



CJ Dens Ph. 1



Legend

☐ Taxlots

Notes:

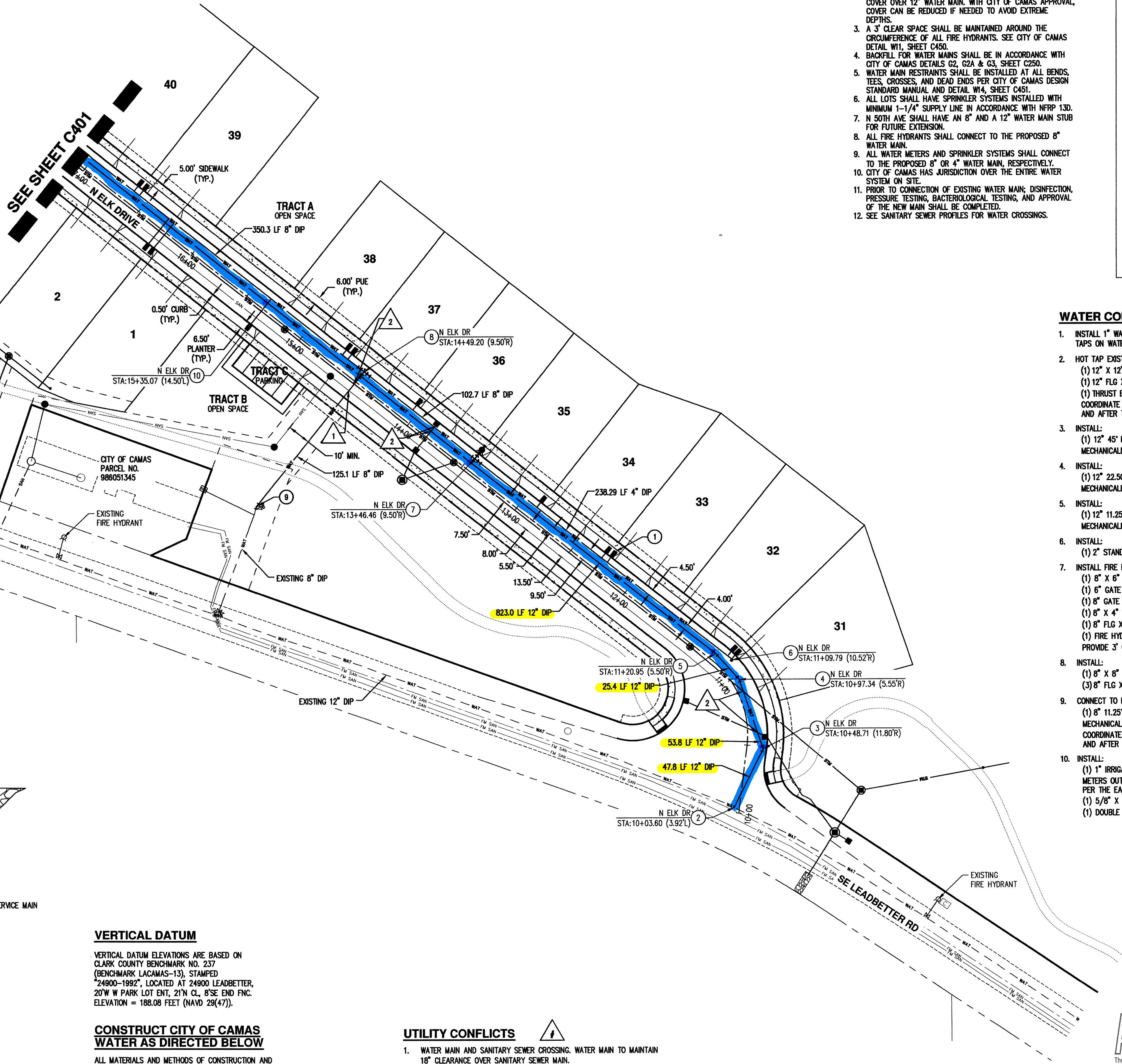
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752.3 0 376.17 752.3 Feet

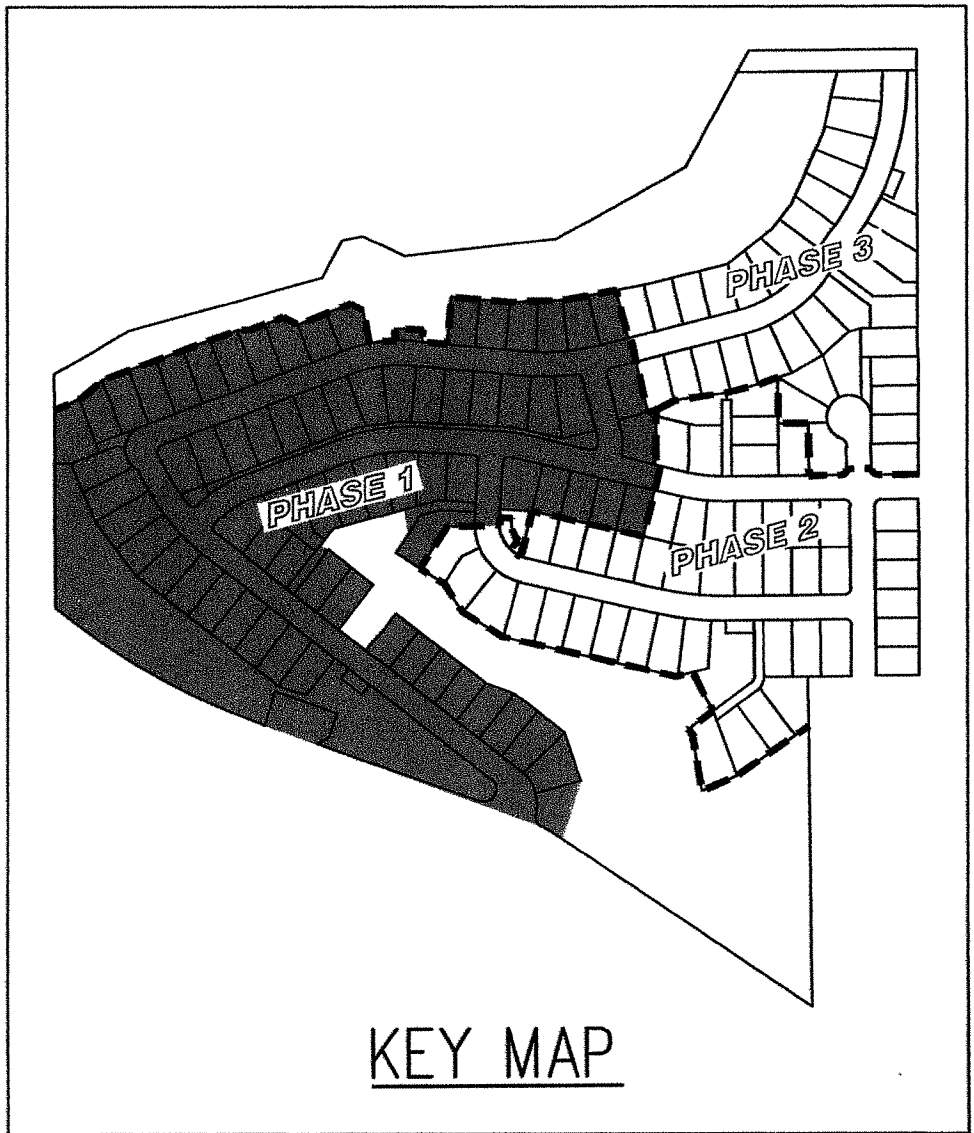
WGS_1984_Web_Mercator_Auxiliary_Sphere
Clark County, WA. GIS - <http://gis.clark.wa.gov>

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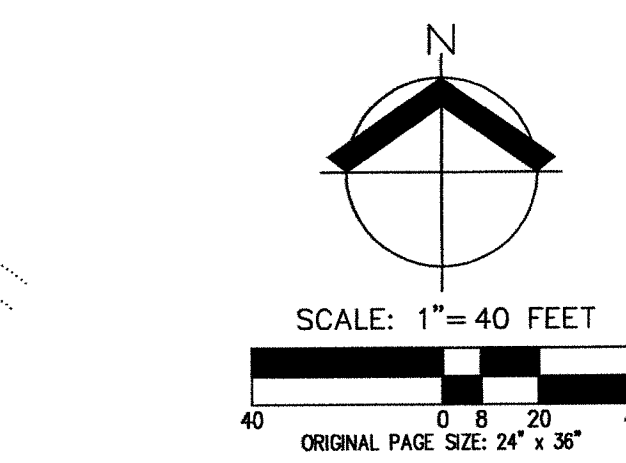
WATER GENERAL NOTES

1. MAINTAIN 10' HORIZONTAL AND 18" VERTICAL SEPARATION BETWEEN SEWER AND WATER MAIN LINES.
2. MAINTAIN MINIMUM 3" COVER OVER 8" WATER MAIN AND 6" COVER OVER 12" WATER MAIN. WITH CITY OF CAMAS APPROVAL, COVER CAN BE REDUCED IF NEEDED TO AVOID EXTREME DEPTHS.
3. A 3' CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF ALL FIRE HYDRANTS. SEE CITY OF CAMAS DETAIL W1, SHEET C450.
4. BACKFILL FOR WATER MAINS SHALL BE IN ACCORDANCE WITH CITY OF CAMAS DETAILS G2, G2A & G3, SHEET C250.
5. WATER MAIN RESTRAINTS SHALL BE INSTALLED AT ALL BENDS, TEES, CROSSES, AND DEAD ENDS PER CITY OF CAMAS DESIGN STANDARD MANUAL AND DETAIL W14, SHEET C451.
6. ALL LOTS SHALL HAVE SPRINKLER SYSTEMS INSTALLED WITH MINIMUM 1-1/4" SUPPLY LINE IN ACCORDANCE WITH NFPA 13D. FOR FUTURE EXTENSION.
7. N 50TH AVE SHALL HAVE AN 8" AND A 12" WATER MAIN STUB FOR FUTURE EXTENSION.
8. ALL FIRE HYDRANTS SHALL CONNECT TO THE PROPOSED 8" WATER MAIN.
9. ALL WATER METERS AND SPRINKLER SYSTEMS SHALL CONNECT TO THE PROPOSED 8" OR 4" WATER MAIN, RESPECTIVELY.
10. CITY OF CAMAS HAS JURISDICTION OVER THE ENTIRE WATER SYSTEM ON SITE.
11. PRIOR TO CONNECTION OF EXISTING WATER MAIN; DISINFECTION, PRESSURE TESTING, BACTERIOLOGICAL TESTING, AND APPROVAL OF THE NEW MAIN SHALL BE COMPLETED.
12. SEE SANITARY SEWER PROFILES FOR WATER CROSSINGS.



WATER CONSTRUCTION KEYED NOTES

1. INSTALL 1" WATER SERVICE PER DETAIL W2, SHEET C450 (TYP). MAINTAIN 18" BETWEEN SERVICE TAPS ON WATER MAIN.
2. HOT TAP EXISTING 12" DIP WATER MAIN. INSTALL:
(1) 12" X 12" STAINLESS STEEL TAPPING ASSEMBLY
(1) 12" FLG X MJ TAPPING BUTTERFLY VALVE WITH MJ RESTRAINT
(1) THRUST BLOCK PER COC DETAIL W15, SHEET C451
COORDINATE TIE-IN ACTIVITIES WITH CITY OF CAMAS 48-HRS MINIMUM PRIOR TO CONSTRUCTION AND AFTER TESTING AND APPROVAL BY THE CITY OF CAMAS.
3. INSTALL:
(1) 12" 45° MJ BEND WITH MJ RESTRAINTS
MECHANICALLY RESTRAIN PIPE 19" EACH SIDE
4. INSTALL:
(1) 12" 22.50° MJ BEND WITH MJ RESTRAINTS
MECHANICALLY RESTRAIN PIPE 4" EACH SIDE.
5. INSTALL:
(1) 12" 11.25° MJ BEND WITH MJ RESTRAINTS
MECHANICALLY RESTRAIN PIPE 4" EACH SIDE.
6. INSTALL:
(1) 2" STANDARD BLOW-OFF ASSEMBLY WITH THRUST BLOCK PER COC DETAIL W8, SHEET C450.
7. INSTALL FIRE HYDRANT
(1) 8" X 6" FLG X SIDE FLG TEE WITH MJ RESTRAINTS.
(1) 6" GATE VALVE, FLG X MJ WITH MJ RESTRAINT.
(1) 8" GATE VALVE, FLG X FLG.
(1) 8" X 4" FLG X MJ REDUCER WITH MJ RESTRAINT.
(1) 8" FLG X MJ ADAPTER WITH MJ RESTRAINT.
(1) FIRE HYDRANT ASSEMBLY PER COC STANDARD DETAIL W11, SEE SHEET C450.
PROVIDE 3' CLEAR SPACE.
8. INSTALL:
(1) 8" X 8" X 8" FLG TEE
(3) 8" FLG X MJ GATE VALVE (ALL DIRECTIONS)
9. CONNECT TO EXISTING 8" DIP WATER MAIN. INSTALL:
(1) 8" 11.25° MJ BEND WITH MJ RESTRAINTS.
MECHANICALLY RESTRAIN PIPE 3" EACH SIDE.
COORDINATE TIE-IN ACTIVITIES WITH CITY OF CAMAS 48-HRS MINIMUM PRIOR TO CONSTRUCTION AND AFTER TESTING AND APPROVAL BY THE CITY OF CAMAS.
10. INSTALL:
(1) 1" IRRIGATION WATER SERVICE AND METER BOX PER COC DETAIL W2, SHEET C450.
METERS OUTSIDE OF ROW TO BE PLACED WITHIN EASEMENTS DEDICATED TO THE CITY OF CAMAS PER THE EASEMENT DETAILS, SHEET C451.
(1) 5/8" X 3/4" METER.
(1) DOUBLE CHECK VALVE ASSEMBLY PER COC DETAIL IR13, SHEET C451.



APPROVED

811

Know what's below. Call before you dig.
Camas Public Works Department Checked By: AA Date: 4/4/2023

AKS
AKS ENGINEERING & FORESTRY, LLC
9800 NE 26TH AVE, STE 2520
VANCOUVER, WA 98682
360.882.0419
WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

CJ DENS SUBDIVISION
PHASE 1

WASHINGTON

CAMAS

APN 178172000, 178236000, 177906000
NW 1/4 & SW 1/4 S35, NE 1/4 & SE 1/4 S34, T2N, R2E W.M.

DESIGNED BY: CJS
DRAWN BY: JRF
MANAGED BY: JMM
CHECKED BY: JMM
DATE: 11-8-21

REVISIONS

JOB NUMBER
5504

SHEET
C400

WATER GENERAL NOTES

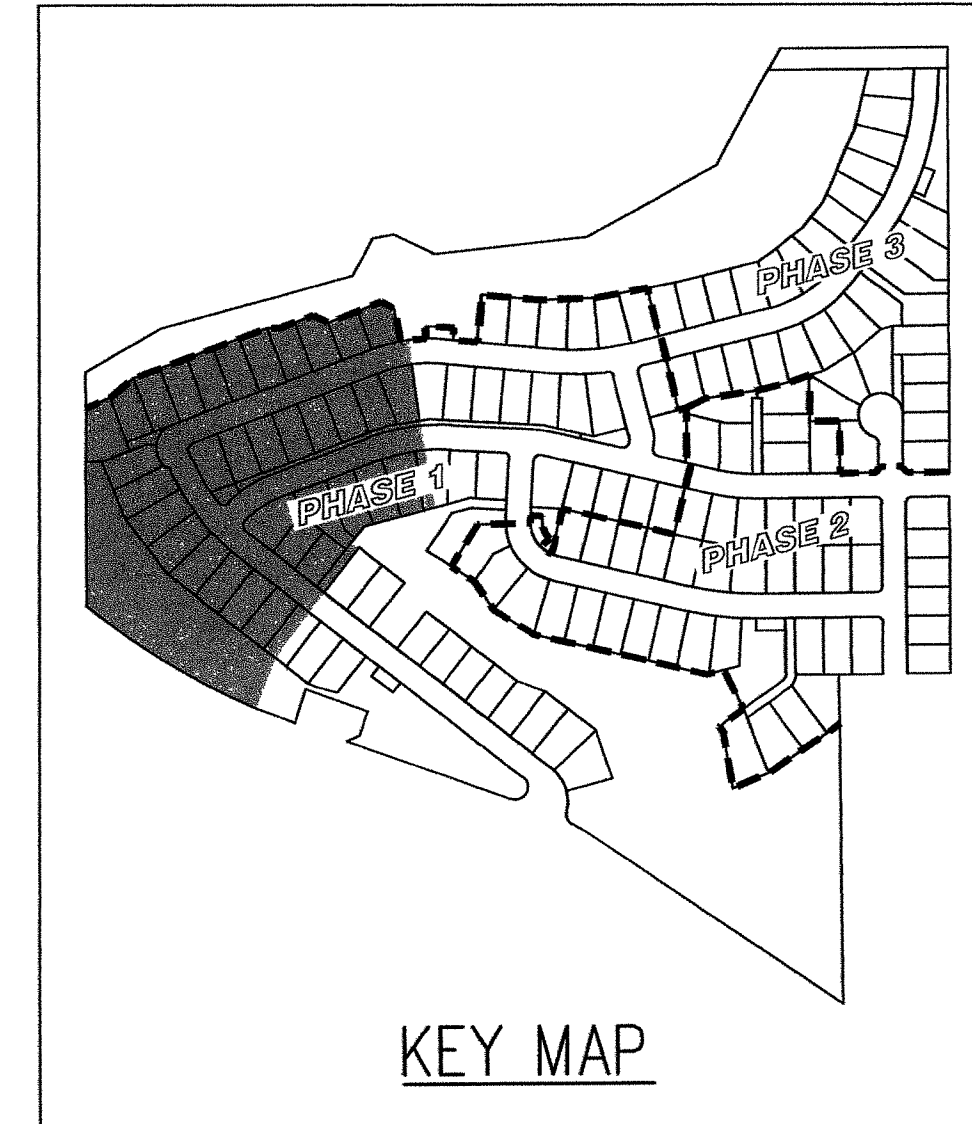
1. MAINTAIN 10' HORIZONTAL AND 18" VERTICAL SEPARATION BETWEEN SEWER AND WATER MAIN LINES.
2. MAINTAIN MINIMUM 3" COVER OVER 8" WATER MAIN AND 6" COVER OVER 12" WATER MAIN. WITH CITY OF CAMAS APPROVAL, COVER CAN BE REDUCED IF NEEDED TO AVOID EXTREME DEPTHS.
3. A 3' CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF ALL FIRE HYDRANTS. SEE CITY OF CAMAS DETAIL W11, SHEET C450.
4. BACKFILL FOR WATER MAINS SHALL BE IN ACCORDANCE WITH CITY OF CAMAS DETAILS G2, G2A & G3, SHEET C250.
5. WATER MAIN RESTRAINTS SHALL BE INSTALLED AT ALL BENDS, TEES, CROSSES, AND DEAD ENDS PER CITY OF CAMAS DESIGN STANDARD MANUAL AND DETAIL W14, SHEET C451.
6. ALL LOTS SHALL HAVE SPRINKLER SYSTEMS INSTALLED WITH MINIMUM 1-1/4" SUPPLY LINE IN ACCORDANCE WITH NFPA 130.
7. N 50TH AVE SHALL HAVE AN 8" AND A 12" WATER MAIN STUB FOR FUTURE EXTENSION.
8. ALL FIRE HYDRANTS SHALL CONNECT TO THE PROPOSED 8" WATER MAIN.
9. ALL WATER METERS AND SPRINKLER SYSTEMS SHALL CONNECT TO THE PROPOSED 8" OR 4" WATER MAIN, RESPECTIVELY.
10. CITY OF CAMAS HAS JURISDICTION OVER THE ENTIRE WATER SYSTEM ON SITE.
11. PRIOR TO CONNECTION OF EXISTING WATER MAIN; DISINFECTION, PRESSURE TESTING, BACTERIOLOGICAL TESTING, AND APPROVAL OF THE NEW MAIN SHALL BE COMPLETED.
12. SEE SANITARY SEWER PROFILES FOR WATER CROSSINGS.

VERTICAL DATUM

VERTICAL DATUM ELEVATIONS ARE BASED ON CLARK COUNTY BENCHMARK NO. 237 (BENCHMARK LACAMAS-13), STAMPED "24900-1992", LOCATED AT 24900 LEADBETTER, 20'W W PARK LOT ENT, 21'N CL, 8'SE END FNC. ELEVATION = 188.08 FEET (NAVD 29(47)).

CONSTRUCT CITY OF CAMAS WATER AS DIRECTED BELOW

ALL MATERIALS AND METHODS OF CONSTRUCTION AND INSTALLATION FOR WATER SHALL CONFORM TO CITY OF CAMAS "DESIGN STANDARD MANUAL". CONSTRUCTION SHALL BE AS PER THE MOST CURRENT STANDARD DETAILS CONTAINED THEREIN.



WATER CONSTRUCTION KEYED NOTES (1)

1. INSTALL 1" WATER SERVICE PER DETAIL W2, SHEET C450 (TYP). MAINTAIN 18" BETWEEN SERVICE TAPS ON WATER MAIN.
2. INSTALL:
 - (1) 8" 11.25' MJ BEND WITH MJ RESTRAINTS
 - MECHANICALLY RESTRAIN PIPE 3' EACH SIDE
3. INSTALL:
 - (1) 8" MJ X 6" FLG TEE
 - (1) FIRE HYDRANT ASSEMBLY PER COC DETAIL W11, SHEET C450
 - (1) 6" FLG X MJ GATE VALVE
 - (1) MECHANICALLY RESTRAIN ALL JOINTS FROM TEE TO HYDRANT
4. INSTALL:
 - (1) 8" X 8" X 8" FLG TEE
 - (3) 8" FLG X MJ GATE VALVE (ALL DIRECTIONS)
5. INSTALL:
 - (1) 12" 11.25' MJ BEND WITH MJ RESTRAINTS
 - MECHANICALLY RESTRAIN PIPE 4' EACH SIDE.
6. INSTALL:
 - (1) 8" 45' MJ BEND WITH MJ RESTRAINTS
 - MECHANICALLY RESTRAIN PIPE 13' EACH SIDE.
7. INSTALL:
 - (1) 12" 90° MJ BEND WITH MJ RESTRAINTS
 - MECHANICALLY RESTRAIN PIPE 19' EACH SIDE.
8. INSTALL:
 - (1) 1" IRRIGATION WATER SERVICE AND METER BOX PER COC DETAIL W2, SHEET C450.
 - (1) 5/8" X 3/4" METER.
 - (1) DOUBLE CHECK VALVE ASSEMBLY PER COC DETAIL W13, SHEET C451.
9. BEGIN 258.00' RADIUS DEFLECTION.
10. END 258.00' RADIUS DEFLECTION.
11. BEGIN 439.48' RADIUS DEFLECTION.
12. END 439.48' RADIUS DEFLECTION.
13. BEGIN 444.50' RADIUS DEFLECTION.
14. END 444.50' RADIUS DEFLECTION.
15. BEGIN 310.51' RADIUS DEFLECTION.
16. BEGIN 305.50' RADIUS DEFLECTION.
17. BEGIN 408.00' RADIUS DEFLECTION.
18. INSTALL:
 - (1) WATER SAMPLING STATION AND ASSOCIATED BACKFLOW ASSEMBLY PER CITY OF CAMAS DETAIL W22, SHEET C451.

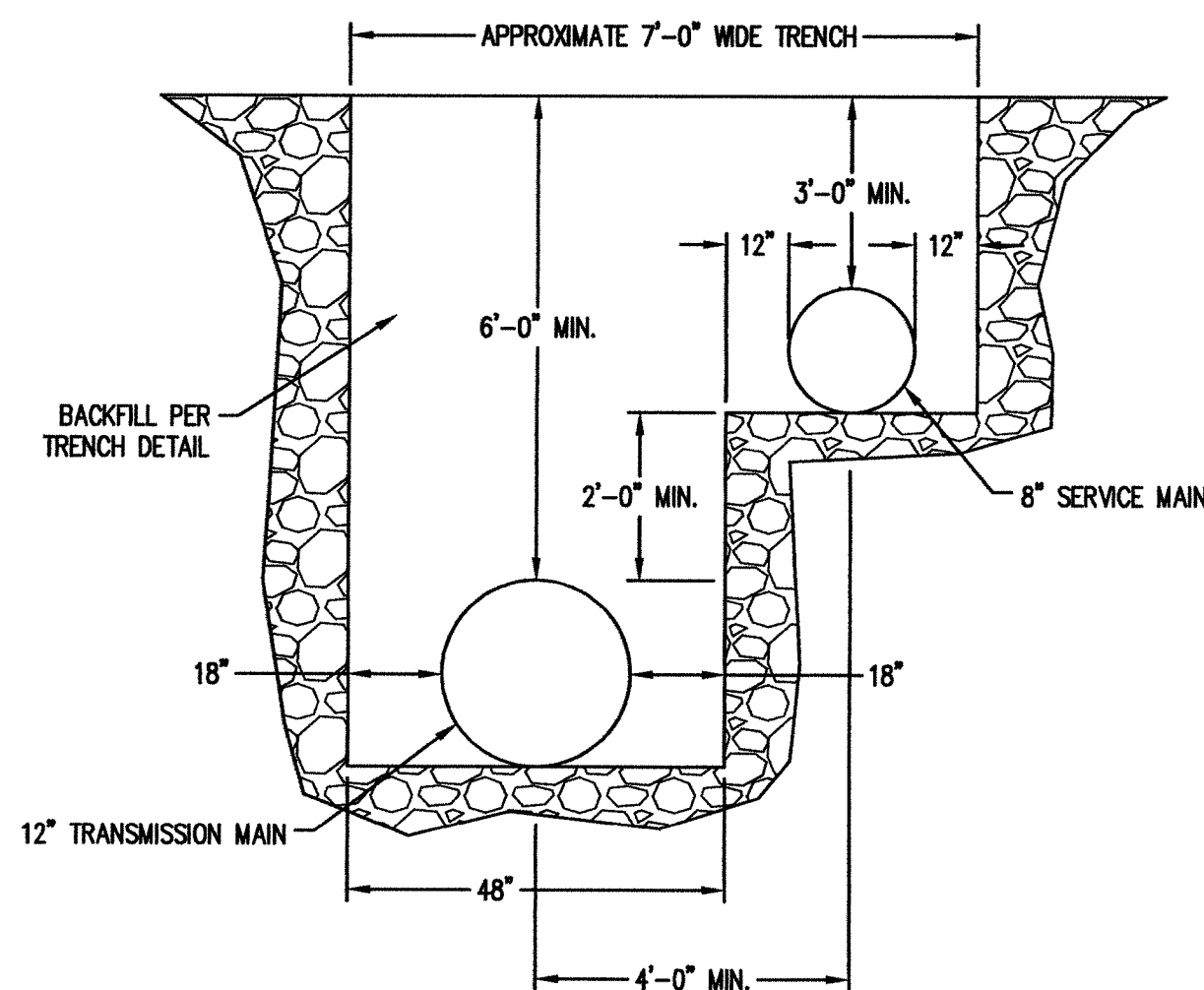
UTILITY CONFLICTS

1. WATER MAIN AND SANITARY SEWER CROSSING. WATER MAIN TO MAINTAIN 18" CLEARANCE OVER SANITARY SEWER MAIN.
2. WATER MAIN AND STORM MAIN CROSSING. WATER MAIN TO MAINTAIN 6" CLEARANCE AT STORM MAIN.

SHARED TRANSMISSION/SERVICE LINES

TRENCH DETAIL

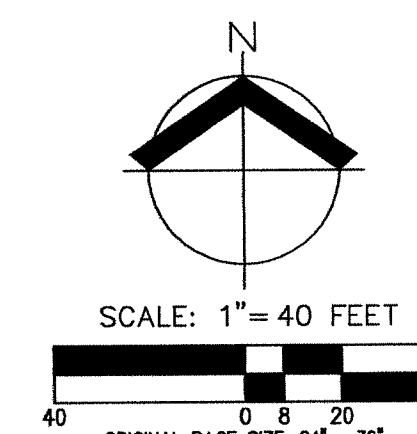
NTS



APPROVED

The approval of the plans and specifications shall not prevent the City Engineer from thereafter requiring the correction of errors in said plans and specifications or from preventing construction operations being carried on thereunder when in violation of applicable codes or any other ordinance of the City of Camas.

Camas Public Works Department Checked By: AA Date 4/4/2022



AKS
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**ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE**

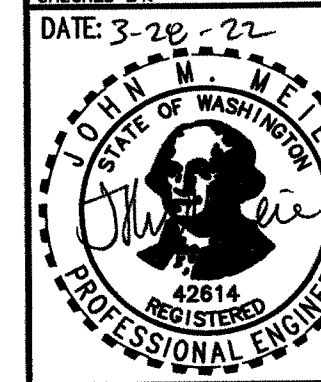
**CJ DENS SUBDIVISION
PHASE 1**

WASHINGTON

CAMAS

WATER PLAN

DESIGNED BY: CJS
DRAWN BY: JRF
MANAGED BY: JMM
CHECKED BY: JMM



REVISIONS

JOB NUMBER
5504

SHEET

C401

WATER GENERAL NOTES

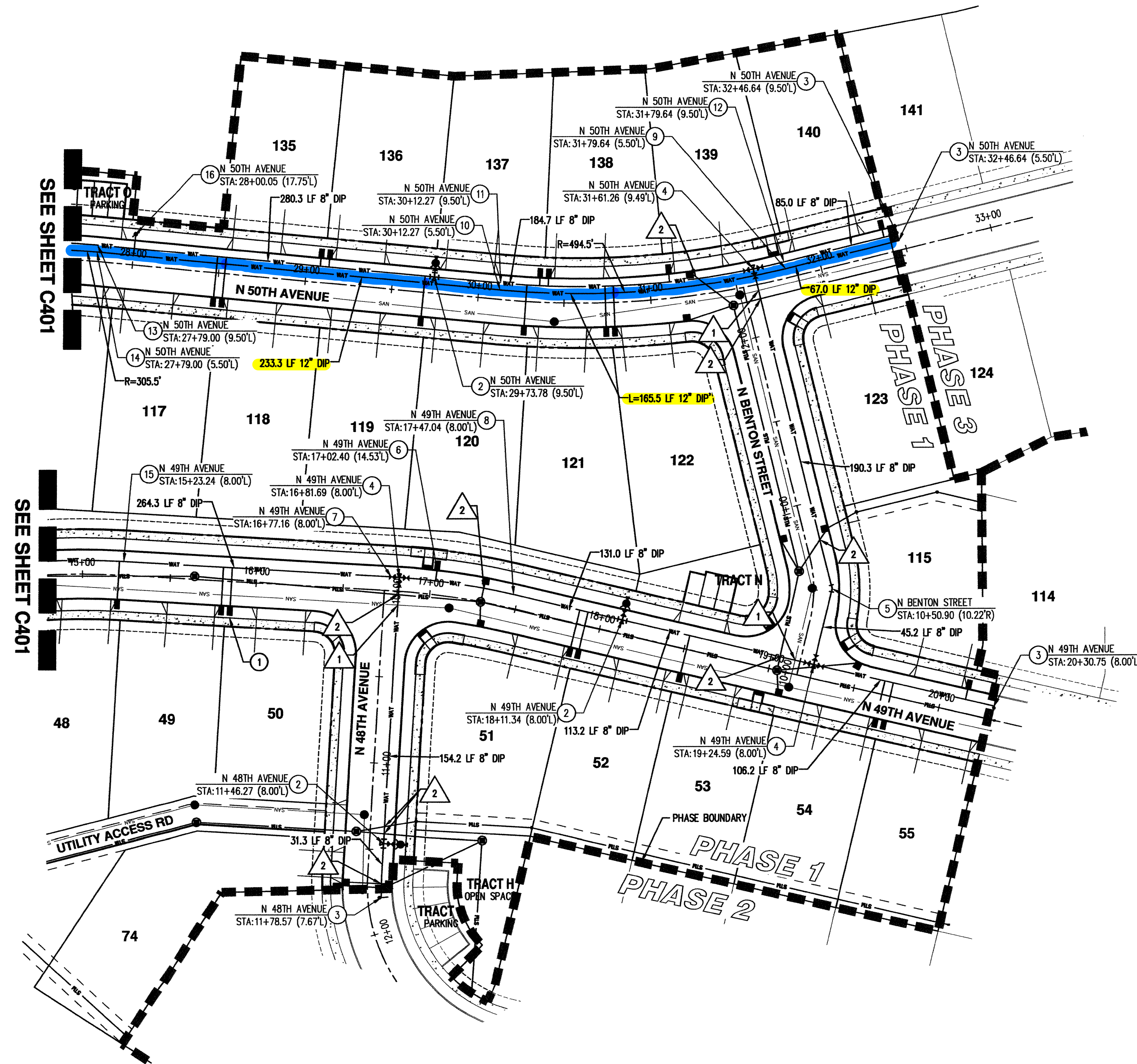
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4. BACKFILL FOR WATER MAINS SHALL BE IN ACCORDANCE WITH CITY OF CAMAS DETAILS G2, G2A & G3, SHEET C250.
5. WATER MAIN RESTRAINTS SHALL BE INSTALLED AT ALL BENDS, TEES, CROSSES, AND DEAD ENDS PER CITY OF CAMAS DESIGN STANDARD MANUAL AND DETAIL W14, SHEET C451.
6. ALL LOTS SHALL HAVE SPRINKLER SYSTEMS INSTALLED WITH MINIMUM 1-1/4" SUPPLY LINE IN ACCORDANCE WITH NFPA 13D.
7. N 50TH AVE SHALL HAVE AN 8" AND A 12" WATER MAIN STUB FOR FUTURE EXTENSION.
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VERTICAL DATUM

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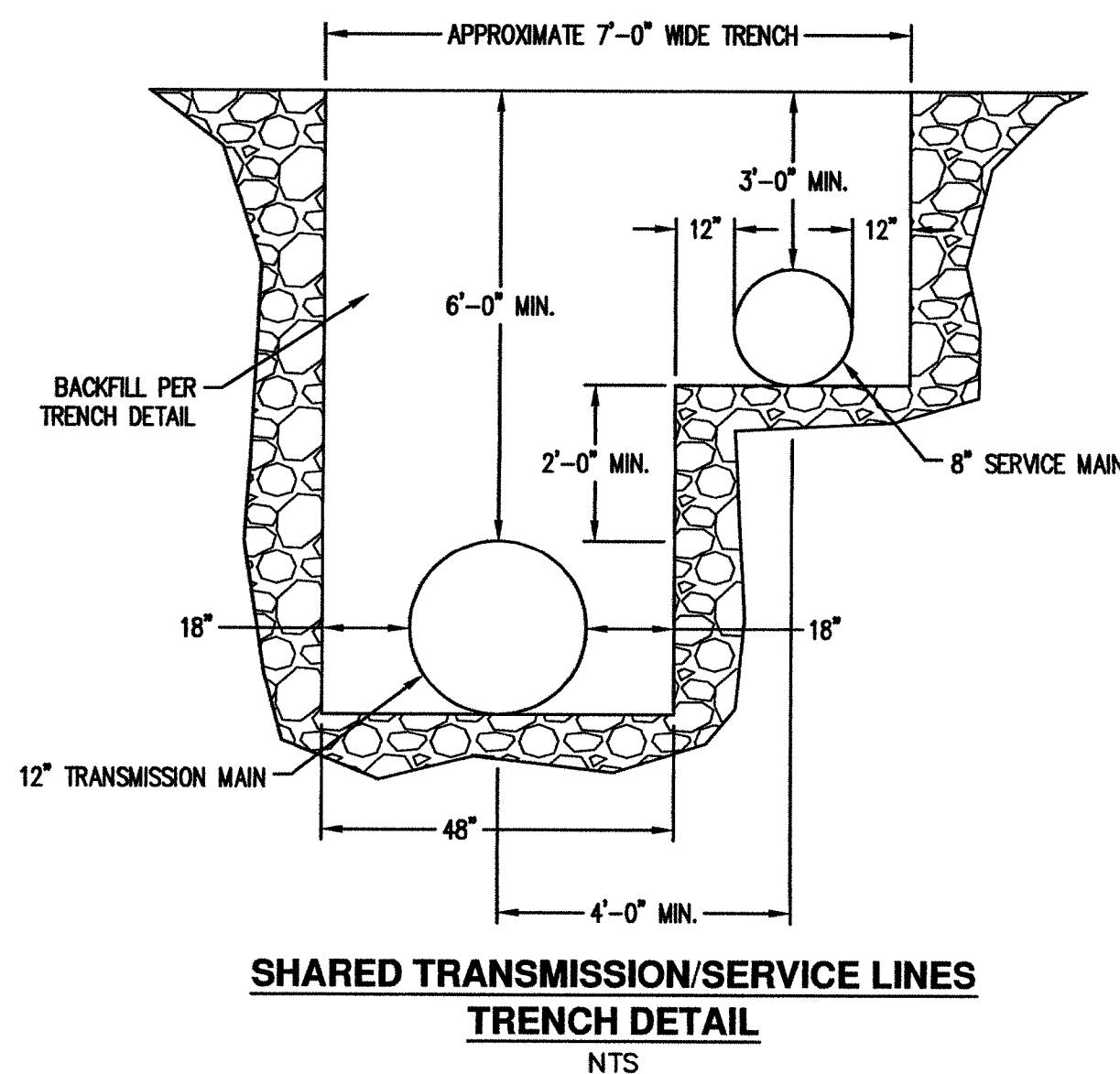
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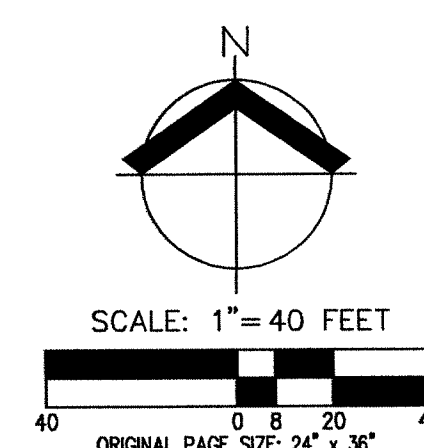
WATER CONSTRUCTION KEYED NOTES

1. INSTALL 1" WATER SERVICE PER DETAIL W2, SHEET C450 (TYP). MAINTAIN 18" BETWEEN SERVICE TAPS ON WATER MAIN.
2. INSTALL:
 - (1) 8" MJ X 6" FLG TEE
 - (1) FIRE HYDRANT ASSEMBLY PER COC DETAIL W11, SHEET C450
 - (1) 6" FLG X MJ GATE VALVE
 - (1) MECHANICALLY RESTRAIN ALL JOINTS FROM TEE TO HYDRANT.
3. INSTALL:
 - (1) 2" TEMPORARY BLOWOFF PER COC DETAIL W8 SHEET C450.
4. INSTALL:
 - (1) 8" X 8" X 8" FLG TEE
 - (3) 8" FLG X MJ GATE VALVE (ALL DIRECTIONS)
5. INSTALL:
 - (1) 8" 22.50' MJ BEND WITH MJ RESTRAINTS.
 - (1) MECHANICALLY RESTRAIN PIPE 6" EACH SIDE
6. INSTALL:
 - (1) 1" IRRIGATION WATER SERVE AND METER BOX PER COC DETAIL W2, SHEET C450.
 - (1) 5/8" X 3/4" METER.
 - (1) DOUBLE CHECK VALVE ASSEMBLY PER COC DETAIL IR13, SHEET C451.
7. BEGIN 408.00' RADIUS DEFLECTION.
8. END 408.00' RADIUS DEFLECTION.
9. BEGIN 494.50' RADIUS DEFLECTION.
10. END 494.50' RADIUS DEFLECTION.
11. BEGIN 489.50' RADIUS DEFLECTION.
12. END 489.50' RADIUS DEFLECTION.
13. END 310.51' RADIUS DEFLECTION.
14. END 305.50' RADIUS DEFLECTION.
15. END 408.00' RADIUS DEFLECTION.
16. INSTALL:
 - (1) 2" AIR / VACUUM RELIEF VALVE PER COC DETAIL W16, SHEET C451.



UTILITY CONFLICTS

1. WATER MAIN AND SANITARY SEWER CROSSING. WATER MAIN TO MAINTAIN 18" CLEARANCE OVER SANITARY SEWER MAIN.
2. WATER MAIN AND STORM MAIN CROSSING. WATERMAIN TO MAINTAIN 6" CLEARANCE AT STORM MAIN.



APPROVED

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Camas Public Works Department Checked By AA Date 4/14/2022



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APN 178172000, 178236000, 177906000
NW 1/4 & SW 1/4 S35, NE 1/4 & SE 1/4 S4, T2N, R3E, W4E

DESIGNED BY: CJS

DRAWN BY: JRF

MANAGED BY: JMM

CHECKED BY: JMM

DATE: 11-8-21

REVISIONS

JOB NUMBER
5504

SHEET
C402

WATER PLAN



04/05/2023