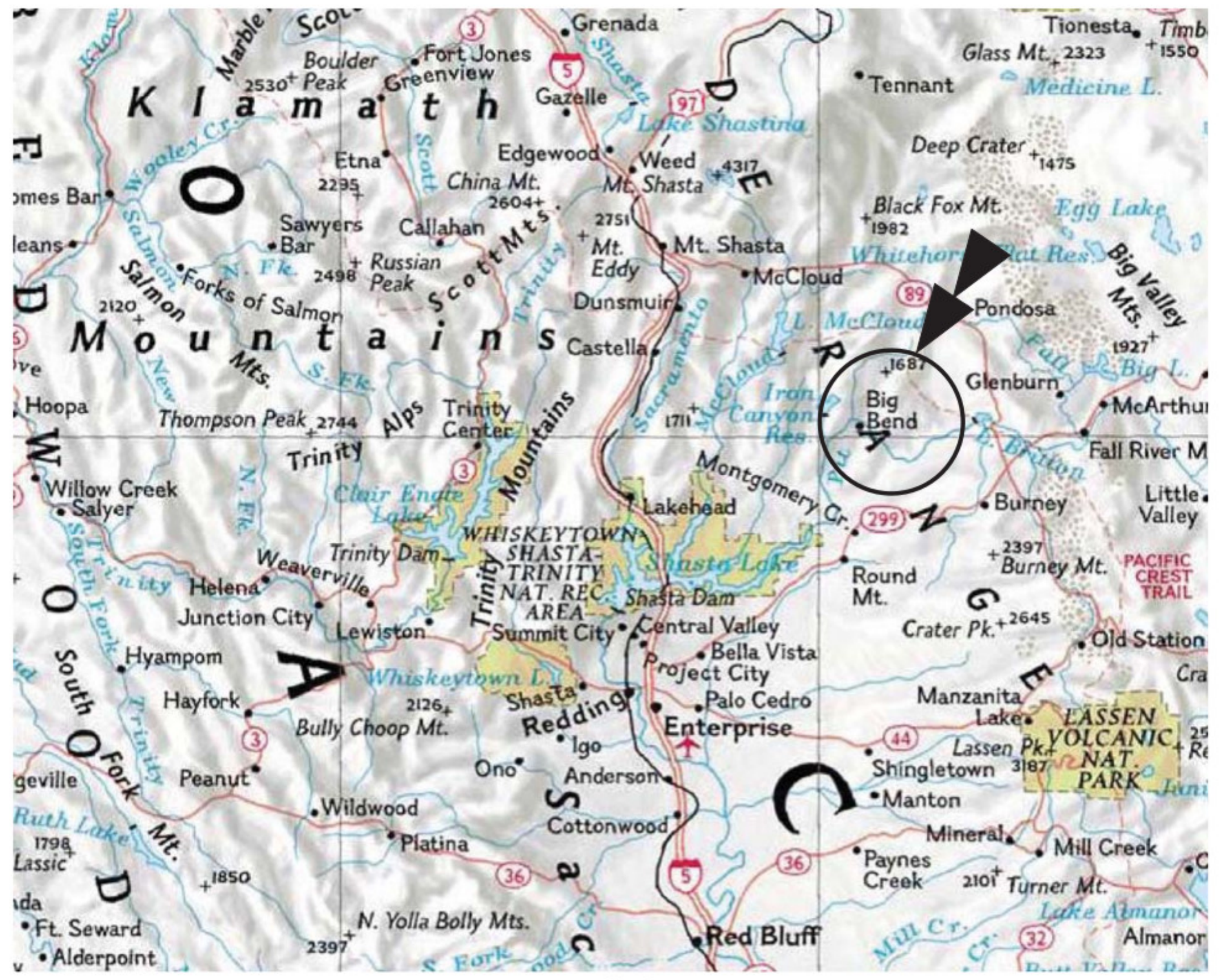
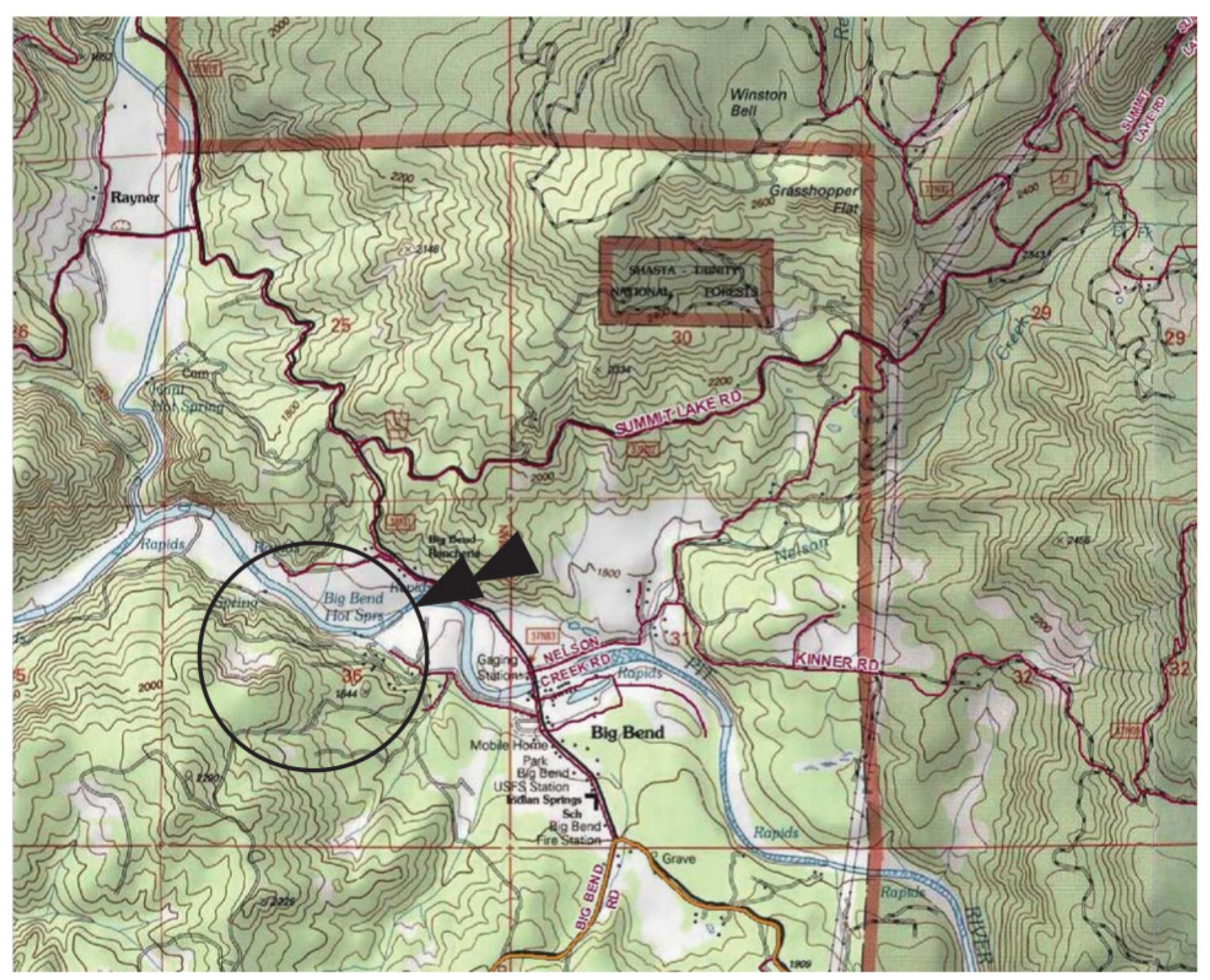
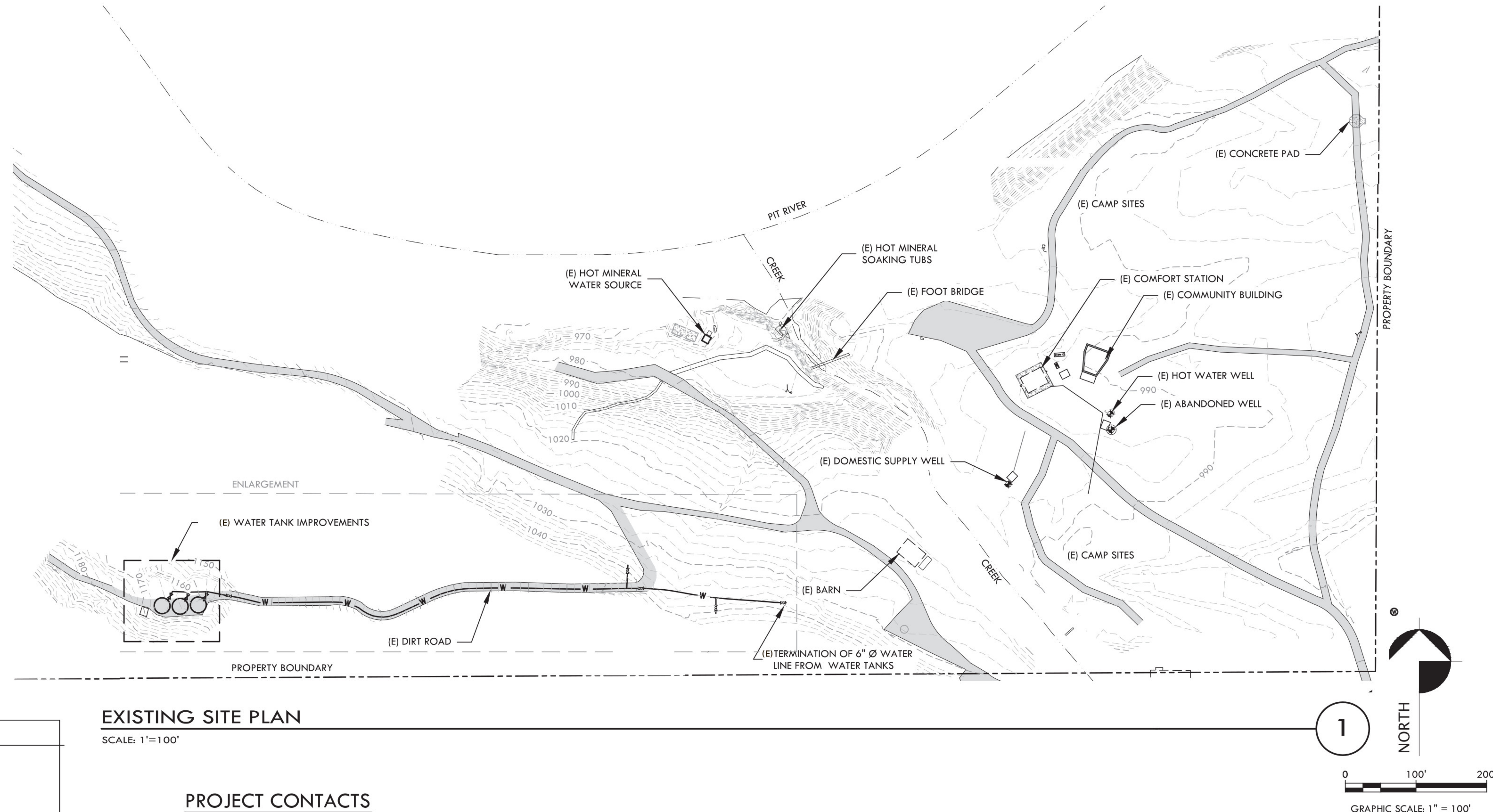
BIG BEND HOT SPRINGS, BIG BEND, CA
FIRE SUPPRESSION SYSTEM PROJECT



VICINITY
NTS



SITE
NTS



EXISTING SITE PLAN 1
SCALE: 1'=100'

GENERAL REQUIRMENTS

1. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH:
   - SHASTA COUNTY DEVELOPMENT STANDARDS (1997 EDITION)
   - 2013 CALIFORNIA BUILDING CODE (BASED ON THE 2012 EDITION OF THE IBC)
   - 2013 CALIFORNIA PLUMBING CODE (BASED ON THE 2012 UPC)
   - 2013 CALIFORNIA MECHANICAL CODE (BASED ON THE 2012 UMC)
   - 2013 CALIFORNIA ELECTRICAL CODE (BASED ON THE 2012 NEC)
   - 2013 CALIFORNIA EXISTING BUILDING CODE
   - REGULATIONS OF THE STATE FIRE MARSHAL
   - 2013 CALIFORNIA FIRE CODE
   - STATE OF CALIFORNIA CODE OF REGULATIONS, TITLE 22 DRINKING WATER REGULATIONS, 2013
   - AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS
   - CALIFORNIA WATER WORKS STANDARDS (CWWS)

2. NOTHING ON THE DRAWING IS TO BE CONSTRUED AS REQUIRING OR PERMITTING WORK THAT IS CONTRARY TO THE ABOVE LISTED CODES AND REGULATIONS, OR OTHER LOCAL, STATE OR FEDERAL CODES OF REGULATIONS WHICH MAY BE APPLICABLE.

3. ANY CHEMICAL, MATERIAL, LUBRICANT, OR PRODUCT USED IN THE PRODUCTION, TREATMENT, OR DISTRIBUTION OF DRINKING WATER SHALL HAVE BEEN TESTED AND CERTIFIED AS MEETING THE SPECIFICATIONS OF AMERICAN NATIONAL STANDARD INSTITUTE/NSF INTERNATIONAL (ANSI/NSF) 61-2005/ADDENDUM 1.0-2006 (DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS) OR A MORE RECENT VERSION OF ANSI/NSF 61.

4. ANY ADDITIVE MUST BE CERTIFIED UNDER ANSI/NSF 60 STANDARD.

5. NOTIFY SHASTA COUNTY FOR INSPECTION AT LEAST 24 HOURS BEFORE COVERING ANY EXCAVATION.

7. ALL NEW WATER SYSTEM CONSTRUCTION SHALL BE DISINFECTED PER CWWS.

8. APPROVAL BY SHASTA COUNTY MUST BE GRANTED PRIOR TO USE OF WATER FOR DOMESTIC PURPOSES.

PROJECT CONTACTS

CLIENT
BIG BEND HOT SPRINGS
25322 HEALTH WAY,
BIG BEND, CA 96011
CONTACT: STEVE LYON
PHONE: 530-337-6155

GEOTECHNICAL ENGINEER
CGI TECHNICAL SERVICES, INC.
1612 WEDDING WAY
REDDING, CA 96003
PHONE: 530-244-6277
FAX: 530-244-6276
CONTACT: JAMES A. BIANCHIN, P.G., C.E.G.
GENERAL MANAGER

GENERAL NOTES

SURVEY
CONTOURS BASED ON OCT 2012 SITE SURVEY BY NORTH STAR CIVIL ENGINEERS AND SURVEYORS, CHICO CA.

- BENCHMARK: BLM BRASS DISK STAMPED "BUREAU OF LAND MANAGEMENT E $\frac{1}{16}$ C-C S 36 2005" AT ENTRANCE ROAD. ELEVATION ASSUMED = 1000.0'

TECHNICAL REFERENCES
1. GEOTECHNICAL REPORT, BIG BEND HOT SPRINGS PROJECT, BIG BEND, SHASTA COUNTY, CA, BY CGI TECHNICAL SERVICES, INC. OCTOBER 2011.
2. GEOTECHNICAL LETTER, WATER STORAGE SYSTEMS. BIG BEND HOT SPRINGS PROJECT, BIG BEND, SHASTA COUNTY, CA, BY CGI TECHNICAL SERVICES, INC. NOVEMBER 2012.

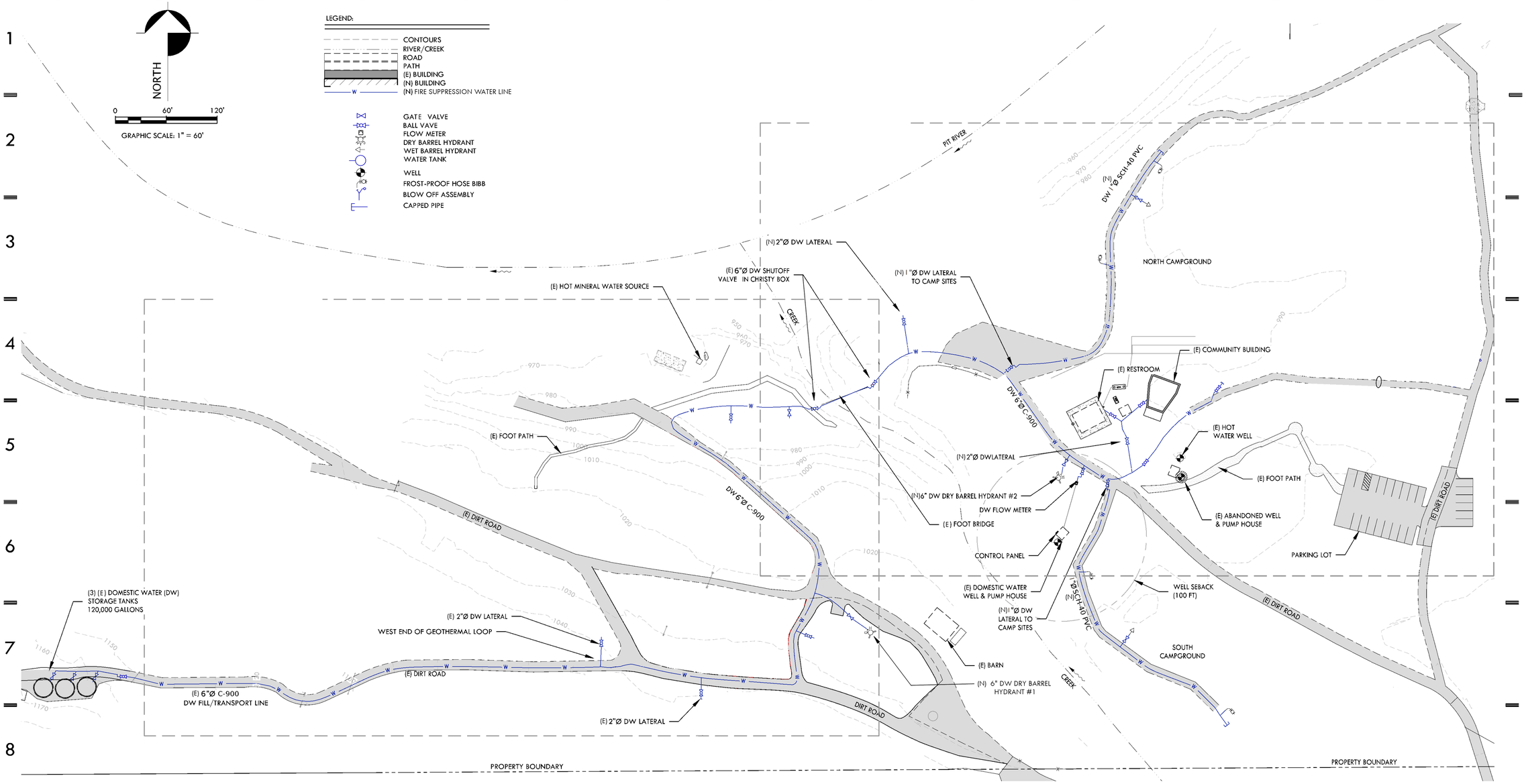
22"x34" SHEET. IF SHEET SIZE IS SMALLER, DRAWING HAS BEEN REDUCED.

SHEET TITLE:
COVER SHEET AND EXISTING SITE PLAN

CLIENT:
BIG BEND HOT SPRINGS
COMMUNITY RETREAT
ATTN: SEABROOK LEAF
25322 HEALTH WAY
BIG BEND, CA

PROJECT TITLE:
FIRE SUPPRSSION SYSTEM
BIG BEND HOT SPRINGS
25322 HEALTH WAY
BIG BEND, CA 96011

DRAWN BY:	
CHECKED BY:	
DATE:	JULY 2015
JOB NO:	21224
SCALE:	AS SHOWN
SHEET:	C1.0



SCALE: 1" = 60'

1

NOTE:

1. PIPE LINE LOCATIONS ARE APPROXIMATE AND ARE TO BE FIELD VERIFIED BY CONTRACTOR.
2. MAINTAIN A MINIMUM OF THREE FEET (3') SEPARATION BETWEEN POTABLE (DOMESTIC) AND OTHER NONPOTABLE PIPE LINES PER CALIFORNIA WATERWORKS STANDARDS SECTION 64572
3. MAINTAIN 10 FEET (10') SEPARATION BETWEEN POTABLE (DOMESTIC) AND SANITARY/GRAYWATER PIPING.
4. ALL VALVES SHALL BE INSTALLED IN CHRISTY BOXES

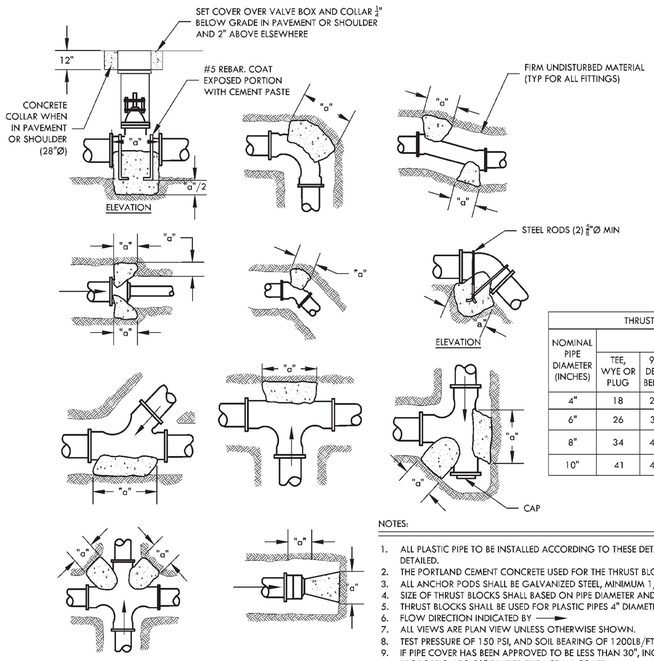
22"x34" SHEET. IF SHEET SIZE IS SMALLER, DRAWING HAS BEEN REDUCED.

SHEET TITLE:

CLIENT:
BIG BEND HOT SPRINGS
COMMUNITY RETREAT
ATTN: BROOK LEAF
25322 HEALTH WAY
BIG BEND, CA

PROJECT TITLE:
FIRE SUPPRESSION SYSTEM
BIG BEND HOT SPRINGS
25322 HEALTH WAY
BIG BEND, CA 96011

DRAWN BY:	
CHECKED BY:	
DATE:	APRIL 2015
JOB NO:	21224
SCALE:	AS SHOWN
SHEET:	



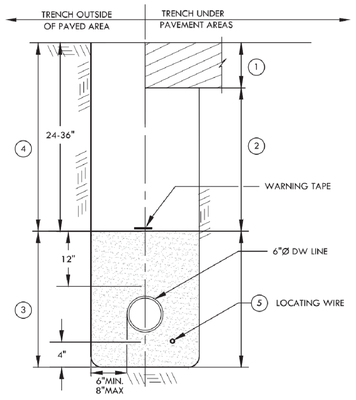
THRUST BLOCK LENGTHS "a"					
NOMINAL PIPE DIAMETER (INCHES)	FITTINGS				
	TEE, WYE OR PLUG	90 DEG BEND	45 DEG BEND	22.5 DEG BEND	REDUCER (BASED ON LARGER DIAMETER)
4"	18	22	16	15	--
6"	26	31	23	17	--
8"	34	40	30	21	17
10"	41	49	36	26	21

NOTES:

1. ALL PLASTIC PIPE TO BE INSTALLED ACCORDING TO THESE DETAILS UNLESS OTHERWISE NOTED OR DETAILED.
2. THE PORTLAND CEMENT CONCRETE USED FOR THE THRUST BLOCKS SHALL BE 420-C-2000 CONCRETE.
3. ALL ANCHOR PODS SHALL BE GALVANIZED STEEL, MINIMUM 1/2 INCH DIAMETER, WRAPPED AROUND PIPE.
4. SIZE OF THRUST BLOCKS SHALL BASED ON PIPE DIAMETER AND AS DESIGNATED BY THRUST BLOCK TABLE.
5. THRUST BLOCKS SHALL BE USED FOR PLASTIC PIPES 4" DIAMETER OR LARGER.
6. FLOW DIRECTION INDICATED BY ⟶
7. ALL VIEWS ARE PLAN VIEW UNLESS OTHERWISE SHOWN.
8. TEST PRESSURE OF 150 PSI, AND SOIL BEARING OF 1200LB/FT.
9. IF PIPE COVER HAS BEEN APPROVED TO BE LESS THAN 30", INCREASE HORIZONTAL THRUST BLOCK IN PROPORTION TO 30" DIVIDED THE ACTUAL COVER.
10. ON VERTICAL FITTING THRUST BLOCKS THE EMBEDMENT OF THE RODS SHALL BE 30"

TYPICAL THRUST BLOCK DETAILS

SHASTA COUNTY STANDARD 7.D.3.a (FIGURE W-5)



NOTES:

(1) STRUCTURAL SECTION, REPLACE IN KIND

(2) STRUCTURE BACKFILL MATERIAL (95% RELATIVE COMPACTION)

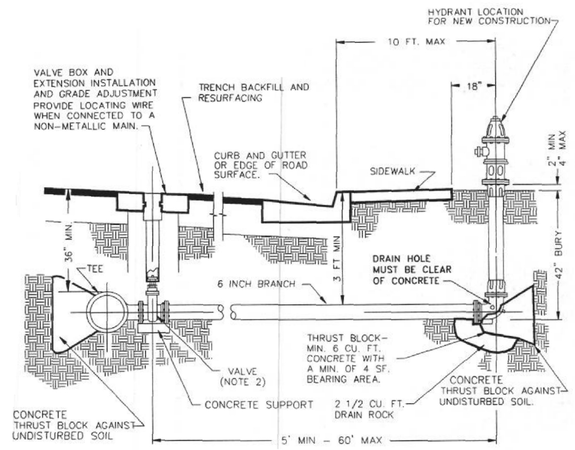
(3) SAND BACKFILL (95% RELATIVE COMPACTION). MATERIAL FREE FROM ORGANIC MATTER AND CLAY

(4) BACKFILL MATERIAL (90% RELATIVE COMPACTION). MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATERIAL, OR OTHER DELETERIOUS MATERIAL.

(5) ALL VALVES, INCLUDING FIRE HYDRANT VALVES SHALL HAVE LOCATING WIRES. LOCATING WIRE SHALL BE INSTALLED WITH ALL NON-METALIC MAINS AND OFF STREET FIRE SERVICES AND HYDRANTS. LOCATING WIRE SHALL BE PLACED AT BOTTOM OF TRENCH, NEXT TO PIPE (DO NOT ATTACH WIRE TO PIPE). BARE LOCATING WIRE SHALL NOT TOUCH VALVE OR FITTING (MAINTAIN 3" CLEAR DISTANCE). LOCATING WIRE SHALL BE INSULATED # 10 COPPER.

TYPICAL TRENCHING DETAIL

SHASTA COUNTY STANDARD 7.D.1 - 7.D.3 (FIG. G-2, G-3, G-4, & W-4)



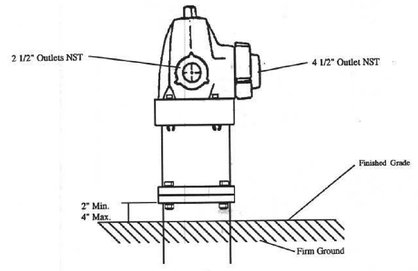
NOTES:

1. ALL CONSTRUCTION SHALL BE INSPECTED BY THE RESPONSIBLE AGENCY PRIOR TO BURIAL.
2. FOR ALLOWABLE FIRE HYDRANTS, VALVES, PIPE AND FITTINGS SEE SECTION 5.36. (GATE VALVE ACCORDING TO A.W.W.A. STANDARDS)
3. HYDRANT BURY DEPTH MAY VARY WITH PRIOR APPROVAL OF THE WATER SERVICE ENTITY.
4. PRIVATE ON-SITE HYDRANT LOCATIONS TO BE APPROVED BY THE FIRE AGENCY HAVING JURISDICTION.

STATE OF CALIFORNIA
COUNTY OF SHASTA
FIRE DEPARTMENT

FIRE HYDRANT INSTALLATION

Fig. FS-2



NOTES:

(1) Each hydrant must be gated between the hydrant and street main.

(2) Each hydrant shall be placed in such a manner that the 4 1/2 inch outlet faces the street.

(3) Fire hydrants shall be placed a minimum of 4 feet and maximum of 10 feet from the edge of the road surface or turnout, or as otherwise approved by the respective fire district and water service entity.

(4) Barrel must be of dry type.

(5) Hose threads on outlets shall be National Standard dimensions.

(6) Hydrants shall NOT be less than 18 inches or more than 25 inches above the grade of the roadway or driveway.

STATE OF CALIFORNIA
COUNTY OF SHASTA
FIRE DEPARTMENT

MINIMUM FIRE STANDARD
FIRE HYDRANT
DRY BARREL TYPE

Fig. FS-1

SHEET TITLE:

CLIENT:
BIG BEND HOT SPRINGS
COMMUNITY RETREAT
ATTN: BROOK LEAF
25322 HEALTH WAY
BIG BEND, CA

PROJECT TITLE:
BIG BEND HOT SPRINGS
25322 HEALTH WAY
BIG BEND, CA 96011

DRAWN BY:	
CHECKED BY:	
DATE:	APRIL 2015
JOB NO:	21224
SCALE:	AS SHOWN
SHEET:	C3.0

22"x34" SHEET. IF SHEET SIZE IS SMALLER, DRAWING HAS BEEN REDUCED.

GENERAL SPECIFICATIONS

THE CONTRACTOR SHALL CAREFULLY EXAMINE THE PROPOSED WORK, PLANS, AND SPECIFICATIONS. THE SUBMISSION OF A BID SHALL BE CONCLUSIVE EVIDENCE THAT THE CONTRACTOR HAS INVESTIGATED AND IS SATISFIED AS TO THE CONDITIONS TO BE ENCOUNTERED, THE CHARACTER, QUALITY, AND SCOPE OF WORK TO BE PERFORMED, THE QUANTITIES OF MATERIALS TO BE FURNISHED, AND TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON THE PLANS.

ALL WORK SHALL CONFORM TO THE COUNTY OF SHASTA STANDARDS AND THE CALIFORNIA WATER WORKS STANDARDS.

1. LOCATION OF THE WORK AND ACCESS

PHYSICAL LOCATION OF THE WORK: BIG BEND HOT SPRING, 25322 HEALTH WAY, BIG BEND, SHASTA COUNTY, CALIFORNIA.

2. TIMING OF THE WORK

DAILY WORK HOURS FOR THE OPERATION OF HEAVY EQUIPMENT SHALL BE LIMITED TO HOURS WHICH ARE AGREED UPON WITH THE PROJECT OWNERS AND COMPLY WITH ALL LOCAL ORDINANCES AND REGULATIONS.

3. INQUIRIES

QUESTIONS SHOULD BE DIRECTED TO THE DEVELOPMENT COORDINATOR:

STEVE LYON
Development Coordinator
Big Bend Hot Springs Project LLC
530-337-6155
www.bigbendhotsprings.org

4. SPECIAL NOTICES

4.2. CONSTRUCTION WORK SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH ENVIRONMENTAL PERMIT REQUIREMENTS, IF APPLICABLE. PERMITS WILL BE OBTAINED BY THE CONTRACTOR FROM SHASTA COUNTY.

4.3. HAZARDOUS MATERIALS. NO HAZARDOUS OR CONTAMINATED SOILS SOILS HAVE BEEN OBSERVED ON SITE AND ARE NOT ANTICIPATED TO BE ENCOUNTERED. HOWEVER, IN THE EVENT THAT CONTAMINATED MATERIALS ARE ENCOUNTERED, ALL WORK SHALL CEASE AND THE PROJECT ENGINEER SHALL BE INFORMED.

5. GENERAL TECHNICAL REQUIREMENTS

5.1. IF THE CODE PROVISIONS CONFLICT, THE MORE STRINGENT CODE PROVISION SHALL GOVERN. IN ANY INSTANCES WHERE THE DRAWINGS AND SPECIFICATIONS DO NOT SPECIFY EXPLICIT MATERIALS OR METHODS, THEN PERFORM THE WORK IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE CODE APPLICABLE TO THE WORK.

5.2. FIELD-VERIFY ALL DIMENSIONS AND CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IMMEDIATELY NOTIFY THE PROJECT COORDINATOR OF ANY CONFLICTS.

5.3. CLEARING LIMITS: MINIMIZE DISTURBANCE AND EXISTING VEGETATION OUTSIDE OF THE CLEARING LIMITS TO THE MAXIMUM EXTENT PRACTICABLE.

6. CONSTRUCTION SUPPORT

6.1. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EQUIPMENT AND CONSTRUCTION METHODS NECESSARY TO EFFICIENTLY PERFORM THE WORK. EARTHWORK EQUIPMENT SHOULD BE CHOSEN TO MINIMIZE ENVIRONMENTAL IMPACTS TO THE PROJECT AND ADJACENT AREAS AS WELL AS THE ACCESS ROAD.

6.2. THE CONTRACTOR SHALL PROVIDE A FIELD SURVEYOR (HORIZONTAL LAYOUT AND GRADE CONTROL STAKING) TO ACCURATELY ESTABLISH THE HORIZONTAL AND VERTICAL LOCATIONS OF THE WORK. ADJUST THE LAYOUT OF THE WORK AS NECESSARY FOR SMOOTH HORIZONTAL AND VERTICAL TRANSITION TO EXISTING FEATURES.

7. PROTECTION

7.1. COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL ENVIRONMENTAL LAWS AND REGULATIONS. THIS CONDITION APPLIES TO, BUT IS NOT LIMITED TO, LAWS AND REGULATIONS GOVERNING NOISE LEVELS, AIR AND WATER QUALITY STANDARDS, AND CULTURAL RESOURCES.

7.2. PROTECT ADJACENT VEGETATION, PROPERTY, STRUCTURES, AND IMPROVEMENTS FROM DAMAGE. REPAIR OF DAMAGE INCURRED TO ADJACENT VEGETATION, PROPERTY, STRUCTURES, AND IMPROVEMENTS AS A RESULT OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR.

7.3. RESTORE ANY DISTURBED AREAS TO THEIR PRE-CONSTRUCTION CONDITION. SLOPE ANY DISTURBED SOIL AREAS TO DRAIN. INSTALL EROSION CONTROL MEASURES IN ANY DISTURBED SOIL AREAS.

8. CLEAN UP

KEEP THE WORK SITE IN NEAT APPEARANCE. KEEP ROADWAYS, PARKING AREAS, AND WALKWAYS FREE OF MUD AND ROCKS. SWEEP DAILY AS NECESSARY. DISPOSE OF DEBRIS LEGALLY AT LICENSED DISPOSAL FACILITIES. UPON COMPLETION OF THE WORK AND IMMEDIATELY PRIOR TO THE FINAL INSPECTION, CLEAN THE IMPROVEMENTS, AND REMOVE ANY TEMPORARY LABELS.

9. FINAL INSPECTION

9.2. THE TIME REQUIRED FOR SUCH REVIEW AND FOR MAKING ANY CORRECTIONS, AS A RESULT THEREOF, SHALL BE INCLUDED IN THE CONTRACT PERFORMANCE TIME.

9.3. THE CONTRACTOR REPRESENTATIVE RESPONSIBLE FOR THE WORK SHALL BE PRESENT AT THE FINAL INSPECTION AND SHALL SUBMIT A PRELIMINARY LIST OF UNFINISHED WORK.

10. CLOSE OUT DOCUMENTS

10.1. RECORD DOCUMENTS: MAINTAIN ON THE PROJECT SITE WHEN WORK IS IN PROGRESS, A CURRENT SET OF DRAWINGS CLEARLY AND ACCURATELY SHOWING THE AS-CONSTRUCTED WORK.

10.2. AS-BUILTS: PRIOR TO FINAL PAYMENT, SUBMIT ONE SET OF AS-BUILT DRAWINGS THAT CLEARLY INDICATE THE AS-CONSTRUCTED FEATURES SHOWN IN RED.

MATERIAL SPECIFICATIONS

THE ACCOMPANIED PLANS PRESENT THE GENERAL LAYOUT AND CONSTRUCTION DETAILS FOR THE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF THE WATER STORAGE TANK SITE. THE FOLLOWING ARE MATERIAL SPECIFICATIONS FOR THE PROJECT COMPONENTS. ALL MATERIALS USED FOR THE CONSTRUCTION OF THIS PROJECT SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS AND AS DESCRIBED IN THE ACCOMPANIED PLANS.

1. DOMESTIC WATER SYSTEM

THE CONTRACTOR SHALL UTILIZE MATERIALS AS SPECIFIED IN THE FOLLOWING SECTIONS. ALL MATERIAL SPECIFICATIONS ARE IN ACCORDANCE WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS-WATER WORKS STANDARDS (CCR-WWS) AND STANDARDS ESTABLISHED BY THE AMERICAN WATER WORKS ASSOCIATION (AWWA), ASSOCIATION OF STANDARDS AND TESTING OF MATERIALS (ASTM), NSF INTERNATIONAL (NSF), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AND U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA) AND SHASTA COUNTY.

ALL PIPE AND FITTINGS SHALL BE CERTIFIED LEAD-FREE BY NSF, UNDERWRITERS LABORATORIES (UL), OR WATER QUALITY ASSOCIATION (WQA).

1.1. GENERAL PIPING AT THE WATER STORAGE TANK SITE INCLUDES MAIN LINES OF 6" DIAMETER AND SMALLER CONSISTING OF HDPE, C-900 PVC, GALVANIZED STEEL AND DUCTILE IRON. VALVES AND FITTINGS ARE DESCRIBED IN THIS SECTION AND SHOWN IN ACCOMPANIED ENGINEERING DESIGN PLANS. THE TYPE OF PIPE MATERIALS AND FITTINGS SHALL BE AS DESIGNATED ON THE PLANS OR IN THE SPECIFICATIONS AND SHALL COMPLY WITH THE FOLLOWING:

1.2. PIPES AND FITTINGS (COUNTY STANDARDS 7.G)

1.2.1. HDPE PIPE (AWWA C901 & C906). ALL HDPE PIPE (SIZES 2" THROUGH 6" DIAMETER) SHALL HAVE A 160 PSI PRESSURE RATING SUCH AS SDR-11 HIGH DENSITY POLYETHYLENE (HDPE) TYPE 3408/3608 PER ASTM D3035 AND AWWA C901. PIPE SHALL BE NSF LISTED FOR USE WITH POTABLE WATER. PIPE SHALL CONTAIN A MINIMUM OF 2% OF FINELY DIVIDED AND EVENLY DISPERSED CARBON BLACK FOR UV STABILIZATION. ALL HDPE FITTINGS AND TRANSITIONS SHALL MEET ASTM D3261. ALL HDPE PIPE AND FITTINGS SHALL HAVE A HYDROSTATIC DESIGN BASIS (HDB) OF AT LEAST 1,600 PSI. PIPE SHALL BE FROM A SINGLE MANUFACTURER WHO IS FULLY EXPERIENCED, REPUTABLE AND QUALIFIED IN THE MANUFACTURE OF THE HDPE PIPE TO BE FURNISHED SUCH AS ISCO INDUSTRIES.

1.2.2. PVC PIPE (AWWA C605-05 & C900). ALL POLYVINYL CHLORIDE PIPE (PVC) MAINS AND FITTINGS (SIZES 4" THROUGH 6") SHALL HAVE A 235 PSI PRESSURE RATING SUCH AS SDR-18 AND SHALL CONFORM TO ASTM SPECIFICATION D-1785 AND AWWA STANDARD 900-907. PIPE SHALL BE FROM A SINGLE MANUFACTURER WHO IS FULLY EXPERIENCED, REPUTABLE AND QUALIFIED IN THE MANUFACTURE OF THE PVC PIPE TO BE FURNISHED SUCH AS JM EAGLE.

1.2.3. GALVANIZED STEEL PIPE (AWWA C200, ASTM A 120, & COUNTY STANDARD 7.G.1.g). ALL PIPING SHALL BE GALVANIZED STEEL STANDARD WEIGHT (SCHEDULE 40). STEEL PIPE SHALL BE JOINTED WITH GALVANIZED, THREADED, STANDARD WEIGHT MALLEABLE IRON FITTINGS AND COUPLINGS.

1.2.4. BALL VALVES (AWWA C507). BALL VALVES IN THE TRANSMISSION LINE SHALL BE RATED FOR AT LEAST 160 PSI (@ 60°F. VALVES SHALL BE BRONZE OR STAINLESS STEEL. CONNECTIONS SHALL BE TRUE UNION. ALTERNATIVE VALVES SHALL BE AT THE ENGINEER'S DISCRETION.

1.2.5. GATE VALVES (COUNTY STANDARD 7.G.1.i). GATE VALVES, TWO INCHES AND LARGER, FOR USE ON PVC, DI AND GSP PIPING SHALL BE 125-POUND, TOTALLY ENCAPSULATED DISK, SOLID WEDGE RESILIENT SEAT VALVES, WITH NON-RISING STEM, OPEN TO LEFT, AND HAVE O-RING SEALS. EXPOSED VALVES SHALL HAVE HANDWHEEL OPERATORS. BURIED VALVES SHALL HAVE TWO-INCH SQUARE WRENCH NUTS. THE VALVES SHALL BE MUELLER, WATEROUS, OR EQUAL, AND CONFORM TO A WW A C509.

1.2.6. BURIED GATE VALVES SHALL BE WRAPPED IN POLYETHYLENE FILM PURSUANT TO A WW A C105. CONNECTIONS SHALL BE TRUE UNION. ALTERNATIVE VALVES SHALL BE AT THE ENGINEER'S DISCRETION.

1.2.7. FLEXIBLE PIPE CONNECTIONS. FLEXIBLE PIPE CONNECTIONS SHALL BE USED FOR THE PROCESS CONNECTIONS TO THE NEW TANKS. FLEXIBLE CONNECTIONS SHALL BE CONSTRUCTED OF FLEXIBLE PIPE OR NEOPRENE AND NYLON AND RATED FOR EXTERIOR INSTALLATION IN DIRECT SUNLIGHT.

1.2.8. FLOW METER (COUNTY STANDARD 7.G.1.o). FLOW METER SHALL BE LOCATED IN THE EXISTING WELL SHED AND SHALL BE A PADDLE WHEEL STYLE METER WITH FLOW RANGE BETWEEN 0.3 AND 20 FT/S (3.1 TO 209 GPM IN 4" PIPE). METER SHALL BE CONSTRUCTED OF CORROSION RESISTANT MATERIALS SUCH AS PP, PVDF, SS, HASTELLOY-C OR TITANIUM. METER SHALL BE NEMA 4X/IP65 ENCLOSURE RATED. METER SHALL BE CE AND UL LISTED. FLOW METER SHALL BE SUPPLIED WITH APPROPRIATE FITTING OR PIPE SADDLE FOR PIPE SIZE AND PIPE MATERIAL FLOW METER TRANSMITTER SHALL DISPLAY INSTANTANEOUS FLOW RATE AND FLOW TOTAL IN GALLONS. FLOW TRANSMITTER SHALL HAVE 4-20 MA OUTPUT. FLOW METER SHALL BE SENSUS MODEL SRSG, OR APPROVED EQUIVALENT.

1.2.9. VALVE BOXES (COUNTY STANDARD 7.G.1.j). ALL VALVES IN THE DOMESTIC WATER SYSTEM SHALL BE PLACED IN CHRISTY BOXES. WHERE CHRISTY BOXES ARE LOCATED IN THE DRIVEWAY OR PEDESTRIAN PATH, THE LID SHALL BE TRAFFIC-RATED AND FLUSH WITH THE FINISHED GRADE.

2. STEEL BOLTED WATER STORAGE TANKS

2.1. MATERIALS

THE MATERIALS, DESIGN, FABRICATION, AND ERECTION OF THE BOLTED STEEL TANK SHALL CONFORM TO AWWA D103-87, TO THE PRINCIPLES OF STANDARD SPECIFICATION 12B OF THE AMERICAN PETROLEUM INSTITUTE, OR TO COLUMBIAN'S SPECIFICATIONS WHICH ARE DERIVED FROM ENGINEERING PRINCIPLES, INDUSTRY EXPERIENCES, AND THE AFOREMENTIONED STANDARDS AND SPECIFICATIONS.

2.1.1. STEEL
- A. STEEL SHEETS SHALL CONFORM TO OR SHALL BE AT LEAST EQUAL TO HOT-ROLLED QUALITY PER ASTM A570 GRADE 33 WITH MINIMUM YIELD STRENGTH OF 33,000 PSI. MINIMUM THICKNESS SHALL BE 12 GAUGE (0.0972" MINIMUM)
- B. STEEL PLATES SHALL CONFORM TO OR AT LEAST BE EQUAL TO THE REQUIREMENTS OF ASTM A36 WITH MINIMUM YIELD STRENGTH OF 36,000 PSI.
- C. ROLLED STRUCTURAL SHAPES. ROLLED STRUCTURAL SHAPES SHALL CONFORM TO ASTM A 36.

2.0.1. BOLTS
- A. GALVANIZED BOLTS, NUTS AND WASHERS USED IN TANK JOINTS SHALL BE MINIMUM 1/2 INCH BOLT DIAMETER AND SHALL MEET THE MINIMUM REQUIREMENTS OF API 12B, APPENDIX A, EXCEPT THAT BOLT HEADS AND NUTS MAY BE OTHER THAN SQUARE AT THE OPTION OF TANK MANUFACTURER.
- B. POLYCAPPED BOLT HEADS SHALL BE USED FOR ADDITIONAL CORROSION PROTECTION.
- C. OTHER BOLTS SHALL CONFORM TO OR AT LEAST BE EQUAL TO THE LATEST REVISION OF ASTM A307.
- D. ANY STEEL NUTS THAT ARE IN CONTACT WITH THE LIQUID IN THE TANK SHALL BE FACTORY-ENCAPSULATED SO THAT THE NUT FORMS ONE PIECE WITH THE CORROSION-RESISTANT ENCAPSULATING MATERIAL.

2.0.1. GASKETS
ALL BOLTED CONNECTIONS SHALL INCORPORATE AN EPDM PREFABRICATED GASKET MINIMUM WIDTH 1-3/4". A SINGLE PIECE DOUBLE-PUNCHED GASKET SHALL BE USED AT VERTICAL SEAMS, WHICH REQUIRE TWO VERTICAL ROWS OF PUNCHING. FIELD CAULKING WILL BE ALLOWED WHEN JOINING A DISCONTINUOUS GASKET SECTION AND AT CERTAIN JOINT CONNECTIONS. NEOPRENE BACKED STEEL WASHERS SHALL BE PROVIDED AT ALL BOLTS IN CONTACT WITH THE STORED WATER.

2.1. 40,000 GALLON WATER STORAGE TANKS

2.1.1. THE WATER STORAGE TANKS SHALL HAVE A MINIMUM CAPACITY OF 120,000 GALLONS AND SHALL BE CONSTRUCTED OF BOLTED STEEL. THE TANKS SHALL BE NSF 61 LISTED FOR DRINKING WATER. A DETAILED DRAWING OF THE TANK AND FOUNDATION ARE PROVIDED ON THE ACCOMPANIED ENGINEERING DESIGN PLANS. THREE TANKS SHALL BE USED TO MEET THE TOTAL CAPACITY:

2.1.1.1. ONE (1) TANK SHALL BE A 40,000 GALLON (21.5' DIAMETER AND 16.1' OVERALL HEIGHT), ABOVE GROUND BOLTED STEEL TANK SUCH AS *COLUMBIAN TECTANK MODEL 21*, OR APPROVED EQUIVALENT.

2.1.1.2. TWO (2) TANKS SHALL BE A 40,000 GALLON (12.5' DIAMETER AND 20.0' OVERALL HEIGHT), ABOVE GROUND BOLTED STEEL TANK SUCH AS *COLUMBIAN TECTANK MODEL 18*, OR APPROVED EQUIVALENT.

2.1.2. ALL TANKS SHALL HAVE THE FOLLOWING APPURTENANCES, TO BE INSTALLED PER PLANS OR FIELD VARIFIED BY THE PROJECT MANAGER:

A 2"Ø VENT.
ONE 6"Ø INLET/OUTLET
ONE 6"Ø OVERFLOW WITH A ROCK ENERGY DISSIPATOR.
LADDER AND SAFETY CAGE
24"Ø ACCESS MANWAY
WATER LEVEL INDICATOR

2.1.3. ULTRASONIC LEVEL SENSOR. AN ULTRASONIC LEVEL SENSOR SHALL BE INSTALLED IN A 2" FTNP HILLSIDE FITTING AND SHALL BE LOCATED IN THE FIELD. THE ULTRASONIC LEVEL SENSOR SHALL BE NSF 61 CERTIFIED FOR USE IN DRINKING WATER SYSTEMS.

2.1. TANK FOUNDATION

A. STEEL BOTTOM TANKS: THE FOUNDATION SHALL BE INSTALLED PER AWWA D103-97, SECTION 11.4. SUPPLYING AND INSTALLING THESE FOUNDATION MATERIALS SHALL BE THE RESPONSIBILITY OF THE CUSTOMER.

B. THE FOUNDATION SHALL BE LEVEL WITH DIFFERENTIAL NOT EXCEEDING +1/8 INCH IN ANY 30-FOOT CIRCUMFERENCE UNDER THE SHELL. THE LEVELNESS ON THE CIRCUMFERENCE SHALL NOT VARY MORE THAN +1/4 INCH FROM AN ESTABLISHED PLANE.

3. PUMP CONTROL SYSTEM

THE CONTROL SYSTEM SHALL BE CONSTRUCTED OF UL LISTED COMPONENTS.

3.1. THE PUMP CONTROL PANEL SHALL CONTROL THE EXISTING WELL PUMP AND SHALL CONSIST OF THE FOLLOWING:
- MOTOR STARTS CONTACTS: RATED FOR 240/120VAC; 11/22 FLA, 5 HP, 60 HZ; 2.5 MILLION CYCLES AT FLA (10 MILLION AT 50% OF FLA)
- HAND/OFF/AUTO MANUAL SWITCH- ONE PER PUMP
- CURRENT OVERLOAD PROTECTION
- SERVICE DISCONNECT SWITCH(ES) OR TWIST PLUGS
- LIGHTNING PROTECTION
- PUMP PROTECTION FROM OVER PRESSURE ON OUTLET SIDE AND SUCTION HEAD ON INLET SIDE (IN PLC)
- PANEL MOUNTED ELAPSED TIME METER, EVENT COUNTER, AND CYCLE CONTROLLER.
- PANEL MOUNTED SYSTEM FAULT INDICATOR LIGHT
- POWER INDICATOR LIGHT
- PUMP RUN LIGHT
- FLOW RATE DISPLAY (INSTANTANEOUS AND TOTALIZER)
- TANK WATER LEVEL DISPLAY
- PANEL ENCLOSURE: NEMA 4 RATED.
- ALL STARTERS, DISCONNECTS, OVERLOAD PROTECTION AND CIRCUITRY SHALL BE DESIGNED AND RATED TO MATCH THE ELECTRICAL DEMAND OF THE PUMPING SYSTEM.

5. EROSION AND SEDIMENTATION CONTROL

5.1. EROSION AND SEDIMENTATION CONTROL AND BEST MANAGEMENT PRACTICES (BMPS) SPECIFIED IN THESE SPECIFICATIONS WILL BE IMPLEMENTED TO PROTECT AGAINST DETRIMENTAL DISCHARGE OF SEDIMENT TO SENSITIVE HABITATS. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS NECESSARY TO PROVIDE AN EFFECTIVE MEANS TO STABILIZE SOILS AND CONTROL EROSION AT THE SITE. INSPECT ALL EROSION CONTROL MEASURES AT THE SITE TO ENSURE THEY ARE PROPERLY INSTALLED. THE EROSION CONTROL LAYOUT AND SPECIFICATIONS ARE OUTLINED ON SHEET C5.0.

4. CONCRETE

4.1. CONCRETE FORMS AND ACCESSORIES.
- 4.1.1. PLYWOOD: B-B PLYFORM.
- 4.1.2. STEEL: PREFABRICATED.
- 4.1.3. LUMBER: STANDARD GRADE, (CONCEALED SURFACES ONLY).
- 4.1.4. FORM TIES AND SPREADERS: SNAP-OFF TYPE, GALVANIZED METAL, FIXED LENGTH, CONE TYPE, WITH WATERPROOFING WASHER AND LEAVING NO METAL WITHIN 1 INCH OF THE CONCRETE FACE.
- 4.1.5. FORM RELEASE AGENT: COLORLESS MINERAL OIL WHICH WILL NOT STAIN CONCRETE, OR ABSORB MOISTURE, OR IMPAIR NATURAL BONDING OR COLOR CHARACTERISTICS OF COATING INTENDED FOR USE ON CONCRETE. DIESEL OR OIL BASED RELEASE AGENTS SHALL NOT BE USED.

4.2. CONCRETE REINFORCEMENT. THIS SECTION SPECIFIES REINFORCING BARS AND WELDED WIRE FABRIC
- 4.2.1. REINFORCEMENT STEEL: BAR REINFORCEMENT - ASTM A615 GRADE
- 4.2.2. REINFORCING FABRIC: WELDED WIRE FABRIC - ASTM A185.

22"x34" SHEET. IF SHEET SIZE IS SMALLER, DRAWING HAS BEEN REDUCED.

SHEET TITLE:
MATERIAL SPECIFICATIONS

CLIENT:
BIG BEND HOT SPRINGS
COMMUNITY RETREAT
ATTN: SEABROOK LEAF
25322 HEALTH WAY
BIG BEND, CA

PROJECT TITLE:
FIRE SUPPRESSION SYSTEM
BIG BEND HOT SPRINGS
25322 HEALTH WAY
BIG BEND, CA 96011

DRAWN BY:	
CHECKED BY:	
DATE:	JULY 2015
JOB NO:	21224
SCALE:	AS SHOWN
SHEET:	C4.0

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O

CONSTRUCTION SPECIFICATIONS

1

THE CONSTRUCTION OF ALL FACILITIES SHALL CONFORM TO THE PLANS AND FOLLOWING SPECIFICATIONS. ALL NECESSARY CONSTRUCTION PERMITS SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF ALL SITE WORK.

1. PRECONSTRUCTION CONFERENCE

THE CONTRACTOR OR A "DESIGNATED REPRESENTATIVE" (WHO WILL OVERSEE THE ACTUAL CONSTRUCTION WORK) SHALL HAVE A PRECONSTRUCTION MEETING WITH THE PROJECT MANAGER AT LEAST ONE WEEK PRIOR TO COMMENCEMENT OF SITE WORK. THE PROJECT MANAGER SHALL BE CONTACTED 72 HOURS PRIOR TO THE MEETING CONFERENCE. THE MEETING SHOULD BE CONDUCTED TO REVIEW THE DESIGN, MATERIAL, AND CONSTRUCTION SPECIFICATIONS.

2

2. FIELD ENGINEERING

2.1. STAGING AREAS: PRIOR TO THE START OF WORK THE CONTRACTOR SHALL PROPOSE A STAGING AREA TO BE APPROVED BY THE PROJECT MANAGER.

2.2. UTILITIES. PRIOR TO THE START OF CLEARING AND EXCAVATION WORK, LOCATE ANY EXISTING UTILITIES AND PROVIDE FIELD ENGINEERING TO ACCURATELY ESTABLISH THE HORIZONTAL LAYOUT AND VERTICAL ELEVATIONS OF THE WORK. MAINTAIN AND RENEW THE FIELD STAKING AS THE WORK PROGRESSES.

3

2.3. VERTICAL TOLERANCE. VERTICALLY LAYOUT AND FINISH-GRADE THE EARTHWORK AREA TO WITHIN 0.025 FEET OF THE ELEVATION(S) SHOWN ON THE DRAWINGS, AND TO SMOOTHLY TRANSITION VERTICALLY WITH THE EXISTING GROUND LINES.

2.4. HORIZONTAL TOLERANCE. HORIZONTALLY LAYOUT AND CONSTRUCT EARTHWORK WITHIN 0.5 FEET OF THE TRUE HORIZONTAL POSITION INDICATED ON THE DRAWINGS, AND SMOOTHLY TRANSITION HORIZONTALLY WITH THE EXISTING GROUND LINES. THE PRINCIPAL EDGES OF EARTHWORK SHALL BE CONSTRUCTED STRAIGHT OR SMOOTHLY CURVED AS INDICATED ON THE DRAWINGS WITHOUT READILY NOTICEABLE WAVINESS.

3. SITE WORK

4

MOBILIZATION: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PREPARATORY WORK AND PLACEMENT OF MATERIALS IN A STAGING AREA REQUIRED FOR CONSTRUCTION OPERATIONS INCLUDING, BUT NOT LIMITED TO, THOSE NECESSARY FOR THE MOVEMENT OF PERSONNEL, EQUIPMENT, SUPPLIES, AND INCIDENTALS TO THE PROJECT SITE; FOR THE ESTABLISHMENT OF FACILITIES NECESSARY FOR WORK ON THE PROJECT; PROVIDING POLLUTION CONTROL MEASURES; AND FOR ALL OTHER WORK AND OPERATIONS WHICH MUST BE PERFORMED.

THE CONTRACTOR SHALL PROVIDE MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR PROPER COMPLETION OF THE WORK OF THIS SECTION,

4. STAKING

5

THE CONTRACTOR SHALL PROVIDE SUFFICIENT HORIZONTAL AND VERTICAL CONTROL FOR INSTALLATION OF THE WORK AT DATUM POINTS NECESSARY TO ESTABLISH ALIGNMENT AND GRADE. THE PROTECTION AND CARE OF THE STAKES ONCE SET, SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR.

5. CLEARING AND GRUBBING

CLEAR AND GRUB WITHIN THE CLEARING LIMITS. PROTECT TREES AND SHRUBS TO THE MAXIMUM EXTENT PRACTICAL.

5.1.1. TREE REMOVAL: ALL TREE REMOVAL SHALL BE DONE BY AN ARBORIST CERTIFIED FORESTER. TREES SHALL BE REMOVED TO 12" BELOW THE EXISTING SURFACE, WITH TREES UNDER THE ROAD REMOVED COMPLETELY. REMOVED TREE MATERIAL SHALL REMAIN ONSITE AND MOVED TO A LOCATION DESIGNATED BY THE PROJECT MANAGER.

6

6. STRIPPING

PRIOR TO GENERAL SITE GRADING AND/OR CONSTRUCTION OF PLANNED IMPROVEMENTS, EXISTING VEGETATION, TREES, ORGANIC TOPSOIL, DEBRIS, AND DELETERIOUS MATERIALS SHOULD BE STRIPPED AND DISPOSED OF OFF-SITE OR OUTSIDE THE CONSTRUCTION LIMITS. IT IS ANTICIPATED THAT STRIPPING DEPTHS WILL EXTEND 2 TO 6 INCHES DEEP, DEPENDING ON THE VEGETATIVE COVER DENSITY AND TYPES. IN ADDITION, THERE ARE A NUMBER OF TREES AND SHRUBS THAT MAY HAVE RELATIVELY DENSE ACCUMULATIONS OF ROOTS THAT ARE LATERALLY AND VERTICALLY EXTENSIVE. THESE ROOT BALLS COULD EXTEND DEEPER THAN 3 FEET BELOW GRADE AND SHOULD BE REMOVED DURING STRIPPING. CGI SHOULD BE ALLOWED TO OBSERVE STRIPPED AREAS TO CONFIRM THAT ADEQUATE REMOVAL OF ORGANIC, DELETERIOUS, AND UNSUITABLE MATERIALS HAVE BEEN PROPERLY STRIPPED AND REMOVED FROM THE SITE.

7

ALL WASTES DISPOSAL SHALL BE CONDUCTED AS FOLLOWS:

A. REMOVE WASTE FROM CLEARING OPERATIONS.
B. DISPOSE OF AWAY FROM THE SITE IN A LEGAL MANNER.
C. DO NOT STORE OR PERMIT DEBRIS TO ACCUMULATE ON THE JOB SITE.
D. DO NOT BURN DEBRIS AT THE SITE.

7. EXISTING UTILITIES, WELLS, AND/OR FOUNDATIONS

8

BELOW-GRADE UTILITY LINES, SEPTIC TANKS, CESSPOOLS, WELLS, ON-SITE WASTE DISPOSAL FIELDS AND TANKS, IRRIGATION PONDS AND/OR FOUNDATIONS THAT ARE ENCOUNTERED DURING CONSTRUCTION SHOULD BE REMOVED AND DISPOSED OF OFF-SITE. BURIED TANKS, IF PRESENT, SHOULD BE REMOVED IN COMPLIANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS. EXISTING, BELOW-GRADE UTILITY PIPELINES (IF ANY) THAT EXTEND BEYOND THE LIMITS OF THE PROPOSED CONSTRUCTION AND WILL BE ABANDONED IN-PLACE SHOULD BE PLUGGED WITH LEAN CONCRETE OR GROUT TO PREVENT MIGRATION OF SOIL AND/OR WATER. ALL EXCAVATIONS RESULTING FROM REMOVAL AND DEMOLITION ACTIVITIES SHOULD BE CLEANED OF LOOSE OR DISTURBED MATERIAL PRIOR TO PLACING ANY FILL OR BACKFILL.

7. EXCAVATION AND FILL

9

7.1. EXCAVATE AND FILL TO:

A. THE LINES AND GRADES SHOWN ON THE DRAWINGS,
B. PROVIDE A SMOOTH HORIZONTAL AND VERTICAL TRANSITION WITH EXISTING FEATURES AND TO;
C. PROVIDE EFFECTIVE DRAINAGE WITHOUT PONDING WATER.

10

8. KEY AND BENCH

8.1. KEYWAYS SHOULD BE OBSERVED AND APPROVED BY A CGI ENGINEER OR GEOLOGIST. AS ENGINEERED FILL MATERIALS ARE PLACED WITHIN THE KEYWAY, PER RECOMMENDATIONS OF THE GEOTECHNICAL REPORT, BENCHES SHOULD BE GRADED INTO THE CUT TO TIE THE ENGINEERED FILL AND COMPETENT INTACT SOIL AND ROCK MATERIALS TOGETHER. AS SHOWN IN THE DETAILS, BENCHES SHOULD BE A MINIMUM OF 6 FEET WIDE AND HAVE VERTICAL BACKCUTS AT LEAST 4 FEET TALL. THE BENCHES SHOULD BE INCLINED INTO THE CUT SLOPE A MINIMUM OF 4 PERCENT. SUBDRAINS SHOULD BE INSTALLED AT THE BACK OF THE BENCHES AT NO MORE THEN 15-VERTICAL-FOOT AND/OR 30-HORIZONTAL-FOOT INTERVALS, WHICHEVER COMES FIRST. THE SUBDRAINS CAN BE TIED INTO THE KEYWAY SUBDRAIN TO DRAIN FROM ONE OUTLET, OR THEY CAN DRAIN INDIVIDUALLY. IT IS RECOMMENDED THAT COLLECTOR PIPELINES THAT TAKE WATER FROM THE SUBDRAINS AND EXTEND THROUGH ENGINEERED FILL MATERIALS TO DAYLIGHT ONTO THE GROUND SURFACE BE CONSTRUCTED USING SOLID (UNPERFORATED) PIPING MATERIALS.

8. POLLUTION CONTROL

8.1. WATER POLLUTION:THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL PERMITTING REQUIREMENTS RELEVANT TO THE CONSTRUCTION OF THE PROJECT ARE MET AT ALL TIMES. ACTIONS BY THE CONTRACTOR, THE SUBCONTRACTORS OR EMPLOYEES THEREOF RESULTING IN NONCOMPLIANCE OF PERMITTING REQUIREMENTS MAY BE GROUNDS FOR TERMINATION OF THIS CONTRACT.

8.2. NOISE POLLUTION: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO KEEP NOISE POLLUTION, DUE TO THESE CONSTRUCTION ACTIVITIES, AS LOW AS POSSIBLE.

8.3. SOIL CONTAMINATION:THE CONTRACTOR SHALL NOT ALLOW REGULATED MATERIALS TO SPILL ON THE PROJECT SITE. ANY SPILLAGE OR REGULATED MATERIALS RESULTING FROM THE CONTRACTOR'S OPERATION SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

9. STORAGE OF REGULATED MATERIALS

THE STORAGE AND USE OF ANY REGULATED MATERIALS SHALL MEET ALL REQUIREMENTS OF LOCAL, STATE, AND FEDERAL REGULATORY AGENCIES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SATISFY THE REQUIREMENTS OF ANY REGULATORY AGENCY FOR THE STORAGE, MONITORING, USAGE, TRANSPORTATION, SAFETY, REPORTING, OR ANY OTHER REQUIREMENTS REGARDING THE MANAGEMENT OF REGULATED MATERIALS ON AND OFF THE PROJECT SITE.

10. TRENCH WORK

TRENCH WORK SHALL BE DONE IN ACCORDANCE WITH CGI TECHNICAL SERVICES GEOTECHNICAL REPORT.

10.1. EXTRA PRECAUTION SHALL BE TAKEN BY THE CONTRACTOR IN EXCAVATION FOR THE INSTALLATION OF THE PIPE IN AREAS WHERE THE PIPE MAY CROSS EXISTING UNDERGROUND UTILITIES AND OTHER FACILITIES OF ANY NATURE. CONTRACTOR SHALL PERFORM HIS OPERATION 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, THEY SHALL REPAIR THE SAME AT THEIR OWN EXPENSE. IF IT DOES NOT APPEAR FEASIBLE THAT THE CONTRACTOR CAN MAKE THE NEEDED REPAIRS, THEN SUCH REPAIRS SHALL BE MADE BY THE COUNTY AND THE CONTRACTOR SHALL BE CHARGED FOR SUCH REPAIRS.

10.2. PIPE TRENCHES

A. GENERAL. PIPE TRENCHES WILL BE CONSTRUCTED TO THE DIMENSIONS SPECIFIED IN THE DESIGN PLANS.
B. TRENCH EXCAVATIONS: PIPE TRENCHES SHOULD BE EXCAVATED AFTER FILL HAS BEEN PLACED AND COMPACTED TO THE COUNTY STANDARDS 7.D, OR AS SHOWN IN PLAN SET DETAILS.
C. EXCAVATION AND PREPARATION FOR PIPE TRENCHES SHALL BE DONE IN ACCORDANCE TO THE LINES, GRADES AND DIMENSIONS SHOWN IN THE DRAWINGS. THE FOUNDATION FOR THE PIPE TRENCHES SHALL BE SMOOTH.
D. PIPE ZONE (BOTTOM OF TRENCH TO 6" ABOVE PIPE) SHALL BE BACKFILLED WITH MATERIALS CONSISTING OF IMPORTED SOIL HAVING SE OF NO LESS THAN 30 AND HAVING A PARTICLE SIZE NO GREATER THAN ¾INCH, PER SECTION 306-1.2.1 OF GREENBOOK.
E. REMAINING TRENCH SHALL BE BACKFILLED WITH NATIVE MATERIAL, SCREENED OF DELETERIOUS, ORGANIC, HIGHLY PLASTIC CLAY AND OVERSIZED MATERIALS HAVE DIMENSIONS GREATER THAN 3 INCHES.

11. FINISH GRADING AND CLEAN UP

SPREAD TOPSOIL AND FINISH GRADE ANY DISTURBED SOIL AREAS TO SMOOTHLY TRANSITION WITH THE SURROUNDING GROUND LINES AND STRUCTURES. ONCE THE EARTHWORK IS STABLE, PROMPTLY REMOVE ANY TEMPORARY EROSION CONTROL MATERIALS.

ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO THE CURRENT SHASTA COUNTY AND AMERICAN WATER WORKS ASSOCIATION STANDARDS.

12. DOMESTIC WATER PLUMBING

12.1. PIPING & ASSEMBLY INSTALLATION

HIGH DENSITY POLYETHYLENE (HDPE) PIPE , C-900 PVC PIPE, DUCTILE IRON PIPE AND HOT DIPPED GALVANIZED STEEL (GLV STEEL) PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE INSTRUCTION OF THE MANUFACTURER, AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.

CARE SHALL BE TAKEN IN LOADING, TRANSPORTING AND UNLOADING TO PREVENT DAMAGE TO THE PIPE. PIPE OR FITTING SHALL NOT BE DROPPED. ALL PIPE OR FITTING SHALL BE EXAMINED BEFORE INSTALLATION, AND NO PIECE SHALL BE INSTALLED WHICH IS FOUND TO BE DEFECTIVE. ANY DAMAGE TO THE PIPE SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER. IF ANY DEFECTIVE PIPE IS DISCOVERED AFTER IT HAS BEEN INSTALLED, IT SHALL BE REMOVED AND REPLACED WITH A SOUND PIPE IN A SATISFACTORY MANNER BY THE CONTRACTOR, AT HIS/HER OWN EXPENSE.

PIPE SHALL BE STORED ON CLEAN LEVEL GROUND TO PREVENT UNDUE SCRATCHING OR GOUGING. THE HANDLING OF THE PIPE SHALL BE IN SUCH A MANNER THAT THE PIPE IS NOT DAMAGED BY DRAGGING IT OVER SHARP AND CUTTING OBJECTS. THE MAXIMUM ALLOWABLE DEPTH OF CUTS, SCRATCHES OR GOUGES ON THE EXTERIOR OF THE PIPE IS 5 PERCENT OF WALL THICKNESS. THE INTERIOR PIPE SURFACE SHALL BE FREE OF CUTS, GOUGES OR SCRATCHES.

ALL PIPE AND FITTINGS SHALL BE THOROUGHLY CLEANED BEFORE INSTALLATION, SHALL BE KEPT CLEAN UNTIL THEY ARE USED IN THE WORK. PIPE SHALL BE LAID TO LINES AND GRADE SHOWN ON THE DRAWINGS WITH BEDDING AND BACKFILL AS SHOWN ON THE DRAWINGS.

PVC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF SHASTA COUNTY, SECTION 64572 OF TITLE 22 OF THE CCR-WWR AND AWWA C605-05, C651-14 AND C-900 STANDARDS.

HDPE PIPE SHALL BE JOINED WITH BUTT, HEAT FUSION JOINTS AS OUTLINED IN ASTM D2657 AND CONFORM TO THE GENERIC BUTT FUSION JOINING PROCEDURE FOR FIELD JOINING OF POLYETHYLENE PIPE, TECHNICAL REPORT TR-33/2005, PUBLISHED BY THE PLASTIC PIPE INSTITUTE (PPI).

GLV STEEL PIPE SHALL BE ASTM A 53 JOINED WITH GALVANIZED ASME B16.1, CLASS 125, CAST IRON FLANGES. FLANGED CONNECTIONS SHALL BE PROVIDED WITH A FULL-FACE NEOPRENE GASKET AND SHALL CONSISTS OF A POLYETHYLENE FLANGE THERMALLY BUTT-FUSED TO THE STUB END OF THE PIPE AND A 316 STAINLESS STEEL BACK UP RING TO MATE WITH A 316 STAINLESS STEEL FLANGE. 316 STAINLESS STEEL BOLTS AND NUTS SHALL BE USED.

ALL JOINTS SHALL BE MADE IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. A FACTORY QUALIFIED JOINING TECHNICIAN AS DESIGNATED BY PIPE MANUFACTURER OR EXPERIENCED, TRAINED TECHNICIAN SHALL PERFORM ALL HEAT FUSION JOINTS.

ALL PIPES SO JOINED SHALL BE MADE FROM THE SAME CLASS AND TYPE OF RAW MATERIAL MADE BY THE SAME RAW MATERIAL SUPPLIER.

WHEN LAYING IS NOT IN PROGRESS, INCLUDING LUNCHTIME, THE OPEN ENDS OF THE PIPE SHALL BE CLOSED BY FABRICATED PLUGS, OR BY OTHER APPROVED MEANS.

SECTIONS OF PIPE WITH CUTS, SCRATCHES OR GOUGES EXCEEDING 5 PERCENT OF THE PIPE WALL THICKNESS SHALL BE REMOVED COMPLETELY AND THE ENDS OF THE PIPELINE REJOINED.

ALL PIPE JOINTS SHALL BE BY THERMAL BUTT-FUSION. THE USE OF SOCKET FUSION, AND ELECTRO-FUSION COUPLINGS IS ACCEPTABLE. THE USE OF MECHANICAL JOINTS SHALL BE AT ENGINEER'S DISCRETION.

TRANSITION FITTINGS (HDPE TO STEEL) SHALL BE COMPRESSION STYLE OR WELD IN PLACE (THERMAL BUTT-FUSION). TRANSITION FITTING SHALL BE RATED FOR A WORKING PRESSURE OF 160 PSI.

ALL WATERLINES SHALL NOT HAVE LESS THAN 24 INCHES OF COVER OVER THE TOP OF THE PIPE, EXCEPT WHERE NECESSARY TO AVOID UNDERGROUND OBSTRUCTIONS OR ROCKY CONDITIONS. SERVICE CONNECTION PIPE AND FITTINGS SHALL BE DESIGNED FOR COLD WATER WORKING PRESSURES OF NOT LESS THAN 160 PSI.

THE TRENCH SHALL HAVE A MINIMUM WIDTH OF 12 INCHES AND THE BOTTOM OF THE TRENCH SHALL BE LEVELED. THE PIPELINE SHALL BE SUPPORTED BY A BEDDING MATERIAL OF CLEAN NATIVE SOIL OR SAND. THE CONTRACTOR SHALL REMOVE ANY ROCKS OR OTHER INTERFERING MATERIALS THAT COULD POTENTIALLY PUNCTURE THE PIPELINE.

12.2. VALVES

VALVES AND RELATED ACCESSORIES SHALL BE FURNISHED AND INSTALLED AS SPECIFIED. ALL VALVES AND OTHER EQUIPMENT SHALL BE INSTALLED IN A NORMAL UPRIGHT POSITION UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER, AND SHALL BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE, AND REPLACEMENT. VALVES SHALL BE THE SAME SIZE AS THE PIPELINE IN WHICH THEY ARE INSTALLED. WHERE APPLICABLE, VALVES SHALL BE PROTECTED BY VALVE BOXES. VALVE BOXES SHALL BE APPROPRIATELY SIZED TO ALLOW FOR ACCESS FOR ROUTINE OPERATION.

12.3. TANKS

TANKS SHALL BE INSTALLED AS SHOWN IN THE PLANS AND PURSUANT TO MANUFACTURER'S SPECIFICATIONS. THE TANKS SHOULD BE PLACED IN LOCATIONS NOT SUBJECT TO EROSION OR LANDSLIDE. A SHUTOFF VALVE SHALL BE INSTALLED AT EACH OUTLET OF THE TANKS TO ALLOW FOR ROUTINE MAINTENANCE AND REPAIR OF THE TANK.

VENTS, OVERFLOWS, DRAIN OUTLETS AND OTHER OPENINGS SHALL BE LOCATED AND CONSTRUCTED TO PROTECT THE WATER STORED IN THE TANK FROM CONTAMINATION. VENTS SHALL NOT OPEN UPWARD. OVERFLOWS SHALL BE LARGE ENOUGH TO DISPOSE OF TANK OVERFLOW RATES EQUAL TO THE MAXIMUM TANK-FILLING RATE.

TANK ACCESSORIES, SUCH AS THE LADDER AND CAGE, LEVEL INDICATOR, ETC. SHALL BE INSTALLED PER MANUFACTURES GUIDELINES, AND IN ACCORDANCE WITH LOCAL AND STATE STANDARDS.

THE AREA WITH THE TANK FOUNDATIONS SHALL BE OVEREXCAVATED BELOW PLANNED BOTTOM OF FOUNDATIONS TO A DEPTH 3 TIMES THE WIDTH OF THE FOUNDATION AND EXTEND THROUGHOUT THE CUT AREA TO A MINIMUM OF FIVE HORIZONTAL FEET PAST THE PERIMETER FOUNDATIONS OF THE STRUCTURE. TANK FOUNDATION EXCAVATIONS SHOULD EXTEND BELOW ANY OBSERVED YIELDING MATERIAL. THE GEOTECHNICAL ENGINEER SHALL OBSERVE AND APPROVE THE OVEREXCAVATED AREA ONCE EXPOSED.

12.4. FLUSHING AND TESTING

AFTER COMPLETION, ALL PIPELINES AND TANKS SHALL BE THOROUGHLY FLUSHED TO REMOVE DIRT, SCALE, OR OTHER MATERIAL. AFTER FLUSHING, THE LINE SHALL BE PRESSURE TESTED. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT, MATERIALS AND LABOR NECESSARY TO PERFORM THE TESTS AND ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE OWNER.

PRESSURE TESTING SHALL BE CONDUCTED PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL SUPPLY ALL LABOR, EQUIPMENT, MATERIAL, GAGES, PUMPS, METERS AND INCIDENTALS REQUIRED FOR TESTING. ALL MAINS SHALL BE TESTED AT 150 PERCENT OF THE OPERATING DESIGN PRESSURE OF THE PIPE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

AT THE CONCLUSION OF THE WORK, THOROUGHLY CLEAN ALL OF THE NEW PIPE LINES TO REMOVE ALL DIRT, STONES, PIECES OF WOOD OR OTHER MATERIAL WHICH MAY HAVE ENTERED DURING THE CONSTRUCTION PERIOD. FLUSHING VELOCITIES SHALL BE A MINIMUM OF 2.5 FEET PER SECOND.

12.5. DISINFECTION

ALL NEW SYSTEM FACILITIES INCLUDING SECTIONS OF THE WATER DISTRIBUTION SYSTEM, AND THE WATER STORAGE TANK(S) SHALL BE DISINFECTED IN ACCORDANCE WITH STANDARDS DEVELOPED BY THE AWWA, INCLUDING THE FOLLOWING:

C651-05: DISINFECTING WATER MAINS
C652-02: DISINFECTION OF WATER-STORAGE FACILITIES

12.6. ELECTRICAL TESTING

THE CONTRACTOR SHALL INSTALL THE CONTROL PANEL, SENSORS AND RELATED CONDUIT AND WIRING.

CONTROL WIRING BETWEEN THE SPLICE (JUNCTION) BOX AND THE CONTROL PANELS MAY BE HOUSED IN CONDUIT OR DIRECT BURIED USING A SUITABLE DIRECT-BURIAL WIRE AND BURIAL DEPTHS. ALL CONDUIT SHALL BE SCH 40 HDPE OR APPROVED METAL CONDUIT. ALL EQUIPMENT AND SWITCH PANELS SHALL BE INTERCONNECTED WITH RAIN TIGHT FLEXIBLE CONDUIT AND JUNCTION BOXES. ALL ELECTRICAL RECEPTACLES SHALL BE SUITABLE FOR OUTDOOR EXPOSURE. ALL CONTROL PANELS, SERVICE PANEL AND SWITCHES SHALL BE ENCLOSED IN WATER TIGHT NEMA RATED ENCLOSURES.

THE NUMBER AND SIZE OF WIRES SHOULD BE AS SPECIFIED BY THE MANUFACTURERS AND COMPLIANT WITH THE NATIONAL ELECTRIC CODE (NEC). CONTROL WIRING SHALL BE SUITABLY COLOR CODED AS NECESSARY FOR IDENTIFICATION. ALL COMMON WIRE SHALL BE THE SAME COLOR. ALL SPLICES MADE IN THE SPLICE BOX SHOULD BE DONE USING WATERPROOF WIRE NUTS OR BUTT CONNECTORS AND HEAT SHRINK TUBING. SPLICES IN THE CONTROL WIRE SHALL BE MADE IN ACCORDANCE WITH THE REQUIREMENTS FOR SERVICE WIRE. AT LEAST 2 FEET OF SLACK SHALL BE LEFT IN EACH SPLICE AND POINT OF CONNECTION IN CONTROL BOXES.

ALL WIRING SHALL BE TESTED FOR CONTINUITY, OPEN CIRCUITS AND UNINTENTIONAL GROUND PRIOR TO CONNECTING EQUIPMENT.

UPON COMPLETION OF THE WORK, THE CONTROL SYSTEM SHALL BE IN OPERATING CONDITION WITH AN OPERATIONAL CHART MOUNTED WITHIN THE CONTROLLER CABINET. ALL CONTROL SYSTEMS SHALL ALSO CONTAIN THE PROPER ELECTRICAL WARNINGS AND INSTRUCTIONAL INFORMATION TO ENSURE USER AWARENESS AND SAFETY.

12.7. OPERATIONAL TESTING

THE PERFORMANCE OF ALL COMPONENTS OF THE PUMP AND CONTROL SYSTEMS SHALL BE EVALUATED FOR MANUAL AND AUTOMATIC CONTROL.

CHECK ALL ELECTRICAL AND WATER LINE CONNECTIONS AND PARTS BEFORE STARTING THE PUMP. MAKE SURE WATER DELIVERY WILL NOT WET ANY ELECTRICAL PARTS. START THE PUMP(S) AND CHECK MOTOR AMPS AND PUMP DELIVERY. IF NORMAL, CONTINUE TO RUN THE PUMP UNTIL DELIVERY IS CLEAR. MAKE SURE THAT STARTING, RUNNING AND STOPPING CAUSE NO SIGNIFICANT VIBRATION OR HYDRAULIC SHOCKS. AFTER AT LEAST 15 MINUTES RUNNING, VERIFY THAT PUMP OUTPUT, ELECTRICAL INPUT, PUMPING LEVEL, AND OTHER CHARACTERISTICS ARE STABLE AND AS SPECIFIED.

DURING THE TEST PERIOD AND AT LEAST 15 DAYS PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL SET THE CONTROLLER ON AUTOMATIC OPERATION, AND THE SYSTEM SHALL OPERATE SATISFACTORILY DURING SUCH PERIOD. ALL NECESSARY REPAIRS, REPLACEMENTS, AND ADJUSTMENTS SHALL BE MADE UNTIL ALL EQUIPMENT, ELECTRICAL WORK, CONTROLS, AND INSTRUMENTATION ARE FUNCTIONING IN ACCORDANCE WITH THE CONTRACTORS DOCUMENTS OR MANUFACTURER SPECIFICATIONS.

13. CONCRETE

13.1. CONCRETE FORMS AND ACCESSORIES

13.1.1. CONSTRUCT FORMS TO PREVENT LEAKAGE OF MORTAR, AND ANY SHIFTING OR DEFORMATION DURING THE PLACEMENT AND FINISHING OF CONCRETE.
13.1.2. WET FORMS TO ALLOW REMOVAL WITHOUT DAMAGING THE CONCRETE PER MANUFACTURER'S INSTRUCTIONS.
13.1.3. JOINTS: ARRANGE JOINTS VERTICALLY AND HORIZONTALLY.
13.1.4. INSPECTION: OBTAIN PROJECT MANAGER INSPECTION AND APPROVAL OF FORMS AT LEAST 4 HOURS PRIOR TO PLACING CONCRETE. NOTIFY CONSTRUCTION MANAGER AT LEAST 24 HOURS IN ADVANCE OF CONCRETE POUR THAT FORMS WILL BE READY FOR INSPECTION.
13.1.5. CLEANING: REMOVE ALL SAWDUST, SHAVINGS, AND OTHER DEBRIS FROM WITHIN THE FORMS.
13.1.6. FORM REMOVAL: DO NOT DISTURB FORMS UNTIL CONCRETE HAS GAINED ENOUGH STRENGTH TO CARRY ITS OWN WEIGHT AND SUCH CONSTRUCTION LOADS AS MAY OCCUR. LOOSEN FORMS CAREFULLY. DO NOT WEDGE PRY BARS, HAMMERS, OR TOOLS AGAINST FINISH CONCRETE SURFACES SCHEDULED FOR EXPOSURE TO VIEW.

13.2. CONCRETE REINFORCEMENT

13.1.1. SECURE REINFORCEMENT AGAINST DISPLACEMENT CAUSED BY CONSTRUCTION LOADS OR PLACING OF CONCRETE. TIE ALL BAR INTERSECTIONS WITH ANNEALED IRON WIRE OF NOT LESS THAN 16 GAUGE. HOOK OR SUPPORT WIRE MESH DURING PLACING CONCRETE SLABS TO INSURE PLACEMENT AS DETAILED.
13.1.2. FIELD BENDING AND CUTTING WILL BE PERMITTED IF PERFORMED IN ACCORDANCE WITH THE ACI CODE.
13.1.3. KEEP REINFORCEMENT FREE OF DIRT, OIL, PAINT, GREASE, MILL SCALE, AND LOOSE OR THICK RUST.
13.1.4. PLACE, SUPPORT AND SECURE REINFORCEMENT AGAINST DISPLACEMENT. DO NOT DEVIATE FROM REQUIRED POSITION.
13.1.5. DO NOT DISPLACE OR DAMAGE VAPOR BARRIER.
13.1.6. ACCOMMODATE PLACEMENT OF FORMED OPENINGS.
13.1.7. CONFORM TO ACI 318 FOR CONCRETE COVER OVER REINFORCEMENT.
13.1.8. CLEANING
A. CLEAN-UP: CONCRETE SPILLED OR SPLASHED ON ADJACENT SURFACES SHALL BE THOROUGHLY REMOVED. AFTER FORM REMOVAL, BACKFILL AND LANDSCAPE TO MATCH SURROUNDING AREA.
B. EXCESS MATERIALS: EXCESS AND WASTE MATERIAL SHALL BE DISPOSED OF OFF THE SITE.

15. CONCRETE WASHOUT

15.1. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE LOCATED A MINIMUM OF 50 FT FROM STORM DRAIN INLETS, OPEN DRAINAGE FACILITIES, AND WATERCOURSES.

15.2. A SIGN SHALL BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

15.3. CONCRETE WASHOUT FACILITY SHALL BE CONSTRUCTED WITH A MINIMUM LENGTH AND MINIMUM WIDTH OF 10 FT. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

15.4. LATH AND FLAGGING SHOULD BE COMMERCIAL TYPE.

15.5. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

15.6. TEMPORARY WASHOUT FACILITIES SHALL HAVE A TEMPORARY PIT OR BERMED AREAS OF SUFFICIENT VOLUME TO COMPLETELY CONTAIN ALL LIQUID AND WASTE CONCRETE MATERIALS GENERATED DURING WASHOUT PROCEDURES.

15.7. ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHALL BE BROKEN UP, REMOVED, AND DISPOSED OF PER WM-5, SOLID WASTE MANAGEMENT. DISPOSE OF HARDENED CONCRETE ON A REGULAR BASIS.

15.8. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHALL BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.

15.9. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

16. FINAL INSPECTION

THE CONTRACTOR SHALL PER-FORM A FINAL INSPECTION WITH THE PROJECT MANAGER OR OWNER TO VERIFY SYSTEMS ARE OPERATIONAL AND FUNCTIONING AS DESIGNED.

22"x34" SHEET: IF SHEET SIZE IS SMALLER, DRAWING HAS BEEN REDUCED.

SHEET TITLE: CONSTRUCTION SPECIFICATIONS

CLIENT:
BIG BEND HOT SPRINGS
COMMUNITY RETREAT
ATTN: SEABROOK LEAF
25322 HEALTH WAY
BIG BEND, CA

PROJECT TITLE:
FIRE SUPPRESSION SYSTEM
BIG BEND HOT SPRINGS
25322 HEALTH WAY
BIG BEND, CA 96011

DRAWN BY:	
CHECKED BY:	
DATE:	JULY 2015
JOB NO:	21224
SCALE:	AS SHOWN
SHEET:	C4.1