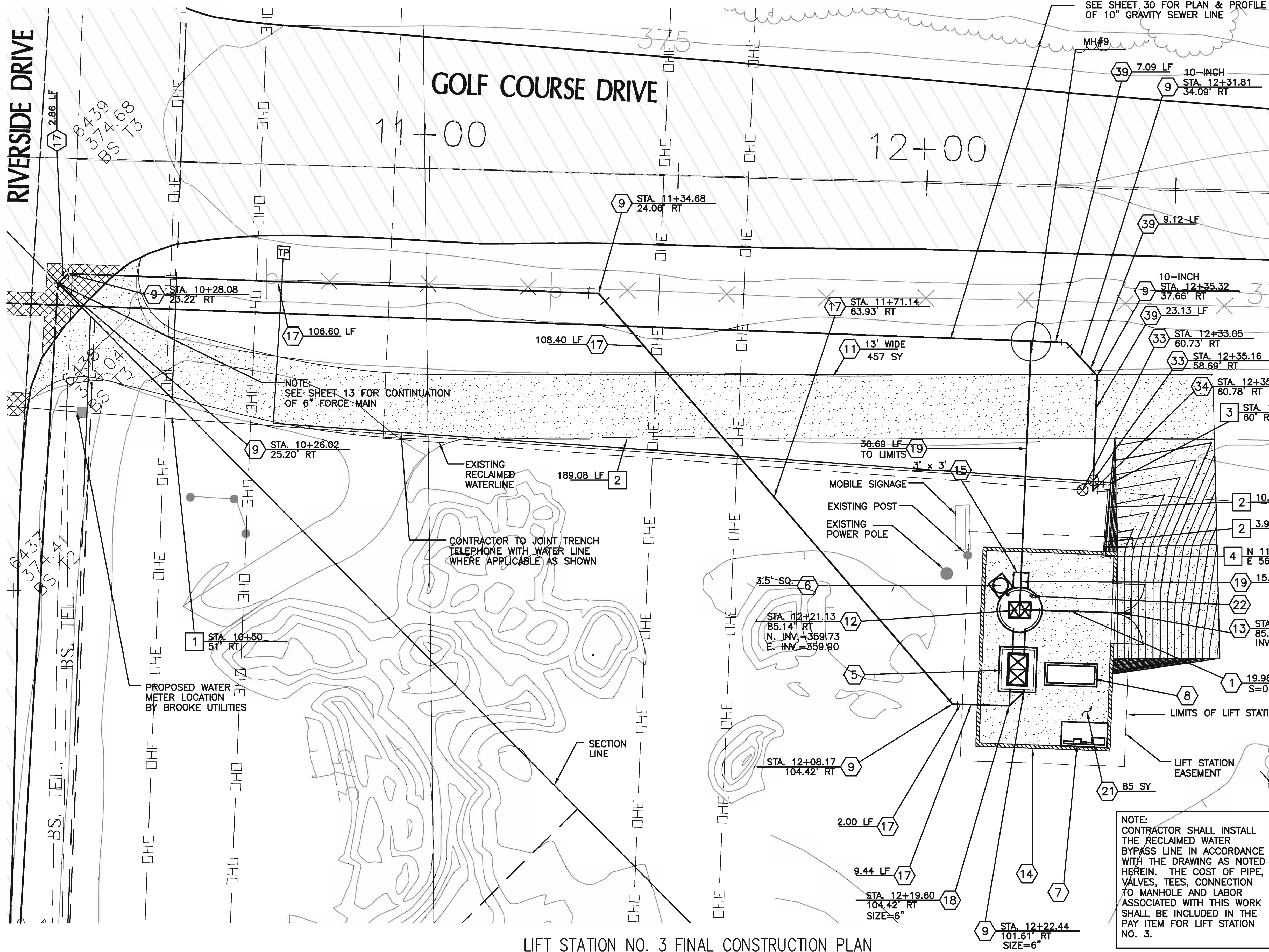
NOTE:  
THE PAY LIMITS FOR LIFT STATION NO. 3 SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE INSTALLATION OF THE WATER LINE, WATER SERVICE PER BROOKE UTILITIES STANDARDS, TELEPHONE SERVICE, AND ALL COSTS OF CONST. OF THE ACCESS ROAD

NOTE:  
CONTRACTOR IS ADVISED THAT THE SEWER CONSTRUCTION NOTES FOR THE LIFT STATIONS (SHEETS 33, 36, AND 39) DIFFER FROM THE NOTES FOR THE PLAN & PROFILE SHEETS

NOTE:  
SEE SHEET 43 FOR LIFT STATION NO. 3 DETAILS.



NOTE:  
CONTRACTOR SHALL INSTALL THE RECLAIMED WATER BYPASS LINE IN ACCORDANCE WITH THE DRAWING AS NOTED HEREIN. THE COST OF PIPE, VALVES, TEES, CONNECTION TO MANHOLE AND LABOR ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE PAY ITEM FOR LIFT STATION NO. 3.



LIFT STATION NO. 3 FINAL CONSTRUCTION PLAN

SCALE: 1"=10'

**ENERGY AND WATER SOLUTIONS, LLC**  
 CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
 PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #:    DATE: 10/31/13  
 SCALE: 1"=10'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
 PHASE 4 SEWER  
 LIFT STATION NO. 3

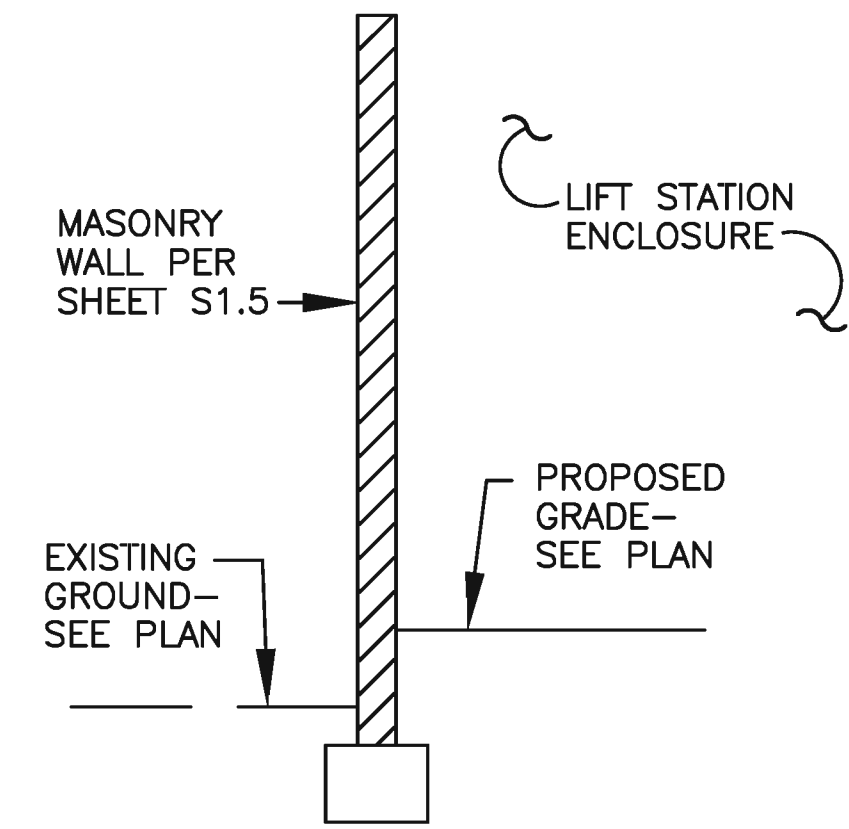
SHEET 39

RIVERSIDE DRIVE

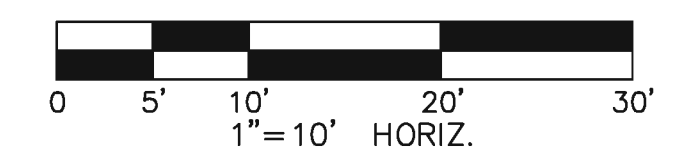
GOLF COURSE DRIVE

11+00

12+00



SECTION A-A  
N.T.S.



LIFT STATION NO. 3 FINAL GRADING AND DRAINAGE PLAN  
SCALE: 1"=10'

**ENERGY AND WATER SOLUTIONS, LLC**  
CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824    FAX: 480.656.9778    EMAIL: gpanaro@cox.net

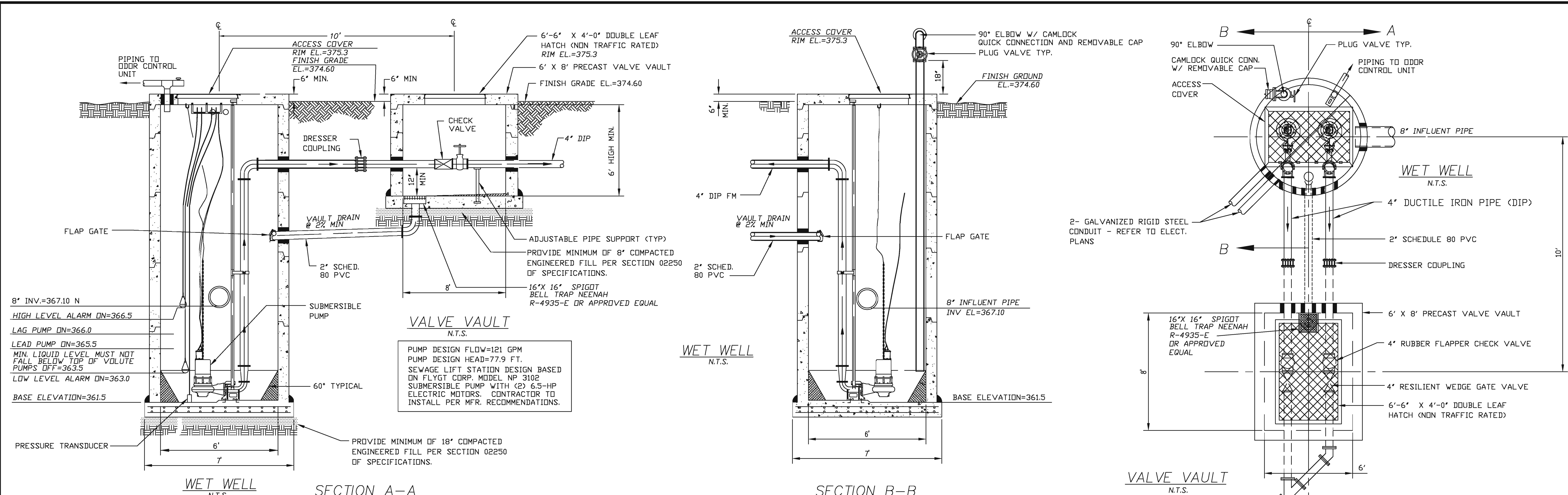
JOB #:    DATE: 10/31/13  
SCALE: 1"=10'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
PHASE 4 SEWER  
LIFT STATION NO. 3

**SHEETS**  
40

CALL TWO WORKING DAYS BEFORE YOU DIG  
**602-263-1100**  
**1-800-STAKE-IT**  
(OUTSIDE MARICOPA COUNTY)

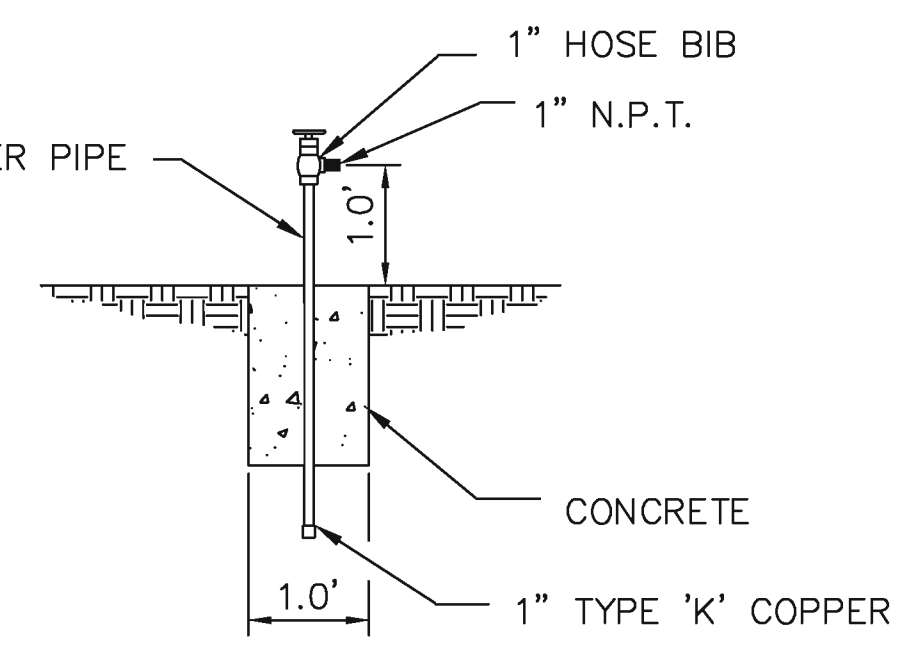
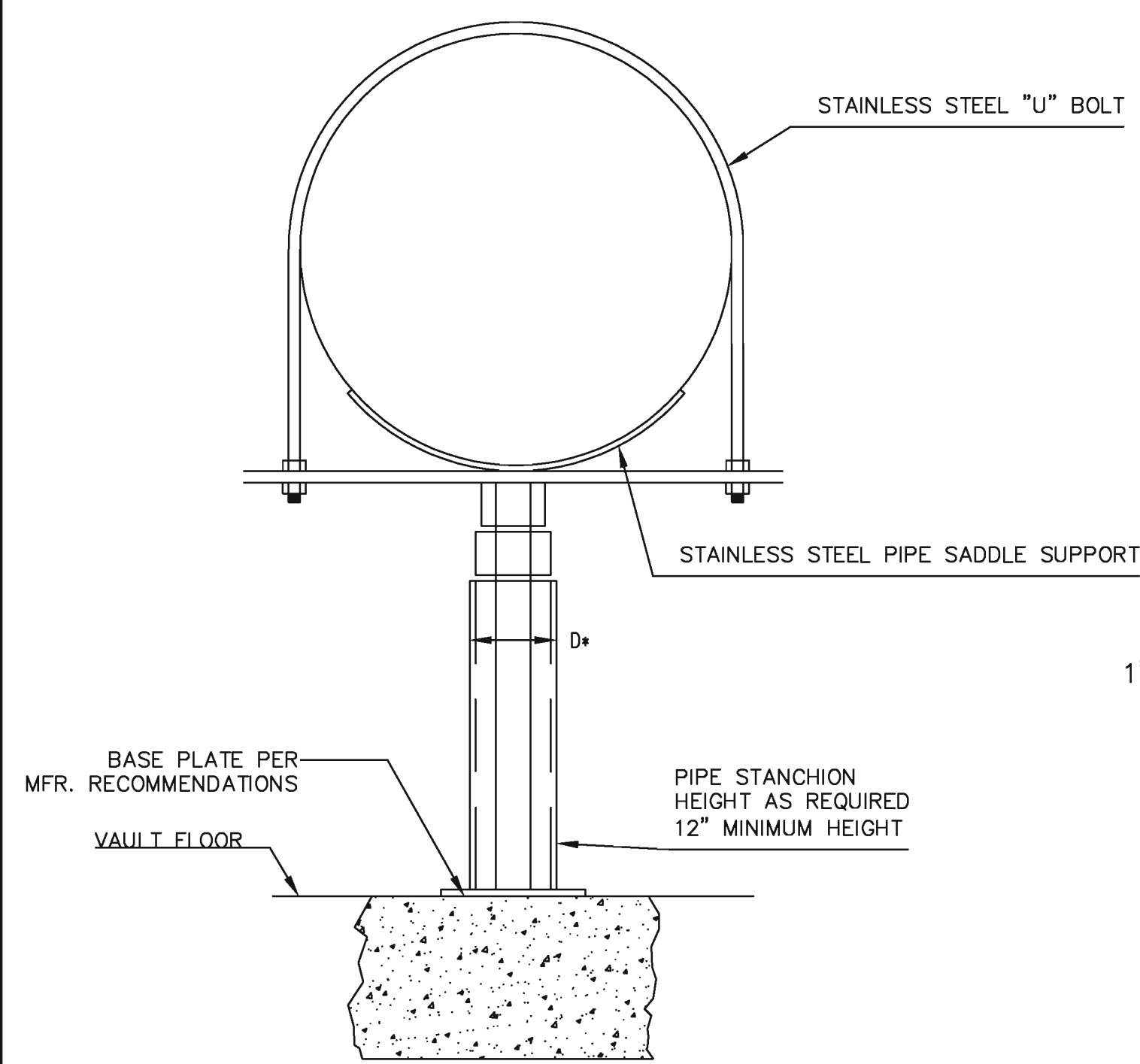


**VALVE VAULT**  
N.T.S.

PUMP DESIGN FLOW=121 GPM  
PUMP DESIGN HEAD=77.9 FT.  
SEWAGE LIFT STATION DESIGN BASED ON FLYGT CDRP. MODEL NP 3102 SUBMERSIBLE PUMP WITH (2) 6.5-HP ELECTRIC MOTORS. CONTRACTOR TO INSTALL PER MFR. RECOMMENDATIONS.

**WET WELL & VALVE CHAMBER DETAILS**  
(OR APPROVED EQUAL)  
N.T.S.

**NOTE:**  
SEE SHEET 4.2 FOR STANDARD LIFT STATION NOTES.

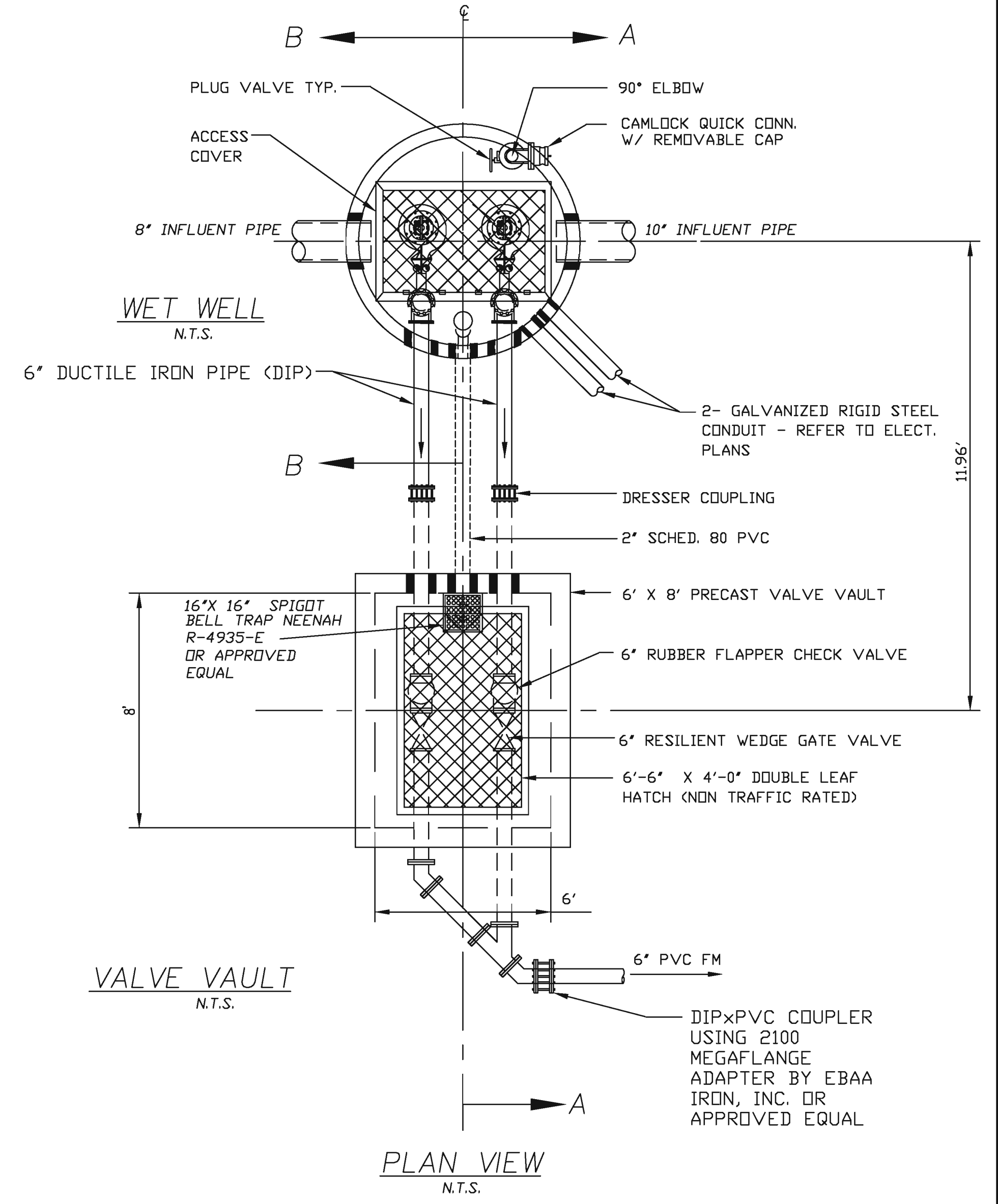
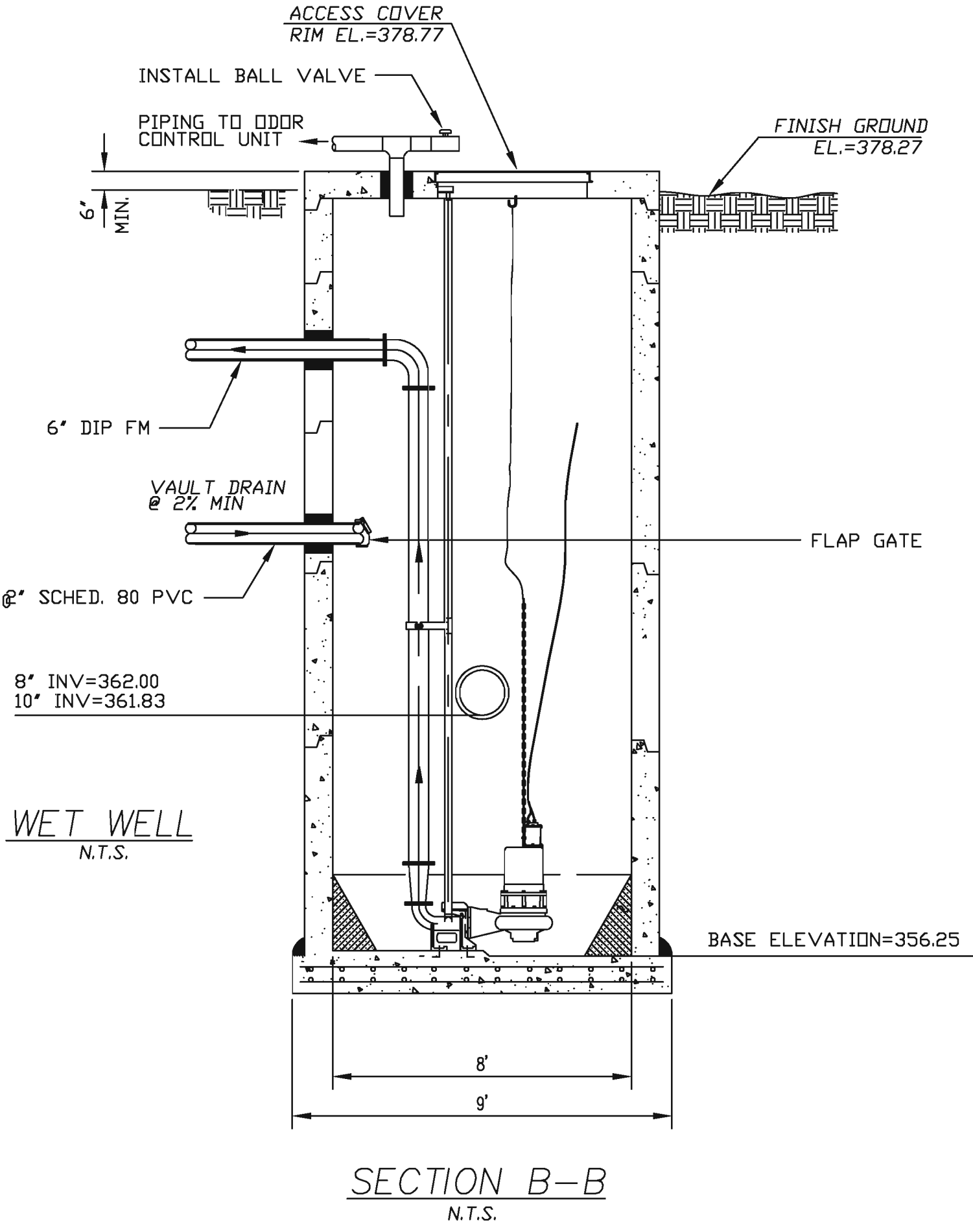
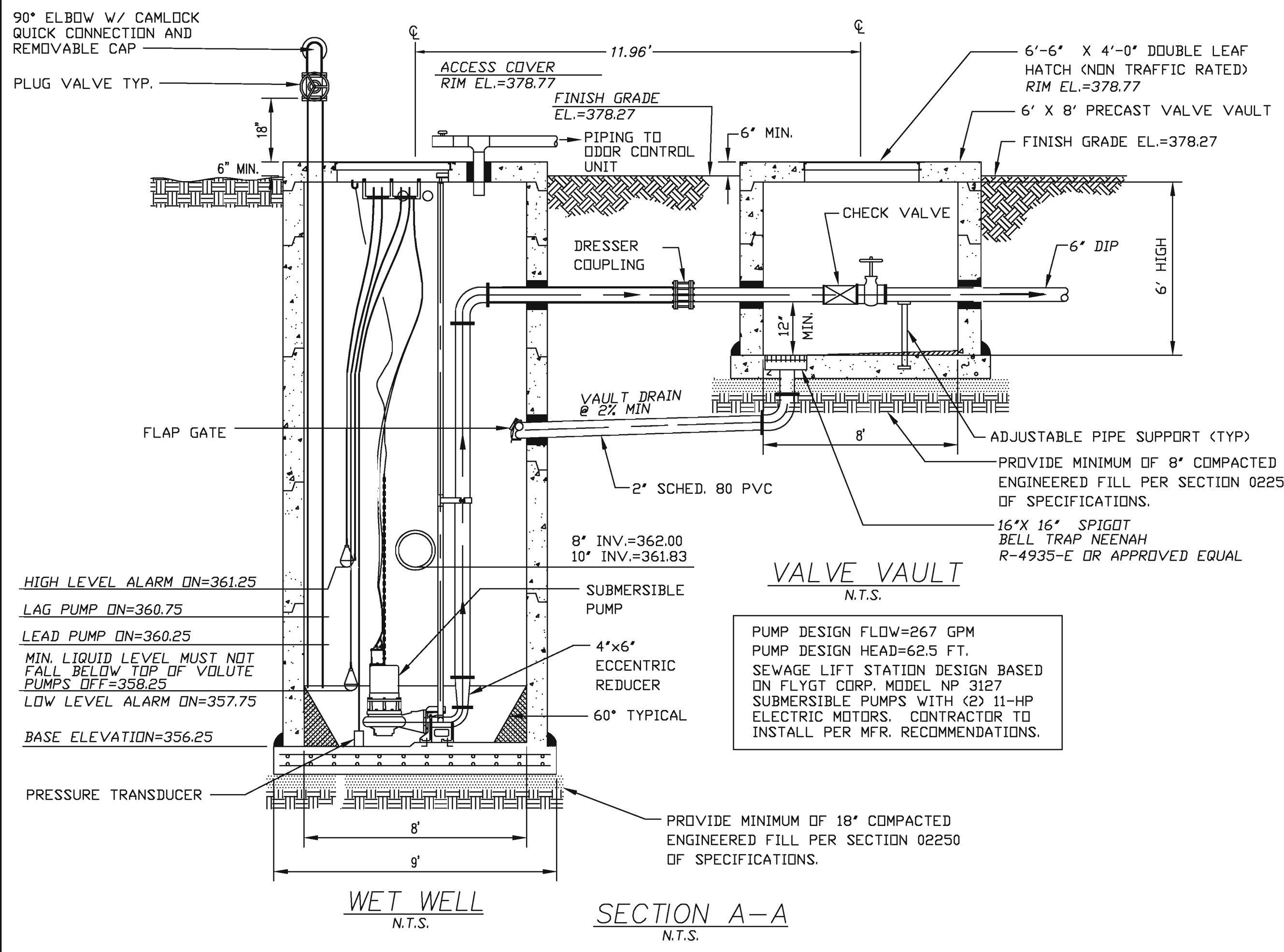


**ADJUSTABLE PIPE SUPPORT**  
N.T.S.

\*D TO BE DETERMINED BY PIPE SUPPORT MANUFACTURER

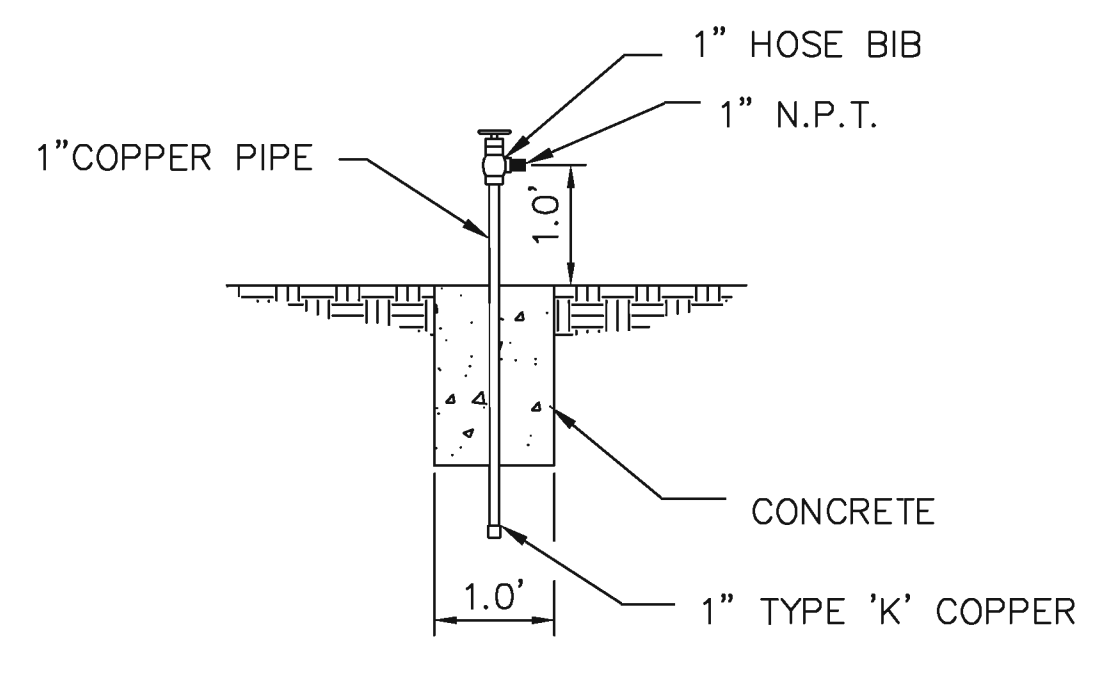
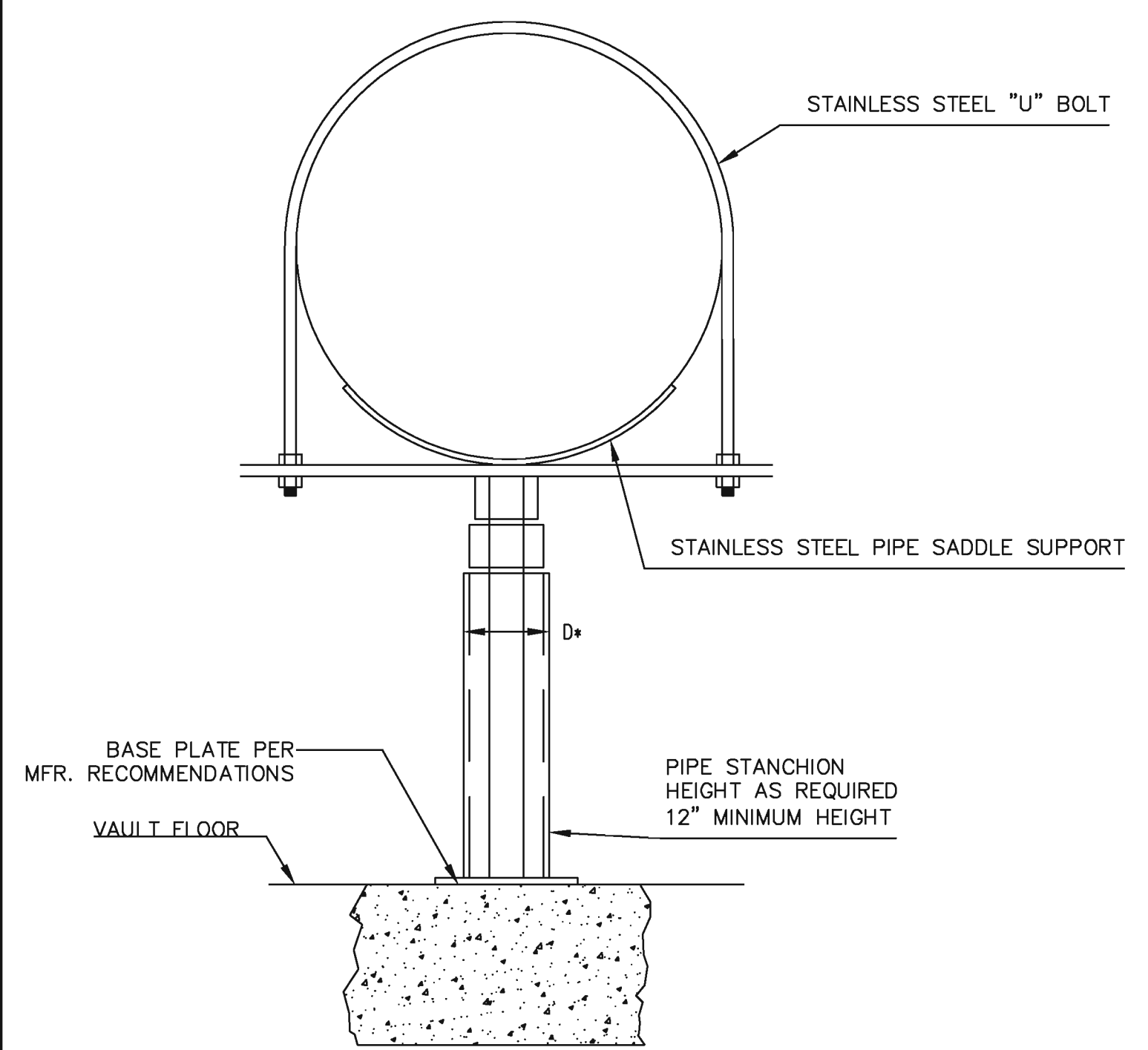
**HOSE BIB DETAIL**  
N.T.S.

REVISIONS	BY	DATE



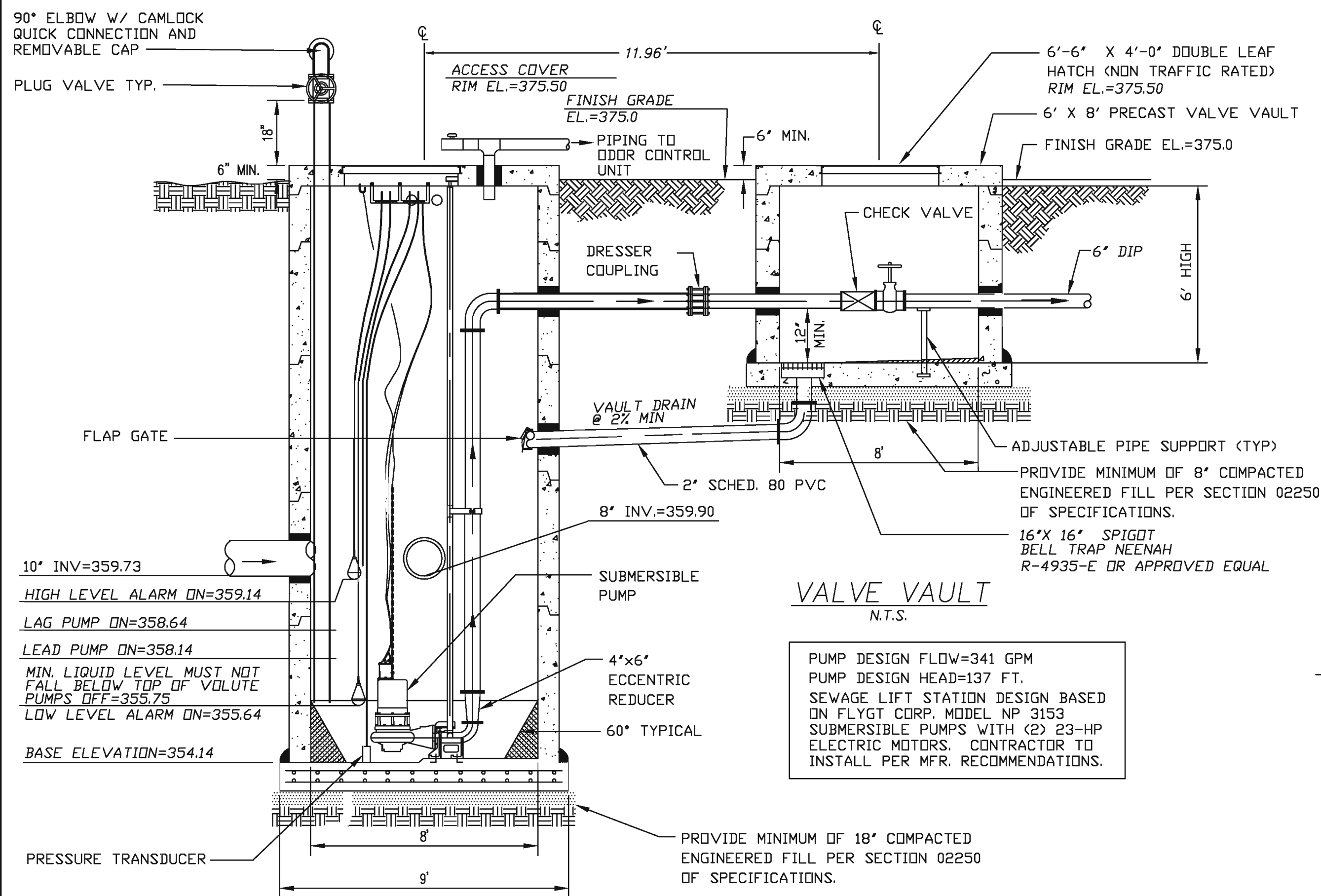
**WET WELL & VALVE CHAMBER DETAILS**  
(OR APPROVED EQUAL)  
N.T.S.

**NOTE:**  
SEE SHEET 4.2 FOR STANDARD LIFT STATION NOTES.



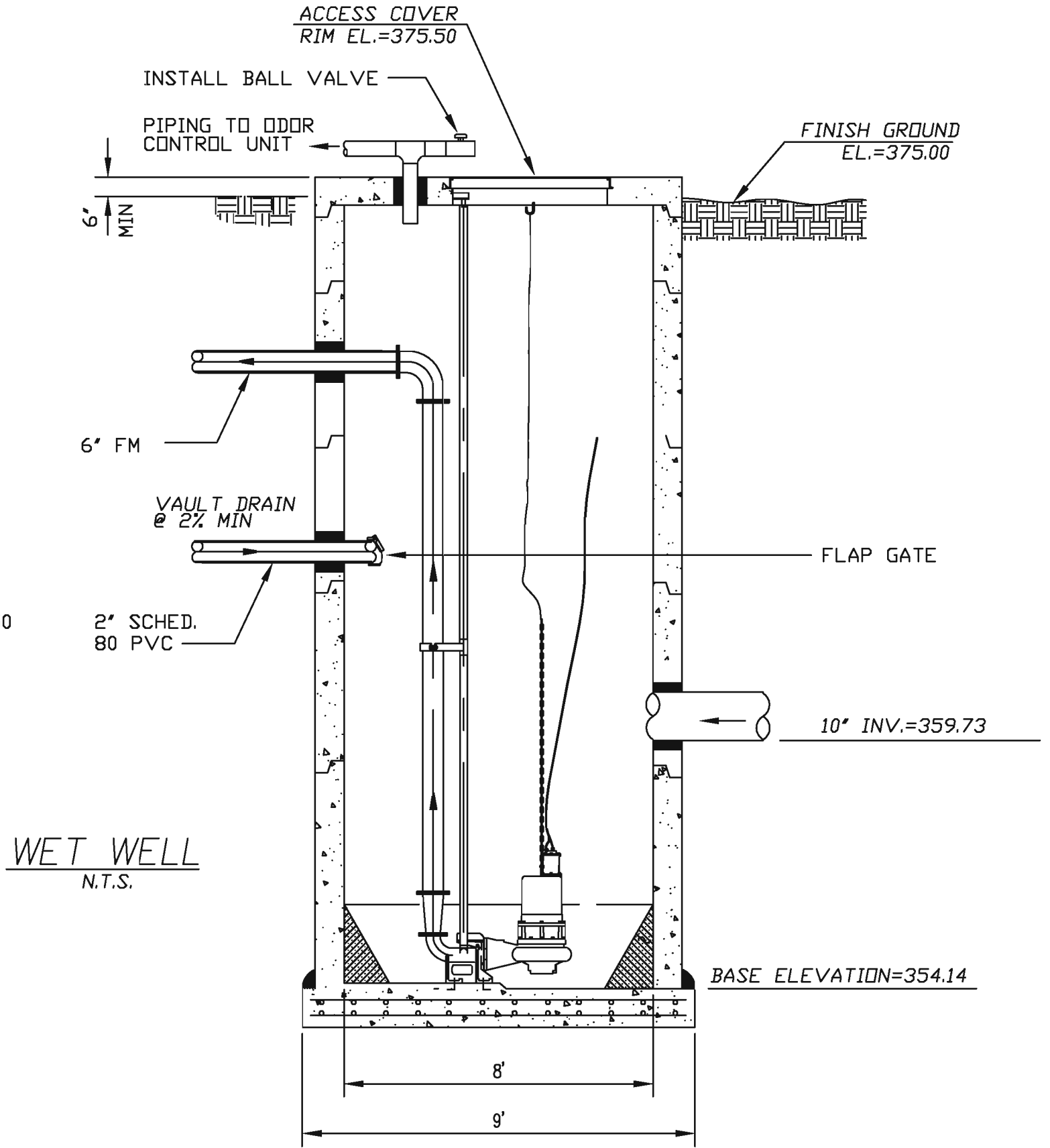
EXPIRES 3/31/17

REVISIONS	BY	DATE



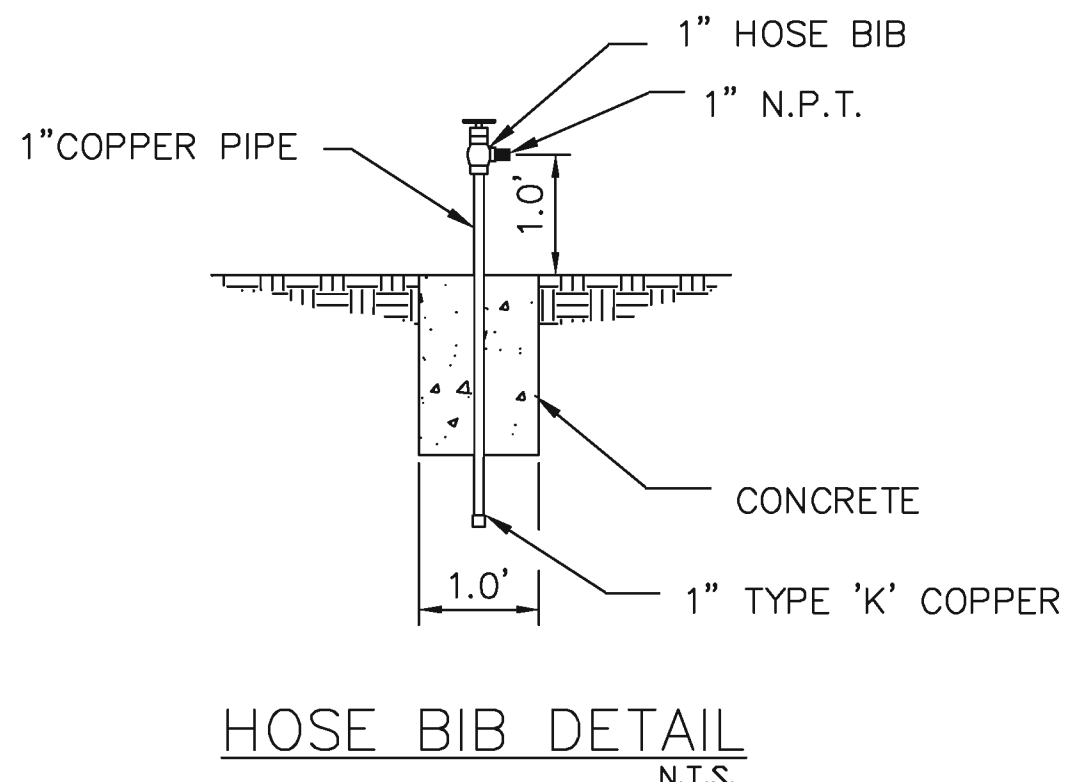
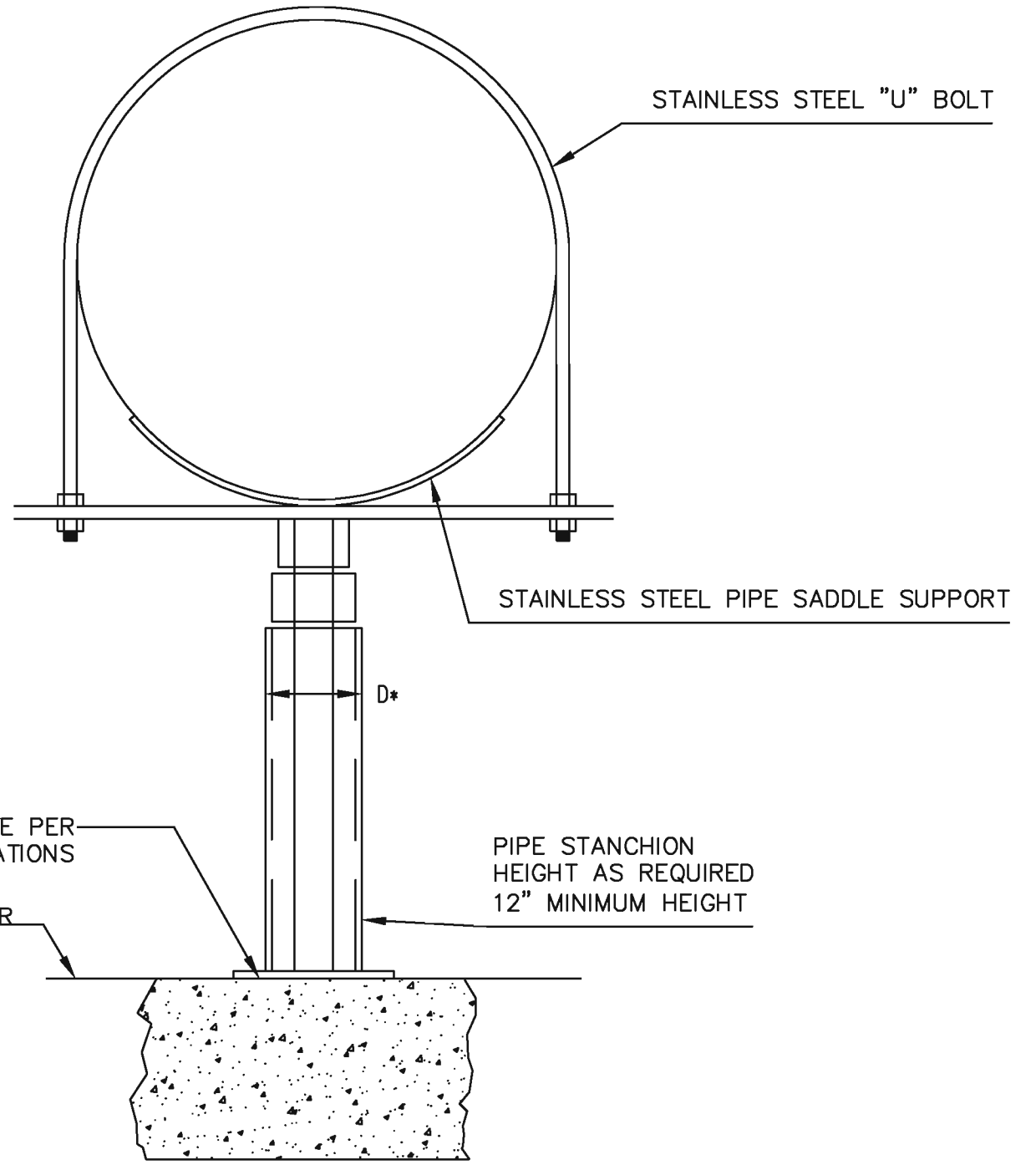
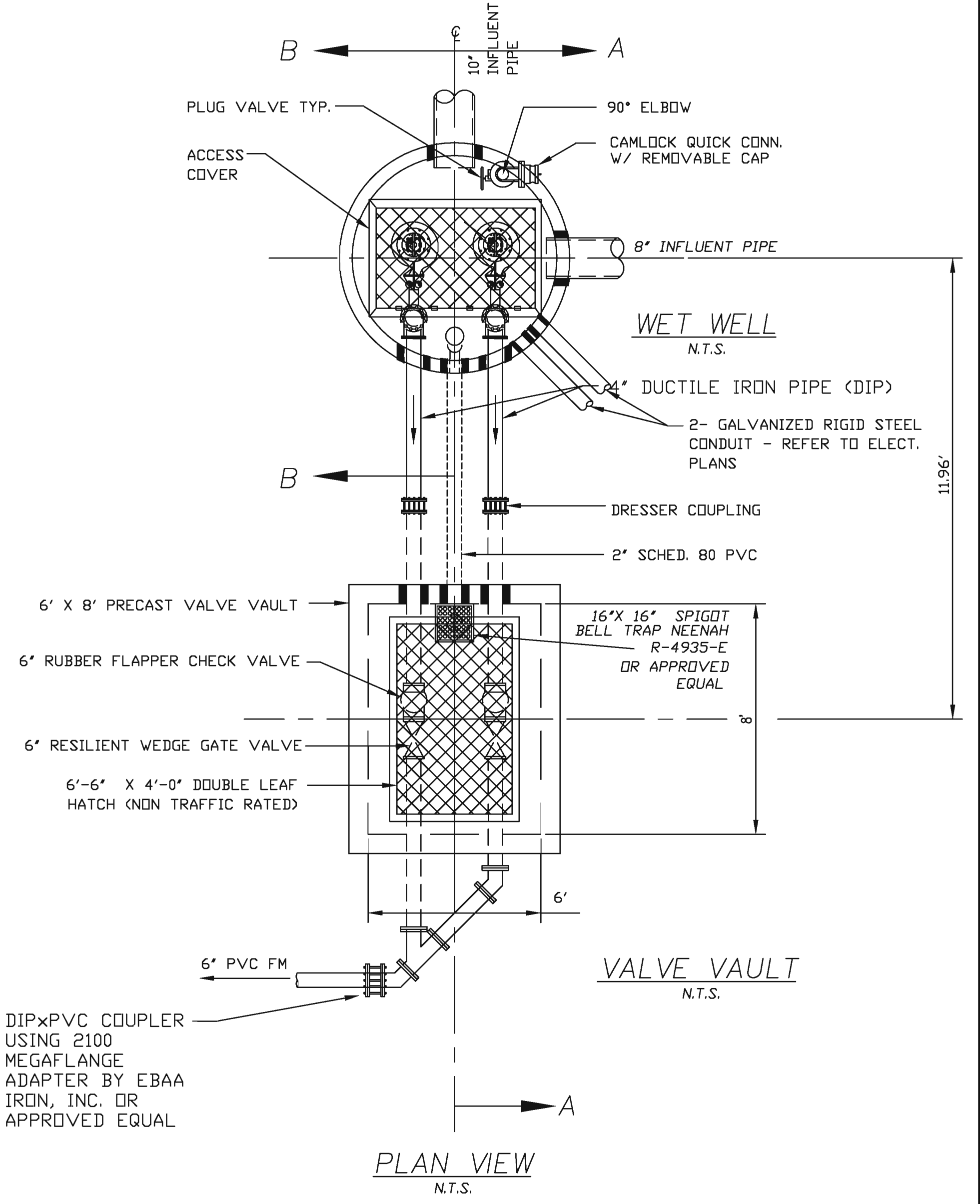
**VALVE VAULT**  
 N.T.S.

PUMP DESIGN FLOW=341 GPM  
 PUMP DESIGN HEAD=137 FT.  
 SEWAGE LIFT STATION DESIGN BASED ON FLYGT CORP. MODEL NP 3153 SUBMERSIBLE PUMPS WITH (2) 23-HP ELECTRIC MOTORS. CONTRACTOR TO INSTALL PER MFR. RECOMMENDATIONS.



**WET WELL**  
 N.T.S.

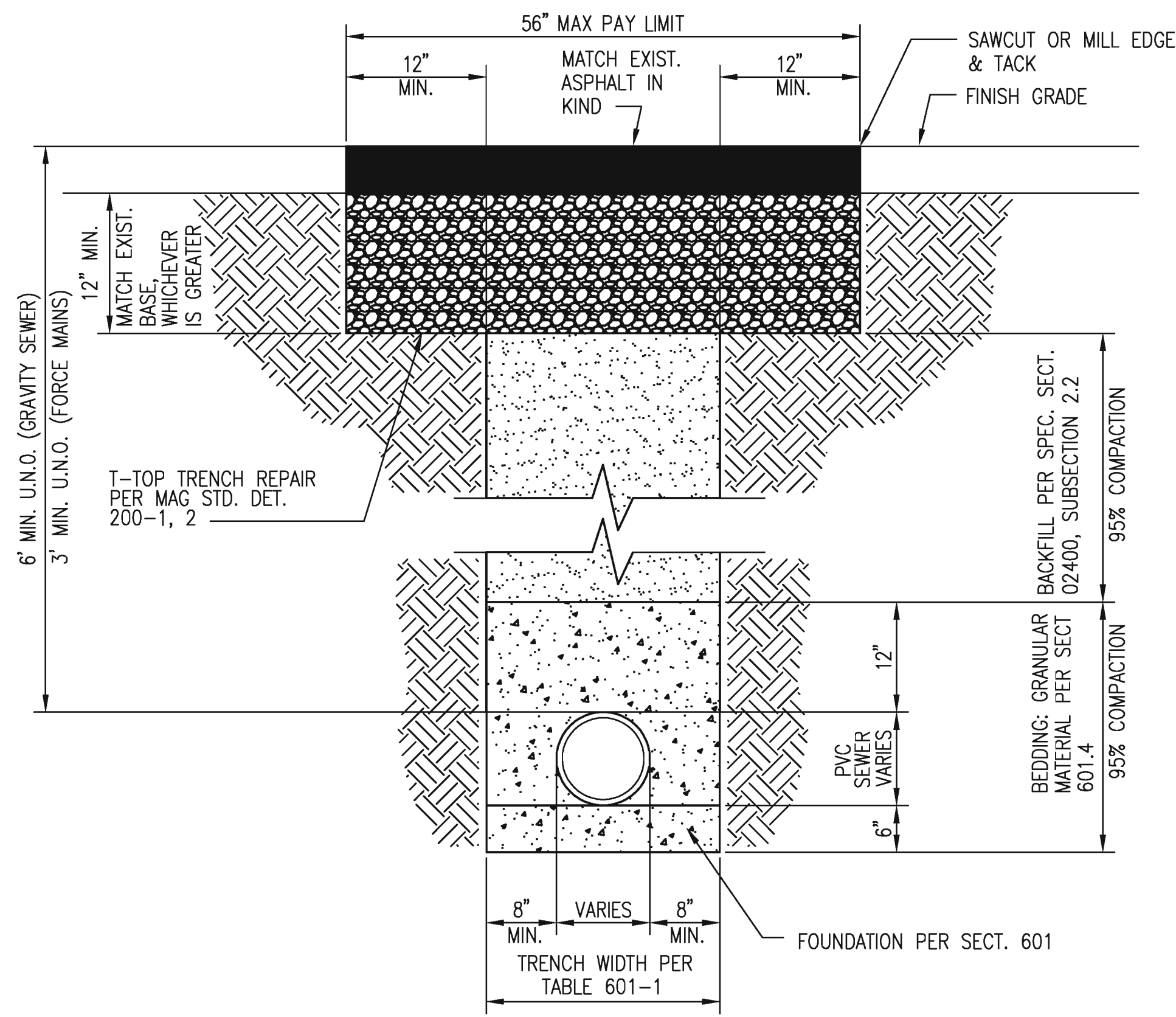
**WET WELL & VALVE CHAMBER DETAILS**  
 (OR APPROVED EQUAL)  
 N.T.S.



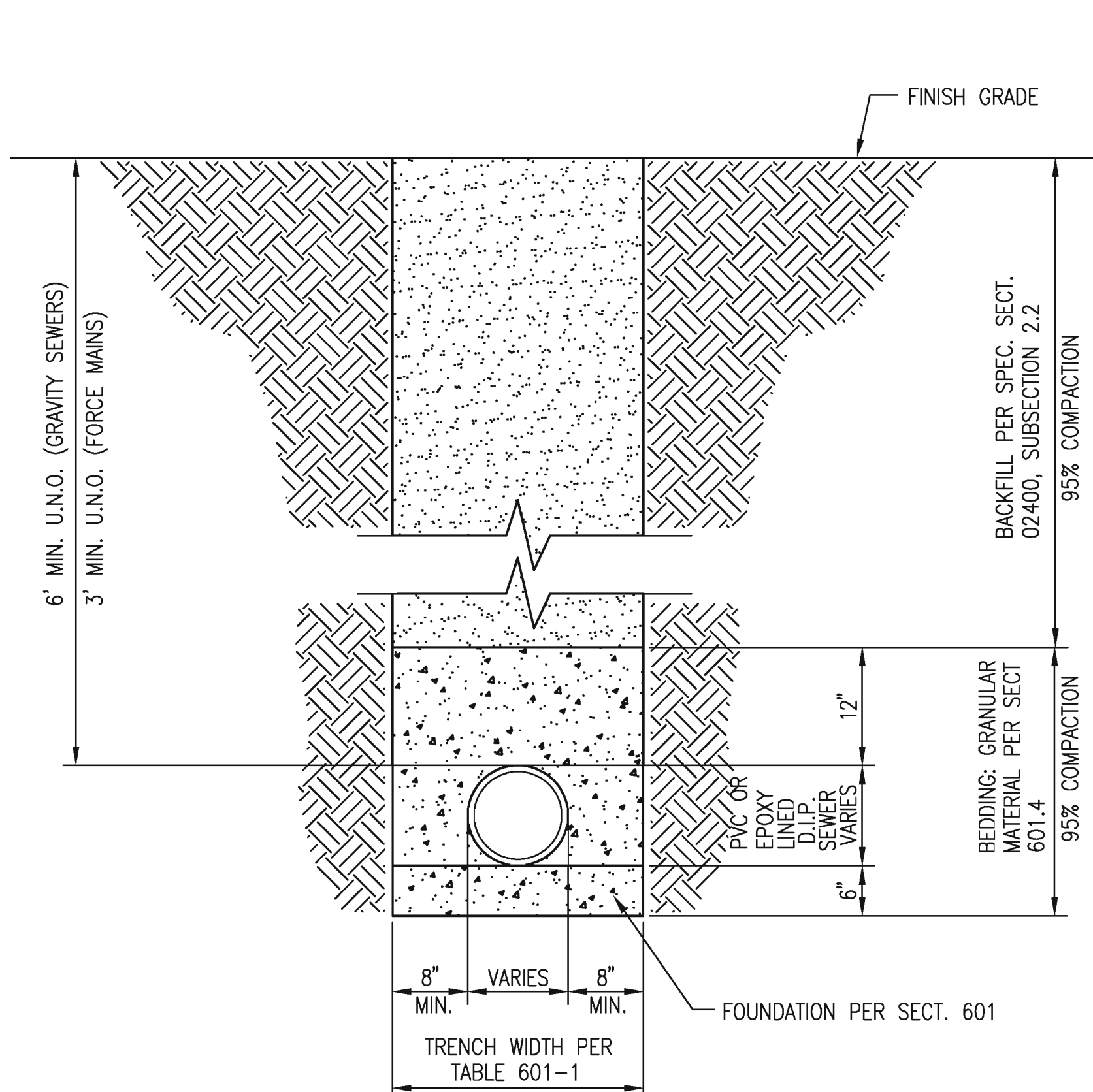
**NOTE:**  
 SEE SHEET 4.2 FOR STANDARD LIFT STATION NOTES.



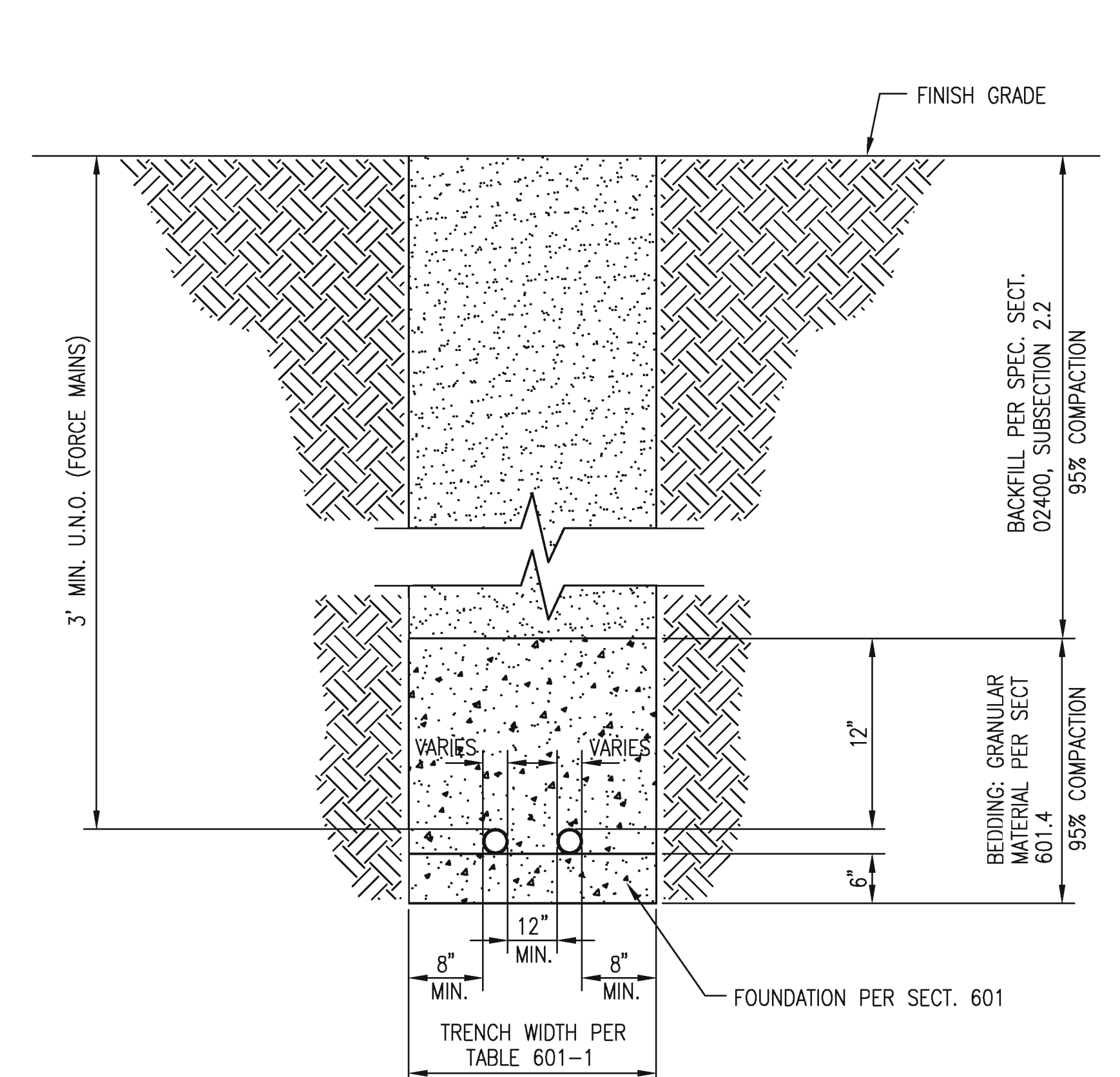
REVISIONS	BY	DATE



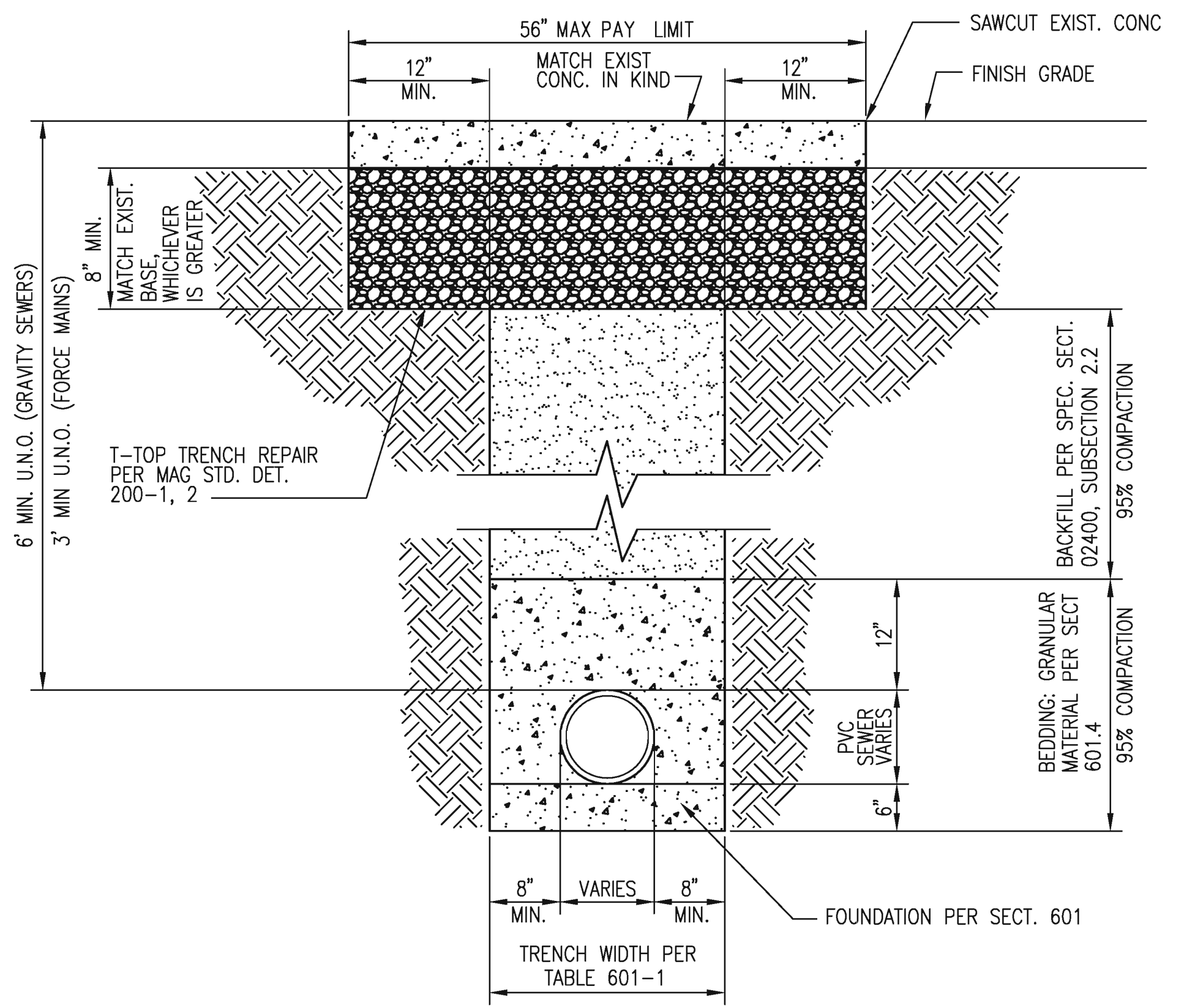
**A** TYPICAL GRAVITY / FORCE MAIN SEWER TRENCH IN PAVED AREAS  
N.T.S.



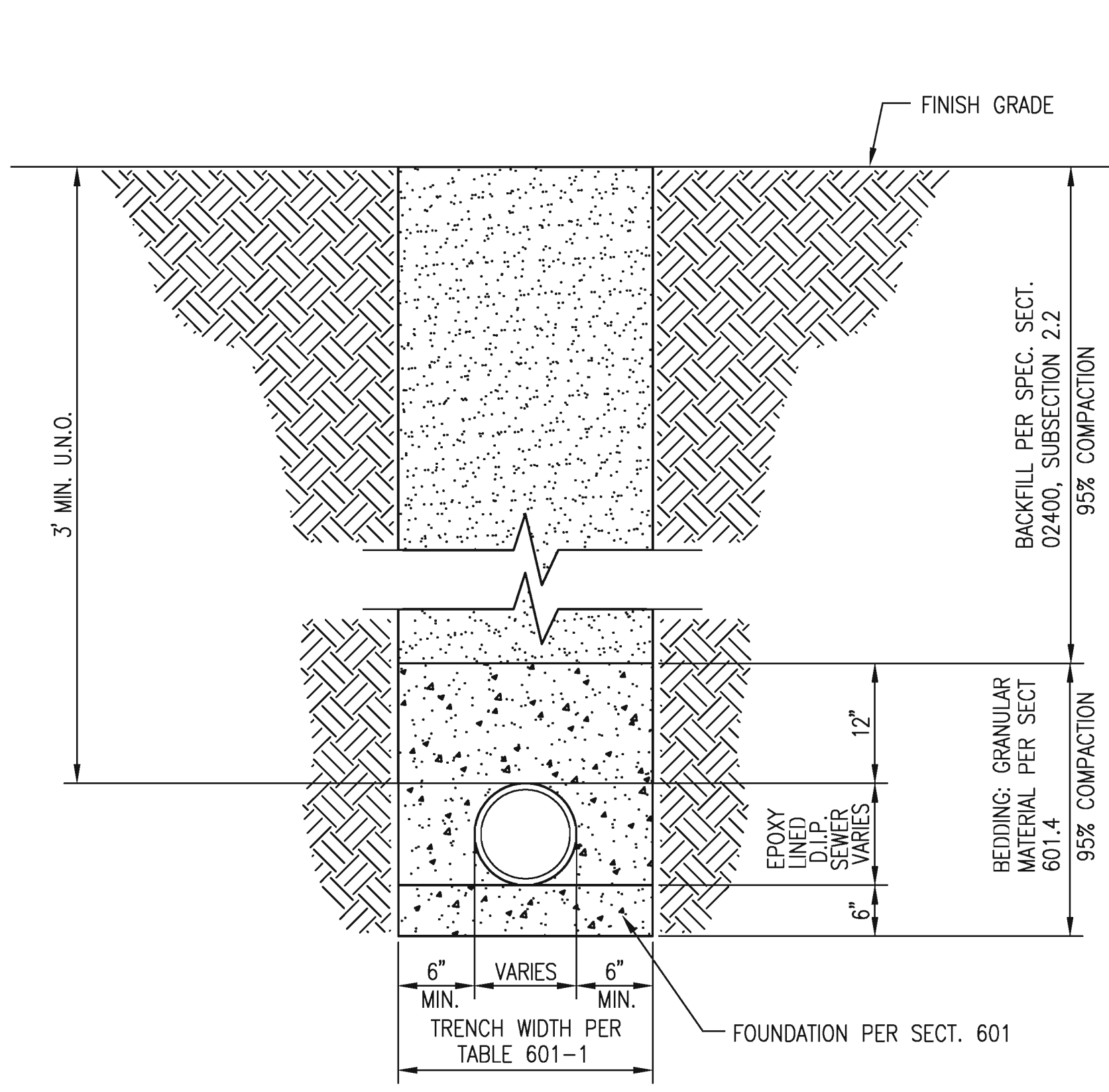
**B** TYPICAL GRAVITY / FORCE MAIN SEWER TRENCH IN NON-PAVED AREAS  
N.T.S.



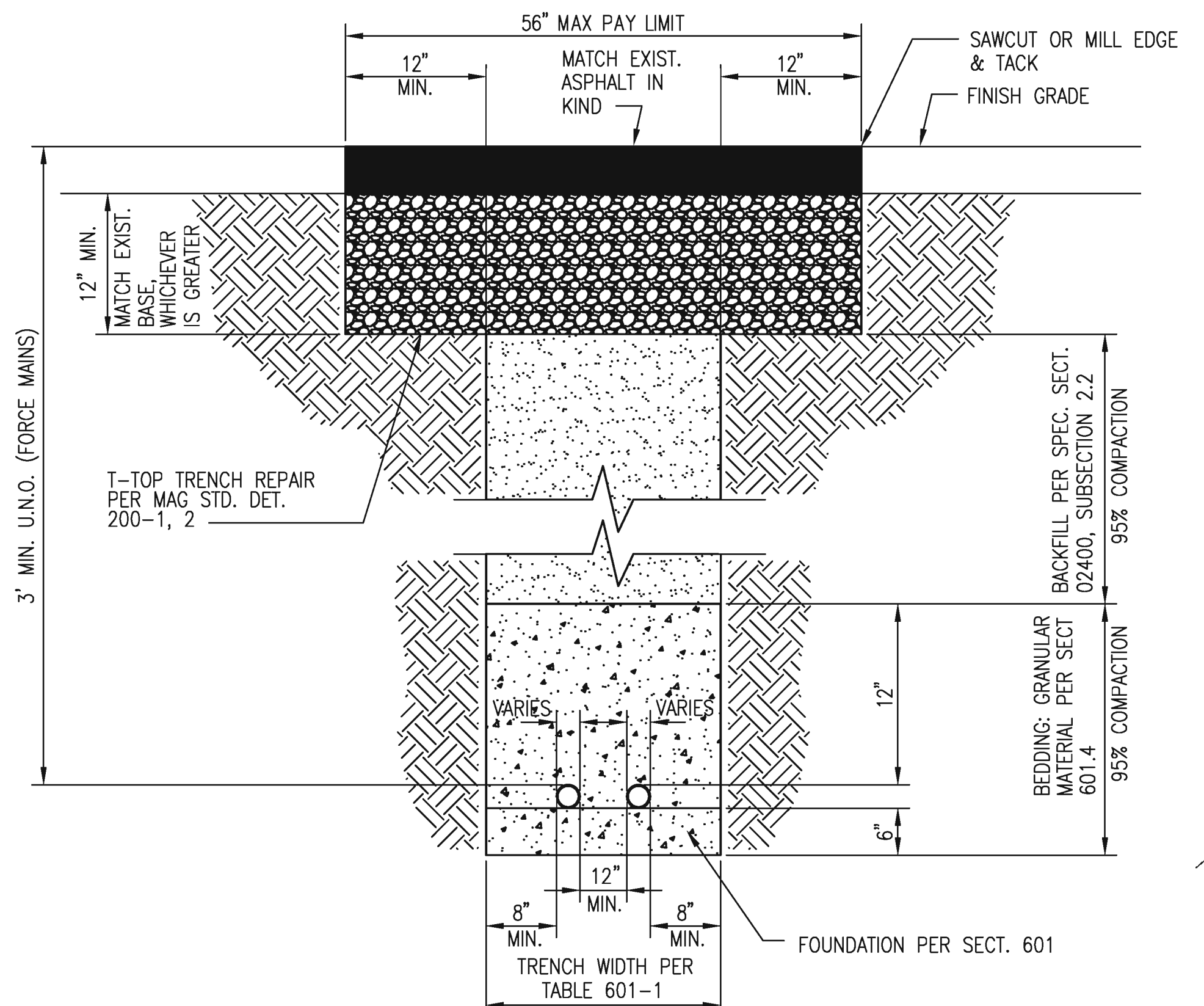
**C** JOINT TRENCH - DUAL FORCE MAINS IN NON-PAVED AREAS  
N.T.S.



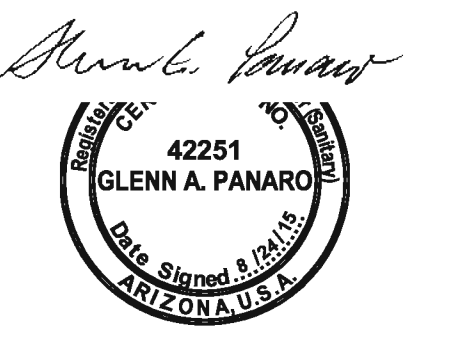
**D** TYPICAL GRAVITY / FORCE MAIN SEWER TRENCH DETAIL IN CONCRETE  
N.T.S.



**E** FORCE MAIN SEWER TRENCH DETAIL IN WASH CROSSINGS  
N.T.S.



**F** JOINT TRENCH - DUAL FORCE MAIN SEWER IN PAVED AREAS  
N.T.S.

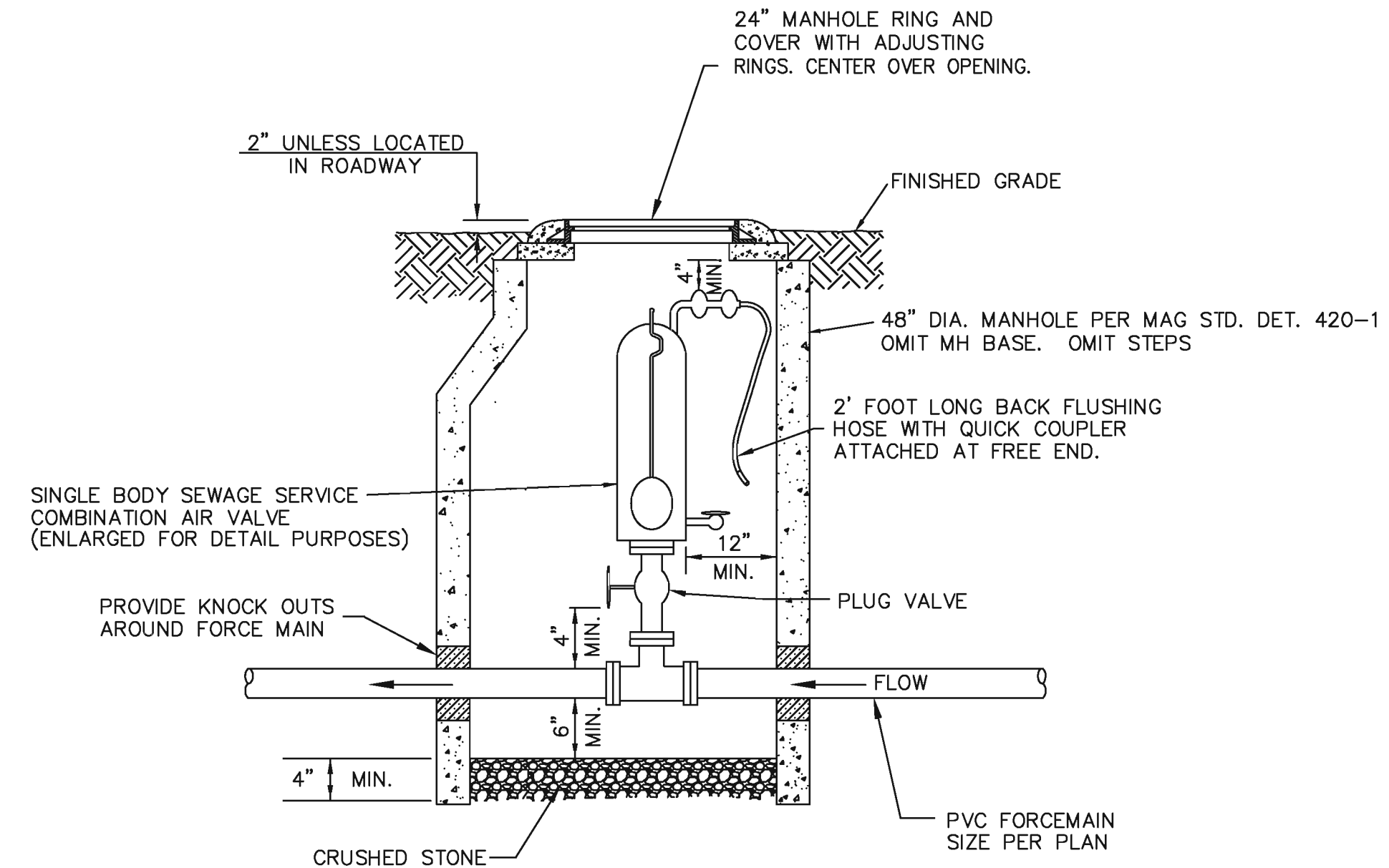


EXPIRES 3/31/17

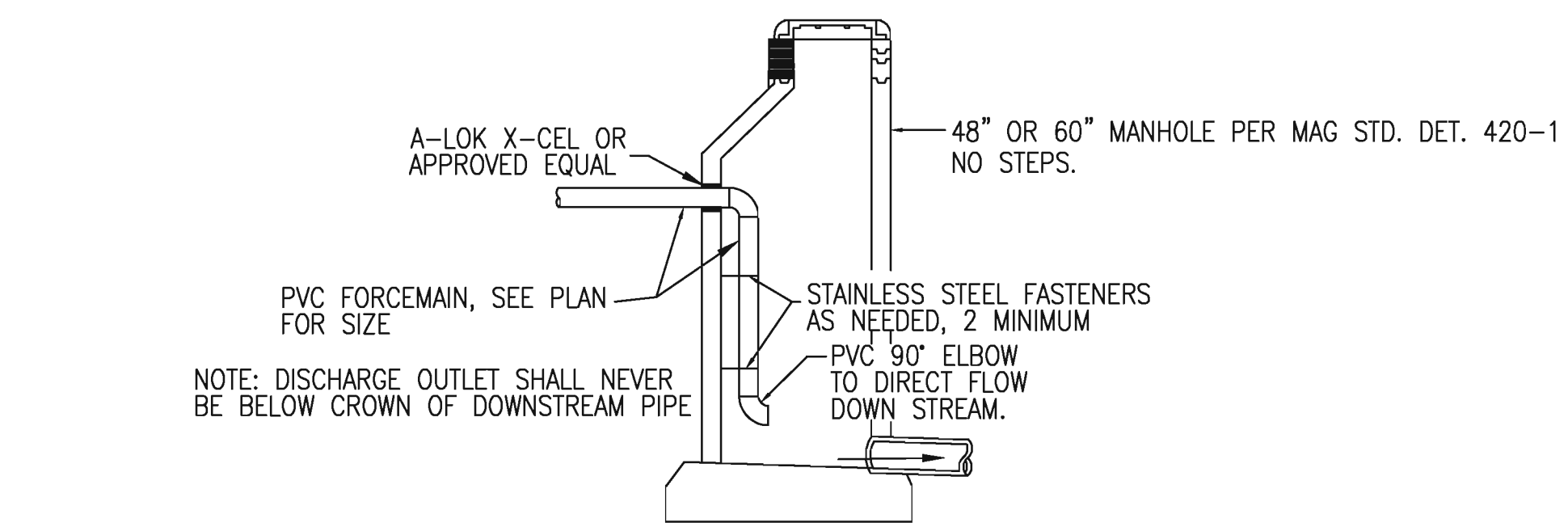
CALL TWO WORKING DAYS BEFORE YOU DIG  
602-263-1100  
1-800-STAKE-IT  
(OUTSIDE MARICOPA COUNTY)

REVISIONS	BY	DATE

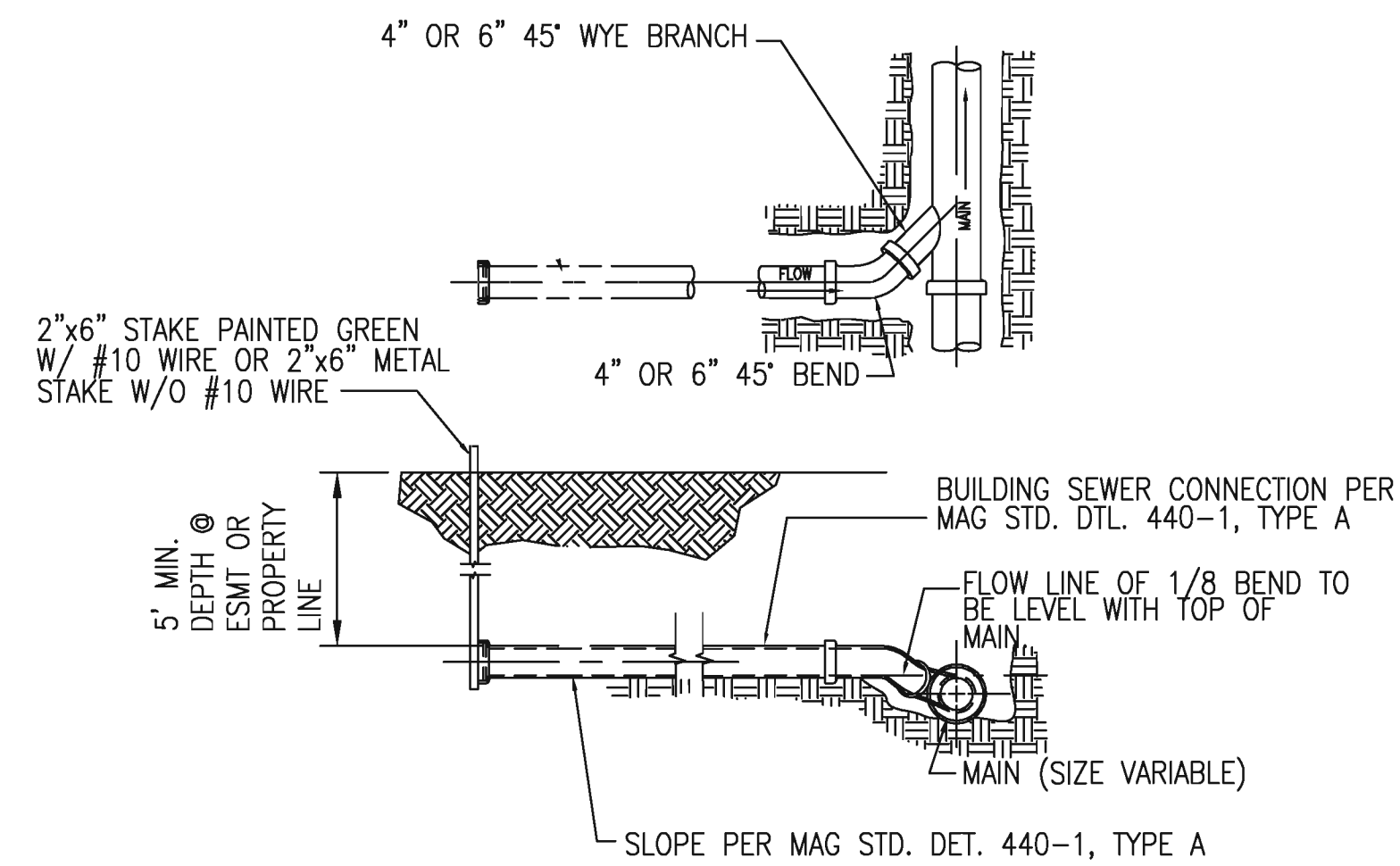




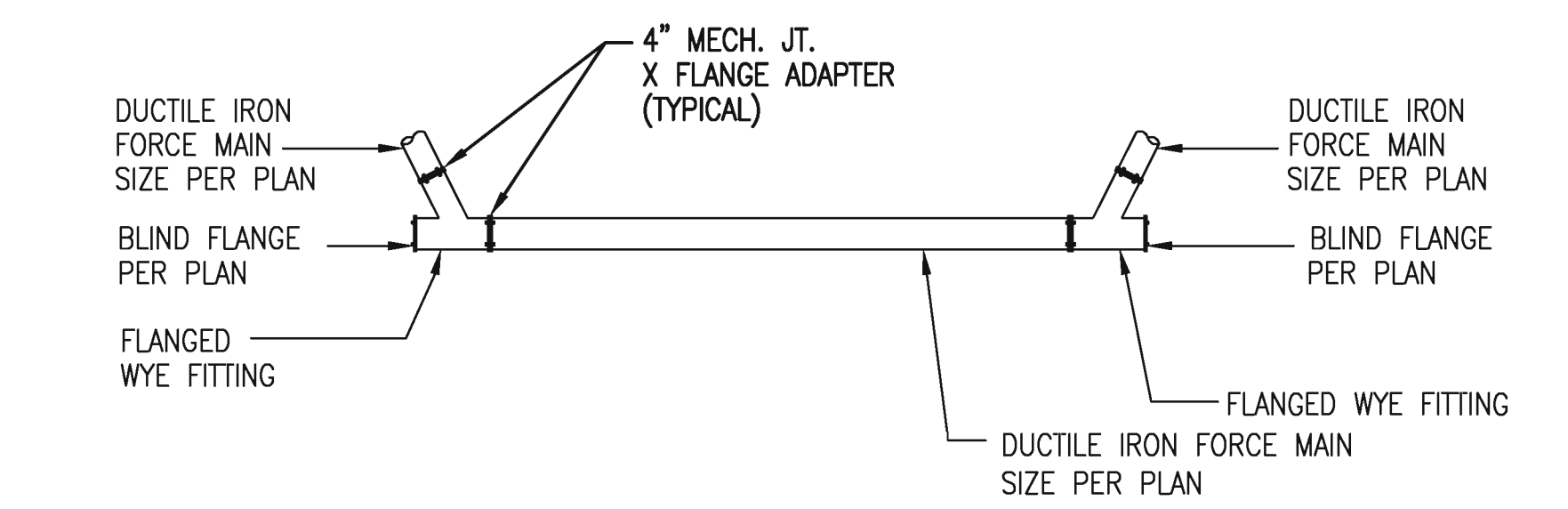
**SEWER AIR RELEASE VALVE**  
N.T.S.



**TYPICAL FORCEMAIN DISCHARGE MANHOLE**  
N.T.S.

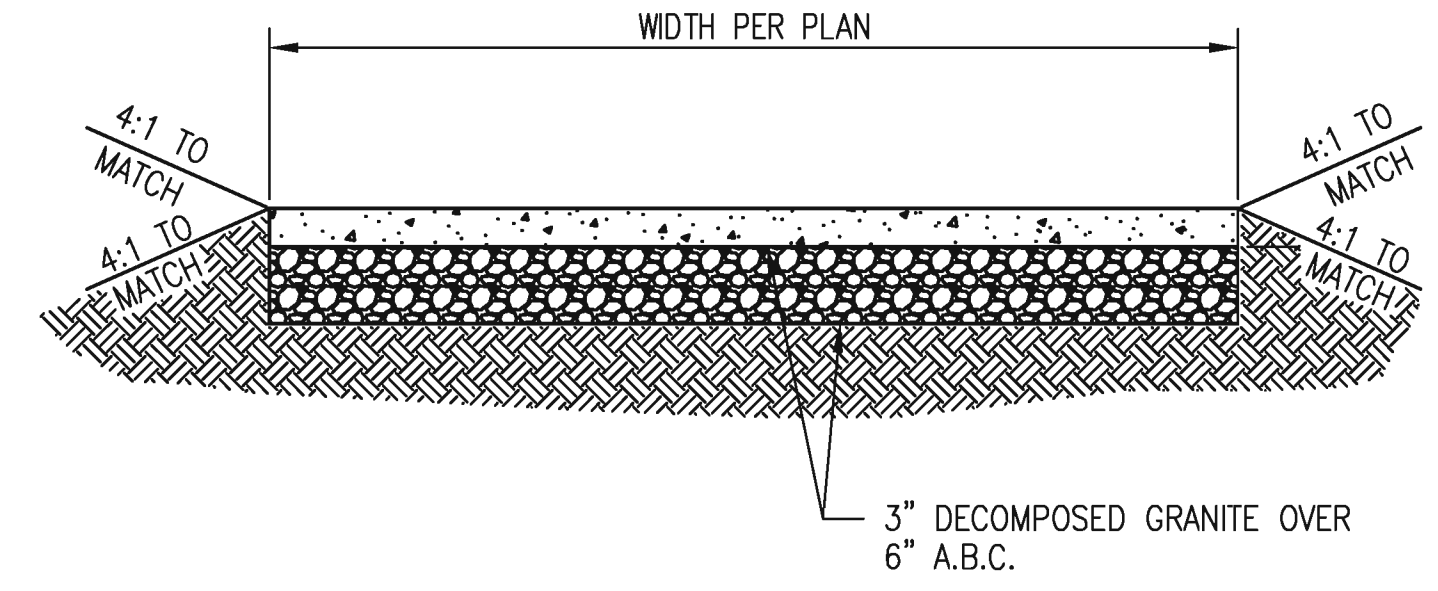


**BUILDING SEWER CONNECTION**  
N.T.S.

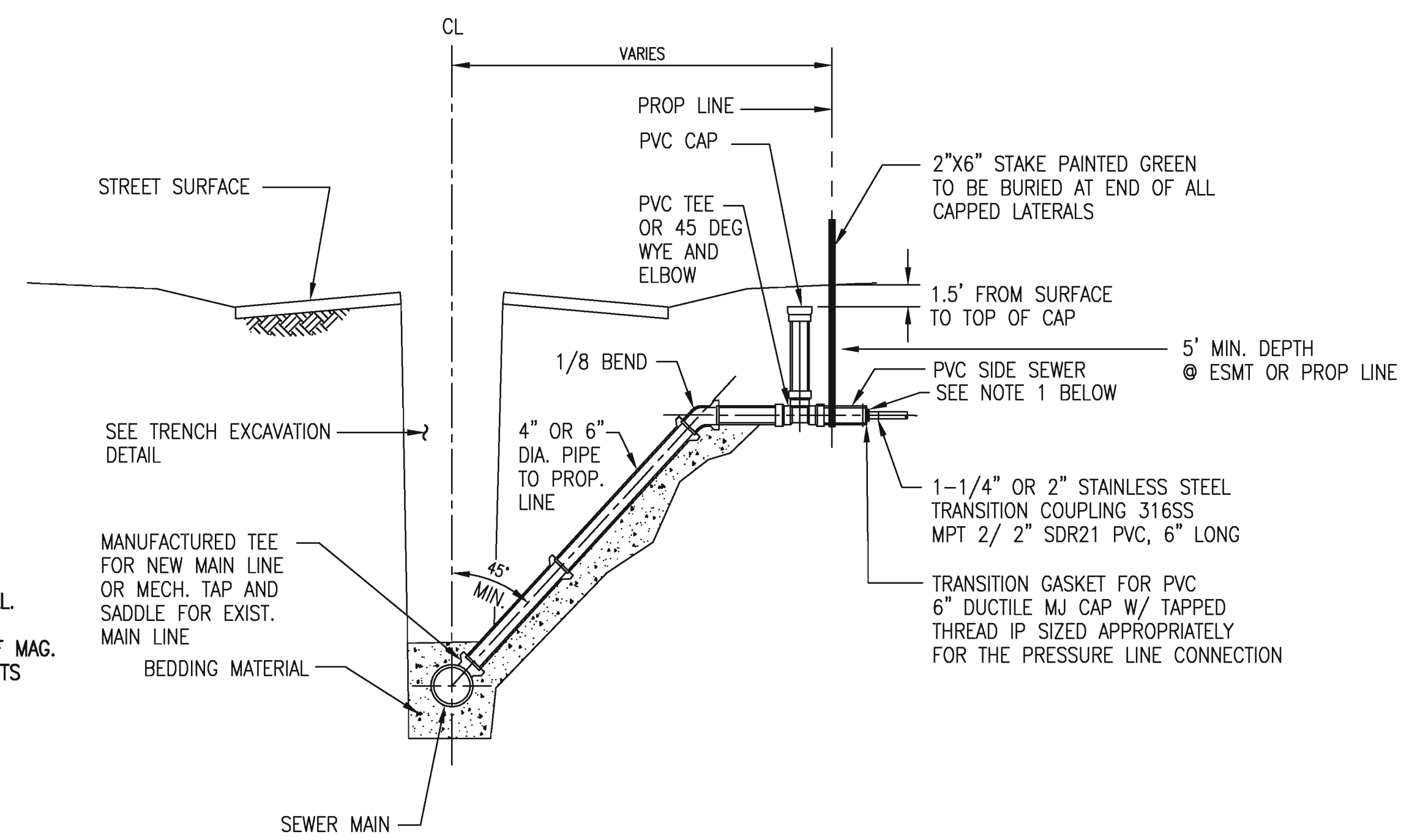


**FORCE MAIN CLEANOUT**  
N.T.S.

NOTE:  
 1. ALL 4" DIP JOINTS SHALL BE RESTRAINED USING MEGA-LUG SERIES 1100 BY EBAA IRON INC., OR APPROVED EQUAL.  
 2. ALL 4" D.I. PIPING AND FITTINGS SHALL BE LINED WITH CERAMIC EPOXY, "PROTECTO 401", OR APPROVED EQUAL.  
 3. ALL 4" D.I. PIPING AND FITTINGS SHALL BE ENCASED WITH POLYETHYLENE IN ACCORDANCE WITH SECTION 610-6 OF MAG.  
 4. D.I. PIPING SHALL BE CONCRETE ENCASED AT A MINIMUM OF 10' BEYOND THE OUTSIDE DIAMETER OF BOTH CULVERTS IN ACCORDANCE WITH MAG STD. DET. 404-1,2,3.



**ACCESS ROAD DETAIL**  
N.T.S.



**FORCE MAIN SEWER LATERAL SERVICE CONNECTION**  
N.T.S.

NOTES:  
 1. FOR 1-1/4" SERVICE USE 2"x1-1/4" BRASS BUSHING FOR 2" TAP  
 2. FOR 2" SERVICE, OMIT BUSHING



REVISIONS	BY	DATE

**GENERAL NOTES**

CONSTRUCTION SPECIFICATION – 2012 EDITION UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, MARICOPA ASSOCIATION OF GOVERNMENTS. ACI 530.1, SPECIFICATIONS FOR MASONRY STRUCTURES.

WIND VELOCITY 80 MPH, EXPOSURE C.  
WIND PRESSURE 18.0 PSF FOR WALL HEIGHT UNDER 12'-0".  
WIND PRESSURE 25.0 PSF FOR WALL HEIGHT OVER 12'-0".

SPECIAL INSPECTION IS REQUIRED FOR ALL MASONRY WALL CONSTRUCTION. VERTICAL CELLS CONTAINING REINFORCEMENTS SHALL BE GROUTED SOLID FULL HEIGHT. BOND BEAMS WITH REINFORCEMENTS SHALL BE GROUTED SOLID FULL LENGTH.

ALL CONCRETE SHALL BE CLASS A ( $f'c = 3,000$  PSI).

REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A615. ALL REINFORCING SHALL BE FURNISHED AS GRADE 60 ( $f_y = 60,000$  PSI).

ALL BENDS AND HOOKS SHALL MEET THE REQUIREMENTS OF AASHTO LRFD ARTICLE 5.10. ALL BEND DIMENSIONS FOR REINFORCING STEEL SHALL BE OUT-TO-OUT OF BARS. ALL PLACEMENT DIMENSIONS FOR REINFORCING STEEL SHALL BE TO CENTER OF BARS UNLESS NOTED OTHERWISE.

ALL REINFORCING STEEL SHALL HAVE 2 INCH CLEAR COVER UNLESS NOTED OTHERWISE.

COMPACT BACKFILL FOR FOOTING AND WALL BASE MINIMUM 95 PERCENT OF ASTM D698 MAXIMUM DRY DENSITY.

SEE PROJECT PLANS FOR WALL LAYOUT, TOP OF FOOTING AND FINISHED GRADE ELEVATIONS, FOOTING STEP AND WALL JOINT LOCATIONS. HEIGHT OF WALL MAY VARY +/- 2 INCHES. CONTROL JOINTS SHALL OCCUR AT INTERVALS NOT TO EXCEED 24'-0".

PAY ITEM FOR THE WORK ASSOCIATED WITH LIFT STATION NO'S 2 & 3 INCLUDES THE COST FOR MASONRY WALLS. MASONRY WALLS IS MEASURED AS WALL HEIGHT H TIMES LENGTH OF WALL, AND INCLUDE ITEMS SUCH AS ALL LABOR AND MATERIALS FOR EXCAVATION, BACKFILL, CONCRETE FOOTING, GATE HARDWARE AND MASONRY WALL WITH REINFORCEMENTS.

DIMENSIONS SHALL NOT BE SCALED FROM DRAWINGS.

**MATERIAL NOTES**

MASONRY: SPECS SECTION 510.  
 $f'm = 1900$  PSI, ASTM C90, MEDIUM OR NORMAL WEIGHT, RUNNING BOND, SPLIT FACE BLOCK OUTSIDE FACE ONLY.

MORTAR: ASTM C270, TYPE S, CUBE STRENGTH 1800 PSI, ASTM C91 CEMENT.

GROUT: ASTM C476, TYPE COARSE, CUBE STRENGTH 2500 PSI,

REINFORCING STEEL: ASTM A615, GRADE 60.

JOINT REINFORCING: 9 GAUGE LADDER OR TRUSS TYPE, STANDARD WEIGHT,  $f_y=33,000$  PSI, ASTM A82 WIRE.

**SPECIAL INSPECTION NOTES**

SPECIAL INSPECTION AND TESTING, PROVIDED BY THE ENGINEER, ARE REQUIRED FOR THE MASONRY WALL STEM TO ASSURE QUALITY MATERIALS AND CONSTRUCTION.

**(A) PRE-CONSTRUCTION:**

- 1) VERIFY CORRECT BLOCK TYPE TO BE USED.
- 2) VERIFY CORRECT MORTAR AND GROUT TO BE USED.
- 3) VERIFY THE LOCATION, SPACING, SIZE AND LAP LENGTH OF VERTICAL REINFORCING DOWEL BARS AND WALL REINFORCEMENT THAT IS WITHIN PLUS OR MINUS 1/2" OF THE PLAN DIMENSION AS MEASURED NORMAL TO THE WALL AND PLUS OR MINUS 2" IN THE LONGITUDINAL DIRECTION.
- 4) VERIFY THAT MASONRY UNITS ARE CLEAN AND FREE FROM DIRT WHEN PLACED IN THE WALL. MASONRY UNITS SHALL BE DRY BEFORE PLACEMENT.

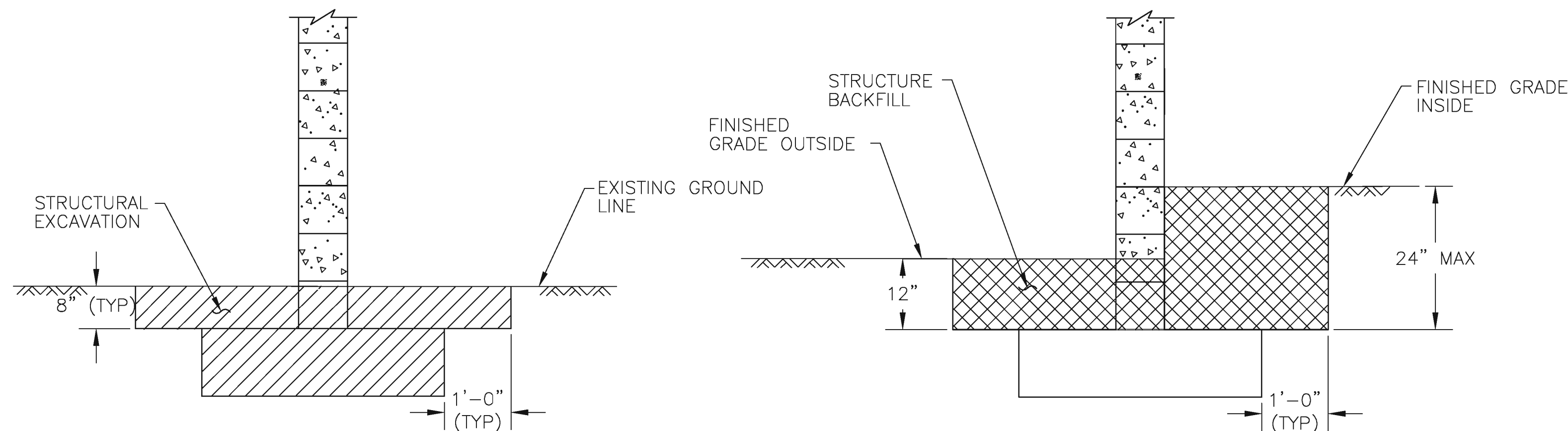
**(B) CONSTRUCTION:**

- 1) OBSERVE, PERIODICALLY, THE PLACEMENT OF THE MASONRY UNITS AND THE MAKING OF THE MORTAR. VERIFY THAT THE INITIAL BED JOINT THICKNESS IS NOT LESS THAN 1/4" OR MORE THAN 1"; SUBSEQUENT BED JOINTS SHALL NOT BE LESS THAN 1/4" OR MORE THAN 5/8" IN THICKNESS.
- 2) OBSERVE ALL GROUT PLACEMENTS.
- 3) VERIFY HORIZONTAL JOINT REINFORCING SIZE, LOCATION, AND SPACING.
- 4) VERIFY THAT ALL CONCRETE MASONRY UNITS ARE PLACED IN UNIFORM AND TRUE COURSE, LEVEL AND PLUMB WITH A TOLERANCE OF 1/4" IN 8 FEET, NON-CUMULATIVE.
- 5) VERIFY THAT CONCRETE MASONRY UNITS ARE PLACED TO THE DESIRED HEIGHT WITH JOINTS OF UNIFORM THICKNESS. LEVEL, PLUMB AND STRAIGHTEN BEFORE THE MORTAR STIFFENS. BOND SHALL BE PLUMB THROUGHOUT.
- 6) VERIFY THAT ALL CONCRETE MASONRY UNITS ARE CURED BY SPRINKLING TWICE A DAY FOR MINIMUM OF 2 DAYS.

**CONTINUE, MATERIALS**

**STRUCTURAL STEEL AND CORRUGATED STEEL PANEL**

1. STRUCTURAL STEEL SHALL CONFORM TO ASTM SPECIFICATIONS A36
2. CORRUGATED STEEL SHALL BE GALVANIZED ACCORDING TO ASTM A 653 WITH ZINC THICKNESS CORRESPONDING TO G90
3. ALL EXPOSED STEEL EDGES SHALL BE GROUND SMOOTH. ALL GALVANIZING THAT HAS BEEN DAMAGED IN HANDLING, TRANSPORTATION OR WELDING SHALL BE REPAIRED BY THE APPLICATION OF A PASTE COMPOUND OF AN APPROVED ZINC POWDER AND FLUX.
4. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY, ANSI/AASHTO/AWS D1.5 WELDING CODE, LATEST EDITION
5. GATE SHALL BE PAINTED PER MAG STANDARDS SECTION 530, CONTRACTOR SHALL SUBMIT A COLOR SAMPLE TO OWNER FOR APPROVAL PRIOR TO PAINTING THE GATE

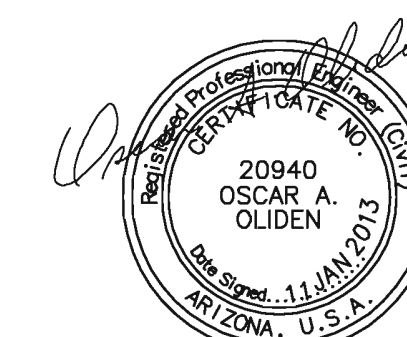


STRUCTURAL EXCAVATION LIMITS

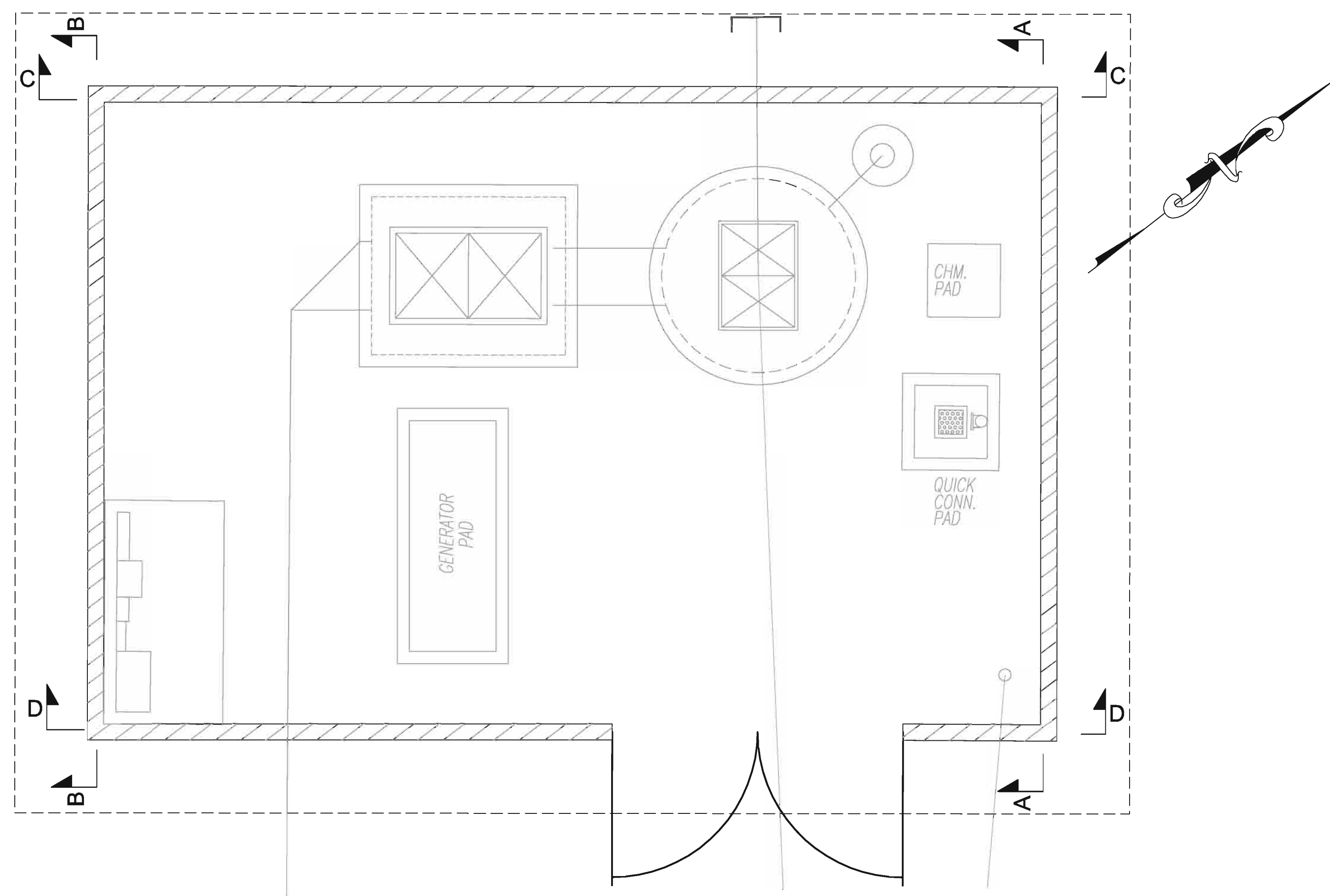
STRUCTURE BACKFILL LIMITS

**APPROXIMATE QUANTITIES**

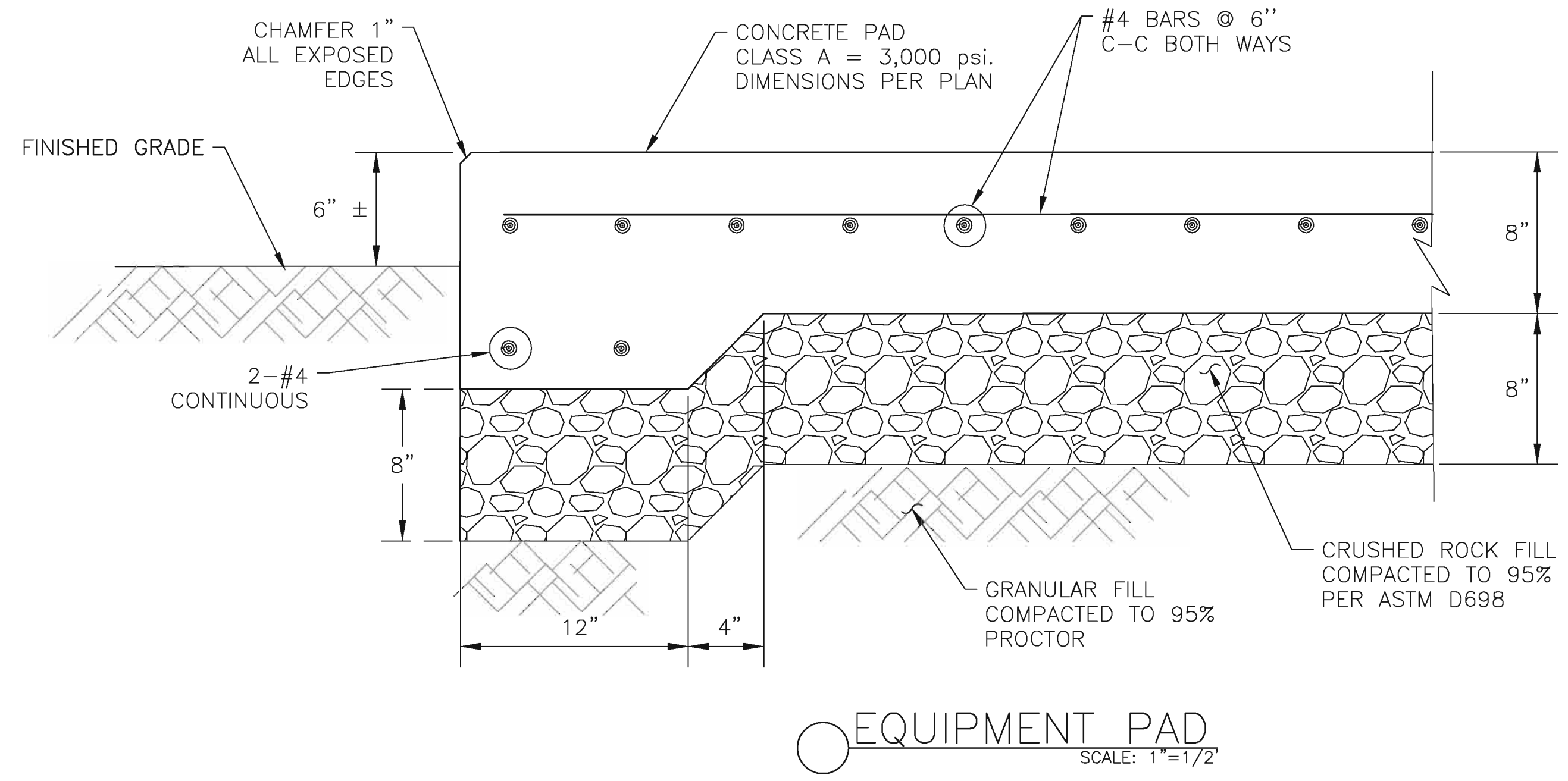
LOCATION	WALL AREA (SF)	GATE (UNIT)
LIFT STATION # 2	1,193	1
LIFT STATION # 3	1,193	1
TOTAL	2,386	2



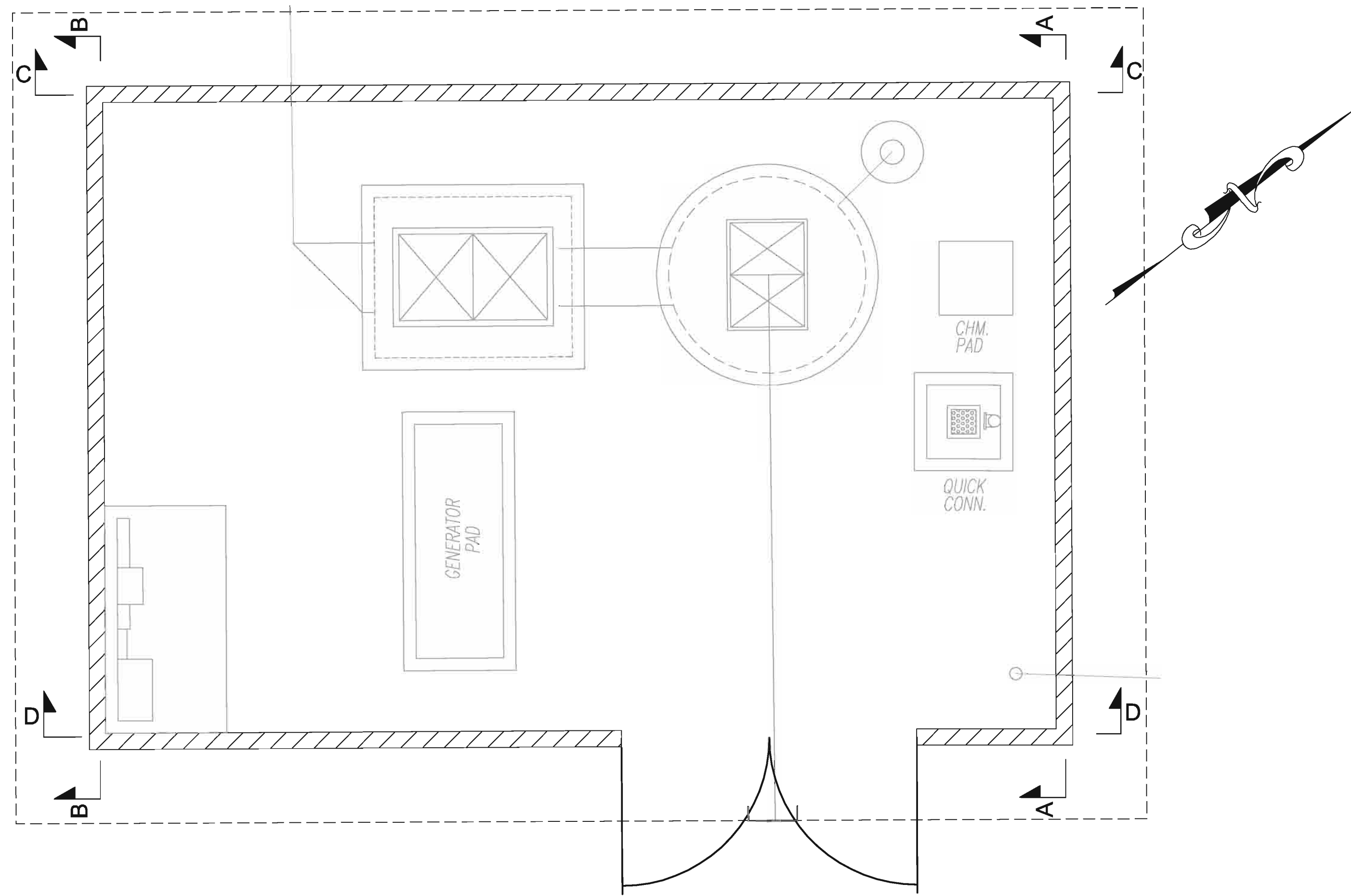
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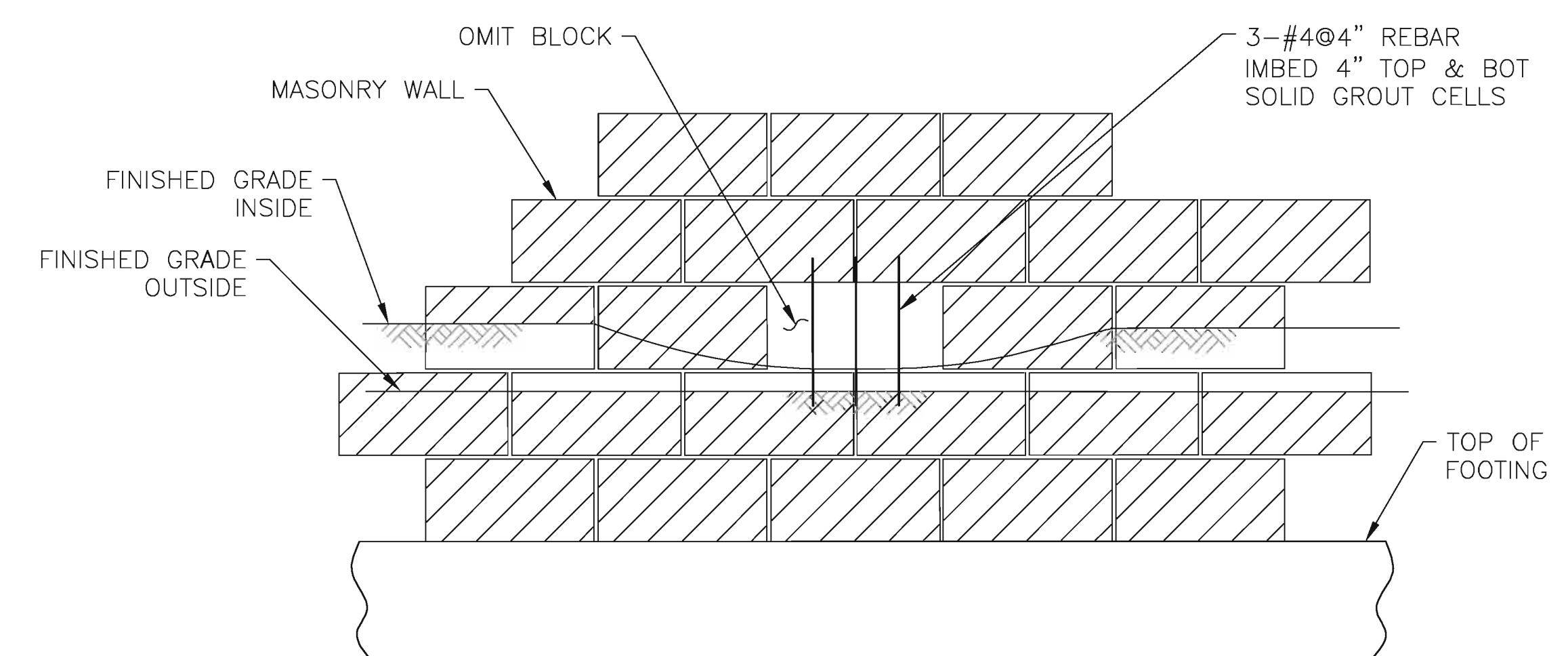
LIFT STATION NO. 2 WALL & GATE PLAN  
SCALE: 1"=1/2'



EQUIPMENT PAD  
SCALE: 1"=1/2'



LIFT STATION NO. 3 WALL & GATE PLAN  
SCALE: 1"=1/2'

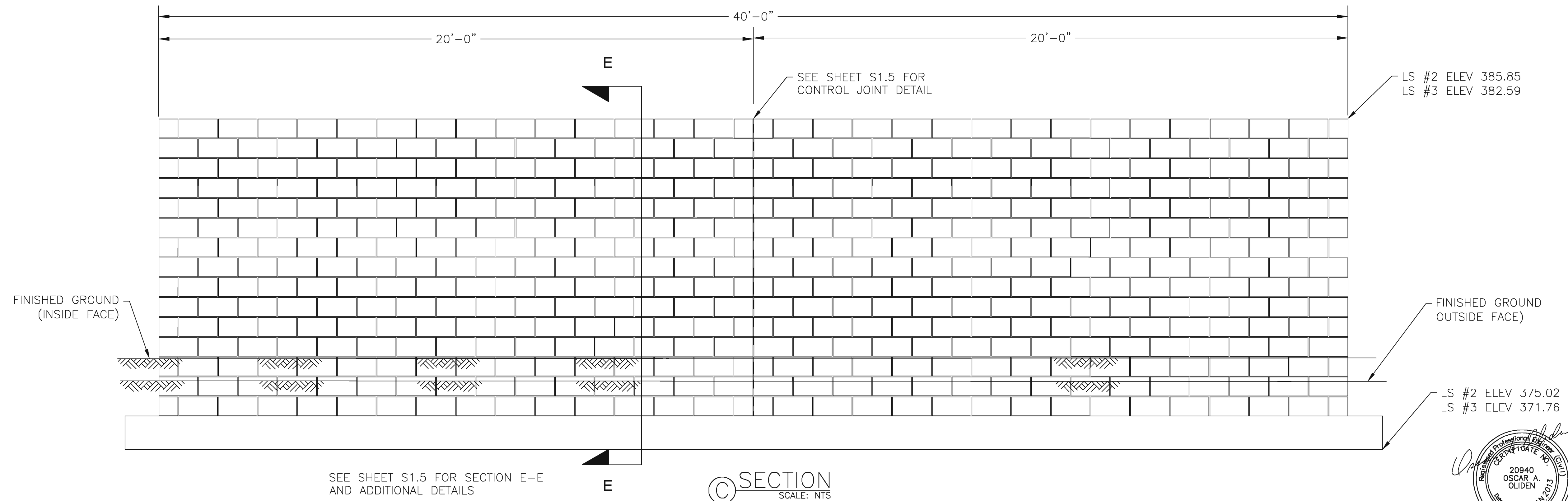
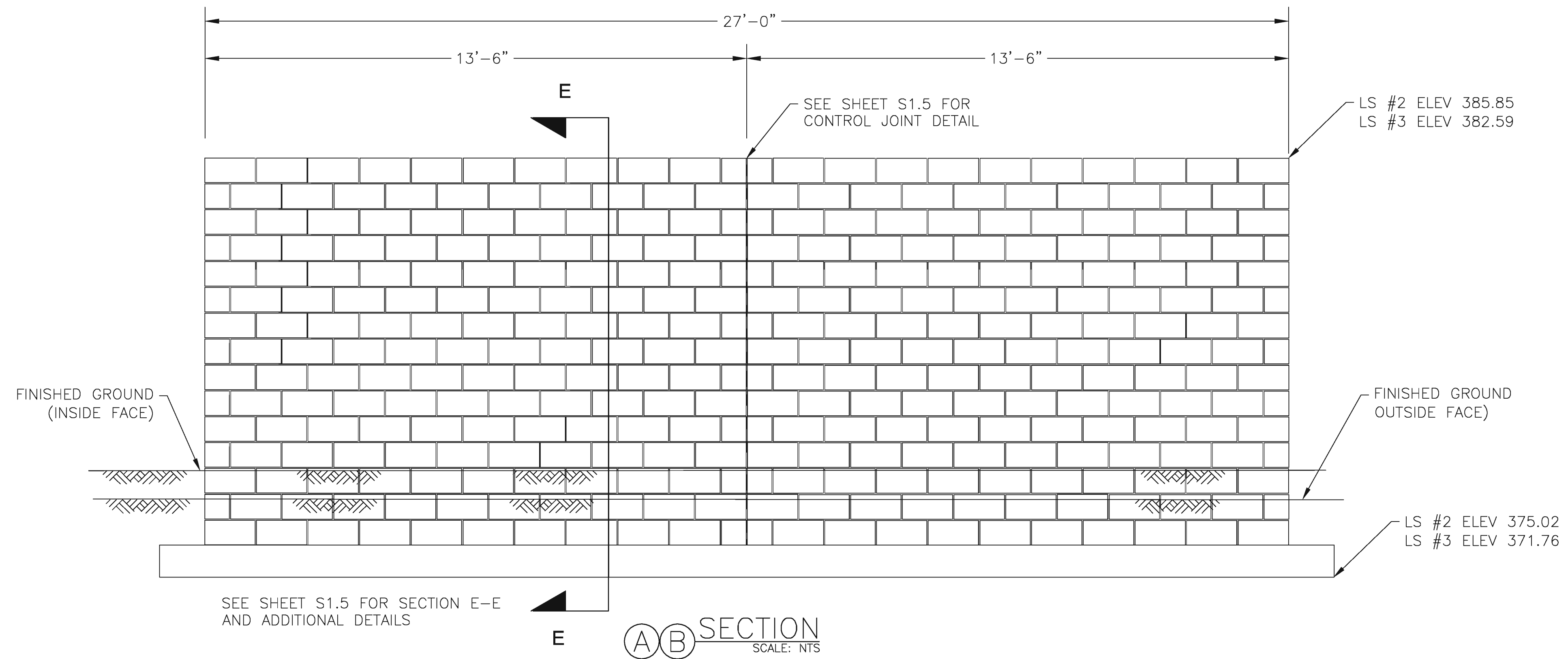


MASONRY WALL OPENING  
SCALE: 1"=1/2'



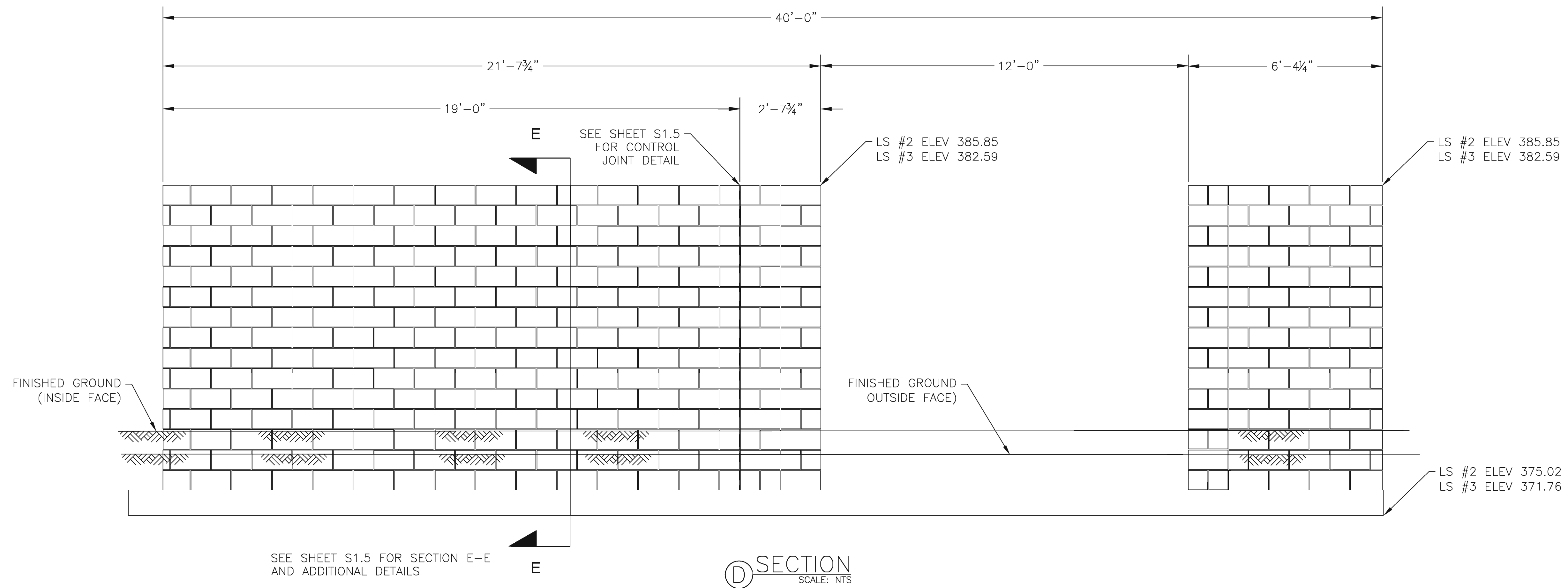
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SECTION  
SCALE: NTS



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**ENERGY AND WATER SOLUTIONS, LLC**  
CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

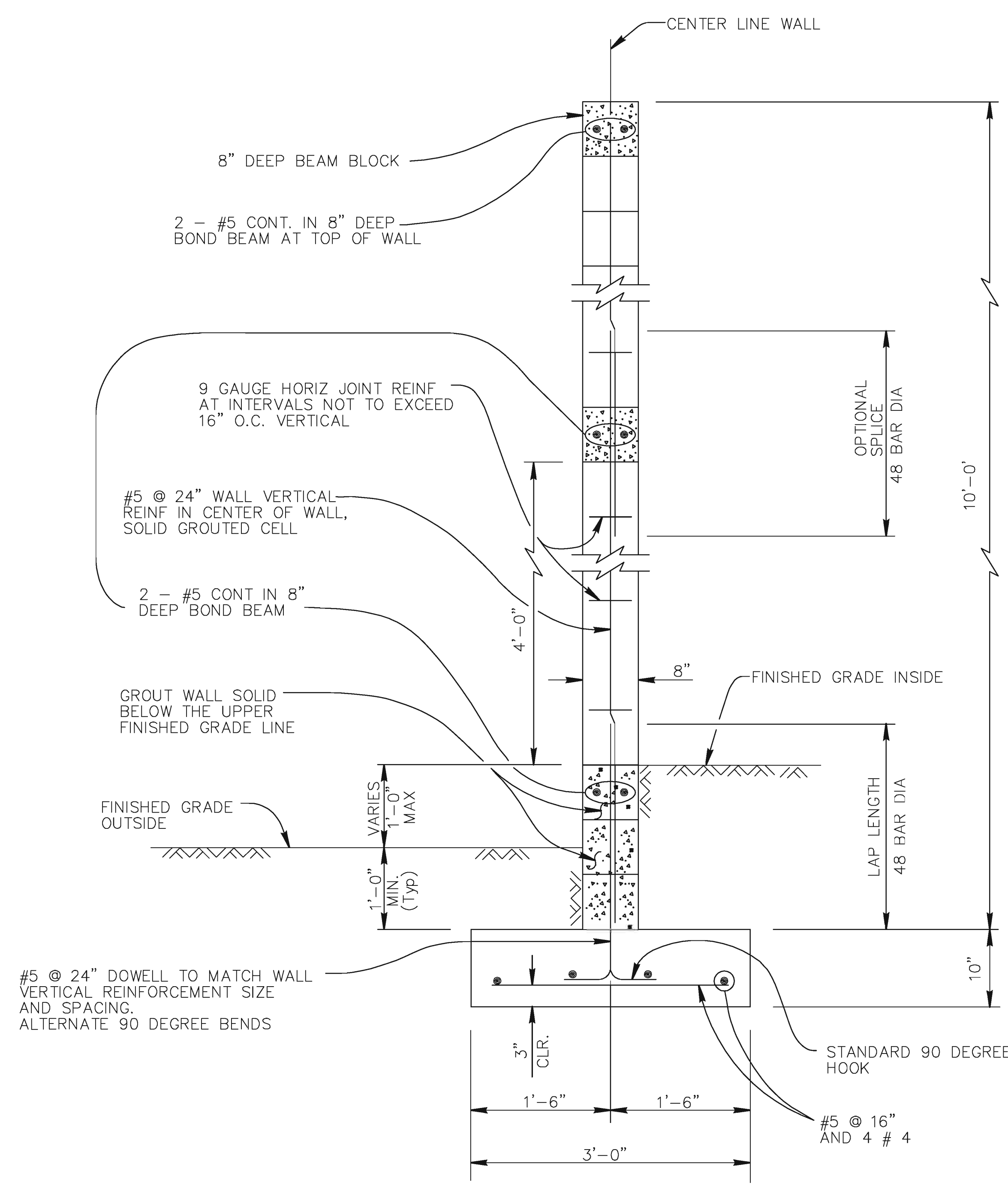
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #:  
DATE:  
SCALE:

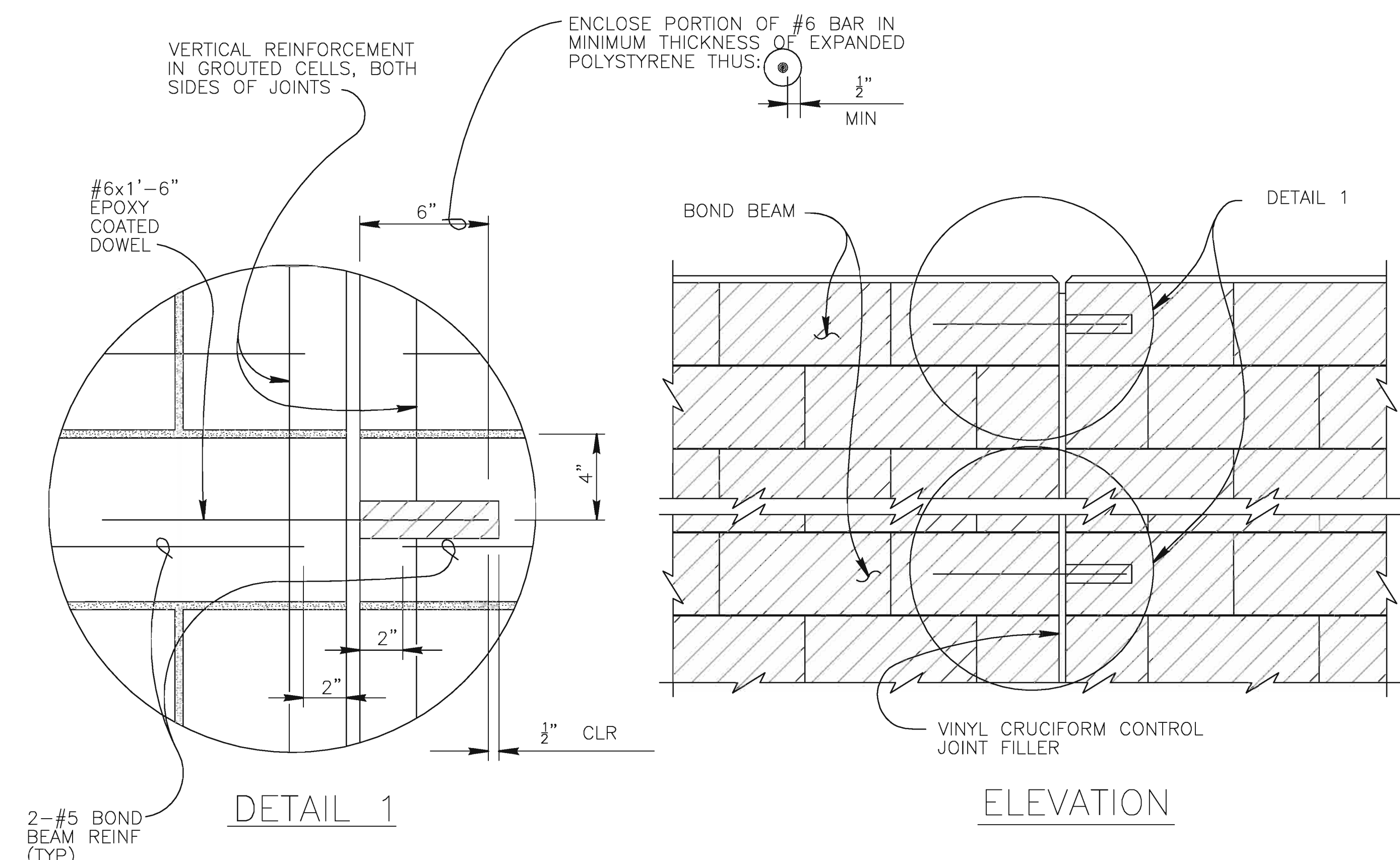
REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**STRUCTURAL DETAILS**

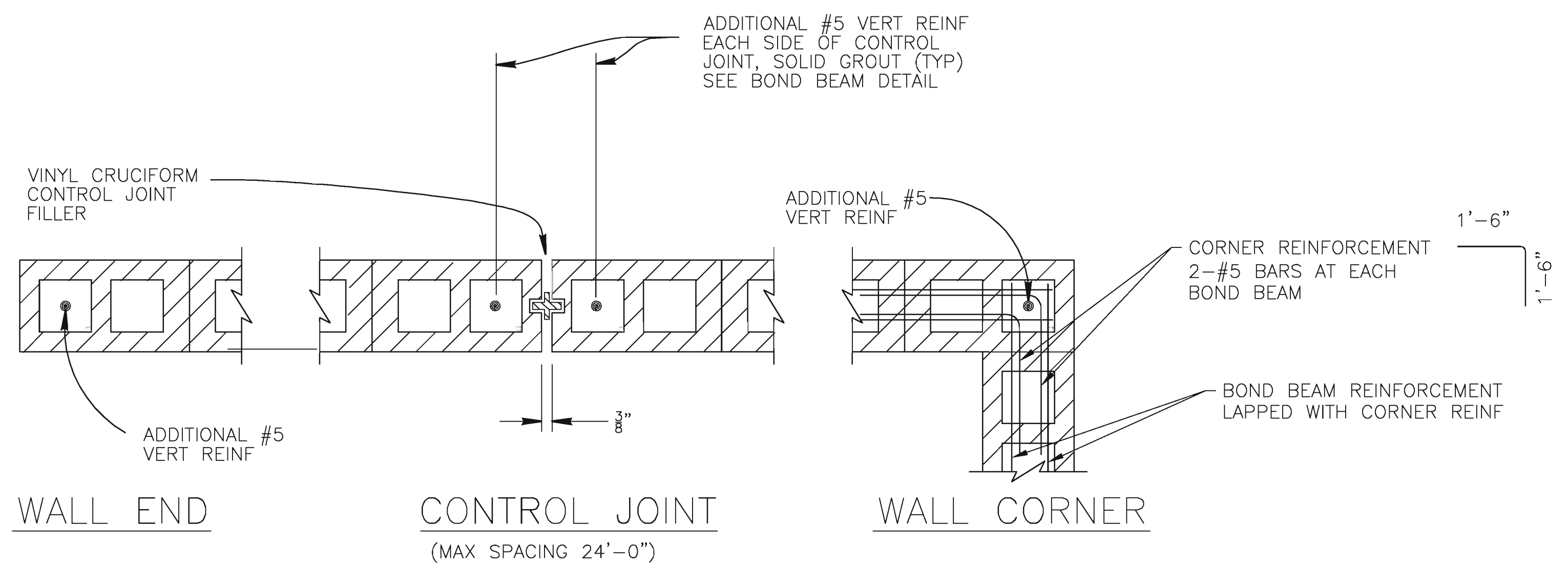
LS 1.4  
OF  
SHEETS



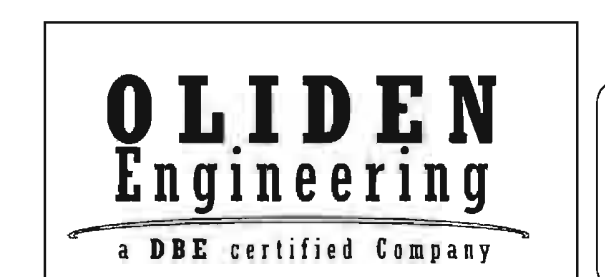
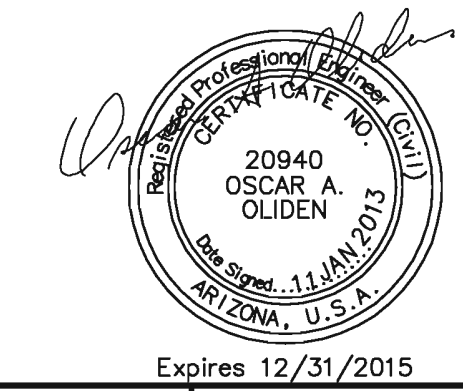
**E** MASONRY BLOCK WALL TYPICAL SECTION  
SCALE: NTS



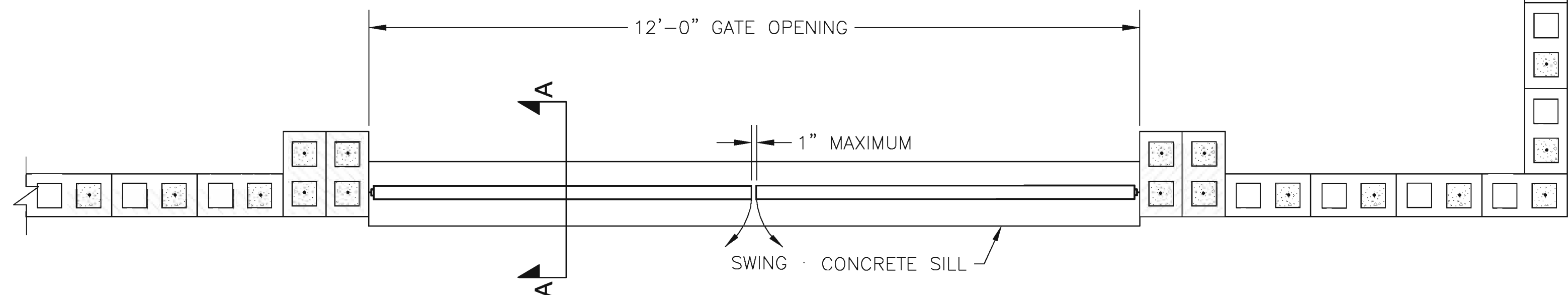
**F** TYPICAL BOND BEAM DETAIL AT CONTROL JOINT  
(FOR BOND BEAMS ABOVE THE UPPER FINISHED GRADE LINE)  
SCALE: NTS



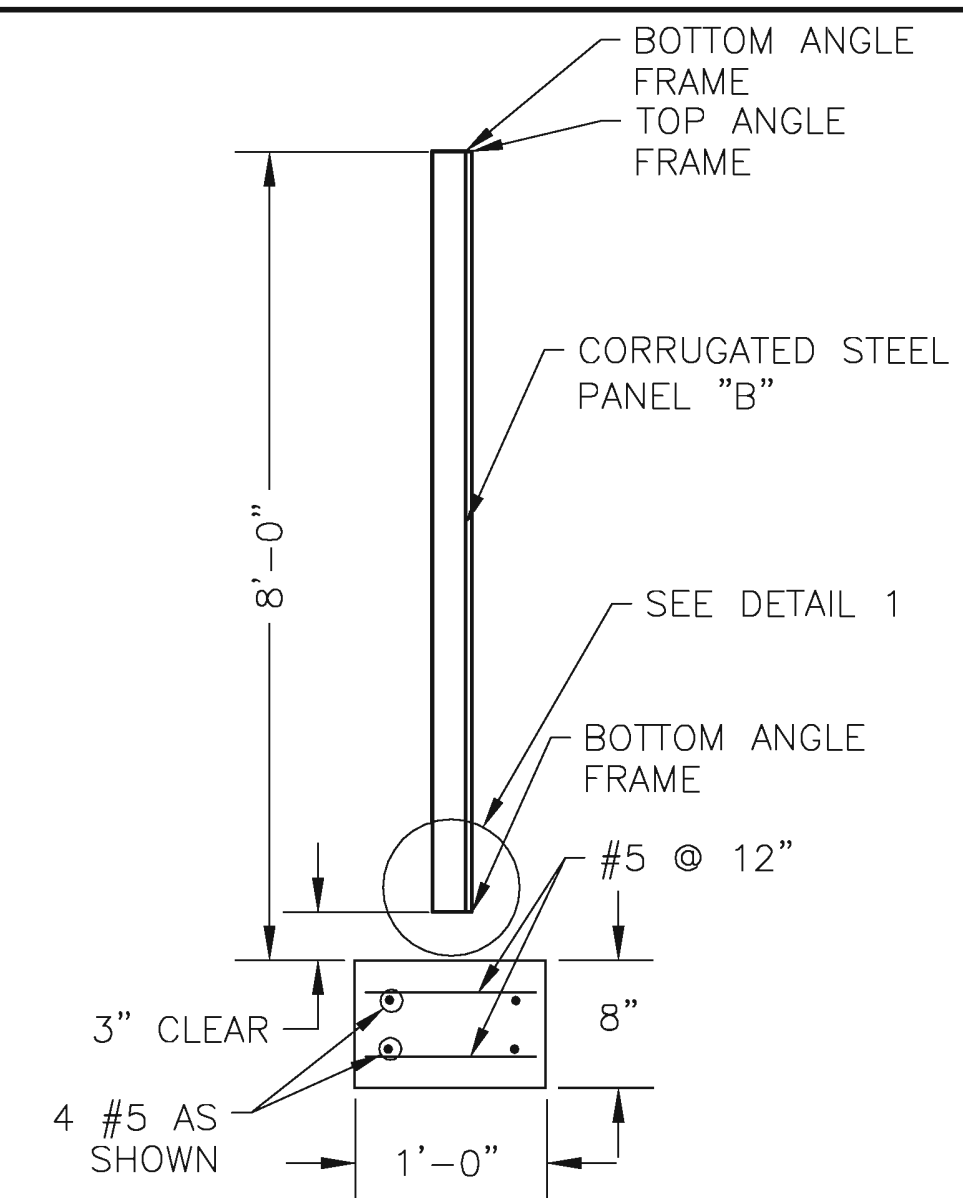
**E** WALL DETAILS AT JOINTS AND ENDS  
SCALE: NTS



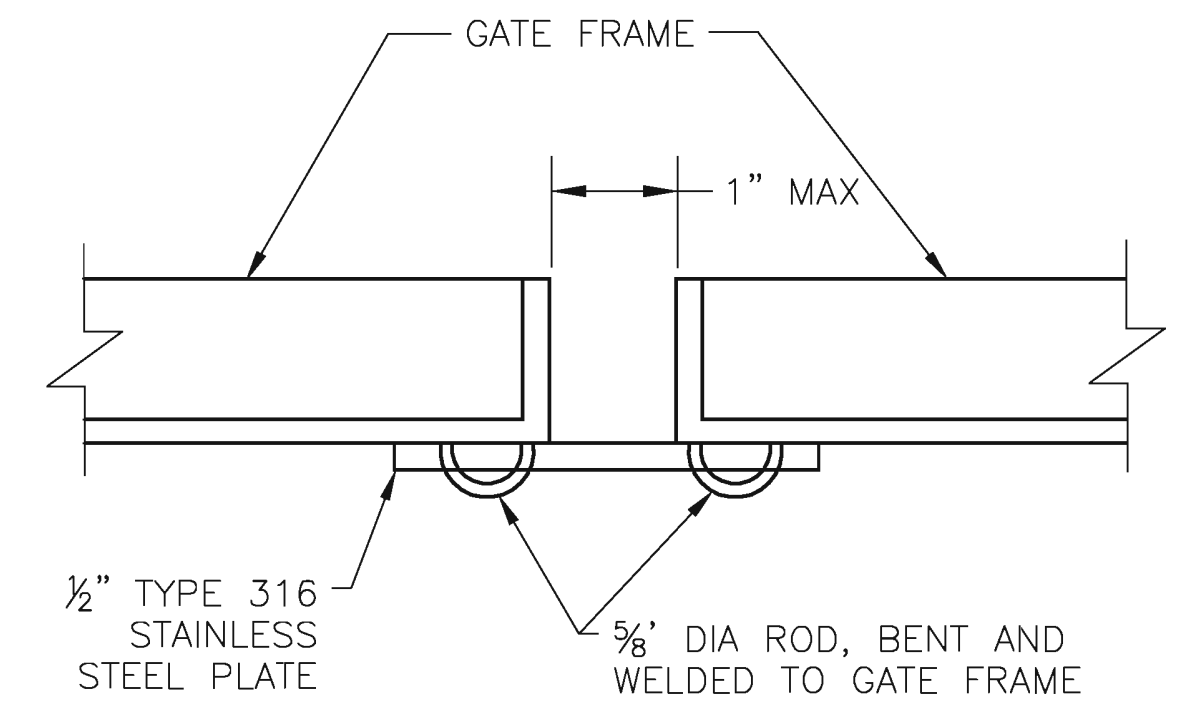
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○ SWING GATE EXTERIOR PLAN  
SCALE: NTS

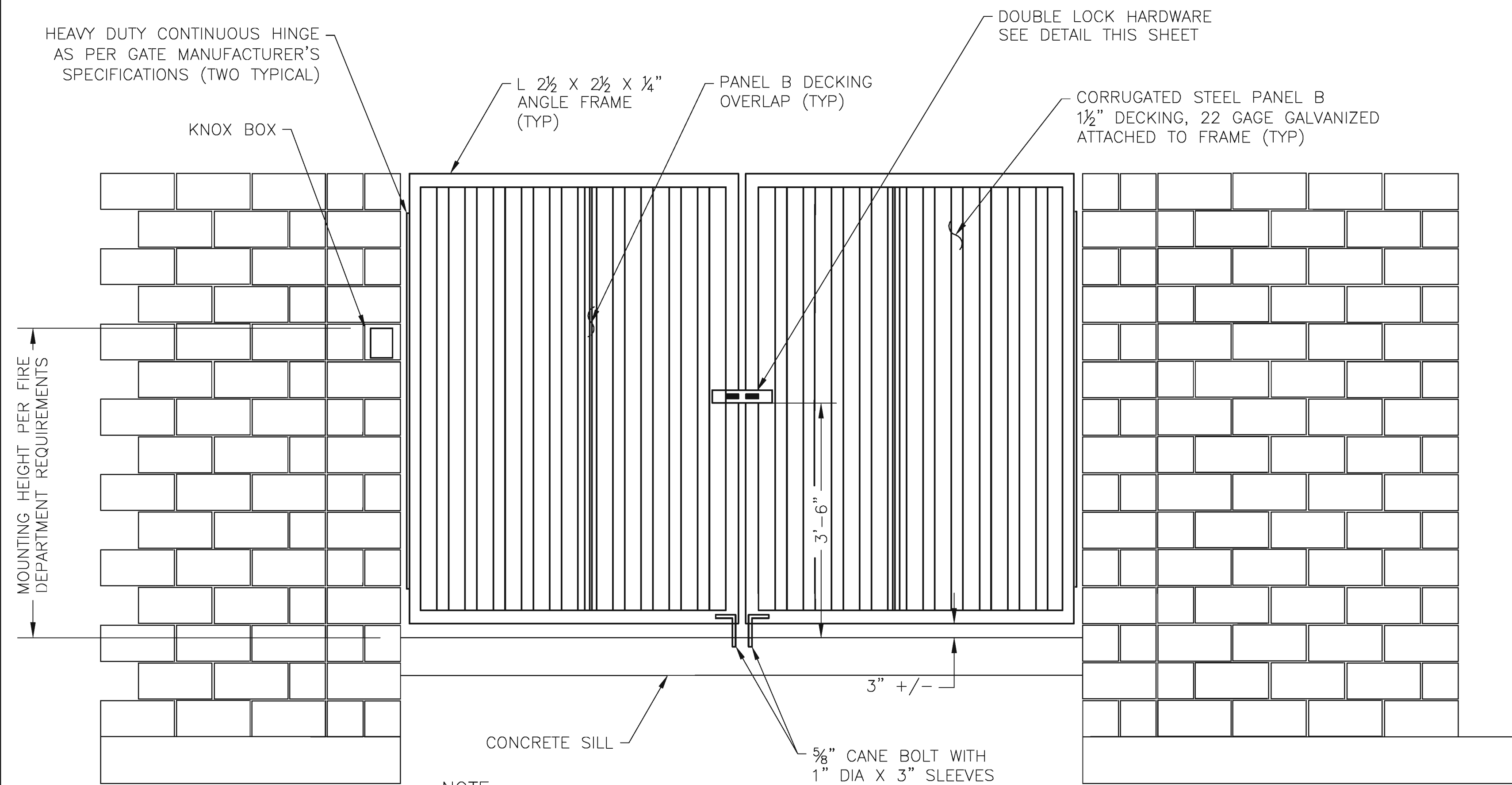


○ A SWING GATE SECTION  
SCALE: NTS

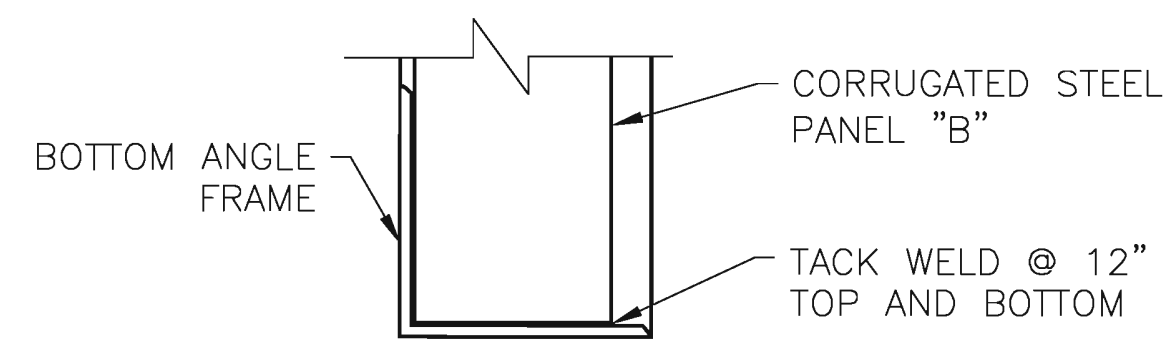


○ DOUBLE LOCK HARDWARE DETAILS  
SCALE: NTS

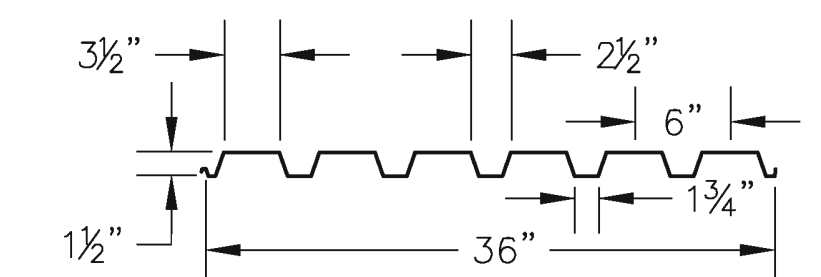
- NOTE
1. PROVIDE PADLOCK (MASTER LOCK OR EQUAL) KEY FOR OWNER (TYP EACH GATE)
  2. PROVIDE FIRE DEPARTMENT KNOX PADLOCK (TYP EACH GATE)



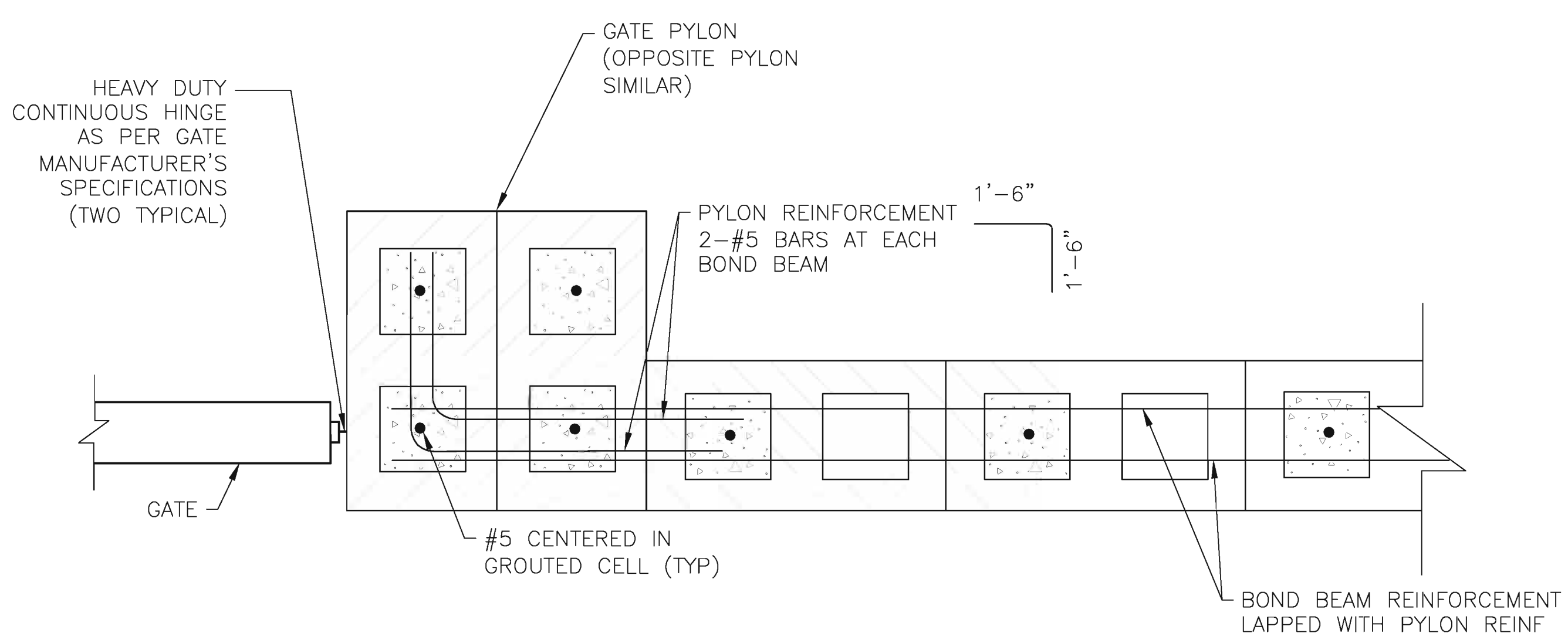
○ SWING GATE EXTERIOR ELEVATION  
SCALE: NTS



○ 1 DETAIL  
SCALE: NTS



○ TYPICAL SECTION CORRUGATED STEEL PANEL "B"  
SCALE: NTS



○ SWING GATE / PYLON DETAIL  
SCALE: NTS



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REVISIONS	BY	DATE

# BUCKSKIN SANITARY DISTRICT

## PHASE 4 SEWER PLANS

WRIGHT ENGINEERING  
PROJECT NO:  
**12138**  
DESIGN BY: JHB  
DRAWN BY: JHB  
CHECKED BY: WTW

**WRIGHT**  
engineering corporation  
ELECTRICAL ENGINEERING AND DESIGN  
165 EAST CHILTON DRIVE • CHANDLER, ARIZONA 85225  
PHONE 480.497.5829 • FAX 480.497.5807  
www.wrightengr.com

PROJECT: TITLE:

PARKER, ARIZONA  
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER PLANS**  
**ELECTRICAL COVER SHEET**

NO.	DATE	SUBMITTALS/REVISIONS (DESCRIPTIONS)
1	AUG 2012	1ST TOWN SUBMITTAL
2	NOV 2012	2ND TOWN SUBMITTAL
3	DEC 2012	3RD TOWN SUBMITTAL
4	JUN 2015	4TH TOWN SUBMITTAL

Professional Engineer  
35843  
WILLIAMS  
Expires 5-31-16

DRAWING NO:  
**E1.0**  
OF 14

ARIZONA BLUE STAKE  
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### ELECTRICAL SYMBOLS

SINGLE LINE DIAGRAMS	CONTROL WIRING DIAGRAMS	PLANS
<p>(A) AMMETER</p> <p>(V) VOLTMETER</p> <p>(M) METER</p> <p>(KWH) KILOWATT HOUR METER</p> <p>(AS) AMMETER SWITCH</p> <p>(VS) VOLTMETER SWITCH</p> <p>(GFP) GROUND FAULT PROTECTION</p> <p>(CT) CURRENT TRANSFORMER</p> <p>(PT) POTENTIAL TRANSFORMER</p> <p>(PT) POWER TRANSFORMER SEE NOTE 1.</p> <p>(CT) CONTROL TRANSFORMER SEE NOTE 2.</p> <p>(---) DRAW OUT TYPE EQUIPMENT</p> <p>(---) DRAW OUT TYPE HIGH VOLTAGE MOTOR STARTER</p> <p>(---) PLUG-IN TYPE EQUIPMENT</p> <p>(A-24) CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE INDICATED</p> <p>(---) DISCONNECT SWITCH, 3 POLE UNLESS OTHERWISE INDICATED</p> <p>(---) OIL FUSE CUTOUTS</p> <p>(---) FUSE SEE NOTE 3.</p> <p>(---) TRANSFER SWITCH, AUTOMATIC</p> <p>(RV) MAGNETIC MOTOR STARTER. "1" INDICATES SIZE 1. RV INDICATES REDUCED VOLTAGE. 2S INDICATES 2 SPEED. R INDICATES REVERSING.</p> <p>(---) MAGNETIC CONTACTOR</p> <p>(12) CONDUIT NUMBER 12. SEE CONDUIT AND WIRING SCHEDULE FOR SIZES AND QUANTITIES OF CONDUIT AND WIRES.</p> <p>(---) GROUND</p> <p>(K) KIRK KEY INTERLOCKING OF EQUIPMENT</p> <p>(2 HP) EQUIPMENT FURNISHED, INSTALLED AND CONNECTED UNDER ANOTHER SECTION OF THE CONTRACT.</p> <p>(PFR) PHASE FAILURE RELAY</p> <p>(SA) SURGE ARRESTER</p> <p>(#) EXISTING MOTOR (HP SHOWN)</p> <p>(#) NEW MOTOR (ESTIMATED HP SHOWN)</p> <p>(#) FUTURE MOTOR (ESTIMATED HP SHOWN)</p> <p>(1) MANHOLE</p> <p>(EYS) EYS SEAL</p>	<p>NORMALLY OPEN    NORMALLY CLOSED    DEVICE</p> <p>(---) CONTACT</p> <p>(---) LIMIT SWITCH</p> <p>(---) LIMIT SWITCH HELD CLOSED</p> <p>(---) LIMIT SWITCH HELD OPEN</p> <p>(---) PRESSURE OR VACUUM SWITCH</p> <p>(---) LIQUID LEVEL SWITCH</p> <p>(---) TEMPERATURE ACTUATED SWITCH</p> <p>(---) FLOW SWITCH (AIR, WATER, ETC.)</p> <p>(---) PUSH BUTTON SINGLE CIRCUIT MOMENTARY CONTACT. SEE NOTE 3.</p> <p>(---) PUSH BUTTON SINGLE CIRCUIT LOCK-OUT (LOCATED AT MOTOR UNLESS OTHERWISE NOTED)</p> <p>(---) TIMED CONTACT- CONTACT ACTION RELAY ON ENERGIZATION.</p> <p>(---) TIMED CONTACT- CONTACT ACTION RELAY ON DE-ENERGIZATION.</p> <p>(---) ON-OFF SWITCH. SEE NOTE 3.</p> <p>(ESB) EMERGENCY STOP PUSH BUTTON (MAINTAINED CONTACT)</p> <p>(STOP START) STOP -START PUSH-BUTTON STATION (MAINTAINED CONTACTS). SEE NOTE 3.</p> <p>(---) HAND-OFF-AUTO SELECTOR SWITCH SEE NOTE 3. (THREE POSITION).</p> <p>(---) TWO POSITION SELECTOR SWITCH SEE NOTE 3.</p> <p>(P) PILOT LIGHT, Y=YELLOW, R=RED, A=AMBER, SEE NOTE 3. B=BLUE, W=WHITE, G=GREEN.</p> <p>(BELL) BELL</p> <p>(HORN) HORN OR SIREN</p> <p>(CR) CONTROL RELAY SEE NOTE 3.</p> <p>(M) STARTER COIL. SEE NOTE 3.</p> <p>(TDR) TIME DELAY RELAY. (0-30 SECONDS UNLESS OTHERWISE NOTED). SEE NOTE 3.</p> <p>(OL'S) MOTOR STARTER OVERLOAD RELAY CONTACTS</p> <p>(---) CONTROL TRANSFORMER. SEE NOTES 2</p> <p>(---) MANUAL MOTOR STARTER</p> <p>(---) SOLENOID OPERATED CONTROL VALVE</p> <p>(1) 120 VOLT, 1 PHASE, MOTOR (UNLESS OTHERWISE NOTED)</p> <p>(RTM) RUNNING TIME METER. SEE NOTE 3. (ELAPSED TIME METER)</p> <p>(---) SPACE HEATERS. (LOCATED AT MOTOR UNLESS OTHERWISE NOTED).</p> <p>(---) TERMINALS IN MOTOR CONTROL CENTER/MCP CONTACT OR DEVICE REMOTE FROM MOTOR CONTROL CENTER/MCP</p> <p>(---) TERMINALS IN MOTOR CONTROL CENTER/MCP CONTACT IN MOTOR CONTROL CENTER FOR CONNECTION TO REMOTE DEVICE/MCP</p> <p>(---) DEVICE SIGNAL OUTPUT</p> <p>(---) DEVICE SIGNAL INPUT</p>	<p>(---) CONDUIT RUN CONCEALED UNDER SLAB OR BELOW GRADE. (CONCEALED IN SLAB WHERE SO NOTED OR WHERE ALLOWED PER SPECIFICATIONS).</p> <p>(---) CONDUIT RUN EXPOSED UNLESS OTHERWISE NOTED</p> <p>(---) EXISTING CONDUIT RUN</p> <p>(---) HASH MARKS INDICATE QUANTITY OF #12 WIRES IN CONDUIT (PLUS 1#12 GROUND WIRE) EXCEPT NO HASH MARKS=3/4", 2#12 (PLUS 1#12 GROUND WIRE) UNLESS OTHERWISE NOTED.</p> <p>--- 3/4", 3#12 --- 1", 6#12 --- 3/4", 4#12 --- 1", 7#12 --- 3/4", 5#12 --- 1", 8#12</p> <p>(L(1,30)) HOMERUN TO PANEL L, CIRCUITS 1 AND 3</p> <p>(---) GROUND WIRE</p> <p>(---) CONDUIT UP (OUT TOP OF EQUIPMENT)</p> <p>(---) CONDUIT DOWN (OUT BOTTOM OF EQUIPMENT)</p> <p>(---) CONDUIT STUBBED OUT AND CAPPED</p> <p>(---) LIGHTING FIXTURE MOUNTED ON POLE OR POST OR ABOVE PLATFORM</p> <p>(---) CEILING MOUNTED LIGHTING FIXTURE</p> <p>(---) BRACKET MOUNTED LIGHTING FIXTURE</p> <p>(---) FLOODLIGHT</p> <p>(---) FLUORESCENT LIGHTING FIXTURE</p> <p>(---) POLE MOUNTED LIGHT FIXTURE</p> <p>(---) EXIT LIGHT</p> <p>(---) RECESSED INCANDESCENT OR MERCURY VAPOR LIGHTING FIXTURE</p> <p>(---) LIGHTING FIXTURES CONNECTED TO EMERGENCY CIRCUITS</p> <p>(---) LIGHTING FIXTURE TYPE A, 100 WATTS, WITH 1 LAMP. SEE LIGHTING FIXTURE SCHEDULE</p> <p>(---) SINGLE POLE, SINGLE THROW TOGGLE SWITCH</p> <p>(---) DOUBLE POLE, SINGLE THROW TOGGLE SWITCH</p> <p>(---) THREE-WAY TOGGLE SWITCH</p> <p>(---) FOUR-WAY TOGGLE SWITCH</p> <p>(---) MANUAL MOTOR STARTER</p> <p>(---) OUTLETS SHOWN WITH SUBSCRIPT "a" ADJACENT TO THEM SHALL BE CONTROLLED BY S a</p> <p>(---) DUPLEX CONVENIENCE RECEPTACLE AT +12" OR AS NOTED</p> <p>(---) SINGLE CONVENIENCE RECEPTACLE AT +12" OR AS NOTED</p> <p>(---) SPECIAL PURPOSE RECEPTACLE AT +12" OR AS NOTED, RATING AS INDICATED</p> <p>(---) JUNCTION BOX, SIZE AS REQUIRED BY CODE</p> <p>(---) THERMOSTAT OUTLET AT +54"</p> <p>(---) CLOCK OUTLET AT +7"-6" OR AS NOTED</p> <p>(---) TELEPHONE OUTLET AT +12" OR AS NOTED</p> <p>(---) TELEPHONE FLOOR OUTLET</p> <p>(---) HORN</p> <p>(---) CONTROL DEVICE P = PRESSURE SWITCH ZS = LIMIT SWITCH L = LEVEL SWITCH V = CONTROL VALVE</p> <p>(---) CONTROL STATION: PUSH-BUTTON STATION OR SELECTOR SWITCH. SEE CONTROL WIRING DIAGRAMS FOR REQUIREMENTS.</p> <p>(---) EXISTING MOTOR</p> <p>(---) NEW MOTOR</p> <p>(---) FUTURE MOTOR</p> <p>(---) GROUND WELL</p> <p>(---) GROUND ROD</p> <p>(---) DISCONNECT SWITCH. SEE SINGLE LINE DIAGRAM FOR SIZE.</p> <p>(---) LIGHTING PANEL. SURFACE MOUNTED.</p> <p>(---) SWITCHBOARD, DISTRIBUTION PANEL OR MOTOR CONTROL CENTER</p> <p>(12) CONDUIT NUMBER 12. SEE CONDUIT AND WIRING SCHEDULE FOR SIZES AND QUANTITIES OF CONDUIT AND WIRES.</p> <p>(---) INDICATES HEIGHT FROM FINISHED FLOOR OR GRADE TO CENTERLINE OF DEVICE.</p> <p>(1) INDICATES TO REFER TO NOTE (1) ON DRAWING</p> <p>(W.P.) WEATHERPROOF. PROVIDE GASKETS AS REQUIRED</p> <p>(C.O.) CONDUIT ONLY</p> <p>(FE-184) INSTRUMENTATION DEVICE. SEE PROCESS AND INSTRUMENTATION DRAWINGS FOR DESCRIPTIONS.</p> <p>(---) PULL BOX (SIZE AS REQUIRED)</p> <p>(---) OUTPUT TERMINAL</p> <p>(---) INPUT TERMINAL</p>

### SHEET INDEX

- E1.0 ELECTRICAL COVER SHEET
- E2.0 ELECTRICAL SITE PLAN LS#1
- E2.1 ELECTRICAL SITE PLAN LS#2
- E2.2 ELECTRICAL SITE PLAN LS#3
- E3.0 ELECTRICAL SINGLE LINE DIAGRAM #1
- E3.1 ELECTRICAL SINGLE LINE DIAGRAM #2
- E3.2 ELECTRICAL SINGLE LINE DIAGRAM #3
- E4.0 ELECTRICAL DETAILS
- E4.1 ELECTRICAL DETAILS
- E5.0 ELECTRICAL SCHEMATICS LS#1
- E5.1 ELECTRICAL SCHEMATICS LS#2 & LS#3
- E5.2 ELECTRICAL SCHEMATICS
- 11.0 ELECTRICAL P&ID COVER
- 11.1 ELECTRICAL P&ID

### ABBREVIATIONS

AMP AMPERE	GND GROUND	N.C. NORMALLY CLOSED
AL ALUMINUM	HP HORSEPOWER	NEC NATIONAL ELECTRICAL CODE
APS ARIZONA POWER SERVICE	HPS HIGH PRESSURE SODIUM	N.O. NORMALLY OPEN
ATS AUTOMATIC TRANSFER SWITCH	HZ HERTZ (CYCLES PER SECOND)	NO. NUMBER
AWG AMERICAN WIRE GAUGE	IC INTERRUPTING CAPACITY	PLC PROGRAMMABLE LOGIC CONTROLLER
BRK BREAKER	KV KILOVOLTS	PNL PANEL
CAT CATALOG	LCL LONG CONTINUOUS LOAD	PR PAIR
CIRC. MIL CIRCULAR MILS (AWG)	LTG LIGHTING MAX MAXIMUM	PVC POLYVINYL CHLORIDE
C.O. CONDUIT ONLY	MCC MOTOR CONTROL CENTER	REC RECEPTACLE
CKT CIRCUIT	MCP MAIN CONTROL PANEL	RGS RIGID GALVANIZED STEEL
CP CONTROL PANEL	MCM THOUSAND CIRCULAR MIL (AWG)	SES SERVICE ENTRANCE SECTION
DIA DIAMETER	MFR MANUFACTURER	SPECS SPECIFICATIONS
DWG DRAWING	MIN MINIMUM	SSS SOLID STATE STARTER
EA EACH	MIS MISCELLANEOUS	TEL TELEPHONE
ELECT ELECTRICAL	MTG MOUNTING	TDR TIME DELAY RELAY
ELEV ELEVATION	MV MERCURY VAPOR	TTB TELEPHONE TERMINAL BACKBOARD
EX EXISTING		TYP TYPICAL
FLA FULL LOAD AMPS		UCP UNIT CONTROL PANEL
FUT FUTURE		V VOLTS
GFCI GROUND FAULT CIRCUIT INTERRUPTER		WP WEATHERPROOF
		XFMR TRANSFORMER

### GENERAL ELECTRICAL REQUIREMENTS

- THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODE ORDINANCES AND REGULATIONS. CONTRACTOR SHALL CONTACT TEMPLE ENGINEERS TO SCHEDULE INSPECTIONS. ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE, FINISHED AND SAFE MANNER, ACCORDING TO THE LATEST PUBLISHED N.E.C.A. STANDARDS OF INSTALLATION, UNDER COMPETENT SUPERVISION. INSTALL GROUNDING AS REQUIRED BY THE CODE(S).
- VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND ALL OTHER FACTORS WHICH MAY AFFECT THE EXECUTION OF THIS WORK. INCLUDE ALL RELATED COSTS IN THE INITIAL BID PROPOSAL.
- ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, U.L. OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURER'S NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS AND BID PRICE. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED IN WRITING AND REVIEWED BY THE ENGINEER BEFORE ORDERING.
- PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED UNDER DIVISION 16 AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS OR ANY OTHER CAUSES. EQUIPMENT FOUND DAMAGED OR IN OTHER THAN NEW CONDITION WILL BE REJECTED AS DEFECTIVE.
- LEAVE THE SITE CLEAN, REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK.
- CIRCUIT CONDUCTORS #2 AWG OR SMALLER TO BE "XHHW", "THHN", OR "THWN" COPPER. #1 AWG OR LARGER SHALL BE "XHHW-2" STRANDED COPPER. MINIMUM CONDUCTOR SIZE TO BE #12 AWG WITH #12 GND.
- UNDERGROUND CONDUITS TO BE SCHEDULE 40 PVC. MINIMUM DEPTH 24", MINIMUM SIZE 1", UNLESS OTHERWISE SHOWN ON THE PLANS. CONDUITS AS SHOWN ARE FOR INFORMATION ONLY. EXACT CONDUIT ROUTING SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR.
- OUTDOOR CONDUITS EXPOSED TO BE GALVANIZED RIGID STEEL, MINIMUM SIZE 3/4", UNLESS OTHERWISE NOTED ON THE PLANS. GRS CONDUIT SHALL EXTEND BELOW GRADE TO THE FIRST ELBOW. ALL GRS CONDUIT EXPOSED TO EARTH SHALL BE HALF LAPPED WRAPPED IN SCOTCHRAIP 50 10 MIL TAPE OR EQUAL. EXTEND WRAP TO A HEIGHT OF 12" ABOVE GRADE. INDOOR CONDUITS SHALL BE GALVANIZED RIGID STEEL.
- ALL SAFETY SWITCHES AND OTHER DISTRIBUTION AND CONTROL ELECTRICAL EQUIPMENT SHALL BE U.L. LISTED AND RATED FOR HEAVY DUTY SERVICE.
- ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE.
- ALL ELECTRICAL EQUIPMENT, CONDUIT, WIRING, BOXES, ETC. SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING. THE SUBMITTALS SHALL BE NEATLY GROUPED AND ORGANIZED. PERTINENT INFORMATION SHALL BE HIGHLIGHTED, AND THE SPECIFIC PRODUCT SHALL BE IDENTIFIED. ALL SUBMITTALS SHALL BE COMPLETE, AND PRESENTED IN ONE PACKAGE. THE SUBMITTAL SHALL INCLUDE A COMPLETE LIST OF THE EQUIPMENT AND MATERIALS, INCLUDING THE MANUFACTURER'S NAME, PRODUCT SPECIFICATION, DESCRIPTIVE DATA, TECHNICAL LITERATURE, PERFORMANCE CHARTS, CATALOG CUTS, INSTALLATION INSTRUCTIONS, AND SPARE PART RECOMMENDATIONS FOR EACH DIFFERENT ITEM OF THE EQUIPMENT SPECIFIED.
- IT IS THE OBLIGATION OF THE CONTRACTOR TO ORGANIZE HIS WORK, SO THAT A COMPLETE ELECTRICAL, INSTRUMENTATION, AND CONTROL SYSTEM FOR THE FACILITY WILL BE PROVIDED, AND WILL BE SUPPORTED BY ACCURATE SHOP AND RECORD DRAWINGS, AND O & M MANUALS.

### NOTES: (ELECTRICAL SYMBOLS)

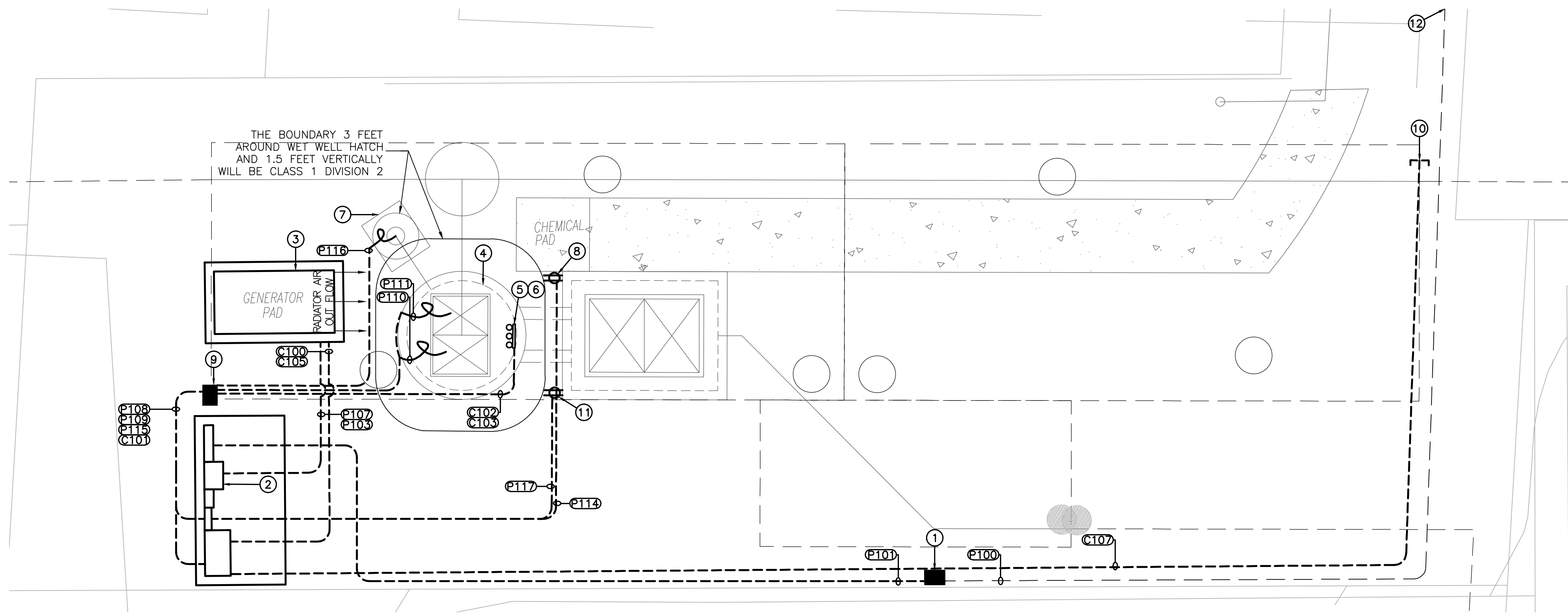
- POWER TRANSFORMERS SHALL BE DRY TYPE 480-208Y/120 VOLTS, 3 PHASE 4 WIRE UNLESS OTHERWISE INDICATED.
- CONTROL TRANSFORMER SHALL BE DRY TYPE 480-120 VOLTS 1 PHASE UNLESS OTHERWISE INDICATED. SEE CONTROL WIRING DIAGRAMS FOR USE OF 120 VOLT CONTROL CIRCUITS CONTROL TRANSFORMERS SHALL BE SIZED TO HANDLE THE LOADS OF ALL RELAYS, PILOT LIGHTS, ETC. CONNECTED THERE TO PLUS 50 VA EXTRA CAPACITY.
- LOCATED IN OR ON MOTOR CONTROL CENTER UNLESS OTHERWISE INDICATED.

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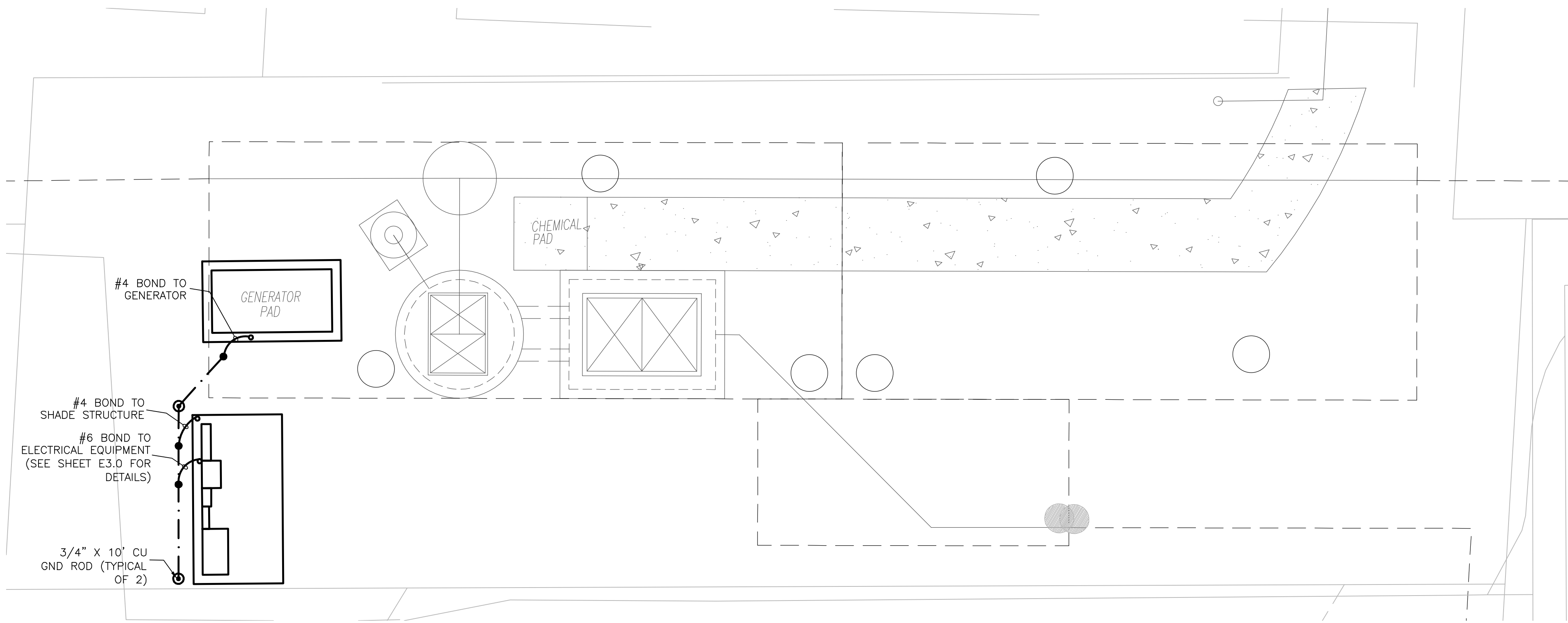
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**LIFTSTATION NO. 1 ELECTRICAL PLAN**



**LIFTSTATION NO. 1 GROUNDING**



**CONSTRUCTION NOTES**

- ① CONTRACTOR SHALL PROVIDE AND INSTALL NEW JUNCTION BOX WHERE EXISTING SERVICE CONNECTS TO EXISTING SES. EXTEND NEW CONDUIT RUN TO NEW SES PER ALL POWER COMPANY REQUIREMENTS AND SPECIFICATIONS.
- ② CONTRACTOR SHALL PROVIDE AND INSTALL NEW ELECTRICAL SERVICE, GEAR, AND SHADE STRUCTURE, SEE DETAILS 1 & 2 ON SHEET E4.0.
- ③ CONTRACTOR SHALL PROVIDE AND INSTALL NEW 40KW GENERATOR SET ON CONCRETE PAD. REFER TO CIVIL PLANS FOR DETAILS.
- ④ DUPLEX PUMP SEWAGE LIFT STATION PREPACKAGED BY OTHERS. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL ELECTRICAL CONNECTIONS AS REQUIRED. SEE DETAIL 4 ON SHEET E4.0.
- ⑤ NEW PRESSURE TRANSDUCER FOR WET WELL LEVEL INDICATION AS COORDINATED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL POWER AND CONTROL AS REQUIRED.
- ⑥ NEW LEVEL FLOAT(S) FOR WET WELL BACKUP LEVEL INDICATION AS COORDINATED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL POWER AND CONTROL AS REQUIRED.
- ⑦ NEW ODOR CONTROL. ELECTRICAL CONTRACTOR SHALL MAKE ELECTRICAL CONNECTIONS PER DETAIL 10 ON SHEET E4.1.
- ⑧ NEW GFCI RECEPTACLE WITH WEATHER PROOF WHILE IN USE METAL COVER FOR CHEMICAL FEED PUMP, SEE DETAIL 5 ON SHEET E4.1.
- ⑨ CONTRACTOR SHALL PROVIDE AND INSTALL NEW STANCHION MOUNTED J-BOX WITH LANDING LUGS AND EYS SEALS. SEE DETAIL 6 ON SHEET E4.1.
- ⑩ COORDINATE WITH TELEPHONE COMPANY TO PROVIDE SERVICE FOR AUTO DIALER. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL WIRE, 2" CONDUIT AND J-BOXES AS REQUIRED.
- ⑪ NEW GFCI RECEPTACLE WITH WEATHER PROOF WHILE IN USE METAL COVER FOR PORTABLE DAVIT CRANE, SEE DETAIL 5 ON SHEET E4.1.
- ⑫ CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR UPGRADED ELECTRICAL SERVICE AND CONFIRMING ALL SIZES AND DISTANCES PRIOR TO CONSTRUCTION. NEW ELECTRICAL SERVICE IS INTENDED TO RUN THROUGH THE EXISTING CONDUIT TO THE EXISTING POWER COMPANY TRANSFORMER.

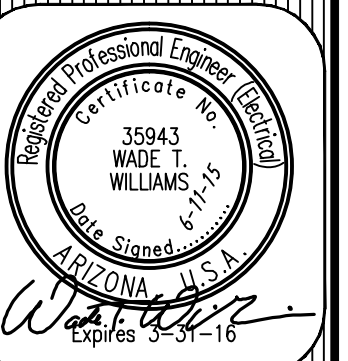
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PROJECT NO:  
**12138**  
DESIGN BY: JHB  
DRAWN BY: JHB  
CHECKED BY: WTW

**WRIGHT**  
engineering corporation  
ELECTRICAL ENGINEERING AND DESIGN  
165 EAST CHILTON DRIVE • CHANDLER, ARIZONA 85225  
PHONE 480.497.5829 • FAX 480.497.5807  
www.wrightengr.com

PROJECT: TITLE:

**PARKER, ARIZONA**  
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER PLANS**  
**ELECTRICAL SITE PLAN LS#1**

NO.	DATE	SUBMITTALS/REVISIONS (DESCRIPTIONS)
1	AUG 2012	1ST TOWN SUBMITTAL
2	NOV 2012	2ND TOWN SUBMITTAL
3	DEC 2012	3RD TOWN SUBMITTAL
4	JUN 2015	4TH TOWN SUBMITTAL

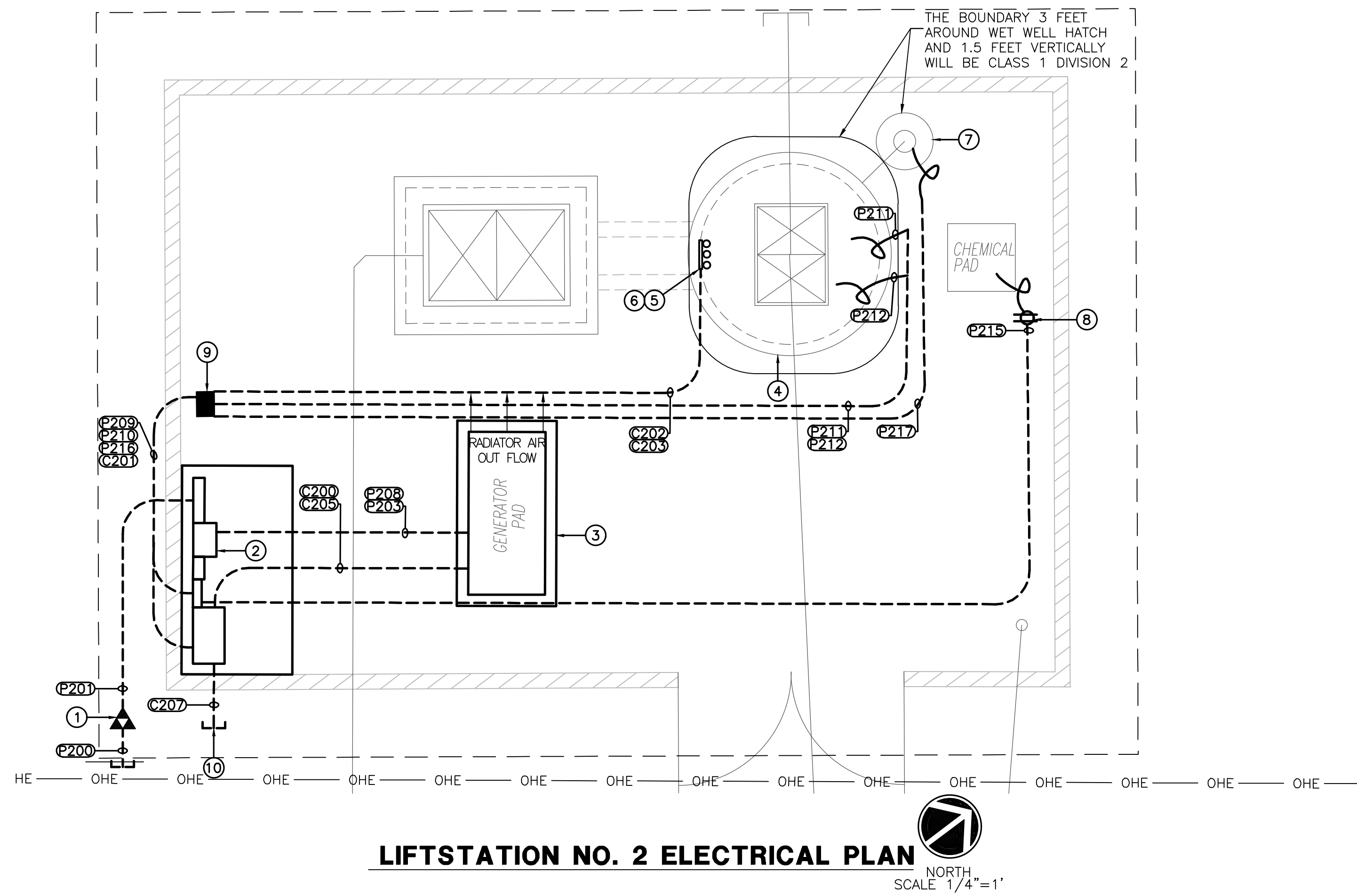


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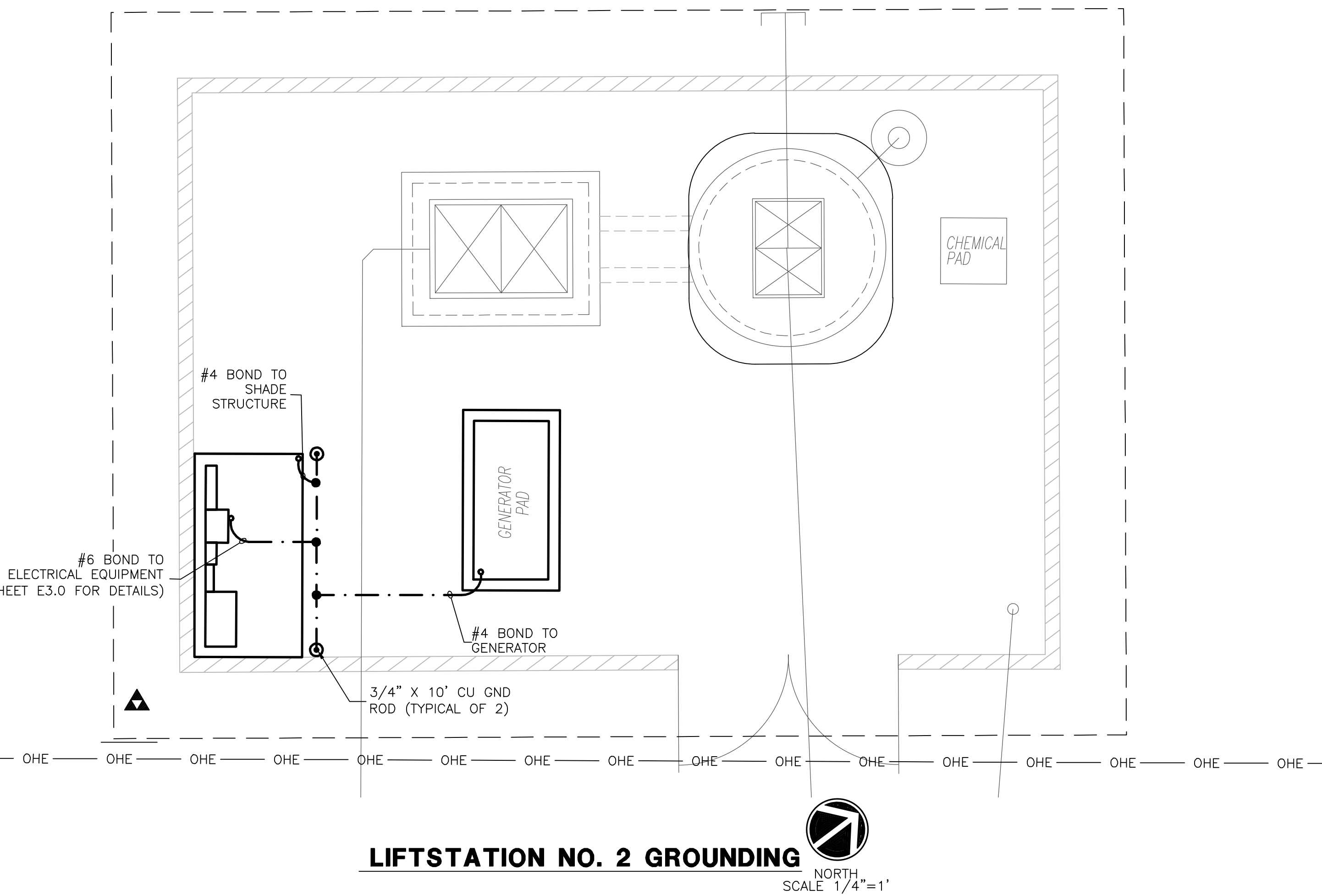
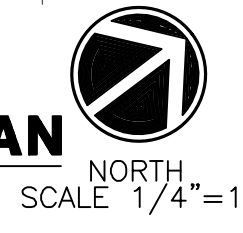


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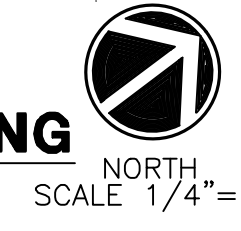
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**LIFTSTATION NO. 2 ELECTRICAL PLAN**



**LIFTSTATION NO. 2 GROUNDING**



**CONSTRUCTION NOTES**

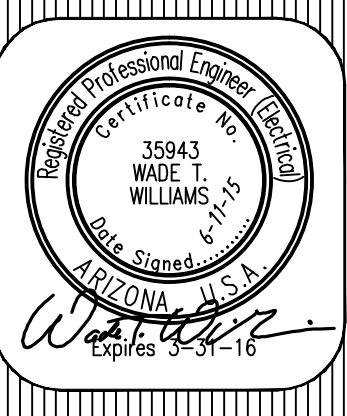
- ① CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR CONNECTIONS TO OVERHEAD TRANSFORMER.
- ② CONTRACTOR SHALL PROVIDE AND INSTALL NEW ELECTRICAL SERVICE, GEAR, AND SHADE STRUCTURE, SEE DETAILS 2 & 3 ON SHEET E4.0.
- ③ CONTRACTOR SHALL PROVIDE AND INSTALL NEW 35kW GENERATOR SET ON CONCRETE PAD. REFER TO CIVIL PLANS FOR DETAILS.
- ④ DUPLEX PUMP SEWAGE LIFT STATION PREPACKAGED BY OTHERS. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL ELECTRICAL CONNECTIONS AS REQUIRED. SEE DETAIL 4 ON SHEET E4.0.
- ⑤ NEW PRESSURE TRANSDUCER FOR WET WELL LEVEL INDICATION AS COORDINATED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL POWER AND CONTROL AS REQUIRED.
- ⑥ NEW LEVEL FLOAT(S) FOR WET WELL BACKUP LEVEL INDICATION AS COORDINATED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL POWER AND CONTROL AS REQUIRED.
- ⑦ NEW ODOR CONTROL. ELECTRICAL CONTRACTOR SHALL MAKE ELECTRICAL CONNECTIONS PER DETAIL 10 ON SHEET E4.1.
- ⑧ NEW GFCI RECEPTACLE WITH WEATHER PROOF WHILE IN USE METAL COVER FOR CHEMICAL FEED PUMP, SEE DETAIL 5 ON SHEET E4.1.
- ⑨ CONTRACTOR SHALL PROVIDE AND INSTALL NEW STANCHION MOUNTED J-BOX WITH LANDING LUGS AND EYS SEALS. SEE DETAIL 6 ON SHEET E4.1.
- ⑩ COORDINATE WITH TELEPHONE COMPANY TO PROVIDE SERVICE FOR AUTO DIALER. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL WIRE, 2" CONDUIT AND J-BOXES AS REQUIRED.

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PROJECT NO:  
**12138**  
DESIGN BY: JHB  
DRAWN BY: JHB  
CHECKED BY: WTW

**WRIGHT** engineering corporation  
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PROJECT: TITLE:  
**PARKER, ARIZONA**  
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER PLANS**  
**ELECTRICAL SITE PLAN LS#2**

NO.	DATE	SUBMITTALS/REVISIONS (DESCRIPTIONS)
1	AUG 2012	1ST TOWN SUBMITTAL
2	NOV 2012	2ND TOWN SUBMITTAL
3	DEC 2012	3RD TOWN SUBMITTAL
4	JUN 2015	4TH TOWN SUBMITTAL

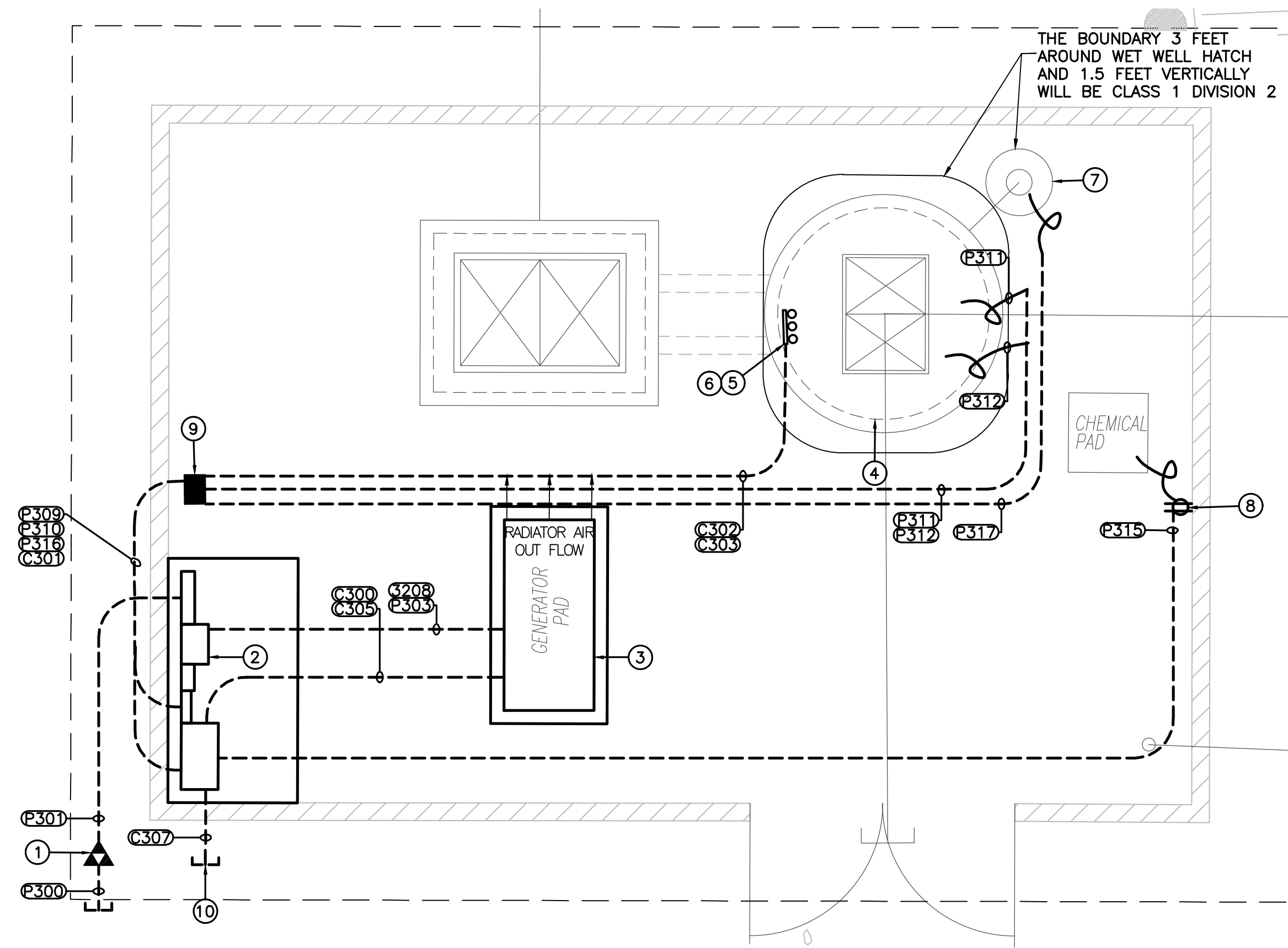


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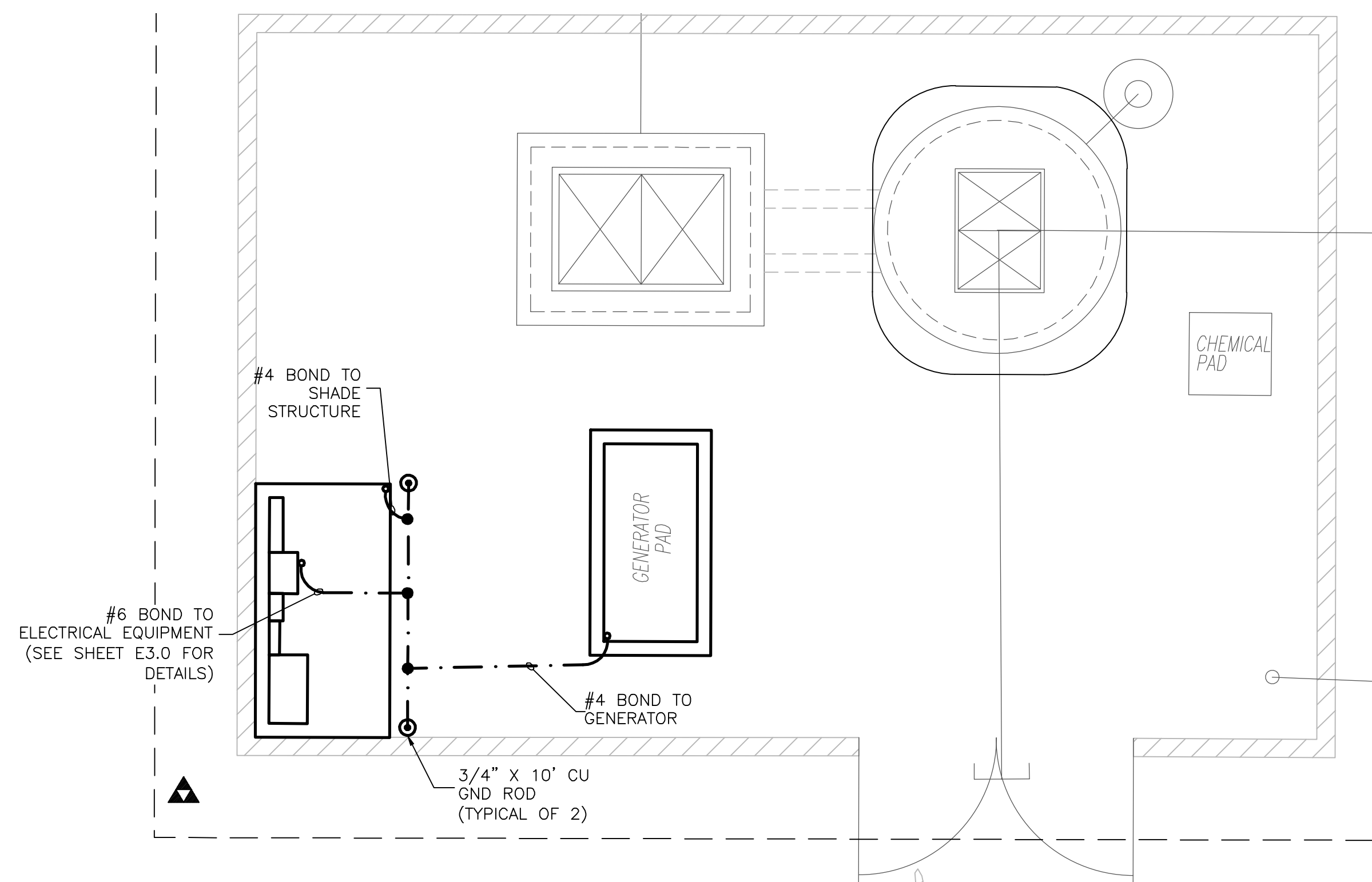


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**LIFTSTATION NO. 3 ELECTRICAL PLAN**



**LIFTSTATION NO. 3 GROUNDING**



**CONSTRUCTION NOTES**

- ① CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR CONNECTIONS TO OVERHEAD TRANSFORMER.
- ② CONTRACTOR SHALL PROVIDE AND INSTALL NEW ELECTRICAL SERVICE, GEAR, AND SHADE STRUCTURE, SEE DETAILS 2 & 3 ON SHEET E4.0.
- ③ CONTRACTOR SHALL PROVIDE AND INSTALL NEW 50KW GENERATOR SET ON CONCRETE PAD. REFER TO CIVIL PLANS FOR DETAILS.
- ④ DUPLEX PUMP SEWAGE LIFT STATION PREPACKAGED BY OTHERS. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL ELECTRICAL CONNECTIONS AS REQUIRED. SEE DETAIL 4 ON SHEET E4.0.
- ⑤ NEW PRESSURE TRANSDUCER FOR WET WELL LEVEL INDICATION AS COORDINATED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL POWER AND CONTROL AS REQUIRED.
- ⑥ NEW LEVEL FLOAT(S) FOR WET WELL BACKUP LEVEL INDICATION AS COORDINATED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL POWER AND CONTROL AS REQUIRED.
- ⑦ NEW ODOR CONTROL. ELECTRICAL CONTRACTOR SHALL MAKE ELECTRICAL CONNECTIONS PER DETAIL 10 ON SHEET E4.1.
- ⑧ NEW GFCI RECEPTACLE WITH WEATHER PROOF WHILE IN USE METAL COVER FOR CHEMICAL FEED PUMP, SEE DETAIL 5 ON SHEET E4.1.
- ⑨ CONTRACTOR SHALL PROVIDE AND INSTALL NEW STANCHION MOUNTED J-BOX WITH LANDING LUGS AND EYS SEALS. SEE DETAIL 6 ON SHEET E4.1.
- ⑩ COORDINATE WITH TELEPHONE COMPANY TO PROVIDE SERVICE FOR AUTO DIALER. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL WIRE, 2" CONDUIT AND J-BOXES AS REQUIRED.

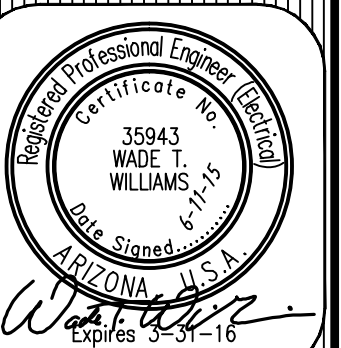
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PROJECT: TITLE:

**PARKER, ARIZONA**  
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER PLANS**  
**ELECTRICAL SITE PLAN LS#3**

NO.	DATE	SUBMITTALS/REVISIONS (DESCRIPTIONS)
1	AUG 2012	1ST TOWN SUBMITTAL
2	NOV 2012	2ND TOWN SUBMITTAL
3	DEC 2012	3RD TOWN SUBMITTAL
4	JUN 2015	4TH TOWN SUBMITTAL

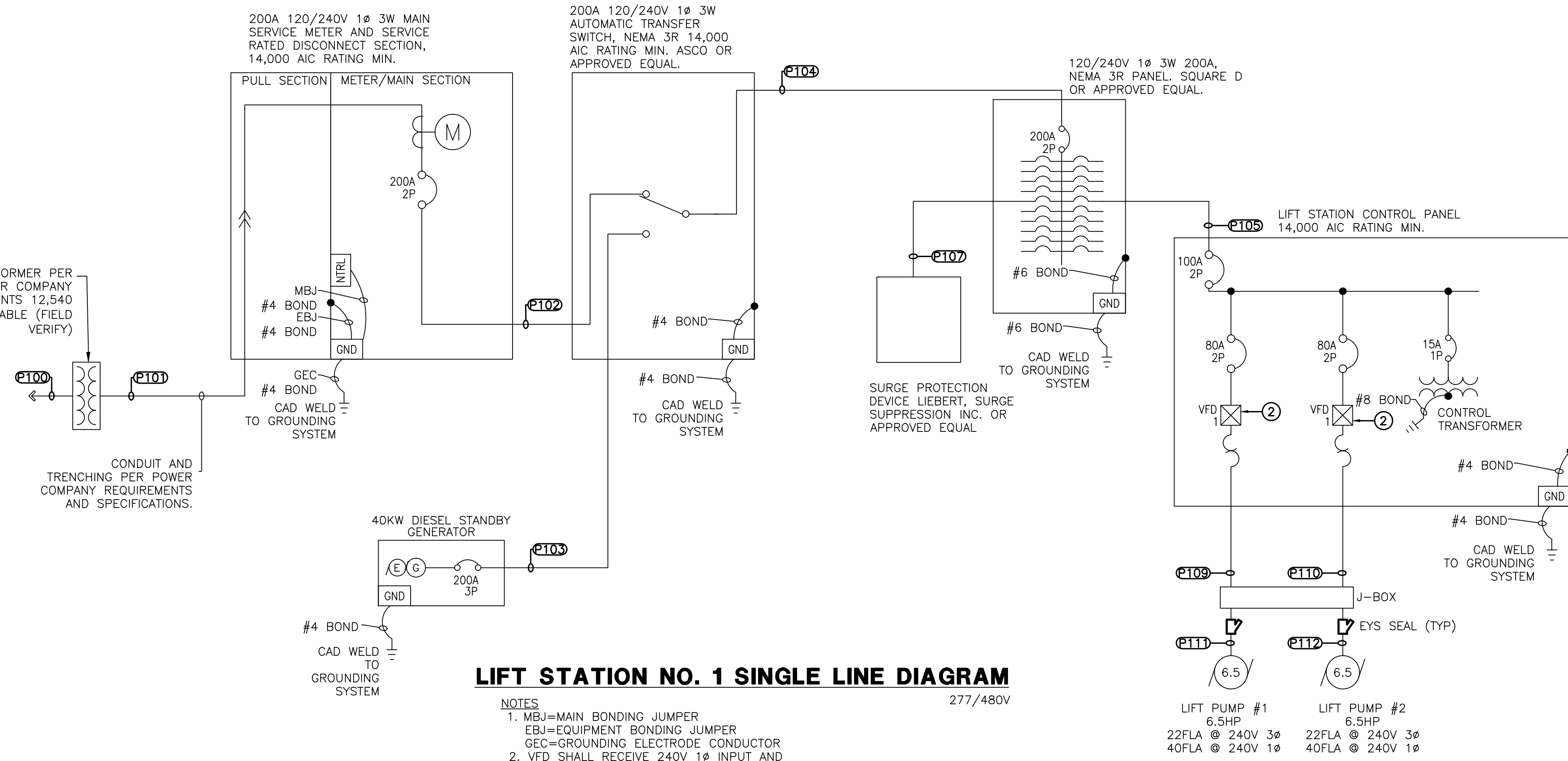


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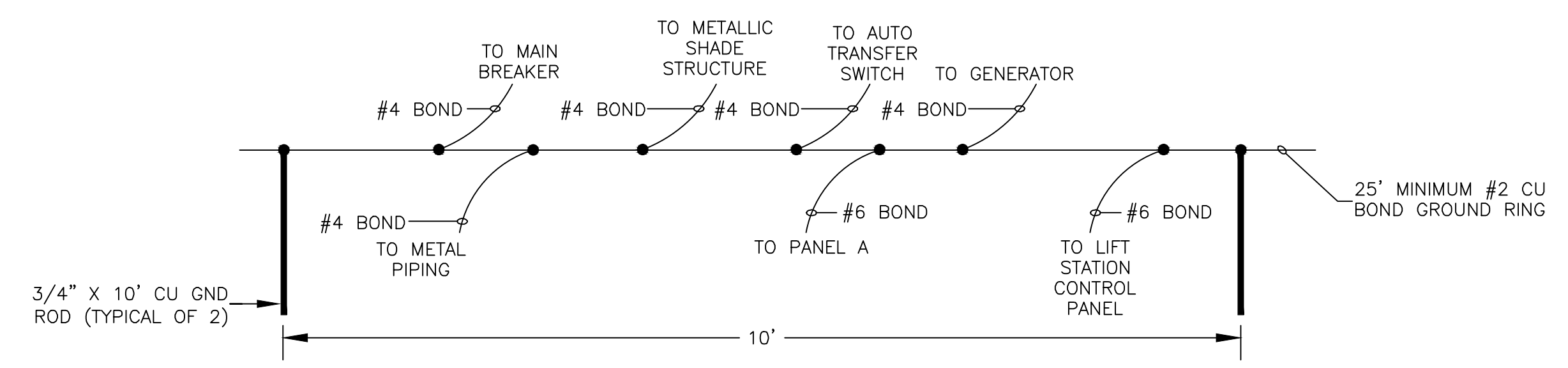
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**LIFT STATION NO. 1 SINGLE LINE DIAGRAM**  
277/480V

- NOTES**
1. MBJ=MAIN BONDING JUMPER  
EBJ=EQUIPMENT BONDING JUMPER  
GEC=GROUNDING ELECTRODE CONDUCTOR
  2. VFD SHALL RECEIVE 240V 1Ø INPUT AND CONVERT TO A 240V 3Ø OUTPUT. SIZE VFD FOR A HORSEPOWER RATING 2 TIMES THE HORSEPOWER SHOWN ON THE SINGLE LINE.



**TYPICAL GROUNDING SYSTEM DETAIL**

- NOTES**
- 1) EXOTHERMIC WELDS SHALL BE USED TO CONNECT GROUND WIRE JUNCTION POINTS.
  - 2) GROUND CLAMPS SHALL BE USED TO CONNECT GROUND WIRE TO GROUND RODS AND PIPES.
  - 3) GROUND LUGS SHALL BE USED TO CONNECT TO EQUIPMENT.

CONDUIT AND WIRE SCHEDULE FOR POWER						
CONDUIT NO.	SIZE	WIRE		FROM	TO	REMARKS
		POWER	GROUND			
P100	3"	EXISTING PER POWER CO.		EX. POWER CO. TRANSFORMER	NEW PULL BOX	
P101	3"	WIRE BY POWER CO.		NEW PULL BOX	MAIN SES	
P102	2"	(3) #3/0	#6	MAIN SES	AUTO TRANSFER SWITCH	
P103	2"	(3) #3/0	#6	AUTO TRANSFER SWITCH	STANDBY GENERATOR	
P104	2"	(3) #3/0	#6	AUTO TRANSFER SWITCH	PANEL A	
P105	1.25"	(3) #2	#6	PANEL 'A'(12,14)	LIFT STATION CONTROL PANEL	
P106	1"	(2) #6	#10	PANEL 'A'(11,13)	SURGE PROTECTION DEVICE	
P107	1"	(2) #12	#12	PANEL 'A'-2	GENERATOR BATTERY CHARGER	
P107	1"	(2) #12	#12	PANEL 'A'-4	GENERATOR HEATER	
P107	1"	(2) #12	#12	PANEL 'A'-6	GENERATOR CONTROL PANEL	
P108	1.25"	(3) #8	#10	LIFT STATION CONTROL PANEL	J-BOX	LIFT PUMP #1
P109	1.25"	(3) #8	#10	LIFT STATION CONTROL PANEL	J-BOX	LIFT PUMP #2
P110	2"	FACTORY CABLE		J-BOX	LIFT PUMP #1	
P111	2"	FACTORY CABLE		J-BOX	LIFT PUMP #2	
P112	1"	(2) #12	#12	PANEL 'A'-1	SHADE LIGHTS	
P113	1"	(2) #12	#12	PANEL 'A'-3	CONVENIENCE RECEPTACLE	
P114	1"	(2) #12	#12	PANEL 'A'-5	CHEMICAL FEED DEDICATED RECEPTACLE	
P115	1"	(2) #12	#12	PANEL 'A'-7	J-BOX	ODOR CONTROL
P116	1"	FACTORY CABLE		J-BOX	SCRUBBER	
P117	1"	(2) #12	#12	PANEL 'A'-10	DAVIT ARM CRANE DEDICATED RECEPTACLE	
P118	1"	(2) #12	#12	PANEL 'A'-8	ALARM BEACON	
P119	1"	(2) #12	#12	PANEL 'A'-9	AUTO DIALER	

CONDUIT AND WIRE SCHEDULE FOR CONTROL							
CONDUIT NO.	SIZE	WIRE			FROM	TO	REMARKS
		POWER	GROUND	CONTROL			
C100	1"		#14	(4) #14	AUTO TRANSFER SWITCH	STANDBY GENERATOR	
C101	1"		#12	(8) #14 #18 SHIELDED TWISTED PAIR	LIFT STATION CONTROL PANEL	J-BOX	LEVEL FLOATS PRESSURE TRANSDUCER
C102	1"			FACTORY CABLE	J-BOX	LEVEL FLOATS	
C103	1"			FACTORY CABLE	J-BOX	PRESSURE TRANSDUCER	
C104	1"		#14	(2) #14	AUTO TRANSFER SWITCH	AUTO DIALER	
C105	1"		#14	(2) #14	STANDBY GENERATOR	AUTO DIALER	
C106	1"		#14	(8) #14	LIFT STATION CONTROL PANEL	AUTO DIALER	
C107	1"				POINT OF SERVICE	TELEPHONE MOUNTING BOARD	
C108	1"				PER TELEPHONE COMPANY	TELEPHONE MOUNTING BOARD	

LIFT STATION NO. 1 SERVICE ENTRANCE SECTION LOAD CALCULATION SUMMARY		
PANEL A	LOAD DESCRIPTION	CONNECTED
		78.8
TOTAL AMPS / Ø		78.8

PANEL NAME: A	120/240V, 1Ø, 3W						200A MAIN BKR	
LOCATION: STANCHION MTD	TYPE: PLUG-ON						STANCHION MTD, NEMA 3R	
DESCRIPTION	BKR SIZE	CKT NO.	LOAD AØ	LOAD BØ	CKT NO.	BKR SIZE	DESCRIPTION	
SHADE LIGHTING*	20/1	1	160		2	20/1	GENERATOR BATTERY CHARGER +	
CONVENIENCE RECEPTACLE	20/1	3		120		20/1	GENERATOR HEATER +	
CHEMICAL FEED DEDICATED RECEPTACLE	20/1	5	1176	400	6	20/1	GENERATOR CONTROL PANEL +	
ODOR CONTROL*	20/1	7		200	8	20/1	ALARM BEACON	
AUTO DIALER	20/1	9	200	1176	10	20/1	DAVIT ARM CRANE DEDICATED RECEPTACLE	
SURGE PROTECTION DEVICE	60/	11		0	12	100/	LIFT STATION CONTROL PANEL*	
"	/2	13	0	5940	14	/2	"	
BUSSED SPACE		15		0	16		BUSSED SPACE	
BUSSED SPACE		17		0	18		BUSSED SPACE	
BUSSED SPACE		19		0	20		BUSSED SPACE	
BUSSED SPACE		21		0	22		BUSSED SPACE	
BUSSED SPACE		23		0	24		BUSSED SPACE	
CODE TOTAL VA/Ø			9452	8236	*INDICATES LOAD @ 125%			
CODE TOTAL AMPS/Ø			78.8	68.6	14,000 AIC BREAKERS			

+ VERIFY WITH GENERATOR MANUFACTURER FOR EXACT SIZE AND QUANTITY PRIOR TO INSTALLATION.

WRIGHT ENGINEERING  
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PROJECT: TITLE:

PARKER, ARIZONA  
**BUCKSKIN SANITARY DISTRICT**  
PHASE 4 SEWER PLANS  
ELECTRICAL SINGLE LINE DIAGRAM #1

NO.	DATE	SUBMITTALS/REVISIONS (DESCRIPTIONS)
1	AUG 2012	1ST TOWN SUBMITTAL
2	NOV 2012	2ND TOWN SUBMITTAL
3	DEC 2012	3RD TOWN SUBMITTAL
4	JUN 2015	4TH TOWN SUBMITTAL

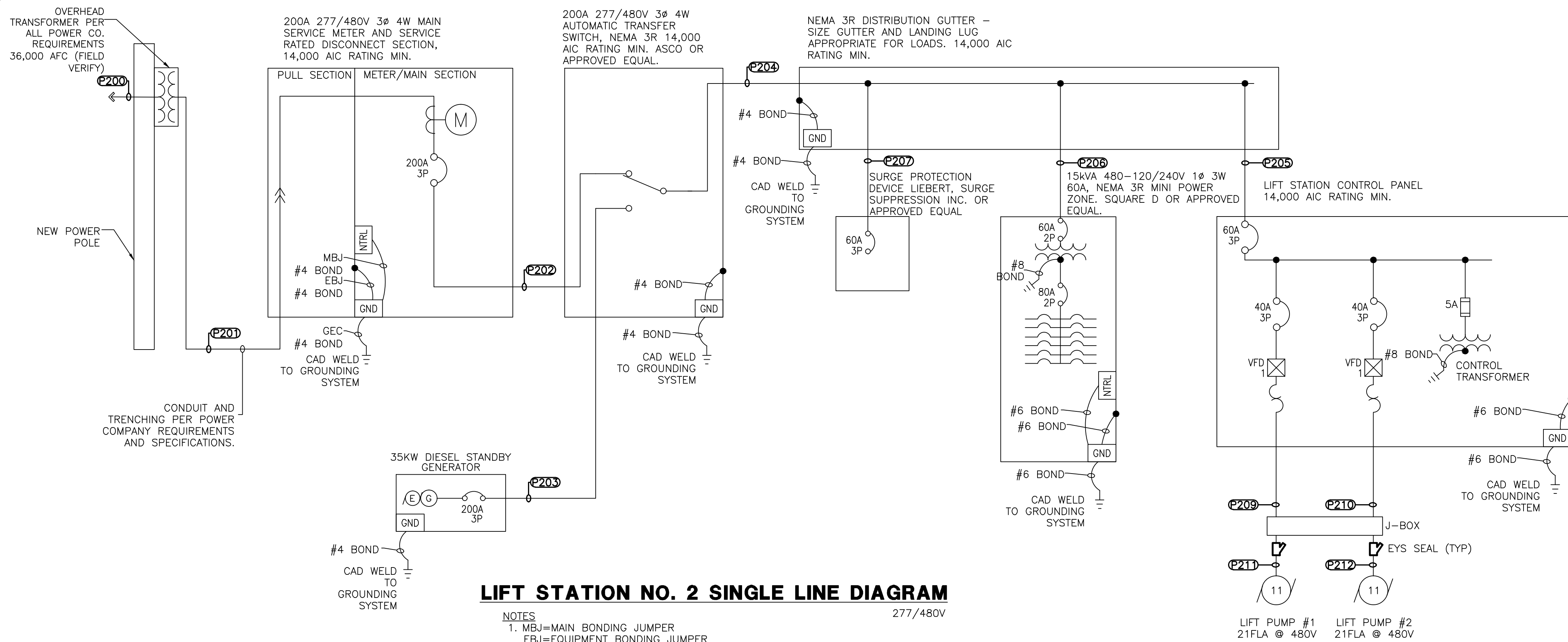
Professional Engineer  
35843  
W. J. WILLIAMS  
Arizona, U.S.A.  
Expires 5-31-16

ARIZONA BLUE STAKE  
CALL THE WORKING DAYS BEFORE YOU DIG  
Dial 811 or  
602-263-1100  
1-800-STAKE-IT  
(OUTSIDE MARICOPA COUNTY)

DRAWING NO:  
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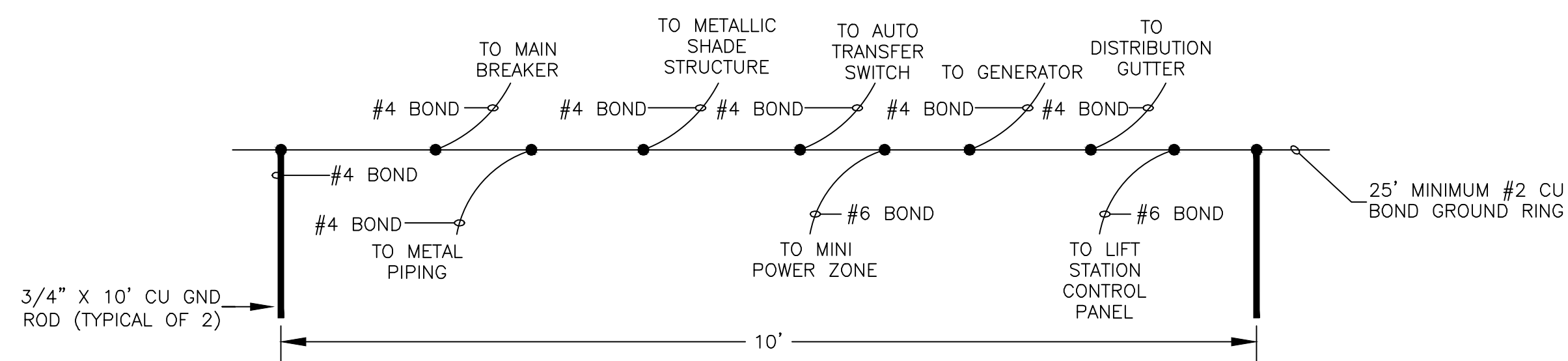
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**LIFT STATION NO. 2 SINGLE LINE DIAGRAM**  
277/480V

- NOTES  
 1. MBJ=MAIN BONDING JUMPER  
 EBJ=EQUIPMENT BONDING JUMPER  
 GEC=GROUNDING ELECTRODE CONDUCTOR



**TYPICAL GROUNDING SYSTEM DETAIL**

- NOTES  
 1)EXOTHERMIC WELDS SHALL BE USED TO CONNECT GROUND WIRE JUNCTION POINTS.  
 2)GROUND CLAMPS SHALL BE USED TO CONNECT GROUND WIRE TO GROUND RODS AND PIPES.  
 3)GROUND LUGS SHALL BE USED TO CONNECT TO EQUIPMENT.

**LIFT STATION NO. 2 SERVICE ENTRANCE SECTION**  
**LOAD CALCULATION SUMMARY**

LOAD DESCRIPTION	CONNECTED
PANEL A	19.5
LIFT PUMP(11HP) #1	21
LIFT PUMP(11HP) #2	21
25% LARGEST MOTOR	3.5
TOTAL AMPS / $\phi$	65.0

PANEL NAME: A      120/240V, 1 $\phi$ , 3W      80A MAIN BKR

LOCATION: STANCHION MTD	TYPE: PLUG-ON				STANCHION MTD, NEMA 3R	
DESCRIPTION	BKR SIZE	CKT NO.	LOAD A $\phi$	LOAD B $\phi$	DESCRIPTION	
SHADE LIGHTING*	20/1	1	160	400	20/1	GENERATOR BATTERY CHARGER +
CONVENIENCE RECEPTACLE	20/1	3		120	20/1	GENERATOR HEATER +
CHEMICAL FEED DEDICATED RECEPTACLE	20/1	5	1176	400	20/1	GENERATOR CONTROL PANEL +
ODOR CONTROL*	20/1	7		195	20/1	ALARM BEACON
AUTO DIALER	20/1	9	200	0		BUSSED SPACE
BUSSED SPACE		11	0	0		BUSSED SPACE
BUSSED SPACE		13	0	0		BUSSED SPACE
BUSSED SPACE		15	0	0		BUSSED SPACE
BUSSED SPACE		17	0	0		BUSSED SPACE
CODE TOTAL VA/ $\phi$			2336	1315		*INDICATES LOAD @ 125%
CODE TOTAL AMPS/ $\phi$			19.5	11.0		14,000 AIC BREAKERS

+ VERIFY WITH GENERATOR MANUFACTURER FOR EXACT SIZE AND QUANTITY PRIOR TO INSTALLATION.

**CONDUIT AND WIRE SCHEDULE FOR POWER**

CONDUIT NO.	SIZE	WIRE		FROM	TO	REMARKS
		POWER	GROUND			
P200	EXISTING PER POWER CO.			POWER CO. POINT OF SERVICE	POWER CO. TRANSFORMER	
P201	3"	WIRE BY POWER CO.		POWER CO. TRANSFORMER	MAIN SES	
P202	2"	(4) #3/0	#6	MAIN SES	AUTO TRANSFER SWITCH	
P203	2"	(4) #3/0	#6	AUTO TRANSFER SWITCH	STANDBY GENERATOR	
P204	2"	(4) #3/0	#6	AUTO TRANSFER SWITCH	DISTRIBUTION GUTTER	
P205	1.5"	(4) #6	#10	DISTRIBUTION GUTTER	LIFT STATION CONTROL PANEL	
P206	1"	(2) #8	#10	DISTRIBUTION GUTTER	MINI POWER ZONE	
P207	1"	(3) #6	#10	DISTRIBUTION GUTTER	SURGE PROTECTION DEVICE	
P208	1"	(2) #12	#12	PANEL 'A'-2	GENERATOR BATTERY CHARGER	
	1"	(2) #12	#12	PANEL 'A'-4	GENERATOR HEATER	
	1"	(2) #12	#12	PANEL 'A'-6	GENERATOR CONTROL PANEL	
P209	1"	(3) #10	#10	LIFT STATION CONTROL PANEL	J-BOX	LIFT PUMP #1
P210	1"	(3) #10	#10	LIFT STATION CONTROL PANEL	J-BOX	LIFT PUMP #2
P211	2"	FACTORY CABLE		J-BOX	LIFT PUMP #1	
P212	2"	FACTORY CABLE		J-BOX	LIFT PUMP #2	
P213	1"	(2) #12	#12	PANEL 'A'-1	SHADE LIGHTS	
P214	1"	(2) #12	#12	PANEL 'A'-3	CONVENIENCE RECEPTACLE	
P215	1"	(2) #12	#12	PANEL 'A'-5	CHEMICAL FEED DEDICATED RECEPTACLE	
P216	1"	(2) #12	#12	PANEL 'A'-7	J-BOX	ODOR CONTROL
P217	1"	FACTORY CABLE		J-BOX	SCRUBBER	
P218	1"	(2) #12	#12	PANEL 'A'-8	ALARM BEACON	
P219	1"	(2) #12	#12	PANEL 'A'-9	AUTO DIALER	

**CONDUIT AND WIRE SCHEDULE FOR CONTROL**

CONDUIT NO.	SIZE	WIRE			FROM	TO	REMARKS
		POWER	GROUND	CONTROL			
C200	1"		#14	(4) #14	AUTO TRANSFER SWITCH	STANDBY GENERATOR	
C201	1"			(8) #14	LIFT STATION CONTROL PANEL	J-BOX	LEVEL FLOATS
				#18 SHIELDED TWISTED PAIR			PRESSURE TRANSDUCER
C202	1"			FACTORY CABLE	J-BOX	LEVEL FLOATS	
C203	1"			FACTORY CABLE	J-BOX	PRESSURE TRANSDUCER	
C204	1"		#14	(2) #14	AUTO TRANSFER SWITCH	AUTO DIALER	
C205	1"		#14	(2) #14	STANDBY GENERATOR	AUTO DIALER	
C206	1"		#14	(8) #14	LIFT STATION CONTROL PANEL	AUTO DIALER	
C207	1"	PER TELEPHONE COMPANY			POINT OF SERVICE	TELEPHONE MOUNTING BOARD	
C208	1"	PER TELEPHONE COMPANY			TELEPHONE MOUNTING BOARD	AUTO DIALER	

WRIGHT ENGINEERING CORPORATION  
 PROJECT NO: **12138**  
 DESIGN BY: JHB  
 DRAWN BY: JHB  
 CHECKED BY: WTW

**WRIGHT** engineering corporation  
 ELECTRICAL ENGINEERING AND DESIGN  
 165 EAST CHILTON DRIVE • CHANDLER, ARIZONA 85225  
 PHONE 480.497.5829 • FAX 480.497.5807  
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PROJECT: TITLE:  
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER PLANS**  
**ELECTRICAL SINGLE LINE DIAGRAM #2**

SUBMITTALS/REVISIONS (DESCRIPTIONS)

NO.	DATE	DESCRIPTIONS
1	AUG 2012	1ST TOWN SUBMITTAL
2	NOV 2012	2ND TOWN SUBMITTAL
3	DEC 2012	3RD TOWN SUBMITTAL
4	JUN 2015	4TH TOWN SUBMITTAL

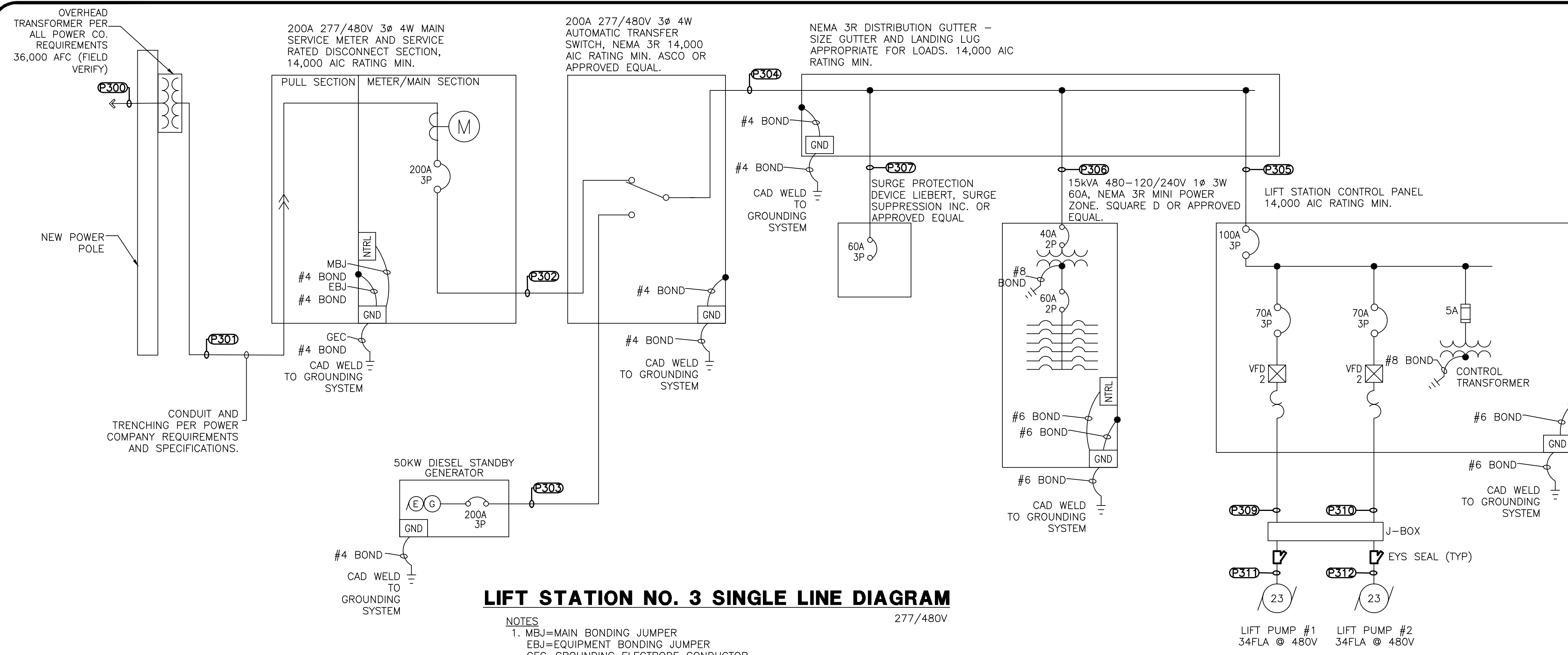
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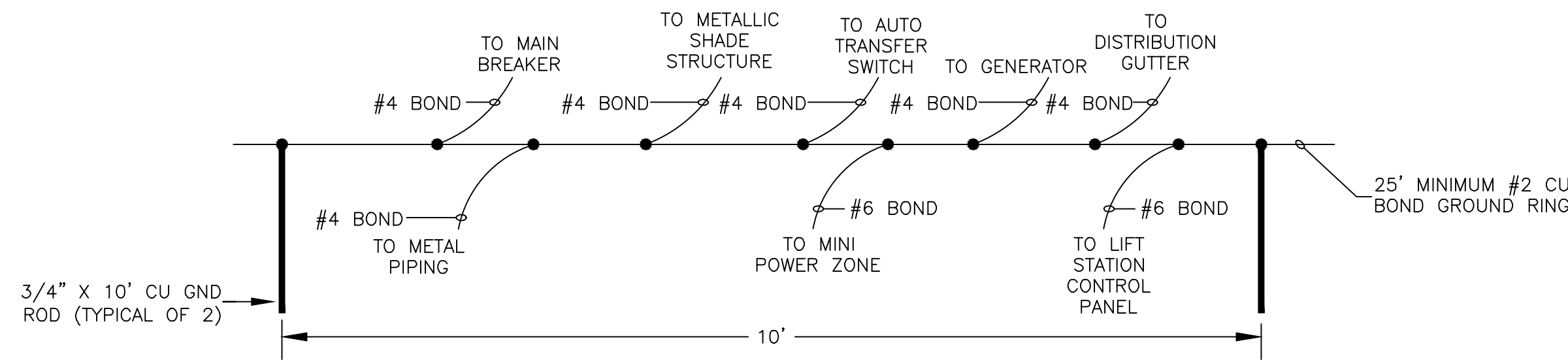
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**LIFT STATION NO. 3 SINGLE LINE DIAGRAM**  
277/480V

- NOTES  
 1. MBJ=MAIN BONDING JUMPER  
 EBJ=EQUIPMENT BONDING JUMPER  
 GEC=GROUNDING ELECTRODE CONDUCTOR



**TYPICAL GROUNDING SYSTEM DETAIL**

- NOTES  
 1) EXOTHERMIC WELDS SHALL BE USED TO CONNECT GROUND WIRE JUNCTION POINTS.  
 2) GROUND CLAMPS SHALL BE USED TO CONNECT GROUND WIRE TO GROUND RODS AND PIPES.  
 3) GROUND LUGS SHALL BE USED TO CONNECT TO EQUIPMENT.

**LIFT STATION NO. 3 SERVICE ENTRANCE SECTION**  
**LOAD CALCULATION SUMMARY**

LOAD DESCRIPTION	CONNECTED
PANEL A	17.8
LIFT PUMP(23HP) #1	34
LIFT PUMP(23HP) #2	34
25% LARGEST MOTOR	8.5
TOTAL AMPS / $\phi$	94.3

PANEL NAME: A	120/240V, 1 $\phi$ , 3W				60A MAIN BKR	
LOCATION: STANCHION MTD	TYPE: PLUG-ON				STANCHION MTD, NEMA 3R	
DESCRIPTION	BKR SIZE	CKT NO.	LOAD A $\phi$	LOAD B $\phi$	BKR SIZE	DESCRIPTION
SHADE LIGHTING*	20/1	1	160		2	GENERATOR BATTERY CHARGER +
CONVENIENCE RECEPTACLE	20/1	3		120	20/1	GENERATOR HEATER +
CHEMICAL FEED DEDICATED RECEPTACLE	20/1	5	1176		20/1	GENERATOR CONTROL PANEL +
ODOR CONTROL*	20/1	7		195	20/1	ALARM BEACON
AUTO DIALER	20/1	9	0		10	BUSSED SPACE
BUSSED SPACE		11	0		12	BUSSED SPACE
BUSSED SPACE		13	0		14	BUSSED SPACE
BUSSED SPACE		15	0		16	BUSSED SPACE
BUSSED SPACE		17	0		18	BUSSED SPACE
CODE TOTAL VA/ $\phi$			2136	1315		*INDICATES LOAD @ 125%
CODE TOTAL AMPS/ $\phi$			17.8	11.0		14,000 AIC BREAKERS

+ VERIFY WITH GENERATOR MANUFACTURER FOR EXACT SIZE AND QUANTITY PRIOR TO INSTALLATION.

**CONDUIT AND WIRE SCHEDULE FOR POWER**

CONDUIT NO.	SIZE	WIRE		FROM	TO	REMARKS
		POWER	GROUND			
P300				POWER CO. POINT OF SERVICE	POWER CO. TRANSFORMER	
P301	3"	WIRE BY POWER CO.		POWER CO. TRANSFORMER	MAIN SES	
P302	2"	(4) #3/0	#6	MAIN SES	AUTO TRANSFER SWITCH	
P303	2"	(4) #3/0	#6	AUTO TRANSFER SWITCH	STANDBY GENERATOR	
P304	2"	(4) #3/0	#6	AUTO TRANSFER SWITCH	DISTRIBUTION GUTTER	
P305	1"	(4) #2	#6	DISTRIBUTION GUTTER	LIFT STATION CONTROL PANEL	
P306	1"	(2) #8	#10	DISTRIBUTION GUTTER	MINI POWER ZONE	
P307	1"	(3) #6	#10	DISTRIBUTION GUTTER	SURGE PROTECTION DEVICE	
P308	1"	(2) #12	#12	PANEL 'A'-2	GENERATOR BATTERY CHARGER	
	1"	(2) #12	#12	PANEL 'A'-4	GENERATOR HEATER	
	1"	(2) #12	#12	PANEL 'A'-6	GENERATOR CONTROL PANEL	
P309	1"	(3) #10	#10	LIFT STATION CONTROL PANEL	J-BOX	LIFT PUMP #1
P310	1"	(3) #10	#10	LIFT STATION CONTROL PANEL	J-BOX	LIFT PUMP #2
P311	2"	FACTORY CABLE		J-BOX	LIFT PUMP #1	
P312	2"	FACTORY CABLE		J-BOX	LIFT PUMP #2	
P313	1"	(2) #12	#12	PANEL 'A'-1	SHADE LIGHTS	
P314	1"	(2) #12	#12	PANEL 'A'-3	CONVENIENCE RECEPTACLE	
P315	1"	(2) #12	#12	PANEL 'A'-5	CHEMICAL FEED DEDICATED RECEPTACLE	
P316	1"	(2) #12	#12	PANEL 'A'-7	J-BOX	ODOR CONTROL
P317	1"	FACTORY CABLE		J-BOX	SCRUBBER	
P318	1"	(2) #12	#12	PANEL 'A'-8	ALARM BEACON	
P319	1"	(2) #12	#12	PANEL 'A'-9	AUTO DIALER	

**CONDUIT AND WIRE SCHEDULE FOR CONTROL**

CONDUIT NO.	SIZE	WIRE			FROM	TO	REMARKS
		POWER	GROUND	CONTROL			
C300	1"		#14	(4) #14	AUTO TRANSFER SWITCH	STANDBY GENERATOR	
C301	1"			(8) #14	LIFT STATION CONTROL PANEL	J-BOX	LEVEL FLOATS
				#18 SHIELDED TWISTED PAIR			PRESSURE TRANSDUCER
C302	1"			FACTORY CABLE	J-BOX	LEVEL FLOATS	
C303	1"			FACTORY CABLE	J-BOX	PRESSURE TRANSDUCER	
C304	1"		#14	(2) #14	AUTO TRANSFER SWITCH	AUTO DIALER	
C305	1"		#14	(2) #14	STANDBY GENERATOR	AUTO DIALER	
C306	1"		#14	(8) #14	LIFT STATION CONTROL PANEL	AUTO DIALER	
C307	1"			PER TELEPHONE COMPANY	POINT OF SERVICE	TELEPHONE MOUNTING BOARD	
C308	1"			PER TELEPHONE COMPANY	TELEPHONE MOUNTING BOARD	AUTO DIALER	

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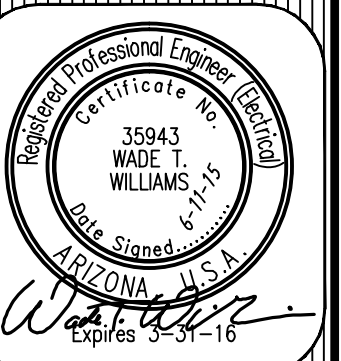
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PROJECT: TITLE:

**PARKER, ARIZONA**  
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER PLANS**  
**ELECTRICAL SINGLE LINE DIAGRAM #3**

NO. DATE SUBMITTALS/REVISIONS (DESCRIPTIONS)

1	AUG 2012	1ST TOWN SUBMITTAL
2	NOV 2012	2ND TOWN SUBMITTAL
3	DEC 2012	3RD TOWN SUBMITTAL
4	JUN 2015	4TH TOWN SUBMITTAL

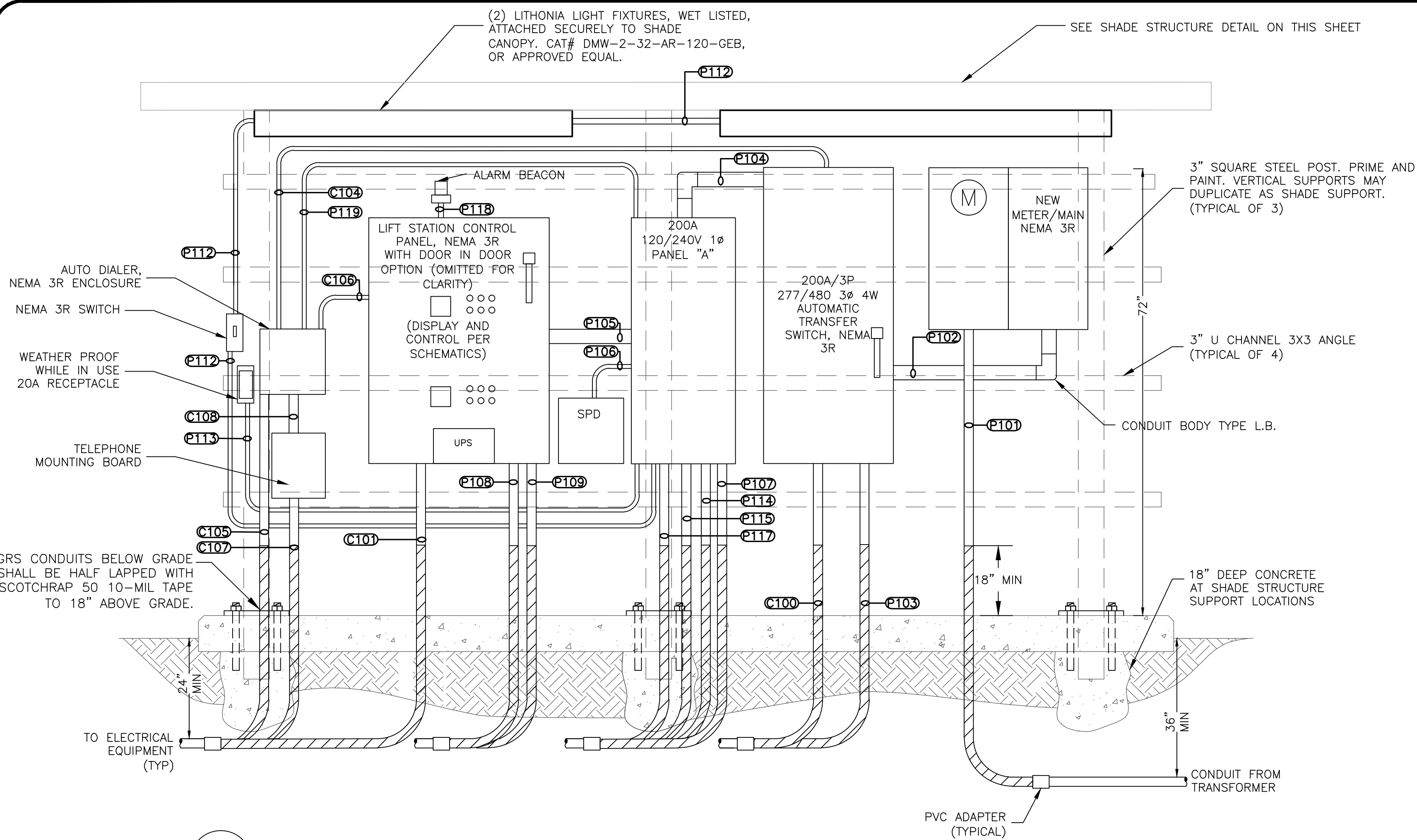


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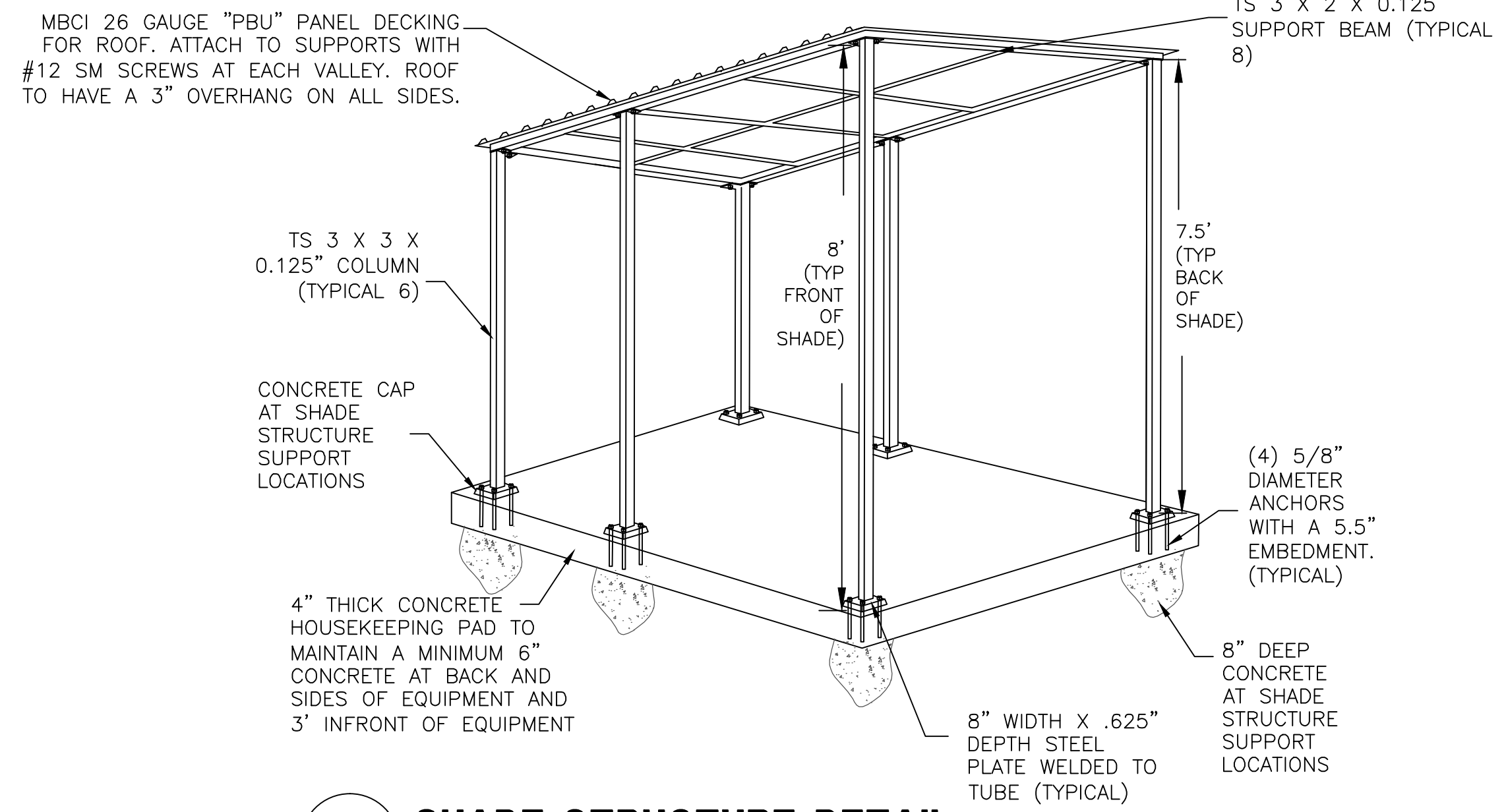


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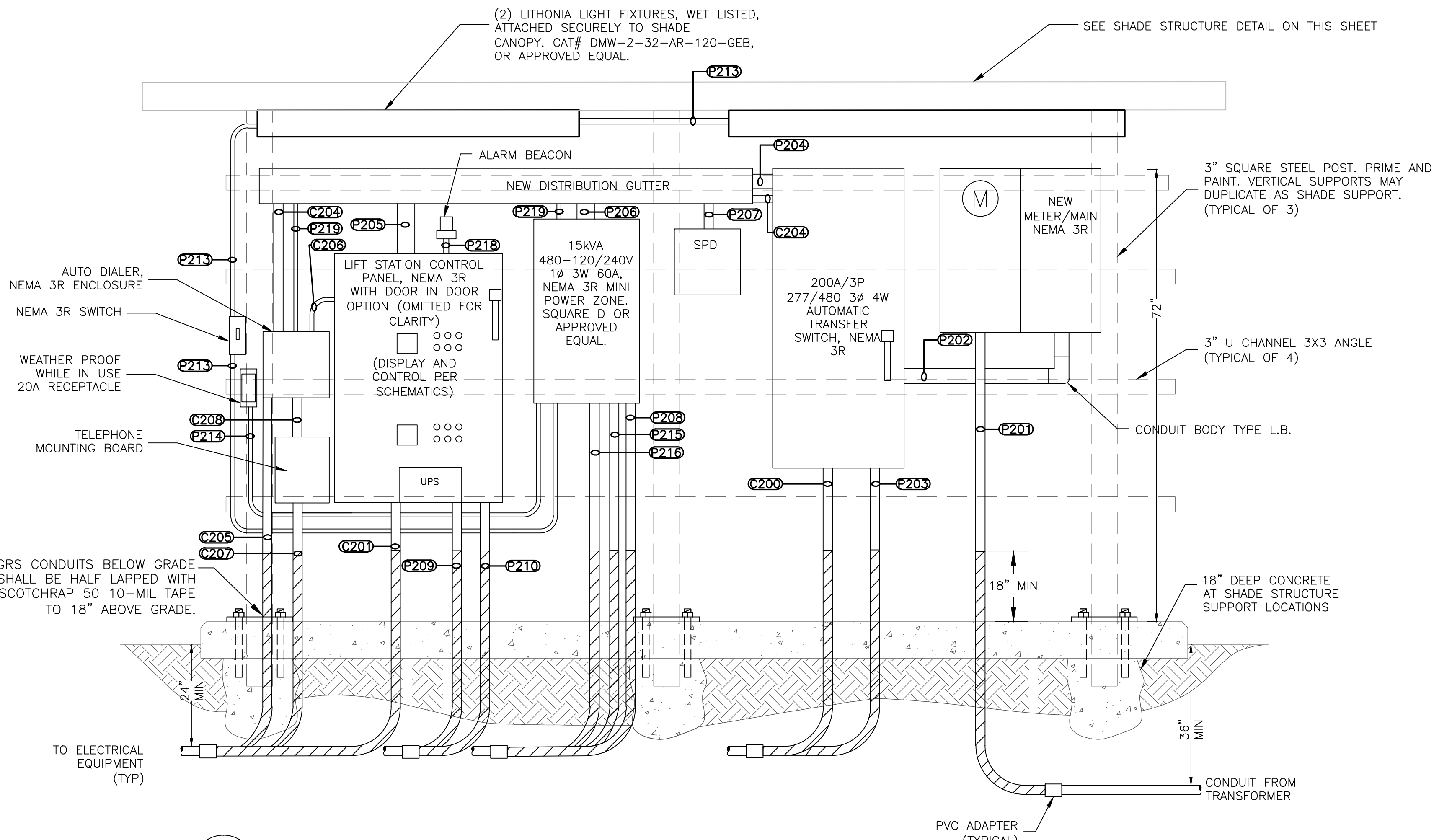


**1 ELECTRICAL ELEVATION DETAIL LS#1**  
NO SCALE

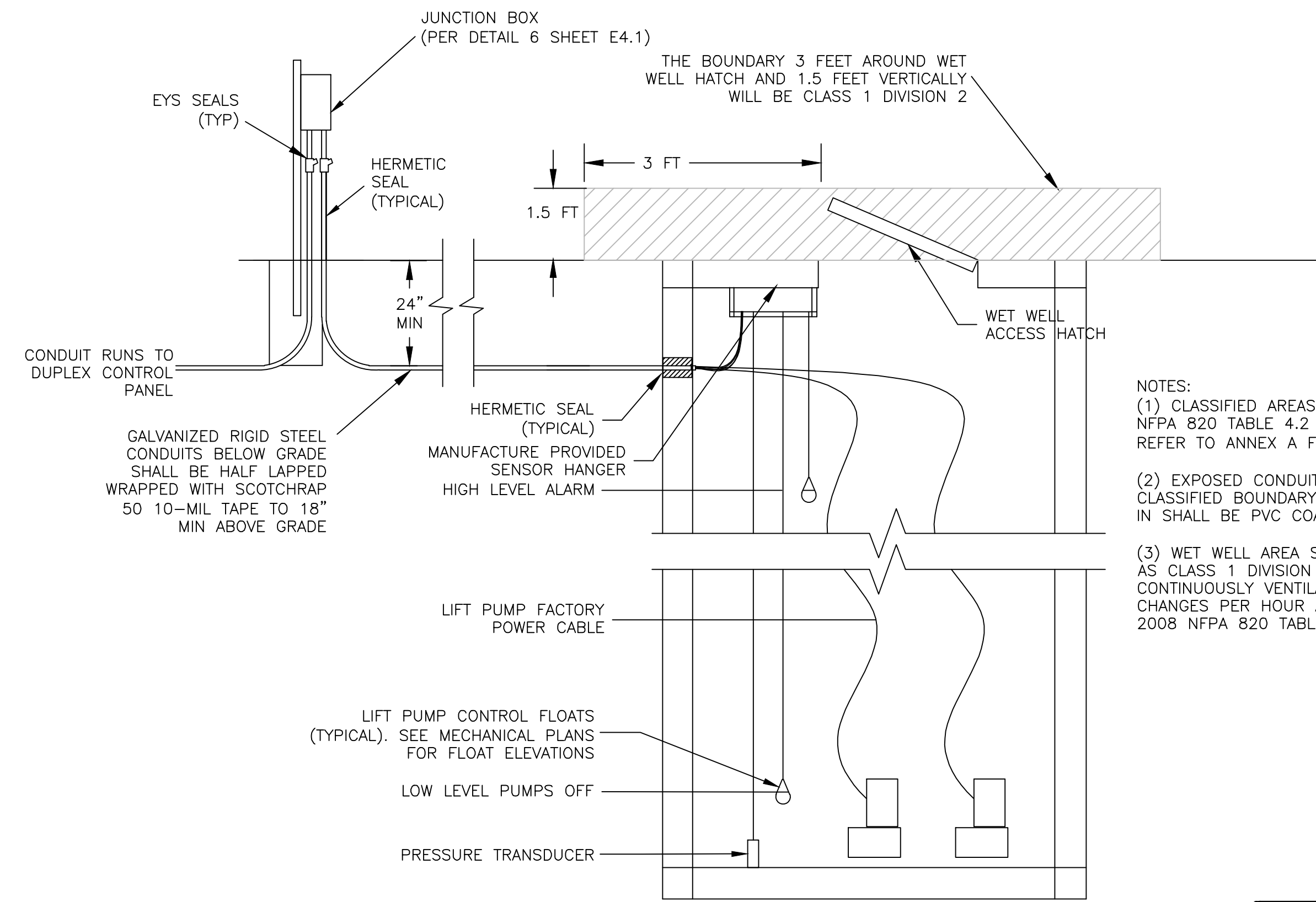


**2 SHADE STRUCTURE DETAIL**  
NO SCALE

NOTE: PROVIDE ALUMA-LINE(480-926-38310) SHADE STRUCTURE ABOVE ELECTRICAL EQUIPMENT OVER ENTIRE CONCRETE PAD. COLOR TO BE DESERT TAN, ALABASTER, OR AS DIRECTED BY OWNER.



**3 ELECTRICAL ELEVATION DETAIL LS#2 & #3 (TYP)**  
NO SCALE



**4 LIFT STATION DETAIL**  
NO SCALE

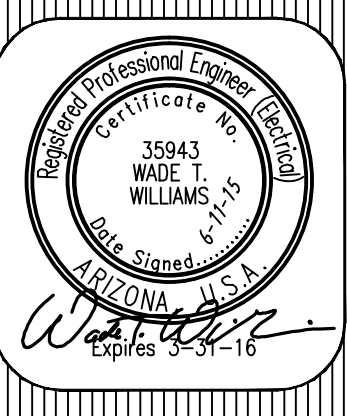
NOTES:  
(1) CLASSIFIED AREAS DEFINED BY 2008 NFPA 820 TABLE 4.2 ROW 11. ALSO REFER TO ANNEX A FIGURE A-4-2(C)  
(2) EXPOSED CONDUITS WITHIN CLASSIFIED BOUNDARY AS DEFINED HEREIN SHALL BE PVC COATED GR.  
(3) WET WELL AREA SHALL BE LISTED AS CLASS 1 DIVISION 1, UNLESS IT IS CONTINUOUSLY VENTILATED AT 12 AIR CHANGES PER HOUR AS DEFINED BY 2008 NFPA 820 TABLE 4.2 ROW 11.

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PHASE 4 SEWER PLANS**  
**ELECTRICAL DETAILS**

NO.	DATE	SUBMITTALS/REVISIONS (DESCRIPTIONS)
1	AUG 2012	1ST TOWN SUBMITTAL
2	NOV 2012	2ND TOWN SUBMITTAL
3	DEC 2012	3RD TOWN SUBMITTAL
4	JUN 2015	4TH TOWN SUBMITTAL

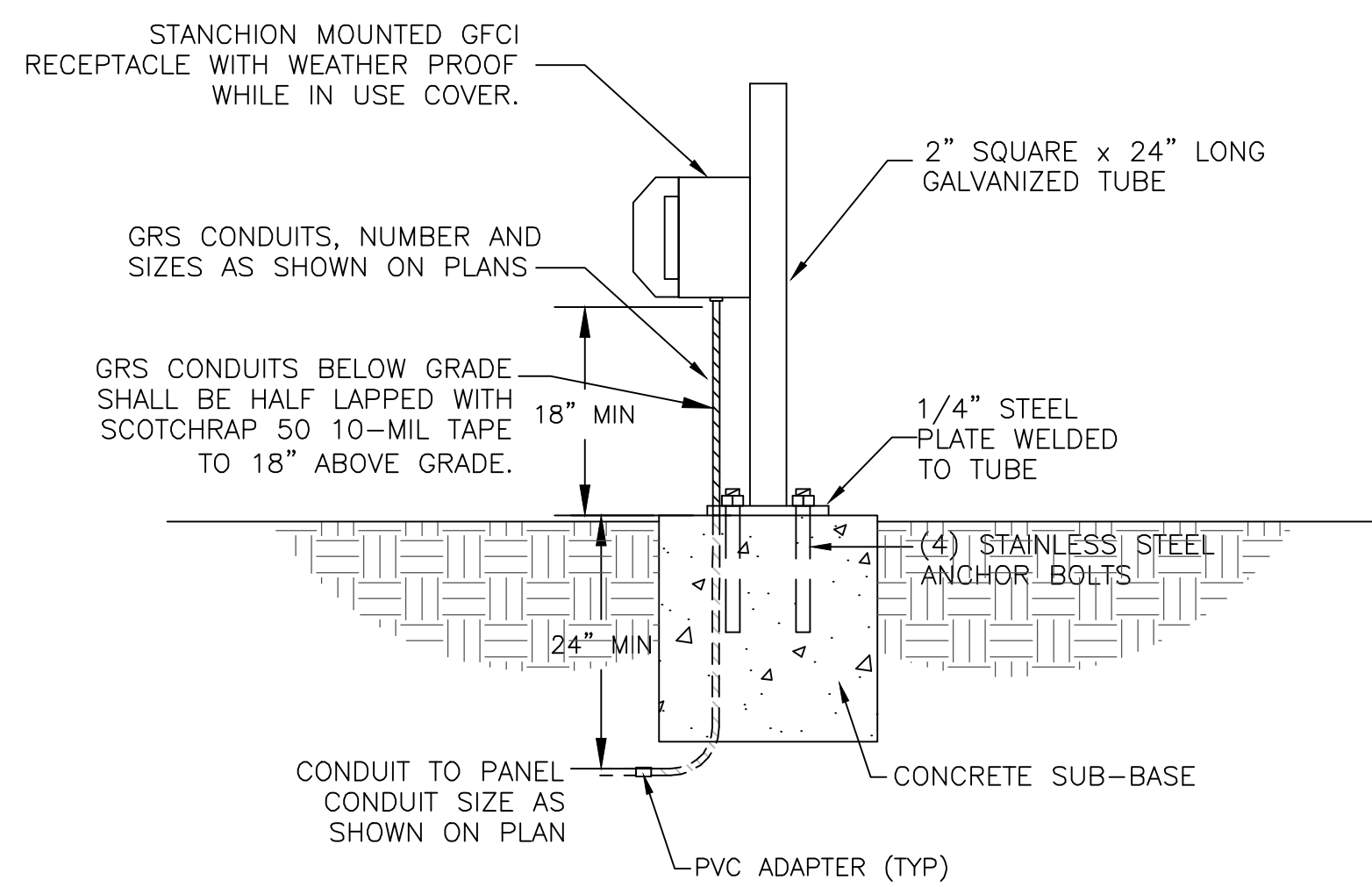


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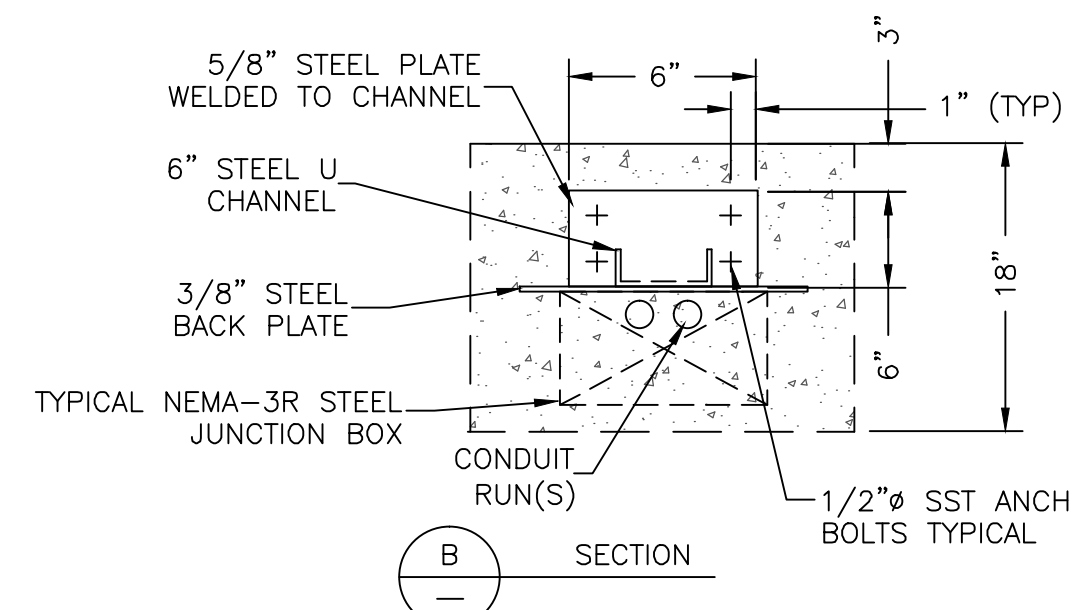


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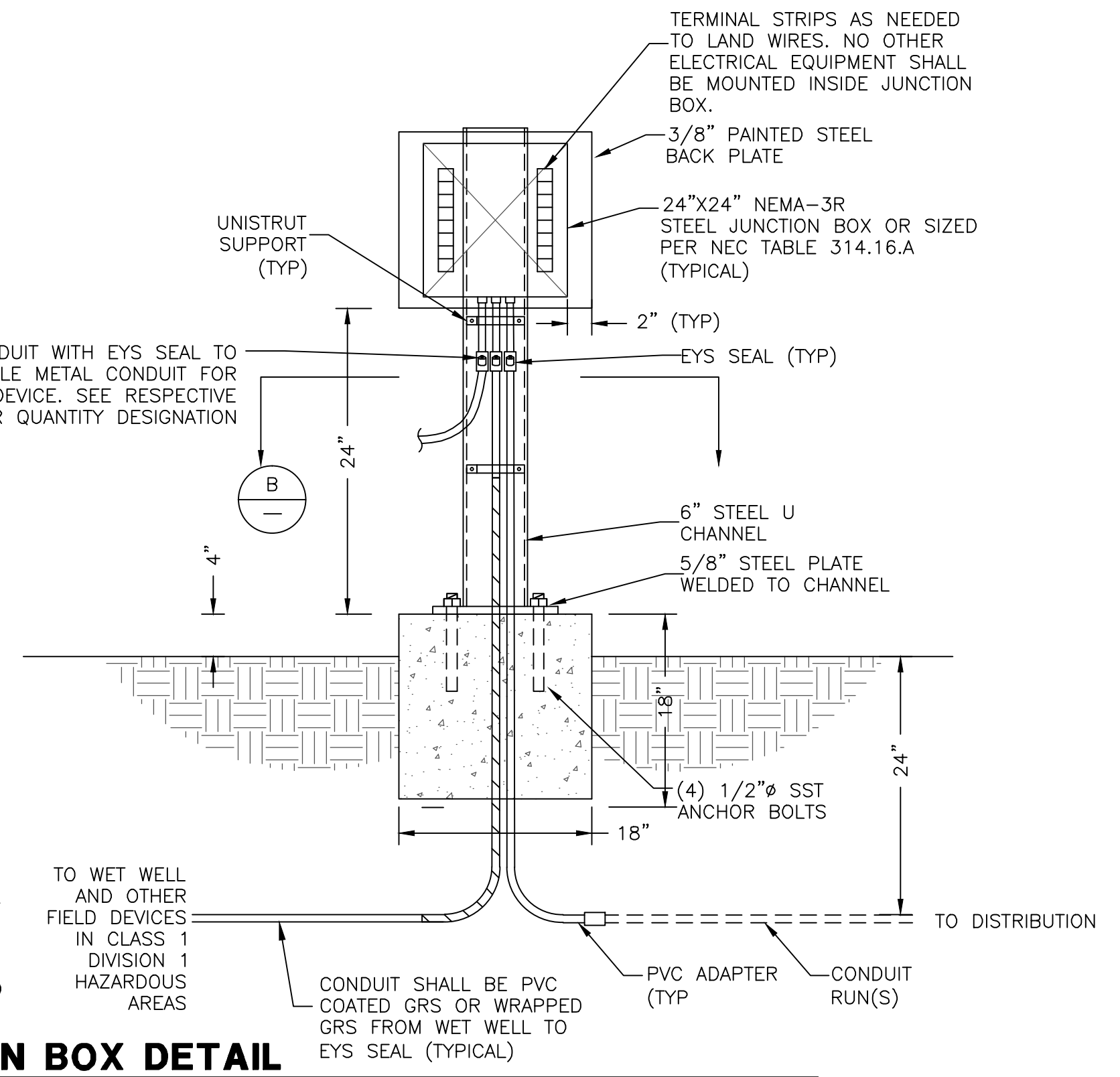
**5 STANCHION MOUNTED RECEPTACLE DETAIL**  
NO SCALE



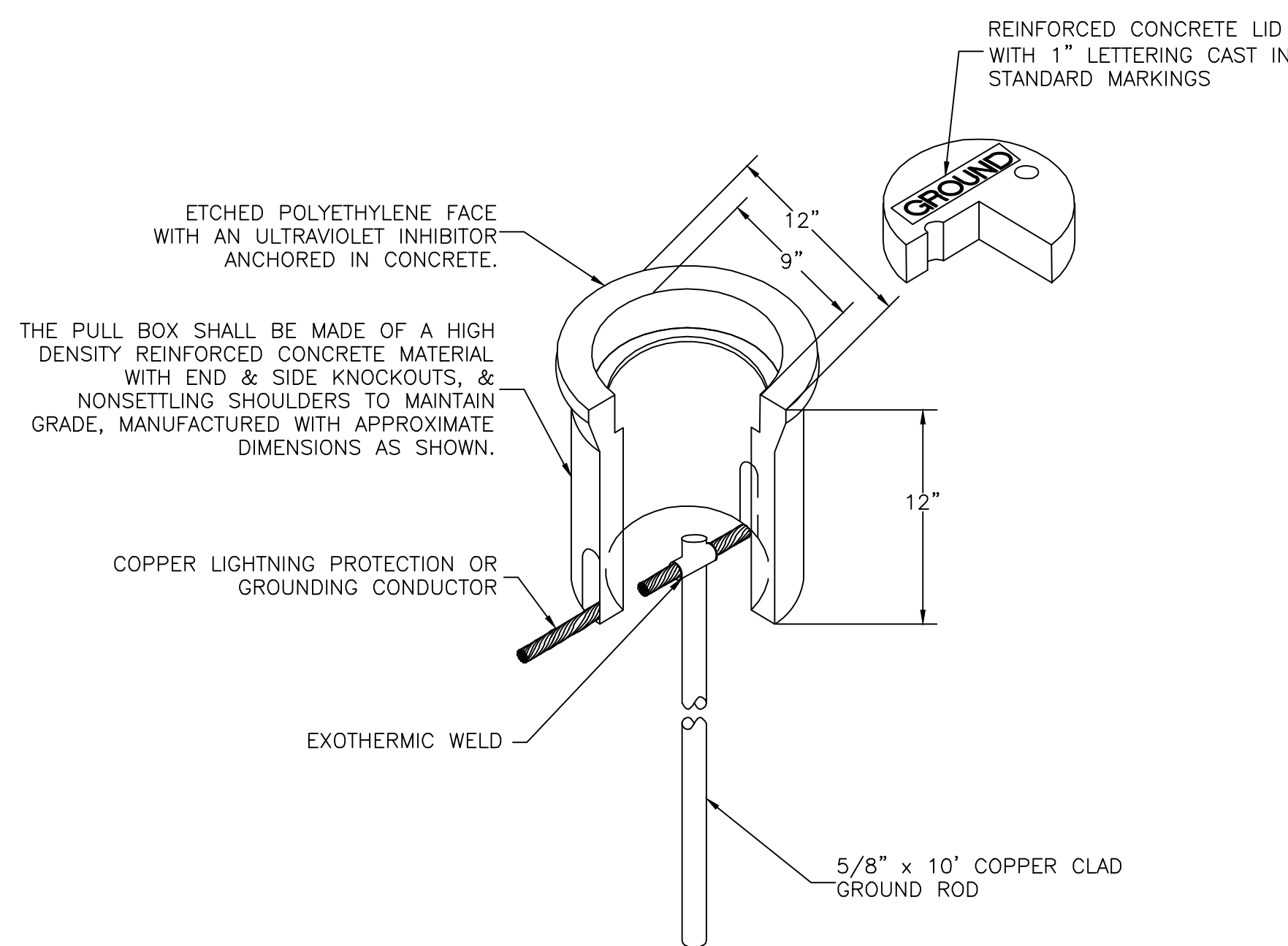
**NOTES:**

- 1) A 36" MIN. CLEARANCE SHALL BE MAINTAINED IN FRONT OF ALL ELECTRICAL DEVICES.
- 2) ALL EXPOSED CONDUITS SHALL BE GALVANIZED RIGID STEEL TO BELOW GRADE PAST 90° BEND TO PVC/GRS ADAPTER UNLESS OTHERWISE NOTED ON PLANS. WRAP PER GENERAL NOTE 8.
- 3) ALL JUNCTION BOXES SHALL BE NEMA-3R STEEL UNLESS OTHERWISE NOTED ON PLANS.
- 4) ALL BARE STEEL COMPONENTS SHALL BE PRIMED AND PAINTED TAN TO MATCH SURROUNDING EQUIPMENT.
- 5) SEE RESPECTIVE SITE PLAN FOR CONDUIT SIZE AND QUANTITY DESIGNATIONS.
- 6) CONTRACTOR SHALL INSTALL EYS SEAL ON CONDUIT RUN COMING FROM WET WELL. SEAL SHALL BE LOCATED AT THE JUNCTION BOX. SEAL OFF SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE FOR CLASS 1, DIVISION 1 HAZARDOUS AREA. CONTRACTOR SHALL INSTALL HERMETIC SEALS AT THE END OF THE CONDUIT RUNS INTO VAULT WALL TO PREVENT MOISTURE FROM ENTERING CONDUIT. CONDUIT SHALL BE CONTINUOUS GRS FROM WET WELL TO EYS SEAL OFF.

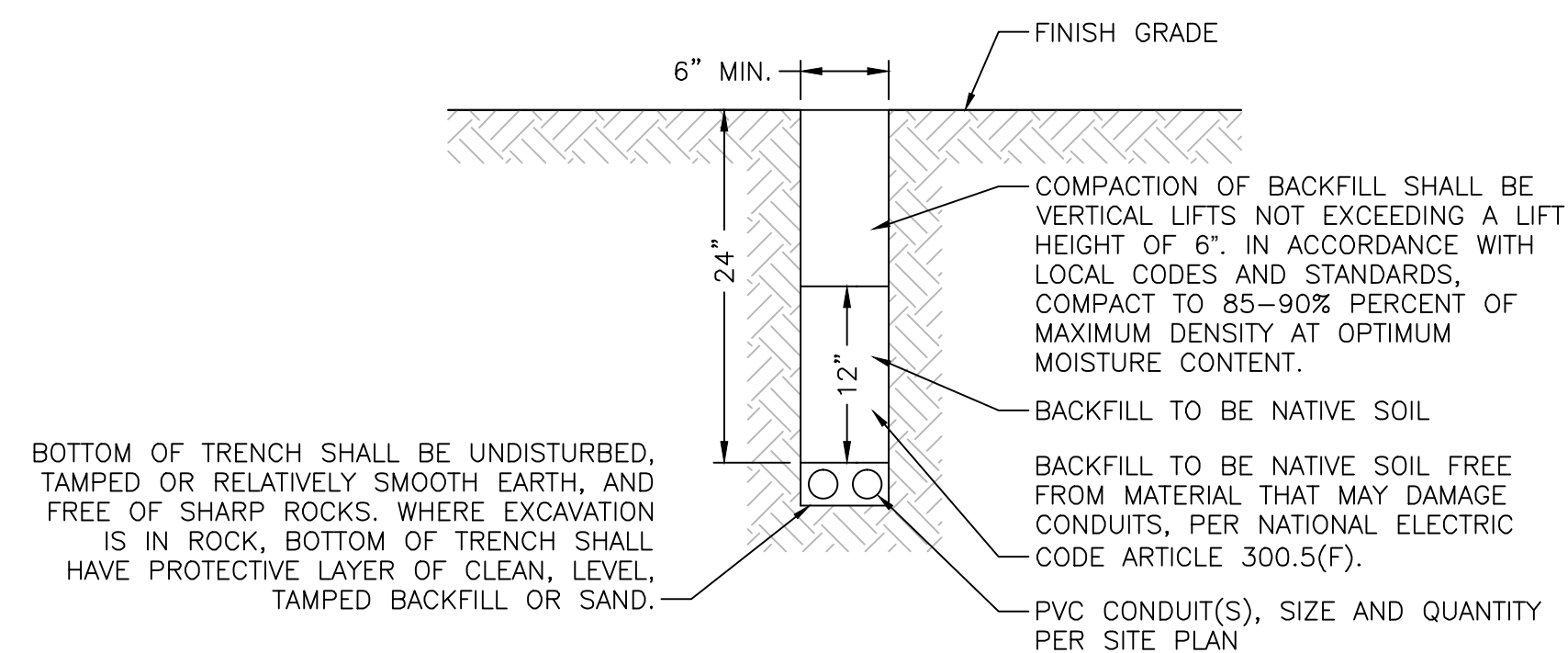
**6 TYPICAL STANCHION MOUNTED JUNCTION BOX DETAIL**  
NO SCALE



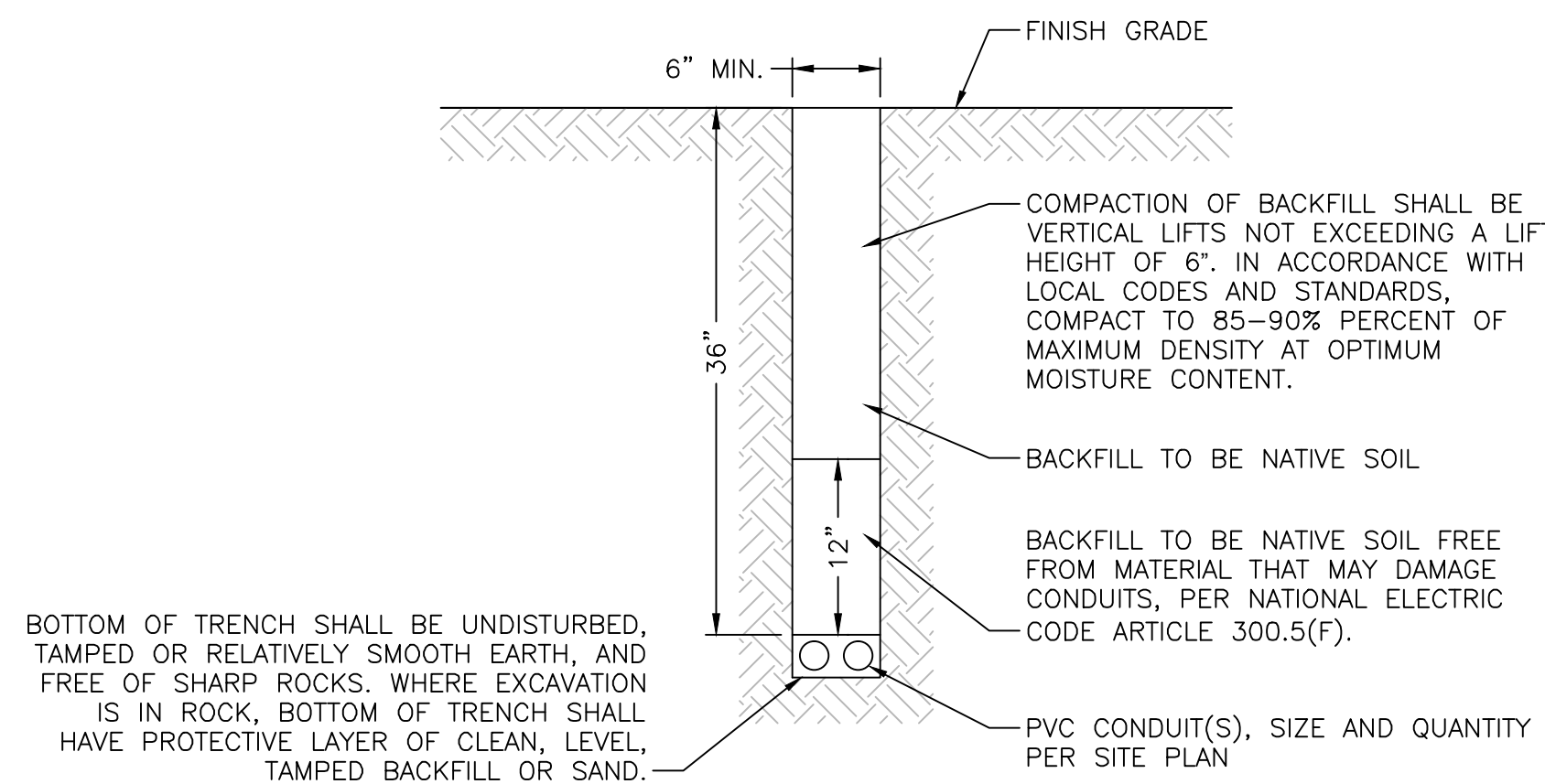
**10 ODOR CONTROL CONNECTION DETAIL**  
NO SCALE



**7 GROUND J-BOX DETAIL**  
NO SCALE

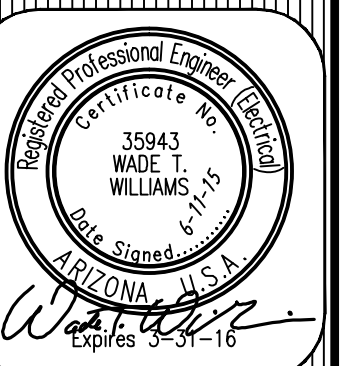


**8 TYPICAL 24" TRENCH FOR ELECTRICAL CONDUIT**  
NO SCALE



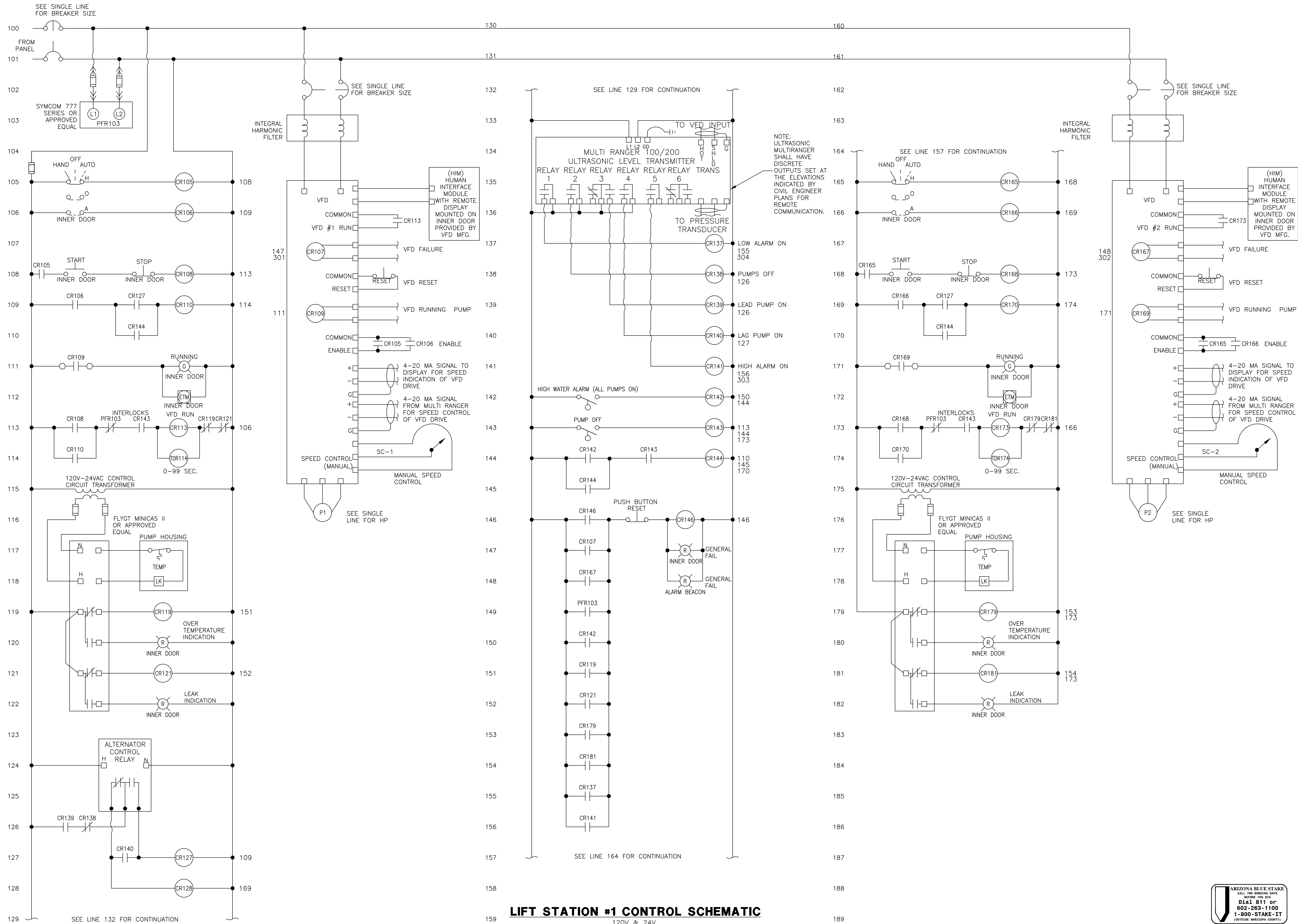
**9 TYPICAL 36" TRENCH FOR ELECTRICAL CONDUIT**  
NO SCALE

NO.	DATE	SUBMITTALS/REVISIONS (DESCRIPTIONS)
1	AUG 2012	1ST TOWN SUBMITTAL
2	NOV 2012	2ND TOWN SUBMITTAL
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**LIFT STATION #1 CONTROL SCHEMATIC**  
120V & 24V

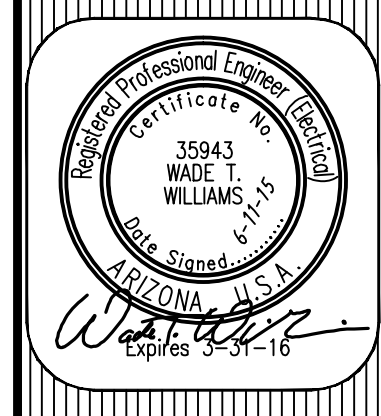
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**PHASE 4 SEWER PLANS**  
**ELECTRICAL SCHEMATICS LS#1**

NO.	DATE	SUBMITTALS/REVISIONS (DESCRIPTIONS)
1	AUG 2012	1ST TOWN SUBMITTAL
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3	DEC 2012	3RD TOWN SUBMITTAL
4	JUN 2015	4TH TOWN SUBMITTAL

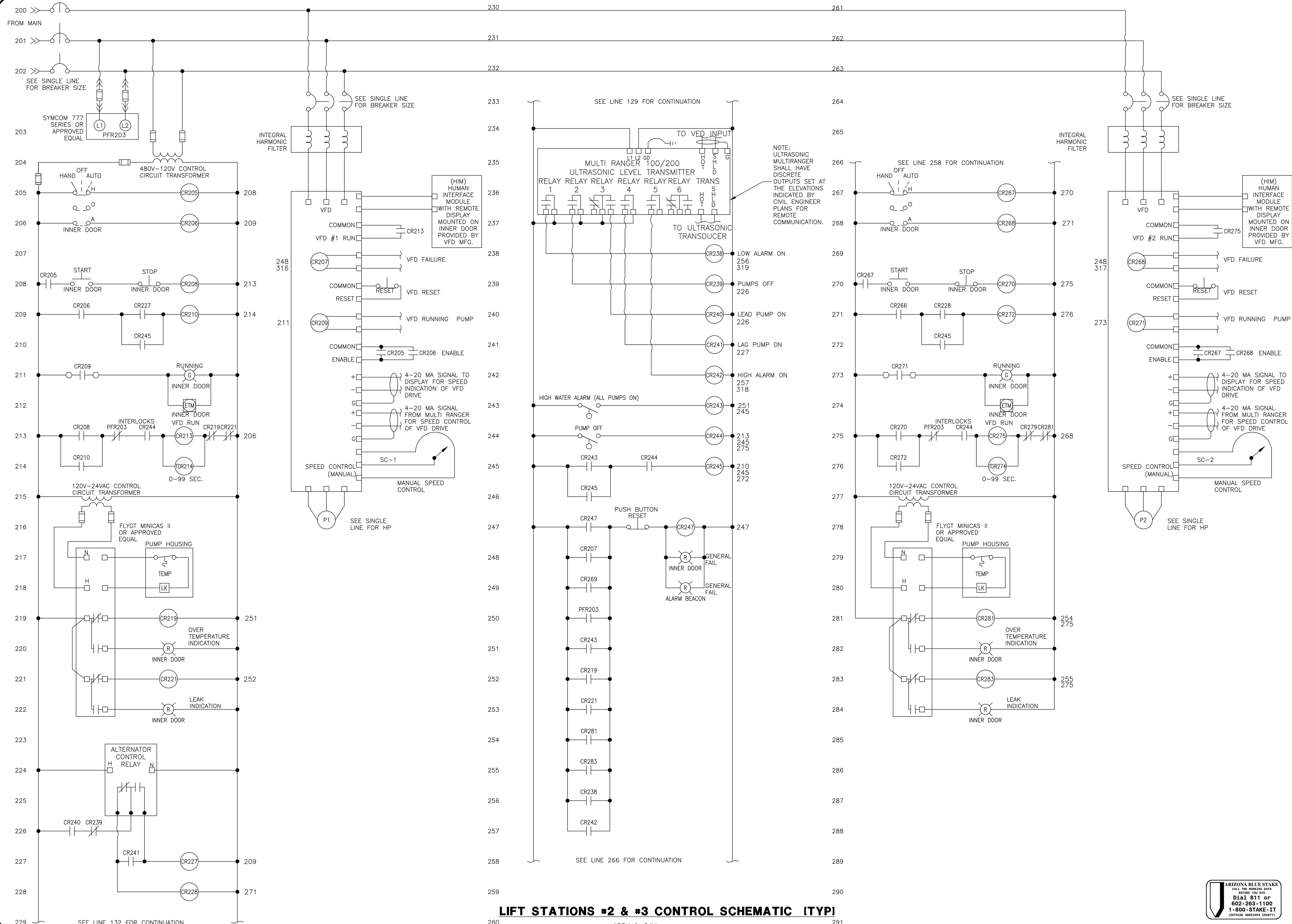


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**LIFT STATIONS #2 & #3 CONTROL SCHEMATIC (TYP)**

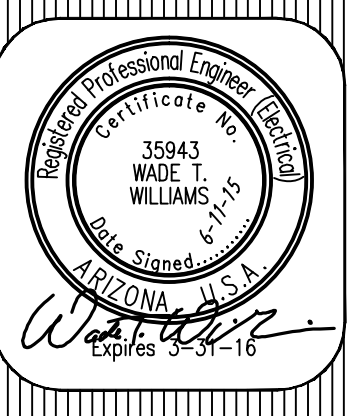
120V & 24V

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TITLE: **BUCKSKIN SANITARY DISTRICT  
PHASE 4 SEWER PLANS  
ELECTRICAL SCHEMATICS LS#2 & LS#3**

NO.	DATE	SUBMITTALS/REVISIONS (DESCRIPTIONS)
1	AUG 2012	1ST TOWN SUBMITTAL
2	NOV 2012	2ND TOWN SUBMITTAL
3	DEC 2012	3RD TOWN SUBMITTAL
4	JUN 2015	4TH TOWN SUBMITTAL



DRAWING NO:  
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OF 14



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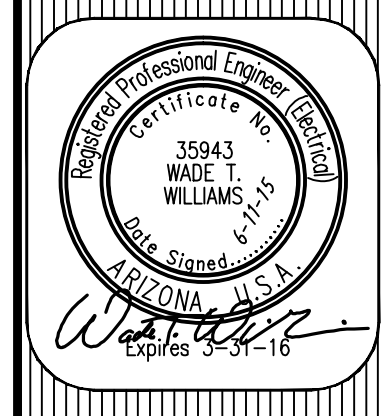
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ELECTRICAL ENGINEERING AND DESIGN  
165 EAST CHILTON DRIVE • CHANDLER, ARIZONA 85225  
PHONE 480.497.5829 • FAX 480.497.5807  
www.wrightengr.com

PROJECT: TITLE:  
**PARKER, ARIZONA  
BUCKSKIN SANITARY DISTRICT  
PHASE 4 SEWER PLANS  
ELECTRICAL SCHEMATICS**

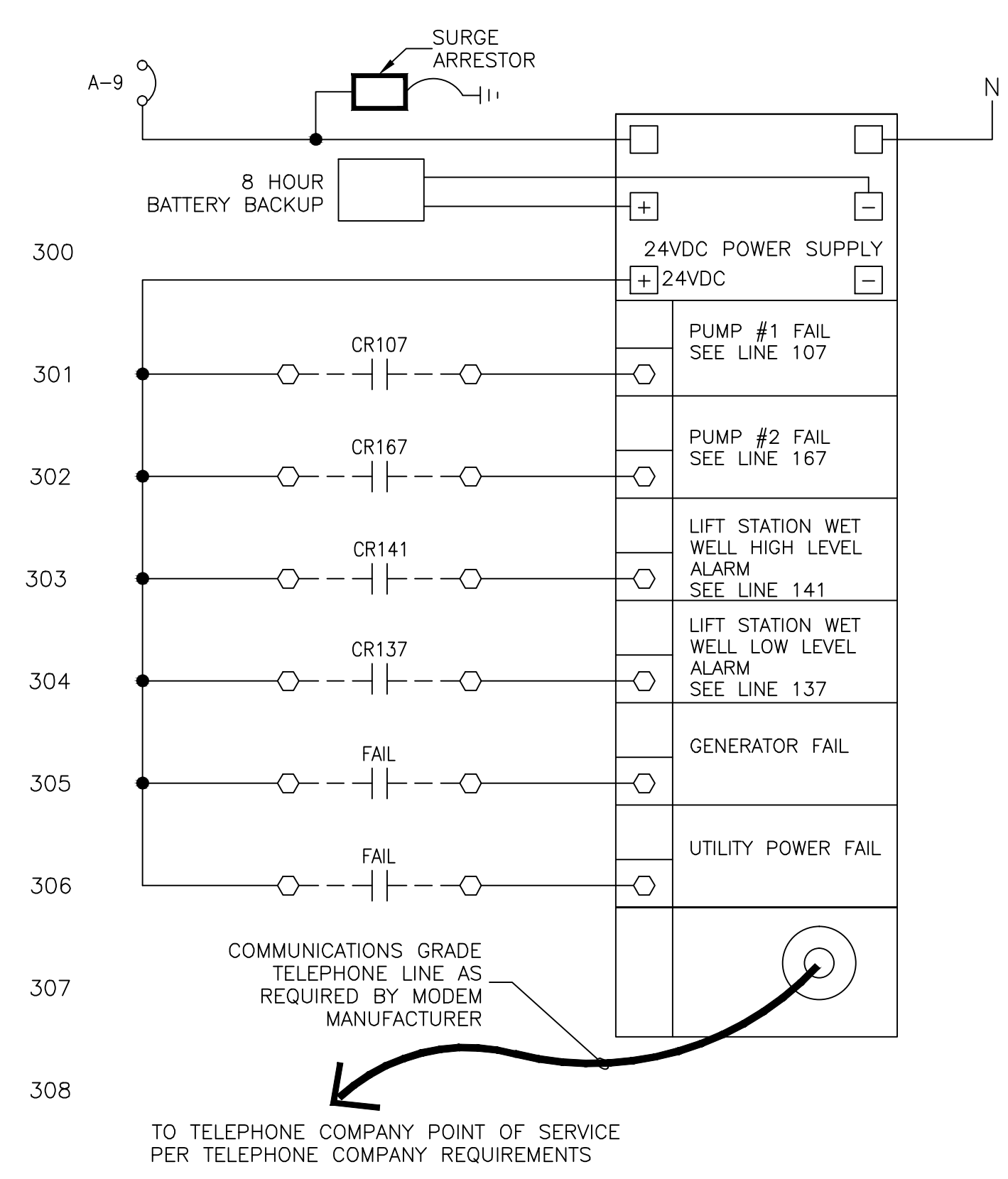
NO.	DATE	SUBMITTALS/REVISIONS (DESCRIPTIONS)
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2	NOV 2012	2ND TOWN SUBMITTAL
3	DEC 2012	3RD TOWN SUBMITTAL
4	JUN 2015	4TH TOWN SUBMITTAL



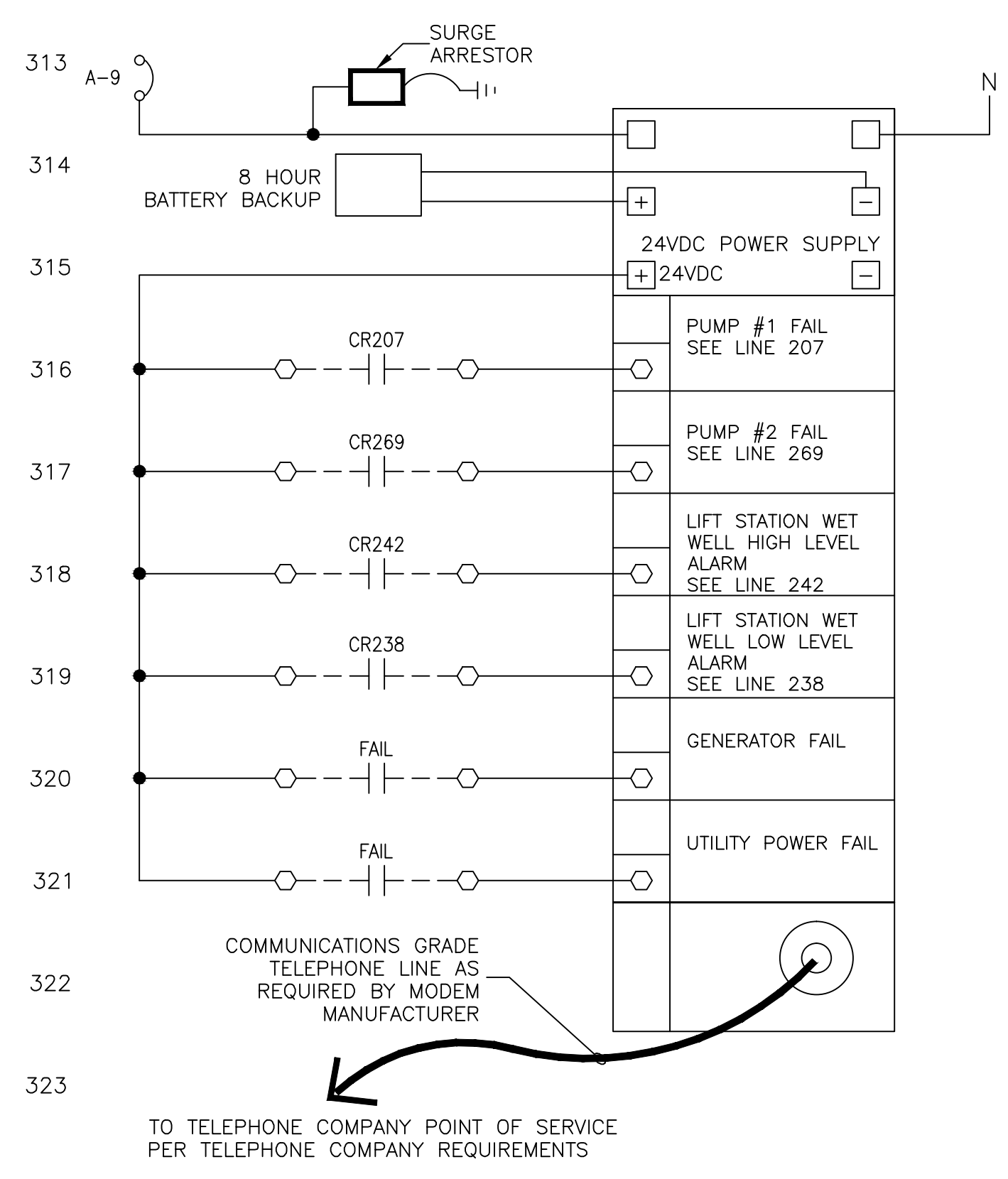
DRAWING NO:  
**E5.2**  
OF 14



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**RTU CONTROL SCHEMATIC LS#1**  
120V



**RTU CONTROL SCHEMATIC LS#2 & LS #3**  
120V

# BUCKSKIN SANITARY DISTRICT

## PHASE 4 SEWER PLANS

### PROCESS AND INSTRUMENTATION DIAGRAM

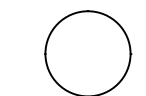
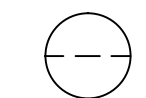
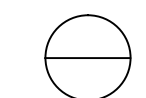
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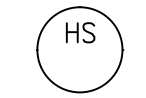
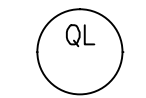
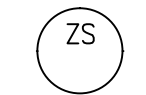
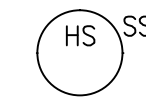
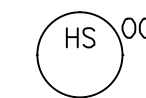
##### INSTRUMENT TYPE

 FIRST LETTER(S)  
 SUCCEEDING LETTERS

##### INSTRUMENT LOCATION CODE

 FIELD MOUNTED INSTRUMENT  
 REAR-OF PANEL MOUNTED INSTRUMENT  
 PANEL MOUNTED INSTRUMENT

#### SPECIAL CASES


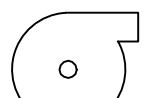
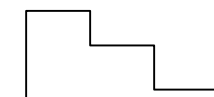

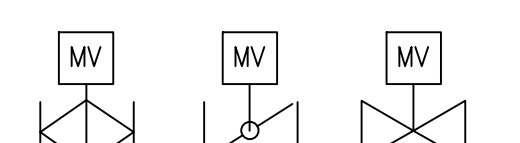

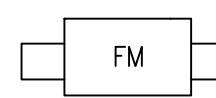
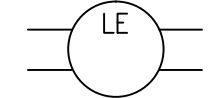
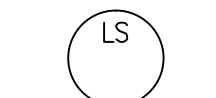
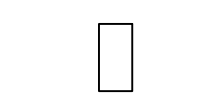
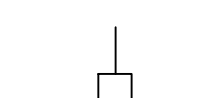
 ILLUMINATED HAND SWITCH  
 FUNCTION SYMBOL ON AND OFF EVENT LIGHTS  
 OPEN AND CLOSE POSITION SWITCHES  
 STOP-START HAND SWITCH. MOMENTARY CONTACT SWITCHES (CONTROLLED DEVICE WILL NOT RESTART ON RETURN OF POWER AFTER POWER FAILURE).  
 OFF-ON HAND SWITCH. MAINTAIN CONTACT SWITCHES (CONTROLLED DEVICE WILL RESTART ON RETURN OF POWER AFTER POWER FAILURE).

H = HAND  
 H-H = HIGH-HIGH  
 HOA = HAND-OFF-AUTO  
 HOAR = HAND-OFF-AUTO-REMOTE  
 HOR = HAND-OFF-REMOTE  
 L = LOW  
 L-L = LOW-LOW  
 LOS = LOCK-OFF-STOP  
 MC = MOTORIZED VALVE CONTROL  
 OL = OVERLOAD  
 OO = ON-OFF  
 RS = RESET  
 SP = SET POINT  
 SS = START/STOP  
 SSR = SET START TIMER  
 SST = SET STOP TIMER  
 VFD = VARIABLE FREQUENCY DRIVE  
 GF = GENERAL FAIL  
 SC = SPEED CONTROL  
 ETM = ELAPSE TIME METER  
 SSS = SOLID STATE STARTER

LETTER	LETTER SYMBOLS				
	FIRST LETTER(S)		SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (*)		ALARM		
B	BURNER FLAME				
C	CONDUCTIVITY			CONTROL	
D	DENSITY (S.G.)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			
G	GAUGE		GLASS	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE		CONTROL STATION		
L	LEVEL		LIGHT		LOW
M	MOTION OR MOISTURE				MIDDLE
N	STROKE				NORMAL
O	LOOP VEH. DETECTOR		ORIFICE		
P	PRESSURE (OR VACUUM)		POINT (TEST CONNECTION)		
Q	QUALITY OR EVENT		INTEGRATE		
R	RATION		RECORD OF PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE (*)		MULTIFUNCTION (#)		
V	TURBIDITY			VALVE	
W	WEIGHT OR FORCE		WELL		
X	PARTICLE COUNT				
Y	PHOTO CELL		LIGHT SOURCE	RELAY OR COMPUTE (*)	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

\* WHEN USED EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL.

#### EQUIPMENT SYMBOLS

 MOTOR (DRIVE)  
 PUMP  
 METERING PUMP  
 BLOWER  
 MOTORIZED VALVE(S)  
 SOLENOID OPERATED VALVE  
 FLOW METER  
 CONDUCTIVITY LEVEL PROBE  
 LEVEL SWITCH  
 ULTRASONIC LEVEL SENSOR  
 SUBMERSIBLE PRESSURE TRANSDUCER

#### SIGNAL SYMBOLS

--- ELECTRICAL SIGNAL  
 -.-.- ETHERNET OR RADIO COMMUNICATION  
 Δ ANALOG SIGNAL  
 ▲ DISCRETE SIGNAL  
 < DIRECTION OF SIGNAL  
 ■ TERMINAL  
 □ INTERLOCK KEY OPERATION VIA LOGIC OR HARDWARE  
**INTERLOCK KEY**  
 I# - EQUIPMENT DESCRIPTION-INSTRUMENT DESCRIPTION-CONTROL DESCRIPTION

#### PROCESS SYMBOLS

→ PROCESS FLOW  
 — A — A — AIR FEED LINE  
 — C — C — CHEMICAL FEED LINE  
 I101 → SEE SHEET I101 FOR CONTINUATION  
 M-100101 → EQUIPMENT IDENTIFICATION

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WRIGHT ENGINEERING  
 PROJECT NO:  
**12138**  
 DESIGN BY: JHB  
 DRAWN BY: JHB  
 CHECKED BY: WTW

**WRIGHT**  
 engineering corporation  
 ELECTRICAL ENGINEERING AND DESIGN  
 165 EAST CHILTON DRIVE • CHANDLER, ARIZONA 85225  
 PHONE 480.497.5829 • FAX 480.497.5807  
 www.wrightengr.com

PROJECT: TITLE:

PARKER, ARIZONA  
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER PLANS**  
**ELECTRICAL P&ID COVER**

NO.	DATE	SUBMITTALS/REVISIONS (DESCRIPTIONS)
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2	NOV 2012	2ND TOWN SUBMITTAL
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4	JUN 2015	4TH TOWN SUBMITTAL

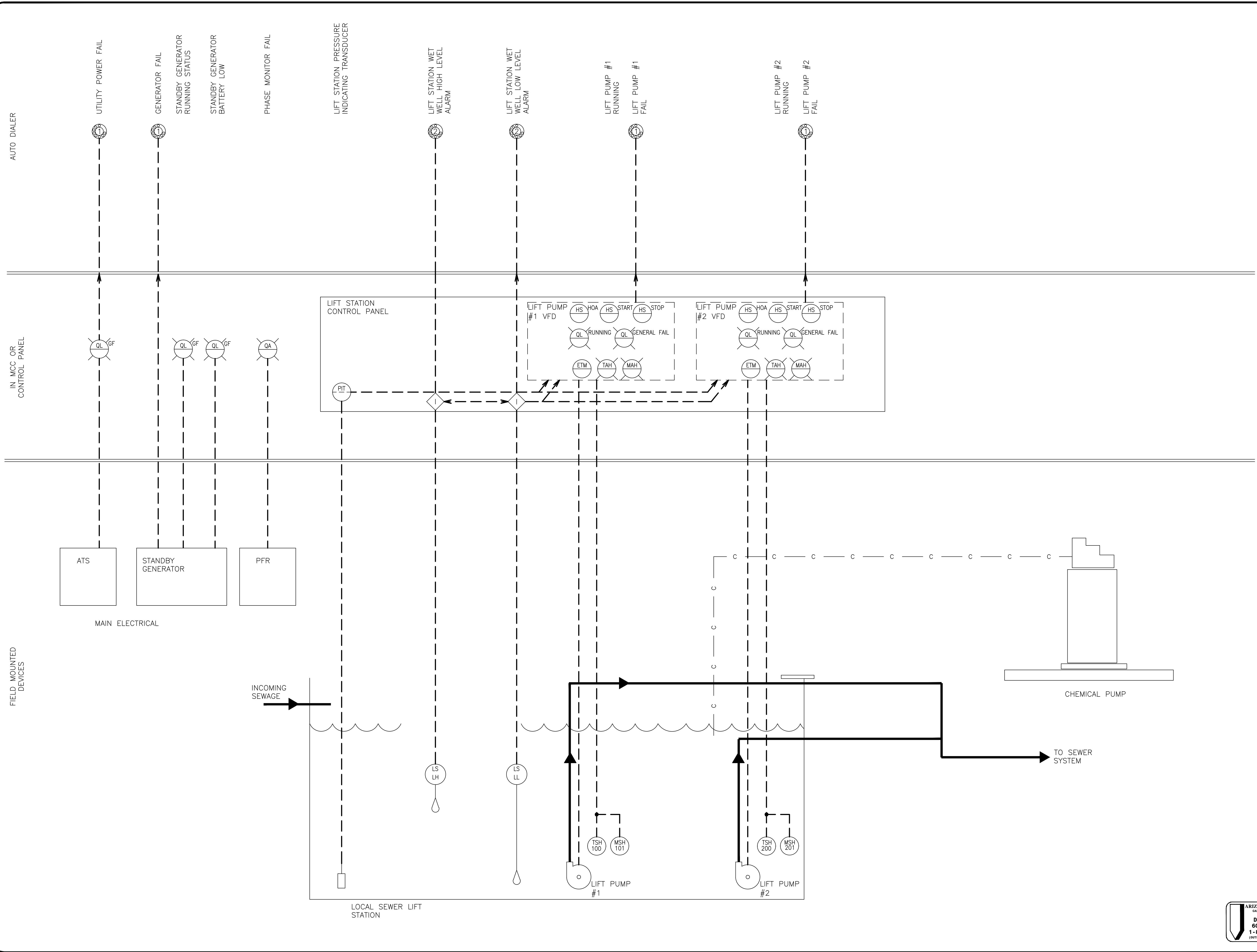
Professional Engineer  
 35843  
 WILSON  
 WILLIAMS  
 Expires 5-31-16

DRAWING NO:  
**11.0**  
 OF 14

ARIZONA BLUE STAKE  
 CALL THE WORKING DAYS  
 BEFORE YOU DIG  
 Dial 811 or  
 602-263-1100  
 1-800-STAKE-IT  
 (OUTSIDE MARICOPA COUNTY)

H:\2012\12138-Buckskin Sanitary District Area 4 Wastewater Collection Lift Stations\12138.dwg

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WRIGHT ENGINEERING CORPORATION  
 PROJECT NO: **12138**  
 DESIGN BY: JHB  
 DRAWN BY: JHB  
 CHECKED BY: WTW

**WRIGHT** engineering corporation  
 ELECTRICAL ENGINEERING AND DESIGN  
 165 EAST CHILTON DRIVE • CHANDLER, ARIZONA 85225  
 PHONE 480.497.5829 • FAX 480.497.5807  
 www.wrightengr.com

PROJECT: TITLE:  
**PARKER, ARIZONA**  
**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER PLANS**  
**ELECTRICAL P&ID**

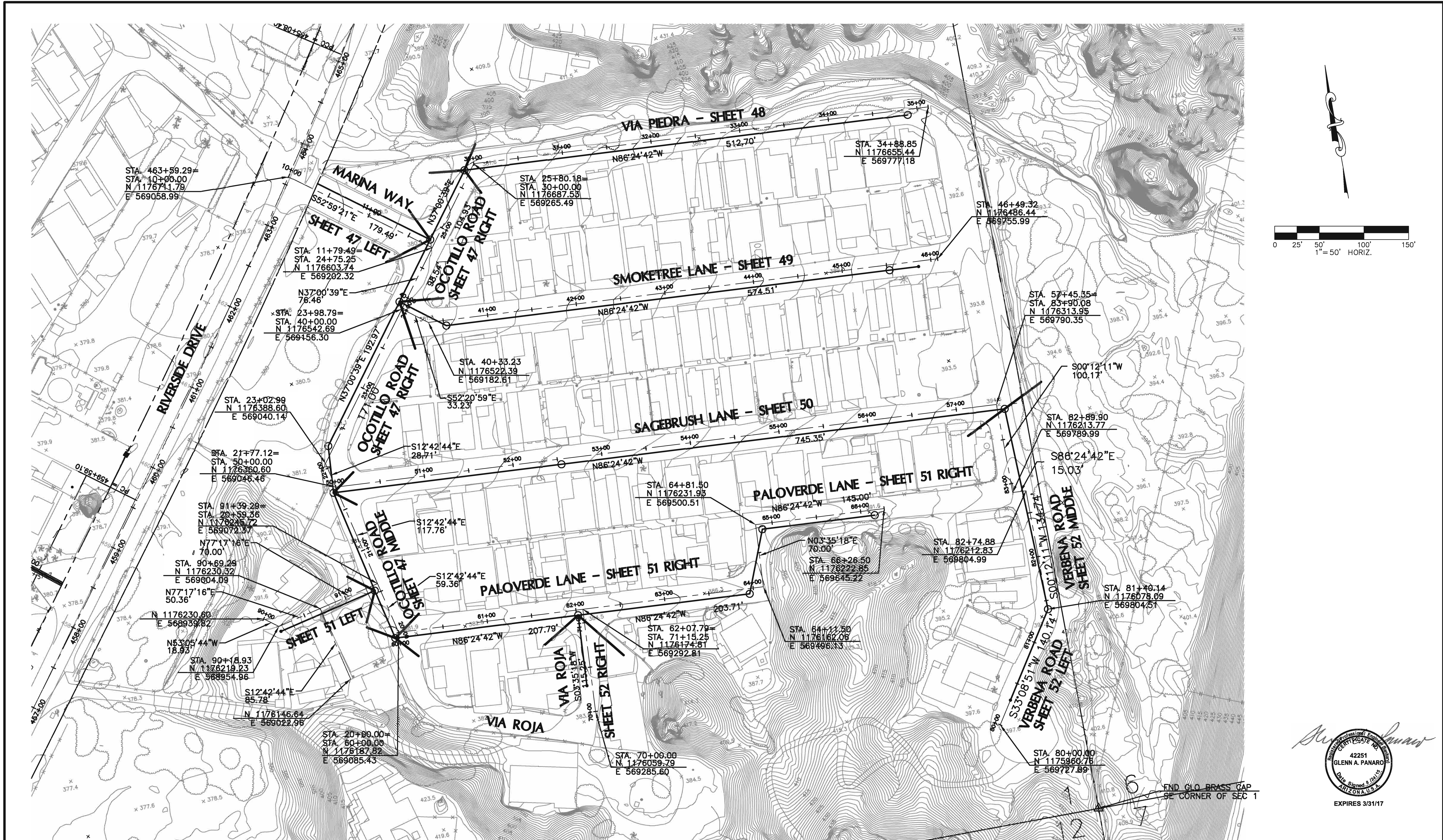
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2	NOV 2012	2ND TOWN SUBMITTAL
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4	JUN 2015	4TH TOWN SUBMITTAL

Professional Engineer Seal:  
 Business Certificate No. 35843  
 WAC No. 11-0001  
 WILLIAMS  
 State of ARIZONA, U.S.A.  
 Expires 5-31-16

DRAWING NO:  
**11.1**  
 OF 14

ARIZONA BLUE STAKE  
 CALL TWO WORKING DAYS  
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 1-800-STAKE-IT  
 (OUTSIDE MARICOPA COUNTY)

H:\2012\12138-Buckskin Sanitary District Area 4 Wastewater Collection Lift Stations\12138.dwg



GEOMETRIC CONTROL SHEET / KEY MAP

*Glenn A. Panaro*  
 Professional Engineer  
 No. 42251  
 Glenn A. Panaro  
 Date Signed 8/14/13  
 Arizona, U.S.A.  
 EXPIRES 3/31/17

FND C/O BRASS GAP  
 SE CORNER OF SEC 1

**ENERGY AND WATER SOLUTIONS, LLC**  
 CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
 PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

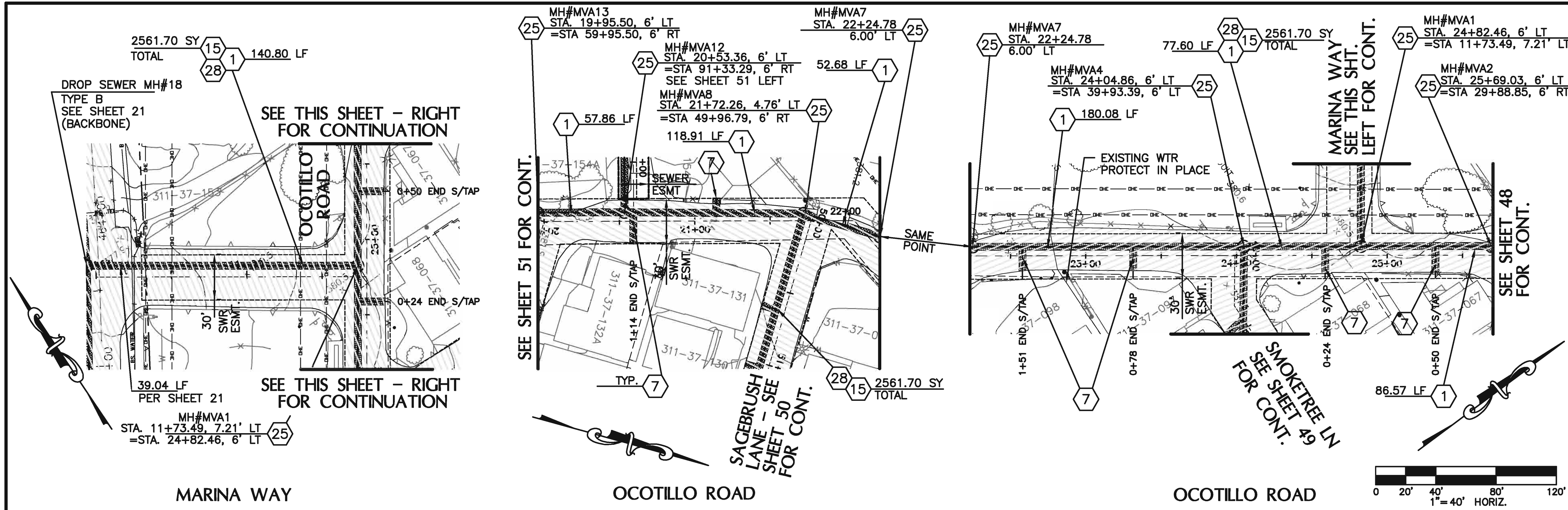
JOB #: \_\_\_\_\_  
 DATE: 10/31/13  
 SCALE: 1"=50'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
 PHASE 4 SEWER  
 MARINA VILLAGE ANNEX

**SHEETS**  
 46

CALL TWO WORKING DAYS BEFORE YOU DIG  
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**1-800-STAKE-IT**  
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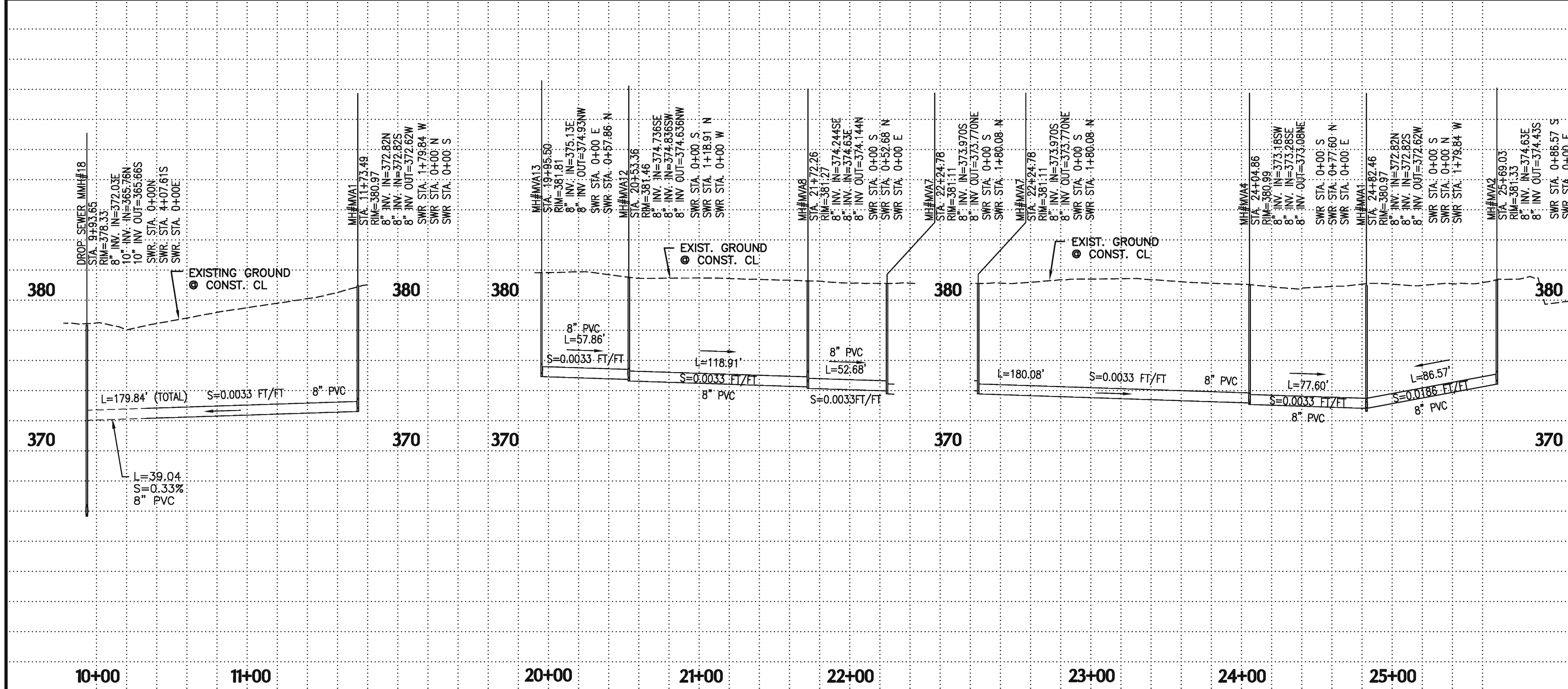
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- 1 INSTALL 8" PVC SEWER
  - 7 INSTALL 4" BLDG CONNECTION
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, "T" TOP
  - 25 INSTALL 4' DIA. MH PER MAG STD. 420-1.2 W/24" WATERTIGHT DIA. FRAME & COVER PER MAG STD. 424-1
  - 28 TRENCH PER DETAIL ON SHEET 44.

NOTE:  
TAPS SHOWN ON PLANS ARE FOR ILLUSTRATION PURPOSES ONLY. FINAL LOCATIONS WILL BE DETERMINED IN THE FIELD.

NOTE:  
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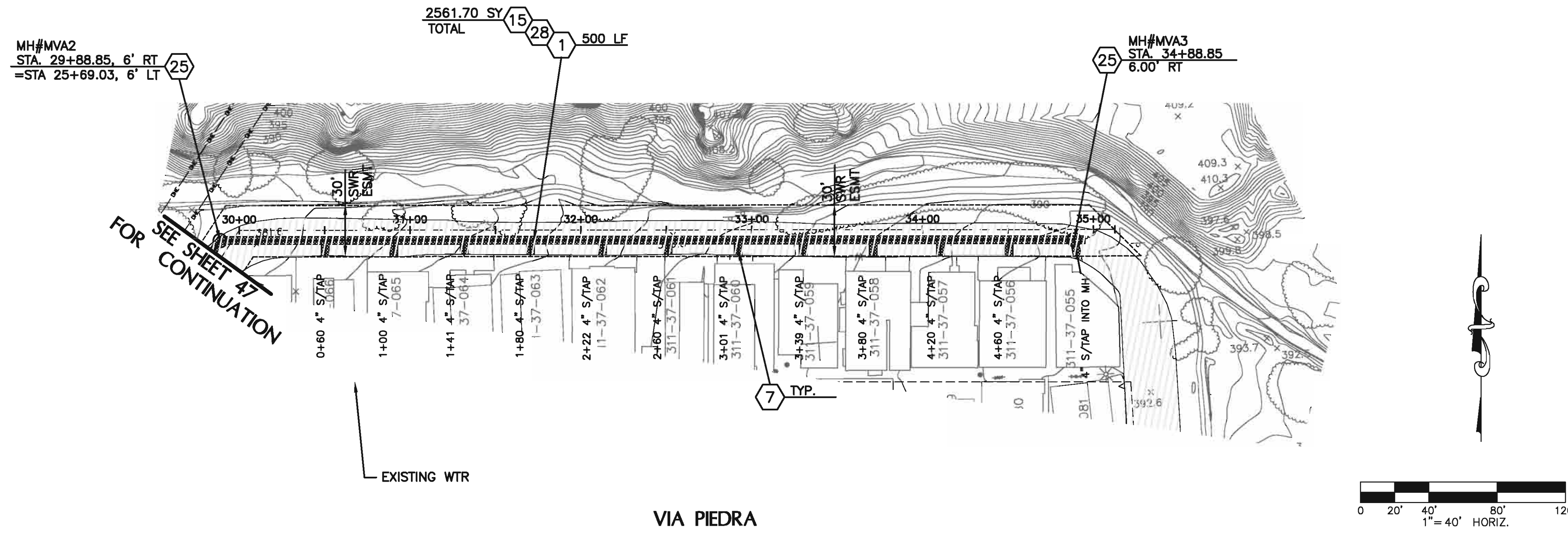
NOTE:  
BUCKSKIN SANITARY DISTRICT HAS MADE EVERY ATTEMPT, UTILIZING STANDARD ENGINEERING PRACTICES, TO DESIGN THE BACKBONE SEWER IN PHASE 4 TO ALLOW THE MAJORITY OF THE PROPERTIES LOCATED WITHIN PHASE 4 TO CONNECT BY MEANS OF GRAVITY. HOWEVER, THERE MAY BE CIRCUMSTANCES THAT REQUIRE CERTAIN PROPERTIES TO CONNECT VIA PUMPING SYSTEMS. CONTRACTORS MAKING BUILDING CONNECTIONS FOR INDIVIDUAL PROPERTY OWNERS TO DISTRICT FACILITIES SHALL VERIFY HORIZONTAL AND VERTICAL CONNECTION PRIOR TO THE START OF CONSTRUCTION. A SEWER CONNECTION PERMIT IS REQUIRED PRIOR TO CONSTRUCTION.



*Glenn A. Panaro*  
 PROFESSIONAL ENGINEERING CERTIFICATE NO. 42251  
 GLENN A. PANARO  
 Date Signed 8/24/19  
 ARIZONA, U.S.A.  
 EXPIRES 3/31/17

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**1-800-STAKE-IT**  
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REVISIONS	BY	DATE



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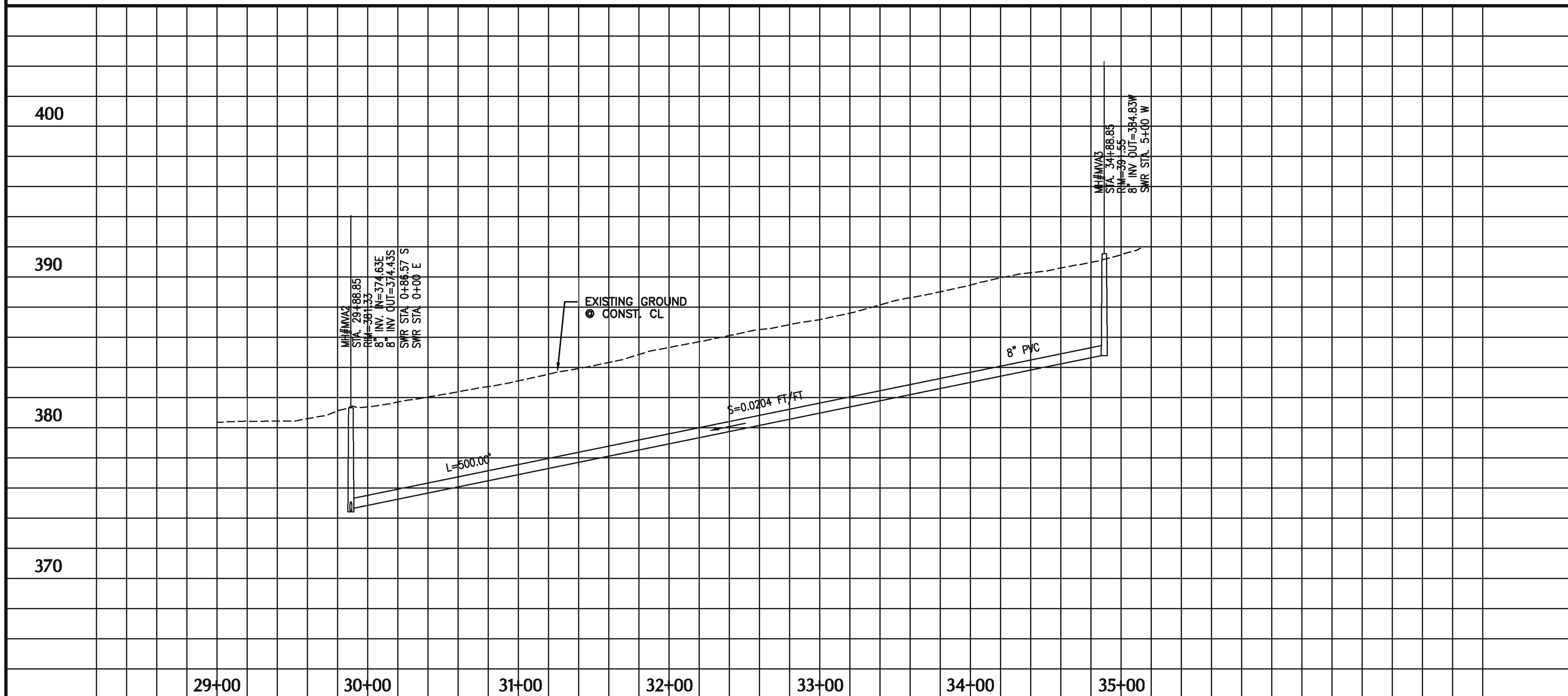
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*Glenn A. Panaro*  
  
 EXPIRES 3/31/17

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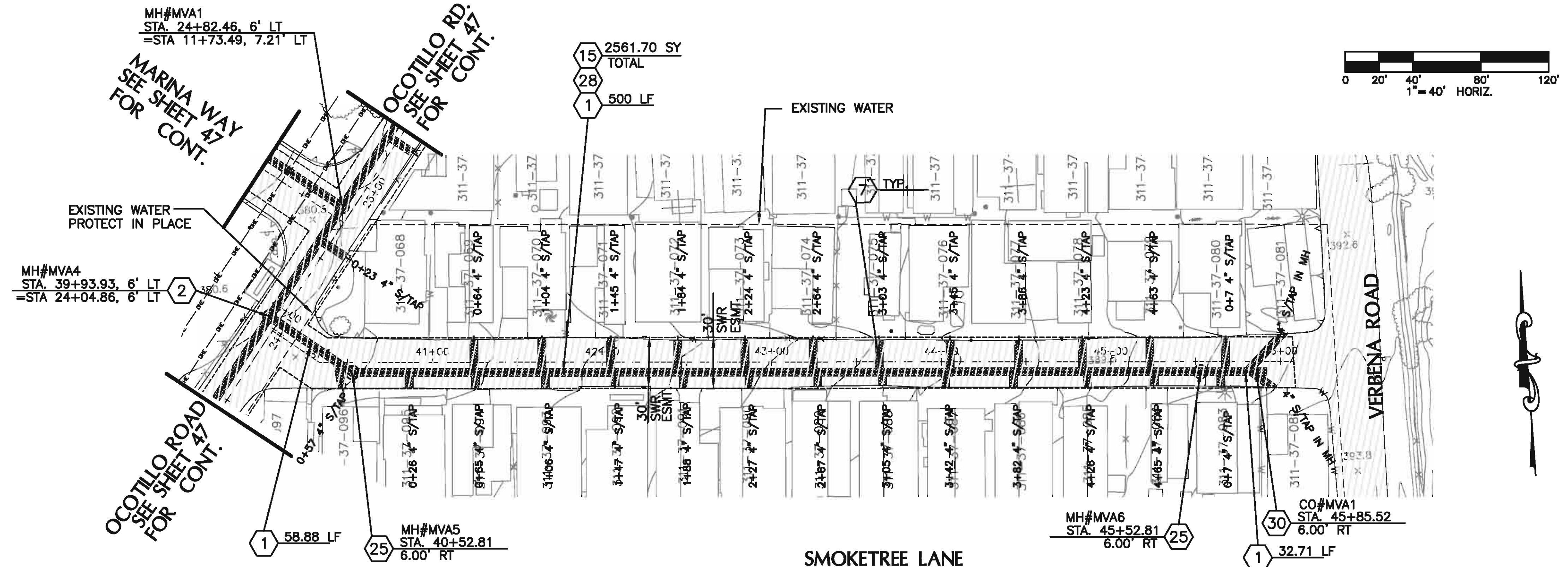
JOB #: \_\_\_\_\_  
 DATE: 10/31/13  
 SCALE: 1"=40'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**MARINA VILLAGE ANNEX**

**SHEETS**  
**48**





- ### SEWER CONSTRUCTION NOTES
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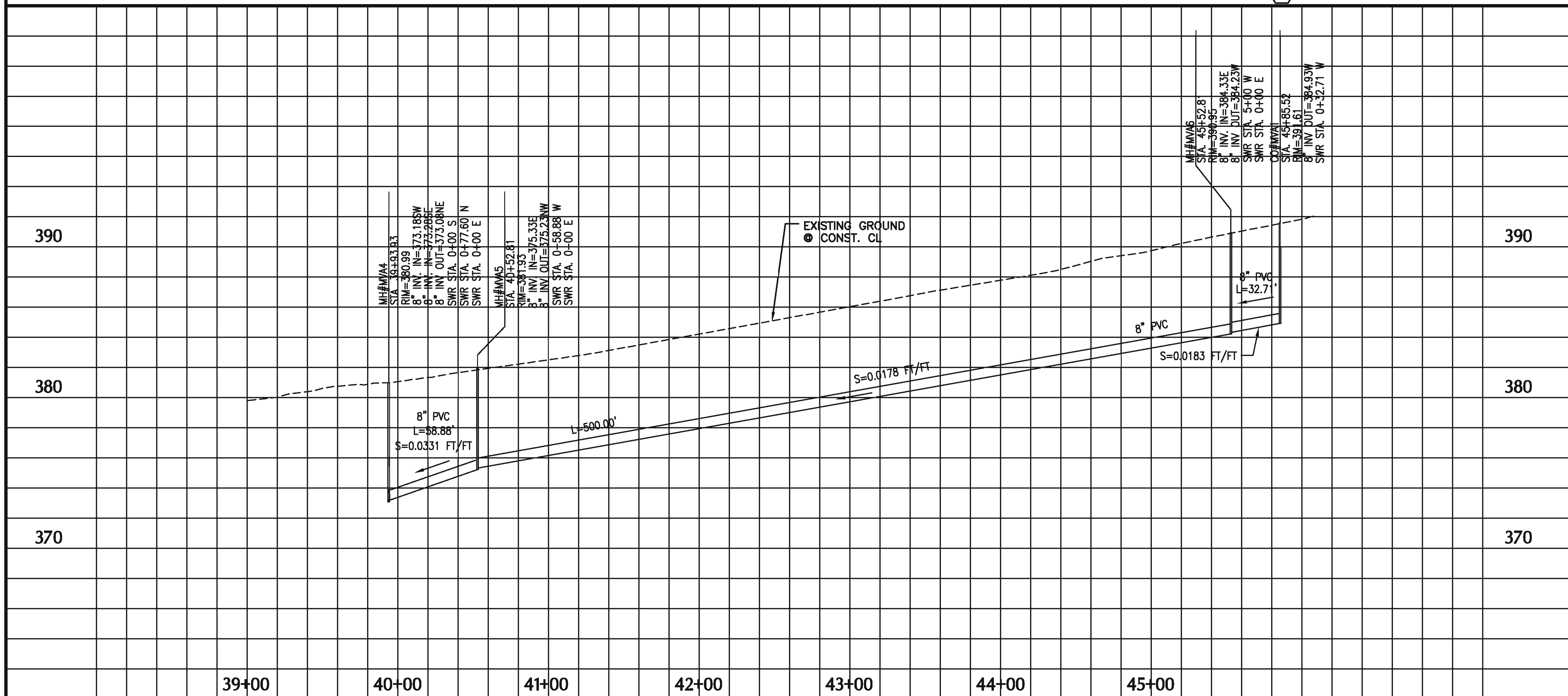
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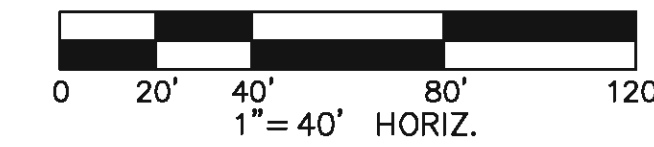
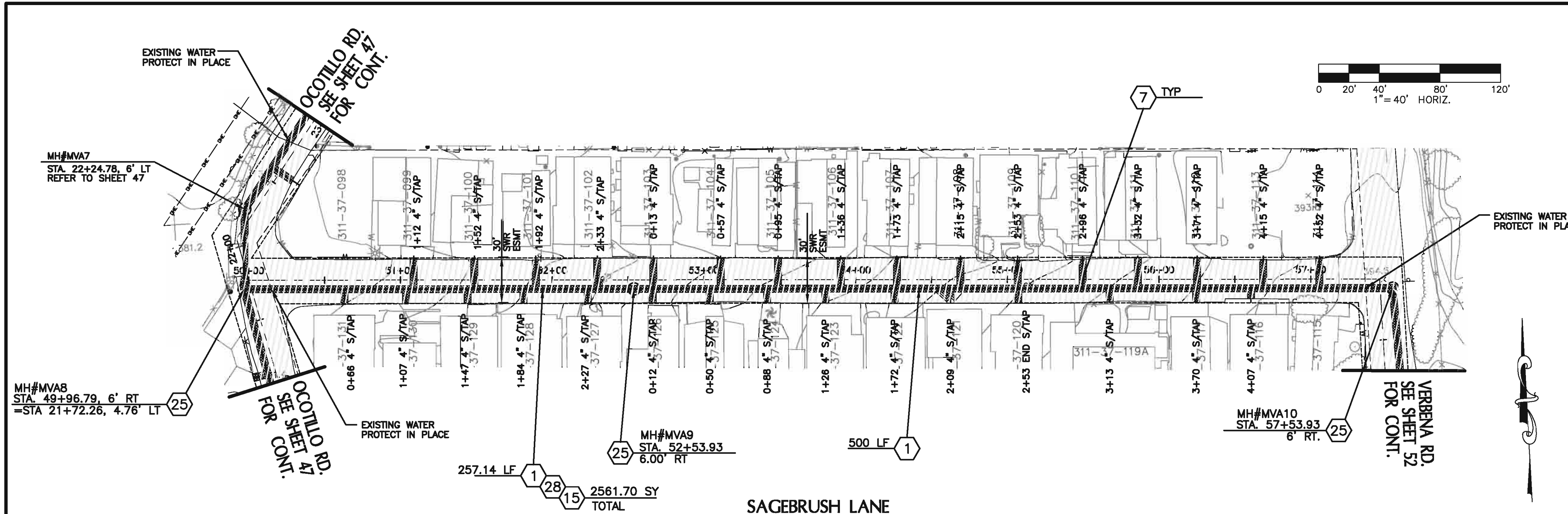
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*Glenn A. Panaro*  
  
 42251  
 GLENN A. PANARO  
 ENGINEER  
 ARIZONA, U.S.A.  
 EXPIRES 3/31/17

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REVISIONS	BY	DATE



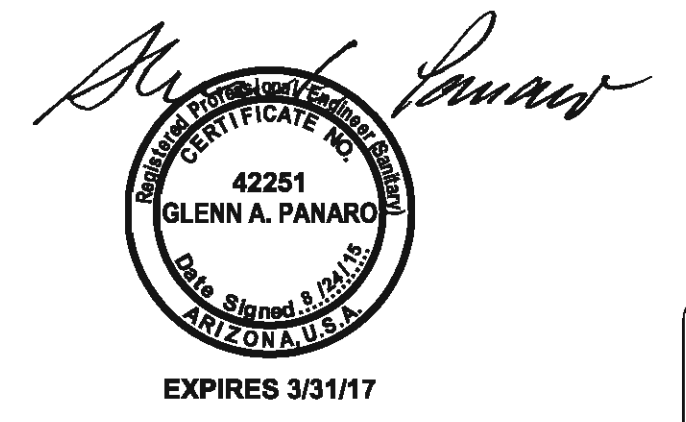
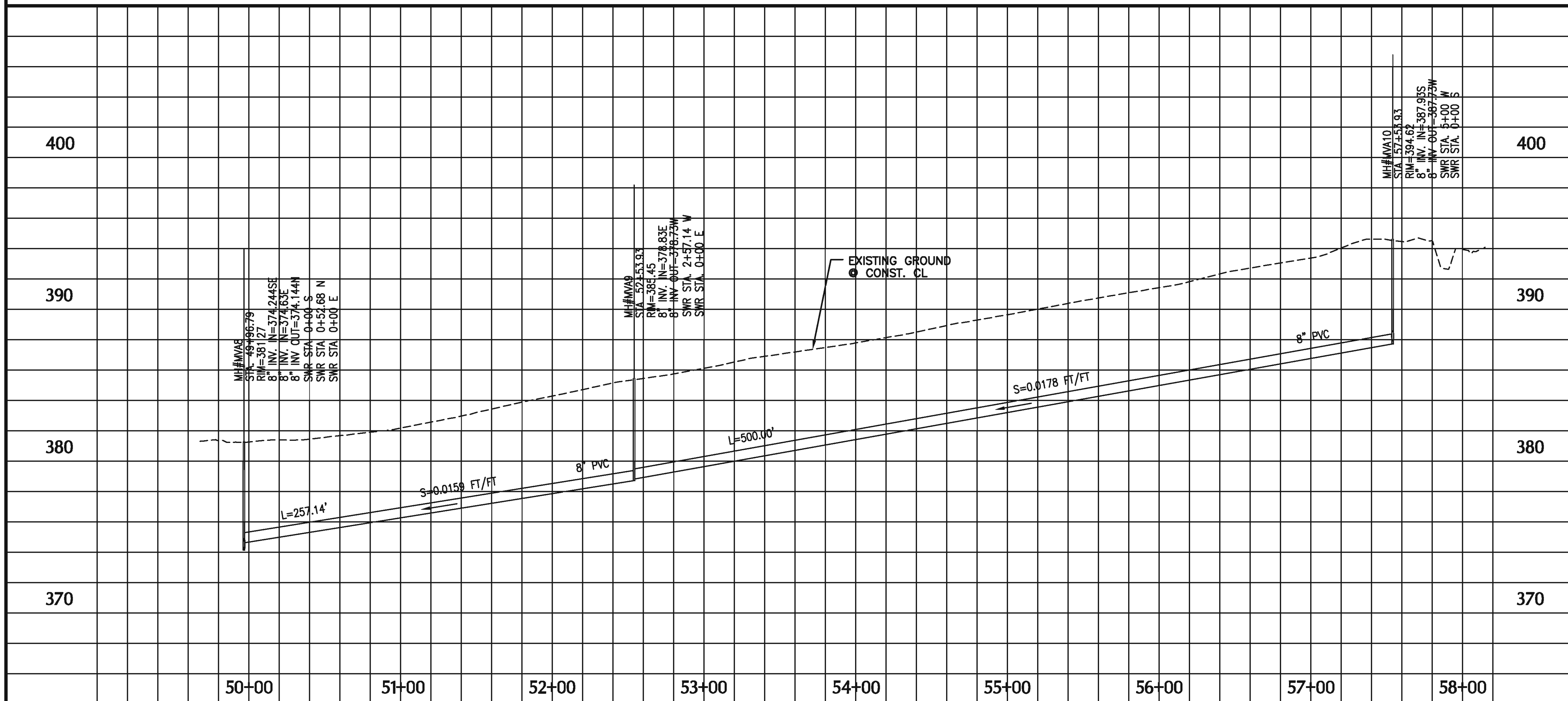
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EXPIRES 3/31/17

CALL TWO WORKING DAYS BEFORE YOU DIG  
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(OUTSIDE MARICOPA COUNTY)

**ENERGY AND WATER SOLUTIONS, LLC**  
CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

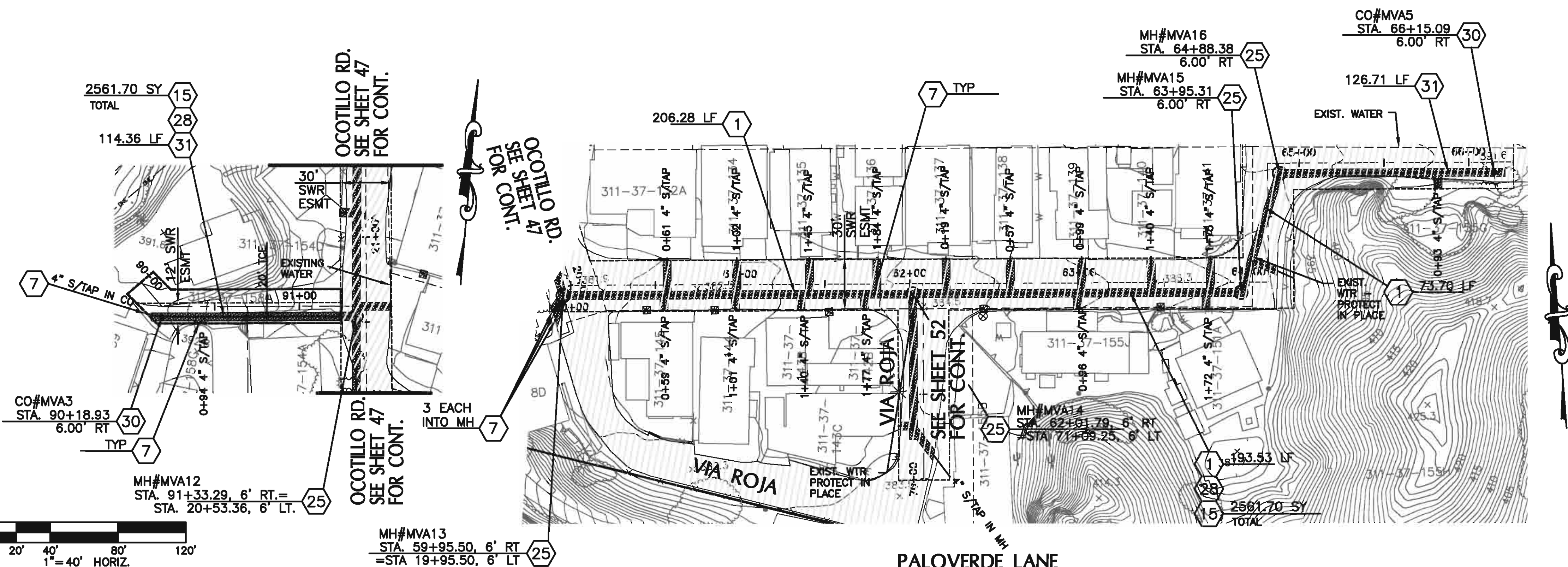
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #:    REVISIONS    BY    DATE  
DATE: 10/31/13  
SCALE: 1"=40'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**MARINA VILLAGE ANNEX**

**SHEETS 50**



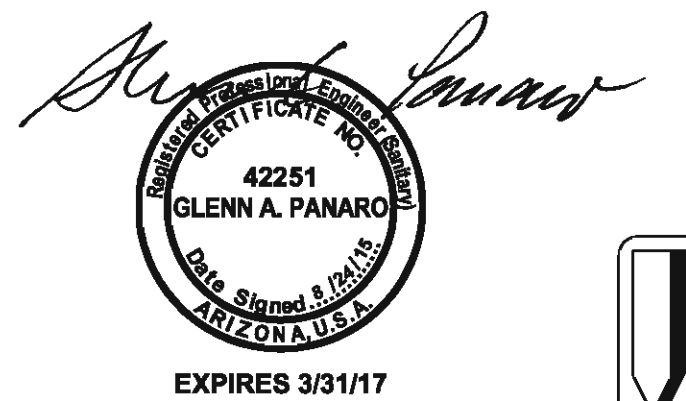
- ### SEWER CONSTRUCTION NOTES
- 1 INSTALL 8" PVC SEWER
  - 7 INSTALL 4" BLDG CONNECTION
  - 15 SAWCUT, REMOVE, & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, "T" TOP
  - 25 INSTALL 4' DIA. MH PER MAG STD. 420-1.2 W/ 24" WATERTIGHT DIA. FRAME & COVER PER MAG STD. 424-1
  - 28 TRENCH PER DETAIL ON SHEET 44.
  - 30 INSTALL CLEANOUT PER MAG STD. DET. 441
  - 31 INSTALL 6" PVC SEWER

NOTE:  
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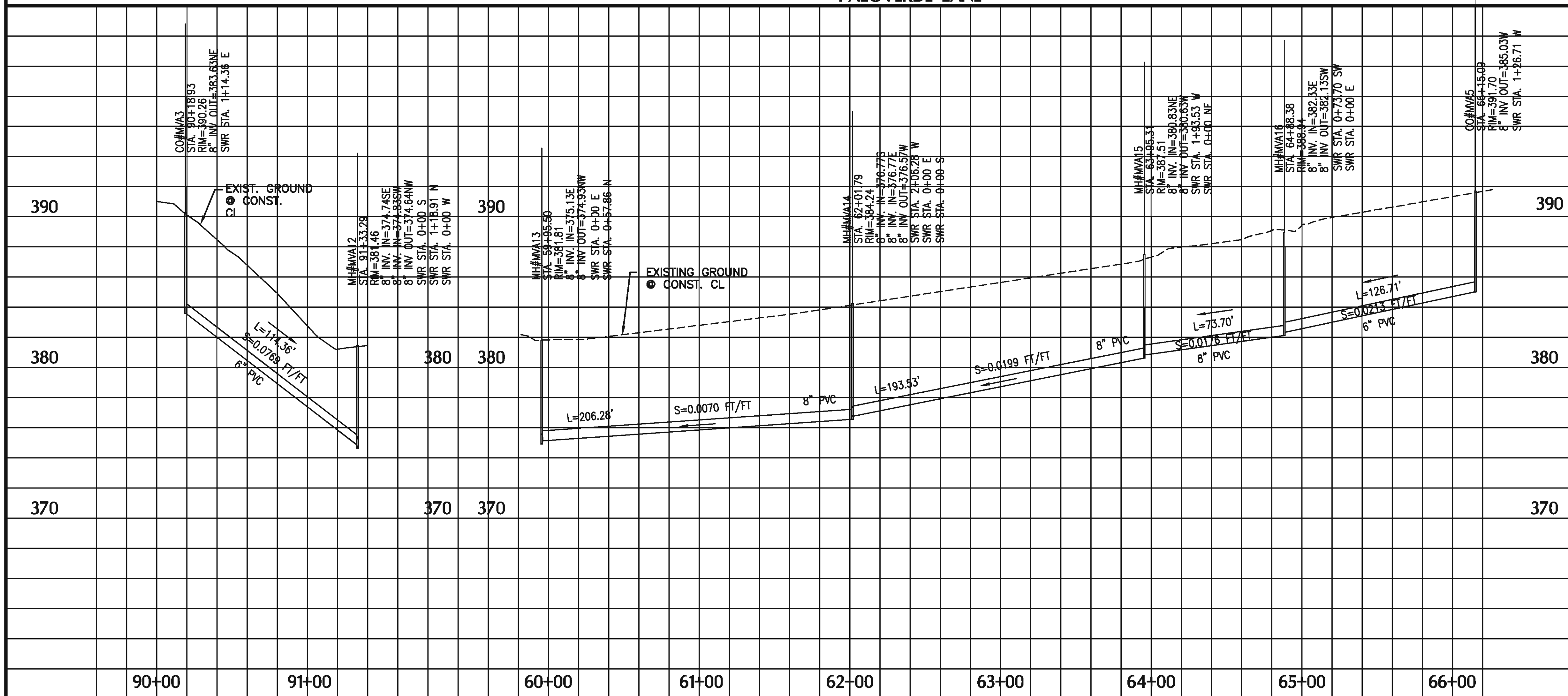
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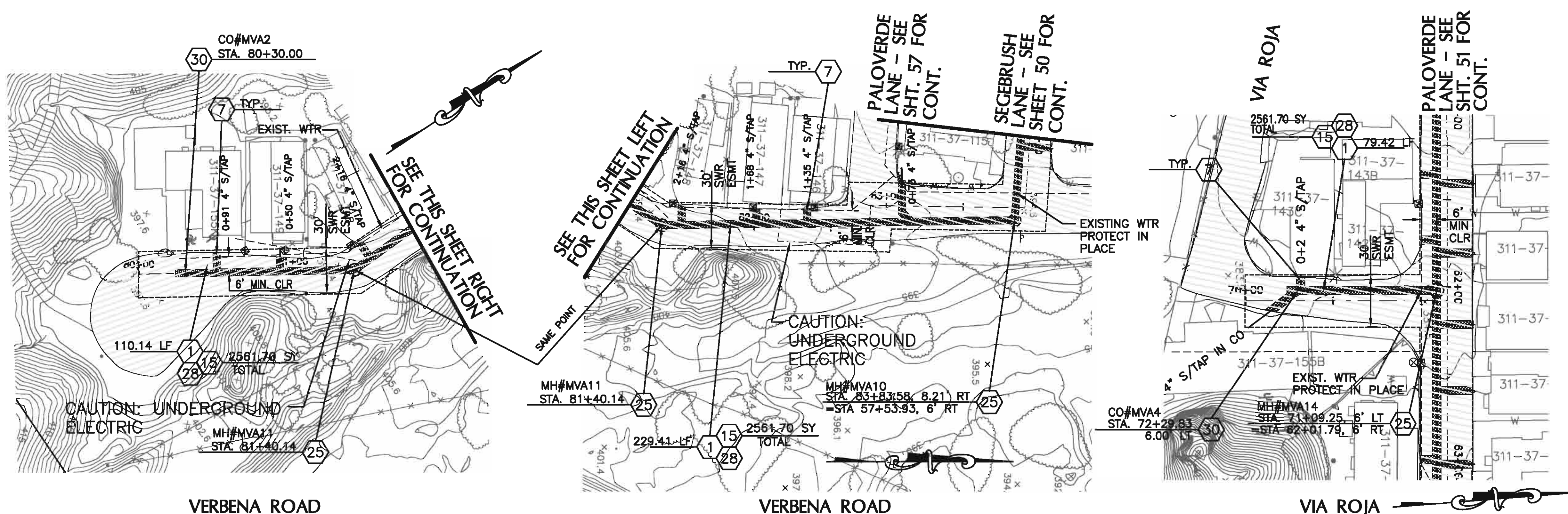
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- ### SEWER CONSTRUCTION NOTES
- 1 INSTALL 8" PVC SEWER
  - 7 INSTALL 4" BLDG CONNECTION
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, "I" TOP
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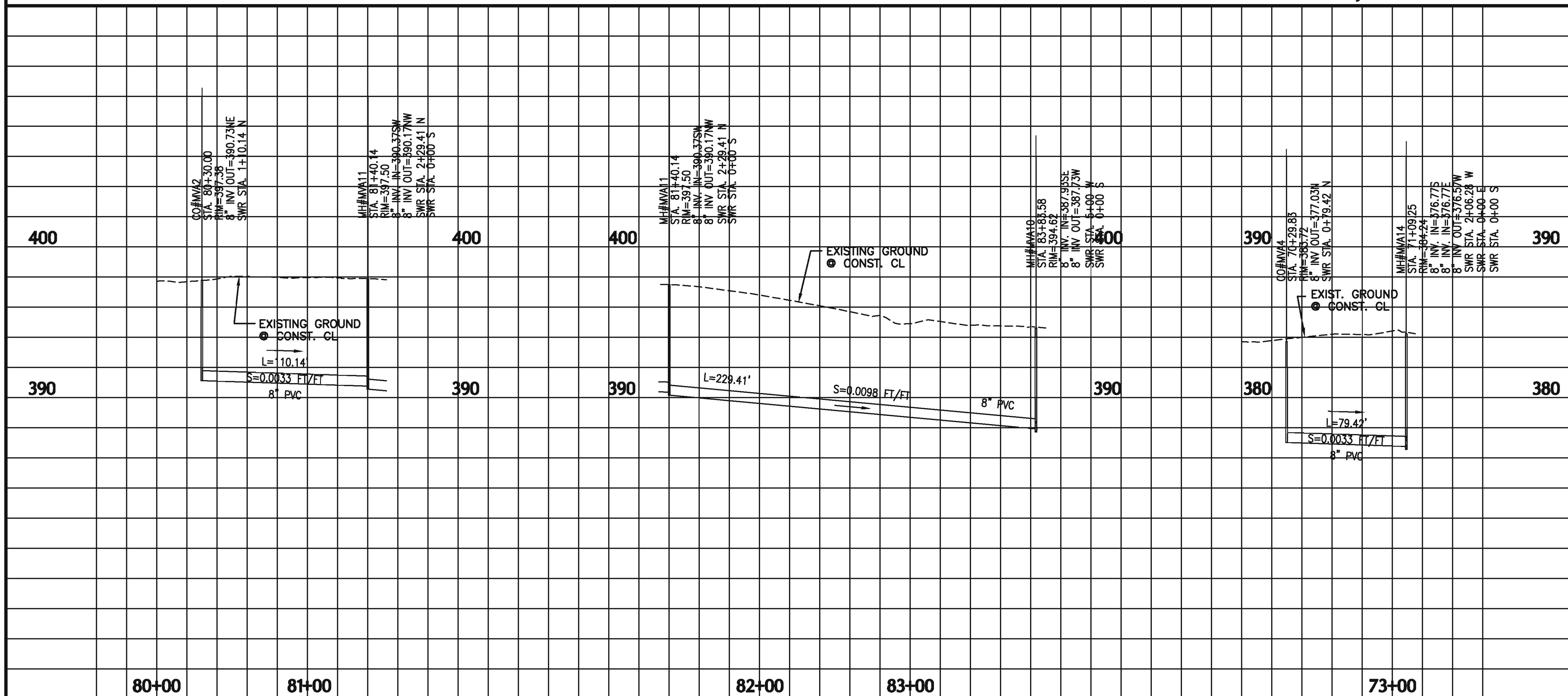
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**ENERGY AND WATER SOLUTIONS, LLC**  
 CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

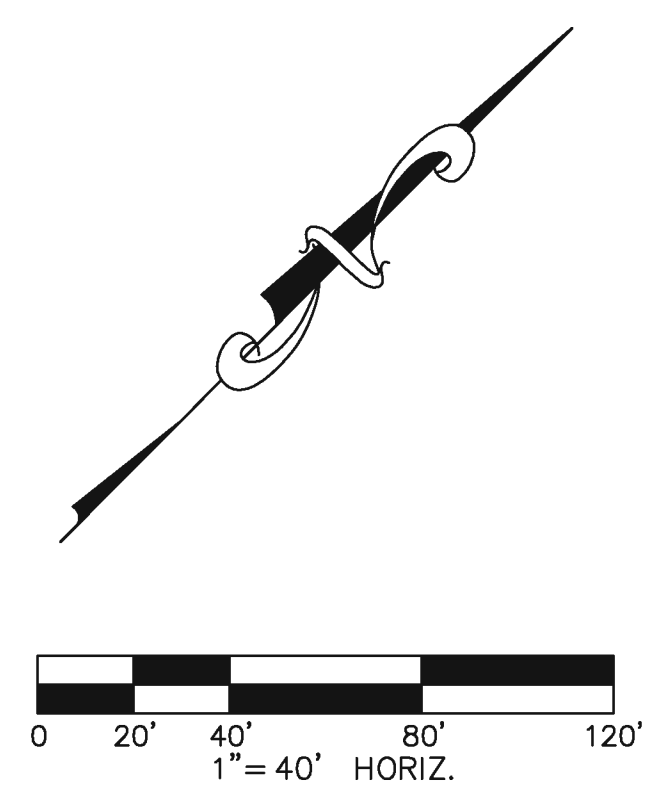
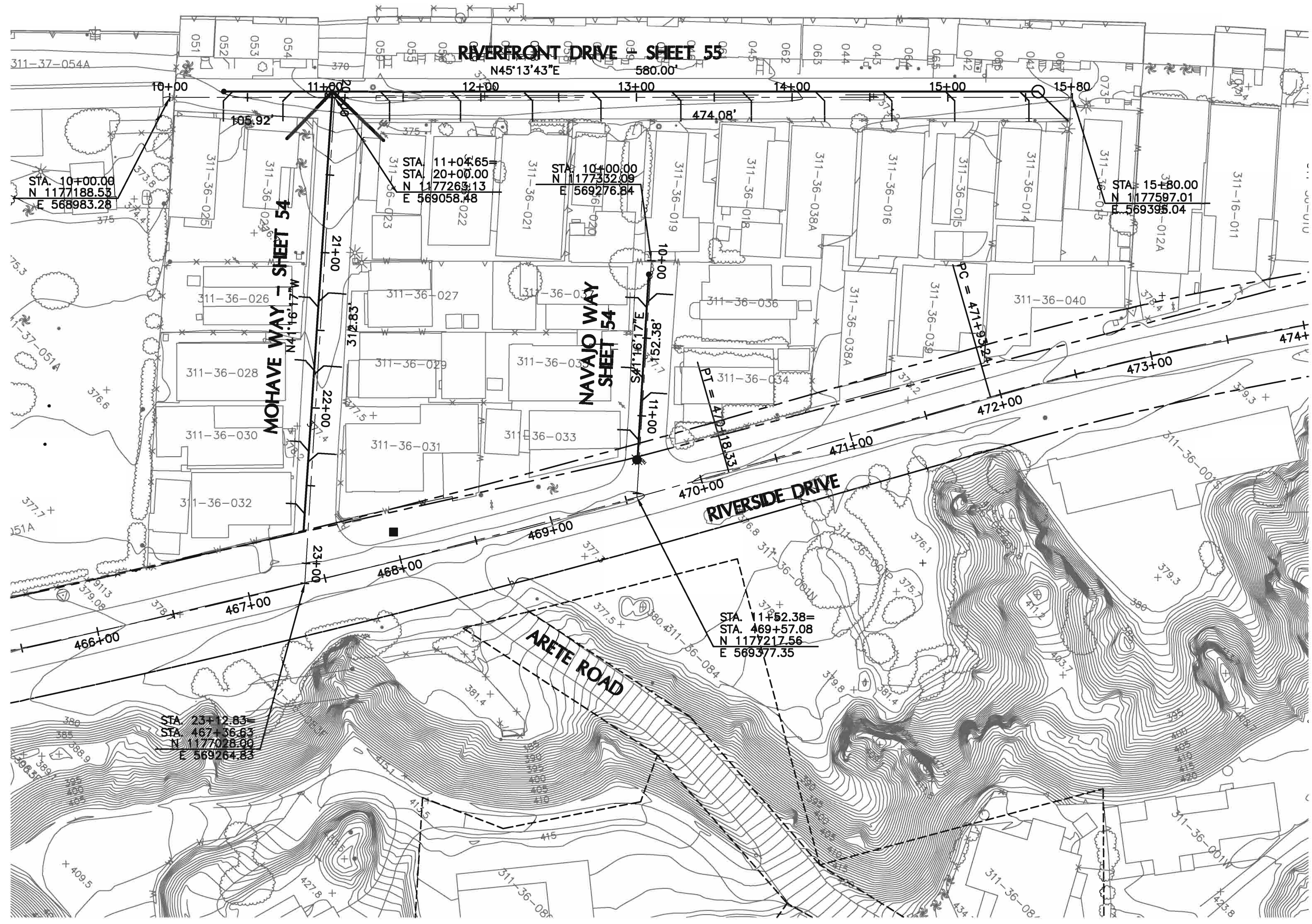
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
 PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #:                    10/31/13  
 DATE:                    10/31/13  
 SCALE:                  1"=40'

REVISIONS	BY	DATE
△ REVISE CONST. NOTES	JEB	1-12-15

**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**MARINA VILLAGE ANNEX**

**SHEETS**  
**52**



**GEOMETRIC CONTROL SHEET / KEY MAP**

*Glenn A. Panaro*  
 Registered Professional Engineer  
 LICENSE NO. 42251  
 GLENN A. PANARO  
 State of Arizona  
 ARIZONA U.S.A.  
 EXPIRES 3/31/17

**ENERGY AND WATER SOLUTIONS, LLC**  
 CIVIL ENGINEERING LAND DEVELOPMENT WATER RESOURCES

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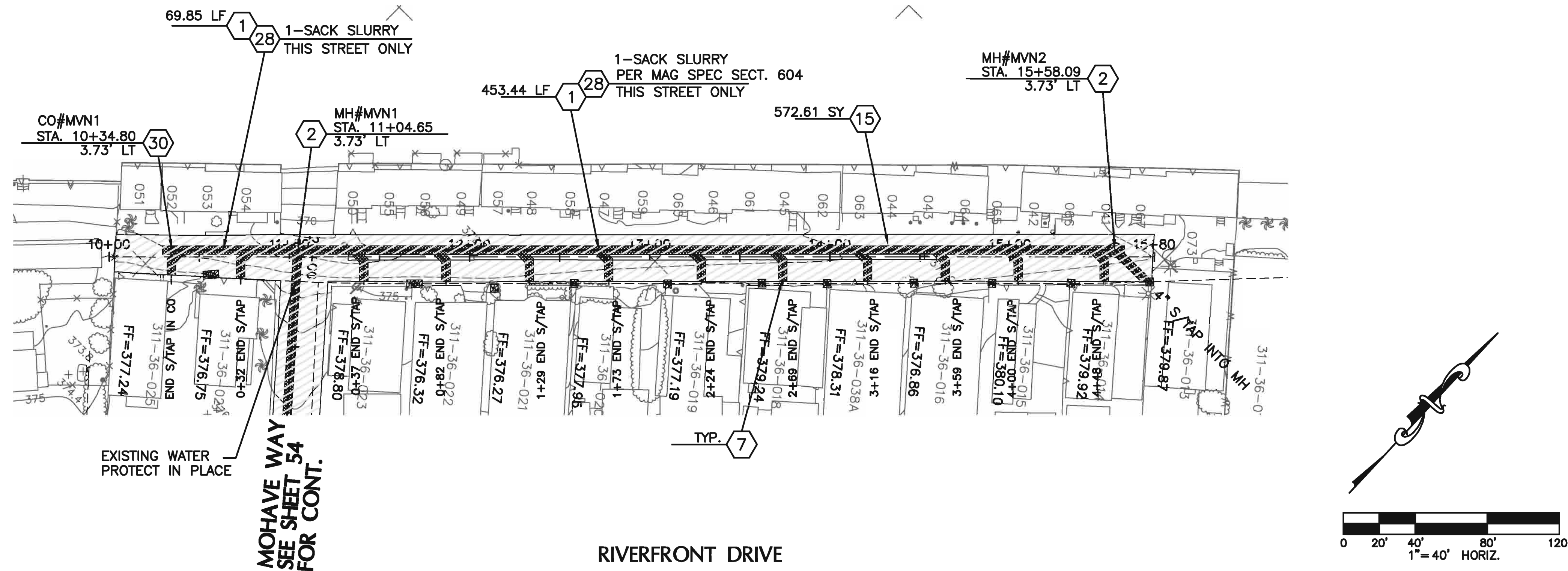
REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
 PHASE 4 SEWER  
 MARINA VILLAGE NORTH

**SHEET 53**

CALL TWO WORKING DAYS BEFORE YOU DIG  
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 (OUTSIDE MARICOPA COUNTY)





**SEWER CONSTRUCTION NOTES**

- 1 INSTALL 8" PVC SEWER
- 2 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. FRAME & COVER PER MAG STD. 423-1
- 7 INSTALL 4" BLDG CONNECTION
- 15 SAWCUT, REMOVE, & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, "T" TOP
- 28 TRENCH PER DETAIL ON SHEET 44.
- 30 INSTALL CLEANOUT PER MAG STD. DET. 441

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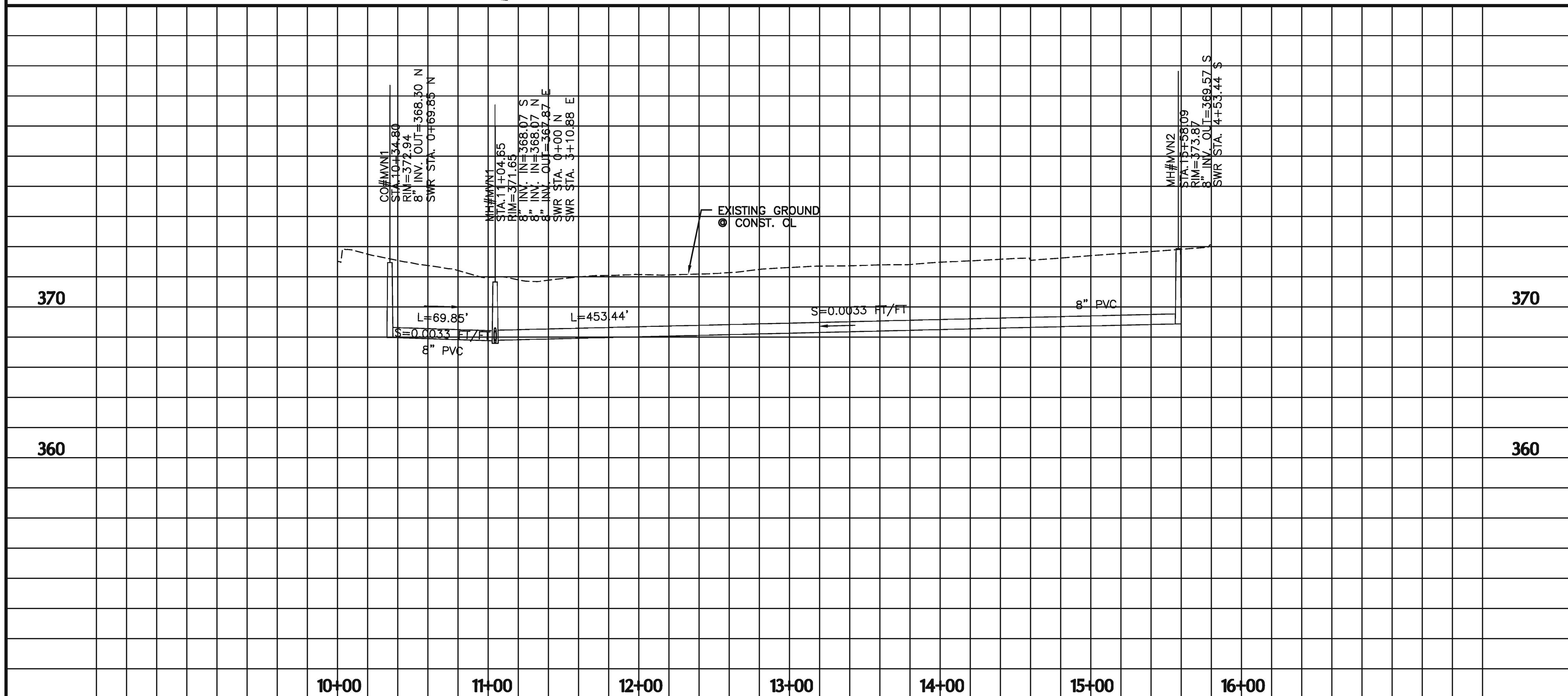
NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES. THERE ARE ALSO POWER AND WATER LINES BETWEEN THE HOMES AND THE CABANAS THAT ARE UNMARKED.

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*Glenn A. Panaro*  
Professional Engineer  
CERTIFICATE NO. 42251  
GLENN A. PANARO  
Date Signed 3/13/13  
ARIZONA U.S.A.  
EXPIRES 3/31/17

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(OUTSIDE MARICOPA COUNTY)



**ENERGY AND WATER SOLUTIONS, LLC**  
CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

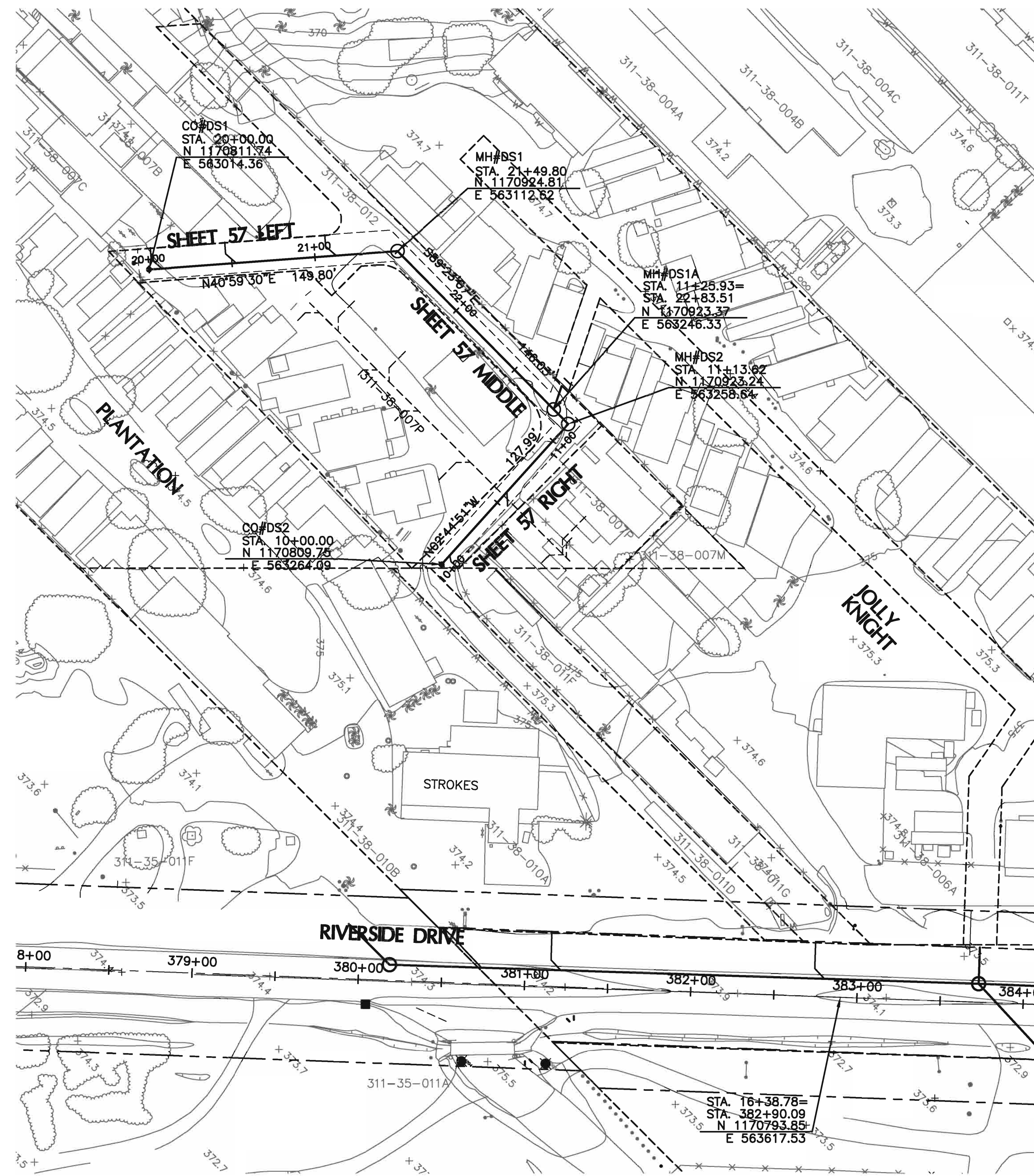
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
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SCALE: 1"=40'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
PHASE 4 SEWER  
MARINA VILLAGE NORTH

**SHEETS 55**



GEOMETRIC CONTROL SHEET / KEYMAP

*Glenn A. Panaro*  
 Professional Engineer License  
 42251  
 GLENN A. PANARO  
 Date Signed: 6/15/15  
 ARIZONA U.S.A.  
 EXPIRES 3/31/17

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**BUCKSKIN SANITARY DISTRICT**  
 PHASE 4 SEWER  
 DESERT STAR

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**1-800-STAKE-IT**  
(OUTSIDE MARICOPA COUNTY)

**SHEETS**  
**56**



**SEWER CONSTRUCTION NOTES**

- 1 INSTALL 8" PVC SEWER
- 7 INSTALL 4" BLDG CONNECTION PER DTL. ON SHT. 45
- 25 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-1
- 28 TRENCH PER DETAIL ON SHEET 44.
- 30 INSTALL CLEANOUT PER MAG STD. DET. 441, SIZE PER PLAN
- 32 INSTALL 6" BLDG CONNECTION PER DTL. ON SHT. 45

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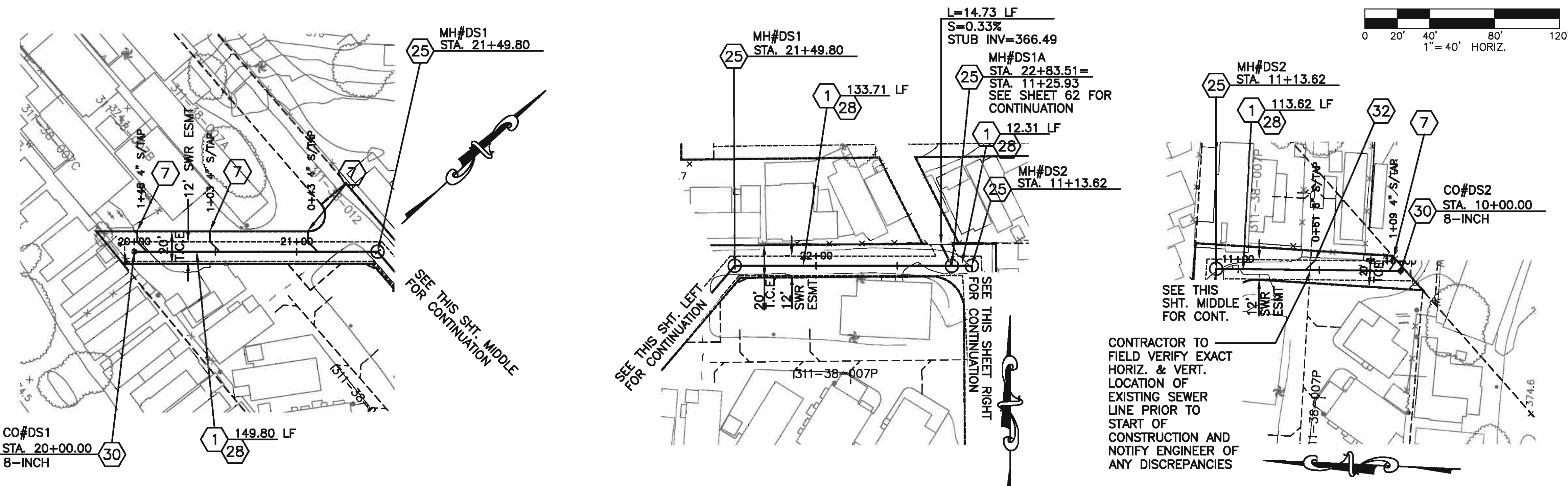
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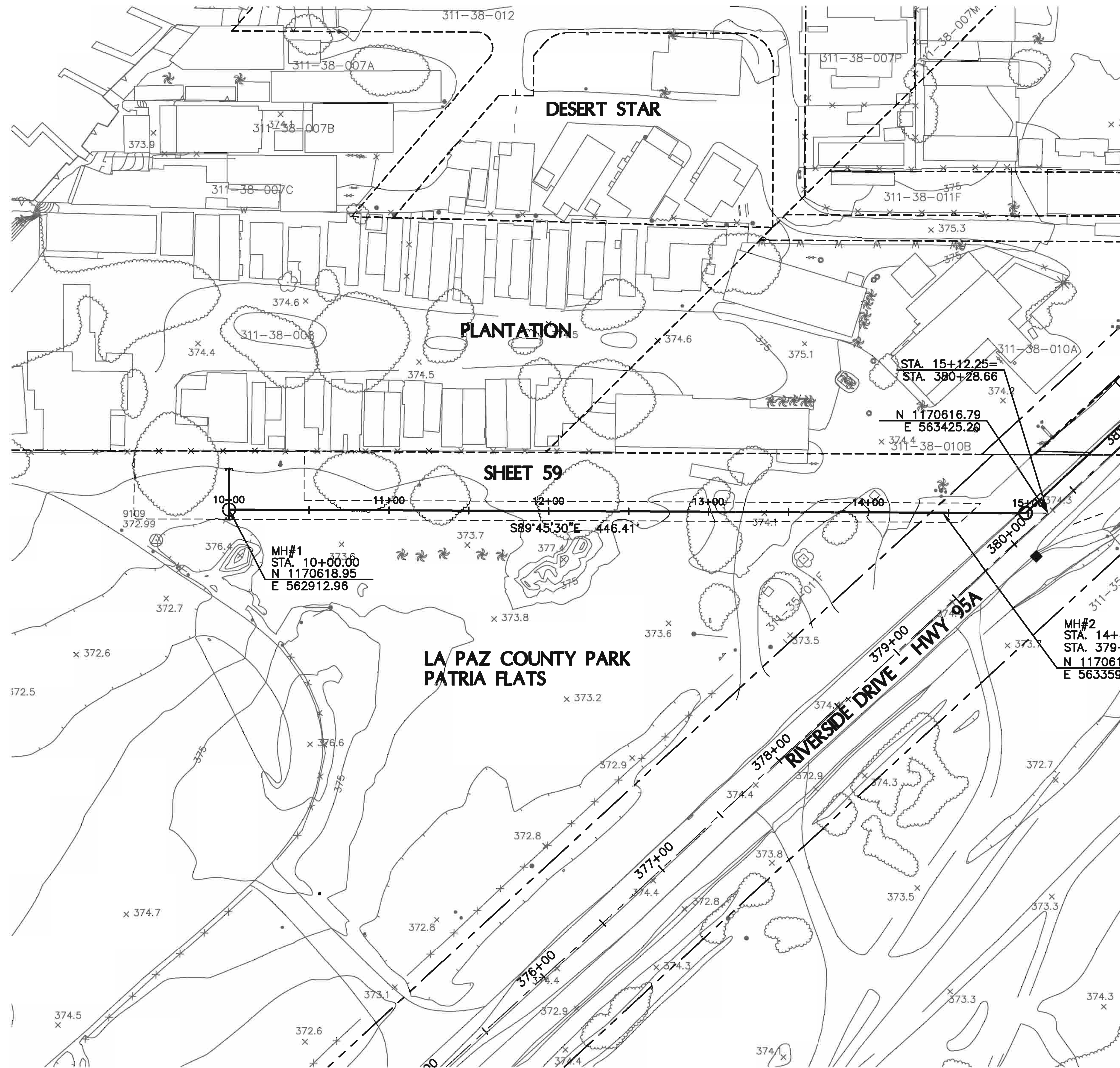
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1-800-STAKE-IT  
(OUTSIDE MARICOPA COUNTY)



DESERT STAR RV PARK - UNNAMED DRIVEWAY

380	<p>CO#DS1 STA. 20+00.00 RIM=374.49 8" INV. OUT=367.84 SWR STA. 1+49.80 NE</p> <p>MH#DS1 STA. 21+49.80 RIM=374.42 8" INV. IN=367.35 8" INV. OUT=367.18 SWR STA. 1+33.71 E SWR STA. 0+00.00 SW</p>	380	<p>MH#DS1 STA. 21+49.80 RIM=374.42 8" INV. IN=367.35 8" INV. OUT=367.18 SWR STA. 1+33.71 E SWR STA. 0+00.00 SW</p> <p>MH#DS1A STA. 22+83.51 RIM=374.06 8" INV. IN=366.74 E 8" INV. IN=366.74 W 8" INV. OUT=366.54 NW SWR STA. 0+90.40 NW SWR STA. 0+00.00 W SWR STA. 0+00.00 E</p> <p>MH#DS2 STA. 11+13.62 RIM=374.01 8" INV. IN=366.98 S 8" INV. OUT=366.78 W SWR STA. 0+12.31 W SWR STA. 0+00.00 S</p>	380		
370	<p>EXISTING GROUND</p> <p>L=149.80' S=0.0033 FT/FT 8" PVC</p>	370	<p>EXISTING GROUND</p> <p>L=133.71' S=0.0033 FT/FT 8" PVC</p> <p>8" PVC L=12.31' S=0.0033 FT/FT</p>	370		
360		360	<p>EXISTING GROUND</p> <p>L=113.62' S=0.0033 FT/FT 8" PVC</p>	360		
20+00	21+00	21+00	22+00	23+00	11+00	10+00

REVISIONS	BY	DATE



**GEOMETRIC CONTROL SHEET / KEYMAP**

*Glenn A. Panaro*  
 Professional Engineer License  
 42251  
 GLENN A. PANARO  
 Date Signed 8/15/15  
 ARIZONA U.S.A.  
 EXPIRES 3/31/17

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 CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

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 PHONE: 602.309.3824    FAX: 480.656.9778    EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
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REVISIONS	BY	DATE

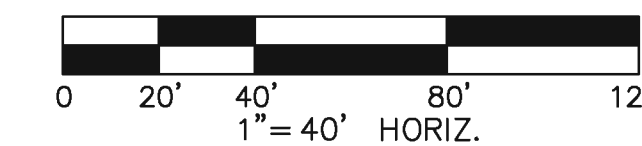
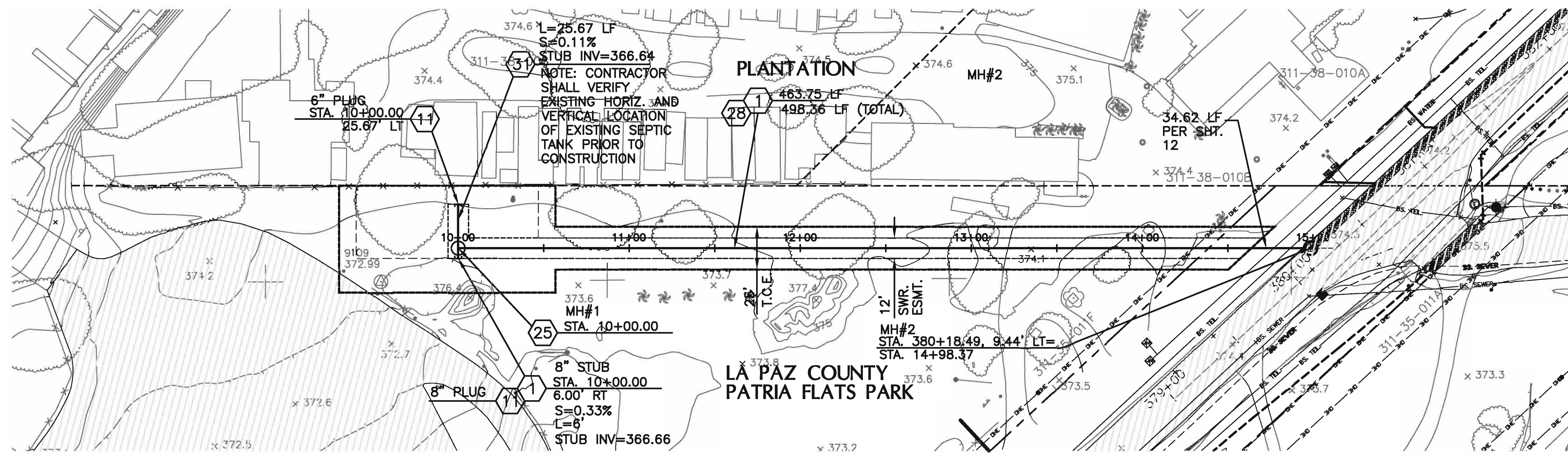
**BUCKSKIN SANITARY DISTRICT**  
 PHASE 4 SEWER  
 PLANTATION / PATRIA FLATS PARK

CALL TWO WORKING DAYS BEFORE YOU DIG  
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**1-800-STAKE-IT**  
(OUTSIDE MARICOPA COUNTY)

**SHEET 58**

**SEWER CONSTRUCTION NOTES**

- 1** INSTALL 8" PVC SEWER
- 11** INSTALL PLUG PER MAG STD. DET. 427, SIZE PER PLAN
- 25** INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-1
- 28** TRENCH PER DETAIL ON SHEET 44.
- 31** INSTALL 6" PVC SEWER

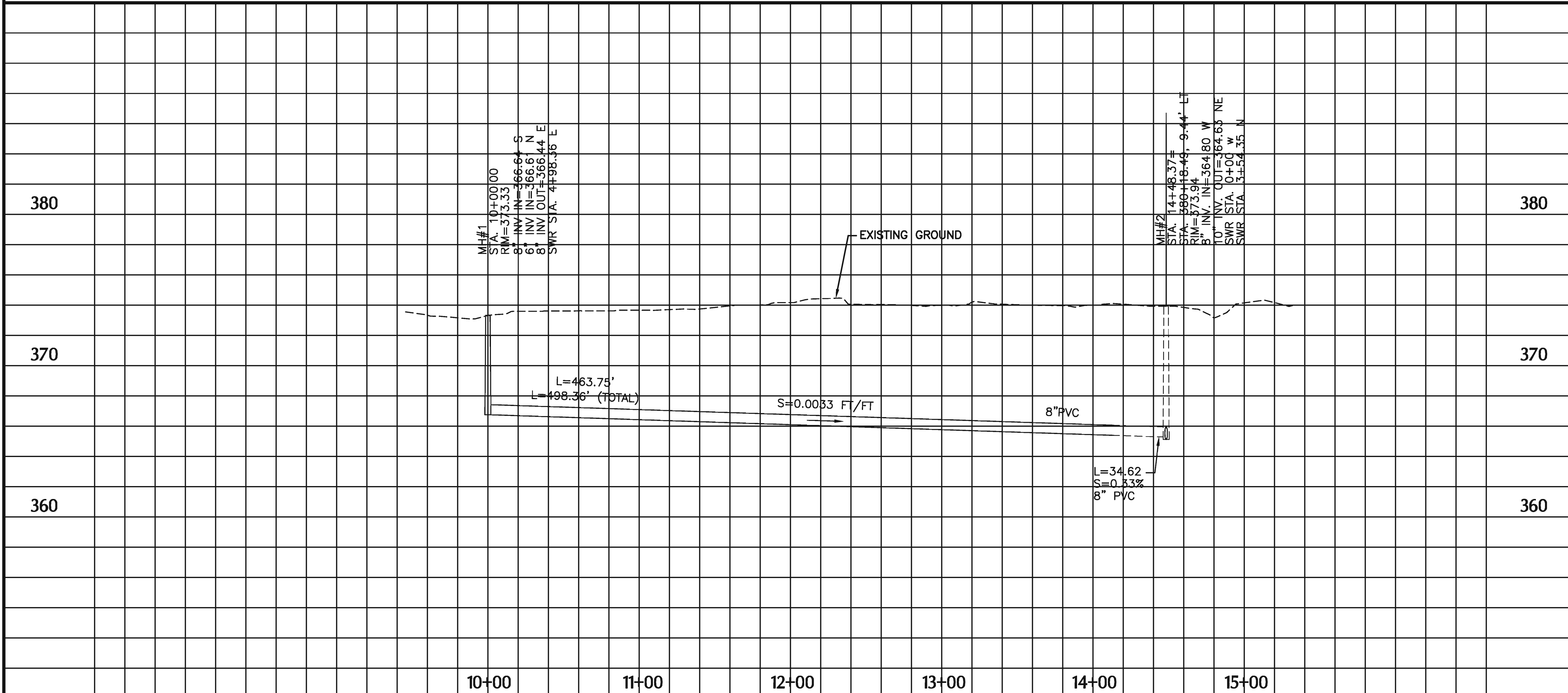


PLANTATION

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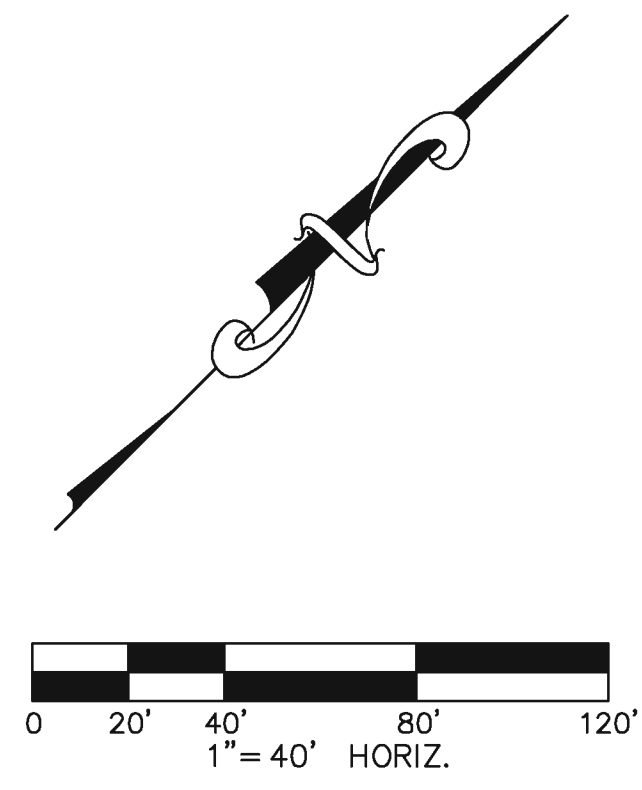
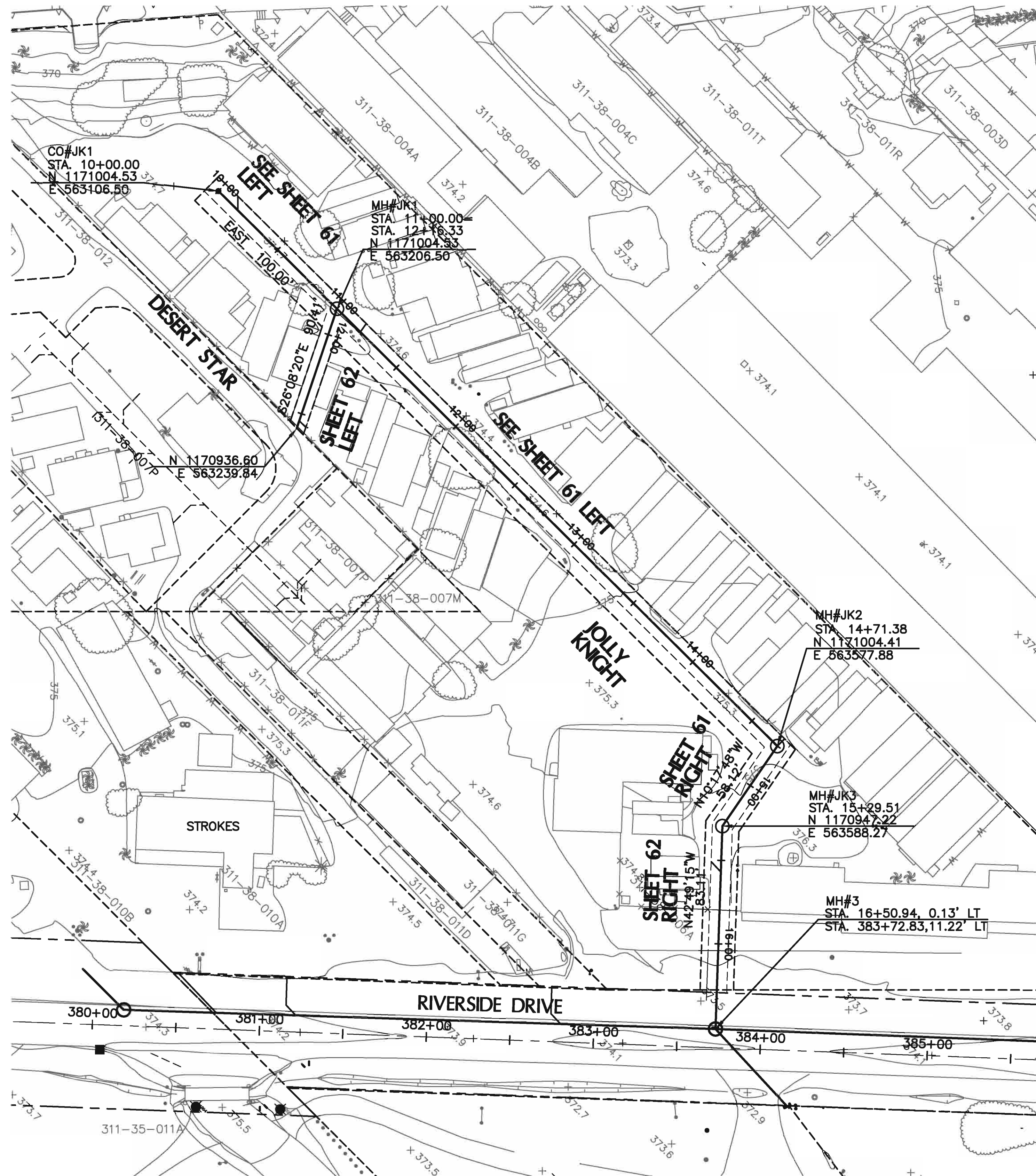
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*Glenn A. Panaro*  
 REGISTERED PROFESSIONAL ENGINEER  
 NO. 42251  
 GLENN A. PANARO  
 DATE SIGNED 8/24/15  
 ARIZONA U.S.A.  
 EXPIRES 3/31/17

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REVISIONS	BY	DATE



GEOMETRIC CONTROL SHEET / KEYMAP

*Glenn A. Panaro*  
 Professional Engineer  
 CERTIFICATE NO. 42251  
 GLENN A. PANARO  
 Date Signed: 8/10/15  
 ARIZONA U.S.A.  
 EXPIRES 3/31/17

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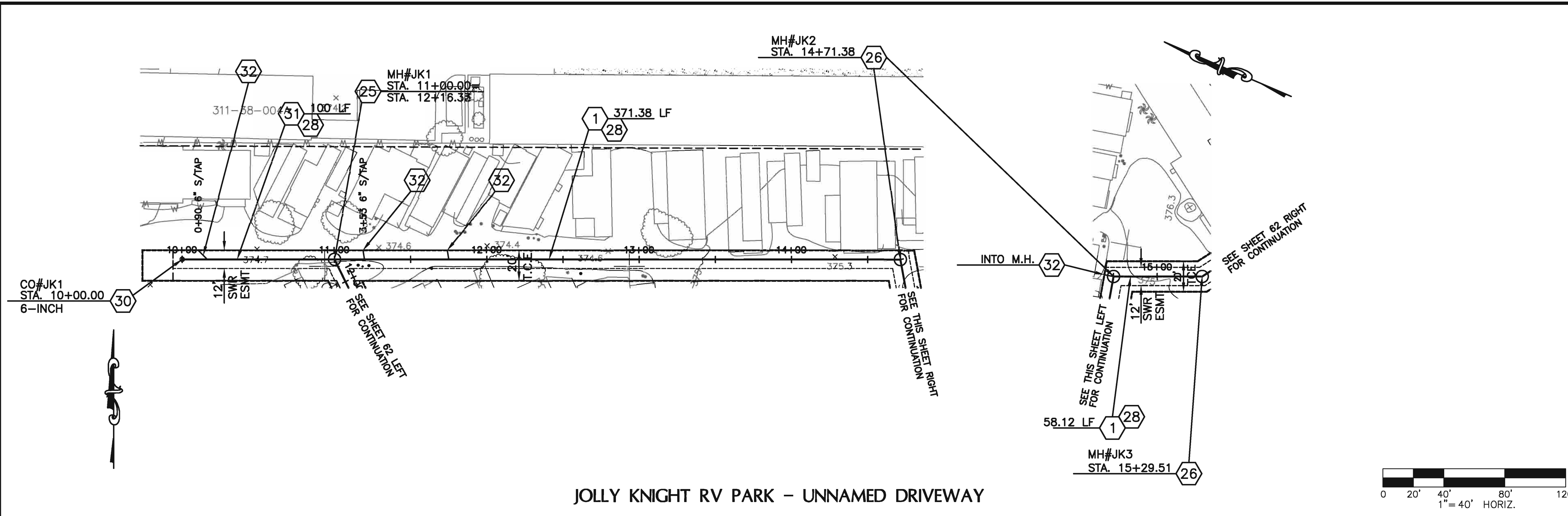
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
 PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
 DATE: 2/8/15  
 SCALE: 1"=40'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
 PHASE 4 SEWER  
 JOLLY KNIGHT

**SHEET 60**



JOLLY KNIGHT RV PARK - UNNAMED DRIVEWAY

SEWER CONSTRUCTION NOTES

- 1 INSTALL 8" PVC SEWER
- 25 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-1
- 26 INSTALL 5' DIA. MH PER MAG STD. 420-1,2 W/ 30" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-2
- 28 TRENCH PER DETAIL ON SHEET 44.
- 30 INSTALL CLEANOUT PER MAG STD. DET. 441, SIZE PER PLAN
- 31 INSTALL 6" PVC SEWER
- 32 INSTALL 6" BLDG CONNECTION PER DTL. ON SHT 45

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380	CO#JK1 STA. 10+00.00 RIM=374.54 6" INV. OUT=367.24 SWR STA. 1+00.00 E	MH#JK1 STA. 11+00.00= STA. 12+16.33 RIM=374.53 6" INV. IN=366.21 W 8" INV. IN=366.24 S 8" INV. OUT=366.04 E SWR STA. 3+71.38 SE SWR STA. 0+00 W SWR STA. 0+00 SE	MH#JK2 STA. 14+71.38 RIM=375.19 8" INV. IN=364.81 8" INV. OUT=364.61 SWR STA. 0+58.12 SE SWR STA. 0+00 W	MH#JK2 STA. 14+71.38 RIM=375.19 8" INV. IN=364.81 8" INV. OUT=364.61 SWR STA. 0+58.12 SE SWR STA. 0+00 W	MH#JK3 STA. 15+29.51 RIM=374.84 8" INV. IN=364.42 8" INV. OUT=364.32 SWR STA. 0+83.11 SE SWR STA. 0+00 NW	380
370	EXISTING GROUND					370
360	L=100.00' S=0.0070 FT/FT 6" PVC	L=371.38' S=0.0033 FT/FT 8" PVC	L=58.12' S=0.0033 FT/FT 8" PVC			360
	10+00	11+00	12+00	13+00	14+00	15+00

**ENERGY AND WATER SOLUTIONS, LLC**  
 CIVIL ENGINEERING LAND DEVELOPMENT WATER RESOURCES

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REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
 PHASE 4 SEWER  
 JOLLY KNIGHT

SHEET 61

*Glenn A. Panaro*  
 REGISTERED PROFESSIONAL ENGINEER  
 42251  
 GLENN A. PANARO  
 Date Signed: 2/10/15  
 ARIZONA U.S.A.  
 EXPIRES 3/31/17

CALL TWO WORKING DAYS BEFORE YOU DIG  
 602-263-1100  
 1-800-STAKE-IT  
 (OUTSIDE MARICOPA COUNTY)

**SEWER CONSTRUCTION NOTES**

- 1 INSTALL 8" PVC SEWER
- 3 INSTALL 5' DIA. MH PER MAG STD. 420-1,2 W/ 30" DIA. FRAME & COVER PER MAG STD. 423-2
- 25 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-1
- 26 INSTALL 5' DIA. MH PER MAG STD. 420-1,2 W/ 30" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-2
- 28 TRENCH PER DETAIL ON SHEET 44.
- 32 INSTALL 6" BLDG CONNECTION PER DTL ON SHT 45

NOTE:  
TAPS SHOWN ON PLANS ARE FOR ILLUSTRATION PURPOSES ONLY. FINAL LOCATIONS WILL BE DETERMINED IN THE FIELD.

NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.

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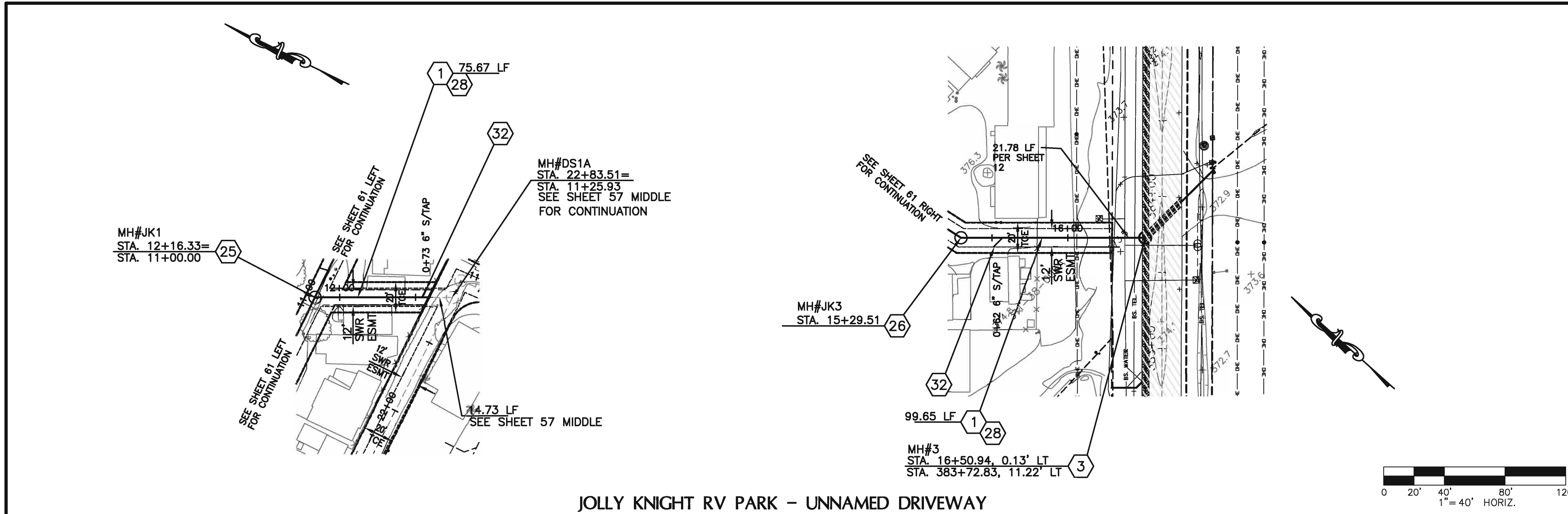
NOTE:  
BUCKSKIN SANITARY DISTRICT HAS MADE EVERY ATTEMPT, UTILIZING STANDARD ENGINEERING PRACTICES, TO DESIGN THE BACKBONE SEWER IN PHASE 4 TO ALLOW THE MAJORITY OF THE PROPERTIES LOCATED WITHIN PHASE 4 TO CONNECT BY MEANS OF GRAVITY. HOWEVER, THERE MAY BE CIRCUMSTANCES THAT REQUIRE CERTAIN PROPERTIES TO CONNECT VIA PUMPING SYSTEMS. CONTRACTORS MAKING BUILDING CONNECTIONS FOR INDIVIDUAL PROPERTY OWNERS TO DISTRICT FACILITIES SHALL VERIFY HORIZONTAL AND VERTICAL CONNECTION PRIOR TO THE START OF CONSTRUCTION. A SEWER CONNECTION PERMIT IS REQUIRED PRIOR TO CONSTRUCTION.

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**BUCKSKIN SANITARY DISTRICT  
 PHASE 4 SEWER  
 JOLLY KNIGHT**

**SHEET 62**



**JOLLY KNIGHT RV PARK – UNNAMED DRIVEWAY**

380	MH#JK1 STA. 12+16.33= STA. 11+00.00 RIM=374.53 8" INV. OUT.=366.04 E 8" INV. IN.=366.24 S SWR STA. 3+11.38 SE SWR STA. 0+00 W SWR STA. 0+00 SE STA. 11+40.65 RIM=374.14 8" INV. OUT.=366.49 N SWR STA. 0+75.67 NW MH#DS1A STA. 22+83.51= STA. 11+25.93 RIM=374.06 8" INV. IN.=366.74 E 8" INV. OUT.=366.74 W SWR STA. 0+86.40 NW SWR STA. 0+00.00 W SWR STA. 0+00.00 E	380
370	L=90.40' (TOTAL) L=75.67' S=0.0033 FT/FT 8" PVC L=14.73' S=0.33% 8" PVC PER SHEET 57	370
360	L=121.43' (TOTAL) L=99.65' S=0.0033 FT/FT 8" PVC L=21.78' S=0.35% 8" PVC PER SHEET 12	360
12+00	16+00	17+00

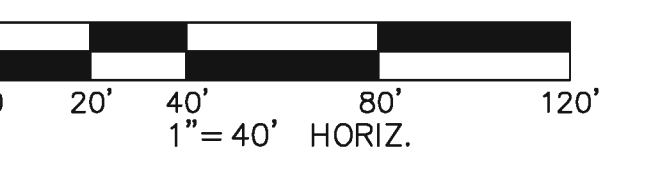
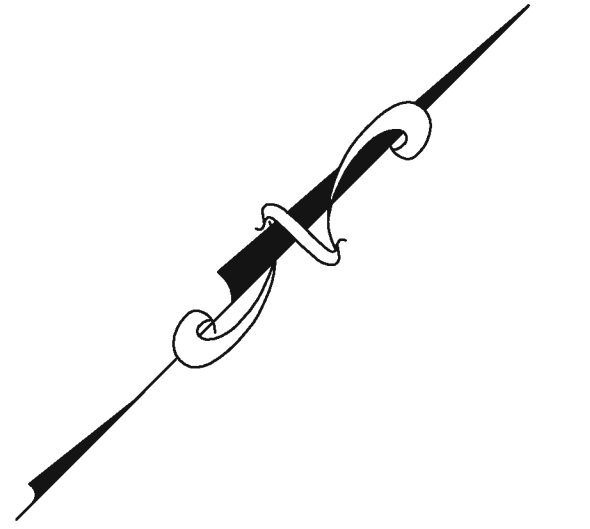
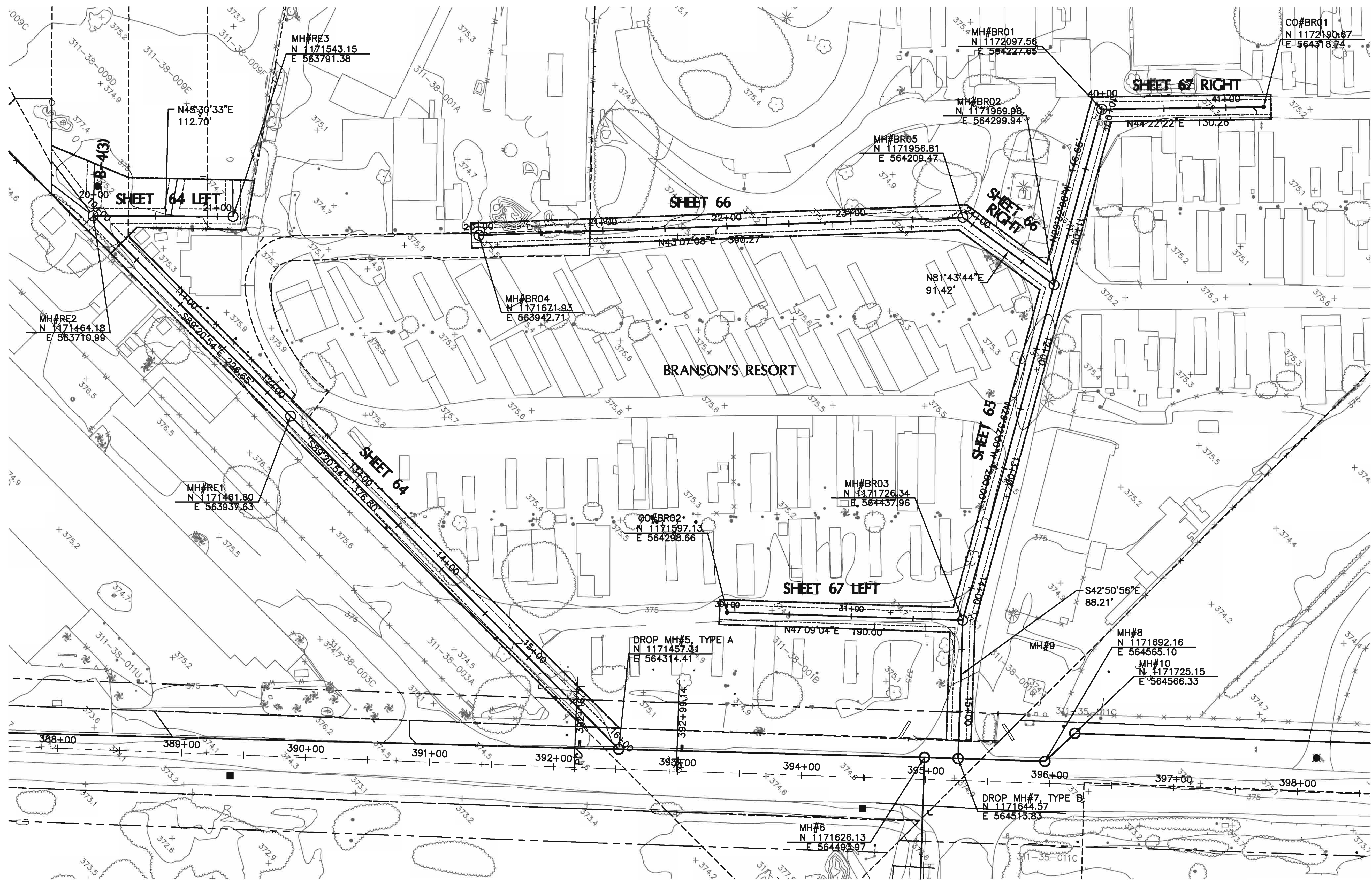
**ENERGY AND WATER SOLUTIONS, LLC**  
 CIVIL ENGINEERING LAND DEVELOPMENT WATER RESOURCES

P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
 PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #: 2/10/15  
 DATE: 2/10/15  
 SCALE: 1"=40'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT  
 PHASE 4 SEWER  
 JOLLY KNIGHT**



*Glenn A. Panaro*  
 PROFESSIONAL ENGINEER  
 42251  
 GLENN A. PANARO  
 State of Arizona  
 ARIZONA, U.S.A.  
 EXPIRES 3/31/17

## GEOMETRIC CONTROL SHEET / KEYMAP

NOTE:  
 NO WORK SHALL BE PERFORMED AT  
 BRANSON'S RESORT (SHEETS 65-67) FROM  
 NOVEMBER 1 THROUGH MARCH 31.

**ENERGY AND WATER SOLUTIONS, LLC**  
 CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
 PHONE: 602.309.3824    FAX: 480.656.9778    EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
 DATE: 1/26/15  
 SCALE: 1"=40'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
 PHASE 4 SEWER  
 BRANSON / RIVER'S EDGE

**SHEETS**  
 63

CALL TWO WORKING DAYS  
 BEFORE YOU DIG  
**602-263-1100**  
**1-800-STAKE-IT**  
(OUTSIDE MARICOPA COUNTY)

**SEWER CONSTRUCTION NOTES**

- 1 INSTALL 8" PVC SEWER
- 7 INSTALL 4" BLDG CONNECTION
- 25 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-1
- 28 TRENCH PER DETAIL ON SHEET 44.

NOTE: TAPS SHOWN ON PLANS ARE FOR ILLUSTRATION PURPOSES ONLY. FINAL LOCATIONS WILL BE DETERMINED IN THE FIELD.

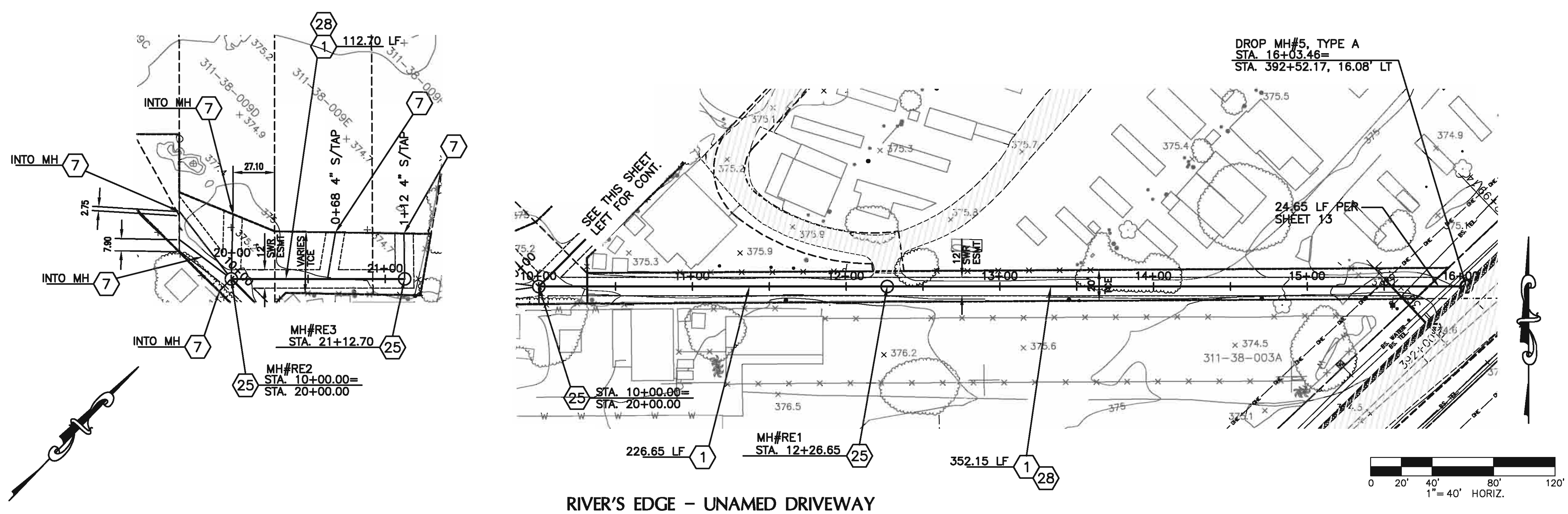
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 EXPIRES 3/31/17

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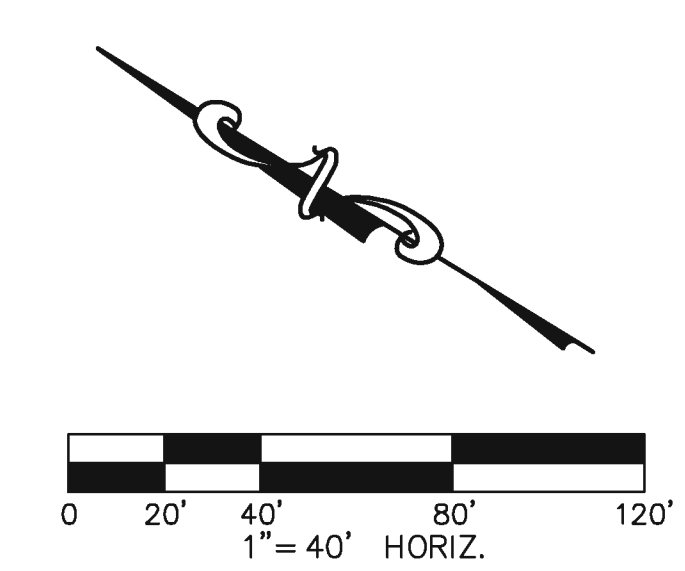
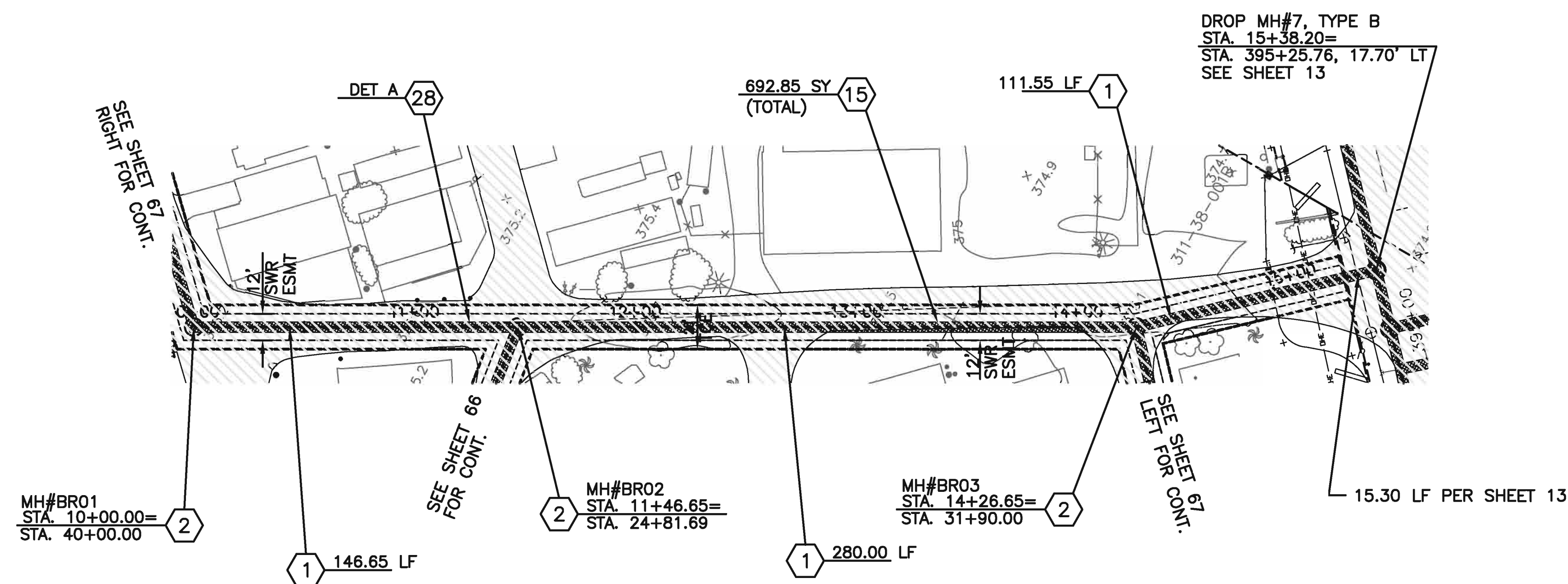


**RIVER'S EDGE - UNAMED DRIVEWAY**

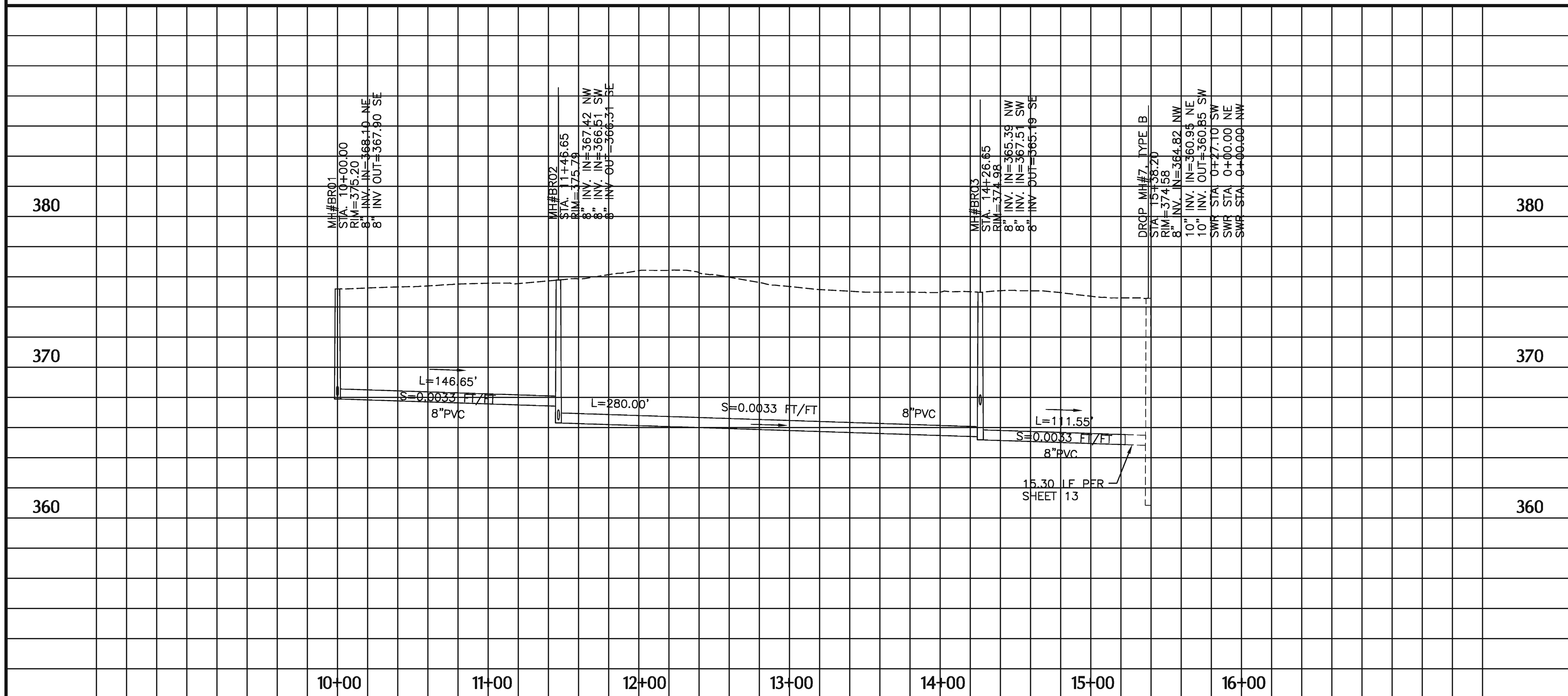
380	MH#RE2 STA. 20+00.00 RIM=374.93 8" INV. IN=367.33 8" INV. OUT=367.13	380	MH#RE2 STA. 10+00.00 RIM=374.93 8" INV. IN=367.33 8" INV. OUT=367.13	380	MH#RE1 STA. 12+26.65 RIM=375.61 8" INV. IN=366.88 8" INV. OUT=366.28	380	MH#5 STA. 16+03.46= STA. 392+52.17, 16.08' LT RIM=374.43 8" INV. IN=365.04 IW 10" INV. IN=361.47 SW 10" INV. OUT=361.37 NE SWR STA. 0+00.00 SW SWR STA. 2+46.45 NE	
370	EXISTING GROUND L=112.70' S=0.0033 FT/FT 8" PVC	370	EXISTING GROUND L=226.65' S=0.0033 FT/FT 8" PVC	370	EXISTING GROUND L=352.15' L=376.80' (TOTAL) S=0.0033 FT/FT 8" PVC	370	EXISTING GROUND L=24.65 LF PER SHEET 13	
360		360		360		360		
20+00	21+00	10+00	11+00	12+00	13+00	14+00	15+00	16+00

REVISIONS	BY	DATE





BRANSON'S - UNAMED DRIVEWAY



SEWER CONSTRUCTION NOTES

- 1 INSTALL 8" PVC SEWER
- 2 INSTALL 4' DIA MH PER MAG STD 420-1,2 2/ 24" DIA. FRAME & COVER PER MAG STD. 423-1
- 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL ON SHEET 44, "T" TOP.
- 25 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-1
- 28 TRENCH PER DETAIL ON SHEET 44.

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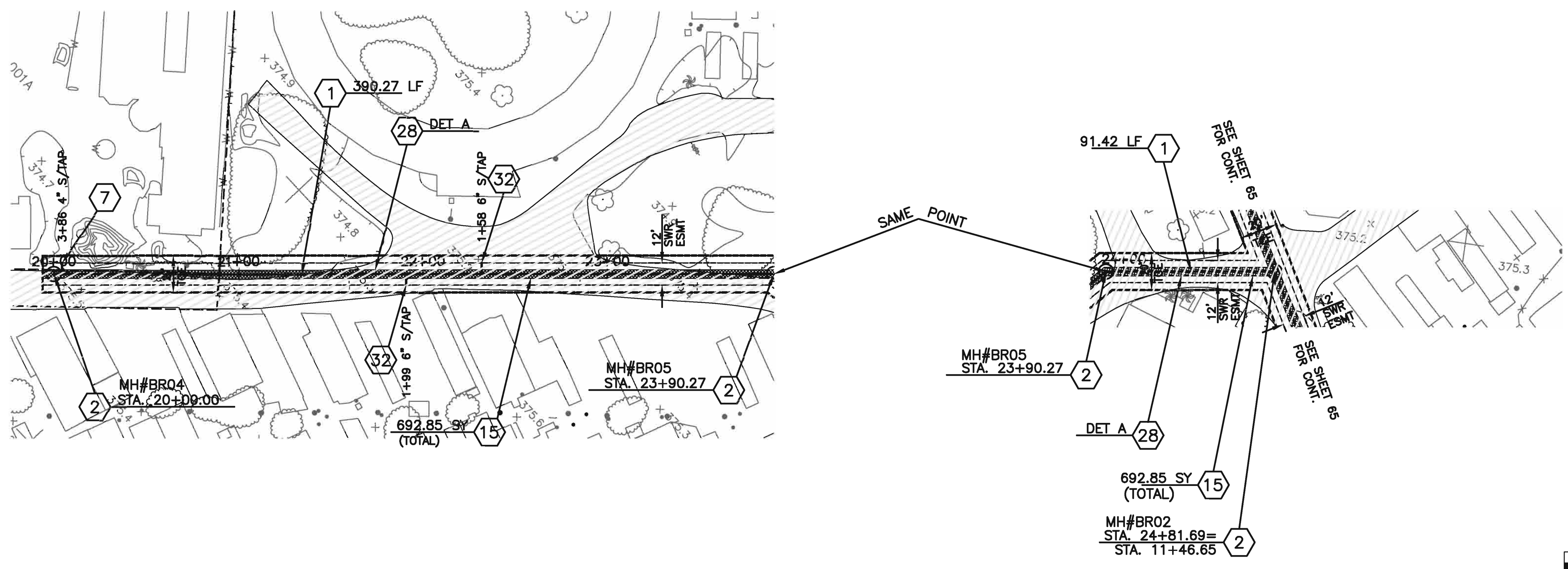
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
 PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
 DATE: 2/10/15  
 SCALE: 1"=40'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**BRANSONS RESORT**

**SHEET 65**



BRANSON'S - UNAMED ROADWAY

SEWER CONSTRUCTION NOTES

- 1 INSTALL 8" PVC SEWER
- 2 INSTALL 4' DIA MH PER MAG STD 420-1,2 W/24" DIA. FRAME & COVER PER MAG STD 423-1
- 7 INSTALL 4" BUILDING CONNECTION
- 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL. ON SHEET 44, "T" TOP.
- 25 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-1
- 28 TRENCH PER DETAIL ON SHEET 44.
- 32 INSTALL 6" BLDG CONNECTION PER DTL ON SHT 45.

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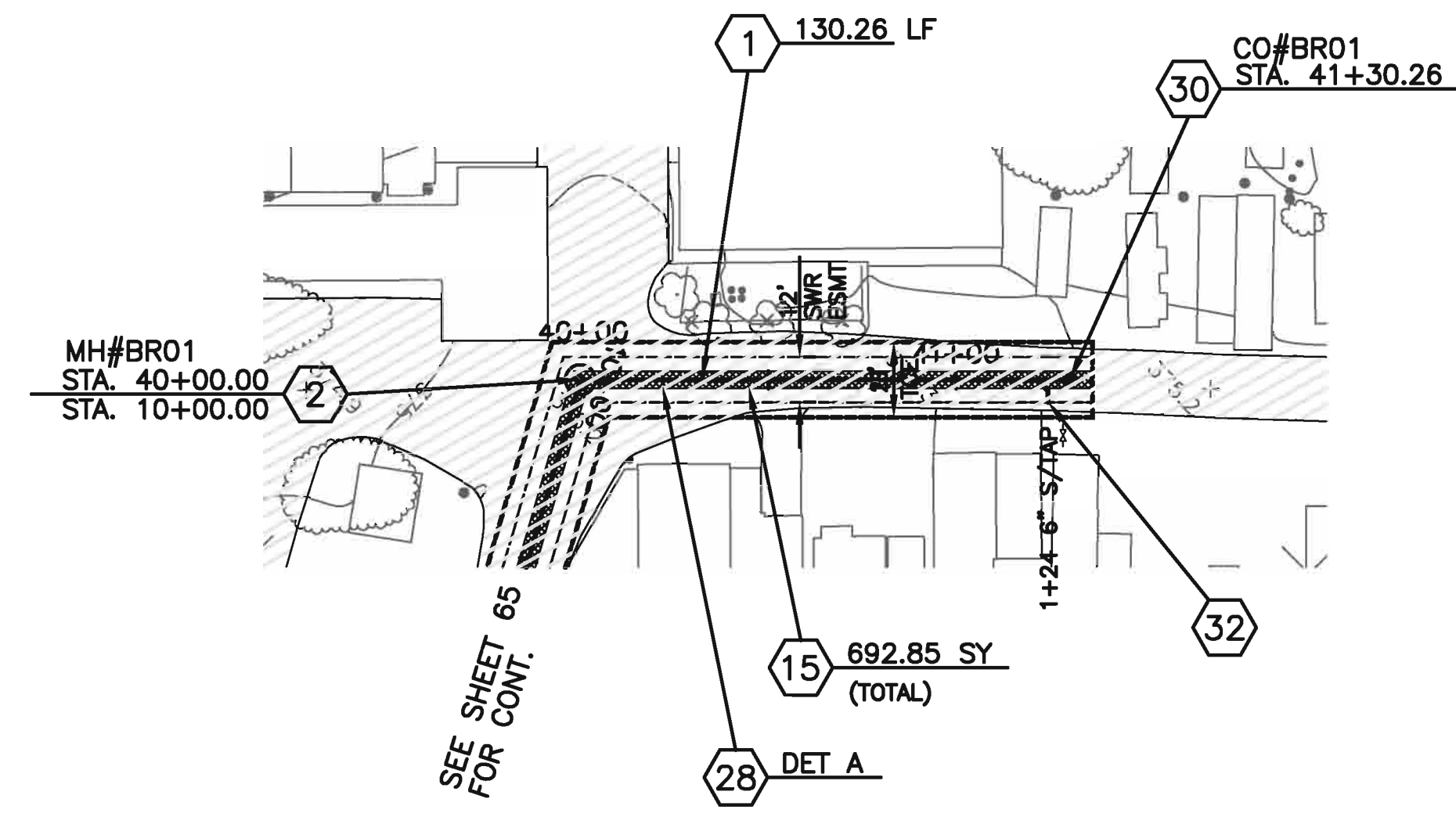
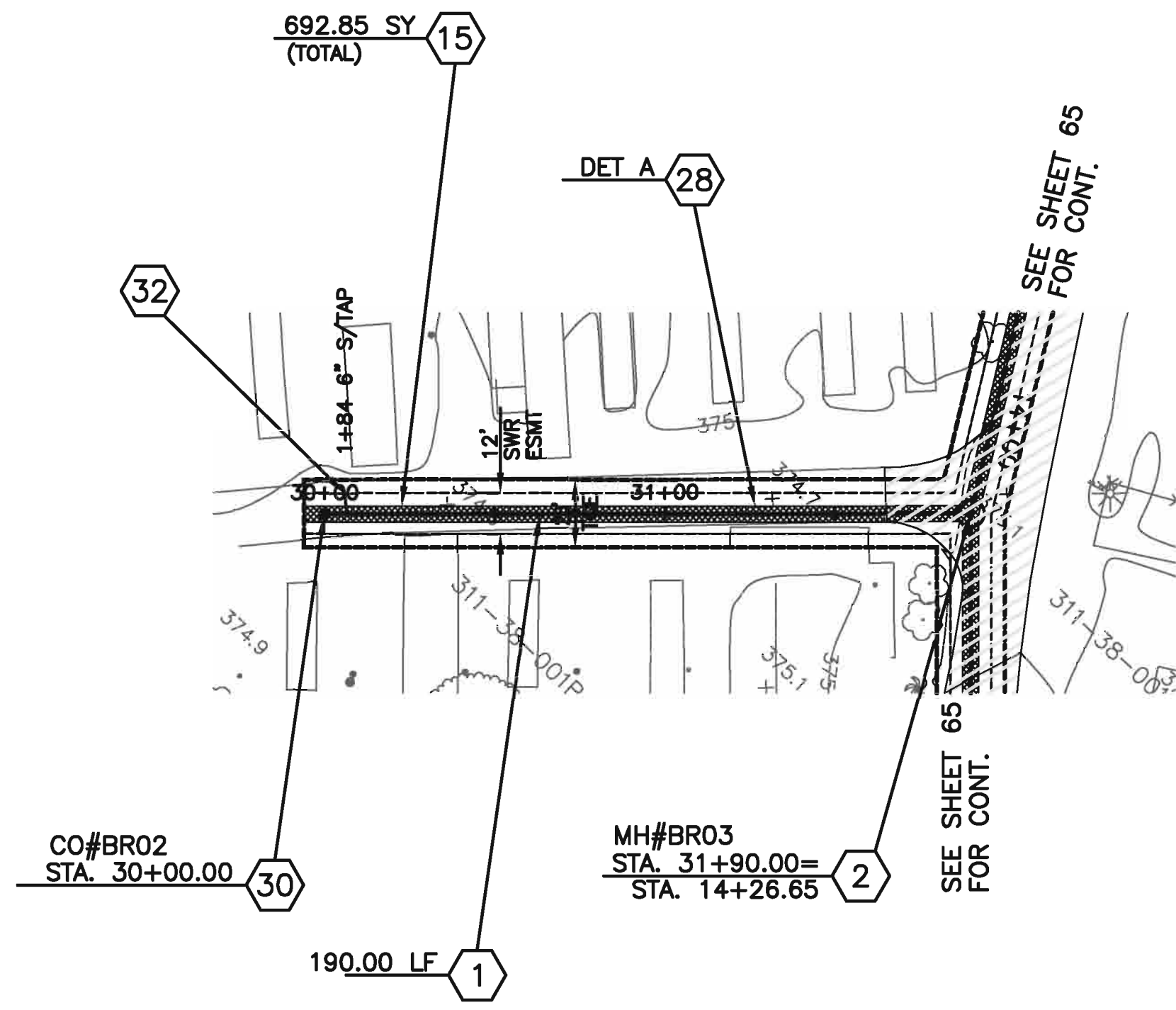
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380	MH#BR04 STA. 20+00.00 RIM=375.31 8" INV. OUT=-368.30 NE	MH#BR05 STA. 23+90.27 RIM=375.25 8" INV. IN=367.01 NE 8" INV. OUT=-366.81 SW	MH#BR05 STA. 23+90.27 RIM=375.25 8" INV. IN=367.01 NE 8" INV. OUT=-366.81 SW	MH#BR02 STA. 24+81.69 RIM=375.79 8" INV. IN=367.42 NW 8" INV. IN=366.51 SW 8" INV. OUT=-366.31 SE	380	
370	<p>U=390.27'</p> <p>S=0.0033 FT/FT</p> <p>8" PVC</p>			<p>91.42'</p> <p>S=0.0033 FT/FT</p> <p>8" PVC</p>	370	
360						360
20+00	21+00	22+00	23+00	24+00	25+00	

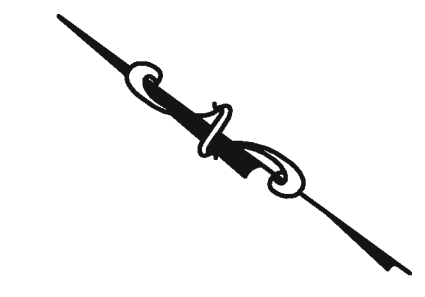
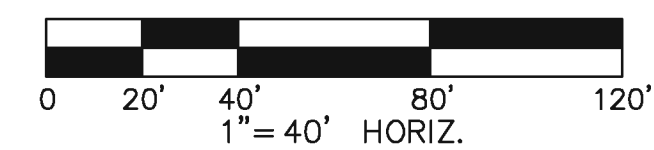
REVISIONS	BY	DATE



BRANSON'S RESORT

SEWER CONSTRUCTION NOTES

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- 2 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. FRAME & COVER PER MAG STD. 423-1
- 7 INSTALL 4" BLDG CONNECTION
- 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL ON SHEET 44, "T" TOP.
- 28 TRENCH PER DETAIL ON SHEET 44.
- 30 INSTALL CLEANOUT PER MAG STD. DET. 441, SIZE PER PLAN
- 32 INSTALL 6" BLDG CONNECTION



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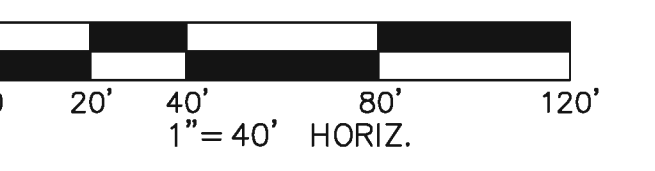
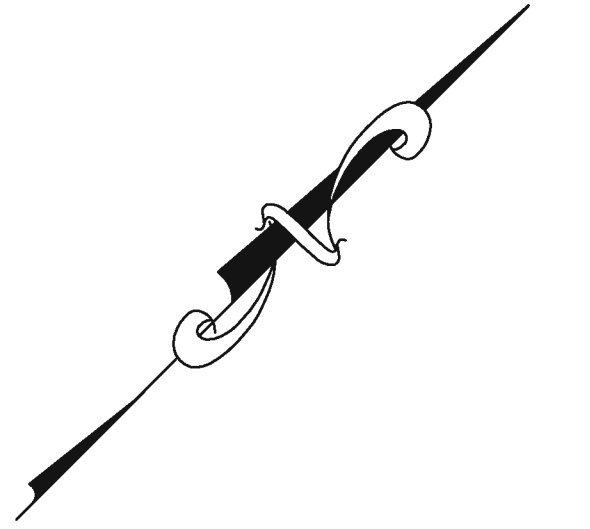
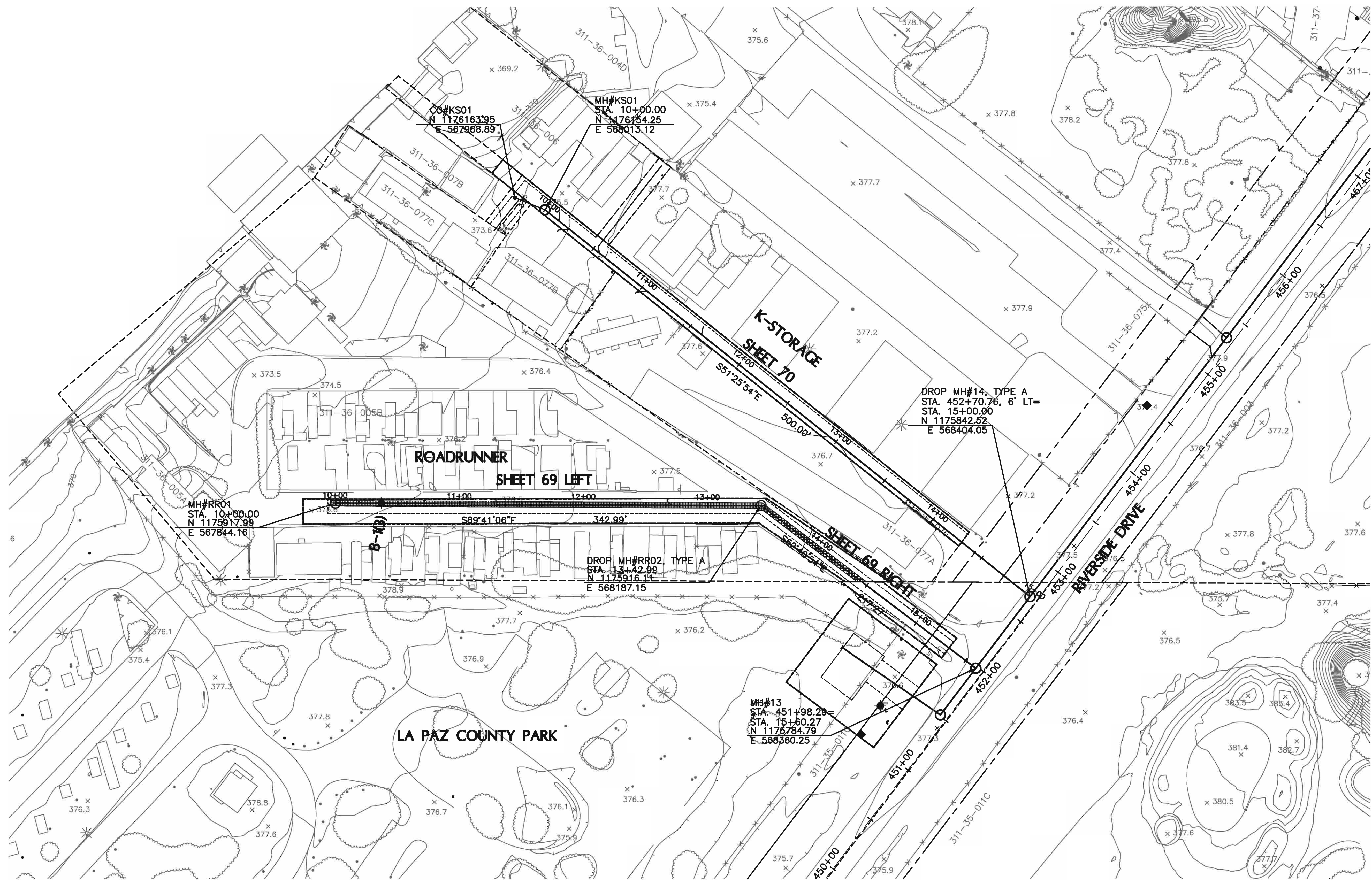
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370	L=190.00' S=0.0033 FT/FT 8" PVC		L=130.26' S=0.0033 FT/FT 8" PVC		370
360					360
	30+00	31+00	40+00	41+00	

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**GEOMETRIC CONTROL SHEET / KEYMAP**

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**BUCKSKIN SANITARY DISTRICT**  
 PHASE 4 SEWER  
 ROADRUNNER / K-STORAGE

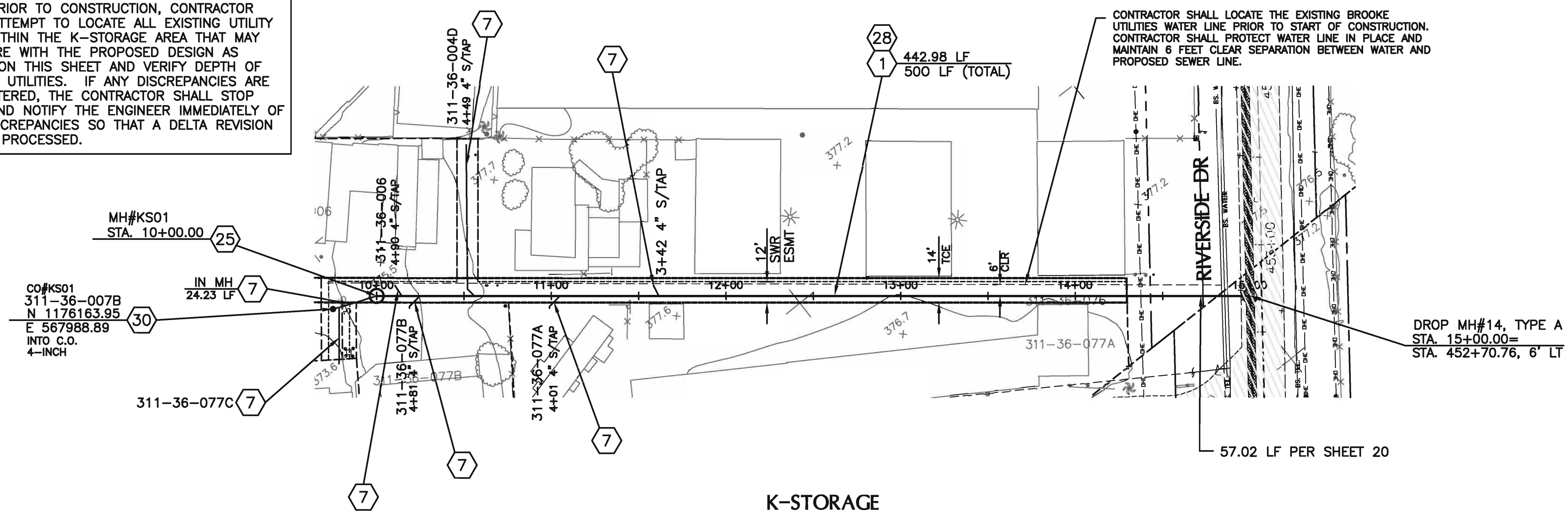
**SHEETS 68**

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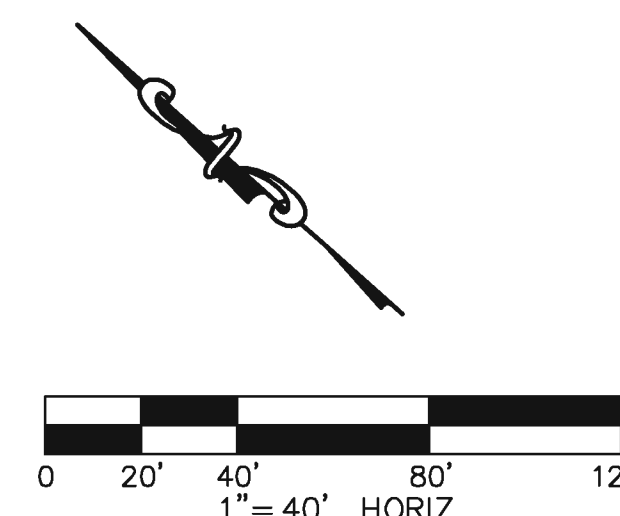
NOTE: PRIOR TO CONSTRUCTION, CONTRACTOR SHALL ATTEMPT TO LOCATE ALL EXISTING UTILITY LINES WITHIN THE K-STORAGE AREA THAT MAY INTERFERE WITH THE PROPOSED DESIGN AS SHOWN ON THIS SHEET AND VERIFY DEPTH OF EXISTING UTILITIES. IF ANY DISCREPANCIES ARE ENCOUNTERED, THE CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY OF SAID DISCREPANCIES SO THAT A DELTA REVISION MAY BE PROCESSED.

CONTRACTOR SHALL LOCATE THE EXISTING BROOKE UTILITIES WATER LINE PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL PROTECT WATER LINE IN PLACE AND MAINTAIN 6 FEET CLEAR SEPARATION BETWEEN WATER AND PROPOSED SEWER LINE.



**SEWER CONSTRUCTION NOTES**

- 1 INSTALL 8" PVC SEWER
- 7 INSTALL 4" BLDG CONNECTION
- 25 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. WATERTIGHT FRAME & COVER PER MAG STD. 424-1
- 28 TRENCH PER DETAIL ON SHEET 44.
- 30 INSTALL CLEANOUT PER MAG STD. DET. 441, SIZE PER PLAN



NOTE:  
CONTRACTOR SHALL ALLOW FOR INGRESS/EGRESS AT ALL TIMES DURING CONSTRUCTION.

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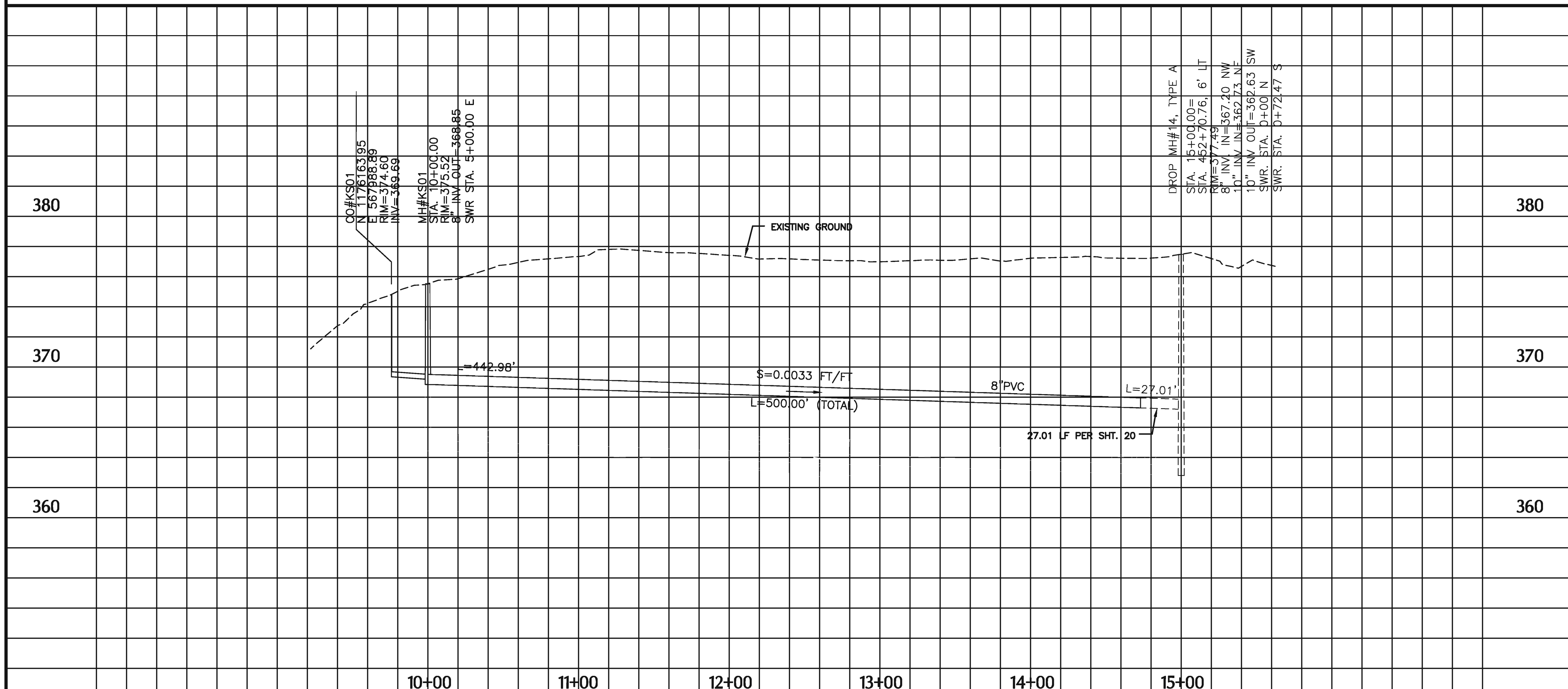
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**ENERGY AND WATER SOLUTIONS, LLC**  
CIVIL ENGINEERING LAND DEVELOPMENT WATER RESOURCES

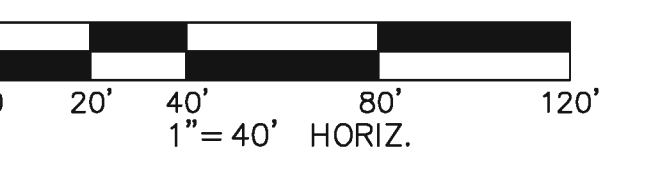
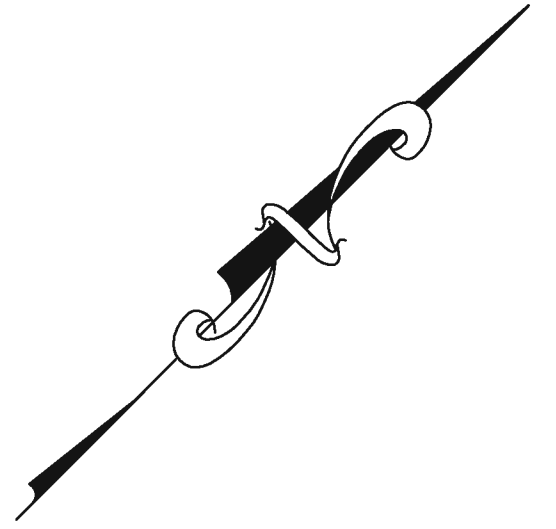
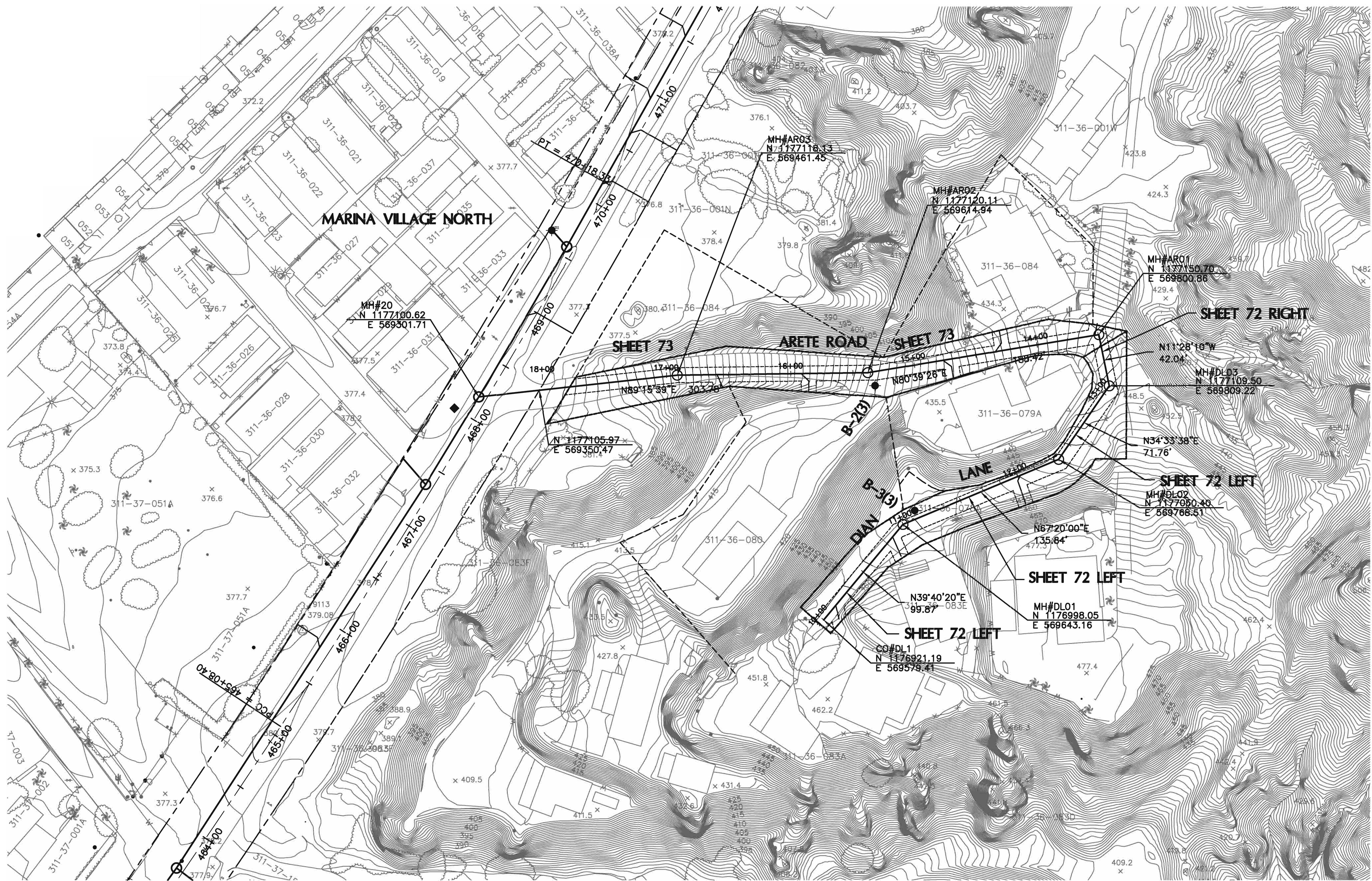
P.O. BOX 20112, FOUNTAIN HILLS, AZ 85269  
PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
DATE: 2/8/15  
SCALE: 1"=40'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
**PHASE 4 SEWER**  
**K-STORAGE**

**SHEET 70**



*Glenn A. Panaro*  
 PROFESSIONAL ENGINEER  
 42251  
 GLENN A. PANARO  
 State of Arizona  
 EXPIRES 3/31/17

## GEOMETRIC CONTROL SHEET / KEYMAP

**ENERGY AND WATER SOLUTIONS, LLC**  
 CIVIL ENGINEERING    LAND DEVELOPMENT    WATER RESOURCES

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 PHONE: 602.309.3824    FAX: 480.656.9778    EMAIL: gpanaro@cox.net

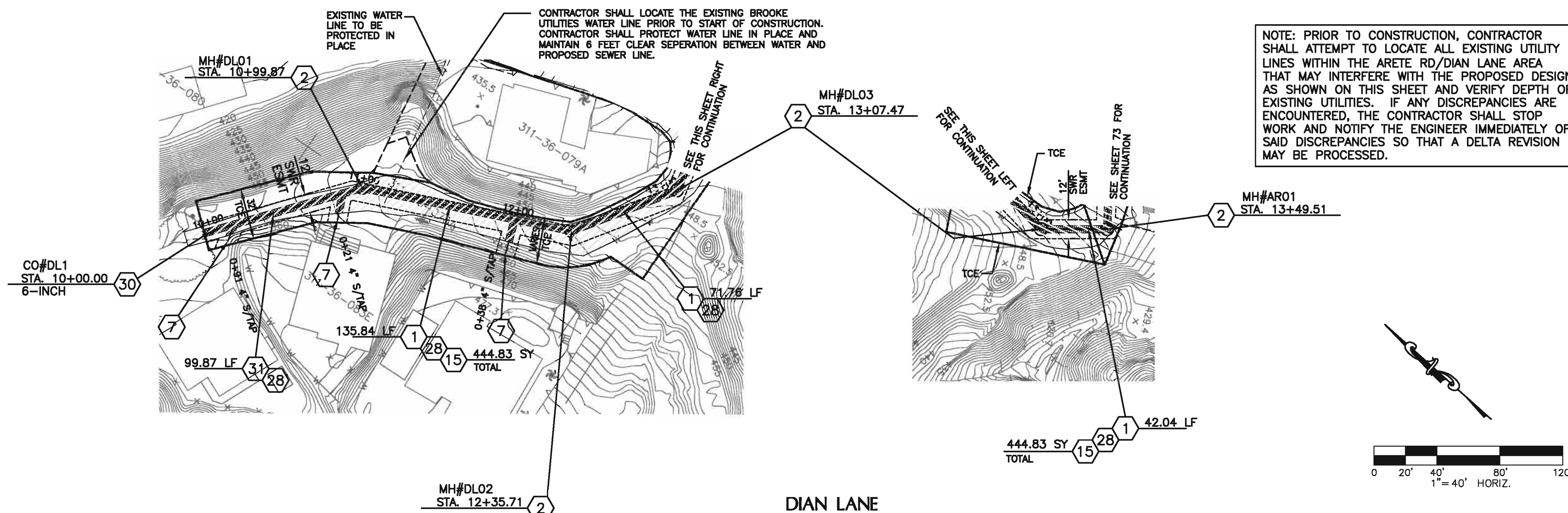
JOB #: \_\_\_\_\_  
 DATE: 2/8/15  
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REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
 PHASE 4 SEWER  
 ARETE ROAD / DIAN LANE

CALL TWO WORKING DAYS  
 BEFORE YOU DIG  
**602-263-1100**  
**1-800-STAKE-IT**  
(OUTSIDE MARICOPA COUNTY)

**71**



**SEWER CONSTRUCTION NOTES**

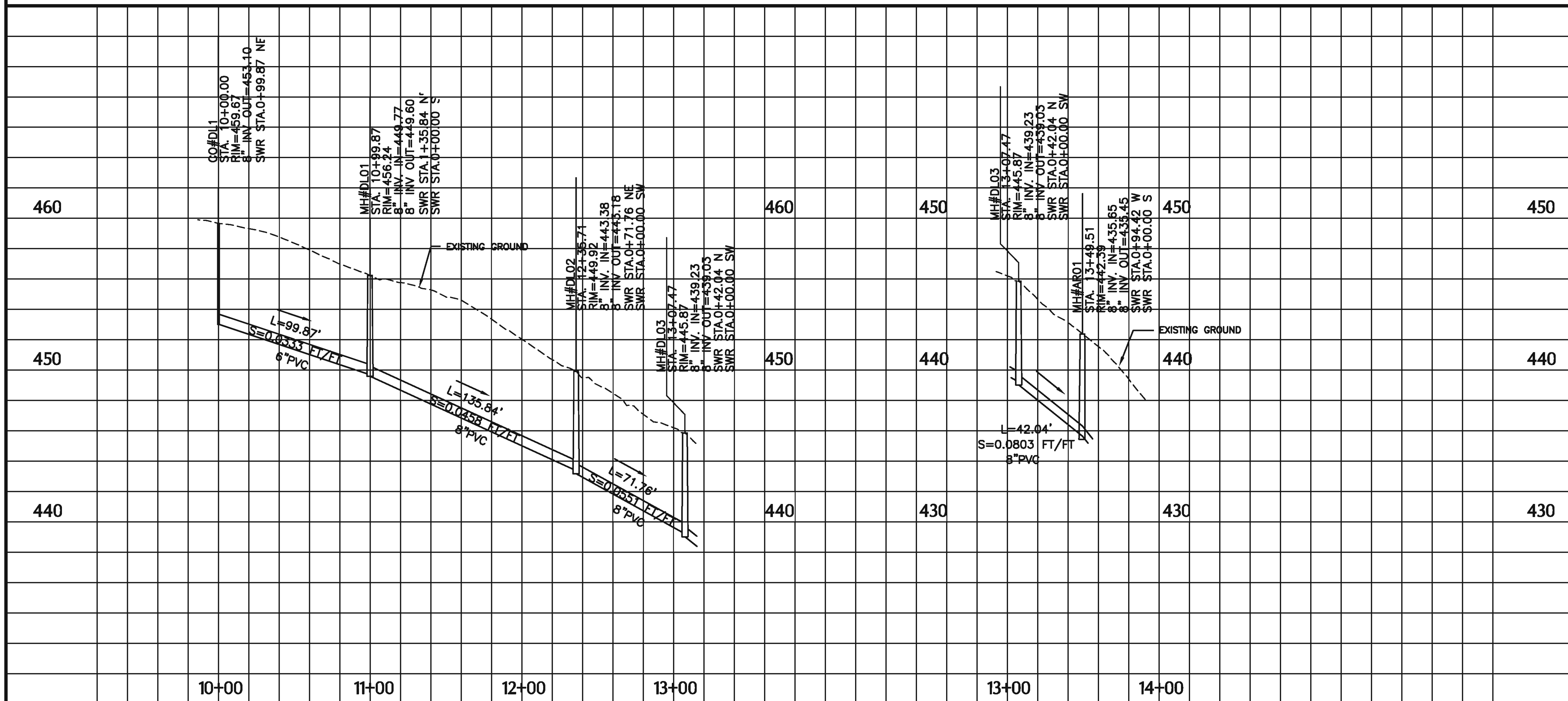
- 1 INSTALL 8" PVC SEWER
- 2 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. FRAME & COVER PER MAG STD. 423-1
- 7 INSTALL 4" BLDG CONNECTION PER DTL ON SHEET 45
- 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL ON SHEET 44, "T" TOP.
- 28 TRENCH PER DETAIL ON SHEET 44.
- 30 INSTALL CLEANOUT PER MAG STD. DET. 441, SIZE PER PLAN
- 31 INSTALL 6" PVC SEWER

NOTE:  
TAPS SHOWN ON PLANS ARE FOR ILLUSTRATION PURPOSES ONLY. FINAL LOCATIONS WILL BE DETERMINED IN THE FIELD.

NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.

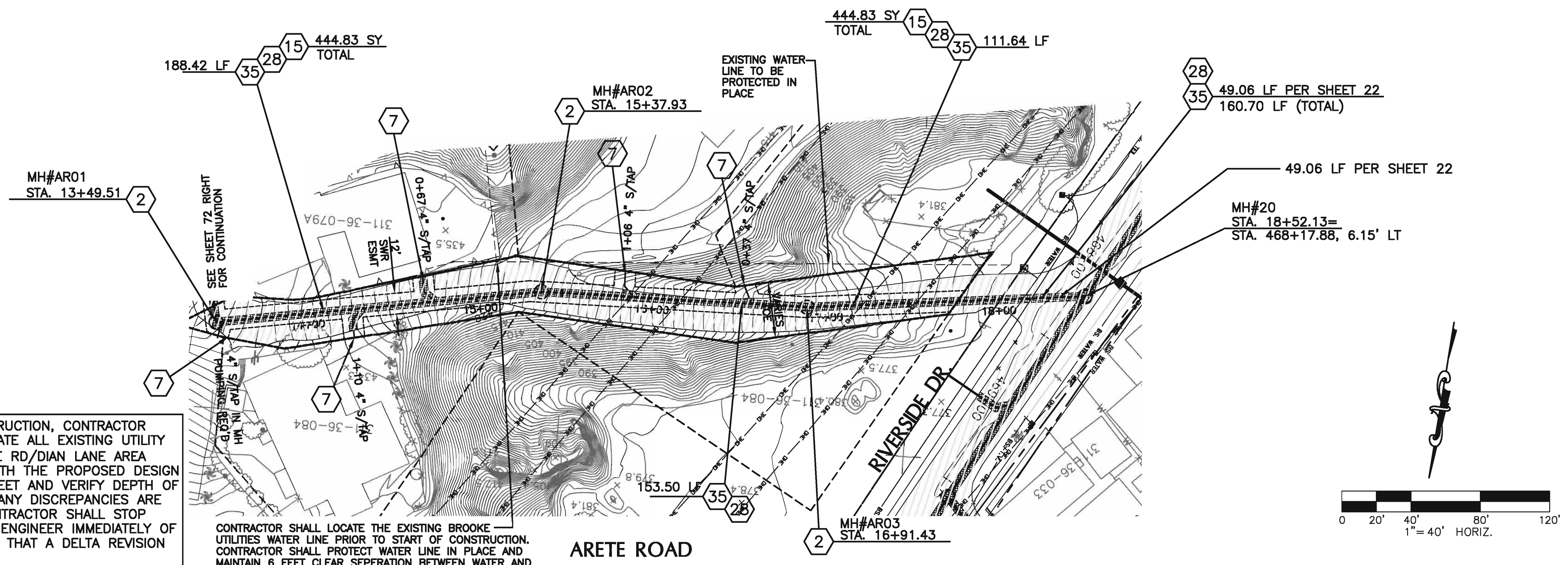
NOTE:  
INFORMATION ON THE PRESENCE AND LOCATION OF UTILITIES IS VERY LIMITED IN THIS COMMUNITY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE PRESENCE OF AND TO PROTECT ANY OVERHEAD AND UNDERGROUND UTILITIES OR STRUCTURES PRIOR TO COMMENCEMENT OF CONSTRUCTION, WHETHER OR NOT SAID UTILITIES ARE SHOWN ON THESE PLANS. WHERE REQUIRED, CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS TO LOCATE UNDERGROUND UTILITIES OR STRUCTURES.

NOTE:  
BUCKSKIN SANITARY DISTRICT HAS MADE EVERY ATTEMPT, UTILIZING STANDARD ENGINEERING PRACTICES, TO DESIGN THE BACKBONE SEWER IN PHASE 4 TO ALLOW THE MAJORITY OF THE PROPERTIES LOCATED WITHIN PHASE 4 TO CONNECT BY MEANS OF GRAVITY. HOWEVER, THERE MAY BE CIRCUMSTANCES THAT REQUIRE CERTAIN PROPERTIES TO CONNECT VIA PUMPING SYSTEMS. CONTRACTORS MAKING BUILDING CONNECTIONS FOR INDIVIDUAL PROPERTY OWNERS TO DISTRICT FACILITIES SHALL VERIFY HORIZONTAL AND VERTICAL CONNECTION PRIOR TO THE START OF CONSTRUCTION. A SEWER CONNECTION PERMIT IS REQUIRED PRIOR TO CONSTRUCTION.



REVISIONS	BY	DATE





NOTE: PRIOR TO CONSTRUCTION, CONTRACTOR SHALL ATTEMPT TO LOCATE ALL EXISTING UTILITY LINES WITHIN THE ARETE RD/DIAN LANE AREA THAT MAY INTERFERE WITH THE PROPOSED DESIGN AS SHOWN ON THIS SHEET AND VERIFY DEPTH OF EXISTING UTILITIES. IF ANY DISCREPANCIES ARE ENCOUNTERED, THE CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY OF SAID DISCREPANCIES SO THAT A DELTA REVISION MAY BE PROCESSED.

CONTRACTOR SHALL LOCATE THE EXISTING BROOKE UTILITIES WATER LINE PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL PROTECT WATER LINE IN PLACE AND MAINTAIN 6 FEET CLEAR SEPERATION BETWEEN WATER AND PROPOSED SEWER LINE.

- ### SEWER CONSTRUCTION NOTES
- 2 INSTALL 4' DIA. MH PER MAG STD. 420-1,2 W/ 24" DIA. FRAME & COVER PER MAG STD. 423-1
  - 7 INSTALL 4" BLDG CONNECTION
  - 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL ON SHEET 44, "T" TOP.
  - 28 TRENCH PER DETAIL ON SHEET 44.
  - 35 INSTALL 8-INCH DIA. EPOXY LINED DUCTILE IRON PIPE

NOTE: TAPS SHOWN ON PLANS ARE FOR ILLUSTRATION PURPOSES ONLY. FINAL LOCATIONS WILL BE DETERMINED IN THE FIELD.

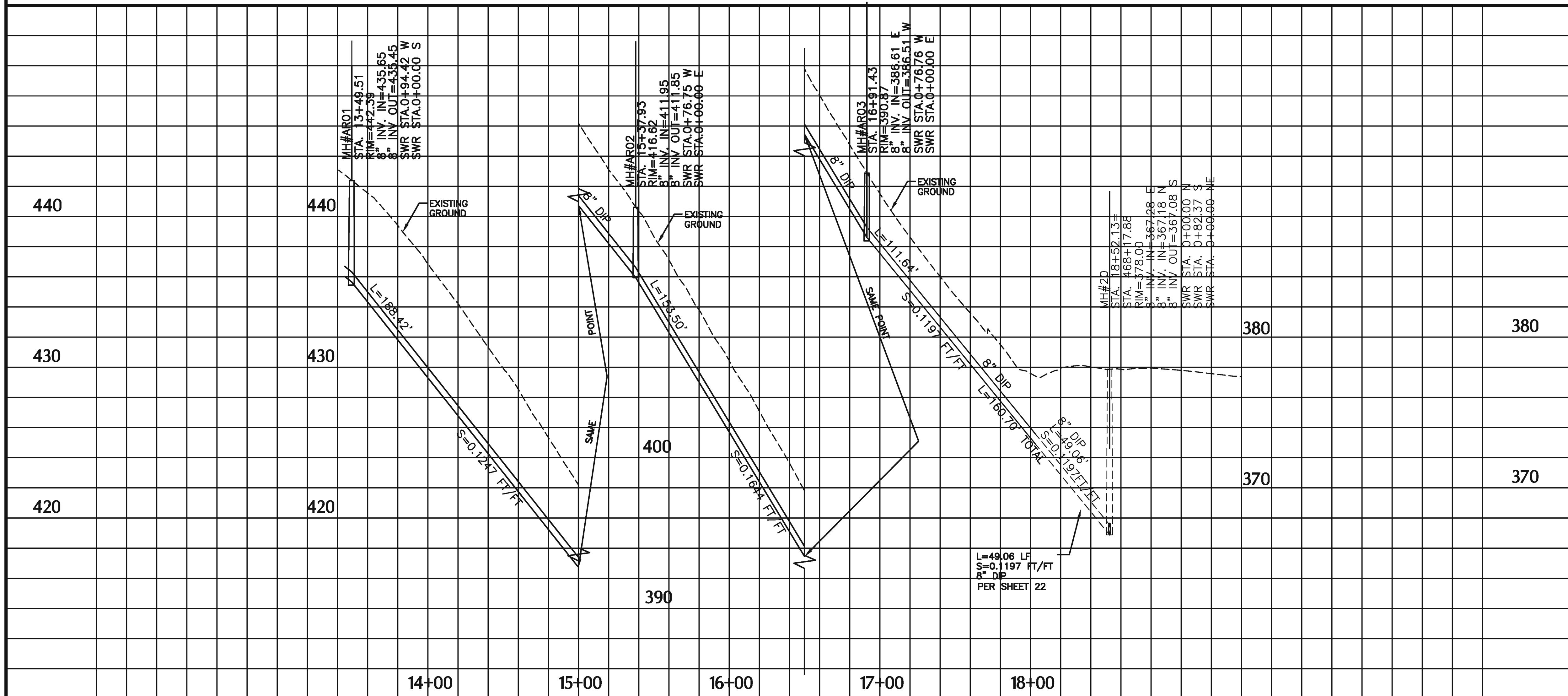
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*Glenn A. Panaro*  
 PROFESSIONAL ENGINEER  
 42251  
 GLENN A. PANARO  
 Date Signed 8/24/15  
 ARIZONA U.S.A.  
 EXPIRES 3/31/17

CALL TWO WORKING DAYS BEFORE YOU DIG  
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 1-800-STAKE-IT  
 (OUTSIDE MARICOPA COUNTY)



**ENERGY AND WATER SOLUTIONS, LLC**  
 CIVIL ENGINEERING LAND DEVELOPMENT WATER RESOURCES

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 PHONE: 602.309.3824 FAX: 480.656.9778 EMAIL: gpanaro@cox.net

JOB #: \_\_\_\_\_  
 DATE: 2/10/15  
 SCALE: 1"=40'

REVISIONS	BY	DATE

**BUCKSKIN SANITARY DISTRICT**  
 PHASE 4 SEWER  
 ARETE ROAD  
 SHEET 73

**SEWER CONSTRUCTION NOTES**

- 1 INSTALL 8" PVC SEWER
- 15 SAWCUT, REMOVE & REPLACE ASPHALT PVMT. PER DTL ON SHEET 44, T-TOP(INCLUDES STUBS AND TAPS WHERE APPLICABLE)
- 24 CONSTRUCT A DROP SEWER CONNECTION PER MAG STD. DET. 426, TYPE A OR B, SEE PLAN
- 26 INSTALL 5' DIA MH PER MAG STD 420-1.2 W/ 30" DIA WATERTIGHT FRAME & COVER PER MAG STD 424-2
- 28 TRENCH PER DETAIL ON SHEET 44.

NOTE:  
CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING EMBEDDED SIGNAL WIRES AT SECURITY GATE.

NOTE:  
CONTRACTOR SHALL USE EXTREME CAUTION WHEN IDENTIFYING, UNCOVERING AND HANDLING ALL UTILITIES.

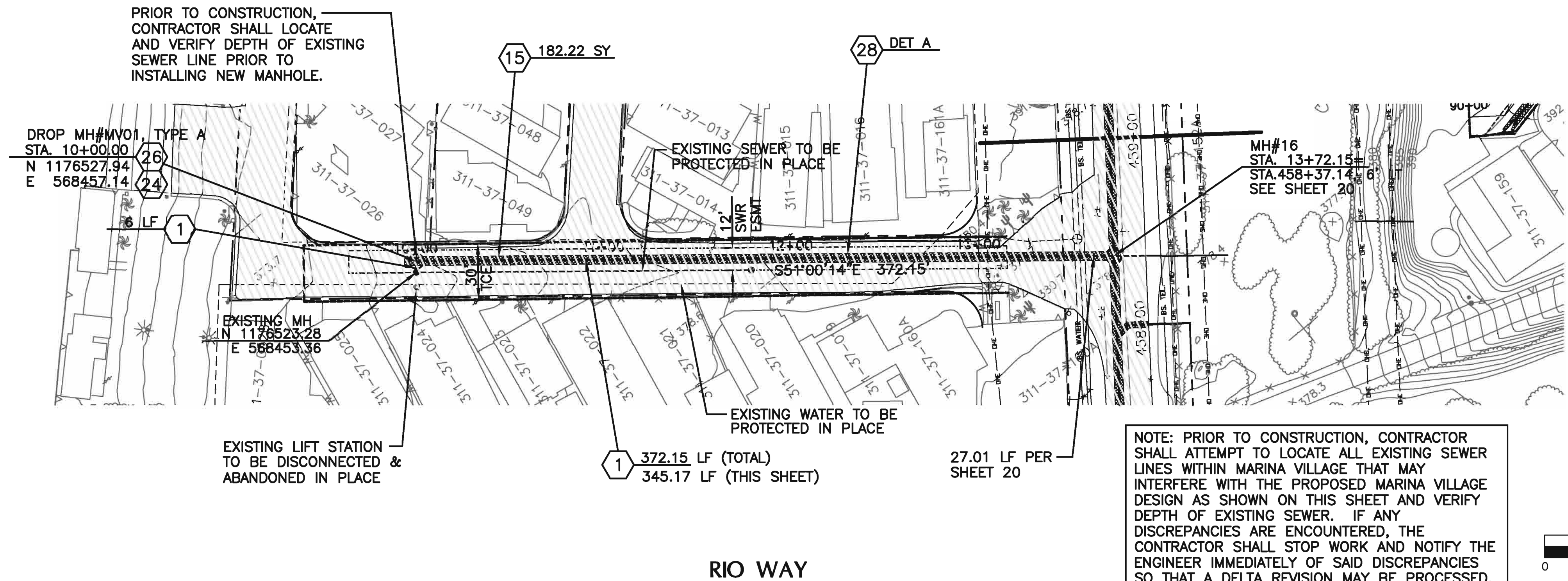
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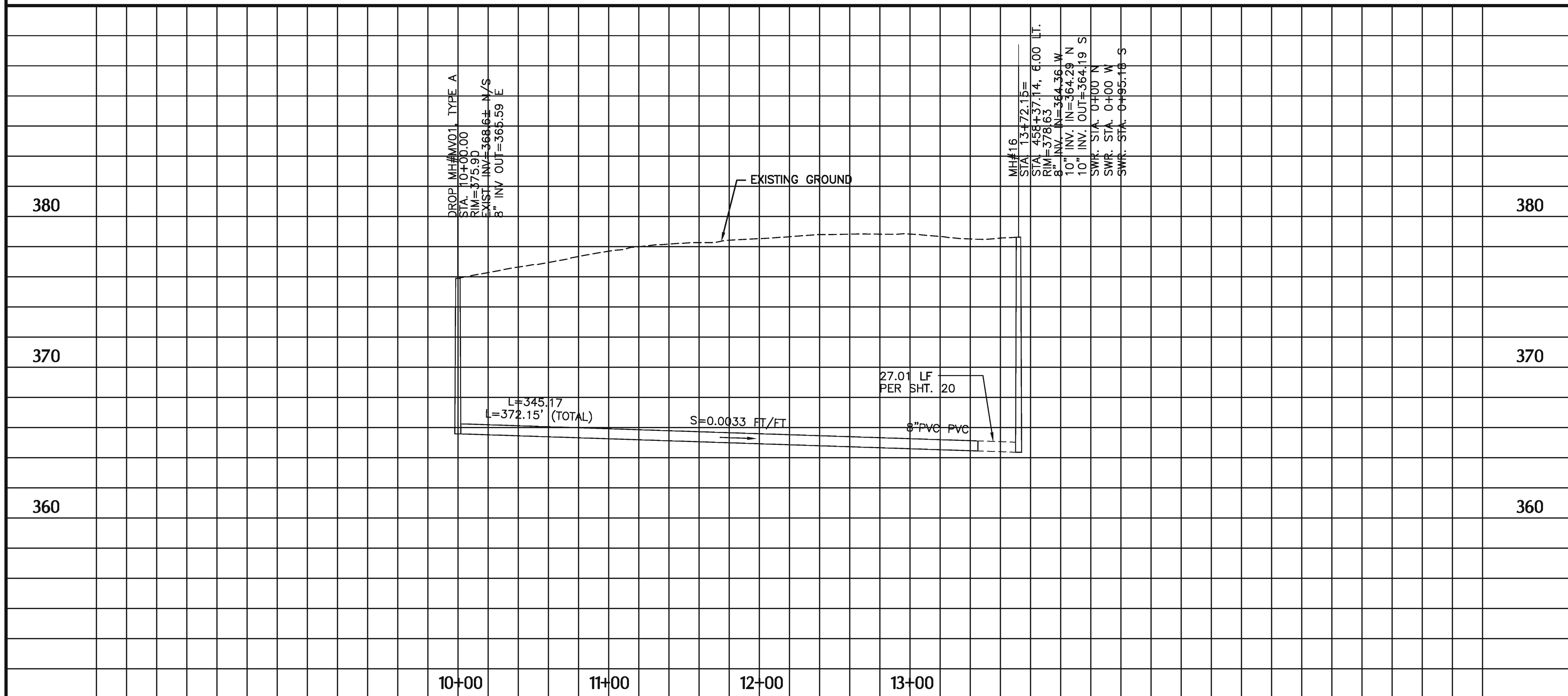


EXPIRES 3/31/17

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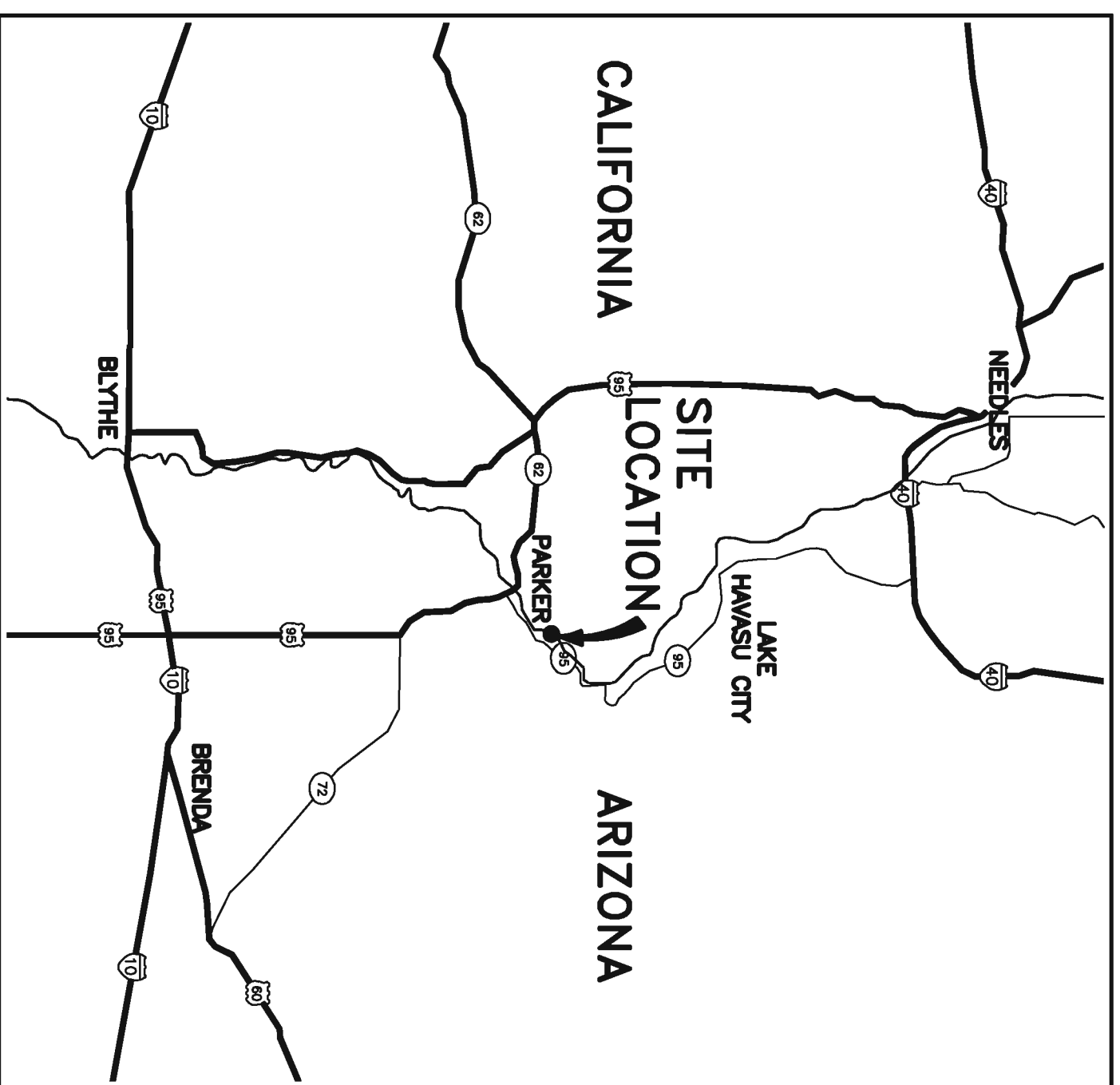
NOTE: PRIOR TO CONSTRUCTION, CONTRACTOR SHALL ATTEMPT TO LOCATE ALL EXISTING SEWER LINES WITHIN MARINA VILLAGE THAT MAY INTERFERE WITH THE PROPOSED MARINA VILLAGE DESIGN AS SHOWN ON THIS SHEET AND VERIFY DEPTH OF EXISTING SEWER. IF ANY DISCREPANCIES ARE ENCOUNTERED, THE CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY OF SAID DISCREPANCIES SO THAT A DELTA REVISION MAY BE PROCESSED.



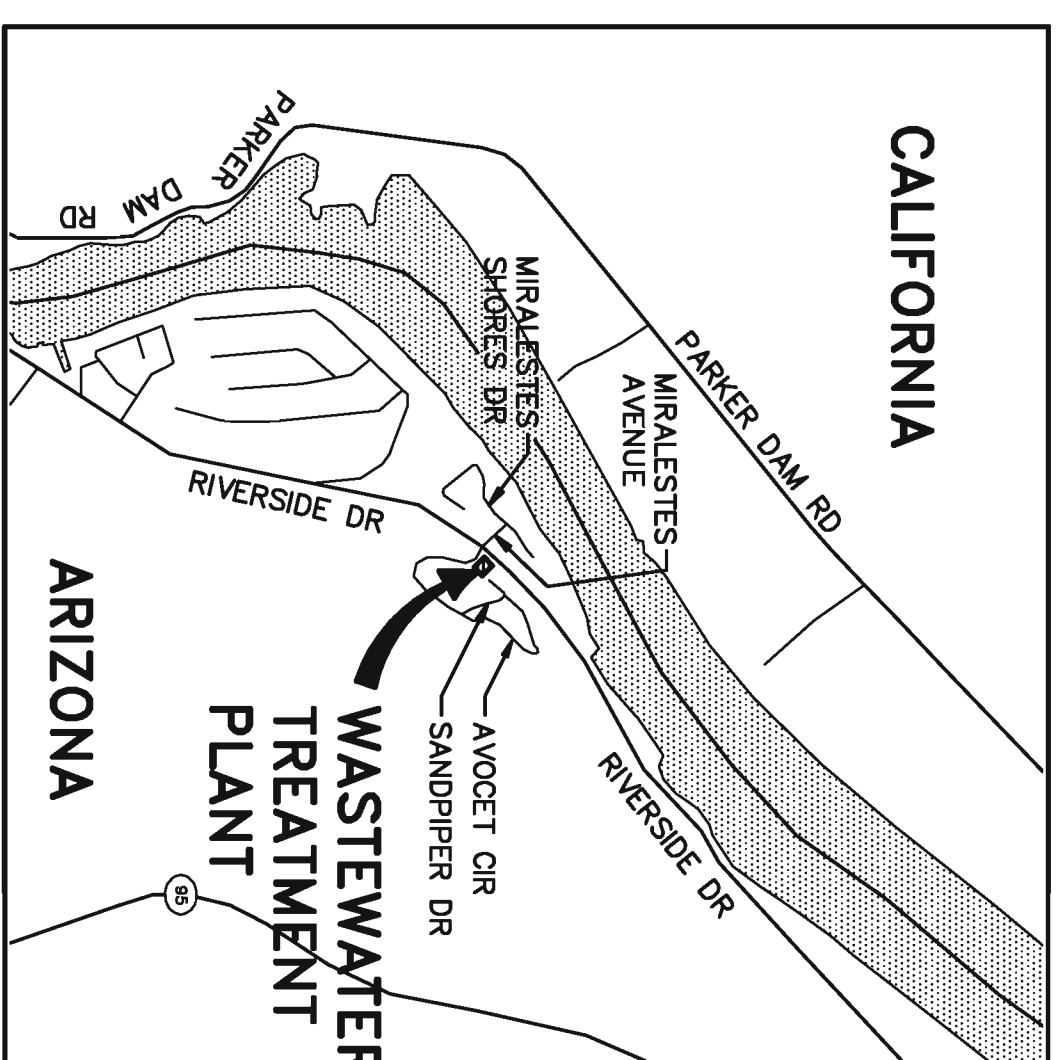
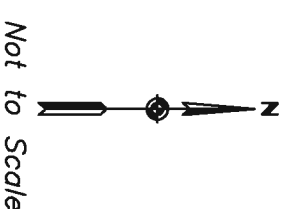
# WASTEWATER TREATMENT PLANT IMPROVEMENTS BUCKSKIN SANITARY DISTRICT LA PAZ COUNTY, ARIZONA DECEMBER 2015

**UTILITY SERVICES**

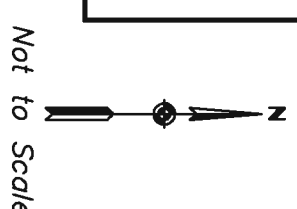
SEWER	BUCKSKIN SANITARY DISTRICT
WATER	BUCKSKIN UTILITIES
GAS	SOUTHWEST GAS
ELECTRICITY	A.P.S.
COMMUNICATIONS	FRONTIER COMMUNICATIONS
COMMUNICATIONS	SUDENLINK COMMUNICATIONS
POLICE	LA PAZ COUNTY SHERIFF
FIRE	BUCKSKIN FIRE DEPARTMENT
STORM DRAINAGE	LA PAZ COUNTY



**LOCATION MAP**



**VICINITY MAP**



**SURVEY CONTROL**

BEARINGS & COORDINATES SHOWN ARE BASED UPON GRID COORDINATES (CONVERTED TO GROUND) AS LISTED AS SECONDARY CONTROL, BEING SHOWN IN THE RIGHT-OF-WAY PLANS OF THE PARKER BUSINESS ROUTE SR95B, SR 95B TURNBACK, 095B LA 148 H4696 01R, S 895-A-800 PREPARED FOR THE ARIZONA DEPARTMENT OF TRANSPORTATION BY ARCADIS GERAGHTY 7 MILLER, PROJECT NO. AZ 000383, DRAWING NO. D-15-I-015 HAVING A STAMP DATE OF 7/15/03.

ELEVATIONS SHOWN HEREIN ARE BASED ON AN ADOT ALUMINUM CAP LOCATED AT STATION 236+70.9 AS SHOWN ON THE SURVEY CONTROL SHEET CREATED BY STANLEY CONSULTANTS PREPARED FOR THE BUCKSKIN SANITARY DISTRICT ON SHEET 6 OF 80, PROJECT NO. 17471.02.00 HAVING PRINT DATE OF 2/9/07. ELEVATION = 390.81 (NGVD 29), N = 1158939.85, E = 558213.86

**APPROVAL**

BUCKSKIN SANITARY DISTRICT

DATE

**DRAWING INDEX**

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G-02	GENERAL NOTES
G-03	ABBREVIATIONS, SYMBOLS AND CIVIL LEGEND
G-04	HYDRAULIC PROFILE AND DESIGN CRITERIA
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C-01	NEW FACILITIES SITE AND YARD PIPING PLAN
C-02	ODOR CONTROL EQUIPMENT AND DIESEL GENERATOR PLAN
C-03	MISCELLANEOUS DETAILS AND SECTIONS
<b>MECHANICAL PROCESS</b>	
M-01	MECHANICAL SCREEN HEADWORKS PLAN, SECTIONS, AND DETAILS
M-02	TREATMENT BUILDING - REMOVALS PLAN
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M-04	ODOR CONTROL LINN AND DIESEL GENERATOR DETAILS
M-05	BAR SCREEN DETAILS AND SECTIONS
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E-03	ELECTRICAL PANEL SCHEDULE
E-04	ELECTRICAL SITE PLAN
E-05	ELECTRICAL BLOCK DIAGRAM
E-06	ELECTRICAL TYPICAL DETAILS

**ENGINEER**

NOS ENGINEERS  
202 E. EARL DR. #110  
PHOENIX, AZ 85251  
PHONE: (602) 629-0208  
FAX: (602) 629-0223

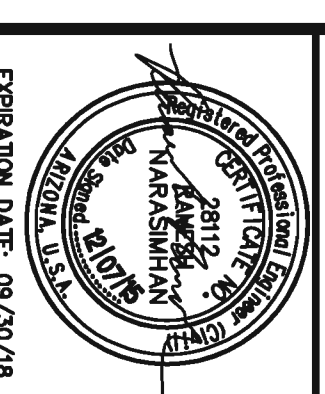
**SEWER OWNER/OPERATOR**

BUCKSKIN SANITARY DISTRICT  
8832 RIVERSIDE DRIVE #4  
PARKER, ARIZONA 85344  
PHONE: (928) 667-7197  
FAX: (928) 667-1797

BUCKSKIN SANITARY DISTRICT  
WASTEWATER TREATMENT PLANT IMPROVEMENTS

COVER SHEET

No.	Revision Note	Date	Drawn	Check



**NOS**  
Engineers  
202 E. Earl Drive Suite 110  
Phoenix, AZ 85251  
Phone (602) 629-0206  
www.noseng.com

Drawn by: KB KWB
Design by: SW SW
Approved by: RNRN
Date: 12/07/15
Project No.: 0524
Sheet No.: G-01

**GENERAL NOTES:**

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS. ALL WORK AND MATERIALS NOT IN CONFORMANCE WITH THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
2. CONTRACTOR TO OBTAIN ANY PERMITS REQUIRED UNLESS OTHERWISE INDICATED. REFER TO SPECIFICATION SECTION 01030. CONTRACTOR TO PROVIDE APPROPRIATE DUST CONTROL MEASURES DURING CONSTRUCTION.
3. CONTRACTOR SHALL COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AND BARRICADING AS PER CURRENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. CONTRACTOR TO COORDINATE ALL DRIVEWAY LOCATIONS, AND REMOVAL OR RESETS OF PRIVATE PROPERTY PINS ON ALL STREETS WITH OWNERS.
4. NOT USED.
5. BUILDING CODE INSPECTION WILL BE PERFORMED BY LA PAZ COUNTY.
  - a. DAMAGE WORK TO SUCH UTILITIES CAUSED AS A RESULT OF THE WORK.
  - b. DAMAGES TO EXISTING WALKS, WALLS, CURBS, DRIVES, TREES, LANDSCAPING, AND PAVING.
7. CONTRACTOR TO PATCH/REPAIR EXISTING UTILITIES AND BURIED PIPING AND ELECTRICAL AHEAD OF CONSTRUCTION, TO ALLOW AND/OR TIE-IN FITTINGS WHICH MAY BE REQUIRED.
8. CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL PLANS FOR DEMOLITION ITEMS.
9. ALL UTILITIES SHALL BE PROTECTED FROM DAMAGE AS A RESULT OF THE WORK. THE CONTRACTOR SHALL RELOCATE, REPAIR OR REPLACE AT HIS EXPENSE, ANY AFFECTED UTILITIES TO THE SATISFACTION OF THE UTILITIES OR THE NTLA.
10. PROVIDE TEMPORARY THRUST RESTRAINT FOR EXISTING PIPING WHENEVER THE WORK REQUIRES. CONTRACTOR TO REPLACE OR RESTORE THE EXISTING RESTRAINT SYSTEM TO LIKE-NEW CONDITION.
11. CONTRACTOR SHALL PROTECT THE ADJACENT PROPERTY AND IMPROVEMENTS THERETO FROM ANY DAMAGE DURING CONSTRUCTION. ANY DAMAGE TO ADJACENT PROPERTY OR IMPROVEMENTS MUST BE REPAIRED OR REPLACED TO THE PROPERTY OWNER'S SATISFACTION, AT THE CONTRACTOR'S EXPENSE.
12. DIMENSIONS AND ELEVATIONS FOR EQUIPMENT INSTALLATION TO BE DETERMINED BASED UPON EQUIPMENT MANUFACTURER SELECTED.
13. WHERE INDICATED, DIMENSIONS AND ELEVATIONS TO BE FIELD VERIFIED.
14. EXISTING EQUIPMENT TO BE REMOVED AND SALVAGED WILL BE MARKED BY ENGINEER PRIOR TO WORK BEGINNING, UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS.
15. CONTRACTOR TO MAINTAIN ACCESS TO EXISTING WASTEWATER TREATMENT PLANT FACILITIES FOR MAINTAINING OPERATIONS DURING CONSTRUCTION. IF THE WORK REQUIRES INTERRUPTION OF EXISTING ACCESS TO OPERATING FACILITIES, THE CONTRACTOR SHALL PROVIDE TEMPORARY ACCESS (APPROVED BY BUCKSKIN SANITARY DISTRICT) TO THESE FACILITIES. THE WASTEWATER TREATMENT PLANT IS CRITICAL TO BUCKSKIN SANITARY DISTRICT OPERATIONS AND A SHUT DOWN WILL NOT BE PERMITTED.
16. THE CONTRACTOR SHALL ADJUST ALL EXISTING MANHOLES, VALVE BOXES, CLEANOUTS, BLIND FLANGED PIPING, AND FIRE HYDRANTS WITHIN WORK LIMITS REQUIRED TO MATCH PROPOSED FINAL GRADE.
17. GOVERNING BUILDING CODES:
  - 2006 INTERNATIONAL BUILDING CODE
  - 2005 NATIONAL ELECTRICAL CODE
  - 2006 INTERNATIONAL PLUMBING CODE
  - NATIONAL FIRE PROTECTION ASSOCIATION 820
18. CONTRACTOR TO MAINTAIN ACCESS FOR EMERGENCY RESPONSE VEHICLES DURING CONSTRUCTION.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULES WITH BUCKSKIN SANITARY DISTRICT, SO AS TO PREVENT ANY CONFLICTING WORK CONDITIONS, LOCATIONS OF TEMPORARY FACILITIES, PARKING, ETC. SHALL BE COORDINATED WITH THE BUCKSKIN SANITARY DISTRICT.
20. CONTRACTOR SHALL PROVIDE TEMPORARY SAFETY AND SECURITY FENCING AND SITE IMPROVEMENTS AS NEEDED AT NO EXTRA COST.
21. CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF AT LEAST WEEKLY BY THE CONTRACTOR. KEEP SITE AREA CLEAN.
22. EXCESS EXCAVATED SOIL SHALL BE REMOVED OFF SITE. CONTRACTOR SHALL ESTABLISH A SUITABLE STAGING AREA FOR STORAGE OF EXCAVATED SOIL.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY AT THE SITE WHILE CONSTRUCTION IS IN PROGRESS. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE PUBLIC FROM ANY HAZARDS ARISING FROM CONSTRUCTION OPERATIONS AND PROTECTING EXISTING AND NEW IMPROVEMENTS FROM DAMAGE DUE TO ACCIDENT OR VANDALISM.
24. THE CONTRACTOR IS TO UNCOVER ALL EXISTING LINES BEING TIED INTO AND VERIFY GRADES BEFORE ANY OTHER CONSTRUCTION.
25. THE ENGINEERING DESIGN OF THESE PLANS ARE ONLY APPROVED BY BUCKSKIN SANITARY DISTRICT IN SCOPE AND NOT IN DETAIL.
26. AN APPROVED SET OF PLANS SHALL BE LOCATED ON THE SITE DURING CONSTRUCTION AND INSPECTION.
27. A COPY OF ALL PERMITS AND DUST CONTROL INFORMATION SIGN MUST BE ON SITE AT ALL TIMES.
28. INSPECTION IS TO BE DONE BY THE BUCKSKIN SANITARY DISTRICT OR A DULY AUTHORIZED REPRESENTATIVE OF THE DISTRICT.
29. ANY WORK PERFORMED WITHOUT THE KNOWLEDGE OF THE ENGINEER OR THE BUCKSKIN SANITARY DISTRICT REPRESENTATIVE IS SUBJECT TO REMOVAL AND REPLACEMENT OF SAME TO BE DONE AT THE CONTRACTOR'S EXPENSE.
30. THE BUCKSKIN SANITARY DISTRICT SHALL BE NOTIFIED AT LEAST 5 WORKING DAYS PRIOR TO STARTING WORK.
31. THE ENGINEER OF RECORD SHALL BE NOTIFIED AT LEAST 5 WORKING DAYS IN ADVANCE OF ANY CONSTRUCTION.
32. FACILITIES WHICH ARE NOT SPECIFICALLY LOCATED WITH ACTUAL HORIZONTAL AND VERTICAL CONTROLS ARE LOCATED APPROXIMATELY AND TO THE BEST AVAILABLE INFORMATION.
33. WHEREVER THE CONTRACTOR'S WORK REQUIRES THE REMOVAL OF EXISTING CONCRETE OR ASPHALTIC CONCRETE PAVEMENT, THE PAVEMENT SHALL BE SAWCUT TO ACHIEVE A NEAT AND UNIFORM JOINT WITH THE REPLACED PAVEMENT.
34. ALL ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIREMENTS FOR THE CONSTRUCTION AND TESTING OF SEWER SHALL BE COMPLIED WITH.
35. THE CONTRACTOR MUST FURNISH AND INSTALL ALL NECESSARY APPURTENANCES INCLUDING BUT NOT LIMITED TO: NUTS, BOLTS, GASKETS, FLANGES, TAPS, BUSHINGS, ADAPTERS, HANDWHEELS, GEAR OPERATORS, SUPPORTS, RESTRAINTS, ETC. TO ACHIEVE COMPLETE AND FUNCTIONING PIPING SYSTEMS, WHETHER OR NOT SUCH INCIDENTAL ITEMS ARE INDICATED ON THE DRAWINGS OR SPECIFIED.
36. THE CONTRACTOR SHALL USE EXTREME CAUTION IN THE AREA OF OVERHEAD ELECTRIC LINES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO USE APPROPRIATE SAFETY MEASURES. ALL WORK SHALL BE IN ACCORDANCE WITH CHAPTER 181, ARTICLE 6.4, ARS 40-560.41-45 (THE OVERHEAD POWERLINE SAFETY LAW).
37. THE CONTRACTOR IS TO UNCOVER ALL EXISTING LINES BEING TIED INTO AND VERIFY GRADES BEFORE ANY OTHER CONSTRUCTION.

No.	Revision Note	Date	Drawn	Check

**BUCKSKIN SANITARY DISTRICT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS**

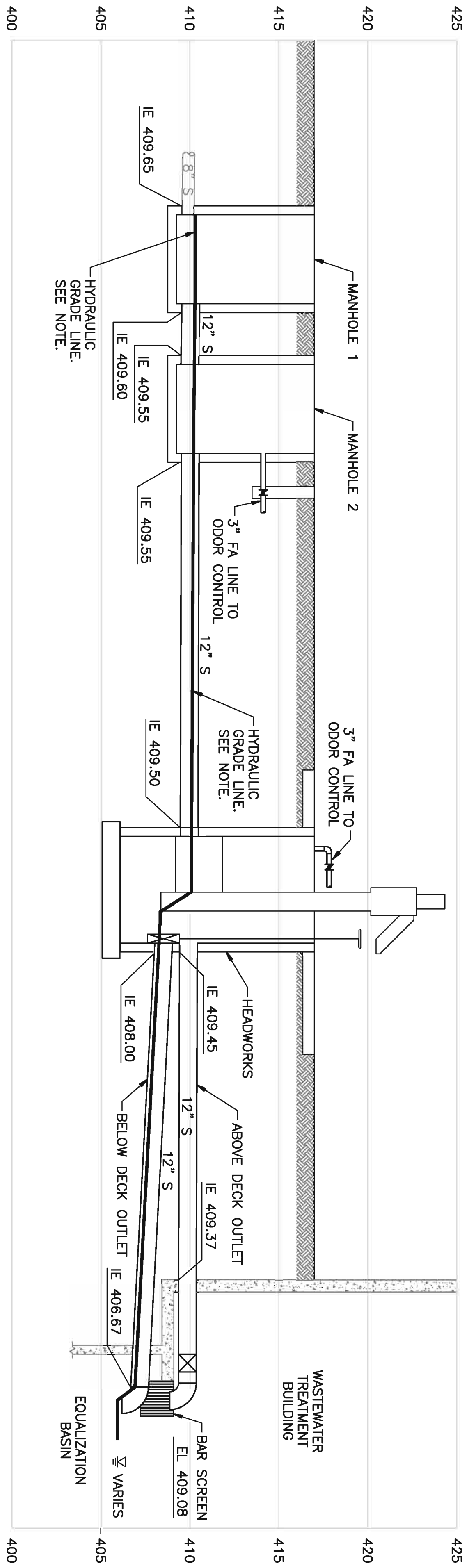
**GENERAL NOTES**

**NCS** Engineers, Inc.  
 202 E. Earl Drive Suite 110  
 Phoenix (602)523-0066  
 www.ncseng.com

EXPIRATION DATE: 09/29/18

Design by: SW SW  
 Drawn by: KB KWB  
 Approved by: RMRN  
 Date: 12/07/15  
 Project No.: 0524  
 Sheet No.: G-02





**HYDRAULIC PROFILE**

SCALE: NTS

NOTE: HYDRAULIC GRADE LINE IS FOR TYPICAL OPERATION AT 500 GPM. ATYPICAL FLOWS WOULD RESULT FROM THE SLIDE GATE TO THE BELOW DECK OUTLET BEING CLOSED TEMPORARILY FOR HEADWORKS EQUIPMENT SERVICING. IN THAT CASE FLOWS WOULD BE DIRECTED TO THE ABOVE DECK OUTLET AND SCREENED WITH THE BAR SCREEN.

**DESIGN CRITERIA**

<b>HEADWORKS</b>		<b>ODOR CONTROL SYSTEM</b>		<b>INFLUENT SEWER</b>		<b>COVERS</b>	
DESIGN FLOW (GPM):	550	HEADWORKS (GPM):	82	PEAK FLOW (GPM):	550	INFLUENT EQUALIZATION (SQ FT):	312
HEADLOSS (FT):	1.5	INFLUENT EQUALIZATION (CFM):	144	SLOPE (FT/FT):	0.002	AEROBIC SLUDGE DIGESTER (SQ FT):	240
		AEROBIC SLUDGE DIGESTER (CFM):	264	VELOCITY (FT/S):	2.2	AERATED SLUDGE HOLDING (SQ FT):	240
		AERATED SLUDGE HOLDING (CFM):	110	DEPTH/DIAMETER RATIO:	0.867	DESIGN LOAD (LB/SF):	50
		TOTAL (CFM):	600			MAXIMUM UNIFORM DEFLECTION UNDER FULL LOAD (IN):	0.5
		H2S CONCENTRATION (PPM):	200				

**BUCKSKIN SANITARY DISTRICT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS**

**HYDRAULIC PROFILE AND DESIGN CRITERIA**

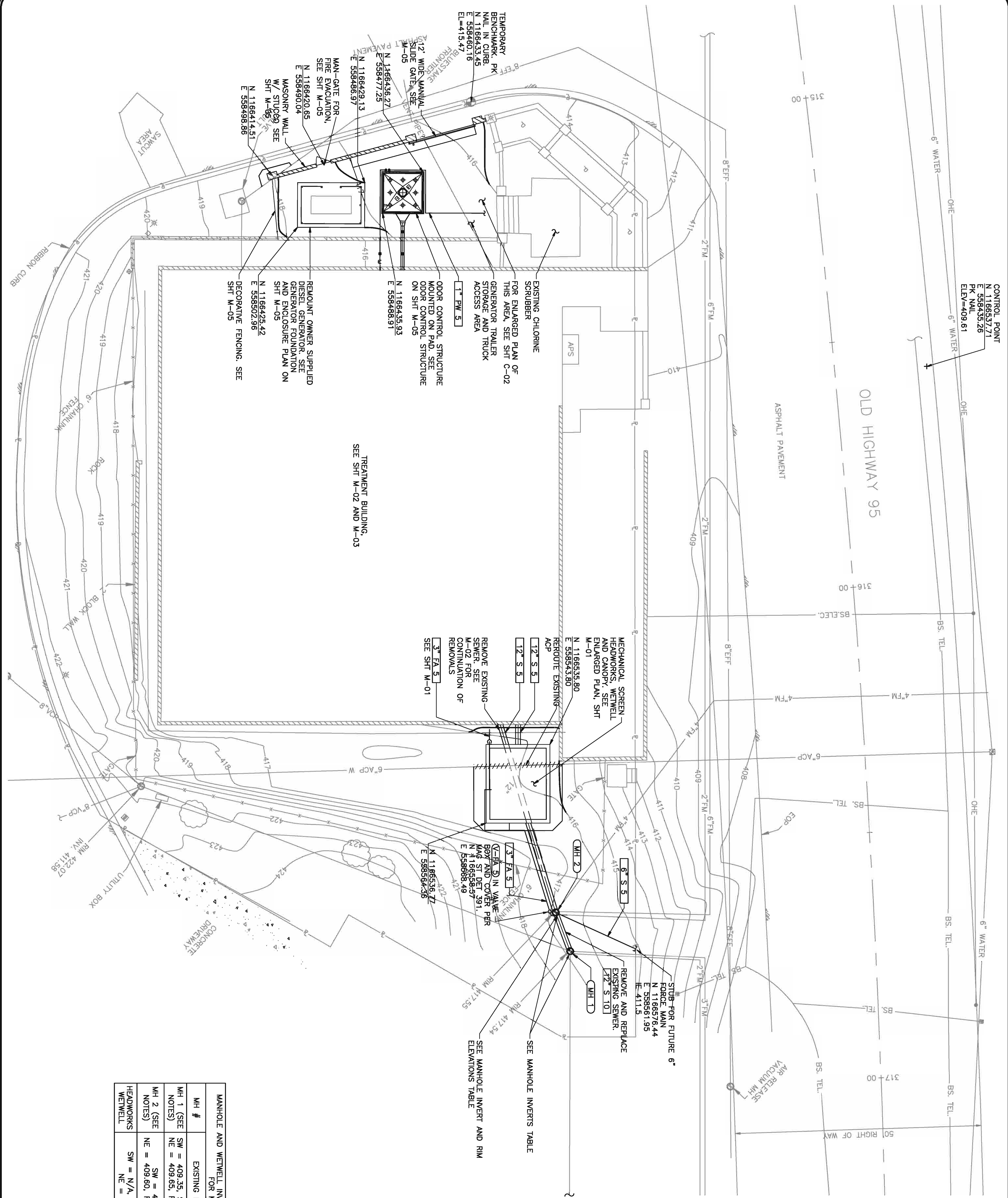
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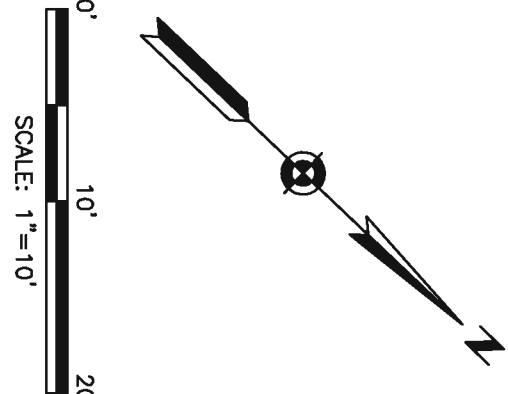
**NCS**  
 Engineers  
 202 E. Earl Dine Site 110  
 Philadelphia, PA 19103  
 Phone: (610) 293-0766  
 www.ncseng.com

EXPIRATION DATE: 09/29/18

Drawn by: KB KWB  
 Design by: SAW SW  
 Approved by: RMRN  
 Date: 12/07/15  
 Project No.: 0524  
 Sheet No.: G-04



- NOTES:
1. FOR SURVEY CONTROL INFORMATION, SEE SHT G-01.
  2. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FORCE MAINS IN THE PLAN AND PER THE INTERSAY OF FORCE MAINS IN THE PLAN.
  3. MANHOLES 1 AND 2 SHALL BE CONSTRUCTED PER MAG ST DET 420-1 WITH LIDS SEALED FOR ODOR CONTROL.



MANHOLE AND WETWELL INVERT AND RIM ELEVATIONS TABLE. SEE NOTES FOR MANHOLE CONSTRUCTION			
MH #	EXISTING INVERTS	NEW INVERTS	
MH 1 (SEE NOTES)	SW = 409.35, SE = 409.60, NE = 409.65, RIM = 417.54	SE = 409.60, NE & SW = 409.65, RIM = 417.54	
MH 2 (SEE NOTES)	SW = 409.37, NE = 409.60, RIM = 417.55	SE & NE = 409.55, RIM = 417.55	
HEADWORKS WETWELL	SW = N/A, W = N/A, NE = N/A	SW = 409.45, W = 409.00, NE = 409.50	

**BUCKSKIN SANITARY DISTRICT  
WASTEWATER TREATMENT PLANT IMPROVEMENTS**

**NEW FACILITIES SITE AND YARD PIPING PLAN**

No.	Revision Note	Date	Drawn	Check

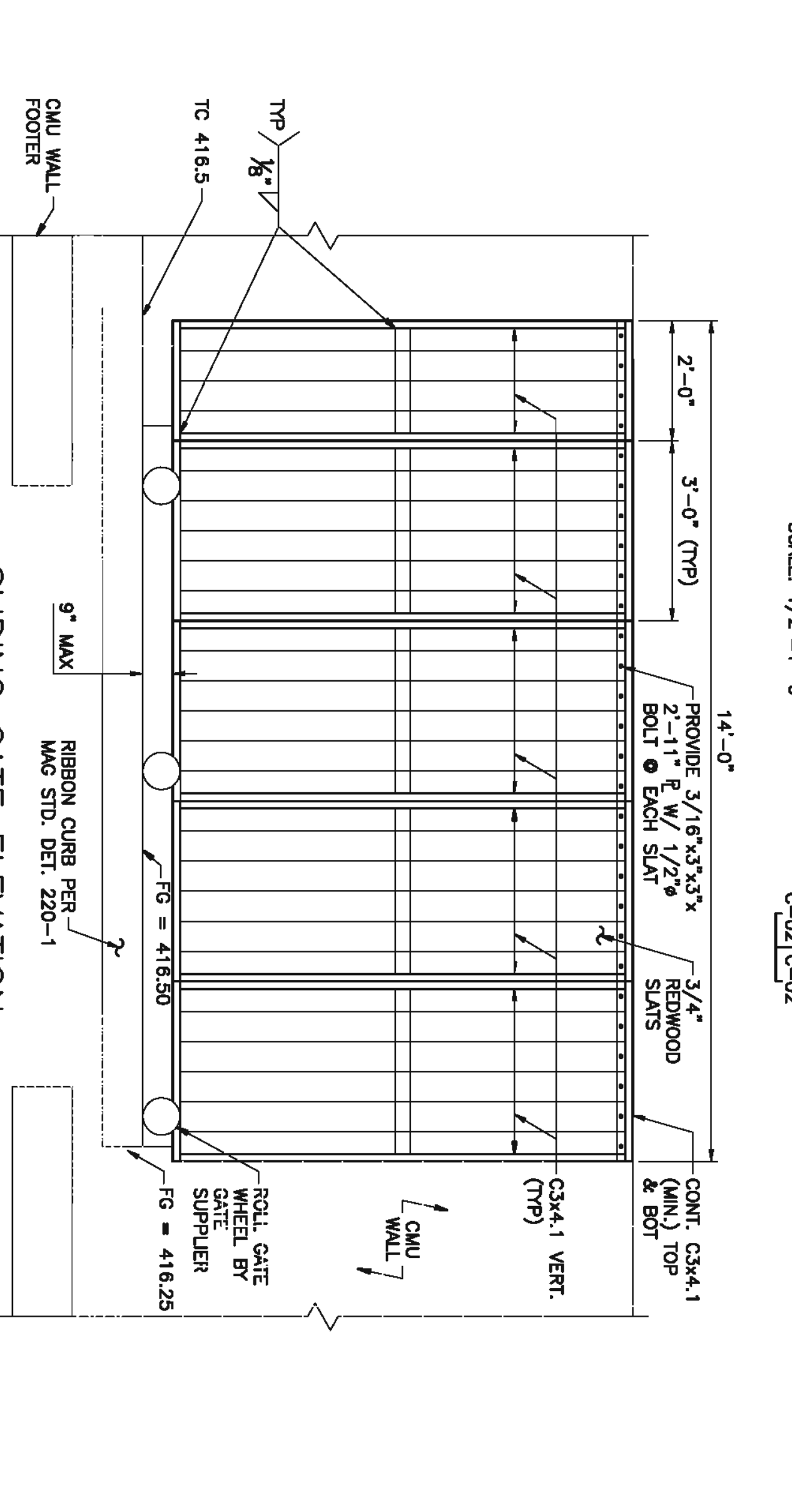
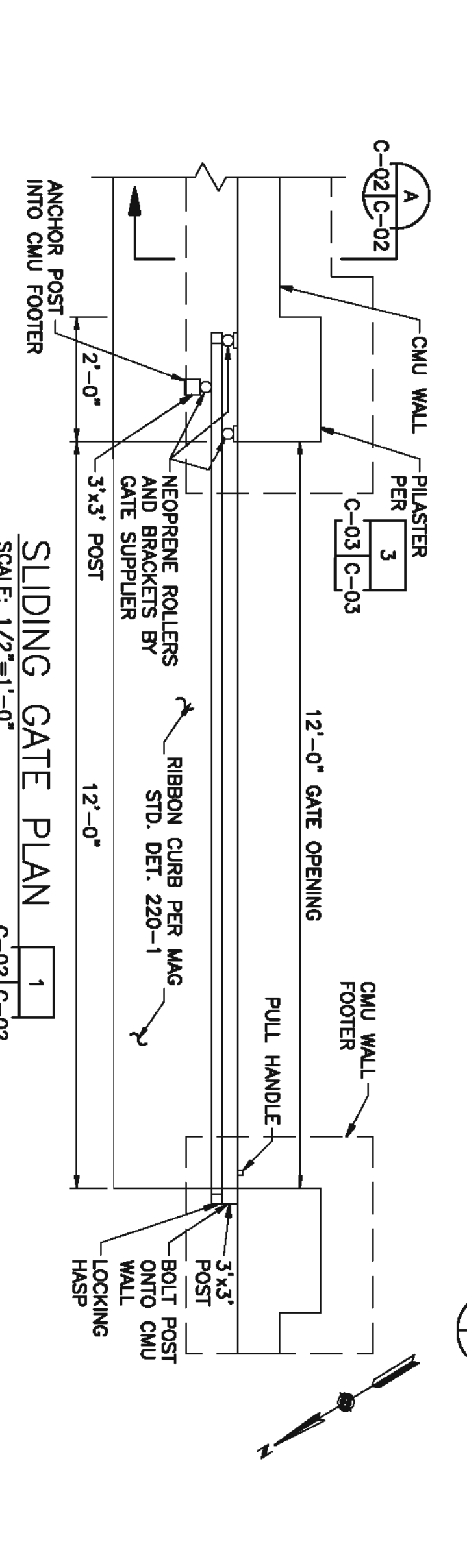
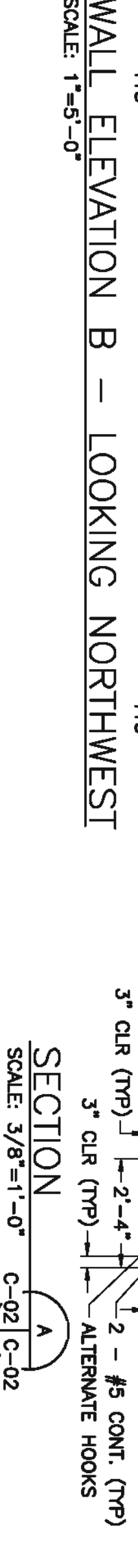
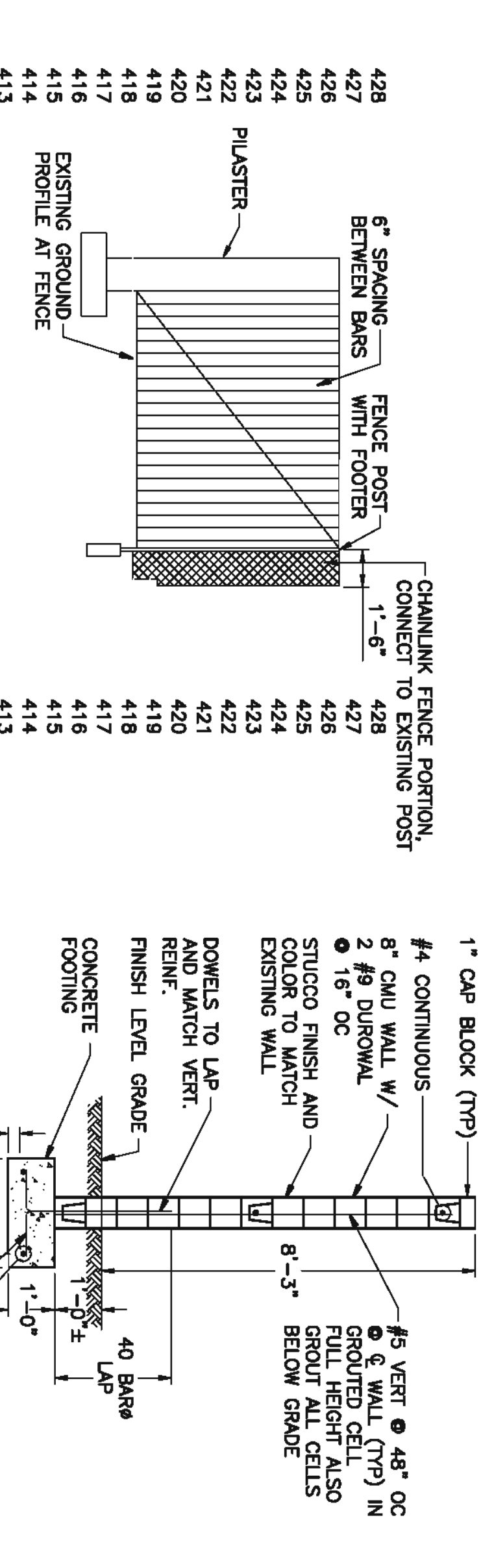
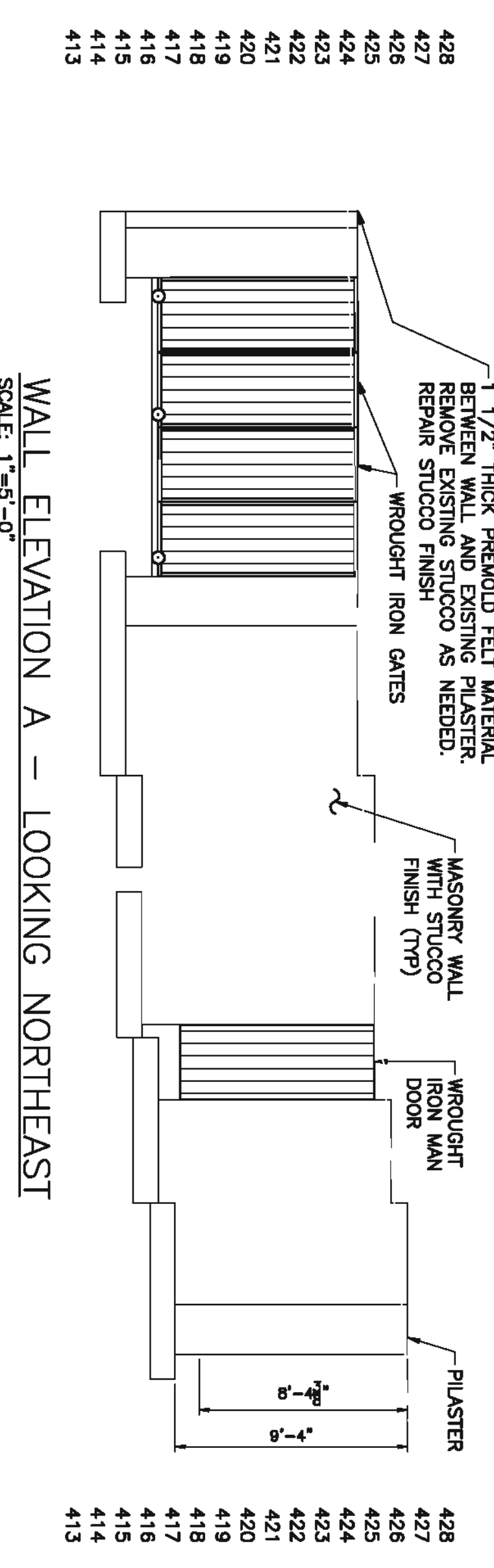
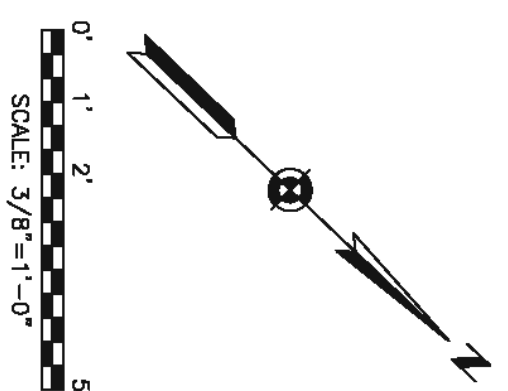
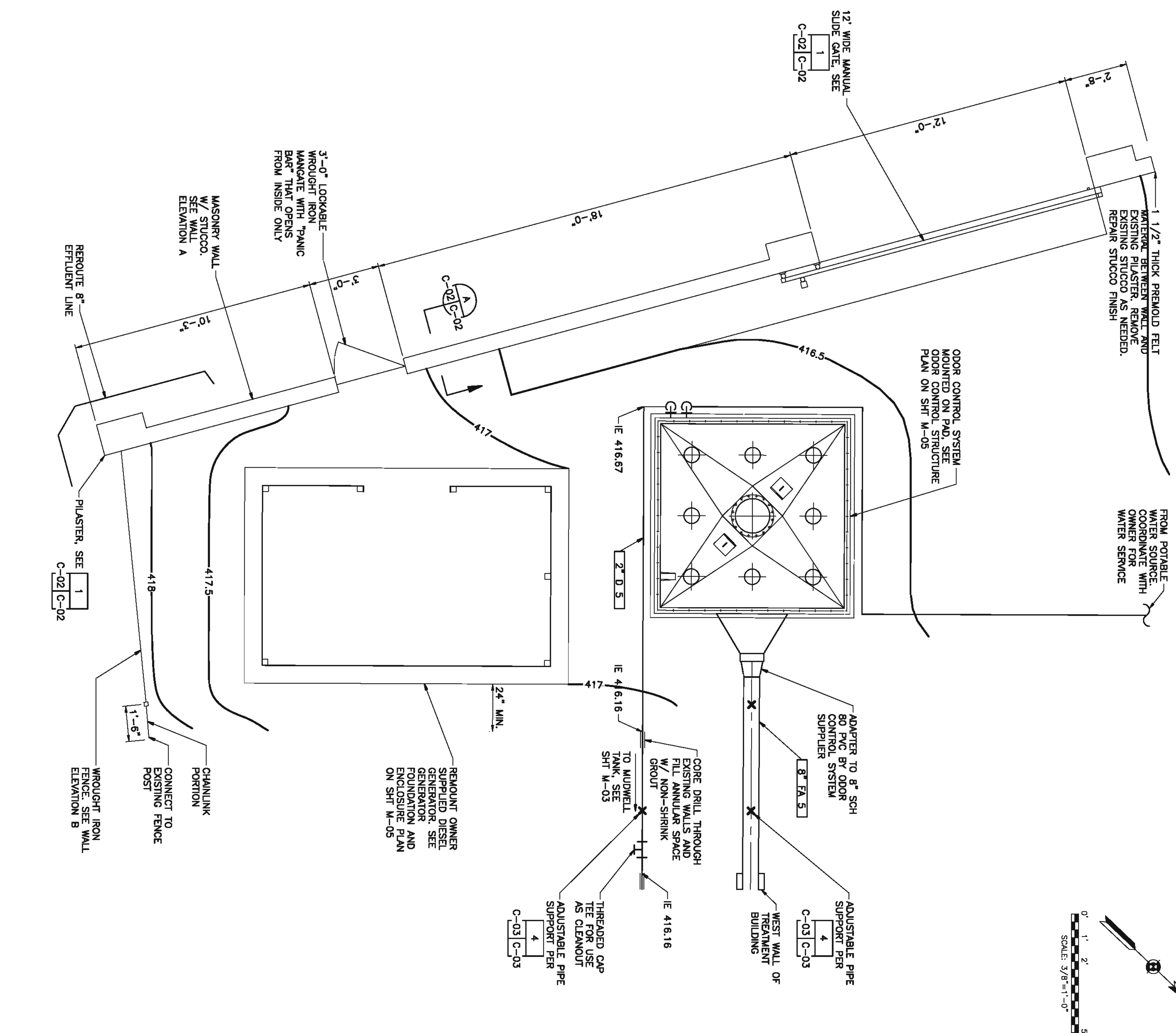
**Engineers**  
**NOS**  
202 E. East Drive Suite 110  
Phone: (602) 639-0206  
www.nosinc.com

2012  
12/07/15  
Project No. 0524  
Sheet No. C-01

Drawn by: KB KWB  
Design by: siw SW  
Approved by: RMRN

Expiration Date: 09/29/18

**PLAN**  
 SCALE: 3/8"=1'-0"



No.	Revision Note	Date	Drawn	Check

**BUCKSKIN SANITARY DISTRICT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS**

**ODOR CONTROL EQUIPMENT  
 AND DIESEL GENERATOR PLAN**

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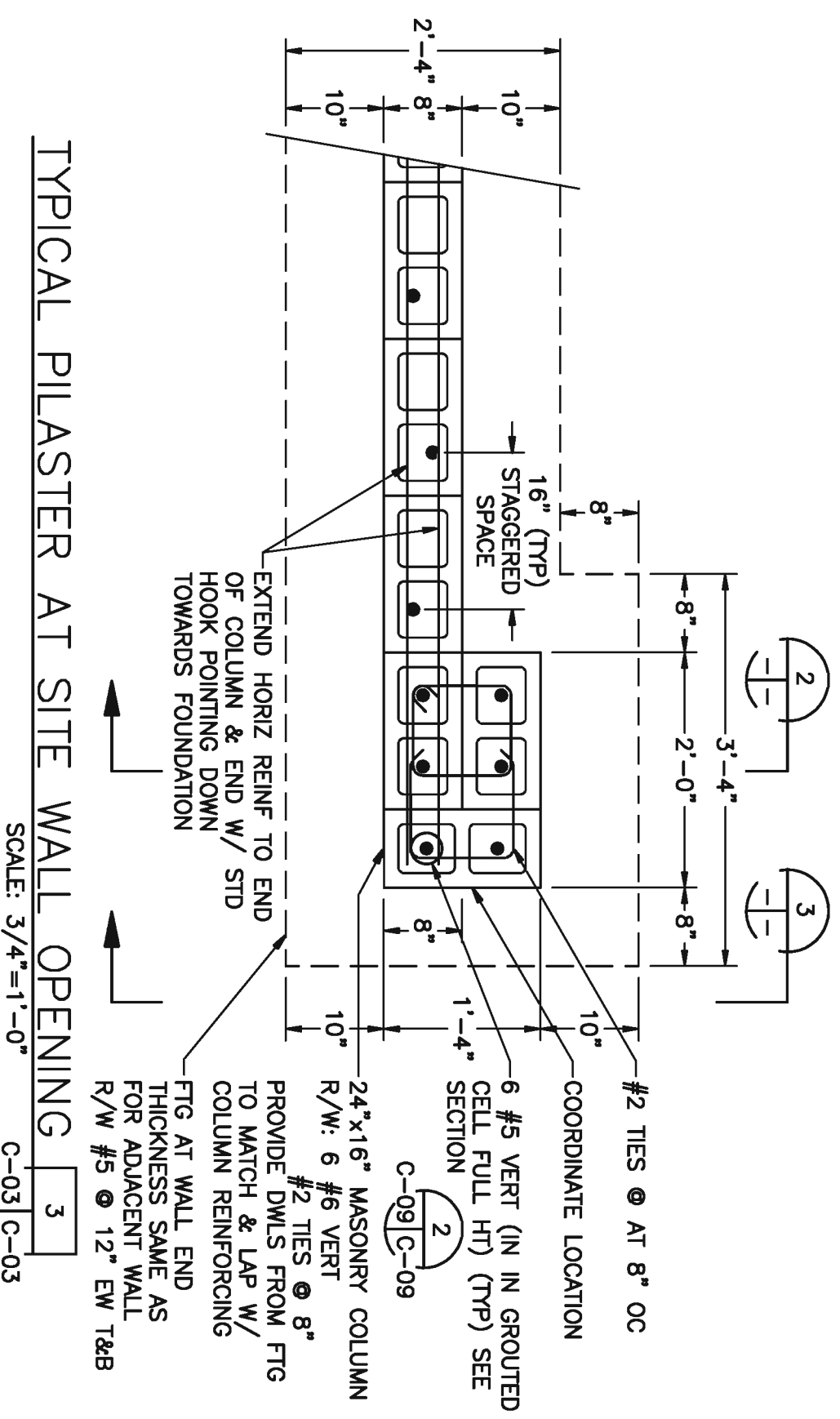
202 E Earl Drive, Suite 110  
 Reno, NV 89503-0206  
 Phone: (775) 782-0206  
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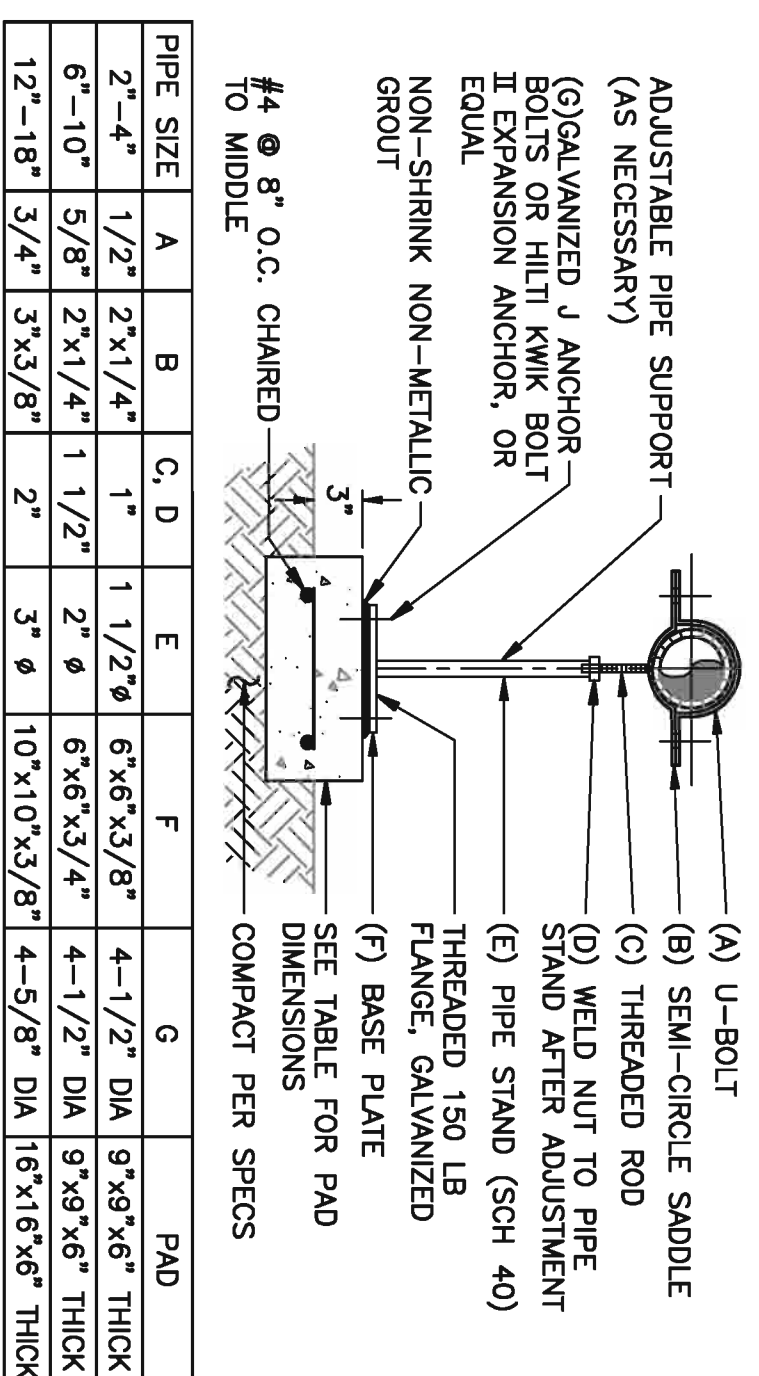
OPERATION DATE: 09/20/18  
 Drawn by: KB KWB  
 Design by: SJW SW  
 Approved by: RMRN

Date: 12/07/15  
 Project No.: 0524  
 Sheet No.: C-02





TYPICAL PILASTER AT SITE WALL OPENING  
 SCALE: 3/4"=1'-0"  
 C-03 C-03



PIPE SIZE	A	B	C, D	E	F	G	PAD
2"-4"	1/2"	2"x1/4"	1"	1 1/2"Ø	6"x6"x3/8"	4-1/2" DIA	9"x9"x6" THICK
6"-10"	5/8"	2"x1/4"	1 1/2"	2"Ø	6"x6"x3/4"	4-1/2" DIA	9"x9"x6" THICK
12"-18"	3/4"	3"x3/8"	2"	3"Ø	10"x10"x3/8"	4-5/8" DIA	16"x16"x6" THICK

NOTES:  
 1. ALL ADJUSTABLE PIPE SUPPORTS SHALL BE CARBON STEEL.  
 2. PROVIDE 3" EMBEDMENT FOR ALL ANCHOR BOLTS AND ANCHORS INTO CONCRETE SLAB.

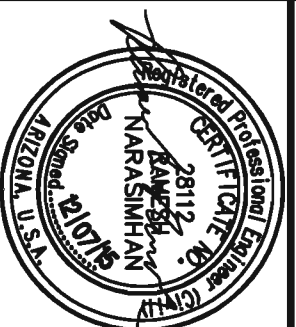
ADJUSTABLE PIPE SUPPORT AND PAD  
 SCALE: 1"=1'-0"  
 C-03 C-03

BUCKSKIN SANITARY DISTRICT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS

MISCELLANEOUS DETAILS AND SECTIONS

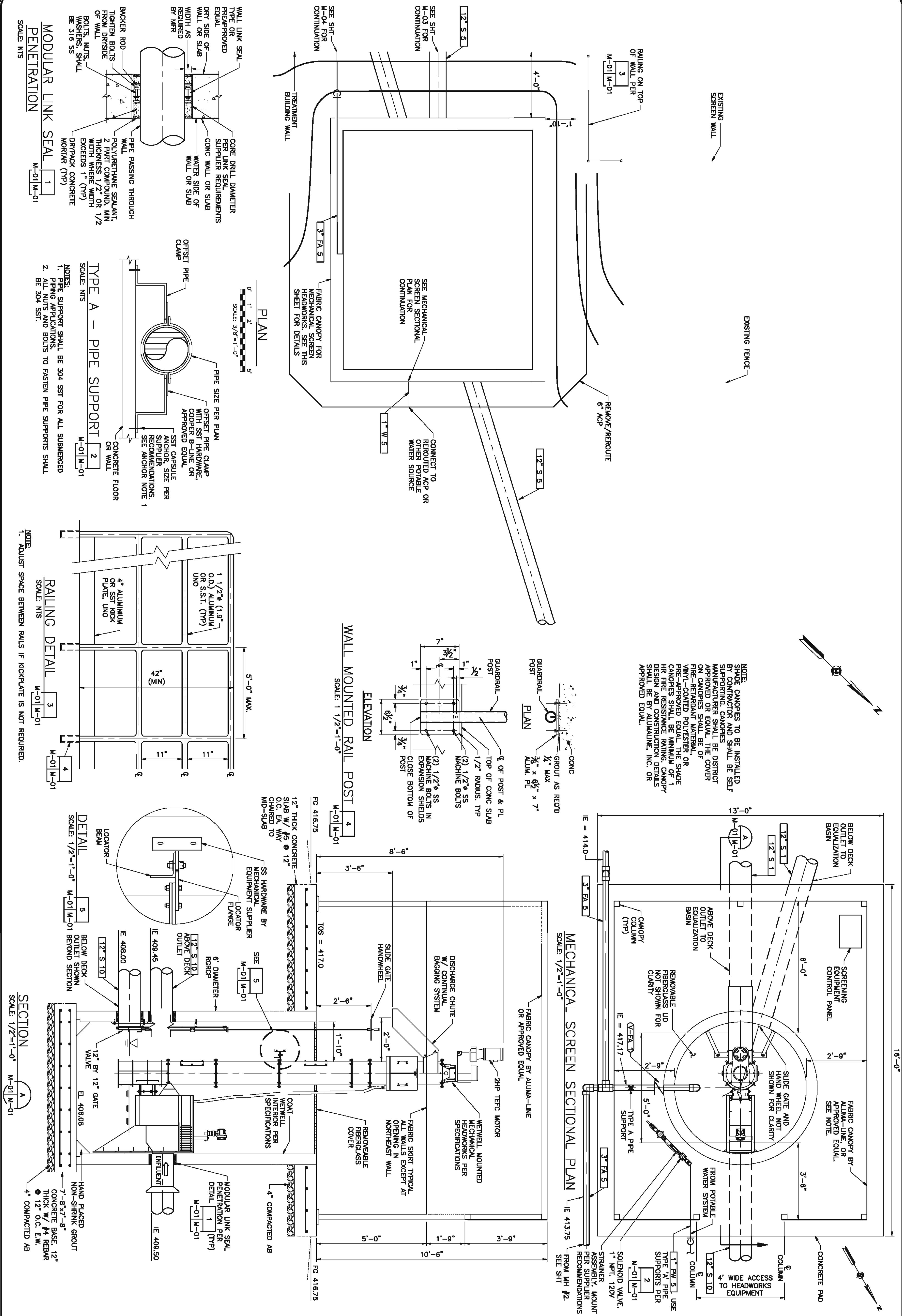
No.	Revision Note	Date	Drawn	Check

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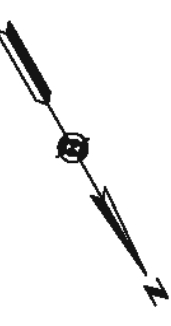
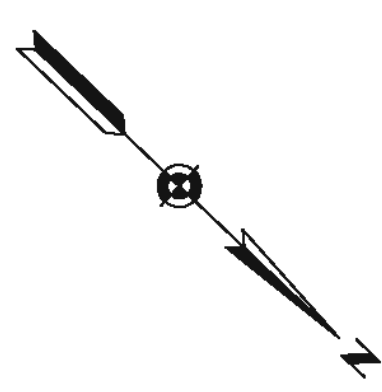


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EXPIRATION DATE: 09/30/18  
 Drawn By: KB KWB  
 Design By: SW SW  
 Approved By: RNR/RN  
 Date: 12/07/15  
 Project No.: 0524  
 Sheet No.: C-03



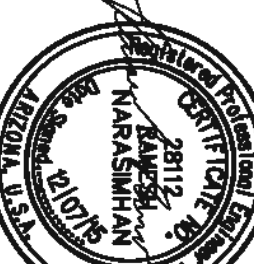
NOTE: SHADE CANOPIES TO BE INSTALLED BY CONTRACTOR AND SHALL BE SELF SUPPORTING. CANOPIES MANUFACTURER SHALL BE DISTRICT APPROVED OR EQUAL. THE COVER ON CANOPIES SHALL BE OF FIRE-RETARDANT MATERIAL, VINYL-COATED POLYESTER OR PRE-APPROVED EQUAL. THE SHADE CANOPIES SHALL BE MINIMUM OF 1 HR FIRE RESISTANCE RATING. CANOPY DESIGN AND CONSTRUCTION DETAILS SHALL BE BY ALUMALINE, INC. OR APPROVED EQUAL.



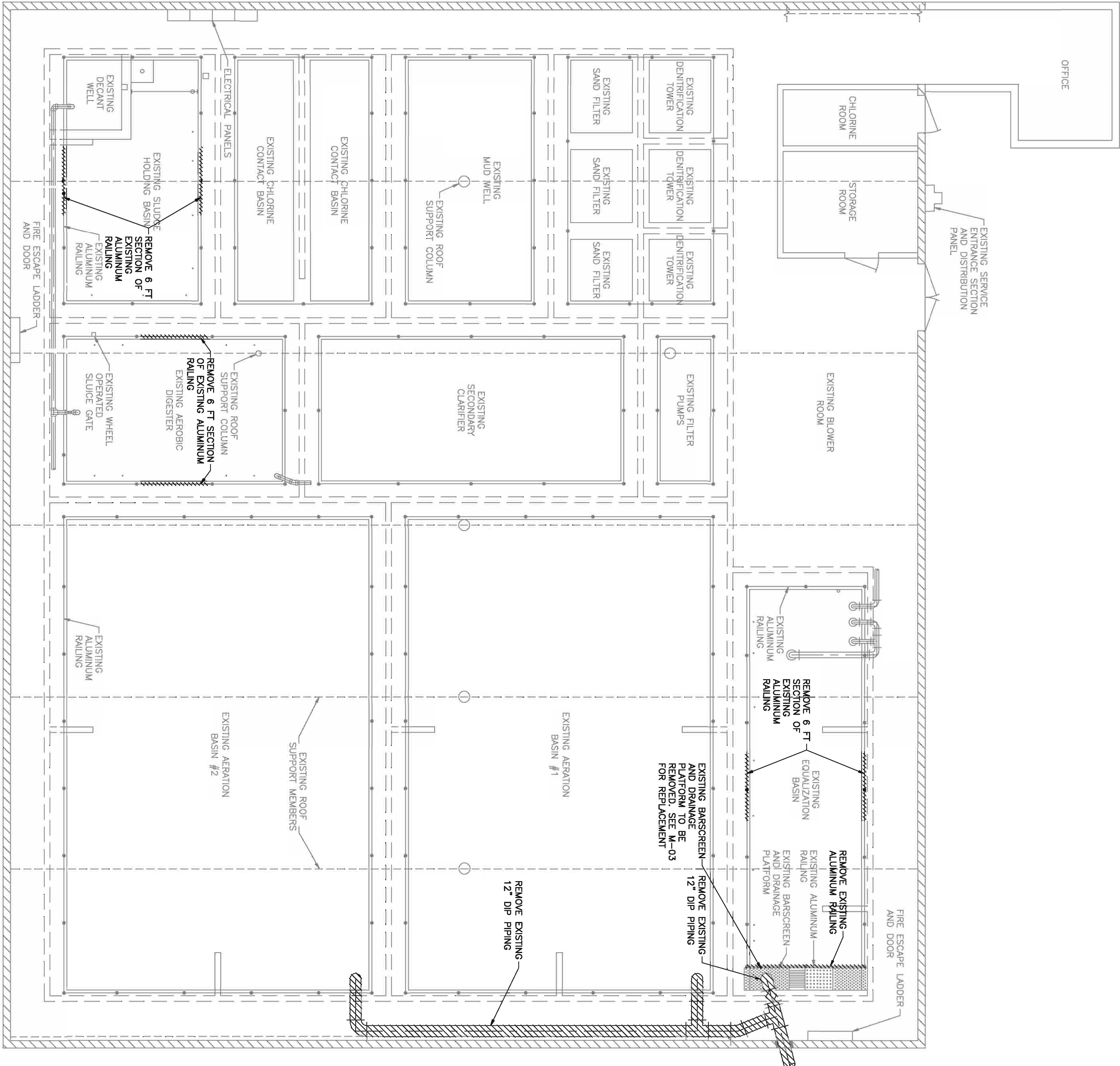
**BUCKSKIN SANITARY DISTRICT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS**

**MECHANICAL SCREEN HEADWORKS  
 PLAN, SECTIONS AND DETAILS**

No.	Revision Note	Date	Drawn	Check

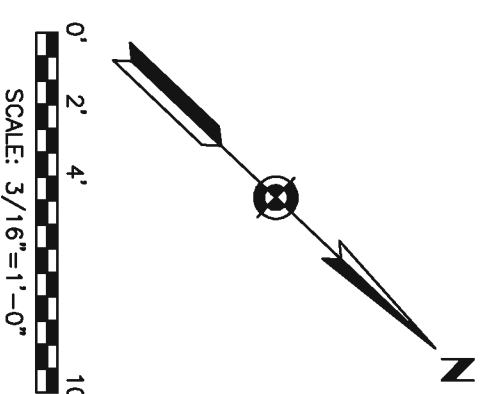

  
 202 E. Earl Dwyer Suite 110  
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 Drawn by: KB KWB  
 Design by: SJW SW  
 Approved by: RMRN  
 Date: 12/07/15  
 Project No.: 0524  
 Sheet No.: M-01



TREATMENT BUILDING - REMOVALS PLAN

SCALE: 3/16"=1'-0"



NOTES:  
 1. BASE DRAWING DEVELOPED FROM SANDPIPER WASTE WATER TREATMENT PLANT IMPROVEMENTS DRAWING, BUCKSKIN SANITARY DISTRICT, CONSULTANTS DRAWINGS PREPARED BY NELL CONSULTANTS, INC., OCTOBER 1995. BUILDING LAYOUT IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY.

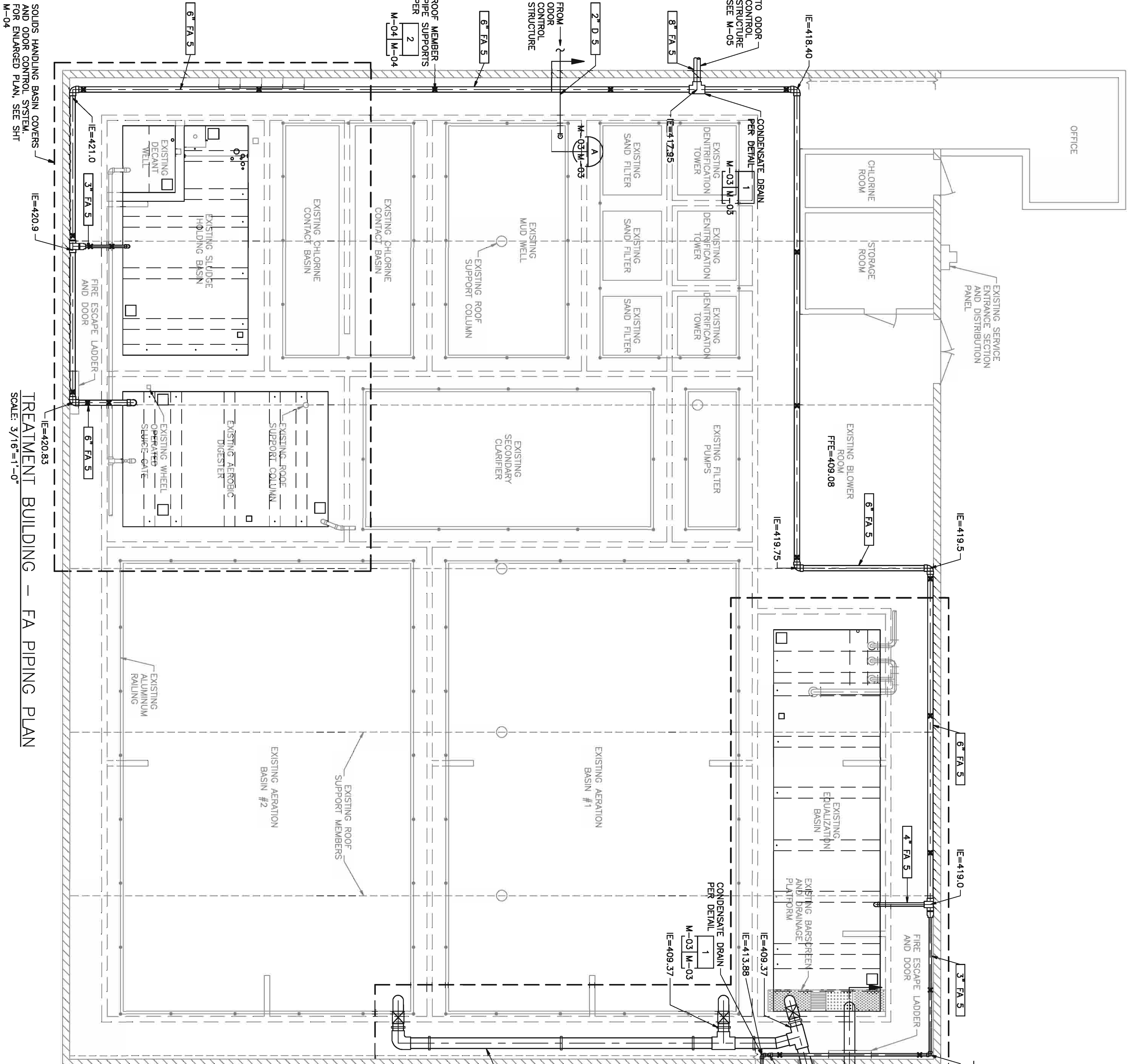
BUCKSKIN SANITARY DISTRICT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS

TREATMENT BUILDING - REMOVALS PLAN

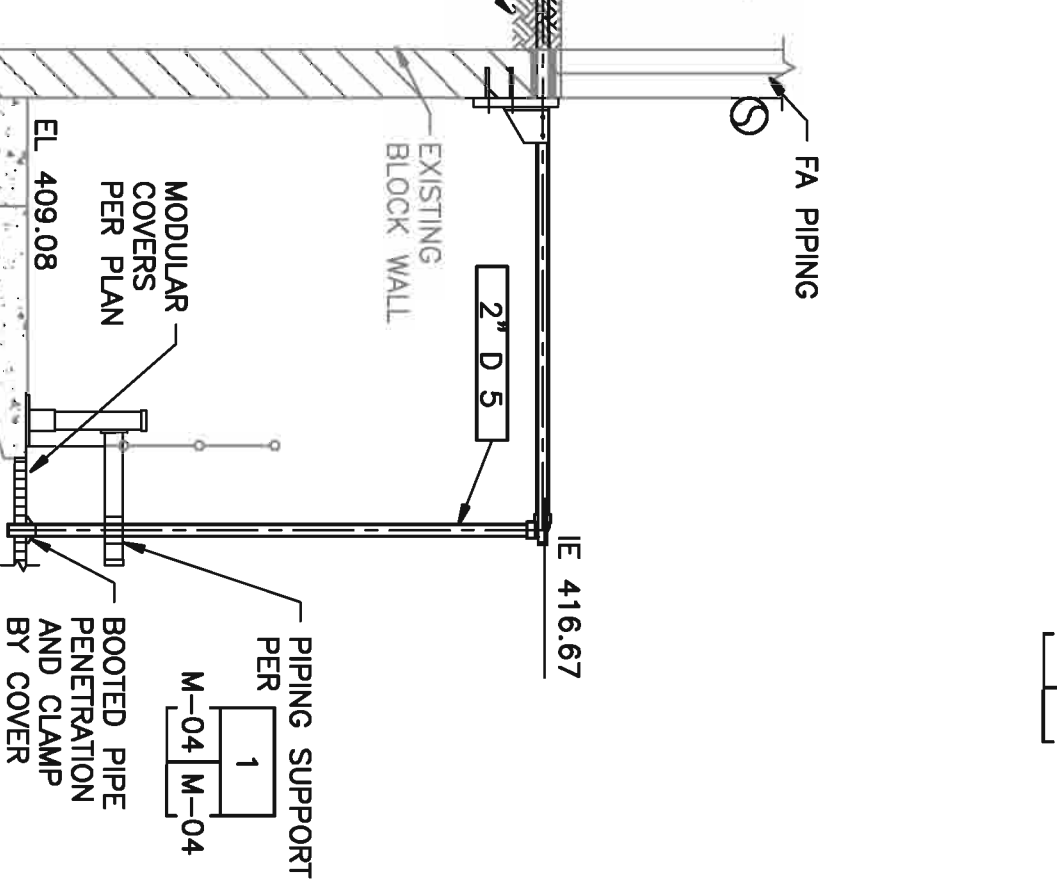
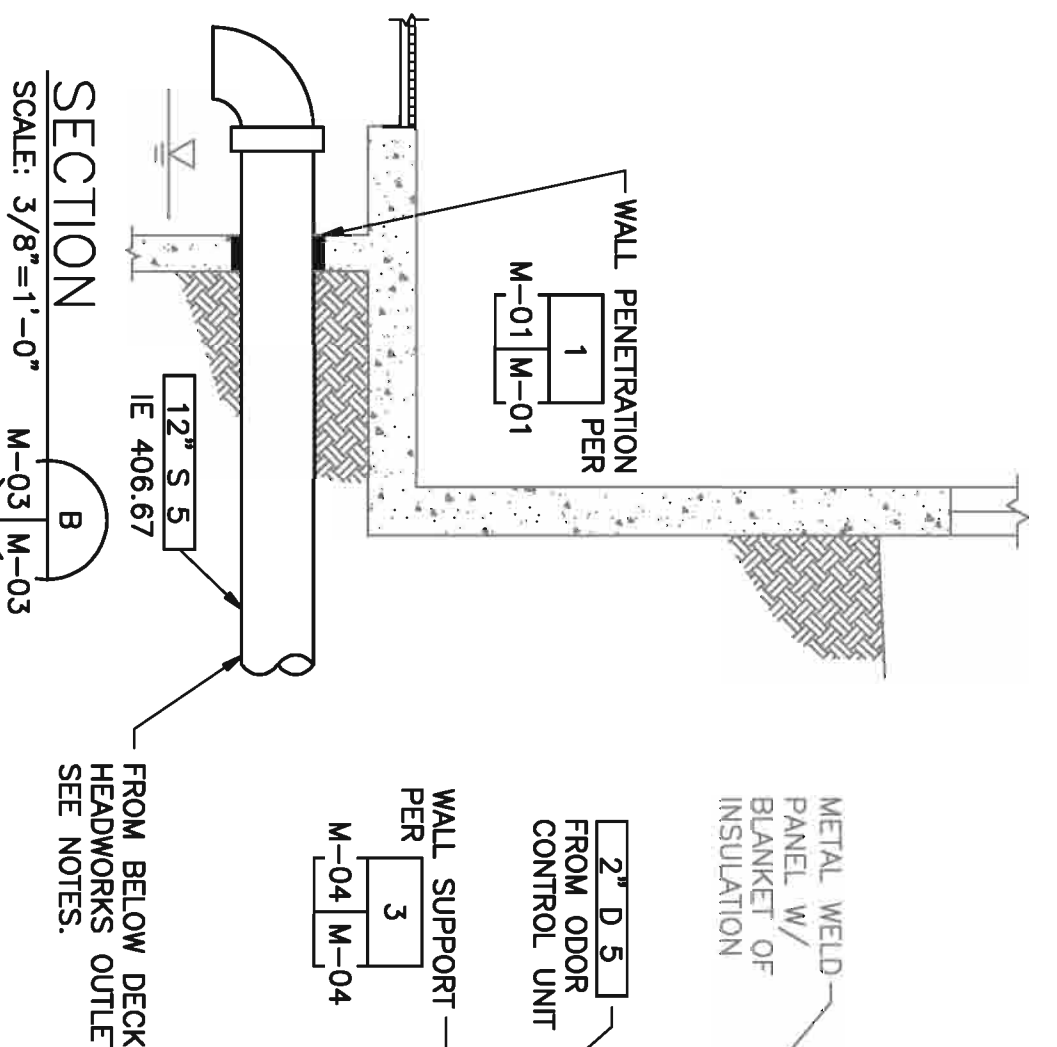
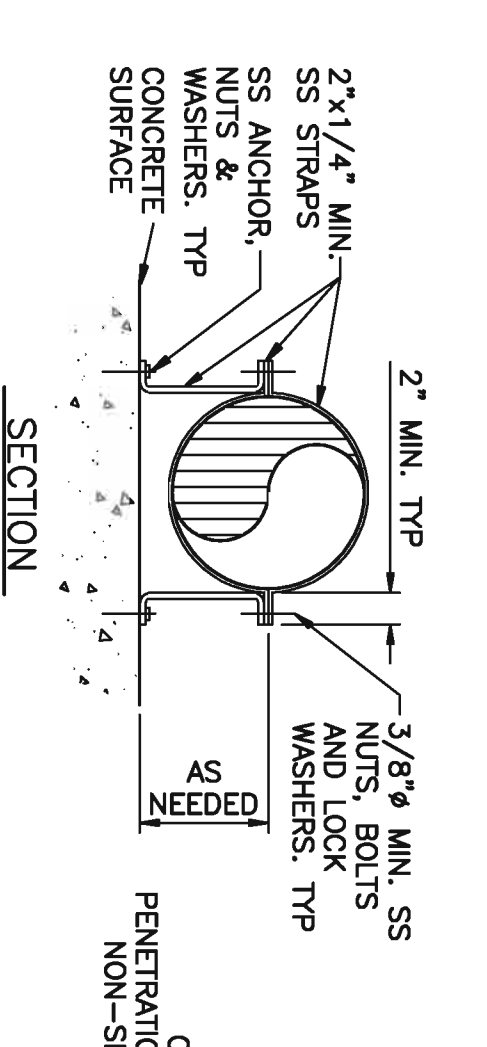
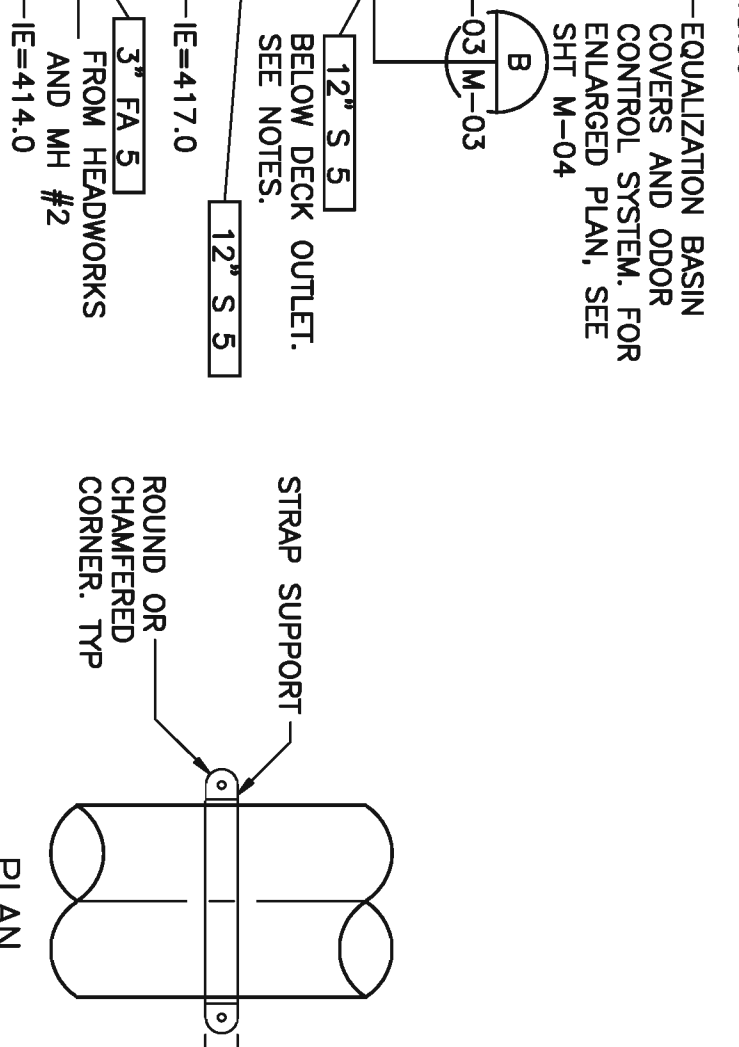
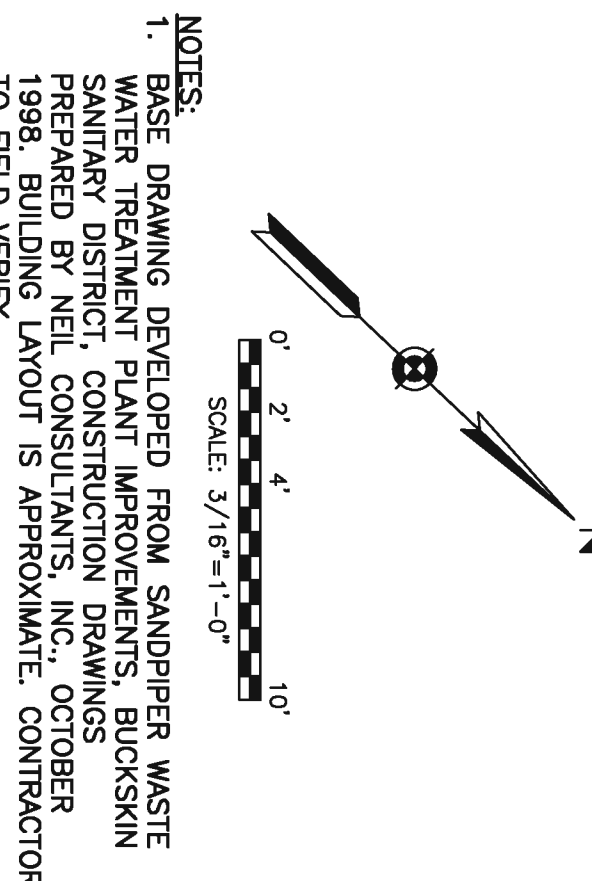
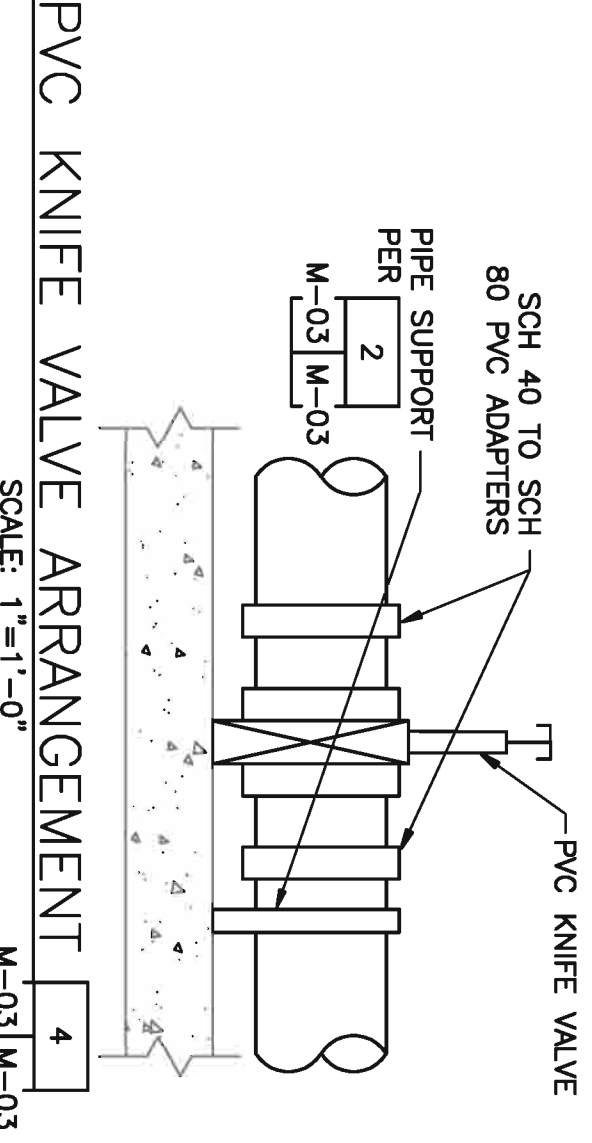
No.	Revision Note	Date	Drawn	Check

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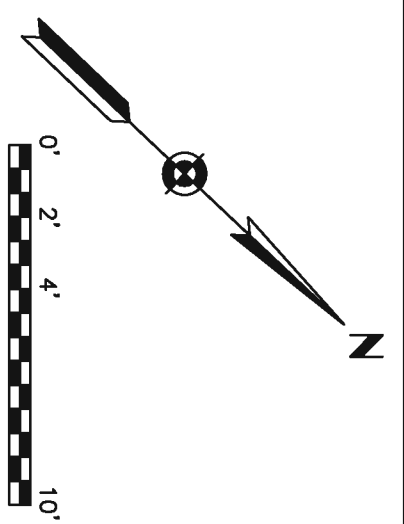
	202 E. Earl Dine Suite 110 Bucks, PA 18848 Phone: (610) 523-0768 www.ncseng.com
EXPIRATION DATE: 09/30/18 Drawn By: KB KWB Design By: SW SW Approved By: RMRN	Date: 12/07/15 Project No.: 0524 Sheet No.: M-02



TREATMENT BUILDING - FA PIPING PLAN  
 SCALE: 3/16"=1'-0"



- NOTES:
1. BASE DRAWING DEVELOPED FROM SANDPIPER WASTE WATER TREATMENT PLANT IMPROVEMENTS, BUCKSKIN SANITARY DISTRICT, CONSULTANTS, INC., OCTOBER 1998. BUILDING LAYOUT IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY.
  2. ROOF SUPPORT COLUMN LOCATIONS OBTAINED FROM METAL ROOFING CONSTRUCTION DRAWINGS, BUCKSKIN MANUFACTURING FACILITY, PREPARED BY BUTLER MANUFACTURING, JUNE 2013. COLUMN LOCATION IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY.
  3. CONTRACTOR TO EXCAVATE AND VERIFY EXISTING BUILDING FOOTING PRIOR TO INSTALLING BELOW DECK INLET PIPE INTO EQUALIZATION BASIN.



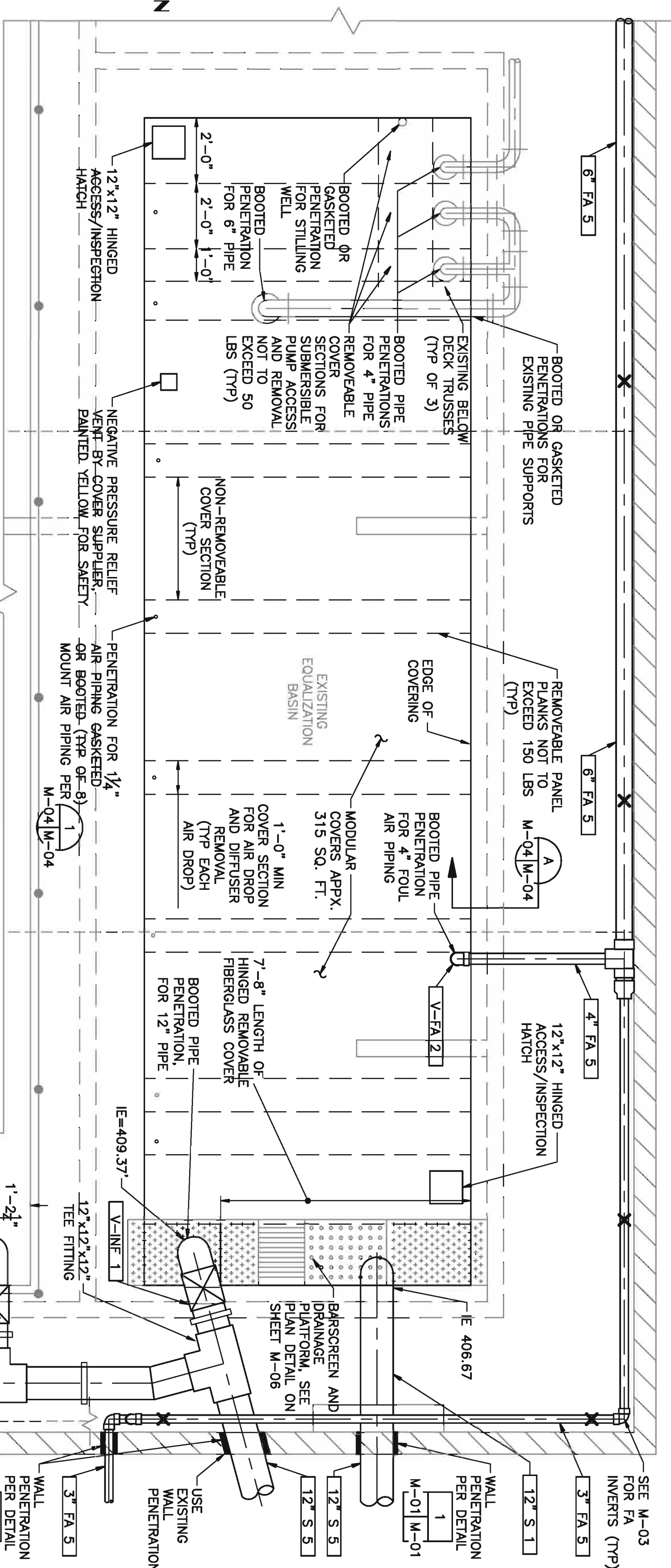
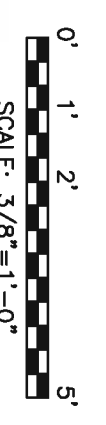
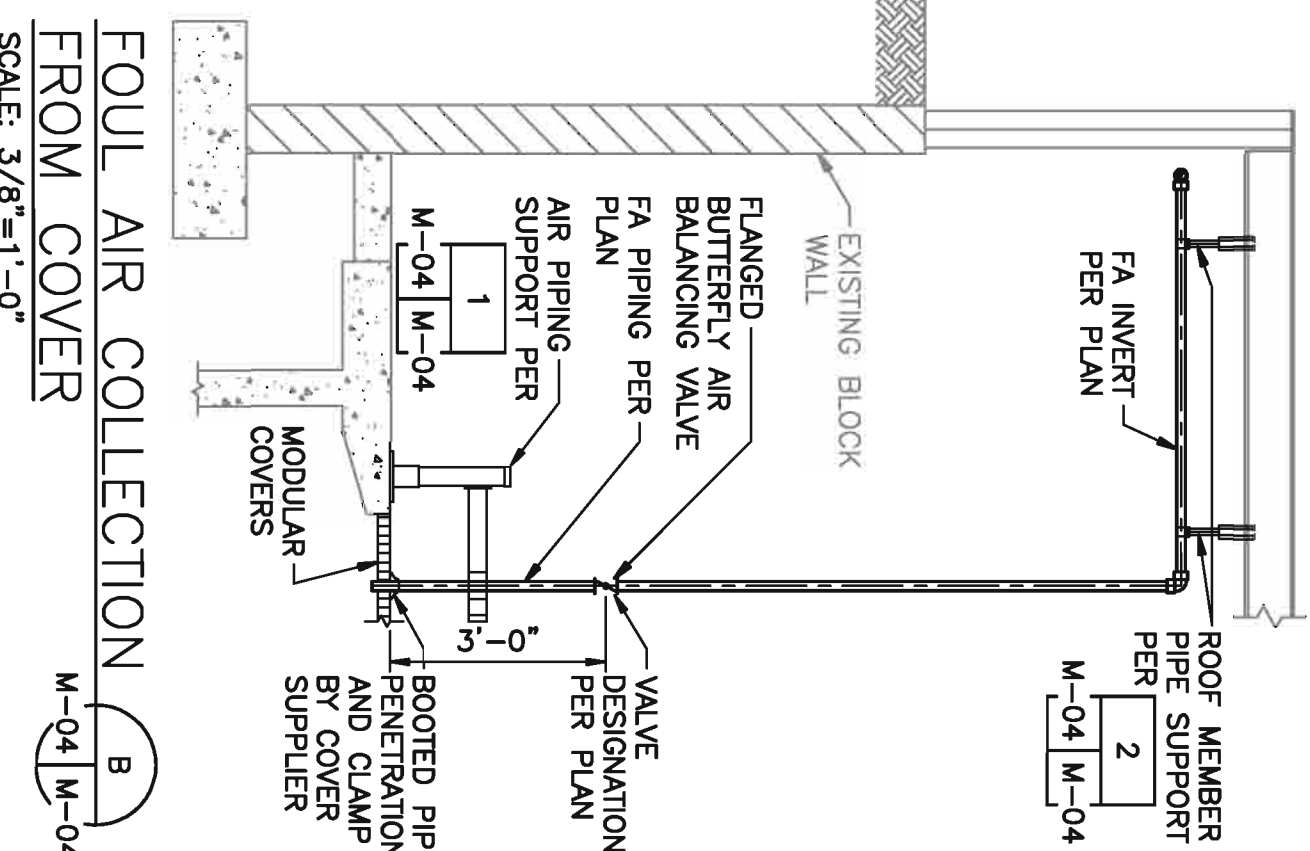
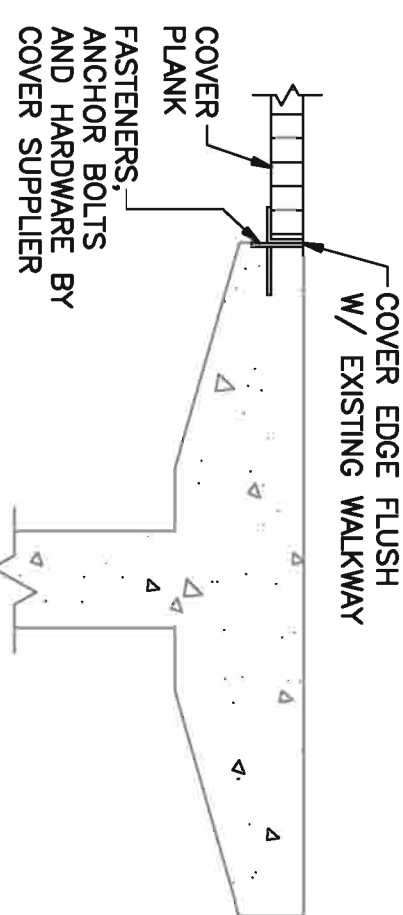
BUCKSKIN SANITARY DISTRICT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS  
 TREATMENT BUILDING - ODOR CONTROL PLAN

No.	Revision Note	Date	Drawn	Check

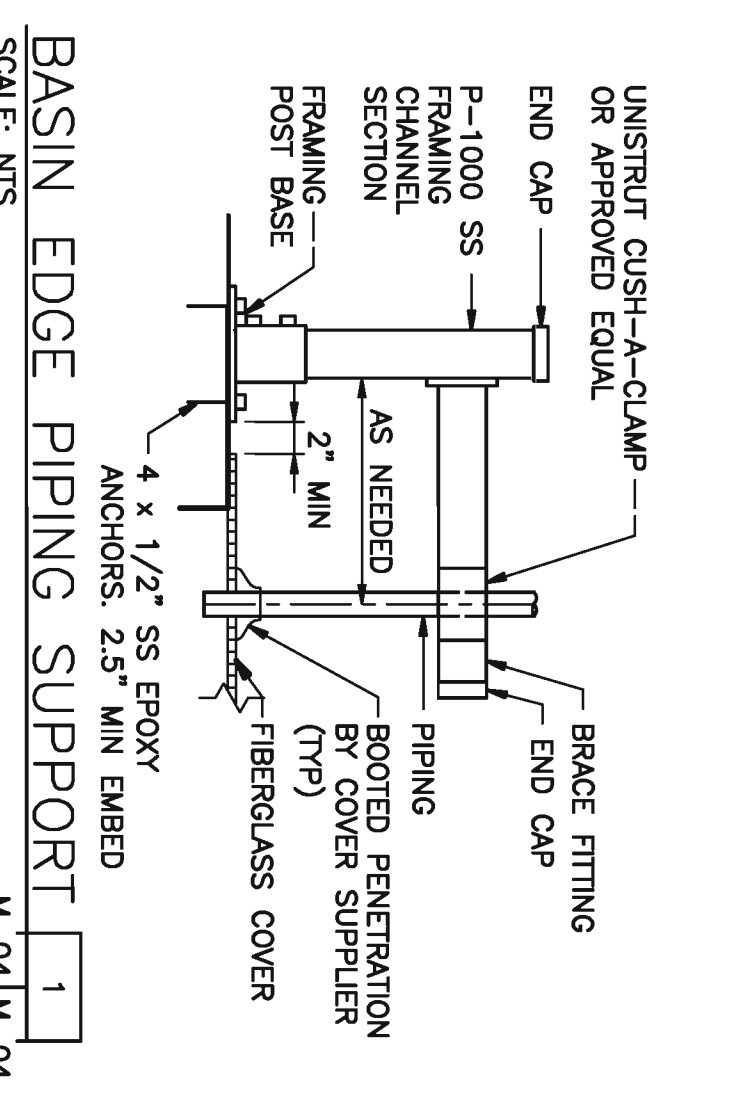
**NCS**  
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 202 E. Earl Drive, Suite 110  
 Cincinnati, OH 45229-0766  
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Drawn by: KB KWB  
 Design by: SW SW  
 Approved by: RARN  
 Date: 12/07/15  
 Project No.: 0524  
 Sheet No.: M-03

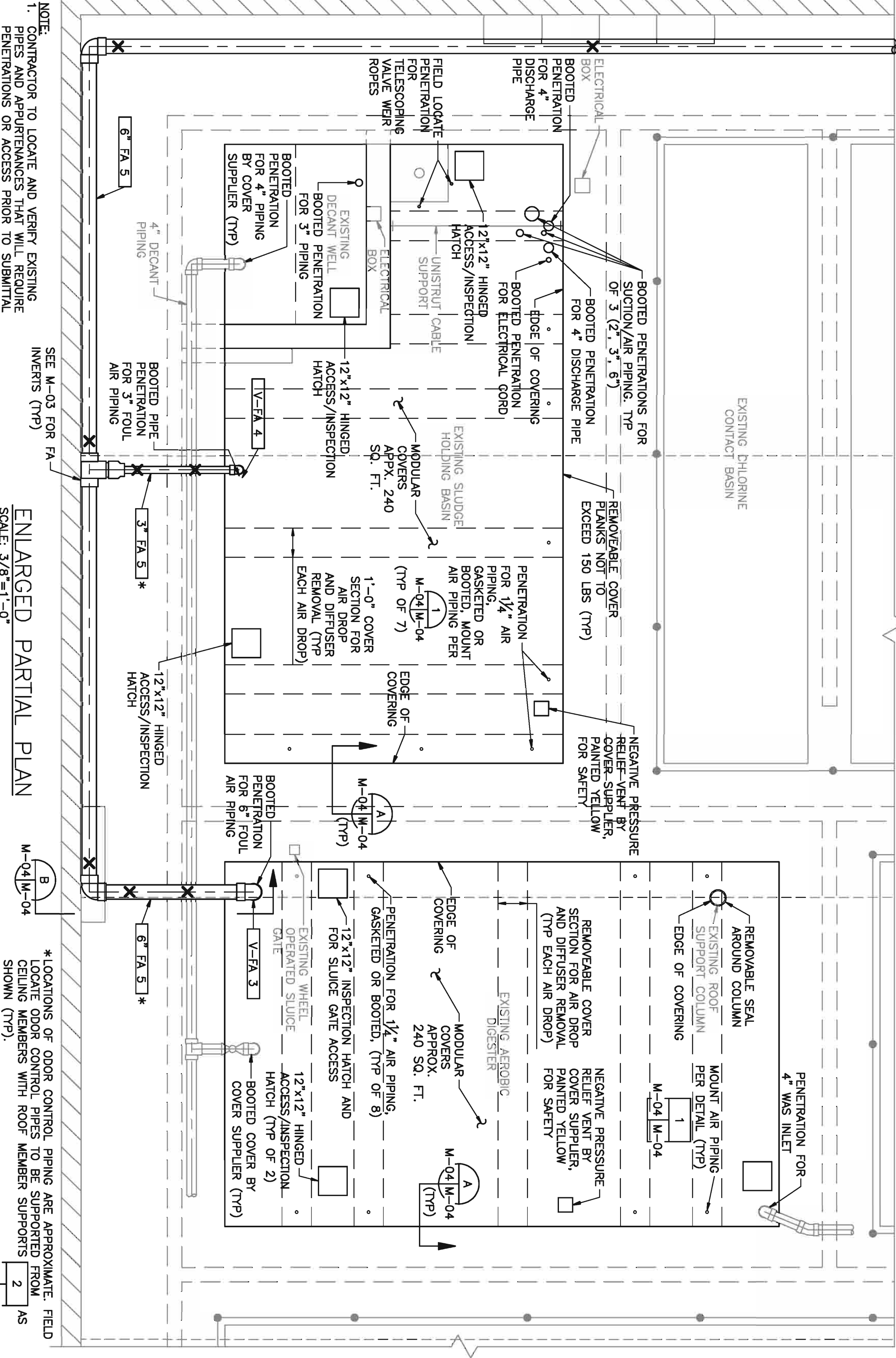
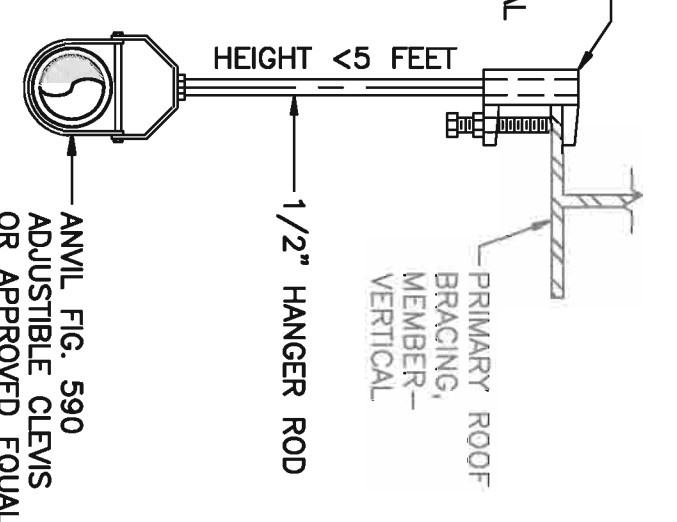
EXPIRATION DATE: 09/29/18



NOTE:  
 1. CONTRACTOR TO LOCATE AND VERIFY EXISTING PIPES AND APPURTENANCES THAT WILL REQUIRE PENETRATIONS OR ACCESS PRIOR TO SUBMITTAL OF SHOP DRAWINGS TO ENGINEER.



NOTE:  
 1. COMPONENTS AND HARDWARE BY UNISTRUT OR APPROVED EQUAL.



NOTE:  
 1. CONTRACTOR TO LOCATE AND VERIFY EXISTING PIPES AND APPURTENANCES THAT WILL REQUIRE PENETRATIONS OR ACCESS PRIOR TO SUBMITTAL OF SHOP DRAWINGS TO ENGINEER.

\*LOCATIONS OF ODOR CONTROL PIPING ARE APPROXIMATE. FIELD LOCATE ODOR CONTROL PIPES TO BE SUPPORTED FROM CEILING MEMBERS WITH ROOF MEMBER SUPPORTS AS SHOWN (TYP).

BUCKSKIN SANITARY DISTRICT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS  
 EXPANDED ODOR CONTROL PLAN

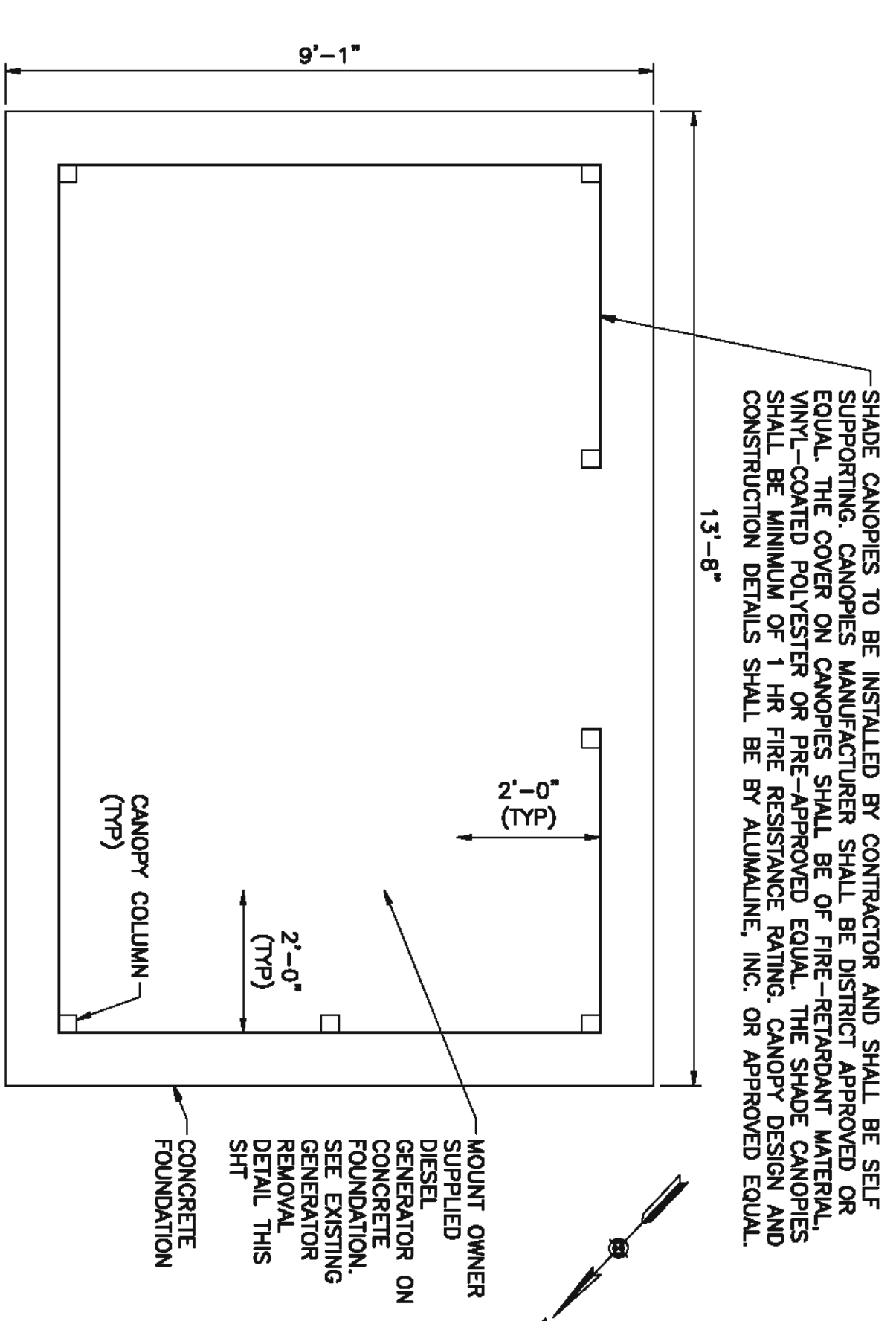
No.	Revision Note	Date	Drawn	Check

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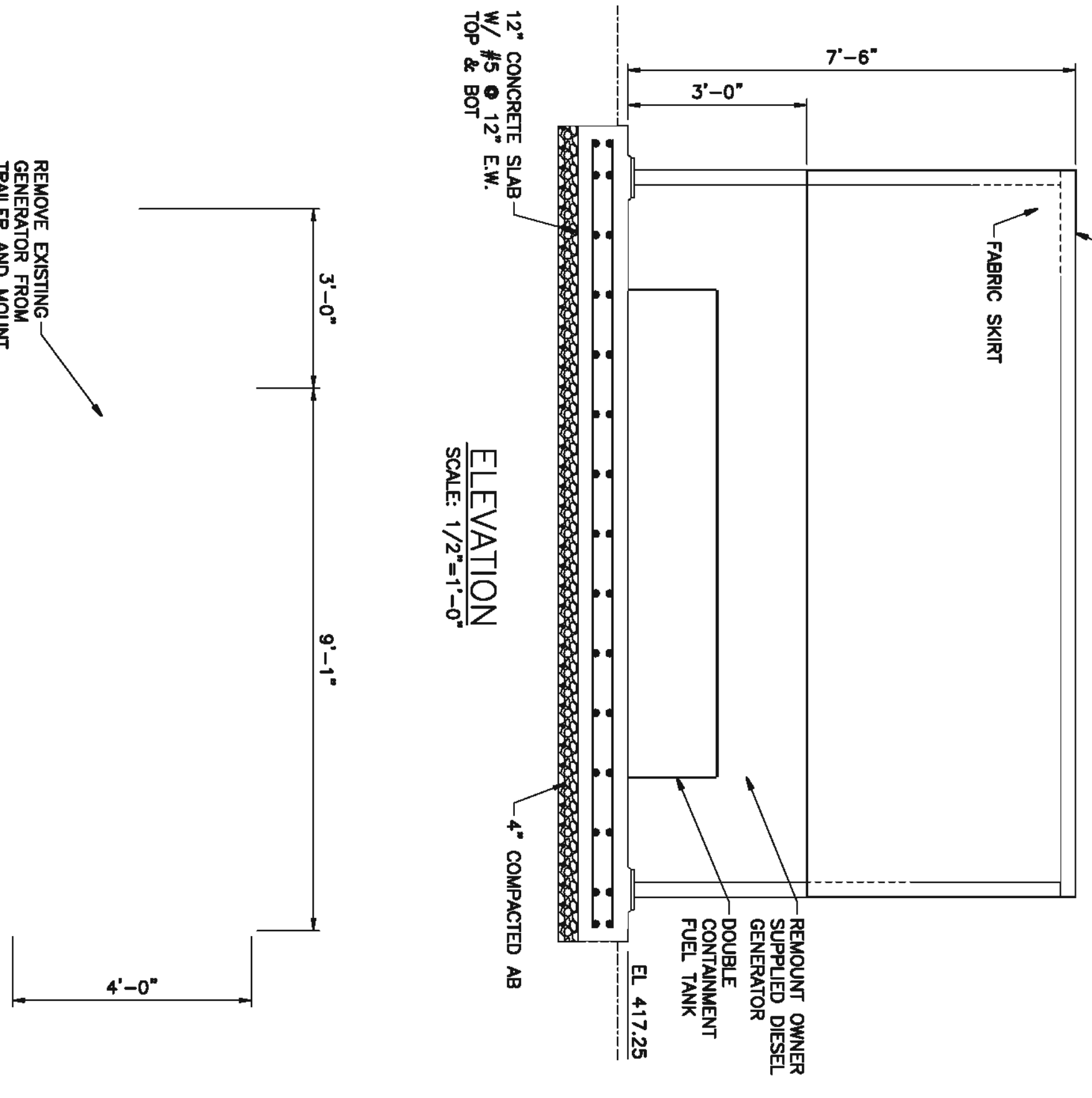
EXPIRATION DATE: 09/20/18

12/07/15  
 Project No. 0524  
 Sheet No. M-04

Approved by: RMRN  
 Design by: KB KWB  
 Drawn by: KB KWB



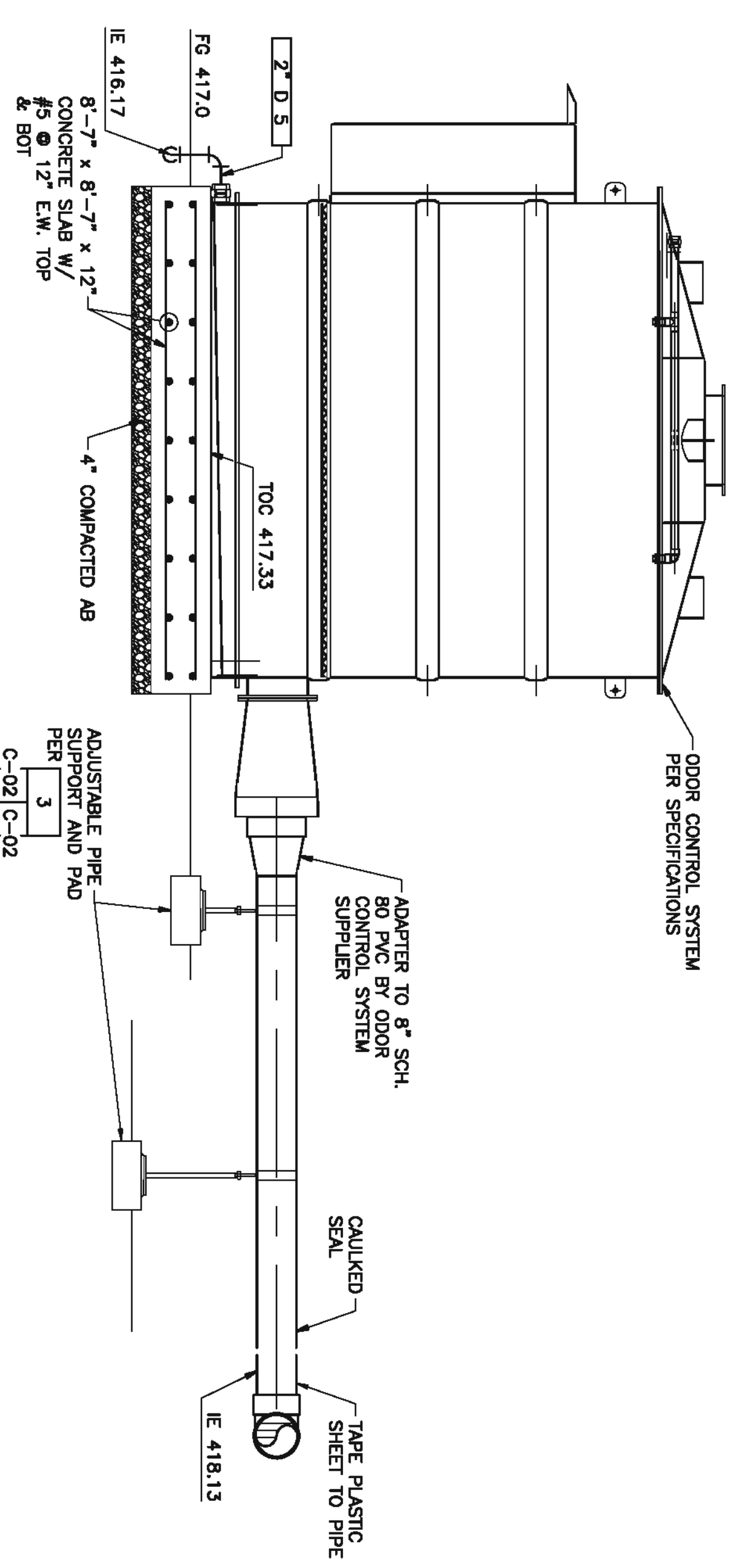
GENERATOR FOUNDATION AND ENCLOSURE SECTIONAL PLAN  
 SCALE: 1/2"=1'-0"



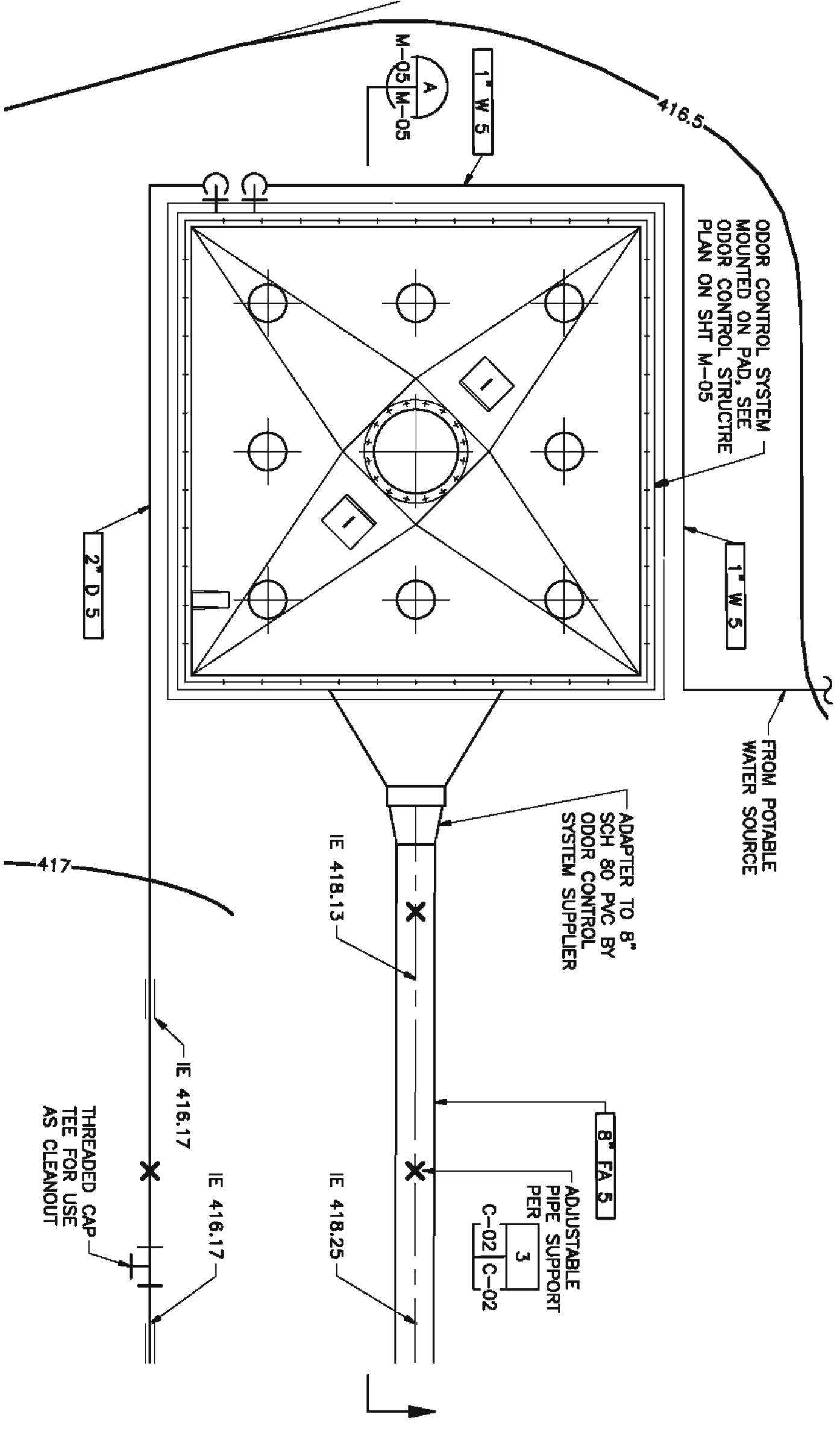
ELEVATION  
 SCALE: 1/2"=1'-0"

EXISTING GENERATOR REMOVAL DETAIL  
 SCALE: 1/2"=1'-0"

- CONSTRUCTION NOTES:
1. REMOVE FASTENERS AND HARDWARE CONNECTING EXISTING GENERATOR TO EXISTING TRAILER.
  2. EXISTING GENERATOR IS KOHLER MODEL BOROZOI, SERIAL 0865375.



SECTION  
 SCALE: 1/2"=1'-0"



ODOR CONTROL FOUNDATION AND SECTIONAL PLAN  
 SCALE: 1/2"=1'-0"

BUCKSKIN SANITARY DISTRICT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS

ODOR CONTROL UNIT AND  
 DIESEL GENERATOR DETAILS

No.	Revision Note	Date	Drawn	Check

OPERATION DATE: 09/20/18

Drawn by: KB KWB

Design by: RMRN

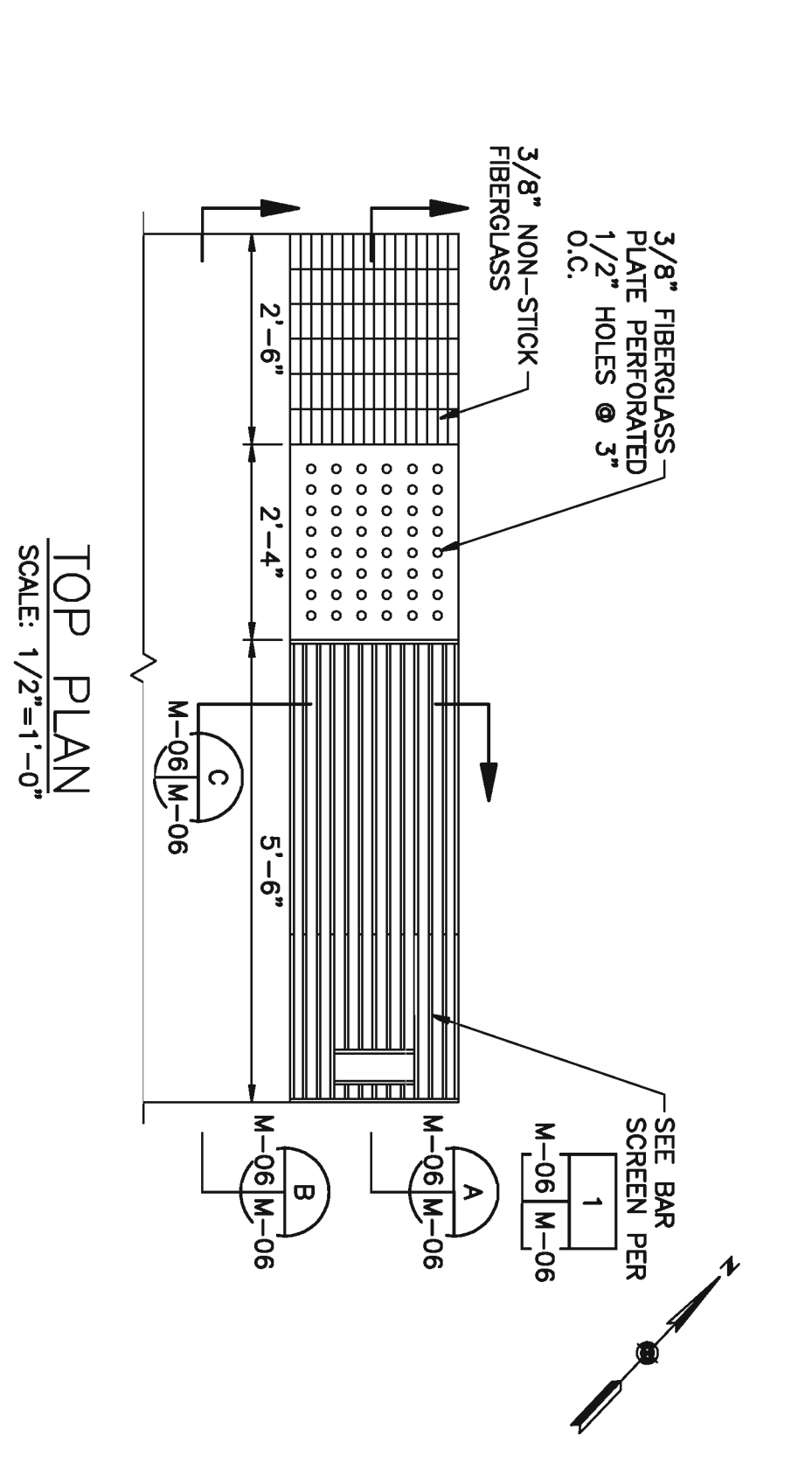
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Date: 12/07/15

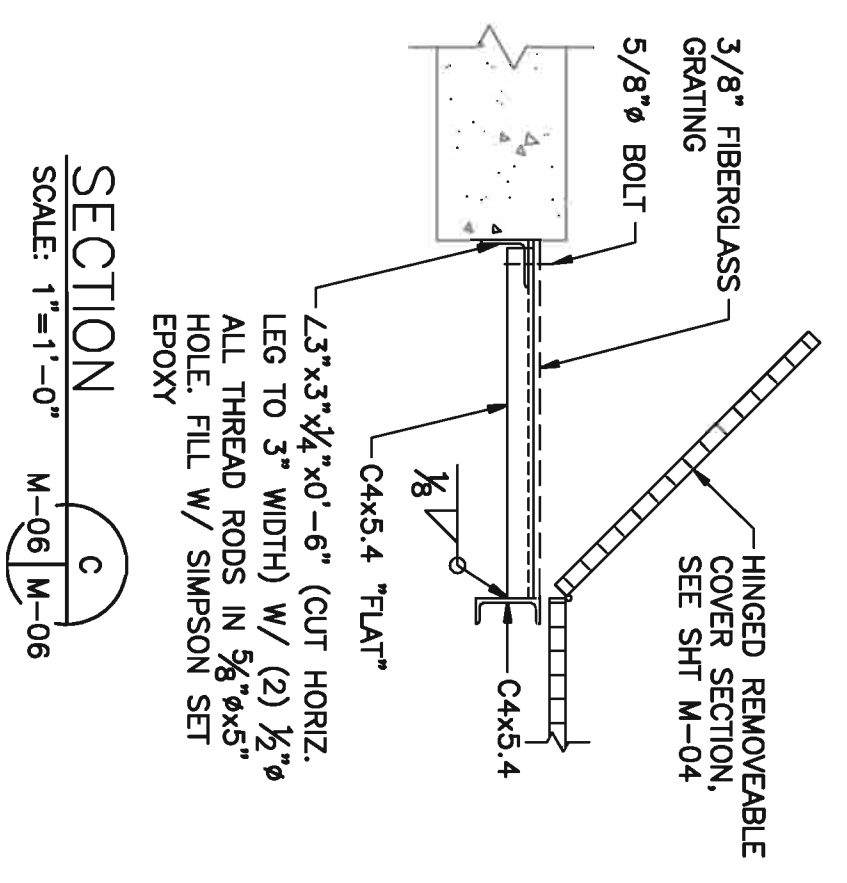
Project No.: 0524

Sheet No.: M-05

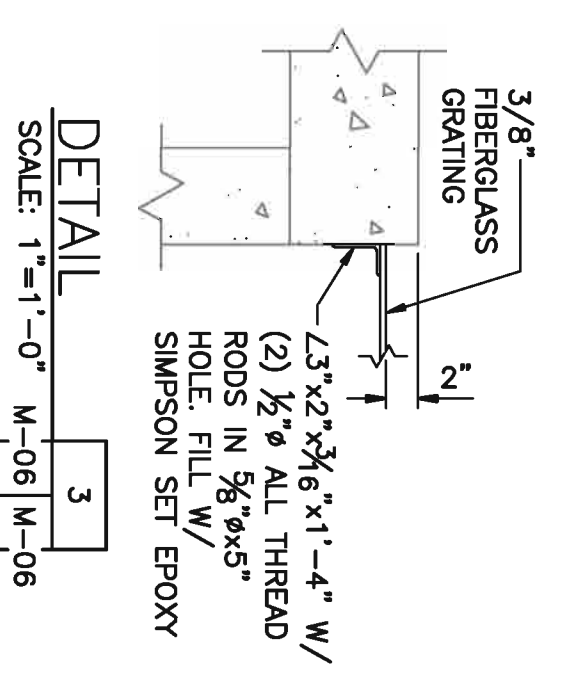
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 Phone: (610) 293-0206  
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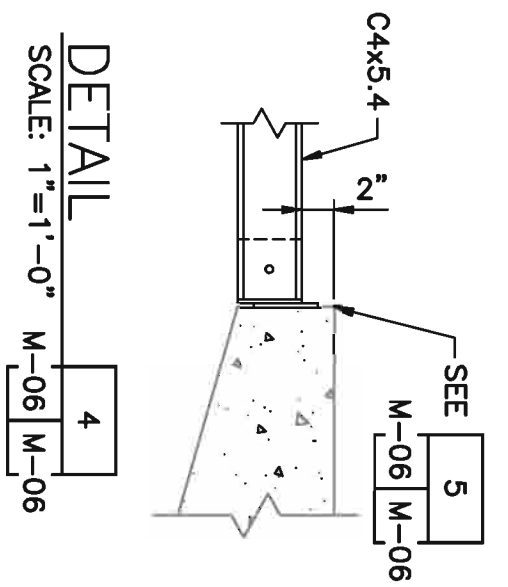
TOP PLAN  
 SCALE: 1/2"=1'-0"



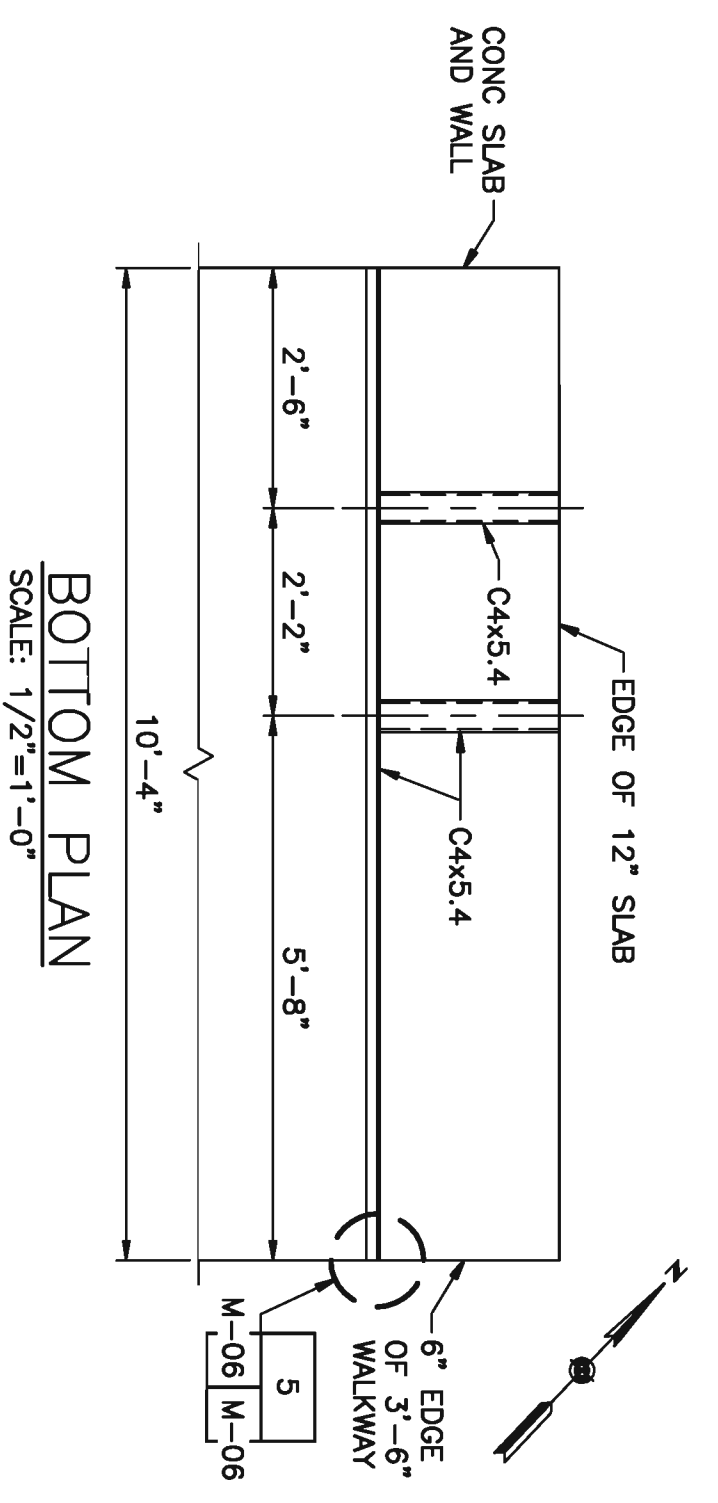
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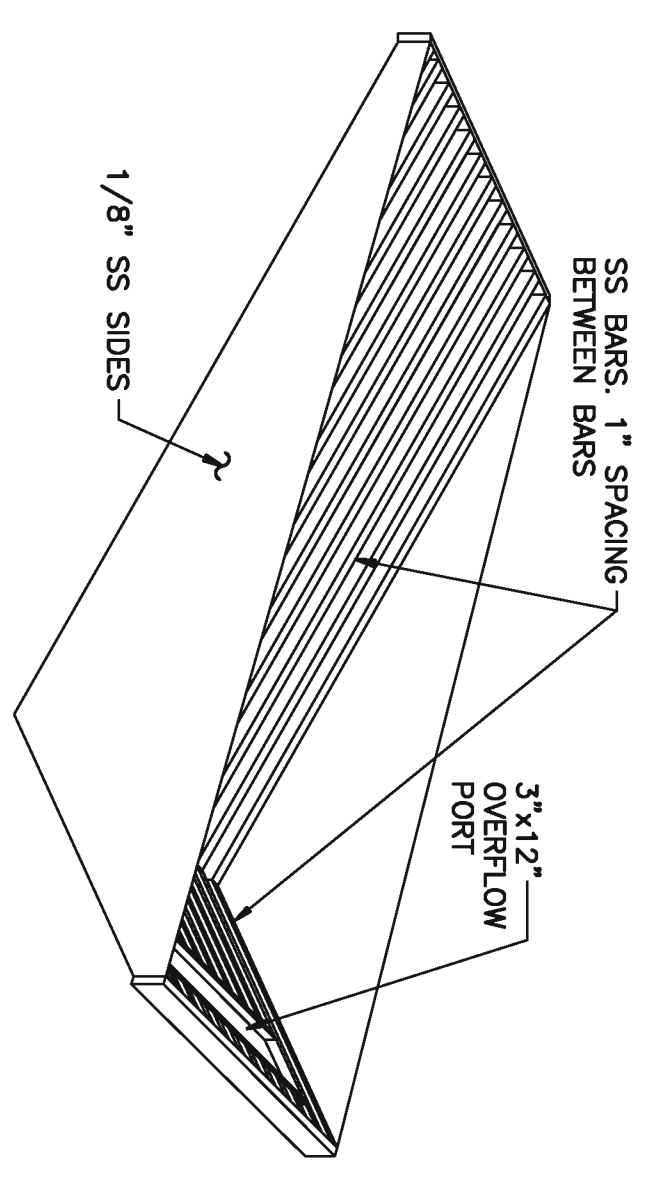
DETAIL  
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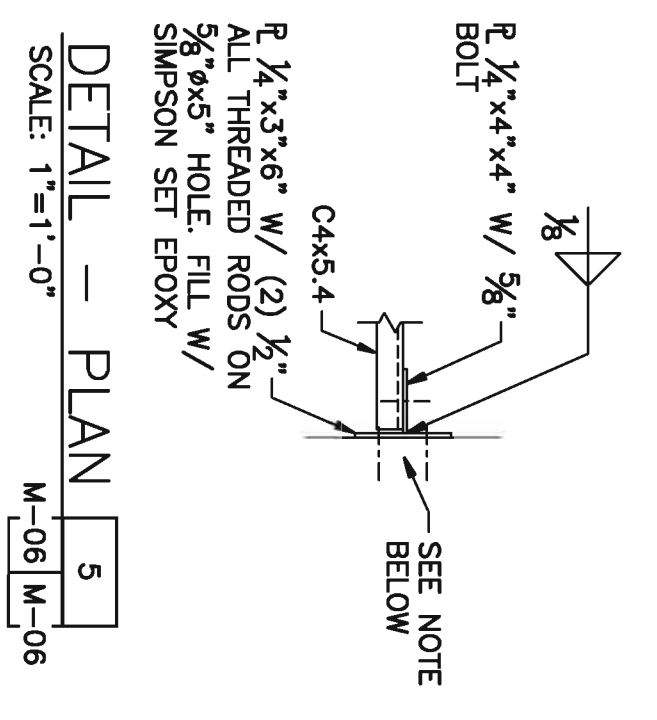
DETAIL  
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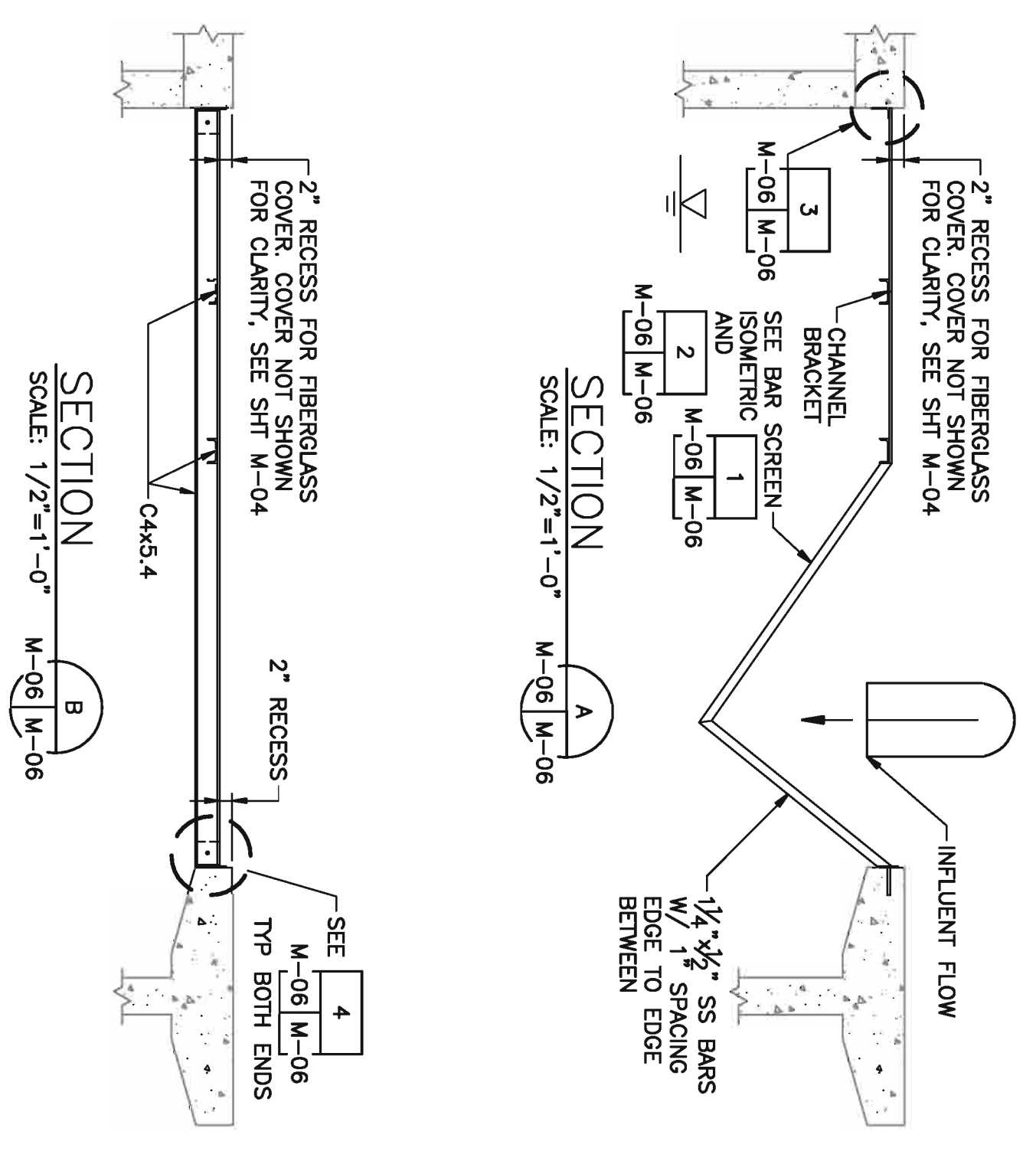
BOTTOM PLAN  
 SCALE: 1/2"=1'-0"



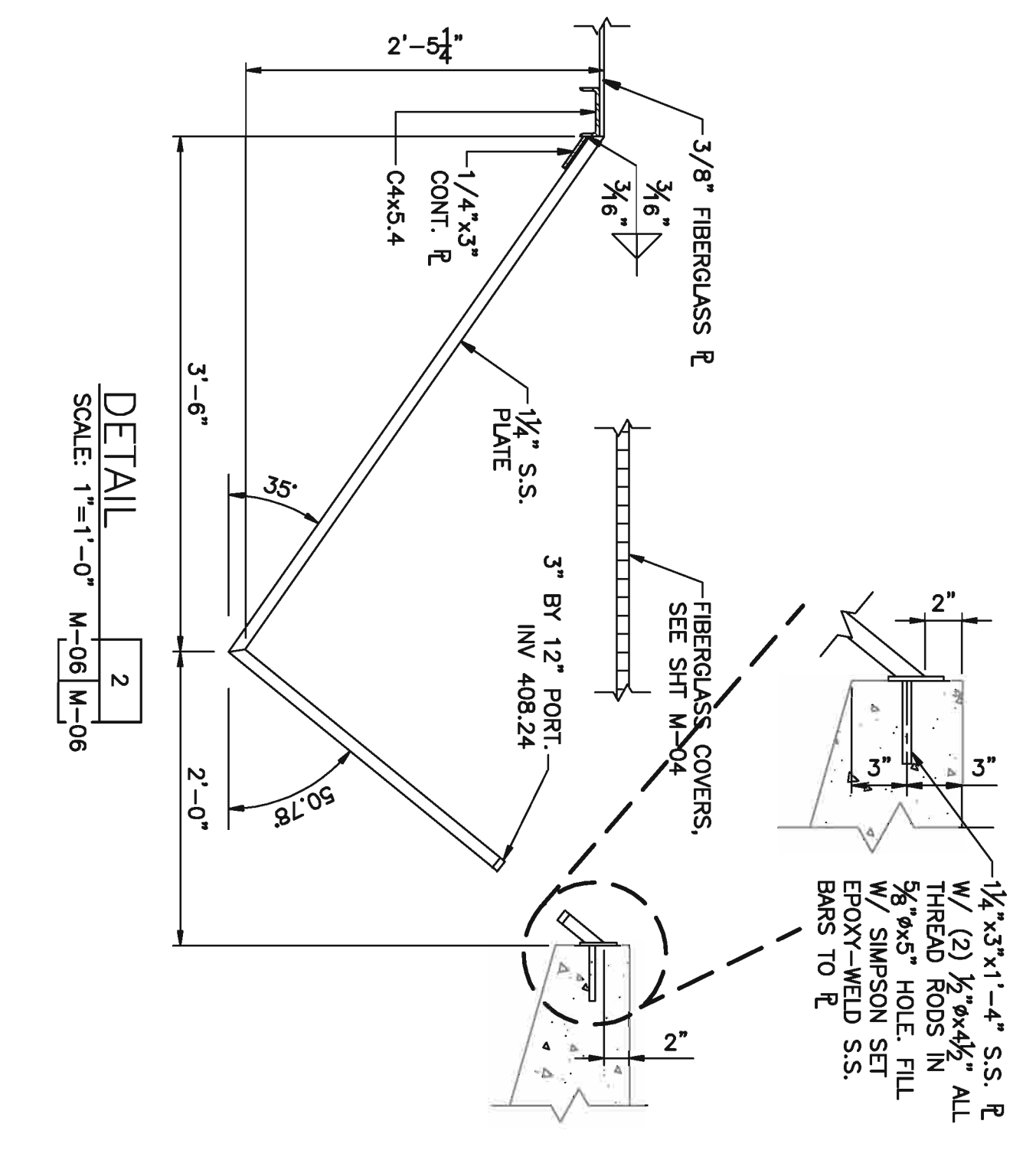
BAR SCREEN ISOMETRIC VIEW  
 SCALE: NTS



DETAIL - PLAN  
 SCALE: 1"=1'-0"



SECTION  
 SCALE: 1/2"=1'-0"



SECTION  
 SCALE: 1/2"=1'-0"



DETAIL  
 SCALE: 1"=1'-0"

No.	Revision Note	Date	Drawn	Check

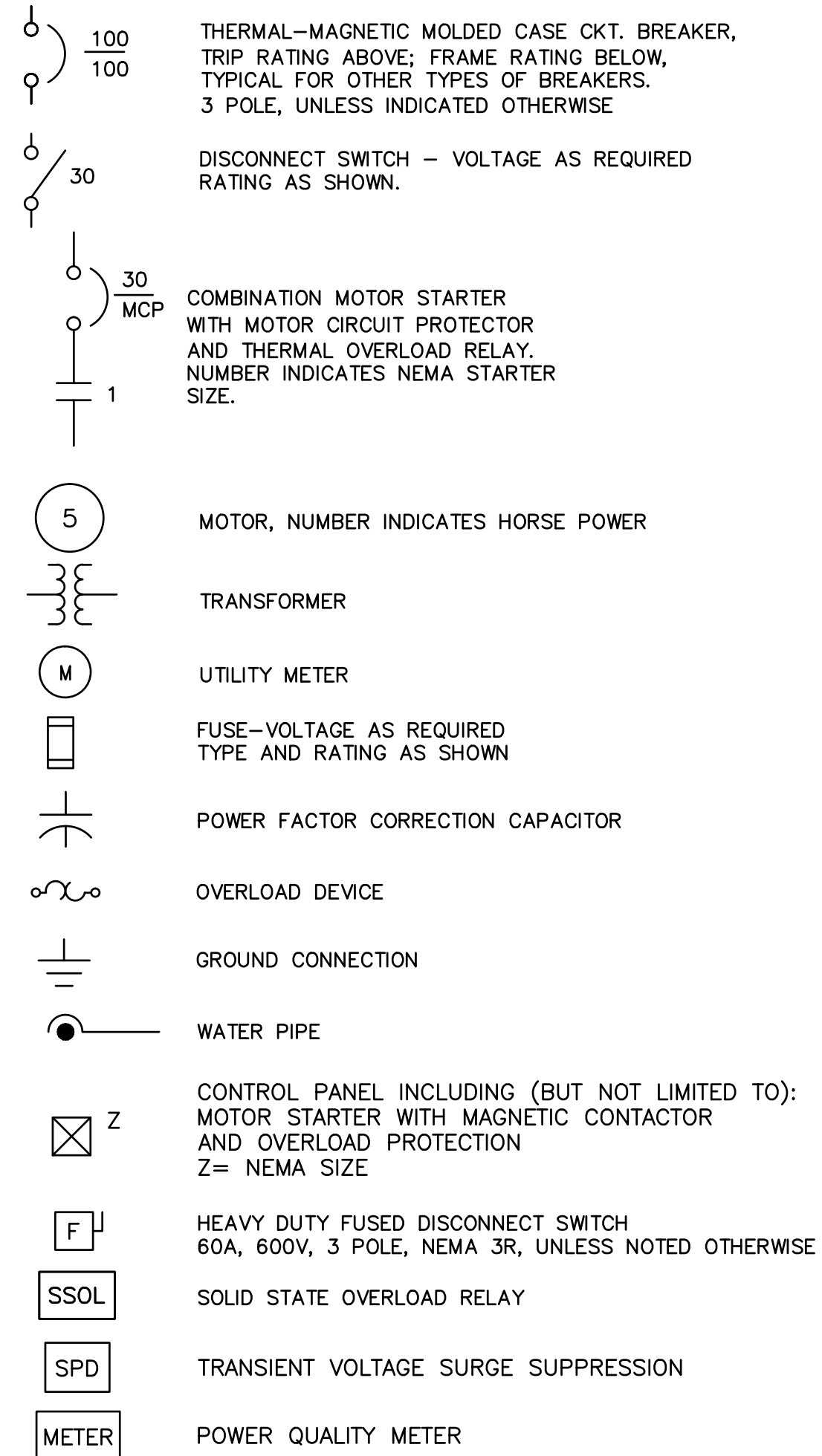
BUCKSKIN SANITARY DISTRICT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS  
 BAR SCREEN DETAILS AND SECTIONS

**NCS**  
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 202 E. Earl Drive, Suite 110  
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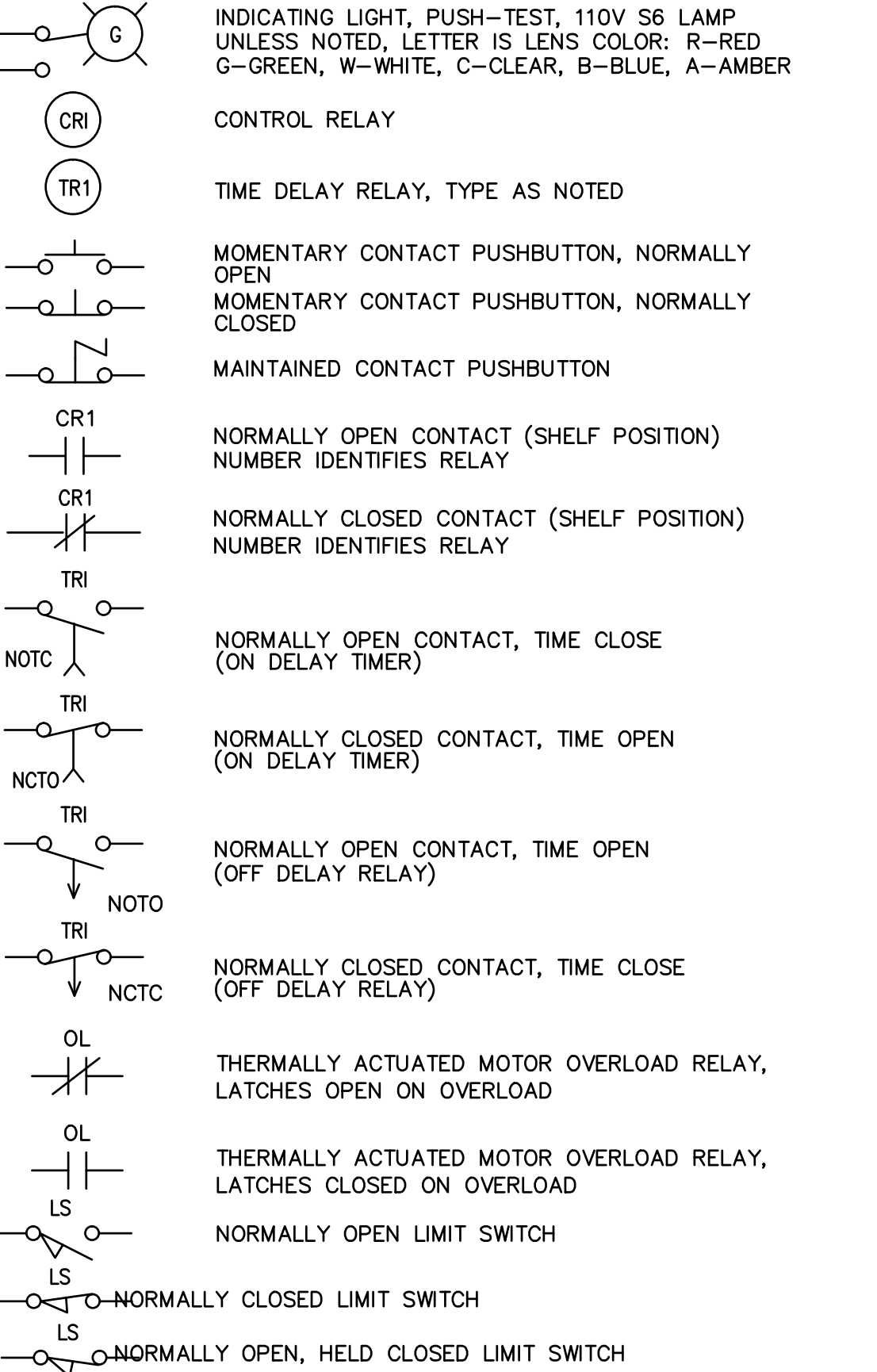
2012 National Professional Engineer Seal  
 Buckskin Sanitary District  
 Wastewater Treatment Plant Improvements  
 BAR SCREEN DETAILS AND SECTIONS  
 M-06  
 EXPIRATION DATE: 09/29/18

Drawn By: KB KWB
Design By: SAW SW
Approved By: RNRN
Date: 12/07/15
Project No.: 0524
Sheet No.: M-06

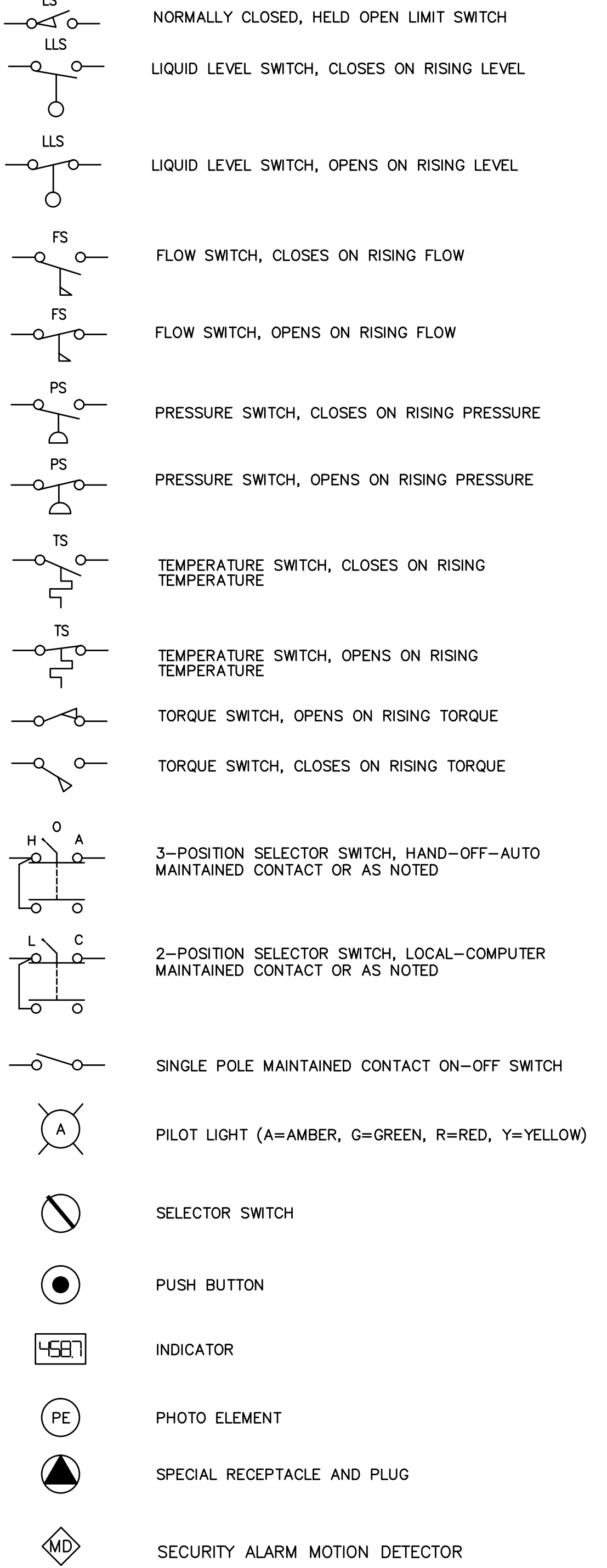
SINGLE LINE DIAGRAM SYMBOLS



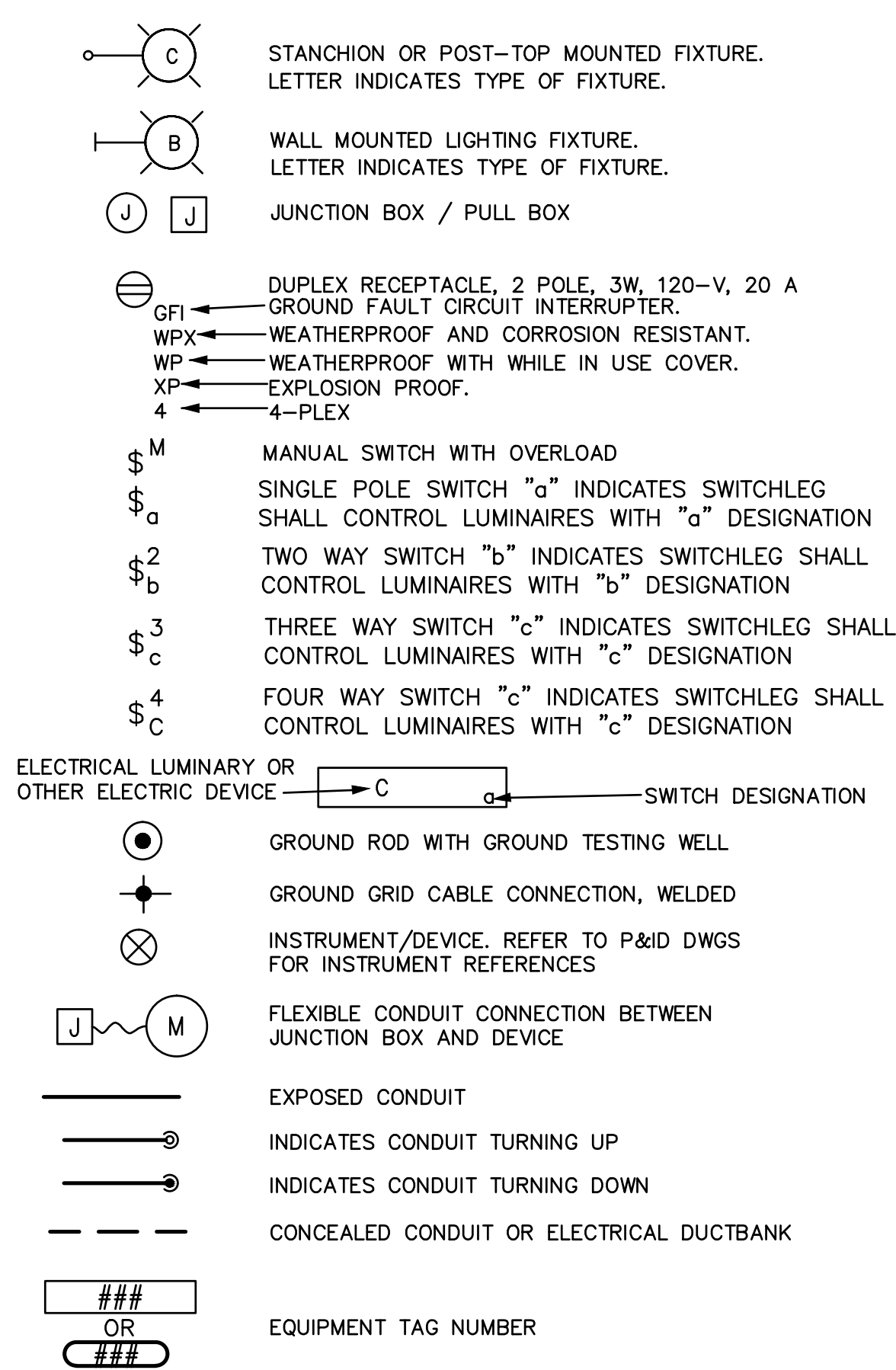
CONTROL SCHEMATIC SYMBOLS



CONTROL SYMBOLS CONT'D



PLAN VIEW SYMBOLS



ABBREVIATIONS

- A AMPERES
A/I ANALOG INPUT
A/O ANALOG OUTPUT
AC ALTERNATING CURRENT
ACB AIR CURRENT BREAKER
AF AMPERE FRAME
AFC ABOVE FINISHED CONCRETE
AFF ABOVE FINISHED FLOOR
AFG ABOVE FINISHED GRADE
AL ALUMINUM
ATS AUTOMATIC TRANSFER SWITCH
AUTO AUTOMATIC
AWG AMERICAN WIRE GAUGE
BD BOARD
BIM BREAKER INTERFACE MODULE
BKR BREAKER
C CONDUIT
CAB CABINET
CB CIRCUIT BREAKER
CI-D1 CLASS 1, DIVISION 1 HAZARDOUS AREA
CI-D2 CLASS 1, DIVISION 2 HAZARDOUS AREA
CKT CIRCUIT
CL2 CHLORINE
CLG CEILING
CMU CONCRETE MASONRY UNIT
CND OR CDT CONDUIT
COND CONDUIT
CONT CONTROL
CP-1 CONTROL PANEL, NUMBER AS NOTED
CPT CONTROL POWER TRANSFORMER
CT CURRENT TRANSFORMER
CU COPPER
D/I DISCRETE INPUT
D/O DISCRETE OUTPUT
DB DECIBELS
DC DIRECT CURRENT
DCS DISTRIBUTED CONTROL SYSTEM
DIAG DIAGRAM
DISC DISCONNECT
DSW DISCONNECT SWITCH
DPDT DOUBLE POLE DOUBLE THROW
DPST DOUBLE POLE SINGLE THROW
DWG DRAWING
EC EMPTY CONDUIT
EDB ELECTRICAL DUCTBANK
EF EXHAUST FAN
EHL ELECTRICAL HANDHOLE
EL, ELEV ELEVATION
EM EMERGENCY
EMT ELECTRICAL METALLIC TUBING CONDUIT
EO ELECTRICALLY OPERATED
EOV ELECTRICALLY OPERATED VALVE
ETM ELAPSED TIME METER
EXIST EXISTING
FDR FEEDER

ABBREVIATIONS CONT'D

- FE FLOW ELEMENT/TRANSDUCER (FLOWMETER)
FEEDER CONDUCTOR
FLA FULL LOAD AMPS
FLC FULL LOAD CURRENT
FLEX FLEXIBLE
FIT FLOW INDICATOR TRANSMITTER
FEET OR FOOT
FT FUTURE
GALV GALVANIZED
GFI GROUND FAULT INTERRUPTER
GFP GROUND FAULT PROTECTION
GND GROUND
HDG HOT DIP GALVANIZED
HOA HAND/OFF/AUTO
HP HEAT PUMP
HTR HEATER
HW HEADWORKS
HZ HERTZ
IC INTERRUPTING CURRENT
IMT INTERMEDIATE METAL GALVANIZED STEEL CONDUIT
IHH INSTRUMENTATION HANDHOLE
IN OR INCHES OR INCH
IND INDICATING
INST INSTANTANEOUS
INSTR INSTRUMENT
INTLK INTERLOCK
ITB INTERFACE TERMINAL BOARD
JB OR JUNCTION BOX, CONDULET, FITTING AS REQUIRED BY NEC, UNLESS NOTED OTHERWISE
KAIC THOUSAND AMPERE INTERRUPTING CAPACITY (SYMMETRICAL)
KOMIL THOUSAND CIRCULAR MILS
KVA KILOVOLT-AMPERES
KW KILOWATTS
LCP LOCAL CONTROL PANEL
LCS LOCAL CONTROL STATION
LE LEVEL ELEMENT/TRANSDUCER
LEU LEVEL ELEMENT ULTRASONIC TRANSDUCER
LIT LEVEL INDICATOR TRANSMITTER
LOS LOCKOUT STOP STATION
LS LEVEL SWITCH
LSIG LONG, SHORT, INSTANTANEOUS, AND GROUND
LT LIGHT
LTG LIGHTING
LV LOW VOLTAGE
MA MILLIAMPERE
MAINT MAINTAINED
MAN MANUAL
MAX MAXIMUM
MC MAINTAINED CONTACT
MCC MAIN CIRCUIT BREAKER
MCC MOTOR CONTROL CENTER
MCP MOTOR CIRCUIT PROTECTOR
MFR MANUFACTURER
MIN MINIMUM
MINT MINUTE
MOV MOTOR OPERATED VALVE
MPR MOTOR PROTECTION RELAY
MSD MAIN SERVICE DISCONNECT
MTR MOTOR
MV MILLIVOLT/MEDIUM VOLTAGE
MVTU MEDIUM VOLTAGE TRIP UNIT
NA NON-AUTOMATIC
N/A NOT APPLICABLE
NC NORMALLY CLOSED
NCID NORMALLY CLOSED INSTANTANEOUS OPEN
NCTC NORMALLY CLOSED TIME CLOSE
NCTD NORMALLY CLOSED TIME OPEN
NEC NATIONAL ELECTRIC CODE
NG NATURAL GAS
NIC NOT IN CONTRACT
NO NUMBER
NO NORMALLY OPEN
NOIC NORMALLY OPEN INSTANTANEOUS CLOSE
NOTC NORMALLY OPEN TIME CLOSE
NOTO NORMALLY OPEN, TIME OPEN
NP NAMEPLATE
NTS NOT TO SCALE
OCS ODOR CONTROL SYSTEM
OL OVERLOAD RELAY
OHU OVERHEAD UTILITY LINE
PB PUSHBUTTON
PC PHOTOCELL
PDS PRESSURE DIFFERENTIAL SWITCH
PM PAD MOUNT
PNL PANEL
POS POSITION
PR PAIR
PRI PRIMARY
PS PRESSURE SWITCH
PSH HIGH PRESSURE SWITCH
PT PRESSURE TRANSMITTER
PVC POLYVINYL CHLORIDE
RECEP RECEPTACLE
RGS RIGID GALVANIZED STEEL CONDUIT
RTU REMOTE TERMINAL UNIT
SCC SHORT CIRCUIT CURRENT
SEC SECONDARY
SEL SELECTOR
SP SPARE
SPD SURGE PROTECTION DEVICE SPECIFICATION
SPT SOUND POWERED TELEPHONE
SPDT SINGLE POLE DOUBLE THROW
SPST SINGLE POLE SINGLE THROW
SS STAINLESS STEEL
SSS SOLID STATE STARTER
S/S STOP/START STATION
STA STATION
STL STEEL
STR STARTER
SV SOLENOID VALVE
SW SWITCH

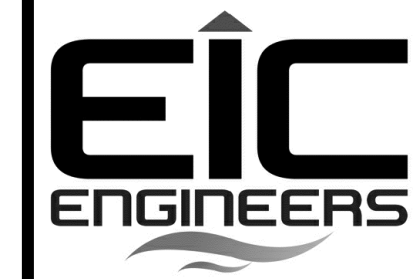
ABBREVIATIONS CONT'D

- SWBD SWITCHBOARD
T THERMOSTAT
TDR TIME DELAY RELAY
TEMP TEMPERATURE
TS TEMPERATURE SWITCH
TSH HIGH TEMPERATURE SWITCH
TSP TWISTED SHIELDED PAIR (CABLE)
TYP TYPICAL
UH UNIT HEATER
UCM UNIVERSAL CONTROL MODULE UNLESS OTHERWISE NOTED
U.G. UNDERGROUND
UPS UNINTERRUPTIBLE POWER SUPPLY VOLTS
VFD VARIABLE FREQUENCY DRIVE
W WATTS
W/O WITHOUT
WP WEATHERPROOF
XMFR TRANSFORMER
XMTR TRANSMITTER
XP EXPLOSION PROOF
XR EXISTING TO REMAIN
ZS LIMIT SWITCH
3W THREE WIRE
4W FOUR WIRE
4X NEMA 4X (CORROSION RESISTANT)

GENERAL NOTES:

- 1. CONFORM TO ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AND REGULATIONS.
2. REFER TO NON-ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS NOT INDICATED IN THE ELECTRICAL DRAWINGS.

BUCKSKIN SANITARY DISTRICT
WASTEWATER TREATMENT PLANT IMPROVEMENTS
ELECTRICAL
SYMBOLS AND LEGEND



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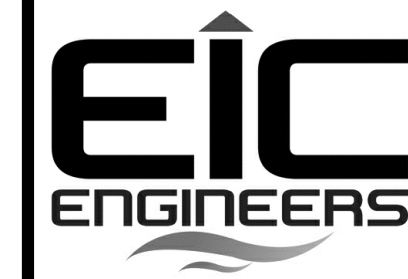


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No.	Revision Note	Date	Drawn	Check

**BUCKSKIN SANITARY DISTRICT  
WASTEWATER TREATMENT PLANT IMPROVEMENTS  
ELECTRICAL  
SINGLE LINE DIAGRAM**



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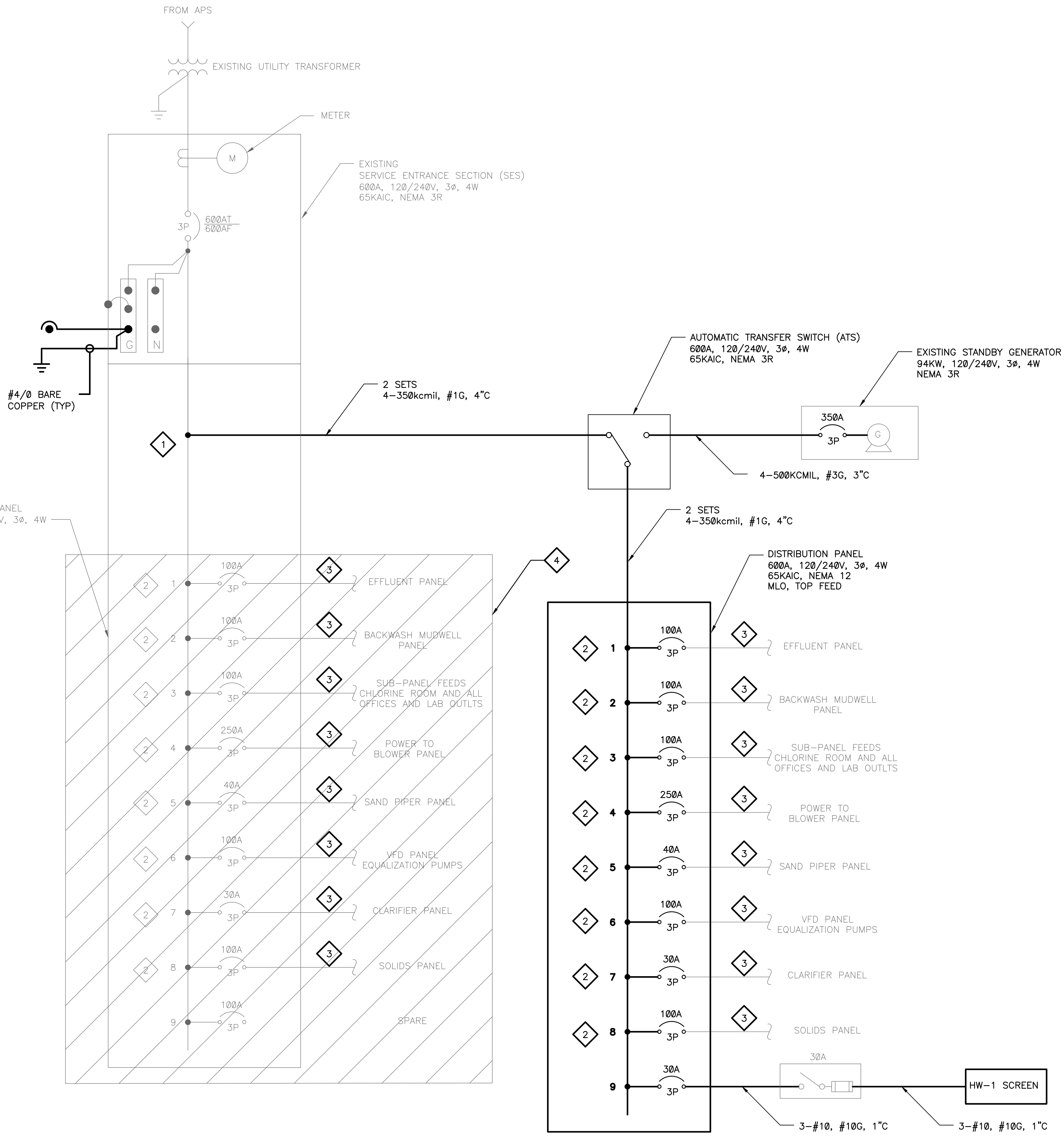
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Design by: BB  
Approved by: VB  
Date: 07/13/15  
Project No. 0524  
Sheet No. E02

**GENERAL NOTES:**

- REFER TO SINGLE LINE DIAGRAMS, BLOCK DIAGRAMS, PANEL SCHEDULES, AND OTHER DRAWINGS FOR CIRCUITRY REQUIREMENTS.
- NOT ALL PULL BOXES AND JUNCTION BOXES ARE INDICATED. PULL BOXES AND JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED BY OTHER DRAWINGS, SPECIFICATIONS, AND/OR NATIONAL ELECTRIC CODE.

**KEY NOTES:**

- RETAIN THE SERVICES OF THE EXISTING EQUIPMENT MANUFACTURER (EATON) TO PERFORM THE FOLLOWING:  
REWORK THE EXISTING BUS AS REQUIRED TO ACCOMMODATE WORK AS INDICATED. PROVIDE THE SERVICES OF A THIRD PARTY INSPECTION FOR COMPLIANCE WITH UL REQUIREMENTS AND ADHERING A UL LABEL ON THE EQUIPMENT AFTER THE COMPLETION OF WORK.
- EXISTING LOAD INFORMATION WAS SUPPLIED BY OWNER.
- RECONNECT THE EXISTING LOADS TO THE NEW DISTRIBUTION PANEL, INTERCEPT EXISTING CONDUIT AND EXTEND TO THE NEW DISTRIBUTION PANEL AND REUSE EXISTING WIRE.
- RETAIN THE SERVICES OF THE EXISTING EQUIPMENT MANUFACTURER (EATON) TO PERFORM THE FOLLOWING:  
DEMO THE EXISTING BREAKERS, CONDUIT AND WIRES TO BE REUSED AND CIRCUITS TO BE RELOCATED IN NEW DISTRIBUTION PANEL.



**SINGLE LINE DIAGRAM**

LOAD CALCULATION BUCKSKIN WATER TREATMENT FACILITY					
EQUIPMENT	KVA	HP	CONNECTED LOAD (FLA)	RUNNING LOAD (FLA)	GENERATOR LOAD (FLA)
<b>EXISTING EQUIPMENT LOAD</b>					
HEADWORKS PUMP - 1		3	9.6	9.6	9.6
HEADWORKS PUMP - 2		3	9.6	9.6	9.6
CL-2 ROOM		1.5	6	6	6
BACKWASH PUMP - 1		10	28	28	28
BACKWASH PUMP - 2		10	28	28	28
CLARIFIER - 1		3	9.6	9.6	9.6
CLARIFIER - 2		3	9.6	9.6	9.6
MUD WELL - 1		1.5	6	6	6
MUD WELL - 2		1.5	6	6	6
EFFLUENT - 1		15	42	42	42
EFFLUENT - 2		15	42	42	42
DIGESTER #2		3	9.6	9.6	9.6
SANDPIPER - 1		5	15.2	15.2	15.2
SANDPIPER - 2		5	15.2	15.2	15.2
BLOWERS - 1		25	68	68	68
BLOWERS - 2		25	68	68	68
VENTILATION FAN		1.5	6	6	6
VENTILATION FAN		1.5	6	6	6
VENTILATION FAN		1.5	6	6	6
VENTILATION FAN		1.5	6	6	6
VENTILATION FAN		2	6.8	6.8	6.8
VENTILATION FAN		2	6.8	6.8	6.8
ODOR SCRUBBER		1.5	6	6	6
<b>NEW EQUIPMENT LOAD</b>					
HEADWORKS SCREENING HW-1	7.5		22	22	22
ODOR CONTROL OC-1	0.8		3	3	3
					0
					0
					0
TOTAL LOAD - AMPS AT 240V, 3 PHASE			441	441	263
25% OF LARGEST MOTOR			6		
TOTAL LOAD - AMPS AT 240V, 3 PHASE			447		
SERVICE SIZE - AMPS AT 240V, 3 PHASE			600		
				109	KVA
				87	KW
				94	KW

**LOAD SUMMARY CALCULATIONS**

**GENERAL NOTES:**

- REFER TO SINGLE LINE DIAGRAMS, BLOCK DIAGRAMS, PANEL SCHEDULES, AND OTHER DRAWINGS FOR CIRCUITRY REQUIREMENTS.
- NOT ALL PULL BOXES AND JUNCTION BOXES ARE INDICATED. PULL BOXES AND JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED BY OTHER DRAWINGS, SPECIFICATIONS, AND/OR NATIONAL ELECTRIC CODE.

PANEL: PANEL A			LOCATION:			FED FROM:				
VOLTAGE: 120/240V, 3-Ph, 4-W			BUS: 100A			FEEDER ENTRANCE: TOP				
AIC:			MAIN: MLO			MOUNTING: SURFACE				
CONDUCTOR AND CONDUIT SCHEDULE	CIR. NO.	DESCRIPTION	AMP/ POLE	LOAD IN VOLTAMPS			AMP/ POLE	DESCRIPTION	CIR. NO.	CONDUCTOR AND CONDUIT SCHEDULE
				ØA	ØB	ØC				
N/A	1	CLARIFIER SCREEN	20/2	960			240	MOTOR CONTROL CL-2 INJECTOR	2	N/A
	3				960		240	CL-2 MONITOR / CL-2 ROOM	4	N/A
	5	SPACE						SPACE	6	
N/A	7	OUTSIDE GFI UNDER PANEL	20/1	180			180	OUTSIDE GFI UNDER PANEL	8	N/A
N/A	9	TRUBIDITY METER C-2 ROOM	20/1		180		720	HEADWORKS SCRUBBER	10	N/A
	11	SPACE						SPACE	12	
N/A	13	S.P. FLOW METER/EFFLUENT FLOW METER	20/1	360			720	CL-2 ROOM LIGHTS AND FAN	14	N/A
N/A	15	TOOL ROOM LIGHTS GRINDER PUMP TOILET	20/1		720			SPARE	16	N/A
	17	SPACE						SPACE	18	
N/A	19	TOOL ROOM OUTLETS	20/1	180			720	OFFICE	20	N/A
N/A	21	CHEMICAL PUMPS OUTLETS	20/1		180		180	CENTER FUSE	22	N/A
	23	SPACE						SPACE	24	
2-#10, #10 GND, 1" C	25	OC-1 ODOR CONTROL BLOWER	30/3	2640			1200	OVEN, VACUUM PUMP	26	N/A
	27			2640			360	LAB LIGHTS, COMPUTER, ALARM	28	N/A
	29				2640				SPACE	30
				KVA ØA	7.4	KVA ØB	6.2	TOTAL CONNECTED KVA		16.2
				AMPS ØA	61.5	AMPS ØB	51.5	MAXIMUM PHASE LOAD (A)		61.5
COMMENTS:				CONTINUOUS LOAD (AMPS) = 61.5 125% OF CONTINUOUS LOAD (AMPS) = 76.9 NONCONTINUOUS LOAD (AMPS) = 0.0 100% OF NON CONTINUOUS LOAD (AMPS) = 0.0 125% OF THE CONTINUOUS AND 100% OF THE NON-CONTINUOUS (AMPS) = 76.9						

**EXISTING PANEL SCHEDULE A**

PANEL: B			LOCATION:			FED FROM:				
VOLTAGE: 208/120 V, 3-Ph, 4-W			BUS: 100A			FEEDER ENTRANCE: TOP				
AIC:			MAIN: MLO			MOUNTING: SURFACE				
CONDUCTOR AND CONDUIT SCHEDULE	CIR. NO.	DESCRIPTION	AMP/ POLE	LOAD IN VOLTAMPS			AMP/ POLE	DESCRIPTION	CIR. NO.	CONDUCTOR AND CONDUIT SCHEDULE
				ØA	ØB	ØC				
N/A	1	FAN-1	20/2	720			1200	?	2	N/A
	3				720		1200		4	
N/A	5	FAN-2	20/2			720		SPARE	6	N/A
	7			720					8	
N/A	9	FAN-3	20/2			720		SPARE	10	N/A
	11					720			12	
N/A	13	FAN-4	20/2	720				20/1	14	N/A
	15				720			20/1	16	N/A
N/A	17	FAN-5	20/2			720		OFFICE A/C	18	N/A
	19			720			2100		20	
N/A	21	FAN-6	20/2			720	360	20/1	22	2-#12, #12 GND, 1" C
	23					720	1440	20/1	24	2-#12, #12 GND, 1" C
	25	SPACE	20/1				180	20/1	26	2-#12, #12 GND, 1" C
	27	SPACE	20/1				180	20/1	28	2-#12, #12 GND, 1" C
	29	SPACE	20/1					20/1	30	
				KVA ØA	6.4	KVA ØB	4.6	TOTAL CONNECTED KVA		18.6
				AMPS ØA	53.0	AMPS ØB	38.5	MAXIMUM PHASE LOAD (A)		63.5
COMMENTS:				CONTINUOUS LOAD (AMPS) = 63.5 125% OF CONTINUOUS LOAD (AMPS) = 79.4 NONCONTINUOUS LOAD (AMPS) = 0.0 100% OF NON CONTINUOUS LOAD (AMPS) = 0.0 125% OF THE CONTINUOUS AND 100% OF THE NON-CONTINUOUS (AMPS) = 79.4						

**EXISTING PANEL SCHEDULE B**

**BUCKSKIN SANITARY DISTRICT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS  
 ELECTRICAL  
 PANEL SCHEDULE**



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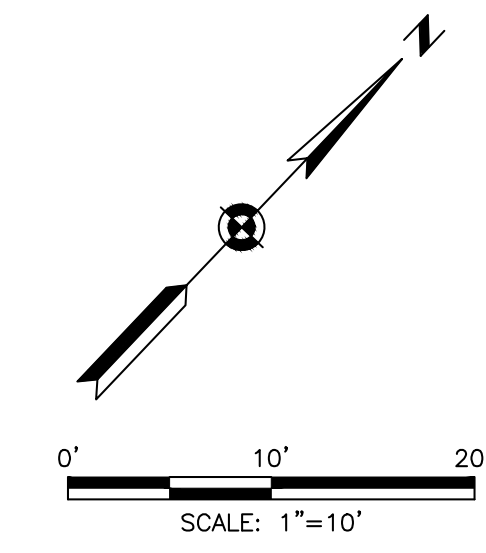
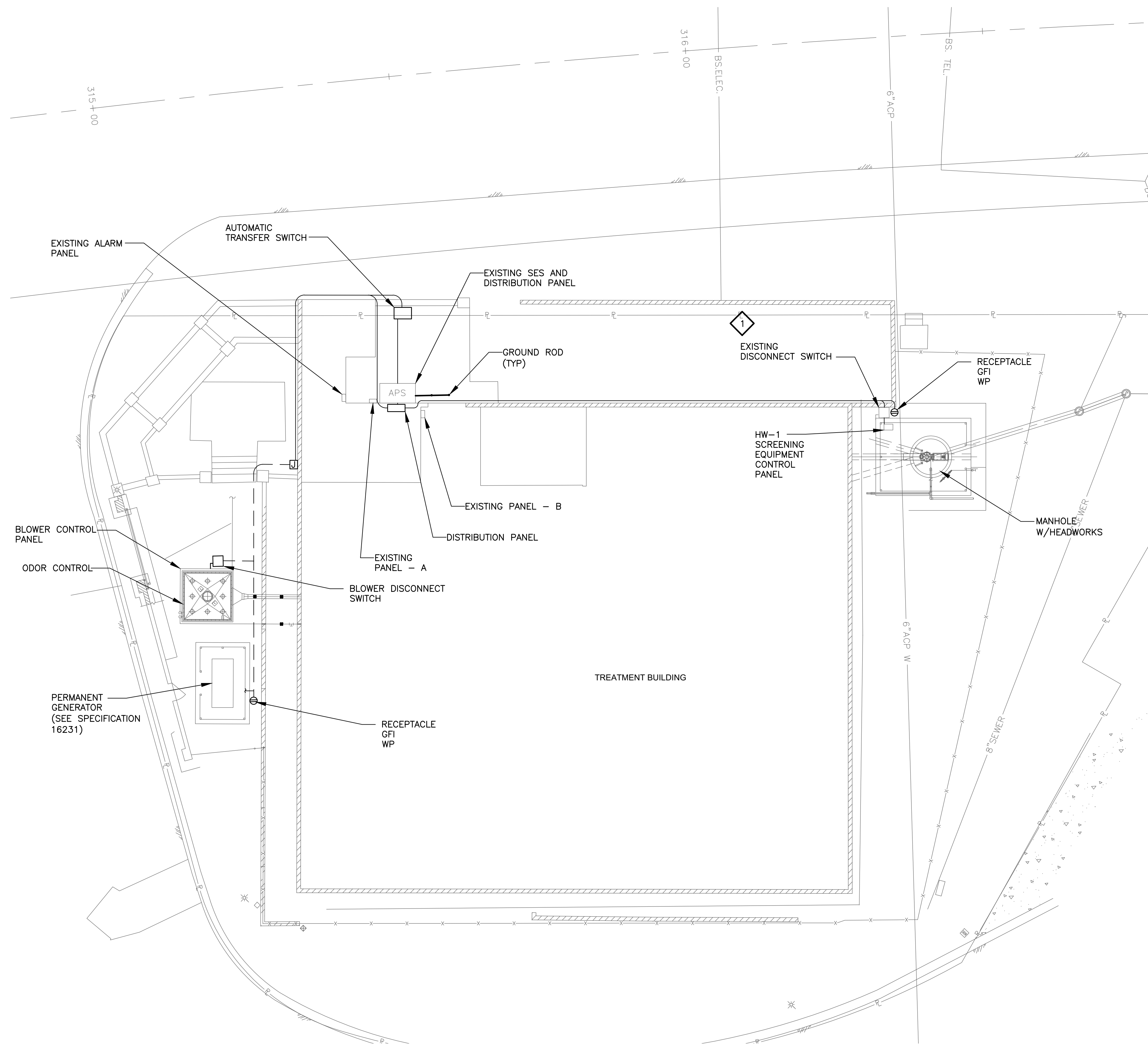
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 Design by: BB  
 Approved by: VB  
 Date: 07/13/15  
 Project No. 0524  
 Sheet No. E03

**GENERAL NOTES:**

- REFER TO SINGLE LINE DIAGRAMS, BLOCK DIAGRAMS, PANEL SCHEDULES, AND OTHER DRAWINGS FOR CIRCUITRY REQUIREMENTS.
- NOT ALL PULL BOXES AND JUNCTION BOXES ARE INDICATED. PULL BOXES AND JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED BY OTHER DRAWINGS, SPECIFICATIONS, AND/OR NATIONAL ELECTRIC CODE.

**KEY NOTES:**

1. CONNECT SCREENING CONTROL PANEL TO EXISTING DISCONNECT. 3#10, #10C, 1" C.



**BUCKSKIN SANITARY DISTRICT  
WASTEWATER TREATMENT PLANT IMPROVEMENTS  
ELECTRICAL  
SITE PLAN**



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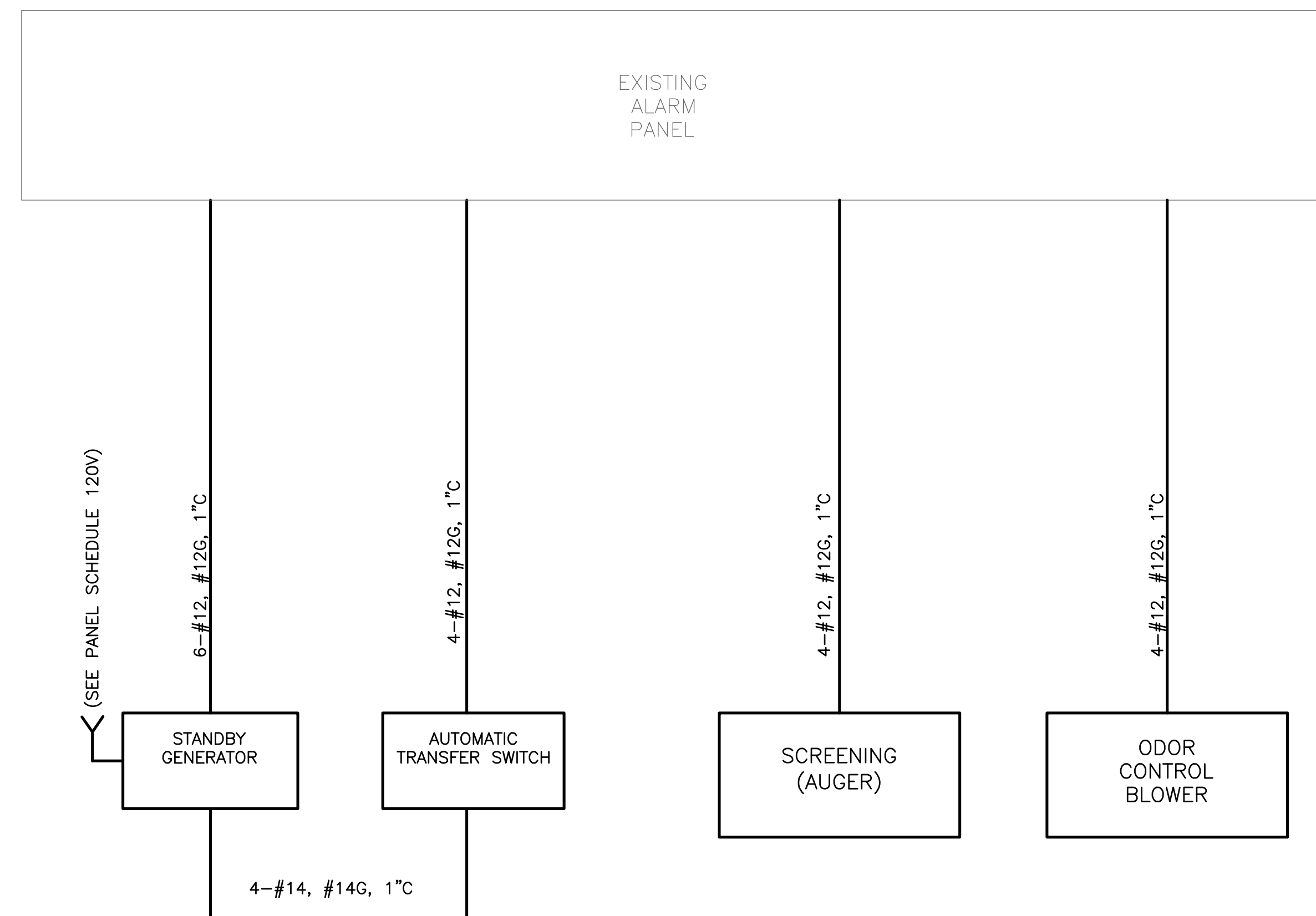


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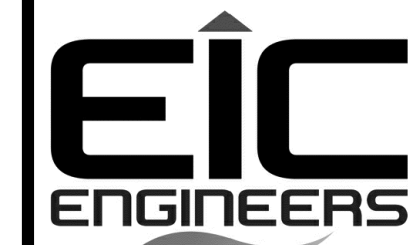
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**GENERAL NOTES:**

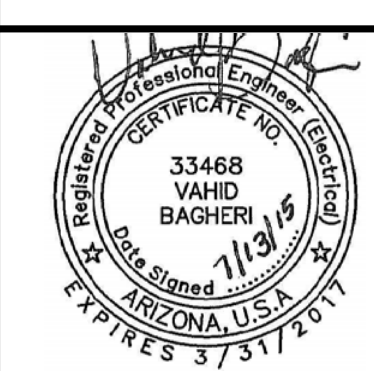
1. REFER TO SINGLE LINE DIAGRAMS, BLOCK DIAGRAMS, PANEL SCHEDULES, AND OTHER DRAWINGS FOR CIRCUITRY REQUIREMENTS.
2. NOT ALL PULL BOXES AND JUNCTION BOXES ARE INDICATED. PULL BOXES AND JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED BY OTHER DRAWINGS, SPECIFICATIONS, AND/OR NATIONAL ELECTRIC CODE.



**BUCKSKIN SANITARY DISTRICT  
WASTEWATER TREATMENT PLANT IMPROVEMENTS  
ELECTRICAL  
BLOCK DIAGRAM**



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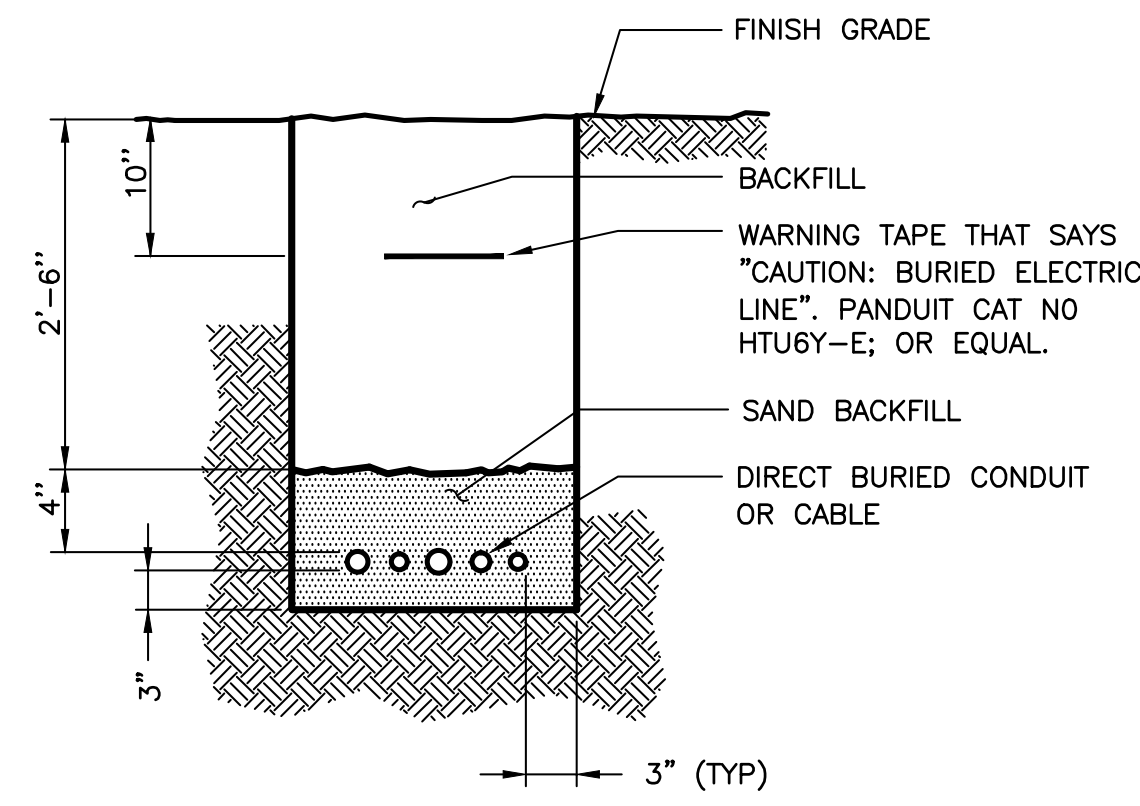
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Date  
07/13/15

Project No.  
0524

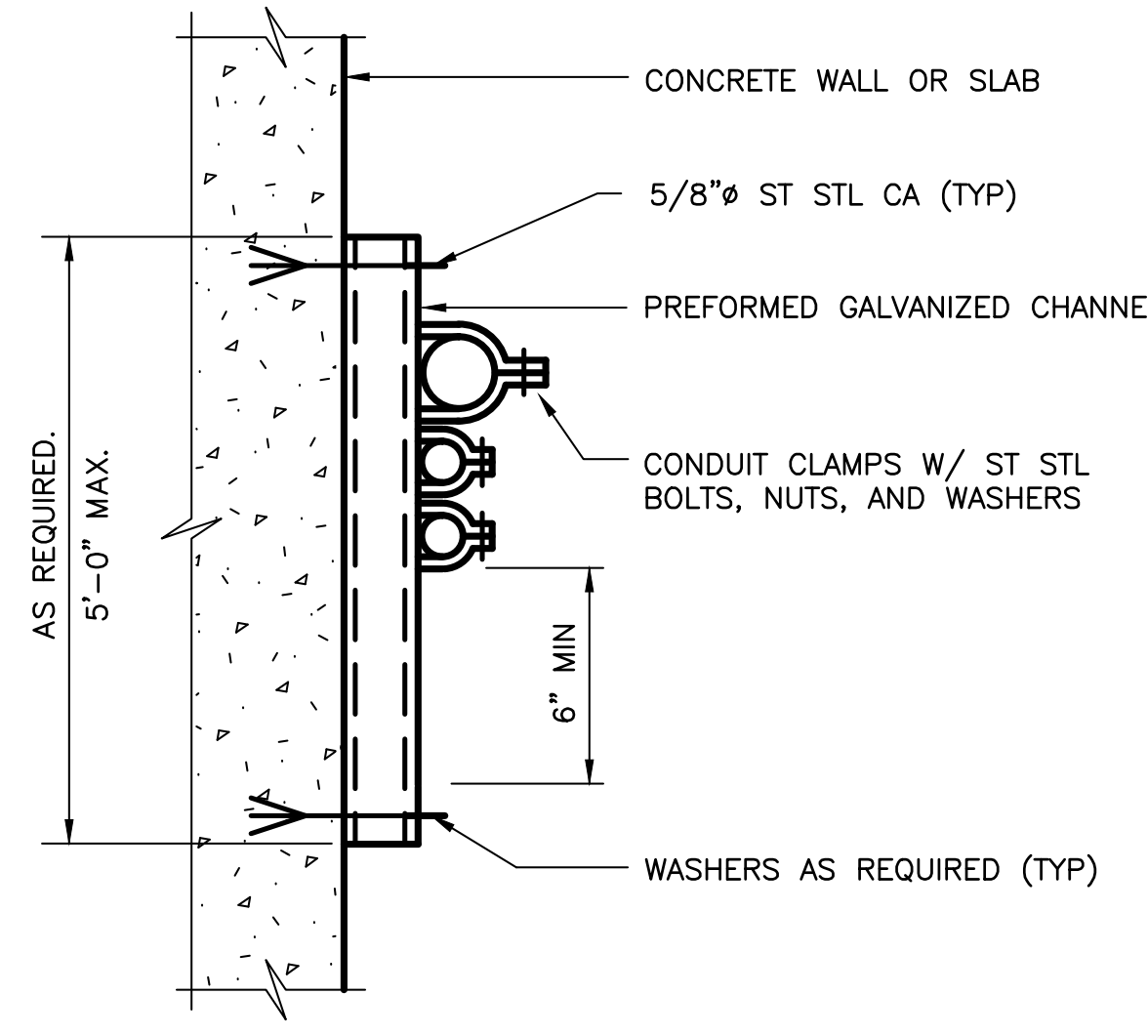
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E05

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- NOTES:**
1. ALL DIMENSIONS ARE MINIMUM UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
  2. REFER TO SPECIFICATIONS FOR TRENCH BACKFILL REQUIREMENTS.

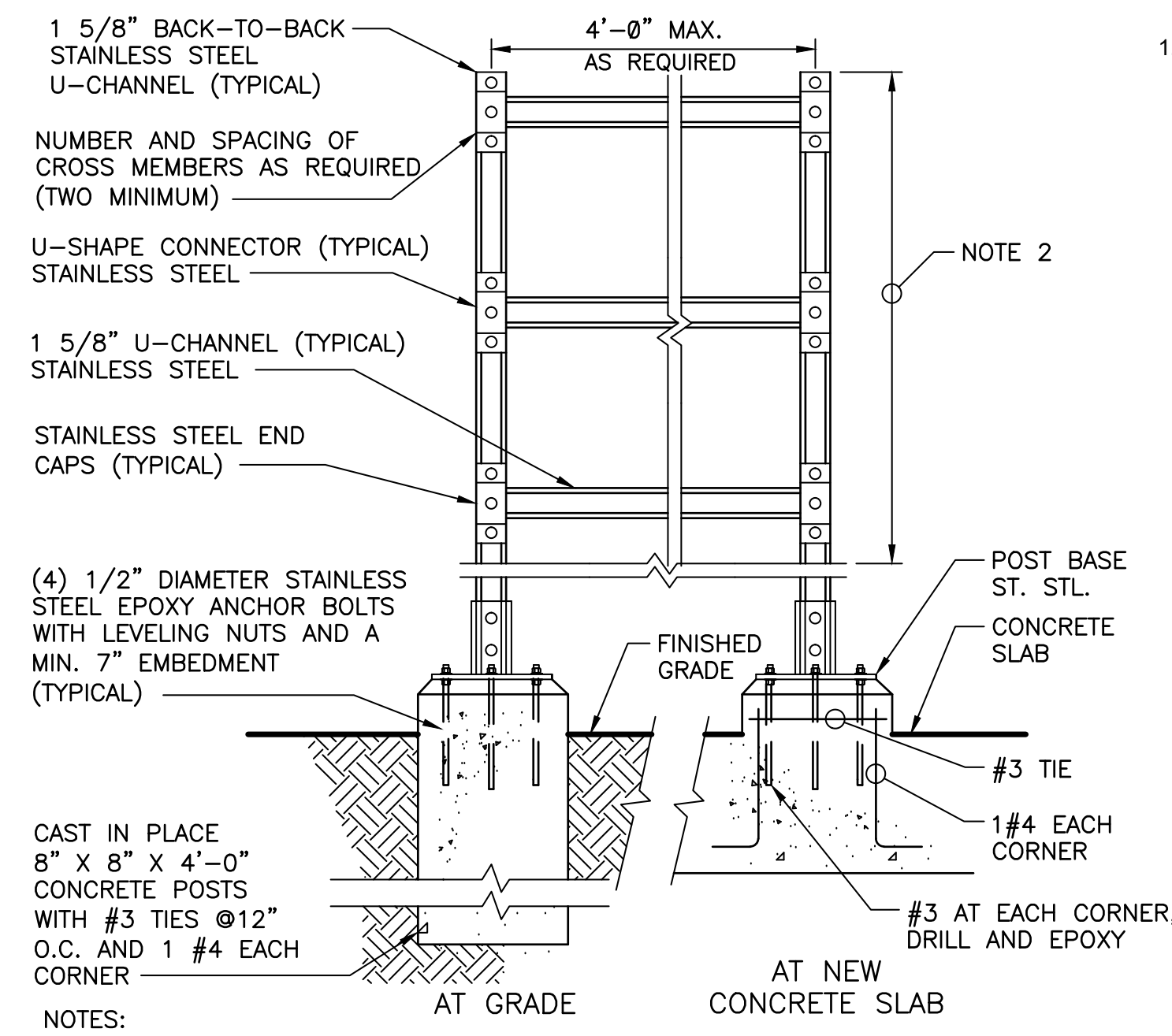
**E102** DIRECT BURIED CONDUIT OR CABLE  
TYP N.T.S.



ELEVATION

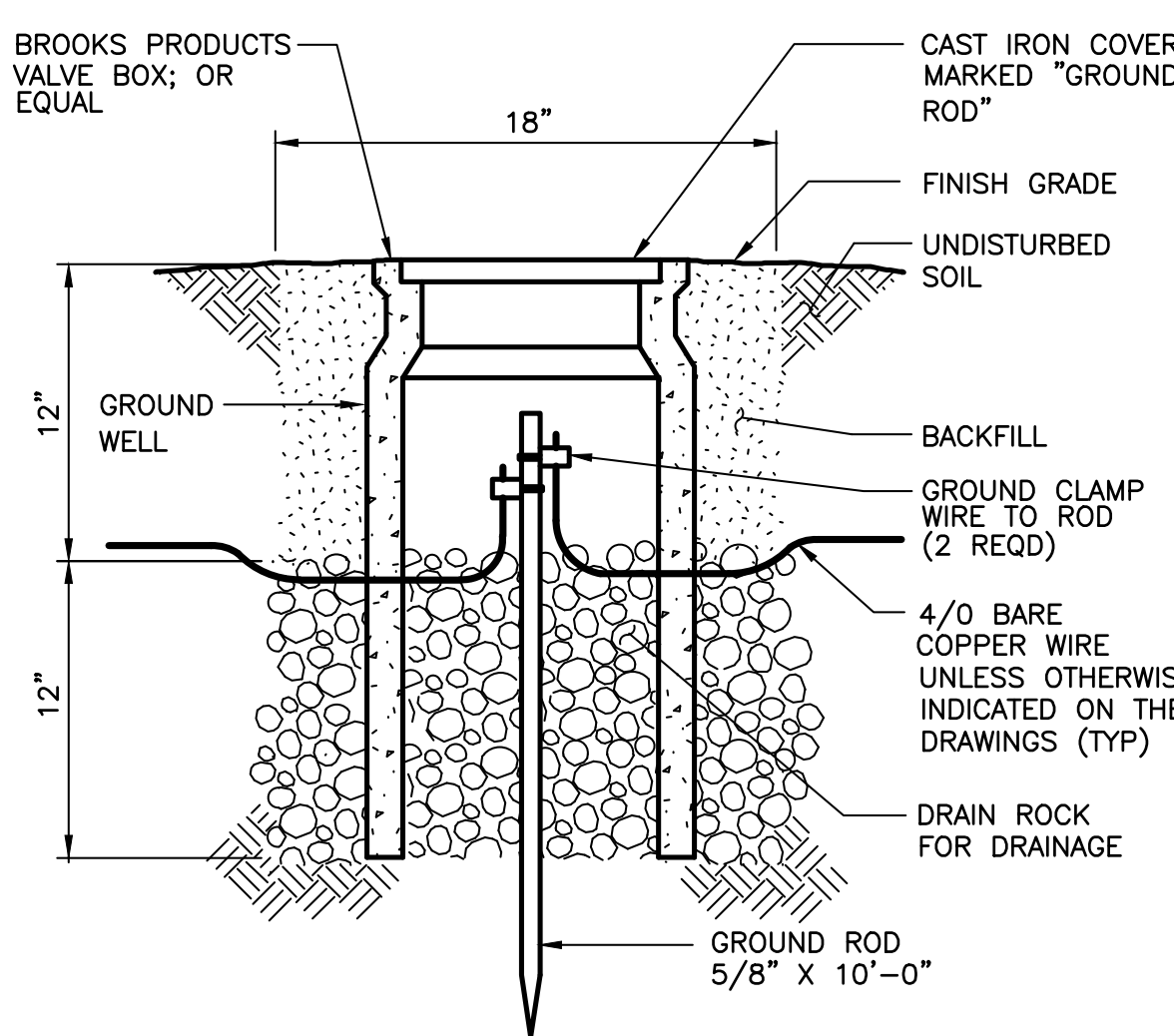
- NOTES:**
1. THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING.
  2. PREFORMED CHANNEL, FITTINGS, AND CLAMPS SHALL BE HOT-DIP GALVANIZED STEEL. FIELD COAT ALL CUTS PER SPECIFICATIONS.
  3. CHANNELS TO BE SPACED AT 5'-0" OC MAXIMUM.

**E109** CONDUIT SUPPORT  
TYP N.T.S.



- NOTES:**
1. EQUIPMENT RACK SHALL BE UTILIZED FOR MOUNTING THE FOLLOWING:
    - A. ONE EQUIPMENT ITEM WITH MOUNTING FOOTPRINT GREATER THAN 150 IN.
    - B. TWO EQUIPMENT ITEMS WITH COMBINED MOUNTING FOOTPRINT GREATER THAN 130 IN.
    - C. THREE OR MORE EQUIPMENT ITEMS. WHERE MULTIPLE EQUIPMENT ITEMS WITH SMALL FOOTPRINT AREAS ARE MOUNTED ON THE RACK, A 1/4" PLATE AS USED IN DETAIL D/E3 FOR EQUIPMENT MOUNTING CAN BE UTILIZED SPANNING FROM THE TOP TO THE BOTTOM CROSS MEMBER IN LIEU OF MULTIPLE CROSS MEMBERS.
  2. EQUIPMENT SHALL BE MOUNTED SO THAT INDICATION, ADJUSTMENTS, OR OPERATING HANDLES ARE FOUR TO FIVE FEET ABOVE FLOOR OR PLATFORM.
  3. MATERIALS AND HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF SPECIFICATION 16050.

**E111** EQUIPMENT RACK  
TYP N.T.S.



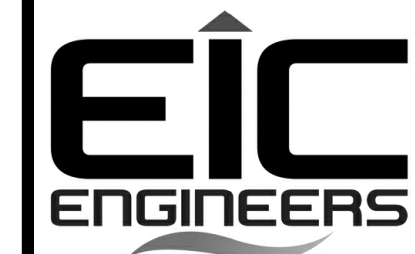
**E113** GROUND ROD INSTALLATION  
TYP N.T.S.

**GENERAL NOTES:**

1. THE TYPICAL DETAILS ARE NOT REFERENCED ON EACH AND EVERY DRAWING. THE TYPICAL DETAILS ARE NOT REFERENCED ON EACH AND EVERY TYPE OF INSTALLATION. THE TYPICAL DETAILS HOWEVER SHALL BE ADHERED TO WHERE THE INSTALLATION APPLIES.

No.	Revision Note	Date	Drawn	Check

**BUCKSKIN SANITARY DISTRICT**  
**WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
**ELECTRICAL**  
**TYPICAL DETAILS**



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