



Purchasing Division

## **ADDENDUM NO. 2**

**DATE: March 6, 2019**  
**FROM: City of Grand Junction Purchasing Division**  
**TO: All Offerors**  
**RE: Raw Water Irrigation Supply and Waterline Replacement IFB-4611-19-DH**

Offerors responding to the above referenced solicitation are hereby instructed that the requirements have been clarified, modified, superseded and supplemented as to this date as hereinafter described.

Please make note of the following clarifications:

1. **The Responses Due date and time have been extended to April 2, 2019 prior to 3:30pm**

2. Section 3.7 IFB Tentative Time Schedule has been updated/modified as follows:

### **IFB TENTATIVE TIME SCHEDULE:**

Invitation For Bids available	February 28, 2019
Mandatory Pre-Bid Meeting	March 12, 2019
Inquiry deadline, no questions after this date	March 20, 2019
Addendum Posted	March 25, 2019
Submittal deadline for proposals	April 2, 2019
City Council Approval	May 1, 2019
Notice of Award & Contract execution	May 6, 2019
Bonding & Insurance Cert due	May 13, 2019
Preconstruction meeting	TBD
Work begins no later than	TBD
Final Completion	November 15, 2019

### Holidays:

Memorial Day	May 27, 2019
Independence Day	July 4, 2019
Labor Day	September 2, 2019
Veteran's Day	November 11, 2019

3. See attached updated Construction Drawings.

4. The City would like to remind all Contractors, Sub-Contractors, Vendors, Suppliers, Manufacturers, Service Providers, etc. that (with the exception of Pre-Bid or Site Visit Meetings) all questions, inquiries, comments, or communication pertaining to any formal solicitation (whether process, specifications, scope, etc.) must be directed (in writing) to the Purchasing Agent assigned to the project, or Purchasing Division. Direct communication with the City assigned Project Managers/Engineers is not appropriate for public procurement, and may result in disqualification.

The original solicitation for the project noted above is amended as noted.

All other conditions of subject remain the same.

Respectfully,

A handwritten signature in black ink, appearing to read "Duane Hoff Jr.", written in a cursive style.

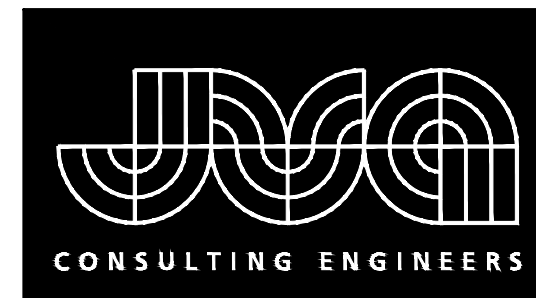
Duane Hoff Jr., Senior Buyer  
City of Grand Junction, Colorado

# CITY OF GRAND JUNCTION RAW WATER IRRIGATION SUPPLY AND WATERLINE REPLACEMENT GRAND JUNCTION, COLORADO BID DOCUMENTS

## CONTACTS

<b>OWNER:</b>	CITY OF GRAND JUNCTION 250 NORTH 5TH STREET GRAND JUNCTION, CO 81501	JOHN EKLUND, P.E. (970) 244-1558 JOHNE@GJ.CITY.ORG
<b>ENVIRO ENGINEER:</b>	JVA, INC 817 COLORADO AVENUE GLENWOOD SPRINGS, CO 81601	COOPER BEST, P.E. (303) 444-1951 CBEST@JVAJVA.COM
<b>TRAFFIC AND SIGNALS:</b>	CITY OF GRAND JUNCTION 250 NORTH 5TH STREET GRAND JUNCTION, CO 81501 ENGINEERING PROGRAM SUP	PAUL JAGIM (970) 244-1542 PAULJ@GJ.CITY.ORG
<b>SURVEYOR:</b>	CITY OF GRAND JUNCTION 250 NORTH 5TH STREET GRAND JUNCTION, CO 81501	MIKE GRIZENKO (970) 241-4722 MIKEG@GJ.CITY.COM
<b>GEOTECHNICAL:</b>	HUDDLESTON-BERRY ENGINEERING & TESTING LLC 640 WHITE AVENUE, UNIT B GRAND JUNCTION, CO 81501	MICHAEL A BERRY, P.E. VICE PRESIDENT OF ENGINEERING (970) 255-8005 PH (970) 255-6818 FAX MBERRY@HUDDLESTONBERRY.COM
<b>CDOT:</b>	CDOT GRAND JUNCTION, CO 81501	SEAN YEATES RESIDENT ENGINEER, TRAFFIC AND SAFETY (970) 683-6276 PH SEAN.YEATES@STATE.CO.US
<b>XCEL (ELECTRIC):</b>	XCEL ENERGY 2538 BLICHMAN AVE GRAND JUNCTION, CO 81505	STEVE PIBURN, UNIT MANAGER (970) 244-2664 PH STEPHEN.R.PIBURN@XCELENERGY.COM
<b>XCEL (GAS):</b>	XCEL ENERGY 2538 BLICHMAN AVE GRAND JUNCTION, CO 81505	SARAH BARRICAU, UNIT MANAGER (970) 244-2656 PH @XCELENERGY.COM
<b>CDOT:</b>	COLORADO DEPARTMENT OF TRANSPORTATION UTILITY COORDINATOR UTILITIES	JOE CARTER (970) 683-6209 JOSEPH.CARTER@STATE.CO.US
<b>CDOT:</b>	COLORADO DEPARTMENT OF TRANSPORTATION STAFF BRIDGE ENGINEER STAFF BRIDGE	MIKE MOHSENI (303) 512-4300 MANSOUR.MOHSENI@STATE.CO.US
<b>CDOT:</b>	COLORADO DEPARTMENT OF TRANSPORTATION STAFF BRIDGE ENGINEER STAFF BRIDGE	SAM ABRAHAM (303) 512-4300 SAM.ABRAHAM@STATE.CO.US
<b>USACE:</b>	PROJECT MANAGER COLORADO WEST SECTION	TRAVIS MORSE (970) 243-1199 W.TRAVIS.MORSE@USACE.ARMY.MIL

<b>UTILITY:</b>	GRAND VALLEY IRRIGATION CO MANAGER	CHARLIE GUENTHER (970) 242-2762 CHARLIEG@SPYNET.COM
<b>UTILITY:</b>	SPECTRUM CABLE TV // INTERNET MANAGER	JEFF VALDEZ (970) 245-8750 JEFF.VALDEZ@CHARTER.COM
<b>UTILITY:</b>	CENTURY LINK TELECOMMUNICATION ENGINEER	CHRIS JOHNSON (970) 244-4311 CHRIS.JOHNSON@CENTURYLINK.COM
<b>UTILITY:</b>	UTE WATER CONSERVANCY WATER SUPERVISOR	JUSTIN BATES (970) 242-7291 JBATES@UTEWATER.ORG
<b>UTILITY:</b>	XCEL ENERGY ELECTRIC UNIT MANAGER	STEVE PIBURN (970) 244-2664 STEPHEN.R.PIBURN@XCELENERGY.COM
<b>UTILITY:</b>	XCEL ENERGY GAS UNIT MANAGER	SARAH BARRICAU (970) 244-2656 SARAH.BARRICAU@XCELENERGY.COM
<b>UTILITY:</b>	REDLANDS WATER AND POWER IRRIGATION SUPERINTENDENT	KEVIN JONES (970) 243-2173 REDLANDSWP@BRESNAN.NET
<b>UTILITY:</b>	ORCHARD MESA IRRIGATION DISTRICT DISTRICT MANAGER	MAX SCHMIDT (970) 464-7885 MAX@OMIRRIGATION.COM

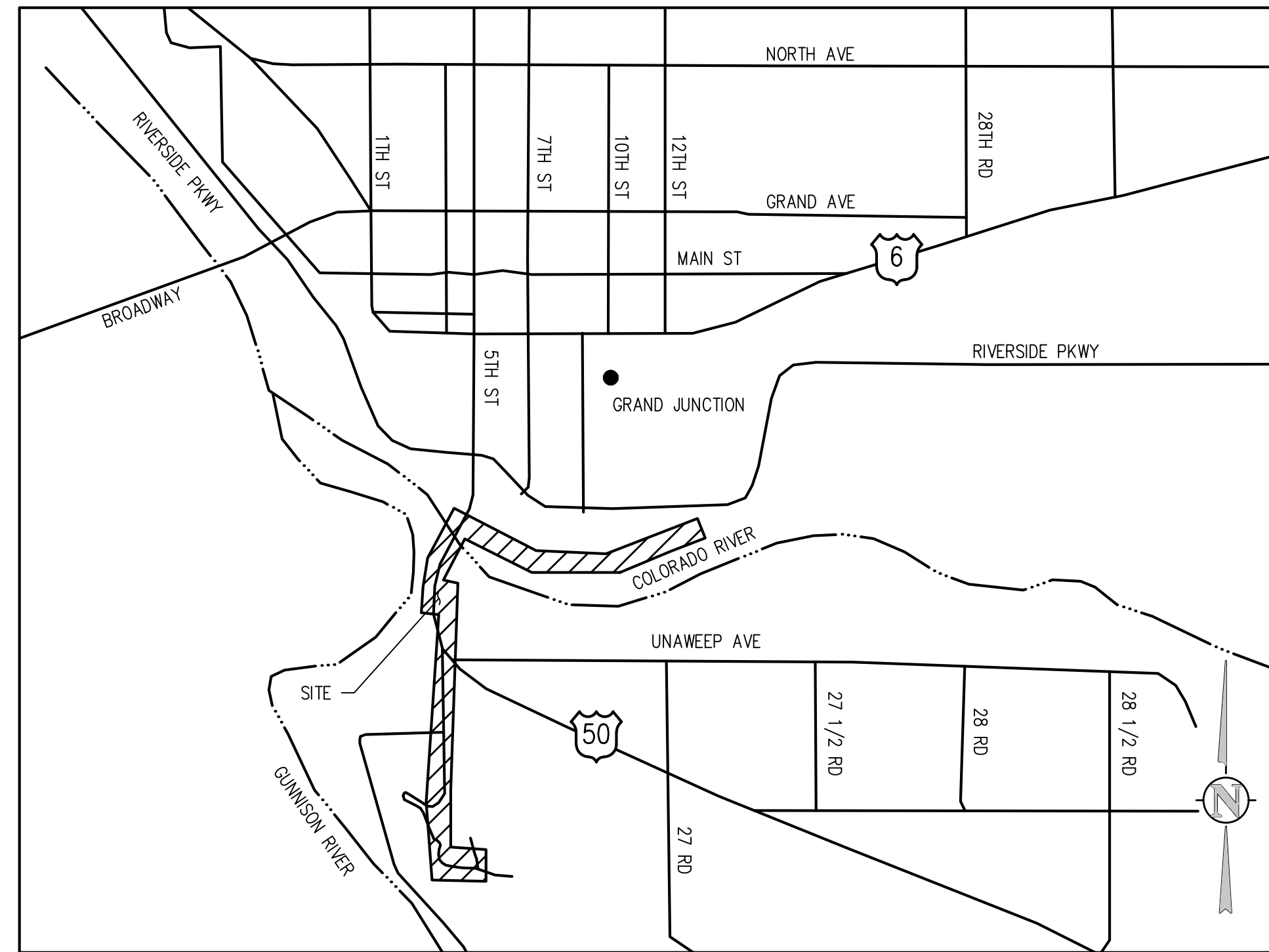


**JVA, Inc.** 817 Colorado Ave., Suite 301  
Glenwood Springs, CO Zip 81601  
970.404.3100  
[www.jvajva.com](http://www.jvajva.com)  
Boulder • Fort Collins • Winter Park  
Glenwood Springs • Denver

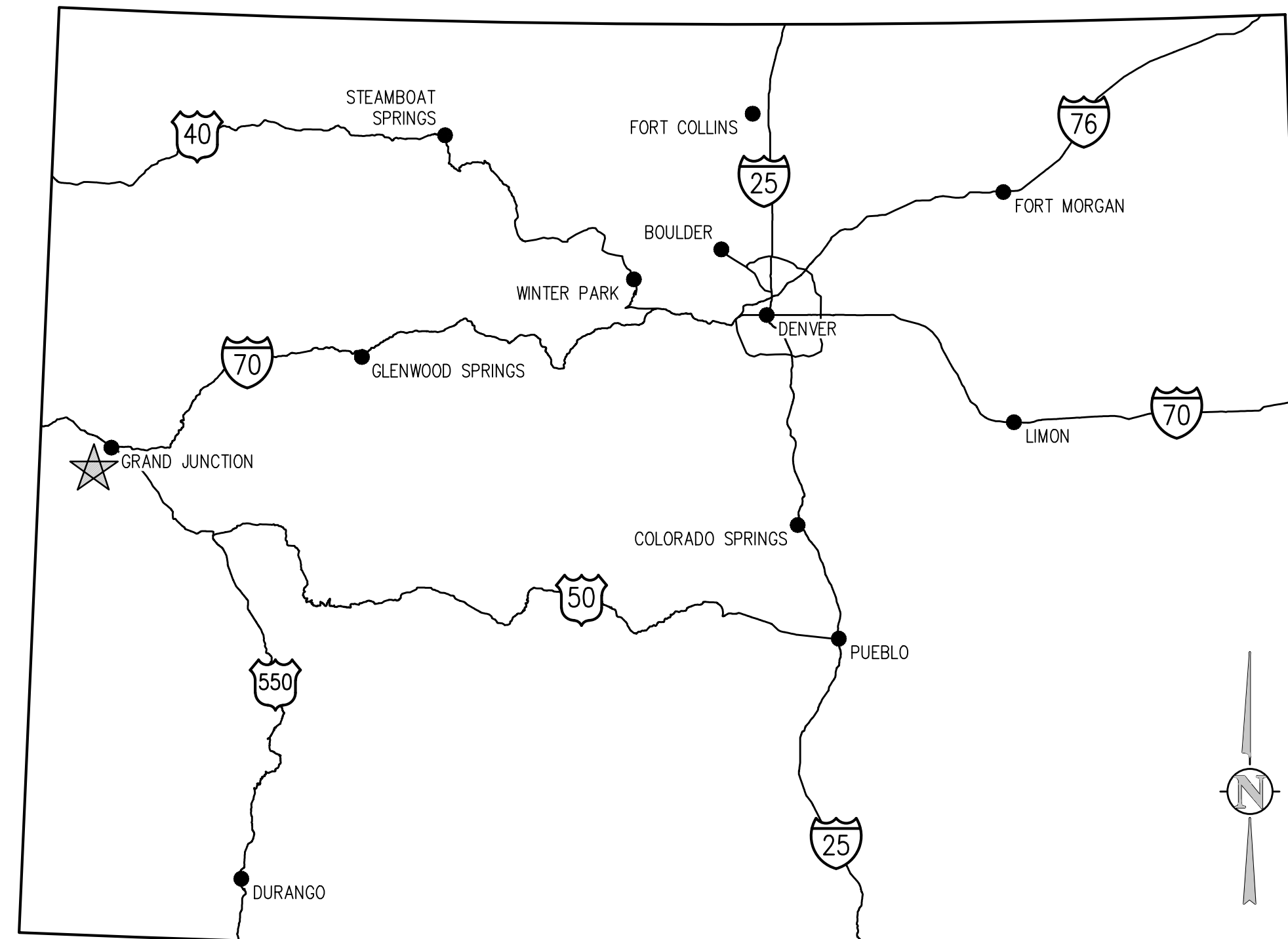
**FEBRUARY 2019**

PREPARED UNDER THE SUPERVISION OF

JVA, Inc.



PROJECT LOCATION MAP  
NTS



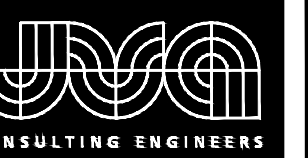
VICINITY MAP  
NTS

## DRAWING INDEX

<u>SHEET NO.</u>	<u>TITLE</u>
C0.0	COVER SHEET
C0.1	LEGEND, NOTES, AND ABBREVIATIONS
C0.3	OVERALL KEY MAP
C0.4	TYPICAL EROSION CONTROL PLAN
C0.5	EROSION CONTROL DETAILS
C0.6	EROSION CONTROL DETAILS
C0.7	EROSION CONTROL DETAILS
C1.0	POTABLE WATERLINE STA 200+00.00 - 206+40.00
C1.1	POTABLE WATERLINE STA 206+40.00 - 212+70.00
C1.2	POTABLE WATERLINE STA 212+70.00 - 219+00.00
C1.3	POTABLE WATERLINE STA 219+00.00 - 225+30.00
C1.4	POTABLE WATERLINE STA 225+30.00 - 231+60.00
C1.5	POTABLE WATERLINE STA 231+60.00 - 235+14.39
CD1.0	POTABLE WATER UTILITY DETAILS
CD1.1	POTABLE WATER UTILITY DETAILS
C2.0	RAW WATER IRRIGATION LINE - RESERVOIR 3 CONNECTION
C2.1	RAW WATER IRRIGATION LINE STA 0+00.00 - 3+00.00
C2.2	RAW WATER IRRIGATION LINE STA 3+00.00 - 9+00.00
C2.3	RAW WATER IRRIGATION LINE STA 9+00.00 - 15+00.00
C2.4	RAW WATER IRRIGATION LINE STA 15+00.00 - 21+00.00
C2.5	RAW WATER IRRIGATION LINE STA 21+00.00 - 27+00.00
C2.6	RAW WATER IRRIGATION LINE STA 27+00.00 - 33+00.00
C2.7	RAW WATER IRRIGATION LINE STA 33+00.00 - 39+00.00
C2.8	RAW WATER IRRIGATION LINE STA 39+00.00 - 45+00.00
C2.9	RAW WATER IRRIGATION LINE STA 45+00.00 - 51+00.00
C2.10	RAW WATER IRRIGATION LINE STA 51+00.00 - 57+00.00
C2.11	RAW WATER IRRIGATION LINE STA 57+00.00 - 63+00.00
C2.12	RAW WATER IRRIGATION LINE STA 63+00.00 - 69+00.00
C2.13	RAW WATER IRRIGATION LINE STA 69+00.00 - 75+00.00
C2.14	RAW WATER IRRIGATION LINE STA 75+00.00 - 81+00.00
C2.15	RAW WATER IRRIGATION LINE STA 81+00.00 - 87+00.00
C2.16	RAW WATER IRRIGATION LINE STA 87+00.00 - 93+00.00
C2.17	RAW WATER IRRIGATION LINE STA 93+00.00 - 99+00.00
C2.18	RAW WATER IRRIGATION LINE STA 99+00.00 - 105+00.00
C2.19	RAW WATER IRRIGATION LINE STA 105+00.00 - 111+00.00
C2.20	RAW WATER IRRIGATION LINE STA 111+00.00 - 117+00.00
C2.20	RAW WATER IRRIGATION SERVICE CONNECTIONS
C2.22	RAW WATER IRRIGATION SERVICE CONNECTIONS
CD2.0	RAW WATER IRRIGATION LINE DETAILS
CD2.1	RAW WATER IRRIGATION LINE DETAILS
CD2.2	RAW WATER IRRIGATION LINE DETAILS
C3.0	OVERALL UTILITY PLAN
CD3.0	UTILITY DETAILS
C4.0	RESERVOIR PLAN AND SECTIONS
C4.1	PICTURES
S0.1	GENERAL NOTES
S1.1	BRIDGE/PIPE SUPPORT FRAMING PLAN
S2.1	SECTIONS







JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvava.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver

NO. DATE DESD DWN REVISION DESCRIPTION

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

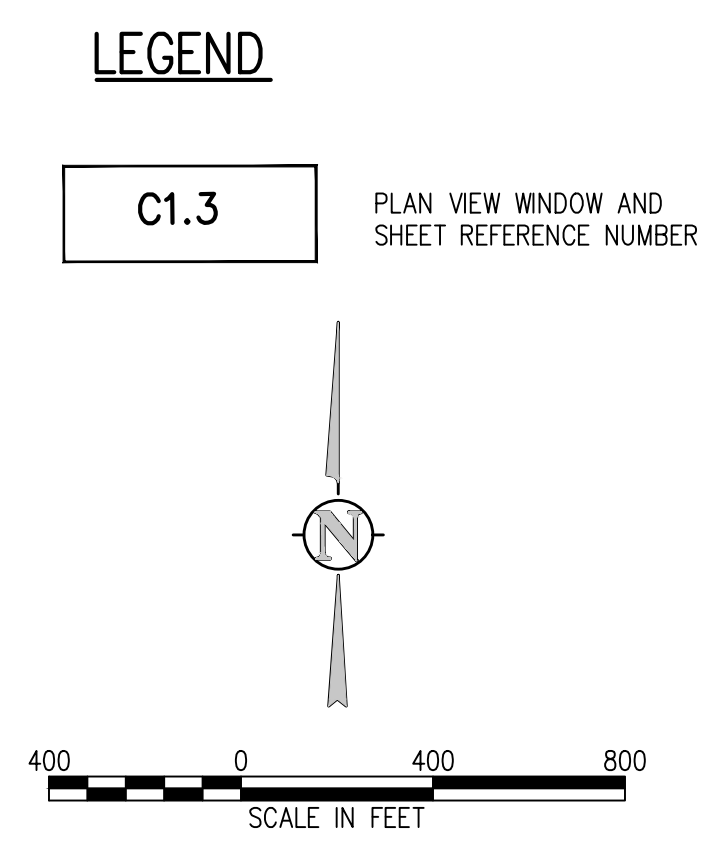
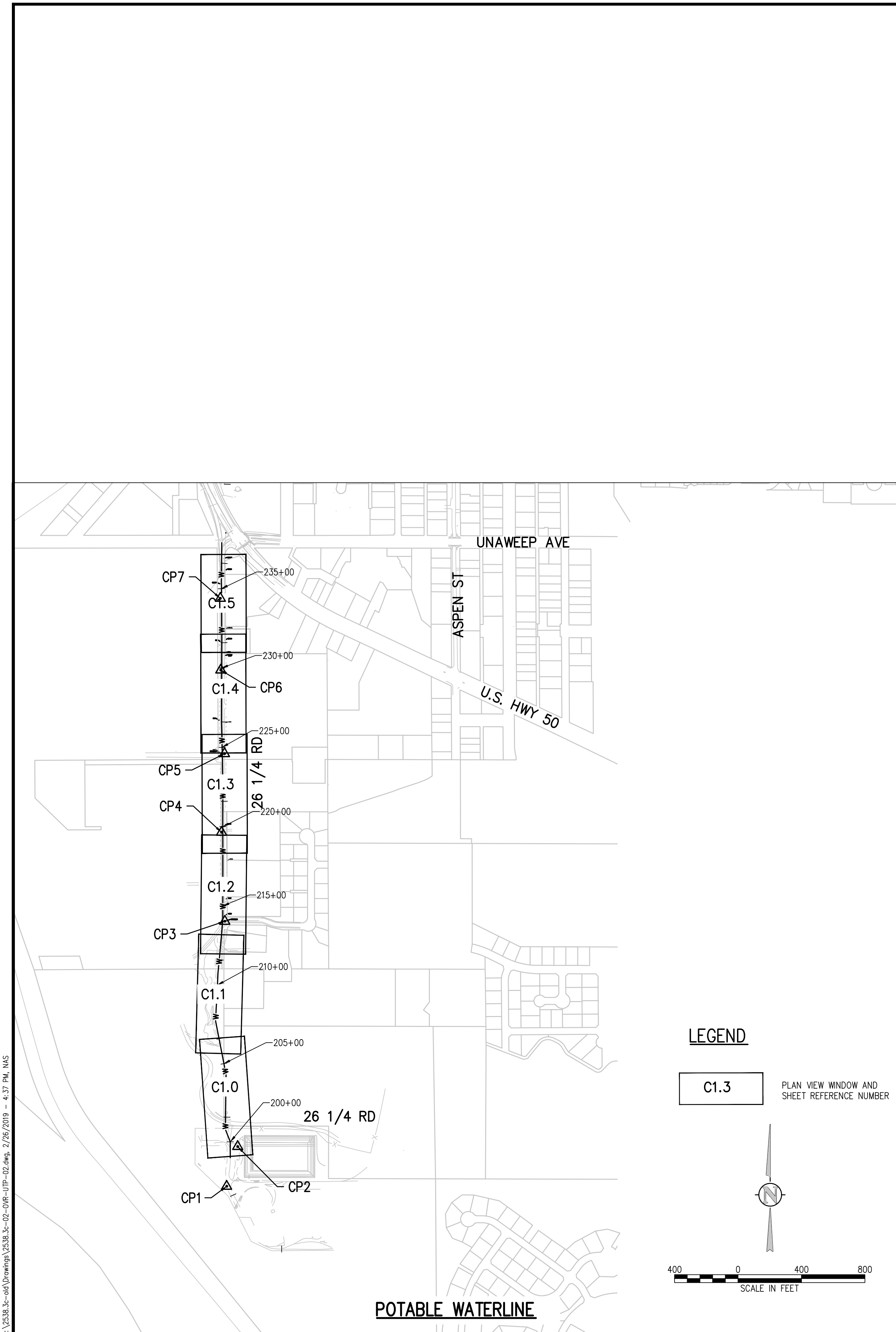
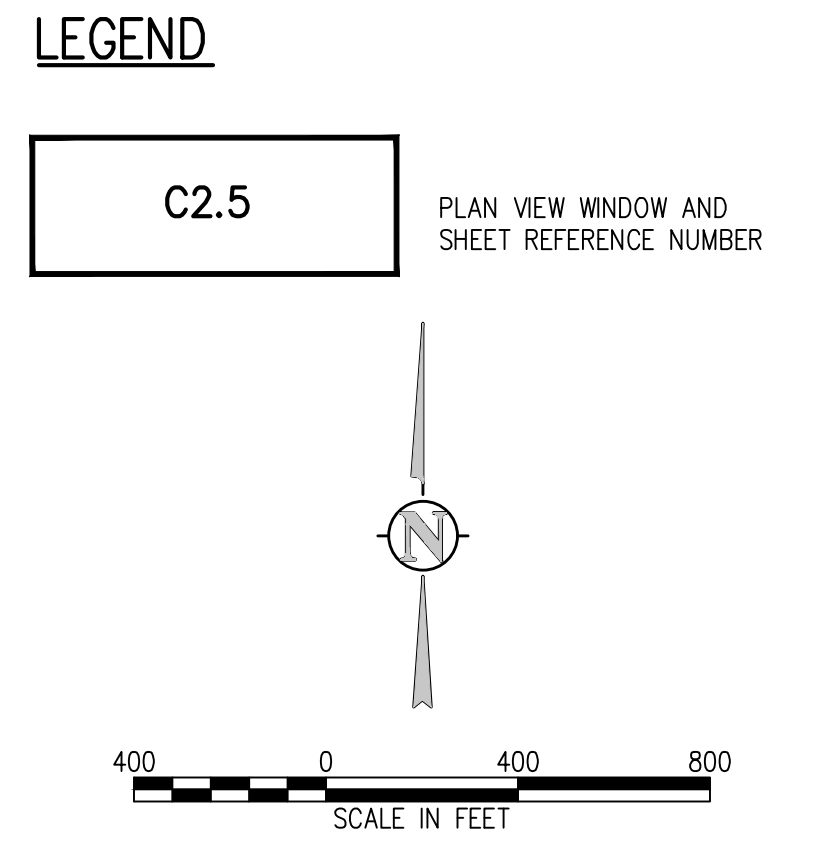
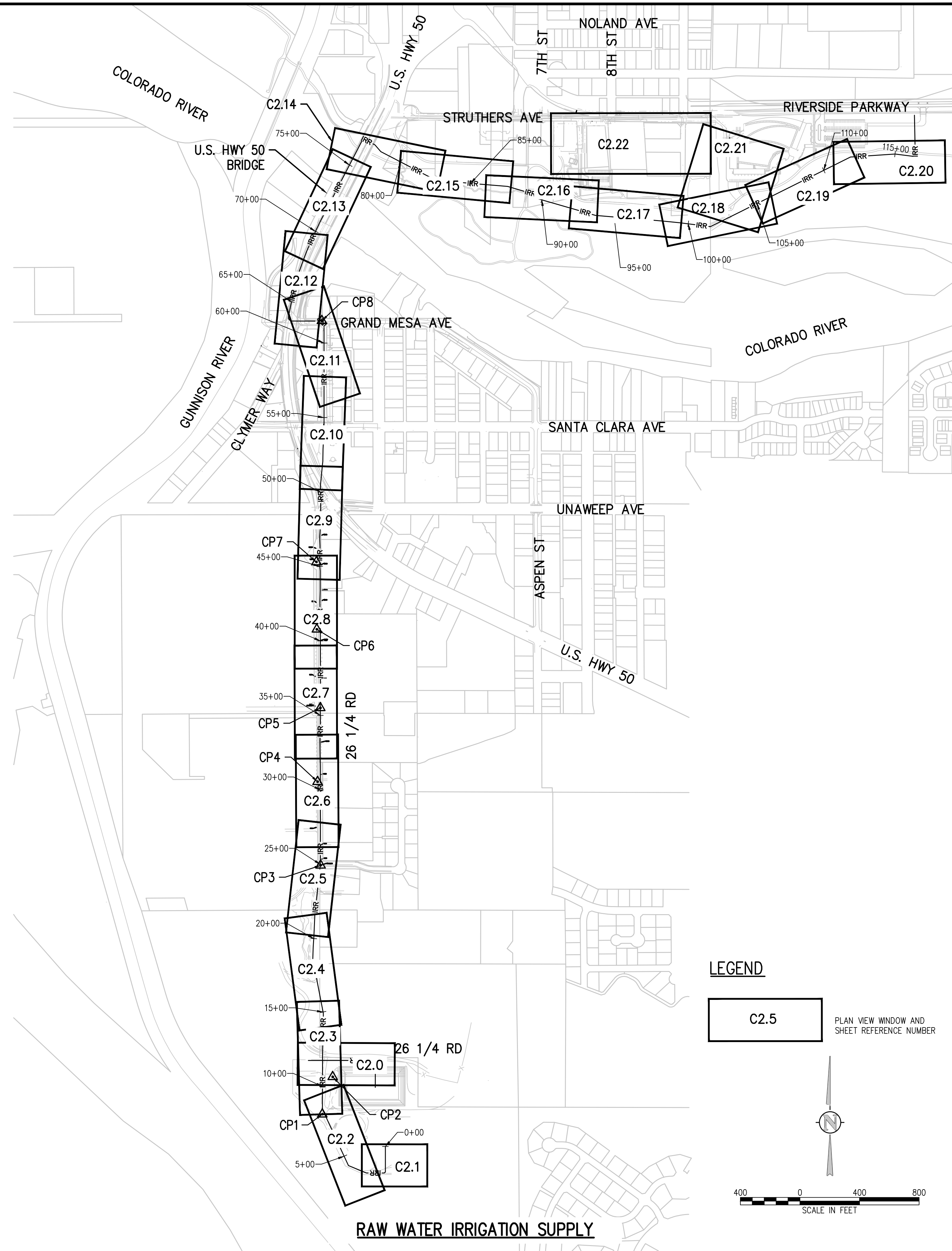
© JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO

OVERALL KEY MAP

SHEET NO.

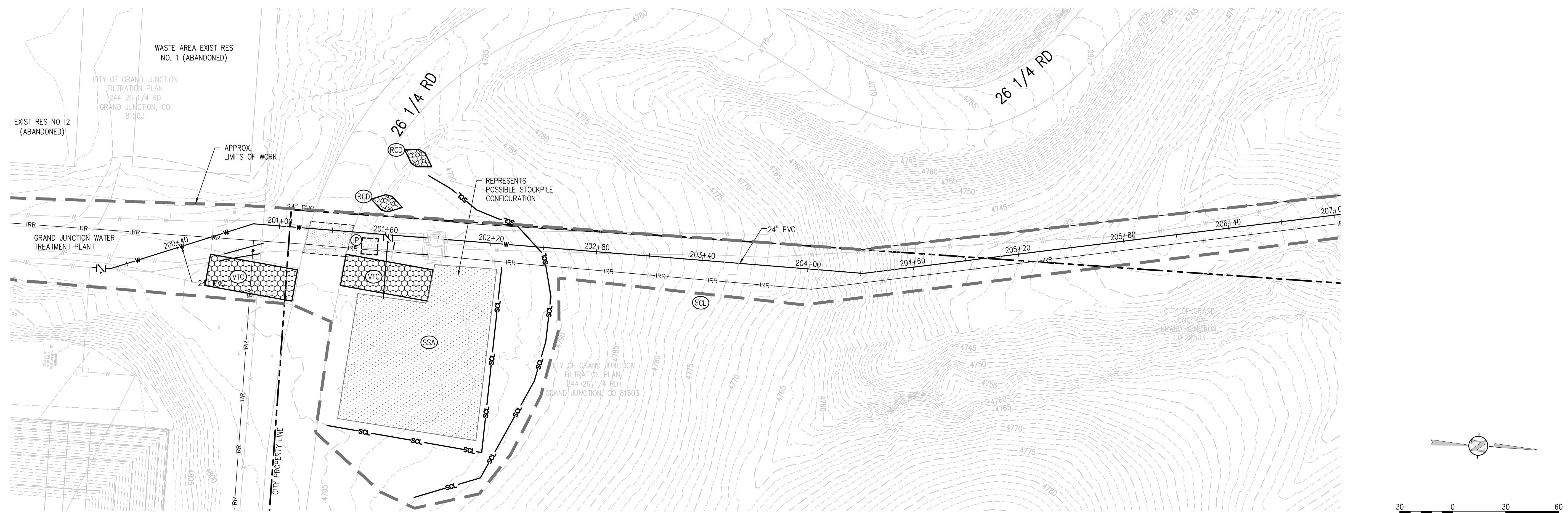
C0.3



POTABLE WATERLINE

RAW WATER IRRIGATION SUPPLY

A:\2538.3c-c0\Drawings\2538.3c-c0-01-01-01-01-01.dwg, 2/26/2019 - 4:37 PM, NAS



**EROSION CONTROL PLAN**  
 SCALE: 1"=30'

**EROSION CONTROL LEGEND**

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- LIMITS OF WORK
- INLET PROTECTION
- OUTLET PROTECTION
- VEHICLE TRACKING CONTROL
- STRAW BALE EROSION BARRIER
- SILT FENCE
- CONSTRUCTION FENCE
- TEMPORARY SLOPE DRAIN
- DIVERSION DITCH
- SEDIMENT CONTROL LOG
- CURB SOCK
- ROCK CHECK DAM
- CONCRETE WASHOUT AREA
- TEMPORARY SEDIMENTATION POND
- STABILIZED STAGING AREA
- EROSION CONTROL BLANKET
- CHANNEL STABILIZATION MATTING
- SURFACE ROUGHENING

**EROSION AND SEDIMENTATION NOTES:**

- THIS SHEET IS TO SHOW A TYPICAL EROSION CONTROL PLAN. SIMILAR EROSION CONTROL MEASURES ARE REQUIRED FOR ENTIRE ALIGNMENTS.
- CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL CONTROLS DURING INITIAL, INTERIM, AND FINAL CONDITIONS.
- COMPLY WITH LOCAL MUNICIPALITY EROSION CONTROL REQUIREMENTS.
- ALL CONTROLS SHALL BE INSTALLED WITHIN THE PROPERTY LINES UNLESS OTHERWISE SPECIFIED. WHEN CONSTRUCTION ACTIVITIES DISTURB ADJACENT AND/OR RIGHT-OF-WAY PROPERTIES, COORDINATION WITH OWNERS IS REQUIRED PRIOR TO CONSTRUCTION.
- EROSION CONTROL MEASURES WILL BE PHASED AND ONLY THE AREAS UNDER CONSTRUCTION WILL NEED EROSION CONTROL. CONTRACTOR TO ADJUST BMP'S TO FACILITATE CONSTRUCTION.
- THE PLACEMENT OF TEMPORARY EROSION CONTROL OBJECTS ARE SUGGESTIONS BASED ON EXISTING TOPOGRAPHY AND OTHER LAND FEATURES. THE CONTRACTOR MAY DETERMINE MORE APPROPRIATE BMP'S AND PLACEMENT DURING CONSTRUCTION.
- SEDIMENT CONTROL LOGS (SCL) SHOULD BE PLACED AT LIMITS OF WORK.
- STAGING AREAS TO BE DETERMINED BY CONTRACTOR BUT MUST BE REVIEWED AND APPROVED BY THE CITY AND PROJECT ENGINEER PRIOR TO PLACEMENT.

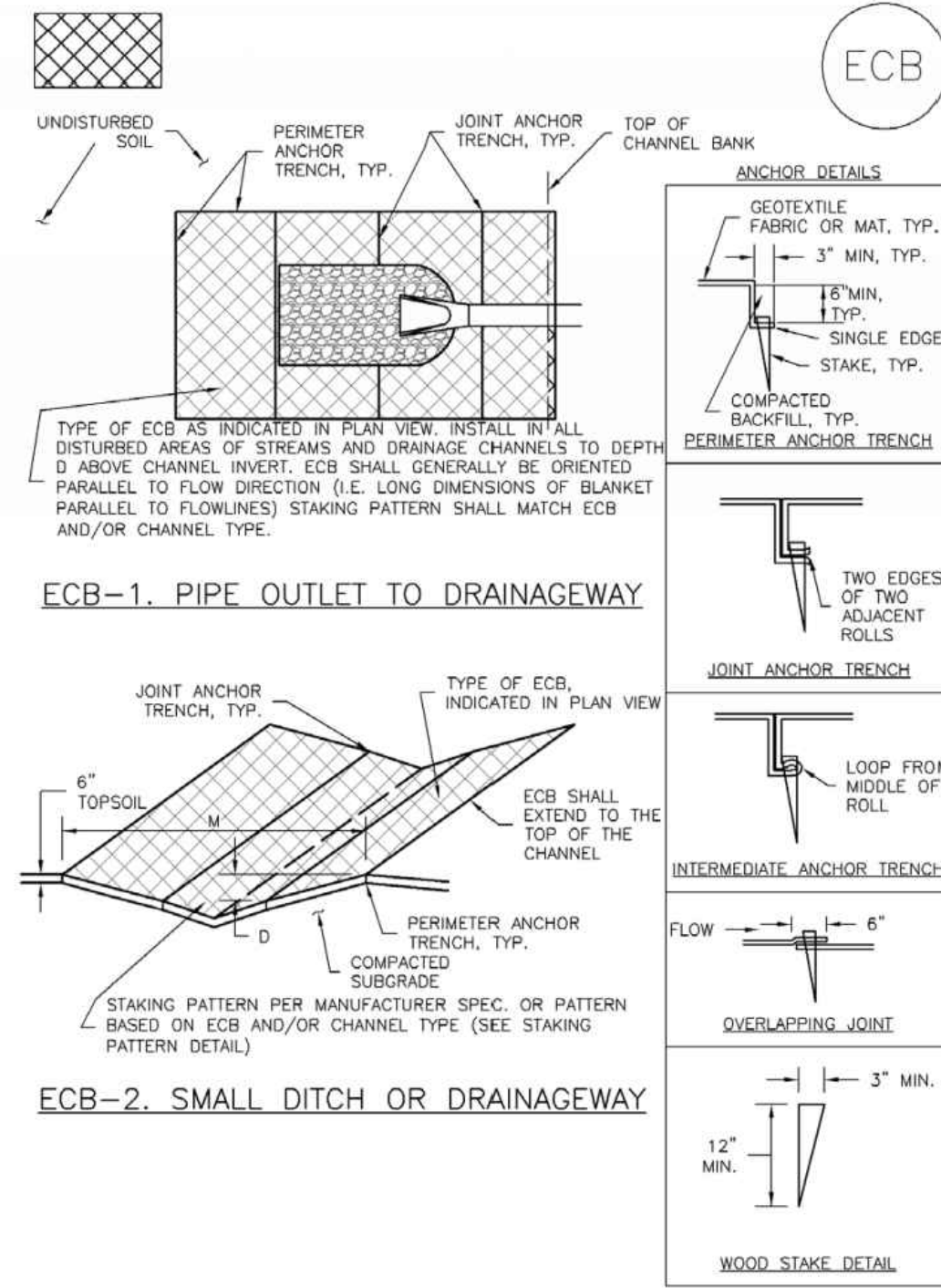
A:\2538.3c-04\Drawings\2538.3c-04-EGP-01.dwg, 2/26/2019 - 4:37 PM, NMS

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

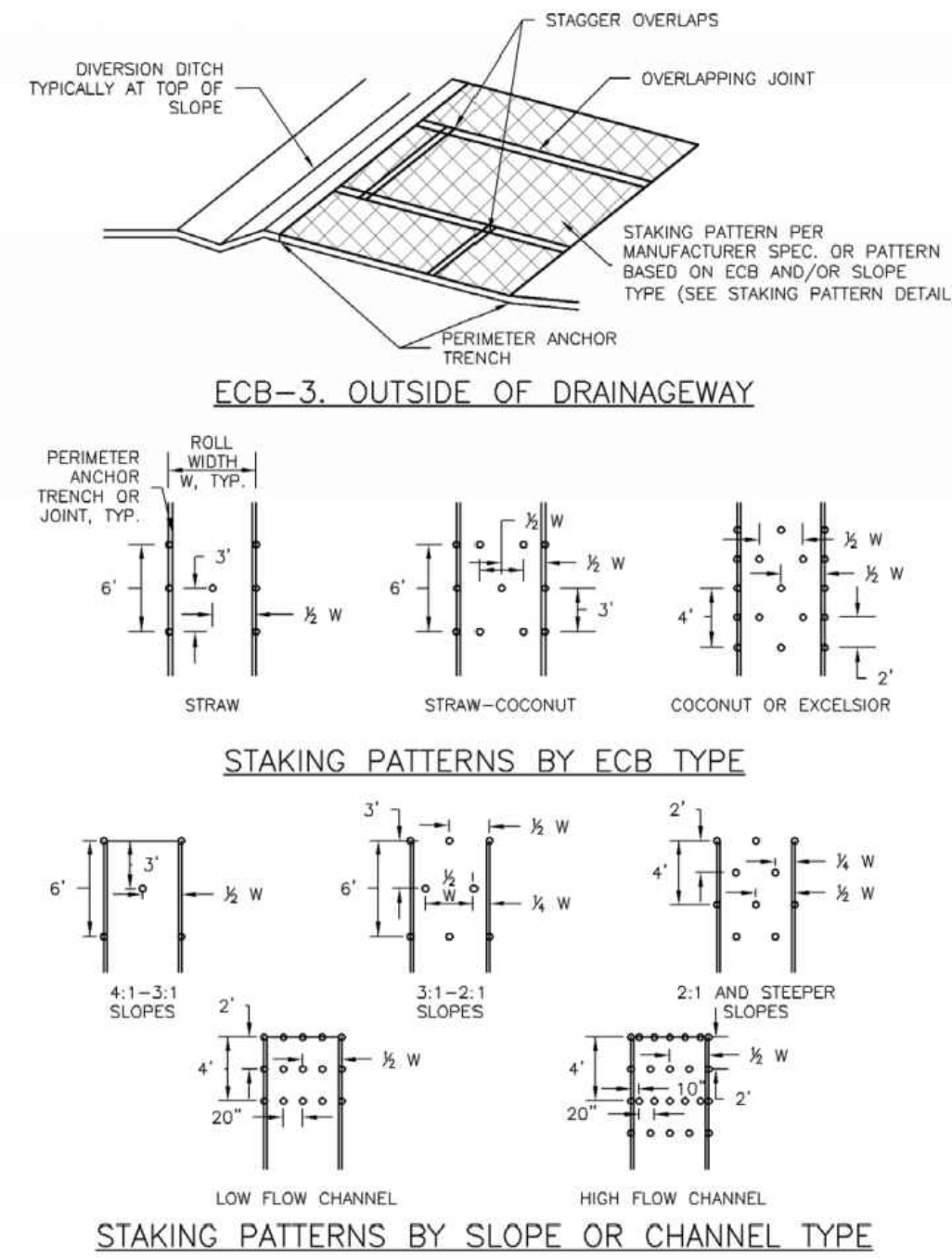
DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 TYPICAL EROSION CONTROL PLAN





RECP-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010



November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 RECP-7

EROSION CONTROL BLANKET INSTALLATION NOTES

- SEE PLAN VIEW FOR:
  - LOCATION OF ECB.
  - TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, OR EXCELSIOR).
  - AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB.
- 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.
- IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
- PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
- JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.
- INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.
- OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
- MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
- ANY AREAS OF SEEDING AND MULCHING MAJOR DISTURBED IN THE PROCESS OF INSTALLING ECBs SHALL BE RESEDED AND MULCHED.
- DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

TABLE ECB-1. ECB MATERIAL SPECIFICATIONS

TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING*
STRAW*	-	100%	-	DOUBLE/NATURAL
STRAW-COCONUT	30% MIN	70% MAX	-	DOUBLE/NATURAL
COCONUT	100%	-	-	DOUBLE/NATURAL
EXCELSIOR	-	-	100%	DOUBLE/NATURAL

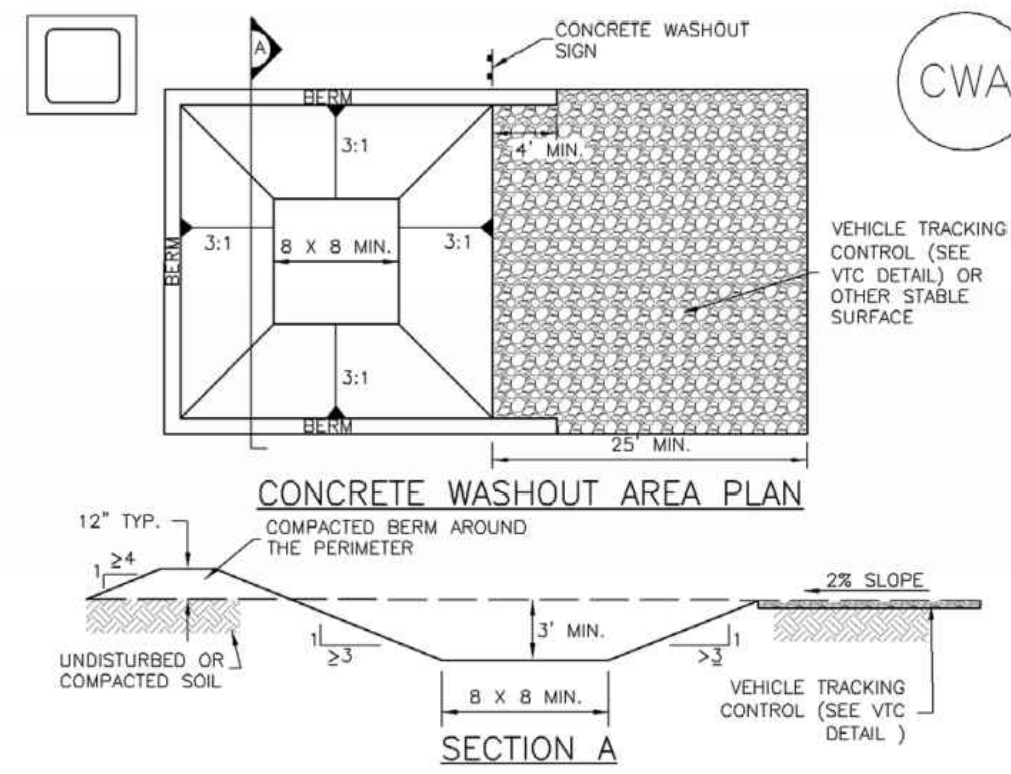
\*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNELS. MULTILAYER NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS.

RECP-8 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

EROSION CONTROL BLANKET MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
  - ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEDED AND MULCHED AND THE ECB REINSTALLED.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO AND TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 RECP-9



- CWA-1. CONCRETE WASHOUT AREA**
- CWA INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
    - CWA INSTALLATION LOCATION.
  - DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (18 MIL. MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
  - THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
  - CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER THE PIT SHALL BE AT LEAST 3' DEEP.
  - BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
  - VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
  - SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
  - USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 CWA-3

CWA MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
  - CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
  - THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
  - WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
- (DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 CWA-4



DESIGNED BY:	BLM
DRAWN BY:	NAS
CHECKED BY:	JJM
JOB #:	2538.3c
DATE:	FEBRUARY 2019
© JVA, INC.	

RAW WATER IRRIGATION SUPPLY AND WATER LINE REPLACEMENT GRAND JUNCTION, COLORADO

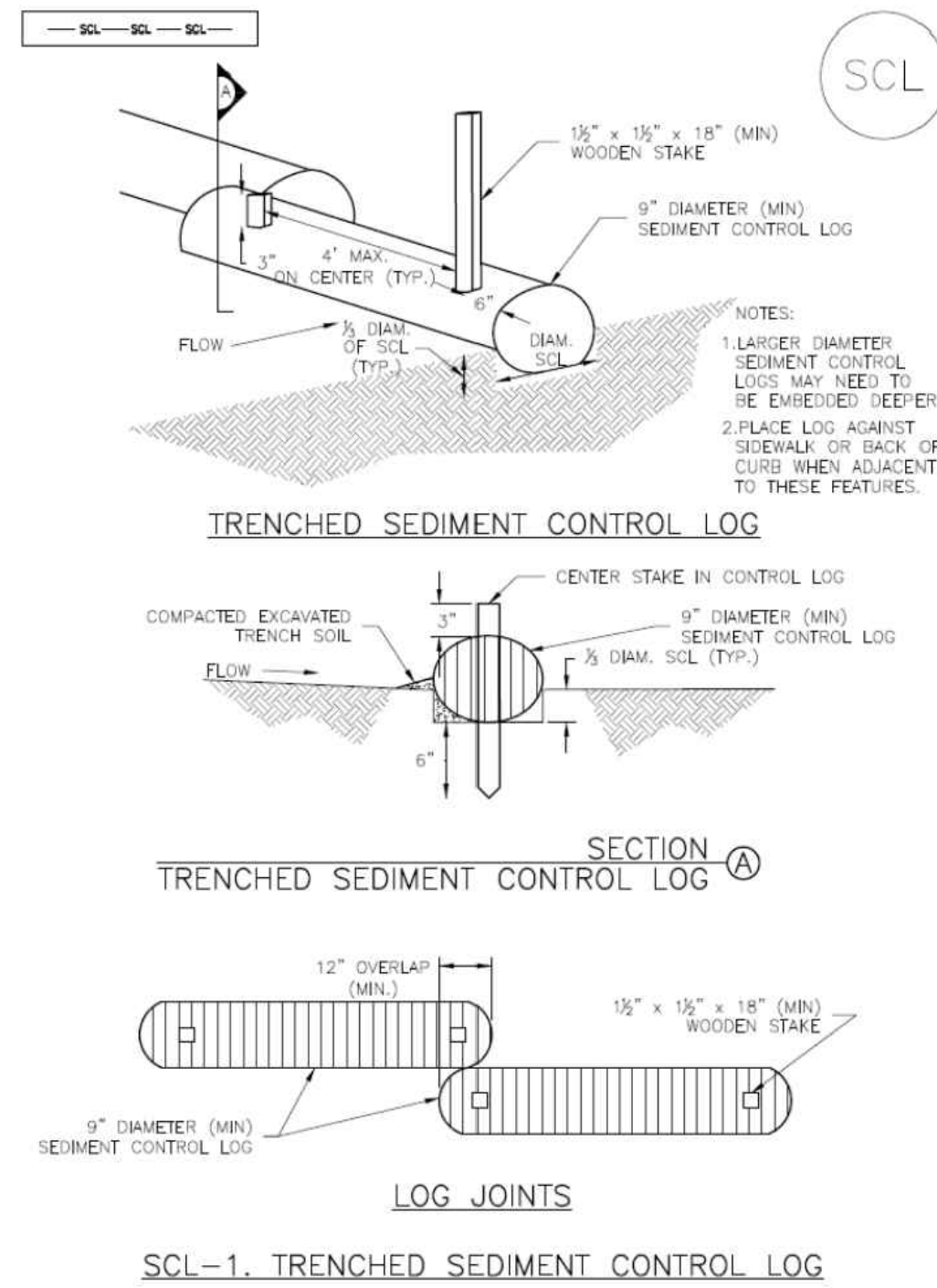
EROSION CONTROL DETAILS

J:\2538.3c-04\Drawings\2538.3c-04-ECB-02.dwg, 2/26/2019 - 4:38 PM, mg



**Sediment Control Log (SCL)**

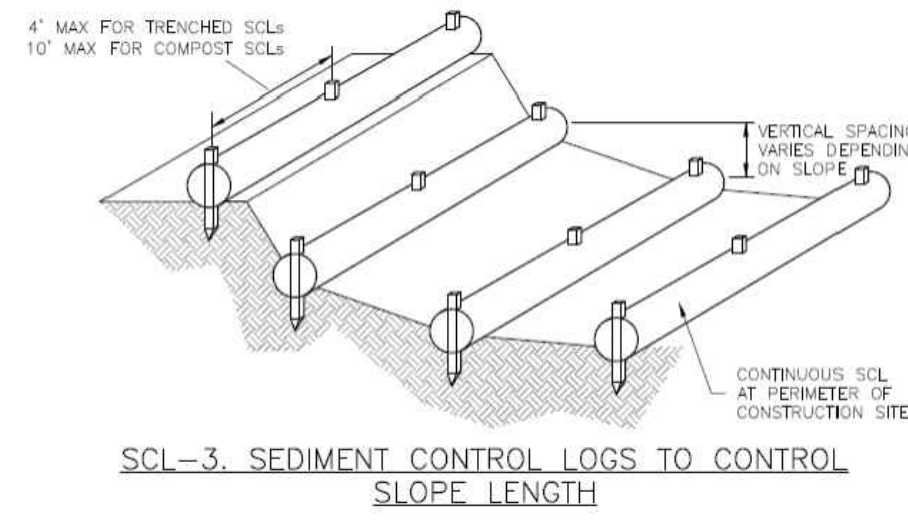
SC-2



November 2015 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 SCL-3

**Sediment Control Log (SCL)**

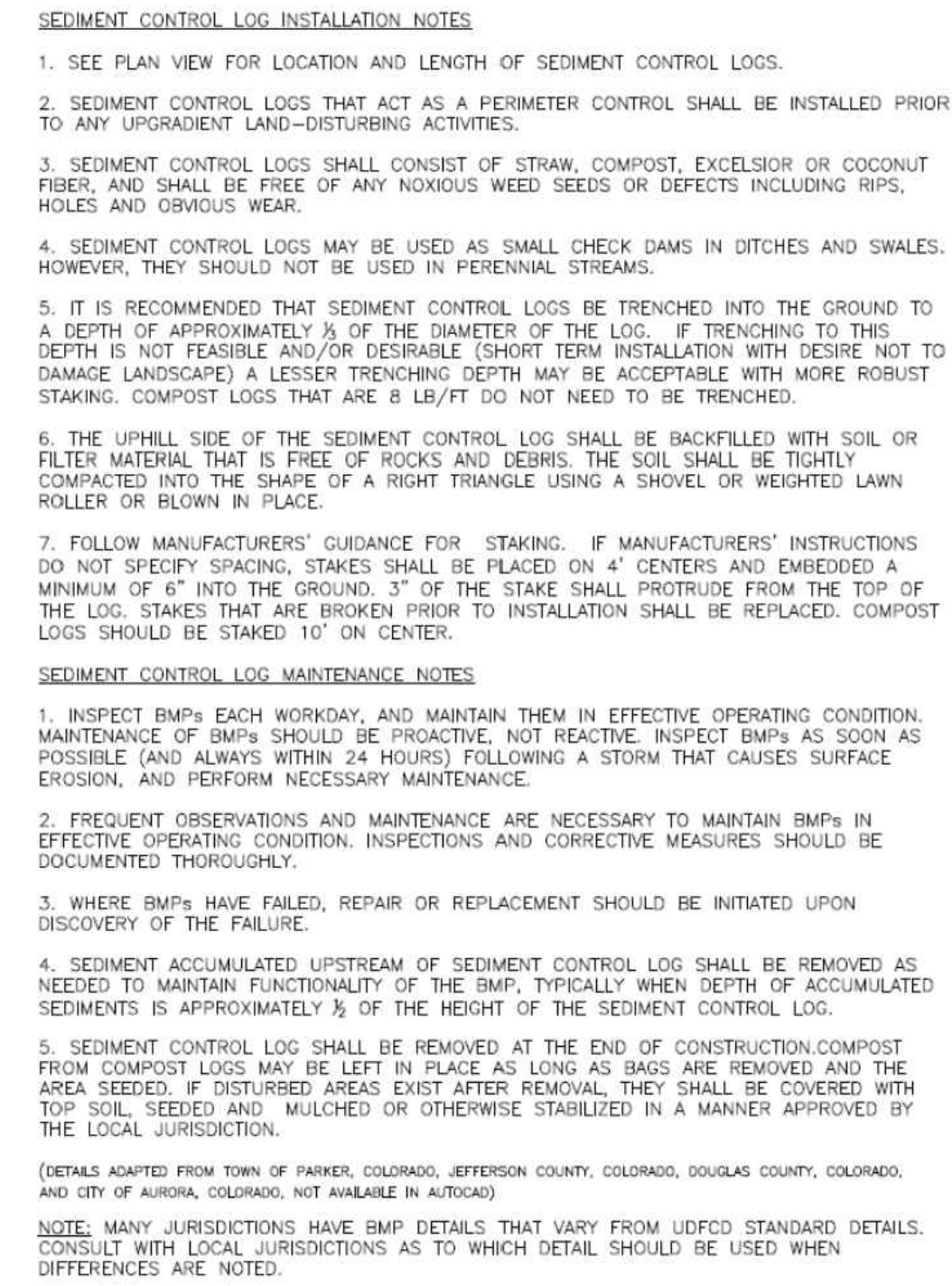
SC-2



November 2015 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 SCL-5

SC-2

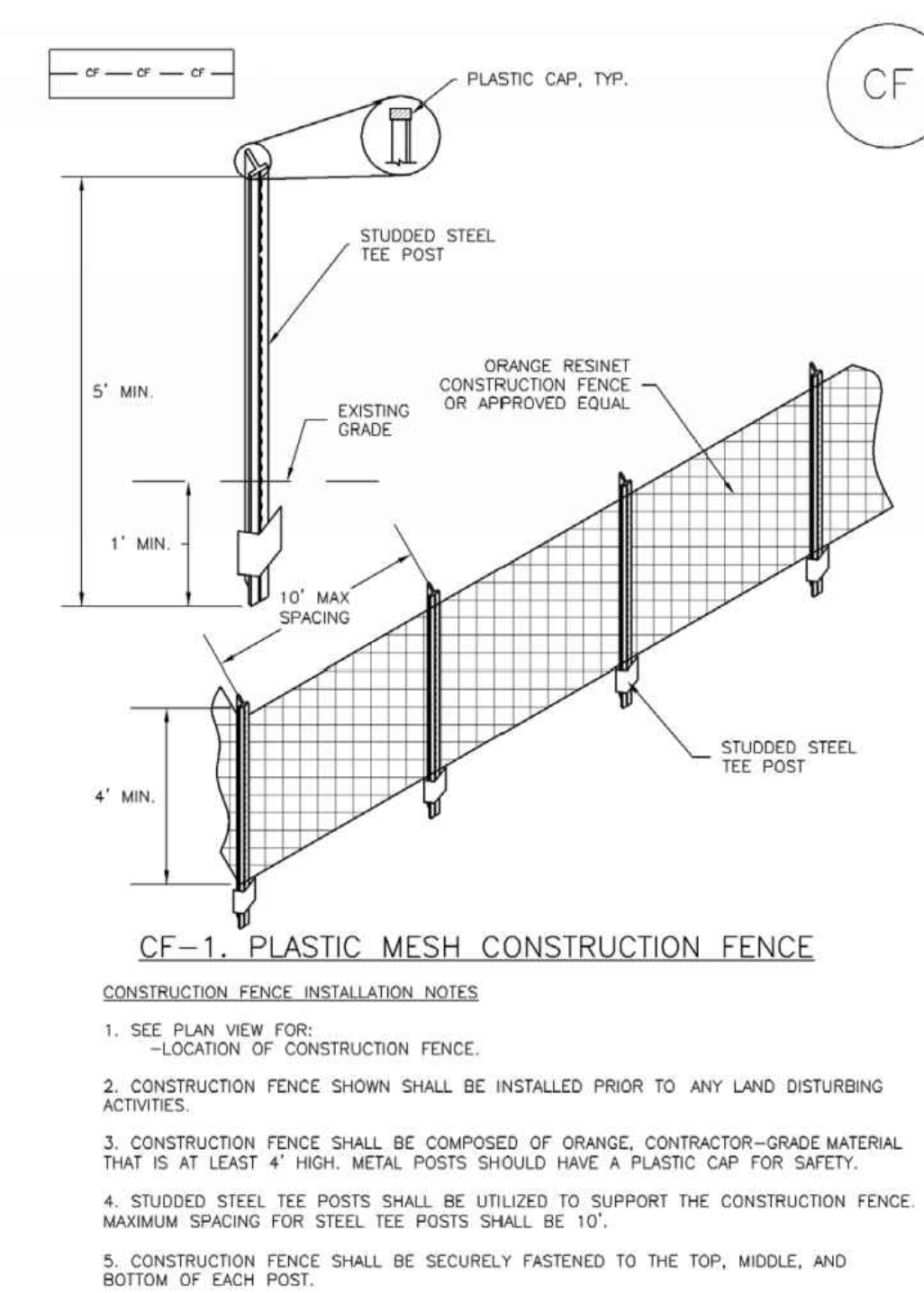
**Sediment Control Log (SCL)**



November 2015 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 SCL-6

SM-3

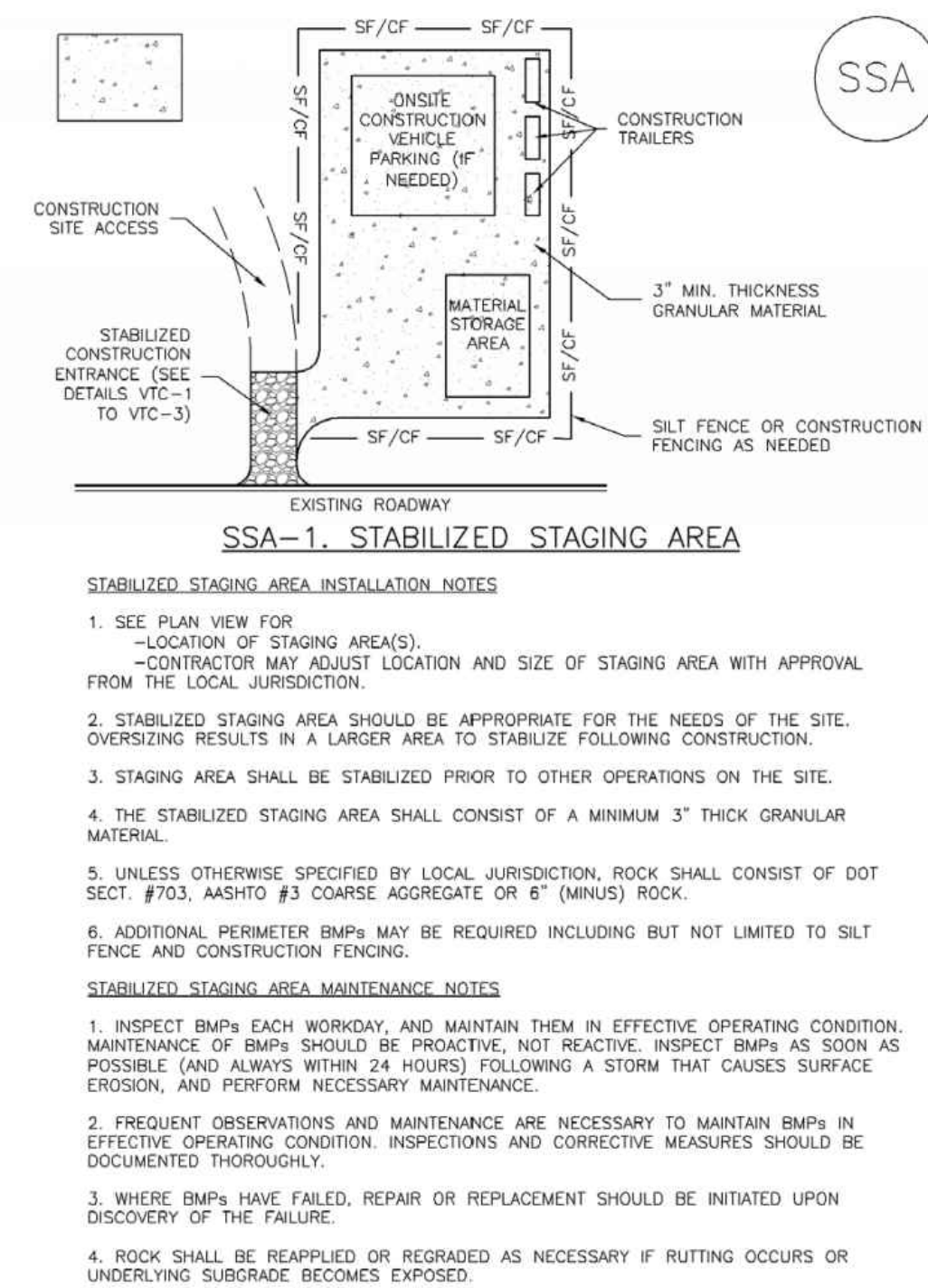
**Construction Fence (CF)**



November 2010 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 CF-2

**Stabilized Staging Area (SSA)**

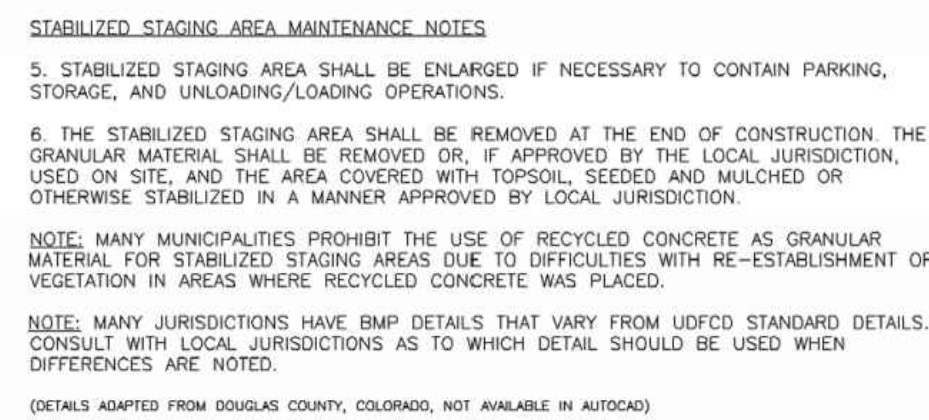
SM-6



November 2010 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 SSA-3

SM-6

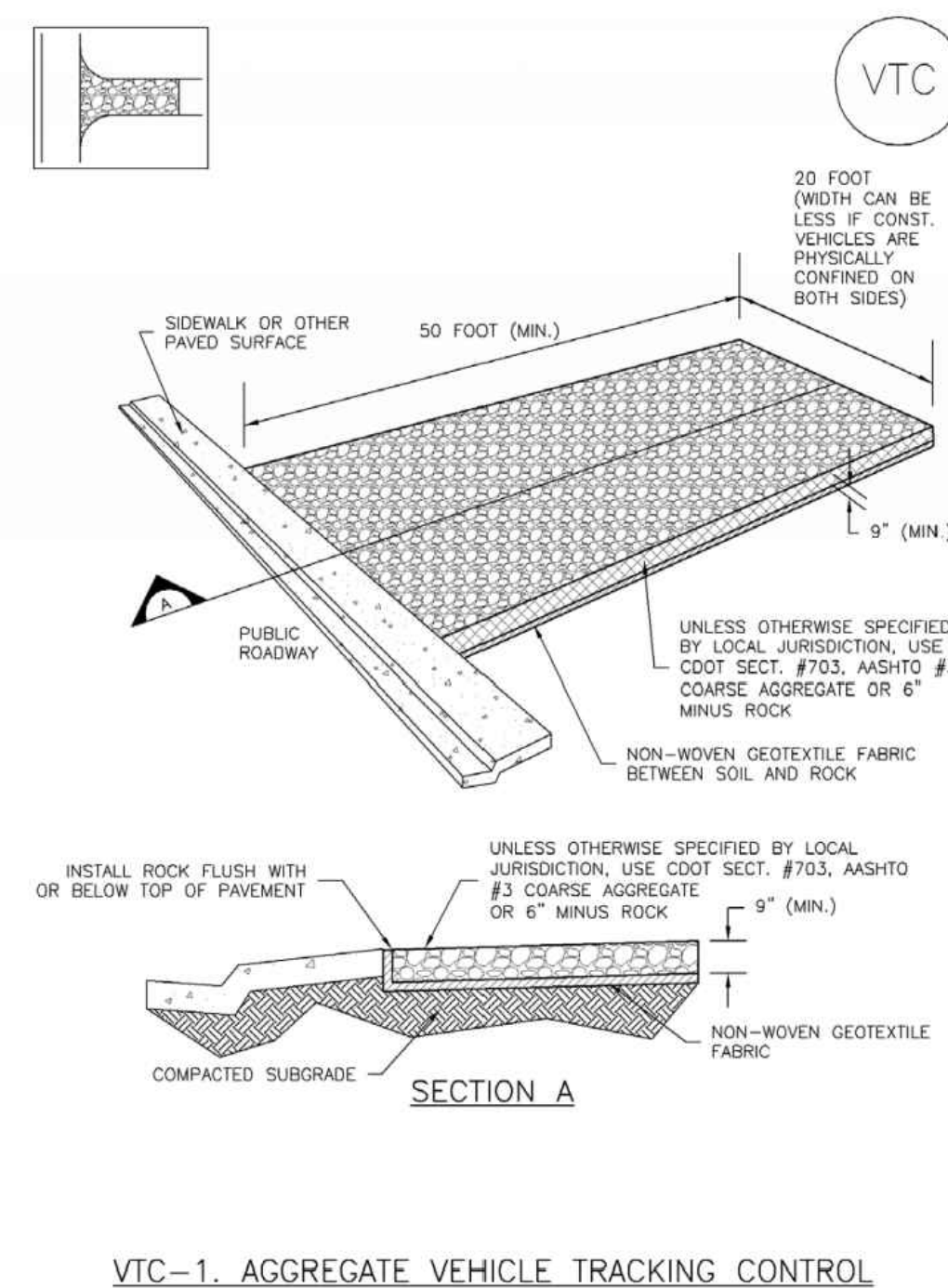
**Stabilized Staging Area (SSA)**



November 2010 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 SSA-4

**Vehicle Tracking Control (VTC)**

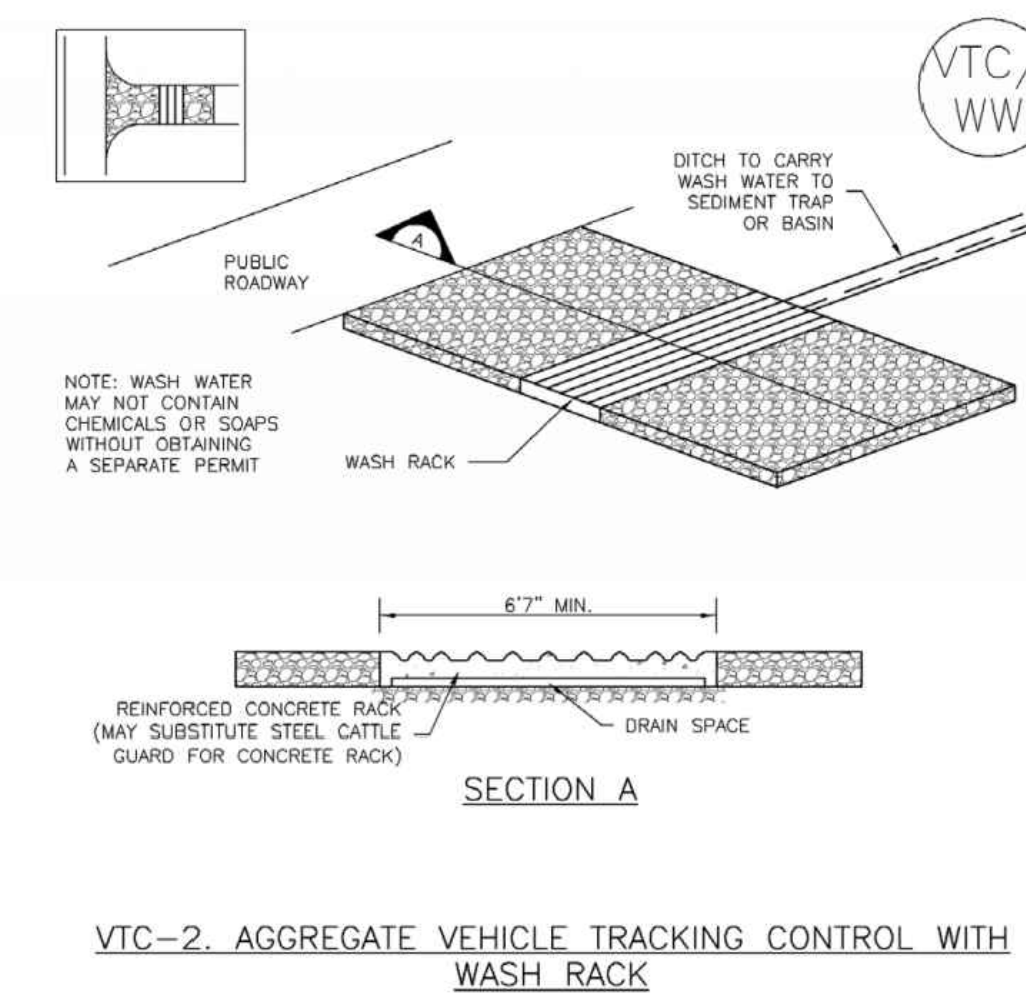
SM-4



November 2010 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 VTC-3

SM-4

**Vehicle Tracking Control (VTC)**



November 2010 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 VTC-4



DESIGNED BY:	BLM
DRAWN BY:	NAS
CHECKED BY:	JJM
JOB #:	2538.3c
DATE:	FEBRUARY 2019
© JVA, INC.	

RAW WATER IRRIGATION SUPPLY AND WATER LINE REPLACEMENT GRAND JUNCTION, COLORADO

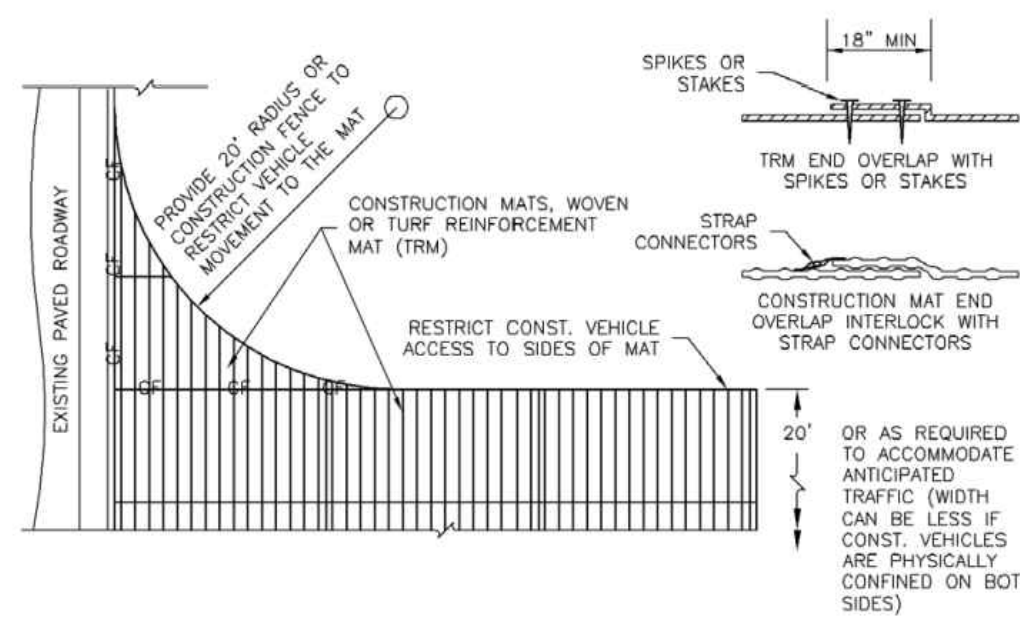
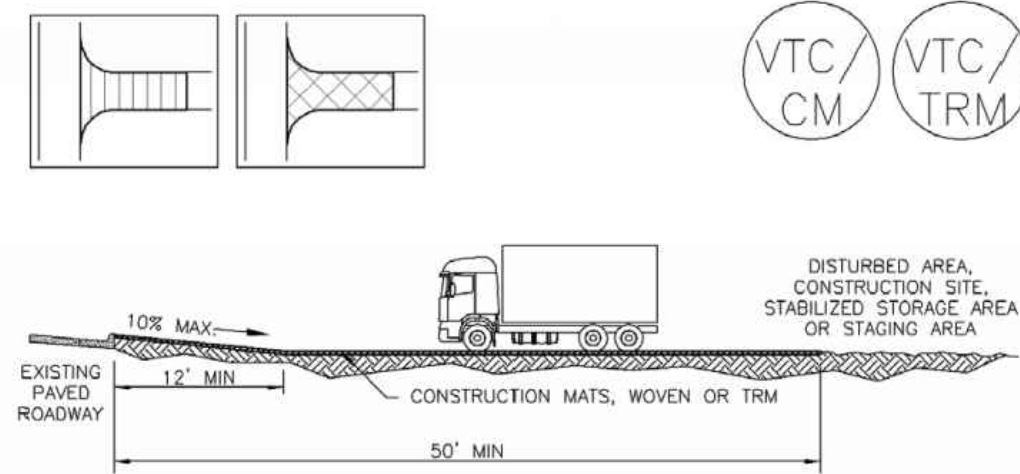
EROSION CONTROL DETAILS

A:\2538.3c-04\Drawings\2538.3c-04-EOP-02.dwg, 2/26/2019 4:38 PM, mrg



**Vehicle Tracking Control (VTC)**

**SM-4**



**VTC-3. VEHICLE TRACKING CONTROL W/ CONSTRUCTION MAT OR TURF REINFORCEMENT MAT (TRM)**

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 VTC-5

**SM-4**

**Vehicle Tracking Control (VTC)**

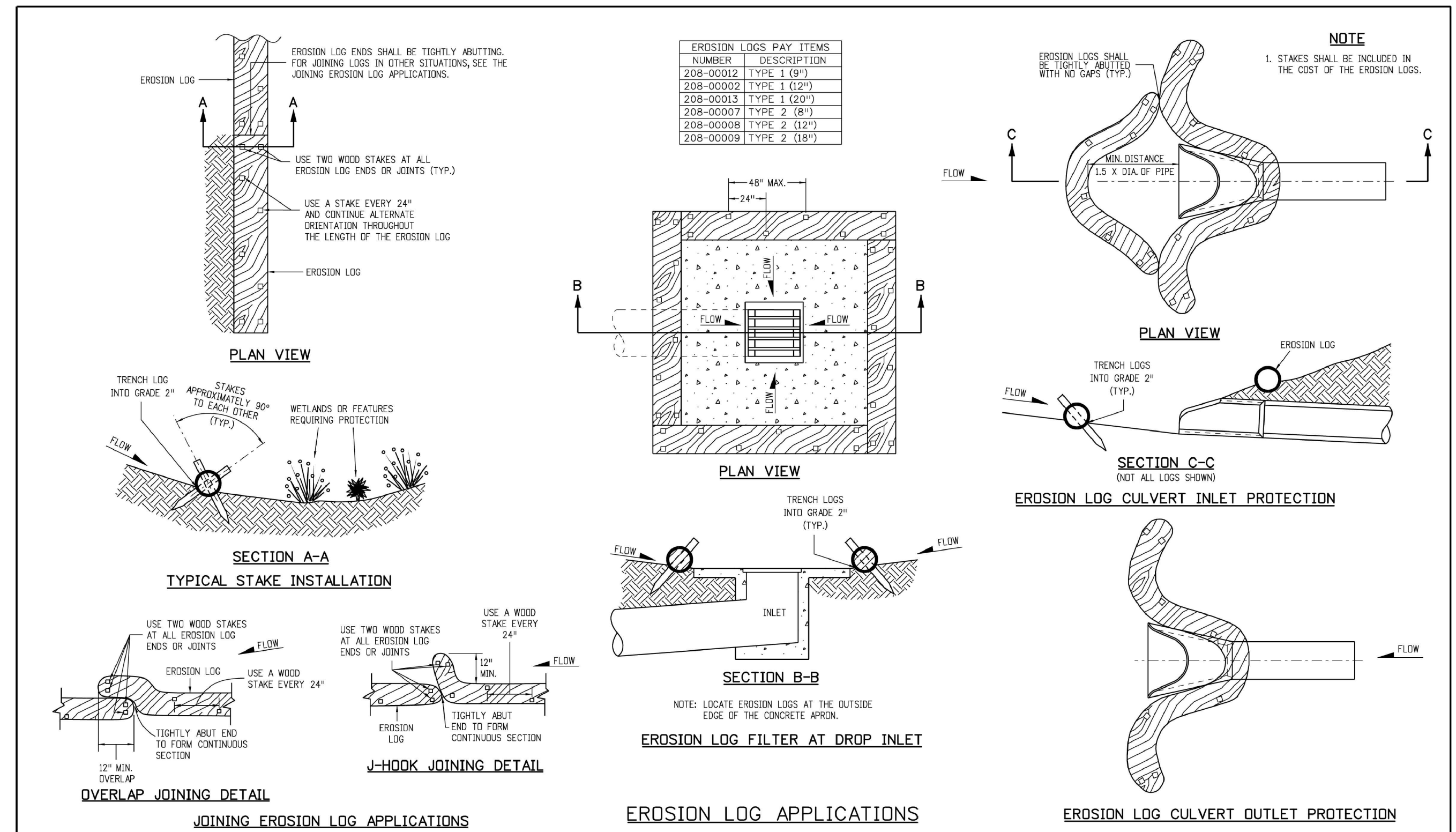
**STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES**

- SEE PLAN VIEW FOR:
  - LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
  - TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).
- CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
- A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
- STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
- UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

**STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES**

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
  - SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

VTC-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010



Computer File Information		Sheet Revisions		Colorado Department of Transportation		TEMPORARY EROSION CONTROL		STANDARD PLAN NO.	
Creation Date: 07/04/12	Initials: JBK	Date:	Comments:	4201 East Arkansas Avenue		M-208-1		M-208-1	
Last Modification Date: 03/29/16	Initials: LTA	03/29/16	Minor revisions to note 1.	CDOT, HQ, 4th Floor		Issued By: Project Development Branch on July 4, 2012		Sheet No. 2 of 11	
Full Path: www.coloradodot.info/business/designsupport				Denver, CO 80222					
Drawing File Name: 2080102011.dgn				Phone: 303-757-9021 FAX: 303-757-9868					
CAD Ver: MicroStation V8	Scale: Not to Scale	Units: English		Division of Project Support		JBK/LTA			

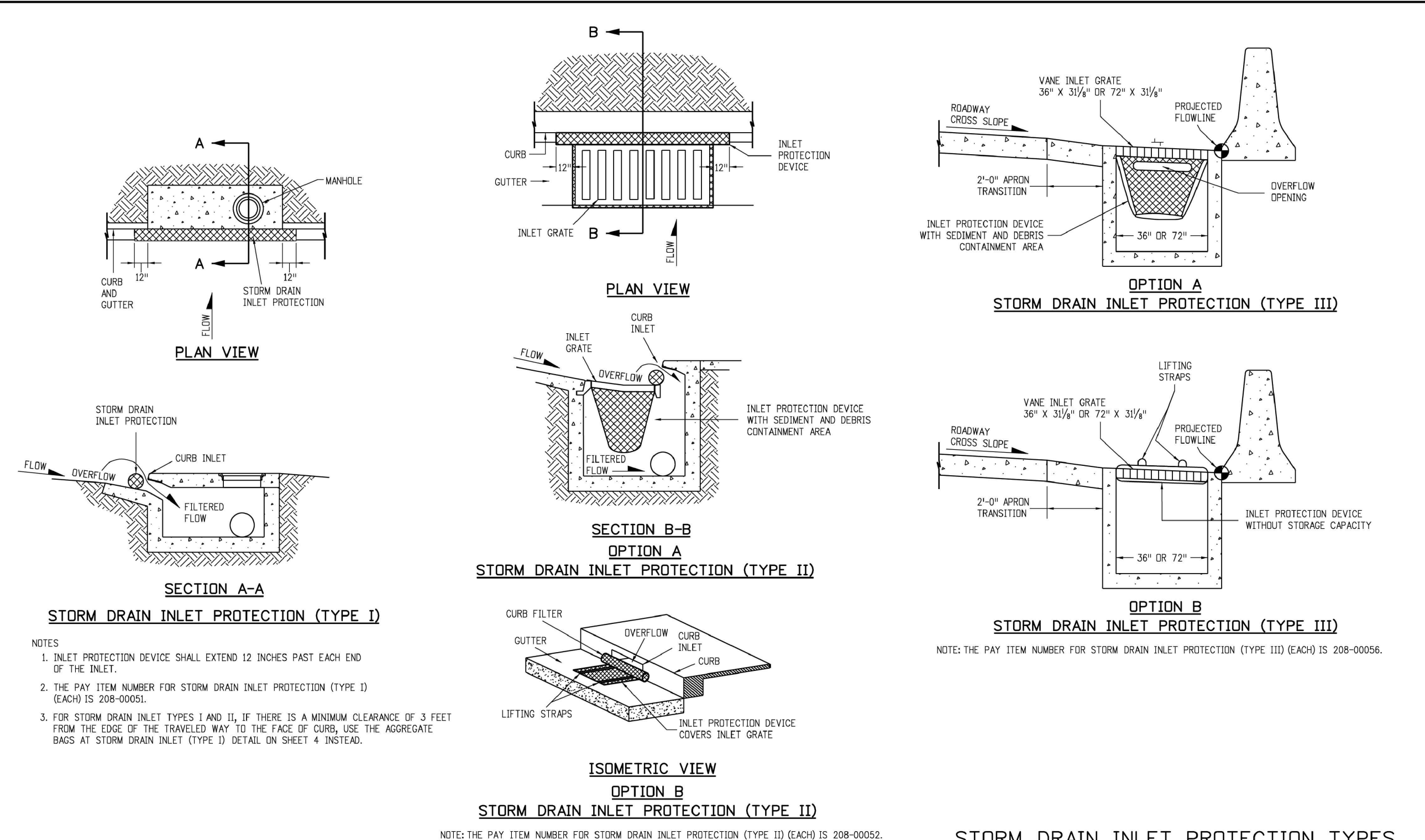
**JVA CONSULTING ENGINEERS**  
 JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvava.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver

NO.	DATE	DESIGN	DESCRIPTION
		DWN	

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 EROSION CONTROL DETAILS

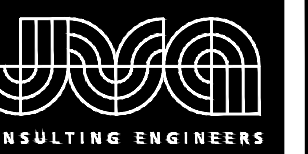
SHEET NO.  
**C0.7**



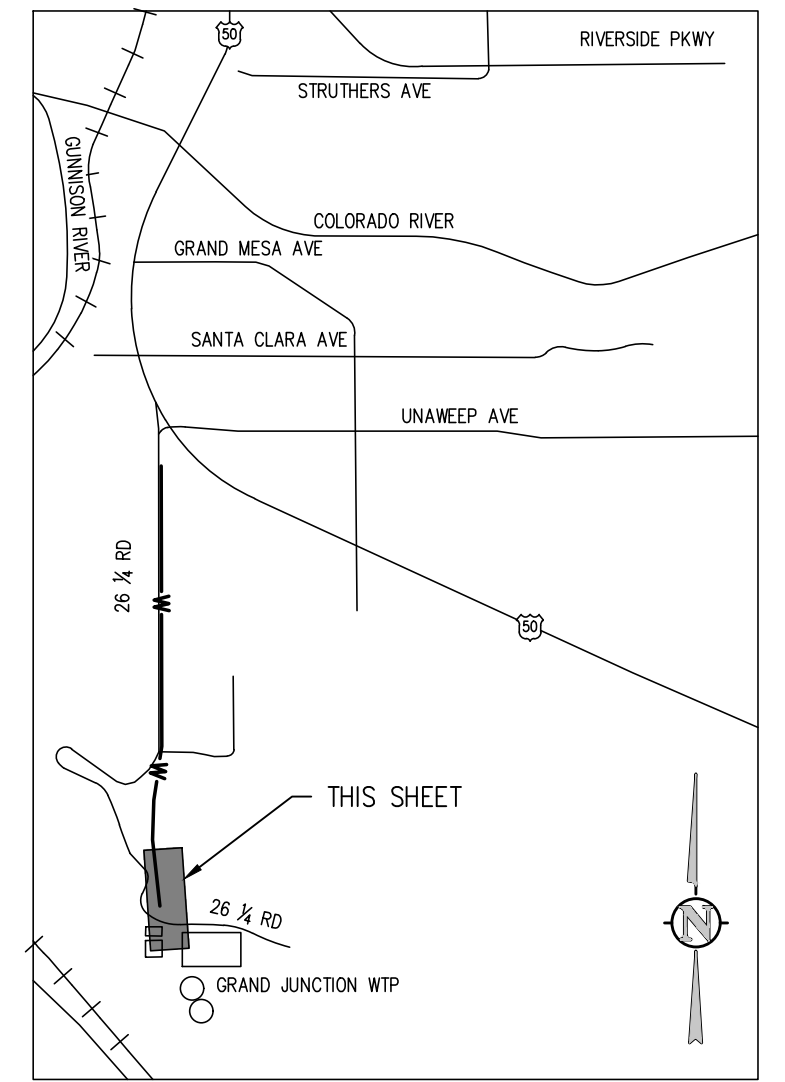
Computer File Information		Sheet Revisions		Colorado Department of Transportation		TEMPORARY EROSION CONTROL		STANDARD PLAN NO.	
Creation Date: 07/04/12	Initials: JBK	Date:	Comments:	4201 East Arkansas Avenue		M-208-1		M-208-1	
Last Modification Date: 03/29/16	Initials: LTA	03/29/16	Added Note 3.	CDOT, HQ, 4th Floor		Issued By: Project Development Branch on July 4, 2012		Sheet No. 5 of 11	
Full Path: www.coloradodot.info/business/designsupport				Denver, CO 80222					
Drawing File Name: 2080105011.dgn				Phone: 303-757-9021 FAX: 303-757-9868					
CAD Ver: MicroStation V8	Scale: Not to Scale	Units: English		Division of Project Support		JBK/LTA			

A:\2538.3c-c0\Drawings\2538.3c-c0-E09-02.dwg, 2/26/2019, 4:38 PM, .img



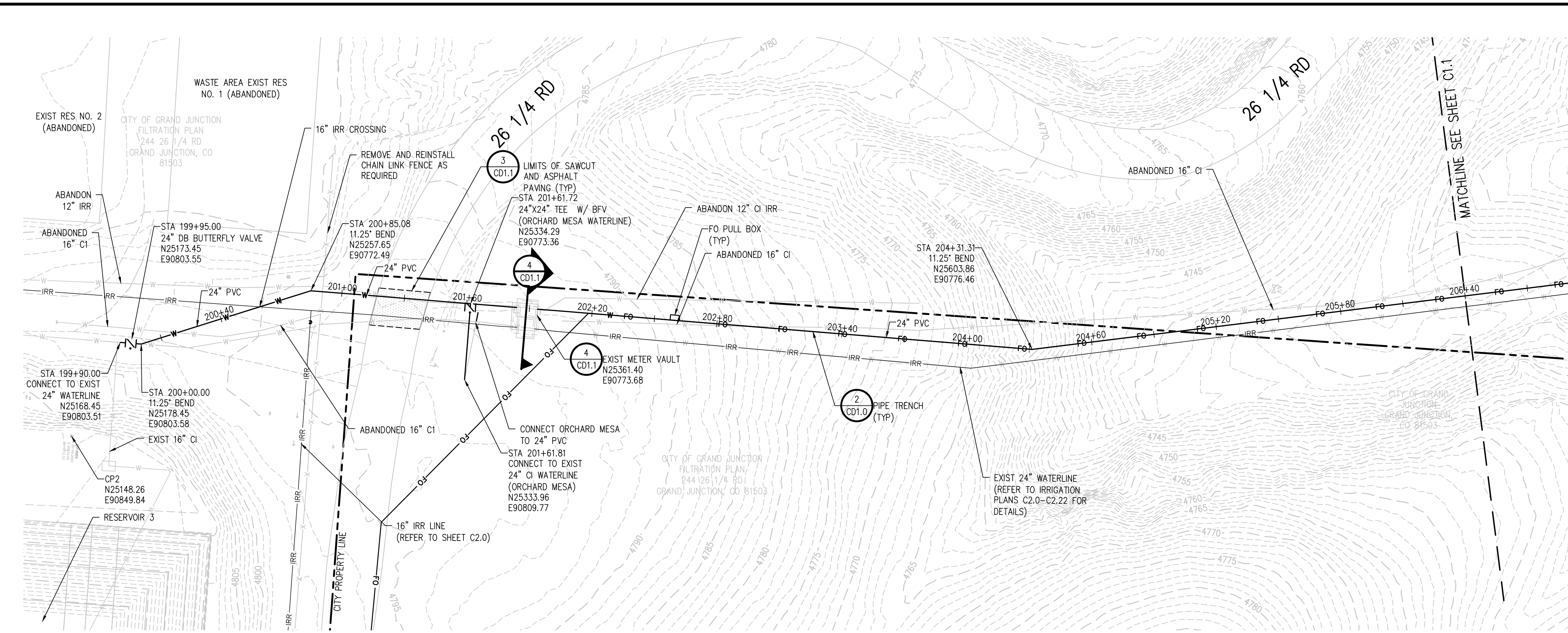
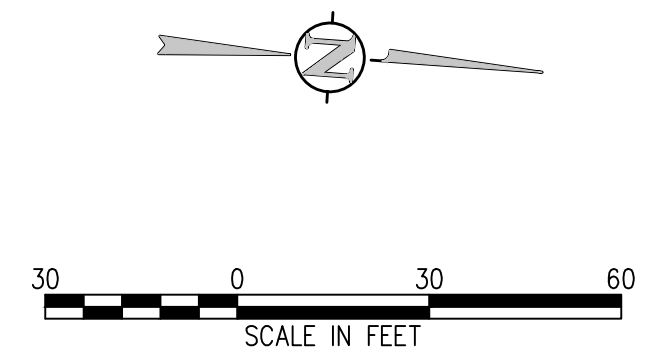


JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvaja.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver

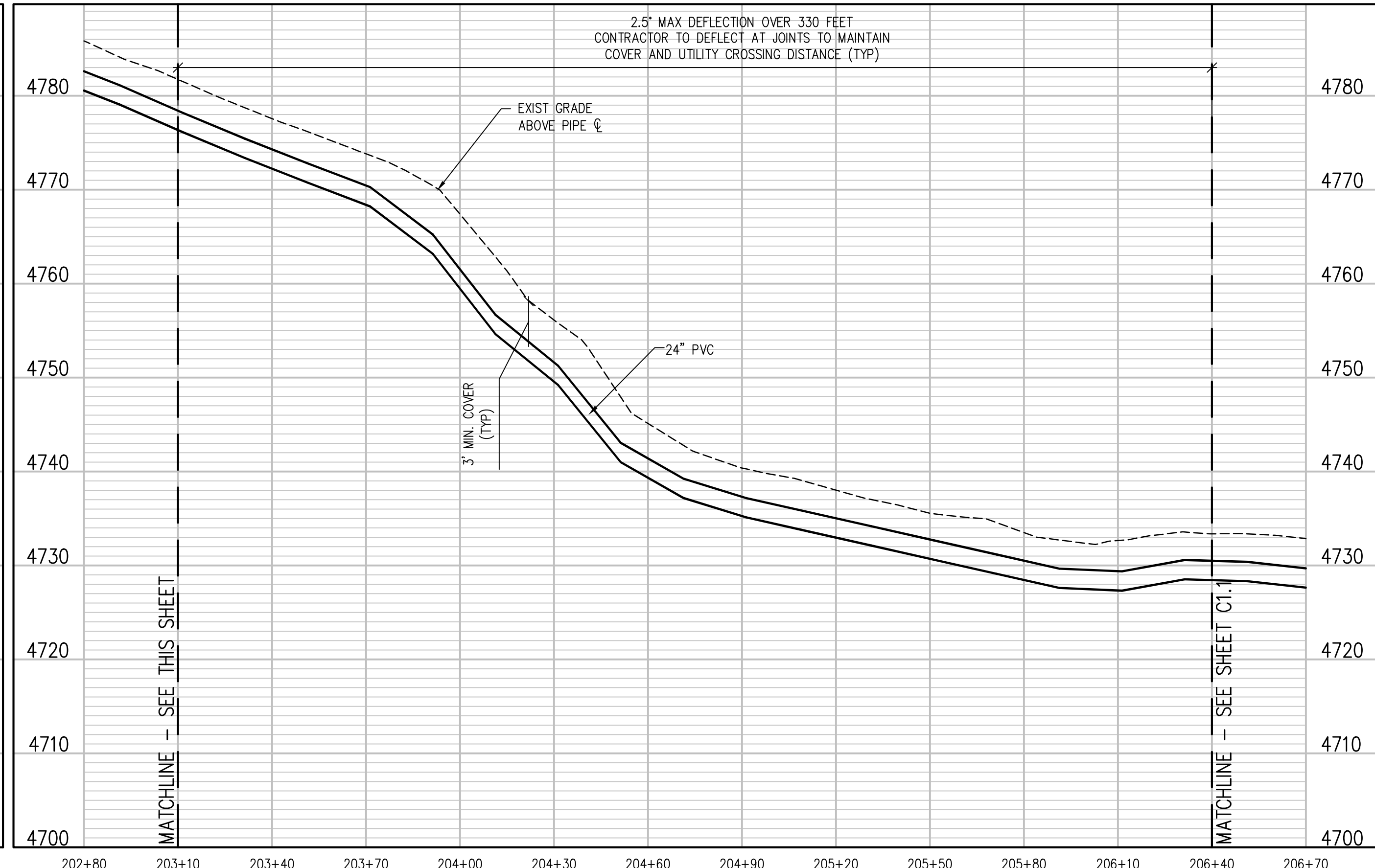
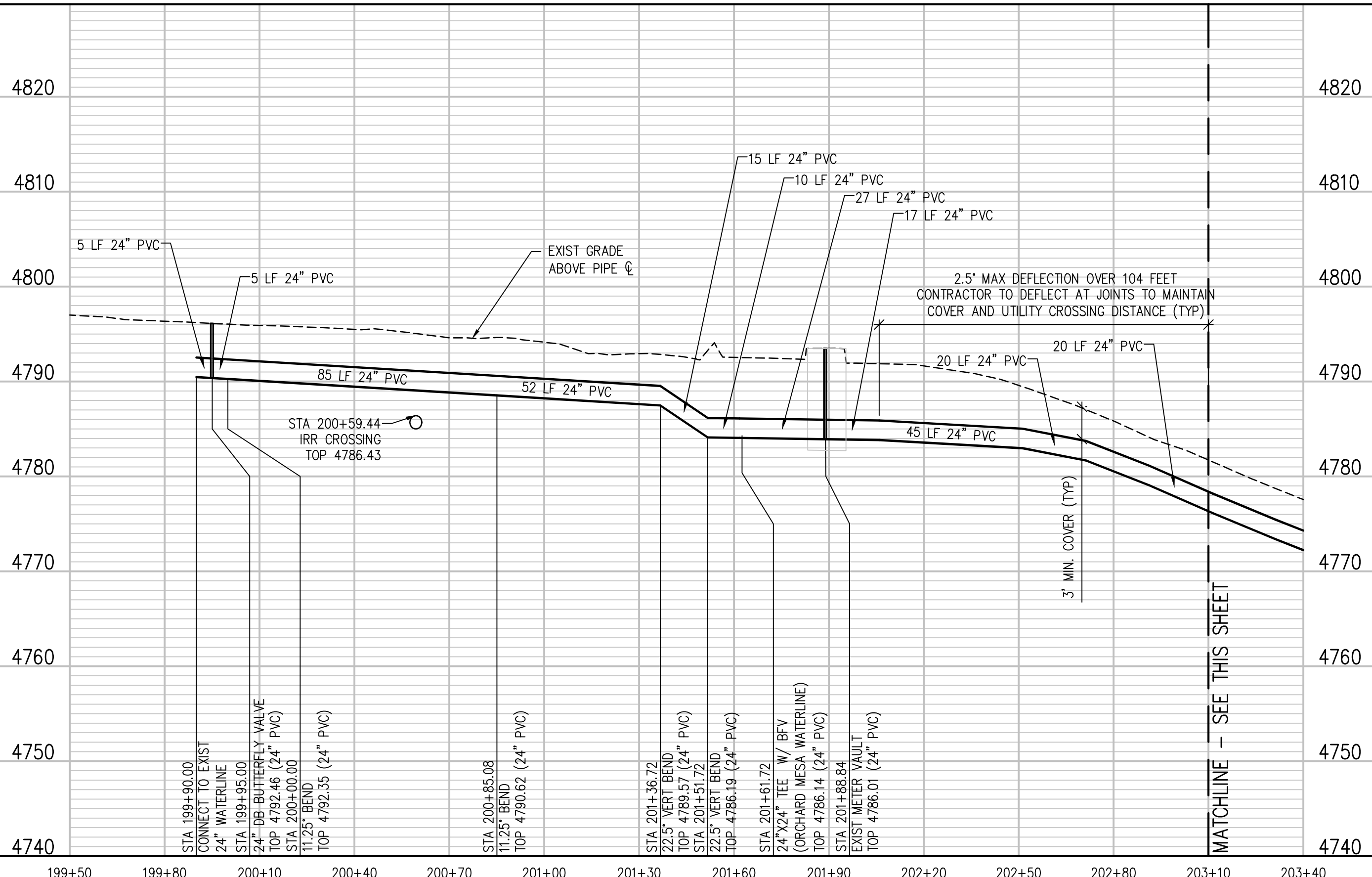


KEY MAP  
 NTS

NOTE:  
 REMOVE 12" IRR AND 16" ABANDONED CI AS NECESSARY FOR INSTALLATION OF 24" PVC PW.



POTABLE WATERLINE PLAN  
 SCALE: 1"=30'

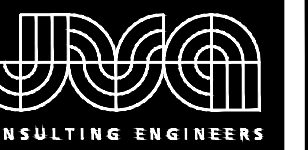


POTABLE WATERLINE PROFILE  
 SCALE: 1"=30' HORIZ  
 1"=10' VERT

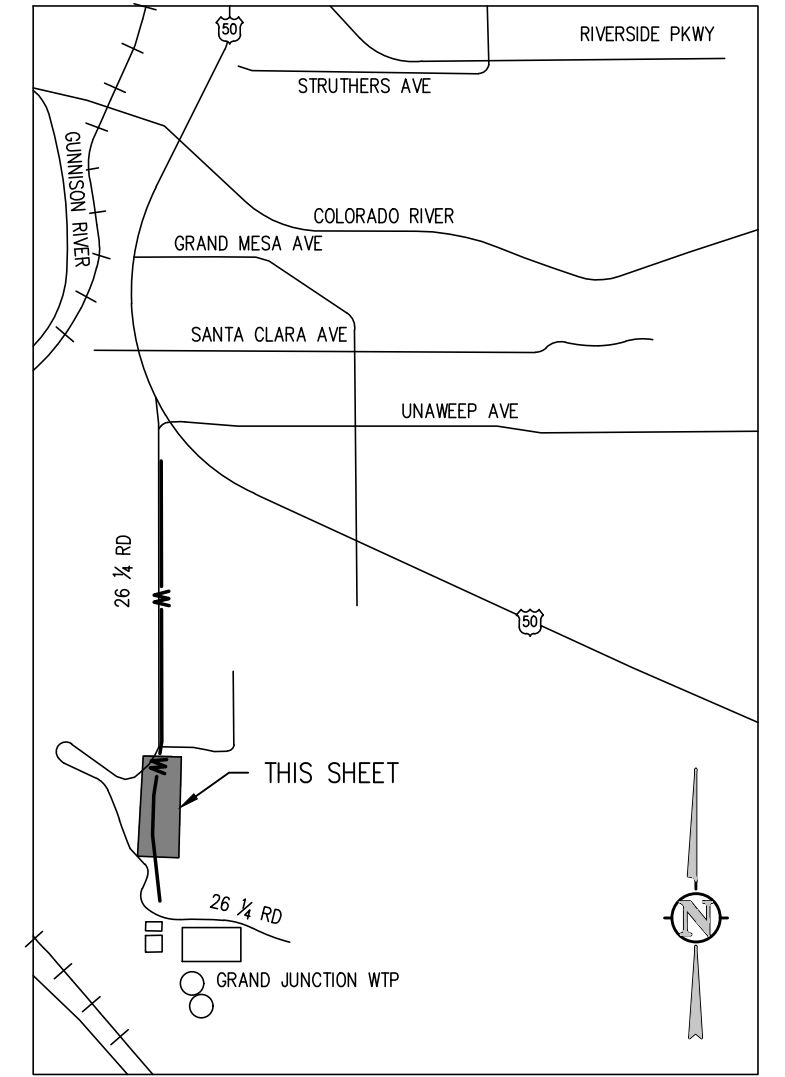
J:\2538.3c-c01\Drawings\2538.3c-02-PWP-06.dwg, 2/28/2019 - 12:46 PM, JMS

DESIGNED BY:	BLM
DRAWN BY:	NAS
CHECKED BY:	JJM
JOB #:	2538.3c
DATE:	FEBRUARY 2019
© JVA, INC.	
RAW WATER IRRIGATION SUPPLY AND WATER LINE REPLACEMENT GRAND JUNCTION, COLORADO POTABLE WATERLINE STA 200+00.00 - 206+40.00	
SHEET NO.	
C1.0	

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION
-----	------	-------	-----	----------------------

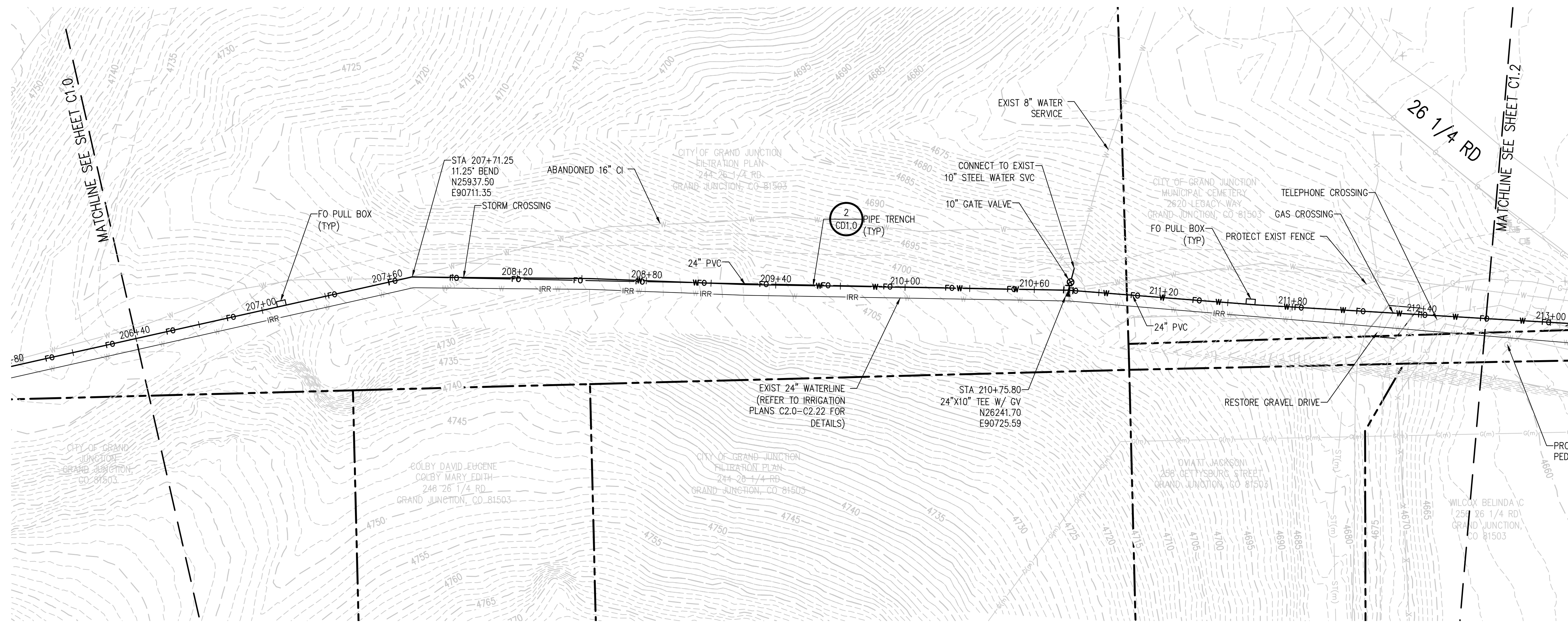
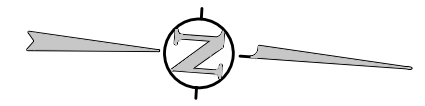


JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvajva.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver

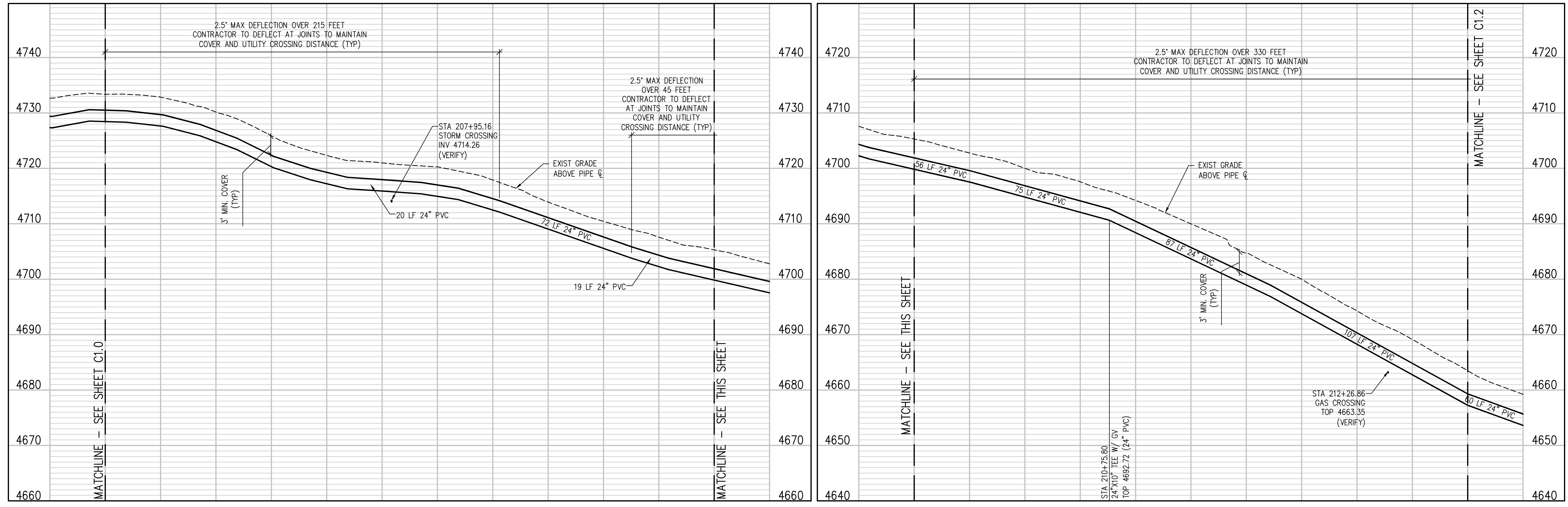


KEY MAP  
NTS

NOTE:  
REMOVE 12" IRR AND 16" CEMETERY LINE AS NECESSARY FOR INSTALLATION OF 24" PVC PW.



POTABLE WATERLINE PLAN  
SCALE: 1"=30'



POTABLE WATERLINE PROFILE  
SCALE: 1"=30' HORIZ  
1"=10' VERT

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

DESIGNED BY:	BLM
DRAWN BY:	NAS
CHECKED BY:	JJM
JOB #:	2538.3c
DATE:	FEBRUARY 2019
© JVA, INC.	

RAW WATER IRRIGATION SUPPLY  
AND WATER LINE REPLACEMENT  
GRAND JUNCTION, COLORADO

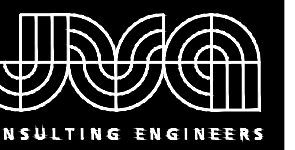
POTABLE WATERLINE STA 206+40.00 -  
212+70.00

SHEET NO.

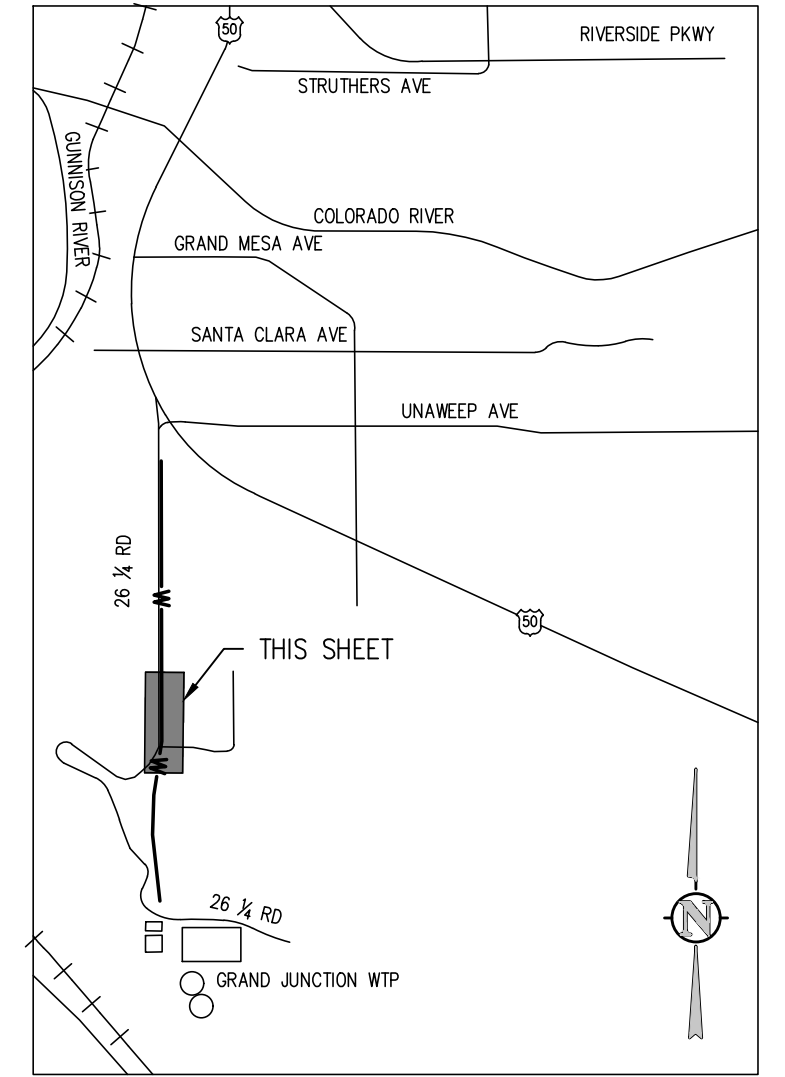
C1.1

J:\2538.3c-c01\Drawings\2538.3c-c01-PWP-06.dwg, 2/28/2019 12:46 PM, NWS



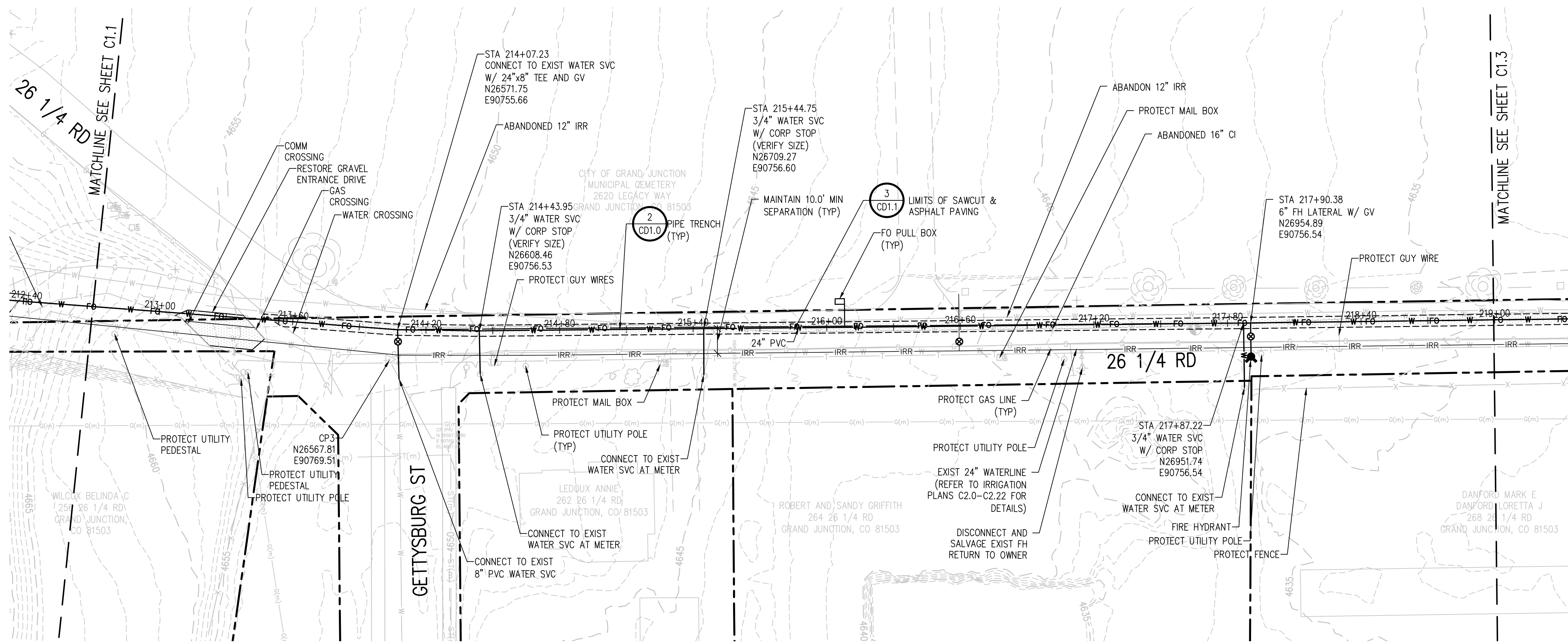
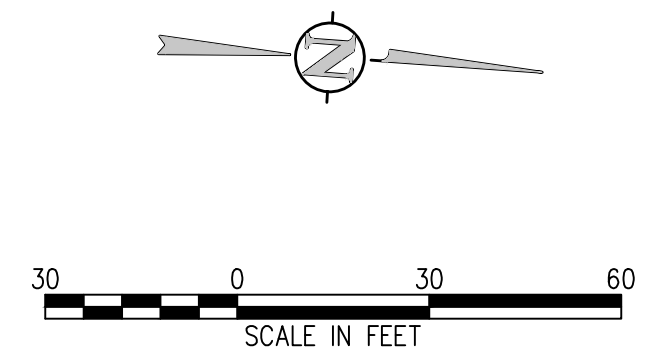


JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jva.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver

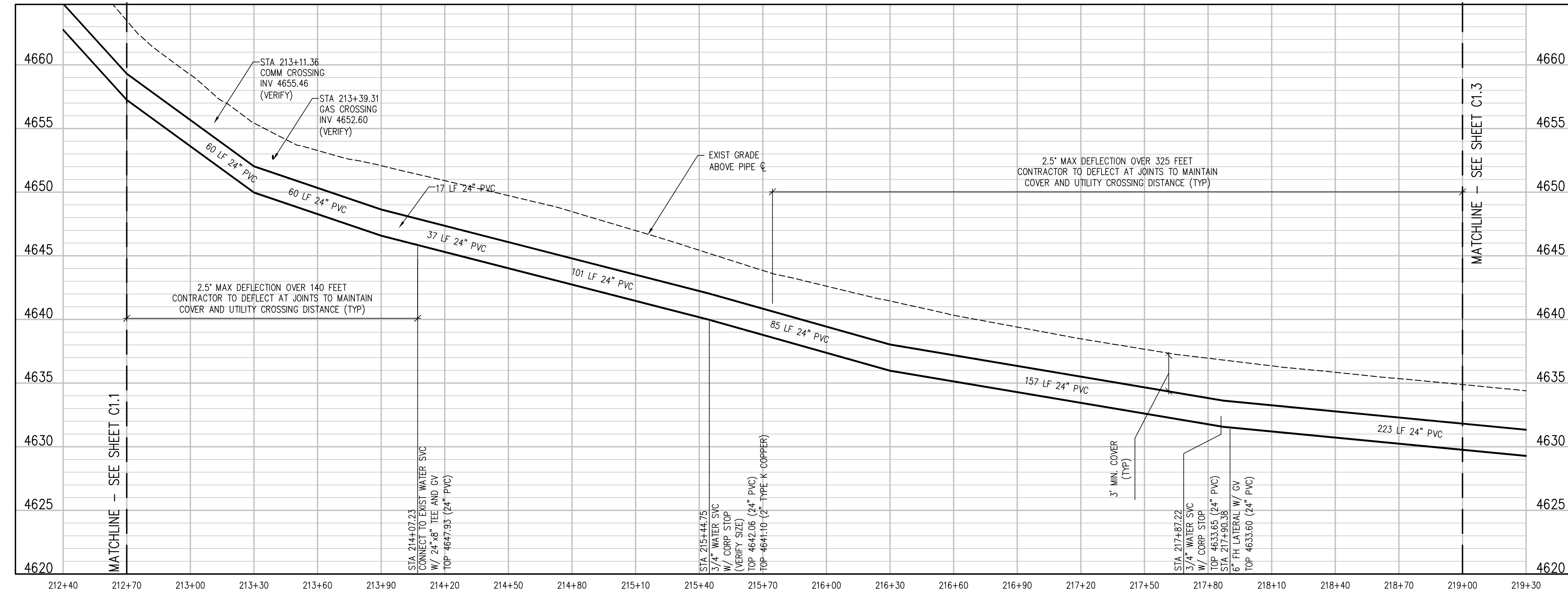


KEY MAP  
 NTS

NOTE:  
 REMOVE 12" IRR AND 16" CEMETERY LINE AS NECESSARY FOR INSTALLATION OF 24" PVC PW.



POTABLE WATERLINE PLAN  
 SCALE: 1"=30'



POTABLE WATERLINE PROFILE  
 SCALE: 1"=30' HORIZ  
 1"=10' VERT

NO. DATE DESD DWN REVISION DESCRIPTION

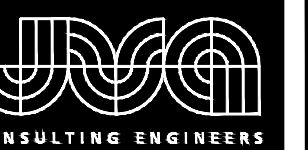
DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

© JVA, INC.  
 RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 POTABLE WATERLINE STA 212+70.00 -  
 219+00.00

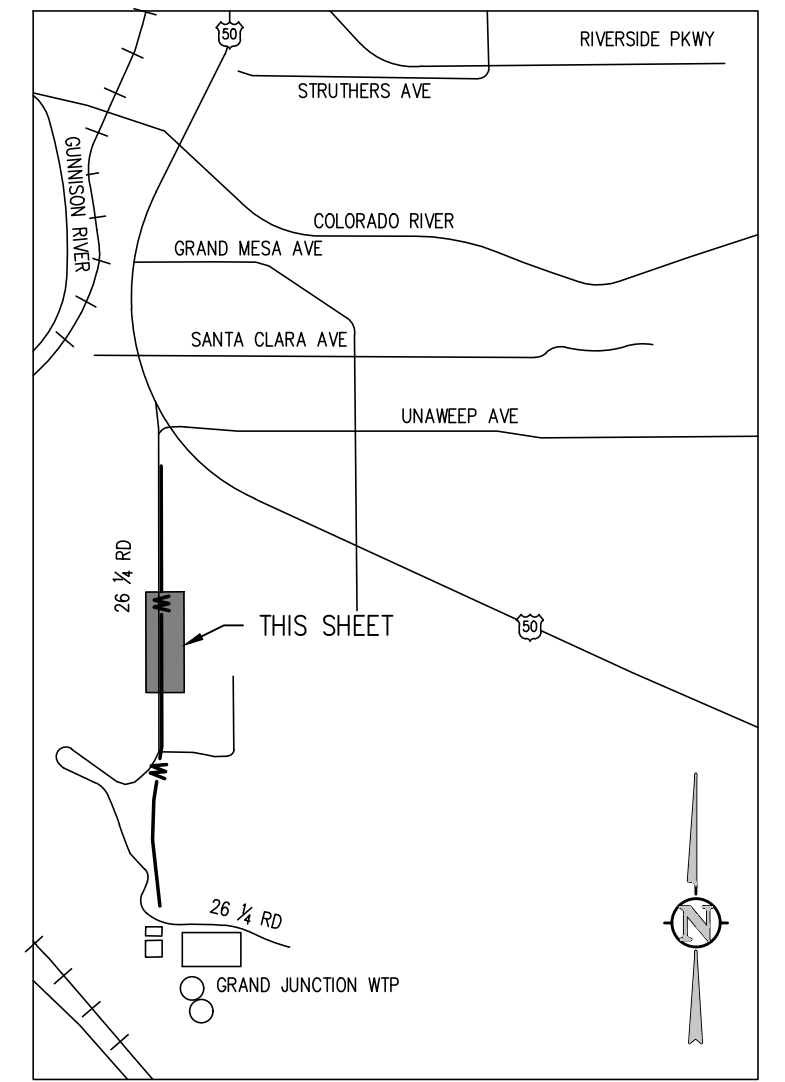
SHEET NO.  
**C1.2**

J:\2538.3c-c01\Drawings\2538.3c-c02-PWP-06.dwg, 2/28/2019 12:46 PM, JVA



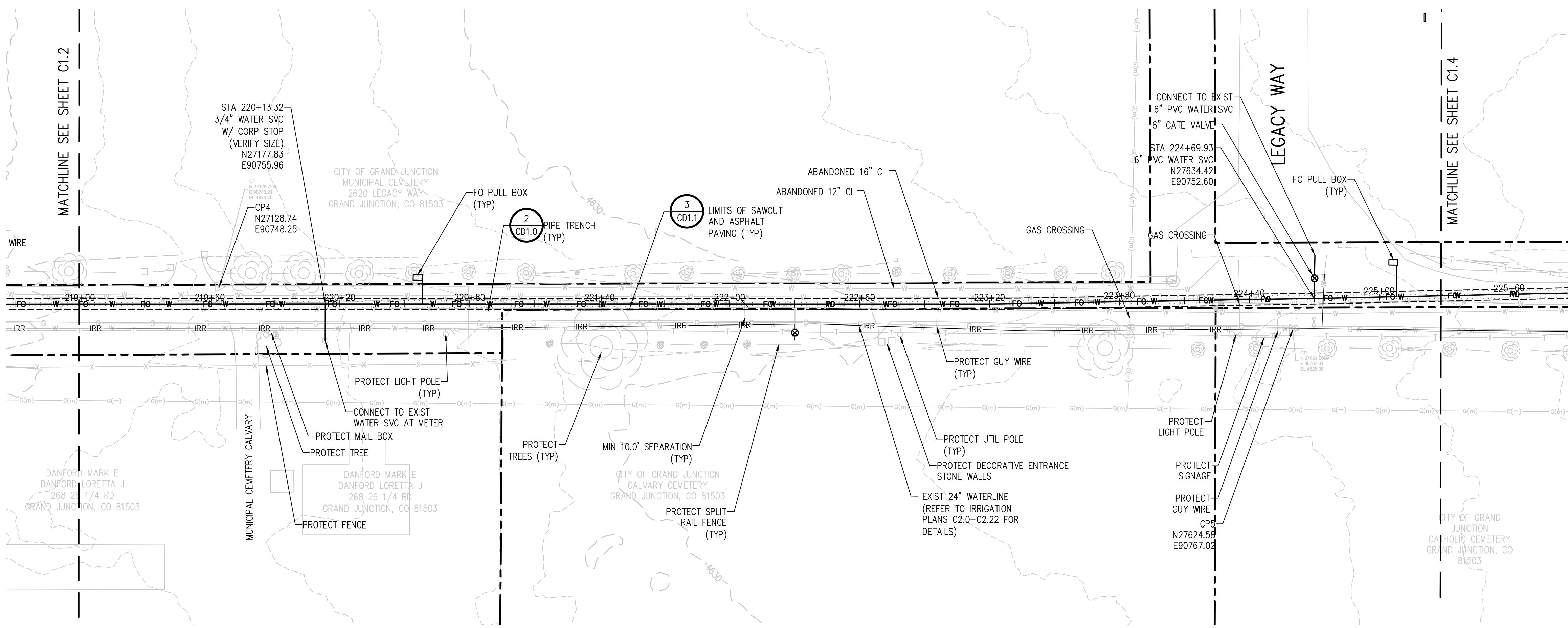
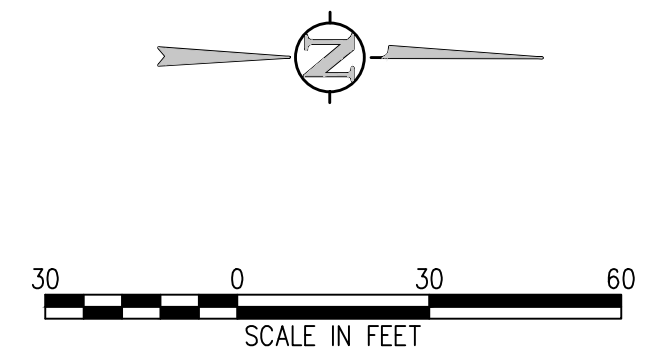


JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jva.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver

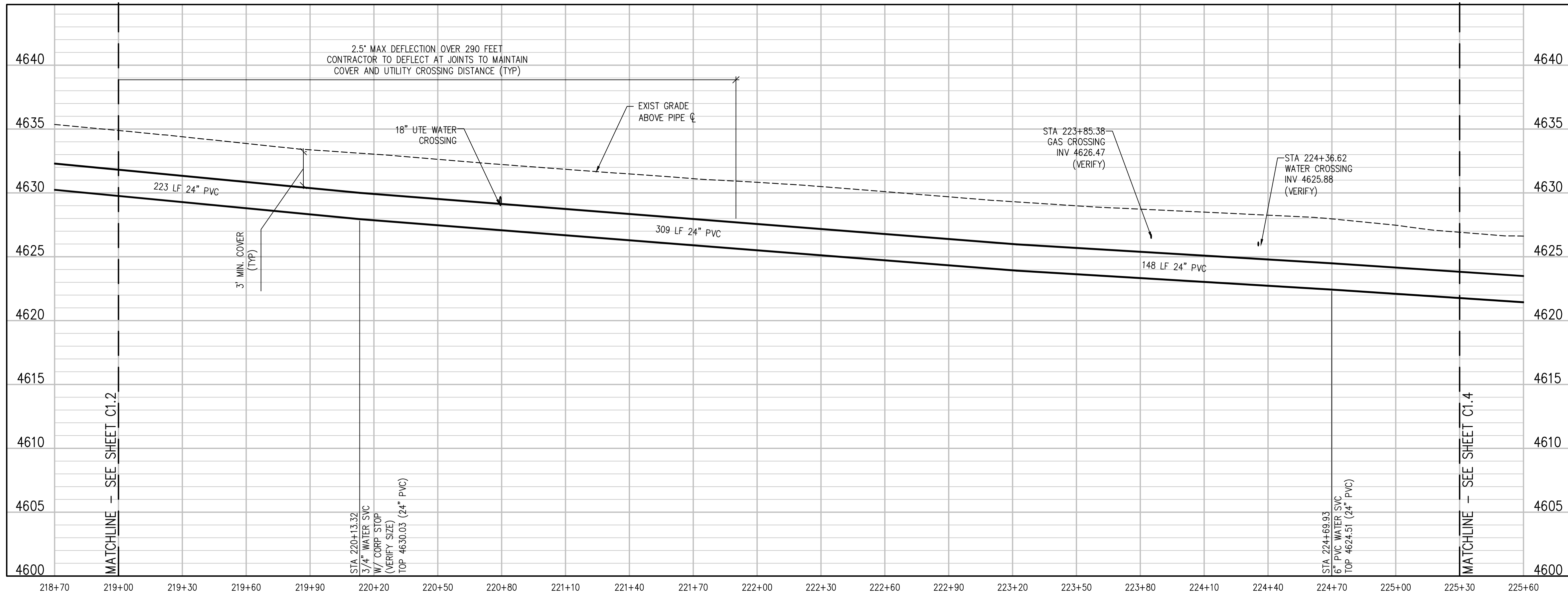


KEY MAP  
NTS

NOTE:  
REMOVE 12" IRR AND 16" CEMETERY LINE AS NECESSARY FOR INSTALLATION OF 24" PVC PW.



POTABLE WATERLINE PLAN  
SCALE: 1"=30'



POTABLE WATERLINE PROFILE  
SCALE: 1"=30' HORIZ  
1"=10' VERT

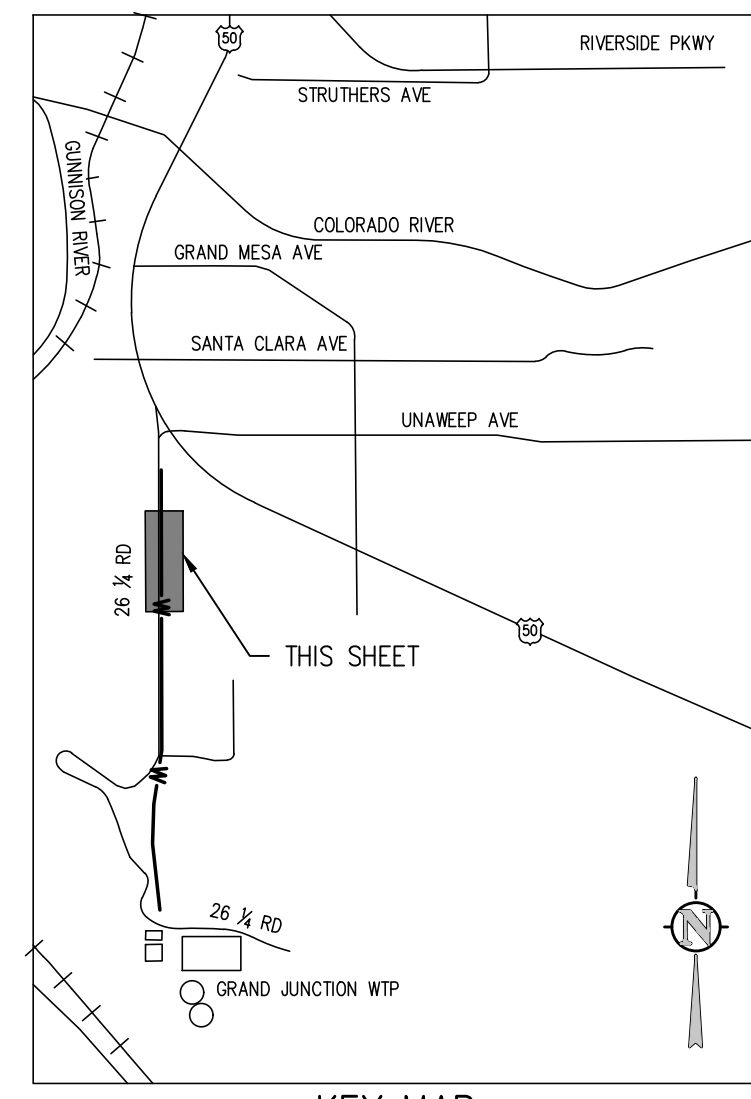
NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

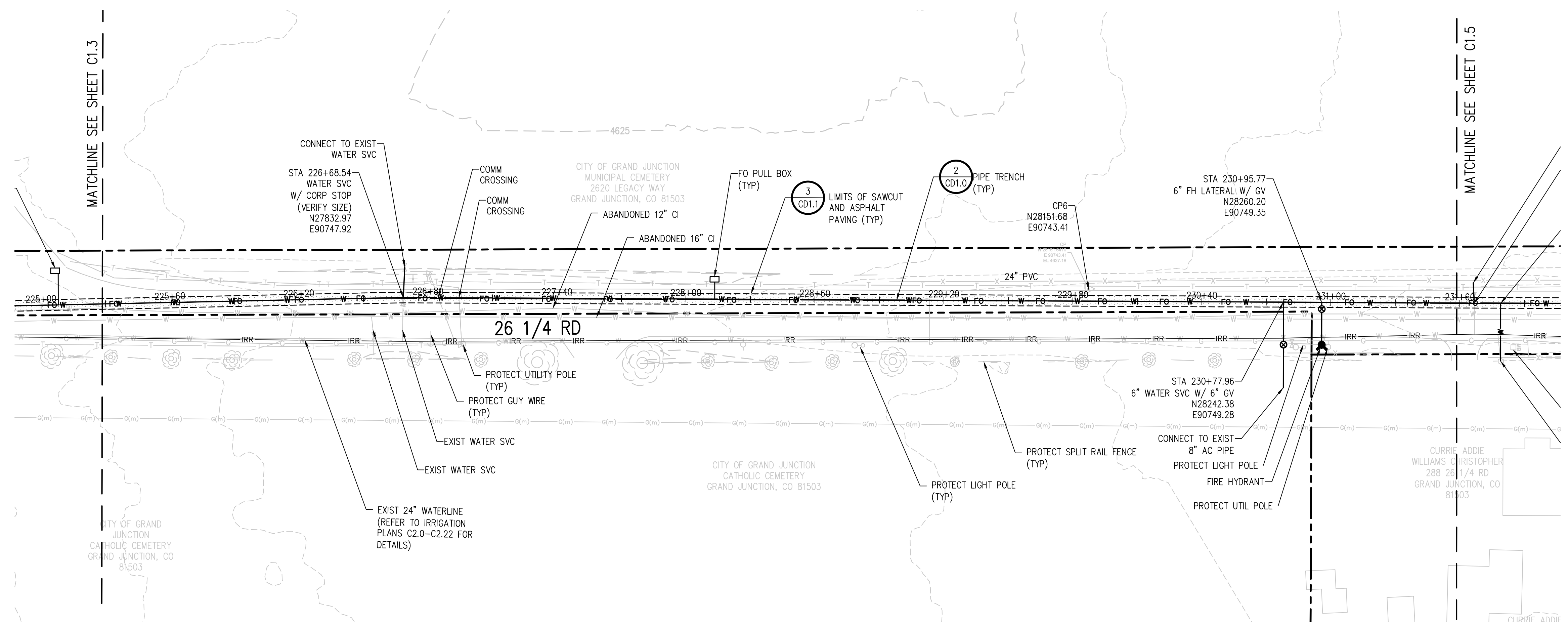
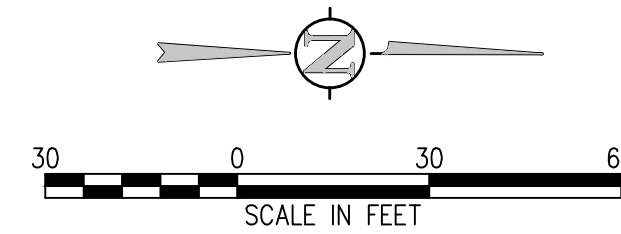
RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 POTABLE WATERLINE STA 219+00.00 -  
 225+30.00

SHEET NO.  
**C1.3**

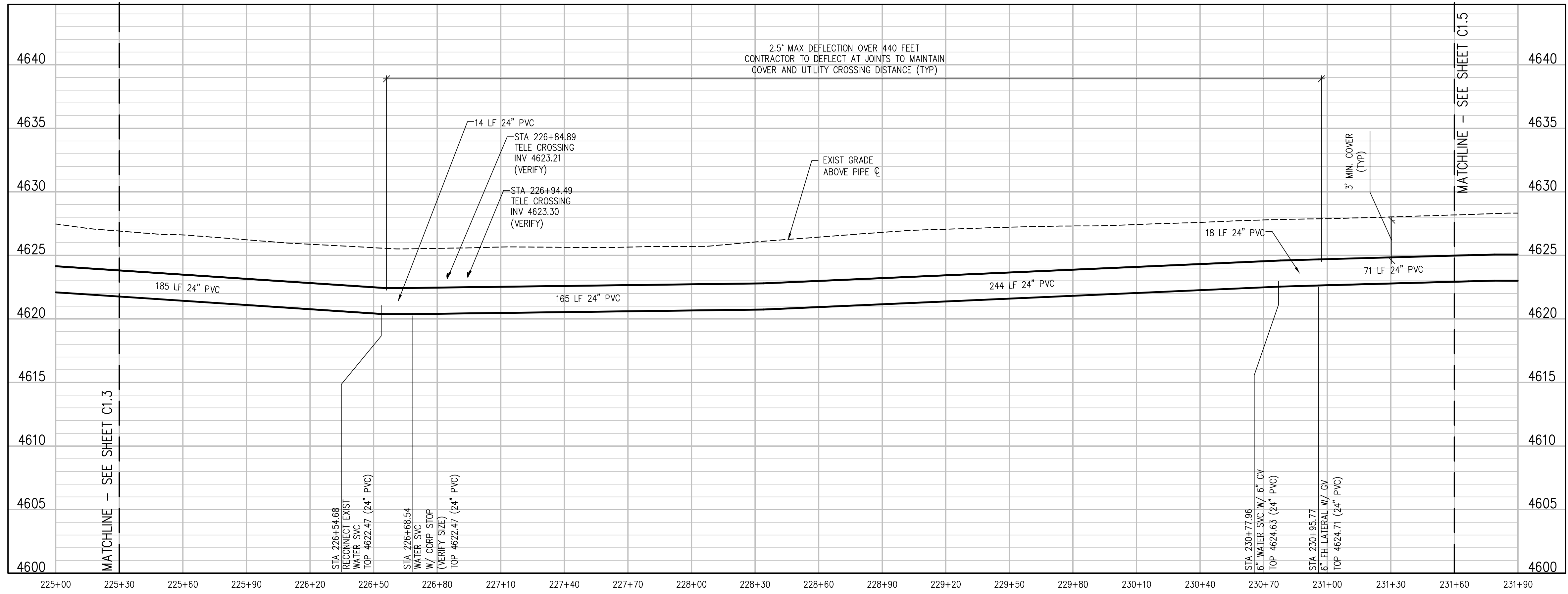
J:\2538.3c-c01\Drawings\2538.3c-c01-PWP-06.dwg, 2/28/2019 12:46 PM, WMS



**NOTE:**  
 REMOVE 12" IRR AND 16" CEMETERY LINE AS NECESSARY FOR INSTALLATION OF 24" PVC PW.



**POTABLE WATERLINE PLAN**  
 SCALE: 1"=30'



**POTABLE WATERLINE PROFILE**  
 SCALE: 1"=30' HORIZ  
 1"=10' VERT

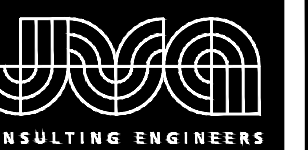
NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

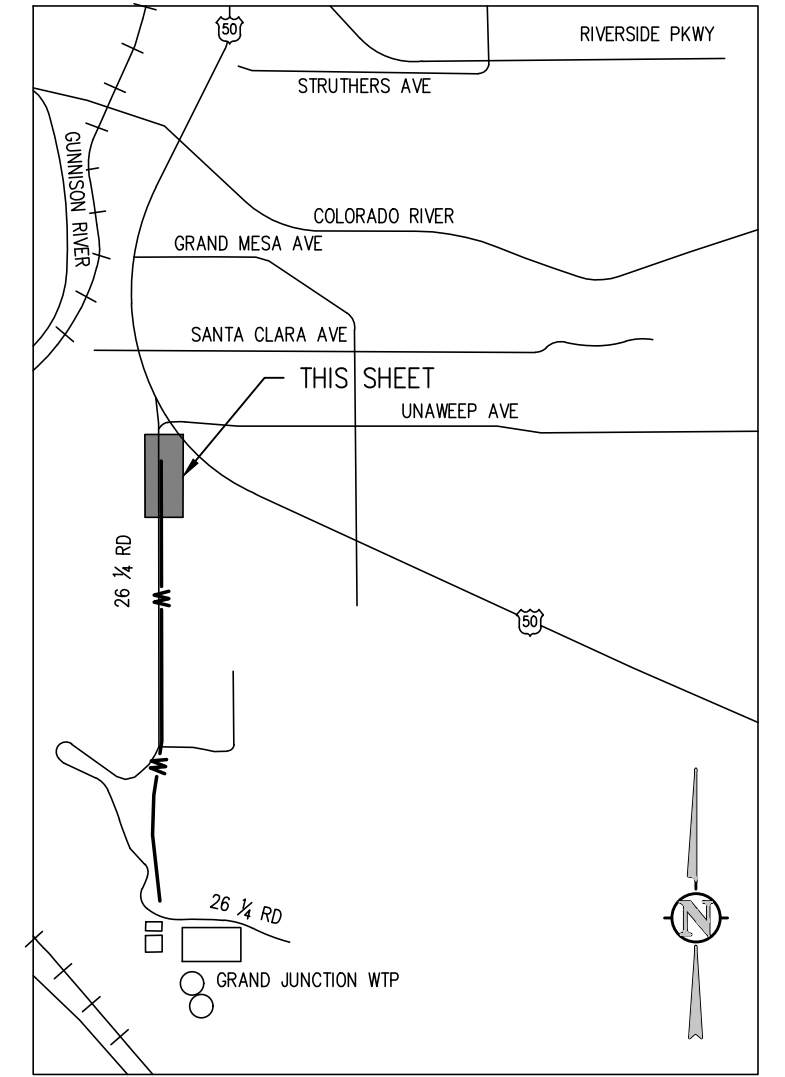
**RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO**  
**POTABLE WATERLINE STA 225+30.00 -  
 231+60.00**

SHEET NO.  
**C1.4**

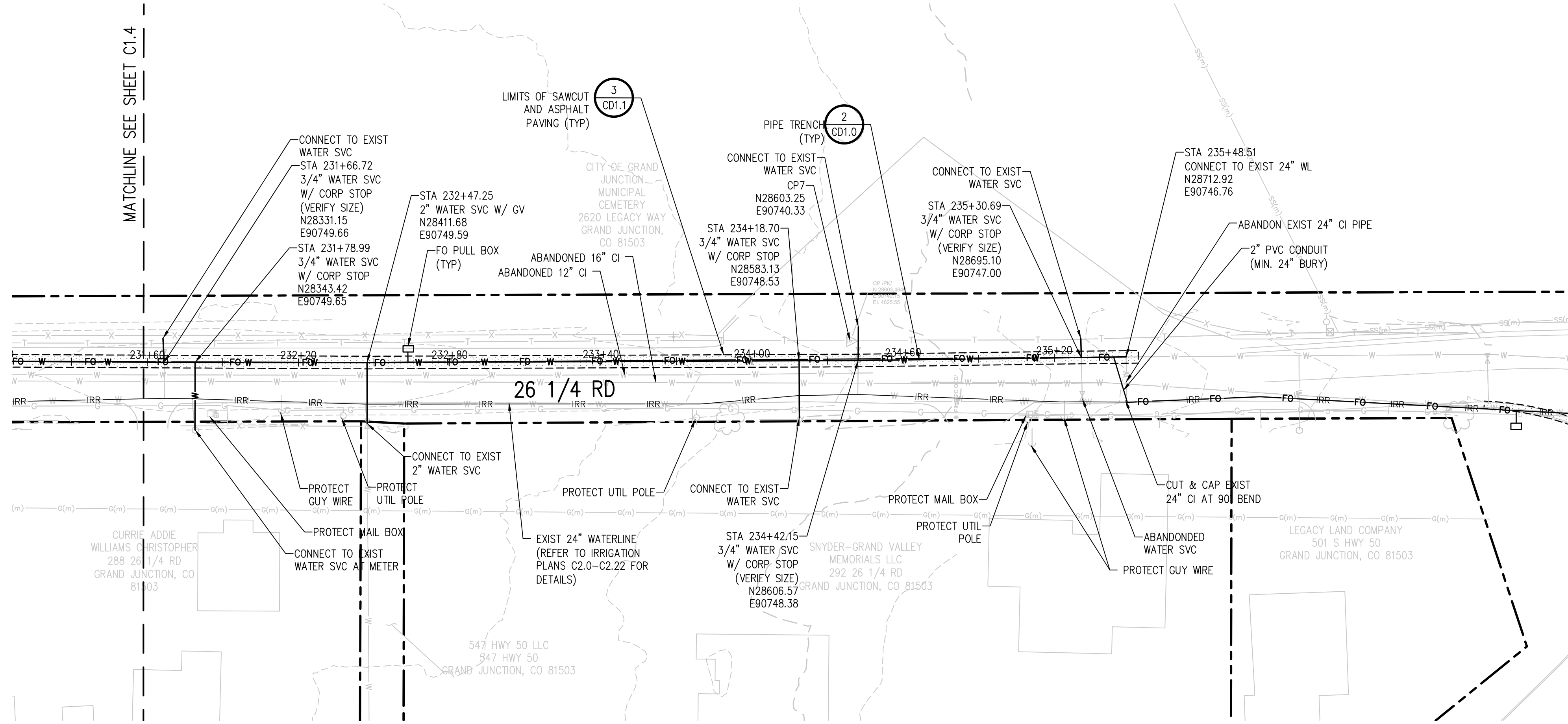
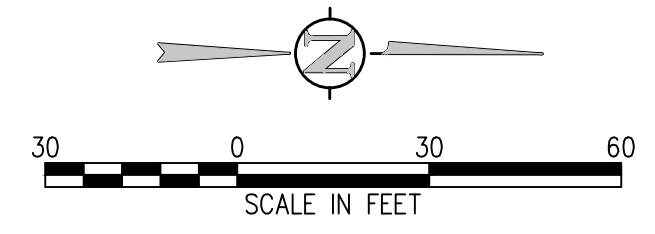
A:\2538.3c-c01\Drawings\2538.3c-c01-PWP-06.dwg, 2/28/2019 12:46 PM, JMS



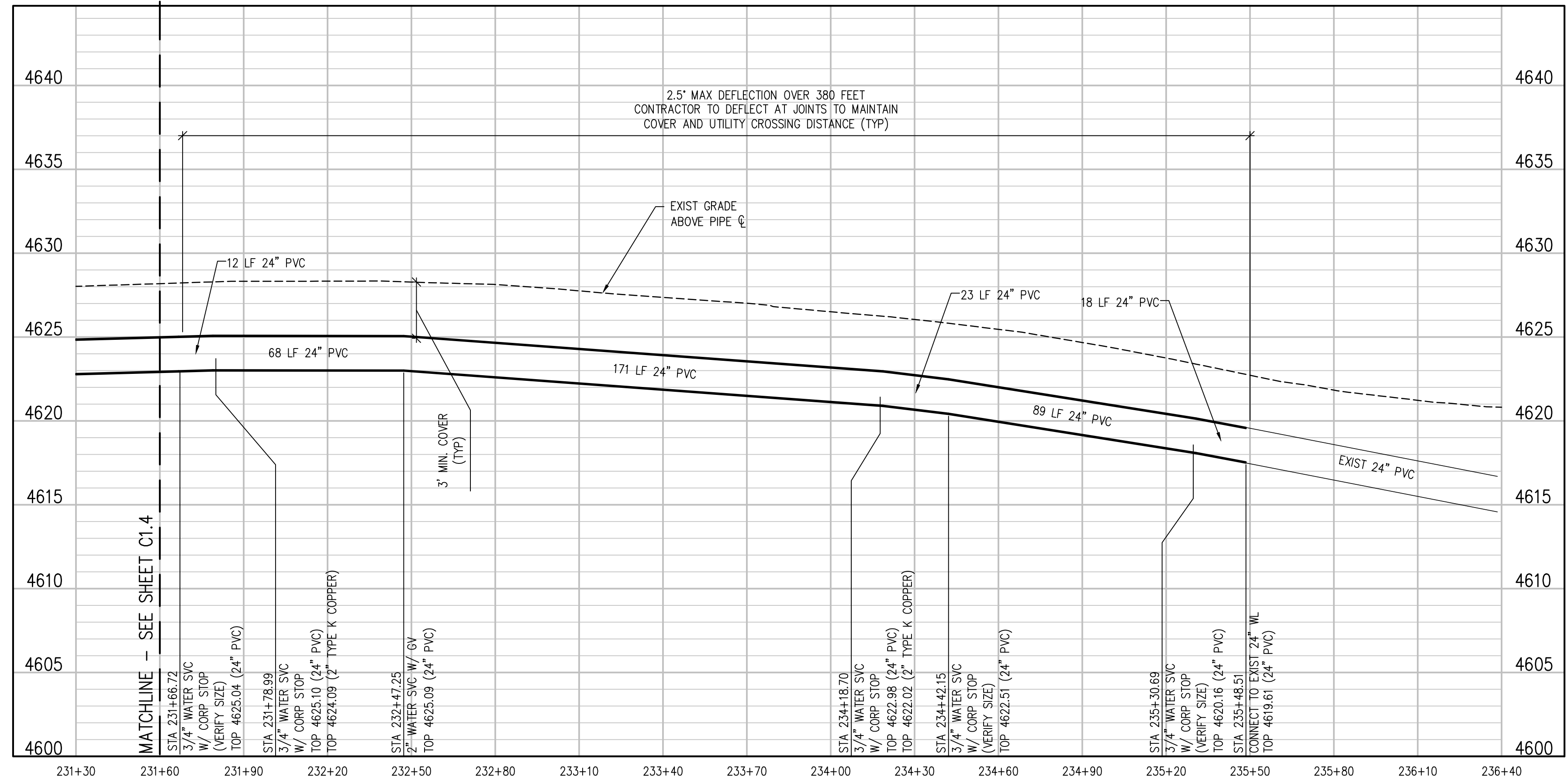
JVA, Inc. 817 Colorado Ave., Suite 301  
Glenwood Springs, CO 970.404.3100  
www.jvajva.com  
Boulder • Fort Collins • Winter Park  
Glenwood Springs • Denver



**NOTE:**  
REMOVE 12" IRR AND 16" CEMETERY LINE AS NECESSARY FOR INSTALLATION OF 24" PVC PW.



POTABLE WATERLINE PLAN  
SCALE: 1"=30'



POTABLE WATERLINE PROFILE  
SCALE: 1"=30' HORIZ  
1"=10' VERT

NO. DATE DESD DWN REVISION DESCRIPTION

DESIGNED BY: BLM  
DRAWN BY: NAS  
CHECKED BY: JJM  
JOB #: 2538.3c  
DATE: FEBRUARY 2019

© JVA, INC.

RAW WATER IRRIGATION SUPPLY  
AND WATER LINE REPLACEMENT  
GRAND JUNCTION, COLORADO  
POTABLE WATERLINE STA 231+60.00 -  
235+14.39

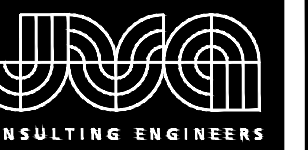
SHEET NO.  
**C1.5**

J:\2538.3c-c01\Drawings\2538.3c-c01-PWP-06.dwg, 2/28/2019 - 12:47 PM, MMS

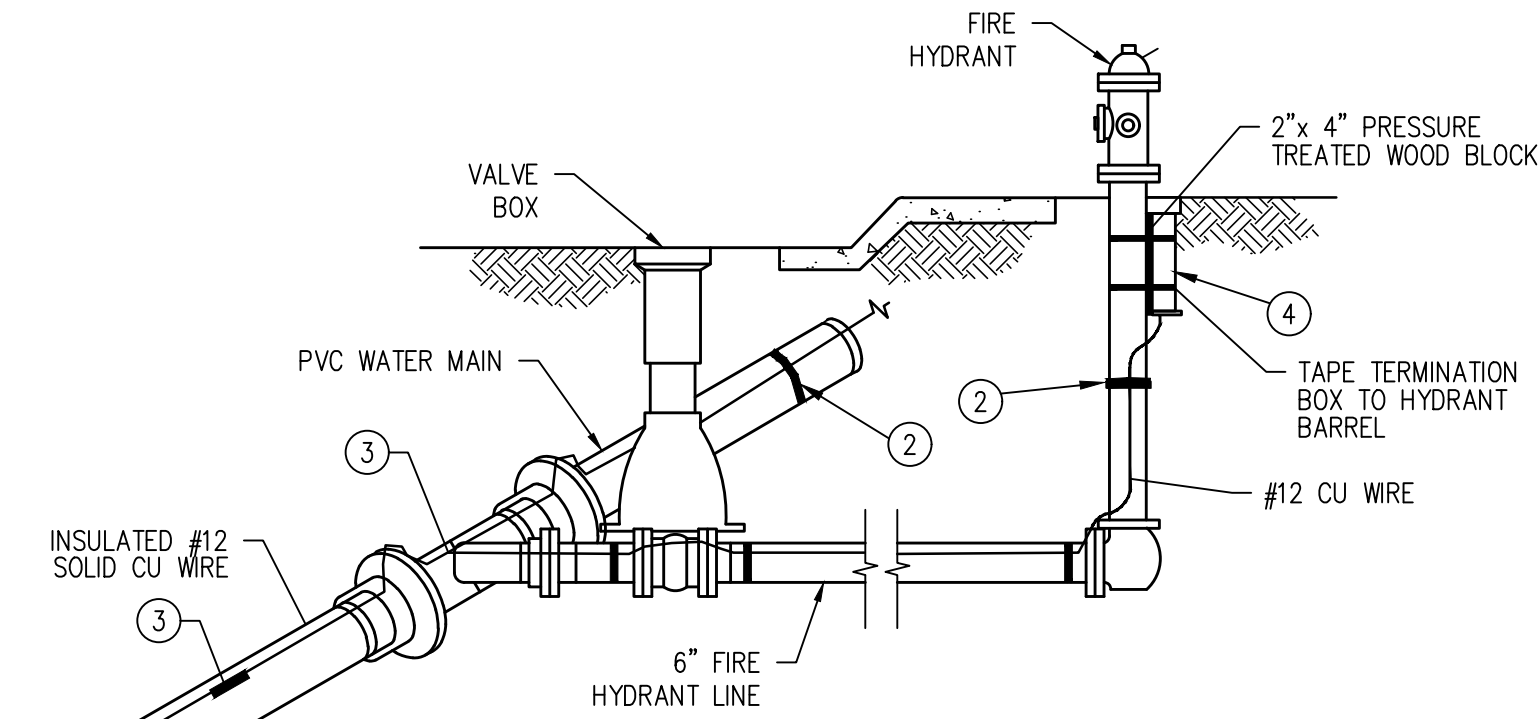






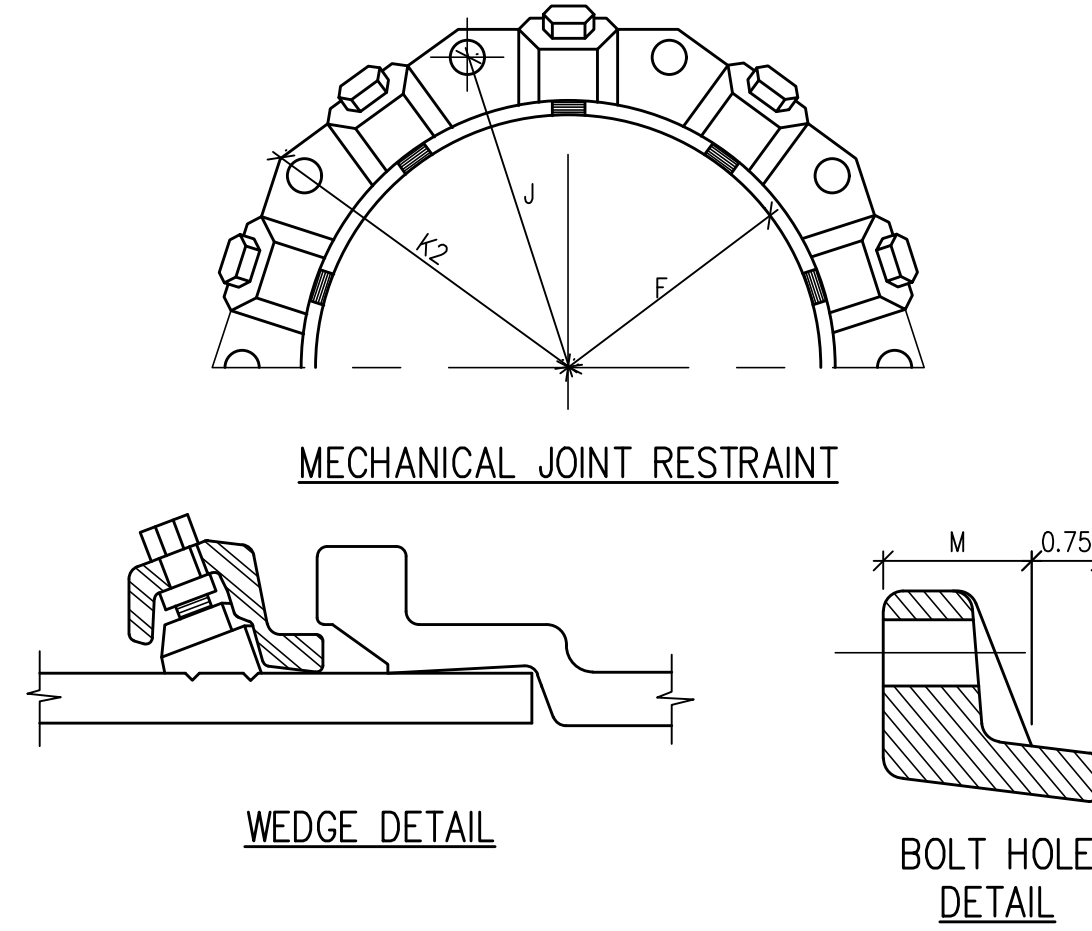


JVA, Inc. 817 Colorado Ave., Suite 301  
Glenwood Springs, CO 81601  
970.404.3100  
www.jvajva.com  
Boulder • Fort Collins • Winter Park  
Glenwood Springs • Denver



- NOTES:**
1. INSTALL TRACER WIRE ON ALL PIPE INSIDE POLYWRAP. TERMINATE TEST LEADS AT EACH HYDRANT, BLOW-OFF AS SHOWN ON PLANS, AND AS DIRECTED BY UTILITY OWNER.
  2. TAPE WIRE ON EACH SIDE OF FITTINGS AND AT 10' MAX ON CENTERS ALONG TOP OF PIPE OR LOOP WIRE AROUND EACH PIPE SECTION 2 OR 3 TIMES W/ 2" PVC TAPE.
  3. USE 12 GAUGE COPPER CONNECTOR DOSSERT NO. DPC2 OR EQUAL FOR SINGLE SPLICE. USE 12 GAUGE COPPER CONNECTOR, BURNOY NO. YC12, 3M TYPE DBY-6 OR EQUAL FOR MULTIPLE SPLICES. SPLICES AT FITTINGS SHALL BE OUTSIDE POLYWRAP.
  4. USE 18" LONG BY 2 1/2" DIA. PVC TERMINATION FITTING W/ CAST IRON LID. CONNECT ALL WIRE(S) TO TERMINAL. (C.P. TEST SERVICES, INC. OR EQUAL). PROVIDE AMPLE TRACER WIRE AT TEST SERVICES, INC. OR EQUAL. PROVIDE AMPLE TRACER WIRE AT TEST STATIONS FOR TESTING.

**TRACER WIRE INSTALLATION DETAIL** 1  
NTS

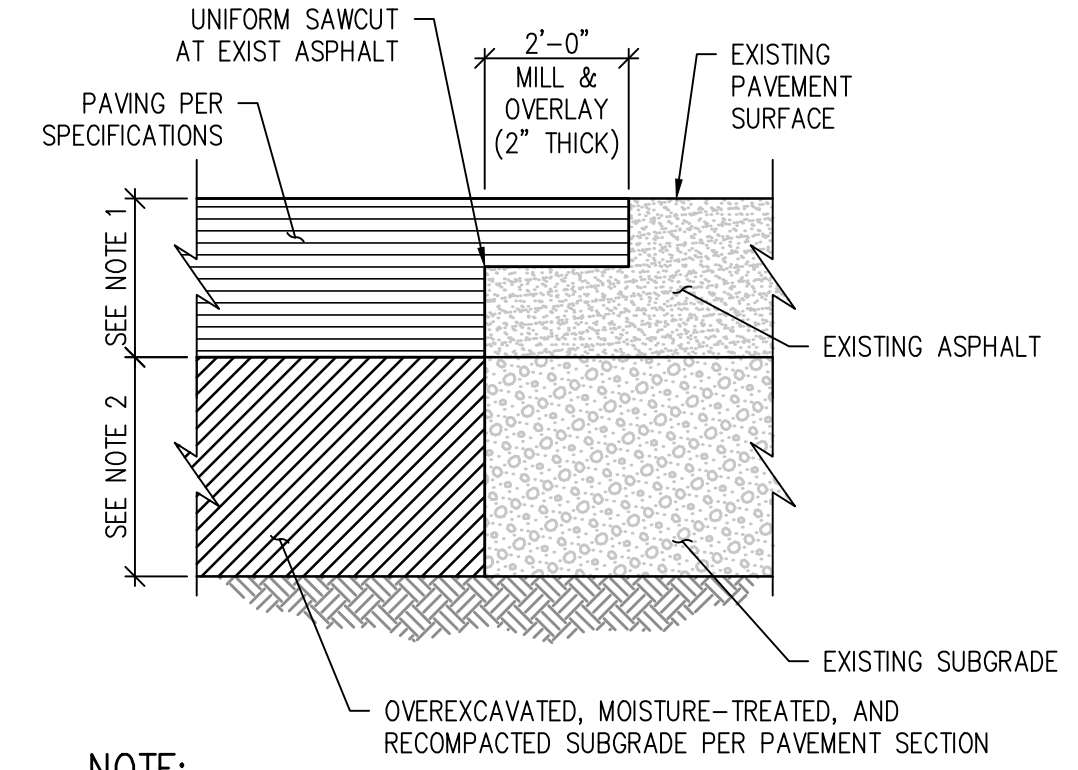


**DIMENSIONS**

NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	K2 INCHES	J INCHES	F INCHES	M INCHES
16"	12	12	22.50	21.00	17.54	1.56
20"	14	14	27.00	25.50	21.74	1.69
24"	16	16	31.50	30.00	25.94	1.81
36"	24	24	46.00	43.75	38.47	2.25

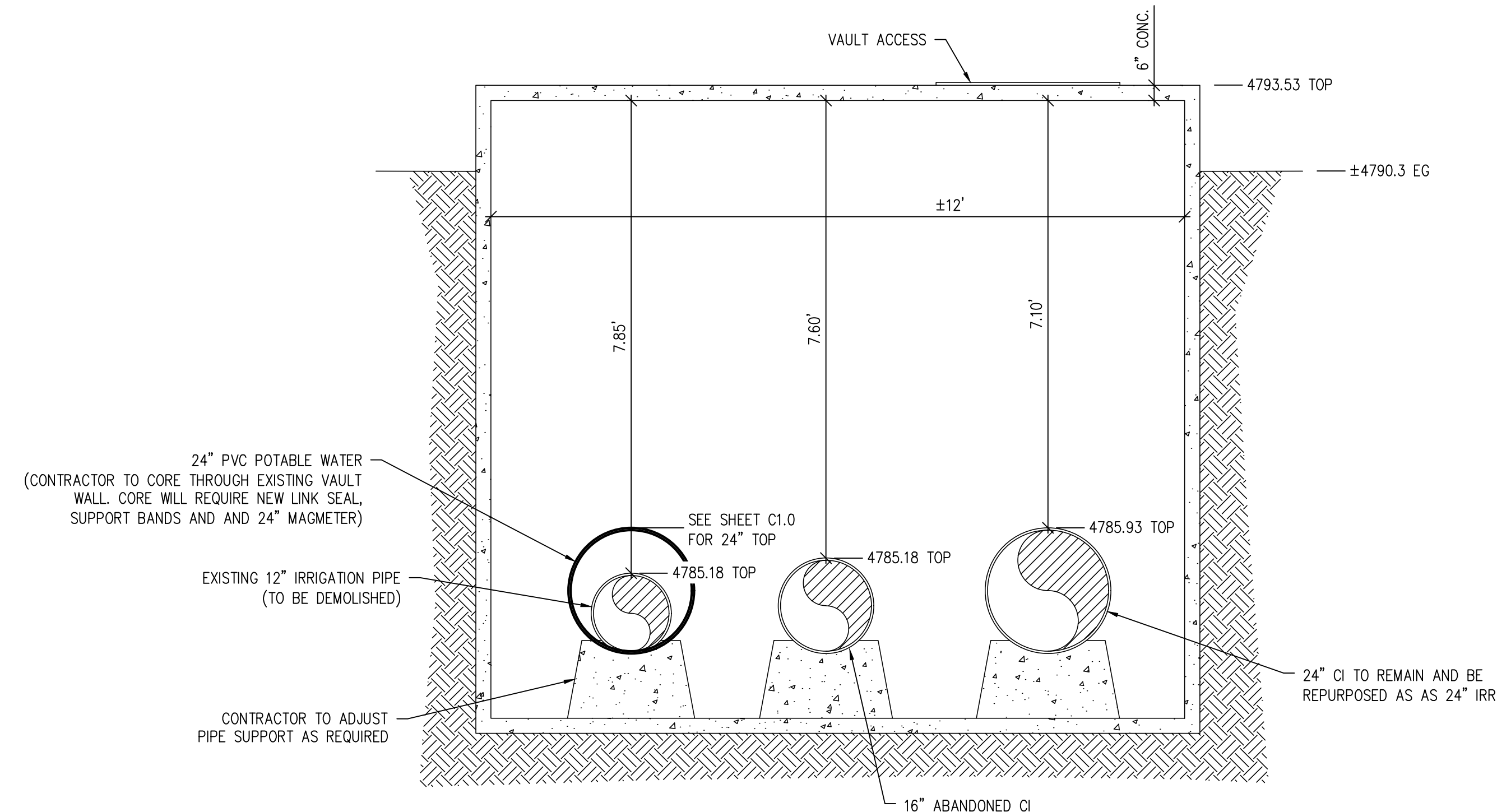
- NOTE:**
1. BASED ON "MEGA LUG" PIPE RESTRAINT SYSTEM BY EBAA IRON
  2. OTHER MECHANICAL JOINT RESTRAINT DEVICES MUST BE APPROVED BEFORE INSTALLATION.

**MECHANICAL JOINT RESTRAINT DETAIL** 2  
NTS



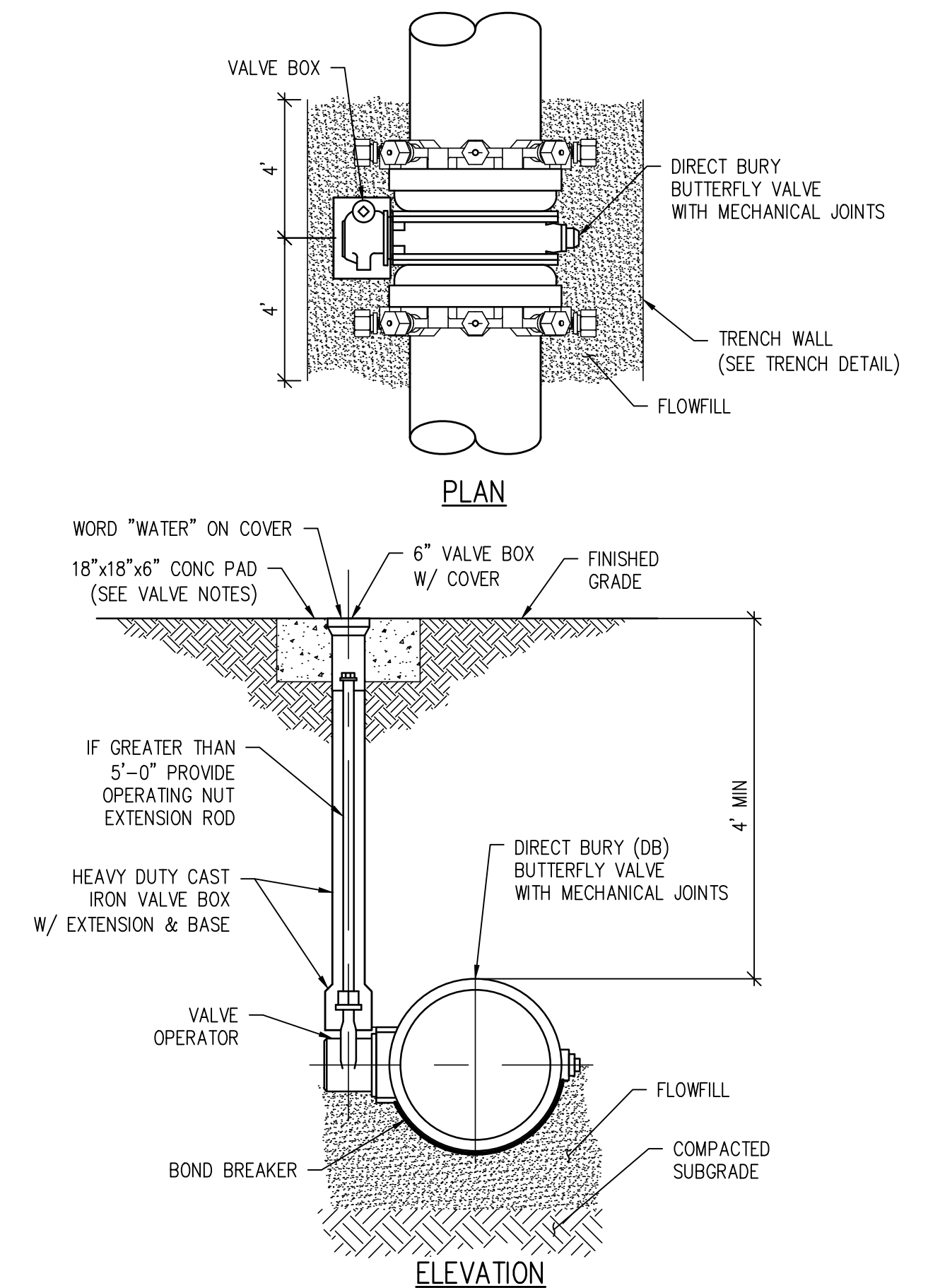
- NOTE:**
1. MATCH EXISTING DEPTH +1"
  2. MATCH EXIST SUBGRADE DEPTH UNLESS OTHERWISE SPECIFIED
  3. APPLY TACKIFIER AT SAWCUT AND MILL PRIOR TO PAVING.

**ASPHALT "T" PATCH DETAIL** 3  
NTS



- NOTES:**
1. 16" CI CAN BE REMOVED AND DISPOSED OF AS NECESSARY TO FACILITATE CONSTRUCTION. CAP ANY CUT PIPE.
  2. MODIFY EXISTING CONCRETE PIPE SUPPORTS AS NECESSARY TO PROVIDE ADEQUATE SUPPORT FOR 24" PVC POTABLE WATER.
  3. CONTRACTOR TO TRANSITION FROM 16" PVC IRR A MINIMUM OF 10' OUTSIDE OF VAULT TO CONNECT TO EXISTING 24" METER.

**EXISTING VAULT SECTION** 4  
NTS



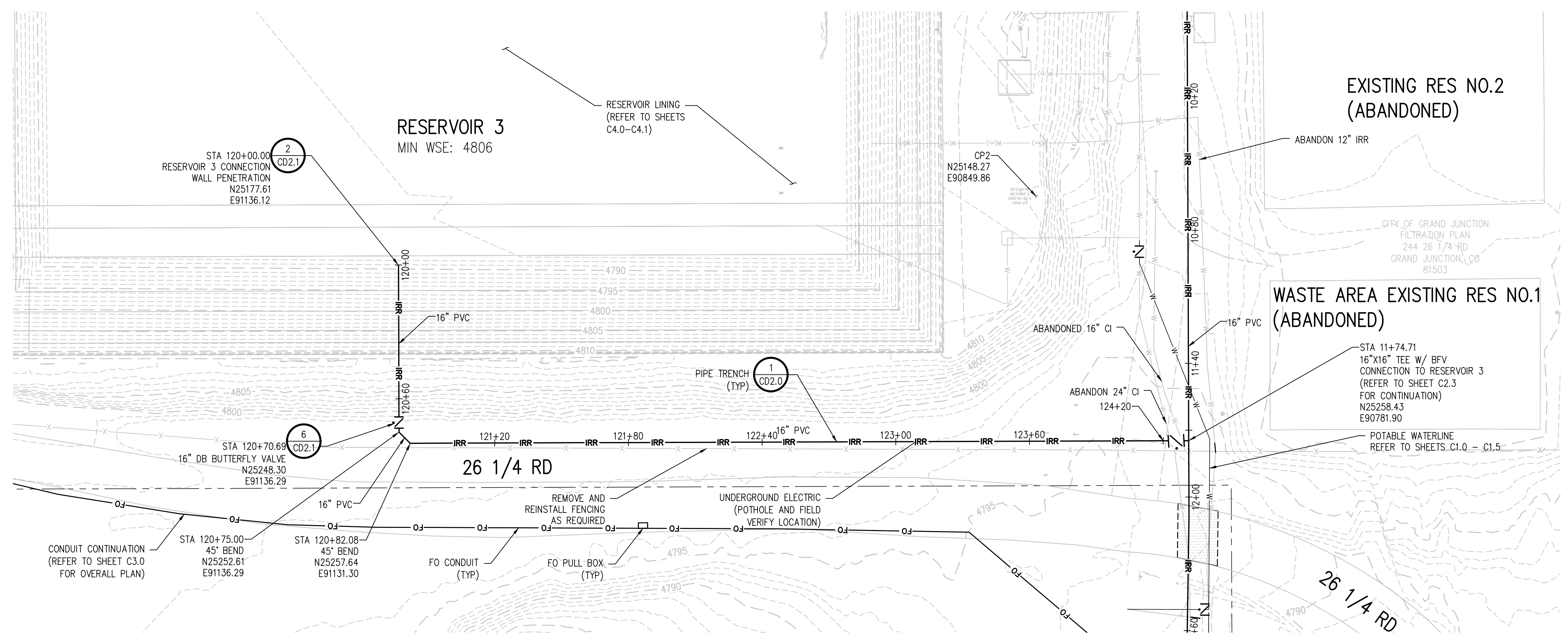
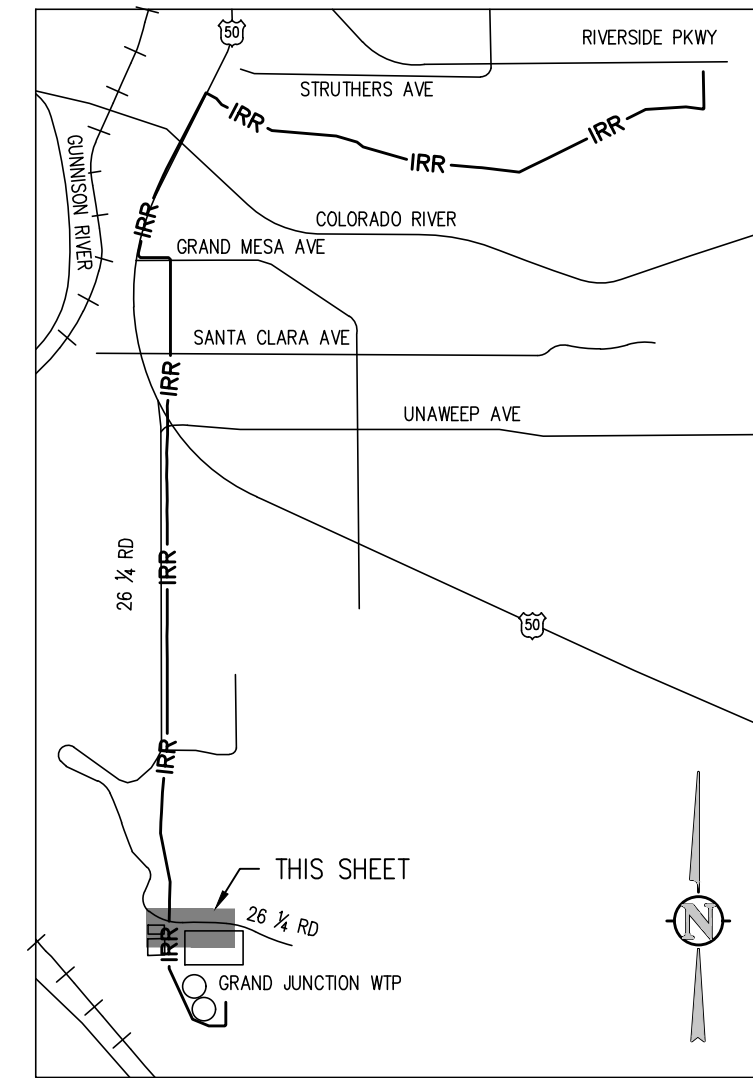
**DIRECT BURY BUTTERFLY VALVE INSTALLATION DETAIL** 5  
NTS

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION
1				

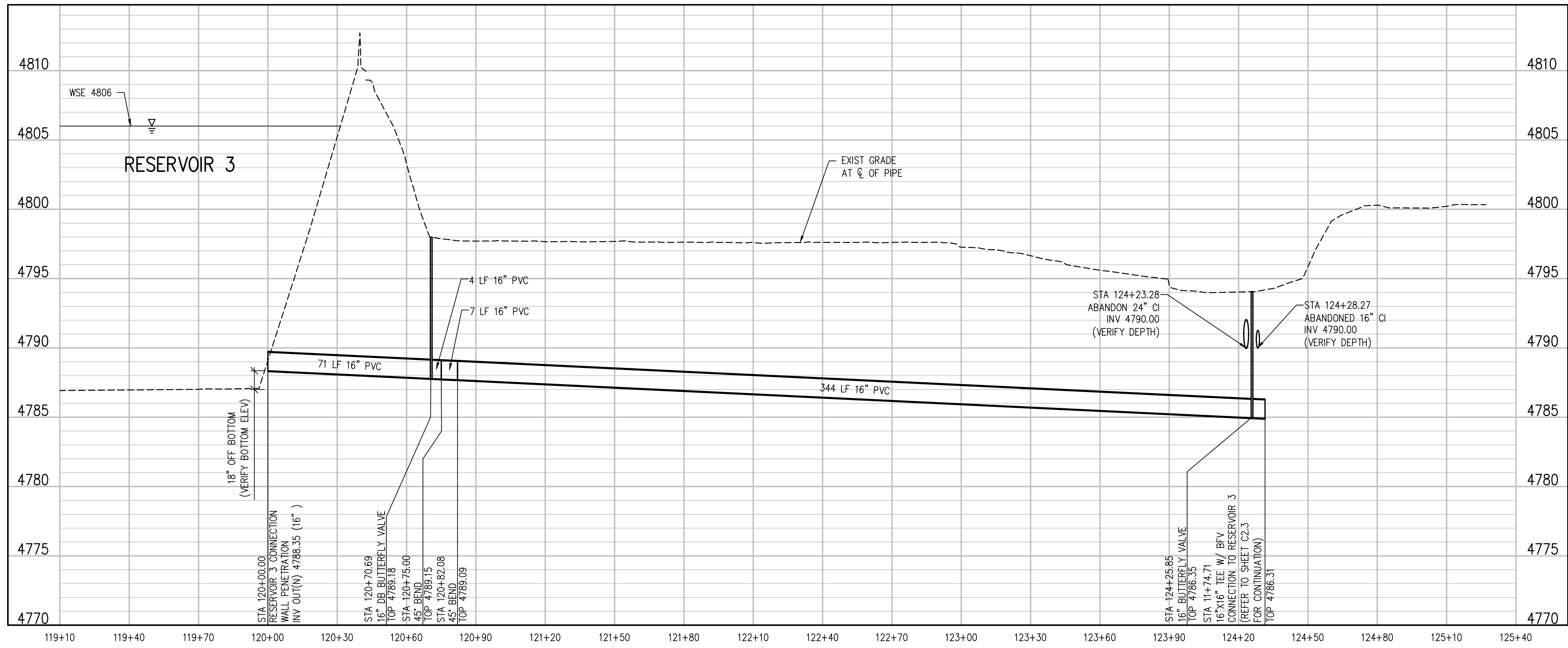
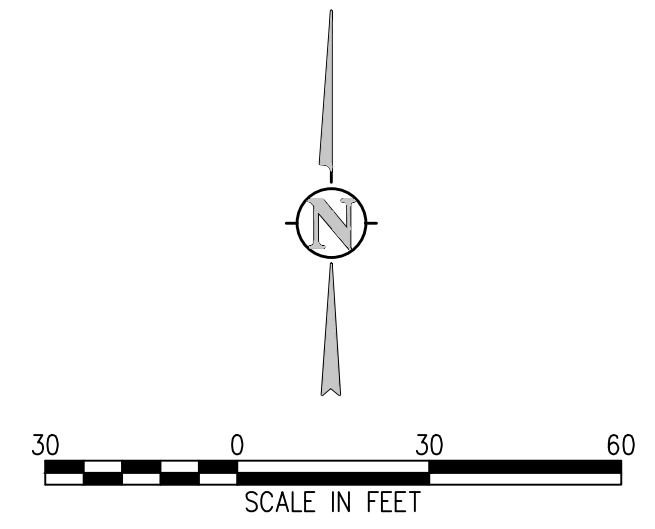
DESIGNED BY: BLM  
DRAWN BY: NAS  
CHECKED BY: JJM  
JOB #: 2538.3c  
DATE: FEBRUARY 2019  
© JVA, INC.

RAW WATER IRRIGATION SUPPLY AND WATER LINE REPLACEMENT GRAND JUNCTION, COLORADO  
POTABLE WATER UTILITY DETAILS

SHEET NO. CD1.1



**WATERLINE PLAN**  
SCALE: 1"=30'



**WATERLINE RESERVOIR 3 CONNECTION PROFILE**  
SCALE: 1"=30' HORIZ  
1"=5' VERT

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

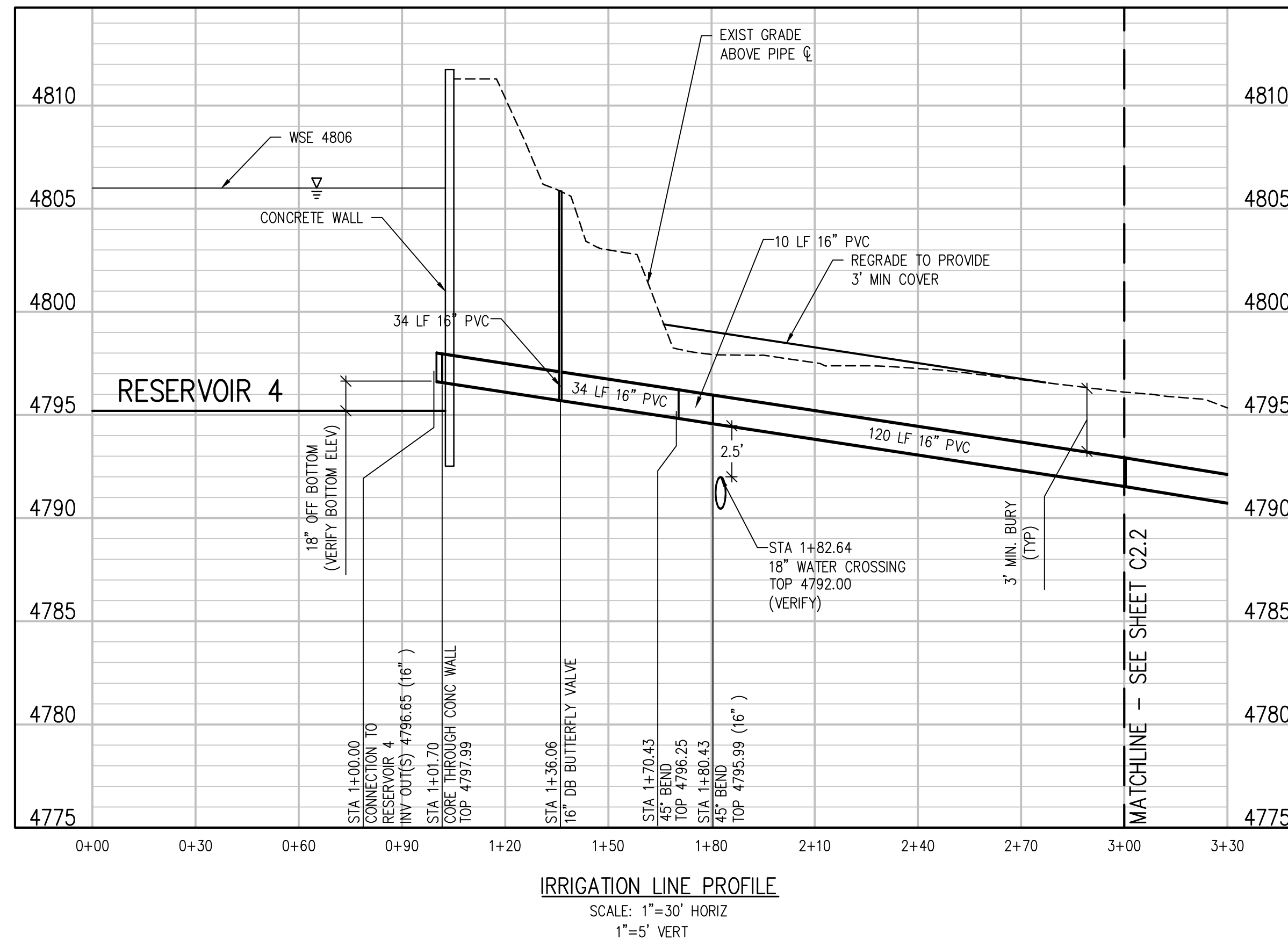
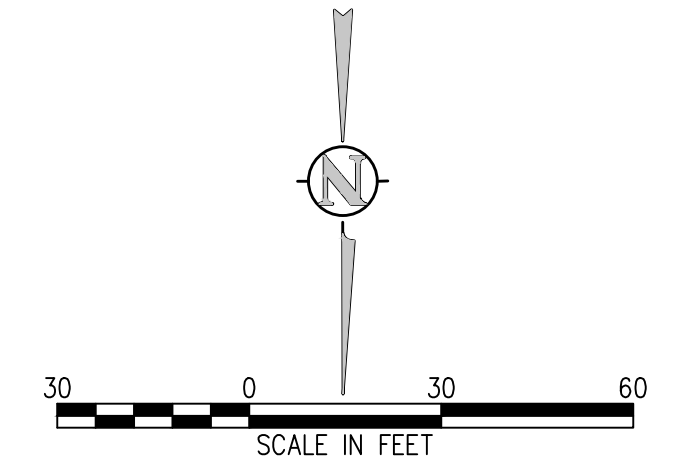
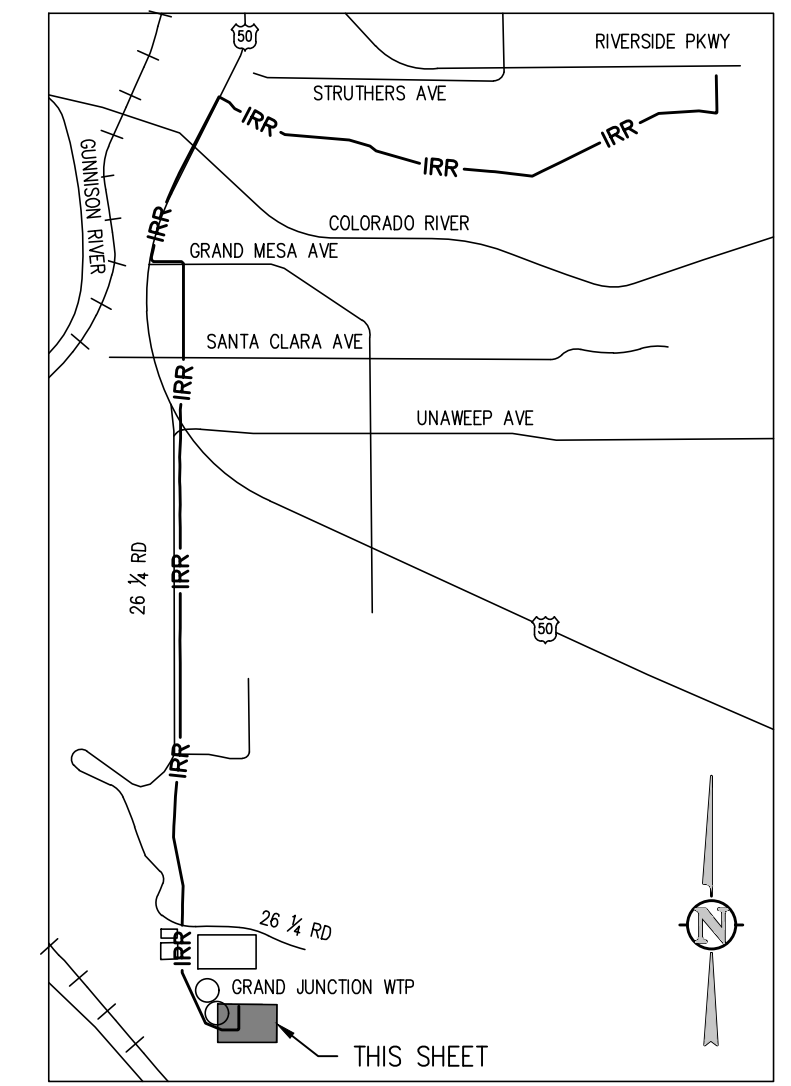
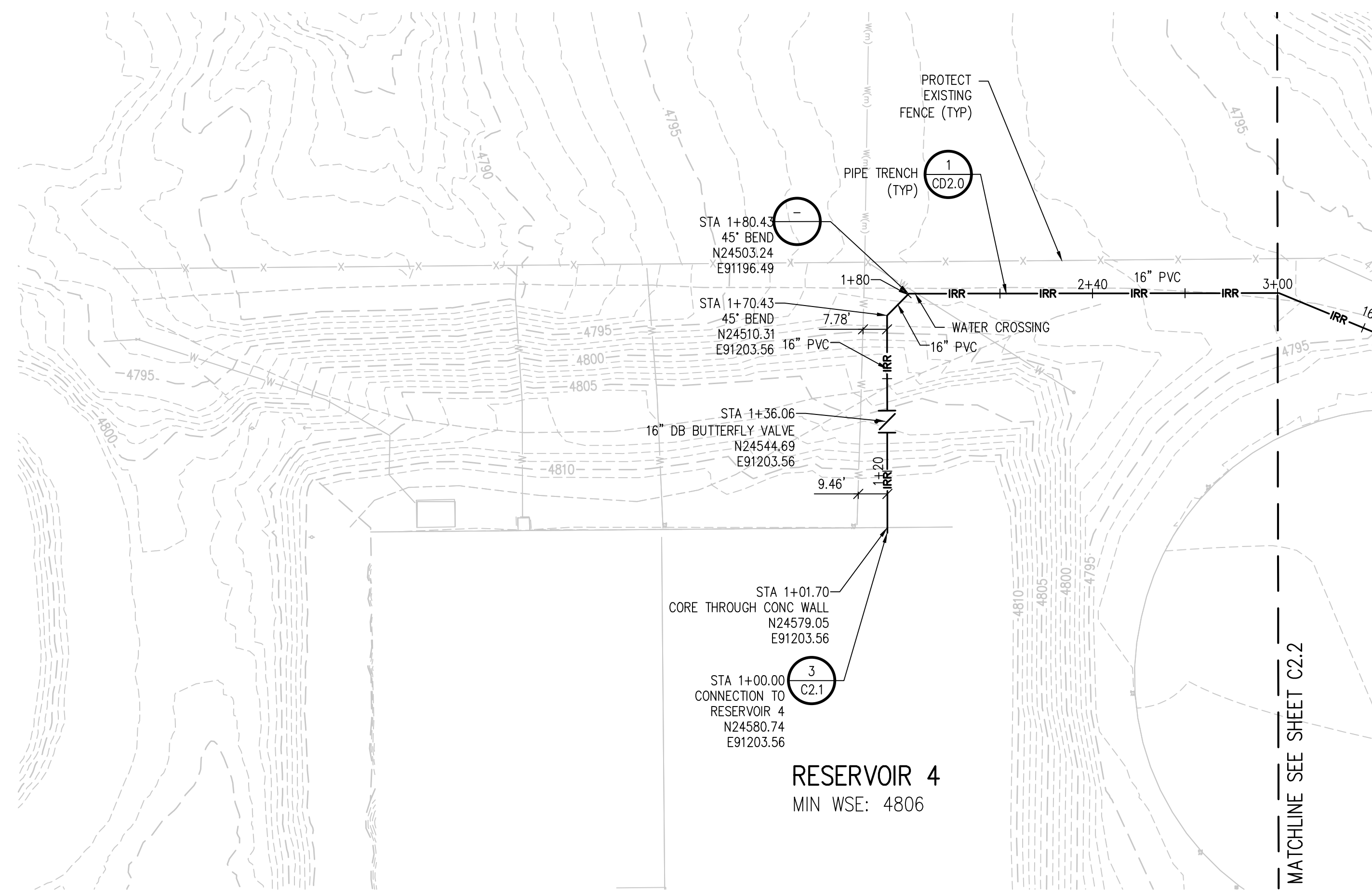
DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

© JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE -  
 RESERVOIR 3 CONNECTION

SHEET NO.  
**C2.0**

A:\2538.3c-c01\Drawings\2538.3c-c01-PWP-01a.dwg, 2/28/2019 - 12:47 PM, NAS



NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

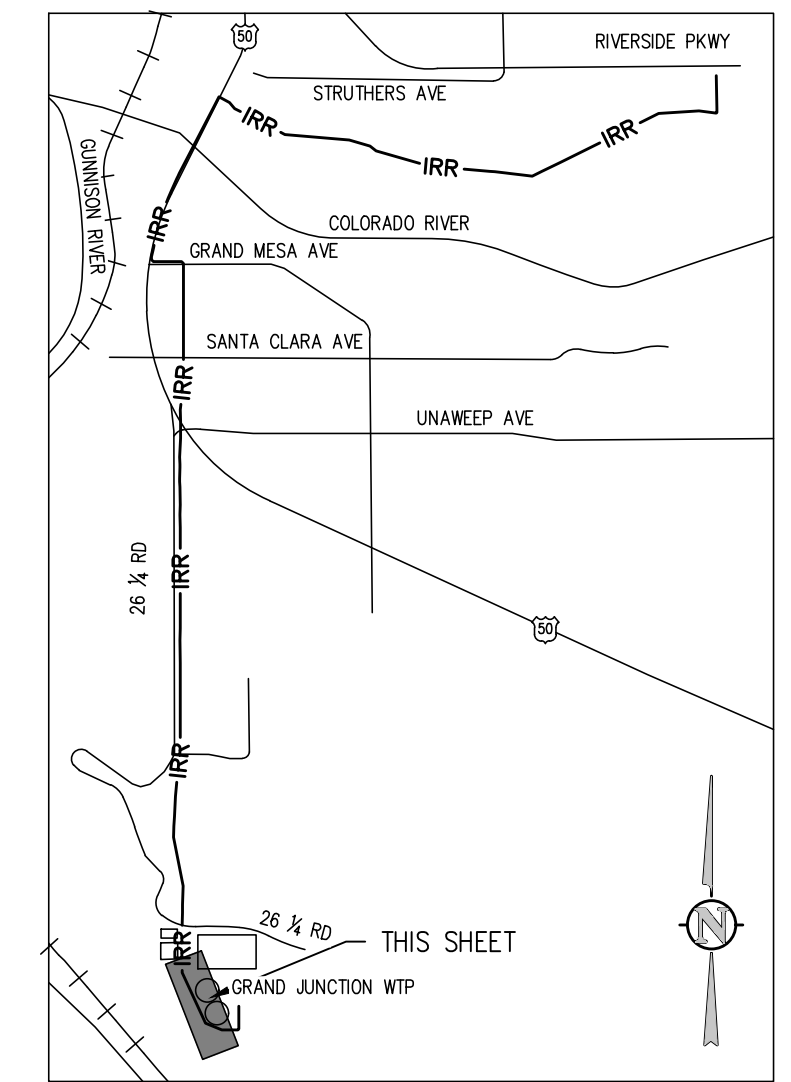
RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO

RAW WATER IRRIGATION LINE STA 0+00.00 -  
 3+00.00

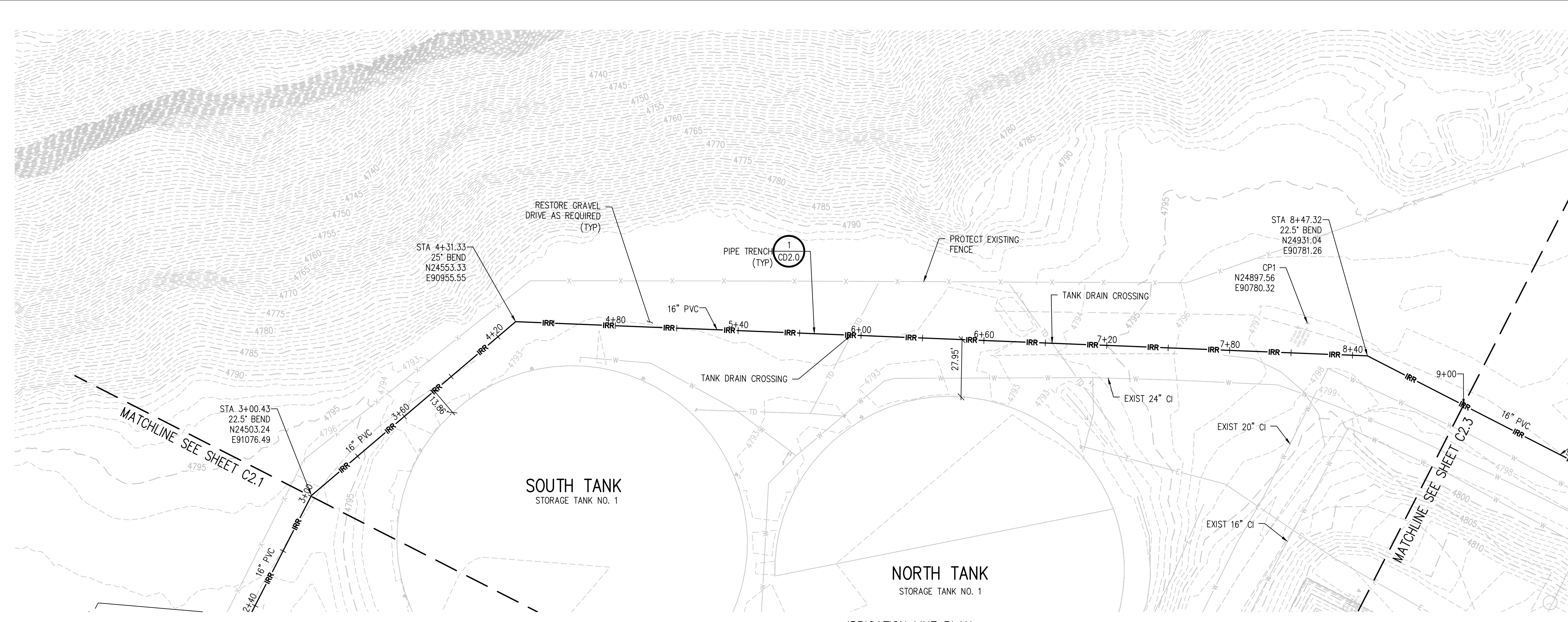
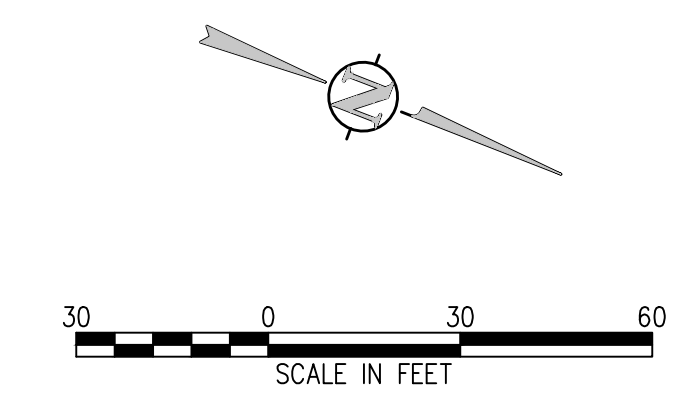




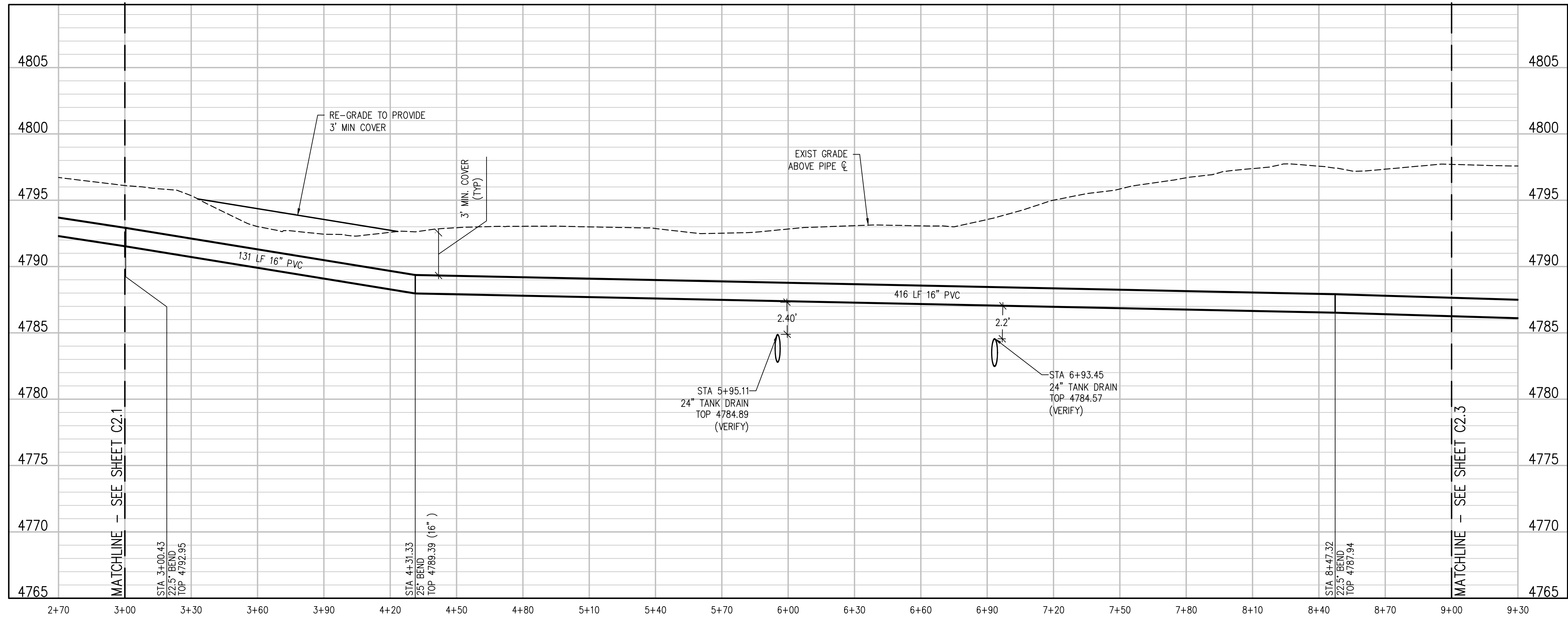
JVA, Inc. 817 Colorado Ave., Suite 301  
Glenwood Springs, CO 970.404.3100  
www.jvajva.com  
Boulder • Fort Collins • Winter Park  
Glenwood Springs • Denver



KEY MAP  
NTS



IRRIGATION LINE PLAN  
SCALE: 1"=30'

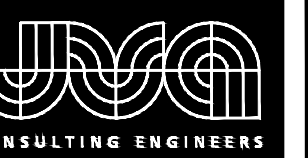


IRRIGATION LINE PROFILE  
SCALE: 1"=30' HORIZ  
1"=5' VERT

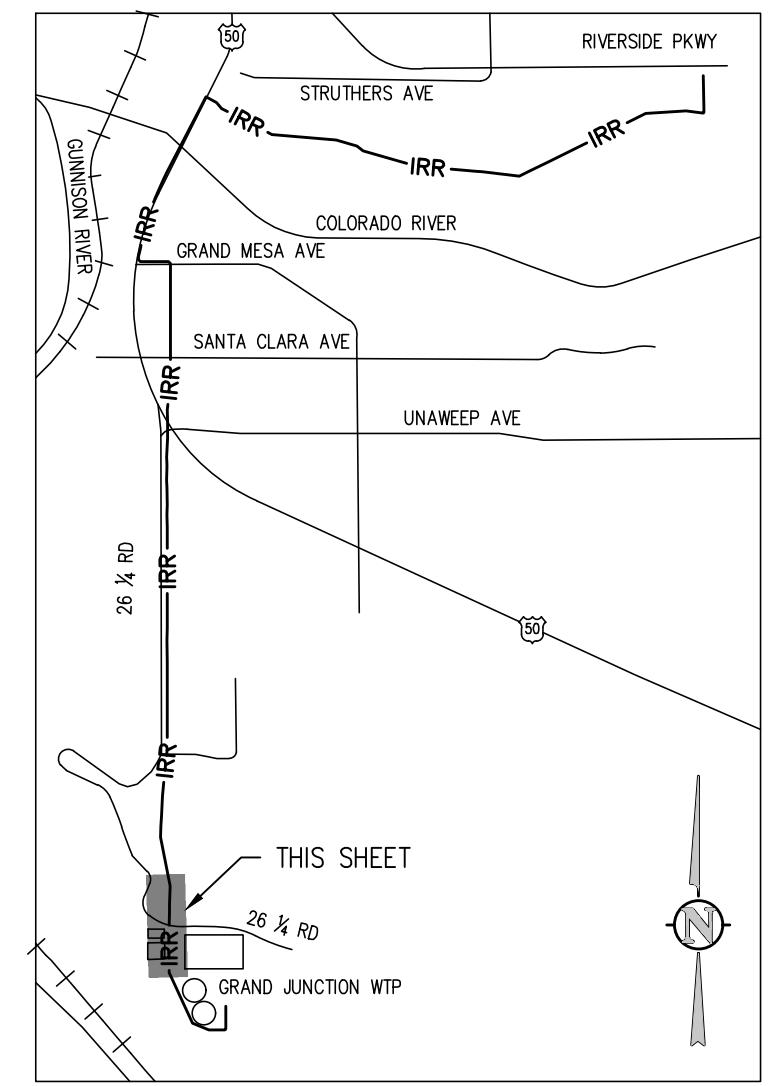
NO.	DATE	DES'D	DWN	REVISION DESCRIPTION
				DESIGNED BY: BLM
				DRAWN BY: NAS
				CHECKED BY: JJM
				JOB #: 2538.3c
				DATE: FEBRUARY 2019
				© JVA, INC.
				RAW WATER IRRIGATION SUPPLY AND WATER LINE REPLACEMENT GRAND JUNCTION, COLORADO
				RAW WATER IRRIGATION LINE STA 3+00.00 - 9+00.00
				SHEET NO.
				C2.2

J:\2538.3c-c01\Drawings\2538.3c-c02-IRR-01.dwg, 2/26/2019 - 4:41 PM, NAS

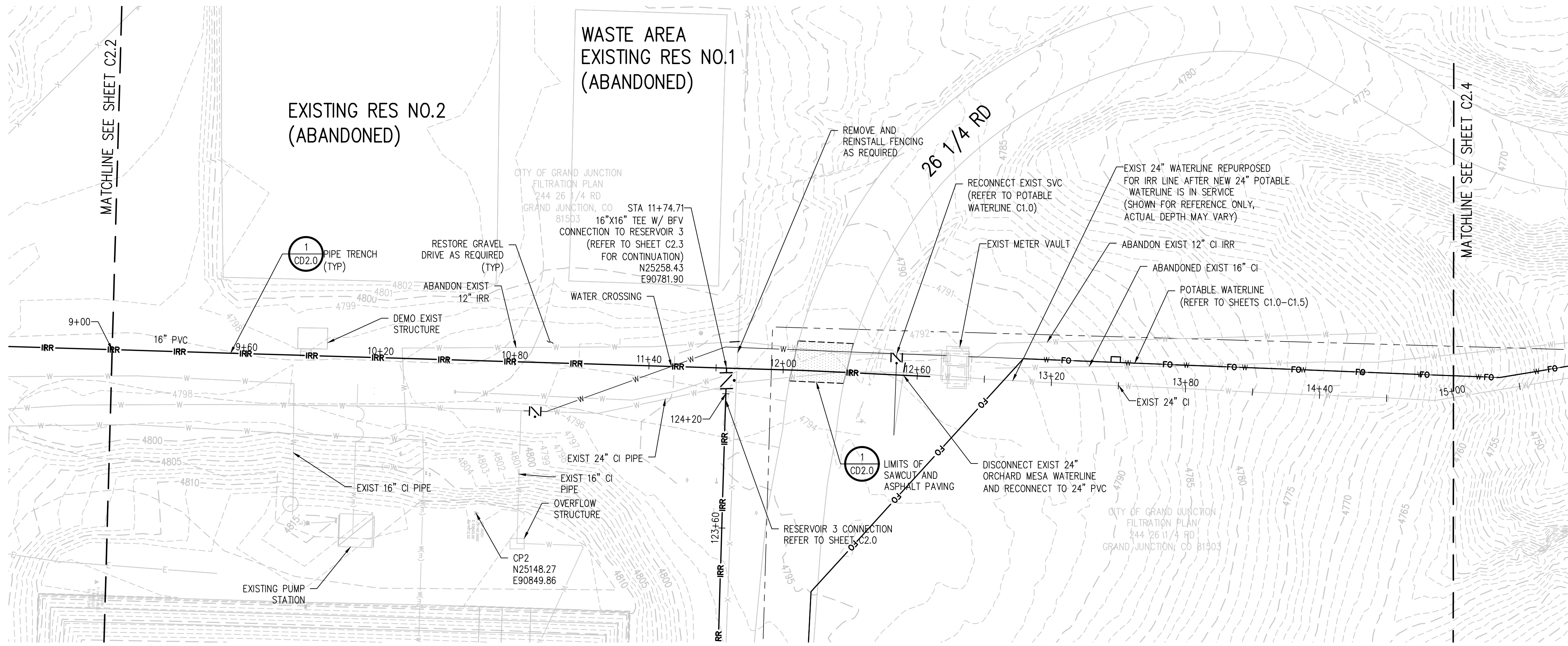
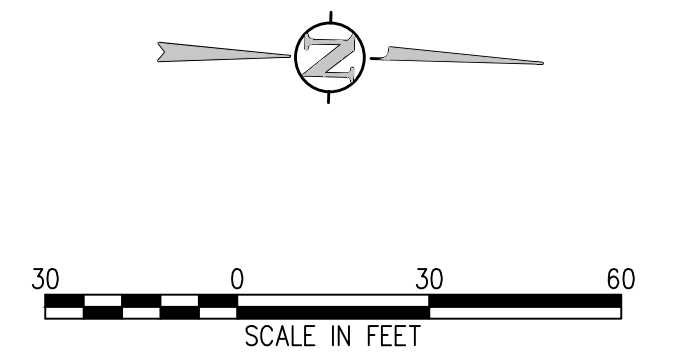




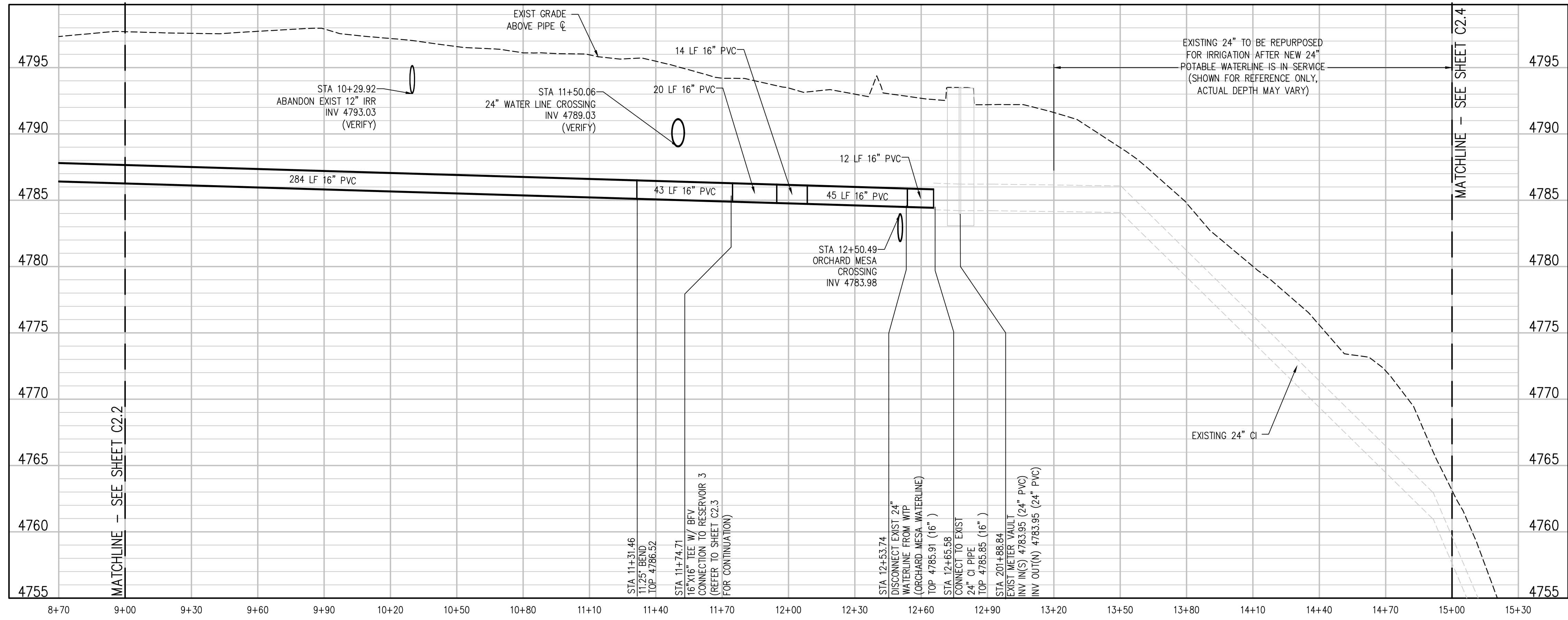
JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvajva.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver



KEY MAP  
 NTS



IRRIGATION LINE PLAN  
 SCALE: 1"=30'



IRRIGATION LINE PROFILE  
 SCALE: 1"=30' HORIZ  
 1"=5' VERT

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

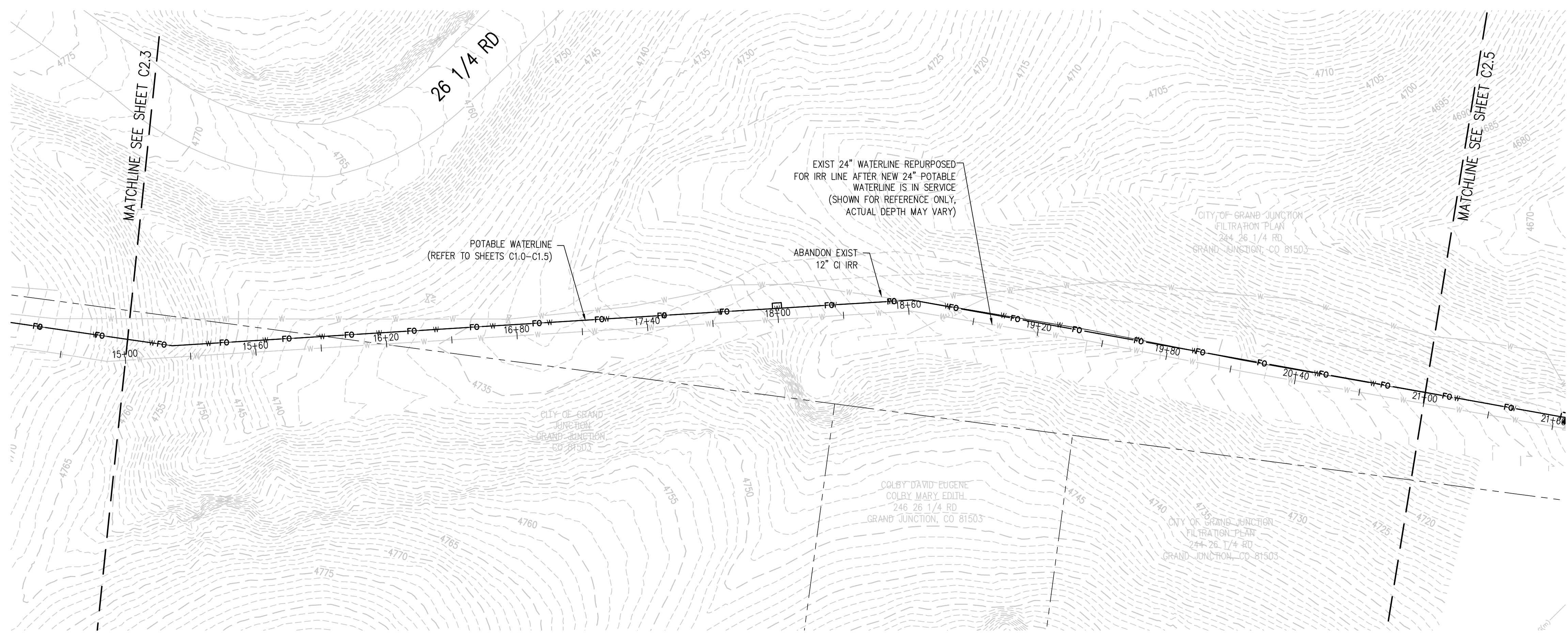
DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE STA 9+00.00 -  
 15+00.00

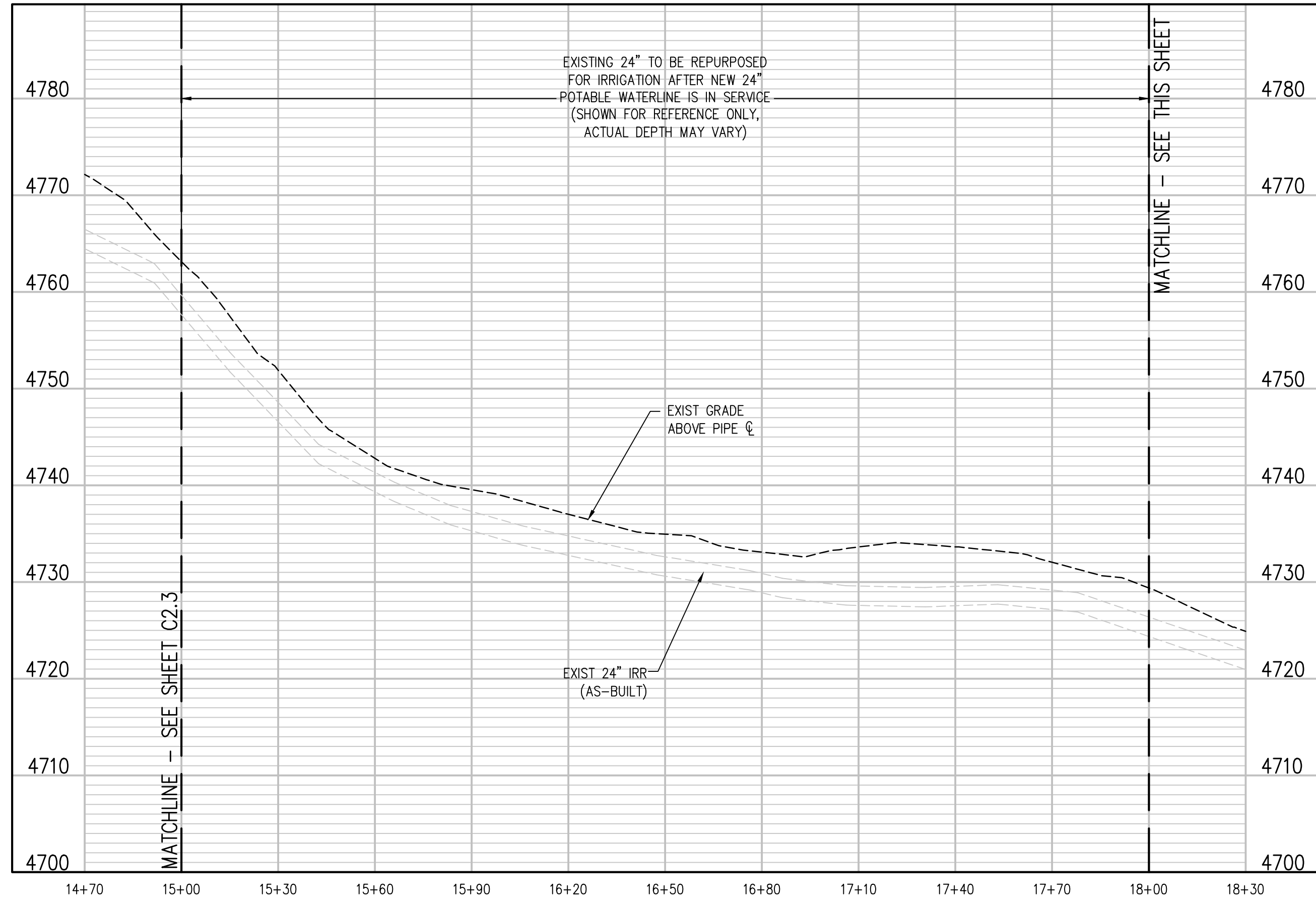
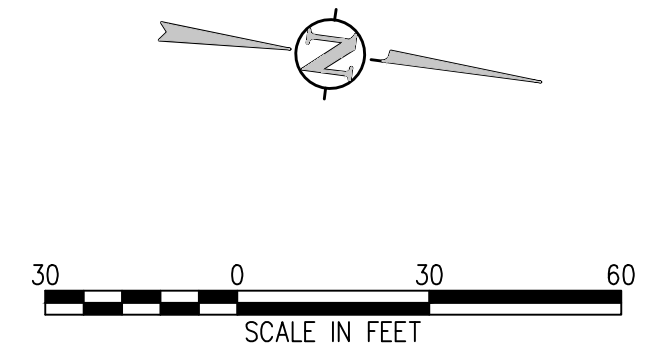
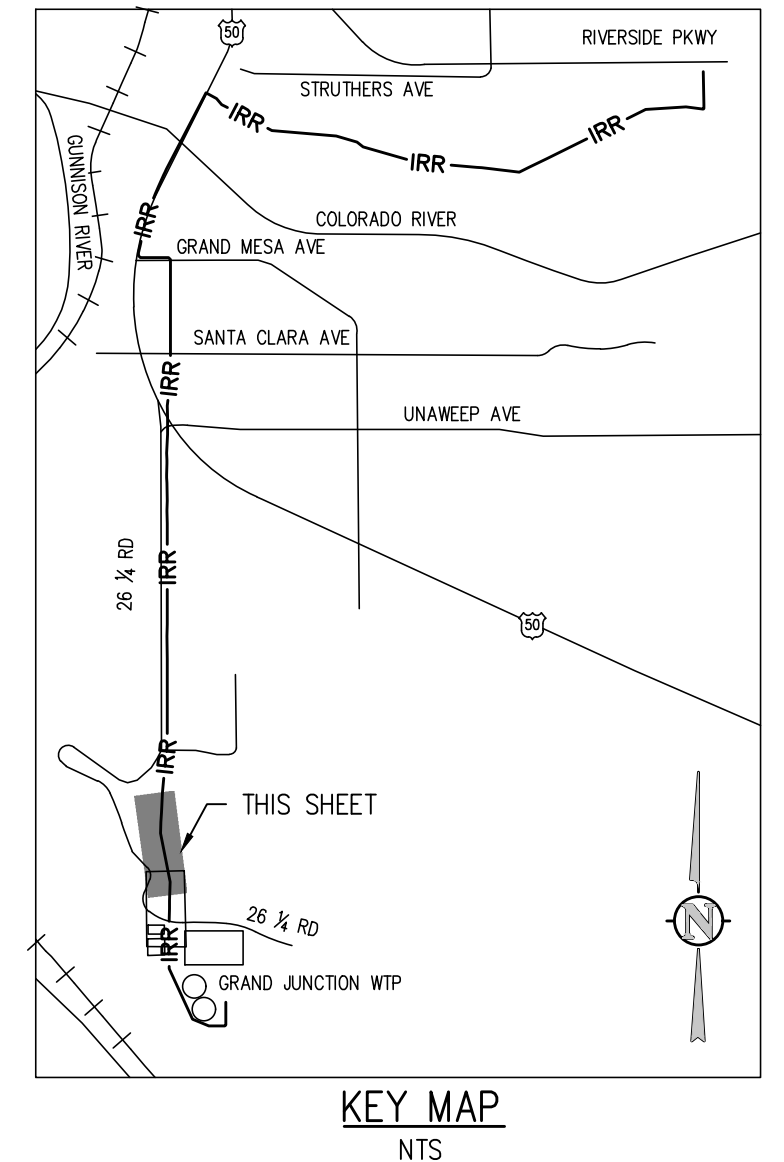
SHEET NO.

C2.3

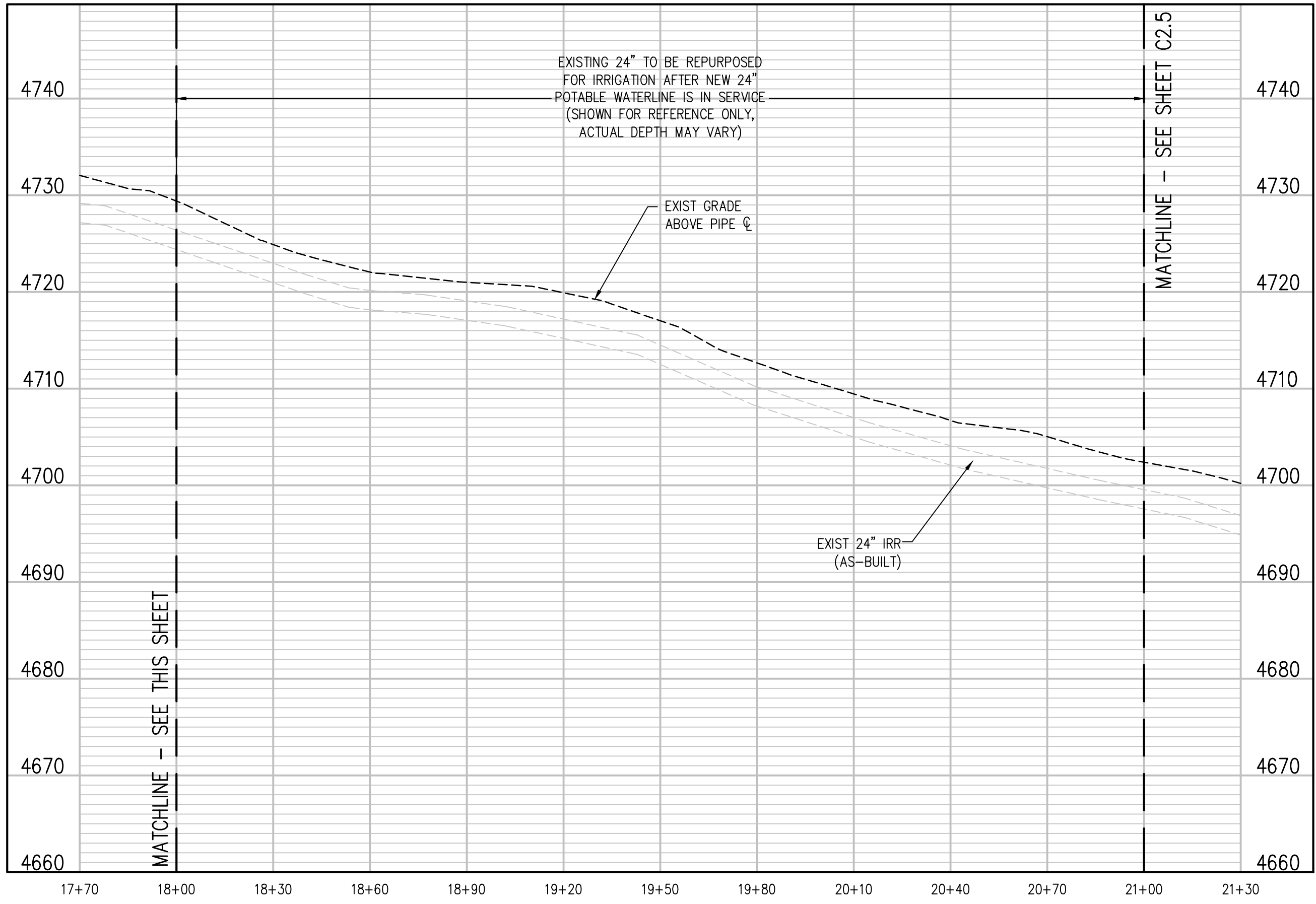
A:\2538.3c-c0\Drawings\2538.3c-c0-PWP-01.dwg, 2/26/2019 - 4:41 PM, NAS



**IRRIGATION LINE PLAN**  
 SCALE: 1"=30'



**IRRIGATION LINE PROFILE**  
 SCALE: 1"=30' HORIZ  
 1"=10' VERT



NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

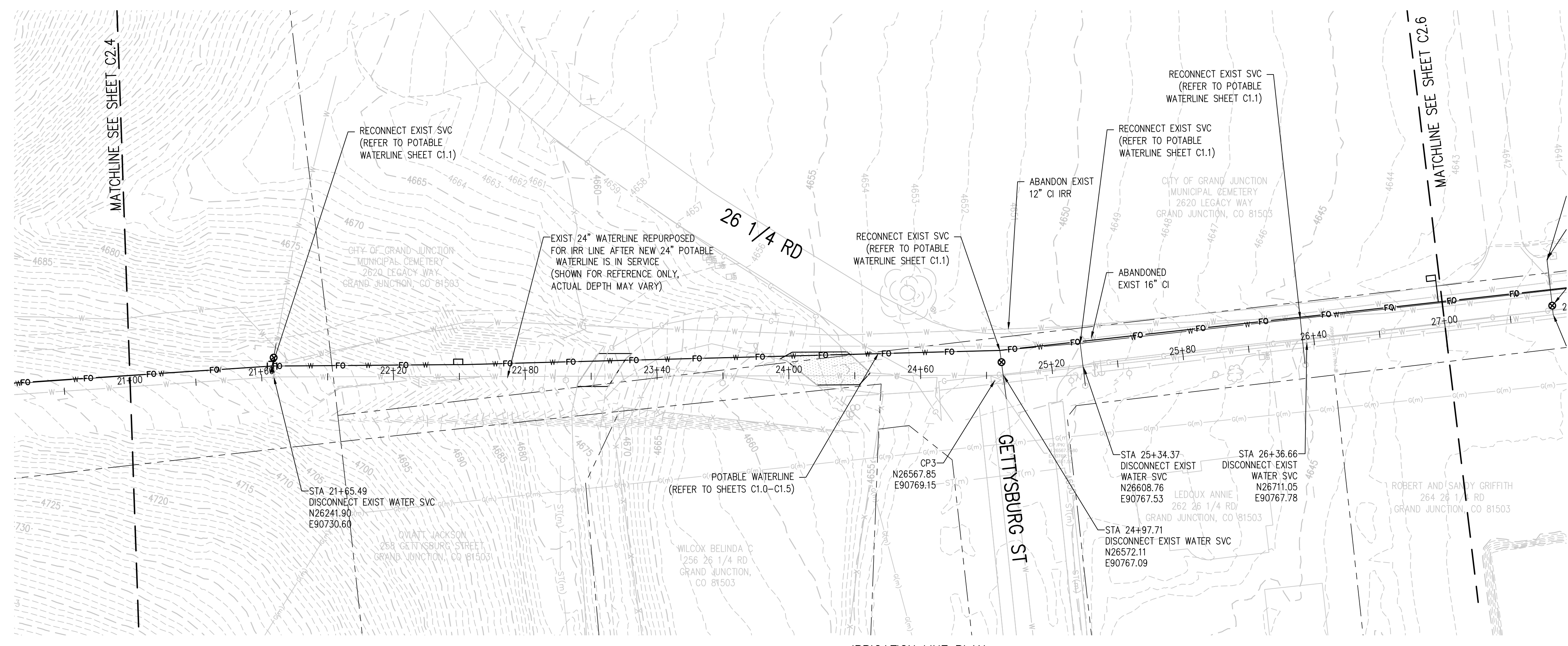
**RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO**

**RAW WATER IRRIGATION LINE STA 15+00.00  
 - 21+00.00**

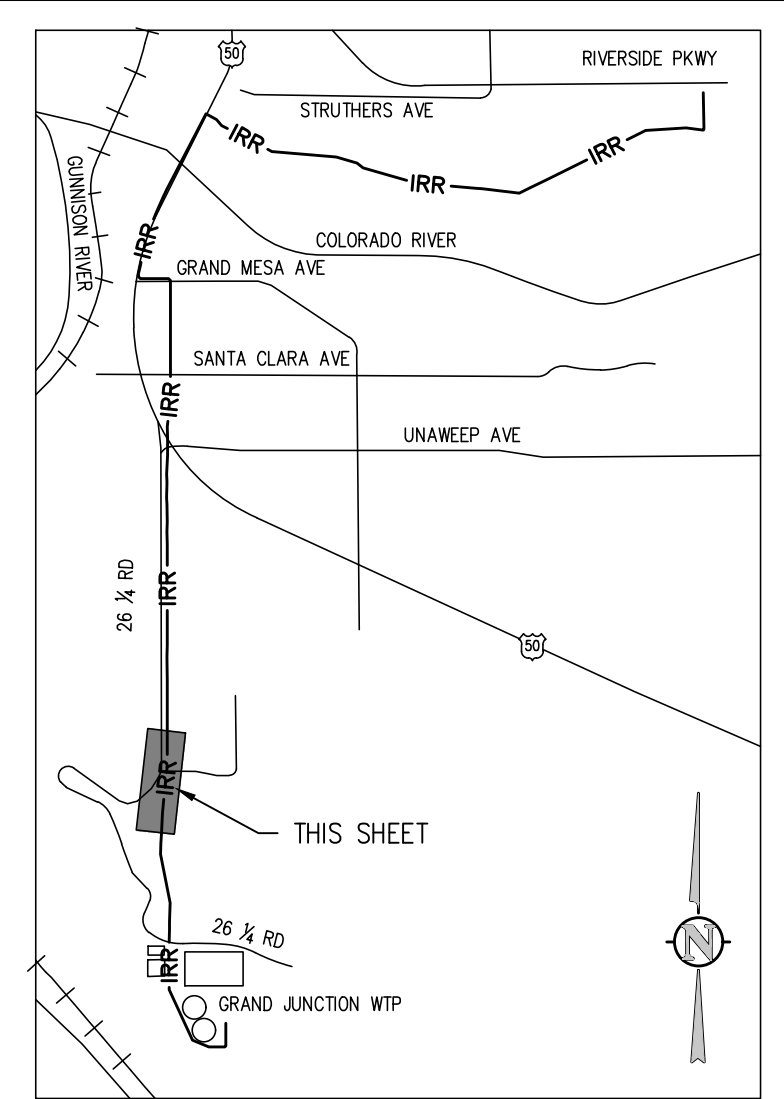
SHEET NO.  
**C2.4**

J:\2538.3c-c0\Drawings\2538.3c-c2-RWP-01.dwg, 2/26/2019 - 4:41 PM, NAS

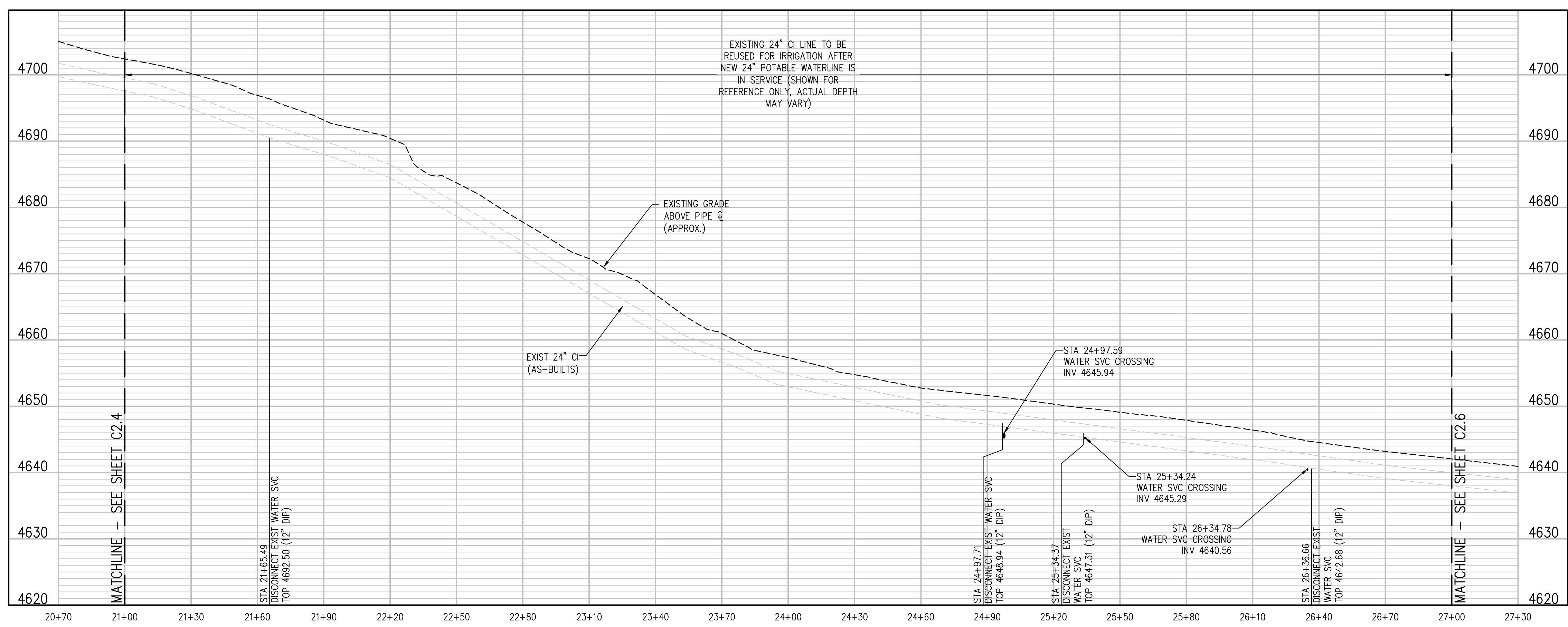
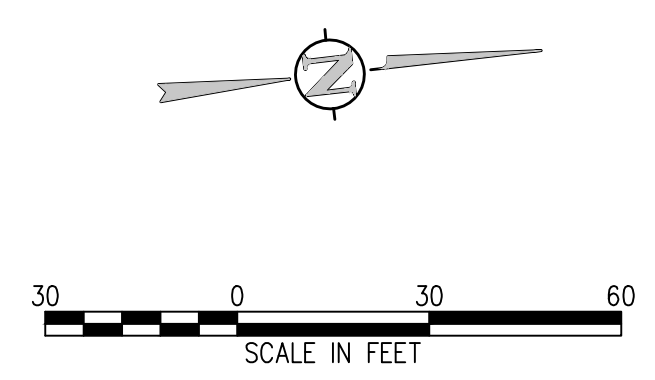




**IRRIGATION LINE PLAN**  
 SCALE: 1"=30'



**KEY MAP**  
 NTS



**IRRIGATION LINE PROFILE**  
 SCALE: 1"=30' HORIZ  
 1"=5' VERT

**DISCONNECT NOTES:**

1. CUT EXISTING SERVICE 12" FROM MAIN
2. PHOTO DOCUMENT ALL DISCONNECTS
3. CITY TO INSPECT DISCONNECTS BEFORE BACKFILL
4. SEE POTABLE WATER SHEETS C1.0-C1.5 FOR RECONNECTION
5. DISCONNECT AND RECONNECT SHALL OCCUR WITHIN 6 HOURS

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

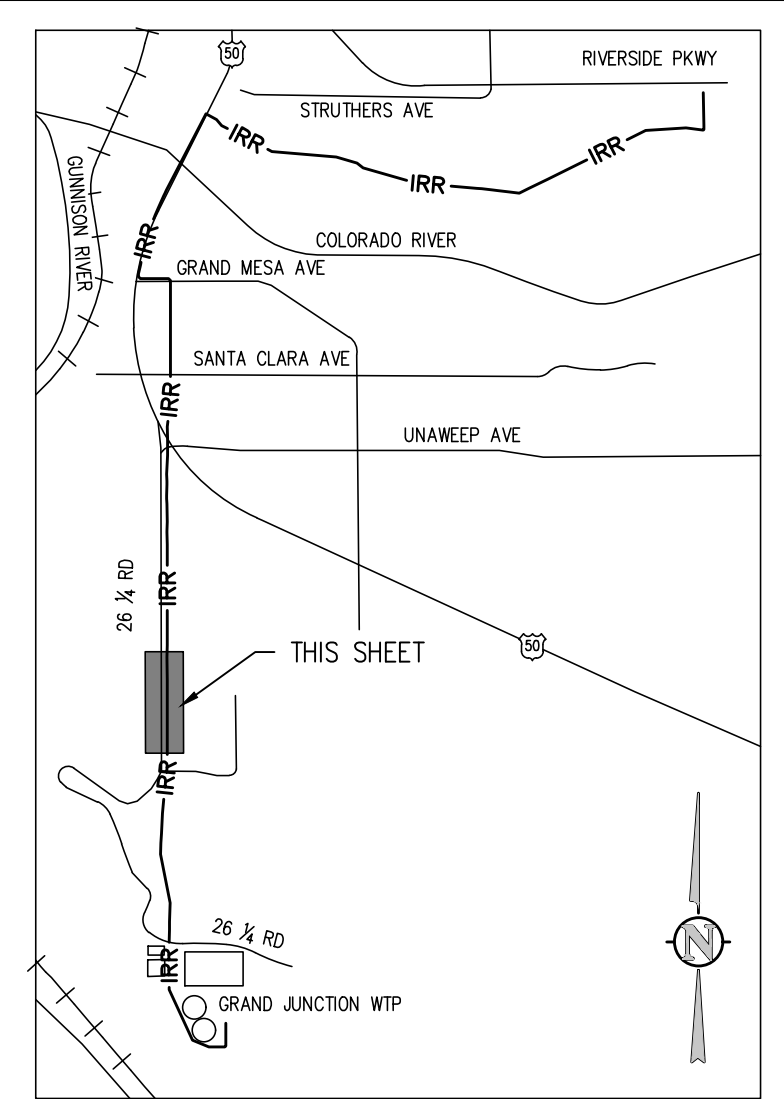
© JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO

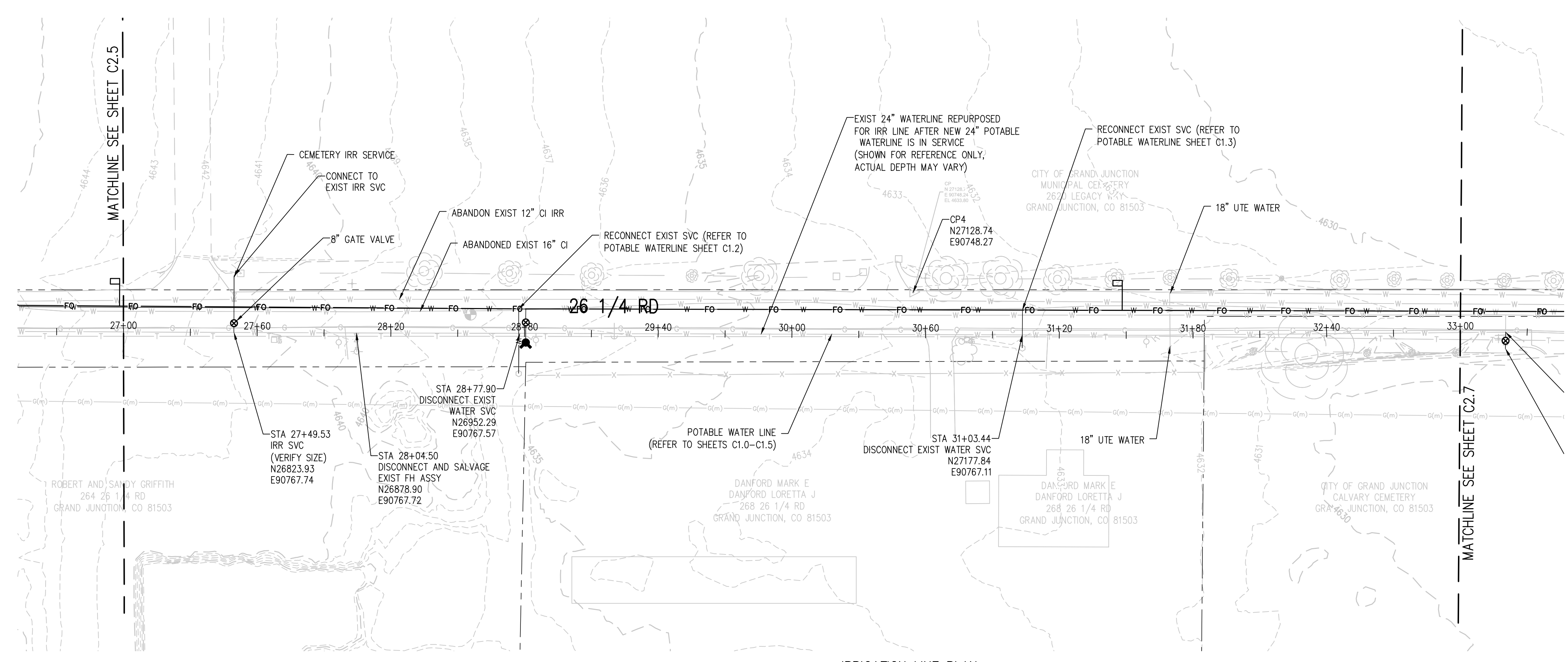
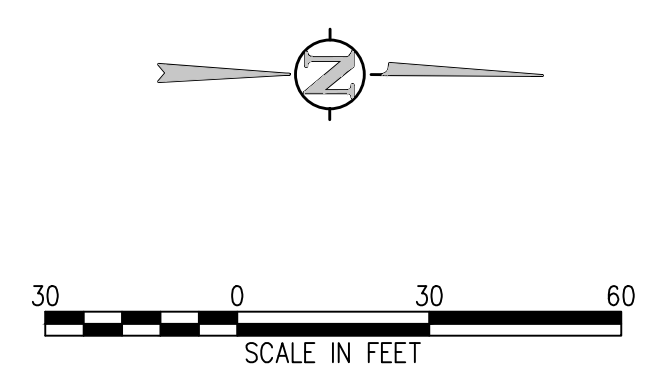
RAW WATER IRRIGATION LINE STA 21+00.00  
 - 27+00.00

SHEET NO.  
**C2.5**

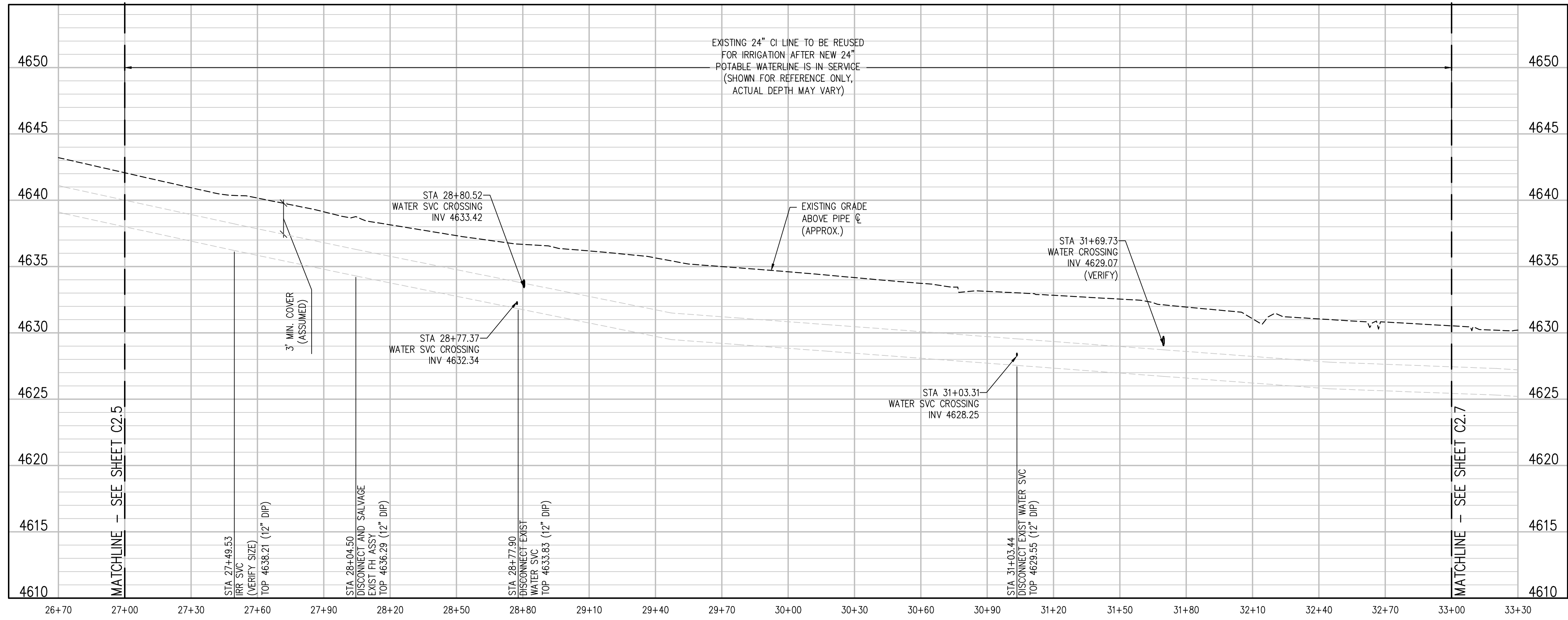
J:\2538.3c-c0\Drawings\2538.3c-c0-PWP-02.dwg, 2/26/2019 - 4:42 PM, NMS



KEY MAP  
NTS



IRRIGATION LINE PLAN  
SCALE: 1"=30'



IRRIGATION LINE PROFILE  
SCALE: 1"=30' HORIZ  
1"=5' VERT

**DISCONNECT NOTES:**  
 1. CUT EXISTING SERVICE 12" FROM MAIN  
 2. PHOTO DOCUMENT ALL DISCONNECTS  
 3. CITY TO INSPECT DISCONNECTS BEFORE BACKFILL  
 4. SEE POTABLE WATER SHEETS C1.0-C1.5 FOR RECONNECTION  
 5. DISCONNECT AND RECONNECT SHALL OCCUR WITHIN 6 HOURS

NO.	DATE	DESD	DWN	REVISION DESCRIPTION

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

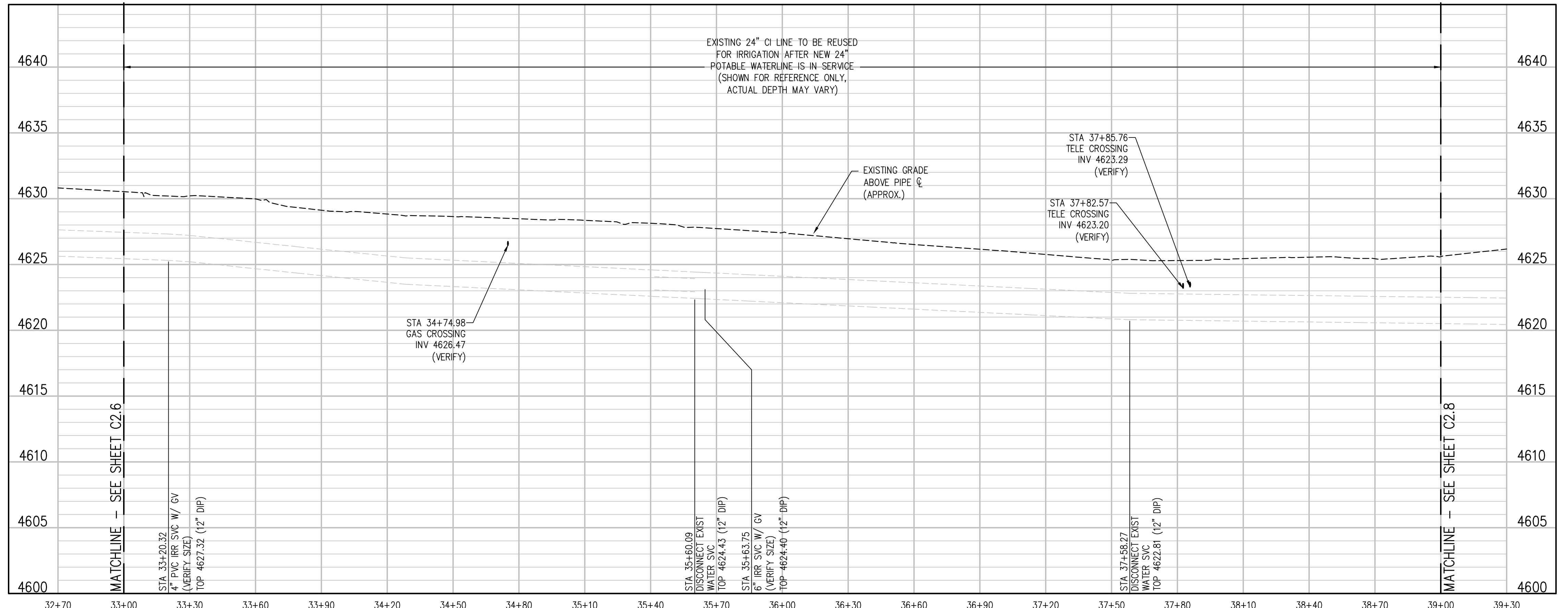
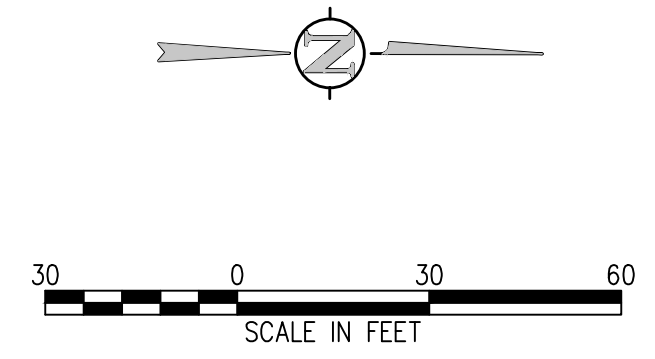
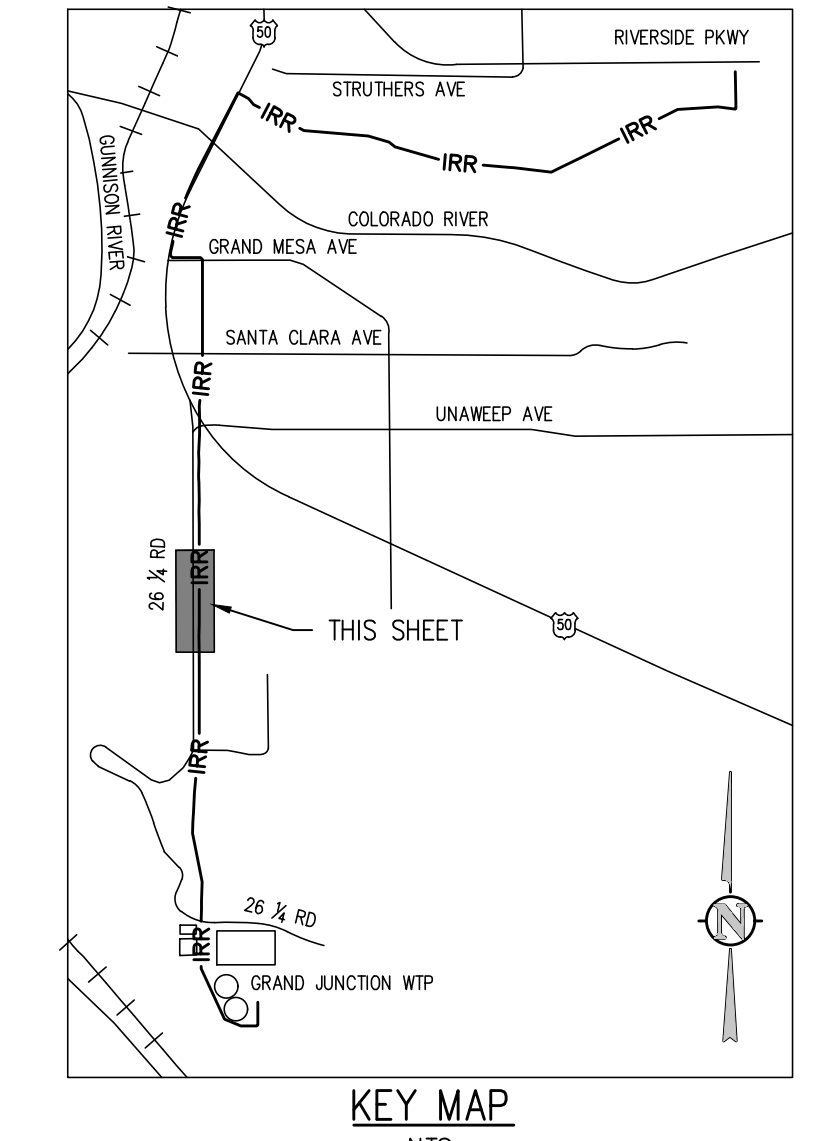
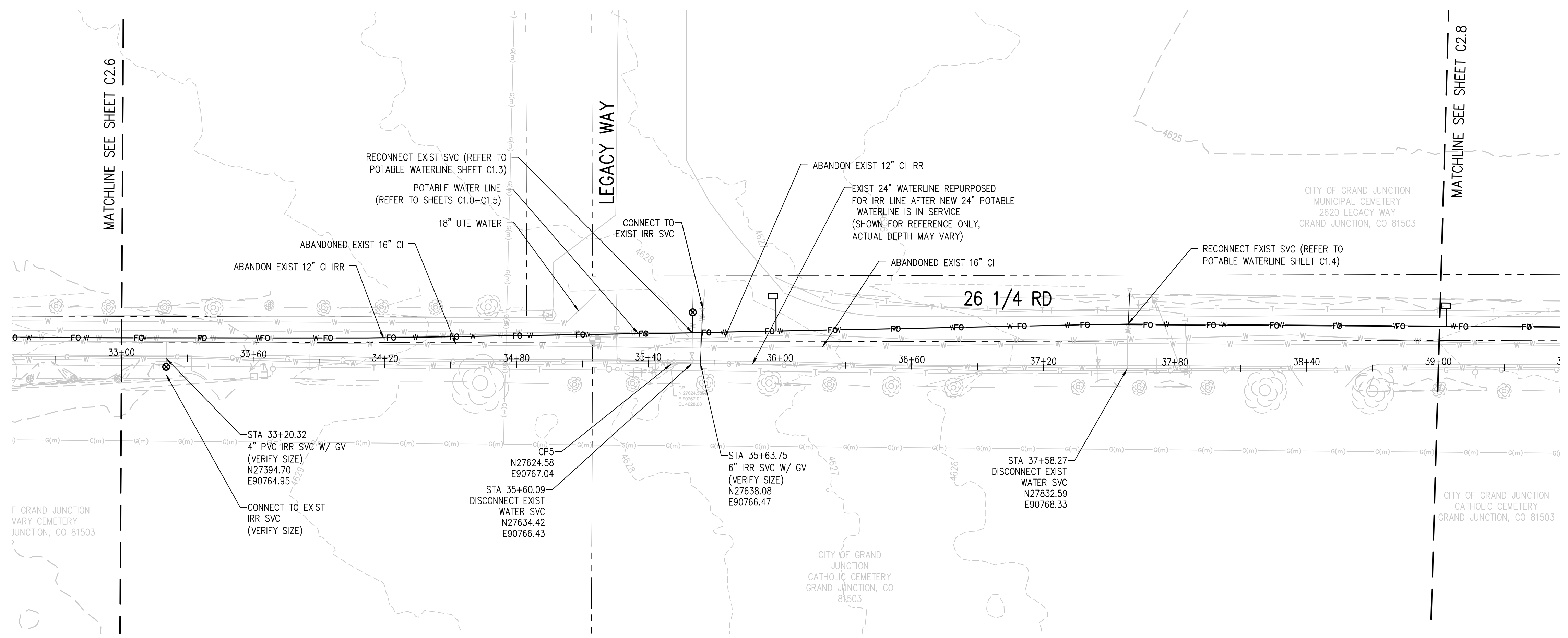
© JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE STA 27+00.00  
 - 33+00.00

SHEET NO.  
**C2.6**

J:\2538.3c-c01\Drawings\2538.3c-c01-PWP-02.dwg, 2/26/2019 - 4:42 PM, NMS





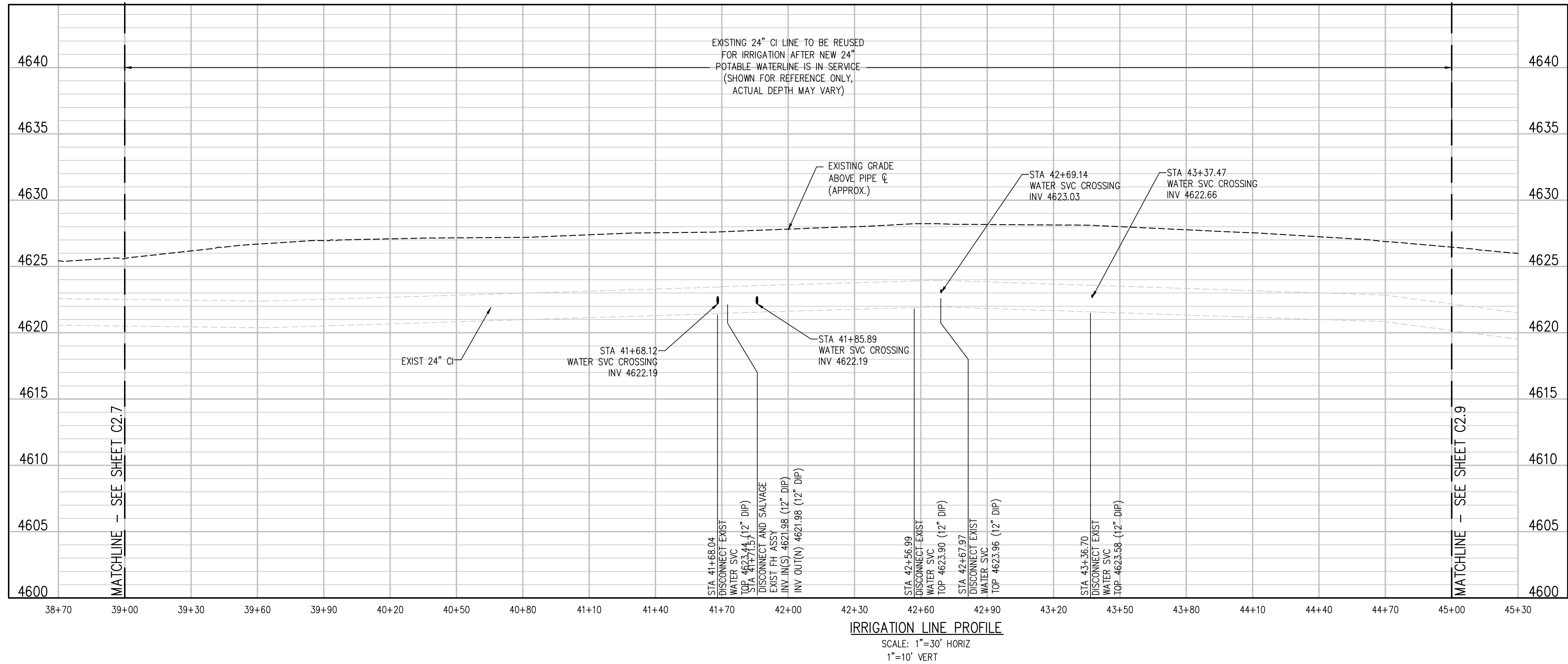
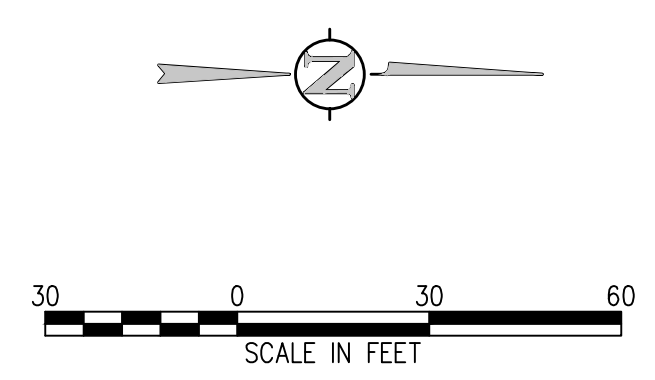
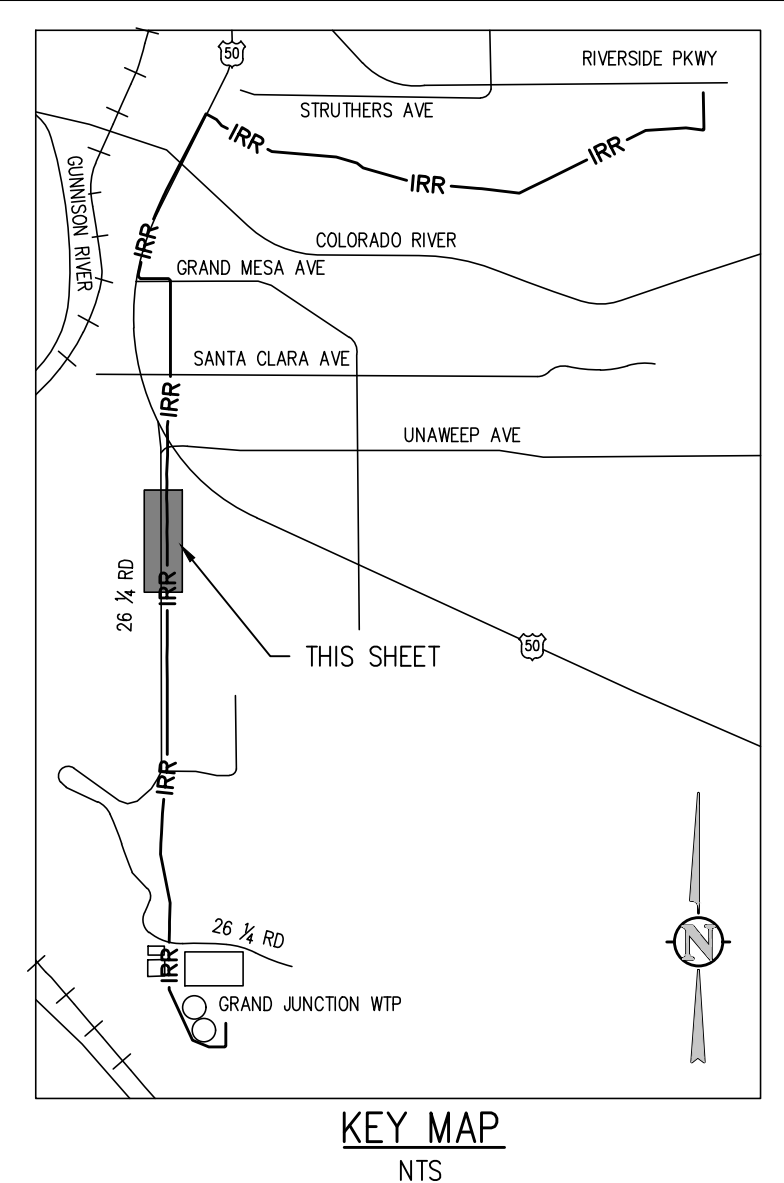
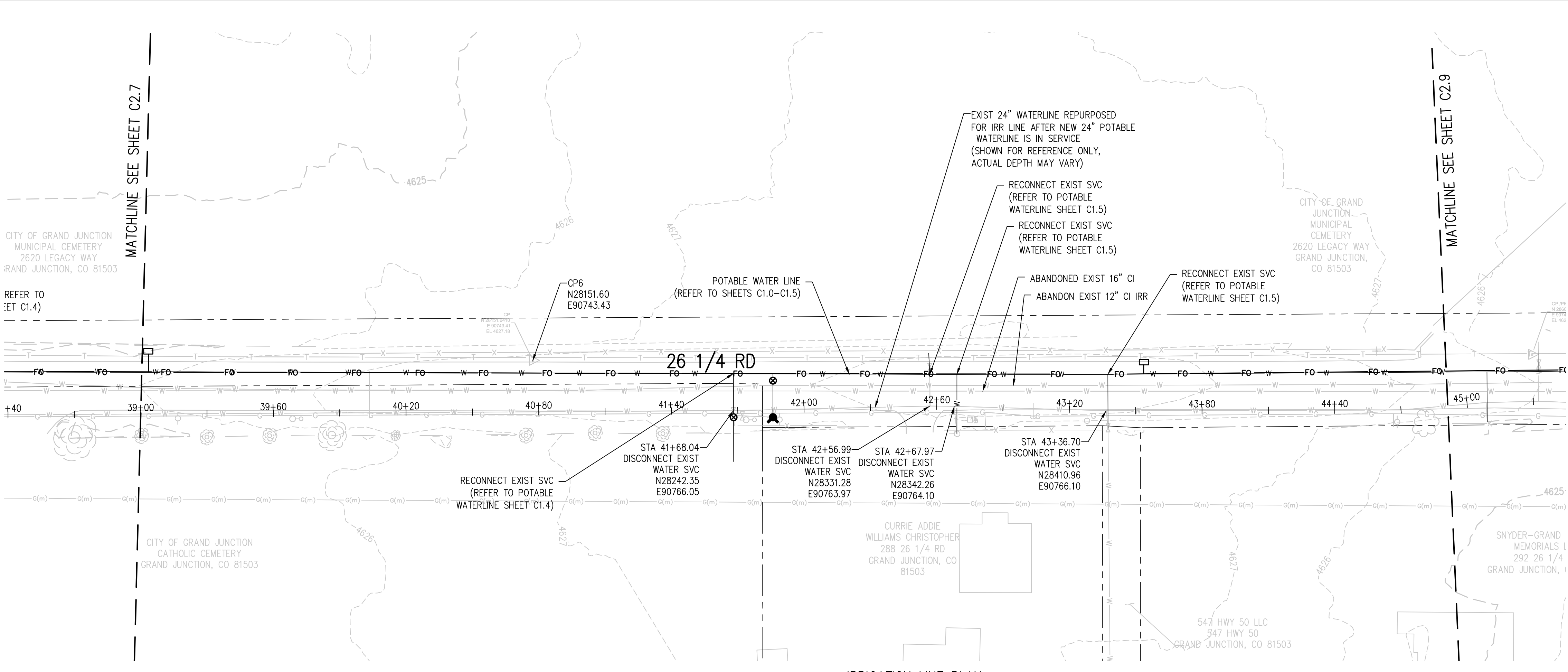
**DISCONNECT NOTES:**

- CUT EXISTING SERVICE 12" FROM MAIN
- PHOTO DOCUMENT ALL DISCONNECTS
- CITY TO INSPECT DISCONNECTS BEFORE BACKFILL
- SEE POTABLE WATER SHEETS C1.0-C1.5 FOR RECONNECTION
- DISCONNECT AND RECONNECT SHALL OCCUR WITHIN 6 HOURS

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE STA 33+00.00  
 - 39+00.00

A:\2538.3c-c01\Drawings\2538.3c-c01-PWP-02.dwg, 2/26/2019 - 4:42 PM, NMS



**DISCONNECT NOTES:**

- CUT EXISTING SERVICE 12" FROM MAIN
- PHOTO DOCUMENT ALL DISCONNECTS
- CITY TO INSPECT DISCONNECTS BEFORE BACKFILL
- SEE POTABLE WATER SHEETS C1.0-C1.5 FOR RECONNECTION
- DISCONNECT AND RECONNECT SHALL OCCUR WITHIN 6 HOURS

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

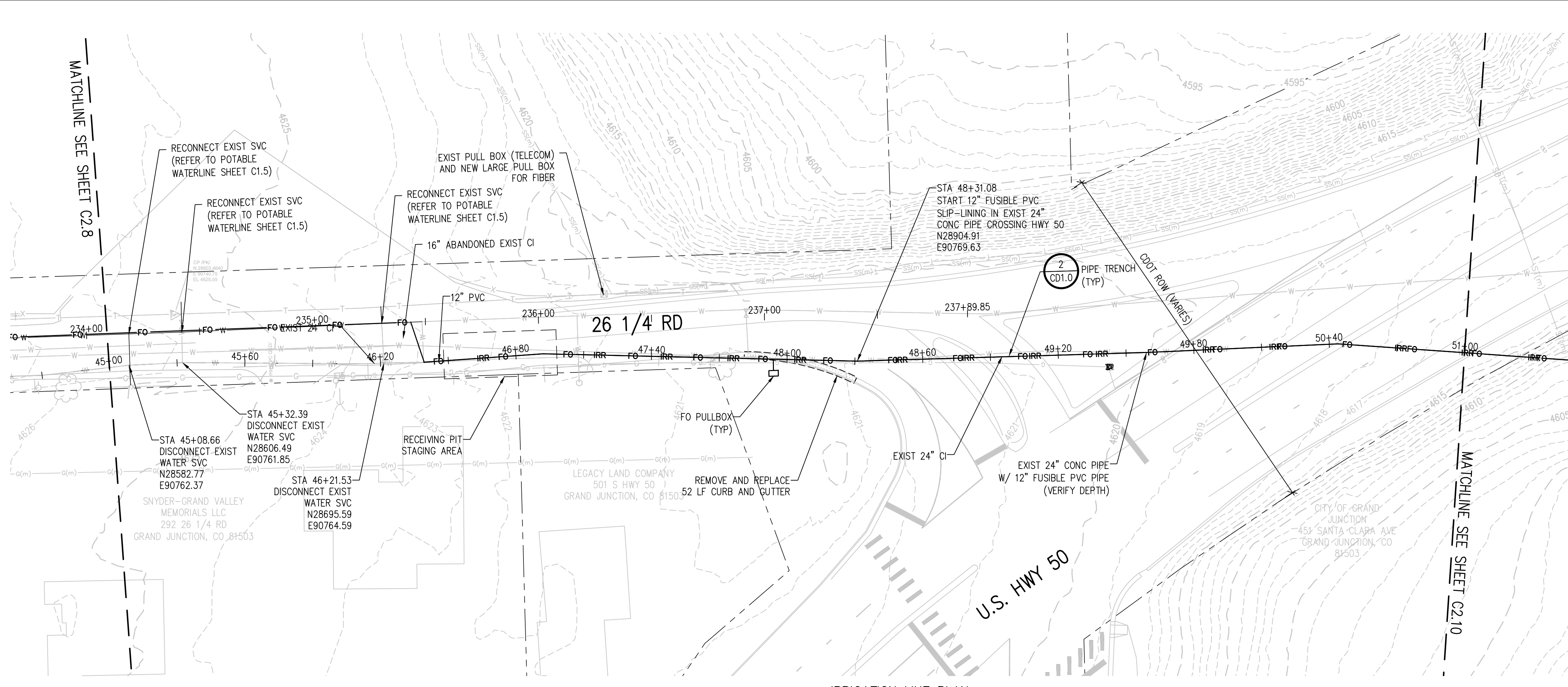
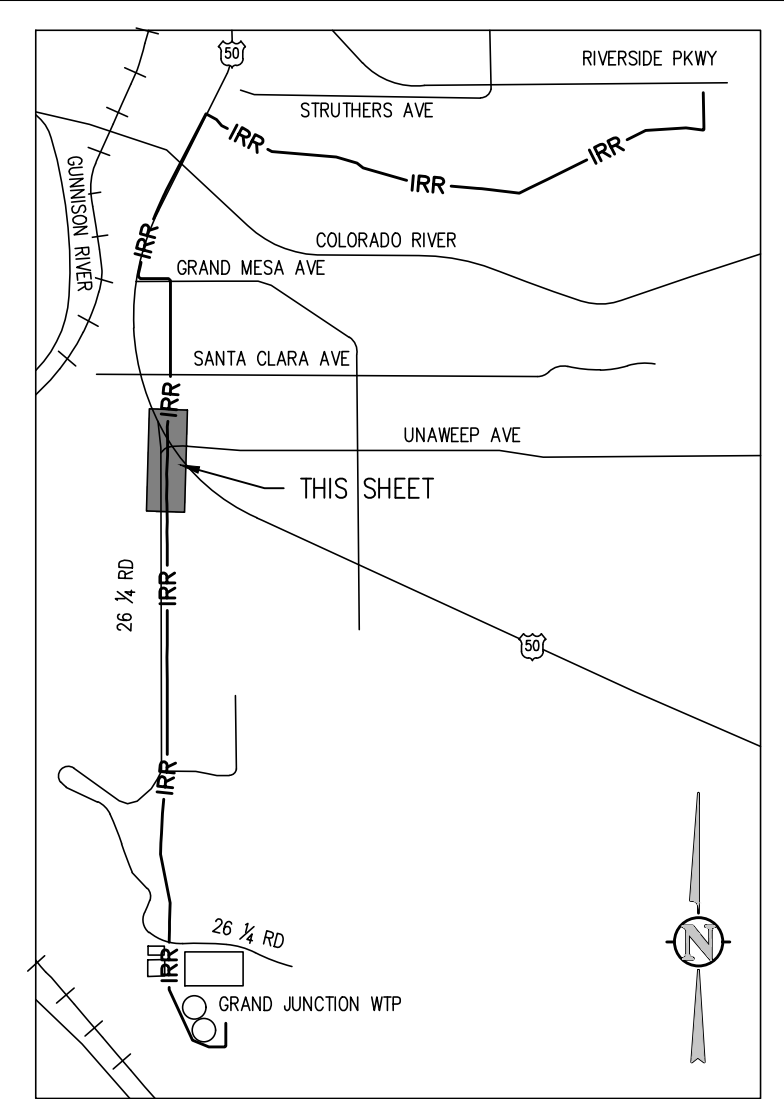
RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO

RAW WATER IRRIGATION LINE STA 39+00.00  
 - 45+00.00

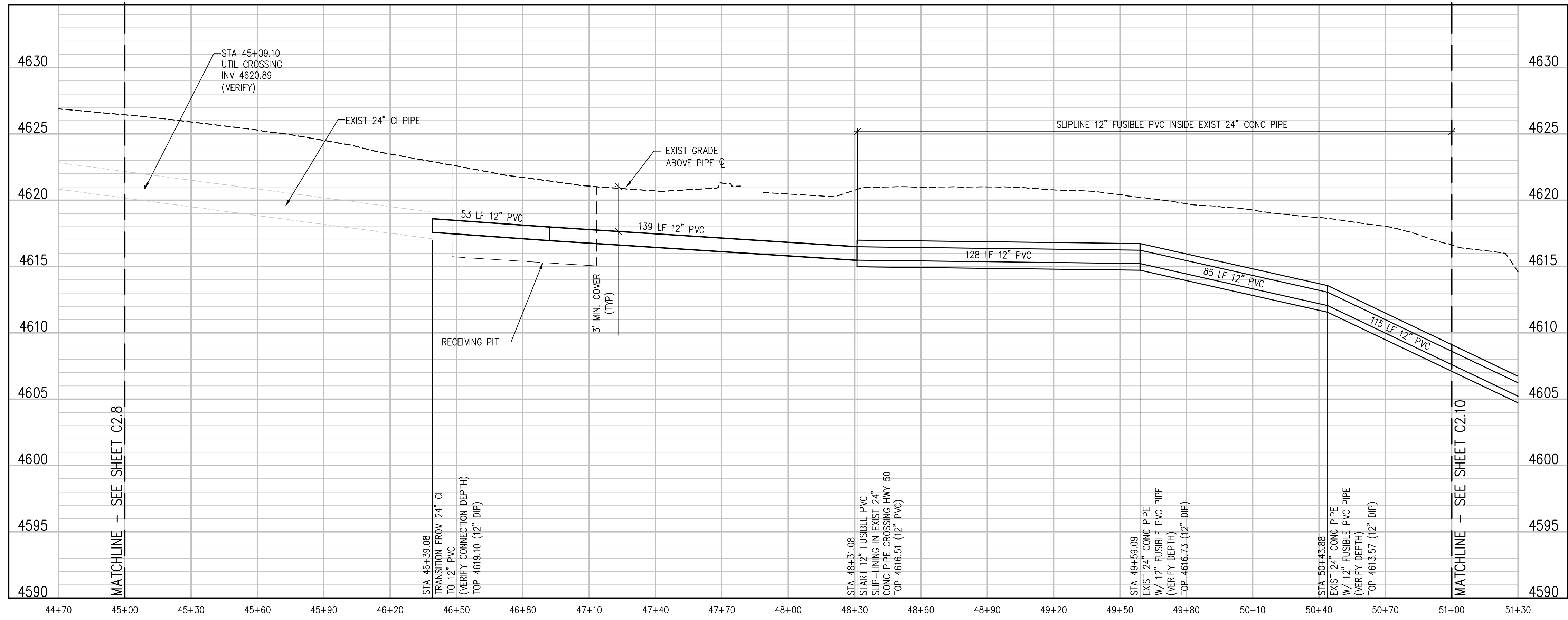
A:\2538.3c-c0\Drawings\2538.3c-c0-PWP-02.dwg, 2/26/2019 - 4:43 PM, NMS



NO.	DATE	DES'D	DWN	REVISION DESCRIPTION



**IRRIGATION LINE PLAN**  
 SCALE: 1"=30'



**IRRIGATION LINE PROFILE**  
 SCALE: 1"=30' HORIZ  
 1"=5' VERT

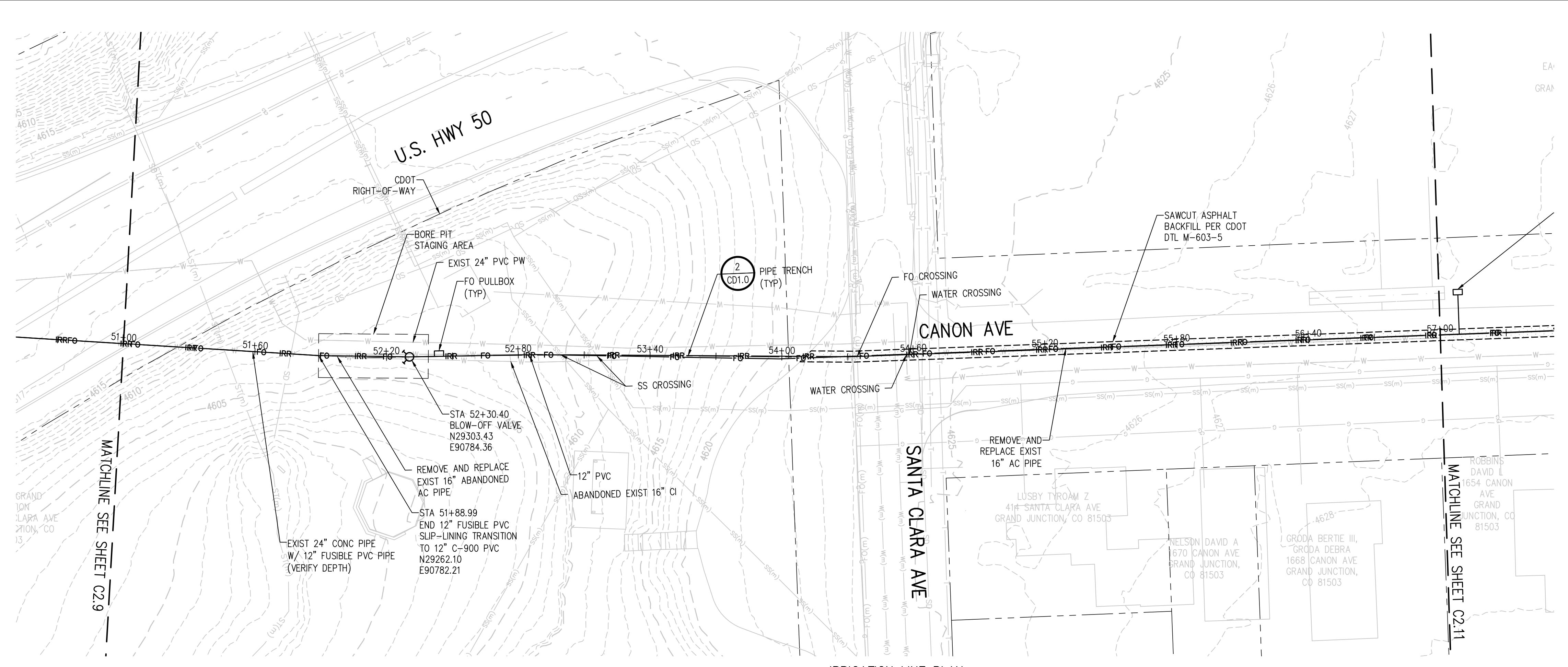
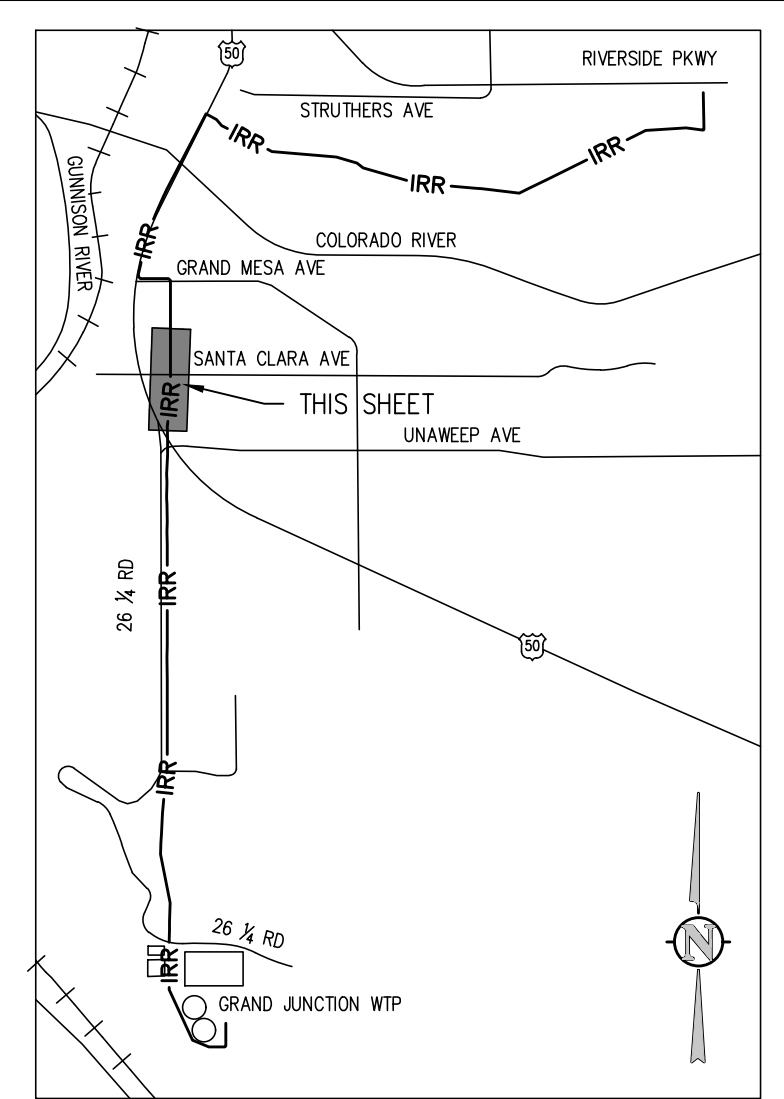
DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

© JVA, INC.

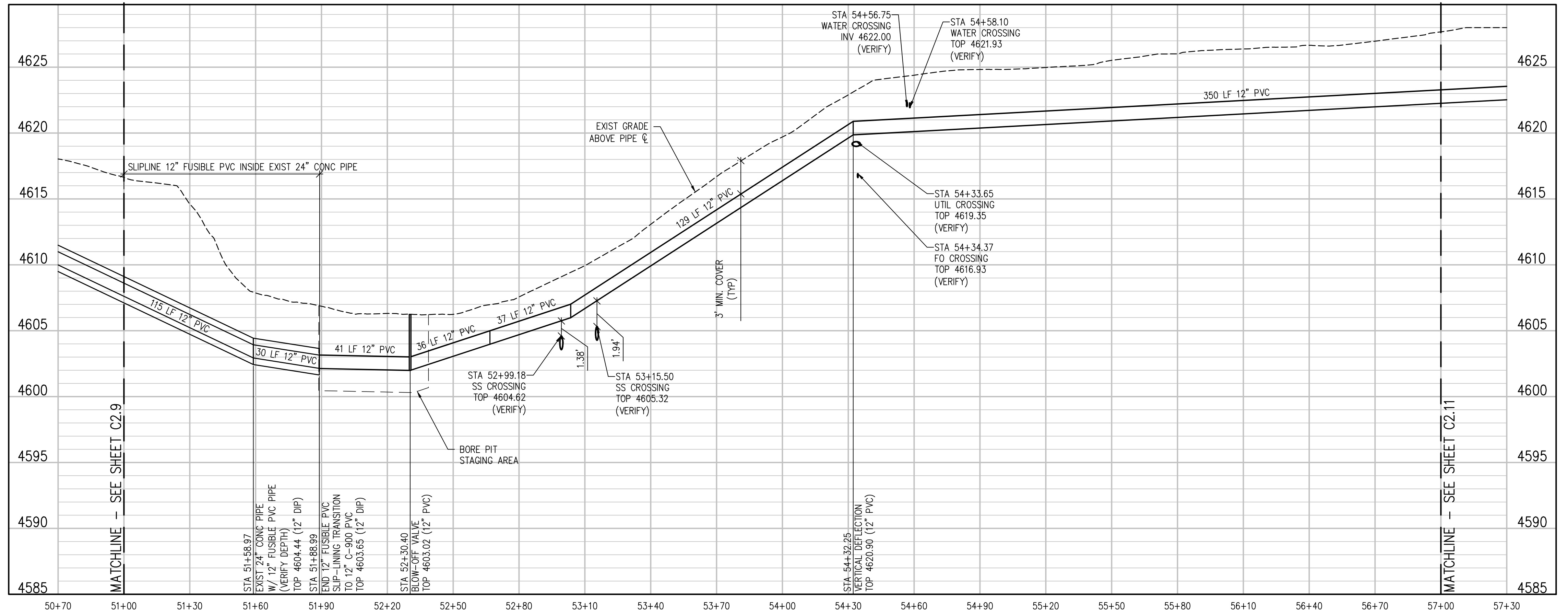
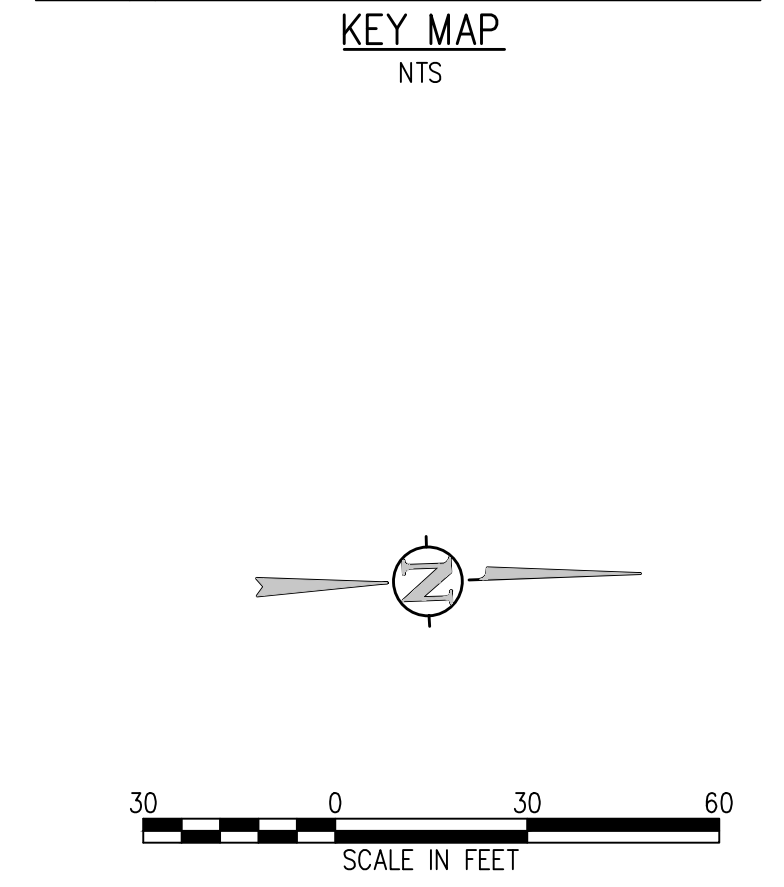
RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE STA 45+00.00  
 - 51+00.00

SHEET NO.  
**C2.9**

J:\2538.3c-c01\Drawings\2538.3c-02-IRR-03.dwg, 2/26/2019 - 4:43 PM, NMS



**IRRIGATION LINE PLAN**  
 SCALE: 1"=30'



**IRRIGATION LINE PROFILE**  
 SCALE: 1"=30' HORIZ  
 1"=5' VERT

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

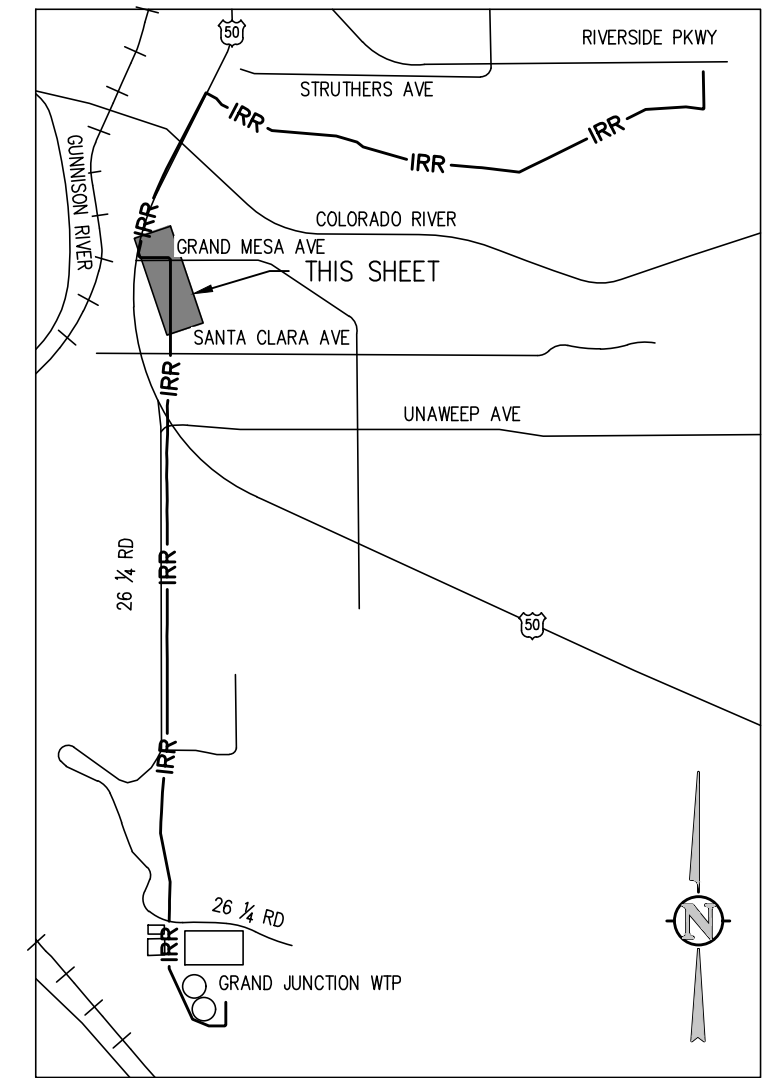
DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

© JVA, INC.  
 RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE STA 51+00.00  
 - 57+00.00

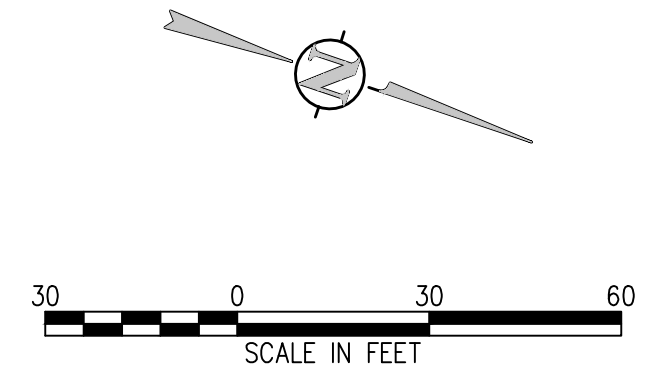
SHEET NO.  
**C2.10**

J:\2538.3c-c01\Drawings\2538.3c-02-IRR-03.dwg, 2/26/2019 - 4:44 PM, NMS





KEY MAP  
NTS

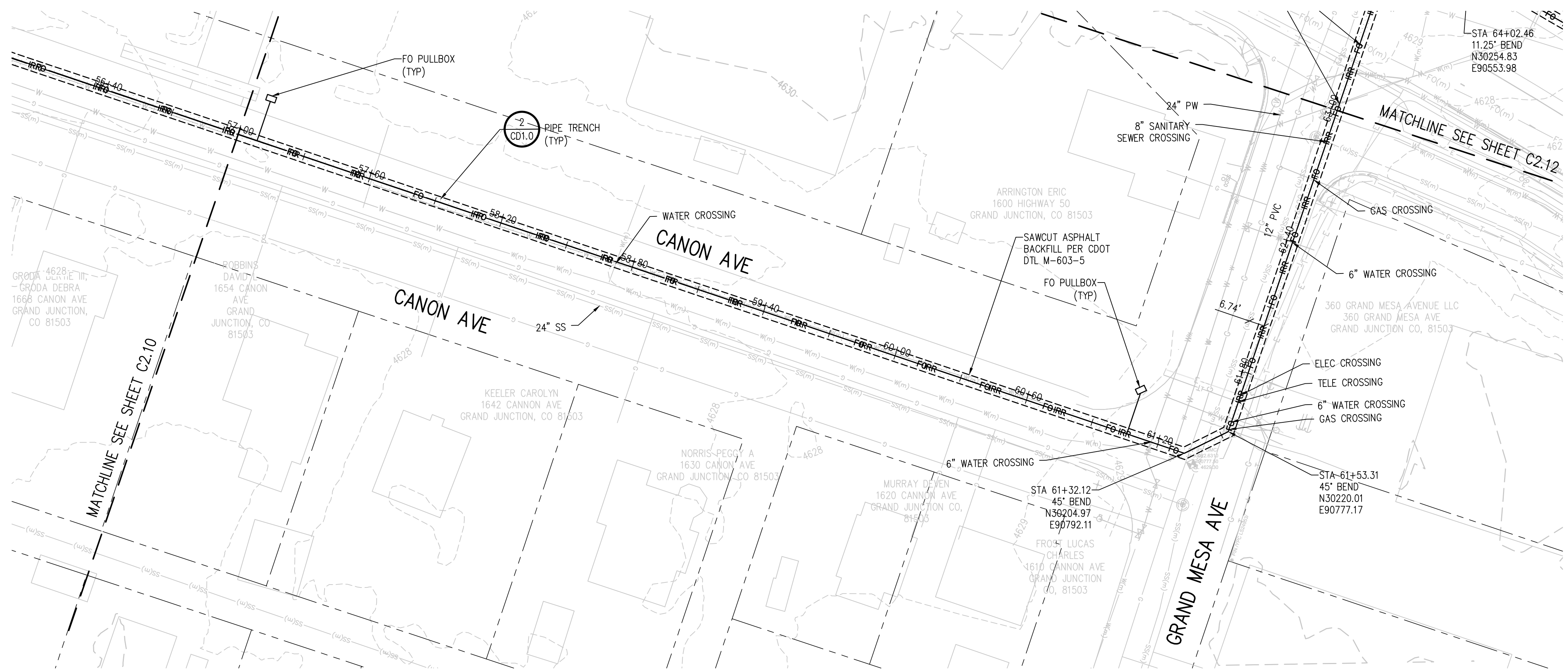


NO. DATE DESD DWN REVISION DESCRIPTION

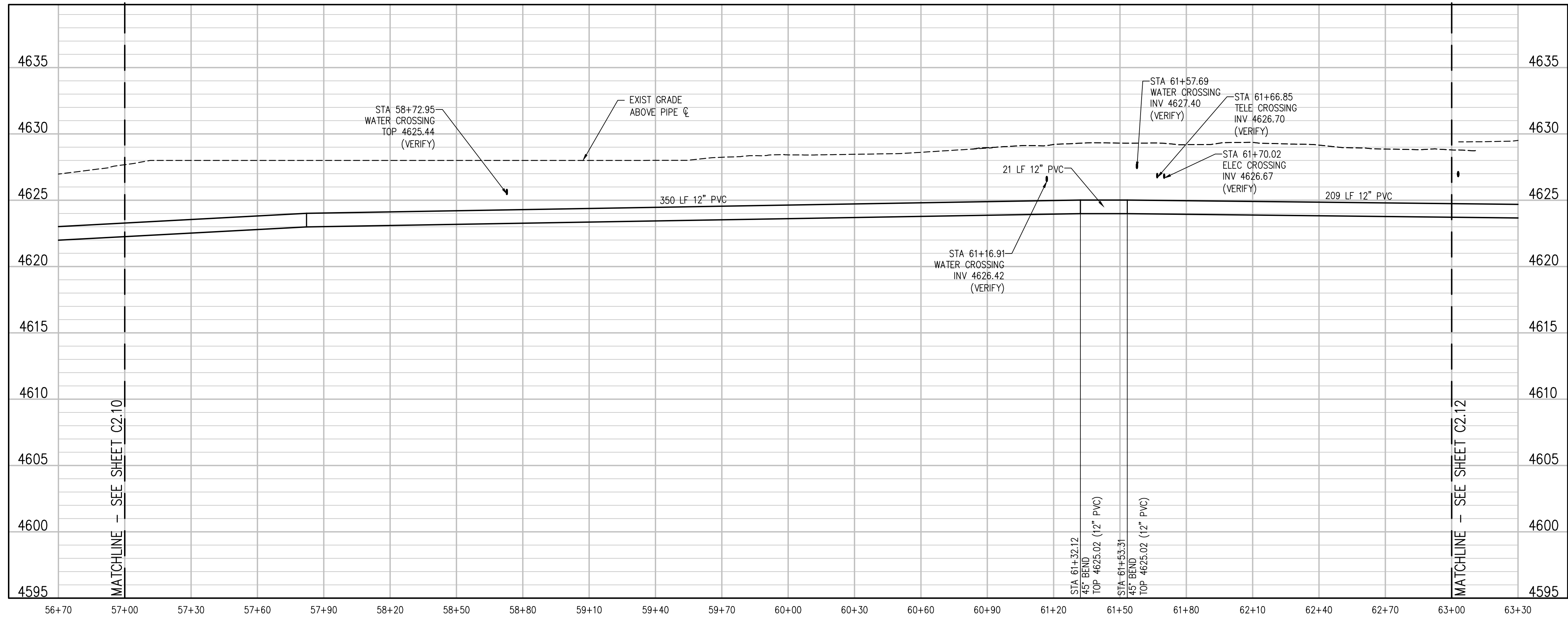
DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE STA 57+00.00  
 - 63+00.00

SHEET NO.  
**C2.11**

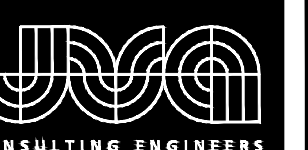


IRRIGATION LINE PLAN  
SCALE: 1"=30'

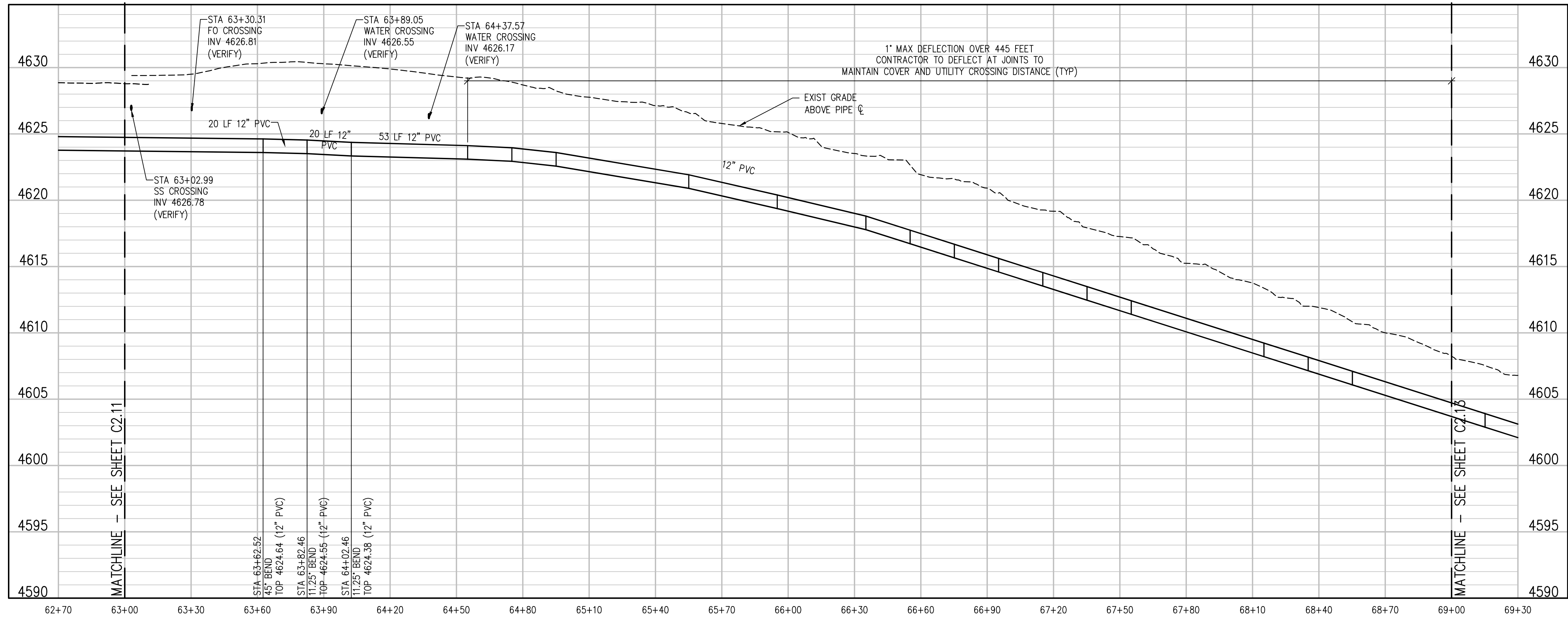
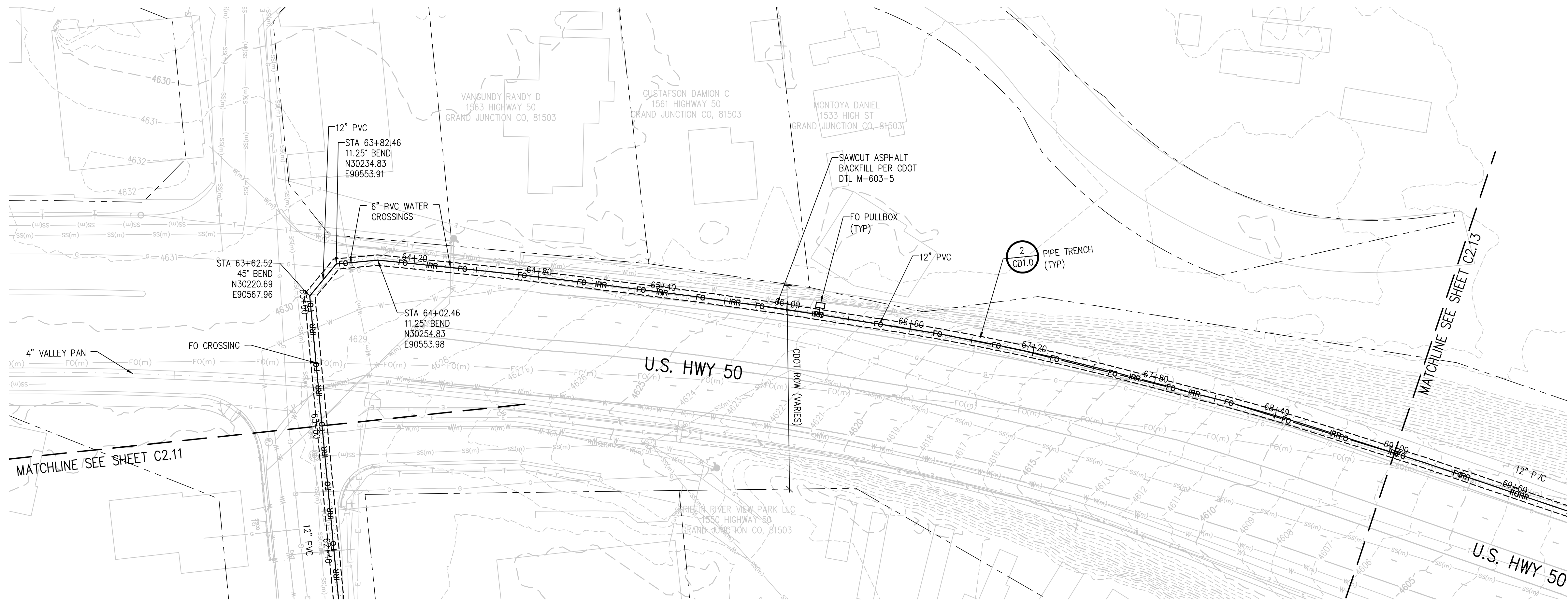
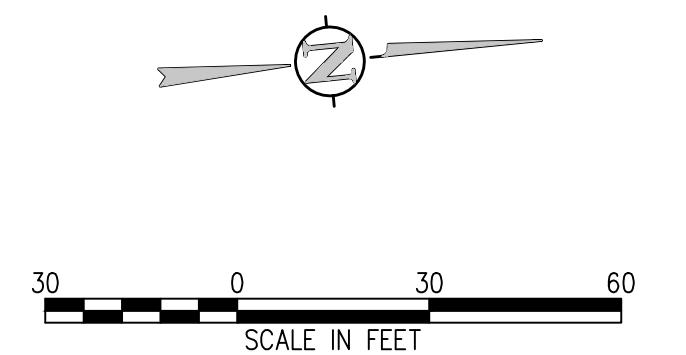
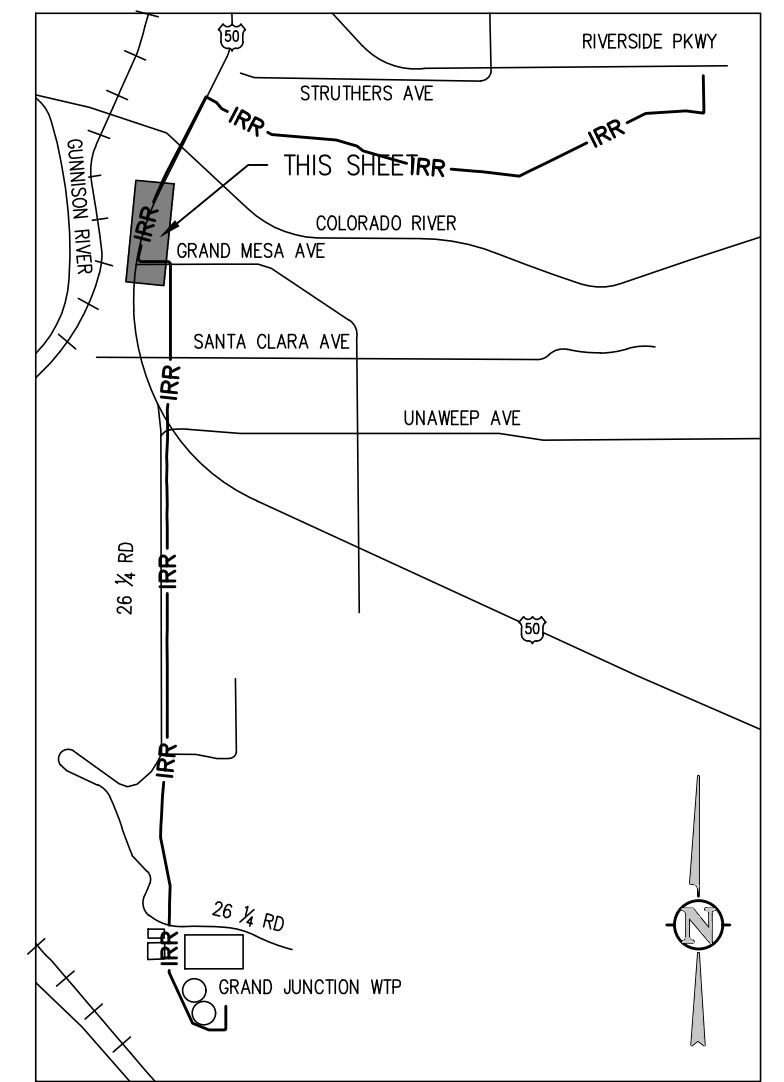


IRRIGATION LINE PROFILE  
SCALE: 1"=30' HORIZ  
1"=5' VERT

J:\2538.3c-c01\Drawings\2538.3c-c01-PP-03.dwg, 2/26/2019 - 4:44 PM, NMS



JVA, Inc. 817 Colorado Ave., Suite 301  
 Greenwood Springs, CO 81503  
 970.404.3100  
 www.jva.com  
 Boulder • Fort Collins • Winter Park  
 Greenwood Springs • Denver



NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

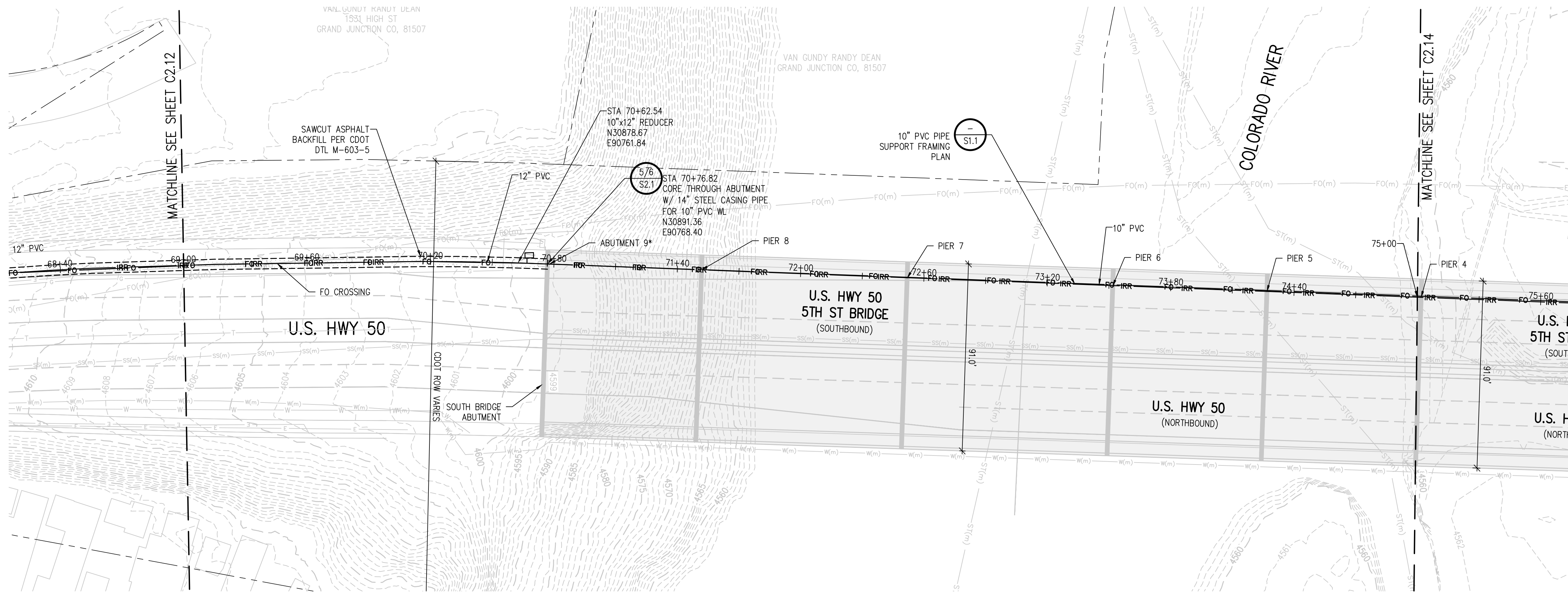
DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

© JVA, INC.

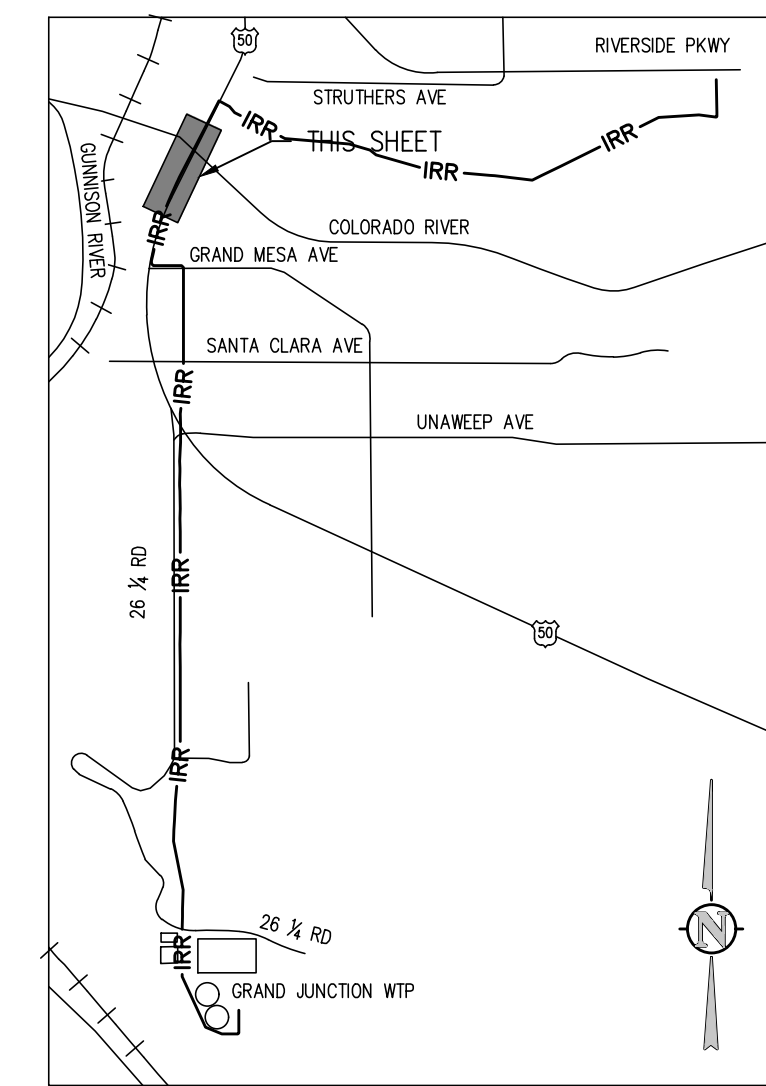
RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE STA 63+00.00  
 - 69+00.00

SHEET NO.  
**C2.12**

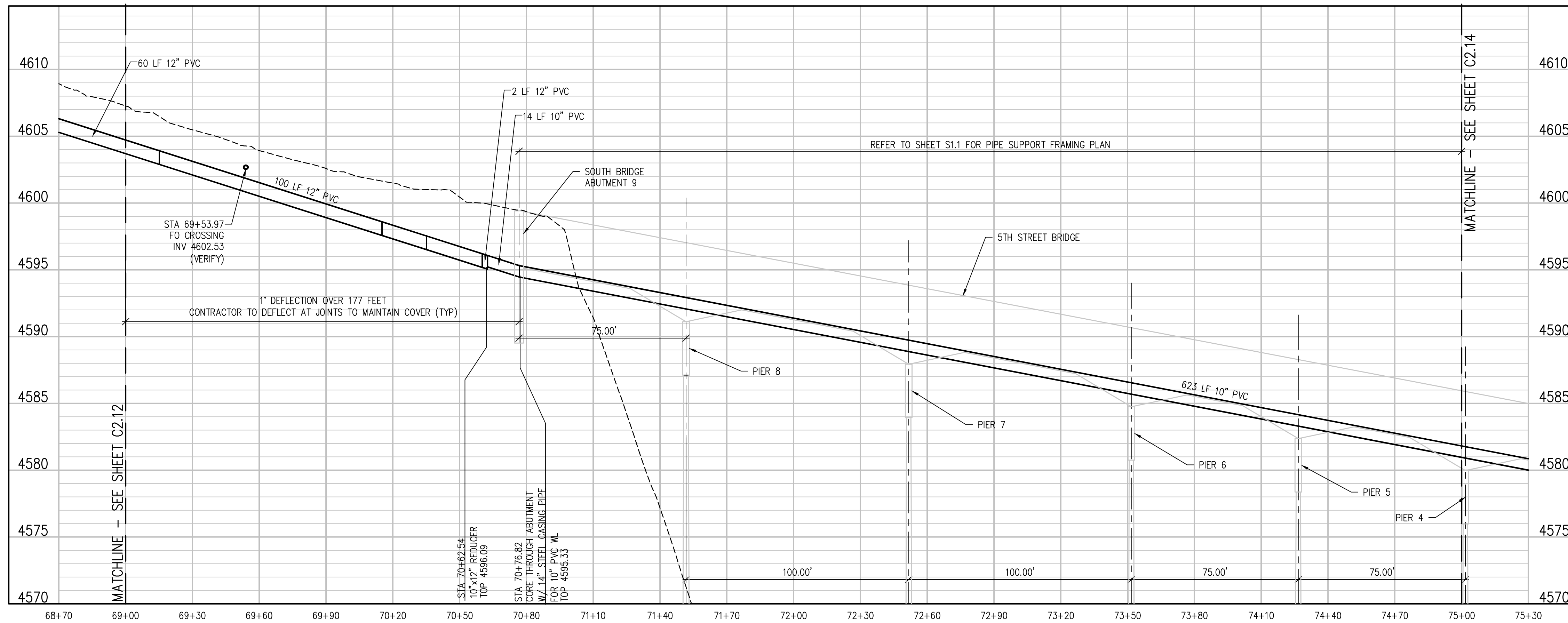
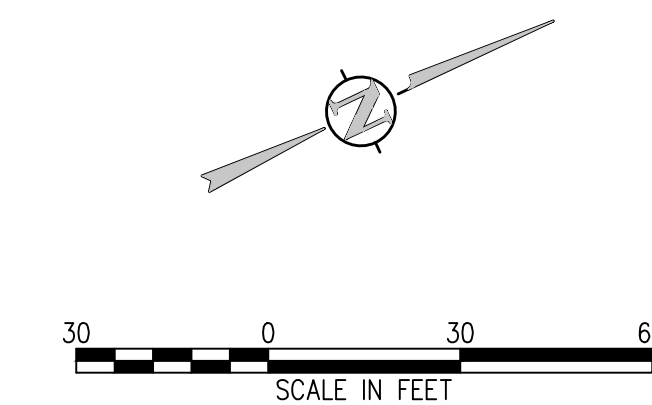




IRRIGATION LINE PLAN  
SCALE: 1"=30'



KEY MAP  
NTS



IRRIGATION LINE PROFILE  
SCALE: 1"=30' HORIZ  
1"=5' VERT

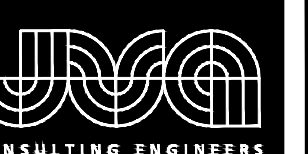
NOTE:  
BRIDGE ABUTMENT AND PIER  
IDENTIFICATION PER 12/31/08 US 50  
BRIDGE AS-BUILT PLANS.

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

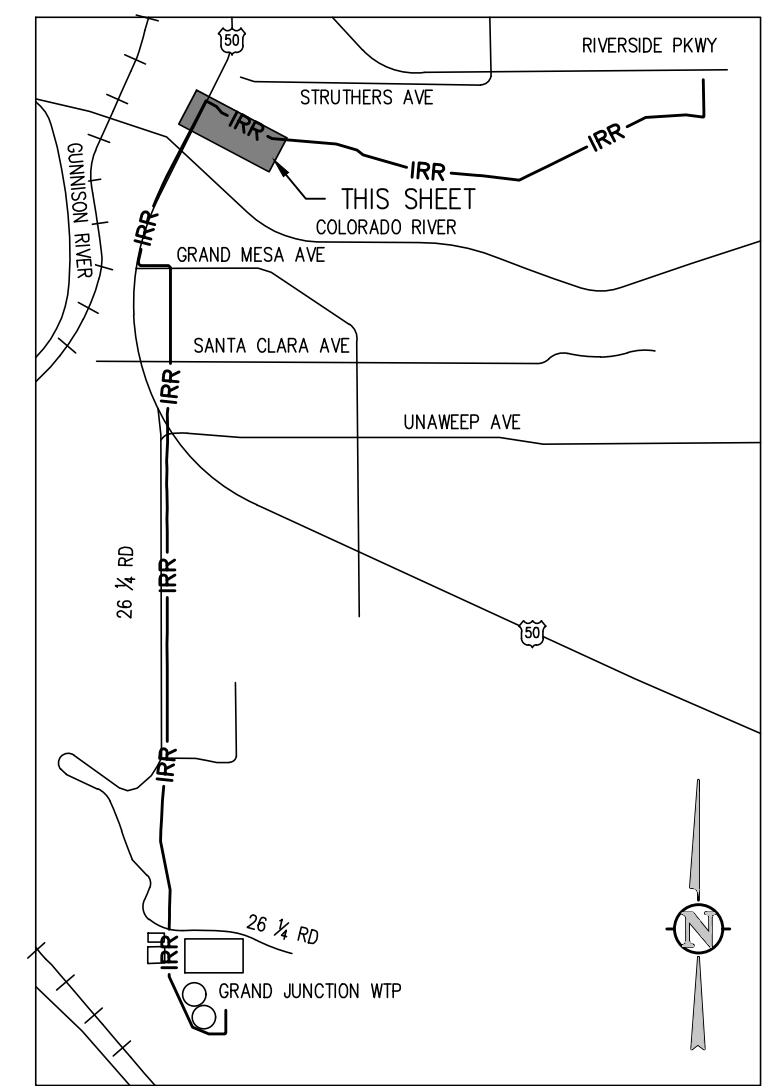
DESIGNED BY: BLM  
DRAWN BY: NAS  
CHECKED BY: JJM  
JOB #: 2538.3c  
DATE: FEBRUARY 2019  
© JVA, INC.

RAW WATER IRRIGATION SUPPLY  
AND WATER LINE REPLACEMENT  
GRAND JUNCTION, COLORADO  
RAW WATER IRRIGATION LINE STA 69+00.00  
- 75+00.00

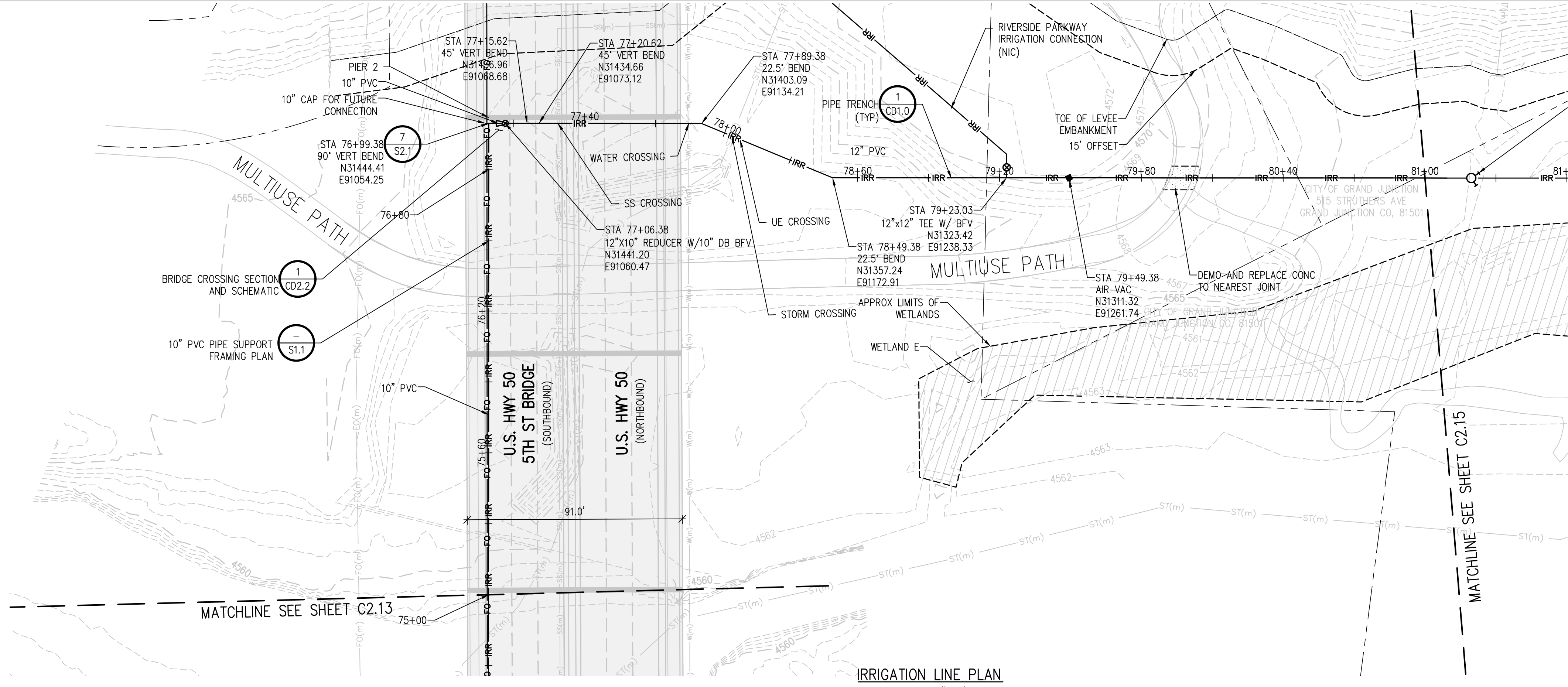
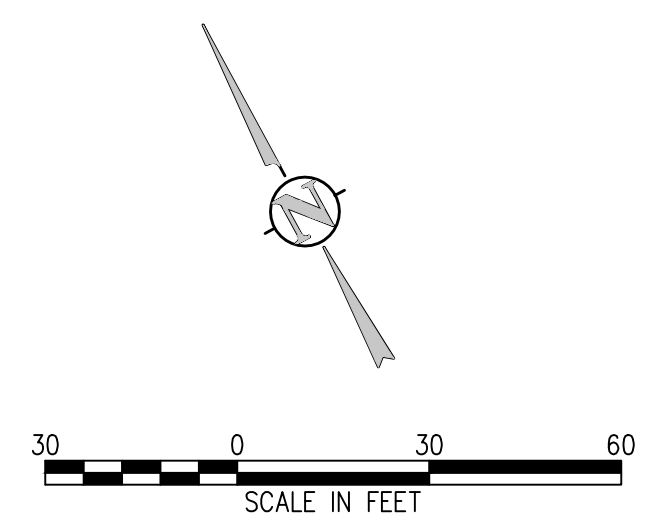
J:\2538.3c-c01\Drawings\2538.3c-c01-IRR-04.dwg, 2/26/2019 - 4:45 PM, NMS



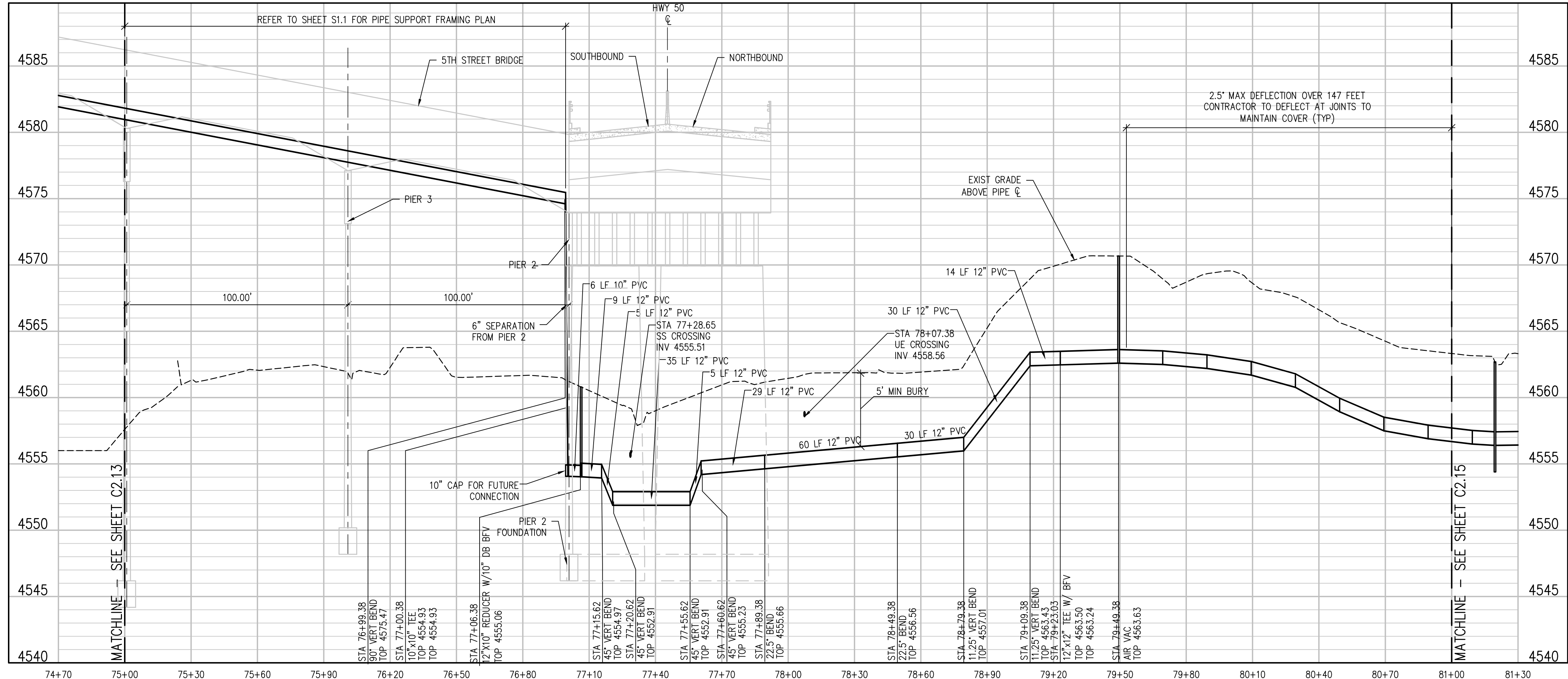
JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvava.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver



KEY MAP  
NTS



IRRIGATION LINE PLAN  
SCALE: 1"=30'

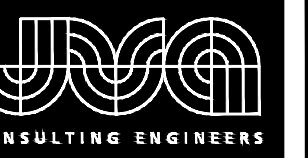


IRRIGATION LINE PROFILE  
SCALE: 1"=30' HORIZ  
1"=5' VERT

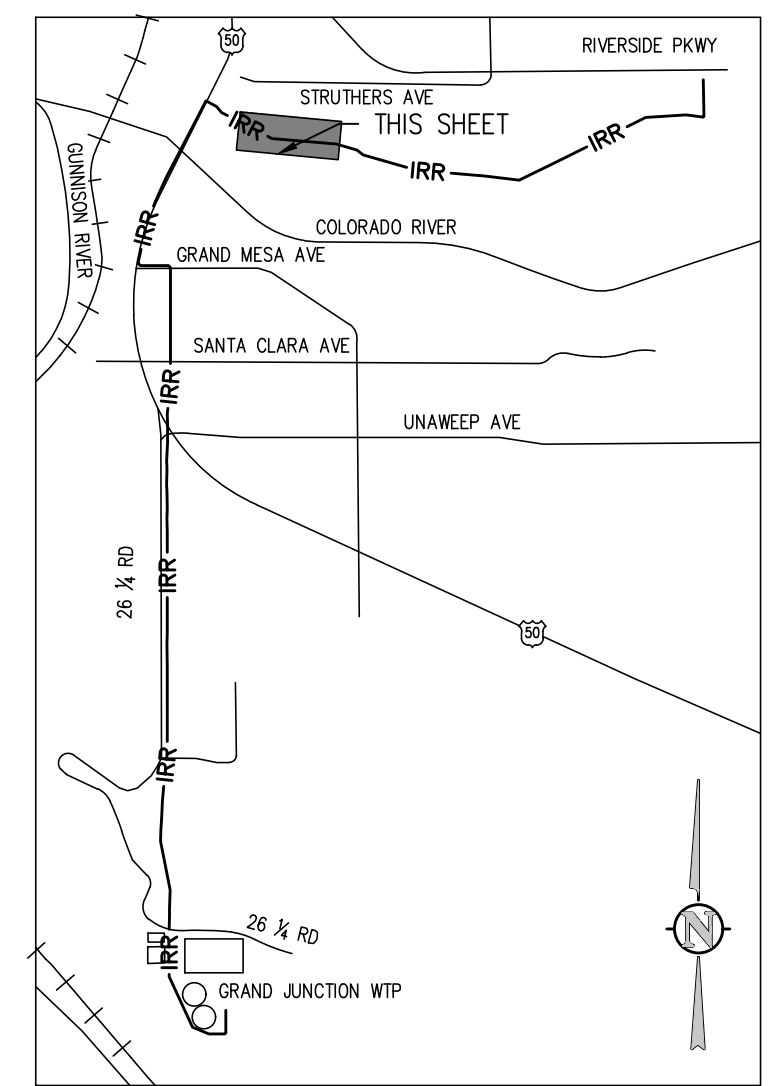
NO.	DATE	DES'D	DWN	REVISION DESCRIPTION
DESIGNED BY: BLM				
DRAWN BY: NAS				
CHECKED BY: JJM				
JOB #: 2538.3c				
DATE: FEBRUARY 2019				
© JVA, INC.				
RAW WATER IRRIGATION SUPPLY AND WATER LINE REPLACEMENT GRAND JUNCTION, COLORADO				
RAW WATER IRRIGATION LINE STA 75+00.00 - 81+00.00				
SHEET NO.				
<b>C2.14</b>				

D:\2538.3c-c0\Drawings\2538.3c-02-IRR-04.dwg, 2/26/2019 - 4:45 PM, NMS

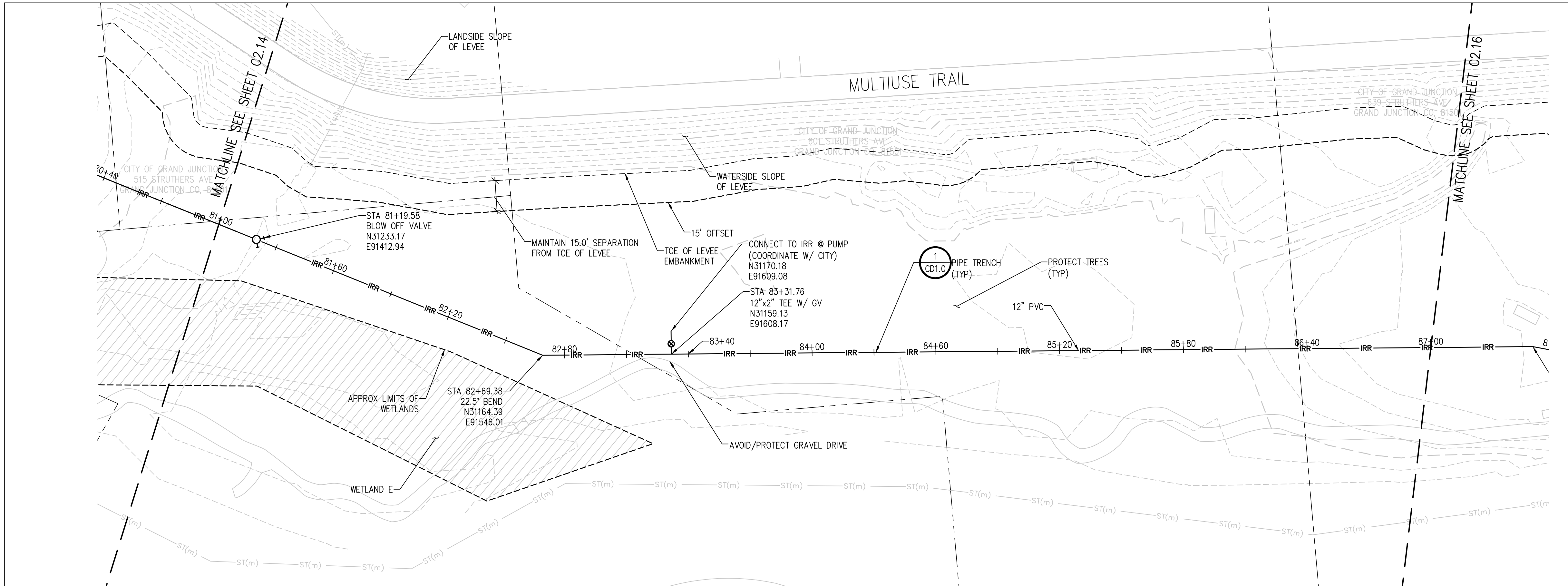
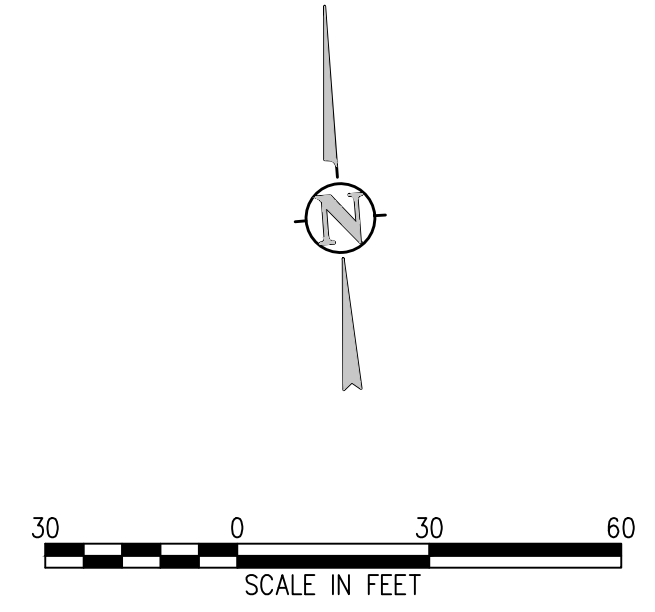




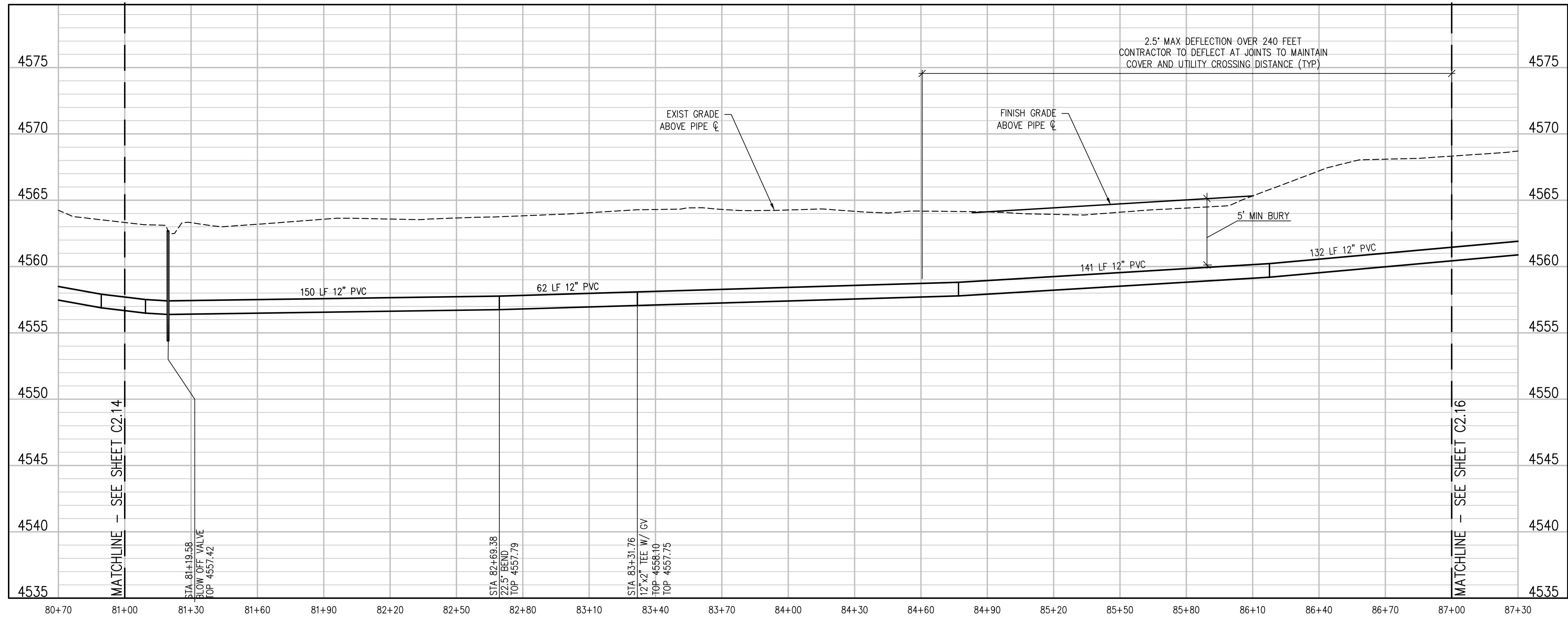
JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvajva.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver



KEY MAP  
 NTS



IRRIGATION LINE PLAN  
 SCALE: 1"=30'



IRRIGATION LINE PROFILE  
 SCALE: 1"=30' HORIZ  
 1"=5' VERT

NO. DATE DESD DWN REVISION DESCRIPTION

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

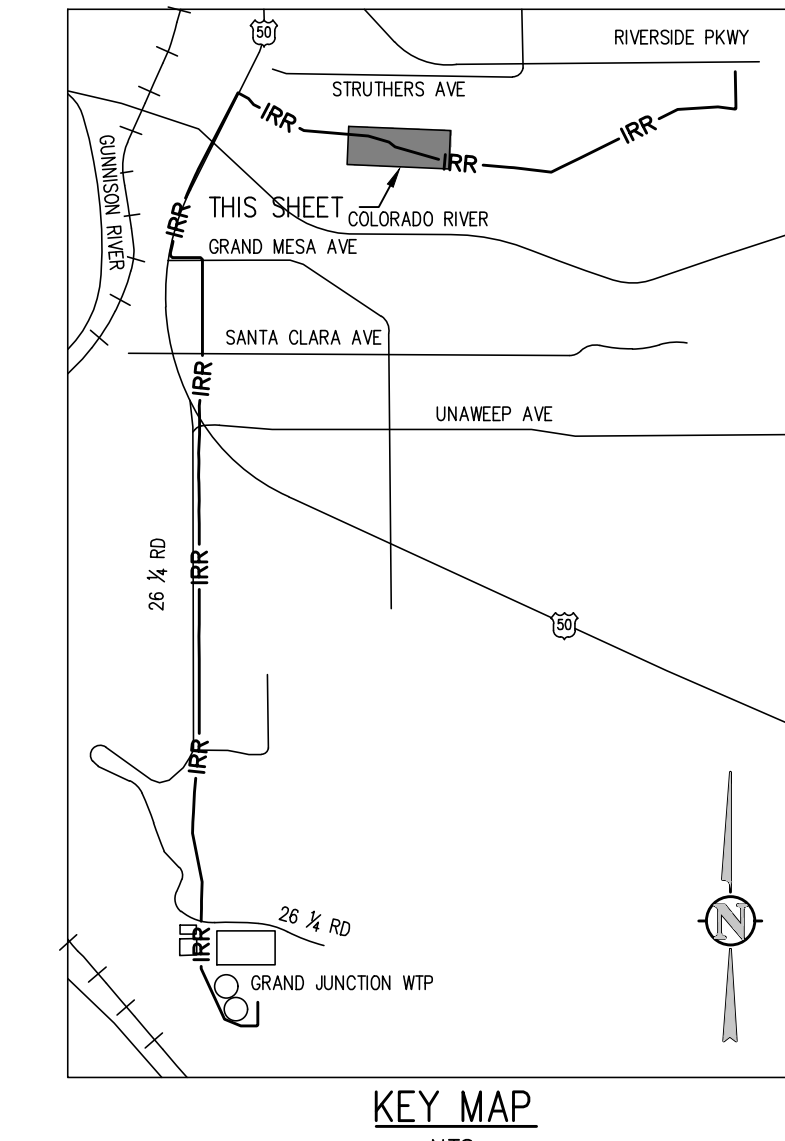
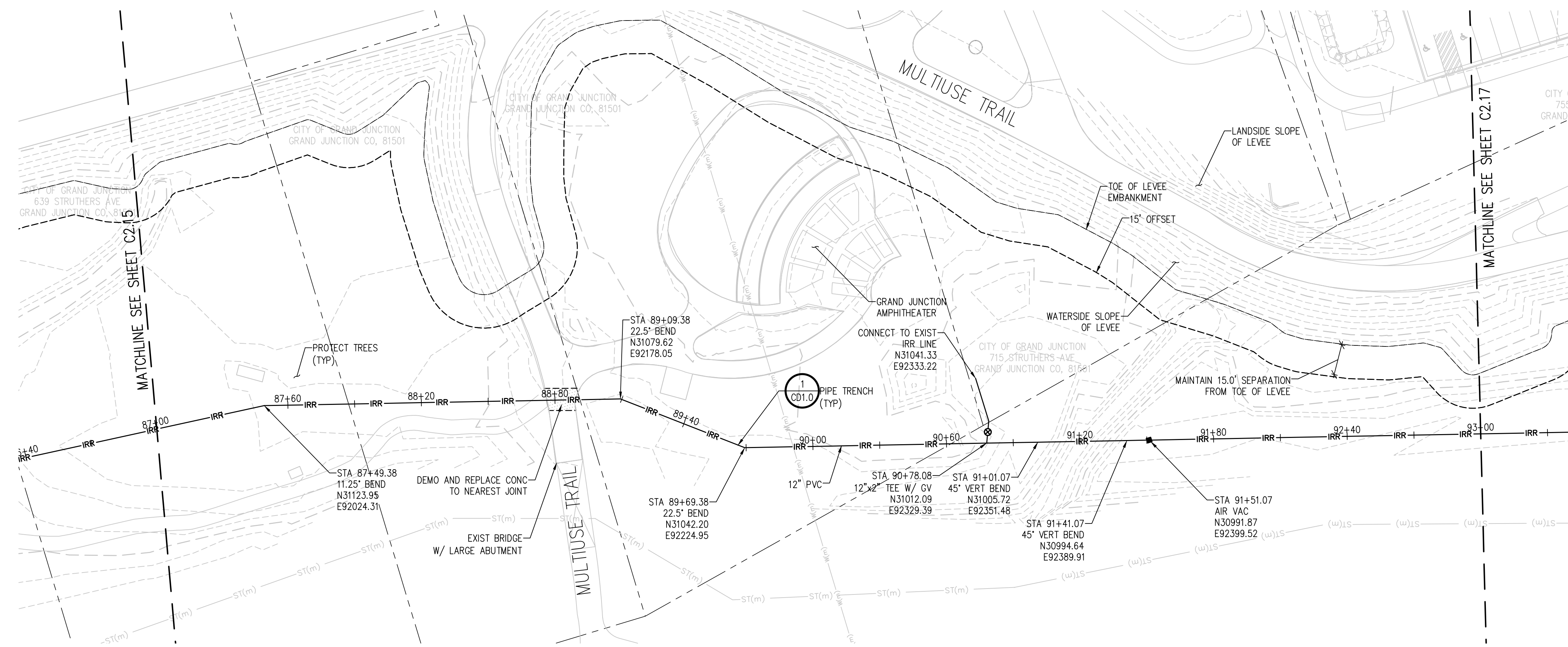
© JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE STA 81+00.00  
 - 87+00.00

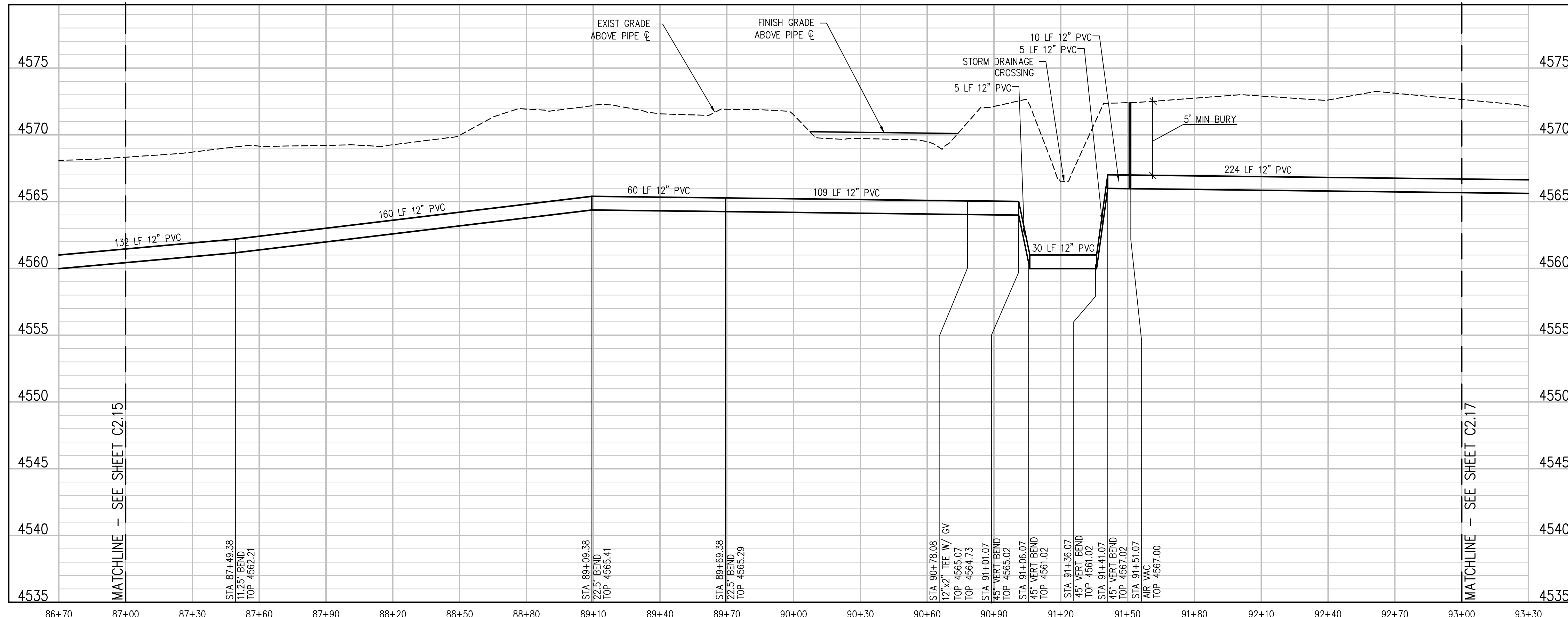
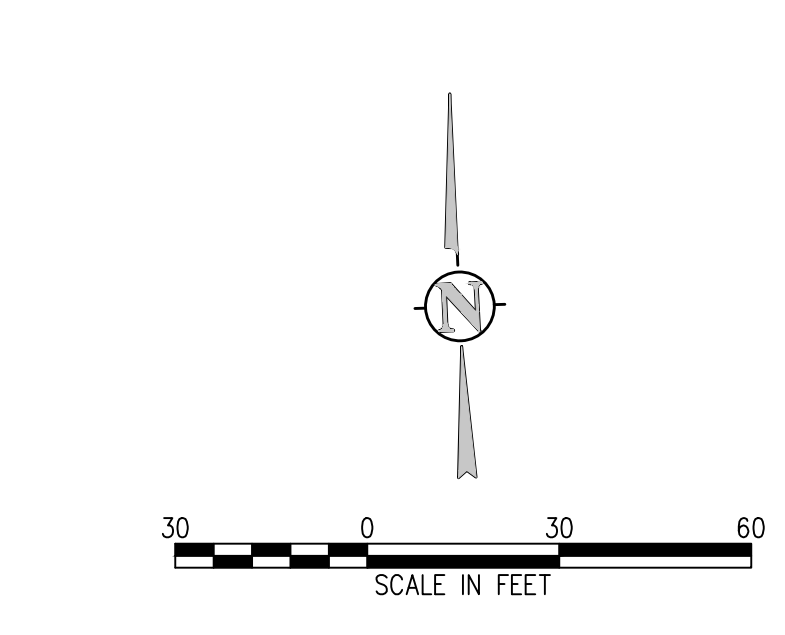
SHEET NO.

C2.15

A:\2538.3c-c01\Drawings\2538.3c-02-IRR-04.dwg, 2/26/2019 - 5:03 PM, NMS



- NOTES:**
1. MINIMIZE DISTURBANCE THROUGH POLLINATOR GARDEN
  2. CONTRACTOR TO REPLACE LANDSCAPING IN KIND



JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvava.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver

---

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

---

DESIGNED BY: BLM	DRAWN BY: NAS
CHECKED BY: JJM	JOB #: 2538.3c
DATE: FEBRUARY 2019	© JVA, INC.

---

**RAW WATER IRRIGATION SUPPLY AND WATER LINE REPLACEMENT GRAND JUNCTION, COLORADO**

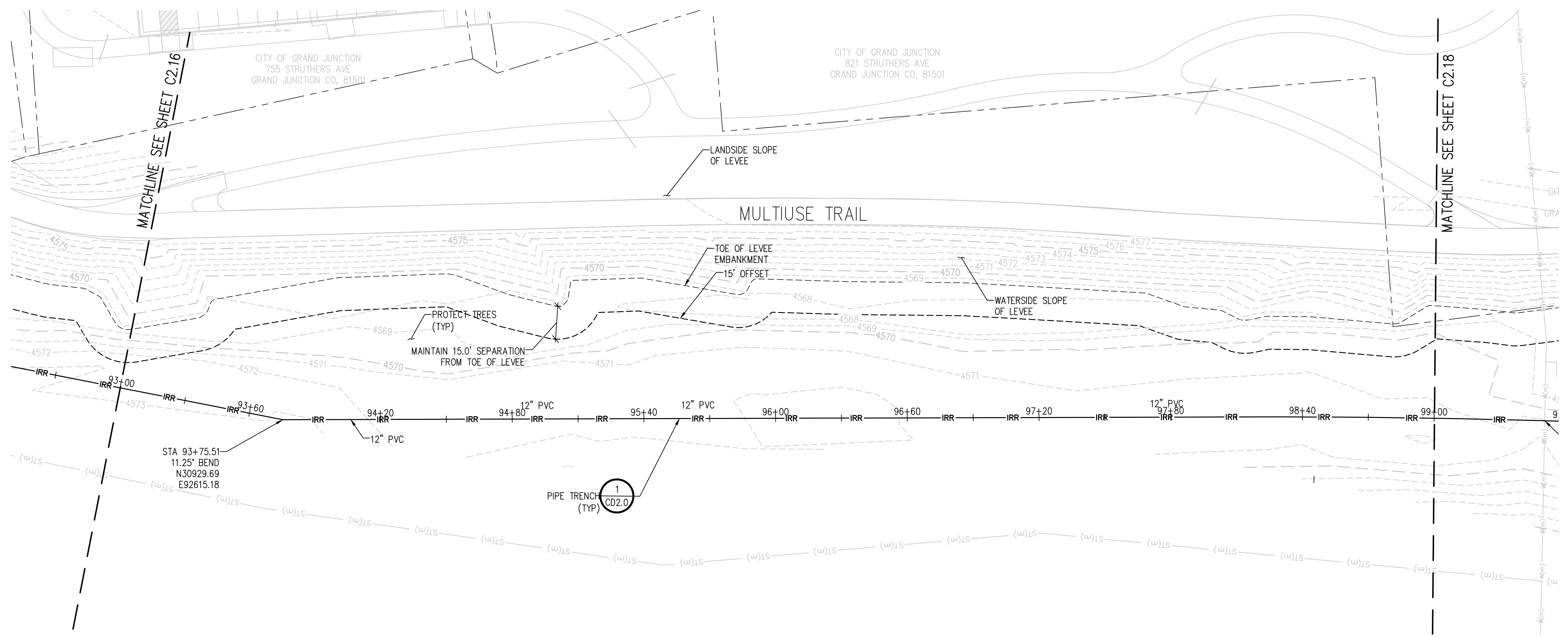
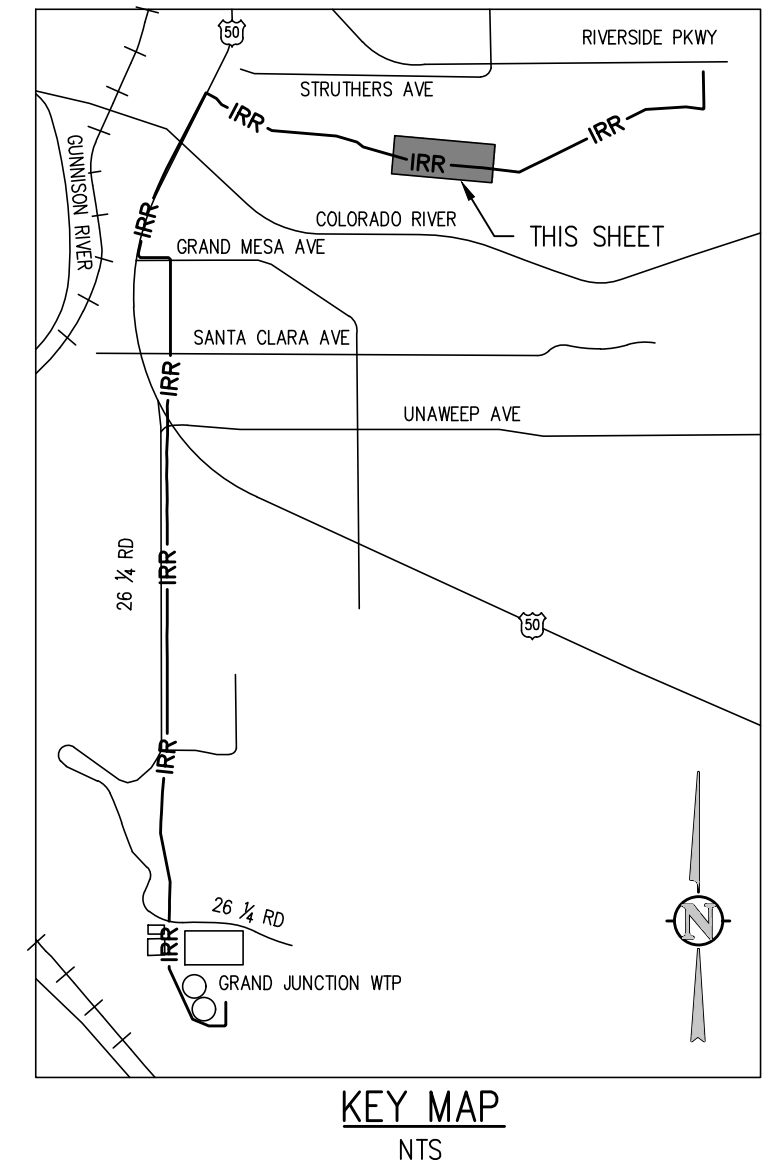
**RAW WATER IRRIGATION LINE STA 87+00.00 - 93+00.00**

---

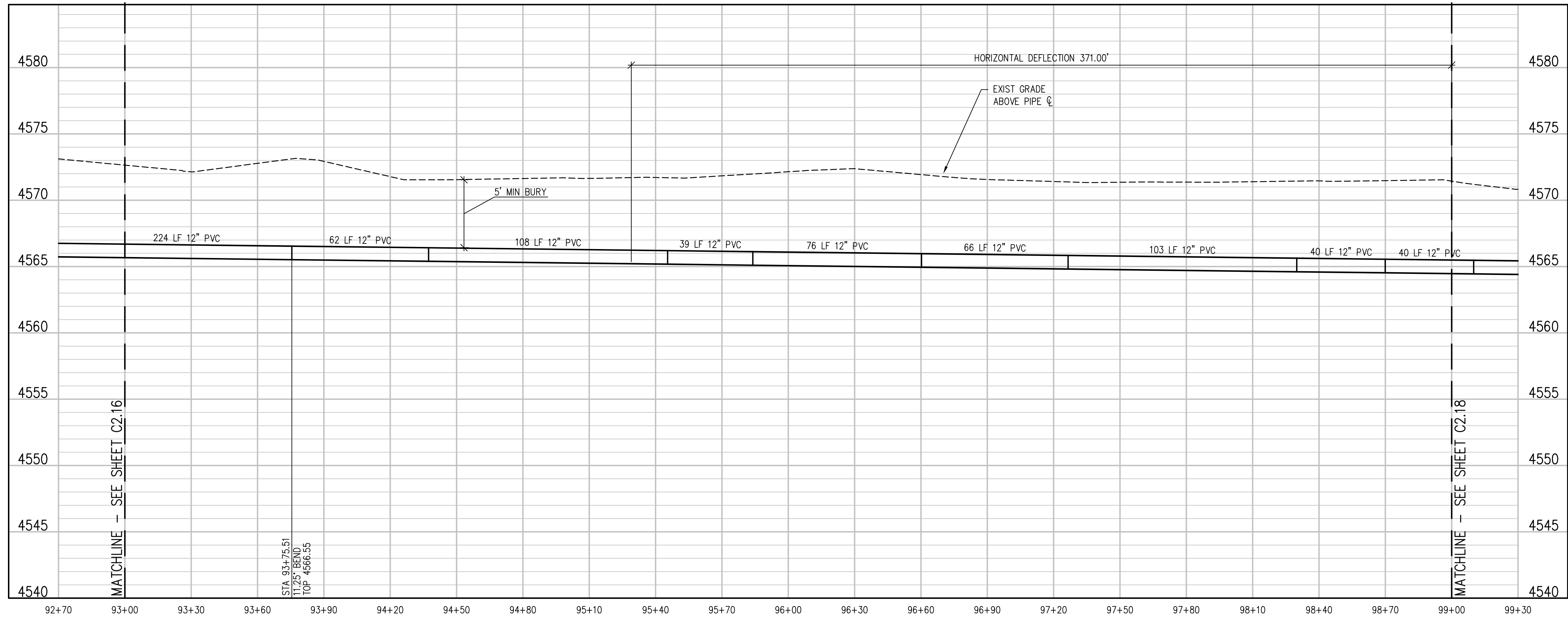
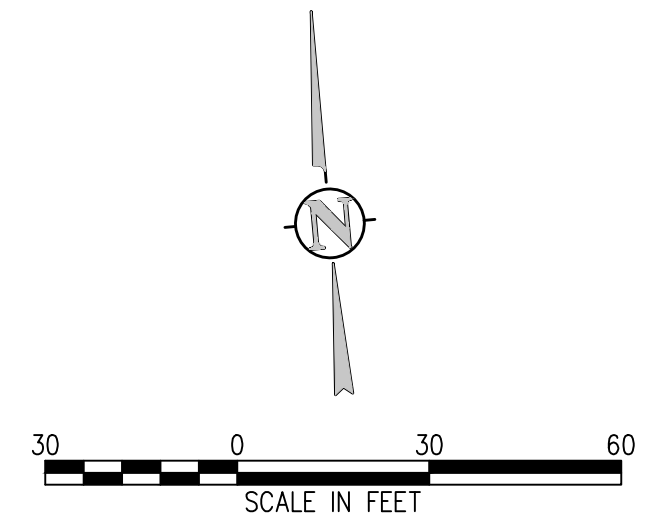
SHEET NO.  
**C2.16**

J:\2538.3c-c01\Drawings\2538.3c-c01-PWP-04.dwg, 2/26/2019 - 4:45 PM, NMS





**IRRIGATION LINE PLAN**  
SCALE: 1"=30'



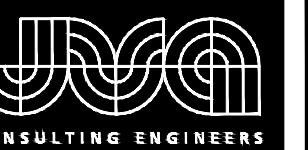
**IRRIGATION LINE PROFILE**  
SCALE: 1"=30' HORIZ  
1"=5' VERT

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

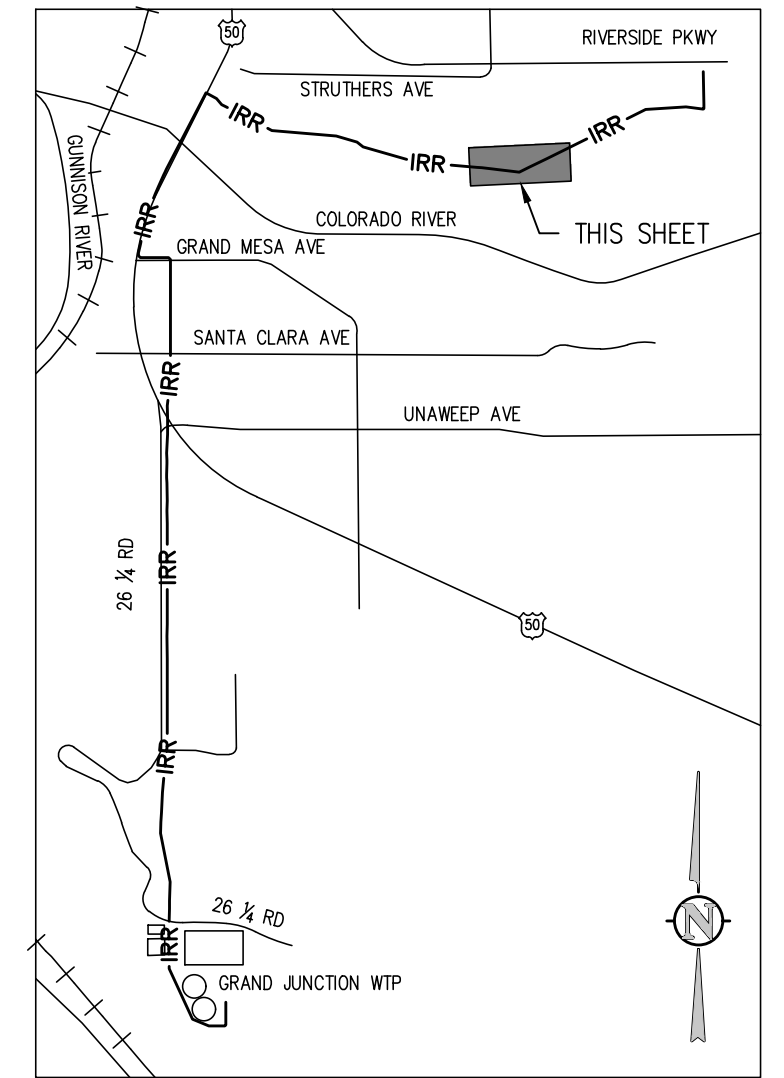
DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE STA 93+00.00  
 - 99+00.00

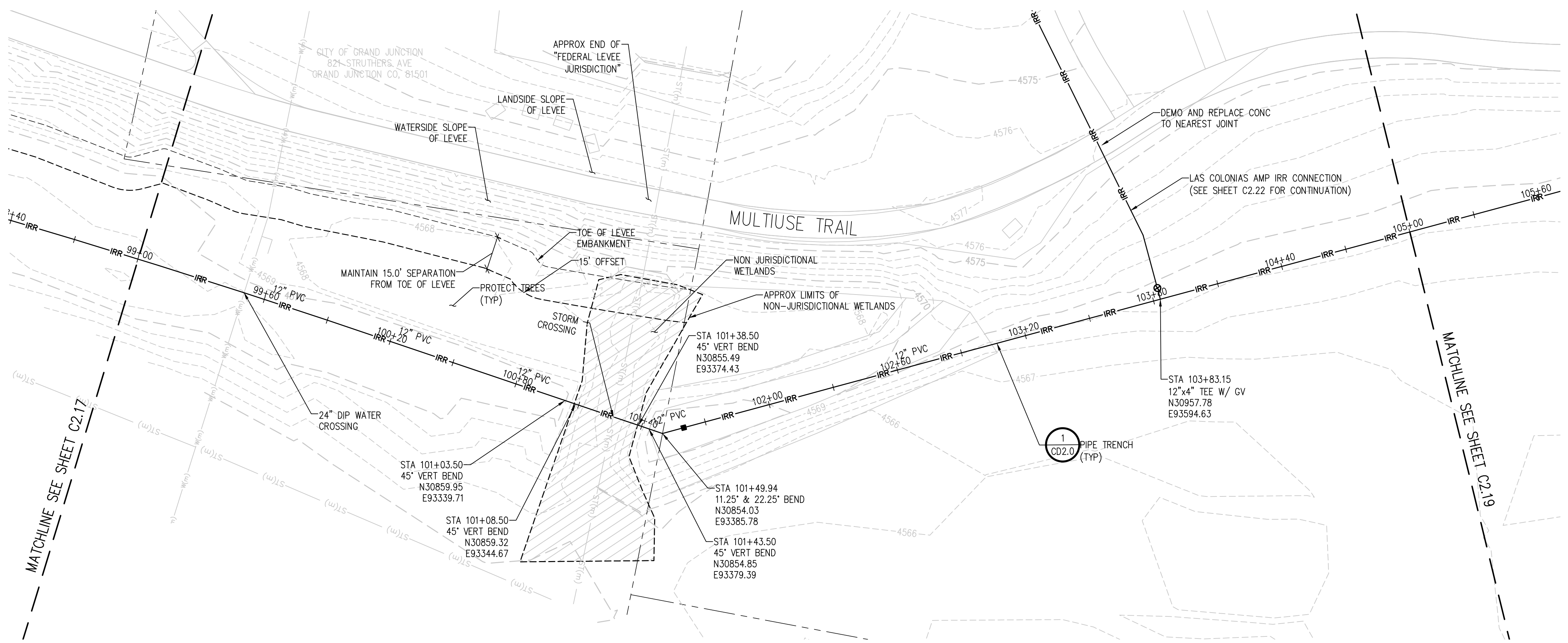
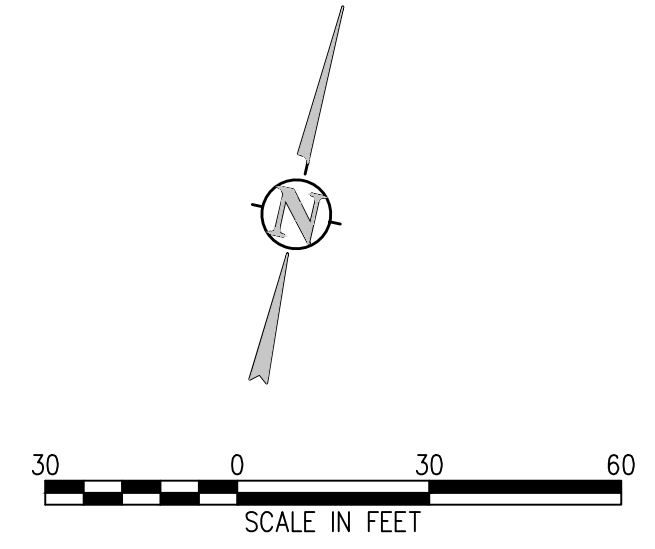
J:\2538.3c-c01\Drawings\2538.3c-c02-PWP-05.dwg, 2/26/2019 - 4:46 PM, NMS



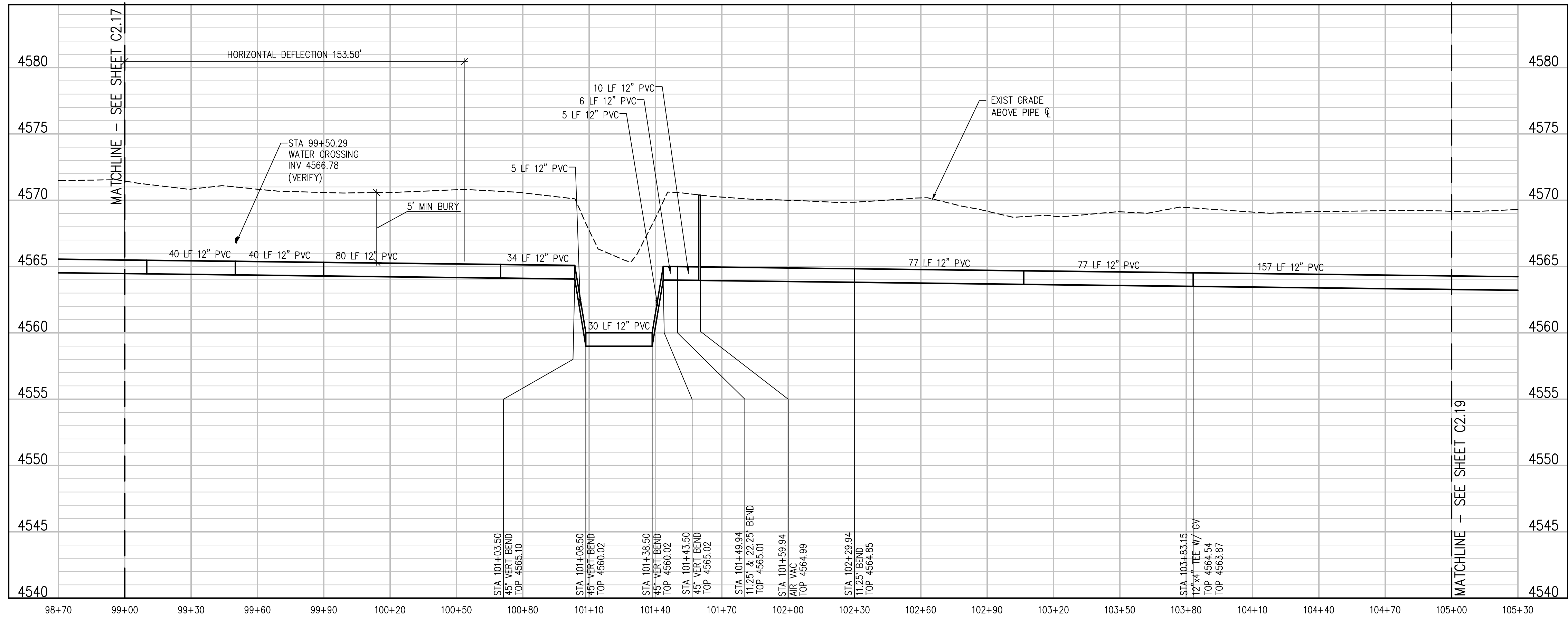
JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvava.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver



KEY MAP  
NTS



IRRIGATION LINE PLAN  
SCALE: 1"=30'



IRRIGATION LINE PROFILE  
SCALE: 1"=30' HORIZ  
1"=5' VERT

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

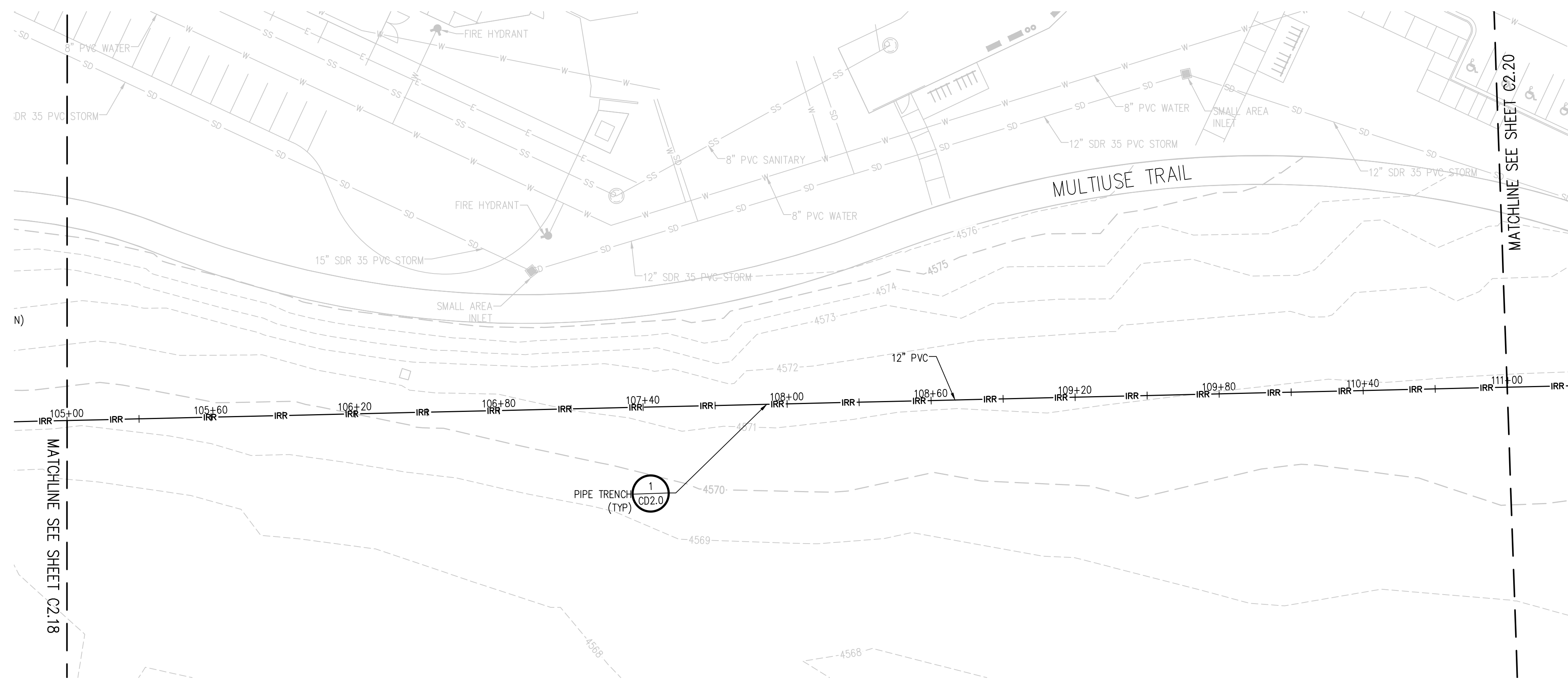
© JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE STA 99+00.00  
 - 105+00.00

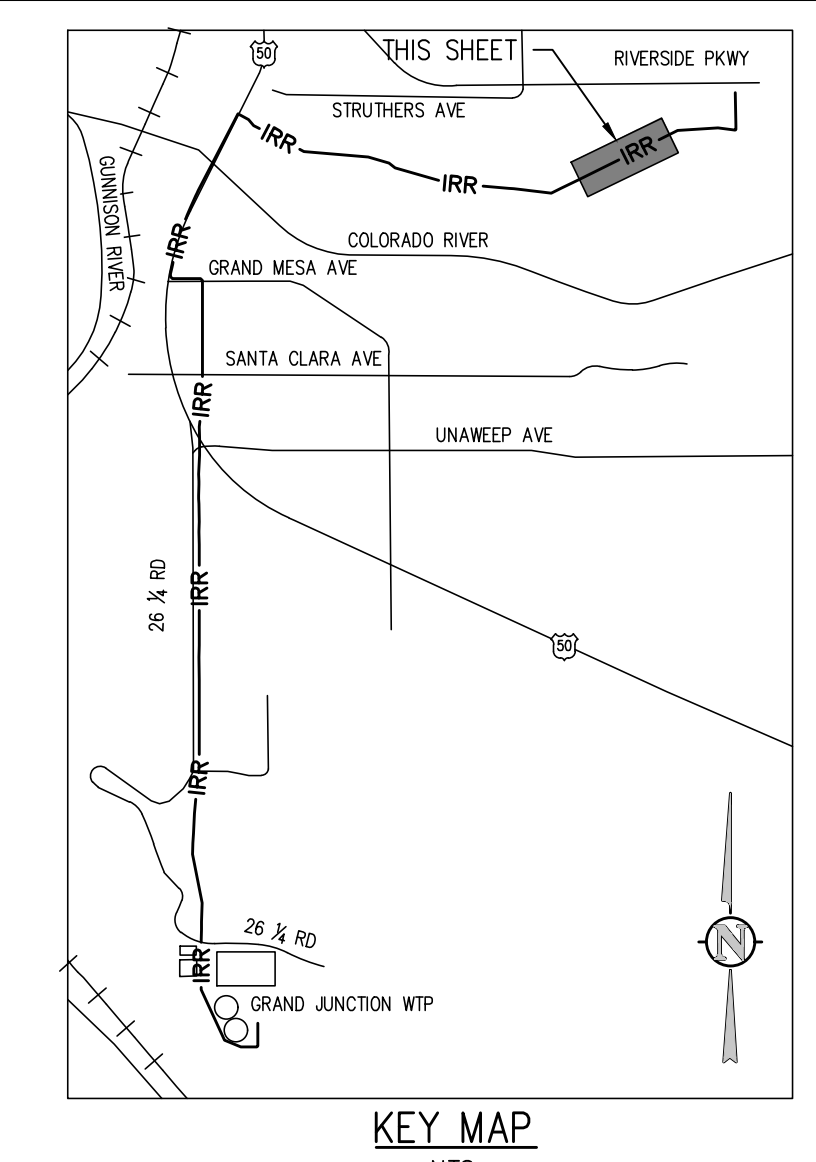
SHEET NO.  
C2.18

J:\2538.3c-c01\Drawings\2538.3c-c01-PWP-05.dwg, 2/26/2019 - 5:04 PM, NMS

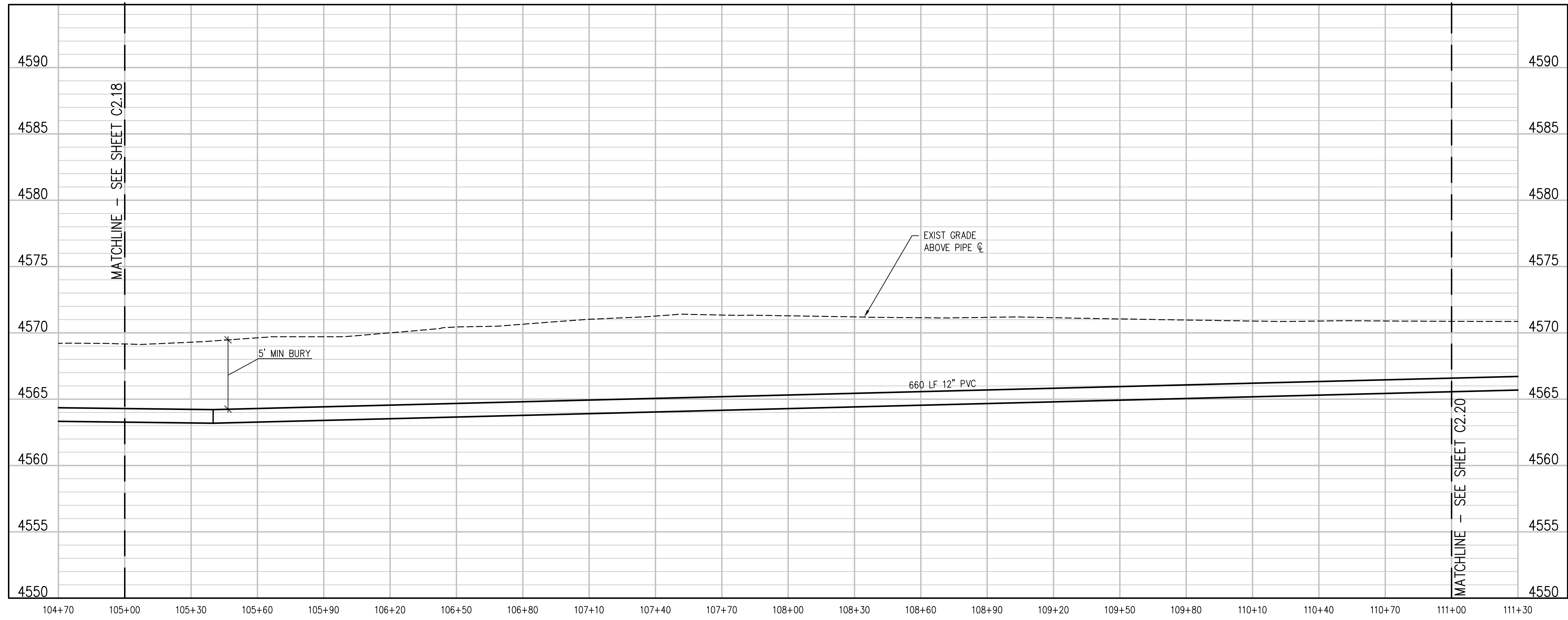
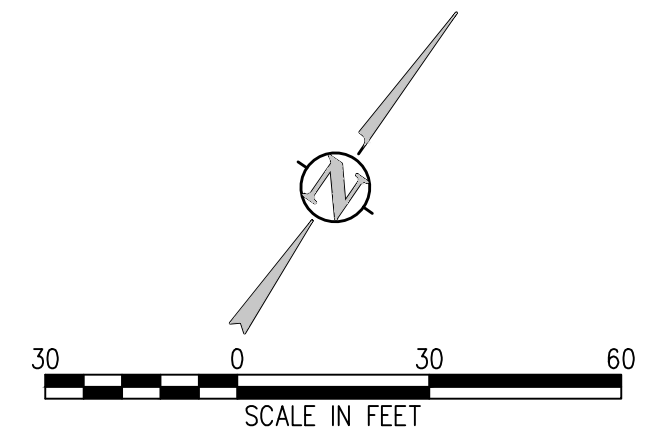




IRRIGATION LINE PLAN  
SCALE: 1"=30'



KEY MAP  
NTS



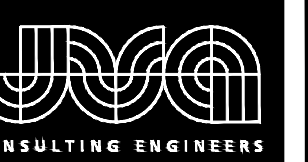
IRRIGATION LINE PROFILE  
SCALE: 1"=30' HORIZ  
1"=5' VERT

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

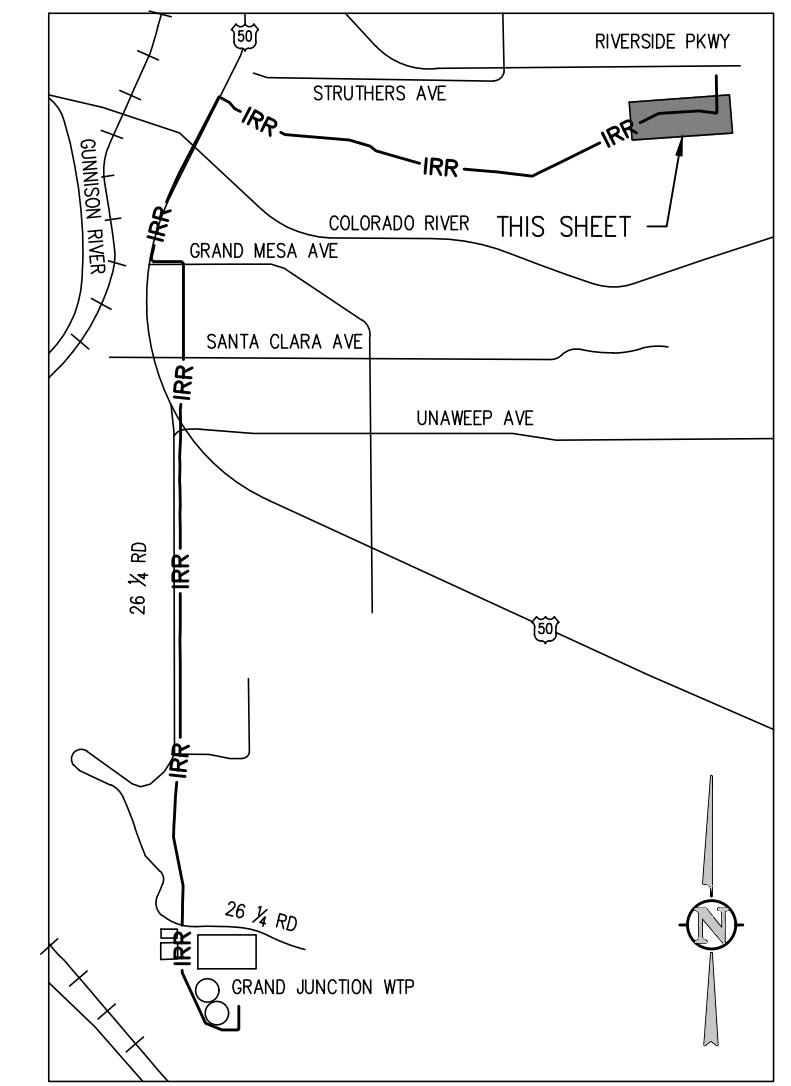
DESIGNED BY:	BLM
DRAWN BY:	NAS
CHECKED BY:	JJM
JOB #:	2538.3c
DATE:	FEBRUARY 2019

© JVA, INC.  
RAW WATER IRRIGATION SUPPLY  
AND WATER LINE REPLACEMENT  
GRAND JUNCTION, COLORADO  
RAW WATER IRRIGATION LINE STA 105+00.00  
- 111+00.00

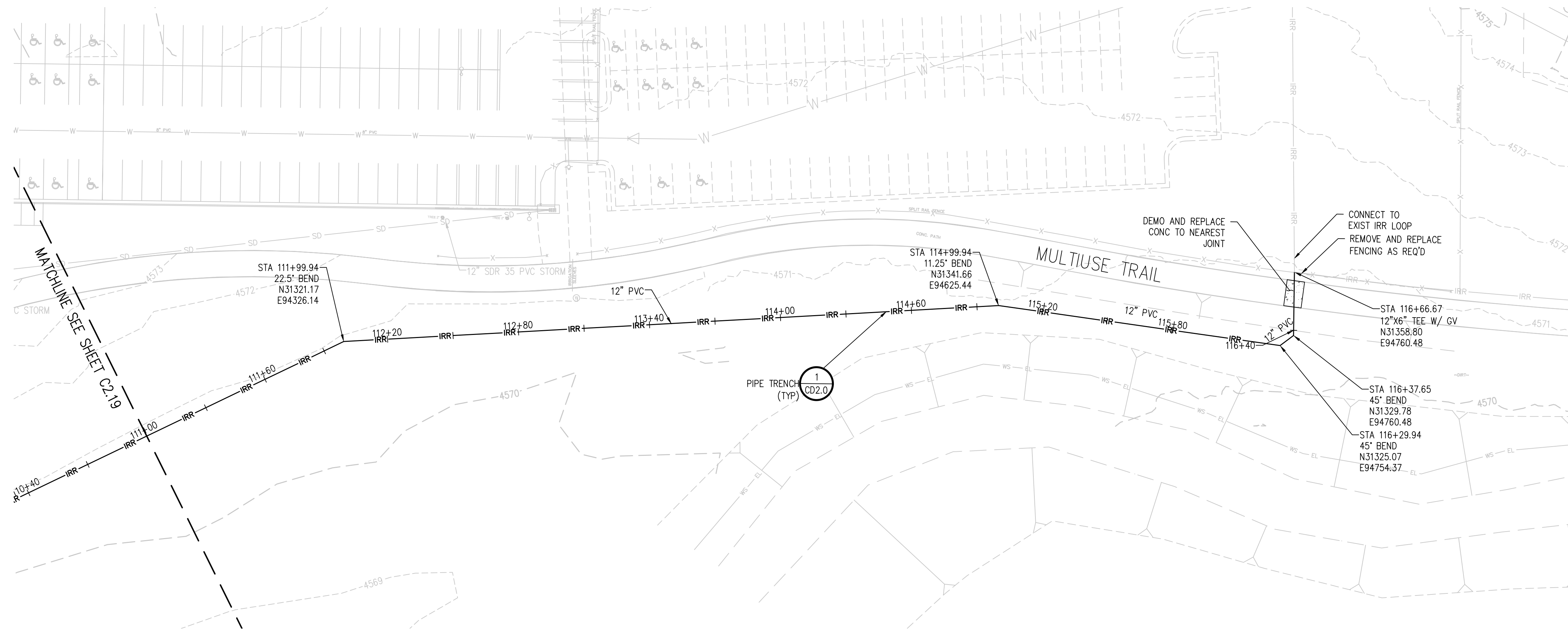
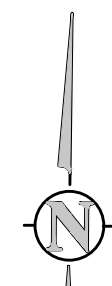
J:\2538.3c-c01\Drawings\2538.3c-c02-PWP-05.dwg, 2/26/2019 - 4:47 PM, NMS



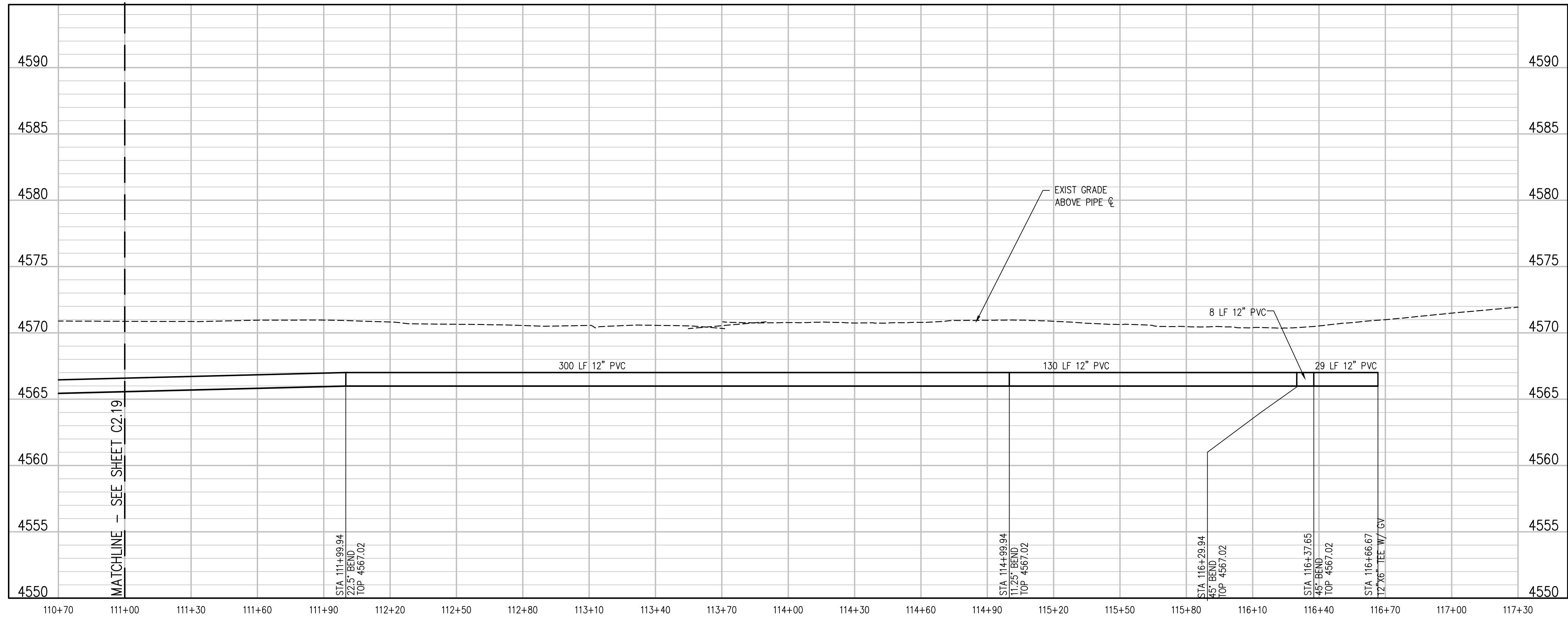
JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvajva.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver



KEY MAP  
NTS



IRRIGATION LINE PLAN  
SCALE: 1"=30'



IRRIGATION LINE PROFILE  
SCALE: 1"=30' HORIZ  
1"=5' VERT

NO. DATE DESD DWN REVISION DESCRIPTION

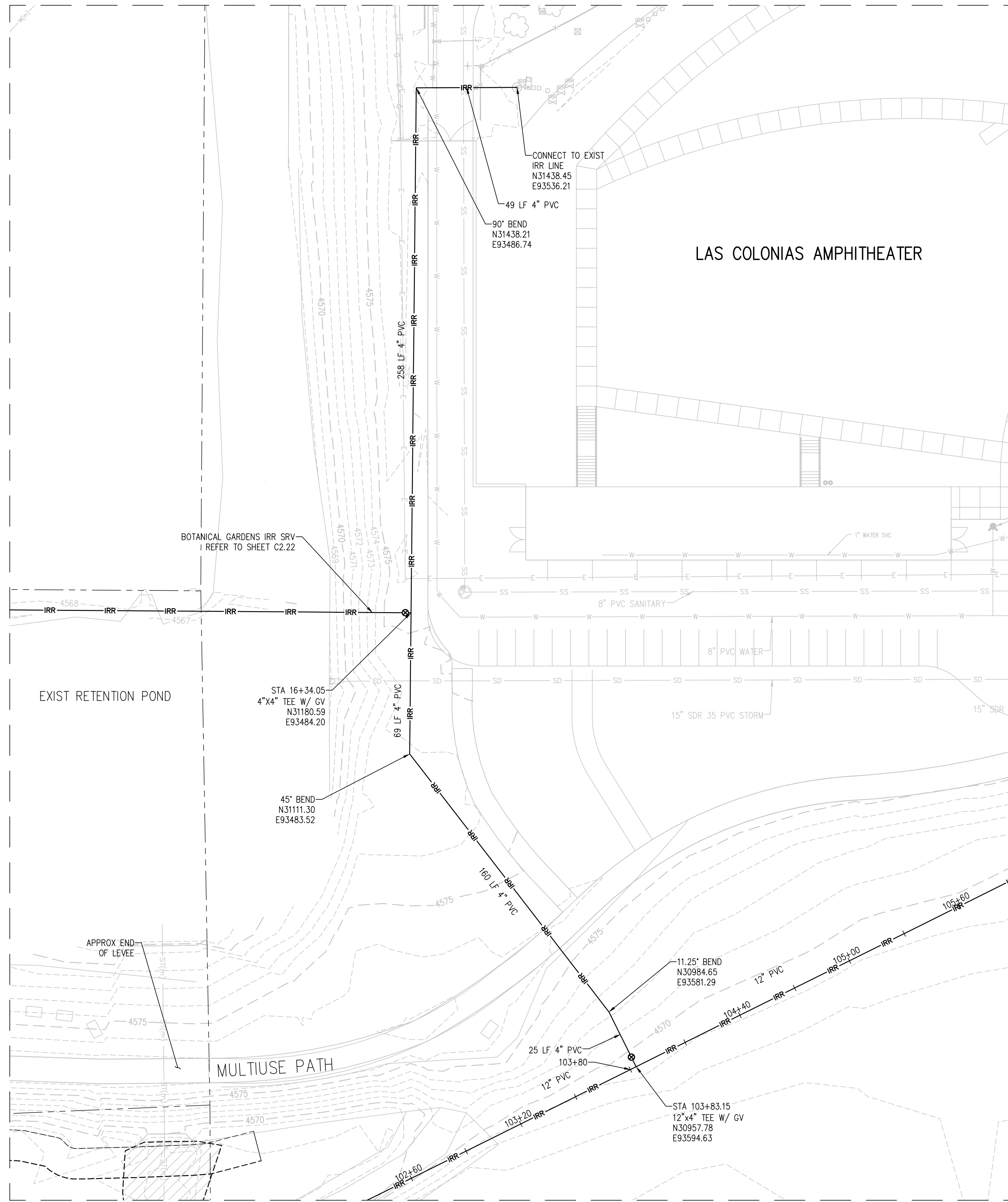
DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

© JVA, INC.  
 RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE STA 111+00.00  
 - 117+00.00

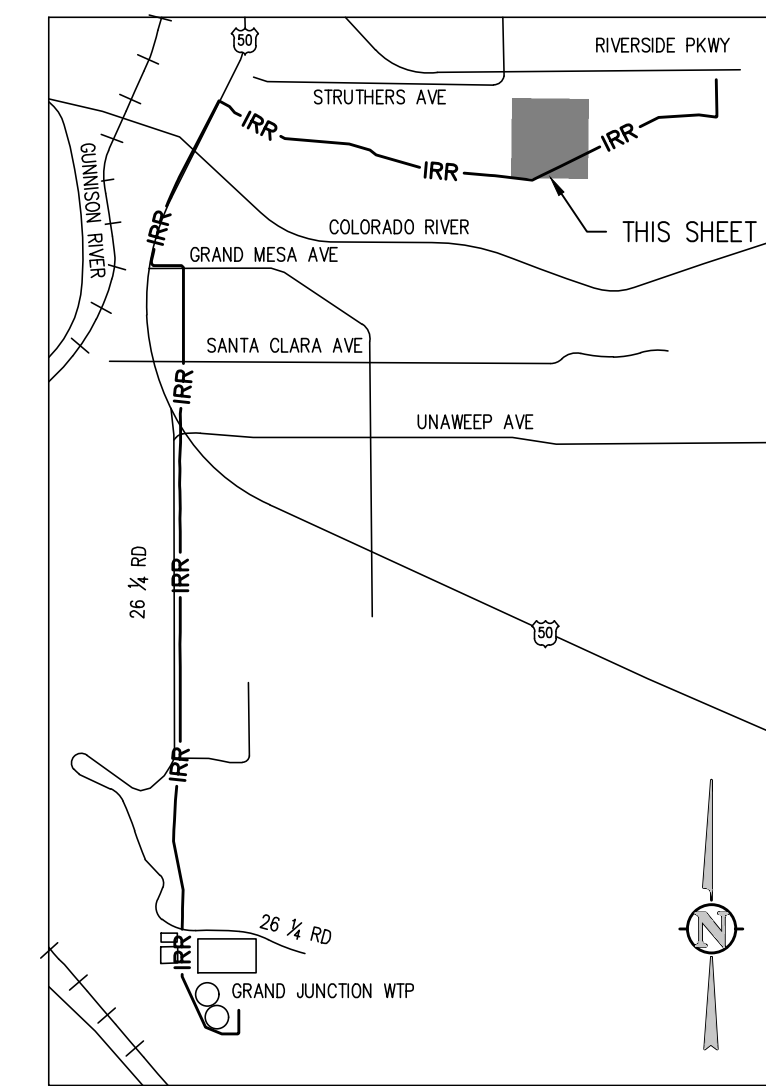
SHEET NO.  
C2.20

J:\2538.3c-cd\Drawings\2538.3c-02-IRR-05.dwg, 2/26/2019 - 4:47 PM, NMS

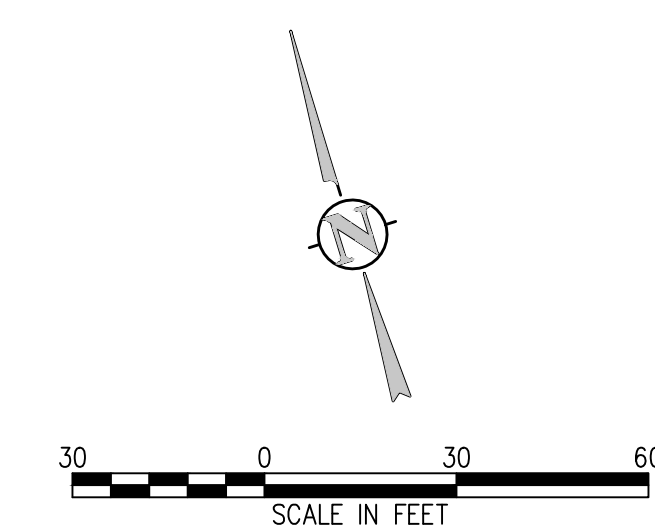




LAS COLONIAS AMPHITHEATER IRRIGATION SERVICE LINE  
SCALE: 1"=30'



KEY MAP  
NTS



JVA, Inc. 817 Colorado Ave., Suite 301  
Glenwood Springs, CO 970.404.3100  
www.jvajva.com  
Boulder • Fort Collins • Winter Park  
Glenwood Springs • Denver

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

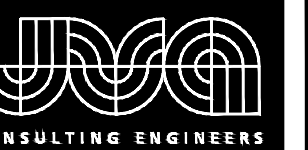
DESIGNED BY: BLM  
DRAWN BY: NAS  
CHECKED BY: JJM  
JOB #: 2538.3c  
DATE: FEBRUARY 2019  
© JVA, INC.

RAW WATER IRRIGATION SUPPLY  
AND WATER LINE REPLACEMENT  
GRAND JUNCTION, COLORADO

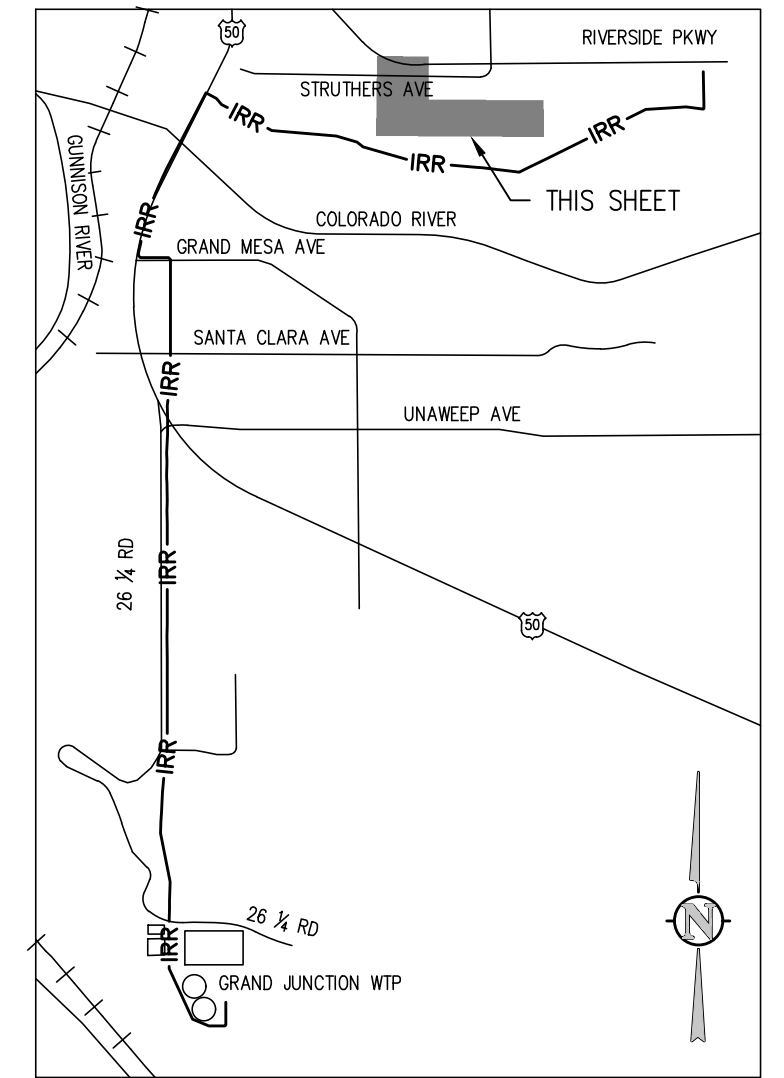
RAW WATER IRRIGATION SERVICE  
CONNECTIONS

SHEET NO.  
**C2.21**

J:\2538.3c-01\Drawings\2538.3c-02-SP-02.dwg, 2/26/2019 - 4:47 PM, NAS



JVA, Inc. • 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO  
 970.404.3100  
 www.jvava.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver



KEY MAP  
NTS

- NOTES:**
1. CONTRACTOR TO COORDINATE ALIGNMENT WITH CITY PRIOR TO START OF CONSTRUCTION AND PROVIDE NOTICE FOR PARK CLOSURE DURING CONSTRUCTION EFFORTS.
  2. COORDINATE REMOVAL AND REINSTALLATION OF ALL LANDSCAPING FEATURES, BENCHES, VEGETATION, ETC.

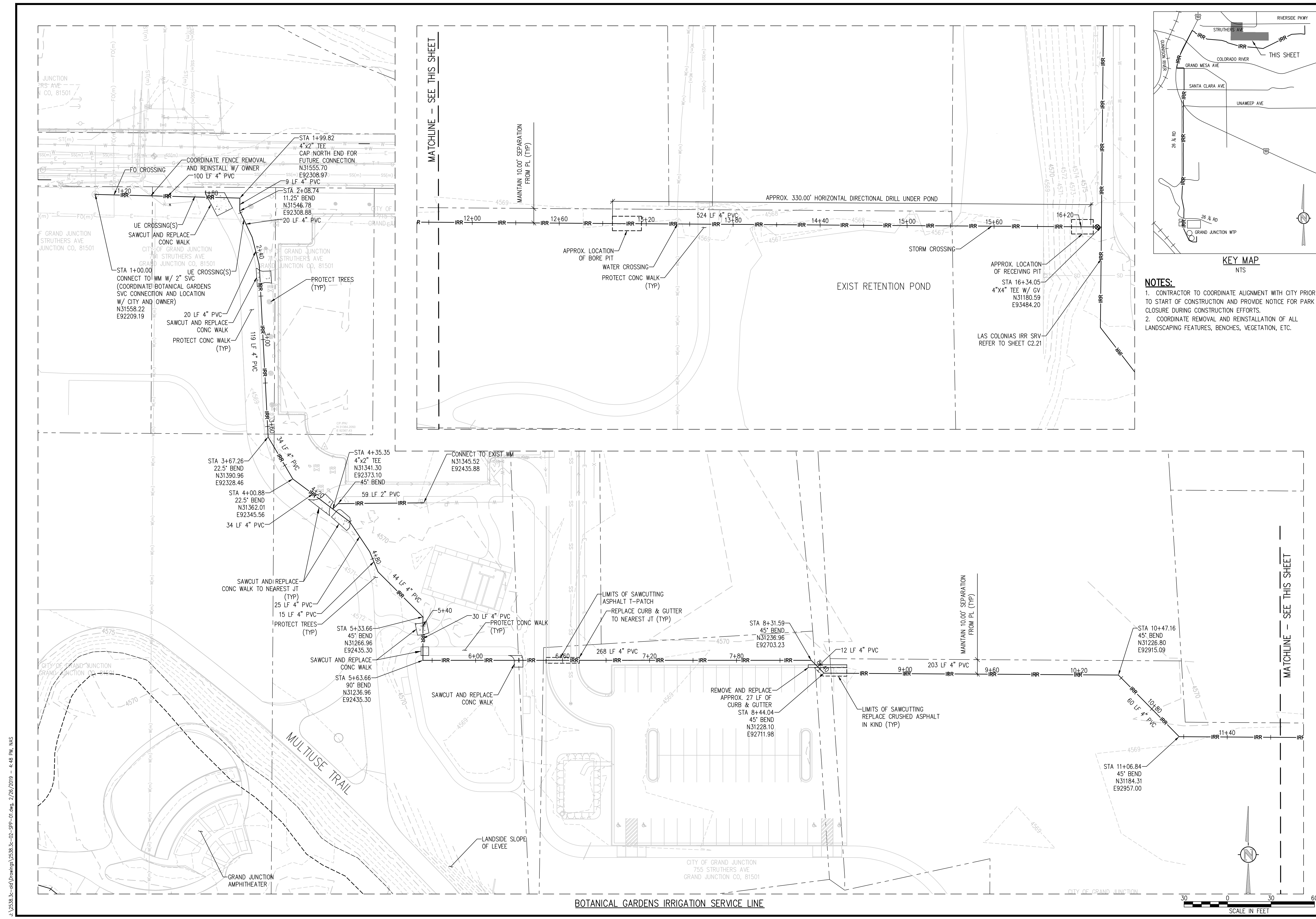
NO. DATE DESD DWN

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION SERVICE  
 CONNECTIONS

SHEET NO.

C2.22

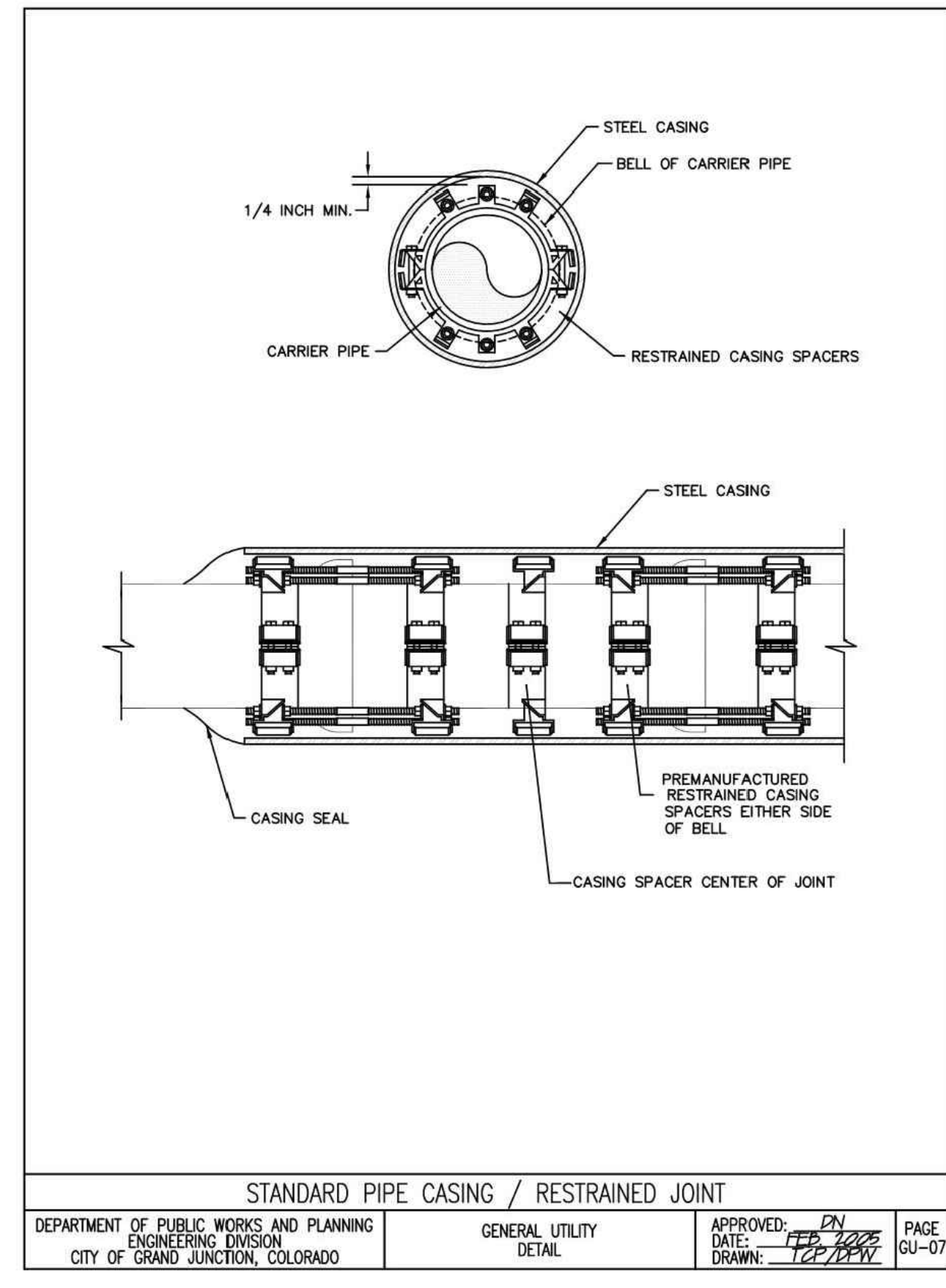


2: \\2538.3c-00\Drawings\2538.3c-02-SP-01.dwg, 2/26/2019 - 4:48 PM, IMS

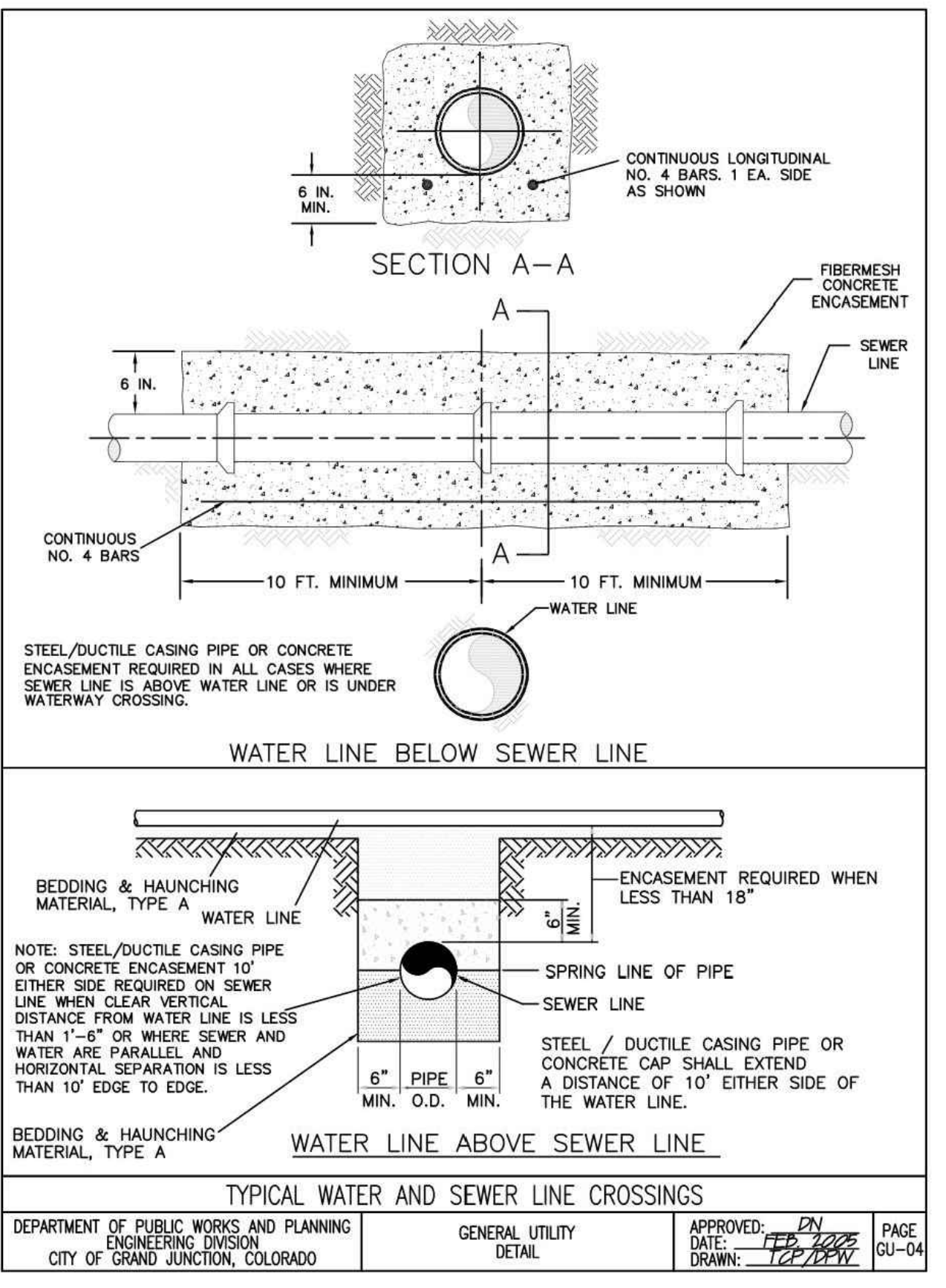


BOTANICAL GARDENS IRRIGATION SERVICE LINE

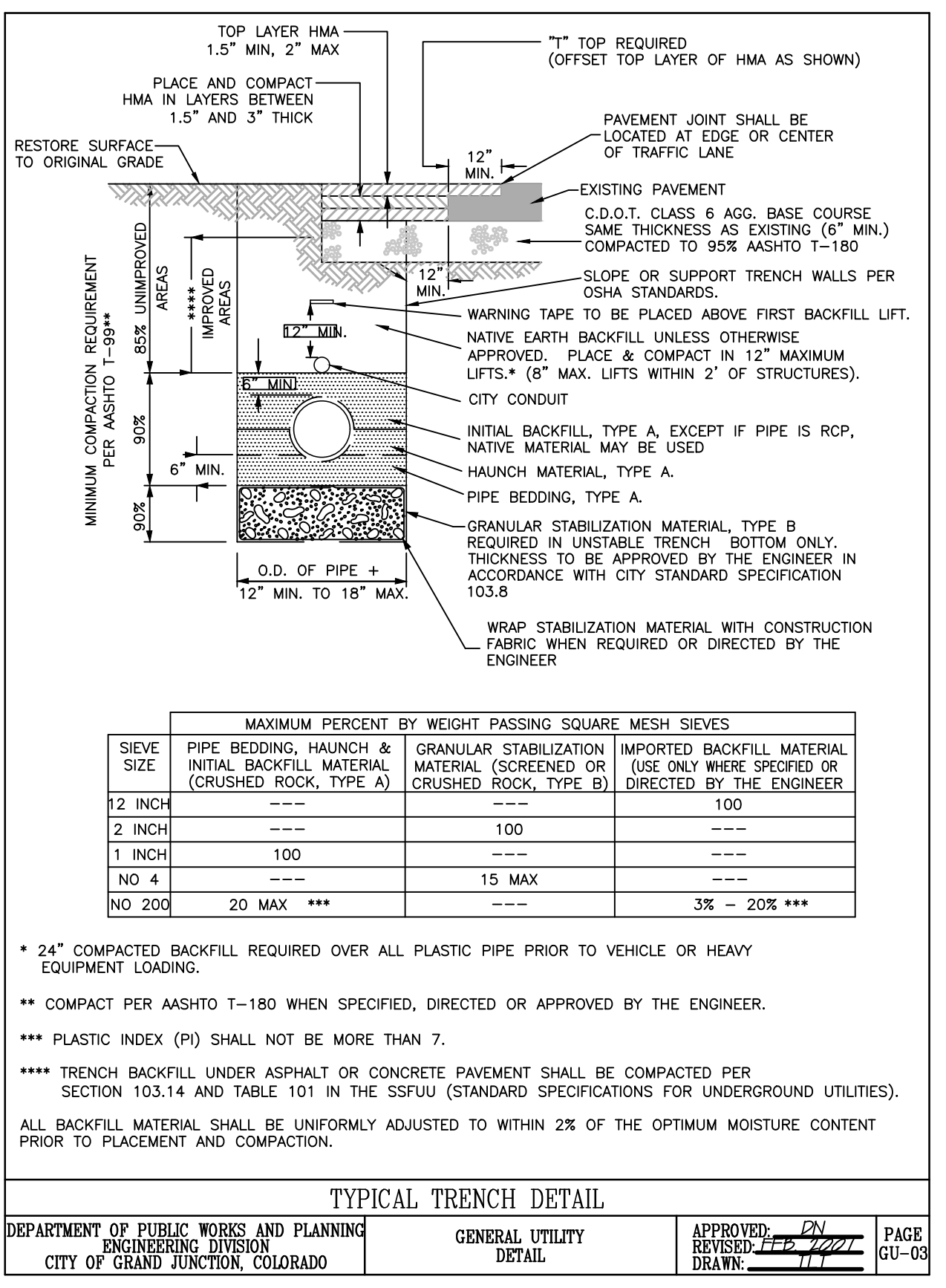




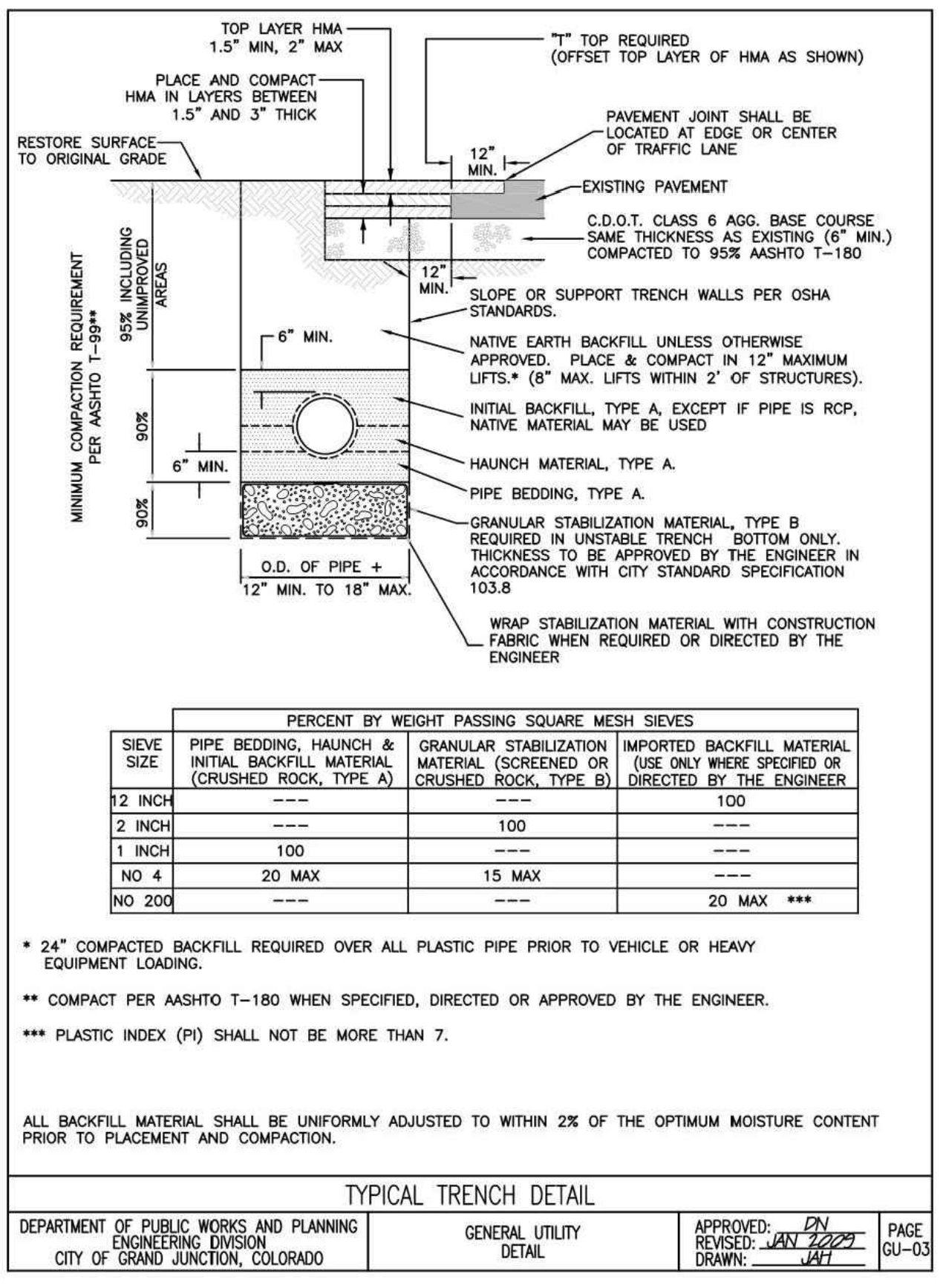
**STANDARD PIPE CASING / RESTRAINED JOINT** 4



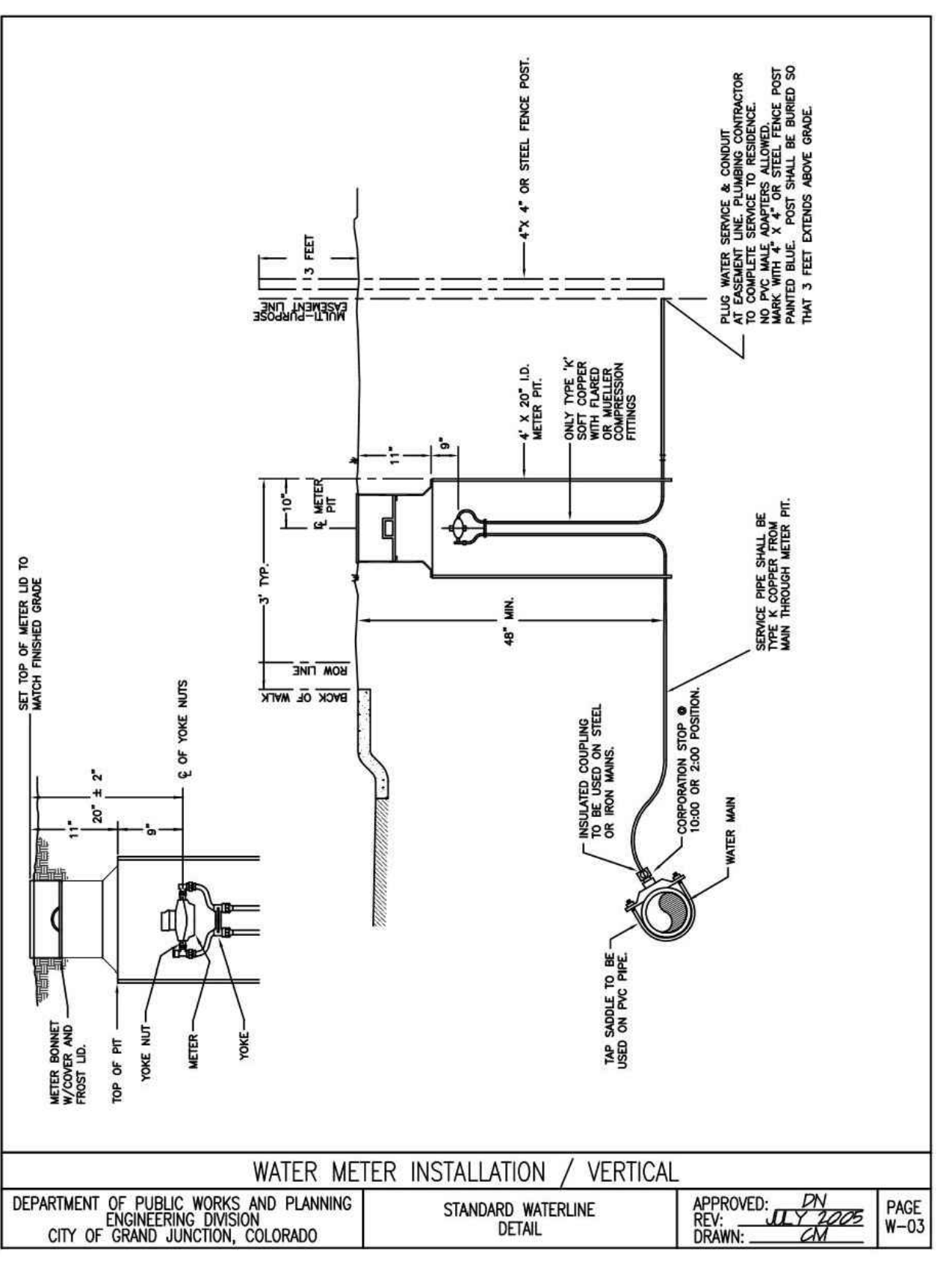
**TYPICAL WATER AND SEWER LINE CROSSINGS** 3



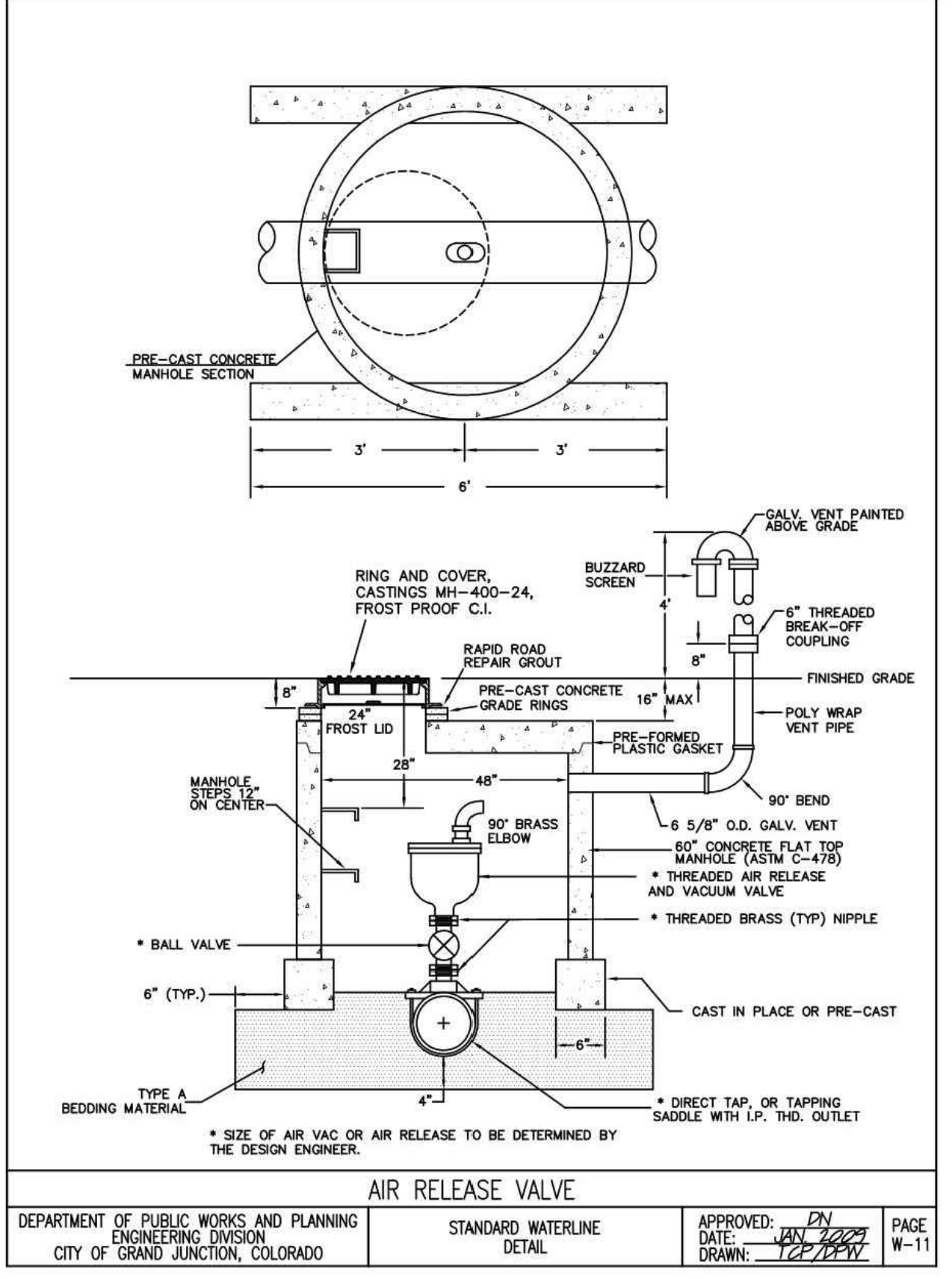
**DUAL TRENCH DETAIL** 2



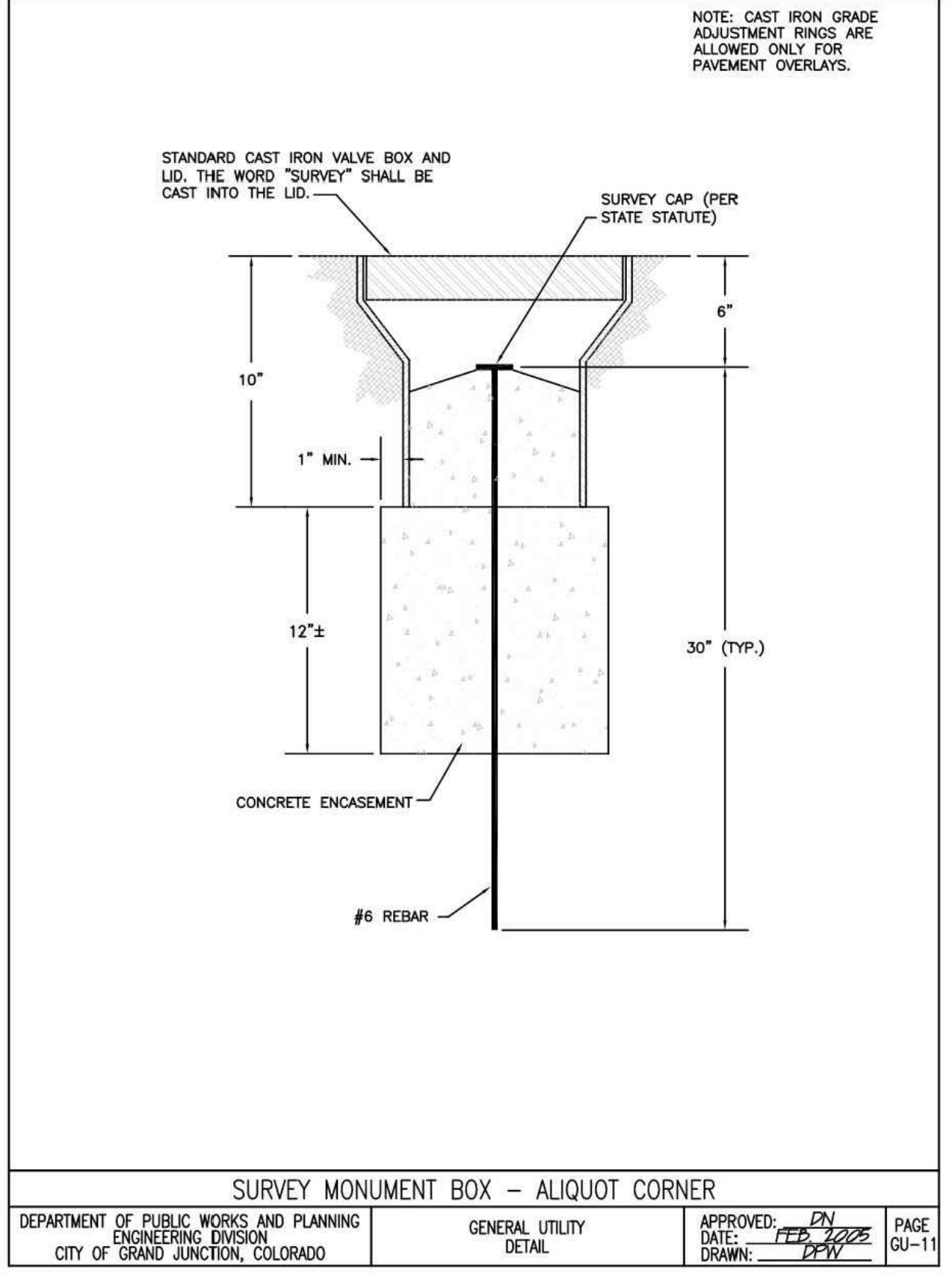
**TYPICAL TRENCH DETAIL** 1



**WATER METER INSTALLATION / VERTICAL** 7

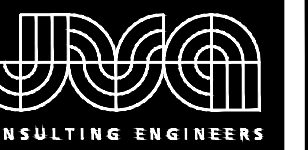


**AIR RELEASE VALVE** 6

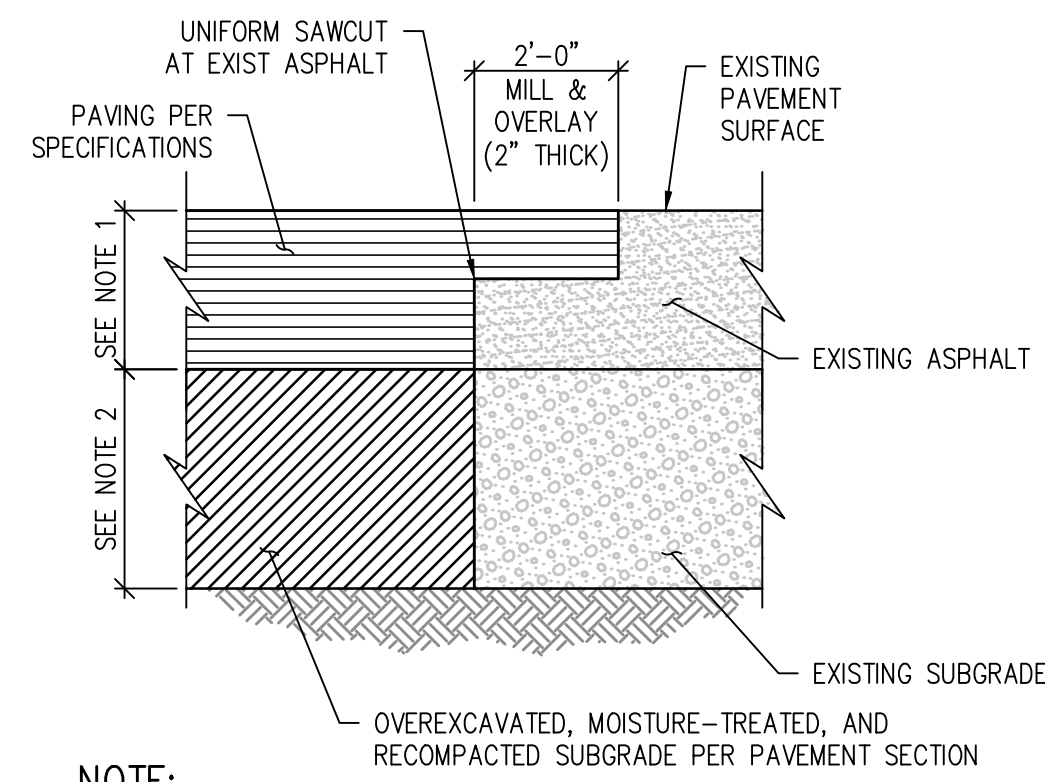


**SURVEY MONUMENT BOX / ALIQUOT CORNER** 5

A:\2538.3c-04\Drawings\2538.3c-02-UTP-DET-01.dwg, 2/26/2019 - 4:46 PM, JMS



JVA, Inc. 817 Colorado Ave., Suite 301  
Glenwood Springs, CO 970.404.3100  
www.jvajva.com  
Boulder • Fort Collins • Winter Park  
Glenwood Springs • Denver

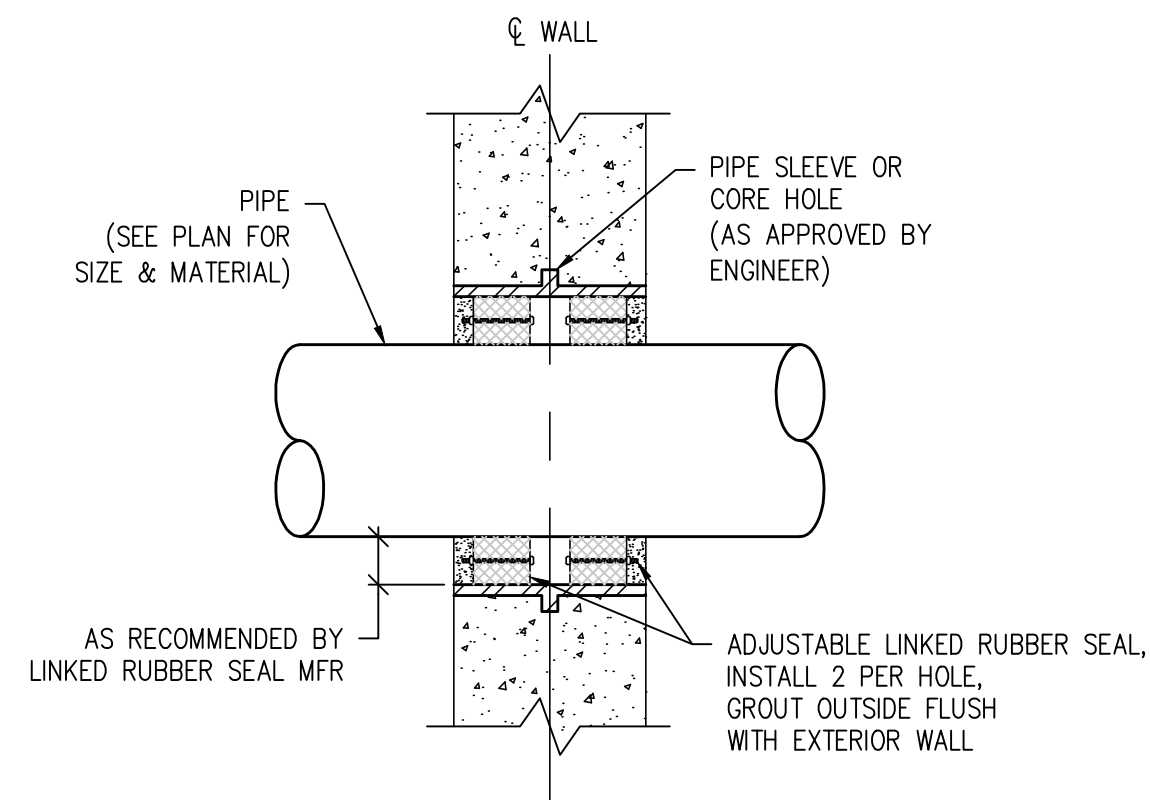


**NOTE:**

1. MATCH EXISTING DEPTH +1"
2. MATCH EXIST SUBGRADE DEPTH UNLESS OTHERWISE SPECIFIED
3. APPLY TACKIFIER AT SAWCUT AND MILL PRIOR TO PAVING.

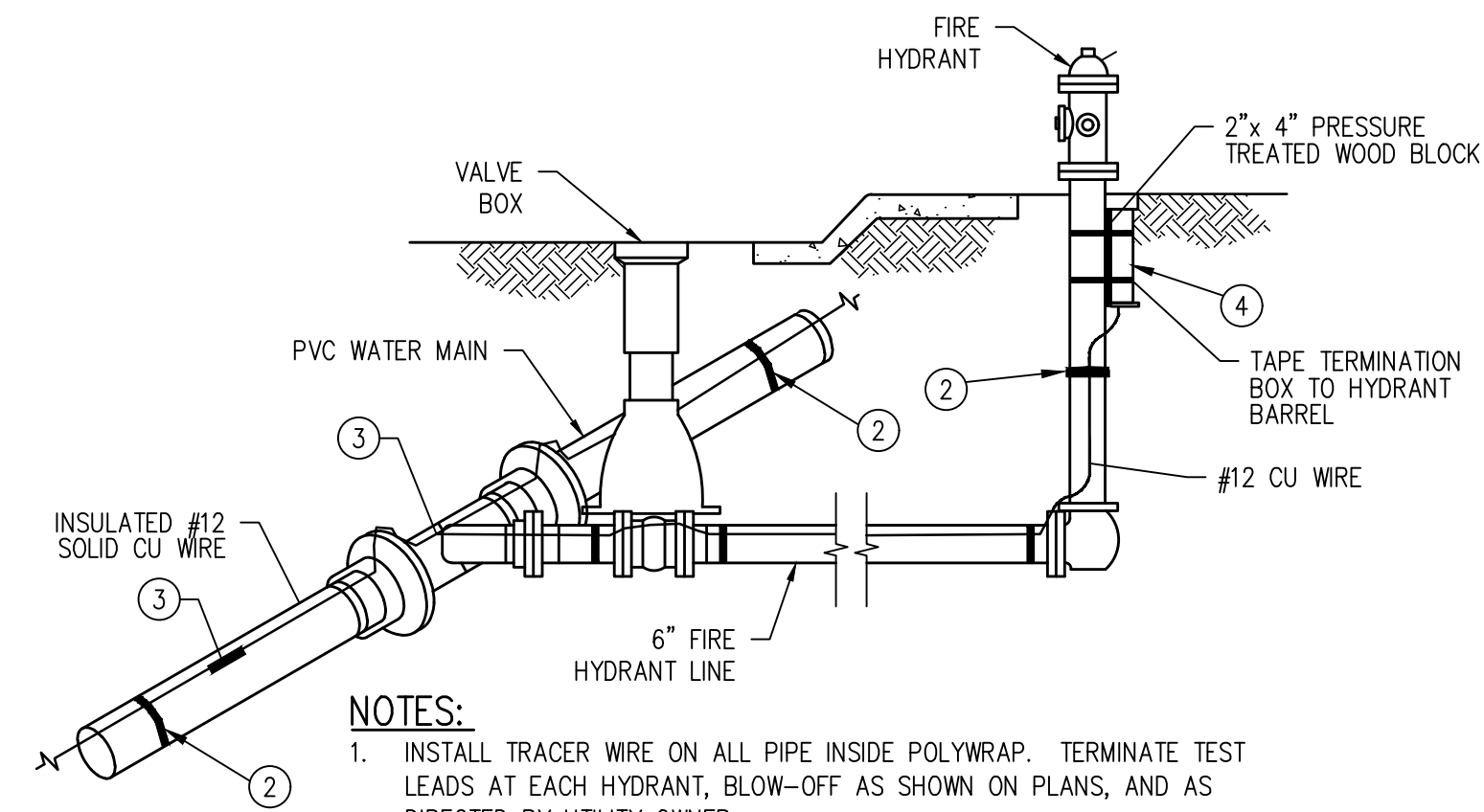
**ASPHALT "T" PATCH DETAIL** (1)

NTS



**WALL PENETRATION WITH CORE HOLE DETAIL** (2)

NTS

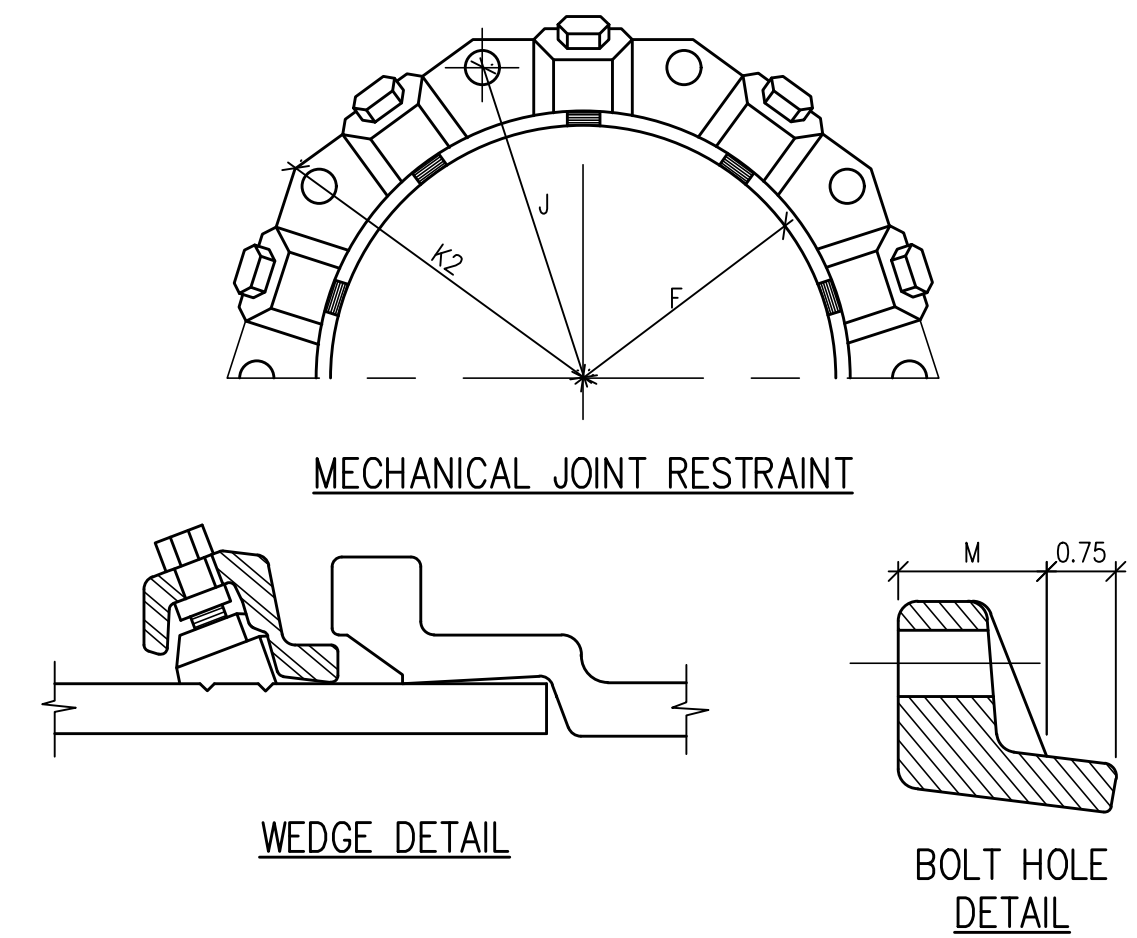


**NOTES:**

1. INSTALL TRACER WIRE ON ALL PIPE INSIDE POLYWRAP. TERMINATE TEST LEADS AT EACH HYDRANT, BLOW-OFF AS SHOWN ON PLANS, AND AS DIRECTED BY UTILITY OWNER.
2. TAPE WIRE ON EACH SIDE OF FITTINGS AND AT 10' MAX ON CENTERS ALONG TOP OF PIPE OR LOOP WIRE AROUND EACH PIPE SECTION 2 OR 3 TIMES W/ 2" PVC TAPE.
3. USE 12 GAUGE COPPER CONNECTOR DOSSERT NO. DPC2 OR EQUAL FOR SINGLE SPLICE. USE 12 GAUGE COPPER CONNECTOR, BURNOY NO. YC12, 3M TYPE DBY-6 OR EQUAL FOR MULTIPLE SPLICES. SPLICES AT FITTINGS SHALL BE OUTSIDE POLYWRAP.
4. USE 18" LONG BY 2 1/2" DIA. PVC TERMINATION FITTING W/ CAST IRON LID. CONNECT ALL WIRE(S) TO TERMINAL. (C.P. TEST SERVICES, INC. OR EQUAL). PROVIDE AMPLE TRACER WIRE AT TEST STATIONS FOR TESTING.

**TRACER WIRE INSTALLATION DETAIL** (3)

NTS



**DIMENSIONS**

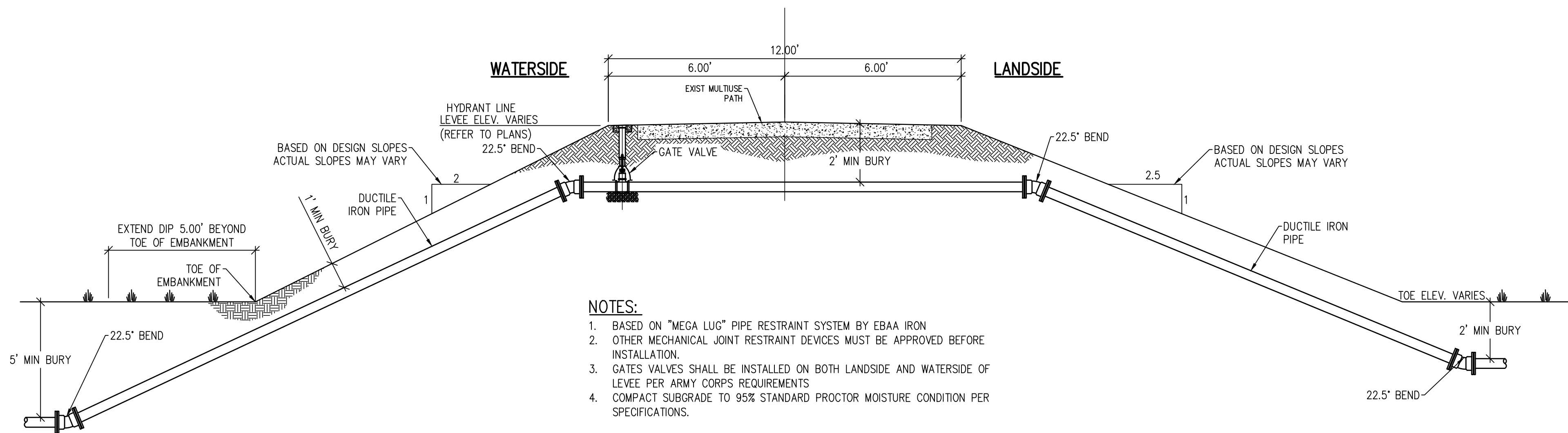
NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	K2 INCHES	J INCHES	F INCHES	M INCHES
16"	12	12	22.50	21.00	17.54	1.56
20"	14	14	27.00	25.50	21.74	1.69
24"	16	16	31.50	30.00	25.94	1.81
36"	24	24	46.00	43.75	38.47	2.25

**NOTE:**

1. BASED ON "MEGA LUG" PIPE RESTRAINT SYSTEM BY EBAA IRON
2. OTHER MECHANICAL JOINT RESTRAINT DEVICES MUST BE APPROVED BEFORE INSTALLATION.

**MECHANICAL JOINT RESTRAINT DETAIL** (4)

NTS

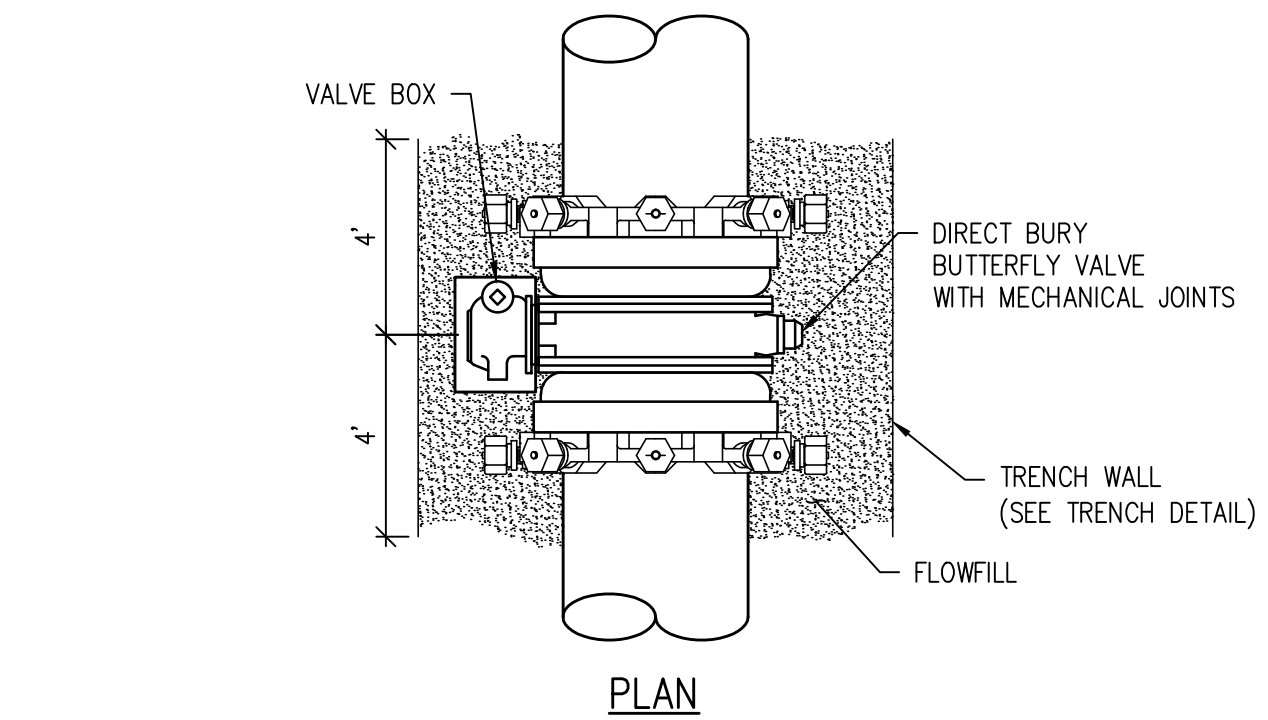


**NOTES:**

1. BASED ON "MEGA LUG" PIPE RESTRAINT SYSTEM BY EBAA IRON
2. OTHER MECHANICAL JOINT RESTRAINT DEVICES MUST BE APPROVED BEFORE INSTALLATION.
3. GATE VALVES SHALL BE INSTALLED ON BOTH LANDSIDE AND WATERSIDE OF LEVEE PER ARMY CORPS REQUIREMENTS
4. COMPACT SUBGRADE TO 95% STANDARD PROCTOR MOISTURE CONDITION PER SPECIFICATIONS.

**LEVEE CROSSING DETAIL** (6)

NTS



**DIRECT BURY BUTTERFLY VALVE INSTALLATION DETAIL** (5)

NTS

NO.	DATE	DESIGNED BY	DESCRIPTION
1		DWN	

DESIGNED BY: BLM  
DRAWN BY: NAS  
CHECKED BY: JJM  
JOB #: 2538.3c  
DATE: FEBRUARY 2019

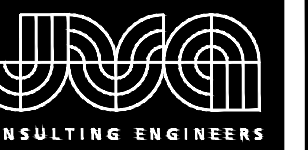
© JVA, INC.

RAW WATER IRRIGATION SUPPLY AND WATER LINE REPLACEMENT GRAND JUNCTION, COLORADO  
RAW WATER IRRIGATION LINE DETAILS

SHEET NO.

CD2.1





JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvajva.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver

REVISION DESCRIPTION  
 NO. DATE DESD DWN

**LEGEND**

H = MAXIMUM ALLOWABLE HEIGHT OF COVER OVER THE TOP OF THE PIPE, EXCLUDING PAVEMENT THICKNESS.

FILL HEIGHTS ARE BASED ON AASHTO M304 POLYVINYL CHLORIDE (PVC) PIPE WITH OUTER, RIBBED WALL AND SMOOTH INNER WALL, AND ON AASHTO T180 MINIMUM RELATIVE COMPACTION OF 95% OR 90%.

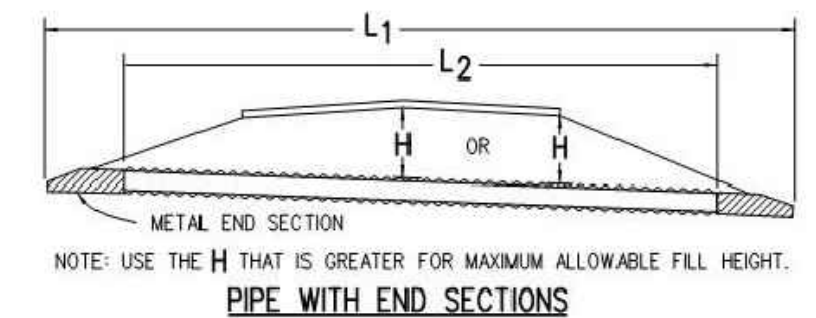
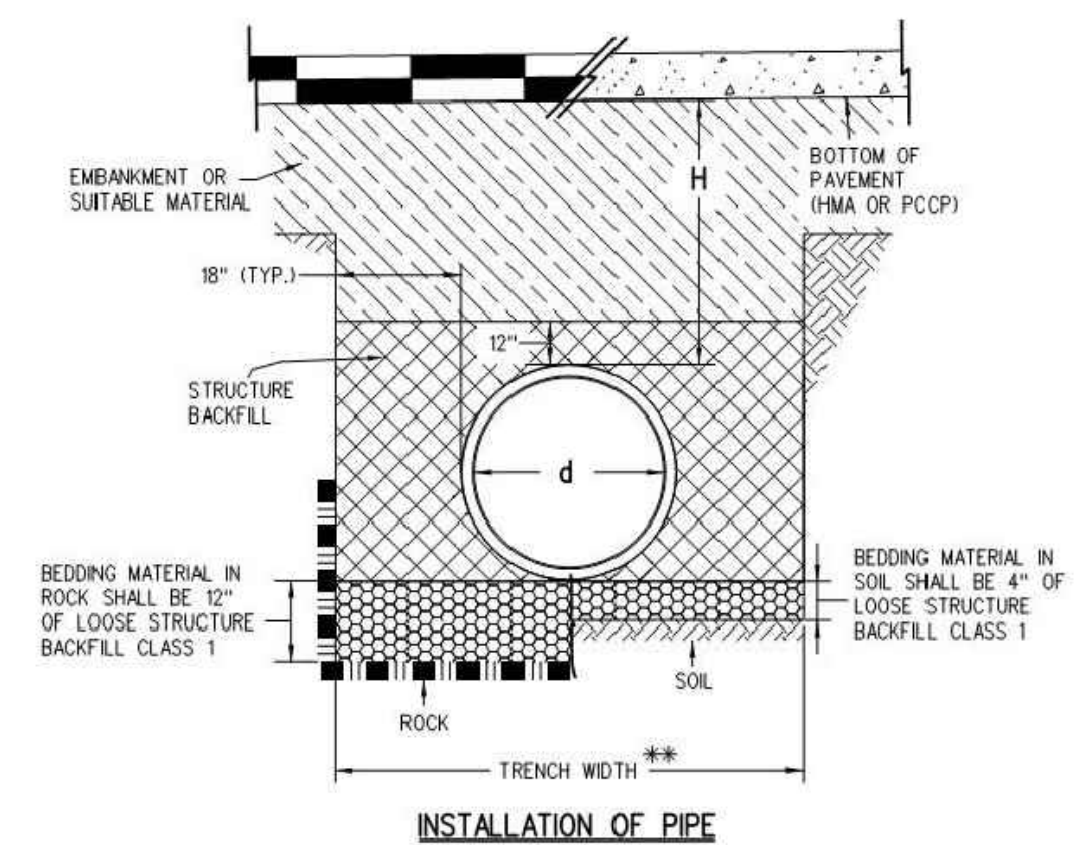
FILL HEIGHTS, FOR INSTALLATION WITH HIGH WATER TABLE, REQUIRE A SPECIAL DESIGN. THE MAXIMUM HEIGHT IN HIGHWATER LOCATIONS SHOULD BE 15 FEET OR BASED ON AASHTO LRFD DESIGN SPECIFICATIONS.

THE MINIMUM COVER SHALL BE AS SHOWN ON THESE TABLES OR CONFORM TO AASHTO REQUIREMENTS, WHICHEVER IS GREATER. THE MINIMUM COVER FOR PIPE IS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE PAVEMENT (HMA OR PCCP).

THE MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE SUBGRADE DURING CONSTRUCTION. THE MINIMUM COVER IS BASED ON DUAL AXLE LOADS UP TO 50,000 POUNDS.

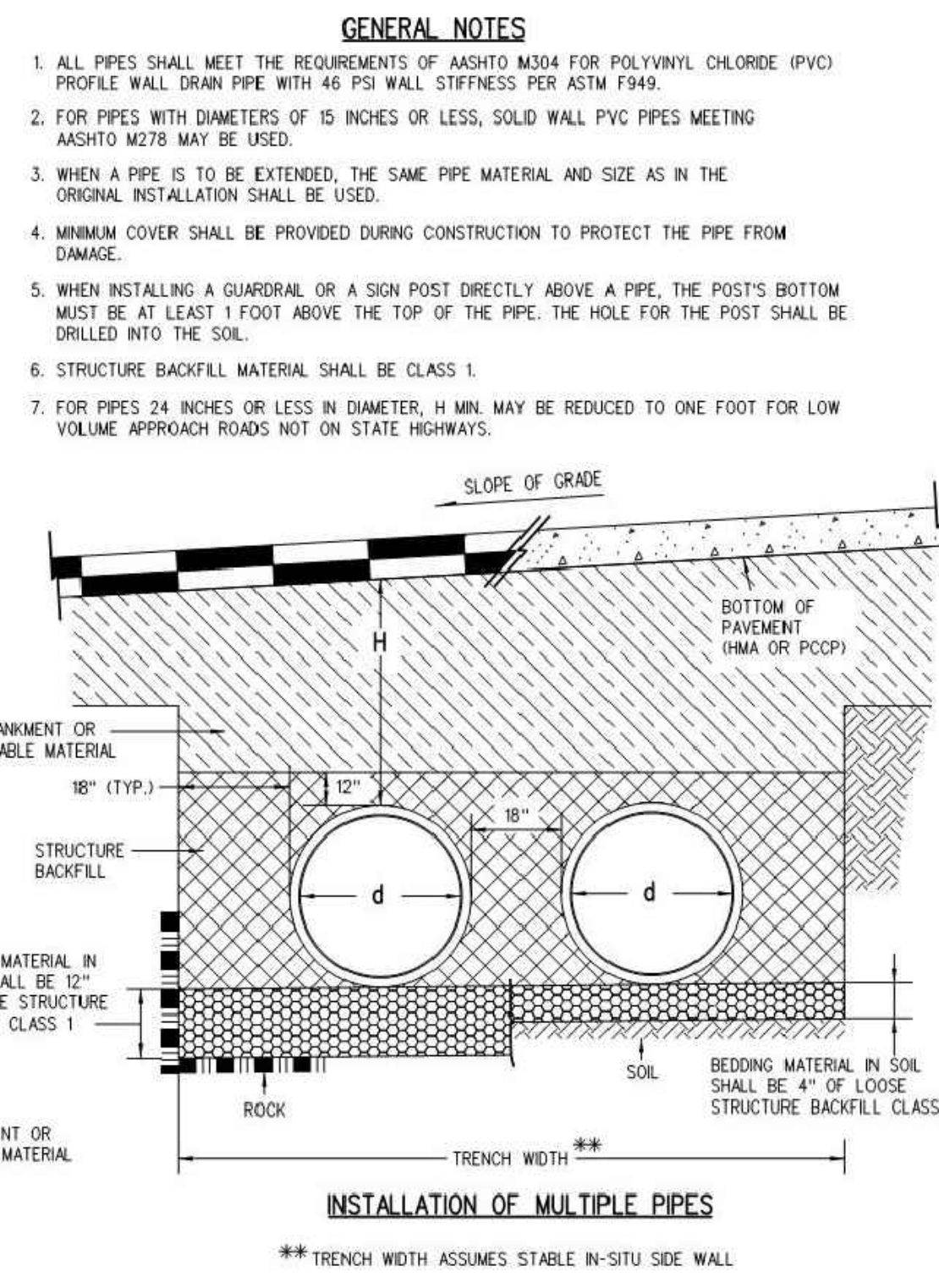
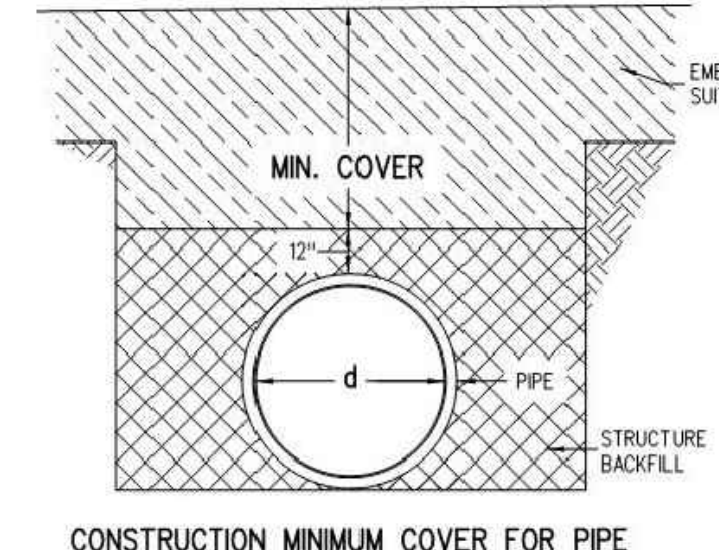
L<sub>1</sub> = LENGTH OF PIPE TO BE MEASURED WHEN PLACED IN ACCORDANCE WITH SECTION 624.

L<sub>2</sub> = LENGTH OF PIPE TO BE MEASURED WHEN PLACED IN ACCORDANCE WITH SECTION 603.



PIPE DIAMETER, d (IN.)	H MINIMUM HEIGHT OF COVER (FT.)	H MAXIMUM HEIGHT OF COVER (FT.)	
		95% COMPACTION	90% COMPACTION
12	2	65	55
15	2	59	51
18	2	63	53
21	2	58	49
24	2	58	49
30	2	56	47
36	2	56	47

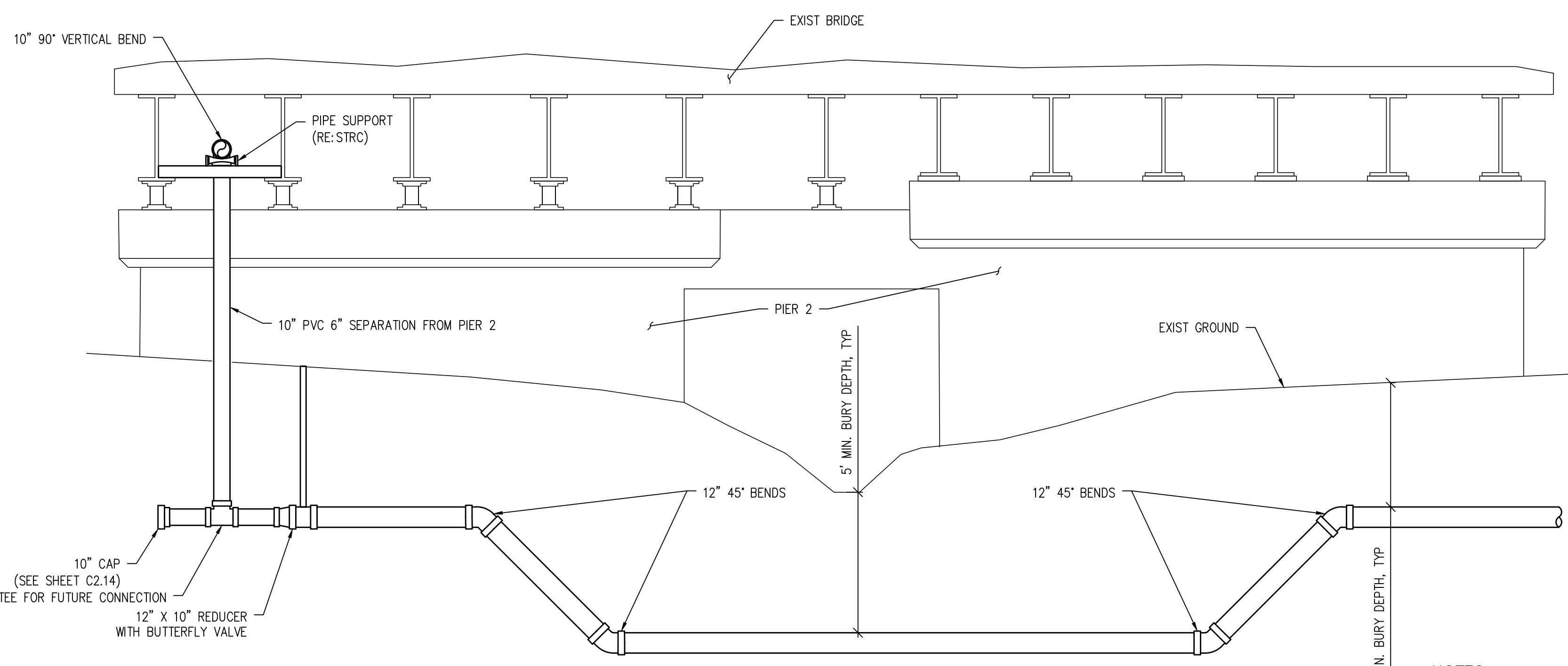
**MINIMUM AND MAXIMUM COVER**



NOMINAL PIPE DIAMETER (IN.)	MINIMUM COVER (IN.) FOR INDICATED AXLE LOADS (KIPS)			
	18.0-50.0	50.0-75.0	75.0-110.0	110.0-150.0
24 - 36	24.0	30.0	36.0	36.0

**AASHTO MINIMUM COVER FOR CONSTRUCTION LOADS**

Computer File Information		Sheet Revisions		Colorado Department of Transportation 4201 East Arkansas Avenue CDOT HO, 4th Floor Denver, CO 80222 Phone: 303-757-9021 FAX: 303-757-9868	POLYVINYL CHLORIDE (PVC) PIPE (AASHTO M304)	STANDARD PLAN NO. M-603-5
Creation Date: 07/04/12	Initials: DLM	Date: 1/07/13	Comments: Edited Legend and General Notes.			
Last Modification Date: 10/02/14	Initials: LTA					
Full Path: www.coloradodot.info/business/designsupport						
Drawing File Name: 603050101.dgn						
CAD Ver.: MicroStation V8	Scale: Not to Scale	Units: English				



**NOTES:**

- THIS DETAIL IS SCHEMATIC, SEE SHEET C2.14 FOR HORIZONTAL AND VERTICAL DESIGN INFORMATION.

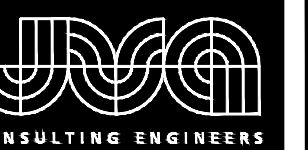
A:\2538.3c-cad\Drawings\2538.3c-02-UTP-DET-01.dwg, 2/26/2019 - 4:48 PM, JMS

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

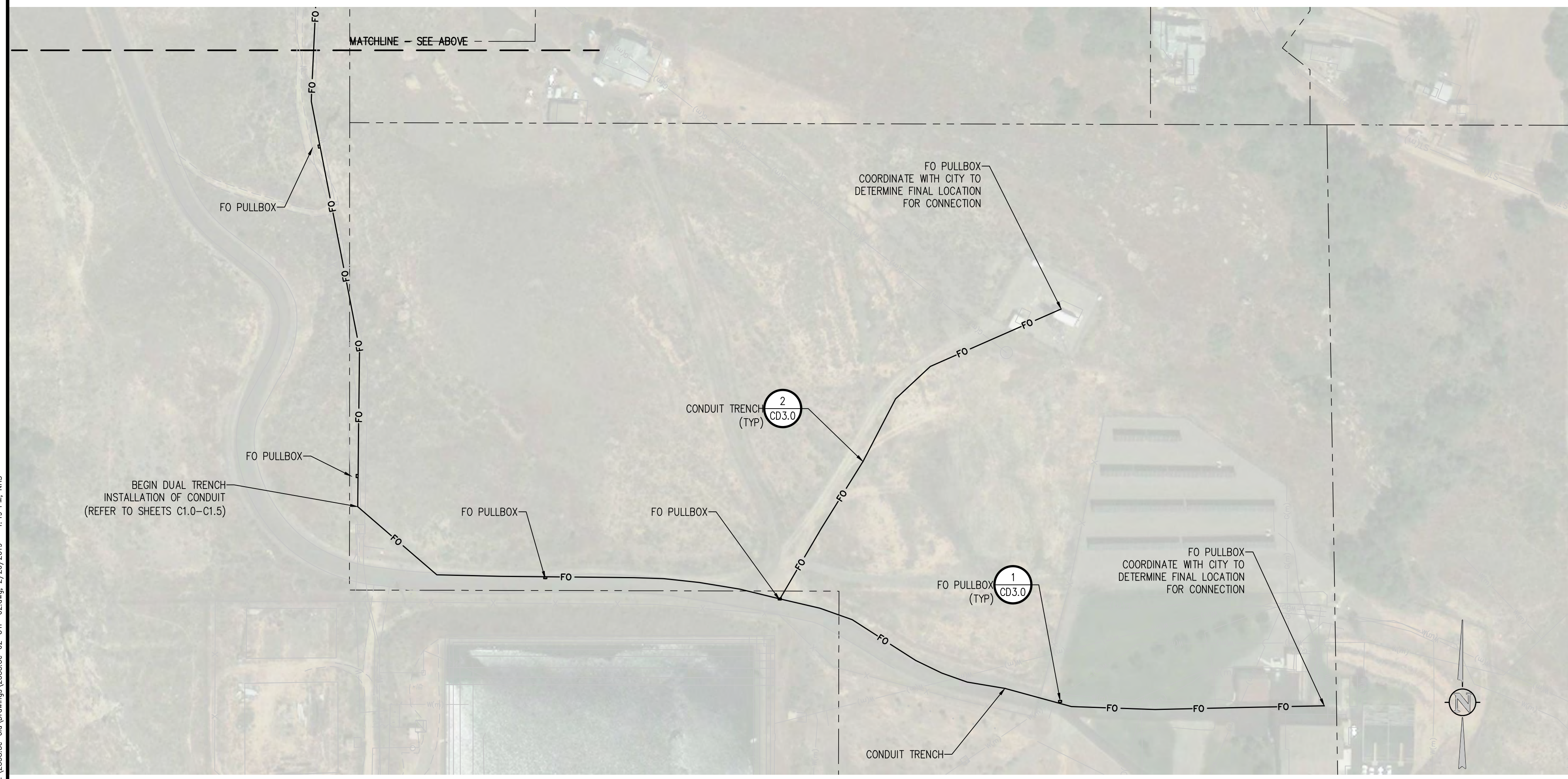
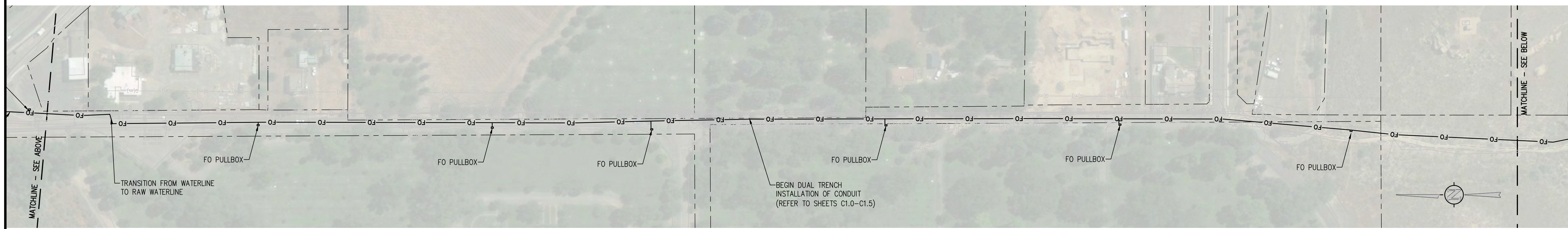
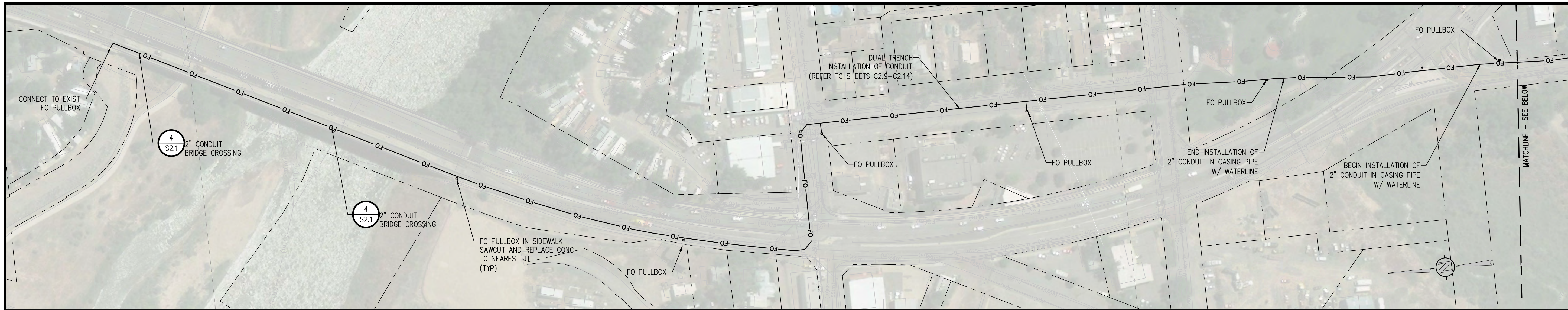
RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 RAW WATER IRRIGATION LINE DETAILS

SHEET NO.  
**CD2.2**





JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvajva.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver



NO.	DATE	DESD	DWN	REVISION DESCRIPTION

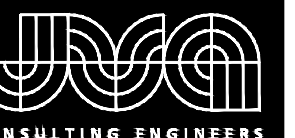
DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019  
 © JVA, INC.

RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO  
 OVERALL UTILITY PLAN

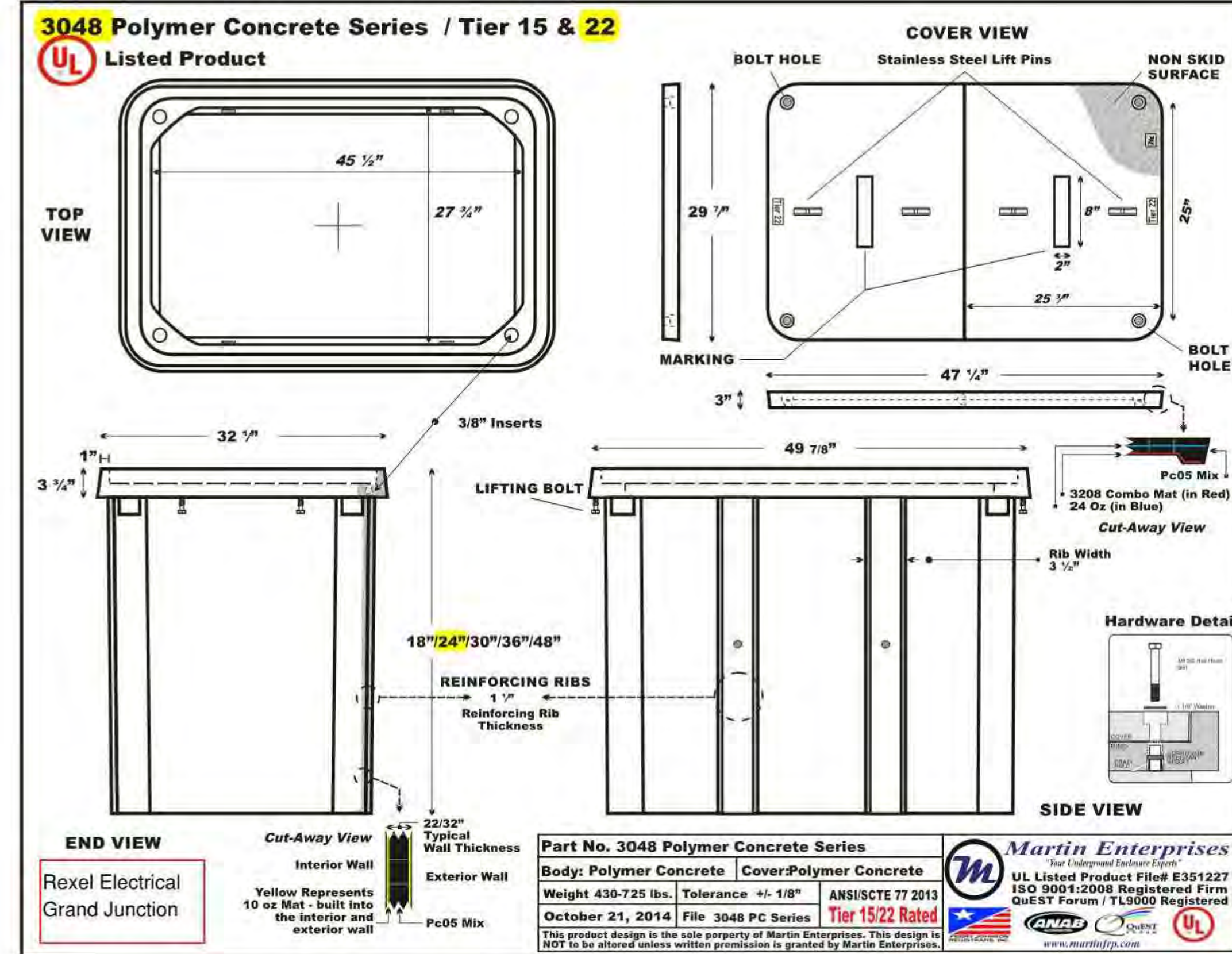
SHEET NO.  
**C3.0**

I:\2538.3c-c01\Drawings\2538.3c-c01-UTP-02.dwg, 2/26/2019 - 4:49 PM, IMS

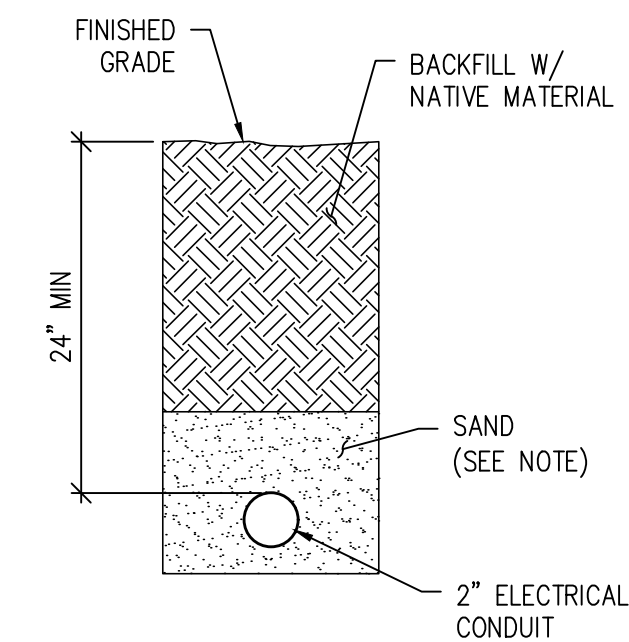




JVA, Inc. 817 Colorado Ave., Suite 301  
 Glenwood Springs, CO 970.404.3100  
 www.jvajva.com  
 Boulder • Fort Collins • Winter Park  
 Glenwood Springs • Denver



FO PULLBOX DETAIL 1  
 NTS C3.0



NOTE:  
 CONDUITS SHALL BE EMBEDDED IN C33  
 CONCRETE SAND. THE SAND SHALL COVER  
 ALL CONDUITS BY AT LEAST 3 INCHES.

CONDUIT TRENCH DETAIL 2  
 NTS C3.0

NO.	DATE	DESIGN	DESCRIPTION
		DWN	

DESIGNED BY: BLM  
 DRAWN BY: NAS  
 CHECKED BY: JJM  
 JOB #: 2538.3c  
 DATE: FEBRUARY 2019

© JVA, INC.

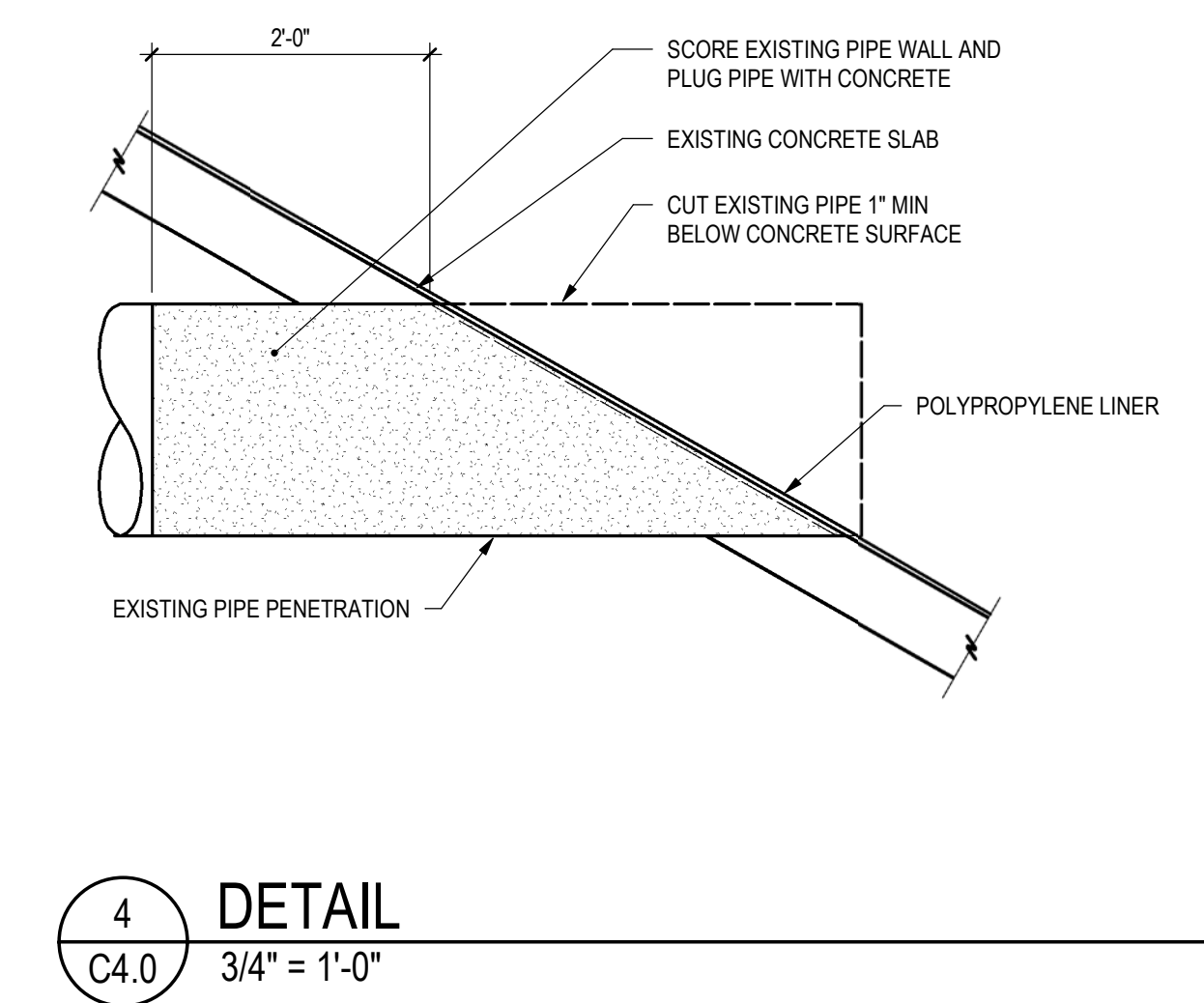
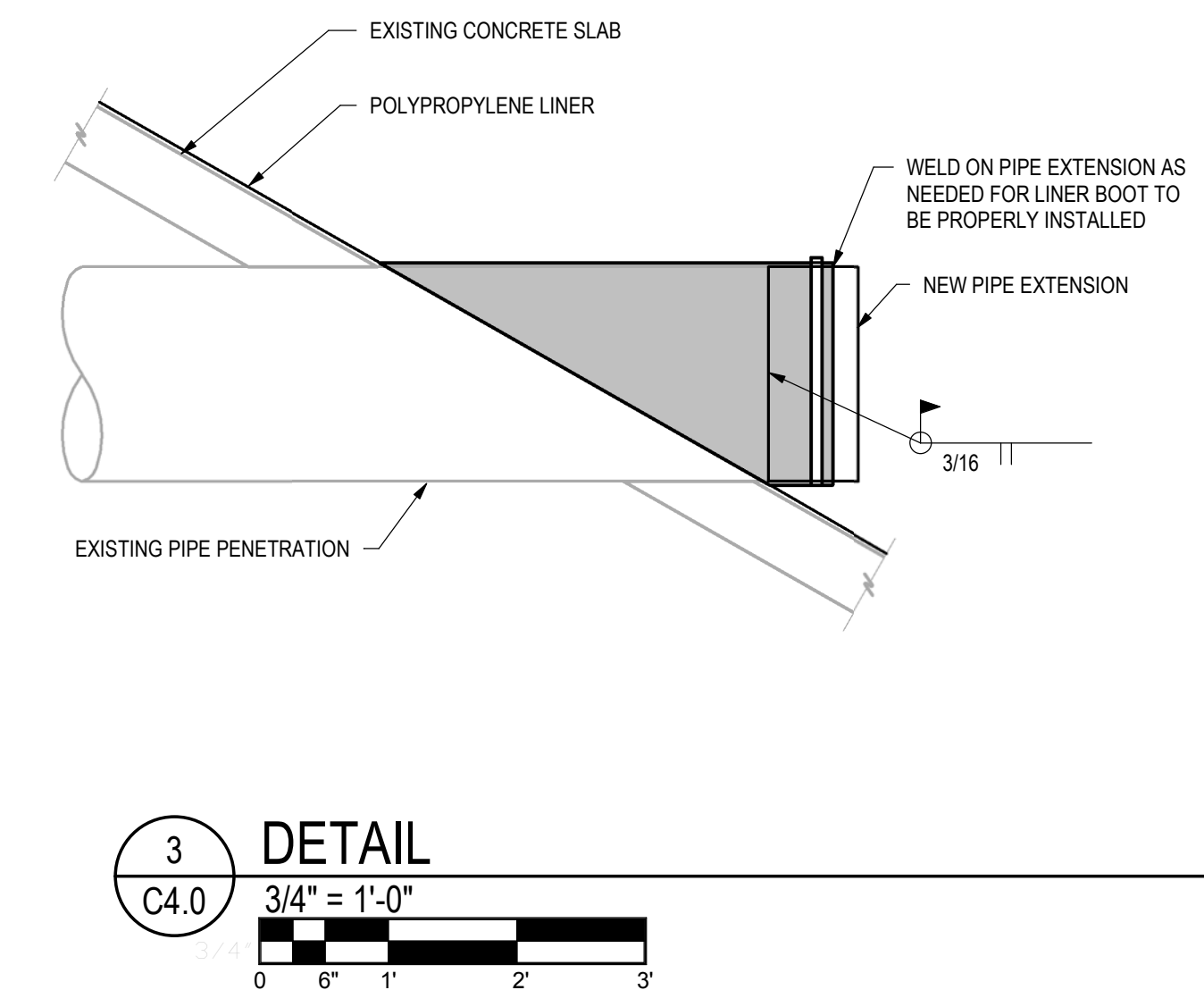
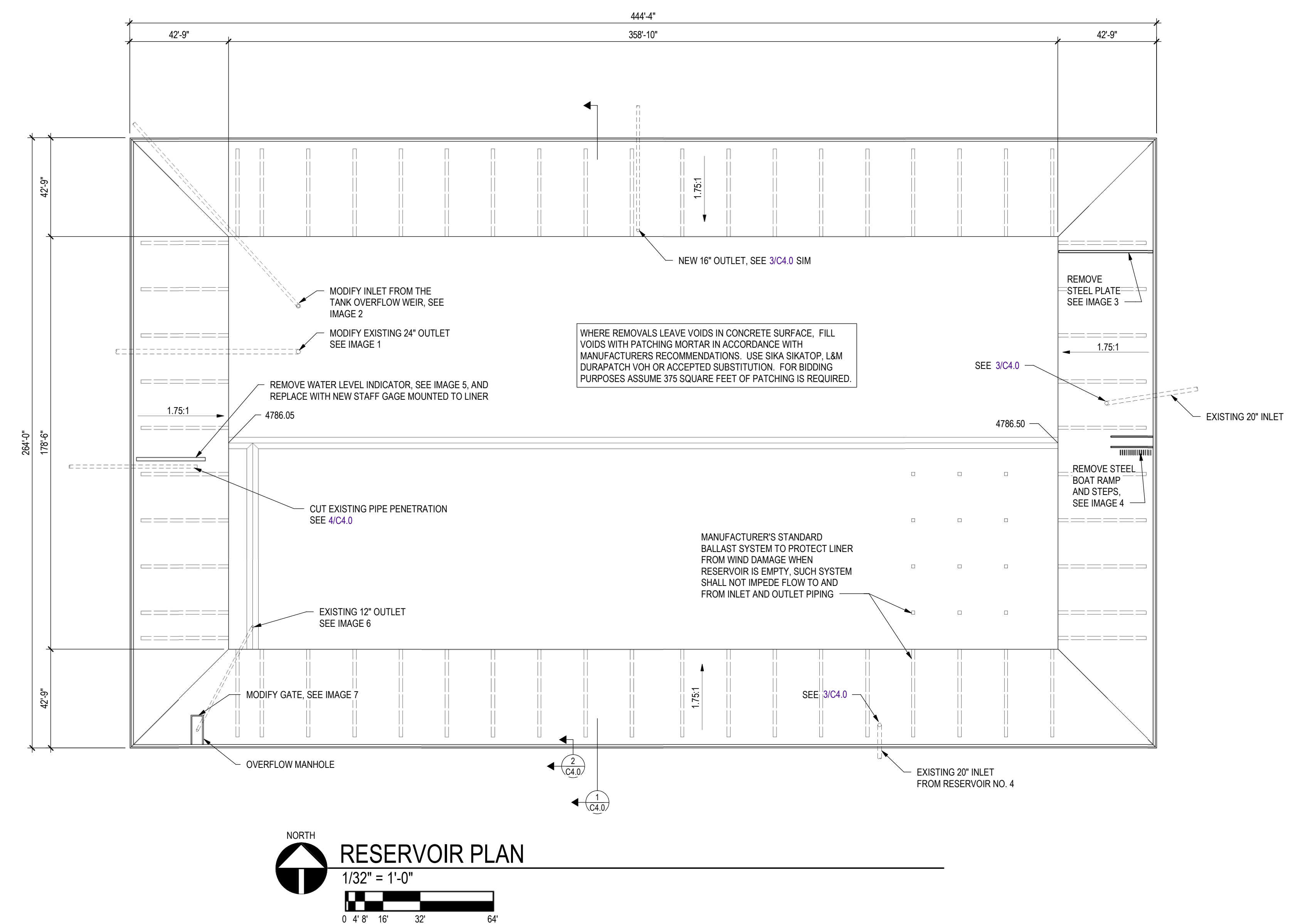
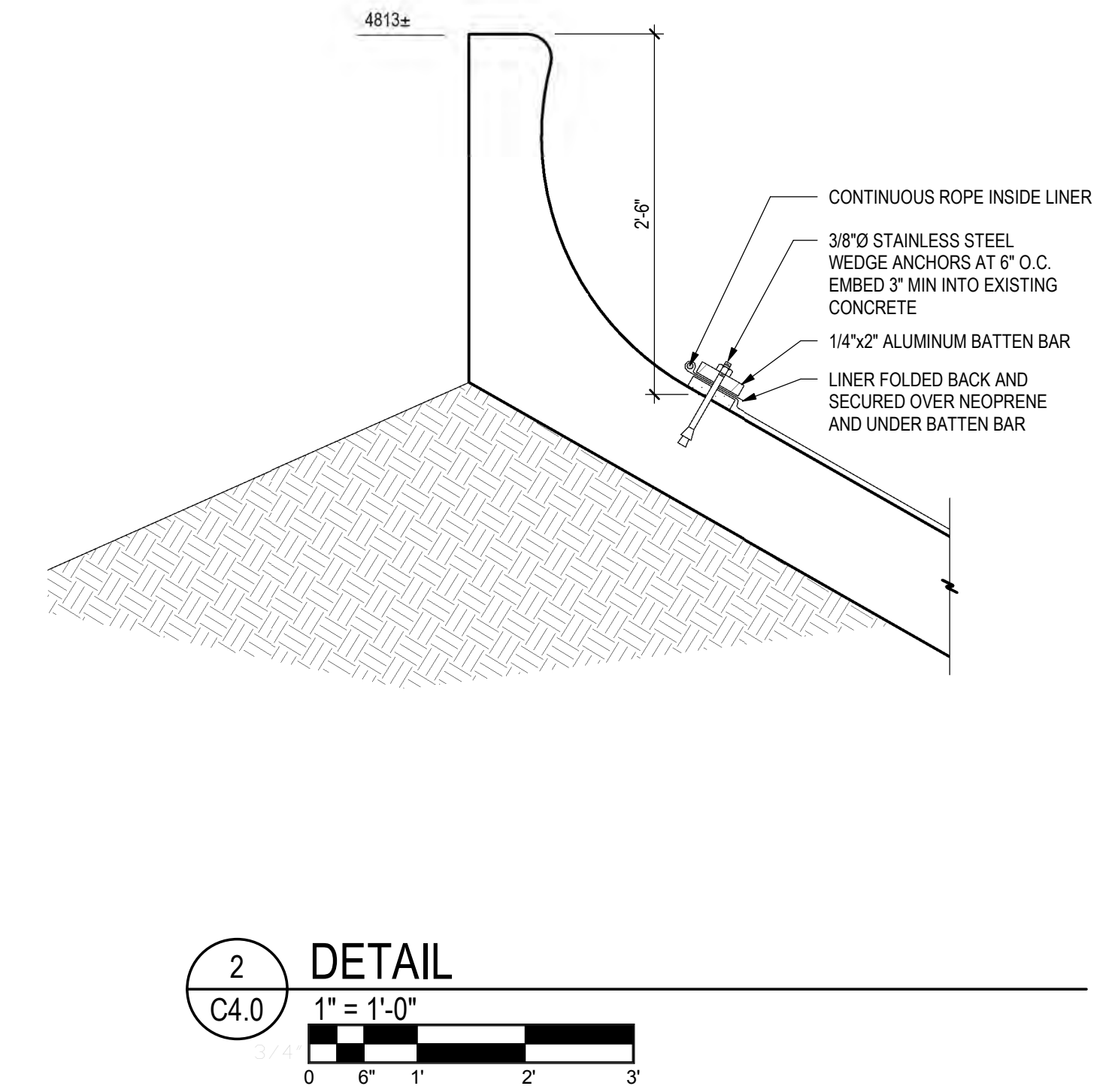
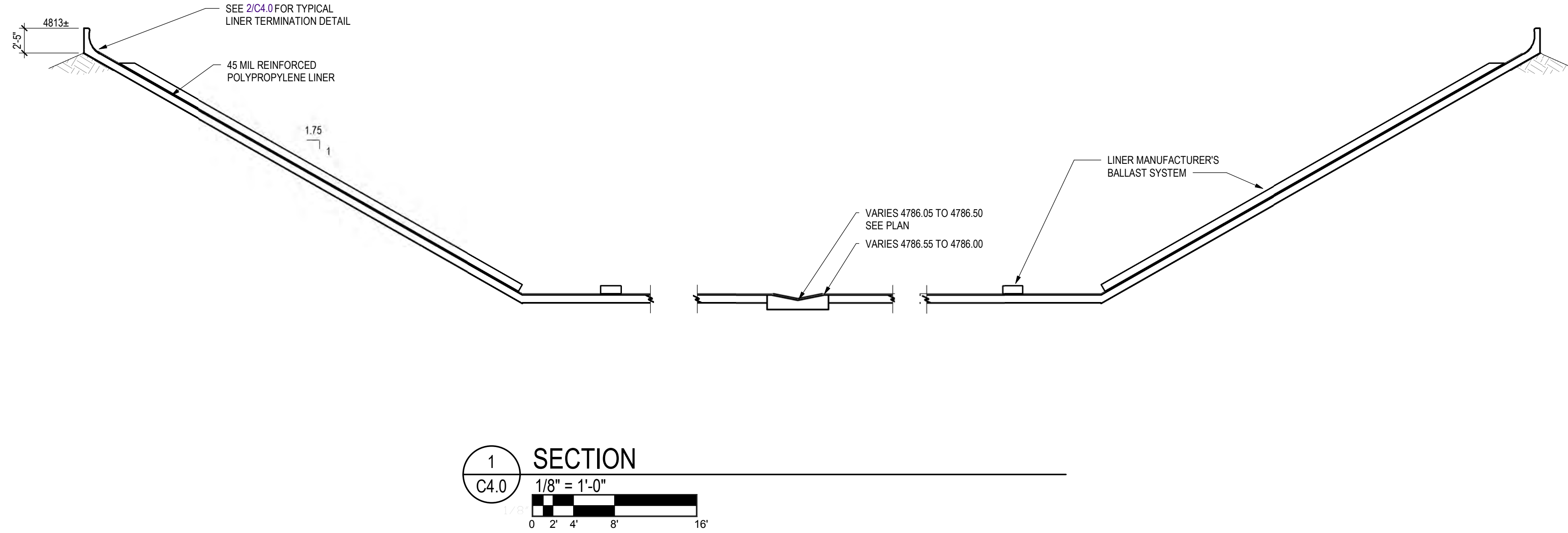
RAW WATER IRRIGATION SUPPLY  
 AND WATER LINE REPLACEMENT  
 GRAND JUNCTION, COLORADO

UTILITY DETAILS

SHEET NO.

CD3.0





NO.	DATE	DESIGNED	DRAWN	DESCRIPTION

DESIGNED BY: AJT  
 DRAWN BY: AJT  
 CHECKED BY: CDB  
 JOB #: 19286  
 DATE: FEBRUARY 2019  
 © JVA INC

CITY OF GRAND JUNCTION  
 PARKS RAW WATER IRRIGATION SUPPLY  
 GRAND JUNCTION, COLORADO  
 RESERVOIR 3 PLAN AND SECTIONS

SHEET NO.  
**C4.0**





IMAGE 1



REMOVE STEEL AND VERTICAL PVC PIPE. TERMINATE LINER WITH BATTEN BAR WITHIN 6" OF PIPE PENETRATION. PROVIDE SEALANTS/WATERSTOPS AS NECESSARY TO TO PREVENT LEAKAGE OF WATER AT BATTEN BAR

IMAGE 2

REMOVE STEEL, VERTICAL PVC PIPE, AND CUT CONCRETE LIP FLUSH WITH BASIN SLAB. TERMINATE LINER WITH BATTEN BAR WITHIN 6" OF PIPE PENETRATION. PROVIDE SEALANTS/WATERSTOPS AS NECESSARY TO TO PREVENT LEAKAGE OF WATER AT BATTEN BAR

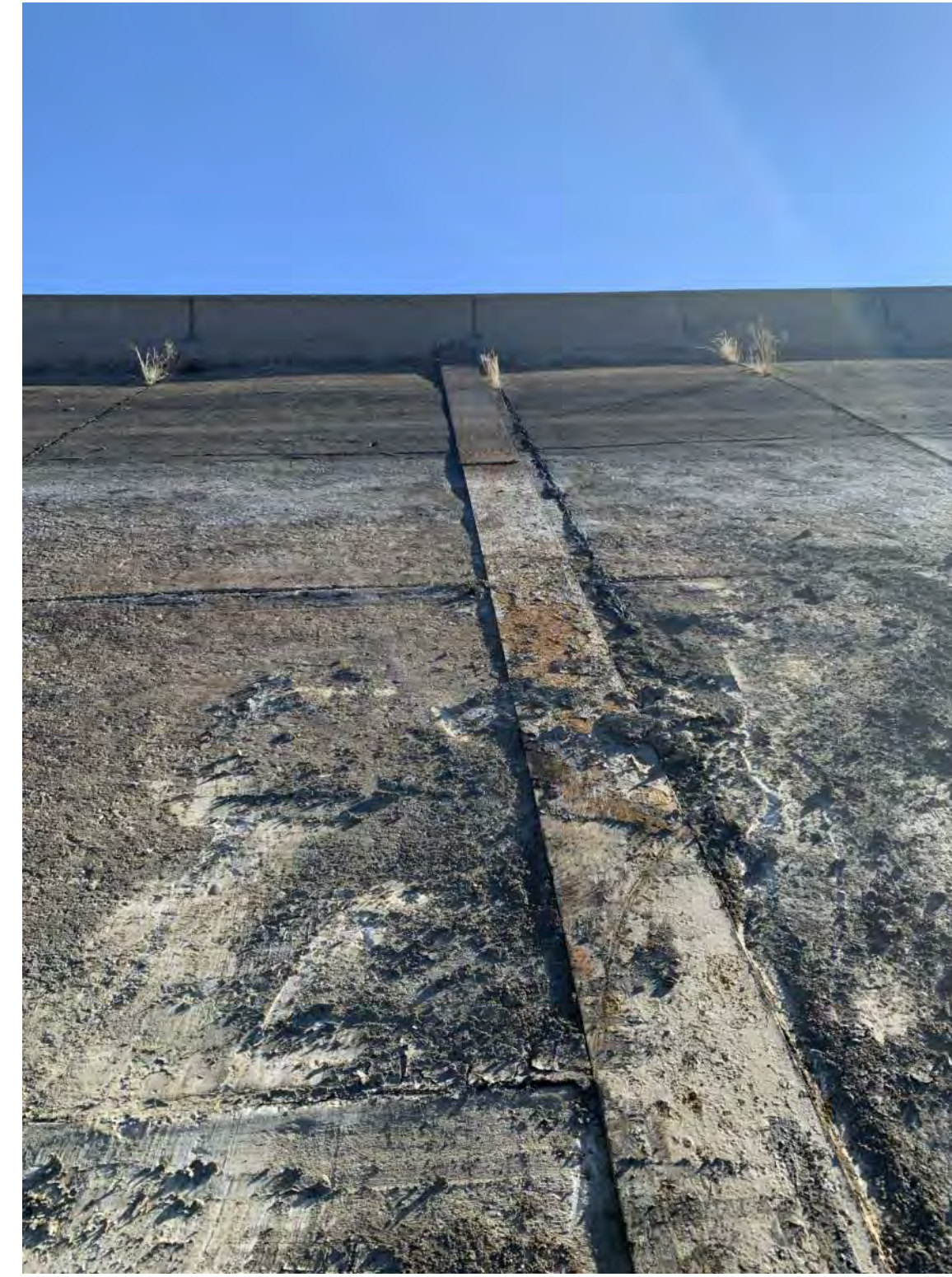


IMAGE 3

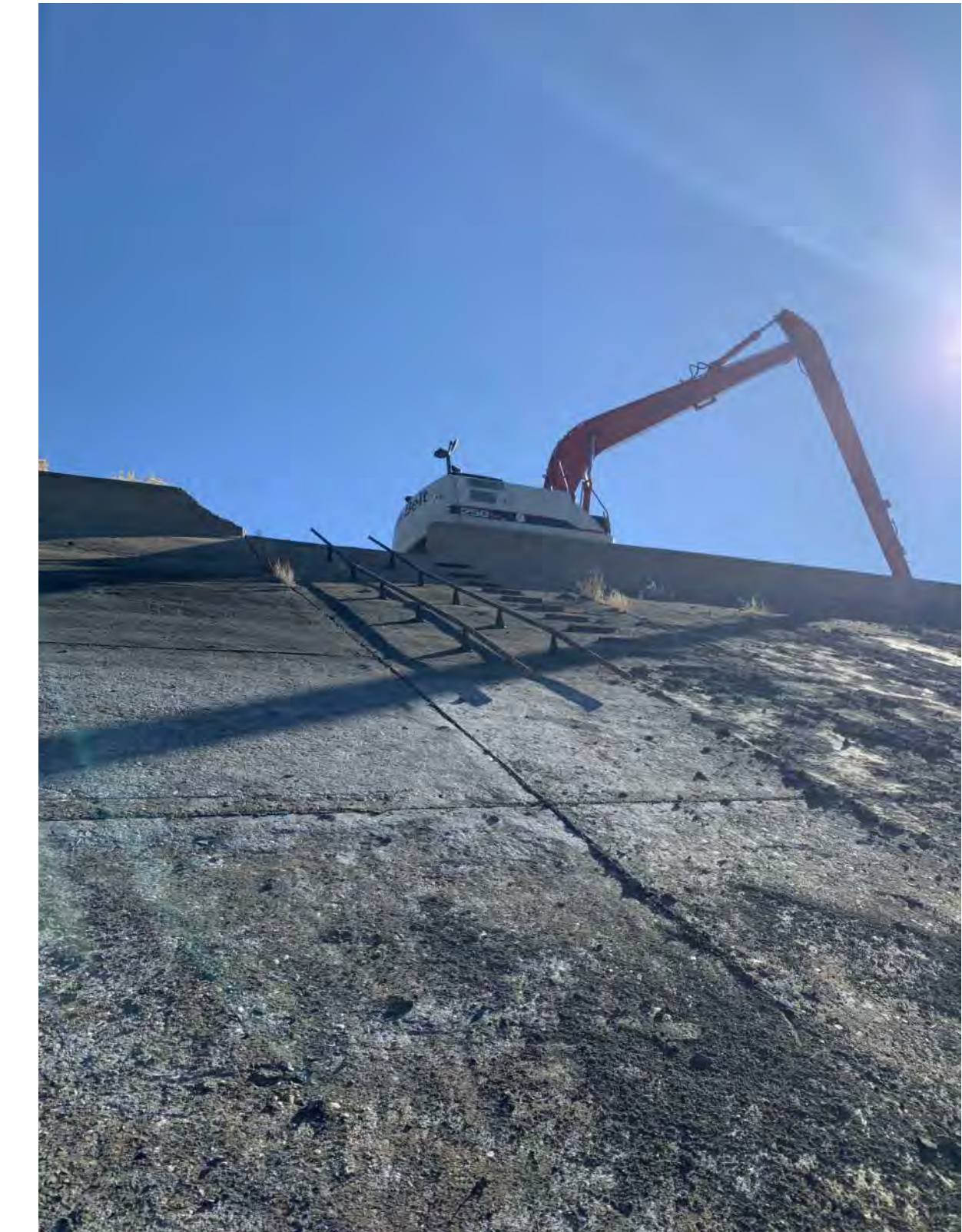


IMAGE 4



IMAGE 5



IMAGE 6

12" OUTLET. TERMINATE LINER WITH BATTEN BAR WITHIN 6" OF OULET PIPE PENETRATION. PROVIDE SEALANTS/WATERSTOPS AS NECESSARY TO TO PREVENT LEAKAGE OF WATER AT BATTEN BAR



IMAGE 7

REMOVE AND REINSTALL GATE AS REQUIRED TO PROVIDE A WATERTIGHT LINER CONNECTION



JVA, Incorporated 1319 Spruce Street  
Boulder, CO 80302 Phone: 303.444.1951  
Fax: 303.444.1957 E-mail: info@jvajva.com

NO.	DATE	DESD	DWN	REVISION DESCRIPTION

DESIGNED BY:	AJT
DRAWN BY:	AJT
CHECKED BY:	CDB
JOB #:	19286
DATE:	FEBRUARY 2019
© JVA INC	

CITY OF GRAND JUNCTION  
PARKS RAW WATER IRRIGATION SUPPLY  
GRAND JUNCTION, COLORADO  
PICTURES

SHEET NO.  
C4.1



# STRUCTURAL GENERAL NOTES

**DESIGN CRITERIA:**

1. SEISMIC DESIGN:
  - A.  $S_s = 0.165g$
  - B.  $S_1 = 0.040g$
2. SNOW LOAD:
  - A. GROUND SNOW LOAD = 30 PSF
3. WIND LOAD:
  - A. BASIC WIND SPEED = 105 MPH
4. WEIGHT OF FILLED WATER PIPE = 148 PLF
5. AASHTO LRFD SPECIFICATIONS, 8TH EDITION
6. LIVE LOAD TO BE HL-93 (DESIGN TRUCK AND DESIGN LANE LOAD)

WORK SHALL BE PERFORMED IN ACCORDANCE WITH REGULATIONS OF ALL AGENCIES HAVING JURISDICTION, INCLUDING BUT NOT LIMITED TO: FEDERAL, STATE (INCLUDING CDOT), AND OSHA STANDARDS.

DIMENSIONAL INFORMATION PROVIDED IS FOR REFERENCE AND CHECK PURPOSES ONLY. THE CONTRACTOR SHALL COORDINATE DIMENSIONS AMONG THESE DOCUMENTS AND VERIFY ALL FIELD CONDITIONS. ANY DISCREPANCY ENCOUNTERED THAT MAY AFFECT THE WORK SHALL BE COMMUNICATED TO THE ENGINEER PRIOR TO PROCEEDING WITH ANY WORK THAT MAY BE AFFECTED.

THE CONTRACTOR IS RESPONSIBLE FOR ALL BRACING AND SHORING, INCLUDING PROTECTION OF ADJACENT PROPERTY, TEMPORARY CONSTRUCTIONS, AND MEANS AND METHODS THAT MAY BE REQUIRED TO CARRY OUT THE WORK SAFELY. FIELD OBSERVATIONS BY THE ENGINEER SHALL NOT IN ANY WAY INCLUDE INSPECTIONS OF THESE ITEMS.

SHOP DRAWINGS SHALL BE REVIEWED FOR QUALITY BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL TO THE ENGINEER AND ANY DEVIATIONS OR REQUESTED SUBSTITUTIONS FROM THE CONSTRUCTION DOCUMENTS MUST BE CLEARLY DEFINED. ALLOW TWO WEEKS TURNAROUND TIME FROM RECEIPT OF SHOP DRAWINGS.

THE CONTRACTOR SHALL COORDINATE ALL SOILS AND MATERIAL TESTING AND SPECIAL INSPECTIONS INCLUDING STRUCTURAL STEEL WELDING AND BOLTING.

**STRUCTURAL STEEL:**

1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" (AISC 360) AND THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (AISC 303) BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
2. STRUCTURAL STEEL WIDE FLANGE BEAMS SHALL CONFORM TO ASTM A992, 50 KSI YIELD.
3. ROLLED STEEL FLOOR PLATES SHALL CONFORM TO ASTM A786, COMMERCIAL GRADE.
4. OTHER ROLLED SHAPES, INCLUDING PLATES, CHANNELS, WTS, AND ANGLES SHALL CONFORM TO ASTM A36, 36 KSI YIELD.
5. HOLLOW STRUCTURAL SECTION (HSS) RECTANGULAR SHAPES SHALL CONFORM TO ASTM A500, GRADE C, 50 KSI YIELD.
6. HSS ROUND SHAPES SHALL CONFORM TO ASTM A500, GRADE C, 46 KSI YIELD.
7. PIPE SHAPES SHALL CONFORM TO ASTM A53, GRADE B, 35 KSI YIELD.
8. EXCEPT AS NOTED, FRAMED BEAM CONNECTIONS SHALL BE BEARING-TYPE WITH 3/4" DIAMETER, SNUG TIGHT, ASTM A325 BOLTS, DETAILED IN CONFORMANCE WITH THE STRUCTURAL DRAWINGS AND THE "STEEL CONSTRUCTION MANUAL" BY THE AISC. INSTALL BOLTS IN ACCORDANCE WITH AISC'S "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".
9. ALL BEAMS SHALL HAVE FULL DEPTH WEB STIFFENERS EACH SIDE OF WEBS ABOVE AND BELOW COLUMNS.
10. ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE (36, 55, AND/OR 105) AS NOTED ON THE STRUCTURAL DRAWINGS WITH WELDABILITY SUPPLEMENT S1.
11. HEADED ANCHOR STUDS (HAS) SHALL CONFORM TO ASTM A108 AND SHALL BE CONNECTED TO STRUCTURAL STEEL WITH EQUIPMENT APPROVED BY THE STUD MANUFACTURER ACCORDING TO THE STUD MANUFACTURER'S RECOMMENDATIONS.
12. WELDING SHALL BE DONE BY A CERTIFIED WELDER IN ACCORDANCE WITH THE AISC DOCUMENTS LISTED ABOVE, THE AMERICAN WELDING SOCIETY (AWS) D1.1: STRUCTURAL WELDING CODE, AND THE RECOMMENDATIONS FOR USE OF WELD E70 ELECTRODES. WHERE NOT SPECIFICALLY NOTED, MINIMUM WELD SHALL BE 3/16" FILLET BY LENGTH OF CONTACT EDGE.
13. ALL POST-INSTALLED ANCHORS SHALL HAVE CURRENT INTERNATIONAL CODE COUNCIL EVALUATION SERVICE (ICC-ES) REPORTS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.
14. EXPANSION ANCHORS SHALL BE APPROVED "WEDGE" TYPE UNLESS SPECIFICALLY NOTED TO BE "SLEEVE" TYPE AS NOTED ON THE STRUCTURAL DRAWINGS.
15. CHEMICAL ANCHORS SHALL BE APPROVED EPOXY OR SIMILAR ADHESIVE TYPE AS APPROPRIATE FOR INSTALLATION IN SOLID AND NON-SOLID BASE MATERIALS.
16. GROUT BENEATH COLUMN BASE AND BEAM BEARING PLATES SHALL HAVE A MINIMUM 28-DAY, COMPRESSIVE STRENGTH OF 7,500 PSI AND SHALL BE NON-SHRINK, NON-METALLIC, AND TESTED IN ACCORDANCE WITH ASTM C1107.



	REVISION DESCRIPTION
	NO. DATE DESD DWN

DESIGNED BY:	BAR
DRAWN BY:	SCR
CHECKED BY:	BAR
JOB #:	19086
DATE:	07/17/18

© JVA, INC.

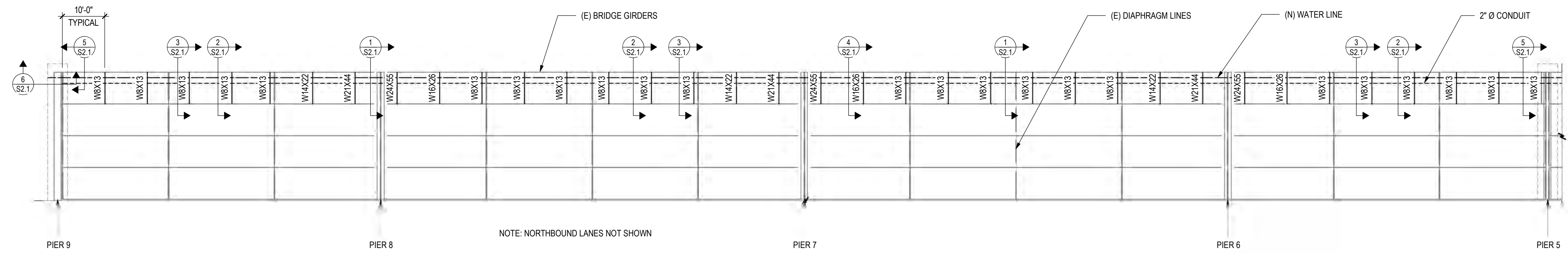
CITY OF GRAND JUNCTION  
 PARKS RAW WATER IRRIGATION SUPPLY  
 GRAND JUNCTION, COLORADO  
 GENERAL NOTES


STRUCTURAL DRAWING LIST	
SHEET NO	SHEET TITLE
S0.1	GENERAL NOTES
S1.1	BRIDGE/PIPE SUPPORT FRAMING PLAN
S2.1	SECTIONS

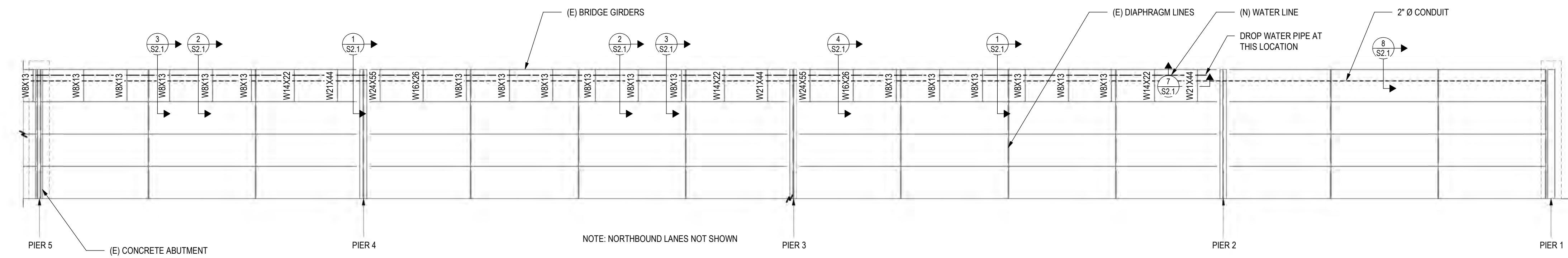
SHEET NO.


**S0.1**






**SOUTH BRIDGE/PIPE SUPPORT FRAMING PLAN**
  
 1/16" = 1'-0"
   
 0 4' 8' 16' 32'



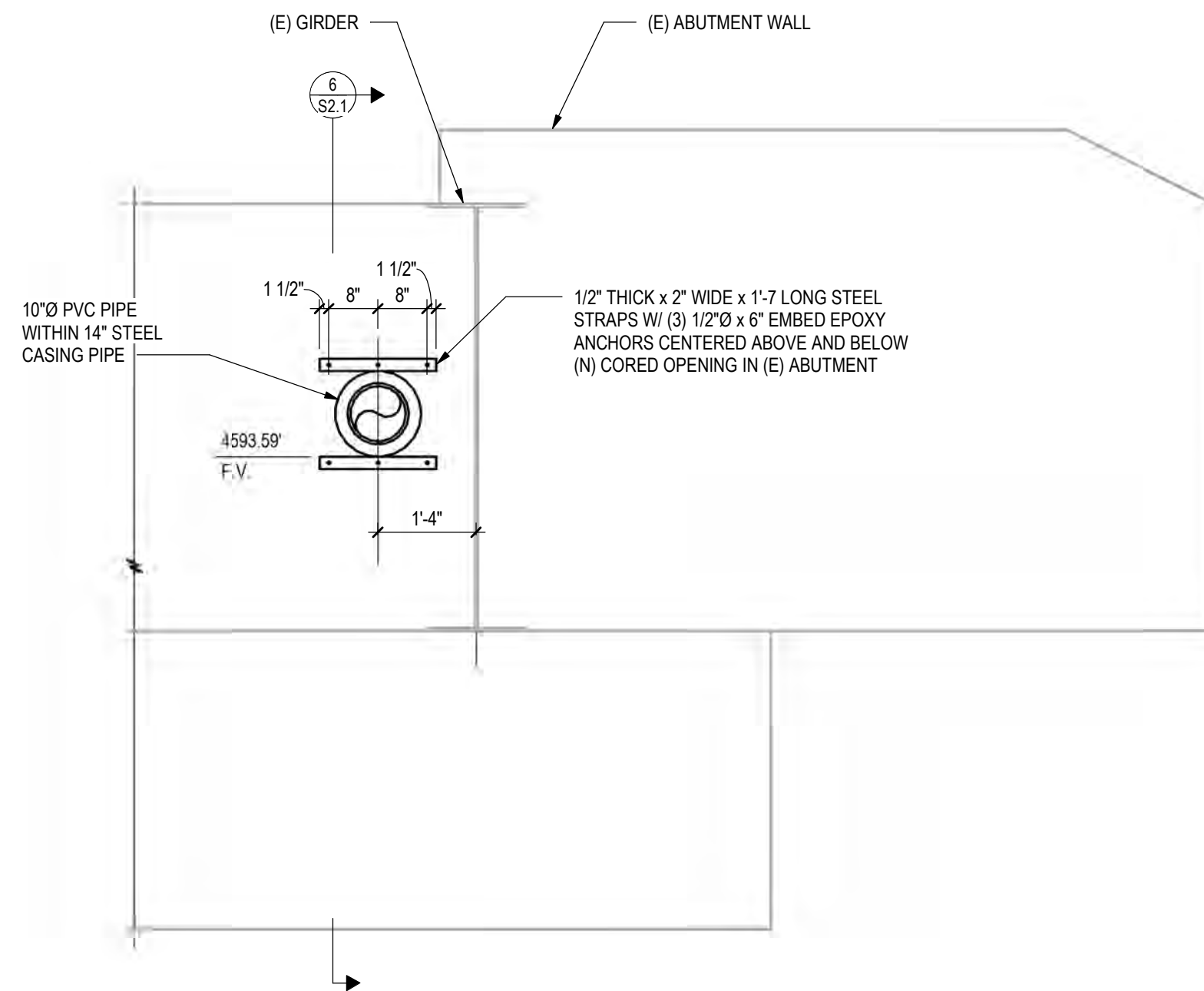

**NORTH BRIDGE/PIPE SUPPORT FRAMING PLAN**
  
 1/16" = 1'-0"
   
 0 4' 8' 16' 32'

REVISION DESCRIPTION

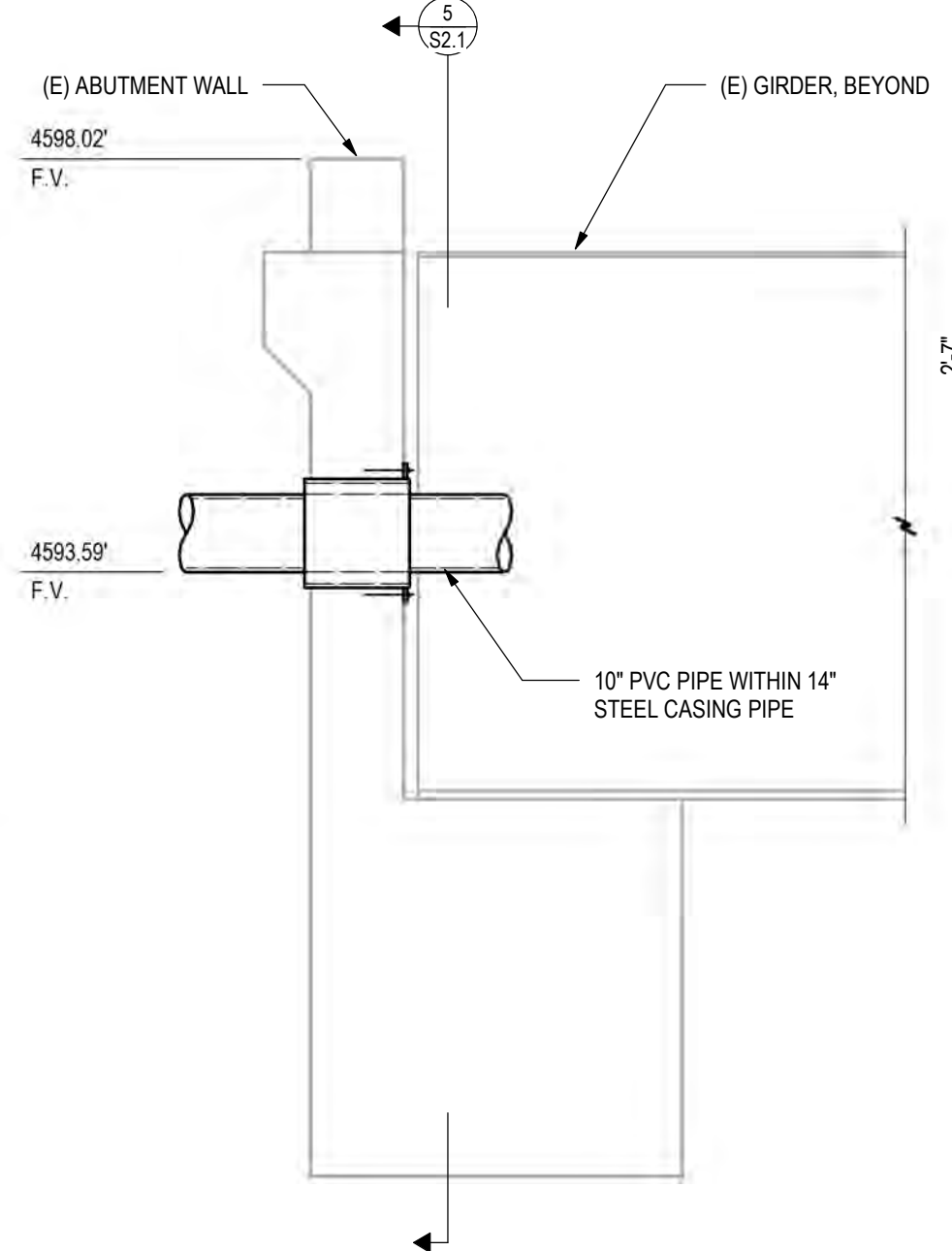
DESIGNED BY:	BAR
DRAWN BY:	SCR
CHECKED BY:	BAR
JOB #:	19086
DATE:	07/17/18

© JVA, INC.

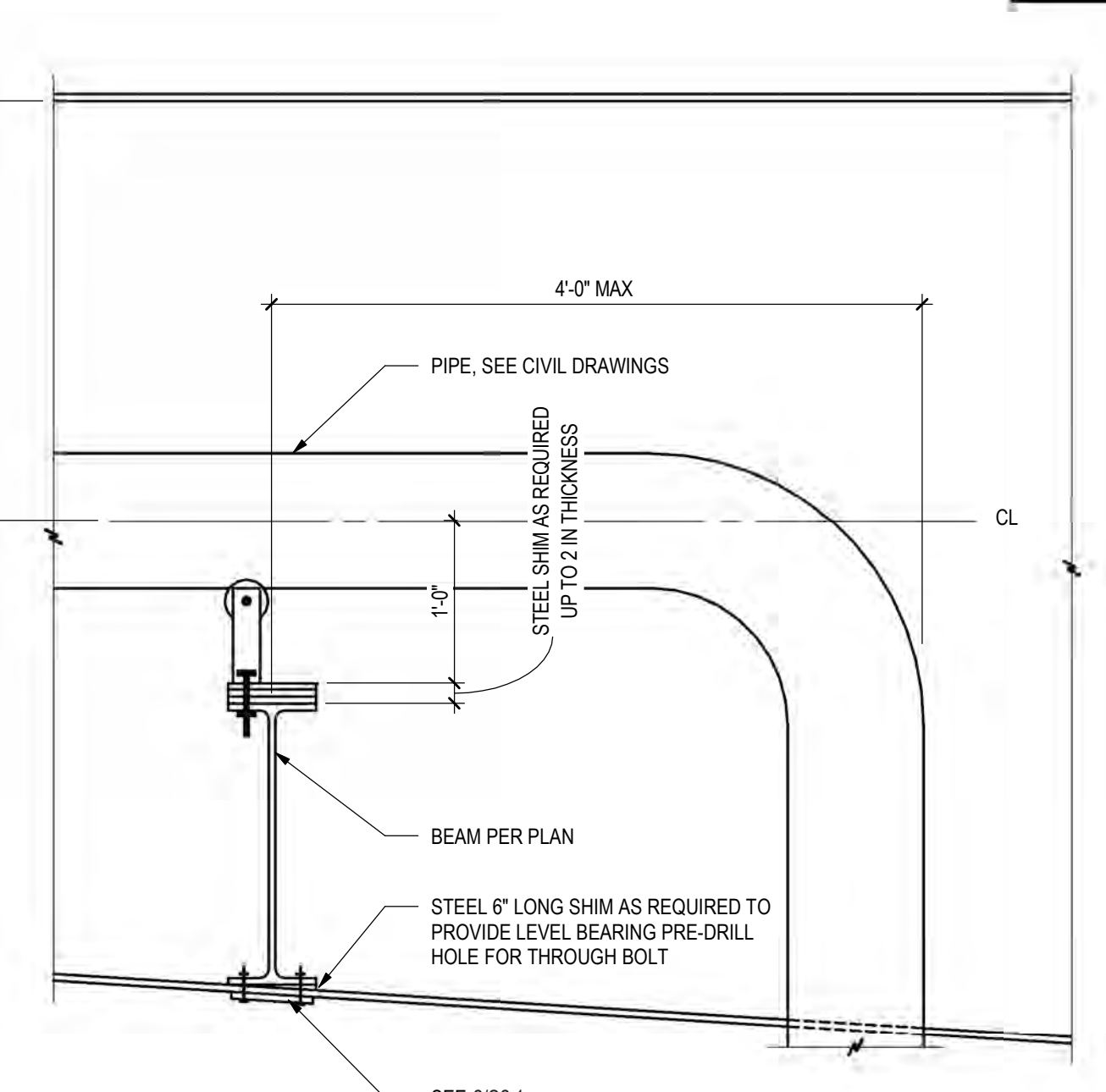
CITY OF GRAND JUNCTION  
 PARKS RAW WATER IRRIGATION SUPPLY  
 GRAND JUNCTION, COLORADO  
 BRIDGE/PIPE SUPPORT FRAMING PLAN



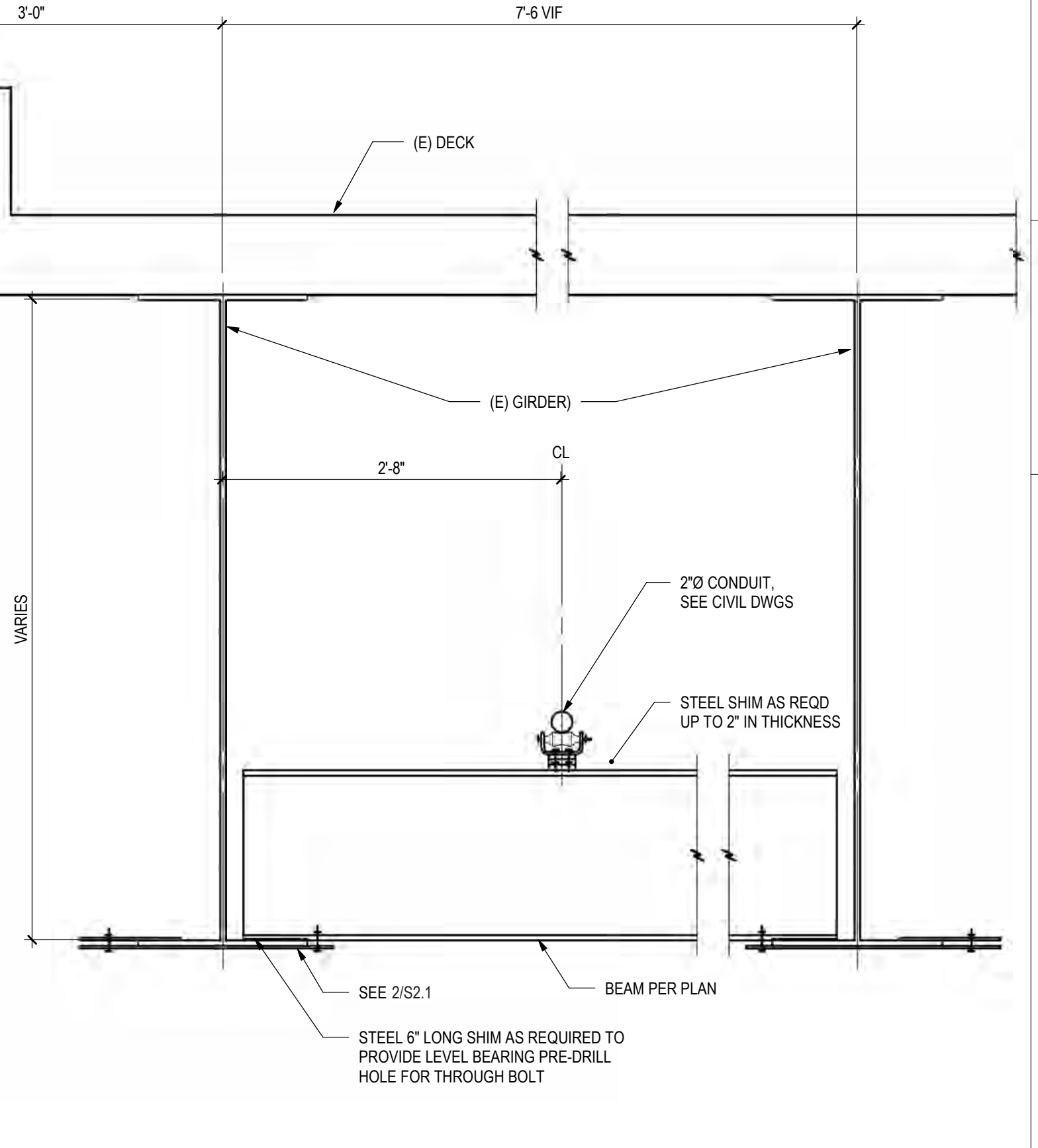
**5 SECTION**  
S2.1 1/2" = 1'-0"



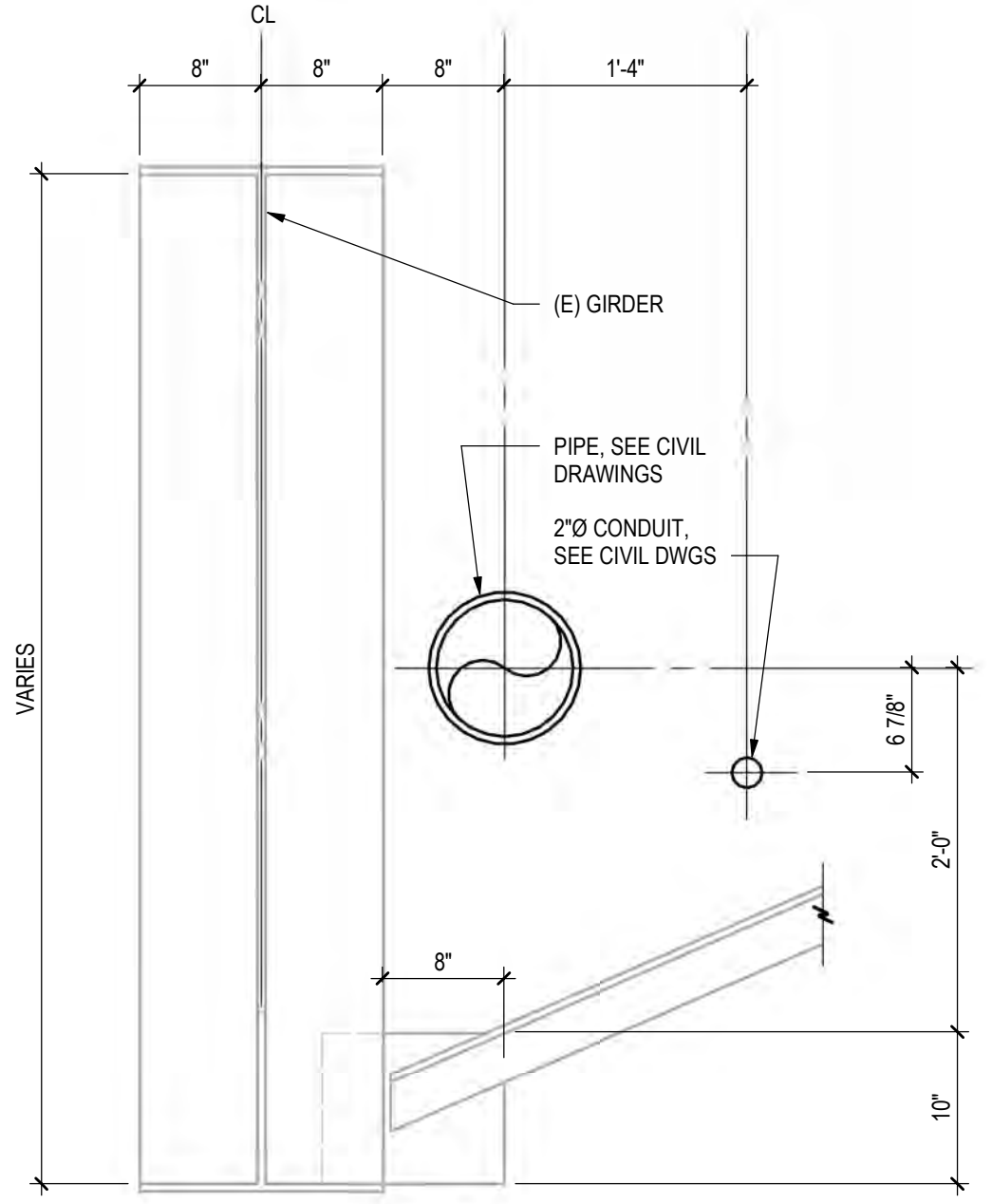
**6 SECTION**  
S2.1 1/2" = 1'-0"



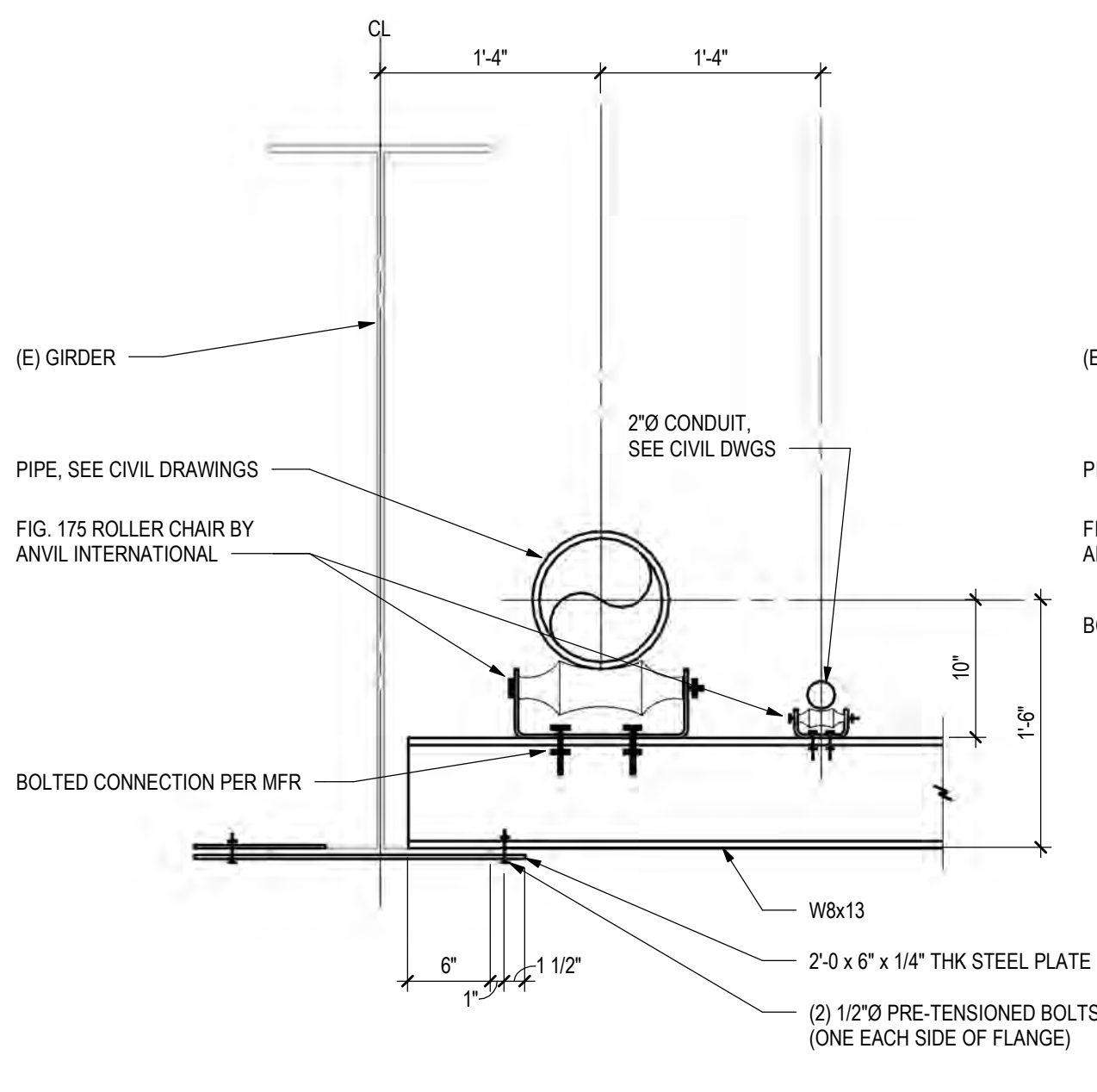
**7 SECTION**  
S2.1 1" = 1'-0"



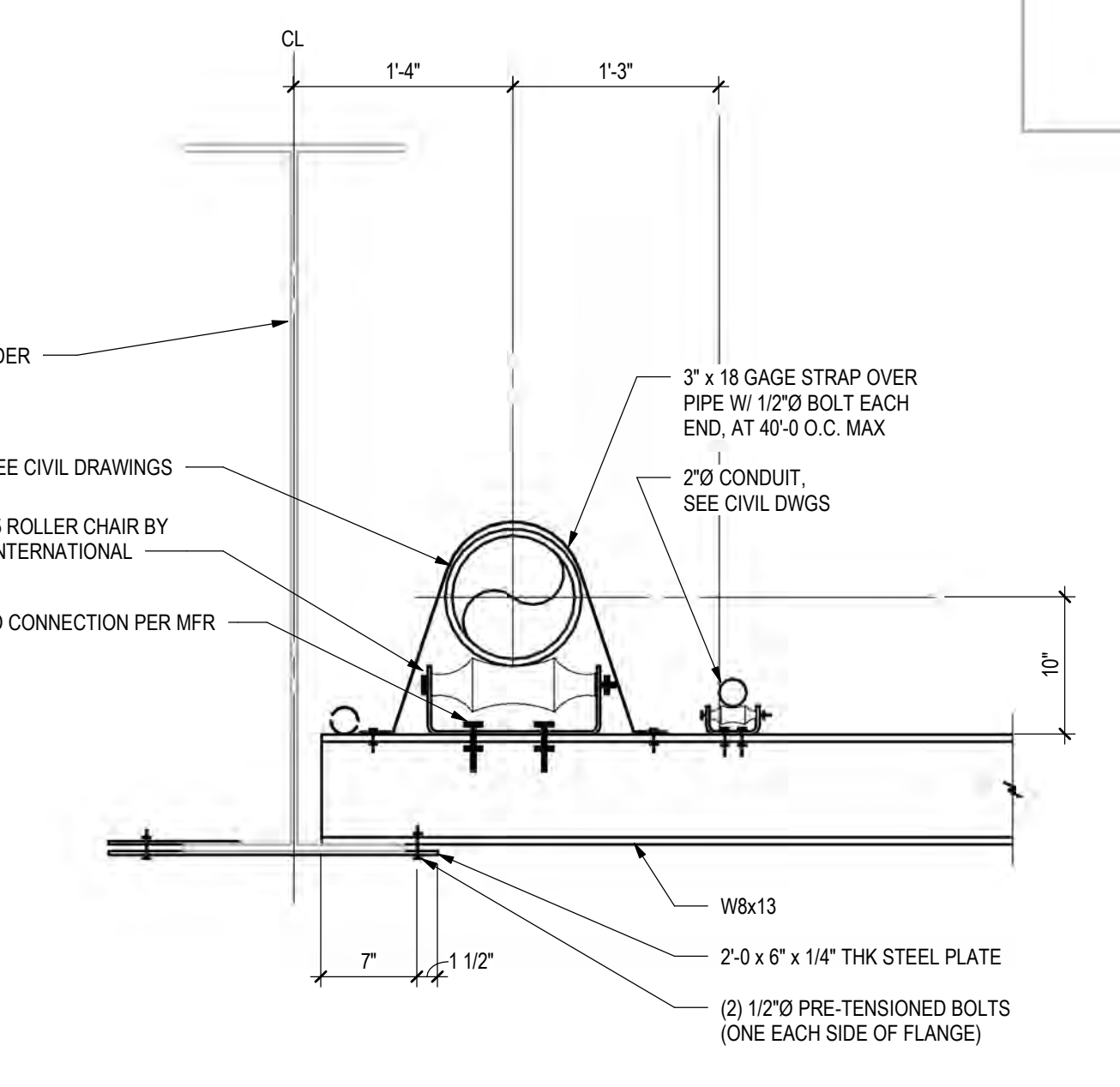
**8 SECTION**  
S2.1 1" = 1'-0"



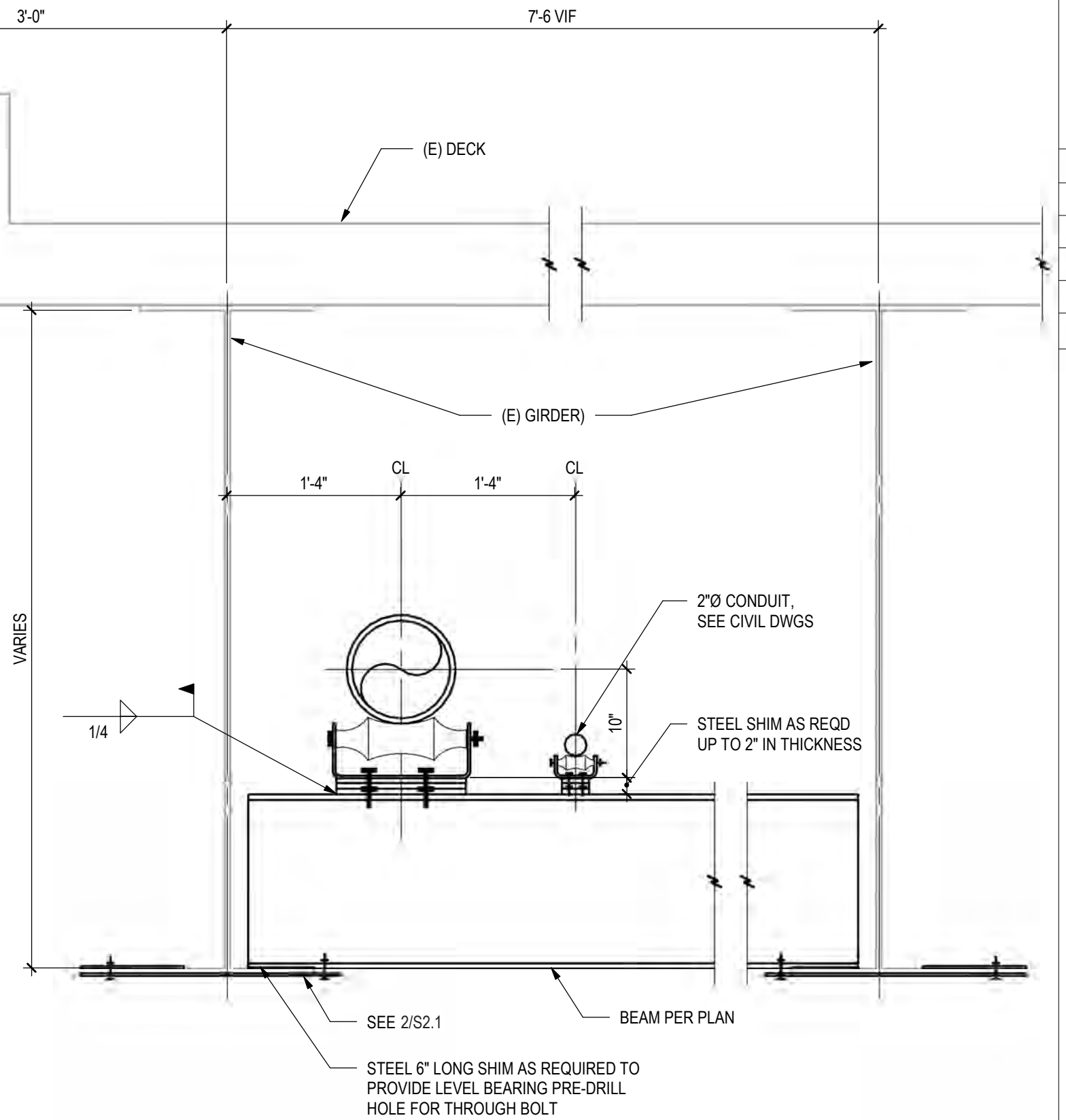
**1 SECTION**  
S2.1 1" = 1'-0"



**2 SECTION**  
S2.1 1" = 1'-0"



**3 SECTION**  
S2.1 1" = 1'-0"



**4 SECTION**  
S2.1 1" = 1'-0"

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

DESIGNED BY: BAR  
DRAWN BY: SCR  
CHECKED BY: BAR  
JOB #: 19086  
DATE: 07/17/18  
© JVA, INC.

CITY OF GRAND JUNCTION  
PARKS RAW WATER IRRIGATION SUPPLY  
GRAND JUNCTION, COLORADO