

# SAND FILTRATION PROJECT

## FOR

# TRUCKEE MEADOWS WATER RECLAMATION FACILITY

BID# 13/14-020

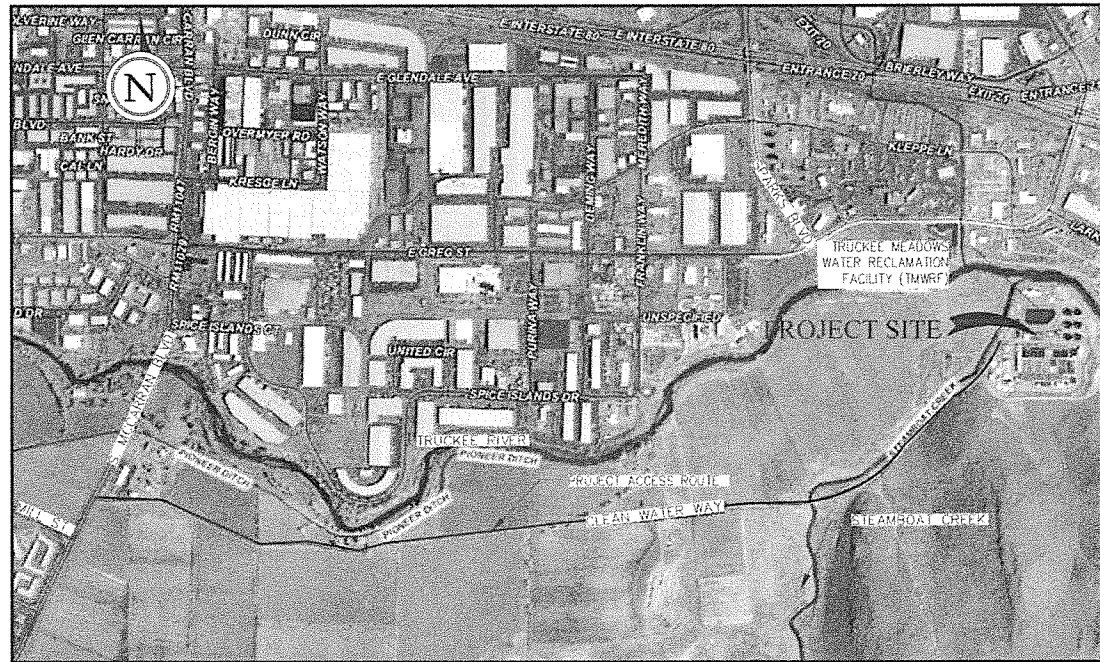
*Neil C. Krutz*  
 Neil C. Krutz P.E.  
 Deputy City Manager

2/28/14  
 Date

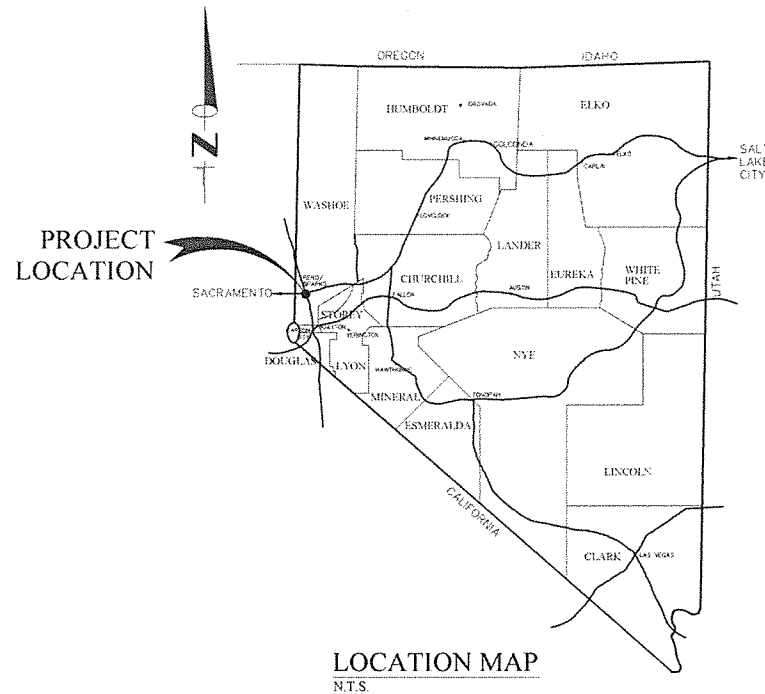
OWNER/DEVELOPER:  
**TRUCKEE MEADOWS WATER RECLAMATION FACILITY**  
 P.O. BOX 857  
 SPARKS, NV 89432  
 PHONE: (775) 353-2340

SITE LOCATION:  
 8500 CLEAN WATER WAY  
 RENO, NEVADA 89502  
 PHONE: (775) 861-4100

ENGINEER:  
**FARR WEST ENGINEERING**  
 5442 LONGLEY LANE, SUITE A  
 RENO, NV 89511  
 PHONE: (775) 851-4788  
 FAX: (775) 851-0766



T19N, R20E, SECTION 19  
**VICINITY MAP**  
 N.T.S.

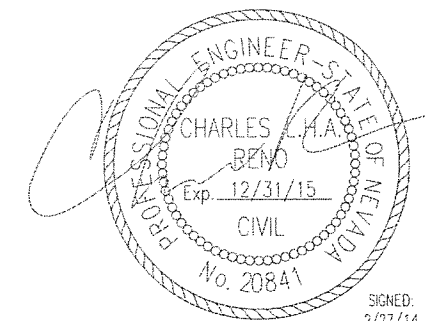


**LOCATION MAP**  
 N.T.S.

**INDEX OF SHEETS:**

- 1 OF 6 G1 TITLE SHEET AND INDEX
- 2 OF 6 G2 GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS
- 3 OF 6 G3 SITE LOCATION PLAN
- 4 OF 6 C1 FILTER BUILDING UPPER FLOOR PLAN
- 5 OF 6 C2 FILTER BUILDING SECTIONS
- 6 OF 6 C3 FILTER TANK AIR NOZZLE DETAILS

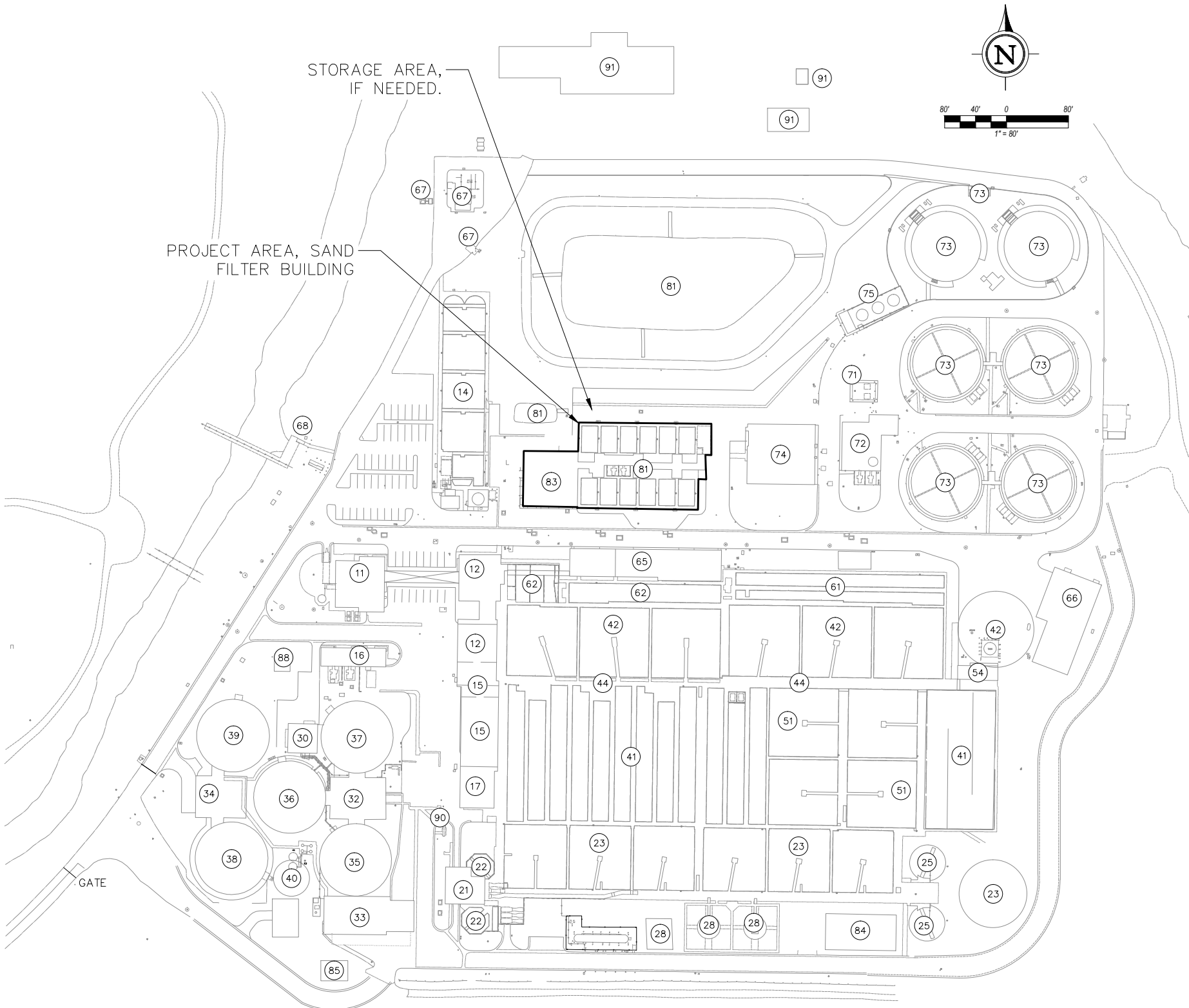
FARR WEST ENGINEERING ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD, THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY.



IMPROVEMENT PLANS FOR TMWRP SAND FILTRATION PROJECT TITLE SHEET AND INDEX	NEVADA WASHOE COUNTY
SHEET NUMBER <h1 style="text-align: center;">G1</h1> 1 OF 6	DRAWING ON 11"x17" IS HALF SCALE
REVISION NO. DATE DESCRIPTION BY APP DATE	
JOB NO.: 0519 MMST DATE: FEBRUARY 2014 SCALE: AS SHOWN DESIGNED: DMW/LEB DRAWN: [ ] CHECKED: [ ] BRIDGE: [ ]	

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**PROCESS ID LEGEND:**

1. POWER DISTRIBUTION
2. YARD PIPING (WET)
3. YARD PIPING (DRY)
4. ROADS
- 5.
- 6.
- 7.
8. COMPUTER SYSTEMS, IT
9. OFFSITE FACILITIES
- 10.
11. HEADWORKS
12. ADMINISTRATION BUILDING/ADMINISTRATION GARAGE
- 13.
14. CHLORINATION CONTACT TANK
15. AERATION BLOWERS, BLOWER 3 ENGINE, BOILER 1 & 2
16. POWER BUILDING
17. COGEN
- 18.
- 19.
- 20.
21. GRIT BUILDING
22. GRIT TANKS, PRIMARY INFLUENT FLUMES
23. PRIMARY SEDIMENTATION TANKS
24. PRIMARY SLUDGE PUMPS, PRIMARY SCUM PUMPS, PHOSPHORUS SLUDGE
25. DISSOLVED AIR FLOTATION THICKENING (DAFT), THICKEN WASTE ACTIVATED SLUDGE (TWAS)
- 26.
- 27.
28. PRIMARY SLUDGE SCREEN, GRAVITY THICKENERS, THICKENED PRIMARY SLUDGE PUMPING, GRAVITY THICKENER SCREEN
- 29.
30. DIGESTER CONTROL BUILDING 3
- 31.
32. DIGESTER CONTROL BUILDING 1 & HIDDEN VALLEY RANCH (HVR) OFFLOADING STATION
33. DEWATERING
34. DIGESTER CONTROL BUILDING 2
35. ANAEROBIC DIGESTER 1
36. ANAEROBIC DIGESTER 2
37. ANAEROBIC DIGESTER 3
38. ANAEROBIC DIGESTER 4
39. ANAEROBIC DIGESTER 5
40. DIGESTER CONTROL BUILDING 4, ACID PHASE DIGESTION
41. AERATION TANKS
42. SECONDARY SEDIMENTATION TANK
- 43.
44. RETURN ACTIVATED SLUDGE (RAS) PUMPS, WASTE ACTIVATED SLUDGE (WAS) SYSTEM
- 45.
- 46.
- 47.
- 48.
- 49.
- 50.
51. PHOSTRIP TANKS
- 52.
- 53.
54. PHOSPHOROUS RICH SUPERNATANT CONDITIONING CHAMBER
- 55.
- 56.
- 57.
- 58.
- 59.
- 60.
61. POST AERATION TANK
62. CONTACT TANK (ABD), SPENT BACKWASH TREATMENT
- 63.
- 64.
65. LAB BUILDING
66. CHLORINATION (RELOCATED), NAHSO3 SYSTEM
67. REUSE SYSTEM, REUSE FILL STATION
68. OUTFALL
- 69.
- 70.
71. TRAVELING SCREEN (OUTSIDE NITRIFICATION)
72. NITRIFICATION TOWER FEED PUMPING STATION, NITRIFICATION TOWER FEED
73. NITRIFICATION TOWERS
74. DENITRIFICATION REACTORS
75. METHANOL STORAGE AND FEED
- 76.
- 77.
- 78.
- 79.
- 80.
81. FILTERS, BACKWASH, MUD WELLS, SPENT BACKWASH PUMPING, EQUALIZATION BASIN
- 82.
83. CHEMICAL BUILDING 1, SO3, ALUM FEED,
84. CHEMICAL BUILDING 2, POLYMER, FERRIC
85. SATELLITE FERRIC
- 86.
87. SEPTAGE RECEIVING ODOR CONTROL - FUTURE
88. BIOSCRUBBER
89. GAS CONDITIONING - FUTURE
90. WASTE GAS BURNER
91. WAREHOUSE/MAINTENANCE BLDG, TRAINING FACILITY, CONFINED SPACE TRAINING FACILITY
- 92.
- 93.
- 94.
- 95.
- 96.
- 97.
- 98.
- 99.

DRAWING ON 11"x17" IS HALF SCALE

DATE	BY	APP	DESCRIPTION

JOB NO.: 0619 TMWR	DATE: FEBRUARY 2014	SCALE: AS SHOWN	DESIGNED: DAD/CLR	DRAWN: JRH	CHECKED: DAD/CLR
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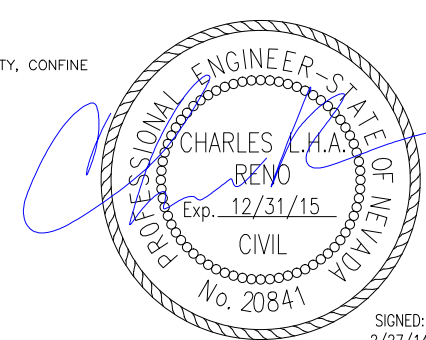
**FARR WEST ENGINEERING**  
 5442 LONGLEY LANE, SUITE A  
 RENO, NEVADA 89511  
 PHONE: (775) 851-4788  
 FAX: (775) 851-0766

NEVADA

WASHOE COUNTY

IMPROVEMENT PLANS FOR TMWR  
 SAND FILTRATION PROJECT  
 TMWR OVERALL MAP

SHEET NUMBER  
**G3**  
 3 OF 6



SIGNED: 2/27/14

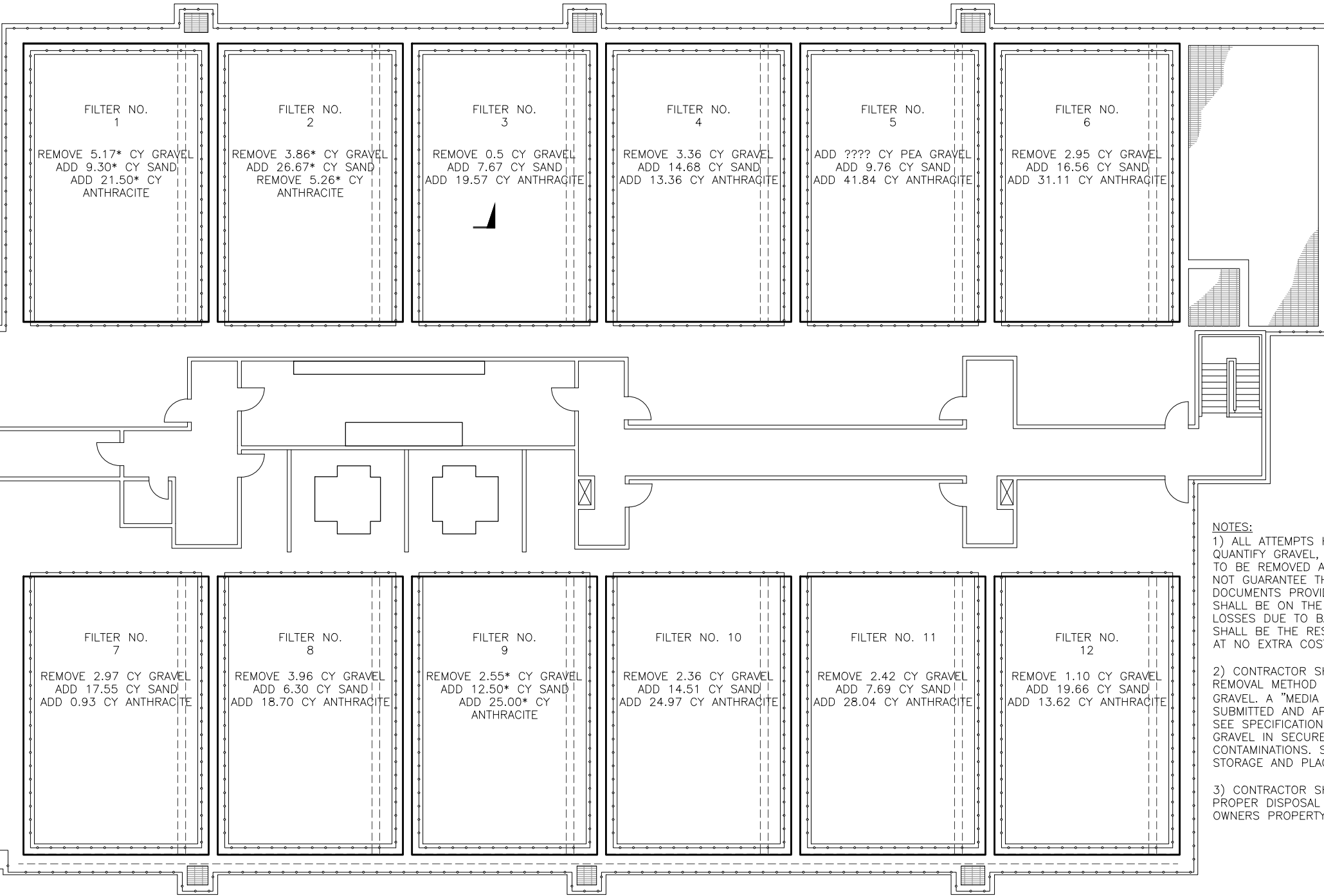
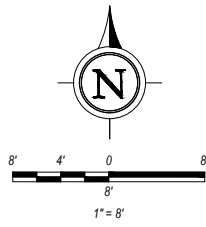
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DESIGN SPECIFICATIONS

4" PEA GRAVEL = 8.88 CY/FILTER  
 12" SAND MEDIA = 26.66 CY/FILTER  
 24" ANTHRACITE MEDIA = 53.33 CY/FILTER

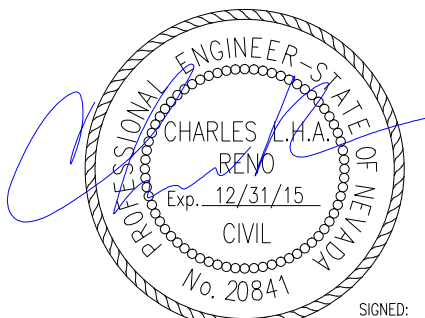
TOTAL QUANTITIES NEEDED (SEE NOTE-1)

GRAVEL: REMOVE 32.28 CY  
 SAND: ADD 161.16 CY  
 ANTHRACITE: ADD 226.28 CY



\* QUANTITIES ARE SUSPECT DUE TO QUESTIONABLE FIELD REPORTED CORE DEPTHS. QUANTITIES ARE ANTICIPATED TO BE LESS THEN THOSE LISTED. FOR BIDDING PURPOSED USE QUANTITIES PROVIDED.

- NOTES:
- 1) ALL ATTEMPTS HAVE BEEN MADE TO CORRECTLY QUANTIFY GRAVEL, SAND AND ANTHRACITE NEEDED TO BE REMOVED AND INSTALLED. FARR WEST CAN NOT GUARANTEE THE QUANTITIES CALCULATED FROM DOCUMENTS PROVIDED TO FARR WEST. PAYMENT SHALL BE ON THE ACTUAL QUANTITIES INSTALLED. LOSSES DUE TO BACKWASHING AND INITIAL STARTUP SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.
  - 2) CONTRACTOR SHALL USE A PROVEN SLURRY REMOVAL METHOD FOR REMOVAL OF MEDIA AND GRAVEL. A "MEDIA REMOVAL PLAN" SHALL BE SUBMITTED AND APPROVED PRIOR TO CONSTRUCTION, SEE SPECIFICATIONS. STORE REMOVED MEDIA & GRAVEL IN SECURE LOCATION FREE FROM FOREIGN CONTAMINATIONS. SEE SPECIFICATIONS FOR REMOVAL, STORAGE AND PLACEMENT REQUIREMENTS.
  - 3) CONTRACTOR SHALL CONSULT WITH OWNER FOR PROPER DISPOSAL OF UNUSED MATERIAL WITHIN THE OWNERS PROPERTY.



SIGNED: 2/27/14

JOB NO.:	0619 TMWRF
DATE:	FEBRUARY 2014
SCALE:	AS SHOWN
DESIGNED:	DAJ/CLR
DRAWN:	JRH
CHECKED:	DAJ/CLR

**FARR WEST ENGINEERING**  
 5442 LONGLEY LANE, SUITE A  
 RENO, NEVADA 89511  
 PHONE: (775) 851-4788  
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NEVADA

IMPROVEMENT PLANS FOR TMWRF  
 SAND FILTRATION PROJECT  
 FILTER BUILDING - UPPER FLOOR PLAN

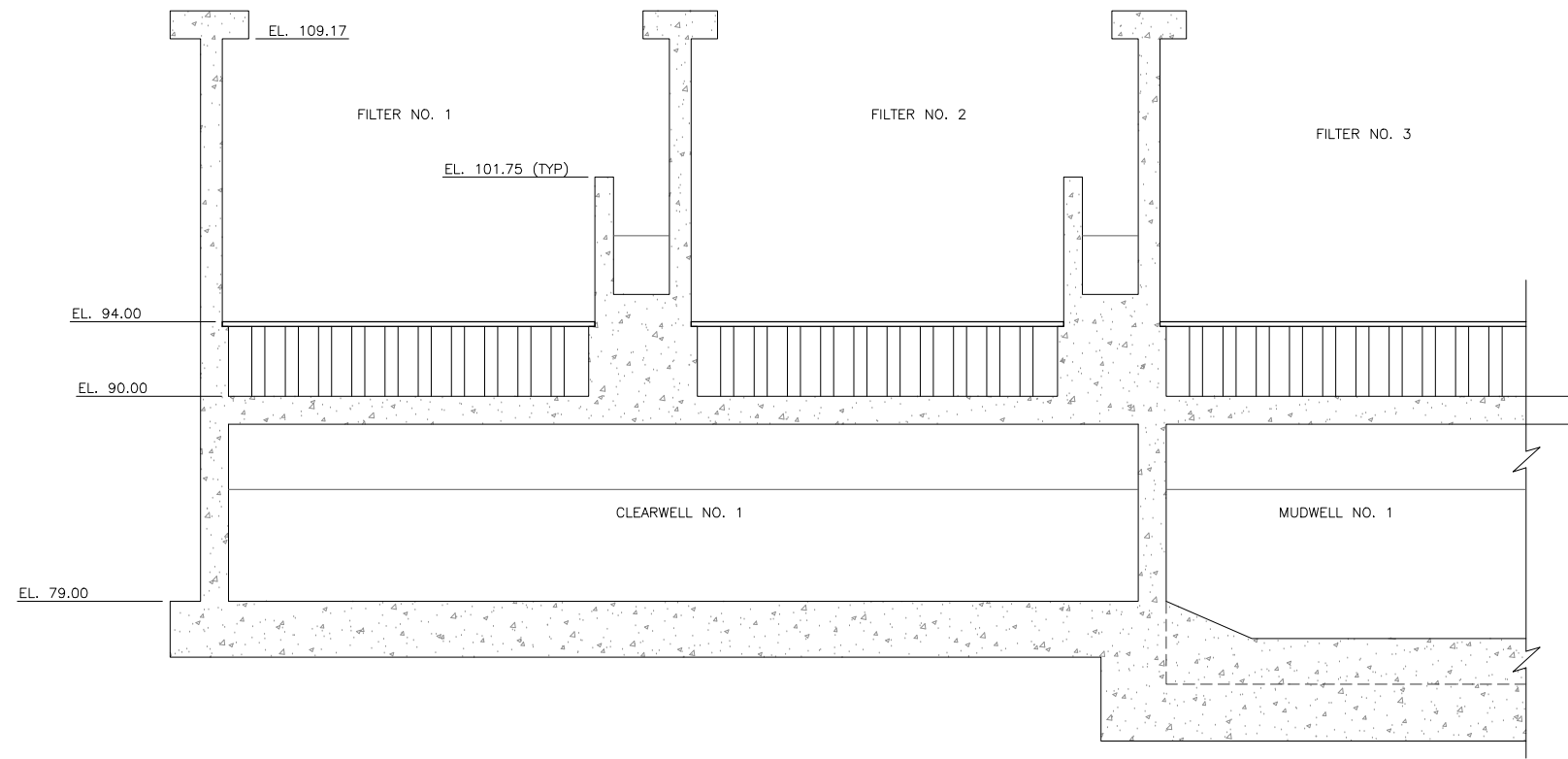
WASHOE COUNTY

SHEET NUMBER  
**C1**  
 4 OF 6

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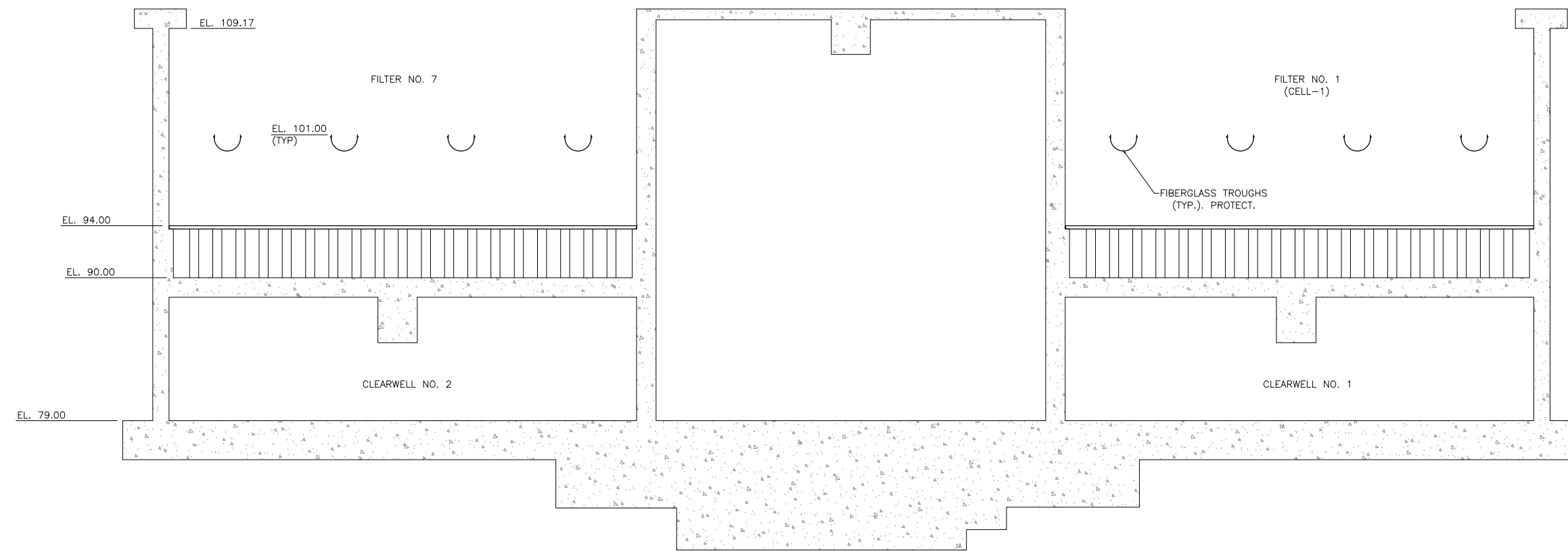


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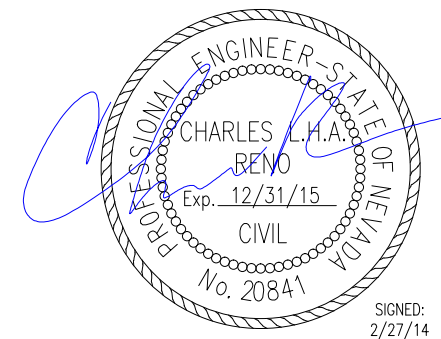


NOTES:  
 1) CONTRACTOR SHALL THOROUGHLY INSPECT AND CLEAN EXISTING TROUGHS AND FILTER CELL SURFACES. REPORT ALL REPAIR ISSUES TO THE OWNER IN WRITING.  
 2) IN NO CASE SHALL MORE THAN 2 CELLS BE OFF-LINE AT ANY ONE TIME. CONSULT WITH OWNER.

**FILTER BUILDING SECTION**  
 SCALE: 1" = 5'  
 A  
 C2



**FILTER BUILDING SECTION**  
 SCALE: 1" = 5'  
 B  
 C2



DATE	APP	BY	DESCRIPTION	REVISION

JOB NO.: 0619 TMWRF  
 DATE: FEBRUARY 2014  
 SCALE: AS SHOWN  
 DESIGNED: DAD/CLR  
 DRAWN: JRH  
 CHECKED: DAD/CLR

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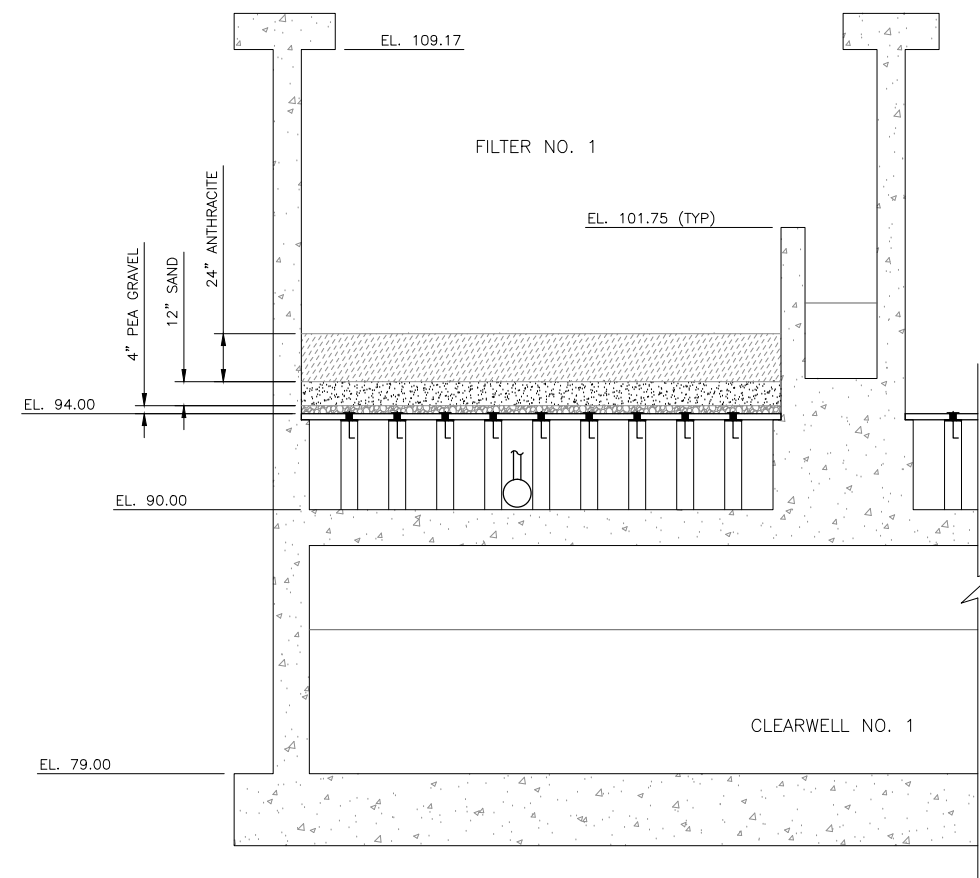
IMPROVEMENT PLANS FOR TMWRF  
 SAND FILTRATION PROJECT  
 FILTER BUILDING SECTIONS

WASHOE COUNTY  
 SHEET NUMBER  
**C2**  
 5 OF 6

SIGNED:  
 2/27/14

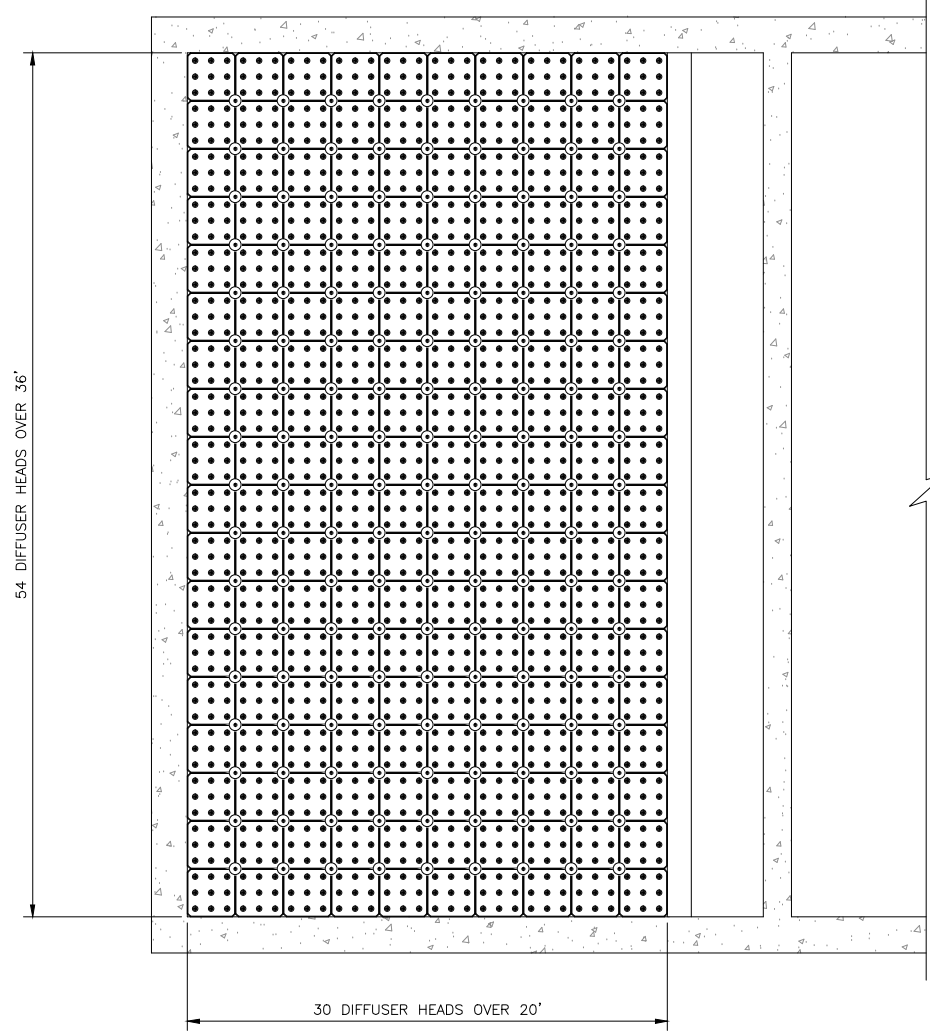
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**FILTER TANK SECTION**  
SCALE: 1" = 5'

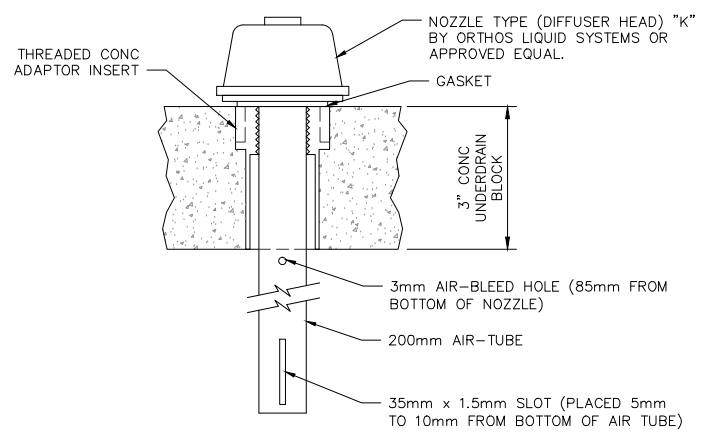
A  
C3



**FILTER TANK NOZZLE LAYOUT**  
SCALE: 1/4" = 1'-0"

B  
C3

NOTE:  
NUMBER OF FILTER  
NOZZLES (DIFFUSER  
HEADS) PER BED IS  
1,620.



**AIR NOZZLE/STRAINER DETAIL**  
SCALE: 6" = 1'-0"

C  
C3

DATE	APP	BY	DESCRIPTION	REVISION

JOB NO.: 0619 TMWRF  
DATE: FEBRUARY 2014  
SCALE: AS SHOWN  
DESIGNED: DMO/CLR  
DRAWN: JRH  
CHECKED: DMO/CLR

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RENO, NEVADA 89511  
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NEVADA

WASHOE COUNTY

IMPROVEMENT PLANS FOR TMWRF  
SAND FILTRATION PROJECT  
FILTER TANK AIR NOZZLE DETAILS

PROFESSIONAL ENGINEER-STATE OF NEVADA  
CHARLES L.H.A. RENO  
Exp. 12/31/15  
CIVIL  
No. 20841

SHEET NUMBER

**C3**

SIGNED: 2/27/14  
6 OF 6

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