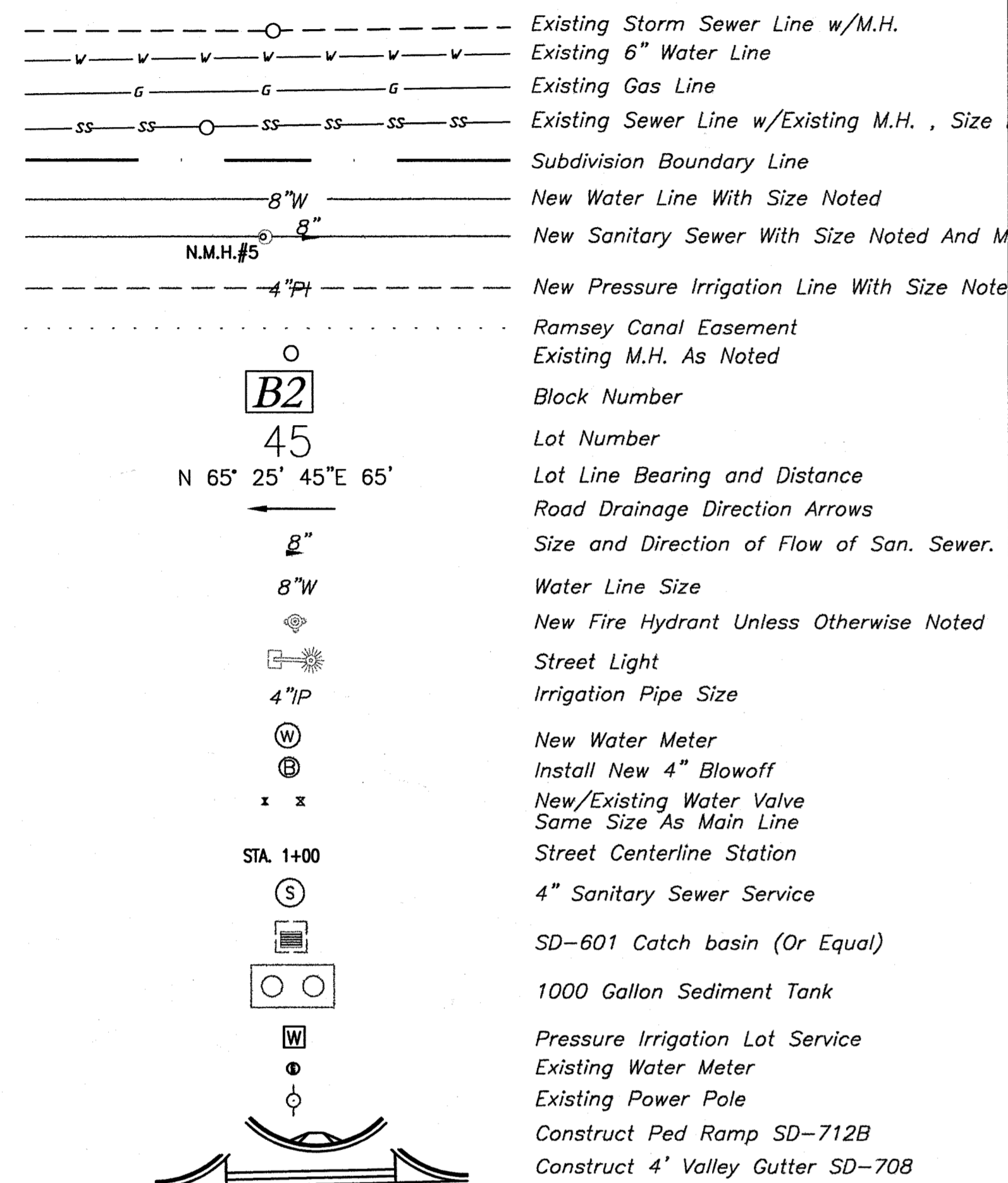


# BEGONIA FIELDS SUBDIVISION

## STREET, WATER, SANITARY SEWER, DRAINAGE AND PRESSURE IRRIGATION CONSTRUCTION PLANS

### LEGEND



### WATER AND SANITARY SEWER CONSTRUCTION NOTES

- ALL WATER AND SEWER CONSTRUCTION SHALL CONFORM TO THE 2002 EDITION OF THE IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (I.S.P.W.C.), UNIFORM PLUMBING CODE (UPC), AND THE LAWS OF THE STATE OF IDAHO.
- ALL SEWER PIPE AND FITTINGS SHALL BE POLY-VINYL-CHLORIDE (PVC) CONFORMING TO THE PROVISIONS OF ASTM D-3034 SDR-35 FOR SIZES 4-INCH THROUGH 15-INCH. SERVICES SHALL BE CONSTRUCTED IN ACCORDANCE WITH I.S.P.W.C. STANDARD DRAWING NO. SD-511A, TYPE "A".
- ALL INSTALLED SEWER LINES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH SECTION 501 OF THE I.S.P.W.C. SPECIFICATIONS FOLLOWING INSTALLATION OF ALL UTILITIES AND PRIOR TO PAVING. THE TESTING MUST BE OBSERVED BY A REPRESENTATIVE OF THE CITY OF KUNA. DEFLECTION TESTS AND/OR TELEVISION INSPECTION MAY BE REQUIRED AT THE OPTION OF THE CITY OF KUNA.
- ALL WATER MAINS SHALL BE POLY-VINYL-CHLORIDE (PVC) CONFORMING TO THE PROVISIONS OF AWWA C-900, CLASS 150, SDR 18 OR CLASS 150 CEMENT MORTAR LINED DUCTILE IRON CONFORMING TO AWWA C-104 AND AWWA C-151. ALL FITTINGS SHALL BE MECHANICAL JOINT DUCTILE IRON CONFORMING TO AWWA C-110. ALL PLASTIC PIPE SHALL BE INSTALLED WITH A #12 DIRECT BURIAL TRACER WIRE PLACED ALONG THE NORTH AND EAST SIDE OF THE MAIN. THE TRACER WIRE SHALL BE ACCESSIBLE AT ALL VALVE BOXES AND SHALL BE EXTENDED ALONG THE OUTSIDE OF THE LOWER PORTION OF THE VALVE BOX AND ALONG THE INSIDE OF THE UPPER PORTION. MINIMUM BURIAL DEPTHS FOR ALL WATER MAINS SHALL BE 4- FEET FROM FINISH GRADE TO THE TOP OF PIPE. THRUST BLOCKS SHALL CONFORM TO I.S.P.W.C. STANDARD DRAWING NO. SD-403.
- ALL MAIN LINE WATER VALVES SHALL BE RESILIENT-SEATED GATE VALVES CONFORMING TO AWWA C-509. ALL WATER VALVES SHALL BE FURNISHED WITH A STANDARD CAST IRON 5-1/4 INCH DIAMETER ADJUSTABLE VALVE BOX. THE CAST IRON COVER SHALL BE MARKED WITH THE WORD "WATER" AS AN INTEGRAL PART OF THE COVER.
- ALL FIRE HYDRANTS SHALL BE DRY BARREL HYDRANTS CONFORMING TO AWWA C-502. HYDRANTS SHALL HAVE:
  - 5-FOOT SETTING
  - 5-1/4 INCH VALVE OPENING MINIMUM
  - 150 PSI WORKING PRESSURE
  - ONE 4-1/2 INCH DIAMETER NATIONAL STANDARD PUMPER NOZZLE
  - TWO 2-1/2 INCH DIAMETER NATIONAL STANDARD THREAD FIRE HOSE NOZZLES

THE VALVE OPERATOR SHALL OPEN LEFT (COUNTER-CLOCKWISE). THE HYDRANT SHALL BE EQUIPPED WITH A BREAKABLE TRAFFIC FLANGE, A DRAIN THAT AUTOMATICALLY OPENS WHEN THE HYDRANT IS CLOSED AND A 6-INCH MECHANICAL JOINT CONNECTION. THE HYDRANT SHALL BE EQUIPPED WITH A 6-INCH FLANGED BY MECHANICAL JOINT RESILIENT-SEAT GATE VALVE WITH CAST IRON VALVE BOX ATTACHED DIRECTLY TO THE MAIN LINE. THE HYDRANT SHALL BE INSTALLED SUCH THAT THE BREAKABLE TRAFFIC FLANGE IS SET 2-INCHES MINIMUM, 6-INCHES MAXIMUM ABOVE THE BACK OF THE SIDEWALK OR FINISH GRADE AS APPLICABLE. FIRE HYDRANTS SHALL BE CLOW MEDALLION, WATEROUS PACER 100, OR MUELLER A423. NO OTHERS WILL BE ACCEPTED.
- INDIVIDUAL WATER SERVICES SHALL BE INSTALLED FOR EACH CONNECTION. THE WATER SERVICES SHALL CONSIST OF THE FOLLOWING:
  - PIPE SADDLE WITH 1-INCH CORPORATION STOP
  - 1-INCH CLASS 200, SDR 7.3 POLYETHYLENE PIPE CONFORMING TO AWWA C-901
  - 18-INCH TALL 5/8" x 3/4" COPPER METER SETTER WITH LOCKABLE SHUTOFF VALVE
  - 18-INCH DIAMETER BY 30-INCH TALL INSULATED METER BOX AS MANUFACTURED BY "MID-STATES PLASTICS, INC." OR EQUAL
  - CAST IRON FRAME AND COVER APPROVED BY THE CITY

THE COVER SHALL BE TAPPED WITH A 1-INCH DIAMETER HOLE. WATER METERS SHALL BE FURNISHED AND INSTALLED BY THE CITY. MULTIPLE TAPS IN THE SAME PIPE JOINT SHALL BE STAGGERED BY A MINIMUM OF ONE FOOT. THE CENTERLINE OF THE METER SETTER SHALL BE LOCATED 18-INCHES BELOW FINISH GRADE. METERS SHALL BE PLACED 18-INCHES INSIDE THE PROPERTY LINE AND 18-INCHES AWAY FROM THE SIDE LOT LINE. A CAPPED AND MARKED MIN. 10-FOOT STUB OF WATER SERVICE LINE SHALL BE EXTENDED INTO EACH LOT, PAST OTHER UTILITIES, FROM THE METER BOX. DUAL SERVICES OFF OF ONE SERVICE LINE WILL NOT BE ALLOWED.
- THE CITY OF KUNA HAS THE RIGHT TO INSPECT THE WORK AT ANY TIME DURING CONSTRUCTION. ANY WORK THAT DOES NOT CONFORM TO THE APPROVED SET OF PLANS AND SPECIFICATIONS SHALL BE REJECTED.
- ALL INSTALLED WATER LINES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH SECTION 401 OF THE I.S.P.W.C. SPECIFICATIONS FOLLOWING INSTALLATION OF ALL UTILITIES AND PRIOR TO PAVING. OPEN EACH METER SETTER TO VERIFY CORPORATION STOP IS OPEN AND SERVICE IS FUNCTIONAL PRIOR TO PAVING. THE TESTING MUST BE OBSERVED BY A REPRESENTATIVE OF THE CITY. ALL INSTALLED WATER LINES SHALL BE DISINFECTED IN ACCORDANCE WITH SECTION 401 OF THE I.S.P.W.C. SPECIFICATIONS AND SATISFACTORILY PASS A BACTERIOLOGICAL TEST CONDUCTED BY THE CITY PRIOR TO BEING PUT INTO SERVICE. ANY ADHESIVES USED FOR DISINFECTION SHALL BE NSF OR FDA APPROVED.
- THE SEPARATION REQUIREMENTS AS OUTLINED IN SECTION 405, SEPARATIONS OF WATER MAINS AND SEWERS, OF THE I.S.P.W.C. SPECIFICATIONS SHALL APPLY TO BOTH MAINLINES AND SERVICE LINES. WHERE SEWER MAINS AND SERVICES DO NOT CONFORM TO THE SEPARATION REQUIREMENTS WATER CLASS PIPE IS REQUIRED. REFER TO DETAIL B SHEET 14 FOR ADDITIONAL INFORMATION. THE TERM "SEWER" SHALL REFER TO ALL NON-POTABLE WATER, EG. STORM SEWER, IRRIGATION.
- IN AREAS WHERE ROCK EXCAVATION IS REQUIRED, ALL BLASTING FOR OTHER UTILITIES SHALL OCCUR PRIOR TO INSTALLATION OF ANY SEWER MAINS, WATER MAINS OR SERVICE LINE CROSSINGS.
- WHEN CONSTRUCTION IS SATISFACTORILY COMPLETED, CLEANED AND TESTED, THE DEVELOPER SHALL REQUEST A FINAL ACCEPTANCE INSPECTION BY THE CITY. THE FINAL ACCEPTANCE INSPECTION SHALL OCCUR AFTER ALL OTHER UTILITIES ARE INSTALLED. AT A MINIMUM, THE FINAL ACCEPTANCE INSPECTION SHALL CONSIST OF LAMPING ALL SEWER MAINS, VISUALLY INSPECTING EACH MANHOLE AND WITNESSING A FINAL SEWER AIR TEST AND WATER PRESSURE TEST CONDUCTED BY THE CONTRACTOR.
- CONTRACTOR (S) SHALL NOTIFY B&A ENGINEERS, INC., THE ADA COUNTY FIRE DISTRICT AND THE CITY OF KUNA DEPARTMENT OF PUBLIC WORKS PRIOR TO COMMENCEMENT OF CONSTRUCTION OF ANY IMPROVEMENTS SHOWN ON THESE PLANS.
- CONTRACTOR (S) SHALL HAVE ALL BURIED UTILITIES LOCATED PRIOR TO COMMENCING CONSTRUCTION. ALL CONTRACTORS SHALL MAKE THEMSELVES AWARE OF IDAHO CODE, CHAPTER 22, TITLE 55 REGARDING UNDERGROUND FACILITIES DAMAGE PREVENTION AND THE ONE-CALL LOCATION SERVICE TELEPHONE NUMBER. (1-444-2424).
- CONSTRUCTION INSPECTION SHALL BE PERFORMED BY B&A ENGINEERS, INC., THE ADA COUNTY HIGHWAY DISTRICT AND/OR THE CITY OF KUNA.
- ALL SEWER SERVICES AND TEMPORARY DEAD ENDS SHALL BE MARKED IN ACCORDANCE WITH I.S.P.W.C. STANDARD DRAWING NO. SD-512. SAID LOCATIONS SHALL BE VISIBLE AND IN PLACE FOR FINAL INSPECTION.
- SANITARY SEWER MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH I.S.P.W.C. STANDARD DRAWING NO. SD-501, SD-507, SD-508 AND SD-509. CONCRETE RIM COLLARS SHALL BE SET BY OTHERS. WHERE PLASTIC PIPE ENTRIES AND LEAVES MANHOLES, APPROVED BOOTS OR COLLARS OR APPROVED EQUIVALENT SHALL BE INSTALLED IN THE WALL OF THE MANHOLE TO INSURE A WATERTIGHT SEAL.
- CONTRACTOR SHALL VERIFY CONSTRUCTION STAKES WITH THE PROJECT BENCHMARK AND CONSTRUCTION PLANS PRIOR TO CONSTRUCTING THE IMPROVEMENTS REFERENCED BY THE CONSTRUCTION PLANS.
- FIRE HYDRANT LOCATION SHALL BE ONE (1) FOOT BEHIND THE PROPERTY LINE AND 18" OFF THE PROPERTY LINE.
- ALL WATERLINES (MAINS AND SERVICES) WITHIN 25 FEET OF THE STORM WATER RETENTION AREAS WITHIN THIS PROJECT SHALL BE INSTALLED WITHIN SLEEVES. SAID SLEEVES SHALL BE 10 INCH DIA. FOR 6 INCH DIA. WATER PIPE, AND 12 INCH DIA. FOR 8 INCH WATER PIPE. SAID SLEEVES SHALL BE PVC PIPE, CONFORMING TO THE REQUIREMENTS OF ASTM D-3034, SDR 35 SEWER PIPE, AND SHALL BE INSTALLED IN CONFORMANCE TO THE DETAIL SHOWN ON DETAIL 4, SHEET 13.
- A NPDES GENERAL PERMIT IS REQUIRED. A NOTICE OF INTENT FOR STORM WATER DISPOSAL AND A POLLUTION PREVENTION PLAN SHALL BE FILED WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THE CONTACT WILL BE NICKIE ARNOLD @ 1-208-378-5746 FOR ADDITIONAL INFORMATION.
- ALL PIPE, MAINS AND SERVICES, SHALL BE BEDDED WITH TYPE 1 BEDDING. IN AREAS OF ROCK EXCAVATION BEDDING SHALL BE 6-INCHES BELOW PIPE.
- 2-INCH WATER MAIN BLOWOFF ASSEMBLY SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF KUNA MUNICIPAL WATER SYSTEM STANDARD DETAIL "BLOWOFF".

### RECORD CONSTRUCTION DRAWING

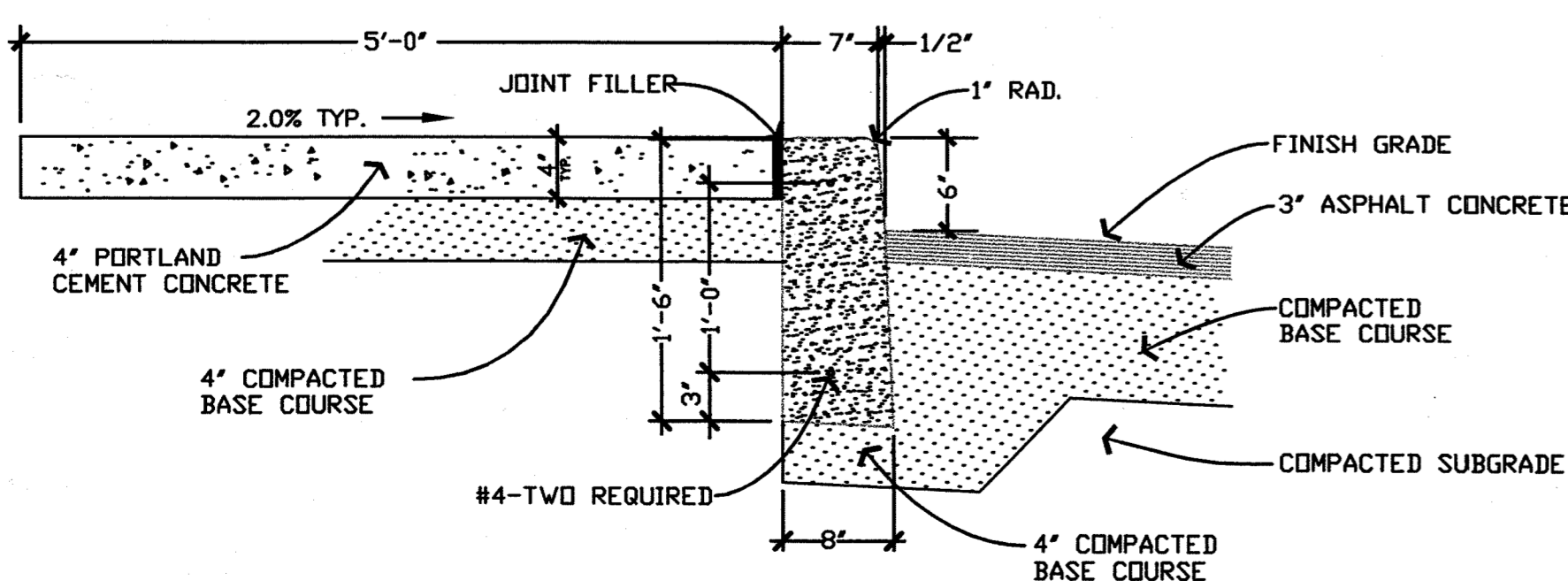
Date: October 14, 2003

These record drawings have been prepared by B & A Engineers Inc. based on information collected during construction, after construction, and provided by others. Deviations may exist between the information shown hereon, and the actual improvements.

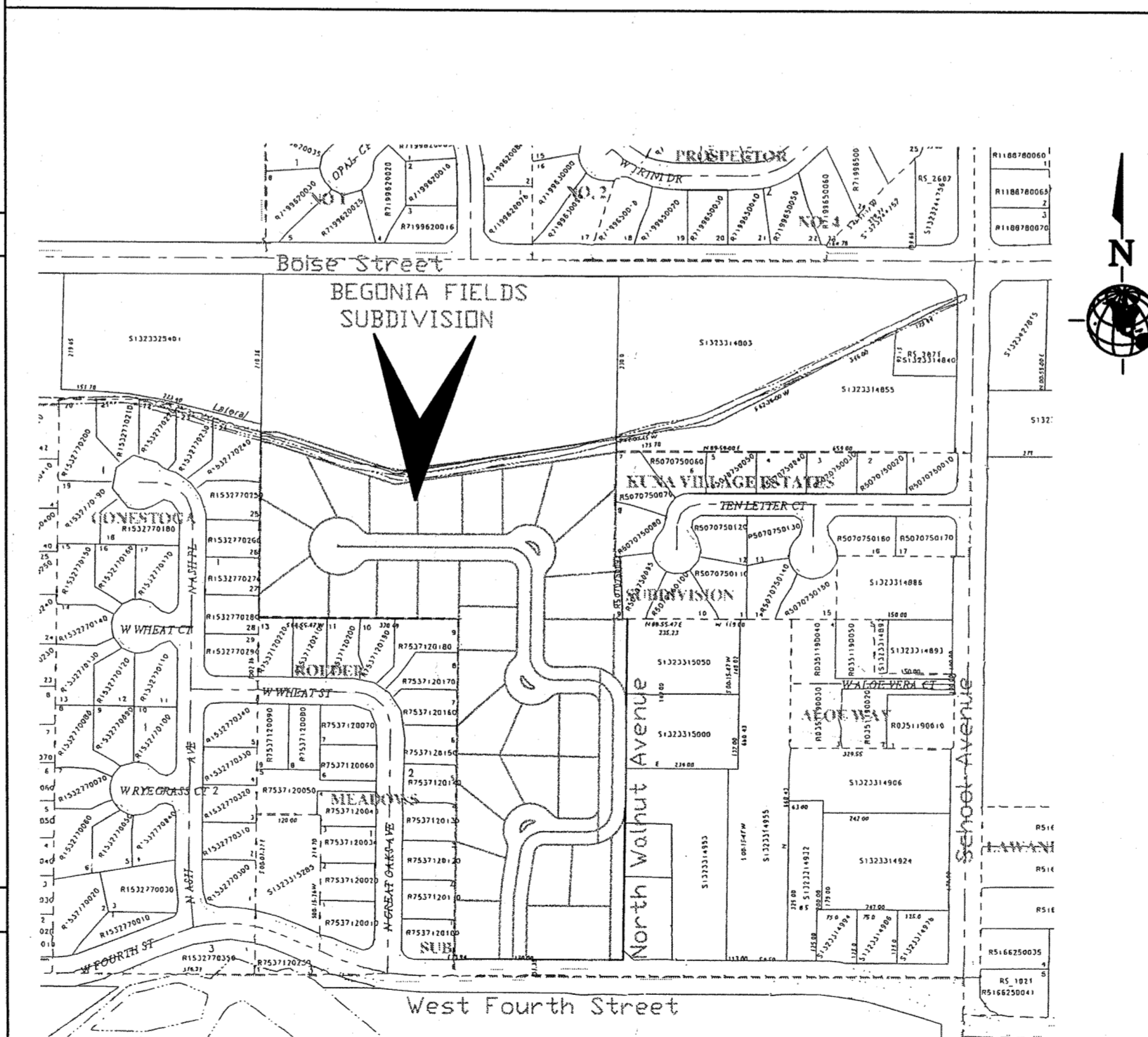
### ROAD AND STORM SEWER CONSTRUCTION NOTES

- ALL MATERIALS, APPURTENANCES AND CONSTRUCTION SHALL CONFORM WITH THE 2002 EDITION OF THE IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (I.S.P.W.C.).
- CONTRACTOR (S) SHALL ATTEND A PRE-CONSTRUCTION CONFERENCE AT A PLACE AND TIME TO BE DETERMINED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- CONTRACTOR (S) SHALL OBTAIN A CONSTRUCTION PERMIT FROM THE ADA COUNTY HIGHWAY DISTRICT AT LEAST 24 HOURS PRIOR TO COMMENCING CONSTRUCTION OF ANY OF THE IMPROVEMENTS SHOWN HEARON.
- CONTRACTOR (S) SHALL HAVE ALL BURIED UTILITIES LOCATED PRIOR TO COMMENCING CONSTRUCTION.
- SEE THE FINAL PLAT OF "BEGONIA FIELDS SUBDIVISION" FOR MORE COMPLETE SURVEY INFORMATION.
- CONSTRUCTION INSPECTION SHALL BE PERFORMED BY THE ADA COUNTY HIGHWAY DISTRICT AND B&A ENGINEERS, INC.
- THE STREET CONTRACTOR SHALL SET SEWER MANHOLE COVERS, FRAMES AND GRADE RINGS TO FINISH GRADE AND PLACE CONCRETE COLLARS AFTER ASPHALT PAVEMENT HAS BEEN COMPLETED. COLLARS SHALL COMPLY WITH I.S.P.W.C. STANDARD DRAWING NO. SD-616.
- STORM SEWER MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH I.S.P.W.C. STANDARD DRAWING SD-611 WITH THE 2 FOOT SUMP.
- PIPE BEDDING NOTE: ALL PIPE SHALL BE BEDDED WITH TYPE 1 BEDDING IN ACCORDANCE WITH I.S.P.W.C., SECTION 305. IN AREAS OF ROCK EXCAVATION, BEDDING SHALL BE 6-INCHES BELOW THE PIPE.
- CATCH BASINS SHALL BE SD-601 OR EQUIVALENT WITH A 1 FOOT SUMP.
- SEDIMENT TANKS SHALL BE 1000 GALLON CONFORMING TO STD. DWG NO. ACHD-625.
- CONTRACTOR SHALL VERIFY CONSTRUCTION STAKES WITH THE PROJECT BENCHMARK AND CONSTRUCTION PLANS PRIOR TO CONSTRUCTING THE IMPROVEMENTS REFERENCED BY THE CONSTRUCTION PLANS.
- ALL CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY SHALL CONFORM TO THE 2002 ISPCW AND ACHD SUPPLEMENTAL SPECIFICATIONS. NO EXCEPTIONS TO DISTRICT POLICY, STANDARDS, AND THE ISPCW WILL BE ALLOWED UNLESS SPECIFICALLY AND PREVIOUSLY APPROVED IN WRITING BY ACHD.

### TYPICAL 18" BARRIER CURB FOR ISLANDS



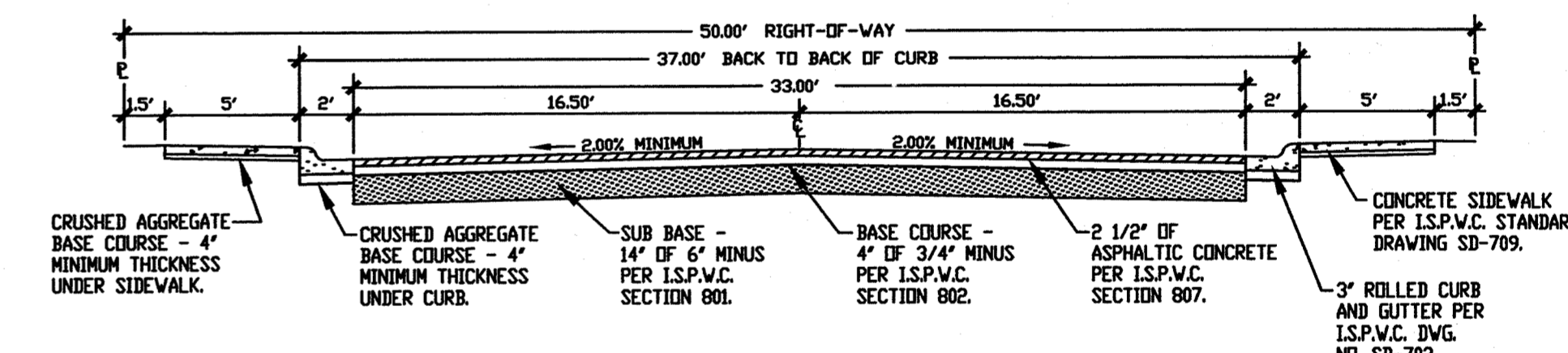
### VICINITY MAP (Not to Scale)



### BENCHMARK DATA

D. 2-1 Elevation = 2670.07  
 R.R. spike in P.P. @ the NW cor. of the intersection of Cedar and Avalon.  
 D. 2-3 Elevation = 2691.68  
 R.R. spike in P.P. @ the NE cor. of the intersection of School St. and Owyhee St.

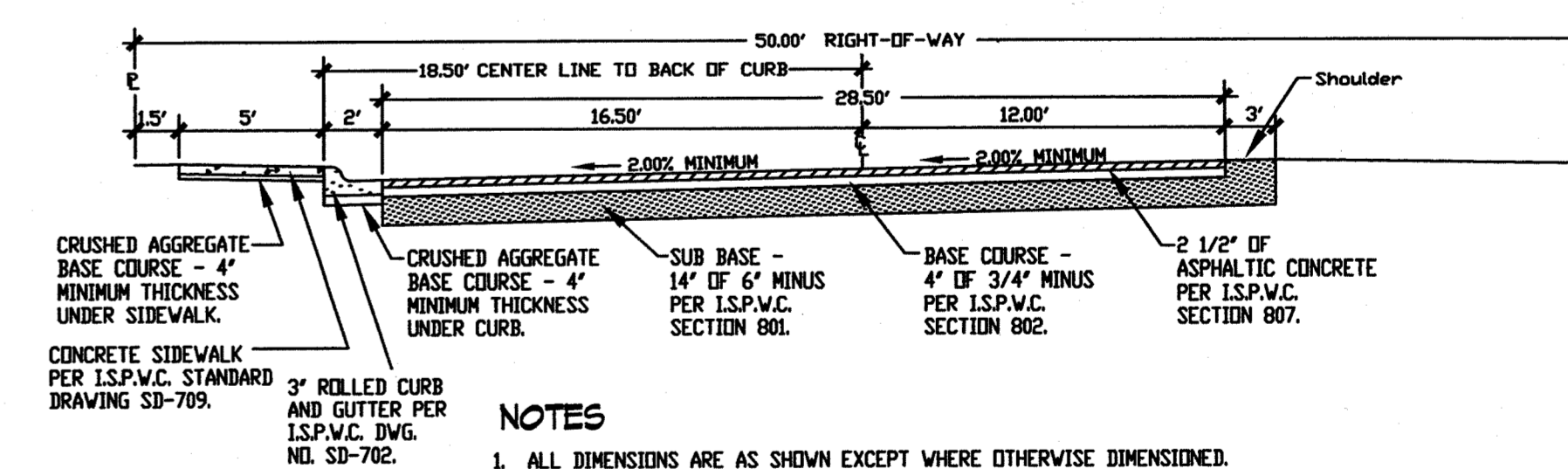
### TYPICAL 50' STREET CROSS-SECTION



### NOTES

1. ALL DIMENSIONS ARE AS SHOWN EXCEPT WHERE OTHERWISE DIMENSIONED.

### TYPICAL STREET CROSS-SECTION AT STATION 3+75 THROUGH 6+42 LOOKING NORTH



### NOTES

1. ALL DIMENSIONS ARE AS SHOWN EXCEPT WHERE OTHERWISE DIMENSIONED.

### SHEET INDEX

- TITLE SHEET AND CONSTRUCTION NOTES
- BEGONIA FIELDS SUBDIVISION PLAT
- ISABELLA STREET & N. WALNUT AVE. IMPROVEMENT PLAN
- NORTH WALNUT AVENUE & INGRID STREET & LAUREN AVE. IMPROVEMENT PLAN
- BAILEY COURT IMPROVEMENT PLAN
- DRAINAGE PLAN AND DETAILS
- IRRIGATION PLAN AND DETAILS

### REVISIONS

- Revision D - Changed Sta. 3+75 to Sta. 6+42 Street Cross Section. Done by S.D.S. 9/10/03  
 Revision C - As per ACHD letter dated April 17, 2003. Done by S.D.S. 4/17/03  
 Revision B - As per ACHD letter dated Dec. 23, 2002. Done by S.D.S. 3/13/03  
 Revision A - As per Tim Burgess comments dated 2/11/03 and Kuna P&Z comments dated 1/21/03. Done by S.D.S. 2/11/03

**B & A Engineers, Inc.**  
 5505 W. Franklin Rd. Boise, Idaho 83705 (208) 343-3381

### BEGONIA FIELDS SUBDIVISION

### TITLE PAGE AND CONSTRUCTION NOTES

HDR. SCALE: AS NOTED DATE: OCTOBER 1, 2002 Sheet 1 of 7  
 VERT. SCALE: N.A. Drawn By: S.D.S. // Ckcd: J.D.C. Dwg. No: SDS-021001

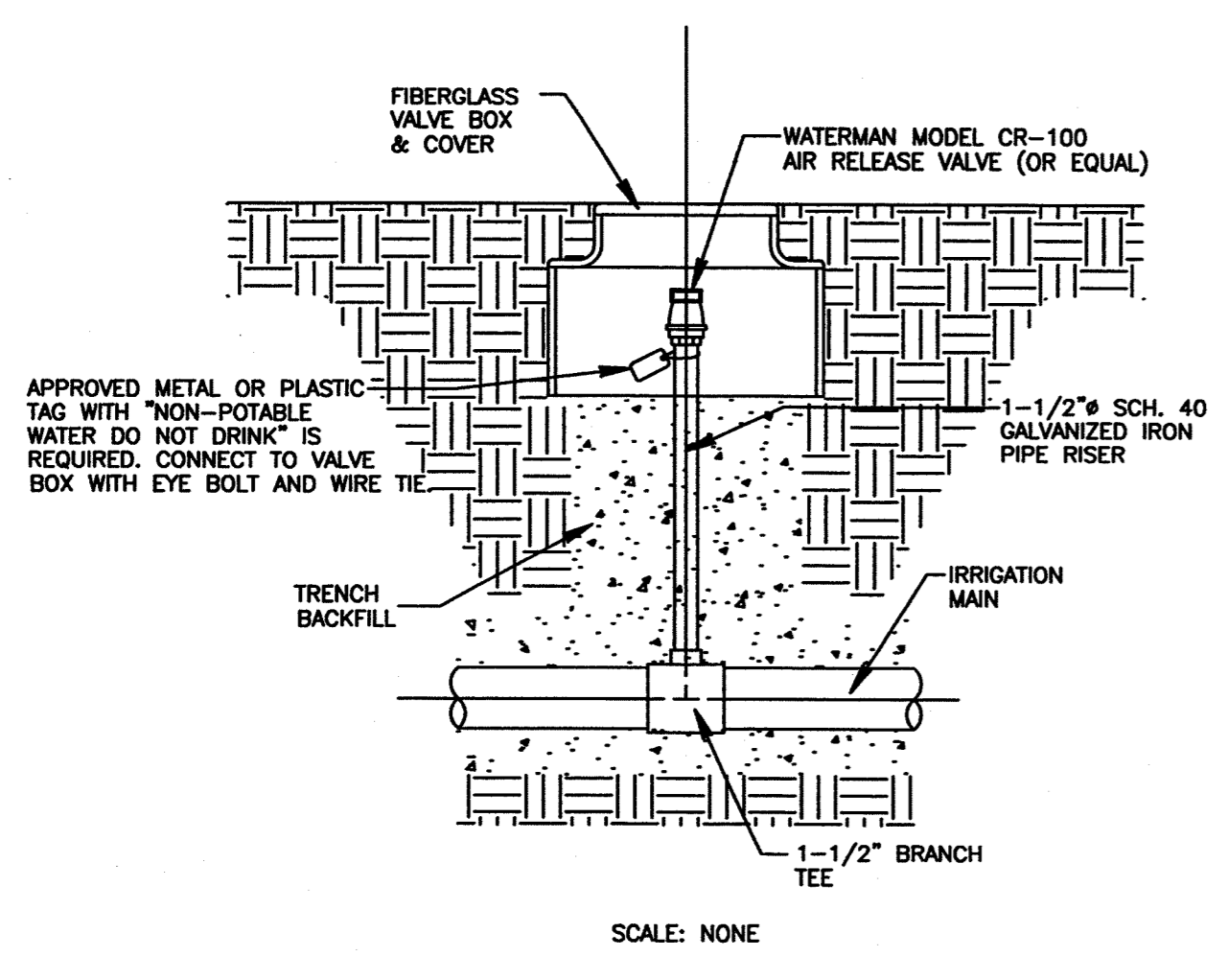






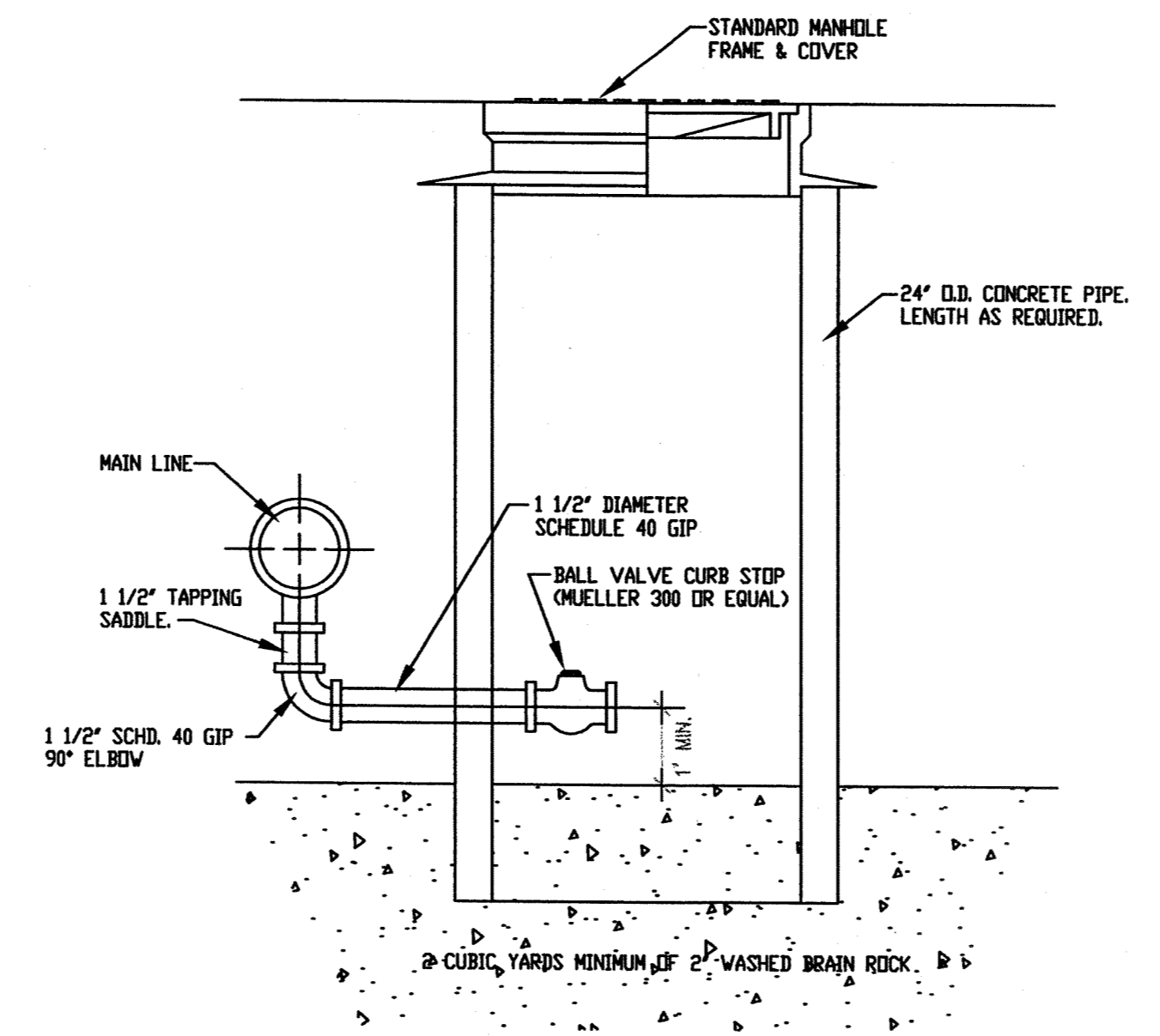






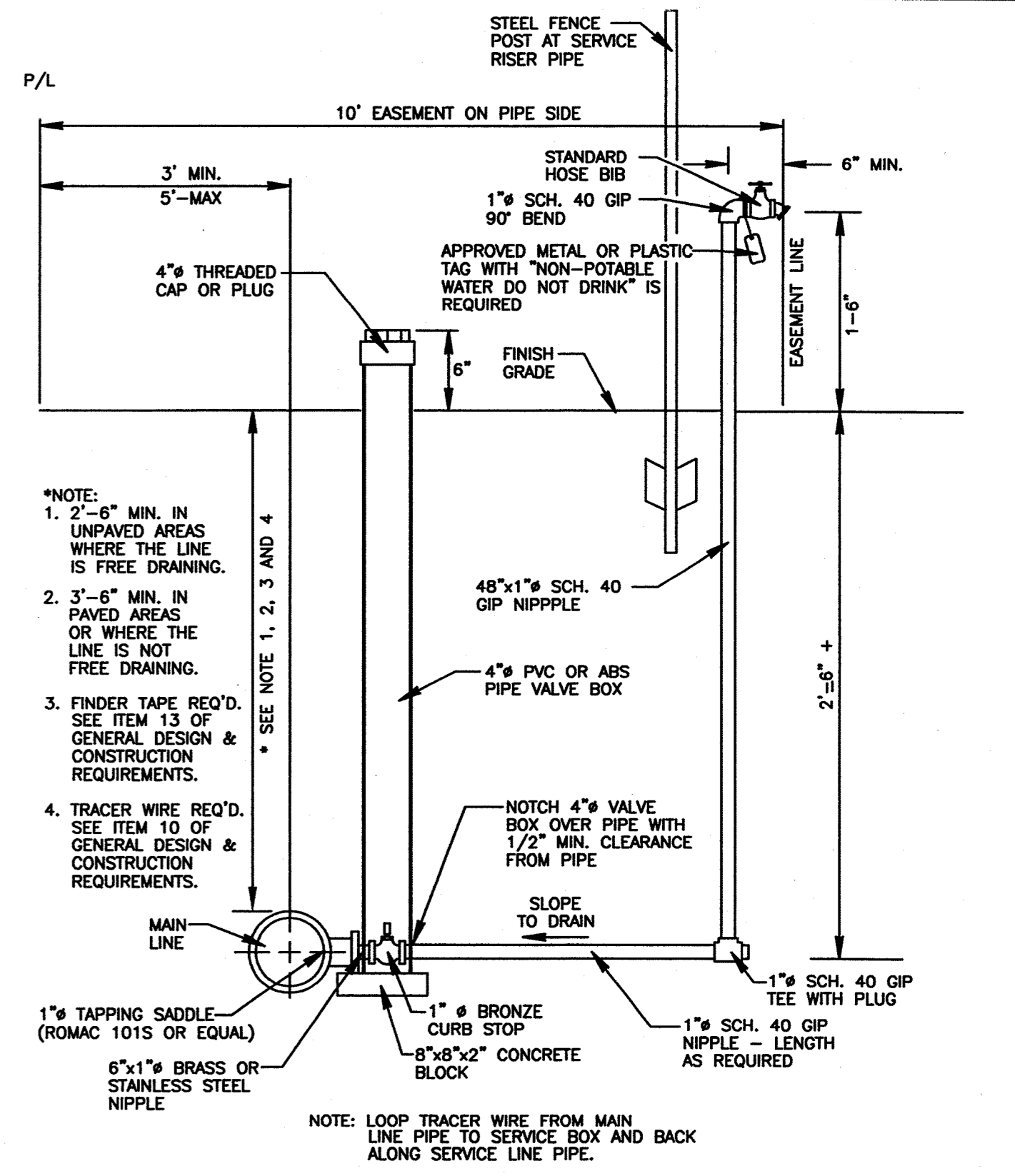
TYPICAL MAIN LINE AIR RELEASE

Scale: Not to Scale



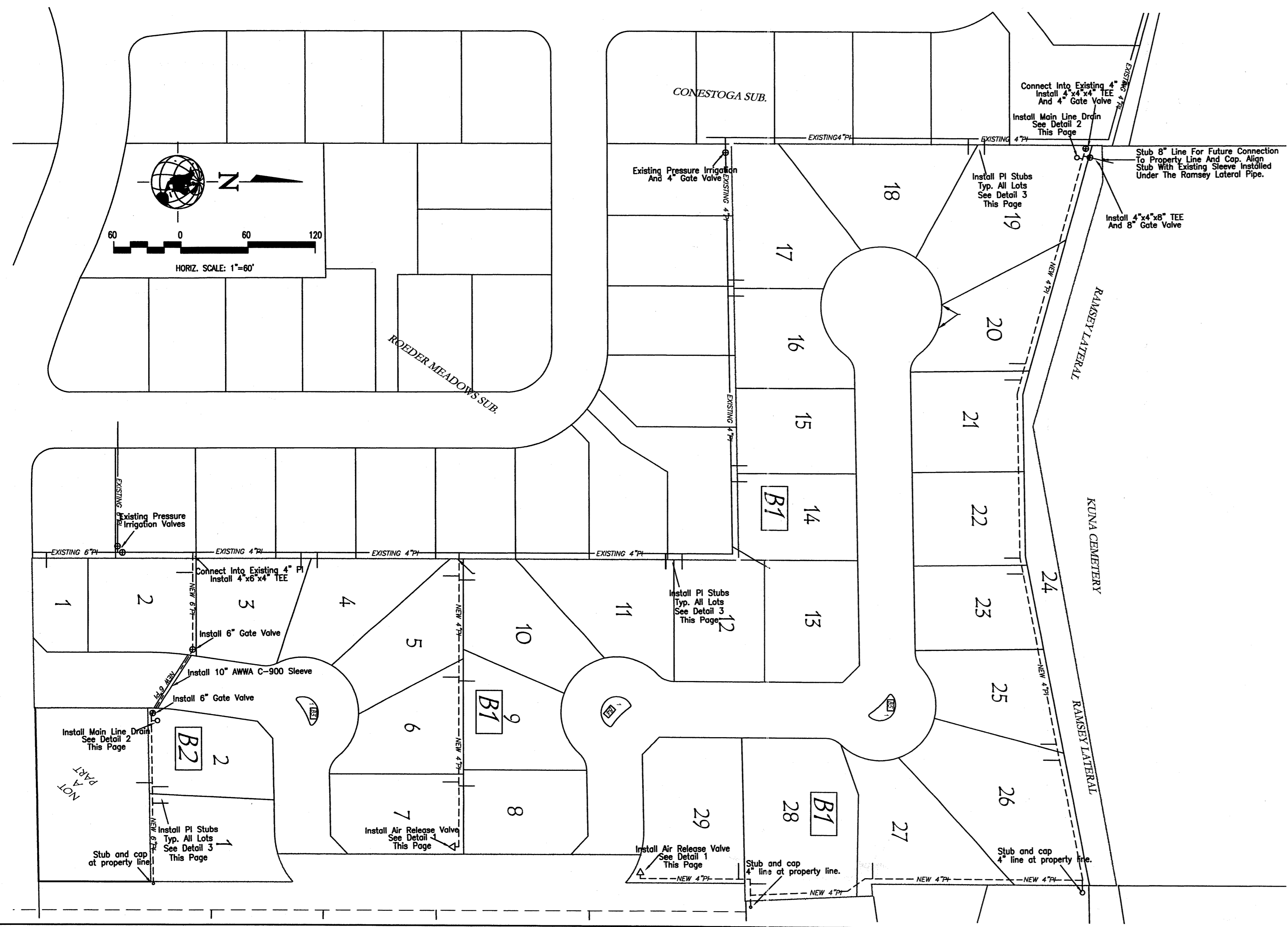
IRRIGATION MAIN LINE DRAIN

Scale: Not to Scale



TYPICAL IRRIGATION LOT SERVICE

Scale: Not to Scale



PRESSURE IRRIGATION CONSTRUCTION NOTES

- Pipelines shall be constructed of poly-vinyl-chloride (PVC). Pipelines 3-inches and larger shall be 200 PSI, SDR 21, conforming to ASTM D-2241. Pipelines smaller than 3-inch shall be Schedule 40, conforming to ASTM D-2466. All joints on pipe 3-inch and larger shall be elastomeric gaskets. All plastic pipe shall be installed with a #12 direct burial tracer wire placed along the north and/or east side of the main. The tracer wire shall be looped from the main line to each service box along the service pipe and back to the main line. The tracer wire shall be accessible at all valve boxes and shall be extended along the outside of the lower portion of the valve box and along the inside of the upper portion. All pipe shall be clearly marked with type, class and/or thickness as applicable. Lettering shall be legible and permanent under normal conditions or handling and storage.
- All pipes shall be free-draining. Pipe lines shall be buried at least 30-inches from finish grade to the top of the pipe. Pipes under roadways shall be buried at least 42-inches from finish grade to the top of the pipe.
- All fittings shall be cast iron, ductile iron, PVC, brass or stainless steel, and shall have a minimum pressure rating equal to or greater than the main line pressure rating. All fittings 4-inches and larger shall be ductile iron with flanged or mechanical joints.
- Valves up to 3-inch in size shall be rising stem, solid double wedge disc, screw bonnet, with hand wheels. The valve body, disc and stem shall be bronze. Valve boxes for valves up to 3-inches in size shall be 4-inch diameter PVC or ABS pipe with a female adapter and threaded plug with square nut. Valves larger than 3-inch in size shall be resilient wedge conforming to AWWA C-509, with mechanical or flanged joints and 2-inch square operating nut. Valve boxes for valves larger than 3-inch in size shall be standard cast iron 5-1/4 inch diameter adjustable valve boxes. All valve boxes shall be labeled "NON-POTABLE WATER" or tagged as noted on the riser in the lot service detail on this sheet.
- All irrigation pipe shall be installed with finder tape. The tape shall be 2-inches wide, metallic red in color, with the words "DANGER - UNSAFE WATER" or "NON-POTABLE WATER" clearly marked along the length of the tape. Tape shall be placed between 6-inches below finish grade and 18-inches above the top of the pipe.
- All construction shall conform to the latest edition of the Idaho Standards for Public Works Construction (ISP.W.C.), Uniform Plumbing Code and the laws of the State of Idaho.
- All pipelines shall be installed to a grade to permit them to freely drain to locations of drains shown.
- All installed pipelines shall be tested for leakage in accordance with Section 404 of the ISPVC specifications following installation of all utilities and prior to paving. The minimum test pressure shall be 80 PSI. Test water shall be potable water from the municipal water system. The test must be observed by a representative of the city. Upon successful completion of the final pressure test, the irrigation system shall be drained.
- All pipe, mains and services shall be bedded with Type I bedding. In any areas of rock excavation, bedding shall be 6-inches below the pipe.
- In any areas where rock excavation is required, all blasting for other utilities shall occur prior to installation of any irrigation facilities.
- Construction inspection shall be performed by B & A Engineers, Inc., the Ada County Highway District and/or the City of Kuna.
- All stub outs for future connection shall be installed with a HT cap and thrust block. The cap shall have a 1" dia. top with threaded plug.
- The pressure irrigation and storm water mains shall be constructed of materials conforming to water main standards at all locations on the plans where water main crosses below the sewer main within 18 inches. To meet water main standards, the pipe selected must:
  - meet AWWA C-900
  - be NSF Standard 14 approved.
  - be ASTM D-2241, class 250 (SDR 17) or better.
- Pressure irrigation main lines shall be installed 3' to 5' from lot lines.

**RECORD CONSTRUCTION DRAWING**  
 Date: October 14, 2003  
 These record drawings have been prepared by B & A Engineers Inc., based on information collected during construction, after construction, and provided by others. Deviations may exist between the information shown hereon, and the actual improvements.

Revision D - As per DEO letter dated April 16, 2002. Done by S.D.S. 4/17/03  
 Revision C - As per ACHD letter dated Dec. 23, 2002. Done by S.D.S. 3/13/03  
 Revision B - As per Tim Burgess comments dated 2/19/03. Done by S.D.S. 2/26/03.  
 Revision A - As per Tim Burgess comments dated 2/11/03. Done by S.D.S. 2/11/03.

<b>B &amp; A Engineers, Inc.</b>		
5505 V. Franklin Rd. Boise, Idaho 83705 (208) 343-3381		
<b>BEGONIA FIELDS SUBDIVISION</b>		
IRRIGATION PLAN AND DETAILS		
HDR. SCALE: AS NOTED	DATE: OCTOBER 1, 2002	Sheet 7 of 7
VERT. SCALE: N/A	Drawn By: S.D.S. // Ckd: J.D.C.	Dwg. No: SDS-021006