RECLAMATION
Managing Water in the West

Categorical Exclusion Checklist

New Turnout on Madera Canal near Farm Bridge 28.04

CEC-10-091

Prepared by:

Nick Kilb
Natural Resources Specialist
South-Central California Area Office

Date: 9/13/2012

Concurred by:

for

Chuck Siek
Supervisory Natural Resources Specialist
South-Central California Area Office

Date: 9-14-12

Concurred by:

Randy English
Chief, Resources Management Division
South-Central California Area Office

Date: 9/18/12

Approved by:

for

Michael Jackson
Area Manager
South-Central California Area Office

Date: 9/18/12

U.S. Department of the Interior
Bureau of Reclamation
South-Central California Area Office

September 2012

Background

The Madera Canal (Canal) is part of the Friant Division of the Central Valley Project, a Federal facility built and managed by the United States Bureau of Reclamation (Reclamation). The Madera-Chowchilla Water & Power Authority (Authority) operates and maintains the Canal on behalf of CVP contractors, including Madera Irrigation District (District). At the request of the District, the Authority has requested Reclamation's permission to install a new turnout within Reclamation's right-of-way (ROW) for the Canal.

Purpose and Need for Action

Two landowners within the District currently share a Canal turnout and water pipeline, causing restrictions in capacity and timing of deliveries. The District needs a new Canal turnout and pipeline to increase the capacity, efficiency, and flexibility of water deliveries to the landowners.

Proposed Action

Reclamation proposes to issue a license, easement, permit, and/or crossing agreement to the Authority allowing construction of a 3,000 gallon per minute irrigation turnout and pipeline crossing Reclamation's ROW. The new turnout would be placed at Canal Mile Post (MP) 28.25, northwest of the farm bridge at MP 28.04 (see Appendix A, Sheet 1). Once constructed, the new turnout would be owned by Reclamation and operated and maintained by the Authority. Reclamation would also approve the new turnout as a new point of diversion under the District's water service contract.

The turnout would be made of structural concrete with a galvanized steel trash rack, slide gate, and catwalk. Approximately 100 feet of 24-inch diameter PVC pipeline rated for 100 pounds per square inch (psi) would cross approximately 90 feet of Reclamation ROW between the paved canal road and the adjacent fence line.

The pipeline would terminate on private property just outside of Reclamation's ROW at a 48-inch reinforced concrete pump stand. A pump mounted on the stand would convey water through approximately 10,137 feet of 18-inch diameter PVC pipeline to an existing ponding basin. The pipeline would be located in the footprint of existing farm roads on private land.

Excavation for the turnout structure would be approximately 20 feet wide by 25 feet long by 15 feet deep. Excavation for the pipeline across Reclamation's ROW would be approximately 5 feet wide by 100 feet long, varying from 10 to 15 feet deep. Approximately 500 cubic yards of excavated material would be stockpiled on-site and replaced as backfill. Excavation for the pipeline on private land would be approximately 10,137 feet long by 36 inches deep. The excavated material would be similarly stockpiled on-site and replaced as backfill.

Approximately 12 inches of riprap would be placed around the turnout on 500 square feet of previously disturbed surface in the Canal. The riprap would likely come from a local quarry, and

would be Caltrans-grade facing-class rock. The paved road on the canal bank would be repaired to match existing pavement.

The proposed construction would require backhoes, excavators, loaders, concrete trucks, and pumps. Staging would likely take place on Reclamation property to the northwest of the structure location. Construction would take approximately two months to complete during winter 2012 through spring of 2013, while the Madera Canal is out of service.

Environmental Commitments

During Reclamation's review of the proposal, the action originally proposed appeared to have the potential to impact biological resources, due to suitable habitat along the pipeline alignment (from directly adjacent to the farm bridge at MP 28.04). The proponent and Reclamation agreed to an alternative alignment, relocating the proposed turnout's location to MP 28.25 (see Appendix A, Alignment Exhibit). By aligning the pipeline in a disturbed context along an existing farm road, potential impacts to biological resources would be avoided.

Additionally, the Authority must implement the following environmental protection measures. Environmental consequences for resource areas assume that the measures specified would be fully implemented.

Resource	Protection Measure
Biological	California tiger salamander preconstruction survey must be conducted to prove that there are no rodent burrows or similar refugia that cannot be avoided by a minimum of 50'. The survey must be conducted by a qualified biologist within two weeks prior to the start of groundbreaking. The results must be provided to Reclamation, the U.S. Fish and Wildlife Service (Service), and DFG. If the survey finds burrows that cannot be avoided, and the pipeline route cannot be adjusted, the action would not be taken until Reclamation could complete a consultation with the Service pursuant to section 7 of the Endangered Species Act.
Biological	Work at night or in the rain would be avoided.
Biological	If any listed species are observed in the project area, all activities must cease in the area. Reclamation must be notified, and the project would be rescheduled or postponed to avoid all impacts to species.
Cultural	In the event of an inadvertent discovery of archaeological or historical cultural resources, all activities must cease in the area of the discovery. Immediate telephone notification of the discovery must be made to Reclamation. The activity would not resume until the Bureau of Reclamation authorized a continuance. In addition, all reasonable efforts to protect the cultural resources discovery shall be made.

Exclusion Categories

516 DM 14.5 paragraph D (10): *Issuance of permits, licenses, easements, and crossing agreements which provide right-of-way over Bureau lands where the action does not allow for or lead to a major public or private action.*

516 DM 14.5 paragraph D (14): *Approval, renewal, transfer, and execution of an original, amendatory, or supplemental water service contract or repayment contract where the only result will be to implement an administrative or financial practice or change.*

Evaluation of Criteria for Categorical Exclusion:

1. This action would have a significant effect on the quality of the human environment (40 CFR 1502.3).	No	☒	Uncertain	☐	Yes	☐
2. This action would have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources (NEPA Section 102(2)(E) and 43 CFR 46.215(c)).	No	☒	Uncertain	☐	Yes	☐
3. This action would have significant impacts on public health or safety (43 CFR 46.215(a)).	No	☒	Uncertain	☐	Yes	☐
4. This action would have significant impacts on such natural resources and unique geographical characteristics as historic or cultural resources; parks, recreation, and refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (EO 11990); flood plains (EO 11988); national monuments; migratory birds; and other ecologically significant or critical areas (43 CFR 46.215 (b)).	No	☒	Uncertain	☐	Yes	☐
5. This action would have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks (43 CFR 46.215(d)).	No	☒	Uncertain	☐	Yes	☐
6. This action would establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects (43 CFR 46.215 (e)).	No	☒	Uncertain	☐	Yes	☐
7. This action would have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects (43 CFR 46.215 (f)).	No	☒	Uncertain	☐	Yes	☐
8. This action would have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by Reclamation (LND 02-01) (43 CFR 46.215 (g)).	No	☒	Uncertain	☐	Yes	☐
9. This action would have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated critical habitat for these species (43 CFR 46.215 (h)).	No	☒	Uncertain	☐	Yes	☐

10. This action would violate a Federal, tribal, State, or local law or requirement imposed for protection of the environment (43 CFR 46.215 (i)).	No	☒	Uncertain	☐	Yes	☐
11. This action would affect ITAs (512 DM 2, Policy Memorandum dated December 15, 1993).	No	☒	Uncertain	☐	Yes	☐
12. This action would have a disproportionately high and adverse effect on low income or minority populations (EO 12898) (43 CFR 46.215 (j)).	No	☒	Uncertain	☐	Yes	☐
13. This action would limit access to, and ceremonial use of, Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (EO 13007, 43 CFR 46.215 (k), and 512 DM 3)).	No	☒	Uncertain	☐	Yes	☐
14. This action would contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act, EO 13112, and 43 CFR 46.215 (l)).	No	☒	Uncertain	☐	Yes	☐

Regional Archeologist concurred with Item 8. Their determination has been placed within the project file.

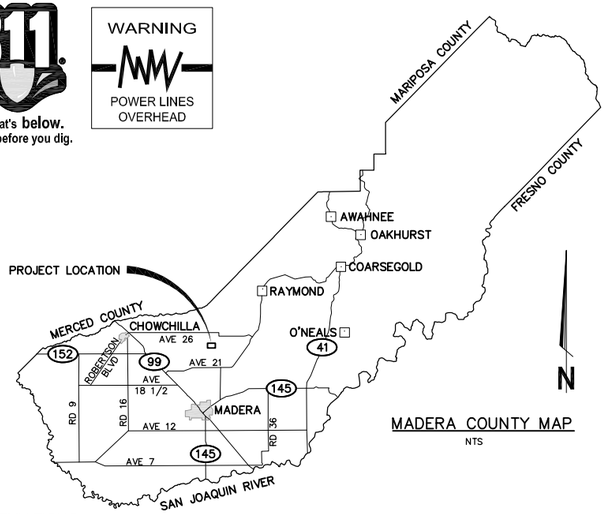
Area Office Biologist concurred with Item 9. Their determination has been placed within the project file.

ITA Designee concurred with Item 11. Their determination has been placed within the project file.

Appendix A Draft Site Plans and Maps

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

WARNING
POWER LINES OVERHEAD



MADERA COUNTY MAP
NTS

COLEMAN FARMING COMPANY

MADERA COUNTY, CA

NEW MADERA CANAL TURNOUT
NEAR FARM BRIDGE 28.04

SITE MAP
NTS

ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE	HWL	HIGH WATER LEVEL
APN	ASSESSORS PARCEL NUMBER	ID	INSIDE DIAMETER
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	INV	INVERT
		MAX	MAXIMUM
CBC	CALIFORNIA BUILDING CODE	MCWPA	MADERA-CHOWCHILLA WATER & POWER AUTHORITY
CL	CLASS	MIN	MINIMUM
℄	CENTER LINE	NO.	NUMBER
CLR	CLEAR	NTS	NOT TO SCALE
CONC	CONCRETE	O&M	OPERATIONS AND MAINTENANCE
CP	CONTROL POINT	OC	ON CENTER
DIA, ⌀	DIAMETER	PIP	PLASTIC IRRIGATION PIPE
DIM	DIMENSION	PROP OR (P)	PROPOSED
EG	EXISTING GRADE	PVC	POLYVINYL CHLORIDE
ELEV	ELEVATION	RCP	REINFORCED CONCRETE PIPE
ELL	ELBOW	RGRCP	RUBBER GASKETED REINFORCED CONCRETE PIPE
EP	EDGE OF PAVEMENT	R/W	RIGHT OF WAY
EW	EACH WAY	SCH	SCHEDULE
EXIST OR (E)	EXISTING	SS	STAINLESS STEEL
FG	FINISHED GRADE	TOE	TOE OF SLOPE
FL	FLOW LINE	TOP	TOP OF SLOPE
FV&C	FRESNO VALVES & CASTINGS	TS	TOP OF STRUCTURE
GALV	GALVANIZED	TYP	TYPICAL
GPM	GALLONS PER MINUTE	USBR	UNITED STATES BUREAU OF RECLAMATION
HORZ	HORIZONTAL	VERT	VERTICAL

AMERICAN COUNCIL OF ENGINEERING COMPANIES OF CALIFORNIA NOTE:

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

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.

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.

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 FACILITIES, APPLIANCES, AND METHODS AND FOR ANY DAMAGE, WHICH MAY RESULT FROM THEIR FAILURE OR THEIR IMPROPER CONSTRUCTION, MAINTENANCE OR OPERATION.

THE CONTRACTOR AGREES THAT IT 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; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, PROVOST & PRITCHARD CONSULTING GROUP, INC., AND THEIR RESPECTIVE AGENTS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF OWNER, ENGINEER, OR THEIR RESPECTIVE AGENTS.

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.

BOUNDARY NOTE

THE EASEMENT INFORMATION SHOWN HEREON IS BASED ON RECORD INFORMATION TIED TO PHYSICAL MONUMENTS LOCATED DURING A FIELD SURVEY CONDUCTED ON FEBRUARY 2, 2010, BASED ON GPS OBSERVATIONS. VERTICAL DATUM IS NAVD 88.

PROJECT BENCHMARK

ALL ELEVATIONS SHOWN HEREON ARE DETERMINED BY GPS OBSERVATIONS WITH GEOID 03 APPLIED.

CP# 1: SET SPIKE W/ SHINER WEST OF BRIDGE, NEAR N.W. CORNER OF BRIDGE, ELEVATION=357.92'

CP# 2: SET SPIKE IN EASTERLY SHOULDER OF PAVED ROAD, BETWEEN ROAD AND CANAL, AT BEGINNING OF CURVE SOUTH OF PROJECT SITE, ELEVATION=358.95'

PROFESSIONAL LAND SURVEYOR
MARTY D. HARRIS
No. 6612
STATE OF CALIFORNIA

DATE SIGNED: _____

GENERAL NOTES

1. CONTRACTOR SHALL NOTIFY ALL OF THE FOLLOWING INDIVIDUALS AT LEAST 48 HOURS PRIOR TO CONSTRUCTION:

   A. DOUG WELCH (559-665-3747) MADERA-CHOWCHILLA WATER & POWER AUTHORITY (MCWPA)

   B. DICK TZOU (559-673-3514) MADERA IRRIGATION DISTRICT (MID)

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 OWNER AWARE OF ANY DISCREPANCIES.
5. MCWPA SHALL INSPECT ALL WORK PHASES ON IRRIGATION FACILITIES. REINFORCING SHALL NOT BE ENCASED IN CONCRETE WITHOUT PRIOR MCWPA INSPECTIONS. LIKEWISE, CONCRETE SHALL NOT BE COVERED WITH EARTH PRIOR TO INSPECTION.
6. STEEL PIPE SHALL HAVE A MINIMUM WALL THICKNESS OF 0.188". ALL STEEL PIPE AND FITTINGS SHALL BE FURNISHED WITH 16 MILS OF SHOP APPLIED HIGH SOLIDS EPOXY COATING ON THE INTERIOR AND EXTERIOR, UNLESS OTHERWISE INDICATED. ALL OTHER EXPOSED STEEL SHALL BE PAINTED WITH A PRE-TREATMENT PRIMER, AN UNDERCOAT AND A FINAL COAT OF PAINT, UNLESS OTHERWISE NOTED.
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 SECURE WITH PVC TAPE.
8. ALL UNDERGROUND PIPE WITHIN MADERA CANAL RIGHT-OF-WAY SHALL BE SDR-32.5 (125-PSI) PVC PIP.
9. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE HEALTH AND SAFETY LAWS OF THE STATE OF CALIFORNIA AND CAL/OSHA STANDARDS.
10. ALL EXCESS MATERIAL AND/OR DEBRIS SHALL BE REMOVED UPON COMPLETION OF INSTALLATION.
11. ALL WORK SHALL CONFORM TO THE CURRENT ACI AND CBC CODES.
12. ALL FENCING OR OTHER EXISTING FACILITIES DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION.
13. NO CONCRETE SHALL BE PLACED UNTIL THE SUBGRADE, FORMS, AND REINFORCING STEEL HAVE BEEN INSPECTED BY MCWPA. HORIZONTAL CONCRETE SURFACES SHALL BE POURED AGAINST UNDISTURBED EARTH.

DESIGN NOTES

1. TURNOUT FLOW = 3,000 GPM.
2. PUMP AND ELECTRICAL SERVICE TO BE FURNISHED AND INSTALLED BY OTHERS.
3. PUMP DESIGN AND IRRIGATION PIPELINES NOT A PART OF THESE DRAWINGS.

EARTHWORK NOTES

1. OVEREXCAVATE AND RECOMPACT TO A MINIMUM DEPTH OF 2' UNDER AND AROUND ALL STRUCTURES AND STANDPIPES TO A MINIMUM 95% RELATIVE DENSITY.
2. 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 LEVEE SIDES SHALL BE SMOOTH AND FREE OF DEBRIS WHERE LINER IS TO BE INSTALLED.
3. ALL AREAS TO RECEIVE ENGINEERED FILL SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES, UNIFORMLY MOISTURE CONDITIONED, AND COMPACTED TO AT LEAST 95% RELATIVE DENSITY.
4. ENGINEERED FILL SHOULD BE PLACED IN LOOSE LIFTS NO THICKER THAN 6 INCHES, UNIFORMLY MOISTURE CONDITIONED TO AT OR ABOVE OPTIMUM MOISTURE CONTENT AT THE TIME OF COMPACTION, AND COMPACTED TO AT LEAST 95% RELATIVE DENSITY, UNLESS OTHERWISE NOTED.
5. THE MAXIMUM LABORATORY DENSITY AT OPTIMUM MOISTURE CONTENT WILL BE DETERMINED BY TEST METHODS IN CONFORMANCE WITH ASTM D1557. A MINIMUM OF 95% OF THE LABORATORY STANDARD MAXIMUM DENSITY WILL BE REQUIRED.
6. WITHIN 2' OF ANY STRUCTURE OR PIPELINE, 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.
7. MOISTURE CONTENT OF COMPACTED EMBANKMENT MATERIAL AND BACKFILL MATERIAL SHALL NOT BE GREATER THAN 3% ABOVE OPTIMUM MOISTURE CONTENT.
8. 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.
9. VEHICULAR TRAVEL THROUGH THE WORK SITE SHALL NOT BE IMPEDED OR OBSTRUCTED.

SHEET INDEX

FINAL REVIEW PLANS
12/06/2011

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY J. PAYNE
No. 71,609
Civil
STATE OF CALIFORNIA

DATE SIGNED: _____

NEW MADERA CANAL TURNOUT
NEAR FARM BRIDGE 28.04
COLEMAN FARMING COMPANY
MADERA COUNTY, CA

COVER

ESTD 1944
PROVOST & PRITCHARD
CIVIL ENGINEERING & LAND PLANNING
An Employee Owned Company
286 W. CROMWELL AVENUE
CLOVIS, CALIFORNIA 93612-3566
559/226-1100 FAX 559/226-1090
www.ppeng.com

DESIGN ENGINEER: TIMOTHY J. PAYNE
LICENSE NO: CE 71,609
DRAFTED BY: CA | CHECKED BY: TJP
SCALE: AS SHOWN
DATE: 11/24/2010
JOB NO: 200610C1
DWG. NO:
SHEET 1 OF 4

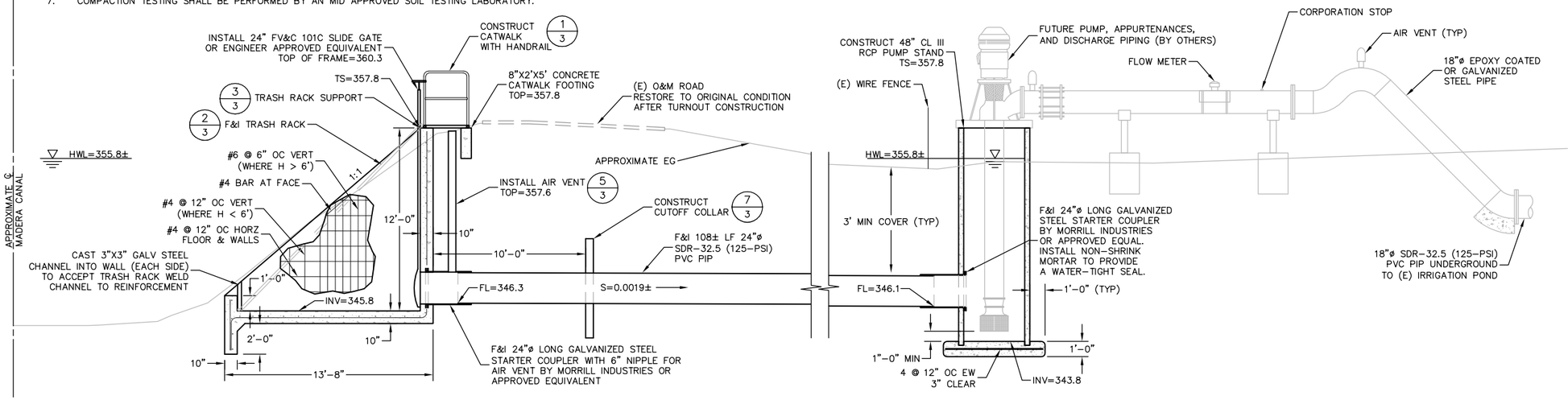
12/6/2011 11:43 AM G:\Clients\Ag-Valley Irrigation-2006\200610C1-Madera Canal Turnout at FB28.04\DWG\SHEET\200610C1-GN-COVER.dwg -Timothy Payne

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

WARNING
POWER LINES OVERHEAD

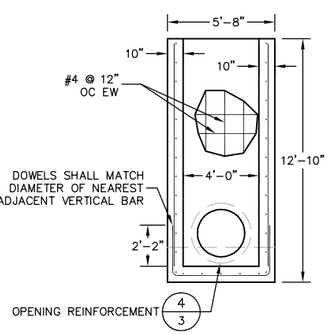
(E) PISTACHIO ORCHARD
(E) POWER POLE TO REMAIN
(E) BARBED WIRE FENCE
(E) GUY WIRE TO REMAIN
CONSTRUCT 48" PUMP STAND
A/2
2'-0"±
(E) METER POLE TO REMAIN
15'-0"±
APPROXIMATE PROPOSED ALIGNMENT FOR FUTURE PUMP DISCHARGE PIPELINE (BY OTHERS)
APPROXIMATE EXISTING IRRIGATION PIPELINE
(E) BARBED WIRE FENCE
(E) IRRIGATION FILTER STATION WITH CHAIN LINK FENCE
(E) DIRT ROAD
USBR MADERA CANAL R/W
TOP OF SLOPE
TOE OF SLOPE
MADERA CANAL
PLACE RIP RAP
B/2
35'-0"±
APPROXIMATE CANAL ℄
APPROXIMATE LOCATION OF (E) SLANT PUMP
12'± PAVED O&M ROAD
N
SCALE IN FEET
0 5 10 20

NOTES:
1. SEAL ALL JOINTS WITH SIKAFLEX 1A OR APPROVED EQUIVALENT.
2. OVEREXCAVATE AND RECOMPACT TO 95% RELATIVE DENSITY 2 FT BENEATH TURNOUT STRUCTURE.
3. BACKFILL AND COMPACT TO MIN 95% RELATIVE DENSITY AROUND STRUCTURES AND WITHIN PIPE TRENCH BETWEEN TURNOUT AND PUMP STAND.
4. FIRST 20 FEET OF PIPELINE SHALL HAVE 4-SACK SAND-CEMENT SLURRY TO 1 FT ABOVE PIPE.
5. CONSTRUCTION JOINTS SHALL BE INSTALLED AT ALL FLOOR TO WALL CONNECTIONS.
6. CONTRACTOR SHALL PLACE FACING CLASS RIP RAP ON ALL DISTURBED AREAS OF THE CANAL SIDESLOPE AND FLOOR TO A MINIMUM DEPTH OF 12 INCHES. GEOTEXTILE FABRIC SHALL BE PLACED BENEATH RIP RAP.
7. COMPACTION TESTING SHALL BE PERFORMED BY AN MID APPROVED SOIL TESTING LABORATORY.



A/2 SECTION A
SCALE: AS SHOWN

SCALE IN FEET
0 2 4 8



B/2 SECTION B
SCALE: AS SHOWN

SCALE IN FEET
0 2 4 8

FINAL REVIEW PLANS
12/06/2011

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER TIMOTHY J. PAYNE No. 71,609 CIVIL STATE OF CALIFORNIA

DATE SIGNED: ____

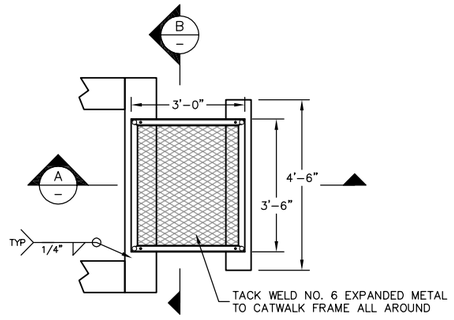
NEW MADERA CANAL TURNOUT
NEAR FARM BRIDGE 28.04
COLEMAN FARMING COMPANY
MADERA COUNTY, CA

TURNOUT PLAN & PROFILE

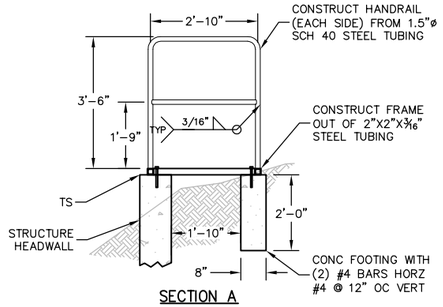
PROVOST & PRITCHARD CONSULTING GROUP
An Employee Owned Company
2505 ALLUVIAL AVENUE
CLOVIS, CALIFORNIA 93611-5866
559/326-1100 FAX 559/326-1090
www.ppeng.com

DESIGN ENGINEER:	TIMOTHY J. PAYNE
LICENSE NO:	CE 71,609
DRAFTED BY:	CA
CHECKED BY:	TJP
SCALE:	AS SHOWN
DATE:	11/24/2010
JOB NO:	200610C1
DWG. NO:	
SHEET	2 OF 4

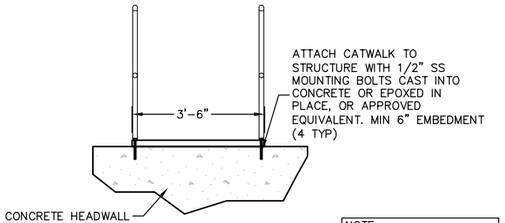
12/6/2011 2:21 PM G:\Clients\Agri-Valley Irrigation-2006\200610C1-Madera Canal Turnout at FB28.04\DWG\SHEET\200610C1-PP-TURNOUT.dwg - Timothy Payne



PLAN VIEW



SECTION A



SECTION B

NOTE:
HOT DIP GALVANIZE CATWALK AND HANDRAIL

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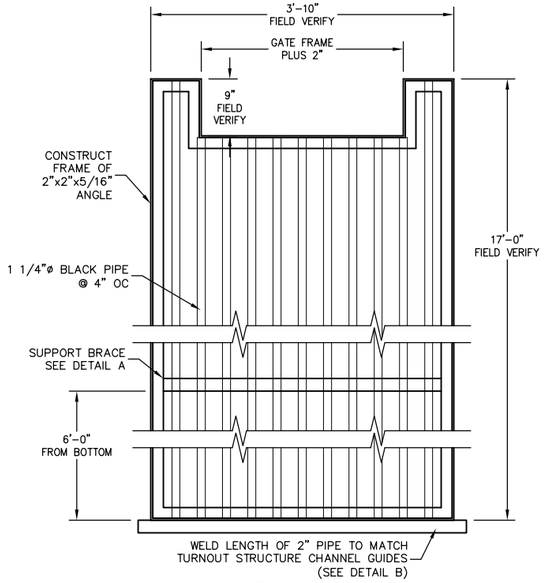
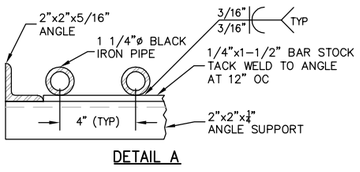
CATWALK

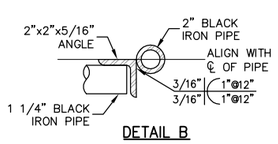
SCALE = NTS



PLAN VIEW



DETAIL A



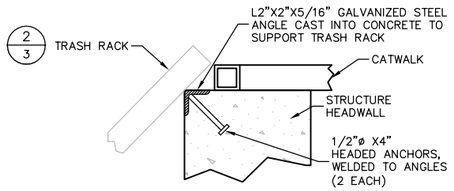
DETAIL B

NOTE:
ALL TRASH RACK COMPONENTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION

2 / 3

TRASH RACK

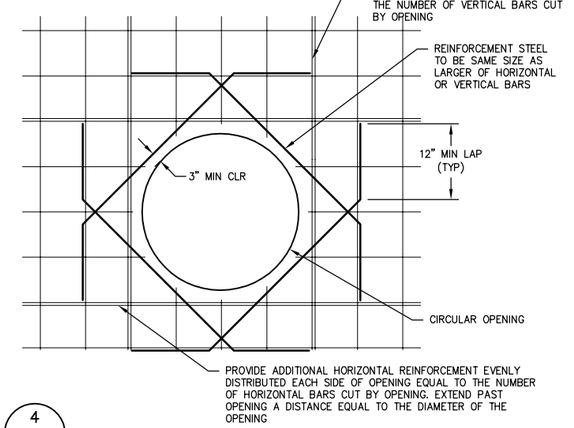
SCALE = NTS



3 / 3

TRASH RACK SUPPORT

SCALE = NTS



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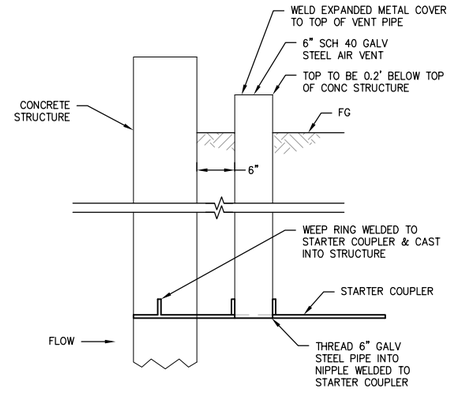
REINFORCEMENT AT OPENINGS

SCALE = NTS



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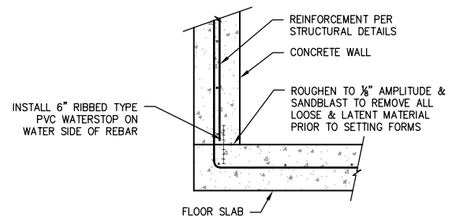
CONCRETE PIPE AIR VENT

SCALE = NTS



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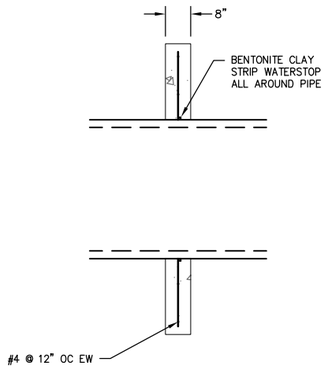
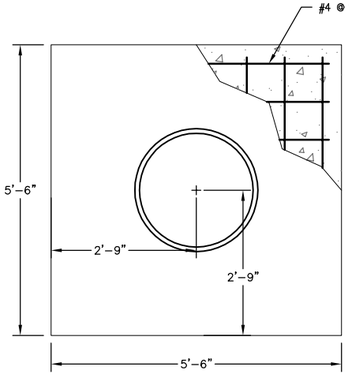
CONSTRUCTION JOINT

SCALE = NTS





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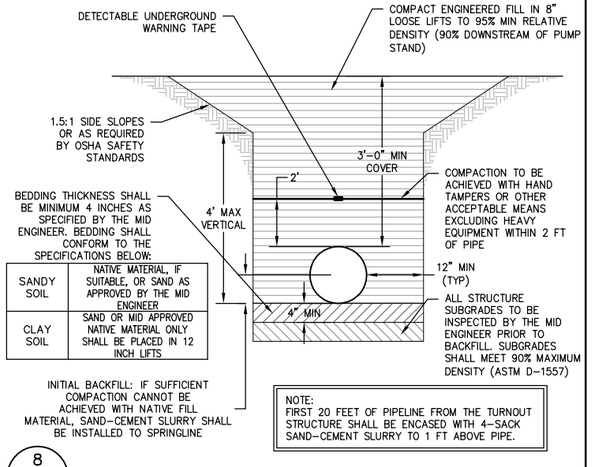
CUTOFF COLLAR

SCALE = NTS



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PVC PIPE TRENCH DETAIL

SCALE = NTS

No.	REVISION	BY	DATE
	FINAL REVIEW PLANS		12/06/2011

REGISTERED PROFESSIONAL ENGINEER TIMOTHY J. PAYNE No. 71609 Civil STATE OF CALIFORNIA

DATE SIGNED: _____

NEW MADERA CANAL TURNOUT
NEAR FARM BRIDGE 28.04
COLEMAN FARMING COMPANY
MADERA COUNTY, CA

DETAILS

PROVOST & PRITCHARD
FCE 21568
CONSULTING GROUP
An Employee Owned Company
286 W. CROMWELL AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/326-1100 FAX 559/326-1090
www.ppeng.com

DESIGN ENGINEER: TIMOTHY J. PAYNE
LICENSE NO: CE 71,609
DRAFTED BY: CA | CHECKED BY: TJP
SCALE: AS SHOWN
DATE: 11/24/2010
JOB NO: 200610C1
DWG. NO:
SHEET 3 OF 4

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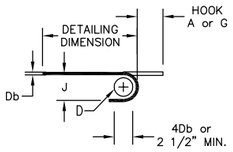
STRUCTURAL CONCRETE NOTES

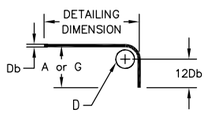
MINIMUM CONCRETE COVER, 2006 IBC, SECTION 1907.7.1	
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO CONCRETE FORMS AND WEATHER	
No. 5 BAR, OR SMALLER	1 1/2"
No. 6 BAR OR LARGER	2"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	
SLABS, WALLS AND JOISTS	3/4"
BEAMS AND COLUMNS	1 1/2"

Db = BAR DIAMETER
D = FINISHED INSIDE BEND DIA.
D = 6Db FOR #3 THROUGH #8



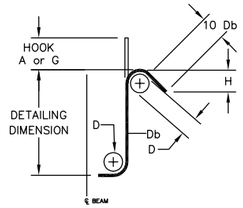
180–DEG.

BAR SIZE	DIMENSIONS OF STANDARD 180° HOOKS. ALL GRADES		
	A OR G	J	D
#3	5"	3"	2 1/4"
#4	6"	4"	3"
#5	7"	5"	3 3/4"
#6	8"	6"	4 1/2"
#7	10"	7"	5 1/4"
#8	11"	8"	6"



90–DEG.

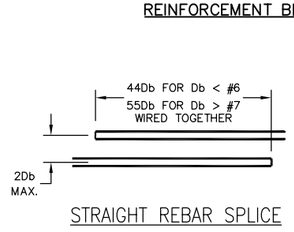
DIMENSIONS OF STANDARD 90° HOOKS ALL GRADES	
A or G	D
6"	2 1/4"
8"	3"
10"	3 3/4"
12"	4 1/2"
14"	5 1/4"
16"	6"



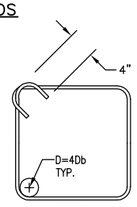
135–DEG. SEISMIC STIRRUP / TIE

135° SEISMIC HOOK			
SIZE	D	A or G	APPROX. H
#3	1 1/2"	5"	3 1/2"
#4	2"	6 1/2"	4 1/2'
#5	2 1/2"	8"	5 1/2"
#6	4 1/2"	11"	6 1/2'
#7	5 1/4"	12 1/2"	7 3/4"
#8	6"	14 1/2"	9"

REINFORCEMENT BENDS



STRAIGHT REBAR SPLICE



TIE

1/4

STRUCTURAL DETAILS

SCALE = NTS

CONCRETE NOTES

1. CONCRETE 28 DAY COMPRESSIVE STRENGTH TO BE MINIMUM 3,000 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. 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 4 INCHES. 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. 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 ALL 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. GUIDELINES FOR CONCRETING IN HOT & COLD WEATHER AS SET FORTH IN NRCS CONSTRUCTION SPECIFICATION 901 SHALL BE FOLLOWED.
8. CONCRETE SHALL NOT BE DROPPED MORE THAT FIVE FEET VERTICALLY AND SHALL BE VIBRATED IN 18 INCH, HORIZONTAL LIFTS. CONCRETE SHALL NOT BE MOVED DISTANCES OVER FIVE FEET HORIZONTALLY USING A VIBRATOR.
9. CONCRETE SHALL BE PREVENTED FROM PREMATURE DRYING FOR A CURING PERIOD OF AT LEAST SEVEN DAYS AFTER IT IS PLACED. EXPOSED SURFACES SHALL BE KEPT CONTINUOUSLY MOIST FOR THE ENTIRE PERIOD. IN LIEU OF WATER CURING, THE CONCRETE SHALL BE PROTECTED BY SPRAYING WITH AN APPROVED CURING COMPOUND. ALL SURFACES SHALL BE KEPT MOIST UNTIL THE COMPOUND IS APPLIED.
10. ALL SLABS SHALL BE SLOPED TO ALLOW DRAINAGE OF RUNOFF WATER TO PREVENT PONDING.
11. 3/4" CHAMFERS ARE REQUIRED FOR ALL EXPOSED CONCRETE CORNERS.

REINFORCING STEEL NOTES

1. ALL REBAR SHALL BE GRADE 60.
2. SPLICES AND HOOKS MADE IN REINFORCING STEEL SHALL BE STAGGERED AND LAPPED IN ACCORDANCE WITH ACI–318.
3. SLAB REINFORCING IS TO BE LOCATED IN THE CENTER OF THE SLAB, UNLESS NOTED OTHERWISE.
4. ALL BARS SHALL BE FREE OF EXCESSIVE RUST, MUD, OIL, AND GREASE.

GENERAL NOTES

1. ALL DIMENSIONS ARE TO BE FIELD VERIFIED BY THE DISTRICT PRIOR TO COMMENCING WORK OR FABRICATION. IF ANY CONDITION EXISTS NOT AS SHOWN ON THE DRAWINGS THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
2. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALED DRAWINGS. VERIFY DIMENSIONS AND MEASUREMENTS AT SITE.
3. ALL WORK SHALL BE PERFORMED BY THE CONTRACTOR USING MATERIALS AND METHODS IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE INTERNATIONAL BUILDING CODE (IBC) 2006 EDITION, 2007 CALIFORNIA BUILDING CODE (CBC), LOCAL CODES AND ORDINANCES. REPORT ALL DISCREPANCIES TO THE DESIGNER IMMEDIATELY.
4. ANY CHANGES TO THE APPROVED SET OF PLANS WITHOUT NOTIFYING THE ENGINEER PRIOR TO SUCH CHANGES ABSOLVES SAID ENGINEER FROM ANY AND ALL RESPONSIBILITY WITH RESPECT TO THE LIABILITY, DAMAGE OR EXTRA WORK RESULTING FROM SAID CHANGES.
5. BUILDING PERMITS, IF REQUIRED MUST BE OBTAINED BEFORE STARTING CONSTRUCTION.

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STRUCTURAL NOTES

SCALE = NTS

FINAL REVIEW PLANS
12/06/2011

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER TIMOTHY J. PAYNE No. 71609 Civil STATE OF CALIFORNIA

DATE SIGNED: _____

NEW MADERA CANAL TURNOUT
NEAR FARM BRIDGE 28.04
COLEMAN FARMING COMPANY
MADERA COUNTY, CA

DETAILS

PROVOST & PRITCHARD
FCE 24615
CIVIL ENGINEERING GROUP
An Employee Owned Company
1234 GLENN AVENUE
CLOVIS, CALIFORNIA 93611–9166
559/326–1100 FAX 559/326–1090
www.ppeng.com

DESIGN ENGINEER:	TIMOTHY J. PAYNE
LICENSE NO:	CE 71,609
DRAFTED BY: CA	CHECKED BY: TJP
SCALE:	AS SHOWN
DATE:	11/24/2010
JOB NO:	200610C1
DWG. NO:	
SHEET	4 OF 4

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SHEET 1 OF 1

DWG. NO:

JOB NO: 200610C1

DATE: 12/22/2011

SCALE: NOT TO SCALE

DRAFTED BY: CA | CHECKED BY: TJP

LICENSE NO:

DESIGN ENGINEER:

EST. 1963
PROVOST& PRITCHARD
CONSULTING GROUP
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NEW MADERA CANAL TURNOUT
NEAR FARM BRIDGE 28.04
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ALIGNMENT EXHIBIT