



City of Ketchum

### CITY COUNCIL MEETING AGENDA MEMO

Meeting Date:  Staff Member/Dept:

Agenda Item:

**Recommended Motion:**

Recommendation to approve Bid award and corresponding Purchase Order 25072 for South of Ketchum Redundant Water Line Project A to Canyon Excavation LLC

**Reasons for Recommendation:**

- Canyon Excavation LLC submitted a low bid amongst five total bidders to complete the South Ketchum Redundant Water Line Project A
- This project replaces the existing water main on Hwy 75 with new water infrastructure east of State Highway 75, adjacent to the south of 702 S Main Street and ending in Farnlun Place
- Coupled with Project B, this creates redundancy in this area and improves system resiliency by allowing back flow water to replace any section of line that could need to be worked on in the future.
- This new line, as well as the line in Project B, is required due to ITD reconstruction of Hwy 75 and the storm sewer system being placed on Hwy 75.
- Recommendation includes authorization to process change orders up to 15% of total contract value without additional council approval
- Project is contingent on executed easement agreement with Idaho Parks Foundation

**Policy Analysis and Background (non-consent items only):**

**Sustainability Impact:**

No direct impact.

**Financial Impact:**

|  |   |
|--|---|
| None OR Adequate funds exist in account: | Adequate funds exist in the Water Fund CIP to cover this project. |
|--|---|

**Attachments:**

1. Purchase order 25072
2. Canyon Excavation LLC Bid for Project A
3. Drawings for South Ketchum Redundant Water Line Project A



# CITY OF KETCHUM

PO BOX 2315 \* 191 5TH ST. \* KETCHUM, ID 83340  
 Administration 208-726-3841 (fax) 208-726-8234

## PURCHASE ORDER

BUDGETED ITEM? \_\_\_ Yes \_\_\_ No

PURCHASE ORDER - NUMBER: 25072

|  |   |
|--|---|
| <b>To:</b><br>5046<br>CANYON EXCAVATION, LLC<br>BOX 961<br>SHOSHONE ID 83352 | <b>Ship to:</b><br>CITY OF KETCHUM<br>PO BOX 2315<br>KETCHUM ID 83340 |
|--|---|

| P. O. Date | Created By | Requested By | Department | Req Number | Terms |
|------------|------------|--------------|------------|------------|-------|
| 01/28/2025 | CCHING     | CCHING       |            |            |       |

| Quantity | Description                                     | Unit Price | Total      |
|----------|---|------------|------------|
| 1.00     | S KETCHUM REDUNDANT WATERLINE PROJ 64-4340-7809 | 568,469.24 | 568,469.24 |
|          | SHIPPING & HANDLING                             |            | 0.00       |
|          | TOTAL PO AMOUNT                                 |            | 568,469.24 |

\_\_\_\_\_  
 Authorized Signature

*NOTE TO BIDDER: Use BLACK or BLUE in for completing this BID FORM*

To: City of Ketchum

Address: 191 5<sup>th</sup> Street West, Ketchum, ID 83340  
PO Box 2315, Ketchum, ID 83340

Project Identification: South Ketchum Redundant Water Main, Project A

## **1 BIDDER'S DECLARATION AND UNDERSTANDING**

- 1.01 Bidder accepts all of the terms and conditions of the Advertisement and Instructions to Bidders, including without limitations those dealing with the dispositions of Bid Security. The bid will remain subject to acceptance for 30 days after the Bid Opening, or for such longer period of time that the Bidder may agree to in writing upon request of the Owner.
- 1.02 In compliance with the Instruction to Bidders, the BIDDER hereby proposes to perform all WORK for the construction of the KETCHUM MAIN STREET WATER MAIN RELOCATION project in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below. The BID prices shall include all labor, materials, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for. Prices shall also include all applicable taxes, overhead, profit, and fees.
- 1.03 By submission of this BID, each BIDDER certifies, and in the case of a joint BID each party thereto certifies as to his own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any competitor.
- 1.04 The BIDDER acknowledges that no special interpretation or inference of intent is to be given to any different formats of different Specifications sections.
- 1.05 In submitting this Bid, the BIDDER acknowledges and accepts the CONTRACTOR's representations as more fully set forth in the AGREEMENT.
- 1.06 The BIDDER understands that quantities listed are approximate and the OWNER reserves the right to increase or decrease individual items as may be, in his sole judgment, to his best interest depending upon conditions encountered or observed during the execution of the WORK.
- 1.07 In addition to this BID FORM, the BIDDER agrees that the following shall form part of this BID:
- 1.07.1 BID SECURITY
  - 1.07.2 BID PROPOSAL – SCHEDULE OF ITEMS AND PRICES
  - 1.07.3 LISTING OF SUBCONTRACTORS
- 1.08 BIDDER accepts the terms and conditions of the Bidding Documents.

## **2 CONTRACT EXECUTION AND BONDS**

- 2.01 The Bidder understands and agrees that if a contract is awarded, OWNER may elect to modify the scope of Work as best serves the interests of OWNER.
- 2.02 The undersigned BIDDER agrees, if this Bid is accepted, to enter into an Agreement with OWNER on the form included in the Bidding Documents, to perform and furnish Work as specified or indicated in the Bidding documents for the Contract Price derived from the Bid and within the Contract Times indicated in the Agreement and in accordance with the other terms and conditions of the Bidding Documents.

3 ADDENDA

3.01 BIDDER acknowledges receipt of the following ADDENDUM No's.:  
1, 2, 3

(BIDDER shall insert number of Addendum received) and agrees that Addenda issued are hereby made part of the Contract Documents, and BIDDER further agrees that this BID includes impacts resulting from said Addenda.

4 BID SCHEDULES

- 4.01 In the event of a discrepancy, the amount in words shall prevail.
- 4.02 The BIDDER hereby acknowledges that the bid prices are based solely on the BIDDER's own estimate of costs, and includes all applicable taxes, overhead, and profit.

Respectfully submitted by:


Canyon Excavation LLC  
(Business Name)

LLC

(Type of Bidder: Individual, Partnership, Corporation, Joint Venture)

(State of Incorporation)

By:

Jake Gage 

(Name and Signature of Person Authorized to Sign)  
For a Joint Venture, each Joint Venture must sign

Owner

(Title)

PUBLIC WORKS LICENSE NO.: 022954-A-4

(Corporate Seal)

Name, telephone number, and address for receipt of official communications and for additional information on this BID:

Name: Jake Gage

Title: Owner

Tel. No.: 208-731-1454

Address: Box 961

Shoshone ID 83352

DATE SUBMITTED: 1-22-25

**BID PROPOSAL**

**1. CONTRACT PRICE**

Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents and amount in current funds equal to the sum of the amounts determined pursuant to table below.

- 1.01 For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work multiplied by the estimated quantity of that item as indicated below.
- 1.02 Estimated quantities are not guaranteed. All computations of the Contractor's compensation shall be based upon the quantities of work actually performed, whether greater or less than estimated quantities.
- 1.03 Each item to be bid shall be completely filled in by the Contractor.

| No. | Description  | Unit | Qty    | Unit Price | Bid Amount |
|-----|--|------|--------|------------|------------|
| 1   | Mobilization   | LS   | 1      | 14,631     | 14,631     |
| 2   | 10" C900 Water Main  | LF   | 4,881  | 75         | 366,075    |
| 3   | 8" C900 Water Main   | LF   | 562    | 57.02      | 32,045.24  |
| 4   | Water Main Connection - 12" Hot Tap (W01a), Sheet C1.10            | EA   | 1      | 7,000      | 7,000      |
| 5   | Water Main Connection - 8" (W01b), Sheet C1.10                     | EA   | 1      | 5,000      | 5,000      |
| 6   | Water Main Connection - 12" Hot Tap (W01c), Sheet C1.20            | EA   | 1      | 7,000      | 7,000      |
| 7   | Water Main Connection - 8" Hot Tap (W01d), Sheet C1.20             | EA   | 1      | 6,000      | 6,000      |
| 8   | Water Main Connection - 8" Hot Tap (W01e), Sheet C1.30             | EA   | 1      | 5,000      | 5,000      |
| 9   | Water Main Connection - 12"x8" D.I. Reducer (W01f), Sheet C1.30    | EA   | 1      | 2,000      | 2,000      |
| 10  | D.I. Fitting - 10" 11 1/4° Bend                                    | EA   | 8-6    | 1,400      | 8,400      |
| 11  | D.I. Fitting - 10" 22 1/2° Bend                                    | EA   | 9-12   | 1,400      | 16,800     |
| 12  | D.I. Fitting - 10" 45° Bend  | EA   | 6-5    | 1,400      | 7,000      |
| 13  | D.I. Fitting - 10" 90° Bend  | EA   | 1      | 1,100      | 1,100      |
| 14  | D.I. Fitting - 8" 11 1/4° Bend                                     | EA   | 3      | 750        | 2,250      |
| 15  | D.I. Fitting - 8" 22 1/2° Bend                                     | EA   | 1      | 750        | 750        |
| 16  | 10" Water Main Boring - (W09)                                      | LF   | 30     | 370        | 11,100     |
| 17  | Landscape Repair (Fence Reconstruction)                            | LS   | 1      | 4,000      | 4,000      |
| 18  | Landscape Repair (Grass Re-seeding), Assumed 20' Wide along trench | SY   | 11,530 | 4.00       | 46,120     |
| 19  | Landscape Repair (Irrigation Repair)                               | LS   | 1      | 4,000      | 4,000      |

**BID PROPOSAL**

|  |                        |    |    |        |                   |
|--|------------------------|----|----|--------|-------------------|
| 20   | Asphalt Repair         | SY | 58 | 81     | 4,698             |
| 21   | Traffic Control        | LS | 1  | 500    | 500               |
| 22   | Construction Surveying | LS | 1  | 17,000 | 17,000            |
| <b>WATER IMPROVEMENTS TOTAL BID AMOUNT</b> |                        |    |    |        | <b>568,469.24</b> |

*Five Hundred Sixty Eight Thousand, Four Hundred Sixty Nine Dollars and  $\frac{2}{1}$*

**LISTING OF SUBCONTRACTORS**

1. The BIDDER shall submit with the BID FORM a list of names of subcontracting firms or businesses that will be awarded subcontractors for portions of the Work as specified in Section 13 of the "Instructions to Bidders."
2. The Subcontractors list shall be completed and shall include the following information:
  - 2.01 Subcontractors, listing each subcontractor whose subcontract amount is more than ten percent (10%) of the Contract Price with whom the BIDDER, if awarded the Contract, will subcontract for performance.
  - 2.02 The categories of work those subcontractors will perform on the Contract.
  - 2.03 The subcontractors that will be performing Instrumentation, Mechanical, HVAC, Plumbing, and Electrical work.
3. A BID PROPOSAL will be considered non-responsive and will be rejected if the BIDDER does not correctly complete the Listing of Subcontractors contained herein, and include this list with the BID FORM.
4. List of Subcontractors to be used:

| SUBCONTRACTOR         | WORK                    | SUBCONTRACT AMOUNT | % OF CONTRACT PRICE |
|-----------------------|-------------------------|--------------------|---------------------|
| <i>Webb Landscape</i> | <i>Landscape Repair</i> | <i>\$46,120.00</i> | <i>8.11</i>         |
|                       |                         |                    |                     |
|                       |                         |                    |                     |
|                       |                         |                    |                     |
|                       |                         |                    |                     |
|                       |                         |                    |                     |
|                       |                         |                    |                     |
|                       |                         |                    |                     |

5. Material Suppliers List

| SUPPLIER                   | MATERIAL                 |  |  |
|----------------------------|--------------------------|--|--|
| <i>Mountainland Supply</i> | <i>Pipe and fittings</i> |  |  |
|                            |                          |  |  |
|                            |                          |  |  |
|                            |                          |  |  |
|                            |                          |  |  |
|                            |                          |  |  |
|                            |                          |  |  |
|                            |                          |  |  |
|                            |                          |  |  |

**BID BOND**

BY THESE PRESENTS, that we, the undersigned, \_\_\_\_\_

Canyon Excavation LLC \_\_\_\_\_ as Principal, and

American Alternative Insurance Corporation \_\_\_\_\_ as Surety, are hereby held and firmly bound unto the CITY OF KETCHUM as OWNER in the penal sum of FIVE PERCENT OF THE TOTAL AMOUNT BID for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed this 22nd day of January, 2025.

The Condition of the above obligation is such that whereas the Principal has submitted to the CITY OF KETCHUM certain BID attached hereto and hereby made a part hereof to enter into a contract in writing for the Work associated with SOUTH KETCHUM REDUNDANT WATER MAIN, PROJECT A.

NOW, THEREFORE,

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

SEAL (If BID is by a corporation)

Canyon Excavation LLC

By: [Signature]  
(Signature)

Title: Owner

American Alternative Insurance Corporation

By: [Signature]  
(Signature)

Matthew Grenrood, Attorney-in-Fact

Attest: [Signature]

Witness: [Signature]  
(Signature)

Jennifer Grenrood, Witness/Attest



IMPORTANT - Surety Companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.



**CERTIFIED COPY**

**POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the AMERICAN ALTERNATIVE INSURANCE CORPORATION, a corporation organized and existing by virtue of the laws of the State of Delaware ("Corporation") with offices at 555 College Road East, Princeton, N.J. 08543, has made, constituted and appointed, and by these presents, does make, constitute and appoint:

**Kara Skinner; Cameron Huntsucker; Mercedes Trokey-Moudy; Jennifer Grenrood; Sierra Maine; Matthew Grenrood; and Alexa Bevill**

its true and lawful Attorneys-in-Fact, at Princeton, in the State of New Jersey, each of them alone to have full power to act without the other or others, to make, execute and deliver on its behalf, as Surety or Co-surety, bonds and undertakings given for any and all purposes, also to execute and deliver on its behalf as aforesaid renewals, extensions, agreements, waivers, consents or stipulations relating to such bonds or undertakings provided, however, that no single bond or undertaking so made, executed and delivered shall obligate said Company for any portion of the penal sum thereof in excess of the sum of **One Hundred Million Dollars (\$100,000,000)**. Such bonds and undertakings for said purposes, when duly executed by said Attorney(s)-in-Fact, shall be binding upon said Company as fully and to the same extent as if signed by the President of said Company under its corporate seal attested by its Secretary. This appointment is made under and by authority of a certain Resolution adopted at a meeting of the Board of Directors of said Company duly held on the 27th day of August, 1975, a copy of which appears below.

IN WITNESS WHEREOF, the AMERICAN ALTERNATIVE INSURANCE CORPORATION has caused its corporate seal to be hereunto affixed, and these presents to be signed by its duly authorized officers this 24th day of September, 2021.



By: *Michael G. Kerner*  
Michael G. Kerner  
President  
Attest: *Ignacio Rivera*  
Ignacio Rivera  
Deputy General Counsel & Secretary

**STATE OF NEW JERSEY, COUNTY OF SOMERSET**

The foregoing instrument was acknowledged before me by means of online notarization this 24th day of September, 2021, by Michael G. Kerner and Ignacio Rivera, who are personally known to me.



*Jillian Sanfilippo*  
Jillian Sanfilippo/Notary Public  
State of New Jersey  
My Commission Expires February 8, 2026

**SECRETARY'S CERTIFICATE**

The undersigned, Ignacio Rivera, hereby certifies:

- 1. That the undersigned is Secretary of American Alternative Insurance Corporation, a corporation of the State of Delaware;
- 2. That the original power of attorney of which the foregoing is a copy was duly executed on behalf of said Corporation on the day of its date, and has not since been revoked, amended or modified; that the undersigned has compared the foregoing copy thereof with said original power of attorney, and that the same is a true and correct copy of said original power of attorney and of the whole thereof;
- 3. That the original resolution of which the following is a copy was duly adopted at, and recorded in the minutes of, a regular meeting of the Board of Directors of said Corporation duly held on August 4, 1998, and has not since been revoked, amended or modified.

RESOLVED, that each of the following officers of this Corporation, namely, the President, the Executive Vice President, the Senior Vice Presidents, and the Vice Presidents, be, and they hereby are, authorized, from time to time in their discretion, to appoint such agent or agents or attorney or attorneys-in-fact as deemed by them necessary or desirable for the purpose of carrying on this Corporation's business, and to empower such agent or agents or attorney or attorneys-in-fact to execute and deliver, in this Corporation's name and on its behalf, and under its seal or otherwise, surety bonds, surety undertakings or surety contracts made by this Corporation as surety thereon.

RESOLVED, that the signature of any authorized officer of the Corporation and the Corporation's seal may be affixed by facsimile to any power of attorney and revocation of any power of attorney or certificate of either given for the execution of any surety bond, surety undertaking, or surety contract, such signature and seal, when so used being hereby adopted by the Corporation as the original signature of such officer and the original seal of the Corporation, to be valid and binding upon the Corporation with the same force and effect as though manually affixed.

FURTHER RESOLVED, that any prior appointments by the Corporation of MGAs are, in all respects, hereby ratified, confirmed and approved.

FURTHER RESOLVED, that the Secretary or any Assistant Secretary of this Corporation is hereby authorized to certify and deliver to any person to whom such certification and delivery may be deemed necessary and desirable in the opinion of such Secretary or Assistant Secretary, a true copy of the foregoing resolution.

- 4. The undersigned has compared the foregoing copies of said original resolutions as so recorded, and they are the same true and correct copies of said original resolutions as so recorded and of the whole thereof.

Witness the hand of the undersigned and the seal of said Corporation this 22nd day of January, 2025.



AMERICAN ALTERNATIVE INSURANCE CORPORATION

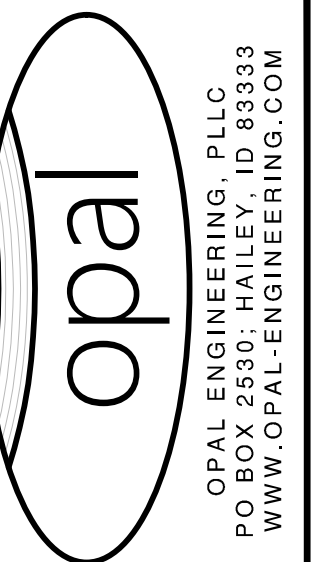
*Ignacio Rivera*  
Ignacio Rivera (Sep 24, 2021 16:06 EDT)  
Ignacio Rivera  
Deputy General Counsel & Secretary

TRS-1001-1

# SOUTH KETCHUM REDUNDANT MAIN, PROJECT A

## KETCHUM, IDAHO

### DECEMBER 2024



OPAL ENGINEERING, PLLC  
 PO BOX 2530 - HAILEY, ID 83333  
 WWW.OPAL-ENGINEERING.COM



These plans and/or specifications have been reviewed for compliance with Department of Environmental Quality rules. This review does not relieve the owner, engineer, or the contractor of the responsibility to design or construct these facilities in compliance with all current applicable federal, state, and local laws, rules, regulations, or ordinances. Plans and/or specifications must be resubmitted for review if construction is not completed within one year from approval date.

**Joseph Otero, P.E.**      **Dec 13, 2024**  
 Reviewing DEQ Engineer      Approval Date:  
 Refer to approval conditions in letter to: City of Ketchum

#### GENERAL CONSTRUCTIONS NOTES

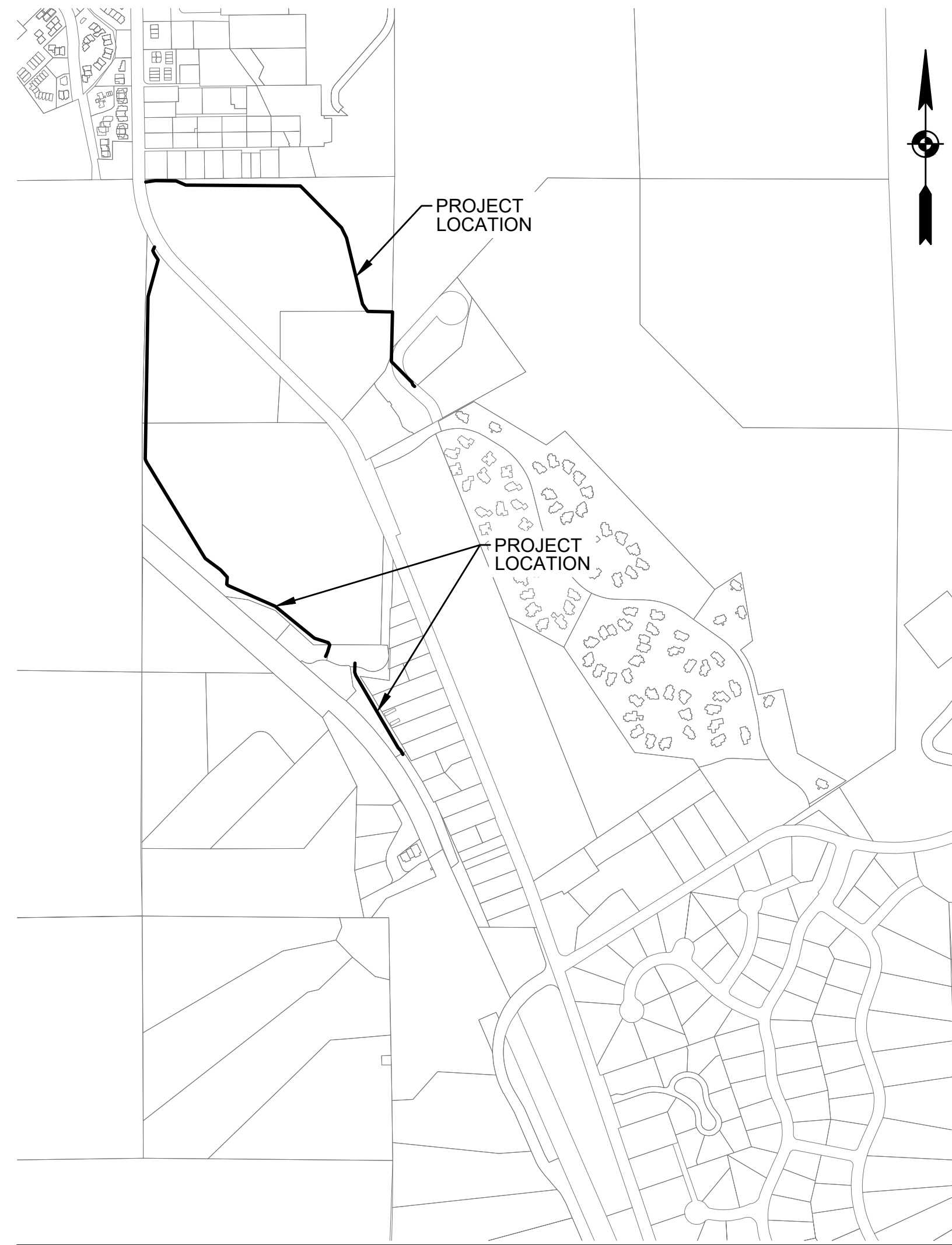
1. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE MOST CURRENT EDITION OF THE "IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION" (ISPGC) AND CITY OF KETCHUM STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND KEEPING A COPY OF THE ISPGC AND CITY OF KETCHUM STANDARDS ON SITE DURING CONSTRUCTION.
2. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN ON THE PLANS IN AN APPROXIMATE WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING UTILITIES PRIOR TO COMMENCING AND DURING THE CONSTRUCTION. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH RESULT FROM HIS FAILURE TO ACCURATELY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CONTRACTOR SHALL CALL DIGLINE (1-800-342-1585) TO LOCATE ALL EXISTING UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS IN ADVANCE OF EXCAVATION.
3. CONTRACTOR SHALL COORDINATE RELOCATIONS OF DRY UTILITY FACILITIES (POWER, CABLE, PHONE, TV) WITH THE APPROPRIATE UTILITY FRANCHISE.
4. THE CONTRACTOR SHALL CLEAN UP THE SITE AFTER CONSTRUCTION SO THAT IT IS IN A CONDITION BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION TO INCLUDE ANY AND ALL LANDSCAPE IRRIGATION, VEGETATION, STRUCTURES, AND FIXTURES.
5. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION (THIS INCLUDES, BUT IS NOT LIMITED TO, ENCROACHMENT PERMITS AND NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERAL PERMIT (CGP) PERMIT COVERAGE).
6. ALL CLEARING & GRUBBING SHALL CONFORM TO ISPGC SECTION 201.
7. ALL EXCAVATION & EMBANKMENT SHALL CONFORM TO ISPGC SECTION 202. SUBGRADE SHALL BE EXCAVATED AND SHAPED TO LINE, GRADE, AND CROSS-SECTION SHOWN ON THE PLANS. THE SUBGRADE SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-698. THE CONTRACTOR SHALL WATER OR AERATE SUBGRADE AS NECESSARY TO OBTAIN OPTIMUM MOISTURE CONTENT. IN-LIEU OF DENSITY MEASUREMENTS, THE SUBGRADE MAY BE PROOF-ROLLED TO THE APPROVAL OF THE ENGINEER.
  - **PROOF-ROLLING:** AFTER EXCAVATION TO THE SUBGRADE ELEVATION AND PRIOR TO PLACING COURSE GRAVEL, THE CONTRACTOR SHALL PROOF ROLL THE SUBGRADE WITH A 5-TON SMOOTH DRUM ROLLER, LOADED WATER TRUCK, OR LOADED DUMP TRUCK, AS ACCEPTED BY THE ENGINEER. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF UNSUITABLE SUBGRADE MATERIAL AREAS, AND/OR AREAS NOT CAPABLE OF COMPACTION ACCORDING TO THESE SPECIFICATIONS. UNSUITABLE OR DAMAGED SUBGRADE IS WHEN THE SOIL MOVES, PUMPS AND/OR DISPLACES UNDER ANY TYPE OF PRESSURE INCLUDING FOOT TRAFFIC LOADS.
  - IF, IN THE OPINION OF THE ENGINEER, THE CONTRACTOR'S OPERATIONS RESULT IN DAMAGE TO, OR PROTECTION OF, THE SUBGRADE, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPAIR THE DAMAGED SUBGRADE BY OVER-EXCAVATION OF UNSUITABLE MATERIAL TO FIRM SUBSOIL, LINE EXCAVATION WITH GEOTEXTILE FABRIC, AND BACKFILL WITH PIT RUN GRAVEL.
8. ALL 2" MINUS GRAVEL SHALL CONFORM TO ISPGC 802, TYPE II (ITD STANDARD 703.04, 2"), SHALL BE PLACED IN CONFORMANCE WITH ISPGC SECTION 801 AND COMPACTED PER SECTION 202. MINIMUM COMPACTION OF PLACED MATERIAL SHALL BE 90% OF MAXIMUM LABORATORY DENSITY AS DETERMINED BY AASHTO T-99.
9. ALL 3/4" MINUS CRUSHED GRAVEL SHALL CONFORM TO ISPGC 802, TYPE I (ITD STANDARD 703.04, 3/4" B), SHALL BE PLACED IN CONFORMANCE WITH ISPGC SECTION 802 AND COMPACTED PER SECTION 202. MINIMUM COMPACTION OF PLACED MATERIAL SHALL BE 95% OF MAXIMUM LABORATORY DENSITY AS DETERMINED BY AASHTO T-99 OR ITD T-91.
10. ALL ASPHALTIC CONCRETE PAVEMENT WORK SHALL CONFORM TO ISPGC SECTION(S) 805, 810, AND 811 FOR CLASS II PAVEMENT. ASPHALT AGGREGATE SHALL BE 1/2" (13MM) NOMINAL SIZE CONFORMING TO TABLE 803B IN ISPGC SECTION 803. ASPHALT BINDER SHALL BE PG 58-28 CONFORMING TO TABLE A-1 IN ISPGC SECTION 805.
11. ASPHALT SAWCUTS SHALL BE AS INDICATED ON THE DRAWINGS, OR 24" INCHES FROM EDGE OF EXISTING ASPHALT, IF NOT INDICATED OTHERWISE SO AS TO PROVIDE A CLEAN PAVEMENT EDGE FOR MATCHING. NO WHEEL CUTTING SHALL BE ALLOWED.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TRAFFIC CONTROL PER THE CURRENT EDITION OF THE US DEPARTMENT OF TRANSPORTATION MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
13. ALL CONCRETE WORK SHALL CONFORM TO ISPGC SECTIONS 701, 703, AND 705. ALL CONCRETE SHALL BE 4,000 PSI MINIMUM, 28 DAY, AS DEFINED IN ISPGC SECTION 703, TABLE 1. IMMEDIATELY AFTER PLACEMENT PROTECT CONCRETE BY APPLYING MEMBRANE-FORMING CURING COMPOUND, TYPE 2, CLASS A PER ASTM C 309-94. APPLY CURING COMPOUND PER MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS.
14. ALL TRENCHING SHALL CONFORM TO ISPGC STANDARD DRAWING SD-301. TRENCHES SHALL BE BACKFILLED AND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.
15. PER IDAHO CODE § 55-1613, THE CONTRACTOR SHALL RETAIN AND PROTECT ALL MONUMENTS, ACCESSORIES TO CORNERS, BENCHMARKS AND POINTS SET IN CONTROL SURVEYS; ALL MONUMENTS, ACCESSORIES TO CORNERS, BENCHMARKS AND POINTS SET IN CONTROL SURVEYS THAT ARE LOST OR DISTURBED BY CONSTRUCTION SHALL BE REESTABLISHED AND RE-MONUMENTED, AT THE EXPENSE OF THE AGENCY OR PERSON CAUSING THEIR LOSS OR DISTURBANCE AT THEIR ORIGINAL LOCATION OR BY SETTING OF A WITNESS CORNER OR REFERENCE POINT OR A REPLACEMENT BENCHMARK OR CONTROL POINT, BY OR UNDER THE DIRECTION OF A PROFESSIONAL LAND SURVEYOR.
16. TOPOGRAPHIC, SITE, AND BOUNDARY SURVEYS SHOWN HEREON WERE CONDUCTED BY GALENA-BENCHMARK ENGINEERING. CONTOUR DATA IS PER BLAINE COUNTY LIDAR.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIRING A MATERIALS TESTING COMPANY DURING CONSTRUCTION TO VERIFY ALL COMPACTION AND MATERIAL PLAN AND SPECIFICATION REQUIREMENTS ARE MET. QUALITY CONTROL DOCUMENTATION OF TESTING FOR WORK IN RIGHT-OF-WAY MEETING CITY OF KETCHUM CODE SECTION 12.04.040 (CONCRETE, AGGREGATE BASE COMPACTION, ASPHALT COMPACTION) WILL BE NECESSARY FOR CERTIFICATE OF OCCUPANCY.

#### WATER MAIN CONSTRUCTION NOTES

1. WATER MAIN AND SERVICE CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CITY OF KETCHUM STANDARDS. NO WATER MAIN OR SERVICES SHALL BE BACKFILLED UNTIL THEY HAVE BEEN INSPECTED AND APPROVED BY THE CITY.
2. WATER MAINS AND SERVICES SHALL HAVE A MINIMUM COVER OF SIX FEET (6.0'), MEASURED FROM FINISHED GRADE.
3. ALL 4" AND LARGER WATER MAINS SHALL BE CONSTRUCTED WITH AWWA C-900, CLASS 235 PVC PIPE. ALL WATER MAINS SHALL BE PRESSURE TESTED IN CONFORMANCE WITH ISPGC SECTION 401.3.6 AND THE CITY OF KETCHUM STANDARDS. TRACER WIRE SHALL BE NO. 12 GAUGE COPPER LOCATING WIRE INSULATED PER ISPGC SECTION 401 AND THE CITY OF KETCHUM SPECIFICATIONS.
4. SEE FLUSHING AND DISINFECTION REQUIREMENTS THIS SHEET. ALL BACTERIA TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER AND THE CITY OF KETCHUM WATER AND SEWER DEPARTMENT FOR FINAL APPROVAL AND ACCEPTANCE PRIOR TO ACTIVATION OF THE WATER MAIN AND SERVICES.
5. ALL WATER DISTRIBUTION AND WATER SERVICE INSTALLATION MATERIALS AND CHEMICALS USED TO DISINFECT POTABLE WATER COMPONENTS MUST BE COMPLIANT WITH ANS/NSF STANDARD 60/61. ALL MATERIALS MUST BE COMPLIANT WITH THE LOW LEAD RULE (<0.25%Pb BY WEIGHT).
6. ALL TEES, PLUGS, CAPS AND BENDS SHALL BE SECURED AND ANCHORED BY SUITABLE THRUST BLOCKING (MECHANICAL RESTRAINTS ARE NOT ALLOWED). THRUST BLOCKS SHALL CONFORM TO ISPGC SD-403 AND THE CITY OF KETCHUM STANDARDS.
7. ALL VALVES SHALL BE GATE VALVES WITH NON-RISING STEM, "O" RING SEALS, AND TWO-INCH OPERATING NUTS MEETING AWWA STANDARDS PER ISPGC SECTION 402. ALL GATE VALVES LOCATED IN PAVEMENT SHALL BE FITTED WITH CAST IRON VALVE BOXES WITH CONCRETE COLLARS PER ISPGC SD-406 AND THE CITY OF KETCHUM SPECIFICATIONS.
8. ALL WATER MAIN FITTINGS SHALL BE DUCTILE IRON CONFORMING TO THE REQUIREMENTS OF AWWA C-110 FOR 250 PSI WORKING PRESSURE. JOINTS ON BURIED VALVES SHALL BE MECHANICAL JOINTS UNLESS OTHERWISE NOTED. FLANGED JOINTS SHOULD IN GENERAL BE AVOIDED UNDERGROUND.
10. ALL TAPPING SADDLES SHALL BE CONSTRUCTED FROM T-304 STAINLESS STEEL WITH ANS/AWWA C-207 CLASS 150 FLANGES. ALL WELDS SHALL CONFORM TO ASTM A-380. THE TEST OUTLET SHALL BE 3/4" NPT WITH 3/4" NPT PLUG.
11. ALL WATER MAINS SHALL COMPLY WITH IDAPA 58.01.08.542.07.a AND IDAPA 58.01.08.542.07.b WHICH ADDRESS THE REQUIREMENTS FOR SEPARATION DISTANCES BETWEEN POTABLE WATER LINES (INCLUDING MAINS AND SERVICE LINES) WITH NON-POTABLE LINES (SEE ILLUSTRATION OF THESE SEPARATION REQUIREMENTS ON THIS SHEET). IN ADDITION, WATER MAINS SHALL BE CONSTRUCTED WITH AT LEAST 25 FEET HORIZONTAL SEPARATION FROM INFILTRATION TRENCHES AND DRY WELLS.
12. ALL WATER SERVICES SHALL BE IN COMPLIANCE WITH ISPGC SECTION 404 AND THE CITY OF KETCHUM STANDARDS. A USC EC APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY (RPBA) SHALL BE INSTALLED ON PRIMARY SERVICE CONNECTIONS (INCLUDING FIRE SUPPRESSION SERVICES, IF APPLICABLE) IN ACCORDANCE WITH THE CITY OF KETCHUM WATER DEPARTMENT, FIRE MARSHAL, PLUMBING BUREAU, AND STATE OF IDAHO BACKFLOW PREVENTION REQUIREMENTS. IN AREAS WHERE MULTIPLE WATER SERVICE LINES ARE IN SAME TRENCH SEPARATE LINES BY 6".
13. THE CONTRACTOR SHALL KEEP THE EXISTING WATER DISTRIBUTION SYSTEM LIVE, TO THE GREATEST EXTENT POSSIBLE, WHILE INSTALLING THE NEW WATER MAIN AND SERVICES MINIMIZING DISRUPTION TO EXISTING WATER SYSTEM USERS. THE NEW WATER MAIN AND SERVICES SHALL BE INSTALLED, BACKFILLED, PRESSURE TESTED AND DISINFECTED AND FLUSHED PRIOR TO CONNECTING THE NEW MAIN TO THE EXISTING MAIN. THE MAXIMUM ALLOWABLE SERVICE OUTAGE FOR ANY SHUTDOWN IS 4 HOURS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROMPTLY REMOVING AND DISPOSING OF WATER ENTERING THE TRENCH DURING THE TIME THE TRENCH IS BEING PREPARED FOR INSTALLATION OF THE UTILITY, INCLUDING COMPLETION OF BACKFILL OF THE PIPE ZONE, AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL DISPOSE OF THE WATER IN A SUITABLE MANNER WITHOUT CAUSING DAMAGE TO PROPERTY.
15. EXTRA FITTINGS MAY BE NECESSARY IN ADDITION TO THOSE SHOWN HEREON TO CONTROL ELEVATION AND AVOID UNDERGROUND CONFLICTS.

#### SHEET INDEX

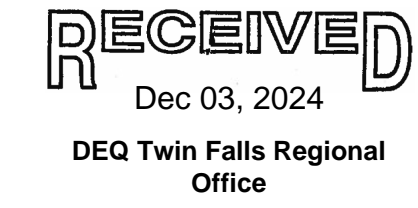
| SHEET# | DESCRIPTION                                |
|--------|--|
| C0.10  | COVER SHEET                                |
| C0.20  | KEY MAP                                    |
| C0.30  | EASEMENT OVERLAY MAP                       |
| C1.00  | DETAIL SHEET                               |
| C1.10  | WATER MAIN PLAN (SH-75 TO FARNLUN PL)      |
| C1.20  | WATER MAIN PLAN (SERENADE LN TO NEILS WAY) |
| C1.30  | WATER MAIN PLAN (NEILS WAY TO GLADE CT)    |



VICINITY MAP  
N.T.S.

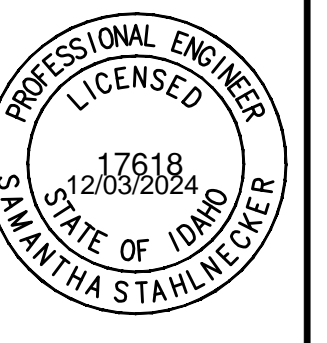
#### LEGEND

| EXISTING CONDITIONS | PROPOSED CONDITIONS              |
|---------------------|----------------------------------|
| P/L                 |                                  |
|                     | 8" Water Main Fitting, see plans |
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PURPOSE: ISSUE FOR BID / D.E.Q. REVIEW (12-03-2024)

REVISION NO. DATE DESCRIPTION

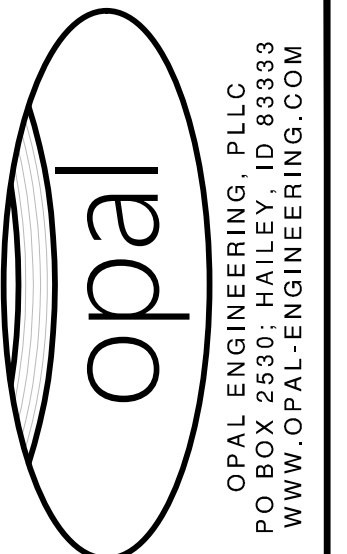
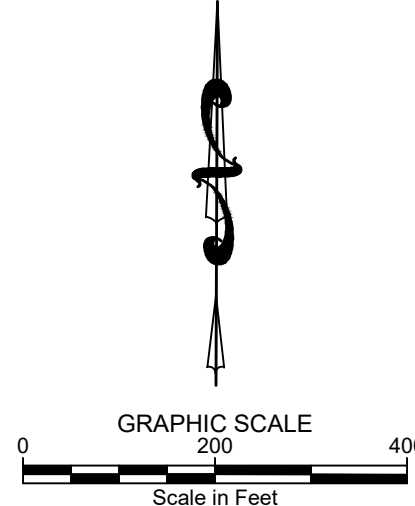
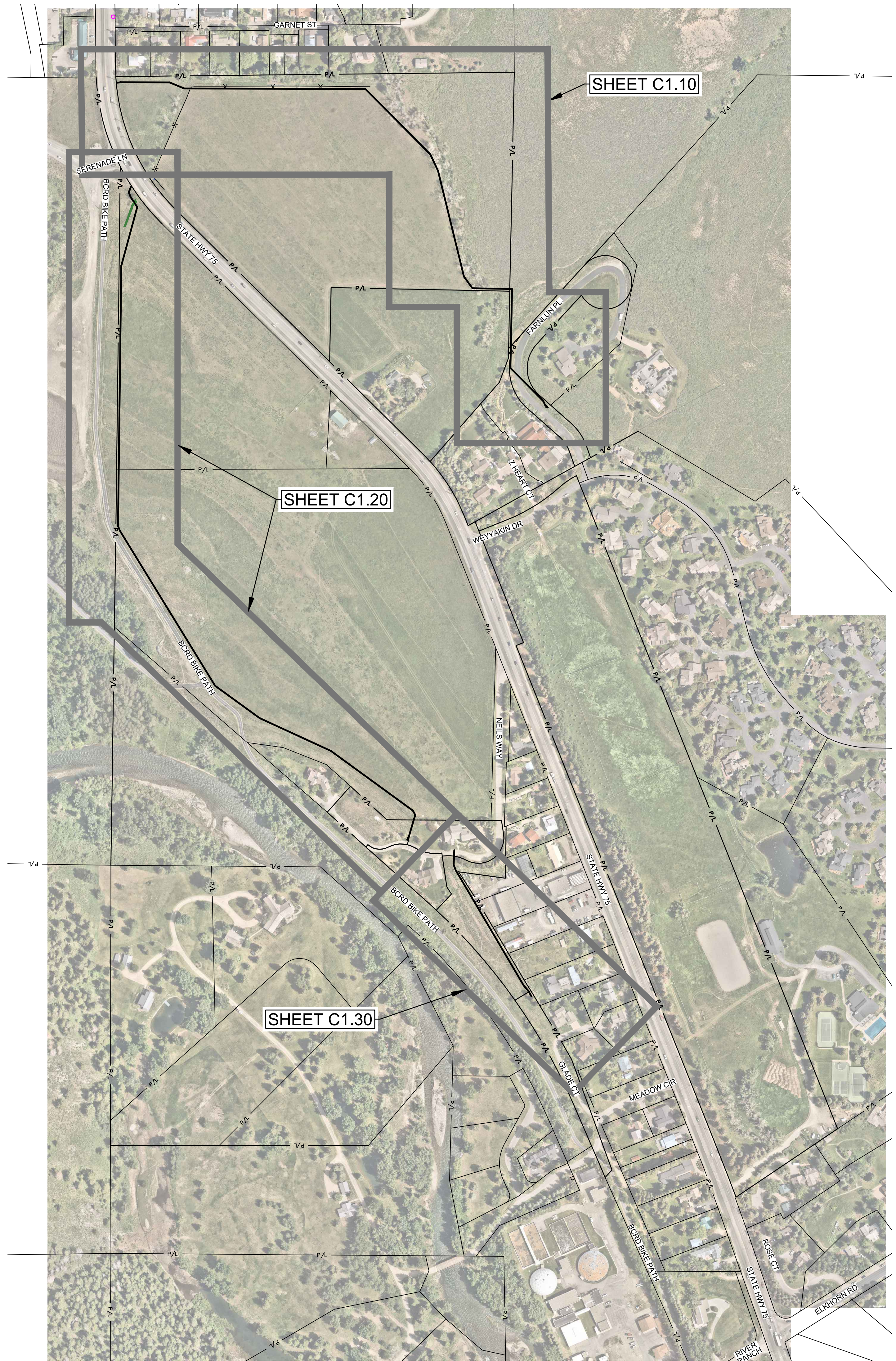


COVER SHEET  
 SOUTH KETCHUM REDUNDANT MAIN, PROJECT A  
 PREPARED FOR: CITY OF KETCHUM

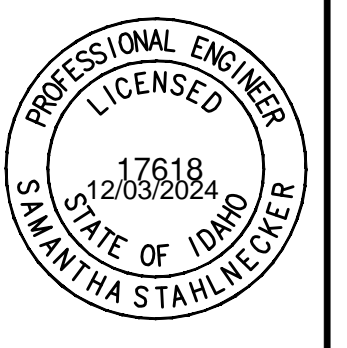
**CIVIL ENGINEER**  
 SAMANTHA STAHLNECKER, PE  
 OPAL ENGINEERING, PLLC  
 416 S. MAIN STREET SUITE 204  
 PO BOX 2530  
 HAILEY, IDAHO 83333

22036-7.0  
PROJECT NUMBER

C0.10



| REVISION NO. | DATE | DESCRIPTION |
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**KEY MAP**

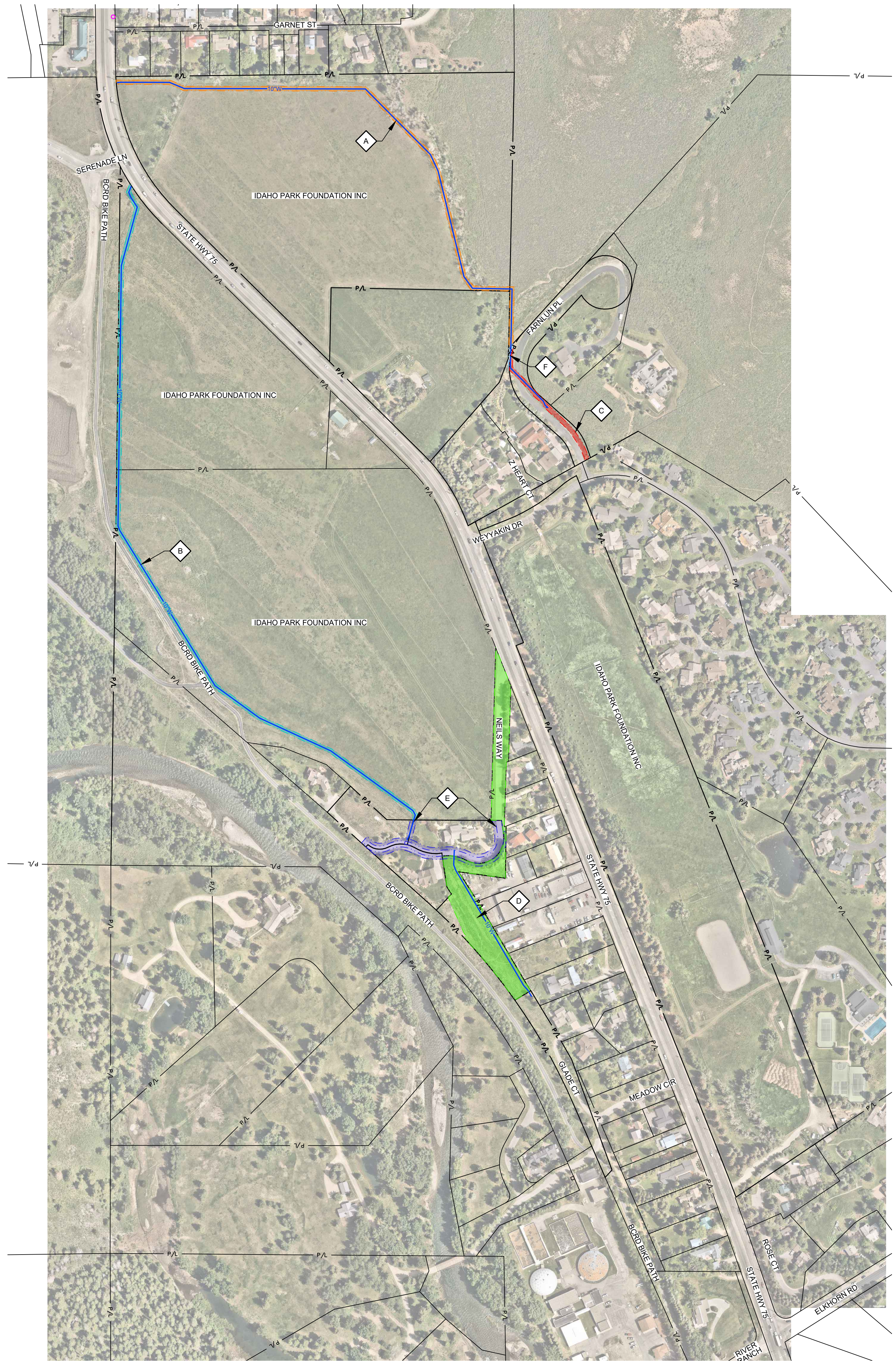
**SOUTH KETCHUM REDUNDANT MAIN, PROJECT A**  
 PREPARED FOR: CITY OF KETCHUM

22036-7.0  
 PROJECT NUMBER

**C0.20**

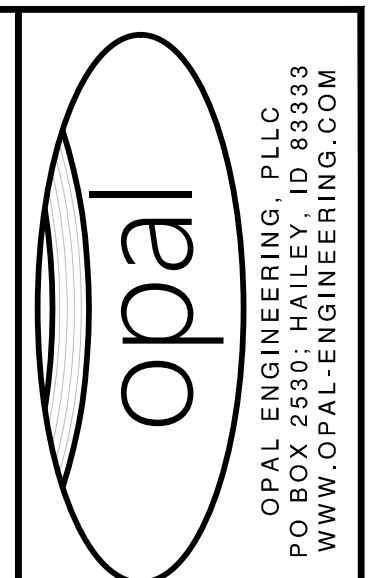
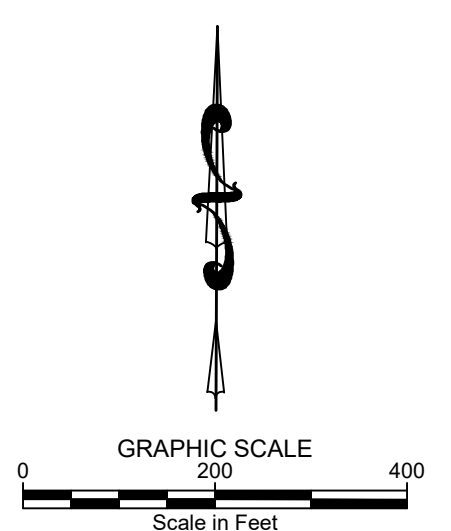
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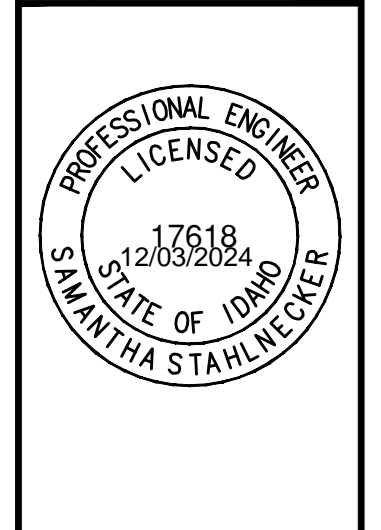


**WATER MAIN EASEMENT LEGEND**

- A  PROPOSED 15' WIDE EASEMENT: IDAHO PARK FOUNDATION INC, AREA EAST OF HIGHWAY 75
- B  PROPOSED 15' WIDE EASEMENT: IDAHO PARK FOUNDATION INC, AREA WEST OF HIGHWAY 75
- C  PROPOSED 15' WIDE EASEMENT: ALONG FARNLUN PLACE (PRIVATE ROAD).
- D  EXISTING UTILITY EASEMENT WITHIN PARCEL A, EAST OF BALDY, NOTE 5, INSTR.# 369083.
- E  EXISTING UTILITY EASEMENTS ALONG NEILS WAY, PER EAST OF BALDY, NOTES 3 & 7, INSTR.# 369083.
- F  EXISTING UTILITY EASEMENT ALONG FARNLUN PLACE, PER PLAT OF LOT 1A, BLOCK 7 WEYAKIN SUB., NOTE 1, INSTR.# 485709.



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**EASEMENT OVERLAY MAP**

**SOUTH KETCHUM REDUNDANT MAIN, PROJECT A**

PREPARED FOR: CITY OF KETCHUM

22036-7.0  
PROJECT NUMBER

C0.30

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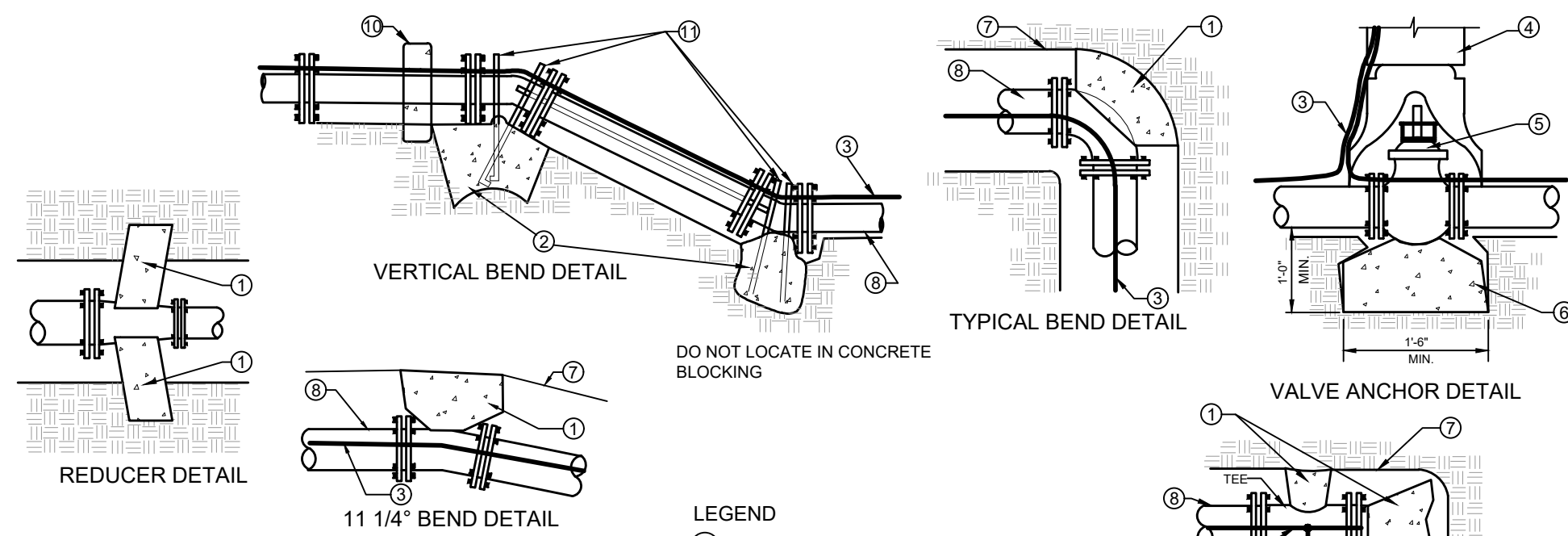
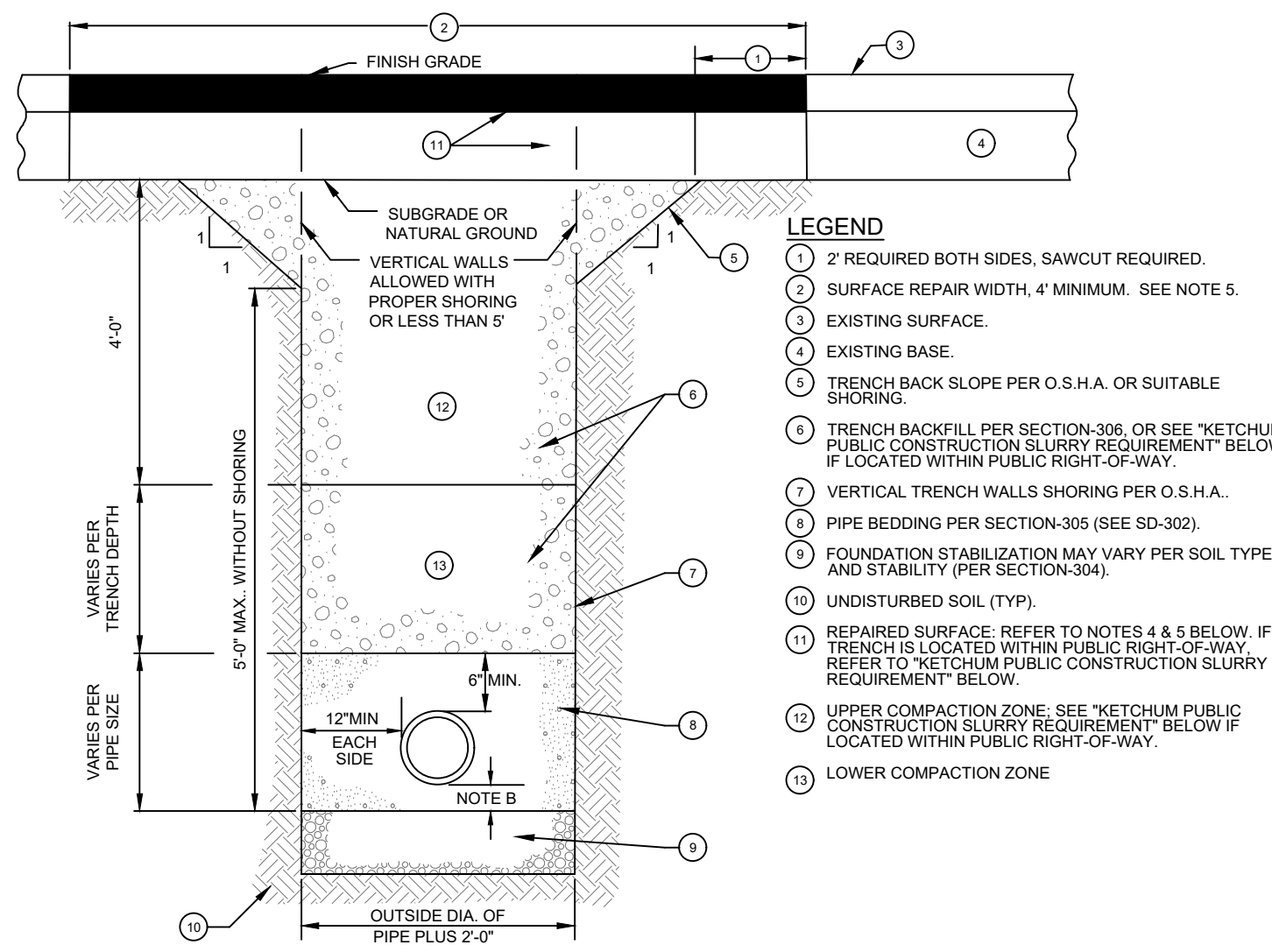


TABLE 1  
THRUST AREA FOR HORIZONTAL BENDS\*\*\*

| PIPE SIZE | TEE, PLUG OF VALVE | 90° BEND** | 45° BEND | 22.5° BENDS OR REDUCER |
|-----------|--------------------|------------|----------|------------------------|
| 3"        | 0.8                | 1.1        | 0.6      | 0.3                    |
| 4"        | 1.4                | 2.0        | 1.1      | 0.6                    |
| 6"        | 3.2                | 4.5        | 2.4      | 1.2                    |
| 8"        | 5.7                | 8.0        | 4.3      | 2.2                    |
| 10"       | 8.8                | 12.5       | 6.8      | 3.4                    |
| 12"       | 12.7               | 18.0       | 9.7      | 5.0                    |
| 14"       | 17.3               | 24.5       | 13.3     | 6.8                    |
| 16"       | 22.6               | 32.0       | 17.3     | 8.8                    |
| 18"       | 28.6               | 40.5       | 21.9     | 11.2                   |

\* MUST BE INCREASED BASED ON DIFFERENT CONDITIONS (HIGHER WORKING PRESSURE OR LOWER SOIL BEARING STRENGTH).  
 \*\* OR TEE ACTING AS A 90° BEND  
 \*\*\*THRUST BLOCK DEPTH TO BE A MINIMUM PF 12" FOR PIPE SIZES 3"-8" AND 18" FOR PIPE SIZES 10"-18" OR THE SQUARE ROOT OF THE REQUIRED BEARING AREA, WHICHEVER IS GREATER.

1  
C1.00 THRUST BLOCK AND ANCHOR DETAILS  
N.T.S.



**KETCHUM PUBLIC CONSTRUCTION SLURRY REQUIREMENT**  
 IN AREAS WHERE IT IS NECESSARY TO CUT THE ASPHALT PAVEMENT AND DIG A TRENCH FOR BURIAL OF CONDUIT CABLE OR OTHER CITY UTILITY, THE TRENCH SHALL BE BACKFILLED WITH A LEAN CONCRETE MIX TO THE BOTTOM OF FINISH SURFACE MATERIAL WITH THE FOLLOWING PROPORTIONS OF MATERIALS:  
 COARSE AGGREGATE (3/4" MINUS) : 2,600 LBS  
 SAND : 800 LBS  
 PORTLAND CEMENT : 94 LBS  
 WATER : 11 GAL. (MAX.)  
 WATER CONTENT IS MAXIMUM AND MAY BE REDUCED DOWNWARD. CARE SHALL BE TAKEN TO ASSURE THAT EXCESS WATER IS NOT PRESENT IN THE MIXING DRUM PRIOR TO CHARGING THE MIXER WITH MATERIALS. THOROUGH MIXING WILL BE REQUIRED PRIOR TO DISCHARGE.  
 NO COMPACTION, VIBRATION, OR FINISHING IS REQUIRED. THE LEAN CONCRETE MIX SHALL BE STRUCK OFF AT OR BELOW THE ELEVATION OF THE PLANTMIX SURFACING WITH A SQUARE-NOSE SHOVEL OR SIMILAR HAND TOOL. THE BACKFILL MIX SHALL BE ALLOWED TO SET FOR A MINIMUM OF 2 HOURS BEFORE THE PERMANENT PLANTMIX SURFACING IS PLACED TO COMPLETE THE TRENCH REPAIR. TEMPORARY PLACEMENT OF ASPHALT COLD MIX SURFACING MAY BE NECESSARY TO ACCOMMODATE TRAFFIC WITHIN THE FIRST 2 HOURS OF BACKFILL PLACEMENT PRIOR TO COMPLETING THE PERMANENT REPAIR.  
**NOTES:**  
 1. TRENCH EXCAVATION PER SECTION-301.  
 2. PIPE BEDDING PER SECTION-305.  
 3. BACKFILL AND COMPACTION PER SECTION-306.  
 4. SURFACE AND BASE REPAIR PER CITY OF KETCHUM STANDARD DRAWING DETAIL NO. 3, "TYPICAL STREET ASPHALT SECTION".  
 5. ASPHALT PAVEMENT FOR SURFACE REPAIR SHALL BE IN ACCORDANCE WITH PLANS AND ISPWV SECTIONS 805, 810, AND 811 FOR CLASS II PAVEMENT. ASPHALT AGGREGATE SHALL BE 1/2" (13MM) NOMINAL SIZE CONFORMING TO TABLE 803B IN ISPWV SECTION 803. ASPHALT BINDER SHALL BE PG 58-28 CONFORMING TO TABLE A-1 IN ISPWV SECTION 805.  
 6. IF TRENCH IMPACTS CROWN OF ROADWAY, CROWN MUST BE MAINTAINED AND POSITIVE DRAINAGE PROVIDED.

2  
C1.00 TYPICAL TRENCH SECTION  
N.T.S.

**FLUSHING AND DISINFECTION**

- A. FLUSHING PRIOR TO DISINFECTION**
- BEFORE CHLORINATION, FLUSH THE MAINS THOROUGHLY AFTER THE PRESSURE AND LEAKAGE TEST ARE COMPLETE.
  - USE A MINIMUM FLUSHING VELOCITY IN THE MAIN OF 2.5 FEET/SECOND.
  - IF NO HYDRANT IS INSTALLED AT THE END OF THE MAIN, PROVIDE A TAP OF THE SIZE SUFFICIENT TO PRODUCE A VELOCITY IN THE MAIN OF AT LEAST 2.5 FEET/SECOND.
  - TABLE 1 SHOWS THE RATES OF FLOW REQUIRED TO PRODUCE A VELOCITY OF 2.5 FEET/SECOND IN VARIOUS SIZE PIPES.
  - EXERCISE EXTREME CARE AND CONDUCT A THOROUGH INSPECTION DURING THE WATER MAIN LAYING TO PREVENT AND DETECT SMALL STONES, PIECES OF CONCRETE, PARTICLES OF MATERIAL, OR OTHER FOREIGN MATERIAL THAT MAY HAVE ENTERED THE MAINS.
  - CLEAN LARGE MATERIAL BY FLUSHING AND INSPECTING ALL HYDRANTS ON THE LINES TO ENSURE THAT THE ENTIRE VALVE OPERATING MECHANISM OF EACH HYDRANT IS IN GOOD CONDITION.
- B. DISINFECTION OF WATER PIPES**
- GENERAL
    - COMPLY WITH ANSI/AWWA C 651: DISINFECTING WATER MAINS, THESE SPECIFICATIONS, AND ENGINEER'S DIRECTION.
    - KEEP THE INTERIOR OF PIPE, FITTINGS AND APPURTENANCES FREE FROM DIRT, HEAVY AND FOREIGN PARTICLES.
    - DISINFECT ALL WATER PIPES AND APPURTENANCES PRIOR TO PLACING IN SERVICE.
  - FORM OF CHLORINE USED TO BE PRE-APPROVED BY THE ENGINEER.
    - LIQUID CHLORINE
      - FORM: LIQUID CONTAINING 100% AVAILABLE CHLORINE UNDER PRESSURE IN STEEL CONTAINERS.
      - STANDARD: ANSI/AWWA B 301.
      - EXECUTION: USED ONLY BY TRAINED PERSONNEL WITH APPROPRIATE GAS-FLOW CHLORINATORS AND EJECTORS.
      - AUTHORIZATION: ONLY WITH WRITTEN AUTHORIZATION OF THE ENGINEER.
    - SODIUM HYPOCHLORITE
      - FORM: LIQUID CONTAINING APPROXIMATELY 5% TO 15% AVAILABLE CHLORINE.
      - STANDARD: ANSI/AWWA B 300.
      - CALCIUM HYPOCHLORITE
        - FORM: GRANULAR OR IN 5G TABLETS CONTAINING APPROXIMATELY 65% AVAILABLE CHLORINE BY WEIGHT.
        - STANDARD: ANSI/AWWA B 300.
  - METHODS OF CHLORINATION USED TO BE PRE-APPROVED BY THE ENGINEER.
    - TABLET OR GRANULE METHOD
      - SOLUTION STRENGTH: 25 MG/L MINIMUM.
      - USE: ONLY IF THE PIPES AND APPURTENANCES ARE KEPT CLEAN AND DRY DURING CONSTRUCTION. DO NOT USE SOLVENT WELDED PLASTIC OR SCREWED JOINT STEEL PIPE.
      - PLACEMENT WHEN USING GRANULES: DURING CONSTRUCTION, PLACE CALCIUM HYPOCHLORITE GRANULES AT THE UPSTREAM END OF EACH BRANCH MAIN, AND AT 500-FOOT INTERVALS.
      - GRANULAR QUANTITY: REFER TO TABLE 2
      - PLACEMENT WHEN USING TABLETS: DURING CONSTRUCTION, PLACE 5G CALCIUM HYPOCHLORITE TABLETS IN EACH SECTION OF PIPE AND ALSO PLACE ONE TABLET IN EACH HYDRANT, HYDRANT BRANCH AND OTHER APPURTENANCES. ATTACH TABLETS TO THE INSIDE OF THE PIPE USING AN ADHESIVE SUCH AS ANSI/AWWA B 301. PLACE TABLETS ON THE BROAD SIDE ATTACHED TO THE SURFACE OF THE PIPE. ATTACH ALL THE TABLETS AT THE INSIDE TIP OF THE MAIN, WITH APPROXIMATELY EQUAL NUMBERS OF TABLETS AT EACH END OF A GIVEN PIPE LENGTH. IF THE TABLES ARE ATTACHED BEFORE THE PIPE SECTION IS PLACED IN THE TRENCH, MARK THEIR POSITION ON THE SECTION SO IT CAN BE READILY DETERMINED THAT THE PIPE IS INSTALLED WITH THE TABLES AT THE TOP.
        - TABLET QUANTITY: REFER TO TABLE 3
        - ADJUST FOR PIPE LENGTH OTHER THAN 18 FEET.
          - BASED ON 3.25G AVAILABLE CHLORINE PER TABLET.
        - FILLING PROCEDURE: WHEN GRANULE OR TABLET INSTALLATION HAS BEEN COMPLETED, FILL THE MAIN WITH CLEAN WATER AT A VELOCITY NOT EXCEEDING 1 FPS. TAKE PRECAUTIONS TO ASSURE THAT AIR POCKETS ARE ELIMINATED. LEAVE THIS WATER IN THE PIPE FOR AT LEAST 24 HOURS. IF THE WATER TEMPERATURE IS LESS THAN 41° F, LEAVE THE WATER IN THE PIPE FOR AT LEAST 48 HOURS. POSITION VALVE SO THAT THE CHLORINE SOLUTION IN THE MAIN BEING TREATED WILL NOT FLOW INTO WATER MAINS IN ACTIVE SERVICE.
      - CONTINUOUS FEED METHOD
        - SOLUTION STRENGTH: DOSE AT 25 MG/L FOR 4 HOURS.
        - RESIDUAL: 10 MG/L AT 24 HOURS.
        - DOSING METHODS
          - LIQUID CHLORINE: SOLUTION FEED VACUUM-OPERATED CHLORINATOR IN COMBINATION WITH A BOOSTER PUMP.
          - DIRECT FEED: NOT ALLOWED.
          - HYPOCHLORITE SOLUTION: CHEMICAL FEED PUMP DESIGNED FOR FEEDING CHLORINE SOLUTIONS.
          - CALCIUM HYPOCHLORITE GRANULES: REFER TO PREVIOUS SECTION.
        - FILLING PROCEDURE: USE APPROVED SOURCE TO FLOW CLEAN WATER AT A CONSTANT, MEASURED RATE INTO THE NEWLY LAID WATER MAIN. FILL AT A POINT NOT MORE THAN 10 FEET DOWNSTREAM FROM THE BEGINNING OF THE NEW MAIN. MEASURE THE CHLORINE CONCENTRATION AT REGULAR INTERVALS AND ENSURE A 25 MG/L DOSE. POSITION VALVES SO THAT THE CHLORINE SOLUTION IN THE MAIN BEING TREATED DOES NOT FLOW INTO WATER MAINS IN ACTIVE SERVICE. DO NOT STOP CHLORINE APPLICATION UNTIL THE ENTIRE MAIN IS FILLED WITH CHLORINATED WATER. RETAIN THE CHLORINATED WATER IN THE MAIN FOR AT LEAST 4 HOURS, OPERATING ALL VALVES AND HYDRANTS IN THE SECTION TREATED. AT THE END OF THE 24 HOUR PERIOD, VERIFY THE TREATED WATER IN ALL PORTIONS OF THE MAIN HAS RESIDUAL OF 10 MG/L FREE CHLORINE.
      - SLUG METHOD
        - SOLUTION STRENGTH: 100 MG/L
        - DOSING METHODS: PER ENGINEER'S DIRECTION
        - FILLING PROCEDURE: USE APPROVED SOURCE TO FLOW CLEAN WATER AT A CONSTANT, MEASURED RATE INTO THE NEWLY LAID WATER MAIN. FILL AT A POINT NOT MORE THAN 10 FEET DOWNSTREAM FROM THE BEGINNING OF THE NEW MAIN. MEASURE CONCENTRATION AT REGULAR INTERVALS TO ENSURE 100 MG/L DOSE. APPLY THE CHLORINE CONTINUOUSLY AND FOR THE TIME REQUIRED TO DEVELOP A SOLID COLUMN OR "SLUG" OF CHLORINATED WATER THAT WILL, AS IT MOVES THROUGH THE MAIN, EXPOSE ALL INTERIOR SURFACES TO A 100 MG/L FOR AT LEAST 3 HOURS. MEASURE THE CHLORINE RESIDUAL IN THE SLUG AS IT MOVES THROUGH THE MAIN. IF AT ANY TIME IT DROPS BELOW 50 MG/L, STOP FLOW AND RELOCATE CHLORINATION EQUIPMENT AT THE HEAD OF THE SLUG, AND AS FLOW IS RESUMED, ADD CHLORINE TO RESTORE THE FREE CHLORINE IN THE SLUG TO NOT LESS THAN 100 MG/L. AS THE CHLORINATED WATER FLOWS PAST FITTINGS AND VALVES, OPERATE VALVES AND HYDRANTS TO DISINFECT APPURTENANCES AND PIPE BRANCHES.
    - FINAL FLUSHING.
      - AFTER THE RETENTION PERIOD, FLUSH THE CHLORINATED WATER FROM THE MAIN UNTIL CHLORINE MEASUREMENTS SHOW THAT THE CONCENTRATION IN THE WATER LEAVING THE MAIN IS NO HIGHER THAN THAT IN THE SYSTEM, OR IS ACCEPTABLE FOR DOMESTIC USE.
      - DISPOSAL OF FLUSHING WATER TO BE DONE IN A MANNER SO THAT IT DOES NOT:
        - REACH SURFACE WATERS OR WATERS OF THE STATE
        - DAMAGE SURROUNDING PROPERTIES
        - TAKE PLACE DURING PERIODS WHEN THE AMBIENT TEMPERATURE IS ABOVE 85° WITHOUT PRIOR APPROVAL OF THE ENGINEER
        - IF WATER CAN NOT BE RETAINED ON SITE AND IF IT IS NOT ALLOWED TO ENTER THE SANITARY SEWER COLLECTION SYSTEM, WATER SHALL BE DECHLORINATED TO HAVE A MAXIMUM AVAILABLE CHLORINE CONCENTRATION OF 0.13 MG/L AND THE APPROPRIATE PRIVATE, FEDERAL, AND STATE DISCHARGE AND DISPOSAL APPROVALS SHALL BE ACQUIRED PRIOR TO COMMENCEMENT OF FLUSHING ACTIVITIES. SHOULD THERE BE A POTENTIAL FOR THE GROUNDWATER RULE TO BE VIOLATED AS A RESULT OF A CHLORINATED DISCHARGE THE ENGINEER SHALL COORDINATE DISPOSAL WITH REGIONAL DEQ STAFF PRIOR TO FLUSHING.
    - BACTERIOLOGICAL TESTS.
      - AFTER FINAL FLUSHING AND BEFORE THE WATER MAIN IS PLACED IN SERVICE, TEST SAMPLES COLLECTED FROM THE MAIN(S) FOR COLIFORM BACTERIA.
      - TAKE 2 SAMPLES FROM EACH LOCATION AT LEAST 24 HOURS APART.
      - UNLESS OTHERWISE DIRECTED BY THE ENGINEER, COLLECT SAMPLES FROM EACH 1,200 FEET ON THE NEW MAIN AND ONE FROM EACH BRANCH.
    - SWABBING.
      - IF CONNECTIONS ARE NOT DISINFECTED ALONG WITH THE NEWLY INSTALLED MAIN, SWAB OR SPRAY THE INTERIOR OF ALL PIPES AND FITTINGS USED IN MAKING THE CONNECTIONS WITH A 1% HYPOCHLORITE SOLUTION BEFORE INSTALLATION.

TABLE 1  
REQUIRED FLOW AND OPENINGS TO FLUSH PIPELINES  
40 PSI RESIDUAL PRESSURE IN WATER MAIN (1)

| Pipe Diam. (inch) | Flow Required to Produce 2.5 fps (approx) (Gpm) | Size of Tap (inch) |     | Hydrant Outlets |                |
|-------------------|---|--------------------|-----|-----------------|----------------|
|                   |   | (1) (1-1/2)        | (2) | Number          | Size in (inch) |
| 4                 | 100   | 1                  | 1   | 1               | 2-1/2          |
| 6                 | 220   | 1                  | 1   | 1               | 2-1/2          |
| 8                 | 400   | 2                  | 1   | 1               | 2-1/2          |
| 10                | 600   | 3                  | 2   | 1               | 2-1/2          |
| 12                | 900   | 4                  | 2   | 2               | 2-1/2          |
| 16                | 1500  | 4                  | 2   | 2               | 2-1/2          |

(1) With a 40 psi pressure in the main with the hydrant flowing to atmosphere, a 2-1/2 inch hydrant outlet will discharge approximately 1,000 gpm and a 4-1/2 inch hydrant will discharge approximately 2500 gpm.  
 (2) Number of taps on pipe based on discharge through 5 feet of galvanized iron (GI) pipe with one 90° elbow.

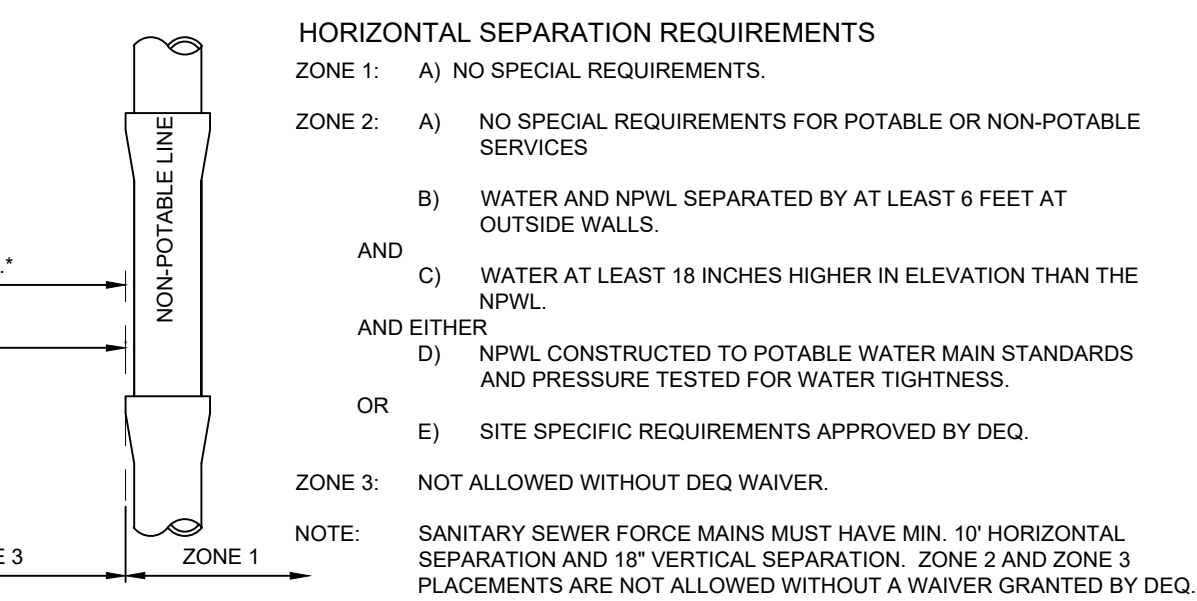
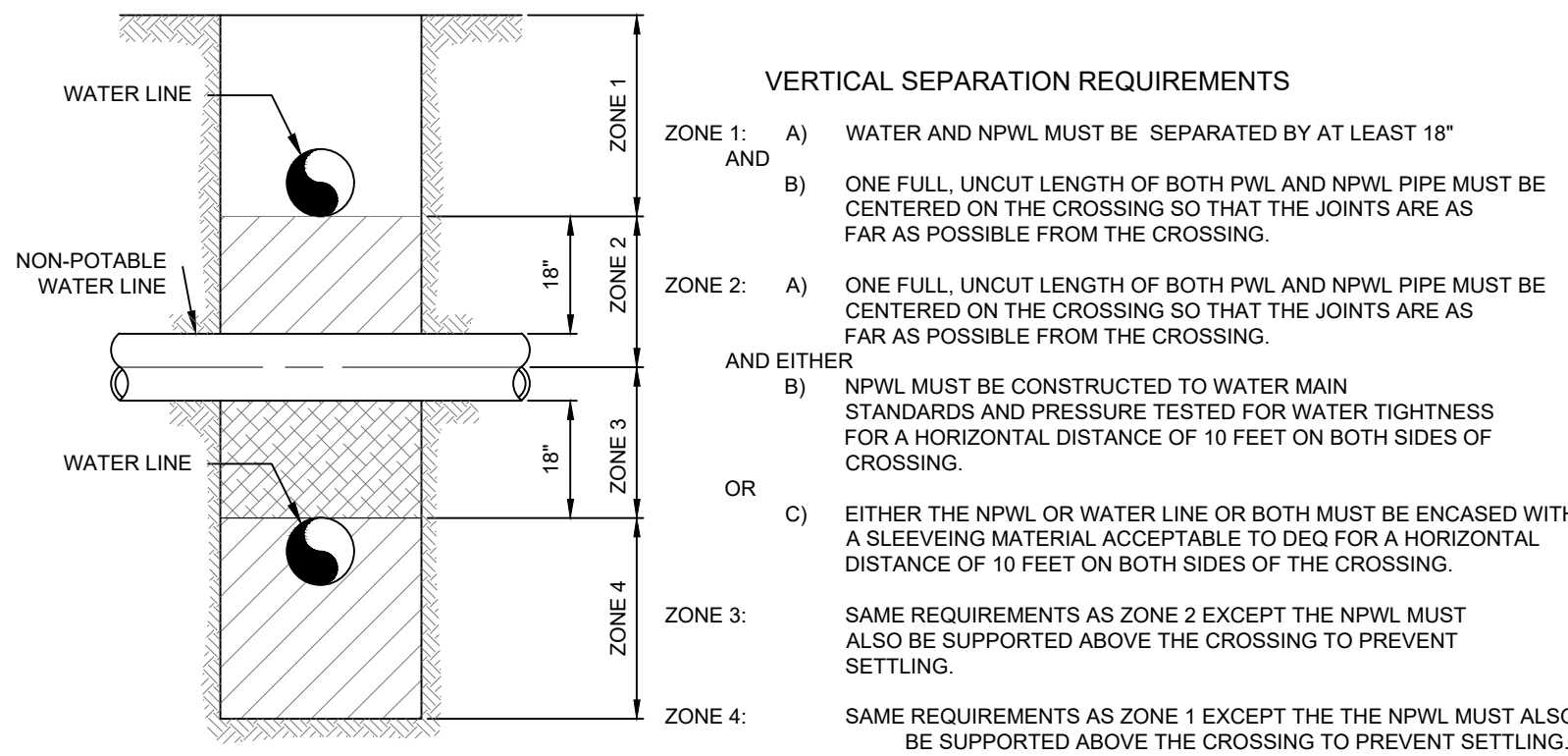
TABLE 2  
OUNCES OF GRANULES

| Pipe Diameter (inches) | Amount (ounces) |
|------------------------|-----------------|
| 4                      | 1.7             |
| 6                      | 3.8             |
| 8                      | 6.7             |
| 10                     | 10.5            |
| 12                     | 15.1            |
| 16                     | 26.8            |
| 18                     | 34.0            |
| 20                     | 41.9            |
| 24                     | 60.4            |

TABLE 3  
NUMBER OF TABLETS (1)

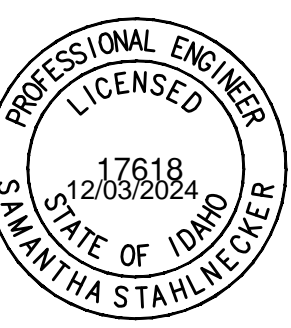
| Pipe Diameter (inches) | Number of 5g Tablets (2) |
|------------------------|--------------------------|
| 4                      | 1                        |
| 6                      | 1                        |
| 8                      | 2                        |
| 10                     | 3                        |
| 12                     | 4                        |
| 16                     | 6                        |
| 18                     | 7                        |
| 20                     | 9                        |
| 24                     | 13                       |

THE TERM "LINE" APPLIES TO BOTH MAIN LINES AND SERVICE LINES



3  
C1.00 POTABLE AND NON-POTABLE WATER LINE (NPWL) SEPARATION  
N.T.S.

PURPOSE: ISSUE FOR BID / D.E.Q. REVIEW (12-03-2024)

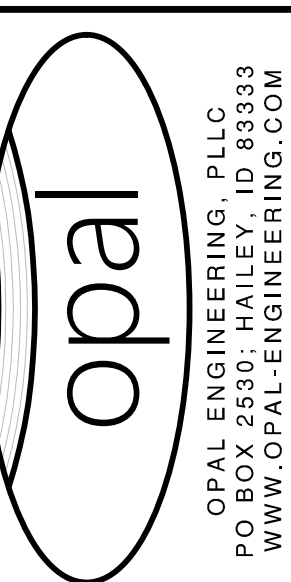


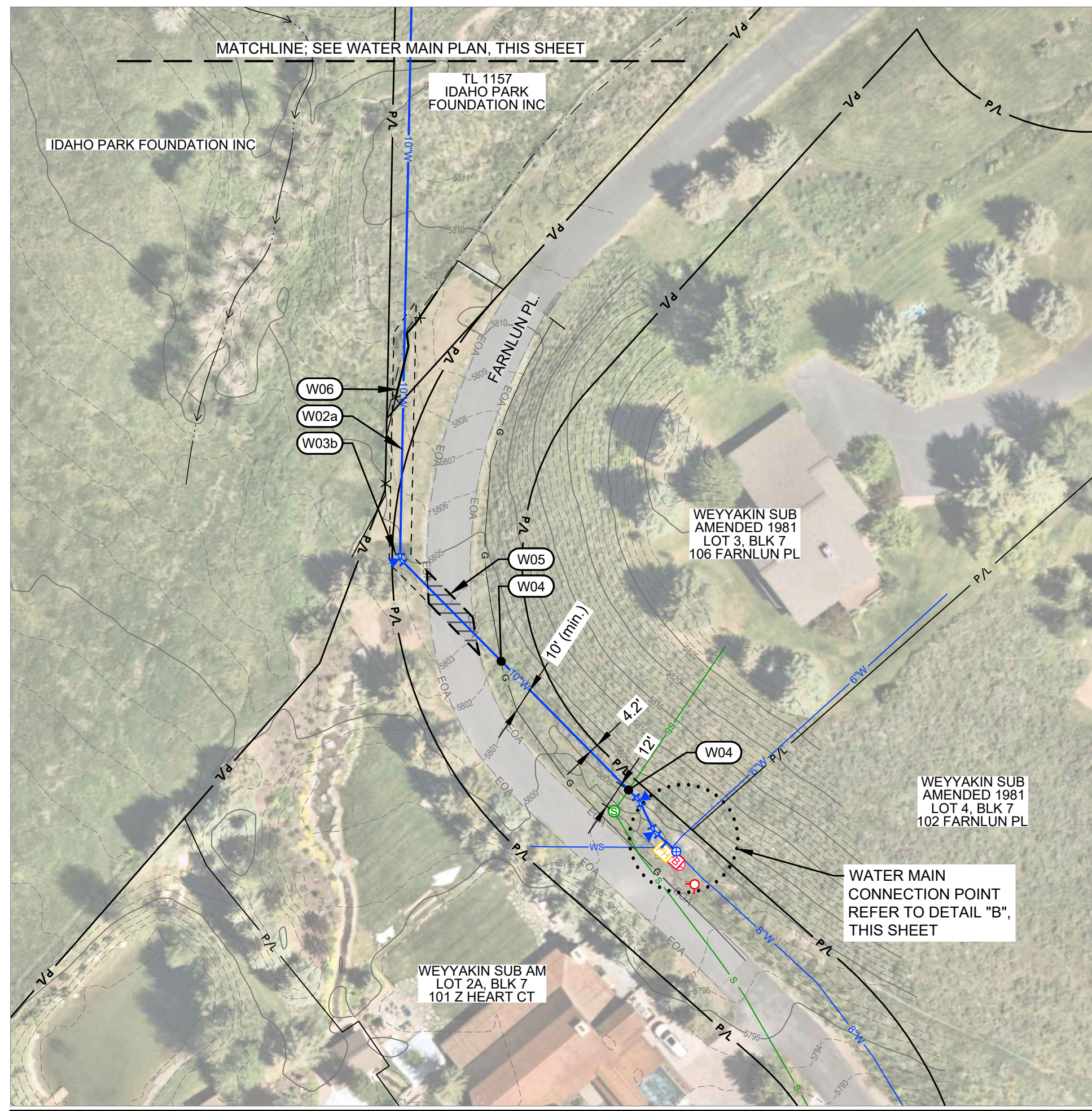
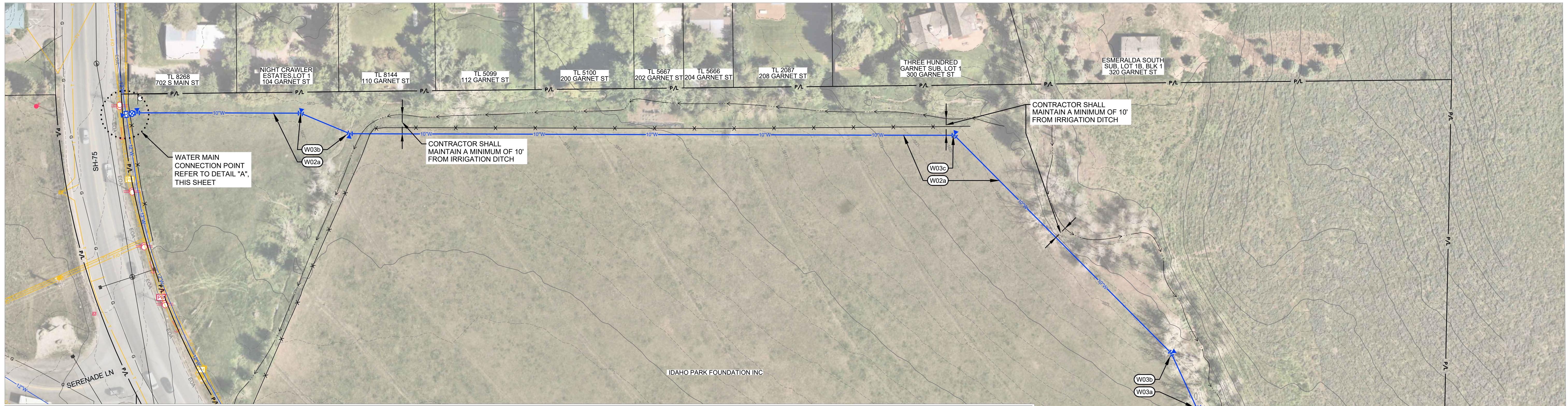
DETAIL SHEET  
 SOUTH KETCHUM REDUNDANT MAIN, PROJECT A  
 PREPARED FOR: CITY OF KETCHUM

22036-7.0  
PROJECT NUMBER

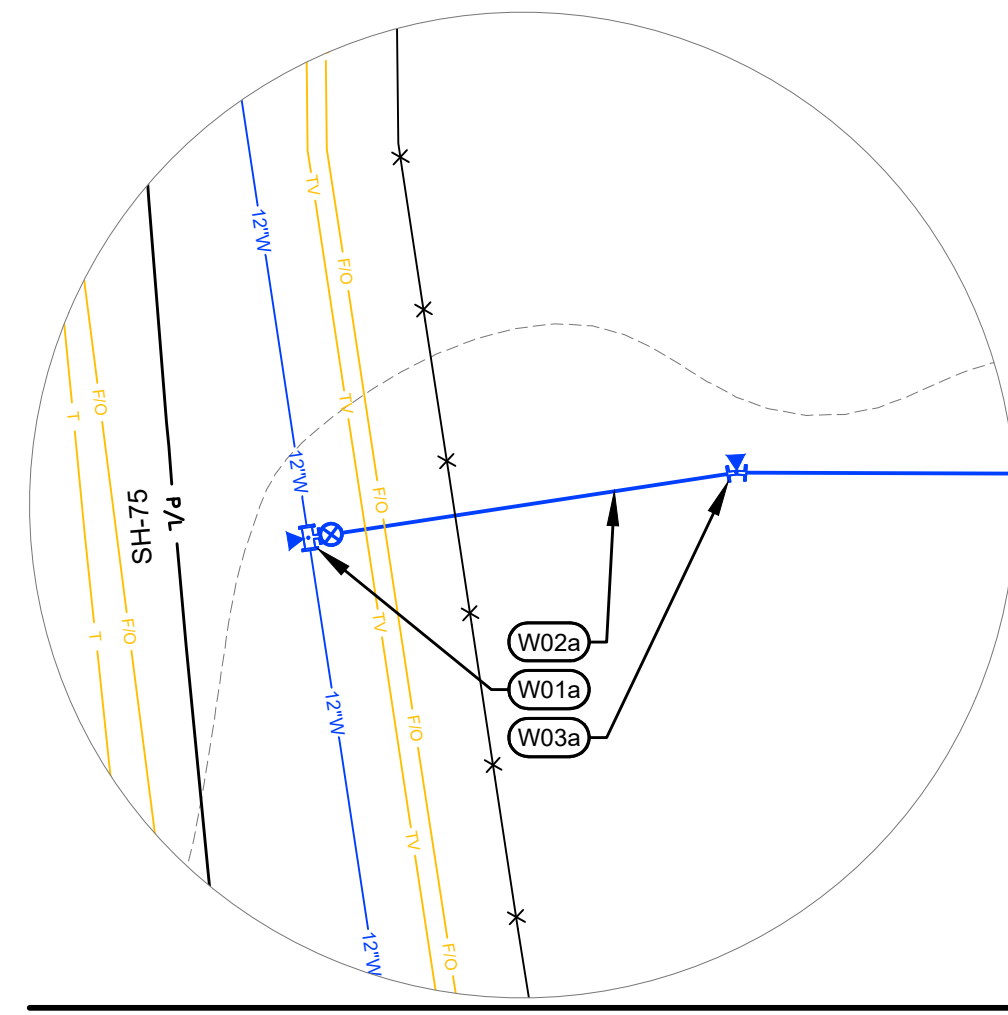
C1.00

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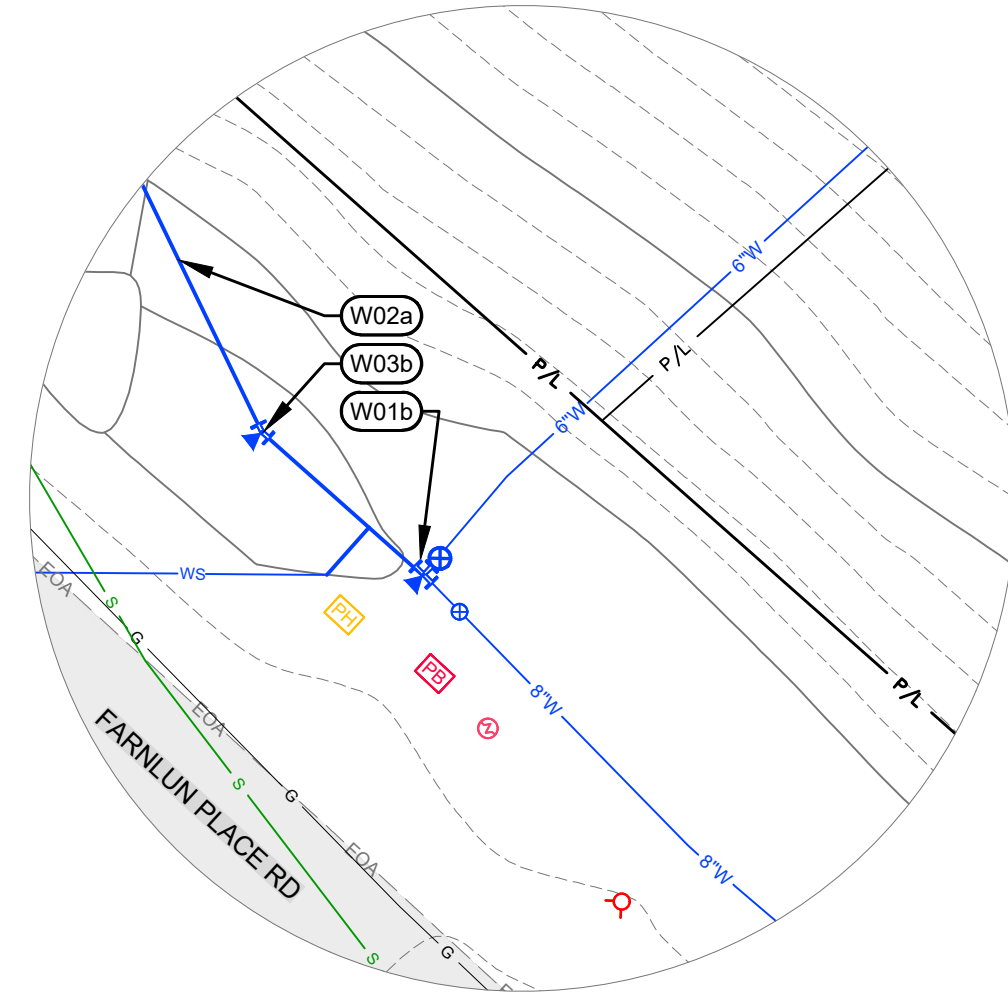




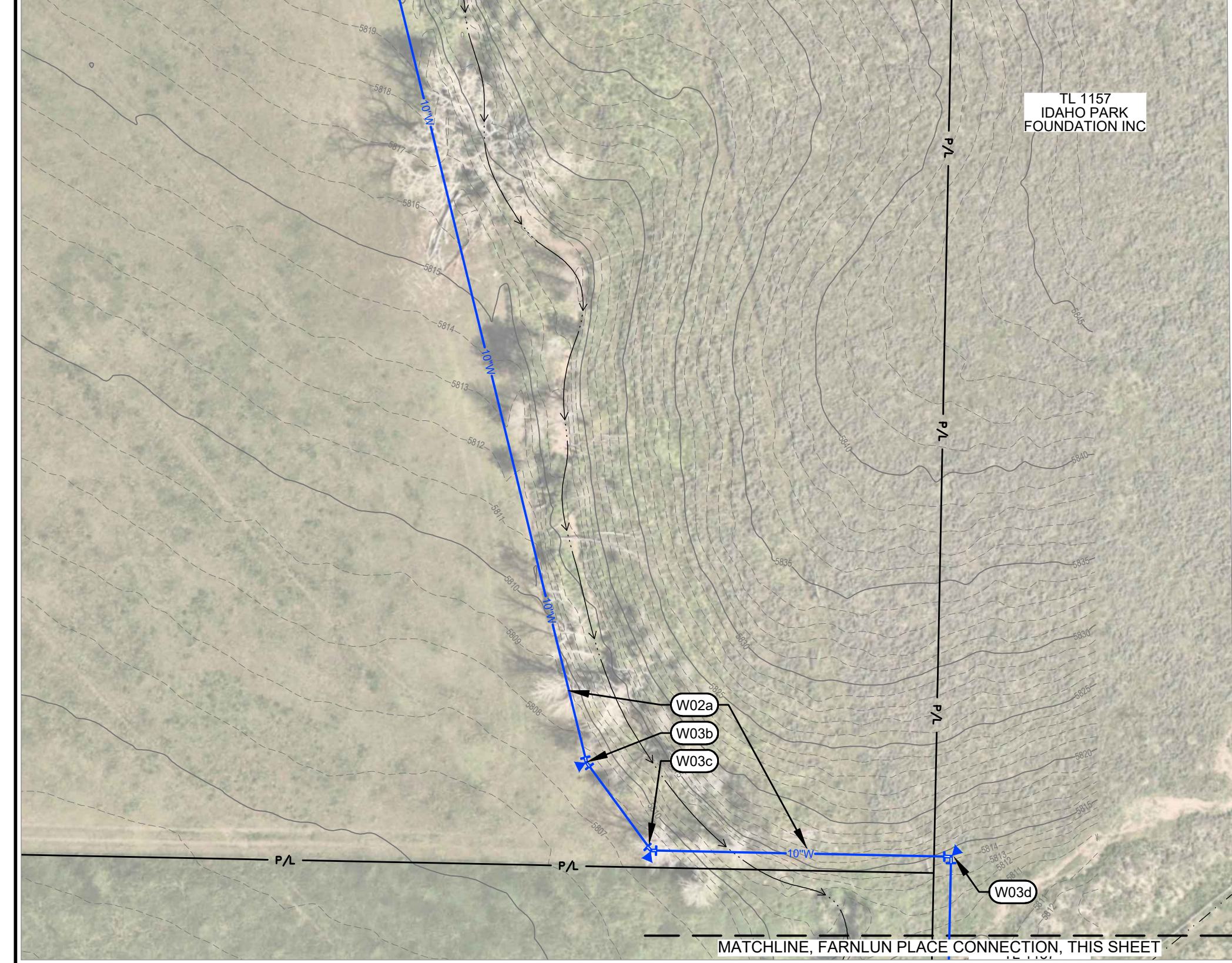
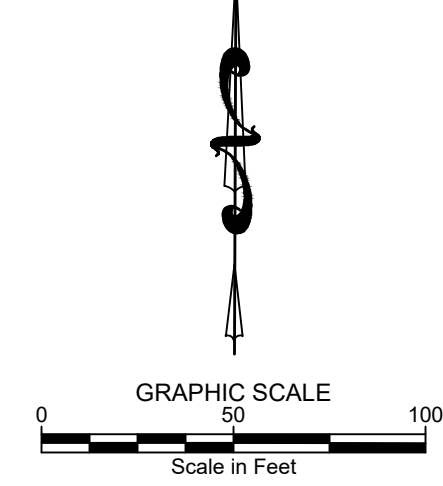
**FARNLUN PLACE RD CONNECTION**  
SCALE: 1" = 50'



**DETAIL "A"**  
SCALE: 1" = 5'



**DETAIL "B"**  
SCALE: 1" = 10'

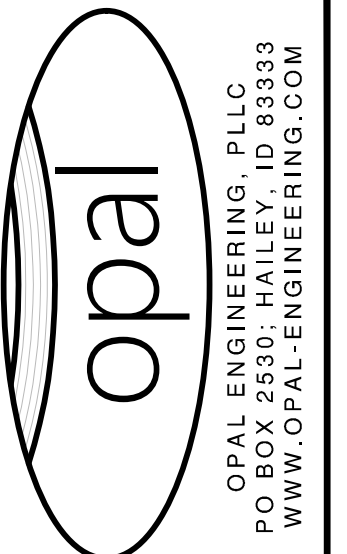
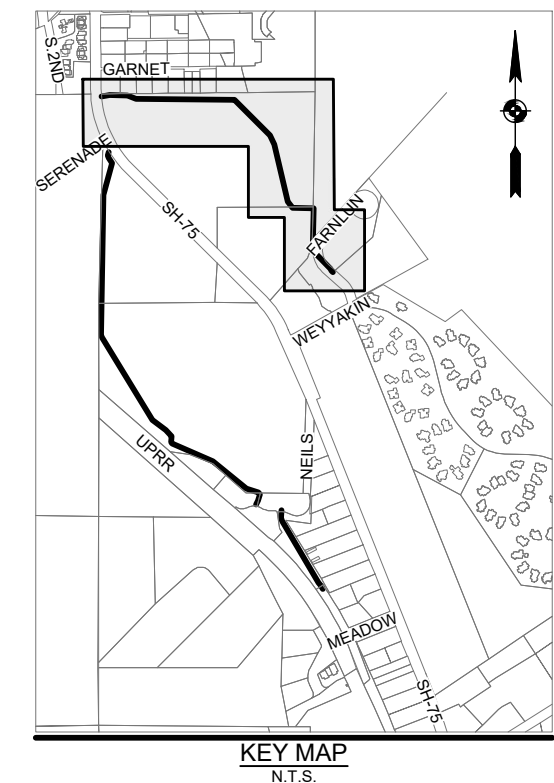


**WATER MAIN PLAN**  
SCALE: 1" = 50'

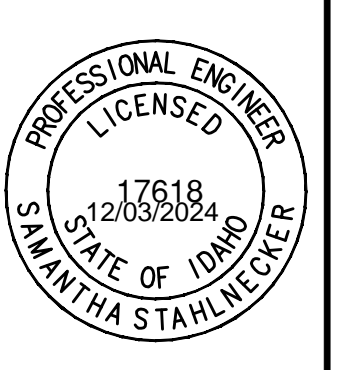
**WATER KEY NOTES**

- W01** POINT OF WATER CONNECTION. COORDINATE ACTIVITY WITH THE CITY.
  - a. INSTALL 12"x10" STAINLESS STEEL TAPPING SADDLE, 10" GATE VALVE, WITH THRUST PROTECTION. REFER TO DETAIL 1 / C1.00.
  - b. CONNECT TO EXISTING 8" WATER MAIN.
    - EXPECTED CONNECTION IS 8"x6" D.I. REDUCING 90° BEND WITH WATER SERVICE TO "101 Z HEART CT" CONNECTED WITH SERVICE TAPPING SADDLE.
    - CONTRACTOR SHALL INSTALL 10"x8" REDUCER 8"x8"x6" D.I. TEE
    - 6" GATE VALVE
    - W/ THRUST BLOCKS
    - RECONNECT WATER SERVICE TO "101 Z HEART CT"
    - CONTRACTOR SHALL CONFIRM FITTING AND WATER SERVICE CONFIGURATION. EXTRA WATER FITTINGS MAY BE NEEDED.
- W02** INSTALL PVC C-900 WATER MAIN. REFER TO DETAIL 2 / C1.00 FOR TRENCHING.
  - a. 10 INCH
- W03** INSTALL DUCTILE IRON FITTINGS WITH THRUST BLOCK. REFER TO DETAIL 1 / C1.00 FOR THRUST PROTECTION.
  - a. 10" 11 1/4" BEND
  - b. 10" 22 1/2" BEND
  - c. 10" 45° BEND
  - d. 10" 90° BEND
- W04** POTABLE/NON-POTABLE CROSSING. SEE ISPW/C DETAIL SD-407 AND/OR DETAIL 3 / C1.00 FOR SEPARATION REQUIREMENTS.
- W05** SAWCUT ASPHALT AND REPAIR. REFER TO DETAIL 2 / C1.00. CONTRACTOR SHALL DEVELOP SEQUENCING PLAN AND SCHEDULE TO MINIMIZE CLOSURE OF FARNLUN PLACE. COORDINATE WITH CITY STAFF FOR IMPACTED NEIGHBOR NOTIFICATIONS.
- W06** LANDSCAPE REPAIR. THE CONTRACTOR SHALL REPAIR LANDSCAPED AREA AFTER CONSTRUCTION SO THAT IT IS IN A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION. SUCH ITEMS IN MAY INCLUDE, BUT ARE NOT LIMITED TO, LAWN, IRRIGATION, FENCE, LANDSCAPE WALL, ETC.

- RETAIN AND PROTECT**
  1. UTILITY POLE AND TELEPHONE RISER
  2. UTILITY BOX / VAULT
  3. FIRE HYDRANT



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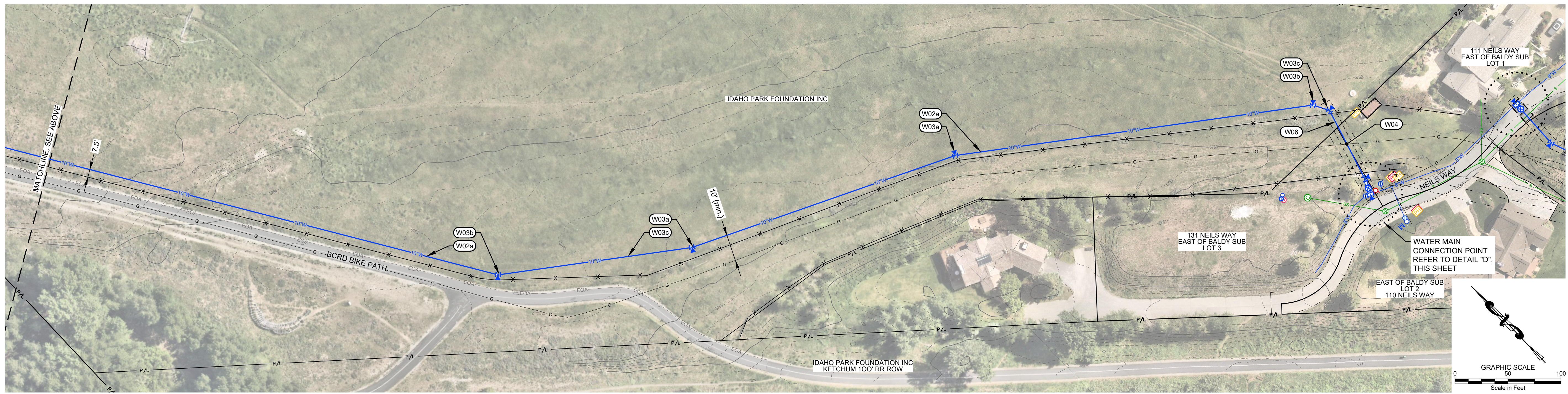


**WATER MAIN PLAN**  
**SH-75 TO FARNLUN PLACE**  
**SOUTH KETCHUM REDUNDANT MAIN, PROJECT A**  
PREPARED FOR: CITY OF KETCHUM

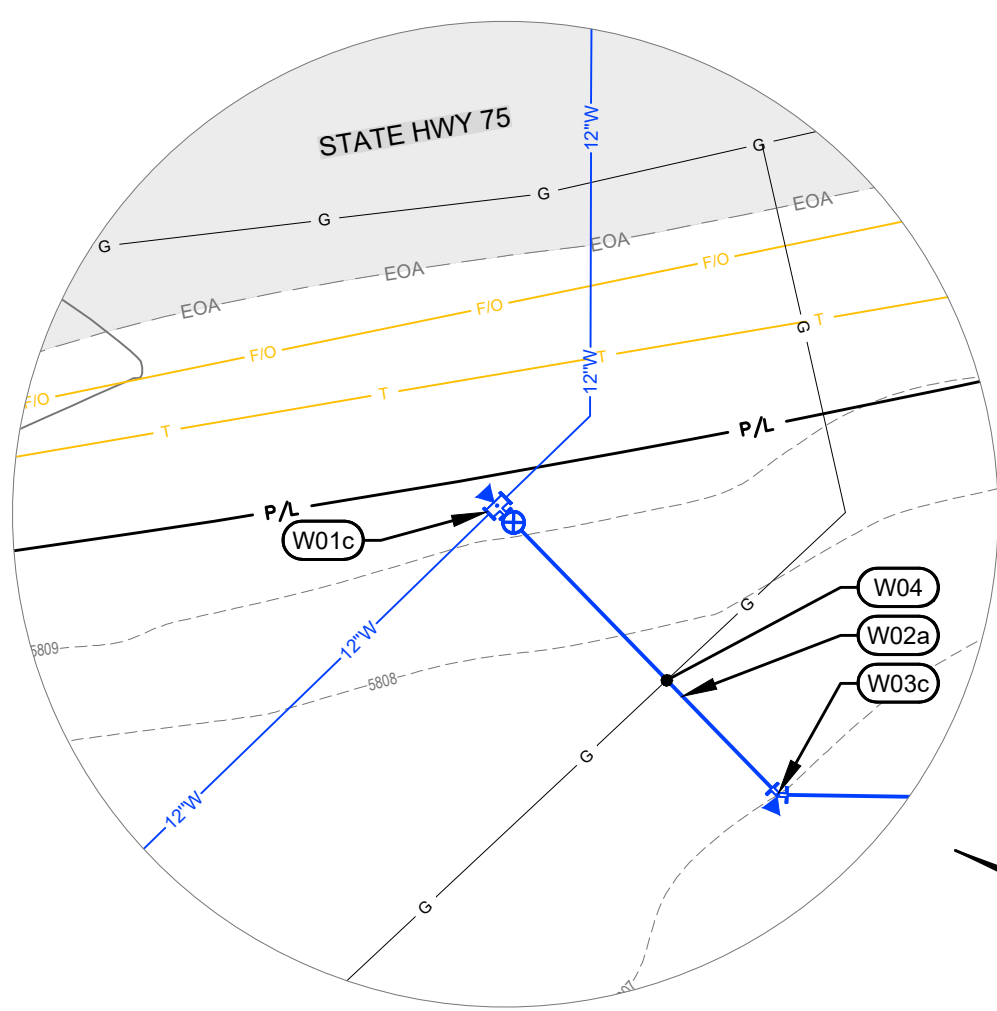
22036-7.0  
PROJECT NUMBER  
**C1.10**



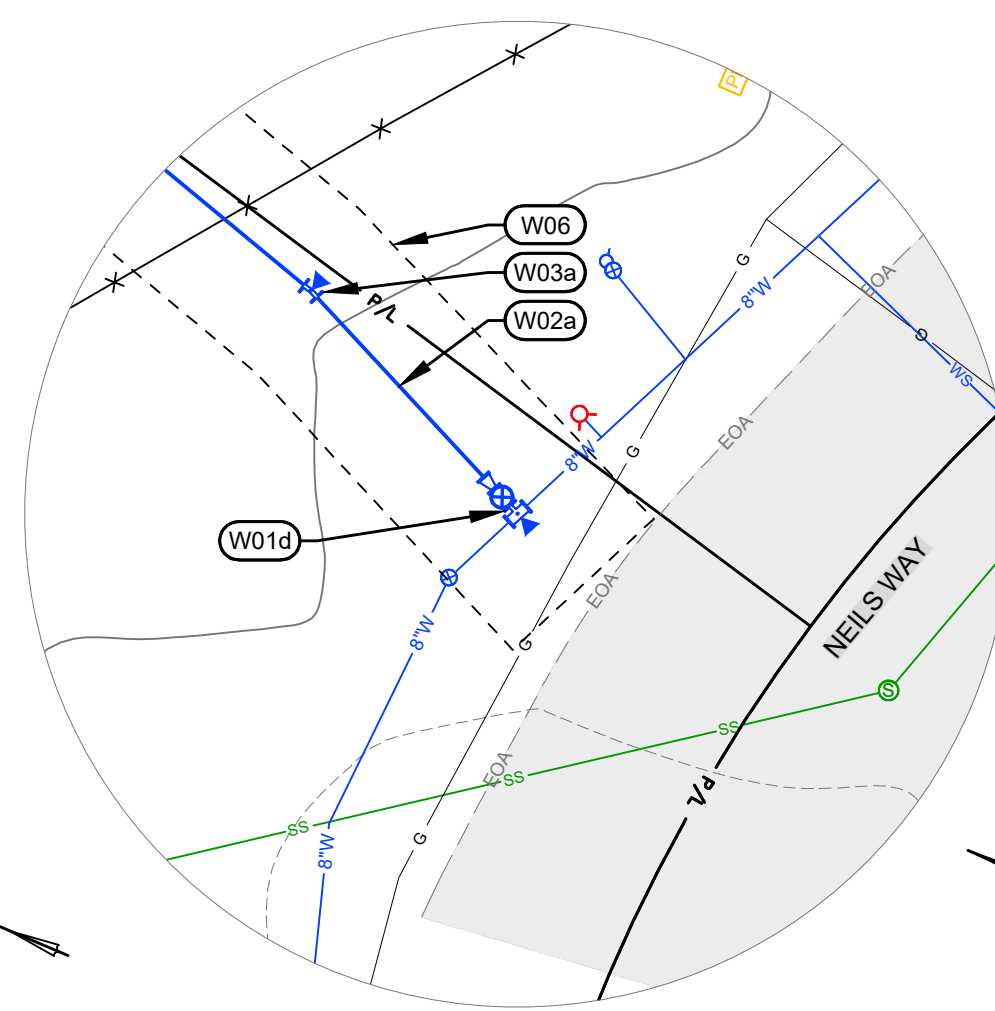
WATER MAIN PLAN



WATER MAIN PLAN



DETAIL "C"  
SCALE: 1" = 10'



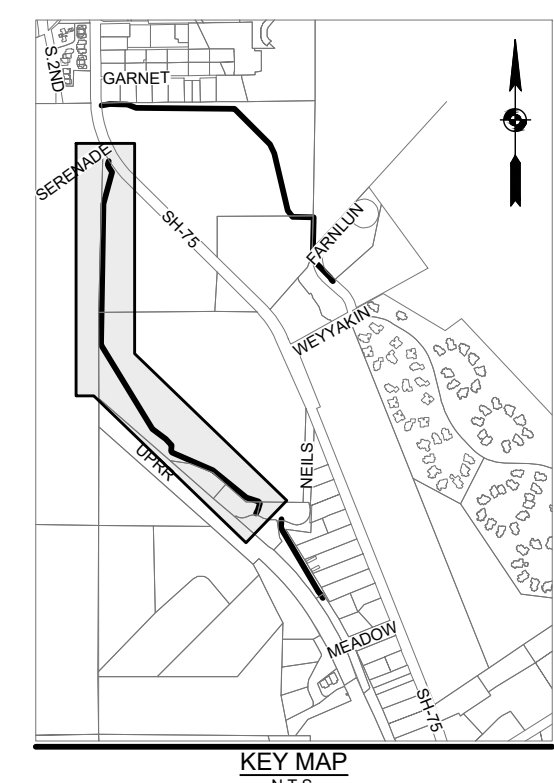
DETAIL "D"  
SCALE: 1" = 10'

**WATER KEY NOTES**

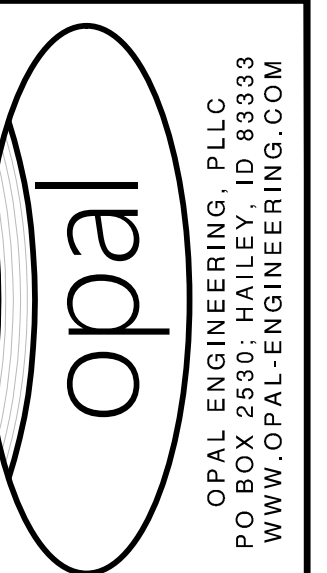
- W01 POINT OF WATER CONNECTION. COORDINATE ACTIVITY WITH THE CITY.
  - c. CONNECT TO EXISTING 12" WATER MAIN. INSTALL 12"x10" STAINLESS STEEL TAPPING SADDLE, 10" GATE VALVE, WITH THRUST PROTECTION. REFER TO DETAIL 1 / C1.00.
  - d. CONNECT TO EXISTING 8" WATER MAIN. INSTALL 8"x8" STAINLESS STEEL TAPPING SADDLE, 8" GATE VALVE, 10"x8" REDUCER WITH THRUST PROTECTION. REFER TO DETAIL 1 / C1.00.
- W02 INSTALL PVC C-900 WATER MAIN. REFER TO DETAIL 2 / C1.00 FOR TRENCHING.
  - a. 10 INCH

- W03 INSTALL DUCTILE IRON FITTINGS WITH THRUST BLOCK. REFER TO DETAIL 1 / C1.00 FOR THRUST PROTECTION.
  - a. 10" 11 1/4" BEND
  - b. 10" 22 1/2" BEND
  - c. 10" 45" BEND
  - d. 10" 90" BEND

- W04 POTABLE/NON-POTABLE CROSSING. SEE ISPWC DETAIL SD-407 AND/OR DETAIL 3 / C1.00 FOR SEPARATION REQUIREMENTS.
- W06 LANDSCAPE REPAIR. THE CONTRACTOR SHALL REPAIR LANDSCAPED AREA AFTER CONSTRUCTION SO THAT IT IS IN A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION. SUCH ITEMS IN MAY INCLUDE, BUT ARE NOT LIMITED TO, LAWN, IRRIGATION, FENCE, LANDSCAPE WALL, ETC.
- W09 WETLANDS CROSSING. CONTRACTOR SHALL BORE UNDER WETLANDS AND CLEAR ITS EDGE BY A MINIMUM OF 10'. REFER TO ISPWC STANDARD DETAIL 307 (SD-307).

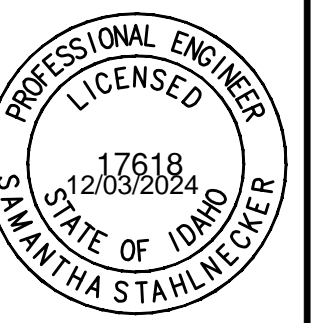


KEY MAP  
N.T.S.



PURPOSE: ISSUE FOR BID / D.E.Q. REVIEW (12-03-2024)

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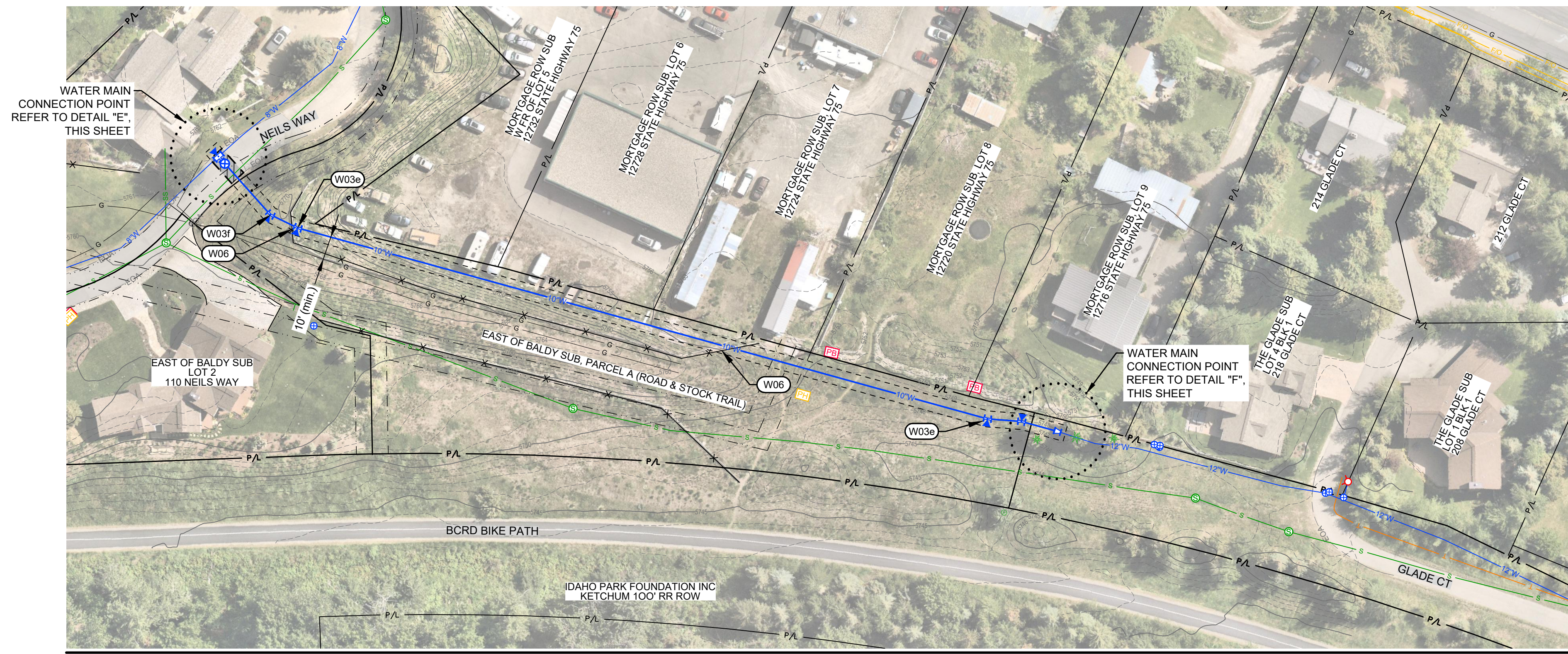


**WATER MAIN PLAN**  
**SERENADE LN TO NEILS WAY**  
 SOUTH KETCHUM REDUNDANT MAIN, PROJECT A  
 PREPARED FOR: CITY OF KETCHUM

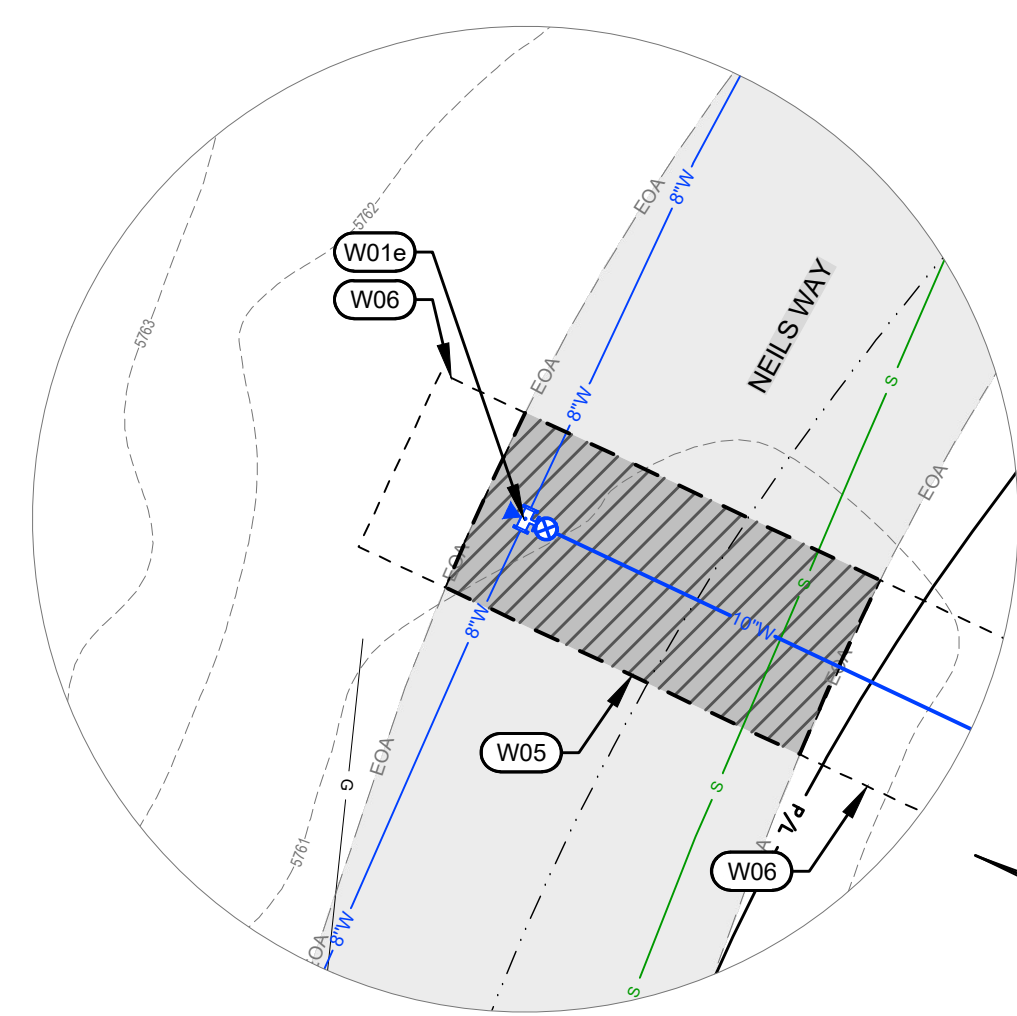
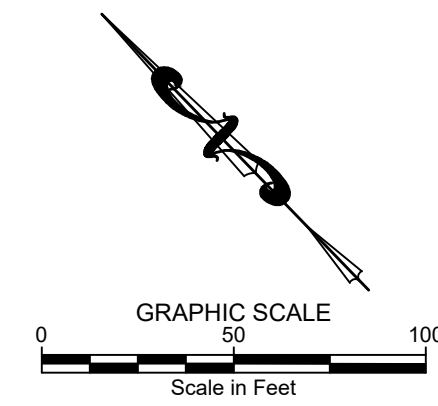
22036-7.0  
PROJECT NUMBER

C1.20

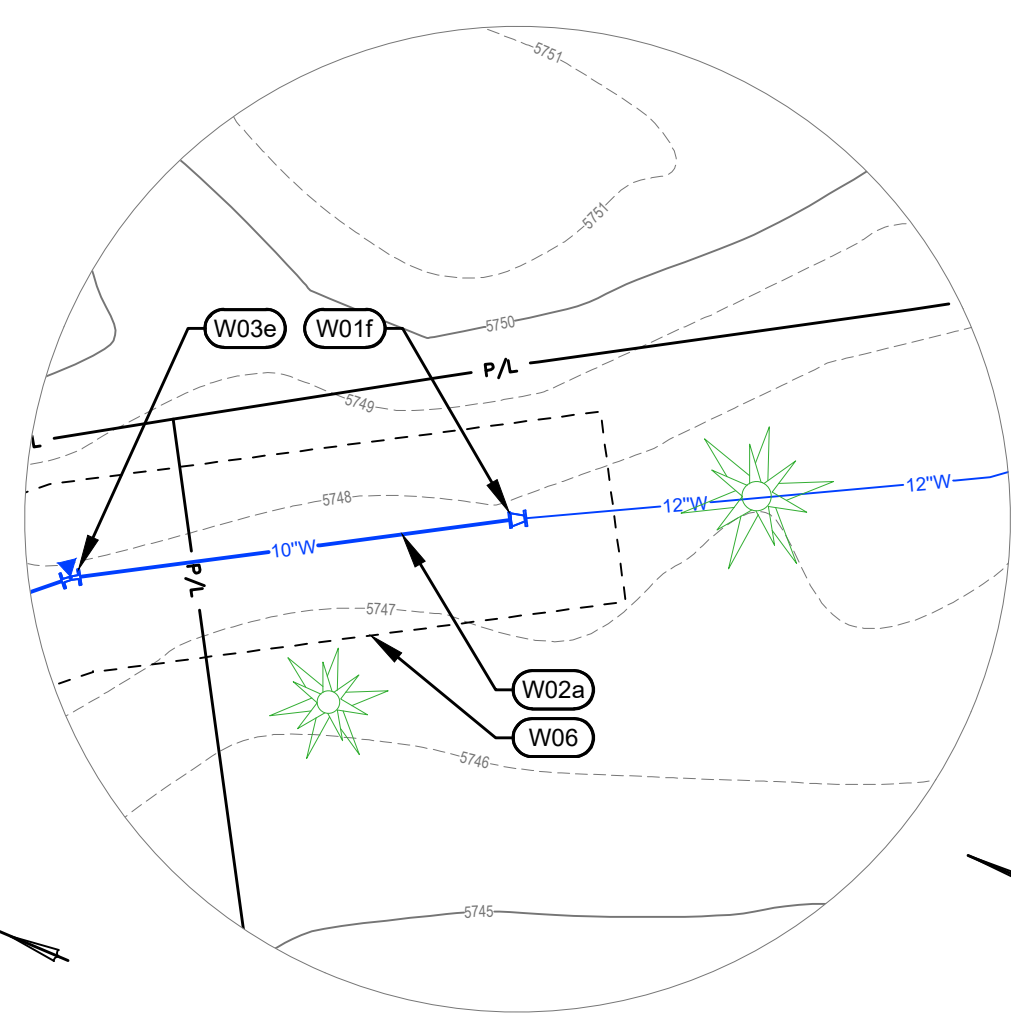
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WATER MAIN PLAN



DETAIL "E"  
SCALE: 1" = 10'

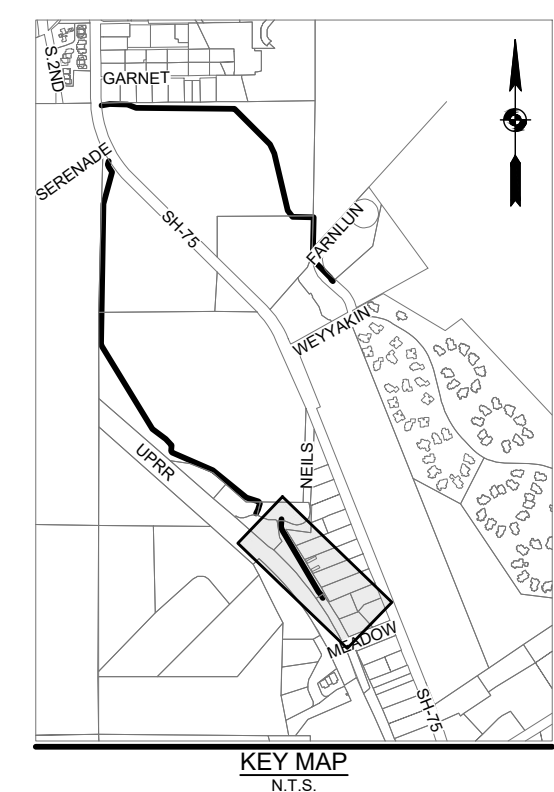


DETAIL "F"  
SCALE: 1" = 10'

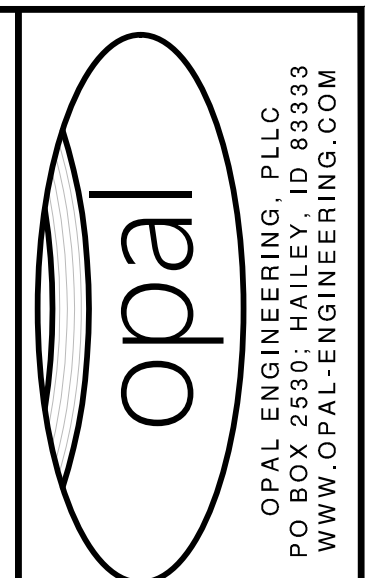
**WATER KEY NOTES**

- W01 POINT OF WATER CONNECTION. COORDINATE ACTIVITY WITH THE CITY.
  - e. CONNECT TO EXISTING 8" WATER MAIN. INSTALL 8"x8" STAINLESS STEEL TAPPING SADDLE, 8" GATE VALVE, WITH THRUST PROTECTION. REFER TO DETAIL 1 / C1.00.
  - f. CONNECT TO EXISTING 12" WATER MAIN. INSTALL 12"x8" D.I. REDUCER WITH THRUST PROTECTION. REFER TO DETAIL 1 / C1.00.
- W02 INSTALL PVC C-900 WATER MAIN. REFER TO DETAIL 2 / C1.00 FOR TRENCHING.
  - a. N/A
  - b. 8 INCH
- W03 INSTALL DUCTILE IRON FITTINGS WITH THRUST BLOCK. REFER TO DETAIL 1 / C1.00 FOR THRUST PROTECTION.
  - a. N/A (10" 11 1/4" BEND)
  - b. N/A (10" 22 1/2" BEND)
  - c. N/A (10" 45" BEND)
  - d. N/A (10" 90" BEND)
  - e. 8" 11 1/4" BEND
  - f. 8" 22 1/2" BEND

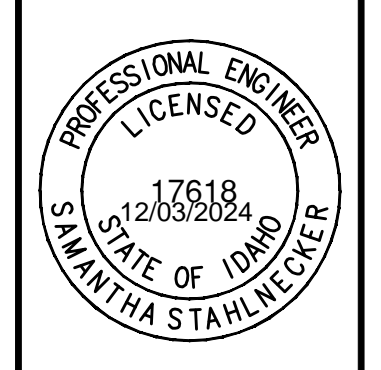
- W04 POTABLE/NON-POTABLE CROSSING. SEE ISPPWC DETAIL SS-407 AND/OR DETAIL 3 / C1.00 FOR SEPARATION REQUIREMENTS.
- W05 SAWCUT ASPHALT AND REPAIR. REFER TO DETAIL 2 / C1.00. CONTRACTOR SHALL DEVELOP SEQUENCING PLAN AND SCHEDULE TO MINIMIZE CLOSURE OF FARNLUN PLACE. COORDINATE WITH CITY STAFF FOR IMPACTED NEIGHBOR NOTIFICATIONS.
- W06 LANDSCAPE REPAIR: THE CONTRACTOR SHALL REPAIR LANDSCAPED AREA AFTER CONSTRUCTION SO THAT IT IS IN A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION. SUCH ITEMS IN MAY INCLUDE, BUT ARE NOT LIMITED TO, LAWN, IRRIGATION, FENCE, LANDSCAPE WALL, ETC.



KEY MAP  
N.T.S.



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**WATER MAIN PLAN**  
**NEILS WAY TO GLADE CT**  
SOUTH KETCHUM REDUNDANT MAIN, PROJECT A  
PREPARED FOR: CITY OF KETCHUM

22036-7.0  
PROJECT NUMBER  
**C1.30**