Attachment 3

WATER SYSTEMS CHARACTERISTICS

SUPPLY LINE TO BE FEED WITH A 10 HORSEPOWER PUMP SET TO MAINTAIN A MINIMUM OF 25 P.S.I. TO THE RESIDENCES

FIRE HYDRANTS:

WEST HYDRANT
4 INCH SUPPLY LINE OFF 6 INCH DISTRIBUTION LINE:
500 G.P.M. DRAFT @ -28.7 P.S.I. RESIDUAL
200 G.P.M. FLOW @ 27.8 P.S.I. RESIDUAL
0 G.P.M. FLOW @ 38.1 P.S.I. RESIDUAL

EAST HYDRANT
4 INCH SUPPLY LINE OFF 6 INCH DISTRIBUTION LINE:
500 G.P.M. DRAFT @ -41.5 P.S.I. RESIDUAL
200 G.P.M. FLOW @ 25.6 P.S.I. RESIDUAL
0 G.P.M. FLOW @ 38.05 P.S.I. RESIDUAL

DOMESTIC SERVICES:

2 INCH SERVICE SUPPLY LINES FROM 6 INCH DISTRIBUTION LINE:

REMAINDER PARCEL, @ ELEVATION 222 FT:
SERVICE PROVIDED BY OWN WELL

PARCEL A, @ ELEVATION 224 FT:
50 G.P.M. FLOW @ 31.5 P.S.I. RESIDUAL
0 G.P.M. FLOW @ 39.8 P.S.I. RESIDUAL

PARCEL B, @ ELEVATION 225 FT:
50 G.P.M. FLOW @ 30.8 P.S.I. RESIDUAL
0 G.P.M. FLOW @ 39.4 P.S.I. RESIDUAL

PARCEL C, @ ELEVATION 226 FT:
50 G.P.M. FLOW @ 30.2 P.S.I. RESIDUAL
0 G.P.M. FLOW @ 38.9 P.S.I. RESIDUAL

PARCEL D, @ ELEVATION 235 FT:
50 G.P.M. FLOW @ 25.7 P.S.I. RESIDUAL
0 G.P.M. FLOW @ 35.0 P.S.I. RESIDUAL

WELL:
12 G.P.M. FLOW AGAINST 11.0 P.S.I. AT THE WELL HEAD
(MINIMUM FLOW REQUIRED)

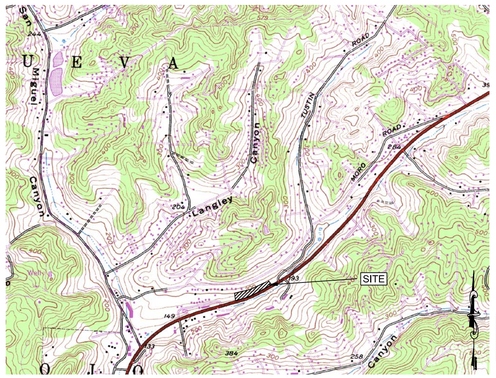
STATIC SYSTEM PRESSURES ARE COMPUTED WITH TANKS 90% FULL AND NO ACTIVITY IN SYSTEM.

DYNAMIC RESIDENTIAL SYSTEM PRESSURES ARE COMPUTED WITH ALL SERVICE LINES FLOWING AS INDICATED AT THE SAME TIME.

DYNAMIC WELL PRESSURE IS COMPUTED WITH SYSTEM STILL EXCEPT FOR WELL.

ELEVATIONS NOTED ARE EXISTING GRADE AT HYDRANT OR METER BOX INDICATED. ACTUAL PRESSURE AT RESIDENCE(S) WILL LIKELY BE HIGHER DUE TO DROP IN ELEVATION.

SYSTEM CHARACTERISTICS GIVEN TO THE LEFT WERE THAT DETERMINED DURING DESIGN. ACTUAL PUMPS INSTALLED ARE A 15 HP AND A 2 HP. THESE PUMPS WERE SELECTED TO MEET THE FIRE DEPARTMENT REQUIREMENTS WHICH CHANGED AFTER PERMIT ISSUANCE. THE CURRENT REQUIREMENT DICTATES A DISCHARGE OF 500 GALLONS OR MORE FROM THE LAST HYDRANT WITH A RESIDUAL PRESSURE OF NO LESS THAN 20 P.S.I.. THE 2 H.P. IS SET TO TURN ON AT 40 P.S.I. AND THE 15 H.P. IS SET TO TURN ON AT 30 P.S.I. WITH BOTH SET TO TURN OFF AT 60 P.S.I..



SITE LOCATION, NO SCALE

SCALE 1 INCH = 50 FT

SHEET INDEX

LEGEND

- THRUST BLOCKING, SEE DETAILS 3,6 & 7 / D-2
- HYDRANT, SEE DETAILS 4 & 5 / D-2
- METER BOX AND SERVICE LINE SEE DETAILS 1 & 3 / D-2
- CHECK VALVE AT WELL, SEE DETAIL 4 / D-3

BOUNDARY, PARCEL AND EASEMENT ALIGNMENTS, TOPOGRAPHY AND FEATURES PROVIDED BY:

PARCEL MAP
PLN070032

OF THAT CERTAIN PARCEL OF LAND DESCRIBED IN RECORDER'S INSTRUMENT NO. 2005114286 OF OFFICIAL RECORDS, IN RANCHO BOLSA NUEVA Y MORO COJO, MONTEREY COUNTY, CALIFORNIA

PREPARED FOR
DAVID H. FREEMAN

APN 125-211-001-000
JUNE 2009

JOB NO. 25-00
SHEET TWO OF TWO

GLS GOETZ LAND SURVEYORS
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GRICE ENGINEERING INC
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561A Brunken Avenue Salinas, California Salinas: (831) 422-9619 Monterey: (831) 375-1198 FAX: (831) 422-1896

NOT VALID WITHOUT STAMP AND SIGNATURE

LAWRENCE E. GRICE, P.E.; R.C.E. 66857

prepared for
MR. DAVID H. FREEMAN
2628 EL CAMINO REAL NORTH
SALINAS, CALIFORNIA
93907

RESIDENTIAL SUBDIVISION IMPROVEMENT PLAN
WATER SYSTEM PLAN - DOMESTIC AND FIRE
FREEMAN SUBDIVISION, 9999 MORO ROAD, SALINAS, CALIFORNIA; A.P.N. 125-211-001

AS BUILT - WATER SYSTEM SITE PLAN

Date Plotted: Dec 03, 2010

Uw 1

FREEMAN SUBDIVISION
FILE NO. 4988-07.04

Attachment 3

WATER SYSTEM SPECIFICATIONS

THE FOLLOWING SPECIFICATIONS ARE FOR THE PURPOSE OF PROVIDING A COMPLETE SYSTEM OF QUALITY AND WHILE ALL ELEMENTS OF THE SYSTEM ARE NOT SPECIFICALLY SPECIFIED, IT IS TO BE UNDERSTOOD THAT NO MATERIAL, SPECIFIED OR NOT, MAY BE OF LESSER QUALITY THAN THAT IMPLIED HEREIN AND SHOULD BE COVERED BY ONE OR MORE OF THE FOLLOWING CODES OR STANDARDS - ANSI- AMERICAN NATIONAL STANDARDS INSTITUTE, ASME - AMERICAN SOCIETY OF MECHANICAL ENGINEERS, ASTM - AMERICAN SOCIETY FOR TESTING AND MATERIALS, AWS - AMERICAN WELDING SOCIETY, AWWA - AMERICAN WATER WORKS ASSOCIATION, EIA - ELECTRONIC INDUSTRIES ASSOCIATION, NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NSF - NATIONAL SANITATION FOUNDATION, UL - UNDERWRITER'S LABORATORIES, INC.

QUANTITIES

THE CONTRACTOR IS REQUIRED TO MAKE HIS OWN ESTIMATE OF ALL MATERIALS AND WORK REQUIRED TO PROVIDE THE COMPLETE SYSTEM.

COST

THE CONTRACT PRICE FOR WORK SHALL BE A LUMP SUM FOR THE ENTIRE SYSTEM, COMPLETED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND REQUIREMENTS OF CONTROLLING AGENCIES AND SHALL INCLUDE ALL PIPING, PUMPS, TANKS, FITTINGS, ELECTRICAL SYSTEMS AND ENCLOSURES, SIGNALING AND WATER LEVEL DEVICES, VALVE AND METER BOXES, FENCING AND OTHER ITEMS RELATED TO THE SYSTEM AND REQUIRED TO PRODUCE A COMPLETE AND USEABLE WATER SERVICE, SUPPLY AND STORAGE SYSTEM.

SUBMISSION OF BID

THE CONTRACTOR SHALL SUBMIT HIS PROPOSED BID ON HIS OWN FORM AND SHALL INCLUDE ANY VARIABLES OR DISCOUNTS FOR EARLY OR INTERIM PAYMENT AS IS THEIR GENERAL PRACTICE.

PAYMENT

THE OWNER WILL PAY ON A MONTHLY ESTIMATED COST FOR PERCENTAGE OF WORK VERIFIED AS COMPLETED. THE OWNER RESERVES THE RIGHT TO REJECT PROGRESS BILLING FOR MATERIALS DELIVERED BUT NOT UTILIZED IN COMPLETED WORK. THE OWNER MAY RETAIN 10 % OF THE COST FOR WORK VERIFIED AS COMPLETED FOR A PERIOD OF 35 DAYS.

STAKING

THE OWNER WILL PROVIDE SUFFICIENT HORIZONTAL AND VERTICAL CONTROL FOR INSTALLATION OF THE WORK INCLUDING MAIN LINES, SERVICE CONNECTIONS, FIRE HYDRANTS, BLOW-OFFS AND SUCH OTHER DATUM POINTS NECESSARY TO ESTABLISH ALIGNMENT AND GRADE. THE PROTECTION AND CARE OF THE STAKES, ONCE SET, SHALL BE THE CONTRACTOR'S RESPONSIBILITY. REPLACEMENT STAKING SHALL BE AT THE CONTRACTORS EXPENSE.

PIPE LINE TRENCHING

EXCAVATION FOR PIPE LINE SHALL FOLLOW NEAT AND PARALLEL LINES WITH TRENCH WIDTH, IN GENERAL, TO BE ONE FOOT WITH SUCH WIDENING AS REQUIRED TO PLACE VALVES AND FITTINGS WITH A MINIMUM OF 4 INCH CLEARANCE TO TRENCH WALL.

IN GENERAL, THE MATERIALS ENCOUNTERED WILL BE DUNE SAND DEPOSITS AND EXCAVATION SHOULD PROVIDE A NEAT, SMOOTH BEDDING AT GRADE FOR THE INSTALLED WORK. WHERE REQUIRED, BEDDING AREA SHALL BE OVER EXCAVATED BY A MINIMUM OF 2 INCHES AND A SAND BEDDING MATERIAL (TYPE NO. 1) PLACED AND COMPACTED FOR THE PURPOSE OF ESTABLISHING GRADE. IN ALL CASES, THE PIPE SHALL BE PLACED ON A BEDDING OF IMPORTED OR NATIVE MATERIAL PROVIDING CONTINUOUS SUPPORT THROUGHOUT ITS LENGTH.

BACKFILL FOR THE PIPE TO TOP OF PIPE PLUS 4" SHALL BE SELECTED OR IMPORTED SANDY MATERIAL FREE OF STONE, CLAY, LIMBS OR OTHER DELETERIOUS MATERIALS IN EXCESS OF 1/2" MAXIMUM DIMENSION, PLACED AND TAMPED AND/OR PUDDLED ABOUT PIPE TO ENSURE PROPER BEDDING PRIOR TO COMPLETION OF TRENCH FILL. THE REMAINING BACKFILL SHALL BE PLACED AT 90 % RELATIVE COMPACTION, AND TESTED IN ACCORDANCE WITH THE COMPACTION CONTROL TESTS A.S.T.M. D-1556, DENSITY OF SOIL IN-PLACE BY SAND CONE METHOD, A.S.T.M. D-1557, MOISTURE DENSITY OF SOILS, AND A.S.T.M. D-2922, DENSITY OF SOILS IN-PLACE BY NUCLEAR METHOD.

EXTRA PRECAUTION SHALL BE TAKEN BY THE CONTRACTOR IN EXCAVATION FOR THE INSTALLING OF THE PIPE IN AREAS WHERE THE PIPE MAY CROSS EXISTING UNDERGROUND UTILITIES AND OTHER FACILITIES OF ANY NATURE. CONTRACTOR SHALL PERFORM HIS OPERATIONS IN SUCH A MANNER AND SHALL EXERCISE THE GREATEST OF CARE SO AS NOT TO INJURE IN ANY MANNER EXISTING UNDERGROUND UTILITIES, MAINS OR FACILITIES OF ANY NATURE. SHOULD THE CONTRACTOR INJURE, BREAK OR DAMAGE EXISTING UNDERGROUND UTILITIES, MAINS OR FACILITIES OF ANY NATURE IN ANY MANNER, HE SHALL REPAIR SAME AT HIS OWN EXPENSE. IF IT DOES NOT APPEAR FEASIBLE THAT HE SHALL CAUSE REPAIRS TO BE MADE IN THE OPINION OF THE ENGINEER, THEN SUCH REPAIRS SHALL BE MADE BY THE OWNER AND THE CONTRACTOR SHALL BE CHARGED FOR SUCH REPAIRS.

THE SIDES OF ALL EXCAVATIONS SHALL BE SUPPORTED IN THE MANNER SET FORTH IN THE RULES, ORDERS AND REGULATIONS PRESCRIBED BY THE DIVISION OF OCCUPATIONAL HEALTH AND SAFETY OF THE STATE OF CALIFORNIA. TRENCH SUPPORT AND OTHER TIMBERING SHALL BE WITHDRAWN IN SUCH A MANNER AS TO PREVENT CAVING OF THE WALLS OF EXCAVATIONS OR DAMAGE TO PIPING OR OTHER STRUCTURES.

SAND BEDDING MATERIAL: TYPE NO. 1 PASS NO. 4 100%
PASS NO. 100 20%
S.E. 25%

MINIMUM COVER: TRAFFIC AREAS 30 INCHES MINIMUM COVER FOR ALL MAIN LINES IS 30 INCHES.
LANDSCAPE AREAS 30 INCHES

CHECK VALVES (BACKFLOW)

CHECK VALVES AND/OR BACKFLOW VALVES SHALL BE AS CALLED ON THE PLAN SET.

THRUST BLOCKS AND ANCHORS

THRUST BLOCKING SHALL BE PROVIDED FOR ALL BENDS GREATER THAN 5 DEGREES AND AT ALL PLUGS, CAPS, TEES, VALVES AND OTHER FITTINGS AND/OR CONNECTIONS WHICH MAY GENERATE ENERGY. THRUST BLOCKING SHALL CONSIST OF POURED IN-PLACE CONCRETE BEARING ON CLEAN, UNDISTURBED NATIVE SOILS AND HAVE ONE SQUARE FOOT OF CONTACT AREA FOR EACH 2 INCH PIPE DIAMETER. PLEASE REFER TO DETAIL

MATERIALS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS AND SHALL REPLACE DEFECTIVE OR DAMAGED PARTS AT NO COST TO THE OWNER.

PIPING

BELOW GRADE LINES SHALL BE EITHER CLASS 150 RING TITE (BLUE BRUTE OR EQUAL) OR SCHEDULE 40 SOLVENT WELD PVC PIPE CONFORMING WITH A.S.T.M. SPECIFICATION D-2441, D-1785, AWWA C900-81 OR AN APPROVED EQUAL. ALL JOINTS AND FITTINGS SHALL BE UTILIZED WHICH ARE COMPATIBLE WITH THE PIPE BEING INSTALLED. ALL PIPES AND FITTINGS MUST BE NATIONAL SANITATION FOUNDATION APPROVED. ALL WATER MAINS SHALL CONFORM TO AWWA C900-81 AS GIVEN IN SECTION 64622 OF THE CALIFORNIA WATER WORKS STANDARDS UNLESS OTHERWISE NOTED.

ABOVE GRADE LINES SHALL BE SCHEDULE 80 GALVANIZED STEEL OR PVC PIPE. FOR STEEL PIPE ALL CUTS AND THREADS SHALL BE COATED WITH A RUST RESISTANT PAINT TREATMENT AFTER INSTALLATION.

PIPE FOR SERVICE CONNECTIONS AND INSTALLATION SHALL BE EITHER SOFT WALLED COPPER WATER TYPE CONFORMING TO A.W.W.A. TYPE K OR POLYETHYLENE PLASTIC PIPE CLASS160, A.S.T.M. D-223A, SOLVENT WELD PVC, OR APPROVED EQUAL.

JOINTS AND FITTINGS

ALL JOINTS AND FITTINGS SHALL MEET THE FOLLOWING SPECIFICATIONS OR BE SPECIFICALLY APPROVED BY THE ENGINEER OR AN APPROVED EQUAL. FITTINGS SHOWN ON MAIN LINES MAY BE OMITTED IF PIPE CAN BE BENT TO CONFORM TO GENERAL LAYOUT PARAMETERS AND DEFLECTION OF PIPE IS WITHIN THAT ALLOWED BY MANUFACTURER. PIPE LOCATION MAY BE ALTERED PROVIDED IT IN NO WAY COMPROMISES SYSTEM INTEGRITY OR SERVICE. AS BUILT PLANS INDICATING SUCH ALTERATIONS SHALL BE RECORDED AS REQUIRED.

POLYVINYL CHLORIDE FITTINGS SHALL MATCH THE GREATEST PIPE SPECIFICATION OF THE JOINT AND BE EQUAL IN KIND FOR THE TYPE OF MATERIAL WITH A MINIMUM RATING OF 160 PSI RATING (SDR 26) FOR PIPE LESS THAN 4".

ALL FITTINGS SHALL BE OF TYPE DESIGNED TO JOIN DIRECTLY TO TYPE OF PIPE BEING USED.

VALVES

ALL GATE VALVES SHALL BE CLASS 200 OF THE DOUBLE GATE TYPE, CONFORMING TO A.W.W.A. STANDARD C550 DESIGNED FOR 150 P.S.I. WORKING PRESSURE. ALL BUTTERFLY VALVES SHALL BE CLASS 150-B AND SHALL BE OF THE RUBBER SEATED TIGHT CLOSING TYPE CONFORMING TO A.W.W.A. STANDARD C504 DESIGNED FOR 150 P.S.I. WORKING PRESSURE.

ALL BALL VALVES SHALL BE RATED FOR A MINIMUM PRESSURE OF 150 PSI AND CONSTRUCTED FROM PVC TYP I CELL CLASS 12454-B WITH EPDM O-RINGS AND LISTED BY THE NSF FOR POTABLE WATER USE. ALL BALL VALVES SHALL CONFORM TO A.W.W.A. STANDARD C507.

CORPORATION STOPS SHALL BE INLET THREADED AND OUTLET FITTED FOR TYPE OF SERVICE PIPE BEING UTILIZED, AS MANUFACTURED BY MULLER OR APPROVED EQUAL. SERVICE CURB STOPS SHALL BE ORISEAL NO. H-10291 OR EQUAL WITH LOCKING METER COUPLING.

WATER SYSTEM SPECIFICATIONS - CONTINUED

PRESSURE RELIEF VALVES

PRESSURE RELIEF VALVES SHALL BE SPRING LOADED POPPET TYPE CONSTRUCTED OF BRASS WITH A STAINLESS LOAD SPRING WITH ADJUSTABLE PRESSURE RANGE TO 150 P.S.I. AS MANUFACTURED BY TEEL VALVES OR APPROVED EQUAL.

PRESSURE GAUGE

ALL PRESSURE GAUGES SHALL BE MARSH TYPE 4.5" DIAL READING 0 TO 160 P.S.I. OR APPROVED EQUAL.

SERVICE CLAMPS

SERVICE CLAMPS SHALL BE BRONZE, DOUBLE STRAP WITH C.C. TAP AS MANUFACTURED BY SMITH, BLAIR OR APPROVED EQUAL.

SAMPLE TAPS

SAMPLE TAPS SHALL BE SUPPLIED AT THREE (3) LOCATIONS. ONE EACH AT AN OUTLET FROM THE WATER STORAGE TANKS AND ONE AT THE SUPPLY LINE FROM THE WELL. THE SAMPLE TAPS SHALL BE OF COMMON CONSTRUCTION WITH A VALVE AND SUFFICIENT TURNS SO AS TO DIRECT THE OUTLET DOWNWARD. THE SAMPLE TAP AT THE WELL SUPPLY LINE SHALL BE INSTALLED BEFORE THE BACKFLOW PREVENTION DEVICE. THE OUTLET OF ALL SAMPLE TAPS SHALL HAVE A SMOOTH THREAD-LESS EXTERIOR SURFACE.

WELL PUMP

ALL WELL PUMPS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

(A) THE WELL SHALL BE CAPABLE OF DELIVERING A MINIMUM OF 12 GPM TO THE STORAGE TANKS AT 25.4 T.D.H. AT THE HEAD OF THE WELL CASING

(B) 70 PERCENT EFFICIENCY SHOULD OCCUR AT 12 G.P.M. AT 25.4 T.D.H.

(C) 75% PERFORMANCE PER STAGE AT POINT OF MAXIMUM EFFICIENCY.

(D) PUMP REQUIREMENTS WERE DETERMINED AT THE CASING HEAD. ACTUAL DYNAMICS AT THE PUMP WILL BE GREATER AND DEPEND ON THE DROP PIPE SIZE, THE PUMP TYPE AND POWER AND OTHER GEOMETRIES.

WELL PUMP CONTROL PANEL TO PROVIDE THE FOLLOWING MINIMUM FUNCTIONS.

A. FLOAT SWITCH ASSEMBLY TO START THE PUMPING AT 1000 GALLONS OF DRAW DOWN BELOW THE REQUIRED STORAGE.

B. FLOAT SWITCH ASSEMBLY TO STOP THE PUMPING WHEN THE TANKS ARE FILLED TO THE REQUIRED STORAGE.

C. FLOAT SWITCH TO ACTIVATE ALARM INDICATING WELL PUMP(S) AND/OR LINE FAILURE. FLOAT SWITCH SHALL BE SET TO ACTIVATE ALARM AFTER A TOTAL DRAW DOWN OF 3000 GALLONS BELOW THE REQUIRED STORAGE.

STORAGE TANKS

MINIMUM OPERATING STORAGE FOR THIS PROJECT IS 20,000 GALLONS FOR THE FIRE HYDRANT AND DOMESTIC SYSTEM. EACH NEW STORAGE TANK(S) SHALL BE OF 10,000 GALLON OPERATING CAPACITY MINIMUM AND BE MANUFACTURED FROM EITHER POLYETHYLENE OR STEEL. THE TANKS MUST BE NSF APPROVED (OR ACCEPTABLE TO THE COUNTY HEALTH AGENCY) AND SHALL HAVE AN INSPECTION HATCH, SUPPLIED WITH A TIGHT FITTING LID. THE HATCH CLEAR OPENING MUST HAVE A MINIMUM DIAMETER OF 18 INCHES. TANKS SHALL BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS.

EACH TANK MUST BE FITTED WITH A 4 INCH BOTTOM BULKHEAD FITTING, A 2 INCH VENT (OR AS SUPPLIED BY MANUFACTURER IN LID), A 2 INCH TOP BULKHEAD, AND A 2 INCH OVERFLOW. THE VENT (IF NOT IN LID) AND OVERFLOW MUST TERMINATE IN DOWNWARD POSITION AND BE FITTED WITH A SCREEN WITH OPENINGS NO GREATER THAN 1/8 INCH AND TERMINATE A MINIMUM OF 36 INCHES FROM GRADE.

COUNTY

ALL CONSTRUCTION COMPONENTS AND MATERIALS SHALL CONFORM TO MONTEREY COUNTY RESIDENTIAL SUBDIVISION WATER SUPPLY STANDARDS AND AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS AS APPROPRIATE AND UNLESS OTHERWISE NOTED WITHIN THE PLANS. IN CASE OF CONFLICT THE STRICTEST STANDARD SHALL APPLY.

ALL DOMESTIC WATER PIPING AND FITTINGS SHALL BE NSF APPROVED FOR POTABLE WATER.

NOTIFY THE MONTEREY COUNTY HEALTH DEPARTMENT FOR INSPECTION AT LEAST 24 HOURS BEFORE COVERING ANY EXCAVATION.

PRIOR TO DOMESTIC USE, ALL NEW WATER SYSTEM CONSTRUCTION SHALL BE DISINFECTED ACCORDING TO AWWA STANDARDS. WATER FROM THE NEW SYSTEM SHALL BE TESTED FOR BACTERIOLOGICAL QUALITY PER CCR TITLE 22. RESULTS MUST BE SUBMITTED TO THE HEALTH DEPARTMENT FOR APPROVAL.

EROSION CONTROL PLANNING

ER:1 General Description:

1.1 The design of erosion protection features should be appropriate for the project and should consider the topographic and hydrologic features of the site. It is important to minimize grading of or near steep slopes. Disturbing native vegetation and natural soil structure allows runoff velocity and transport of sediments to increase.

1.2 The final plan should maintain runoff rates at or below pre-development levels. Runoff from post-development impervious structures should be disposed of on site through percolation of collected waters into the soil by means of percolation trenches intended for storm runoff only.

1.3 If retention/percolation is not possible, post-development generated runoff should be detained in on site basins and released in a controlled fashion. Runoff flows should be directed into pipes or lined ditches and then onto an energy dissipater to reduce the hydraulic gradient before discharging the runoff into streams or drainage ways.

1.4 De-siltation of runoff may take form of stilling basins, gravel berm, turf or vegetation screens, reforestation, etc..

1.5 Free flowing storm runoff should never be directed to septic tank system leach fields. Drainage should be carried through a leach field area in closed conduit or lined surface drain.

1.6 Any site soils or other materials which are disturbed shall be adequately watered to prevent dust from becoming airborne in accordance with local dust control ordinances.

ER:1 Materials Storage:

2.1 During construction, never store cut and fill material where it may wash into streams or drainage ways. Should weather threaten the stored materials it should be covered with plastic or appropriate retention facilities provided for desiltation of the storm water prior to release.

2.2 Keep all culverts and drainage facilities free of silt and debris. Keep emergency erosion control materials such as straw mulch, plastic sheeting, and sandbags on site and install these at the end of each day as necessary.

ER:3 Re-vegetation and Planting:

3.1 Re-vegetate and protect exposed soils by October 15. Use appropriate grass/legume seed mixes and/or straw mulch for temporary cover. Plan permanent vegetation to include native and drought tolerant plants. Seeding and re-vegetation may require special soil preparation, fertilizing, irrigation, and mulching.

3.1.a Recommended Seed Schedule is as follows:
40 pounds per acre of California Brome
15 pounds per acre of Blue Wild Rye
4 pounds per acre of Zorro Fescue
6 pounds per acre of Red Creeping Fescue

3.2 In the absence of a detailed Erosion Control Plan, the work will be protected in accordance with the appropriate ordinance, regulation and/or standard practice which ever provides satisfactory erosion protection.

3.3 Actual grading shall begin within 30 days of vegetation removal or the area shall be planted to control erosion.

ER:4 County

4.1 All erosion control measures for grading shall be in place at the end of each working day between October 15 and April 15.

4.2 All erosion control measures shall conform with Monterey County Erosion Control Ordinance #2806.

RECOMMENDED GRADING SPECIFICATIONS FOR EARTHWORK

ET:1 General Description:

1.1 This item shall consist of all clearing and grubbing; preparation of land to be filled; excavation and fill of the land; spreading, compaction and control of the fill; and all subsidiary work necessary to complete the graded area to conform with the lines, grades and slopes as shown on the approved plans.

1.2 The Contractor shall provide all equipment and labor necessary to complete the work as specified herein, as shown on the approved plans as stated in the project specifications.

1.3 Retaining walls require a separate building permit.

ET:2 Tests:

2.1 The standard test used to define maximum densities of all compaction work shall be the A.S.T.M. D-1557, Moisture Density of Soils, using a 10-pound ram and 18-inch drop. All densities shall be expressed as a relative compaction in terms of the maximum density obtained in the laboratory by the foregoing standard procedure.

2.2 In-place density shall be determined by Test Methods A.S.T.M. D-1556, Density of Soil In-Place by Sand Cone Method and D-2922, Density of Soil In-Place by Nuclear Method.

2.3 Pad elevations shall be certified to 0.1 feet, prior to digging any footings or scheduling any inspections.

ET:3 Clearing, Grubbing and Preparing Areas To Be Excavated Or Filled:

3.1 All vegetable matter, irreducible material greater than 4 inches and other deleterious materials shall be removed from the areas in which grading is to be done. Such materials not suitable for reuse shall be disposed of as directed.

3.2 After the foundation for fill has been cleared, it shall be brought to the proper moisture content by adding water or aerating and compacting to a relative compaction of not less than 90% or as specified. The soils shall be tested to a depth sufficient to determine quality and shall be approved by the Soils Engineer for foundation purposes prior to placing engineered fill.

ET:4 Materials:

4.1 The material for engineered fill shall be approved by the Soils Engineer before commencement of grading operations. Any imported material must be approved for use before being brought to the site. The material used shall be free from vegetable matter and other deleterious materials.

4.2 Imported materials for engineered fill shall consist of non-expansive soil with maximum aggregate size of 3 inches, a PI less than 15 and/or a Cu greater than 4 and shall be approved by the Engineer.

ET:5 Placing, Spreading and Compacting Fill Material:

5.1 The selected fill material shall be placed in layers which, when compacted, shall not exceed 6 inches in thickness. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to ensure uniformity of material in each layer. Fill shall be placed such that cross fall does not exceed 1 foot in 20 unless otherwise directed.

5.2 When fill material includes rock or concrete rubble, no irreducible material larger than 3 inches in greatest dimension will be allowed except under the direction of the Soils Engineer.

5.3 The moisture content of the fill material shall be maintained in a suitable range to permit efficient compaction. The Soils Engineer may require adding moisture, aerating, or blending of wet and dry soils.

5.4 Each layer shall be compacted to a relative compaction of not less than 90 % or as specified in the soils report and on the accepted plans. Compaction shall be continuous over the entire area of each layer.

5.5 Field density test shall be made by the Soils Engineer of each compacted layer. At least one test shall be made for each 500 cubic yards or fraction thereof, placed with a minimum of two tests per layer in isolated areas. Where a sheep-foot roller is used, the soil may be disturbed to a depth of several inches. Density tests shall be taken in compacted materials below the disturbed surface. When these tests indicate that the compaction of any layer of fill or portion thereof, is below the required compaction, that particular layer or portion shall be reworked until the required compaction has been obtained.

5.6 All earth moving and work operations shall be controlled to prevent water from running into excavated areas. All such water shall be promptly removed and the site kept dry.

5.7 Cut and fill slopes steeper than two horizontal to one vertical must be approved by the soils engineer.

ET:6 Seasonal Limits:

6.1 When the work is interrupted by rain, fill operations shall not be resumed until field tests by the Soils Engineer indicate that the moisture content and density of the fill is as previously specified and soils to be placed are in suitable condition.

ET:7 Unusual Conditions:

7.1 In the event that any unusual conditions are encountered during grading operations which are not covered by the soil investigation or the specifications, the Soils Engineer shall be immediately notified such that additional recommendations may be made.

ET:8 County

8.1 A copy of all compaction tests and final grading reports shall be submitted to the County prior to scheduling any inspections.

8.2 All grading shall conform with the Monterey County Grading Ordinance #2535.

8.3 The Soils Engineer shall inspect the building pad and foundation excavations & submit written approval to the building inspector before requesting foundation inspection and pouring of any footings.

8.4 No vegetation removal or grading will be allowed which will result in siltation of water courses or uncontrolled erosion.

8.5 Actual grading shall begin within 30 days of vegetation removal or that area shall be planted under the provisions of Section 16.08.340 to control erosion.

8.6 All disturbed surfaces resulting from grading shall be prepared and maintained to control erosion by effective planting such as rye grass, barley or some other fast germinating seed.

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NOT VALID WITHOUT STAMP AND SIGNATURE

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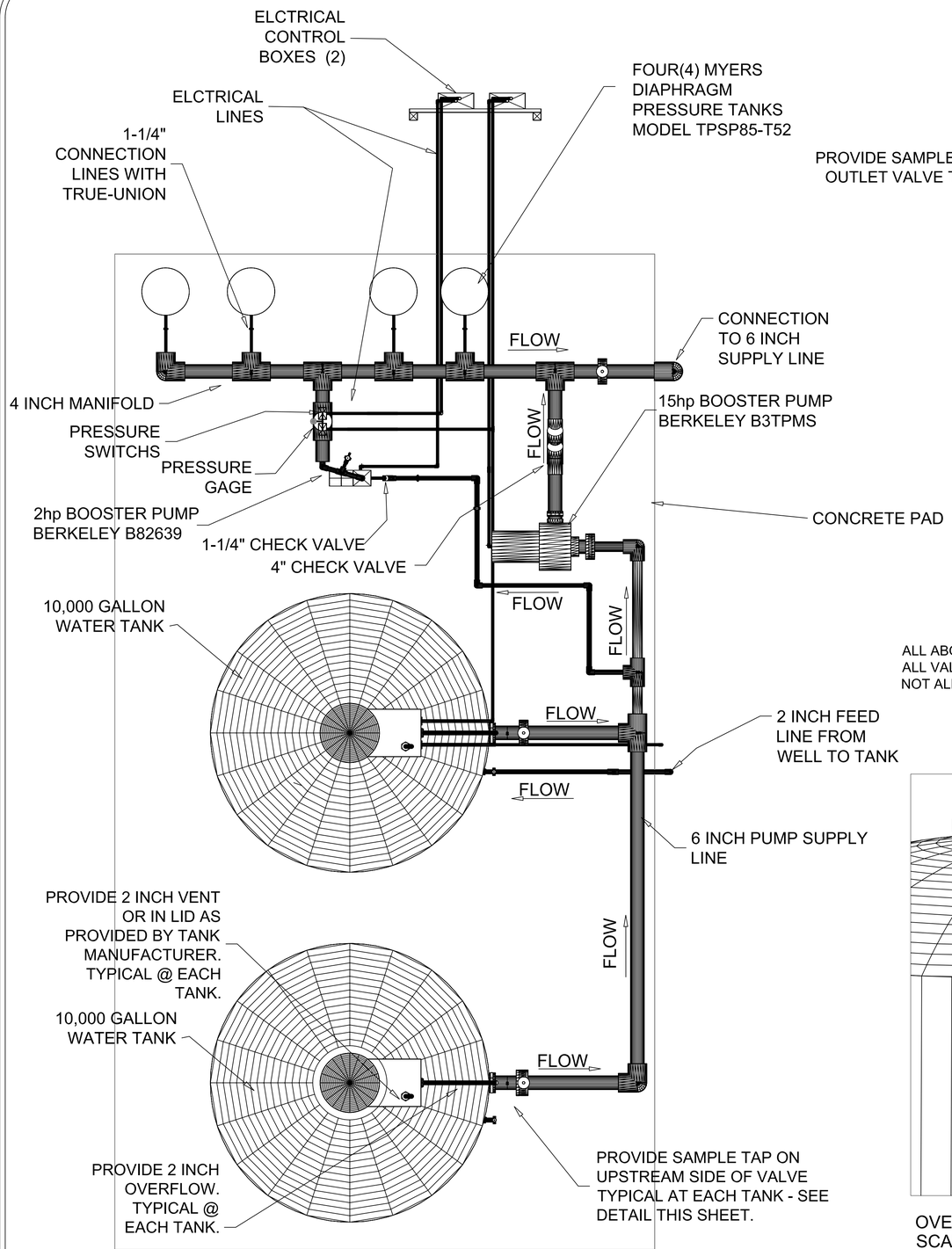
RESIDENTIAL SUBDIVISION IMPROVEMENT PLAN
WATER SYSTEM PLAN - DOMESTIC AND FIRE
FREEMAN SUBDIVISION, 9999 MORO ROAD, SALINAS, CALIFORNIA; A.P.N. 125-211-001

AS BUILT - SPECIFICATIONS AND NOTES

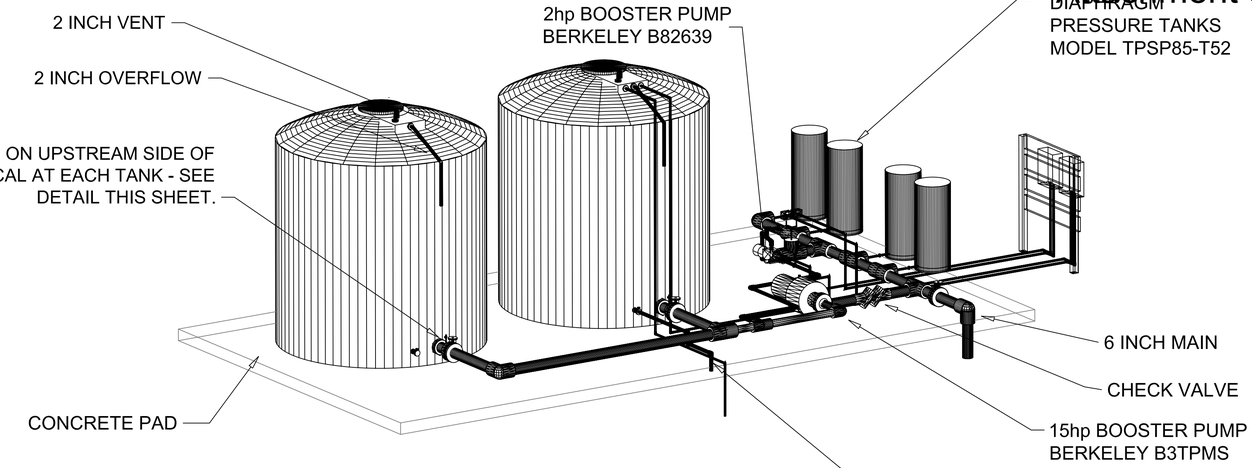
Date Plotted: Dec 03, 2010

T 2

FREEMAN SUBDIVISION
FILE NO. 4988-07.04

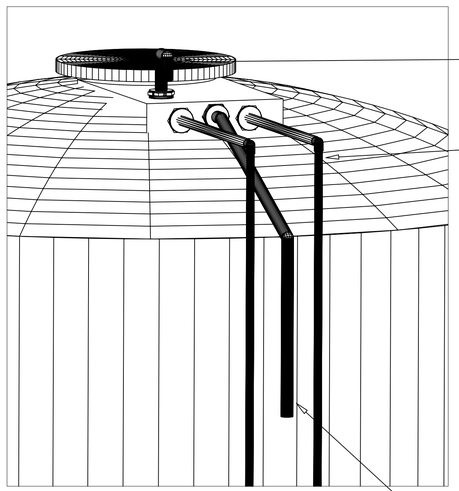


PLAN VIEW OF TANK FARM
SCALE 3/8"=1'

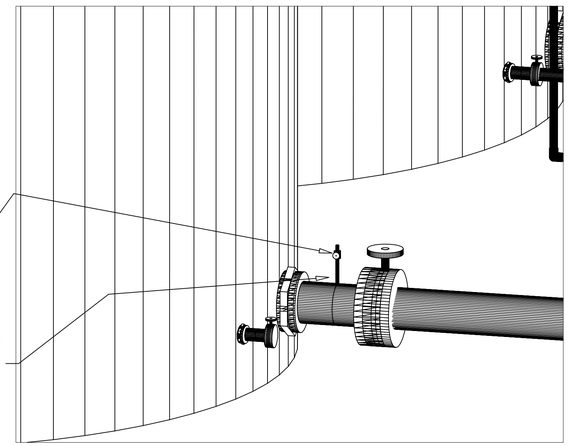


ELEVATED VIEW OF TANK FARM
SCALE 1/4"=1'

ALL ABOVE GRADE PIPES TO BE EITHER SCH. 40 GALVANIZED STEEL OR SCH. 80 P.V.C. PIPE. P.V.C. PIPE BELOW GRADE MAY BE SCH. 40.
ALL VALVES TO BE INSTALLED AS TRUE UNION OR FLANGE. PROVIDE PROPER BUSHING(S) TO ACCOMMODATE SIZE CHANGE.
NOT ALL TANK DETAILS SHOWN. NEW TANKS TO BE EITHER STEEL OR POLYETHYLENE. TANKS TO BE PLACED ON COCNRETE PAD ON ENGINEERED FILL.



OVERFLOW & VENT DETAIL
SCALE 1" = 1'



TANK SAMPLE TAP DETAIL
SCALE 1" = 1'

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NOT VALID WITHOUT STAMP AND SIGNATURE

LAWRENCE E. GRICE, P.E. ; R.C.E. 66857

prepared for
MR. DAVID H. FREEMAN
2628 EL CAMINO REAL NORTH
SALINAS, CALIFORNIA
93907

RESIDENTIAL SUBDIVISION IMPROVEMENT PLAN
WATER SYSTEM PLAN - DOMESTIC AND FIRE
FREEMAN SUBDIVISION, 9999 MORO ROAD, SALINAS, CALIFORNIA; A.P.N. 125-211-001

AS BUILT - TANK FARM PLAN

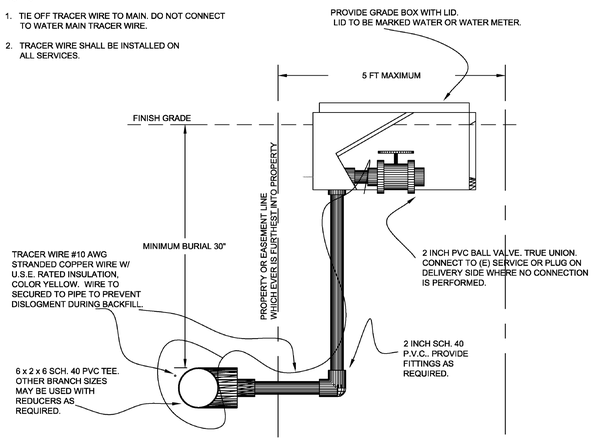
Date Plotted: Dec 03, 2010

D 1

FREEMAN SUBDIVISION
FILE NO. 4988-07.04

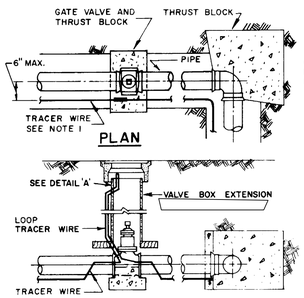
NOTES:

1. TIE OFF TRACER WIRE TO MAIN. DO NOT CONNECT TO WATER MAIN TRACER WIRE.
2. TRACER WIRE SHALL BE INSTALLED ON ALL SERVICES.



1 — 2 inch Service Line and Tracer Wire Installation Details

2

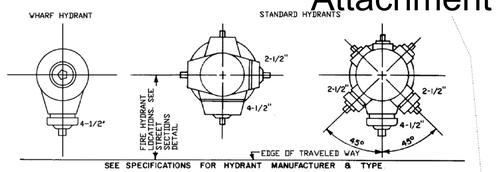


NOTES

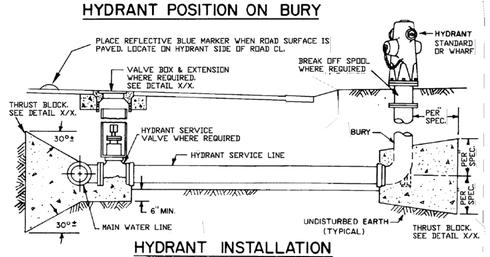
1. CONTRACTOR SHALL USE CARE TO PREVENT DAMAGE TO TRACER WIRE WHEN PLACING CONCRETE.
2. ALL WIRE SHALL BE STRANDED COPPER W/ U.S.E RATED INSULATION, COLOR YELLOW MIN. SIZE AWG 10.
3. SPLICES SHALL BE MADE WITH SCREW TYPE CONNECTORS, BURNDY SERVIET KS-15, AND ENCAPSULATED IN EPOXY, DURCO-CAST UNIVERSAL MODEL SK-40, SEE DETAIL B
4. TRACER WIRES SHALL BE INTER-CONNECTED AT PIPE TEES AND CROSSES.
5. CONTINUITY TESTS SHALL BE CONDUCTED AS DIRECTED BY THE DISTRICT.
6. TRACER WIRE REQUIRED ON ALL NON-FERROUS MAINS.

3 — Mains and Valves Tracer Wire Installation Details

4



HYDRANT POSITION ON BURY

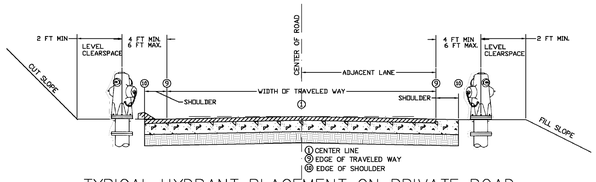


HYDRANT INSTALLATION

NOTES:

1. COAT ALL FERROUS METAL PRIOR TO PLACEMENT IN TRENCH IN ACCORDANCE WITH SPECIFICATIONS.
2. FOR FIRE HYDRANT PAINT COLOR, SEE SECTION F.9 OF ACWD STANDARD SPECIFICATIONS.
3. SLOTTED HYDRANT SPOOLS MAY BE REQUIRED FOR SPECIAL CONDITIONS, SUCH AS HYDRANTS LOCATED IN CUL-DE-SACS, LONG RADIUS CURVES, ETC.
4. CAST CONCRETE AGAINST UNDISTURBED EARTH.

4 — Fire Hydrants Installation Details



TYPICAL HYDRANT PLACEMENT ON PRIVATE ROAD

ALL FLAMMABLE VEGETATION WITHIN 8 FEET OF HYDRANT SHALL BE CLEARED.

WHERE THE ADJACENT ROAD SURFACE IS PAVED, A REFLECTORIZED BLUE MARKER SHALL BE PERMANENTLY GLUED TO THE PAVEMENT TO THE HYDRANT SIDE OF THE CENTERLINE.
EACH HYDRANT/FIRE VALVE OR ACCESS TO WATER SHALL BE IDENTIFIED AS FOLLOWS:
A. IF LOCATED ALONG A DRIVEWAY, A REFLECTORIZED BLUE MARKER, WITH A MINIMUM DIMENSION OF 3 INCHES, SHALL BE LOCATED ON THE DRIVEWAY ADDRESS SIGN AND MOUNTED ON A FIRE RETARDANT POST
B. IF LOCATED ALONG A STREET OR ROAD, A REFLECTORIZED BLUE MARKER, WITH A MINIMUM DIMENSION OF 3 INCHES, SHALL BE MOUNTED ON A FIRE RETARDANT POST. THE SIGN POST SHALL BE WITHIN 3 FEET OF SAID HYDRANT/FIRE VALVE, WITH A SIGN NO LESS THAN 3 FEET NOR GREATER THAN 5 FEET ABOVE GROUND, IN A HORIZONTAL POSITION AND VISIBLE FROM THE DRIVEWAY.

5 — Fire Hydrant Locations Installation Details

6

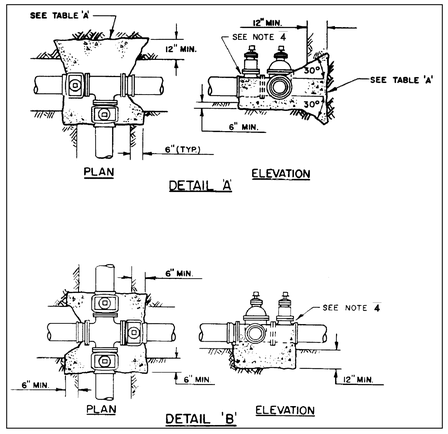


TABLE A

REQUIRED BEARING AREAS – SQ FT	
PIPE DIAMETER	SQUARE FEET
4"	3
6"	5
8"	8
10"	12
12"	17
14"	24
16"	31

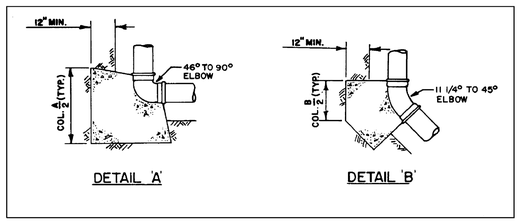
NO THRUST BLOCKING REQUIRED FOR SOLVENT WELD OR THREADED PIPE SMALLER THAN 4 INCHES.

NOTES:

1. DETAILS BASED ON 150 P.S.I. PRESSURE, 1,000 P.S.F. SOIL BEARING. USE 6 SACK, 3/4 AGG. MAX. CONCRETE MIX.
2. COAT FITTINGS WITH MASTIC OR WRAP IN PLASTIC WHERE EMBEDDED IN CONCRETE TO FACILITATE DISS-ASSEMBLY.
3. CAST CONCRETE THRUST BLOCK AGAINST FIRM, UNDISTURBED EARTH.
4. MAINTAIN CLEARANCE FOR BONNET BOLT REMOVAL WHERE APPLICABLE.

6 — Valve Cluster Thrust Blocking PVC Pipe Installation Details

7



REQUIRED BEARING AREAS – SQ FT		
PIPE DIAMETER	A	B
4"	4	3
6"	6	4
8"	11	6
10"	17	9
12"	24	13
14"	33	18
16"	43	23

NO THRUST BLOCKING REQUIRED FOR SOLVENT WELD OR THREADED PIPE SMALLER THAN 4 INCHES.

NOTES:

1. DETAILS BASED ON 150 P.S.I. PRESSURE, 1,000 P.S.F. SOIL BEARING. USE 6 SACK, 3/4 AGG. MAX. CONCRETE MIX.
2. COAT FITTING WITH MASTIC OR WRAP IN PLASTIC WHERE EMBEDDED IN CONCRETE TO FACILITATE DISS-ASSEMBLY.
3. CAST CONCRETE THRUST BLOCK AGAINST FIRM, UNDISTURBED EARTH.

7 — Thrust Blocking for Horizontal Fittings PVC Pipe Installation Details

8

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AS BUILT - DETAILS

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FILE NO. 4988-07.04

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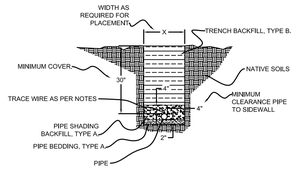
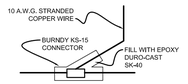
3 Water Pipe Trench Installation Details





TRACE WIRE INTERSECTION SPLICE

MATERIALS

TYPE A BEDDING SAND
SAND EQUIVALENCY = MINIMUM 25
AS PER ASTM D2419-85.
GRADATION: 100% PASSING NO. 4 SIEVE.
MAXIMUM OF 20% PASSING NO. 100 SIEVE.
AS PER ASTM C136-85.
PLACED AS ENGINEERED FILL AND COMPACTED TO A MINIMUM DENSITY 90% (ASTM D1556-85 OR D2922-85) OF MAXIMUM DENSITY AS GIVEN BY ASTM D1557-85.

TYPE B BACKFILL MATERIAL
NATURAL OR IMPORT SOILS CLASSIFIED AS:
CL, ML, S-, G- AS PER ASTM D2487-85,
NO AGGREGATE LARGER THAN 3 INCHES,
PLACED AS ENGINEERED FILL AND COMPACTED TO A MINIMUM DENSITY 90% OR AS REQUIRED OTHERWISE (ASTM D1556-85 OR D2922-85) OF MAXIMUM DENSITY AS GIVEN BY ASTM D1557-85.

TRACE WIRE NOTES

1. CONTRACTOR SHALL USE CARE TO PREVENT DAMAGE TO TRACE WIRE WHEN PLACING CONCRETE.

2. ALL WIRE SHALL BE STRANDED COPPER W/ U.S.E. RATED INSULATION, COLOR GREEN MINIMUM SIZE A.W.G. 10.

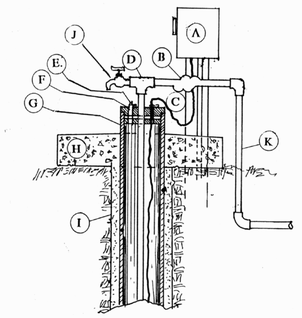
3. SPLICES SHALL BE MADE WITH SCREW TYPE CONNECTORS, BURNDY SEVIET KS-15, AND ENCAPSULATED IN EPOXY, DURO-CAST UNIVERSAL MODEL SK-40, SEE DETAIL B.

4. TRACER WIRES SHALL BE INTER-CONNECTED AT PIPE TEES AND CROSSES.

5. CONTINUITY TESTS SHALL BE CONDUCTED AS DIRECTED BY THE PROJECT ENGINEER OR COUNTY INSPECTOR.

6. TRACER WIRE REQUIRED ON ALL NON-FERROUS MAINS.

4 Well Connection Installation Details



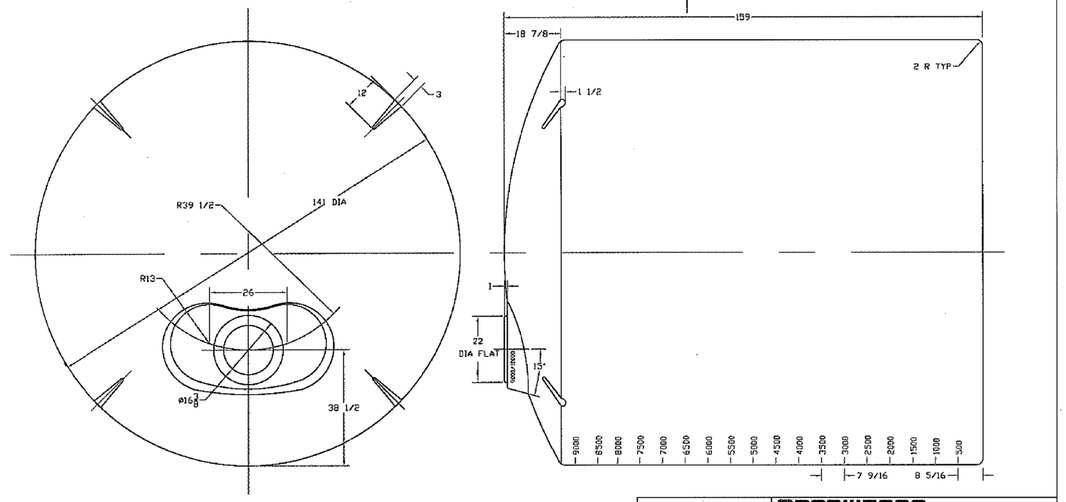
A. ELECTRIC SERVICE
B. SINGLE CHECK VALVE
C. POWER TO PUMP
D. DROP PIPE TO PUMP
E. ACCESS PLUG (THREADED)
F. CASING CAP
G. CASING
H. GROUND CAP
I. GROUT SEAL
J. NON-THREADED WATER TAP
K. DISCHARGE PIPE

5

6

8 WATER TANK

ZONE	REV	DESCRIPTION	DATE	APPROVED



NORWESCO
ST. BONIFACIUS, MN.
10000 GALLON VERTICAL TANK HANFORD CA MOLD

JTP 23FEB01	SIZE B	FSCM NO.	DWG NO.	REV
	SCALE 1/24		SHEET	

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