Attachment 3.4 – Supporting Documents

Workplan

Project D – Root Creek Water District, In-Lieu Groundwater Recharge

Madera Region – IRWM Implementation Grant Application

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Attachment 3.4, Valley Floor Groundwater Level Decline Exhibit

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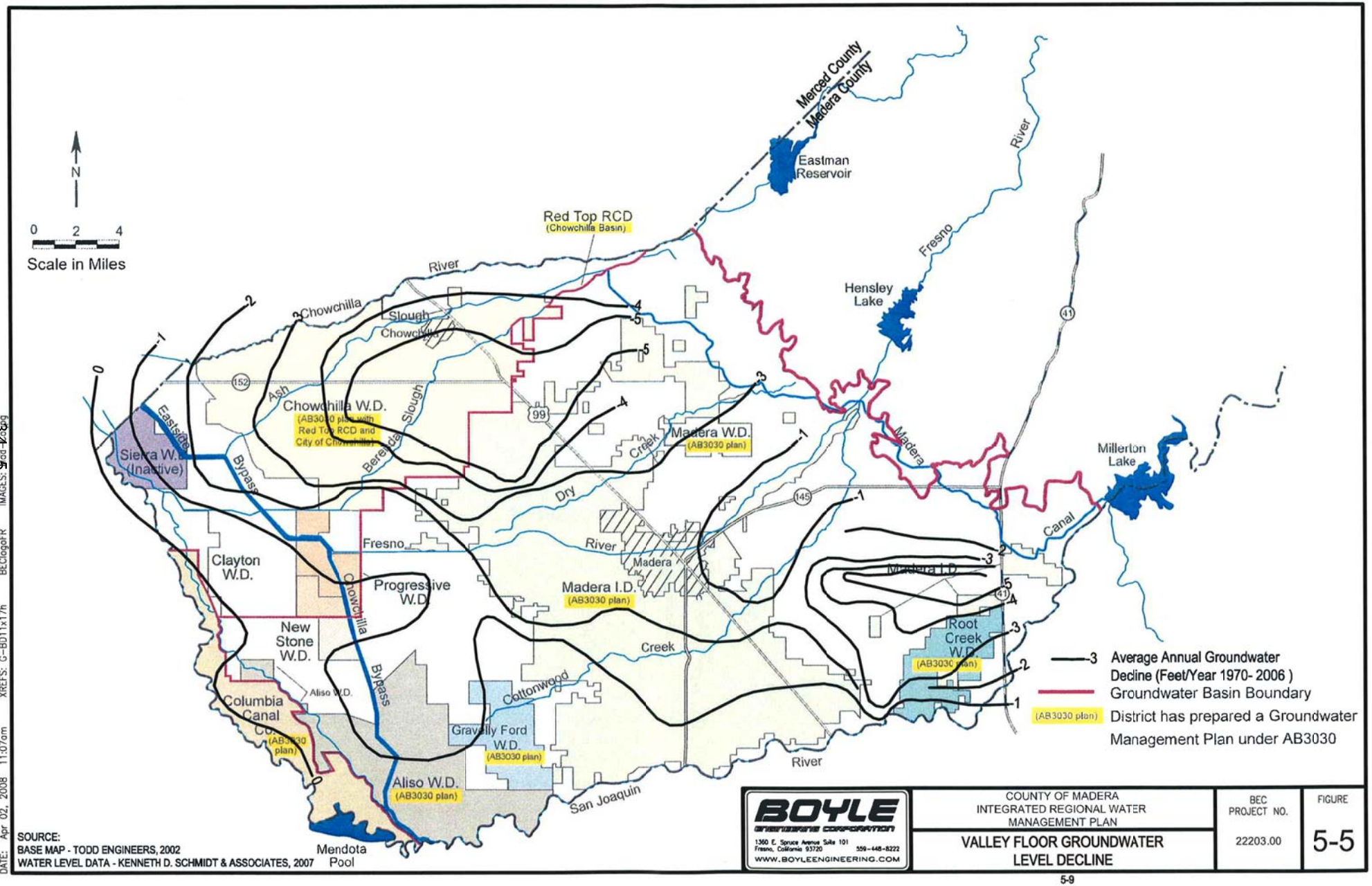

SOURCE:
BASE MAP - TODD ENGINEERS, 2002
WATER LEVEL DATA - KENNETH D. SCHMIDT & ASSOCIATES, 2007

BOYLE ENGINEERING CORPORATION
1360 E. Spruce Avenue Suite 101
Fresno, California 93720 559-448-8222
WWW.BOYLEENGINEERING.COM

COUNTY OF MADERA
INTEGRATED REGIONAL WATER MANAGEMENT PLAN

VALLEY FLOOR GROUNDWATER LEVEL DECLINE

BEC PROJECT NO. 22203.00

FIGURE 5-5

DWG: V:\Madera, County of\22203.00 IRWMP\CAD\FIGURES\Chapter 5\FIG 5-5.dwg USER: drodriguez
DATE: Apr 02, 2008 11:07am XREFS: G-BD11x17h BECLogoFR IMAGES: G-BD-4-5.dgn

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Attachment 3.4, Construction Plans and Specifications

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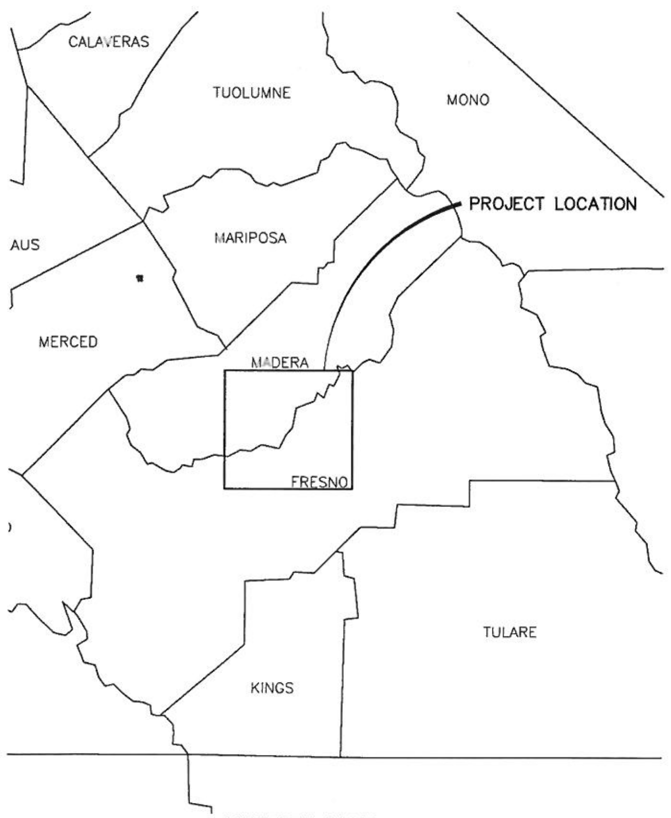
Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD

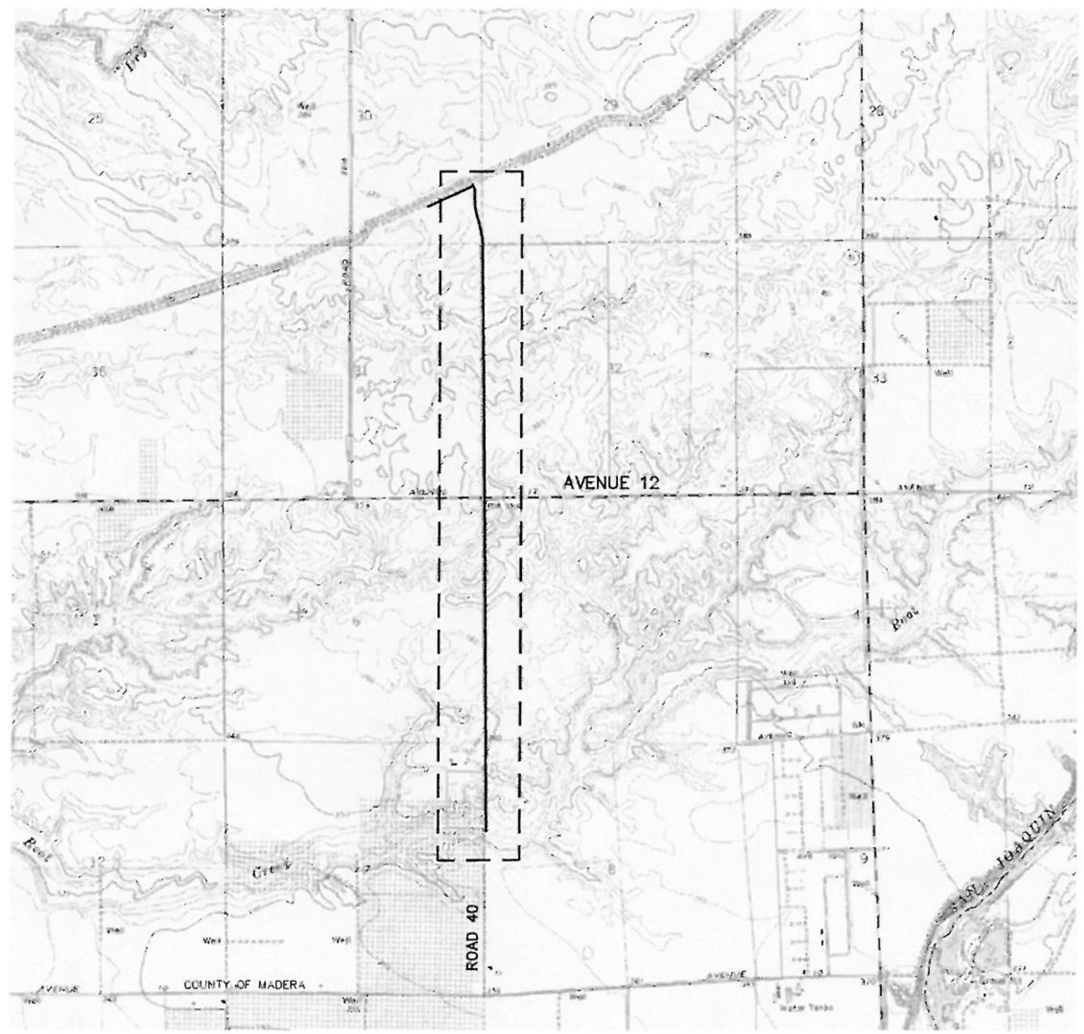
Castle and Cooke, Inc.

Madera County, CA

Gateway Village
In-Lieu Pipeline



VICINITY MAP



SITE MAP

N

GENERAL NOTES

1. Madera Irrigation District (MID) 559-673-3514 shall be contacted at least 48 hours prior to commencement of work on or near existing District facilities.
2. Used material, rejects, misfits, or seconds, etc. are not acceptable for use on facilities.
3. All construction shall be in conformance with these plans.
4. Contractor shall field verify the horizontal and vertical locations of all existing facilities prior to commencing work. Call Underground Service Alert (USA) at 811. Contractor shall make Engineer aware of any discrepancies.
5. MID shall inspect all work phases on irrigation facilities for conformance to MID specifications. Reinforcing shall not be encased in concrete without prior MID inspections. Likewise, concrete shall not be covered with earth prior to MID inspection.
6. All steel pipe and fittings shall be furnished with a shop applied high solids epoxy coating on the interior and exterior, unless otherwise indicated. All exposed steel shall be painted with a pre-treatment primer, an undercoat and a final coat of paint in accordance with MADERA IRRIGATION DISTRICT specifications.
7. All nuts, bolts, and washers used to secure underground fittings shall be stainless steel. After installation, all steel hardware shall be coated with a rust preventative, wrapped with 4 mil polyethylene sheeting, and secured with PVC tape.
8. All construction shall be performed in accordance with applicable health and safety laws of the State of California and CAL/OSHA standards.
9. Concrete vaults and boxes may be purchased from a precast manufacturer or Contractor may construct the structures if structural calculations and design is approved by the MADERA IRRIGATION DISTRICT and the engineer.
10. All excess material and/or debris shall be removed upon completion of installation.
11. Contractor shall be responsible for providing adequate dust control at all times. A dust control permit form from SJVAPCD is required.
12. Contractor shall prepare, file, and conform with all provisions of a Storm Water Pollution Prevention Plan.

DESIGN NOTES

1. TURNOUT DESIGN FLOW = 50 CFS
2. IRRIGATION LATERAL PIPELINES NOT A PART OF THESE DRAWINGS.

BENCH MARKS

All elevations shown are based on the California Coordinate System, Zone 3, NAD 83, Epoch 1993, as determined by Station HPGN-D-CA-06-RG with an NAVD 88 elevation of 430.00 Feet.

U.S.C. & G.S. MONUMENT

The station is located near the State Highway 41 crossing of the Madera Canal. To reach the station from the junction of State Highways 41 and 145, go south on Highway 41 for 2.3 miles to the bridge over the Madera Canal. Continue south on Highway 41 for 0.1 mile to the station on the left at post mile 6.8. The station is a survey disk encased in PVC pipe with access cover set in concrete flush with the ground. The station is about 500 FT south of the bridge over the Madera Canal, about 215 FT south of a concrete viaduct over the canal, 59.1 FT southwest of a road warning sign, 54.0 FT east of the centerline of Highway 41, 22.5 FT west of the center of the access road on the west side of the canal, 2.3 FT west of a carsonite witness post and about 2 FT higher than Highway 41.

TOPOGRAPHY NOTE

Topography shown is photogrametric data provided by Aerial Photomapping Services August 2003, and supplemented by field surveys conducted March 2006.

BOUNDARY NOTE

The boundary/easement information shown on these plans is based upon record information tied to physical monuments, and was prepared under the direction of Craig E. Baum, PLS 7680.

CONSULTING ENGINEERS AND LAND SURVEYORS OF CALIFORNIA

Construction Contractor agrees that in accordance with generally accepted construction practices, construction Contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property, that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction Contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real and alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

SPECIAL NOTE

Where underground and surface structures are shown on the plans, the locations, depth and dimensions of structures are believed to be reasonably correct, but are not guaranteed. Such structures are shown for the information of the Contractor, but information so given is not to be construed as a representation that such structures will, in all cases, be found where shown, or that they represent all of the structures which may be encountered.

SITE SAFETY AND PROTECTION NOTES

1. THE DUTY OF THE ENGINEER, OWNER OR ITS AGENTS TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE AND THE UNDERTAKING OF INSPECTIONS OR THE GIVING OF INSTRUCTIONS AS AUTHORIZED HEREIN IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF THE ACTUAL CONSTRUCTION NOR MAKE THE ENGINEER, OWNER OR ITS AGENTS RESPONSIBLE FOR PROVIDING A SAFE PLACE FOR THE PERFORMANCE OF WORK BY THE CONTRACTOR, SUBCONTRACTORS, OR SUPPLIERS, OR FOR ACCESS, VISITS, USE, WORK, TRAVEL OR OCCUPANCY BY ANY PERSON.
2. THE CONTRACTOR SHALL HAVE AT THE WORK SITE, COPIES OR SUITABLE EXTRACTS OF CONSTRUCTION SAFETY ORDERS, ISSUED BY CAL-OSHA. HE SHALL COMPLY WITH PROVISIONS OF THESE AND ALL OTHER APPLICABLE LAWS, ORDINANCES AND REGULATIONS. THE CONTRACTOR MUST COMPLY WITH PROVISIONS OF THE SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, PROMULGATED BY THE SECRETARY OF LABOR UNDER SECTION 107 OF THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT, AS SET FORTH IN TITLE 29 C.F.R.
3. TO PROTECT THE LIVES AND HEALTH OF HIS EMPLOYEES UNDER THE CONTRACT, THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" ISSUED BY THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC., AND SHALL MAINTAIN AN ACCURATE RECORD OF ALL CASES OF DEATH, OCCUPATIONAL DISEASE, AND INJURY REQUIRING MEDICAL ATTENTION OR CAUSING LOSS OF TIME FROM WORK, ARISING OUT OF AND IN THE COURSE OF EMPLOYMENT OR WORK UNDER THE CONTRACT.
4. THE CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR THE SAFETY, EFFICIENCY, AND ADEQUACY OF HIS FACILITIES, APPLIANCES, AND METHODS AND FOR ANY DAMAGE, WHICH MAY RESULT FROM THEIR FAILURE OR THEIR IMPROPER CONSTRUCTION, MAINTENANCE OR OPERATION.
5. THE OWNER AND ITS AGENTS' SITE RESPONSIBILITIES ARE LIMITED SOLELY TO THE ACTIVITIES OF THEIR EMPLOYEES ON SITE. THESE RESPONSIBILITIES SHALL NOT BE INFERRED BY ANY PARTY TO MEAN THAT THE OWNER OR ITS AGENTS HAVE RESPONSIBILITY FOR SITE SAFETY. SAFETY IN, ON, OR ABOUT THE SITE IS THE SOLE AND EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR ALONE. THE CONTRACTOR'S METHODS OF WORK PERFORMANCE, SUPERINTENDENCE AND THE CONTRACTOR'S EMPLOYEES, AND SEQUENCING OF CONSTRUCTION ARE ALSO THE SOLE AND EXCLUSIVE RESPONSIBILITIES OF THE CONTRACTOR ALONE.

APPROVALS

MADERA IRRIGATION DISTRICT — DATE

MADERA COUNTY — DATE

SHEET INDEX	
SHEET NO.	DESCRIPTION
GENERAL	
GN1	COVER SHEET
GN2	GENERAL NOTES
PLAN AND PROFILE	
PP1	STA 10+00 TO 34+00
PP2	STA 34+00 TO 58+00
PP3	STA 58+00 to 82+00
PP4	STA 82+00 to 106+00
PP5	STA 106+00 TO 130+00
PP6	STA 130+00 TO 142+00
PP7	STA 142+00 TO 154+00 (END)
PP8	24 INCH DIA. PIPELINE
STRUCTURES	
ST1	TURNOUT STRUCTURE
ST2	METERING STRUCTURE
ST3	OUTFALL STRUCTURE
DETAILS	
DT1	TURNOUT DETAILS
DT2	AVE 12 CROSSING
DT3	STANDARD DETAILS
DT4	STANDARD DETAILS

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PRELIMINARY
FOR REVIEW AND APPROVAL
06/15/2010

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER — ADAM B. LEE — No. 69104 — Civil — STATE OF CALIFORNIA

DATE SIGNED:

Gateway Village
In-Lieu Pipeline
Castle and Cooke, Inc.
Madera County, CA

COVER SHEET

EST. 1968
PROVOST & PRITCHARD ENGINEERING GROUP INC
An Employee Owned Company
286 WEST CROMWELL AVENUE
FRESNO, CALIFORNIA 93711-6162
559/449-2700 FAX 559/449-2715
www.ppeng.com

DESIGN ENGINEER:	Adam Lee
LICENSE NO:	CE 69104
DRAFTED BY: DVS	CHECKED BY: DMG
SCALE:	AS SHOWN
DATE:	06/15/2010
JOB NO:	14340405-30
DWG. NO:	
SHEET	GN1 OF

5/29/2008 8:12:27 AM G:\Clients\Castle_Cooke-1434\1434-Gateway\1434-Expan Phs 1\14340405-Gateway Pipeline LD\dwg\SHEET\14340405-GN-COVER.dwg -aaron

811 Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD

LEGEND

EXISTING	PROPOSED	
		RIGHT-OF-WAY
		PROPERTY LINE
—E—	—E—	ELECTRIC LINE (UNDERGROUND)
—E—	—E—	ELECTRIC LINE (AERIAL)
—T—	—T—	TELEPHONE LINE (UNDERGROUND)
		IRRIGATION PIPELINE
		CHAIN LINK FENCE
		EDGE OF A.C. PAVEMENT
		UTILITY POLE AND ANCHOR
E	E	ELECTRIC VAULT
		MANHOLE / STANDPIPE
		CULVERT (SIZE AS NOTED)
		GUARD POST
		CONTROL POINT
		BENCHMARK
		MONUMENT
TEL	TEL	TELEPHONE RISER
T	T	TELEPHONE VAULT
		FLOW METER
		WATER VALVE
		CANAL GATE
		WELL
	XXX	DETAIL NUMBER / SHEET NUMBER
EL=XXX.XX DESC.		SPOT ELEVATION / DESCRIPTION
		SECTION LINE
		APPROX. EDGE OF VEGETATION
		10 FOOT EXISTING GROUND SURFACE CONTROL
		2 FOOT EXISTING GROUND SURFACE CONTROL
		CONSTRUCTION EASEMENT
		O & M EASEMENT
		DIRECTION OF SLOPE

ABBREVIATIONS

AP	ANTENNA POLE
APN	ASSESSOR'S PARCEL NUMBER
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BC	BEGIN CURVE
CA	CALIFORNIA
CFS	CUBIC FEET PER SECOND
CIP	CAST IN PLACE
CL	CLASS
CLF	CHAIN LINK FENCE
C/L OR ℄	CENTER LINE
CONC	CONCRETE
CONST	CONSTRUCTION
CY	CUBIC YARD
DIA OR ø	DIAMETER
DIST	DISTRIBUTION
DISTRICT	MADERA IRRIGATION DISTRICT
EC	END OF CURVE
EG	EXISTING GRADE
ELEC	ELECTRICAL
ELEV OR EL	ELEVATION
ELL	ELBOW
EP	EDGE OF PAVEMENT
ESMT	EASEMENT
EW	EACH WAY
EXIST OR (E)	EXISTING
F&I	FURNISH AND INSTALL
FG	FINISHED GRADE
FL OR ℄	FLOW LINE
FT	FEET
FV&C	FRESNO VALVE & CASTINGS
GALV	GALVANIZED
GB	GRADE BREAK
HGL	HYDRAULIC GRADE LINE
HT	HEIGHT
HWL	HIGH WATER LEVEL
ID	INSIDE DIAMETER
INV	INVERT
IRR	IRRIGATION
LF	LINEAR FEET
LT	LEFT
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MID	MADERA IRRIGATION DISTRICT
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
O&M	OPERATION & MAINTENANCE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
PE	PERMANENT EASEMENT
PH	PHASE
P/L OR ℙ	PROPERTY LINE
PROD	PRODUCTION
PROP OR (P)	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLY VINYL CHLORIDE
Q	DESIGN FLOW
RC	RADIUS OF CURVE
RGRCP	RUBBER GASKETED REINFORCED CONCRETE PIPE
ROW OR R/W	RIGHT OF WAY
RT	RIGHT
S=	SLOPE
SEC	SECTION
SF	SQUARE FEET
SGL	STATIC GRADE LINE
SP	SERVICE POLE
STA	STATION
TCE	TEMPORARY CONSTRUCTION EASEMENT
TS	TOP OF STRUCTURE
TW	TOP OF WALL
TWS	TRAVELING WATER SCREEN
TYP	TYPICAL
USBR	UNITED STATES BUREAU OF RECLAMATION

GRADING NOTES

1. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT AND PERFORM ALL GRADING AND EARTHWORK PROCEDURES TO INSTALL STRUCTURES AND PIPELINES AND CONSTRUCT CANAL EMBANKMENTS.

2. OVEREXCAVATE AND RECOMPACT TO A MINIMUM DEPTH OF 12" UNDER AND WITHIN 5' OF ALL CANAL BANKS, STRUCTURES AND STANDPIPES TO A MINIMUM 90% RELATIVE COMPACTION.

3. NATIVE SOIL MATERIALS, EXCLUSIVE OF DEBRIS, LESS THAN 3 INCHES IN MAXIMUM DIMENSION, AT THE PROPER MOISTURE RANGE, AND CONTAINING LESS THAN 0.3% ORGANICS BY WEIGHT MAY BE USED AS ENGINEERED FILL. FINISHED CANAL BANKS SIDES SHALL BE SMOOTH AND FREE OF DEBRIS.

4. ALL AREAS TO RECEIVE ENGINEERED FILL SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 12 INCHES, UNIFORMLY MOISTURE CONDITIONED, AND COMPACTED TO AT LEAST 90% RELATIVE COMPACTION.

5. ENGINEERED FILL SHOULD BE PLACED IN LOOSE LIFTS NO THICKER THAN 8 INCHES, AND UNIFORMLY MOISTURE CONDITIONED TO AT OR ABOVE OPTIMUM MOISTURE CONTENT AT THE TIME OF COMPACTION, AND RE-COMPACTED TO AT LEAST 90% RELATIVE COMPACTION.

6. ENGINEERED FILL SHALL BE CONSTRUCTED USING METHODS THAT MITIGATE STRATIFICATION AND LAMINATION OF THE FILL AND MUST BE COMPACTED USING KNEADING COMPACTORS (I.E., SHEEPSFOOT) TO PROMOTE BLENDING WITHIN AND BETWEEN INDIVIDUAL CONSTRUCTION LIFTS. TRACK ROLLING, PNEUMATIC WHEEL ROLLING, AND SMOOTH DRUM COMPACTORS SHALL NOT BE USED.

7. THE MAXIMUM LABORATORY DENSITY AT OPTIMUM MOISTURE CONTENT WILL BE DETERMINED BY TEST METHODS IN CONFORMANCE WITH ASTM D1557. A MINIMUM OF 90% OF THE LABORATORY STANDARD MAXIMUM DENSITY WILL BE REQUIRED.

8. WITHIN 2' OF ANY STRUCTURE, HAND TAMPERS OR OTHER ACCEPTABLE MEANS EXCLUDING HEAVY EQUIPMENT SHALL BE USED TO COMPACT BACKFILL. THE SURFACE AREA AROUND ANY STRUCTURE SHALL BE GRADED TO CONVEY SURFACE RUNOFF AWAY FROM THE STRUCTURE. THE EARTHWORK SHALL BE CONSTRUCTED IN A CONTINUOUS MANNER ACROSS PROPOSED STRUCTURE LOCATIONS.

9. MOISTURE CONTENT OF COMPACTED EMBANKMENT MATERIAL AND BACKFILL MATERIAL SHALL NOT BE GREATER THAN 3% ABOVE OPTIMUM MOISTURE CONTENT.

10. PROTECT EXCAVATIONS BY SHORING, BRACING, SHEET PILING, UNDERPINNING, OR OTHER METHODS REQUIRED TO PREVENT CAVE-IN OR LOOSE SOIL FROM FALLING INTO EXCAVATION. GRADE EXCAVATION TOP PERIMETER TO PREVENT SURFACE WATER RUN-OFF INTO EXCAVATIONS.

11. COMPACTED EARTHFILL AND SUBGRADES SHALL MEET MINIMUM 90% RELATIVE DENSITY (ASTM D-1557) AND BE ACCOMPLISHED BY MANUALLY OPERATED COMPACTORS AROUND STRUCTURES AND TO A MINIMUM DEPTH OF 12 INCHES OVER TOP OF PIPE.

12. ALL TRENCH EXCAVATION SHALL COMPLY WITH THE MOST CURRENT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS (OSHA).

13. THE AREA IMMEDIATELY SURROUNDING THE NEW TURNOUT SHALL BE OVER EXCAVATED TWELVE INCHES (12") AND RECOMPACTED TO A RELATIVE DENSITY OF NINETY PERCENT (90%). NATIVE MATERIAL SHALL BE USED FOR THE RECOMPACTED MATERIAL. HOWEVER, FILL MATERIAL SHALL BE FREE OF TRASH, ORGANIC MATERIAL AND OTHER DEBRIS. STONES OR COBBLES HAVING A LARGEST DIMENSION GREATER THAN ONE INCH (1") WILL NOT BE USED IN RECOMPACTED MATERIAL. NO OBJECT HAVING A LARGEST DIMENSION GREATER THAN THREE INCHES (3") SHALL BE INCLUDED IN ANY COMPACTED FILL TO BE USED FOR THE NEW TURNOUT.

CONCRETE NOTES

1. CONCRETE 28 DAY COMPRESSIVE STRENGTH TO BE MINIMUM 3,500 PSI. CEMENT SHALL BE ASTM TYPE II PORTLAND CEMENT AND BE FREE OF LUMPS AND PARTIALLY SET MASSES, AND PROPORTIONED TO INCLUDE NOT LESS THAN 6 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE AND HAVE A MAXIMUM WATER-CEMENT RATIO OF 0.50, AND AIR ENTRAINMENT OF 3%-5%. WATER SHALL BE FREE FROM ACID, ALKALI, OILS OR ORGANIC MATTER. AGGREGATE SHALL BE CLEAN, HARD, STRONG AND DURABLE, AND FREE FROM DIRT AND OTHER SUBSTANCES DELETERIOUS TO CONCRETE. THE FINE AND COARSE AGGREGATES SHALL BE A WELL GRADED MIX APPROVED BY THE ENGINEER. THE MAXIMUM SIZE OF AGGREGATE SHALL NOT EXCEED 3/4 INCHES AND CONFORM TO THE REQUIREMENTS OF ASTM C-33.

2. CONSISTENCY OF THE CONCRETE SHALL ALLOW IT TO BE WORKED INTO PLACE WITHOUT SEGREGATION. SLUMP SHALL BE MAXIMUM OF 3 INCHES FOR HORIZONTAL SURFACES AND 4 INCHES FOR VERTICAL WALLS. FORMS SHALL BE BRACED AND/OR TIED TOGETHER SO AS TO MAINTAIN POSITION AND SHAPE AND BE SUFFICIENTLY TIGHT TO PREVENT LEAKAGE OF MORTAR.

3. NO CONCRETE SHALL BE PLACED UNTIL THE SUBGRADE, FORMS, AND REINFORCING STEEL HAVE BEEN INSPECTED BY THE ENGINEER AND, DEPENDING ON LOCATION, THE DISTRICT ENGINEER. HORIZONTAL CONCRETE SURFACES SHALL BE POURED AGAINST OVEREXCAVATED AND RECOMPACTED EARTH. ALL VERTICAL CONCRETE SURFACES SHALL BE POURED AGAINST FORMS IN ALL CASES. CONCRETE SHALL NOT BE DROPPED MORE THAN FIVE FEET VERTICALLY UNLESS SUITABLE EQUIPMENT IS USED TO PREVENT SEGREGATION. CONSOLIDATION OF CONCRETE SHALL BE ACCOMPLISHED BY MEANS OF INTERNAL TYPE MECHANICAL VIBRATORS, OR ENGINEER PRE-APPROVED EQUIVALENT METHOD.

4. CONSTRUCTION JOINTS SHALL BE PLACED AS SHOWN ON THE PLANS OR AS PRE-APPROVED BY THE ENGINEER ONLY. ENTIRE SURFACE UNDER WALL TO BE ROUGHENED WHILE WET. MINIMUM 1/8" AMPLITUDE/DEPTH. JOINTS SHALL BE THOROUGHLY CLEANED AND LAITANCE REMOVED BEFORE A NEW POUR IS MADE. EACH JOINT SHALL BE WETTED IMMEDIATELY BEFORE THE PLACING OF NEW CONCRETE.

5. ALL CAST-IN-PLACE CONCRETE STRUCTURES SHALL BE FORMED INSIDE AND OUT AND CONCRETE VIBRATED SUFFICIENTLY TO PROVIDE FOR SMOOTH SURFACED WALLS/FLOORS WITHOUT VOIDS AND HONEYCOMBS.

6. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH STRUCTURAL DETAILS AND NOTES.

7. SHOTCRETE OR CONCRETE LINING SHALL EITHER BE REINFORCED WITH 6x6x10x10 WELDED WIRE MESH PLACED IN CENTER, OR BY 2 LBS/CY OF SYNTHETIC FIBER & 50 LBS/CY OF STEEL FIBER REINFORCEMENT.

8. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 STEEL BARS FOR CONCRETE REINFORCEMENT, INTERMEDIATE GRADE, AND SHALL HAVE DEFORMATIONS CONFORMING TO ASTM A615. REINFORCING STEEL SHALL BE CLEANED OF HEAVY FLAKY RUST, LOOSE MILL SCALE, DIRT, GREASE, AND OTHER FOREIGN SUBSTANCES PRIOR TO PLACEMENT. WIRE USED FOR TYING REINFORCEMENT IN PLACE SHALL BE NO.18 AWG BLACK ANNEALED OR HEAVIER.

CONSTRUCTION NOTES

1. CONTRACTOR RESPONSIBLE FOR ALL CLEARING AND GRUBBING.

2. ALL CONCRETE PRESSURE PIPE WITH STEEL JOINT RING SHALL BE HEAD PRESSURE ASTM C361 CLASS AS SHOWN ON PLANS AND INSTALLED PER CONCRETE PIPE MANUFACTURERS SPECIFICATIONS. ALL OTHER CONCRETE IRRIGATION PIPE SHALL BE RGRCP, CL III AS SHOWN ON PLANS.

3. THRUST RESTRAINTS SHALL BE PROVIDED AT ALL PIPELINE BENDS WHETHER OR NOT SHOWN ON THE PLANS.

FLOWMETER INSTALLATION NOTES

1. FLOWMETER SHALL BE A McCROMETER BRAND PROPELLER-TYPE FLOWMETER, MODEL OF12 OR EQUAL. THE NOMINAL SIZE OF THE METER SHALL BE 36 INCHES. CORROSION RESISTANT MATERIALS SHALL BE USED THROUGHOUT THE MECHANICAL ENCLOSURE. EXCEPT FOR THE REGISTER ASSEMBLY, NO ALUMINUM MATERIALS SHALL BE USED AND ALL NON-STAINLESS STEEL SURFACES SHALL BE TREATED WITH A FUSION-BONDED IMPERVIOUS COATING. ALL ROTATING MEMBERS, EXCEPT MEMBERS IN THE REGISTER ASSEMBLY, SHALL BE MOUNTED ON STAINLESS STEEL RADIAL BALL BEARINGS. SLEEVE TYPE OR CERAMIC BEARINGS ARE NOT ACCEPTABLE. FLOWMETER SYSTEM ACCURACY SHALL BE ±2% OF TRUE FLOW RATE WITHIN THE RANGE SPECIFIED.

2. THE REGISTER SHALL BE ON A COMMON AXIS WITH THE IMPELLER SUPPORT AND SHALL BE RIGIDLY SUPPORTED BY THE HOUSING SUPPORT PLATE OR DROP PIPE. THE REGISTER SHALL CONSIST OF AN INSTANTANEOUS INDICATOR AND TOTALIZER WHICH SHALL BE MOUNTED PERPENDICULAR TO THE DIRECTION OF FLOW AND WHICH CAN BE VIEWED THROUGH A TRANSPARENT COVER. THE TOTALIZER SHALL BE SIX-DIGIT, STRAIGHT-READING, DRIVEN BY A POSITIVE DIRECT DRIVE MECHANISM FROM THE IMPELLER COUPLING, AND SHALL REGISTER TOTALIZE VOLUME IN ACRE-FEET (AF). THE FLOW INDICATOR SHALL SHOW FLOWS INSTANTANEOUSLY AND BE DRIVEN BY A MAGNET DRAG MECHANISM FROM A IMPELLER COUPLING. THE FLOW RATE INDICATOR SHALL INDICATE FLOW IN CUBIC FEET PER SECOND (CFS). THE REGISTER SHALL BE FACTORY LUBRICATED AND SEALED WATER-TIGHT FOR INFREQUENT SUBMERSION.

3. FLOWRATE LIMITS OF THE METER SHALL BE AS FOLLOWS:
MINIMUM FLOW – 1,500 GPM (3.3 CFS) *LOW-VELOCITY CONSTRUCTION
MAXIMUM FLOW – 20,000 GPM (44.6 CFS)
INTERMITTENT – 30,000 GPM (66.8 CFS)

4. INSTALLATION SHALL BE ACCORDING TO MANUFACTURER'S SPECIFICATIONS. SEE McCROMETER PROPELLER FLOWMETERS MANUAL FOR INSTALLATION, OPERATION AND MAINTENANCE.

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No.	REVISION	BY	DATE

PRELIMINARY
FOR REVIEW AND APPROVAL
06/15/2010

REGISTERED PROFESSIONAL ENGINEER — ADAM B. LEE — No. 69104 — Civil — STATE OF CALIFORNIA

DATE SIGNED:

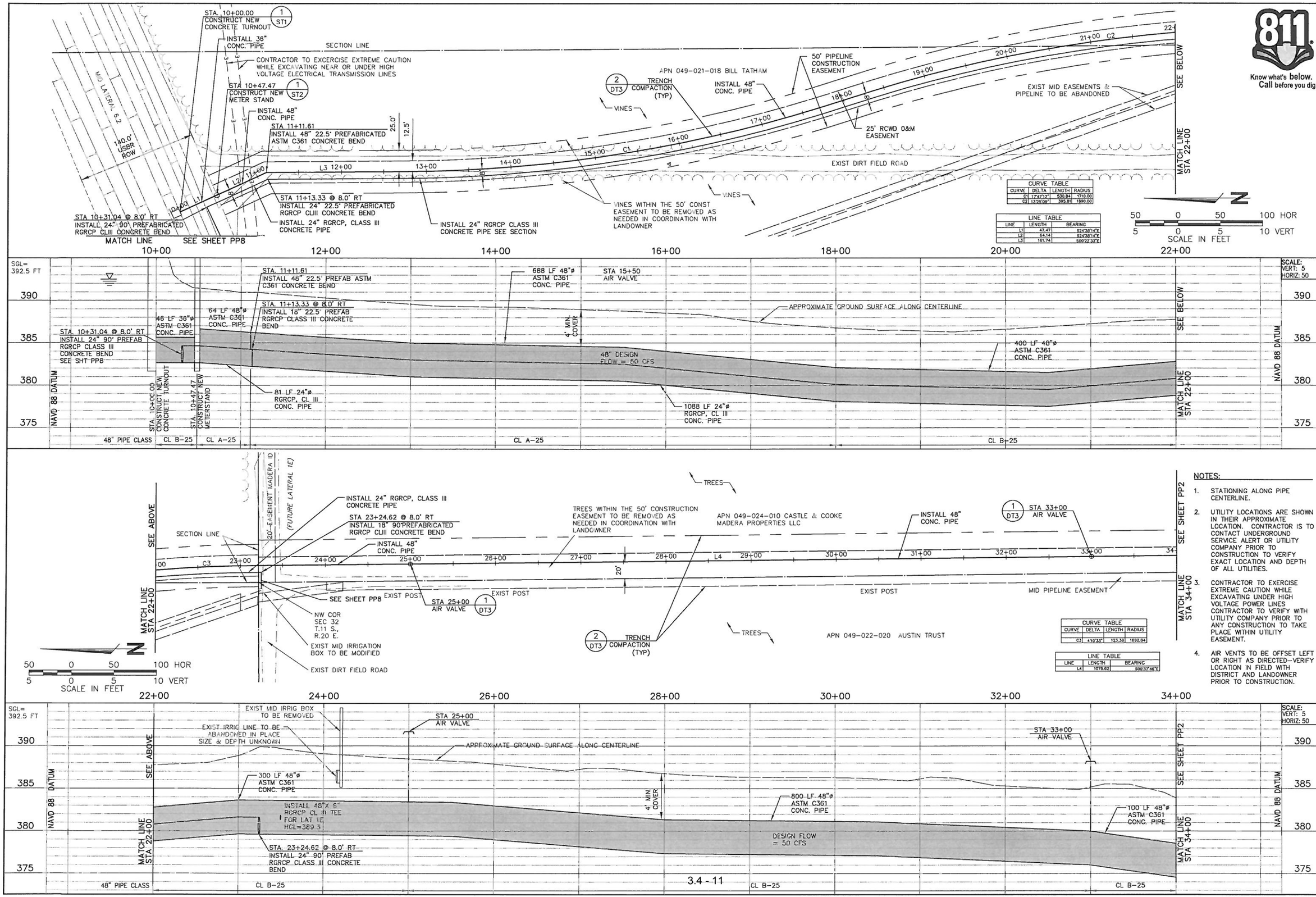
Gateway Village
In-Lieu Pipeline
Castle and Cooke, Inc.
Madera County, CA

GENERAL NOTES

EST. 1968 PROVOST & PRITCHARD ENGINEERING GROUP
An Employee Owned Company
286 WEST CROMWELL AVENUE
FRESNO, CALIFORNIA 93711-6162
559/449-2700 FAX 559/449-2715
www.ppeng.com

DESIGN ENGINEER: Adam Lee	
LICENSE NO: CE 69104	
DRAFTED BY: DWS	CHECKED BY: DMG
SCALE: AS SHOWN	
DATE: 06/15/2010	
JOB NO: 14340405-30	
DWG. NO:	
SHEET GN2 OF	

5/28/2010 8:13:03 AM C:\Clients\Castle_Cooke-1434\1434-Gateway\1434-Expan Phs 1\14340405-Gateway Pipeline LC.dwg\SHEET\14340405-GN-NOTES.dwg -aaron



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06/15/2010

REGISTERED PROFESSIONAL ENGINEER ADAM B. LEE No. 69104 Civil STATE OF CALIFORNIA

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Castle and Cooke, Inc.
Madera County, CA

PLAN & PROFILE
STA 10+00 TO 34+00

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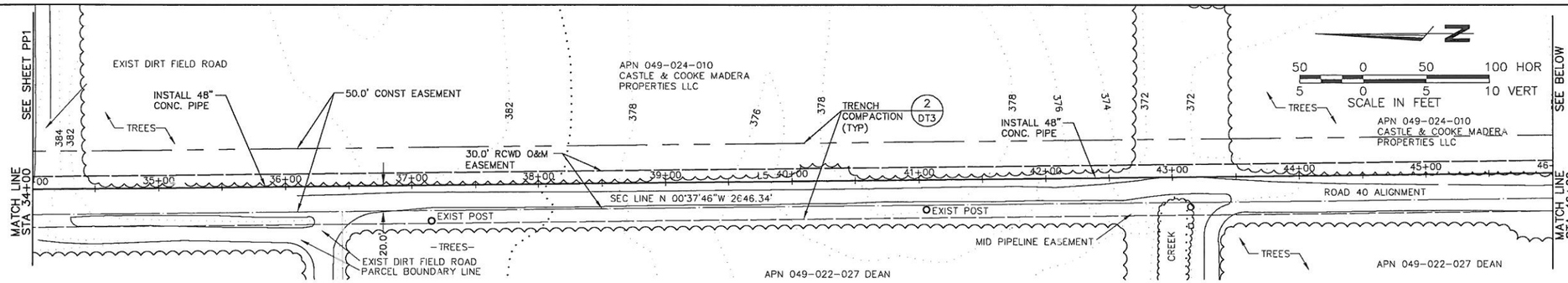
www.ppeng.com

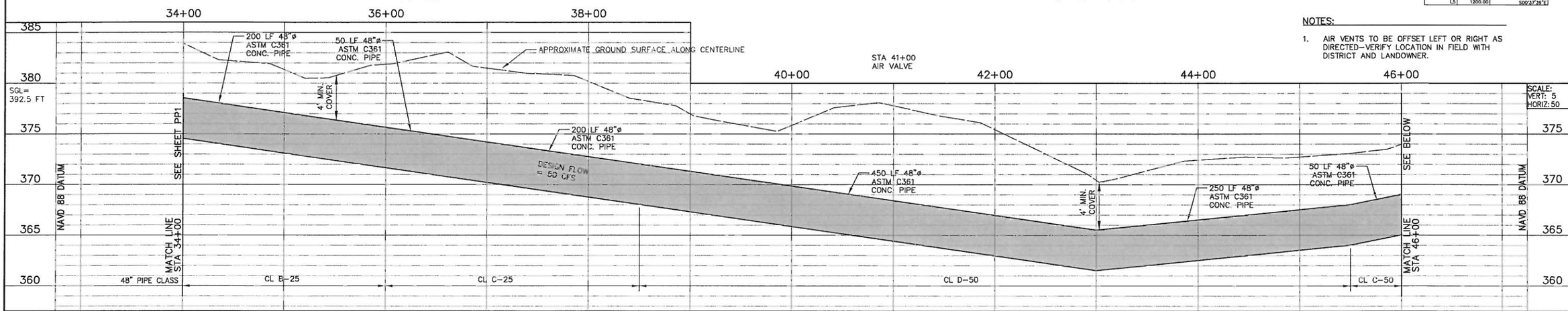
DESIGN ENGINEER: Adam Lee	
LICENSE NO: CE 69104	
DRAFTED BY: DVS	CHECKED BY: DMG
SCALE: AS SHOWN	
DATE: 06/15/2010	
JOB NO: 14340405-30	
DWG. NO:	
SHEET PP1	CF

8/21/2008 7:51:02 AM G:\Clients\Castle_Cooke-1434\1434-Gateway\1434-Expan Phs 1\14340405-Gateway Pipeline LD\dwg\SHEET\14340405-PP-1.dwg -David

Know what's below. Call before you dig.

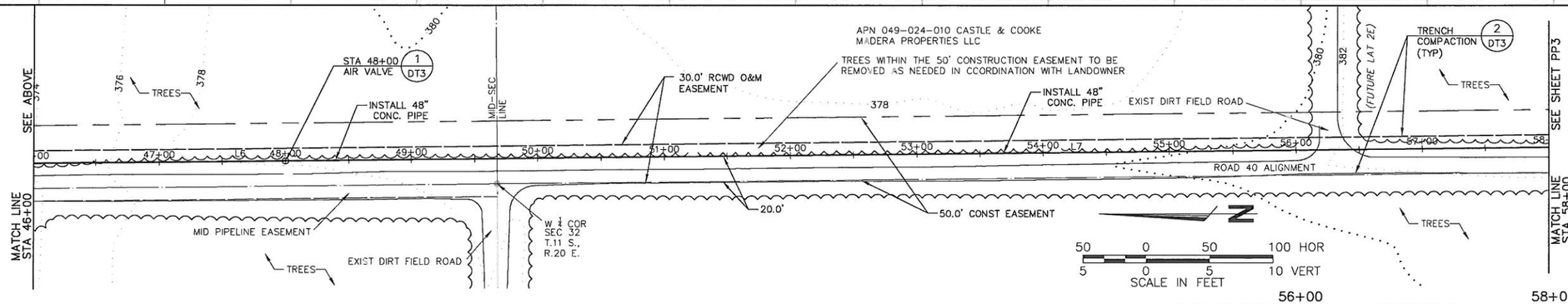


LINE TABLE		
LINE	LENGTH	BEARING
L5	1200.00	S00°37'39"E



NOTES:

1. AIR VENTS TO BE OFFSET LEFT OR RIGHT AS DIRECTED-VERIFY LOCATION IN FIELD WITH DISTRICT AND LANDOWNER.



LINE TABLE		
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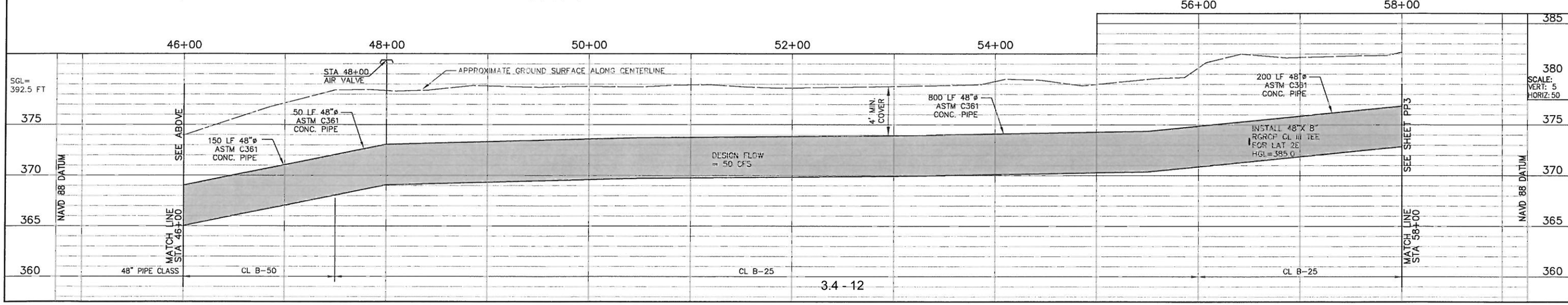
L7	632.32	S00°38'11"E



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DESIGN ENGINEER: Adom Lee	
LICENSE NO: CE 69104	
DRAFTED BY: DVS	CHECKED BY: DMG
SCALE: AS SHOWN	
DATE: 06/15/2010	
JOB NO: 14340405-30	
DWG. NO:	
SHEET PP2 OF	

5/29/2008 8:15:56 AM G:\Clients\Castle_Cooke-1434\1434-Colony\1434-Expan Phs 1\14340405-Gateway Pipeline LD.dwg\SHEET\14340405-PP-2.dwg -apron

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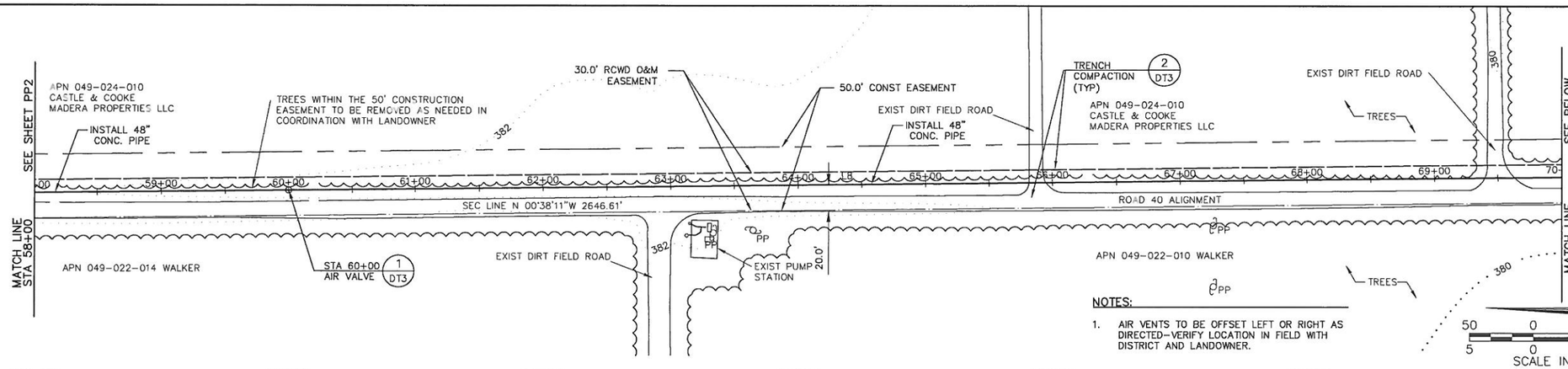

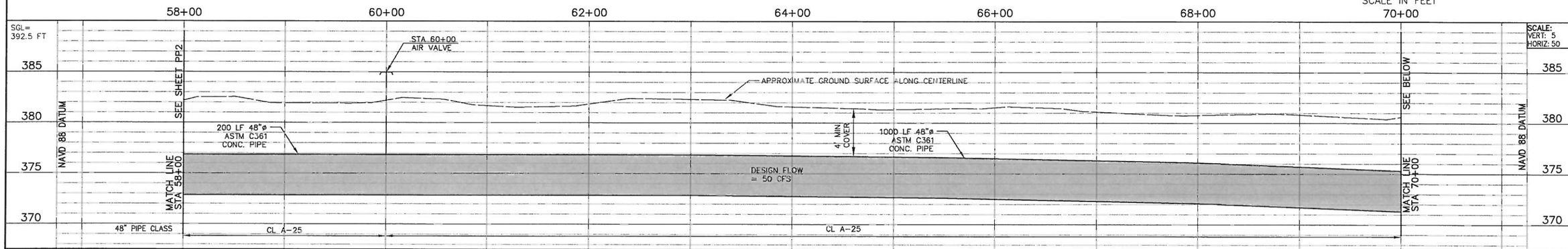

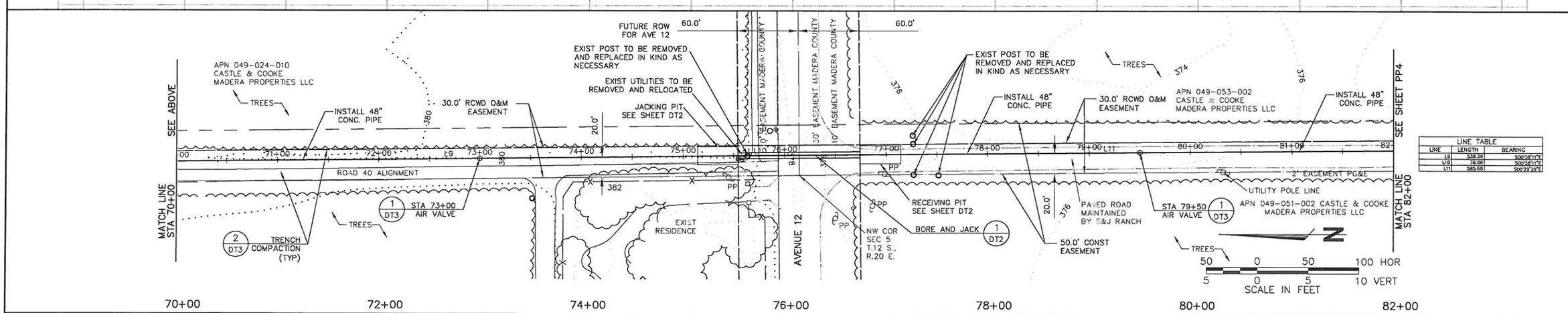

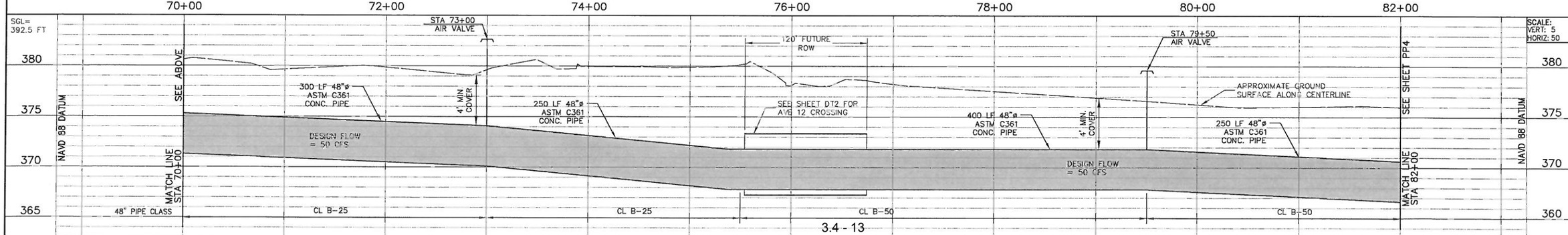

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Madera County, CA

PLAN & PROFILE
STA 58+00 to 82+00

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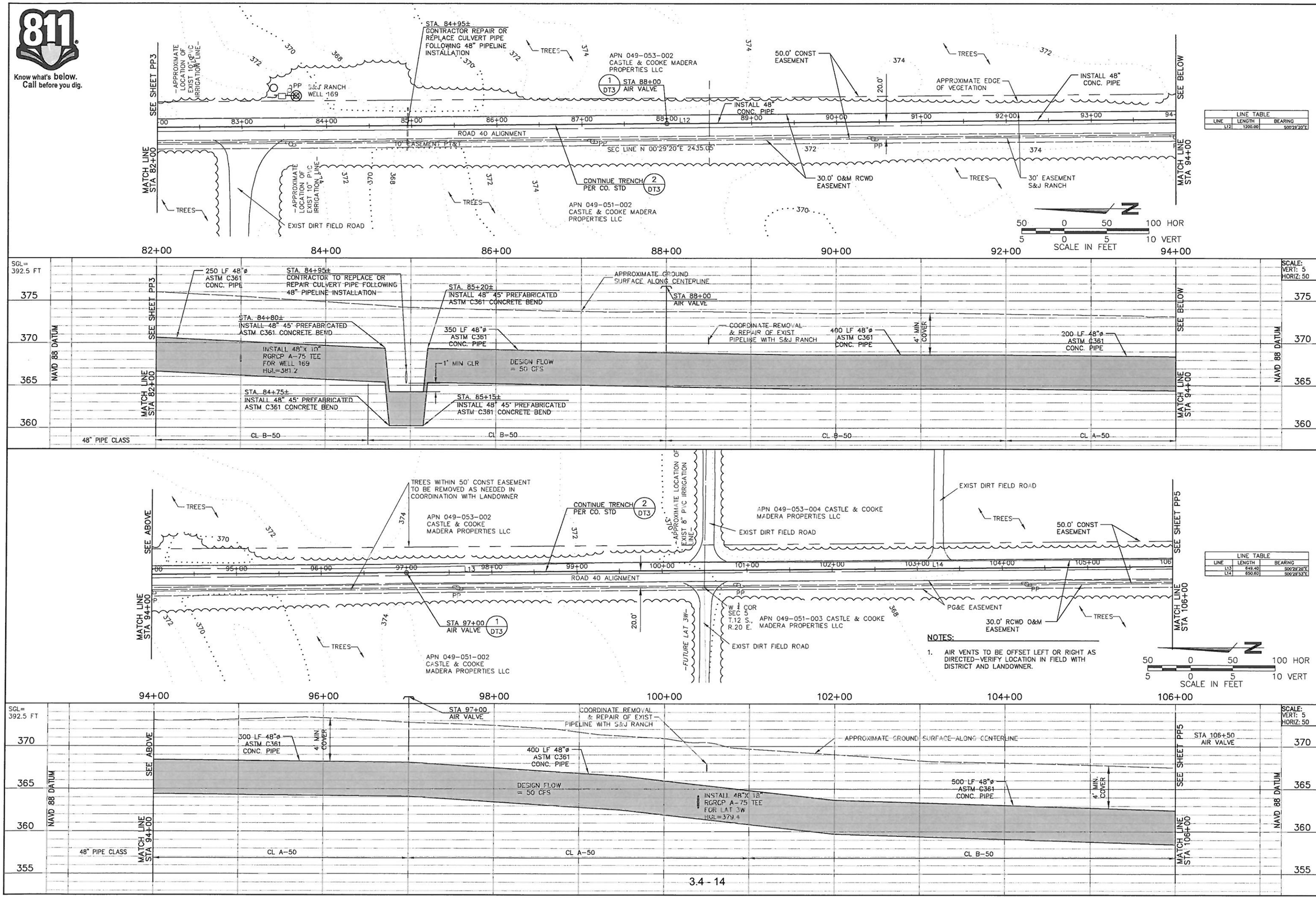
DESIGN ENGINEER: Adam Lee
LICENSE NO: CE 69104
DRAFTED BY: DVS
CHECKED BY: DMG
SCALE: AS SHOWN
DATE: 06/15/2010
JOB NO: 14340405-30
DWG. NO:
SHEET PP3 OF

5/29/2008 8:18:17 AM G:\Clients\Castle_Cooke-1434\1434-Gateway\1434-Expon Phs 1\14340405-Gateway Pipeline LD\dwg\SHEET\14340405-PP-3.dwg - aaron



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LICENSE NO: CE 69104
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SCALE: AS SHOWN
DATE: 06/15/2010
JOB NO: 14340405-30
DWG. NO:
SHEET
PP4 OF

5/29/2008 8:18:59 AM G:\Clients\Castle_Cooke-1434\1434-Gateway\1434-Expan Phs 1\14340405-Gateway Pipeline LD\dwg\SHEET\14340405-PP-4.dwg -aaron

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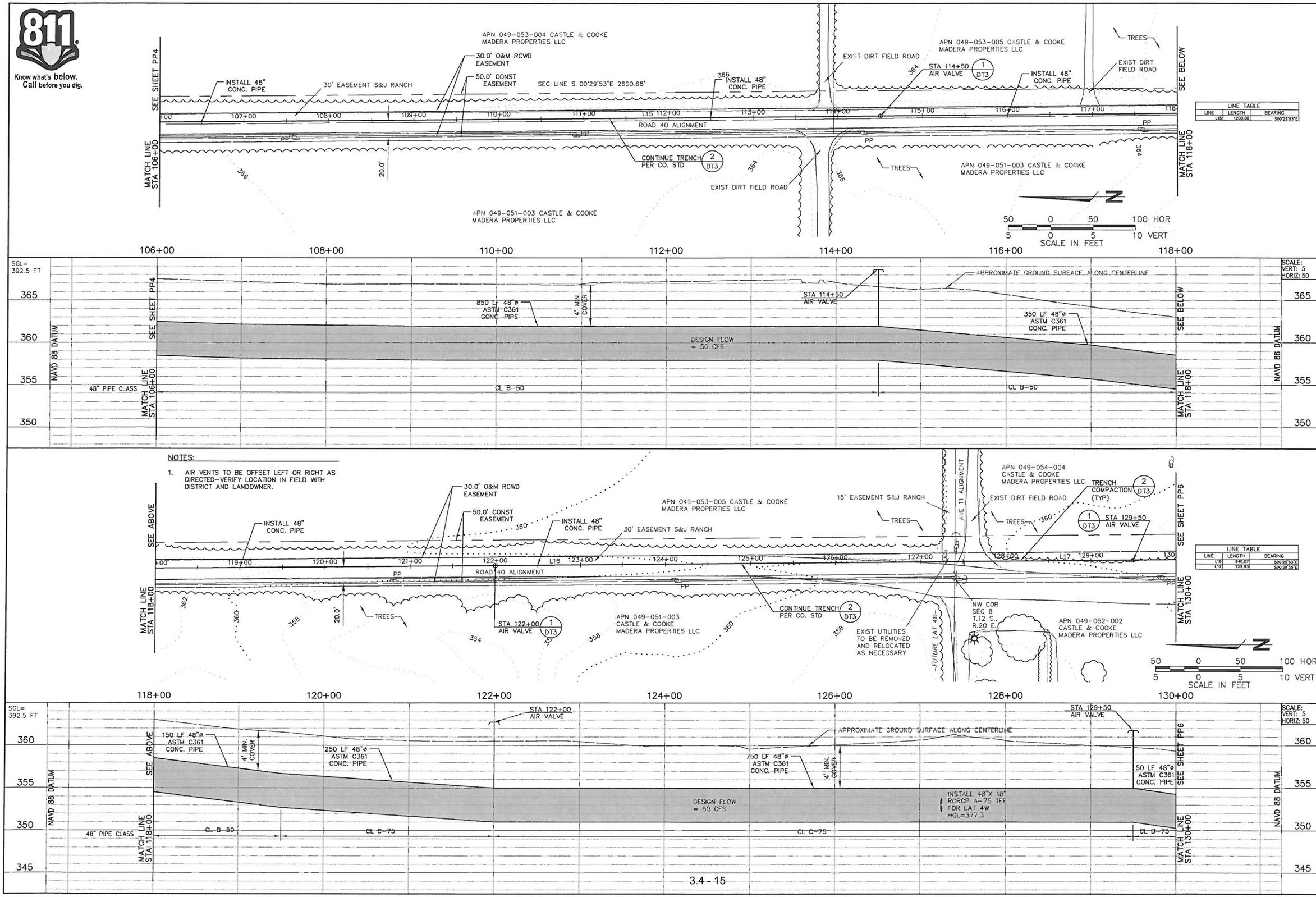

NOTES:

1. AIR VENTS TO BE OFFSET LEFT OR RIGHT AS DIRECTED-VERIFY LOCATION IN FIELD WITH DISTRICT AND LANDOWNER.

LINE TABLE		
LINE	LENGTH	BEARING
L15	1200.00	S00°29'53"E

LINE TABLE		
LINE	LENGTH	BEARING
L16	940.07	S00°29'53"E
L17	259.93	S00°29'35"E

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Madera County, CA

PLAN & PROFILE
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DESIGN ENGINEER: Adam Lee	
LICENSE NO: CE 69104	
DRAFTED BY: DVS	CHECKED BY: DMG
SCALE: AS SHOWN	
DATE: 06/15/2010	
JOB NO: 14340405-30	
DWG. NO:	
SHEET PP5 OF	

5/29/2008 8:21:01 AM G:\Clients\Castle_Cooke-142A\1434-Gateway\1434-Expan Ph: I\14340405-Gateway Pipeline LD\dwg\SHEET\14340405-PP-5.dwg -apron

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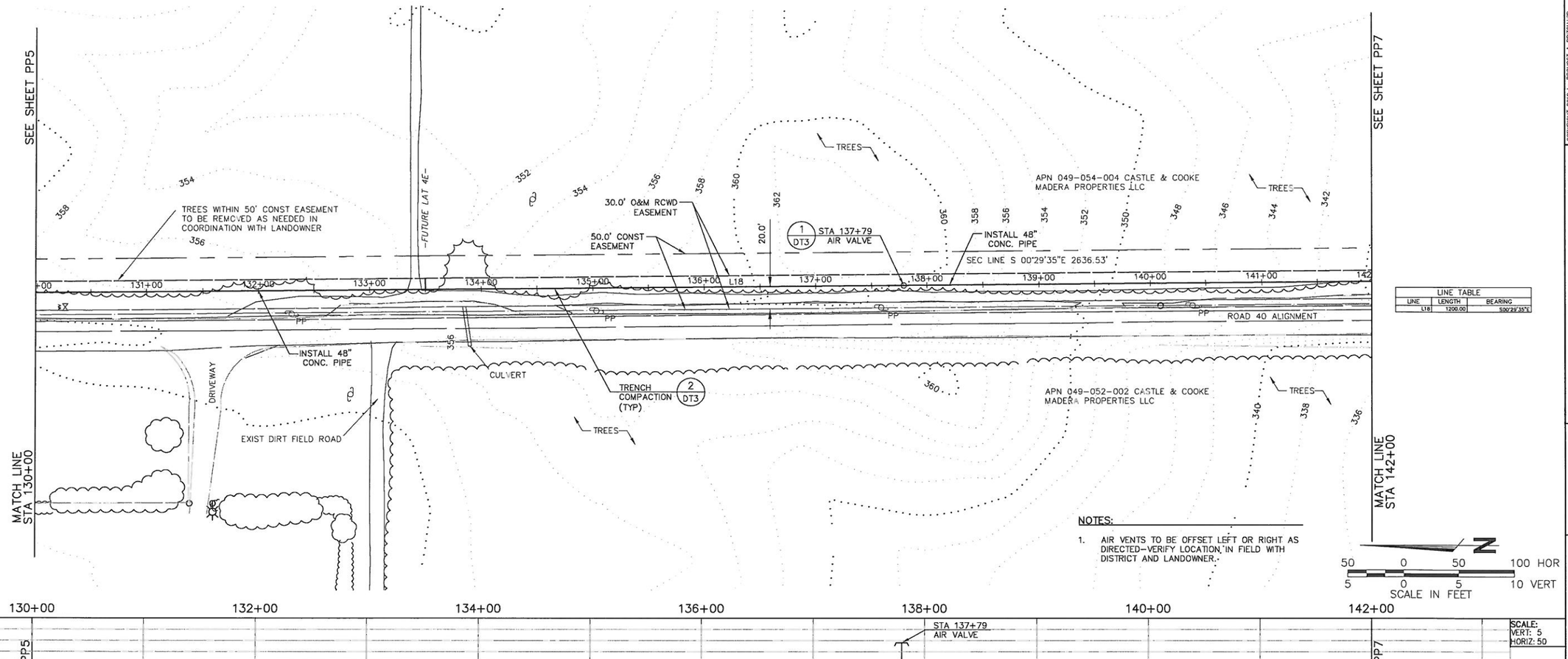
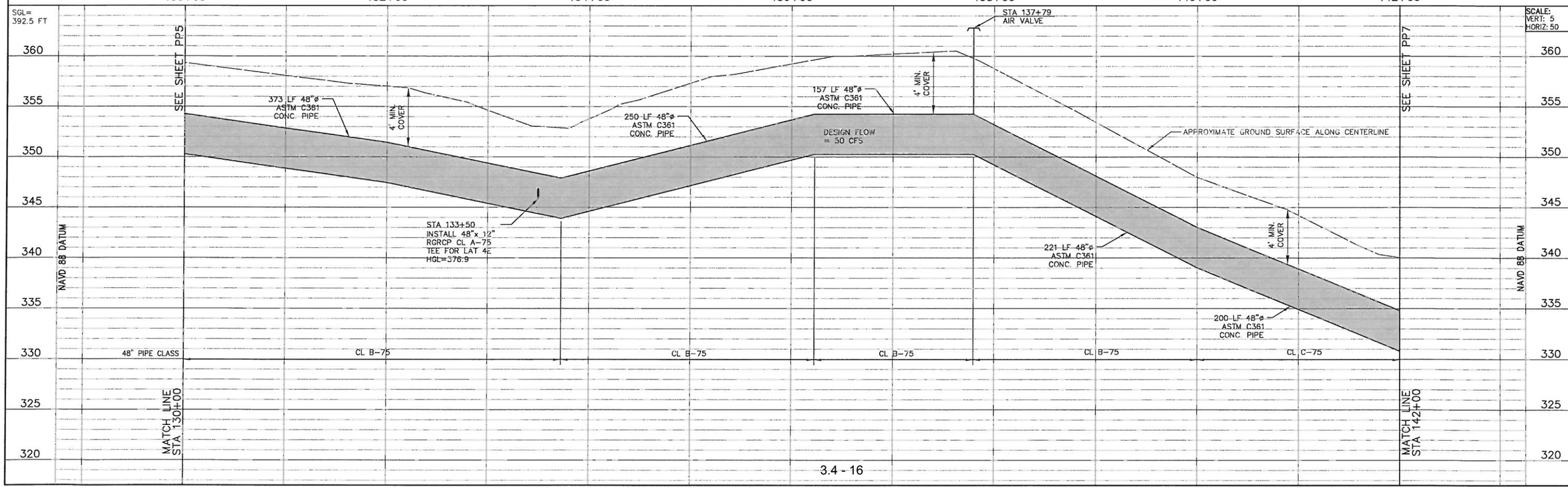


LINE TABLE		
LINE	LENGTH	BEARING
L18	1200.00	S00°29'35"E

NOTES:

1. AIR VENTS TO BE OFFSET LEFT OR RIGHT AS DIRECTED-VERIFY LOCATION IN FIELD WITH DISTRICT AND LANDOWNER.



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DATE SIGNED: _____

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Castle and Cooke, Inc.
Madera County, CA

PLAN & PROFILE
STA 130+00 TO 142+00

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DESIGN ENGINEER: Adam Lee	
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SCALE: AS SHOWN	
DATE: 06/15/2010	
JOB NO: 14340405-30	
DWG. NO:	
SHEET PP6 OF	

5/29/2010 8:22:32 AM G:\Client\C_Castle_Cooke-1434\1434-Gateway\1434-Expan Phs 1\14340405-Gateway Pipeline LD\dwg\SHEET\14340405-PP-5.dwg -gpron

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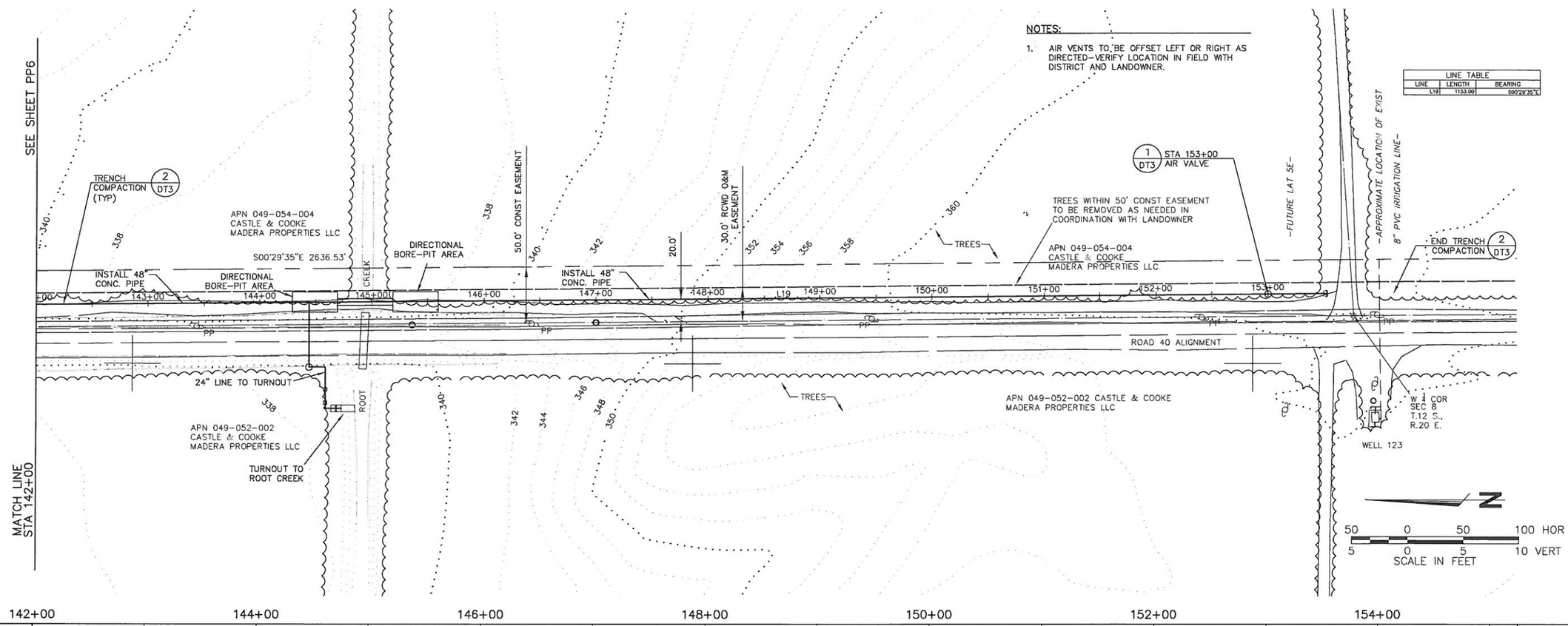
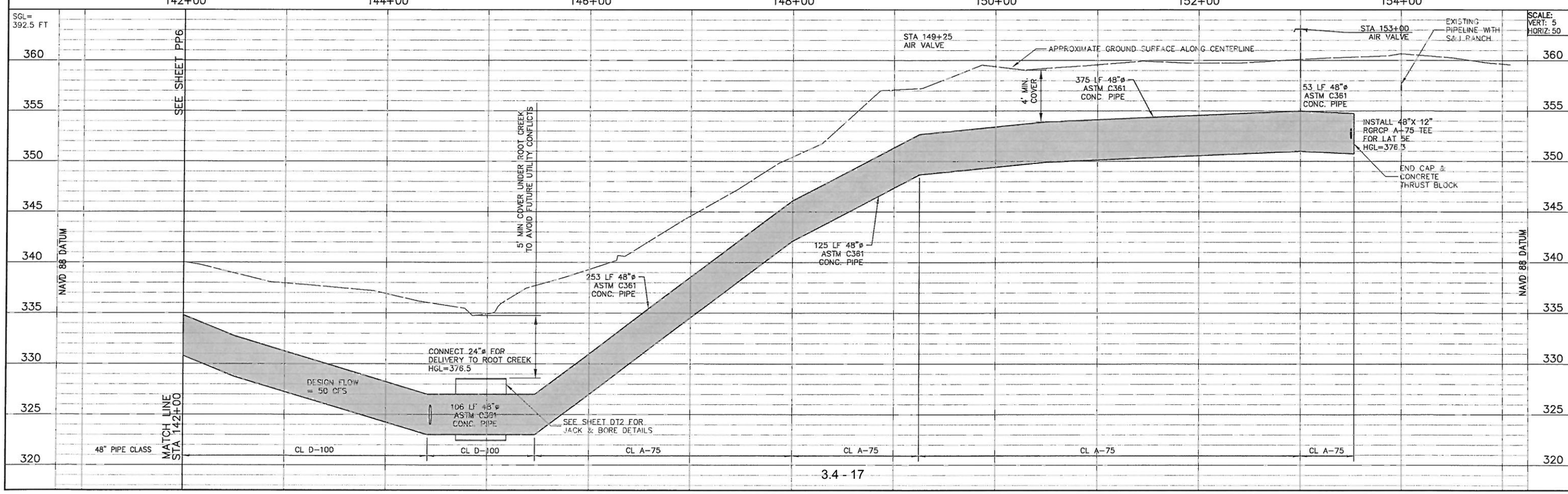
NOTES:

1. AIR VENTS TO BE OFFSET LEFT OR RIGHT AS DIRECTED–VERIFY LOCATION IN FIELD WITH DISTRICT AND LANDOWNER.

LINE TABLE		
LINE	LENGTH	BEARING
L19	1153.00	S00°29'35"E





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Madera County, CA

PLAN & PROFILE
STA 142+00 TO 154+00 (END)

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LICENSE NO: CE 69104
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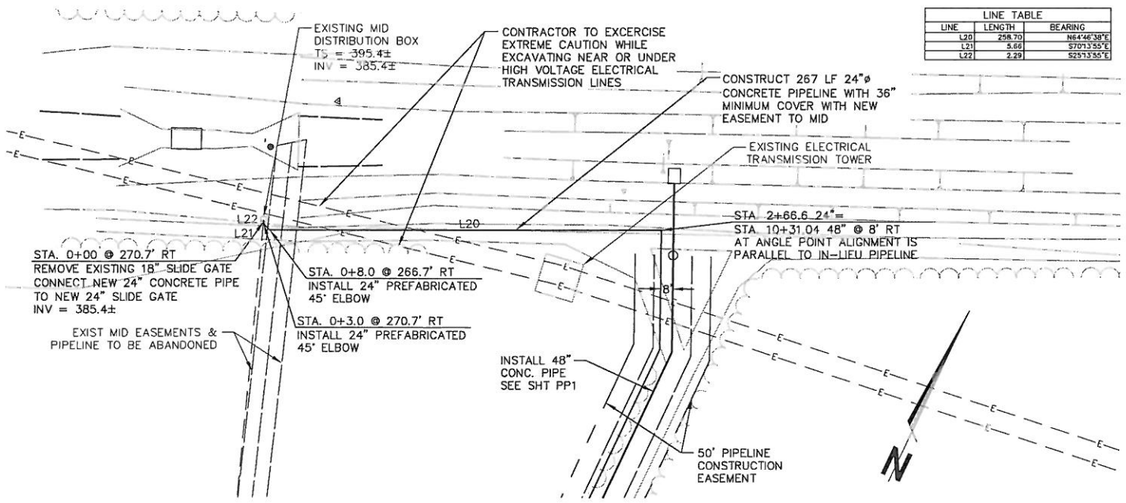
CHECKED BY: DMG
SCALE: AS SHOWN
DATE: 06/15/2010
JOB NO: 14340405-30
DWG. NO:
SHEET PP7 OF

5/29/2008 8:23:48 AM G:\Clients\Castle_Cooke-1434\1434-Gateway\1434-Expan Phs 1\14340405-Gateway Pipeline LD\dwg\SHEET\14340405-PP-7.dwg -apron

811 Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD

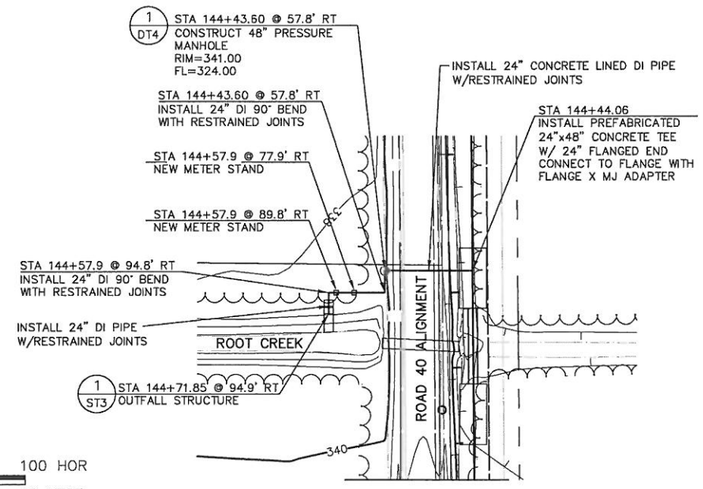


LINE TABLE		
LINE	LENGTH	BEARING
L20	258.70	N64°46'38"E
L21	5.66	S70°13'55"E
L22	2.29	S25°13'55"E

IRRIGATION DISTRIBUTION BOX AND PIPELINE
SCALE: AS SHOWN

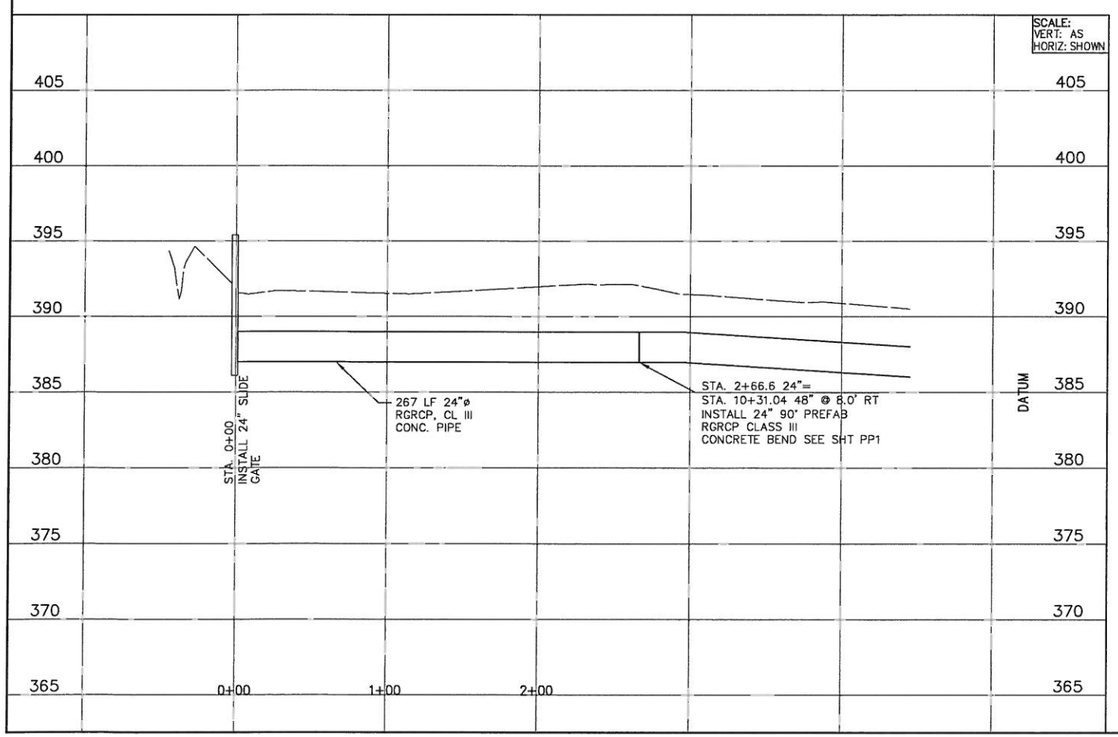
N

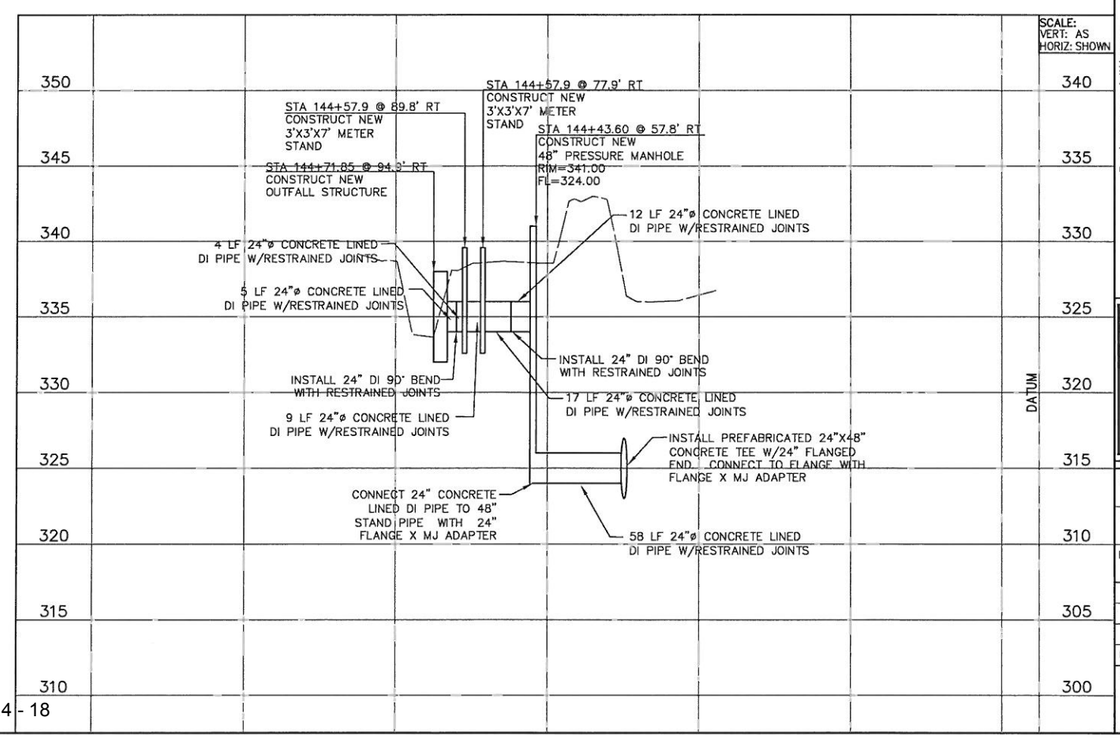
50 0 50 100 HOR
5 0 5 10 VERT
SCALE IN FEET



OUTFALL TO ROOT CREEK
SCALE: AS SHOWN

NOTE:
ALL CONNECTIONS FROM DI PIPE TO CONCRETE SHALL USE FLANGE X MJ WITH RESTRAINED JOINTS.





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DATE SIGNED:

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In-Lieu Pipeline
Castle and Cooke, Inc.
Madera County, CA

PLAN & PROFILE
24 INCH DIA. PIPELINE

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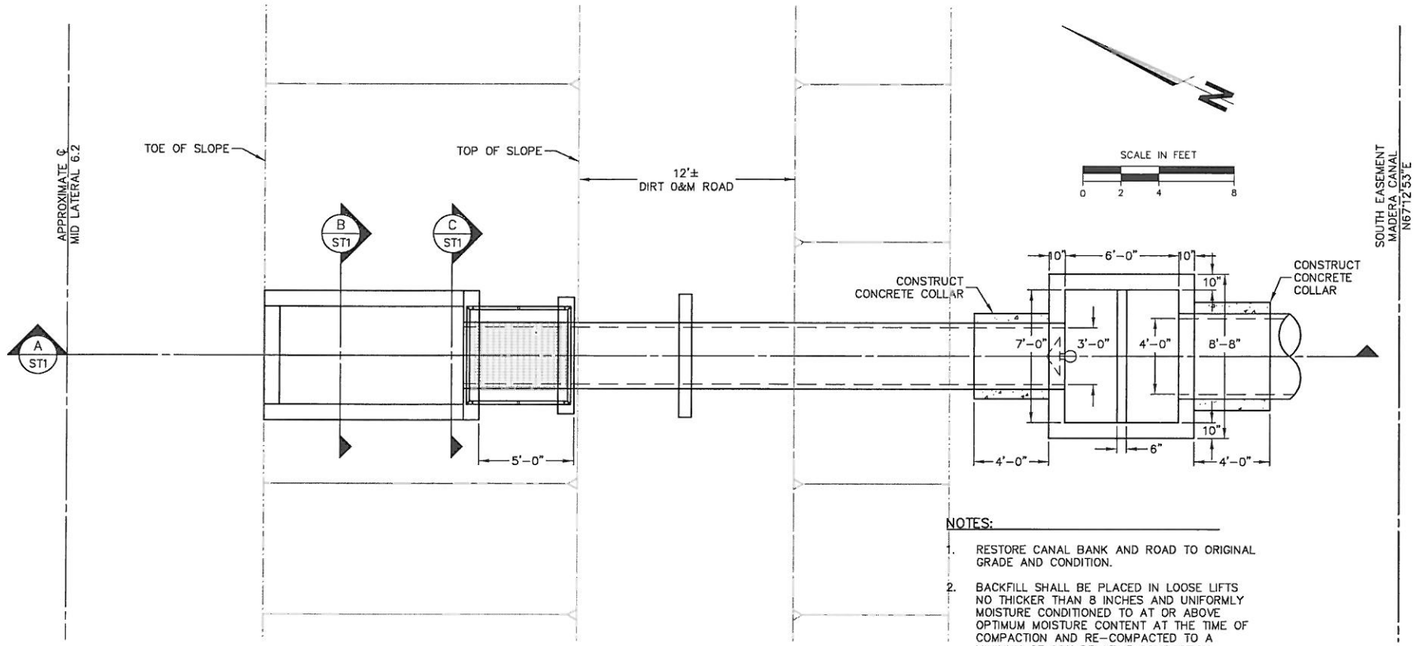
ENGINEERING GROUP
An Employee Owned Company
286 WEST CROWELL AVENUE
FRESNO, CALIFORNIA 93705
559/449-2700 FAX 559/449-2715
www.ppeng.com

DESIGN ENGINEER: Adam Lee
LICENSE NO: CE 69104
DRAFTED BY: DVS
CHECKED BY: DMG
SCALE: AS SHOWN
DATE: 06/15/2010
JOB NO: 14340405-30
DWG. NO:
SHEET PP8 OF

12/2/2010 7:31 AM G:\Clients\Castle_Cooke-1434\1434-Gateway\1434-Expan Phs 1\14340405-Gateway Pipeline LD\dwg\SHEET\14340405-PP-DIA18-1.dwg -David Sorrick

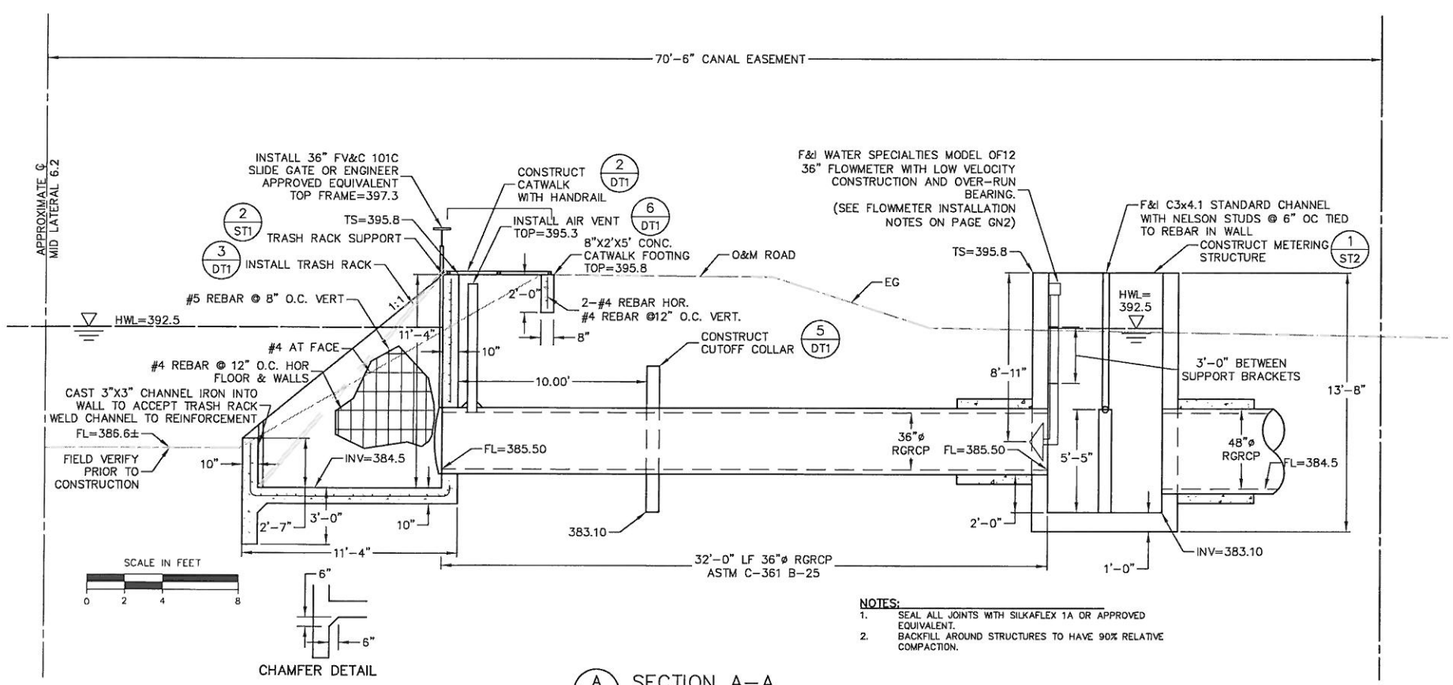


NOTES:

1. RESTORE CANAL BANK AND ROAD TO ORIGINAL GRADE AND CONDITION.
2. BACKFILL SHALL BE PLACED IN LOOSE LIFTS NO THICKER THAN 8 INCHES AND UNIFORMLY MOISTURE CONDITIONED TO AT OR ABOVE OPTIMUM MOISTURE CONTENT AT THE TIME OF COMPACTION AND RE-COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION.

1 / ST1 TURNOUT PLAN
SCALE: AS SHOWN

PLAN VIEW OF NEW TURNOUT AND METER BOX FROM MID LATERAL 6.2

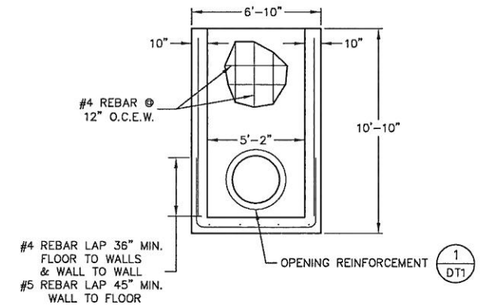


NOTES:

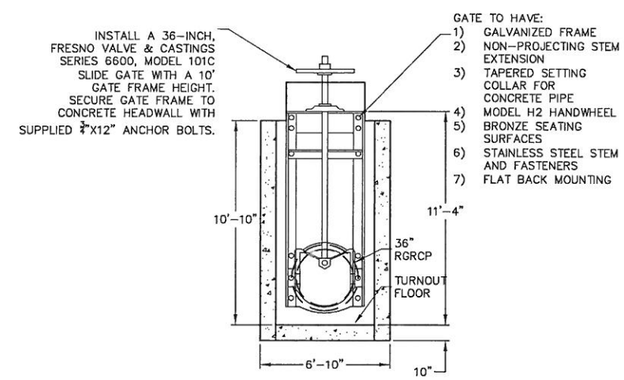
1. SEAL ALL JOINTS WITH SIKAFLEX 1A OR APPROVED EQUIVALENT.
2. BACKFILL AROUND STRUCTURES TO HAVE 90% RELATIVE COMPACTION.

A / ST1 SECTION A-A
SCALE: AS SHOWN

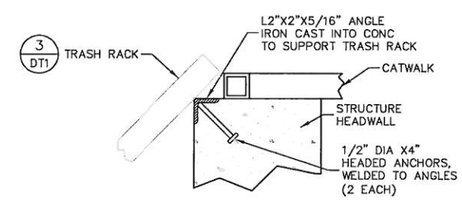
PROFILE VIEW OF NEW TURNOUT AND METER BOX FROM MID LATERAL 6.2



B / ST1 SECTION B-B
SCALE: NTS



C / ST1 SECTION C-C
SCALE: NTS



2 / ST1 TRASH RACK SUPPORT
SCALE: NTS

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No.	REVISION	BY	DATE

PRELIMINARY
FOR REVIEW AND APPROVAL
06/15/2010

REGISTERED PROFESSIONAL ENGINEER ADAM B. LEE No. 69104 Civil STATE OF CALIFORNIA

DATE SIGNED:

Gateway Village
In-Lieu Pipeline
Castle and Cooke, Inc.
Madera County, CA

TURNOUT STRUCTURE

ESTD. 1968 PROVOST & PRITCHARD ENGINEERING GROUP
An Employee Owned Company
286 WEST CROWELL AVENUE
REEDLEY, CALIFORNIA 93654
559/638-9292 559/448-2700 FAX 559/448-2715
www.ppeng.com

DESIGN ENGINEER: Adam Lee	
LICENSE NO: CE 69104	
DRAFTED BY: DVS	CHECKED BY: DMG
SCALE: AS SHOWN	
DATE: 06/15/2010	
JOB NO: 1434040S-30	
DWG. NO:	
SHEET ST1	

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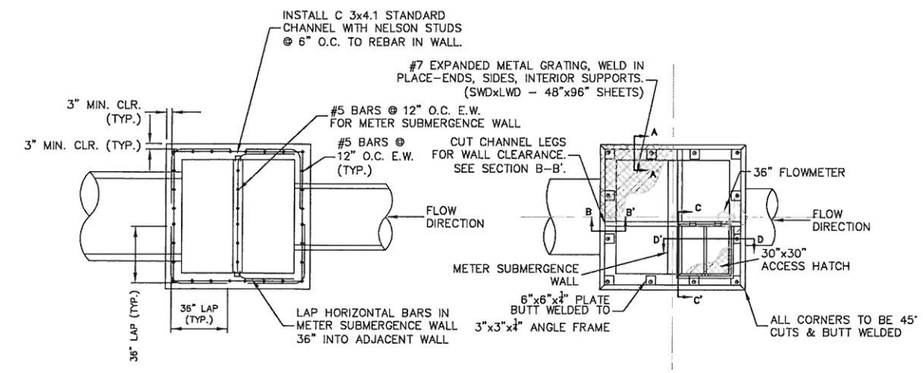

1 ST2 METERING STRUCTURE
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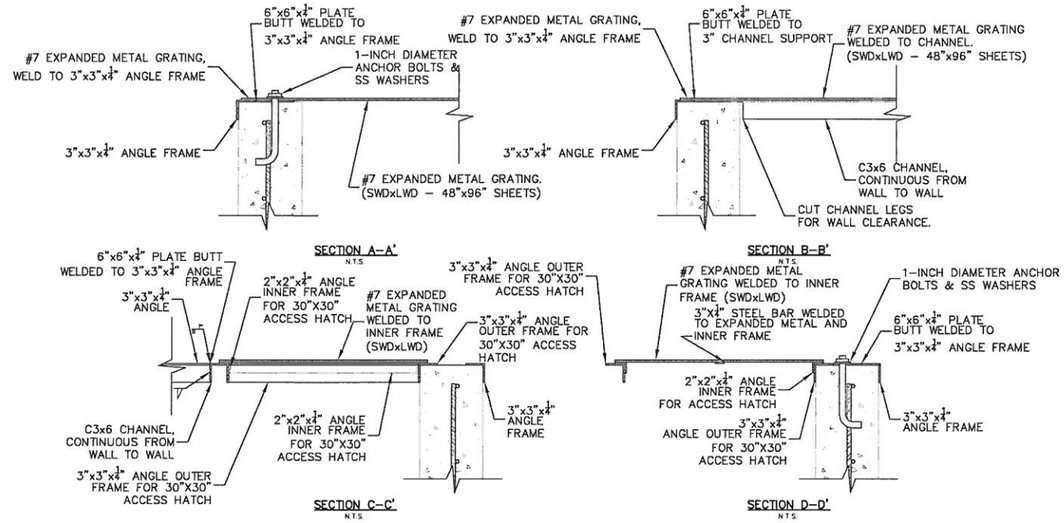

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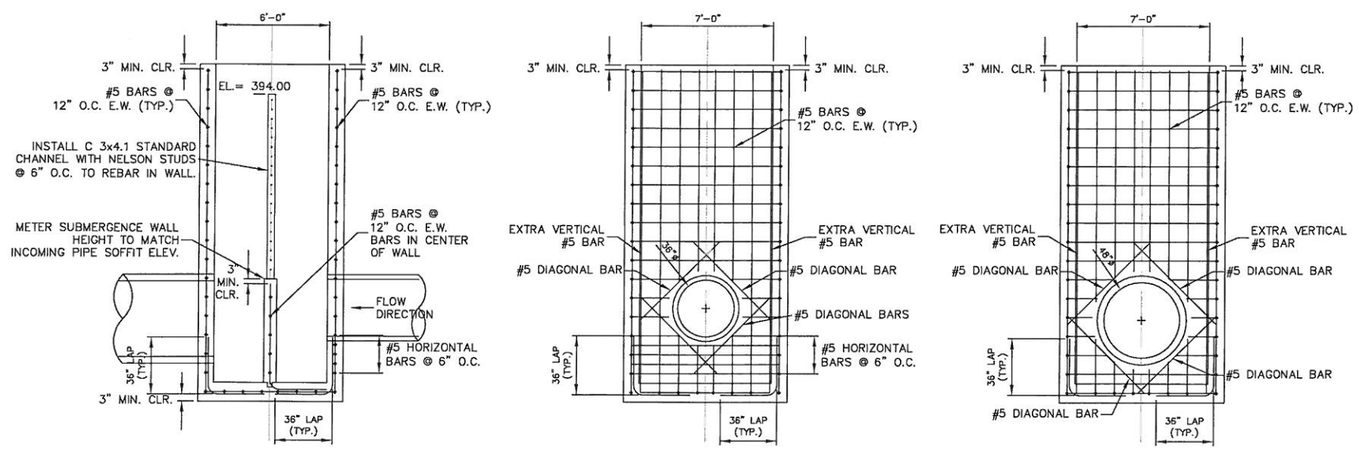

3 ST2 REINFORCING DETAILS
SCALE: NTS

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No.	REVISION	BY	DATE

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06/15/2010

REGISTERED PROFESSIONAL ENGINEER ADAM B. LEE No. 69104 Civil STATE OF CALIFORNIA

DATE SIGNED:

Gateway Village
In-Lieu Pipeline
Castle and Cooke, Inc.
Madera County, CA

METERING STRUCTURE

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An Employee Owned Company
286 WEST CROWELL AVENUE
REEDLEY, CALIFORNIA 93654
559/ 449-2700 FAX 559/ 449-2715
www.ppeng.com

DESIGN ENGINEER: Adam Lee	
LICENSE NO: CE 69104	
DRAFTED BY: DVS	CHECKED BY: DMG
SCALE: AS SHOWN	
DATE: 06/15/2010	
JOB NO: 14340405-30	
DWG. NO:	
SHEET ST2 OF	

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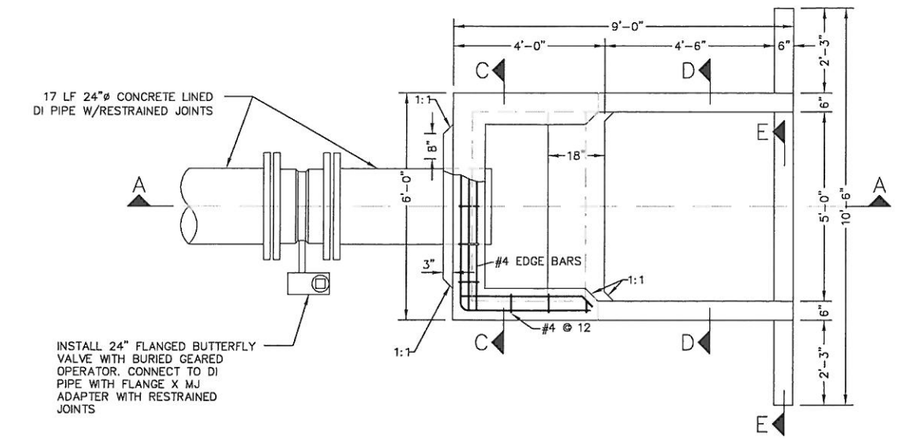

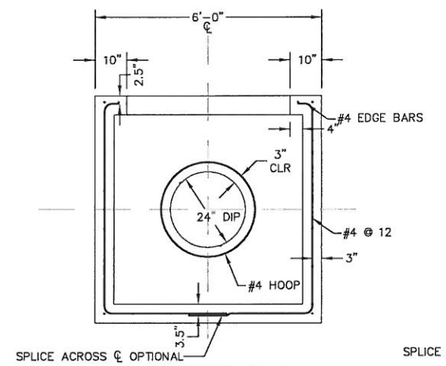

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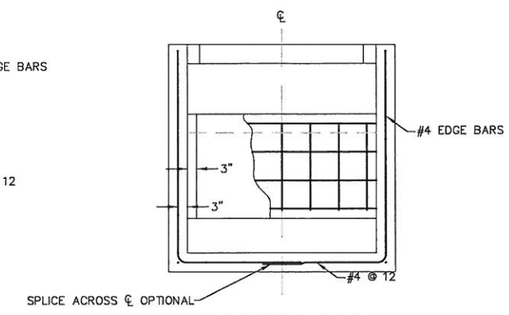

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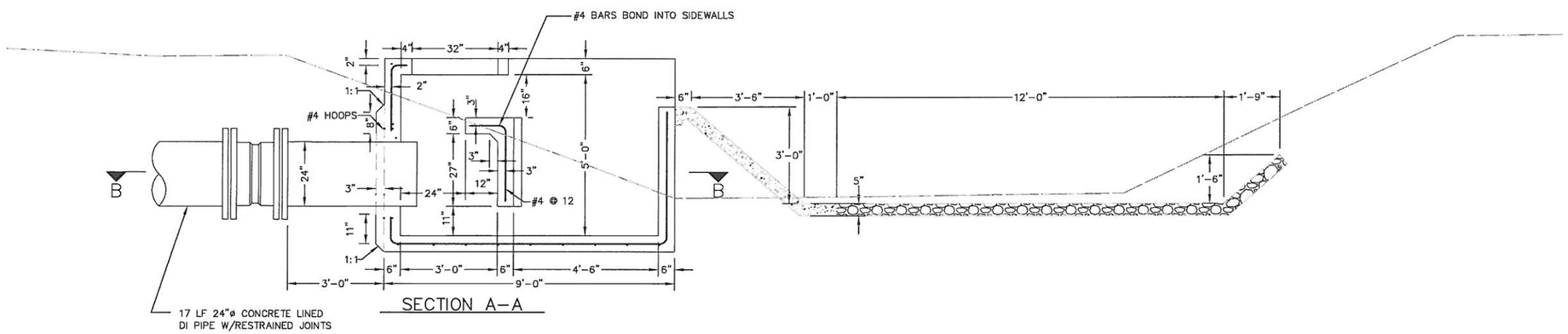
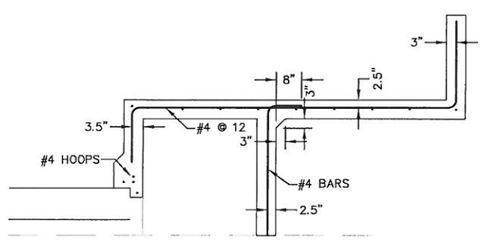
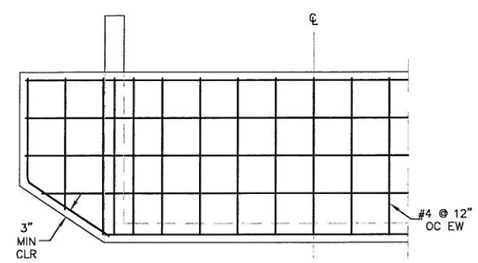


SECTION A–A



SECTION B–B



SECTION E–E

1 ST3 OUTFALL STRUCTURE
SCALE: NTS

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06/15/2010

REGISTERED PROFESSIONAL ENGINEER ADAM B. LEE No. 69104 Civil STATE OF CALIFORNIA

DATE SIGNED:

Gateway Village
In-Lieu Pipeline
Castle and Cooke, Inc.
Madera County, CA

OUTFALL STRUCTURE

EST. 1968 PROVOST & PRITCHARD CPA ENGINEERING GROUP
An Employee Owned Company
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REEDLEY, CALIFORNIA 93654-2399
559/638-9292 559/449-2700 FAX 559/449-2715
www.ppeng.com

DESIGN ENGINEER: Adam Lee	
LICENSE NO: CE 69104	
DRAFTED BY: DVS	CHECKED BY: DMG
SCALE: AS SHOWN	
DATE: 06/15/2010	
JOB NO: 1434.0405-.00	
DWG. NO:	
SHEET ST3 OF	

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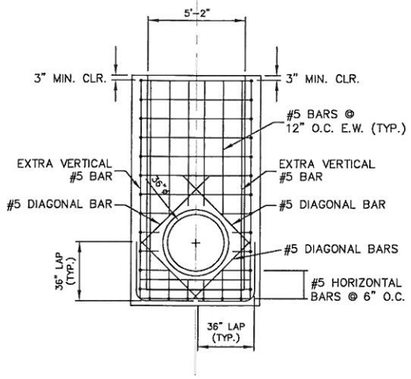
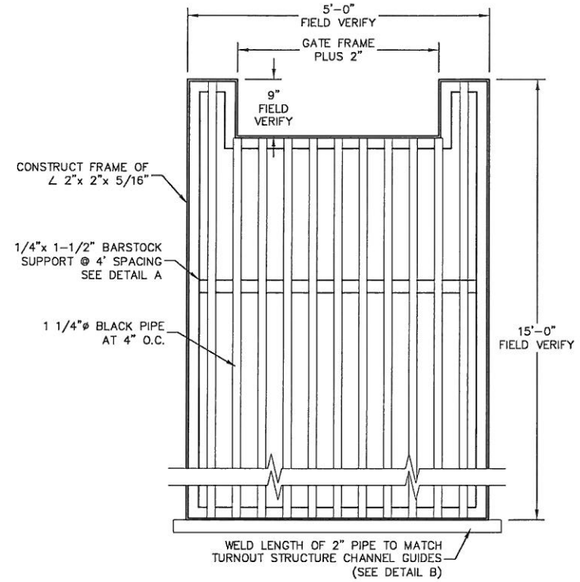
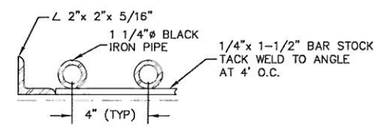
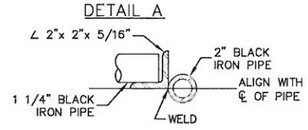


1 DT1 TURNOUT CONCRETE OPENING REINFORCEMENT
SCALE: NTS



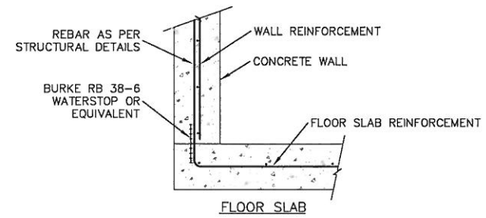


DETAIL A

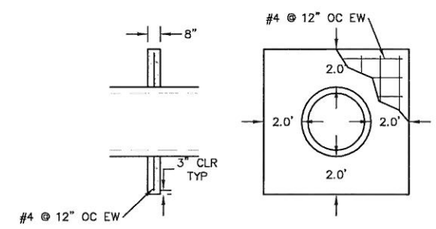


DETAIL B

3 DT1 TRASH RACK
SCALE: NTS



4 DT1 STRUCTURE COLD JOINT
SCALE: NTS



5 DT1 CUTOFF COLLAR
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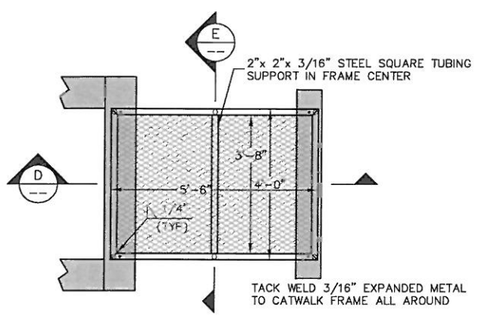

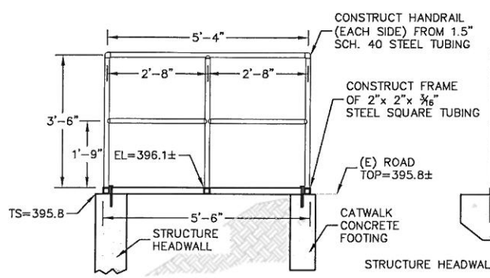

D DT1 SECTION D-D
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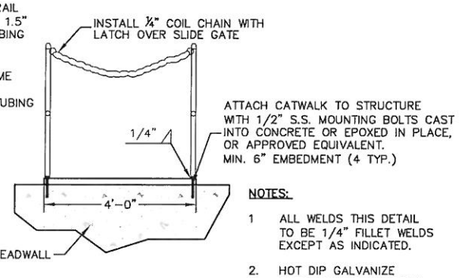


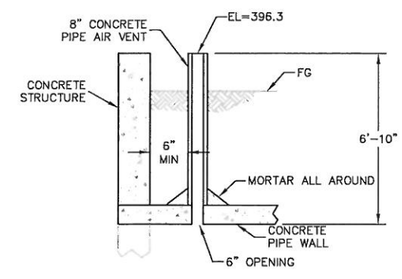
NOTES:

1 ALL WELDS THIS DETAIL TO BE 1/4" FILLET WELDS EXCEPT AS INDICATED.

2. HOT DIP GALVANIZE CATWALK AND HANDRAIL.

E DT1 SECTION E-E
SCALE: NTS

2 DT1 CATWALK
SCALE: NTS



6 DT1 AIR VENT
SCALE: NTS

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No.	REVISION	BY	DATE

PRELIMINARY
FOR REVIEW AND APPROVAL
06/15/2010

REGISTERED PROFESSIONAL ENGINEER ADAM B. LEE No. 69104 Civil STATE OF CALIFORNIA

DATE SIGNED:

Gateway Village
In-Lieu Pipeline
Castle and Cooke, Inc.
Madera County, CA

TURNOUT DETAILS

EST. 1962 PROVOST & PRITCHARD ENGINEERING GROUP
An Employee Owned Company
286 WEST CROWELL AVENUE
FRESNO, CALIFORNIA 93704-1672
559/449-2700 FAX 559/449-2715
www.ppeng.com

DESIGN ENGINEER: Adam Lee	
LICENSE NO: CE 69104	
DRAFTED BY: DVS	CHECKED BY: DMG
SCALE: AS SHOWN	
DATE: 06/15/2010	
JOB NO: 14340405-30	
DWG. NO:	
SHEET DT1 OF	

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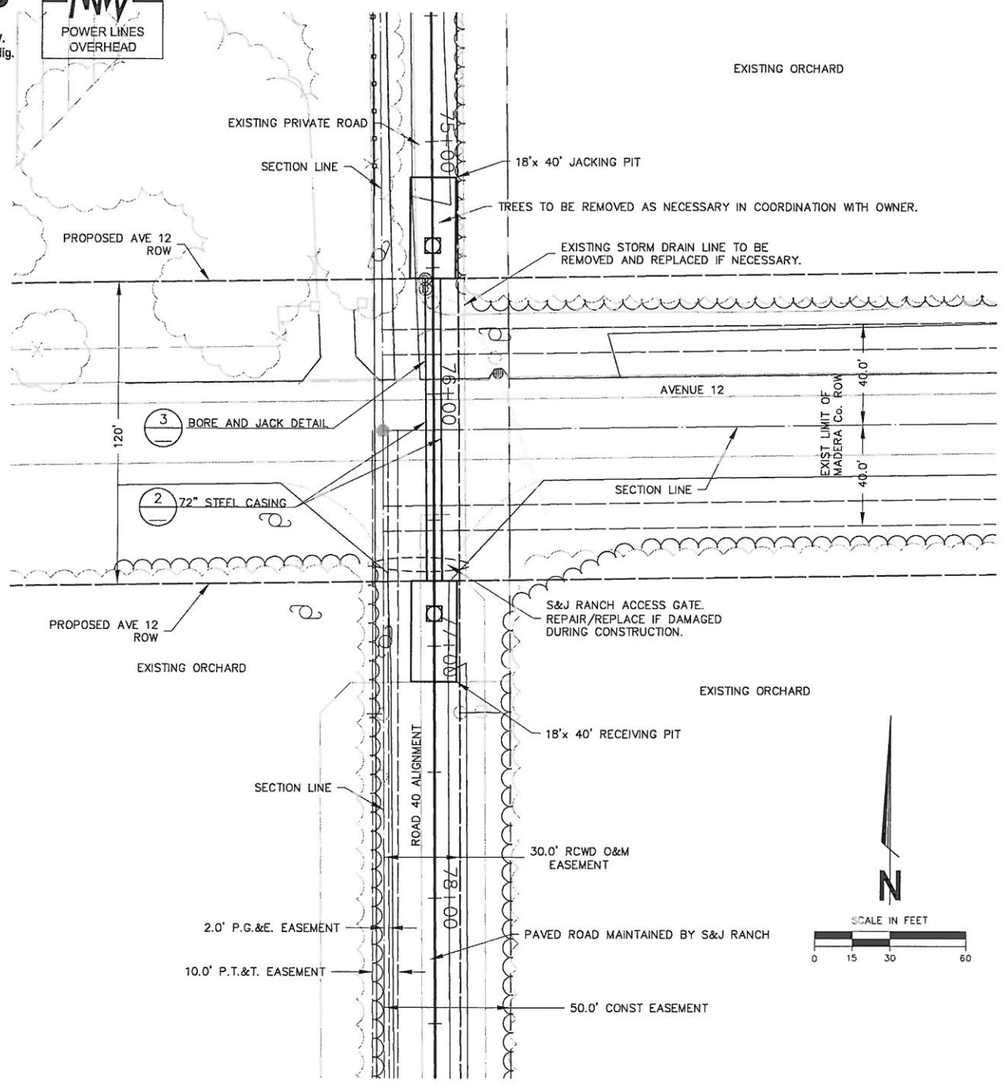
WARNING
POWER LINES OVERHEAD



1 DT2 AVE 12 CROSSING
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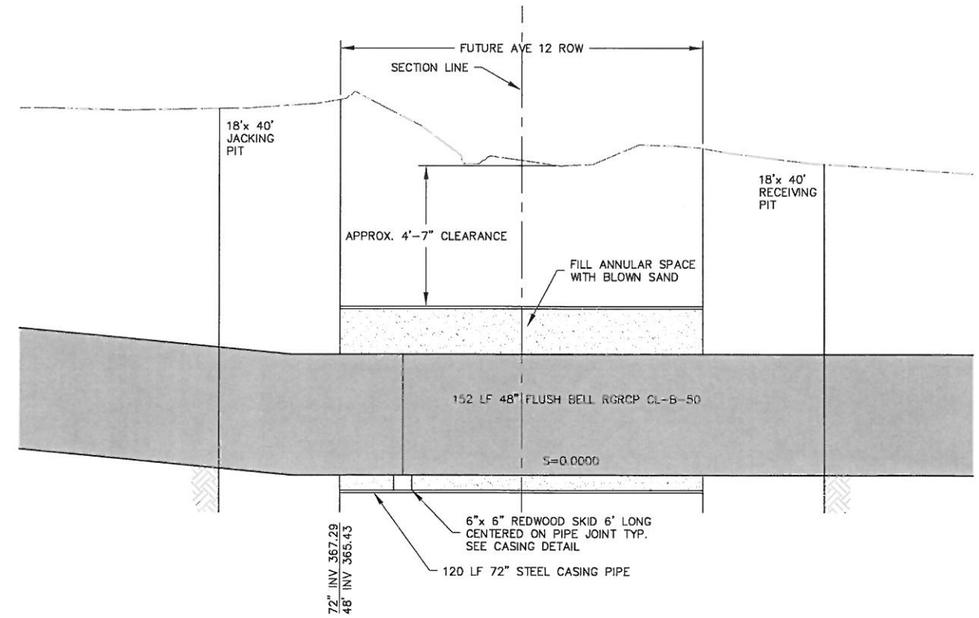

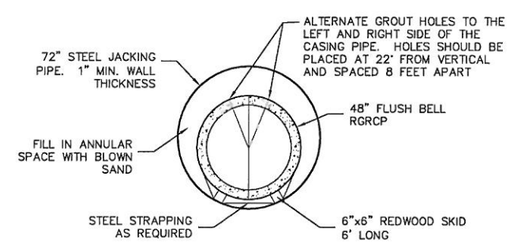

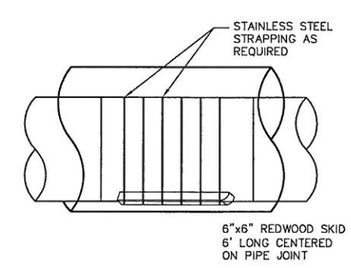

3 DT2 CASING DETAIL
SCALE: NTS

BORE AND JACKING NOTES:

1. CASING ENDS SHALL BE PLUGGED WITH UNGROUTED BRICKS, OR ANOTHER APPROVED MATERIAL.

2. GROUTING MAY BE REQUIRED BETWEEN THE OUTSIDE OF THE CASING AND THE ROADBED TO FILL VOIDS CAUSED BY THE WORK. GROUT PRESSURE SHALL NOT EXCEED 5 PSI FOR A DURATION SUFFICIENT TO FILL THE VOIDS.

3. IF WING CUTTERS ARE USED, THEY SHALL ONLY ADD A MAXIMUM OF 1 INCH DIAMETER TO THE OUTSIDE DIAMETER OF THE CASING PIPE.

4. A BAND WELDED TO THE LEADING EDGE OF THE CASING SHOULD BE PLACED SQUARE TO THE ALIGNMENT. THE BAND SHOULD NOT BE PLACED ON THE BOTTOM EDGE. FLARING THE LEAD SECTION SHALL NOT BE PERMITTED.

5. CASING LENGTH SHALL EQUAL AUGER LENGTH.

6. FENCING WILL BE REQUIRED AROUND THE JACKING AND RECEIVING PITS.

7. SHORING IF REQUIRED SHALL CONFORM TO OR EXCEED CAL-OSHA MINIMUM REQUIREMENTS.

8. A MINIMUM OF 2 INCHES OF CLEARANCE IS REQUIRED BETWEEN THE INTERIOR OF THE CASING PIPE AND THE EXTERIOR OF THE PIPELINE.

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PRELIMINARY
FOR REVIEW AND APPROVAL
06/15/2010

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER ADAM B. LEE No. 69104 Civil STATE OF CALIFORNIA

DATE SIGNED:

Gateway Village
In-Lieu Pipeline
Castle and Cooke, Inc.
Madera County, CA

AVE 12 CROSSING

EST. 1968 PROVOST & PRITCHARD ENGINEERING GROUP
An Employee Owned Company
286 WEST CROMWELL AVENUE
FRESNO, CALIFORNIA 93711-6162
559/449-2700 FAX 559/449-2715
www.ppeng.com

DESIGN ENGINEER: Adom Lee	
LICENSE NO: CE 69104	
DRAFTED BY: DVS	CHECKED BY: DMG
SCALE: AS SHOWN	
DATE: 06/15/2010	
JOB NO: 14340405-30	
DWG. NO:	
SHEET DT2 OF	

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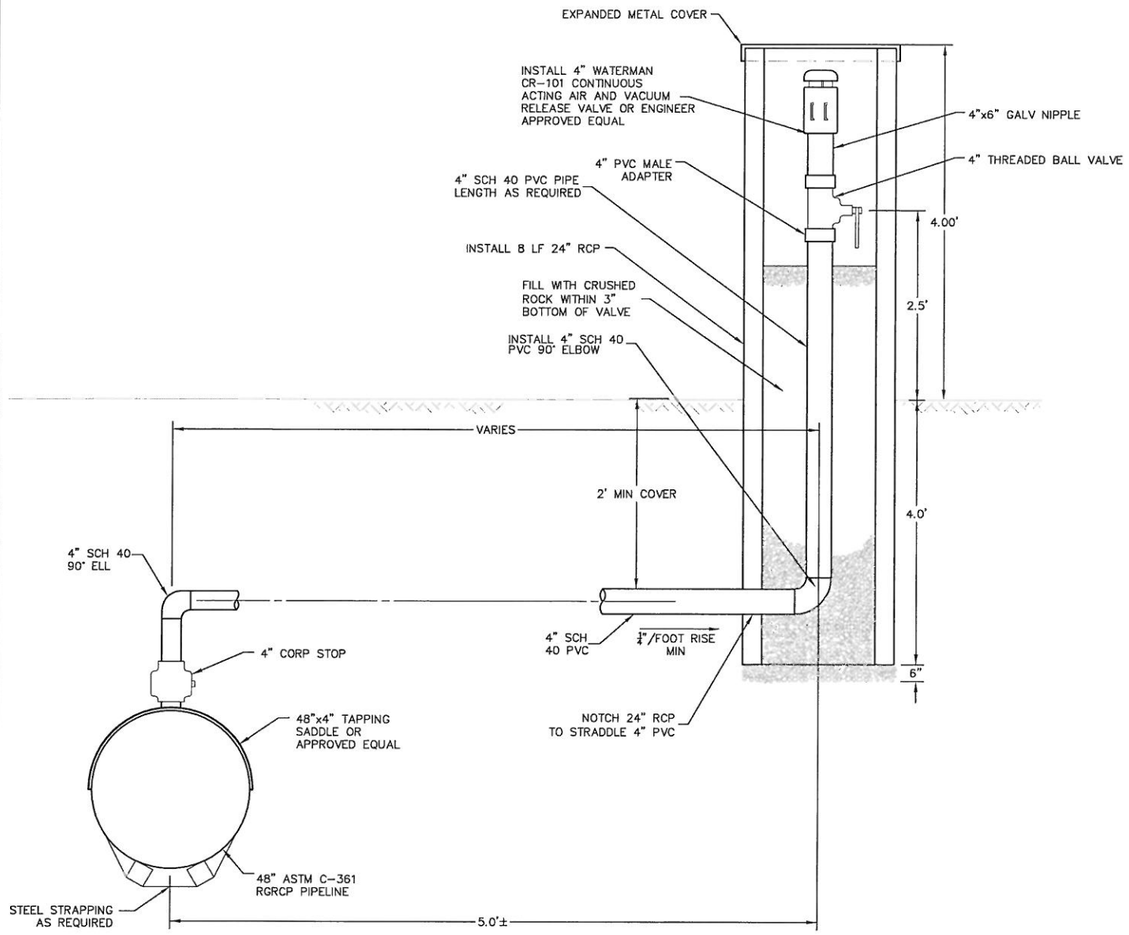
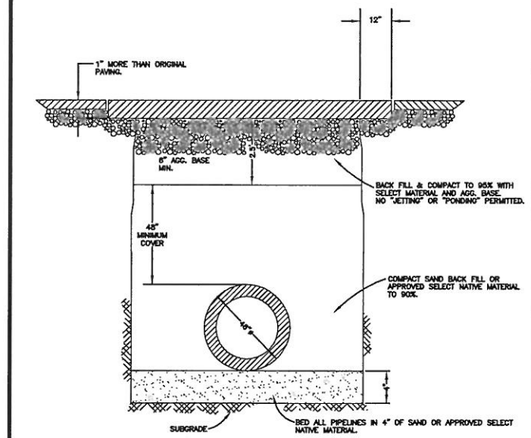


1 DT3 OFFSET AIR VENT
SCALE: NTS

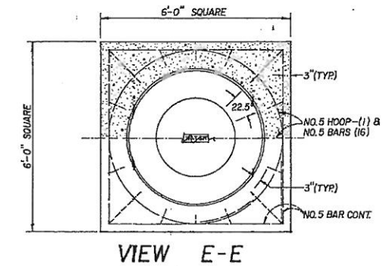


NOTES:

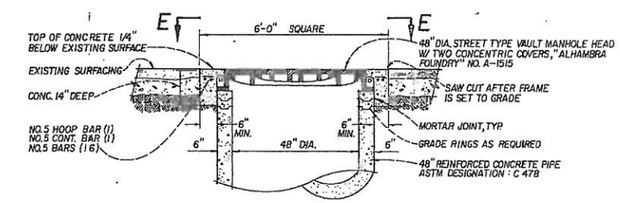
1. Shoring or tapered banks will be required for any trench 5' or more in depth.
2. In all cases a minimum of 3" of paving over 6" Class II A.B. or equivalent is required. Paving material to be the same as that removed. (New pavement to be 1" thicker than original).
3. Decomposed granite may not be used for back fill or pipe bedding.
4. Compaction tests by a certified lab will be required for all trench cuts or other excavation. Contractor to bear full expense of all testing.
5. Upper lift of new A.C. pavement shall contain aggregate of ½" max. size.

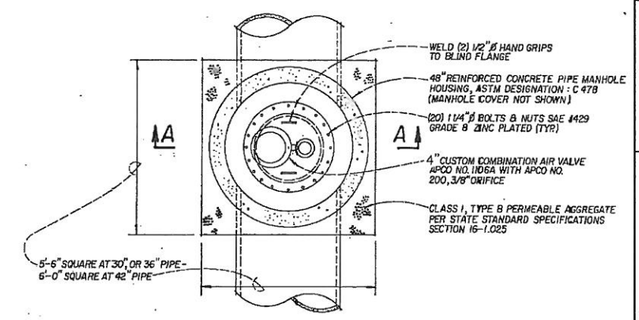
Spec's By	COUNTY OF MADERA	Date 12-24-81
Drawn By J. SHIELDS	STREET EXCAVATION, BACK FILL & SURFACE RESTORATION	Scale NONE
APPROVED BY		Drawing No. ST-28
REVISIONS 8/1/02		

2 DT3 MADERA CO TRENCH DETAILS
SCALE: NTS

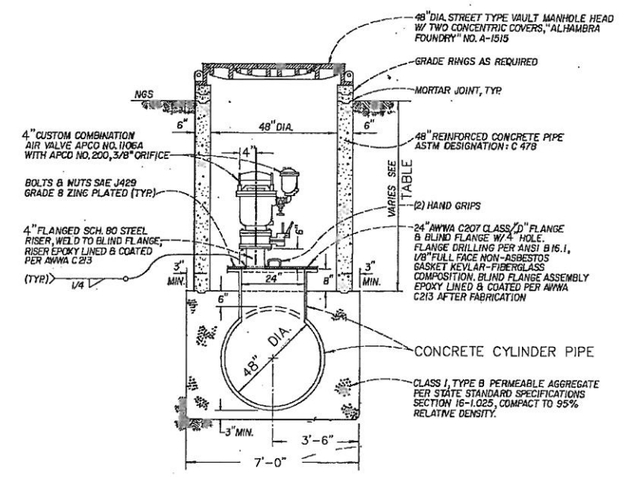


VIEW E-E





PLAN



SECTION A-A

3 DT3 CUSTOM COMBINATION AIR VALVE
SCALE: NTS

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No.	REVISION	BY	DATE

PRELIMINARY
FOR REVIEW AND APPROVAL
06/15/2010

REGISTERED PROFESSIONAL ENGINEER ADAM B. LEE No. 69104 Civil STATE OF CALIFORNIA

DATE SIGNED: _____

Gateway Village
In-Lieu Pipeline
Castle and Cooke, Inc.
Madera County, CA

STANDARD DETAILS

ESTD 1968 PROVOST & PRITCHARD ENGINEERING GROUP
An Employee Owned Company
286 WEST CROMWELL AVENUE
FRESNO, CALIFORNIA 93711-6162
559/449-2700 FAX 559/449-2715
www.ppeng.com

DESIGN ENGINEER: Adam Lee	
LICENSE NO: CE 69104	
DRAFTED BY: DVS	CHECKED BY: DMG
SCALE: AS SHOWN	
DATE: 06/15/2010	
JOB NO: 14340405-30	
DWG. NO:	
SHEET DT3 OF	

5/29/2008 3:23:29 PM G:\Clients\Castle_Cooke-1434\1434-Gateway\1434-Expan Phs 1\14340405-Gateway Pipeline LD.dwg\SHEET\14340405-DT-STANDARD DETAILS.dwg -aaron

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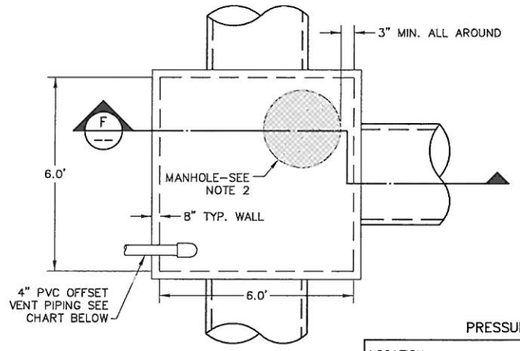
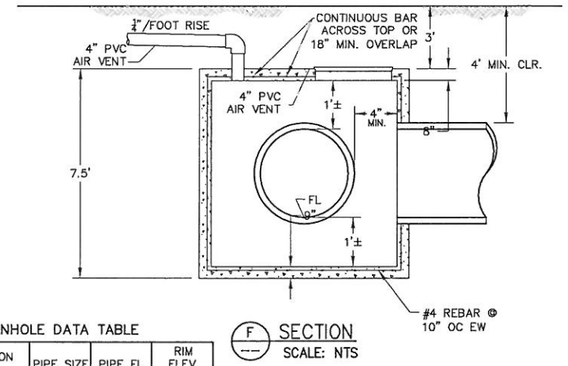
WARNING
POWER LINES OVERHEAD





F SECTION
SCALE: NTS

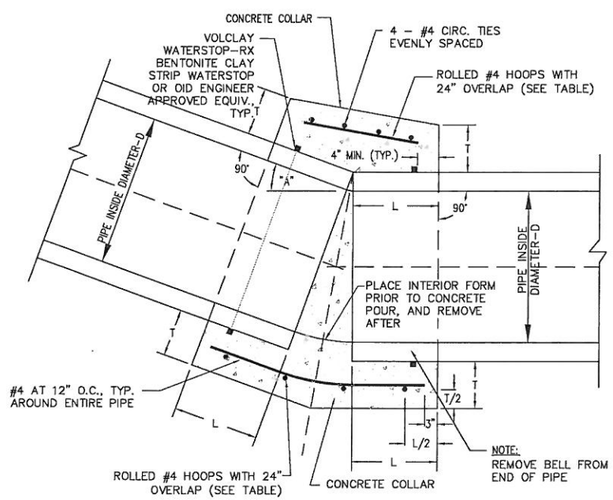
PRESSURE MANHOLE DATA TABLE

LOCATION	STATION	PIPE SIZE	PIPE FL	RIM ELEV.
NORTH OF AVE 12	36+50	48	373.57	383.25
NORTH OF AVE 12	63+00	48	371.85	382.50
NEAR WELL 169	88+00	48	363.87	373.71
ROAD 40 ALIGNMENT	114+50	48	xxx.xx	xxx.xx
NORTH OF ROOT CREEK	141+00	48	333.92	344.21
ROOT CREEK	145+44	48	322.50	337.63
END NEAR LAT 5E	153+00	48	350.10	360.32

1 DT4 PRESSURE MANHOLE
SCALE: NTS

PRESSURE MANHOLE CONSTRUCTION NOTES

1. CONCRETE SHALL BE CLASS "A" 3,000psi WITH #4 REBAR 10" O.C.E.W. SEE REINFORCING DETAIL. FURNISH DESIGN CALCULATIONS FOR STRUCTURES 8' OR GREATER AS MEASURED FROM FLOOR TO TOP.
2. MANHOLES SHALL BE STANDARD 30" HD PRESSURE TYPE MANHOLE FRAME & COVER, PHOENIX IRON WORKS, OAKLAND, CA. NO. P-1002 OR APPROVED EQUAL CAPABLE OF OPERATING LEAK FREE AT __ FT. PRESSURE.
3. CEMENT MORTAR ALL EXTERIOR COLD JOINTS, EPOXY GROUT ALL INTERIOR JOINTS.
4. FLOOR & WALLS MUST BE INSTALLED IN SINGLE POUR. SEE DISTRICT STANDARD FOR COLD JOINT.
5. ALL INLETS/OUTLETS SHALL BE FINISHED FLUSH WITH INSIDE WALL AND SHALL CONTAIN A WATER STOP.
6. STEEL PIPE SHALL HAVE WEEP RING CAST INTO STRUCTURE WALL.
7. FINAL OFFSET AIR VENT LOCATION TO BE DETERMINED BY DISTRICT.



NOTES:

1. ANGLE "A" SHALL BE DETERMINED IN THE FIELD AND REBAR PLACEMENT APPROVED BY THE ENGINEER PRIOR TO CONCRETE PLACEMENT.
2. CONCRETE SHALL BE 3500 PSI @ 28 DAYS OR BETTER AND CONFORM TO CONCRETE SPECIFICATIONS.
3. CONCRETE SHALL BE VIBRATED AROUND PIPE JOINT DURING
4. PLACEMENT.
5. INSIDE JOINT TO BE SMOOTH FINISH (BRUSHED) & FLUSH.
6. DIAMETER OF ROLLED HOOPS SHALL BE D + (2X WALL THICKNESS) + T
7. PREPARE SURFACE OF EXISTING STRUCTURES BY WIRE BRUSHING, WATER BLASTING, OR SANDBLASTING AS
8. REQUIRED BY THE ENGINEER.

   PROVIDE WATER TIGHT JOINT.
9. CONCRETE PIPE SHALL BE CLEANED AND TREATED WITH AN APPROVED CONCRETE BONDING AGENT PRIOR TO CONCRETE PLACEMENT AS REQUIRED BY THE ENGINEER.

   FORMS USED TO POUR CONCRETE COLLAR TO BE REMOVED PRIOR TO BACKFILL.

PIPE DIAMETER, D	L	T	MIN. NO. HOOPS
LESS THAN OR EQUAL TO 24"	18"	8"	3
LESS THAN OR EQUAL TO 48"	24"	10"	4
LESS THAN OR EQUAL TO 72"	30"	12"	5
GREATER THAN 72"	BY DESIGN	BY DESIGN	BY DESIGN

2 DT4 ANGLED PIPE JOINT COLLAR
SCALE: NTS

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No.	REVISION	BY	DATE

PRELIMINARY
FOR REVIEW AND APPROVAL
06/15/2010

REGISTERED PROFESSIONAL ENGINEER ADAM B. LEE No. 69104 Civil STATE OF CALIFORNIA

DATE SIGNED: _____

Gateway Village
In-Lieu Pipeline
Castle and Cooke, Inc.
Madera County, CA

STANDARD DETAILS

EST. 1968
PROVOST & PRITCHARD CPA
ENGINEERING GROUP
An Employee Owned Company
286 WEST CROMWELL AVENUE
FRESNO, CALIFORNIA 93711-6162
559/449-2700 FAX 559/449-2715
www.ppeng.com

DESIGN ENGINEER: Adam Lee
LICENSE NO: CE 69104
DRAFTED BY: DVS
CHECKED BY: DMG
SCALE: AS SHOWN
DATE: 06/15/2010
JOB NO: 14340405-30
DWG. NO:
SHEET DT4 OF

12/2/2010 7:35 AM C:\Clients\Castle_Cooke-1434\1434-Gateway\1434-Expan Phs 1\14340405-Gateway Pipeline LD\dwg\SHEET\14340405-DT-STANDARD DETAILS 3.dwg -David Sorrick

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Preliminary Document
NOT FOR CONSTRUCTION

ROOT CREEK WATER DISTRICT

CONTRACT DOCUMENTS
AND
CONSTRUCTION SPECIFICATIONS
FOR
IN-LIEU GROUNDWATER
RECHARGE PROJECT

MADERA COUNTY, CA

30% Submittal

December 2010

PREPARED BY:

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company

REGISTERED PROFESSIONAL ENGINEER
BRIAN EHLERS
No. 40,655
Civil
STATE OF CALIFORNIA

DATE SIGNED: _____

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Section 02115 Clearing and Grubbing
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Public Contract Code Section 20104
San Joaquin Kit Fox Policy

REQUEST FOR STAKING

CERTIFICATE OF OWNER'S ATTORNEY

REQUEST FOR BIDS

1. The Work consists, in general, of the construction of a surface water delivery system. The major pieces of this delivery system will consist of construction approximately 3.5 miles of 48 RGRCP, approximately 3.5 miles of various diameter PVC lateral pipelines, a new turnout from the MID Lateral 6.2, and system connections to existing filter and booster stations. The Notice to Proceed is anticipated to be issued on XXXXXXX XX, 2011 and the Work must be completed within 200 calendar days.

2. The Contract Documents including Plans and Specifications are available at the office of Provost & Pritchard Consulting Group, 2505 Alluvial Avenue, Clovis, CA, 93611. Copies of the plans and specifications are available upon a non-refundable payment of $XXX.00 per set.

3. **The bid opening is scheduled for XX:XX a.m. on XXXXXX, XXXXX XX, 2011 at the Provost & Pritchard Consulting Group in Clovis.** A non-mandatory **pre-bid meeting and project site tour** will be held on **XXXXX XX,** 2011at **XX:XX A.M.** beginning at the Districts office. Contractors must personally examine the project site prior to bidding.

4. The payment of **prevailing wages will be required**, in accordance with the provisions of Section 1770 of the Labor Code. Prevailing wage schedules for Kern County are available from the Department of Industrial Relations-Division of Labor Statistics & Research via the Internet at www.dir.ca.gov. A prevailing wage scale is also on file in the office of the ROOT CREEK WATER DISTRICT and copies may be obtained upon request.

5. Bidders shall furnish a Bidder's Bond with their Bidder's Proposal in the amount of 10% of the base bid amount.

6. The successful Bidder shall furnish a faithful Performance Bond in the amount equal to one hundred percent (100%) of the Contract Price as well as a Payment Bond in an amount equal to one hundred percent (100%) of the Contract Price.

7. ROOT CREEK WATER DISTRICT reserves the right to accept or reject any or all bids, to evaluate the bids submitted, and to award the Contract according to the proposal which best serves the interests of the District.

BY THE ORDER OF THE BOARD OF DIRECTORS
OF THE ROOT CREEK WATER DISTRICT

_____ _____

Phil Pierre , Manager Date

INSTRUCTIONS TO BIDDERS

1. The Contract Documents include the Contract Agreement, the Notice to Bidders, the Instructions to Bidders, the General Conditions, Supplementary Conditions, and the Technical Provisions, the Bidder's Proposal as accepted (including the Bid Schedule), the Indemnity Agreement, the Non-collusion Affidavit, the required Bonds, the Plans, Profiles and Drawings, and any Addenda or Change Orders. Bidders must examine each of the Contract Documents, must visit the location of the Work and inform themselves of the conditions and make their own estimates of the facilities and difficulties attending the execution of the Work.

2. All Bids must be presented under sealed cover on the blank proposal form attached hereto. Bids shall be submitted in a sealed envelope with the name of the bidder, the name of the project and the statement **"Do Not Open Until The Time of Bid Opening."** Bids are required for the entire work described herein. Bids will be compared on the basis of the total of bid items 1 through 11 of the Bid Schedule. Award, if made, will be based upon the lowest responsible bid submitted.

3. The party to whom the Contract is awarded must, at the time the Contract is awarded, possess a Class A Contractor's license valid in the State of California.

4. Each Bid must be accompanied by a Bid Bond payable to the Owner for ten percent (10%) of the total amount of the base Bid. A cashier's check made payable to the Owner, a certified check made payable to the Owner, or cash in the appropriate amount may be used in lieu of a Bid Bond. In no event will security submitted by unsuccessful Bidders be held by the Owner for more than 60 days from the time of award of the Contract. The Bid Bond of the successful Bidder will be retained until the Performance Bond and the Payment Bond have been executed and approved, after which the Bid Bond will be returned.

5. A Performance Bond and a Payment Bond in the amount of One Hundred percent (100%) each of the Contract Price, with a Corporate Surety approved by the Owner and the Engineer, will be required for the faithful performance of the Contract. The Bidder shall state in the proposal the name and address of the Surety or Sureties who will sign the Bonds in case the Contract is awarded to him. Contract Price shall be based upon the base bid without considering additive or deduct items.

6. The party to whom the Contract is awarded will be required to execute the Contract Agreement, Performance Bond and Payment Bond within six (6) calendar days from the date when the written notice of the award of the Contract is mailed to the Bidder at the address given by him. In case of failure to do so, the Owner may at its option, consider that the Bidder has abandoned the Contract, in which case, the Bid Bond accompanying the proposal shall become the property of the Owner and award may be made to another party. Corporations must furnish a certificate attesting to corporate existence and authority of officers to sign contracts and other documents.

7. **The Contractor shall begin Work within ten (10) calendar days** after receiving the Notice to Proceed by the Owner. The Notice to Proceed is anticipated to be issued on XXXXX XX, 2003. The Contractor shall **complete all Work within one hundred fifty (200) calendar days following the date of the Notice to Proceed.** Time of completion as specified will be enforced.

8. The Contractor's attention is called to the Contract Agreement addressing Liquidated Damages. It is agreed that the Contractor shall be liable for and shall pay to the Owner, as fixed and agreed, for liquidated damages and not as a penalty, the sum of One-thousand Dollars ($1,000.00) per day for each calendar day of delay in completion of the Work from the date of completion as specified herein or in any written extension of time granted by the Owner. Time of completion as specified will be enforced. Liquidated damages will be deducted from final payments.

9. Before the award of the Contract, any Bidder may be required to furnish evidence satisfactory to the Owner and to the Engineer of the necessary facilities, ability, and pecuniary resources to fulfill the conditions of the Contract.

10. Prior to signing the Contract, the successful Bidder shall submit on a form acceptable to the Owner and Engineer, an overall construction schedule for the project. This construction schedule shall start with the proposed date of signing the Contract, and the completion date shall be no later than the date specified in the Contract.

11. Bidders must satisfy themselves by personal examination of the location of the proposed work, and by examination of the Plans and Specifications as to the requirements of the Work and the accuracy of the estimate of the quantities of the work to be done, and shall not at any time after the submission of the Bid dispute or complain of such estimate nor assert that there was any misunderstanding in regard to the nature or amount of work to be done.

12. The Contract and the Specifications contain the provisions required for the construction of the project. No information obtained from any officer, agent, consultant, or employee of the Owner on any such matters shall in any way affect the risk or obligation assumed by the successful Bidder or relieve him from fulfilling any of the conditions of the Contract.

13. Proposals which are incomplete, unbalanced, conditional or obscure or which contain additions not called for, erasures, alterations or irregularities of any kind or which do not comply with the Notice to Bidders and Instruction to Bidders may be rejected at the option of the Owner.

14. A Bidder may withdraw any proposal he has submitted at any time prior to the hour set for the closing of the Bids provided the request for withdrawal is signed in a manner identical with the proposal being withdrawn. No withdrawal or modification will be permitted after the hour designated for closing the Bids. The Bidder's Proposal shall then hold firm for thirty (30) days to enable the Owner to complete pre-construction arrangements prior to issuing any Notice of Award.

15. Computation of quantities that will be the basis for payment estimates, both monthly and final, will be made by the Engineer.

16. If any person contemplating submitting a Bid for the proposed Contract is in doubt as to the true meaning of any part of the Plans and Specifications or other Contract Documents, or finds discrepancies in, or omissions from the Plans and Specifications, he may submit to the Owner a written request for an interpretation or correction thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation or correction of the Contract Documents will be made only by Addendum duly issued and a copy of such Addendum will be mailed or delivered to each Bidder receiving a set of such Contract Documents. The Owner will not be responsible for any other explanations or interpretations of the Contract Documents. No oral interpretations of any provision in the Contract Documents will be made to any Bidder.

17. The Bidder shall include the following with his Bid:

    (a) The name and location of the place of business of each subcontractor (i) who will perform work or labor or render service to the Bidder in or about the construction contemplated in the Plans and Specifications or (ii) licensed by the State who, under subcontract to the Bidder, specially fabricates and installs a portion of the work or improvement according to the detailed drawings contained in the Plans and Specifications in an amount in excess of one-half of one percent of the Bidder's total Bid.

    (b) The portion of the Work which will be done by each subcontractor. The Bidder shall list only one subcontractor for each portion as is defined by the Bidder in his Bid.

18. No substitution of subcontractors by the Bidder shall be consented to or permitted except in accordance with the provisions of Public Contract Code Sections 4107 and 4107.5.

19. The award of the contract, if made, will be within **XXXX (XX) calendar days** after the opening of bids, and satisfactory submittal of materials required prior to the formal award.

20. ROOT CREEK WATER DISTRICT reserves the right to accept or reject any or all bids, to evaluate the bids submitted, and to award the Contract according to the proposal which best serves the interests of the District.

BIDDER'S PROPOSAL

PROJECT: ROOT CREEK WATER DISTRICT
ROOT CREEK IN-LIEU GROUNDWATER RECHARGE & STORAGE PROJECT

1. In compliance with your invitations for Bids dated _____ and subject to all the conditions thereof, the undersigned _____, a Corporation Incorporated in the State of California; a _____ consisting of _____ and individual trading as _____ of the City of _____, State of _____,

   hereby proposes to furnish and do everything required by the contract to which this refers for the construction of all items listed at the unit prices shown for each Bid Item on the following Bid Schedule. The Bid Schedule attached lists the various divisions of construction contemplated in the Plans and Specifications, together with an estimate of the units of each. With these units as the basis, the Bidder will extend each item, using the cost he inserts in the unit column. Any total cost found inconsistent with the unit cost when the bids are examined will be deemed in error and corrected to agree with the unit cost which shall be considered correct.

2. The undersigned Bidder does hereby declare and stipulate that this proposal is made in good faith, without collusion or connection with any other person or persons bidding for the same work, and that it is made in pursuance of and subject to all the terms and conditions of the Contract Agreement, the Notice to Bidders, the Instructions to Bidders, the General Conditions, Supplementary Conditions and the Technical Provisions, this Bidder's Proposal (including the Bid Schedule), the Indemnity Agreement, the Noncollusion Affidavit, the required Bonds, the Plans, Profiles and Drawings, and any Addenda or Change Orders pertaining to the work to be done, all of which have been examined by the undersigned.

3. The undersigned Bidder agrees to execute the Contract, Performance Bond and Payment Bond for the amounts specified within six (6) calendar days from the date when the written notice of the award of the Contract is delivered to him at the address given on this proposal. The name and address of the corporate surety with which the Bidder proposed to furnish the specified **Performance Bond and Payment Bond** is as follows:_____

4. All of the various phases of work enumerated in the Specifications with their individual jobs and overhead, whether specifically mentioned, included by implication or being appurtenant thereto, are to be performed by the Contractor under one of the items listed in the Bid Schedule; irrespective of whether it is named in said list.

5. Payment for work performed will be in accordance with the Bid Schedule, subject to changes as provided for in the Contract.

6. In submitting its Bid and entering into the Contract or a subcontract to supply goods, services, or materials pursuant to the Contract, the Contractor or subcontractor offers and agrees to assign to the Owner all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the Contract or any subcontract. This assignment shall be made and become effective at the time the Owner tenders final payment to the Contractor, without further acknowledgment by the parties.

7. The Bidder shall include the following with his Bid:

   (a) The name and location of the place of business of each subcontractor (i) who will perform work or labor or render service to the Bidder in or about the construction contemplated in the Plans and Specifications or (ii) licensed by the State of California who, under subcontract to the Bidder, specially fabricates and installs a portion of the work or improvement according to the detailed drawings contained in the Plans and Specifications in an amount in excess of one-half of one percent of the Bidder's total Bid.

   (b) The portion of the work which will be done by each subcontractor. The Bidder shall list only one subcontractor for each portion of the work as defined by the Bidder in his Bid. No substitution of subcontractors by the Bidder shall be consented to or permitted except in accordance with the provisions of Public Contract Code Sections 4107 and 4107.5.

   Each bidder shall list the name and location of place of business of each contractor who will perform a portion of the contract work as described above on the attached form, *LIST OF SUBCONTRACTORS*. In each instance, the nature and extent of the work to be sublet shall be described. The failure of the Contractor to specify a subcontractor for any portion of the contract work in excess of the requirements stated above shall be deemed to indicate that the Contractor intends to perform such work himself.

_____
Contractor

_____ _____
Business Address Phone

By _____ _____
Fax

Title _____ Contractor's License No. _____

LIST OF SUBCONTRACTORS

Subcontractor's Firm Name and Business Address	Description of Portion, Nature & Scope of the Work to be Subcontracted

PUBLIC CONTRACT SECTION 10232 STATEMENT

In accordance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two year period because the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE

In accordance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes _____ No _____

If the answer is Yes, explain the circumstances in the space below:

_____

_____

_____

NOTE: The above Questionnaire is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Questionnaire.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

NON-COLLUSION AFFIDAVIT

PROJECT: ROOT CREEK WATER DISTRICT
ROOT CREEK IN-LIEU GROUNDWATER RECHARGE & STORAGE PROJECT

TO: The Board of Directors, ROOT CREEK WATER DISTRICT

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

_____
(Name)

being first duly sworn, deposes and says that he or she is

_____
(Owner, Partner, Corporate Officer (list title), Co-Venturer)

of _____
(Bidding Entity)

the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

(Title 23 United States Code Section 112)

(Calif. Public Contract Code Section 7106; Stats. 1988, c. 1548, Section 1.)

Signed:_____

_____ _____
Name Date

BID SCHEDULE

ROOT CREEK WATER DISTRICT
ROOT CREEK IN-LIEU GROUNDWATER RECHARGE & STORAGE PROJECT
All Items Furnished and Installed

The following Bid Schedule lists the items necessary to complete the Work. Bidder will fully complete the schedule including the total price of each item including applicable sales and other taxes. If the total cost of any item or the total Base Bid is inconsistent with the unit cost, the unit cost shall prevail. Payment of each item will be based on the actual quantity, except for those items bid lump sum, and those items that are noted as fixed quantities. All costs for completing the Work described in the Contract documents shall be included in the bid items listed below. Bids will be compared on the basis of the total of base bid items 1 through 11. Additive bid items will be considered based upon the merits of each item and available funding.

ROOT CREEK IN-LIEU GROUNDWATER RECHARGE & STORAGE PROJECT					
Item No.	Description	Quantity	Unit	Unit Price	Item Total
1	Mobilization, bonds and insurance	1	LS	$_____	$_____
2	Miscellaneous Facilities and Operations	1	LS	$_____	$_____
3	Clearing and Grubbing	1	LS	$_____	$_____
4	Scarify and Recompact Embankment Subgrade	1	LS	$_____	$_____
5(F)	Embankment Earthwork (FINAL PAY QTY.)		CY	$_____	$_____
6	48" RGRCP Pipeline		LF	$_____	$_____
7	18' PVC Pipeline		LF	$_____	$_____
8	12" PVC Pipeline		LF	$_____	$_____
9	48" Jack and Bore w/48" RGRCP Pipeline		LF	$_____	$_____
10	Turnout-MID Lateral 6.2		LS	$_____	$_____
11	Connection to Existing Pump & Filter Stations		LS	$_____	$_____
12				$_____	$_____
13				$_____	$_____
14				$_____	$_____

UPDATE ACCORDING TO APPROVED DRAWINGS

15				$_____	$_____
TOTAL BID: ROOT CREEK IN-LIEU GROUNDWATER RECHARGE & STORAGE PROJECT					$_____

PRELIMINARY CONSTRUCTION SCHEDULE

ROOT CREEK WATER DISTRICT
ROOT CREEK IN-LIEU GROUNDWATER RECHARGE & STORAGE PROJECT

The Contractor shall submit with his Bid a preliminary construction schedule for the Owner's review, including important milestones, assuming the Notice to Proceed is issued on XXXXX XX, 2011. The preliminary construction schedule shall be in sufficient detail to show the chronological relationship of all activities of the project, including, but not limited to, estimated starting and completion dates of various activities, procurement of materials and scheduling of equipment. The preliminary construction schedule shall reflect completion of all work under the contract within the specified time and in accordance with the Specifications. The preliminary construction schedule will be used by the Owner in helping determine award of the contract.

DATE(S)	WORK ITEM
XXXXX XX, 2011	Notice to Proceed

CONTRACT AGREEMENT

ROOT CREEK WATER DISTRICT
ROOT CREEK IN-LIEU GROUNDWATER RECHARGE & STORAGE PROJECT

THIS AGREEMENT, made and entered into this _____ day of_____, 20__, by and between, _____ hereinafter called "Contractor" and the ROOT CREEK WATER DISTRICT, hereinafter called "Owner";

WITNESSETH

WHEREAS, the Owner has awarded a Contract to the Contractor for performing the work hereinafter mentioned in accordance with the sealed proposal of the Contractor:

NOW, THEREFORE, IT IS AGREED, as follows:

1. Scope of Work

The Contractor shall perform all the work and furnish all the labor, materials, equipment and all utility and transportation services required to complete all of the work of construction and installation of the improvements more particularly described in the Plans and Specifications entitled:

ROOT CREEK WATER DISTRICT
ROOT CREEK IN-LIEU GROUNDWATER RECHARGE & STORAGE PROJECT

hereinafter called the "Project" dated _____, the items of which are more particularly set forth in the Contractor's bid therefore on file in the office of the Engineer, except work done or to be done by others, for the sum of _____ Dollars ($) and all extra work in connection therewith, under the terms as stated in the Contract and at his own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance and other accessories and services necessary to complete the said project in accordance with the conditions set forth in the Contract Documents and all other documents and papers incorporated by reference into or referred to, in or pertaining to, the Contract Documents, together with all written supplemental and explanatory matter pertaining thereto as prepared by Provost & Pritchard Engineering Group, Inc., hereinafter entitled the "Engineer".

2. Time of Performance

The Contractor shall begin work within ten (10) calendar days after receipt of official notice by the Owner to proceed and will complete all work within calendar days unless the period for completion is extended otherwise by the Contract Documents. The Notice to Proceed is anticipated to be issued on XXXXX XX, 2011. The Contractor shall diligently prosecute the work to completion on or before XXXX XX, 2012.

3. Liquidated Damages

It is agreed that the Contractor shall be liable for and shall pay to the Owner, as fixed and agreed, liquidated damages and not as a penalty, the sum of One-thousand Dollars **($1,000.00) per day** for each calendar day of delay in completion of the work from the date of completion as specified herein or in any written extension of time granted by the Owner. Whatever sums may be due the Owner as liquidated damages for delay may be deducted from payments due the Contractor or may be collected from the Contractor or the Contractor's Surety.

4. Payments

Payments will be made by Owner to Contractor for said work performed monthly and at the prices stated in the Contractor's Bid.

5. Contract Documents

This Contract shall consist of the following documents, each of which is on file in the office of the Owner and all of which are incorporated herein and made a part hereof by reference thereto:

a) The Notice to Bidders
b) The Instructions to Bidders
c) The Bidder's Proposal as accepted (including the Bid Schedule)
d) The Non-collusion Affidavit
e) The Contract Agreement
f) The Indemnity Agreement
g) The General Conditions
h) The Supplementary Conditions
i) Technical Provisions
j) The Plans, Profiles and Drawings
k) Addenda or Change Orders (if any)
l) Appendix

In the event of an inconsistency between any provision of any other Contract Document and the terms of this Contract, the terms of this Contract shall govern.

6. Contractor's Responsibility

Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; and that this requirement shall apply continuously and not be limited to normal working hours.

7. Extra Work

New and unforeseen work will be classed as extra work when determined by the Owner that such work is not covered by any of the various items or combination of such items for which there is a bid price. In the event that portions of such work are determined by the Owner to be covered by some of the various items or combinations of such items for which there is a bid price, the remaining portion of such work will be classified as extra work. Extra work also includes work specifically designated as extra work in the Plans and Specifications.

Extra work when ordered and accepted shall be paid for under a written work order in accordance with the terms therein provided. Payment for the extra work will be made at the unit price agreed upon by the Contractor and the Owner; or by force account.

If the work is done on force account, the Contractor shall receive the actual cost of all materials furnished by him as shown by his paid voucher, plus fifteen percent (15%), and for all labor, equipment and tools that are necessary, he shall receive the current prices in the locality, which shall have been previously determined and agreed to in writing. The price paid for labor shall include any compensation insurance paid by the Contractor.

All extra work and force account shall be adjusted daily upon report sheets, prepared by the Contractor, furnished to the Owner and signed by both parties, which daily reports shall thereafter be considered the true record of extra or force account work done.

8. Completion

Upon receipt of written notice that the work is ready for final review, the Engineer and Owner will promptly make such review, and when the Owner finds the work satisfactory under the Contract and the Contract fully performed, the Owner will promptly issue a Final Notice stating that the work required by this Contract has been completed. The Owner then shall issue to the Contractor, the entire balance found to be due within thirty-five (35) days after the date of the Owner's final notice.

Before issuance of the Notice of Completion, the Contractor shall submit evidence satisfactory to the Owner that all payrolls, materials bills and other indebtedness connected with the work have been paid, except that in the case of disputed indebtedness or liens, the Contractor may submit in lieu of evidence of payment, a Surety Bond satisfactory to the Owner guaranteeing payment of all such disputed amounts when adjudicated.

9. Guarantee

The Contractor shall guarantee the work for a period of one (1) year after the date of filing of the Notice of Completion. The faulty materials and/or workmanship, and any repairs made necessary by these causes shall be at his expense. A written manufacturer's warranty shall be provided for equipment supplied under this contract. The warranty shall cover all defects or failures of materials, or workmanship that occurs as the result of normal operation and service.

10. Indemnification

The Contractor shall indemnify, defend, and hold harmless the Owner, Provost and Pritchard Consulting Group, BSK & Associates, the State of California and the directors, officers, agents, and employees of the aforementioned from any and all claims and losses accruing or resulting to Contractor and to any and all subcontractors, materialmen, laborers, and any other person, firm, or corporation furnishing or supplying work, services, materials, or supplies in connection with the performance of this agreement, and from any and all claims and losses accruing or resulting to any person, firm, or corporation who may be injured or damaged by the Contractor in the performance of this agreement.

11. Workers' Compensation

In compliance with provisions of Section 1861 of the Labor Code, the undersigned Contractor certifies as follows:

> I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work on this Contract.

12. Insurance

Before commencing Work, Contractor shall obtain at his own expense, and agrees to keep in effect during the life of this Contract, as a minimum requirement, the insurance described in the "Indemnity Agreement". All insurance, excepting Worker's Compensation and Occupational Disease Insurance, shall include as additional insured, the ROOT CREEK WATER DISTRICT, Provost and Pritchard Consulting Group, BSK & Associates, the State of California and the directors, officers, employees, consultants and agents of the aforementioned. The Contractor shall furnish evidence of the required insurance coverage to the Owner prior to execution of the Contract Documents.

13. ASSIGNMENT OF CLAYTION ACT AND CARTWRIGHT ACT RIGHTS

In submitting its Bid and entering into the Contract or a subcontract to supply goods, services, or materials pursuant to the Contract, the Contractor or subcontractor offers and agrees to assign to the Owner all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the Contract or any subcontract. This assignment shall be made and become effective at the time the Owner tenders final payment to the Contractor, without further acknowledgment by the parties.

14. ASSIGNMENT AND TRANSFER OF CONTRACT

The Contractor shall not assign or transfer this Contract or any part thereof or any interest therein without consent in writing of the Owner and the Contractor's Surety, and any such assignment or transfer without such written consent shall be null and void.

15. Dispute Resolution

To the extent required by applicable law, disputes arising between the Contractor and the Owner under or in connection with this Contract shall be resolved in accordance with the provisions of Article 1.5 of Chapter 1 of Part 3 of the Public Contract Code, a copy of which is contained in the Appendix of the Specifications and incorporated herein by this reference.

_____	ROOT CREEK WATER DISTRICT
Contractor	District/Owner
By _____	By _____
	Phil Pierre, President
ATTEST: _____	By_____
	Jim Provost, Manager

INDEMNITY AGREEMENT

The undersigned Contractor (or supplier) by reason of contracts or purchase orders (and addenda and riders thereto) which have or may be entered into with the designate certificate holder, agrees the following conditions shall apply with respect to any and all work performed for or materials or equipment supplied to designated certificate holder.

The Contractor agrees to indemnify and save harmless, the Owner, the State, Provost & Pritchard Consulting Group, BSK & Associates, their officers, directors, agents, employees, and consultants from and against all loss or expense, (including costs and attorney fees) on account of injury or death of persons employed by the Contractor, or his sub-contractors, his or their agents or employees; injury to or death of any person; or injury to, damage or destruction of property, real or personal, including loss of use thereof. Upon demand, the Contractor shall defend any suits or actions covered by the terms of this Agreement.

Before commencing work, Contractor shall obtain at his own expense, and agrees to keep in effect during the life of this Contract, as a minimum requirement, the following insurance in a company or companies acceptable to the Owner. All insurance, excepting Workers' Compensation and Occupational Disease Insurance, shall include as additional insured: the Owner, Provost & Pritchard Consulting Group, BSK & Associates and their officers, employees, consultants and agents.

1) Worker's Compensation and Occupational Disease Insurance meeting the statutory requirements of the State in which the work is to be performed; and Employer's Liability Insurance in an amount of at least $5,000,000.00.

2) Comprehensive Liability Insurance with limits of:

   Bodily Injury, Property Damage and Personal Injury - $5,000,000.00 each occurrence, $5,000,000.00 aggregate.

   This insurance shall be on an occurrence basis and shall protect the Contractor against liability arising from: his operations, operations by sub-contractors, elevators, products, completed operations and contractual liability assumed under the indemnity provisions above insurance.

3) Automobile Liability on occurrence basis covering all owned, non-owned, and hired automobiles for limits of liability of:

   Bodily Injury and Property Damage - $5,000,000.00 each occurrence.

4) Builder's Risk Insurance is required.

Provided however, that the limits of such insurance shall not limit the extent of such assumed responsibility and liability.

DATE: _____ ACCEPTED:_____

Owner, Partner or Officer

Witness-If Corp., Attest & Seal COMPANY: _____

_____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____ , hereinafter
(Corporation, Partnership, or Individual)

called Principal, and _____
(Name of Surety)

hereinafter called Surety, are held and firmly bound unto ROOT CREEK WATER DISTRICT hereinafter called Owner, in the penal sum of _____ Dollars ($_____) in lawful money of the United States, for the payment of which sum well and truly to be made, Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the _____ day of _____, 20_____, a copy of which is hereto attached and made a part hereof for the construction of:

ROOT CREEK WATER DISTRICT
ROOT CREEK IN-LIEU GROUNDWATER RECHARGE & STORAGE PROJECT

NOW THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder of the Specifications accompanying the same shall release or otherwise affect its obligation on this Bond, and it does hereby notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

(Performance Bond continued)

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20___.

_____
Principal

By_____(s)

_____
Address

ATTEST:

_____
(Principal) Secretary

(SEAL)

_____
Witness as to Principal

_____
Address

_____
Surety

By_____(s)
Attorney-in-Fact

_____
Address

ATTEST:

_____
(Surety) Secretary

(SEAL)

_____
Witness as to Surety

_____
Address

NOTE: Date of bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute Bond.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____ , hereinafter
(Corporation, Partnership, or Individual)

called Principal, and _____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto ROOT CREEK WATER DISTRICT, hereinafter called Owner, in the penal sum of _____ Dollars ($_____) in lawful money of the United States, for the payment of which sum well and truly to be made, Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner dated the _____ day of _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of:

ROOT CREEK WATER DISTRICT
ROOT CREEK IN-LIEU GROUNDWATER RECHARGE & STORAGE PROJECT

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor performed in such work, whether by subcontractor or otherwise, then this obligation shall be void, otherwise, to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time alternation or addition to the terms of the Contract or to work to be performed thereunder of the Specifications accompanying the same shall release or otherwise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20___.

_____
Principal

By_____(s)

_____
Address

ATTEST:

_____
(Principal) Secretary

(SEAL)

_____
Witness as to Principal

_____
Address

_____
Surety

By_____(s)
Attorney-in-Fact

_____
Address

ATTEST:

_____
(Surety) Secretary

(SEAL)

_____
Witness as to Surety

_____
Address

NOTE: Date of bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute Bond.

Engineers Joint Documents Committee
Design and Construction Related Documents
Instructions and License Agreement

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You agree upon such termination to destroy **EJCDC Design and Construction Related Documents** along with all copies, modifications and merged portions in any form.

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EJCDC warrants the CDs and diskettes on which **EJCDC Design and Construction Related Documents** is furnished to be free from defects in materials and workmanship under normal use for a period of ninety (90) days from the date of delivery to you as evidenced by a copy of your receipt.

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2. if EJCDC's selling agent is unable to deliver a replacement CD or diskette which is free of defects in materials and workmanship, you may terminate this Agreement by returning EJCDC Document and your money will be refunded.

In no event will EJCDC be liable to you for any damages, including any lost profits, lost savings or other incidental or consequential damages arising out of the use or inability to use **EJCDC Design and Construction Related Documents** even if EJCDC has been advised of the possibility of such damages, or for any claim by any other party.

Some states do not allow the limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.

General:
You may not sublicense, assign, or transfer this license except as expressly provided in this Agreement. Any attempt otherwise to sublicense, assign, or transfer any of the rights, duties, or obligations hereunder is void.

This Agreement shall be governed by the laws of the State of Virginia. Should you have any questions concerning this Agreement, you may contact EJCDC by writing to:

Arthur Schwartz, Esq.
General Counsel
National Society of Professional Engineers
1420 King Street
Alexandria, VA 22314

Phone: (703) 684-2845
Fax: (703) 836-4875
e-mail: aschwartz@nspe.org

You acknowledge that you have read this agreement, understand it and agree to be bound by its terms and conditions. You further agree that it is the complete and exclusive statement of the agreement between us which supersedes any proposal or prior agreement, oral or written, and any other communications between us relating to the subject matter of this agreement.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT FUNDING AGENCY EDITION

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

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This document has been approved and endorsed by

The Associated General Contractors of America

and the

Construction Specification Institute

Knowledge for Creating
and Sustaining
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These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Funding Agency Edition No. C-521 (2002 Edition). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001, 2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800, 2002 Edition).

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GENERAL CONDITIONS

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda* – Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agency* – The Federal or state agency named as such in the Agreement.

3. *Agreement* – The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

4. Application for Payment – The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

5. *Asbestos* – Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

6. *Bid* – The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

7. *Bidder* – The individual or entity who submits a Bid directly to Owner.

8. *Bidding Documents* – The Bidding Requirements and the proposed Contract Documents (including all Addenda).

9. *Bidding Requirements* – The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

10. *Change Order* – A document recommended by Engineer which is signed by Contractor and Owner and Agency and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

11. *Claim* – A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

12. *Contract* – The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

13. *Contract Documents* – Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

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14. *Contract Price* – The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

15. *Contract Times* – The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

16. *Contractor* – The individual or entity with whom Owner has entered into the Agreement.

17. *Cost of the Work* – See Paragraph 11.01.A for definition.

18. *Drawings* – That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

19. *Effective Date of the Agreement* – The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

20. *Engineer* – The individual or entity named as such in the Agreement.

21. *Field Order* – A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

22. *General Requirements* – Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. *Hazardous Environmental Condition* – The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. *Hazardous Waste* – The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. *Laws and Regulations; Laws or Regulations* – Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens* – Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. *Milestone* – A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. *Notice of Award* – The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

29. *Notice to Proceed* – A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

30. *Owner* – The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

31. *PCBs* – Polychlorinated biphenyls.

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32. *Petroleum* – Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

33. *Progress Schedule* – A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

34. *Project* – The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

35. *Project Manual* – The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. *Radioactive Material* – Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. *Related Entity* – An officer, director, partner, employee, agent, consultant, or subcontractor.

38. *Resident Project Representative* – The authorized representative of Engineer who may be assigned to the Site or any part thereof.

39. *Samples* – Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

40. *Schedule of Submittals* – A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

41. *Schedule of Values* – A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

42. *Shop Drawings* – All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

43. *Site* – Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

44. *Specifications* – That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

45. *Subcontractor* – An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

46. *Substantial Completion* – The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

47. *Successful Bidder* – The Bidder submitting a responsive Bid to whom Owner makes an award.

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48. *Supplementary Conditions* – That part of the Contract Documents which amends or supplements these General Conditions.

49. *Supplier* – A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

50. *Underground Facilities* – All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

51. Unit Price Work – Work to be paid for on the basis of unit prices.

52. *Work* – The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

53. *Work Change Directive* – A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and Agency upon recommendation of the Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. *Intent of Certain Terms or Adjectives*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered”, “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

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D. *Defective*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

   a. does not conform to the Contract Documents, or

   b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or

   c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement.

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2.04 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review**:**

1. a preliminary Progress Schedule;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, Agency, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage

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as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work*: Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work*: If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

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3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3) or

3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any,

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of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb

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such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review*: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

   a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

   b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

   a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

   b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

   c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

   a. reviewing and checking all such information and data,

   b. locating all Underground Facilities shown or indicated in the Contract Documents,

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c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

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3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

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ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

5.04 *Contractor's Liability Insurance*

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

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3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

   a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

   b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

   a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

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5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (Contractor shall be responsible for any deductible or self-insured retention.). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. Contractor shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

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5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Contractor as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Contractor and made payable to Contractor as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Contractor shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof.

B. Contractor as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Contractor's exercise of this power. If such objection be made, Contractor as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Contractor as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Contractor as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of

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non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

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B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

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2. Substitute Items

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The procedure requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) will perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified , and

b) available engineering, sales, maintenance, repair, and replacement services;

4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

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C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. *Engineer's Cost Reimbursement*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

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E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain

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that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work, Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved

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Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract

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Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings*

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

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D. *Engineer's Review*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

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3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

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C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

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B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 *Insurance*

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

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8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

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9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

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D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, subject to written approval by Agency at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

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10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

A. *Engineer's Decision Required*: All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action*: Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,

2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

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E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

   a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

   b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are

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consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressages, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

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C. Contractor's Fee: When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

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D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the Bid price of a particular item of Unit Price Work amounts to more than 5 percent of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 25 percent from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect to any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. Contractor's Fee: The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

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e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.B.

1. delays caused by or within the control of Contractor; or

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

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ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

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B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or

2. correct such defective Work; or

3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

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4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

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C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

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b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

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D. *Reduction in Payment*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

   a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

   b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

   c. the Contractor's performance or furnishing of the Work is inconsistent with funding Agency requirements;

   d. there are other items entitling Owner to a set-off against the amount recommended; or

   e. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.03 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, Owner, Agency, Contractor, and Engineer shall make a prefinal inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

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D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner, Agency, and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

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2. The final Application for Payment shall be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

   b. consent of the surety, if any, to final payment;

   c. a list of all Claims against Owner that Contractor believes are unsettled; and

   d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims. The remaining balance of any sum included in the final Application for Payment but held by OWNER for Work not fully completed and accepted will become due when the Work is fully completed and accepted.

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14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by

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Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

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ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Owner and Contractor may mutually request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process hall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim to another dispute resolution process, or

3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

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17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

ARTICLE 18 – FEDERAL REQUIREMENTS

18.01 *Agency Not a Party*

A. This Contract is expected to be funded in part with funds provided by Agency. Neither Agency, nor any of its departments, entities, or employees is a party to this Contract.

18.02 *Contract Approval*

A. Owner and Contractor will furnish Owner's attorney such evidence as required so that Owner's attorney can complete and execute the following "Certificate of Owner's Attorney" (Exhibit GC-A) before Owner submits the executed Contract Documents to Agency for approval.

B. Concurrence by Agency in the award of the Contract is required before the Contract is effective.

18.03 *Conflict of Interest*

A. Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the plans and specifications has a corporate or financial affiliation with the supplier or manufacturer.

B. Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

18.04 *Gratuities*

A. If Owner finds after a notice and hearing that Contractor, or any of Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner may, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.

B. In the event this Contract is terminated as provided in paragraph 18.04.A, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary damages in an

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amount (as determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee.

18.05 *Audit and Access to Records*

A. For all negotiated contracts and negotiated modifications (except those of $10,000 or less), Owner, Agency, the Comptroller General, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Contractor, which are pertinent to the Contract, for the purpose of making audits, examinations, excerpts and transcriptions. Contractor shall maintain all required records for three years after final payment is made and all other pending matters are closed.

18.06 *Small, Minority and Women's Businesses*

A. If Contractor intends to let any subcontracts for a portion of the work, Contractor shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services. Affirmative steps shall consist of: (1) including qualified small, minority and women's businesses on solicitation lists; (2) assuring that small, minority and women's businesses are solicited whenever they are potential sources; (3) dividing total requirements when economically feasible, into small tasks or quantities to permit maximum participation of small, minority, and women's businesses; (4) establishing delivery schedules, where the requirements of the work permit, which will encourage participation by small, minority and women's businesses; (5) using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce; (6) requiring each party to a subcontract to take the affirmative steps of this section; and (7) Contractor is encouraged to procure goods and services from labor surplus area firms.

18.07 *Anti-Kickback*

A. Contractor shall comply with the Copeland Anti-Kickback Act (18 USC 874 and 40 USC 276c) as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

18.08 *Clean Air and Pollution Control Acts*

A. If this Contract exceeds $100,000, Contractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 USC 7401 *et seq.*) and the Federal Water Pollution Control Act as amended (33 USC 1251 *et seq.*). Contractor will report violations to the Agency and the Regional Office of the EPA.

18.09 *State Energy Policy*

A. Contractor shall comply with the Energy Policy and Conservation Act (P.L. 94-163). Mandatory standards and policies relating to energy efficiency, contained in any applicable State Energy Conservation Plan, shall be utilized.

18.10 *Equal Opportunity Requirements*

A. If this Contract exceeds $10,000, Contractor shall comply with Executive Order 11246, "Equal Employment Opportunity," as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

B. Contractor's compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative active obligations required by the Standard Federal Equal Employment

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Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographical area where the Contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract, and in each trade, and Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor's goals shall be a violation of the Contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

C. Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the Contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the Contract is to be performed.

18.11 *Restrictions on Lobbying*

A. Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-121, Section 319) as supplemented by applicable Agency regulations. This Law applies to the recipients of contracts and subcontracts that exceed $100,000 at any tier under a Federal loan that exceeds $150,000 or a Federal grant that exceeds $100,000. If applicable, Contractor must complete a certification form on lobbying activities related to a specific Federal loan or grant that is a funding source for this Contract. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 USC 1352. Each tier shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Certifications and disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

18.12 *Environmental Requirements*

A. When constructing a project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental constraints:

1. Wetlands – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.

2. Floodplains – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, i.e., alluvial soils on NRCS Soil Survey Maps.

3. Historic Preservation – Any excavation by Contractor that uncovers an historical or archaeological artifact shall be immediately reported to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the State Historic Preservation Officer (SHPO).

4. Endangered Species – Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.

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EXHIBIT GC-A

Certificate of Owner's Attorney

I, the undersigned, _____, the duly authorized and acting legal representative of _____, do hereby certify as follows:

I have examined the attached Contract(s) and performance and payment bond(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements is adequate and has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

_____

Date: _____

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SUPPLEMENTARY CONDITIONS

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SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the General Conditions of the Construction Contract and other provisions of the Contract Documents as indicated below. All provisions, which are not so amended or supplemented, remain in full force and effect.

ARTICLE 0-EXPLANATION OF BID ITEMS

SC-0.0 *Explanation of Bid Items* Add the following paragraphs in its entirety:

1. General

The Contract payment for the specified items of work as set forth in the Bid Schedule shall be full compensation for furnishing all labor, materials, methods or processes, implements, tools, equipment and incidentals and for doing all work involved as required by the provisions of the Contract Documents for a complete in place and operational system.

A. Unless otherwise specified in the Supplementary Conditions or Technical Provisions, quantities of work shall be determined from measurements or dimensions in a horizontal plane. All measurements shall be made in accordance with United States Standard Measures. All materials shall be measured on the basis of in place quantities paid for the units listed in the bid schedule. For materials specified to be measured in place in a structure, the actual volume within the neat lines of the structure, as shown on the contract drawings, will be the basis for computing quantities.

B. After the work has been completed, the Engineer will make field measurements of unit price items in order to determine the quantities of the various items as a basis for payment. On all unit price items, the contractor will be paid for the actual amount of the work performed in accordance with the contract documents, as computed from field measurements.

C. Work or quantities not listed in the description of bid items are considered incidental to other construction and will not be measured and paid for.

2. Bid Items

Bid Item 1 **Mobilization Bonds and Insurance:** The lump sum payment shall include the cost of mobilization, move-in, move-out, all necessary bonds, insurance, permits, licenses, and fees required during the performance of the work.

Bid Item 2 **Miscellaneous Facilities and Operations:** The lump sum payment shall include the cost for dust control; traffic control; maintaining drainage; protection and support of existing facilities; pot holing and locating existing utilities; general project clean up; and all costs for miscellaneous work shown and described in the Contract documents, not included in other bid items.

Bid Item 3 **Clearing and Grubbing:** The unit price paid for clearing and grubbing will be paid on a Lump Sum basis, and shall include the cost of all work involved in clearing and grubbing within borrow, embankment and canal areas.

Bid Item 4 **Scarify and Recompact Embankment Subgrade:** The unit price paid to scarify the embankment subgrade prior to the placement of fill material will be on a Lump Sum basis, and shall include the cost of all work involved in scarifying the upper 12" of subgrade in all fill areas, moisture conditioning and compacting prior to the placement of fill material.

Bid Item 5(F) **Embankment Earthwork:** The estimated quantity for Embankment Earthwork as shown in the bid schedule shall be the **final pay quantity** and no additional allowance will be made therefor, unless the scope of the work changes. Section 9-1.015, "Final Pay Items," of the State Standard Specifications, July, 1999, shall apply in its entirety excepting that the words therein, "Engineer's Estimate," shall be replaced with the words, "Bid Schedule," signifying the Bid Schedule provided as part of the Bidder's Proposal of these Specifications.

Bid Item 6 **48" RGRCP Pipeline:** The unit price paid per lineal foot of 48" RGRCP Pipeline shall include, but not be limited to, furnishing of pipe; fittings; excavation; bedding, placement; backfilling of trench, compaction; watering; and dust control and shall include full compensation for furnishing all labor, tools and equipment and for doing all work involved in Installing 48" RGRCP Pipeline as detailed in the Plans and Specifications. Quantities of Pipe will be measured by the foot, based upon horizontal measurement.

Bid Item 7 **18" PVC Pipeline:** The unit price paid per lineal foot of 18" PVC Pipeline shall include, but not be limited to, furnishing of pipe; fittings; excavation; bedding, placement; backfilling of trench, compaction; watering; and dust control and shall include full compensation for furnishing all labor, tools and equipment and for doing all work involved in Installing 18" PVC Pipeline as detailed in the Plans and Specifications. Quantities of Pipe will be measured by the foot, based upon horizontal measurement.

Bid Item 8 **12" PVC Pipeline:** The unit price paid per lineal foot of 12" PVC Pipeline shall include, but not be limited to, furnishing of pipe; fittings; excavation; bedding, placement; backfilling of trench, compaction; watering; and dust control and shall include full compensation for furnishing all labor, tools and equipment and for doing all work involved in Installing 12" PVC Pipeline as detailed in the Plans and Specifications. Quantities of Pipe will be measured by the foot, based upon horizontal measurement.

Bid Item 9 **48" Jack & Bore w/ 48" RGRCP Pipeline:** The unit price paid per lineal foot of 48" Jack & Bore w/ 48" RGRCP Pipeline shall include, but not be limited to, furnishing of pipe; fittings; excavation; bedding, placement; backfilling of trench, compaction; watering; and dust control and shall include full compensation for furnishing all labor, tools and equipment and for doing all work involved in Installing 48" reinforced concrete jacking pipe with rubber gasket joint Pipeline as detailed in the Plans and Specifications.

Bid Item 10 **Turnout-MID Lateral 6.2:** The unit price paid for Turnout-MID Lateral 6.2 will be paid on a Lump Sum basis, and shall include the cost of all work involved in clearing and grubbing; excavation; bedding; backfilling; compaction; watering; and dust control and shall

UPDATE ACCORDING TO APPROVED DRAWINGS

include full compensation for furnishing all labor, tools and equipment and for doing all work involved in constructing Turnout-MID Lateral 6.2 as detailed in the Plans and Specifications.

UPDATE ACCORDING TO APPROVED DRAWINGS

Bid Item 11 **Connection to Existing Pump & Filter Stations:** The unit price paid for Connection to Existing Pump & Filter Stations will be paid on a Lump Sum basis, and shall include the cost of all work involved in clearing and grubbing; excavation; tie-ins; backfilling; compaction; watering; and dust control and shall include full compensation for furnishing all labor, tools and equipment and for doing all work involved in constructing Connection to Existing Pump & Filter Stations as detailed in the Plans and Specifications.

ARTICLE 1-DEFINITIONS AND TERMINOLOGY

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below which are applicable to both the singular and plural thereof.

SC-1.01 *Defined Terms* Add the following list immediately after, 52.F

53. A.S.A.
American Standards Association (now U.S.A.S.I., U.S.A. Standards Institute) and its Standard Specifications.

54. A.S.A.E.
American Society of Agricultural Engineers and its Standards.

55. A.S.T.M.
American Society for Testing and Materials and its Specifications.

56. A.W.W.A.
American Water Works Association and its Standard Specifications.

57. BOARD
Board of Directors, ROOT CREEK WATER DISTRICT.

58. DISTRICT
ROOT CREEK WATER DISTRICT.

59. ENGINEER
The word "Engineer" refers to the firm of Provost & Pritchard Engineering Group, Inc., designated by the Owner as its engineering representative during the course of construction to make appropriate field reviews and computations of payments.

60. GEOTECHNICAL ENGINEER
Geotechnical Engineer refers to the firm BSK & Associates designated by the Owner as its geotechnical engineering representative for the project.

61. MANAGER
The General Manager of the ROOT CREEK WATER DISTRICT.

62. N.B.S.
National Bureau of Standards and its Standard Specifications.

63. OWNER
ROOT CREEK WATER DISTRICT.

64. PERSON
Any individual, association, partnership, corporation, trust, joint venture or other legal entity.

65. PROPOSAL
The offer of a Bidder when submitted on the Proposal form; properly signed and guaranteed.

66. REFERENCE SPECIFICATIONS
Reference Specifications are those entitled "Standard Specifications, State of California, Business and Transportation Agency, Department of Transportation, July, 1992", hereinafter referred to as the State Standard Specifications. These Specifications are to be considered a part of the Contract Documents insofar as the various sections thereof are referred to hereinafter.

67. ROADWAY
The portion of a street reserved for vehicular use.

68. SPECIFICATIONS
Reference Specifications, Contract Documents, General Conditions, Supplementary Conditions, Technical Provisions and any addendums thereof.

69. STATE STANDARD PLANS
State of California, Business and Transportation Agency, Department of Transportation, Caltrans, Standard Plans, dated July, 1992.

70. STATE STANDARD SPECIFICATIONS
State of California, Business and Transportation Agency, Department of Transportation, Caltrans, Standard Specifications, dated July, 1992.

71. STREET
Any public road, highway, parkway, freeway, alley, walk or right-of-way.

72. SURETY
Any individual, firm or corporation bound with and for the Contractor for the acceptable performance, execution and completion of the Work, and for the satisfaction of all obligations incurred.

73. UTILITY
Tracks, overhead of underground wires, pipelines, conduits, ducts or structures, sewers of storm drains owned, operated or maintained in or across a public right-of-way or private easement.

ARTICLE 2-PRELIMINARY MATTERS

SC-2.02 *Copies of Documents* Delete the first sentence with the following:
Five (5) sets of Drawings and Specifications will be furnished to the successful Contractor without charge.

SC-2.03 *Commencement of Contract Time; Notice to Proceed* Delete the first sentence under 2.03 A. and add the following:
The contract time shall commence upon receipt of a Notice to Proceed. The work shall start within ten (10) days thereafter and be diligently prosecuted to completion within the time provided in the Contract.

SC-2.07 *Initial Acceptance of Schedules* Add the following paragraph after 2.07 A 3.

4. If the Contractor desires to make a major change in his method of operations after commencing construction, or if his schedule fails to reflect the actual progress, he shall submit to the Engineer a revised construction schedule in advance of beginning revised operations.

ARTICLE 3-CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

SC-3.02 *Reference Standards* Add the following new paragraphs immediately after 3.02 A 2.

3.The Contractor shall keep on the job a copy of the Plans and Specifications and shall at all times give the Owner and Engineer access thereto. Anything mentioned in the Specifications and not shown on the Plans or shown on the Plans and not mentioned in the Specifications shall be of like effect as if shown or mentioned in both. The Contractor shall not take advantage of any errors, discrepancies or omissions which may exist in the Plans and Specifications but shall immediately call them to the attention of the Engineer whose interpretation or correction thereof shall be conclusive.

SC-3.03 *Reporting and Resolving Discrepancies* Add the following paragraph after 3.03 B1.b.
C. The order of precedence of Contract Documents shall be:

First:	Permits from other agencies as may be required by law.
Second:	Specifications
Third:	Plans
Fourth:	State Standard Specifications

Change Orders, supplemental agreements and approved revisions to Plans and Specifications will take precedence over documents listed above. Detailed Plans shall have precedence over general Plans.

Whenever any conflict appears in any portions of the Contract, it shall be resolved by application of the order of precedence.

4. List of Drawings

The Work shall conform to the following Drawings:

TITLE	SHEET NUMBERS	DRAWING NUMBERS
Cover Sheet	1	20020592
Drawing Index Sheet	2	20020603
Plan and Profile #1	3	20020474
Plan and Profile #2	4	20020483
Plan and Profile #3	5	20020484
Plan and Profile #4	6	20020485
Plan and Profile #5	7	20020487
Plan and Profile #6	8	20020488
Plan and Profile #7	9	20020489
Plan and Profile #8	10	20020490
Plan and Profile #9	11	20020491
Plan and Profile #10	12	20020492
Plan and Profile #11	13	20020493
Plan and Profile #12	14	20020494
Plan and Profile #13	15	20020606
Turnout Details	16	20020590
Pump Station Modifications	17	20020614

UPDATE ACCORDING TO APPROVED DRAWINGS

ARTICLE 4-AVAILABILITY OF LAND; SUBSURFACE & PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

SC-4.01 *Availability of Land* Add the following paragraph after 4.01 C.

Contractor shall make his own arrangements, pay for and assume all responsibility for acquiring, using and disposing of additional work areas and facilities temporarily required by him. He shall indemnify and hold the Owner harmless from all claims for damages occasioned by such actions.

SC- 4.04 *Underground Facilities* Add the following paragraphs immediately after 4.04 A 2d.

3.The Contractor shall expose, prior to staking and trenching, all existing utilities and existing facilities which may control proposed facility grades, and alignment. Two working days notice shall be given to the Engineer prior to commencing this work.

Full compensation for all costs involved in locating, verifying, protecting, exposing, and otherwise providing for utilities shall be included in the amounts bid for the various items of work, and no separate payment shall be made therefor.

4. Protection

The Contractor shall not interrupt the service function or disturb the supporting base of any Utility by disrupting any facility identified in the Plans and Specifications without authority from the Owner or order from the Engineer. Where protection of such facilities is required to ensure

support of utilities, the Contractor shall, unless otherwise provided, furnish and place the necessary protection at the Contractor's expense.

The Contractor shall be prepared at all times with labor, equipment and materials to make repair on damaged mains or Utility facilities. The Contractor shall immediately notify the Engineer and the Utility owner if he disturbs, disconnects or damages any Utility. The Contractor shall bear the costs of repair or replacement of any Utility facility described with reasonable accuracy in the Plans and Specifications which is damaged by the Contractor. No extra compensation will be made for the repair of any services or mains damaged by the Contractor, nor for any damage incurred if the neglect or failure of providing protective barriers, lights and other devices or means required to protect such existing utilities or facilities described with reasonable accuracy in the Plans and Specifications.

5. Relocation

When the Plans or Specifications provide for the Contractor to alter, relocate or reconstruct a Utility, or landowner facility (pipeline, fence, etc.) all costs for such work shall be absorbed in the Contractor's Bid or paid for at the unit price indicated. Temporary or permanent relocation or alteration of utilities desired by the Contractor for his own convenience shall be his responsibility, and he shall make all arrangements and bear all costs. The Contractor may, for his own convenience or to expedite the work, agree with the Owner of any Utility to disconnect and reconnect interfering service connections. The Owner shall not be involved in any such agreement.

SC-4.05 *Reference Points* Delete paragraph 4.05 A in its entirety and insert the following:

A. Surveying and Permanent Survey Markers

The Contractor shall notify the Engineer at least seven (7) days before starting work in order that the Engineer may take necessary measures to insure the preservation of survey markers (monuments and bench marks). The Contractor shall not disturb permanent survey markers without the consent of the Engineer and shall bear the expense of replacing any that may be disturbed without permission. Replacement shall be done only by the Engineer. If disturbing the markers cannot be avoided, the Owner shall pay the cost of replacing the markers.

When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, the Engineer will adjust the monument cover to the new grade unless otherwise specified.

B. Lot Stakes

The Contractor shall preserve property line and corner survey markers except where their destruction is unavoidable and the Contractor is proceeding in accordance with accepted practice. Markers that otherwise are lost or disturbed by his operations shall be replaced at the Contractor's expense by a Registered Civil Engineer or Licensed Land Surveyor.

C. Survey Service

Construction surveying and staking for construction will be done by the Engineer or Engineer's representative at the Owner's expense. The Engineer will provide one set of grade control stakes on offsets at 50 foot intervals on curves and 100 foot intervals on straight lines, and 2 control stakes at structures. Additional detail staking layout will be the responsibility of the Contractor.

The Contractor shall be responsible for preserving construction survey stakes, permanent survey monuments and bench marks for the duration of their usefulness. If any construction survey stakes permanent survey monuments or benchmarks are lost or disturbed and need to be replaced, such replacement shall be made by the Engineer at the expense of the Contractor.

The Contractor shall notify the Engineer at least two (2) working days before he will require survey services in connection with laying out of any portion of the Work. The Contractor at his own expense shall dig all holes necessary for line and grade stakes prior to requesting survey services that depend on such digging.

ARTICLE 5-BONDS AND INSURANCE

SC-5.01 *Performance, Payment, and Other Bonds* Replace the first sentence with the following:

A. The Contractor shall, within ten (10) calendar days after the receipt of the Notice of Award and before the commencement of any operations hereunder, execute the Contract and furnish the Owner with a Performance Bond and a Payment Bond in a penal sum equal to One Hundred Percent (100%) each of the Contract Price, conditioned upon the performance by the Contractor of all undertakings, covenants, terms, conditions and agreements of this Contract, and upon the prompt payment by the Contractor to all persons supplying labor and materials in the prosecution of the Work provided by this Contract.

SC-5.03 *Certificates of Insurance* Delete paragraph A in its entirety and insert the following in its place:

A. The Contractor shall, within ten (10) calendar days after the receipt of the Notice of Award and before the commencement of Work, execute an Indemnity Agreement and furnish proof of required insurance as specified in these Specifications. The expense of insurance shall be borne by the Contractor.

Contractor agrees to keep in effect during the life of this Contact, as a minimum requirement, the insurance described in the "Indemnity Agreement". All insurance, excepting Workers' Compensation and Occupational Disease Insurance, shall include as additional insured, the ROOT CREEK WATER DISTRICT, Provost & Pritchard Engineering Group, Inc., Twining Laboratories, Inc., The State of California and the directors, officers, employees, consultants and agents of the aforementioned.

ARTICLE 6- CONTRACTOR'S RESPONSIBILITIES

SC-6.02 *Labor; Working Hours* Add the following paragraphs immediately after, 6.02 B.

C. No person whose age or physical condition is such as to make his employment dangerous to his health and safety or to the health and safety of others shall be employed on the Work, and in no event shall any person under the age of sixteen (16) years be employed.

The Contractor and the Contractor's subcontractors shall comply in all respects to the provisions of Article 2, Chapter 1, Part 7 of the Labor Code requiring the payment of prevailing wages, all of which are incorporated herein by this reference.

D. Apprentices

In accordance with the provisions of Section 1777.5 of the Labor Code, and in accordance with the rules and procedures of the California Apprenticeship Council properly indentured apprentices shall be employed in the prosecution of the Work. The number so employed shall be as set forth in the certificate issued by the appropriate joint apprenticeship committee unless a certificate of exemption has been issued by the Division of Apprenticeship Standards. Willful failure by the Contractor to comply with said Section 1777.5 shall result in his being denied the right to bid on a public works contract for a period of one year from the date the determination is made.

Information relative to number of apprentices, identification, wages, hours of employment and standards of working conditions shall be obtained from the Director of the Department of Industrial Relations, who is the Administrative Officer of the California Apprenticeship Council, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

It shall be the principal responsibility of the Contractor to cause the compliance with Labor Code Section 1777.5 by the Contractor and all subcontractors used on the construction contemplated by the Contract Documents.

E. Forfeiture of Wage Underpayments

Pursuant to the provisions of Labor code section 1773, the district has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate of holiday and overtime work in the locality in which the Work is to be performed for each craft, classification or type of worker needed to execute the Work. Copies of the prevailing rate of per diem wages are on file at the District's principal office and shall be made available to any interested party on request. The Contractor shall cause a copy of the Director's determination of the prevailing rate of per diem wages to be posted at a prominent place at the site of the Work. The possibility of wage increases is one of the elements to be considered by the Contractor in determining his bid and will not under any circumstances be considered as the basis of claim against the District. The Contractor shall comply with Labor Code section 1774 and 1775. In accordance with Labor Code section 1775, the Contractor shall forfeit as a penalty to the District not more than $50 for each Day or portion thereof for each worker paid less than the prevailing rates as determined by the director for the Work or craft in which the worker is employed for any Work or by any subcontractor under the Contractor. The amount of this penalty shall be determined by the Director based on the factors set forth in section 1775. In addition to such penalty, the difference between such prevailing wage rates and the amount paid to each workman for each Day or portion thereof for each workman was paid less than the prevailing wage rate shall be paid to each worker by the Contractor.

F. Non-Discrimination

The Contractor's attention is directed to the provisions of Labor Code section 1735 which reads as follows:

> "No discrimination shall be made in the employment of persons upon public works because of the race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, martial status or sex of such persons, except as provided in Section 12940 of the Government Code, and every Contractor for public works violating this section is subject to all penalties imposed for a violation of this chapter."

During performance of this agreement, the Contractor and its subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, age (over 40) or sex. Contractor and its subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free of such discrimination.

Contractor and its subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code Sections 12900, et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285.0, et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990, set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this agreement by reference and made a part of it as if set forth in full. The Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

G. Hours of Labor

Eight hours labor constitutes a legal day's work. The Contractor shall forfeit, as a penalty to the District, $25 for each workman employed in the execution of the Work by the Contractor or any subcontractor under it for each Day during which such workman is required or permitted to work more than eight hours in any one Day and 40 hours in any one calendar week in violation of the provisions of the Labor Code, and, in particular, sections 1810 to 1815 thereof, inclusive, except that work performed in excess of eight hours per Day and 40 hours during any one week shall be permitted upon compensation for all hours worked in excess of eight hours per day at not less than one and a half times the basic rate of pay, as provided in Labor section 1815.

SC-6.03 *Services, Materials, and Equipment* Paragraph 6.03 B., Add the words, "free from defects" after, (shall be of good quality), and add the following paragraphs after 6.03 B.

Contractor shall give the Engineer written notification well in advance of actual readiness of materials and equipment to be tested and inspected at point of origin. Satisfactory tests and inspections at the point of origin shall not be construed as a final acceptance of the materials and equipment nor shall such tests and inspections preclude re-testing or re-inspection at the site of the Work.

Materials and equipment that require testing and inspection at the place of origin shall not be shipped prior to such testing and inspection.

All equipment installed under this Contract shall be placed into successful operation according to the written instructions of the manufacturer or the instructions of the manufacturer's field representative. All required adjustments, tests, operation checks, and other startup activity shall be provided.

Where the Specifications require the presence of Engineer, initial tests shall be observed or witnessed by Engineer. Contractor shall reimburse owner for all costs of subsequent visits by Engineer to witness or observe incomplete tests, re-testing, or subsequent tests.

The Contractor shall test all items of mechanical equipment after installation for proper operation, efficiency, and capacity. The Contractor's test operation of each piece of mechanical equipment shall continue for not less than eight hours without interruption. All parts shall operate satisfactorily in all respects, under continuous full load, and in accordance with the specified requirements, for the full duration of the 8-hour test period. If any part of a unit shows evidence of unsatisfactory or improper operation during the 8-hour test period, correction or repairs shall be made and the full 8-hour test operation, as specified above, shall

be repeated after all parts operate satisfactorily. The Contractor shall furnish all personnel, power, water, chemicals, fuel, oil, grease, and all other necessary facilities for conducting the Contractor's test operations.

SC-6.05 *Substitutes and "Or-Equals"* Add the following paragraphs and insert immediately after 6.05 2,d 4) the following:

5) Substitution Request Form shall be used to request the substitution. All information shall be filled-out including identifying the product or fabrication or installation method. The following information shall also be included as appropriate:

1. Product Data, including Drawings and product descriptions, fabrication and installation procedures.
2. Samples.
3. Detailed comparison of significant qualities such as size, weight, durability, performance and visual effect.
4. Coordination information including changes or modifications needed to other parts of the Work to accommodate the proposed substitution including Work to be performed by the Owner and/or separate Contractors.
5. Statement of the substitution's effect on the schedule, and the overall Contract Time.
6. Net change to Contract Sum.
7. Contractor's Certification that the proposed substitution is equal to or better than that required by the Contract Documents, and that it will perform adequately in the application indicated; and Waiver of Rights to additional payment or item, that may subsequently become necessary because of failure of the substitution to perform adequately.

6) Engineer's Action: Within one (1) week of receipt of the Substitution Request Form, the Engineer shall request additional information or documentation necessary for evaluation of the request. Within two (2) weeks of receipt of the Substitution Request Form, or one (1) week of receipt of the additional information or documentation, whichever is later, the Engineer will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitution cannot be made or obtained within the allocated time, the Contractor shall use the product specified. Acceptance shall be in the form of an Addendum if the Contract has not been awarded, or in the form of a Change Order if the Contract has been awarded.

SC-6.09 *Laws and Regulations* Add the following paragraph after 6.09 C.

D. CONTRACTOR'S LICENSE LAWS

The Contractor's attention is directed to the provisions of Business and Professions Code section 7028.15 concerning the licensing of Contractors. All bidders and Contractors shall be licensed in accordance with the laws of the State of California and any bidder or Contractor not so licensed is subject to the penalties imposed by such laws. The party to whom the Contract is awarded must, at the time the Contract is awarded, possess a Class A Contractor's license valid in the State of California.

SUBSTITUTION REQUEST FORM

TO:
_____

PROJECT:
_____

We hereby submit for your consideration the following product instead of the specified item for the above project:

SECTION: _____ PARAGRAPH: _____ SPECIFIED ITEM: _____
_____

Proposed Substitution:_____
_____

Attach: 1) Complete technical data, including laboratory tests, if applicable.
2) Complete information on changes to Drawings and/or Specifications which proposed substitution will require for its proper installation.

Fill in Blanks Below:

A. Does the substitution affect dimensions on Drawings?

_____
_____
_____

B. Will the undersigned pay for changes to the project design, including engineering and detailing costs caused by the requested substitution?

_____
_____
_____

C. What affect does substitution have on other trades?

_____
_____
_____

D. Differences between proposed substitution and specified item?

_____

_____

_____

E. Manufacturer's guarantees of the proposed and specified items are:

____Same _____ Different (explain on attached sheet)

SUBSTITUTION REQUEST FORM

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted By:

Signature _____

Firm _____

Address _____

Date _____

Telephone _____

For Use by Design Consultant
Accepted Accepted as Noted Not Accepted Received Late By_____ Date_____ Remarks_____

SC-6.11 *Use of Site and Other Areas* _Add the following paragraphs immediately after 6.11 A. 1.

The Contractor shall effectively secure and protect adjacent property and structures, crops and other vegetation.

Contractor shall repair all fences damaged during the work

In all cases where the Contractor removes fences to obtain room to work, he shall provide and install temporary fencing as required. Prior to completion of construction, the Contractor shall restore all original fences to the satisfaction of the Engineer. All costs of providing, work required for site maintenance and maintaining and restoring gates and fencing shall be borne by the Contractor.

The Contractor shall use extreme care during construction to prevent damage from dust to crops and adjacent property. The Contractor shall also abate dust nuisance by cleaning, sweeping and sprinkling with water or other means as necessary. Dust control shall conform to the applicable provisions of Section 10 of the State Standard Specifications. All cleanup, dust control, and project site maintenance costs shall be absorbed in the Contractor's Bid.

Care shall be taken to prevent spillage on haul routes. Any such spillage shall be removed immediately and the area cleaned. Likewise, the Contractor shall not allow dust generated from the construction activities to obscure the vision of vehicular traffic on County roads or State Highways. The Contractor, at his own expense, shall provide adequate dust control for the right of way and take other preventive measures as directed by the Engineer.

The Contractor shall be responsible for all damage to any property resulting from trespass by the Contractor or his employees in the course of their employment, whether such trespass was committed with or without the consent or knowledge of the Contractor.

In the event of an emergency or unusual conditions endangering life, the Work, or adjacent property, the Contractor may, without special instructions or authorization, act at his discretion to prevent or eliminate such danger.

Compensation for any necessary work required for site maintenance shall be considered as included in the prices paid for the various bid items and no additional compensation will be made therefor.

SC-6.11 *Use of Site and Other Areas* Add the following paragraphs after 6.11 D:

E. Air Pollution Control

The Contractor shall not discharge smoke, dust or any other air contaminants into the atmosphere in such quantity as will violate the regulations of any legally constituted authority.

If this Contract exceeds $100,000, the Contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act of 1970, as amended.

F. Sanitation

The Contractor shall provide and maintain enclosed toilets for the use of employees engaged in the Work. These accommodations shall be maintained in a neat and sanitary condition.

They shall also comply with all applicable laws, ordinances, and regulations pertaining to the public health and sanitation of dwellings and camps.

G. All traffic signs and street signs within the limits of the improvement shall be removed, salvaged and stockpiled at locations designated by the Engineer. Traffic control signs and street signs will be replaced upon the completion of the Work, and the cost of removal and replacement will be included in various bid items, and no separate payment will be made as such.

H. TEMPORARY LIGHT, POWER, AND WATER

The Contractor shall, at his own expense, furnish, install, maintain and remove all temporary light and power, including piping, wiring, lamps and other equipment necessary for the Work.

The Contractor shall furnish all water necessary for Contract construction work, including sufficient water for all fire protection, dust abatement and testing requirements. Non-Potable water will be provided at no cost to the Contractor by the District providing at least 48 hours advance is given. The Contractor shall furnish all material, pipelines, and equipment to deliver and/or transport the water to the job site. The provisions of Section 10, "Dust Control," and Section 17, "Watering," of the State Standard Specifications shall apply to the work, except that no separate payment will be made for water supply development or controlling dust caused by public traffic, and the cost thereof shall be included in the prices bid in the schedule for other items of work.

SC-6.11 C. *Cleaning* Add the following paragraph after 6.11 C:

In the event of his failure to do so, the same may be done by the Owner at the expense of the Contractor, and his Surety shall be responsible therefor.

SC-6.12 *Record Documents* Add this sentence and paragraph immediately after 6.12 A.:

Final payment will not be made to the Contractor until such time as the Record Drawings are satisfactorily submitted.

B. Retention of Records. The Contractor shall retain all project records (including financial records, progress reports, and payment requests) for a minimum of three (3) years after the project has been formally concluded, or final payment received, whichever is later, unless otherwise directed by the Owner.

C. Audits. Upon written request from the Owner, the Contractor shall provide detailed documentation of all expenses at any time throughout the project. In addition, the Contractor agrees to allow the Owner, the Department of Water Resources, or any other agency of the state, upon written request, to have reasonable access to and the right of inspection of all records that pertain to the project during the term of this agreement and for a period of three (3) years thereafter.

D. PAYROLL RECORDS

The Contractor's attention is directed to the provisions of Labor Code Section 1776, a portion of which read as follows:

> "(a) Each contractor and subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work

classification, and straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work."

"(b) The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following basis:

(1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.

(2) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection or furnished upon request to a representative of the body awarding the contract, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.

(3) A certified copy of all payroll records enumerated in subdivision (a) shall be made available upon request by the public for inspection or for copies thereof. However, a request by the public shall be made through either the body awarding the contract, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to paragraph (2), the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the Contractor, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of the Contractor.

"(c) The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the division.

"(d) Each contractor shall file a certified copy of the records enumerated in subdivision (a) with the entity that requested the records within 10 days after receipt of a written request.

"(e) Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the awarding body, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement, shall be marked or obliterated in a manner so as to prevent disclosure of an individual's name, address, and social security number. The name and address of the Contractor awarded the contract of performing the contract shall not be marked or obliterated.

"(f) The Contractor shall inform the body awarding the contract of the location of the records enumerated under subdivision (a), including the street address, city and county, and shall, within five working days, provide a notice of a change of location and address.

"(g) The Contractor shall have 10 days in which to comply subsequent to receipt of written notice specifying in what respects the Contractor must comply with this section. In the event that the Contractor fails to comply within the 10-day period, he or she shall, as a penalty to the state or political subdivision on whose behalf of the contract is made or awarded, forfeit twenty-five dollars ($25) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due."

The Contractor shall be responsible for seeing that his subcontractors comply with these provisions. The penalties specified in Labor Code Section 1776 for noncompliance therewith may be deducted by the Owner from any monies due or which may become due to the Contractor. The payroll shall be accompanied by a "Statement of Compliance" signed by the employer or his agent under penalty of perjury indicating that the payrolls are correct and complete and that the water rates contained therein are not less than those required by this agreement. The Contractor shall be responsible for the submission of copies of payrolls of all subcontracts. The Contractor and each subcontractor shall preserve their payroll records for a period of three years from the date of completion of this agreement.

The Contractor will be required under this Contract to provide copies of certified payroll records to the Owner <u>and</u> Engineer.

SC-6.13 *Safety and Protection* Add the following sentences immediately after the first sentence under 6.13 A:
The duty of the Engineer to conduct construction review of the Contractor's performance and the undertaking of inspections by the Engineer or the giving of instructions as authorized herein is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the construction site and shall not be construed as supervision of the actual construction nor make the Engineer or the Owner responsible for providing a safe place for the performance of work by the Contractor, subcontractors, or suppliers; or for access, visits, use, work, travel or occupancy by any person.

SC-6.13 *Safety and Protection* Add the following Paragraphs immediately after 6.13 B:

1. Public Safety

The Contractor shall have at the work site, copies or suitable extracts of Construction Safety Orders, issued by Cal-OSHA. He shall comply with provisions of these and all other applicable laws, ordinances and regulations.

Contractors must comply with provisions of the safety and health regulations for construction, promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act, as set forth in Title 29 C.F.R.

In order to protect the lives and health of his employees under the Contract, the Contractor shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment or work under the Contract.

The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances and methods and for any damage which may result from their failure or their improper construction, maintenance or operation.

The Owner, the Engineer, and their respective employees' site responsibilities are limited solely to the activities of the Owner's and Engineer's employees on site. These responsibilities shall not be inferred by any party to mean that the Owner or Engineer has responsibility for site safety. Safety in, on, or about the site is the sole and exclusive responsibility of the Contractor alone. The contractor's methods of work performance, superintendence and the Contractor's employees, and sequencing of construction are also the sole and exclusive responsibilities of the Contractor alone.

2. Labor Code Sections 6500 and 6705

The Contractor's attention is directed to the provisions of Labor Code section 6705 concerning trench excavation safety plans. Labor code section 6705 provides in relevant part:

> "No contract for public works involving an estimated expenditure in excess of twenty-five thousand dollars ($25,000), for the excavation of any trench or trenches five feet or more in depth, shall be awarded unless it contains a clause requiring submission by the Contractor and acceptance by the awarding body or by a registered civil or structural engineer, stipulated by the awarding body, to whom authority to accept has been delegated, in advance of excavation, of a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for weather protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards, the plan shall be presented by a registered civil or structural engineer.
>
> "Nothing in this section shall be deemed to require the use of a shoring, sloping, or prospective system less effective than that required by the Construction Safety Orders".

Before execution of the contract by the Owner, the Contractor shall submit to the Owner a copy of his permit for the project issued by Cal-OSHA.

If there is any non-compliance with said detailed plans, the Contractor shall stop forthwith all affected work until there is compliance in the opinion of the State Division of Industrial Safety.

The Owner, Engineer, officers, employees, consultants, and agents of the aforementioned, shall not be liable for costs incurred by the Contractor due to work stoppage, and the Contractor will not be given nor is entitled to an extension of time to complete the Work within the time set forth in this contract due to the work stoppage.

3. Public Contract Code Section 7104

The Contractor's attention is directed to the provisions of Public Contract Code Section 7104. This section requires that any public works contract which involves digging trenches or other excavations that extend deeper than four feet below ground level contain provisions requiring that (i) the Contractor must notify the local agency of certain specified conditions relating to hazardous waste, unexpected subsurface or latent conditions, or unknown physical conditions, (ii) the local agency must promptly investigate any such conditions reported to it and issue a change order if it makes certain findings regarding those conditions, and (iii) in the event of a dispute between the local agency and the Contractor as to whether hazardous waste exists or whether the conditions encountered differ from those expected, the Contractor is not excused from performance, but must proceed with all Work to be performed under the contract.

Full compensation for all costs involved in locating, verifying, protecting, exposing, bracing, and otherwise providing for utilities, and compliance with Public Contract Code Section 7104 shall be included in the amounts bid for Miscellaneous Facilities and Operations or the various items of Work, and no separate payment shall be made therefor.

4. Traffic and Access

The Contractor's operations shall cause no unnecessary inconvenience. The access rights of the public shall be considered at all times. Unless otherwise authorized, traffic shall be permitted to pass through the Work, or a detour approved by the Engineer shall be provided.

The Contractor shall include all costs for the above items in the various bid items, and no separate payment will be made therefore.

5. THREATENED AND ENDANGERED SPECIES PRECAUTIONS

The Contractor shall take necessary precautions to avoid killing threatened and endangered species or damaging their habitat during the course of the Work. See Appendix for ROOT CREEK WATER DISTRICT Kit Fox Policy. All costs for complying with this section shall be included in Bid Item No. 1.

SC-6.14 *Safety Representative* Add the following paragraph immediately after 6.14 A.:

B. ACCIDENTS

The Contractor shall provide, at the site, such equipment and medical facilities as are necessary to supply first aid service to anyone who may be injured in connection with the Work. The Contractor must promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with the performance of the Work, whether on or adjacent to the site, with cause of death, personal injury, or property damage, giving full details and statements of witnesses. In addition, if death or serious injury or serious damage to the property are caused, the accident shall be reported immediately by telephone or messenger to the Engineer. If any claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim.

SC-6.17 *Shop Drawings and Samples* Delete paragraph 6.17 1. a. and insert the following:

a. The Contractor shall submit to the Engineer for general approval five (5) copies of all Submittals, Shop Drawings, setting diagrams and schedules as called for under the various heading of these Specifications as required for the Work of the various trades.

Three (3) sets of all Submittals will be retained by the Engineer, and two (2) set will be returned to the Contractor. The approval of the drawings by the Engineer shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory. Approval of such drawings will not relieve the Contractor of the responsibility for any error that may exist, as the Contractor shall be responsible for the dimensions and design of adequate connections, details and satisfactory construction and operation of the unit itself and its relation to the project as a whole.

SC-6.17 C. *Submittal Procedures* Delete paragraph 6.17 C. 2. and insert the following:

2. Each submittal shall be accompanied with a transmittal signed by the Contractor. Clearly mark each item proposed to be incorporated into the contract and identify in the submittals, with cross-reference to the contract drawings and specifications so as to identify clearly the use for which it is intended. Each submittal shall be consecutively numbered starting with "1". Resubmittals shall use the same number, but shall also have the letter "A" following the number for the first resubmittal, "B" for the second, and so forth. The Contractor's certification stamp shall be worded as follows:

> "It is hereby certified that the material shown and marked in this submittal is proposed to be incorporated into Contract Project Number (105601B3); is in compliance with the Contract Drawings and specifications; can be installed in the allocated spaces; and is submitted for Owner approval.
>
> Certified by _____ Date _____"
>
> The person signing the certification shall be one designated in writing by the Contractor as having that authority. The signature shall be in original ink. Stamped signatures are not acceptable.

Additional costs of the Engineer's review beyond the second submission shall be borne by the Contractor. This applies to all submittals, shop drawings, and substitutions.

SC-6.17 D *Engineer's Review* Add the following paragraph after 6.17 D. 3.:

4. Submittals & Shop Drawings that involve such changes from the Contract Drawings as to change the design concept of the project, the basic methods of assembly, or reduce the quality of the Work, will be returned to the Contractor without checking unless valid reason for the change is established at the time of submission, and such valid reason is accepted.

SC-6.18 *Continuing the Work* Add the following paragraph's after 6.18 A.:

B. Contractor, its subcontractors and their employees, in the performance of work under this contact shall be responsible for exercising the degree of skill and care required by customarily accepted good professional practices and procedures used in work of this type.

Any costs for failure to meet the foregoing standard or to correct otherwise defective work that requires re-performance of the work as determined by the Owner, shall be borne in total by the

Contractor and not the Owner. The failure of a project to achieve the performance goals and objectives of the project is not a basis for requesting re-performance unless the work conducted by the Contractor is deemed by the Owner to have failed the foregoing standard of performance.

In the event the Contractor fails to perform in accordance with the above standard:

1) Contractor will re-perform, at its own expense, any task which was not performed to the reasonable satisfaction of the Owner. Any work re-performed pursuant to this paragraph shall be completed within the time limitations originally set forth for the specific task involved. Contractor shall work any overtime required to meet the deadline for the task at no additional cost to the Owner;
2) The Owner shall provide a new schedule for the re-performance of any task pursuant to this paragraph in the event that re-performance of a task within the original time limitations is not feasible; and
3) The Owner shall have the option to direct the Contractor not to re-perform any task that was not performed to the reasonable satisfaction of the Owner pursuant to application of (1) and (2) above. In the event the Owner directs the Contractor not to re-perform a task, the Owner and Contractor shall negotiate a reasonable settlement for satisfactory work performed. No previous payment shall be considered a waiver of the Owner's right to reimbursement.

Nothing contained in this section is intended to limit any of the rights or remedies which the Owner may have under law.

SC-6.19 *Contractor's General Warranty and Guarantee* Add the following paragraph after 6.19 A.:

A. 1. The Contractor shall provide a written guarantee for all work performed for a period of one year after its final acceptance by the Owner and the filing of the Notice of Completion. Any repairs needed within one year of acceptance due to faulty workmanship, materials, or non-compliance with the Plans or Specifications shall be promptly repaired or corrected at no expense to the Owner.

ARTICLE 9-ENGINEER'S STATUS DURING CONSTRUCTION

SC-9.02 *Visits to Site* Add the following paragraphs immediately after paragraph, 9.02 B.:

C. Review of the Work by the Engineer shall not relieve the Contractor of the obligation to fulfill all conditions of the Contract.

D. No oral or telephonic agreement or conversation with any officer, agent or employee of the Owner or the Engineer, or with the Engineer, either before or after execution of the Contract, shall affect or modify any of the terms or obligations contained in any of the Contract Documents.

E. The Contractor shall pay the Owner for all overtime review in accordance with existing resolutions or fee schedules of the Owner, unless the charges for such inspection have been specifically waived in the Special Provisions. Overtime charges will be made for all reviews on Saturdays, Sundays and State holidays, and hours worked by the reviewer other than those of the normal working day.

ARTICLE 11-COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

SC-11.03 *Unit Price Work* Add the following paragraph to the end of paragraph 11.03 B.:

Where an Increase or a Decrease in the estimated quantity occurs, payment will be made per Section 4-1.03B, per the State Standard Specifications.

SC-11.03 *Unit Price Work* Add the following section after 11.03 D. 3.:

SC-11.04. *Final Pay Quantities* When the estimated quantity for a specific portion of the work is designated on the plans and specifications as a final pay quantity, payment will be based on the final pay quantity per Section 9-1.015, of the State Standard Specifications.

ARTICLE 14- PAYMENTS TO CONTRACTOR AND COMPLETION

SC-14.02 *Progress Payments* Delete 14.02 A and 14.02 B.1. in its entirely and insert the following in its place:

A. Partial payments will be made as the Work progresses at the end of the 5th day of each calendar month following the District's monthly Board Meeting, or as soon thereafter as practicable on estimates made by the Engineer and as approved by the Owner, provided that the Contractor is performing the overall job in a diligent manner. A ten percent (10%) retention of payment will be withheld on progress payments.

The provisions above pertaining to the withholding of specified percentages of the Contract price, may, at the Contractor's request and expense, be satisfied by depositing with the District or State or Federally chartered bank as escrow agent, securities equivalent to the amount to be withheld. Securities eligible for investment include those listed in California Government Code Section 16430 and bank and savings and loan certificates of deposit. The escrow agent shall pay such securities to the Contractor upon satisfactory completion of the Contract. The Contractor shall be the beneficial owner of such securities and shall receive any interest thereon. A form to allow the substitution of securities that is acceptable to the Owner is the "Escrow Agreement for Security Deposits in Lieu of Retention" form that is contained in Part 5, Section 22300 of the Public Contract Code.

SC-14.02 C. *Payment Becomes Due* Add the following paragraph after 14.02 C. 1.:

2. The Contractor is hereby notified that delays of as much as 60 days may occur in his receipt of payment for progress pay estimates and the final pay estimate. The Contractor is urged to process his request for payment in a timely matter to minimize payment delays.

SC-14.02 D. *Reduction in Payment* Add the following insert after 14.02 D. 1. d.:

e) Failure of the Contractor to make payments properly to subcontractors or for material or labor.

f) A reasonable doubt that the Contract can be completed for the balance then unpaid.

g) Damage to another Contractor.

h) Failure of the Contractor to keep his work progressing in accordance with his time schedule.

Where work on unit price items is substantially complete but lack clean-up and/or corrections ordered by the Engineer, amounts shall be deducted from unit prices in partial payment estimates to amply cover such clean-up and corrections.

SC-14.07 B. *Engineer's Review of Applications and Acceptance* Delete the first sentence in its entirety under 14.07 B. 1. and insert the following sentences in its place:

B. 1. Final review of the Work shall be made jointly by the Owner and Engineer. Such review shall be made as soon as practical after the Contractor has notified the Owner in writing that the Work is ready for such review. If, in the Owner's judgment, the Work has been completed satisfactorily, the Owner will accept the Work and determine the date that the Work is completed. This will be the date when the Contractor is relieved from responsibility to protect the Work. This will also be the date to which liquidated damages will be computed.

Neither the acceptance of the Work by the Owner nor the payment of all or part of the sum due the Contractor hereunder shall constitute a waiver by the Owner of any claim which the Owner may have against the Contractor or Surety under this Contract or otherwise.

SC-14.07 B. *Engineer's Review of Applications and Acceptance* Add the following new paragraphs after 14.07 B.1.

Upon completion and acceptance of the Work, the Engineer shall issue an opinion that the Work has been completed and accepted by him under the conditions of this Contract and shall make and approve the final estimate of the Work. The entire balance found to be due the Contractor including the retained percentages, but excepting such sums as may be lawfully retained by the Owner, shall be paid to the Contractor. Such payment shall be contingent, however, upon the submission by the Contractor of evidence satisfactory to the Owner that all claims for labor, material and any other outstanding indebtedness in connection with this Contract have been paid.

If after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor and the Engineer so states, the Owner shall, upon the opinion of the Engineer and without terminating the Contract, make payment for the balance due for that portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claim.

SC-14.07 C *Payment Becomes Due* Delete 14.07 C. 1. in its entirety and insert the following in its place:

C.1. Final payment shall not be due until thirty-five (35) days after the Notice of Completion has been recorded, in compliance with the Code of Civil Procedure of the State of California.

ARTICLE 15- SUSPENSION OF WORK AND TERMINATION

SC-15.01 *Owner May Suspend Work* Add the following paragraph immediately after 15.01 A.

B. If Work is suspended through no fault of the Owner, all expenses and losses incurred by the Contractor during such suspensions shall be borne by him. If the Contractor fails to properly provide for public safety, traffic and protection of the Work during period of suspension, the Owner may elect to do so and deduct the cost from moneys due the Contractor. Such action will not relieve the Contractor from any liability.

SC-15.02 *Owner May Terminate for Cause* Add the following new paragraph immediately after paragraph 15.02 F.:

G. If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed to take over his affairs, the Owner may serve written notice on the Contractor and the Surety of his Performance Bond stating its intention to exercise one of the remedies hereinafter set forth and the grounds upon which the Owner bases its right to exercise such remedy.

In any event, unless the matter complained of is satisfactorily cleared within ten (10) days after service of such notice, the Owner may, without prejudice to any other right or remedy, exercise one of such remedies at once, having first obtained a certificate from the Engineer that sufficient cause exists to justify such action.

(a) The Owner may terminate the services of the Contractor, which termination shall take effect immediately upon service of notice thereof on the Contractor and his Surety, whereupon the Surety shall have the right to take over and perform the Contract. If the Surety does not commence performance of the Contract within ten (10) days after service of the notice of termination, the Owner may itself take over the Work, take possession of and use all materials, tools, equipment and appliances on the premises and prosecute the Work to completion by such means as it shall deem best. In the event of such termination of his service the Contractor shall not be entitled to any further payment under his Contract until the Work is completed and accepted. If the Owner takes over the Work and if the unpaid balance of the Contract Price when the Owner takes over the Work exceeds the cost of completing the Work, including compensation for any damages or expenses incurred by the Owner through the default of the Contractor, such excess shall be retained by the Owner. In such event, if such costs, expenses, and damages shall exceed such unpaid balance of the Contract Price, the Contractor and his Surety shall pay the difference to the Owner.

(b) The Owner may take control of the Work and either make good the deficiencies of the Contractor itself or direct the activities of the Contractor in doing so, employing such additional help as the Owner deems advisable. In such event, the Owner shall be entitled to collect from the Contractor and his Surety, or to deduct from any payment then or thereafter due the Contractor, the costs incurred by it through the default of the Contractor provided the Engineer approves the amount thus charged to the Contractor.

(c) The Owner may require the Surety on the Contractor's Performance Bond to take control of the Work at once and see to it that all the deficiencies of the Contractor are made good with due diligence. As between the Owner and the Surety, the costs of making good such deficiencies shall all be borne by the Surety.

If the Surety takes over the Work, either upon termination of the services of the Contractor or upon instructions from the Owner to do so, the provisions of the Contract Documents shall govern in respect to the Work done by the Surety, the Surety being substituted for the Contractor as to such provisions, including provisions as to payment for the Work and provisions of this section as to the right of the Owner to do the work itself or to take control of the Work.

ARTICLE 16- DISPUTE RESOLUTION

SC-16.01 *Method and procedures* Delete the entire section and replace with the following:

A. Pursuant to Public Contract Code sections 20104 et seq., if applicable, any "claim" as defined in Public Contract Code section 20104 that cannot be resolved by the procedure given in SC-10.05, shall be filed with the District in writing within 30 days of Engineer's action under paragraph, 10.05 C or D. The District shall respond to any final claim under the Contractor as provided in Public Contract Code section 20104.2. If such claim is not resolved, such claim shall be mediated and arbitrated pursuant to Public Contracts Code sections 20104.2 through 20104.6. A copy of Public Contract Code section 20104 is included as an Appendix to these Specifications.

SECTION 02115

CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Clear, grub, remove, and dispose of all debris, trees, stumps, roots, and other protruding obstructions within the clearing limits.

B. Remove trees as required by Construction. Trees for removal shall be approved by Owner.

C. Protect trees that are not designated to be removed.

1.2 RELATED WORK

A. Section 02200 - Earthwork

1.3 REGULATORY REQUIREMENTS

A. Obtain required permits from Madera County.

B. Dispose of removed materials in an approved disposal facility.

1.4 REFERENCES

A. Section 18 - Clearing and Grubbing, State Standards

B. Section 19 - Earthwork, State Standards

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.1 CLEARING AND GRUBBING

A. Clear the specified areas by removing, above the natural ground surface, all vegetable growth such as trees, shrubs, logs, upturned stumps, roots of down trees, brush, and similar material.

B. Grub the specified areas below the natural ground surface, except in embankment areas where the grading plane is 2-feet or more above the natural ground, to a depth necessary to remove all boulders, stumps, roots, buried logs, and other objectionable material including rock and concrete. Remove and stockpile the top 4" of topsoil in any area which is to receive structural fill.

3.2 PRESERVATION

A. If indicated or required, preserve trees, plants, rock outcroppings, or other features designated to remain. Protect trees and plants from damage; fell trees in a manner which shall not injure standing trees, plants and improvements which are to be preserved.

END OF SECTION

SECTION 02200

EARTHWORK

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Excavate earth and rock as necessary to allow the installation or construction of various items of work, regardless of character and subsurface conditions.

B. Excavate foundation for building, concrete tanks and other concrete structures.

C. Haul excavated material for use as embankment material.

D. Backfill holes, pits and other depressions; such as locations of demolished structures.

E. Place, grade, and compact embankment for roads, road approaches, driveways, and connections to allow placement of the road structural section as indicated in the Plans.

F. Prepare foundation for placing other material thereon.

G. Place backfill for structures and other facilities.

H. Remove and replace unsuitable materials.

I. Dispose of excess material, to the most extent possible by spreading around open areas using slope flattening and other methods to create a natural appearance.

J. Dispose of unsuitable and excess material off-site.

1.2 RELATED WORK

A. Section 02115 - Clearing and Grubbing
B. Section 02610 - Pipe and Fittings
C. Section 02640 - Valves, Gates and Appurtenances

1.3 PROTECTION

A. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.

B. Notify Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.

C. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.

D. Grade excavation top perimeter to prevent surface water run-off into excavation.

1.4 QUALITY ASSURANCE

A. Test relative compaction in conformance with the provisions of Section 19-5, State Standards.

1.5 DEFINITION

A. Unsuitable Material: Unsuitable material is material determined to be 1) incapable of being compacted to specified density using ordinary methods at optimum moisture content; or 2) too wet to be properly compacted if circumstances prevent satisfactory in-place drying prior to incorporation into the work; or 3) otherwise unsuitable for the planned use.

1.6 REFERENCES

A. Section 16 - Clearing and Grubbing, State Standards
B. Section 19 - Earthwork, State Standards
C. Section 17 - Watering, State Standards
D. Section 7-1.0H - Use of Pesticides, State Standards

1.7 SUBMITTALS

A. Submit plans as required for worker protection against caving ground in excavation. Submittals shall be in accordance with the Standard General Conditions and the Supplementary Conditions.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Embankment and backfill material shall be as required by Section 19, "Earthwork," State Standards.

B. Embankment material for the roadway shall be selected to the maximum practical extent from excavation. Deficiency of material, if any, may be made up from other sources, as approved.

C. Sterilizing agent as specified.

D. Gravel: Pit run, natural stone; free of shale, clay, friable materials and debris; graded in accordance with 1-1/2" x 3/4" aggregate grading in Section 90-3, State Standards.

E. Pea Gravel: Natural stone; washed, free of clay, shale, organic matter; 1/4" minimum to 5/8" maximum size.

F. Sand: Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter, graded in accordance with ANSI/ASTM C136 within the following limits:

Sieve Size	Percent Passing
No. 4	100
No. 200	5

G. Class 2 Aggregate Base: Material as specified for ¾" maximum grading in Section 26, State Standards, unless otherwise specified.

PART 3 - EXECUTION

3.1 PREPARATION

A. Identify required lines, levels, contours, and datum.

3.2 EXCAVATION

A. Excavate the specified areas as shown, including rock.

3.3 EMBANKMENT CONSTRUCTION

A. Embankment construction shall consist of constructing embankments in conformance with provisions in Section 19-6, State Standards, except that large rocky material or hard lumps will not be allowed in the upper 18-inches of the embankment.

3.4 TRENCH EXCAVATION AND BACKFILL

A. Excavation and backfill of trenches used for construction of communications, power, process piping, and water distribution systems shall conform to Section 19, "Earthwork", State Standards.

B. Excavation shall be by open cut except that short sections of a trench may be tunnelled if the utilities can be safely and properly installed and backfill can be properly compacted in such tunnel sections.

C. The bottom of trenches for pipe shall be scarified to a depth of 4-inches below the staked invert of the pipe to allow for bedding. Bedding shall conform to Section 19, "Earthwork", State Standard.

D. Backfilling and cleanup work shall be accomplished as sections of pipe or conduit are tested and approved. Vehicular travel through the work site shall be impeded or obstructed as little as possible.

3.5 EXCAVATION FOR CONCRETE STRUCTURES

A. If soil conditions in excavations indicate that footings need not be carried down as deep as shown, or must be carried deeper, the changes shall be made by the Contractor as approved by Owner, before excavation by Contractor.

3.6 MOISTURE CONTROL

A. Water development, hauling, and application shall be in accordance with Section 17, "Watering", State Standards.

3.7 SURPLUS MATERIAL

A. Unless otherwise specified, surplus excavated material shall be used to widen embankments uniformly or to flatten slopes, or it shall be disposed of in a uniform manner along the adjacent roadway around the site or otherwise as approved.

3.8 UNSUITABLE MATERIAL

A. Unsuitable material shall be excavated and disposed of in a uniform manner within the Owner's property as approved, however all disposal shall be approved by the Owner prior to initiating the work.

END OF SECTION

SECTION 02222

EXCAVATION

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Structure excavation.

B. Shoring excavations.

1.2 RELATED WORK

A. Section 02200 - Earthwork.

B. Section 02223 - Backfilling.

C. Section 02225 - Trenching.

1.3 PROTECTION

A. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.

B. D. Grade excavation top perimeter to prevent surface water run-off into excavation.

1.4 SUBMITTALS

A. Submit plans as required in the Standard General Conditions and the Supplementary Conditions, for worker protection against caving grounds in excavation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Native Material: Excavated material, graded free of lumps larger than 3 (three) inches and debris.

B. Pea Gravel: Mineral aggregate graded 1/4 inch to 5/8 inch; free of soil, subsoil, clay, shale, or foreign matter.

C. Drain Rock: Mineral aggregate graded 3/4 inch to 1 inch; free of soil, subsoil, clay, shale, or foreign matter.

PART 3 - EXECUTION

3.1 PREPARATION

A. Identify required lines, levels, contours, and datum.

3.2 EXCAVATION

A. Excavate subsoil required for building foundations, construction operations, and other work.

B. Slope height, slope inclination, or excavation depths (including utility trench excavations) should in no case exceed those specified in local, state, or federal safety regulation, e.g. OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations.

C. Excavation shall not interfere with normal 45º bearing splay of any foundation.

D. Hand trim excavation and leave free of loose matter.

E. Remove lumped subsoil, boulders, and rock.

F. Correct unauthorized excavation at no cost to Owner.

G. Fill over-excavated areas under structure bearing surfaces in accordance with direction by Engineer.

H. Stockpile excavated material in area designated on site.

3.3 FIELD QUALITY CONTROL

Provide for visual inspection of bearing surfaces under provisions of Section 19.4, State Standards.

END OF SECTION

SECTION 02223
BACKFILLING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Site backfilling.

B. Utilities trench backfilling.

C. Compaction requirements.

1.2 RELATED WORK

A. Section 02200 - Earthwork

B. Section 02225 - Trenching

1.3 REFERENCES

A. ANSI/ASTM C136 - Sieve Analysis of Fine and Coarse Aggregates.

B. ANSI/ASTM D1557 - Moisture-Density Relations of Soils and Soil-Aggregate Mixture Using 10 lb (4.54 kg) Rammer and 18-inch (457 mm) Drop.

C. Section 6 - Control of Materials, State Standards.

D. Section 26 - Aggregate Bases, State Standards.

E. Section 19 - Earthwork, State Standards.

1.4 TESTS

A. Tests and analysis of fill materials will be performed in accordance with ANSI/ASTM D1557.

PART 2 - PRODUCTS

2.1 SELECT FILL MATERIALS

A. Type A - Gravel: Pit run, natural stone; free of shale, clay, friable materials and debris; graded in accordance with 1-1/2" x 3/4" aggregate grading in Section 90-3, State Standards.

B. Type B - Pea Gravel: Natural stone; washed, free of clay, shale, organic matter; 1/4" minimum to 5/8" maximum size.

C. Type C - Sand: Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter, graded in accordance with ANSI/ASTM C136 within the following limits:

Sieve Size	Percent Passing
No. 4	100
No. 200	5

D. Type D - Class 2 Aggregate Base: Material as specified for 3/4" maximum grading in Section 26, State Standards.

2.2 COMMON FILL MATERIALS

A. Native material free of stones larger than 3-inch size, and debris.

PART 3 - EXECUTION

3.1 INSPECTION

A. Verify areas to be backfilled are free of debris, snow, ice, or water, and ground surfaces are not frozen.

3.2 PREPARATION

A. When necessary, compact subgrade surfaces to density requirements for backfill material.

B. Cut out soft areas of subgrade not readily capable of in-situ compaction. Backfill with Type A or Type B and compact to density equal to requirements for subsequent backfill material.

3.3 BACKFILLING

A. Backfill areas to contours and elevations. Use unfrozen materials.

B. Backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, or spongy subgrade surfaces.

C. Place and compact select fill materials in continuous layers not exceeding 6-inches loose depth.

D. Place and compact common fill material in continuous layers not exceeding 8-inches loose depth.

E. Maintain optimum moisture content of backfill materials to attain required compaction density.

F. Backfill against supported foundation walls. Backfill simultaneously on each side of unsupported foundation walls.

G. Remove surplus backfill materials from site.

H. Leave stockpile areas completely free of excess fill materials.

3.4 TOLERANCES

A. Top Surface of Backfilling: Plus or minus 1-inch.

3.5 FIELD QUALITY CONTROL

A. Compaction testing will be performed in accordance with Section 6-3, State Standards.
   1. Mass excavation.
      a. Areas under structures or roadways shall be compacted to 95% of maximum density.
      b. All other areas shall be compacted to 90% of maximum density.
      c. See Section 02225 for trench backfill requirements.

B. If tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to Owner.

END OF SECTION

SECTION 02225
TRENCHING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Excavate trenches for utilities and onsite piping.

B. Compacted bed and compacted fill over utilities.

C. Compaction requirements.

1.2 RELATED WORK

A. Section 02260 – Finish Grading:

B. Section 02222 – Excavation

C. Section 02223 - Backfilling

1.3 REFERENCES

A. ANSI/ASTM C136 - Sieve Analysis of Fine and Coarse Aggregates.

B. ANSI/ASTM D698 - Tests for Moisture-Density Relations of Soils and Soil-Aggregate Mixture Using 5.5 lb (2.49 kg) Rammer and 12-inch (305 mm) Drop.

C. ANSI/ASTM D1556 - Density of Soil in Place by Sand-Cone Method.

D. ANSI/ASTM D1557 - Moisture-Density Relations of Soils and Soil-Aggregate Mixture Using 10 lb (4.54 kg) Rammer and 18-inch (457 mm) Drop.

1.4 TESTS

A. Tests and analysis of fill materials will be performed in accordance with ANSI/ASTM D1557.

1.5 PROTECTION

A. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.

B. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.

C. Grade excavation top perimeter to prevent surface water run-off into excavation.

1.6 SUBMITTALS

A. Submit plans as required for worker protection against caving ground in excavation, Submittals shall be in accordance with the Standard General Conditions and the Supplementary Conditions.

PART 2 - PRODUCTS

2.1 SELECT BED AND FILL MATERIALS

A. Conform to Section 02223, "Backfilling".

PART 3 - EXECUTION

3.1 INSPECTION

A. Verify areas to be backfilled are free of debris, snow, ice, or water, and surfaces are not frozen.

3.2 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. When necessary, compact subgrade surfaces to density requirements for backfill material.

3.3 EXCAVATION

A. Cut trenches sufficiently wide to enable installation of utilities and allow inspection.

B. Hand trim excavation and leave free of loose matter. Hand trim for bell and spigot pipe joints.

C. Remove lumped subsoil, boulders, and rock.

D. Excavation shall not interfere with normal 45° bearing splay of foundations.

E. Correct unauthorized excavation at no cost to Owner.

F. Fill over-excavated areas under pipe bearing surfaces in accordance with direction by Engineer.

G. Stockpile excavated material in area designated on site.

3.4 BACKFILLING

A. Support pipe during placement and compaction of bedding fill.

B. Backfill trenches to contours and elevations. Backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, or spongy subgrade surfaces.

C. Place and compact select fill materials in continuous layers not exceeding 6-inches loose depth.

D. Place and compact common fill material in continuous layers not exceeding 8-inches loose depth.

E. Employ a placement method so not to disturb or damage pipe.

F. Maintain optimum moisture content of backfill materials to attain required compaction density.

G. Remove surplus backfill materials from site.

H. Leave stockpile areas completely free of excess fill materials.

3.5 TOLERANCES

A. Top Surface of Backfilling: Plus or minus 1-inch.

3.6 FIELD QUALITY CONTROL

A. Compaction testing will be performed in accordance with Section 6-3, State Standards and under provisions of Section 02223 Backfilling.

1. Trench excavation.
   a. Areas under structures or roadways shall be compacted to 95% of maximum density.
   b. All other areas shall be compacted to 90% of maximum density.
   c. See Section 02223 for mass area backfill requirements.

END OF SECTION

SECTION 02260

FINISH GRADING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. All finished grading.

1.2 RELATED WORK

1. Section 02222 - Excavation
2. Section 02223 - Backfilling
3. Section 02503 - Storm Water Pollution Prevention Plan

A. Location of Work: All areas within limits of grading and all areas outside limits of grading which are disturbed in the course of the work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Soil:

1. Original surface soil typical of the area.
2. Capable of supporting native and specified plant growth.

2.2 TOLERANCES

A. Finish Grading Tolerance: 0.1 FT plus/minus from required elevations.

PART 3 - EXECUTION

3.1 PREPARATION

A. Correct, adjust and/or repair rough graded areas.

1. Bring all sub-grades to specified contours, even and properly compacted.

B. Remove all stones and debris over 2 inches in any dimension.

3.2 ACCEPTANCE

A. Upon completion, obtain Engineer's acceptance of grade and surface.

END OF SECTION

SECTION 02270

EROSION CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work of this section consists of protecting from erosion all areas disturbed by new construction and construction operations, including areas disturbed by demolition, earthwork, and fence, piping and equipment installation.

1.2 SUBMITTALS

A. As specified in the Standard General Conditions and the Supplementary Conditions.

PART 2 - PRODUCTS

2.1 RICE STRAW

A. Sterile rice straw.

PART 3 - EXECUTION

3.1 PREPARATION

A. Loosen areas to be protected by raking or other approved method before application. Maintain grading and drainage patterns.

3.2 PLACING STRAW

A. Exercise particular care to ensure application is made uniformly.

B. The Contractor shall install and maintain protected areas as required by the Storm Water Pollution Prevention Plan.

3.3 ACCEPTANCE

A. Application will be considered complete when all soil disturbing activities are completed and all unpaved disturbed areas have an even application of straw. No gaps (larger than 4 inches x 4 inches) will be permitted.

END OF SECTION

SECTION 02503

STORM WATER POLLUTION PREVENTION PLAN

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work of this section consists of implementing measures to prevent storm water pollution during construction activities, in accordance with Federal, State, and local regulations, and in accordance with the Storm Water Pollution Prevention Plan (SWPPP) as provided by the Government. The SWPPPs can be amended, by the Owner and/or Contractor, as needed should revisions be determined necessary during construction activities.

1.2 SUBMITTALS

A. As specified in the Standard General Conditions and the Supplementary Conditions.

B. Submit, prior to beginning work and within 10 days of issuance of the Notice to Proceed.

C. Plans showing proposed arrangements and methods for control of erosion, sedimentation, and pollutant conveyance in storm water resulting from demolition activities. Show that the plans satisfy all Federal and State NPDES permit requirements, as well as the Storm Water Pollution Prevention Plan.

D. Provide sufficient information to permit evaluation of:

1. Catch basin protection measures.
2. Surface restoration.

E. Submit narrative describing the means/methods by which the maintenance/inspection procedures will be accomplished. This shall include a schedule for inspection/monitoring of all storm water pollution prevention measures.

1.3 QUALITY ASSURANCE

A. Control the rate and effect of dewatering in such a manner as to avoid all objectionable settlement and subsidence as approved by the Contracting Officer and to assure the integrity of the finished work.

B. Where critical structures or facilities exist immediately adjacent to areas of proposed dewatering, establish reference points and observe at frequent intervals to detect any settlement that may develop. Conduct the dewatering operation in a manner that protects adjacent natural resources and facilities. Cost of repairing all damage to adjacent resources and facilities shall be the sole responsibility of the Contractor.

C. Before commencing grading, excavation or filling in any part of the site, Contractor shall construct swales, diversion channels, sterilized rice straw inlet protection barriers, sedimentation traps, and other measures to guide runoff away from the work area and to capture eroded material before it reaches natural water courses. The measures shall be in accordance with the reviewed Storm Water Pollution Prevention Plan.

D. Arrange demolition activities to minimize erosion to the maximum practical extent. Clearing, excavation, and grading shall be limited to those areas of the Project site necessary for demolition. Minimize the area exposed and unprotected.

E. Clearly mark and delineate the work limits activities. Equipment shall not be allowed to operate outside the limits of work or to disturb existing vegetation. Excavation and grading shall be completed during the dry season to the maximum extent possible.

1.4 REGULATORY REQUIREMENTS

A. Contractor shall comply with all provisions of the Federal and State NPDES permit program, as well as any local regulations.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. Before the work begins, sufficient equipment shall be available on the site to assure that the operation and adequacy of the erosion control plans can be continuously maintained.

2.2 EROSION CONTROL MEASURES

A. Erosion control measures shall consist of sterilized rice straw inlet protection barriers and silt fences and other means as determined by the SWPPP.

B. Sterilized rice straw bales shall be used to control run-on and run-off into other demolition areas, including creeks, streams, marshes, access roads, well areas, and the staging areas. Sterilized rice straw bales shall also be used to form inlet protection barriers.

C. Erosion control measures shall be used to contain only direct precipitation in the construction zone. The contained water shall be allowed to percolate into the ground or drain slowly through the inlet protection barriers.

PART 3 - EXECUTION

3.1 GENERAL DESCRIPTION

A. Erosion and sedimentation measures shall include, but may not be limited to: sterilized rice straw bales (for inlet protection barriers, run-on control, and staging area berms). If berms are used, the Contracting Officer shall approve locations and sizes. No imported soil may be used. Berms shall be completely removed as per Contracting Officers approval.

B. Furnish, install, maintain, and operate necessary control measures and other equipment necessary to prevent erosion. Temporary measures shall be to Contractor's own design and Contractor shall be solely responsible for risks related to the management of erosion control during construction.

3.2 METHODS

A. As described in the SWPPP and approved by the Contracting Officer.

3.3 MAINTENANCE OF TEMPORARY FACILITIES

A. Inspect erosion and sediment control structures daily and as specified in the SWPPP.

B. Sediment shall be removed from behind sterilized rice straw bales after each storm by Contractor.

C. If areas are seeded, contractor shall examine those areas during or after major storms to check that grass is becoming established.

3.4 DISPOSAL OF SEDIMENT FROM STORM WATER POLLUTION CONTROL STRUCTURES

A. Sediment excavated from temporary sediment control structures shall be disposed on the site with general fill or with topsoil. Sediment shall be allowed to dry out as required before reuse. Any trash shall be removed before reuse.

B. Contractor shall place the sediment removed from traps and other structures where it will not enter a storm drain or water course and where it will not immediately reenter the basin.

3.5 REMOVAL OF TEMPORARY STORM WATER POLLUTION CONTROL MEASURES

A. Temporary control measures shall be removed once grading is completed and slopes have stabilized, permanent drainage works have been constructed. Contractor shall not breach any temporary control structures until the associated catchment area is complete unless approved by the Contracting Officer.

END OF SECTION

SECTION 02610

PIPE AND FITTINGS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Furnish, install, and test all pipe, fittings, and appurtenances as indicated and as specified.

1.2 RELATED WORK

A. Section 02200 - Earthwork

B. Section 02223 - Backfilling

C. Section 02640 - Valves and Appurtenances

D. Section 09900 - Painting

1.3 SUBMITTAL REQUIREMENTS

A. Shop drawings, manufacturer's literature, and guarantees shall be submitted for review.

B. Shop drawings of mechanical restrained joint assemblies when used in-lieu of concrete thrust blocks.

C. Submittals shall be in accordance with the Standard General Conditions and the Supplementary Conditions.

1.4 REFERENCES

A. Uniform Plumbing Code published by the International Association of Plumbing and Mechanical Officials, 1985.

B. American Water Works Association Standards published by the American Water Works Association, in effect September 1, 1986.

PART 2 - PRODUCTS

2.1 DUCTILE IRON PIPE

A. General: Ductile iron pipe shall conform to ANSI A21.51 (AWWA C151), and shall be Class 52 unless shown otherwise. Pipe for grooved or flanged joints shall be no less than Class 53.

B. Joints:

1. Buried pipe and pipe fittings shall have push-on joints or mechanical joints conforming to AWWA C111. Flanged joints, sleeve-type mechanical couplings, and grooved-type couplings shall be used when shown.

2. For push-on joints, shape of pipe ends shall conform to ANSI A21.11 (AWWA C111). Gaskets and lubricant for pipe and fittings shall conform to ANSI A21.11 (AWWA C111).

3. For mechanical joints, dimensional and material requirements for pipe ends, glands, bolts, nuts, and gaskets shall conform to ANSI A 21.11 (AWWA C111).

4. For flanged joints, ends of pipe and fittings shall be provided with cast iron flanges conforming to ANSI A21.10 (AWWA C115), except that the flanges for pipe shall be screwed-on type with threads conforming to ANSI B16.1 for 150 lb. class. Bolts, nuts, and gaskets for flanged connections shall conform to ANSI B16.1. Gaskets shall be plain rubber gaskets, 1/8-inch in thickness. For grooved joints, groove specifications shall conform to ANSI/AWWA C606.

C. Fittings: Fittings with push-on mechanical joint grooved joints and flanged ends shall conform to ANSI A21.10 (AWWA C110). Fittings shall have pressure rating at least equivalent to that of the pipe. Fittings shall have cement-mortar lining equivalent to that of the pipe lining.

D. Coating and Lining: Pipe shall be bituminous seal-coated and cement-mortar lined. The lining shall conform to AWWA C104.

2.2 STEEL PIPE

A. General: Steel pipe 12-inches in diameter and smaller shall conform to the requirements of the "Specifications for Black and Hot-Dipped Zinc-Plated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses (ASTM A120), and shall be "Standard Weight" Steel Pipe larger than 12 inches in diameter shall be ASTM A139, AWWA C200, wall thickness not less than 0.18 inches.

B. Joints: Pipe 4-inches in diameter and larger shall be flanged or shall have grooved ends for Victaulic-type couplings. Where shown on the Plans, the pipe shall be flanged or plain end for flanged coupling adapters. Flanges shall be standard 150 psi flanges meeting the requirements of ANSI B16.1. Flanges shall be furnished with flat faces. Pipe smaller than 4 inches shall have screwed or grooved joints unless shown otherwise on the Plans.

C. Fittings: All fittings shall be flanged cast or ductile iron, screwed malleable iron, or Victaulic-type fittings. The Contractor may substitute Victaulic-type fittings for flanged fittings or screwed fittings unless the particular joint requires a specific end for compatibility with a valve or special fitting. All Victaulic-type fittings shall be of strength equal to the pipes with lining and coatings equivalent to that specified for the pipe.

D. Unless otherwise specified or noted in the Plans, all steel pipe 2-1/2 inch and smaller shall be Hot-Dipped galvanized, and pipes larger than 2-1/2 inch shall be black steel with coal tar epoxy lining with minimum 10 mil dry thickness. Exterior surfaces of all pipe shall be shop primed. Finish coatings shall be as specified in Section 09900 - Painting.

2.3 POLYVINYL CHLORIDE WATER PIPE (PVC)

A. General: PVC pipe 4-inches and larger in diameter shall conform to AWWA C900, unless otherwise specified. The pipe shall be Class 150 unless shown otherwise. Each standard or random length shall have been factory tested to four times the service pressure rating of the pipe. Each length of pipe shall be marked with the manufacturer's name, nominal size, pressure classification, and date of manufacture.

B. Joints: Joints shall be push-on type couplings or integral socket bell PVC pipe unless otherwise shown with rubber gaskets conforming to ASTM D 3139 and ASTM F 477. Integral socket bells of PVC pipe or separate couplings shall meet the same strength requirements as that of the pipe. All component parts of each joint including gaskets and coupling shall be clearly marked for use with the pipe for which they are intended.

C. Fittings: Fittings shall be of ductile iron conforming to ANSI A21.10 (AWWA C110) with push-on joint bell to fit the particular make of pipe furnished. Fittings shall have a pressure rating at least equivalent to that of the pipe used and shall be cement-mortar lined in accordance with ANSI A21 (AWWA C104).

2.4 POLYVINYL CHLORIDE SCHEDULE PIPE

A. General: PVC schedule pipe up to 4 inches in diameter shall be ASTM D1785, Schedule 40 and 80 as specified or indicated in the Plans. Pipe material shall have cell classification 12454-B and have NSF seal.

B. Joints: Joints shall be solvent weld joints between pipes, and flanged or threaded at valve or fittings. Flange diameter and drilling shall conform to ANSI B16.5, class 150. Solvent cement for joints shall conform to ASTM D2564 and primer shall conform to ASTM F656.

C. Fittings: PVC fittings shall conform to ASTM D2466, all classifications 12454-B, bearing NSF seal.

2.5 POLYVINYL CHLORIDE GRAVITY SEWER PIPE (PVC)

A. General: PVC pipe 4-inches and larger in diameter shall conform to ASTM D 3034, SDR 35. Each length of pipe shall be marked with the manufacturers name, nominal size and ASTM designation. Pipe shall be made of PVC plastic having a cell classification of 12454B or 12364B as defined in ASTM D1784 and shall have SDR of 35 and minimum pipe stiffness of 46 PSI according to ASTM Test D2412.

B. Joints: Pipe shall include an integral bell section with a factory assembled rubber ring gasket conforming to ASTM F477. Joint shall conform to ASTM D 3212. Bells shall meet the same strength requirements as that of the pipe.

C. Fittings: Fittings shall be supplied by the pipe manufacturer and shall meet the strength requirement of the pipe. Integral bells and gaskets shall conform to the requirements for joints in this section. Fittings shall be marked with nominal size, manufacturers name and ASTM designation.

D. PVC sewer pipe 3 inches to 6 inches, for chemical drain shall conform to ASTM D-2729 and D2949. Fittings shall be PVC with socket welded joints and shall conform to ASTM D2949 and ASTM D2665.

2.6 GROOVED COUPLINGS

A. Groove dimensions shall conform to AWWA C606.

B. Grooved couplings for ductile iron shall be Victaulic Style 31; for steel pipe shall be Victaulic Style 77 or equal.

C. Victaulic Flange Adapter shall be Style 341.

D. Grooved coupling for high density polyethylene pipe shall be Victaulic 995 or 997 style.

2.7 FLANGED JOINTS

A. Flange shall conform to ANSI B16.5, Class 150.

B. Flange bolts and nuts shall conform to ASTM A307.

C. Gaskets for water service shall be ASTM D133 O, Grade I, red rubber, ring type, 1/8 inch thick.

D. Gaskets for other piping services shall meet the requirements and recommendations suitable for the service.

2.8 FLEXIBLE EXPANSION COUPLINGS

A. Flexible couplings shall be Rockwell No. 611, Dresser Style 63, or approved equivalent.

B. Flexible rubber coupling shall be flexible joints, which includes a tube, body cover and flanges. The tube shall be a leakproof liner and the body shall consist of fabric and rubber compound, reinforced with steel wire or rings for strength. Flexible rubber coupling shall be either a single arch or double arch construction as indicated in the Plans. Couplings shall have control rods to limit extension and flanges shall have backing rings. Flexible couplings shall have minimum pressure ratings of 100 psi; couplings installed on suction of pumps shall have a minimum vacuum (pressure) rating of 30 inches Hg column. Flexible coupling shall have Buna N liner and cover and shall be manufactured by Red Valve Company Inc., Metraflex Company or equal.

2.9 MARKER TAPE FOR BURIED PIPING

A. For non-metallic piping, marker tape shall be metallic foil bonded to plastic film not less than 2-inches wide. The adhesive shall be colored and compatible with the foil and film. Film shall be inert polyethylene plastic with thickness not less than 1 mil. Foil shall be not less than 1 mil thick. For metallic piping, the foil layer may be omitted.

B. The buried utility line tape shall be identified with imprint such as "Caution: Water Line Below" and the identifications repeated at approximately 24-inch intervals. Letters shall be 3/4-inch high minimum.

C. Marking and warning tape shall be as manufactured by Lineguard, Inc., Allen Systems, Inc., Paul Potter Associates, all of Wheaton, Illinois; Reef Industries, Houston, Texas.

2.10 CONCRETE FOR THRUST BLOCKS

A. Concrete shall have a minimum compressive strength of 2,000 psi after 28 days.

2.11 JOINT RESTRAINT COUPLINGS

A. Mechanical joint restraint coupling shall be of the type that utilizes the follower gland, and shall consist of several individual lug bolts with gripping mechanism that prevents the joints from pulling apart. Glands shall be ductile iron conforming to ASTM A536-80, and dimensions shall be compatible to be used with standard mechanical joint fittings for ductile rim pipe. The mechanical restraint joint shall have a minimum working pressure rating of 100 psi with a safety factor of not less than 2. Restrained joints shall have twist off nuts to insure proper installation of restraining grip mechanism. Mechanical joint restrained coupling shall be EBAA, Iron, Inc. MEGALUG; or equal.

B. Restrained joint fittings shall meet Uni-B-13 for PVC and be FM and UL approved through 12 inch for both ductile iron and PVC.

C. Restrained joint fittings for high density polyethylene pipe shall be Victaulic 995 or 997 style coupling.

PART 3 - EXECUTION

3.1 HANDLING AND DISTRIBUTION OF MATERIALS

A. No more than one week's supply of material shall be distributed in advance of pipe laying operations, unless otherwise approved or required.

B. Before laying, pipe shall be inspected for cracked, broken, or defective pieces. Pipe shall be carefully lowered into the trench to prevent damage. All dirt or other foreign matter shall be removed from inside the pipe before lowering into the trench.

3.2 INSTALLATION OF BURIED PRESSURE PIPING

A. General: Pipe, fittings, and appurtenances shall be installed in accordance with the manufacturer's instructions and in accordance with the following references as appropriate:

1. Ductile Iron Pipe - AWWA C603
2. Polyvinyl Chloride Pipe - AWWA C603.

All piping shall extend a minimum of 5-feet beyond edge of new pavement.

B. Handling: The pipe shall be protected to prevent entrance of foreign materials during laying operations. When laying is not in progress, open pipe ends shall be protected with a watertight plug or other approved means to exclude water or foreign material.

C. Alignment:

1. Mains shall be installed to the grades and elevations indicated and shall have a minimum cover of 30-inches from the top of the pipe to existing ground or paved surface unless otherwise indicated.

2. The allowable angle of deflection at any joint shall not exceed the amount recommended by the pipe manufacturer for the particular pipe size used. Deviation of any pipe section from the line and grade indicated shall not exceed 1/2-inch.

D. Joints:

1. Pipe shall be assembled and joined in accordance with the manufacturer's published instructions for the type of pipe and joint used. All portion of the joints shall be thoroughly cleaned before the sections of pipe are put together. The ends of each pipe shall abut against the next pipe section in such a manner that there shall be no unevenness of any kind along the bottom half of the interior of the pipe. Where mechanical joints are used, the pipe shall be marked in such a manner that it can be determined after installation that the pipe is properly seated.

2. Where flexible couplings are used as expansion joints, the ends of the pipes shall be separated 1-inch to allow for expansion. The welded seam at the end of each coupled steel pipe shall be ground smooth for approximately 12-inches. Couplings shall be centered on pipe ends. Runs of pipe containing flexible couplings shall be properly blocked, anchored or tied to the structure to prevent joints from pulling apart.

3. Mechanical restrained joints shall be installed in accordance with joint manufacturer’s instructions and recommendation.

E. Installation of Marker Tape: Install tape in backfill directly over each pipeline, 4 to 8-inches below finished grade or 2 to 4-inches below backfilling operation. Where utilities are buried in a common trench, identify each line by a separate marker tape. Bury tapes side by side directly over the applicable line.

3.3 THRUST BLOCKS OR MECHANICAL RESTRAINED JOINTS

A. Place concrete thrust blocks at all tees, elbows, plugs, and other locations where unbalanced forces exist in underground pipe in accordance with details shown. Place blocks between undisturbed ground and fitting to be anchored. Place blocking so that pipe and fittings will be accessible for repairs. Thrust blocks shall be of such size as to give bearing against undisturbed vertical earth banks sufficient to absorb the thrust from line pressure, allowing a maximum earth bearing pressure of 500 pounds per square foot per foot of depth below natural grade or as shown.

B. Restrained joint fittings may be used in-lieu of thrust blocks, at the discretion of the Engineer. Contractor shall submit shop drawings showing methods of joint restraint for each type of restrained joint fitting to be used including the length of pipe having restrained push-on joints on all pipes which connect to the restrained fitting.

When it is necessary to restrain push-on joints adjacent to restrained fittings, a harness restraint device shall be used. All harnesses shall have a pressure rating equal to that of the pipe on which it is used through 14-inch. Harness assemblies including tie bolts shall be manufactured of ductile iron conform to ASTM A536-80. Harness shall be manufactured by EBAA Iron, Inc.

3.4 INSTALLATION OF EXPOSED PIPING

A. General - Pipe shall be installed as specified, as indicated on the Plans or, in the absence of detail piping arrangement, in a manner acceptable to the Engineer.

Pipe shall be cut from measurements taken at the site and not from the Plans. All necessary provisions shall be taken in laying out piping to provide throughout for expansion and contraction. Piping shall not obstruct openings or passageways. Pipes shall be held free of contact with building construction so as not to transmit noise resulting from expansion.

The inside of all pipe, valves, and fittings shall be smooth, clean, and free from blisters, loose mill scale, sand, dirt, and other foreign matter when erected. The interior of all lines shall be thoroughly cleaned, to the satisfaction of the Engineer, before being placed in service.

Stuffing box leakage from water sealed pumps shall be piped to the nearest point of drainage collection.

Taps for pressure gauge connections on piping and equipment shall be provided with a nipple and a ball type shutoff valve. Drilling and tapping of pipe walls for installation of pressure gauges or switches will not be permitted.

A union shall be provided within 2 feet of each threaded end valve unless there are other connections that will permit easy removal of the valve. Unions shall also be provided in piping at locations adjacent to devices or equipment that may require removal in the future and at locations required by the Plans or specifications.

In all piping except air piping, insulating fittings shall be provided to prevent contact of dissimilar metals wherever copper tubing or fittings or stainless steel pipe, tubing, or fittings are connected to iron or steel pipe or fittings.

B. Pipe Joints - Pipe joints shall be carefully and neatly made in accordance with the requirements that follow.

1. Threaded - Pipe threads shall conform to ANSI/ASME B1.20.1, NPT, and shall be full and cleanly cut with sharp dies. Not more than three threads at each pipe connection shall remain exposed after installation. Ends of pipe shall be reamed, after threading and before assembly, to remove all burrs.

   Threaded joints in plastic piping shall be made up with Teflon thread tape applied to all male threads. Threaded joints in stainless steel piping shall be made up with Teflon thread sealer and Teflon thread tape applied to all male threads. At the option of the Contractor, threaded joints in other piping may be made up with Teflon thread tape, thread sealer, or a suitable joint compound. Thread tape and joint compound or sealers shall not be used in threaded joints that are to be seal welded.

   Threaded joints in steel piping for chlorine service shall be made up with Teflon thread tape or litharge and glycerine paste applied to all male threads.

2. Compression - Ends of tubing shall be cut square and all burrs shall be removed. The tubing end shall be fully inserted into the compression fitting and the nut shall be tightened not less than 1-1/4 turns and not more than 1-1/2 turns past fingertight, or as recommended by the fitting manufacturer, to produce a leaktight, torque-free connection.

3. Flared - Ends of annealed copper tubing shall be cut square and all burrs shall be removed prior to flaring. Ends shall be uniformly flared without scratches or grooves. Fittings shall be tightened as required to produce leaktight connections.

4. Soldered and Brazed - Where solder fittings are specified for lines smaller than 2 inches, joints may be soldered or brazed at the option of the Contractor. Joints in 2 inch and larger copper tubing shall be brazed.

5. Flanged - Flange bolts shall be tightened sufficiently to slightly compress the gasket and effect a seal, but not so tight as to fracture or distort the flanges. A plain washer shall be installed under the head and nut of bolts connecting plastic pipe flanges. Anti-seize thread lubricant shall be applied to the threaded portion of all stainless steel bolts during assembly. Connecting flanges shall have similar facings, i.e., flat or raised face.

6. Welded - Welding shall conform to the specifications and recommendations contained in the "Code for Pressure Piping", ANSI B31.1.

7. Grooved Couplings - Grooves for grooved couplings shall be cut with a specially designed grooving tool. Grooves cut in steel pipe shall conform to flexible grooving dimensions as set forth in AWWA C606, and shall be clean and sharp without burrs or check marks.

3.5 ACCEPTANCE TEST FOR GRAVITY PIPING

A. All sections of completed gravity pipe lines shall be tested to assure that no potential obstructions are present in the lines by passing a standard ball through each completed section of line.

B. All sanitary sewer lines shall be air tested. The minimum time requirements for the 0.5 psig pressure drop from 3.5 psig to 3.0 psig shall not be less than the times shown below.

C. Should any test on any section of the pipeline disclose an air loss rate greater than permitted, the Contractor shall at his own expense, locate and repair the defective joints or pipe sections. After the repairs are completed, the line shall be re-tested until the air loss rate is within the specified allowance - i.e. the pipeline holds the pressure within the allowable pressure drop of 0.5 psi for a minimum time equal to the time(s) shown in the table below.

Pipe Size (Inches)	Time
4	1 min. 53 sec.
6	2 min. 50 sec.
8	3 min. 47 sec.
10	4 min. 43 sec.
12	5 min. 40 sec.
15	7 min. 05 sec.
18	8 min. 30 sec.
21	9 min. 55 sec.
24	11 min. 20 sec.
27	12 min. 45 sec.

3.6 ACCEPTANCE TESTS FOR BURIED PRESSURE PIPING

A. All newly installed sections of buried pressure piping shall be pressure and leakage tested as described herein.

B. For buried pressure pipelines, tests shall be made on two or more valved sections not to exceed 2,500 feet in length. The Contractor shall furnish all necessary equipment, material and labor required.

C. Tests shall be made after the trench has been backfilled and compacted, but not until at least 5 days have elapsed since any thrust blocks in the section have been poured.

D. The pipe shall be filled with water and all air expelled from section being tested. A test pressure equal to 1.5 times the design pressure, or 100 psi, whichever is greater, of the pipe measured at the point of lowest elevation shall be applied.

E. The test pressure in the line shall be maintained for a period of 2 hours. Test pressure shall be maintained within " 5 psi during the test period by adding water as required. The water required to maintain test pressure shall be measured by means of a graduated barrel, drum, or similar device at the pump suction or through a meter.

F. Allowable leakage at the specified test pressure shall not exceed the amounts allowed by AWWA C600, Table 6. (copy included in appendix)

G. Should testing disclose any visible leaks or leakage greater than that allowed, the defective joints or pipe shall be located, repaired, and re-tested until satisfactory.

3.7 ACCEPTANCE TEST FOR EXPOSED PIPING

A. Pipe to be Tested - All new installed piping sections shall be pressure and leakage tested as specified herein.

B. Pressure Testing - After the section of line to be tested has been filled with water or other test media, the test pressure shall be applied and maintained without interruption for 2 hours plus any additional time required for the Engineer to examine all piping undergoing the test and for the Contractor to locate all defective joints and materials.

1. Test medium shall be potable water for potable water piping; all other piping may be tested using plant water subject to Engineer's approval.
2. Pipe system shall be tested at1-1/2 times the operating pressure, or 100psi,whichever is greater, using the appropriate test fluid medium.

C. All piping shall be tight and free from leaks. All pipe, fittings, valves, pipe joints, and other materials that are found to be defective shall be removed and repaired or replaced with new and acceptable material, and the affected portion of the piping retested by and at the expense of the Contractor.

Compressed air or gas under pressure shall not be used to test plastic piping unless specifically recommended by the pipe manufacturer.

Leakage may be determined by loss of pressure, soap solution, chemical indicator, or other positive and accurate method acceptable to the Engineer. All fixtures, devices, or other accessories which are to be connected to the lines and which would be damaged if subjected to the specified test pressure shall be disconnected and ends of the branch lines plugged or capped as required during the testing procedures.

END OF SECTION

SECTION 02640
VALVES AND APPURTENANCES

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Furnish, install, and test all valves, fittings, and appurtenances as indicated and as specified.

1.2 RELATED WORK

A. Section 02200 - Earthwork

B. Section 02610 - Pipe and Fittings

1.3 SUBMITTAL REQUIREMENTS

A. Shop drawings, manufacturer's literature, and guarantees shall be submitted in accordance with Standard General Conditions and the Supplementary Conditions.

1.4 REFERENCES

A. Uniform Plumbing Code published by the International Association of Plumbing and Mechanical Officials, 1985.

B. American Water Works Association Standards published by the American Water Works Association, in effect September 1, 1986.

C. Section 90, "Portland Cement Concrete", Caltrans Standard Specifications, July 1992.

D. Madera County Standard Specifications, and Standards.

PART 2 - PRODUCTS

2.1 VALVES

A. Gate valves shall be resilient wedge gate valves conforming to AWWA C509 shall be AVK Series 25 and manufactured by American AVK Co..

B. The valves shall be designed for a water working pressure of 300 psi and shall have stainless steel floats. All working parts shall be constructed of brass, stainless steel, or other corrosion-resistant materials.

2.2 VALVE ACTUATORS

A. Handwheels - Handwheel diameters shall be at least 8 inches but not more than 24 inches for 30 inch or smaller valves.

B. Chainwheels - Each chainwheel operated valve shall be equipped with a chain guide which will permit rapid handling of the operating chain without "gagging" of the wheel and will also permit reasonable side pull on the chain. Suitable actuator extensions shall be provided, if necessary, to prevent interference of chain and adjacent piping or equipment. Operating chains shall be hot-dip galvanized carbon steel and shall be looped to extend to within 4 feet of the floor below the valve.

C. Wrench Nuts - Wrench nuts shall be provided on all buried valves and where indicated on the Plans. Unless otherwise directed by the Owner, all wrench nuts shall comply with Section 3.16 of AWWA C500. Not less than two operating keys shall be furnished for operation of the wrench nut operated valves.

D. Lever Actuators - Lever actuators shall be designed to produce the specified torque with a maximum pull of 80 pounds. Levers on valves for throttling services shall have an infinitely variable locking device, and levers for other valves shall be capable of being locked in at least five intermediate positions between fully open and fully closed.

PART 3 - EXECUTION

3.1 VALVES

A. Valves shall be installed with concrete anchor block as indicated on the Plans.

B. Split disc check valves shall be installed in accordance with the manufacturers' instructions and recommendations.

C. Valves shall be with valve extension stems to subgrade, terminating with 2 inch AWWA operating nut.

3.2 VALVE BOX

A. Valve box shall be set with valve box extension to subgrade.

B. Valve box shall be adjusted to final pavement grade and completed in accordance with Madera County Standard Specifications.

END OF SECTION

SECTION 02800

FENCING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Furnish and install new chain link fencing as indicated on the Plans.

B. Install salvaged chain link fence and gate as indicated on the Plans

1.2 RELATED WORK

A. Section 02200 – Earthwork

1.3 SUBMITTALS

A. Shop drawing of fence and gates, materials, dimensions and specifications. Submittals shall be in accordance with Standard General Conditions and the Supplementary Conditions.

PART 2 - PRODUCTS

2.1 FENCE MATERIALS

Materials shall be at least comparable to existing.

PART 3 - EXECUTION

3.1 FENCES AND GATES

Installation shall be as indicated on the Plans and, at least, comparable to existing.

END OF SECTION

SECTION 05550

ANCHOR BOLTS AND EXPANSION ANCHORS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Cast-in-place anchor bolts, anchor bolts and threaded rod anchors for epoxy grouting.

B. Expansion anchors to be installed in hardened concrete.

1.2 RELATED WORK

A. Section 05990 – Structural Steel and Miscellaneous Metals

1.3 GENERAL

A. Unless otherwise specified or indicated on the drawings, all anchor bolts shall be cast-in-place bolts, shall have a diameter of at least 3/4 inch, and shall be headed. Expansion anchors and threaded rod anchors indicated or accepted in lieu of cast-in-place anchor bolts for equipment or structural framing shall have a diameter of at least 3/4 inch and shall be ICBO Evaluation Report listed. All other expansion anchors shall have a diameter of at least 1/2 inch.

B. Anchor bolts and threaded rod anchors for buried service and in splash zones shall be hot-dip galvanized. Anchor bolts, threaded rod anchors, and expansion anchors for immersion service shall be stainless steel. Expansion anchors for buried service and in splash zones shall be stainless steel. All other anchor bolts, threaded rod anchors, and expansion anchors shall be carbon steel unless otherwise specified or indicated on the plans.

PART 2 - MATERIALS

2.1 MATERIALS

A. Anchor Bolts and Nuts

1. Carbon Steel	ASTM A307
2. Stainless Steel	IFI-104, Grade 304 or 316
3. Galvanized Steel	Carbon steel bolts and nuts; hot-dip galvanized, ASTM A153 and A385.

B. Threaded Rod Anchors and Nuts

1. Carbon Steel	ASTM A307 or A36.
2. Stainless Steel	IFI-104, Grade 304 or 316
3. Galvanized Steel	Carbon steel bolts and nuts; hot-dip galvanized, ASTM A153 and A385.

C. Flat Washers	ANSI B18.22.1; of the same material as anchor bolts and nuts.

D. Expansion Anchors

1. For Concrete	Fed Spec FF-S-325; wedge type, Group II, Type 4, Class 1 or 2; self-drilling type, Group III, Type 1; or nondrilling type, Group VIII, Type 1 or 2; Hilti ICBO #3987 or 4627, ITW Ramset/Red Head ICBO #2391, Rawl Bolt ICBO #4514, or ICBO approved equivalent.
2. For Masonry	ICBO approved anchors for use in masonry.

PART 3 - EXECUTION

3.1 ANCHOR BOLTS

A. Anchor bolts shall be delivered in time to permit setting before the structural concrete is placed. Anchor bolts which are cast in place in concrete shall be provided with sufficient threads to permit a nut to be installed on the concrete side of the concrete form or supporting template. Installation of anchor bolts shall be as shown on the drawings and as specified by all relevant codes and regulations.

B. Anchor bolts and threaded rod anchors which are to be epoxy grouted shall be clean and free of coatings that would weaken the bond with epoxy.

C. Two nuts, a jam nut, and a washer shall be furnished for anchor bolts and threaded rod anchors indicated on the drawings to have locknuts; two nuts and a washer shall be furnished for all other anchor bolts.

D. Anti-seize thread lubricant shall be liberally applied to projecting, threaded portions of stainless steel anchor bolts and threaded rod anchors immediately before final installation and tightening of the nuts.

3.2 EXPANSION ANCHORS

A. Expansion anchors shall be installed in conformity with the manufacturer's and ICBO Evaluation Report recommendations for maximum holding power, but in no case shall the depth of hold be less than four bolt hole diameters. The minimum distance between the center of any expansion anchor and an edge or exterior corner of concrete shall be at least 4-1/2 times the diameter of the hole in which the anchor is installed. Unless otherwise indicated on the drawings, the minimum distance between the centers of the expansion anchors shall be at least eight times the diameter of the hole in which the anchors are installed.

B. Nuts and washers for expansion anchors shall be as specified for anchor bolts.

C. Anti-seize thread lubricant shall be liberally applied to threaded stainless steel components of expansion anchors immediately before installation.

END OF SECTION

SECTION 05990

STRUCTURAL STEEL AND MISCELLANEOUS METALS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Fabricated items from metal shapes, plates, sheets, rods, bars, or castings, except component parts of equipment.

B. Structural steel shall include all structural members and fasteners.

C. Floor plates, brackets, ladders, handrails and railings.

1.2 RELATED WORK

A. Section 05550 - Anchor Bolts and Expansion Anchors

B. Section 09900 - Painting

1.3 SUBMITTALS

A. Complete assembly, installation drawings, detailed specifications and data covering materials used and accessories forming part of the furnished product shall be submitted in accordance with Standard General Conditions and the Supplementary Conditions.

1.4 APPLICABLE CODES AND REFERENCE STANDARDS

A. Except as modified herein, all work specified herein shall comply with the applicable requirements of the following standards:

1. Uniform Building Code
2. Aluminum Association
3. American Institute of Steel Construction
4. American Iron and Steel Institute
5. American National Standards Institute
6. American Society of Testing and Materials
7. American Welding Society
8. National Association of Architectural Metal Mfg.

1.5 INSPECTION AND TESTING

A. Contractor shall schedule testing with the testing laboratory so that tests and shop inspections may be made in sufficient time for approvals to be given prior to fabrication.

1.6 TOLERANCES

A. For materials, fabrications and erection shall not exceed those tolerances as set forth in the "Code of Standard Practice, American Institute of Steel Construction", as adopted and revised to date.

1.7 CLEANING AND STRAIGHTENING

A. All material, before being fabricated, shall be thoroughly wire brushed, cleaned of all scale and rust, and shall be thoroughly straightened by methods that will not injure the material before being worked on. After punching or working the component parts of a riveted member, all twists or bends shall be removed before the parts are assembled. All finished members shall be free from twists, bends or open joints, when erected.

1.8 QUALITY ASSURANCE

A. All welding procedures and operators for welding of steel and aluminum fabrications shall be qualified in accordance with the applicable provisions of AWS.

1.9 DELIVERY, STORAGE AND HANDLING

A. Structural and miscellaneous metals work shall be stored on blocking so that no metal touches the ground and water cannot collect thereon. The material shall be protected against bending under its own weight or superimposed loads.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel

1. Shapes, Plates and Bars	ASTM A36.
2. Sheets	ASTM A366 OR A569, zinc coated.
3. Pipe	ASTM A120 OR A53.
4. Bolts and Nuts	ASTM A307 (unfinished).
High Strength	ASTM A325;
5. Nuts, Self-Locking	Prevailing torque type; IFI-100, Grade A.
6. Washers	
a. Flat	ANSI B18.22.1.
b. Flat, Hardened	ASTM A325.
c. Lock	ANSI B18.21.1, helical spring type.

B. Checkered Plate — ASTM A786; carbon steel, skid resistant pattern as standard with the manufacturer;

C. Stainless Steel

1. Plates	ASTM A167, Type 304.
2. Bolts and Nuts	IFI - 104, Grade 303, 304, or 305
3. Washers	
a. Flat	ANSI B18.22.1
b. Lock	ANSI B18.21.1, helical spring type

D. Aluminum

Sheet and Plate	ASTM B209, Alloy 6061-T6.
Rolled Sections	ASTM B308, Alloy 6061-T6.
Rod and Bar	ASTM B211, Alloy 6061-T6 or 2017-T4.
Extrusions	ASTM B221, Alloy 6063-T5 or T6.

Pipe	ASTM B429, Alloy 6061-T6 or 6063-T6.
Rivets	ASTM B316, Alloy 6061-T6.
Bolts	IFI-104, Grade 24T4.
Nuts	IFI-104, Grade 61T6

E. Steel Grating — Fed Spec RR-G-661, Type I, rectangular, welded, galvanized after fabrication

F. Aluminum Grating — ASTM B221, Alloy 6063-T6, mechanically locked; Klemp "I-Bar", Reliance "I-Lok", or Universal "Uni-Lok".

G. Shop Coatings

1. Rust-Inhibitive Primer	Universal type; Cook "391-N-167 Barrier Coat", Koppers "No. 10 Inhibitive Primer", Tnemec 77 Chem-Prime", or Valspar "13-R-28 Chromox Primer."
2. Epoxy Paint	Cook "920-Y-130", Koppers "654", Tnemec "66-1211", or Valspar "13-R-60"; light gray.
3. Coal Tar Paint	Koppers "Bitumastic Super Service Black", Tnemec "46-449 Heavy Duty Black", or Valspar "High-Build Bituminous Coating 35-J-10."

H. Except as otherwise specified or indicated on the drawings, all materials and work shall conform to the applicable provisions of the AISC "Steel Construction Manual" and AISC "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings".

2.2 HANDRAILS AND RAILINGS

A. Handrails and railings shall conform to current local, State, and OSHA standards and requirements. Unless otherwise indicated on the drawings, all railings provided under this section shall be of the same type and design.

B. Aluminum railings shall be provided except where steel railings are designated on the drawings or specified.

1. All welding of aluminum shall be done in accordance with recommendations of the American Welding Society. Welds shall be free of porosity, cracks, holes, and flux.
2. All fasteners used in connection with aluminum railings shall be stainless steel.
3. Aluminum Railings. All aluminum railings shall be fabricated from 1-1/2 inch Schedule 40 pipe; or shall be Enerco "Alumarail", Universal Uni-Rail", or Moultrie "Wesrail" in-line side-mounted prefabricated 1-1/2 inch railing, generally as specified and as indicated on the drawings.
4. All fabricated aluminum railings shall be provided with a mill finish.

C. Connections. All angles, offsets, or other changes in alignment in pipe railings shall be made with R & B Wagner railing ells and welding connectors. All fittings and connections in prefabricated aluminum railings shall be as recommended by the railing manufacturer. Field joints in welded railings shall be made with R & B Wagner "Double-Lock Splice-Lock", at least 3-3/4 inches long. Welding connectors and splice locks shall be installed in accordance with the manufacturer's recommendations. Other methods of making connections and changes in alignment will be considered, provided complete information covering the proposed method is submitted to the Engineer as specified in Section 01631 – Product Substitutions..

D. Fabrication. Railings shall be smooth, with all projecting joints and sharp corners ground smooth. Welded joints shall be flush type. Members shall be neatly coped and continuously welded or mechanically connected at all junctions. Top rails shall run continuously over posts. All rails and posts shall be in the same plane, and shall not be offset.

E. All welding shall be done neatly and substantially by a process (i.e., TIG or MIG) producing a smooth weld. All weld spatter and burrs shall be removed, and all welds shall be thoroughly brushed with a stainless steel power wire brush.

F. A safety chain, fabricated of 1/4 inch galvanized chain, shall be provided across each opening in the railings where indicated on the drawings. The chain shall be fastened to one railing post by a stainless steel eyebolt, and shall engage a similar eyebolt on the opposite post by means of a 2-1/2 inch

heavy-duty cadmium plated harness snap. The chain length shall be as required by the width of the opening.

G. Sleeves for fixed handrail posts shall be fabricated from schedule 40 black steel pipe and hot-dip galvanized after fabrication. Sleeves shall provide at least 1/4 inch clearance all around each post and shall be 5 inches long unless otherwise indicated on the drawings.

H. Maximum spacing for posts shall be 5 feet. Handrails in outdoor locations shall have slip joints at least every 30 feet to permit expansion and contraction. The gap at each slip joint shall be not less than 1/8 inch nor more than 3/8 inch.

2.3 CHECKERED FLOOR PLATES

A. Checkered floor plates shall be aluminum as indicated on the drawings.

B. All checkered plates which are not required to be bolted or welded in place shall be provided with lifting holes to facilitate removal. Warped or bent checkered plates shall be shop straightened so they will lie perfectly flat.

C. Steel frames anchored to or cast in concrete to support checkered plates shall be hot-dip galvanized after fabrication.

2.4 GRATING

A. All grating and grating stair treads shall be aluminum. Depth of bearing bars for grating and treads shall be as indicated on the drawings.

B. Except as modified herein, grating manufacture, fabrication, and installation shall comply with recommendations in the "Metal Bar Grating, Manual" of the National Association of Architectural Metal Manufacturers.

1. Aluminum Grating. Aluminum grating shall be pressure locked type. Grating stair treads shall be pressure locked or one-piece cast or extruded type. Bearing bars shall be at least 3/16 inch flat stock or equivalent I-bars, with center-to-center spacing of 1-3/16 inch.

2. Fabrication. Grating panels shall be arranged so that openings are centered on a joint between panels. Toeplates extending the full depth of grating and 4 inches above the top shall be provided around openings and on the open sides of stairway landings, overhead platforms, overhead walkways, and other locations indicated on the drawings. Ends of bearing bars in grating floor panels shall be provided with full-depth bands. Bands and toeplates shall be 3/16 inch thick. Toeplates shall be

welded to each bearing bar. Bands shall be welded to first, last, and every fourth intermediate bar. Cross bars shall be cut off flush with the outside face of side bars.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. Structural and miscellaneous metal work shall be fabricated in conformity with dimensions, arrangement, sizes, and weights or thicknesses specified or indicated on the drawings.

B. All members and parts, as delivered and erected, shall be free of winds, warps, local deformations, and unauthorized bends. Holes and other provisions for field connections shall be accurately located and shop checked so that proper fit will result when the units are assembled in the field. Erection drawings shall be prepared, and each separate piece shall be marked as indicated thereon. All field connection materials shall be furnished.

C. Structural and miscellaneous metal work shall be stored on blocking so that no metal touches the ground and water cannot collect thereon. The material shall be protected against bending under its own weight or superimposed loads.

D. Before assembly, surfaces to be in contact with each other shall be thoroughly cleaned. All parts shall be assembled accurately as indicated on the drawings. Light drifting will be permitted to draw parts together, but drifting to match unfair holes will not be permitted. Any enlargement of holes necessary to make connections in the field shall be done by reaming with twist drills. Enlarging holes by burning will not be permitted.

3.2 WELDING AND CUTTING

A. The welding shall be done by A.W.S. certified welders. The operator, the welding equipment, the electrodes, the methods of making the welds as completed shall be approved by the inspector of the testing laboratory.

B. Defective welds or unsatisfactory parts of welds shall be cut out and replaced.

C. Cutting shall be done by machine when possible. All re-entrent corners shall be shaped, notch free, to a radius of at least one half inch.

D. Welded joints which will be fully or partially submerged shall be sealed watertight by continuous welds.

E. Surplus metal shall be dressed off smooth.

3.3 SURFACE COATING

A. Shop Painting

1. All structural steel not to be encased in concrete shall be thoroughly cleaned, wire brushed, removing all scale and given one heavy coat of paint as specified in Section 09900 - Painting. Structural steel parts not in contact, but inaccessible after assembly shall be painted with two coats before assembly as specified in Section 09900 - Painting.

2. The surface of structural steel to be encased in concrete shall be thoroughly cleaned of all scale, rust, dirt, and other foreign incrustations and shall not be painted.

B. Field Painting

1. After erection, all parts where paint has been rubbed or burned off or where skips have occurred in shop painting, all field rivets, bolts and welded areas shall be painted as specified in Section 09900 - Painting.

3.4 INSTALLATION

A. When railings are assembled, all posts shall be plumb, and longitudinal members shall be parallel with each other and with the floor surface or slope of stairs. In any section or run of railing, the center lines of all members shall be in true alignment lying in the same vertical plane.

Suitable wall brackets shall be provided where shown or required. Wall brackets shall be securely anchored to walls with AISI 300 Series stainless steel bolts and expansion anchors.

All posts in fixed handrail sections shall be rigidly attached to the supporting structure. Unless otherwise noted, posts shall be attached to concrete structures by setting in sleeves. Sleeves shall be rigidly supported in accurate alignment in the forms and shall be positioned vertically so that the top of each sleeve is approximately 1/2 inch below the finished concrete surface. The position of all sleeves shall be carefully measured before railings are fabricated. When the railing is set, the posts shall be wedged in accurate alignment, and the annular space between the posts and sleeves shall be filled with handrail-setting cement to the top of the steel sleeve. Filling of the remaining space with sealant, as indicated on the drawings, is

covered in the caulking section. Where so indicated, attachments shall be made with flanges or other special attachments or anchorages. Maximum spacing for posts shall be 5 feet.

After installation, railings shall be checked for final alignment, using a tightly drawn wire for reference. The maximum misalignment tolerance for railings shall be 1/8 inch in 12 feet. Bent, deformed, or otherwise damaged railings shall be replaced.

B. Weirs shall be installed with the top level. Before installation, all surfaces in contact with concrete shall be given a heavy coat of coal tar paint.

3.5 ADJUSTING AND CLEANING

A. Items which have been given shop applied protective coatings that become damaged during erection or installation shall be repaired with the same or equivalent coating used in the original application.

END OF SECTION

SECTION 05990

STRUCTURAL STEEL AND MISCELLANEOUS METALS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Fabricated items from metal shapes, plates, sheets, rods, bars, or castings, except component parts of equipment.

B. Structural steel shall include all structural members and fasteners.

C. Floor plates, brackets, ladders, handrails and railings.

1.2 RELATED WORK

A. Section 05550 - Anchor Bolts and Expansion Anchors

B. Section 09900 - Painting

1.3 SUBMITTALS

A. Complete assembly, installation drawings, detailed specifications and data covering materials used and accessories forming part of the furnished product shall be submitted in accordance with Standard General Conditions and the Supplementary Conditions.

1.4 APPLICABLE CODES AND REFERENCE STANDARDS

A. Except as modified herein, all work specified herein shall comply with the applicable requirements of the following standards:

1. Uniform Building Code
2. Aluminum Association
3. American Institute of Steel Construction
4. American Iron and Steel Institute
5. American National Standards Institute
6. American Society of Testing and Materials
7. American Welding Society
8. National Association of Architectural Metal Mfg.

1.5 INSPECTION AND TESTING

A. Contractor shall schedule testing with the testing laboratory so that tests and shop inspections may be made in sufficient time for approvals to be given prior to fabrication.

1.6 TOLERANCES

A. For materials, fabrications and erection shall not exceed those tolerances as set forth in the "Code of Standard Practice, American Institute of Steel Construction", as adopted and revised to date.

1.7 CLEANING AND STRAIGHTENING

A. All material, before being fabricated, shall be thoroughly wire brushed, cleaned of all scale and rust, and shall be thoroughly straightened by methods that will not injure the material before being worked on. After punching or working the component parts of a riveted member, all twists or bends shall be removed before the parts are assembled. All finished members shall be free from twists, bends or open joints, when erected.

1.8 QUALITY ASSURANCE

A. All welding procedures and operators for welding of steel and aluminum fabrications shall be qualified in accordance with the applicable provisions of AWS.

1.9 DELIVERY, STORAGE AND HANDLING

A. Structural and miscellaneous metals work shall be stored on blocking so that no metal touches the ground and water cannot collect thereon. The material shall be protected against bending under its own weight or superimposed loads.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel

1. Shapes, Plates and Bars	ASTM A36.
2. Sheets	ASTM A366 OR A569, zinc coated.
3. Pipe	ASTM A120 OR A53.
4. Bolts and Nuts	ASTM A307 (unfinished).
High Strength	ASTM A325;
5. Nuts, Self-Locking	Prevailing torque type; IFI-100, Grade A.
6. Washers	
a. Flat	ANSI B18.22.1.
b. Flat, Hardened	ASTM A325.
c. Lock	ANSI B18.21.1, helical spring type.

B. Checkered Plate — ASTM A786; carbon steel, skid resistant pattern as standard with the manufacturer;

C. Stainless Steel

1. Plates	ASTM A167, Type 304.
2. Bolts and Nuts	IFI - 104, Grade 303, 304, or 305
3. Washers	
a. Flat	ANSI B18.22.1
b. Lock	ANSI B18.21.1, helical spring type

D. Aluminum

Sheet and Plate	ASTM B209, Alloy 6061-T6.
Rolled Sections	ASTM B308, Alloy 6061-T6.
Rod and Bar	ASTM B211, Alloy 6061-T6 or 2017-T4.
Extrusions	ASTM B221, Alloy 6063-T5 or T6.

Pipe	ASTM B429, Alloy 6061-T6 or 6063-T6.
Rivets	ASTM B316, Alloy 6061-T6.
Bolts	IFI-104, Grade 24T4.
Nuts	IFI-104, Grade 61T6

E. Steel Grating — Fed Spec RR-G-661, Type I, rectangular, welded, galvanized after fabrication

F. Aluminum Grating — ASTM B221, Alloy 6063-T6, mechanically locked; Klemp "I-Bar", Reliance "I-Lok", or Universal "Uni-Lok".

G. Shop Coatings

1. Rust-Inhibitive Primer	Universal type; Cook "391-N-167 Barrier Coat", Koppers "No. 10 Inhibitive Primer", Tnemec 77 Chem-Prime", or Valspar "13-R-28 Chromox Primer."
2. Epoxy Paint	Cook "920-Y-130", Koppers "654", Tnemec "66-1211", or Valspar "13-R-60"; light gray.
3. Coal Tar Paint	Koppers "Bitumastic Super Service Black", Tnemec "46-449 Heavy Duty Black", or Valspar "High-Build Bituminous Coating 35-J-10."

H. Except as otherwise specified or indicated on the drawings, all materials and work shall conform to the applicable provisions of the AISC "Steel Construction Manual" and AISC "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings".

2.2 *HANDRAILS AND RAILINGS*

A. Handrails and railings shall conform to current local, State, and OSHA standards and requirements. Unless otherwise indicated on the drawings, all railings provided under this section shall be of the same type and design.

B. Aluminum railings shall be provided except where steel railings are designated on the drawings or specified.

1. All welding of aluminum shall be done in accordance with recommendations of the American Welding Society. Welds shall be free of porosity, cracks, holes, and flux.
2. All fasteners used in connection with aluminum railings shall be stainless steel.
3. Aluminum Railings. All aluminum railings shall be fabricated from 1-1/2 inch Schedule 40 pipe; or shall be Enerco "Alumarail", Universal Uni-Rail", or Moultrie "Wesrail" in-line side-mounted prefabricated 1-1/2 inch railing, generally as specified and as indicated on the drawings.
4. All fabricated aluminum railings shall be provided with a mill finish.

C. Connections. All angles, offsets, or other changes in alignment in pipe railings shall be made with R & B Wagner railing ells and welding connectors. All fittings and connections in prefabricated aluminum railings shall be as recommended by the railing manufacturer. Field joints in welded railings shall be made with R & B Wagner "Double-Lock Splice-Lock", at least 3-3/4 inches long. Welding connectors and splice locks shall be installed in accordance with the manufacturer's recommendations. Other methods of making connections and changes in alignment will be considered, provided complete information covering the proposed method is submitted to the Engineer as specified in Section 01631 – Product Substitutions..

D. Fabrication. Railings shall be smooth, with all projecting joints and sharp corners ground smooth. Welded joints shall be flush type. Members shall be neatly coped and continuously welded or mechanically connected at all junctions. Top rails shall run continuously over posts. All rails and posts shall be in the same plane, and shall not be offset.

E. All welding shall be done neatly and substantially by a process (i.e., TIG or MIG) producing a smooth weld. All weld spatter and burrs shall be removed, and all welds shall be thoroughly brushed with a stainless steel power wire brush.

F. A safety chain, fabricated of 1/4 inch galvanized chain, shall be provided across each opening in the railings where indicated on the drawings. The chain shall be fastened to one railing post by a stainless steel eyebolt, and shall engage a similar eyebolt on the opposite post by means of a 2-1/2 inch

heavy-duty cadmium plated harness snap. The chain length shall be as required by the width of the opening.

G. Sleeves for fixed handrail posts shall be fabricated from schedule 40 black steel pipe and hot-dip galvanized after fabrication. Sleeves shall provide at least 1/4 inch clearance all around each post and shall be 5 inches long unless otherwise indicated on the drawings.

H. Maximum spacing for posts shall be 5 feet. Handrails in outdoor locations shall have slip joints at least every 30 feet to permit expansion and contraction. The gap at each slip joint shall be not less than 1/8 inch nor more than 3/8 inch.

2.3 CHECKERED FLOOR PLATES

A. Checkered floor plates shall be aluminum as indicated on the drawings.

B. All checkered plates which are not required to be bolted or welded in place shall be provided with lifting holes to facilitate removal. Warped or bent checkered plates shall be shop straightened so they will lie perfectly flat.

C. Steel frames anchored to or cast in concrete to support checkered plates shall be hot-dip galvanized after fabrication.

2.4 GRATING

A. All grating and grating stair treads shall be aluminum. Depth of bearing bars for grating and treads shall be as indicated on the drawings.

B. Except as modified herein, grating manufacture, fabrication, and installation shall comply with recommendations in the "Metal Bar Grating, Manual" of the National Association of Architectural Metal Manufacturers.

1. Aluminum Grating. Aluminum grating shall be pressure locked type. Grating stair treads shall be pressure locked or one-piece cast or extruded type. Bearing bars shall be at least 3/16 inch flat stock or equivalent I-bars, with center-to-center spacing of 1-3/16 inch.

2. Fabrication. Grating panels shall be arranged so that openings are centered on a joint between panels. Toeplates extending the full depth of grating and 4 inches above the top shall be provided around openings and on the open sides of stairway landings, overhead platforms, overhead walkways, and other locations indicated on the drawings. Ends of bearing bars in grating floor panels shall be provided with full-depth bands. Bands and toeplates shall be 3/16 inch thick. Toeplates shall be

welded to each bearing bar. Bands shall be welded to first, last, and every fourth intermediate bar. Cross bars shall be cut off flush with the outside face of side bars.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. Structural and miscellaneous metal work shall be fabricated in conformity with dimensions, arrangement, sizes, and weights or thicknesses specified or indicated on the drawings.

B. All members and parts, as delivered and erected, shall be free of winds, warps, local deformations, and unauthorized bends. Holes and other provisions for field connections shall be accurately located and shop checked so that proper fit will result when the units are assembled in the field. Erection drawings shall be prepared, and each separate piece shall be marked as indicated thereon. All field connection materials shall be furnished.

C. Structural and miscellaneous metal work shall be stored on blocking so that no metal touches the ground and water cannot collect thereon. The material shall be protected against bending under its own weight or superimposed loads.

D. Before assembly, surfaces to be in contact with each other shall be thoroughly cleaned. All parts shall be assembled accurately as indicated on the drawings. Light drifting will be permitted to draw parts together, but drifting to match unfair holes will not be permitted. Any enlargement of holes necessary to make connections in the field shall be done by reaming with twist drills. Enlarging holes by burning will not be permitted.

3.2 WELDING AND CUTTING

A. The welding shall be done by A.W.S. certified welders. The operator, the welding equipment, the electrodes, the methods of making the welds as completed shall be approved by the inspector of the testing laboratory.

B. Defective welds or unsatisfactory parts of welds shall be cut out and replaced.

C. Cutting shall be done by machine when possible. All re-entrent corners shall be shaped, notch free, to a radius of at least one half inch.

D. Welded joints which will be fully or partially submerged shall be sealed watertight by continuous welds.

E. Surplus metal shall be dressed off smooth.

3.3 SURFACE COATING

A. Shop Painting

1. All structural steel not to be encased in concrete shall be thoroughly cleaned, wire brushed, removing all scale and given one heavy coat of paint as specified in Section 09900 - Painting. Structural steel parts not in contact, but inaccessible after assembly shall be painted with two coats before assembly as specified in Section 09900 - Painting.

2. The surface of structural steel to be encased in concrete shall be thoroughly cleaned of all scale, rust, dirt, and other foreign incrustations and shall not be painted.

B. Field Painting

1. After erection, all parts where paint has been rubbed or burned off or where skips have occurred in shop painting, all field rivets, bolts and welded areas shall be painted as specified in Section 09900 - Painting.

3.4 INSTALLATION

A. When railings are assembled, all posts shall be plumb, and longitudinal members shall be parallel with each other and with the floor surface or slope of stairs. In any section or run of railing, the center lines of all members shall be in true alignment lying in the same vertical plane.

Suitable wall brackets shall be provided where shown or required. Wall brackets shall be securely anchored to walls with AISI 300 Series stainless steel bolts and expansion anchors.

All posts in fixed handrail sections shall be rigidly attached to the supporting structure. Unless otherwise noted, posts shall be attached to concrete structures by setting in sleeves. Sleeves shall be rigidly supported in accurate alignment in the forms and shall be positioned vertically so that the top of each sleeve is approximately 1/2 inch below the finished concrete surface. The position of all sleeves shall be carefully measured before railings are fabricated. When the railing is set, the posts shall be wedged in accurate alignment, and the annular space between the posts and sleeves shall be filled with handrail-setting cement to the top of the steel sleeve. Filling of the remaining space with sealant, as indicated on the drawings, is

covered in the caulking section. Where so indicated, attachments shall be made with flanges or other special attachments or anchorages. Maximum spacing for posts shall be 5 feet.

After installation, railings shall be checked for final alignment, using a tightly drawn wire for reference. The maximum misalignment tolerance for railings shall be 1/8 inch in 12 feet. Bent, deformed, or otherwise damaged railings shall be replaced.

B. Weirs shall be installed with the top level. Before installation, all surfaces in contact with concrete shall be given a heavy coat of coal tar paint.

3.5 ADJUSTING AND CLEANING

A. Items which have been given shop applied protective coatings that become damaged during erection or installation shall be repaired with the same or equivalent coating used in the original application.

END OF SECTION

SECTION 10400

SIGNAGE

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Signs Shall be furnished and installed as indicated on the Drawings and specified herein. Signs shall meet OSHA requirements for location, lettering size and colors, sign size and background colors.

1.2 RELATED WORK

A. Section 09900 – Painting

1.3 SUBMITTALS

A. As specified in Standard General Conditions and the Supplementary Conditions.

B. Provide one (1) sample of each type of proposed sign

PART 2 - PRODUCTS

A. All exterior signs shall be 18 gauge aluminum sheet with neatly painted letters. Corners of signs shall be rounded. All fasteners shall be stainless steel.

B. Sign shall be with white background and red lettering, and shall be provided in accordance with the following schedule:

Text	Size Height x Width	Height of Letter	No. of Sign
Non-Potable Water Unsafe for Drinking	8” x 16”	1 ½“	10
Keep Out Private Property	8” x 12”	1 ½”	6
Do Not Enter Authorized Personnel Only	12” x 12”	1 ½”	1

PART 3 - EXECUTION

3.1 INSTALLATION

A. All installations shall be vandal-resistant where possible. Graphics shall be highest quality and shall have smooth, uniform colored finishes.

B. Manufactured items shall be installed in accordance with the manufacturer's recommendations.

C. Installation shall be level, plumb, true to plane, and securely attached to structures.

D. Exact locations of all signs shall be subject to acceptance by the Engineer.

END OF SECTION

APPENDIX

SAN JOAQUIN KIT FOX POLICY – The San Joaquin kit fox is native to the San Joaquin Valley and may at times range through the areas which will be affected by construction under this contract. The kit fox is listed by the Federal government as endangered and by the State as threatened.

The Contractor shall be responsible for insuring that no San Joaquin kit foxes are harmed or taken by construction activities. The Contractor and the Contractor's employees shall comply with the project rules attached in the Appendix.

REQUEST FOR STAKING – See Insert

CERTIFICATE OF OWNER'S ATTORNEY – See Insert

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Attachment 3.4, Property Easements

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RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

Doc#: 2007036163
9/24/2007 9:46 AM

Christopher L. Campbell, Esq.
Baker Manock & Jensen, PC
5260 North Palm Avenue, Suite 421
Fresno, California 93704

CONFORMED COPY
This document has not been
compared with the original.
MADERA COUNTY CLERK-RECORDER

EASEMENT AND ANNEXATION AGREEMENT

THIS EASEMENT AND ANNEXATION AGREEMENT is made effective as of September 4, 2007, by and between CONSOLIDATED LAND COMPANY, a California limited partnership ("Consolidated"), the ROOT CREEK WATER DISTRICT, a California water district ("RCWD"), and the MADERA IRRIGATION DISTRICT, a California irrigation district ("MID"). RCWD and MID are referred to below together as the "Districts".

RECITALS:

A. Consolidated is the owner of that certain real property, commonly known and referred to as the River Hills Ranch, more particularly described in Exhibit "1" hereto, incorporated herein by this reference (the "Property"). The Property lies generally between the MID Lateral 6.2 and the boundary of RCWD, but is not currently part of RCWD or MID.

B. RCWD has acquired the use of capacity in, and the right to wheel surface water for agricultural use through, the Madera Canal and MID Lateral 6.2 in excess of MID's needs. RCWD desires to establish a pipeline connection between MID Lateral 6.2 and the RCWD service area. RCWD desires to obtain a pipeline easement over the Property, as described in this Agreement.

C. MID currently holds an easement over the Property, as described in that certain Easement Grant, recorded in the Official Records of Madera County on November 27, 1984, in Book 919, Page 494 (the "Existing MID Easement"). Consolidated desires that the pipeline currently located in the Existing MID Easement (the "Existing MID Pipeline") be relocated to the easement to be created under this Agreement, and for MID to then abandon the existing easement. MID is willing to allow RCWD to relocate the Existing MID Pipeline, at RCWD's cost and expense, and then to abandon the Existing MID Easement at no cost to MID.

D. Consolidated desires to obtain the conditional pre-approval of RCWD for the annexation of the Property to the RCWD service area, on the terms and subject to the conditions of this Agreement.

NOW THEREFORE, for valuable consideration, the receipt of which is hereby acknowledged:

1. Grant of Easement.

(a) Consolidated hereby grants to RCWD a perpetual underground pipeline easement (the "RCWD Easement") over that portion of the Property described in Exhibit "A" hereto, incorporated herein by this reference, to construct, install, operate, maintain, repair, and reconstruct one 48 inch diameter underground pipeline and all associated appurtenances and fixtures (the "RCWD Pipeline") sufficient in design and capacity to deliver all of RCWD's current and future surface water requirements, and to flow and conduct water through said RCWD Pipeline, together with all rights necessary, convenient, or incidental thereto.

(b) Consolidated hereby grants to MID a perpetual underground pipeline easement (the "MID Easement") over that portion of the Property described in Exhibit "3" hereto, to construct, install, operate, maintain, repair, and reconstruct one 24 inch diameter underground plastic pipeline and all associated appurtenances and fixtures, including water meters, (the "New MID Pipeline") sufficient in design and capacity to deliver all of MID's surface water irrigation requirements necessary to serve only that portion of the MID service area served by the Existing Pipeline, and to flow and conduct water through said New MID Pipeline, together with all rights necessary, convenient, or incidental thereto.

(c) RCWD and MID shall individually hold exclusive and first priority rights to their respective Easements. The allocation of use of the RCWD Pipeline and New MID Pipeline shall be of no concern to Consolidated. The Districts shall exercise the rights herein granted in such manner as not to cause an unreasonable interference with or destruction of the existing vineyard operation or any lawful future use of the remainder of the Property by Consolidated. Except as expressly provided herein, RCWD shall be responsible to repair or reimburse Consolidated for any damage to the Property located within the Easements area caused by the construction and placement of the RCWD Pipeline or the New MID Pipeline. Neither RCWD nor MID shall be responsible for the cost or replacement of any vines that must be permanently removed to locate the Easements and the RCWD Pipeline or the New MID Pipeline within the Road 40 alignment along the western boundary of Section 29, Township 11 South, Range 20 East, Mount Diablo Base and Meridian.

2. Use by Consolidated. Consolidated may use the area subject to the Easements in any lawful manner not inconsistent with the rights herein granted to the Districts, including development of the Property to municipal or industrial uses, provided that Consolidated shall not place any form of structure, any personal property, or any trees, plants, or shrubs in the area subject to the Easements without the express prior written consent of the Districts, which will not be unreasonably withheld, delayed or conditioned.

3. New MID Pipeline; Abandonment of Existing MID Pipeline. RCWD shall construct, at its expense, the New MID Pipeline. The New MID Pipeline shall meet MID's standards for similar facilities in effect as of the date of this Agreement, and following construction of the New MID Pipeline, it shall be operated and tested for one irrigation season and successfully satisfy MID's standards, prior to transfer of responsibility for maintenance of the pipeline by MID. Upon satisfaction of MID's standards, MID shall release RCWD of any maintenance and repair responsibility for the new MID pipeline. Upon such release on the New MID Pipeline, MID shall abandon the Existing MID Easement and the Existing MID Pipeline and MID shall quitclaim its interest in the Existing MID Easement and the Existing MID Pipeline to Consolidated. Consolidated shall bear, and shall relieve MID from, all expense of removal of the Existing MID Pipeline. Consolidated acknowledges that MID is abandoning the Existing MID Easement in exchange for a new MID Easement to be granted by Consolidated, and that such easement exchange will be at no cost to either MID or Consolidated.

4. RCWD Annexation.

(a) At such time as Consolidated determines, in its sole discretion, to pursue annexation of the Property to RCWD, then, as consideration for granting the RCWD Easement, subject to compliance with applicable environmental laws, RCWD hereby agrees that it shall approve such annexation, on the terms and subject to the conditions of this Agreement.

(b) RCWD shall support the annexation of the Property and cooperate with Consolidated to obtain the approval by the Local Area Formation Commission ("LAFCO") and any other agencies maintaining jurisdiction or involvement in the annexation process. However, Consolidated shall be responsible to obtain any necessary approvals and entitlements for Consolidated's annexation of the Property to RCWD from any other agency other than RCWD having jurisdiction over such entitlements and annexation (an "Agency"), including approval of the annexation from LAFCO. RCWD shall provide such assistance and support to Consolidated to obtain such approvals as may reasonably be provided by an annexing public agency to a landowner seeking annexation. Notwithstanding the foregoing, Consolidated will be responsible for all costs and expenses in connection with annexation to RCWD, including, but not limited to any environmental consultation or compliance fees or costs. If and when Consolidated elects to pursue municipal and industrial development on the Property, Consolidated shall be responsible to obtain any necessary approvals and entitlements required for Consolidated's development of the Property to municipal and industrial uses. Upon request by Consolidated, RCWD shall cooperate and assist Consolidated in obtaining the necessary approvals and entitlements, but only to the extent that RCWD, as a public agency, deems such cooperation and assistance appropriate.

(c) If and when RCWD annexes the Property and Consolidated provides water to RCWD for municipal and industrial uses as required by Paragraph 5 below, RCWD shall provide water service and any other RCWD utility services to the Property in accordance with RCWD's then-current policies, connection fees and rate

schedules. The Property shall be entitled to receive municipal and industrial water service and other RCWD utility services on the same priority basis as other lands within the district, i.e., the Property's right to receive such services shall not be considered subordinate to the rights of other lands already within RCWD.

(d) The parties acknowledge that the Property will rely on groundwater extracted from wells located on the Property to meet all projected agricultural requirements, and therefore the Property shall not, as a result of annexation, be entitled to delivery of agricultural irrigation water from RCWD. The property shall be subject to any charges that RCWD assesses against all lands within its service area regardless of whether such lands directly receive services; at the date of this Agreement, the amount of such charges is $3.00 per acre per year, subject to change in accordance with law. (The Property shall not be subject to charges relating to municipal and industrial water service or other RCWD utility services until the Property is developed for municipal and industrial uses and such services are provided to the Property).

(e) Consolidated shall be responsible for any costs associated with providing water and utility services to the Property, including, but not limited to, the Property's proportionate share of the capital costs for any facilities that directly benefit the Property; the Property's proportionate share of RCWD operations and maintenance costs; and the Property's proportionate share of past and current RCWD infrastructure costs and other costs proportionately assessed to all utility users within RCWD, such as wheeling capacity fees for MID Lateral 6.2. The provision of water service to the Property shall not increase the capacity burdens to MID Lateral 6.2 beyond those provided under the RCWD/MID Conveyance Agreement and shall not affect or reduce the conveyance capacity of water for MID's needs.

(f) Without limiting the foregoing, upon annexation to RCWD the Property shall become subject in the same manner as other lands in RCWD to all of the terms and provisions of the "Agreement Concerning Agricultural, Municipal and Industrial Water Use Within Root Creek Water District" executed on December 30, 1999, and the "Agreement between Madera Irrigation District and Root Creek Water District for the Conveyance and Sale of Water" executed on March 13, 2002.

5. Annexation Supplies and Capacity. If and when the Property is annexed to RCWD:

(a) In accordance with the policies of RCWD and Madera County, as a condition of receiving municipal and industrial water service, Consolidated shall be required to provide to RCWD sufficient imported surface water supplies and any conveyance capacity or exchange agreements necessary to deliver the water to RCWD to meet the projected water demand for the municipal and industrial development approved for the Property ("Consolidated Supply and Capacity"). Consolidated's obligation to provide imported surface water supplies for the municipal and industrial development approved for the Property shall be net of such groundwater supplies from the Property as

may be approved by Madera County as available for use for such development of the Property, and in accordance with subparagraph 4(f) above.

(b) Upon request of Consolidated at any time after the annexation of the Property to RCWD, RCWD agrees to use its best efforts to identify and acquire surface water supplies and conveyance capacity, and to otherwise assist Consolidated in acquiring any required Consolidated Supplies and Capacity, at Consolidated's sole cost and expense.

6. Term of Annexation Rights. Consolidated shall have a period of fifteen (15) years from the "Commencement Date" to pursue annexation of the Property to RCWD as outlined in Paragraph 4 (the "Term"). The "Commencement Date" shall be the later of (i) the date that the last appeals period runs in connection with the County of Madera's approval of the Village of Gateway Specific Plan, provided that no appeal is filed, or (ii) the date of a final resolution of any such appeal in such a manner that the Village of Gateway development is permitted to proceed, and the project proponent in fact determines to proceed on the basis of such resolution

7. Damages for Failure to Annex.

(a) If, during the Term, (i) Consolidated does not request to annex the Property to RCWD, or (ii) despite RCWD's compliance with the terms of this Agreement, any Agency denies Consolidated's application for such annexation and Consolidated chooses to abandon its efforts to appeal such denial or has exhausted all of its appeal rights, then Consolidated may request the payment specified in Paragraph 8(b) below upon sixty (60) days' written notice to RCWD.

(b) If the conditions of Paragraph 8(a) are satisfied RCWD shall pay to Consolidated the cash sum of One-Half Dollar ($.50) per square foot of the RCWD Easement area, adjusted to the time of payment by the change from the January 2004 level of the Consumer Price Index, All Urban Consumers in Western Cities Less than 500,000 or the comparable successor index most reflective of the western United States economy outside the major urban centers. Following payment, RCWD shall have no further obligation to annex the Property pursuant to this Agreement. RCWD AND CONSOLIDATED EACH AGREE THAT IF, FOR ANY REASON WHATSOEVER, THE PROPERTY IS NOT ANNEXED TO RCWD DESPITE RCWD'S COMPLIANCE WITH THE TERMS OF THIS AGREEMENT, THE PRICE SET FORTH ABOVE SHALL SERVE AS LIQUIDATED DAMAGES, AS A REASONABLE ESTIMATE OF THE DAMAGES TO CONSOLIDATED PURSUANT TO CALIFORNIA CIVIL CODE SECTIONS 1671. EXCEPT AS PROVIDED BELOW, CONSOLIDATED WAIVES ANY AND ALL RIGHT TO SEEK OTHER RIGHTS OR REMEDIES AGAINST RCWD, INCLUDING WITHOUT LIMITATION, SPECIFIC PERFORMANCE. CONSOLIDATED HEREBY WAIVES THE PROVISIONS OF CALIFORNIA CIVIL CODE SECTION 3389.

Initials on behalf of: *RCWD* *Consolidated*

(c) Notwithstanding the foregoing, if the Property is not annexed to RCWD due to a failure by RCWD to comply with its obligations under this Agreement, Consolidated shall be entitled to pursue any damages to which Consolidated would have been entitled had RCWD condemned the Easement as of the effective date of this Agreement, as well as reimbursement of all out of pocket costs, attorneys' fees and expenses incurred (i) in developing this Agreement, (ii) in pursuing annexation or (iii) otherwise in reliance on or in an effort to enforce this Agreement. However, Consolidated shall not be entitled to consequential damages or lost profits.

(d) Upon annexation of the Property to RCWD, the foregoing liquidated damage and waiver provisions shall be ineffective, and the respective rights, duties, and obligations of the parties shall be consistent with those of a California water district and its landowners, except as specifically set forth herein. No part of this Agreement shall be interpreted as a waiver by Consolidated of any such landowner rights which might otherwise arise upon annexation.

8. Temporary Construction Easement. Consolidated hereby grants to RCWD a temporary construction easement and right of entry over that portion of Property adjacent to the RCWD and MID Easements area, such as may be reasonably necessary for the initial construction and placement of the pipelines described in Paragraph 1 above as more particularly described in Exhibit B hereto, incorporated herein by this reference. RCWD shall be responsible to repair or reimburse Consolidated for any damage to the Property located outside of the RCWD and MID Easements area caused by RCWD in its use of the temporary construction easement.

9. Detachment. In the event that the Property is annexed to RCWD, and subsequently Consolidated desires to detach any or all of the Property from RCWD, RCWD shall reasonably cooperate in such detachment to the extent RCWD determines at the time that such detachment will not adversely affect RCWD or its other landowners in any material way. RCWD shall not charge Consolidated more than the amount reasonably necessary to reimburse RCWD for its costs to serve the Property (or the portion thereof to be detached) actually incurred prior to the detachment, to the extent such costs have not been repaid or consist of obligations not yet payable. Such costs shall include, but shall not be limited to, a proportionate share of any costs incurred by RCWD after the date of this Agreement for any infrastructure or water supplies that benefit the portion of the Property to be detached.

10. Recordation. The parties agree that this Agreement shall be recorded in the Official Records of the County of Madera, State of California and all liens, encumbrances or other easements affecting the portion of the Property described in Exhibit "2" and Exhibit "3" hereto shall be subordinated to these Easements when this Agreement is recorded

11. Further Assurances. Each party shall at all times do and perform all acts and things reasonably necessary or appropriate to effectuate this Agreement. Each party shall execute and deliver to the other party on ten (10) days written notice any

further instruments or documentation that the other party may reasonably deem necessary or appropriate in order to effectuate the other party's rights or interests under this Agreement, any instrument or document deemed necessary by any Agency, or any of the documents referred to in or executed pursuant to this Agreement.

12. Attorneys' Fees. In the event any party hereto shall institute legal proceedings hereunder, pursuant to or in connection with this Agreement or any representation, warranty, covenant or agreement herein given, the prevailing party shall be entitled to recover in such proceedings its reasonable attorneys' fees and costs. RCWD shall indemnify MID for any action brought by Consolidated to enforce this Agreement, except for negligence by MID employees for repair or operation of the pipeline.

13. Binding Effect. This Agreement and all of the rights and obligations hereunder shall run with the land described on the attached Exhibits and shall be binding upon and inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto.

14. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

15. Counterparts. Separate counterparts of this Agreement may be signed and together shall constitute one agreement, even though all parties may not have signed the same counterpart.

16. Headings and Definitions. The titles of the paragraphs of this Agreement are for the convenience of the reader only and no presumption or implication of the intent of the parties as to the construction of this Agreement shall be drawn therefrom.

IN WITNESS WHEREOF, the parties have executed this Agreement to be effective as of the date first above written.

CONSOLIDATED LAND COMPANY, a California limited partnership

By _____
William R. Tatham, Sr., general partner

ROOT CREEK WATER DISTRICT, a California water district

By _____
Philip R. Pierre, President

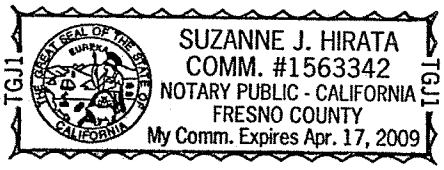
MADERA IRRIGATION DISTRICT, a
California Irrigation District

By Carl Janzen
Carl Janzen, President

STATE OF CALIFORNIA)
)
COUNTY OF FRESNO)

On August 31, 2007, before me Suzanne J. Hirata, a Notary Public, personally appeared William R. Tatham, Sr. personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.



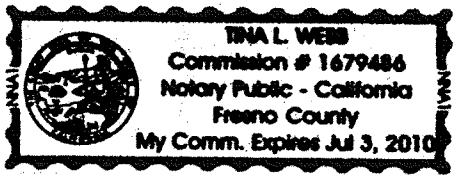
Suzanne J. Hirata
Notary Public

@PFDesktop\::ODMA/MHODMA/DMS;DMS;324785;1

STATE OF CALIFORNIA)
)
COUNTY OF FRESNO)

On August 30, 2007, before me Tina L. Webb, a Notary Public, personally appeared Phillip R. Pierre personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.



Notary Public

GOVERNMENT CODE 27361.7

I certify under the penalty of perjury that the notary seal on the document to which this statement is attached reads as follows:

Name of Notary Tina L. Webb

Commission Number 1679486

Date Commission Expires July 3, 2010

Place of Execution Fresno County, California Date August 30, 2007

Elias J. Barrios, Paralegal
BAKER MANOCK & JENSEN, PC

STATE OF CALIFORNIA)
)
COUNTY OF Madera)

On Sep 4, 2007, before me Janet Linehan Carl Janzen, a Notary Public, personally appeared Carl Janzen personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

JANET LINEHAN
Commission # 1700824
Notary Public - California
Madera County
My Comm. Expires Oct 24, 2010

Janet Linehan
Notary Public

@PFDesktop\::ODMA/MHODMA/DMS;DMS;324785;1

GOVERNMENT CODE 27361.7

I certify under the penalty of perjury that the notary seal on the document to which this statement is attached reads as follows:

Name of Notary Janet Linehan

Commission Number 1700824

Date Commission Expires October 24, 2010

Place of Execution Madera County, California Date September 4, 2007

Elias J. Barrios, Paralegal
BAKER MANOCK & JENSEN, PC

Exhibit "1"

Property Description

DESCRIPTION

PARCEL NO. 1

Parcel 1, 2, 4 and 5 of Parcel Map 2075, according to the map thereof recorded October 16, 1981 in Book 27 of Maps, at Pages 195 and 196, Madera County Records.

APN: 049-021-010, 011, 015 (Portion), 017 (Portion)

PARCEL NO. 2

Unincorporated Area:

That portion of Sections 29 and 30, Township 11 South, Range 20 East, Mount Diablo Base and Meridian, according to the Official Plan thereof, described as follows:

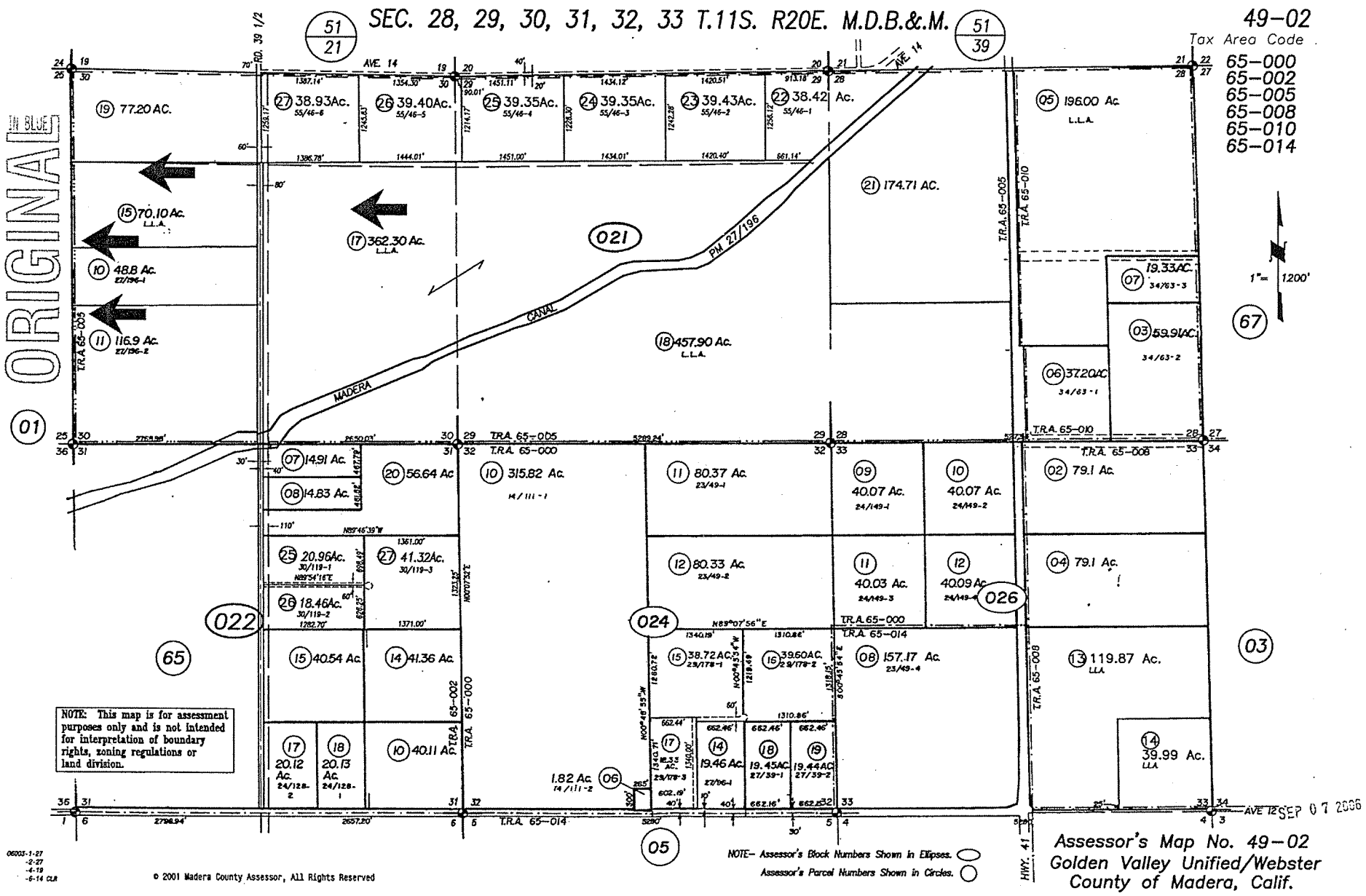
Beginning at the Northwest corner of the South three quarters of said Section 30; thence 89° 11' 11" Ease along the North line of said South three quarters a distance of 5407.65 feet to the Northwest corner of the South three quarters of said Section 29; thence North 89° 21' 39" East along the North line of the South three quarters of said Section 29 a distance of 5308.19 feet to the Northeast corner thereof; thence North 0° 02' 35" West along the East line of said Section 29 a distance of 60.22 feet; thence South 89° 46' 19" West a distance of 10715.00 feet to the West line of Section 30; thence South the point of beginning.

EXCEPTING THEREFROM that portion acquired by the United States of America for canal purposes, by Declaration of Taking, dated July 14, 1952 and recorded July 21, 1952 in Book 550 of Official Records, page 422, Madera County Records.

ALSO EXCEPTING THEREFROM that 20 foot strip of land granted to the County of Madera, in Deed recorded August 22, 1969, in Book 1041 of Official Records, page 153, Madera County Records, Document No. 9138.

AND FURTHER EXCEPTING that 60 foot strip of land granted to the County of Madera, in Deed recorded October 8, 1991 in book 1609 Official Records, Page 162, as Document No. 20854, Madera County Records.

APN: 049-021-015 (Portion), 017 (Portion)


SEC. 28, 29, 30, 31, 32, 33 T.11S. R20E. M.D.B.&.M.
51/21
51/39
49-02
Tax Area Code
65-000
65-002
65-005
65-008
65-010
65-014
ORIGINAL IN BLUE
01
02
03
05
06
65
67
021
022
024
026
AVE. 14
AVE. 12
RD. 39 1/2
MADERA CANAL
PM 27/196
T.R.A. 65-000
T.R.A. 65-002
T.R.A. 65-005
T.R.A. 65-008
T.R.A. 65-010
T.R.A. 65-014
HWY. 41
1" = 1200'
19 77.20 AC.
27 38.93Ac. 55/46-6
26 39.40Ac. 55/46-5
25 39.35Ac. 55/46-4
24 39.35Ac. 55/46-3
23 39.43Ac. 55/46-2
22 38.42 Ac. 55/46-1
05 196.00 Ac. L.L.A.
15 70.10 Ac. L.L.A.
17 362.30 Ac. L.L.A.
21 174.71 AC.
10 48.8 Ac. 27/196-1
11 116.9 Ac. 27/196-2
18 457.90 Ac. L.L.A.
07 19.33AC. 34/63-3
03 59.91AC. 34/63-2
06 37.20AC 34/63-1
07 14.91 Ac.
08 14.83 Ac.
20 56.64 Ac
10 315.82 Ac. 14/111-1
11 80.37 Ac. 23/49-1
09 40.07 Ac. 24/149-1
10 40.07 Ac. 24/149-2
02 79.1 Ac.
25 20.96Ac. 30/119-1
27 41.32Ac. 30/119-3
26 18.46Ac. 30/119-2
12 80.33 Ac. 23/49-2
11 40.03 Ac. 24/149-3
12 40.09 Ac. 24/149-4
04 79.1 Ac.
15 40.54 Ac.
14 41.36 Ac.
15 38.72AC 23/178-1
16 39.60AC. 23/178-2
08 157.17 Ac. 23/49-4
13 119.87 Ac. L.L.A.
17 20.12 Ac. 24/128-2
18 20.13 Ac. 24/128-1
10 40.11 Ac.
1.82 Ac. 06 14/111-2
17 19.33 AC. 23/178-3
14 19.46 Ac. 27/196-1
18 19.45AC 27/39-1
19 19.44AC 27/39-2
14 39.99 Ac. L.L.A.
NOTE: This map is for assessment purposes only and is not intended for interpretation of boundary rights, zoning regulations or land division.
NOTE– Assessor's Block Numbers Shown in Ellipses.
Assessor's Parcel Numbers Shown in Circles.
© 2001 Madera County Assessor, All Rights Reserved
06003-1-27
-2-27
-4-19
-6-14 CLR
Assessor's Map No. 49-02
Golden Valley Unified/Webster
County of Madera, Calif.
SEP 07 2006

DESCRIPTION

Order No. 803103 EH

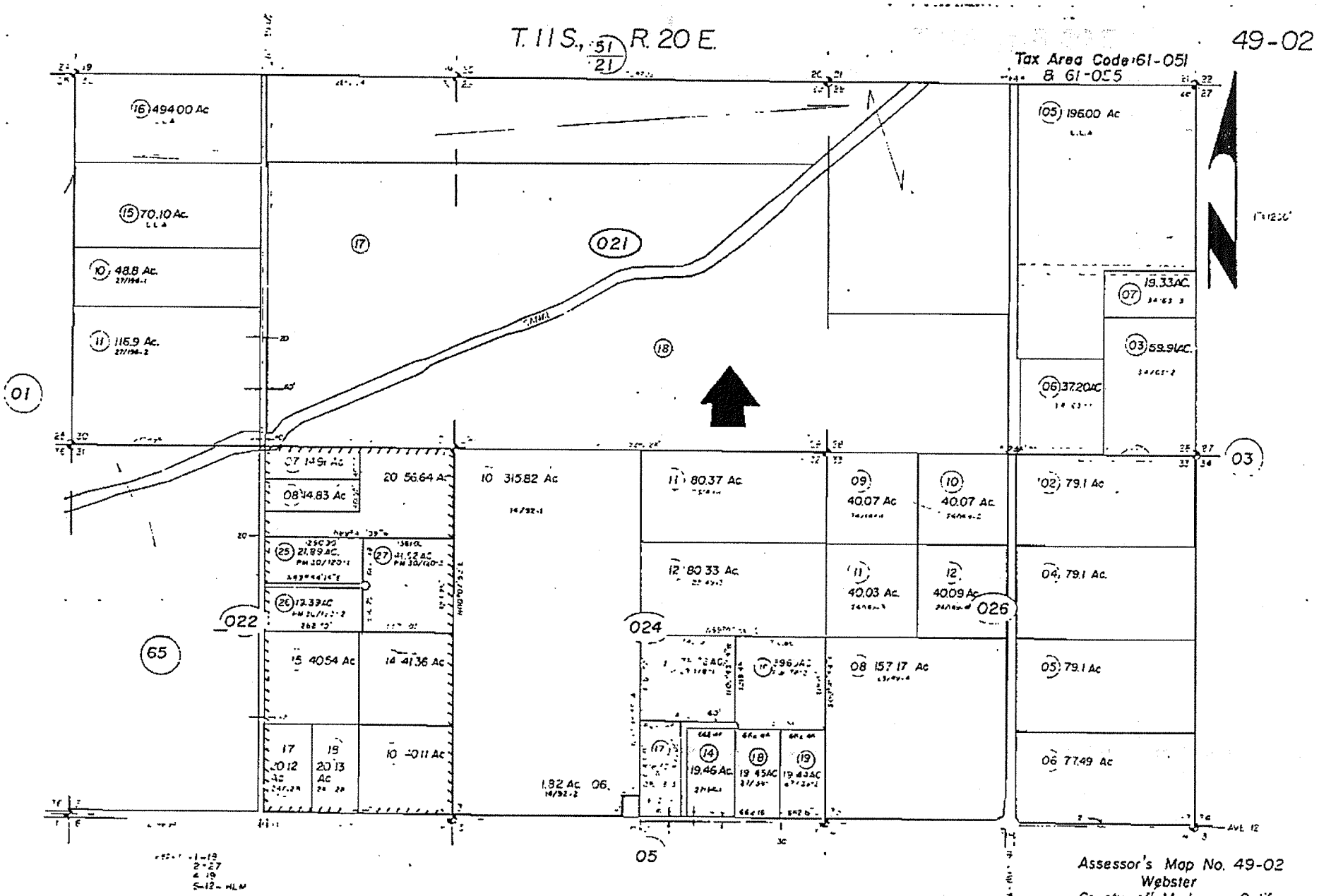
PARCEL NO. 1:

Parcel 3 of Parcel Map 2075, according to the map recorded October 16, 1981 in Book 27 of Maps, at pages 195 and 196, Madera County Records.

PARCEL NO. 2:

That portion of Section 28, Township 11 South, Range 20 East, Mount Diablo Base and Meridian, according to the official plat thereof, described as follows:

Beginning at the Northwest corner of the South 105 acres of the West 1/2 of said Section 28, said 105 acres bounded on the North by a line parallel to the South line of said West 1/2; thence North 0° 02' 35" West along the West line of said West 1/2 a distance of 274.19 feet thence North 89° 46' 51" East a distance of 2646.45 feet to a point on the East line of said West 1/2; thence South 0° 06' 09" East along said East line a distance of 275.24 feet to the Northeast corner of said South 105 acres; thencce South 89° 48' 13" West along the North line of said South 105 acres a distance of 2646.73 feet to the point of beginning.



Assessor's Map No. 49-02
Webster
County of Madera, Calif.

"THIS PLAT IS FOR YOUR AID IN LOCATING YOUR LAND WITH REFERENCE TO STREET AND OTHER PARCELS, WHILE THIS PLAT IS BELIEVED TO BE CORRECT, THE COMPANY ASSUMES NO LIABILITY FOR ANY LOSS OCCURING BY REASON OF RELIANCE THEREON"
CHICAGO TITLE

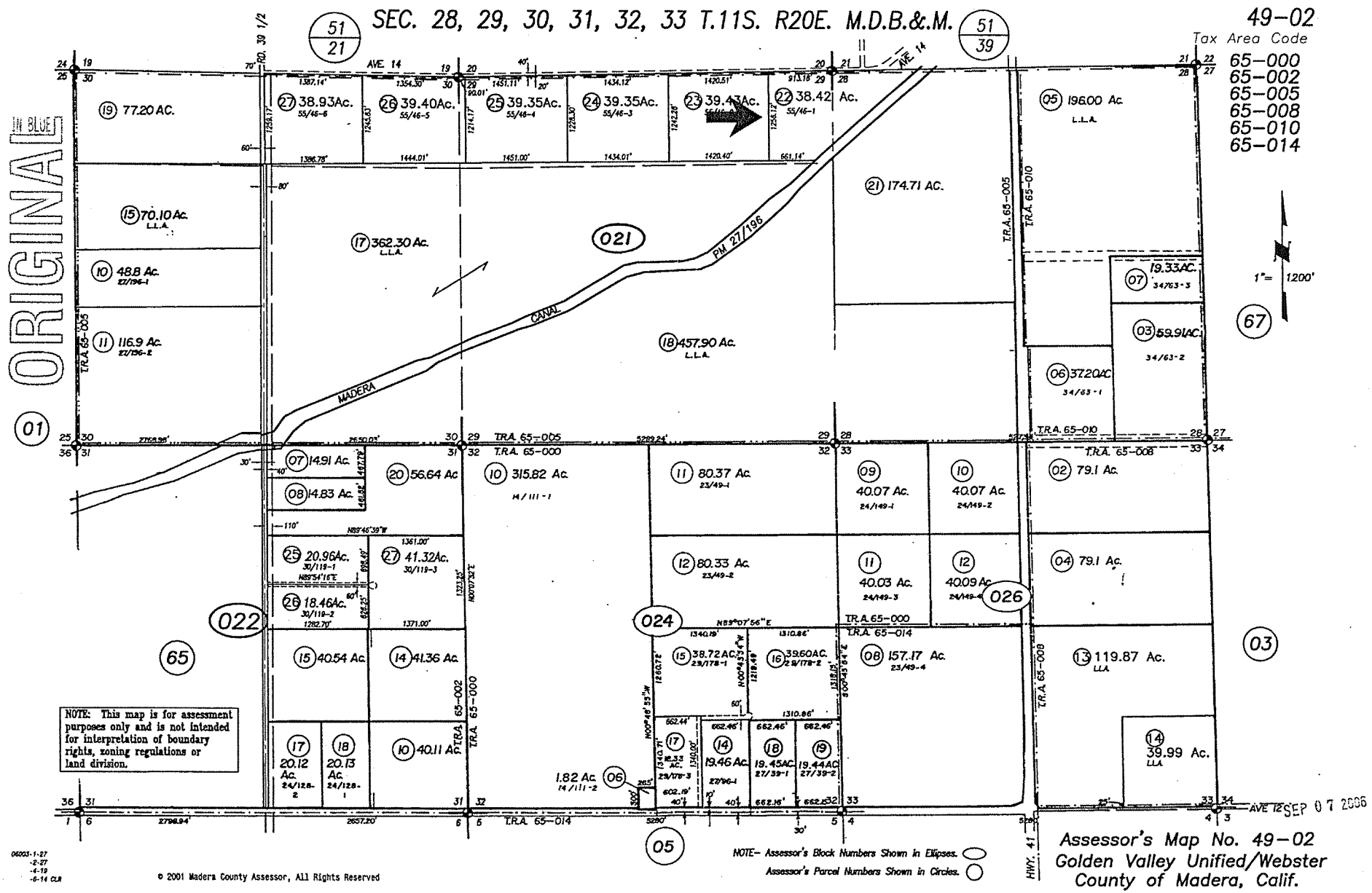
LEGAL DESCRIPTION

EXHIBIT "A"

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF MADERA, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:

Parcel 1 of Parcel Map 3937, in the County of Madera, State of California, according to the map thereof recorded in Book 55 of Maps at Pages 46, 47, 48 and 49, Madera County Records.

APN: 049-021-022



Assessor's Map No. 49-02
Golden Valley Unified/Webster
County of Madera, Calif.

EXHIBIT "A"

LEGAL DESCRIPTION

A 25 foot wide easement for pipeline operation and maintenance purposes above, over, across and through a portion of Parcel 3, as said parcel is shown on Parcel Map No. 2075, filed Book 27 of Maps, Pages 195 and 196, Madera County Records, being a portion of the southwest quarter of Section 29, and a portion of the southeast quarter of Section 30, Township 11 South, Range 20 East, Mount Diablo Base and Meridian; the centerline of said easement being more particularly described as follows:

Beginning at a point on the south line of said Parcel 3, distant along said line North 89° 28' 17" East, a distance of 20.00 feet from the southwest corner of said Section 29, said point being the endpoint of a non-tangent curve concave westerly, and having a radius of 1690.00 feet, with a radial bearing North 89° 22' 18" East; thence leaving said line

1) northerly, along the arc of said non-tangent curve, through a central angle of 17° 32' 02", an arc distance of 517.18 feet to a point of reverse curvature with a curve concave easterly, and having a radius of 1710.00 feet; thence

2) northerly, along the arc of said reverse curve, through a central angle of 17° 47' 11", an arc distance of 530.84 feet; thence

3) North 00° 22' 33" West, a distance of 161.74 feet; thence

4) North 24° 38' 14" West, a distance of 77.13 feet to the southerly boundary of the Madera Canal, as said canal is shown on said map.

Note: The sidelines and/or limits of said easement are to be lengthened or shortened to terminate southerly at the south line of said Parcel 3, and northerly at the southerly line of said Madera Canal.

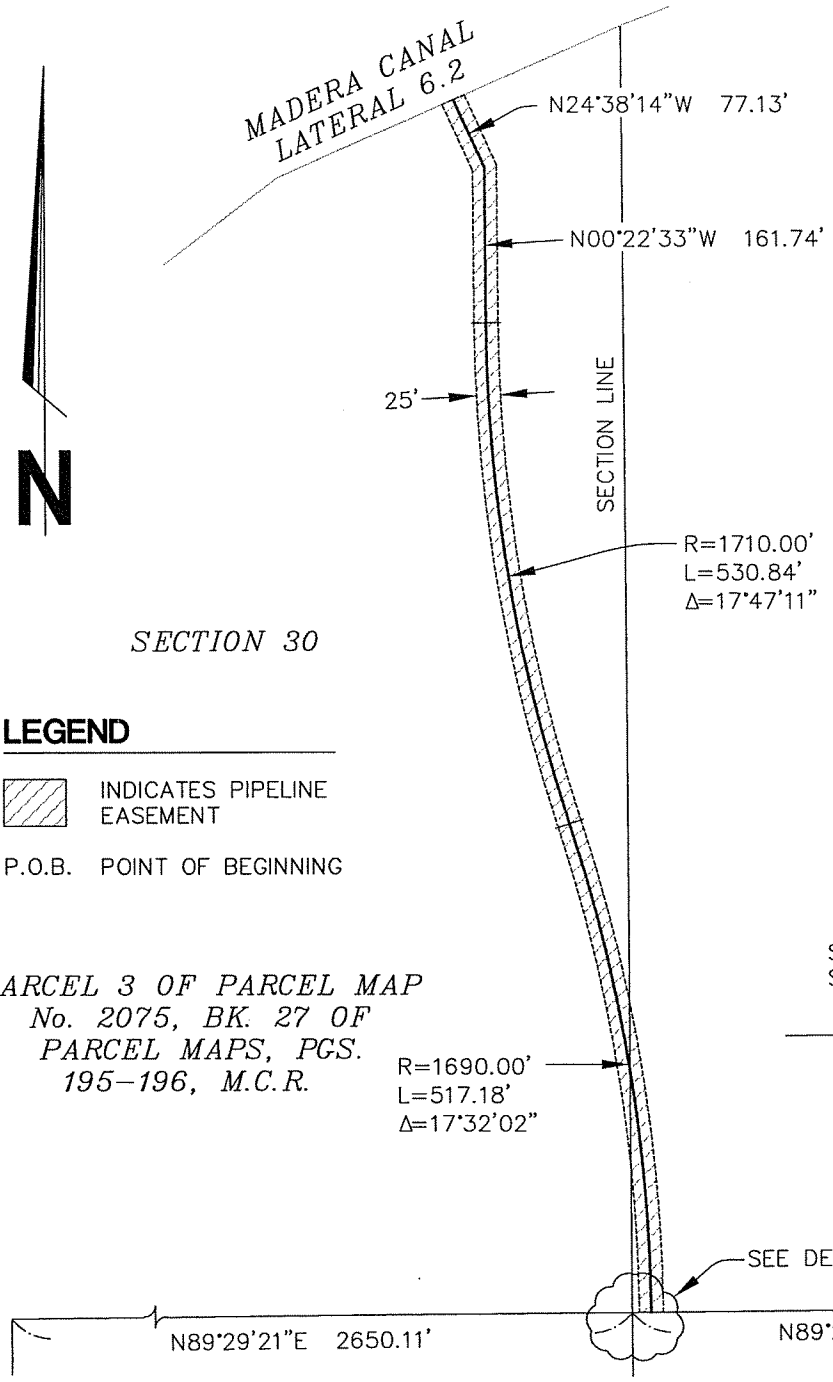
END OF DESCRIPTION

LICENSED LAND SURVEYOR
CRAIG E. BAUM
No. 7680
STATE OF CALIFORNIA

EXP. 31 DEC 06

EXHIBIT "A"

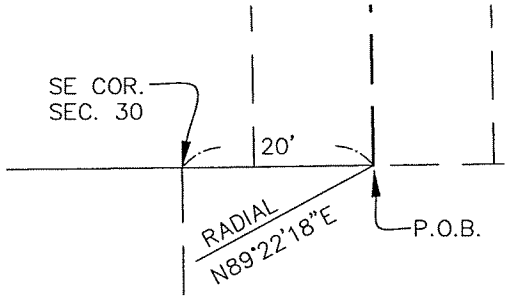
BEING A PORTION OF THE SOUTHWEST QUARTER OF SECTION 29 AND A PORTION OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 11 SOUTH, RANGE 20 EAST, MOUNT DIABLO BASE AND MERIDIAN



LICENSED LAND SURVEYOR
CRAIG E. BAUM
EXPIRES: 12-31-08
No. 7680
STATE OF CALIFORNIA

DATE SIGNED: 10SEP07

DETAIL A
SCALE 1"=20'



LEGEND

INDICATES PIPELINE EASEMENT

P.O.B. POINT OF BEGINNING

PARCEL 3 OF PARCEL MAP No. 2075, BK. 27 OF PARCEL MAPS, PGS. 195–196, M.C.R.

SCALE IN FEET

0 100 200 400

PROVOST & PRITCHARD ENGINEERING GROUP, CST. 1959, 286 WEST CROMWELL AVENUE, FRESNO, CALIFORNIA 93711-6162, 559/448-2700 FAX 559/448-2715, www.provostandpritchard.com	PIPELINE EASEMENT	SCALE 1" = 200'
		DRAWN BY SD
	MADERA, CA	REVISED
	LAND SURVEYOR CRAIG E. BAUM DATE 03/09/06 L.S. LICENSE NO. LS 7680	SHEET 1 OF 1 SHEETS
Job No. 14340405	Date Revised	
Dwg. No.	Approval	

EXHIBIT "B"

LEGAL DESCRIPTION

A 50 foot wide temporary easement for construction purposes above, over, across and through a portion of Parcel 3, as said parcel is shown on Parcel Map No. 2075, filed Book 27 of Maps, Pages 195 and 196, Madera County Records, being a portion of the southwest quarter of Section 29, and a portion of the southeast quarter of Section 30, Township 11 South, Range 20 East, Mount Diablo Base and Meridian; the centerline of said easement being more particularly described as follows:

Beginning at a point on the south line of said Parcel 3, distant along said line North 89° 28' 17" East, a distance of 20.00 feet from the southwest corner of said Section 29, said point being the endpoint of a non-tangent curve concave westerly, and having a radius of 1690.00 feet, with a radial bearing North 89° 22' 18" East; thence leaving said line

1) northerly, along the arc of said non-tangent curve, through a central angle of 17° 32' 02", an arc distance of 517.18 feet to a point of reverse curvature with a curve concave easterly, and having a radius of 1710.00 feet; thence

2) northerly, along the arc of said reverse curve, through a central angle of 17° 47' 11", an arc distance of 530.84 feet; thence

3) North 00° 22' 33" West, a distance of 161.74 feet; thence

4) North 24° 38' 14" West, a distance of 77.13 feet to the southerly boundary of the Madera Canal, as said canal is shown on said map.

Note: The sidelines and/or limits of said easement are to be lengthened or shortened to terminate southerly at the south line of said Parcel 3, and northerly at the southerly line of said Madera Canal.

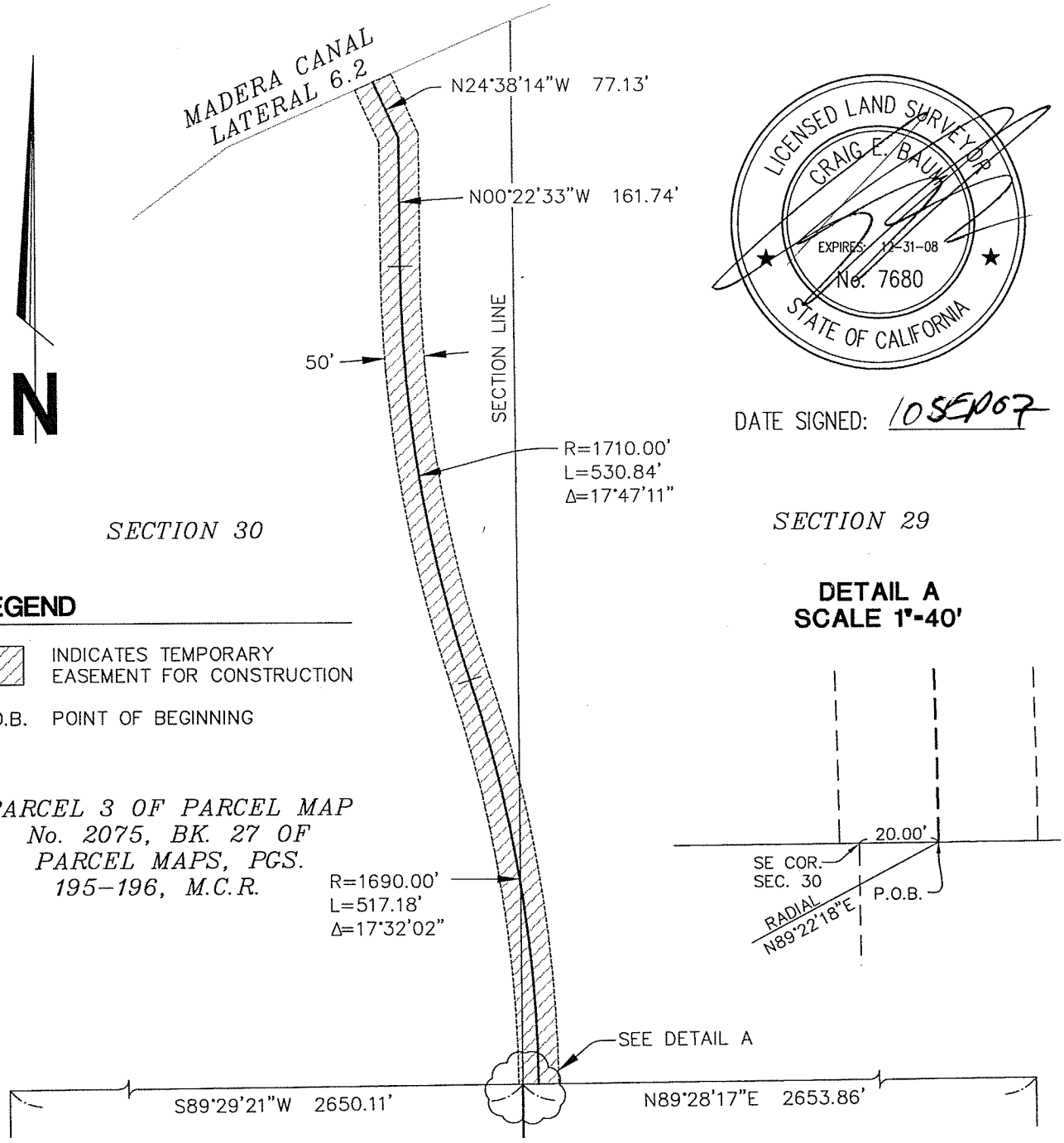
END OF DESCRIPTION

LICENSED LAND SURVEYOR
CRAIG E. BAUM
No. 7680
STATE OF CALIFORNIA

EXP. 31 DEC 06

EXHIBIT "B"

BEING A PORTION OF THE SOUTHWEST QUARTER OF SECTION 29 AND A PORTION OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 11 SOUTH, RANGE 20 EAST, MOUNT DIABLO BASE AND MERIDIAN



LICENSED LAND SURVEYOR
CRAIG E. BAUM
EXPIRES: 12-31-08
No. 7680
STATE OF CALIFORNIA

DATE SIGNED: 10SEP07

LEGEND

INDICATES TEMPORARY EASEMENT FOR CONSTRUCTION

P.O.B. POINT OF BEGINNING

SCALE IN FEET

0 100 200 400

PROVOST & PRITCHARD ENGINEERING GROUP, EST. 1959, 286 WEST CROMWELL AVENUE, FRESNO, CALIFORNIA 93711-6162, 559/448-2700 FAX 559/449-2715, www.provostandpritchard.com	CONSTRUCTION EASEMENT	SCALE 1" = 200'
		DRAWN BY BWB
	MADERA, CA	REVISED
	LAND SURVEYOR CRAIG E. BAUM DATE 03/09/06 L.S. LICENSE NO. LS 7680	SHEET 1 OF 1 SHEETS
Job No. 14340405	Date Revised	
Dwg. No.	Approval	

Attachment 3.4, CEQA Documents and Status

Letter to USBR Regarding CEQA review status
RCWD Resolutions 2010-07 & 2010-08
Initial Study/Negative Declaration for the RCWD/MID Conveyance Facilities, Contract for Temporary Receipt of Section 215 Waters and Water Transfer and Exchanges Project

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Gretchen Heisdorf

From: Chris Campbell [CCampbell@bakermanock.com]
Sent: Friday, November 12, 2010 5:50 PM
To: Timothy Jones
Cc: Phil Pierre
Subject: FW: Revised PD received - FW: Root Creek Project Description

Importance: Low

Tim,

Here is the latest update from the Bureau. In my experience, they do nothing without money on deposit so it is best to get the $15,000 deposit to them as soon as possible. It is best to make a check to RCWD so that the District can pay the bureau.

I already requested that Brian push MID to get the turnout design to Valerie. I believe that everything will be in the Bureau's court once we get them them the CEQA approval on Thursday and MID turns in the construction plans.

It appears that my estimate that they would want $15,000 was accurate but I thought that they had more money left in their deposit account. Unfortunately, they have historically been really bad about regularly billing their time so that they can keep the account balance current. Valerie says that they plan to institute monthly updates but we certainly hope that we are done with this project before they get that system in place.

Let me know when you are available to discuss the grant proposals.

Chris

From: Curley, Valerie J [mailto:VCurley@usbr.gov]
Sent: Friday, November 12, 2010 5:44 PM
To: Chris Campbell; Phil Pierre; Matthew Avedikian; Tina Webb
Cc: Woolley, David L; Bushard, George K; Ballew, Rena K; Inthavong, Michael T; Beck, Kimberley A; Williams, Darrin R.; Salazar, Edward; Siek, Charles R; Couron, Laura M; Carter, Sheryl R
Subject: Revised PD received - FW: Root Creek Project Description
Importance: Low

Chris,
Thank you for providing us the revised project description. As discussed, we will use this, along with the CEQA documentation and design information to be provided, to perform our analysis and review actions.

Regarding the expenses to date; as of October 31, 2010, the cost reimbursable account we have established under Letter of Agreement (LOA) # 02-WC-20-2083 for this project has $322.46 remaining.

For work to proceed, Reclamation will need a deposit of $15,000.00 for cost authority number A1R-1752-9652-220-00-3-4 – Root Creek Water District.

With respect to providing a target completion date for this project; before making a commitment of when we can finalize our environmental, engineering, land, and contract analysis actions, I will need to obtain an assessment from our team after they have had an opportunity to review the information that you will provide in the coming weeks. Once reviewed, I will provide a target completion date at that time.

Please send Krista our 'Congratulations!' on the new addition to her family and we look forward to working with you on the completion of this project.

Thanks again,

Valerie J. Curley
Chief, Contract Administration Branch
South-Central California Area Office
Bureau of Reclamation
1243 "N" Street
Fresno CA 93721
559-487-5041 (phone)
559-284-1051 (cell)
559-487-5397 (fax)
vcurley@usbr.gov

From: Chris Campbell [mailto:CCampbell@bakermanock.com]
Sent: Friday, November 12, 2010 9:20 AM
To: Curley, Valerie J
Cc: Phil Pierre; Matthew Avedikian; Tina Webb
Subject: Root Creek Project Description
Importance: Low

Valerie,

Attached is my cover letter and the final project description for the Root Creek project. As I say in the letter, we have a board meeting Wednesday to approve the Negative Declaration for the project. I would also like to be able to report on the budget at that meeting.

Thank you. I look forward to talking with you soon.

Chris

From: Tina Webb
Sent: Wednesday, November 10, 2010 9:42 AM
To: Chris Campbell
Subject: Scanned document from Tina Webb (TWebb@bakermanock.com)
Importance: Low

Baker Manock
& Jensen PC
ATTORNEYS AT LAW

Christopher L. Campbell
Attorney at Law
ccampbell@bakermanock.com

Fig Garden Financial Center
5260 North Palm Avenue
Fourth Floor
Fresno, California 93704
Tel: 559.432.5400
Fax: 559.432.5620
www.bakermanock.com

November 10, 2010

VIA ELECTRONIC & U.S. MAIL

Ms. Valerie Curley
BUREAU OF RECLAMATION
1234 North N Street
Fresno, California 93721

Re: Root Creek Water District Environmental Review of Construction and Water Supply project

Dear Ms. Curley:

Attached is a completed Final Project Description for the Root Creek water supply project. I believe that the only thing that the Bureau still needs to complete its review of this project is the turnout design for the connection to Madera Lateral 6.2. That design has been completed and it is being reviewed by Madera Irrigation District. I expect that they will complete their review and have the final design documents delivered to you soon.

The District has proceeded with the environmental review of the project pursuant to the California Environmental Quality Act. The District completed its Initial Study that determined that there were no significant adverse environmental impacts of the project as proposed. Therefore, the District published a Notice of Intent to adopt a Negative Declaration. No comments were received concerning the project. Therefore, the District Board is expected to adopt the Negative Declaration and approve the project at its meeting on November 17, 2010. Once that is done, we will provide you with a copy of the Negative Declaration, the Initial Study and the Notice of Determination.

With all of this completed I am hopeful that we can also wrap up the Bureau review in the next 60 days.

I am also being asked by the District's Board for an estimate of the Bureau fees to completion of the review. Of course, we recognize that the District is obligated to pay the actual costs. Please tell us the amount that the District currently has on deposit with the Bureau pursuant to the LOI. Also, please let me know whether all of the Bureau services to date have been charged to the deposit or whether there are additional, essentially outstanding, bills. Finally, it would be helpful if you could give us an estimate of remaining costs.

Thank you for your assistance. I would appreciate it if we could talk prior to the 17th so I can report to the board on the remaining process and a time estimate.

Very truly yours,

Christopher L. Campbell
BAKER MANOCK & JENSEN, PC

CLC:tlw

Enclosure

Madera Irrigation District and Root Creek Water District Project Description For Application to the Bureau of Reclamation for Environmental Review and Approval

November 10, 2010

Summary

Root Creek Water District ("RCWD"), located in southeastern Madera County, has acquired contracts with Madera Irrigation District ("MID") and other parties to receive surface water supplies for conjunctive use and direct recharge within and near the District. In addition, MID has agreed to deliver RCWD's surface water supplies through the Madera Canal and MID Lateral 6.2 on the terms set forth in the March 13, 2002 agreement between RCWD and MID (the "2002 Agreement"). RCWD proposes to construct a new turnout on MID Lateral 6.2, and run a new pipeline from Lateral 6.2 to RCWD's northern boundary to provide surface water to existing agricultural irrigation systems that currently rely solely on groundwater. Finally, RCWD has contracted for a water exchange that is set forth in the Water Exchange Agreement between MID, RCWD, Shafter-Wasco Irrigation District ("SWID") and Westside Mutual Water Company, LLC ("Westside").

Proposed Project

MID AND RCWD REQUEST THAT THE BUREAU APPROVE THE FOLLOWING PROPOSED ACTIONS (collectively, the "Proposed Project"):

- Construction of a new turnout in MID Lateral 6.2 and construction of a 48-inch diameter underground pipeline to deliver surface water to RCWD from the proposed new turnout in MID lateral 6.2.

- Construction of a 24-inch plastic pipeline to replace an existing 18-inch concrete MID supply line.

- A Temporary Water Services Contract for RCWD with the Bureau of Reclamation under Section 215 of the Reclamation Reform Act of 1982 ("Section 215 Contract").

- A program of annual transfers of up to 10,000 acre-feet of Central Valley Project ("CVP") Water, as available, from MID to RCWD.

- Approval of water deliveries to RCWD pursuant to the Water Exchange Agreement between RCWD, MID, Westside, and SWID.

- Approval of MID's surface water deliveries to RCWD through the Madera Canal and MID Lateral 6.2.

Purpose and Need

The Proposed Project will help RCWD address chronic regional groundwater overdraft. Long-term groundwater pumping has created severe overdraft conditions in that portion of the Madera Groundwater Basin that underlies the northern portion of RCWD and adjacent areas generally east of the MID service area. RCWD is principally an agricultural district, developed with a variety of permanent crops. RCWD currently relies exclusively on pumped groundwater.

The overdraft is especially significant in the eastern areas of the Madera Groundwater Basin (such as RCWD) where the aquifer is thin, recharge is limited due to geologic conditions, and existing extensive agricultural and urban development rely solely on groundwater. Because the RCWD area is immediately adjacent to, but outside, the eastern boundary of MID, the local overdraft causes subsurface flow of groundwater out of MID.[1] Overdraft of the Madera Groundwater Basin within RCWD itself is estimated at approximately 3,400 acre-feet per year.[2] This overdraft results in dropping water levels in agricultural wells, increased pumping costs, decreasing quality, and, eventually, will compromise reliability of water supplies.

If RCWD does not or cannot import surface water, groundwater quality and the groundwater table in RCWD will continue to decline and the cost to pump groundwater will continue to rise until agricultural production is no longer viable. Decreasing water levels have already led to irreparable well failures in immediately adjacent areas north of RCWD.

The Proposed Project will assist RCWD in eliminating its contribution to overdraft within the Madera Groundwater Basin, stabilize groundwater levels, and reduce pumping costs within RCWD. MID desires that RCWD achieve these goals because a primary goal of MID's groundwater management plan is elimination of overdraft in adjacent areas outside MID boundaries. These goals will be met through RCWD importing surface water supplies for in-lieu and direct recharge of the groundwater basin. RCWD will substitute imported surface water for ground water currently pumped by RCWD's agricultural users and will percolate imported water in basins constructed for that purpose.

Providing surface irrigation water to the agricultural users reduces the quantity of groundwater pumped for irrigation on a one-to-one basis. The Proposed Project will facilitate the acquisition and delivery of surface water supplies to RCWD. This reduces the draw on the aquifer, saves energy, improves air quality, and improves water quality. Acquisition and delivery of these supplies will provide a long term sustainable water supply for RCWD while assisting MID with attaining a groundwater balance at no cost to MID.

---

[1] Figure 2-6, Groundwater Levels Unconfined Aquifer Spring 1999, "AB 3030 Groundwater Management Plan, Madera County" (2002) prepared by Todd Engineers.

[2] Hydrogeologic Investigation: Southeastern Madera County" (1999, revised 2001) prepared by Kenneth D. Schmidt & Associates, in conjunction with Provost & Pritchard Engineering Group, Inc.

Description of Proposed Project

A. Construction of Turnout and Conveyance Infrastructure

The Proposed Project will require new facilities to be constructed for the delivery of surface waters. The two major construction components are as follows:

1. Construction of a new turnout in MID Lateral 6.2 and construction of a 48-inch diameter underground pipeline to deliver surface water to RCWD from the proposed new turnout in MID lateral 6.2.

This construction component includes: (i) a turnout and metering facility along MID Lateral 6.2; (ii) approximately 1.25 miles of mainline pipeline from MID Lateral 6.2 to RCWD's current northern boundary and 1.5 miles of mainline pipeline plus lateral pipelines within RCWD; and (iii) approximately 10 to 12 connections to existing irrigation pump stations.

The turnout and metering facility will be located within the MID Lateral 6.2 right-of-way, owned by the Bureau. It will be on the south bank of Lateral 6.2 near the mid section point of Section 29 (T.11S, R.20E), approximately 2.4 miles from the headgate at the Madera Canal. The canal turnout is preliminarily designed to be constructed of concrete with a 36-inch diameter canal slide gate and metal trash rack. The metering facility will be a 6-foot by 6-foot concrete meter box with a flow meter and a baffle wall. The baffle wall is necessary to maintain a full pipe for water measurement purposes. Neither the turnout nor metering facility will utilize lighting or be designed with materials that will create glare.

The RCWD mainline, leaving the meter box, is proposed to be 48-inch diameter reinforced concrete pipe, that will convey water to a point just north of the Root Creek channel. Lateral pipelines of 4-inch to 24 inches in diameter will be attached to the mainline to connect to existing irrigation facilities.

2. Construction of a 24-inch diameter underground plastic pipeline to replace an existing 18-inch concrete MID supply pipeline.

The proposed replacement pipeline will connect to an existing MID turnout in Lateral 6.2 that is west of the proposed RCWD turnout. The pipeline will run generally in a north-easterly direction within the Lateral 6.2 right of way approximately 260 feet. There the 24-inch pipe will turn to run south approximately 1/4 mile parallel to and adjacent to the westerly side of the RCWD 48-inch pipeline and will connect to the existing MID distribution system now served by the existing concrete pipeline.

MID currently holds an easement that contains the existing 18-inch MID under ground supply pipeline. The existing pipeline crosses the River Hills Ranch that is currently improved with a vineyard. If approved, RCWD will construct and dedicate the MID

Replacement Pipeline to MID, and MID will abandon its current easement over River Hills Ranch. The existing pipeline will be abandoned in place at River Hills request.

All the new pipelines and connections will be constructed within previously disturbed areas including developed agricultural fields, agricultural roads, or public highway right-of-ways.

All construction will comply with San Joaquin Valley Air Pollution Control District Rule 8021, Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities. Construction equipment will be muffled and intakes and exhaust shielding will be utilized to reduce noise (per manufacturers' specifications). A Storm Water Pollution Plan will be developed and implemented for the Proposed Project.

If construction is scheduled to commence between the months of February and the end of August, a pre-construction survey will be conducted by a qualified biologist for nesting raptors. This survey will occur within 30 days prior to the on-set of construction. If an active nest is located during the pre-construction surveys, this nest, and an appropriate buffer around it (as determined by a qualified biologist) will remain off-limits to construction until the nesting season is over.

B. Acquisition of Surface Water through Section 215 Contract, Conditional Pre-Approval of Transfers from MID, and Exchange of Water from Kern County

RCWD seeks a 215 contract with the Bureau and has already entered into three water supply related contracts. First, RCWD, the Friant Water User's Authority ("FWUA"), MID, and the Chowchilla Water District ("CWD") have entered into the "Agreement Concerning Agricultural, Municipal and Industrial Water Use Within Root Creek Water District," dated December 30, 1999 (the "Friant Agreement"). Second, RCWD and MID have entered into the "Agreement between Madera Irrigation District and Root Creek Water District for the Conveyance and Sale of Water," dated March 13, 2002 (the "2002 Agreement"). Third, RCWD has entered into the "Water Exchange Agreement" with MID, SWID, and Westside. These contracts have not been performed pending CEQA review and the Bureau's approval under NEPA.

1. <u>215 Contract</u>.

RCWD seeks a contract with the Bureau for receipt of Section 215 waters from the Friant Unit of the CVP, when available. Upon completion of its facilities, RCWD will be able to accept 215 water at any time during the year for irrigation or direct recharge. RCWD is seeking a contract for up to 10,000 acre feet of Section 215 water, although the amount that can actually be taken in any year will vary. The addition of Section 215 waters to RCWD supplies will help RCWD eliminate its contribution to the regional groundwater overdraft, to stabilize groundwater levels, reduce pumping costs within RCWD, and maintain a reliable and affordable supply for its agricultural users.

2. Transfer of up to 10,000 acre-feet of CVP water from MID.

In the 2002 Agreement, MID agreed to annually transfer up to 10,000 acre feet of MID CVP water to RCWD, when available. This transfer allows MID to maximize the beneficial use of available water supplies to benefit the Madera Groundwater Basin at no financial cost to MID. The transfer also provides MID with greater flexibility in delivering available water supplies to deficient areas to better balance surface and ground water supplies in southeastern Madera County.

Delivering available surface water to RCWD at times when water supply exceeds water demand by MID growers or other MID uses, including recharge efforts, will help MID and RCWD curtail the current groundwater overdraft in the eastern portion of the Madera Groundwater Basin. MID will be able to efficiently and economically utilize wet year supplies for local recharge and subsequent extraction that will directly benefit MID, without the cost of constructing and maintaining direct recharge facilities. RCWD will supply water to its agricultural lands on a viable long-term basis, while simultaneously minimizing its contribution to overdraft of the Madera Groundwater Basin. Groundwater pumping will be reduced in RCWD (and, therefore, the eastern portion of the Madera Basin) because surface water supplies will be delivered through the gravity-fed RCWD pipeline from the Madera Canal. These pumping reductions will lead to significant corresponding reductions in energy use and air pollution.

3. Water Deliveries Pursuant to Water Exchange Agreement.

The Water Exchange Agreement guarantees RCWD's right to purchase up to 3,500 ac-ft per year initially, increasing over time to a maximum of 7,000 ac-ft per year, from Westside for up to 50 years. RCWD may purchase additional surface water as available.

Three different methods are available to deliver the water purchased from Westside. First, the Water Exchange Agreement contemplates the annual exchange of 3,500 to 7,000 ac-ft of SWID's CVP Water allocated under its Friant Division long term water service contract with the Bureau ("Bureau Contract") for an equal amount of Westside's non-CVP water deriving from pre-1914 water rights on the Kern and Kaweah Rivers. SWID will accept and use the non-CVP water within its Bureau Contract service area boundary in compliance with the Reclamation Reform Act ("RRA") acreage limitations. The exchanged CVP water will be used on RCWD's agricultural lands within its service area boundaries for irrigation purposes, but without any RRA restrictions.

Second, If SWID enters into a repayment contract, as authorized by PL 111-11 (included in the San Joaquin River Settlement Act), upon repayment of outstanding capital obligations, RRA restrictions will no longer apply to water received by SWID. The exchanged CVP water received by RCWD would remain without RRA restrictions.

Finally, Westside may acquire CVP water that could be available for exchange. Under this option, SWID would exchange its CVP water allocated under its Bureau Contract for

an equal amount of Westside's CVP water. SWID will accept and use the Westside CVP water within its service area boundaries in compliance with RRA acreage limitations. As stated above, if SWID enters into a repayment contact, upon repayment of outstanding capital obligations, RRA restrictions will no longer apply to deliveries within SWID. If that occurs, the exchanged CVP water delivered to RCWD may be subject to RRA restrictions depending on the source of Westside's CVP water.

4. Source of Westside Non-CVP Water Supplies.

High flow water on the Kern River and high priority rights on the Kaweah River are the source of Westside's surface waters that are stored in the NKWSD under a landowner banking agreement. NKWSD has an established program of groundwater monitoring, consisting of bi-annually measuring and assessing impacts to groundwater from pumping stored surface water. Surface water supplies stored in NKWSD are expected to be recharged, banked, and withdrawn by Westside under the existing landowner banking agreement with NKWSD using existing facilities.

Westside's stored surface water supplies come from Lower Kern River Hacienda Water Rights. ("Hacienda Water"). These water rights originated prior to the construction of Isabella Dam, when the Kern River reached the Hacienda Ranch north of Highway 46. These flows were diverted and used on the Hacienda Water District property located in southern Kings County. Consequently, the Hacienda Water is an "imported" supply to Kern County. Variable quantities of the average annual yield have historically been delivered to users outside of Kern County.

Westside's other surface water supplies come from the Kaweah River in Tulare County. Paramount Citrus Association ("PCA"), a member of Westside owns stock in the Wutchumna Water Company entitling it to a proportionate share of the annual surface water supplies generated under Wutchumna's pre-1914 water rights from the Kaweah River ("Wutchumna Water"). The Wutchumna Water is diverted on a yearly basis into the Wutchumna ditch just below Terminus Dam. The Rayo Ranch (owned by PCA) is a stockholder in the Wutchumna Water Company. PCA converted the Rayo Ranch irrigation system from a flood irrigation system to a micro-sprinkler irrigation system in the late 1980's, resulting in a decrease in yearly water use for irrigation of approximately 4,000 ac-ft. that PCA can utilize elsewhere.

5. Water Deliveries to RCWD under the Water Exchange Agreement.

The Water Exchange Agreement is necessary to deliver the Westside water to RCWD. This exchange utilizes Millerton Lake, the Madera Canal, and the MID 6.2 lateral for storage and conveyance. These facilities are owned by the Bureau.

The previously banked water involved in this exchange will be delivered from the NKWSD to SWID through existing facilities. The Wutchumna Water generated annually through conservation measures will be delivered to SWID through an exchange of CVP water from Millerton Lake with Tulare Irrigation District. The non-CVP waters will not be

introduced into CVP facilities. In turn, SWID will release to MID a like amount of its CVP surface waters stored in Millerton Lake. MID will deliver the water to the proposed RCWD turnout through the Madera Canal and MID 6.2 lateral per the 2002 Agreement.

The non-CVP water delivered to SWID will assume the characteristics of CVP water subject to the terms of the RRA (as noted above, the RRA restrictions will no longer apply upon SWID's repayment of certain capital obligations). Conversely, the CVP water delivered to RCWD, while being delivered and used in the CVP Friant Division permitted place of use, will not be subject to the RRA.

C. MID's surface water deliveries to RCWD through the Madera Canal and MID Lateral 6.2

MID and RCWD propose delivery of surface water supplies to RCWD through MID Lateral 6.2, according to the terms of the 2002 Agreement. Water will be delivered from MID Lateral 6.2 to RCWD through a new turnout and gravity-fed pipeline, as discussed above.

Gateway Village Environmental Impact Report

As part of the development of Gateway Village, a master planned community that includes a variety of residential and commercial uses on 2,062 acres, including the portion within RCWD and the approximately 320 acres to be annexed to RCWD, all the above-described actions were proposed. These actions will assist RCWD in its goals of recharging the groundwater basin through an in-lieu recharge program and, as a result, RCWD will be able to provide Gateway Village with an adequate and reliable water supply.

All environmental impacts associated with the development of the Gateway Village Project, including the acquisition and delivery of surface water supplies described above, are analyzed in the Gateway Village EIR. That EIR concluded that there will be significant and unavoidable impacts of the Gateway Village development to four categories evaluated by the EIR. These categories are: Agriculture Resources, Biological Resources, Noise, and Public Services. The Madera County Board of Supervisors certified the Gateway Village EIR and made a finding that overriding economic considerations make infeasible the project alternatives identified in the EIR.

The Madera County Board of Supervisors certified the Environmental Impact Report for the Specific Plan for the Gateway Village Project and approved Gateway Village on September 11, 2007. Litigation over the Gateway Village Project and Gateway Village EIR was settled by the parties on January 12, 2009.

Therefore, because the impacts of the Gateway Village Project have been fully evaluated in the Gateway Village EIR, and the EIR has been certified, the impacts should not need to be reevaluated by the Bureau in the Environmental Assessment.

Mitigation measures implemented in the Gateway Village EIR are set forth in full in that EIR. The focus of the Bureau's Environmental Assessment will be the additional potential impacts of the Proposed Project that were not included in the scope of the Gateway Village EIR.

Conclusion

To facilitate conjunctive use and direct recharge to the Madera Groundwater Basin, MID and RCWD request that the Bureau approve all aspects of the Proposed Project including the construction and the Water supply and Exchange Agreements.

DMS: 878516_1

ROOT CREEK WATER DISTRICT
RESOLUTION NO. 2010-07

WHEREAS, the Root Creek Water District (the "District") is a water district organized under the California Water District Law, codified by California Water Code section 34000 *et seq.*, and serves a portion of southeastern Madera County consisting of 9,221 contiguous acres;

WHEREAS, the California Environmental Quality Act ("CEQA") requires that the District conduct an environmental review of each proposed "project" as defined by Public Resources Code section 21065;

WHEREAS, the District has proposed a project to acquire and import surface water to the District described briefly as Proposed Madera Irrigation District/Root Creek Water District Construction of Conveyance Facilities, Contract for Receipt of Reclamation Reform Act of 1982 Section 215 Waters, Madera Irrigation District wheeling water to RCWD through existing facilities, Water Transfer, and Exchanges all as more particularly set forth in the Project Description attached (the "Project");

WHEREAS, the District, as lead agency, conducted an Initial Study to determine if the Project would have a significant effect on the environment under CEQA;

WHEREAS, the District has completed the Initial Study that indicates the Project will not have a significant effect on the environment and the Initial Study is attached hereto as Exhibit "A" and incorporated herein by this reference;

WHEREAS, on October 15, 2010 the District issued a Notice of Intent to Adopt a Negative Declaration for the Project pursuant to the Public Resource Code;

WHEREAS, the District made the Initial Study available for comments during the public review period, and received no comments;

WHEREAS, the District considered all comments on the Initial Study at a public hearing on November 17, 2010; and

WHEREAS, the District's Board of Directors, after considering all comments on the Initial Study, now desires to adopt the Negative Declaration without mitigation.

NOW, THEREFORE, BE IT RESOLVED that:

The District hereby adopts the Negative Declaration and makes the following determinations regarding the Project:

1. RCWD prepared an Initial Study to evaluate the potential environmental impacts of the project;
2. The Initial Study indicates that the Project will not have a significant effect on the environment;
3. RCWD prepared a Negative Declaration for the Project pursuant to the provisions of CEQA and made it available for public comment from October 15 through November 8. No comments were received by RCWD.
4. The Initial Study and the lack of comments indicate that no Mitigation measures are required for the approval of the Project.

ADOPTED this 17th day of November, 2010.

Vote	Yes	No	Abstain
Philip R. Pierre, President	x		
Tim Jones	x		
Laura Whittaker	x		
Jeffrey D. Coulthard (Absent)			
Rodger B. Jensen	x		
L. Dave Cobb (Absent)			

Certificate of Secretary

The undersigned hereby certifies that she is the Secretary of the Root Creek Water District and that the foregoing resolution was duly adopted by the Board of Directors at a meeting thereof, duly and regularly held on November 17, 2010.

IN WITNESS WHEREOF, I have set my hand this 17 day of November, 2010.

Deborah C. Messer

Deborah Messer, Secretary

DMS: 880014_1

ROOT CREEK WATER DISTRICT
RESOLUTION NO. 2010-08

WHEREAS, the Root Creek Water District (the "District") is a water district organized under the California Water District Law, codified by California Water Code section 34000 *et seq.*, and serves a portion of southeastern Madera County consisting of 9,221 contiguous acres;

WHEREAS, the California Environmental Quality Act ("CEQA") requires that the District conduct an environmental review of each "project" as defined by Public Resources Code section 21065;

WHEREAS, the District has proposed a project under CEQA in connection with the Gateway Village development proposal: Proposed Madera Irrigation District/Root Creek Water District Construction of Conveyance Facilities, Contract for Receipt of Reclamation Reform Act of 1982 Section 215 Waters, Madera Irrigation District wheeling water to RCWD through existing facilities, Water Transfer, and Exchanges all as more particularly set forth in the Project Description attached (the "Project");

WHEREAS, the District, as lead agency, conducted an Initial Study to determine if the Project would have a significant effect on the environment under CEQA;

WHEREAS, the District has completed the Initial Study and has found that the Project will not have a significant effect on the environment;

WHEREAS, on November 17 2010, the District, after considering all comments on the Initial Study, adopted a Negative Declaration without mitigation for the Project; and

WHEREAS, the District's Board of Directors now desires to approve the Project.

NOW, THEREFORE, BE IT RESOLVED that:

The District hereby approves the Project and makes the following determinations regarding the Project:

1. The Project will not have a significant effect on the environment;
2. A Negative Declaration was prepared for the Project and approved by RCWD pursuant to the provisions of CEQA;
3. Mitigation measures were not made a condition of the approval of the Project; and
4. The Initial Study documenting reasons to support this finding is attached hereto as Exhibit "A" and incorporated herein by this reference.

ADOPTED this 17th day of November, 2010.

Vote	Yes	No	Abstain
Philip R. Pierre, President	x		
Tim Jones	x		
Laura Whittaker	x		
Jeffrey D. Coulthard (Absent)			
Rodger B. Jensen	x		
L. Dave Cobb (Absent)			

Certificate of Secretary

The undersigned hereby certifies that she is the Secretary of the Root Creek Water District and that the foregoing resolution was duly adopted by the Board of Directors at a meeting thereof, duly and regularly held on November 17, 2010.

IN WITNESS WHEREOF, I have set my hand this 17 day of November, 2010.

Deborah C. Messer

Deborah Messer, Secretary

C:\NrPortbl\DMS\TLW\878495_1.DOCDMS: 878495_1

Exhibit "A"

Initial Study

Root Creek Water District
Notice of Intent to Adopt a Negative Declaration

Root Creek Water District ("RCWD"), as the Lead Agency under the California Environmental Quality Act ("CEQA") intends to adopt a Negative Declaration for the following project:

1. **Project Title**. Proposed Madera Irrigation District/Root Creek Water District Construction of Conveyance Facilities, Contract for Receipt of Reclamation Reform Act of 1982 Section 215 Waters, Madera Irrigation District wheeling water to RCWD through existing facilities, Water Transfer, and Exchanges.

2. **Description and Location of Project**. RCWD consists of approximately 9,200 acres in Madera County located primarily between Avenue 12 to the north and the San Joaquin River to the south and between Road 37 to the west and Highway 41 to the east. Subject to this environmental review under CEQA, RCWD has acquired contracts with Madera Irrigation District ("MID") and other parties to receive surface water supplies for conjunctive use and direct recharge within and near the District. If approved, MID will deliver RCWD's surface water supplies through the Madera Canal and MID Lateral 6.2 on the terms set forth in the March 13, 2002 agreement between RCWD and MID that is subject to review as part of this project. RCWD proposes to (1) construct a new turnout on MID Lateral 6.2, and run a new 48-inch diameter pipeline from Lateral 6.2 to RCWD's northern boundary to provide surface water to existing agricultural irrigation systems that currently rely solely on groundwater; (2) Construct a 24-inch plastic pipeline to replace an existing 18-inch concrete MID supply line; and (3) enter into a Temporary Water Services Contract with the Bureau of Reclamation under Section 215 of the Reclamation Reform Act of 1982 (section 215 Contract). Further, MID and RCWD propose to (4) approve the water exchange set forth in the Water Exchange Agreement between MID, RCWD, Shafter-Wasco Irrigation District and Westside Mutual Water Company, LLC; (5) establish an program of annual transfers of up to 10,000 acre-feet of Central Valley Project Water, as available, from MID to RCWD; and (6) approve of MID's surface water wheeling to RCWD through the Madera Canal and MID Lateral 6.2.

3. **Presence of Hazardous Sites**. The project site is not on any lists of hazardous sites enumerated in Government Code § 65962.5.

4. **Review Period**. The public review period will begin on October 19, 2010 and end on November 9, 2010.

5. **Public Meetings and Hearings**. Comments on the Initial Study will be reviewed by RCWD in considering the proposed Negative Declaration at a public hearing at Baker Manock & Jensen, PC, 5260 North Palm Avenue, Suite 421, Fresno, California 93704, on November 17, 2010, at 2:00 p.m.

6. **Location of Documents**. The proposed Negative Declaration and Initial Study, including all referenced documents, are available for review at Baker Manock & Jensen, PC, 5620 N. Palm Ave, Suite 420, Fresno, CA 9370.

7. **Proposed Finding**. RCWD has determined that the proposed project will not have significant adverse effects on the environment and has proposed a Negative Declaration in accordance with the requirements of CEQA.

8. **Comments**. Submit your comments in writing to Christopher L. Campbell and Matthew S. Avedikian, Baker Manock & Jensen, PC, 5620 N. Palm Ave, Suite 420, Fresno, CA 93704, or by email to mavedikian@bakermanock.com, or by fax to (559) 432-5620, attn: Matthew S. Avedikian. If there are any questions regarding this Notice or the proposed project, please contact Christopher L. Campbell at (559) 432-5400.

Date: October 15, 2010

Christopher L. Campbell, Esq.

DMS: 870642_1

Tiered Initial Study/Negative Declaration for the RCWD/MID Conveyance Facilities, Contract for Temporary Receipt of Section 215 Waters, and Water Transfer and Exchanges Project

A. PROJECT BACKGROUND INFORMATION

1. Project Title:

Proposed Madera Irrigation District/Root Creek Water District Construction of Conveyance Facilities, Contract for Temporary Receipt of Section 215 Waters, Water Transfer and Exchanges

2. Lead Agency Name and Address:

Root Creek Water District
Philip R. Pierre, President
c/o Christopher L. Campbell, Esq.
Baker, Manock & Jensen
5260 N. Palm Avenue, Suite 421
Fresno, CA 93704

3. Contact Person:

Matthew S. Avedekian, Esq.
Baker, Manock & Jensen
5260 N. Palm Avenue, Suite 421
Fresno, CA 93704
(559) 432-5400

4. Project Location:

Root Creek Water District "RCWD" consists of approximately 9,200 acres located primarily between Avenue 12 to the north and the San Joaquin River to the south and between Road 37 to the west and Highway 41 to the east.

5. Project Sponsor's Name and Address:

Root Creek Water District
Philip R. Pierre, President
c/o Christopher L. Campbell, Esq.
Baker, Manock & Jensen
5260 N. Palm Avenue, Suite 421
Fresno, CA 93704

6. Identification of Previous EIRs Relied Upon for Tiering Purposes, and Address Where a Copy Is Available for Inspection

Gateway Village Specific Plan Final EIR (State Clearinghouse No. 2005091071), certified by the County of Madera, September 11, 2007 (the "Gateway Village EIR"). Prepared by Environmental Science Associates, Los Angeles, California. This document, including all technical appendices, is available for public inspection at the County of Madera, Resources Management Agency, 2037 W. Cleveland Avenue, Madera, CA 93637.

7. Project Compatibility With Existing Zones And Plans:

The Project consists of the delivery of water to RCWD. RCWD will initially provide service to 9,200 acres, including the Gateway Village Project. RCWD has also agreed to annex the approximately 320 acres of Gateway Village that is contiguous with RCWD but is currently outside the District service area. Gateway Village's compatibility with the General Plan and zoning has been analyzed in the Gateway Village EIR . The EIR concludes that the Gateway Village Project is compatible with the Madera County General Plan, the Gateway Village Specific Plan, and the zoning ordinance. (Gateway Village EIR, Section 4.9.6). The Gateway Village EIR specifically provides that RCWD will implement this Project, in part to provide water service to Gateway Village. (Gateway Village EIR, Section 4.9.16). The Project's proposed water service to agricultural lands in RCWD and to Gateway Village is wholly consistent with the General Plan and existing zoning designations.

8. Project Description:

Summary

Subject to this environmental review pursuant to the California Environmental Quality Act ("CEQA"), RCWD has acquired contracts with Madera Irrigation District ("MID") and other parties to receive surface water supplies for conjunctive use and direct recharge within and near the District. In addition, MID has agreed to deliver RCWD's surface water supplies through the Madera Canal and MID Lateral 6.2 on the terms set forth in the March 13, 2002 agreement between RCWD and MID (the "2002 Agreement"). RCWD proposes to construct a new turnout on MID Lateral 6.2, and run a new pipeline from Lateral 6.2 to RCWD's northern boundary to provide surface water to existing agricultural irrigation systems that currently rely solely on groundwater. Further, MID and RCWD propose to approve the water exchange set forth in the Water Exchange Agreement between MID, RCWD, Shafter-Wasco Irrigation District ("SWID") and Westside Mutual Water Company, LLC ("Westside").

Proposed Project

MID AND RCWD PROPOSE TO TAKE ACTION TO APPROVE THE FOLLOWING ACTIONS (collectively, the "Proposed Project"):

- Construction of a new turnout in MID Lateral 6.2 and construction of a 48-inch diameter underground pipeline to deliver surface water to RCWD from the proposed new turnout in MID lateral 6.2.

- Construction of a 24-inch plastic pipeline to replace an existing 18-inch concrete MID supply line.

- A Temporary Water Services Contract for RCWD with the Bureau of Reclamation under Section 215 of the Reclamation Reform Act of 1982 (section 215 Contract).

- A program of annual transfers of up to 10,000 acre-feet of Central Valley Project (CVP) Water, as available, from MID to RCWD.

- Approval of water deliveries to RCWD pursuant to the Water Exchange Agreement between RCWD, MID, Westside, and SWID.

- Approval of MID's surface water deliveries to RCWD through the Madera Canal and MID Lateral 6.2.

Purpose and Need

The Proposed Project will help RCWD address chronic regional groundwater overdraft. Long-term groundwater pumping has created severe overdraft conditions in that portion of the Madera Groundwater Basin that underlies the northern portion of RCWD and adjacent areas generally east of the MID service area. RCWD is principally an agricultural district, developed with a variety of permanent crops. RCWD currently relies exclusively on pumped groundwater.

The overdraft is especially significant in the eastern areas of the Madera Groundwater Basin (such as RCWD) where the aquifer is thin, recharge is limited due to geologic conditions, and existing extensive agricultural and urban development rely solely on groundwater. Because the RCWD area is immediately adjacent to, but outside, the eastern boundary of MID, the local overdraft causes subsurface flow of groundwater out of MID.[1] Overdraft of the Madera Groundwater Basin within RCWD itself is estimated at approximately 3,400 acre-feet per year.[2] This overdraft results in dropping water levels for agricultural wells, increased pumping costs, decreasing quality and, eventually, will comprise reliability of water supplies.

[1] Figure 2-6, Groundwater Levels Unconfined Aquifer Spring 1999, "AB 3030 Groundwater Management Plan, Madera County" (2002) prepared by Todd Engineers.
[2] Hydrogeologic Investigation: Southeastern Madera County" (1999, revised 2001) prepared by Kenneth D. Schmidt & Associates, in conjunction with Provost & Pritchard Engineering Group, Inc.

If RCWD does not or cannot import surface water, groundwater quality and the groundwater table in RCWD will continue to decline and the cost to pump groundwater will continue to rise until agricultural production is no longer viable. Decreasing water levels have already led to irreparable well failures in immediately adjacent areas North of RCWD.

The Proposed Project will assist RCWD in eliminating its contribution to overdraft within the Madera Groundwater Basin, stabilize groundwater levels and reduce pumping costs within RCWD. MID desires that RCWD achieve these goals because a primary goal of MID's groundwater management plan is elimination of overdraft in adjacent areas outside MID boundaries. These goals will be met through RCWD importing surface water supplies for in-lieu and direct recharge of the groundwater basin. RCWD will substitute imported surface water for ground water currently pumped by RCWD's agricultural users and will percolate imported water in basins constructed for that purpose.

Providing surface irrigation water to the agricultural users reduces the quantity of groundwater pumped for irrigation on a one-to-one basis. The Proposed Project will facilitate the acquisition and delivery of surface water supplies to RCWD. This reduces the draw on the aquifer, saves energy, improves air quality and improves water quality. Acquisition and delivery of these supplies will provide a long term sustainable water supply for RCWD while assisting MID with attaining a groundwater balance at no cost to MID.

Description of Proposed Project

Construction of Turnout and Conveyance Infrastructure

The Proposed Project will require new facilities to be constructed for the delivery of surface waters. The two major construction components are as follows:

1. Construction of a new turnout in MID Lateral 6.2 and construction of a 48-inch diameter underground pipeline to deliver surface water to RCWD from the proposed new turnout in MID lateral 6.2.

This construction component includes (i) a turnout and metering facility along MID Lateral 6.2, (ii) approximately 1.25 miles of mainline pipeline from MID Lateral 6.2 to RCWD's current northern boundary and 1.5 miles of mainline pipeline plus lateral pipelines within RCWD; and (iii) approximately 10 to 12 connections to existing irrigation pump stations.

The turnout and metering facility will be located within the MID Lateral 6.2 right-of-way, owned by the Bureau. It will be on the south bank of Lateral 6.2 near the mid section point of Section 29 (T.11S, R.20E), approximately 2.4 miles from the headgate at the Madera Canal. The canal turnout is preliminarily designed to be

constructed of concrete with a 36-inch diameter canal slide gate and metal trash rack. The metering facility will be a 6-foot by 6-foot concrete meter box with a flow meter and a baffle wall. The baffle wall is necessary to maintain a full pipe for water measurement purposes. Neither the turnout nor metering facility will utilize lighting or be designed with materials that will create glare.

The RCWD mainline pipe is proposed to be 48-inch diameter reinforced concrete pipe leaving the meter box, and will convey water to a point just north of the Root Creek channel. Lateral pipelines of 4-inch to 24 inches in diameter will be attached to the mainline to connect to existing irrigation facilities.

2. Construction of a 24-inch diameter underground plastic pipeline to replace an existing 18-inch concrete MID supply pipeline. The proposed replacement pipeline will connect to an existing MID turnout in Lateral 6.2 that is west of the Proposed RCWD turnout. The pipeline will run generally in a North-easterly direction within the Lateral 6.2 right of way approximately 260 feet. There the 24-inch pipe will turn to run south approximately 1/4 mile parallel to and adjacent to the westerly side of the RCWD 48-inch pipeline and will connect to the existing MID distribution system now served by the existing concrete pipeline.

MID currently holds an easement that contains the existing 18-inch MID under ground supply pipeline that crosses certain real property known as the River Hills Ranch that is currently improved with a vineyard. If approved, RCWD will construct and dedicate the MID Replacement Pipeline to MID, and MID will abandon its current easement over River Hills Ranch. The existing pipeline will be abandoned in place at River Hills' request.

All of the pipelines and connections will be constructed within previously disturbed areas including developed agricultural fields, agricultural roads or public highway right-of-ways.

All construction will comply with SJVAPCD Rule 8021, Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities. Construction equipment will be muffled and intakes and exhaust shielding shall be utilized to reduce noise (per manufacturers' specifications). A Storm Water Pollution Plan will be developed and implemented for the Proposed Project.

If construction is scheduled to commence between the months of February and the end of August, a pre-construction survey will be conducted by a qualified biologist for nesting raptors. This survey will occur within 30 days prior to the on-set of construction. If an active nest is located during the pre-construction surveys, this nest, and an appropriate buffer around it (as determined by a qualified biologist) will remain off-limits to construction until the nesting season is over.

Acquisition of Surface Water through Section 215 Contract, Conditional Pre-Approval of Transfers from MID and Exchange of Water from Kern County

RCWD seeks a 215 contract with the Bureau and has already entered into three water supply related contracts. First, RCWD, the Friant Water User's Authority ("FWUA"), MID, and the Chowchilla Water District ("CWD") have entered into the "Agreement Concerning Agricultural, Municipal and Industrial Water Use Within Root Creek Water District," dated December 30, 1999 (the "Friant" Agreement"). Second, RCWD and MID have entered into the "Agreement between Madera Irrigation District and Root Creek Water District for the Conveyance and Sale of Water," dated March 13, 2002 (the "2002 Agreement"). Third, RCWD has entered into the "Water Exchange Agreement" with MID, SWID and Westside. These contracts have not been performed pending this CEQA review.

215 Contract

RCWD seeks a contract with the Bureau for receipt of Section 215 waters from the Friant Unit of the CVP, when available. Upon completion of its facilities, RCWD will be able to accept 215 water at any time during the year for irrigation or direct recharge. RCWD is seeking a contract for up to 10,000 acre feet of 215 water although the amount that can actually be taken in any year will vary. The addition of Section 215 waters to RCWD supplies will help RCWD to eliminate its contribution to the regional groundwater overdraft, to stabilize groundwater levels, reduce pumping costs within RCWD, and to maintain a reliable and affordable supply for its agricultural users.

Transfer of up to 10,000 acre-feet of CVP water from MID

In the 2002 Agreement between MID and RCWD, MID agreed to annually transfer up to 10,000 acre feet of MID CVP water to RCWD, when available. This transfer allows MID to maximize the beneficial use of available water supplies to benefit the Madera Groundwater Basin at no financial cost to MID. The transfer also provides MID with greater flexibility in delivering available water supplies to deficient areas to better balance surface and ground water supplies in southeastern Madera County.

Delivering available surface water to RCWD at times when water supply exceeds water demand by MID growers or other MID uses, including recharge efforts, will help MID and RCWD curtail the current groundwater overdraft in the eastern portion of the Madera Groundwater Basin. MID will be able to efficiently and economically utilize wet year supplies for local recharge and subsequent extraction that will directly benefit MID, without the cost of constructing and maintaining direct recharge facilities. RCWD will supply water to its agricultural lands on a viable long-term basis, while simultaneously minimizing its

contribution to overdraft of the Madera Groundwater Basin. Groundwater pumping will be reduced in RCWD (and, therefore the eastern portion of the Madera Basin) because surface water supplies will be delivered through the gravity-fed RCWD pipeline from the Madera Canal. These pumping reductions will lead to corresponding significant reductions in energy use and air pollution.

Water Deliveries Pursuant to Water Exchange Agreement

The Water Exchange Agreement ("Agreement") guarantees RCWD's right to purchase 3,500 ac-ft per year initially, increasing over time to 7,000 ac-ft per year, from Westside for up to 50 years. RCWD may purchase additional surface water as available.

Three different methods are available to deliver the water purchased from Westside. First, the Agreement contemplates the annual exchange of 3,500 to 7,000 ac-ft of SWID's CVP Water allocated under its Friant Division long term water service contract with the Bureau ("Bureau Contract") for an equal amount of Westside's non-CVP water deriving from pre-1914 water rights on the Kern and Kaweah Rivers. SWID will accept and use the non-CVP water within its Bureau Contract service area boundary in compliance with the Reclamation Reform Act (RRA) acreage limitations. The exchanged SWID CVP water will be used on RCWD's agricultural lands within its service area boundaries for irrigation purposes, but without any RRA restrictions.

Second, If SWID enters into a repayment contract, as authorized by PL 111-11 (included in the San Joaquin River Settlement Act), upon repayment of outstanding capital obligations RRA restrictions will no longer apply to water received by SWID. The exchanged CVP water received by RCWD would remain without RRA restrictions.

Finally, Westside may acquire CVP water that could be available for exchange. Under this option, SWID would exchange its CVP water allocated under its Bureau Contract for an equal amount of Westside's CVP water. SWID will accept and use the Westside CVP water within its service area boundaries in compliance with RRA acreage limitations. As stated above, if SWID enters into a repayment contact, upon repayment of outstanding capital obligations RRA restrictions will no longer apply to deliveries within SWID. If that occurs, the exchanged CVP water delivered to RCWD may be subject to RRA restrictions depending on the source of Westside's CVP water.

Source of Westside Non-CVP Water Supplies

High flow water on the Kern River and high priority rights on the Kaweah River are the source of Westside's surface waters that are stored in the NKWSD under a landowner banking agreement. NKWSD has an established program of groundwater monitoring, consisting of bi-annually measuring and assessing

impacts to groundwater from pumping stored surface water. Surface water supplies stored in NKWSD are expected to be recharged, banked and withdrawn by Westside under the existing landowner banking agreement with NKWSD using existing facilities.

Westside's stored surface water supplies come from Lower Kern River Hacienda Water Rights. ("Hacienda Water"). These water rights originated prior to the construction of Isabella Dam, when the Kern River reached the Hacienda Ranch north of Highway 46. These flows were diverted and used on the Hacienda Water District property located in southern Kings County. Consequently, the Hacienda Water is an "imported" supply to Kern County. Variable quantities of the average annual yield have historically been delivered to users outside of Kern County.

Westside's other surface water supplies come from the Kaweah River in Tulare County. Paramount Citrus Association ("PCA"), a member of Westside owns stock in the Wutchumna Water Company entitling it to a proportionate share of the annual surface water supplies generated under Wutchumna's pre-1914water rights from the Kaweah River ("Wutchumna Water"). The Wutchumna Water is diverted on a yearly basis into the Wutchumna ditch just below Terminus Dam. The Rayo Ranch (owned by PCA) is a stockholder in the Wutchumna Water Company. PCA converted the Rayo Ranch irrigation system from a flood irrigation system to a micro-sprinkler irrigation system in the late 1980's, resulting in a decrease in yearly water use for irrigation of approximately 4,000 ac-ft. that PCA can utilize elsewhere.

Water Deliveries to RCWD under the Water Exchange Agreement ("Agreement")

The Agreement between MID, RCWD, Westside and SWID is necessary to deliver the Westside water to RCWD. This exchange utilizes Millerton Lake, the Madera Canal and the MID 6.2 lateral for storage and conveyance. These facilities are owned by the Bureau.

The previously banked water involved in this exchange will be delivered from the NKWSD to SWID through existing facilities. The Wutchumna water generated annually through conservation measures will be delivered to SWID through an exchange of CVP water from Millerton Lake with Tulare Irrigation District. The non-CVP waters will not be introduced into CVP facilities. In turn, SWID will release to MID a like amount of its CVP surface waters stored in Millerton Lake. MID will deliver the water to the proposed RCWD turnout through the Madera Canal and MID 6.2 lateral per the 2002 Agreement.

The non-CVP water delivered to SWID will assume the characteristics of CVP water subject to the terms of the Reclamation Reform Act (RRA) (as noted above, the RRA restrictions will not longer apply upon SWID's repayment of

certain capital obligations). Conversely, the CVP water delivered to RCWD, while being delivered and used in the CVP Friant Division permitted place of use, will not be subject to the RRA.

For this portion of the project only, SWID and NKWSD are involved in addition to MID and RCWD.

MID's surface water deliveries to RCWD through the Madera Canal and MID Lateral 6.2

MID and RCWD propose delivery of surface water supplies to RCWD through MID Lateral 6.2, according to the terms of the 2002 Agreement. Water will be delivered from MID Lateral 6.2 to RCWD through a new turnout and gravity-fed pipeline, as discussed above.

Conclusion

To facilitate conjunctive use and direct recharge to the Madera Groundwater Basin, MID and RCWD desire to approve all aspects of the Proposed Project and NKWSD and SWID desire to approve the Exchange Agreement.

9. PRIOR ENVIRONMENTAL REVIEW; GATEWAY VILLAGE ENVIRONMENTAL IMPACT REPORT

As part of the development of Gateway Village, a master planned community that includes a variety of residential and commercial uses on 2,062 acres, including the portion within RCWD and the approximately 320 acres to be annexed to RCWD, all the above described actions were proposed. Those actions will assist RCWD in its goals of recharging the groundwater basin through an in-lieu recharge program and, as a result, RCWD will be able to provide Gateway Village with an adequate and reliable water supply.

All environmental impacts associated with the development of the Gateway Village Project, including the acquisition and delivery of surface water supplies described above, are analyzed in the Gateway Village EIR. That EIR concluded that there will be significant and unavoidable impacts of the Gateway Village development to four categories evaluated by the EIR. These categories are: Agriculture Resources, Biological Resources, Noise and Public Services. The Madera County Board of Supervisors certified the Gateway Village EIR and made a finding that overriding economic considerations make infeasible the project alternatives identified in the EIR.

The Madera County Board of Supervisors certified the Environmental Impact Report for the Specific Plan for the Gateway Village Project and approved

Gateway Village on September 11, 2007. Litigation over the Gateway Village Project and Gateway Village EIR was settled by the parties on January 12, 2009.

Therefore, because the impacts of the Gateway Village Project have been fully evaluated in the Gateway Village EIR, and the EIR has been certified, the impacts will not be evaluated again in this Initial Study. Mitigation measures implemented in the Gateway Village EIR are set forth in the discussion of each category on the Environmental Impact Checklist to give the reader an understanding of the measures that are in effect to protect the environment during the development of the Gateway Village Project.

The focus of this Initial Study will be the additional potential impacts of the Proposed Project that were not included in the scope of the Gateway Village EIR.

10. Other Agencies Whose Approvals Is Required and Permits Needed:

Madera Irrigation District
12152 Road 28 ½
Madera, California 93637

Shafter-Wasco Irrigation District
P.O. Box 1168
Wasco, California 93280

North Kern Water Storage District
P.O. Box 81435
Bakersfield, California 93380

Bureau of Reclamation
1243 N. Street
Fresno, California 93721

11. Name of Person Who Prepared Initial Study:

Root Creek Water District.

B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the proposed project, involving at least one impact that is a "Potentially Significant Impact" or "Potentially Significant Unless Mitigated", as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture Resources	☐	Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Geology/Soils
☐	Hazards & Hazardous Materials	☐	Hydrology/Water Quality	☐	Land Use/Planning
☐	Mineral Resources	☐	Noise	☐	Population/Housing
☐	Public Services	☐	Recreation	☐	Transportation/Traffic
☐	Utilities/Service Systems	☐	Mandatory Findings of Significance		

C. DETERMINATION

I certify that this project was independently reviewed and analyzed and that this document reflects the independent judgment of the District.

☒ I find that the proposed project COULD NOT have a significant effect on the environment, and that any potential impacts associated with the proposed project were adequately analyzed in an earlier document pursuant to applicable legal standards, and that a TIERED NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a significant effect(s) on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

Signature: _____ Date: _____

Printed name:
Title:

D. ENVIRONMENTAL IMPACT CHECKLIST

This Tiered Initial Study/Negative Declaration is tiered from the Gateway Village EIR for: (1) a discussion of general background and setting information for environmental topic areas; (2) an evaluation of overall growth-related issues; and (3) issues that were evaluated in sufficient detail in the Gateway Village EIR for which there is no significant new information or there are no changes in circumstances that would require further analysis. This Initial Study analyzes the

potential impacts of the Proposed Project, and the adequacy of the analysis in the Gateway Village EIR, with regard to the following environmental topic areas as required by the California Environmental Quality Act, Pub. Resources Code, § 21000, *et seq.* ("CEQA").

Discussion of each category in the Environmental Impact Checklist are set forth following the Checklist.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
I. AESTHETICS Would the proposal:				
a) Affect a scenic vista or scenic highway?				X
b) Have a demonstrable negative aesthetic effect?				X
c) Create light or glare?				X
II. AGRICULTURE RESOURCES In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X
III. AIR QUALITY Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?				X
d) Expose sensitive receptors to substantial pollutant concentrations?				X
e) Create objectionable odors affecting a substantial number of people?				X
IV. BIOLOGICAL RESOURCES Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X
V. CULTURAL RESOURCES Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5?				X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?				X
VI. GEOLOGY/SOILS Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				X
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
VII. HAZARDS & HAZARDOUS MATERIALS Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				X
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X
VIII. HYDROLOGY/WATER QUALITY Would the project:				
a) Violate any water quality standards or waste discharge requirements?				X
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				X

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				X
f) Otherwise substantially degrade water quality?				X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
IX. LAND USE/PLANNING Would the project:				
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
X. MINERAL RESOURCES Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X
XI. NOISE Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				X
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two				X

miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?			X
XII. POPULATION/HOUSING Would the project:			
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			X
XIII. PUBLIC SERVICES			
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:			
Fire protection?			X
Police protection?			X
Schools?			X
Parks?			X
Other public facilities?			X
b) Cumulatively exceed official regional or local population projections?			X
c) Induce substantial growth in an area either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?			X
d) Displace existing housing, especially affordable housing?			X

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
XIV. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X
XV. TRANSPORTATION/TRAFFIC Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				X

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Result in inadequate parking capacity?				X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X
XVI. UTILITIES/SERVICE SYSTEMS Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X
XVII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				X
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively Considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				X

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?				X

E. ENVIRONMENTAL IMPACT CHECKLIST COMMENTS

I. AESTHETICS

The construction of the turnout, replacement pipeline and conveyance infrastructure ("construction of facilities") would not have any negative aesthetic impacts. As stated above, RCWD is an extensively developed agricultural district primarily reliant on groundwater for irrigation. Due to this reliance on groundwater, significant water pumping infrastructure exists on private property in the RCWD area. As such, the proposed turnout will not have a demonstrable negative affect to the area. Additionally, the proposed turnout is not designed to utilize lighting. Therefore, no light or glare will be created. As such, the construction of the turnout on MID Lateral 6.2 will have no impact on aesthetics. Similarly, the RCWD distribution and lateral pipelines, and 24 inch MID replacement pipeline will not have negative aesthetic impacts as the pipelines will be buried.

The application of 215 contract surface waters and the transfer and application of up to 10,000 acre-feet annually of CVP water from MID will have no impact on aesthetics. RCWD is currently developed primarily with agricultural uses that will receive these surface waters for irrigation. As the agricultural uses will continue to exist, the application of these surface waters will have no impact on aesthetics.

The Water Exchange consists of the exchange of stored water banked in North Kern under a landowner banking agreement and surface water supplies from the Kaweah River. The Water Exchange will merely utilize the stored and other surface water supplies that would otherwise be recovered for other uses. The Water Exchange will use only existing facilities. Therefore, there will be no aesthetic impacts from the Water Exchange.

Delivery of surface water supplies to RCWD through MID Lateral 6.2 will have no impact on aesthetics, as no noticeable change in water levels will result in Lateral 6.2.

In addition, the Gateway Village EIR evaluates and analyzes potential impacts of the Gateway Village Specific Plan, including cumulative impacts, in regards to aesthetics, visual quality, light and glare.

The EIR concludes that the Gateway Village Project would have a less than significant impact on scenic vistas, scenic resources, and on the existing visual character and quality of the site and its surrounding. (Gateway Village Specific Plan EIR, Section 4.1.6). The EIR determined that with the incorporation of mitigation measures, the Gateway Village Project would have a less than significant impact on light and glare that could adversely affect day or nighttime views of the area. These mitigation measures include the following:

- Outdoor light fixtures for non-residential areas shall be low-intensity, shielded and directed away from residential areas and night sky. Lighting fixtures for parking lots shall use low-pressure sodium lamps or other similar lighting fixtures and shall be installed and shielded in such a manner that no light rays are emitted from the fixture at angles above the horizontal plane. High-intensity discharge lamps, such as mercury, metal halide and high-pressure sodium lamps shall be prohibited. Site plans shall be reviewed and approved on a case-by-case basis, contingent upon certification by the Madera County Planning Department that adjacent residential areas would not be affected.

- Streetlights shall use low-pressure sodium lamps and shall be installed and shielded in such a manner that no light rays are emitted from the fixture at angles above the horizontal plane. High-intensity discharge lamps, such as mercury, metal halide and high-pressure sodium lamps shall be prohibited.

- Native landscaping, such as shrubs and trees, shall be planted in such a manner to shield motor vehicle lights from adjacent areas. Dense native landscaping (such as shrubs) shall be placed along all project arterial roadways and Root Creek Parkway, as well as employment and commercially designated areas and the Village Center.

- Light fixtures for sports fields, park sites, and other lighted sports facilities shall be directed away from residential areas and shielded in a manner to minimize their illumination of the night sky, as specified in applicable County standards. (Gateway Village Specific Plan EIR, Section 4.1.6).

In conclusion, the Proposed Project will have no impacts on aesthetics and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

II. AGRICULTURE RESOURCES

The Proposed Project will have no adverse impact on agricultural resources. The major purpose of the Project is to benefit agricultural resources by bringing surface waters into RCWD to ease reliance on groundwater resources.

The continued dependence of agriculture in RCWD on groundwater pumping will result in dropping well water levels, increased pumping costs, and decreasing water quality.

The MID Transfer will have no impact on agricultural resources within MID because the transfer of surface water supplies will only take place in years where available surface water flows exist. Agricultural users within MID will not be impacted by the MID Transfer, and will benefit by recharging the aquifer at no cost to MID rate payers. As stated above, MID and RCWD overlie the same groundwater basin. Therefore, RCWD's reduction of use of groundwater supplies benefits both RCWD and MID. (See AB 3030 Groundwater Management Plan, Madera County). In conclusion, the MID transfer will have no negative impact on agricultural resources within MID.

The Water Exchange contemplates the conveyance of water from an existing water district through existing facilities. The water to be conveyed is either previously banked water, or surface waters generated through conservation. As such, the Water Exchange will have no adverse impact to agricultural resources.

The impact to agricultural resources within the Gateway Village Project has been evaluated and analyzed in the Gateway Village EIR. (Gateway Village Specific Plan EIR, Section 4.2). The EIR concludes that the Gateway Village Project would have significant and unavoidable impacts to agricultural resources. Particularly, the EIR found that the Gateway Village Project would have the following impacts:

- would result in significant impacts by converting "prime" and "unique farmland" agricultural lands to non-agricultural uses;

- the project is not designed to direct urban uses to designated new growth areas, existing communities and/or cities; or to maintain agriculturally zoned areas for agricultural use, a significant and unavoidable impact would occur;

- the project would result in conflicts with adjacent agricultural uses. (Gateway Village Specific Plan EIR, Section 4.2.6).

The Madera County Board of Supervisors has found that overriding economic considerations make infeasible the project alternatives identified in the Gateway Village EIR. (Board of Supervisors of the County of Madera, Resolution Number 2007-202, Attachment A). The Board of Supervisors approved Gateway Village September 11, 2007.

Moreover, although the Gateway Village EIR found that the Gateway Village Project would have significant and unavoidable impacts to agricultural resources, implementation of the Proposed Project will provide a more reliable and potentially more cost effective water supply to agricultural users in the RCWD. This secure water supply is intended to benefit the RCWD agricultural users.

In conclusion, the Proposed Project will not have any adverse impact on agricultural resources and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

III. AIR QUALITY

The construction of the turnout, MID replacement pipeline and other conveyance infrastructure will not conflict with, or obstruct the implementation of the SJVAPCD air quality management plan. Standards set by SJVAPCD for Construction of Facilities will be required and incorporated at the applicable design stages. Specifically, the Construction of Facilities would comply with SJVAPCD Rule 8021, Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities. As such, any impacts to air quality which may arise during Construction of the Facilities will be less than significant.

The 215 Contract and MID transfer will have no adverse impact on air quality. As stated above, the approval of these actions will result in the application of surface waters to areas already in agricultural production within RCWD. Delivery will be by gravity and existing facilities. There may be a reduction in air pollution due to reduced deep well pumping.

The Water Exchange will have no impact on air quality as only existing facilities will be utilized.

The impacts to air quality within the Gateway Village Project have also been evaluated and analyzed in the EIR performed for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.3).
The EIR concludes that all the potential impacts to air quality as a result of the development of the Gateway Village Project would be less than significant with implementation of the following mitigation measure:

- The applicant shall fulfill all provisions and requirements of the agreement with the San Joaquin Valley Unified Air Pollution Control District ("SJVUAPCD") to reduce net ROG, NOx, and PM10 impacts to zero. This agreement includes an emission reduction program, whereby the applicant funds projects in the Basin, such as replacement and destruction of old engines with new more efficient engines.

The agreement requires the Applicant to identify and propose opportunities for the reduction of emissions to fully mitigate project's air impact to less than significant, and includes opportunities for removal or retrofitting of stationary, transportation, indirect, and/or mobile pollution source equipment. Each proposal requires SJVUAPCD approval and verification of emission reduction. The applicant's compliance with the provisions of the agreement will reduce net ROG, NOx and PM10 impacts to zero. (Gateway Village Specific Plan EIR, Section 4.3.6).

In conclusion, the Proposed Project will have a less than significant impact on air quality and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

IV. BIOLOGICAL RESOURCES

The construction of the turnout and related conveyance infrastructure will have a less than significant impact on biological resources. Eleven special status vascular plant species are known to occur in the general vicinity where the construction is to occur. None of the eleven special status plant species are present at the construction site, however. (Biotic Evaluation, Live Oak Associates, February 6, 2007).

Thirty-nine special status animal species occur regionally. Of these thirty-nine special status species, thirty species would not be present or would be unlikely to be present on-site due to the absence of suitable habitat. Therefore, the construction would have no impact on these thirty species because there is little or no likelihood that they occur in the RCWD.

Eight special status species may pass through or over the site as migrants or transients from time to time. Considerable habitat suitable for migratory movements will continue to be available for these species after the construction. Therefore, any impact to these eight migratory species from the construction will be less than significant.

There are no riparian areas or natural communities of special concern existing within RCWD. Therefore, the construction will have no impact on natural communities of special concern. (Biotic Evaluation, Live Oak Associates, February 6, 2007).

The construction of facilities would have little effect on the regional movements of migratory fish or wildlife species. Therefore, there will be a less than significant impact on regional wildlife movements. While agricultural lands of the site provide some habitat for a number of wildlife species, they are not of unique or of significant value as wildlife habitat. After the Proposed Project is complete, large areas of agricultural habitats will remain. Therefore, the construction would

no constitute a significant adverse environmental impact on fish or wildlife habitat. (Biotic Evaluation, Live Oak Associates, February 6, 2007).

Construction of the pipeline will involve trenching that often leaves the soils of a construction zone barren of vegetation and, therefore, vulnerable to erosion. Eroded soil can be carried as sediment in seasonal creeks to be deposited in creek beds and adjacent wetlands. The area proposed for the construction is, however, nearly level with soils that are not highly erodible. Therefore, the potential for erosion and the degradation of water quality in local stream is less than significant. (Biotic Evaluation, Live Oak Associates, February 6, 2007).

Construction related activities of the proposed pipeline such as trenching would have a small temporary impact to the onsite creeks that already experience regular disturbance from surrounding agricultural practices. Therefore, impacts to Root and Madera Ranchos South Creek constitute a less than significant impact on federally protected waters. (Biotic Evaluation, Live Oak Associates, February 6, 2007).

The acquisition, delivery and application of surface waters will have no impact on biological resources. As stated above, the application of these surface waters to the RCWD will assist in curtailing groundwater pumping to agricultural users. Therefore, as the surface waters will serve to replace groundwater resources, no impact to biological resources will result.

The potential impacts to biological resources within the Gateway Village Project have also been evaluated and analyzed in the EIR performed for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.4). As provided in the EIR, implementation of the proposed Gateway Village Specific Plan would not affect species that are currently listed as Threatened and/or Endangered by the state and/or federal government, but may have a significant impact on Special Status species, particularly the Western spadefoot toad and the burrowing owl, without incorporation of mitigation measures. (Gateway Village Specific Plan EIR, Section 4.4.6). The following mitigation measure would bring potential impact to a Special Status species to below significant:

- A pre-construction survey shall be conducted by a qualified biologist within and adjacent to ruderal habitat within 30 days of the onset of construction. This survey shall include two early morning surveys and two evening surveys to ensure that all owl pairs have been located.

- If preconstruction surveys undertaken during the breeding season (February 1st through July 31st) locate active nest burrows within 250 feet of construction zones, an appropriate buffer around them (as determined by the project biologist) shall remain excluded from construction activities until the breeding season has ended.

- During the non-breeding season (August 15th through January 31st), resident owls may be relocated to alternative habitat. The relocation of resident owls shall occur according to a relocation plan prepared by a qualified biologist in consultation with the California Department of Fish and Game. This plan shall provide for the owl's relocation to nearby lands possessing available nesting habitat. Suitable development-free buffers shall be maintained between replacement nest burrows and the nearest building, pathway, parking lot or landscaping. The relocation of resident owls shall be in conformance with all necessary state and federal permits. (Gateway Village Specific Plan EIR, Section 4.4.6).

With the following mitigation measure implemented, potential impacts to jurisdictional wetlands at the proposed Gateway Village Project will be less than significant:

- An area equivalent to the wetland impact acreage and in similar condition shall be identified and improved through riparian planting or the removal of non-invasive species. The location shall be as close to the project site as possible.

The EIR concludes that the proposed Gateway Village Project would result in a cumulatively considerable impact to biological resources. (Gateway Village Specific Plan EIR, Section 4.4.6). The Madera County Board of Supervisors found that overriding economic considerations make infeasible the project alternatives identified in the EIR. (Board of Supervisors of the County of Madera, Resolution Number 2007-202, Attachment A). The Gateway Village Project was approved on that basis.

In conclusion, the Proposed Project will have a less than significant impact on biological resources and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

V. CULTURAL RESOURCES

A Cultural Resources survey was completed for the proposed construction of the turnout and related conveyance infrastructure. No potentially significant or important cultural resources were identified as a result of this surface inspection. Based on the lack of surface evidence of cultural resources, it is unlikely that the proposed construction will have any impact on significant archaeological or other cultural resources. (Cultural Resources Survey for the Root Creek Water District In-Lieu Groundwater Recharge Facility, Sierra Valley Cultural Planning, February 2007).

The Water Exchange consists of the conveyance of previously banked water from an existing water district (North Kern) through existing facilities. . As such,

there will be no impacts to cultural resources.

Impacts to cultural resources from development of the Gateway Village Project have been evaluated and analyzed in the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.5).

The EIR concluded that any potential impacts to cultural resources will be mitigated to a less than significant level. The mitigation measures to be implemented are as follows:

- If any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 50 feet of the resources shall be halted and the County shall consult with a qualified archeologist to assess the significance of the find according to CEQA Guidelines Section 15064.5. If any find is determined to be significant, the County and the archeologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation. The County shall make the final determination. All significant cultural materials recovered shall be, as necessary and to the discretion of the consulting archeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards.

  In considering any suggested mitigation proposed by the consulting archeologist in order to mitigate impacts to historical resources or unique archeological resources, the County shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g. data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is being carried out.

- In the event that paleontological resources are discovered, the project proponent shall notify a qualified paleontologist, who shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. If a breas or other fossil is discovered during construction, excavations within 50-feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist shall notify the appropriate agencies to determine procedures that should be followed before construction is allowed to resume at the location of the find. If the County determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the proposed project on the qualities that make the resource important. The plan shall be submitted to the County for review and approval prior to implementation.

- If human skeletal remains are uncovered during project construction, the project proponent shall immediately halt work in the area of the discovery, contact the Madera County coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5(e)(1) of the CEQA Guidelines. If the county coroner determines that the remains are Native American, the County shall contact NAHC, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and all excavation and site preparation activities would cease until appropriate arrangements are made. (Gateway Village Specific Plan EIR, Section 4.5.6).

In conclusion, the Proposed Project will have no impact on cultural resources and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

VI. GEOLOGY AND SOILS

The construction of the turnout, MID replacement pipeline and related conveyance infrastructure will utilize all Best Management Practices ("BMPs") for construction. BMPs have been recognized as methods to effectively prevent or minimize erosion of topsoil. The actual area to be disturbed by construction is less than 10 acres. Due to the small scope of the construction activities and the adherence to BMPs, there will be no impact to geology and soils.

As stated above, the 215 Contract and MID Transfer involves the application of surface waters to agricultural lands. These lands are currently in agricultural use. The 215 Contract and MID Transfer will have not impact on geology and soils.

The Water Exchange consists of the conveyance of previously banked water from an existing water district (North Kern) through existing facilities, in addition to the conveyance of surface water supplies generated annually through conservation measures taken on the Rayo Ranch.

Any impacts to geology and soils from development of the Gateway Village Project have been evaluated and analyzed in the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.6).

The EIR concluded that any impacts to geology and soils would be less than significant. (Gateway Village Specific Plan EIR, Section 4.6.6). The reasoning behind this conclusion is as follows:

> As with any project in California, the structures would be required to conform to the California Building Code, which incorporates seismic design criteria that would minimize the potential for

damage and injury due to seismic ground shaking. Therefore, the potential impact from ground shaking is considered to be less than significant.

As Best Management Practices ("BMPs") have been recognized as methods to effectively prevent or minimize the erosion, and RCWD will adhere to erosion control measures outlined in the Storm Water Pollution Prevention Plan ("SWPPP"), the potential for erosion impacts during construction would be less than significant.

The proposed Project will be appropriately engineered by a geotechnical or civil engineer to withstand expected structural loads, thereby minimizing the potential for damage as a result of any expansive soils.

Finally, the proposed Gateway Village Project, with other area projects would not contribute to cumulative impacts on geology and soils in the project area.

(Gateway Village Specific Plan EIR, Section 4.6.6).

In conclusion, the Proposed Project will have no impact on geology and/or soils and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

VII. HAZARD & HAZARDOUS MATERIALS

The construction of the turnout, MID replacement pipeline and related conveyance infrastructure, 215 Contract, MID Transfer involve the application of surface waters to agricultural lands and will not involve the use of hazardous materials. The surface waters will not be applied to properties listed on hazardous materials sites listed in the California Government Code. As such, the approval of these actions will have no impact on hazards or hazardous materials.

The Water Exchange consists of the conveyance of previously banked water and surface waters generated annually from an existing water district through existing facilities. As such, the Water Exchange will have no impact on hazards or hazardous materials.

Any impacts from hazards and hazardous materials from development of the Gateway Village Project have been evaluated and analyzed in the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.7).

The EIR concludes that any potential impacts from hazards or hazardous materials at the Gateway Village Project will be mitigated to a less than

significant level. (Gateway Village Specific Plan EIR, Section 4.7.6). The mitigation measures to be implemented are as follows:

- In order to determine if contaminants may be present in the soil, a sampling program shall be conducted in areas proposed for sensitive land uses such as residences and schools. Sampling protocol shall include, but not be limited to, sampling in random grid locations, sampling at various soil depths, and sampling in areas where known mixing of pesticides has occurred.

  Soil samples shall be analyzed for elevated levels of agricultural chemicals. Soil sampling also shall be conducted in the areas of the urea fertilizer tans and the irrigation well turbine pumps. Remediation activities shall be required if testing reveals levels of contaminants that exceed regulatory requirements and/or pose a threat to the public health and the environment. Remediation may be required for both soils and groundwater, if regulatory requirements are exceeded. The remediation plan shall require approvals from the appropriate agencies. Remediation activities could include excavation and disposal, excavation and on-site treatment, or capping the soil with an impenetrable surface such as asphalt or concrete.

- The applicant shall follow the provisions of CCR, Title 8, Sections 5163 through 5167 for General Industry Safety Orders to protect the project area from being contaminated by the accidental release of any hazardous materials and/or wastes. Disposal of all hazardous materials will be in compliance with applicable California hazardous waster disposal laws. The applicant shall contact the local fire agency and the County Department of Public Health, Environmental Health Division, for any site-specific requirements regarding hazardous materials or hazardous waste containment or handling.

- In the event of an accidental release of hazardous materials during construction, containment and clean up shall occur in accordance with applicable regulatory requirements.

- Oil and other solvents used during maintenance of construction equipment shall be recycled or disposed of in accordance with applicable regulatory requirements. All hazardous materials shall be transported, handled, and disposed of in accordance with applicable regulatory requirements.

- The applicant shall require the construction contractor to prepare a Site Safety Plan in accordance with any requirement of the Regional Water Quality Control Board ("RWQCB"). If hazardous materials are encountered during construction activities, the contractor shall be required

to halt construction immediately and notify the applicant. Disposal of all hazardous materials shall be in compliance with all applicable California hazardous waste disposal laws.

- The applicant shall prepare and implement a safety program to ensure the health and safety of construction workers and the public during project construction. The safety program shall include an injury and illness prevention program, a site-specific safety plan, and information on the appropriate personal protective equipment to be used during construction.

- The applicant shall work closely with local fire agencies to develop a fire safety plan, which describes various potential scenarios and action plans in the event of a fire.

- During construction, all staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other material that could ignite. Any construction equipment that includes a spark arrestor shall be equipped with a spark arrestor in good working order. During the construction of the proposed project, the applicant shall require all vehicles and crews working at the project site to have access to functional fire extinguishers at all times. In addition, construction crews shall have a spotter during welding activities to look out for potentially dangerous situations, including accidental sparks.

The EIR finds that the Gateway Village Project would not contribute to significant cumulative hazards impacts in the project site vicinity. (Gateway Village Specific Plan EIR, Section 4.7.6).

In conclusion, the Proposed Project will have no impact from hazards or hazardous materials and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

VIII. HYDROLOGY/WATER QUALITY

As previously mentioned, the annual groundwater overdraft within RCWD is estimated at approximately 3,400 acre feet per year. The purpose of the Proposed Project is to minimize RCWD's contribution to the regional groundwater overdraft, to stabilize groundwater levels and reduce pumping costs within RCWD, and to maintain a reliable and affordable water supply for its users.

Therefore, implementation of the Proposed Project will actually benefit groundwater resources by reducing reliance by RCWD's agricultural users on

pumped groundwater. (See AB 3030 Groundwater Management Plan, Madera County).

The Water Exchange will convey up to 7,000 acre-feet annually of water. Some of this water has been previously stored in North Kern under a landowner banking agreement. This previously stored water was banked in earlier years for the specific purpose of withdrawal. Therefore, the conveyance of this water will not deplete groundwater supplies to levels below what existed prior to depositing the water under the landowner banking agreement. Additionally, North Kern has an established monitoring program for this groundwater basin. This monitoring program consists of measuring and assessing impacts to the groundwater from pumping of stored water on a bi-annual basis. Any impacts to the groundwater levels based on the Water Exchange will be discovered by this monitoring program. If impacts are determined to exist, pumping of stored water will be adjusted so as to alleviate any impacts. As such, the Water Exchange will not impact hydrology or water quality.

Any impacts to hydrology or water quality from development of the Gateway Village Project have been evaluated and analyzed in the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.8).

The EIR concludes that any potential impacts to hydrology or water quality at the Gateway Village Project will be mitigated to a less than significant level. (Gateway Village Specific Plan EIR, Section 4.8.6). The EIR states that compliance with applicable regulations would assure construction activities would not involve grading and earthwork activities that could increase soil erosion and may transport sediment or other contaminants to downstream receiving waters. Further, contaminants from urban runoff transported to downstream receiving waters from the proposed project would not degrade groundwater and surface water quality. Discharges from the proposed wastewater treatment plant would not degrade groundwater and surface water quality. The proposed project would result in a beneficial impact to recharge and groundwater supplies because the conveyance of the exchange water from the Water Bank would be used for irrigation of certain agricultural lands within the RCWD that are currently dependant on groundwater pumping.

The implementation of the following mitigation measure will reduce impacts to a less than significant level:

- RCWD shall submit final design plans and a hydrology reports based on findings from the Infrastructure Master Plan ("IMP"), demonstrating adequate detention and percolation of stormwater to the satisfaction of the County and RCWD. The hydrology report shall also re-examine the flood hazard in the area, updating the Federal Emergency Management Agency ("FEMA") analysis to identify a floodway and base flood elevations, as appropriate, considering

recent and reasonably foreseen upstream and downstream development in the area. (Gateway Village Specific Plan EIR, Section 4.8.6)

In conclusion, the Proposed Project will have no impact to hydrology and/or water quality and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

IX. LAND USE/PLANNING

The construction of the turnout, MID replacement pipeline and related conveyance infrastructure will have no impact on land use and/or planning.

The 215 Contract and MID Transfer consist of the application of excess surface waters to agricultural lands. These actions will not physically divide any established communities, nor do they conflict with any land use or habitat conservation plans. Therefore, the 215 Contract and MID Transfer will have no impact on land use or planning.

The Water Exchange consists of the conveyance of water from an existing water district through existing facilities to the border of RCWD. The Water Exchange will not conflict with any land use or habitat conservation plans. The Water Exchange will have no impact on land use or planning.

Any impacts to land use and/or planning from development of the Gateway Village Project have been evaluated and analyzed in the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.9). The EIR concludes that any impacts from the Gateway Village Project would be less than significant.

The EIR states that the development of the Gateway Village Project would not divide an already established community because the City of Madera is located approximately 12.5 miles northwest of the project site and the nearest community development is adjacent to the ease of the project site. (Gateway Village Specific Plan EIR, Section 4.9.6).

The Gateway Village Project would not conflict with the General Plan land use designations and policies and the zoning ordinance, with approval of the discretionary actions. A Specific Plan is proposed for the Gateway Village Project, which would serve as the tool for the systematic implementation of the Gateway Village Area Plan. Upon approval of the Gateway Village Area Plan, it would be incorporated into and consistent with the Madera County General Plan. Additionally, to facilitate development of the project, the applicant proposed and received a zone change that would result in the rezoning of the project site. Therefore, the proposed Gateway Village Project would not conflict with the General Plan land use designations and policies and the zoning ordinance.

Finally, the EIR concluded that the Gateway Village Project would not conflict with any applicable habitat conservation plan or natural community conservation plan, and would not result in a cumulatively considerable environmental impact to the County in terms of land use and planning. (Gateway Village Specific Plan EIR, Section 4.9.6).

In conclusion, the Proposed Project will have no impact to land use and planning and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

X. MINERAL RESOURCES

The Construction of Facilities will have no impact on mineral resources.

The 215 Contract and MID Transfer consist of the application of surface waters to agricultural lands. As such, these actions will have no impact on mineral resources.

The Water Exchange consists of the conveyance of water from an existing water district (North Kern) through existing facilities to the boundary of the RCWD. As such, the Water Exchange will have no impact on mineral resources.

Any impacts to mineral resources from development of the Gateway Village Project have been evaluated and analyzed in the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.10). The EIR concludes that there are no impacts from the Gateway Village Project to mineral resources. (Gateway Village Specific Plan EIR, Section 4.10.6).

The EIR states that there are no known economically viable sources of rock materials in the immediate project site vicinity, and there are no unique geologic features identified within the project site vicinity. Therefore, there is no potential for the proposed project to result in the loss of mineral of unique geologic features. (Gateway Village Specific Plan EIR, Section 4.10.6).

Finally, Madera County has been identified as having sufficient resources to meet its 50-year projected aggregate demand. Therefore, the proposed project would not have any impact of known mineral resources. (Gateway Village Specific Plan EIR, Section 4.10.6).

In conclusion, the Proposed Project will have no impact on mineral resources and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

XI. NOISE

The construction of the turnout, MID replacement pipeline, and related conveyance infrastructure consists of a turnout on MID Lateral 6.2, distribution and lateral pipelines, and the relocation of a MID pipeline. A temporary increase in noise levels will result from these construction activities. Construction equipment noise will be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturers' specifications) and by shrouding or shielding impact tools. Therefore, any increase in noise will be less than significant

The 215 Contract and MID Transfer solely consist of the application of surface waters to agricultural lands. There will be no noise associated with these actions. Therefore, there is no impact on noise.

The Water Exchange consists of the conveyance of water from an existing water facility through existing facilities to the RCWD boundary. Therefore, the Water Exchange will have a less than significant impact on noise.

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Any impacts from noise from development of the Gateway Village Project have been evaluated and analyzed in the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.11). The EIR concludes that there is a significant and unavoidable impact to transportation noise levels with the implementation of mitigation measures. (Gateway Village Specific Plan EIR, Section 4.11.6). The Madera County Board of Supervisors has found that overriding economic considerations make infeasible the project alternatives identified in the EIR. (Board of Supervisors of the County of Madera, Resolution Number 2007-202, Attachment A).

The EIR finds that the Gateway Village Project would result in a less than significant impact to ambient noise levels due to construction, with the following mitigation measures:

- Hours of construction shall be limited to between 7 AM and 6 PM on weekdays and from 8 AM to 5 PM on Saturdays.

- Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturers' specifications) and by shrouding or shielding impact tools.

- Construction staging areas shall be located as far as possible from noise-sensitive uses. (Gateway Village Specific Plan EIR, Section 4.11.6).

The EIR further found that because commercial uses that would be facilitated by the project could generate noise levels at proposed residential uses in excess of

County standards for non-transportation noise sources, with the following mitigation measures, this impact could be reduced to a less than significant level:

- Where the development of a given parcel could result in the exposure of noise-sensitive land uses to existing or projected non-transportation or stationary noise levels in excess of the applicable County standards, an acoustical analysis that conforms to the requirements of General Plan Policy 7.A.7 shall be performed.

- Siting of individual parcels shall adhere to the applicable noise standard to establish minimum setbacks or other measures required for noise attenuation from non-transportation noise. (Gateway Village Specific Plan EIR, Section 4.11.6).

RCWD will compy with those noise mitigation measures applicable to the Proposed Project. In conclusion, the Proposed Project will have a less than significant impact on noise and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

XII. POPULATION/HOUSING

The Proposed Project consists of the acquisition and delivery of surface water supplies to existing agricultural lands. No direct impact to population and/or housing will result due to these actions.

Any impacts from population and/or housing from development of the Gateway Village Project have been evaluated and analyzed in the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.12).

The EIR finds that the Gateway Village would not induce substantial population growth in a manner not anticipated by the General Plan, either directly by proposed new homes and businesses, or indirectly through infrastructure improvements. The rationale for this finding is that the Madera County General Plan does not restrict population growth or establish a population cap for the County. Therefore, population and housing growth alone would not be considered a significant environmental impact. (Gateway Village Specific Plan EIR, Section 4.12.6).

Further, development of the Gateway Village Project would not displace existing housing or residents because it does not require the demolition of any existing residential units. Therefore, any potential impacts to existing housing or residences would be less than significant. (Gateway Village Specific Plan EIR, Section 4.12.6).

Development of the Gateway Village Project would increase the number of jobs within the project site by 6,786, but would eliminate approximately 78 existing agricultural jobs. Therefore, because the proposed project would not eliminate a substantial number of jobs necessitating replacement facilities elsewhere, a less than significant impact is anticipated. (Gateway Village Specific Plan EIR, Section 4.12.6).

Finally, the EIR finds that implementation of the Gateway Village Project would improve the current jobs/housing balance within Madera County. Therefore, the Gateway Village Project would result in a less than significant impact to the current jobs/housing imbalance within the County. (Gateway Village Specific Plan EIR, Section 4.12.6).

In conclusion, the Proposed Project will have no impact to population and/or housing in the area and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

XIII. PUBLIC SERVICES

The Proposed Project consists of the construction of facilities, acquisition and delivery of surface water supplies to existing agricultural lands. No direct impact to public services will result due to these actions.

Any impacts to public services from development of the Gateway Village Project have been evaluated and analyzed in the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.13).

The EIR finds that the Gateway Village Project would require additional fire protection staffing and equipment, thereby necessitating the construction of new and/or physically altered facilities. With the implementation of the following mitigation measures, the impacts would be reduced to a less than significant level:

- Prior to the approval of subsequent tentative subdivision maps and/or non-residential development, the District shall work with Madera County Fire District ("MCFD") to address provisions for fire protection services, including water supply, to Gateway Village. These provisions shall ensure that existing fire protection service levels are not adversely affected by the proposed project and include the following:

    1. Establishment of an assessment process for determining an adequate urban level of fire protection services throughout project build out that includes specific details on site dedication, facilities, number of personnel, and equipment,

that are needed to serve the project site. Fire protection services shall be in place prior to the arrival of residents. RCWD would be required to provide the necessary funding for fire protection service (facilities, personnel, and equipment) until there is sufficient development within the proposed project site to generate an adequate tax base to fully fund fire protection services. Coordination with surrounding volunteer fire stations shall be included.

2. Consideration of sharing fire protection facilities, staff, equipment, and costs with future development in the Rio Mesa Area Plan and Gunner Ranch West Area Plan.

3. Gateway Village will participate in a pro-rata share of the cost of providing additional staffing and equipment or the cost of construction of the new fire station on a per-unit or per dwelling basis to be determined after additional study by the County.

- Prior to approval of the water distribution system, Gateway Village shall submit the project water distribution system plans to the MCFD, and/or California Department of Forestry ("CDF"), and the Madera County Resources Management Agency for review. The water distribution system shall meet all fire flow and hydrant spacing requirements.

- Prior to the approval of subsequent tentative subdivision maps and/or non-residential development, RCWD shall submit tentative subdivision maps and/or improvement plans to the MCFD for review. Project site design shall include adequate fire access, including two points of ingress and egress, throughout the project site, including access to any gated communities. Fire accesses shall be approved by MCFD. (Gateway Village Specific Plan EIR, Section 4.13.6).

Finally, the EIR concludes that implementation of the Gateway Village Project would result in a cumulatively considerable environmental impact to public services. This impact is significant and unavoidable. The Madera County Board of Supervisors has found that overriding economic considerations make infeasible the project alternatives identified in the EIR. (Board of Supervisors of the County of Madera, Resolution Number 2007-202, Attachment A).

The Proposed Project will have no impact on public services and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

XIV. RECREATION

The purpose and intent of the Proposed Project is to minimize impact to the groundwater basin underlying RCWD. No direct impacts to recreation will exist due to approval of the Proposed Project.

Any impacts to recreation from development of the Gateway Village Project have been evaluated and analyzed in the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.14). The EIR concludes that any impacts to recreation will be less than significant. (Gateway Village Specific Plan EIR, Section 4.14.6).

The EIR finds that the Gateway Village Project would increase the demand for use of existing neighborhood and regional parks; however, this increase would be offset by the creation of 217 acres of new parkland and would not result in the deterioration of existing facilities. (Gateway Village Specific Plan EIR, Section 4.14.6).

Further, the EIR concludes that the new recreational facilities to be developed would not have an adverse physical effect on the environment. (Gateway Village Specific Plan EIR, Section 4.14.6). Finally, the EIR stated that the Gateway Village Project would provide for additional recreational uses and would not contribute to a cumulative recreation or open space impact. (Gateway Village Specific Plan EIR, Section 4.14.6).

In conclusion, the Proposed Project will have no impact to recreation and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

XV. TRANSPORTATION/TRAFFIC

The EIR concludes that with implementation of the required mitigation measures the Gateway Village impacts to transportation and/or traffic would be less than significant. However, as improvements outside of the County's and Gateway Village's control cannot be guaranteed, impacts would be significant and unavoidable. (Gateway Village Specific Plan EIR, Section 4.15.6).

The Proposed Project will have a less than significant impact on traffic and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

XVI. UTILITIES/SERVICE SYSTEMS

The construction of a turnout, MID replacement pipeline and related conveyance infrastructure will have no impact on utilities and/or service systems. The distribution pipelines are gravity-fed and will not require pumps.

The acquisition, delivery and application of surface waters to agricultural lands will not result in impacts to utilities and/or service systems.

Any impacts to utilities and/or service systems from development of the Gateway Village Project have been evaluated and analyzed in the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Section 4.16). The EIR finds that any impacts to utilities and/or service systems from development of the Gateway Village Project will be less than significant.

The EIR concludes that the development of the Gateway Village Project would require a water supply of approximately 6,374 acre-feet a year to meet the demand of future uses. With the incorporation of the project features, actual water usage would likely be less than the estimated demand. Sufficient water supplies would be available to serve the proposed project. Project impacts related to the availability of water supplies would be less than significant. (Gateway Village Specific Plan EIR, Section 4.16.6).

Further, water demand associated with implementation of the proposed project would contribute to groundwater overdraft for the RCWD. However, the proposed project would incorporate a direct groundwater recharge program, in-lieu groundwater recharge, and reclaimed water use to minimize the overdraft. With incorporation of these features, impacts to groundwater overdraft conditions from the Gateway Village Project would be less than significant. (Gateway Village Specific Plan EIR, Section 4.16.6).

The Gateway Village Project would construct new water facilities and infrastructure to serve the new water demand of approximately 6,374 af/year. With the construction of the water infrastructure system, impacts related to water infrastructure would be less than significant. (Gateway Village Specific Plan EIR, Section 4.16.6).

Implementation of the Gateway Village Project would deliver water for domestic use. Although the quality of the water is not known at this time, it is anticipated to be acceptable and meet state and federal water quality standards. The water quality and supply system would be regulated by the state. Therefore, impacts related to drinking water quality would be less than significant. (Gateway Village Specific Plan EIR, Section 4.16.6).

Implementation of the Gateway Village Project would require the construction of wastewater conveyance and treatment facilities that currently do not exist. With the construction of these facilities, the impacts of the Gateway Village Project

related to wastewater would be less than significant. (Gateway Village Specific Plan EIR, Section 4.16.6).

The Gateway Village Project would be served by a landfill with sufficient permitted capacity to accommodate the proposed project's solid waste disposal needs. Therefore, the impacts of the Gateway Village Project in relation to available solid waste management and disposal systems would be less than significant. (Gateway Village Specific Plan EIR, Section 4.16.6).

The Gateway Village Project would not cumulatively contribute to a significant impact on existing water supplies. As the Gateway Village Project would result in a beneficial impact to the RCWD's groundwater supply conditions, the proposed project's water demand would not be considered cumulatively considerable. Cumulative impacts to water supply would be less than significant. (Gateway Village Specific Plan EIR, Section 4.16.6).

The Gateway Village Project, in conjunction with related projects, would cumulatively increase the need for wastewater treatment services. However, each project would be required to construct wastewater treatment facilities that would accommodate the wastewater generated. Therefore, cumulative impacts regarding wastewater would be less than significant. (Gateway Village Specific Plan EIR, Section 4.16.6).

In conclusion, the Proposed Project will have no impact to utilities and/or service systems in the area and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

XVII. GLOBAL WARMING

The Proposed Project will primarily utilize gravity water delivery and will reduce groundwater pumping and energy use. As such, the Proposed Project does not have the potential for increasing emissions identified as having potential global warming impacts.

Moreover, any impacts to global warming from development of the Gateway Village Project have been evaluated and analyzed in the Responses to Additional Comments portion of the EIR for the Gateway Village Specific Plan. (Gateway Village Specific Plan EIR, Response to Comment 2A.1-7). The EIR concludes that the Gateway Village Project would be consistent with California's stringent greenhouse gas reduction goals and that the project's impacts on global warming, on both a project and cumulative level would be less than significant.

In conclusion, the Proposed Project will have a less than significant impact to global warming and, in any event, to the extent any such impact could potentially occur, the impact was adequately addressed in the Gateway Village EIR.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

As stated above, the Madera County Board of Supervisors certified the Gateway Village EIR on September 11, 2007. Litigation over the Gateway Village Project and Gateway Village EIR was settled by the parties on January 12, 2009.

All environmental impacts associated with the development of the Gateway Village Project, including the acquisition and delivery of surface water supplies to RCWD, are analyzed in the Gateway Village EIR. That EIR concluded that there will be significant and unavoidable impacts to four categories evaluated by the EIR. These categories are: Agriculture Resources, Biological Resources, Noise and Public Services. The Madera County Board of Supervisors made a finding that overriding economic considerations make infeasible the project alternatives identified in the EIR.

Therefore, because the impacts of the Gateway Village Project have been fully evaluated in the Gateway Village EIR, and the EIR has been certified, any such impacts have not been evaluated again in this Initial Study. Certain mitigation measures implemented in the Gateway Village EIR are incorporated into this Initial Study for reference only.

The Proposed Project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. The purpose of the Proposed Project is to substitute imported surface water supplies for pumped groundwater. These surface water supplies will be applied to lands that are currently in agricultural production.

The Proposed Project water does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals. Nor does the Proposed Project have impacts that are individually limited but cumulatively considerable. The goal of the Proposed Project is to reduce dependence on groundwater resources. This is a long term goal that will be achieved through the implementation of the Proposed Project. The Proposed Project will have no potential environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

Summary

Root Creek Water District ("RCWD" or the "District") has acquired contracts with Madera Irrigation District and other parties and is seeking additional contracts to receive surface water supplies for conjunctive use and direct recharge within and near the District. In addition, Madera Irrigation District ("MID") has agreed to deliver RCWD's surface water supplies through the Madera Canal and MID Lateral 6.2 on the terms set forth in the March 13, 2002 agreement between RCWD and MID (the "2002 Agreement"). RCWD proposes to construct a new turnout on MID Lateral 6.2, and run a new pipeline from Lateral 6.2 to RCWD's northern boundary to provide surface water to existing agricultural irrigation systems that currently rely solely on groundwater. Further, MID and RCWD propose to approve the water exchange set forth in the Water Exchange Agreement between MID, RCWD, Shafter-Wasco Irrigation District ("SWID") and Westside Mutual Water Company, LLC ("Westside").

Proposed Project

MID AND RCWD PROPOSE TO TAKE ACTION TO APPROVE THE FOLLOWING PROJECTS (collectively, the "Proposed Project"):

- Construction of a new turnout in MID Lateral 6.2; construction of a 48-inch diameter underground pipeline to deliver surface water to RCWD from the proposed new turnout in MID lateral 6.2.
- Construction of a 24-inch plastic pipeline to replace an existing 18-inch concrete MID supply line.
- A Temporary Water Services Contract for RCWD with the Bureau of Reclamation under Section 215 of the Reclamation and Reform Act of 1982 (section 215 Contract).
- A program of annual transfers of up to 10,000 acre-feet of Central Valley Project (CVP) Water, as available, from MID to RCWD.
- Approval of water deliveries to RCWD pursuant to the Water Exchange Agreement between RCWD, MID, Westside, and SWID.
- Approval of MID's surface water deliveries to RCWD through the Madera Canal and MID Lateral 6.2.

Purpose and Need

The Proposed Project will help RCWD address chronic regional groundwater overdraft. Long-term groundwater pumping has created severe overdraft conditions in that portion of the Madera Groundwater Basin that underlies the

northern portion of RCWD and adjacent areas generally east of the MID service area. RCWD is principally an agricultural district, developed with a variety of permanent crops. RCWD currently relies exclusively on pumped groundwater.

The overdraft is especially significant in the eastern areas of the Madera Groundwater Basin (such as RCWD) where the aquifer is thin, recharge is limited due to geologic conditions, and existing extensive agricultural and urban development rely solely on groundwater. Because the RCWD area is immediately adjacent to, but outside, the eastern boundary of MID, the local overdraft causes subsurface flow of groundwater out of MID.[1] Overdraft of the Madera Groundwater Basin within RCWD itself is estimated at approximately 3,400 acre-feet per year.[2] This overdraft results in dropping water levels for agricultural wells, increased pumping costs, and decreasing quality and reliability of community water supplies.

If RCWD does not or cannot import surface water, groundwater quality and quantity in RCWD will continue to decline and the cost to pump groundwater will continue to rise until agricultural production is no longer viable. Decreasing water levels have already led to irreparable well failures in immediately adjacent areas North of RCWD.

The Proposed Project will assist RCWD in eliminating its contribution to overdraft within the Madera Groundwater Basin, stabilize groundwater levels and reduce pumping costs within RCWD. MID desires that RCWD achieve these goals because a primary goal of MID's groundwater management plan is elimination of overdraft in adjacent areas outside MID boundaries. These goals will be met through importation of surface waters supplies for in-lieu recharge of the groundwater basin. The surface waters will be substituted for water currently pumped by RCWD's agricultural users.

By providing a supply of surface irrigation water to the agricultural users, the quantity of pumped groundwater for irrigation can be reduced on a one-to-one basis. The Proposed Project will facilitate the acquisition and delivery of surface water supplies to RCWD. This reduces the draw on the aquifer, saves energy, improves air quality and improves water quality. Acquisition and delivery of these supplies will provide a long term sustainable water supply for RCWD while assisting MID with attaining a groundwater balance at no cost to MID.

Description of Proposed Project

Construction of Turnout and Conveyance Infrastructure

---

[1] Figure 2-6, Groundwater Levels Unconfined Aquifer Spring 1999, "AB 3030 Groundwater Management Plan, Madera County" (2002) prepared by Todd Engineers.

[2] Hydrogeologic Investigation: Southeastern Madera County" (1999, revised 2001) prepared by Kenneth D. Schmidt & Associates, in conjunction with Provost & Pritchard Engineering Group, Inc.

The Proposed Project will require new facilities to be constructed for the delivery of surface waters. The two major construction components are as follows:

1. Construction of a new turnout in MID Lateral 6.2 and construction of a 48-inch diameter underground pipeline to deliver surface water to RCWD from the proposed new turnout in MID lateral 6.2.

This construction component includes (i) a turnout and metering facility along MID Lateral 6.2, (ii) approximately 1/4 mile of mainline pipeline from MID Lateral 6.2 to RCWD's northern boundary and 2 ½ miles of mainline pipeline plus lateral pipelines within RCWD; and (iii) approximately 10 to 12 connections to existing irrigation pump stations.

The turnout and metering facility will be located within the MID Lateral 6.2 right-of-way, owned by the Bureau. The turnout will be located on the south bank of Lateral 6.2 near the mid section point of Section 29 (T.11S, R.20E), approximately 2.4 miles from the headgate at the Madera Canal. The canal turnout is preliminarily designed to be constructed of concrete with a 36-inch diameter canal slide gate and metal trash rack. A 6-foot by 6-foot concrete meter box with a flow meter and a baffle wall will be constructed within the Lateral 6.2 right-of-way. The baffle wall is necessary to maintain a full pipe for water measurement purposes. Neither the turnout nor metering facility will utilize lighting or be designed with materials that will create glare.

The RCWD mainline pipe is proposed to be 48-inch diameter reinforced concrete pipe leaving the meter box, and will convey water to a point just north of the Root Creek channel. Lateral pipelines will be attached to the mainline along its length of varying smaller diameters down to a 4-inches diameter.

2. Construction of a 24-inch diameter underground plastic pipeline to replace an existing 18-inch concrete MID supply pipeline. The proposed replacement pipeline will connect to an existing MID turnout in Lateral 6.2. Then it will run generally in a North-easterly direction within the Lateral 6.2 right of way approximately 260 feet. There the 24-inch pipe will turn to run south approximately 1/4 mile parallel to and adjacent to the westerly side of the RCWD 48-inch pipeline and will connect to the existing MID distribution system now served by the existing concrete pipeline.

MID currently holds an easement that contains the existing 18-inch MID supply pipeline. The existing pipeline is an underground pipeline that crosses certain real property known as the River Hills Ranch. The MID Replacement Pipeline will replace the MID pipeline crossing River Hills Ranch. If approved, RCWD will construct and dedicate the MID Replacement Pipeline to MID, and MID will abandon its current easement over River Hills Ranch.

All of the pipelines and connections will be constructed within previously

disturbed areas such as developed agricultural fields, agricultural roads or public highway right-of-ways.

All construction will comply with SJVAPCD Rule 8021, Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities, as well as utilize all Best Management Practices ("BMPs"). Construction equipment will be muffled and shielding intakes and exhaust shall be utilized to reduce noise (per manufacturers' specifications). A Storm Water Pollution Plan will be developed and implemented for the Proposed Project.

If construction is scheduled to commence between the months of February and the end of August, a pre-construction survey will be conducted by a qualified biologist for nesting raptors. This survey will occur within 30 days prior to the on-set of construction. If an active nest is located during the pre-construction surveys, this nest, and an appropriate buffer around it (as determined by a qualified biologist) will remain off-limits to construction until the nesting season is over.

Acquisition of Surface Water through Section 215 Contract, Conditional Pre-Approval of Transfers from MID and Exchange of Water from Kern County

RCWD has already entered into three major water supply related contracts. First, RCWD, the Friant Water User's Authority ("FWUA"), the MID, and the Chowchilla Water District ("CWD") have entered into the "Agreement Concerning Agricultural, Municipal and Industrial Water Use Within Root Creek Water District," dated December 30, 1999 (the "Friant" Agreement"). Second, RCWD and MID have entered into the "Agreement between Madera Irrigation District and Root Creek Water District for the Conveyance and Sale of Water," dated March 13, 2002 (the "2002 Agreement"). Third, RCWD has entered into the "Water Exchange Agreement" with MID, SWID and Westside. These contracts have not been performed pending this CEQA review.

<u>215 Contract</u>

RCWD seeks a contract with the Bureau for receipt of Section 215 waters from the Friant Unit of the CVP, when available. The addition of Section 215 waters to RCWD supplies will help RCWD to eliminate its contribution to the regional groundwater overdraft, to stabilize groundwater levels, reduce pumping costs within RCWD, and to maintain a reliable and affordable supply for its agricultural users.

<u>Transfer of up to 10,000 acre-feet of CVP water from MID</u>

In the 2002 Agreement between MID and RCWD, MID agreed to annually transfer up to 10,000 acre feet of MID CVP water to RCWD, when available. This transfer allows MID to maximize the beneficial use of available water

supplies to benefit the Madera Groundwater Basin at no financial cost to MID. The transfer also provides MID with greater flexibility in matching excess flood supplies to deficient areas to better balance existing water supplies in southeastern Madera County.

Delivering MID's surface water to RCWD at times MID growers do not require the water will help MID and RCWD eliminate the current groundwater overdraft in the eastern portion of the Madera Groundwater Basin. MID will be able to efficiently and economically utilize wet year supplies for local recharge, without the cost of constructing and maintaining direct recharge facilities. RCWD will supply water to its agricultural lands on a viable long-term basis, while simultaneously eliminating its contribution to overdraft of the Madera Groundwater Basin. Groundwater pumping will be significantly reduced in RCWD (and, therefore the eastern portion of the Madera Basin) because surface water supplies will be delivered through the gravity-fed RCWD pipeline from the Madera Canal. These pumping reductions will lead to corresponding significant reductions in energy use and air pollution.

Water Deliveries Pursuant to Water Exchange Agreement

The Water Exchange Agreement ("Agreement") guarantees RCWD's right to purchase 3,500 ac-ft per year initially, increasing over time to 7,000 ac-ft per year, from Westside for up to 50 years. RCWD may purchase additional surface water as available.

The Agreement contemplates the annual exchange of 3,500 to 7,000 ac-ft of SWID's CVP Water allocated under its Friant Division long term water service contract with the Bureau ("Bureau Contract") for an equal amount of Westside's non-CVP water deriving from pre-1914 water rights on the Kern and Kaweah Rivers. SWID will accept and use the non-CVP water within its Bureau Contract service area boundary in compliance with the Reclamation Reform Act (RRA) acreage limitations while the exchanged CVP water would be used on RCWD's agricultural lands within its service area boundaries for irrigation purposes, but without any RRA restrictions.

The Westside water consists of either surface water previously stored by Westside in the North Kern Water Storage District ("NKWSD") or other Westside surface water supplies.

Source of Westside Water Supplies

The surface water is stored in the NKWSD under a landowner banking agreement. High flow water on the Kern River and high priority rights on the Kaweah River are the source of Westside's stored surface waters. NKWSD has an established program of groundwater monitoring, consisting of bi-annually measuring and assessing impacts to groundwater from pumping stored surface

water. Stored water supplies are expected to be recharged, banked and withdrawn under the existing landowner banking agreement with NKWSD using existing facilities.

Westside's stored surface water supplies come from Lower Kern River Hacienda Water Rights. ("Hacienda Water"). These water rights originated prior to the construction of Isabella Dam, when the Kern River reached the Hacienda Ranch north of Highway 46. These flows were diverted and used on the Hacienda Water District property located in southern Kings County. Consequently, the Hacienda Water is an "imported" supply to Kern County. Variable quantities of the average annual yield have historically been delivered to interests outside of Kern County.

Westside's other surface water supplies come from the Kaweah River in Tulare County. ("Watchumna water"). Westside owns a portion of the pre-1914 Watchumna water rights from the Kaweah River. The Wutchumna water is diverted on a yearly basis into the Wutchumna ditch just below Terminus Dam. Westside has the right to store 4000 ac-ft of this non-CVP water in the Kaweah River. Westside also has rights to 4000 ac-ft storage in Bravo Lake.

Water Deliveries to RCWD under the Water Exchange Agreement ("Agreement")

The Agreement between MID, RCWD, Westside and SWID is necessary to deliver the Westside water to RCWD. This exchange utilizes Millerton Lake, the Madera Canal and the MID 6.2 lateral for storage and conveyance. These facilities are owned by the Bureau.

The non-CVP Hacienda and Watchumna water involved in this exchange will be diverted from the NKWSD and Kaweah River to SWID through existing facilities. These non-CVP waters will not be introduced into CVP facilities. In turn, SWID will release to MID a like amount of its CVP surface waters stored in Millerton Lake. MID will deliver the water to RCWD at the proposed turnout through the Madera Canal and MID 6.2 lateral per the 2002 Agreement.

The non-CVP water delivered to SWID will assume the characteristics of CVP water from the Reclamation Reform Act (RRA) perspective. Conversely, the CVP water delivered to RCWD, while being delivered and used in the CVP Friant Division permitted place of use, will not be subject to the RRA.

For this portion of the project only, SWID and NKWSD are approving parties in addition to MID and RCWD.

MID's surface water deliveries to RCWD through the Madera Canal and MID Lateral 6.2

MID and RCWD propose delivery of surface water supplies to RCWD through MID Lateral 6.2, per the 2002 Agreement. Waters will be delivered from MID Lateral 6.2 to RCWD through a new turnout and gravity-fed pipeline, as discussed above.

Conclusion

To facilitate conjunctive use and direct recharge to the Madera Groundwater Basin, MID and RCWD desire to approve all aspects of the Proposed Project and NKWSD and SWID desire to approve the Exchange Agreement.

RELATED ENVIRONMENTAL DOCUMENTS

Gateway Village Environmental Impact Report

As part of the development of Gateway Village ("Gateway Village Development"), a master planned community that includes a variety of residential and commercial uses on 2,062 acres, all the above described actions were proposed. Those actions will assist RCWD in its goals of recharging the groundwater basin through an in-lieu recharge program and, as a result, RCWD will be able to provide Gateway Village with an adequate and reliable water supply.

The Madera County Board of Supervisors certified an Environmental Impact Report ("Gateway Village EIR") for the Specific Plan for the Gateway Village Project on September 11, 2007. Litigation over the Gateway Village Project and Gateway Village EIR was settled by the parties on January 12, 2009.

All environmental impacts associated with the development of the Gateway Village Project, including the acquisition and delivery of surface water supplies described above, are analyzed in the Gateway Village EIR. That EIR concluded that there will be significant and unavoidable impacts to four categories evaluated by the EIR. These categories are: Agriculture Resources, Biological Resources, Noise and Public Services. The Madera County Board of Supervisors made a finding that overriding economic considerations make infeasible the project alternatives identified in the EIR.

Therefore, because the impacts of the Gateway Village Project have been fully evaluated in the Gateway Village EIR, and the EIR has been certified, the impacts will not be evaluated again in this Initial Study. Mitigation measures implemented in the Gateway Village EIR are set forth in the discussion of each category on the Environmental Impact Checklist to give the reader an understanding of what measures are in effect to protect the environment during the development of the Gateway Village Project.

The focus of this Initial Study will be the additional potential impacts of the Proposed Project that were not included in the scope of the Gateway Village EIR.

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Attachment 3.4, *Biotic Evaluation, RCWD Pipeline, Gateway Village*

Prepared by Live Oak Associates, Inc. dated February 6, 2007

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LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

BIOTIC EVALUATION
RCWD PIPELINE PROJECT
GATEWAY VILLAGE
MADERA COUNTY, CALIFORNIA

Prepared by:

LIVE OAK ASSOCIATES, INC.

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February 6, 2007 Project No. 1000-01

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EXECUTIVE SUMMARY

The Root Creek Water District (RCWD) has proposed the construction of a 48-inch diameter pipeline in the Gateway Village, Madera County. This proposed canal pipeline will be located just west of Highway 41, running south along Road 40 from the Madera Irrigation District 6.2 canal to just south of Root Creek. Live Oak Associates, Inc. completed an investigation of the biological resources of the site and evaluated likely impacts to such resources from eventual site development.

Biotic habitats identified on the site include seasonal wetland drainages in the form of Root and Madera Ranchos South Creeks and agriculture in the form of vineyards and orchards. Root Creek and the Madera Ranchos South Creek supported no woody riparian vegetation, but a number of hydrophytic plant species occurred in their channel. Root and Madera Ranchos South Creek are possible waters of the United States. Due to the routine annual farming practices, all of the onsite habitats are highly disturbed and support mostly weedy upland and wetland vegetation in addition to citrus, olive, pistachios, grapes, and almonds. No special status plant species occurred in the study area. However, a number of special status animal species may pass through or over the site, or forage on the site from time to time. The Swainson's hawk, a special status species, could possibly use a stick nest observed in a large eucalyptus tree adjacent to the southernmost boundary of the study area. Other special status species that may forage on the site include the sharp shinned hawk, Ferruginous hawk, Cooper's hawk, merlin, long-billed curlew, and the loggerhead shrike.

Impacts from pipeline construction to special status plant species, most special status wildlife species, riparian habitat, wildlife movement corridors, and possible Waters to the United States would be less than significant. No mitigation measures are warranted for less than significant impacts to the biotic resources of the study area. Although temporary impacts to possible Waters of the United States would be less than significant, trenching, grading, and filling of small portions of Root and Madera Ranchos South Creeks would require a Clean Water Act permit if the USACE asserts jurisdiction these creeks.

Potentially significant impacts from construction related activities include the disturbance and possible mortality of the Swainson's hawk and other tree nesting raptors that would utilize a stick nest in a eucalyptus tree along the margin of the study area. Mortality of nesting raptors resulting from project construction would be a violation of the federal Migratory Bird Treaty Act and provisions of California Fish and Game Code. Mortality of Swainson's hawks would also be a violation of the California Endangered Species Act. Required mitigation measures include pre-construction surveys, avoidance of active nests, and placement of appropriate buffers around the nests during nesting season.

POTENTIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES, RCWD PIPELINE, MADERA COUNTY		
Potentially Significant Impacts		
Biological Resource	**Possible Impact**	**Recommended Mitigation Measure**
Nesting raptors.	Nest disturbance during construction that may result in nest abandonment and possible mortality of juveniles.	Avoidance through conducting work outside the raptor nesting season (February– August). Pre-construction surveys prior to work conducted during the nesting season). Avoidance of active nests with buffer zones maintained around them until the end of the nesting season.

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1.0 INTRODUCTION

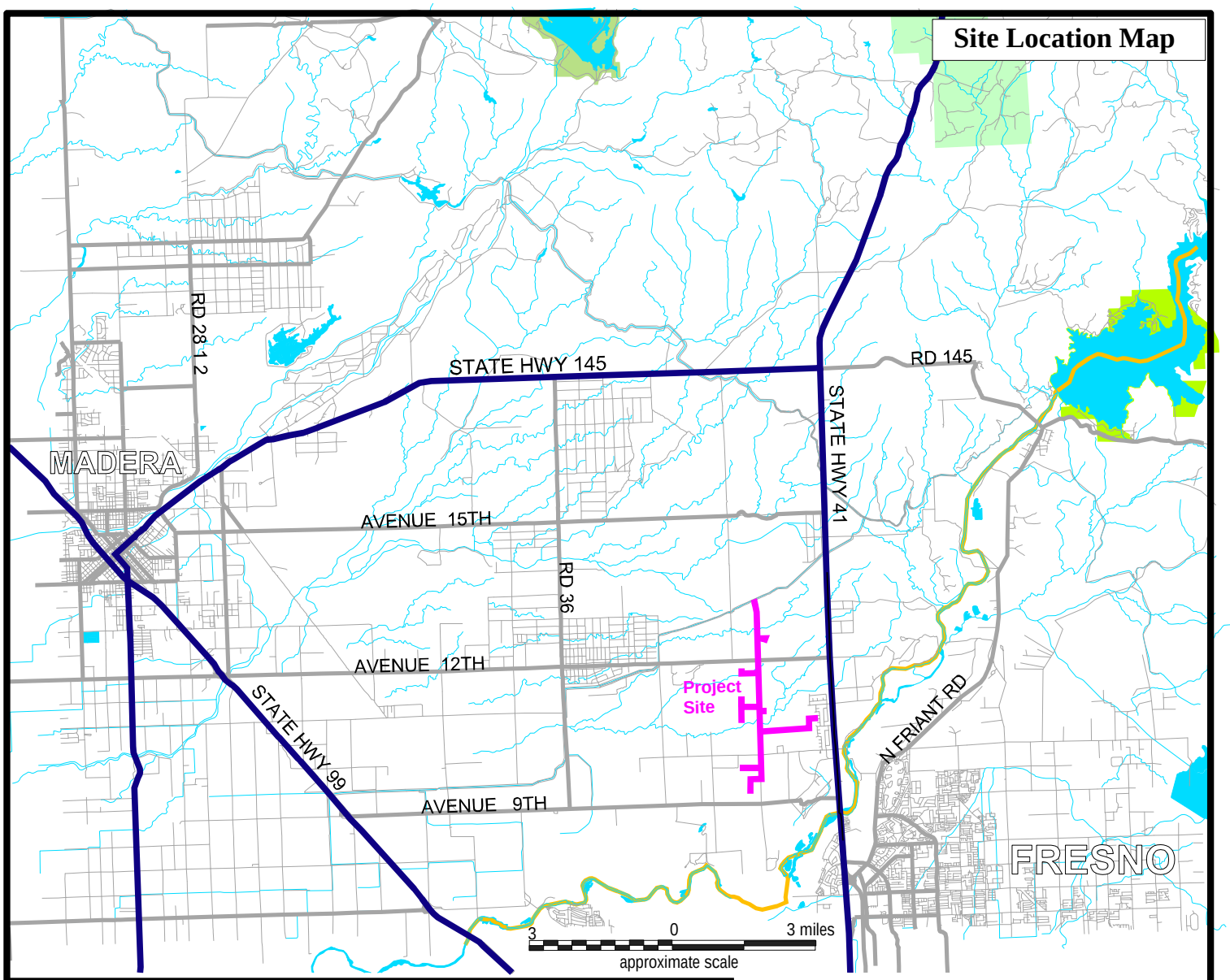
The technical report that follows describes the biotic resources within the alignment of a proposed pipeline (hereafter referred to as the study area or site) to be constructed by the Root Creek Water District (RCWD). The study area is located in Madera County, California north of the City of Fresno (see Figure 1) just west of Highway 41. The site runs north to south from the Madera Irrigation District (MID) Lateral 6.2 down the Road 40 alignment, crossing Avenue 12 and ending just north of Avenue 10 (see Figures 2 and 3). The site can be found on the Lanes Bridge, California U.S.G.S quadrangle, and runs down a section line dividing sections 30, 29, 31, 32, 6, 5, 7, and 8. Live Oak Associates, Inc. assessed possible impacts to biotic resources within the project impact areas that include the alignment of the proposed pipeline, the construction staging area adjacent to Road 40 and Avenue 12, and associated lateral PVC pipelines (see Figures 2 and 3).

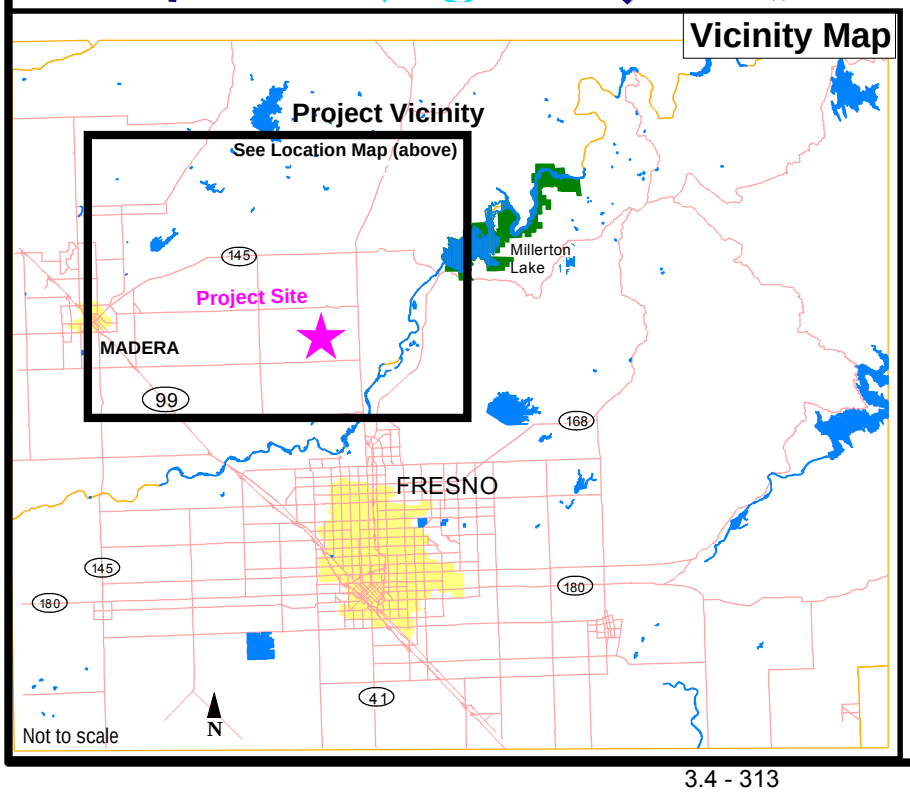
The RCWD Pipeline Project is adjacent to Gateway Village and involves an in-lieu groundwater recharge program that includes the construction a 48 inch pipeline that will deliver surface water from the Madera Irrigation District's Lateral 6.2 Canal to irrigate land within the Root Creek Water District. According to the In-Lieu Recharge Program Update of the Gateway Village Master Infrastructure Plan, "this 'in-lieu' recharge pipeline will deliver surface water to agricultural lands that are currently dependent solely upon groundwater as a source of water supply. The imported water will be used "in-lieu" of pumped groundwater, thereby reducing the contribution of this area to the groundwater overdraft" (Provost and Pritchard, 2003). ESA (Environmental Science Associates, Inc.) has completed a study of the Gateway Village parcel partly covered by the in-lieu groundwater recharge program (see Figure 2). In addition to identifying the biotic resources and assessing impacts of the proposed RCWD pipeline, LOA has reviewed ESA's study and conducted a reconnaissance level survey of the in-lieu area on December 14, 2006.

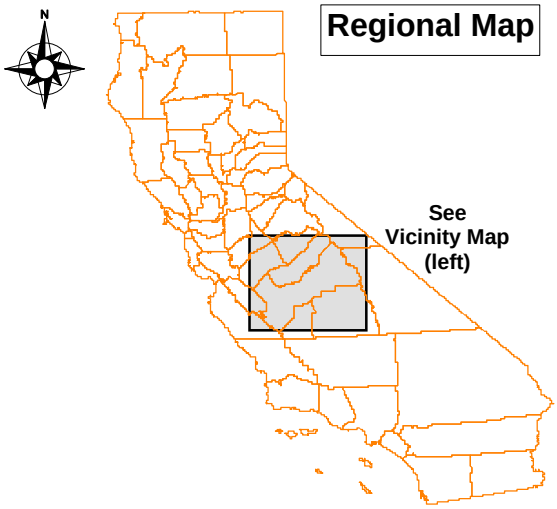
Pipeline projects can potentially damage or modify biotic habitats used by sensitive plant and wildlife species. Furthermore, the pipeline project may be regulated by state and/or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), and covered by policies of the County of Madera

General Plan, or some combination of the three. This report addresses issues related to sensitive biological resources occurring, or potentially occurring, in the study area, the federal, state and local laws related to such resources, and proposed mitigation measures that would minimize potential impacts.

The impact analysis and mitigation proposals found in Section 3.0 of this report have been based on the known and potential biotic resources of the study area (discussed in Section 2.0). Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFG 2006); (2) the *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001); (3) miscellaneous other planning documents and biological studies from the general project vicinity. Additional information was gathered in the field by vegetation ecologist Arren Mendezona and wildlife biologist Joe Medley during a field survey conducted on December 14, 2006.



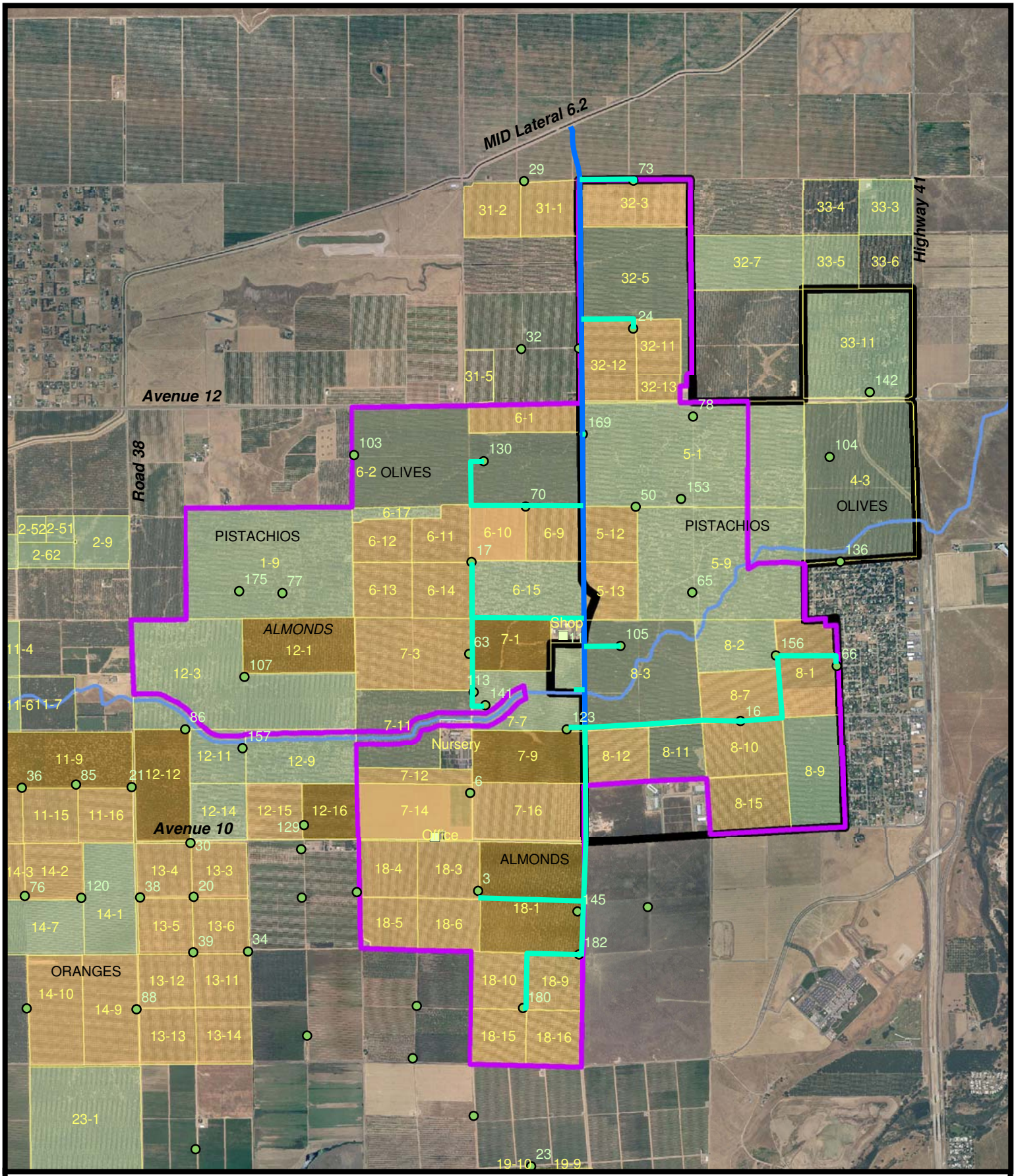




Live Oak Associates, Inc.

RCWD Pipeline Project
Site / Vicinity Map

Date	Project #	Figure #
1/03/07	1000-01	1



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ENGINEERING GROUP
An Employee Owned Company

N

0 1,500 3,000 Feet

Legend

- Root Creek
- PVC Pipeline
- RCP Pipeline
- In-Lieu Area
- Gateway Village

S & J Ranch Fields

- Almonds
- Citrus
- Olives
- Pistachios
- Ag Well
- Domestic Well

Figure 2
Gateway Village
In-Lieu Recharge Program Update

7/24/2006
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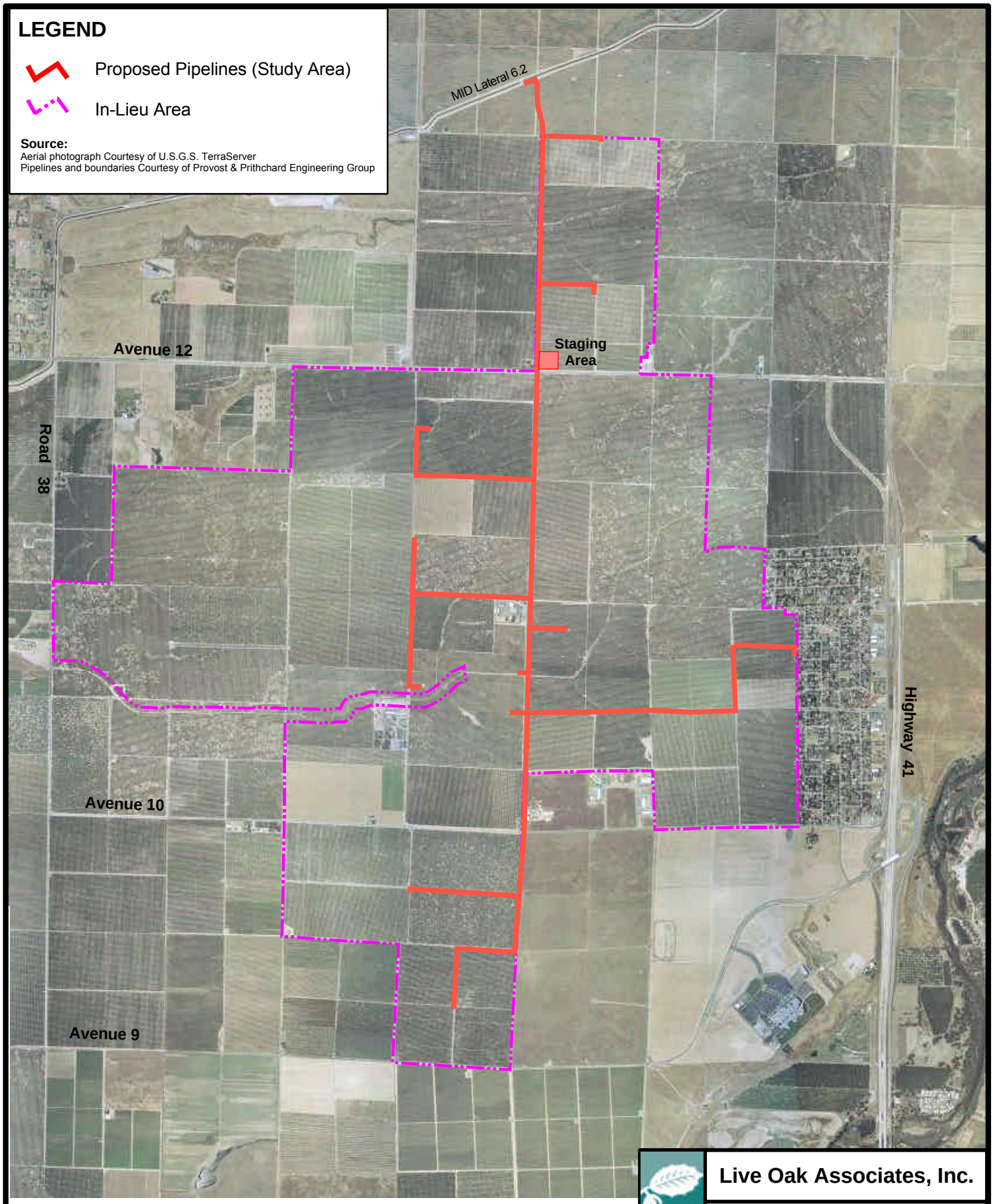

Live Oak Associates, Inc.

RCWD Pipeline Project
Study Area

Date	Project #	Figure #
1/04/07	1000-01	3

2.0 EXISTING CONDITIONS

The study area is located in the San Joaquin Valley of California, approximately five miles north of the City of Fresno. The low foothills of the Sierra Nevada Range lie approximately 10 miles to the northeast of the study area. The study area itself is located on relatively level ground with elevations ranging from approximately 350 to 375 feet National Geodetic Vertical Datum (NGVD). Because the site has been graded and converted to orchards, all of the natural rolling terrain once common to the region has been eliminated.

Five soil series have been identified within the study area (see Figure 4 and Table 1). Like most soils of the San Joaquin Valley, the soils of the project site consist of alluvium derived primarily from plutonic rocks of the Sierra Nevada to the east (NRCS 1962). This alluvium was carried from the Sierra to the Central Valley during the Pleistocene by the considerable volume of runoff generated from melting snow and glaciers. Therefore, soil development on the project site and adjoining lands has occurred principally during the Holocene (i.e. the last 8,000 years). All of the soils found on the site typically have duripan or hardpan layers of 18-24 inches below the surface. In undisturbed soils, this hardpan restricts the downward movement of water, thereby causing water to “perch” near the surface during the winter. Hogwallow terrain (hummock and swale topography) is common in undisturbed areas of California’s Central Valley, where the soils are underlain with this duripan or hardpan layer. Topographic depressions fill with water to form seasonal pools known as vernal pools. All of the study area has been graded, possibly deep-ripped, and converted to vineyards and orchards. Therefore, vernal pools that may have once been present no longer exist on the study area.

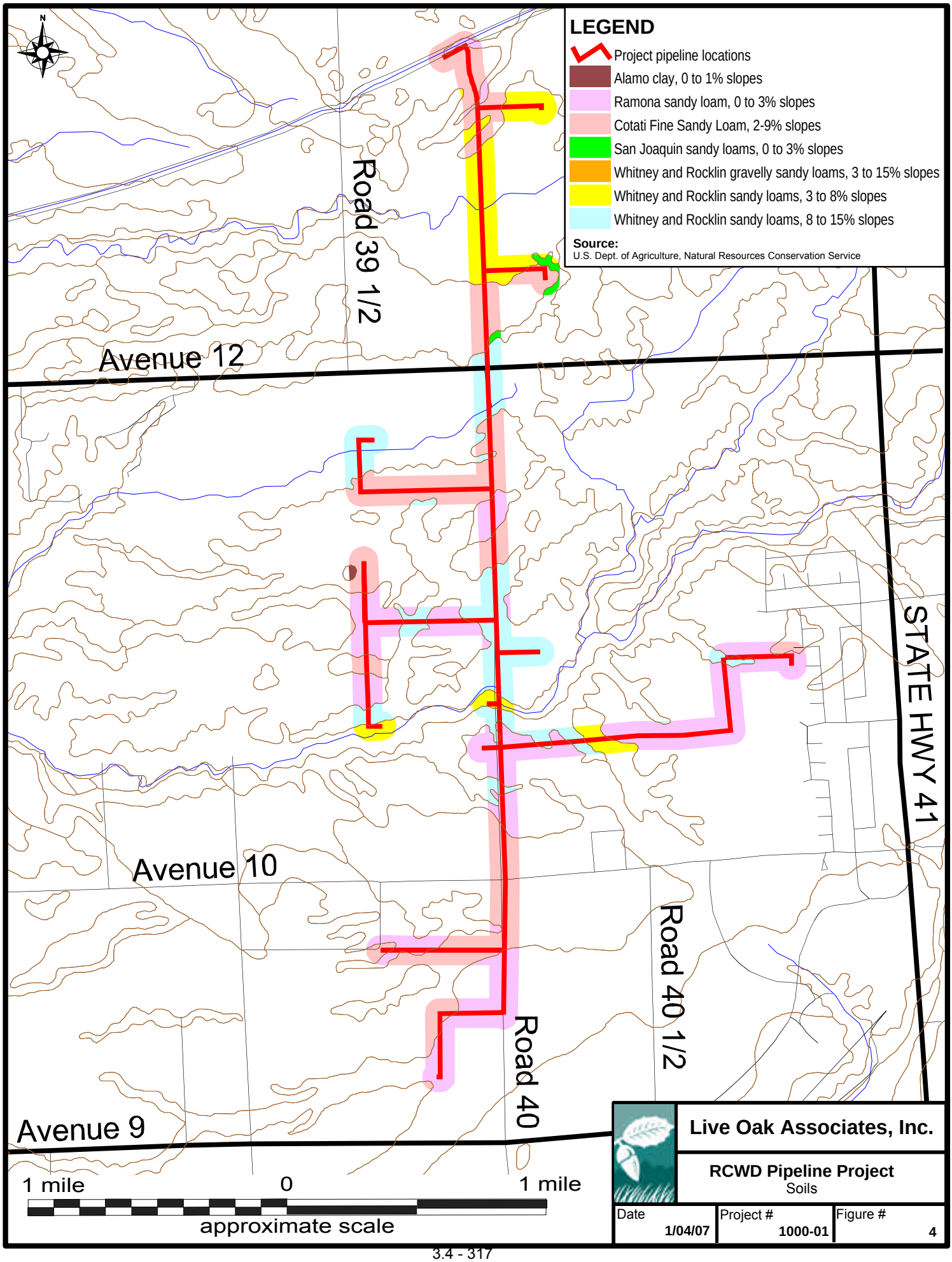
N
LEGEND
Project pipeline locations
Alamo clay, 0 to 1% slopes
Ramona sandy loam, 0 to 3% slopes
Cotati Fine Sandy Loam, 2-9% slopes
San Joaquin sandy loams, 0 to 3% slopes
Whitney and Rocklin gravelly sandy loams, 3 to 15% slopes
Whitney and Rocklin sandy loams, 3 to 8% slopes
Whitney and Rocklin sandy loams, 8 to 15% slopes
Source:
U.S. Dept. of Agriculture, Natural Resources Conservation Service
Road 39 1/2
Avenue 12
STATE HWY 41
Avenue 10
Road 40 1/2
Road 40
Avenue 9
1 mile
0
1 mile
approximate scale
Live Oak Associates, Inc.
RCWD Pipeline Project
Soils
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Figure #
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TABLE 1: SOIL SERIES WITHIN THE STUDY AREA				
Soil Series	**Parent Material**	**Surface Permeability**	**Hardpan/ Duripan**	**Hydric**
Whitney and Rocklin Series	Weakly consolidated sedimentary materials (primarily granitic) Mixed alluvium, predominantly granitic	Slow	Yes, Hardpan (Rocklin)	Yes
Ramona Series	Old alluvium derived principally from granitic rocks	Very Slow to Slow	Yes, hardpan	Yes
San Joaquin Series	Alluvium derived from mixed but dominantly granitic rock sources	Very Slow to Slow	Yes, Hardpan	Yes
Alamo series	Alluvium derived from mixed sources	Slow	Yes, Hardpan	Yes
Cotati series	Material weathered from soft sedimentary rocks	Rapid	No	No
Whitney and Rocklin Series	Weakly consolidated sedimentary materials (primarily granitic) Mixed alluvium, predominantly granitic	Slow	Yes, Hardpan (Rocklin)	Yes
Ramona Series	Old alluvium derived principally from granitic rocks	Very Slow to Slow	Yes, hardpan	Yes
San Joaquin Series	Alluvium derived from mixed but dominantly granitic rock sources	Very Slow to Slow	Yes, Hardpan	Yes
Alamo series	Alluvium derived from mixed sources	Slow	Yes, Hardpan	Yes
Cotati series	Material weathered from soft sedimentary rocks	Rapid	No	No

The study area, like virtually all of California, experiences a Mediterranean climate. Summers are dry and typically quite warm with daytime temperatures commonly exceeding 100°F. Winters are rainy and cool with daytime temperatures rarely exceeding 65°F. Annual precipitation in the general vicinity of the study area is highly variable from year to year, but averages approximately 12 inches, most of which falls between the months of October through March. All precipitation falls in the form of rain. Stormwater infiltrates the site's soils and/or leaves the site as sheet flow collecting in Root and Madera Ranchos South Creek when field capacity has been reached

Lands immediately surrounding the project site have been planted to orchards and vineyards

2.1 BIOTIC HABITATS

Biotic habitats and land uses of the site include agriculture (orchards and vineyards), wetland drainages (Root Creek and Madera Ranchos South Creek), and residential. A list of vascular

plants found on the study area can be found in Appendix A. Vertebrate species potentially occurring in the project site can be found in Appendix B.

2.1.1 Agriculture

The majority of the site consists of orchards and vineyards. Orchards included those of citrus, olive, and pistachio. The orchard and vineyard's understory supported a variety of weedy grasses and forbs such as soft chess (*Bromus hordeaceus*), wild oat (*Avena fatua)*, broad-leaf filaree (*Erodium botrys*), prickly lettuce (*Lactuca serriola*), prickly sowthistle (*Sonchus asper*), panicle willow herb (*Epilobium brachycarpum*), telegraph weed (*Heterotheca grandiflora*), pigweed (*Amaranthus retroflexus*), Jimson weed (*Datura wrightii*), and turkey mullein (*Eremocarpus setigerus*). The orchard's understory also consisted of some wetland weeds due to irrigation structures supplying constant water to the orchards. Some of these wetland species included barnyard grass (*Echinochloa crus-galli),* fall panicum (*Panicum dichotomiflorum*), and curly dock (*Rumex crispus*).

Orchards and vineyards on site are likely to be used by a number of avian species for foraging, but nesting habitat is limited. Invertebrates and small mammals would attract a number of avian predators to the site. Several red-tailed hawks (*Buteo jamaicensis*) and American kestrels (*Falco sparverius*) were observed foraging over the orchards during the field survey. A sharp-shinned hawk (*Accipiter striatus*) and a merlin (*Falco columbarius*) were observed perched just southeast of the proposed pipeline. Other resident raptors that could potentially forage over the site include the ferruginous hawks (*Buteo regalis*) and Swainson's hawks (*Buteo swainsoni*). Common resident avian species observed during the field surveys included mourning doves (*Zenaida macroura*), American crows (*Corvus brachyrhynchos*), Brewer's blackbirds (*Euphagus cyanocephalus*), and western meadowlarks (*Sturnella neglecta*). Other resident birds likely to forage on the site in mixed flocks would include brown-headed cowbirds (*Molothrus ater*) and European starlings (*Sturnus vulgaris*).

A number of mammal species may occur in agricultural lands of the site. Small mammals such as deermice (*Peromyscus maniculatus*), California voles (*Microtus californicus*), house mice (*Mus musculus*), and Botta's pocket gopher (*Thomomys bottae*) would occur in fluctuating numbers depending on the available cover in the individual fields. Audubon cottontails

(Sy*lvilagus audubonii*) and black-tailed hares (*Lepus californicus*) probably forage in the orchards and vineyards of the site. Common mammalian predators attracted to these small mammals would likely be limited to coyotes (*Canis latrans*). Various species of bats may forage over the site for flying insects and/or roost in the few structures located in three of the four corners of the site.

2.1.2 Wetland Drainages

Wetlands are areas that experience inundation or saturated soils for a sufficient period to select for plants adapted to such conditions. For the purposes of this analysis, wetlands are limited areas of the site where soil saturation or inundation occurs naturally. The channels of Root and Madera Ranchos South Creek are seasonal wetland drainages passing through the project site at two locations. ESA has conducted a formal wetland delineation of Root Creek and Madera Ranchos South Creek. Obligate and facultative wetland vegetation such as curly dock, cattails (*Typha latifolia*), common rush, and umbrella sedge (*Cyperus ergrostis*) were a few of the common wetland species observed in the wetland channels.

Many of the same wildlife species expected to use the orchards and vineyards of the site would also be expected to utilize the wetlands associated with the two creeks along with a number of wetland dependant species. The channels provide likely habitat for bullfrogs (*Rana catesbeiana*), Pacific chorus frogs (*Pseudacris regilla*), and western toads (*Bufo boreas*). Common garter snakes (*Thamnophis sirtalis*) probably forage along the creek for amphibians and small mammals. During the rainy season, when water is present in the two creeks found passing through the site, foraging habitat for great blue herons (*Ardea herodias*) and great egrets (*Ardea alba*) is present. . Mallards (*Anas platyrhynchos*) could also occur in the channel when water is present. The channel banks provide habitat for various small mammals occurring elsewhere on the site, as well as ornate shrews (*Sorex inornatus*). Raccoons (*Procyon lotor*) are likely to frequent the creek while foraging for invertebrates and amphibians.

2.1.2 Residential

Areas adjacent to the footprint of the proposed RCWD pipeline include a single-family residence and associated structures on the northwestern corner of Avenue 12 and Road 40. The area

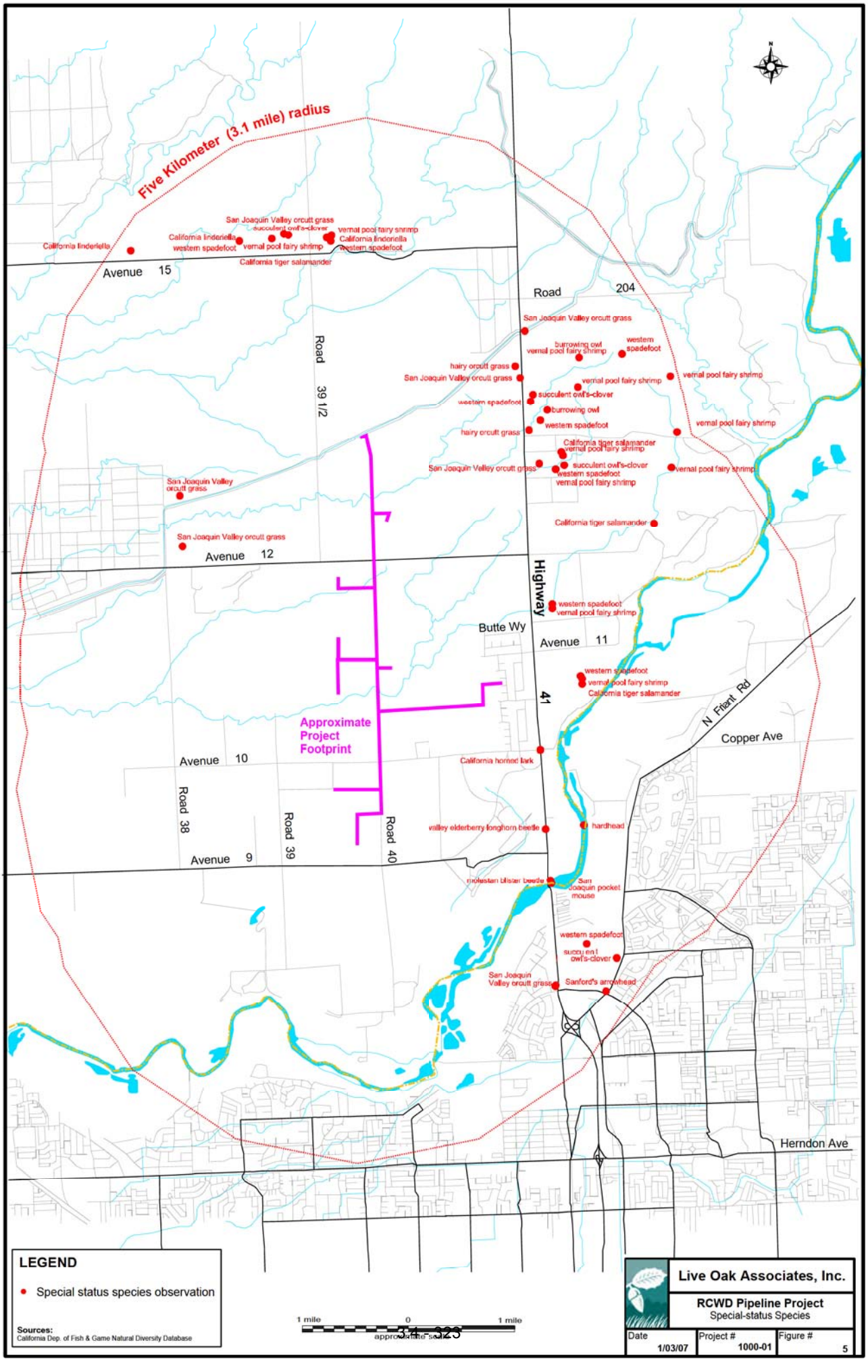
surrounding the buildings consisted of landscaped and/or ruderal habitat. In general, these areas are unlikely to support native vegetation. Ruderal species (i.e. species adapted to disturbed conditions) are common, as are horticultural species associated with residences. Non-native grasses such as soft brome, ripgut, wild oat, and Italian rye grass (*Lolium multiflorum*) dominated the roadsides surrounding the residential area.

The residence and its grounds provide limited habitat for native wildlife. Avian species often associated with residential landscaping include northern mockingbirds (*Mimus polyglottus*), house finches (*Carpodacus mexicanus*), and house sparrows (*Passer domesticus*). Mammals typical of such areas would include house mice (*Mus musculus*), Norway rats (*Rattus norvegicus*), and feral cats (*Felis cattus*).

2.2 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations, limited distributions, or the combination of the two. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFG. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened or endangered (CNPS 2001). Collectively, these plants and animals are referred to as "special status species".

A number of special status plants and animals occur in the vicinity of the study area (see Figures 5 and 6). These species, and their potential to occur in the study area, are listed in Table 2 on the following pages. Sources of information for this table include *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *California Natural Diversity Data Base* (CDFG 2006), *Endangered and Threatened Wildlife and Plants* (USFWS 2002), *Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants* (CDFG 2004), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001).


Five Kilometer (3.1 mile) radius
Avenue 15
Road 204
Road 39 1/2
Avenue 12
Highway 41
Butte Wy
Avenue 11
Approximate Project Footprint
Avenue 10
Road 38
Road 39
Road 40
Avenue 9
N Friant Rd
Copper Ave
Herndon Ave
California linderiella
western spadefoot
vernal pool fairy shrimp
San Joaquin Valley orcutt grass
succulent owl's-clover
California tiger salamander
burrowing owl
hairy orcutt grass
California horned lark
valley elderberry longhorn beetle
hardhead
molestan blister beetle
San Joaquin pocket mouse
Sanford's arrowhead
LEGEND
Special status species observation
Sources:
California Dep. of Fish & Game Natural Diversity Database
1 mile
0
1 mile
approximate scale
Live Oak Associates, Inc.
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Special-status Species
Date
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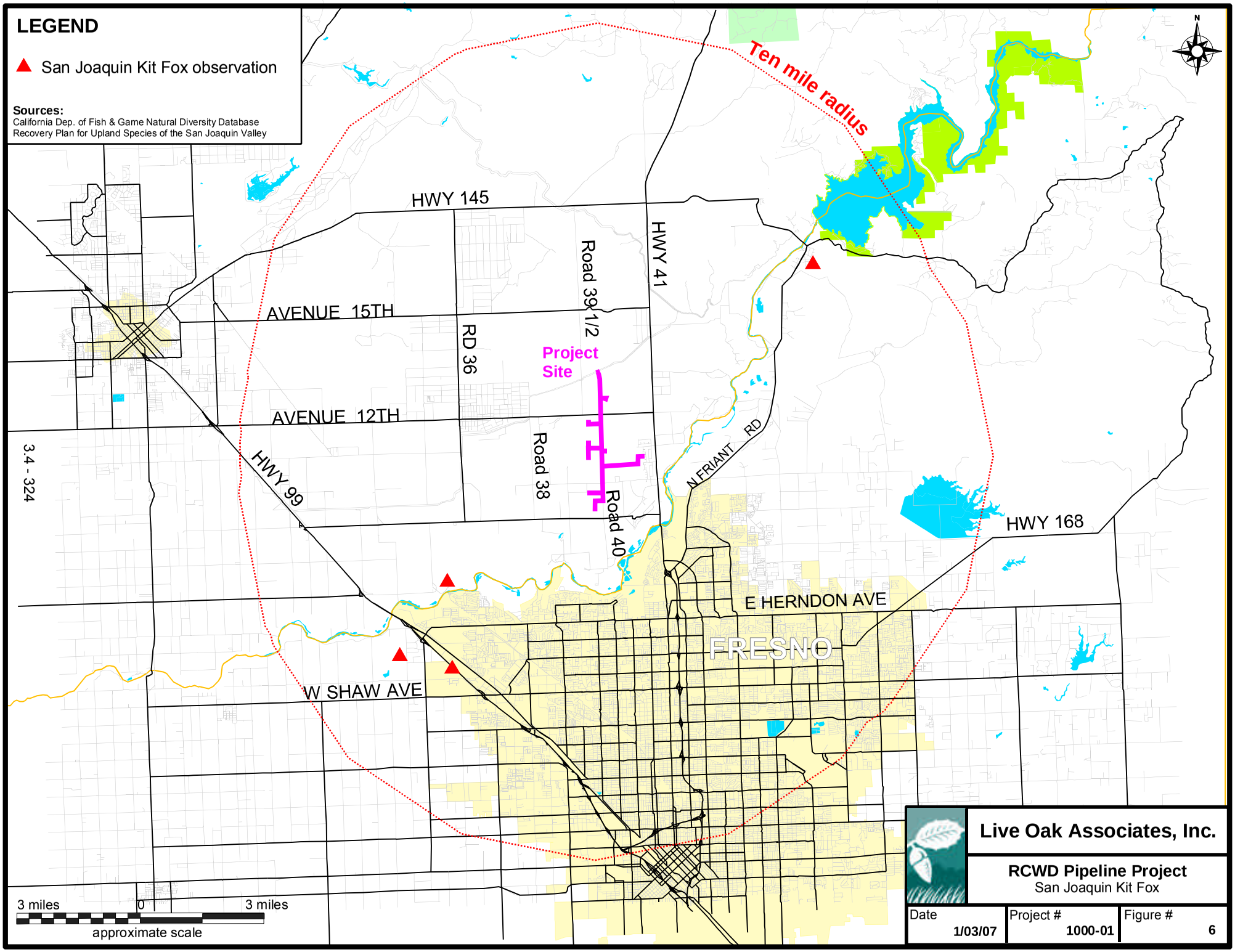
LEGEND
San Joaquin Kit Fox observation
Sources:
California Dep. of Fish & Game Natural Diversity Database
Recovery Plan for Upland Species of the San Joaquin Valley
Ten mile radius
HWY 145
HWY 41
Road 39 1/2
AVENUE 15TH
RD 36
Project Site
AVENUE 12TH
Road 38
Road 40
HWY 99
3.4 - 324
N FRIANT RD
HWY 168
E HERNDON AVE
FRESNO
W SHAW AVE
3 miles
0
3 miles
approximate scale
N
Live Oak Associates, Inc.
RCWD Pipeline Project
San Joaquin Kit Fox
Date
1/03/07
Project #
1000-01
Figure #
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TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE VICINITY OF THE STUDY AREA.

PLANTS (adapted from CDFG 2006 and CNPS, 2001)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat/Range	*Occurrence in the Study Area
Greene's Tuctoria (*Tuctoria greenei*)	FE, CR CNPS 1B	Occurs in vernal pools of California's Central Valley; blooms May-September (CNPS 2001).	**Absent.** Vernal pools that provide habitat for this species no longer exist in the study area. The nearest known occurrence is mapped in the vicinity of Tollhouse and Nees Avenue, approx. 11 air miles southeast of the site.
Hairy Orcutt Grass (*Orcuttia pilosa*)	FE, CE CNPS 1B	Occurs in vernal pools of California's Central Valley; blooms May-September (CNPS 2001).	**Absent.** Vernal pools that provide habitat for this species no longer exist in the study area**.** The nearest documented occurrence for this species is approx. 0.8 miles northeast of the site.
San Joaquin Valley Orcutt Grass (*Orcuttia inaequalis*)	FT, CE CNPS 1B	Occurs in vernal pools of California's Central Valley; blooms April-September (CNPS 2001).	**Absent.** Vernal pools that provide habitat for this species no longer exist in the study area**.** The nearest documented occurrence for this species is approx. one mile northeast of the site.
Succulent Owl's Clover (*Castilleja campestris* ssp. *succulenta*)	FT, CE CNPS 1B	Occurs in vernal pools of California's Central Valley that are often acidic; blooms April-May (CNPS 2001).	**Absent.** Vernal pools that provide habitat for this species no longer exist in the study area**.** The nearest documented occurrence for this species is approx. one mile northeast of the site.

CNPS-listed Species

Spiny-sepaled button celery (*Eryngium spinosepalum*)	CNPS 1B	Occurs in vernal Pools of California's central valley. Also occurs in CA annual grassland and oak woodlands, generally in moist places. Blooms April-July from 1,246ft-5,577 ft.	**Absent**. Suitable habitats in the form of vernal pools were absent from the study area. The closest documented occurrence is 5.5 air miles northeast of the study area in Friant, CA
Madera Leptosiphon (*Leptosiphon serrulatus*)	CNPS 1B	Occurs in cismontane woodland and lower montane coniferous forest. Blooms April to May at elevations ranging from 300-1300 m.	**Absent.** Habitats of the study area are unsuitable for this species. The closest documented occurrence is 10.5 air miles northeast of the study area, just north of Millerton Lake.
Dwarf Downingia (*Downingia pusilla*)	CNPS 2	Occurs in mesic valley and foothill grasslands and vernal pools; blooms March-May (CNPS 2001).	**Absent.** Suitable habitat in the form of vernal pools was absent from the study area. The closest documented occurrence is 5.7 miles southeast of the study area.
Orange Lupine (*Lupinus citrinus*)	CNPS 1B	Occurs in chaparral, cismontane woodland, and lower montane coniferous forest. Microhabitats consist of decomposed granite and other gravel substrates in open areas with rolling to flat terrain. Blooms April to May from 80-255 m.	**Absent.** The site, primarily consisting of orchard, does not provide suitable habitat for this species. The closest documented occurrence is 16 air miles northeast of the study area, near the intersection of Road 405 and state highway 41.
Hartweg's Golden Sunburst (*Pseudobahia bahiifolia)*	CNPS 1B	Occurs in cismontane woodland as well as valley and foothill grassland. Microhabitats include clay soils, predominantly on the northern slopes of Knolls, but also along the shady creeks or near vernal pools at an elevation range of 15-150 m.	**Absent.** The site, primarily consisting of orchard, does not provide suitable habitat for this species. The closest documented occurrence is 5.5 air miles northeast of the study area in Friant, CA.

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE VICINITY OF THE STUDY AREA.

PLANTS (adapted from CDFG 2006 and CNPS, 2001)

CNPS-listed Species

Species	Status	Habitat/Range	*Occurrence in the Study Area
Sanford's Arrowhead (*Sagittaria sanfordii*)	CNPS 1B	Occurs in freshwater marshes and swamps of California's Central Valley; blooms May-October (CNPS 2001).	**Absent.** The site does not provide suitable habitat for this species. The closest documented occurrence is 16 air miles northeast of the study area, close to the intersection of Road 405 and state Highway 41.

ANIMALS (adapted from CDFG, 2006)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	FT	Vernal pools, clear to tea-colored water in grass or mud-bottomed swales, basalt depression pools, or sandstone rock outcrops. This species has been documented in vernal pools within 1 mile of the site (CNDDB 2006).	**Unlikely.** The site contains no suitable habitat in the form of vernal pools. Although there are nearby occurrences, these occurred on the east side of Highway 41, where vernal pool habitats exist.
Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs of California's Central Valley and Sierra foothills.	**Absent.** Suitable habitat is absent from the site due to the absence of elderberry shrubs. A small complex of elderberry shrubs was observed in the in lieu fee area just south of Avenue 10. A survey done by ESA in 2006 revealed no exit holes in these elderberries.
California Tiger Salamander (*Ambystoma californiense*)	FT, CSC	Found primarily in annual grasslands; requires vernal pools for breeding and rodent burrows for refuge. The closest documented occurrence of CTS occurred less than one mile away, to the east of Highway 41 (CNDDB 2006).	**Absent.** Suitable habitat is absent from the site (i.e. no vernal pools). No ground squirrel burrows were observed on site, suggesting a lack of potential aestivation habitat on site.
Greater Sandhill Crane (*Grus Canadensis tabida*)	CT	Winters in Central Valley farmlands, but breeds in northern California.	**Absent.** This species commonly forages in agricultural lands in western Merced County, but occurs rarely in Madera County. Cranes are unlikely to use orchards as habitats for foraging or cover.
Bald Eagle (*Haliaeetus leucocephalus*)	FT, CE	Winters near reservoirs of California's Central Valley. Mostly feeds on fish in large bodies of water or rivers.	**Absent.** The site itself provides habitat generally unsuitable for this species. Individuals may fly over the site.
Swainson's Hawk (*Buteo swainsonii*)	CT	Occurs in grasslands and agricultural lands of California's Central Valley during the spring and summer	**Possible.** Although breeding habitat is largely absent from the site, a raptor stick nest directly adjacent to the study area could be used by this species The nearest documented sighting occurred is just over seven miles away (CNDDB 2006).
Peregrine Falcon (*Falco peregrinus*)	CE	Individuals breed on cliffs in the Sierra or in coastal habitats; occurs in many habitats of the state during migration and winter.	**Unlikely.** This species would at most forage over the study area during migration. Breeding habitat is absent.

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE VICINITY OF THE STUDY AREA.

ANIMALS (adapted from CDFG, 2006)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Species	Status	Habitat/Range	*Occurrence in the Study Area
Western yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)	FC, CE	Riparian forest nester along the broad, lower flood-bottoms of larger river systems (CNDDB 2006).	**Absent.** This site provides no nesting or foraging habitat for this species. The closest documented sighting occurred six miles northeast of Fresno. However, this sighting occurred over 100 years ago.
Willow Flycatcher (*Empidonax traillii*)	CT	Breeds in willows of montane meadows in the Sierra Nevada.	**Unlikely.** The site provides no nesting or foraging habitat for this species. Individuals may pass through the site during migration.
Fresno Kangaroo Rat (*Dipodomys nitratoides exilis*)	FE, CE	Historically occurred in alkali sink scrub and alkali grassland habitats of Fresno, Madera and potentially Tulare Counties.	**Absent.** This species has not been documented near the study area in recent years (CNDDB 2006). Habitat suitable for this species is absent from the site.
San Joaquin Kit Fox (*Vulpes macrotis mutica*)	FE, CT	Desert alkali scrub, annual grasslands; may forage in adjacent agricultural habitats.	**Absent.** The site lacks breeding habitat for this species. At most, the site provides marginal foraging habitat. This species has not been documented near the study area in recent years (CNDDB 2006).

California Species of Special Concern

Western Spadefoot (*Scaphiopus hammondii*)	CSC	Mainly occurs in grasslands of San Joaquin Valley where vernal pools provide breeding habitat.	**Absent.** Suitable habitat for this species is absent from the site.
Western Pond Turtle (*Emys marmorata*)	CSC	Open slow moving water of rivers and creeks of central California with rocks and logs for basking.	**Unlikely.** At most, Root Creek provides marginal habitat for this species. There is very little basking habitat for this species along Root Creek.
California Horned Lizard (*Phrynosoma coronatum*)	CSC	Grasslands, scrublands, oak woodlands, etc. of central Calif. Common in sandy washes with scattered shrubs.	**Absent.** Orchards and vineyards of the site do not provide suitable habitat for this species. Sandy soils are absent from the site.
Silvery Legless Lizard (*Anniella pulchra pulchra*)	CSC	Occurs in loose sandy soils of central Calif. with sporadic occurrences on floor of San Joaquin Valley.	**Absent.** Orchards and vineyards of the site do not provide suitable habitat for this species. Sandy soils are absent from the site.
Mountain Plover (*Charadrius montanus*)	CSC, PT	Forages in short grasslands and freshly plowed fields of the Central Valley.	**Unlikely.** The site lacks suitable winter foraging habitat. This species may use open, short grass fields adjacent to the site. This species has not been documented in the vicinity of the study area in recent years (CNDDB 2006).
Northern Harrier (*Circus cyaneus*)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands. This species is uncommon in wooded habitats.	**Unlikely.** The site lacks breeding a foraging habitat for this species. Individuals may pass over the site during migration, and may use areas adjacent to the site for foraging.
White-tailed Kite (*Elanus leucurus*)	Fully Protected	Resident in coastal and valley lowlands, rarely associated far from agricultural areas.	**Unlikely.** The site lacks breeding habitat for this species. Onsite foraging habitat is marginal as this species prefers open grasslands and meadows for foraging.

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE VICINITY OF THE STUDY AREA.

Animals (adapted from CNDDB 2006)

California Species of Special Concern (cont.)

Species	Status	Habitat/Range	*Occurrence in the Study Area
Sharp-shinned Hawk (*Accipiter striatus*)	CSC	Breeds in mixed conifer forests of the northern Sierra Nevada; winters in a variety of habitats.	**Present.** An individual adult of this species was observed perched in a pistachio tree just southeast of the proposed pipeline and just north of Avenue 11. Wintering individuals may occasionally pass over the site, or forage on the site. However, breeding habitat is absent.
Cooper's Hawk (Accipiter cooperii)	CSC	Breeds in oak woodlands, riparian forests and mixed conifer forest of the Sierra Nevada, but winters in a variety of lowland habitats.	**Possible.** Wintering individuals may occasionally pass over the site, or even forage on the site. However, breeding habitat is absent.
Ferruginous Hawk (Buteo regalis)	CSC	Breeds in the Pacific Northwest and Canada, but winters in a variety of California habitats.	**Possible.** Wintering individuals may occasion-ally pass over the site, however, open foraging habitat does not occur on the site. Breeding habitat is absent.
Golden Eagle (*Aquila chrysaetos*)	CSC, CP	Open grasslands, oak savannahs, agricultural fields, etc. of San Joaquin Valley and nearby foothills of Inner Coast Range.	**Unlikely.** This site lacks suitable foraging and breeding habitat for this species. Individuals may pass over the site during migration.
Merlin (*Falco columbarius*)	CSC	This falcon, which breeds in Canada, winters in a variety of Calif. Habitats, including grasslands, savannahs, wetlands, etc.	**Present.** An individual of this species was observed just southwest of the proposed pipeline, perched on a power pole on Avenue 10. Wintering individuals may occasionally pass over the site, or forage on the site. However, breeding habitat is absent.
Prairie Falcon (*Falco mexicanus*)	CSC	Distributed from annual grasslands to alpine meadows; requires cliffs or rock outcroppings for nesting.	**Unlikely.** Foraging and breeding habitat for this species is absent from the site. Individuals may pass over the site during migration.
Long-billed Curlew (*Numenius americanus*)	CSC	Winters in Central Valley farmlands and pastures.	**Unlikely.** Wintering individuals may occasion-ally pass over the site, but foraging habitat is absent. Nesting habitat is also absent. This species is more likely to use open farmlands adjacent to the site.
Black Swift (*Cypseloides niger*)	CSC	Migrants and transients found throughout many habitats of state; nests in the Sierra, coastal cliffs, and regions of southern California.	**Possible.** Individuals may occasionally pass over the site during migration or while foraging. Breeding habitat is absent.
Vaux's Swift (*Chaetura vauxi*)	CSC	Migrants and transients move through the foothills of the western Sierra in spring and late summer.	**Possible.** Individuals may occasionally pass over the site during migration or while foraging. Breeding habitat is absent.
California Horned Lark (*Eremophila alpestris actia*)	CSC	Found in various open habitats lacking trees and shrubs; breeds in grasslands and fallow fields.	**Unlikely.** Suitable foraging and breeding habitat is absent on site for this species. Individuals may pass through the site on occasion.
Loggerhead Shrike (*Lanius ludovicianus*)	CSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	**Possible.** The site provides marginal foraging habitat, but nesting habitat is absent for this species.
Tri-colored Blackbird (*Agelaius tricolor*)	CSC	Occurs near fresh water with dense cattails, or thickets of willows or shrubs.	**Absent.** The site provides no habitat for foraging or nesting for this species. The closest observation of this species occurred over 10 miles to the south of the site, in Fresno, 1975 (CNDDB 2006).

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE VICINITY OF THE STUDY AREA.

Animals (adapted from CNDDB 2006)

California Species of Special Concern (cont.)

Species	Status	Habitat/Range	*Occurrence in the Study Area
Yellow Warbler (*Dendroica petechia brewster*)	CSC	Breeds in riparian thickets of alder, willow and cottonwoods. Migrants move through many habitats of the state.	**Unlikely.** Although this species may pass through the area during migration, the site does not provide vegetative cover necessary for migrating individuals.
Spotted Bat (*Euderma maculatum*)	CSC	Occurs primarily in foothill and mountain habitats of the southern Sierra and Transverse Ranges.	**Unlikely.** This species is not often found in the Central Valley. The site may provide occasional foraging habitat. Roosting habitat is absent.
Townsend's Western Big Eared Bat (*Corynorhinus townsendii townsendii*)	CSC	Found throughout California.	**Possible.** Suitable foraging habitat for this species is present on site. Suitable roosting habitat absent.
Pallid Bat (*Antrozous pallida*)	CSC	Grasslands, chaparral, woodlands, and forests of California. Most common in dry rocky open areas providing roosting opportunities. Also roosts in buildings.	**Absent.** There is no suitable foraging habitat present on-site for this species. Suitable roosting habitat is absent.
American Badger (*Taxidea taxus*)	CSC	Found throughout most of the state most abundantly in drier, open stages of shrub, forest, and herbaceous habitats.	**Absent.** The site lacks suitable denning and foraging habitat for this species. This species has not been documented in the vicinity of the study area in recent years (CNDDB 2006).

*** Explanations**

Present: Species observed on the site at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the site, but it could occur there from time to time.
Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the site, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Protected
		CSC	California Species of Special Concern

CNPS	California Native Plant Society Listing		
1A	Plants Presumed Extinct in California	3	Plants about which we need more information – a review list
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	4	Plants of limited distribution – a watch list
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere		

An expanded discussion of some special status species has been provided below, either because the information related to their occurrence in the region is ambiguous, or because the U.S. Fish and Wildlife Service (USFWS) is likely to consider them present in the absence of protocol level surveys.

2.2.1 San Joaquin Kit Fox (*Vulpis macrotis mutica*); Federally Endangered, California Threatened. The San Joaquin kit fox (*Vulpes macrotus mutica*) was listed as endangered on March 11, 1967 by the U.S. Fish and Wildlife Service (32 FR 4001). Subsequently, the California Department of Fish and Game listed the San Joaquin kit fox as threatened in 1971. The San Joaquin kit fox once occurred throughout much of the San Joaquin Valley, but this species favored areas of alkali sink scrub and alkali grassland in the trough of the San Joaquin Valley and Tulare Basin, as well as areas further west. The low foothills of the Sierra Nevada found at the eastern edge of the San Joaquin Valley must at best be considered at the margin of their natural range. In fact, there is no record of anyone ever having seen a kit fox east of Highway 99 in Madera County. The nearest confirmed record of a small kit fox population to the project site is in southwestern Madera County, just north of the San Joaquin river and east of the intersection between Avenue 7 and Road 35 (see figure 6).

Live Oak Associates, Inc. conducted den surveys on portions of lands just north of the San Joaquin River in Madera County in the spring of 2002. These surveys included the use of camera stations and track plates wherever burrows were arguably of a size suitable for kit foxes. No evidence of kit foxes was detected during these surveys. Live Oak Associates, Inc. also conducted den surveys on River Ranch in Madera County without detecting any sign of kit foxes. In October of 2003, Live Oak Associates, Inc. conducted a an extensive survey for the San Joaquin kit fox on lands fronting Friant Road in Fresno County. This study involved den surveys, photo stations, track plates, and night spotlighting. The results of these surveys persuaded the Federal Highway Administration that a kit fox population was absent from the area.

The U.S. Fish and Wildlife Service does not appear to be persuaded by the negative survey results of these various studies. At the time this report was written, the Service appears to be maintaining the position that the dearth of evidence notwithstanding kit foxes probably occur in the Friant/Millerton area of Fresno and Madera Counties.

The biotic habitats (orchards and wetland channels) of the study area do not provide suitable denning and foraging habitat for the kit foxes.

2.3 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, drainages with a defined bed and bank that may carry at most ephemeral flows, lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U. S. Army Corps of Engineers (USACE), the California Department of Fish and Game (CDFG) and the California Regional Water Quality Control Board (RWQCB) (see Section 3.2.5 of this report for additional information).

Root and Madera Ranchos South Creeks are possible Waters of the United States. ESA has conducted a formal wetland delineation of these creeks in August 2006. As mentioned in section 2.1.2, obligate and facultative wetland vegetation such as curly dock, cattails, common rush, and umbrella sedge were present in Root and Madera Ranchos South Creek. Onsite soils mapped within Root creek are the Whitney and Rocklin sandy loam series that are classified as hydric soils (NRCS 2006). Hydric soils are those that formed under conditions of inundation, saturation and flooding sufficient to create anaerobic conditions suitable for wetland vegetation (1987 USCOE Manual). Although Root and Madera Ranchos South Creeks may meet the vegetation, hydrology, and soil criteria of a jurisdictional wetland, connectivity to a designated Water of the United States is generally required for the USACE to assert jurisdiction over such drainages. Root and Madera Ranchos South Creek do not appear to be connected to the closest designated Water of the United States, the San Joaquin River. Furthermore, irrigation tailwater from agricultural practices appears to have altered the flow of these creeks. In fact, ESA has claimed in their Biological Resources Report for Gateway Village that the wetland conditions of Root Creek and Madera Ranchos South Creek are attributable to “run-off, infiltration, and subsurface recharge from irrigation.” This fact was verified by during LOA’s site visit. The 1987 COE Manual states that “man-induced” wetlands do not qualify as jurisdictional wetlands if their existence is due to artificial water sources such as the artificially irrigated areas present in the adjacent orchards. However, the USACE has been known to assert jurisdiction over natural creeks collecting tailwater from nearby agricultural land.

2.4 WILDLIFE MOVEMENT CORRIDORS

The site does not appear to constitute a "movement corridor" for native wildlife, although several species potentially move within and through the study area. The construction of a pipeline may have a temporary adverse effect on home range and dispersal movements of native wildlife now using habitats where site development may eventually occur. Many migratory species that now pass through the study area are neo-tropical migrant birds that are likely to pass through and over the site even when it is eventually developed.

2.5 NATURAL COMMUNITIES OF SPECIAL CONCERN

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, home to special status plant and animal species, of importance in maintaining water quality or sustaining flows, etc. Examples of natural communities of special concern include vernal pools, emergent marsh, various types of riparian forest, etc. (Sawyer and Keeler-Wolf, 1995). Natural communities of special concern were absent from the study area.

3.0 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all of its existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc. may replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. These impacts may be considered significant or not. According to *Guide to the California Environmental Quality Act* (Remy et al. 1999), "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they will:

- Have a substantial adverse effect, the directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use

of native wildlife nursery site; Reduce substantially the habitat of a fish or wildlife species, including causing a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate an animal community.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plan (Remy et al. 1999).

Furthermore, CEQA Guidelines Section 15065 states that a project may trigger the requirement to make a "mandatory findings of significance" if "the project has the potential to subsequently degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range on an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory."

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 County of Madera General Plan Policies

Provisions of this plan address the protection and preservation of:

- Special-status species.
- Habitat suitable for burrowing owls.
- Wetlands.
- Wildlife.
- Wildlife movement.
- Open space and natural areas that are interconnected.
- Major creeks, streams, woodlands and other appropriate areas.
- Buffers along creeks.

3.2.2 Threatened and Endangered Species

State and federal "endangered species" legislation has provided the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status". Permits may be required from the CDFG and USFWS if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFG and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). The agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.3 Migratory Birds

State and federal law also protect most birds. The Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

3.2.4 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, (1992), which states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance

that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG.

3.2.5 Wetlands and Other "Jurisdictional Waters"

Natural drainage channels and adjacent wetlands may be considered "Waters of the United States" (hereafter referred to as "jurisdictional waters") subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations, but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- All interstate waters including interstate wetlands.
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce.
- All impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries of waters identified in paragraphs (a) (1)-(4) (i.e. the bulleted items above).

As recently determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision), channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds.

The USACE regulates the filling or grading of such waters under the authority of Section 404 of the Clean Water Act (Wetland Training Institute, Inc. 1991). The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated.

The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The CDFG has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1603 of the California Fish and Game Code (CDFG 1995). Activities that would disturb these drainages are regulated by the CDFG via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protects the habitat values of the drainage in question.

3.3 ENVIRONMENTAL IMPACT/MITIGATION

As described in Section 1.0 the proposed action is the construction of the RCWD pipeline. Impact areas will include the construction staging area adjacent to Road 40 and Avenue 12 and the associated PVC pipeline. Potential impacts to biotic resources have been discussed conceptually below.

Less than Significant Project Impacts

3.3.1. Impacts to Special Status Plant Species from Habitat Modification and/or Direct Loss of Individuals

Impact. Eleven special status vascular plant species are known to occur in the general project vicinity in Madera County (see Table 2). Site development would have no effect on regional populations of eleven special status plant species, since such species have been determined to be absent from the site.

Mitigation. None warranted.

3.3.2 Project Impact to Special Status Animal Species from Habitat Modification

Impact. Thirty-nine special status animal species occur regionally (see Table 2). Possible impacts to regional populations of these species from habitat modification associated with eventual site development are discussed below:

Species Absent From the Site, or Unlikely to Occur There. Of the 39 special status species potentially occurring in the region, 30 would not occur or would be unlikely to occur on the site due to the absence of suitable habitat. For example, the valley elderberry longhorn beetle, greater sandhill crane, bald eagle, Fresno kangaroo rat, San Joaquin kit fox (discussed in detail above in *Section 2.3.2*), western pond turtle, etc. are not expected to occur on the site due to an absence of suitable habitat. Eventual site development would have no effect on these 30 species, because there is little or no likelihood that they occur in the onsite habitats modified by the proposed development.

Species Potentially Present on Site as Migrants or Transients. Of the 39 special status species potentially occurring in the region, 8 species would at most pass through or over the site as migrants or transients or forage on the site from time to time. For example, an adult sharp shinned hawk was observed perched in a pistachio tree just southeast of the proposed pipeline and immediately north of Avenue 11. Other species would include peregrine falcons, prairie falcons, sharp-shinned hawks, Merlins, willow flycatchers, Vaux's swifts, black swifts, etc. The site does not provide regionally important foraging habitat for these species. Migrant and

transient species pass through or over many types of habitats en route to breeding or wintering habitat. Considerable habitat suitable for migratory movements will continue to be available for these species after possible site development. Many of the migrants now passing over or through the site now will continue to use the site if developed as planned. Therefore, eventual site development will result in a less than significant adverse environmental impact on these species.

Species that May Forage on the Site but Would Breed, Den, or Nest Off Site. Of the 39 special status species potentially occurring in the region, 11 species would forage on the site, but breed, nest, or den in habitats off site. Breeding habitat is largely absent from the study area itself, but the irrigated orchards both provide suitable foraging habitat for this species. Other species likely to use the site as foraging habitat from time to time include winter migrants such as Ferruginous hawks, Cooper's hawk, Merlins, long-billed curlews, and one summer migrant, the loggerhead shrike. The winter migrants do not breed in the area. The loggerhead shrike breeds locally, but nesting habitat within the study area is absent for this species.

While the RCWD pipeline project may result in a temporary small loss of potential foraging habitat for some avian species, this loss would not represent a substantial decrease of available foraging habitat in the immediate area. Therefore, project impacts to foraging habitat used by the species discussed above would constitute a less than significant adverse environmental impact.

Species that May Forage, Breed, Nest, Roost, or Den on the Site. A raptor stick nest occurring in the large eucalyptus tree outside the study area's boundaries, but adjacent to the southernmost boundary was observed. ESA determined this stick nest to be that of a red tailed hawk in their August 2004 biological evaluation report. Although this nest is likely used by red-tail hawks, the occurrence of nesting Swainson's hawks in Madera County north of Fresno indicates there is some possibility that Swainson's hawks have used this nest or could use this nest in the future if left abandoned. Nonetheless, the stick nest in the eucalyptus tree lies outside the study area and the project would not result in the elimination of this nesting habitat. The proposed project would have little effect on Swainson's hawk foraging habitat as project impacts consist of temporary disturbance of already highly disturbed lands.

The study area does not provide breeding, nesting, or roosting habitat for any other special status species.

Mitigation. None warranted.

3.3.3 Project Impacts to Riparian Habitats or Other Natural Communities of Special Concern

Impact. There were no riparian areas or natural communities of special that exist within the study area. Therefore, the construction of a pipeline will have no effect on natural communities of special concern

Mitigation. None warranted

3.3.4 Project Impacts to the Movements of Migratory Fish or Wildlife Species

Impact. As previously noted (Section 2.4), the site does not appear to function as a corridor for regular seasonal movements of wildlife species moving through the region. The project would have little effect on such regional movements. Therefore, this project will result in a less than significant effect on regional wildlife movements.

Mitigation. None warranted.

3.3.5 Project Impacts to Fish and Wildlife Habitat

Impact. While agricultural lands of the site provide some habitat for a number of wildlife species, they are not of unique or of significant value as wildlife habitat. After project completion, large areas of agricultural habitats will remain. This suggests that the project, when considered by itself, will not result in a fish or wildlife population dropping below self-sustaining levels, or threatened to eliminate an animal community. Therefore, the construction of an RCWD pipeline along the orchards would not constitute a significant adverse environmental impact on fish or wildlife habitat.

Mitigation. None warranted.

3.3.6 Project Consistency with Local Policies or Ordinances Protecting Biological Resources

Impact. The project appears to be consistent with the County of Madera General Plan policies that are relevant to natural resource protection.

Mitigation. None warranted.

3.3.7 Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters

Impact. Pipeline construction involves trenching that often leaves the soils of construction zones barren of vegetation and, therefore, vulnerable to erosion. Eroded soil can be carried as sediment in seasonal creeks to be deposited in creek beds and adjacent wetlands. The study area is, however, nearly level with soils that are not highly erodible. Therefore, the potential for erosion and the degradation of water quality in local creeks is negligible.

Projects involving the grading of large tracts of land typically require a General Construction permit (a type of NPDES permit) available from the California RWQCB, even where project impacts to nearby water bodies from erosion and sedimentation may not be significant.

Mitigation. None warranted.

3.3.8 Project Impact to Federally Protected Wetlands as Defined by Section 404 of the Clean Water Act

Impact. Live Oak Associates, Inc. surveyed the alignment of the proposed RCWD Pipeline. Root Creek and Madera Ranchos South Creek met the vegetation, soils, and hydrology of criteria of a jurisdictional wetland. Furthermore, ESA has conducted a wetland delineation focusing on Madera Ranchos South Creek and Root Creek for the Gateway Village (see Figure 2) and presumably submitted it to the USACE for verification. Regardless of these waters jurisdictional status, construction related activities of the proposed pipeline such as trenching would have a small temporary impact to these onsite creeks that already experience regular disturbance from surrounding agricultural practices. Therefore, project impact to Root and Madera Ranchos South Creek constitute a less than significant impact on federally protected waters. However, should the USACE claim these waters as jurisdictional, a Clean Water Act permit should be obtained from

the USACE for any activity (i.e. trenching) that would result in the placement of fill within the ordinary high water or wetland margins of these creeks.

Mitigation. None warranted.

Potentially Significant Project Impacts

3.3.9 Potential "Take" of Swainson's Hawks or Other Raptors

Impact. As previously mentioned, a raptor nest has been identified along the margins of the study area, just offsite. Although it is thought to be a red-tail hawk nest, the nest could possibly be from a number of raptors including the Swainson's hawk. Should construction occur during the raptor breeding season (February through August), nest abandonment and subsequent nestling mortality may occur due to the close proximity of the nest site to proposed impact areas. Such disturbance would be a violation of the California Fish and Game Code and the federal Migratory Bird Treaty Act, and if the mortality of juvenile Swainson's hawks occurs, a violation of the California Endangered Species Act. Possible construction-related mortality to nesting raptors represents is a potentially significant adverse environmental impact.

Mitigation. In order to minimize disturbances to active nests, the applicant will implement the following measures if construction should occur during raptor breeding season (February through August).

- ***Mitigation Measure 3.3.9a:*** Should project construction be scheduled to commence between the months of February and the end of August, a pre-construction survey will be conducted by a qualified biologist for nesting raptors. This survey will occur within 30 days of the on-set of construction. All suitable habitats of the study area will be covered during this survey.

- ***Mitigation Measure 3.3.9b:*** If pre-construction surveys undertaken during the nesting season locate an active nest within or near construction zones, this nest, and an appropriate buffer around it (as determined by a qualified biologist) will remain off-limits to construction until the nesting season is over.

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APPENDIX A: VASCULAR PLANTS OF THE STUDY AREA

APPENDIX A
VASCULAR PLANTS OF THE STUDY AREA

The plants species listed below have been observed on the study area during the field survey conducted by Live Oak Associates, Inc. on December 14, 2006. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
+/- - Higher/lower end of category
NR - No review
NA - No agreement
NI - No investigation

AMARANTHACEAE – Amaranth Family		
Amaranthus albus	Tumbleweed	FACU
Amaranthus blitoides	Prostrate Pigweed	FACW
ANACARDIACEAE - Cashew Family		
Pistacia sp.	Pistacio	UPL
APOCYNACEAE – Dogbane Family		
Nerium oleander	Oleander	UPL
ASTERACEAE - Sunflower Family		
Cirsium vulgare	Bull Thistle	UPL
Conyza canadensis	Canada Horseweed	FAC
Gnaphalium palustre	Cudweed	FACW
Grindelia camporum	Great Valley Gumplant	UPL
Helianthus annuus	Common Sunflower	FAC-
Hemizonia pungens	Spikeweed	FAC
Heterotheca grandiflora	Telegraph Weed	UPL
Lactuca serriola	Prickly Lettuce	UPL
Xanthium strumarium	Rough Cocklebur	FAC*
Taraxacum officinale	Dandelion	FACU
BRASSICACEAE - Mustard Family		
Brassica nigra	Black Mustard	UPL
Raphanus sativa	Wild Radish	UPL
CARYOPHYLLACEAE- Carnation Family		
Stellaria media	Chickweed	FACU
CITRINAEAE- Citrus Family		
Citrus sp	Citrus	UPL
CYPERACEAE – Sedge Family		
Cyperus ergrostis	Umbrella Sedge	FACW

CUCURBITACEA – Squash Family		
Cucurbita pepo.	Squash	NI
CACTACEAE – Cactus Family		
Opuntia basilaris	Bakersfield Cactus	UPL
EUPHORBIACEAE – Spurge Family		
Chamaecyse maculata	Prostrate and Spotted spurge	UPL
Eremocarpus setigerus	Dove Weed	UPL
FABACEAE - Pea Family		
Trifolium hirtum	Rose Clover	UPL
Vicia sativa	Vetch	UPL
Medicago polymorpha	Bur Clover	UPL
GERANEACEAE - Geranium Family		
Erodium botrys	Broad-leaf Filaree	UPL
Erodium cicutarium	Red-stemmed Filaree	UPL
JUNCACEAE – Rush Family		
Juncus effusus	Common Rush	OBL
LAMIACEAE – Mint Family		
Trichostemma lanceolatum	Vinegar Weed	UPL
MALVACEAE – Mallow Family		
Malva sp.	Mallow	UPL
MORACEAE – Mulberry Family		
Morus alba	White Mulberry	NI
MYRSINACEAE		
Anagallis arvensis	Scarlet pimpernel	UPL
MYRTACEAE - Myrtle Family		
Eucalyptus sp.	Eucalyptus	UPL
OLEACEAE – Olive Family		
Olea europea	Olive	UPL
ONAGRACEAE – Evening Primrose Family		
Epilobium brachycarpum	Panicled Willow-herb	UPL
POACEAE - Grass Family		
Aira caryophyllea	European Wild grass	UPL
Avena sp.	Wild Oats	UPL
Bromus diandrus	Ripgut	UPL
Bromus hordeaceous	Soft Chess	FACU
Cynodon dactylon	Bermuda Grass	FAC
Echinochloa crus-galli	Barnyard Grass	FACW
Panicum capillare	Witch grass	UPL
Poa annua	Annual bluegrass	UPL
Poa secunda	Blue grass	UPL
Setaria glauca	Yellow Foxtail	FAC
PHYTOLACACEAE –Pokeweed Family		
Phytolacca americana	Poke Weed	NI
POLYGONACEAE - Buckwheat Family		
Polygonum arenastrum	Common Knotweed	UPL
Polygonum lapathifolium	Pale smartweed	OBL

Rumex crispus	Curly Dock	FACW
SALICACEAE – Willow Family		
Populus fremontii	Fremont's Cottonwood	FACW
Salix laevigata	Red Willow	FACW
SCROPHULARIACEAE - Figwort Family		
Mimulus guttatus	Common Monkeyflower	OBL
TYPHACEAE		
Typha latifolia	Common cattail	OBL
VITACEAE- Grape Family		
Vitis sp.	Domesticated grape	NI
ZYGOPHYLLACEAE- Caltrop Family		
Tribulus terrestris	Puncture Vine	UPL

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE STUDY AREA

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE STUDY AREA

The species listed below are those that may reasonably be expected to use the habitats of the study area routinely from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the site by Live Oak Associates on December 14, 2006 have been noted with an asterisk.

CLASS: AMPHIBIA
ORDER: ANURA (Frogs and Toads)
FAMILY: BUFONIDAE (True Toads)
Western Toad (*Bufo boreas*)
FAMILY: HYLIDAE (Treefrogs and Relatives)
Pacific Chorus Frog (*Pseudacris regilla*)
FAMILY: RANIDAE (True Frogs)
Bullfrog (*Rana catesbeiana*)
CLASS: REPTILIA
ORDER: SQUAMATA (Lizards and Snakes)
SUBORDER: SAURIA (Lizards)
FAMILY: PHRYNOSOMATIDAE
Western Fence Lizard (*Sceloporus occidentalis*)
FAMILY: SCINCIDAE (Skinks)
Gilbert Skink (*Eumeces gilberti*)
FAMILY: ANGUIDAE (Alligator Lizards and Relatives)
Southern Alligator Lizard (*Elgaria multicarinata*)
SUBORDER: SERPENTES (Snakes)
FAMILY: COLUBRIDAE (Colubrids)
Racer (*Coluber constrictor*)
Coachwhip (*Masticophis flagellum*)
Gopher Snake (*Pituophis melanoleucus*)
Common Kingsnake (*Lampropeltis getula*)
Common Garter Snake (*Thamnophis sirtalis*)

CLASS: AVES
ORDER: CICONIIFORMES (Herons, Storcks, Ibises and Relatives)
FAMILY: ARDEIDAE (Herons and Bitterns)
Green Heron (*Butorides virescens*)
Cattle Egret (*Bubulcus ibis*)
Snowy Egret (*Egretta thule*)
Great Egret (*Ardea alba*)
Great Blue Heron (*Ardea herodias*)
ORDER: ANSERIFORMES (Screamers, Ducks and Relatives)
FAMILY: ANATIDAE (Swans, Geese and Ducks)
*Mallard (*Anas platyrhynchos*)
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: CATHARTIDAE (New World Vultures)
*Turkey Vulture (*Cathartes aura*)

FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
White-tailed Kite (*Elanus caeruleus*)
Northern Harrier (*Circus cyaneus*)
*Sharp-shinned Hawk (*Accipiter striatus*)
Cooper's Hawk (*Accipiter cooperi*)
Red-shouldered Hawk (*Buteo lineatus*)
*Red-tailed Hawk (*Buteo jamaicensis*)
Ferruginous Hawk (*Buteo regalis*)
Rough-legged Hawk (*Buteo lagopus*)
Golden Eagle (*Aquila chrysaetos*)
Swainson's hawk ((*Buteo swainsonii*)
FAMILY: FALCONIDAE (Caracaras and Falcons)
*American Kestrel (*Falco sparverius*)
*Merlin (*Falco columbarius*)
Peregrine Falcon (*Falco peregrinus*)
Prairie Falcon (*Falco mexicanus*)
ORDER: GALLIFORMES (Megapodes, Currassows, Pheasants, and Relatives)
FAMILY: ODONTOPHORIDAE (New World Quail)
California Quail (*Callipepla californica*)
ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)
FAMILY: CHARADRIIDAE (Plovers and relatives)
Black-bellied Plover (*Pluvialis squatarola*)
*Killdeer (*Charadrius vociferus*)
FAMILY: RECURVIROSTRIDAE (Stilts and Avocets)
Black-necked Stilt (*Himantopus mexicanus*)
FAMILY: SCOLOPACIDAE (Sandpipers and Relatives)
Greater Yellow-legs (*Tringa melanoleuca*)
Least Sandpiper (*Calidris minutilla*)
Long-Billed Curlew (*Numenius americanus*)
Common Snipe (*Gallinago gallinago*)
FAMILY: LARIDAE (Skuas, Gulls, Terns and Skimmers)
Ring-billed Gull (*Larus delawarensis*)
California Gull (*Larus californicus*)
Herring Gull (*Larus argentatus*)
ORDER: COLUMBIFORMES (Pigeons and Doves)
FAMILY: COLUMBIDAE (Pigeons and Doves)
Rock Pigeon (*Columba livia*)
*Mourning Dove (*Zenaida macroura*)
ORDER: STRIGIFORMES (Owls)
FAMILY: TYTONIDAE (Barn Owls)
Barn Owl (*Tyto alba*)
FAMILY: STRIGIDAE (Typical Owls)
Western Screech Owl (*Otus kennicottii*)
Great Horned Owl (*Bubo virginianus*)
ORDER: CAPRIMULGIFORMES (Goatsuckers and Relatives)
FAMILY: CAPRIMULGIDAE (Goatsuckers)
Lesser Nighthawk (*Chordeiles acutipennis*)
Common Poorwill (*Phalaenoptilus nuttalli*)
ORDER: APODIFORMES (Swifts and Hummingbirds)
FAMILY: APODIFORMES (Swifts and Hummingbirds)

Black Swift (*Cypseloides niger*)
Vaux's Swift (*Chaetura vauxi*)
White-throated Swift (*Aeronautes saxatalis*)

FAMILY: TROCHILIDAE (Hummingbirds)

Black-chinned Hummingbird (*Archilochus alexandri*)
Anna's Hummingbird (*Calypte anna*)
Rufous Hummingbird (*Selasphorus rufus*)

ORDER: PICIFORMES (Woodpeckers and Relatives)

FAMILY: PICIDAE (Woodpeckers and Wrynecks)

Red-breasted Sapsucker (*Sphyrapicus ruber*)
Nuttall's Woodpecker (*Picoides nuttallii*)
Downy Woodpecker (*Picoides pubescens*)
*Northern Flicker (*Colaptes auratus*)

ORDER: PASSERIFORMES (Perching Birds)

FAMILY: TYRANNIDAE (Tyrant Flycatchers)

Western Wood-pewee (*Contopus sordidulus*)
Pacific-slope Flycatcher (*Empidonax difficilis*)
Ash-throated Flycatcher (*Myiarchus cinerascens*)
*Black Phoebe (*Sayornis nigricans*)
Say's Phoebe (*Sayornis saya*)
Western Kingbird (*Tyrannus verticalis*)

FAMILY: LANIIDAE (Shrikes)

Loggerhead Shrike (*Lanius ludovicianus*)

FAMILY: CORVIDAE (Jays, Magpies, and Crows)

*Western Scrub Jay (*Aphelocoma coerulescens*)
*American Crow (*Corvus brachyrhynchos*)
Common Raven (*Corvus corax*)

FAMILY: ALAUDIDAE (Larks)

California Horned Lark (*Eremophila alpestris*)

FAMILY: HIRUNDINIDAE (Swallows)

Tree Swallow (*Tachycineta bicolor*)
Violet-green Swallow (*Tachycineta thalassina*)
Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)
Cliff Swallow (*Petrochelidon pyrrhonota*)
Barn Swallow (*Hirundo rustica*)

FAMILY: SITTIDAE (Nuthatches)

Red-breasted Nuthatch (*Sitta canadensis*)
White-breasted Nuthatch (*Sitta carolinensis*)

FAMILY: TROGLODYTIDAE (Wrens)

Bewick's Wren (*Thryomanes bewickii*)
House Wren (*Troglodytes aedon*)

FAMILY: REGULIDAE (Kinglets)

Golden-crowned Kinglet (*Regulus satrapa*)
*Ruby-crowned Kinglet (*Regulus calendula*)

FAMILY: SYLVIIDAE (Old World Warblers and Gnatcatchers)

Blue-gray Gnatcatcher (*Polioptila caerulea*)

FAMILY: TURDIDAE (Thrushes)

Western Bluebird (*Sialia mexicana*)
Mountain Bluebird (*Sialia currucoides*)
Hermit Thrush (*Catharus guttatus*)

*American Robin (*Turdus migratorius*)
Varied Thrush (*Ixoreus naevius*)
FAMILY: MIMIDAE (Mockingbirds and Thrashers)
Northern Mockingbird (*Mimus polyglottos*)
FAMILY: STURNIDAE (Starlings and Allies)
***European Starling (*Sturnus vulgaris*)
FAMILY: MOTACILLIDAE (Wagtails and Pipits)
American Pipit (*Anthus rubrescens*)
FAMILY: BOMBYCILLIDAE (Waxwings)
*Cedar Waxwing (*Bombycilla cedrorum*)
FAMILY: PARULIDAE (Wood Warblers and Relatives)
Orange-crowned Warbler (*Vermivora celata*)
*Yellow-rumped Warbler (*Dendroica coronata*)
Black-throated Gray Warbler (*Dendroica nigrescens*)
Yellow Warbler (*Dendroica petechia*)
FAMILY: EMBERIZIDAE (Emberizines)
California Towhee (*Pipilo crissalis*)
*Spotted Towhee (*Pipilo maculatus*)
Chipping Sparrow (*Spizella passerina*)
Vesper Sparrow (*Pooecetes gramineus*)
Lark Sparrow (*Chondestes grammacus*)
Savannah Sparrow (*Passerculus sandwichensis*)
Fox Sparrow (*Passerella illiaca*)
Song Sparrow (*Melospiza melodia*)
Lincoln's Sparrow (*Melospiza lincolnii*)
Vesper Sparrow (*Pooecetes gramineus*)
Golden-crowned Sparrow (*Zonotrichia atricapilla*)
*White-crowned Sparrow (*Zonotrichia leucophrys*)
*Dark-eyed Junco (*Junco hyemalis*)
FAMILY: CARDINALIDAE (Cardinals, Grosbeaks and Allies)
Black-headed Grosbeak (*Pheucticus melanocephalus*)
Blue Grosbeak (*Guiraca caerulea*)
Lazuli Bunting (*Passerina amoena*)
FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)
Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*)
Tricolored Blackbird (*Agelaius tricolor*)
*Western Meadowlark (*Sturnella neglecta*)
*Brewer's Blackbird (*Euphagus cyanocephalus*)
Brown-headed Cowbird (*Molothrus ater*)
Hooded Oriole (*Icterus cucullatus*)
Bullock's Oriole (*Icterus bullocki*)
FAMILY: FRINGILLIDAE (Finches)
*House Finch (*Carpodacus mexicanus*)
Pine Siskin (*Carduelis pinus*)
Lesser Goldfinch (*Carduelis psaltria*)
*American Goldfinch (*Carduelis tristis*)
FAMILY: PASSERIDAE (Old World Sparrows)
House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA

ORDER: DIDELPHIMORPHIA (Marsupials)

FAMILY: DIDELPHIDAE (Opossums)

Virginia Opossum (*Didelphis virginiana*)

ORDER: INSECTIVORA (Shrews and Moles)

FAMILY: TALPIDAE (Moles)

Broad-footed Mole (*Scapanus latimanus*)

ORDER: CHIROPTERA (Bats)

FAMILY: VESPERTILIONIDAE (Vespertilionid Bats)

Yuma Myotis (*Myotis yumanensis*)
California Myotis (*Myotis californicus*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Western Red Bat (*Lasiurus blossevillii*)
Hoary Bat (*Lasiurus cinereus*)
Pale Big-eared Bat (*Corynorhinus townsendii pallescens*)
Townsend's Western Big-eared Bat (*Corynorhinus townsendii townsendii*)
Pallid Bat (*Antrozous pallidus*)

FAMILY: MOLOSSIDAE (Free-tailed Bat)

Brazilian Free-tailed Bat (*Tadarida brasiliensis*)
Western Mastiff Bat (*Eumops perotis*)

ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)

FAMILY: LEPORIDAE (Rabbits and Hares)

Desert Cottontail (*Sylvilagus audubonii*)
Black-tailed Hare (*Lepus californicus*)

ORDER: RODENTIA (Rodents)

FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)

California Ground Squirrel (*Spermophilus beecheyi*)

FAMILY: GEOMYIDAE (Pocket Gophers)

Botta's Pocket Gopher (*Thomomys bottae*)

FAMILY: MURIDAE (Mice, Rats and Voles)

Western Harvest Mouse (*Reithrodontomys megalotis*)
Deer Mouse (*Peromyscus maniculatus*)
Black Rat (*Rattus rattus*)
Norway Rat (*Rattus norvegicus*)
House Mouse (*Mus musculus*)
California Vole (*Microtus californicus*)

ORDER: CARNIVORA (Carnivores)

FAMILY: CANIDAE (Foxes, Wolves, and Relatives)

Coyote (*Canis latrans*)
Gray Fox (*Urocyon cinereoargenteus*)

FAMILY: PROCYONIDAE (Raccoons and Relatives)

Raccoon (*Procyon lotor*)

FAMILY: MUSTELIDAE (Weasels and Relatives)

Long-tailed Weasel (*Mustela frenata*)
Western Spotted Skunk (*Spilogale gracilis*)
Striped Skunk (*Mephitis mephitis*)

FAMILY: FELIDAE (Cats)

Feral Cat (*Felis cattus*)

Attachment 3.4, *In-Lieu Groundwater Recharge Facilities Feasibility Study*

Prepared by Provost and Pritchard Engineering Group, Inc., dated April 30, 2003

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IN-LIEU GROUNDWATER RECHARGE FACILITIES FEASIBILITY STUDY

IN COMPLIANCE WITH

THE SAFE DRINKING WATER, CLEAN WATER, WATERSHED PROTECTION AND FLOOD PROTECTION ACT PROPOSITION 13

AS AUTHORIZED BY THE

ROOT CREEK WATER DISTRICT

SUBMITTED TO THE

CALIFORNIA DEPARTMENT OF WATER RESOURCES

April 30, 2003

Prepared By:

EST. 1968 PROVOST & PRITCHARD INC ENGINEERING GROUP

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EXECUTIVE SUMMARY

The Root Creek Water District is located in southeastern Madera County, in the Central San Joaquin Valley. A map showing the District and project location relative to the San Joaquin River and Friant Dam, **Figure ES-1**, immediately follows this summary.

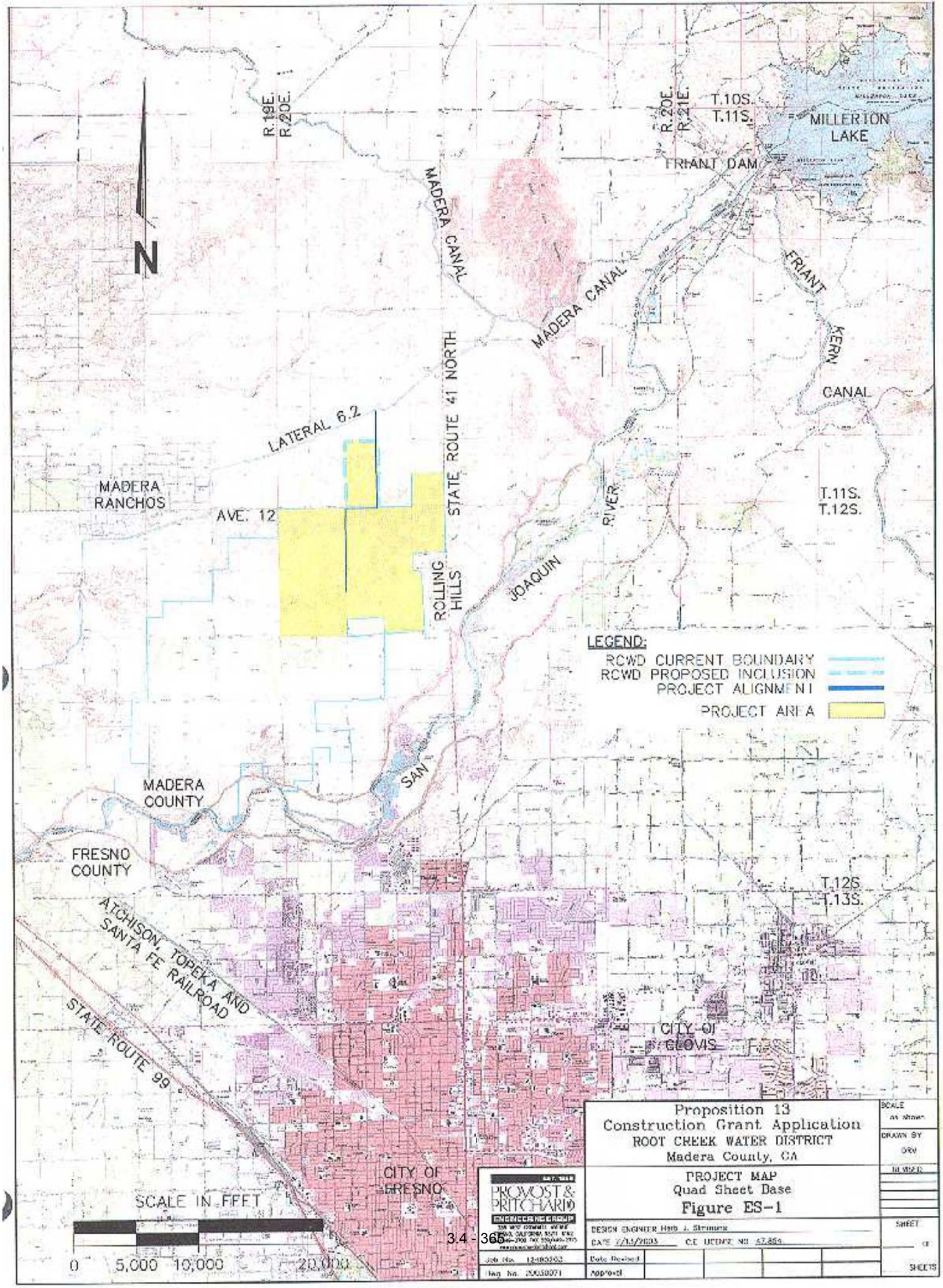
Since 1996, the Root Creek Water District (herein the District) has attempted to address the issue of groundwater overdraft in southeastern Madera County. The District relies almost exclusively on pumped groundwater as its water source for agricultural production. This 9,234-acre district is almost completely developed to production agricultural orchards, yet only has a very small surface water supply that benefits limited areas. For this reason, the District has seen groundwater levels in the area decline as much as 5 feet per year. Estimates of the groundwater overdraft for the District are approximately 3,400 acre-feet per year, while the regional southeastern Madera County area (to be described shortly) accounts for nearly 22,000 acre-feet of overdraft per year. The affects of this critically overdrafted groundwater basin are that agricultural wells water levels continue to drop, pumping costs have increased, and the reliability of local community water supplies have been compromised.

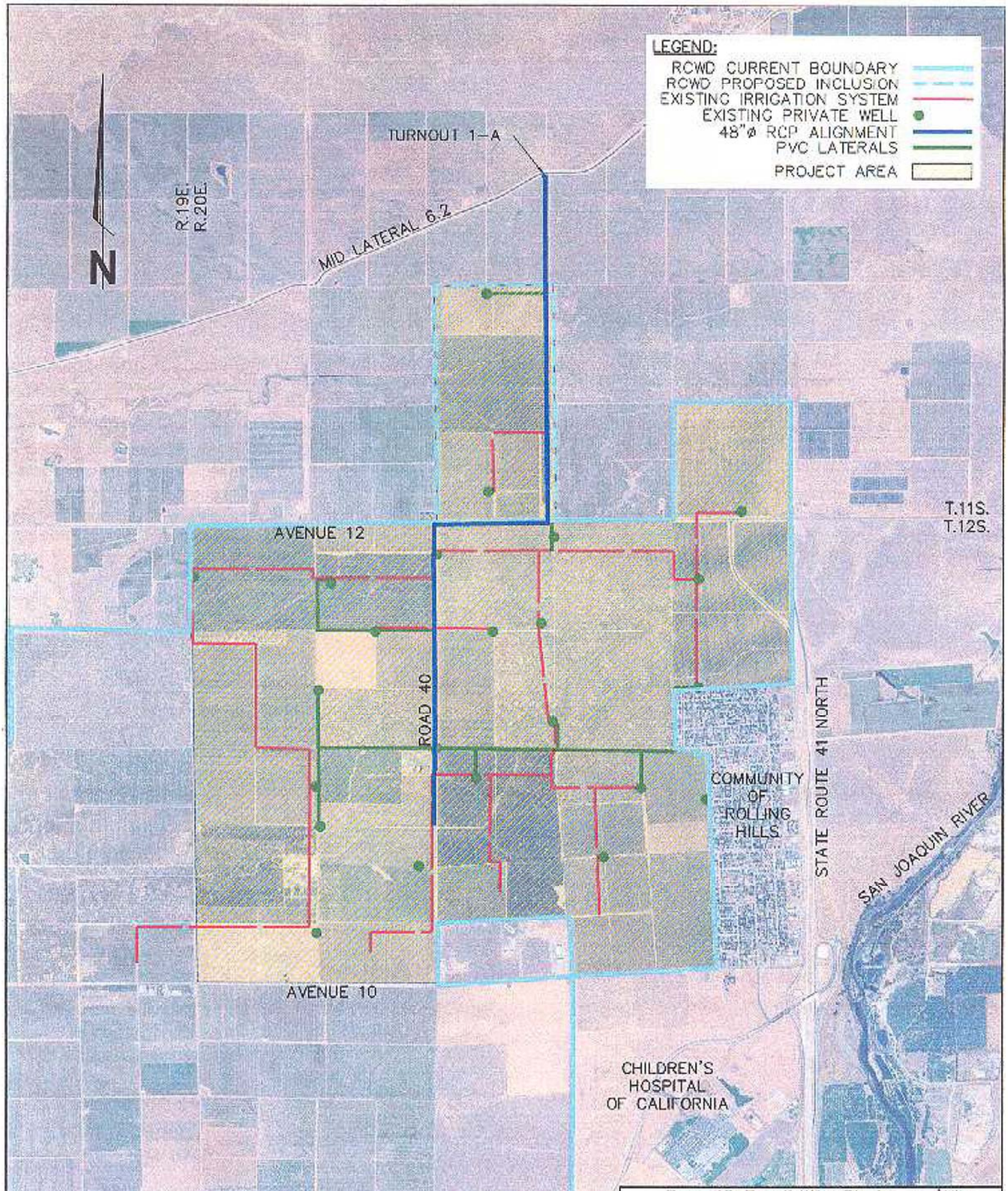
The District is located 7 miles from Friant Dam and Millerton Lake. During above average water years, floodwater (Section 215 water) is released from Friant Dam in excess of the storage of the dam and/or the diversion capability of contracted users. The District is currently negotiating with the US Bureau of Reclamation for a Section 215 contract, and plans to have this in place by spring 2004. Also, the District has successfully negotiated agreements with local water agencies that allow for the purchase and conveyance of surplus Class 2 waters from Madera Irrigation District (MID). This contract allows the District to purchase a maximum of 10,000 acre-feet of surplus Class 2 water per year. The District does not currently have a facility capable of supplying district landowners with either of these available water supplies. This project proposes constructing such a facility so that surface water supplies may be delivered to District landowners when they are available.

This study evaluates the existing conditions in the area of the District and proposes an In-Lieu Recharge Project to positively address the groundwater overdraft. Existing agreements have allowed for transmission capacity through the Madera Canal and Lateral 6.2. These facilities are shown in **Figure ES-1** that immediately follows this summary. From the Lateral 6.2, a large diameter transmission pipeline will be constructed that will serve as the backbone of the surface water delivery system. The pipeline will deliver surface water to the District area that has the deepest groundwater levels in an attempt to address the greatest need. The surface water will be used to supply the agricultural water demand of existing crops. The existing private irrigation systems in the area are interconnected in order to allow high flows to prevent frost damage to local crops. This project will capitalize on this existing distribution system capacity by connecting to it in key areas. Also, existing agricultural wells are run through filters prior to distribution into drip irrigation systems. This project will connect laterals to existing filters and booster pumps through a few simple valves and

connections. **Figure ES-2** shows the planned facilities discussed more fully in this document.

Due to the seasonal nature of agricultural water demand, the project area has been analyzed to determine agricultural water demand and annual average project yield by month. This analysis shows that the **project yields an annual average 4,190 acre-feet** of recharge addressing 123% of the estimated annual overdraft in the District (3,400 AF), and 19% of overdraft in the regional area (22,000 AF). **Total estimated capital costs are on the order of $4.3 million** while the discounted operations, maintenance and replacement cost are estimated to be approximately $4.4 million over the 50 year simulated period. The total discounted cost of the project is estimated at $8.7 million, with a **benefit\cost ratio of 1.84** and a **discounted cost per acre-foot of water at $42**.


N
R.19E.
R.20E.
R.20E.
R.21E.
T.10S.
T.11S.
MILLERTON LAKE
FRIANT DAM
MADERA CANAL
MADERA CANAL
FRIANT
KERN
CANAL
STATE ROUTE 41 NORTH
LATERAL 6.2
MADERA RANCHOS
AVE. 12
ROLLING HILLS
JOAQUIN
RIVER
T.11S.
T.12S.
LEGEND:
RCWD CURRENT BOUNDARY
RCWD PROPOSED INCLUSION
PROJECT ALIGNMENT
PROJECT AREA
SAN
MADERA COUNTY
FRESNO COUNTY
T.12S.
T.13S.
ATCHISON, TOPEKA AND SANTA FE RAILROAD
STATE ROUTE 99
CITY OF CLOVIS
CITY OF FRESNO
SCALE IN FEET
0
5,000
10,000
20,000
Proposition 13
Construction Grant Application
ROOT CREEK WATER DISTRICT
Madera County, CA
PROJECT MAP
Quad Sheet Base
Figure ES-1
SCALE
as shown
DRAWN BY
SRV
REVISED
SHEET
OF
SHEETS
PROVOST & PRITCHARD
ENGINEERING GROUP
DESIGN ENGINEER Herb J. Strauss
DATE 7/15/2003
C.E. LICENSE NO. 47,854
Job No. 12-180303
Reg. No. 20030071
Date Revised
Approved



Prop 13 Feasibility Study
In-Lieu Recharge Project
ROOT CREEK WATER DISTRICT
Madera County, CA

Project
Facilities Map
Figure ES-2

PROVOST & PRITCHARD
ENGINEERING GROUP

DATE 2/13/2003

I. INTRODUCTION

A. A BRIEF HISTORY OF ROOT CREEK WATER DISTRICT

The Root Creek Water District (herein the District) is located in southeastern Madera County, lying generally west of State Highway 41, north of the City of Fresno and the San Joaquin River, and southeast of the City of Madera. **Figure I-1** shows the general location of the District. The District is located entirely within the following four USGS 7½ minute quadrangles: Gregg, Lanes Bridge, Herndon, and Fresno North, with the majority of the District within the Lanes Bridge quadrangle. The District encompasses approximately 9,234 acres of which the majority is irrigated from groundwater. The District was organized on October 14, 1996 for the primary purpose of obtaining a reliable water supply for the District and southeastern Madera County. The District plans to accomplish this through obtaining surface water supplies to offset groundwater usage.

B. PURPOSE OF STUDY

Farming has provided the economic base for the region and area for decades, and central to this activity is water supply and related water quality. Agricultural development in the District is essentially complete, and the area has been developed primarily in permanent crops. With a desire on the part of individual landowners for a more reliable water supply and the contractual obligation with other districts/agencies to mitigate long-term regional overdraft, the District desires to actively pursue the potential for new surface water supplies to reduce the overdraft within the region and the County.

The District's goals include, but are not limited to, the following:

1. Increase groundwater supplies in the basin.
2. Increase water supplies affordable for agriculture.
3. Increase groundwater levels to reduce pumping costs.
4. Maintain the viability of existing agriculture.

This study evaluates the construction of a new conveyance facility to connect the Madera Irrigation District Lateral 6.2 (shown at the right) to a portion of the existing irrigation systems within the District. This would allow for surface water supplies to be delivered (when available), so that the need for groundwater pumping can be reduced in the District.

C. FUNDING FOR THE STUDY

This study was funded by a grant from the California Department of Water Resources, as part of the Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection Act (Proposition 13) Groundwater Recharge Feasibility Study Grant Program (Chapter 8, Article 4). The District wishes to thank the State for selecting and funding this study. The District also wishes to thank the State staff for the help that has been provided to the District in completion of this work.

D. STUDY AREA

Several different areas are referred to in this study, which are briefly described below:

The **Regional Area** is the area bound by State Route 41 on the East, State Route 145 on the North, the San Joaquin River on the South, and Madera County Road 33 on the West (excluding portions of Madera Irrigation District). This area was analyzed in the *Hydrogeologic Investigation: Southeastern Madera County* prepared for the District by Kenneth D. Schmidt and Associates and Provost & Pritchard Engineering Group, Inc. in 2001. The regional area was set and analyzed to determine regional groundwater conditions and estimate overdraft where boundary conditions were minimized.

The **Study Area** for this report is the 9,234 acres of the District. The District has the ability to take actions to meet its goals within its boundary. Agricultural demands, groundwater pumping and overdraft have been calculated and evaluated for many years. It is this analysis that has identified the need for additional water supplies.

The **Project Area** for this study is the northeastern portion of the District. These 3,188 acres were determined to have the deepest groundwater levels and are closest to the surface water conveyance facilities. 316 acres of the total 3,188 are currently outside the District boundary, but are in the process of District annexation and are adjacent to the project alignment. Constructing a distribution system and offsetting groundwater usage in this portion of the District will have the greatest affect on groundwater conditions. Construction costs and average annual in-lieu recharge estimates of the project were made using this area.

Figure I-1 is a map that shows the Regional, Study and Project Areas.

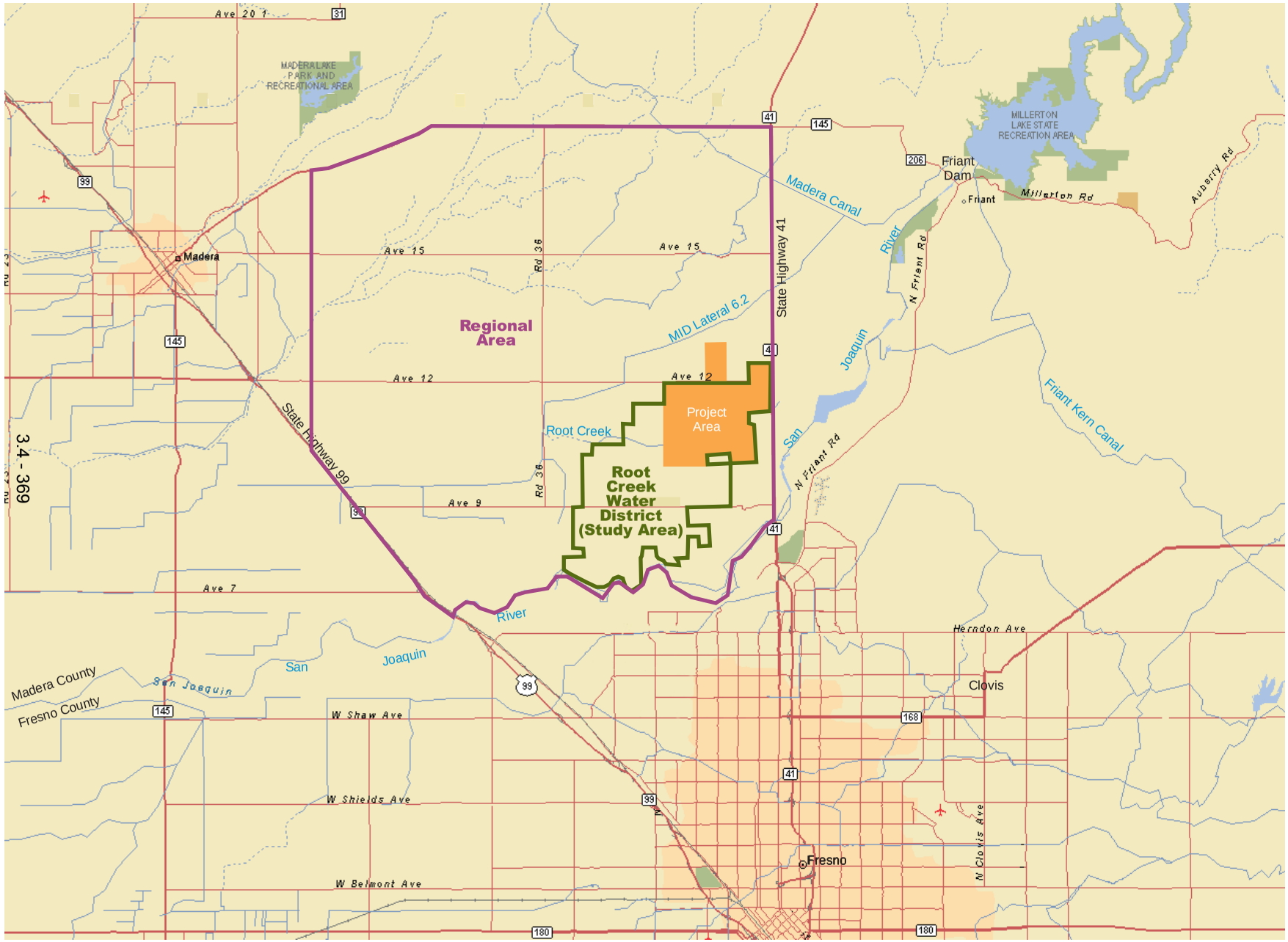


FIGURE I-1

MAP OF REGIONAL, STUDY & PROJECT AREAS

N

EST. 1968
PROVOST & PRITCHARD INC
ENGINEERING GROUP

DATE March 25, 2003
JOB# 12490203-REP
DWG# Study & Project Area

II. REVIEW OF EXISTING INFORMATION

A. PRIOR STUDIES AND DOCUMENTS

1. Land Ownership

Land ownership records were obtained from the Madera County Assessor's Office.

TABLE II-1

Land Ownership Information for Project Area

Madera Co APN	Acreage	Landowner	Mail Address	City	Zip
* 049-024-010	315.82	APACHE GROVE LAND 1971 LTD	P O BOX 3347	PINEDALE	93650
049-026-008	157.17	APACHE GROVE LAND 1971 LTD	P O BOX 3347	PINEDALE	93650
049-051-002	299.19	APACHE GROVE LAND 1971 LTD	PO BOX 3347	PINEDALE	93650
049-051-003	315.30	AG 1970 INC	P O BOX 3232	PINEDALE	93650
049-052-002	638.59	AG 1970 INC	PO BOX 3232	PINEDALE	93650
049-053-002	302.39	APACHE GROVE LAND 1971 LTD	P O BOX 3347	PINEDALE	93650
049-053-004	39.59	S & J RANCH INC	P O BOX 3347	PINEDALE	93650
049-053-005	39.59	S & J RANCH INC	P O BOX 3347	PINEDALE	93650
049-053-006	221.77	AG 1970 INC	P O BOX 3232	PINEDALE	93650
049-054-004	245.15	AG 1970 INC	P O BOX 3232	PINEDALE	93650
049-054-006	84.37	APACHE GROVE LAND 1971 LTD	P O BOX 3347	PINEDALE	93650
049-054-007	218.35	AG 1970 INC	P O BOX 3232	PINEDALE	93650
049-055-001	226.70	AG 1970 INC	P O BOX 3232	PINEDALE	93650
049-056-011	74.34	APACHE GROVE LAND 1971 LTD	PO BOX 3347	PINEDALE	93650

* Currently in the process of District annexation.

2. Surface Water Information

a. USBR Central Valley Operations Records for Millerton Lake (1949-2002)

Operations records for Friant Dam at Millerton Lake were obtained from the US Department of the Interior, US Bureau of Reclamation. These flow records showed daily and monthly releases to the three outlets from the dam: Madera Canal, Friant Kern Canal, and the San Joaquin River below Friant Dam. Portions of flood release were indicated, as well as spill conditions.

b. DWR Bulletin No. 135

The Department of Water Resources prepared an investigation in the Madera area in 1966. Unfortunately, this study was undertaken before substantial rural-residential developments and major changes in irrigated crops. This work is published in DWR Bulletin No. 135 and includes information on surface water, groundwater, and water levels.

3. Surface Water Agreements

a. Agreement Concerning Agricultural, Municipal, and Industrial Water Use Within Root Creek Water District (Executed December 30, 1999)

This agreement between the Friant Water Users Authority, Madera Irrigation District, Chowchilla Water District and the District addressed the groundwater basin-wide desire to deliver available waters to the District. This agreement does not secure a water source, but commits to cooperation in order that the District will be granted surface water from at least one of the parties in the near future. A copy of this agreement is included in Appendix A.

b. Agreement Between Madera Irrigation District and Root Creek Water District For The Conveyance And Sale of Water (Executed March 18, 2002)

This agreement between MID and the District satisfied portions of the intent of the previously discussed agreement, outlining the supply, conveyance and costs for a surplus Class 2 water contract. The contract is for a maximum 10,000 acre-feet of surplus Class 2 water after MID has determined that they can no longer beneficially use additional amounts of its Class 2 supply. Generally this condition happens during above average water years when MID's Class 2 allocation is greater than 43%. Conveyance of supplied waters is contracted through the Madera Canal and then Lateral 6.2 to Turnout 1-A, approximately 1.4 miles north of the current District boundary. A copy of this agreement is included in Appendix A.

4. Hydrogeologic Investigation: Southeastern Madera County

Kenneth D. Schmidt & Associates prepared this report for the District in conjunction with Provost & Pritchard Engineering Group, Inc. in 1999 and it was later updated in the fall of 2001. This study provided considerable research and material for the analysis of the hydrogeologic characteristics and historic groundwater conditions of the District and the greater southeastern Madera County area. The following reports are sited as source information for the Hydrogeologic Investigation.

a. Madera County Soil Survey

This report provided surface soil conditions and suggested areas of potential recharge.

b. Open File Report 76-841

In March of 1976 the USGS mapped the geologic nature of surface materials in *Open File Report 76-841*. The area mapped covers most of the District.

c. Geology, Hydrology and Quality of Water in the Madera Area

A report prepared by the United States Geological Survey by Miller, LeBlanc and Bertoldi, titled "Geology, Hydrology and Quality of Water in the Madera Area" (1970) provides a general review of the southern Madera county regional groundwater conditions. Groundwater in much of the area is present in the alluvial deposits and is recharged by seepage from the San Joaquin River and other sources. The boundary between where groundwater is found in bedrock versus in alluvium generally occurs along the northeastern edge of this report's regional area. Areas generally indicated to be favorable for direct recharge were delineated and most were in the southern portion of the District, outside of the project area. Historic groundwater contour maps were used from this report.

d. Proposed Water-Resource Study for the Madera Area

The USGS prepared a proposed water resources study in cooperation with the Madera County Flood Control and Water Conservation Agency in 1972, due to the changing water levels experienced in the 1960's. Historic groundwater contour maps were used from this report as well as specific water quality information.

B. IDENTIFICATION OF NEED

1. Regional Historical Water Use

The predominant historic source of the water used in this area has been groundwater. The most recent regional hydrogeologic evaluation of groundwater by an agency in the Madera area was prepared by the U.S. Geological Survey in the 1960's, and reported by Miller, LeBlanc, and Bertoldi (1970). The study area for this report extended from the Merced County (Chowchilla River) boundary on the north, to the San Joaquin River on the south and west. At that time, few deep wells had been drilled in the area east of State Highway 99. Since the 1960's, thousands of water supply wells have been drilled in the area. Some irrigation wells have been drilled to depths ranging from 700 to more than 900 feet. Substantial development has occurred in many areas without a surface water supply. This USGS report concludes that recharge has not been able to keep up with the pumpage, and groundwater levels have fallen accordingly.

To illustrate this point, maps reflective of the groundwater elevation contours for this area prepared by DWR for the years 1936 and 1960 are included as **Figures II-1** and **Figure II-2**. Both of these figures indicate a predominant southwesterly direction of groundwater flow. Fall 1936 water level elevations ranged from about 270 feet above mean sea level (MSL) near the intersection of Highway 41 and Avenue 12 to about 235 feet above MSL near the corner of Road 36 and Avenue 9. Water level elevations in the spring of 1960 ranged from about 255 feet above MSL near the intersection of Highway 41 and Avenue 12 to about 225 feet above MSL near the corner of Road 36 and Avenue 9. As of 1936, little if any groundwater recharge to the area came from San Joaquin River Seepage. As of 1960, recharge from river seepage was limited to a localized area near the river.

Figure II-3 is a water-level elevation contour map for Spring 2001 taken from the "Hydrogeologic Investigation: Southeastern Madera County" which was prepared by Kenneth D. Schmidt & Associates in conjunction with Provost & Pritchard Engineering Group, Inc. for the District. For that study, water levels were measured in a number of normally unmeasured wells in Spring 2001 east of Highway 41. Water-level elevations were approximately 220 feet above MSL near the San Joaquin River between Road 38 and the Children's Hospital. The lowest water-level elevations recorded were about 120 feet above MSL, in the area near Avenue 12 and between Road 38 and Road 40. This reading shows a 130-foot change in groundwater elevation during the past four decades. A north to northwesterly direction of groundwater flow was indicated in the southern part of the Hydrogelogic Investigation's study area, or the region for this report. Groundwater flowed toward a large cone of depression in and to the east of the Madera Ranchos area and north of Avenue 12 (See **Figure I-1** and **Figure II-3**). Water-level elevations in this cone of depression were lower than 110 feet above MSL and the depression was north of the Rolling Hills area. West of State Highway 99 and north of the San Joaquin River, groundwater flowed northwest into the Madera Irrigation District. The Hydrogeologic Investigation concludes that the San Joaquin River, in this area, is a losing stream and is indicated to be one of the major sources of recharge by the contours and flow lines shown on **Figure II-3**.

As the groundwater levels in the area noticeably dropped, the District began to better track the production of wells within their borders through power usage records. Each of the 21 wells in the project area receives a regular pump test that is then used with electric meter records to calculate the volume pumped per month. A correlation between electric meter readings and pumpage was established, and used to track annual water production of wells for the last decade with a fair amount of accuracy. **Figure II-4** shows the private pumps and wells recorded and analyzed within the project area while **Figure II-8** shows their corresponding calculated annual productions for the years 1992 to 2001.

2. Groundwater Overdraft in the Region

a. Water-Level Changes

Through the "Hydrogeologic Study: Southeastern Madera County," water-level hydrographs were available for 15 wells in the area of the District's groundwater management plan. Water-level hydrographs were also available for about 18 additional wells with long-term records outside of the District. Rates of water-level decline during the past several decades have ranged from less than one foot per year near the San Joaquin and Fresno Rivers to almost ten feet per year in part of the interfan area at Madera Ranchos. Water level declines in the District increase with increasing distance from the San Joaquin River. For example, near Avenue 8 the average rate of decline has been about one foot per year, near Avenue 9 about two feet per year, near Avenue 10 about four feet per year, and near Avenue 11½ about five feet per year. The average rate of water-level decline in the District during the past two decades has been about three and a half feet per year.

Average water-level declines in the portions of the Madera Irrigation District served with canal water have averaged about two feet per year since the 1950's. Water-level declines in the area east of the Santa Fe Railroad tracks and north of the District have averaged about four feet per year, except in Madera Ranchos, where declines have reportedly ranged from five to ten feet per year. The average water-level decline outside of both the Madera Irrigation District and Root Creek Water District, yet in the nearby area, is indicated to have averaged about five feet per year during the past two decades.

b. Regional Sources of Recharge and Discharge

Recent water-level elevation maps for the northern portion of the Fresno urban area indicate that groundwater flows away from the San Joaquin River, to the south. There is presently little or no flow of groundwater from Fresno County into Madera County east of Highway 99. For this region, major sources of recharge are seepage of San Joaquin River stream flow, and some groundwater inflow from the west, where canal water is used in the Madera Irrigation District. Additional recharge is from seepage from Cottonwood Creek, Little Dry Creek, and Root Creek. Groundwater outflow from this area is not indicated, due to the pumping depression, and thus the main source of groundwater discharge is due to pumping wells. Seepage of San Joaquin River stream flow is indicated to be the predominant source of recharge to the District. San Joaquin River flows and consequent seepage reduced substantially after the construction of Friant Dam in the 1950's. Deep percolation of irrigation return flow where river or canal water is used for irrigation is another source of recharge. Groundwater discharge from the District is primarily by well pumpage and groundwater outflow to the northwest.

c. Calculating District Groundwater Overdraft

To estimate District overdraft, rates of water-level decline and the specific yield of the alluvium must be known. Once these factors are quantified, then the extent of groundwater overdraft can be estimated. The water-level declines in the District and the regional area have already been discussed in Section II-B.2. Miller, LeBlanc, and Bertoldi (1970) provided a graph relating the percentage of coarse-grained deposits versus the specific yield for an area south of Madera. Most specific yield values in the area ranged from 7 to 15 percent.

For this evaluation, the parts of the subsurface cross sections below the water level and above a depth of about 700 feet were categorized. Fine-grained deposits were assigned an average value of five percent and coarse-grained deposits an average value of twenty percent. Along Cross Section A-A^1 (**Figure II-5**), about 70 percent of the deposits were classified as fine-grained, and the average specific yield was estimated to be 10.5 percent. Along Cross Section B-B^1 (**Figure II-6**), about 60 percent of the deposits were classified as fine-grained, and the average specific yield was estimated to be 11 percent. The well logs used to create Sections A-A^1 and B-B^1 are shown in **Figure II-7**. For both the District and rest of the area (alluvial part only), an average specified value of 11 percent is utilized.

For the 9,234 acres in the District, the average water-level decline has been about 3.3 feet per year. The amount of groundwater overdraft is then calculated at about 3,400 acre-feet per year within the District.

3. Potential to Reduce Groundwater Overdraft

Production farming has been the economic base for this area for many years. The approximately 3,188-acre project area is almost completely developed to agriculture and planted almost exclusively with permanent trees. It is estimated (in Section III-3) that agriculture in this area consumes approximately 11,200 acre-feet of water per year through groundwater extraction. If a portion of this need could be supplied through a source that did not negatively affect the falling groundwater table, then the regional area would reap the benefit of stabilized groundwater levels. The purpose of this project is to address the identified groundwater overdraft condition through supplying surface water to a portion of the existing agricultural need in the project area when supplies are available. However, at this time there are no facilities to allow for direct or in-lieu recharge of these surface waters. A distribution system, if constructed, would allow surface supplies to be delivered and enable groundwater pumps to be turned off in the area when surface supplies are available.

4. Available Water Supply Through Existing Agreements

The District, in conjunction with its groundwater management plan, has attempted to contract for available water supplies to mitigate the declining water levels. The District has two existing agreements that build the framework for receiving surface water from the San Joaquin River. The first agreement is between the Friant Water Users Authority, Madera Irrigation District, Chowchilla Water District, and the District. This agreement specifically addressed the issue of groundwater overdraft in the District by committing to delivering floodwaters when available. The second agreement is specifically with Madera Irrigation District and structures the availability, cost, and conditions of receiving surface water.

a. Agreement Concerning Agricultural, Municipal, and Industrial Water Use Within Root Creek Water District (Executed December 30, 1999)

This agreement is between the Friant Water Users Authority, Madera Irrigation District, Chowchilla Water District, and Root Creek Water District; collectively referred to as the "District Parties". The Friant Water Users Authority (the "Authority") represents twenty-five water and irrigation districts, including Chowchilla Water District (CWD) and Madera Irrigation District (MID), who each contract with the United States Department of Interior, Bureau of Reclamation (the "Bureau") for San Joaquin River water impounded by Friant Dam and delivered through the Madera and the Friant-Kern Canals. The water districts, irrigation districts, and municipalities who have contracts to obtain water deliveries from the Friant-Kern and Madera Canals, including all Member Agencies and all additional contractors, are referred to collectively as the "Friant Contractors". MID and CWD each

contract with the Bureau for San Joaquin River water impounded by Friant Dam and delivered through the Madera Canal.

This agreement states that when Friant Contractors do not request delivery of all available San Joaquin River floodwater, the Authority, MID and CWD will use their best efforts to assist the District to obtain those unused flood flows either through Bureau 215 water purchases, temporary Class 2 contracts, water transfers or other means at the lowest prevailing rate available for water districts. These parties agree their intention is that no payment will be made to any Friant Contractors for unused flood flows other than reimbursement for payments made by a contractor to the Bureau, the Authority or the Madera-Chowchilla Water and Power Authority for that water or MID delivery charges for water delivered through its canal system to be negotiated between MID and the District. Pursuant to this the District has begun negotiations with the Bureau for a Section 215 contract and estimates that this process should be complete in the spring of 2004.

Further, the District intends to purchase surface water to supplement San Joaquin River water made available pursuant to the terms of this agreement and supplies available within the boundaries of the District. The District agrees that before purchasing supplemental water from other sources, it shall satisfy its needs from supplies available for sale by MID, to the extent and on the same terms and conditions that MID is willing to sell such water to parties other than Friant Contractors or other CVP contractors. In consideration of the District's commitment to look first to MID for purchases of supplemental water, MID agreed that the District shall have the first right of refusal to purchase any MID surface water that is available for sale outside its district (except water sold to other Friant Contractors or other CVP contractors) to the extent and on the same terms and conditions that MID is willing to sell such water to parties other than Friant Contractors or other CVP contractors.

Due to large conveyance losses and difficulty in scheduling, the District Parties agree that the San Joaquin River channel is a poor conveyance option and all parties prefer to utilize other options for delivery of water supplies to the District. The District Parties acknowledge that the District currently does not have adequate facilities for the delivery of surface water to meet its objectives. However, the most convenient way to deliver surface water to the District is through the Madera Canal and MID Lateral 6.2.

b. Agreement Between Madera Irrigation District and Root Creek Water District For The Conveyance And Sale of Water (Accepted by both parties March 18, 2002)

With the "Agreement Concerning Agricultural, Municipal, and Industrial Water Use Within Root Creek Water District" in place, MID and the District proceeded with an agreement which provides the process, availability and associated cost structure for the purchase of water by the District from MID.

This agreement states that surplus Class 2 waters will be made available by MID for purchase by the District pursuant to an annual $100,000 option upon the occurrence of:

1) A determination by MID based on June 1 or later water supply conditions, that CVP Class 2 water available to MID, in combination with other supplies available to MID, has resulted in the ability of MID to transfer water to the District without impacting current or future deliveries to MID agricultural customers. (CVP Class 2 water is defined within the agreement as "that supply of water which can be made available pursuant to MID's Long-term CVP Water Service Contract for delivery from Millerton Lake and the Madera Canal, in addition to the supply of Class 1 Water. Because of its uncertainty as to the availability and time of occurrence, such water will be undependable in character and will be furnished only if, as, and when it can be made available, as determined by the Bureau.")

2) If USBR issues a notice of reduced allocation of CVP Class 2 water after delivery of surplus Class 2 water by MID to the District is complete, the District shall render replacement of water to MID from other water supply sources within one year of date of pre-reduction delivery. (Surplus Class 2 water is defined within the agreement as "water made available to the District during a condition, as determined solely by MID, wherein the MID supply of CVP Class 2 water, in combination with other water supplies available to MID, has resulted in the ability of MID to transfer water to the District without impacting current or future deliveries of water to MID agricultural customers.")

3) Uncontrolled Season Class 2 water will be available for purchase by the District pursuant to an annual option by the District only upon MID determination that there is water in excess of MID's ability to divert and deliver water to MID landowners, recharge facilities or storage facilities, including those facilities that may be developed in conjunction with the District, during the uncontrolled season. (The Uncontrolled Season is defined within the agreement as "that period of time, typically occurring during the spring months of March through May, when the Bureau has determined that there is a need to evacuate water from Millerton Lake in order to prevent or minimize a spill or meet flood control criteria, and has noticed Friant long-term water service contractors that such condition exists. During an Uncontrolled Season, water taken by a Friant long-term water service contractor is in addition to the water supply declaration for the balance of the contract water year.")

This agreement also allows for the conveyance of flows purchased from the Bureau or other sources.

The conveyance facility for surface waters in this contract is the Madera Canal. This canal, constructed by the USBR, extends from Friant Dam to the Chowchilla River for the purposes of flood control and delivering water to MID and CWD. The Madera Canal is operated by the Madera Chowchilla Water and Power Authority (MCWPA), pursuant to the "Cooperative Agreement Among the United States of America, the Madera Irrigation District, and the Chowchilla Water District Providing for Operation and Maintenance of Madera Canal and Associated Public Works", dated September 20, 1985, and the Joint Exercise of Powers Agreement by and between MID and CWD. Water is turned out of the Madera Canal to MID Lateral 6.2. Final delivery would be made at the existing delivery structure from Lateral 6.2 located at Station 129+32 ("Turnout 1-A"), or such structure at that location as modified to increase its diversion capacity.

Under this agreement, the District is entitled to the use of Reserved Capacity in Lateral 6.2 of 25 cfs from May 1 to August 31 of each year, and 50 cfs from September 1 of each year until April 30 of the following year.

The fee schedule for this water is based on the before mentioned $100,000 annual option for a maximum volume of 10,000 AF. This option is to be paid in full on February 1st of a given year that the District desires to receive water from MID. Each acre-foot of water will then cost an additional $50 plus the CVP contract rate (~$10/AF at the time the contract was signed) and any other additional charges accrued by MID for the water. At the time of this report, conservative estimates would put the price of this Class 2 water at around $85/AF.

C. DATA COLLECTION

1. Existing Irrigation System Capacity

The initial work of this feasibility study consisted of identifying the existing irrigation systems within the project area and their estimated capacities. Since wells are currently the only source of water for the area, all the wells in the project area were surveyed and their pertinent information collected into a database for the District.

From regular pump tests, the private landowners have a reasonable idea of the regular production for their wells. This information was also gathered from District records.

2. Irrigated Water Demand

Due to the lack of water meter records on the wells in the project area, two different methods to develop water demand estimates were used. For both methods the cropped acreage records from the 1995 Department of Water Resources crop database were used. The District then reviewed and verified these records.

a. Estimated Pumpage

In the absence of direct flow records, power usage records were used to estimate pumpage. **Figure II-4** is a map of the 23 wells within the project area, while **Figure II-8** shows a summary of District records for the wells within the Project Area from 1992-2001. The average record of pumped water by the wells in the project area for these years is approximately 8,900 acre-feet of groundwater. This value will be shown to be much larger than the estimated project average annual yield.

b. Cropped Water Demand

As was stated before, production farming has been the economic base for this area for many years. The approximately 3,188-acre project area is almost completely developed to agriculture and planted almost exclusively with production orchards. The Department of Water Resources, in their 1995 crop survey, classifies the majority of these trees as citrus, or deciduous fruits and nuts. In 2002, however, the District lists the current crops within the project area as almonds, citrus, pistachios, and olives.

TABLE II-2

Project Area Cropped Acreage by Section (Acres)

T	R	S	Almonds	Citrus	Olives	Other	Pistachios	Total
11	20	32	-	216	100	-	-	316
		33		-	-	-	-	158
Subtotal			***0***	***216***	***100***	***0***	***158***	***474***
12	20	4	-	-	234	-	-	234
		5	-	80	-	-	524	604
		6	-	260	259	-	95	614
		7	120	275	100	34	110	639
		8	-	245	205	-	97	547
		9	-	38	-	-	38	76
Subtotal			***120***	***898***	***798***	***34***	***864***	***2,714***
Total			**120**	**1,114**	**898**	**34**	**1,022**	**3,188**

Table II-2 shows the cropped acreage sorted by Township, Range and Section. In **Table III-1**, the cropped acreage was applied to average values for monthly and annual water demand. This analysis will be described more fully in Section III-3 as it became a bounding factor to project yield, and a determining factor to project area. However, in Section III-3, the average annual water demand for the project area is estimated to be approximately 11,200 acre-feet, given an average water demand of roughly 3.5 acre-feet per acre over the project area. This estimate roughly corresponds to the results of the previous groundwater pumpage values created through District power records. (**Figure II-8**)

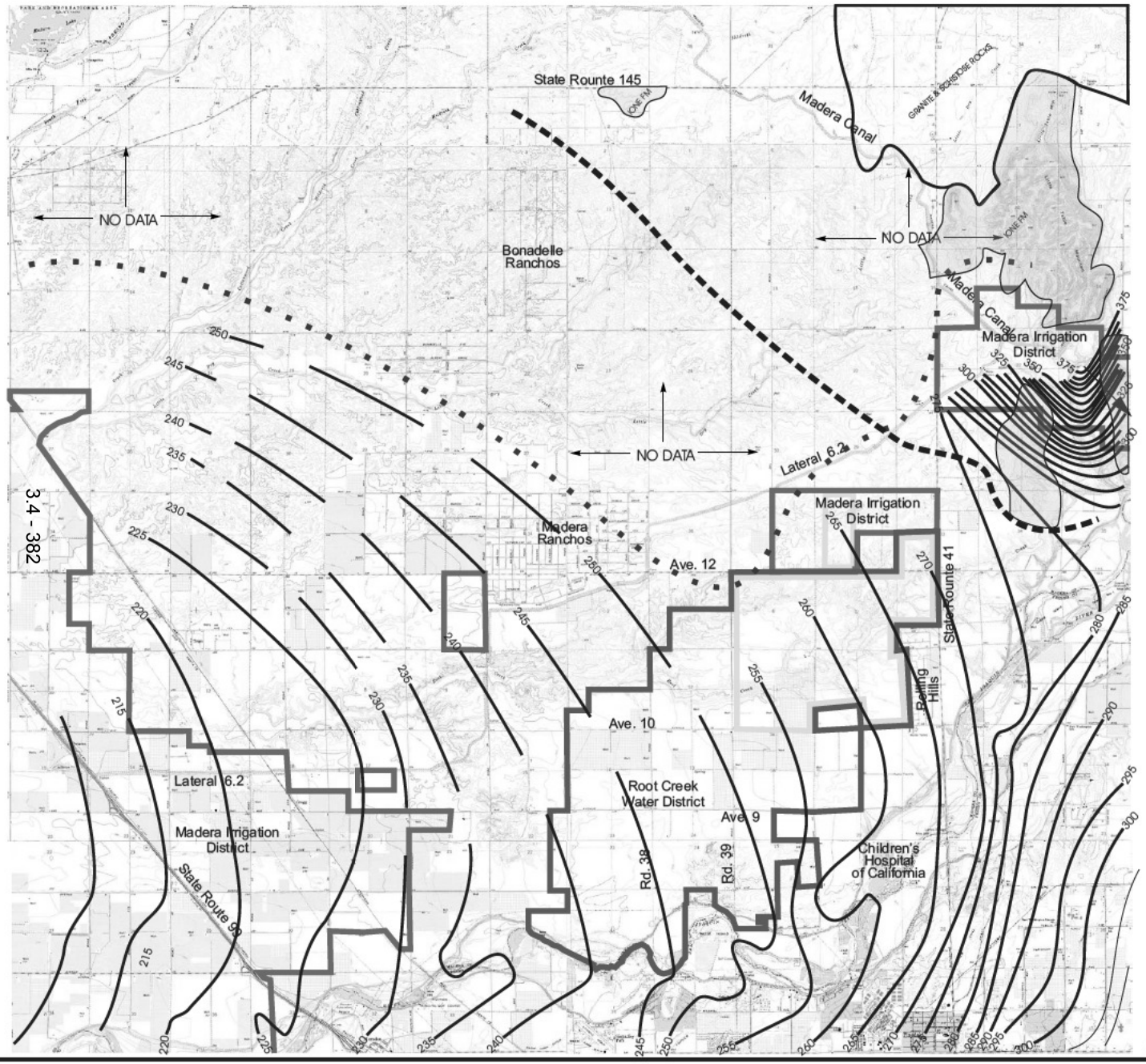


FIGURE II-1

REGIONAL AREA

GROUNDWATER-LEVEL ELEVATIONS
FALL 1936

LEGEND

- MADERA IRRIGATION DISTRICT BOUNDARY
- DISTRICT BOUNDARY/ STUDY AREA
- WATER LEVEL ELEVATIONS
- GROUNDWATER FLOW DIRECTION
- APPROX. LOCATION OF ALLUVIAL-HARDROCK BOUNDARY
- PROJECT AREA

N

MAPPING - UNITED STATES GEOLOGICAL SURVEY

EST. 1969
PROVOST & PRITCHARD
ENGINEERING GROUP

DATE March 26, 2003
JOB # 12490203-REP
DWG # Fig II-1

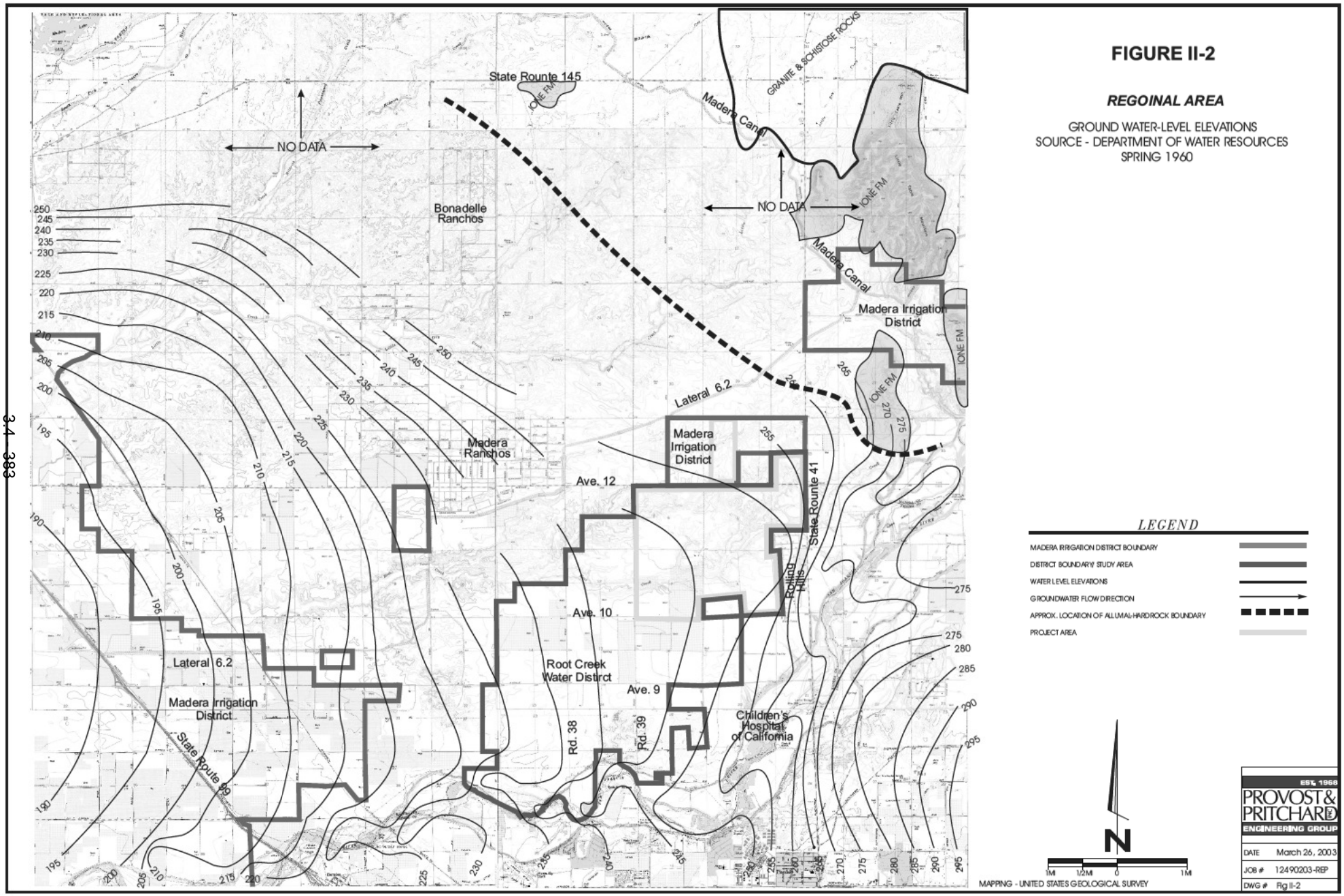


FIGURE II-2
REGOINAL AREA
GROUND WATER-LEVEL ELEVATIONS
SOURCE - DEPARTMENT OF WATER RESOURCES
SPRING 1960
State Route 145
IONE FM
GRANITE & SCHISTOSE ROCKS
Madera Canal
NO DATA
Bonadelle Ranchos
Madera Irrigation District
Lateral 6.2
Madera Ranchos
Ave. 12
Ave. 10
Ave. 9
Root Creek Water District
Rd. 38
Rd. 39
State Route 41
Rolling Hills
Children's Hospital of California
State Route 99
LEGEND
MADERA IRRIGATION DISTRICT BOUNDARY
DISTRICT BOUNDARY/ STUDY AREA
WATER LEVEL ELEVATIONS
GROUNDWATER FLOW DIRECTION
APPROX. LOCATION OF ALLUVIAL-HARDROCK BOUNDARY
PROJECT AREA
N
1M 1/2M 0 1M
MAPPING - UNITED STATES GEOLOGICAL SURVEY
EST. 1968
PROVOST & PRITCHARD
ENGINEERING GROUP
DATE March 26, 2003
JOB # 12490203-REP
DWG # Fig II-2

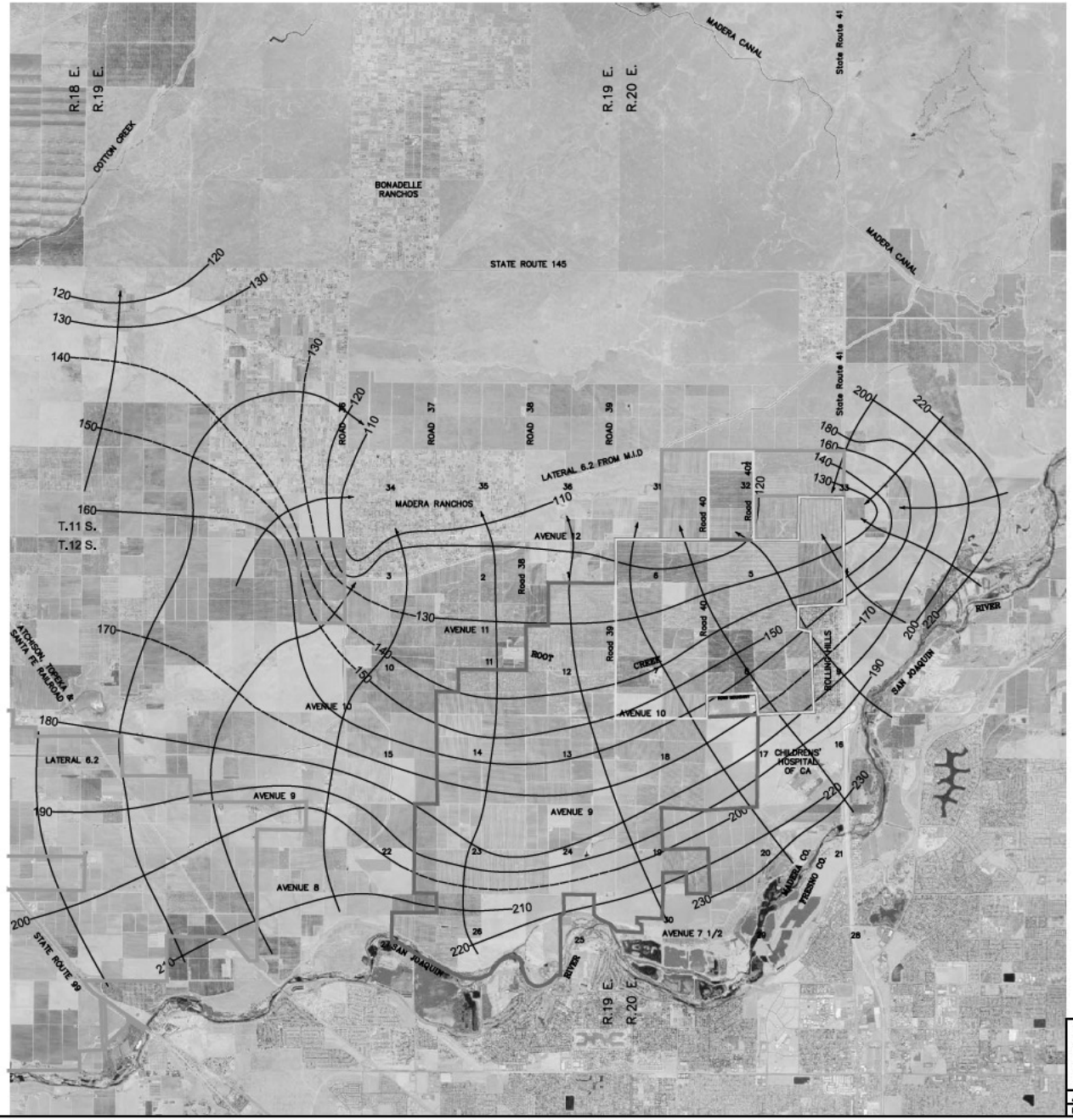


FIGURE II-3

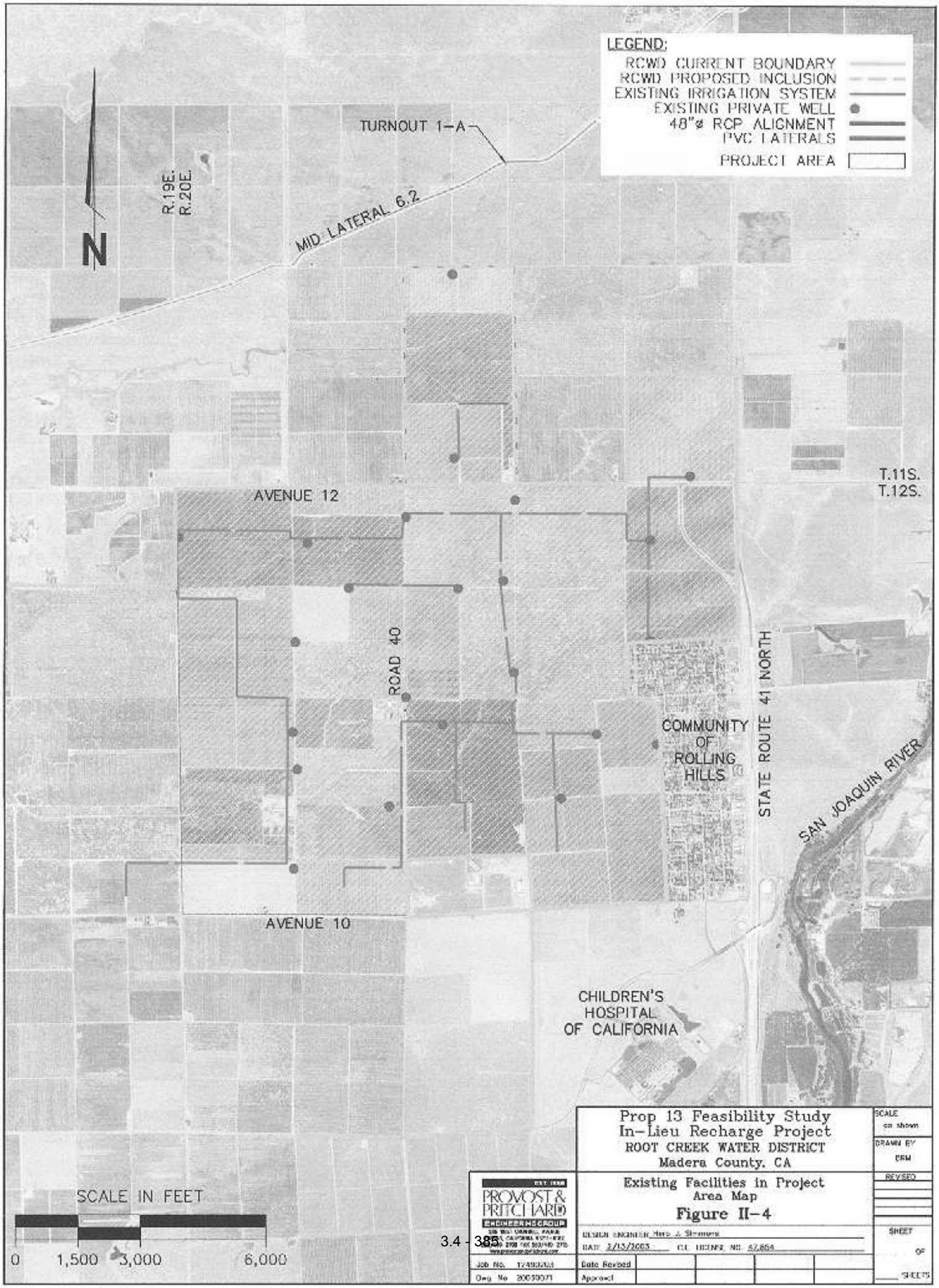
REGIONAL AREA
GROUNDWATER-LEVEL ELEVATIONS AND FLOW DIRECTION FOR SPRING 2001

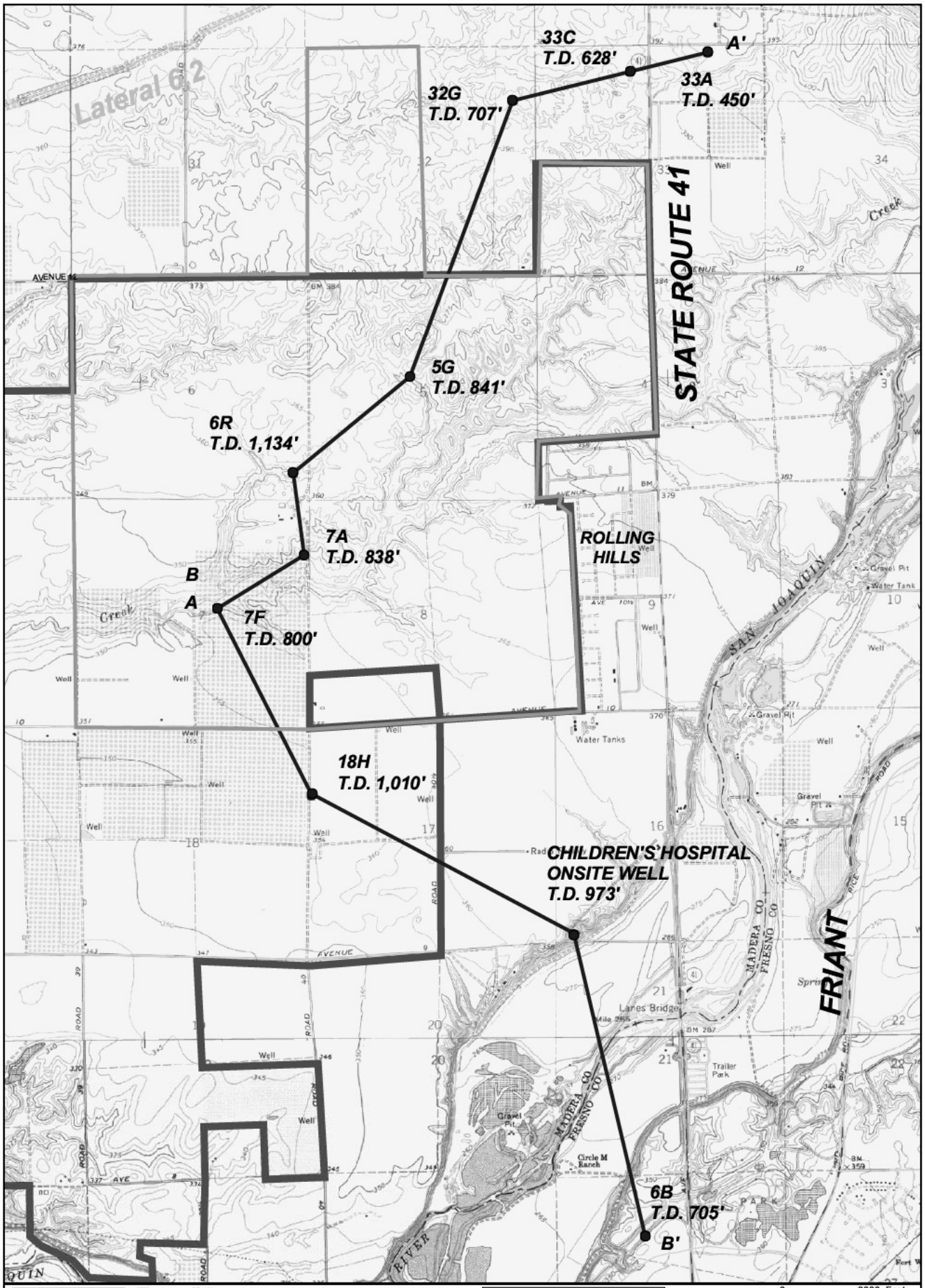
LEGEND

- ROOT CREEK WATER DISTRICT
- STUDY AREA BOUNDARY
- MADERA ID
- 200 — WATER LEVEL ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- GENERALIZED DIRECTION OF GROUNDWATER FLOW

GRAPHIC SCALE

PROVOST & PRITCHARD	Hydrogeologic Investigation Root Creek Water District Madera County, CA	SCALE: AS SHOWN DRAWN BY: DVS
	Water Level Elevations for Spring 2001 Plate 14	REVISED
	DESIGN ENGINEER Brian E. Ehlers DATE _____ C.E. LICENSE NO. _____	SHEET ___ OF ___ SHEETS
Job No. 14340101-GW	Date Revised	
Dwg. No. 20010219	Approval	


LEGEND:
RCWD CURRENT BOUNDARY
RCWD PROPOSED INCLUSION
EXISTING IRRIGATION SYSTEM
EXISTING PRIVATE WELL
48"ø RCP ALIGNMENT
PVC LATERALS
PROJECT AREA
N
R.19E.
R.20E.
TURNOUT 1-A
MID LATERAL 6.2
T.11S.
T.12S.
AVENUE 12
ROAD 40
COMMUNITY OF ROLLING HILLS
STATE ROUTE 41 NORTH
SAN JOAQUIN RIVER
AVENUE 10
CHILDREN'S HOSPITAL OF CALIFORNIA
SCALE IN FEET
0
1,500
3,000
6,000
Prop 13 Feasibility Study
In-Lieu Recharge Project
ROOT CREEK WATER DISTRICT
Madera County, CA
Existing Facilities in Project Area Map
Figure II-4
PROVOST & PRITCHARD
ENGINEERING GROUP
SCALE as shown
DRAWN BY DRW
REVISED
SHEET
OF
SHEETS



EST. 1968
PROVOST & PRITCHARD
ENGINEERING GROUP

Figure II-7
Well Locations for Geologic Cross Section
Root Creek Water District

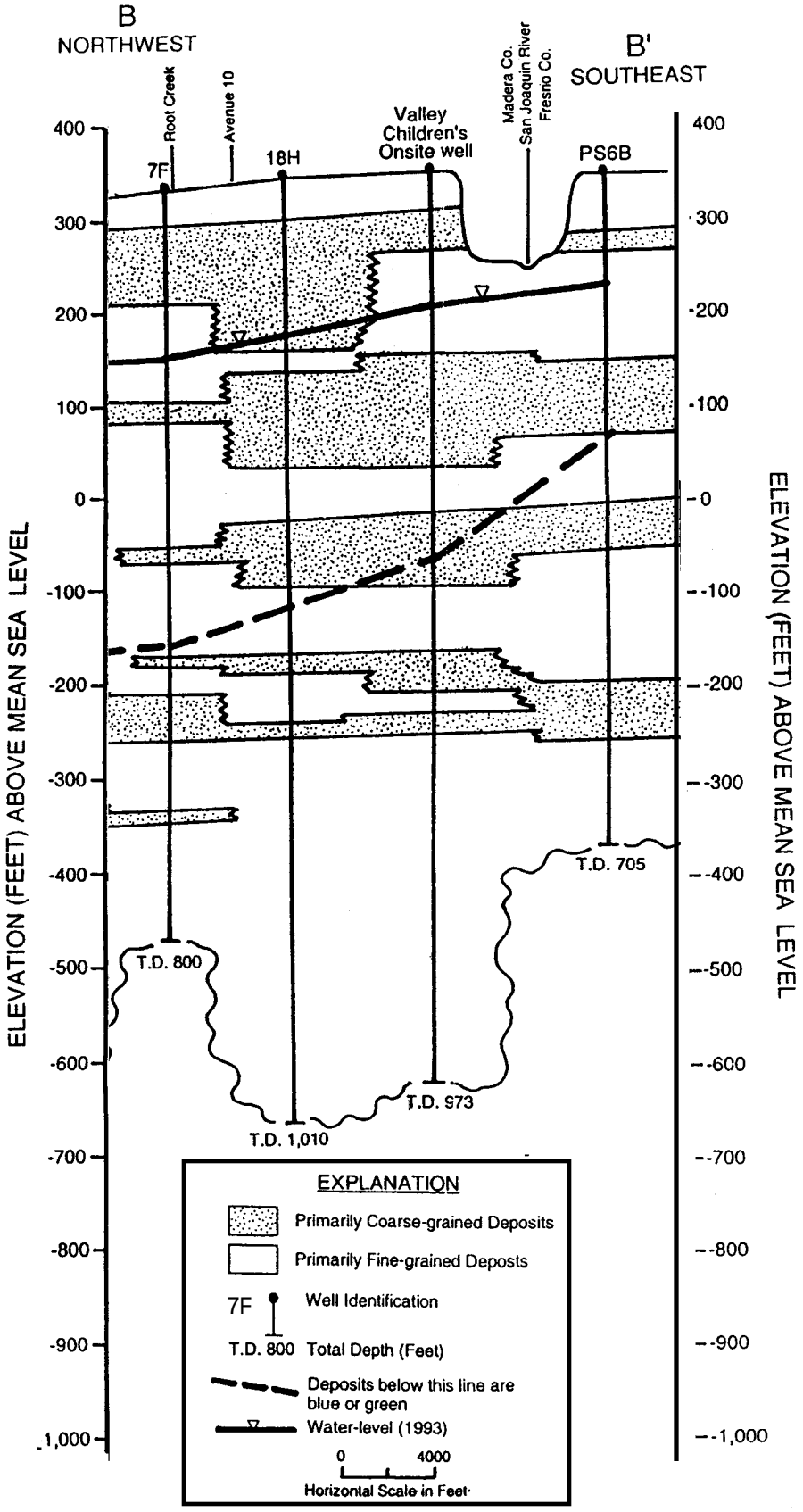
z:\clients\rootcreekwd_1249\12490203\xsections.apr

- WELL LOCATIONS (T.D. = TOTAL DEPTH)
- LINE OF CROSS SECTION
- ROOT CREEK WD
- PROJECT BOUNDARY

0 2000 Feet
1:24000
N

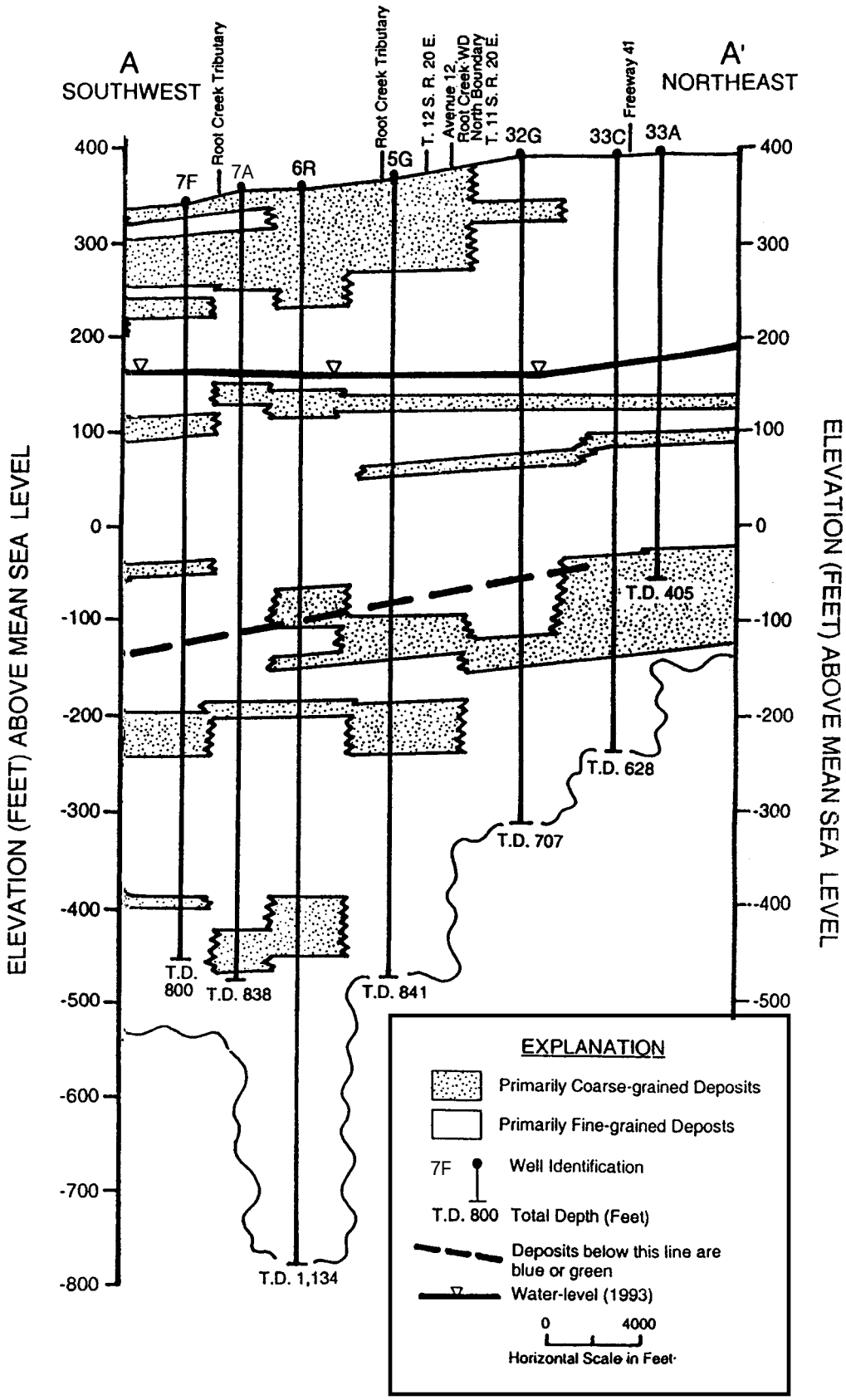
Map printed 3/27/2003

Figure II-6



SUBSURFACE GEOLOGIC CROSS SECTION B – B'

Figure II-5



SUBSURFACE GEOLOGIC CROSS SECTION A – A'

FIGURE II-8

ROOT CREEK WATER DISTRICT
IN-LIEU GROUNDWATER RECHARGE FACILITIES PROJECT
FEASIBILITY STUDY

GROUNDWATER PUMPAGE IN PROJECT AREA FROM POWER USAGE

Pump ID #	HP	1992 (AF)	1993 (AF)	1994 (AF)	1995 (AF)	1996 (AF)	1997 (AF)	1998 (AF)	1999 (AF)	2000 (AF)	2001 (AF)
16	75	715	629	653	369	451	530	301	593	503	786
17	100	602	692	651	509	899	612	611	758	567	623
24	50	221	389	345	280	312	299	142	179	194	27
50	75	258	212	283	361	258	212	211	193	303	297
63	75	413	389	407	28	418	466	223	145	165	872
65	100	710	512			0	6	154	377	173	209
68	75	423	478	388	536	745	590	268	540	400	435
70	60	241	176	113	173	254					
103	100	350	309	328	266	368	581	316	362	403	411
104	100	579	573	529	460	686	512	284	672	569	527
105	100	790	323		300	405	332	198	252	119	66
113	100	623	626	594	523	505	355	449	444	578	484
123	75	158	168	175	143	237	286	69	113	195	266
129	60	525	561	656	104	207	524	191	272	358	443
130	75	754	792	748	466	598	341	309	334	575	575
136	100	617	571	753	655	583	665	417	343	346	346
141	100	1,055	828	899	480	588	691	308	391	253	743
142	100	414	354	414	317	434	450	204	241	287	377
153	200		1,394	1,486	1,323	690	1,040	740	760	1,271	672
156	200		1,441	879	843	1,136	1,082	529	495	953	550
169	200								72	151	550
Averages	101	450	544	490	388	466	456	282	359	398	441
Subtotal - Groundwater		9,449	11,419	10,300	8,138	9,776	9,573	5,922	7,538	8,363	9,257

Notes:

/1 Since 1998 water deliverd to the community of Rolling Hills is shown in gray shaded/highlighted area.

/2 The year 2000 acre footage value for Pump#136 was obtained from Madera County.

III. SITE SELECTION

1. Alignment

From existing District agreements, the most logical conveyance route for the delivery of surface water to the District had been identified. The San Joaquin River, as stated previously, presented large seepage losses and difficulty in varying desired flow. On the other hand, the route from Friant Dam through the Madera Canal to Lateral 6.2, and then through a turnout at or near the current location of Turnout 1-A provides existing nearby facilities, low seepage rates, and available capacity with willing partners. The existing turnout at 1-A was hydraulically evaluated and found to be a restriction to the amount of water available to this project. For that reason a new larger turnout is proposed adjacent to the existing Turnout 1-A.

Turnout 1-A is located approximately 1.4 miles north of the current District boundary. The District is currently negotiating with MID to annex approximately 320 acres that is part of MID. After this annexation and de-annexation occurs, Turnout 1-A will only be approximately 0.4 miles from the District boundary. With this in mind the District instructed that the alignment would begin at the new Turnout location and proceed south until it entered the District boundary. The District will not acquire the 0.4 miles that is outside their boundary. Instead, the landowner is granting the District an easement in exchange for the controlling interest in the existing Turnout 1-A.

Three possible alignments were proposed and analyzed as part of the feasibility study. The three analyzed alignments are shown in **Figure III-1**. Each alignment was compared on several criteria, and the following discussion is a summary of this analysis.

Alignment Option #1 was the option chosen as the project alignment. This alignment was superior to the other two in minimizing damage to existing fields, minimizing lengthy areas of deep and costly excavation, while at the same time maximizing the use of existing pump stations and pipelines.

Option #1 has the same ground surface profile through the first mile and a half as Option #2. Both have a generally gentle and consistent negative grade along an approximately thirty-foot wide dirt road. Option #3, however, runs along a much narrower dirt road, and has a more problematic grade. As Option #3 turns west and then south, the grade is flatter than the other options. This, along with the narrowness of the existing dirt road would have required deep excavations and a subsequently large impact on the surrounding orchards. This was particularly undesirable since half of the lands affected would not be within the District and would not be served with project water. For these reasons, Alignment Option #3 was not chosen.

At Avenue 12, Options #1 and #2 diverge. Option #2 continues south along an undulating dirt road near to some of the largest production wells in the area. This alignment was desirable due to proximity of some large wells, but because of the distance to the wells on the western side of the project area became problematic. Option #2 provides excellent coverage to the eastern half of the service area, while requiring several lateral pipelines and new booster stations to service the western half

of the service area. Also, Option #2 would require the removal of more agricultural trees than Option #1. Option #1 is along a two lane paved road that is wider than the dirt road along Option #2. The lesser operation and maintenance considerations for Option #1 were favorable as well as construction impacts to landowners. For these reasons Alignment Option #1 was chosen. **Figure III-2** is a location map showing the Project Alignment and the associated lands to be served surface waters.

Aerial photography and a topographic survey of the project area were obtained to initiate the engineering design process. The aerial photography was geo-referenced and flown by Air Photo USA in August of 2000. Aerial photographs for Madera County were not available, but the flight of Fresno County overlapped into Madera County far enough to encompass the project area. The aerial photos were used in the preliminary decision making process concerning the alignment, and aided in the effort to record existing irrigation facilities. The topographic survey of the alignment consisted of using a GPS survey to set control and then perform a topographic survey using this control. After the GPS survey was complete, the aerial photos were geo-rectified to the survey using NAD 27, Zone 4, feet.

Additional information about land ownership, environmental impacts, and utility right-of-way was also researched and analyzed. Hydraulic calculations were preformed to size the transmission pipeline, as well as lateral pipelines that connect to the existing systems. Cost effective control systems were researched in an attempt to make the project both reliable and affordable. The result of these efforts was the engineering design found in **Appendix B**.

2. Environmental Impact Analysis

Environmental impacts were reviewed by the District and found to be only beneficial. The alignment is over developed agricultural ground and does not support any endangered species. This project does not cross any navigable waters of the United States nor are there any wetlands present in the area. Due to the District's status as a government agency, they will be required to fulfill their responsibilities under the California Environmental Quality Act. The District plans to prepare and submit a negative declaration to the state clearinghouse.

3. Analyzing Seasonal Crop Demand

It should be noted that the category of acreage named "other" in **Table II-1** was ignored in this analysis. Since this is a project to supply agricultural demand, this acreage, which is mostly farm equipment staging areas, was removed from the analysis for monthly crop demand. Therefore, the total acreage from **Table II-1** and **Table III-1** are slightly different.

Table III-1

Monthly Crop Demand

Using the average annual precipitation from the NOAA weather station at Fresno, Et(o) from CIMIS station at Fresno, and factoring an 85% micro-sprinkler irrigation efficiency.

	Water Demand for Specified Crops (Inches)				Cumulative monthly water demand for study area (AF)
Month	**Pistachios**	**Citrus**	**Olives**	**Almonds**	
January	0.00	0.00	0.00	0.00	**0**
February	0.00	0.00	0.00	0.00	**0**
March	0.00	1.53	2.08	1.38	**312**
April	0.77	3.91	4.81	4.36	**832**
May	6.08	5.20	6.40	6.72	**1,547**
June	10.45	5.96	7.33	8.25	**2,074**
July	11.84	6.47	7.96	8.95	**2,293**
August	10.46	5.71	7.03	7.91	**2,026**
September	6.45	4.04	4.98	5.16	**1,349**
October	2.24	2.28	2.90	2.27	**642**
November	0.00	0.69	0.98	0.00	**137**
December	0.00	0.00	0.00	0.00	**0**
Annual Water Demand in inches	48.3	35.8	44.5	45.0	**11,212**
Cropped Acreage in Study Area	**1,022**	**1,114**	**898**	**120**	
Annual Water Demand per Crop (AF)	**4,112**	**3,322**	**3,328**	**450**	**11,212**

Given the cropped acreage presented in **Table II-1**, an estimate of monthly water demand was needed to determine how much water could annually be applied to the project area. The most representative CIMIS station for the project area is the station at Fresno. Likewise, normal monthly precipitation data from the NOAA weather station at Fresno was used to reduce the average Et(o) numbers from CIMIS and calculate the crop consumptive use without precipitation. These values were then increased to reflect an assumed micro-sprinkler irrigation efficiency of eighty-five percent. The summary of this analysis is presented in **Table III-1**.

These values then become one source of the project limitations in a final recharge simulation that can be reviewed in **Figure III-3** and **Figure III-4**.

4. Methodology and Results of Estimating Water Supplies

a. Flows Available From MID

This discussion, found previously in Section II-4b (page 18), describes the agreement with MID. Based on the terms in the contract, a review of the past hydrology was performed to determine when surplus Class 2 water would be available for purchase from MID.

b. Section 215 Water Available from San Joaquin River

Section 215 was historically estimated using the general guideline that when San Joaquin River flows out of the outlet gates are greater than 500 cfs, floodwater is available. This criterion was applied to the period of 1953 to 2002 to establish a simulation of operations for the project. This application of criterion showed the annual average of water available to the project given their existing agreements for flood released surface water.

c. Results

Figure III-3 shows a summary of available flows from MID and the San Joaquin River. Upon inspection of this figure, it can be seen that these sources of water are frequently available at the same time. For the operations of this project it is assumed that if floodwater were available, it would be taken prior to the purchase of waters from MID. The primary reasoning for this assumption is the price difference between the two sources. At the writing of this document, Section 215 water costs approximately $30 per acre-foot while the MID supply costs approximately $85 per acre-foot.

Therefore, in **Figure III-3** when Section 215 is available, that supply is shaded light blue. It can be seen that in most years the amount of water available is thousands of acre-feet. Given the small amount of water monthly needed during these flooding conditions, it can be assumed with a fairly high degree of certainty that waters will be available given the current demands on this type of water. During above average water years when Section 215 is not declared, and when MID has water available for the District to purchase, these water supplies are shaded light yellow. This source, although much more expensive than the first, can be scheduled later in the growing season when Section 215 rarely occurs. In particular, the months of July through October yield a large percentage of annual project yield.

Figure III-3 shows available supplies for the two different types of water. **Figure III-4** shows the available supply distributed through the project. At the top of **Figure III-4** there are two rows of project limitations shaded gray. The two limitations are the ag demand and the conveyance capacity for each month. During the first five months in the year, the ag demand is the limiting factor in supply distributed through the project. However, from June to August the limiting factor changes to conveyance capacity. Then from September to December the limiting factor changes back to ag demand as the growing season ends for most crops. **Table III-2** summarizes this analysis, showing that given the assumed project limitations, the project yields an average annual 4,190 acre-feet of surface water supplied to existing agricultural crops.

Table III-2

Simulated Recharge from In-Lieu Recharge Project (Acre-feet)

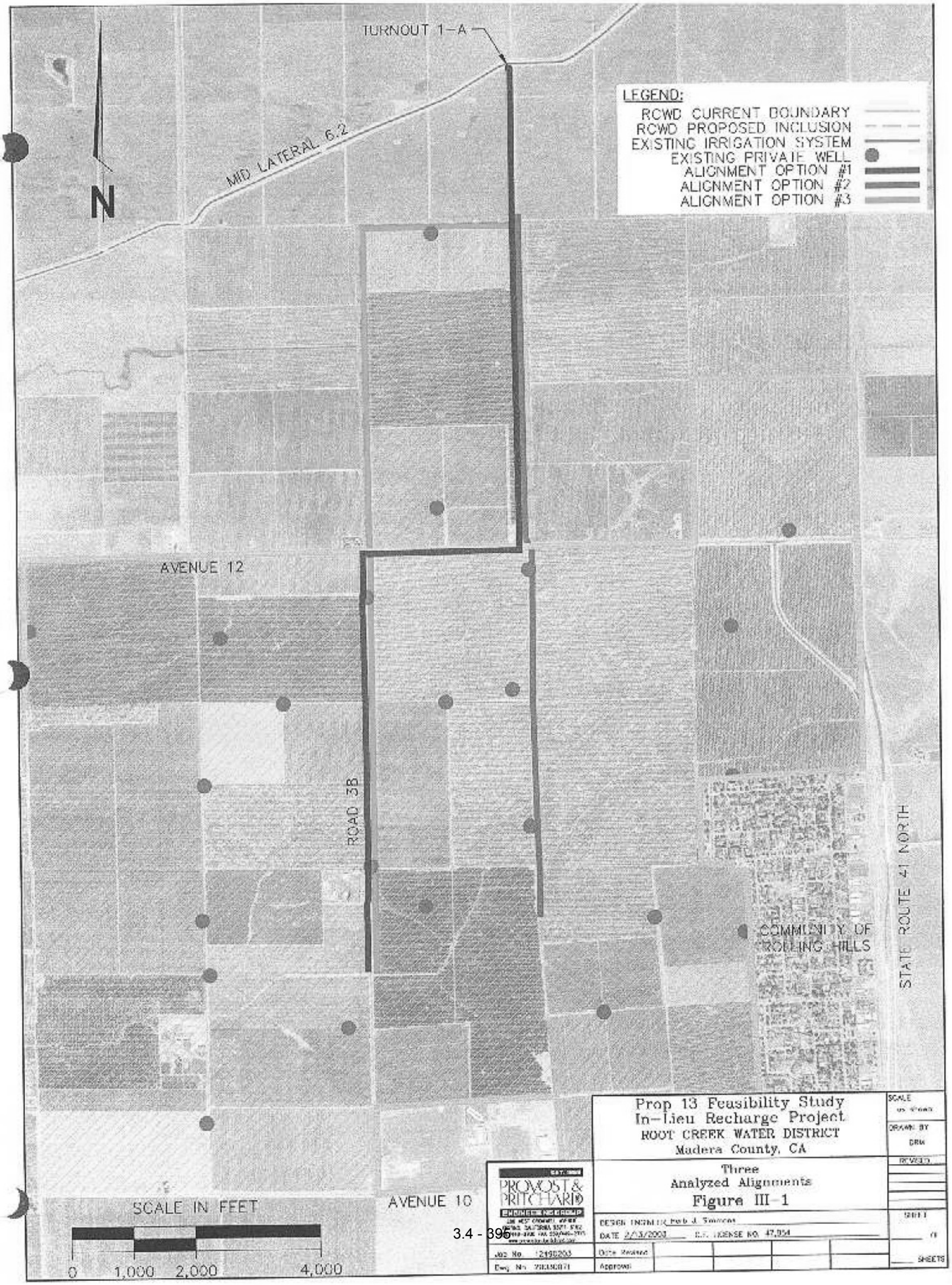
Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Average Annual
0	0	150	392	713	712	645	639	594	282	63	0	**4,190**

At the bottom right of **Figure III-4** there are several calculated numbers. Starting at the bottom of the list, the average annual water cost per acre-foot is $58. This number is calculated by summing the total amounts of both Section 215 and Class 2 water used by the project, multiplying them respectively by their water costs, and then dividing the total of those numbers by the total amount of water used by the project over the fifty years. Then moving up the list, there are the average annual water amounts and costs for both Section 215 and Class 2 supplies. Finally on top is the average annual water amount and cost for the project.

The final project simulation, summarized in **Table III-2**, shows that for the period considered, the average annual surface water deliveries made to the project are approximately 4,190 acre-feet. This means that the project can beneficially supply nearly 37% of the total agricultural water demand for the area, and that the estimated annual amount of reduction in groundwater overdraft from this project will address more than the estimated annual overdraft contribution for the District for the regional area.

5. Project Capacity

It was determined early in the analysis that the 3,188-acre project area is irrigated using drip irrigation and pressurized emitters. The emitters used in this area are designed for a flow rate of six gallons per hour, and there is one for every tree. Knowing the current cropping of the District, the tree spacing of the different crops planted, and the number of irrigation sets run at one time, it was calculated that the facilities for this project required a 45 cfs maximum flow rate. This rate would allow the in-lieu recharge facilities to deliver water to every available irrigation system in the project area while each is taking as much water as currently possible. Given the maximum flow rate, a 48-inch diameter reinforced concrete pipe was chosen as the mainline for the system. This choice was then analyzed in accordance with the topography provided by a GPS survey of the alignment to ensure adequate hydraulic gradient given desired connection points and physical restrictions.


TURNOUT 1-A
MID LATERAL 6.2
N
LEGEND:
RCWD CURRENT BOUNDARY
RCWD PROPOSED INCLUSION
EXISTING IRRIGATION SYSTEM
EXISTING PRIVATE WELL
ALIGNMENT OPTION #1
ALIGNMENT OPTION #2
ALIGNMENT OPTION #3
AVENUE 12
ROAD 3B
COMMUNITY OF ROLLING HILLS
STATE ROUTE 41 NORTH
AVENUE 10
SCALE IN FEET
0
1,000
2,000
4,000
Prop 13 Feasibility Study
In-Lieu Recharge Project
ROOT CREEK WATER DISTRICT
Madera County, CA
Three
Analyzed Alignments
Figure III-1
PROVOST & PRITCHARD
ENGINEERING GROUP
SCALE
DRAWN BY
DRW
REVISED
DESIGN ENGINEER
DATE
C.E. LICENSE NO.
SHEET
SHEETS
Job No.
Dwg. No.
Date Revised
Approved

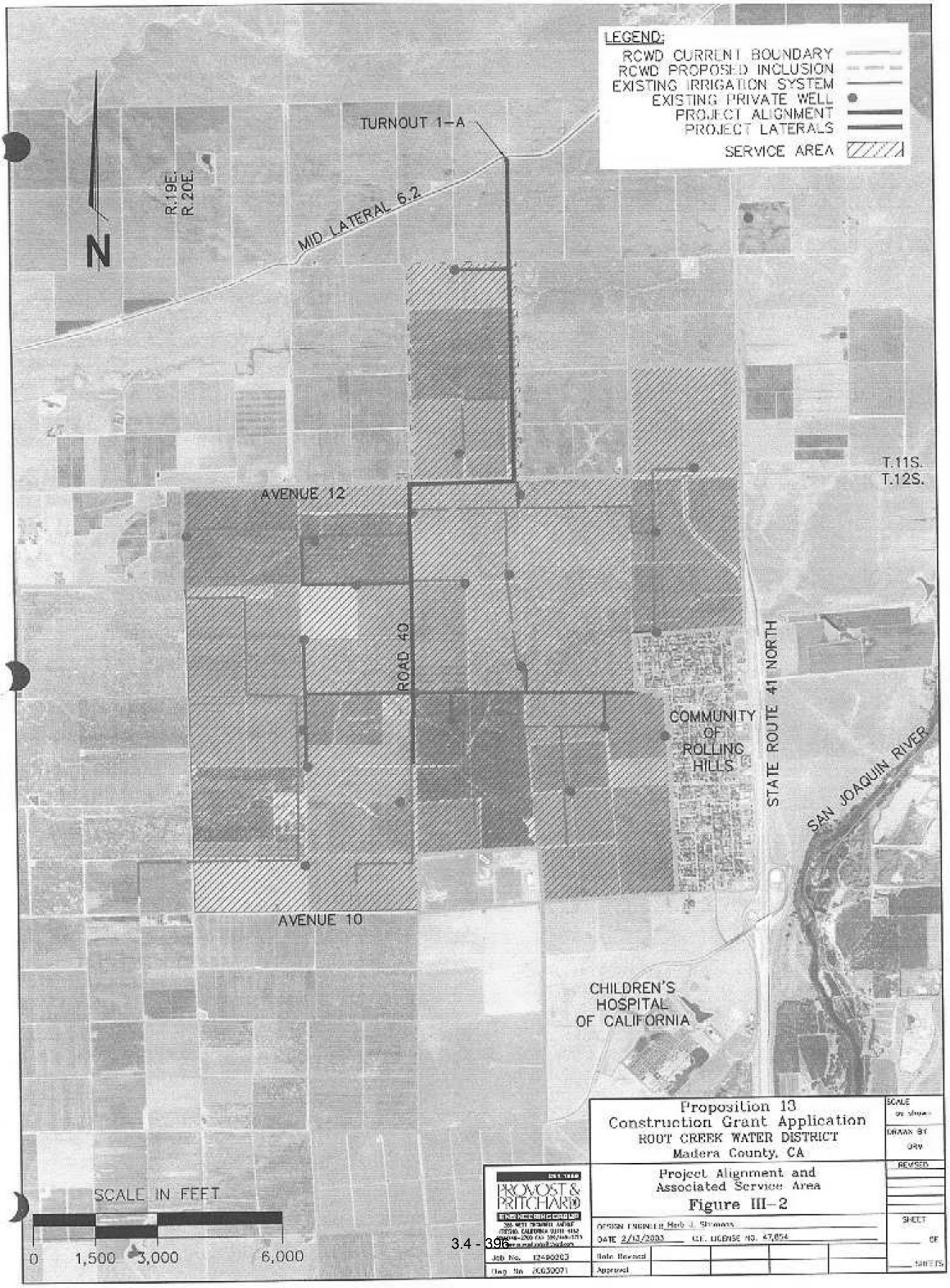

LEGEND:
RCWD CURRENT BOUNDARY
RCWD PROPOSED INCLUSION
EXISTING IRRIGATION SYSTEM
EXISTING PRIVATE WELL
PROJECT ALIGNMENT
PROJECT LATERALS
SERVICE AREA
TURNOUT 1-A
MID LATERAL 6.2
R.19E.
R.20E.
N
T.11S.
T.12S.
AVENUE 12
ROAD 40
COMMUNITY OF ROLLING HILLS
STATE ROUTE 41 NORTH
SAN JOAQUIN RIVER
AVENUE 10
CHILDREN'S HOSPITAL OF CALIFORNIA
SCALE IN FEET
0
1,500
3,000
6,000
Proposition 13
Construction Grant Application
ROOT CREEK WATER DISTRICT
Madera County, CA
Project Alignment and
Associated Service Area
Figure III-2
PROVOST & PRITCHARD
ENGINEERING GROUP
DESIGN ENGINEER Herb J. Stevens
DATE 2/13/2003
C.E. LICENSE NO. 47,054
Job No. 12490203
Dwg. No. 20030071
Date Revised
Approved
SCALE
DRAWN BY
REVISED
SHEET
OF
SHEETS

FIGURE III-3

ROOT CREEK WATER DISTRICT
IN-LIEU GROUNDWATER RECHARGE FACILITIES PROJECT
FEASIBILITY STUDY

Available Water Supply for Project
Section 215 Water and MID Surplus Class II
(Acre-Feet)

Year in Simulation	Calendar Year	Jan (Conveyance max 3069 AF) (Ag Demand 146 AF)			Feb (Conveyance max 2772 AF) (Ag Demand 187 AF)			Mar (Conveyance max 3069 AF) (Ag Demand 493 AF)			Apr (Conveyance max 2970 AF) (Ag Demand 865 AF)		
		215	Class II	Total	215	Class II	Total	215	Class II	Total	215	Class II	Total
1	1953	0	0	0	7,012	0	7,012	24,768	0	24,768	21,194	0	21,194
2	1954	0	0	0	2,424	0	2,424	0	0	0	452	0	452
3	1955	0	0	0	0	0	0	0	0	0	0	0	0
4	1956	313,869	0	313,869	210,290	0	210,290	97,438	0	97,438	70,329	0	70,329
5	1957	0	0	0	0	0	0	0	0	0	0	0	0
6	1958	0	0	0	0	0	0	67,443	0	67,443	405,759	0	405,759
7	1959	0	0	0	0	0	0	0	0	0	0	0	0
8	1960	0	0	0	0	0	0	0	0	0	0	0	0
9	1961	0	0	0	0	0	0	0	0	0	0	0	0
10	1962	0	0	0	0	0	0	0	0	0	0	0	0
11	1963	0	200	200	0	200	200	0	500	500	562	500	1,062
12	1964	0	200	200	0	200	200	0	500	500	0	500	500
13	1965	0	3,069	3,069	0	2,772	2,772	0	0	0	0	0	0
14	1966	0	0	0	0	0	0	0	0	0	0	0	0
15	1967	6,597	200	6,797	55,745	200	55,945	0	500	500	223,541	500	224,041
16	1968	0	3,069	3,069	0	2,772	2,772	0	0	0	0	0	0
17	1969	72,374	200	72,574	385,562	200	385,762	469,554	500	470,054	257,830	500	258,330
18	1970	10,328	3,069	13,397	28,727	2,772	31,499	0	0	0	0	0	0
19	1971	0	0	0	0	0	0	0	0	0	0	0	0
20	1972	0	0	0	0	0	0	0	0	0	0	0	0
21	1973	0	200	200	51,607	200	51,807	16,888	500	17,388	114,162	500	114,662
22	1974	27,148	200	27,348	5,399	200	5,599	0	500	500	21,634	500	22,134
23	1975	0	200	200	0	200	200	0	500	500	0	500	500
24	1976	0	3,069	3,069	0	2,772	2,772	0	0	0	0	0	0
25	1977	0	0	0	0	0	0	0	0	0	0	0	0
26	1978	0	200	200	96,138	200	96,338	288,207	500	288,707	416,225	500	416,725
27	1979	14,698	200	14,898	10,826	200	11,026	0	500	500	0	500	500
28	1980	119,669	200	119,869	193,447	200	193,647	230,582	500	231,082	97,133	500	97,633
29	1981	0	3,069	3,069	0	2,772	2,772	0	0	0	0	0	0
30	1982	0	200	200	0	200	200	6,486	500	6,986	402,401	500	402,901
31	1983	217,588	200	217,788	277,000	200	277,200	432,484	500	432,984	459,282	500	459,782
32	1984	234,830	200	235,030	14,471	200	14,671	0	500	500	0	500	500
33	1985	0	1,749	1,749	0	1,749	1,749	0	0	0	0	0	0
34	1986	0	200	200	199,159	200	199,359	321,527	500	322,027	279,045	500	279,545
35	1987	0	3,069	3,069	0	2,772	2,772	0	0	0	0	0	0
36	1988	0	0	0	0	0	0	0	0	0	0	0	0
37	1989	0	0	0	0	0	0	0	0	0	0	0	0
38	1990	0	0	0	0	0	0	0	0	0	0	0	0
39	1991	0	0	0	0	0	0	0	0	0	0	0	0
40	1992	0	0	0	0	0	0	0	0	0	0	0	0
41	1993	0	200	200	0	200	200	12,616	500	13,116	50,092	500	50,592
42	1994	0	3,069	3,069	0	2,772	2,772	0	0	0	0	0	0
43	1995	0	200	200	7,906	200	8,106	206,094	500	206,594	313,578	500	314,078
44	1996	0	200	200	9,960	200	10,160	89,984	500	90,484	36,048	500	36,548
45	1997	518,054	200	518,254	328,404	200	328,604	51,968	500	52,468	0	500	500
46	1998	0	200	200	149,934	200	150,134	116,348	500	116,848	244,986	500	245,486
47	1999	0	200	200	9,338	200	9,538	0	500	500	0	500	500
48	2000	0	3,069	3,069	0	2,772	2,772	30,961	0	30,961	0	0	0
49	2001	0	0	0	0	0	0	0	0	0	0	0	0
50	2002	0	0	0	0	0	0	0	0	0	0	0	0
		1,535,155	30,301	1,565,456	2,043,349	27,925	2,071,274	2,463,348	10,000	2,473,348	3,414,253	10,000	3,424,253

Year in Simulation	Calendar Year	May (Conveyance max 1535 AF) (Ag Demand 1252 AF)			Jun (Conveyance max 1485 AF) (Ag Demand 1775 AF)			Jul (Conveyance max 1535 AF) (Ag Demand 2270 AF)			Aug (Conveyance max 1535 AF) (Ag Demand 2042 AF)		
		215	Class II	Total	215	Class II	Total	215	Class II	Total	215	Class II	Total
1	1953	62	0	62	0	0	0	0	0	0	1,264	0	1,264
2	1954	53,096	0	53,096	0	0	0	0	0	0	0	0	0
3	1955	0	0	0	0	0	0	0	0	0	0	0	0
4	1956	173,475	0	173,475	149,024	0	149,024	0	0	0	0	0	0
5	1957	0	0	0	1,460	0	1,460	0	0	0	0	0	0
6	1958	381,550	0	381,550	217,342	0	217,342	14,553	0	14,553	0	0	0
7	1959	0	0	0	0	0	0	0	0	0	0	0	0
8	1960	0	0	0	0	0	0	0	0	0	0	0	0
9	1961	0	0	0	0	0	0	0	0	0	0	0	0
10	1962	0	0	0	0	0	0	0	0	0	0	0	0
11	1963	403	1,000	1,403	17,818	1,500	19,318	0	1,500	1,500	0	1,600	1,600
12	1964	0	1,000	1,000	0	1,500	1,500	0	1,500	1,500	0	1,600	1,600
13	1965	0	0	0	0	0	0	0	0	0	0	0	0
14	1966	0	0	0	0	0	0	0	0	0	0	0	0
15	1967	485,836	1,000	486,836	346,289	1,500	347,789	67,076	1,500	68,576	0	1,600	1,600
16	1968	0	0	0	0	0	0	0	0	0	0	0	0
17	1969	464,131	1,000	465,131	456,391	1,500	457,891	43,877	1,500	45,377	0	1,600	1,600
18	1970	0	0	0	0	0	0	0	0	0	0	0	0
19	1971	0	0	0	0	0	0	0	0	0	0	0	0
20	1972	0	0	0	0	0	0	0	0	0	0	0	0
21	1973	1,002	1,000	2,002	26,531	1,500	28,031	0	1,500	1,500	0	1,600	1,600
22	1974	2,319	1,000	3,319	15,733	1,500	17,233	0	1,500	1,500	0	1,600	1,600
23	1975	0	1,000	1,000	0	1,500	1,500	0	1,500	1,500	0	1,600	1,600
24	1976	0	0	0	0	0	0	0	0	0	0	0	0
25	1977	0	0	0	0	0	0	0	0	0	0	0	0
26	1978	330,227	1,000	331,227	151,829	1,500	153,329	0	1,500	1,500	0	1,600	1,600
27	1979	5,256	1,000	6,256	0	1,500	1,500	0	1,500	1,500	0	1,600	1,600
28	1980	131,595	1,000	132,595	10,895	1,500	12,395	76,484	1,500	77,984	0	1,600	1,600
29	1981	0	0	0	0	0	0	0	0	0	0	0	0
30	1982	225,200	1,000	226,200	79,651	1,500	81,151	13,159	1,500	14,659	0	1,600	1,600
31	1983	373,753	1,000	374,753	514,976	1,500	516,476	296,226	1,500	297,726	72,275	1,600	73,875
32	1984	0	1,000	1,000	0	1,500	1,500	0	1,500	1,500	0	1,600	1,600
33	1985	0	0	0	0	0	0	0	0	0	0	0	0
34	1986	8,172	1,000	9,172	22,017	1,500	23,517	0	1,500	1,500	0	1,600	1,600
35	1987	0	0	0	0	0	0	0	0	0	0	0	0
36	1988	0	0	0	0	0	0	0	0	0	0	0	0
37	1989	0	0	0	0	0	0	0	0	0	0	0	0
38	1990	0	0	0	0	0	0	0	0	0	0	0	0
39	1991	0	0	0	0	0	0	0	0	0	0	0	0
40	1992	0	0	0	0	0	0	0	0	0	0	0	0
41	1993	32,188	1,000	33,188	36,434	1,500	37,934	20,106	1,500	21,606	0	1,600	1,600
42	1994	0	0	0	0	0	0	0	0	0	0	0	0
43	1995	424,490	1,000	425,490	127,952	1,500	129,452	289,486	1,500	290,986	10,914	1,600	12,514
44	1996	75,742	1,000	76,742	3,344	1,500	4,844	0	1,500	1,500	0	1,600	1,600
45	1997	0	1,000	1,000	0	1,500	1,500	0	1,500	1,500	0	1,600	1,600
46	1998	223,084	1,000	224,084	366,036	1,500	367,536	242,344	1,500	243,844	286	1,600	1,886
47	1999	0	1,000	1,000	7,182	1,500	8,682	6,902	1,500	8,402	0	1,600	1,600
48	2000	0	0	0	8,856	0	8,856	0	0	0	0	0	0
49	2001	0	0	0	0	0	0	0	0	0	0	0	0
50	2002	0	0	0	0	0	0	0	0	0	0	0	0
		3,391,581	20,000	3,411,581	2,559,760	30,000	2,589,760	1,070,213	30,000	1,100,213	84,739	32,000	116,739

Year in Simulation	Calendar Year	Sep (Conveyance max 2970 AF) (Ag Demand 1387 AF)			Oct (Conveyance max 3069 AF) (Ag Demand 949 AF)			Nov (Conveyance max 2970 AF) (Ag Demand 354 AF)			Dec (Conveyance max 3069 AF) (Ag Demand 170 AF)			TOTAL
		215	Class II	Total	215	Class II	Total	215	Class II	Total	215	Class II	Total	
1	1953	23,454	0	23,454	17,602	0	17,602	266	0	266	0	0	0	95,622
2	1954	0	0	0	0	0	0	3,994	0	3,994	2,054	0	2,054	62,020
3	1955	0	0	0	0	0	0	0	0	0	85,162	0	85,162	85,162
4	1956	10,581	0	10,581	36,888	0	36,888	8,145	0	8,145	9,682	0	9,682	1,079,721
5	1957	0	0	0	0	0	0	0	0	0	0	0	0	1,460
6	1958	0	0	0	0	0	0	0	0	0	0	0	0	1,086,647
7	1959	0	0	0	0	0	0	0	0	0	0	0	0	0
8	1960	0	0	0	0	0	0	0	0	0	3,650	0	3,650	3,650
9	1961	0	0	0	0	0	0	0	0	0	0	0	0	0
10	1962	0	0	0	0	0	0	0	0	0	0	0	0	0
11	1963	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	28,583
12	1964	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	9,800
13	1965	0	0	0	0	0	0	0	0	0	0	0	0	2,772
14	1966	0	0	0	0	0	0	0	0	0	0	0	0	0
15	1967	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	1,194,884
16	1968	0	0	0	0	0	0	0	0	0	0	0	0	2,772
17	1969	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	2,159,519
18	1970	0	0	0	0	0	0	0	0	0	0	0	0	41,827
19	1971	0	0	0	0	0	0	0	0	0	0	0	0	0
20	1972	0	0	0	0	0	0	0	0	0	0	0	0	0
21	1973	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	219,990
22	1974	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	82,033
23	1975	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	9,800
24	1976	0	0	0	0	0	0	0	0	0	0	0	0	2,772
25	1977	0	0	0	0	0	0	0	0	0	0	0	0	0
26	1978	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	1,292,426
27	1979	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	40,580
28	1980	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	869,605
29	1981	0	0	0	0	0	0	0	0	0	0	0	0	2,772
30	1982	0	1,400	1,400	0	1,000	1,000	87,431	400	87,831	223,191	200	223,391	1,047,319
31	1983	109,993	1,400	111,393	67,043	1,000	68,043	69,869	400	70,269	127,325	200	127,525	3,027,614
32	1984	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	259,101
33	1985	0	0	0	0	0	0	0	0	0	0	0	0	1,749
34	1986	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	839,720
35	1987	0	0	0	0	0	0	0	0	0	0	0	0	2,772
36	1988	0	0	0	0	0	0	0	0	0	0	0	0	0
37	1989	0	0	0	0	0	0	0	0	0	0	0	0	0
38	1990	0	0	0	0	0	0	0	0	0	0	0	0	0
39	1991	0	0	0	0	0	0	0	0	0	0	0	0	0
40	1992	0	0	0	0	0	0	0	0	0	0	0	0	0
41	1993	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	161,236
42	1994	0	0	0	0	0	0	0	0	0	0	0	0	2,772
43	1995	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	1,390,220
44	1996	0	1,400	1,400	0	1,000	1,000	0	400	400	55,992	200	56,192	280,870
45	1997	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	908,226
46	1998	0	1,400	1,400	0	1,000	1,000	2,900	400	3,300	11,354	200	11,554	1,367,072
47	1999	0	1,400	1,400	0	1,000	1,000	0	400	400	0	200	200	33,222
48	2000	0	0	0	0	0	0	0	0	0	0	0	0	42,589
49	2001	0	0	0	0	0	0	0	0	0	0	0	0	0
50	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
		144,028	28,000	172,028	121,533	20,000	141,533	172,605	8,000	180,605	518,410	4,000	522,410	
													TOTAL	17,696,310

1 Maximum capacity through Lateral 6.2 is 25 cfs or 1510 AF per month, May 1 to August 31 of each year, and 50 cfs or 3020 AF per month, from
2 Losses are calculated as 3% of delivery through the Madera Canal and Lateral 6.2 to be measured at Turnout 1-A.
3 Allocation based on a CVP water year of March to February.
4 The period of 1995 through present is heavily affected by the introduction of early season water.

=Section 215 Water at ~$30\AF
=Class II Water at ~$85\AF
=Combination of both

FIGURE III-4

ROOT CREEK WATER DISTRICT
IN-LIEU GROUNDWATER RECHARGE FACILITIES PROJECT
FEASIBILITY STUDY

Section 215 and Class II Waters used by Project to Irrigate Permanent Crops and Offset Groundwater Pumpage
(Acre-Feet)

Year in Simulation	Calendar Year	Percent Water Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
		Project Limitations	Conveyance max 3,069 AF	Conveyance max 2,772 AF	Conveyance max 3,069 AF	Conveyance max 2,970 AF	Conveyance max 1,535 AF	Ag Demand 1,775 AF	Ag Demand 2,270 AF	Ag Demand 2,042 AF	Conveyance max 2,970 AF	Conveyance max 3,069 AF	Conveyance max 2,970 AF	Conveyance max 3,069 AF	
			Ag Demand 146 AF	Ag Demand 187 AF	Ag Demand 493 AF	Ag Demand 865 AF	Ag Demand 1,252 AF	Conveyance max 1,485 AF	Conveyance max 1,535 AF	Conveyance max 1,535 AF	Ag Demand 1,387 AF	Ag Demand 949 AF	Ag Demand 354 AF	Ag Demand 170 AF	
1	1953		0	187	493	864	62	0	0	1,264	1,387	949	266	0	5,473
2	1954		0	187	0	452	1,252	0	0	0	0	0	354	170	2,415
3	1955		0	0	0	0	0	0	0	0	0	0	0	170	170
4	1956		146	187	493	864	1,252	1,485	0	0	1,387	949	354	170	7,288
5	1957		0	0	0	0	0	1,460	0	0	0	0	0	0	1,460
6	1958		0	0	493	864	1,252	1,485	1,535	0	0	0	0	0	5,629
7	1959		0	0	0	0	0	0	0	0	0	0	0	0	0
8	1960		0	0	0	0	0	0	0	0	0	0	0	170	170
9	1961		0	0	0	0	0	0	0	0	0	0	0	0	0
10	1962		0	0	0	0	0	0	0	0	0	0	0	0	0
11	1963		146	187	493	864	1,252	1,485	1,500	1,535	1,387	949	354	170	10,323
12	1964		146	187	493	500	1,000	1,485	1,500	1,535	1,387	949	354	170	9,706
13	1965		146	187	0	0	0	0	0	0	0	0	0	0	333
14	1966	71	0	0	0	0	0	0	0	0	0	0	0	0	0
15	1967	176	146	187	493	864	1,252	1,485	1,535	1,535	1,387	949	354	170	10,358
16	1968	47	146	187	0	0	0	0	0	0	0	0	0	0	333
17	1969	220	146	187	493	864	1,252	1,485	1,535	1,535	1,387	949	354	170	10,358
18	1970	79	146	187	0	0	0	0	0	0	0	0	0	0	333
19	1971	77	0	0	0	0	0	0	0	0	0	0	0	0	0
20	1972	57	0	0	0	0	0	0	0	0	0	0	0	0	0
21	1973	112	146	187	493	864	1,252	1,485	1,500	1,535	1,387	949	354	170	10,323
22	1974	119	146	187	493	864	1,252	1,485	1,500	1,535	1,387	949	354	170	10,323
23	1975	98	146	187	493	500	1,000	1,485	1,500	1,535	1,387	949	354	170	9,706
24	1976	34	146	187	0	0	0	0	0	0	0	0	0	0	333
25	1977	20	0	0	0	0	0	0	0	0	0	0	0	0	0
26	1978	185	146	187	493	864	1,252	1,485	1,500	1,535	1,387	949	354	170	10,323
27	1979	100	146	187	493	500	1,252	1,485	1,500	1,535	1,387	949	354	170	9,958
28	1980	162	146	187	493	864	1,252	1,485	1,535	1,535	1,387	949	354	170	10,358
29	1981	58	146	187	0	0	0	0	0	0	0	0	0	0	333
30	1982	181	146	187	493	864	1,252	1,485	1,535	1,535	1,387	949	354	170	10,358
31	1983	253	146	187	493	864	1,252	1,485	1,535	1,535	1,387	949	354	170	10,358
32	1984	111	146	187	493	500	1,000	1,485	1,500	1,535	1,387	949	354	170	9,706
33	1985	70	146	187	0	0	0	0	0	0	0	0	0	0	333
34	1986	151	146	187	493	864	1,252	1,485	1,500	1,535	1,387	949	354	170	10,323
35	1987	42	146	187	0	0	0	0	0	0	0	0	0	0	333
36	1988	47	0	0	0	0	0	0	0	0	0	0	0	0	0
37	1989	52	0	0	0	0	0	0	0	0	0	0	0	0	0
38	1990	40	0	0	0	0	0	0	0	0	0	0	0	0	0
39	1991	66	0	0	0	0	0	0	0	0	0	0	0	0	0
40	1992	46	0	0	0	0	0	0	0	0	0	0	0	0	0
41	1993	150	146	187	493	864	1,252	1,485	1,535	1,535	1,387	949	354	170	10,358
42	1994	50	146	187	0	0	0	0	0	0	0	0	0	0	333
43	1995	218	146	187	493	864	1,252	1,485	1,535	1,535	1,387	949	354	170	10,358
44	1996	124	146	187	493	864	1,252	1,485	1,500	1,535	1,387	949	354	170	10,323
45	1997	158	146	187	493	500	1,000	1,485	1,500	1,535	1,387	949	354	170	9,706
46	1998	178	146	187	493	864	1,252	1,485	1,535	1,535	1,387	949	354	170	10,358
47	1999	150	146	187	493	500	1,000	1,485	1,535	1,535	1,387	949	354	170	9,741
48	2000	103	146	187	493	0	0	1,485	0	0	0	0	0	0	2,311
49	2001	60	0	0	0	0	0	0	0	0	0	0	0	0	0
50	2002		0	0	0	0	0	0	0	0	0	0	0	0	0
		Annual	87	120	237	363	552	712	637	639	610	418	161	82	
		%	2%	3%	5%	8%	12%	15%	14%	14%	13%	9%	3%	2%	230,904
														AVERAGE ANNUAL =	4,618

= Section 215 Water at ~$30\AF
= Class II Water at ~$85\AF
= Combination of both
= Average calendar Rainfall Year

Average Annual Water Cost of Total 4,229 AF Project Yield =	$270,849
Average Annual Water Cost for 2,005 AF of Class II Project Yield =	$204,474
Average Annual Water Cost for 2,188 AF of Section 215 Project Yield =	$66,375
Average Annual Water Cost per AF=	$58.65

Notes:

1 In April 1963, 562 AF of Section 215 was available
2 In May 1963, 403 AF of Section 215 was available
4 Maximum capacity through Lateral 6.2 is 2.5 cfs or 1510 AF per month, May 1 to August 31 of each year, and 50 cfs or 3020 AF per month ,from September 1of each year until April 30 of the following year.
5 Losses are calculated as 3% of delivery through the Madera Canal and Lateral 6.2 to be measured at Turnout 1-A.
6 Allocation based on a CVP water year of March to February.
7 The period of 1995 through present is heavily affected by the introduction of early season water.

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Feasibility Study Data\Final Simulated operations.xls, Possible Deliveries Revised

IV. ECONOMIC ANALYSIS

An economic analysis of the proposed project was performed by comparing the initial capital costs and the discounted O&M costs for the in-lieu recharge project to the discounted cost of an alternative surface water supply. The analysis concludes that the project is economically feasible with a **B/C ratio of 1.84**. The following sections describe in more detail this analysis.

A. ANALYSIS ASSUMPTIONS

1. Period of Analysis

The economic analysis is based on a fifty-year simulation period. The period of 1953 to 2002 was chosen because of the availability of data for the period.

2. Inflation and Escalation

Inflation and escalation of the value and price of water was neglected in this analysis. Costs were discounted to take into account the time value of money.

3. Discounted Project Costs

Capital expenditures and annual operations and maintenance costs for this project are $4,323,000 and $4,378,000 respectively. In **Figure IV-1**, capital expenditures are listed which were assumed to occur during the first year and for that reason receive no discount. Operations, maintenance and administration costs however, are assumed to occur during the length of the period of analysis and so are discounted six percent per year to reflect the time value of money. **Figure IV-2** shows an annual breakdown of estimated project operations, maintenance and administration costs. Due to the nature of the facilities to be constructed, underground pipelines and concrete structures, no replacement costs were assumed during the analysis period. The total discounted costs for the project are shown below in **Table IV-1**.

TABLE IV-1
Discounted Project Costs

Item Description	Cost
Capital Expenditures	$4,323,000
Discounted O&M Costs	$4,378,000
Discounted Replacement Costs	$0
TOTAL DISCOUNTED COSTS	**$8,701,000**
COST / ACRE-FOOT	**$42**

4. Avoided Costs

For this analysis avoided costs represent the costs of acquiring and providing an equivalent water supply. These costs represent the benefits of the project in financial terms. The purpose of this project is to beneficially impact the currently overdrafted groundwater basin in the area the District. Communities are having problems with wells while trying to provide drinking water supplies. It is not possible to continue to keep going deeper for groundwater, due to its unreliability. An equivalent water supply cannot come from the groundwater table. Therefore, water can only be acquired through purchases from other water contractors. Also, since the District currently has no infrastructure to deliver this contracted water supply, the distribution system for this water supply must be included in the avoided cost as an initial capital expenditure.

The Friant Water Users Authority (Friant) solicited bids for 10,000 to 15,000 acre-feet of water for an Experimental San Joaquin River Restoration project in April 2002. The solicitation package and bids received are included in **Appendix C**. A summary of bids received is shown in **Table IV-2**.

TABLE IV-2
Friant's Experimental San Joaquin River Restoration Bids Received for Water Sale

District	Bid	Remarks
Arvin Edison Water Supply District	$177 / AF	
Fresno Irrigation District & Lower Tule Irrigation District	$175 / AF	
Semitropic Water Storage District	$170 / AF	Does not include wheeling and extraction costs
North Kern Water Storage District	$150 / AF	

Friant required that the water be available behind Friant Dam for release into the San Joaquin River. Therefore, all these sources would be available to the District through the existing facilities of the Madera Canal and Lateral 6.2 or a new pumping station and pipeline on the San Joaquin River. The bids are all fairly consistent and are considered to represent the market value of water in the region for a normal water year. Due to the large expense of a new pump station on the San Joaquin River, the option of transporting water through the Madera Canal and Lateral 6.2 was used to be conservative. The lowest bid of $150 / AF was used as the purchase cost of water in the economic analysis. This value was adjusted by an estimated $10 / AF to account for transmission charges through the Madera Irrigation District's facilities.

The total project and annual avoided costs are presented in **Figure IV-3**. Annual costs were discounted over a fifty-year simulation to make them comparable to the proposed In-Lieu Groundwater Recharge Facilities Project. In addition to water purchases, maintenance and administration, as well as capital expenditures on a distribution system, are included. This simulation determined a total discounted project cost of $16,025,000. The project cost with the associated volume of water supplied comes to a cost of roughly $76 / AF of water.

B. RESULTS

The benefit\cost ratio for the project is summarized in **Table IV-3**. The **benefit / cost ratio of 1.84** shows that this project is economically feasible with the current local market value of contract water being approximately $150 / AF. With the discounted price of water for this project being **$42 / AF**, the beneficial use of an otherwise lost resource, and the ability to positively impact a critically overdrafted groundwater basin, this project's beneficial nature is without question.

TABLE IV-3

Benefit / Cost Ratio Summary Table

Cost of Alternative Water Source (Benefits)	$16,025,000
Cost for In-Lieu Groundwater Recharge Facilities Project (Costs)	$8,701,000
BENEFIT / COST RATIO	**1.84**

FIGURE IV-1

ROOT CREEK WATER DISTRICT
IN-LIEU GROUNDWATER RECHARGE FACILITIES PROJECT
FEASIBILITY STUDY

PRELIMINARY COST ESTIMATE

Item No.	Item Description	No.	Unit	Unit Price	Cost
1	Mobilization	1	LS	$30,000	$30,000
2	Canal Turnout from MID Lat 6.2 and Meter box	1	Ea.	$64,980	$64,980
3	Mainline air vents	10	Ea.	$500	$5,000
4	Lateral connections	6	Ea.	$500	$3,000
5	48" RCP Class III	17,313	LF	$160	$2,770,080
6	18" PVC PIP, 80 psi pipe	5,150	LF	$9	$46,350
7	15" PVC PIP, 80 psi pipe	7,050	LF	$6	$42,300
8	12" PVC PIP, 80 psi pipe	5,300	LF	$4	$21,200
9	10" PVC PIP, 80 psi pipe	1,660	LF	$3	$4,980
10	48" Jack and Bore under Ave. 12	100	LF	$700	$70,000
11	Pump Station Modifications	1	LS	$63,000	$63,000
12	Ag Tree Purchase from Land Owners	880	Ea.	$200	$176,000
13	Ag Tree Removal	1	LS	$50,000	$50,000
14	Private Irrigation System Repair	1	LS	$20,000	$20,000
	15% Contingencies				$505,034
	Sub-Total				**$3,871,924**
15	Engineering				$35,000
16	Construction Management				$10,000
17	District Administration				$70,000
18	Legal				$10,000
19	Environmental				$10,000
	10% Contingencies				$13,500
	Total				**$4,020,424**

FIGURE IV-2

ROOT CREEK WATER DISTRICT
IN-LIEU GROUNDWATER RECHARGE FACILITIES PROJECT
FEASIBILITY STUDY

Operations and Maintenance Costs

		OPERATIONS			MAINTENANCE				REPLACEMENT	TOTAL O&M
Years in Sequence	Calendar Year	Average Annual Project Yield	Estimated Water Price	Operations Discounted	Hours	Rate	Total Maintenance	Maintenance Discounted		
1	1953	4,298	$251,961	$251,961	400	$50	$20,000	$20,000	$0	$271,961
2	1954	4,298	$251,961	$237,699	400	$50	$20,000	$18,868	$0	$256,567
3	1955	4,298	$251,961	$224,244	400	$50	$20,000	$17,800	$0	$242,044
4	1956	4,298	$251,961	$211,551	400	$50	$20,000	$16,792	$0	$228,343
5	1957	4,298	$251,961	$199,576	400	$50	$20,000	$15,842	$0	$215,418
6	1958	4,298	$251,961	$188,280	400	$50	$20,000	$14,945	$0	$203,225
7	1959	4,298	$251,961	$177,622	400	$50	$20,000	$14,099	$0	$191,721
8	1960	4,298	$251,961	$167,568	400	$50	$20,000	$13,301	$0	$180,869
9	1961	4,298	$251,961	$158,083	400	$50	$20,000	$12,548	$0	$170,631
10	1962	4,298	$251,961	$149,135	400	$50	$20,000	$11,838	$0	$160,973
11	1963	4,298	$251,961	$140,693	400	$50	$20,000	$11,168	$0	$151,861
12	1964	4,298	$251,961	$132,730	400	$50	$20,000	$10,536	$0	$143,265
13	1965	4,298	$251,961	$125,217	400	$50	$20,000	$9,939	$0	$135,156
14	1966	4,298	$251,961	$118,129	400	$50	$20,000	$9,377	$0	$127,506
15	1967	4,298	$251,961	$111,442	400	$50	$20,000	$8,846	$0	$120,288
16	1968	4,298	$251,961	$105,134	400	$50	$20,000	$8,345	$0	$113,480
17	1969	4,298	$251,961	$99,183	400	$50	$20,000	$7,873	$0	$107,056
18	1970	4,298	$251,961	$93,569	400	$50	$20,000	$7,427	$0	$100,996
19	1971	4,298	$251,961	$88,273	400	$50	$20,000	$7,007	$0	$95,280
20	1972	4,298	$251,961	$83,276	400	$50	$20,000	$6,610	$0	$89,887
21	1973	4,298	$251,961	$78,563	400	$50	$20,000	$6,236	$0	$84,799
22	1974	4,298	$251,961	$74,116	400	$50	$20,000	$5,883	$0	$79,999
23	1975	4,298	$251,961	$69,920	400	$50	$20,000	$5,550	$0	$75,470
24	1976	4,298	$251,961	$65,963	400	$50	$20,000	$5,236	$0	$71,199
25	1977	4,298	$251,961	$62,229	400	$50	$20,000	$4,940	$0	$67,168
26	1978	4,298	$251,961	$58,706	400	$50	$20,000	$4,660	$0	$63,366
27	1979	4,298	$251,961	$55,383	400	$50	$20,000	$4,396	$0	$59,780
28	1980	4,298	$251,961	$52,249	400	$50	$20,000	$4,147	$0	$56,396
29	1981	4,298	$251,961	$49,291	400	$50	$20,000	$3,913	$0	$53,204
30	1982	4,298	$251,961	$46,501	400	$50	$20,000	$3,691	$0	$50,192
31	1983	4,298	$251,961	$43,869	400	$50	$20,000	$3,482	$0	$47,351
32	1984	4,298	$251,961	$41,386	400	$50	$20,000	$3,285	$0	$44,671
33	1985	4,298	$251,961	$39,043	400	$50	$20,000	$3,099	$0	$42,142
34	1986	4,298	$251,961	$36,833	400	$50	$20,000	$2,924	$0	$39,757
35	1987	4,298	$251,961	$34,748	400	$50	$20,000	$2,758	$0	$37,507
36	1988	4,298	$251,961	$32,781	400	$50	$20,000	$2,602	$0	$35,383
37	1989	4,298	$251,961	$30,926	400	$50	$20,000	$2,455	$0	$33,381
38	1990	4,298	$251,961	$29,175	400	$50	$20,000	$2,316	$0	$31,491
39	1991	4,298	$251,961	$27,524	400	$50	$20,000	$2,185	$0	$29,709
40	1992	4,298	$251,961	$25,966	400	$50	$20,000	$2,061	$0	$28,027
41	1993	4,298	$251,961	$24,496	400	$50	$20,000	$1,944	$0	$26,441
42	1994	4,298	$251,961	$23,110	400	$50	$20,000	$1,834	$0	$24,944
43	1995	4,298	$251,961	$21,801	400	$50	$20,000	$1,731	$0	$23,532
44	1996	4,298	$251,961	$20,567	400	$50	$20,000	$1,633	$0	$22,200
45	1997	4,298	$251,961	$19,403	400	$50	$20,000	$1,540	$0	$20,943
46	1998	4,298	$251,961	$18,305	400	$50	$20,000	$1,453	$0	$19,758
47	1999	4,298	$251,961	$17,269	400	$50	$20,000	$1,371	$0	$18,640
48	2000	4,298	$251,961	$16,291	400	$50	$20,000	$1,293	$0	$17,585
49	2001	4,298	$251,961	$15,369	400	$50	$20,000	$1,220	$0	$16,589
50	2002	4,298	$251,961	$14,499	400	$50	$20,000	$1,151	$0	$15,650
		214,900	$12,598,029	**$4,209,650**			$1,000,000	**$334,151**	$0	**$4,543,801**

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FEASIBILITY STUDY DATA\Final Cost Estimate.xls, O&M

FIGURE IV-3

ROOT CREEK WATER DISTRICT
IN-LIEU GROUNDWATER RECHARGE FACILITIES PROJECT
FEASIBILITY STUDY

Water Contract Purchase and Facilities
Avoided Future Supply Cost Analysis

Years in Sequence	Calendar Year	[1] Average Annual Project Yield (AF)	[2] Cost Per AF for Contract Water	Water Cost for Project Yield	[3] Discounted Cost for Project Yield
1	1953	4,298	$160	$687,681	$687,681
2	1954	4,298	$160	$687,681	$648,755
3	1955	4,298	$160	$687,681	$612,033
4	1956	4,298	$160	$687,681	$577,390
5	1957	4,298	$160	$687,681	$544,708
6	1958	4,298	$160	$687,681	$513,875
7	1959	4,298	$160	$687,681	$484,788
8	1960	4,298	$160	$687,681	$457,347
9	1961	4,298	$160	$687,681	$431,459
10	1962	4,298	$160	$687,681	$407,037
11	1963	4,298	$160	$687,681	$383,997
12	1964	4,298	$160	$687,681	$362,262
13	1965	4,298	$160	$687,681	$341,756
14	1966	4,298	$160	$687,681	$322,412
15	1967	4,298	$160	$687,681	$304,162
16	1968	4,298	$160	$687,681	$286,945
17	1969	4,298	$160	$687,681	$270,703
18	1970	4,298	$160	$687,681	$255,380
19	1971	4,298	$160	$687,681	$240,925
20	1972	4,298	$160	$687,681	$227,287
21	1973	4,298	$160	$687,681	$214,422
22	1974	4,298	$160	$687,681	$202,285
23	1975	4,298	$160	$687,681	$190,835
24	1976	4,298	$160	$687,681	$180,033
25	1977	4,298	$160	$687,681	$169,842
26	1978	4,298	$160	$687,681	$160,229
27	1979	4,298	$160	$687,681	$151,159
28	1980	4,298	$160	$687,681	$142,603
29	1981	4,298	$160	$687,681	$134,531
30	1982	4,298	$160	$687,681	$126,916
31	1983	4,298	$160	$687,681	$119,732
32	1984	4,298	$160	$687,681	$112,955
33	1985	4,298	$160	$687,681	$106,561
34	1986	4,298	$160	$687,681	$100,529
35	1987	4,298	$160	$687,681	$94,839
36	1988	4,298	$160	$687,681	$89,471
37	1989	4,298	$160	$687,681	$84,406
38	1990	4,298	$160	$687,681	$79,629
39	1991	4,298	$160	$687,681	$75,121
40	1992	4,298	$160	$687,681	$70,869
41	1993	4,298	$160	$687,681	$66,858
42	1994	4,298	$160	$687,681	$63,073
43	1995	4,298	$160	$687,681	$59,503
44	1996	4,298	$160	$687,681	$56,135
45	1997	4,298	$160	$687,681	$52,958
46	1998	4,298	$160	$687,681	$49,960
47	1999	4,298	$160	$687,681	$47,132
48	2000	4,298	$160	$687,681	$44,464
49	2001	4,298	$160	$687,681	$41,947
50	2002	4,298	$160	$687,681	$39,573
		214,900 AF		$34,384,034	**$11,489,475**

Assumptions / Notes :

[1] Yield numbers from annual average yield of In-Lieu recharge Facilties project.

[2] Cost from "Friant, NRDC Issue Request for Proposal For Experimental San Joaquin River Restoration Effort Flows", North Kern Water Storage District bid used to be conservative. This value was used, plus an estimated conveyance charge from MID for the use of the Madera Canal and Lateral 6.2.

[3] Costs discounted using DWR method of 6% compunded yearly.

Item Description	Cost
Estimated Capital Cost	$4,020,424
Discounted O&M Costs	$11,489,475
Discounted Replacement Cost	$0
Total Discounted Costs	**$15,509,898**
Cost / Acre-foot	**$72**

Cost of Alternative Water Source (Benefits)	**$15,509,898**
Cost for Groundwater Recharge Project (Costs)	**$8,564,225**
Benefit / Cost Ratio	**1.81**

V. COMMUNITY THEMES

A. COMMUNITY INTEREST

1. Madera County Flood Control and Water Conservation Agency

The purpose of this Agency is to govern countywide water conservation, development of water resources, control of drainage, storm, flood and other waters. It provides for the conservation, development, control and use of water for public good and protection of life and property. This agency is guided by an advisory board whose members are appointed by the County Board of Supervisors to study flood and water problems in the County and to advise the Board of Supervisors on their findings. This agency has identified the southeastern portion of the county as a problem area as far as groundwater overdraft is concerned, but has not been able to measurably benefit the situation. This agency has withheld approval for any further development in this area until such time when any development can show that they will not further impact the overdrafted groundwater aquifer. This agency has pursued funds from federal, state and local sources in attempts to mitigate the groundwater overdraft, but has mostly tightened development opportunities. This agency would be in favor of this project because it accomplishes in part the vary goals that they have been trying to implement with limited success.

2. Community of Rolling Hills

The community of Rolling Hills is located immediately to the east of the feasibility study area. The two production groundwater wells that provide drinking water for this community have suffered the same decline in groundwater levels as the ag wells in the study area. Both of these drinking water wells have recently gone dry, and the community has used an ag-well through an agreement with a local rancher for the past two years as their primary water source. The 1,871 people of this community are in favor of beneficially addressing the groundwater overdraft in the area. Given the annual recharge benefit of this project, the community of Rolling Hills could expect their wells to recover in a similar fashion to those in the study area at an average projected rate of two to three feet per year. This community would see the benefits of a more dependable water supply and decreased pumping costs, while avoiding the necessity of drilling new wells when their existing ones go dry.

3. Community of Bonadelle Ranchos-Madera Ranchos

The community of Madera Ranchos is located approximately one mile to the west of the feasibility study area. The production groundwater wells that provide drinking water for this community have suffered the same decline in groundwater levels as the ag wells in the study area. The 7,300 people of this community are in favor of beneficially addressing the groundwater overdraft in the area. Given the annual benefit of this project, the community of Madera Ranchos could expect their wells to respond in a similar fashion to those in the study area. This community would see the benefits of a more dependable water supply and decreased pumping costs, while avoiding the necessity of drilling new wells when their existing ones go dry.

4. Children's Hospital

Children's Hospital of Central California, formerly Valley Children's Hospital, is located approximately one mile to the south-southeast of the study area. This regional hospital specifically targets the physical and emotional needs of children who require surgery or long-term medical treatment. This large facility is dependent on two domestic production groundwater wells for it's water supply. The hospital is in favor of this project due to its potential benefits to their groundwater situation. Given their proximity to the study area, the estimated groundwater decline of one to three feet is also affecting their water supply. The potential average annual reduction in groundwater pumping immediately down gradient from their well provides hope that their water levels would be stabilized and rebounded if the project were undertaken and implemented. The hospital would see the benefits of a more dependable water supply and decreased pumping costs, while avoiding the necessity of drilling new wells when their existing one goes dry.

B. IMPACTS ON COMMUNITIES AND STAKEHOLDERS

1. Service Area Benefiting from Project

A map of the estimated benefiting service area from the project is shown in **Figure V-1**. Careful inspection of this map shows the District boundary, the study area or lands that will receive surface water through this project, and the 21,650 acres of benefited service area from this project. The San Joaquin River bounds the benefiting area to the south and to the west. However, the other boundaries of this area were established primarily by considering the current direction of subsurface flow and the quantity of recharge accomplished.

2. Project Impacts on Local Communities

The communities immediately surrounding the project, Rolling Hills and Madera Ranchos, will be positively impacted by the stabilization of water levels in their water supply wells. Both communities are on the verge of drilling new deeper wells to more dependably supply water to their communities. This project will benefit them with the avoidance of increased pumping cost due to further groundwater level decline and the possible avoidance of drilling new wells. These communities are not financial contributors to this project nor is any of the project area within their boundaries. However, due to the regional nature of groundwater management, they will be positively impacted due to its presence.

3. Project Impacts on Neighboring Public Agencies

a. Madera Irrigation District

Madera Irrigation District (MID) is an irrigation district to the northwest of the District, still in Madera County. MID will be positively impacted by the reduction of groundwater overdraft in the common groundwater basin with the District. Due to the distance between the two districts, it is doubtful that MID would see a sizable difference in water levels throughout their entire district. However, a measurable benefit should be seen along their southeastern border.

Cooperation from MID will also be required to coordinate the construction of the new Turnout 1-A during the scheduled maintenance period for Lateral 6.2.

b. Madera County

Madera County has not been able to directly address the issue of groundwater overdraft in the southeastern portion of their county in the past. However, with this project, the county would be able to potentially use these facilities, in conjunction with new recharge basins, to more fully address the groundwater impacts of the community of Madera Ranchos. The County would favorably view projects of this nature, as Madera Ranchos negatively impacts District growers with the communities' ever-increasing need for groundwater.

c. Fresno Irrigation District

From current groundwater contours, it can be concluded that the San Joaquin River is feeding the groundwater table both in Madera and Fresno County. For this reason Fresno Irrigation District (FID) will probably not see any sizable benefit from the project. However, since the groundwater overdraft in an adjacent basin is being addressed, it can be argued that there will be some benefit to FID from and the County of Fresno.

4. Project Impacts on Landowners

a. District Assessment

The District will levee an assessment on properties that will be served water from this project. The amount of assessment will be determined by the annual payment required to service the loan secured by the District to cover the cost share required for this project. The assessment will be applied on an acreage and crop type basis. This way both aspects that primarily determine water consumption are addressed. These assessments will also address the increased value to these lands, as they are now some of the only lands that are able to receive surface water.

b. Construction Impacts

Landowners along the project alignment will be impacted by the removal of trees during construction. The removal of existing trees will be necessary to create a safe and stable trench for the placement of the reinforced concrete pipeline. Also, the existing irrigation systems that intersect with the project alignment will be removed and repaired as they are encountered. Landowners will be impacted by the inability to use these systems during times of removal and repair. For these reasons, the District will keep communications open between all parties involved and the landowners intimately involved in construction scheduling.

c. Easements

Landowners will be impacted by District easements for construction and maintenance. These easements will be with willing partners in this project in order to avoid the necessity of land acquisition. However, the easements will be a condition of any further sale of the property.

d. Stabilization of Groundwater Levels

This project would probably increase the value of lands surrounding the project area due to the monetary value of a more stable water source. Lands in this area have historically not been able to obtain or beneficially use surface water supplies. The ability to manage a new and valuable commodity should bring moderate increased value. However, the cost and variability of the water source may not prove as attractive to potential landowners.

5. Project Impacts on District Growers

a. Inside the Project Area

The impacts of District assessments, construction impacts, easements, and the stabilization of groundwater levels was discussed in the previous section.

b. Outside the Project Area

This project will create the possibility for future direct or in-lieu recharge projects for District growers outside the project area.

6. Project Impacts on Project Co-Sponsors

There are no project co-sponsors and therefore no impacts on them.

7. Project Impacts on CALFED Program

This project has no impact on the CALFED Program.

8. Project Impacts on Existing Public and Private Infrastructure

a. Lateral 6.2

The construction of this project will impact the MID Lateral 6.2. However, given a sufficient amount of coordination between the District and MID, it will be possible to make this impact negligible.

The use of existing capacity from MID through the Madera Canal and Lateral 6.2 will negligibly impact MID's system. MID regularly maintains both facilities and has been comfortable enough with the request to make the capacity available to the District.

b. Avenue 12

Avenue 12 is a Madera County maintained road that will be crossed by the project alignment. Madera County will not allow an open cut trench, but will accept boring underneath the road. Bore pits will need to be excavated on both side of Avenue 12, completely outside of the county right-of-way. The county will further require that the pipeline have a conductor pipe of acceptable material and strength within its right-of-way. The District will cooperate with Madera County on this topic, as it is known that Avenue 12 will be widened in the near future.

c. Farm Roads

The existing farm roads called Road 40½ and Road 40 will be put out of service to landowners during construction. This impact is minimal due to the availability of alternate traffic routes. These farm roads, which are along the project alignment, will be partially excavated and reconstructed.

d. Irrigation Systems

The existing irrigation systems that intersect with the project alignment will be removed and repaired as they are encountered. Landowners within the project service area will be impacted by the inability to use these systems during times of removal and repair. For these reasons the District will keep communications open between all parties involved and the landowners intimately involved in construction scheduling.

FIGURE V-1

REGIONAL AREA
BENEFITTED AREA
FROM IN-LIEU RECHARGE
FACILITIES PROJECT

LEGEND

- ROOT CREEK WATER DISTRICT
- STUDY AREA BOUNDARY
- MADERA ID
- BENEFITTED AREA FROM PROJECT

N

GRAPHIC SCALE

PROVOST & PRITCHARD	Hydrogeologic Investigation Root Creek Water District Madera County, CA Water Level Elevations for Spring 2001 Plate 14	SCALE AS SHOWN DRAWN BY DVS CHECKED
	DESIGN ENGINEER Brian E. Chiers DATE ____ C.E. LICENSE NO. ____	SHEET ___ OF ___ SHEETS
Job No. 14340101-GW Dwg. No. 20010219	Date Revised Approval	

VI. PERMITTING AND REGULATIONS

A. CONSTRUCTION PERMITS

1. Madera County

Construction permits from Madera County will be necessary for the construction of the proposed facilities. Both a county grading permit and an encroachment permit for the crossing at Avenue 12 will be required. A set of plans will need to be submitted Madera County planning department to get the permit process started. Preliminary discussions with the county have provided guidelines about the required methods of road crossing, placement of boring pits and right-of-ways in the area. After the District completes CEQA, these permits should be attainable with minimal effort.

2. Water of the United States

There is a potential for permits with the Army Corps of Engineers (404 Permit), Regional Water Quality Control Board (401 Permit), and the California Department of Fish and Game (1600 Permit). All of these permits would need to be addressed with the respective agencies when final plans and specifications are completed. The concern would be the potential release/draining of water from the conveyance pipeline to Root Creek, so that the facility does not remain full of water when it is not in use. Root Creek is designated a stream on the 7½ minute Quad for this area. Local ranchers have planted permanent crops to almost the very edge of the drainage, which is probably three to four feet deep at it's deepest. If the Army Corps of Engineers considers the Root Creek to be part of the water of the United States, then a 404, 401, and 1600 permits may be necessary. However, from a preliminary investigation of the area, the creek does not appear to be a wetland and would not appear to be fed by seasonal flows. Its major purpose is flood drainage in the area. Also, if the Army Corps of Engineers did deem the Root Creek to be part of the water of the United States, the impacted portion of the creek by construction and facilities would be less than a ¼ acre. With this small of an area, these permits, if necessary, should be attainable. However, if necessary, these permits would require roughly six months to a year to attain.

B. AGREEMENTS

1. MID Water Purchase

In the "Agreement Between Madera Irrigation District and Root Creek Water District For The Conveyance And Sale of Water" accepted by both parties March 18, 2002, the legal ability for Root Creek Water District to purchase water from and convey water through Madera Irrigation District was established and outlined.

2. USBR Section 215 Contract

The District has been negotiating for a Section 215 contract from the Bureau since the "Agreement Concerning Agricultural, Municipal and Industrial Water Use Within Root Creek Water District" was signed in December 1999. Currently the environmental review is underway and the contract is expected to be finalized in the near future.

3. RCWD Surface Water Assessment

Root Creek Water District plans to assess properties within the service area for the benefit they receive from the project and to gather funds for its cost share. Assessments would be based on the amount of project water received by each parcel and the amount of damage suffered by each parcel during construction. RCWD is currently deciding the specifics of this assessment system, but is determined that this is the method of payment that will be established.

C. APPROVALS

1. Madera County Planning Department

As was mentioned before, the Madera County Planning Department will review this project to assure that it complies with Madera County standards and that the county's interests are protected. Their approval will be necessary before this project can proceed to construction.

2. Madera County Groundwater Oversight Committee

The Madera County Groundwater Oversight Committee is an agency that oversees the groundwater conditions at the county level. Their purpose is to promote better groundwater management and to assure that the county has an accountable agency for its groundwater management plan. This project will address one of the most severely over-drafted areas of the county with in-lieu recharge and so will be complimentary with the committee's desires and purposes.

3. The Department of Water Resources on Proposition 13 Construction Grant Application

Before this project can be constructed, it will need to be selected for funding by the Department of Water Resources under a Proposition 13 Construction Grant Application, which the District intends to submit.

VII. CONSTRUCTION

A. CONSTRUCTION MATERIALS AND METHODS

The new turnout structure for this project will be poured-in-place structural concrete with reinforcement. In designing the reinforcing schedule, an attempt was made to not use large size diameter bars for ease in construction. Instead the spacing of bars was shortened. Pre-cast structures were considered, but due to the necessary size of the structure were more problematic and costly than beneficial. The inlet and metering structure will provide a transition from the inlet piping to the outlet piping while still housing a broad crested weir inside the turnout to ensure the submersion of the flow meter. This style of structure was chosen due to its acceptance in the area and proven reliability. With a trash rack on the inlet to the turnout and a pad locked expanded metal grate over the top of the meter box, this structure provides protection against inadvertent damage and vandalism.

Construction of the new turnout should only minimally impact the MID Lateral 6.2 Canal. The placement of the meter-box is thirty feet off of the bank of the canal and therefore should not be impacted by excavation for the construction of forms or placement of concrete. However, when the meter-box is completed, it will be necessary to work in the canal for about a month. It will be necessary to construct the turnout slab, headwall, gate, wing walls, and inlet piping when the canal is down and out of service during the maintenance season. In this way the construction of project facilities will have minimum impact on the Madera Irrigation District. Earthwork compaction requirements around the turnout and canal will be ninety-five percent relative compaction, calibrated from soil samples in the area.

The main transmission line for this system is planned to be forty-eight inch diameter centrifugally spun concrete pipe. Even though this project is supplying water to a pressurized irrigation system, it was found that a gravity system could successfully deliver the necessary amounts if connections were made prior to the existing booster stations. The reinforced concrete pipe will provide a cost effective facility with a long life in agricultural conditions.

The construction of the main transmission line is envisioned to be accomplished with excavators, haul trucks, grade verification, and much attention to the existing permanent crops in the area. Due to the large diameter of pipe to be installed, trenchers will probably not be used. More likely, a large excavator with a sufficient reach will be used to sit over the alignment and excavate small portions of the project while carefully placing the spoil to the east and west of the trench. Sufficient area will need to be left on one side of the excavation for trucks to deliver pipe to be placed in the trench. For this reason, it is expected that the contractor will place only a section or two of pipe at a time prior to compaction on that section of the pipeline. This scenario mandates that grade control be held to the tightest standards and verified on every section of pipe laid.

The lateral pipelines are much smaller in diameter than the main transmission line and for that reason are planned to be PVC PIP (80 psi) pipe. The low head application is still the driving consideration behind material selection, but due to the small diameter

some materials are not reasonable. These laterals will not have the resilience to damage that the reinforced concrete pipe will, but they can be much more easily repaired. Also, if a lateral is out of service for a few days, this is much less serious than if the whole system is out of service for a few days. Laterals will be in the range of ten to eighteen inches in diameter. Construction of these long fairly straight lateral pipelines will likely be accomplished with trenching machines. Since the diameter of pipe will not be prohibitive for this type of construction, the benefits of speed and trench safety will be desirable. However, care will have to be taken that existing irrigation system pipes are not damaged in the construction.

Connections to the existing irrigation systems will be made in a manner consistent to the existing station construction. As lateral pipelines transition from the underground, their material will change to painted steel. Check valves will be placed at all distributions points to protect the system from potentially accepting water from a well as it turns on. Float-activated butterfly valves will be used in conjunction with existing gravity screens as flow control valves. These valves will ensure that the distribution system never provides too great a flow for the gravity screens to accept. The District has used these float-activated butterfly valves for years and they have confidence in their reliable operation and easy maintenance. Also, these valves are considerably less expensive than other styles of flow control valves that are more complex.

B. CONSTRUCTION SCHEDULE

A ghant chart showing the expected construction schedule by task is shown in **Figure VII-1** for ease in analysis. An outline of the major categories is listed below.

1. Root Creek Water District Pre-Construction Management
    a. Complete Design (Completed two months after funding is secured.)
        i. 30% plans to completion
        ii. Contract documents
        iii. Final Engineers Cost Estimate
    b. Easements (Completed in late July 2003)
    c. Assessment Agreements (Completed in late July 2003)
    d. CEQA (Completed in mid October 2003)
    e. Permits
        i. Madera County (Finished September 2003)
        ii. ACOE (if applicable, finished December 2003)
        iii. RWQCB (if applicable, finished December 2003)
        iv. California Dept of Fish & Game (if applicable, finished December 2003)
2. Bidding Process (Completed 2 months after Design Completion)

3. Construction
    a. Mobilization (Completed two weeks after Bidding Process)
    b. Connections to existing irrigation systems (Completed early June 2004)
    c. Mainline and Lateral Pipelines and Connections (Completed mid August 2004)
    d. Crossing Ave 12 (Completed late June 2004)
    e. New Turnout 1-A Structure (Completed during MID down time for canal maintenance ~ mid November 2004)
    f. Punch List (Completed mid December 2004)

C. CONSTRUCTION INSPECTION PLAN

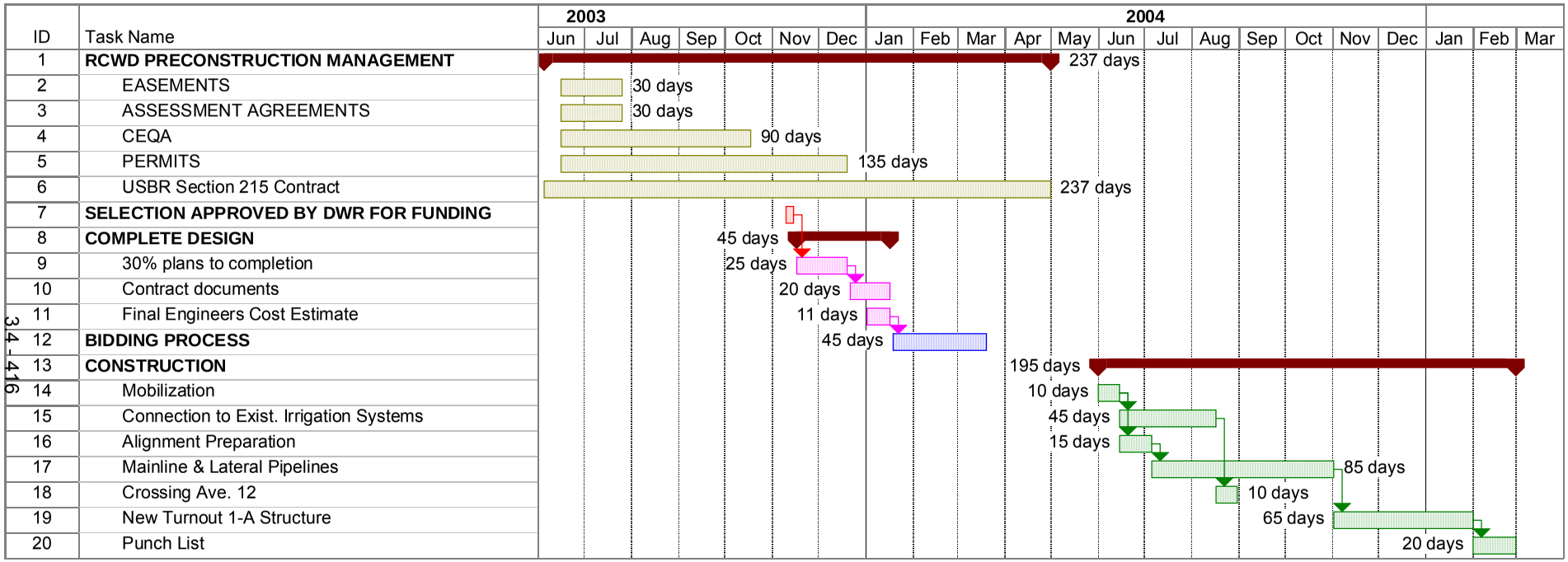
A qualified construction inspector from Provost & Pritchard Engineering Group, Inc. will be present approximately 20 hrs a week during construction. She/he will coordinate with the Contractor and the District to ensure that she/he is able verify contract requirements prior to and during critical events. Critical events for this project would include but not be limited to:

- Soils testing to determine compaction requirements
- Excavation of boring pits and installation of sled
- Boring under Ave. 12
- Forms and Rebar for New Turnout 1-A structure
- Concrete pour for the New Turnout 1-A structure
- Testing and compaction along MID's Lateral 6.2
- Transitions from mainline to lateral pipelines
- Avoidance of existing irrigation pipelines
- Grade verification along mainline pipeline
- Connections to existing irrigation systems
- Observation of construction along Root Creek
- Overall construction methods

A logged record of construction site visits will be kept to protect the District's interests and establish a record of the fashion in which construction occurred.

FIGURE VII-1

Root Creek Water District Proposition 13
Proposed Construction Schedule



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APPENDICIES

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Attachment 3.4, *A Cultural Resources Survey for the RCWD In-Lieu Groundwater Recharge Facilities Project Avenue 12 at Road 40*

Prepared by Sierra Valley Cultural Planning, dated February 2007

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A CULTURAL RESOURCES SURVEY FOR THE ROOT CREEK WATER DISTRICT IN-LIEU GROUNDWATER RECHARGE FACILITIES PROJECT AVENUE 12 AT ROAD 40, MADERA COUNTY, CALIFORNIA

Prepared by:

C. Kristina Roper, M.A., RPA
Sierra Valley Cultural Planning
Three Rivers, California

February 2007

A CULTURAL RESOURCES SURVEY FOR THE ROOT CREEK WATER DISTRICT IN-LIEU GROUNDWATER RECHARGE FACILITIES PROJECT AVENUE 12 AT ROAD 40, MADERA COUNTY, CALIFORNIA

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6 February 2007

Topographic Quadrangle: Lanes Bridge, Calif., 7.5' (1987)
Area: ~6 miles (9.7 kilometers) and ~200 acres (809 hectares)

(Keywords: *Madera, Township 11S/12S, Range 19E/20E, Hoyima Yokuts, Madera Irrigation District, Central Valley Project, Madera Canal, Lateral 6.2, Lanes Bridge, Deepwell School)*

(Cover Photo: Looking east along the Madera Canal, MID Lateral 6.2, where a new turnout is proposed.)

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ATTACHMENT 1: RECORDS SEARCH RESULTS

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MANAGEMENT SUMMARY

On January 28 and 31, 2007, a cultural resources survey was performed of approximately 2000 acres (809 hectares) and six linear miles (9.7 kilometers) located immediately south of Madera Irrigation District (MID) Lateral 6.2 of the Madera Canal in the vicinity of Avenue 12 and Road 40 in southern Madera County, California (see Figure 1). The Project's Area of Potential Effect (APE) includes those lands within Township 11S, Range 20E, Section 32; Township 11S, Range 19E, Sections 1 and 12; and Township 12S, Range 20E, Section 5-9 and 18, MDB&M, as depicted on the USGS Lanes Bridge, Calif., 7.5' topographic quadrangle map.

The Root Creek Water District (RCWD) is seeking surface water supplies for irrigation and direct recharge. To this end, the RCWD desires to enter into Section 215 contracts with the U.S. Bureau of Reclamation, a federal agency, for delivery of water as available from the Central Valley Project (CVP) Friant Unit. Pursuant to agreements with the Madera Irrigation District (MID), RCWD will take delivery of water through the Madera Canal and MID Lateral 6.2. The RCWD plans to construct a new turnout on MID Lateral 6.2, and run a pipeline from the new turnout to RCWD's northern boundary. From this point the water will flow through a 48" reinforced concrete pipeline to be distributed through smaller (18") PVC pipeline. The proposed turnout, main distribution pipeline and laterals, as well as the discharge area, are depicted in Figure 1.

The present study was performed to address both federal and state regulatory requirements regarding cultural resources. Identification of historic properties is required pursuant to provisions and implementing regulations of Section 106 of the National Historic Preservation Act when the proposed action has the potential for causing disturbance to or destruction of significant cultural resources (historic properties). A cultural resources survey is also required in such contexts pursuant to guidelines set forth in the California Environmental Quality Act. Consultation must also be conducted with interested parties to identify any traditional cultural properties that may be affected by the proposed project.

No historic properties or resources were identified as a result of surface inspection of the Project's APE; thus, it is unlikely that construction of the RCWD's water discharge facility will have an effect on significant archaeological, historical, or other cultural resources. No further cultural resources investigation is therefore recommended. In the unlikely event that buried archaeological deposits are encountered during project-related activities, work in the immediate vicinity of the discovery must cease until the finds have been evaluated by a qualified archaeologist. Should human remains be encountered during development, the County Coroner must be contacted immediately; if the remains are determined to be Native American, then the Native American Heritage Commission must be contacted as well.

1.0 INTRODUCTION

This report presents the findings of a cultural resources survey of 6 linear miles (9.7 kilometers) and ~200 acres (809 hectares) located south of MID Lateral 6.2 of the Madera Canal in the vicinity of Avenue 12 and Road 40 in southern Madera County, California. The Project's Area of Potential Effect (APE) is bounded by Lateral 6.2 of the Madera Canal on the north, Road 38 on the west, Avenue 9 on the south, and by residential and commercial properties to the east along the SR 41 corridor. The survey area includes those lands within Township 11S, Range 20E, Section 32; Township 11S, Range 19E, Sections 1 and 12; and Township 12S, Range 20E, Section 5-9 and 18, MDB&M, as depicted on the USGS Lanes Bridge, Calif., 7.5' topographic quadrangle map (see Figure 1).

The author and two assistants conducted a cultural resources survey of the Project APE on January 28 and 31, 2007. No significant cultural resources were identified as a result of surface inspection of the study area. A brief description of the natural and cultural setting of the project area follows this introduction. Survey methods and findings are presented in the subsequent section.

1.1 Project Description

The Root Creek Water District (RCWD) is seeking surface water supplies for irrigation and direct recharge. To this end, the RCWD desires to enter into Section 215 contracts with the U.S. Bureau of Reclamation, a federal agency, for delivery of water as available from the Central Valley Project (CVP) Friant Unit. Pursuant to agreements with the Madera Irrigation District (MID), RCWD will take delivery of water through the Madera Canal and MID Lateral 6.2. The RCWD plans to construct a new turnout on MID Lateral 6.2, and run a new pipeline from the new turnout to RCWD's northern boundary. From this point the water will flow through a 48" reinforced concrete pipeline to be distributed through smaller (18") PVC pipeline. The proposed turnout, main distribution pipeline and laterals, as well as the discharge area, are depicted in Figure 1.

1.2 Regulatory Context

The present study was performed to address regulatory requirements as set forth in Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR 800), as well as provisions of the California Environmental Quality Act (CEQA). Section 106 requires federal agencies, in this case the Bureau of Reclamation, or those they fund or permit, to consider the effect of their actions (undertakings) on historic properties, i.e., cultural resources which may be eligible for listing on the National Register of Historic Places (NRHP). Such resources may include, but are not limited to, archaeological, historical, architectural resources as well as traditional cultural properties. To meet these requirements, cultural resources present within the Project's Area of Potential Effect (APE) must be inventoried and evaluated for listing in the NRHP. Consultation must also be conducted with interested parties to identify any traditional cultural properties that may be affected by the proposed project.

CEQA requires that public or private projects financed or approved by public agencies must assess the effects of the project on historical resources. Historical resources are defined as buildings, sites, structures, objects or districts, each of which may have historical, architectural, archaeological, cultural, or scientific significance. Such properties may qualify for listing on the California Register of Historical Resources.

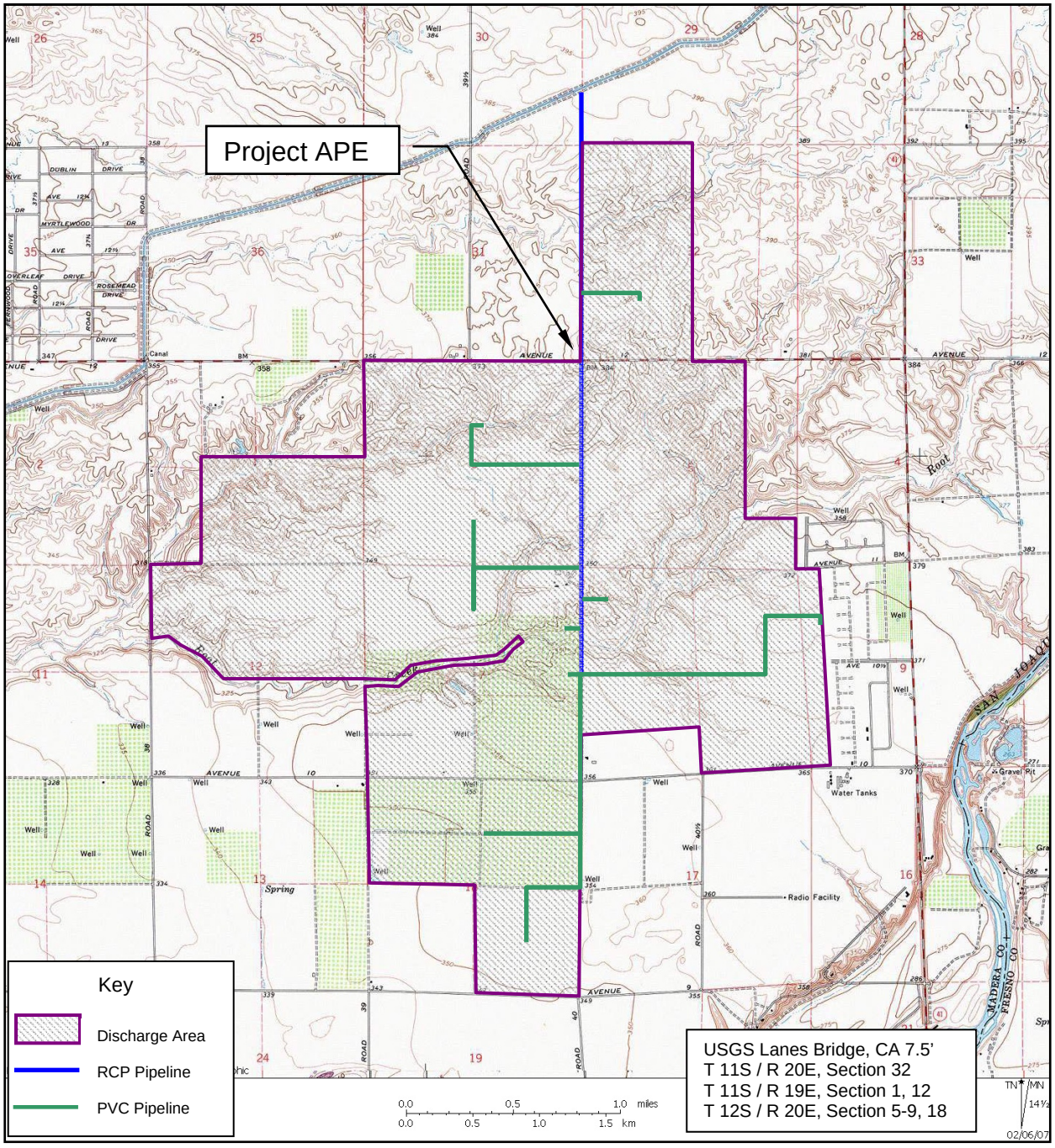

Figure 1. Root Creek Water District Project's Area of Potential Effect (APE), Avenue 12 at Road 40, Madera County, California.

2.0 SETTING

The Project APE is located in a rural agricultural zone located approximately two miles north of the City of Fresno west of the SR 41 corridor in southern Madera County, California. The Project APE is situated on a gently undulating plain approximately one mile north and west of the San Joaquin River. Twentieth century modifications within and immediately surrounding the study area include olive, pistachio, almond, and citrus orchards, and associated agricultural facilities including the S&J Ranch office, shop area and packing house, several water pumping facilities, and arterial access roads. A development of single-family residences is located to the east of the Project APE along SR 41. Figures 2a-d provide a pictorial overview of the Project APE.

2.1 Natural Environment

The Project APE is situated on the floor of the San Joaquin Valley one mile north and west of the San Joaquin River at an elevation ranging from 320 to 390 ft (98 to 119 m) above sea level. Topography is gently undulating to level with a gradual downward slope to the west and along stream courses. Native vegetation most likely consisted of climax stands of perennial bunchgrasses, such as purple needlegrass, and scattered oaks, with mixed riparian habitat along perennial waterways, and annual species on drier alluvial terraces above the floodplain. Other than the planted orchards, present vegetation within the boundaries of the Project APE includes non-native grasses and forbes. Soils within the study area grade between light brown to red-brown sandy alluvium with few rounded gravels. Small rounded cobbles are present within drainages.

Prior to EuroAmerican exploration and settlement in the region, the central San Joaquin Valley was extensive grassland covered with spring-flowering herbs. Stands of trees -- sycamore, cottonwoods, box elders and willows -- lined the stream and river courses with groves of valley oaks in well-watered localities with rich soil. Rivers yielded fish, mussels, and pond turtles; migratory waterfowl nested in the dense tules along the river sloughs downstream. Tule elk, sometimes referred to by early Spanish explorers as wild horses, found ample forage. Smaller mammals and birds, including jackrabbits, ground squirrels, and quail were abundant. Native Americans occupants of the region describe abundant sedge beds, along with rich areas of deer grass, plants that figure prominently in the construction of Native American basketry items.

2.2 Prehistoric Period Summary

The San Joaquin Valley and adjacent Sierran foothills and Coast Range have a long and complex cultural history with distinct regional patterns that extend back more than 11,000 years (McGuire 1995). The first generally agreed-upon evidence for the presence of prehistoric peoples in the region is represented by the distinctive fluted spear points, termed Clovis points, found on the margins of extinct lakes in the San Joaquin Valley. The Clovis points are found on the same surface with the bones of extinct animals such as mammoths, sloths, and camels. Based on evidence from elsewhere, the ancient hunters who used these spear points existed during a narrow time range of 10,900 BP to 11,200 BP.

Figure 2a. View east along Root Creek drainage bounded by pistachio orchards.

Figure 2b. View west through orchards with olives to the right and citrus at left.

Figure 2c. Water pumping facility within orchards.

Figure 2d. Packing shed located in central portion of parcel.

The next cultural period represented, the Western Pluvial Lakes tradition, thought by most to be after the Clovis period, is another widespread complex that is characterized by stemmed spear points. This poorly defined early cultural tradition is regionally known from a small number of sites in the Central Coast Range, San Joaquin Valley lake margins, and Sierra Nevada foothills. The cultural tradition is dated to between 8,000 and 10,000 years ago and its practitioners may be the precursors to the subsequent cultural pattern.

About 8,000 years ago, many California cultures shifted the main focus of their subsistence strategies from hunting to seed gathering, as evidenced by the increase in food-grinding implements found in archeological sites dating to this period. This cultural pattern is best known for southern California, where it has been termed the Milling Stone Horizon (Wallace 1954, 1978a), but recent studies suggest that the horizon may be more widespread than originally described and is found throughout the region. Radiocarbon dates associated with this period vary between 8,000 and 2,000 BP, although most cluster in the 6,000 to 4,000 BP range (Basgall and True 1985).

Cultural patterns as reflected in the archeological record, particularly specialized subsistence practices became codified within the last 3,000 years. The archeological record becomes more complex, as specialized adaptations to locally available resources were developed and populations expanded. Many sites dating to this time period contain mortars and pestles and/or are associated with bedrock mortars, implying the intense exploitation of the acorn. The range of subsistence resources utilized and exchange systems expanded significantly from the previous period. In the Central Valley, archaeological evidence of social stratification and craft specialization is indicated by well-made artifacts such as charmstones and beads, often found as mortuary items. Ethnographic lifeways serve as good analogs for this period.

2.3 Ethnographic Summary

The southern San Joaquin Valley was home to speakers of Yokutsan languages. The bulk of the Valley Yokuts people lived on the eastern side of the San Joaquin Valley. The San Joaquin River, with its maze of waterways and sloughs, formed the core of the Northern Valley Yokuts homeland (Wallace 1978:462). Population densities were highest in this area, with as many as 10+ people per square mile living along a narrow strip bordering the San Joaquin and its tributaries (Baumhoff 1963: map 7). Kroeber (1925) identifies the *Hoyima* Yokuts as occupying the area from the north bank of the San Joaquin River to as far north as the Fresno River. They had a settlement at *Moyoliu* located near the confluence of Little Dry Creek and the San Joaquin River approximately four miles east of the Project Study Area (Kroeber 1925:484). No village or other named sites are identified within one mile radius of the project area.

Numerous accounts of Valley Yokuts lifeways offer details of pre-European land use in the San Joaquin Valley. The reader is referred to Gayton (1948), Kroeber (1925), Latta (1999), and Wallace (1978) for additional information on pre-contact Yokuts subsistence and culture.

2.4 Historic Period Summary

The San Joaquin Valley was visited in the early 1800s by Spanish expeditions exploring the interior in search of potential mission sites. The Moraga (1806) expedition may have passed through *Hoyima* territory (Cook 1960). In 1832-33 Colonel Jose J. Warner, a member of the Ewing-Young trapping expedition, passed through the San Joaquin Valley. Warner described Native villages densely packed along the valley waterways, from the foothills down into the slough area. The next year he revisited the area following a devastating malaria epidemic. Whereas the previous year the region had been densely occupied by Native peoples,

during this trip not more than five Indians were observed between the head of the Sacramento Valley and the Kings River (Cook 1955).

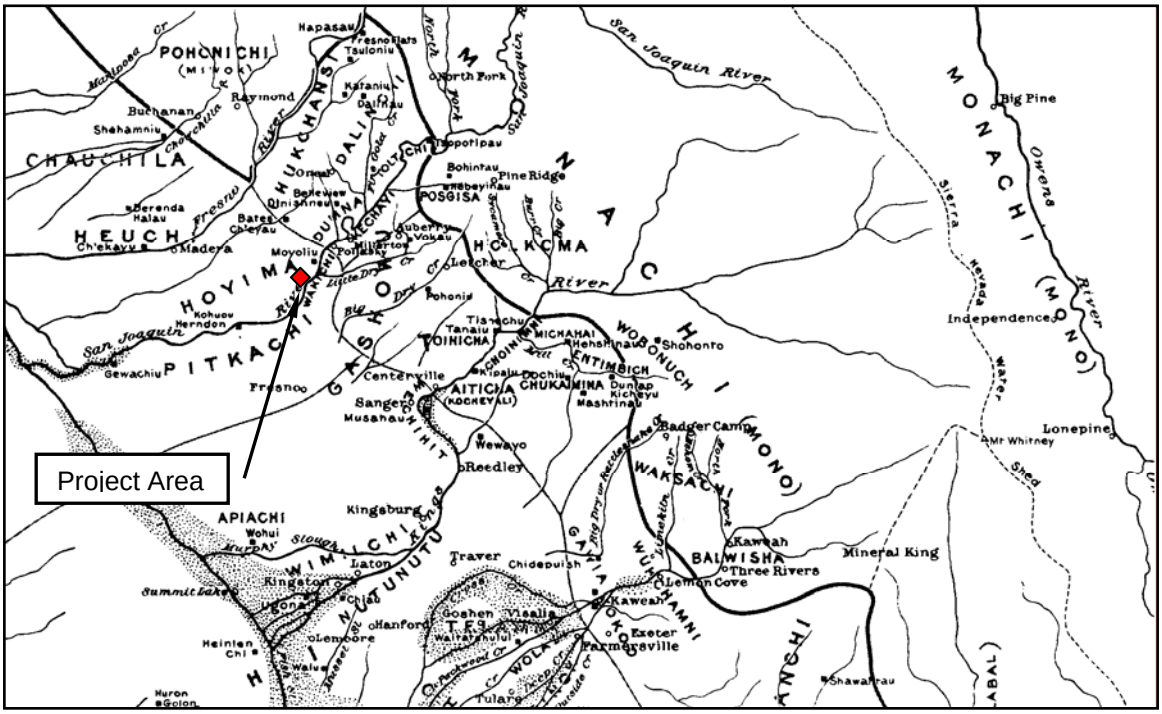

Figure 3. Northern Valley Yokuts Village Locations (from Kroeber 1925: Plate 47).

EuroAmerican settlement of the region began in 1851 with the establishment of Fort Miller on the San Joaquin River. Hostilities between Native inhabitants and American settlers initially prevented widespread settlement of the region; however, by 1860 such threats had been reduced and settlers began taking up large tracts in the region.

Madera County was founded in 1893. It developed as the residents of the region became disenchanted with the county's government seated in Fresno. Much of what became the county was represented in Fresno by one supervisor who was often ignored when it came to any concern above the San Joaquin River. Area residents won the right to secede from Fresno County with a successful vote in Fresno in 1893. The city of Madera is located about 12 miles west/northwest of the Project APE.

The earliest economic development of the area focused on cattle. Miller and Lux, the cattle kings, claimed ownership to over 150,000 acres in Madera County. Agriculture, particularly winter wheat cultivation, gained importance following passage of the "No Fence" law of 1874 (Clough 1996:29). Expansion of agriculture as an economic focus did not occur until after introduction of irrigation into the region. Miller and Lux were the first to provide for irrigation in Madera County. They took water from the Fresno and San Joaquin rivers and spread it through canals over their grasslands in western Madera County (Footman 1956). Isaac Friedlander is credited as being the first to initiate irrigation on his holdings in east-central Madera County by about 1871 (Clough 1996:37). The Madera Canal and Irrigation Company was formed soon after and delivered water from the Fresno River south to the early colony

developments such as the Alabama Colony located west of the study area centering around Borden (Clough 1996:37). Following construction of Friant Dam (completed in 1944) and the Madera Canal (completed 1950), irrigation ditches were constructed to distribute water through the county (JRP Historical Consulting Services and California Department of Transportation 2000:79).

Figure 4 depicts land ownership and improvements in the present study area ca. 1914. Figure 5 presents the same information for 1891. Several of the current roadways are depicted on these early maps, including Roads 38 and 41 (now SR 41) and Avenues 9 and 12. Lane's Bridge, situated east of the APE crossing the San Joaquin River, is clearly identified on the 1914 map; the "Yo Semite" Bridge is identified just south of this location on the earlier 1891 map. Four residential structures are depicted on the 1891 map within the Project APE, none of which remain within the Project APE. The historic Deepwell School (Figure 6) is located on the 1914 map immediately adjacent to the Project APE on the northwest corner of Avenue 12 at Road 40; a modern residence is now located on this site. All of the lands within the Project APE are now owned and/or operated by S&J Ranch, a farm management company started in 1950.

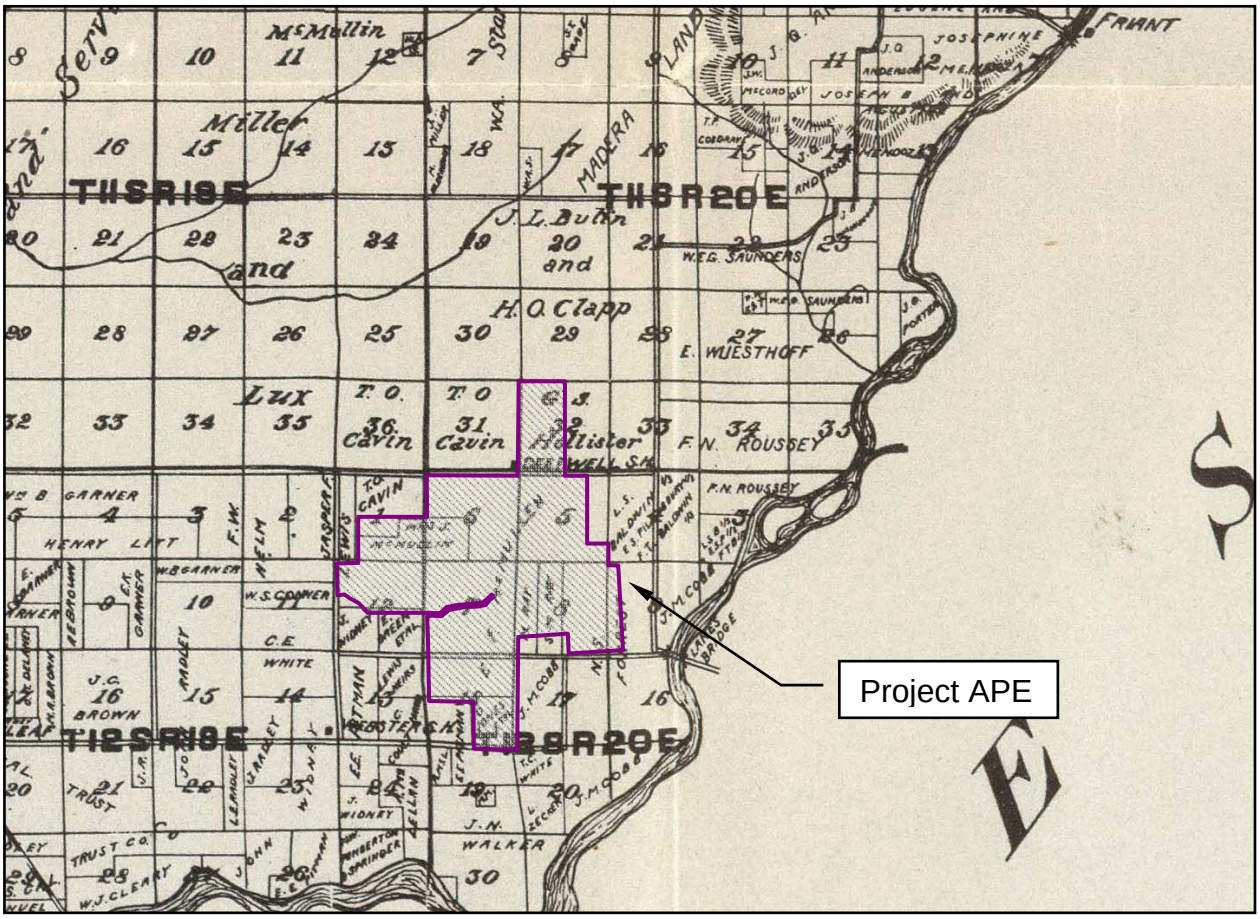

Figure 4. 1914 Map depicting parcel ownership and development within the Project APE (F. E. Smith Survey Company 1914).

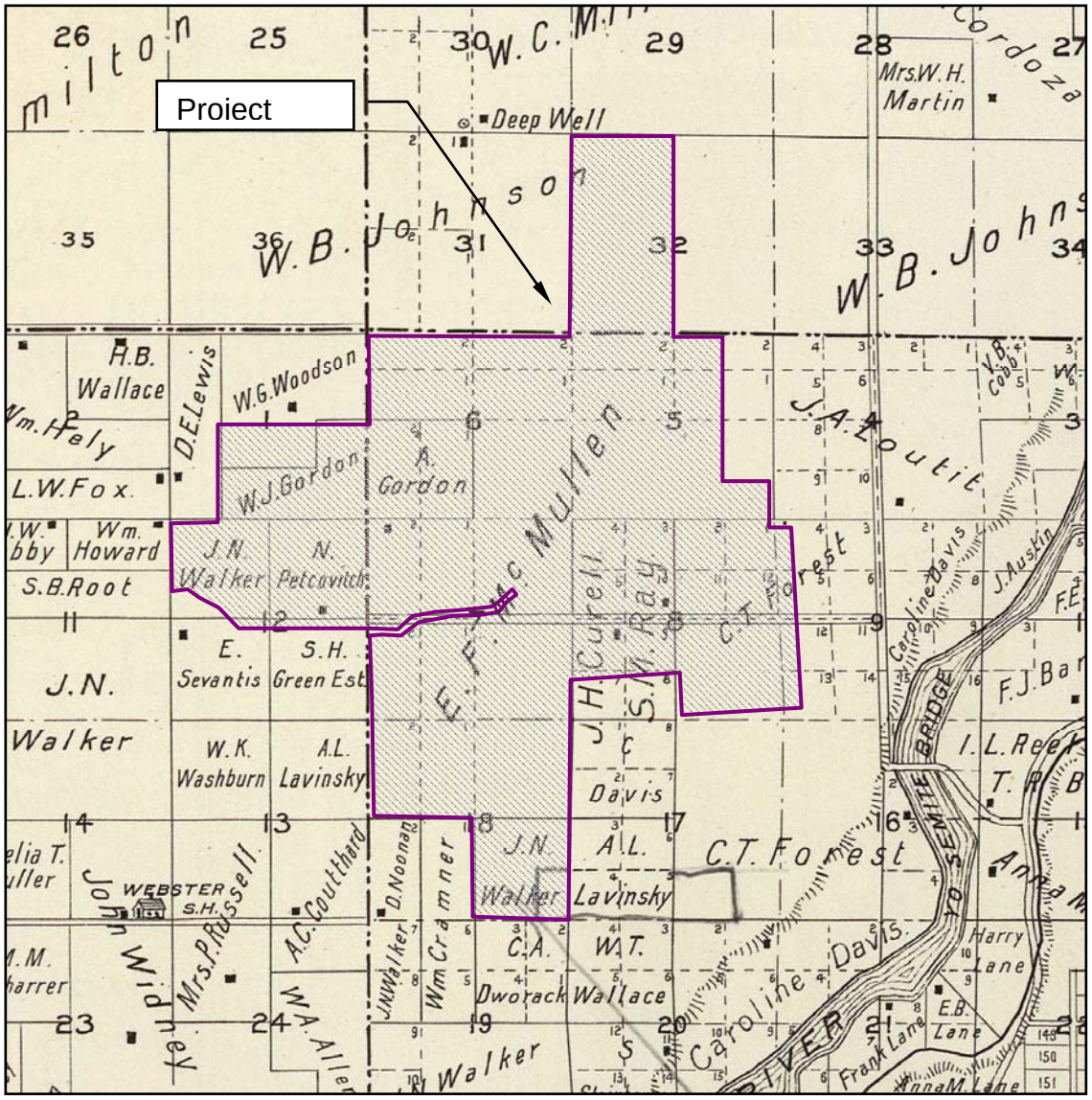

Figure 5. 1891 Map depicting parcel ownership and development within the Project APE (Thompson 1891).

Figure 6. Historic Deepwell School, formerly located at the SW corner of Ave. 12 and Rd. 40.

3.0 METHODS AND FINDINGS

3.1 Record Search Results

Prior to field inspection, the author reviewed records on file with the Southern San Joaquin Valley Information Center of the California Historical Resources Information System to identify areas previously surveyed and identify known cultural resources present within or in close proximity to the Project APE. One recorded cultural resource (two fragments of an isolated milling slab identified along Root Creek; P-20-2236), has have been identified within the present APE; an obsidian biface fragment (P-20-2235) and a concentration of four adobe blocks (P-20-2307) were recorded in close proximity to the APE boundaries. No other cultural resources have been documented either within or in one mile radius of the Project APE.

Three surveys have been conducted within the Project APE. In 1995 Applied EarthWorks, Inc. surveyed a total of 2,553 acres for the proposed Gateway Village Specific Plan of the Village of Gateway Area Plan (Moratto and Wickstrom 1995; Clark 1997). Other than the two isolated artifacts described above (P-20-2235 and -2236), no cultural resources were identified as a result of the investigation.

In 2004 additional acreage not included in the previous studies were surveyed by Environmental Science Associates in support of infrastructure improvement associated with the Gateway Village Specific Pan (ESA 2005). An earlier linear survey, completed in 1976 for the Helms Transmission Line project for PG&E (Wren 1976), crossed through the northernmost extent of the present APE in the area of Lateral 6.2 of the Madera Canal. No cultural resources were identified and documented as a result of either of these studies (see Attachment 1).

3.2 Native American Consultation

The Native American Heritage Commission NAHC) was contacted in January 2007 in order to determine whether Native American sacred sites have been identified either within or in close proximity to the project area. No such sites have been identified. During a recent investigation of portions of the present APE, Environmental Science Associates (2005) contacted the NAHC and requested information on locations of importance to Native Americans and a list of Native Americans that should be contacted. Consultation was initiated with representatives of five Native American groups in the region including representatives of Table Mountain Rancheria in Friant and the Santa Rosa Rancheria in Lemoore. No traditional cultural properties or other areas of concern were identified as a result of Native American consultation conducted at that time.

3.3 Field Survey

On January 28 and 31, 2007, the author and two assistants conducted a cultural resources survey of the Project APE. Surface visibility was fair to excellent depending on ground cover. The majority of the APE was inspected with the aid of two 4-wheel all terrain vehicles running 30-50 meter spaced transects at an average speed of 5 miles per hour. The exception was the area of the proposed turnout on Lateral 6.2 of the Madera Canal and the proposed pipeline alignment to the RCWD boundary. This portion of the APE was intensively inspected using 5-meter-spaced transects to identify any potential cultural resources which may be present in lands controlled by the Bureau of Reclamation.

3.4 Survey Findings

No artifacts or concentrations of prehistoric debris suggesting intensive use or occupation were identified. Other than the Madera Canal Lateral (discussed below and the S&J Ranch office, shop and packing house areas, several water pumping facilities and wells (which are less than 50 years of age), no structures or features were noted within or immediately adjacent to the Project APE. The two groundstone fragments reported by Applied EarthWorks in their 1997 study were not found despite an intensive on-foot inspection of the Root Creek drainage where they were previously identified. No plant resources of potential value for Native Americans such as sedge or deer grass, which are of importance in the traditional methods of basketry construction, were observed in the Project APE. Due to the extensive disturbance as a result of land leveling and agricultural use, archaeological deposits may have been removed or destroyed; periodic fluvial deposition may have buried older living surfaces, obscuring surface evidence of archaeological remains.

Madera Canal Lateral 6.2

The 36-mile Madera Canal is part of the Central Valley Project (CVP) which represents "one of the most ambitious and successful water development projects ever taken" (JRP Historical Consulting Services and the California Department of Transportation 2000:73). The Madera Canal, also known as the Friant-Madera Canal, runs from Friant Dam to Chowchilla and was completed in the late 1940s and fully operational by 1950. As part of the larger CVP, the Madera Canal may be eligible for listing on both the National Register as a contributing element of the CVP under Criterion A (association with events that have made a significant contribution to the broad patterns of our history).

Distribution of water from the Madera Canal is handled by laterals such as Lateral 6.2, which were built in the 1950s and 1960s (Clough 1996). Lateral 6.2, put into service in March of 1962 (Bureau of Reclamation 1964:2), is an open, earth-lined canal which appears to have been deepened and widened in the more recent past. Due to its date of construction during the past 50 years, and subsequent modifications, Lateral 6.2 is not a contributing element to the Madera Canal and larger CVP water conveyance system, and is not considered an historic property or resources for purposes of Section 106 and CEQA..

3.5 Recommendations

No potentially significant or important cultural resources were identified as a result of surface inspection of the Project APE. Based on the lack of surface evidence of cultural resources within the project area, it is unlikely that proposed project construction will have an effect on significant archaeological or other cultural resources. Therefore, no further cultural resource investigation is recommended at this time. In the unlikely event that unanticipated buried archaeological deposits are encountered during project-related activities, work in the immediate vicinity of the discovery must cease until the finds can be evaluated by a qualified archaeologist. Should human remains be encountered within the project area, the County Coroner must be contacted immediately; if the remains are determined to be Native American, then the Native American Heritage Commission must be contacted as well.

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Attachment 1:

Records Search with the Southern San Joaquin Valley Information Center, Copies of Resource and Survey Maps Reviewed

Attachment 3.4, Surface Water Contracts

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WATER EXCHANGE AGREEMENT

(Westside Mutual – Shafter Wasco Irrigation District)

THIS AGREEMENT (the or this "Agreement") is executed in quadruplicate as of the Commencement Date by and between WESTSIDE MUTUAL WATER COMPANY, LLC ("Westside"), SHAFTER-WASCO IRRIGATION DISTRICT ("SWID"), MADERA IRRIGATION DISTRICT ("MID"), and ROOT CREEK WATER DISTRICT ("RCWD").

W I T N E S S E T H:

WHEREAS, Westside and its members have certain rights to groundwater banked in storage accounts within North Kern[1] and may hereafter bank additional water in storage accounts within North Kern; and

WHEREAS, Westside desires to extract its groundwater banked in storage accounts within North Kern for delivery to SWID which will, in turn, release to MID a like amount of surface water in Friant for delivery to RCWD at its turnout on the MID 6.2 Lateral; and

WHEREAS, Westside and SWID intend that the exchange provided in this Agreement shall be deemed a delivery of Westside's groundwater banked in storage accounts within North Kern to RCWD in Madera County by exchange for SWID's Friant surface water;

WHEREAS, RCWD and MID entered into that certain Agreement for the Conveyance and Sale of Water dated March 13, 2002, (the "2002 Agreement") that, among other things, provides the terms for MID's conveyance of water to the RCWD Turnout.

NOW, THEREFORE, in consideration of the mutual covenants contained in this Agreement, the parties agree as follows:

ARTICLE I
DEFINITIONS

1.00. AF.

"AF" means acre feet.

1.01. CEQA.

"CEQA" means the California Environmental Quality Act.

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[1] The term "North Kern" and other words and phrases are defined in Article I hereof.

1.02. Commencement Date.

"Commencement Date" means January 1, 2009.

1.03. Force Majeure Event.

"Force Majeure Event" means any of the following:

(a) Adverse impacts (other than de minimus impacts) to SWID's operations, water supply or costs with respect to deliveries which cannot be reasonably mitigated.

(b) Any flood, earthquake, failure of any facility not owned by Westside, acts of God (other than drought), governmental or court actions, Reclamation allocations and other events which are beyond the reasonable control of, and have not been caused or contributed to by the parties hereto.

1.04. Friant.

"Friant" means the Friant Division of the Central Valley Project.

1.05. Maximum Delivery Quantity.

"Maximum Delivery Quantity" means for a particular Year the following amount of water expressed in AF:

Year After Commencement Date	Maximum Delivery Quantity
Years 1 – 4	3,500
Years 5 – 9	5,000
Years 10 +	7,000

Because the Commencement Date is January 1, 2009, Year 1 is Year 2009, Year 5 is Year 2013 and Year 10 is Year 2018.

1.06. MID.

"MID" means MADERA IRRIGATION DISTRICT, a California irrigation District.

1.07. North Kern.

"North Kern" means NORTH KERN WATER STORAGE DISTRICT, a California water storage district.

1.08. Point of Delivery.

"Point of Delivery" means SWID's northern Intake Canal or southern intake (through a connection with North Kern facilities) from the Friant Kern Canal for deliveries to SWID.

1.09. Reclamation.

"Reclamation" means the United States Bureau of Reclamation.

1.10. Root Creek.

"RCWD" means ROOT CREEK WATER DISTRICT, a California water district.

1.11. RCWD Turnout.

"RCWD Turnout" means the new turnout and meter to be constructed by RCWD in the general location of the intersection of the Road 40 alignment and the MID Lateral 6.2 from the Madera Canal.

1.12. SWID.

"SWID" means SHAFTER-WASCO IRRIGATION DISTRICT, a California irrigation district.

1.13. Westside.

"Westside" means WESTSIDE MUTUAL WATER COMPANY, a California limited liability company.

1.14. Year.

"Year" means a calendar year commencing January 1 and ending December 31.

ARTICLE II
EXCHANGE

2.00. Delivery of Water to SWID.

Westside shall have the right, but not the obligation, to deliver the Maximum Delivery Quantity to SWID at the Point of Delivery during the period April 1 through October 31 of each Year. The water so delivered by Westside to SWID may, at the sole discretion of Westside, be either (a) groundwater banked within North Kern or (b) Westside surface water delivered using North Kern conveyance facilities. Westside shall use its reasonable efforts to deliver any water to SWID according to a schedule

acceptable to SWID at times and to the extent SWID then has demands within the system into which such water is delivered. Westside shall not be obligated to deliver more than 17 cubic feet per second of water to SWID at any time.

2.01. Transfer of Friant Surface Water to Westside.

For each acre foot of water delivered by Westside to SWID at the Point of Delivery, SWID shall request the simultaneous transfer to MID, for the benefit of Westside, of one acre foot of SWID's Friant water which MID shall deliver to RCWD at the RCWD Turnout. MID shall accept the water transferred by SWID to MID and shall deliver that water less losses incurred in the Madera Canal and MID Lateral 6.2 to RCWD at the RCWD Turnout. Westside shall be responsible for providing sufficient water to SWID so that following the exchange to MID and the losses incurred in the Madera Canal or the MID Lateral 6.2, MID will be able to deliver the amount of water Westside desires to deliver to RCWD. Neither SWID nor MID will be responsible for any losses in the Madera Canal or the MID Lateral 6.2 or otherwise. All losses shall be borne by Westside and determined under the 2002 Agreement which provides for (a) no losses in the Madera Canal, (b) measurement of the delivered water at the Madera Canal outflow structure into MID Lateral 6.2 and no calculation of losses if the only water conveyed in Lateral 6.2 is that being delivered to RCWD, and (c) losses of 3 percent in MID Lateral 6.2 if there is water in Lateral 6.2 in addition to that being delivered to RCWD. Deliveries by MID to RCWD shall be strictly pursuant to the terms of the 2002 Agreement, including but not limited to, scheduling, pricing, computation of losses, measurement and priority.

2.02. Point of Measurement.

All water delivered to SWID under this Agreement shall be metered at the Point of Delivery by SWID.

All water delivered to RCWD under this Agreement shall be metered at the RCWD Turnout.

ARTICLE III
GENERAL PROVISIONS

3.00. Term.

The term of this Agreement shall be 26 years from and after the Commencement Date. This Agreement may be extended upon the mutual agreement of parties hereto.

3.01. Conditions Precedent.

The following are conditions precedent to the parties' performance under this Agreement:

(a) Reclamation Findings.

Reclamation shall (1) approve the exchange set forth in this Agreement and (2) provide written confirmation that SWID's Friant water exchanged for Westside's banked groundwater in North Kern shall be considered "non-project" water when delivered to RCWD. RCWD shall bear all costs to obtain the approval and confirmations set forth in this subsection 3.01(a).

(b) CEQA Compliance.

RCWD, MID and SWID shall complete their environmental review as required by the CEQA for the actions contemplated by this Agreement, and the time period to appeal the approval by RCWD, MID and SWID of any CEQA document shall have expired.

(c) Approvals.

All necessary approvals or consents from any governmental agency for the actions contemplated by this Agreement shall be received.

3.02. Assignment.

Westside may assign its rights and delegate its obligations under this Agreement, and SWID hereby consents to such assignment and delegation, to (a) RCWD, (b) North Kern, (c) an entity affiliated with Westside, or a trust or foundation for estate planning purposes of the owner(s) of Westside (or its members), provided, however, such affiliate, trust or foundation is substantially capable of performing the obligations under this Agreement as Westside. Except as expressly allowed in this section 3.02, no party shall assign or transfer this Agreement or any right or interest herein or hereunder, or suffer or permit any such assignment or transfer to occur by operation of law without the prior written consent of the other party hereto, which consent shall not be unreasonably withheld. Subject to the foregoing, this Agreement shall be binding upon the successors and assigns of the respective parties hereto.

3.03. Force Majeure.

Performance under this Agreement by all parties may be suspended upon the occurrence of a Force Majeure Event which causes the affected party to be unable to substantially perform its obligations hereunder; provided, however, that no suspension shall extend the term of this Agreement. The affected party shall provide the other party written notice of the estimated duration of the suspension of performance and basis for the suspension prior to the suspension, if possible, and in no event less than one business day following the suspension. The affected party shall thereafter provide the other party with any information obtained regarding the Force Majeure Event and any information reasonably requested. Westside shall have 60 days from receipt of written notice of a

Force Majeure Event adversely impacting SWID to mitigate the impact to the reasonable satisfaction of SWID.

3.04. Reduction of Maximum Delivery Quantity.

The Maximum Delivery Quantity for all purposes under this Agreement shall be reduced in any Year when the SWID allocation of Class 1 water from Reclamation falls below 22,000 AF. The Maximum Delivery Quantity in such a Year, and only for that Year, shall be redetermined to be an amount equal to the Maximum Delivery Quantity multiplied by a fraction the numerator of which is SWID's allocation of Class 1 water from Reclamation and the denominator of which is 22,000.

3.05 Notices.

All notices and other communications required under this Agreement shall be in writing and shall be deemed to have been duly given (a) on the date of service, if served personally on the person to whom notice is to be given, (b) on the date of service if sent by e-mail or telecopier, provided the original is concurrently sent by first class mail, and provided that notices received by email or telecopier after 5:00 p.m. shall be deemed given on the next business day, (c) on the next business day after deposit with a recognized overnight delivery service, or (d) or on the third day after mailing, if mailed to the party to whom notice is to be given by first class mail, registered or certified, postage-prepaid, and properly addressed as follows:

To Westside: William D. Phillimore, Executive Vice President
Westside Mutual Water Company
33141 E. Lerdo Highway
Bakersfield, California 93308-9767

With a copy to:
Roll International Corporation
Attn: General Counsel
11444 W. Olympic Blvd., 10th Floor
Los Angeles, CA 90064

To SWID: General Manager
P.O. Box 1168
Wasco, CA 93280

To RCWD: Philip R. Pierre, President
c/o Christopher L. Campbell, Esq.
Baker, Manock & Jensen
5260 N. Palm Avenue, Suite 421
Fresno, CA 93701

To MID: General Manager
12152 Road 281/4

Madera, CA 93637

or at such other address as any party may, by like notice, designate to the other parties in writing; provided, however, that any notice given under section 3.04 hereof shall comply with the additional notice requirements of that section.

ARTICLE IV
INTERPRETATION OF AGREEMENT

4.00. Introduction.

The rules of interpretation contained in this Article IV shall govern the interpretation of this Agreement.

4.01. Definitions.

The words and phrases defined in Article I hereof shall govern the interpretation of this Agreement.

4.02. Applicable Law.

The laws of the State of California without regard to conflict of law principles shall govern the interpretation of this Agreement.

4.03. Amendment of Agreement.

This Agreement may not be modified, changed, altered, amended, or otherwise revised except by a duly executed written amendment.

4.04. Statutory Rules of Interpretation.

Any rule of interpretation that in ambiguity is to be resolved against the drafting party shall not be employed in the interpretation of this Agreement, any exhibits hereto, or any amendments hereof, and neither Civil Code section 1654, nor any similar law shall be applied to resolve any ambiguity in this Agreement.

4.05. Opinions and Determinations.

Except as may be otherwise provided in this Agreement, or any term of this Agreement provides for action to be passed on the opinion, judgment, approval, consent, review, certification, or determination of a party, such terms shall not be construed as permitting the opinion, judgment, approval, consent, review, certification, or determination to be arbitrary, capricious or unreasonable.

4.06. Waiver.

The waiver of any party hereto of any right with respect to a default or any other matter arising under this Agreement shall not constitute or be construed as constituting a waiver with respect to any other default or matter.

4.07. Remedies not Exclusive.

Except as otherwise provided in this Agreement, the application by any party hereto of any remedy provided in this Agreement for the enforcement of this Agreement is not exclusive and shall not deprive such party of, or limit the application of, any other remedy provided by law, in equity, or otherwise.

4.08. Captions.

The captions, articles and sections of this Agreement do not define the scope, meaning or intent of this Agreement.

IN WITNESS WHEREOF, WESTSIDE, SWID, MID and RCWD have caused this Agreement to be executed as of the effective date.

WESTSIDE MUTUAL
WATER COMPANY, LLC

By_____
Name: **William D. Phillimore**
Title: **Executive Vice President**

"Westside"

SHAFTER-WASCO
IRRIGATION DISTRICT

By_____
Name:
Title:

By_____
Name:
Title: General Manager

"SWID"

MADERA IRRIGATION DISTRICT

By_____
Name:
Title: President

"MID"

ROOT CREEK WATER DISTRICT

By_____
Name: Philip R. Pierre
Title: President

"RCWD"

DMS: 774855_1

WATER SUPPLY AGREEMENT

between

ROOT CREEK WATER DISTRICT

and

WESTSIDE MUTUAL WATER COMPANY, LLC

November 1, 2006

WATER SUPPLY AGREEMENT

THIS WATER SUPPLY AGREEMENT is made effective as of November 1, 2006, by and between the ROOT CREEK WATER DISTRICT, a California water district ("RCWD") and WESTSIDE MUTUAL WATER COMPANY, LLC, a California limited liability company ("Westside").

RECITALS:

A. RCWD is a California water district, located in Southeastern Madera County. The lands of the district have been extensively developed to agriculture, and in particular, permanent plantings. Also, a portion of the district has been designated for municipal and industrial development.

B. The lands within RCWD rely primarily on groundwater, and the groundwater basin underlying the district is in a state of overdraft. In order to efficiently manage its groundwater supplies, RCWD is seeking to acquire surface water supplies for conjunctive use purposes.

C. RCWD has acquired or will acquire certain wet-year supplies that it intends to deliver to its agricultural water users. RCWD is also seeking "firm" supplies, available in dry years, that will be available if necessary for the agricultural, municipal and industrial development within the district. Westside desires to provide RCWD with dry-year firm supplies, as described below.

D. Westside and its members have certain rights to banked groundwater in the North Kern Water Storage District ("North Kern") and may bank additional water in North Kern in the future. Westside proposes to pump and deliver banked groundwater to North Kern, for North Kern in turn to deliver to the Shafter Wasco Irrigation District ("SWID"). SWID shall use the banked groundwater delivered from North Kern in lieu of a comparable amount of surface water that SWID would otherwise have taken from the Friant Unit of the Central Valley Project ("Friant"), under its long-term water supply contract with the US Bureau of Reclamation ("Reclamation"). Westside and its members also have access to certain non-project supplies (i.e., waters that are not captured or delivered by Reclamation's Central Valley Project) that Westside may provide to RCWD under this Agreement.

E. The Friant water that could have been delivered to SWID shall remain in Lake Millerton, available for delivery to RCWD through the Madera Canal and related facilities. The parties intend that the SWID water delivered from Lake Millerton to RCWD shall be deemed an exchange for North Kern banked groundwater, and shall not be deemed to be Federal project water when delivered to RCWD.

NOW THEREFORE, in consideration of the mutual covenants and conditions contained in this Agreement, the parties agree as follows:

1. Definitions. Definitions for the following terms are found at the following paragraphs of this Agreement:

(a) "Approvals" is defined at Paragraph 10.

(b) "CEQA" is defined at Paragraph 10(b).

(c) "Commencement Date" is defined at Paragraph 8.

(d) "Delivered Price" is defined at Paragraph 3(c).

(e) "Delivery Point" is defined at Paragraph 6.

(f) "Event of Default" is defined at Paragraph 16.

(g) "Friant" is defined at Recital D.

(h) "Force Majeure Event" is defined at Paragraph 14(b).

(i) "Maximum Delivery Quantity" is defined at Paragraph 2.

(j) "North Kern" is defined at Recital D.

(k) "Order" is defined at Paragraph 5.

(l) "Pre-Delivered Water" is defined at Paragraph 7.

(m) "Reclamation" is defined at Recital D.

(n) "Replacement Water Supply" is defined at Paragraph 16.

(o) "Pre-Delivery Notice" is defined at Paragraph 7.

(p) "RCWD" is defined in the Preamble.

(q) "Reservation Fee" is defined at Paragraph 3(a).

(r) "Standby Charge" is defined at Paragraph 3(b).

(s) "SWID" is defined at Recital D.

(t) "Term" is defined at Paragraph 8 .

(u) "Uncredited Standby Charges" is defined at Paragraph 7(b)(i).

(v) "Westside" is defined in the Preamble.

2. Agreement to Sell/Right to Purchase. Westside hereby agrees to sell to RCWD banked groundwater or other non-project waters available to Westside each year as requested by RCWD pursuant to the notice procedure set forth below. The amount Westside is obligated to sell each year shall not exceed the "Maximum Delivery Quantity" for that year described in Exhibit "A" to this Agreement and incorporated herein by this reference. RCWD shall not be obligated to purchase water from Westside, except as provided in this Agreement.

3. Pricing.

(a) *Reservation Fee.* Notwithstanding any other provision herein, commencing January 1, 2006 and continuing until the Commencement Date, RCWD shall pay to Westside the sum of $50,000 each calendar quarter to reserve the availability of water supplies under this Agreement (the "Reservation Fee"). The Reservation Fee shall be paid not later than the 30th day of each calendar quarter.

(b) *Standby Charge.* Beginning on the Commencement Date, RCWD shall pay to Westside an annual "Standby Charge" of $180 per acre-foot of the Maximum Delivery Quantity available each calendar year, as specified in Exhibit "A" hereto, as adjusted pursuant to this paragraph 3(b) and paragraph 9(b)(ii) hereof. Commencing on the Commencement Date and annually thereafter, the Standby Charge shall be adjusted annually for inflation by the same percentage as the percentage change in the Consumer Price Index for All Urban Consumers, West Region from the value of the Index on January 1, 2006. The annual Standby Charge shall be paid not later than January 31 of each year. Subject to paragraph 7(b)(ii) hereof, all Standby Charges paid shall be credited against the price of water purchased under this Agreement. Any Standby Charges paid that are not credited to water purchased in any year shall roll over into subsequent years until utilized for water purchased. While there shall be no limit to the amount of credit RCWD can accrue for Standby Charges paid, RCWD shall not be entitled to exceed the Maximum Delivery Quantity of water available in any year. If at the end of the Term there is a credit remaining, then RCWD shall be entitled to order and delivery, and be subject to pre-delivery, of the amount of water that can be purchased with such credit pursuant to the provisions of this Agreement.

(c) *Water Charge.* The price of water delivered under this Agreement shall be $600 per acre-foot (the "Delivered Price") as adjusted pursuant to this paragraph 3(c) and paragraph 9(b)(ii) hereof. Commencing on the Commencement Date and annually thereafter, the Delivered Price shall be adjusted annually for inflation by the same percentage as the percentage change in the Consumer Price Index for All Urban Consumers, West Region from the value of the Index on January 1, 2006.

4. Payment of Delivered Price. RCWD shall pay the Delivered Price for all water ordered within 60 days of the Order for such water. Standby Charges paid shall be credited against the Delivered Price pursuant to paragraph 3(b) hereof.

5. Ordering. Not later than April 1 of each calendar year, RCWD shall give written notice to Westside of the amounts of water to be purchased that year (the "Order"), up to the Maximum Delivery Quantity for that year. At RCWD's option, RCWD may also include in the Order a monthly schedule of requested deliveries as well as the total for the year and Westside shall use its reasonable good faith efforts to comply with the requested delivery schedule. In no case shall Westside be obligated to deliver more than 13.5 percent of the Maximum Delivery Quantity for that year in any single month; provided, however, that Westside shall remain obligated to deliver the full Maximum Delivery Quantity.

6. Delivery. The delivery point for all water ordered under this Agreement shall be RCWD's turnout on Madera Irrigation District Lateral 6.2 from the Madera Canal (the "Delivery Point"). The delivery period for all water ordered shall be April through September. Westside shall not be obligated to deliver any water during the period October through March; provided, however that Westside may pre-deliver water at any time during the year pursuant to paragraph 7 hereof regarding Pre-Delivery.

(a) *Conveyance to Delivery Point.* Except as provided in this Agreement, Westside shall be solely responsible for conveyance arrangements necessary to deliver the water to the Delivery Point, including, but not limited to, contracting with other parties for water exchanges.

(b) *Losses.* Westside shall be responsible to deliver the full amount of water specified in the Order to the Delivery Point and shall have no responsibility for any losses of any kind after its delivery of water to the Delivery Point. RCWD shall be solely responsible for any losses, including carriage or conveyance losses, after the Delivery Point.

7. Pre-Delivery. Westside may, at its option, deliver water at any time during the year to RCWD prior to receipt of an Order for such water ("Pre-Delivered Water"), provided that RCWD has available conveyance capacity and beneficial use (including capacity for direct recharge) for such water. Westside shall notify RCWD in writing when and if Westside has water available for pre-delivery ("Pre-Delivery Notice"). The Pre-Delivery Notice shall specify the amount of water available to be pre-delivered and the proposed timing of delivery. Not later than ten (10) days following receipt of the Pre-Delivery Notice, RCWD shall notify Westside how much, if any, Pre-Delivered Water that RCWD has the conveyance capacity and beneficial use to receive over and above that dedicated to receiving Section 215 water available to RCWD as a Section 215 contractor with the Bureau of Reclamation and/or water available under its agreement with Madera Irrigation District dated March 13, 2002 as it exists on the date hereof. RCWD shall maintain during the Term sufficient beneficial use and conveyance capacity in its water delivery facilities to allow (a) total deliveries of at least 10,000 AF of water each calendar year and (b) deliveries by Westside of at least 4,000

AF of water each calendar year. If this obligation is not satisfied at any time during the Term, then Westside shall have first priority to use RCWD delivery facilities for Pre-Delivered Water until the quantity of water prevented from being delivered by such limitation is delivered by Westside.

(a) *Application to Orders (Delivery).* Water Orders made by RCWD shall be considered satisfied first from the amount of Pre-Delivered Water delivered to the Delivery Point. RCWD shall not be considered to have ordered Pre-Delivered Water until Westside receives an Order.

(b) *Application of Uncredited Standby Charges.* If, as of December 31 of any year:

(i) RCWD has Pre-Delivered Water remaining, and after crediting the Standby Charges paid by RCWD against all water ordered by and delivered to RCWD prior to December 31 of that year RCWD still has a credit for additional Standby Charges ("Uncredited Standby Charges"), then

(ii) RCWD shall be deemed to have ordered an amount of the remaining Pre-Delivered Water up to the lesser of the amount of remaining Pre-Delivered Water or the amount that could be purchased for the amount of the Uncredited Standby Charges. The appropriate amount of Pre-Delivered Water shall be deemed delivered and paid for by crediting the appropriate amount of Standby Charges as of December 31 of that year. At the end of the Term, RCWD shall pay for any Pre-Delivered Water remaining after the foregoing credit at the then existing Delivered Price.

(c) *Reporting.* To monitor RCWD's use of Pre-Delivered Water, RCWD shall deliver to Westside a copy of RCWD's annual report submitted to Madera County, the Madera Irrigation District and/or the Friant Water Users' Authority (or its successor under the December 31, 1999 contract with RCWD) at the time of such submission demonstrating RCWD's water deliveries utilized for elimination of the contribution of its lands to regional overdraft. Should RCWD report the use of any Pre-Delivered Water, or other water from Westside that RCWD has not paid for, in achieving RCWD's groundwater balance, then RCWD shall promptly pay Westside for the reported water.

8. Term. The initial term of this Agreement shall be for a period of twenty-five (25) years, commencing on the "Commencement Date," which shall be January 1, 2008, or, if the General Plan Amendment, Area Plan Amendment and Specific Plan Amendment for Gateway Village are not approved by June 30, 2007, January 1, 2009, unless otherwise mutually agreed by RCWD, Westside, North Kern and SWID.

9. Renewal.

(a) *Renewal.* Subject to the renewal provisions described below, RCWD may, at its option, renew this Agreement on the same terms and conditions for up to one (1) additional twenty-five (25) year period. Each twenty-five (25) year period is referred to herein as a "Term". RCWD shall provide written notice to Westside of its intent to renew not later than one (1) year prior to the expiration of the initial Term.

(b) *Renewal Provisions.*

(i) Notwithstanding paragraph 6(a) hereof, RCWD and Westside shall, upon delivery to Westside of RCWD's notice of intent to renew this Agreement pursuant to paragraph 9(a) hereof, be mutually obligated to secure the conveyance arrangements necessary to deliver water under this Agreement to the Delivery Point for any renewal Term. In the event that such arrangements cannot reasonably be secured prior to the expiration of the initial term despite the good faith efforts of both parties, then this Agreement shall not be renewed.

(ii) At the beginning of the renewal Term, the Delivered Price and the Standby Charge shall be adjusted to an amount that reflects the then-current market price for water supplies of similar origin and reliability delivered to the Delivery Point. In the event that the parties are unable to agree as to a then-current market price, such price shall be decided through the dispute resolution procedure described in Paragraph 18 below.

10. Governmental Approvals and Environmental Review.

(a) *Governmental Approvals.* The parties shall work together to obtain any approvals or consents necessary from any governmental agency for the transactions contemplated herein ("Approvals"). Notwithstanding the foregoing,

(i) RCWD shall be solely responsible for any costs or fees incurred for any Approvals, except as provided in this Agreement.

(ii) Westside shall be solely responsible to negotiate with and obtain any necessary Approvals from North Kern and SWID.

(b) *CEQA.* The parties acknowledge that RCWD, North Kern and SWID are responsible to comply with the provisions of the California Environmental Quality Act ("CEQA") in connection with the performance of the actions contemplated by this Agreement. For CEQA purposes, RCWD shall be the lead agency, and North Kern and SWID shall be responsible agencies. RCWD shall bear all costs for CEQA compliance.

11. Conditions Precedent. The following are conditions precedent to the parties' performance under this Agreement except for RCWD's unconditional obligation to pay the Reservation Fee which shall be absolute:

(a) Westside and North Kern shall have executed the agreements necessary for Westside's performance under this Agreement; provided, however, that execution of such agreements shall be within the sole and absolute discretion of Westside. If this condition precedent is not satisfied, then Westside shall refund to RCWD one-half of the Reservation Fee paid to that date and this Agreement shall terminate.

(b) Westside and SWID (or at Westside's discretion Westside and another Friant Contractor) shall have executed the agreements necessary for Westside's performance under this Agreement; provided, however, that execution of such agreements shall be within the sole and absolute discretion of Westside. If this condition precedent is not satisfied, then Westside shall refund to RCWD one-half of the Reservation Fee paid to that date and this Agreement shall terminate.

(c) RCWD, North Kern and SWID shall have completed their environmental review as required by CEQA for the actions contemplated by this Agreement, and the time period to appeal the approval by any of those agencies of any CEQA document shall have run.

(d) The parties shall receive written confirmation from Reclamation that:

(i) RCWD is within the municipal and industrial "place of use" designated in Reclamation's permits from the State Water Resources Control Board for waters delivered from Friant; and that

(ii) SWID Friant water exchanged for North Kern banked groundwater shall be considered "non-project" water when delivered to RCWD.

(e) The parties have received all necessary Approvals.

12. Westside Representations and Warranties. Westside represents and warrants to RCWD that, to the best of Westside's knowledge:

(a) Westside is a limited liability company duly organized, validly existing and in good standing under the laws of the State of California;

(b) As of the date of this Agreement, Westside and its members have banked groundwater within North Kern on their own account(s) and have the current right to withdraw and transfer about 30,000 acre feet of that stored water. Westside and its members also have the right to bank additional water and have other water banked within Kern County that,

based on circumstances, laws, rules and regulations that exist as of the date of this Agreement, will allow Westside to fulfill its obligations under this Agreement throughout the total 50 year term if the option to renew is exercised.

(c) Westside has all necessary power and authority to enter into this Agreement and to perform its obligations hereunder; and all actions required to be taken on its part to approve the execution and delivery of this Agreement have been duly taken. This Agreement constitutes a legal, valid and binding obligation of Westside, enforceable against Westside in accordance with its terms.

(d) The execution and delivery of this Agreement by Westside, and the performance of its obligations hereunder do not and will not (i) violate, or conflict with its obligations under any contract to which it is a party or by which it is bound, or (ii) violate (and none of such obligations is void or voidable under) any law, regulation, order, arbitration award, judgment or decree to which it is a party or to which it is subject.

(e) Subject to paragraphs 10 and 11 hereof, no authorization, consent or approval of, or notice to, any person or entity (including but not limited to any federal, state, county, local or foreign government, regulatory body or official or any third party) not already obtained or given by Westside is required to be obtained or given in connection with the execution and delivery of this Agreement by Westside or the performance of any of its obligations hereunder.

(f) Subject to paragraphs 9, 10, 11 and 14 hereof, Westside currently has and will maintain throughout the Term, as extended, the legal right and ability to perform all of its obligations under this Agreement, including, but not limited to, the conveyance arrangements necessary to deliver the water to the Delivery Point.

(g) As of the date of this Agreement, there is no suit, action, arbitration, or legal, administrative, or other proceeding, or governmental investigation pending or threatened affecting any of the transactions contemplated by this Agreement.

13. RCWD Representations and Warranties. RCWD represents and warrants to Westside that, to the best of RCWD's knowledge:

(a) RCWD is a California water district duly formed and organized under the California Water District Law; RCWD has all necessary power and authority to enter into this Agreement and to perform its obligations hereunder; and all action required to be taken on its part to approve the execution and delivery of this Agreement has been duly taken.

(b) The execution and delivery of this Agreement by RCWD, and the performance of its obligations hereunder, do not and will not (i) violate, or conflict with its obligations under, any contract to which it is a party or by which it is bound, or (ii) violate (and none of such obligations is void or voidable under) any law, regulation, order, arbitration award, judgment or decree to which it is a party or to which it is subject.

(c) As of the date of this Agreement, there is no suit, action, arbitration, or legal, administrative, or other proceeding, or governmental investigation pending or threatened affecting any the transactions contemplated by this Water Service Agreement.

(d) This Agreement constitutes the legal, valid and binding obligation of RCWD, enforceable against RCWD in accordance with its terms.

14. Force Majeure/Permitted Suspension of Performance.

(a) *Suspension of Water Delivery.* Westside may suspend its delivery obligations under this Agreement only if it is unable to substantially perform such delivery obligations as the result of a Force Majeure Event (defined below); provided, however, that no suspension shall extend the Term of this Agreement. If at all possible, prior to suspension of performance, and in no event less than two business days following suspension of performance of water delivery based on a Force Majeure Event, Westside shall provide RCWD with written notice of the estimated duration for the suspension and the basis for the suspension. Westside shall additionally provide RCWD with any information that Westside subsequently obtains regarding the Force Majeure Event and any information RCWD may reasonably request. Except as expressly provided in this Paragraph or as a remedy for a default of the other party, neither party shall be entitled to suspend, or otherwise be excused from, performance of any of its obligations under this Agreement.

(b) *Force Majeure Event.* A "Force Majeure Event" is strictly limited to the following:

> Any flood, earthquake, failure of any facility not owned by Westside, acts of God (other than drought), governmental or court actions, Reclamation allocations and other events which are beyond the reasonable control of, and have not been caused or contributed to by Westside and whose consequences cannot be avoided by utilizing other water supplies or conveyance facilities reasonably available to Westside at an equivalent cost. Neither drought nor unavailability of water resulting from drought shall result in cancellation or permanent reduction of water available under this contract.

(c) *Make-up Water.* Should Westside be unable to deliver the full amount of water ordered by RCWD in any year due to a Force Majeure Event, RCWD shall have the option of obtaining water in the following five (5) years pursuant to the provisions of this Agreement, including paragraph 2 hereof, to make up that shortfall if necessary to meet RCWD's obligations to balance the water usage in RCWD.

15. Events of Default. An "Event of Default" of a party shall be deemed to occur if, unless excused by a Force Majeure Event, the party at any time fails to perform any of its obligations as and when required to be performed under this Agreement, or any representation or warranty of the party made or restated in this Agreement becomes false or inaccurate in any material respect at any time; provided, however, that the other party shall have first demanded in writing that the party cure such non-performance, or false or inaccurate representation or warranty (or cause it to be cured) and the party shall have then failed to (i) cure the default within 30 days after the receipt of such demand in the case of payment obligations, (ii) commence a cure within 30 days after the receipt of such demand in the case of non-payment performance obligations, or (iii) develop within 30 days after the receipt of such demand and thereafter perform a plan to maintain RCWD's five year rolling average groundwater balance in the case of Westside's obligation to deliver water.

16. Rights Upon an Event Default. Upon the occurrence of an Event of Default, the non-defaulting party (a) may suspend performance of its obligations under this Agreement until the Event of Default has been cured or waived, and (b) shall have the following rights and remedies:

(i) *Westside Event of Default.*

Replacement Water Supply

Upon a Westside Event of Default, RCWD shall immediately have the right to (A) specific performance of Westside's obligations under this Agreement and (B) reimbursement of the actually incurred reasonable cost of obtaining water to replace the water requested in an Order that Westside does not deliver ("Replacement Water Supply") less all amounts saved as a result of the Event of Default including all amounts that otherwise would have been due under this Agreement.

Termination of Contract and Replacement Contract

RCWD shall have the right to terminate this Agreement upon its reasonable determination that a material Westside Event of Default has occurred that cannot or will not be cured within a reasonable time. Westside's obligation to reimburse RCWD for a Replacement Water Supply shall thereupon cease and RCWD shall have the right to recover from Westside, immediately upon demand, an amount equal to the excess of (A) the net present value as of the termination date of the reasonable cost of securing equivalent substitute performance from a financially responsible contractor for the balance of the existing Term remaining as of the date of termination, over (B) the net

present value as of the date of termination of all amounts RCWD saved as a result of such termination plus the cost of any water under a Replacement Water Supply to be delivered after the date of termination for which Westside has paid reimbursement.

Sole Remedy

The rights and remedies of RCWD described in this paragraph 16 are RCWD's sole and exclusive remedy for any Event of Default by Westside under, or any inaccuracy in any of Westside's representations and warranties in, this Agreement.

(ii) *RCWD Event of Default.* Upon a RCWD Event of Default, Westside shall immediately have the right to (A) deem any Pre-Delivered Water as ordered to accelerate delivery of any Pre-Delivered Water and payment therefor, (B) specific performance of this Agreement or money damages at the discretion of Westside, (C) payment of any amount that is due and payable by RCWD under this Agreement plus interest at the rate of 10 percent per annum, and/or (D) terminate this Agreement; provided, however, that no delay in termination of this Agreement by Westside shall constitute a waiver of this right. RCWD's obligation to pay any amounts that are due and payable under this Agreement or this paragraph 16 shall survive any termination of this Agreement. The rights and remedies of Westside described in this paragraph 16 shall be cumulative, and are Westside's sole and exclusive remedies for any Event of Default by RCWD under, or any inaccuracy in any of RCWD's representations or warranties in, this Agreement.

17. Dispute Resolution. Upon the request of either party, any dispute claim, or controversy of any kind arising in connection with this Agreement shall be resolved through a two-step dispute resolution process, as follows:

(a) *Step I Mediation*: At the request of either party, the dispute, claim or controversy of the matter shall be referred for mediation to a retired Superior Court Judge, reasonably acceptable to both parties.

(b) *Step II Trial by Court Reference*: If the dispute, claim or controversy has not been resolved by Step I mediation, then any remaining dispute, claim or controversy shall be submitted for determination by a trial on Order of Reference conducted by a single retired Judge appointed pursuant to the provisions of California Code of Civil Procedure Section 638 (or any amendment, addition or successor section thereto). BOTH PARTIES HEREBY WAIVE A JURY TRIAL OR PROCEEDING IN CONNECTION WITH ANY DISPUTE, CLAIM OR CONTROVERSY ARISING IN CONNECTION WITH THIS AGREEMENT. The parties intend this general reference agreement to be specifically enforceable in accordance with CCP Section 638, and no other agreement shall be necessary to submit a dispute to general judicial reference.

(i) The general reference proceeding shall be commenced by a request or motion filed with the Presiding Judge of the

Superior Court of Kings County. If the parties are unable to agree upon a person to act as referee, then a referee shall be appointed by the Presiding Judge as provided under CCP Section 640.

(ii) The parties shall pay in advance, to the referee, the estimated reasonable fees and costs of the reference. Each party shall be responsible for one-half of such estimated fees. The referee shall be authorized to award costs of the general reference, including, without limitation, attorneys' fees, expert witness fees and fees assessed by the referee to the prevailing party.

(iii) The general reference hearing must commence within three (3) months after appointment of the referee. The referee shall report his or her findings to the Court in the form of a statement of decision within twenty (20) days after the close of testimony, pursuant to CCP Section 643. The Court shall enter judgment based upon the statement of decision which shall be appealable.

(c) *Venue.* The parties agree that venue for any mediation or reference held pursuant to this Paragraph shall be the County of Kings, to avoid any undue advantage that might otherwise accrue to RCWD or Westside from a venue located in their respective home counties.

18. Indemnification. Neither party shall be liable for injury or damage to persons or property caused by the other party, or the other party's employees, agents, or representatives. Each party hereby agrees to defend, indemnify, and hold harmless the other party from any claim, demand, or liability on account of such injury or damage.

19. Severability. If any term or provision of this Agreement shall be held to be invalid or unenforceable in any jurisdiction, for any reason, then it is the intention of the parties that this Agreement shall be construed and enforced as if such invalid or unenforceable term or provision had never been a part hereof without invalidating the remaining terms and provisions hereof, and that all of the terms and provisions of this Agreement shall remain in full force and effect without regard to such invalidity or unenforceability.

20. Waiver. The failure by either party to enforce any of the covenants, terms, or conditions of this Agreement shall not be deemed a waiver of such breach, or any future breach, of such covenants, terms, or conditions, unless such waiver shall have been made in writing.

21. Binding Effect. This Agreement shall be binding upon and inure to the benefit of the, successors, and permitted assignees of the parties.

22. Assignment. Except as provided in this Paragraph, neither party shall assign or transfer its rights under this Agreement. RCWD hereby consents to an assignment of the rights and delegation of the obligations of Westside pursuant to this Agreement to a trust or foundation for estate planning purposes, an affiliate entity, North

Kern or SWID. Upon the prior written consent of Westside, which shall not be unreasonably withheld, RCWD may assign its rights to receive water under this Agreement provided that RCWD shall pay all of the costs of environmental review or third party permitting necessary to accomplish the assignment and pay any additional conveyance costs (including, but not limited to conveyance losses) to any alternate point of delivery.

23. Governing Law. This Agreement shall be governed by, and construed and enforced in accordance with the laws of the State of California.

24. Further Assurances. From time to time and at any time after the execution and delivery hereof, each of the parties, at their own expense, shall execute, acknowledge and deliver any further instruments, documents and other assurances reasonably requested by the other party, and shall take any other action consistent with the terms of this Agreement that may reasonably be requested by another party, to evidence or carry out the intent of this Agreement.

25. Notices. All notices and other communications required under this Agreement shall be in writing and shall be deemed to have been duly given (i) on the date of service, if served personally on the person to whom notice is to be given, (ii) on the date of service if sent by e-mail or telecopier, provided the originally is concurrently sent by first class mail, and provided that notices received by email or telecopier after 5:00 p.m. shall be deemed given on the next business day, (iii) on the next business day after deposit with a recognized overnight delivery service, or (iv) or on the third (3rd) day after mailing, if mailed to the party to whom notice is to be given by first class mail, registered or certified, postage-prepaid, and properly addressed as follows:

To Westside: William D. Phillimore, Executive Vice President
Westside Mutual Water Company
33141 E. Lerdo Highway
Bakersfield, California 93308-9767

With a copy to:
Roll International Corporation
Attn: General Counsel
11444 W. Olympic Blvd., 10th Floor
Los Angeles, CA 90064

To RCWD: Philip R. Pierre, President
c/o Christopher L. Campbell, Esq.
Baker, Manock & Jensen
5260 N. Palm Avenue, Suite 421
Fresno, California 93701

or at such other address as any party may, by like notice, designate to the other party in writing.

26. Liquidated Damages. It is not intended that this Agreement contain any provisions providing for liquidated damages. However, in the event that any provision of this Agreement should nevertheless be construed as providing for liquidated damages, then the parties agree that provision is reasonable under the circumstances existing at the time this Agreement is made.

27. References. The Paragraph headings in this Agreement are provided for convenience only, and shall not be considered in the interpretation hereof or thereof. References in this Agreement to Paragraphs refer, unless otherwise specified, to the designated Paragraph of this Agreement. Terms such as "herein," "hereto" and "hereof" refer to this Agreement as a whole.

28. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original instrument, but all of which together shall constitute one and the same instrument.

29. Entire Agreement. This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof, and supersedes all prior agreements or understandings with respect thereto. This Agreement may be modified or amended only by written instrument signed by both parties.

30. Time and Computation of Time. Time is of the essence of this Agreement and each and all of its provisions. The parties agree that the time for performance of any action permitted or required under this Agreement shall computed as if such action were "an act provided by law" within the meaning of California Civil Code §10, which provides: "The time in which any act provided by law to be done is computed by excluding the first day and including the last, unless the last day is a holiday, and then it is also excluded."

31. Parties in Interest. Nothing in this Agreement, whether expressed or implied, is intended to confer any rights or remedies on any persons other than the parties hereto and their respective successors and assigns, nor is anything in this Agreement intended to relieve or discharge the obligation or liability of any third person to any party to this Agreement, nor shall any provision give any third person any right of subrogation or action over and against any party to this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement to be effective as of the date first above written.

"RCWD"	"Westside"
ROOT CREEK WATER DISTRICT, a California water district	WESTSIDE MUTUAL WATER COMPANY LLC, a California limited liability company
By_____ Philip R. Pierre, President	By_____ Joseph C. MacIlvaine, President

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Exhibit "A"
Maximum Delivery Quantities and Standby Charges

Period after Commencement Date	Maximum Delivery Quantity
Years 1-4	3,500 af/year
Years 5-9	5,000 af/year
Years 10+	7,000 af/year

AGREEMENT BETWEEN
MADERA IRRIGATION DISTRICT
and
ROOT CREEK WATER DISTRICT
FOR THE CONVEYANCE AND SALE OF WATER

THIS AGREEMENT FOR THE CONVEYANCE AND SALE OF WATER ("**Agreement**") is made and entered into by MADERA IRRIGATION DISTRICT, a California irrigation district ("**MID**"), and ROOT CREEK WATER DISTRICT, a California water district ("**RCWD**") (collectively, the "**Parties**") as of March 13, 2002.

RECITALS:

A. WHEREAS, MID is an irrigation district organized under the California Irrigation District Law, codified at § 20500 et seq. of the California Water Code, that delivers water from Hidden Dam and Friant Dam under 25-year Long Term Renewal Contracts with the United States Department of Interior, Bureau of Reclamation ("USBR") to locations in Madera County for irrigation purposes.

B. WHEREAS, RCWD is a water district organized under the California Water District Law, codified at § 34000 et seq. of the California Water Code, and serves a portion of southeastern Madera County currently consisting of 9,221 acres.

C. WHEREAS, the Parties executed an "Agreement Concerning Agricultural, Municipal and Industrial Water Use Within Root Creek Water District" ("Root Creek Agreement") on December 30, 1999, with the Friant Water Users Authority ("FWUA"), Chowchilla Water District ("CWD") and certain Holding Contract owners and Landowners/Developers within RCWD.

D. WHEREAS, the Root Creek Agreement recognizes that surface water supplies may become available to RCWD from: (1) Friant Dam flood flow releases unused by Friant Contractors; (2) Water transfers from sources outside of Madera County; (3) Water transfers from Central Valley Project ("CVP") water service or exchange contractors; (4) Water transfers from sources within Madera County; and (5) Purchase of water to supplement San Joaquin River water, first from MID and CWD, then if additional water is needed, purchase from other supplemental sources.

E. WHEREAS, the Root Creek Agreement, Article III, section 2, provides that before obtaining supplemental water from any sources other than San Joaquin River flood flows, and Section 215 water purchased directly from the Bureau, RCWD shall first satisfy its water purchase requirements from supplies available for sale by MID, to the extent and on the same terms and conditions that MID is willing to sell such water to parties other than Friant Contractors or other CVP Contractors. In exchange MID agrees that RCWD shall have the first right to purchase any MID surface water available for sale outside its district, subject only to water sold to other Friant Contractors or CVP Contractors.

F. WHEREAS, the Root Creek Agreement, under Article V, section 4, provides that the Parties will negotiate and execute an implementing agreement to construct necessary facilities to convey water to RCWD from MID's Lateral 6.2.

G. WHEREAS, the United States constructed the Madera Canal as a part of the CVP for the carriage and distribution of waters of the San Joaquin River, which Canal is now operated by the Madera Chowchilla Water and Power Authority ("MCWPA"), pursuant to the "Cooperative Agreement Among the United States of America, the Madera Irrigation District, and the Chowchilla Water District Providing for Operation and Maintenance of Madera Canal and Associated Project Works," dated September 20, 1985, and the Joint Exercise of Powers Agreement by and between MID and CWD.

H. WHEREAS, on April 30, 1985, MID and CWD entered into an agreement on the method of sharing capacity of the Madera Canal ("1985 Capacity Agreement"), which allocates the capacity of the Madera Canal during normal operations as 60% of the capacity to MID and 40% to CWD, and allows the use of whatever share of the other District's capacity is not being used. The Agreement further provides that this allocated capacity "shall apply regardless of the type of water being delivered to any district."

I. WHEREAS, the Root Creek Agreement, under Article V, section 5, provides that the Parties will negotiate and execute an implementing agreement regarding water conveyance charges, capacity, terms and conditions.

J. WHEREAS, the most convenient surface route to deliver water to RCWD is through the Madera Canal and MID Lateral 6.2.

K. WHEREAS, the Parties desire to explore opportunities to cooperate and jointly participate in groundwater recharge projects in Madera County.

L. WHEREAS, the Parties desire to cooperate and support one another, as appropriate, on Madera County and regional water issues.

M. WHEREAS, upon the completion of the Environmental Impact Report ("EIR") for the Village of Gateway Development within RCWD, this Agreement will be reviewed and no physical implementation of the Agreement will occur prior to the completion of such EIR.

NOW THEREFORE, the Parties agree as follows:

ARTICLE I DEFINITIONS

As used in this Agreement, the terms set forth below have the following meanings.

1. "As-Available Capacity" shall mean any water conveyance capacity in the Madera Canal or Lateral 6.2 in excess of MID or CWD needs and the "Reserved

Capacity" made available to RCWD pursuant to this Agreement, which, if available, may be used by RCWD to convey its water.

2. "Building Permit" shall mean any building permit issued by the County of Madera, or any other public entity which may assume such authority, for construction in RCWD pursuant to any Tentative Map, Parcel Map or other entitlement.

3. "CVP Water" shall mean all water that is developed, diverted, stored, or delivered by the USBR in accordance with the statutes authorizing the CVP and in accordance with the terms and conditions of water rights acquired by the USBR pursuant to California law.

4. "CVP Class 1 Water" shall mean that supply of water stored in or flowing through Millerton Lake which, pursuant to MID's Long-Term CVP Water Service Contract, will be available for delivery from Millerton Lake and the Madera Canal as a dependable water supply during each year.

5. "CVP Class 2 Water" shall mean that supply of water which can be made available pursuant to MID's Long-Term CVP Water Service Contract for delivery from Millerton Lake and the Madera Canal, in addition to the supply of Class 1 Water. Because of its uncertainty as to availability and time of occurrence, such water will be undependable in character and will be furnished only if, as, and when it can be made available, as determined by the USBR.

6. "Village of Gateway" shall mean that certain property described in the Village of Gateway Area Plan dated November 2000.

7. "General Plan Amendment Approval by Madera County" shall mean certification of the Village of Gateway Environmental Impact Report based on the draft dated February 2001, approval of the Village of Gateway Area Plan, designation of the Village of Gateway as a new growth area and the running of any applicable period to appeal those decisions.

8. "Infrastructure Master Plan for Village of Gateway" shall mean that certain plan for infrastructure (including roadways, water, sewer and other urban infrastructure) within the Village of Gateway and the EIR for that plan as required by mitigation measures imposed by the County of Madera in its General Plan Amendment Approval for the Village of Gateway.

9. "Lateral 6.2" shall mean the canal constructed by the U. S. Bureau of Reclamation beginning at mile post 6.2 of the Madera Canal for the purpose of delivering irrigation water to lands within MID

10. "Madera Canal" shall mean the canal constructed by the USBR extending from Friant Dam to the Chowchilla River, for the purposes of flood control and delivering irrigation water to MID and CWD.

11. "Non-CVP Water" shall mean any water not deemed to be CVP Water.

12. "Non-Residential Equivalent Dwelling Unit ("e.d.u.")" shall be defined as follows: The number of e.d.u.'s in any permitted non-residential structure shall equal the total square feet of floor space divided by 500.

13. "Reserved Capacity" shall mean that water conveyance capacity in the Madera Canal or Lateral 6.2 that has been reserved by MID for use by RCWD pursuant to the terms of this Agreement, and held available during the term of this Agreement for RCWD use in conveying its water.

14. "Residential Equivalent Dwelling Unit ("e.d.u.")" shall mean any single family dwelling unit or any unit of a multi-family residential structure designed to house a single family or individual.

15. "Restoration Fund Costs" shall mean any rates, costs or charges payable to the Restoration Fund pursuant to the Central Valley Project Improvement Act, PL 102-575.

16. "Surplus Class 2 Water" shall mean Class 2 water made available to RCWD following a determination by MID that a Surplus Water Condition exists.

17. "Surplus Water Condition" shall mean a condition, as determined solely by MID, wherein the MID supply of Class 2 water, in combination with other water supplies available to MID, has resulted in the ability of MID to transfer water to RCWD without impacting current or future deliveries of water to MID agricultural customers.

18. "Uncontrolled Season" shall mean that period of time, typically occurring during the spring months of March through May, when the USBR has determined that there is a need to evacuate water from Millerton Lake in order to prevent or minimize a spill or meet flood control criteria, and has notified Friant long-term water service contractors that such condition exists. During an Uncontrolled Season, water taken by a Friant long-term water service contractor is in addition to the water supply declaration for the balance of the contract year.

19. "Uncontrolled Season Class 2 Water" shall mean water delivered as Class 2 Water during the period(s) when the USBR has declared an Uncontrolled Season.

20. "MID Long-Term CVP Water Service Contract" shall mean the "Long-Term Renewal Contract Between the United States and Madera Irrigation District

Providing for Project Water Service From Friant Division," Contract No. 175r-2891-LTR1 and as it may be renewed from time to time.

21. "The Root Creek Agreement" shall mean that certain "Agreement Concerning Agricultural, Municipal and Industrial Water Use Within Root Creek Water District" entered into December 30th 1999 by and among the Friant Water Users Authority, Madera Irrigation District, Chowchilla Water District and Root Creek Water District.

ARTICLE II TERM AND RENEWAL OF AGREEMENT

1. Term

This Agreement shall become effective upon execution by the Parties and shall terminate on February 28, 2026.

2. Initiation of Physical Performance

No physical performance, other than the payment of fixed or guaranteed payments due during 2002 through 2005 under this Agreement shall occur prior to environmental review of this Agreement under the EIR prepared by the County of Madera to review the environmental effects of Infrastructure Master Plan for the Village of Gateway, including the implementation of this Agreement.

3. Renewal

Upon date of termination, this Agreement shall be automatically renewed on the same terms and conditions, except as changes to the Agreement are necessary to reflect change in MID's CVP Long-Term Water Supply Contract. Either Party may provide notice of intent to negotiate revised terms for renewal, provided that such notice is made at least one year prior to the expiration of this Agreement.

ARTICLE III. CONVEYANCE FACILITIES AND CHARGES

1. Lateral 6.2

a. Capacity

i) Under this Agreement, RCWD is entitled to the use of Reserved Capacity in Lateral 6.2 of 25 cfs from May 1 to August 31 of each year, and 50 cfs from September 1 of each year until April 30 of the following year.

(1) RCWD shall have the first right of refusal for any increase in Reserved Capacity that MID may determine is available on Lateral 6.2 as a result of changed conditions or actions taken by MID. Should RCWD request an increase in available Reserved

Capacity, MID agrees to negotiate in good faith to make such capacity available.

(2) MID shall not reduce Reserved Capacity of RCWD unless required to do so by the USBR or by exercise of state or federal law. Should MID be required to reduce Reserved Capacity, the parties shall negotiate in good faith to adjust capacity charges commensurate with the changed circumstances.

(3) The Reserved Capacity is for the sole and exclusive use of RCWD and it shall not be assigned for any other purpose or to any other user.

ii) As-Available Capacity in excess of Reserved Capacity may be utilized by RCWD during each water year as it becomes available (for that year only) from MID's capacity provided:

(1) MID landowners and agricultural customers' water conveyance capacity needs are first satisfied, then RCWD shall have first priority on any available capacity.

(2) MID shall provide RCWD one day's notice of available capacity changes affecting the requested additional capacity by RCWD.

iii) Terms and Conditions Applicable to RCWD's Reserved Capacity and As-Available Capacity

(1) RCWD must provide MID at least 30 days' notice to initiate deliveries if Lateral 6.2 is out of service at the time delivery is requested by RCWD.

(2) If Lateral 6.2 is in service at the time delivery to RCWD is requested, RCWD shall give MID at least three days' notice of RCWD capacity requirements.

b. Delivery Locations

i) RCWD will use the existing diversion structure from Lateral 6.2 located at Station 129+35 ("Turnout 1-A"), or such structure at that location as modified to increase its diversion capacity.

ii) The existing diversion structure at Turnout 1-A is owned by MID to benefit MID Improvement District #3 landowners. Any modifications to such diversion structure to increase capacity shall be at the sole expense of RCWD, with the approval of MID and MID

Improvement District #3 landowners. RCWD will have the sole responsibility to obtain approval from MID Improvement District #3 landowners but MID will provide reasonable assistance in a mutually acceptable resolution.

iii) Any additional diversion locations from Lateral 6.2 by RCWD shall require the prior approval of MID, which shall not be unreasonably withheld.

c. **Carriage Losses**

i) Carriage losses for conveyance of RCWD water supplies in Lateral 6.2 shall be computed at 3% from Madera Canal outflow structure to delivery location at Turnout 1-A. Carriage losses to any additional future diversion locations shall be determined when additional diversion locations are approved by MID.

ii) If the only water conveyed in Lateral 6.2 is that being delivered to RCWD, the delivery amount shall be measured at the Madera Canal outflow structure into Lateral 6.2 and no carriage loss calculation will be necessary for Lateral 6.2.

d. **Capacity and Conveyance Charges**

i) **Charges for Reserved Capacity And Other Cooperation**
The charges assessed by MID to RCWD for the long-term assurance of availability of Reserved Capacity to convey RCWD water supplies through the Madera Canal and Lateral 6.2 and for the other assistance and cooperation provided to RCWD pursuant to this Agreement include three components. Fixed Reimbursement Payments prior to the construction of residential and commercial development within the Village of Gateway are intended to reimburse MID for prior and anticipated administrative and legal costs incurred in the development, environmental review and administration of this and other agreements.

Commencing in the year 2004, when construction of such units is expected to be underway, two other fees shall then be paid to MID by RCWD: an Impact Fee and an Annual Assessment Fee. The Impact Fee shall be a one-time fee paid by RCWD at the time a building permit is issued for each Equivalent Dwelling Unit for the purpose of defraying all or a portion of the cost of MID facilities related to the development project. The Annual Fee shall be applied annually to all Equivalent Dwelling Units existing at that time.

(1) Fixed Reimbursement Payments to MID by RCWD:

A. The initial payment shall be $100,000, which shall be made within 120 days of County of Madera Board of Supervisors final action to approve the Village of Gateway General Plan Amendment,

B. The second payment of $125,000 shall be made at the one-year anniversary of the initial payment.

C. The third payment, expected to occur in 2004, shall be $150,000, which shall be made upon certification of the applicable EIR and approval of the Infrastructure Master Plan for the Village of Gateway by Madera County.

(2) One-time Impact Fees payable to MID by RCWD at issuance of Building Permits by Madera County shall be paid by the fifteenth (15th) day of each month for Building Permits issued in the prior month based on the following rates:

A. From 2004 to 2008, $1,000 per Building Permit issued for each Residential e.d.u., and $250 per Non-Residential e.d.u. For the year 2005 only, the minimum Impact Fee payable by RCWD shall be $150,000 as additional reimbursement, provided that any Impact Fees paid in 2004 shall be credited toward meeting the $150,000 required to be paid by the end of 2005.

B. From 2009 to 2013, $1,100 per Building Permit issued for each Residential e.d.u., and $260 per Non-Residential e.d.u.

C. From 2014 to 2018, $1,200 per Building Permit issued for each Residential e.d.u., and $270 per Non-Residential e.d.u.

D. From 2019 to 2023, $1,300 per Building Permit issued for each Residential e.d.u., and $280 per Non-Residential e.d.u.

E. From 2024 to 2026, $1,400 per Building Permit issued for each Residential e.d.u., and $290 per Non-Residential e.d.u.

F. Upon renewal of this Agreement, the Impact Fee shall continue to escalate in the manner described above (i.e., by $100 per Residential e.d.u. and $10 per Non-Residential e.d.u. every five years), unless otherwise agreed to by the Parties.

(3) Annual Assessment Fee payments to MID by RCWD shall be based upon the number of e.d.u.'s on the regular property tax roll of Madera County during each calendar year. The Annual Assessment Fee payments shall be made in two installments due on or before January 31 and May 31 of each year using the following annual unit rates:

A. Annual Payment Rate for 2004: $80.00 per Residential e.d.u. and $40.00 per Non-Residential e.d.u.

B. Each year thereafter the Annual Payment Rate for both Residential e.d.u. and Non-Residential e.d.u. shall increase by 2% per year (e.g., the payment rate for 2005 will be $81.60 per Residential e.d.u. and $40.80 per Non-Residential e.d.u.).

ii) **Conveyance Charges**

(1) Reserved Capacity Water conveyed by RCWD through the Madera Canal and Lateral 6.2 pursuant to this Agreement shall be subject to charges based on the cost per acre-foot of water conveyed, which will be determined each year based on MID's budget for that upcoming year. (Such annual rate will be established to cover MID operations, maintenance and administrative costs of conveying water, including MID's share of costs to convey water through the Madera Canal.)

(2) The conveyance charge shall reflect the full operations cost of Lateral 6.2 if the canal would not otherwise be operating at the time RCWD is using such capacity.

(3) The conveyance charge shall be calculated based upon the amount delivered as measured at Turnout 1-A, plus Carriage Losses as defined in Section III 1.c. above, or if the only water conveyed in Lateral 6.2 is that being delivered to RCWD, the delivery shall be measured at the Madera Canal turnout structure.

(4) The payment of conveyance charges shall be due within 30 days of the last day of the month in which water is delivered.

2. **Madera Canal**

a. **Use of MID Share of Reserved Capacity in Madera Canal**
Under this Agreement, RCWD may also utilize a portion of MID's allocation of Madera Canal capacity equal to RCWD's Reserved Capacity in Lateral 6.2 set out in Section III 1.a.i) above, under the following terms and conditions:

i) Utilization of MID's share of Reserved Capacity in the Madera Canal shall be for a 25-year period (to match term of the current MID CVP Contract) and shall be renewable on the same terms and conditions with the exception of any changes required by USBR in any renewal of the MID CVP Contract.

ii) RCWD's utilization of MID's Reserved Capacity in the Madera Canal may be subject to necessary conveyance agreements with MCWPA and USBR.

iii) As provided in Section III 1.a.i)(3), the Reserved Capacity is for the sole and exclusive use of RCWD and it shall not be assigned for any other purpose or to any other user.

RCWD payment to MID for its share of Reserved Capacity in the Madera Canal is included in RCWD's payment to MID for Lateral 6.2 Reserved Capacity as set forth in Section III 1.d.i) of this Article.

b. **RCWD Use of Additional As-Available Capacity in Madera Canal**
Under this Agreement, RCWD may also utilize As-Available Capacity in excess of its Reserved Capacity in MID's allocation in the Madera Canal on the following terms and conditions:

i) As-Available Capacity in the Madera Canal may be available on an annual basis, subject to satisfying needs of MID and CWD conveyance requirements.

ii) If the Madera Canal is not currently operating, RCWD must give MID at least 30 days' notice of request for As-Available Capacity. If Canal is out of service due to scheduled Canal maintenance, the 30-day notice period may be modified by mutual agreement of the Parties and MCWPA with the intent of operating the canal as soon as reasonably possible. (Such minimum maintenance period will

be determined annually by the MCWPA in consultation with the Parties.)

iii) If Madera Canal is operating, RCWD must give MID at least three days' notice of request for As-Available Capacity.

iv) MID must give RCWD one day's notice of any change in As-Available Capacity.

c. **Terms and Conditions Applicable to RCWD Use of Both Reserved Capacity and As-Available Capacity in the Madera Canal**

i) RCWD's use of capacity in the Madera Canal shall not include the annual 45-day period of "down" time for Canal maintenance. MID shall give RCWD 30 days' prior written notice of such scheduled Canal maintenance down time.

ii) The use of capacity provided in this Agreement in the Madera Canal shall in no manner be construed as a warranty or covenant by MID that any water is available to be conveyed under such RCWD capacity and such conveyance shall be subject to the USBR minimum release requirements in place at Friant Dam. (The availability of any water to be conveyed under the capacity provided in this section depends upon a variety of factors beyond MID's control, such as annual precipitation, increased use by MID and CWD landowners, and other factors.)

iii) The delivery location of waters conveyed through the Madera Canal pursuant to this section shall be at the Lateral 6.2 diversion on the Madera Canal.

iv) RCWD is responsible for scheduling the water deliveries with MID.

v) Carriage Losses

(1) There shall be no carriage losses within the Madera Canal associated with CVP water whose delivery point is at Lateral 6.2.

(2) Carriage losses for all water that is not CVP water shall be calculated pursuant to Warren Act provisions in any applicable USBR Contracts.

vi) Conveyance Charges for the Madera Canal

(1) There shall be no additional charge to RCWD for the conveyance of water that is purchased directly from MID pursuant to other terms of this Agreement.

(2) RCWD will pay all operations costs of the Madera Canal to MID if the Canal is operated solely for the conveyance of water to RCWD.

ARTICLE IV. SALE OF MID WATER AND OPTIONS TO PURCHASE

1. **Options to Purchase MID Water**
RCWD shall pay an annual option fee to MID to secure the first right to purchase surplus water from MID (if any) on the following terms and conditions for each source of water specified:

a. Surplus Class 2 Water will be made available by MID for purchase by RCWD pursuant to an annual option by RCWD upon the occurrence of:

i) A determination by MID based on June 1 or later water supply conditions, that Class 2 Water available to MID, in combination with other supplies available to MID, has resulted in the ability of MID to transfer water to RCWD without impacting current or future deliveries to MID agricultural customers.

ii) If USBR issues a notice of reduced allocation of Class 2 Water after delivery of Surplus Class 2 Water by MID to RCWD is complete, RCWD shall render replacement of water to MID from other water supply sources within one year of date of pre-reduction delivery.

b. Uncontrolled Season Class 2 water will be available for purchase by RCWD pursuant to an annual option by RCWD only upon MID determination that there is water in excess of MID's ability to divert and deliver water to MID landowners, recharge facilities or storage facilities, including those facilities that may be developed in conjunction with RCWD, during the uncontrolled season.

2. **Option Payments**
a. RCWD shall purchase annually from MID an option to receive 10,000 acre-feet of MID water.

b. The total annual option price shall be $10 per acre-foot per year, equaling a $100,000 annual payment, payable no later than February 1 of each calendar year.

c. Option payments are non-refundable and MID makes no guarantee that surplus water will be available in any year for purchase under these options.

d. RCWD shall receive full credit for option payments for water purchased in future years up to a maximum $50.00 per acre-foot purchased in any year.

e. Annual Option payments by RCWD shall not be required whenever RCWD has accumulated an unused $500,000 credit because MID has been unable to make water available.

f. Option payments by RCWD shall be forfeited at a rate of $10.00 per acre-foot for water made available by MID but not taken by RCWD.

3. **Purchase of Water By Exercise of Option**

a. **Price of MID CVP Water Purchased Under Exercise of Option**
If RCWD exercises its option to purchase water from MID, the purchase price shall be set at $50 per acre-foot above MID cost of water. The MID cost of water determination will include the following: CVP contract rate (currently $10.05/acre-foot); Restoration Fund Charges; any incremental costs charged by USBR; any USBR surcharge for water transferred to non-CVP Contractors; and San Luis/Delta Mendota Authority charges, and other charges that may be imposed upon MID water deliveries.

b. **Delivery of MID Non-CVP Water Supplies Under Exercise of Option**

i) MID may deliver Non-CVP Water, if available, in lieu of CVP Class 2 Water.

ii) If Non-CVP water is delivered to RCWD in lieu of Class 2 Water, cost adjustment will be made to reflect increases or decreases in MID or RCWD costs, including but not limited to:

(1) Restoration Fund Costs, if any;

(2) Non-CVP water conveyance charges and carriage losses.

c. **Cooperation in Acquisition of Supplemental Supplies**
MID will cooperate and assist RCWD in securing supplemental water supplies from other sources. If MID secures such supplies on behalf of RCWD, the following charges shall be assessed by MID to RCWD:

i) The purchase price by RCWD shall be $50 per acre-foot above MID cost in securing such supplies;

ii) MID shall apply option payments previously made to MID by RCWD to the price payable by RCWD for such supplemental supplies up to $50 per acre-foot.

4. Billings and Payments

a. Compensation Factor for Carriage Losses

The billing for water shall be based on charges per acre-foot of metered water taken by RCWD at the point of delivery. In order to compensate for the carriage loss set forth in Section III.1.c (Carriage Losses), the billing for all water charges under this Agreement shall be based on the amount of metered water taken by RCWD multiplied by a factor of 1.03, except as otherwise provided in Section III.1.c.

b. Billing Due Dates

RCWD will be billed separately by MID for water purchase amounts and water conveyance costs. All payments shall be due within 30 days of the last day of the month in which water is delivered. Interest shall be charged for all delinquent payments at a rate of 1 percent per month from the due date to the date of payment.

ARTICLE V CONDITIONS AND OBLIGATIONS OF PARTIES

1. Madera Irrigation District

a. Assistance with Environmental Approvals

MID agrees to provide reasonable assistance to RCWD, as appropriate on water issues, on the County, State and Federal environmental approvals for the Village of Gateway General Plan Amendment, the Infrastructure Master Plan for the Village of Gateway, subsequent tentative and subdivision maps, the Root Creek Agreement and this Agreement.

b. Provide Reasonable Support at Gateway Village Entitlement Hearings

MID agrees to provide RCWD reasonable support on water issues at all entitlement hearings for the Village of Gateway General Plan Amendment , the Infrastructure Master Plan for the Village of Gateway, subsequent tentative and subdivision maps before the Madera County Planning Commission and Board of Supervisors.

c. **Provide Support for Future Annexations to RCWD**

MID agrees to provide RCWD reasonable support for additional future annexations to RCWD, providing such annexations are subject to the provisions of the Root Creek Agreement and this Agreement.

d. **Provide Support for Special RCWD Legislation**

MID agrees to provide RCWD reasonable support for State legislation to expand the powers of RCWD to allow RCWD to provide roadways, public buildings and school facilities, parks, street lighting and landscaping, electricity, natural gas, telecommunications, and other utilities and urban services and contract for police and fire services within the boundaries of RCWD. MID acknowledges, however, that nothing in this Agreement entitles MID to participate in any additional revenue generated by RCWD from any activities authorized by the special legislation.

e. **Provide Assistance in Obtaining Pipeline from RCWD to Lateral 6.2**

MID shall provide reasonable assistance to RCWD to obtain an easement to deliver water from Turnout 1-A on Lateral 6.2 to the boundary of RCWD.

2. **Root Creek Water District**

a. **Indemnification of MID by RCWD**

It is the understanding of the Parties hereto, and the intention of this Agreement, that the execution of this Agreement by MID and all actions taken by MID under this Agreement are to be performed at the expense and risk of RCWD, and that RCWD shall defend, indemnify and hold MID harmless against any loss, expense, damage or liability of any kind whatsoever, including attorneys' fees, arising out of or in connection with the sale or conveyance of water or any other action taken under this Agreement.

b. **Future Lands Annexed or Served by RCWD**

All additional lands annexed or served by RCWD after the date of execution of this Agreement shall be annexed or served by RCWD subject to the terms and provisions of the Root Creek Agreement and this Agreement.

c. **RCWD Commitment to Purchase Water First from MID and CWD**

In purchasing its necessary water supplies, RCWD shall purchase such water first from MID and then CWD, if available, prior to purchasing water from any other sources.

d. **RCWD Commitment Not to Sell or Provide Water Service to Lands Outside of RCWD Boundaries**

RCWD shall not sell or provide water service utilizing water purchased from MID to lands outside of RCWD boundaries without the prior approval of MID.

e. **Provision of Services Only to Properties Subject to a Groundwater Management Plan**

RCWD will provide its services, including but not limited to, provision of water, wastewater treatment, flood control, electrical power, natural gas, telecommunications, public facilities, or any other urban or M & I services, only to properties that have adopted or are subject to a groundwater management plan that stipulates to water balance, and, if applicable, are subject to an agreement to limited consumption of San Joaquin River waters pursuant to USBR Holding Contracts, similar to the limitations imposed in the Root Creek Agreement.

ARTICLE VI GENERAL PROVISIONS

1. **Compliance with Environmental Laws**

The Parties shall comply with all applicable federal, state and local environmental laws and regulations, and take all steps necessary to assess whether the activities described in this Agreement may adversely impact threatened or endangered species, critical habitat or other environmental resources regulated pursuant to the federal Endangered Species Act, the California Endangered Species Act and other applicable state and federal laws relating to the protection of environmental resources.

2. **Enforcement of Agreement**

If default shall be made by any Party in any provision contained in this Agreement, such default shall not excuse the other Party from fulfilling its obligations under the Agreement and such other Party shall continue to be liable for the performance of all obligations herein contained. The Parties hereby declare that this Agreement is entered into for the benefit of all Parties to the Agreement and each Party shall have the right to enforce this Agreement, and all the obligations of each Party hereunder, by whatever lawful means that Party deems appropriate.

3. **Recording**

This Agreement shall be recorded in the Official Records of Madera County to bind the land within RCWD to the extent legally permissible and to make an official record of the agreement of the Parties.

4. **Best Efforts/No Guaranty**

When this Agreement requires any Party to assist, cooperate, negotiate, facilitate or otherwise participate in a process to obtain a mutually desired result described in this Agreement, all that is required of that Party is that they exert their reasonable and appropriate best efforts in relation to the matter described in this Agreement. In agreeing to cooperate, assist or negotiate in good faith, no Party is endeavoring to guaranty any result describe or sought by this Agreement.

5. **Uncontrolled Forces**

If any of the Parties to this Agreement are prevented in whole or in part from delivering wheeling or receiving water as a result of forces beyond their control, all Parties are relieved from the obligations to the extent they are reasonably unable to complete the obligation due to the uncontrollable force. Uncontrollable forces shall include, but are not limited to, earthquakes, fires, tornadoes, floods and other natural disasters. However, each Party shall be responsible for payment of any costs incurred on its behalf by the other Party before the occurrence of the uncontrollable force.

6. **Waste and Unreasonable Use**

Nothing in this Agreement is intended or shall be construed as condoning any waste or unreasonable use of water. All Parties specifically retain their rights and responsibilities as water purveyors to ensure that water within their jurisdiction is put to reasonable and beneficial use.

7. **Remedies - Specific Performance**

The Parties acknowledge that both groundwater and surface water are unique and irreplaceable resources. Therefore, monetary compensation or other remedies at law will not be sufficient to cure a breach of this Agreement. Thus, the Parties agree that in addition to all remedies at law, specific performance shall be available to all Parties to enforce the terms of this Agreement.

8. **Costs**

The costs and expenses incurred for the preparation of this Agreement shall be paid by each Party subject only to the reimbursement of MID set forth above.

9. **Time**

Time is of the essence of this Agreement and each and all of its provisions.

10. **Effect of Headings**

The subject headings of the articles and paragraphs of this Agreement are included for purposes of convenience only and shall not affect the construction or interpretation of any of its provisions.

11. **Entire Agreement**

This Agreement constitutes the entire agreement between the Parties pertaining to the subject matter contained in it and supersedes all prior and contemporaneous agreements, representations, and understandings of the Parties. No supplement, modification, or amendment to this Agreement shall be binding unless executed in writing by all of the Parties hereto. It is understood by the Parties that this Agreement may be subject to additional mitigation measures if required by the EIR to be prepared for the Village of Gateway Amendment to the Madera County General Plan, the Infrastructure Master Plan for the Village of Gateway, subsequent tentative or subdivision maps for the Village of Gateway.

12. **Waiver**

Waiver of any breach of this Agreement by any Party hereto shall not constitute a continuing waiver or a waiver of any breach of the same or another provision of this Agreement.

13. **Counterparts**

This Agreement may be executed in any number of counterparts and each such counterpart shall be deemed to be an original instrument, all of which together shall constitute one and the same instrument.

14. **Binding Effect**

This Agreement shall be binding upon and inure to the benefit of the heirs, executors, administrators, assigns and successors of the Parties hereto, and shall bind and apply to all property subsequently annexed to RCWD or any other party and shall be recorded against subsequent annexed land.

15. **Survival of Agreement**

The provisions of this Agreement and the covenants and conditions contained herein shall be continuous and shall survive any annexation or other change in the boundaries of RCWD and any transfer of ownership of any Holding Contract property or other property within RCWD.

16. **Attorneys' Fees**

Should any litigation be commenced between the Parties hereto concerning this Agreement or the rights and duties of any Party in relation thereto, the Party prevailing in such litigation shall be entitled, in addition to such other relief as may be granted, to recover from the losing Party a

reasonable sum for its attorneys' and paraprofessionals' fees and costs in such litigation, or any other separate action brought for that purpose.

17. Governing Law

This Agreement shall be governed by the laws of the State of California.

18. Rules of Construction and Word Usage

All words used in the Agreement shall be construed to include the plural as well as the singular number and vice versa. Words used herein in the present tense shall include the future as well as the present, and words used in the masculine gender shall include the feminine and neuter genders.

19. Parties in Interest

Nothing in this Agreement, whether expressed or implied, is intended to confer any rights or remedies on any persons other than the Parties hereto and their respective successors and assigns, nor is anything in this Agreement intended to relieve or discharge the obligation or liability of any third person to any Party to this Agreement, nor shall any provision give any third person any right of subrogation or action over and against any Party to this Agreement.

20. Notices

All notices and other communications required under this Agreement shall be in writing and shall be deemed to have been duly given on the date of service, if served personally on the person to whom notice is to be given, or on the third (3rd) day after mailing, if mailed to the Party to whom notice is to be given by first class mail, registered or certified, postage prepaid, and properly addressed as follows:

To Stephen H. Ottemoeller, General Manager, at:
Madera Irrigation District
12152 Road 28 ¼
Madera, CA. 93637-9199

To Christopher L. Campbell, Counsel, at:
Root Creek Water District
5260 N. Palm Ave., Suite 421
Fresno, CA 93704

or at such other address as any party may, by like notice, designate to the other Party in writing.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the day and year first above written.

MADERA IRRIGATION DISTRICT

Ron Pistoresi

By President – Board of Directors

Attest:

By S A Ottmar

GENERAL MANAGER

ROOT CREEK WATER DISTRICT

By President – Board of Directors

Attest:

By Deborah C. Messer

SECRETARY ROOT CREEK WATER DISTRICT

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of Madera } ss.

On March 13, 2002 (Date) before me, Lela K. Beatty Notary Public (Name and Title of Officer (e.g., "Jane Doe, Notary Public")) personally appeared Phillip R. Pierce (Name(s) of Signer(s)),

☐ personally known to me
☒ proved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

LELA K. BEATTY
Commission # 1196323
Notary Public - California
Madera County
My Comm. Expires Sep 14, 2002

Place Notary Seal Above

WITNESS my hand and official seal.

Lela K. Beatty
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Agreement Between MID & Root Creek WD for the Conveyance & Sale of Water

Document Date: 3/13/02 Number of Pages: 20

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer

Signer's Name: _____

☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer Is Representing: Root Creek Water District

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CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of Madera } ss.

On March 13, 2002 (Date), before me Lela K. Beatty, Notary Public (Name and Title of Officer (e.g., "Jane Doe, Notary Public")),
personally appeared Ron Pistoresi (Name(s) of Signer(s)),

☒ personally known to me
☐ proved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Lela K. Beatty
Signature of Notary Public

LELA K. BEATTY
Commission # 1196323
Notary Public - California
Madera County
My Comm. Expires Sep 14, 2002

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

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Title or Type of Document: Agreement Between MID & Root Creek WD for the Conveyance & Sale of Water
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Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer
Signer's Name: _____
☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: Madera Irrigation District

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

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DUPLICATE ORIGINAL

AGREEMENT CONCERNING AGRICULTURAL, MUNICIPAL AND INDUSTRIAL WATER USE WITHIN ROOT CREEK WATER DISTRICT

This Agreement Concerning Agricultural, Municipal and Industrial Water Use Within Root Creek Water District ("Agreement") is entered into this 30th day of December, 1999, by and among FRIANT WATER USERS AUTHORITY ("Authority"), MADERA IRRIGATION DISTRICT ("MID"), CHOWCHILLA WATER DISTRICT ("CWD"), and ROOT CREEK WATER DISTRICT ("RCWD") (collectively, the "District Parties"). This Agreement shall further be between the District Parties and holding contract owners (as defined below) who sign this Agreement, and all landowners or developers who subsequently sign the Consents to be Bound by this Agreement as set out below. For the purposes of this Agreement, "Parties" shall refer collectively to the District Parties, any holding contract owner who signs this Agreement, and any others who are made Parties by agreement.

RECITALS:

A. The Authority represents 25 water and irrigation districts, including CWD and MID (the "Member Agencies"), who each contract with the United States Department of Interior, Bureau of Reclamation (the "Bureau") for San Joaquin River water impounded by Friant Dam and delivered through the Madera and the Friant-Kern Canals. The water and irrigation districts and municipalities who have contracts to obtain water deliveries from the Friant-Kern and Madera Canals, including all Member Agencies and all additional contractors, shall be referred to collectively as the "Friant Contractors."

B. MID and CWD each contract with the Bureau for San Joaquin River water impounded by Friant Dam and delivered through the Madera Canal.

C. RCWD is a new water district serving a portion of Southeastern Madera County currently consisting of 9,234 acres. A legal description of RCWD is attached as Exhibit A.

D. The "Holding Contract Owners" are certain landowners within RCWD who own certain properties that are subject to contracts with the United States acting through the Bureau (the "Holding Contracts"). The Holding Contracts provide for the property to obtain water directly from the main stem of the San Joaquin River downstream from Friant Dam. The signatories to this Agreement disagree with each other as to the scope of that right, including the amount of water which may be utilized under each Holding Contract, where that water may be utilized, and the purposes for which such water may be utilized.

E. The Holding Contracts within the RCWD Boundaries are numbers 65, 67, 69, and 74. The RCWD boundaries also include a claimed riparian parcel that is described in the Bureau's offer for Holding Contract number 72. The land included within RCWD and described in those four Holding Contracts and the claimed riparian parcel consists of a combined total of 2,211 acres. The Parties acknowledge that there is a dispute whether all the land described in the Holding Contracts is entitled to water pursuant to the terms of the Holding Contracts. For the purposes of this Agreement, the term "Holding Contracts" shall be used to mean only the four signed holding contracts and the claimed riparian parcel located within the current boundaries of RCWD.

F. RCWD desires to obtain additional surface water supplies to supplement the surface water and groundwater already available within RCWD and to correct the current groundwater overdraft within RCWD by utilizing direct and in lieu recharge programs. For the purposes of this Agreement, direct recharge means the application of water to land (either in spreading basins or intentional over irrigation) to provide recharge by direct

percolation. For the purposes of this Agreement, in lieu recharge means reducing groundwater pumping by providing surface water supplies to users that would otherwise pump groundwater. The amount of effective recharge is the amount of water available for extraction in the basin pursuant to Article II, Paragraph 5 of this Agreement

G. The "Gateway Developers" who are concurrently signing a Consent to be Bound by this Agreement desire to develop approximately 2,400 acres within RCWD to residential, commercial and industrial uses according to the terms of the Gateway Village plan submitted to the County of Madera (the "County"). The Gateway Developers intend to rely entirely on groundwater delivered by RCWD to supply their development ("M&I") water needs. To ensure a long-term, high-quality groundwater supply for the Village of Gateway, the Gateway Developers desire, through RCWD, to begin a program in cooperation with the District Parties and the County to address the existing groundwater overdraft in Southeastern Madera County.

H. The Parties desire to enter into this Agreement due to their mutual interest in the reasonable use and allocation of the waters of the San Joaquin River and/or preservation of the groundwater supply within the County, to fully resolve the current and any potential disputes among the Parties as to the scope of the rights to water under the Holding Contracts, and to comply with the Madera County General Plan Policies concerning water supply and delivery. The Parties believe that the creation of RCWD and the potential for municipal and industrial development in Southeastern Madera County creates both a need and an opportunity to comprehensively utilize available water resources for the mutual benefit of all Parties. It is the intent of the Parties that neither the development of RCWD's water supply nor conversion of lands within RCWD to municipal and industrial uses will have any adverse effects on established users of groundwater in

Southeastern Madera County, on established users of San Joaquin River water, or on the ability of any entity to meet current or future environmental requirements pertaining to San Joaquin River water.

I. Although the Authority cannot bind its members to this Agreement, it has concluded that this Agreement affords the requisite assurances to Friant Contractors that the use of water within RCWD will not adversely impact the water supply available from the Friant Division.

NOW, THEREFORE, the Parties agree as follows:

ARTICLE I

APPLICATION OF THIS AGREEMENT

1. Root Creek Water District. This Agreement shall apply to the operation of Root Creek Water District to obtain water for groundwater recharge and direct surface deliveries for agricultural and Municipal and Industrial ("M&I") uses. This Agreement shall apply to all water rights, water service or other transactions exercised by RCWD in its own name or on behalf of others. This Agreement shall not, however, apply to the individual exercise of any existing or future water rights by any Holding Contract Owners who do not sign this Agreement within RCWD solely for the account of those individual owners. Furthermore, any rights exercised by RCWD in delivering water to any landowner or water user within RCWD, including exercise of any landowner's overlying rights, whether in its own name or on behalf of others, shall be used exclusively by RCWD, and they shall not be concurrently exercised by any other owner of that right.

2. Holding Contract Owners. Any Holding Contract Owner that desires to avail itself of the settlement of potential disputes concerning the validity and scope of the rights granted in the Holding Contracts, all as set out in Article IV below, shall sign this

Agreement. As to non-signing Holding Contract Owners and those holding contracts outside RCWD, the Parties will retain the right to assert any claim, action or objection concerning the use of San Joaquin River water under such contracts.

3. Municipal and Industrial Users. For the purposes of this Agreement, an "M&I user" shall mean any water user that includes more than four residential units or any office or industrial facility. On farm labor camps and farmsteads for people who own or work in commercial agricultural production and existing agricultural office, processing or other support facilities (and repairs and replacement of the same approximate size and scope) shall not be included within the definition of M&I user. However, agricultural processing or other support facilities constructed after the date of this Agreement shall be included in such definition. The Parties acknowledge that RCWD is agreeing to the terms of this Agreement as a condition of providing M&I water service. Therefore, RCWD agrees that any M&I user within RCWD that desires to obtain M&I water service from RCWD, either directly or through participation in RCWD's groundwater recharge program shall be required to enter into an M&I Consent to be Bound by this Agreement substantially in the form attached as Exhibit B.

4. Effect of Consents. A Consent to be Bound shall not be revocable and shall modify the contract or other rights subject to that Consent so long as this Agreement is in effect.

ARTICLE II

PURPOSE AND COMMITMENTS OF ROOT CREEK WATER DISTRICT

1. Creation of RCWD/Purpose of Agreement. The District Parties, the County and others supported the creation and development of RCWD as the District

Parties and the County will benefit from RCWD comprehensively addressing the water supply needs within RCWD.

2. Increased Water Supply Goal. The District Parties agree to enter into this Agreement to assist RCWD in providing a water supply within its boundaries consistent with the District Parties' ongoing efforts to improve the total beneficially-useable water supply on the east side of the San Joaquin Valley and Southeastern Madera County. RCWD agrees to manage the water available to it from all existing sources and to obtain new water sources to achieve the goal of increasing the water supply that can be beneficially used within RCWD and, as a result, in Southeastern Madera County. In particular, RCWD shall stabilize and improve groundwater levels within RCWD boundaries and provide a firm annual water supply to support urbanization planned within RCWD.

3. No Adverse Impact on Existing Water Users. RCWD agrees that the operations of RCWD in providing M&I water service as set out in this Agreement shall be achieved with no long-term adverse impacts (as defined in Article II Section 6 below) on existing groundwater and surface water users in Madera County or on those other water users who receive water from the Friant system. Diversion of water by RCWD for use within RCWD shall not result in degradation of the quality or reduction of the quantity of water from the existing surface or groundwater sources currently utilized by (1) water users in the County, (2) Friant Contractors, or (3) downstream users of San Joaquin River water. RCWD also acknowledges that its water use may be impacted by current or future downstream environmental requirements.

4. Conjunctive Use Program. The Parties acknowledge that a major purpose of RCWD is enhancement of the groundwater resource within the RCWD

boundaries. Therefore, all Parties acknowledge that RCWD plans to bank surface water in the underground within and up and down gradient of RCWD to the maximum extent possible considering the constraints of the local aquifer and the ability to deliver water to RCWD. RCWD and landowners within RCWD are currently engaged in feasibility studies to develop an M&I conjunctive use program incorporating all of the following to the extent reasonably possible: reuse and reclamation of return flows, capture and groundwater recharge of currently unused local storm water flows, capture and groundwater recharge with San Joaquin River flood flows when available, groundwater recharge with and/or direct use of imported surface water, and off-site banking of surface water in the underground within Madera County or the Friant Service area. RCWD agrees, immediately following an agreement on conveyance charges with MID, to implement an aggressive, conjunctive use program within RCWD designed, in accordance with the feasibility study results, to maximize the water that is available for beneficial use within the RCWD boundaries, provided that such banking and subsequent groundwater extraction will not adversely affect any parties to this Agreement or adjacent landowners.

5. Groundwater Performance Criteria Applicable to RCWD. The RCWD groundwater management plan (the "Plan") indicates that the current groundwater usage within RCWD is contributing to groundwater overdraft by approximately 2,500 acre feet per year. To ensure a stable, reliable high-quality water supply within RCWD for agricultural and M&I use, RCWD agrees reduce to zero its contribution to groundwater overdraft within five years following completion of a facility to convey surface water to RCWD from MID lateral 6.2 as provided below. RCWD agrees to maintain such zero contribution to groundwater overdraft, on average, thereafter. The Parties acknowledge

that the conjunctive use program planned by RCWD intends to recharge more than is used in wet years and to extract more than is recharged in dry years. The commitment being made by all Parties is to assist RCWD in obtaining enough water in wet years to eliminate the RCWD contribution to groundwater overdraft assuming hydrologic conditions consistent with the period 1975 through 1995. Eliminating the RCWD contribution to groundwater overdraft shall be achieved by any combination of consumptive water use reductions that occur within RCWD (as compared to the consumptive use within RCWD as of the date of this Agreement), intentional groundwater recharge, or in lieu recharge from supplying surface water to agricultural uses within RCWD that currently rely on groundwater. The RCWD groundwater overdraft elimination program shall only be credited with the extractable portion of intentionally-recharged water based upon reasonable recharge/extraction ratios to be determined by RCWD based on applicable data and consultation with MID and CWD. The RCWD groundwater overdraft elimination program must assume that all Holding Contract water is currently utilized and assume that all Holding Contract supplies within RCWD are subject to reduction pursuant to this Agreement. All surface water imported by RCWD and accounted as balancing the water usage within RCWD shall be either Unused Flood Flows (defined below) or new water obtained for RCWD pursuant to this Agreement or otherwise. The Parties acknowledge that bringing RCWD's water usage into balance will not alone stabilize groundwater levels within RCWD as there are many significant contributors to the current overdraft in Southeastern Madera County.

6. Definition of Long-Term Adverse Impact and Unused Flood Flows. For the purposes of this Agreement, a "long-term adverse effect on an existing water user"

shall be a reduction in surface water availability in any year, or a decline in groundwater levels that persists for five years.

For the purposes of this Agreement, "Unused Flood Flows" shall be flows of the San Joaquin River that are not diverted by any other Friant Contractors and would not otherwise be diverted by downstream users pursuant to their rights thereto or for satisfying current or future environmental requirements pertaining to the San Joaquin River.

ARTICLE III

SURFACE WATER SUPPLIES FOR RCWD

1. San Joaquin River Water Available to RCWD. In periods of high runoff on the San Joaquin River, water is sometimes flood released from Friant Dam because no Friant Contractors desire to take delivery of the water as it is available. The flood released water has the potential to be directly diverted from the San Joaquin River or delivered through the Madera Canal and utilized within RCWD. When flood releases are projected to occur, the Authority agrees to notify RCWD that water is potentially available at the same time notice is provided to all Friant Contractors. When Friant Contractors do not request delivery of all available San Joaquin River floodwater, the Authority, MID and CWD will use their best efforts to assist RCWD to obtain those Unused Flood Flows either through Bureau 215 water purchases, temporary Class 2 contracts, water transfers or other means at the lowest prevailing rate (including CVPIA Restoration Fund charges when applicable) available for water districts. The District Parties agree their intention is that no payments will be made to any Friant Contractors for Unused Flood Flows other than reimbursement for payments made by a contractor to the Bureau, the Authority or the Madera-Chowchilla Water and Power Authority for

that water or MID delivery charges for water delivered through its canal system to be negotiated between MID and RCWD in accordance with Paragraph 4 of Article V. The Parties acknowledge that certain regulatory approvals may be required to allow RCWD to obtain Unused Flood Flows, and the District Parties shall cooperate with RCWD in obtaining any such approvals. To benefit both RCWD and water users in Madera County generally, the Parties further agree to facilitate water transfers from outside Madera County to RCWD or other water purveying entities. The Parties agree that RCWD shall pay all delivery costs for water delivered to RCWD or for its benefit, including reasonable temporary regulation, storage or wheeling charges. The Parties agree that they shall jointly pursue all approvals necessary for delivery of such water to RCWD. The cost of those approvals shall be solely borne by RCWD. The Parties further agree to facilitate RCWD's efforts to obtain water transfers from Central Valley Project ("CVP") water service or exchange contractors pursuant to the Central Valley Project Improvement Act, or from Madera County or other M&I contractors who are not parties to this Agreement.

2. Purchase of Surface Water/First Option. RCWD intends to purchase additional surface water to supplement San Joaquin River water made available pursuant to the terms of this Agreement and supplies available within the boundaries of RCWD. RCWD agrees that before purchasing supplemental water from other sources, it shall satisfy its needs from supplies available for sale by MID, to the extent and on the same terms and conditions that MID is willing to sell such water to parties other than Friant Contractors or other CVP contractors. In consideration of RCWD's commitment to look first to MID for purchase of supplemental water, MID hereby agrees that RCWD shall have the first right to purchase any MID surface water that is available for sale outside its district

(except water sold to other Friant Contractors or other CVP contractors) to the extent and on the same terms and conditions that MID is willing to sell such water to parties other than Friant Contractors or other CVP contractors; provided, that RCWD's right pursuant to this paragraph shall not be interpreted as senior to or otherwise interfering with MID's ability to exchange water with other Friant Contractors to assist in delivery, timing and water management of MID water supplies. Nothing contained in this Agreement shall require MID to take any actions contrary to its bylaws or Friant Division operating policies or current water management arrangements.

3. Other Surface Water Supplies. MID agrees that RCWD shall be free to purchase surface water supplies from other members of the Authority or other sources so long as RCWD honors its commitment to purchase the MID water to the extent that it is reasonably available. The Parties acknowledge that RCWD desires to acquire long-term water supplies that originate outside Madera County. RCWD may seek to exchange any acquired supplies to augment supplies originating within Madera County. The Parties agree that (subject to the terms and conditions applicable to each supply) RCWD may utilize any long-term water supplies owned by RCWD or owned by any landowner (other than non-signing Holding Contract Owners) within RCWD, providing such use does not violate the terms and conditions of this Agreement, without violating RCWD's obligation to MID for surface water purchases.

4. Use of San Joaquin River for Conveyance. The District Parties agree that the San Joaquin River channel is a poor conveyance option due to the channel losses and other considerations and all District Parties prefer to utilize other options for delivery of water supplies to RCWD. The District Parties also acknowledge that the capacity of other conveyance options is limited and during some months no other options to convey

water to RCWD may be available. So long as this Agreement is in effect, all Parties agree to negotiate in good faith if RCWD believes it is necessary to utilize the San Joaquin River Channel for conveyance of water or to add or change points of diversion to facilitate the purposes of this Agreement.

ARTICLE IV

HOLDING CONTRACT SETTLEMENT

1. Settlement of Disputed Claims. The Parties agree that the purpose of this Article is to settle competing claims made by the Parties including, but not necessarily limited to, the following: (1) that the purposes of use of water under the Holding Contracts is limited to irrigation and domestic uses; (2) that the Holding Contracts describe land that is not entitled to water, and (3) that all land described in the Holding Contracts has a first right to all the water it can beneficially and reasonably use every year regardless of the total San Joaquin River flow. All Parties agree that litigation by a party interested in the flows of the San Joaquin River could resolve the disagreements among the Parties by defining the rights and obligations under the Holding Contracts. Because the Parties desire to resolve those disagreements without litigation and because all of the Parties to this Agreement have an interest in the flow of water in the San Joaquin River and may assert that they have a cause of action to enforce certain terms of the Holding Contracts, they have agreed to enter into this Agreement to specify an agreed upon water diversion schedule and other terms pursuant to the Holding Contracts within RCWD owned by Holding Contract Owners executing this Agreement. The intent of the Parties is that the agreements in this Article (that will sometimes be referred to as the "Holding Contract Settlement") shall survive any suit by any third party regardless of outcome. That is, the Parties intend this to be

a final and enforceable settlement of all claims by the Parties concerning any Holding Contract that is utilized by RCWD in accordance with this Agreement.

2. No Amendment/Agreement Not to Assert Claims. The Parties acknowledge that they do not have the right to amend or modify, and this Agreement will not be interpreted as amending or modifying, the terms of any Holding Contract, including any Holding Contract held by a Party. Based on the commitments of RCWD contained in this Agreement, all Parties hereby agree that, without waiving or modifying any rights that they may have under or pertaining to any Holding Contract, they shall not assert those rights with respect to any Holding Contract that is subject to this Agreement, and is managed by RCWD pursuant to the terms of this Agreement. (For the purposes of this paragraph only, the term "Agreed Holding Contract" shall refer to such a contract.) So long as (i) this Agreement is in full force and effect, (ii) all Agreed Holding Contract water delivered within RCWD is put to reasonable and beneficial use under California law, and (iii) RCWD and the owner of each Agreed Holding Contract comply with the terms of this Article and all other provisions of this Agreement, then (a) the District Parties and those Holding Contract Owners signing this Agreement agree that they shall not object to the management by RCWD of the water received under any Agreed Holding Contract or use of such Agreed Holding Contract water by RCWD for municipal and industrial purposes, (b) they shall not bring any action challenging such use on any basis, (c) they shall not cooperate in or assist in any action by any other party to challenge such use as being in violation of the Agreed Holding Contract, as creating adverse impacts different from those created by other users of water diverted at Friant Dam, or as failing to qualify as a reasonable and beneficial use of water merely because the water is used for municipal and industrial purposes, and (d)

they shall not assert that diversions, pursuant to an Agreed Holding Contract in accordance with the Holding Contract Delivery Schedule set out in Article IV, Paragraph 8, in and of themselves create adverse impacts on any existing water user. The Parties further do not waive, but agree not to assert while this Agreement is in full force and effect and all provisions of this Agreement are satisfied, any claims or assertions concerning the character of the lands described in the Agreed Holding Contracts as riparian or otherwise and assertions that significant portions of the land described in the Agreed Holding Contracts may not be entitled to water deliveries under such Agreed Holding Contracts. The Parties agree that during the continuance of a material breach of this Agreement by RCWD or an owner of an Agreed Holding Contract, they shall not be obligated by the terms of this paragraph. The Parties acknowledge that their agreement not to object, bring an action or assert any claim concerning RCWD's use of Agreed Holding Contract water supplies in accordance with the terms and conditions of this settlement shall not be construed as their opinion that all necessary legal authorization has been obtained for the usage and terms contemplated by this Agreement.

3. Holding Contracts Within RCWD. There are four privately-owned Holding Contracts numbered 65, 67, 69 and 74 within the RCWD service area. In addition, Contract 72 was offered by the Bureau but has not yet been signed. Upon the execution of this Agreement by the owner of the claimed riparian parcel described by Holding Contract 72, such owner shall use its best efforts to cause the Bureau to execute and deliver Holding Contract 72 to such owner, whereupon such owner shall also execute it. Upon its full execution, Holding Contract 72 shall be deemed to be a Holding Contract for purposes of this Agreement. Until such Holding Contract 72 has

been fully executed, the claimed riparian parcel described by offered Holding Contract 72 shall be treated the same as the land described in the Holding Contracts within RCWD that have been executed.

4. Agricultural Use of Holding Contract Water. Certain of the Holding Contract Owners currently divert water from the San Joaquin for agricultural use within the boundaries specified in those Holding Contracts. Agricultural irrigation may also occur in the future on other land within the boundaries specified in these Holding Contracts. So long as a particular Holding Contract (including groundwater supplies extracted from the lands described in that Holding Contract) has not been used to supply water for M&I or RCWD use, is not subject to the terms of this Agreement, and/or it has not been put under management of RCWD for district purposes, then, the Parties agree that the provisions of this Agreement shall not apply, and RCWD shall not receive any credit against its overdraft elimination commitment from any deep percolation resulting from such Holding Contract irrigation water supplies.

5. Management of Holding Contracts By RCWD for District Use. RCWD desires to utilize water from the Holding Contracts within RCWD as part of its total water supply strategy to ensure that reliable water service is available for the expected M&I development within RCWD without adverse impacts. RCWD shall only utilize water from a Holding Contract if the Holding Contract Owner signs this Agreement and that Contract is managed by RCWD subject to an exclusive management agreement with that Holding Contract Owner. The exclusive management contract shall provide that the Holding Contract Owner shall not retain any right to independently divert water pursuant to a Holding Contract managed by RCWD. RCWD and any Holding Contract Owners signing this Agreement agree that all

deliveries pursuant to any Holding Contract RCWD manages will be strictly controlled according to the terms of this Agreement. No water from any Holding Contract whose owner has executed this Agreement shall be used for M&I purposes unless the Holding Contract is managed by RCWD in accordance with this Section 5.

6. Full Disclosure of Water Supplies. RCWD shall meter its water diversions and make its water supply and the sources of those waters, including any water used for groundwater recharge, public record so that any of the other parties to this Agreement can confirm that the amount of water obtained pursuant to Holding Contract rights and the use of that water remains in accord with the limitations specified in this Agreement. RCWD shall furnish to the District Parties on a quarterly basis a summary of certified diversion metering records, intentional groundwater recharge, in lieu recharge, usage within RCWD by type, and other pertinent information on all RCWD water supplies and all water usage within RCWD. The District Parties shall be given access to properties within RCWD to verify diversions, recharge and water uses.

7. Agreement Not to Object to Changes in Place of Use and Point of Diversion Under the Holding Contracts. The terms of the Holding Contracts do not specify a quantitative limit on the amount of water that can be diverted pursuant to each contract. The terms of the Holding Contracts only specify a limited area for diversion and limit use of water to the land described in each contract. The Parties agree that the imprecise approach to diversions specified in the Holding Contracts makes planning difficult for the Authority, MID and CWD and leads to the dispute the Parties desire to resolve with this Agreement. The restrictions on diversion points and place of use of Holding Contract water makes water budgeting and distribution within RCWD for M&I uses unfeasible. Strictly for Holding Contracts whose owners have executed this

Agreement the Parties hereby agree, without waiving any rights or claims, and subject to Article III, Paragraph 4 not to assert point of diversion, purpose of use and place of use restrictions under the Holding Contracts in exchange for the commitments of the Parties under this Agreement and the schedule of diversions pursuant to each Holding Contract set out in the following paragraph.

8. Holding Contract Diversion Schedule. RCWD and the signing Holding Contract Owners voluntarily agree to limit their diversion of surface San Joaquin River water pursuant to each Holding Contract when such water or any ground water underlying such holding Contract land is first used for M & I purposes as follows:

a. In a water year with total projected San Joaquin River deliveries greater than 1,466,000 acre feet (above average deliveries), 2.0 acre feet per acre described in each Holding Contract managed by RCWD.

b. In a water year with total projected San Joaquin River deliveries of 1,466,000 acre feet or less (below average deliveries) diversion of Holding Contract water by RCWD shall be reduced to 1.5 acre-feet per acre described in each Holding Contract managed by RCWD.

c. In a water year with total projected San Joaquin River deliveries of 800,000 acre feet or less (critically dry) diversion of Holding Contract water by RCWD shall be reduced to 0.5 acre-feet per acre described in each Holding Contract managed by RCWD; and

d. There shall be no limitation on RCWD use of flood flows and any RCWD flood flow diversions shall not be considered Holding Contract water counted against the applicable annual limitations.

For the purpose of measuring diversions pursuant to this paragraph, RCWD shall be subject to the same water year forecasting and allocation schedule applicable to water service contractors within the Friant Division as that system operates and is amended from time to time. The Parties agree that they shall be bound by this water diversion formula only for so long as this Agreement is in effect.

9. Holding Contract Diversion Points. RCWD's use of Holding Contract water for M&I use requires that it have coordinated extraction and distribution facilities to utilize in its district wide supply. RCWD intends to extract Holding Contract water, for direct and in lieu groundwater recharge, M&I and other district purposes only, from any point along the main stem or underflow of the San Joaquin River accessible to RCWD. The remaining Parties agree that they, while not waiving any rights or claims, will not object to any such diversion by RCWD as long as RCWD and the participating Holding Contract Owners comply with both the quantity and area of use limitations specified by this Agreement, and other commitments in this Agreement.

10. Holding Contract Water Distribution. RCWD agrees that, subject to Bureau approval if required, any Holding Contract water obtained by RCWD will be introduced into the general RCWD distribution system with all other RCWD water and will be utilized for M&I uses through direct and in lieu groundwater recharge on lands throughout RCWD but will not be exported to lands that are outside RCWD except to the extent that occurs as an incidental part of an integrated regional groundwater recharge program in the RCWD area. The remaining Parties agree, without waiving any rights or claims, that they will not object to the expansion of place of use to all of RCWD of water diverted pursuant to Holding Contracts subject to this Agreement so

long as RCWD and the participating Holding Contract Owners comply with the quantity and place of use limitations specified by this Agreement.

11. Holding Contract Modification. The Parties agree to support RCWD in requesting that the Bureau of Reclamation modify any Holding Contract obtained by RCWD whose owner has executed this Agreement, provided both the quantity and area of use limitations specified by Article IV of this Agreement are incorporated into such modified Holding Contract. The owners of Holding Contracts executing this Agreement shall use their good faith best efforts to assist RCWD in obtaining such modifications. Any proposed modification of a Holding Contract shall be consistent with this Agreement and the Parties shall be provided an opportunity to review the proposed Holding Contract modification to ensure compliance with this Agreement. Following execution of a Holding Contract modification that incorporates the terms of this Holding Contract Settlement, all Parties waive all prior claims that they may have concerning that Holding Contract.

12. Definition of Holding Contract Settlement. Whenever the term "Holding Contract Settlement" is used in this Agreement, or in any consent to this Agreement it shall refer to all terms and conditions of this Article.

ARTICLE V

IMPLEMENTING AGREEMENTS

1. General. The Parties agree that additional agreements will be necessary to fully implement all aspects of this Agreement. The Parties agree to negotiate in good faith to reach all necessary subsequent agreements, including, but not limited to, those specified in this Article V.

2. Underground Banking In MID and CWD. The Parties acknowledge that MID and CWD may have excellent conditions within their boundaries for banking surface water in the underground. RCWD, MID and CWD agree to consider groundwater banking and recovery arrangements within MID and CWD. The Parties desire that arrangements between RCWD and MID and/or CWD be the preferred off-site banking utilized by RCWD within Madera County. RCWD agrees not to bank water elsewhere in Madera County unless approved by MID and CWD, but RCWD shall have the freedom to utilize the ability to enhance delivery timing or other advantages that other off-site banking opportunities may offer. Notwithstanding anything else in this Agreement, the Parties agree that RCWD shall not be required to negotiate or enter into any other banking or water storage agreements with any other District until RCWD fully develops the groundwater banking potential in and around RCWD.

3. Additional Underground Banking. To the extent that RCWD desires to bank additional surface water in the underground to provide for a firm annual agricultural and M&I supply, to maximize available surface water delivery options or for other purposes, RCWD and the Authority agree to work together and with Friant Contractors to develop underground banking and exchange programs within districts constituting the Authority. The availability, terms and conditions for any programs will be negotiated by the particular parties.

4. Conveyance Facility. The Parties acknowledge that RCWD currently does not have adequate facilities for delivery of surface water to meet its objectives. The most convenient way to deliver surface water to RCWD is through the Madera Canal and MID lateral 6.2. MID and RCWD shall negotiate in good faith on an agreement to be executed 18 months from the effective date of this Agreement to

obtain a replacement easement and construct a facility to convey water to RCWD from MID's Lateral 6.2. The facility will be financed pursuant to the terms of such agreement.

5. Warren Act Water Conveyance Charges. RCWD and MID and the Madera-Chowchilla Water and Power Authority shall negotiate in good faith to reach agreement on conveyance charges applicable to water delivered to RCWD through the Madera Canal and the MID lateral system. The availability of conveyance capacity, terms and conditions will be negotiated by the affected Parties. The conveyance rates shall not include any component for use of the easement or the pipeline connecting the existing MID laterals to the RCWD facilities, as RCWD will pay its pro rata capital operation and maintenance costs pursuant to separate facilities agreements. MID and the Madera-Chowchilla Power Authority agree to sign an agreement with RCWD on conveyance charges on or before 18 months from the effective date of this Agreement, subject to compliance with applicable environmental laws.

6. Effect of Failure to Reach Agreement. Failure to reach agreement on any of the implementing agreements shall not void or in any way modify, suspend or diminish the settlement concerning Holding Contracts or the commitments of the Parties to assist RCWD in obtaining surface water supplies. Should MID and RCWD fail to reach agreement on conveyance facilities however, RCWD shall be released from any obligation to utilize groundwater banking within MID or to purchase surface water from MID, and RCWD's obligation to eliminate its contribution to groundwater overdraft shall be deferred as provided in Article II Section 5.

ARTICLE VI

GENERAL PROVISIONS

1. Participation Within Madera County Groundwater Control (AB 3030 Plan). RCWD hereby agrees to participate with Madera County and the other interested water purveyors in Madera County to develop a groundwater management program for Southeastern Madera County. In making this agreement, RCWD acknowledges that the groundwater levels within the RCWD boundaries have been in a gradual state of decline over many years and that a fundamental purpose of RCWD is, to the extent reasonably feasible, to restore the groundwater within RCWD to a level consistent with overall water needs within RCWD and Southeastern Madera County.

2. Limitation on Water Transfers From RCWD. RCWD voluntarily agrees that as consideration for the cooperation of the other Parties in facilitating RCWD's acquisition of surface and Holding Contract water, RCWD shall restrict the use of all water acquired by it to the RCWD boundaries as they exist from time to time. To accomplish effective groundwater recharge, however, RCWD may utilize facilities immediately up or down gradient from RCWD boundaries. The Parties agree however that this restriction shall not be interpreted to prevent water transfers and exchanges by RCWD in the ordinary course of managing water to ensure appropriate timing of deliveries and a reliable and consistent water supply.

3. Rules, Regulations and Rights of Non-Parties. The Parties acknowledge that this Agreement only binds the Parties and their successors and assigns. RCWD agrees to comply at its own expense with all applicable rules and regulations of the United States acting through the Department of the Interior, Bureau of Reclamation, the California State Water Resources Control Board and any other

applicable regulatory agencies. RCWD further acknowledges that the signatories are not making any representations concerning and cannot bind any other claimants to waters of the San Joaquin River. RCWD takes any and all risks that other claimants may object to the terms of this Agreement. Furthermore this Agreement shall not be interpreted as excepting RCWD from any environmental review process applicable to any specific proposal made by RCWD and shall not be interpreted as limiting the participation of any other Party in that review.

4. Enforcement of Agreement. If default shall be made by any party in any provision contained in this Agreement, such default shall not excuse the other Parties from fulfilling their obligations under the Agreement and such other Parties shall continue to be liable for the performance of all obligations herein contained. The Parties hereby declare that this Agreement is entered into for the benefit of all Parties to the Agreement and each Party shall have the right to enforce this Agreement by whatever lawful means that Party deems appropriate all of the obligations of each Party hereunder.

5. Recording. This Agreement shall be recorded in the Official Records of Madera County to bind the land within RCWD as described in Exhibit A to the extent legally permissible and to make an official record of the agreement of the Parties.

6. Best Efforts/No Guaranty. When this Agreement requires any party to assist, cooperate, negotiate, facilitate or otherwise participate in a process to obtain a mutually desired result described in this Agreement, all that is required of that party is that they exert their reasonable and appropriate best efforts in relation to the matter described in this Agreement. In agreeing to cooperate, assist, or negotiate in good

faith, no party is endeavoring to guaranty any result described or sought by this Agreement.

7. Waste and Unreasonable Use. Nothing in this Agreement is intended or shall be construed as condoning any waste or unreasonable use of water. All Parties specifically retain their rights and responsibilities as water purveyors to ensure that water within their jurisdiction is put to reasonable and beneficial use.

8. Specific Performance. The Parties acknowledge that both groundwater and surface water are unique and irreplaceable resources. Therefore, monetary compensation or other remedies at law will not be sufficient to cure a breach of this Agreement. The Parties agree that in addition to all remedies at law, specific performance shall be available to all Parties to enforce the terms of this Agreement.

9. Costs. The costs and expenses incurred for the preparation of this Agreement shall be paid by each party.

10. Time. Time is of the essence of this Agreement and each and all of its provisions.

11. Effect of Headings. The subject headings of the articles and paragraphs of this Agreement are included for purposes of convenience only and shall not affect the construction or interpretation of any of its provisions.

12. Entire Agreement. This Agreement constitutes the entire agreement between the Parties pertaining to the subject matter contained in it and supersedes all prior and contemporaneous agreements, representations, and understandings of the Parties. No supplement, modification, or amendment of this Agreement shall be binding unless executed in writing by all of the Parties hereto.

13. Waiver. Waiver of any breach of this Agreement by any party hereto shall not constitute a continuing waiver or a waiver of any breach of the same or another provision of this Agreement.

14. Counterparts. This Agreement may be executed in any number of counterparts and each such counterpart shall be deemed to be an original instrument, all of which together shall constitute one and the same instrument.

15. Binding Effect. This Agreement shall be binding upon and inure to the benefit of the heirs, executors, administrators, assigns, and successors of the Parties hereto, and shall bind and apply to all property subsequently annexed to RCWD or any other Party and shall be recorded against subsequent annexed land.

16. Survival of Agreement. The provisions of this Agreement and the covenants and conditions contained herein shall be continuous and shall survive any annexation or other change in the boundaries of RCWD and any transfer of ownership of any Holding Contract property or other property within RCWD.

17. Attorneys' Fees. Should any litigation be commenced between the Parties hereto concerning this Agreement, or the rights and duties of any party in relation thereto, the party prevailing in such litigation shall be entitled, in addition to such other relief as may be granted, to recover from the losing party a reasonable sum for its attorneys' and paraprofessionals' fees and costs in such litigation, or any other separate action brought for that purpose.

18. Governing Law. This Agreement shall be governed by the laws of the State of California.

19. Construction. All words used in this Agreement shall be construed to include the plural as well as the singular number and vice versa. Words used herein

in the present tense shall include the future as well as the present, and words used in the masculine gender shall include the feminine and neuter genders.

20. Parties in Interest. Nothing in this Agreement, whether expressed or implied, is intended to confer any rights or remedies on any persons other than the Parties hereto and their respective successors and assigns, nor is anything in this Agreement intended to relieve or discharge the obligation or liability of any third person to any party to this Agreement, nor shall any provision give any third person any right of subrogation or action over and against any party to this Agreement.

21. Notices. All notices and other communications required under this Agreement shall be in writing and shall be deemed to have been duly given on the date of service, if served personally on the person to whom notice is to be given, or on the third (3rd) day after mailing, if mailed to the party to whom notice is to be given by first class mail, registered or certified, postage-prepaid, and properly addressed as follows:

To Richard M. Moss, General Manager, at:
Friant Water Users Authority
854 North Harvard Avenue
Lindsay, CA 93247

To Stephen H. Ottemoeller, General Manager, at:
Madera Irrigation District
12152 Road 281/4
Madera, CA 93637-9199

To Douglas G. Welch, General Manager, at:
Chowchilla Water District
P.O. Box 905
Chowchilla, CA 93610

To Christopher L. Campbell, Counsel
Root Creek Water District
5260 N. Palm Ave., Suite 421
Fresno, CA 93704

To Holding Contract No. 65 at:

_____
_____
_____

To Holding Contract No. 67 at:

_____
_____
_____

To Holding Contract No. 69 at:

_____
_____
_____

To Holding Contract No. 74 at:
S & J Ranch
P.O. Box 3347
Pinedale, CA 93650

To Offered Holding Contract No. 72 at:
S & J Ranch
P.O. Box 3347
Pinedale, CA 93650

or at such other address as any party may, by like notice, designate to the other party in writing.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the day and year first above written.

FRIANT WATER USERS AUTHORITY

By _____
Chairman
Board of Directors

Attest:

By_____
General Manager

MADERA IRRIGATION DISTRICT

By_____
President
Board of Directors

Attest:

By_____
General Manager

CHOWCHILLA WATER DISTRICT

By_____
President
Board of Directors

Attest:

By_____
General Manager

ROOT CREEK WATER DISTRICT

By_____
President
Board of Directors

Attest:

By_____
General Manager

HOLDING CONTRACT NO. 65

By_____
Owner

HOLDING CONTRACT NO. 67

By_____
Owner

HOLDING CONTRACT NO. 69

By_____
Owner

HOLDING CONTRACT NO. 74

By_____
Owner

OFFERED HOLDING CONTRACT NO. 72

By_____
Owner

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List of Exhibits

EXHIBIT "A"	RCWD Legal Description
EXHIBIT "B"	M&I Consent to Be Bound

Attachment 3.4, Property Owner Payment Contracts

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AGREEMENT FOR ACQUISITION OF IMPORTED WATER SUPPLIES FOR RECHARGE, AND FOR DEVELOPMENT AND OPERATION OF WATER SUPPLY, WASTEWATER TREATMENT AND STORM WATER FACILITIES FOR GATEWAY VILLAGE

(Root Creek Water District – Castle & Cooke Madera Properties, LLC)

THIS AGREEMENT (the "Agreement") is made effective as of June 23, 2008 by and between ROOT CREEK WATER DISTRICT, a California water district ("RCWD"), and CASTLE & COOKE MADERA PROPERTIES, LLC., a California limited liability company and CASTLE & COOKE COMMERCIAL-CA, INC., a California corporation (collectively, the two Castle & Cooke entities shall be referred to as "Developer"). RCWD and Developer are sometimes collectively referred to herein as the "Parties" or singularly as a "Party."

RECITALS

A. RCWD is a water district organized under the California Water District Law, codified by California Water Code section 34000 *et seq.*, and serves a portion of southeastern Madera County consisting of approximately 9,221 contiguous acres.

B. Developer is developing Gateway Village, a master planned community in southeastern Madera County (as more fully defined below, "Gateway Village"). The Gateway Village Property (defined below) currently contains approximately 1,982 acres that is currently planned to be developed with approximately 6,578 residential units and approximately 516 acres of commercial, industrial, and public uses. Gateway Village is located primarily within the current RCWD service area. The northern portion of Gateway Village comprising approximately 310 acres is adjacent to RCWD and will be annexed to RCWD at a later date as provided below. A legal description of the "Gateway Village Property" is attached hereto as Exhibit "A" and incorporated herein by this reference.

C. Developer is currently the sole landowner of the Gateway Village Property. As the sole landowner, Developer desires to contract with RCWD for various water supply, storm water management and wastewater treatment and disposal services ("Municipal Water Services") necessary for the development of Gateway Village. The Parties desire that the terms of this Agreement "run with the land" as benefiting and binding subsequent property owners of the Gateway Village Property or any portion thereof.

D. RCWD, including all of Gateway Village, overlies the Madera Groundwater Basin, which is in a state of critical overdraft as defined in the 2001 Groundwater study performed by Kenneth D. Schmidt, PhD. Developer initially intends to use groundwater as the primary water supply for Gateway Village. To comply with California law and Madera County requirements that new M&I Projects (as defined below) have reliable water supplies, Developer desires that RCWD take appropriate steps to reduce the existing groundwater overdraft within RCWD and ensure that Gateway Village groundwater supplies are adequate and reliable. The Parties desire to maintain a "Balanced Water Budget" (as defined below) in the RCWD area, through (i) delivery of surface water to existing agricultural users within and adjacent to RCWD for in lieu recharge, (ii) direct surface water recharge, (iii) delivery and

recharge of captured storm water, (iv) use of treated sewage effluent for irrigation purposes, and (v) reductions in the net water used on properties within RCWD through voluntary implementation of conservation measures by property owners or as an incidental result of conversion from a more water-intensive use to one or more less water-intensive uses. To assist RCWD in addressing the groundwater overdraft within the RCWD boundary and to ensure that RCWD has an adequate water supply for Gateway Village, Developer has solely financed RCWD's acquisition of those certain water supply and delivery contracts that are specified in Article V, and is committing to fund certain other costs related to the groundwater overdraft.

E. Developer desires a commitment from RCWD to provide all Municipal Water Services necessary and appropriate for Gateway Village. Those services will include, but not be limited to, issuing bonds to finance the capital costs of necessary infrastructure, creation of an RCWD improvement district coterminous with the Gateway Village Property (such district, as more particularly defined in Section 1.35, "RCWD ID#1") to provide for assessments against the real property within the Gateway Village Property to repay the bonds. RCWD desires to be the Municipal Water Services provider for Gateway Village.

F. Further, the Parties desire to assure that subsequent developers maintain a Balanced Water Budget for their M&I Projects and proportionately contribute to eliminating the groundwater overdraft within RCWD upon development of their Projects.

G. Finally, the Parties desire to develop a procedure whereby RCWD will reimburse Developer and/or RCWD ID#1 appropriately (1) if other developers utilize RCWD surface water financed by Developer or ID#1, and (2) if other developers import surface water into RCWD via infrastructure paid for by Developer and/or RCWD ID#1.

NOW, THEREFORE, in consideration of the mutual covenants and promises contained herein, the Parties agree as follows:

ARTICLE I
DEFINITIONS

1.01 <u>AFY</u>

"AFY" shall mean acre-feet per year.

1.02 <u>Agency</u>

"Agency" shall mean any Federal, State or local governmental agency or authority.

1.03 <u>Balanced Water Budget</u>

"Balanced Water Budget" shall mean that the amount of water available from all sources shall be at least equal to the amount of consumptive use of water within a specified time period, without causing or contributing to a groundwater overdraft. (Available water shall include only the amount of groundwater that can be produced without contributing to

overdraft.) For the purposes of this Agreement, a Balanced Water Budget is computed on a Five-Year Rolling Average, as defined below. The concept of a Balanced Water Budget can be applied to any water user or groups of water users, but is primarily used in this Agreement in reference to RCWD as a whole or to a proposed or actual M&I Project within RCWD.

1.04 CEQA

"CEQA" shall mean the California Environmental Quality Act.

1.05 CWD

"CWD" shall mean the Chowchilla Water District.

1.06 Direct Recharge Spreading Basin

"Direct Recharge Spreading Basin" shall mean a direct recharge spreading basin, which will be constructed on an 80-acre parcel owned by Developer that is commonly known as Madera County Assessor's Parcel Number 047-272-005, which is located south of the Root Creek channel, west of the RCWD boundary and just east of Road 35.

1.07 Distribution Lateral

"Distribution Lateral" shall mean any new or existing pipeline that carries surface water from the main RCWD Main Delivery Pipeline and/or well water to irrigate agricultural lands within RCWD.

1.08 Easement Agreements

"Easement Agreements" shall mean the Restated Well and Pipeline Easement Agreement and the Reclaimed Water Agreement.

1.09 Easements

"Easements" shall mean the easements and related rights created pursuant to the Easement Agreements.

1.10 Election

"Election" shall mean any election required by law to accomplish any of the purposes of this Agreement, including, but not limited to, the election to establish RCWD ID#1, elections to approve the issuance of any Improvement District Bonds, and elections to comply with the provisions of Proposition 218 (Cal. Const. Art. XIII D) pertaining to levying of any land based charges.

1.11 Five-Year Rolling Average

"Five-Year Rolling Average" is used in this Agreement in connection with achieving a Zero Contribution to Overdraft within RCWD as a whole and maintaining a Balanced Water Budget for an M&I Project within RCWD. In those contexts, the Five-Year Rolling Average shall refer to (a) the average of the water supply available for use within RCWD or the M&I Project under consideration, minus (b) the water actually consumptively used within RCWD or that M&I Project, for the previous five years. The average is rolling because it shall be computed each year for the previous five-year period. Therefore, each year, the oldest year rolls out of the years used to calculate the average, and the data for the most recent year rolls into the average calculation. This concept is used to measure whether an M&I Project proposed in RCWD has a Balanced Water Budget (the average has to be more than zero) or whether RCWD as a whole has successfully achieved a Balanced Water Budget or Zero Contribution to Overdraft as defined below.

1.12 Friant Agreement

"Friant Agreement" shall mean that certain agreement entered into December 30, 1999 between RCWD and other parties as described in Section 5.01(a).

1.13 Gateway Village Net Imported Water

"Gateway Village Net Imported Water" shall mean the amount of Imported Water required to (a) achieve and maintain a Balanced Water Budget for Gateway Village, plus (b) satisfy Gateway Village's obligation to assist RCWD to achieve Zero Contribution to Overdraft as provided in Section 3.02. For purposes of item (b), Gateway's obligation shall start at one hundred percent (100%), but shall be reduced to the extent—and when—other developers are required to proportionately participate in causing RCWD to achieve Zero Contribution to Overdraft pursuant to Section 4.06.

1.14 Gateway Supply Agreements

"Gateway Supply Agreements" shall mean the specific Supply Agreements set forth in Article V, which are the Friant Agreement, the MID Agreement and the Westside Agreement.

1.15 Gateway Village

"Gateway Village" is the development proposed for the Gateway Village Property more particularly described in the Gateway Village Specific Plan and the Development Agreement by and between the County of Madera and Castle & Cooke Madera, Inc. dated September 11, 2007, which was recorded on September 20, 2007 as Document No. 2007035512, Madera County Records. Gateway Village is subject to possible expansion as provided in Section 6.01, at which time the term "Gateway Village" shall include such expansion area.

1.16 Gateway Village Property

"Gateway Village Property" or Gateway Village shall mean all property included in the Gateway Village Specific Plan as approved by the Madera County Board of Supervisors on September 11, 2007, to become a portion of the M&I Project set forth in the Specific Plan for Gateway Village, a master planned community in southeastern Madera County, as described in Recital "B" above. The Gateway Village Property is subject to possible expansion as provided in Section 6.01, at which time the term "Gateway Village Property" shall include such expansion area.

1.17 Gateway Village Specific Plan

"Gateway Village Specific Plan" shall mean the Gateway Village Specific Plan as approved by the Madera County Board of Supervisors on September 11, 2007.

1.18 Grove Lands

"Grove Lands" shall mean the real property described in Exhibit "B."

1.19 Impact Fees

"Impact Fees" shall mean fees assessed pursuant to the Impact Fee Program.

1.20 Impact Fee Program

"Impact Fee Program" shall mean the program developed by RCWD pursuant to Section 4.06 to ratably assess subsequent developers for the benefits that accrue to them from costs advanced pursuant to this Agreement.

1.21 Imported Water

"Imported Water" shall mean surface water supplies imported into RCWD to be delivered for direct recharge and/or In Lieu Recharge by direct delivery for beneficial uses within RCWD.

1.22 Improvement District Bonds

"Improvement District Bonds" shall mean any bonds issued by RCWD ID#1 for the purpose of financing Lump Sum Costs, Surface Water Delivery Infrastructure Costs, M&I Delivery Infrastructure Costs, Treatment Facilities Costs, and/or the cost of constructing any direct recharge facilities to be repaid by assessments levied against the real property located in RCWD ID#1.

1.23 Incremental Cost

"Incremental Cost" shall mean the amount by which the Volumetric Cost of Imported Water obtained by RCWD exceeds the amount collected by RCWD pursuant to Section 4.05(b) for such water when RCWD delivers that water to agricultural users. Incremental Costs shall not include Lump Sum Costs.

1.24 Infrastructure Master Plan

"Infrastructure Master Plan" shall mean the Gateway Village Infrastructure Master Plan, dated September 2006, prepared by Provost & Pritchard Engineering, Inc.

1.25 In Lieu Recharge

"In Lieu Recharge" shall mean delivering Imported Water to satisfy irrigation demand that is currently being met by pumped groundwater and, consequently, reducing existing groundwater overdraft by the amount of the surface water delivered.

1.26 Lump Sum Costs

"Lump Sum Costs" shall mean any costs incurred in connection with the acquisition, transfer, conveyance or delivery of Imported Water that are not determined on a volumetric basis (i.e., not "Volumetric Costs" as defined below); but Lump Sum Costs do not include M&I Delivery Infrastructure Costs, Surface Water Delivery Infrastructure Costs, or Treatment Facilities Costs. Lump Sum Costs may include, but are not limited to, option payments, reservation fees, and payments for water rights exclusive of charges for the water actually yielded by those rights. Lump Sum Costs shall also include attorney's fees, engineering fees, permitting and other fees charged by any Agency or incurred in negotiating any Supply Agreement, obtaining any Section 215 Contract from the Federal Bureau of Reclamation, or obtaining any Permits necessary for the transfer and delivery of Imported Water. (The total cost of Imported Water is the sum of its Lump Sum Cost and Volumetric Cost.) For the purposes of reimbursement the Lump Sum Costs shall be indexed for inflation using the Consumer Price Index for All Urban Consumers in Western Urban Cities with Populations between 50,000 and 1,500,000 (December 1996=100), or comparable successor index, from the date they are incurred until the date of reimbursement, not to exceed an average of three and one-half percent (3.5%) per annum.

1.27 M&I Delivery Infrastructure

"M&I Delivery Infrastructure" shall mean the water delivery infrastructure built to deliver water to the M&I uses planned within Gateway Village, in accordance with the Infrastructure Master Plan.

1.28 M&I Delivery Infrastructure Costs

"M&I Delivery Infrastructure Costs" shall mean the engineering, permitting, attorney's fees, construction costs, and right-of-way costs (if any) related to the M&I Delivery Infrastructure.

1.29 Main Delivery Pipeline

"Main Delivery Pipeline" is defined in Section 7.02(b).

1.30 M&I Project

"M&I Project" shall mean a project with municipal and industrial uses. When modifying land or water usage, M&I Project shall refer to urban uses of land and water in contrast to the existing agricultural uses that currently predominate within RCWD.

1.31 MID

"MID" shall mean the Madera Irrigation District.

1.32 MID Agreement

"MID Agreement" shall mean that certain agreement entered into by RCWD and MID on March 13, 2002 as described more fully in Section 5.01(b).

1.33 Municipal Water Services

"Municipal Water Services" shall mean water supply, wastewater treatment and storm water facilities and services.

1.34 Permits

"Permits" shall mean any permits or approvals required from any Agency with jurisdiction in connection with the transfer, delivery or use of the Imported Water, including, but not limited to, approvals required from Reclamation, the California State Water Resources Control Board, and the County of Madera.

1.35 RCWD ID#1

"RCWD ID#1" shall mean the improvement district to be formed by RCWD pursuant to the provisions of the Water Code, with boundaries identical to that of the Gateway Village, as described in Exhibit A. The formation of RCWD ID#1 is described in Article VI below.

1.36 Reclaimed Water Easement

"Reclaimed Water Easement" shall mean that certain Easement Agreement Regarding Delivery and Use of Reclaimed Water for Agricultural Irrigation now being entered into between Developer and other parties, and any amendments thereto or restatements thereof. The Reclaimed Water Easement will restate and supersede the Wastewater Disposal Easement entered into between such parties dated March 23, 2007 and recorded in the Official Records of Madera County on March 27, 2007 as Document No. 2007011906.

1.37 Reclamation

"Reclamation" shall mean the United States Department of Interior, Bureau of Reclamation.

1.38 Restated Well and Pipeline Easement Agreement

"Restated Well and Pipeline Easement Agreement" shall mean that certain Amended and Restated Well and Pipeline Easement Agreement now being entered into between Developer and certain other parties, and any amendments thereto or restatements thereof. The Restated Well and Pipeline Easement Agreement will restate and supersede the Well and Pipeline Easement Agreement entered into between such parties dated March 23, 2007 and recorded in the Official Records of Madera County on March 27, 2007 as Document No. 2007011908.

1.39 Section 215 Contracts

"Section 215 Contracts" shall mean short-term Contracts between RCWD and Reclamation for delivery to RCWD of temporary water supplies (typically unmanaged flood flows or waters otherwise not storable within the Friant system), pursuant to a declaration by Reclamation that Section 215 Water is available.

1.40 Section 215 Water

"Section 215 Water" shall mean waters declared by Reclamation to be temporary water supplies available pursuant to Section 215 of the Reclamation Reform Act of 1982.

1.41 Service Area

"Service Area" shall mean the approximately 9,221 acre RCWD service area as it exists on the effective date of this Agreement (including approximately 1,672 acres of Gateway Village) plus (a) the Gateway Village Property consisting of approximately 310 acres North of Avenue 12, and (b) any additional land annexed at Developer's request pursuant to Article VI. For the purposes of this Agreement, the Service Area shall not include any other subsequent annexations to RCWD or any groundwater overdraft attributable to the property included in any such other annexation. The water use and contribution to overdraft of any land

annexed to RCWD at Developer's request shall be added to, and considered part of, the Gateway Village obligation under this Agreement.

1.42 Supply Agreements

"Supply Agreements" shall mean agreements between RCWD and third Parties for Imported Water supplies. "Supply Agreements" shall be broadly interpreted to mean any agreement providing RCWD with rights of any type to acquire water supplies, including, but not limited to, options to purchase water or water rights, one-time purchases and multi-year agreements, purchases of definite quantities of water without the underlying water right, purchase of water rights, and purchases of existing supply contracts.

1.43 Surface Water Delivery Infrastructure

"Surface Water Delivery Infrastructure" shall mean the water delivery facilities to be constructed by RCWD for the delivery of Imported Water for irrigation, In Lieu Recharge and direct recharge. Surface Water Delivery Infrastructure shall not include M&I Delivery Infrastructure.

1.44 Surface Water Delivery Infrastructure Costs

"Surface Water Delivery Infrastructure Costs" shall mean the engineering, permitting, attorney's fees, construction costs, and right-of-way costs (if any) related to the Surface Water Delivery Infrastructure.

1.45 Treatment Facilities

"Treatment Facilities" shall mean the drinking water, wastewater, and storm water treatment facilities to be constructed by RCWD in accordance with the Infrastructure Master Plan.

1.46 Treatment Facilities Costs

"Treatment Facilities Costs" shall mean the engineering, permitting, attorney's fees, and construction costs related to the Treatment Facilities.

1.47 Volumetric Costs

"Volumetric Costs" shall mean any costs incurred for the acquisition, transfer, conveyance or delivery of Imported Water that are customarily determined on a volumetric basis (e.g., included as part of the per acre-foot cost of Imported Water delivered, but not including "Lump Sum Costs" as defined above). Volumetric Costs may include, but shall not be limited to, the cost of water itself, conveyance charges, operations and maintenance charges, standby charges, environmental restoration charges, and annual charges levied in connection with any Permit or agreement for water supply or conveyance capacity. (The total cost of Imported Water is the sum of its Volumetric Cost and Lump Sum Cost.)

1.48 Water Supply Assurances

"Water Supply Assurances" shall mean any certification or other assurance to be given by RCWD to any Agency that the water supplies RCWD has available to serve Gateway Village are adequate and reliable to meet the reasonably projected needs of Gateway Village, or that portion of Gateway Village included in the RCWD certification or assurance.

1.49 Westside Agreement

"Westside Agreement" shall mean that certain agreement entered into by RCWD and the Westside Mutual Water Company on November 1, 2006 as described more fully in Section 5.01(c).

1.50 Zero Contribution to Overdraft

"Zero Contribution to Overdraft" shall mean the RCWD contractual obligations under the "Groundwater Performance Criteria Applicable to RCWD" as set forth in Article II, Paragraph 5 of the Friant Agreement defined above. This definition will summarize the obligation set forth in the Friant Agreement, but the Friant Agreement language shall control. Essentially, RCWD is contractually committed to ensure that the total usage of all types within the RCWD Service Area of local groundwater, net of Imported Water, is reduced (on a Five-Year Rolling Average, as defined above) by 3,400 acre-feet from 2001 levels. The reduction in the net local groundwater use may be achieved through importing additional water and/or voluntary reductions in existing groundwater use. The net reduction in local groundwater use was intended to eliminate the RCWD contribution to the overdraft of the Madera Groundwater Basin. The Friant Agreement estimated that the RCWD contribution to the overdraft averaged 2,500 AFY. That estimate was updated to 3,400 AFY in the more detailed 2001 study done by Kenneth Schmidt PhD. Therefore, the Gateway Village Infrastructure Master Plan, the Specific Plan and the entitlements based upon it, and this Agreement set the initial requirement for net reduction in local groundwater use within RCWD at 3,400 AFY as compared to 2001 conditions.

ARTICLE II
SERVICES TO GATEWAY VILLAGE/WATER SUPPLY ASSURANCES

2.01 RCWD Commitments to Gateway Village

In consideration of the Gateway Supply Agreements obtained and funded by Developer, and the Easement Agreements made available to RCWD by Developer and the continuing obligations of Gateway Village to fund the costs described herein, RCWD agrees to provide all necessary and appropriate Municipal Water Services for Gateway Village, and take all reasonable measures to fulfill RCWD's obligation to achieve Zero Contribution to Overdraft within the entire RCWD Service Area. RCWD agrees to take all measures reasonably required to ensure that Gateway Village water supplies are adequate and reliable for all existing and planned uses within Gateway Village as further described in this Agreement. RCWD shall require each M&I Project in the RCWD Service Area (including, but not limited to Gateway Village) to each

provide the appropriate funding and water supplies to RCWD so that RCWD can maintain a Balanced Water Budget for that Project (computed on a Five-Year Rolling Average), through (i) delivery of Imported Water for In Lieu Recharge, (ii) direct recharge by percolation of Imported Water, (iii) delivery and recharge of captured storm water, and (iv) delivery of treated sewage effluent for irrigation to achieve additional In Lieu Recharge. The obligation to supply Municipal Water Services to Gateway Village is strictly conditioned upon (a) the willingness and ability of the landowners within RCWD ID#1, that serves Gateway Village, to pay the cost of Gateway Village Net Imported Water, as well as any other costs related to obtaining and maintaining the Municipal Water Services, (b) Developer's and/or RCWD ID #1's construction of the M&I Delivery Infrastructure, the Surface Water Delivery Infrastructure, and the Treatment Facilities (subject to possible reimbursement for a portion of the related costs via the Impact Fees described in Section 4.06), (c) no other owners being charged for the portion of the water supply or the infrastructure that serves Gateway Village, and (d) no other owners being required to involuntarily reduce their beneficial usage of water to ensure the water supply for Gateway Village. RCWD shall apply the Balanced Water Budget and contribution to elimination of overdraft requirements pursuant to Section 4.06 to other Developers who propose M&I Projects within the RCWD Service Area. The obligation for RCWD to achieve Zero Contribution to Overdraft shall initially be funded by Gateway Village up to 3,400 AFY, although any subsequent M&I Projects within RCWD will be required to participate in achieving Zero Contribution to Overdraft as provided in Section 4.06.

2.02 Water Supply Assurances

So long as Gateway Village is current in its financial obligations to RCWD and the conditions set forth in items (c) and (d) of Section 2.01 are satisfied, RCWD shall provide such Water Supply Assurances related to Gateway Village as may be reasonably required by any Agency with permitting or regulatory authority over Gateway Village or as may be reasonably requested in connection with any financing for Gateway Village. Without limiting the foregoing:

(a) RCWD shall provide any "Water Supply Assessment" or "WSA" required by Water Code Section 10910 *et seq.* (i.e., SB 610), to complete Madera County's review of any aspect of Gateway Village. Any WSA shall be sufficient for the County to reasonably conclude that water supplies available to RCWD to serve Gateway Village will meet the Gateway Village water demand including all planned future uses.

(b) RCWD shall certify to the County of Madera that "a sufficient water supply" is available from RCWD to Gateway Village, within the meaning of Government Code Section 66473.7 (i.e., SB 221), in connection with Developer's application for tentative maps within Gateway Village.

ARTICLE III
ZERO CONTRIBUTION TO OVERDRAFT

3.01 Time Table to Achieve Zero Contribution to Overdraft

As RCWD agreed in the Friant Agreement, RCWD shall take all measures necessary to achieve Zero Contribution to Overdraft within the RCWD Service Area within five years following completion of a facility to convey surface water to RCWD from MID Lateral 6.2, and RCWD shall maintain Zero Contribution to Overdraft, as measured on a Five-Year Rolling Average, thereafter.

3.02 Methods for Reducing Overdraft

RCWD may achieve Zero Contribution to Overdraft by any combination of (1) any voluntary reductions in consumptive groundwater use that occur within the RCWD Service Area (as compared to the 2001 consumptive use within the RCWD Service Area), (2) direct groundwater recharge, or (3) In Lieu Recharge from supplying surface water to agricultural uses within RCWD that currently rely on groundwater. Nothing in this Agreement shall authorize or require RCWD, under any circumstances, to impose any groundwater rationing or to restrict the reasonable and beneficial consumptive use of groundwater by any water user within RCWD, or allow RCWD to do any of the foregoing for the purpose of satisfying its obligations hereunder to Gateway Village.

3.03 Historic Ground Water Overdraft

The Parties acknowledge that, according to the 2001 study performed by Dr. Schmidt, the historic groundwater usage within the RCWD Service Area contributes to regional groundwater overdraft by approximately 3,400 AFY. The Parties acknowledge that when water is intentionally recharged by percolation, it is not possible to recover all of the recharged water for beneficial uses. Therefore, the parties agree that RCWD shall establish standards stating that 100% of In Lieu Recharged water and 90% of water intentionally recharged by percolation shall be credited by RCWD toward achieving Zero Contribution to Overdraft. All Imported Water of any type shall be credited toward achieving Zero Contribution to Overdraft. As discussed in Section 5.05 below, however, insofar as a districtwide analysis is concerned, water delivered pursuant to the five Holding Contracts (as defined in Section 5.05) within RCWD shall not be considered Imported Water to be credited toward achieving Zero Contribution to Overdraft.[1] If (a) the amount of RCWD's contribution to regional groundwater overdraft, or (b) the credit percentages for In Lieu Recharge, or water intentionally recharged by percolation, are revised due to Agency mandate, third-party challenge, or otherwise, the revised amounts shall apply throughout RCWD, including with respect to Gateway Village.

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[1]As provided in Section 5.05, individual properties subject to Holding Contracts are credited for water pumped pursuant to the Holding Contract and used in RCWD.

ARTICLE IV
IMPORTED WATER SUPPLIES

4.01 Water Supply Requirement

RCWD shall utilize the Gateway Supply Agreements and the Section 215 Contracts and shall acquire additional or replacement Imported Water supplies and Supply Agreements as necessary to fulfill RCWD's obligations under this Agreement and under the Friant Agreement without requiring involuntary reductions of beneficial agricultural water use on any lands within the District. Those obligations, include, but are not limited to, providing reliable water service to Gateway Village in accordance with all Federal, State and local requirements, providing all required and reasonably requested assurances of the reliability of those supplies for Gateway Village and achieving Zero Contribution to Overdraft. Concurrently, RCWD shall obtain all necessary Permits for delivery and use of such Imported Water and shall implement all mitigation measures that may be required to acquire or utilize such Permits. The RCWD obligation to acquire and maintain all necessary permits applies to any permits required for the Gateway Supply Agreements and for any additional Supply Agreements necessary to accomplish RCWD's obligations to Gateway Village pursuant to this Agreement. Any Supply Agreements shall be in such form and substance as may be acceptable to RCWD, in its discretion. All Incremental Costs incurred by RCWD pursuant to this Section 4.01 and in the acquisition of Section 215 Water pursuant to Section 4.02, shall be paid by water charges for M&I water or assessments on the RCWD ID#1 property or via assessments on other benefitted properties, if any, pursuant to Section 4.06 below.

4.02 Section 215 Contracts

RCWD shall use diligent efforts to enter into Section 215 Contracts with Reclamation when Reclamation makes Section 215 Water available. RCWD shall take all appropriate measures to acquire and deliver Section 215 Water for In Lieu Recharge and direct recharge to the maximum extent practicable.

4.03 RCWD Ownership of Supply Agreements and Water Supplies

Neither Developer nor any other property owner within RCWD shall have any right, title or interest in or to any of the Supply Agreements or Section 215 Contracts, the Imported Water yielded by those Agreements or Contracts or any obligations under any Supply Agreements, except as may be expressly provided in the terms of any particular Supply Agreement executed by a landowner. According to the terms of this Agreement, however, the lands within Gateway Village shall have certain rights and a priority to service utilizing those water supplies funded by Developer or by RCWD ID#1. All Imported Water delivered pursuant to any Supply Agreement or Section 215 Contract shall be the sole property of RCWD, and RCWD shall manage the delivery and recharge of water as necessary and appropriate to meet its obligations to the landowners within RCWD, including with respect to the Gateway Village Property as provided herein.

4.04 Water Supply Permits

RCWD shall be the sole owner of any Permits acquired in connection with the conveyance, transfer, delivery and use of Imported Water (except in the case that the Permits are issued jointly to RCWD and another Agency). Neither Developer nor any other property owner within RCWD shall have any right, title or interest in or to such Permits.

4.05 Gateway Obligations for Water Costs

The Gateway Village Property (directly and/or through RCWD ID#1) shall be responsible for (i) the Incremental Cost of Gateway Village Net Imported Water, and (ii) advancing all Lump Sum Costs, M&I Delivery Infrastructure Costs, Surface Water Delivery Infrastructure Costs, and Treatment Facilities Costs (subject to potential reimbursement pursuant to Section 4.06). Without limiting the generality of the foregoing, and subject to the referenced reimbursement rights:

(a) The Gateway Village Property shall advance any Lump Sum Costs required for the Gateway Supply Agreements, the Section 215 Contracts and for those additional or replacement Supply Agreements, if any, that are necessary to supply M&I water for Gateway Village and to achieve Zero Contribution to Overdraft.

(b) RCWD shall recover a portion of the Volumetric Cost of the Imported Water through water rates charged to its agricultural customers for irrigation water deliveries. RCWD's agricultural water service rates shall be determined by the RCWD Board of Directors, in its sole discretion. RCWD's agricultural water service rates (together with the other charges mentioned in this sentence, "All-Inclusive Ag Water Rates") must be set at levels that—in combination with any RCWD assessments, delivery charges, and third-party charges—are low enough so that agricultural users have a financial incentive to voluntarily take all of the Imported Water that RCWD makes available each year and reduce their groundwater usage by a like amount so that RCWD can accomplish Zero Contribution to Overdraft. Therefore, such All-Inclusive Ag Water Rates cannot exceed the operation and maintenance costs for groundwater replaced by Imported Water. The parties acknowledge that RCWD is required to ensure that the Gateway Village residents and property owners are not charged to subsidize the agricultural water users more than is necessary to achieve Zero Contribution to Overdraft. While the setting of specific rates is solely within RCWD's discretion, RCWD will not set fees or impose other costs or restrictions on groundwater use for the purpose of increasing the price RCWD can charge for Imported Water. While the amount of water necessary to achieve Zero Contribution to Overdraft may change, the parties acknowledge that this Agreement only requires Gateway Village to contribute a maximum of 3,400 AFY to accomplish that goal. Should any legal action be brought against RCWD or Gateway Village challenging that limitation on Gateway's responsibility or asserting that RCWD is required to contribute more water to assist in resolving regional groundwater overdraft Gateway shall indemnify, defend and hold harmless RCWD and shall supply any required additional water until another M&I user within RCWD is required to share in the water contribution pursuant to the terms of this

Agreement. If an action is brought challenging whether RCWD is complying with its obligation to achieve Zero Contribution to Overdraft after there are M&I Water users within RCWD in addition to Gateway Village, then all M&I Water users shall jointly determine how to defend or resolve the action.

(c) The Gateway Village Property's continuing obligation to fund Gateway Village Net Imported Water will be met through a combination of fees payable upon the issuance of building permits within the Gateway Village Property under the MID Agreement, assessments on Gateway Village Property, water rates charged to Gateway Village water users and other appropriate fees that may be duly adopted and charged by RCWD to Gateway Village water users and property owners from time to time in accordance with applicable law. Except as otherwise specifically provided, Developer shall be responsible for ongoing costs only by paying the fees applicable to the Developer as a Gateway Village landowner and water user at any given time.

(i) Developer agrees that appropriate fees are necessary to pay the reasonable cost of the services provided by RCWD to Gateway Village under this Agreement to achieve Zero Contribution to Overdraft and maintain adequate and reliable groundwater supplies for Gateway Village. Developer shall vote to approve properly calculated and justified fees when an Election is required.

(ii) The Gateway Village Property shall be responsible for RCWD's costs to properly levy fees or assessments necessary to collect the foregoing amounts, including, but not limited to, Election costs, attorneys' fees and engineering fees.

4.06 Reciprocal Obligations for Subsequent M&I Projects/Impact Fee

RCWD agrees that RCWD shall require all others who seek to develop M&I Projects within RCWD to provide for a Balanced Water Budget with respect to their M&I Projects, including (if such Projects do not have sufficient water from other sources) via the acquisition of sufficient Imported Water and delivery capacity. In addition, RCWD agrees to require each additional M&I Project to proportionately participate in causing RCWD to achieve Zero Contribution to Overdraft (which participation may be achieved via any combination of the methods described in Section 3.02). For the purpose of determining such proportional contribution, the parties agree that all M&I property within RCWD, except property within a Holding Contract boundary as discussed in Section 5.05 below, shall be considered to have an equal per acre obligation to participate in the RCWD program for achieving Zero Contribution to Overdraft. The parties acknowledge that as other M&I Projects within RCWD assume a portion of the obligation to contribute to regional overdraft reduction, the contribution required by Gateway Village pursuant to Section 4.05(c) will be reduced accordingly (see definition of Gateway Village Net Imported Water), and Developer and/or RCWD ID#1 may be entitled to a reimbursement of certain Lump Sum Costs, M&I Delivery Infrastructure Costs, Surface Water Delivery Infrastructure Costs, and/or Treatment Facilities Costs (as applicable) they paid pursuant to Section 4.05(a). RCWD agrees that it shall promptly adopt a development impact fee program (the "Impact Fee Program"), in accordance with AB 1600 and related laws and

regulations, which shall provide for appropriate reimbursement to the Developer or others who advance costs in excess of their proportionate contribution to the extent of Impact Fees properly assessed and collected. Except as provided below, the Impact Fee Program shall apply to a proportionate share of Lump Sum Costs (adjusted as, or if, appropriate based on the remaining term of the Imported Water contracts at issue),[2] M&I Delivery Infrastructure Costs, Surface Water Delivery Infrastructure Costs, and Treatment Facilities Costs related to any of the following voluntarily used by subsequent developers: water supply and conveyance pursuant to the Gateway Supply Agreements; M&I Infrastructure to the extent provided in Section 8.01; and Surface Water Delivery Infrastructure pursuant to Article VII below; but (a) in no event shall costs assigned to Developer pursuant to the Restated Well and Pipeline Easement Agreement be assessed back to owners of the Grove Lands, except to the proportionate extent (if any) that the Grove Lands receive water via the wells constructed pursuant to that Agreement, and even in that case, costs related to the negotiation of the Restated Well and Pipeline Easement Agreement shall not be assessed to owners of the Grove Lands, and (b) in no event shall costs assigned to Developer pursuant to the Reclaimed Water Easement be assessed to owners of the Grove Lands except to the proportionate extent (if any) that the Grove Lands dispose of their own Reclaimed Water (as defined in the Reclaimed Water Easement) via that Easement.

The principles in this paragraph are illustrated by the following examples. They are not intended to address all permutations.

(a) Proportionate Contribution to Zero Contribution to Overdraft. Should a second developer propose an M&I Project that is equal in acreage to Gateway Village,[3] then each M&I Project will assume 50% of the RCWD obligation to achieve Zero Contribution to Overdraft (assuming those two M&I Projects are the only M&I Projects in RCWD), and each M&I Project may satisfy its share of that obligation via any combination of methods described in Section 3.02. At the time the new M&I Project is approved, the County and RCWD will evaluate relevant data to determine the amount of net groundwater reduction necessary to achieve that goal. If the amount is still the 3,400 AFY determined in 2001, then the new developer will be responsible for a net groundwater use reduction of 1,700 AFY, and to the extent a portion thereof is achieved in a manner that triggers Impact Fees pursuant to Section 4.06, Impact Fees will be assessed accordingly by RCWD (who will in turn reimburse Developer and/or RCWD ID#1 to the extent they paid for the water and/or infrastructure related to such Impact Fees). In the same scenario, if RCWD determines that 5,000 AFY are actually needed to achieve Zero Contribution to Overdraft, then the subsequent developer and Gateway Village will each be responsible for a 2,500 AFY net reduction in groundwater use.

(b) Potential Surplus Gateway Water Supplies. Continuing the hypothetical from Section 4.06(a)—where there are only two equal-acreage M&I Projects

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[2]No Impact Fees shall be assessed for prior years' Volumetric Costs pursuant to this Section.

[3]If the second M&I Project is not the same acreage as Gateway Village, the per-acre rules of Section 4.06 shall determine the two Projects' proportionate contributions to achieve Zero Contribution to Overdraft.

in RCWD—if the required amount of net groundwater use reduction to achieve Zero Contribution to Overdraft is 5,000 AFY, there might still be "surplus" water available for use by the second developer pursuant to the Gateway Supply Agreements. (See Sections 5.03 and 5.04.) Assume that due to conservation or overly conservative water use projections, Gateway Village has a Balanced Water Budget, with an additional 6,000 AFY available pursuant to the Gateway Supply Agreements, which (for purposes of this illustration), includes the 3,400 AFY that Gateway agreed to contribute to achieve Zero Contribution to Overdraft within RCWD. If 5,000AFY are required to achieve Zero Contribution to Overdraft and Gateway now shares that obligation 50/50 with the new developer, Gateway only is required to contribute 2,500 AFY. That leaves 3,500 AFY extra Imported Water pursuant to the Gateway Supply Agreements. Therefore, the subsequent developer, if it chooses, may pay Impact Fees to RCWD to acquire the right to utilize up to 3,500 AFY of Imported Water to meet the subsequent developer's contribution to the overdraft elimination and/or to achieve a Balanced Water Budget for its M&I Project. Once again, RCWD will reimburse the Developer or RCWD ID#1 accordingly from any Impact Fees paid by that second developer.

4.07 RCWD Responsibility to Minimize Water Costs

RCWD acknowledges that the cost of water that is potentially available to meet the Gateway Village obligation to contribute to a Balanced Water Budget within RCWD varies tremendously from the low price for Section 215 Water to the high price for Westside water. RCWD agrees to manage the use of water yielded by the three Gateway Supply Agreements, any Section 215 Contracts and any other Supply Agreements as efficiently as reasonably possible to minimize the average cost per acre-foot of surface water imported into RCWD each year to satisfy the obligation to achieve Zero Contribution to Overdraft.

ARTICLE V
SPECIFIC SUPPLY AGREEMENTS AND EASEMENTS

5.01 Gateway Supply Agreements

RCWD and Developer acknowledge that Developer has arranged and funded all costs to date for the following Supply Agreements (collectively, the "Gateway Supply Agreements") that have been entered into by RCWD:

(a) That certain "Agreement Concerning Agricultural, Municipal, and Industrial Water Use Within Root Creek Water District," dated December 30, 1999, by MID, and CWD and among RCWD, the Friant Water Users Authority (the "Friant Agreement"). As part of the Friant Agreement, MID and CWD agreed to assist RCWD in acquiring water that is currently unstorable within the Friant system including assisting RCWD to become a Section 215 Contractor with the Bureau of Reclamation.

(b) That certain "Agreement between Madera Irrigation District and Root Creek Water District for the Conveyance and Sale of Water," dated March 13, 2002, by and between RCWD and MID (the "MID Agreement"). The MID Agreement

helps to implement the Friant Agreement, by providing RCWD an option to purchase certain supplies from MID, and reserving delivery capacity for RCWD in MID's allocated portion of the capacity in the Madera Canal and in MID Lateral 6.2.

(c) That certain "Water Supply Agreement Between Root Creek Water District and Westside Mutual Water Company" dated November 1, 2006 (the "Westside Agreement"). The Westside Agreement provides for a firm water supply that may be called on in any year irrespective of hydrological conditions.

5.02 Gateway Easements

RCWD acknowledges that Developer has entered into the Easement Agreements. Developer agrees to make the Easements available to RCWD to assist RCWD in fulfilling its obligations to the Gateway Village Property pursuant to this Agreement. Following perfection of each of the Easements, RCWD agrees to accept a dedication of the Easements and assume all of the obligations pursuant to the Easements—and take subject to their terms and conditions—when Developer offers them to RCWD for dedication.

5.03 Initial Gateway Priority; Conditional Pro Rata Priority

RCWD acknowledges that Developer has paid or will pay all of the costs to negotiate and secure the Gateway Supply Agreements and the Easements, including the deposits and reservation fees under the MID Agreement and the Westside Agreement, as well as the costs of environmental review and Federal permitting related to those agreements. In addition, RCWD acknowledges that the Gateway Village Property is further committed in the MID Agreement to make additional payments to MID upon obtaining each initial building permit for a new home or commercial building in Gateway Village. RCWD, therefore agrees that the water supply obtained from the Gateway Supply Agreements and the conveyance capacity in MID Lateral 6.2 secured by the MID Agreement shall be utilized to ensure that adequate, reliable water supplies are available to the Gateway Village Property under all hydrologic conditions including single-year and multiple-year dry periods before utilizing either the water delivered pursuant to the Gateway Supply Agreements or the conveyance capacity to serve the needs of other water users within RCWD. If, however, water supplies and/or conveyance capacity is/are available pursuant to the Gateway Supply Agreements or the Easements in excess of the need for Gateway Village (as determined below, "Excess Supplies and/or Capacity"), then the Grove Lands shall have the first right to utilize such Excess Supplies and/or Capacity subject to the obligations under Sections 4.06 and 5.04 (such right, the "First Right"), as described in Section 5.03(d).

(a) From time to time when a property owner within RCWD desires to use Excess Supplies and/or Capacity to support agricultural uses and/or an M&I Project within the RCWD boundary, that owner shall request that RCWD determine whether Excess Supplies and/or Capacity exist, and RCWD shall make such determination utilizing the methodology in Section 5.03(b). RCWD shall promptly notify Developer in writing of the request to determine whether there are Excess Supplies and/or Capacity and that for the purpose of the Excess determination only, Developer has one (1) year to

designate to RCWD in writing any additional lands allowed by Section 6.01 that Developer chooses to include within Gateway Village. RCWD shall then determine whether there are Excess Supplies and/or Capacity utilizing the process described in Section 5.03(b).

(b) RCWD shall reasonably estimate the water supply and capacity needs of the lands within the "Eligible Expansion Area" (defined below) and add them to the water supply and capacity needs of "Original Gateway Village" (also defined below). "Eligible Expansion Acreage" shall be deemed to consist of (i) Madera County Assessor's Parcel No. 049-032-020 (40± acres); (ii) the school site on the west side of Road 40 between Avenue 11 and Avenue 12 (80± acres), and (iii) any additional property described in Section 6.01 that Developer identifies within one (1) year after the District delivers the Additional Lands Designation Notice to Developer. "Original Gateway Village," for the purpose of this paragraph only, shall be deemed to consist solely of the property described in Sections 1.15 and 1.16, respectively, which includes approximately 310 acres north of Avenue 12 as there referenced, but does not include any additional property described in Section 6.01. In reasonably estimating the water supplies and needs of the Eligible Expansion Acreage, RCWD shall take into account the Balanced Water Budget and proportionate responsibility for Zero Contribution to Overdraft requirements of Section 6.02. To the extent a Water Supply Assessment has not been completed for any portion of the Eligible Expansion Acreage (such portion, the "Unassessed Expansion Acreage"), the water needs of the Unassessed Expansion Acreage shall be reasonably estimated by using the following criteria:

- To the extent uses have been designated for portions of the Unassessed Expansion Acreage, the water needs thereof shall be computed via the corresponding estimates contained in Gateway Village's latest Water Supply Assessment described in Section 2.02(a).

- To the extent uses have not been designated for portions of the Unassessed Expansion Acreage, the water needs thereof shall be computed under the assumption that such portions will be developed with the permitted reasonable mix of uses with the highest water need, and the water needs of such presumed uses shall be computed via the corresponding estimates contained in Gateway Village's latest Water Supply Assessment described in Section 2.02(a).

The combined water supply and capacity needs of the Original Gateway Village and the Eligible Expansion Acreage constitute the total first priority need of Gateway Village for water supplies and conveyance capacity. RCWD shall confer with and obtain the reasonable concurrence of Gateway Village and/or RCWD ID#1 throughout this process. (The determination of Eligible Expansion Acreage and

Unassessed Expansion Acreage does not limit the provisions of Section 6.01 (regarding the addition of land to Gateway Village and the Gateway Village Property) or Section 6.02 (regarding the annexation of additional land into RCWD and RCWD ID#1); it merely affects the determination of whether there are Excess Supplies and/or Capacity and, if so, who has priority thereto.) If, after consulting with Developer and Gateway Village, RCWD determines to its reasonable satisfaction that Excess Supplies and/or Capacity exist, RCWD's determination shall be deemed to be correct, and the declared Excess Supplies and/or Capacity shall be allocated to another agricultural user or M&I Project, but not until (i) the condition described in Section 5.03(c) has been satisfied, and (ii) if the prospective user of the Excess Supplies and/or Capacity is not the owner of the Grove Lands, the First Right procedures of Section 5.03(d) have been completed.

(c) Once Excess Supplies and/or Capacity are deemed to exist, the interested property owner and RCWD shall request a formal determination from the County of Madera that—following a proposed transfer of the benefit of the Excess Supplies and/or Capacity to another water user within RCWD—all of the County approvals and entitlements Gateway Village has received from the County will remain in full force and effect and Gateway Village has sufficient water supplies to build out the urban improvements on the entire Gateway Village Property (including any expansion portions described in Section 6.01 to the extent provided in Section 5.03(b)). The cost of obtaining the County's determination that transfer of the Excess Supplies and/or Capacity will not adversely affect the build-out of Gateway Village shall be initially paid by RCWD but may be recovered by RCWD from any party that elects to obtain the benefit of that water or conveyance pursuant to this Section 5.03. The owner of the Gateway Village Property shall reasonably cooperate in this determination process.

(d) Whenever there is a formal determination from time to time that (i) there are Excess Supplies and/or Capacity pursuant to the procedures described in Sections 5.03(a) and 5.03(b), and (ii) the condition described in Section 5.03(c) is satisfied, RCWD shall provide the owner(s) of the Grove Lands written notice thereof, which notice shall contain details regarding the Excess Supplies and/or Capacity sufficient to allow the owner of the Grove Lands to make a reasonably informed decision regarding whether to exercise the First Right. The owner(s) of the Grove Lands shall then have one hundred-eighty (180) days within which to exercise the First Right by delivering written notice to RCWD. Upon such exercise, the affected Excess Supplies and/or Conveyance Capacity shall be dedicated for use in connection with the Grove Lands, subject to the obligations under Sections 4.06 and 5.04.

(e) When the Grove Lands or—to the extent the First Right is not exercised—other property owners pay the appropriate Impact Fees to be allowed to use a percentage of such water supply and/or conveyance capacity pursuant to Section 5.04, then Gateway Village (including, for this purpose, only the portion thereof located within RCWD upon the date of this Agreement plus the Eligible Expansion Acreage) and such other Projects shall share pro rata in the foregoing priority rights. RCWD shall provide the Grove Lands or other property owners appropriate Water Supply Assurances concerning the water acquired pursuant to this Section 5.03. The Grove Lands or the

other property that chooses to take a percentage of the water shall have the responsibility at their own expense of pursuing approval of their use of the water supplies in connection with any particular proposal through the County of Madera or any other Agency with jurisdiction.

5.04 Additional M&I Projects/Reimbursement

Developer agrees that—subject to the procedures and conditions set forth in Section 5.03, including the Grove Lands' Right of First Refusal—RCWD has the right to utilize any Excess Supplies and/or Capacity, other Imported Water financed by Developer and/or RCWD ID#1, and/or the rights under the Easements that is not necessary to meet the needs of the Gateway Village Property for reliable Municipal Water Services, to serve other M&I Projects within RCWD. If that occurs, however, RCWD shall require the other M&I Projects who voluntarily use such Imported Water to pay the appropriate fees under the Impact Fee Program adopted by RCWD pursuant to Section 4.06—but the developer[s] of the Grove Lands shall be required to pay amounts related to the Easements only to the extent there provided—as well as the Volumetric Cost of any such Imported Water they use. RCWD shall utilize an appropriate portion of the Impact Fee to reimburse Developer and/or RCWD ID#1, as their interests appear, for a pro-rata portion of Lump Sum Costs (adjusted as, and if, appropriate based on the remaining term of the Imported Water contracts at issue), Surface Water Delivery Infrastructure Costs, M&I Delivery Infrastructure Costs, and Treatment Facilities Costs (as applicable) they paid in connection with the Gateway Supply Agreements and infrastructure for which the Impact Fees were imposed. The Parties agree that RCWD shall be deemed to be using the Gateway Supply Agreements to support another M&I Project if the Gateway Supply Agreements are specifically designated as an available and necessary source of water for the M&I Project under consideration in any Water Supply Assurances provided to any Agency to support the subsequent M&I Project proposal. RCWD agrees that it will not issue any Water Supply Assurance utilizing the Gateway Supply Agreements or the Easements, for another M&I Project within RCWD, until the subsequent developer has agreed—as a condition of such Supply Agreement—to pay the appropriate Impact Fee, if any, prior to RCWD initiating service. RCWD shall not actually initiate service until the subsequent developer has paid the Impact Fee. RCWD shall then reimburse Developer and/or RCWD ID#1 for the portion, if any, of the water yield and conveyance capacity from the Gateway Supply Agreements that are being used to support the subsequent M&I Project.

5.05 Holding Contracts

Developer acknowledges that the Friant Agreement contains certain provisions regarding "Holding Contracts" for water supplies from the San Joaquin River. Developer acknowledges that although RCWD is seeking to amend the Holding Contracts to allow for delivery of Holding Contract supplies anywhere within the Service Area, the amount of Holding Contract water RCWD agreed to take in the Friant Agreement cannot be credited toward RCWD achieving Zero Contribution to Overdraft on a districtwide basis because that amount of Holding Contract water was included in the original calculation of the net overdraft. Nevertheless, when computing each RCWD property owner's share of the districtwide obligation

to achieve Zero Contribution to Overdraft, owners of land subject to Holding Contracts shall be credited for the water pumped pursuant to the Holding Contracts and used in the District.

ARTICLE VI
EXPANSION OF GATEWAY VILLAGE/GATEWAY VILLAGE PROPERTY; ANNEXATION OF ADDITIONAL TERRITORY, FORMATION OF RCWD ID#1; AND ISSUANCE OF IMPROVEMENT DISTRICT BONDS

6.01 Gateway Village Expansions

Subject to compliance with Article IV, the other provisions of this Article VI, and all other applicable provisions of this Agreement, at Developer's election, the following additional property may be added from time to time to Gateway Village and the Gateway Village Property:

- A cumulative total of up to one hundred sixty (160) acres that are outside the boundaries of RCWD as of the date of this Agreement and are contiguous to the Gateway Village Property immediately prior to such addition.
- A cumulative total of up to one hundred sixty (160) acres that are within the boundaries of RCWD as of the date of this Agreement and are contiguous to the Gateway Village Property immediately prior to such addition.
- If it becomes feasible, the forty (40)± acre parcel east of SR-41 owned by Developer and identified as Madera County Assessor's Parcel No. 049-032-020.
- The 80 acre parcel being acquired by Developer for a Gateway Village school site on the west side of Road 40 between Avenue 11 and Avenue 12, which is being created as a separate legal parcel via a lot line adjustment.

6.02 RCWD Annexations Related to Gateway Village

From time to time, upon request of Developer—subject to Article IV, the other provisions of this Article VI, and all other applicable provisions of this Agreement—RCWD agrees to (a) promptly petition Madera County LAFCO to annex into RCWD (i) the approximately 310 acres North of Avenue 12 that is currently within Gateway Village but not within RCWD, and (ii) the land, if any, added to the Gateway Village Property pursuant to Section 6.01 that is not already in RCWD, and (b) take all other steps necessary to annex such additional land into RCWD.

From time to time, upon request of the owner of the following properties (which are part of the Grove Lands)—subject to Section 4.06, the other provisions of this

Article VI, and all other applicable provisions of this Agreement—RCWD agrees to (x) promptly petition Madera County LAFCO to annex into RCWD the approximately twenty (20) acres currently owned by Madera Properties 1971, LLC ("MP 71") north of Avenue 12 (Madera County Assessor's Parcel No. 049-022-017) and—if it becomes feasible—the forty (40)± acre parcel east of SR-41 also owned by MP 71 (Madera County Assessor's Parcel No. 049-032-010), and (y) take all other steps necessary to annex such additional land into RCWD.

Further, if RCWD ID#1 has been formed prior to the addition of any additional Gateway Village Property, as described in Section 6.01 and this Section 6.02, then that additional Gateway Village area shall be annexed simultaneously to RCWD ID#1. All Eligible Expansion Acreage (as defined in Section 5.03(b)) shall enjoy the same first priority right to benefit from the Gateway Supply Agreements. Gateway Village Property annexed pursuant to Section 6.02 shall also be responsible to meet the Gateway Village Property obligations pursuant to this Agreement. Without limiting the generality of the foregoing, any such property annexed to RCWD shall be required to maintain a Balanced Water Budget and contribute proportionately to Zero Contribution to Overdraft without causing any adverse financial or water supply impacts to other owners within RCWD.

6.03 Developer Reimbursement

Developer shall timely reimburse RCWD for any costs, including, but not limited to, attorneys' fees and engineers' fees, incurred by RCWD in annexing the additional Gateway Village Property or in providing any Water Supply Assurance required in connection with any Gateway Village approval.

6.04 Formation of RCWD ID#1

Within 30 days of a request from Developer, RCWD shall commence the process to form "Root Creek Water District Improvement District Number 1" (RCWD ID#1) and shall diligently pursue that process to completion. Developer shall vote to approve the formation of RCWD ID#1. The entire Gateway Village Property that is within RCWD at the time ID#1 is formed will be included within RCWD ID#1 and it shall include no other lands. RCWD ID#1 may be formed before or after the annexation of the portion of the Gateway Village Property that is currently outside the RCWD boundary (see Section 6.02), but, if it is formed before annexation, then the additional area will not initially be included in RCWD ID#1. Developer shall be responsible for all costs associated with formation of RCWD ID#1, including, but not limited to, Election costs, attorneys' fees and engineering fees.

6.05 RCWD ID#1 Bonds

At such times as requested by Developer, RCWD ID#1 shall issue Improvement District Bonds for an amount or amounts requested by Developer, to finance all or any portion of the costs payable by Developer, or the Gateway Village Property, under this Agreement, including, but not limited to, Lump Sum Costs, Surface Water Delivery Infrastructure Costs, M&I Delivery Infrastructure Costs, Treatment Facilities Costs, and the cost of constructing any direct recharge facilities. Developer shall vote to approve such Improvement

District Bonds. RCWD ID#1 shall be responsible for all of RCWD's and RCWD ID#1's costs associated with issuing such bonds, including, but not limited to, Election costs and attorneys' fees.

ARTICLE VII
SURFACE WATER DELIVERY INFRASTRUCTURE

7.01 RCWD to Construct Surface Water Delivery Infrastructure

RCWD shall construct such Surface Water Delivery Infrastructure as may be necessary to deliver sufficient surface water to agricultural water users to provide for the In Lieu Recharge necessary to achieve a Balanced Water Budget for Gateway Village and Gateway Village's 3,400 AFY contribution to Zero Contribution to Overdraft. Subject to reimbursement, if any, as provided in Section 4.06 pursuant to the Impact Fee Program, Developer—or the Gateway Village Property through RCWD ID#1—shall initially fund construction of the Surface Water Delivery Infrastructure.

7.02 Components of Surface Water Delivery Infrastructure

The Surface Water Delivery Infrastructure shall include, but shall not be limited to, the following:

(a) New turnout on Lateral 6.2, constructed in accordance with Reclamation standards, and designed to regulate flows from Lateral 6.2 into the Main Delivery Pipeline.

(b) A main delivery pipeline (the "Main Delivery Pipeline"), which is currently planned to be a 48-inch concrete gravity main from Lateral 6.2 to approximately Avenue 10. The Main Delivery Pipeline will convey water to various existing and new Distribution Laterals serving the agricultural lands within the In Lieu Recharge service area.

(c) Lateral service lines connecting the Main Delivery Pipeline to the headworks of the various on-farm irrigation distribution systems within the In Lieu service area, and the connections required to supply In Lieu Recharge water to those on-farm systems.

(d) The Direct Recharge Spreading Basin. RCWD projects that this facility will receive approximately 1000 AF per year of water on behalf of RCWD for recharge to meet a portion of the Gateway Village Property obligations to help RCWD achieve Zero Contribution to Overdraft. If RCWD utilizes the Direct Recharge Spreading Basin for the benefit of other water users within or outside the RCWD Service Area, RCWD shall reimburse Developer and/or RCWD ID#1, as their interests appear, on a pro rata basis for the cost of the facilities.

(e) Any easements, rights of way, fee interests or other interests in real property necessary for the Surface Water Delivery Infrastructure, whether acquired by donation, purchase or eminent domain.

7.03 Operation & Maintenance Costs for Surface Water Delivery Infrastructure

The Parties acknowledge that operations and maintenance costs for the Surface Water Delivery Infrastructure are included as part of the Volumetric Costs. As agreed above, RCWD shall recover a portion of the Volumetric Cost of the Imported Water through its water rates charged to its agricultural customers for irrigation water deliveries that those customers elect to take pursuant to Section 4.05(b).

7.04 Additional Infrastructure

Developer and the Gateway Village Property shall only be responsible for the cost of constructing new, or connecting to existing, Distribution Laterals that are necessary or appropriate to deliver sufficient Imported Water to meet the Gateway Village obligations and to satisfy Developer's obligations pursuant to the Easement Agreements. Should any property owner desire to extend laterals to provide Imported Water to additional agricultural land, that owner shall bear the cost of the extension. Developer will make connections to existing Distribution Laterals at the time the Main Delivery Pipeline is constructed, where such Distribution Laterals cross the alignment of the Main Delivery Pipeline and will make provision for the connection of additional Distribution Laterals to be constructed by RCWD. The cost of construction for additional infrastructure may be financed by RCWD in any manner appropriate and authorized for a California Water District.

ARTICLE VIII
M&I DELIVERY INFRASTRUCTURE AND TREATMENT FACILITIES

8.01 M&I Infrastructure

RCWD shall construct the Gateway Village M&I Delivery Infrastructure and Treatment Facilities in accordance with the Infrastructure Master Plan, or, at Developer's election, Developer may construct the M&I Delivery Infrastructure and the Treatment Facilities and dedicate them to RCWD. Subject to reimbursement pursuant to the Impact Fee Program to the extent the M&I Delivery Infrastructure and/or the Treatment Facilities are used by other developers, Developer shall be responsible for all acquisition and construction costs associated with such infrastructure and facilities; however, if requested by Developer, RCWD will cooperate with Developer in utilizing Improvement District Bonds secured by the Gateway Village Property to finance the infrastructure as provided above.

8.02 RCWD Obligations

This Agreement is not intended to be a full description of the Parties' rights and responsibilities regarding the M&I Delivery Infrastructure and the Treatment Facilities, which shall be public facilities under the ownership and control of RCWD.

Notwithstanding the foregoing, if RCWD constructs the facilities, the Parties agree that RCWD shall be responsible to do the following:

(a) provide overall supervision, coordination, and direction of construction;

(b) monitor the architect's coordination, review, and distribution of construction contract documents, including revised drawings and specifications;

(c) direct and inspect the work of the various contractors until final completion in an effort to see that the materials furnished and work performed are in accordance with Infrastructure Master Plan and the requirements of any Agency having jurisdiction over the M&I Delivery Infrastructure and the Treatment Facilities;

(d) review for propriety all requests for changes to any construction plans; and

(e) keep accurate and detailed written records during all stages of planning and construction.

8.03 Applicable Regulations

RCWD shall operate the M&I Delivery Infrastructure and the Treatment Facilities in accordance with law and the rules and regulations of any Agency having jurisdiction over such infrastructure and facilities.

8.04 Drinking Water Standards

RCWD shall provide drinking water to Gateway Village that meets National Primary Drinking Water Regulations, requirements of the California Safe Drinking Water Act, and all other applicable Agency water quality standards.

8.05 Wastewater Treatment

RCWD shall treat all sewage effluent and other wastewater generated by the Gateway Village. Treatment shall include primary, secondary and tertiary treatment consistent with law and the rules and regulations of any Agency having jurisdiction over such matters. All treated wastewater shall be reclaimed for lawful use within the Service Area, to the maximum extent permitted by law and otherwise economically feasible.

8.06 Storm Water Management

RCWD shall capture, store and recharge to the greatest extent possible, and legally allowable, all storm water within the RCWD boundary, at the Direct Recharge Spreading Basin, and particularly within Gateway Village in a manner consistent with law and the rules and regulations of any Agency having jurisdiction over such matters. RCWD shall

design and implement a comprehensive storm-water management program using the best management practices.

8.07 NPDES Permit

Without limiting the foregoing, RCWD shall obtain and maintain a National Pollutant Discharge Elimination System (NPDES) permit for Gateway Village, including the wastewater treatment plant, holding ponds and effluent disposal area, and shall otherwise comply with rules and regulations of the federal Environmental Protection Agency and the California Environmental Protection Agency in its management of wastewater and storm water.

ARTICLE IX
ANNUAL ASSESSMENTS

9.01 Assessment Agreement

From the date that RCWD was formed, Developer (by private agreement with the other property owners) has been responsible for, and has paid, all of the annual assessments levied by Root Creek Water District against each acre within the RCWD. Under those agreements, the other property owners shall be required to begin paying any assessments levied by RCWD against their land when they commence taking water from the RCWD. Upon construction of the Surface Water Delivery Infrastructure, RCWD shall collect its annual assessments directly from the parcels that receive water. (The assessments described in this Section 9.01 do not include Impact Fees, which are separately covered in Section 4.06.)

ARTICLE X
MISCELLANEOUS

10.01 Costs

The costs and expenses incurred for the preparation of this Agreement shall be paid by Developer.

10.02 Time

Time is of the essence of this Agreement and each and all of its provisions. The Parties agree that the time for performance of any action permitted or required under this Agreement shall be computed as if such action were "an act provided by law" within the meaning of California Civil Code §10, which provides: "The time in which any act provided by law to be done is computed by excluding the first day and including the last, unless the last day is a holiday, and then it is also excluded."

10.03 Headings

The subject headings of this Agreement are included for purposes of convenience only and shall not affect the construction or interpretation of any of its provisions.

10.04 Amendments

This Agreement may not be amended or modified except in a writing executed by all of the Parties hereto.

10.05 Assignment

Except as may occur in connection with Developer's sale of all or any portion of the Gateway Village, no Party shall assign or transfer its rights or obligations under this Agreement.

10.06 No Implied Waiver

Waiver of any breach of this Agreement by any Party hereto shall not constitute a continuing waiver or a waiver of any breach of the same or another provision of this Agreement.

10.07 Severability

Any provision of this Agreement that is unenforceable or invalid or the inclusion of which would adversely affect the validity, legality, or enforceability of this Agreement shall be of no effect, but all the remaining provisions of this Agreement shall remain in full force.

10.08 Counterparts

This Agreement may be executed in any number of counterparts and each such counterpart shall be deemed to be an original instrument, all of which together shall constitute one and the same instrument.

10.09 Further Assurances

Whenever requested by the other Party, each Party shall execute and deliver all further documents or instruments as may be necessary or proper to complete any matters covered by this Agreement, and to do all other acts to carry out the intent and purpose of this Agreement.

10.10 Run With the Land

Developer's obligations under this Agreement shall constitute covenants running with the land constituting the Gateway Village. Such covenants shall be for the benefit of RCWD, and particularly for the benefit of the agricultural lands within RCWD. This Agreement shall be binding upon and inure to the benefit of the heirs, executors, administrators, assigns, and successors of the Parties hereto.

10.11 Continuing Covenants

The provisions of this Agreement and the covenants and conditions contained herein shall be continuous.

10.12 Attorney's Fees

Should any action or proceeding be commenced between the Parties hereto concerning this Agreement, or the rights and duties of any Party in relation thereto, the Party prevailing in such action or proceeding shall be entitled, in addition to such other relief as may be granted, to recover from the losing Party a reasonable sum for its attorneys', paralegals', accountants', and other professional fees and costs incurred in connection with such action or proceeding.

10.13 Gender/Number

All words used in this Agreement shall be construed to include the plural as well as the singular number and vice versa. Words used herein in the present tense shall include the future as well as the present, and words used in the masculine gender shall include the feminine and neuter genders.

10.14 No Implied Rights

Nothing in this Agreement, whether expressed or implied, is intended to confer any rights or remedies on any persons other than the Parties hereto and their respective successors and assigns, except when specifically discussed in reference to the Grove Lands (to which extent the owners of the Grove Lands are third-party beneficiaries). Nothing in this Agreement intended to relieve or discharge the obligation or liability of any third person to any Party to this Agreement, nor shall any provision give any third person any right of subrogation or action over and against any Party to this Agreement.

10.15 Notices

All notices and other communications required under this Agreement shall be in writing and shall be deemed to have been duly given (i) on the date of service, if served personally on the person to whom notice is to be given, (ii) on the date of service if sent by telecopier, provided the originally is concurrently sent by first class mail, and provided that notices received by telecopier after 5:00 p.m. shall be deemed given on the next business day, (iii) on the next business day after deposit with a recognized overnight delivery service, or (iv) or on the third (3rd) day after mailing, if mailed to the Party to whom notice is to be given by first class mail, registered or certified, postage-prepaid, and properly addressed as follows:

To RCWD: ROOT CREEK WATER DISTRICT
Jim Provost, District Manager
Provost & Pritchard, Inc. Engineering Group
286 West Cromwell
Fresno, California 93711
Facsimile: (559) 449-2715

To Developer: CASTLE & COOKE COMMERCIAL-CA, INC.
10900 Wilshire Boulevard, Suite 1600
Los Angeles, California 90024
Attn: Mary Garnett
Facsimile: (310) 824-7700

CASTLE & COOKE MADERA PROPERTIES, LLC
Post Office Box 11165
Bakersfield, California 93311
Attn: Laura Whitaker
Facsimile: (661) 664-6188

With copies to: Mark Jones
JONES & BEARDSLEY
10000 Stockdale Highway, Suite 350
Bakersfield, California 93311
Facsimile: (661) 664-2904

Christopher L. Campbell
BAKER, MANOCK & JENSEN, PC
5260 North Palm Avenue, Suite 421
Fresno, California 93704
Facsimile: (559) 432-5620

or at such other address as any Party may, by like notice, designate to the other Party in writing.

10.16 Non-Exclusive Terms

Non-exclusive terms such as "including," "such as," "for example," and "e.g.," list examples only, and do not indicate an exhaustive list of situations in which a clause applies.

10.17 Entire Agreement

This Agreement constitutes the parties' entire, integrated agreement with respect to the subject matter described herein, and there are no other agreements regarding that subject. This Agreement replaces and supersedes all prior written, oral, and implied agreements,

and understandings by and among the Parties regarding that subject matter, as well as any related written, oral, or implied representations, warranties, and covenants.

10.18 Recitals, Exhibits, and Definitions Part of Agreement

All recitals, exhibits, and definitions are incorporated by reference and constitute part of this Agreement.

[Remainder of this page intentionally left blank.]

10.19 Authority

All persons executing this Agreement on behalf of any Party to this Agreement warrant that they have the authority to execute this Agreement on behalf of that Party.

IN WITNESS WHEREOF, the Parties have executed this Agreement to be effective as of the date first above written.

"RCWD"

ROOT CREEK WATER DISTRICT, a California water district

By _____
Title President

By _____
Title _____

"Developer"

CASTLE & COOKE MADERA PROPERTIES, LLC, a California limited liability company

By _____
Title VICE PRESIDENT

By Laura Whitaker
Title VP

CASTLE & COOKE COMMERCIAL-CA, INC., a California corporation

By _____
Title VICE PRESIDENT

By Laura Whitaker
Title VP

Exhibit "A"

Legal Description of the Gateway Village Property

Exhibit "B"

Legal Description of the Grove Land