

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to the above referenced solicitation are hereby instructed that the requirements have been clarified, modified, superseded and supplemented as to this date as hereinafter described.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 March 12, 2019 Mandatory Pre-Bid Meeting 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**

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,

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

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COLORADO DEPARTMENT OF TRANSPORTATION STAFF BRIDGE ENGINEER STAFF BRIDGE

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CITY OF GRAND JUNCTION

RAW WATER IRRIGATION SUPPLY

AND WATERLINE REPLACEMENT

GRAND JUNCTION, COLORADO

BID DOCUMENTS

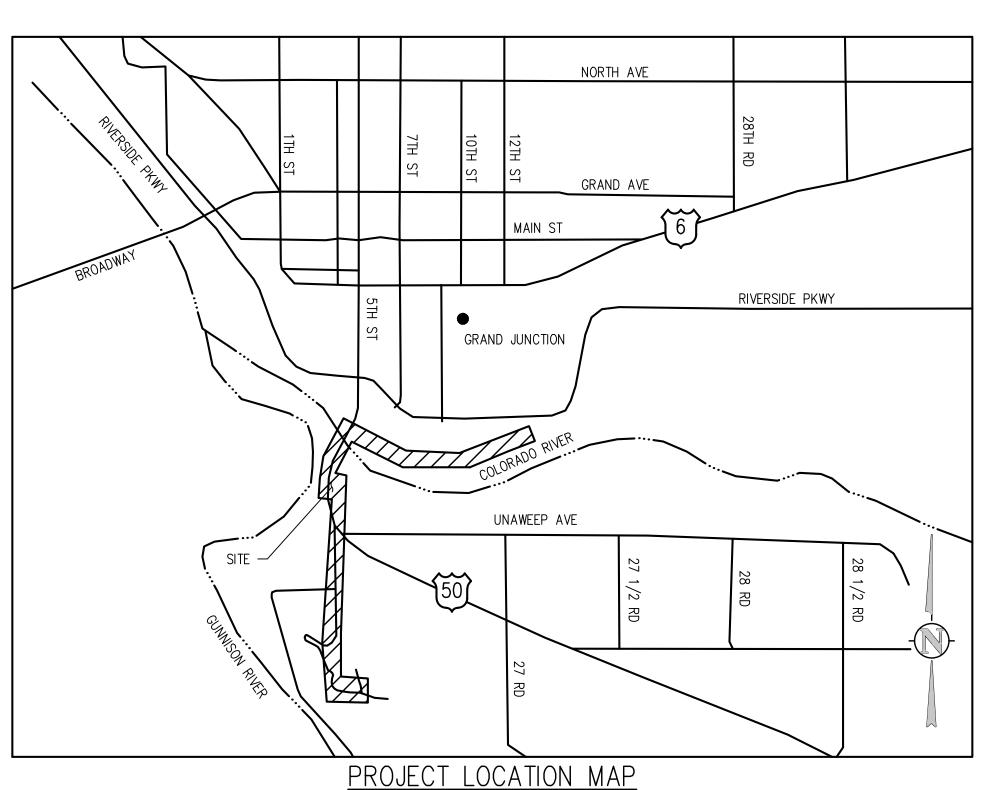
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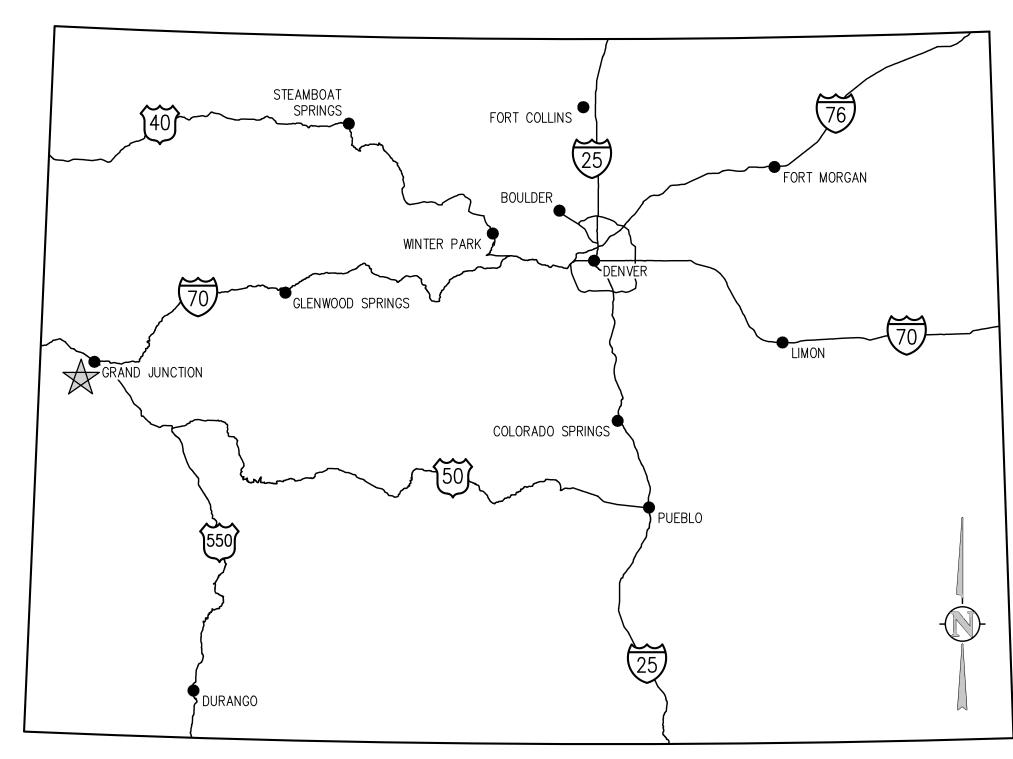
FEBRUARY 2019

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<u>VICINITY MAP</u>

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SHEET NO. TITLE

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COVER SHEET

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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 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 RAW WATER IRRIGATION LINE STA 111+00.00 - 117+00.00 C2.20

RAW WATER IRRIGATION LINE DETAILS

C2.21 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

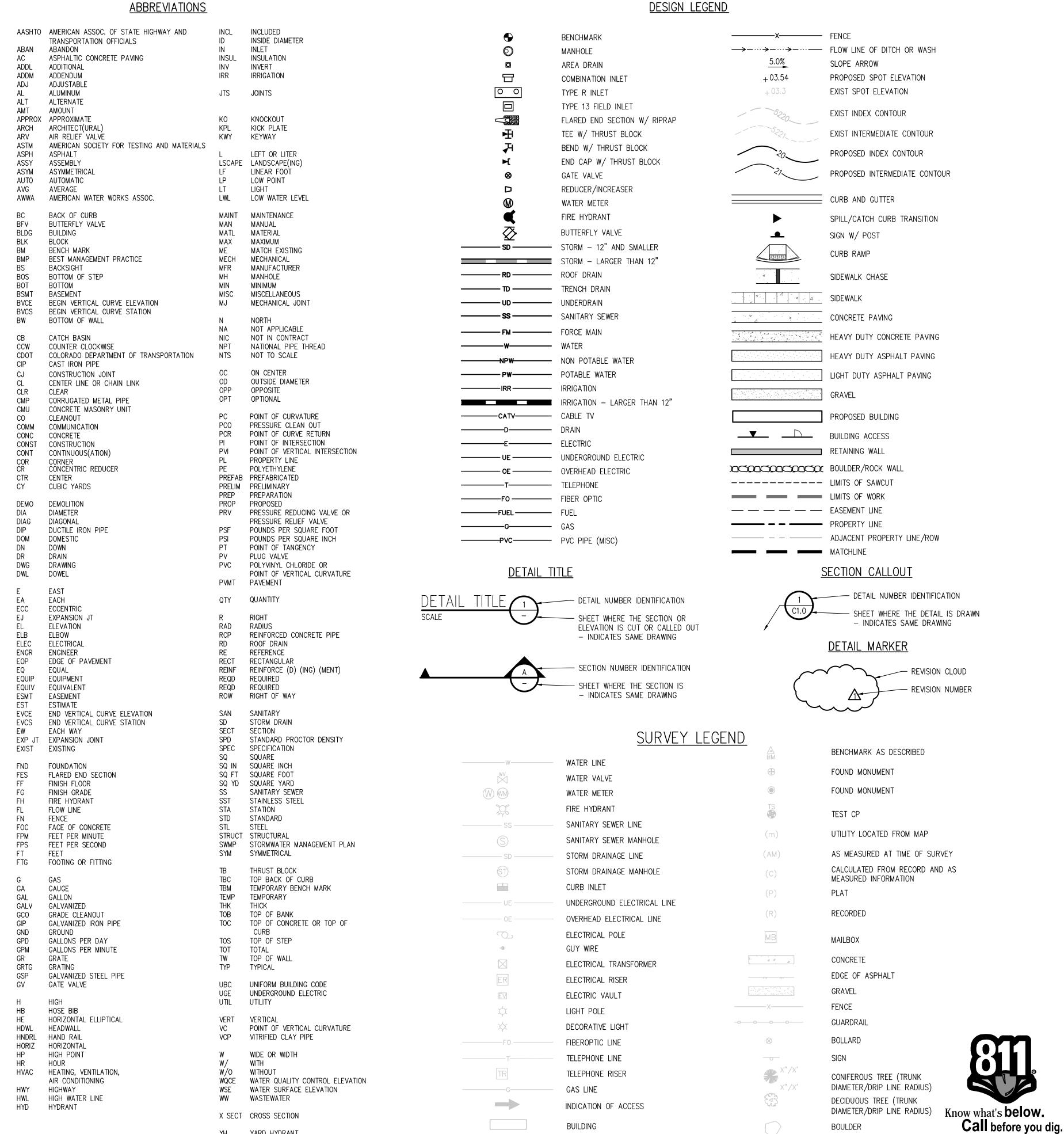
C3.0 OVERALL UTILITY PLAN CD3.0 UTILITY DETAILS

C4.0 RESERVOIR PLAN AND SECTIONS C4.1 PICTURES

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S2.1 SECTIONS

CD2.2

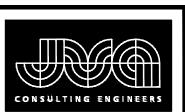


NOTE: SHADED ITEMS REPRESENT EXIST FEATURES

YARD HYDRANT

GENERAL NOTES

- 1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE CITY OF GRAND JUNCTION. COLORADO DEPARTMENT OF TRANSPORTATION, GRAND JUNCTION FIRE PROTECTION REQUIREMENTS, AND APPLICABLE STATE AND LOCAL STANDARDS AND SPECIFICATIONS. THE CONTRACTOR SHALL HAVE IN POSSESSION AT THE JOB SITE AT ALL TIMES ONE (1) SIGNED COPY OF APPROVED PLANS, STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EMERGENCY ACCESS ROUTES TO THE SITE AND STRUCTURE AT ALL TIMES PER THE APPLICABLE GRAND JUNCTION FIRE PROTECTION DISTRICT REQUIREMENTS. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR ANY VARIANCE TO THE ABOVE DOCUMENTS. NOTIFY ENGINEER OF ANY CONFLICTING STANDARDS OR SPECIFICATIONS. IN THE EVENT OF ANY CONFLICTING STANDARD OR SPECIFICATION, THE MORE STRINGENT OR HIGHER QUALITY STANDARD, DETAIL OR SPECIFICATION SHALL APPLY.
- 2. THE CONTRACTOR SHALL OBTAIN, AT HIS OWN EXPENSE, ALL APPLICABLE CODES, LICENSES, STANDARD SPECIFICATIONS, PERMITS, BONDS, ETC., WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK, INCLUDING, BUT NOT LIMITED TO A LOCAL AND STATE GROUNDWATER DISCHARGE AND COLORADO DEPARTMENT OF HEALTH AND ENVIRONMENT (CDPHE) STORMWATER DISCHARGE AND 521 DRAINAGE PERMITS ASSOCIATED WITH CONSTRUCTION ACTIVITY.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE CITY OF GRAND JUNCTION, ENGINEER, CDOT, AND GEOTECHNICAL ENGINEER AT LEAST 48 HOURS PRIOR TO START OF ANY CONSTRUCTION. PRIOR TO BACKFILLING, AND AS REQUIRED BY JURISDICTIONAL AUTHORITY AND/OR PROJECT SPECIFICATIONS. THE CONTRACTOR SHALL CONTINUE WITH NOTIFICATIONS THROUGHOUT THE PROJECT AS REQUIRED BY THE STANDARDS AND SPECIFICATIONS.
- 4. THE LOCATIONS OF EXISTING UTILITIES ARE SHOWN IN THE APPROXIMATE LOCATION BASED ON INFORMATION BY OTHERS. NOT ALL UTILITIES MAY BE SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT SIZE, LOCATION AND TYPE OF ALL EXISTING UTILITIES WHETHER SHOWN OR NOT BEFORE COMMENCING WORK. THE ENGINEER AND/OR OWNER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS SHOWN ON PLANS. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGES AND COSTS WHICH MIGHT OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES. THE CONTRACTOR SHALL NOTIFY ALL PUBLIC AND PRIVATE UTILITY COMPANIES AND DETERMINE THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO PROCEEDING WITH GRADING AND CONSTRUCTION. ALL WORK PERFORMED IN THE AREA OF UTILITIES SHALL BE PERFORMED AND INSPECTED ACCORDING TO THE REQUIREMENTS OF THE UTILITY OWNER. LIKEWISE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAPPING ANY EXISTING UTILITY (INCLUDING DEPTH) WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION, AND FOR RELOCATING ENCOUNTERED UTILITIES AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL CONTACT AND RECEIVE APPROVAL FROM CITY OF GRAND JUNCTION BEFORE RELOCATING ANY ENCOUNTERED UTILITIES. CONTRACTOR RESPONSIBLE FOR SERVICE CONNECTIONS, AND RELOCATING AND RECONNECTING AFFECTED UTILITIES AS COORDINATED WITH UTILITY OWNER AND/OR ENGINEER, INCLUDING NON-MUNICIPAL UTILITIES (TELEPHONE, GAS, CABLE, ETC., WHICH SHALL BE COORDINATED WITH THE UTILITY OWNER). THE CONTRACTOR SHALL IMMEDIATELY CONTACT ENGINEER UPON DISCOVERY OF A UTILITY DISCREPANCY OR CONFLICT. AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO (1-800-922-1987, WWW.UNCC.ORG).
- 5. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN FOR OWNER AND/OR CITY APPROVAL AND PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FENCING, FLAGMEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR AGREES TO COMPLY WITH THE PROVISIONS OF THE TRAFFIC CONTROL PLAN AND THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," PART VI, FOR CONSTRUCTION SIGNAGE AND TRAFFIC CONTROL. ALL TEMPORARY AND PERMANENT TRAFFIC SIGNS SHALL COMPLY TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) WITH REGARD TO SIGN SHAPE, COLOR, SIZE, LETTERING, ETC. UNLESS OTHERWISE SPECIFIED. IF APPLICABLE, PART NUMBERS ON SIGNAGE DETAILS REFER TO MUTCD SIGN NUMBERS.
- 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY GROUNDWATER ENCOUNTERED DURING THE CONSTRUCTION OF ANY PORTION OF THIS PROJECT GROUNDWATER SHALL BE PUMPED, PIPED, REMOVED AND DISPOSED OF IN A MANNER WHICH DOES NOT CAUSE FLOODING OF EXISTING STREETS NOR EROSION ON ABUTTING PROPERTIES IN ORDER TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THESE PLANS. GROUNDWATER TO BE PUMPED SHALL BE TESTED, PERMITTED, AND PUMPED PER THE STATE OF COLORADO AND LOCAL GROUNDWATER DISCHARGING PERMIT REQUIREMENTS.
- 7. RIM AND GRATE ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. THE CONTRACTOR SHALL ADJUST RIMS AND OTHER IMPROVEMENTS TO MATCH FINAL PAVEMENT AND FINISHED GRADE ELEVATIONS.
- 8. THE EXISTING AND PROPOSED ELEVATIONS OF FLATWORK, SIDEWALKS, CURBS, THRESHOLDS, PAVING, ETC. AS SHOWN HEREON ARE BASED ON EXTRAPOLATION OF FIELD SURVEY DATA, EXISTING CONDITIONS, AND DATA PROVIDED BY OTHERS. AT CRITICAL AREAS ON 26 1/4 ROAD, US HIGHWAY 50, AND CITY OF GRAND JUNCTION PROPERTY AND SITE FEATURES, CONTRACTOR SHALL HAVE FORMWORK INSPECTED AND APPROVED BY OWNER, OWNER'S REPRESENTATIVE, OR ENGINEER PRIOR TO PLACING CONCRETE. MINOR ADJUSTMENTS, AS APPROVED, TO PROPOSED GRADES, INVERTS, ETC. MAY BE REQUIRED TO PREVENT PONDING OR SLOPE NOT IN CONFORMANCE WITH MUNICIPAL STANDARDS. ALL FLATWORK MUST PREVENT PONDING AND PROVIDE POSITIVE DRAINAGE AWAY FROM EXISTING AND PROPOSED BUILDINGS, WALLS, ROOF DRAIN OUTFALLS, ACROSS DRIVES AND WALKS, ETC., TOWARDS THE PROPOSED INTENDED DRAINAGE FEATURES AND CONVEYANCES.
- 9. FINAL LIMITS OF REQUIRED ASPHALT SAWCUTTING AND PATCHING MAY VARY FROM LIMITS SHOWN ON PLANS. CONTRACTOR TO PROVIDE SAWCUT AND PATCH WORK TO ACHIEVE POSITIVE DRAINAGE AND A SMOOTH TRANSITION TO EXISTING ASPHALT WITHIN SLOPES ACCEPTABLE TO THE ENGINEER AND WITHIN MUNICIPAL STANDARDS. CONTRACTOR SHALL PROVIDE ADDITIONAL SAWCUTTING AND PATCHING AT UTILITY WORK, CONNECTION POINTS TO EXISTING PAVEMENT AND FEATURES, ETC. THAT MAY NOT BE DELINEATED ON PLANS.
- 10. ANY EXISTING MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC. TO BE PROTECTED AND TO REMAIN IN SERVICE. IF FEATURES EXIST, EXTEND OR LOWER TO FINAL SURFACE WITH LIKE KIND CAP WITH STANDARD CAST ACCESS LID WITH SAME MARKINGS. IN LANDSCAPED AREAS PROVIDE A CONCRETE COLLAR (18"x18"x6" THICK) AT ALL EXISTING AND PROPOSED MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC.
- 11. OWNER TO APPROVE ALL PRIVATE CONCRETE FINISHING, JOINT PATTERNS AND COLORING REQUIREMENTS PRIOR TO CONSTRUCTION. SUBMIT JOINT LAYOUT PLAN TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
- 12. PIPE LENGTHS AND HORIZONTAL CONTROL POINTS SHOWN ARE FROM CENTER OF STRUCTURES, END OF FLARED END SECTIONS, ETC. SEE STRUCTURE DETAILS FOR EXACT HORIZONTAL CONTROL LOCATION. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING ACTUAL PIPE LENGTHS TO ACCOUNT FOR STRUCTURES AND LENGTH OF FLARED END SECTIONS.
- 13. ALL SURPLUS MATERIALS, TOOLS, AND TEMPORARY STRUCTURES, FURNISHED BY THE CONTRACTOR, SHALL BE REMOVED FROM THE PROJECT SITE BY THE CONTRACTOR ALL DERRIS AND RUBRISH CAUSED BY THE OPERATIONS OF THE CONTRACTOR SHALL BE REMOVED. AND THE AREA OCCUPIED DURING CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ITS ORIGINAL CONDITION, WITHIN 48 HOURS OF PROJECT COMPLETION, UNLESS OTHERWISE DIRECTED BY THE MUNICIPALITY OR OWNER'S REPRESENTATIVE.
- 14. THE CONTRACTOR IS REQUIRED TO PROVIDE AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE LOCAL JURISDICTION, THE STATE OF COLORADO, URBAN DRAINAGE AND FLOOD CONTROL DISTRICT "URBAN STORM DRAINAGE CRITERIA MANUAL VOLUME 3", THE M-STANDARD PLANS OF THE COLORADO DEPARTMENT OF TRANSPORTATION, AND THE APPROVED EROSION CONTROL PLAN. JURISDICTIONAL AUTHORITY MAY REQUIRE THE CONTRACTOR TO PROVIDE ADDITIONAL EROSION CONTROL MEASURES AT THE CONTRACTOR'S EXPENSE DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE PLANS DO NOT FUNCTION AS INTENDED. THE CONTRACTOR IS RESPONSIBLE FOR PROHIBITING SILT AND DEBRIS LADEN RUNOFF FROM LEAVING THE SITE, AND FOR KEEPING ALL PUBLIC AREAS FREE OF MUD AND DEBRIS. THE CONTRACTOR IS RESPONSIBLE FOR RE-ESTABLISHING FINAL GRADES AND FOR REMOVING ACCUMULATED SEDIMENTATION FROM ALL AREAS INCLUDING SWALES AND DETENTION/WATER QUALITY AREAS. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AND REPAIR AREAS AS REQUIRED AFTER VEGETATION IS ESTABLISHED AND ACCEPTED BY OWNER AND MUNICIPALITY.
- 15. ADA COMPLIANCE: THE CROSS-SLOPE OF ALL WALKS MUST BE LESS THAN 1:48 (2.0%) PERPENDICULAR TO DIRECTION OF TRAVEL. RUNNING SLOPE OF ACCESSIBLE WALKS MUST BE NOT STEEPER THAN 1:20 (5.0%) IN DIRECTION OF TRAVEL. MAXIMUM GRADE OF ACCESSIBLE CURB RAMPS AND RAMPS IS 1:12 (8.3%). CURB RAMPS SHALL PROVIDE A LANDING AT THE TOP AND RAMP RUNS PROVIDE LANDINGS AT THE BOTTOM AND TOP OF EACH RAMP RUN AT A SLOPE NOT TO EXCEED 1:48. RAMPS RUNS EXCEEDING SIX INCHES SHALL INCLUDE HANDRAILS. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED 1:48 IN ALL DIRECTIONS. CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO PLACEMENT OF FLATWORK OF SITE CONDITIONS OR DISCREPANCIES WHICH PREVENT TYPICAL REQUIRED GRADES FROM BEING ACHIEVED. ALL RAMPS, STAIRS, EDGE PROTECTION, AND RAILINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT ADA STANDARDS. ACCESSIBLE CURB RAMPS SHALL CONFORM TO THE CDOT M-STANDARDS (SEE DETAIL M-608-1, ETC). ACCESSIBLE FEATURE WITHIN THE PUBLIC RIGHTS-OF-WAY SHALL BE CONSTRUCTED TO CONFORM TO THE LOCAL AUTHORITY HAVING JURISDICTION REQUIREMENTS.
- 16. PROTECT ALL TREES AND VEGETATION. PLACE CONSTRUCTION FENCING AT DRIP LINE OF TREES AND PLANTS NEAR THE WORK ZONE. DEEP WATER TREES WEEKLY. HAND EXCAVATION REQUIRED AT ROOT ZONES WHERE PROPOSED PAVING OR UTILITY WORK IS WITHIN DRIPLINE OF TREES.
- 17. LOCATIONS OF CLEANOUTS, LIGHTS, SIGNAGE, JUNCTION BOXES, AND OTHER SIGNIFICANT SITE FEATURES TO BE STAKED FOR ENGINEER AND OR OWNER APPROVAL PRIOR TO WORK. CLEANOUTS, JUNCTION BOXES, AND ADJACENT GRADES TO BE RAISED ONE-HALF INCH AT ASPHALT/CONCRETE (OR 1" AT LANDSCAPING) TO PROVIDE POSITIVE DRAINAGE AWAY FROM FEATURES.
- 18. BENCHMARK INFORMATION: TOPOGRAPHIC INFORMATION WAS PROVIDED BY THE CITY OF GRAND JUNCTION. COORDINATE AND VERIFY ALL VERTICAL AND HORIZONTAL DATA SHOWN IN SURVEY AND REPORT ANY IRREGULARITIES OR DISCREPANCIES TO ENGINEER PRIOR TO CONSTRUCTION.
- HORIZONTAL CONTROL INFORMATION: HORIZONTAL CONTROL COORDINATES AND ARE PROVIDED BY THE FOLLOWING POINTS AS SHOWN ON THE PLANS: CP1 FOUND 60D NAIL N24897.56 E90780.32 ELEV 4797.24
 - CP2 FOUND 60D NAIL N25148.27 E90849.86 ELEV 4812.52 CP3 FOUND PK NAIL N26567.86 E90769.14 ELEV 4651.50 CP4 FOUND PK NAIL N27128.73 E90748.24 ELEV 4633.80 CP5 FOUND PK NAIL N27624.59 E90767.01 ELEV 4628.08 CP6 FOUND PK NAIL N28151.64 E90743.41 ELEV 4627.18 CP7 FOUND PK NAIL N28603.46 E90740.75 ELEV 4625.55 CP8 FOUND PK GMC N30222.63 E90777.50 ELEV 4629.30
- BASIS OF BEARINGS: ARE BASED ON THE REFERENCED SURVEY.
- 19. THE CONTRACTOR SHALL FURNISH THE ENGINEER OF RECORD A COMPLETE SET OF CONSTRUCTION RECORD DRAWINGS ("AS-BUILTS"), FOR THE CONSTRUCTED IMPROVEMENTS. THE PLANS SHALL SHOW SUFFICIENT DIMENSION TIES TO PERMANENT SURFACE FEATURES FOR ALL BURIED FACILITIES TO ALLOW FOR FUTURE LOCATING. THE PLANS SHALL SHOW FINAL PAVEMENT, FLOW LINE ELEVATIONS, CONTOURS AT POND/DRAINAGE FEATURES (AS SURVEYED AND CERTIFIED BY A COLORADO P.L.S.), MANHOLE, PIPE, AND INLET LOCATIONS, INVERTS, GRATE ELEVATIONS, SIZES OF ALL UTILITIES, AND ANY VARIATIONS FROM THE APPROVED PLAN. ENGINEER WILL PRODUCE FINAL RECORD DRAWINGS.



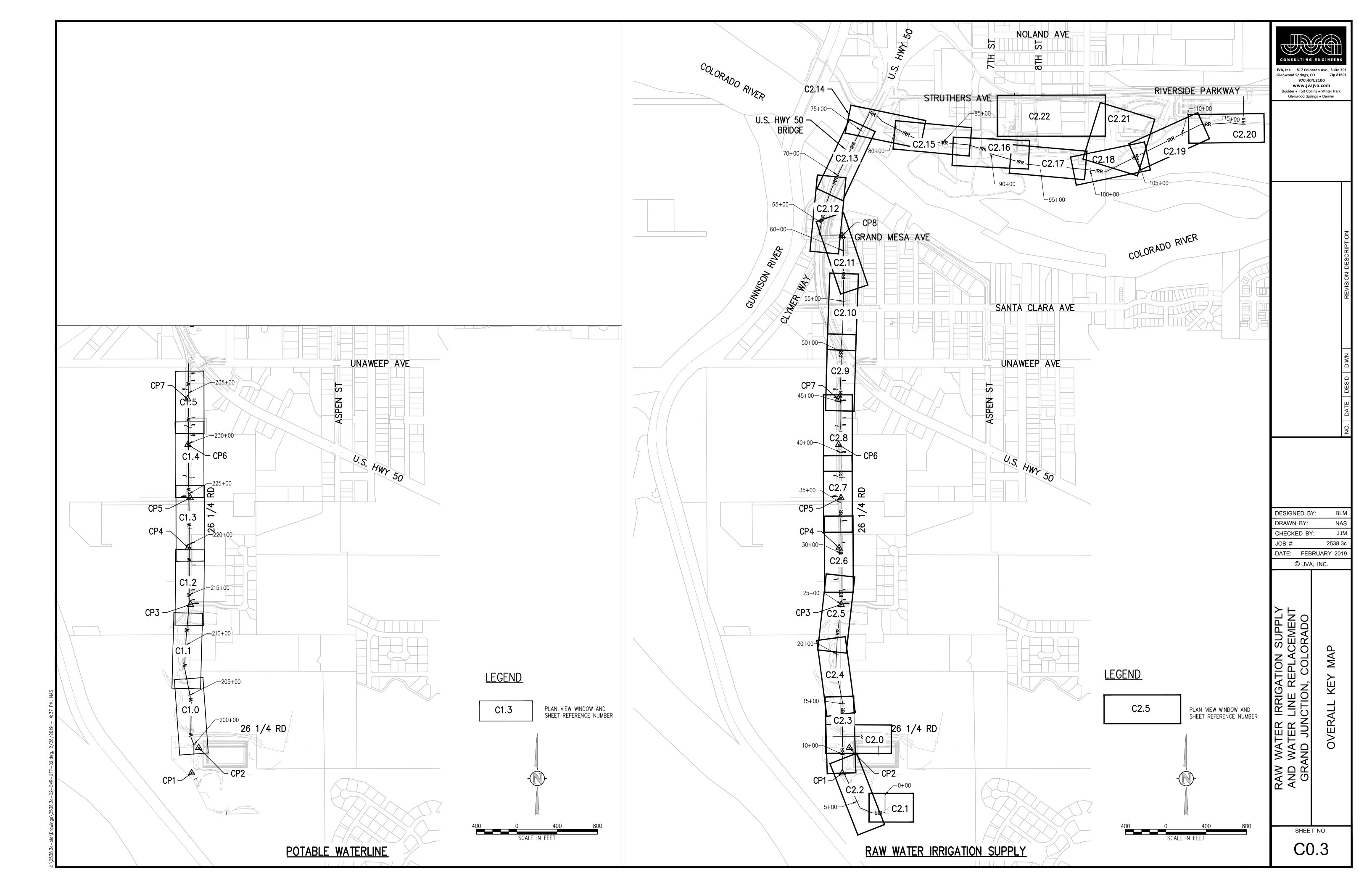
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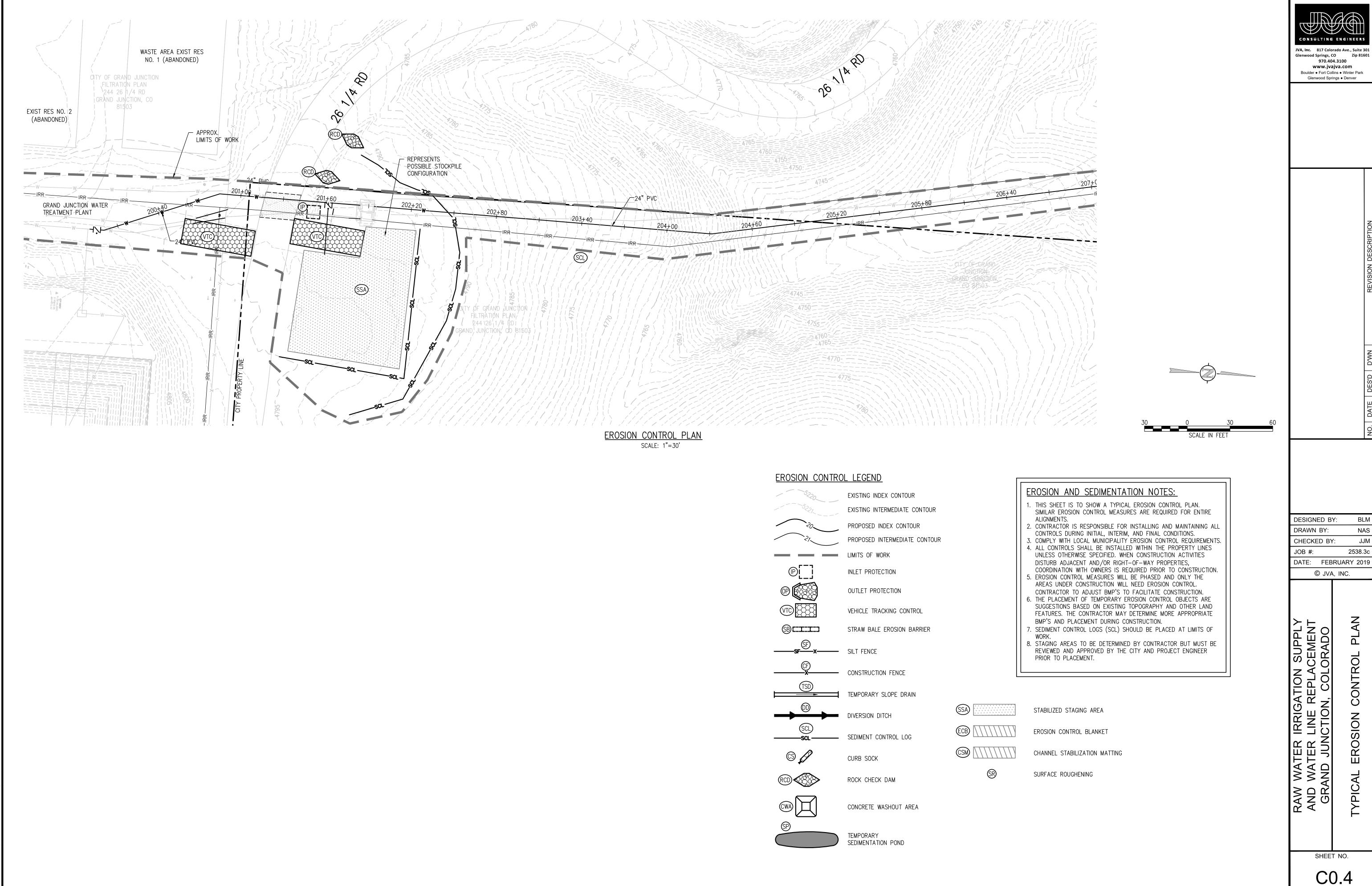
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TRENCH, TYP.

ANCHOR TRENCH, TYP

TYPE OF ECB AS INDICATED IN PLAN VIEW. INSTALL IN ALL DISTURBED AREAS OF STREAMS AND DRAINAGE CHANNELS TO DEPTH

PARALLEL TO FLOW DIRECTION (I.E. LONG DIMENSIONS OF BLANKET

PARALLEL TO FLOWLINES) STAKING PATTERN SHALL MATCH ECB

ECB-1. PIPE OUTLET TO DRAINAGEWAY

STAKING PATTERN PER MANUFACTURER SPEC. OR PATTERN

BASED ON ECB AND/OR CHANNEL TYPE (SEE STAKING

ECB-2. SMALL DITCH OR DRAINAGEWAY

Concrete Washout Area (CWA)

AND/OR CHANNEL TYPE.

JOINT ANCHOR

JOINT ANCHOR TOP OF

TYPE OF ECB, INDICATED IN PLAN VIEW

PERIMETER ANCHOR TRENCH, TYP.

CHANNEL BANK

- SINGLE EDGE

OF TWO ADJACENT

- MIDDLE OF ROLL

STAKE, TYP.

PERIMETER ANCHOR TRENCH

JOINT ANCHOR TRENCH

INTERMEDIATE ANCHOR TRENCH

OVERLAPPING JOINT

WOOD STAKE DETAIL

TYPICALLY AT TOP O

PERIMETER

TRENCH OF

STAGGER OVERLAPS

PERIMETER ANCHOR

ECB-3. OUTSIDE OF DRAINAGEWAY

STAKING PATTERNS BY ECB TYPE

STAKING PATTERNS BY SLOPE OR CHANNEL TYPE

- OVERLAPPING JOINT

STAKING PATTERN PER

MANUFACTURER SPEC. OR PATTERN

TYPE (SEE STAKING PATTERN DETAIL)

BASED ON ECB AND/OR SLOPE

COCONUT OR EXCELSIOR

2:1 AND STEEPER

EC-6



1. 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

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

REMOVED BY THE LOCAL JURISDICTION. 5. 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, RESEEDED AND MULCHED AND THE ECB REINSTALLED.

4. ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE

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)

EROSION CONTROL BLANKET MAINTENANCE NOTES

3. 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 MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE 4. PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL 5. 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. 6. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs. 7. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs 8. MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1. 9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBS 10. DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF

EROSION CONTROL BLANKET INSTALLATION NOTES

-TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, OR EXCELSIOR). -AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB.

SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.

2. 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPS, ALTHOUGH

TYPE	COCONUT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING**	
STRAW*	-	100%	==	DOUBLE/ NATURAL	
STRAW- COCONUT	30% MIN	70% MAX	=	DOUBLE/ NATURAL	
COCONUT	100%	<u> </u>			
EXCELSIOR _		-	100%	DOUBLE/ NATURAL	

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Urban Drainage and Flood Control District

RECP-6

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MM-1

Urban Drainage and Flood Control District

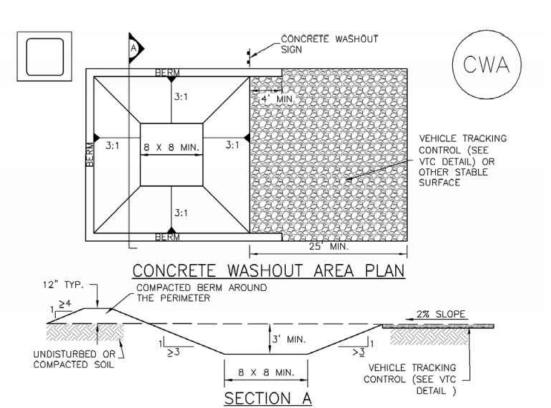
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LOW FLOW CHANNEL

MM-1

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Concrete Washout Area (CWA)



CWA-1. CONCRETE WASHOUT AREA CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:

-CWA INSTALLATION LOCATION.

2. 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 (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.

3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE. 4. 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

5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'. 6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.

7. 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.

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

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

1. 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

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON

4. 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'. 5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS

N THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY. 6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.

7. 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. Urban Storm Drainage Criteria Manual Volume 3

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November 2010

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JOB #:	25	38
DATE:	FEBRUARY	20

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4" MAX FOR TRENCHED SCLs

10' MAX FOR COMPOST SCL5

AT PERIMETER OF CONSTRUCTION SITE

___ CF ___ CF ___ CF ___

5' MIN.

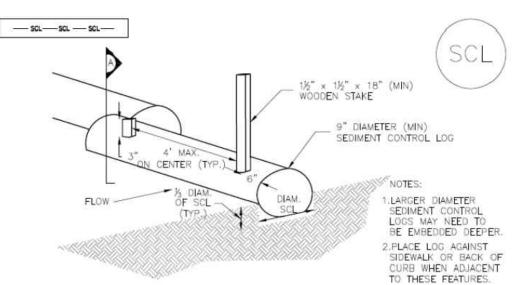
STUDDED STEEL

- PLASTIC CAP, TYP.

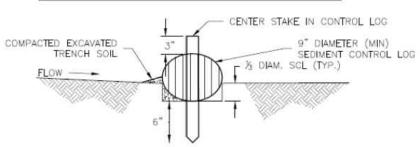
CONSTRUCTION FENCE

OR APPROVED EQUA

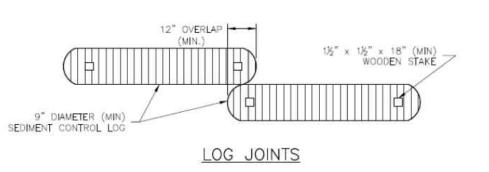
STUDDED STEEL



TRENCHED SEDIMENT CONTROL LOG



TRENCHED SEDIMENT CONTROL LOG



SCL-1. TRENCHED SEDIMENT CONTROL LOG

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

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

SCL-3. SEDIMENT CONTROL LOGS TO CONTROL

SLOPE LENGTH

SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.

2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.

Sediment Control Log (SCL)

3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.

4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.

5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/2 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING. COMPOST LOGS THAT ARE 8 LB/FT DO NOT NEED TO BE TRENCHED.

6. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL OR FILTER MATERIAL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER OR BLOWN IN PLACE.

7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND, 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED. COMPOST LOGS SHOULD BE STAKED 10' ON CENTER.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. 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.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION, INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON

4. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.

5. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION.COMPOST FROM COMPOST LOGS MAY BE LEFT IN PLACE AS LONG AS BAGS ARE REMOVED AND THE AREA SEEDED. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

Urban Drainage and Flood Control District

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50 FOOT (MIN.)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN

SM-4

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CF-1. PLASTIC MESH CONSTRUCTION FENCE

2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.

5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND

3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL

4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE.

CONSTRUCTION FENCE INSTALLATION NOTES

-LOCATION OF CONSTRUCTION FENCE.

MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.

1. SEE PLAN VIEW FOR:

November 2010

Stabilized Staging Area (SSA)

STABILIZED

CONSTRUCTION

ENTRANCE (SEE DETAILS VTC-1

SM-6

Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

SM-6

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.

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, NOT AVAILABLE IN AUTOCAD)

Vehicle Tracking Control (VTC)

SIDEWALK OR OTHER

PAVED SURFACE

SM-4

November 2015

20 FOOT

(WIDTH CAN BE LESS IF CONST.

VEHICLES ARE PHYSICALLY CONFINED ON

BOTH SIDES)

L 9" (MIN.)

UNLESS OTHERWISE SPECIFIED

CDOT SECT. #703, AASHTO #3

NON-WOVEN GEOTEXTILE

BY LOCAL JURISDICTION, USE

COARSE AGGREGATE OR 6"

MINUS ROCK

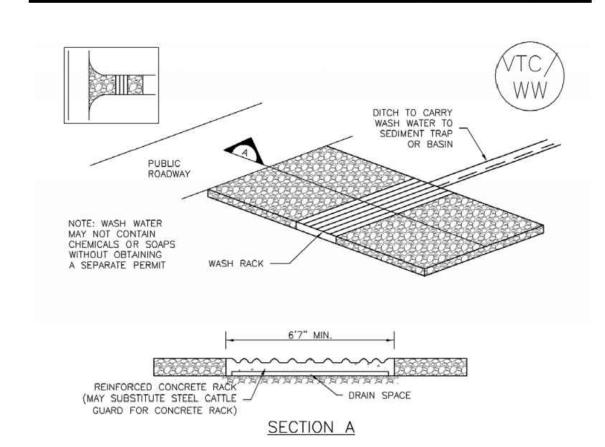
UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, USE COOT SECT. #703, AASHTO

#3 COARSE AGGREGATE

OR 6" MINUS ROCK

NON-WOVEN GEOTEXTILE FABRIC BETWEEN SOIL AND ROCK

Vehicle Tracking Control (VTC)



VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

SSA-1. STABILIZED STAGING AREA STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR

-LOCATION OF STAGING AREA(S). -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

ONSITE CONSTRUCTION

NEEDED)

CONSTRUCTION

3" MIN. THICKNESS

GRANULAR MATERIAL

FENCING AS NEEDED

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE, OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.

— SF/CF —— SF/CF →

4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK. 6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT

FENCE AND CONSTRUCTION FENCING. STABILIZED STAGING AREA MAINTENANCE NOTES

1. 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.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

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Urban Storm Drainage Criteria Manual Volume 3

SSA-4

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INSTALL ROCK FLUSH WITH OR BELOW TOP OF PAVEMENT

COMPACTED SUBGRADE

Urban Drainage and Flood Control District

SECTION A

VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

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DATE: FEBRUARY 2019

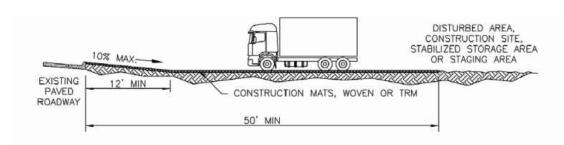
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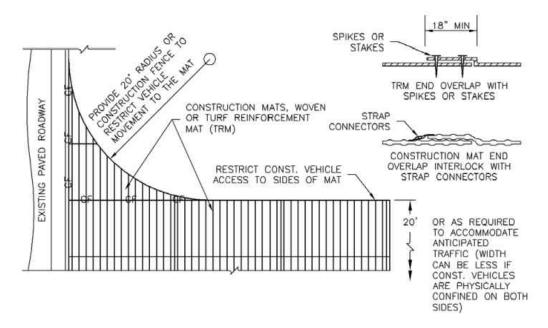
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VTC-3. VEHICLE TRACKING CONTROL W/ CONSTRUCTION MAT OR TURF REINFORCEMENT MAT (TRM)

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CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

1. SEE PLAN VIEW FOR

DISTURBING ACTIVITIES.

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

-LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
-TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).

2. 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.

3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS. 4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND

5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.

6. 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

1. 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.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

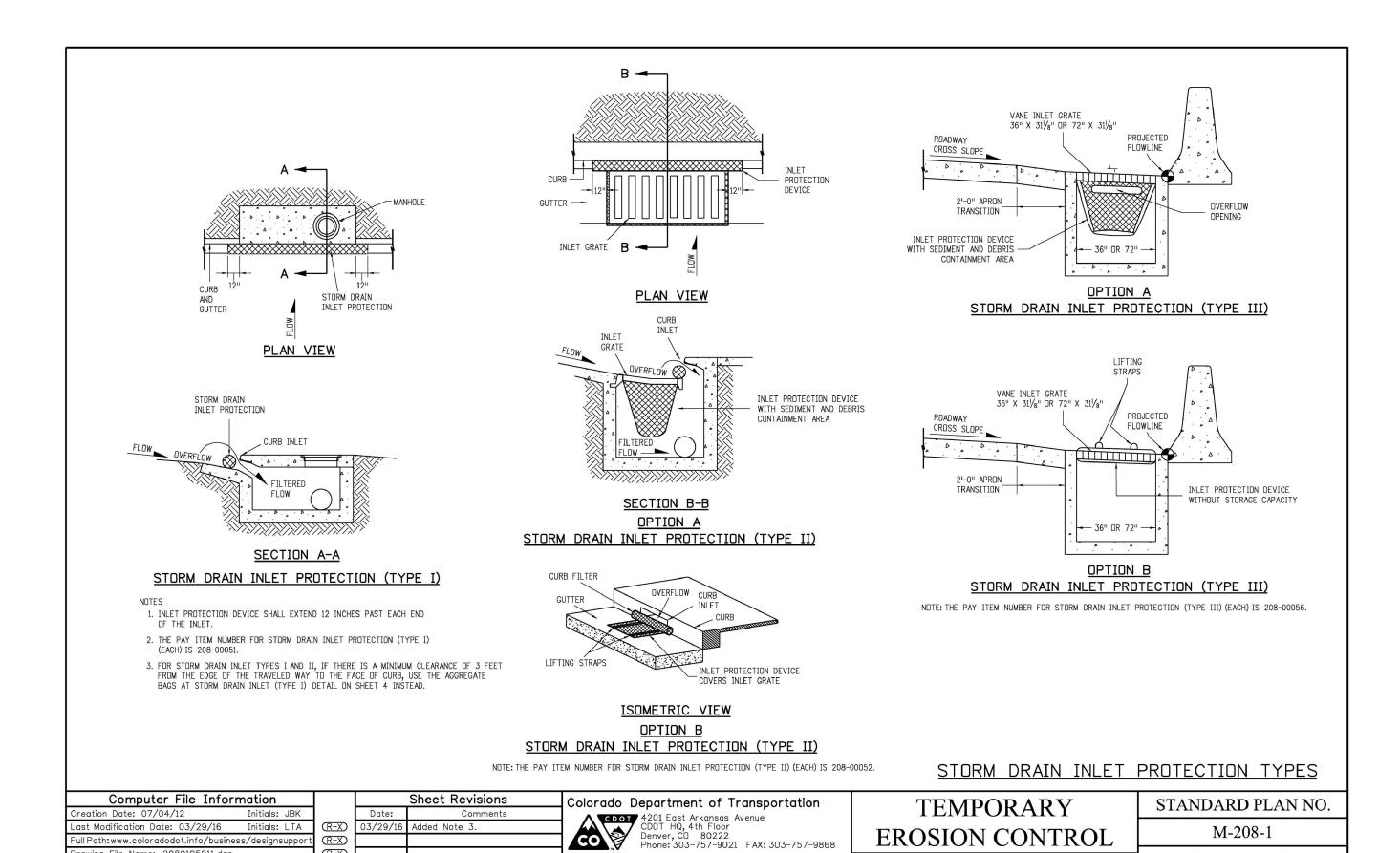
4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH. 5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED

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 November 2010 Urban Storm Drainage Criteria Manual Volume 3

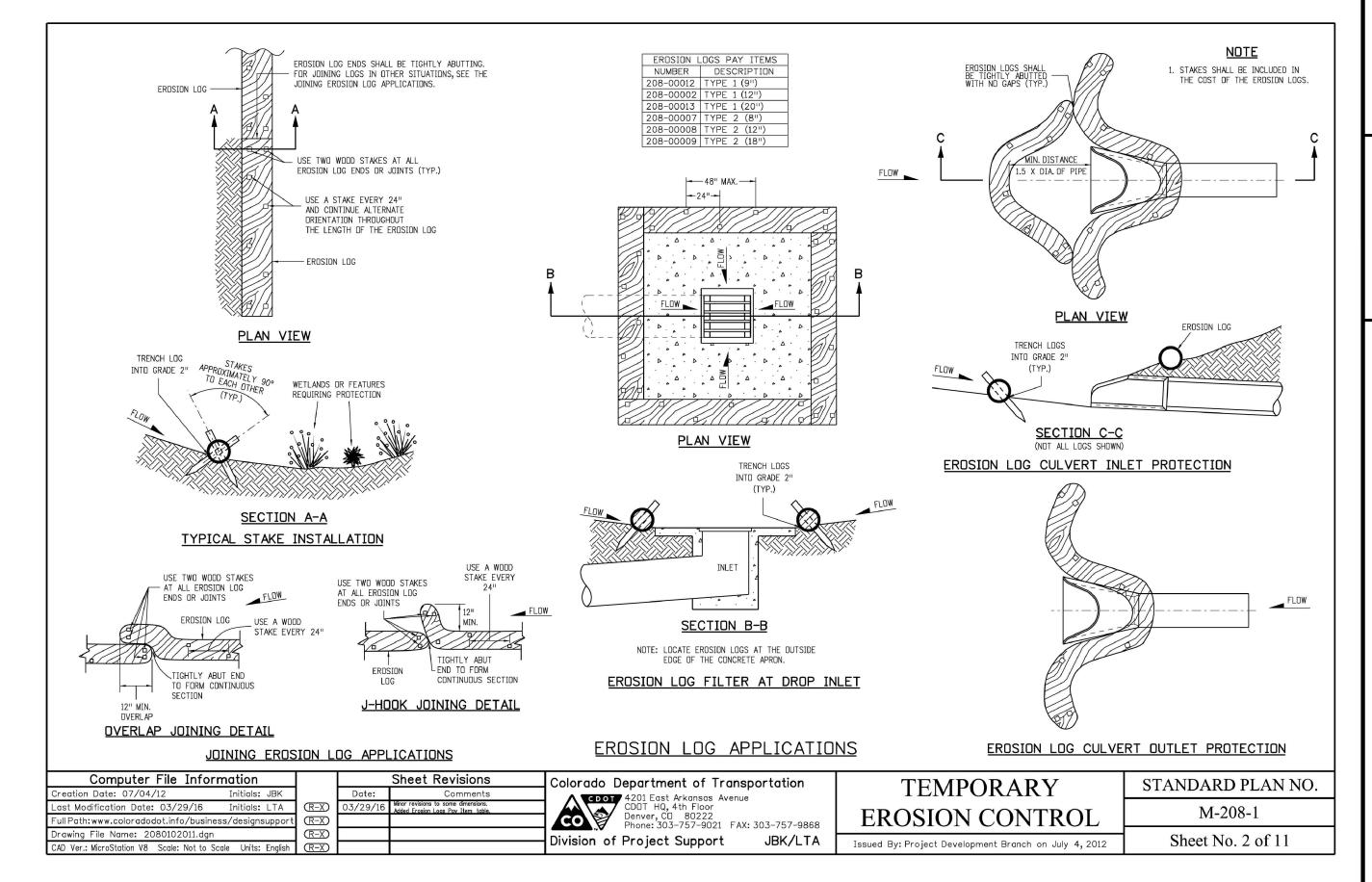
Sheet No. 5 of 11



Division of Project Support

JBK/LTA

Issued By: Project Development Branch on July 4, 2012



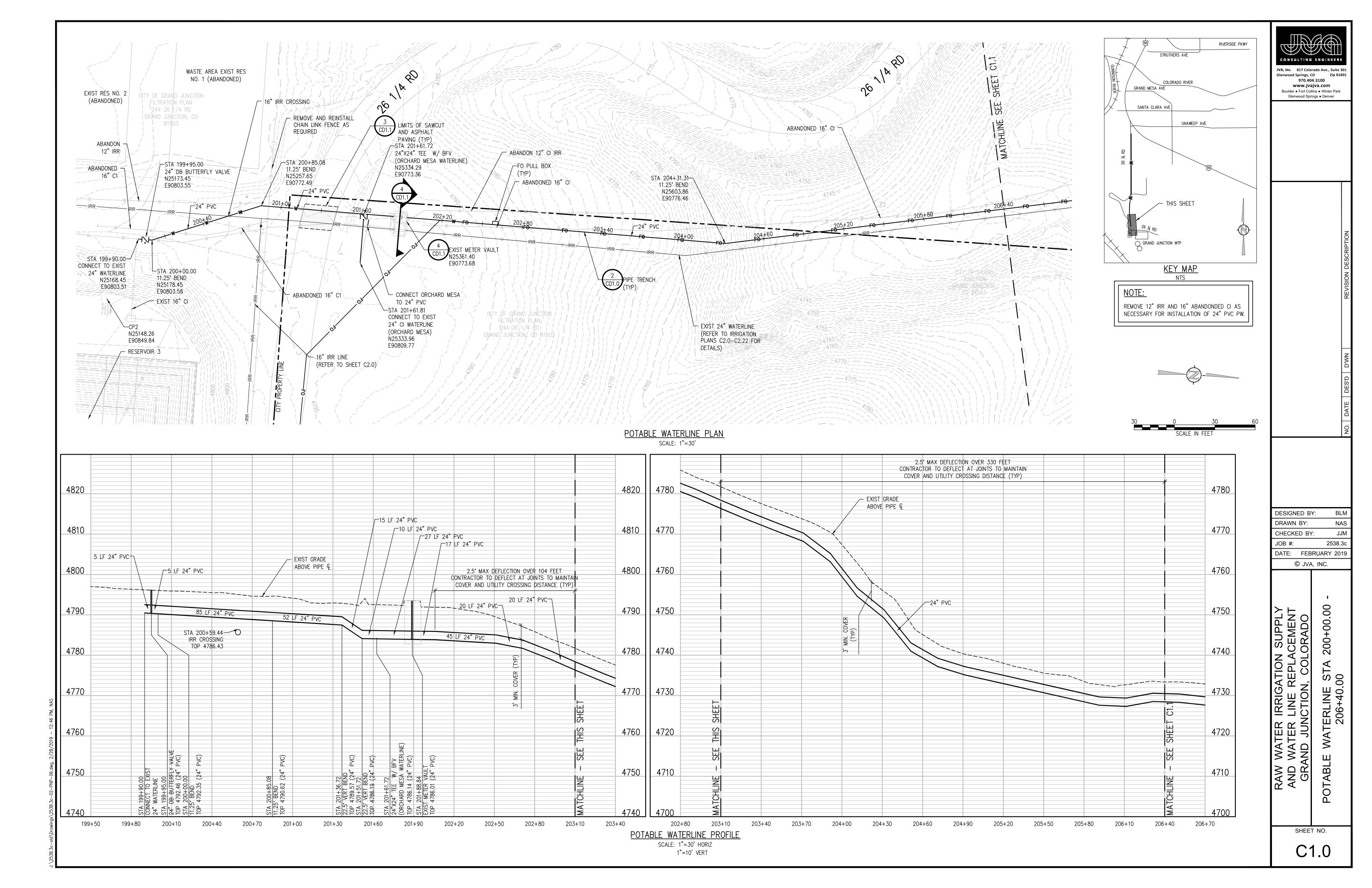


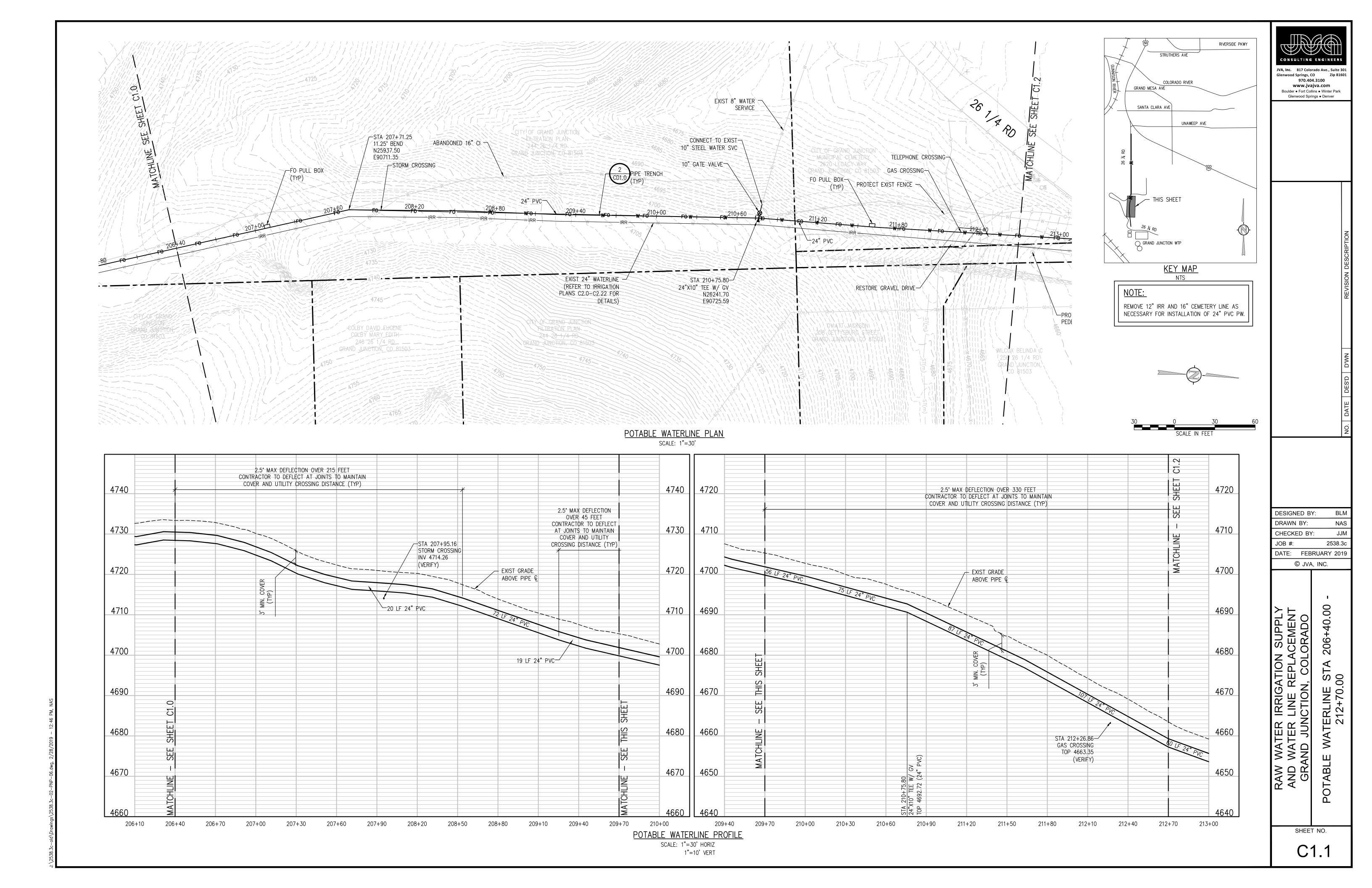
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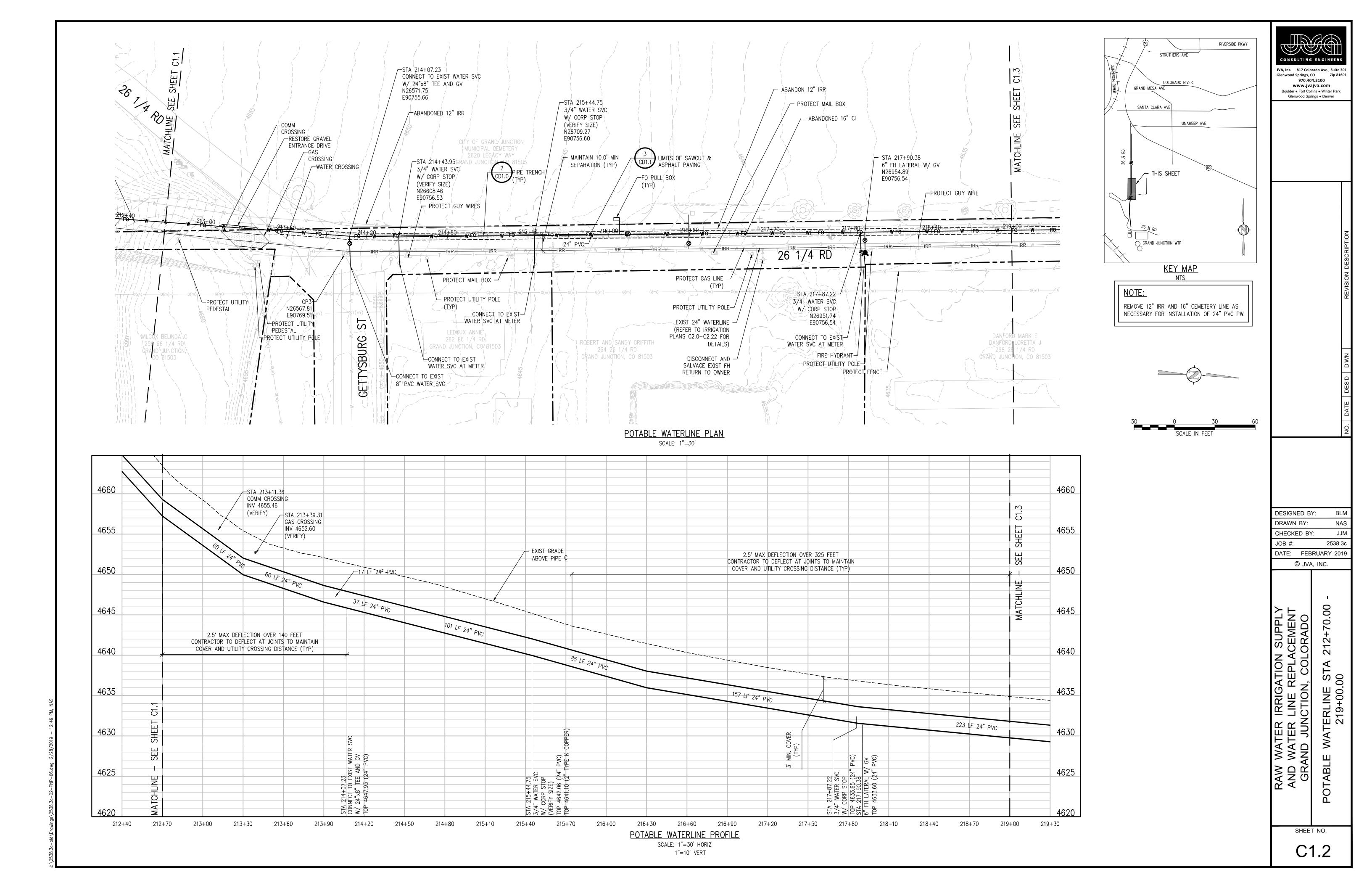
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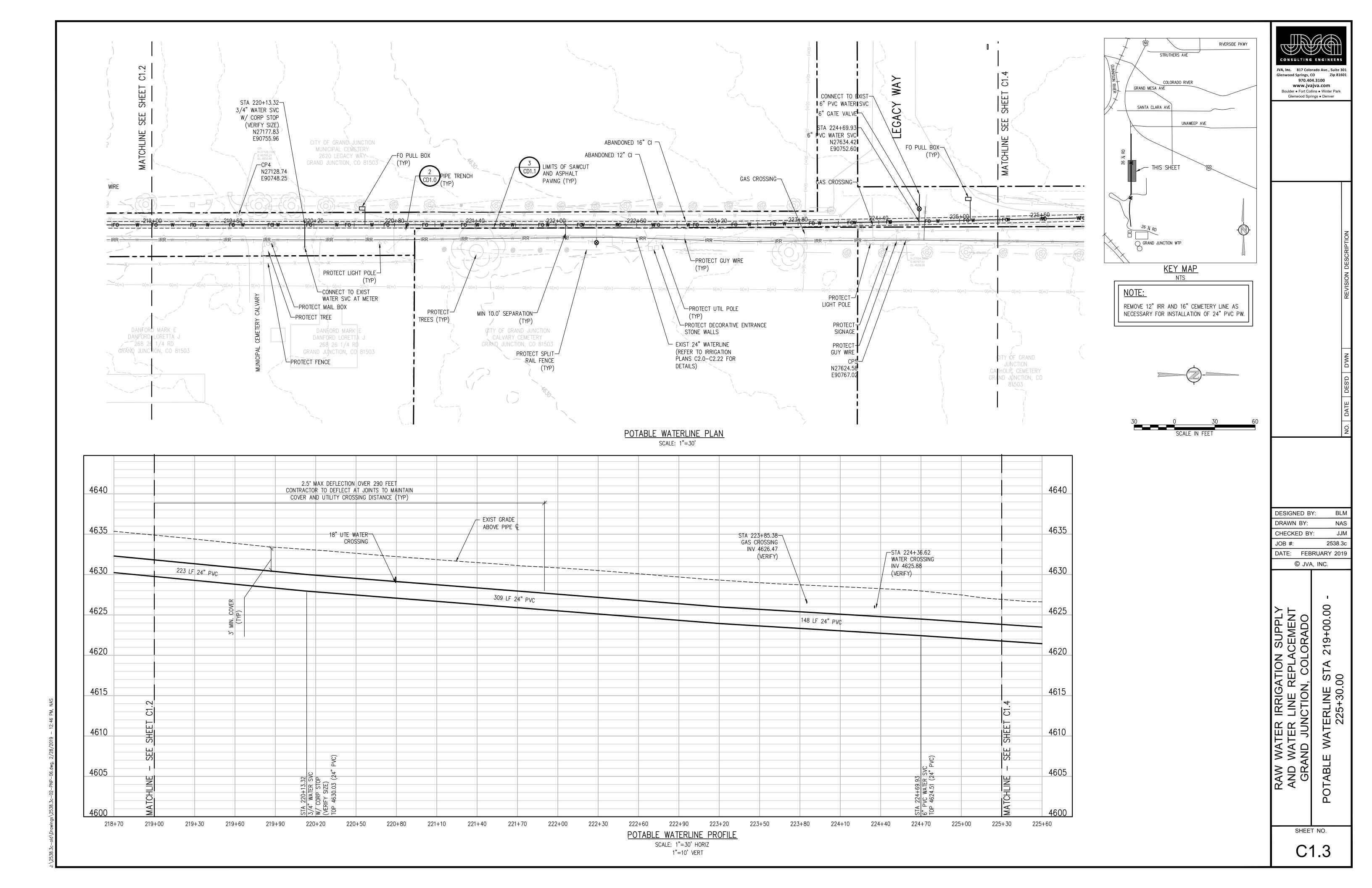
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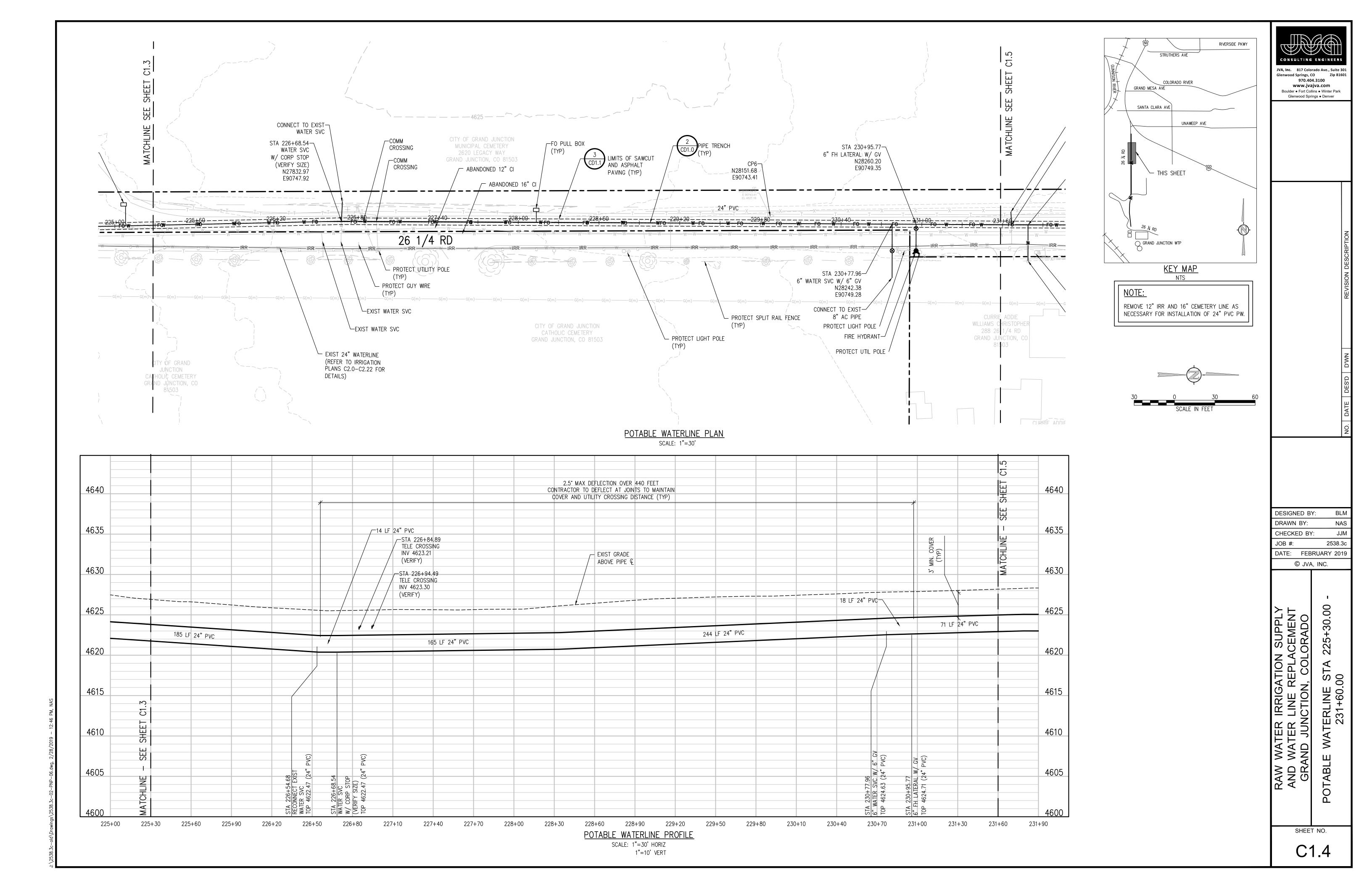
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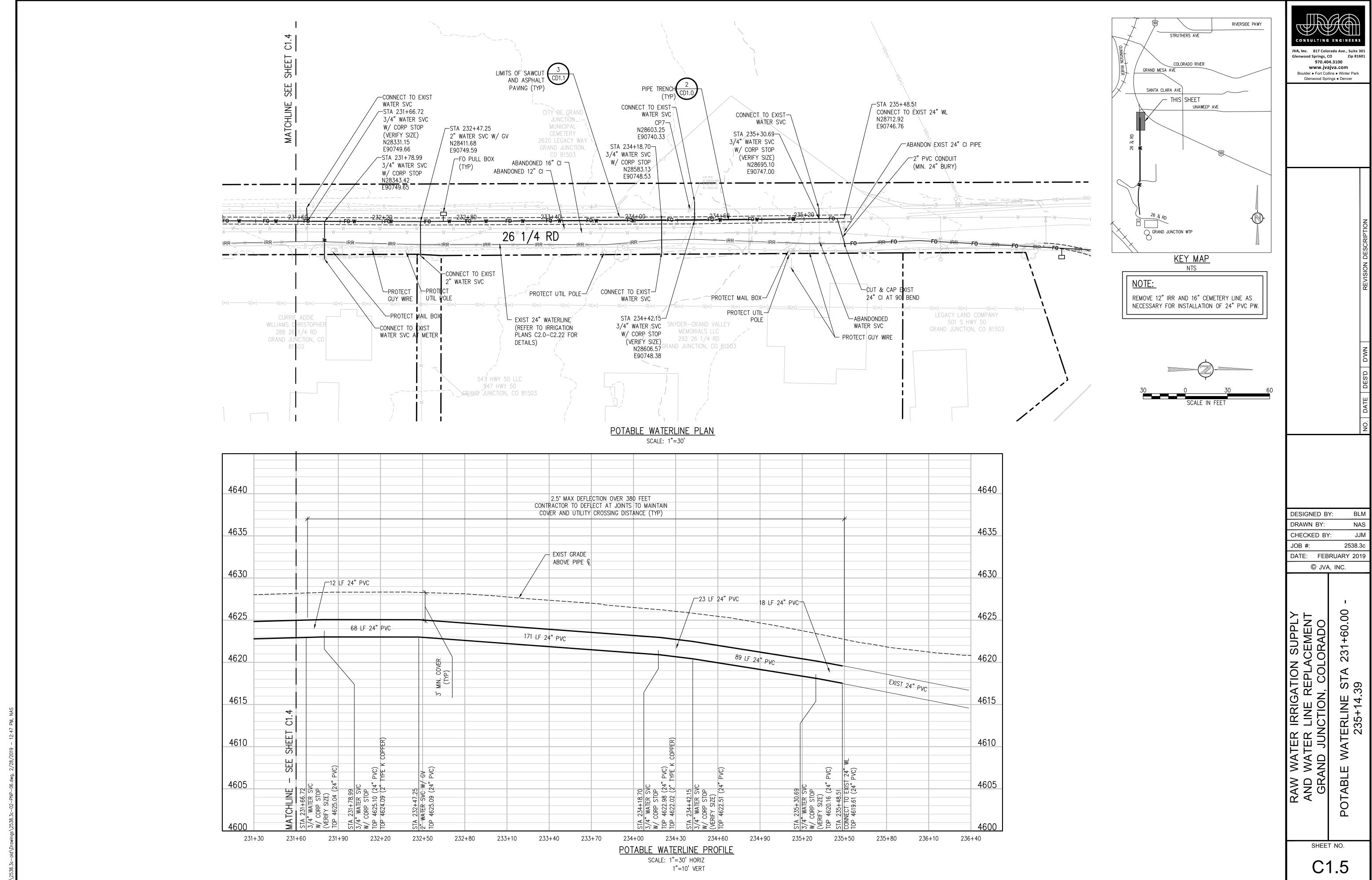


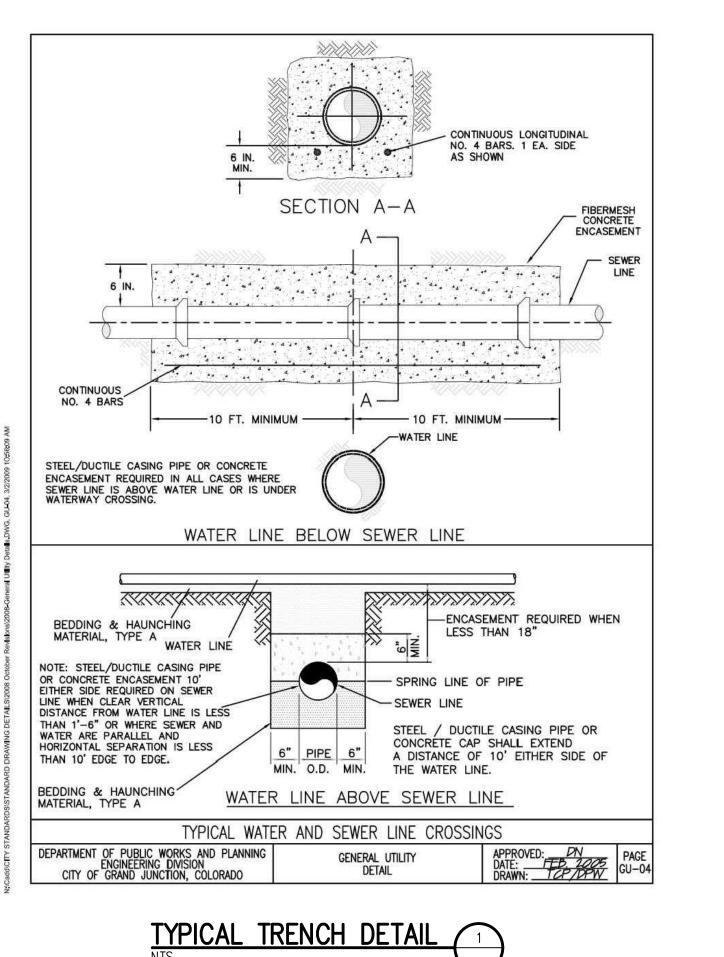


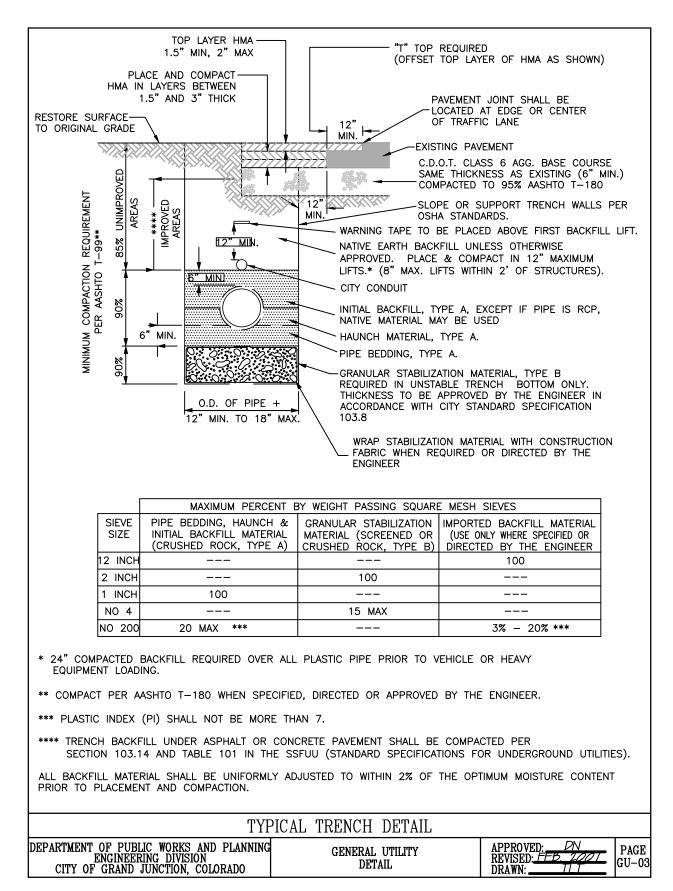


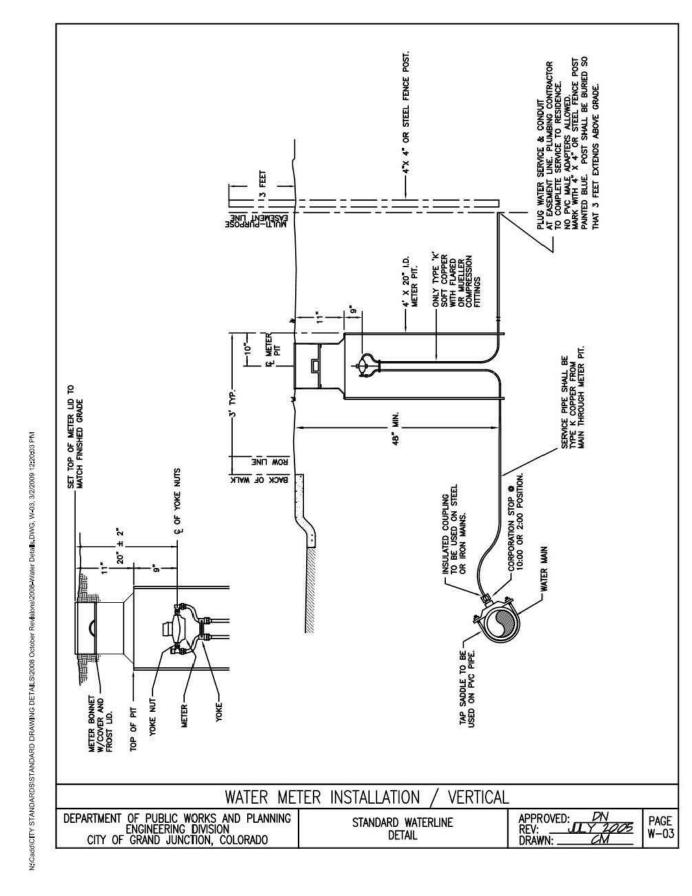


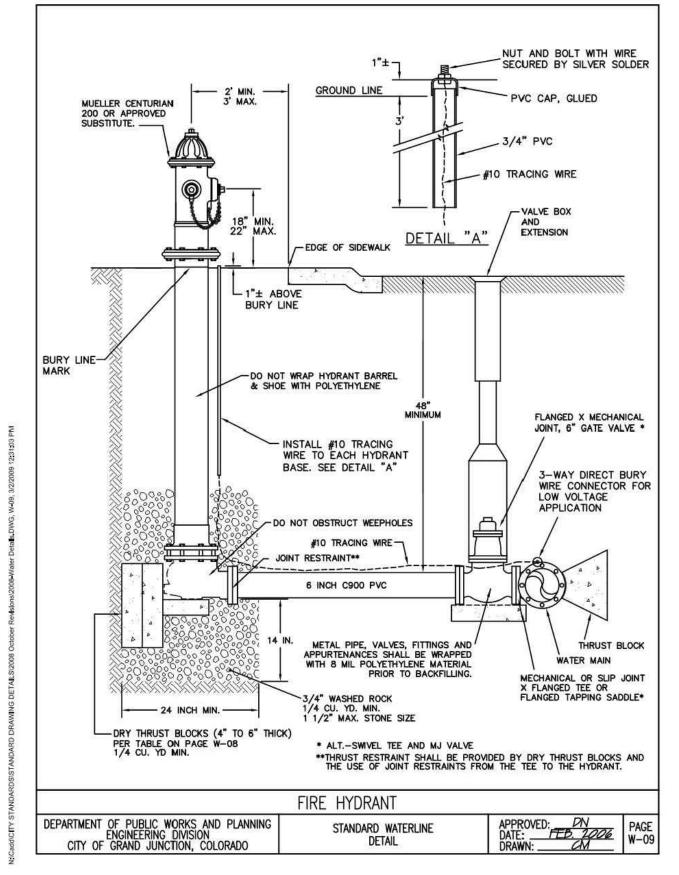




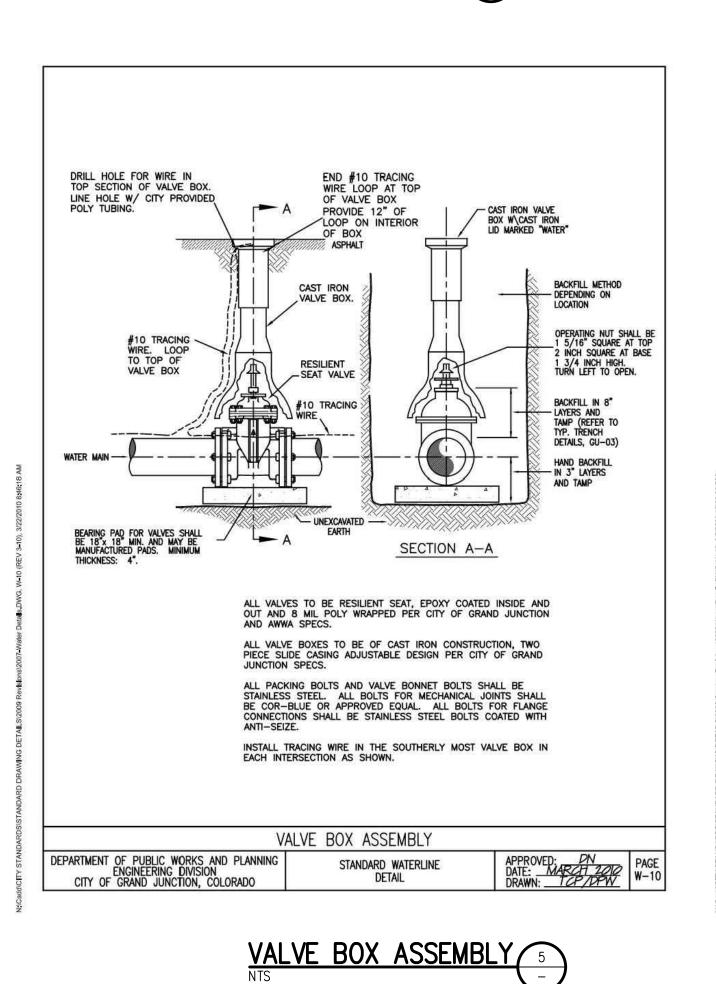


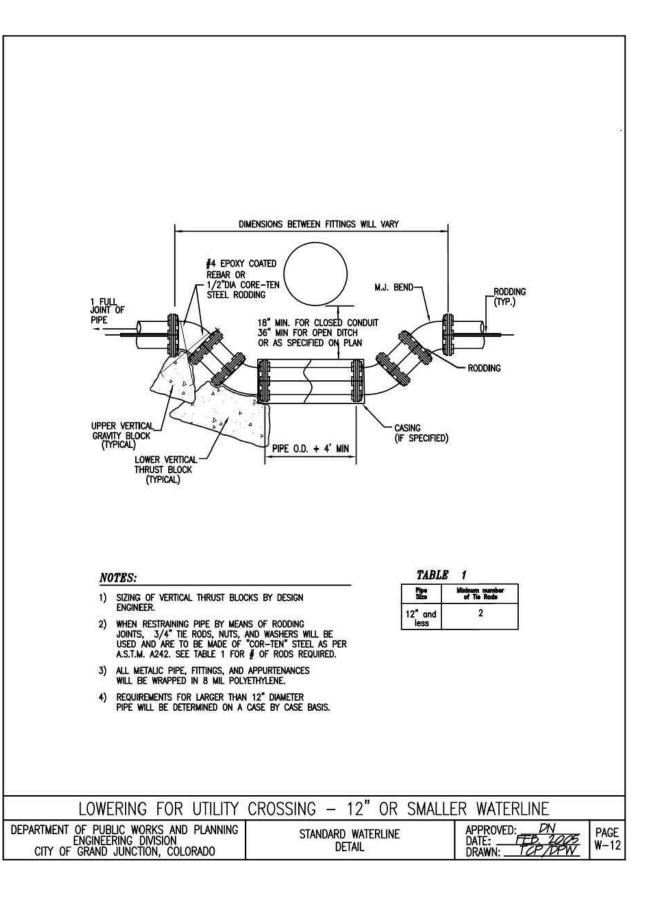




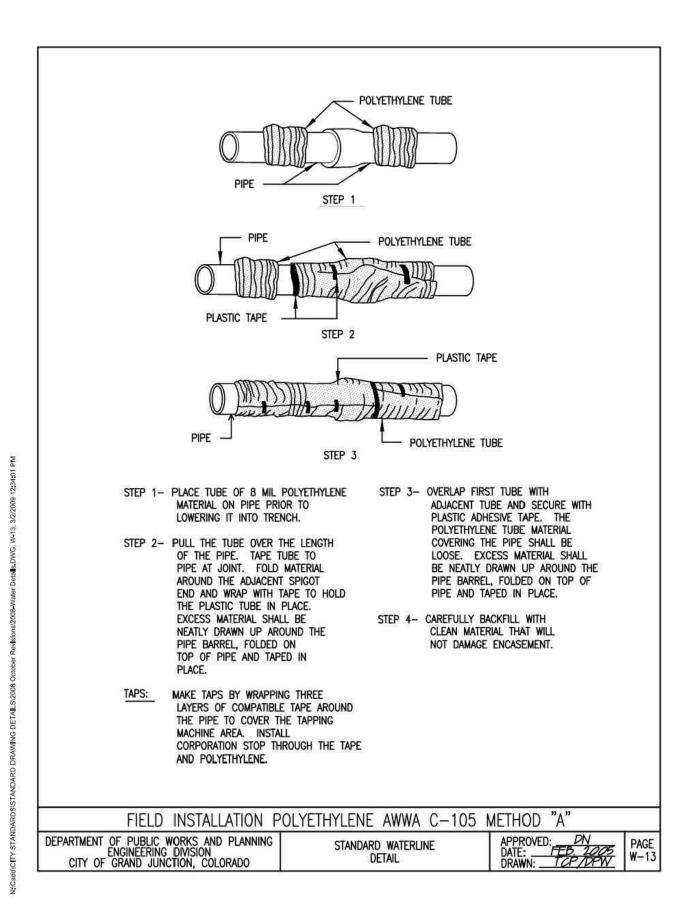




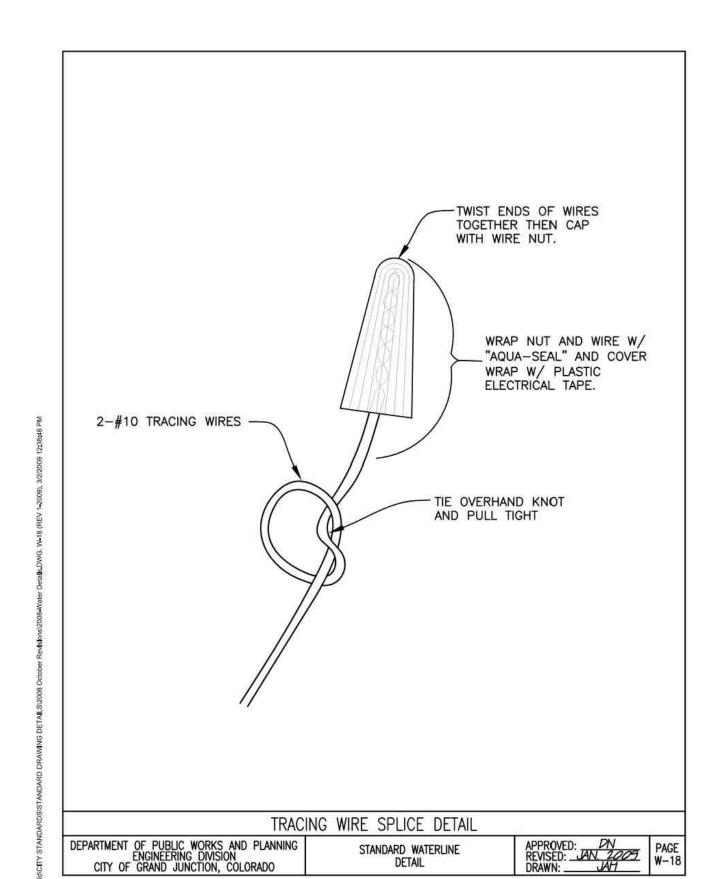


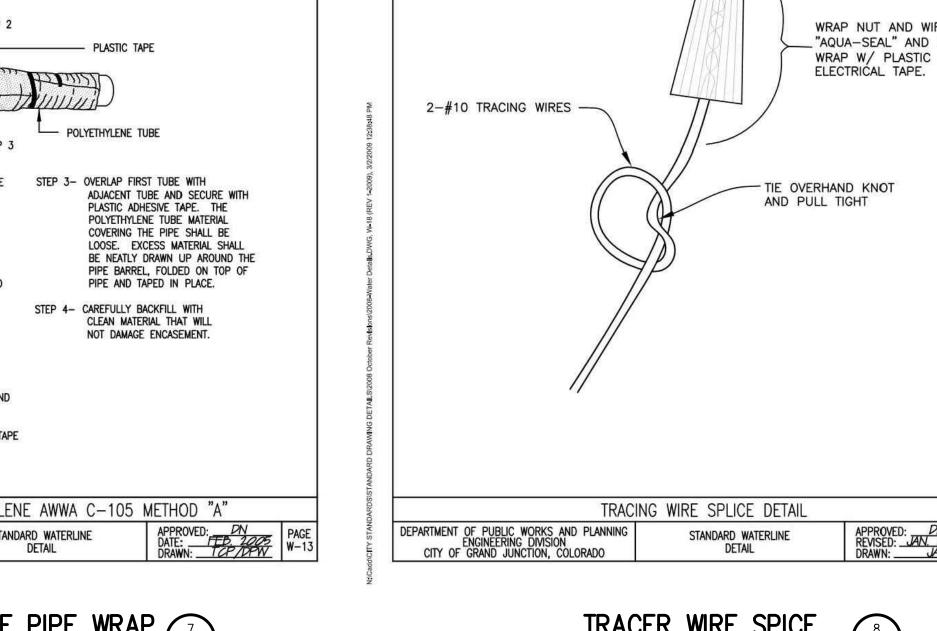


DUAL TRENCH DETAIL (2)



WATER METER INSTALLATION / VERTICAL 3





WATERLINE LOWERING
NTS

POLYETHYLENE PIPE WRAP

TRACER WIRE SPICE

SHEET NO.

DESIGNED BY:

CHECKED BY:

DATE: FEBRUARY 2019

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JOB #:

2538.3c

CONSULTING ENGINEERS

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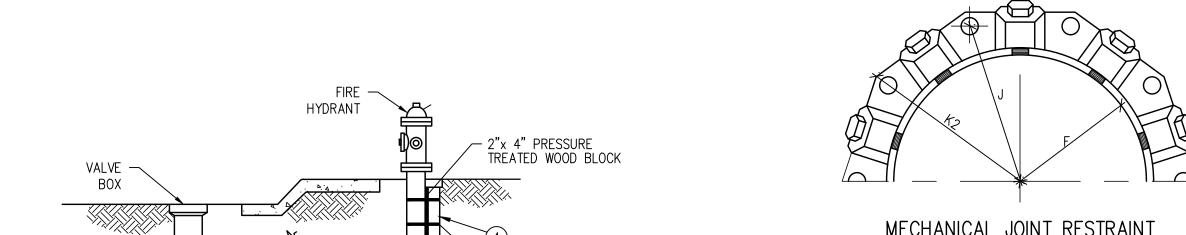
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- TAPE TERMINATION

BOX TO HYDRANT

BARREL

- #12 CU WIRE

PVC WATER MAIN -

HYDRANT LINE

DIRECTED BY UTILITY OWNER.

SHALL BE OUTSIDE POLYWRAP.

TIMES W/ 2" PVC TAPE.

1. INSTALL TRACER WIRE ON ALL PIPE INSIDE POLYWRAP. TERMINATE TEST

2. TAPE WIRE ON EACH SIDE OF FITTINGS AND AT 10' MAX ON CENTERS

3. USE 12 GAUGE COPPER CONNECTOR DOSSERT NO. DPC2 OR EQUAL FOR

4. USE 18" LONG BY 2 1/2" DIA. PVC TERMINATION FITTING W/ CAST IRON

PROVIDE AMPLE TRACER WIRE AT TEST STATIONS FOR TESTING.

TRACER WIRE INSTALLATION DETAIL (1

LEADS AT EACH HYDRANT, BLOW-OFF AS SHOWN ON PLANS, AND AS

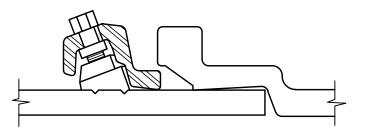
ALONG TOP OF PIPE OR LOOP WIRE AROUND EACH PIPE SECTION 2 OR 3

SINGLE SPLICE. USE 12 GAUGE COPPER CONNECTOR, BURNOY NO. YC12, 3M TYPE DBY-6 OR EQUAL FOR MULTIPLE SPLICES. SPLICES AT FITTINGS

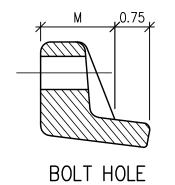
LID. CONNECT ALL WIRE(S) TO TERMINAL. (C.P. TEST SERVICES, INC. OR

EQUAL). PROVIDE AMPLE TRACER WIRE AT TEST SERVICES, INC. OR EQUAL).

MECHANICAL JOINT RESTRAINT







<u>DETAIL</u>

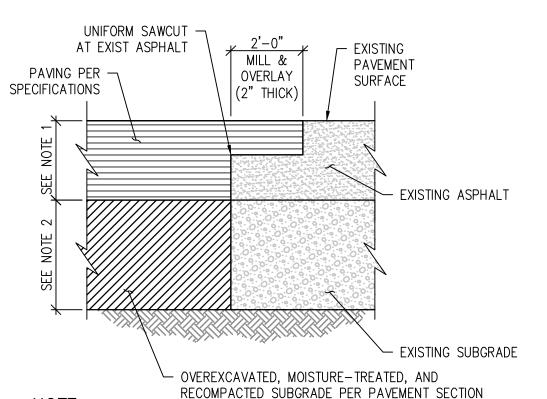
DIMENSIONS

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

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)

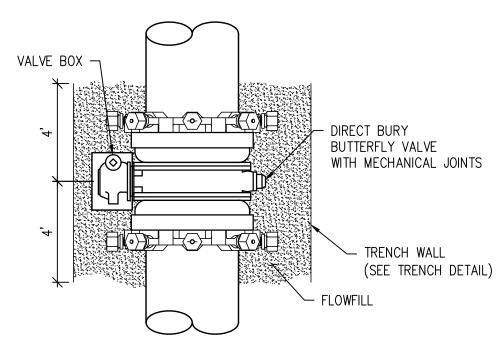


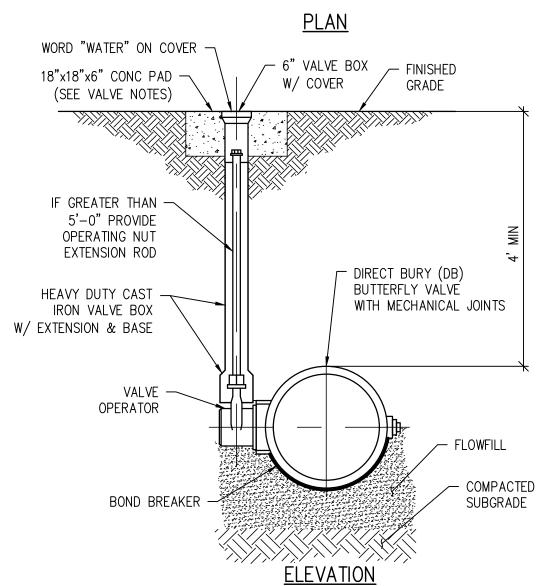
NOTE:

MATCH EXISTING DEPTH +1"

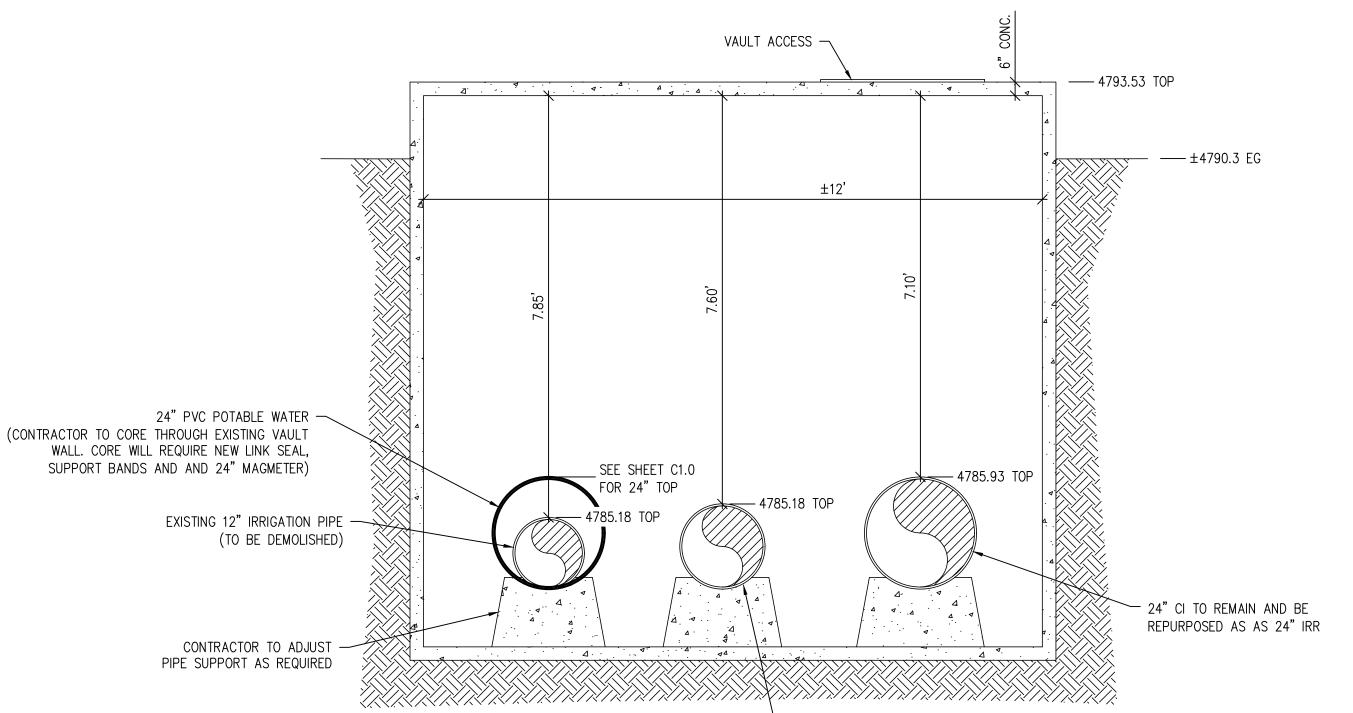
2. MATCH EXIST SUBGRADE DEPTH UNLESS OTHERWISE SPECIFIED 3. APPLY TACKIFIER AT SAWCUT AD MILL PRIOR TO PAVING.

ASPHALT "T" PATCH DETAIL





DIRECT BURY BUTTERFLY VALVE INSTALLATION DETAIL



- 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
C1.0

— 16" ABANDONED CI



CHECKED BY: 2538.3c JOB #: DATE: FEBRUARY 2019 © JVA, INC.

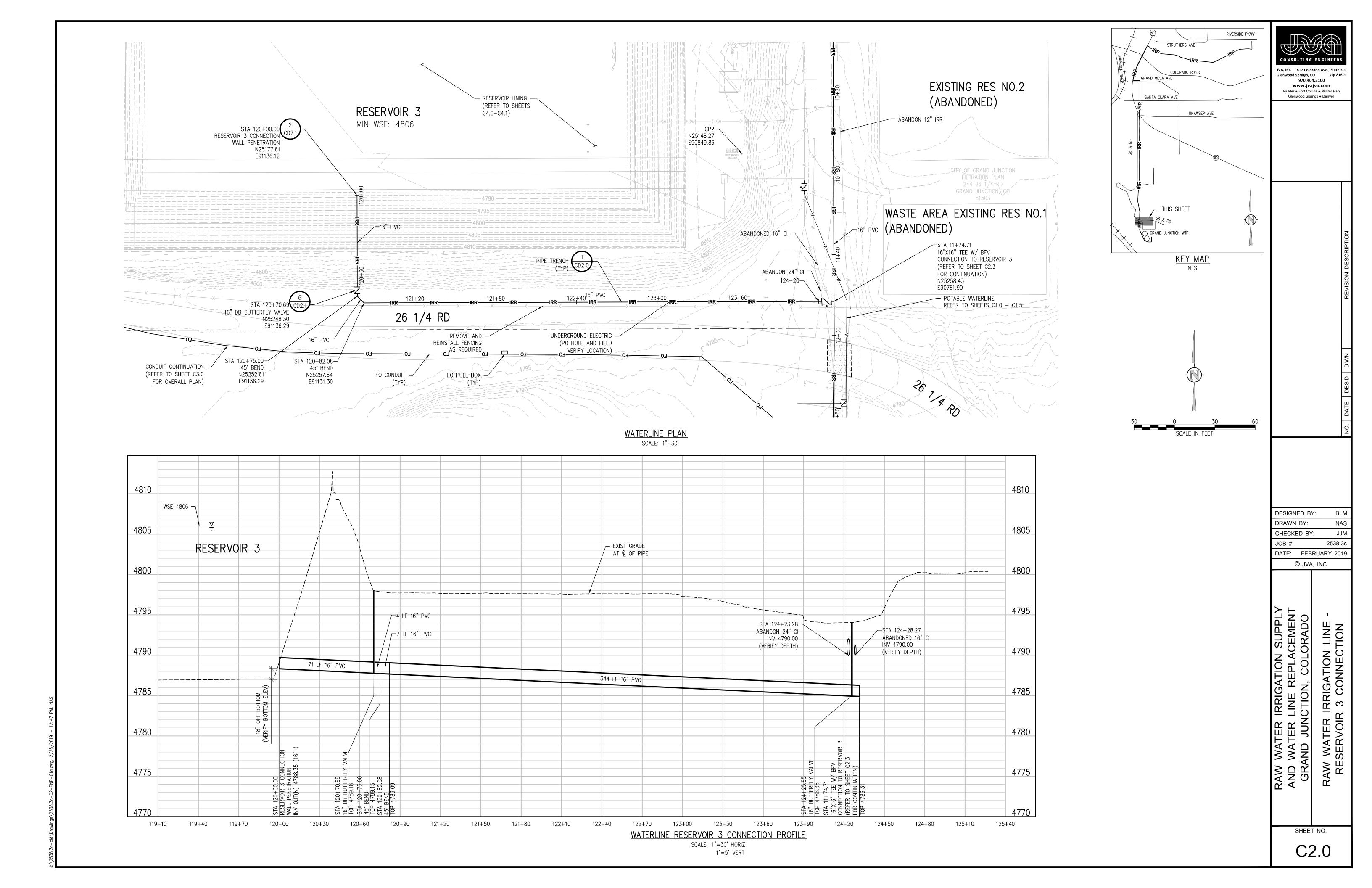
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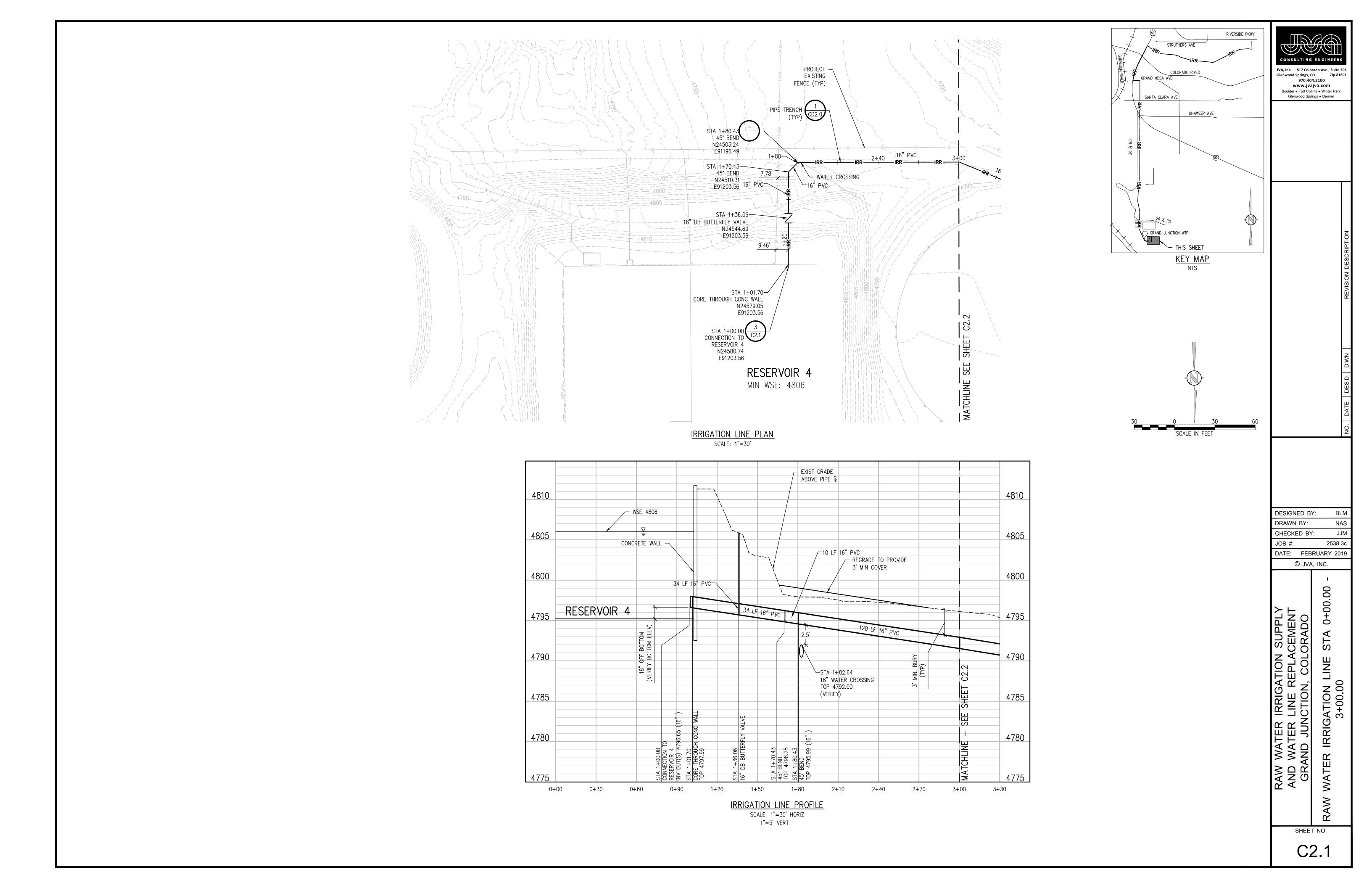
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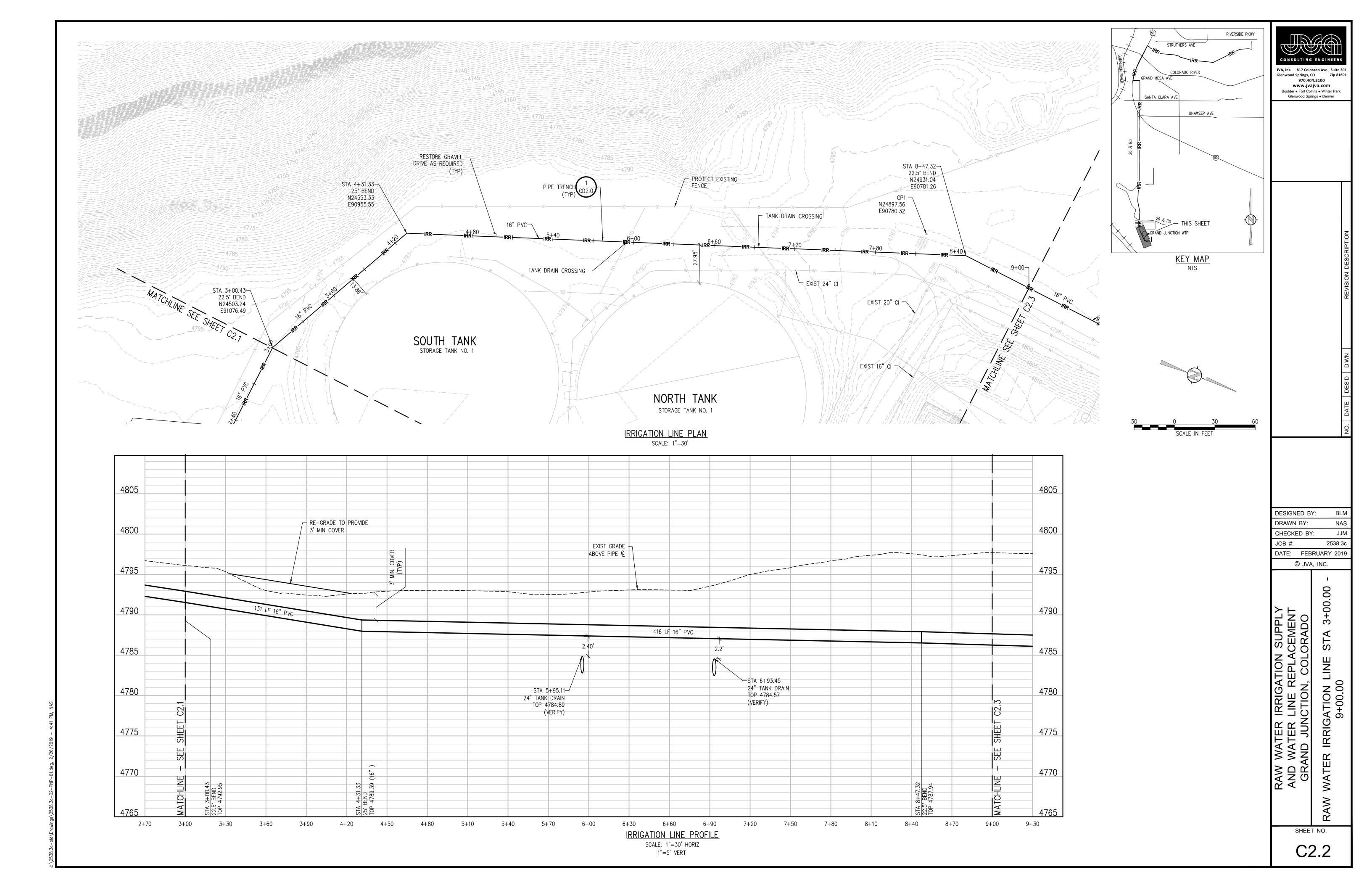
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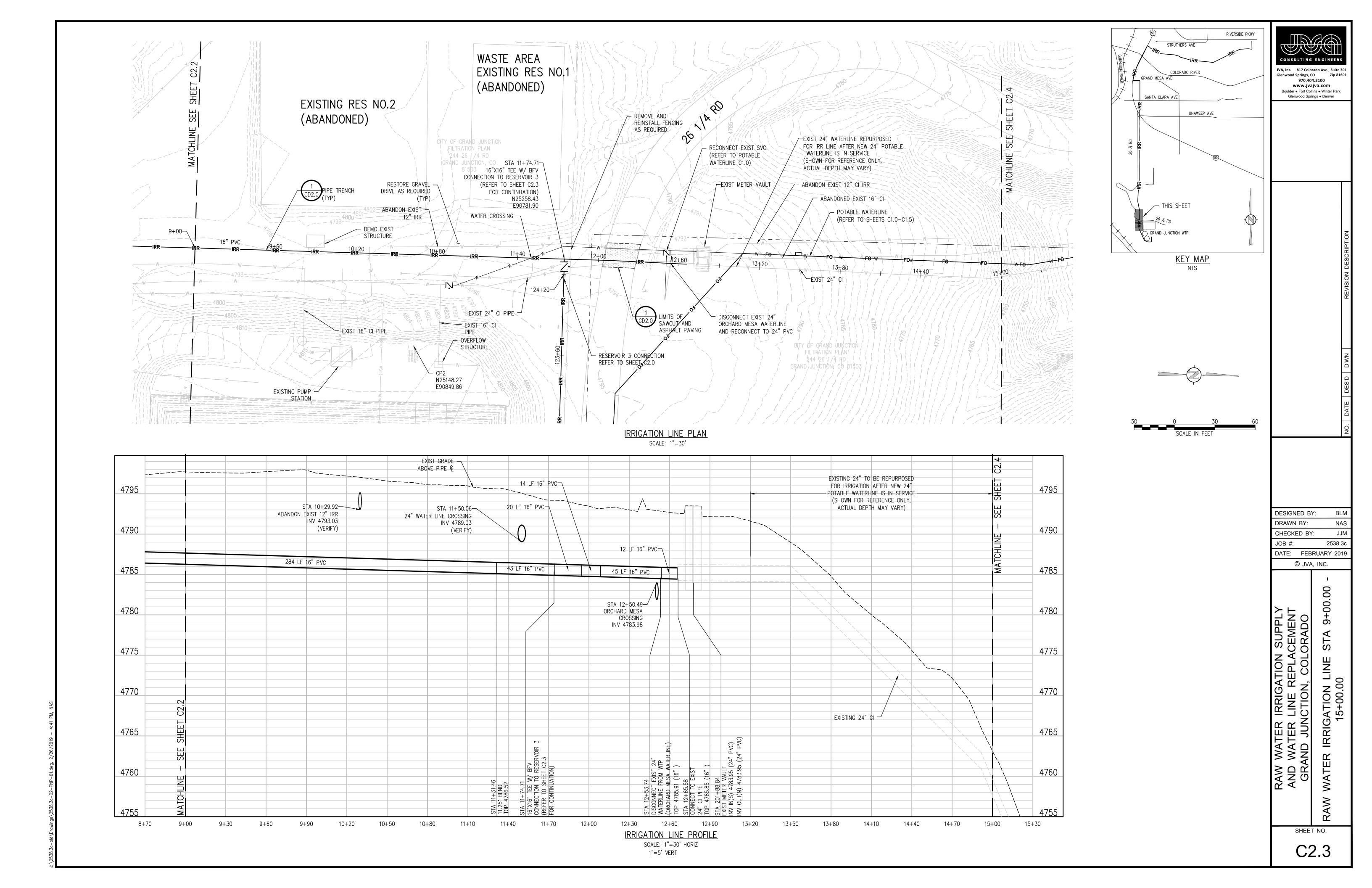
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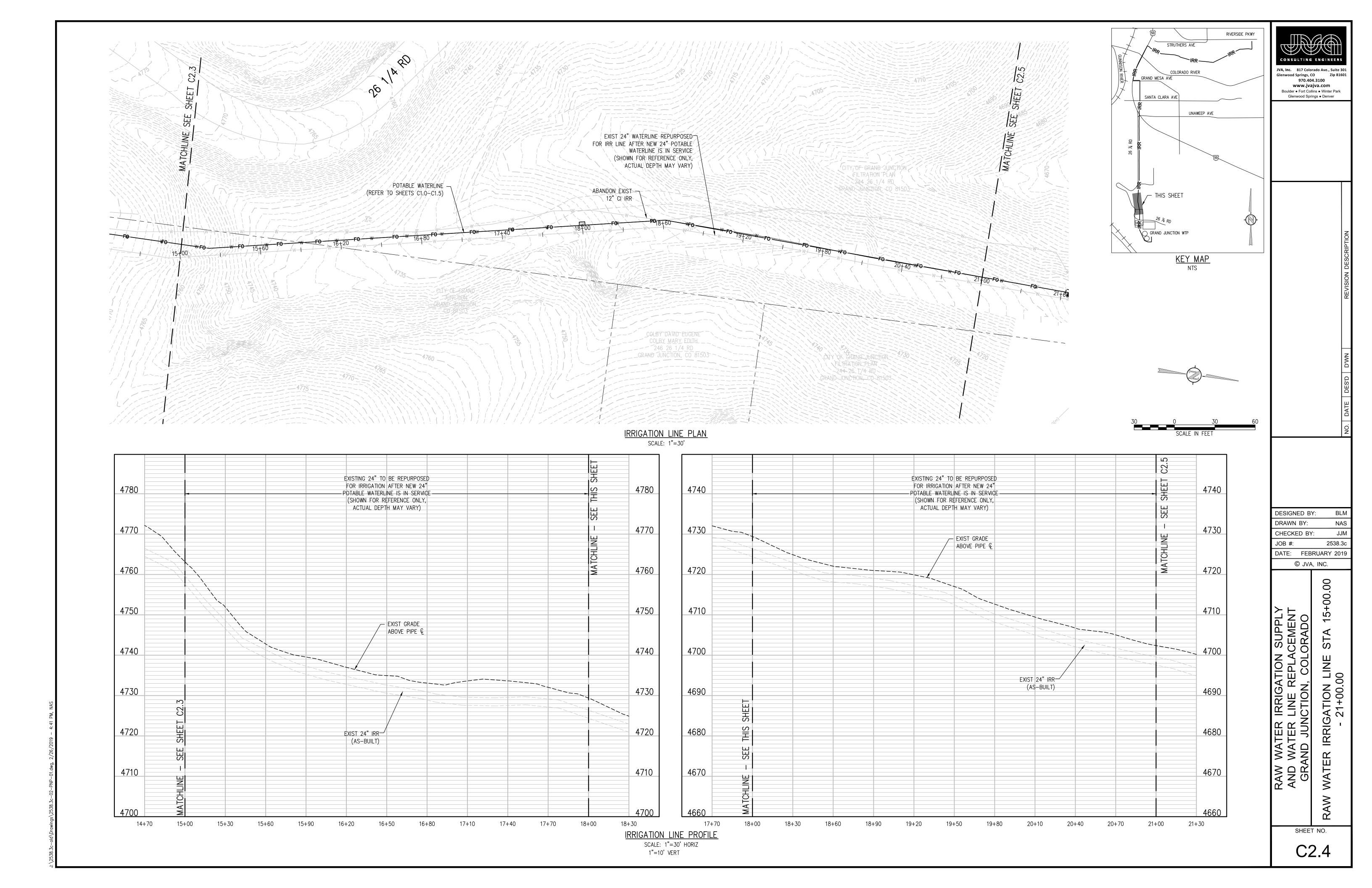
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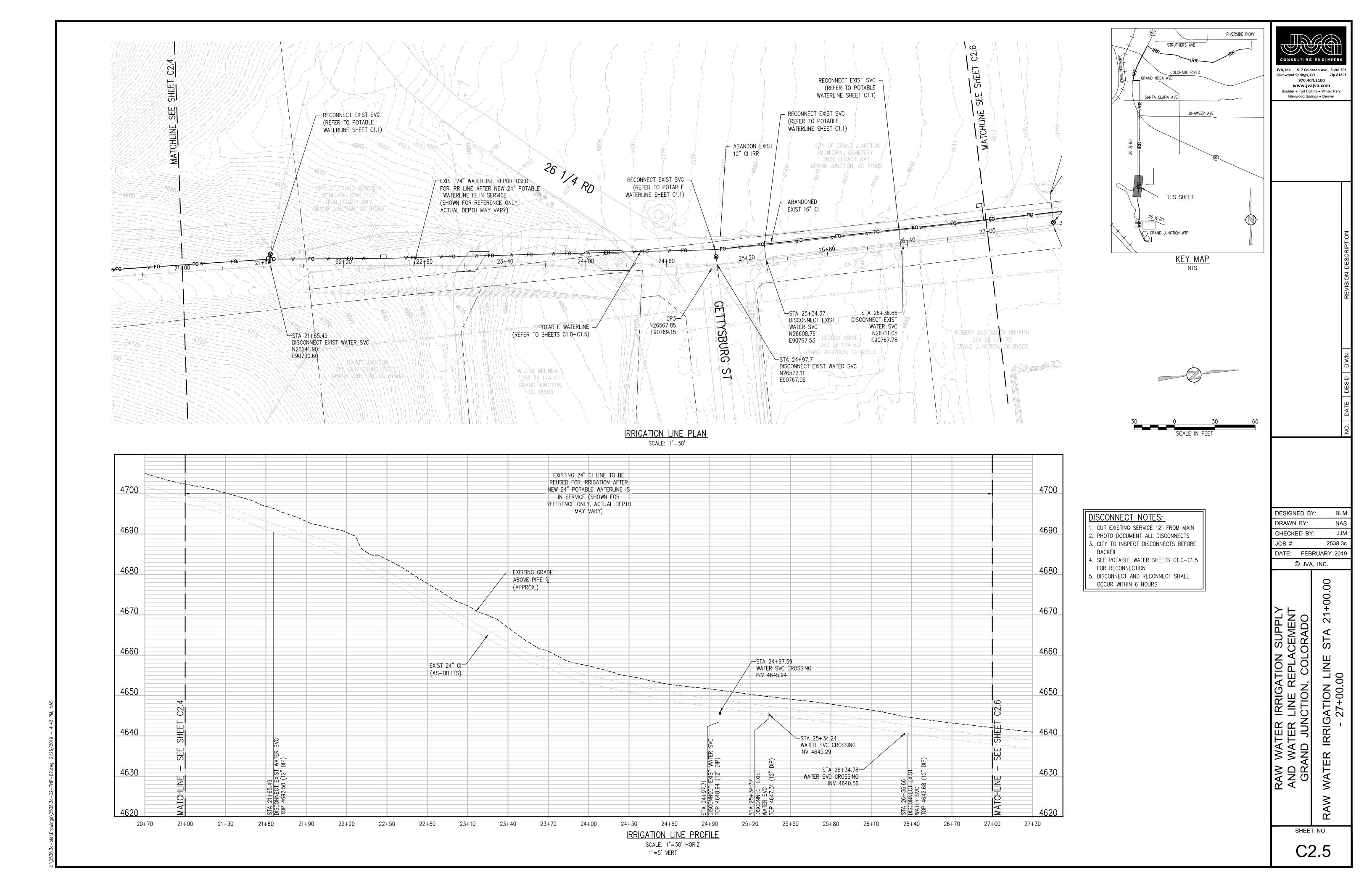


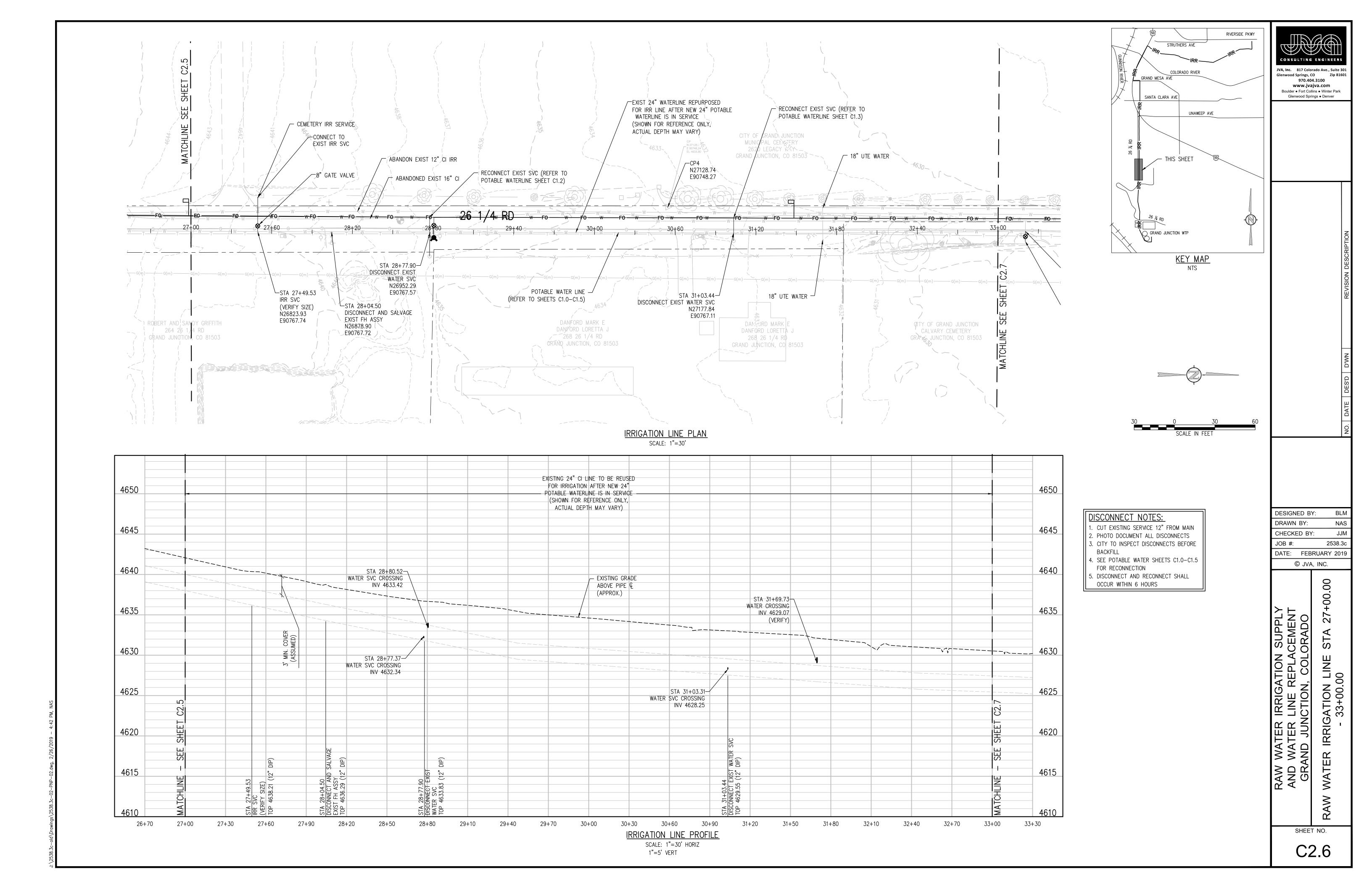


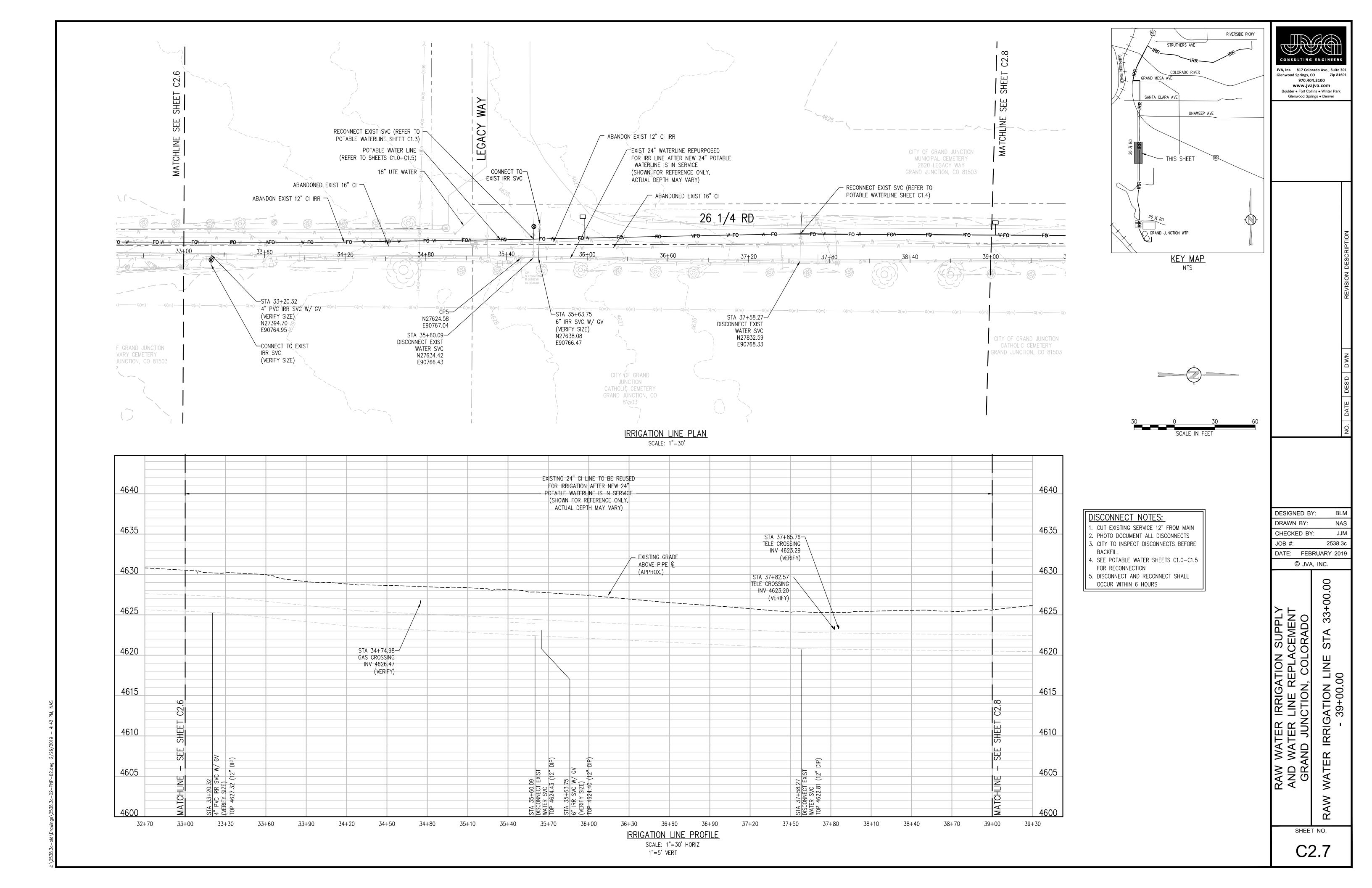


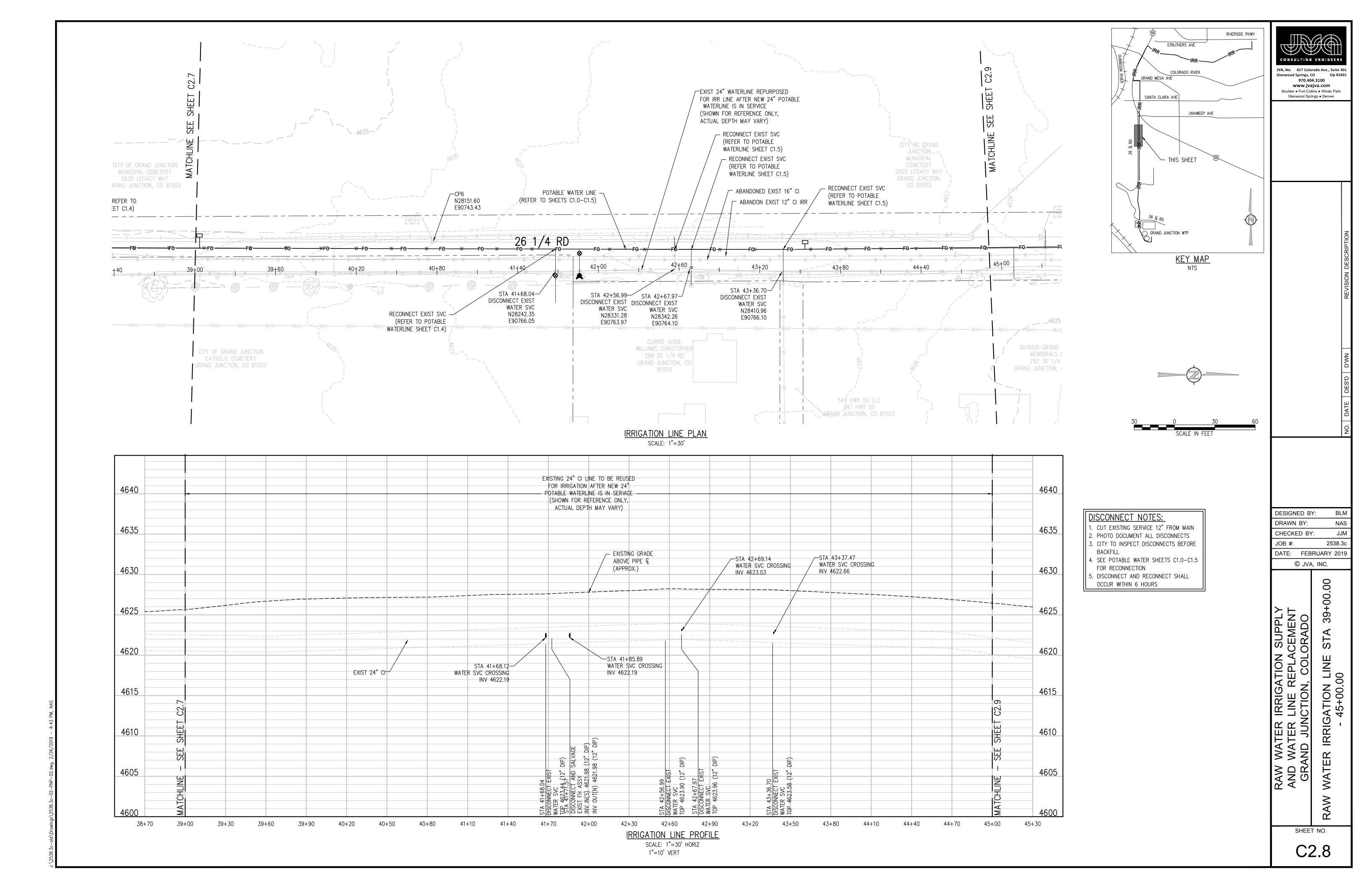


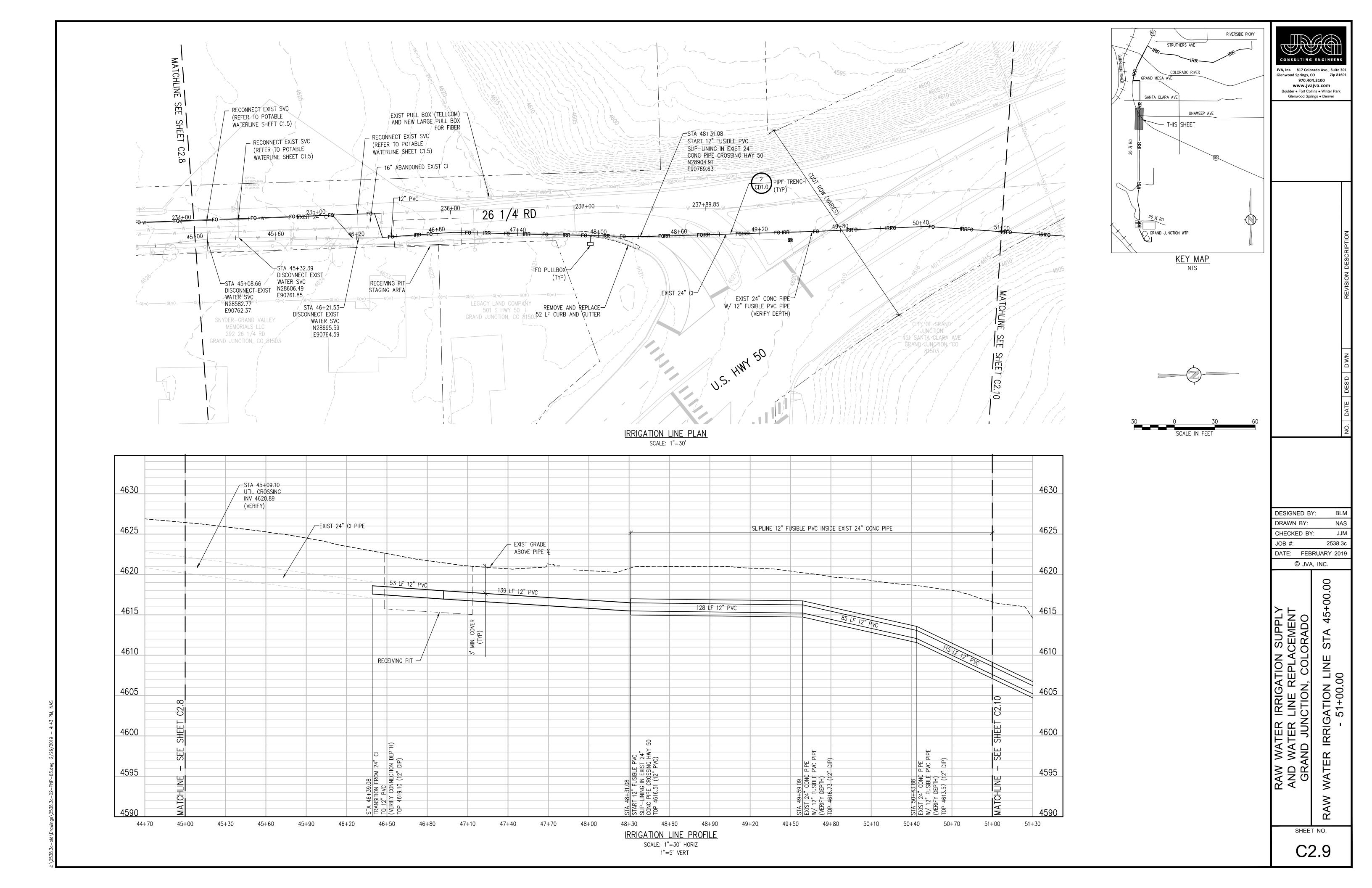


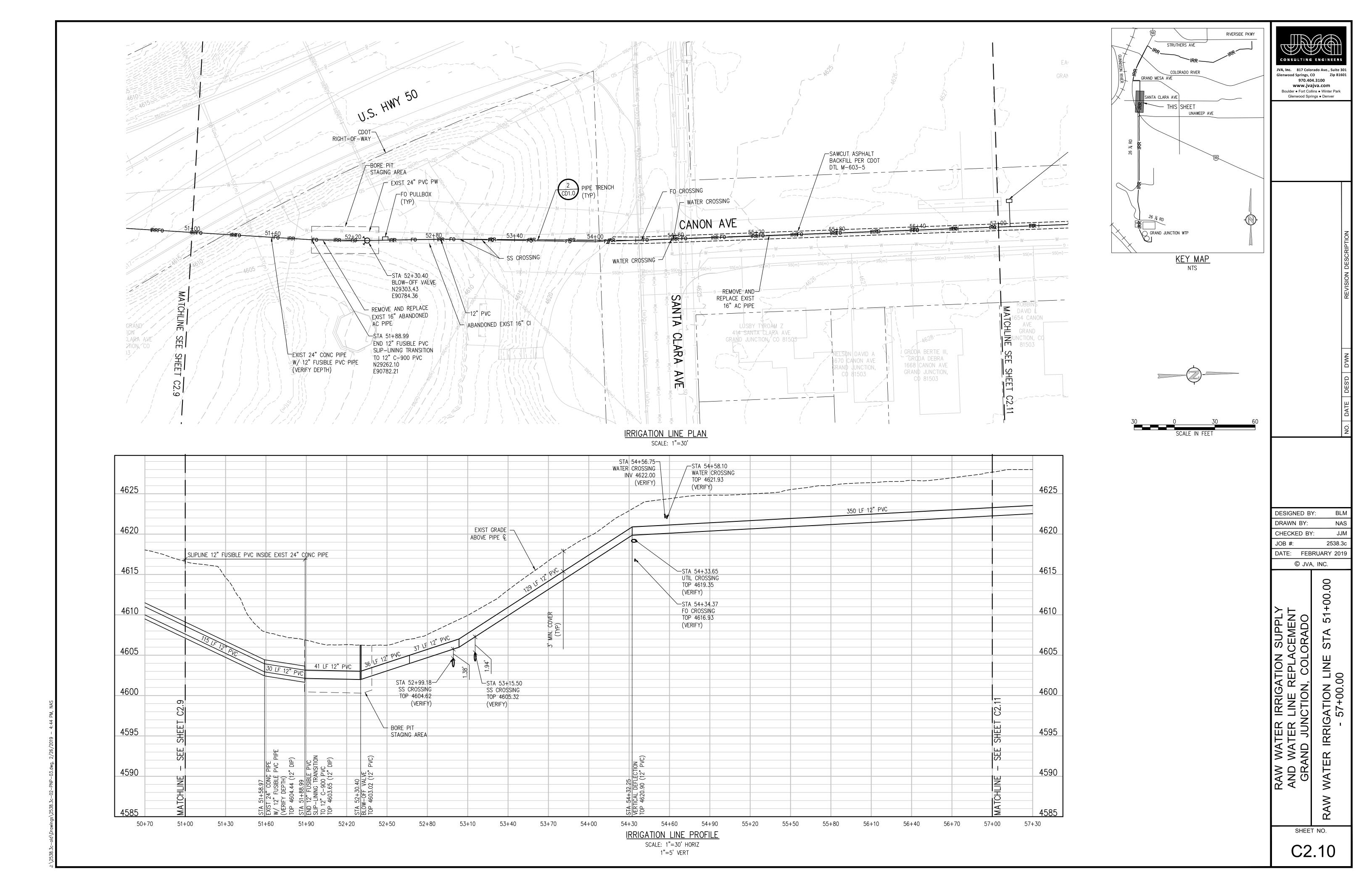


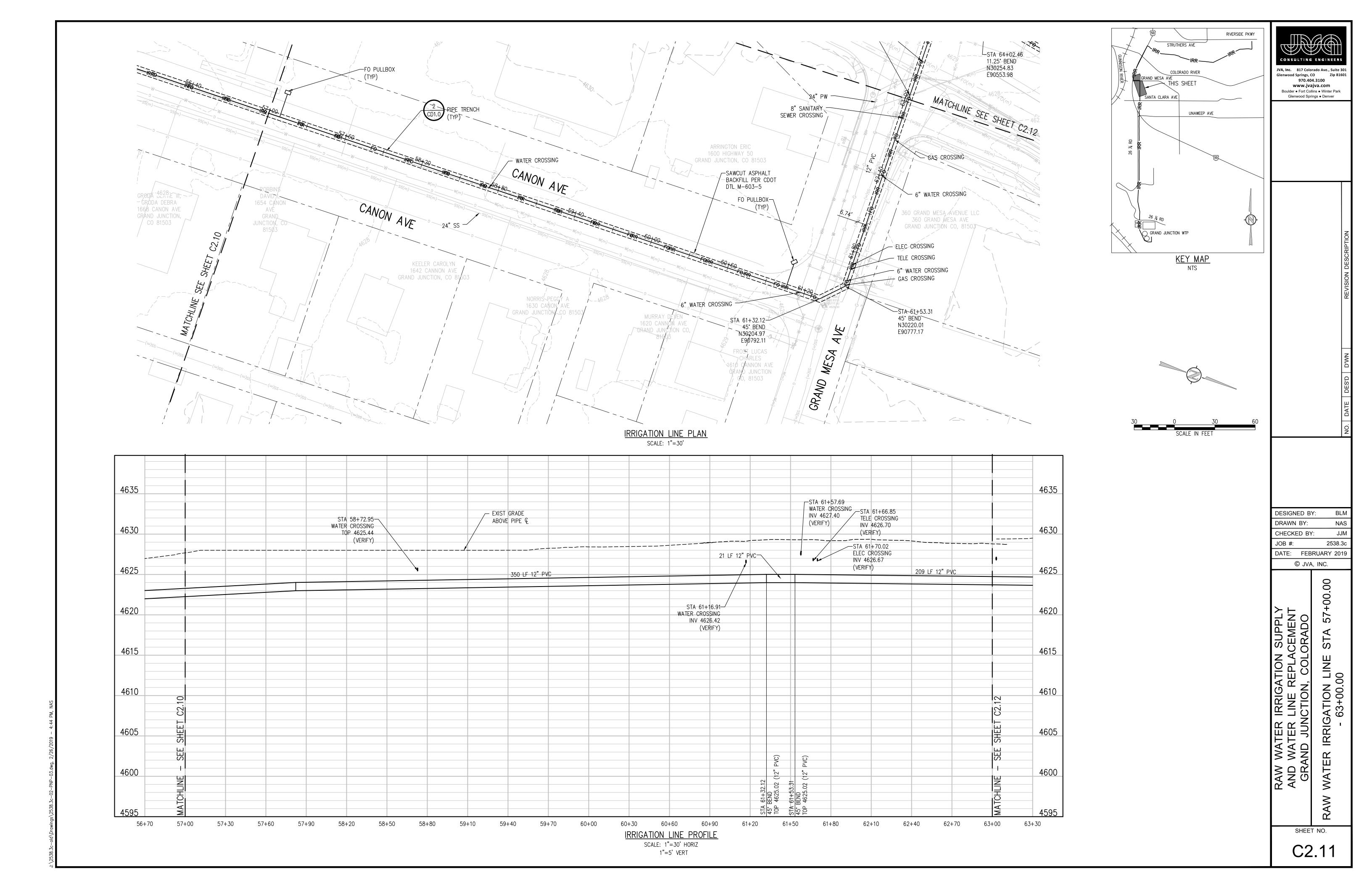


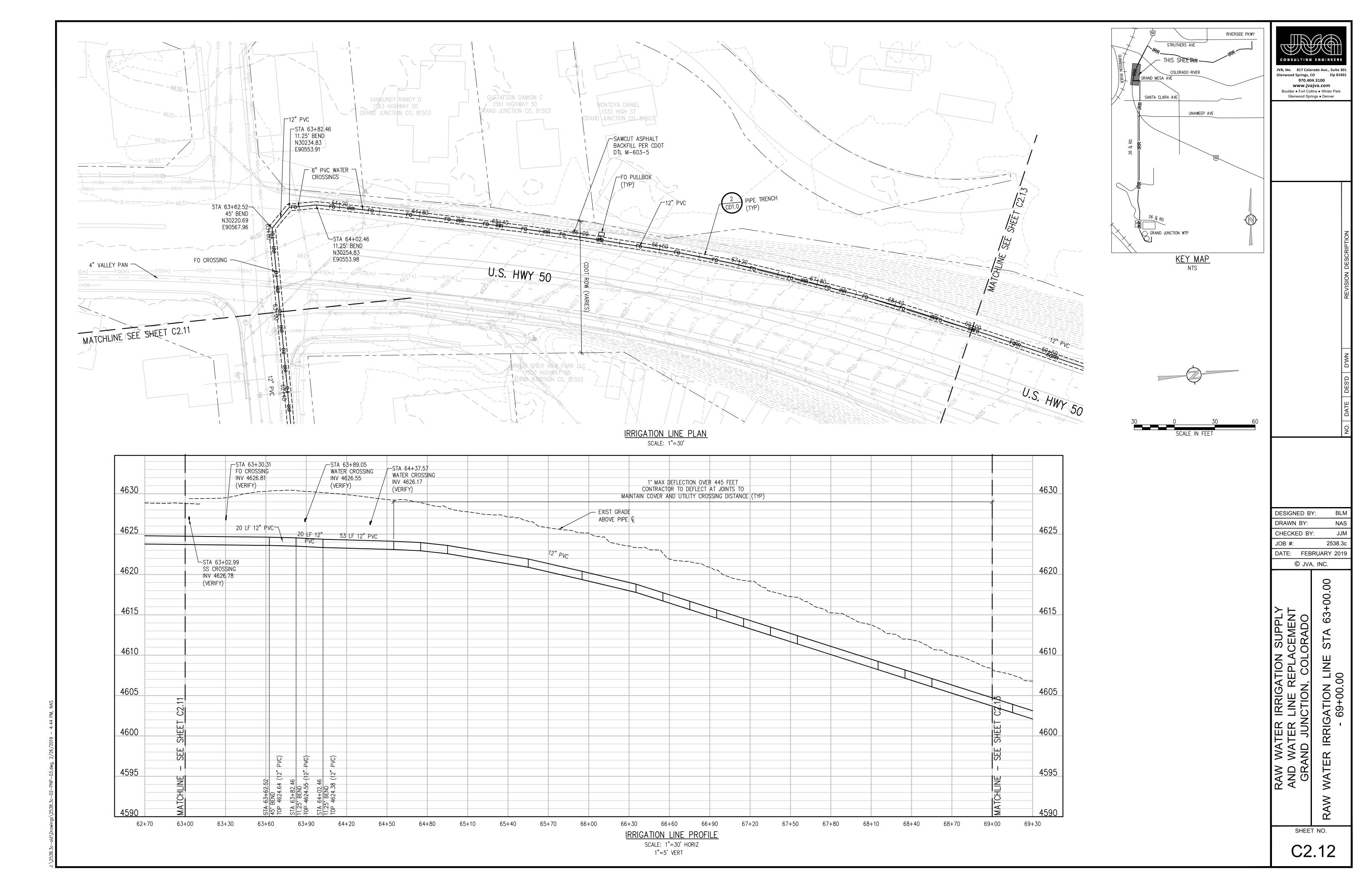


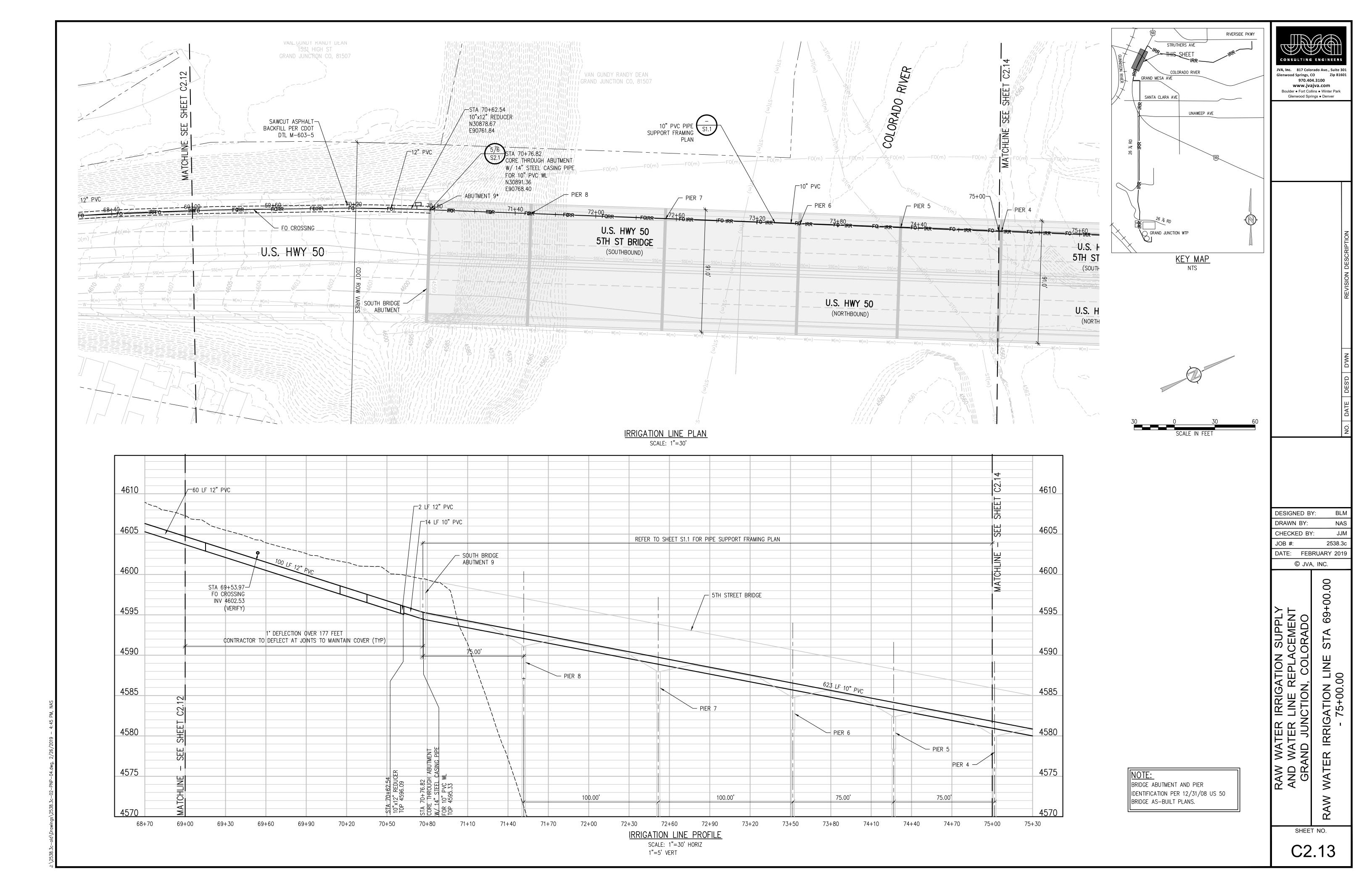


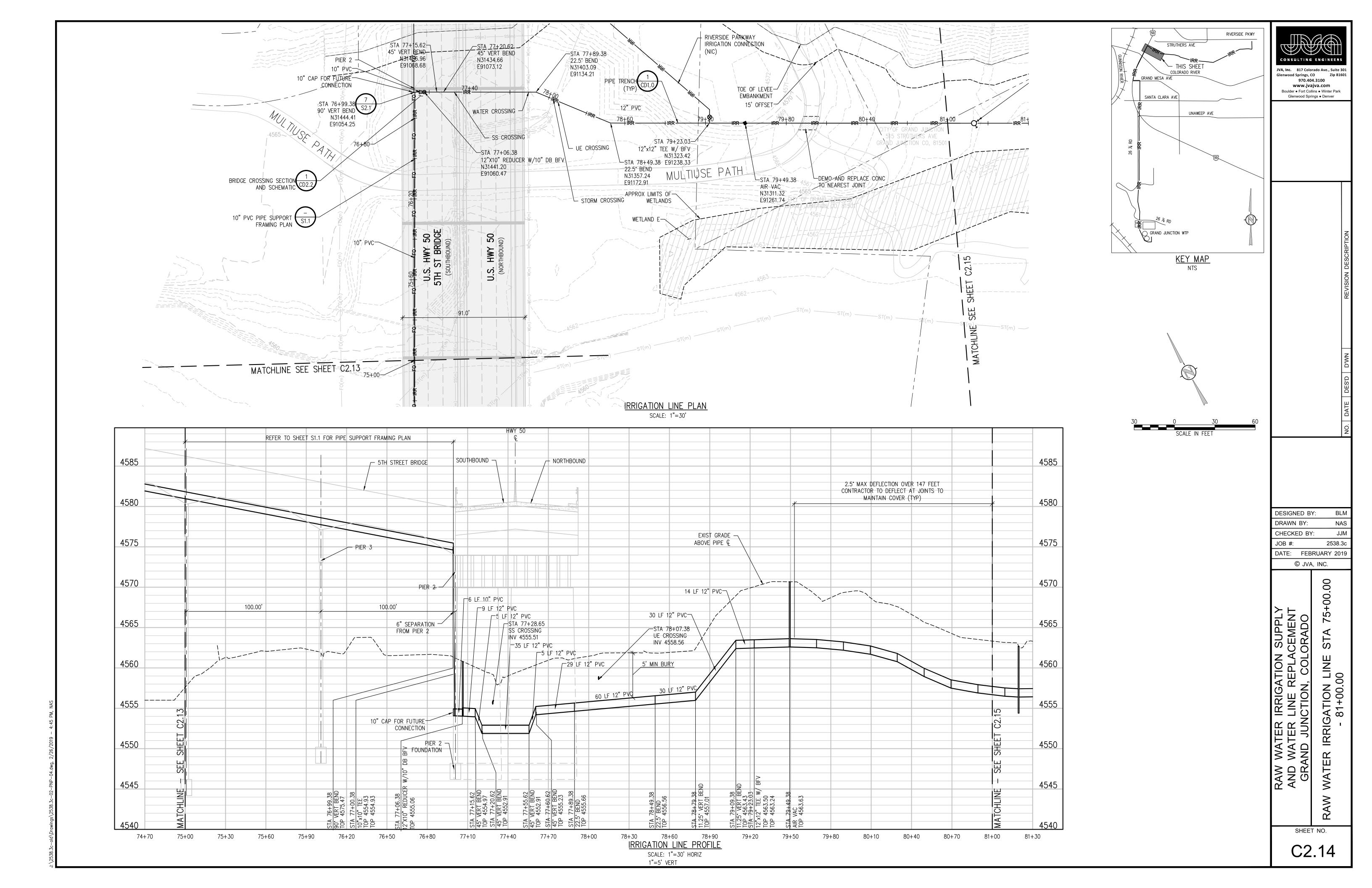


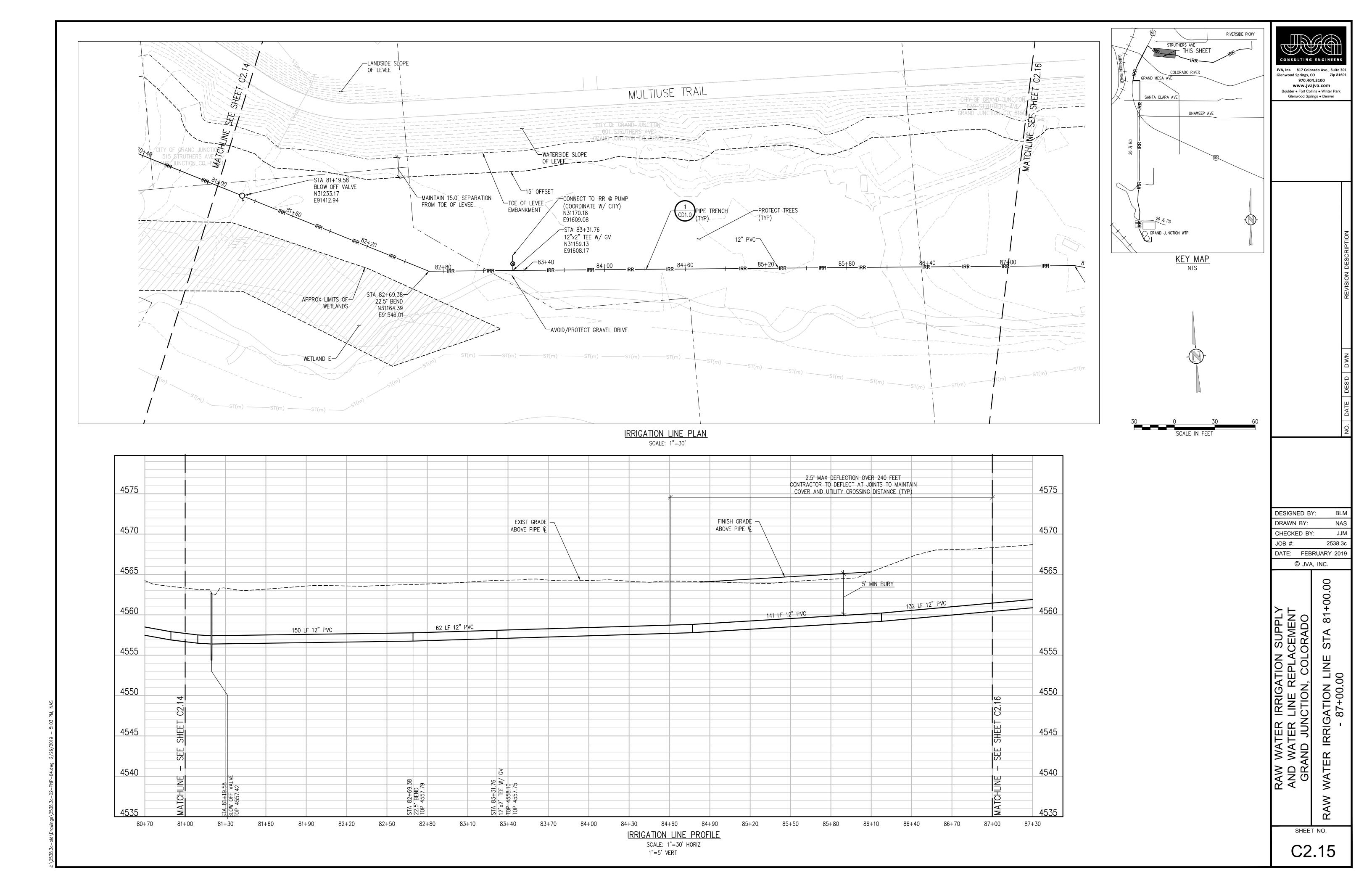


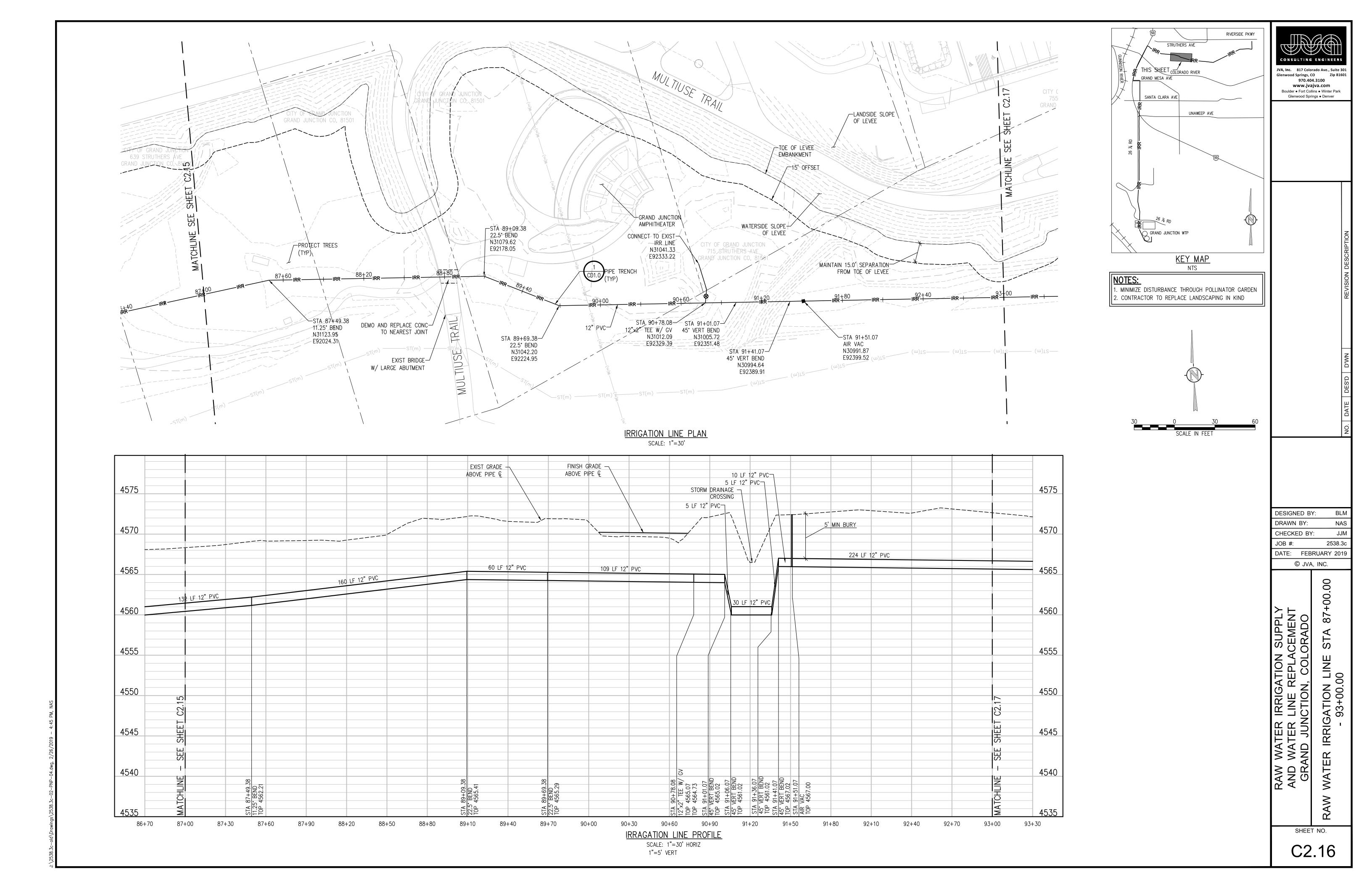


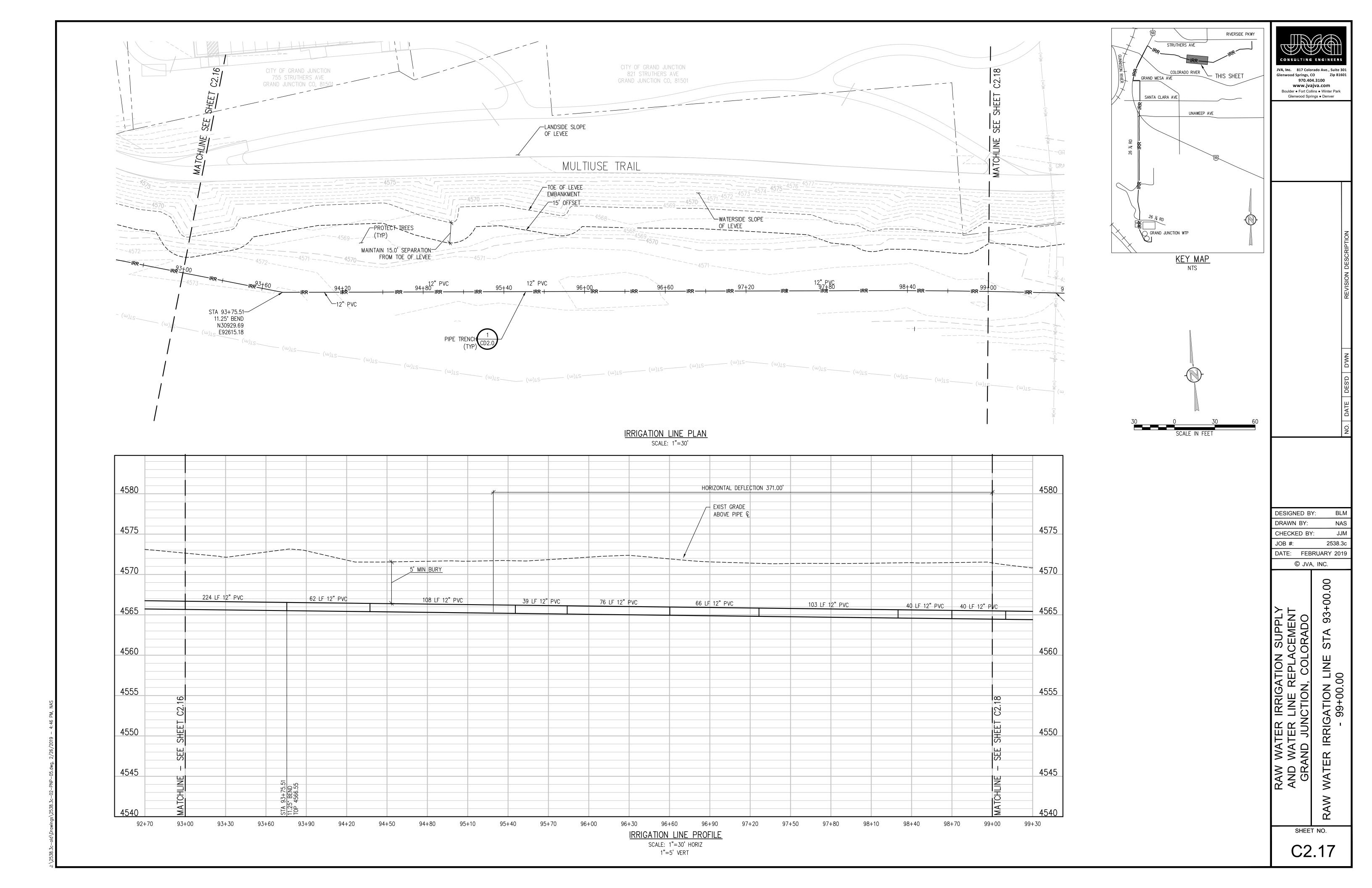


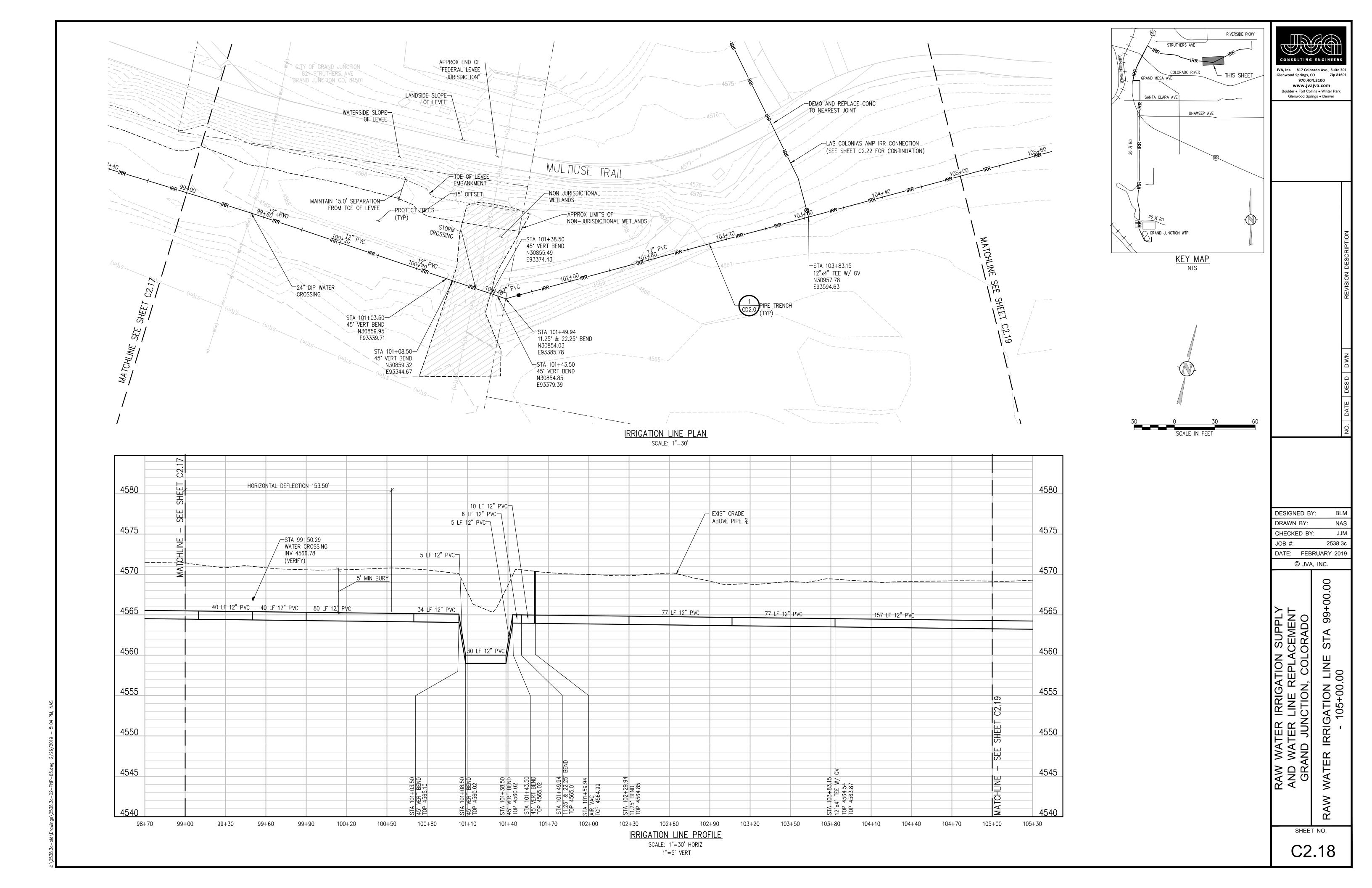


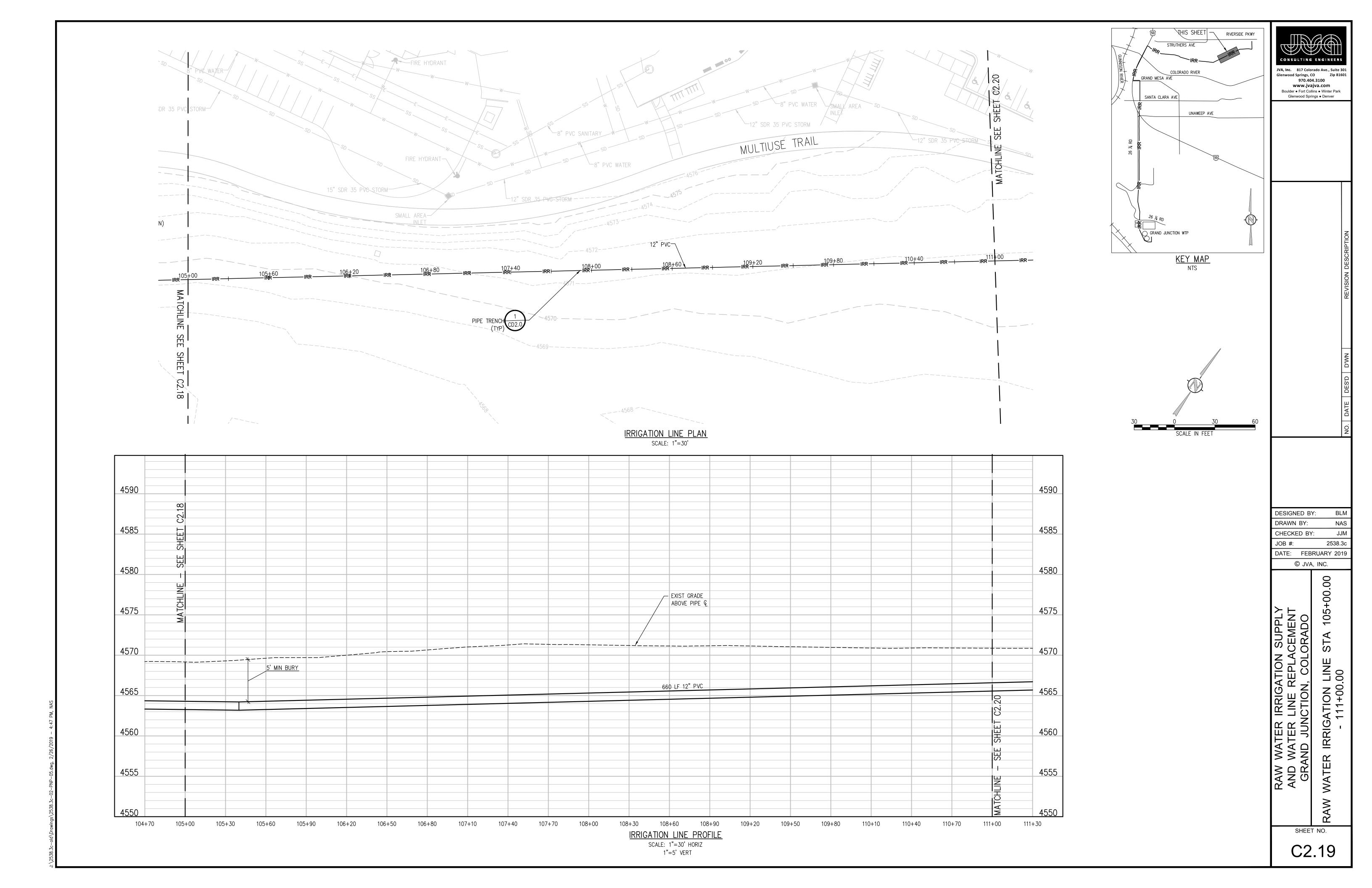


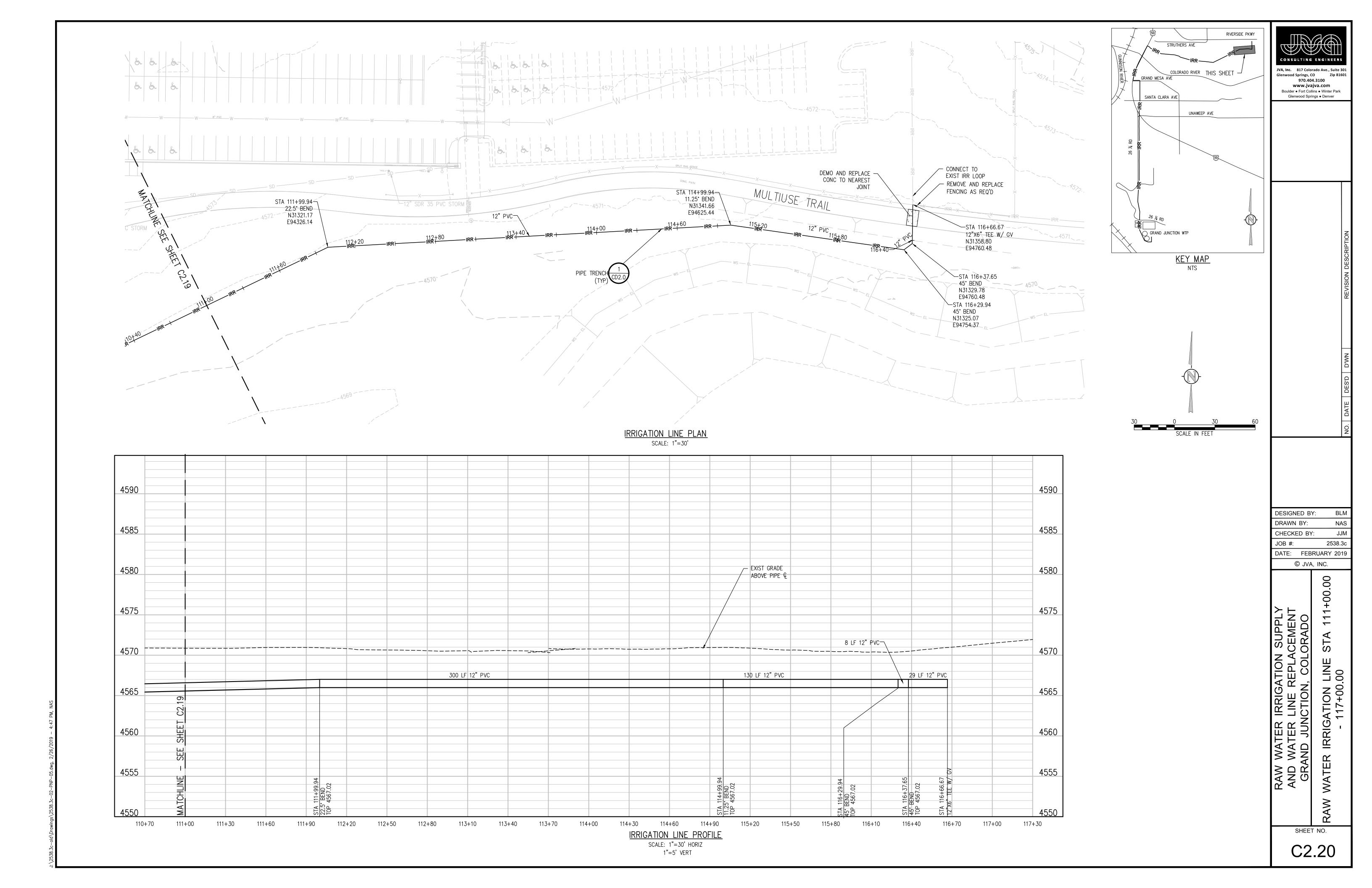


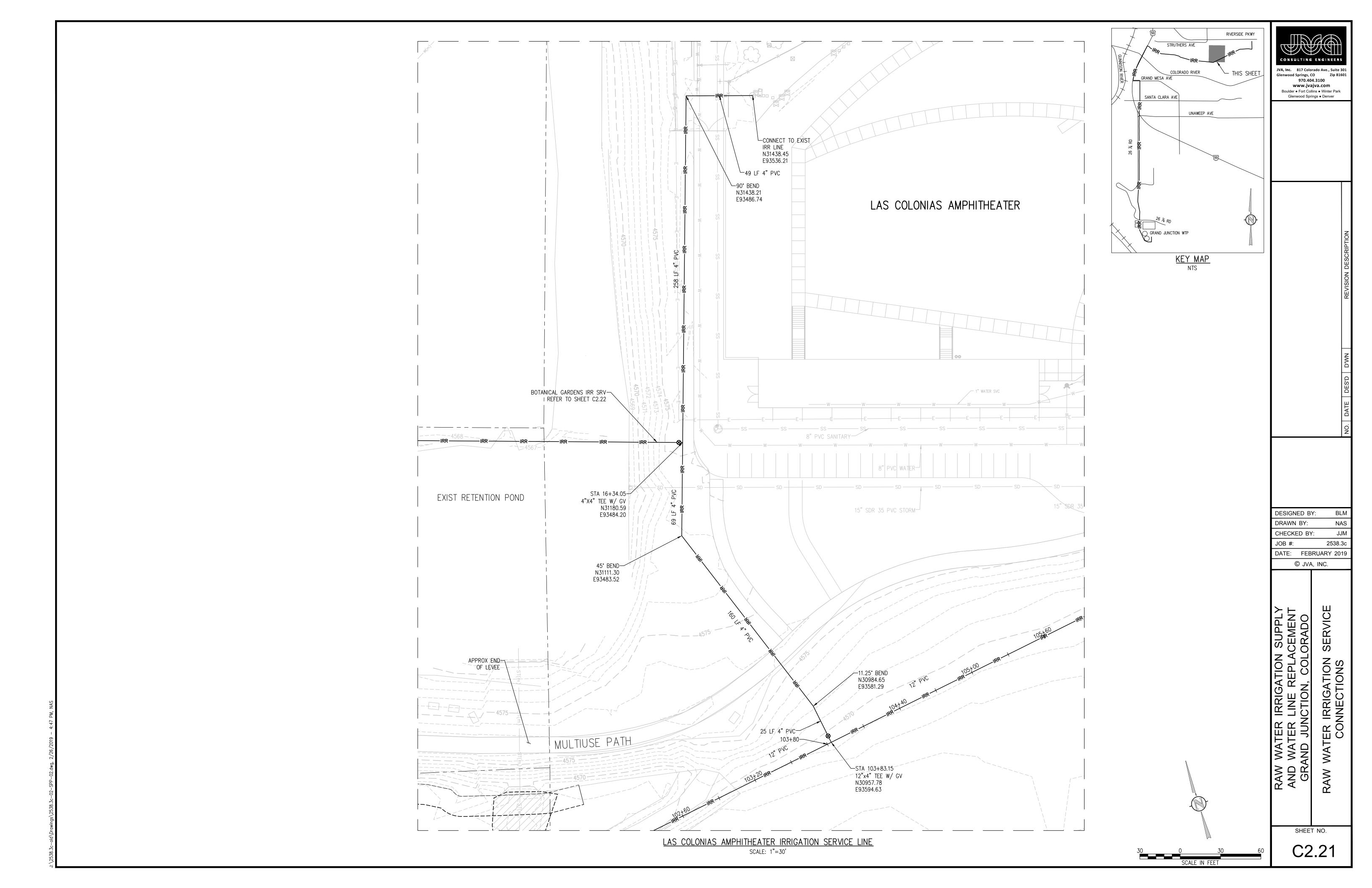


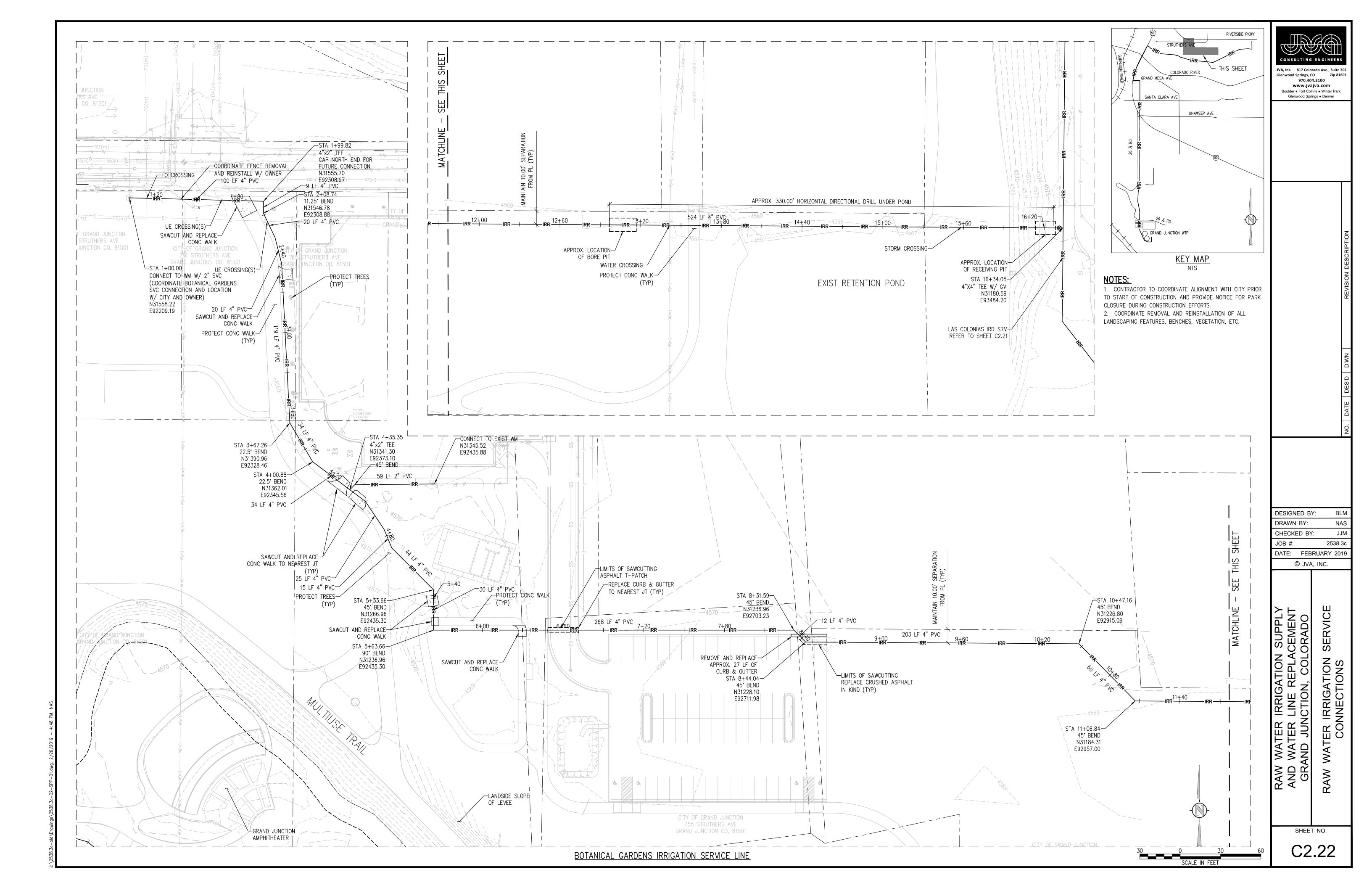


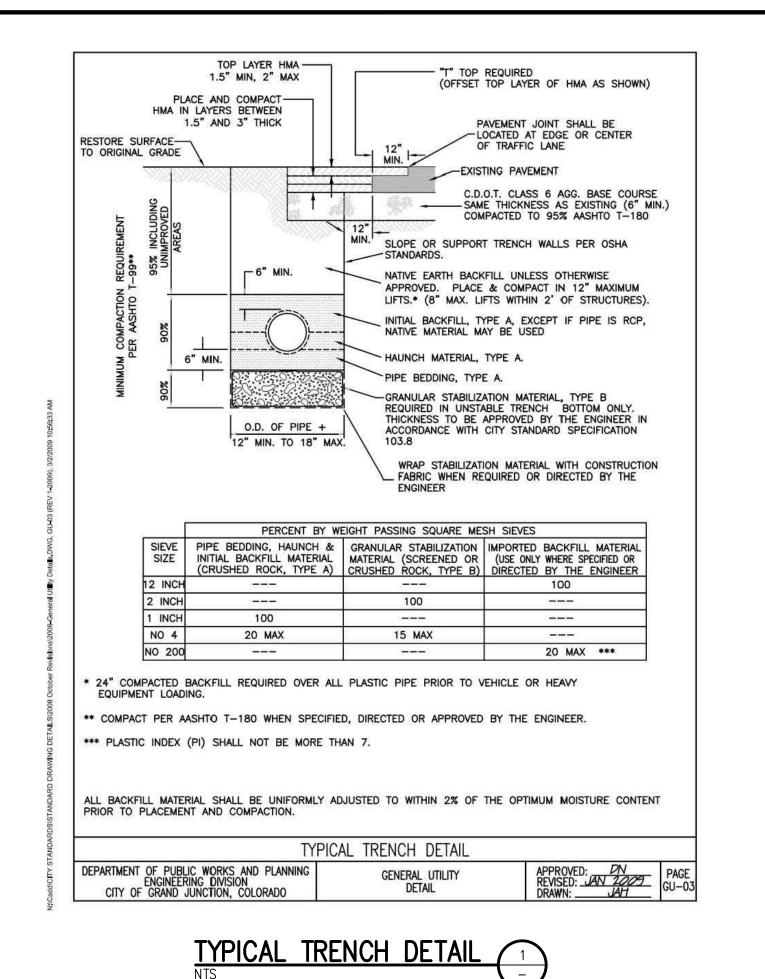


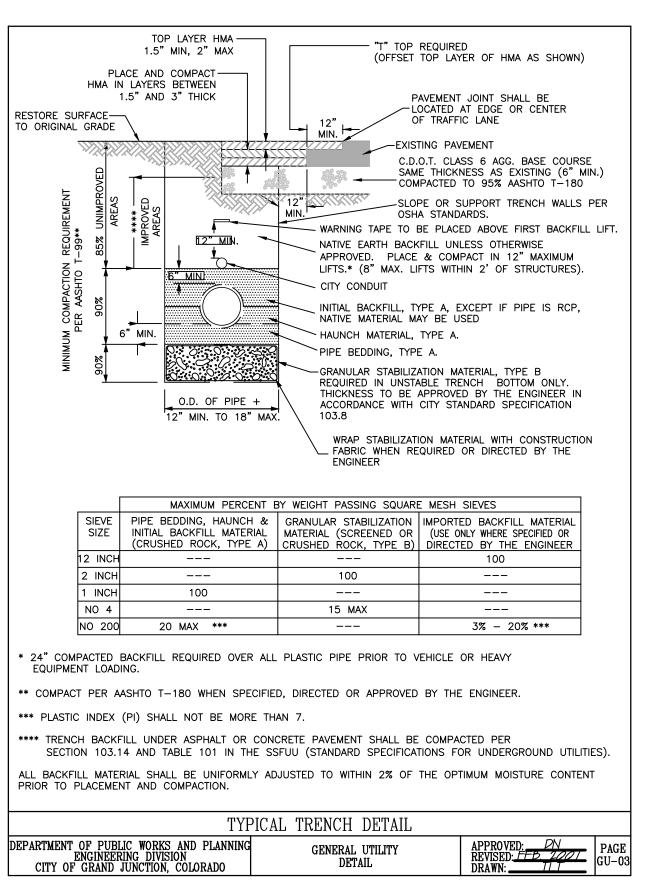






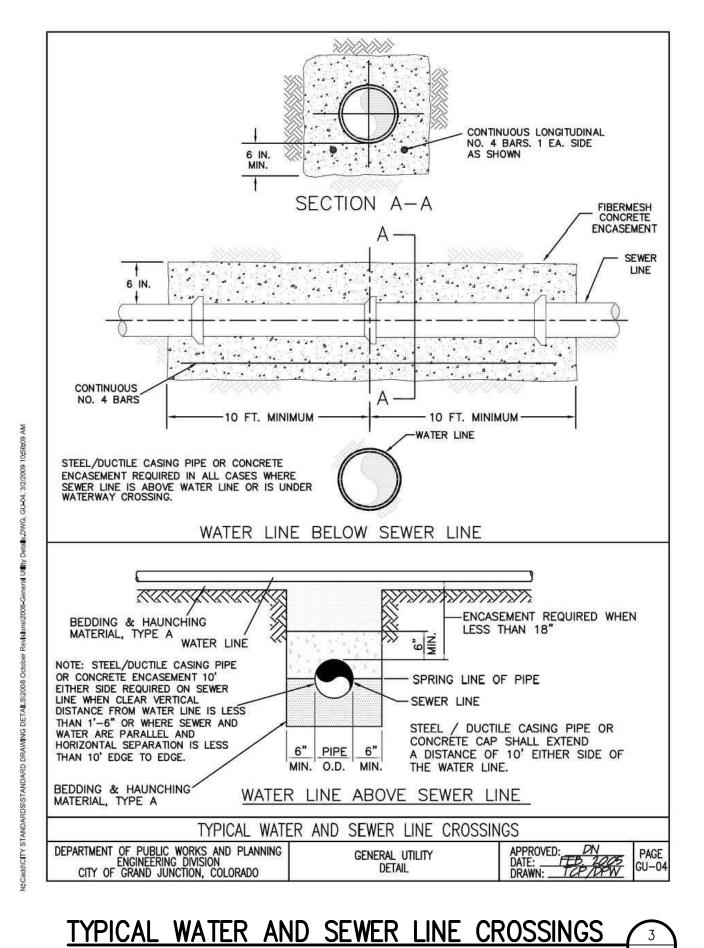


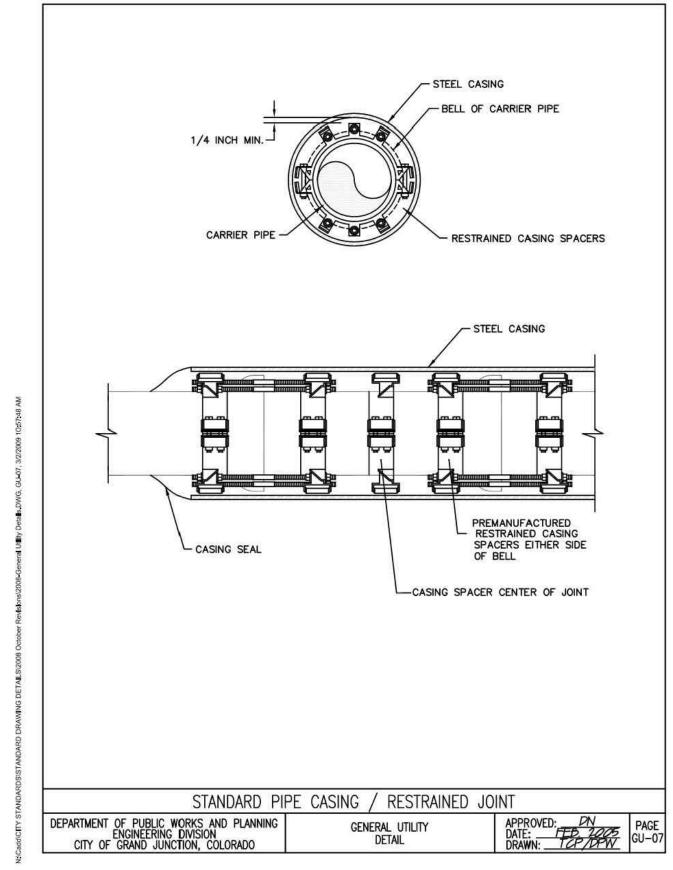


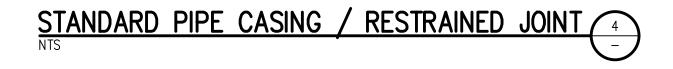


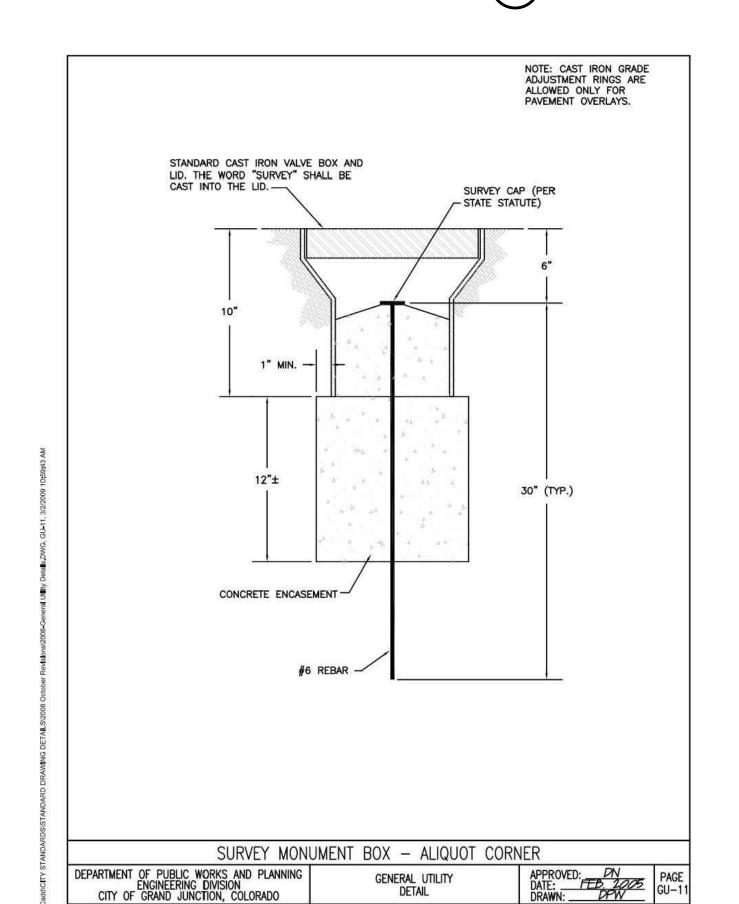
DUAL TRENCH DETAIL 2

NTS

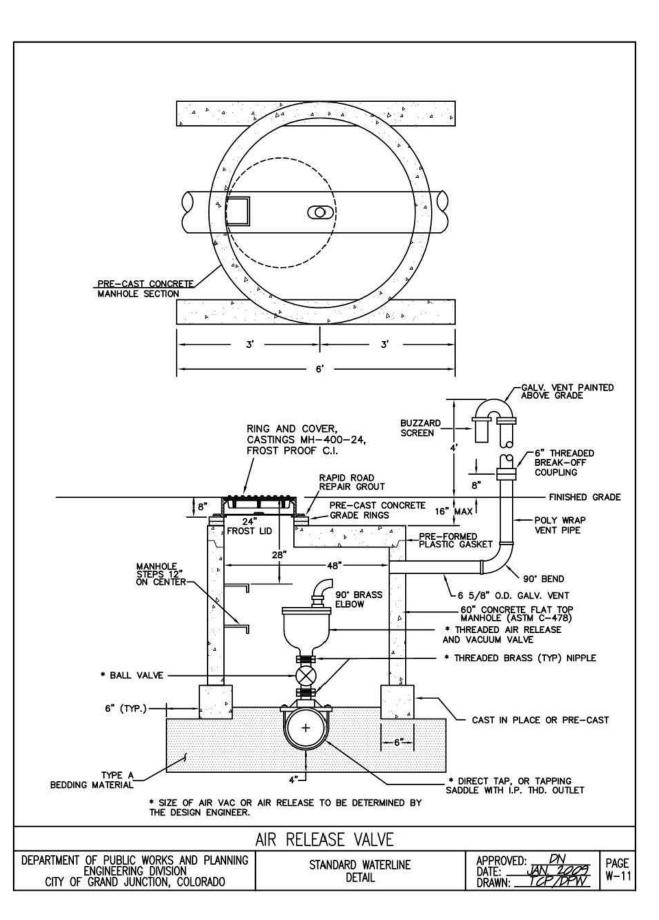


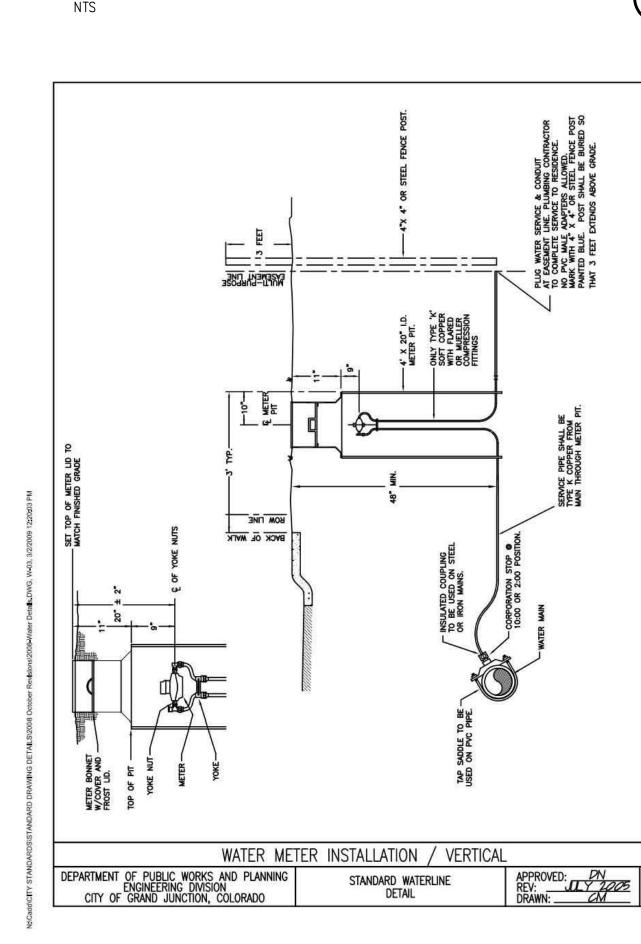


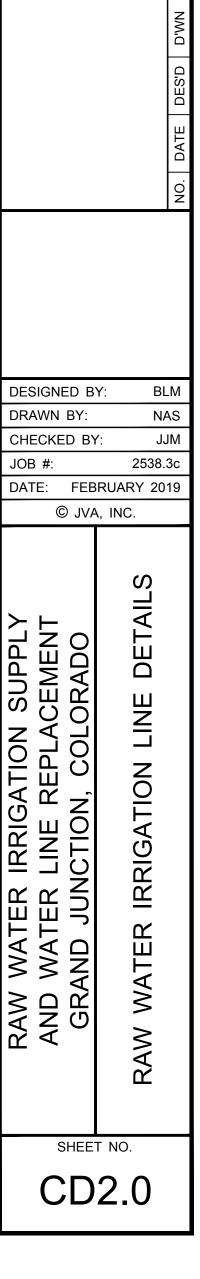




SURVEY MONUMENT BOX / ALIQUOT CORNING 5







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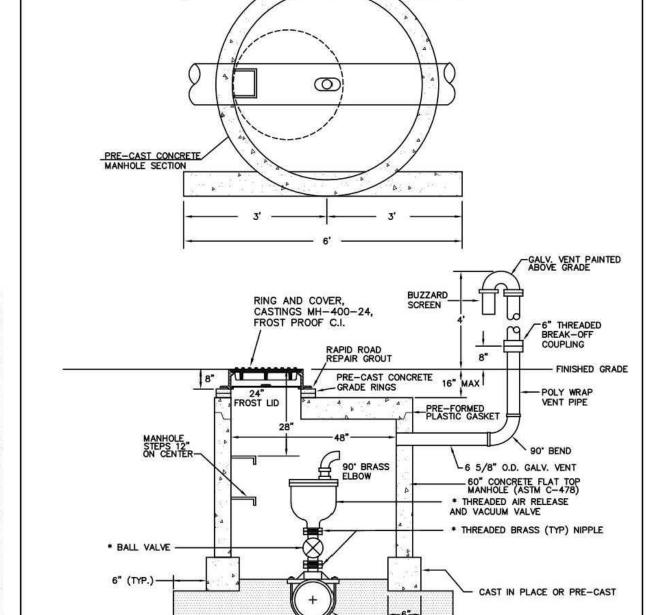
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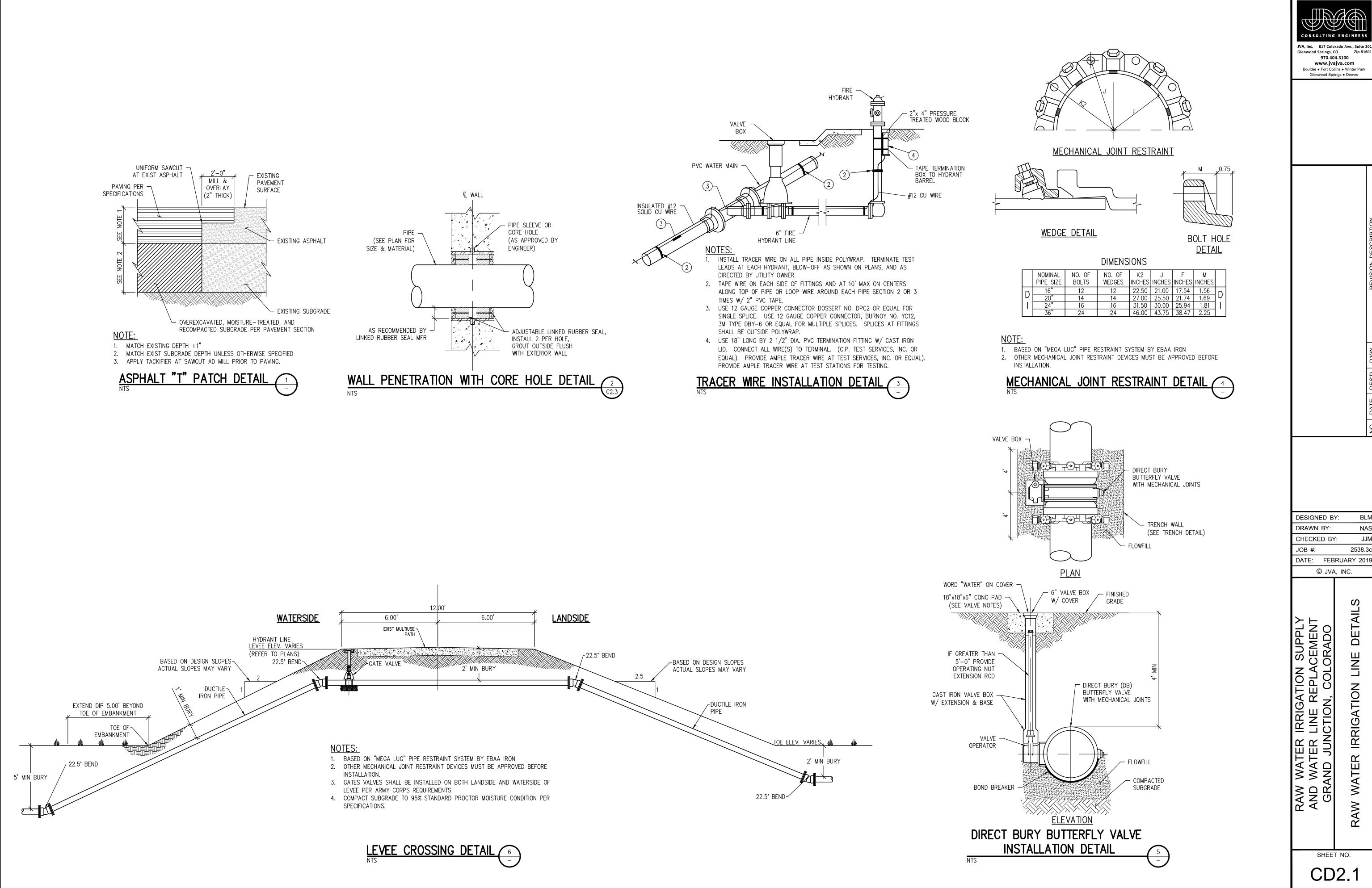
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AIR RELEASE VALVE 6

WATER METER INSTALLATION / VERTICAL 7

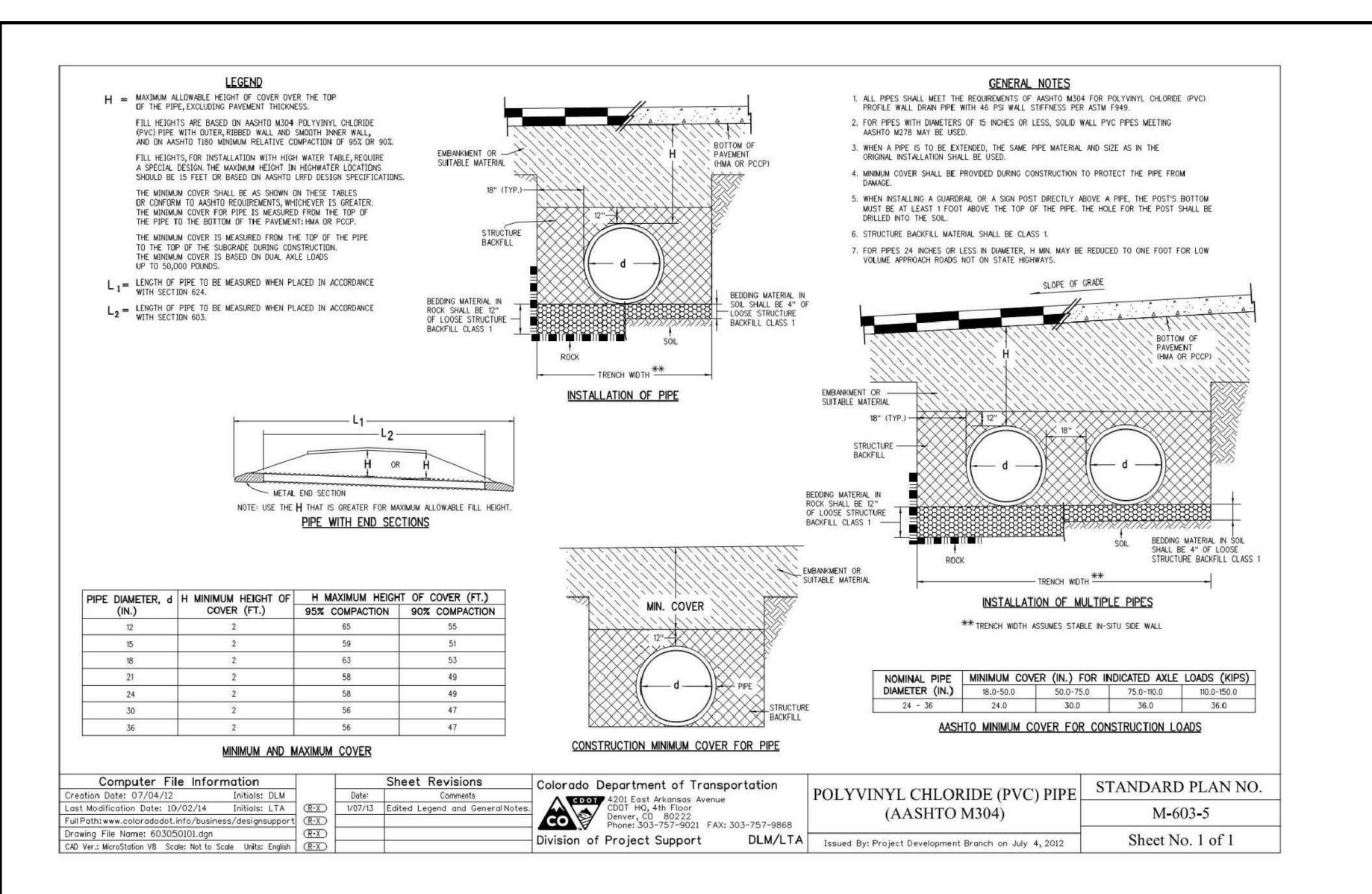


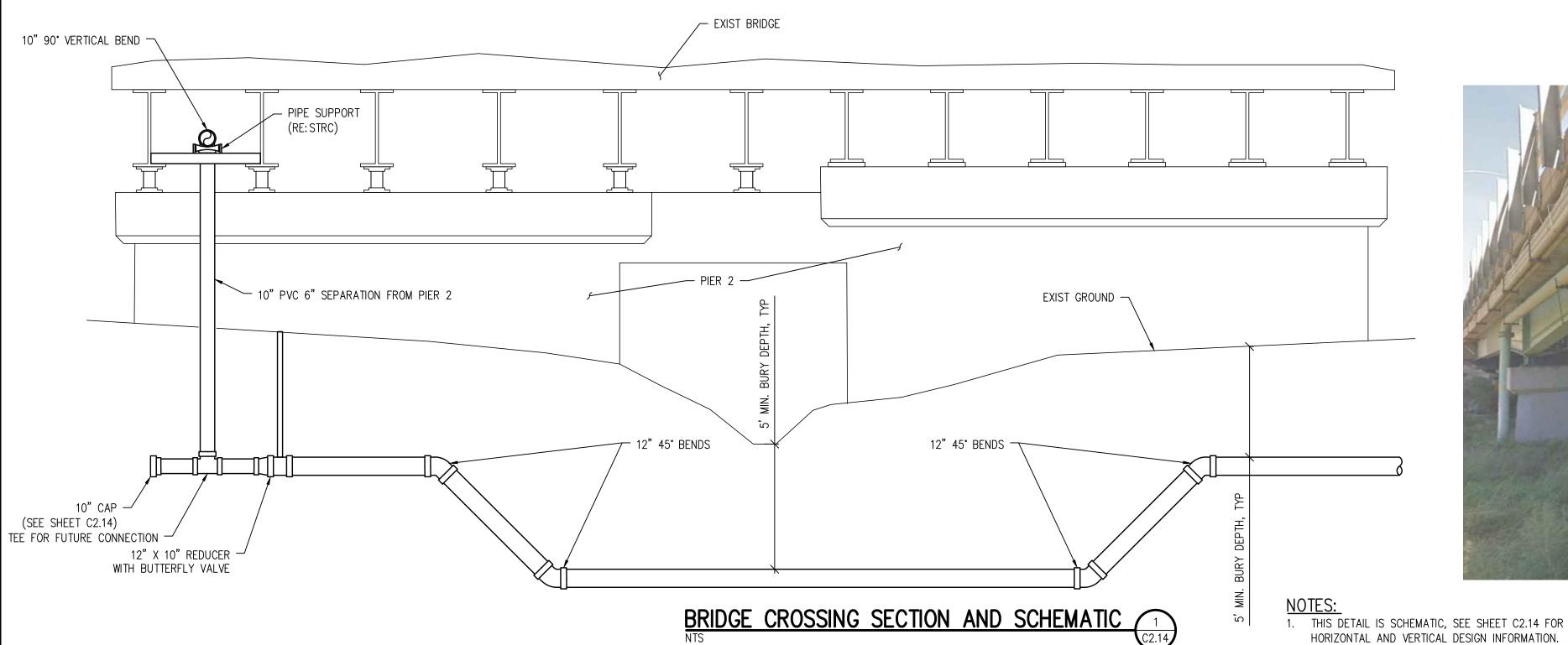
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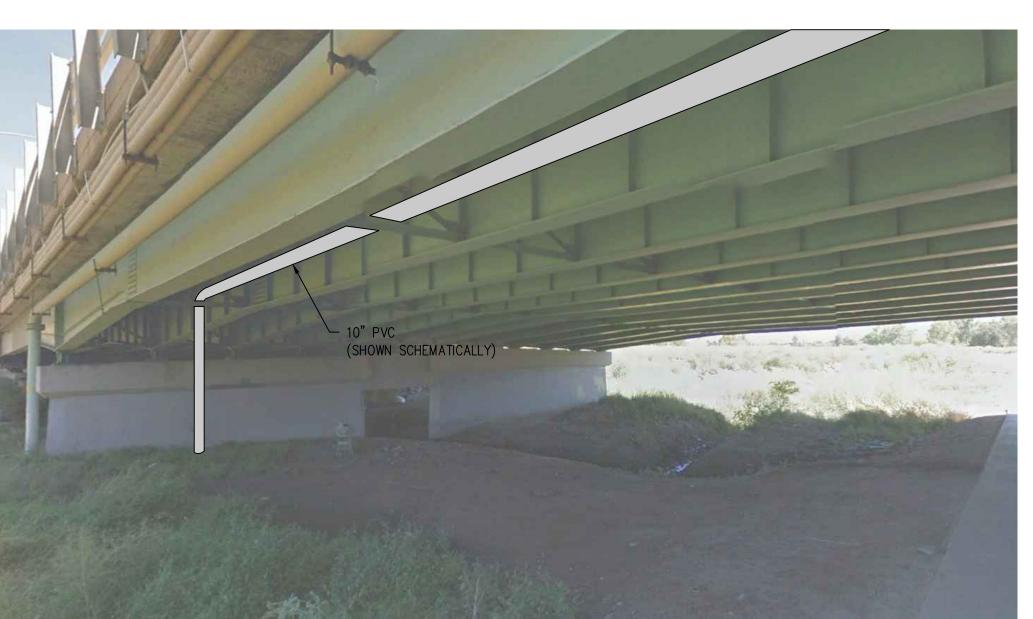
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2538.3c

CD2.1







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DESIGNED BY: BLM

DRAWN BY: NAS

CHECKED BY: JJM

JOB #: 2538.3c

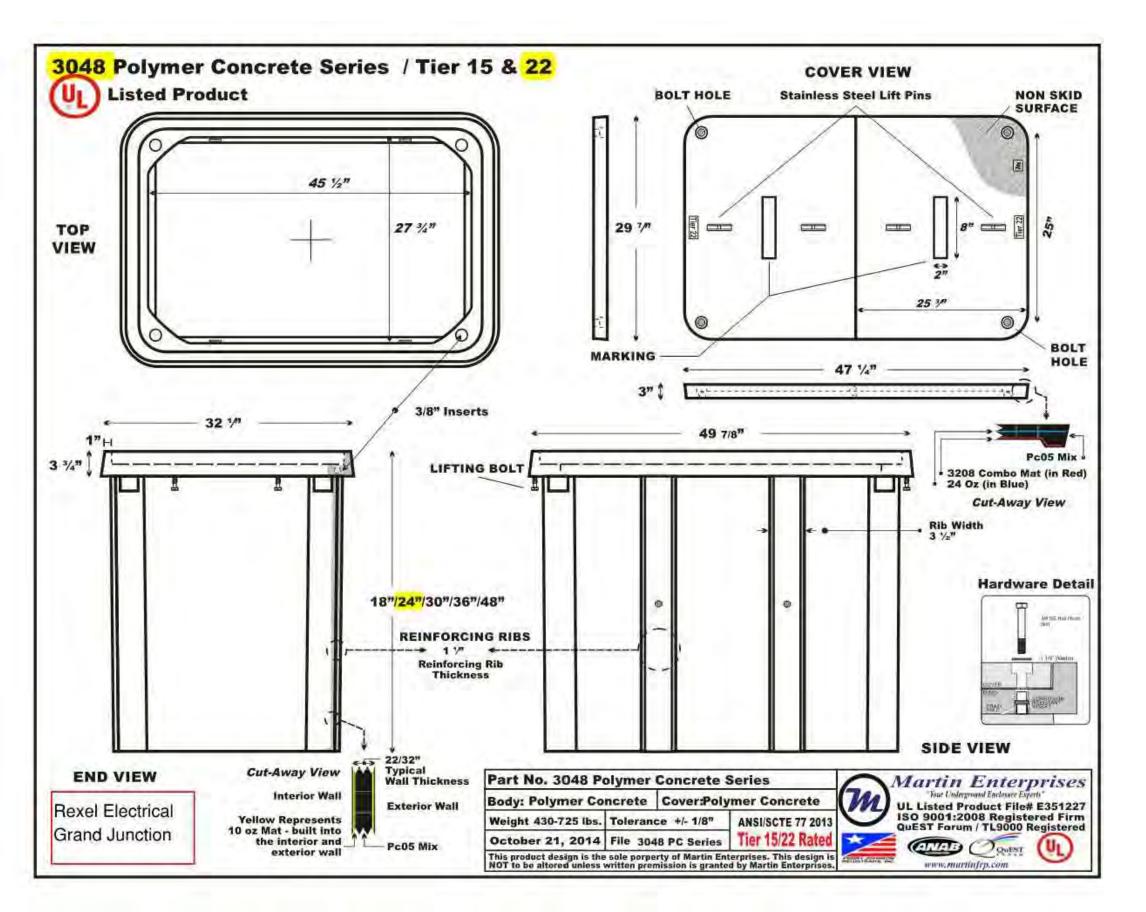
DATE: FEBRUARY 2019

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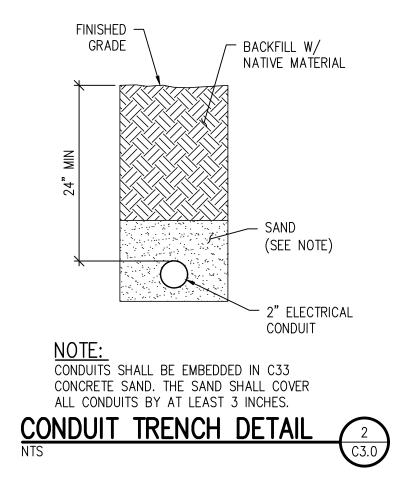
AND WATER LINE REPLACEMENT
GRAND JUNCTION, COLORADO
RAW WATER IRRIGATION LINE DETAILS

SHEET NO.









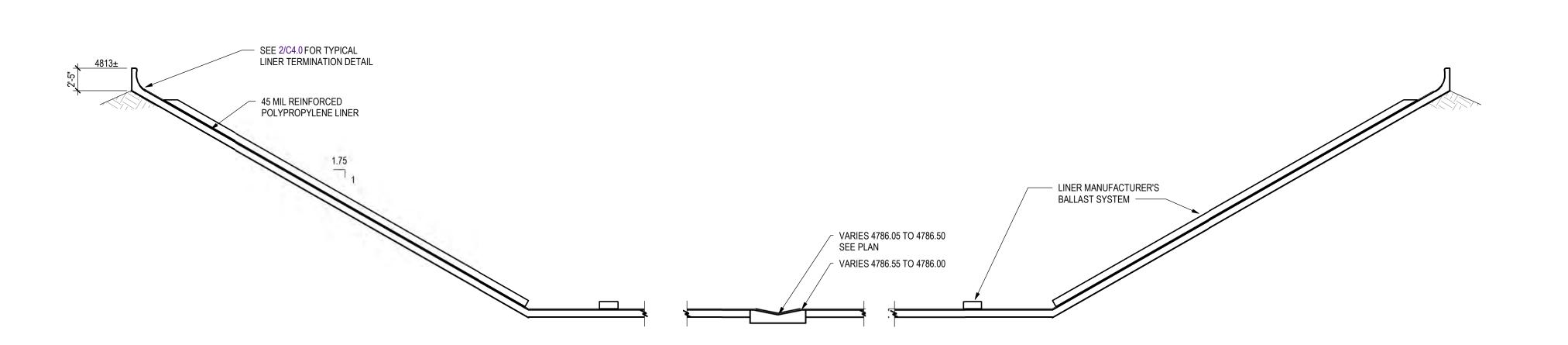
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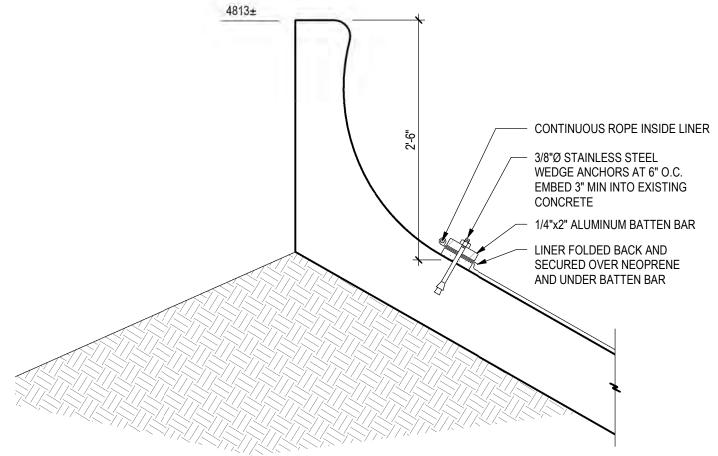
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CHECKED	BY:	JJM
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WATER IRRIGATION SUPPLY
WATER LINE REPLACEMENT
AND JUNCTION, COLORADO
UTILITY DETAILS

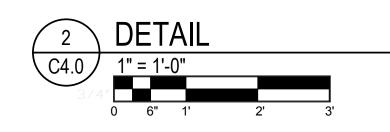
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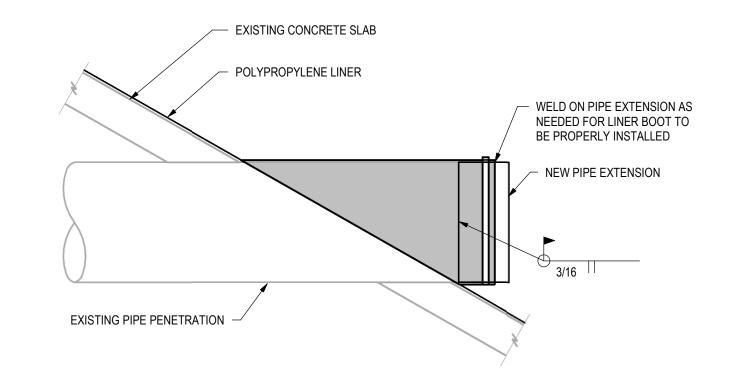
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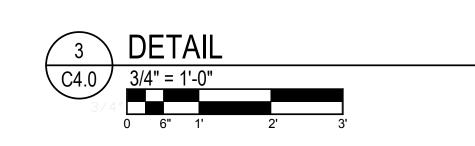


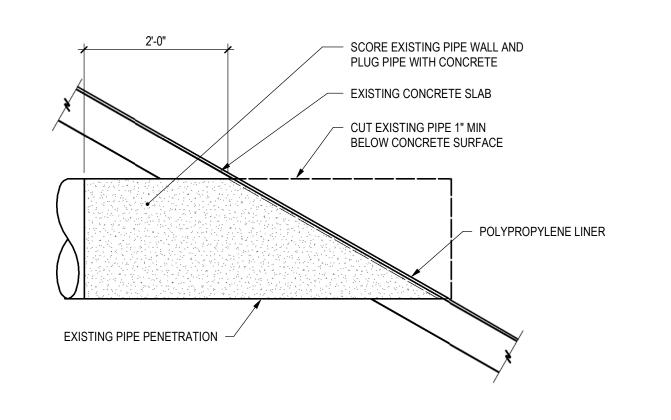




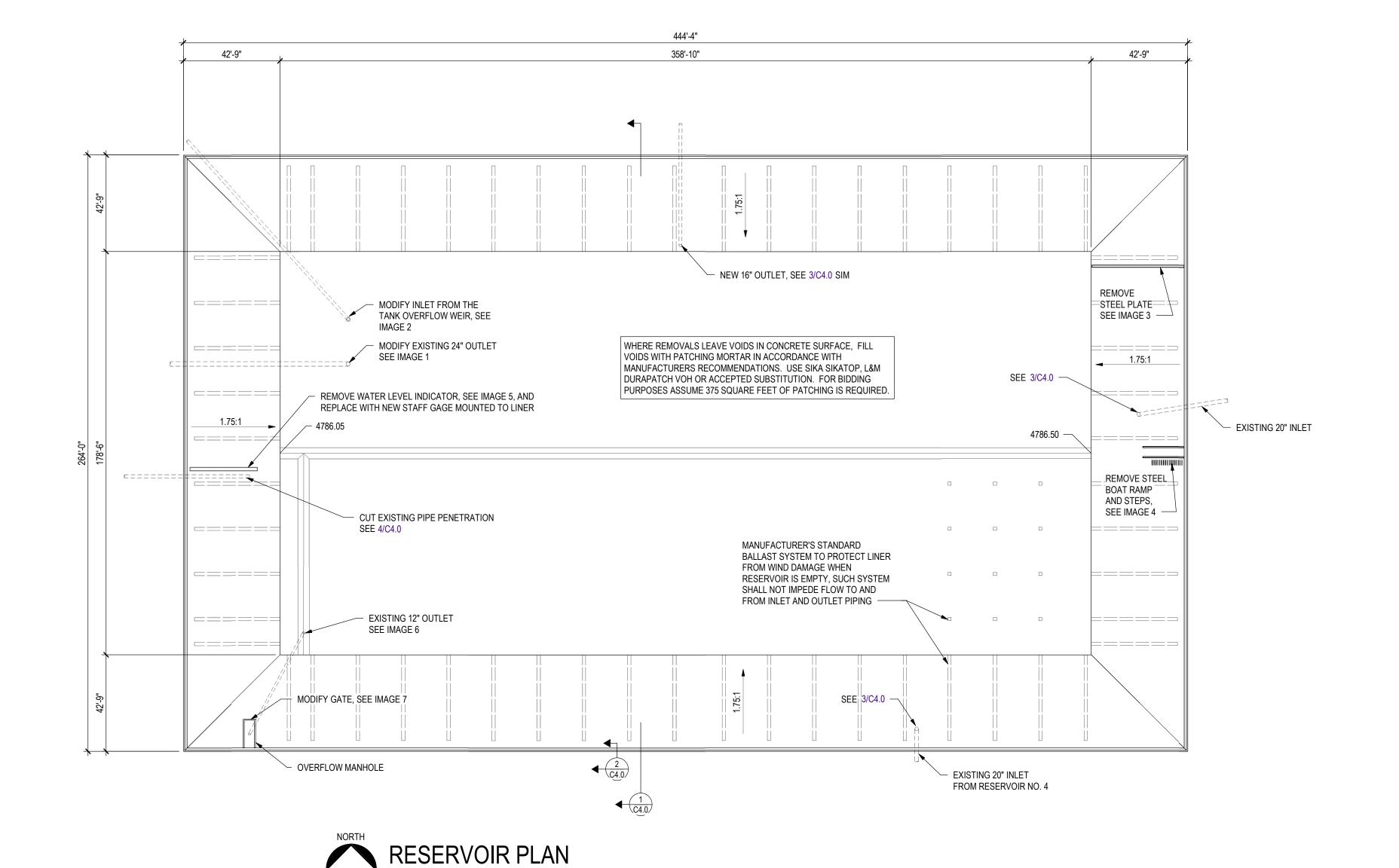




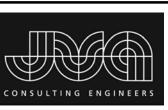




4 DETAIL	
C4.0 3/4" = 1'-0"	



	4	DETAIL		
C	4.0	3/4" = 1'-0"		_



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

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

CITY OF GRAND JUNCTION
RAW WATER IRRIGATION SUPPL
GRAND JUNCTION, COLORADO

SHEET NO.

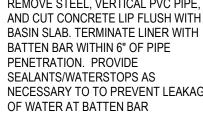
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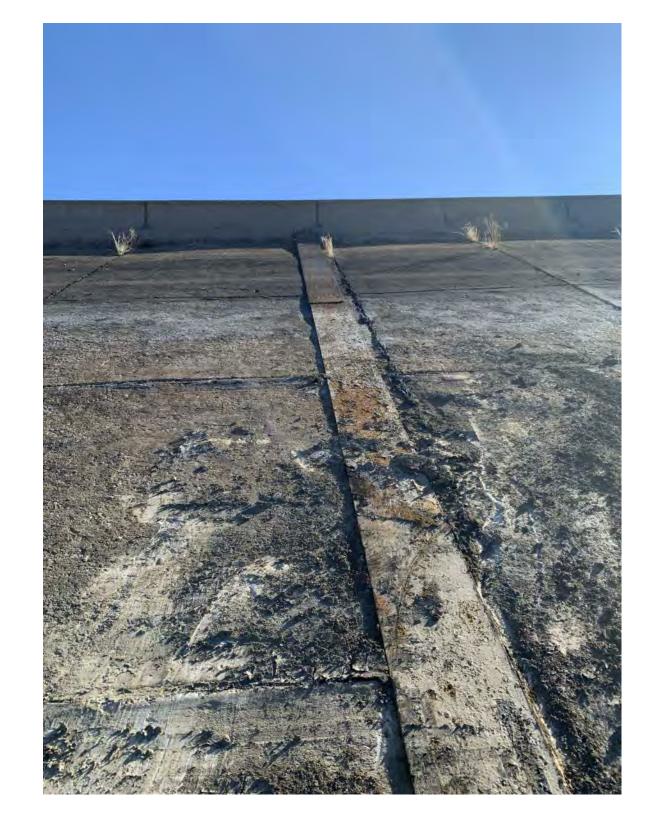




REMOVE STEEL AND VERTICAL PVC
PIPE. TERMINATE LINER WITH
BATTEN BAR WITHIN 6" OF PIPE
PENETRATION. PROVIDE
SEALANTS/WATERSTOPS AS
NECESSARY TO TO PREVENT
LEAKAGE OF WATER AT BATTEN BAR

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





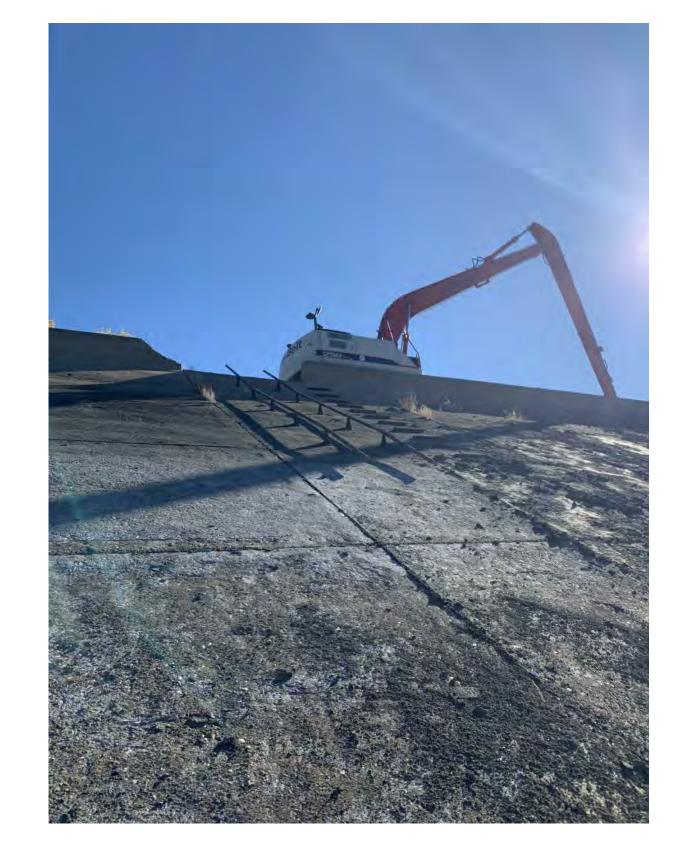


IMAGE 4 IMAGE 3

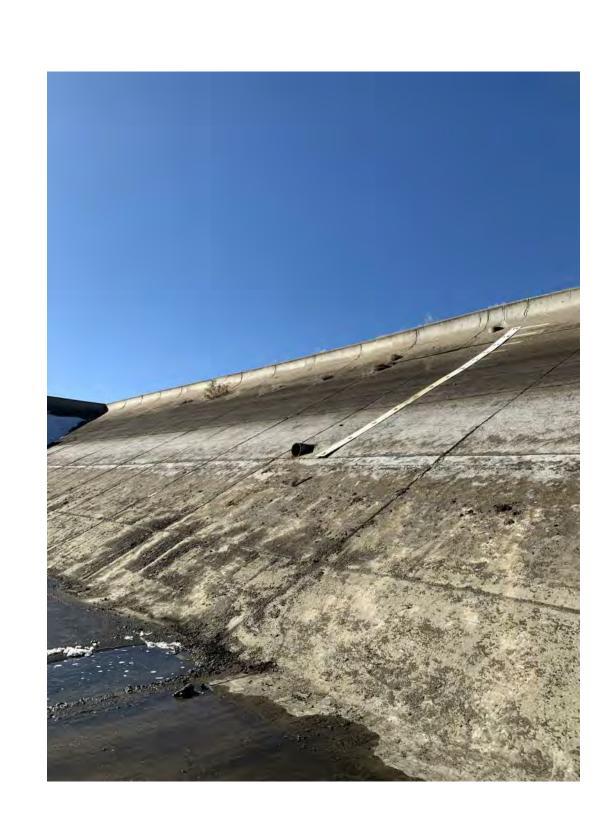


IMAGE 5



IMAGE 6



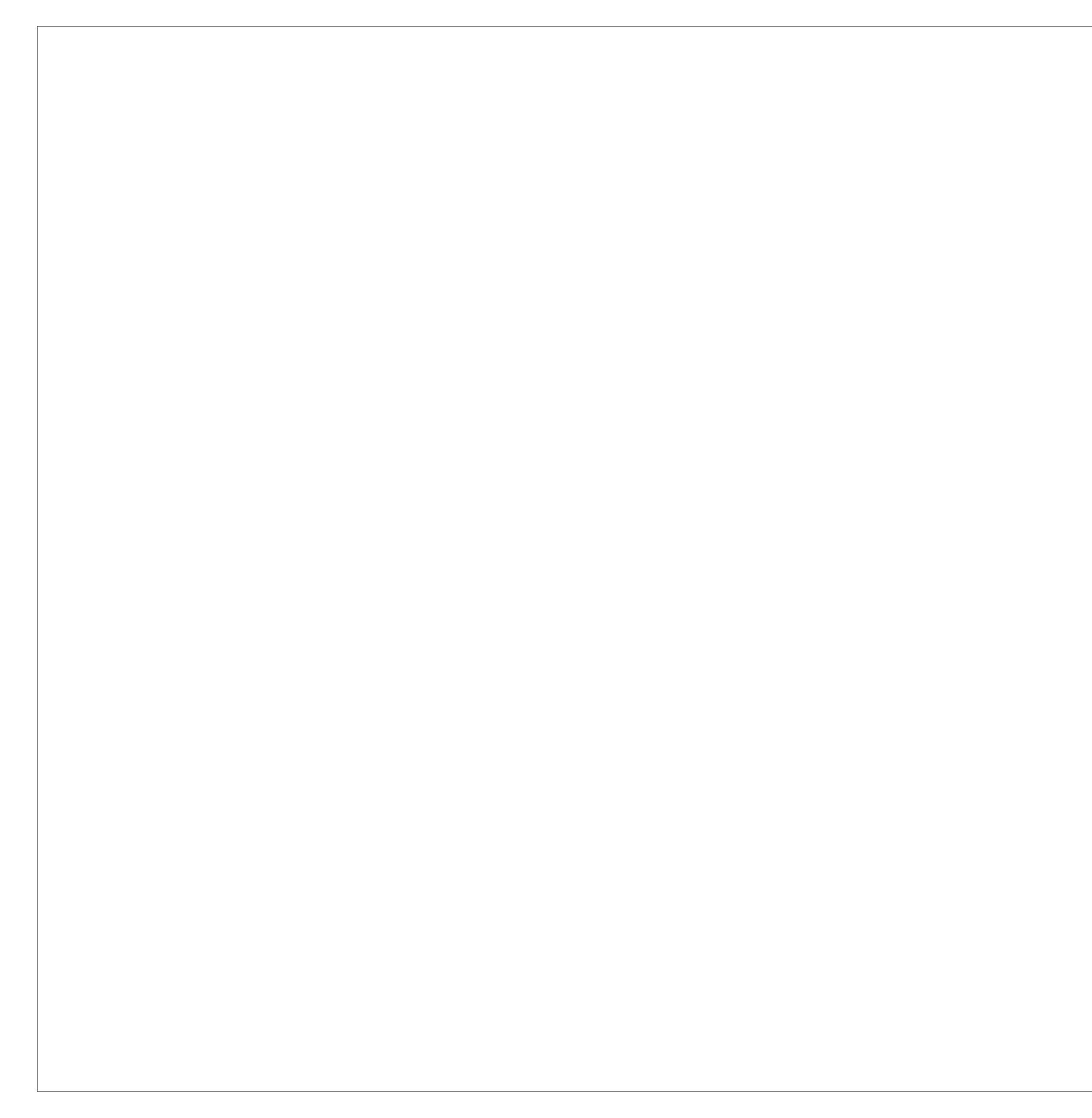
REMOVE AND
REINSTALL GATE AS
REQUIRED TO PROVIDE
A WATERTIGHT LINER
CONNECTION

IMAGE 7

		DEST
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DESIGNED BY:	AJT	
RAWN BY:	AJT	
CHECKED BY:	CDB	
OB #:)ATE: FEI	19286 BRUARY 2019	
©JV		
PARKS RAW WATER IRRIGATION SUPPLY GRAND JUNCTION, COLORADO	PICTURES	

SHEET NO.

C4.1



STRUCTURAL GENERAL NOTES

DESIGN CRITERIA:

 SEISMIC DESIGN: A. $S_S = 0.165g$

- B. $S_1 = 0.040g$ SNOW LOAD:
 - A. GROUND SNOW LOAD = 30 PSF
- WIND LOAD: A. BASIC WIND SPEED = 105 MPH
- 4. WEIGHT OF FILLED WATER PIPE = 148 PLF
- 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.

- 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. 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
- 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

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

STRUCTURAL DRAWING LIST

BRIDGE/PIPE SUPPORT FRAMING PLAN

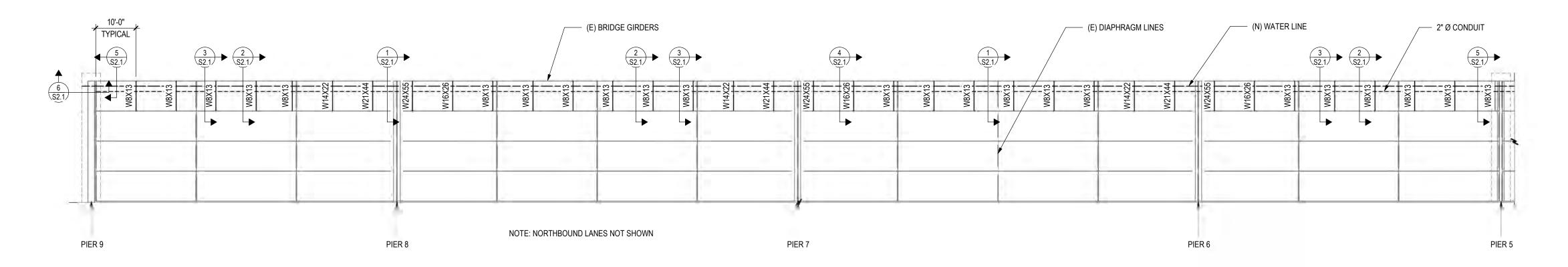
GENERAL NOTES

SECTIONS

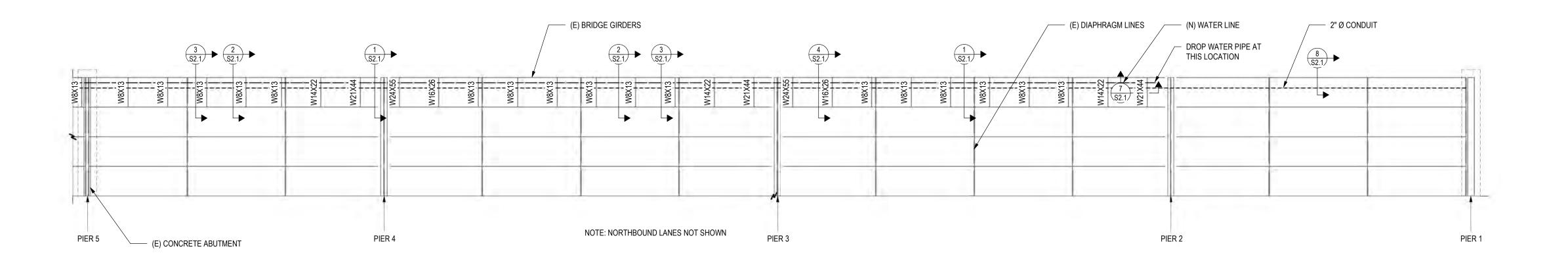
SHEET TITLE

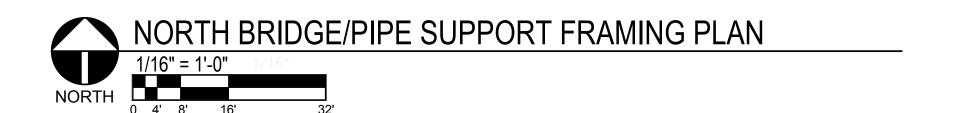
SHEET NO.











REVISION DESCRIPTION

DESIGNED BY: BAR
DRAWN BY: SCR
CHECKED BY: BAR
JOB #: 19086
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CITY OF GRAND JUNCTION
PARKS RAW WATER IRRIGATION SUPPLY
GRAND JUNCTION, COLORADO
BRIDGE/PIPE SUPPORT FRAMING PLAN

SHEET NO.

S1.1

