



Mr. Dave Clark

July 09, 2015

NM MMD

Subject: Addenda to APPLICATION FOR REVISION OF MINE PERMIT #C1002RE FROM STANDBY TO ACTIVE STATUS and MODIFICATION OF GROUND WATER DISCHARGE PERMIT DP-61 MT. TAYLOR MINE, SAN MATEO, NEW MEXICO, Rev.1, for Addition of Molybdenum/ Selenium (MoSe) Treatment Building

Dear Mr. Clark:

With this letter, Rio Grande Resources Corporation (RGR) is submitting information describing a facility that will be added to the Mt. Taylor Mine's mine water treatment unit (MWTU) for removal of molybdenum and selenium from mine water before it is discharged. The MoSe facility will be constructed, and the existing IX plant (for removal of uranium) will be upgraded, during mine reactivation and will be operable before mine dewatering begins. When mine dewatering commences, the MWTU will be capable of removing U, Ra, Mo and Se to New Mexico human health standards per 20.6.2.3103A NMAC.

This submittal contains an addendum to the subject application for revision of the mine permit (application) from standby status to active status (Rev.1) as well as an addendum to the Closeout/Closure Plan (CCP), Rev.1 for the reactivated mine. Although water treatment for Mo and Se was not needed during previous mine operations, nor necessarily activated in future mine operations until/ unless Mo or Se limits are approached, the MoSe facility is being added as a condition of the Environment Department (NMED) approval of renewal of DP-61; this submittal is not a request for mine permit revision or modification.

The attached *addendum to the application for revision of mine permit status to active* includes:

- Mount Taylor Uranium Mine/ Rio Grande Resources Corp. Uranium Ion Exchange & Molybdenum and Selenium Adsorption Facility design drawings, set of 14, by LNV Engineers/ Architects/ Contractors, Rev.1, 3/13/15
- Operations and Maintenance (O&M) Manual, Mount Taylor Uranium Mine/ Rio Grande Resources Corp. Mine Water Treatment Unit (MWTU) - Uranium IX & Molybdenum/ Selenium Treatment Facility, by LNV Engineers/ Architects/ Contractors, Rev.1, 3/19/15
- Drawings MT13-AC-01 Rev.2, -02 Rev.2, -03 Rev.1, and -14 Rev.2, showing the location of the MoSe facility.
- Update of Section 3.1, Mine Water Treatment Unit, by reference to section II and IV of the O&M Manual. Where the O&M Manual conflicts with the present language of the application, the O&M Manual governs and supersedes the application section 3.1 text.

- LNV letter to NMED dated 5/20/2015 responding to questions regarding design and operation of the uranium IX and MoSe elements of the MWTU.
- RGR letter to MMD dated 6/24/2015, committing RGR to a cultural resources survey of the ground to be disturbed by construction of the MoSe facility.

The attached *addendum to the CCP for revision of mine permit status to active* includes:

- Additions to the CCP Rev.1 text, specifically to section 2.5, Future Mine Units; section 4.3, Surface Facilities Demolition; and section 7, Cost Estimate
- Changes to drawings MT13-CL-04 Rev.2, -07 Rev.2, and -13 Rev.2 to show the location of the MoSe facility.
- Change to Table 5.1, Building Inventory, to include the MoSe building.
- Rev.2 of the Cost Estimate (Appendix E) to include the cost to remove the MoSe facility.

Please contact me with any questions or comments.



Joe Lister

A handwritten signature in black ink, appearing to read "Joe Lister". The signature is fluid and cursive, with a large, open loop on the left side.

## **Addendum to the Application for Revision of Mine Permit #C1002RE from Standby to Active Status, Mt. Taylor Mine; July 9, 2015**

This addendum to the Revision 1 of the Application for Revision of Mine Permit #C1002RE from Standby to Active Status, Mt. Taylor Mine provides information related to a new facility that will be added to the Mt. Taylor Mine's mine water treatment unit (MWTU) for removal of molybdenum and selenium from mine water before it is discharged. The MoSe facility will be constructed, and the existing IX plant (for removal of uranium) will be upgraded, during mine reactivation and will be operable before mine dewatering begins. The addendum includes:

1. Mount Taylor Uranium Mine/ Rio Grande Resources Corp. Uranium Ion Exchange & Molybdenum and Selenium Adsorption Facility design drawings, set of 14, by LNV Engineers/ Architects/ Contractors, Rev.1, 3/13/15. This document in pdf format is attached.
2. Operations and Maintenance (O&M) Manual, Mount Taylor Uranium Mine/ Rio Grande Resources Corp. Mine Water Treatment Unit (MWTU) - Uranium IX & Molybdenum/ Selenium Treatment Facility, by LNV Engineers/ Architects/ Contractors, Rev.1, 3/19/15. This document in pdf format is attached.
3. Drawings MT13-AC-01 Rev.2, -02 Rev.2, -03 Rev.1, and -14 Rev.2, showing the location of the MoSe facility. These documents in pdf format are attached.
4. Update of Section 3.1, Mine Water Treatment Unit, *by reference to section II and IV of the O&M Manual*. Where the O&M Manual conflicts with the present language of the application, the O&M Manual governs and supersedes sections 3.1 and 3.1.1 on pages 13-16 of Revision 1 of the application text.
5. LNV letter to NMED dated 5/20/2015 responding to questions regarding design and operation of the uranium IX and MoSe elements of the MWTU. This document in pdf format is attached.
6. RGR letter to MMD dated 6/24/2015, committing RGR to a cultural resources survey of the ground to be disturbed by construction of the MoSe facility. This document in pdf format is attached.

# **Addendum to the Closeoue/ Closure Plan (CCP) for Revision of Mine Permit #C1002RE from Standby to Active Status, Mt. Taylor Mine; July 9, 2015**

1. Additions to the CCP Rev.1 text, specifically to section 2.5, Future Mine Units; section 4.3, Surface Facilities Demolition; and section 7, Cost Estimate, as follows:

## **2.5 Future Mine Units**

Both existing and future mine units were described in the original mine permit application (RGR 1994b). The only mine units not existing at this time (future mine unit) are the north waste rock pile and the Molybdenum/ Selenium (MoSe) treatment facility. The north pile will be constructed only if needed, and that need will not be determined until at least five years after the mine is reactivated. The MoSe treatment facility will be constructed during mine reactivation adjacent to and north of the existing IX plant. The MoSe treatment facility will be operated as needed to maintain Mo and Se concentrations below the New Mexico human health standards per 20.6.2.3103A NMAC while water is pumped from the mine.

## **4.3 Surface Facilities Demolition**

The MoSe facility is added to the list of facilities that will not be retained for the later use of the landowner and will be demolished.

## **7.0 COST ESTIMATE**

The estimated costs of closeout/ closure of the Mt. Taylor Mine were developed to satisfy the requirements of both MMD's *CLOSEOUT PLAN GUIDELINES FOR EXISTING MINES, Attachment #4 (FINANCIAL ASSURANCE CALCULATION HAND BOOK)* and its *Guidance To Mine Operators for Calculating Reclamation Costs in Net Present Value, December 29, 2004* as well as NMED-GWQB's *Discharge Plan Closure Guidance for Mines, May 30, 1996*.

Several references were used for unit costs, the primary being R.S. Means Heavy Construction Cost Data 2013, the Wyoming DEQ Guideline No. 12, and the Caterpillar Performance Handbook. The basis for each unit cost is identified on the cost estimate spreadsheet.

Quantities of work and materials were based on field measurements or counts of materials, construction or design record drawings, and area/ volume calculation functions within AutoDesks AutoCAD Civil 3D® design software. A new base map, completed in June 2012 at 2.0-foot contour intervals, was used as the topographic base along with AutoCAD Civil 3D® design software for the earthwork estimates in this CCP.

The cost estimate does not include closure costs for the north waste pile. If this pile is needed, RGR will update the cost estimate to include costs related to closure of this facility. If the north waste pile is not needed and not constructed, the area reserved for this pile will be left undisturbed.

The cost estimate does not include any deductions or offsets for re-sale or salvage value of mine components and scrap. However, the value of these materials, especially the structural steel and the treated water pipeline, could offset one quarter to one third the actual direct cost of closeout.

Cost estimates for closeout of the IX facility are based on the conservative assumption that tubular materials (pipes) and debris internal to the IX circuit will contain scale or corrosion material with radiological contamination that cannot be removed, making it necessary to dispose of these materials as low-level radioactive waste in a licensed facility off-site (DOE 2002). Tubular materials (pipes) and debris internal to the MoSe circuit are not likely to contain scale or corrosion material with radiological contamination, so these materials will be disposed on-site with other similar material or recycled for off-site use. MoSe resins will be recycled to a permitted facility. Additional assumptions are that 1) the IX resin will be sent to a third party facility licensed by NRC or an Agreement State to process equivalent feed source material in the form of IX resin, and 2) the third party facility would accept title to the resin. The decontamination and demolition (D&D) costs for the IX circuit equipment are covered under the financial assurance requirement of the Radioactive Material License with the NMED Radiation Control Bureau and are not included in this estimate; only the IX structure is included in this estimate.

The detailed estimate is presented in Appendix E. The estimated costs by category are:

Direct Cost = \$ 5,135,745

Indirect Cost = \$2,516,515

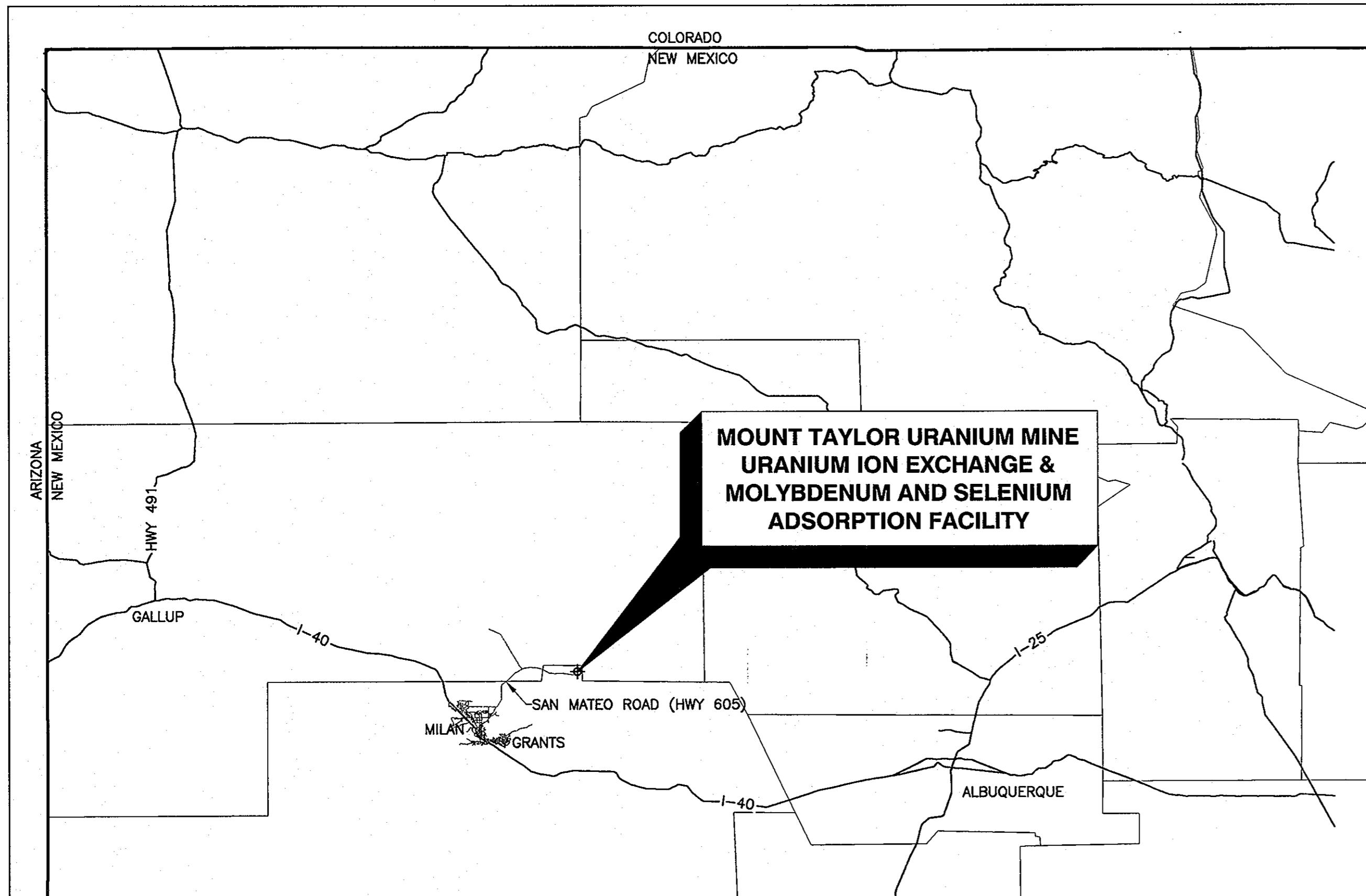
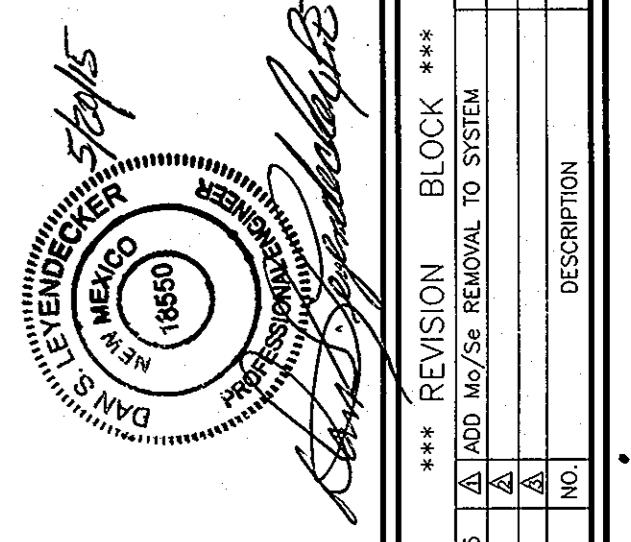
Direct + Indirect Cost = \$7,652,260

Location Cost Adjustment=	0.879
Total Adjusted Direct + Indirect =	\$6,726,337
New Mexico Gross Receipts Tax	\$441,416
<b>Total Direct + Indirect, Location-adjusted, with NMGRT</b>	<b>\$7,167,753</b>

# CIBOLA COUNTY, NEW MEXICO

## MOUNT TAYLOR URANIUM MINE/RIO GRANDE RESOURCES CORP.

### URANIUM ION EXCHANGE & MOLYBDENUM AND SELENIUM ADSORPTION FACILITY



LOCATION MAP  
NOT TO SCALE

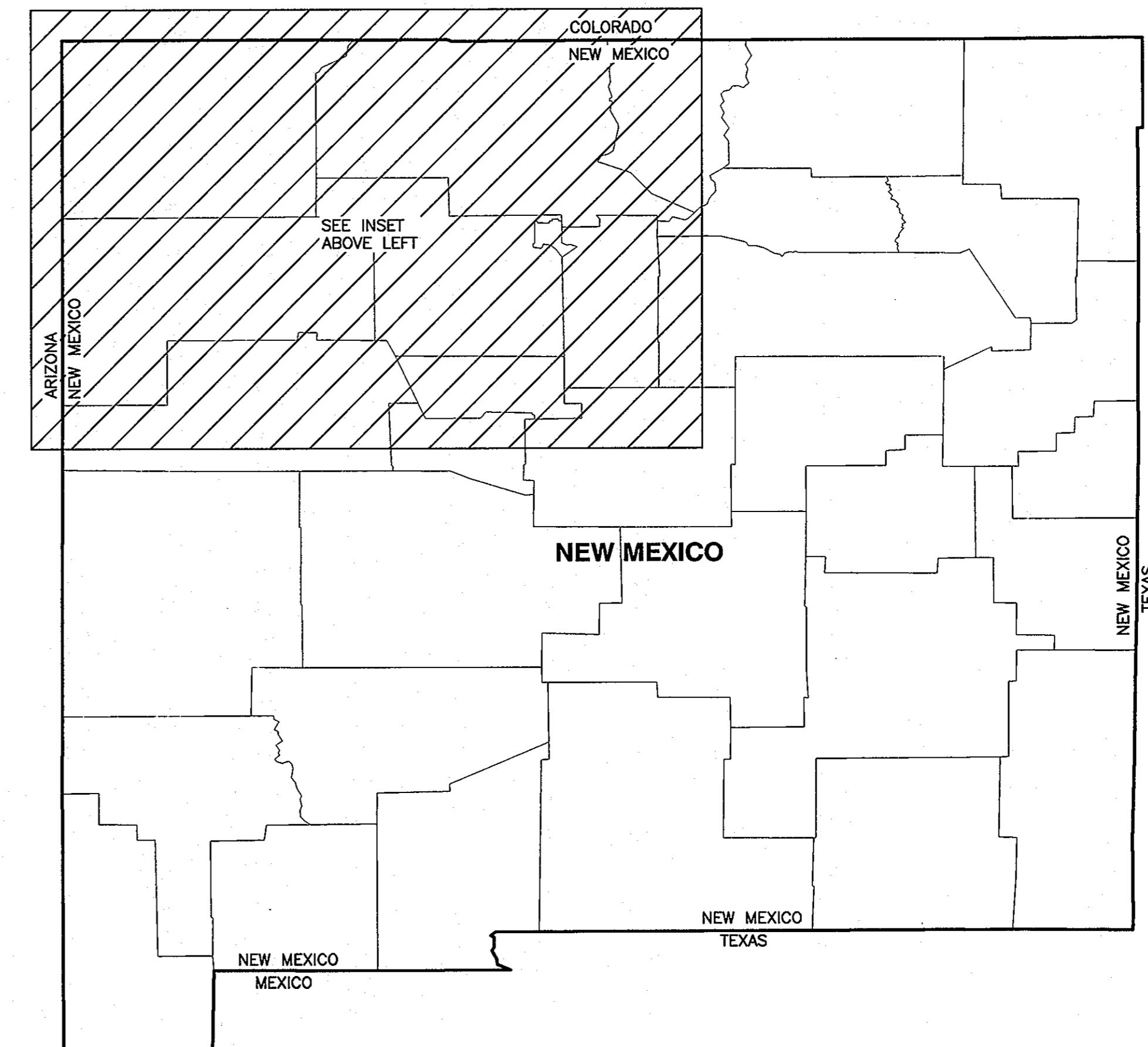
# LNV

engineers | architects | contractors

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TBPE FIRM NO. F-366

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SHEET INDEX	
SHEET NUMBER	SHEET TITLE
1	<b>COVER SHEET</b>
2	<b>SYMBOLS &amp; LEGEND (SHEET 1 OF 2)</b>
3	<b>SYMBOLS &amp; LEGEND (SHEET 2 OF 2)</b>
4	<b>URANIUM ION EXCHANGE EQUIPMENT LAYOUT PLAN</b>
5	<b>URANIUM ION EXCHANGE FOUNDATION CONTAINMENT PLAN</b>
6	<b>URANIUM ION EXCHANGE MISCELLANEOUS DETAILS</b>
7	<b>URANIUM ION EXCHANGE PROCESS FLOW DIAGRAM</b>
8	<b>MOLYBDENUM AND SELENIUM PROCESS FLOW DIAGRAM</b>
9	<b>URANIUM P&amp;ID-MINE WATER WET WELL</b>
10	<b>URANIUM P&amp;ID-ION EXCHANGE COLUMNS (TRAINS 1 &amp; 2)</b>
11	<b>URANIUM P&amp;ID-RESIN STORAGE AND TRANSFER</b>
12	<b>Mo-Se P&amp;ID-Mo-Se SORBSTER STORAGE AND TRANSFER</b>
13	<b>MOLYBDENUM AND SELENIUM P&amp;ID</b>
14	<b>MOLYBDENUM AND SELENIUM BUILDING LAYOUT AND CONTAINMENT PLAN</b>



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APPROVED BY _____	
SCALE: _____	
DESCRIPTION: _____	
3.13.1.5	*** REVISION BLOCK ***
A	ADD No./See REGIONAL TO SYSTEM
B	DATE NO.
MARCH 2015	

**MT. TAYLOR URANIUM MINE/RIO GRANDE RESOURCES CORP., NEW MEXICO  
URANIUM ION EXCHANGE & MOLYBDENUM AND SELENIUM ADSORPTION FACILITY**

**COVER SHEET**

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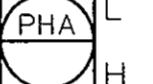
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SHEET NO. 1 OF 14

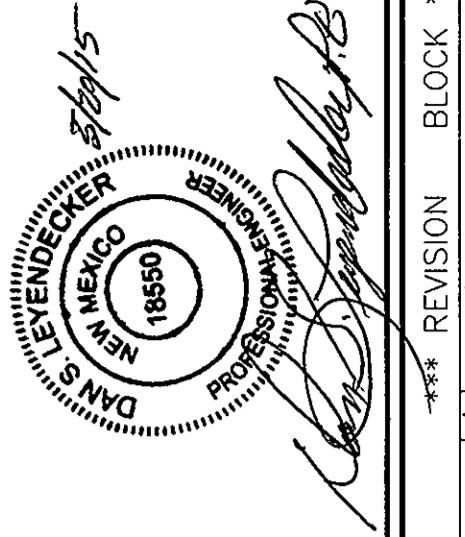


XX = EQUIPMENT ID

MW	MINE WATER
IX-(1-14)	ION EXCHANGE COLUMN (1-14)
RI	RESIN IN
RO	RESIN OUT
T-1	OVERFLOW TANK
T-2A	RESIN TRANSFER WATER STORAGE TANK
T-2B	RESIN TRANSFER WATER STORAGE TANK
T-3A	LOADED RESIN STORAGE TANK
T-3B	LOADED RESIN STORAGE TANK
SP-1	SUMP PUMP

P&ID SYMBOLS;  
FIELD INSTRUMENTS

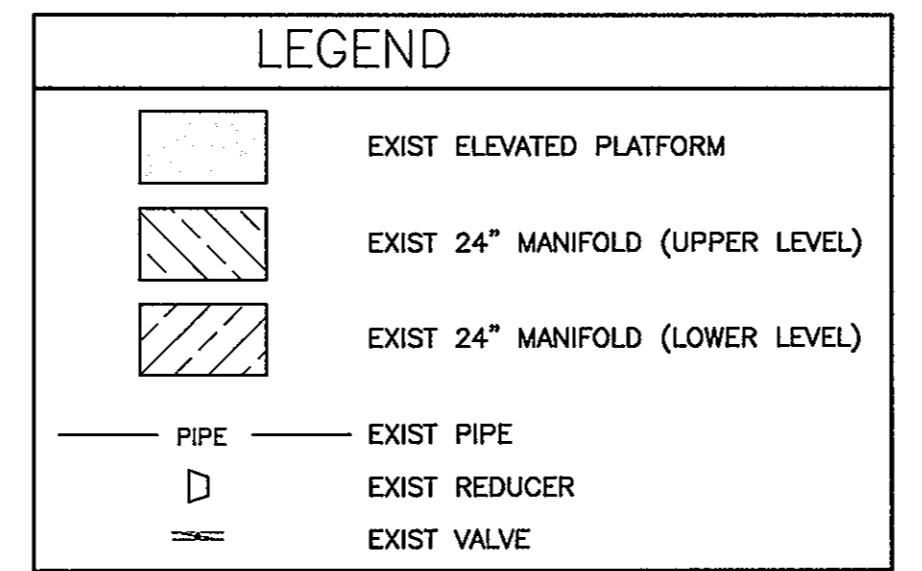
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	FLOW INDICATOR		LEVEL ALARM HIGH by DCS
	LEVEL TRANSMITTER		LEVEL ALARM LOW by DCS
	FLOW TRANSMITTER		LEVEL ALARM LOW LOW by DCS
	LEVEL VALVE		FLOW ALARM LOW by DCS
	FLOW CONTROL VALVE		FLOW ALARM HIGH by DCS
	LEVEL INDICATOR TRANSMITTER		LEVEL INDICATOR CONTROL by DCS
	FLOW INDICATOR TRANSMITTER		FLOW INDICATOR CONTROL by DCS
	LEVEL SWITCH		FLOW RECORDER by DCS
	LEVEL SWITCH HIGH		PH INDICATOR CONTROL by DCS
	LEVEL SWITCH LOW		PH ALARM by DCS
	LEVEL SWITCH HIGH LOW		
	LEVEL CONTROL VALVE		
	FLOW SENSOR ELEMENT		
	LEVEL SENSOR ELEMENT		
	VARIABLE FREQUENCY DRIVE		
	PH INDICATOR TRANSMITTER		



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APPROVED BY _____	DSL
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MT. TAYLOR URANIUM MINE/RIO GRANDE RESOURCES CORP., NEW MEXICO  
URANIUM ION EXCHANGE & MOLYBDENUM AND SELENIUM ABSORPTION FACILITY  
SYMBOLS & LEGEND  
(SHEET 2 OF 2)

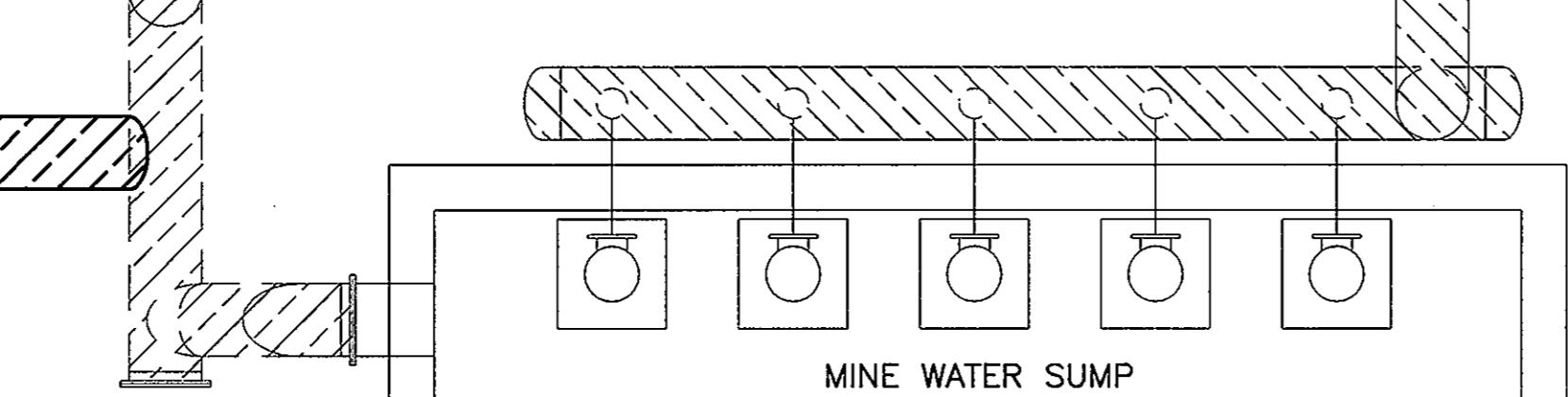
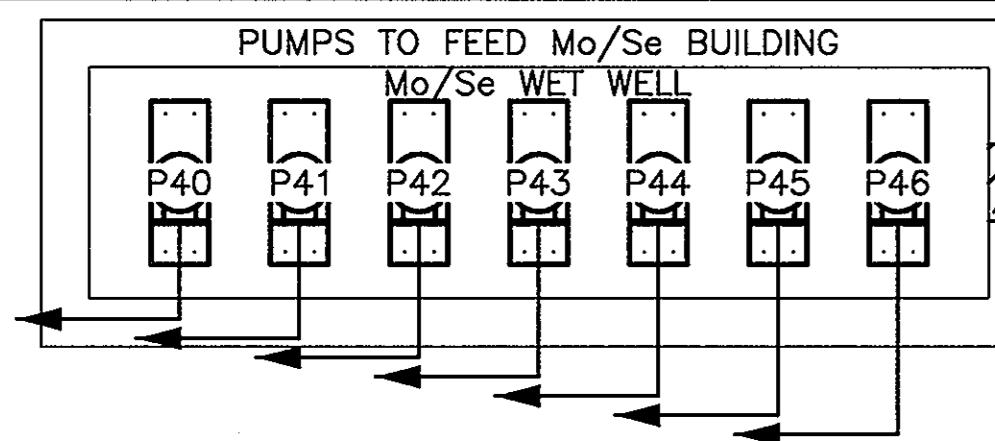
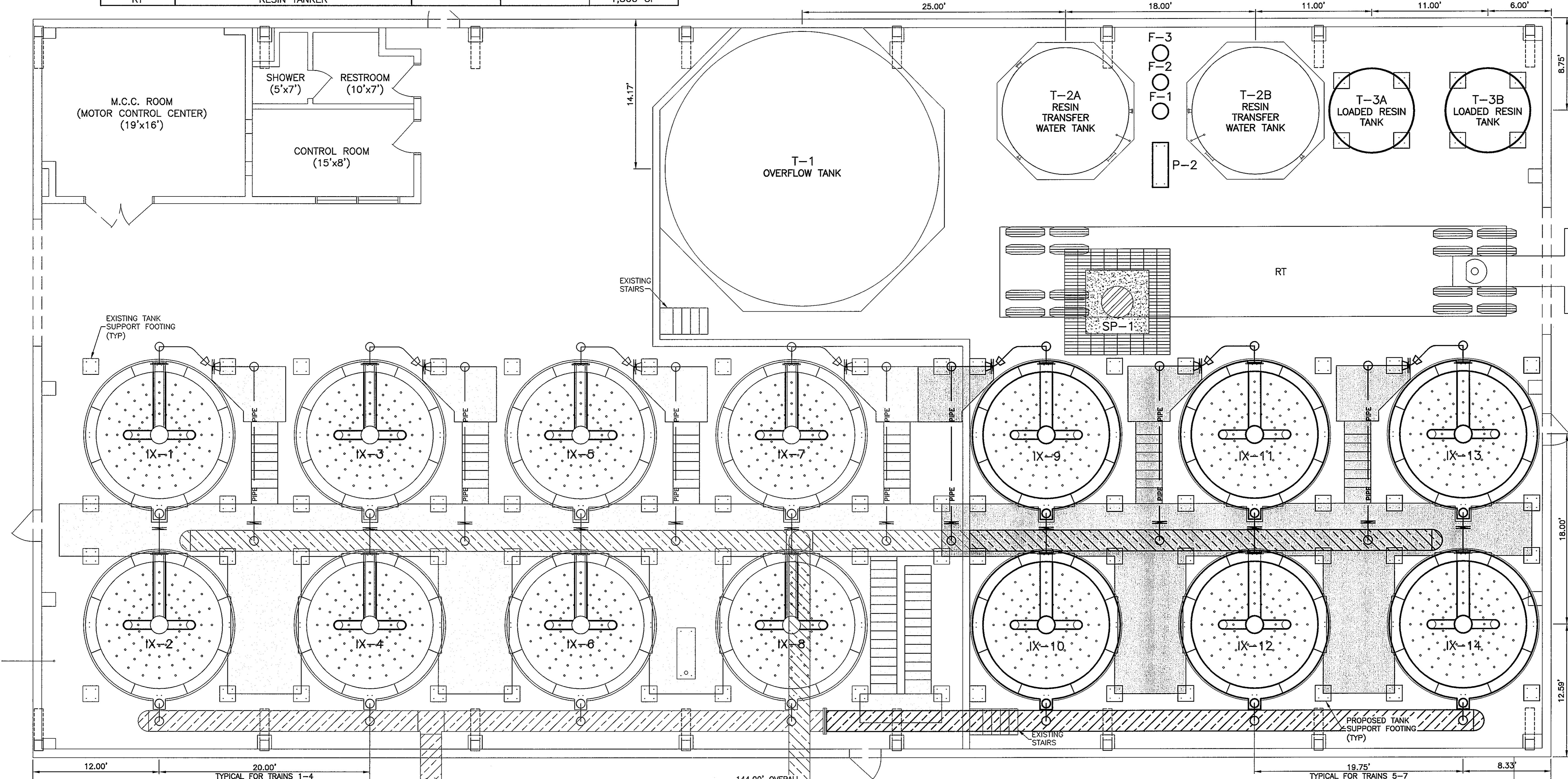
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IX-(9-14)	PROPOSED IX COLUMNS	12'Ø x 12'H	10,000 GAL
T-1	OVERFLOW TANK	26'Ø x 24'H	95,000 GAL
T-2A	RESIN TRANSFER WATER STORAGE TANK	12'Ø x 20'H	16,000 GAL
T-2B	RESIN TRANSFER WATER STORAGE TANK	12'Ø x 20'H	16,000 GAL
T-3A	LOADED RESIN STORAGE TANK	8'Ø x 20'H	7,500 GAL
T-3B	LOADED RESIN STORAGE TANK	8'Ø x 20'H	7,500 GAL
SP-1	SUMP AND GRATE	6'Ø x 5' DEEP	1,000 CF
P-2	RESIN TRANSFER WATER PUMP	TBD	
F-(1-3)	FILTER	TBD	
RT	RESIN TANKER		1,500 CF



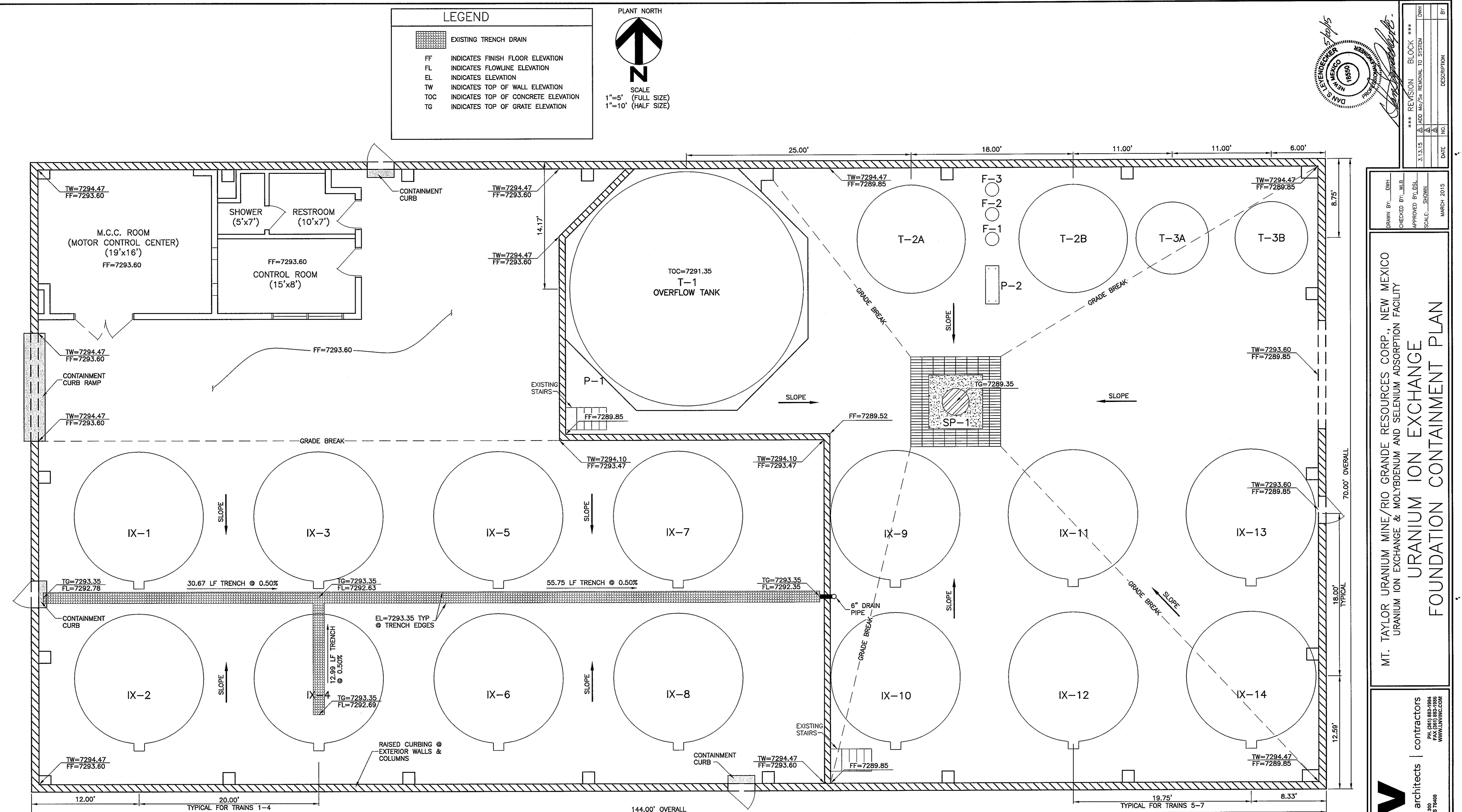
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N  
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1"=10' (HALF SIZE)

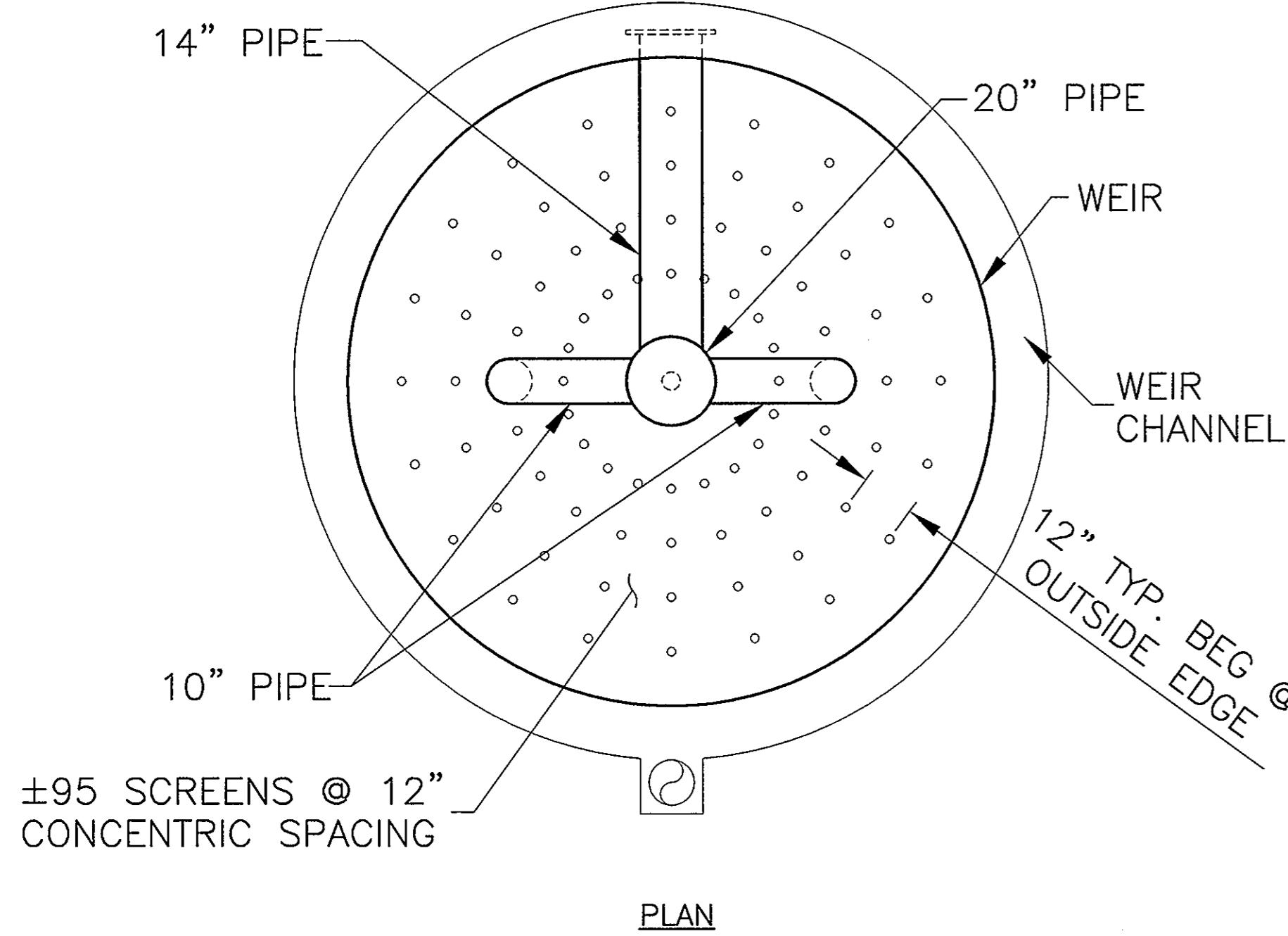
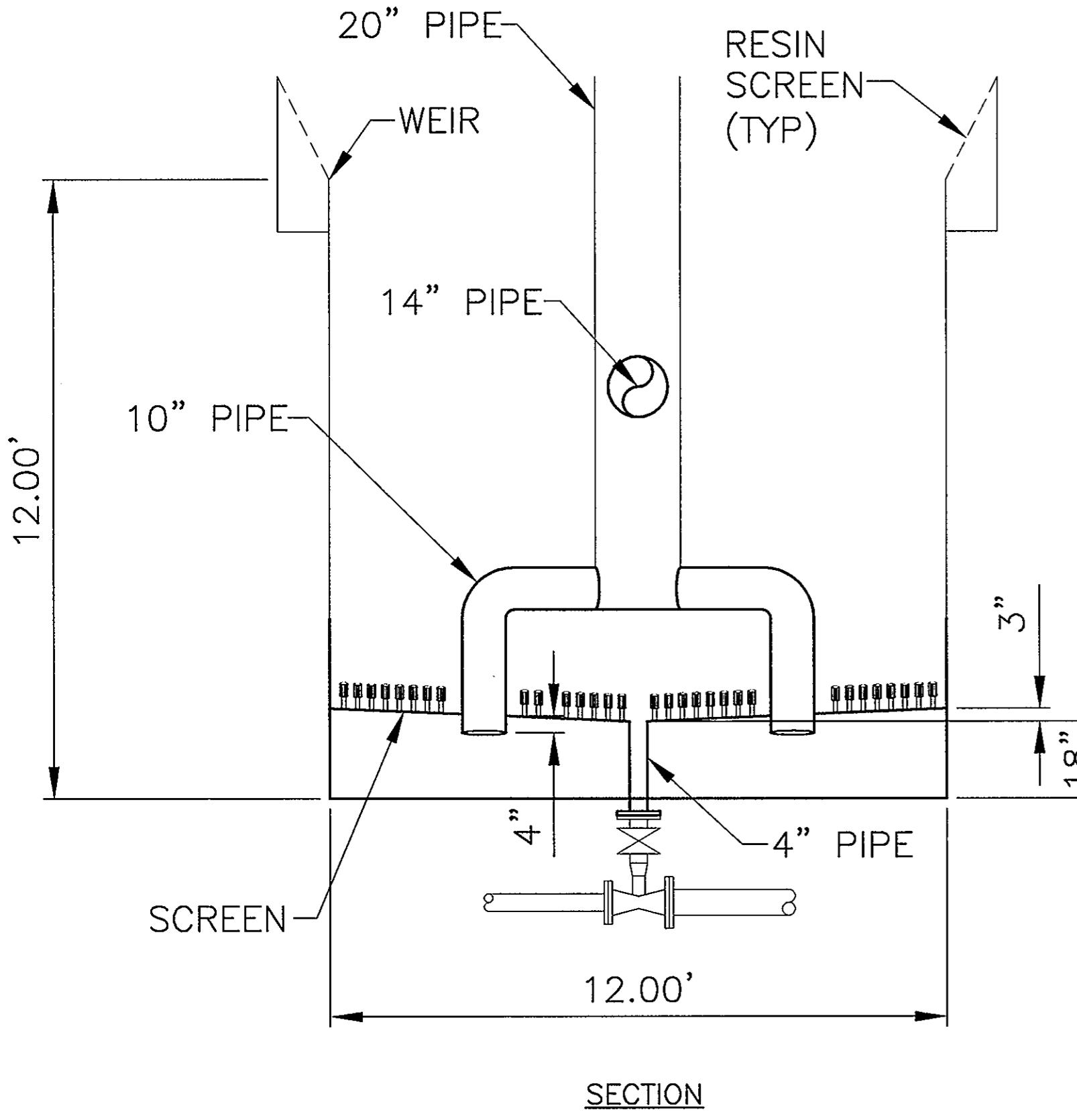
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DENVER, COLORADO  
NEW MEXICO PROPOSAL NUMBER 188550  
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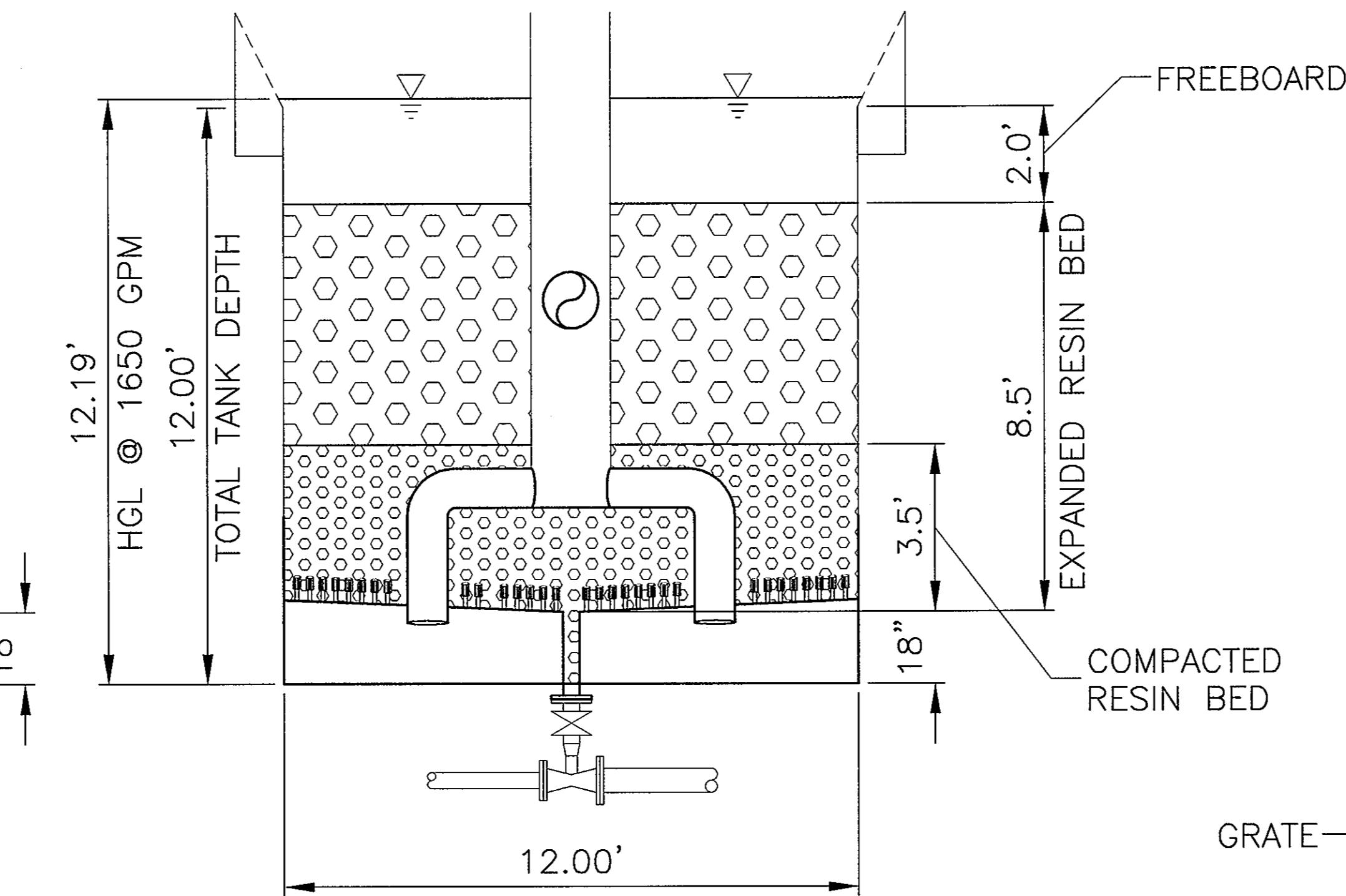


1 URANIUM ION EXCHANGE EQUIPMENT LAYOUT PLAN  
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SCALE: 1"=5' (FULL SIZE SHEETS)

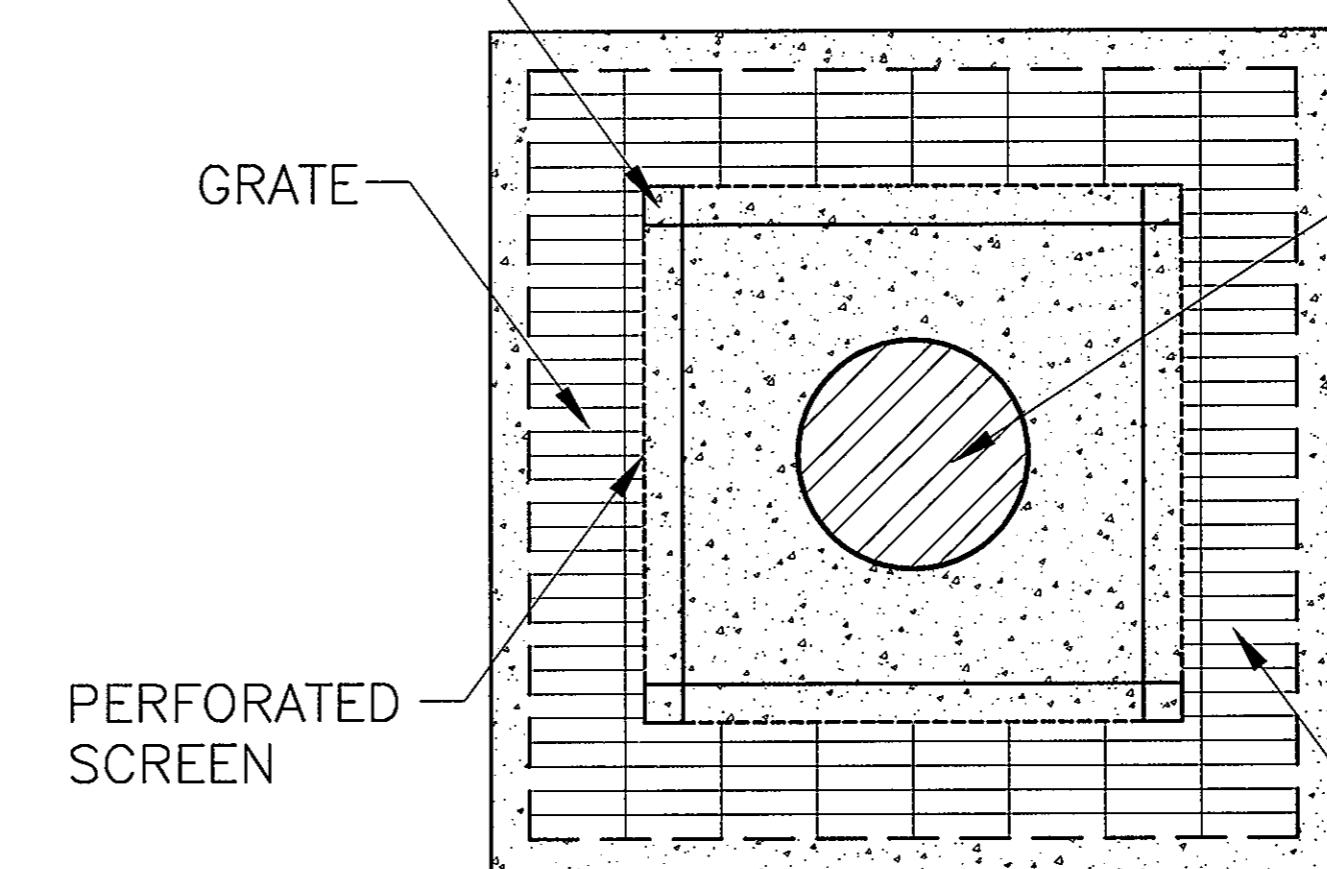
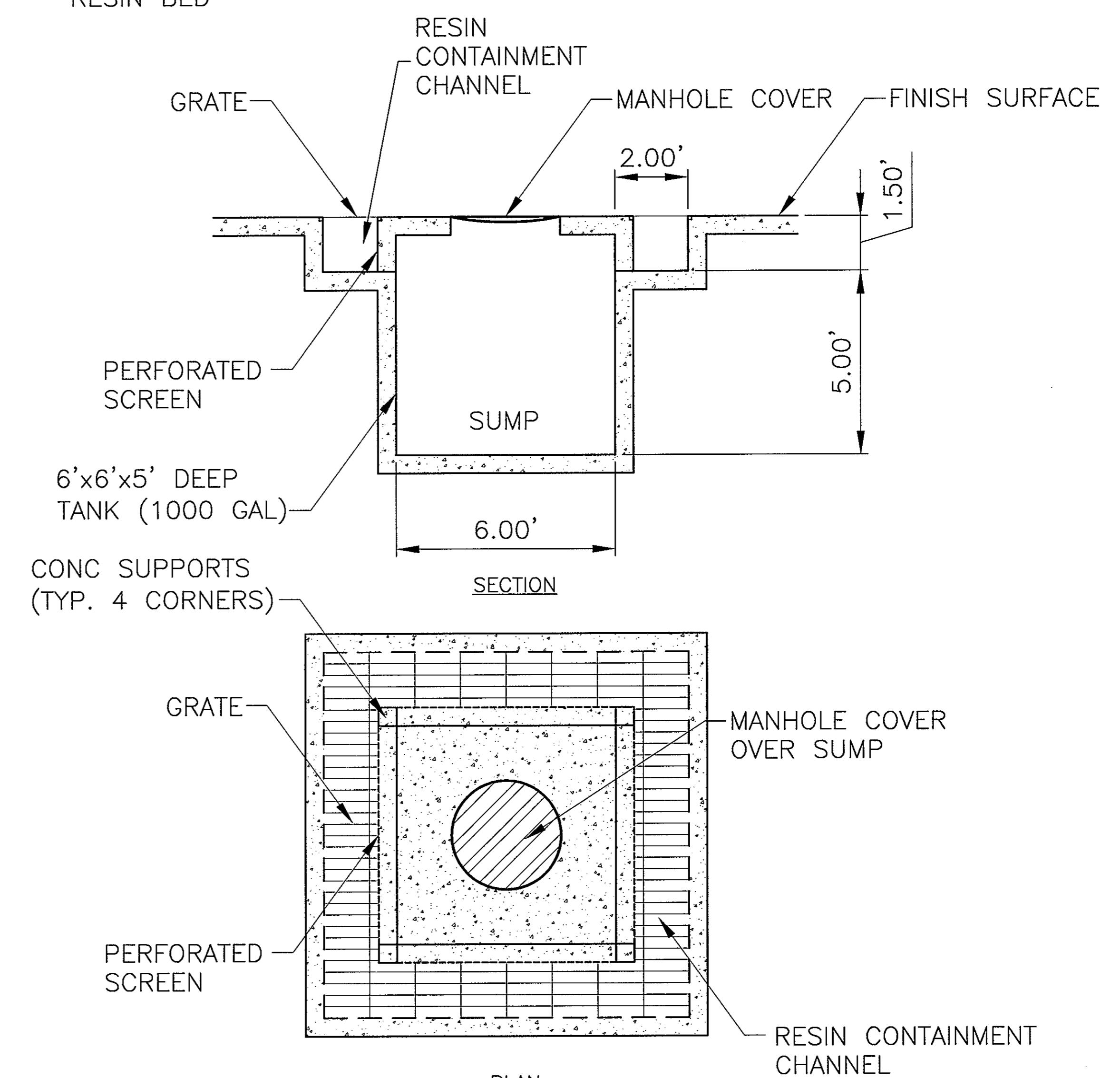




3 IX COLUMN  
SCALE: 1"=5' (HALF SIZE)



4 RESIN & HYDRAULIC PROFILE  
SCALE: 1"=5' (HALF SIZE)



5 SUMP DETAIL  
SCALE: 1"=5' (HALF SIZE)

LNV		engineers   architects   contractors
801 NAVIGATION, SUITE 300 CORPUS CHRISTI, TEXAS 78406 TELEPHONE NO. 361-5866		
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URANIUM ION EXCHANGE & MOLYBDENUM AND SELENIUM ABSORPTION FACILITY		
URANIUM ION EXCHANGE MISCELLANEOUS DETAILS		
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DRAFTING STAMP  
DAN L. VENDEKER, S.E.  
PROFESSIONAL ENGINEER  
NEW MEXICO  
19550  
REMOVED BY: DAN L. VENDEKER, S.E.

**NOTES:**

1. LEAD AND TAIL IX COLUMNS OF TRAIN NUMBER (1) OF SEVEN (7) SHOWN
2. NEW RESIN TRANSFER LINE 4" @ 5 FPS  
THEREFORE WATER FLOW @ 200 GPM.
3. V901 - MANUAL FLOW INLET TO WET WELL.

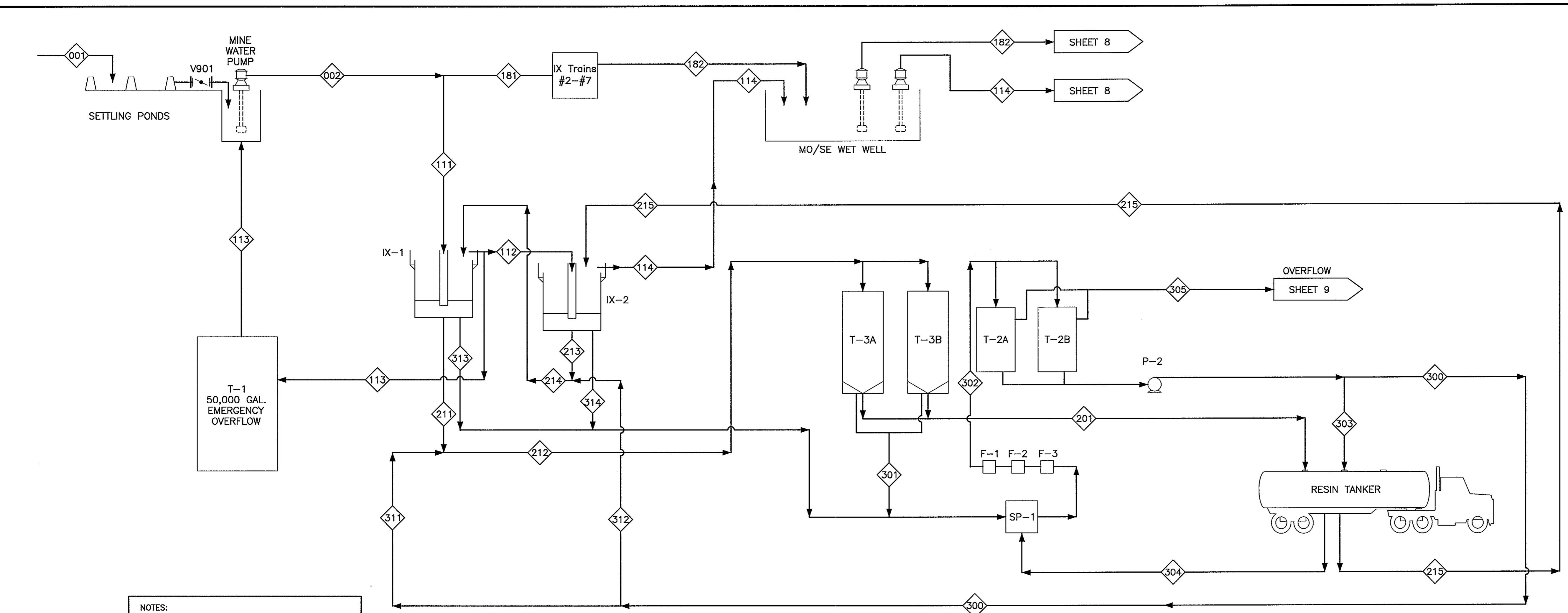
6 URANIUM ION EXCHANGE PROCESS FLOW DIAGRAM  
NOT TO SCALE

PROCESS  
 XXX  
 STREAM ID TRAIN # 8= TRAINS 2-7 COMBINED  
 PROCESS 0= ALL TRAINS COMBINED  
 0 MINE WATER  
 1 ION EXCHANGE  
 2 RESIN TRANSFER  
 3 RESIN TRANSFER WATER

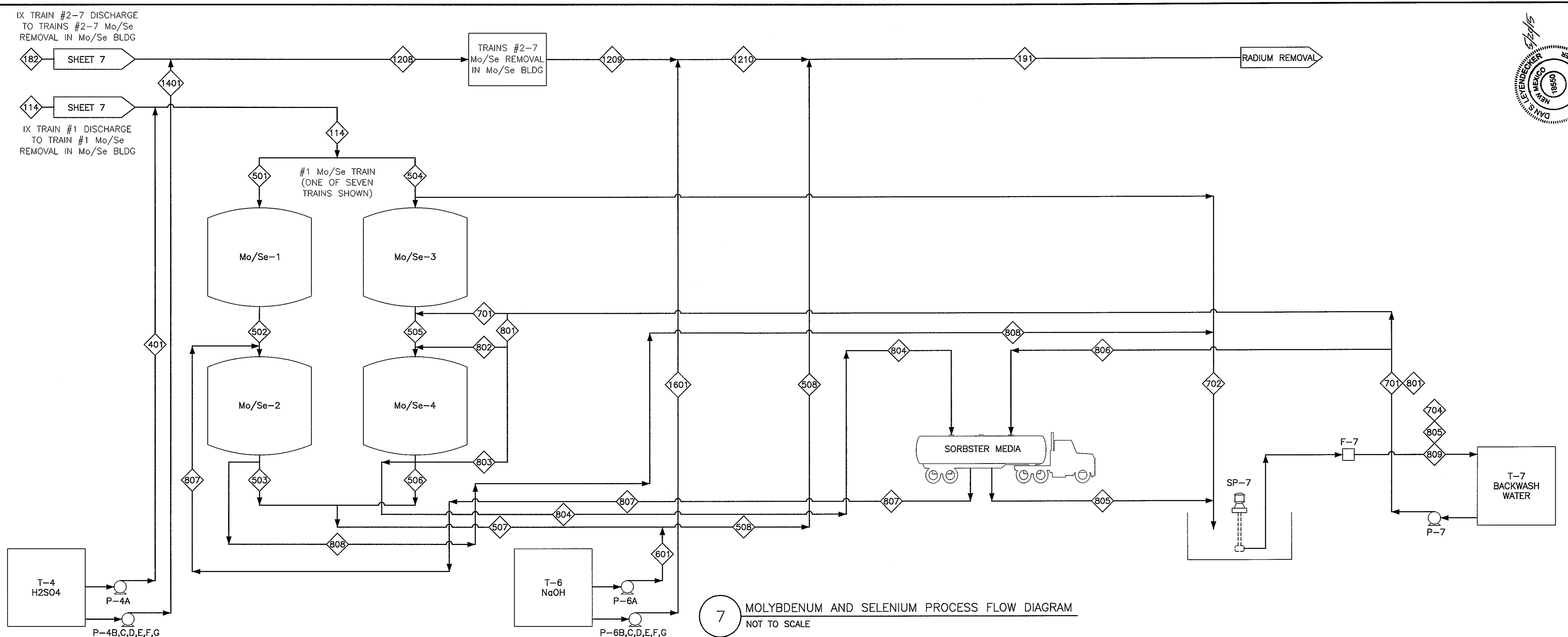
URANIUM ION EXCHANGE  
PROCESS FLOW DIAGRAM

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JOB NO: 160092  
TAB NO: 7 OF 14  
SHEET NO: 7 OF 14

DAN S. LEENECKER  
NEW MEXICO  
PROFESSIONAL  
ENGINEER  
REGISTRATION  
NO. 8650  
BLOCK \*\*\*  
\*\*\* REVISION  
3.13.15  
ADD Mine Removal to System  
SCALE: SHOWN  
Date: MARCH 2015  
Description: BY



PROCESS		ION EXCHANGE							RESIN TRANSFER					RESIN TRANSFER WATER												
STREAM NO.	DESCRIPTION	001	002	111	112	113	114	181	182	201	211	212	213	214	215	300	301	302	303	304	305	311	312	313	314	
ION EXCHANGE		RAW MINE WATER	SETLED MINE WATER	U <sub>3</sub> O <sub>8</sub> TRAIN #1 LEAD COLUMN FEED	U <sub>3</sub> O <sub>8</sub> TRAIN #1 LEAD COLUMN DISCHARGE / TAIL COLUMN FEED	OVERFLOW	U <sub>3</sub> O <sub>8</sub> TRAIN #1 TAIL COLUMN TREATED WATER	U <sub>3</sub> O <sub>8</sub> IX TRAINS #2-#7 TREATED WATER	U <sub>3</sub> O <sub>8</sub> IX TRAINS #2-#7 FEED	LOADED RESIN TO RESIN TANKER	U <sub>3</sub> O <sub>8</sub> TRAIN #1 LEAD COLUMN LOADED RESIN	LOADED RESIN AND RTW	U <sub>3</sub> O <sub>8</sub> TRAIN #1 TAIL COLUMN PARTIALLY LOADED RESIN	PARTIALLY LOADED RESIN AND RTW	STRIPPED RESIN	RTW TO EDUCTOR OF LEAD OR TAIL IX COLUMN	LOADED RESIN BACK TO RTW	FILTERED WATER BACK TO RTW	RESIN TANKER WATER TO RESIN TANKER	RESIN TANKER WATER TO SUMP	RESIN TRANSFER WATER STORAGE TANK OVERFLOW	RTW TO EDUCTOR OF LEAD COLUMN	RTW TO EDUCTOR OF TAIL COLUMN	U <sub>3</sub> O <sub>8</sub> TRAIN #1 LEAD COLUMN RTW RETURN	U <sub>3</sub> O <sub>8</sub> TRAIN #1 TAIL COLUMN RTW RETURN	
ION EXCHANGE	Q <sub>IX</sub> (gpm)	10,000	10,000	1,429	1,429	-	1,429	8,571	8,571	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ION EXCHANGE	Q <sub>IX</sub> (ft <sup>3</sup> /min)	1,337	1,337	191	191	-	191	1,146	1,146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ION EXCHANGE	SOLIDS (mg/L)	1,000	100	100	100	-	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ION EXCHANGE	SOLIDS (Tons/h)	2.5	0.25	0.04	0.04	-	0.04	0.21	0.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRANSFER TIME	(min)	-	-	-	-	-	-	-	-	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	
SP.GR.	LIQUOR	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
U <sub>3</sub> O <sub>8</sub>	(mg/l)	0.1	0.1	0.1	0.020	-	0.017	0.1	0.017	0.3	961	0.3	35	0	-	-	-	-	-	-	-	-	-	-	-	-
U <sub>3</sub> O <sub>8</sub>	(lbs/day)	12	12	1.7	0.34	-	0.29	10.3	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U <sub>3</sub> O <sub>8</sub>	(lbs/ft <sup>3</sup> )	0	0	0	0	-	0	0	0	0	0.06	0	0.002	0	-	-	-	-	-	-	-	-	-	-	-	-
Mo	(mg/L)	0.530	0.530	0.530	0.530	0.530	0.530	0.530	0.530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Se	(mg/L)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q <sub>TOTAL</sub>	(gpm)	10,000	10,000	1,429	1,429	-	1,429	8,571	8,571	225	25	225	25	225	200	200	200	200	200	200	200	200	200	200	200	200
Water	(Tons/h)	2,502	2,502	357	357	-	357	2,145	2,145	56	6	56	6	56	50	50	50	50	50	50	50	50	50	50	50	50
TOTAL	(Tons/h)	2,505	2,503	358	358	-	358	2,145	2,145	56	6	56	6	56	50	50	50	50	50	50	50	50	50	50	50	50
RESIN TRANSFER	Q <sub>RESIN</sub>	-	-	-	-	-	-	-	-	25	25	25	25	25	-	-	-	-	-	-	-	-	-	-	-	-
RESIN TRANSFER	Q <sub>RESIN</sub>	(ft <sup>3</sup> /min)	-	-	-	-	-	-	-	3.3	3.3	3.3	3.3	3.3	-	-	-	-	-	-	-	-	-	-	-	-
RESIN TRANSFER WATER	V <sub>RESIN</sub>	(ft <sup>3</sup> )	-	-	-	-	-	-	-	400	400	400	400	400	-	-	-	-	-	-	-	-	-	-	-	-
RESIN TRANSFER WATER	Q <sub>RTW</sub>	(gpm)	-	-	-	-	-	-	-	200	-	200	200	200	200.0	200.0	200.0	200	200	200	200.0	200.0	200.0	200.0	200.0	
RESIN TRANSFER WATER	Q <sub>RTW</sub>	(ft <sup>3</sup> /min)	-	-	-	-	-	-	-	27	-	27	27	27	27	27	27	27	27	27	27	27	27	27	27	



MOLYBDENUM AND SELENIUM PROCESS FLOW DIAGRAM

## **FLOW AND MASS BALANCE**

**LNV**

engineers | architects | contractors

801 NAVIGATION, SUITE 300  
CORPUS CHRISTI, TEXAS 78408  
TBPE FIRM NO. F-366

PH. (361) 883-1984  
FAX (361) 883-1986  
[WWW.LNVINC.COM](http://WWW.LNVINC.COM)

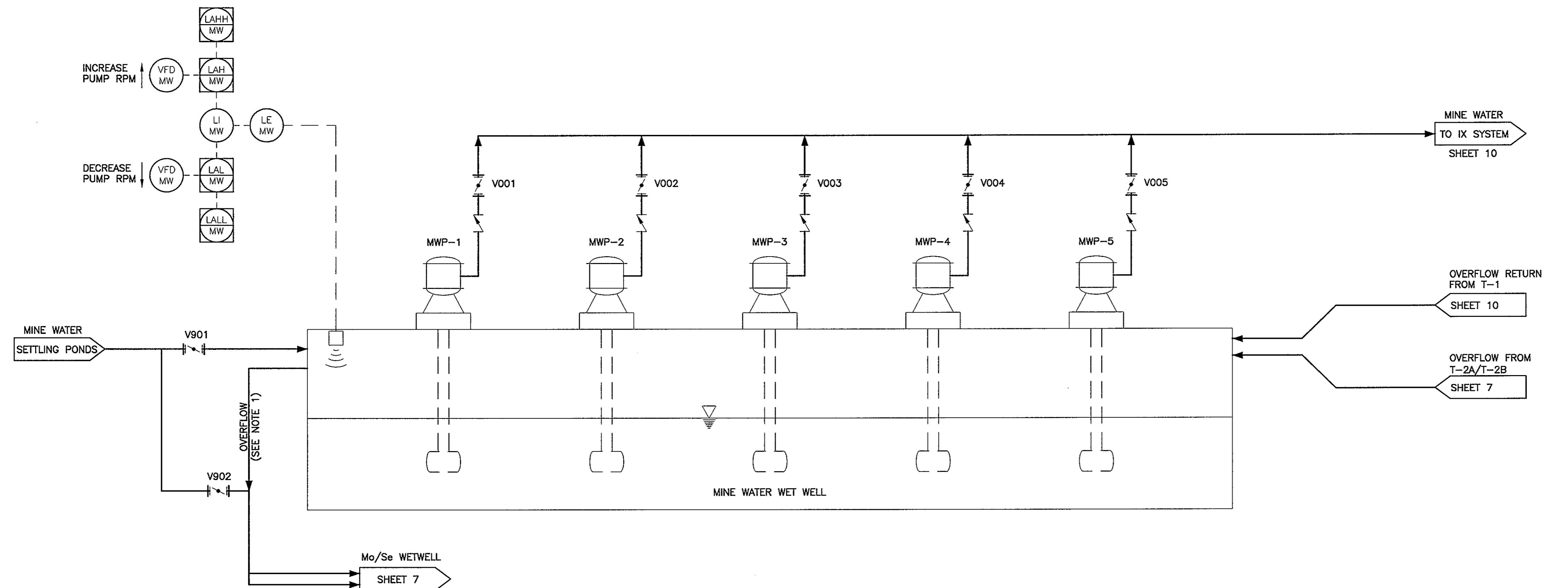
8	14
JOB NO:	150092
TAB NO.	PFD
SHEET NO:	8 OF 14

DAN'S	REYENDERICKER	5/1/15
NEW MEXICO	18850	18850
DRAWN BY: DWH CHECKED BY: WLB APPROVED BY: DS SCALE: N.I.S.		
*** REVISION BLOCK **		
3.13.15	<input checked="" type="checkbox"/> ADD Mo/Se Removal to System	DWH
	<input checked="" type="checkbox"/> ADD	
	<input checked="" type="checkbox"/> DATE NO.	DESCRIPTION
	MARCH 2015	

**MT. TAYLOR URANIUM MINE/RIO GRANDE RESOURCES CORP., NEW MEXICO  
URANIUM ION EXCHANGE & MOLYBDENUM AND SELENIUM ABSORPTION FACILITY**

**URANIUM P&ID—MINE WATER WET WELL**

**LNV**  
 engineers | architects | contractors  
 801 NAVIGATION SUITE 300  
 1000 EAST 19TH STREET  
 DALLAS, TEXAS 75201  
 PH: 972.242.7408  
 FAX: 972.242.7408  
 E-MAIL: [WWW.LNV.COM](http://WWW.LNV.COM)



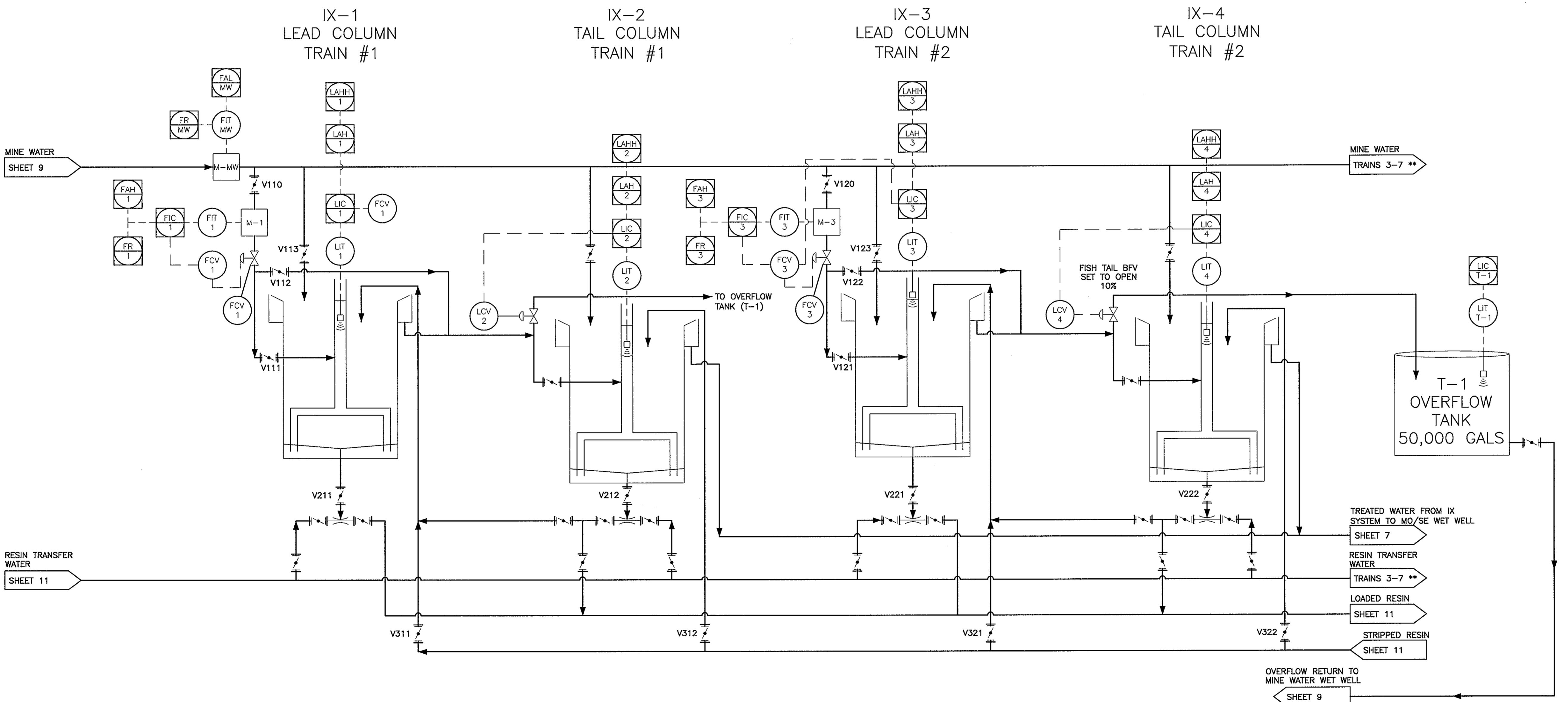
**NOTE:**

1. OVERFLOW WILL ONLY BE USED DURING EXTREME HIGH WATER LEVELS RESULTING FROM ELECTRICAL, EQUIPMENT, OR INSTRUMENT FAILURE. THIS OVERFLOW WILL BE DIRECTED TO THE MO/SE WET WELL NOT TO RADIUM REMOVAL.
2. LAH ALARM WILL NOTIFY THE LEVEL IN WET WELL IS ABOVE LEVEL SET POINT. OPERATOR WILL MONITOR THIS LEVEL AND HAS THE OPTION TO THROTTLE BACK V901 (FLUID FROM PONDS).
3. LAHH WILL ONLY OCCUR IF V901 THROTTLING HAS NOT PREVENTED LEVEL TO INCREASE. THE OVERFLOW RATE WILL BE THE DIFFERENCE OF FLUID NOT BEING HANDLED IN URANIUM IX SYSTEM.
4. V901 IS MANUAL VALVE THAT CONTROLS INLET FLOW TO WET WELL.

DAN'S  
LEVENDICKER  
PROFESSIONAL ENGINEER  
NEW MEXICO  
18550  
Signature

*** DRAWN BY _____ DWH	*** REVISED BY _____ DWH
*** CHECKED BY _____ WLB	*** APPROVED BY _____ DWH
SCALE: _____ SHOWN	SCALE: _____ SHOWN
DATE: _____ MARCH 2015	DATE: _____ MARCH 2015
DESCRIPTION: URANIUM P&ID-ION EXCHANGE COLUMNS (TRAINS 1 & 2)	

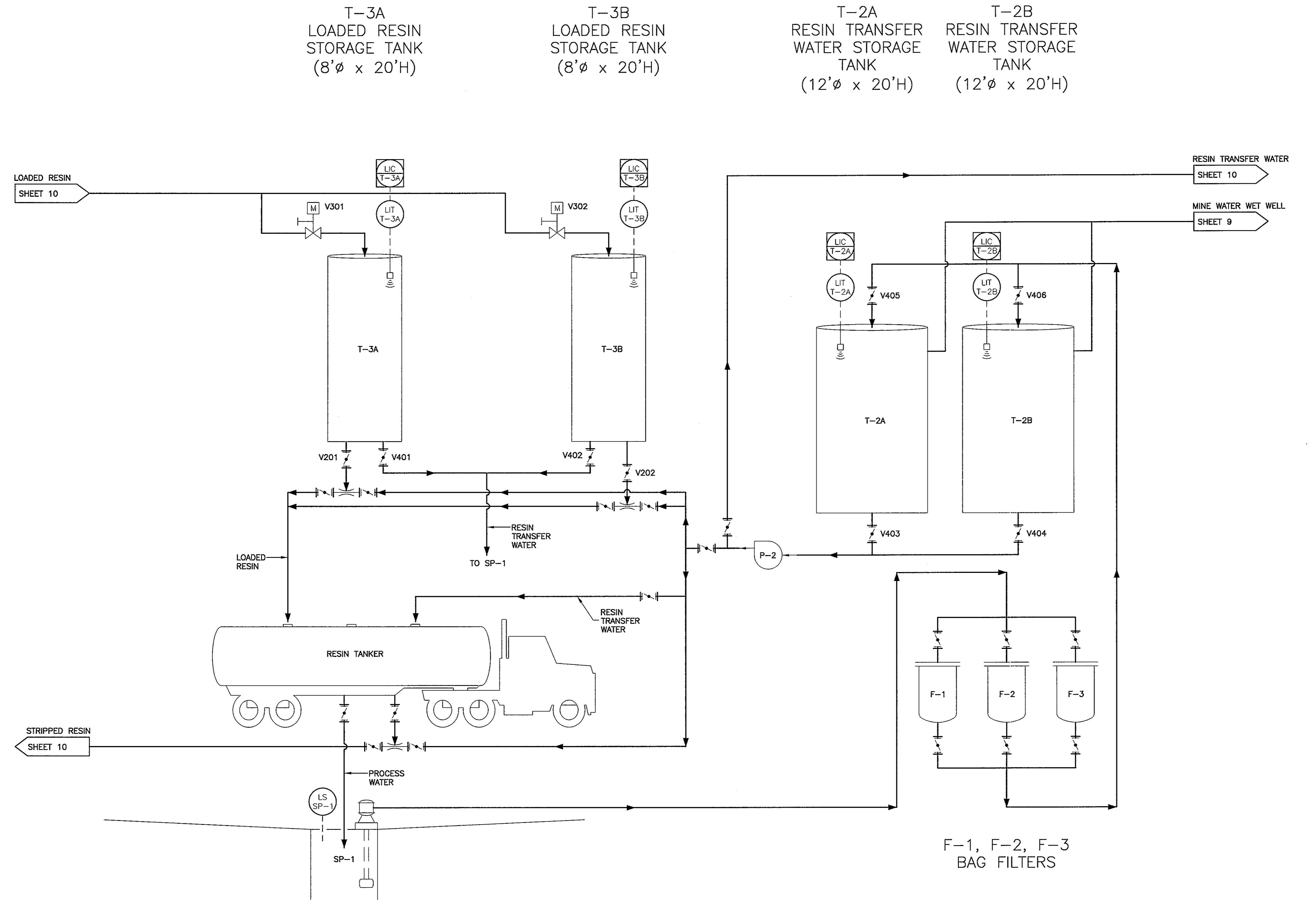
\*\* LEAD AND TAIL IX COLUMNS OF TRAINS ONE (1) AND TWO (2) OF SEVEN (7) SHOWN



DAN'S  
LEVENDICKER  
PROFESSIONAL ENGINEER  
NEW MEXICO  
18550  
Signature

*** DRAWN BY _____ DWH	*** REVISED BY _____ DWH
*** CHECKED BY _____ WLB	*** APPROVED BY _____ DWH
SCALE: _____ SHOWN	SCALE: _____ SHOWN
DATE: _____ MARCH 2015	DATE: _____ MARCH 2015
DESCRIPTION: URANIUM P&ID-ION EXCHANGE COLUMNS (TRAINS 1 & 2)	

**LNV**  
engineers | architects | contractors  
navigation suite 300  
160092  
10  
14  
JOE NO: 160092  
TAB NO: IX PID  
SHEET NO: 10 OF 14



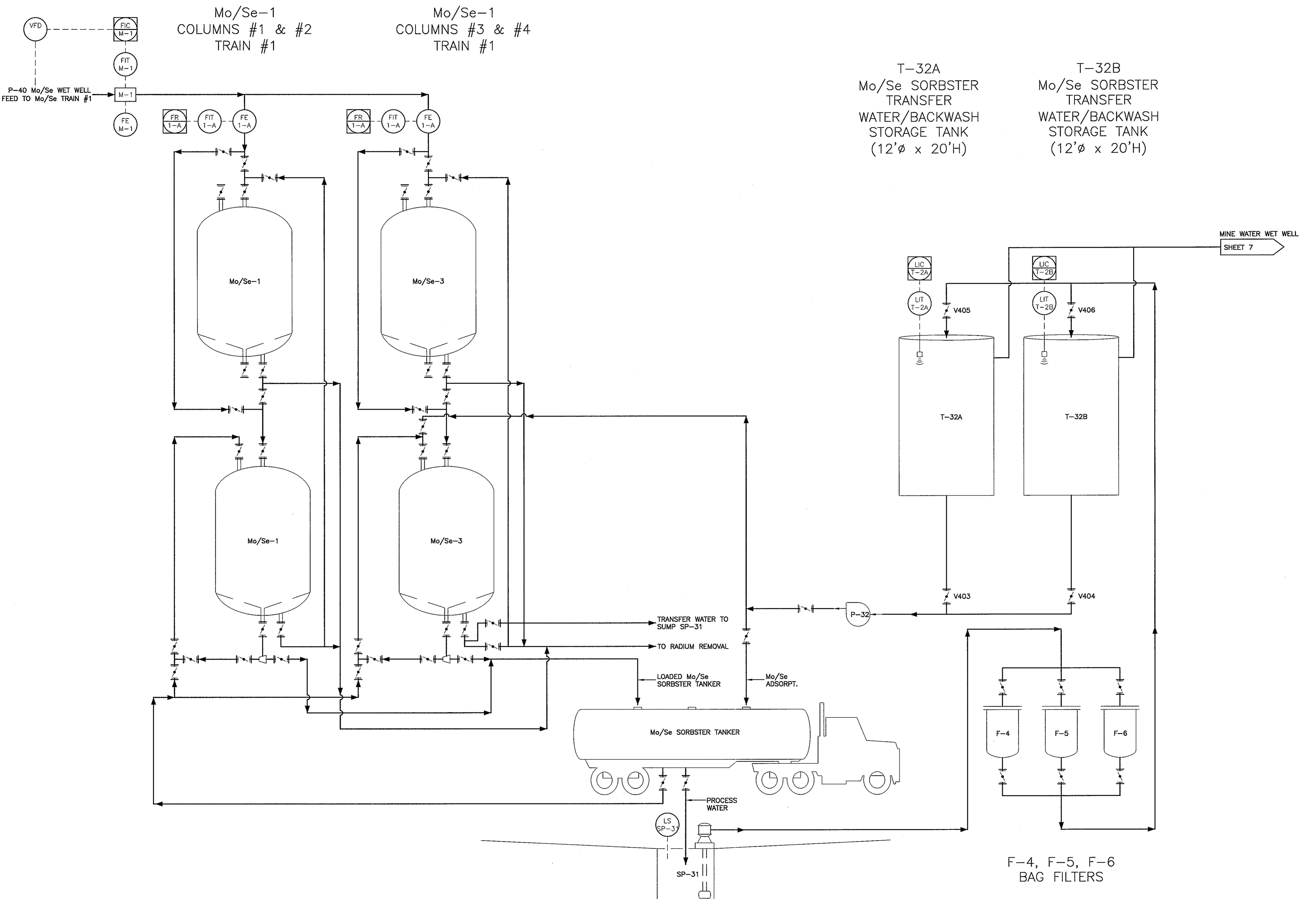
# URANIUM P&ID—RESIN STORAGE AND TRANSFER

**LNV** | engineers | architects | contractors  
NAVIGATION, SUITE 300  
NAPLES CHRISTI, TEXAS 78408  
FIRM NO. F-386  
PH. (361) 883-1984  
FAX (361) 883-1986  
[WWW.LNvinc.com](http://WWW.LNvinc.com)

1 14  
150092  
RS PID  
11 OF 14



DRAWN BY: <u>DWH</u>	APPROVED BY: <u>DSL</u>	REVISION BLOCK ***
CHECKED BY: <u>WLB</u>	SCALE: <u>SHOWN</u>	3.13.15      ADD Mo/Se REMOVAL TO SYSTEM
		DATE NO.      DESCRIPTION
		MARCH 2015      BY



DRAWN BY: DHH	
CHECKED BY: WLB	
APPROVED BY DSH	
SCALE: SHOWN	
DATE: MARCH 2015	
MATERIAL NUMBER: 150092	
JOB NO: 150092	
RS PID:	
TAB NO: 12	
SHEET NO: 12 OF 14	

**MT. TAYLOR URANIUM MINE/RIO GRANDE RESOURCES CORP., NEW MEXICO**  
**URANIUM ION EXCHANGE & MOLYBDENUM AND SELENIUM ADSORPTION FACILITY**  
**Mo-Se P&ID - Mo-Se SORBSTER**  
**STORAGE AND TRANSFER**

**LNW**  
engineers | architects | contractors  
PH: 1881 883-1884  
FAX: 1881 883-1886  
WWW.LNWINC.COM

**12**

**14**

**12 OF 14**

**18850**

**REVISION BLOCK \*\*\***

**ADD Mo/Se RECOVERY SYSTEM**

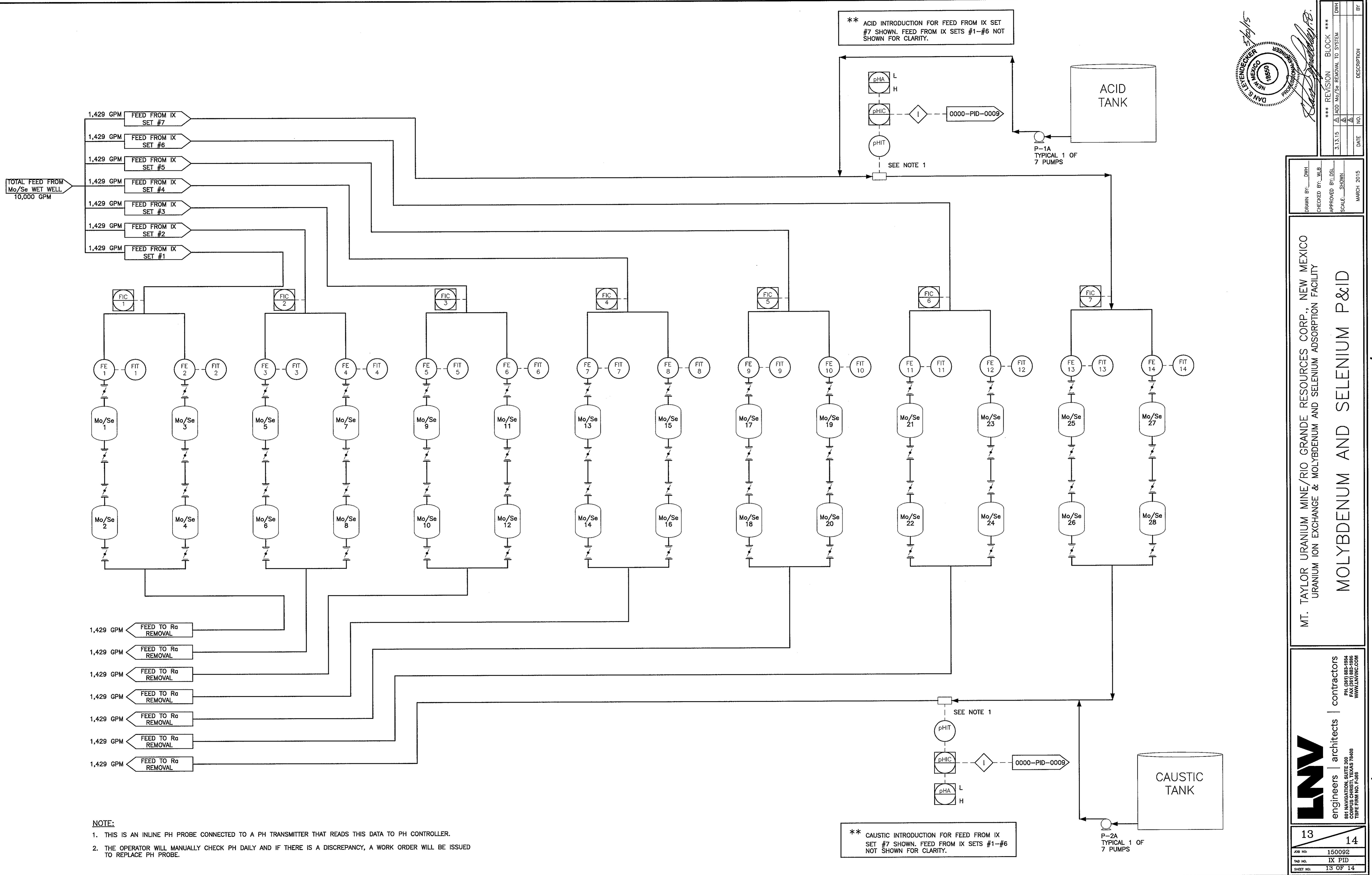
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**DATE NO.**

**DESCRIPTION**

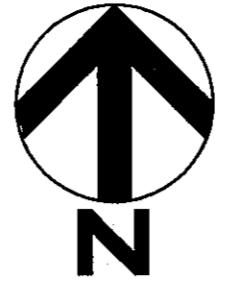
**BY**

**LEYENDASER**  
**DESIGN ENGINEERS**  
**NEW MEXICO**  
**18850**



EQUIPMENT SUMMARY				
TAG	DESCRIPTION	SIZE	CAPACITY	
Mo/Se-(1-28)	PROPOSED Mo/Se COLUMNS	12.5'Ø x 12'H	10,000 GAL	
T-7A	BACKWASH WATER STORAGE TANK	12'Ø x 20'H	16,000 GAL	
T-7B	BACKWASH WATER STORAGE TANK	12'Ø x 20'H	16,000 GAL	
SP-7	SUMP AND GRATE	6'Ø x 5' DEEP	1,000 GAL	
P-7A & 7B	BACKWASH WATER PUMP	TBD		
F-7A & 7B	FILTER	TBD		

PLANT NORTH



SCALE  
1"=10' (FULL SIZE)  
1"=20' (HALF SIZE)

APPROVED BY:	DSL	REVISION	BLOCK	***
HECKED BY:	WLB	3.13.15	ADD Mo/Se REMOVAL TO SYSTEM	DWH
DATE:	SHOWN	△		
		△		
		△		
MARCH 2015	DATE	NO.	DESCRIPTION	BY

**URANIUM ION EXCHANGE & MOLYBDENUM AND SELENIUM ADSORPTION FACILITY  
MOLYBDENUM AND SELENIUM BUILDING  
LAYOUT AND CONTAINMENT PLAN**

