PREPARED FOR:

CITY OF SANTA FE: RVER & WATERSHED PUBLIC WORKS DEPARTMENT
CONTACT: MELISSA A. MCDONALD, RLA
PHONE: 505-955-6840
EMAIL: MAMCDONALD@SANTAFENM.GOV

PREPARED BY:

WILLIAM J MILLER ENGINEERS, INC.
1511 THIRD ST.,
SANTA FE, NM 87505

CONTACT: JOHN CRITCHFIELD
PHONE: 505-983-7694
FAX: 505-983-8205
EMAIL: JOHN@WJMILLERENGINEERS.COM

ENGINEER'S CERTIFICATE

I, JOHN M. CRITCHFIELD, HEREBY CERTIFY THAT I AM A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW MEXICO, QUALIFIED IN CIVIL ENGINEERING; THAT THIS DOCUMENT FOR THE SANTA FE RIVER & TRAIL (PHASE 3B) WAS PREPARED BY ME OR UNDER MY SUPERVISION AND ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JOHN M. CRITCHFIELD, NEW MEXICO, 21128, REGISTERED PROFESSIONAL ENGINEER

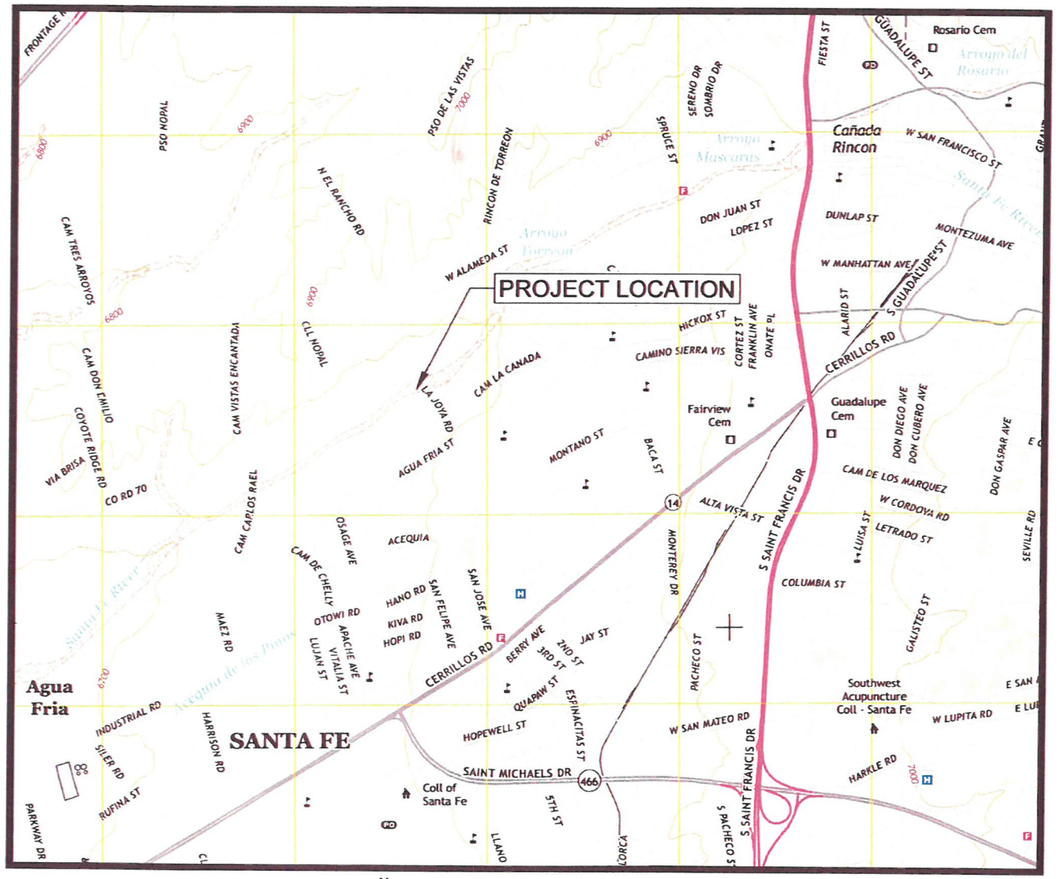
_____, LICENSE NO. 21128
JOHN M. CRITCHFIELD

DATE: JUNE 18, 2018

CITY OF SANTA FE
NEW MEXICO

CONSTRUCTION DRAWINGS FOR THE:

SANTA FE RIVER & TRAIL (PHASE 3B)
RIVER BANK AND ROCK RUNDOWN REPAIRS

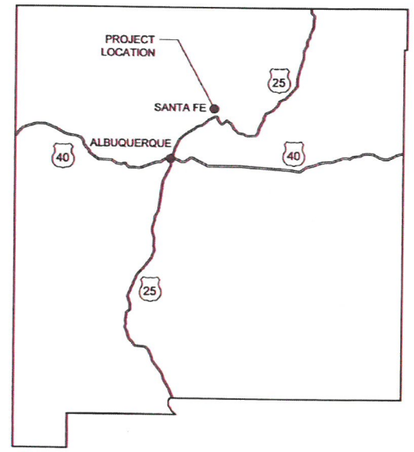


N
PROJECT SITE MAP
N.T.S.

SOURCE: USGS US TOPO SANTA FE, NM 2017

SHEET INDEX:

1. COVER SHEET
2. GENERAL NOTES, PERMITS AND MATERIAL QUANTITIES
3. DEMOLITION PLAN
4. GRADING PLAN AND PROFILE
5. ADDITIVE ALTERNATIVE 4 - LA JOYA ST. STORMWATER CHANNEL PLAN, PROFILE AND SECTIONS
6. ADDITIVE ALTERNATIVE 3 - ALEJANDRO ST. STORMWATER CHANNEL PLAN, PROFILE AND SECTIONS
7. CROSS SECTIONS - SANTA FE RIVER STA: 39+00 TO STA: 41+50
8. CROSS SECTIONS - SANTA FE RIVER STA: 36+56 TO STA: 37+60
9. REVEGETATION PLAN



N
PROJECT LOCATION MAP

APPROVED BY CITY OF SANTA FE		APPROVED BY CITY OF SANTA FE	
PUBLIC WORKS DEPARTMENT DIRECTOR	7/10/18 DATE	ROADWAY & TRAILS ENGINEERING DIVISION DIRECTOR	7/10/18 DATE
REVIEWED BY CITY OF SANTA FE MAYOR'S COMMITTEE ON DISABILITY		REVIEWED BY CITY OF SANTA FE HISTORIC PRESERVATION DIVISION	
ADA COORDINATOR	6/25/18 DATE	HISTORIC PRESERVATION DIVISION	6/21/18 DATE

Design Revisions			
Rev. No.	Description	Approved	Date
1	POST-FLOOD DESIGN CHANGES	WJM	DEC 2018

La Villa Real de la Santa Fé de San Francisco de Asís 1610 1846 1821

william j. miller ENGINEERS

William J. Miller Engineers, Inc.
1511 Third St.,
Santa Fe, NM 87505

COVER SHEET

CIP 500 C: SANTA FE RIVER AT LA JOYA STREET RIVER BANK STABILIZATION REPAIR (PHASE 3B)
SANTA FE, NM

Designed By	Created By	Project Number	Sheet
JMC	WJM	17080	1 of 9
Drawn By: AMR	Date: JUNE 29, 2018		

NEW MEXICO
ENVIRONMENT DEPARTMENT

Surface Water Quality Bureau

Harold Runnels Building, N2050
1190 South St. Francis Drive (87505)
P.O. Box 5469, Santa Fe, NM 87502
Phone (505) 827-0187 Fax (505) 827-0160
www.nmenv.state.nm.us

RECEIVED
JUN 29 2010
ENGINEERING DIVISION

BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary
SARAH COTTRELL
Deputy Secretary

June 24, 2010

CERTIFIED MAIL NO. 7008 1830 0003 4174 5623

Mr. Brian K. Drypolcher
City of Santa Fe, Watershed and Trails Section, Engineering Division
POB 909
Santa Fe, New Mexico 87504-0909

Subject: Clean Water Act Section 401 Water Quality Certification for ***NMED SWQB File SF-507***: Santa Fe River Restoration, Santa Fe County, New Mexico.

Dear Mr. Drypolcher,

The Surface Water Quality Bureau (SWQB) of the New Mexico Environment Department has examined the application for the project indicated above under Sections 404 and 401 of the federal Clean Water Act. According to the application, this project involves installing trails, channel and bank stabilization, and revegetation along at the Santa Fe River between Camino Alire and Camino Carlos Real. Gannett Fleming West, Inc. is acting as agent on your behalf.

The U.S. Army Corps of Engineers (USACE) will regulate this project under Nationwide Permit NW-27 (USACE Action SPA-2009-00765 -ABQ). A state Water Quality Certification is required by Section 401 of the federal Clean Water Act to ensure that the project complies with the State of New Mexico water quality standards (*State of New Mexico, Standards for Interstate & Intrastate Surface Waters, New Mexico Water Quality Control Commission, 20.6.4 New Mexico Administrative Code (NMAC) amendments effective on August 1, 2007*). A Section 401 Water Quality Certification is also required to comply with General Condition 21 (Water Quality) and General Condition 23 (Regional and Case-By-Case Conditions) of the Nationwide Permits.

The State of New Mexico water quality standards applicable to the project, which are available on the web at http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0004.pdf include, but are not limited to:

20.6.4.8	*Antidegradation Policy and Implementation Plan*
20.6.4.13 A, B, F, I and	*General Criteria for Bottom Deposits and Suspended or Settleable Solids, Floating Solids, Oil and Grease, Toxic Pollutants, Temperature, and Turbidity*
20.6.4.13.J	*Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the normal growth, function or reproduction of aquatic life is impaired or that will cause substantial visible contrast with the natural appearance of the water. Turbidity shall not exceed 10 NTU over background turbidity when the background turbidity is 50 NTU or less, or increase more than 20 percent when the background turbidity is more than 50 NTU. Background turbidity shall be measured at a point immediately upstream of the turbidity-causing activity. However, limited-duration activities necessary to accommodate dredging, construction or other similar activities and that cause the criterion to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and all appropriate permits and approvals have been obtained.*
20.6.4.98	*All intermittent surface waters of the state...*
20.6.4.900	*Standards Applicable to Attainable or Designated Uses*

According to the State of New Mexico water quality standards, the Santa Fe River (Santa Fe WWTP to Nichols Reservoir) is designated for the following uses: livestock watering, wildlife habitat, limited aquatic life and secondary contact. "Surface water(s) of the state" means all surface waters including streams, mudflats, sandflats, wetlands, sloughs, wet meadows, and natural ponds. The Santa Fe River (Santa Fe WWTP to Nichols Reservoir) does not meet State of New Mexico water quality standards for aquatic life, primary contact, or wildlife habitat *(2008 - 2010 CWA §303(d)/§305(b) Integrated Report and List of Assessed Surface Waters)*.

Section 401 Water Quality Certification with Conditions:

Pursuant to Section 401 of the Clean Water Act and 40 Code of Federal Regulations Part 121, the SWQB hereby issues a conditional Section 401 Water Quality Certification for USACE Action SPA-2009-00765 -ABQ (Santa Fe River Restoration) based on the application and/or information provided. This certification is subject to conditions to reasonably assure that the activity is consistent with state law, will be conducted in a manner that will not violate applicable State of New Mexico water quality standards, and implements the Water Quality Management Plan, including Total Maximum Daily Loads (TMDLs), the Continuing Planning Process, and Antidegradation Policy Implementation Plan. **Therefore, this Certification is not valid unless the following conditions are adhered to:**

1. Erosion control measures for all portions of the project area that drain to or would have runoff toward surface water must be properly selected, installed, inspected, repaired, and maintained. Erosion and sediment control structures (e.g., silt fences, sediment basins, etc.) must be inspected after significant storm events and repaired as necessary. Sediment must be removed from erosion control structures when the sediment reaches one-half the height of the structure or wet storage volume is reduced by one-half.

2. Fuel, oil, hydraulic fluid, lubricants, and other petrochemicals must not be stored within the 100-year floodplain and must have a secondary containment system to prevent spills. Appropriate spill clean-up materials such as booms and absorbent pads must be available on-site at all times during construction.

3. All heavy equipment used in the project area must be pressure washed and/or steam cleaned before the start of the project and inspected daily for leaks. A written log of inspections and maintenance must be completed. Leaking equipment must not be used in or near surface water. Refuel equipment at least 100 feet from surface water.

4. Do not work within the channel during spring runoff or summer monsoon seasons. Local weather forecasts must be monitored to avoid working in high water. Releases from dams must be incorporated into the work schedule to avoid working in high water. Work in the stream channel should be limited to periods of no flow when practicable, and must be limited to periods of low flow.

5. Temporary crossings must be restricted to a single location and perpendicular to and at a narrow point of the channel to minimize disturbance. Heavy equipment must be operated from the bank or work platforms and not enter surface water when practicable. Heavy equipment must not be parked within the stream channel. Heavy equipment that is operated from within flowing water must be appropriate for such work and properly maintained.

6. Flowing water must be temporarily diverted around the work area, but remain within the existing channel to minimize erosion and turbidity and to provide for aquatic life movement. Diversion structures must be non-erodible, such as sand bags, water bladders, concrete barriers, or channel lined with geotextile or plastic sheeting. Dirt cofferdams are not acceptable diversion structures. Diversion structures must be capable of carrying anticipated stream flows during the construction period. All man-made materials must be removed from the diversion channel and water returned to the original channel in a manner that avoids or minimizes turbidity. Temporary diversion channels must be backfilled in a manner that prevents erosion and diversion of the stream from its natural channel.

7. Any asphalt, concrete, or other construction materials must be properly handled and contained to prevent releases to surface water. Poured concrete must be fully contained in mortar-tight forms and/or placed behind non-erodible cofferdams to prevent releases to surface water or ground water. Appropriate measures must be used to prevent wastewater from concrete batching, vehicle wash-down, or aggregate processing entering the watercourse. Dumping of waste materials near watercourses is strictly prohibited.

8. Work or the use of heavy equipment in wetlands must be avoided or minimized unless the impacts are to be mitigated.

9. In-channel structures must be properly designed, installed and maintained to allow passage of sediment, bedload, and woody debris, and to prevent erosion problems or diversion of the stream from its natural channel.

10. All areas adjacent to the watercourse that are disturbed because of the project, including temporary access roads, stockpiles and staging areas, must be restored to pre-project elevations. Disturbed areas outside the channel that are not otherwise physically protected from erosion must be reseeded or planted with native vegetation. Stabilization measures including vegetation are required at the earliest practicable date, but by the end of first full growing season following construction. Native woody riparian and/or wetland species must be used in areas that support such vegetation. Plantings must be monitored and replaced for an overall survival rate of at least 80 percent. Once established, native plants adapted to the site must be able to thrive with no supplemental water or treatment.

11. You are required to submit an annual monitoring report documenting the monitoring discussed below for a period of not-less-than five years.

    a. You shall take photographs of not less than ten locations adjacent to structures installed to determine the efficacy of the structure. Include the project's largest structures, especially those that cross the entire stream channel. The same locations shall be photographed annually and displayed in the monitoring report. Changes shall be prominently noted, both in the report text and annotated in the photo captions.

    b. You shall include a discussion of peak flows during spring and monsoon peak events, the installed structures' response to high flows, and the progress of post-construction stabilization, including the revegetation success. This discussion should be cumulative from year to year to enable the reader to obtain an overall understanding of the structures' efficacy since installation.

12. A copy of this Section 401 Water Quality Certification must be kept at the project site during all phases of construction. All contractors involved in the project must be provided a copy of this certification and made aware of the conditions prior to starting construction.

13. The SWQB must be notified at least five days before starting construction to allow time to schedule monitoring or inspections.

14. Report all spills immediately to the NMED as required by the New Mexico Water Quality Control Commission regulations (20.6.2.1203 NMAC). For non-emergencies during normal business hours, call 505-428-2500. For non-emergencies after hours, call 866-428-6535 or 505-428-6535 (voice mail, twenty-four hours a day). For emergencies only, call 505-827-9329 twenty-four hours a day (New Mexico Department of Public Safety).

Violations of State of New Mexico water quality standards could lead to penalties under the New Mexico Water Quality Act. Section 74-6-10.1 B of the Act states, "Any person who violates any provision of the New Mexico Water Quality Act other than Section 74-6-5 NMSA 1978 or any person who violates any regulation, water quality standard, or compliance order adopted pursuant to that act shall be assessed civil penalties up to the amount of ten thousand dollars ($10,000) per day for each violation."

The SWQB specifically reserves the right to amend or revoke this conditional Section 401 Certification at any time to ensure compliance with the State of New Mexico water quality standards. If you have any questions regarding this Section 401 Water Quality Certification, please feel free to contact Neal Schaeffer of my staff at (505) 476-3017. Thank you for your cooperation.

Sincerely,

Glenn Saums, Acting Chief
Surface Water Quality Bureau

GS: cns

xc: NMED District II Manager, Santa Fe
Deanna Cummings, U.S. Army Corps of Engineers
Tom Nystrom, Wetlands, Region 6, USEPA
Jill Wick, New Mexico Department of Game and Fish
Brian Millsap, U.S. Fish and Wildlife Service
401 Certification File SF-507

GENERAL NOTES:

1. THE LOCATION AND ELEVATIONS OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS ARE BASED UPON THE BEST AVAILABLE INFORMATION AND IS APPROXIMATE AND INCOMPLETE. CONTRACTOR SHALL CONTACT NEW MEXICO ONE CALL SYSTEM, AS REQUIRED BY LAW, 48 HOURS PRIOR TO ANY EXCAVATION TO LOCATE EXISTING UNDERGROUND UTILITIES. UTILITY FACILITIES ARE SHOWN AS BELIEVED TO EXIST AT TIME OF SURVEYS. FACILITIES MAY HAVE BEEN OMITTED, MISPLACED, AND OR RELOCATED. THE CONTRACTOR SHALL PROTECT ALL UTILITIES WHETHER SHOWN ON THE DRAWINGS OR NOT. THE CONTRACTOR IS RESPONSIBLE FOR FINAL VERIFICATION OF ALL UTILITIES WITH THE UTILITY OWNERS BEFORE CONSTRUCTION IS INITIATED.

2. PROPERTY LINES SHOWN ON THESE DRAWINGS ARE APPROXIMATE AND ARE FOR ILLUSTRATIVE PURPOSES ONLY. PROPERTY LINE CORNERS WILL BE LOCATED IN THE FIELD BY ENGINEER PRIOR TO PRECONSTRUCTION CONFERENCE. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL WORK IS EXECUTED WITHIN THE PROPERTY BOUNDARIES AND REQUIRED SETBACKS.

3. THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, ROADWAY, DRAINAGE WAYS, CULVERTS, AND VEGETATION UNTIL SUCH ITEMS ARE TO BE DISTURBED OR REMOVED AS INDICATED ON THE CONSTRUCTION DOCUMENTS. BEST MANAGEMENT PRACTICES SHALL BE INSTALLED AND MAINTAINED DURING AND AFTER CONSTRUCTION ACTIVITY, IN ACCORDANCE WITH CONSTRUCTION SPECIFICATION NO. 603 POLLUTION CONTROL, TO PREVENT POLLUTION FROM STORMWATER RUNOFF FROM THE ENTERING RIVER.

4. ALL STATIONING REFERS TO THE BASELINE OF CONSTRUCTION AND IS THE MEASURED HORIZONTAL DISTANCE FROM DOWNSTREAM TO UPSTREAM.

5. LEFT AND RIGHT OF THE BASELINE ARE DETERMINED BY LOOKING IN THE DOWNSTREAM DIRECTION.

6. SLOPES DESIGNATED AS 1:1, 3:1, 5:1, ET CETERA, REFER TO THE RATIO OF HORIZONTAL TO VERTICAL DISTANCE.

7. DIMENSIONS FOR EARTHWORK (EXCAVATION, BACKFILL, DRAINFILL) ARE GIVEN IN FEET AND TENTHS OF FEET.

8. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL REMOVE FROM THE WORK SITE: ALL DEBRIS, UNUSED MATERIALS, AND OTHER MATERIALS BELONGING TO OR USED UNDER THEIR DIRECTION DURING THE CONSTRUCTION. THE AREAS OF THE JOB SITE DISTURBED BY THE WORK SHALL BE GRADED TO A UNIFORM SLOPE AND RE-VEGETATED AS SPECIFIED. THE SITE SHALL HAVE A NEAT LOOKING APPEARANCE, AND IF NEEDED, BE RESTORED TO EXISTING CONDITIONS AFTER THE WORK HAS BEEN COMPLETED.

9. DISTURBED AREA FOR THE BASE BID PORTION OF THIS PROJECT WILL BE LESS THAN 1 ACRE. THEREFORE, A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS NOT REQUIRED FOR THE BASE BID, BUT WILL BE REQUIRED IF ALTERNATIVES ARE SELECTED. SEE SUMMARY OF DISTURBED AREA, SHEET 9. CONTRACTOR REMAINS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL WATER QUALITY REGULATIONS.

10. THE CONTRACTOR SHALL BE FULLY INFORMED OF ALL FEDERAL AND STATE LAWS, ALL LOCAL LAWS, ORDINANCES AND REGULATIONS, AND ALL ORDERS AND DECREES OF BODIES OR TRIBUNALS HAVING JURISDICTION OR AUTHORITY, INCLUDING THOSE WHICH IN ANY MANNER CONTROL POLLUTION OR IMPACTS TO THE ENVIRONMENT, AFFECT THOSE ENGAGED OR EMPLOYED ON THE WORK, OR WHICH IN ANY WAY AFFECT THE CONDUCT OF THE WORK. THE CONTRACTOR SHALL AT ALL TIMES OBSERVE AND COMPLY WITH ALL SUCH LAWS, ORDINANCES, REGULATIONS, ORDERS, AND DECREES; AND PROTECT AND INDEMNIFY THE OWNERS AND ITS OFFICERS, EMPLOYEES AND AGENTS AGAINST ALL CLAIMS OR LIABILITY ARISING FROM OR BASED ON THE VIOLATION OF SUCH LAWS, ORDINANCES, REGULATIONS, ORDERS, OR DECREES, BY THE CONTRACTOR, OR ITS OFFICERS, EMPLOYEES OR AGENTS.

11. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SANITARY ACCOMMODATIONS FOR USE BY CONTRACTOR AND OWNER'S EMPLOYEES, IN ACCORDANCE WITH STATE AND LOCAL BOARDS OF HEALTH, OR OTHER LEGAL ENTITY WITH JURISDICTION. THE CONTRACTOR SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL HEALTH RULES AND REGULATIONS. THE CONTRACTOR SHALL ENSURE THAT WORKING CONDITIONS ARE SANITARY, NON-HAZARDOUS, AND NOT DANGEROUS TO THE HEALTH OR SAFETY OF WORKERS OR AUTHORIZED VISITORS ON THE PROJECT.

12. CITY OF SANTA FE NOISE ORDINANCE SFCC §10-2.4 B.(5)(A) PROHIBITS OPERATION OF EQUIPMENT USED IN CONSTRUCTION WORK ON STREETS IN RESIDENTIAL OR COMMERCIALLY ZONED AREAS BETWEEN THE HOURS OF 9:00 P.M. AND 7:00 A.M. THE FOLLOWING DAY. HOWEVER, THE CITY OF SANTA FE PUBLIC WORKS DEPT. HAS THE ABILITY TO REQUEST AN EXEMPTION TO THIS ORDINANCE IN ACCORDANCE WITH SFCC §10-2.8 PERMITS IF IT IS DEEMED ADVANTAGEOUS TO THE TASK ORDER.

13. THE CONTRACTOR SHALL PERFORM DUST ABATEMENT ON THE PROJECT. THE CONTRACTOR SHALL ENSURE THAT BURNING OPERATIONS, DUST-PRODUCING ACTIVITIES, AND OTHER OPERATIONS THAT PRODUCE PARTICULATE MATTER COMPLY WITH STATE AND FEDERAL AIR QUALITY REGULATIONS, AS ADMINISTERED BY THE AIR POLLUTION CONTROL BUREAU OF THE NMED, APPLICABLE LOCAL AIR QUALITY REGULATIONS, AND THE FEDERAL CLEAN AIR ACT (42 USC § 7401 ET SEQ.).

14. THE CONTRACTOR SHALL MINIMIZE DAMAGE TO OR REMOVAL OF VEGETATION AND TREES. THE CONTRACTOR SHALL NOT CLEAR, GRUB, DISTURB, OR EXCAVATE LAND BEYOND WHAT IS AUTHORIZED BY THE CONTRACT. THE CONTRACTOR SHALL REMEDIATE OR REPLACE VEGETATION DUE TO UNNECESSARY CLEARING OR DAMAGE, AT NO ADDITIONAL COST TO THE OWNER.

15. THE CONTRACTOR SHALL TERMINATE OPERATIONS IN THE IMMEDIATE AREA OF ENVIRONMENTAL, HAZARDOUS MATERIALS OR CULTURAL RESOURCES NOT IDENTIFIED IN THE CONTRACT AND IMMEDIATELY NOTIFY THE PROJECT MANAGER. WHILE THE PROJECT MANAGER AND REGULATORY AUTHORITIES COMPLETE APPROPRIATE MITIGATION ACTIONS THE CONTRACTOR SHALL CONTINUE WORK IN OTHER AREAS. THE PROJECT MANAGER SHALL PROVIDE WRITTEN NOTIFICATION TO THE CONTRACTOR WHEN WORK MAY COMMENCE IN THE AREA OF TERMINATED OPERATIONS. ANY ADJUSTMENTS SHALL BE MADE IN ACCORDANCE WITH SECTION 109.5, "PAYMENT FOR CHANGES, DIFFERING SITE CONDITIONS AND EXTRA WORK."

16. THE PROJECT AREA FOR THE (PHASE 3B) REPAIR WORK IS LOCATED WITHIN THE EXTENTS OF THE ARCHAEOLOGICAL SURVEY PERFORMED FOR THE SANTA FE RIVER TRAIL PHASE 2 (NMCRIS #115132).

BID AND MATERIAL QUANTITIES

ADDITIVE ALTERNATIVE 3: ALEJANDRO ST STORMWATER CHANNEL & ROCK RUNDOWN REHABILITATION

BID ITEM NO.	SPEC. NO.*	DESCRIPTION	UNITS	QUANTITY
32	801	Construction staking by Contractor	LS	1
36	601	Demolition and removal of existing structures	LS	1
34	203	Earthwork (excavation & compacted backfill)	CY	155
35	203	Remove excess earthfill from project site	CY	1,188
39	602	Furnish and install graded rock filter	CY	50
33	603	Temporary erosion and sediment control	LS	1
37	602	Furnish and install structure rock	TN	445
40	570/206	Furnish and install 3.5 ft. diameter corrugated metal pipe	LF	20
41	664	Planting and irrigation	LS	1

*REFERENCE NMDOT SPECIFICATIONS

ADDITIVE ALTERNATIVE 4: INSTALLATION OF BOULDER BANK PROTECTION STRUCTURE ON THE SOUTH BANK OF THE SANTA FE RIVER

BID ITEM NO.	SPEC. NO.*	DESCRIPTION	UNITS	QUANTITY
42	801	Construction staking by Contractor	LS	1
43	603	Temporary erosion and sediment control	LS	1
44	203	Earthwork (excavation & compacted backfill)	CY	244
47	602	Furnish and install structure rock for bank stabilization and rock wall	TN	1,230
45	203	Remove excess earthfill from project site	CY	845
50	602	Furnish and install graded rock filter	CY	170
52	632/664	Planting, seeding and irrigation	LS	1
53	702	Traffic control	LS	1

ADDITIVE ALTERNATIVE 4: LA JOYA ST STORMWATER CHANNEL & ROCK RUNDOWN REHABILITATION

BID ITEM NO.	SPEC. NO.*	DESCRIPTION	UNITS	QUANTITY
42	801	Construction staking by Contractor	LS	1
46	601	Demolition and removal of existing structures	LS	1
44	203	Earthwork (excavation & compacted backfill)	CY	137
45	203	Remove excess earthfill from project site	CY	195
50	602	Furnish and install graded rock filter	CY	15
49	602	Furnish and install Class 'C' Riprap	CY	11
43	603	Temporary erosion and sediment control	LS	1
48	602	Furnish and install structure rock	TN	340
51	570/206	Furnish and install 3.5 ft. diameter corrugated metal pipe	LF	20
52	664	Planting and irrigation	LS	1

*REFERENCE NMDOT SPECIFICATIONS

REQUIRED SUBMITTALS:

NUMBER	SPEC. NO.	DESCRIPTION
1	602	STRUCTURE ROCK MATERIAL SOURCE
2	602	GRADED ROCK FILTER
3	570/206	CORRUGATED METAL PIPE
5	632/664	PLANTING MATERIAL SOURCE

Design Revisions			
Rev. No.	Description	Approved	Date
1	POST-FLOOD DESIGN CHANGES	WJM	DEC 2018

JOHN M. CRITCHFIELD — NEW MEXICO — 21128 — PROFESSIONAL ENGINEER

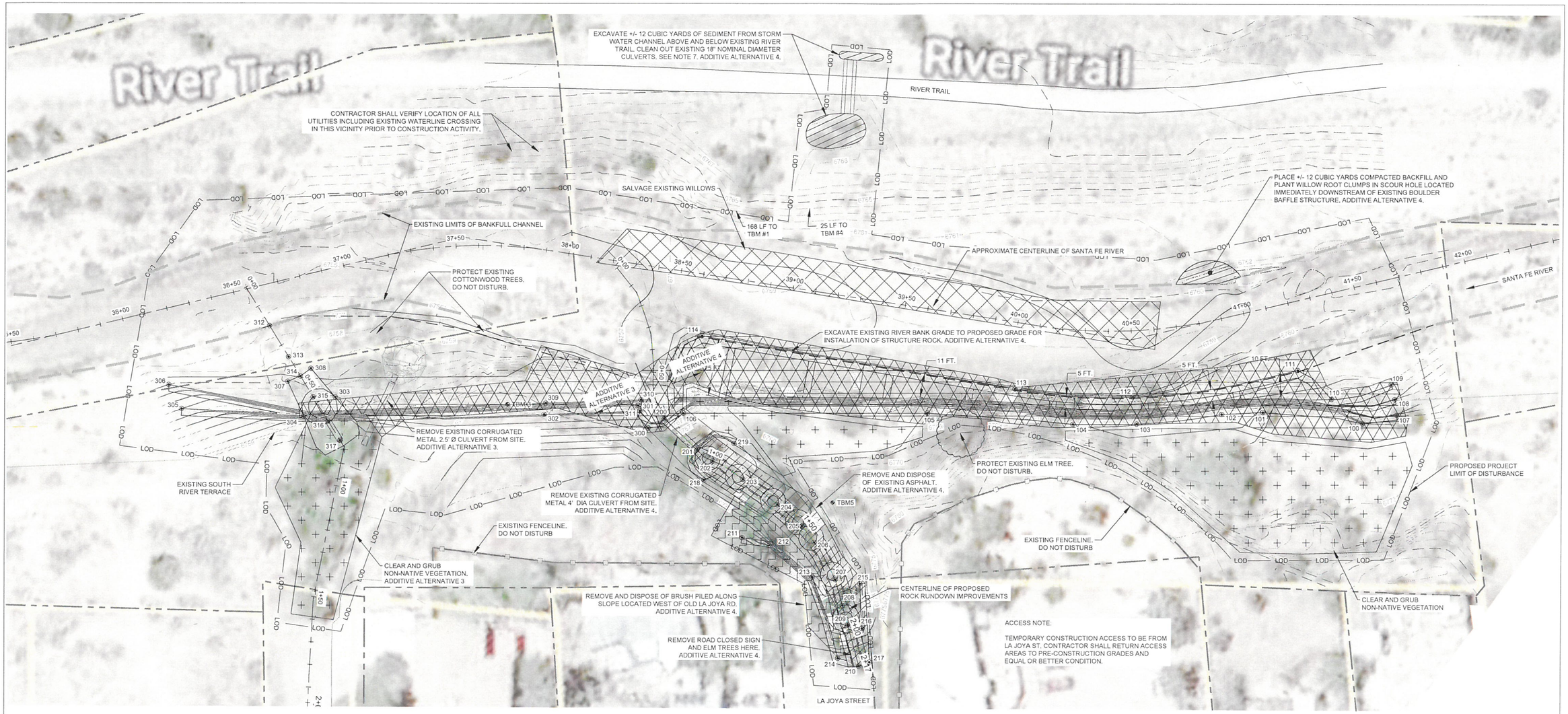
william j. miller ENGINEERS

William J. Miller Engineers, Inc.
1511 Third St.,
Santa Fe, NM 87505

GENERAL NOTES, PERMITS AND MATERIAL QUANTITIES

CIP 500 C: SANTA FE RIVER AT LA JOYA STREET
RIVER BANK STABILIZATION REPAIR (PHASE 3B)
SANTA FE, NM

Designed By:	Checked By:	Project Number:	Sheet:
JMC	WJM	17080	2 of 9
Drawn By: AMR	Date: JUNE 29, 2018		



PLAN: SANTA FE RIVER @ LA JOYA ST.

NOTES:
1. GOOGLE AERIAL IMAGERY DATED JUNE 2017 IS NOT ORTHO-RECTIFIED AND IS FOR ILLUSTRATIVE PURPOSES ONLY.

DEMOLITION NOTES:

1. CONTRACTOR SHALL IMPLEMENT THE ENGINEER APPROVED TRAFFIC CONTROL PLAN, INCLUDING TEMPORARY DETOURS TO BYPASS PEDESTRIAN AND BICYCLE TRAFFIC AROUND THE PROJECT SITE.
2. CONTRACTOR MUST TAKE MEASURES TO PROTECT FROM DISTURBANCE ANY NATIVE TREES AND SHRUBS, INCLUDING COTTONWOOD SPECIES LOCATED WITHIN THE LIMITS OF DISTURBANCE. SHOULD CONTRACTOR IDENTIFY ANY COTTONWOOD TREES THAT ARE IN CONFLICT WITH THE PROPOSED STRUCTURES AND/OR GRADING, CONTRACTOR SHALL CONTACT ENGINEER AT (505) 983-7694. ENGINEER SHALL PROVIDE CLARIFICATION IN CONSULTATION WITH PUBLIC WORKS - LANDSCAPE ARCHITECT ON WHERE TO TRANSPLANT THE EXISTING COTTONWOOD, IF NEEDED.
3. ERODED SOUTH BANK OF SANTA FE RIVER SHALL BE EXCAVATED TO PROPOSED GRADE TO INSTALL ROCK WALL BANK STABILIZATION. EXCAVATED EARTH SHALL BE SALVAGED AND USED AS BACKFILL. CONTRACTOR SHALL SALVAGE AND SORT COBBLE FOR USE IN RIVER RUNDOWN STABILIZATION STRUCTURE.
4. DEMOLISH AND REMOVE FROM SITE EXISTING ASPHALT SURFACE WITHIN DESIGNATED AREAS SHOWN ON THIS PLAN. ASPHALT RUBBLE SHALL BE DISPOSED OF BY CONTRACTOR IN AN APPROVED LANDFILL. BRUSH AND DEBRIS LOCATED WITHIN LIMIT OF DISTURBANCE SHALL BE CLEARED AND REMOVED BY THE CONTRACTOR.
5. DEMOLISH AND REMOVE FROM SITE THE EXISTING 4 FOOT DIAMETER CORRUGATED METAL CULVERT. CONTRACTOR SHALL TAKE CARE TO PRESERVE THE INTEGRITY OF THE EXISTING ROCK OUTFALL STRUCTURE WHEN REMOVING THE EXISTING CULVERT.
6. ROAD CLOSED SIGN LOCATED AT THE DEAD END OF LA JOYA ST ON THE SOUTH BANK OF THE SANTA FE RIVER SHALL BE REMOVED AND RETURNED TO CITY BY THE CONTRACTOR.
7. CONTRACTOR SHALL CLEAR AND GRUB EXISTING NON-NATIVE TREES FROM WITHIN LIMITS OF DISTURBANCE WITH A DIAMETER AT BREAST HEIGHT (DBH) CALIPER LESS THAN 6 INCHES. ANY TREE REMOVAL GREATER THAN 6 INCHES IN DIAMETER MUST RECEIVE APPROVAL, PRIOR TO REMOVAL, BY PUBLIC WORKS - LANDSCAPE ARCHITECT.

DEMOLITION AREAS WITHIN LIMIT OF DISTURBANCE

- EXCAVATE ERODED SOUTH RIVER BANK NEAR LA JOYA RD TO PROPOSED GRADE.
- CLEAR AND DISPOSE OF STOCKPILED BRUSH AND DEBRIS.
- REMOVE ASPHALT AND BROKEN CONCRETE ALONG SOUTH SLOPE OF EXISTING LA JOYA ST RUNDOWN STRUCTURE. REMOVE ROAD CLOSED SIGN AND EXISTING CULVERT.
- DO NOT DISTURB DESIGNATED TREES. SEE NOTE 7.
- SALVAGE EXISTING WILLOWS IN LIMITS OF DISTURBANCE. SOAK IN TANK OF WATER FOR A MINIMUM OF 48 HOURS AND REPLANT IN ACCORDANCE WITH PLANTING PLAN.
- CLEAR AND GRUB EXISTING NON-NATIVE TREES LESS THAN 6" DIAMETER AT BREAST HEIGHT. NATIVE TREES AND SHRUBS SHALL REMAIN UNDISTURBED. SEE NOTE 7.

LEGEND

- APPROXIMATE PARCEL DATA (SANTA FE COUNTY)
- LIMITS OF EXISTING BANKFULL CHANNEL
- 41+00 — BASELINE OF EXISTING BANKFULL CHANNEL
- LOD — PROPOSED LIMITS OF DISTURBANCE

Design Revisions			
Rev. No.	Description	Approved	Date
1	POST-FLOOD DESIGN CHANGES	WJM	DEC 2018

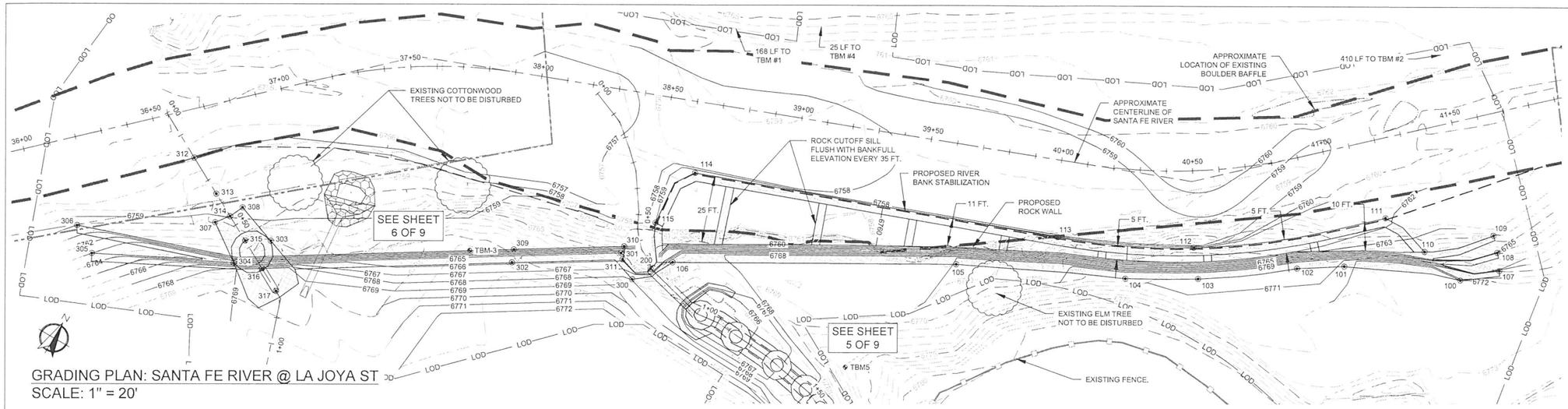
JOHN M. CRITCHFIELD — NEW MEXICO — 21128 — PROFESSIONAL ENGINEER

william j. miller ENGINEERS
William J. Miller Engineers, Inc.
1511 Third St.,
Santa Fe, NM 87505

DEMOLITION PLAN

CIP 500 C: SANTA FE RIVER AT LA JOYA STREET
RIVER BANK STABILIZATION REPAIR (PHASE B)
SANTA FE, NM

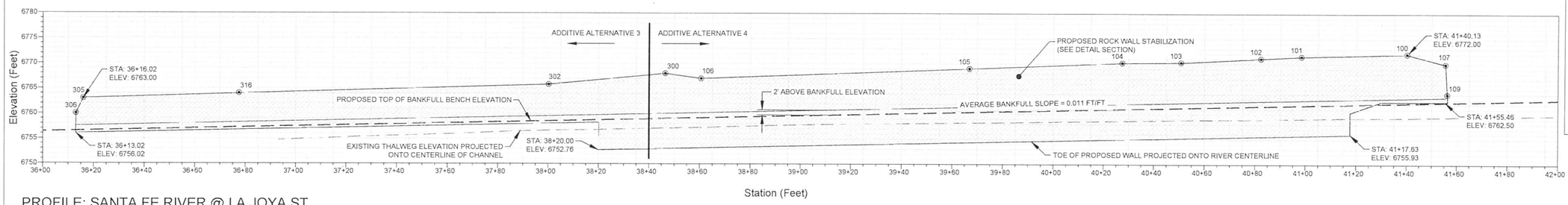
Designed By	Checked By	Project Number	Sheet
JMC	WJM	17080	3 of 9
Drawn By: AMR	Date: JUNE 29, 2018		



GRADING PLAN: SANTA FE RIVER @ LA JOYA ST
SCALE: 1" = 20'

GRADING LEGEND

- EXISTING 1' CONTOURS
- TBM-1 — TEMPORARY BENCHMARK
- APPROXIMATE PROPERTY LINE (SANTA FE COUNTY PARCEL DATA)
- PROPOSED RIVER BANK STABILIZATION 3'x3'x6' (54 CF MIN.)
- PROPOSED ROCK WALL MINIMUM BOULDER SIZE: 2'x3'x6' (36 CF MIN.)
- EXISTING LIMIT OF BANKFULL CHANNEL
- PROPOSED LIMIT OF BANKFULL CHANNEL
- 41+00 — EXISTING CHANNEL CENTERLINE
- 6760 — PROPOSED 1' CONTOURS
- LOD — PROPOSED LIMITS OF DISTURBANCE
- EXISTING FENCE



PROFILE: SANTA FE RIVER @ LA JOYA ST
SCALE: 1" = 20' H; 1" =10' V

TEMPORARY BENCHMARK NOTES:

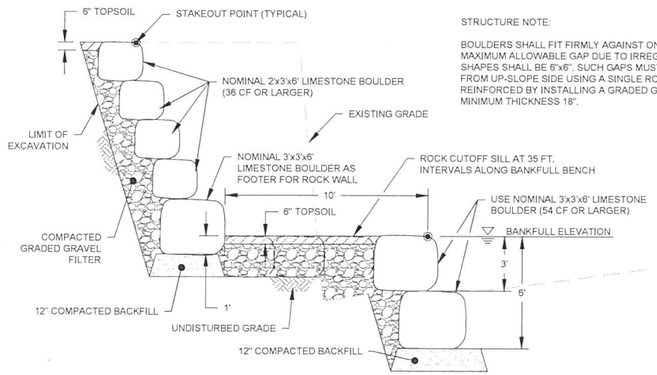
1. TEMPORARY BENCHMARKS INSTALLED AT SITE ARE NOMINAL 18" LENGTH #4 REBAR, DRIVEN FLUSH WITH EXISTING GRADE.
2. TEMPORARY BENCHMARK HORIZONTAL AND VERTICAL LOCATIONS PROVIDED ON THIS PLAN ARE REFERENCED TO NM STATE PLANE COORDINATES, CENTRAL ZONE, NAD 83 (FT.) AND NAVD 1988 (FEET).
3. ENGINEER WILL FLAG BENCHMARKS AT PRE-CONSTRUCTION MEETING, AFTER WHICH CONTRACTOR SHALL BEAR THE RESPONSIBILITY OF MAINTAINING A MINIMUM OF TWO UNDISTURBED BENCHMARKS THROUGH THE DURATION OF CONSTRUCTION ACTIVITY.

CONSTRUCTION SEQUENCE:

1. NOTIFY THE U.S. ARMY CORPS OF ENGINEERS IN ACCORDANCE WITH THE APPROVED PERMIT, CONDUCT AN ON-SITE PRE-CONSTRUCTION MEETING TO ENSURE ALL AFFECTED PARTIES (OWNER, ENGINEER, CONTRACTOR) FULLY UNDERSTAND THE CONSTRUCTION SEQUENCING AND THE CONDITIONS OF THE CWA 404/401 PERMIT. ENGINEER SHALL FLAG CONTROL POINTS AND IDENTIFY LOCATION OF PROPERTY CORNERS AT THE PRE-CONSTRUCTION MEETING.
2. CALL 811 TO NOTIFY NM811 THAT ALL UNDERGROUND FACILITIES SHOULD BE LOCATED IN THE PROJECT AREA PRIOR TO ANY CONSTRUCTION ACTIVITY.
3. INSTALL ALL PERIMETER TEMPORARY EROSION & SEDIMENT CONTROLS PRIOR TO ANY LAND DISTURBING ACTIVITY.
4. STRIP/EXCAVATE ANY AVAILABLE TOPSOIL FROM DISTURBED AREAS AND STOCKPILE FOR LATER USE IN SITE RESTORATION. CONTRACTOR WILL ENSURE THAT APPROPRIATE BEST MANAGEMENT PRACTICES FOR STOCKPILES ARE IN PLACE AT THE END OF EACH WORK DAY.
5. CONTRACTOR'S SURVEYOR SHALL STAKE OUT PROPOSED STRUCTURES USING CONSTRUCTION STAKEOUT POINTS AND TEMPORARY BENCHMARKS PROVIDED ON THESE DRAWINGS. CONTACT ENGINEER TO OBTAIN DIGITAL DRAWINGS OF THE STRUCTURES AS NEEDED.
6. CONTRACTOR SHALL PROCEED WITH CONSTRUCTION OF IN-CHANNEL ROCK STRUCTURES FROM DOWNSTREAM TO UPSTREAM, UNLESS AN ALTERNATE SEQUENCE IS APPROVED BY THE ENGINEER.
7. EXCAVATE TO SUBGRADE AND INSTALL ROCK STRUCTURES IN ACCORDANCE WITH THE DETAILS.
8. GRADE AREAS AROUND STRUCTURES AS SHOWN ON PLAN, MAX TIE OUT GRADES SHALL BE 5:1 UNLESS OTHERWISE SHOWN ON PLANS OR APPROVED BY ENGINEER.
9. COMPLETE REVEGETATION PLAN.

GRADING NOTES:

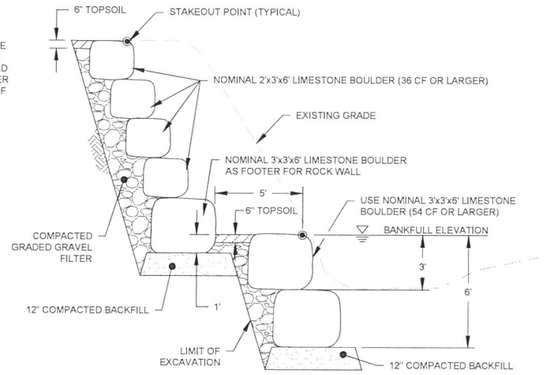
1. PROPOSED CONTOURS SHOWN ON THIS PLAN DEPICT APPROXIMATE GRADING AROUND PROPOSED STRUCTURES. SEE CONSTRUCTION DETAILS FOR DETAILED STRUCTURE DIMENSIONS AND SECTIONS.
2. EXACT QUANTITY AND SIZE OF STRUCTURE ROCKS INSTALLED WILL DEPEND ON SOURCE OF STRUCTURE ROCK MATERIAL AS APPROVED BY ENGINEER.
3. ALL EXCESS EXCAVATED EARTH SHALL BE REMOVED FROM SITE.
4. ANY EXISTING FENCE(S) LOCATED WITHIN THE LIMITS OF DISTURBANCE THAT IS MOVED OR DAMAGED BY CONTRACTOR SHALL BE REPAIRED OR REPLACED AT CONTRACTORS EXPENSE UNLESS OTHERWISE SPECIFIED ON THE PLANS.



STRUCTURE NOTE:

BOULDERS SHALL FIT FIRMLY AGAINST ONE ANOTHER. THE MAXIMUM ALLOWABLE GAP DUE TO IRREGULAR BOULDER SHAPES SHALL BE 6"x6". SUCH GAPS MUST BE HAND FILLED FROM UP-SLOPE SIDE USING A SINGLE ROCK AND FURTHER REINFORCED BY INSTALLING A GRADED GRAVEL FILTER OF MINIMUM THICKNESS 18".

TYPICAL RIVER BANK SECTION (10' BANKFULL BENCH)
(N.T.S)



TYPICAL RIVER BANK SECTION (5' BANKFULL BENCH)
(N.T.S)

ADDITIVE ALTERNATIVE 4

BANK STABILIZATION STAKEOUT POINTS

Point #	Elevation	Northing	Easting	Description
100	6772.00	1702195.28	1721911.27	TOP OF ROCK
101	6771.50	1702180.45	1721869.48	TOP OF ROCK
102	6770.50	1702171.65	1721853.75	TOP OF ROCK
103	6770.30	1702151.39	1721822.01	TOP OF ROCK
104	6770.20	1702139.09	1721797.09	TOP OF ROCK
105	6769.00	1702115.37	1721737.24	TOP OF ROCK
106	6767.00	1702068.13	1721640.59	TOP OF ROCK
107	6770.00	1702205.17	1721922.99	TOP OF ROCK
108	6767.00	1702211.00	1721919.17	TOP OF ROCK
109	6764.00	1702216.12	1721914.97	TOP OF ROCK
110	6764.00	1702198.95	1721894.27	TOE
111	6761.95	1702203.78	1721875.24	BKF
112	6761.00	1702161.33	1721815.23	BKF
113	6760.50	1702141.77	1721767.11	BKF
114	6759.75	1702102.32	1721632.94	BKF
115	6759.00	1702078.73	1721628.03	BKF

TEMPORARY BENCHMARKS

NORTHING	EASTING	ELEVATION (NAVD 88)	DESCRIPTION	LATITUDE	LONGITUDE
1702222.93	1721467.84	6775.17	TBM-1	35.6781410	-105.9770821
1702504.89	1722189.02	6779.74	TBM-2	35.6789101	-105.9746511
1702037.77	1721569.38	6771.49	TBM-3	35.6776316	-105.9767419
1702190.75	1721645.14	6768.35	TBM-4	35.6780513	-105.9764854
1702061.67	1721717.17	6773.16	TBM-5	35.6944444	-105.9763889

EXCESS EARTHWORK SUMMARY

ADDITIVE ALTERNATIVE NO.	ITEM	EXCESS EARTHFILL* (CUBIC YARDS)
3	ALEJANDRO CHANNEL REHABILITATION	1188
4	SOUTH BANK PROTECTION AT LA JOYA	845
4	LA JOYA CHANNEL REHABILITATION	195

* ESTIMATED QUANTITY OF MATERIAL REQUIRED TO BE REMOVED FROM SITE BY CONTRACTOR.

Design Revisions

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william j. miller ENGINEERS

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Santa Fe, NM 87505

GRADING PLAN AND PROFILE

COP 500 C: SANTA FE RIVER AT LA JOYA STREET
RIVER BANK STABILIZATION REPAIR (PHASE B)
SANTA FE, NM

Designed By:	Checked By:	Project Number:	Sheet:
JMC	WJM	17080	4 of 9
Drawn By:	Date:		
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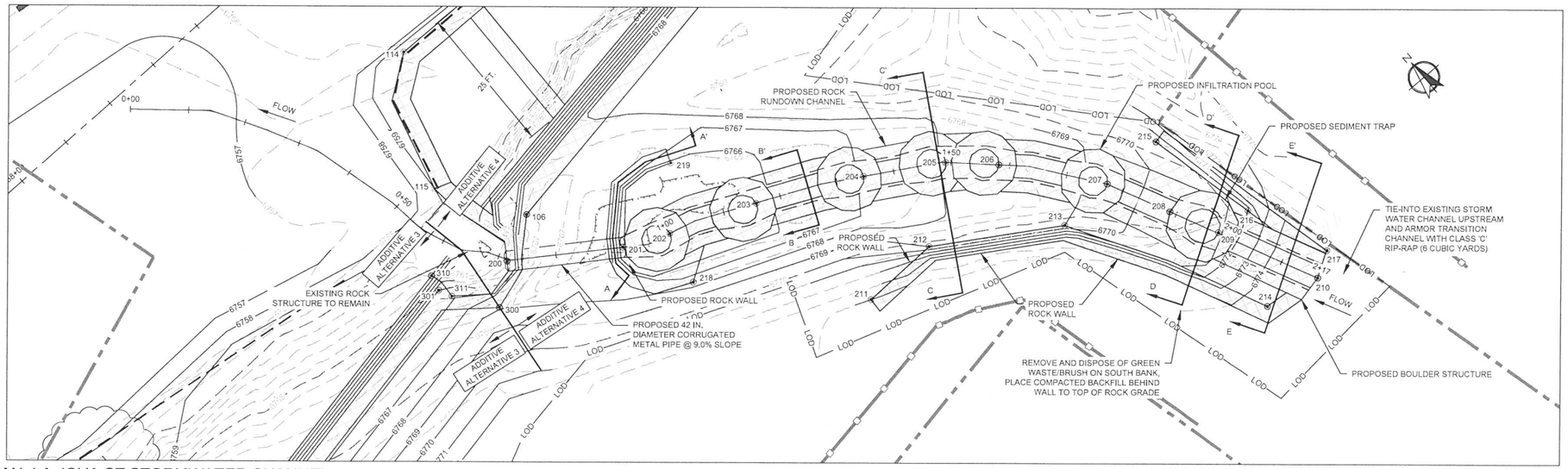
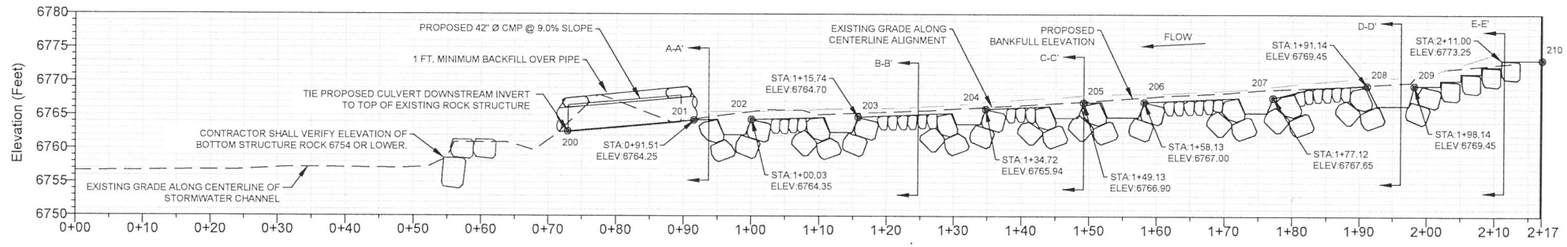
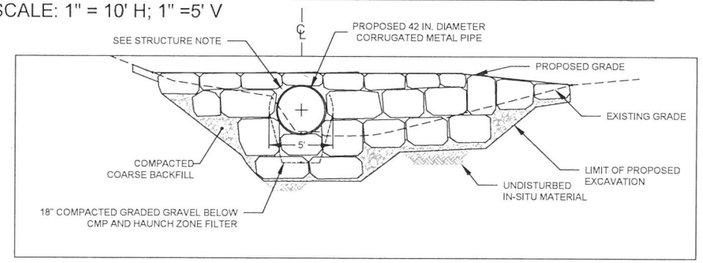


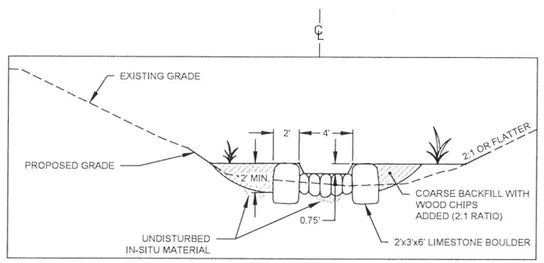
PLAN: LA JOYA ST STORMWATER CHANNEL
SCALE: 1" = 10'



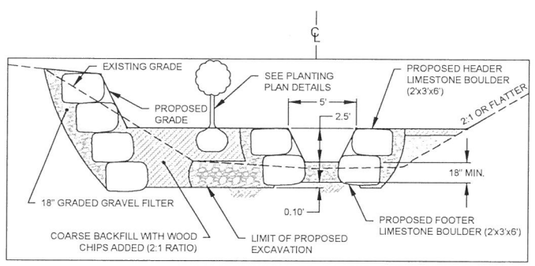
PROFILE: ALONG CENTERLINE OF LA JOYA ST STORMWATER CHANNEL
SCALE: 1" = 10' H; 1" =5' V



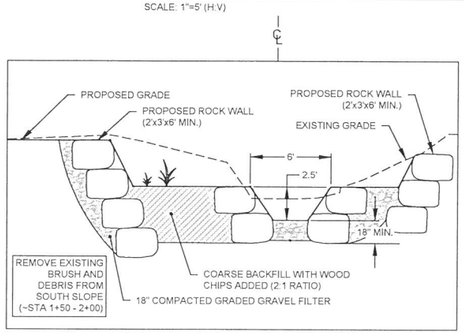
SECTION A-A': AT CMP INLET INVERT
SCALE: 1"=5' (H:V)



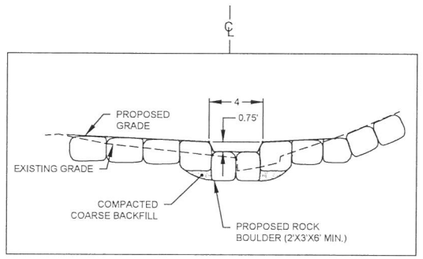
SECTION B-B': RUNDOWN CHANNEL
SCALE: 1"=5' (H:V)



SECTION C-C': INFILTRATION POOL
SCALE: 1" = 5' (H:V)



SECTION D-D': AT SEDIMENT TRAP
SCALE: 1"=5' (H:V)



SECTION E-E': BOULDER RUNDOWN
SCALE: 1"=5' (H:V)

STRUCTURE NOTE:

BOULDERS SHALL FIT FIRMLY AGAINST ONE ANOTHER. THE MAXIMUM ALLOWABLE GAP DUE TO IRREGULAR BOULDER SHAPES SHALL BE 6"x6". SUCH GAPS MUST BE HAND FILLED FROM UP-SLOPE SIDE USING A SINGLE ROCK AND FURTHER REINFORCED BY INSTALLING A GRADED GRAVEL FILTER OF MINIMUM THICKNESS 18".

LEGEND

- EXISTING 1' CONTOURS
- APPROXIMATE PROPERTY LINE (SANTA FE COUNTY PARCEL DATA)
- PROPOSED BOULDER STRUCTURE 2'x3'x6' (36CF MIN.)
- PROPOSED HAND PLACED CLASS 'C' RIPRAP
- PROPOSED LIMIT OF BANKFULL CHANNEL
- 41+00 EXISTING CHANNEL CENTERLINE
- 6760 PROPOSED 1' CONTOUR
- LOD PROPOSED LIMITS OF DISTURBANCE
- COMPACTED COARSE BACKFILL
- GRADED GRAVEL FILTER

ADDITIVE ALTERNATIVE 4

Rock Rundown Structure Stakeout Points

Point #	Elevation	Northing	Easting	Description
200	6762.45	1702062.22	1721634.19	INV
201	6764.25	1702056.16	1721653.25	INV
202	6764.35	1702054.97	1721661.56	INV
203	6764.70	1702053.54	1721677.15	INV
204	6765.94	1702050.13	1721695.79	INV
205	6766.90	1702046.38	1721709.67	INV
206	6767.00	1702042.28	1721717.68	INV
207	6767.65	1702031.58	1721733.30	INV
208	6769.45	1702022.76	1721741.07	INV
209	6769.45	1702016.03	1721747.10	INV
210	6773.25	1702001.80	1721759.51	INV
211	6774.00	1702030.26	1721688.26	TOP OF ROCK
212	6774.00	1702034.42	1721701.12	TOP OF ROCK
213	6774.00	1702028.10	1721723.73	TOP OF ROCK
214	6774.00	1702000.94	1721749.63	TOP OF ROCK
215	6772.00	1702034.70	1721743.83	TOP OF ROCK
216	6772.00	1702017.33	1721753.35	TOP OF ROCK
217	6774.00	1702005.45	1721762.89	TOP OF ROCK
218	6768.00	1702045.66	1721661.75	TOP OF ROCK
219	6767.00	1702065.99	1721666.67	TOP OF ROCK

Design Revisions

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1	POST-FLOOD DESIGN CHANGES	WJM	DEC 2018

william j. miller ENGINEERS
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1511 Third St.,
Santa Fe, NM 87505

ADDITIVE ALTERNATIVE 4
LA JOYA ST. STORMWATER CHANNEL
PLAN, PROFILE AND SECTIONS

COP 500 C: SANTA FE RIVER AT LA JOYA STREET
RIVER BANK STABILIZATION REPAIR (PHASE B)
SANTA FE, NM

JOHN M. CRITCHFIELD NEW MEXICO 21128 REGISTERED PROFESSIONAL ENGINEER

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JMC	WJM	17080	5 of 9
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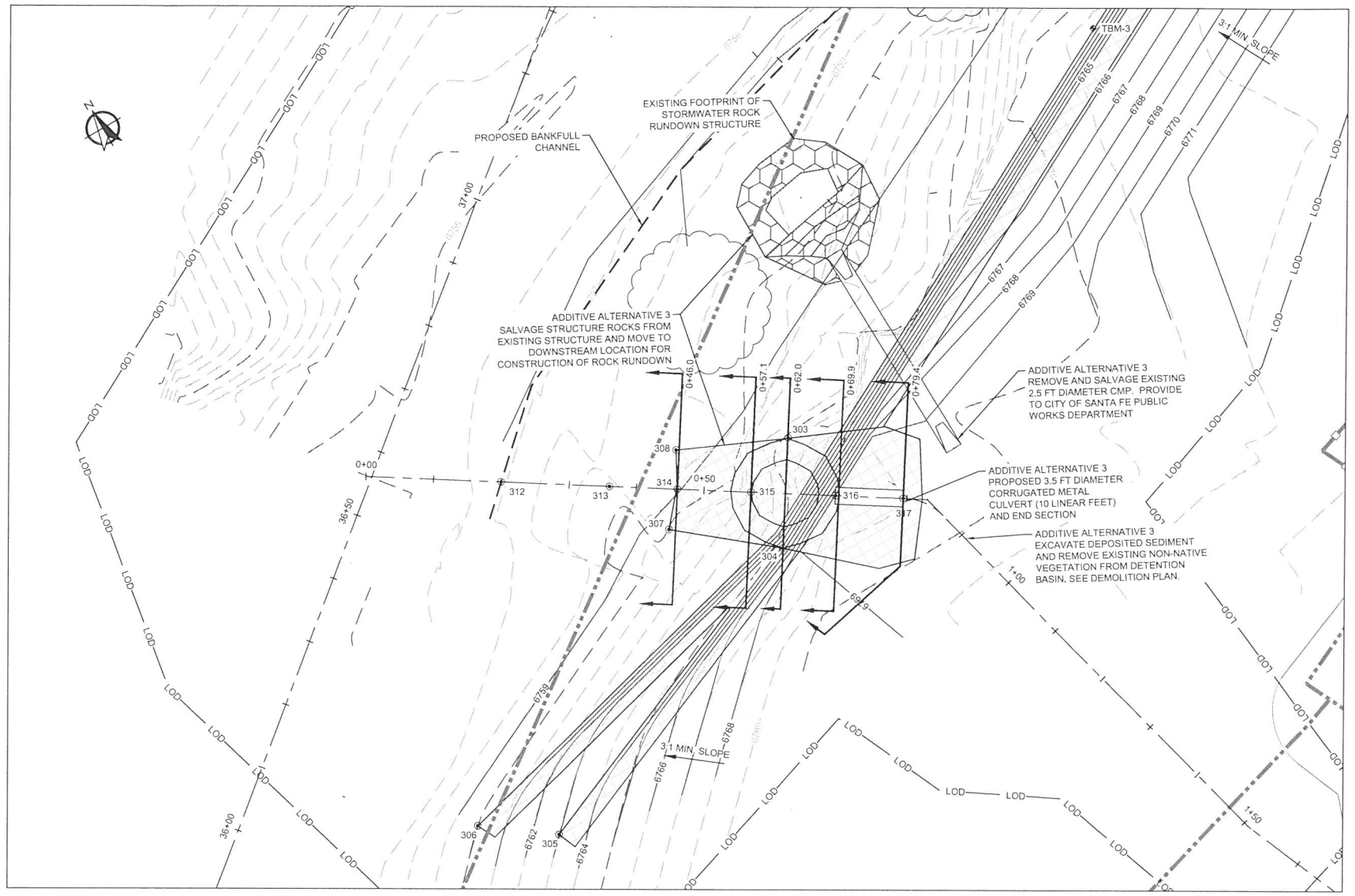
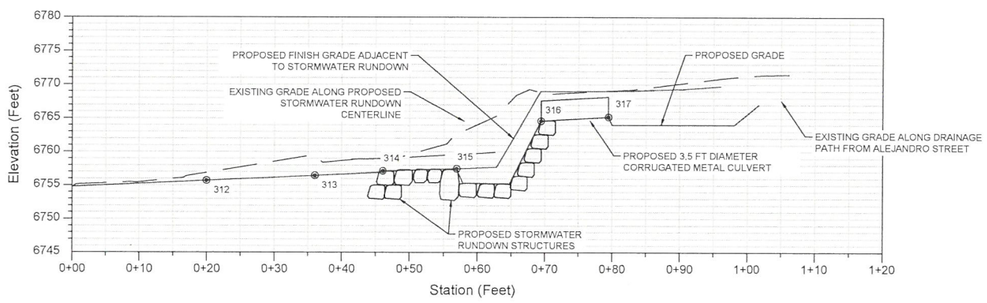
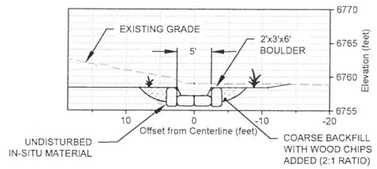


PLAN: ALEJANDRO ST. STORMWATER CHANNEL
SCALE: 1" = 10'



PROFILE: ALONG CENTERLINE OF ALEJANDRO ST. STORMWATER CHANNEL
SCALE: 1" = 10' H & V

0+46.0



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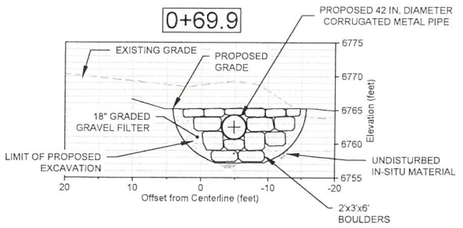

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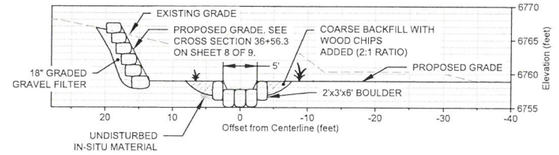

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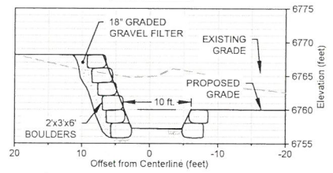

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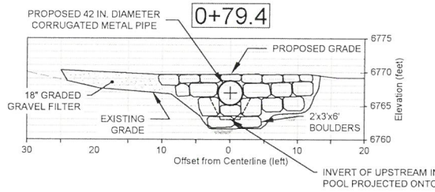

SECTION VIEWS ALONG CENTERLINE OF ALEJANDRO ST. STORMWATER CHANNEL
SCALE: 1" = 10' H & V

LEGEND

- EXISTING 1' CONTOURS
- APPROXIMATE PROPERTY LINE (SANTA FE COUNTY PARCEL DATA)
- PROPOSED BOULDER STRUCTURE 2'x3'x6' (36CF MIN.)
- PROPOSED HAND PLACED CLASS 'C' RIPRAP
- PROPOSED LIMIT OF BANKFULL CHANNEL
- EXISTING CHANNEL CENTERLINE
- PROPOSED 1' CONTOUR
- PROPOSED LIMITS OF DISTURBANCE
- COMPACTED COARSE BACKFILL
- COARSE BACKFILL WITH WOOD CHIPS

ADDITIVE ALTERNATIVE 3

Rock Rundown Structure Stakeout Points

Point #	Elevation	Northing	Easting	Description
300 *	6768.00	1702055.49	1721629.71	TOP OF ROCK
301 *	6765.00	1702062.52	1721621.42	TOP OF ROCK
302 *	6765.80	1702040.82	1721585.88	TOP OF ROCK
303	6760.00	1702007.43	1721500.17	TOP OF ROCK
304	6764.50	1701993.63	1721491.41	TOP OF ROCK
305	6763.00	1701973.12	1721441.59	TOP OF ROCK
306	6760.00	1701980.20	1721431.85	TOP OF ROCK
307	6758.50	1702004.38	1721478.20	TOP OF ROCK
308	6758.50	1702014.09	1721484.93	TOP OF ROCK
309 *	6760.00	1702045.58	1721584.34	TOP OF ROCK
310 *	6760.00	1702065.31	1721621.36	TOP OF ROCK
311 *	6766.00	1702060.66	1721623.06	TOP OF ROCK
312	6755.70	1702022.88	1721460.13	INV
313	6758.45	1702014.33	1721473.71	INV
314	6757.11	1702008.96	1721482.23	INV
315	6758.39	1702003.18	1721491.41	INV
316	6764.00	1701996.52	1721502.00	INV
317	6765.17	1701991.19	1721510.46	INV

* SEE SHEET 8 OF 9 FOR STAKEOUT POINT LOCATION

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ADDITIVE ALTERNATIVE 3
ALEJANDRO ST. STORMWATER CHANNEL
PLAN, PROFILE AND SECTIONS

CIP 500 C: SANTA FE RIVER AT LA JOYA STREET
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SANTA FE, NM

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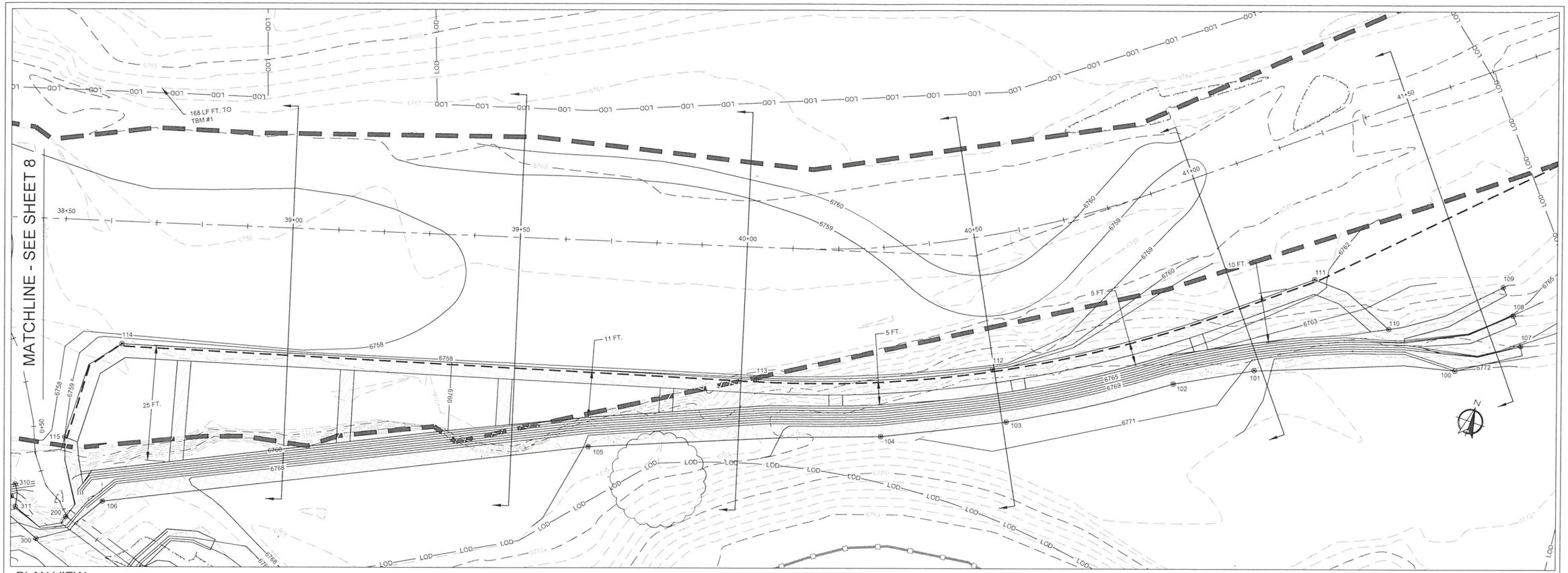
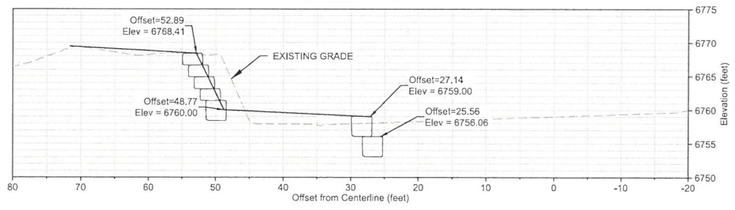


PLAN VIEW:
SCALE: 1" = 10'

SECTION VIEWS:
SCALE: 1" = 10' (H&V)

39+00.0



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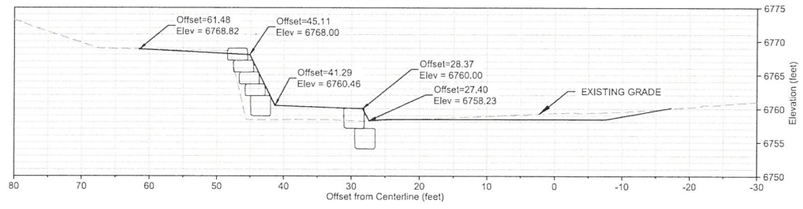

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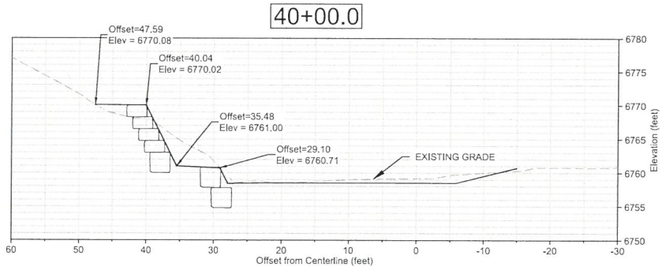

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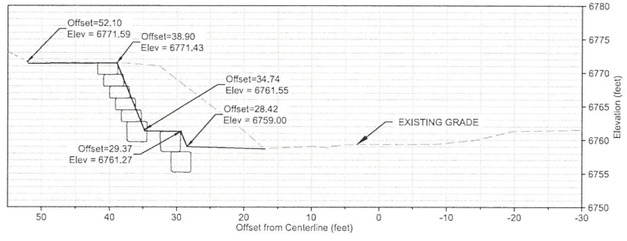
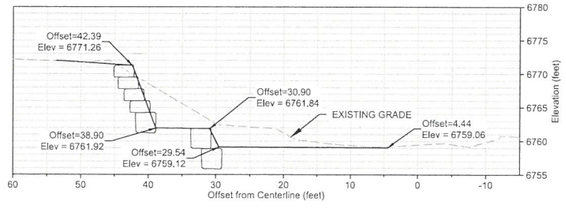


41+00.0



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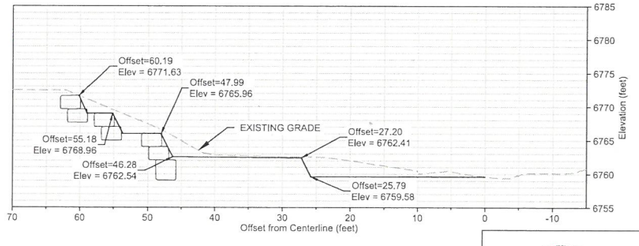


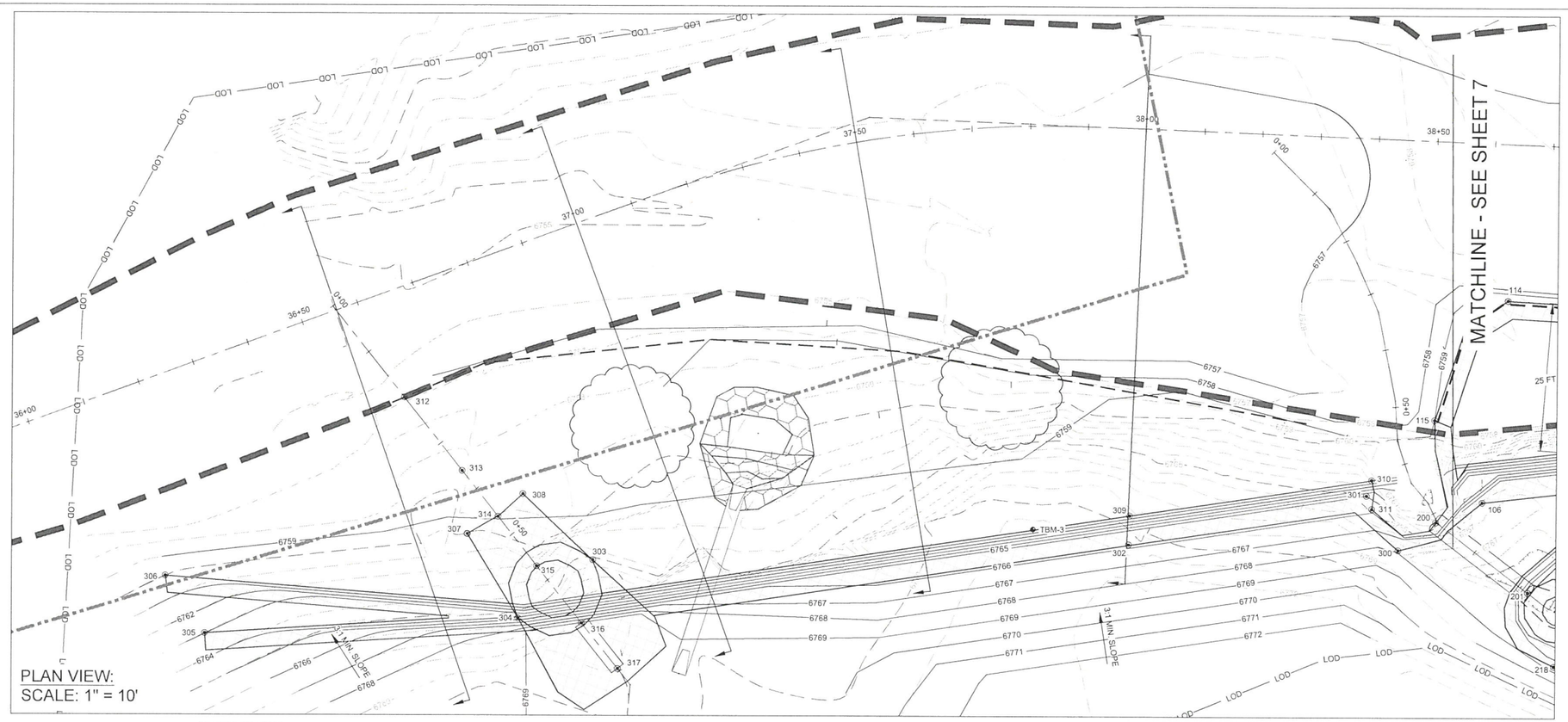
Design Revisions			
Rev. No.	Description	Approved	Date
1	POST-FLOOD DESIGN CHANGES	WJM	DEC 2018

william j. miller ENGINEERS
William J. Miller Engineers, Inc.
1511 Third St.,
Santa Fe, NM 87505

CROSS SECTIONS
SANTA FE RIVER STA: 39+00 TO STA: 41+50

CIP 500 C: SANTA FE RIVER AT LA JOYA STREET
RIVER BANK STABILIZATION REPAIR (PHASE 3B)
SANTA FE, NM

Designed By	Checked By	Project Number	Sheet
JMC	WJM	17080	7 of 9
Drawn By	Date		
AMR	JUNE 29, 2018		



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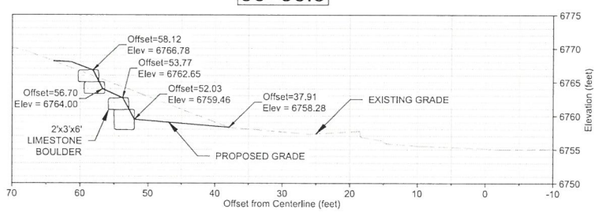

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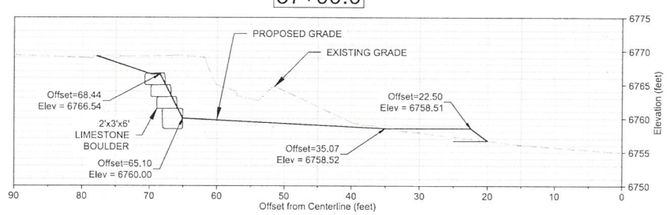

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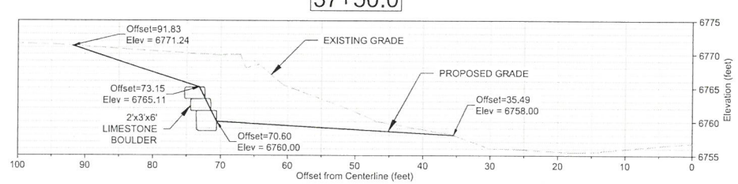

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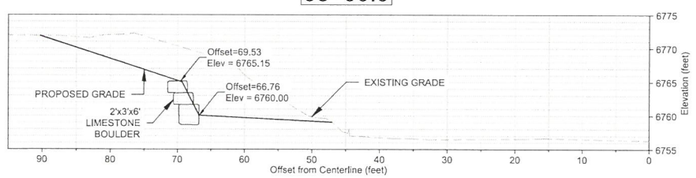

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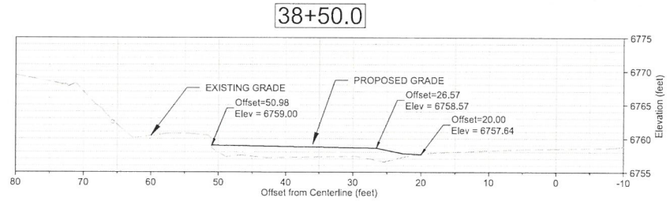

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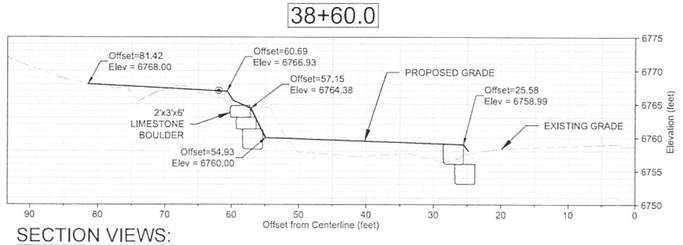

SECTION VIEWS:
SCALE: 1" = 10' (H&V)

Design Revisions			
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1	POST-FLOOD DESIGN CHANGES	WJM	DEC 2018

william j. miller ENGINEERS
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1511 Third St.,
Santa Fe, NM 87505

CROSS SECTIONS
SANTA FE RIVER STA: 36+56 TO STA: 37+60

CIP 500 C: SANTA FE RIVER AT LA JOYA STREET
RIVER BANK STABILIZATION REPAIR (PHASE 3B)
SANTA FE, NM

Designed By	Checked By	Project Number	Sheet
JMC	WJM	17080	8 of 9
Drawn By	Date		
AMR	JUNE 29, 2017		

EROSION AND SEDIMENT CONTROL NOTES:

1. CONSTRUCTION ACTIVITY, EXCEPT THAT NECESSARY TO ESTABLISH EROSION CONTROLS, SHALL NOT BEGIN UNTIL EROSION CONTROLS HAVE BEEN INSTALLED.
2. CONTRACTOR MAY DRIVE OVER EXISTING WILLOW COVER WITH CONSTRUCTION EQUIPMENT INSTEAD OF CLEARING AND REPLANTING, IF EXISTING WILLOW COVER NEEDS TO BE CUT BACK, CUT FLUSH WITH GROUND AND DO NOT REMOVE ROOTS.
3. DISTURBED AREA QUANTITIES FOR ADDITIVE ALTERNATIVE NO. 3 AND NO. 4 IS SUMMARIZED IN A TABLE ON THIS SHEET. REFER TO SUMMARY OF LIMITS OF DISTURBANCE TABLE TO DETERMINE IF A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED. CONTRACTOR REMAINS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL WATER QUALITY REGULATIONS.
4. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN 3:1, EXCEPT AS OTHERWISE SHOWN ON PLANS OR APPROVED BY FIELD ENGINEER.

WILLOW PLANTING NOTES (DORMANT SEASON: NOVEMBER-MARCH):

1. HARVEST AND PLANT STAKES AND POLE PLANTINGS DURING DORMANT SEASON (NOVEMBER-MARCH).
2. USE HEALTHY, STRAIGHT AND LIVE WOOD BETWEEN 2-7 YEARS OLD.
3. MAKE CLEAN CUTS AND DO NOT DAMAGE INSTALLATION, USE A PILOT BAR IN FIRM SOILS.
4. SOAK CUTTINGS FOR 48 HOURS (MIN.) PRIOR TO INSTALLATION.
5. TAMP THE SOIL AROUND THE STAKE.

SITE RESTORATION PLAN NOTES:

1. ANY TOPSOIL THAT IS EXCAVATED FROM WITHIN PROPOSED LIMITS OF DISTURBANCE SHALL BE SALVAGED/STOCKPILED FOR USE ON DISTURBED OVERBANK AREAS (OUTSIDE OF BANKFULL CHANNEL).
2. ALL DISTURBED OVERBANK AREAS SHALL HAVE A MINIMUM OF 6" TOPSOIL (APPROVED BY ENGINEER). ALL DISTURBED OVERBANK AREAS WITH SLOPES EQUAL TO 2:1 OR FLATTER WHOSE TOPSOIL HAS BEEN COMPACTED BY MACHINERY, MATERIAL STORAGE, ETC., SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 IN. PRIOR TO STABILIZATION.
3. PLANT 2-3 ROWS OF WILLOWS AT RANDOM AVERAGE SPACING 6 FT. ON STABILIZED SOUTH BANK. WILLOWS FOR PLANTING SHALL BE SALVAGED FROM THE NORTH BANK OF THE SANTA FE RIVER.
4. ANY DISTURBED SLOPES EQUAL TO OR STEEPER THAN 3:1 SHALL BE STABILIZED WITH EROSION CONTROL BLANKET TRENCHED INTO EARTH 12" ON ALL SIDES AND AT SEAM. BLANKET SHALL BE WESTERN EXCEL OR EXCEL CC-4 ALL NATURAL OR FULLY BIODEGRADABLE APPROVED EQUAL.

IRRIGATION PLAN:

1. CONTRACTOR SHALL PREPARE AND SUBMIT TO ENGINEER FOR APPROVAL TEMPORARY IRRIGATION PLAN USING A TEMPORARY STORAGE TANK AND DRIP SYSTEM OR OTHER APPROVED METHOD.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PLANTS FOR FIRST YEAR FOLLOWING SUBSTANTIAL COMPLETION OF PROJECT.
3. A 70% SURVIVAL RATE IS REQUIRED FOR WILLOW PLANTINGS. A 100% SURVIVAL RATE IS REQUIRED FOR THE REMAINING PLANTINGS. MEASURED AFTER 1 YEAR CONTRACTOR MUST REPLACE ANY PLANTINGS THAT DO NOT SURVIVE THE FIRST YEAR AFTER SUBSTANIAL COMPLETION.

VEGETATION SCHEDULE

SPECIES	PLANT SPACING	BASE BID	ADDITIVE ALTERNATIVE A	ADDITIVE ALTERNATIVE B	ADDITIVE ALTERNATIVE C
Salix exigua Nutt. (Coyote Willow)	Bundles (6')	55	0	36	3
Gleditsia triacanthos var. inermis (Honeylocust)	10 gallon	0	2	0	0
Chilopsis linearis (Desert Willow)	3 gallon	24	0	14	2
Populus wislizeni (Rio Grande Cottonwood)	5 gallon	0	1	1	0

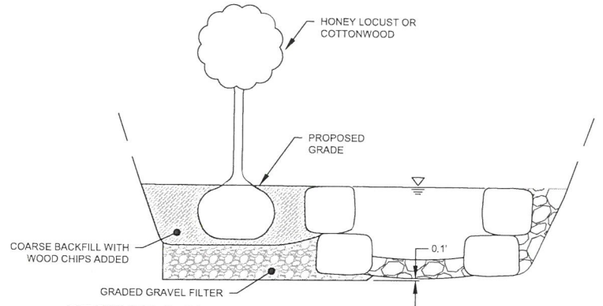
PLANTING LEGEND

COTTONWOOD

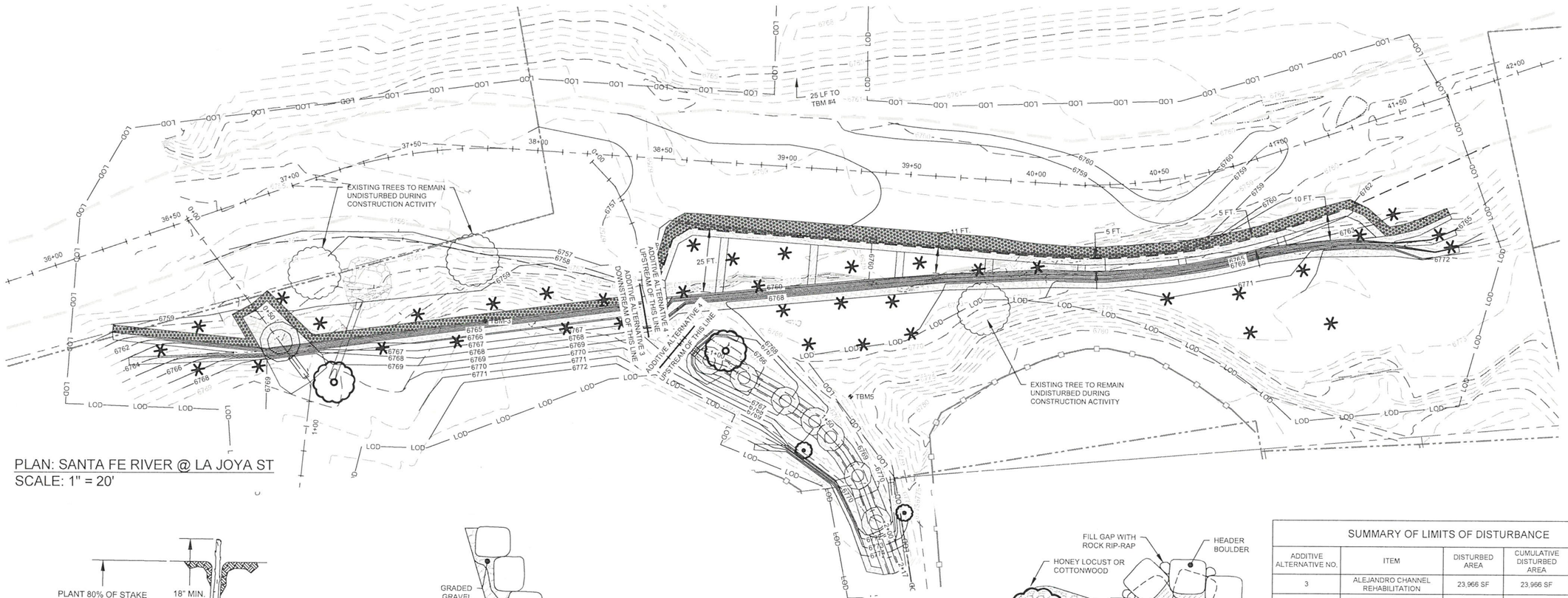
HONEY LOCUST

DESERT WILLOW

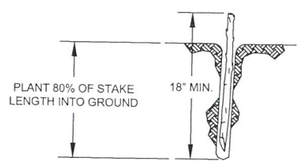
COYOTE WILLOW PLANTING AREA



SECTION C-C': TREE PLANTING AT INFILTRATION POOL
(N.T.S)



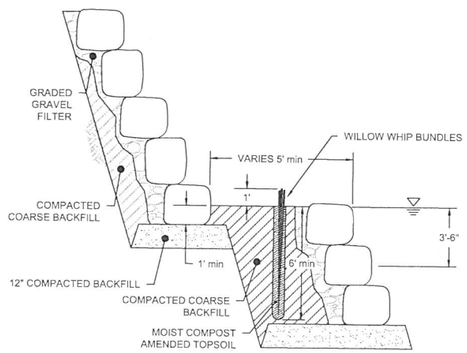
PLAN: SANTA FE RIVER @ LA JOYA ST
SCALE: 1" = 20'



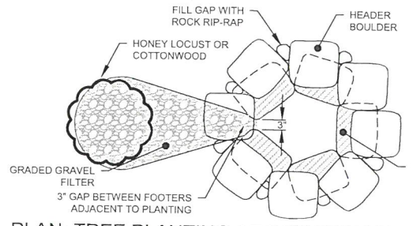
NOTES:

1. HARVEST AND PLANT STAKES AND POLE PLANTINGS DURING DORMANT SEASON (NOVEMBER-MARCH).
2. USE HEALTHY, STRAIGHT AND LIVE WOOD BETWEEN 2-7 YEARS OLD.
3. MAKE CLEAN CUTS AND DO NOT DAMAGE INSTALLATION, USE A PILOT BAR IN FIRM SOILS.
4. SOAK CUTTINGS FOR 24 HOURS (MIN.) PRIOR TO INSTALLATION.
5. TAMP THE SOIL AROUND THE STAKE.

TYPICAL COYOTE WILLOW PLANTING AT TOE OF BANK
(N.T.S.)



SECTION E-E':TYPICAL WILLOW PLANTING (5' - 25' BANKFULL BENCH)
(N.T.S)



PLAN: TREE PLANTING AT INFILTRATION POOL
(N.T.S)

SUMMARY OF LIMITS OF DISTURBANCE

ADDITIVE ALTERNATIVE NO.	ITEM	DISTURBED AREA	CUMULATIVE DISTURBED AREA	SWPPP REQUIRED
3	ALEJANDRO CHANNEL REHABILITATION	23,966 SF	23,966 SF	NO
4	SOUTH BANK PROTECTION AT LA JOYA	33,246 SF	57,212 SF	YES
4	LA JOYA CHANNEL REHABILITATION	4,484 SF	61,696 SF	YES

william j. miller ENGINEERS
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REVEGETATION PLAN

CIP 500 C: SANTA FE RIVER AT LA JOYA STREET RIVER BANK STABILIZATION REPAIR (PHASE 3B)
SANTA FE, NM

Designed By:	Checked By:	Project Number:	Sheet:
JMC	JMC	17080	9 of 9
Drawn By:	Date:		
CTO	JUNE 29, 2018		

Design Revisions			
Rev. No.	Description	Approved	Date
1	POST-FLOOD DESIGN CHANGES	WJM	DEC 2018

JOHN M. CRITCHFIELD 21128 REGISTERED PROFESSIONAL ENGINEER 11/11/2019