

NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**

STATE OF NEVADA
Department of Conservation & Natural Resources

Brian Sandoval, Governor
Leo M. Drozdoff, P.E., Director
Colleen Cripps, Ph.D., Administrator

April 2, 2015

Michael Rojo
Environmental Services, Supervisor
NV Energy
6226 W Sahara Ave M/S 30
Las Vegas, NV 89146

Re: **NV Energy (NVE)**
Reid Gardner Station (RGS)
NDEP Facility ID #H-000530
Nevada Division of Environmental Protection (NDEP) Response to Comments
Concurrence:
Solids Removal Work Plan, Pond E-2, Administrative Order on Consent Activities,
NV Energy, Reid Gardner Station, Draft March 2015

Dear Mr. Rojo:

The NDEP has received and reviewed NVE's submittal of the Response to Comments and the revised March 2015 Draft Work Plan titled *Solids Removal Work Plan for Former Pond E-2* (Work Plan). The work plan was received by the NDEP on March 4, 2015. The NDEP has reviewed the Work Plan and the Document and Response to Comments Tracking Form for the subject Work Plan. The comments appear to be adequately addressed and the NDEP has no further comments at this time. The NDEP **concurs** with the work plan.

Please contact me with any questions or comments about this letter at (775) 687-9396 or aoakley@ndep.nv.gov.

Sincerely,



Alison Oakley, CEM
Environmental Scientist III
Bureau of Corrective Actions
NDEP-Carson City Office

Mr. Mike Rojo
April 2, 2015
Page 2 of 2

ec: Jeff Collins, Nevada Division of Environmental Protection (NDEP)
Scott Smale, Bureau of Corrective Actions, NDEP Carson City
Todd Croft, Bureau of Corrective Actions, NDEP Las Vegas
Bill Campbell, Tribal Liaison, NDEP
Alan Tiney, Bureau of Water Pollution Control, NDEP
Ebrahim Juma, Clean Water Team (ejuma@cleanwaterteam.com)
Joe Leedy, Clean Water Team (jleedy@cleanwaterteam.com)
Lynn M. Cintron, Southern Nevada Health District, (cintron@snhdmail.org)
Jacqueline Reszetar, Director of Envi. Health, Southern Nevada Health District reszetar@snhdmail.org
Brian Northam, Southern Nevada Health District, (northam@snhdmail.org)
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Michael Rojo, NV Energy (MRojo@nvenergy.com)
Jason Reed, NV Energy (JReed@nvenergy.com)
Becky Svatos, Stanley Consultants, Inc., (SvatosBecky@stanleygroup.com)
William Carrig, Stanley Consultants, Inc., (CarrigBill@stanleygroup.com)
John Kivett, ARCADIS U.S., Inc., (John.Kivett@arcadis-us.com)
Brad Cross, ARCADIS U.S., Inc., (Brad.Cross@arcadis-us.com)
Elliott Lips, Great Basin Earth Science, (elips@gbearthscience.com)
Andrea Issod, Sierra Club, (andrea.issod@sierraclub.org)
Robert Wiygul, Counsel Sierra Club and Moapa Band of Piutes, (Robert@waltzerlaw.com)
Ranajit Sahu, Consultant, (sahuron@earthlink.com)

cc: Althea Tom, Moapa Band of Paiutes, Chairperson, P.O. Box 340, Moapa, NV 89025
Darren Daboda, Moapa Band of Paiutes, Environmental Director, P.O. Box 340, Moapa, NV 89025
Clark County Emergency Management, 500 S. Grand Central Parkway 6th Floor, P.O. Box 551713, Las Vegas, NV 89155-1713
Anitha Rednam, Department of Water Resources, 1416 9th Street, Room 1140, Sacramento CA 95814



February 26, 2015

Nevada Division of Environmental Protection
NDEP – Bureau of Corrective Actions
901 S Stewart St
Carson City, NV 89701
Attn: Alison Oakley

Dear Alison:

Subject: NV Energy
Reid Gardner Station
Pond E2 Solids Removal Work Plan

NV Energy is pleased to provide the Revised Draft Solids Removal Work Plan for Pond E2 dated February 2015 and associated Document and Response to Comments Tracking Form based on NDEP comments dated December 8, 2014. Pond E2 solids removal activities are currently scheduled to begin in April/May 2015, therefore NV Energy respectfully requests NDEP review by March 31, 2015.

If you have any questions regarding the enclosed report, please contact me at 702-402-1319.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Rojo".

Michael Rojo
Supervisor, Environmental Services
Reid Gardner Station

CC: William Campbell, NDEP (electronic copy via FilesAnywhere)
Michael Rojo, NV Energy
Tony Garcia, NV Energy (two copies)
John Kivett, ARCADIS U.S., Inc.
Bob Forsberg, ARCADIS U.S., Inc.

Document and Response to Comments Tracking Form
NV Energy – Reid Gardner Station
Administrative Order On Consent Implementation

Document Title Pond E2 Solids Removal Work Plan, Administrative Order on Consent Activities, NV Energy, Reid Gardner Station

Preparer Stanley Consultants

Draft #1

To NDEP From NV Energy

Submittal Date September 2014 Comment Date December 8, 2014

Response Date March 2, 2015

Commenter Alison Oakley, CEM Responder Mike Rojo

Comment #1

The background section states that Pond E was in service from 1974 to 2001, and in 2002 approximately 320,000 cubic yards of pond solids were removed before adding a geogrid and backfill soil in preparation for construction of the new ponds E-1 and E-2. Provide information on any pond solids from pre-2001 that may have been left in place prior to installing the geogrid and clean fill.

Response #1

Limited information exists regarding pond solids from pre-2001 that may have been left in place prior to installing the geogrid and clean fill. The following text was added to Section 2, “No data is currently available to characterize the soil that was left behind in 2002 following solids removal. To the best of NV Energy’s knowledge, this soil was not sampled and a photographic record of the finished surface, prior to reinforcing the subgrade with geogrid and backfill, was not prepared. However, a limited number of photographs and verbal comments from the contractor who removed the solids indicate that solids were generally removed to the groundwater table.” In addition, Section 3 was revised to include the following text, “NV Energy will excavate test pits in selected areas to evaluate whether pond solids are present below the clean backfill placed during the 2002 pond solids removal project, but above the groundwater table. If necessary, NV Energy will remove pond solids present below the clean backfill.”

Comment #2

The work plan states that the five discrete soil samples collected after solids removal will be analyzed for general chemistry, metals, and formaldehyde. The document referenced is the 2013 Preliminary Source Area Identification and Characterization Report

(PSAICR). The PSAICR does not provide a table that lists specific chemicals that are included in the categories general chemistry and metals or refer to the document that contains the lists (ex.: September 2008 Preliminary Site Related Chemical Document).

Response #2

Section 3 was revised to include a list of the analytical parameters for the soil samples.

Comment #3

Provide depth intervals for soil samples to be collected beneath the geogrid. Based on the response to #1 above, it may be prudent to collect samples at multiple depths.

Response #3

Section 3 was revised to state “Five discrete soil samples will be collected from the ground surface following excavation. If the geogrid is exposed, but left in place, the soil samples will be collected from directly beneath the geogrid. If the geogrid is not exposed, and the backfill over the geogrid has been left in place, the soil samples will be collected from the backfill material.” In addition, the first part of Section 3 was revised to clarify the excavation activities in the area of the geogrid as follows: “Excavation will stop when soils are encountered which do not appear to be impacted or at the first indication of groundwater present at the time of removal activities. To the extent possible, the existing geogrid and clean backfill will be left in place to provide stability for heavy equipment operation on the pond bottom.”

NVE acknowledges the importance of collecting soil samples at multiple depths. As part of the PA5-7 Groundwater and Soil Characterization Work Plan to be implemented in 2015, NV Energy plans to collect soil samples at multiple depths beneath former Pond E from a boring through the berm between Ponds E-1 and E-2.

Comment #4

The NDEP requests total organic carbon, and sulfur speciation (e.g., hydrogen sulfide, sulfite, sulfate, etc.) be included in the general chemistry analytical list. Other parameters may be requested once NDEP has an opportunity to review the complete parameter list requested in comment #2.

Response #4

Section 3 was revised to include a list of the analytical parameters for the soil samples; including sulfate, sulfide, sulfite, and TOC.

Final

To _____

From _____

Submittal Date _____

Approval Date _____

Approver _____

Solids Removal Work Plan
Pond E-2
Administrative Order on
Consent Activities

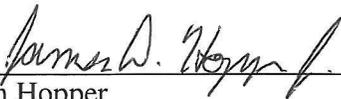
NV Energy
Reid Gardner Station

Final
May 2015
20618.09.28

Certifications

NV Energy Certification

I certify that this document and all attachments submitted to the Division were prepared under the direction or supervision of NV Energy in accordance with a system designed to gather and evaluate the information by appropriately qualified personnel. Based on my inquiry of the person or persons who manage the system(s) or those directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted and provided by NV Energy is, to the best of my knowledge and belief, true, accurate, and complete in all material respects. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: 
Name: Don Hopper
Title: Plant Director, Reid Gardner Station
Company: NV Energy
Date: 2/26/2015

Certified Environmental Manager Certification

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state, and local statutes, regulations, and ordinances.

Signature: 
Name: Rebecca L. Svatos
Title: Project Manager
Company: Stanley Consultants
Date: 3/2/15
EM Certificate Number: EM-1931
EM Expiration Date: 9/30/2015

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Introduction

This Solids Removal Work Plan is being submitted to the Nevada Division of Environmental Protection (NDEP) Bureau of Corrective Action (BCA) to address removal of pond solids from Pond E-2 (Source Area PA-6), as part of the Administrative Order on Consent (AOC) for the Reid Gardner Station (Station) signed by Nevada Power Company (NPC) dba NV Energy and NDEP on February 22, 2008.

The Station is a coal-fired electric power generation facility that is located approximately 45 miles northeast of Las Vegas, within the Moapa Valley. The site was developed in 1964 and the Station became commercially operational in 1965. Figure 1 in Appendix A shows the layout of the site and the location of Pond E-2.

The objectives of this Work Plan are to remove solids from Pond E-2 (including the double high-density polyethylene [HDPE] liner and associated leakage collection system) and characterize the underlying soils that will be left in place. Potential environmental impacts to underlying soil and groundwater in this area will be addressed later under the oversight of the NDEP BCA and in accordance with the AOC.

This Solids Removal Work Plan describes proposed pond solids removal activities, soil sampling, and an associated schedule.

Background

Pond E was built with Pond D in 1974 and received scrubber effluent from Units 1, 2, and 3 which were fitted with mechanical fly ash dust collection systems, wet bottom ash systems, and wet scrubbers for sulfur removal. Pond E was removed from service by NV Energy in 2001, and in 2002 an estimated 320,000 cubic yards (cy) of pond solids were removed. In 2003 the subgrade was reinforced with geogrid and backfill soil before the Pond E footprint was divided into two smaller ponds, E-1 and E-2, to improve process water management. Additionally, the ponds were lined with a double HDPE liner system with leak detection. Record drawings are provided in Appendix B. Pond E-2 was removed from service in 2014 and covered with a soil layer to control dust.

No data is currently available to characterize the soil that was left behind in 2002 following solids removal. To the best of NV Energy's knowledge, this soil was not sampled and a photographic record of the finished surface, prior to reinforcing the subgrade with geogrid and backfill, was not prepared. However, a limited number of photographs and verbal comments from the contractor who removed the solids indicate that solids were generally removed to the groundwater table.

Proposed Activities

Actions under this Work Plan include removal of material from Pond E-2 within the approximate limits of the pond footprint. This material includes:

- Soil cover
- Pond solids
- HDPE liner system and associated leakage collection system
- Underlying visually impacted soils (while leaving underlying clean fill and geogrid in place).
- In the event there is visible pond solids material in the clean fill, it will be removed.

Excavation will stop when soils are encountered which do not appear to be impacted or at the first indication of groundwater present at the time of removal activities. To the extent possible, the existing geogrid and clean backfill will be left in place to provide stability for heavy equipment operation on the pond bottom. NV Energy will excavate test pits in selected areas to evaluate whether pond solids are present below the clean backfill placed during the 2002 pond solids removal project, but above the groundwater table. If necessary, NV Energy will remove pond solids present below the clean backfill.

NV Energy will also ensure that any piping that drains to Pond E-2 is cut and capped providing complete isolation from plant operations. A groundwater collection system was installed in 2002 as an interim remedial measure directly south of Ponds E-1 and E-2. Only a small portion of this groundwater collection system is located adjacent to Pond E-2 as shown on Figure 2 in Appendix A. The groundwater collection system, existing berms and slurry walls will remain in place. Potential environmental impacts to underlying soil and groundwater remaining in this area after solids removal will be addressed later under the oversight of the NDEP BCA and in accordance with the AOC.

An estimated 140,000 bank cy of pond solids from above the HDPE-liner will be removed from the Pond E-2 area as indicated on Figures 3 and 4 in Appendix A. The material will be disposed in an HDPE-lined cell of NV Energy's Class III Industrial Waste Landfill in accordance with the landfill permit.

Work will be completed in a manner that controls fugitive dust emissions during both working and non-working hours. In addition to following existing plant dust control requirements, a project-specific Clark County Dust Control permit will be obtained and the contractor will be required to prepare and comply with a project-specific dust control plan. Dust control management measures will include managing the size of the excavation working face; traffic control and established vehicle speed limits; placement of gravel or crushed rock in select high traffic areas; watering of surface disturbances, roadways, stockpiles, and other areas; and placement of cover material over the landfill working face in compliance with the existing landfill permit.

Monitoring wells located along the perimeter of Pond E-2 (see Figure 2 in Appendix A) will be protected during removal activities and are not expected to be adversely affected. These wells will remain in service.

Five discrete soil samples will be collected from the ground surface following excavation. If the geogrid is exposed, but left in place, the soil samples will be collected from directly beneath the geogrid. If the geogrid is not exposed, and the backfill over the geogrid has been left in place, the soil sample will be collected from the backfill material. Soil samples will be collected at the approximate locations shown on Figure 2 in Appendix A. The soil sampling locations shown on Figure 2 in Appendix A may be adjusted in the field.

Based on operations historically conducted in the Pond E-2 area (Pond E-2 received scrubber effluent from Units 1, 2, and 3 which were fitted with mechanical fly ash dust collection systems, and wet scrubbers for sulfur removal) and the results of sampling solids in former Pond D, the Site-Related Chemical (SRC) parameter categories that could be present in the Pond E-2 area are formaldehyde, general chemistry, and metals (Stanley Consultants, 2013). Soil samples will be analyzed for the SRCs in these categories, as well as Total Organic Carbon (TOC), sulfide and sulfite (sulfate is included in the SRC list as a general chemistry parameter). The parameters to be analyzed in the soil samples are as follows:

- Metals
 - Aluminum
 - Antimony
 - Arsenic
 - Barium
 - Beryllium
 - Boron
 - Cadmium
 - Calcium
 - Chromium (total)
 - Chromium (hexavalent)
 - Cobalt
 - Copper
 - Iron
 - Lead
 - Magnesium
 - Manganese
 - Mercury
 - Molybdenum
 - Nickel
 - Potassium
 - Selenium
 - Silica
 - Silver
 - Sodium
 - Thallium
 - Titanium
 - Vanadium
 - Zinc

- General Chemistry
 - Ammonia
 - Chloride
 - Fluoride
 - Nitrate-nitrogen
 - Nitrite-nitrogen
 - pH
 - Phosphorus (total)
 - Sulfate
 - Sulfide
 - Sulfite
 - TOC

- Formaldehyde

Analytical results will be validated by a third party data validation subconsultant in accordance with the Revised Data Validation Memorandum of Understanding dated March 5, 2010 (NV Energy, 2010). The soil data will be reviewed, compared to applicable screening levels and summarized in a Pond E-2 Solids Removal Completion Report.

After solids removal, when possible, the existing soil backfill present under the HDPE liner will remain in place to serve as cover over native subsoil. Additional soil cover will be placed in areas where over excavation was necessary to complete the removal activities. A dust palliative will be applied over the finished soil surface as a dust mitigation measure. NV Energy will complete a topographic survey of the condition of Pond E-2 following completion of the solids removal activities.

Section 4

Schedule

NV Energy tentatively plans to begin the removal actions, with approval from NDEP, in May 2015, with completion scheduled in mid to late 2015. NDEP will be notified prior to sampling activities outlined in this plan and prior to initiation of solids removal activities.

Section 5

References

NV Energy, *Revised Data Validation Memorandum of Understanding*, March 5, 2010.

Stanley Consultants, *Preliminary Site Related Chemicals (SRC) Document, Administrative Order on Consent Activities*, November 2008.

Stanley Consultants, *Generic Quality Assurance Project Plan, AOC Implementation Activities, Version 2.4*, November 2011.

Stanley Consultants, *Preliminary Source Area Identification and Characterization Report*, July 2013.

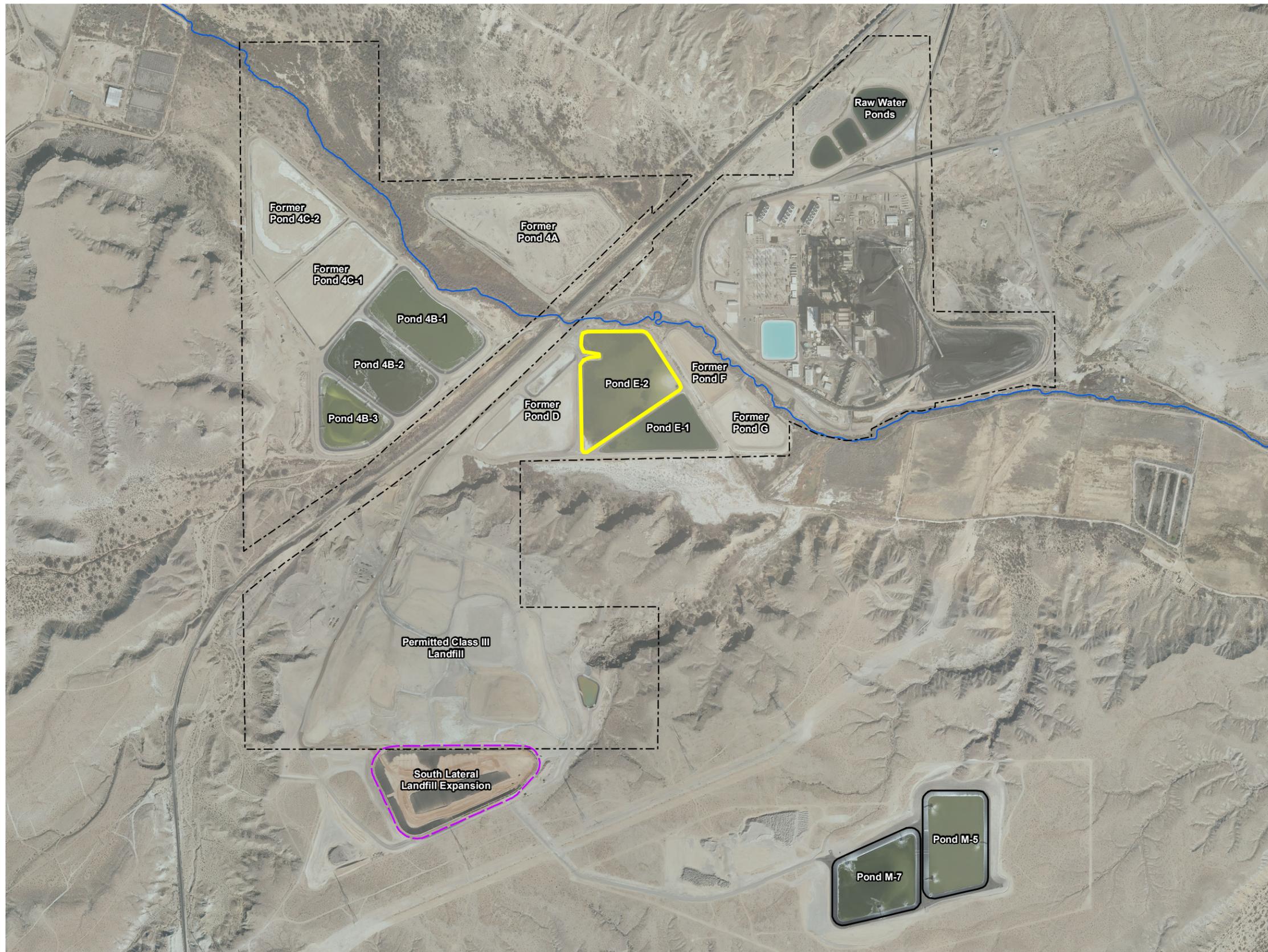
Acronyms and Abbreviations

AOC	Administrative Order on Consent
BCA	Bureau of Corrective Action
cy	cubic yards
dba	doing business as
HDPE	high density polyethylene
NDEP	Nevada Division of Environmental Protection
NPC	Nevada Power Company
SRC	Site-Related Chemical
Station	Reid Gardner Station

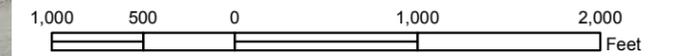
Appendix A

Figures

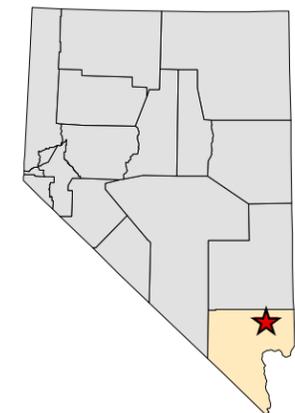
I:\cvs\11\Projects_E\20618_03_NVE_RGS_AOC_Improvements\14-GIS\GIS\WorkingData\Map\Map\E2SolidsRemoval\WorkPlan\Figure1_PondE2_SiteMap.mxd © STANLEY CONSULTANTS



- Legend**
- Pond E2
 - South Lateral Landfill Expansion
 - Property Boundary
 - Muddy River

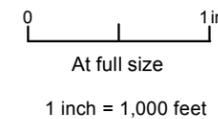


Notes:
 1. Aerial imagery provided by Clark County Assessor Office; photographs taken Spring 2013



September 2014

REV	No.	REVISION DESCRIPTION	DATE	DRWN	CHKD	APVD
0		Submittal to NDEP	9/19/14	CC	BC	RLS



20618.09.28

REV.
0

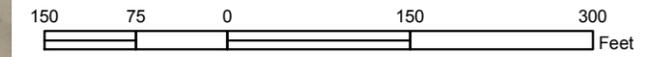
SITE MAP
 Pond E-2 Solids Removal Work Plan
 NV Energy
 Reid Gardner Station
 Moapa, NV
 Figure 1

\\cvs\projects\20618_03_NVE_RGS_AOC\mp\09\active\14-GIS\GIS\WorkingData\Map\Kml\PondE2SolidsRemoval\WorkPlan\Figure2_PondE2_SoilSampling.mxd © STANLEY CONSULTANTS



Legend

- Proposed Soil Sampling Location
- Groundwater Monitoring Locations**
- ⊕ Sampled or Gauged
- ⊖ Abandoned / Destroyed
- Property Boundary
- Groundwater Remediation Trench
- Muddy River



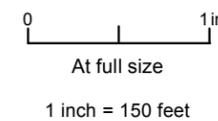
Notes:
 1. Aerial imagery provided by Clark County Assessor Office; photographs taken Spring 2013



Stanley Consultants INC. September 2014

POND E-2 SOIL SAMPLING LOCATIONS
 Pond E-2 Solids Removal Work Plan
 NV Energy
 Reid Gardner Station
 Moapa, NV
 Figure 2

REV	No.	REVISION DESCRIPTION	DATE	DRWN	CHKD	APVD
0		Submittal to NDEP	9/19/14	CC	BC	RLS



20618.09.28
 REV.
 0

NOTES:

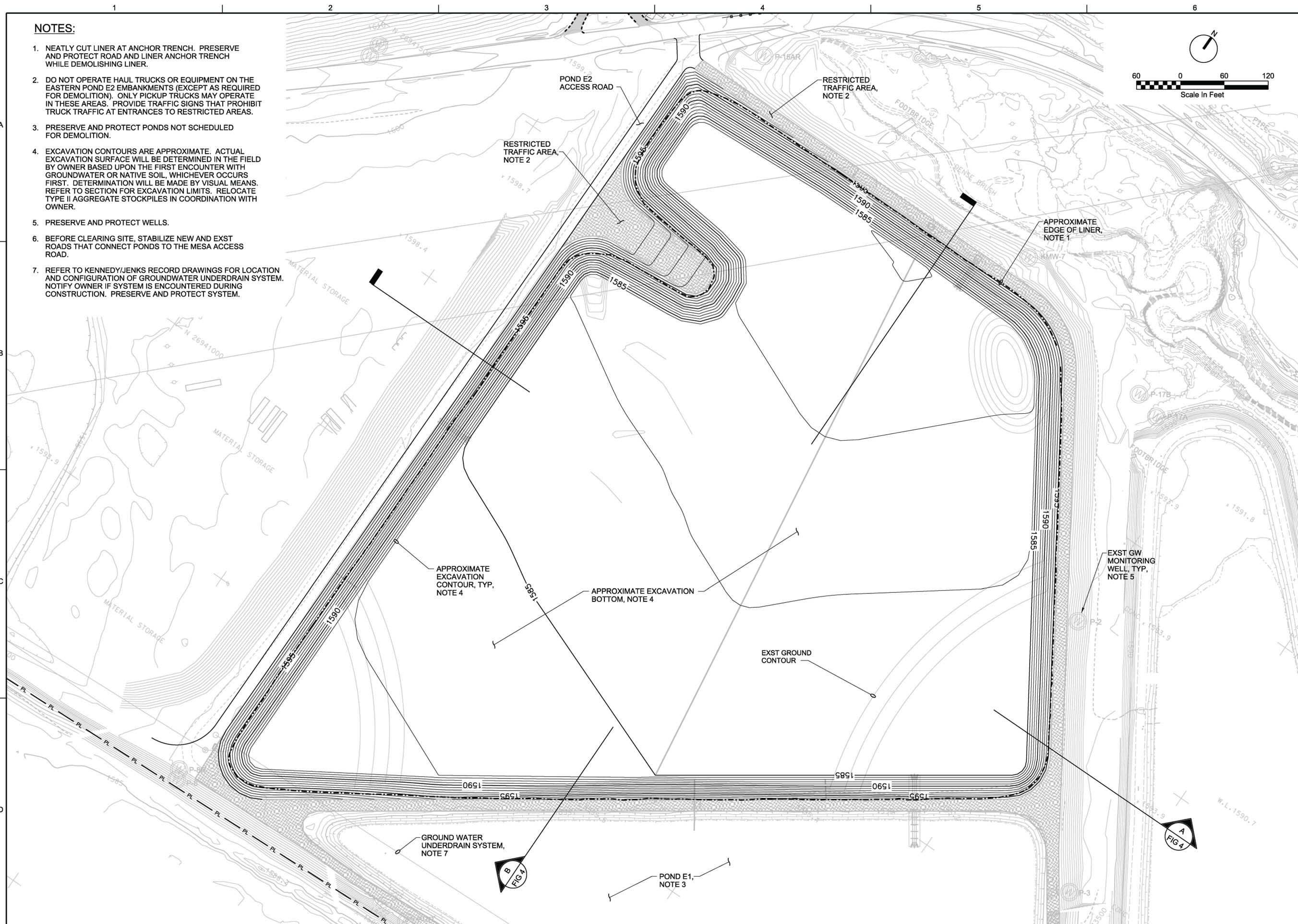
1. NEATLY CUT LINER AT ANCHOR TRENCH. PRESERVE AND PROTECT ROAD AND LINER ANCHOR TRENCH WHILE DEMOLISHING LINER.
2. DO NOT OPERATE HAUL TRUCKS OR EQUIPMENT ON THE EASTERN POND E2 EMBANKMENTS (EXCEPT AS REQUIRED FOR DEMOLITION). ONLY PICKUP TRUCKS MAY OPERATE IN THESE AREAS. PROVIDE TRAFFIC SIGNS THAT PROHIBIT TRUCK TRAFFIC AT ENTRANCES TO RESTRICTED AREAS.
3. PRESERVE AND PROTECT PONDS NOT SCHEDULED FOR DEMOLITION.
4. EXCAVATION CONTOURS ARE APPROXIMATE. ACTUAL EXCAVATION SURFACE WILL BE DETERMINED IN THE FIELD BY OWNER BASED UPON THE FIRST ENCOUNTER WITH GROUNDWATER OR NATIVE SOIL, WHICHEVER OCCURS FIRST. DETERMINATION WILL BE MADE BY VISUAL MEANS. REFER TO SECTION FOR EXCAVATION LIMITS. RELOCATE TYPE II AGGREGATE STOCKPILES IN COORDINATION WITH OWNER.
5. PRESERVE AND PROTECT WELLS.
6. BEFORE CLEARING SITE, STABILIZE NEW AND EXST ROADS THAT CONNECT PONDS TO THE MESA ACCESS ROAD.
7. REFER TO KENNEDY/JENKS RECORD DRAWINGS FOR LOCATION AND CONFIGURATION OF GROUNDWATER UNDERDRAIN SYSTEM. NOTIFY OWNER IF SYSTEM IS ENCOUNTERED DURING CONSTRUCTION. PRESERVE AND PROTECT SYSTEM.

A

B

C

D



**PRELIMINARY
NOT FOR
CONSTRUCTION**

ISSUED FOR WORK PLAN	SD	APVD
REVISION	NB	BY
NO. DATE	DR	CHK
0 09/19/14	R. VILORIA	S. DETHLOFF
DSGN		APVD
N. BETTS		M. JOHNS

2485 VILLAGE VIEW DRIVE, SUITE 350
HENDERSON, NEVADA 89074
PHONE: 702-389-6175

REID GARDNER STATION

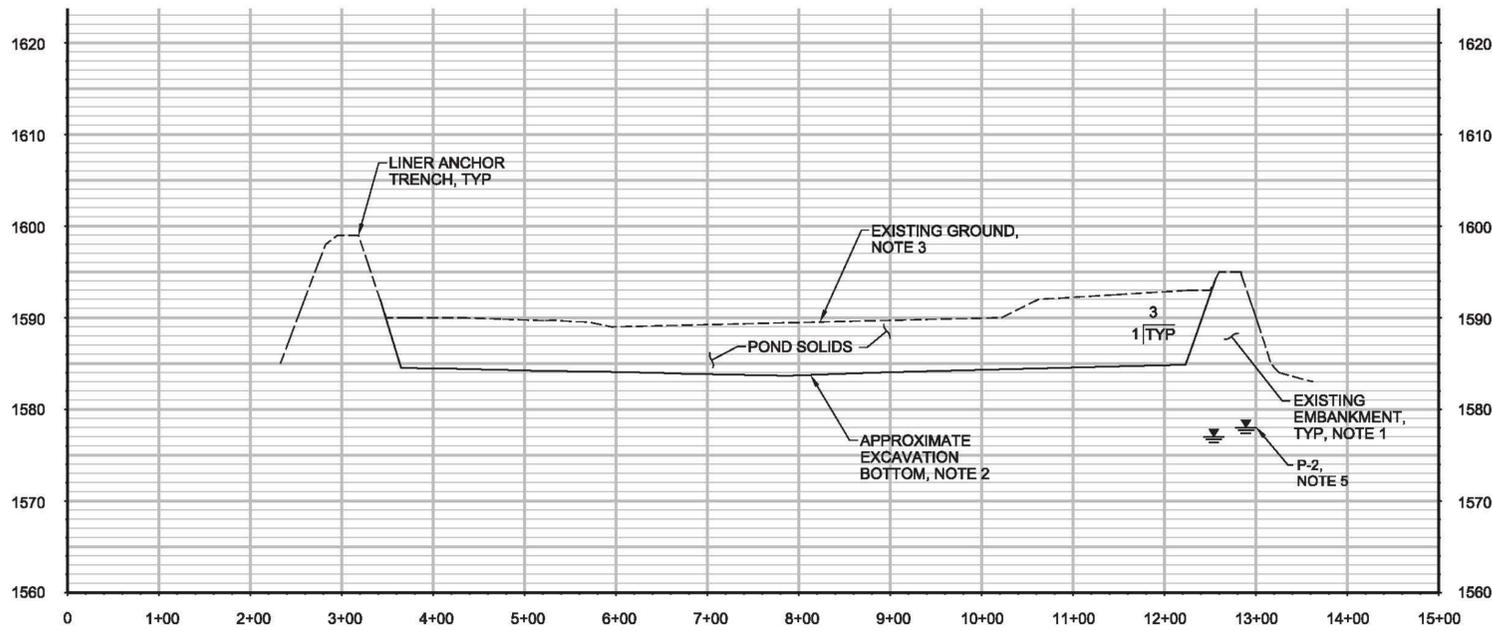
MVEnergy
Moapa, Nevada

CH2MHILL

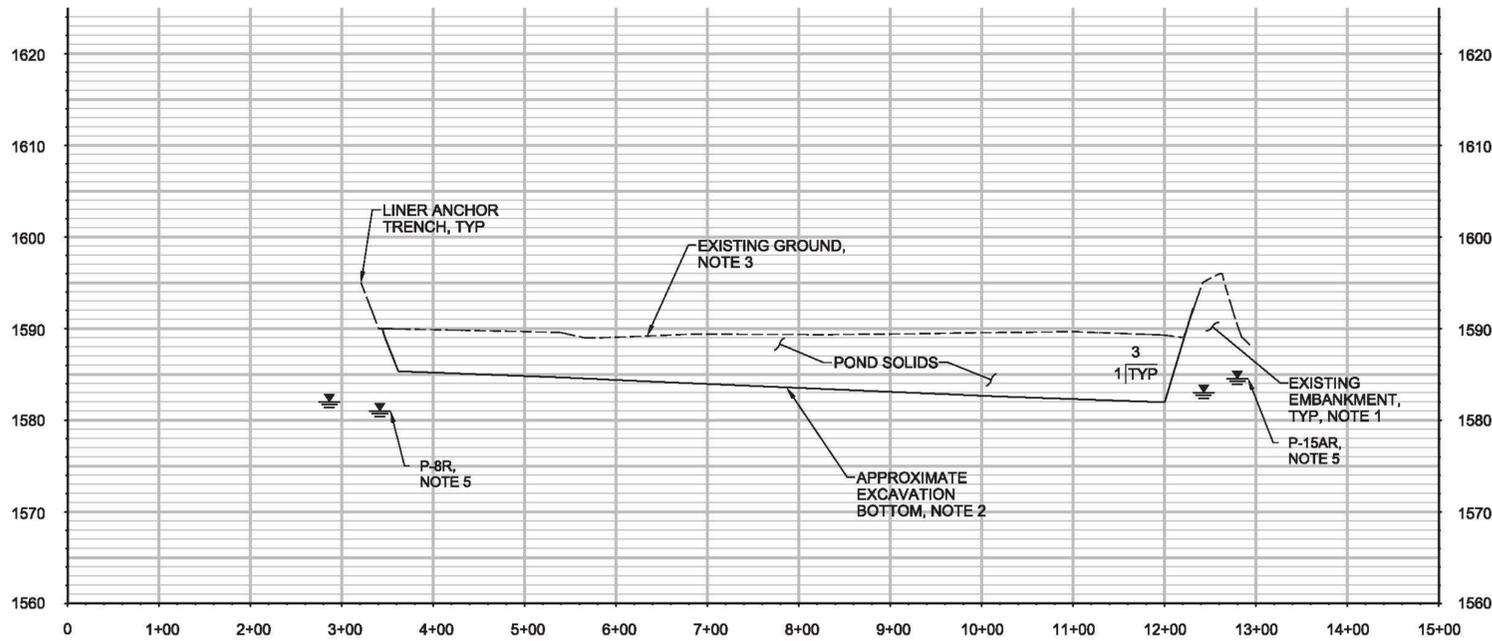
EXCAVATION PLAN - POND E-2

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	SEPTEMBER 2014
PROJ	387230
DWG	FIG 3
SHEET	

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2004. ALL RIGHTS RESERVED.



A SECTION
 H 1"=50'
 V 1"=5'
 FIG 3



B SECTION
 H 1"=50'
 V 1"=5'
 FIG 3

NOTES:

1. GROOM SLOPES TO A NEAT LINE TO REMOVE POND SOLIDS. PROTECT AND PRESERVE EXISTING ZONED EMBANKMENTS AND CREST ROADS. SLOPES AND DIMENSIONS OF EXISTING EMBANKMENTS ARE BASED UPON RECORD DRAWINGS CREATED BY KENNEDY/JENKS CONSULTANTS DATED DECEMBER 2005 AND DRAWINGS CREATED BY CONVERSE CONSULTANTS DATED JANUARY 1990.
2. THE ACTUAL EXCAVATION BOTTOM MAY BE IN CLOSE PROXIMITY TO GROUNDWATER AND SOFT SUBGRADE SOILS ARE EXPECTED. SHALLOW, MOUNDED, OR PERCHED GROUNDWATER MAY BE ENCOUNTERED DUE TO LOW PERMEABILITY SOIL IN THE SUBGRADE AND EMBANKMENTS.
3. PORTIONS OF THE POND SOLIDS ARE CAPPED WITH A 6"-12" THICK SOIL COVER. DISPOSE WITH POND SOLIDS. DO NOT ALLOW RELEASE OF DUST FROM SOIL COVER. DO NOT REMOVE SOIL COVER UNTIL READY TO EXCAVATE UNDERLYING POND SOLIDS. DO NOT EXPOSE MORE POND SOLIDS THAN CAN BE EXCAVATED WITHIN THE SAME DAY.
4. LINER SURFACE IS BASED UPON RECORD DRAWINGS CREATED BY KENNEDY/JENKS CONSULTANTS DATED DECEMBER 2005. DEMOLISH LINER DURING EXCAVATION AS SPECIFIED. SEQUENCE EXCAVATION HIGH LINER ELEVATION TO LOW AS SPECIFIED.
5. THE GROUNDWATER ELEVATION RANGES SHOWN ARE BASED ON MEASURED HIGH AND LOW GROUNDWATER LEVELS AT THE INDICATED WELLS BETWEEN Q1 2010 AND Q1 2014. LOCATIONS SHOWN ARE APPROXIMATE AND ACTUAL CONDITIONS OBSERVED IN THE FIELD WILL VARY. REFER TO SEPARATE GROUNDWATER MONITORING REPORTS FOR ADDITIONAL GROUNDWATER DATA.

PRELIMINARY
 NOT FOR
 CONSTRUCTION

ISSUED FOR WORK PLAN	REVISION	CHK	DR	APVD
0	09/19/14	N. BETTS	R. VILORIA	M. JOHNS
NO.	DATE	DGN	DR	APVD
0	09/19/14	N. BETTS	R. VILORIA	M. JOHNS
SD	BY	APVD	BY	APVD

2485 VILLAGE VIEW DRIVE, SUITE 350
 HENDERSON, NEVADA 89074
 PHONE: 702-389-6175

REID GARDNER STATION
 Moapa, Nevada

NVEnergy
 NV Energy logo

CH2MHILL

SECTIONS - POND E-2

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	SEPTEMBER 2014
PROJ	387230
DWG	FIG 4
SHEET	

PRELIMINARY NOT FOR CONSTRUCTION
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Appendix B

Record Drawings

NEVADA POWER COMPANY REID GARDNER STATION MOAPA, NEVADA

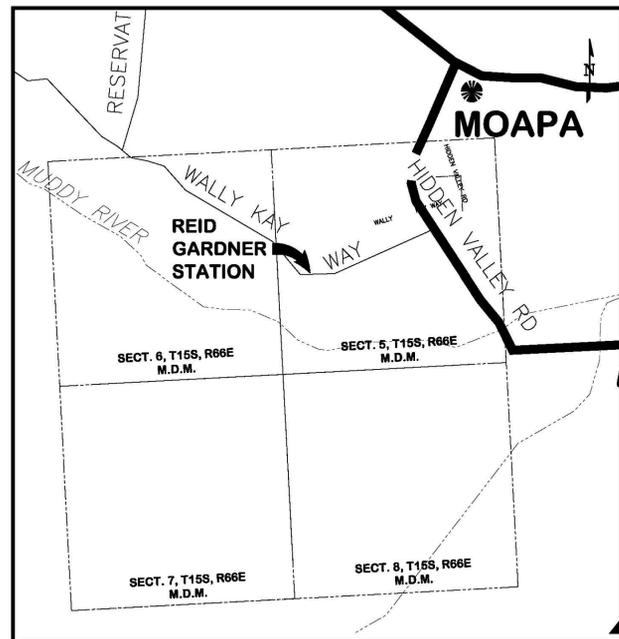
RECONSTRUCTION OF PONDS D AND E

DECEMBER 2002 ISSUED FOR CONSTRUCTION

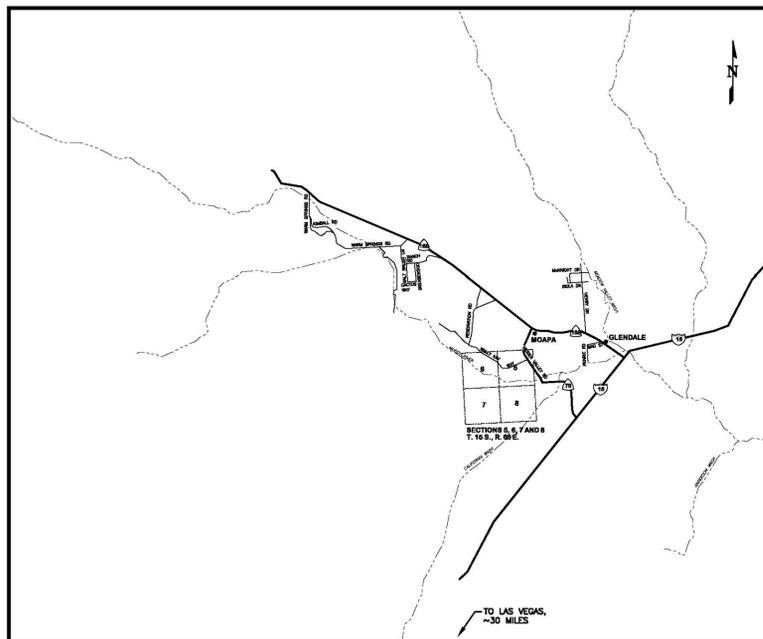
SHEET INDEX	
C-1	TITLE SHEET
C-2	GENERAL NOTES AND LEGEND
C-3	EXISTING SITE PLAN-PONDS D & E
C-4	DEMOLITION PLAN
C-5	OVERALL SITE PLAN
C-6	CROSS SECTIONS
C-7	HORIZONTAL & GRADING PLAN-POND D
C-8	HORIZONTAL & GRADING PLAN-POND E
C-9	GROUNDWATER UNDERDRAIN PROFILES-POND D & E
C-10	WATERLINE PLAN & PROFILE
C-11	DRAINAGE SYSTEM CROSS SECTIONS
C-12	DRAINAGE SYSTEM DETAILS
C-12A	PIPE DETAILS
C-12B	REMEDIATION PUMPS AND PIPINGS
C-13	MIXER MOUNTING SYSTEM ARRANGEMENT
C-14	MIXER CARRIAGE DETAILS
C-15	MIXER CRADLE/CONCRETE DETAILS
C-16	RAIL DETAILS
C-17	SHROUD/ROLLER/OUTRIGGER DETAILS
C-18	JIB CRANE DETAILS
C-19	RAIL DETAILS
S-1	MCC STRUCTURAL NOTES
S-2	MCC STRUCTURAL PLAN & SECTIONS
S-3	MCC STRUCTURAL DETAILS
EE-1	ELECTRICAL 480V ONE-LINE DIAGRAM
EE-2	ELECTRICAL COMBINED WIRING DIAGRAM, TYPICAL FOR MIXER LOCAL STARTERS
EE-3	ELECTRICAL COMBINED WIRING DIAGRAM, TYPICAL FOR PUMP LOCAL STARTERS
EE-4	ELECTRICAL ADDITIONAL PLC WIRING DIAGRAM IN EXISTING MCC1
EG-1	ELECTRICAL SITE PLAN
EG-2	ELECTRICAL DETAILS
EG-3	ELECTRICAL DETAILS

NOTE:
THIS DRAWING SET TO BE SUPPLEMENTED BY THE FOLLOWING DOCUMENTS:
 • PROJECT CONTRACT SPECIFICATIONS
 • UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENT, CLARK COUNTY AREA, NEVADA

REVISIONS
75% REVIEW 8/02
ISSUED FOR CONSTRUCTION DEC 02
RECORD DRAWINGS DEC 05
D.S.I



LOCATION MAP
1 INCH = 1000 FEET
M.D.M. = MOUNT DIABLO MERIDIAN



VICINITY MAP
1 INCH = 2 MILES

APPROVED BY:

RICHARD A. WILLER, E.I. _____ DATE _____
 NEVADA POWER COMPANY
 ENGINEER IV, CIVIL - GENERATION ENGINEERING

PETER R. SAMUOLIS, P.E. (Drawings C-1 thru C-12B and S-1 thru S-3) _____ DATE _____
 KENNEDY/JENKS CONSULTANTS

DAVID R. WEBSTER, P.E. (Drawings C-13 thru C-19) _____ DATE _____
 SOLUTIONS, INC.

LARRY JOHNSON, P.E. (Drawings EE-1 thru EG-3) _____ DATE _____
 STANLEY CONSULTANTS, INC.

RECORD DRAWINGS

Kennedy/Jenks Consultants
840 Crier Drive, Suite 300
Las Vegas, Nevada 89119
702/270-3610



**REID GARDNER STATION
PONDS D & E RECONSTRUCTION
TITLE SHEET**

WORK ORDER
98132819.01
DRAWING STATUS
DWN: **MAW**
DATE: **4/30/02**
CHK'D:
DATE:
APP'D:
DATE:
SCALE:
NOTED
DRAWING NUMBER
**RSG-C
0410**
SHEET NO./REV
**C-1
B**

GENERAL NOTES

1. DRAWINGS AND SPECIFICATIONS ARE COOPERATIVE. CONTRACTOR SHALL EXECUTE WORK INDICATED IN ONE AS IF INDICATED IN BOTH DRAWINGS AND SPECIFICATIONS. WORK NOT DETAILED OR SPECIFIED MUST BE SAME QUALITY AND TYPE AS WORK DETAILED OR SPECIFIED. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON THE SITE. REPORT TO OWNER PRIOR TO ANY WORK ANY DISCREPANCIES FOUND BETWEEN DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS. UNDER NO CIRCUMSTANCES SHOULD WORK IN QUESTION BE STARTED IF A DISCREPANCY IS DISCOVERED AFTER AWARD OF CONTRACT. CONTRACTOR TO KEEP A COMPLETE SET OF DRAWINGS AND SPECIFICATIONS AND ALL PERMITS AND ANY PERTINENT SUPPLEMENTAL DOCUMENTS ON THE JOB AT ALL TIMES. IN THE EVENT OF A CONFLICT BETWEEN DRAWING AND SPECIFICATIONS, THE DRAWING SHALL HAVE THE HIERARCHY.

2. CONTRACTOR SHALL DELIVER TECHNICAL SUBMITTALS TO THE OWNER/ENGINEER TO EXPEDITE THE PROJECT. CONTRACTOR SHALL IDENTIFY ANY DEVIATIONS FROM TERMS OF CONTRACT AND PRODUCT OR SYSTEM LIMITATIONS THAT MAY BE DETRIMENTAL TO SUCCESSFUL PERFORMANCE OF THE COMPLETED WORK. THE RFP OR CONTRACT ISSUES SHALL BE DELIVERED TO THE OWNER'S DESIGNATED CONTRACT AGENT.

3. CONTRACTOR SHALL COORDINATE ALL WORK IN THE VICINITY OF EXISTING UTILITIES WITH UTILITY COMPANIES INCLUDING ANY NECESSARY MODIFICATION. CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE DURING EXCAVATION AND REMOVAL AND PROVIDE SUPPORT FOR UTILITIES AS NEEDED. USA (UNDERGROUND SERVICE ALERT) SHALL BE CONTACTED PRIOR TO ALL EXCAVATIONS.

4. CONTRACTOR SHALL PERFORM GEOPHYSICAL SURVEYS, AS NECESSARY, TO LOCATE UNDERGROUND UTILITIES IN CONSTRUCTION AREA AT THE SITE AT LOCATIONS WHERE SUBSURFACE WORK IS TO BE PERFORMED.

5. ALL AREAS, STRUCTURES, SURFACES AND FEATURES OF WHATEVER NATURE WHICH ARE DAMAGED DURING CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO, CONCRETE AND ASPHALT, DRAINAGE STRUCTURES, AND UTILITIES, WILL BE RESTORED BY THE CONTRACTOR TO PRECONSTRUCTION CONDITION TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

6. CONTRACTOR SHALL PREPARE A SITE SPECIFIC HEALTH AND SAFETY PLAN (HASP) IN ACCORDANCE WITH STATE AND FEDERAL OSHA REQUIREMENTS AND NEVADA POWER COMPANY (NPC). NPC WILL PROVIDE A COPY OF THE HASP TO THE CONTRACTOR AT THE PRECONSTRUCTION MEETING. CONTRACTOR SHALL COMPLY WITH SITE SPECIFIC SAFETY AND OPERATIONAL GUIDELINES.

7. CONTRACTOR IS REQUIRED TO OBTAIN PERMITS AND PAY FEES FOR GRADING AND DUST CONTROL. CONTRACTOR SHALL COMPLY WITH ALL RAILROAD PERMIT REQUIREMENTS.

8. CONTRACTOR SHALL SECURE ALL APPLICABLE LICENSES AND PERMITS PRIOR TO ANY CONSTRUCTION.

9. CONTRACTOR SHALL BE A LICENSED CONTRACTOR IN THE STATE OF NEVADA IN GOOD STANDING.

10. EXCAVATION AREAS AND OPEN TRANCHES (AFTER HOURS) SHALL BE PROTECTED BY TEMPORARY FENCES TO PREVENT UNAUTHORIZED ENTRY.

11. ALL WORK SHALL CONFORM WITH APPLICABLE CODES. CONTRACTOR SHALL NOTIFY NEVADA POWER COMPANY OF ANY DISCREPANCY PRIOR TO CONSTRUCTION.

12. ALL EQUIPMENT AND PIPING, ETC., NOT SPECIFICALLY IDENTIFIED AS EXISTING (E) SHALL BE CONSIDERED NEW (N) UNLESS OTHERWISE NOTED.

13. ALL EXISTING EQUIPMENT AND MATERIALS REMOVED AND NOT REUSED FOR THE NEW SYSTEM, AS DIRECTED BY THE OWNER, SHALL BE DISPOSED OF BY THE CONTRACTOR AT APPROVED OFF-SITE DISPOSAL FACILITIES.

14. CERTAIN ITEMS LISTED HEREIN ARE REVOCABLE ITEMS, IDENTIFIED AS SUCH IN CONTRACT DOCUMENTS.

15. PAYMENT FOR EXCAVATION, BACKFILL, AND DISPOSAL WILL BE MADE ON A UNIT COST BASIS ACCORDING TO THE PROJECT CONTRACT.

16. CONTRACTOR SHALL COORDINATE AND COOPERATE WITH ALL INSPECTIONS FOR DAM SAFETY, AND WITH LOCAL AND JURISDICTIONAL AUTHORITIES AND SPECIAL INSPECTORS.

17. CONTRACTOR SHALL VERIFY ALL PIPING SIZES, CUT LENGTHS, AND PIPING COMPONENTS PRIOR TO INSTALLATION. ALL PIPING INSTALLED IN ACCORDANCE WITH TO MANUFACTURER'S SPECIFICATIONS.

18. ALL PIPING SHALL BE TESTED FOR TIGHTNESS AT THE COMPLETION OF INSTALLATION. APPROVED TESTING METHODS (PRESSURE TESTING) SHALL BE USED TO PERFORM TIGHTNESS TESTING. ALL TESTS MUST BE WITNESSED BY THE OWNER/ENGINEER.

19. CONTRACTOR SHALL USE TRENCH PLATES TO COVER EXCAVATIONS SUBJECT TO PEDESTRIAN OR VEHICULAR TRAFFIC. ALL VEHICLE CIRCULATION DIRECTIONS, ACCESS POINTS, ETC. SHALL BE KEPT OPEN AT ALL TIMES.

20. CONTRACTOR SHALL PROVIDE SCHEDULE FOR SITE ACCORDING TO SPECIFICATIONS. THE FACILITY IS ACTIVE AND MUST REMAIN OPEN DURING CONSTRUCTION.

21. THE SITE HAS CONTROLLED ACCESS AND LIMITED WORK HOURS AND DAYS. CONTRACTOR SHALL COORDINATE ACCESS FOR WORK AND DELIVERIES WITH OWNER.

22. UTILITIES AVAILABLE TO CONTRACTOR ON-SITE ARE DUST-CONTROL WATER IN LIMITED QUANTITY AND AT LIMITED LOCATIONS. CONTRACTOR SHALL COORDINATE ALL USE WITH OWNER AND PROVIDE OWN WATER, SANITARY, ELECTRICAL AND TELEPHONE UTILITIES.

23. STOCKPILING OF ALL MATERIALS SHALL BE COORDINATED WITH OWNER SO IT WILL NOT INTERFERE WITH FACILITY OPERATION.

24. ALL ELECTRICAL INSTALLATIONS SHALL BE INSTALLED UNDER THE SUPERVISION OF A LICENSED ELECTRICAL CONTRACTOR.

25. ALL ELECTRICAL MONITORING EQUIPMENT SHALL HAVE MANUFACTURER'S CERTIFICATION THAT THE EQUIPMENT WILL NOT FAIL AS A RESULT OF THE PASSING OF THE YEAR 2000.

26. IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THE NEVADA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, AND THE DIVISION OF WATER RESOURCES. THE IMPROVEMENTS ARE SUBJECT TO THE INSPECTION AND APPROVAL OF THE CLARK COUNTY HEALTH DISTRICT. WORK SPECIFIED HEREIN SHALL BE SUPPLEMENTED BY THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS' CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, LATEST EDITION. CONTRACTOR SHALL BE RESPONSIBLE FOR FULL COMPLIANCE.

27. CONTACT THE CLARK COUNTY HEALTH DISTRICT INSPECTION AT (702) 385-1291 AT LEAST TWO (2) WORKING DAYS PRIOR TO THE START OF ANY WORK TO ARRANGE FOR INSPECTION.

28. ALL REVISIONS TO THESE PLANS MUST BE REVIEWED AND APPROVED IN WRITING BY THE DESIGN ENGINEER AND MAY ADDITIONALLY REQUIRE APPROVAL BY JURISDICTIONAL AUTHORITIES PRIOR TO CONSTRUCTION OF AFFECTED ITEMS.

29. EXCAVATIONS SHALL BE ADEQUATELY SHORED, BRACED AND SHEATHED SO THAT THE EARTH WILL NOT SLIDE OR SETTLE AND SO THAT ALL EXISTING IMPROVEMENTS OF ANY KIND WILL BE FULLY PROTECTED FROM DAMAGE. ANY DAMAGE RESULTING FROM A LACK OF ADEQUATE SHORING, BRACING AND SHEATHING, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND HE SHALL COMPLETE NECESSARY REPAIRS OR RECONSTRUCTION AT HIS OWN EXPENSE. WHERE THE EXCAVATION FOR A TRENCH, AND/OR STRUCTURE IS FIVE (5) FEET IN DEPTH, THE CONTRACTOR SHALL PROVIDE SHEATHING, SHORING AND BRACING IN CONFORMANCE WITH THE APPLICABLE CONSTRUCTION SAFETY ORDERS. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AT ALL TIMES.

30. THE CONTRACTOR SHALL PROVIDE DUST CONTROL FOR THE ENTIRE PROJECT SITE AT ALL TIMES. THE WORK AREAS AND ACCESS ROADS SHALL BE SPRINKLED AS NECESSARY TO PREVENT DUST NUISANCE. IN THE EVENT THE CONTRACTOR NEGLECTS TO USE ADEQUATE MEASURES TO CONTROL DUST, THE OWNER RESERVES THE RIGHT TO TAKE WHATEVER MEASURES ARE NECESSARY TO CONTROL DUST AND CHARGE THE COST TO THE CONTRACTOR.

31. IF, DURING CONSTRUCTION, ARCHAEOLOGICAL REMAINS ARE ENCOUNTERED, CONSTRUCTION IN THE VICINITY SHALL BE HALTED AND THE OWNER AND ENGINEER SHALL BE NOTIFIED.

32. THE CONTRACTOR SHALL POST EMERGENCY TELEPHONE NUMBERS FOR POLICE, FIRE, AMBULANCE, AND THOSE AGENCIES RESPONSIBLE FOR MAINTENANCE OF UTILITIES IN THE VICINITY OF THE JOB.

33. THE CONTRACTOR IS RESPONSIBLE FOR CONFORMING TO SURROUNDING ELEVATIONS AND CONDITIONS AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION. AND TO AVOID ANY ABRUPT OR APPARENT CHANGES IN GRADES OR CROSS SLOPES, LOW SPOTS OR HAZARDOUS CONDITIONS.

34. ORDER OF WORK FOR POND CONSTRUCTION:

CIVIL	LINER
A. ROUGH GRADING	D. SECONDARY LINER INSTALLATION
B. BERM CONSTRUCTION	E. LEAK DETECTION SYSTEM INSTALLATION
C. FINISH GRADING	F. PRIMARY LINER INSTALLATION
G. POND RELATED UTILITIES (I.E. ELECTRICAL PIPE, MECHANICAL, ETC.)	

(ALL LINER ITEMS TO BE COORDINATED WITH CIVIL WORK)

35. CONTRACTOR SHALL COORDINATE THE COMPLETION OF CONSTRUCTION OF THE PIPELINE AND THE PUMP STATION WITH ABOVE POND CONSTRUCTION SEQUENCE IN ORDER TO COMPLETE THE OVERALL PROJECT WITHIN THE REQUIRED SCHEDULE.

36. THE CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, AS REQUIRED BY THE CONTRACTOR'S HASP. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL LOCAL STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.

LAYOUT NOTES

1. TOPOGRAPHIC BASE MAP INFORMATION WAS PREPARED USING PHOTOGRAMMETRIC TECHNIQUES FROM AERIAL PHOTOGRAPHY DATED NOVEMBER 1997 AND UPDATED APRIL 1999 (PIPELINE ALIGNMENT). CONTRACTOR SHALL REVIEW THE PLANS AND SPECIFICATIONS AND CONDUCT FIELD INVESTIGATIONS AS REQUIRED TO VERIFY CONDITIONS AT THE PROJECT SITE.

2. INFORMATION REGARDING EXISTING SUBSURFACE IMPROVEMENTS AND UTILITIES SHOWN ON THESE PLANS WAS TAKEN FROM RECORD DATA KNOWN TO THE ENGINEER AND IS NOT MEANT TO BE A FULL CATALOG OF EXISTING CONDITIONS. CONTRACTOR SHALL CONDUCT FIELD INVESTIGATIONS AS REQUIRED TO VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING SUBSURFACE IMPROVEMENTS AND UTILITIES (WHETHER SHOWN ON THESE PLANS OR NOT) PRIOR TO THE COMMENCEMENT OF WORK. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS IN THE FIELD AND INFORMATION SHOWN ON THESE PLANS.

3. ELEVATIONS AND LOCATIONS OF ALL EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO START OF ANY CONSTRUCTION AFFECTING SAID LINES.

GRADING NOTES

1. ALL GRADING WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE REPORT PREPARED BY CONVERSE CONSULTANTS, TITLED GEOTECHNICAL INVESTIGATION - RETROFIT OF PONDS D & E, DATED MAY 17, 2002, ADDENDUM NO. 1, DATED NOV. 20, 2002 AND IN ACCORDANCE WITH PROJECT SPECIFICATIONS. THE REPORT WILL BE MADE AVAILABLE TO THE CONTRACTOR AT THE ENGINEER'S OFFICE.

2. THE SOILS ENGINEER SHALL BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.

3. THE SOILS ENGINEER SHALL BE PRESENT AT THE SITE DURING GRADING OPERATIONS AND SHALL PERFORM ALL TESTING DEEMED NECESSARY. THE SOILS ENGINEER SHALL OBSERVE ALL GRADING OPERATIONS AND IDENTIFY THOSE CONDITIONS WITH RECOMMENDED CORRECTIVE MEASURES TO THE CONTRACTOR.

4. ALL GRADING SHALL BE INSPECTED AND TESTED BY A QUALIFIED SOILS ENGINEER OR UNDER THEIR DIRECTION. CONVERSE CONSULTANTS SHALL INSPECT AND TEST THE EXCAVATION, PLACEMENT OF FILLS BACKFILLING AND COMPACTION. THE SOILS ENGINEER SHALL SUBMIT SOILS REPORTS AS REQUIRED AND WILL DETERMINE THE SUITABILITY OF ANY FILL MATERIAL. UPON COMPLETION OF GRADING OPERATIONS THE SOILS ENGINEER SHALL STATE IN A REPORT TO THE NEVADA PUBLIC WORKS AGENCY THAT THE INSPECTIONS AND TESTS WERE MADE BY HIM/HER OR UNDER HIS SUPERVISION AND THAT IN HIS/HER OPINION ALL EMBANKMENTS AND EXCAVATION WERE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED GRADING PLANS AND APPROVED REVISIONS THERETO AND ALL EMBANKMENTS AND EXCAVATIONS ARE ACCEPTABLE FOR THEIR INTENDED USE.

UTILITIES

1. A MINIMUM OF TWELVE (12) INCHES VERTICAL CLEARANCE SHALL BE PROVIDED BETWEEN ADJACENT UTILITIES AT ALL UTILITY CROSSINGS UNLESS OTHERWISE NOTED.

RECORD DRAWINGS

1. CONTRACTOR SHALL KEEP ACCURATE RECORD DRAWINGS, WHICH SHOW THE FINAL LOCATION, ELEVATION, AND DESCRIPTION OF ALL WORK. CONTRACTOR SHALL ALSO NOTE THE LOCATION AND ELEVATION OF ANY EXISTING IMPROVEMENTS ENCOUNTERED. RECORDS SHALL BE "REDLINED" ON A SET OF CONSTRUCTION PLAN REPRODUCIBLES.

STATEMENT OF RESPONSIBILITY

1. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR SHALL 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. THE 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 OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL.

2. REFER TO GENERAL PROVISION OF BID DOCUMENTS PREPARED BY OWNER'S REPRESENTATIVE FOR CONTRACT, SCHEDULE AND PAYMENT PROVISIONS.

UNAUTHORIZED CHANGES AND USES

1. THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USE OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PROJECT OWNER AND ENGINEER.

SEDIMENTATION AND POLLUTION CONTROL

1. EROSION CONTROL FACILITIES SHALL BE INSTALLED AND SHALL BE MAINTAINED DAILY DURING CONSTRUCTION. THESE FACILITIES SHALL CONTROL AND CONTAIN EROSION - CAUSED SILT DEPOSITS AND PROVIDE FOR THE SAFE DISCHARGE OF SILT-FREE STORM WATER INTO EXISTING STORM DRAIN FACILITIES. DESIGN OF THESE STRUCTURES MUST BE APPROVED BY THE ENGINEER.

PROJECT CONTACTS

- OWNER:
NEVADA POWER COMPANY
6226 WEST SAHARA AVENUE, MS 35
LAS VEGAS, NV 89151
CONTACT: RICHARD WILLER
(702) 367-5306
- PROJECT AND SOILS ENGINEER:
CONVERSE CONSULTANTS
731 PILOT ROAD, SUITE H
LAS VEGAS, NV 89118
CONTACT: MARTIN JENSEN
(702) 269-8336
- STATE:
DIVISION OF WATER RESOURCES
CAPITOL COMPLEX
123 WEST NYE LANE
CARSON CITY, NV 89710
CONTACT: JASON KING
(702) 687-3861
- COUNTY:
CLARK COUNTY HEALTH DISTRICT
625 SHADOW LANE
LAS VEGAS, NV 89106
CONTACT: GLEN SAVAGE
(702) 385-1291



LEGEND

	10% WASTEWATER SUPPLY LINE
	10% SLUDGE SUPPLY LINE
	12% SLUDGE RETURN LINE
	12% UNDERGROUND PIPE TO POND E
	12% UNDERGROUND PIPE TO POND E (BELOW GROUND)
	SITE BOUNDARY
	PIPELINE ALIGNMENT
	WATER SERVICE PIPELINE
	ELECTRICAL CONDUIT AND WIRING
	EXISTING MONITORING WELL
	EXISTING LYSIMETER
	EXISTING SOIL BORING
	PIPELINE PIGGING STATION
	CUT SLOPE (2H:1V)
	FILL BANK (AS INDICATED)
	ELECTRICAL INTERLOCK
	TEMPERATURE CONTROLLER
	LIQUID STREAM I.D.
	PUMP
	GATE VALVE
	CHECK VALVE
	REDUCER
	CONTROL VALVE
	CONNECTION
	SOLENOID VALVE
	RADIUS
	HIGH LEVEL SWITCH
	LOW LEVEL SWITCH
	HIGH LEVEL ALARM
	LOW LEVEL ALARM
	NEW STRUCTURE
	EXISTING STRUCTURE
	NORMALLY CLOSED (MANUAL VALVE)
	SOIL MOISTURE STATION
	WASTEWATER COLLECTION RECOVERY SYSTEM
	PIPELINE ALIGNMENT STATIONING
	TEMPORARY SURVEY BENCHMARK WITH ELEVATION
	EXISTING POWER POLE
	EXISTING RAILROAD
	V-DITCH
	MANHOLE

MISCELLANEOUS NOTES

- ANY EXISTING MONITORING WELLS ENCOUNTERED SHALL BE ABANDONED AND SEALED PER NEVADA DIVISION OF WATER RESOURCES REQUIREMENTS, ONLY AFTER APPROVAL OF THE ENGINEER.
- CONSTRUCTION STAKING SHALL BE PERFORMED BY A REGISTERED CIVIL ENGINEER OR A LICENSED LAND SURVEYOR AND SHALL BE PAID FOR BY CONTRACTOR. SUBGRADE ELEVATIONS ARE TO BE VERIFIED BY THE REGISTERED CIVIL ENGINEER OR LICENSED LAND SURVEYOR. THEN REVIEWED AND APPROVED BY THE OWNER AND ENGINEER PRIOR TO START OF CONSTRUCTION.

RECORD DRAWINGS

Kennedy/Jenks Consultants
840 Oriole Drive, Suite 300
Las Vegas, Nevada 89119
702/270-3610

Nevada Power
Las Vegas Nevada

REID GARDNER STATION
PONDS D & E RECONSTRUCTION
GENERAL NOTES AND LEGEND

REVISIONS

75% REVIEW 8/02
ISSUED FOR CONSTRUCTION DEC 02
RECORD DRAWINGS DEC 05
D.S.I

WORK ORDER
98132819.01

DRAWING STATUS

DWN: MAW
DATE: 4/30/02

CHK'D:

DATE:

APP'D:

DATE:

SCALE:
NOTED

DRAWING NUMBER

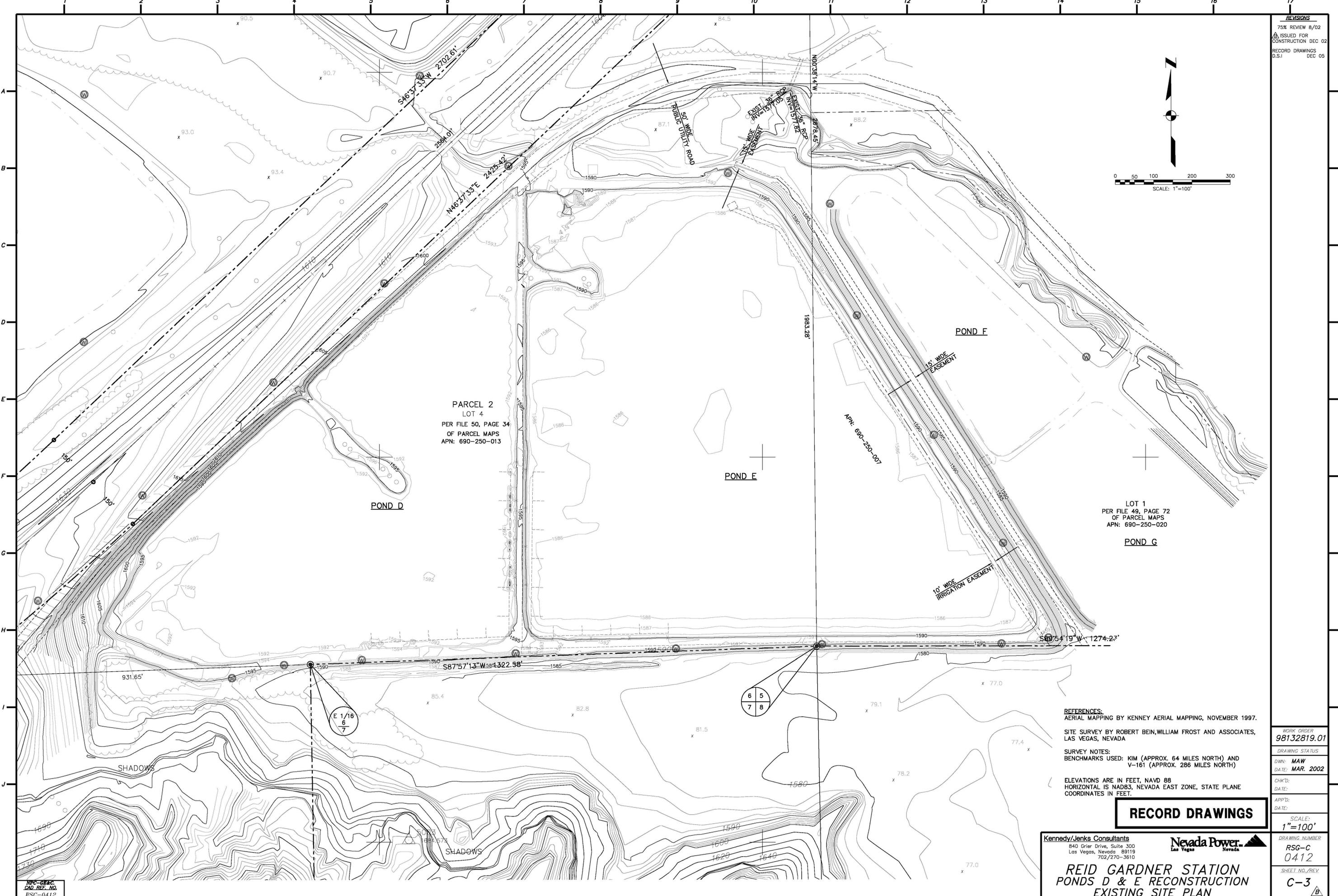
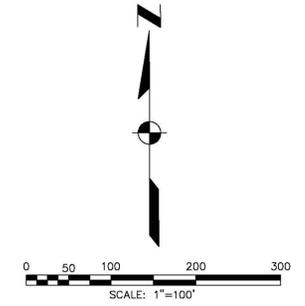
RSG-C-
0411

SHEET NO./REV

C-2

NPC-0846
CAD REF. NO.
RSC-0411

REVISIONS
 75% REVIEW B/02
 ISSUED FOR
 CONSTRUCTION DEC 02
 RECORD DRAWINGS
 D.S.I DEC 05



PARCEL 2
 LOT 4
 PER FILE 50, PAGE 34
 OF PARCEL MAPS
 APN: 690-250-013

LOT 1
 PER FILE 49, PAGE 72
 OF PARCEL MAPS
 APN: 690-250-020

REFERENCES:
 AERIAL MAPPING BY KENNEY AERIAL MAPPING, NOVEMBER 1997.
 SITE SURVEY BY ROBERT BEIN, WILLIAM FROST AND ASSOCIATES,
 LAS VEGAS, NEVADA
SURVEY NOTES:
 BENCHMARKS USED: KIM (APPROX. 64 MILES NORTH) AND
 V-161 (APPROX. 286 MILES NORTH)
 ELEVATIONS ARE IN FEET, NAVD 88
 HORIZONTAL IS NAD83, NEVADA EAST ZONE, STATE PLANE
 COORDINATES IN FEET.

RECORD DRAWINGS

Kennedy/Jenks Consultants
 840 Oriole Drive, Suite 300
 Las Vegas, Nevada 89119
 702/270-3610

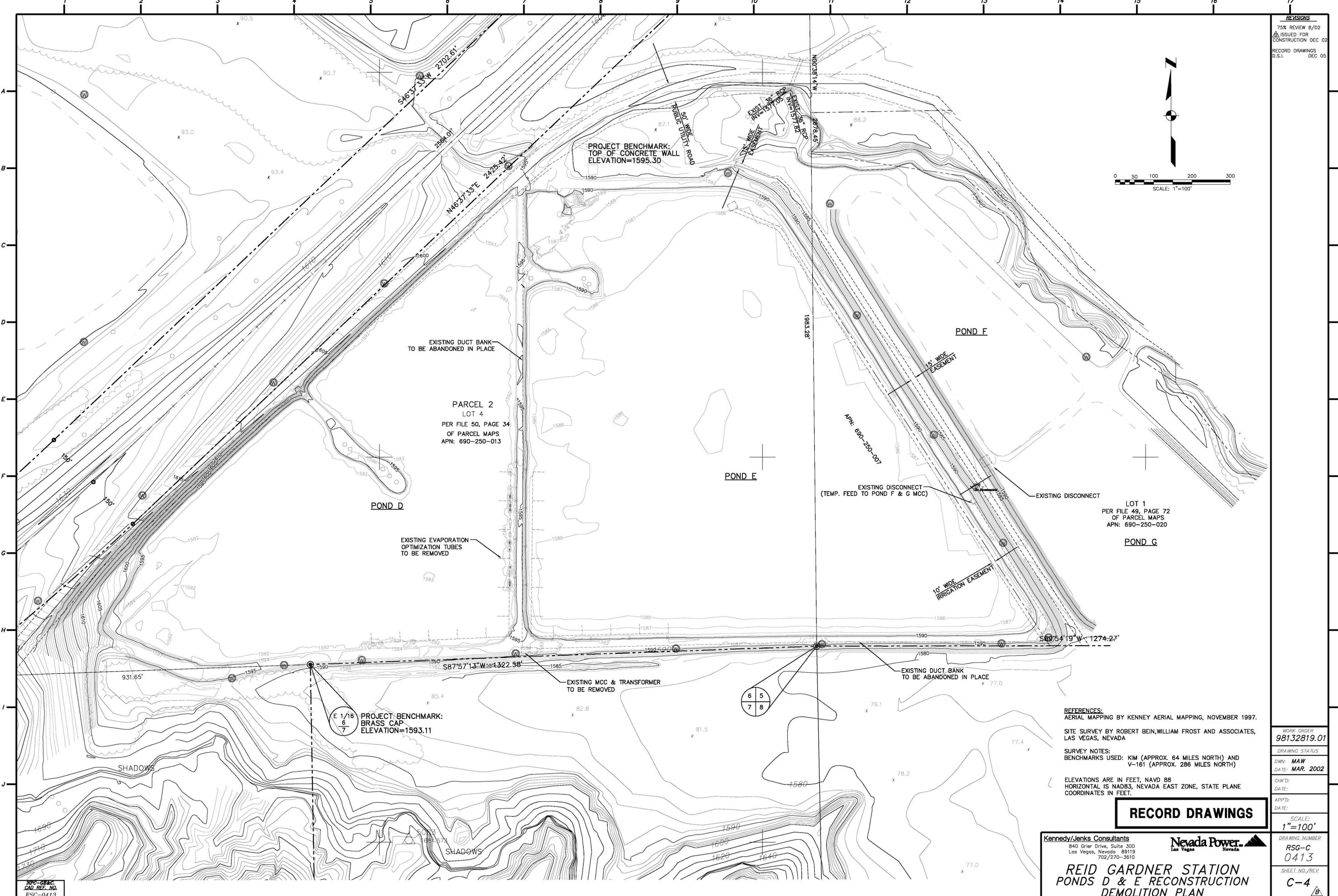
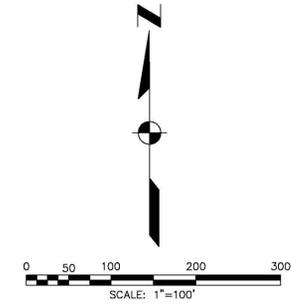
Nevada Power
 Las Vegas Nevada

**REID GARDNER STATION
 PONDS D & E RECONSTRUCTION
 EXISTING SITE PLAN**

WORK ORDER: 98132819.01
DRAWING STATUS: DWN: MAW DATE: MAR. 2002
CHK'D: DATE:
APP'D: DATE:
SCALE: 1"=100'
DRAWING NUMBER: RSG-C 0412
SHEET NO./REV: C-3 B

NPC-CB&C
 CAD REF. NO.
 RSC-0412

REVISIONS
 75% REVIEW 8/02
 ISSUED FOR CONSTRUCTION DEC 02
 RECORD DRAWINGS DEC 05
 D.S.I.



PARCEL 2
 LOT 4
 PER FILE 50, PAGE 34
 OF PARCEL MAPS
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RECORD DRAWINGS

Kennedy/Jenks Consultants
 840 Oriole Drive, Suite 300
 Las Vegas, Nevada 89119
 702/270-3610

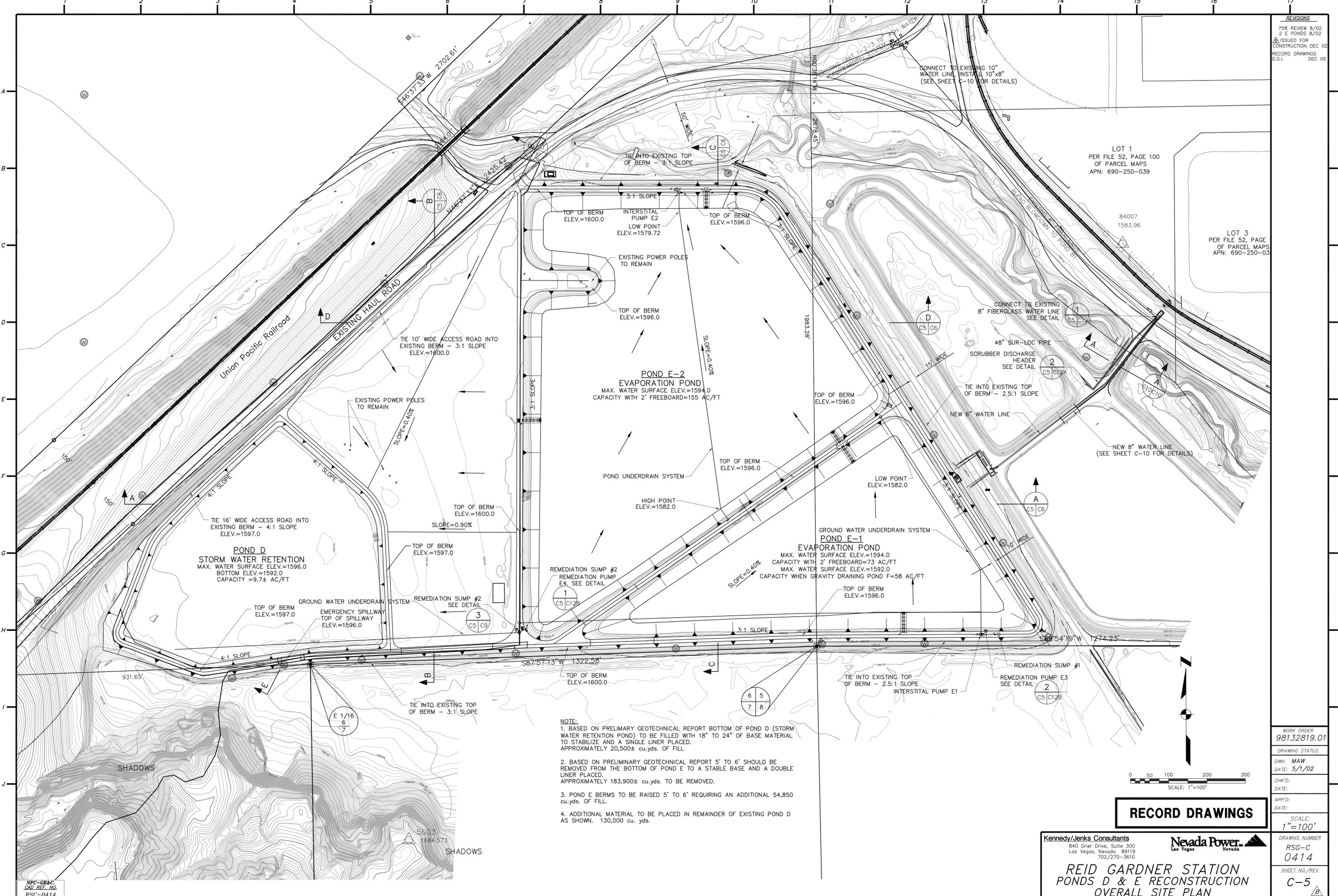
Nevada Power
 Las Vegas, Nevada

**REID GARDNER STATION
 PONDS D & E RECONSTRUCTION
 DEMOLITION PLAN**

WORK ORDER 98132819.01
DRAWING STATUS DWN: MAW DATE: MAR. 2002
CHK'D: DATE:
APP'D: DATE:
SCALE: 1"=100'
DRAWING NUMBER RSG-C 0413
SHEET NO./REV C-4 B

NPC-CB&C
 CAD REF. NO.
 RSC-0413

REVISIONS
 75% REVIEW 8/02
 2 E PONDS 8/02
 ISSUED FOR
 CONSTRUCTION DEC 02
 RECORD DRAWINGS
 0.S.I. DEC 05



POND D
 STORM WATER RETENTION
 MAX. WATER SURFACE ELEV.=1596.0
 BOTTOM ELEV.=1592.0
 CAPACITY = 9.7± AC/FT

POND E-2
 EVAPORATION POND
 MAX. WATER SURFACE ELEV.=1594.0
 CAPACITY WITH 2' FREEBOARD=155 AC/FT

POND E-1
 EVAPORATION POND
 MAX. WATER SURFACE ELEV.=1594.0
 CAPACITY WITH 2' FREEBOARD=73 AC/FT
 MAX. WATER SURFACE ELEV.=1592.0
 CAPACITY WHEN GRAVITY DRAINING POND F=58 AC/FT

- NOTE:**
1. BASED ON PRELIMINARY GEOTECHNICAL REPORT BOTTOM OF POND D (STORM WATER RETENTION POND) TO BE FILLED WITH 18" TO 24" OF BASE MATERIAL TO STABILIZE AND A SINGLE LINER PLACED. APPROXIMATELY 20,500± cu.yds. OF FILL.
 2. BASED ON PRELIMINARY GEOTECHNICAL REPORT 5' TO 6' SHOULD BE REMOVED FROM THE BOTTOM OF POND E TO A STABLE BASE AND A DOUBLE LINER PLACED. APPROXIMATELY 183,900± cu.yds. TO BE REMOVED.
 3. POND E BERMS TO BE RAISED 5' TO 6' REQUIRING AN ADDITIONAL 54,850 cu.yds. OF FILL.
 4. ADDITIONAL MATERIAL TO BE PLACED IN REMAINDER OF EXISTING POND D AS SHOWN. 130,000 cu. yds.

RECORD DRAWINGS

Kennedy/Jenks Consultants
 840 Oriole Drive, Suite 300
 Las Vegas, Nevada 89119
 702/270-3610

Nevada Power
 Las Vegas Nevada

REID GARDNER STATION
PONDS D & E RECONSTRUCTION
OVERALL SITE PLAN

WORK ORDER
 98132819.01

DRAWING STATUS
 DWN: MAW
 DATE: 5/1/02

CHK'D:
 DATE:

APP'D:
 DATE:

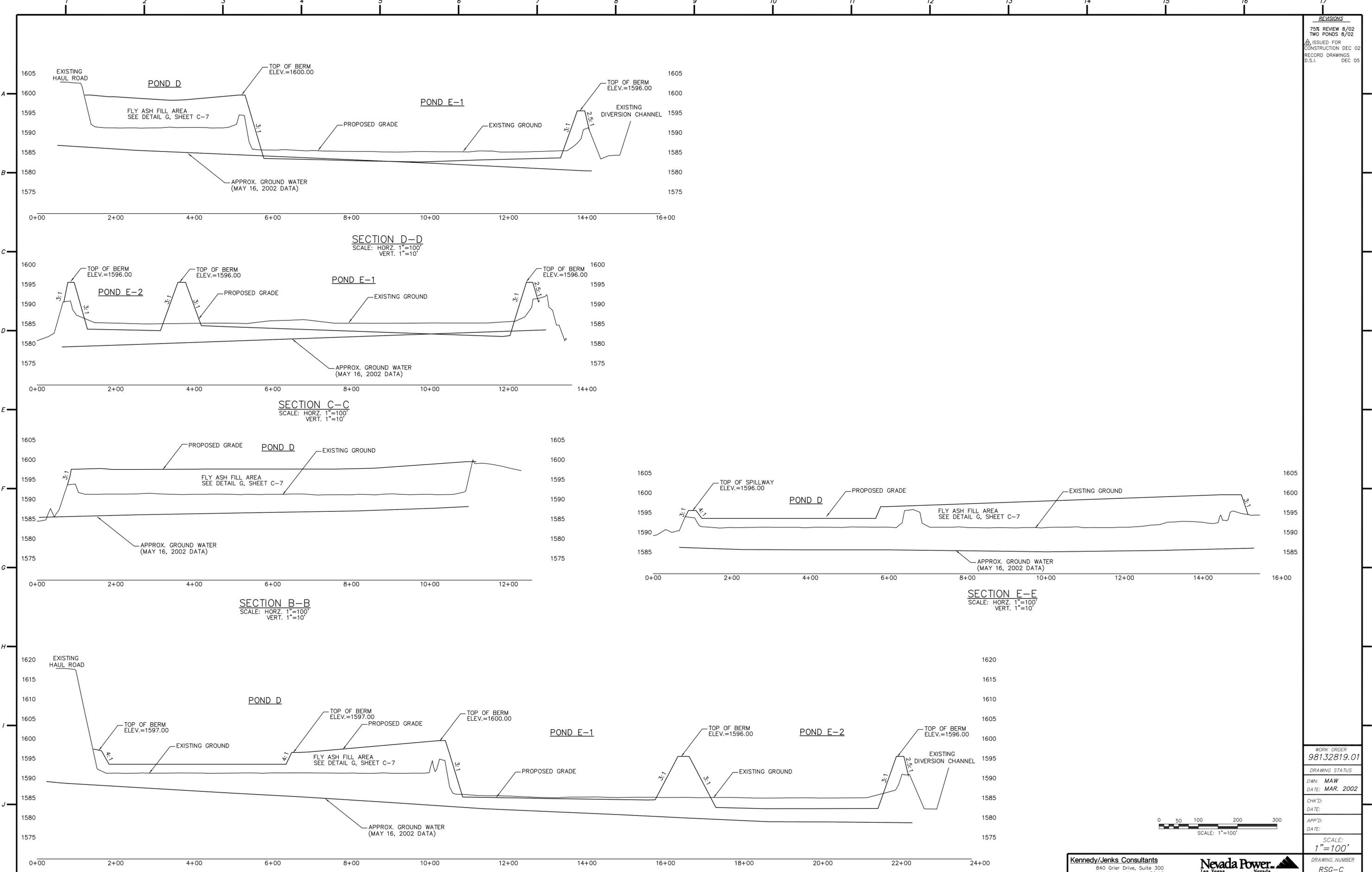
SCALE:
 1"=100'

DRAWING NUMBER
 RSG-C
 0414

SHEET NO./REV
 C-5
 B

NPC-GB&C
 CAD REF. NO.
 RSC-0414

REVISIONS
 75% REVIEW 8/02
 TWO PONDS 8/02
 ISSUED FOR
 CONSTRUCTION DEC 02
 RECORD DRAWINGS
 D.S.I. DEC 05



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 702/270-3610

Nevada Power
 Las Vegas, Nevada

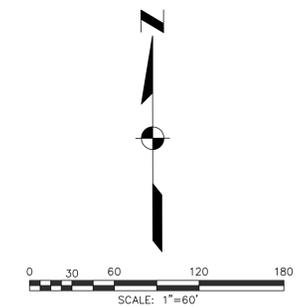
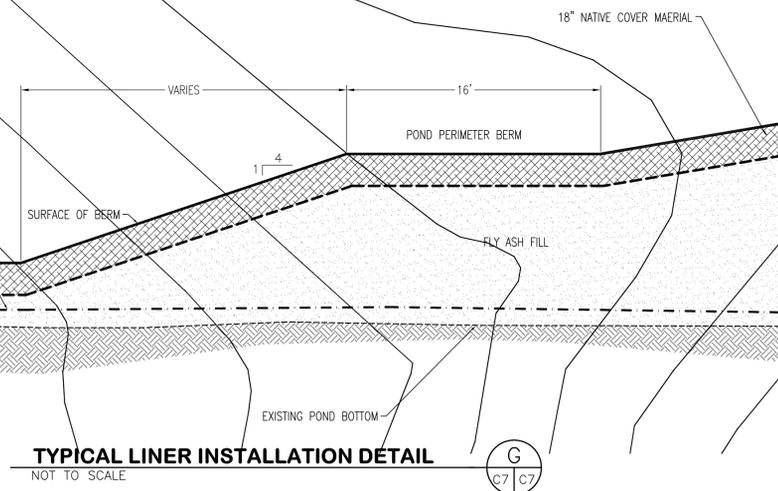
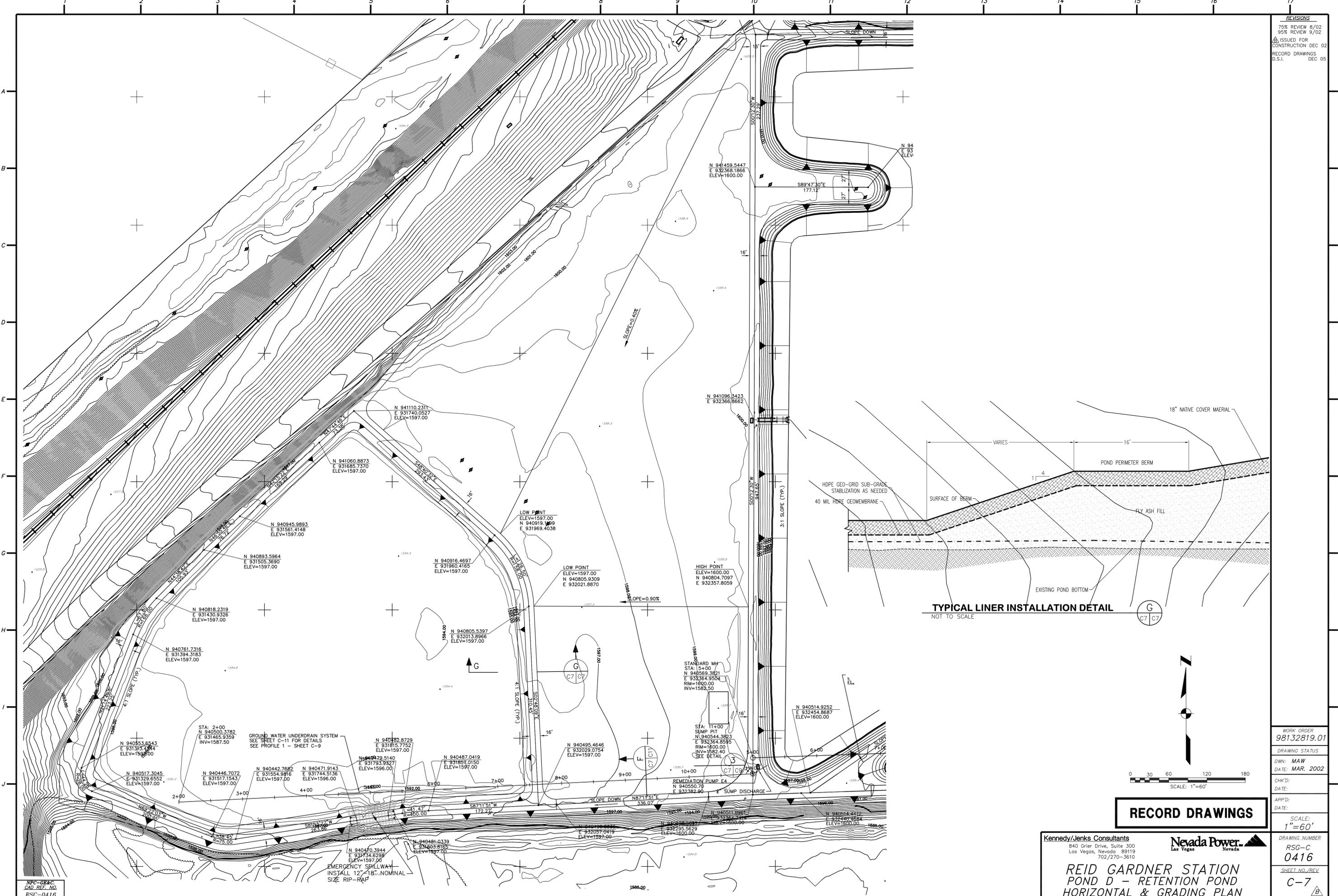
**REID GARDNER STATION
 PONDS D & E RECONSTRUCTION
 CROSS SECTIONS**

WORK ORDER	98132819.01
DRAWING STATUS	
DWN: MAW	
DATE: MAR. 2002	
CHK'D:	
DATE:	
APP'D:	
DATE:	
SCALE:	1"=100'
DRAWING NUMBER	RSG-C 0415
SHEET NO./REV.	C-6 B

NPC-GB&C
 CAD REF. NO.
 RSC-0414

SECTION A-A
 SCALE: HORZ. 1"=100'
 VERT. 1"=10'

REVISIONS	
75% REVIEW	8/02
95% REVIEW	9/02
ISSUED FOR CONSTRUCTION	DEC. 02
RECORD DRAWINGS	DEC. 05
D.S.I.	



RECORD DRAWINGS

Kennedy/Jenks Consultants
840 Orier Drive, Suite 300
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702/270-3610

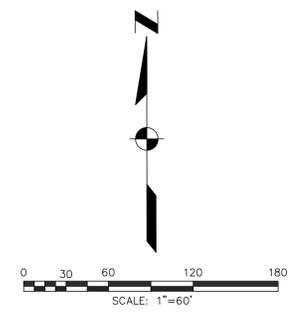
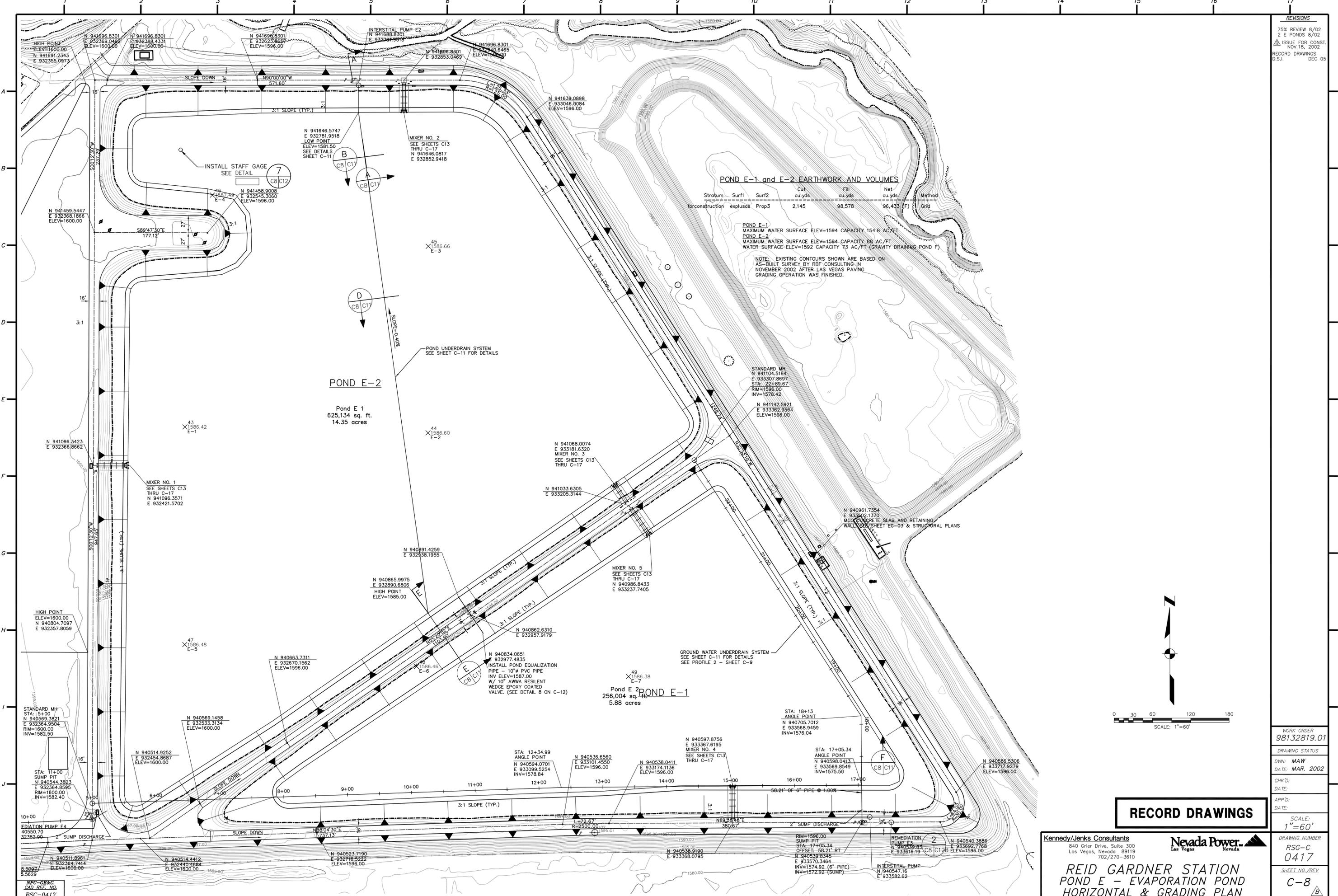
Nevada Power
Las Vegas, Nevada

**REID GARDNER STATION
POND D - RETENTION POND
HORIZONTAL & GRADING PLAN**

WORK ORDER	98132819.01
DRAWING STATUS	
DWN: MAW	
DATE: MAR. 2002	
CHK'D:	
DATE:	
APP'D:	
DATE:	
SCALE:	1"=60'
DRAWING NUMBER	RSG-C 0416
SHEET NO./REV	C-7

NPC-GE&C
CAD REF. NO.
RSC-0416

REVISIONS
75% REVIEW 8/02
2 E PONDS 8/02
ISSUE FOR CONST. NOV.18, 2002
RECORD DRAWINGS 0.S.I. DEC. 05



RECORD DRAWINGS

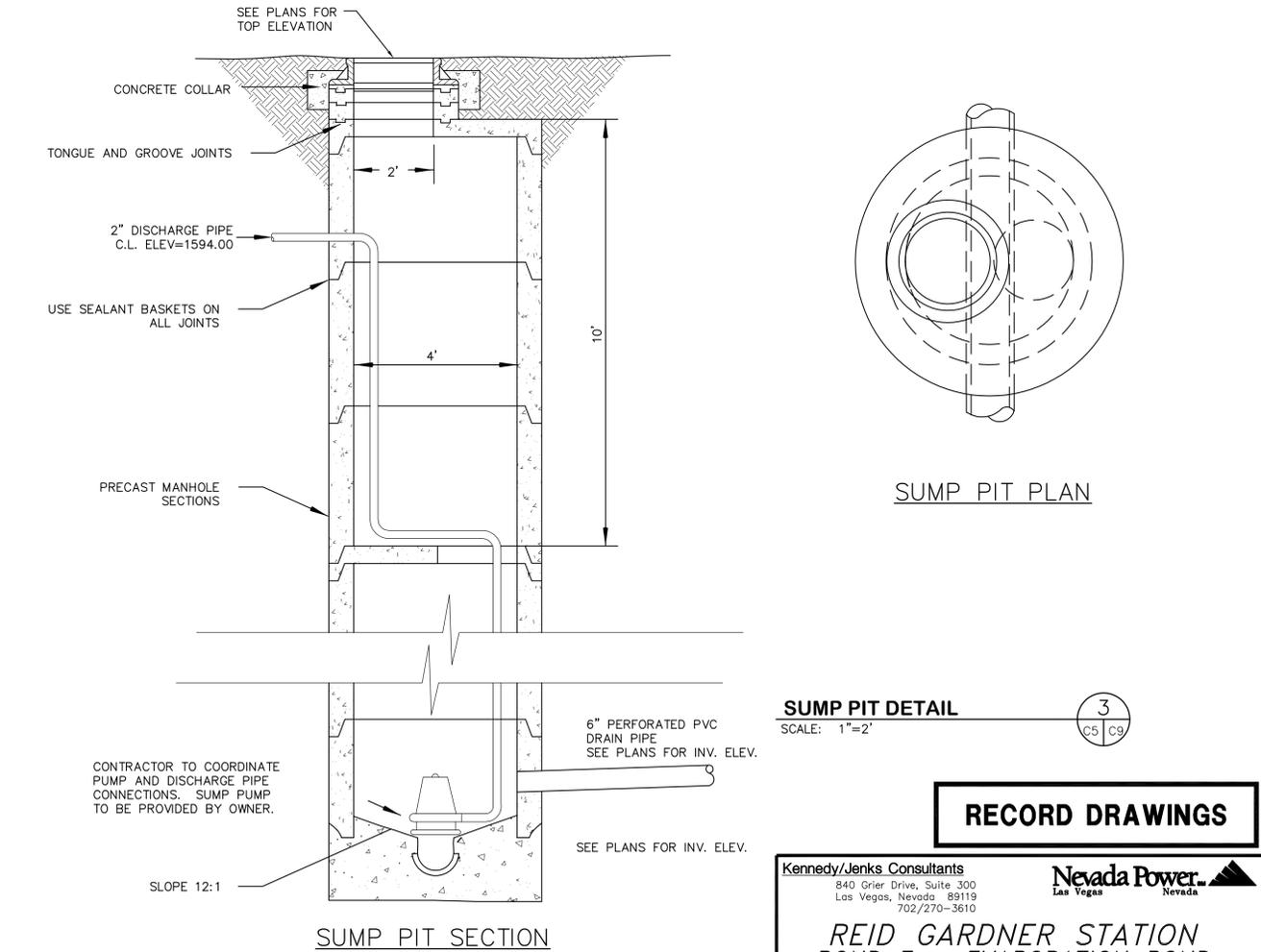
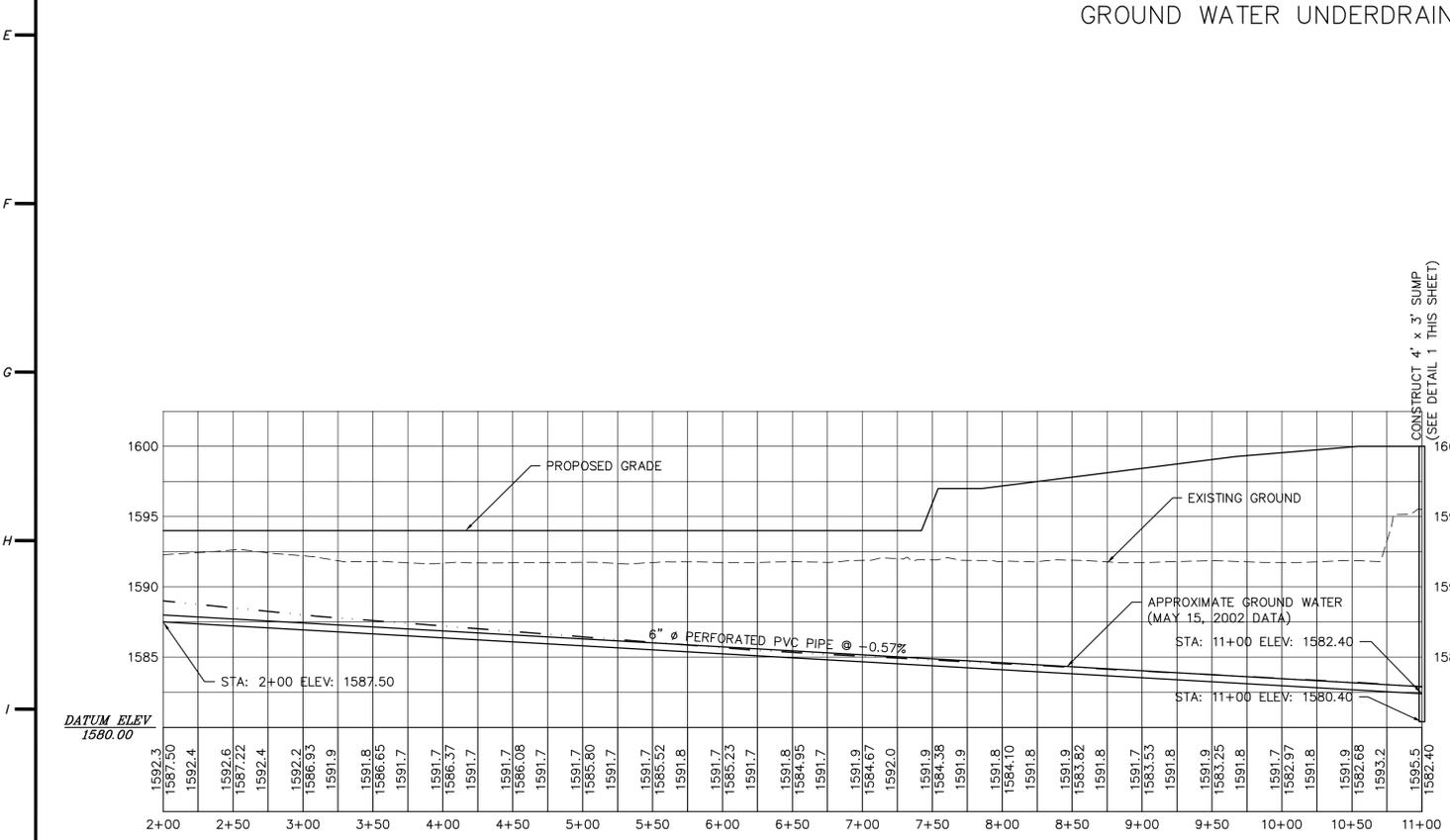
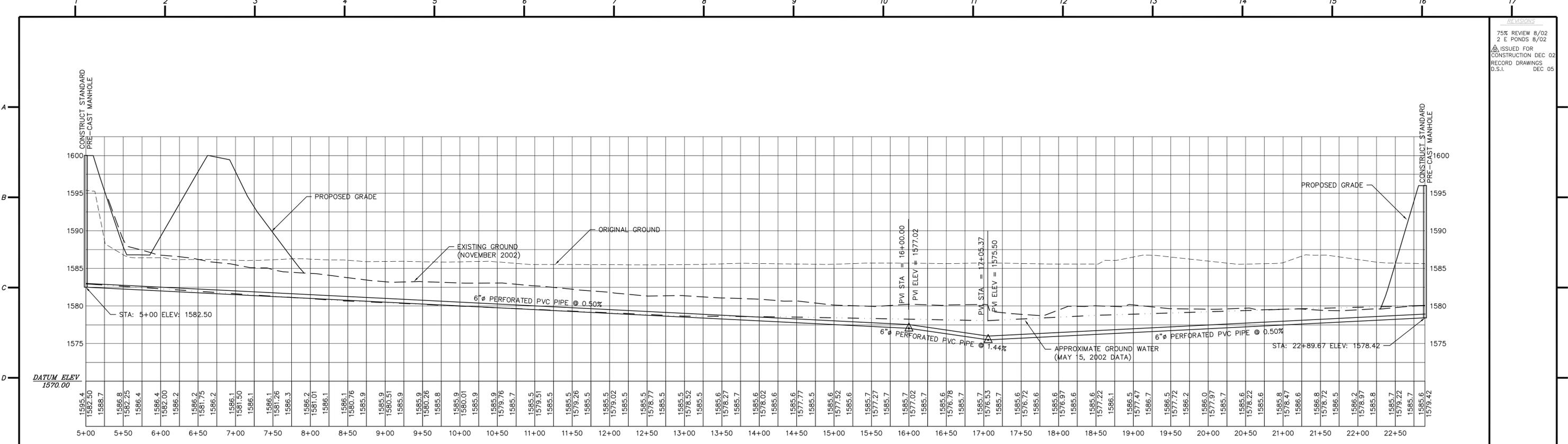
Kennedy/Jenks Consultants
 840 Oriole Drive, Suite 300
 Las Vegas, Nevada 89119
 702/270-3610

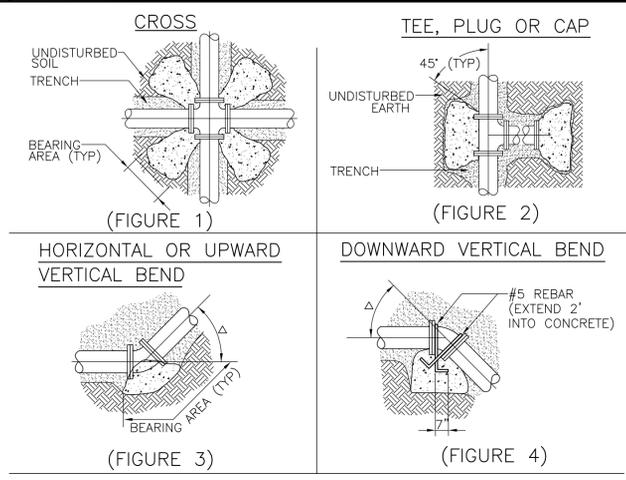
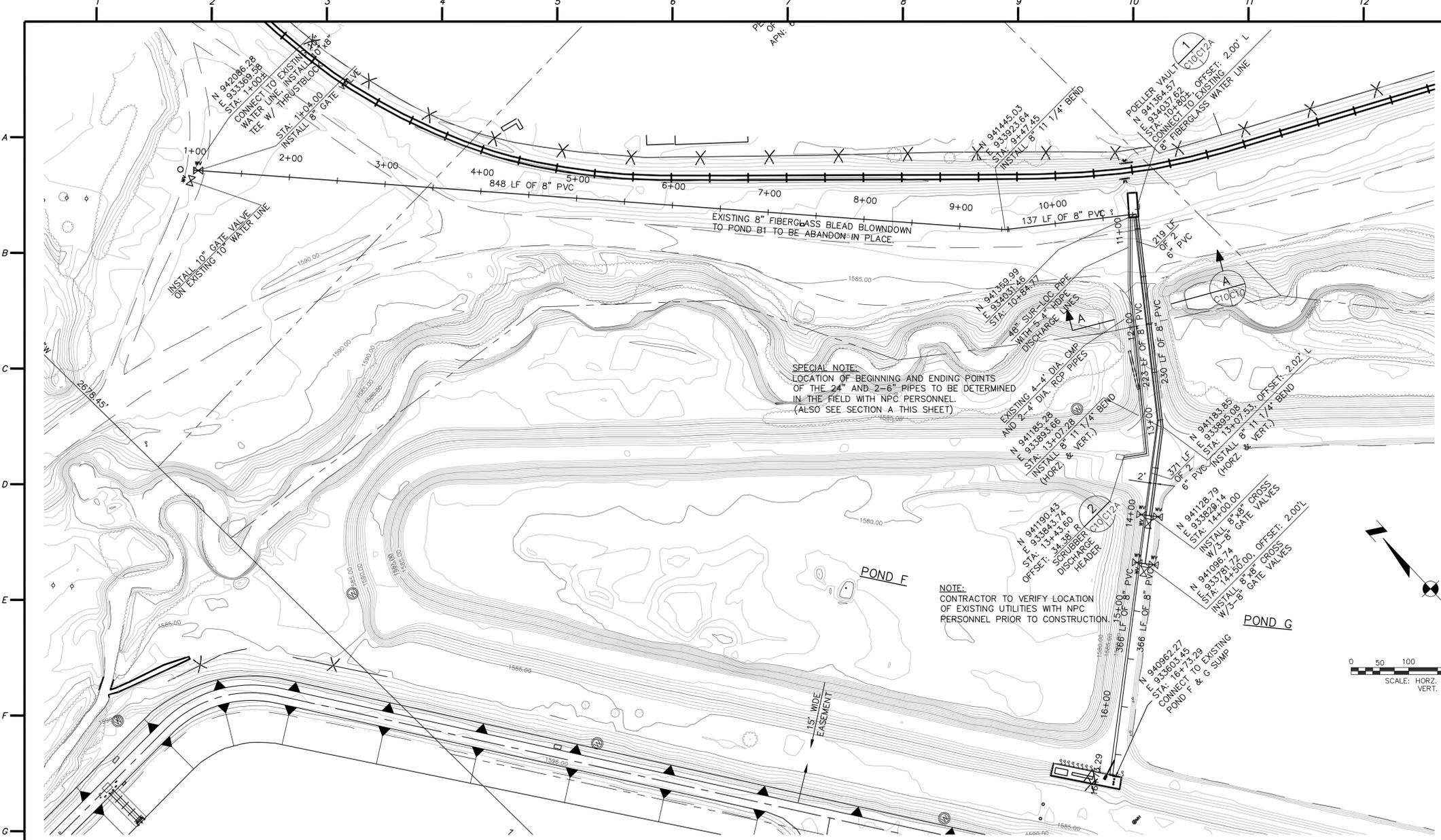
Nevada Power
 Las Vegas, Nevada

REID GARDNER STATION
POND E - EVAPORATION POND
HORIZONTAL & GRADING PLAN

WORK ORDER 98132819.01
DRAWING STATUS DATE: MAR. 2002
DWN: MAW
CHK'D:
DATE:
APP'D:
DATE:
SCALE: 1"=60'
DRAWING NUMBER RSG-C 0417
SHEET NO./REV. C-8

NPC-GB&C
 240 REF. NO.
 RSC-0417

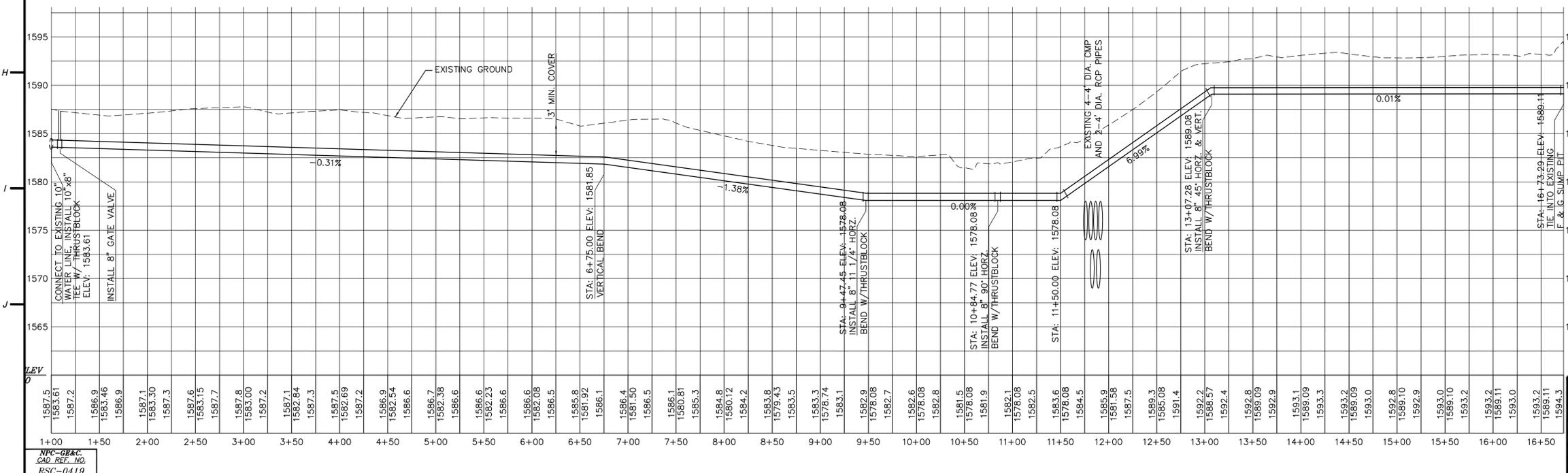
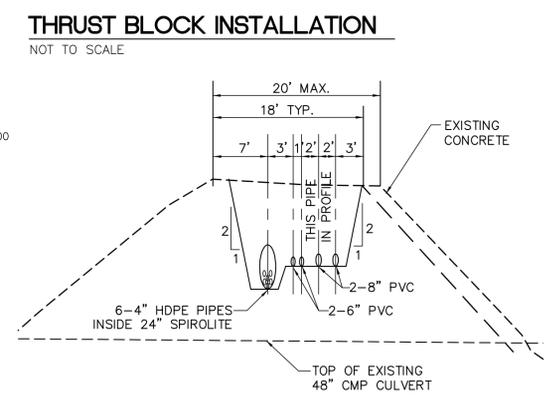




GENERAL NOTES

ALL CONCRETE SHALL BE 3000 PSI MINIMUM, 28 DAYS COMPRESSIVE STRENGTH. CONCRETE IS TO BE PLACED IN UNDISTURBED EARTH. TABLE BELOW DENOTES MINIMUM BEARING AREA OR VOLUME OF THRUST BLOCK. ALL VERTICAL SURFACES NOT BEARING AGAINST UNDISTURBED EARTH SHALL BE FORMED.

PIPE ID	BEARING AREA IN SQ FT						CONC/CU YDS		
	FIGURE 1	FIGURE 2	FIGURE 3, Δ	FIGURE 3, Δ	FIGURE 4, Δ				
4"	1	2	90°	45°	22½"	11½"	45°	22½"	11½"
6"	2	3	4	2	1	1	1.5	1.0	0.5
8"	3	5	7	4	2	1	3.0	1.5	1.0
10"	4	8	10	6	3	2	4.5	2.5	1.5
12"	5	11	16	8	4	2	6.5	3.0	1.5



RECORD DRAWINGS

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702/270-3610

Nevada Power
Las Vegas, Nevada

**REID GARDNER STATION
POND D & E RECONSTRUCTION
WATER LINE PLAN & PROFILE**

REVISIONS

75% REVIEW 8/02
2 E POND 8/02
RECORD DRAWINGS
D.S.I.

WORK ORDER
98132819.01

DRAWING STATUS
DWN: MAW
DATE: 5/1/02

CHK'D:
DATE:

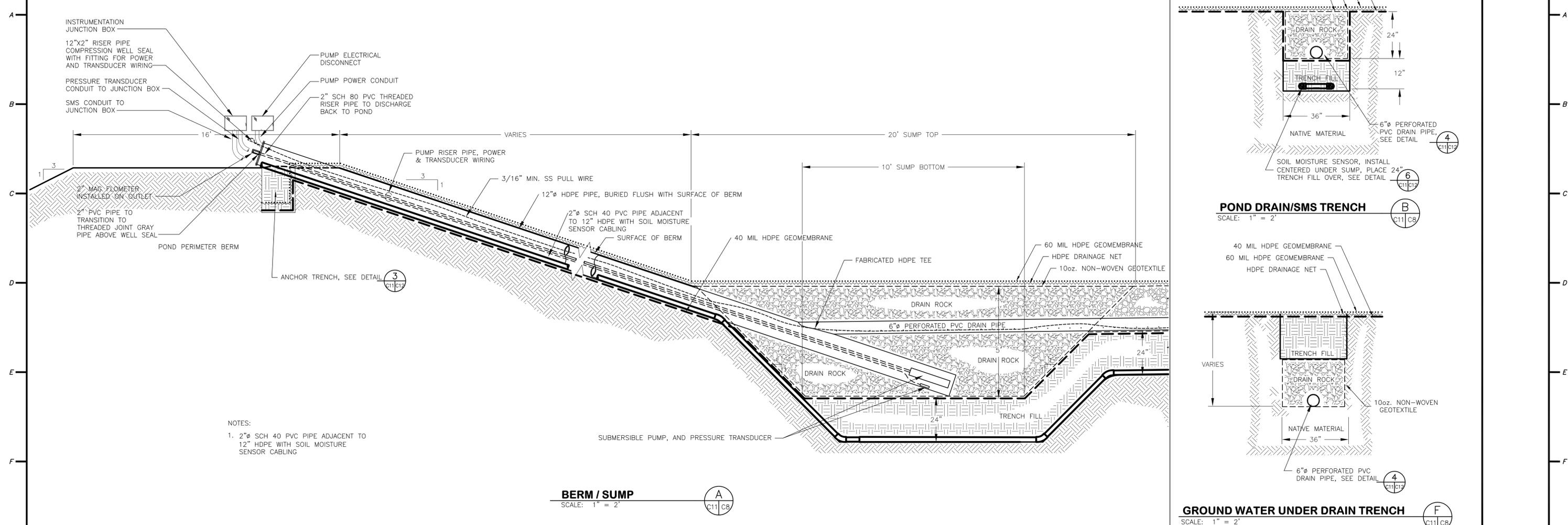
APP'D:
DATE:

SCALE:
1"=60'

DRAWING NUMBER
RSG-C
0419

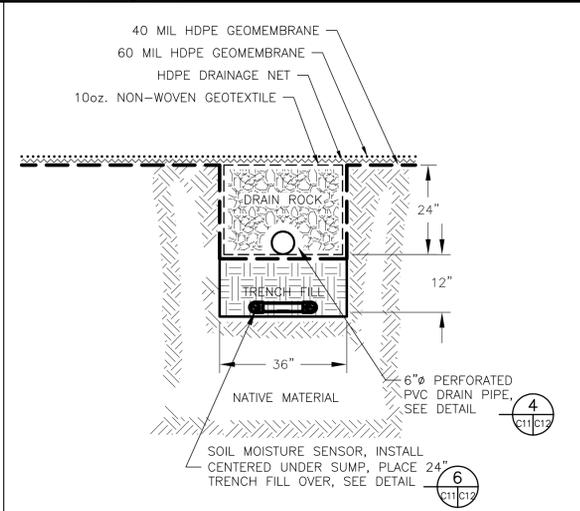
SHEET NO./REV
C-10

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

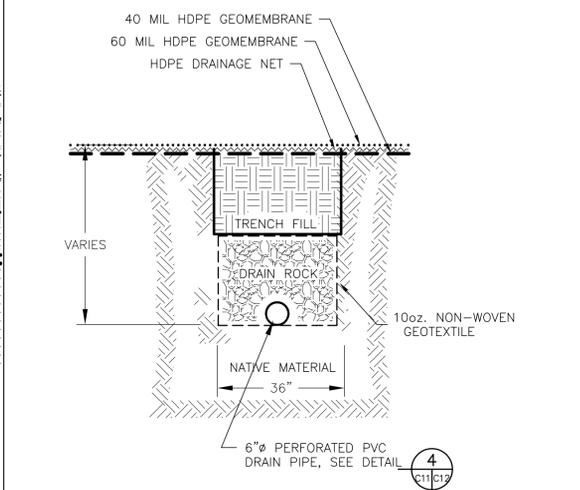


NOTES:
 1. 2" SCH 40 PVC PIPE ADJACENT TO 12" HDPE WITH SOIL MOISTURE SENSOR CABLING

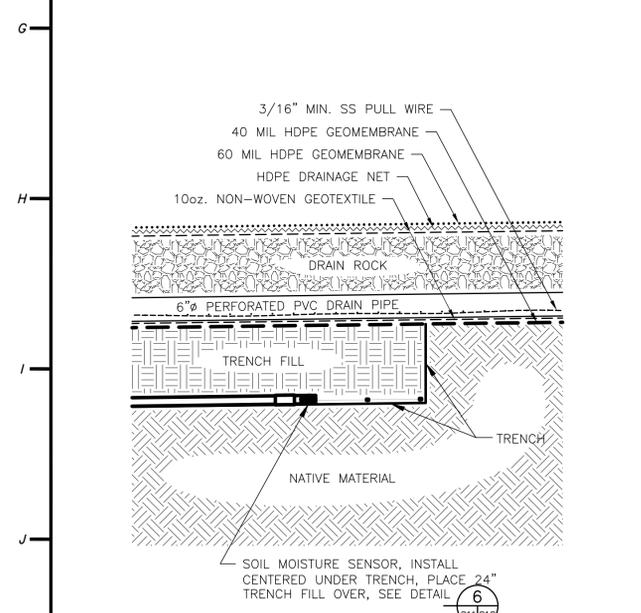
BERM / SUMP
 SCALE: 1" = 2'
 A
 C11 C8



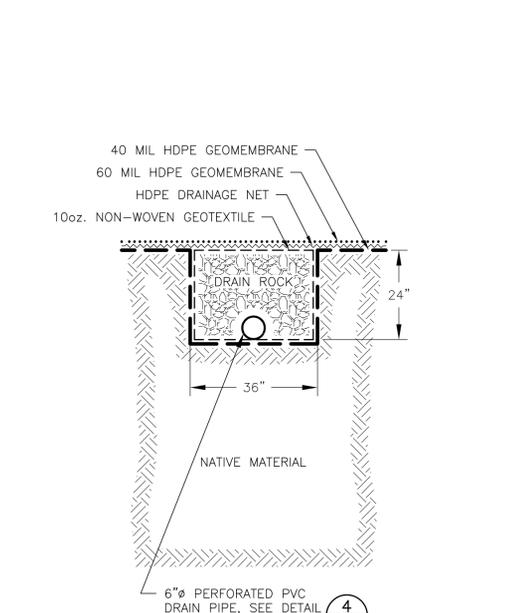
POND DRAIN/SMS TRENCH
 SCALE: 1" = 2'
 B
 C11 C8



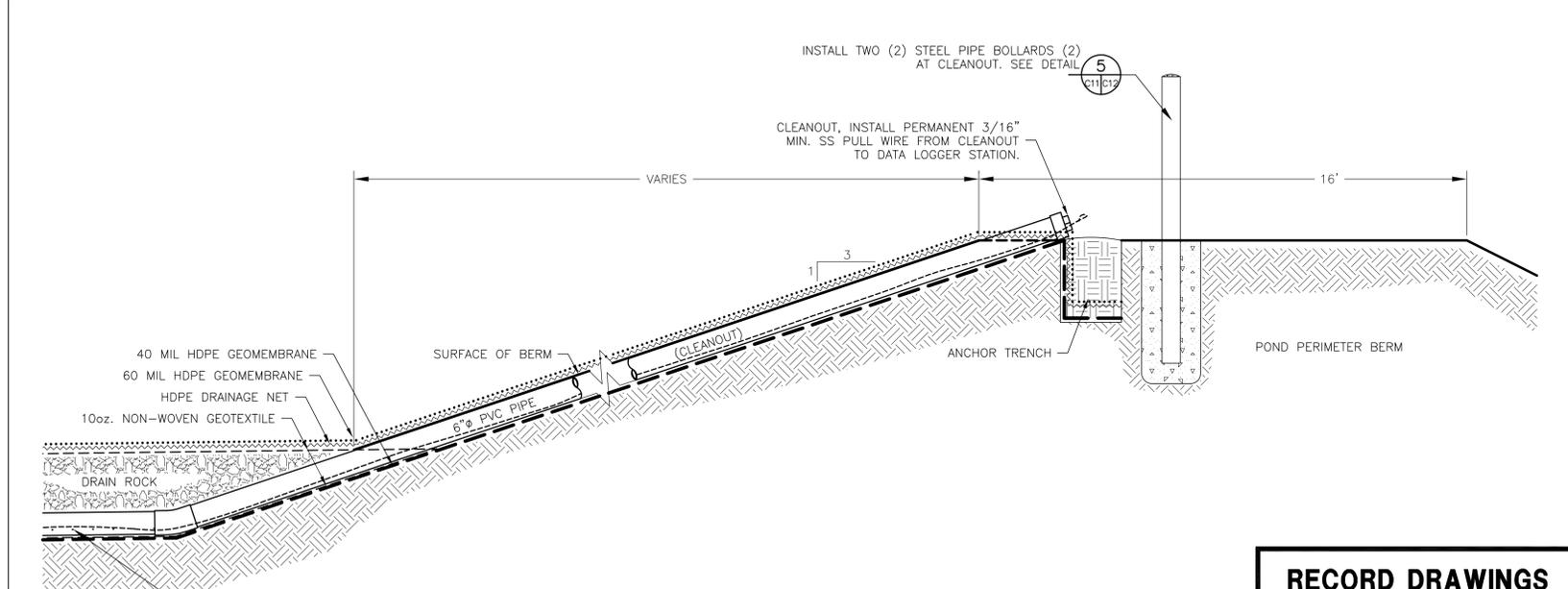
GROUND WATER UNDER DRAIN TRENCH
 SCALE: 1" = 2'
 F
 C11 C8



POND DRAIN/SMS TRENCH
 SCALE: 1" = 2'
 C
 C11 C8



POND DRAIN TRENCH
 SCALE: 1" = 2'
 D
 C11 C8



BERM/CLEANOUT
 SCALE: 1" = 2'
 E
 C11 C8

REVISIONS

75% REVIEW	8/02
95% REVIEW	9/02
ISSUED FOR CONSTRUCTION DEC 02	
RECORD DRAWINGS	DEC 05
D.S.I.	

WORK ORDER

DRAWING STATUS

DWN: DATE:

CHK'D: DATE:

APP'D: DATE:

RECORD DRAWINGS

Kennedy/Jenks Consultants
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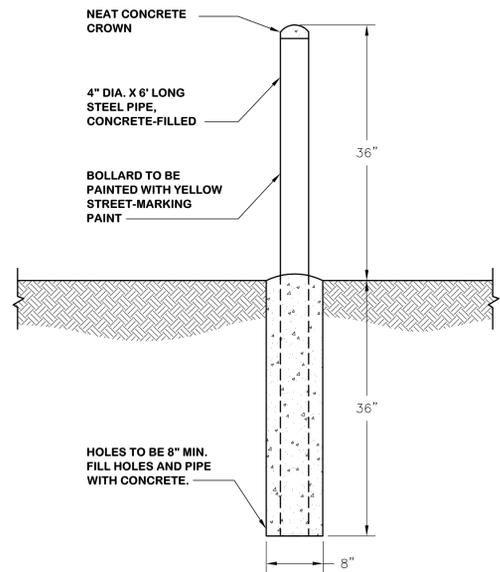
Nevada Power
 Las Vegas Nevada

DRAWING NUMBER
 RSG-C-0420

REID GARDNER STATION
 DRAIN SYSTEM CROSS SECTIONS

SHEET NO./REV.
 C-11
 B

NPC-GB&C
 CAD REF. NO.
 RSC-0420

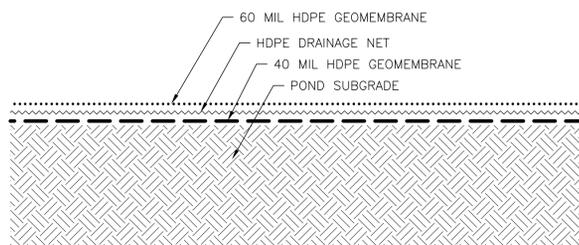


TYPICAL BOLLARD DETAIL

SCALE: 1"=1"

1
C11/C12

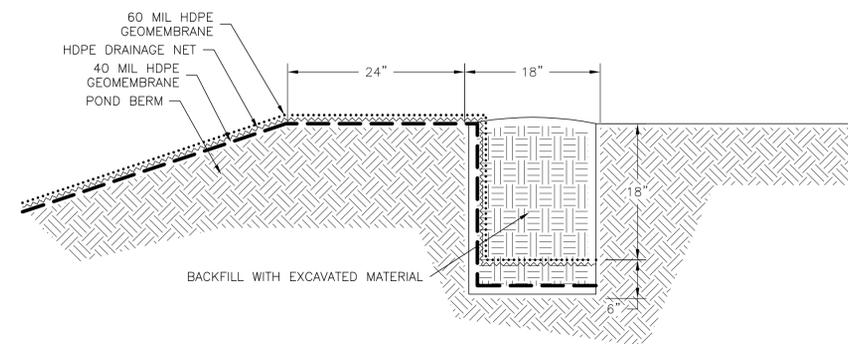
- NOTES:
1. PROVIDE ADEQUATE CLEARANCE FOR ITEMS SUCH AS COOLING COILS AND OPENING OF DOORS OF EQUIPMENT.
 2. INSTALLATION OF BARRIER MUST BE COORDINATED WITH ELECTRICAL CABLES OR CONDUIT INSTALLATION TO AVOID MUTUAL INTERFERENCE
 3. WHEN OVERHEAD OBSTACLES PREVENT REMOVAL OF EQUIPMENT BY CRANE, TWO ADJACENT BARRIERS MUST BE MADE REMOVABLE.



TYPICAL LINER INSTALLATION DETAIL

NOT TO SCALE

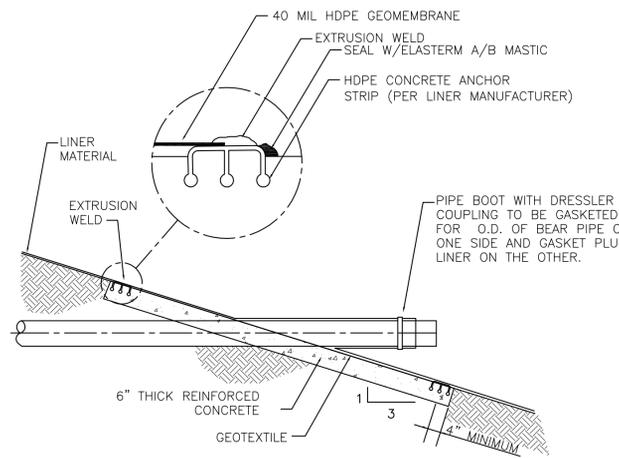
2
C11/C12



TYPICAL ANCHOR TRENCH DETAIL

SCALE: 1"=2"

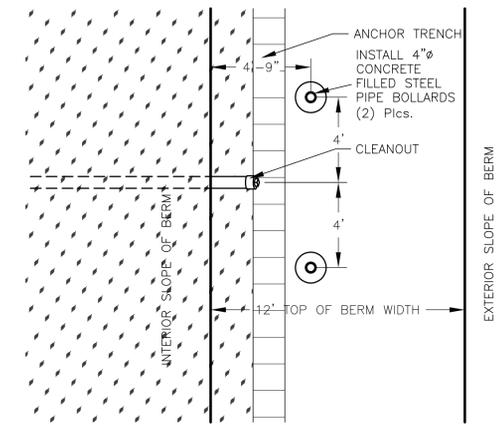
3
C11/C12



TYPICAL PIPE BOOT DETAIL

NOT TO SCALE

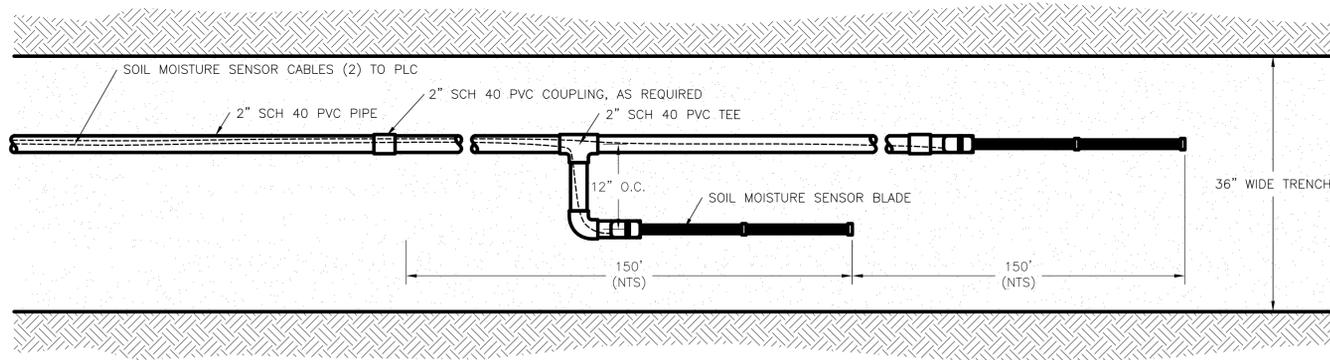
8
C11/C12



TYPICAL BOLLARD LOCATION PLAN

SCALE: 1"=2"

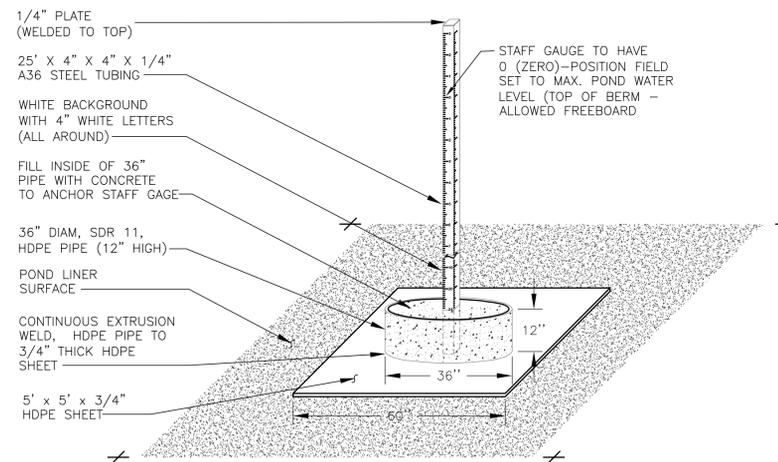
5
C11/C12



SOIL MOISTURE SENSOR LAYOUT PLAN

SCALE: 1"=1"

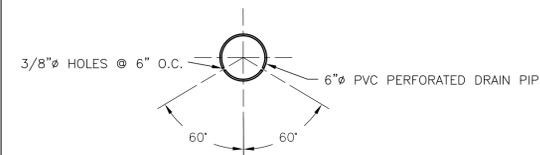
6
C11/C12



TYPICAL STAFF GAGE DETAIL

NOT TO SCALE

7
C11/C12



TYPICAL DRAIN PIPE SECTION

NOT TO SCALE

4
C11/C12

RECORD DRAWINGS

Kennedy/Jenks Consultants
840 Oriole Drive, Suite 300
Las Vegas, Nevada 89119
702/270-3610

Nevada Power
Las Vegas Nevada

REID GARDNER STATION
DRAINAGE SYSTEM DETAILS

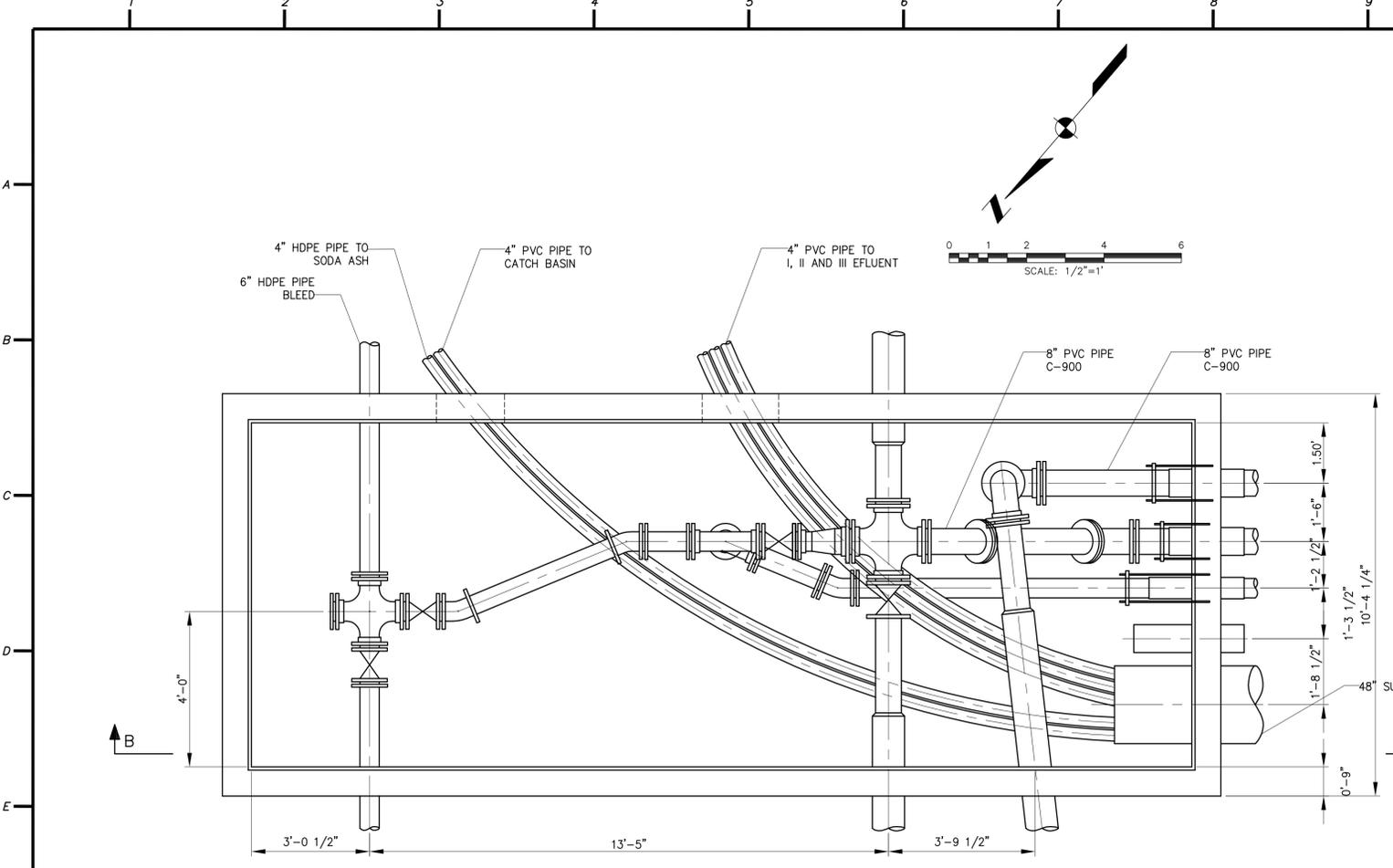
WORK ORDER
DRAWING STATUS
DWN:
DATE:
CHK'D:
DATE:
APP'D:
DATE:

SCALE:
NOTED

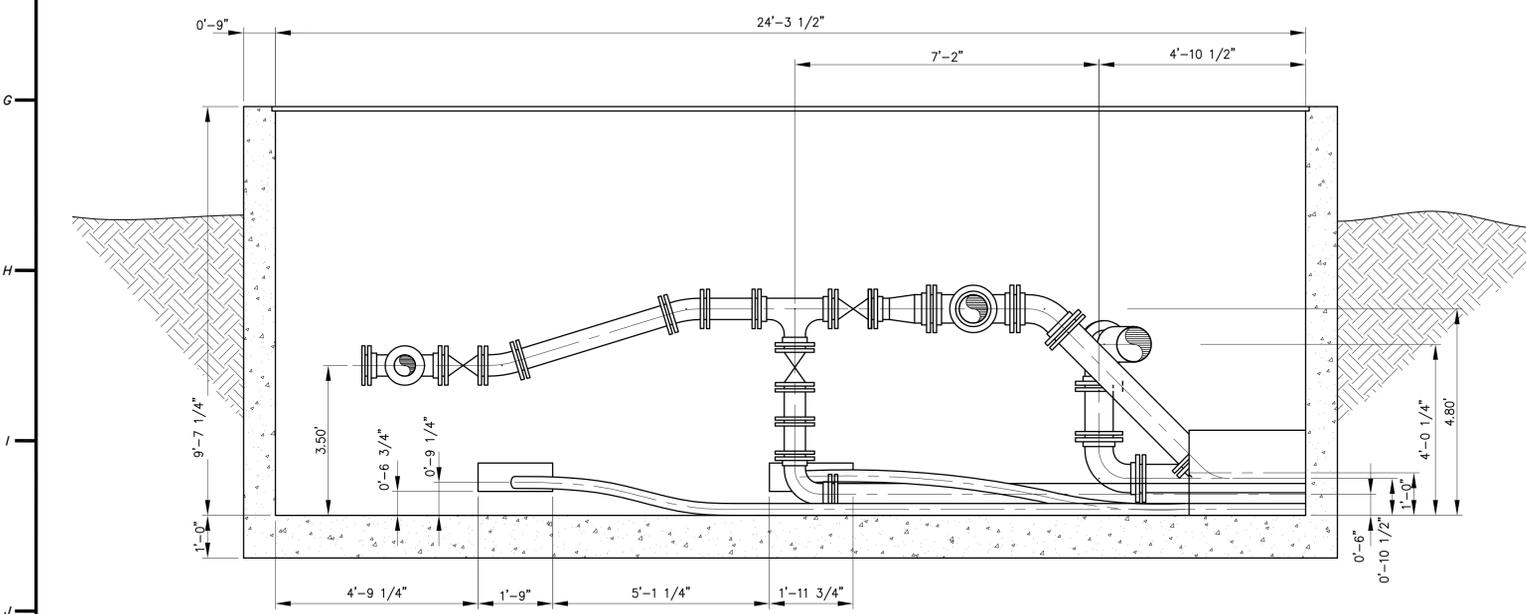
DRAWING NUMBER
RSG-C-0421

SHEET NO./REV.
C-12
B

REVISIONS
 75% REVIEW 8/02
 ISSUED FOR CONSTRUCTION DEC 02
 RECORD DRAWINGS DEC 05
 D.S.I.

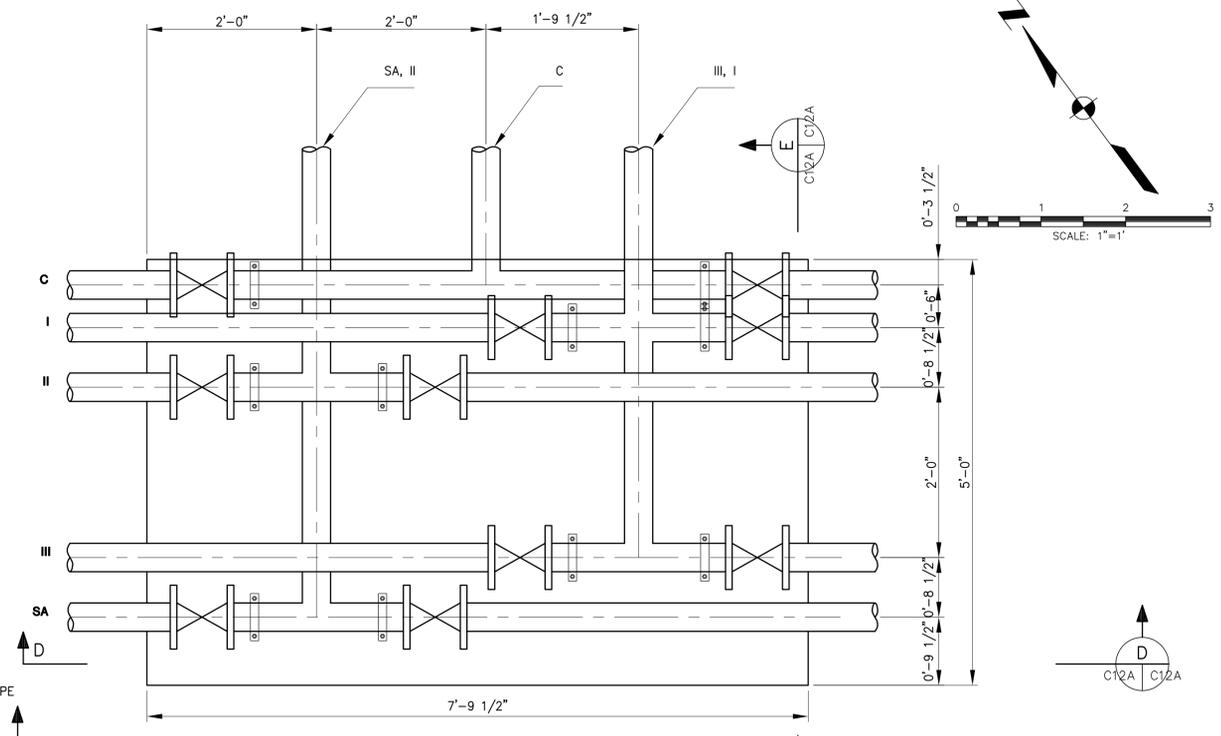


PLAN
 SCALE: 1/2"=1'
 C11A C12A

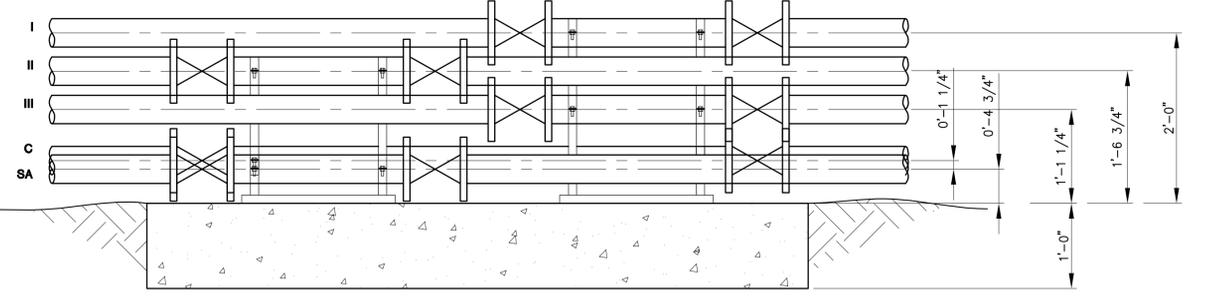


SECTION
 SCALE: 1/2"=1'
 C11A C12A

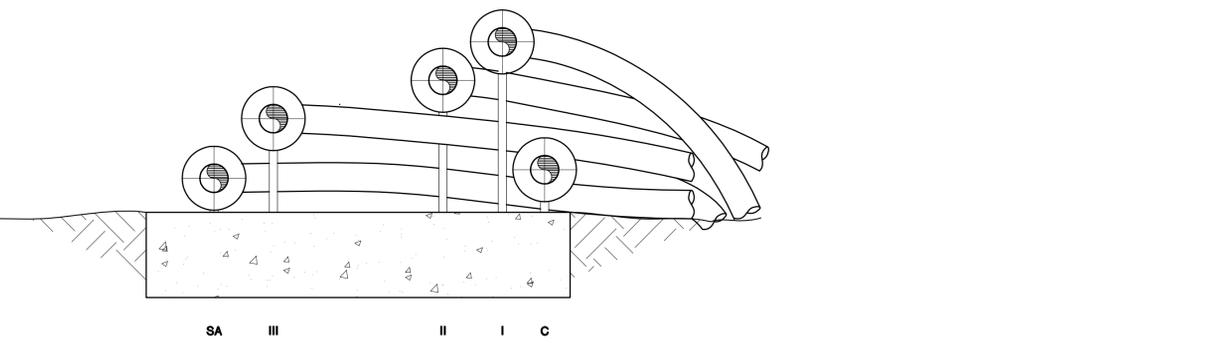
POELLER VAULT
 SCALE: 1/2"=1'
 C5, C10 C12A



PLAN
 SCALE: 1"=1'
 C11A C12A



SECTION
 SCALE: 1"=1'
 C11A C12A



SECTION
 SCALE: 1"=1'
 C11B C12A

SCRUBBER DISCHARGE HEADER
 SCALE: 1"=1'
 C5, C10 C12A

RECORD DRAWINGS

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 702/270-3610

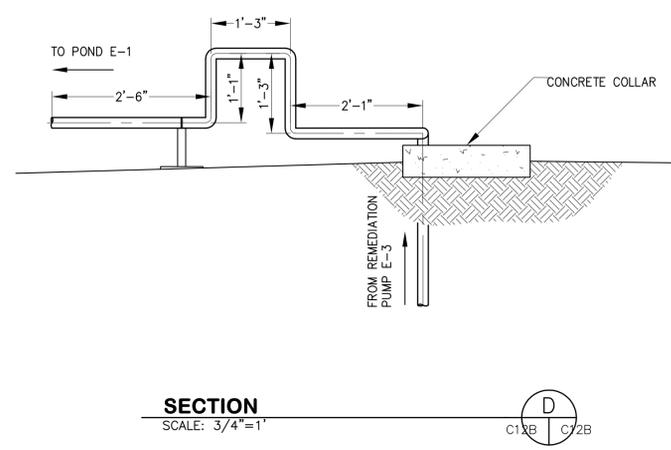
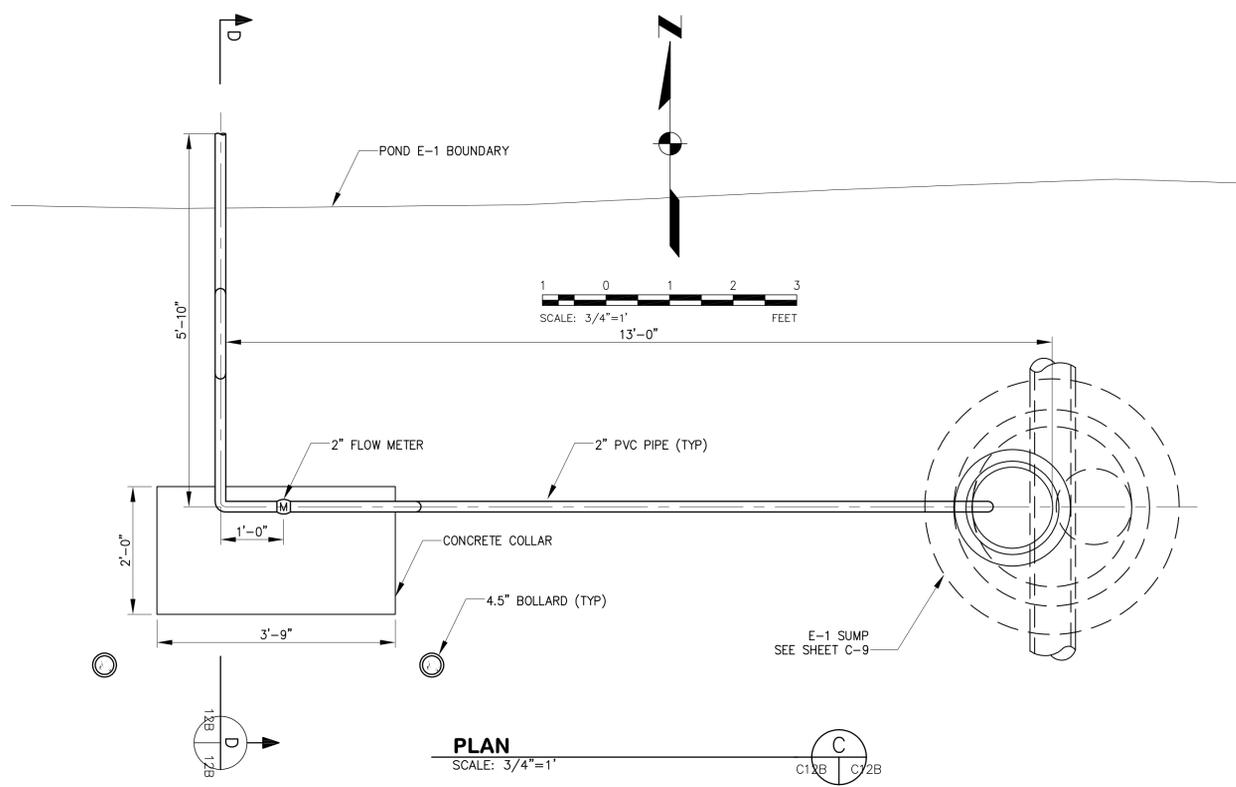
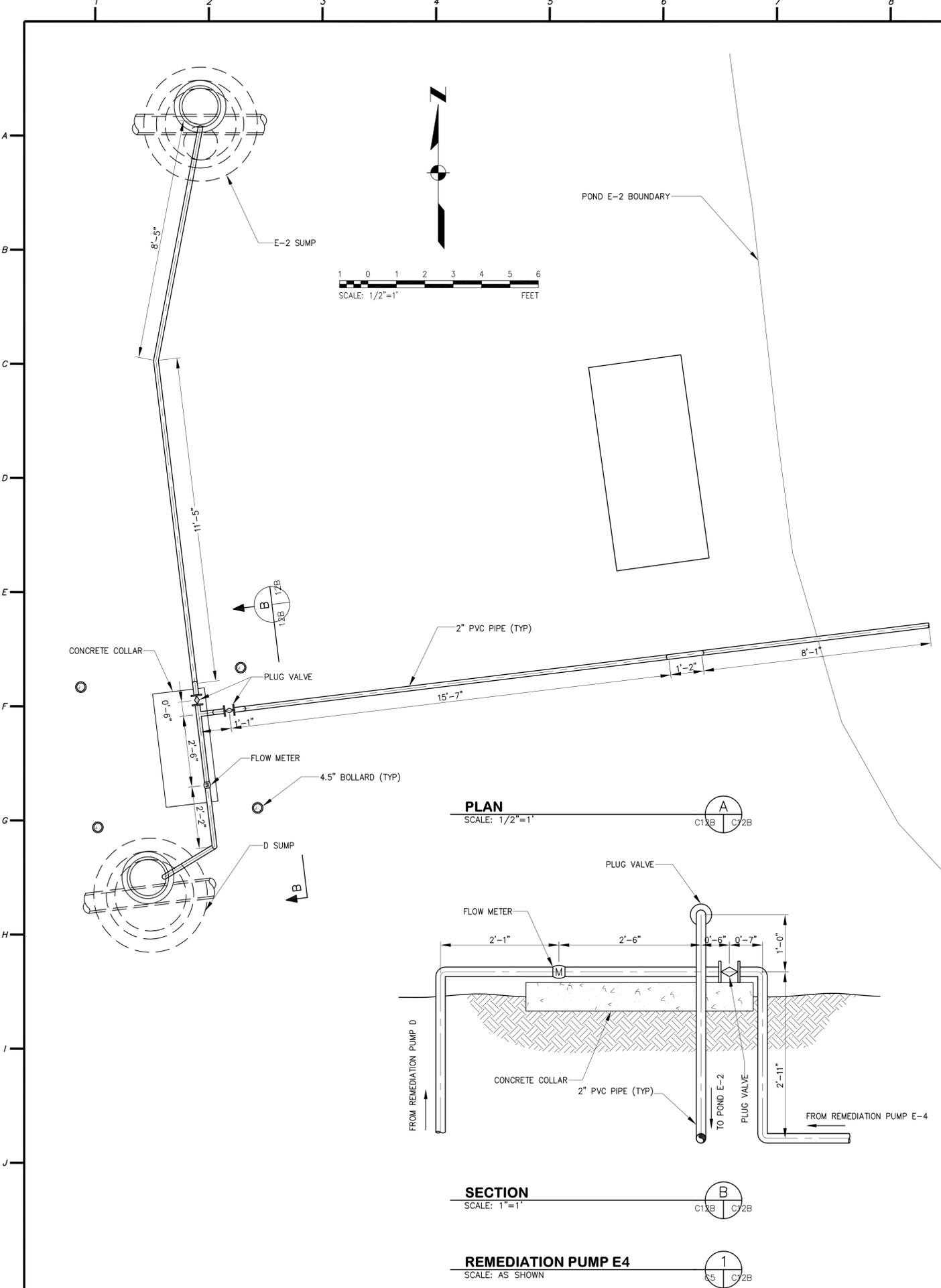
Nevada Power
 Las Vegas Nevada

REID GARDNER STATION
 PONDS D & E RECONSTRUCTION
 PIPE DETAILS

WORK ORDER
 98132819.01
 DRAWING STATUS
 DWN: DSI
 DATE: OCT. 2005
 CHK'D:
 DATE:
 APP'D:
 DATE:
 SCALE:
 AS SHOWN
 DRAWING NUMBER
 RSG-C
 0421-A
 SHEET NO./REV.
 C-12A

NPC-GB&C
 CAD REF. NO.
 RSC-0412

REVISIONS
 75% REVIEW 8/02
 ISSUED FOR CONSTRUCTION DEC 02
 RECORD DRAWINGS DEC 05
 D.S.I.



REMEDATION PUMP E3
 SCALE: 3/4"=1'
 C1XB C2B

RECORD DRAWINGS

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 702/270-3610

Nevada Power
 Las Vegas Nevada

REID GARDNER STATION
PONDS D & E RECONSTRUCTION
REMEDATION PUMPS AND PIPINGS

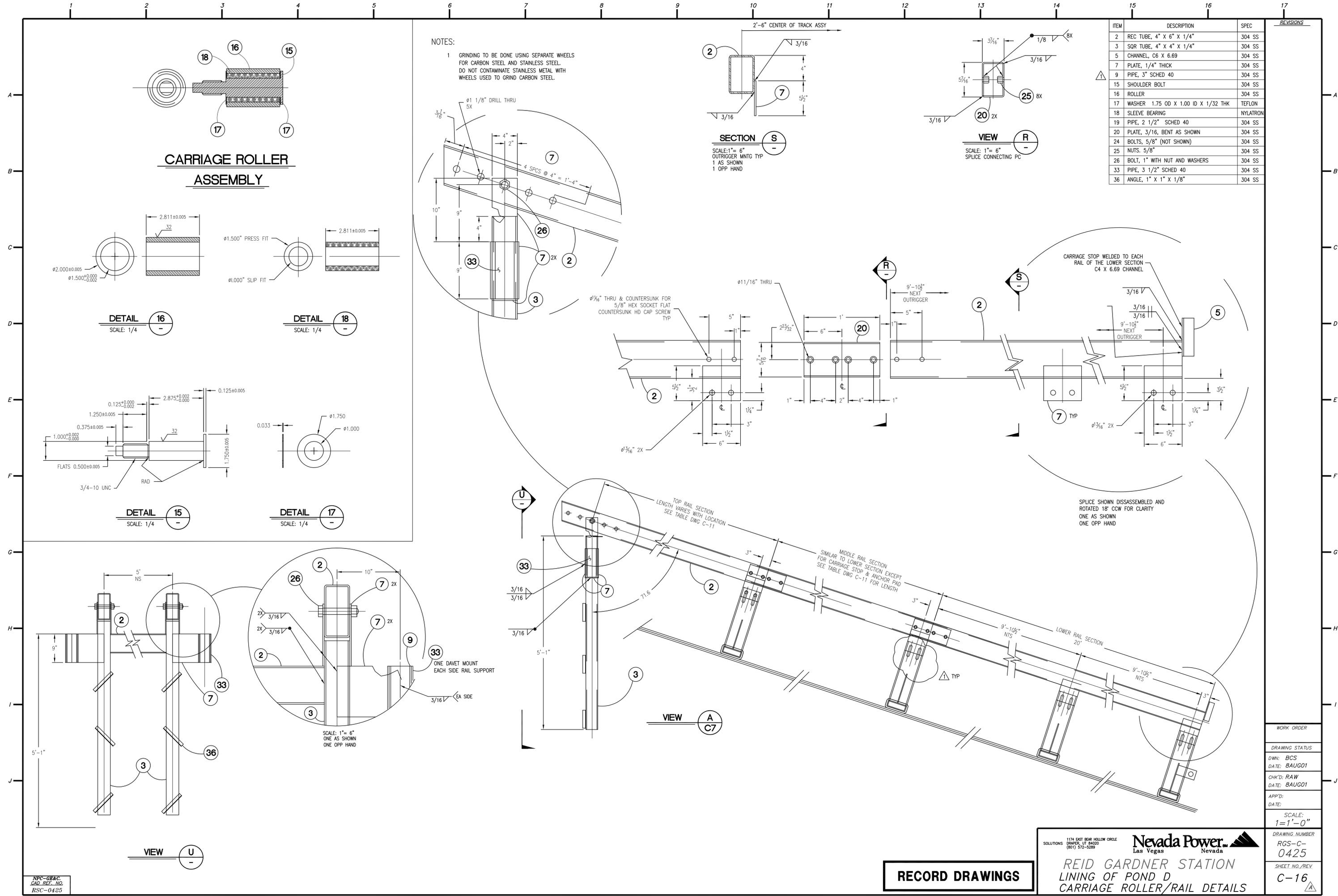
WORK ORDER	98132819.01
DRAWING STATUS	
DWN: DSI	
DATE: OCT. 2005	
CHK'D:	
DATE:	
APP'D:	
DATE:	
SCALE:	AS SHOWN
DRAWING NUMBER	RSG-C 0421-B
SHEET NO./REV.	C-12B B

NPC-GB&C
 CAD REF. NO.
 RSC-0412

CARRIAGE ROLLER ASSEMBLY

NOTES:
 1 GRINDING TO BE DONE USING SEPARATE WHEELS FOR CARBON STEEL AND STAINLESS STEEL. DO NOT CONTAMINATE STAINLESS METAL WITH WHEELS USED TO GRIND CARBON STEEL.

ITEM	DESCRIPTION	SPEC	REVISIONS
2	REC TUBE, 4" X 6" X 1/4"	304 SS	
3	SQR TUBE, 4" X 4" X 1/4"	304 SS	
5	CHANNEL, C6 X 6.69	304 SS	
7	PLATE, 1/4" THICK	304 SS	
9	PIPE, 3" SCHED 40	304 SS	
15	SHOULDER BOLT	304 SS	
16	ROLLER	304 SS	
17	WASHER 1.75 OD X 1.00 ID X 1/32 THK	TEFLON	
18	SLEEVE BEARING	NYLATRON	
19	PIPE, 2 1/2" SCHED 40	304 SS	
20	PLATE, 3/16, BENT AS SHOWN	304 SS	
24	BOLTS, 5/8" (NOT SHOWN)	304 SS	
25	NUTS, 5/8"	304 SS	
26	BOLT, 1" WITH NUT AND WASHERS	304 SS	
33	PIPE, 3 1/2" SCHED 40	304 SS	
36	ANGLE, 1" X 1" X 1/8"	304 SS	



NPC-GB&C
 CAD REF: NO
 RSC-0425

RECORD DRAWINGS

1174 EAST BEAR HOLLOW CIRCLE
 SOLUTIONS DRAPER, UT 84020
 (801) 572-5289

Nevada Power
 Las Vegas Nevada

REID GARDNER STATION
 LINING OF POND D
 CARRIAGE ROLLER/RAIL DETAILS

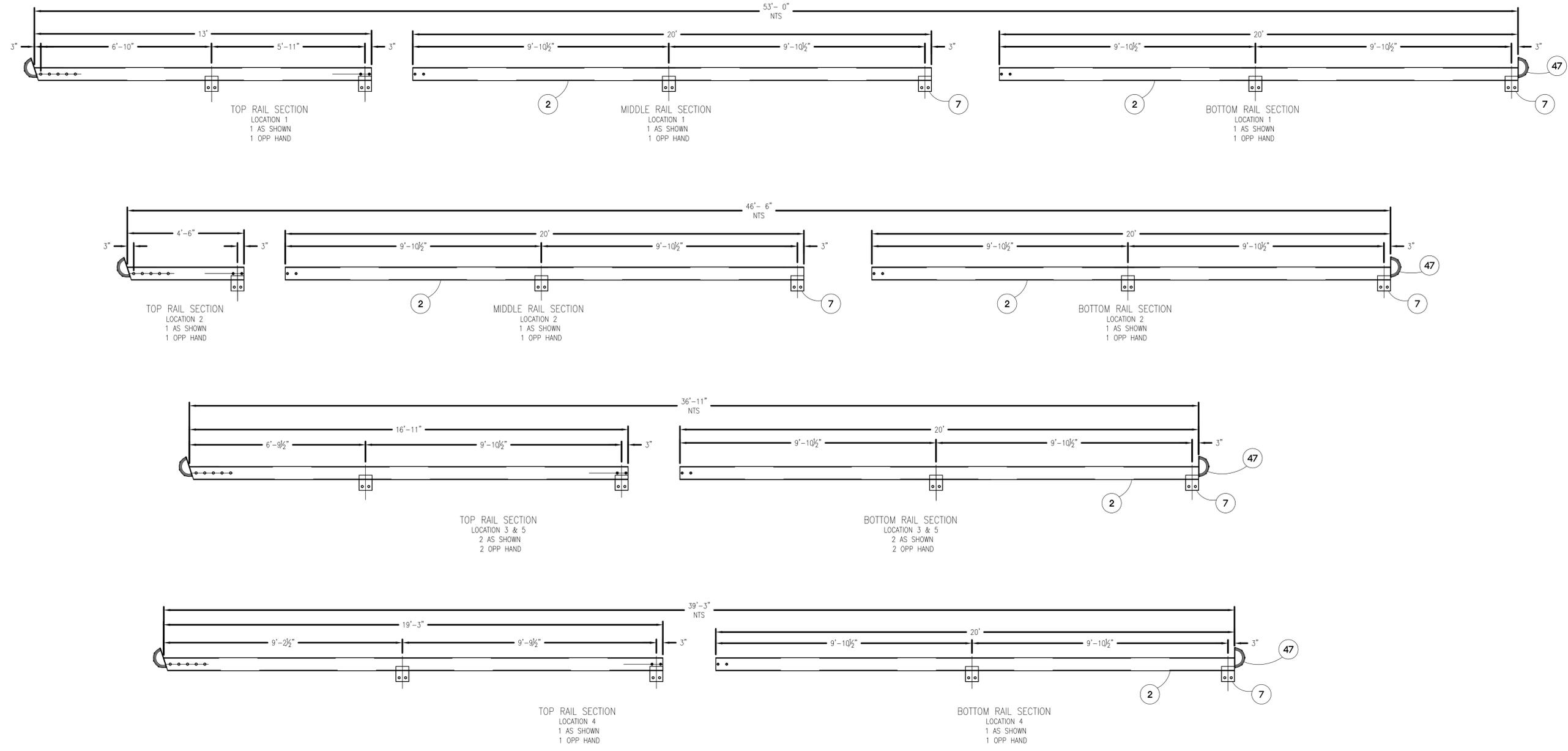
WORK ORDER
DRAWING STATUS
DWN: BCS
DATE: BAUG01
CHK'D: RAW
DATE: BAUG01
APP'D:
DATE:
SCALE: 1" = 1'-0"
DRAWING NUMBER RGS-C- 0425
SHEET NO./REV C-16

TRACK LOCATION (SEE DWG C-05)	LENGTH OF TRACK = DISTANCE CREST TO TOE LESS 6" PLUS EXTENSION	TOP SECTION SEE DWG C-17		MIDDLE SECTION SEE DWG C-17		LOWER SECTION SEE DWG C-17	
		LENGTH	OUTRIGGERS	LENGTH	OUTRIGGERS	LENGTH	OUTRIGGERS
1 STA	$50'-8'' - 6'' + 2'-10'' = 53'-0''$	13'-0"	2	20'	2	20'-0"	2
2 STA	$44'-2'' - 6'' + 2'-10'' = 46'-6''$	6'-6"	1	20'	2	20'-0"	2
3 STA	$34'-7'' - 6'' + 2'-10'' = 36'-11''$	16'-11"	2	0	0	20'-0"	2
4 STA	$36'-11'' - 6'' + 2'-10'' = 39'-3''$	19'-3"	2	0	0	20'-0"	2
5 STA	$34'-7'' - 6'' + 2'-10'' = 36'-11''$	16'-11"	2	0	0	20'-0"	2

CONTRACTOR TO VERIFY ALL TRACK
LENGTHS AFTER FINAL GRADING

ITEM	DESCRIPTION	SPEC
2	REC TUBE, 4" X 6" X 1/4"	304 SS
4	PLATE, 1/2" THICK	304 SS
7	PLATE, 1/4" THICK	304 SS
47	CABLE GUIDE (SEE C-16 FOR DETAIL)	304 SS

REVISIONS
INITIAL ISSUE POND E
SEPT 02



NPC-GB&C
CAD REF. NO.
0428

RECORD DRAWINGS

Nevada Power
Las Vegas Nevada

REID GARDNER STATION
LINING OF POND E
RAIL DETAILS

WORK ORDER
DRAWING STATUS
DWN: REK
DATE: 29MAY02
CHK'D: DRW
DATE: 31MAY02
APP'D:
DATE:
SCALE: 1/2" = 1'-0"
DRAWING NUMBER RGS-C- 0428
SHEET NO./REV C-19

REINFORCING STEEL

1. REINFORCING STEEL - A.S.T.M. A-615 WITH GRADES AS LISTED BELOW:

MATERIAL	SIZE	GRADE
CONCRETE	ALL SIZES	60
MASONRY		

2. ALL WELDED REINFORCING BARS SHALL BE A.S.T.M. A-706. USE LOW HYDROGEN ELECTRODES AS FOLLOWS:

WELDED MEMBERS	ELECTRODE
REBAR TO REBAR	E80XX
REBAR TO A36 BASE METAL	E70XX

3. WELDED WIRE FABRIC - A.S.T.M. A-185.

4. UNLESS NOTED OTHERWISE, MINIMUM PROTECTIVE COVER AS FOLLOWS:

CONDITION	CLEAR DISTANCE
ON EARTH SIDE - PLACED AGAINST EARTH	3"
ON EARTH SIDE WHEN FORMED	2"
STEEL IN SLAB ON GRADE	∅ SLAB

5. BAR SPLICE LAPS SHALL BE AS FOLLOWS:

F'c (PSI)	BAR SIZE				
	#7	#8	#9	#10	#11
4,500	23"	30"	38"	49"	60"

A. CONCRETE REINFORCING - #3 THRU #6 SEE DETAIL 4/S-1A. FOR BARS LARGER THAN #6, SEE SCHEDULE ABOVE.

B. MASONRY REINFORCING - SEE DETAIL 4/S-1A.

C. WELDED WIRE FABRIC - SPACING OF WIRE PLUS 2".

6. REINFORCING DETAILING, BENDING AND PLACING SHALL BE IN ACCORDANCE WITH THE CONCRETE REINFORCING STEEL INSTITUTE'S MANUAL OF STANDARD PRACTICE, LATEST EDITION AND A.C.I. 315.

7. ALL REINFORCING STEEL, WELDED WIRE FABRIC, ANCHOR BOLTS, DOWELS AND INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO AND WHILE PLACING CONCRETE OR GROUT.

8. UNLESS OTHERWISE NOTED OR SHOWN, SPACER TIES SHALL BE #3 TIES AT 72 IN. IN ALL BEAMS AND REINFORCED FOOTINGS.

9. ALL FIELD WELDING SHALL HAVE CONTINUOUS SPECIAL INSPECTION.

STRUCTURAL STEEL

1. MATERIAL AND WORKMANSHIP SHALL CONFORM TO A.I.S.C. SPECIFICATIONS FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, LATEST EDITION.

2. STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING A.S.T.M. DESIGNATION:

MEMBER	DESIGNATION
STRUCTURAL TUBES	A500, GRADE B (Fy = 46 KSI)
PIPE COLUMNS	A53, TYPE E OR S, GRADE B
'W' ROLLED SHAPES	A992 (Fy = 50 KSI)
UNFINISHED BOLTS	A307
HIGH STRENGTH BOLTS	A325 U.N.O.
OTHER STRUCTURAL STEEL	A36

3. PROVIDE FULL BEARING ON UNTHREADED PORTION OF SHANK FOR BOLTS AT ALL STEEL MEMBER CONNECTIONS UNLESS NOTED OTHERWISE.

4. WELDS SHALL BE MADE ONLY BY CERTIFIED WELDERS AS PRESCRIBED IN THE STANDARD CODE FOR WELDING IN BUILDING CONSTRUCTION OF THE AMERICAN WELDING SOCIETY.

5. WELDING ELECTRODES: LOW HYDROGEN E70XX SERIES PER A.W.S. D1-1, UNLESS NOTED OTHERWISE.

6. ALL FIELD WELDING AND HIGH STRENGTH BOLTING SHALL BE UNDER CONTINUOUS SPECIAL INSPECTION. SPECIAL INSPECTION NEED NOT BE CONTINUOUSLY PRESENT DURING WELDING OF THE SINGLE-PASS FILLET WELDS NOT GREATER THAN ~5" IN SIZE, PROVIDED THE MATERIALS AND QUALIFICATIONS OF WELDING PROCEDURES AND WELDERS ARE VERIFIED PRIOR TO THE START OF WORK; PERIODIC INSPECTIONS ARE MADE OF WORK IN PROGRESS; AND A VISUAL INSPECTION OF ALL WELDS IS MADE PRIOR TO COMPLETION OR PRIOR TO SHIPMENT OF SHOP WELDING.

7. SHOP WELDING MUST BE DONE BY A FABRICATOR APPROVED AND RECOGNIZED BY THE BUILDING OFFICIAL OR WELDING MUST HAVE CONTINUOUS SPECIAL INSPECTION. A RECOGNIZED TESTING LAB IS ONE SUPERVISED BY A STATE REGISTERED ENGINEER. A 'CERTIFICATE OF CONFORMANCE' SHALL BE SUBMITTED TO THE DEPARTMENT OF BUILDING INSPECTION AND THE ENGINEER FOR ALL SHOP WELDED WORK.

GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES. ANY OMISSION OR CONFLICT BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK SO AFFECTED.

2. NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS ON THIS SHEET IN CASE OF CONFLICT.

3. ALL CONSTRUCTION AND QUALITY OF MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE U.B.C., AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

4. WHERE CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, SUCH DETAILS SHALL BE THE SAME AS FOR SIMILAR WORK SHOWN ON THE DRAWINGS. WHERE SUFFICIENTLY SIMILAR WORK IS NOT SHOWN, THE ENGINEER SHALL BE CONSULTED FOR CLARIFICATION.

5. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO LOCATE AND PROTECT ANY UNDERGROUND OR CONCEALED CONDUIT, PLUMBING OR OTHER UTILITIES WHERE NEW WORK IS BEING PERFORMED, PRIOR TO BEGINNING EXCAVATIONS.

6. PIPES, DUCTS, SLEEVES, ETC., UP TO A DIAMETER OF 4 INCHES MAY BE PLACED IN SLABS, BEAMS, FOOTINGS OR WALLS. IF THE LOCATION OF THESE ITEMS ARE SPECIFICALLY SHOWN IN DETAILS, DO NOT DEVIATE FROM THE LOCATION SHOWN WITH OUT NOTIFYING THE STRUCTURAL ENGINEER. STRUCTURAL MEMBERS SHALL NOT BE CUT FOR PIPES, DUCTS, ETC., UNLESS NOTED OTHERWISE.

7. THE CONTRACTOR SHALL COORDINATE EXACT WEIGHTS AND LOCATIONS OF EQUIPMENT WITH THE STRUCTURAL SUPPORTS. IN THE EVENT THAT THE EQUIPMENT DEVIATES IN WEIGHT OR LOCATION FROM THOSE INDICATED ON THE DRAWING, THE STRUCTURAL ENGINEER MUST BE NOTIFIED AND APPROVAL GIVEN PRIOR TO INSTALLATION.

8. THIS STRUCTURE IS DESIGNED AS A STABLE UNIT AFTER ALL COMPONENTS ARE IN PLACE AND PROPERLY CONNECTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY BRACING, AS REQUIRED, TO INSURE THE VERTICAL AND LATERAL STABILITY OF THE ENTIRE STRUCTURE OR ANY PORTION THEREOF DURING CONSTRUCTION.

9. NEITHER THE OWNER NOR THE ENGINEER WILL ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING AND BRACING AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.

10. ANY OPTIONS OR SUBSTITUTIONS ARE FOR THE CONTRACTOR'S CONVENIENCE. NO STRUCTURAL CHANGES OR SUBSTITUTIONS SHALL BE MADE IN THE FIELD FROM THE APPROVED CONSTRUCTION DOCUMENTS UNLESS WRITTEN APPROVAL OF SUCH CHANGES OR SUBSTITUTIONS IS OBTAINED FROM THE STRUCTURAL ENGINEER. IF CHANGES ARE MADE WITHOUT WRITTEN APPROVAL, SUCH CHANGES, ALONG WITH ANY ADDITIONAL COSTS, REPAIRS AND COORDINATION WITH OTHER AFFECTED ITEMS SHALL BE THE LEGAL AND FINANCIAL RESPONSIBILITY OF THE CONTRACTOR AND/OR SUBCONTRACTORS INVOLVED.

11. A CIVIL ENGINEER REGISTERED IN THE STATE OF NEVADA SHALL DESIGN AND BE RESPONSIBLE FOR ANY SUPPLEMENTAL FABRICATION DESIGNS OF BUILDING COMPONENTS. IT SHALL BE THE RESPONSIBILITY OF THE COMPONENT FABRICATOR TO COMPLY WITH ALL APPLICABLE REGULATIONS AND TO OBTAIN APPROVAL FROM THE NECESSARY GOVERNING AGENCIES ON SUCH DESIGNS. PRIOR TO CONSTRUCTION AND/OR FABRICATION OF THE ALTERNATE COMPONENTS, THE DESIGN SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER OF RECORD FOR CONFORMANCE WITH THE STRUCTURAL DESIGN AS APPROVED FOR BUILDING PERMIT.

REINFORCED CONCRETE

1. UNLESS NOTED OTHERWISE, THE SPECIFIED CONCRETE STRENGTH SHOWN IN THE FOLLOWING TABLE IS THE MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS. THE AGGREGATE SHOWN IS THE MAXIMUM SIZE. THE SLUMP SHOWN IS THE MAXIMUM IN INCHES (REGULAR WEIGHT - 145 PSF).

CONSTRUCTION	STRENGTH (PSI)	AGGREGATE	H ₂ O/CEMENT RATIO	SLUMP
FOUNDATION	4,500 U.N.O.	1 1/2"	0.45	4
WALL	4,500	1"	0.45	4
SLAB ON GRADE	4,500	1"	0.45	5

2. DRY PACK SHALL BE COMPOSED OF 1 PART PORTLAND CEMENT AND NO MORE THAN 3 PARTS SAND.

3. PORTLAND CEMENT SHALL CONFORM TO A.S.T.M. C 150 TYPE V. STRUCTURAL CONCRETE AGGREGATE SHALL CONFORM TO A.S.T.M. C 33 FOR STANDARD WEIGHT OR C 330 FOR LIGHTWEIGHT.

4. CONTINUOUS SPECIAL INSPECTION IS NOT REQUIRED FOR STRUCTURAL CONCRETE.

5. ADMIXTURES MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER. ADMIXTURES USED TO INCREASE THE WORKABILITY OF THE CONCRETE SHALL NOT BE CONSIDERED TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT (CALCIUM CHLORIDE SHALL NOT BE USED). CONCRETE SHALL NOT COME IN CONTACT WITH ALUMINUM.

6. NO CONDUIT PLACED IN A CONCRETE SLAB OR FOOTING SHALL HAVE AN OUTSIDE DIAMETER GREATER THAN 1/3 THE THICKNESS OF THE SLAB OR FOOTING. NO CONDUIT SHALL BE EMBEDDED IN A SLAB THAT IS LESS THAN 4 IN. THICK. WITH THE EXCEPTION OF LOCAL OFFSETS, MINIMUM CLEAR DISTANCE BETWEEN CONDUITS SHALL BE 6 IN.

7. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR THE LOCATION OF ALL PIPES, CONDUITS, ETC.

8. TIE ALL INSERTS, ANCHOR BOLTS OR OTHER EMBEDDED ELEMENTS SECURELY IN PLACE PRIOR TO PLACEMENT OF CONCRETE.

9. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ALL MOULDS, GROOVES, REGLETS, ORNAMENTAL CLIPS, PIPES, CONDUITS, INSERTS, ETC. TO BE CAST IN CONCRETE.

10. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED.

11. CONCRETE MIXES SHALL COMPLY WITH THE STRUCTURAL REQUIREMENTS OF THE PLANS. MIXES SHALL BE DESIGNED BY A RECOGNIZED TESTING LABORATORY, AND SHALL BE SIGNED AND STAMPED BY A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE OF NEVADA. STRENGTH TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

FOUNDATION

1. CONTRACTOR SHALL PREPARE ALL FOUNDATION SOILS IN ACCORDANCE WITH THE PROVISIONS OF THE PROJECT GEOTECHNICAL REPORT BY CONVERSE CONSULTANTS:

SOIL AND FOUNDATION INVESTIGATION
CONCRETE SLABS AT F&G PONDS AND 4C PONDS
PROJECT NO. 99-33111-05
DATED APRIL 24, 2001

2. FOUNDATION DESIGN IS BASED ON A SOIL BEARING VALUE OF 1,500 PSF.

3. IN THE EVENT THAT THE FOUNDATION EXCAVATIONS ARE CARRIED TO A DEPTH GREATER THAN THAT REQUIRED, THE ADDITIONAL DEPTH SHALL BE FILLED WITH THE SAME CONCRETE AS THAT USED FOR THAT FOOTING AT NO ADDL EXPENSE TO THE OWNER. NO UNCONTROLLED FILL WILL BE PERMITTED.

4. THE FOOTING EXCAVATIONS SHALL BE KEPT FREE FROM LOOSE MATERIAL AND STANDING WATER.

5. UNLESS NOTED OTHERWISE, ALL REQUIRED BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY OBTAINABLE BY THE A.S.T.M. DESIGNATION D-1557 (LATEST EDITION) METHOD OF COMPACTION.

6. A COMPACTION REPORT MUST BE SUBMITTED TO AND APPROVED BY THE GOVERNING JURISDICTION PRIOR TO PLACEMENT OF ANY CONCRETE ON FILL.

7. UNLESS NOTED OTHERWISE, ALL UTILITY TRENCHES SHALL BE COMPACTED TO A MINIMUM OF 95% RELATIVE DENSITY.

8. FINISH GRADES SHALL BE SLOPED TO DRAIN SURFACE WATER AWAY FROM SLABS.

DESIGN CRITERIA

LATERAL EARTH PRESSURE FOR RESTRAINED WALL = 50 PCF.

LATERAL EARTH PRESSURE FOR UNRESTRAINED WALL = 40 PCF (CONSTRUCTION).

LIVE LOAD SLAB SURCHARGE = 250 PSF.

COEFFECIENT OF LATERAL EARTH PRESSURE FOR LIVE LOAD SURCHARGE = 0.40.

WEIGHT OF SOIL = 120 PCF.

PASSIVE SOIL PRESSURE IS NOT USED TO RESIST OVERTURNING OR SLIDING.

WIND DESIGN: 80 MPH, EXPOSURE C.

REVISIONS

ISSUED FOR CONSTRUCTION DEC 02
RECORD DRAWINGS DEC 05
D.S.I.

WORK ORDER
98132819.01

DRAWING STATUS

DWN: MAW

DATE: OCT. 2002

CHK'D: PS

DATE:

APP'D:

DATE:

SCALE:
NOTED

DRAWING NUMBER

RGS-S-

0440

SHEET NO./REV.

S-1

△

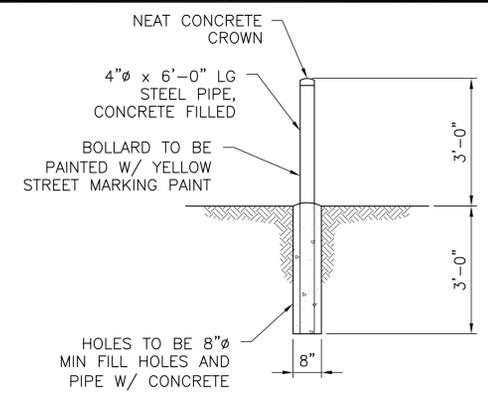
RECORD DRAWINGS

Kennedy/Jenks Consultants
840 Grier Drive, Suite 300
Las Vegas, Nevada 89119
702/270-3610

Nevada Power
Las Vegas Nevada

**REID GARDNER STATION
PONDS D & E RECONSTRUCTION
MCC STRUCTURAL NOTES**

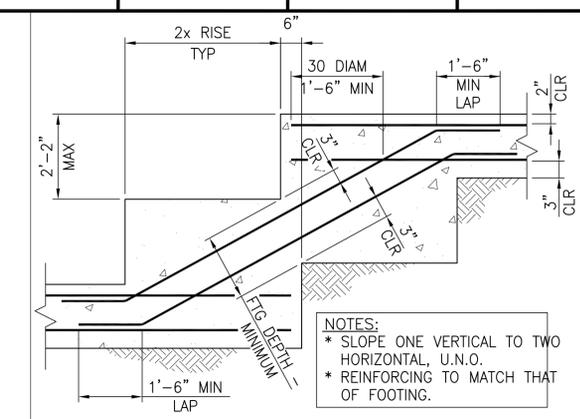
REVISIONS
ISSUED FOR CONSTRUCTION DEC 02
RECORD DRAWINGS DEC 05
D.S.I.



- NOTES:
1. PROVIDE ADEQUATE CLEARANCE FOR ITEMS SUCH AS COOLING COILS AND OPENINGS OF DOORS OF EQUIPMENT.
 2. INSTALLATION OF BARRIER MUST BE COORDINATED WITH ELECTRICAL CABLES OR CONDUIT INSTALLATION TO AVOID MUTUAL INTERFERENCE.
 3. WHEN OVERHEAD OBSTACLES PREVENT REMOVAL OF EQUIPMENT BY CRANE, TWO ADJACENT BARRIERS MUST BE MADE REMOVABLE.

TYPICAL BOLLARD DETAIL

1/2" = 1'-0"



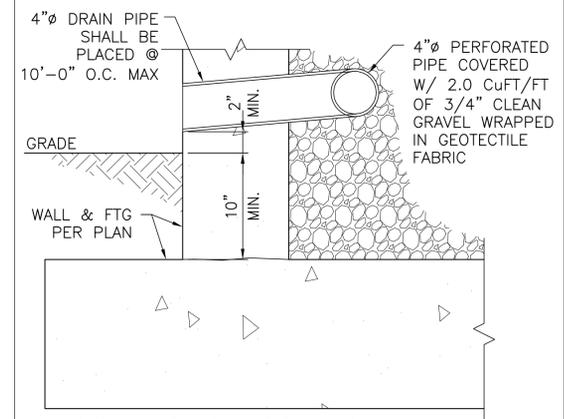
- NOTES:
- * SLOPE ONE VERTICAL TO TWO HORIZONTAL, U.N.O.
 - * REINFORCING TO MATCH THAT OF FOOTING.

STEPPED FOOTING DETAIL

1/2" = 1'-0"

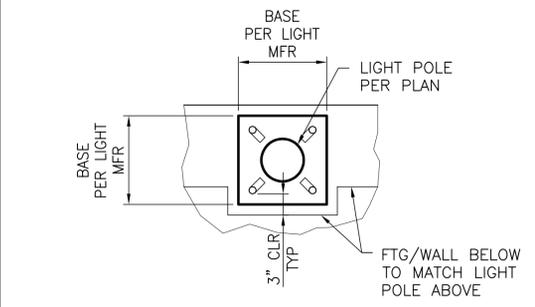
03/19/01

PSDE001



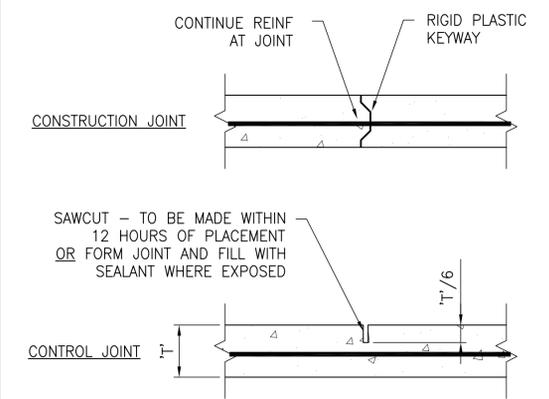
TYPICAL FRENCH DRAIN DETAIL

1 1/2" = 1'-0"



PLAN VIEW

1" = 1'-0"

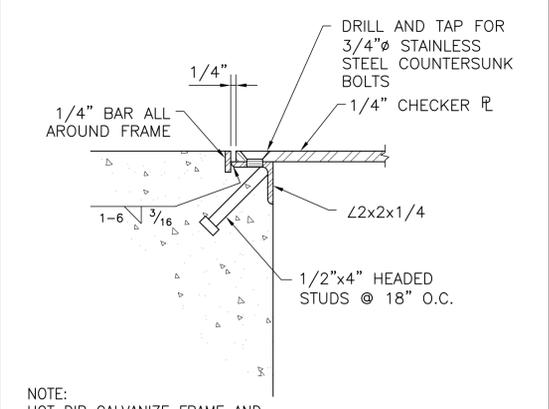


CONCRETE JOINTS, U.N.O.

1" = 1'-0"

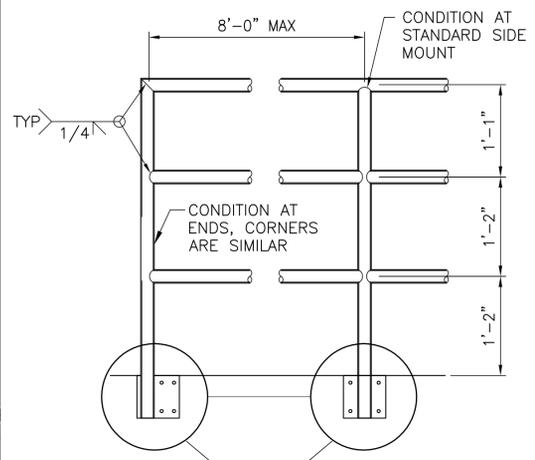
MM/DD/YY

PSDE002



NOTE:
HOT DIP GALVANIZE FRAME AND COVER AFTER FABRICATION.

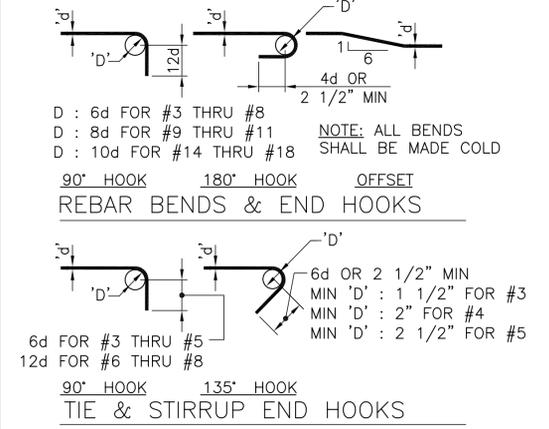
1" = 1'-0"



- NOTES:
1. POSTS AND RAILINGS SHALL BE 1 1/2" SCHED 40 PIPE GALVANIZED.
 2. HANRAIL MANUFACTURER/FABRICATOR MAY VARY POST TO MOUNTING PLATE CONNECTION.
 3. POST SHALL BE SET 1 1/2" FROM CONCRETE EDGE TO CENTER OF POST TYPICALLY.
 4. POSTS SHALL BE SET VERTICALLY PLUMB AND LEVEL.
 5. RAILINGS SHALL BE SET PARALLEL TO TOP OF CONCRETE.
 6. SPACING BETWEEN POSTS SHALL BE A LENGTH SUCH THAT EQUAL SPACING IS PROVIDED NOT TO EXCEED 8'-0" O.C.

TYPICAL 3-RAIL HANRAIL SYSTEM

1" = 1'-0"



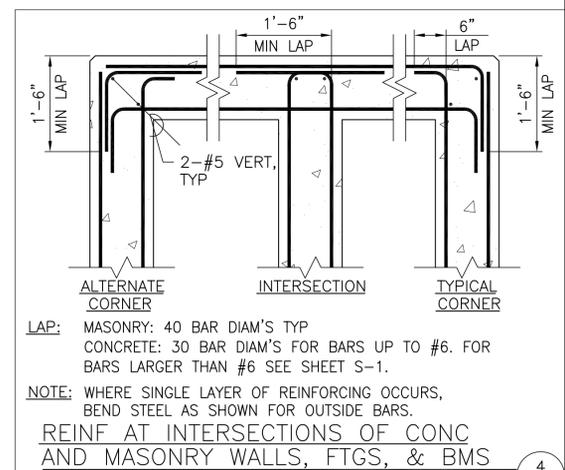
- D : 6d FOR #3 THRU #8
D : 8d FOR #9 THRU #11
D : 10d FOR #14 THRU #18
- NOTE: ALL BENDS SHALL BE MADE COLD
- 90° HOOK 180° HOOK OFFSET
- REBAR BENDS & END HOOKS

- 6d FOR #3 THRU #5
12d FOR #6 THRU #8
- 6d OR 2 1/2" MIN
MIN 'D' : 1 1/2" FOR #3
MIN 'D' : 2" FOR #4
MIN 'D' : 2 1/2" FOR #5
- 90° HOOK 135° HOOK
- TIE & STIRRUP END HOOKS

1 1/2" = 1'-0"

03/19/01

PSDE003



LAP: MASONRY: 40 BAR DIAM'S TYP
CONCRETE: 30 BAR DIAM'S FOR BARS UP TO #6. FOR BARS LARGER THAN #6 SEE SHEET S-1.

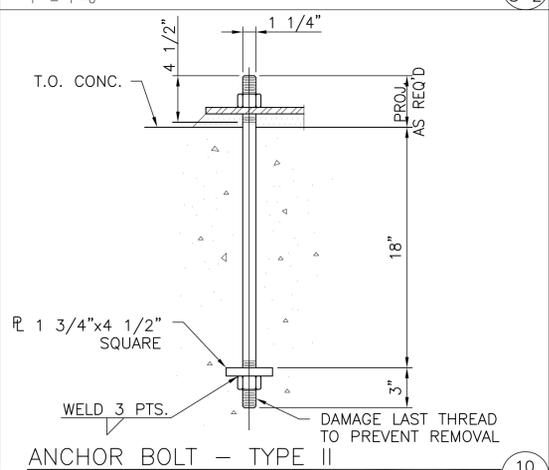
NOTE: WHERE SINGLE LAYER OF REINFORCING OCCURS, BEND STEEL AS SHOWN FOR OUTSIDE BARS.

REIN AT INTERSECTIONS OF CONC AND MASONRY WALLS, FTGS, & BMS

3/4" = 1'-0"

04/19/01

PSDE004



1" = 1'-0"

PSDE005

WORK ORDER	98132819.01
DRAWING STATUS	
DWN: MAW	
DATE: OCT. 2002	
CHK'D:	
DATE:	
APP'D:	
DATE:	

RECORD DRAWINGS

Kennedy/Jenks Consultants
840 Grier Drive, Suite 300
Las Vegas, Nevada 89119
702/270-3610

Nevada Power
Las Vegas Nevada

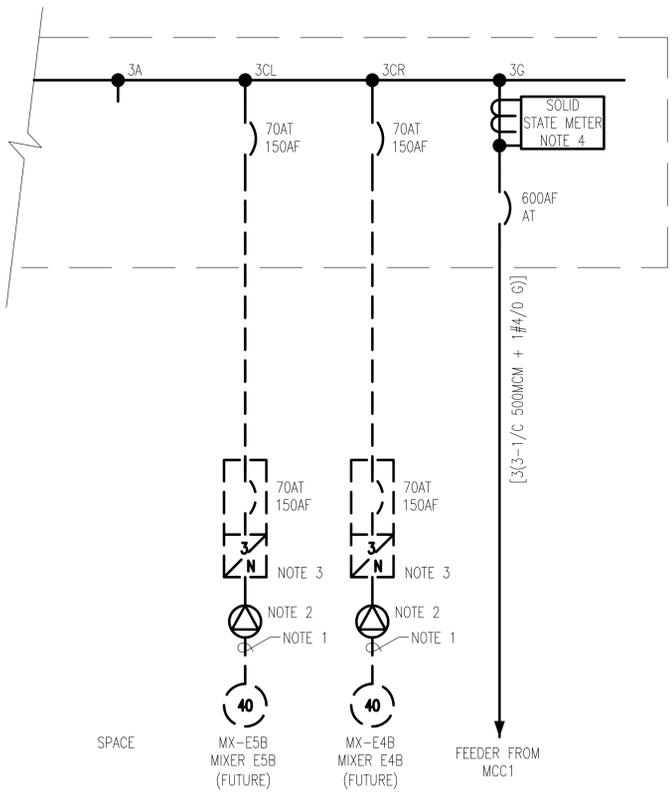
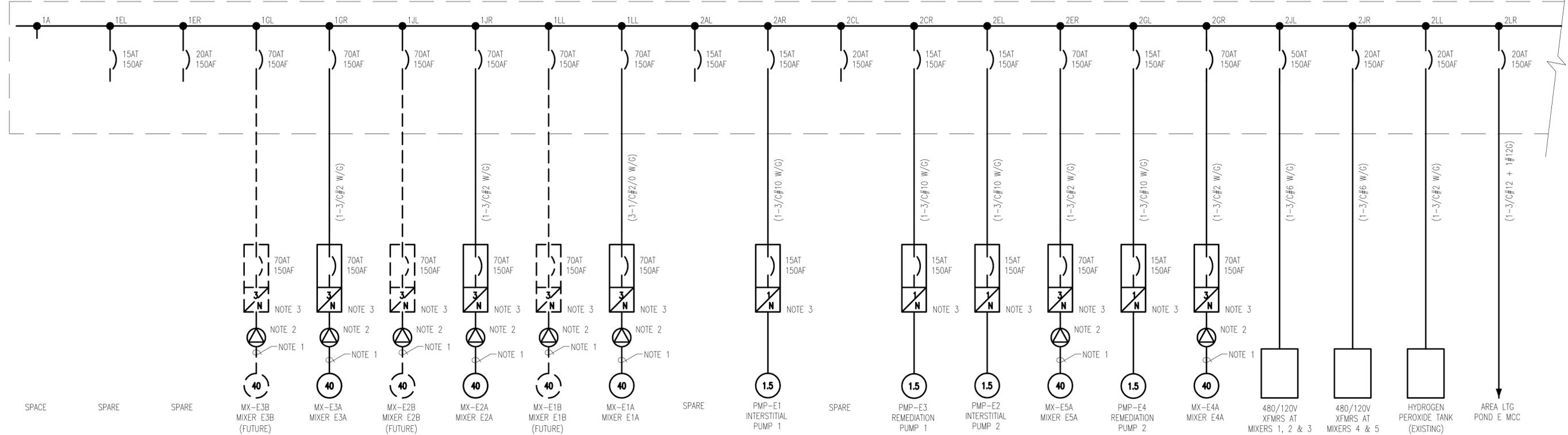
REID GARDNER SATION
PONDS D & E RECONSTRUCTION
MCC DETAILS

SCALE:
NOTED

DRAWING NUMBER
RGS-S-
0442

SHEET NO./REV.
S-3

EVAP POND E MCC
480V, 3Ø, 3W, 800A, 65KAIC



EVAP POND E MCC

1A SPACE		2AL SPARE 150AF 15AT	2AR PUMP E1 15AT	3A SPACE
1EL SPARE 150AF 15AT	1ER SPARE 150AF 20AT	2EL PUMP E2	2ER MIXER E5A	3CL MIXER E5B (FUT.)
1GL MIXER E3B (FUT.)	1GR MIXER E3A	2GL PUMP E4	2GR MIXER E4A	3CR MIXER E4B (FUT.)
1JL MIXER E2B (FUT.)	1JR MIXER E2A	2JL LOCAL 120V XFMRs 1,2,3	2JR LOCAL 120V XFMRs 4 & 5	3E METERING
1LL MIXER E1B (FUT.)	1LR MIXER E1A	2LL HYD PEROX TANK	2LR AREA LTG	3G MAIN INCOMING BREAKER

NOTES:

- 50 FT. PREFAB CABLE SUPPLIED WITH MIXER.
- 480V RECEPTACLE HUBBELL MODEL 460R7W.
- LOCAL NEMA 3R STARTER.
- PROVIDE CUTLER-HAMMER TYPE WESTINGHOUSE IQ-ANALYZER AT SERVICE ENTRANCE AS SHOWN. PROVIDE OUTPUTS TO PLC TO LOG VOLTAGE AND CURRENT. CONNECT SOLID STATE OUTPUTS TO PLC WITH 2 PR #16 TS.

C	ISSUED FOR BID	LFP	LM	LRJ	09/30/02
B	ISSUED FOR BID	LFP	LM	LRJ	09/19/02
A	ISSUE FOR 75% REVIEW	LFP	LRJ		07/29/02
NO.	REVISIONS	DWN	APVD	APVD	DATE

9200 East Mineral Avenue
Suite 400
Englewood, Colorado
80112-3416
www.stanleygroup.com

Stanley Consultants INC.

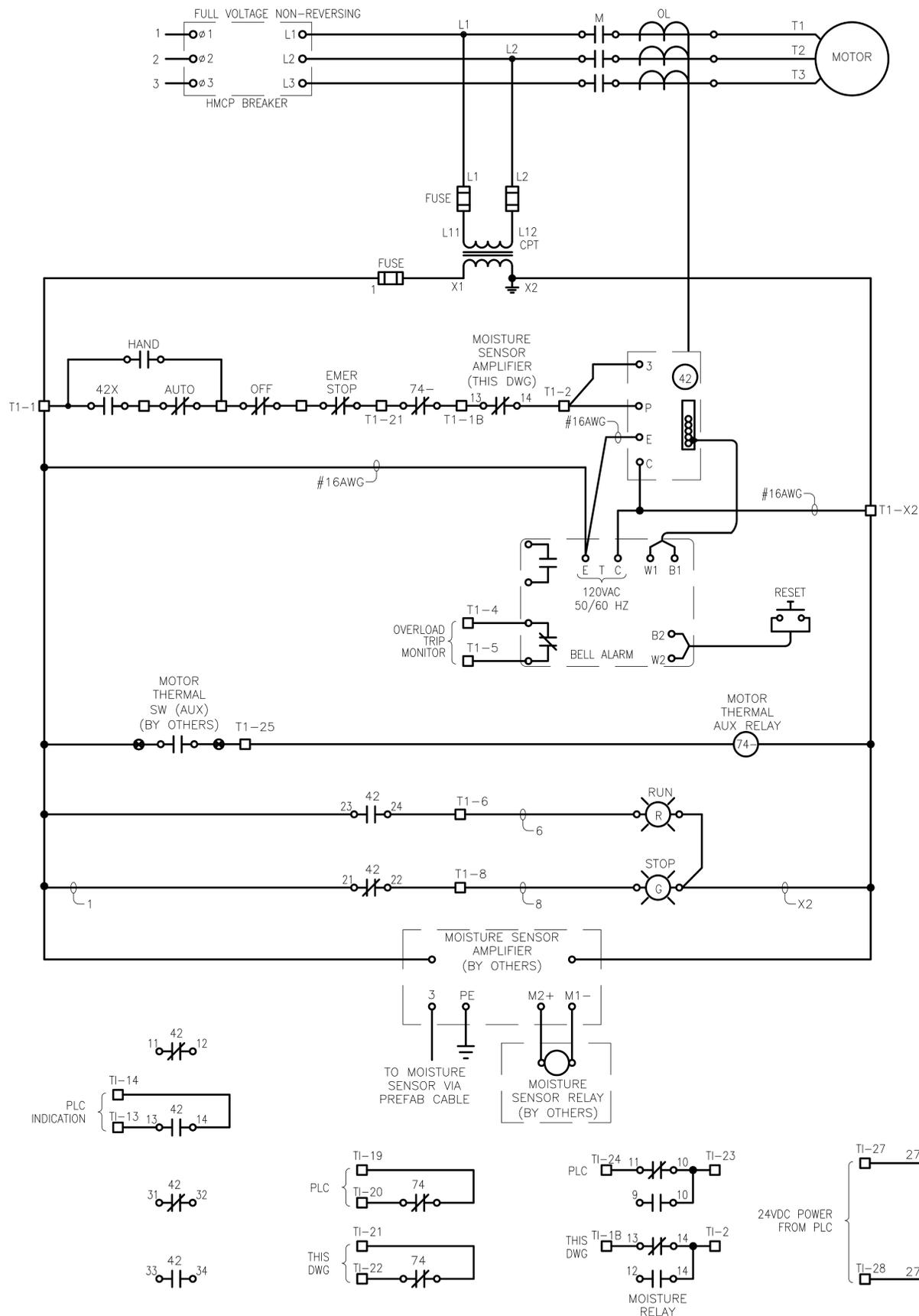
9200 East Mineral Avenue, Suite 400, Englewood, Colorado 80112-3416
www.stanleygroup.com

NEVADA POWER CO
REID GARDNER PLANT
EVAPORATION POND E

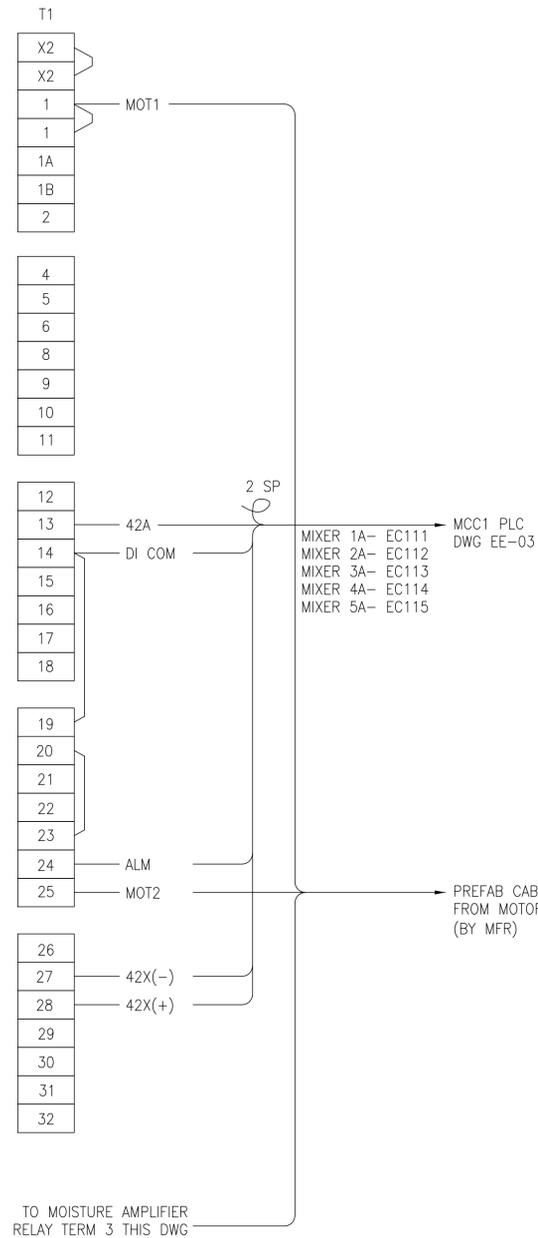
ELECTRICAL
480V ONE-LINE DIAGRAM

DESIGNED	L.F. PRUESS	SCALE:	NONE
DRAWN	L.F. PRUESS	CHECKED	P. HARRISON
APPROVED	L.R. JOHNSON	NO.	15756.04
DATE	07/29/02	REV.	EE-01
			C

RECORD DRAWINGS



TYPICAL SCHEMATIC FOR LOCAL STARTER FOR MIXER



TYPICAL WIRING DIAGRAM FOR LOCAL STARTER FOR MIXER

NOTES:

1. LOCAL HAND-OFF-AUTO SWITCH TO BE KEY OPERATED.
2. ALL EQUIPMENT SHOWN TO BE PROVIDED AND CONNECTED AS SHOWN UNLESS SPECIFICALLY NOTED OTHERWISE.
3. MOISTURE SENSOR, MOISTURE SENSOR AMPLIFIER, MOISTURE SENSOR RELAY AND MOTOR THERMAL SWITCH PROVIDED BY MOTOR SUPPLIER. EXTERNAL CONNECTION POINTS TO BE PROVIDED AS SHOWN.
4. ALLEN-BRADLEY RELAY MODEL #700-HA32224 WITH BASE MODEL #700-HN125.
5. PROVIDE SPAE FOR MOUNTING MOISTURE SENSOR AND RELAY IN STARTER ENCLOSURE.

LEGEND:

- TERMINAL IN LOCAL MOTOR STARTER PANEL
- TERMINATION FOR EXTERNAL EQUIPMENT (PROVIDED BY OTHERS)

NO.	REVISIONS	DWN	APVD	DATE
B	ISSUED FOR BIDS	LFP	LM	LRJ 09/30/02
A	ISSUED FOR 75% REVIEW	LFP	LM	LRJ 07/29/02



Stanley Consultants INC.

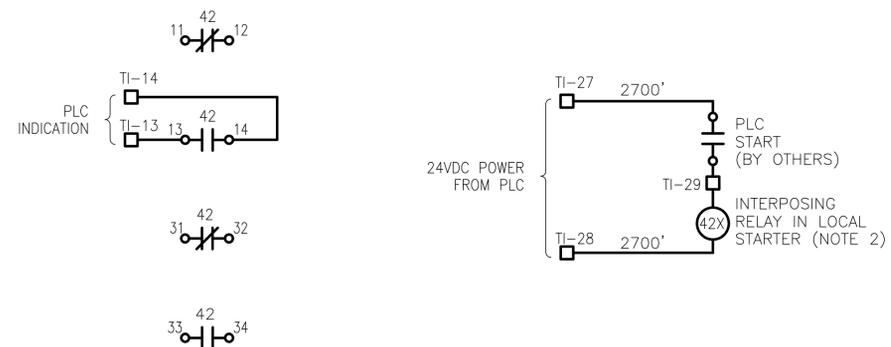
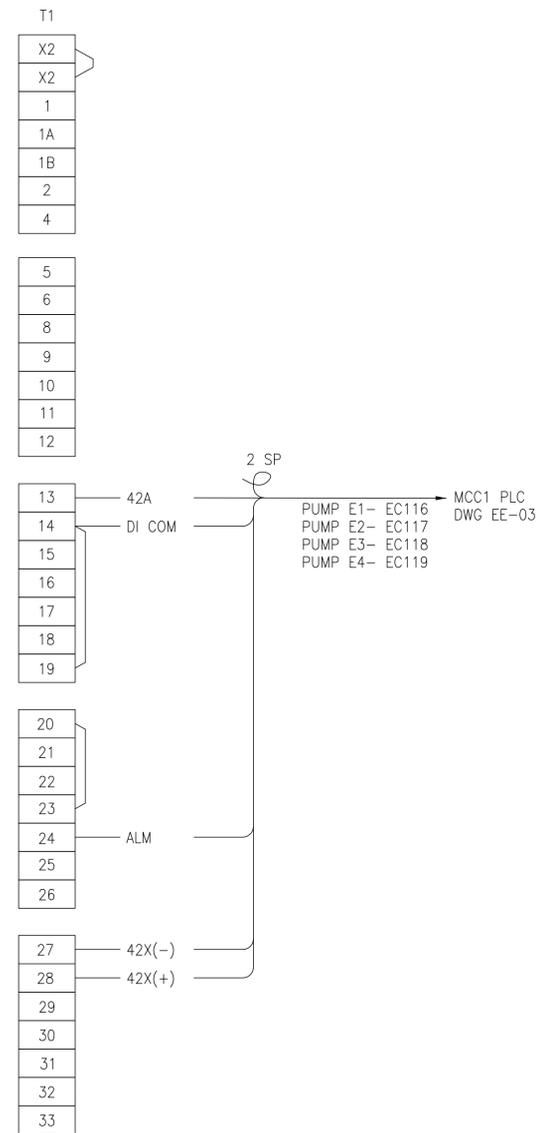
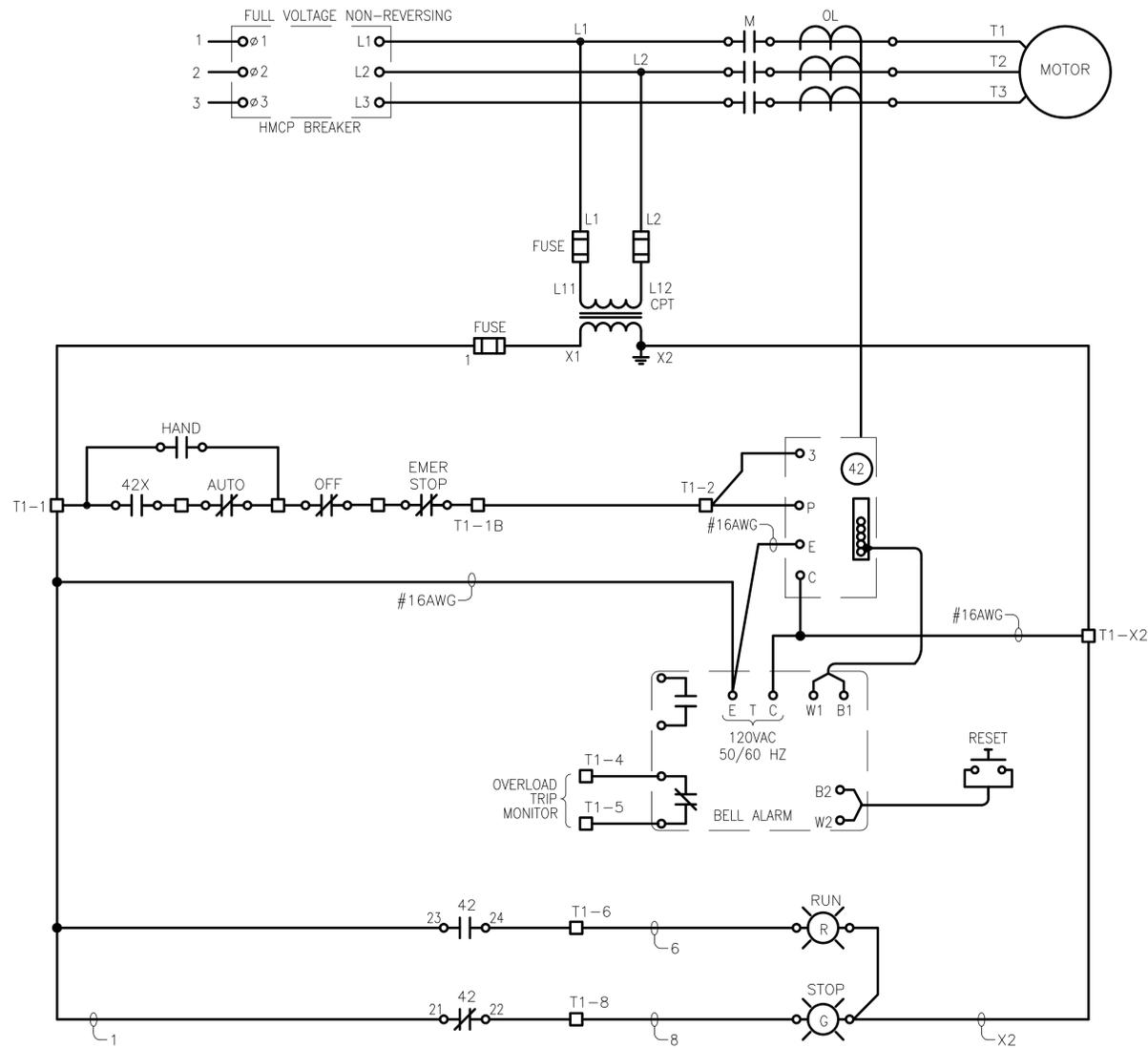
9200 East Mineral Avenue, Englewood, Colorado 80112
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NEVADA POWER CO.
REID GARDNER PLANT
EVAPORATION POND E

**ELECTRICAL
COMBINED WIRING DIAGRAM
TYPICAL FOR MIXER LOCAL STARTERS**

DESIGNED	L. PRUESS	SCALE:	NONE
DRAWN	L. PRUESS	NO.	15756.04
CHECKED	L. MILLER	REV.	
APPROVED	L. JOHNSON	DATE	07/29/02
DATE	07/29/02		EE-02 B

RECORD DRAWINGS



TYPICAL SCHEMATIC FOR LOCAL STARTER FOR PUMP

TYPICAL WIRING DIAGRAM FOR LOCAL STARTER FOR PUMP

- NOTES:
1. LOCAL HAND-OFF-AUTO SWITCH TO BE KEY OPERATED.
 2. ALLEN-BRADLEY RELAY MODEL #700-HA32Z24 WITH BASE MODEL #700-HN125.

- LEGEND:
- TERMINAL IN LOCAL MOTOR STARTER PANEL

B	ISSUED FOR BIDS	LFP	LM	LRJ	09/30/02
A	ISSUED FOR 75% REVIEW	LFP	LM	LRJ	07/29/02
NO.	REVISIONS	DWN	APVD	APVD	DATE

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 9200 East Mineral Avenue, Englewood, Colorado 80112
 www.stanleygroup.com

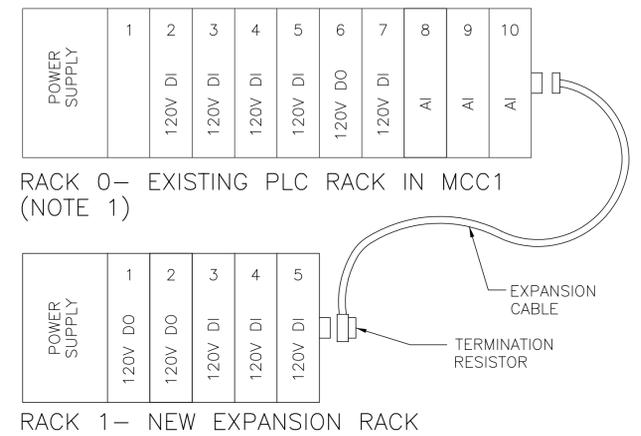
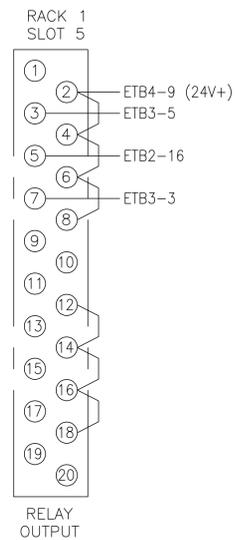
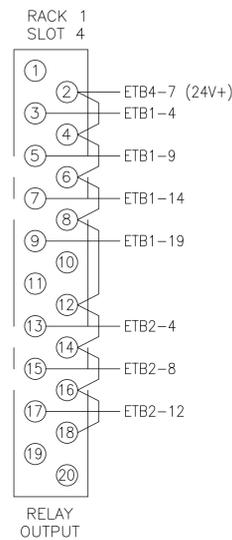
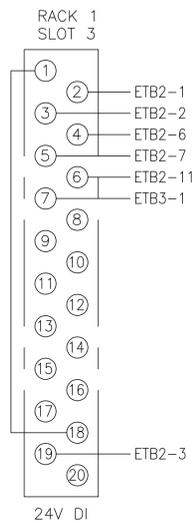
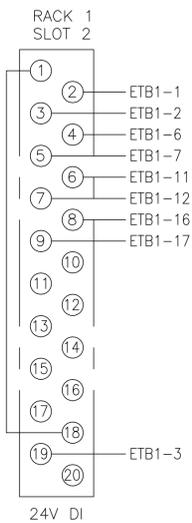
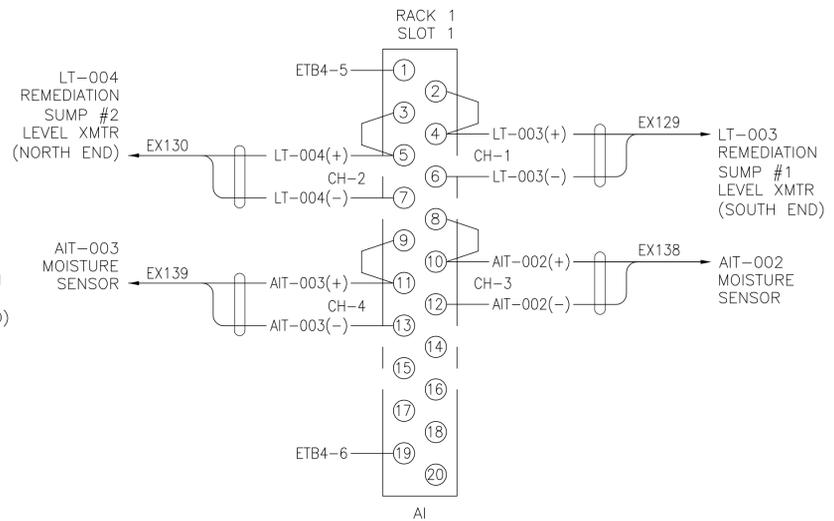
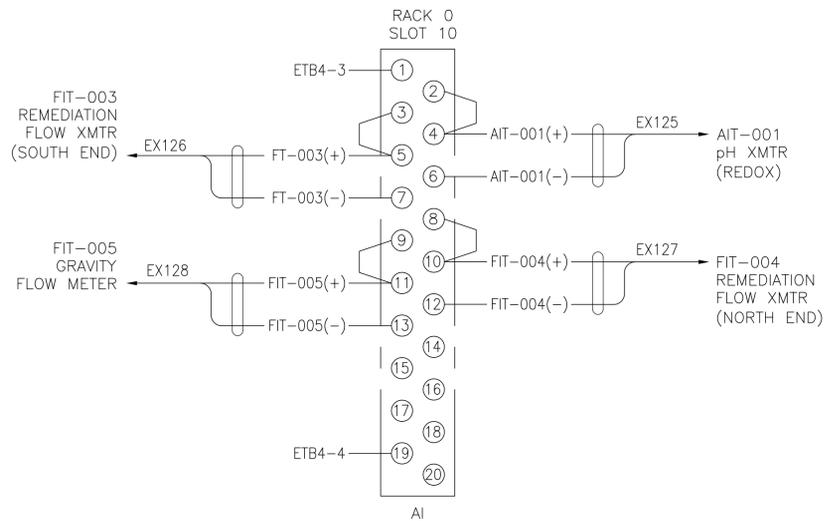
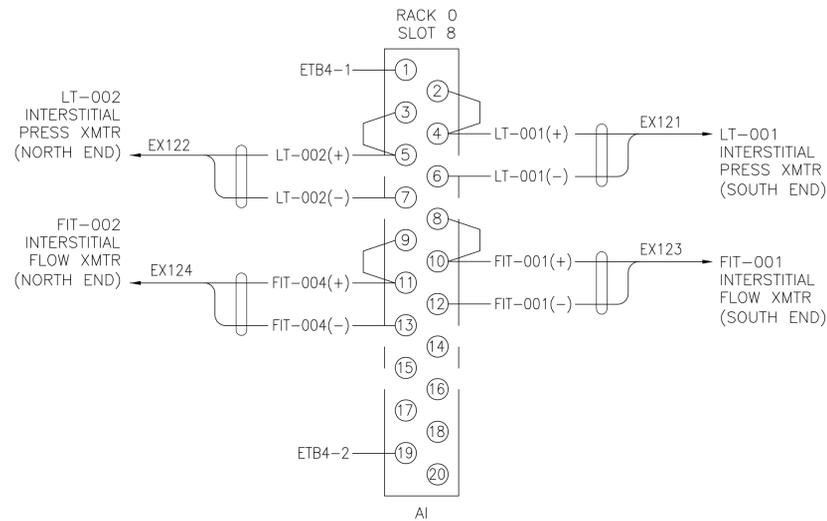
NEVADA POWER CO.
 REID GARDNER PLANT
 EVAPORATION POND E

**ELECTRICAL
 COMBINED WIRING DIAGRAM
 TYPICAL FOR PUMP LOCAL STARTERS**

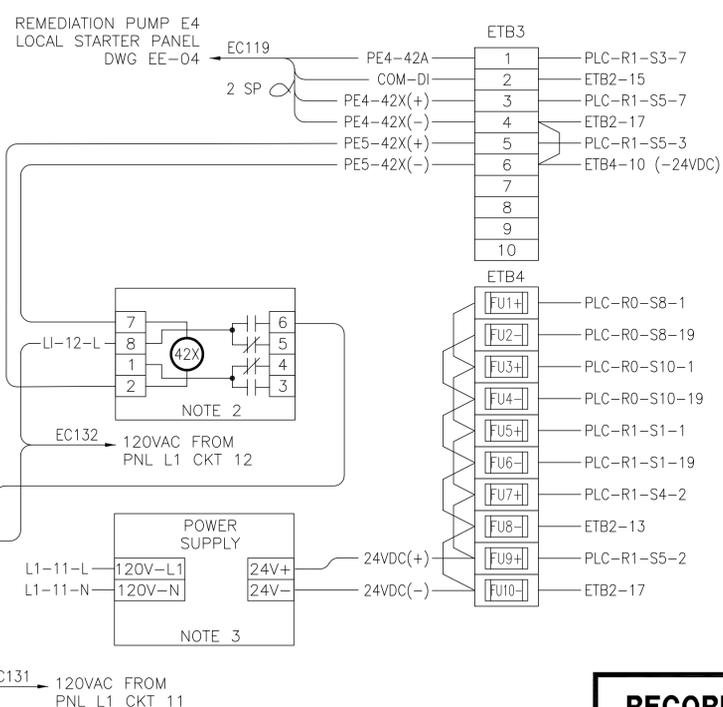
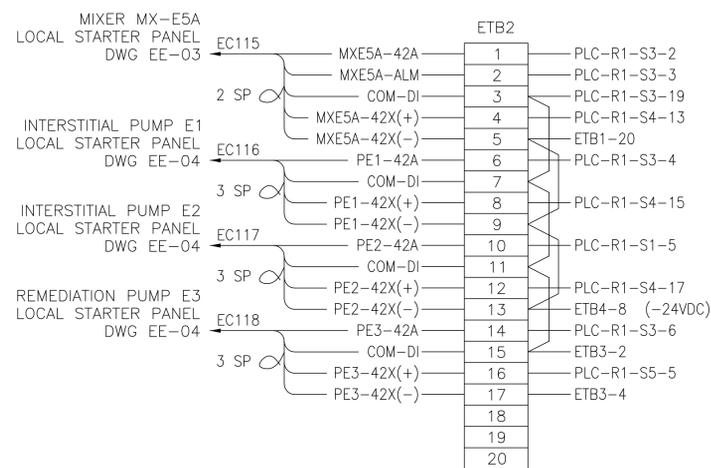
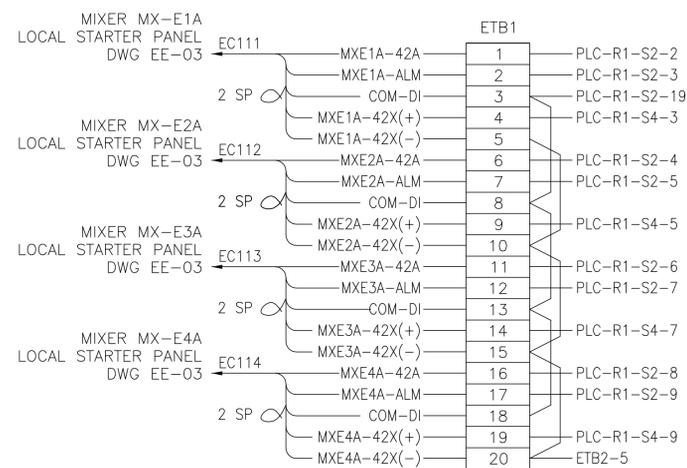
DESIGNED	L. PRUESS	SCALE:	NONE
DRAWN	L. PRUESS	NO.	15756.04
CHECKED	L. MILLER	REV.	
APPROVED	L. JOHNSON	DATE	07/29/02
DATE	07/29/02		EE-03 B

RECORD DRAWINGS

SC1 PROJECT NO: 15756.04
 CADD D1-R3



- NOTES:
- RACK 0 IS EXISTING. CONTRACTOR TO ADD AI CARD AS INDICATED IN RACK 0 SLOT 8. AI CARD IN SLOT 10 IS SPARE AND SHALL BE USED.
 - ALLEN-BRADLEY RELAY MODEL #700-HA32Z24 WITH BASE MODEL #700-HN125. INSTALL IN EXISTING PLC CABINET IN EXISTING MCC1.
 - NEW 24VDC, 8A. POWER SUPPLY. INSTALL IN EXISTING PLC CABINET IN EXISTING MCC1.



B	ISSUED FOR ISSUE	LFP	LM	LRJ	09/30/02
A	ISSUED FOR 75% REVIEW	LFP	LM	LRJ	07/29/02
NO.	REVISIONS	DWN	APVD	APVD	DATE



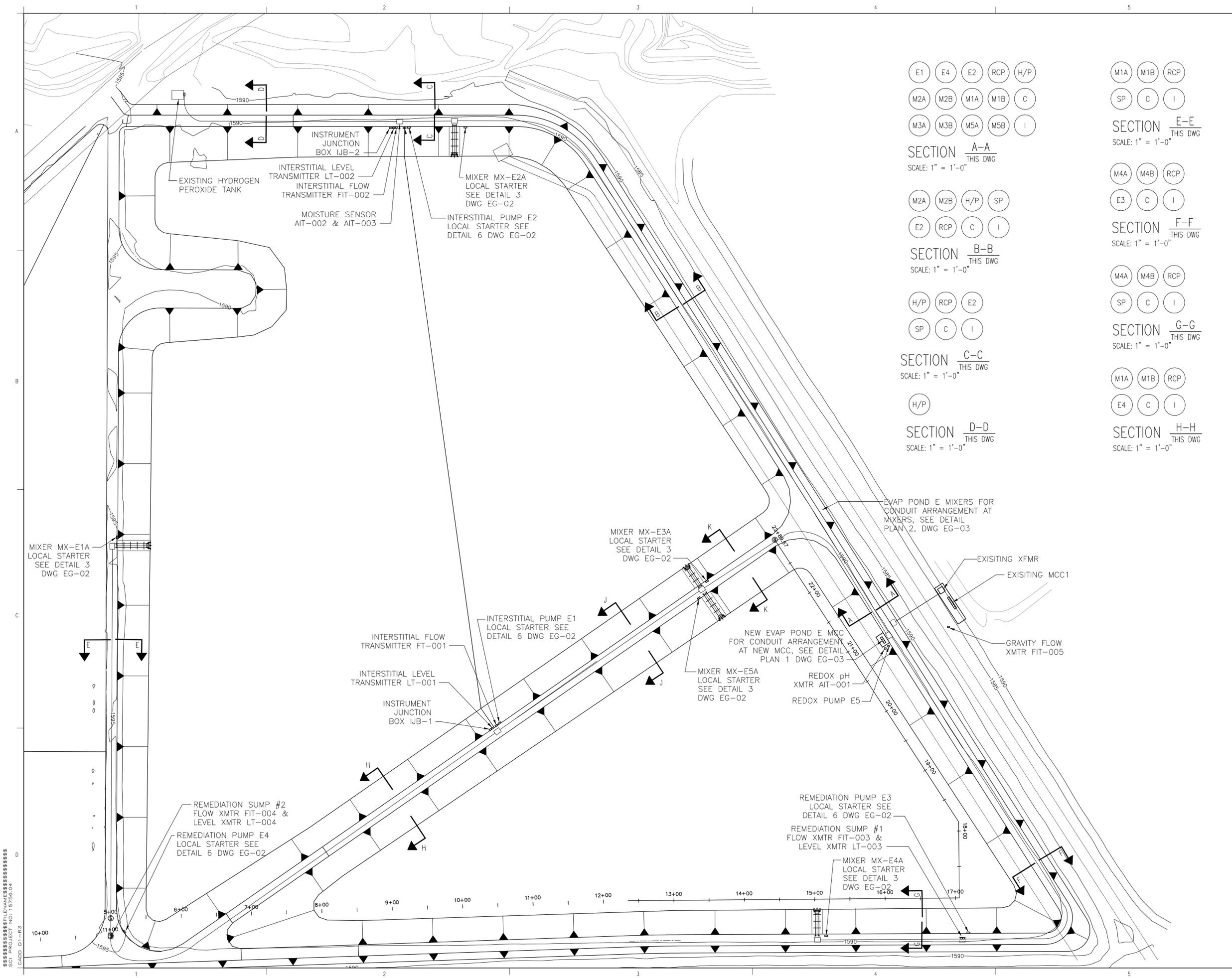
NEVADA POWER CO.
REID GARDNER PLANT
EVAPORATION POND E

**ELECTRICAL
ADDITIONAL PLC WIRING DIAGRAM
IN EXISTING MCC1**

DESIGNED	L. PRUESS	SCALE: NONE
DRAWN	L. PRUESS	NO. 15756.04
CHECKED	L. MILLER	REV.
APPROVED	L. JOHNSON	EE-04
DATE	09/30/02	B

RECORD DRAWINGS

FILENAME: 15756.04
PROJECT NO: 15756.04
CADD: D1-R3



- (E1) (E4) (E2) (RCP) (H/P)
- (M2A) (M2B) (M1A) (M1B) (C)
- (M3A) (M3B) (M5A) (M5B) (I)
- SECTION $\frac{A-A}{THIS\ DWG}$
SCALE: 1" = 1'-0"
- (M2A) (M2B) (H/P) (SP)
- (E2) (RCP) (C) (I)
- SECTION $\frac{B-B}{THIS\ DWG}$
SCALE: 1" = 1'-0"
- (H/P) (RCP) (E2)
- (SP) (C) (I)
- SECTION $\frac{C-C}{THIS\ DWG}$
SCALE: 1" = 1'-0"
- (H/P)
- SECTION $\frac{D-D}{THIS\ DWG}$
SCALE: 1" = 1'-0"

- (M1A) (M1B) (RCP)
- (SP) (C) (I)
- SECTION $\frac{E-E}{THIS\ DWG}$
SCALE: 1" = 1'-0"
- (M4A) (M4B) (RCP)
- (E3) (C) (I)
- SECTION $\frac{F-F}{THIS\ DWG}$
SCALE: 1" = 1'-0"
- (M4A) (M4B) (RCP)
- (SP) (C) (I)
- SECTION $\frac{G-G}{THIS\ DWG}$
SCALE: 1" = 1'-0"
- (M1A) (M1B) (RCP)
- (E4) (C) (I)
- SECTION $\frac{H-H}{THIS\ DWG}$
SCALE: 1" = 1'-0"

- (E1) (M1A) (M1B) (RCP)
- (E4) (SP) (C) (I)
- SECTION $\frac{J-J}{THIS\ DWG}$
SCALE: 1" = 1'-0"
- (M1A) (M1B) (M3A) (M3B)
- (E1) (RCP) (M5A) (M5B)
- (E4) (SP) (C) (I)
- SECTION $\frac{K-K}{THIS\ DWG}$
SCALE: 1" = 1'-0"

DUCTBANK LEGEND:
 I= INSTRUMENTATION
 C= CONTROL
 RCP= RECEPTACLE POWER
 H/P= HYDROGEN PEROXIDE FEEDER
 M1A-M5A MIXER "A" 1-5
 M1B-M5B MIXER "B" 1-5 (FUTURE)
 E1-E4 PUMPS E1-E4
 SP= SPARE

RECORD DRAWINGS

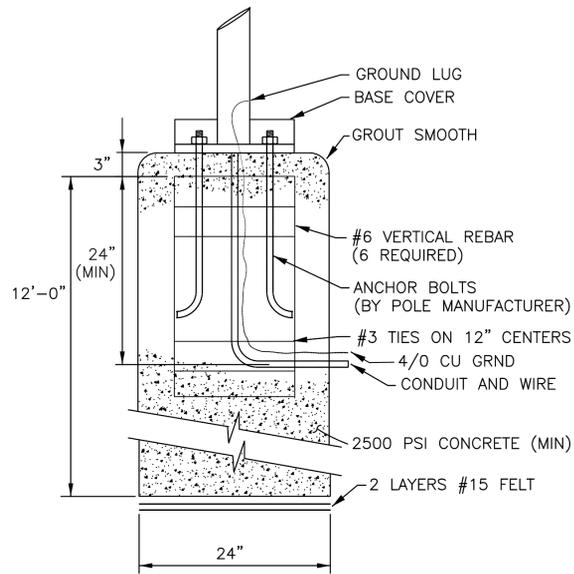
C	ISSUE FOR BIDS	LFP	LM	LRJ	09/30/02
B	ISSUED FOR BID	LFP	LRJ		09/19/02
A	ISSUE FOR 75% REVIEW	LFP	LJR		07/29/02
NO.	REVISIONS	DWN	APVD	APVD	DATE

Stanley Consultants INC.
 9200 East Mineral Avenue, Englewood, Colorado 80112
 www.stanleygroup.com

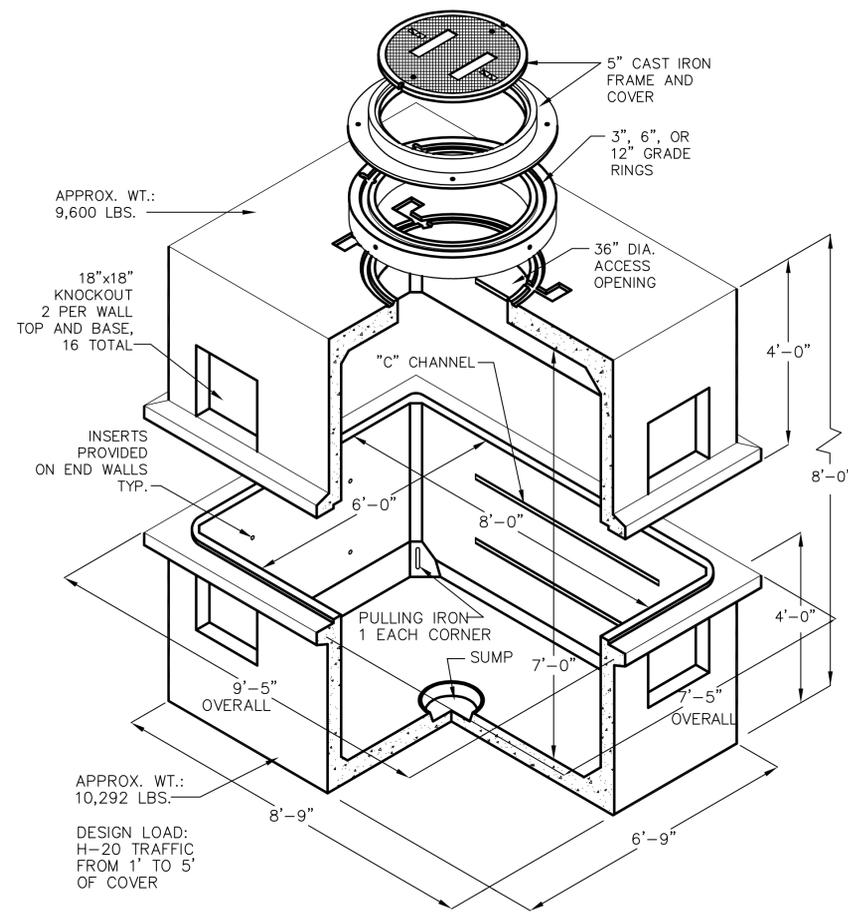
NEVADA POWER COMPANY
 REID GARDNER PLANT
 EVAPORATION POND E
**ELECTRICAL
 SITE PLAN**

DESIGNED	L. PRUESS	SCALE: 1" = 60'
DRAWN	L. PRUESS	NO. 15756.04
CHECKED	L. MILLER	REV.
APPROVED	L. JOHNSON	EG-01
DATE	09/30/02	C

SC1 PROJECT NO: 15756.04
 CADD D1-R3

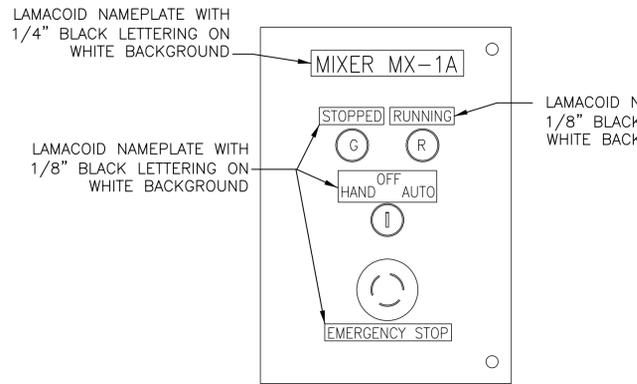


DETAIL 1
EG-03
SCALE: N.T.S.



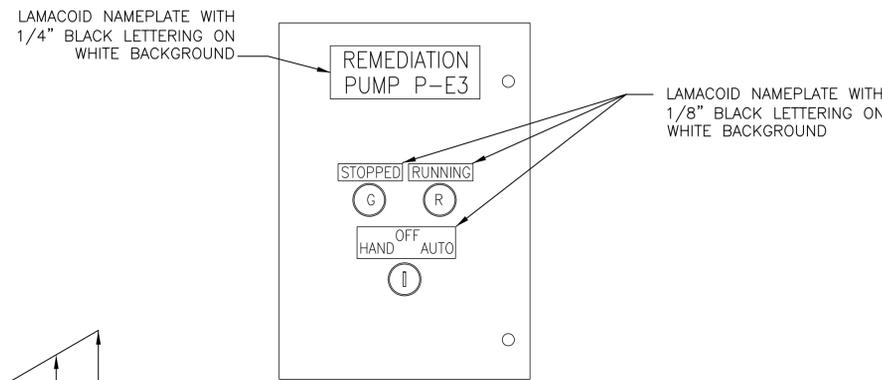
DETAIL 4
EG-01
SCALE: N.T.S.

JENSEN PRECAST MODEL 687LA MANHOLE WITH 36" DIA. ACCESS OPENING. FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT MANUFACTURER.



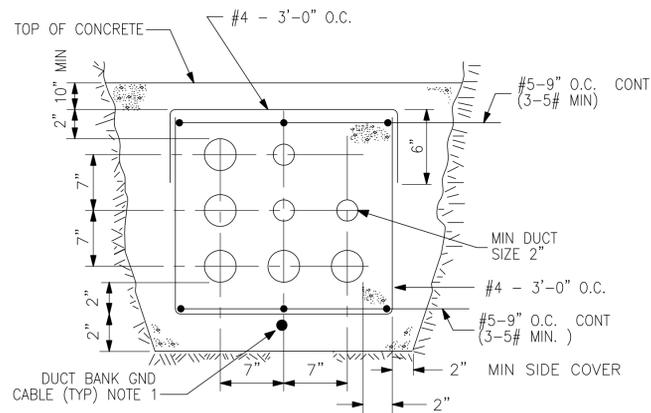
DETAIL 2
EG-02
SCALE: N.T.S.

NOTES:
1. ALL INDICATING LIGHTS SHALL BE OF THE LED TYPE 30.5MM APPROVED BY OWNER



DETAIL 5
EG-02
SCALE: N.T.S.

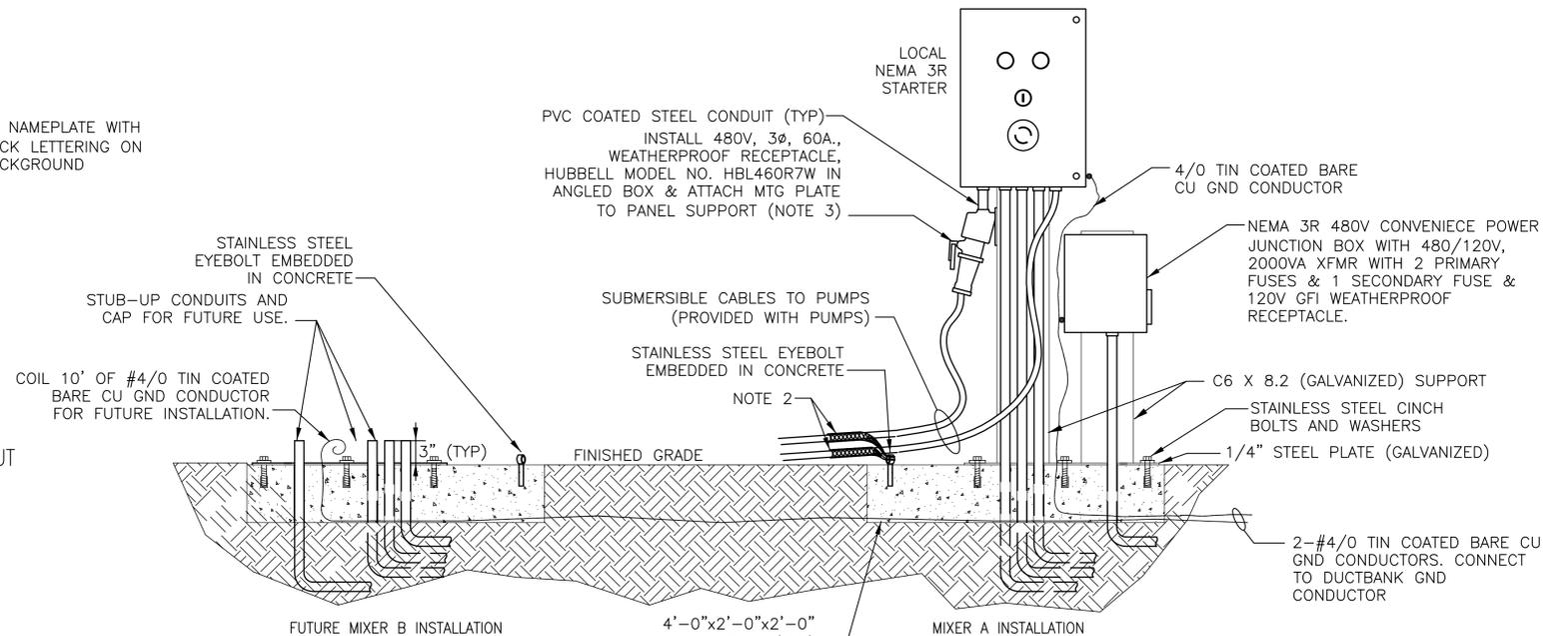
NOTES:
1. ALL INDICATING LIGHTS SHALL BE OF THE LED TYPE 30.5MM APPROVED BY OWNER



NOTES:
1. CONNECT TO 3/4" X 10'-0" CU GROUND ROD EVERY 100'

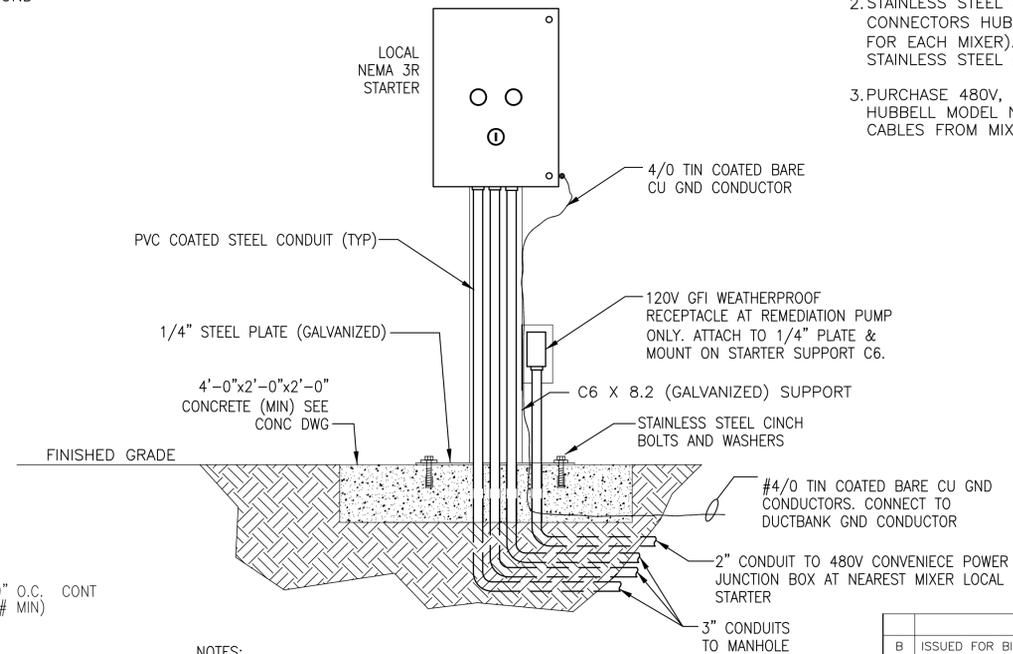
DUCT BANK REINFORCEMENT FOR 3 OR MORE CONDUIT WIDE 1,2,3, OR MORE CONDUIT DEEP N.T.S.

DETAIL 7
SCALE: N.T.S.



DETAIL 3
EG-03
SCALE: N.T.S.

NOTES:
1. ALL EXPOSED CONDUITS AND STUB-UP ELBOW SHALL BE PVC COATED STEEL CONDUIT. ALL BURIED CONDUIT SHALL BE PVC BURIED A MIN OF 24" BELOW FINISHED GRADE.
2. STAINLESS STEEL CABLE STRAIN RELIEF CONNECTORS HUBBELL KELLUM GRIPS (2 REQ'D FOR EACH MIXER). ATTACH TIE DOWNS TO STAINLESS STEEL ANCHOR
3. PURCHASE 480V, 30, 60A., WEATHERPROOF PLUG, HUBBELL MODEL NO. HBL460P7W AND WIRE TO CABLES FROM MIXER.



NOTES:
1. ALL EXPOSED CONDUITS AND STUB-UP ELBOWS SHALL BE PVC COATED STEEL CONDUIT. ALL BURIED CONDUIT SHALL BE PVC BURIED A MIN OF 24" BELOW FINISHED GRADE. ALL CONDUITS SHALL HAVE 36" RADIUS BENDS.

DETAIL 6
EG-03
SCALE: N.T.S.

B	ISSUED FOR BIDS	LFP	LM	LRJ	09/30/02
A	ISSUED FOR 75% REVIEW	LFP	LM	LRJ	07/29/02
NO.	REVISIONS	DWN	APVD	APVD	DATE



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9200 East Mineral Avenue, Englewood, Colorado 80112
www.stanleygroup.com

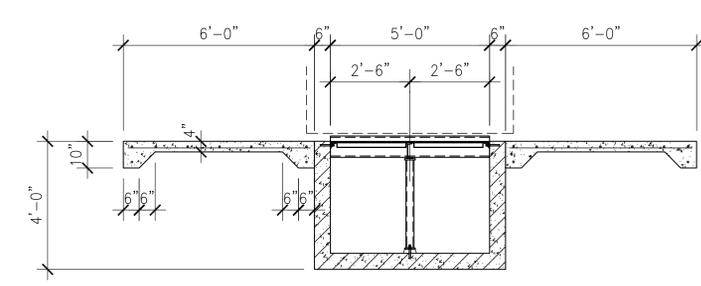
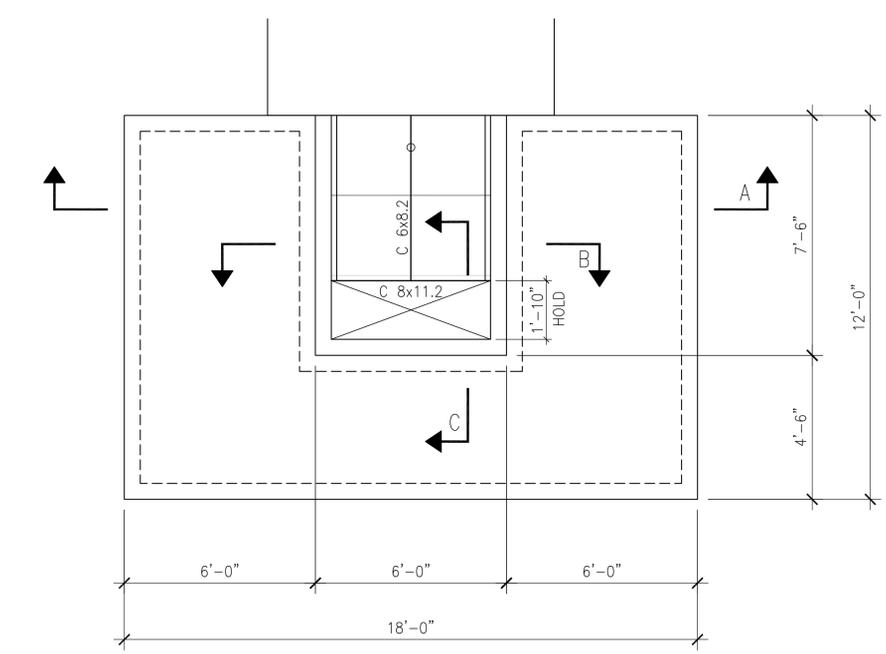
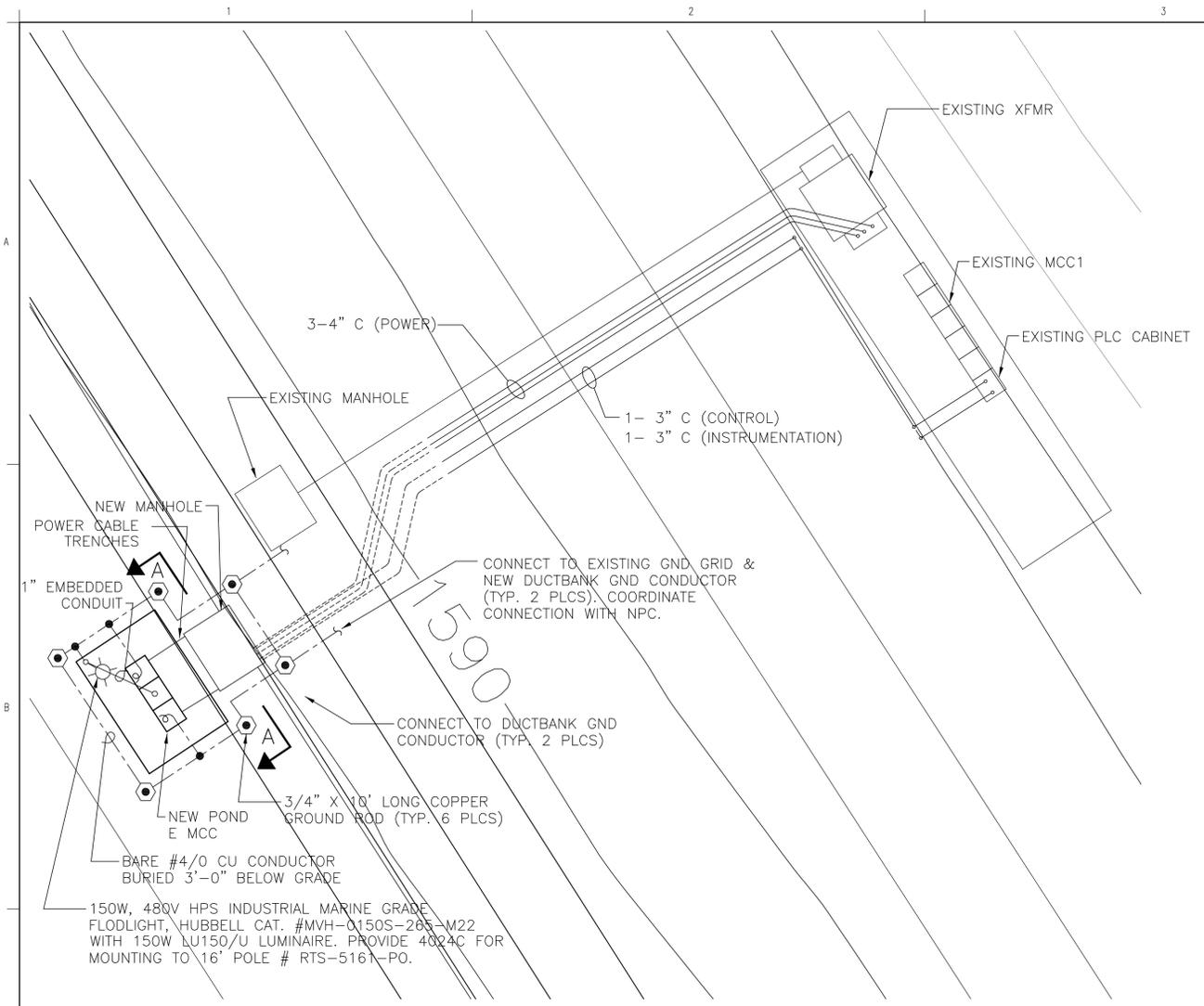
NEVADA POWER COMPANY
REID GARDNER PLANT
EVAPORATION POND E

**ELECTRICAL
DETAILS
SHEET 1 OF 2**

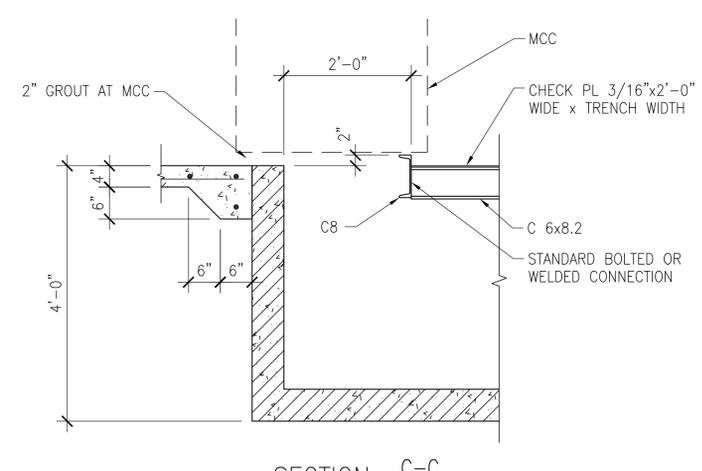
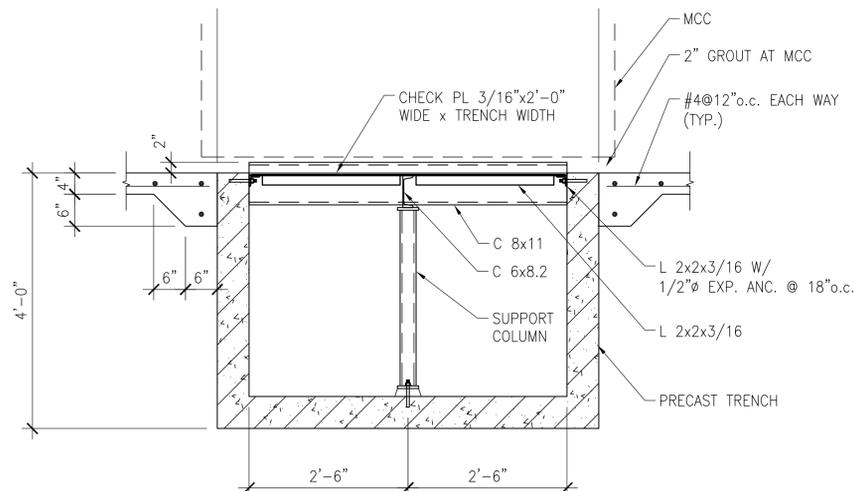
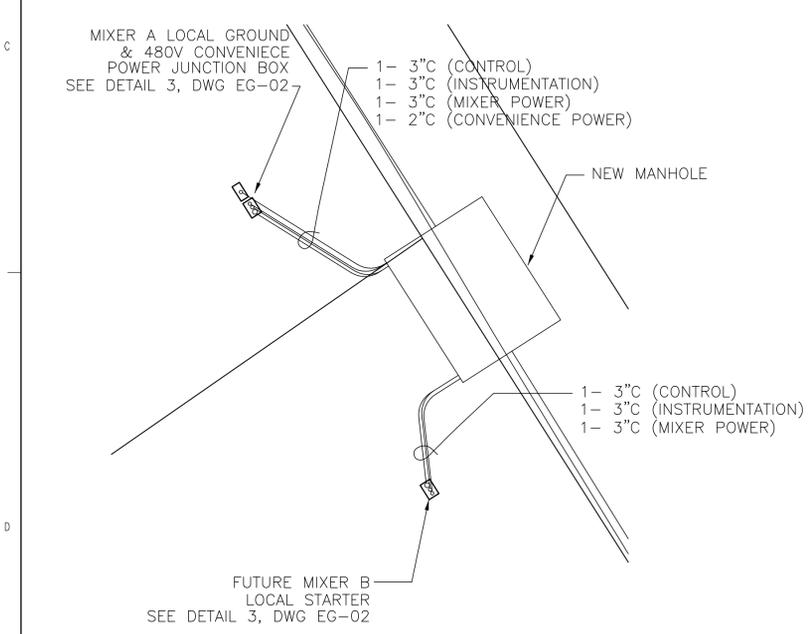
DESIGNED	L. PRUESS	SCALE: N.T.S.	
DRAWN	L. PRUESS	NO. 15756	REV.
CHECKED	L. MILLER		
APPROVED	L. JOHNSON		
DATE	07/29/02	EG-02	B

RECORD DRAWINGS

FILENAME: S:\PROJECTS\15756\04
SCT PROJECT NO: 15756.04
CADD D1-R3



DETAIL 8 PLAN AT NEW MCC
SCALE: 1" = 5'-0"



B	ISSUED FOR BIDS	LFP	LM	LRJ	09/30/02
A	ISSUED FOR 75% REVIEW	LFP	LM	LRJ	07/29/02
NO.	REVISIONS	DWN	APVD	APVD	DATE



NEVADA POWER COMPANY
REID GARDNER PLANT
EVAPORATION POND E

**ELECTRICAL
DETAILS
SHEET 2 OF 2**

DESIGNED	L. PRUESS	SCALE:	AS NOTED
DRAWN	L. PRUESS	NO.	15756.04
CHECKED	L. MILLER	REV.	
APPROVED	L. JOHNSON		
APPROVED			
DATE	07/29/02		

EG-03 B

CADD D1-R3
 SCI PROJECT NO: 15756.04
 FILENAME: \\S:\PROJECTS\15756\EG-03.DWG