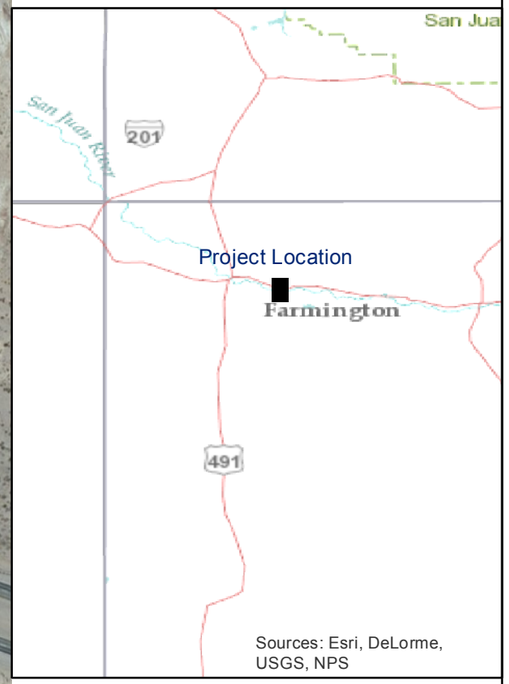
Location Map



A&B Pump Station
Drawing Index

#	Verson/Revisions	Date (m-m/d/yy)	Design	Draw	Check	Approved

Coordinate System: State Plane New Mexico West FT
Datum: D_North_American_1983
Survey Data Source:
File Name:

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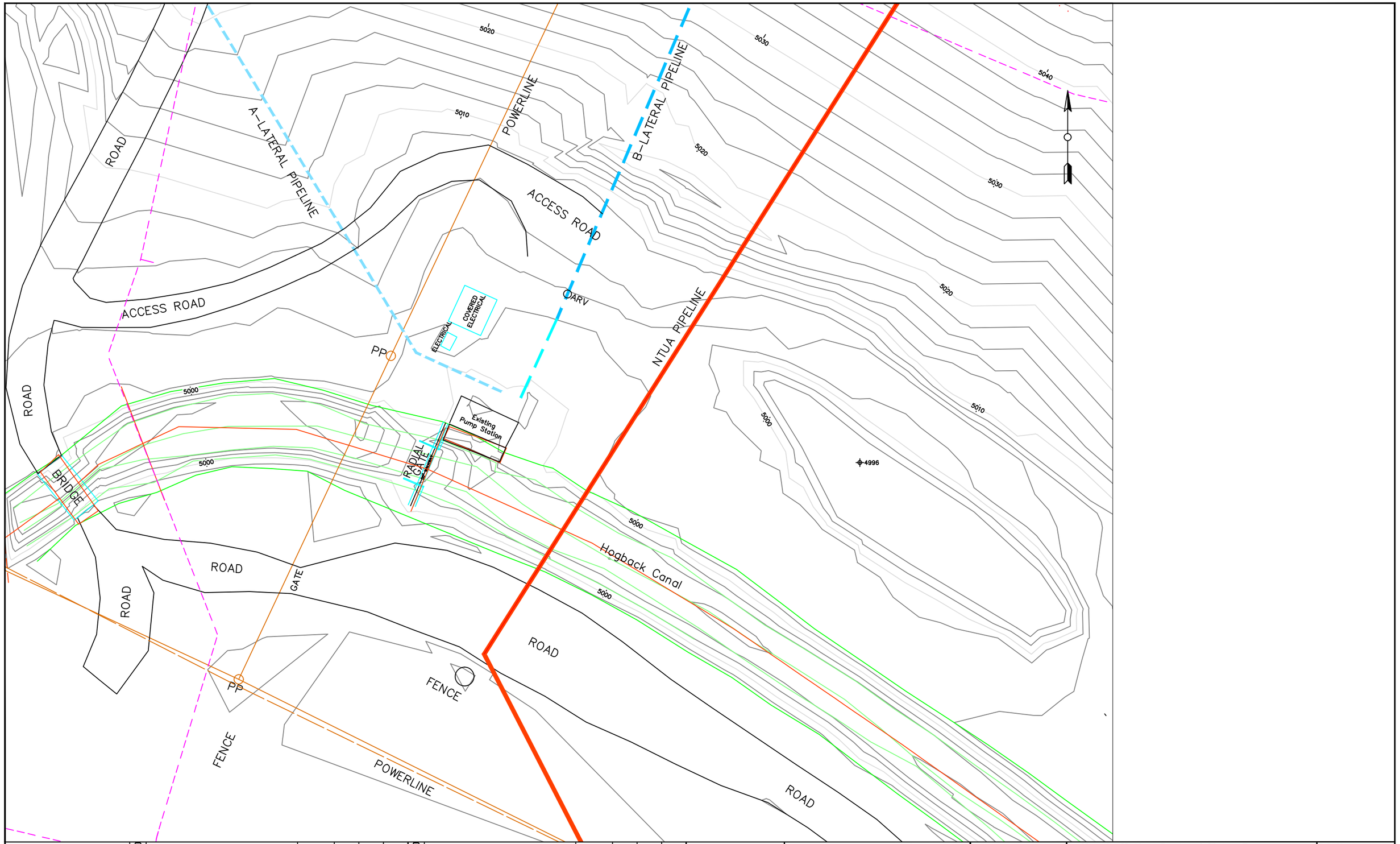
78 E. Center Logan, Utah 84321

Navajo Nation Department of Water Resources
Hogback Pumping Plant

Project Location and Drawing Index

Job No. NNDWR
Date: 4/8/2016
Sheet 0 of 24
DRAWING NO. H-L100
REV 0



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REV	Revisions	Date	Design	Draw	Check

Status:	For Review
Designed	MI/RDB
Drawn	MI
Checked	MJL
Approved	
File Name:	Main Canal Emb.dwg

0 20' 40'

Coordinate System: State Plane NM West NAD–83
Datum: WGS 84
Survey Data Source: NNDWR–TCOB

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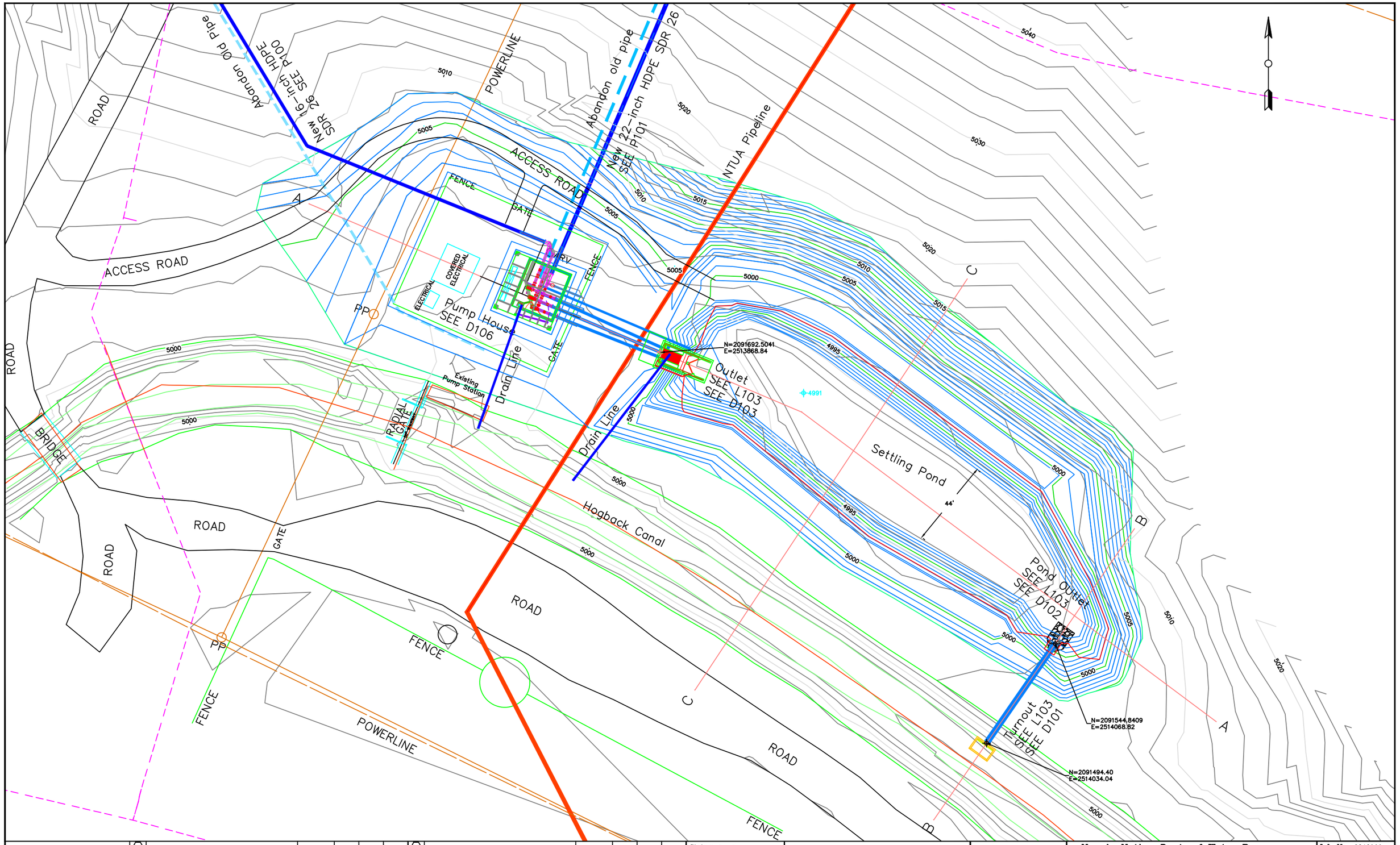
Irrigation & Water Resources
78 E. Center
Logan, Utah 84321

Navajo Nation Dept. of Water Resources
San Juan River Navajo Irrigation Projects
Hogback–Cudei Irrigation Project

Hogback Pump Station Phase II
Existing Situation

Job No.	C010966
Date:	3/15/16
Sheet	1 of 19
DRAWING NO.	H–L101
REV	0



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Status: For Review
Designed MI/RDB
Drawn MJL
Checked MI
Approved
File Name: Main Canal Emb.dwg

Coordinate System: State Plane NM West NAD–83
Datum: WGS 84
Survey Data Source: NNDWR–TCOB

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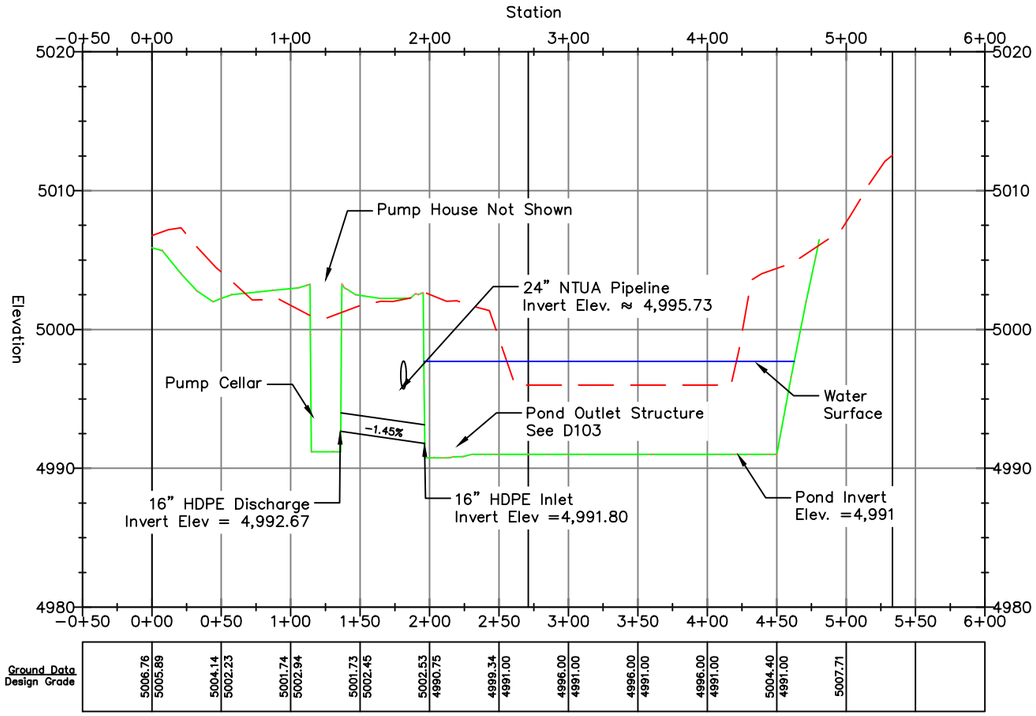
Logan, Utah 84321

Navajo Nation Dept. of Water Resources
San Juan River Navajo Irrigation Projects
Hogback–Cudei Irrigation Project
Hogback Pump Station Phase II
General Layout

Job No. C010966
Date: 3/15/16
Sheet 2 **of** 19
DRAWING NO. H–L102
REV 0

Cross Section A–A PROFILE



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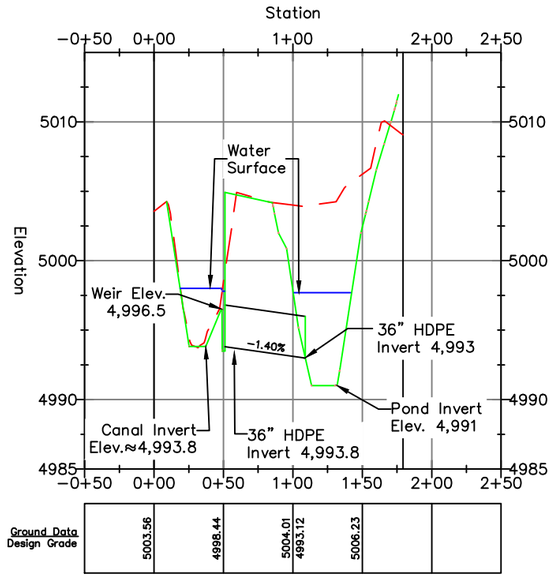
Cross Section B–B PROFILE



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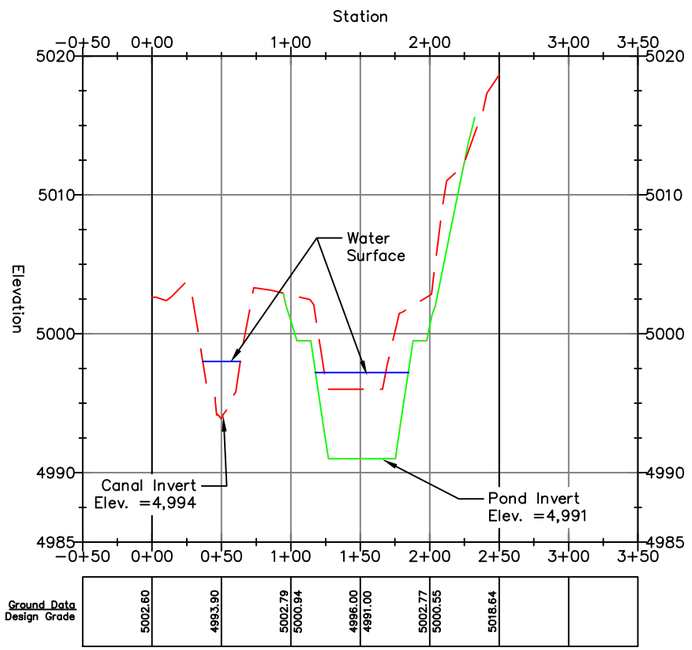
Design Grade							

Cross Section C–C PROFILE



Ground Data	5002.60	4993.90	5002.79	5000.94	4996.00	4991.00	5002.77	5000.55	5018.64		
Design Grade											

REV	Revisions	Date	Design	Draw	Check
REV	Revisions	Date	Design	Draw	Check

Status:	For Review
Designed	MI/RDB
Drawn	MJL
Checked	MI
Approved	
File Name:	Main Canal Emb.dwg

Coordinate System: State Plane NM West NAD–83
Datum: WGS 84
Survey Data Source: NNDWR–TCOB

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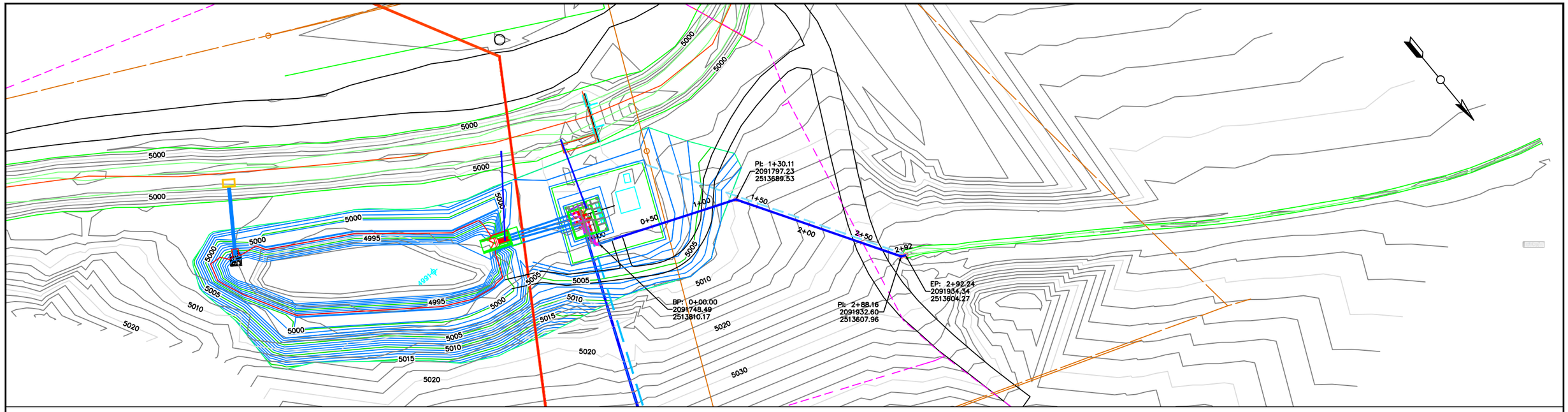
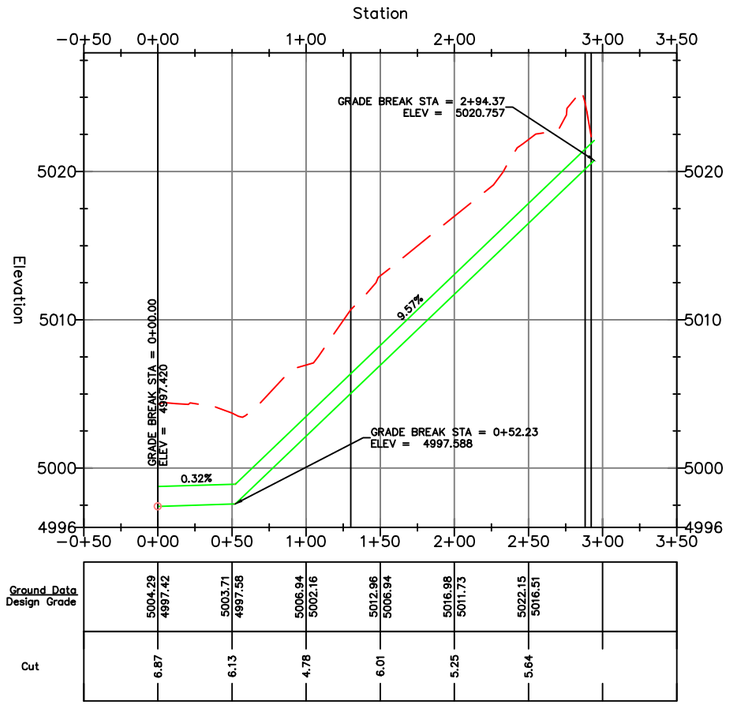
San Juan River Navajo Irrigation Projects
Hogback–Cudei Irrigation Project
Hogback Pump Station Phase II
Cross Section A–A, B–B, C–C

Job No.	C010966
Date:	3/15/16
Sheet	3 of 19
DRAWING NO.	H-L103
REV	0



A–Lateral PROFILE



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Cut	6.87	6.13	4.78	6.01	5.25	5.64			

REV	Revisions	Date	Design	Draw	Check

REV	Revisions	Date	Design	Draw	Check

Status:	For Review
Designed	MI/RDB
Drawn	MJL
Checked	MI
Approved	
File Name:	Main Canal Emb.dwg

0 20' 40'

Coordinate System: State Plane NM West NAD–83
Datum: WGS 84
Survey Data Source: NNDWR–TCOB

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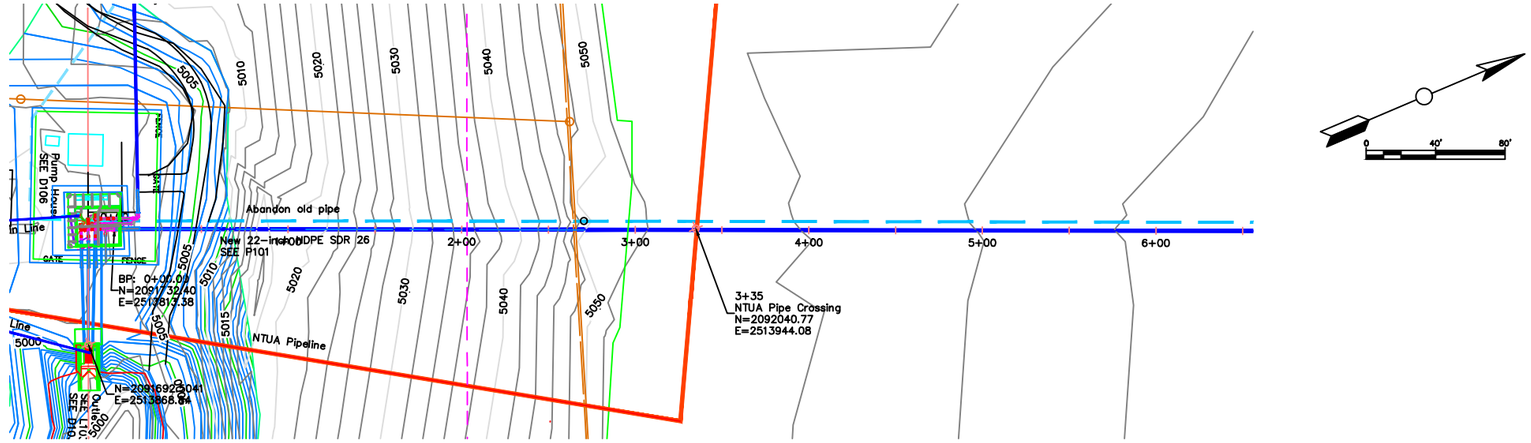
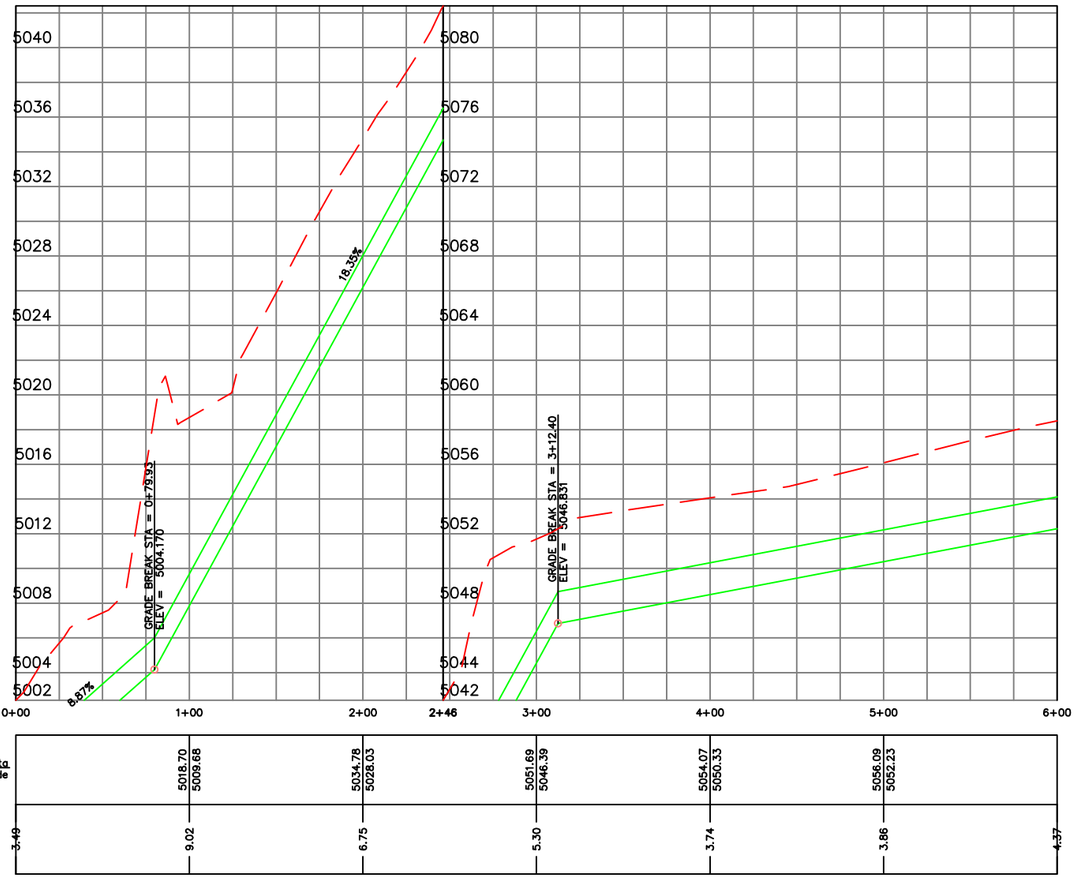
Logan, Utah 84321

Navajo Nation Dept. of Water Resources
San Juan River Navajo Irrigation Projects
Hogback–Cudei Irrigation Project
Hogback Pump Station Phase II
A–Lateral Plan and Profile

Job No.	C010966
Date:	3/15/16
Sheet	4 of 19
DRAWING NO.	H–P100
REV	0



B–Lateral PROFILE



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Cut	3.49		9.02		6.75		5.30		3.74		3.86		4.37						

REV	Revisions	Date	Design	Draw	Check

REV	Revisions	Date	Design	Draw	Check

Status:	For Review
Designed	MI/RDB
Drawn	MJL
Checked	MI
Approved	
File Name:	Main Canal Emb.dwg

0 20' 40'

Coordinate System: State Plane NM West NAD–83
Datum: WGS 84
Survey Data Source: NNDWR–TCOB

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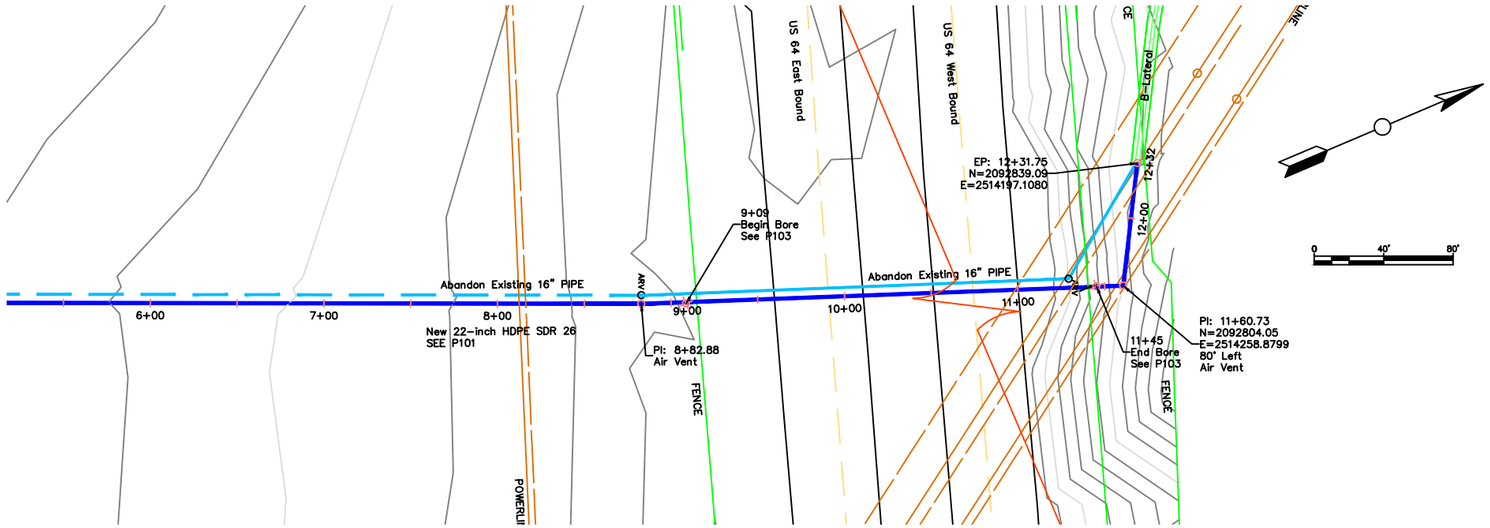
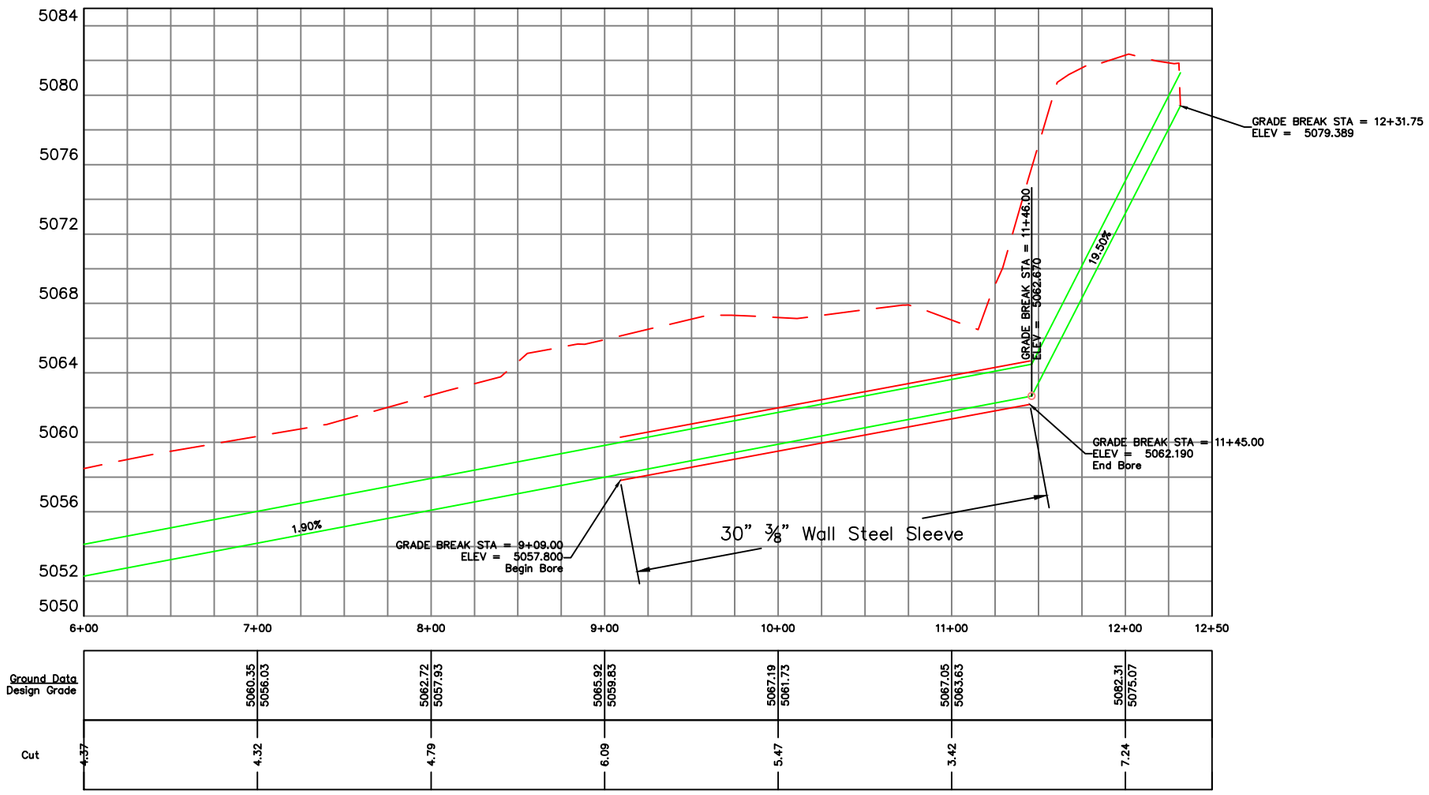
78 E. Center
Logan, Utah 84321

Navajo Nation Dept. of Water Resources
San Juan River Navajo Irrigation Projects
Hogback–Cudei Irrigation Project
Hogback Pump Station Phase II
B–Lateral Plan and Profile

Job No.	C010966
Date:	3/15/16
Sheet	5 of 19
DRAWING NO.	H–P101
REV	0



B–Lateral PROFILE



	6+00	7+00	8+00	9+00	10+00	11+00	12+00	12+50
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Design Grade	5056.03	5057.93	5059.83	5061.73	5063.63	5075.07		
Cut	4.37	4.32	4.79	6.09	5.47	3.42	7.24	

REV	Revisions	Date	Design	Draw	Check

REV	Revisions	Date	Design	Draw	Check

Status:	For Review
Designed	MI/RDB
Drawn	MJL
Checked	MI
Approved	
File Name:	Main Canal Emb.dwg

0 20' 40'

Coordinate System: State Plane NM West NAD–83
Datum: WGS 84
Survey Data Source: NNDWR–TCOB

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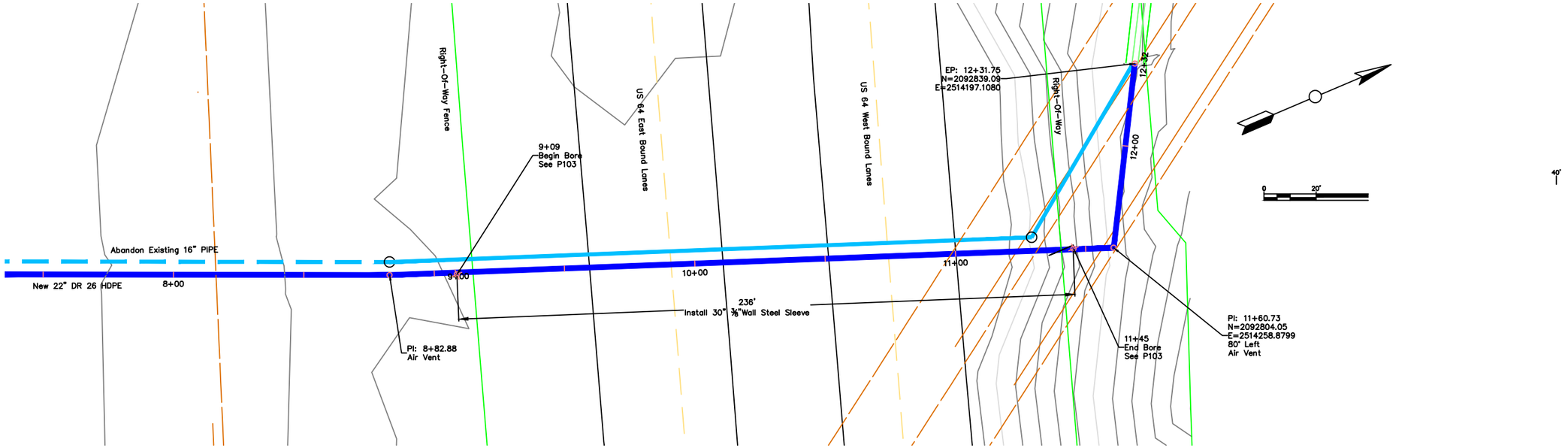
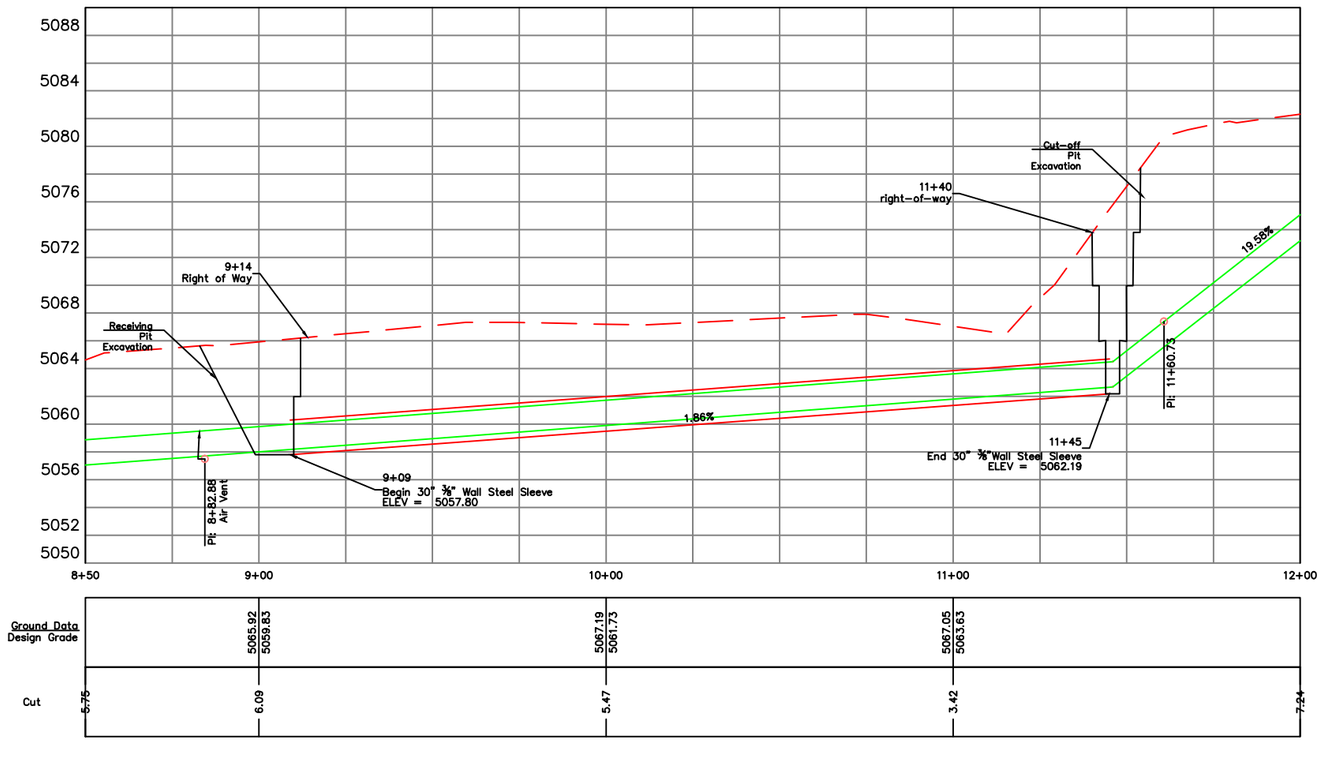
Logan, Utah 84321

Navajo Nation Dept. of Water Resources
San Juan River Navajo Irrigation Projects
Hogback–Cudei Irrigation Project
Hogback Pump Station Phase II
B–Lateral Plan and Profile 2

Job No.	C010966
Date:	3/15/16
Sheet	6 of 19
DRAWING NO.	H–P102
REV	0



B–Lateral Road Crossing Profile



REV	Revisions	Date	Design	Draw	Check

REV	Revisions	Date	Design	Draw	Check

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Designed	AB/MI
Drawn	MI
Checked	MI
Approved	
File Name:	Main Canal Emb.dwg

0 20' 40'

Coordinate System: State Plane NM West NAD–83
Datum: WGS 84
Survey Data Source: NNDWR–TCOB

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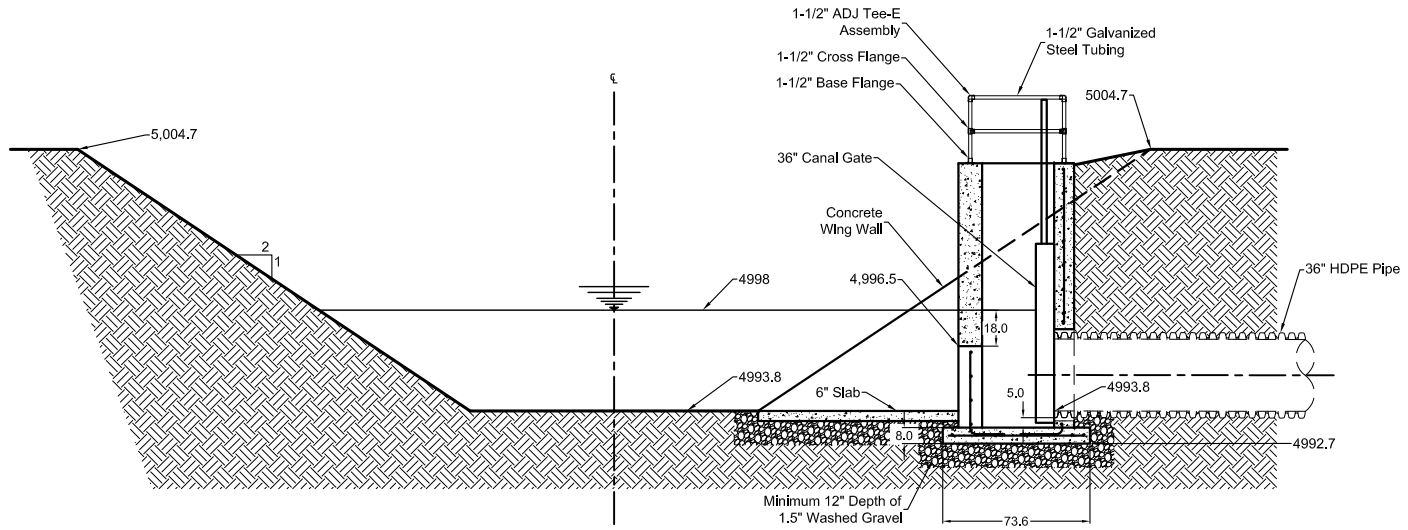
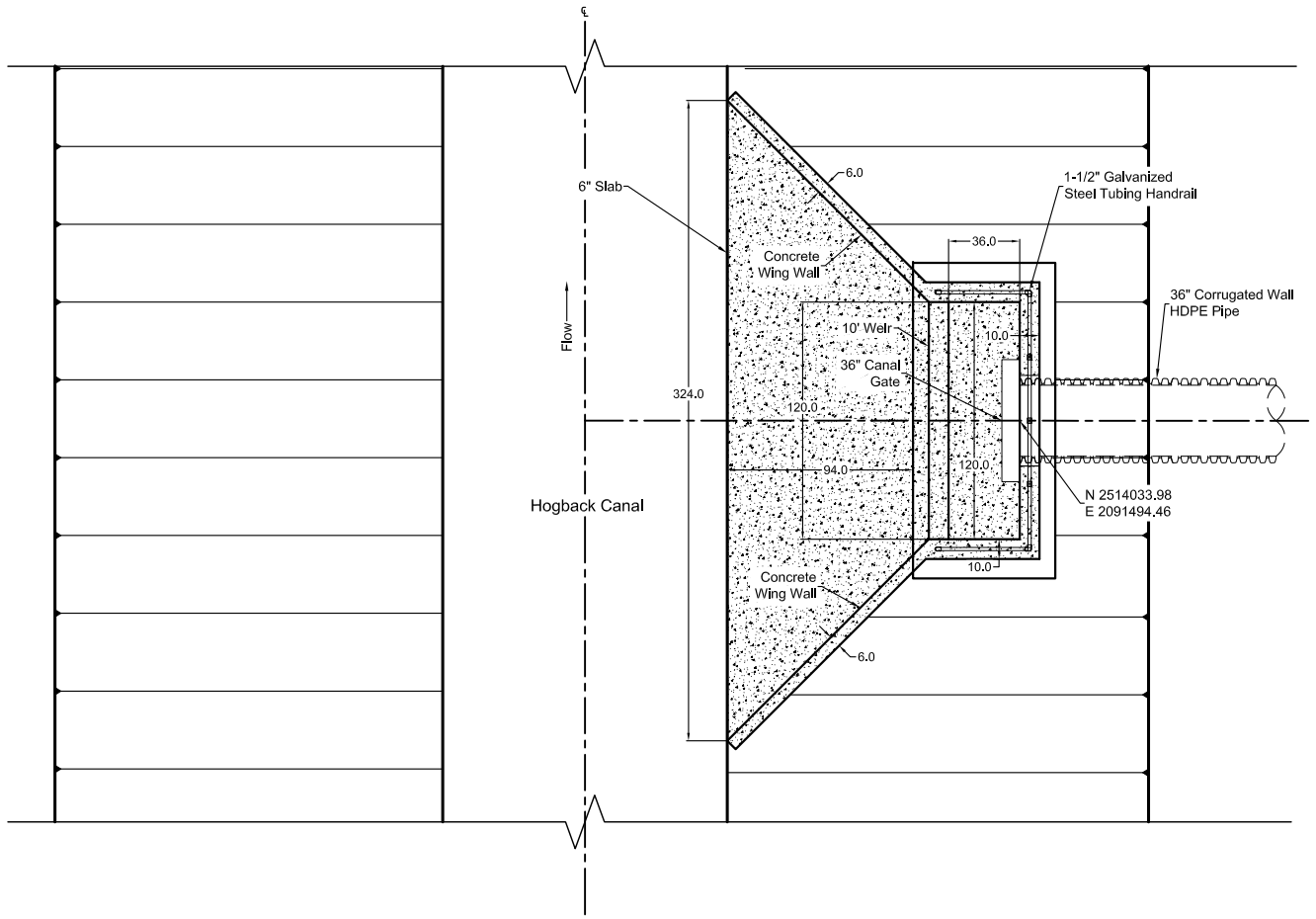
Logan, Utah 84321

Navajo Nation Dept. of Water Resources
San Juan River Navajo Irrigation Projects
Hogback–Cudei Irrigation Project

Hogback Pump Station Phase II
B–Lateral US 64 Crossing, San Juan County

Job No.	C010966
Date:	3/15/16
Sheet	7 of 19
DRAWING NO.	H–P103
REV	0





Canal Turnout

Notes:

1. Mount 36" Canal gate to wall following manufacturer instructions. Canal gate is flatback for mounting directly to headwall.
2. Steel Reinforcement is #4 Bars on 12" Centers.
3. Concrete Walls are 8-inch Thick
4. Concrete floors are 6-inch Thick
5. Cast in 36-inch HDPE pipe into concrete.
6. Structural Backfill and compact to 95% of standard proctor in 6-inch lifts
7. Pipe backfill and compact to 85% of standard proctor in 12-inch lifts. Back fill material to be free of rocks, sticks, and sharp objects.
8. Minimum 12" Depth of 1.5" Washed Gravel Under All Footings and Slabs.

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#	Verson/Revisions	Date (MM/DD/YY)	Design	Draw	Check	Approved
			MI	ASB	RDB	MI

0.5 0 0.5 1.0
SCALE OF : NTS

Coordinate System:
Datum:
Survey Data Source:
File Name:

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78 E. Center Logan, Utah 84321

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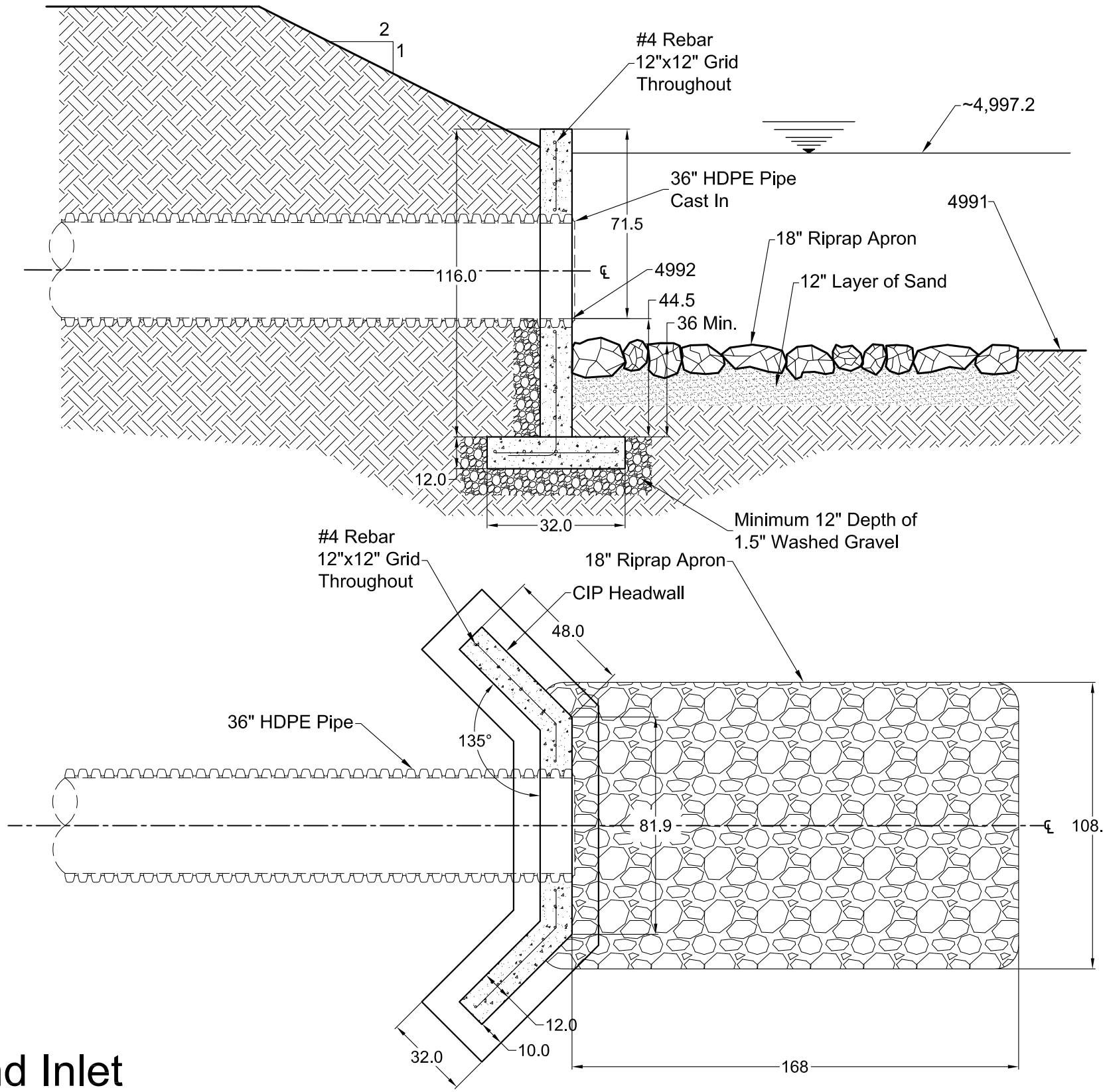
Hogback Pumping Plant

Hogback Canal Turnout

Job No. NNDWR
Date: 04/01/16
Sheet 8 of 24
DRAWING NO. H-D101
REV 0



Notes:

1. Steel Reinforcement #4 Bars on 12" Centers Each Way
2. Structural Backfill Compact to 95% of Standard Proctor in 6-Inch Lifts
3. Pipe Backfill Compact to 85% of Standard Proctor in 12-inch Lifts. Backfill Shall Have NO Rocks, Sticks, or Sharp Objects.
4. Riprap Dmax = 18", D50 = 8"
5. Minimum 12" Depth of 1.5" Washed Gravel Under All Footings and Slabs.

Pond Inlet

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#	Verson/Revisions	Date (MM/DD/YY)	Design	Draw	Check	Approved
			ASB	ASB	MI	MI

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SCALE OF : NTS

Coordinate System:
Datum:
Survey Data Source:
File Name:

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78 E. Center Logan, Utah 84321

Navajo Nation Department of Water Resources
Hogback Pumping Plant
Hogback Pond Inlet

Job No. NNDWR
Date: 04/01/16
Sheet 9 of 24
DRAWING NO. H-D102
REV 0

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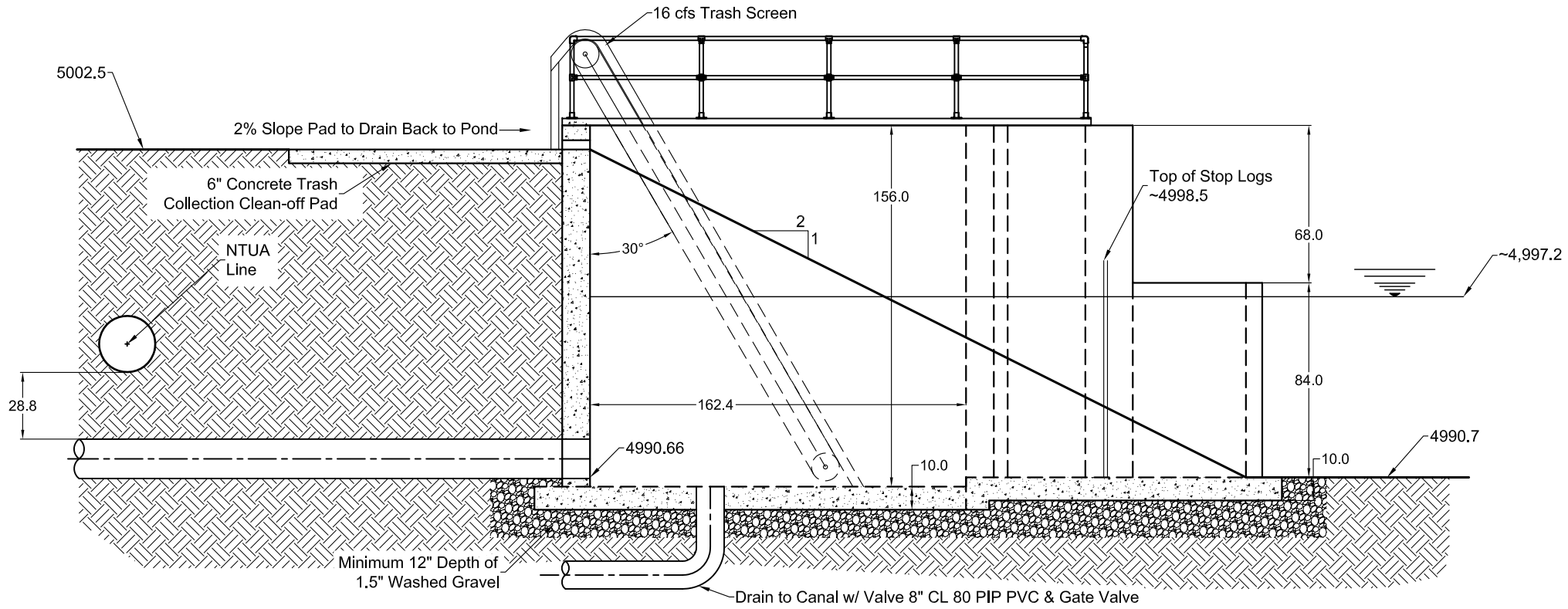
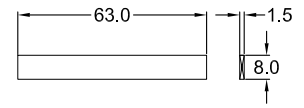
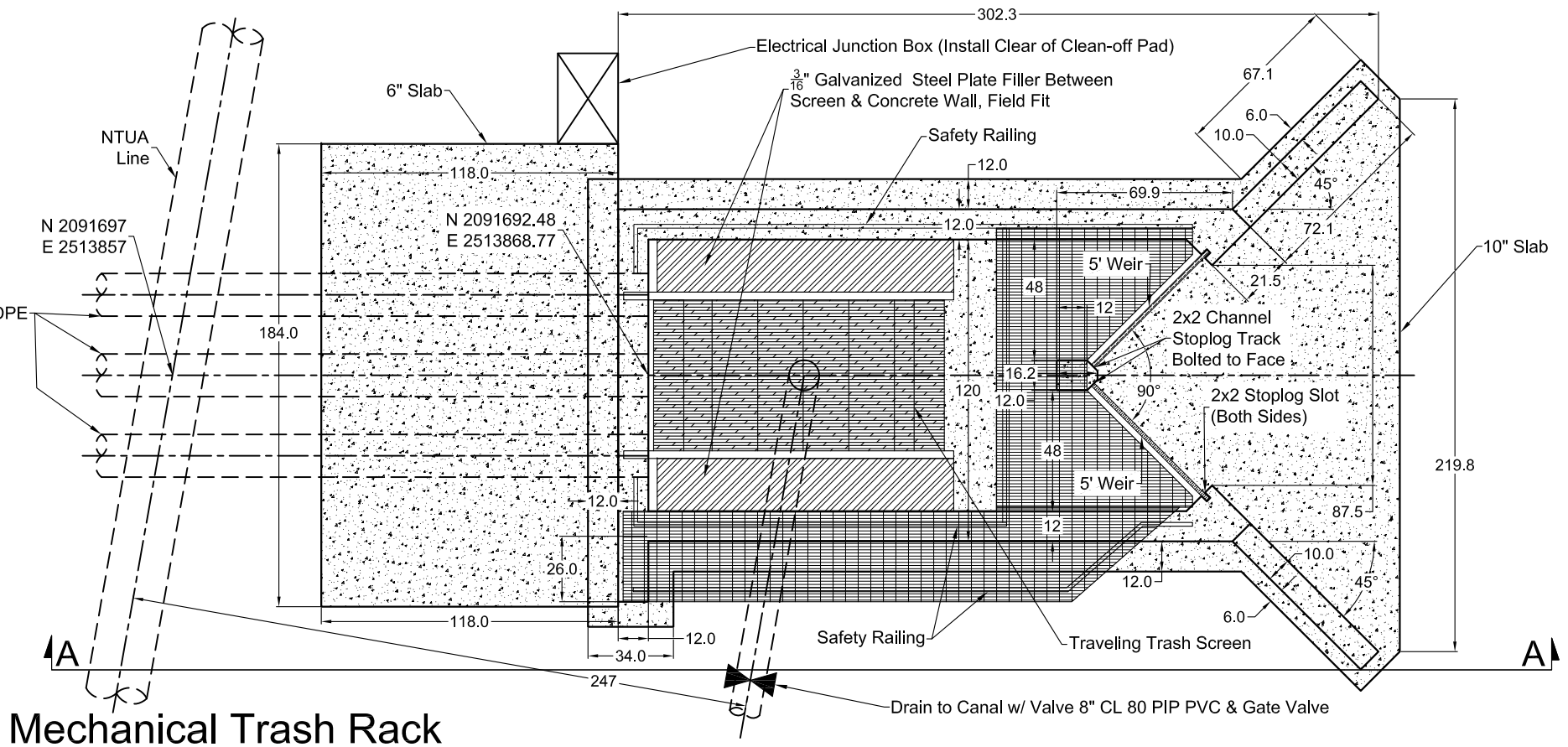


Trash Screen Stop Log Detail





Mechanical Trash Rack

Notes:

1. Steel Reinforcement #4 bars on 12" Centers Each Way Throughout
2. Structural Backfill Compacted to 95% of Standard Proctor in 6-inch Lifts
3. Pipe Backfill Compacted to 85% of Standard Proctor in 12-inch Lifts. Backfill Shall Have No Rocks, Sticks, or Sharp Objects.
4. Trash Screen Design by Contractor for Flow of 16 cfs.
5. Trash Screen to Run Intermittently Once Every 15 Minutes.
6. Electrical Service Design by Contractor
7. Electrical Service to Include Trash Screen, and (1) 240V 30 Amp Service
8. All Electrical Work to Meet Code
9. Minimum 12" Depth of 1.5" Washed Gravel Under All Footings and Slabs.
10. (8) Stop Logs Required for Each Weir.

#	Verson/Revisions	Date (MM/DD/YY)	Design	Draw	Check	Approved
			MI/ASB	ASB	RDB	MI

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SCALE OF : NTS

Coordinate System:
Datum:
Survey Data Source:
File Name:

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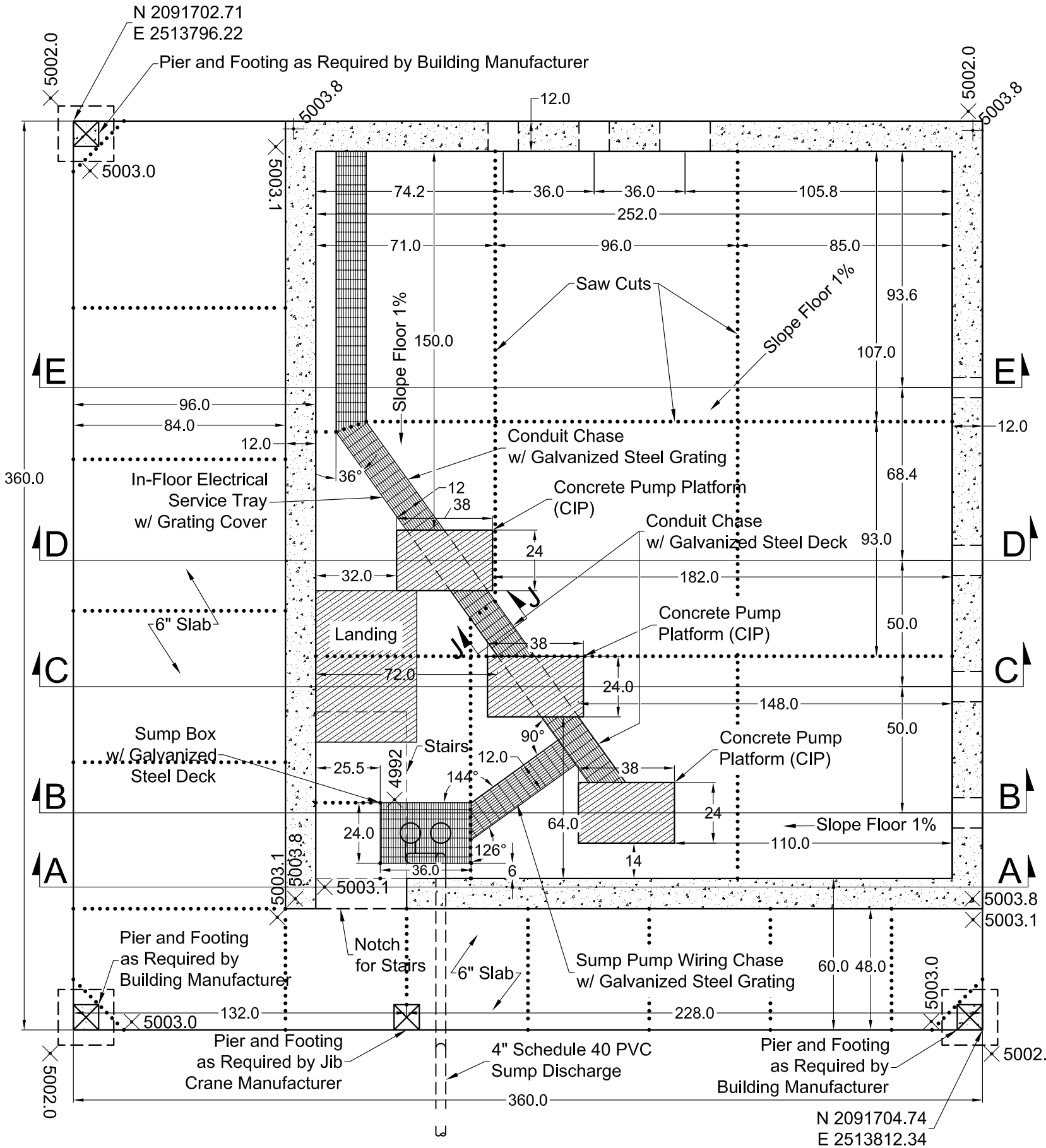
Irrigation & Water Resources
78 E. Center Logan, Utah 84321

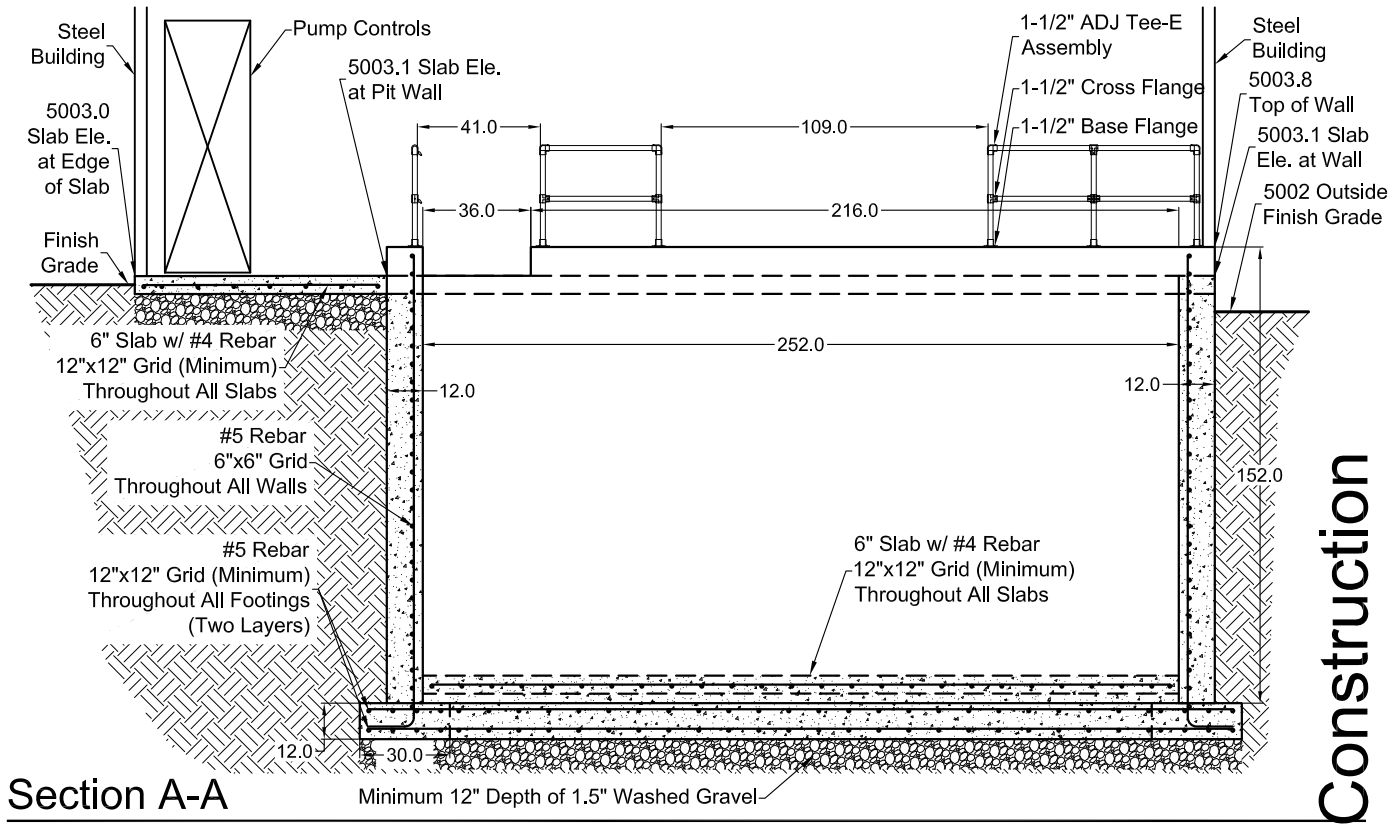
Navajo Nation Department of Water Resources

Hogback Pumping Plant

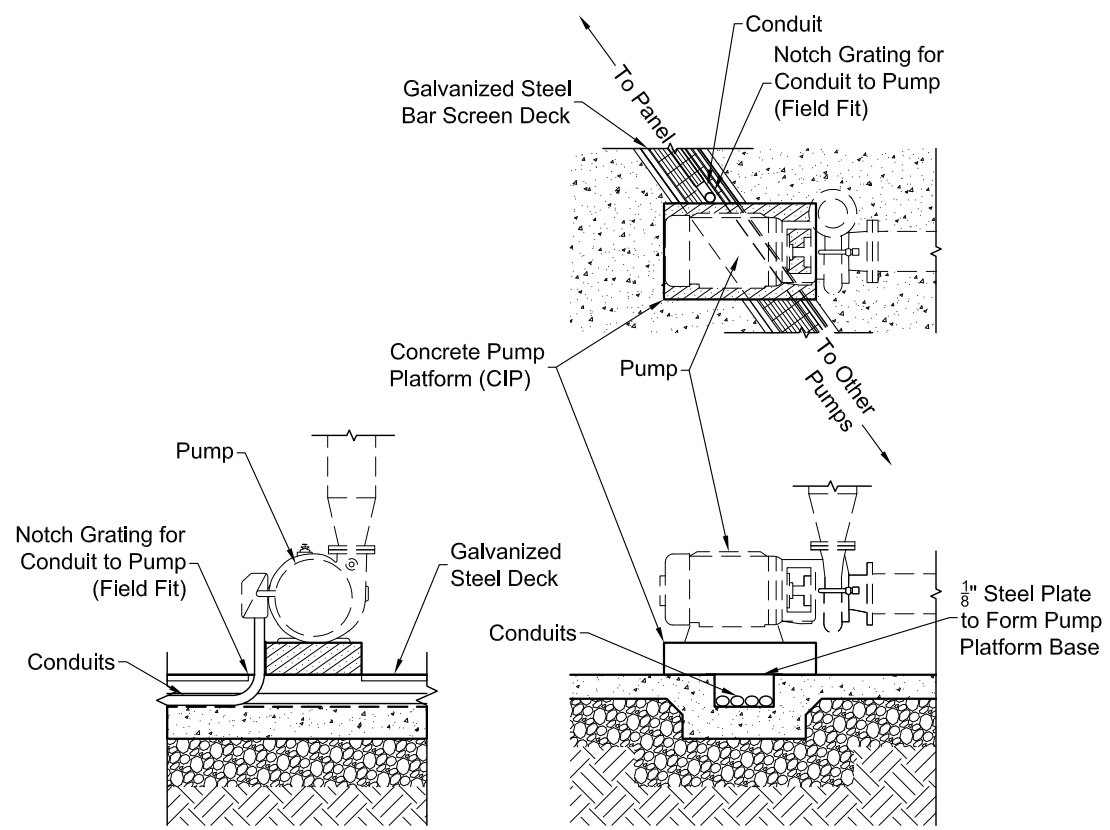
Hogback Pond Outlet & Trash Screen

Job No. NNDWR
Date: 04/01/16
Sheet 10 of 24
DRAWING NO. H-D103
REV 0





Section A-A



Conduit Chase with Galvanized Steel Grating

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#	Verson/Revisions	Date (MM/DD/YY)	Design	Draw	Check	Approved
			MI/ASB	ASB	RDB	MI

SCALE OF : NTS 0.5 0 0.5 1.0

Coordinate System:
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Survey Data Source:
File Name:

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78 E. Center Logan, Utah 84321

Navajo Nation Department of Water Resources
Hogback Pumping Plant
Pump House Concrete

Job No. NNDWR
Date: 04/01/16
Sheet 11 of 24
DRAWING NO. H-D104
REV 0

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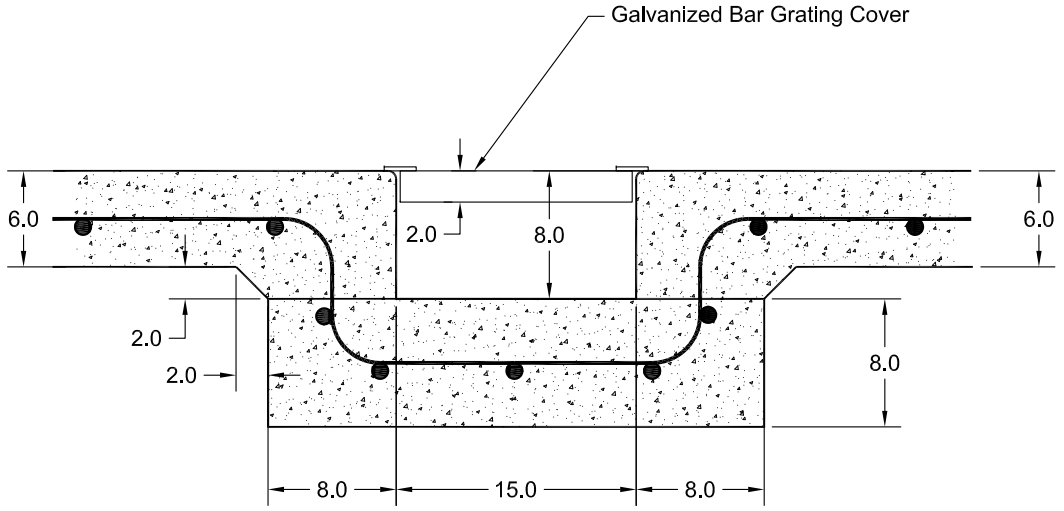
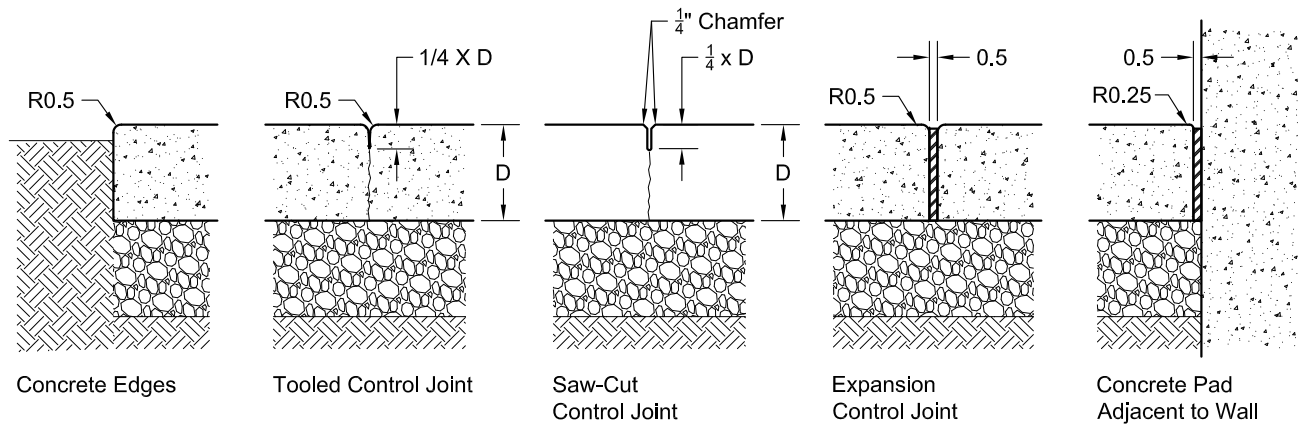


Section J-J Pump Electrical Supply Floor Tray Not to Scale



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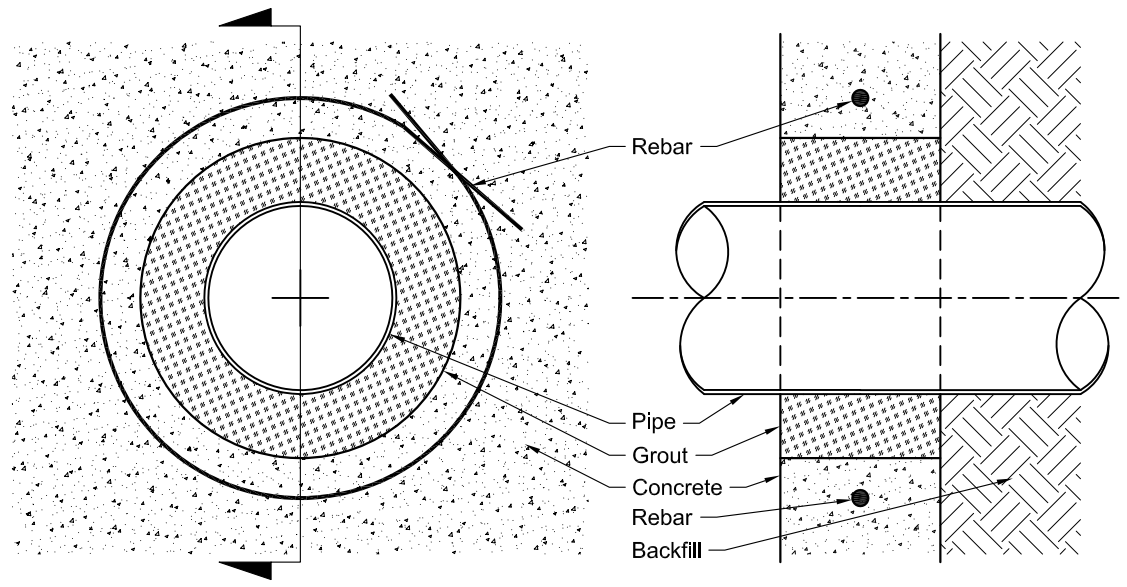

Pipe Through Wall Detail Not to Scale

#	Verson/Revisions	Date (MM/DD/YY)	Design	Draw	Check	Approved
			ASB	ASB	MI	MI

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SCALE OF : NTS

Coordinate System:
Datum:
Survey Data Source:
File Name:

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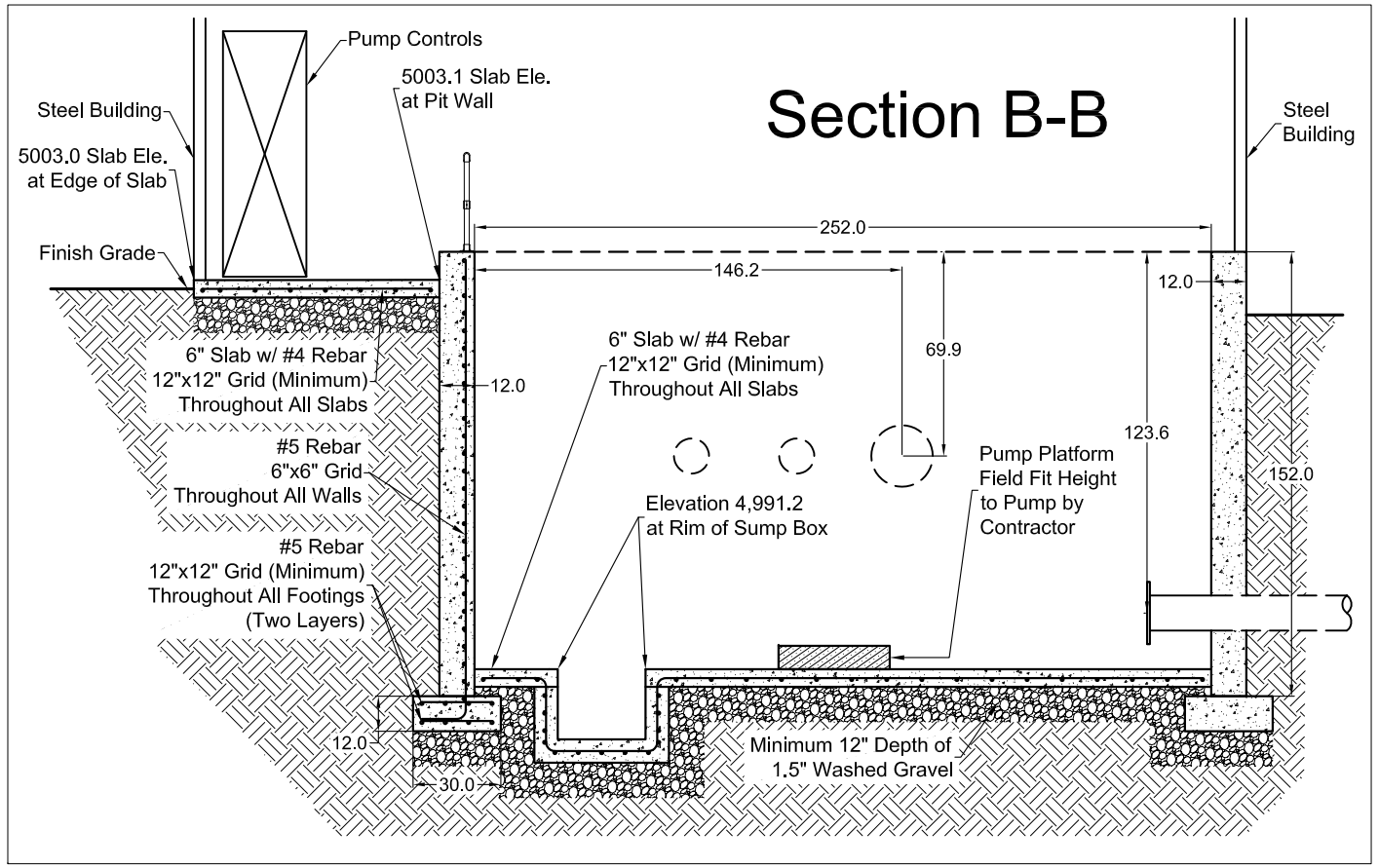
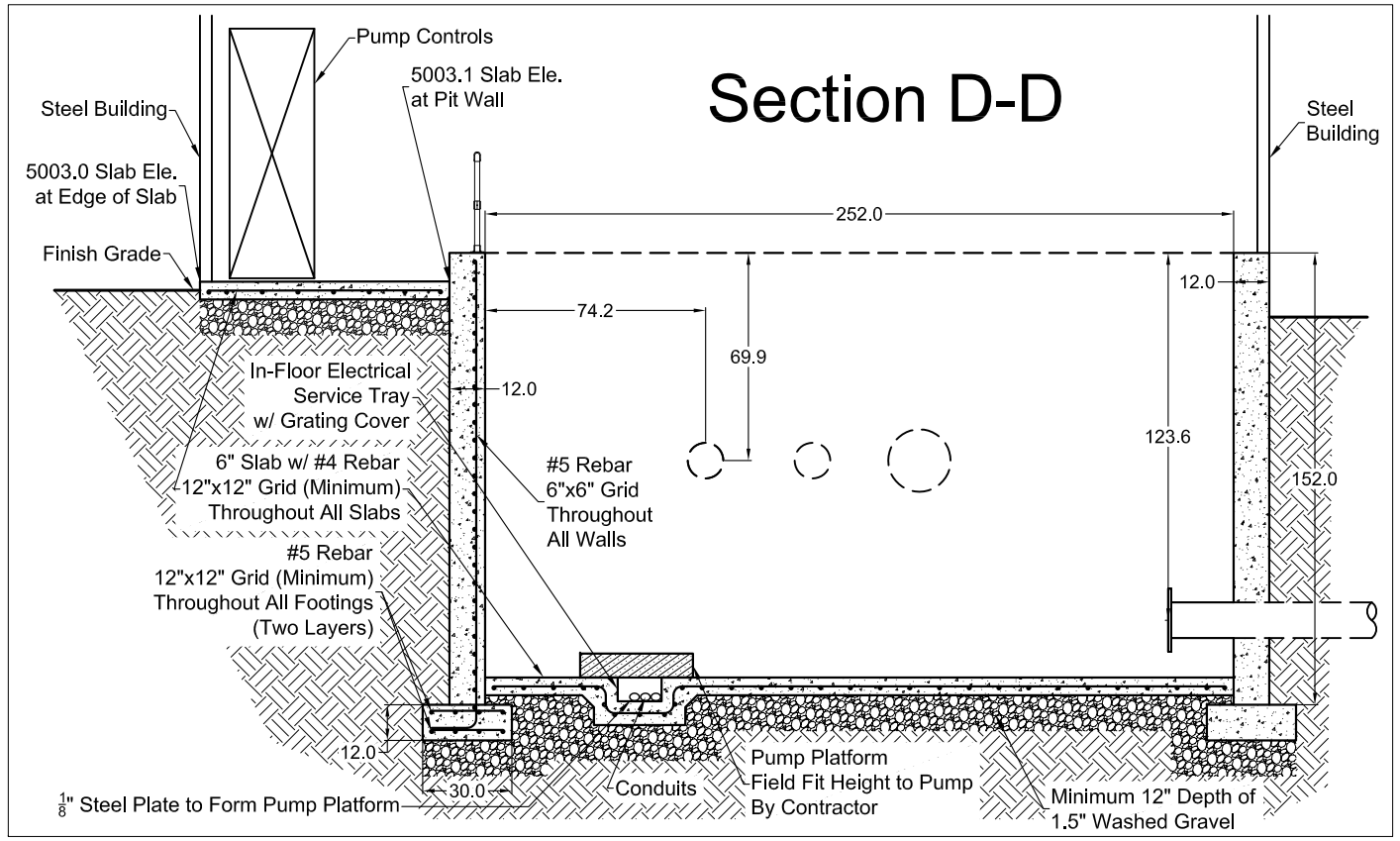
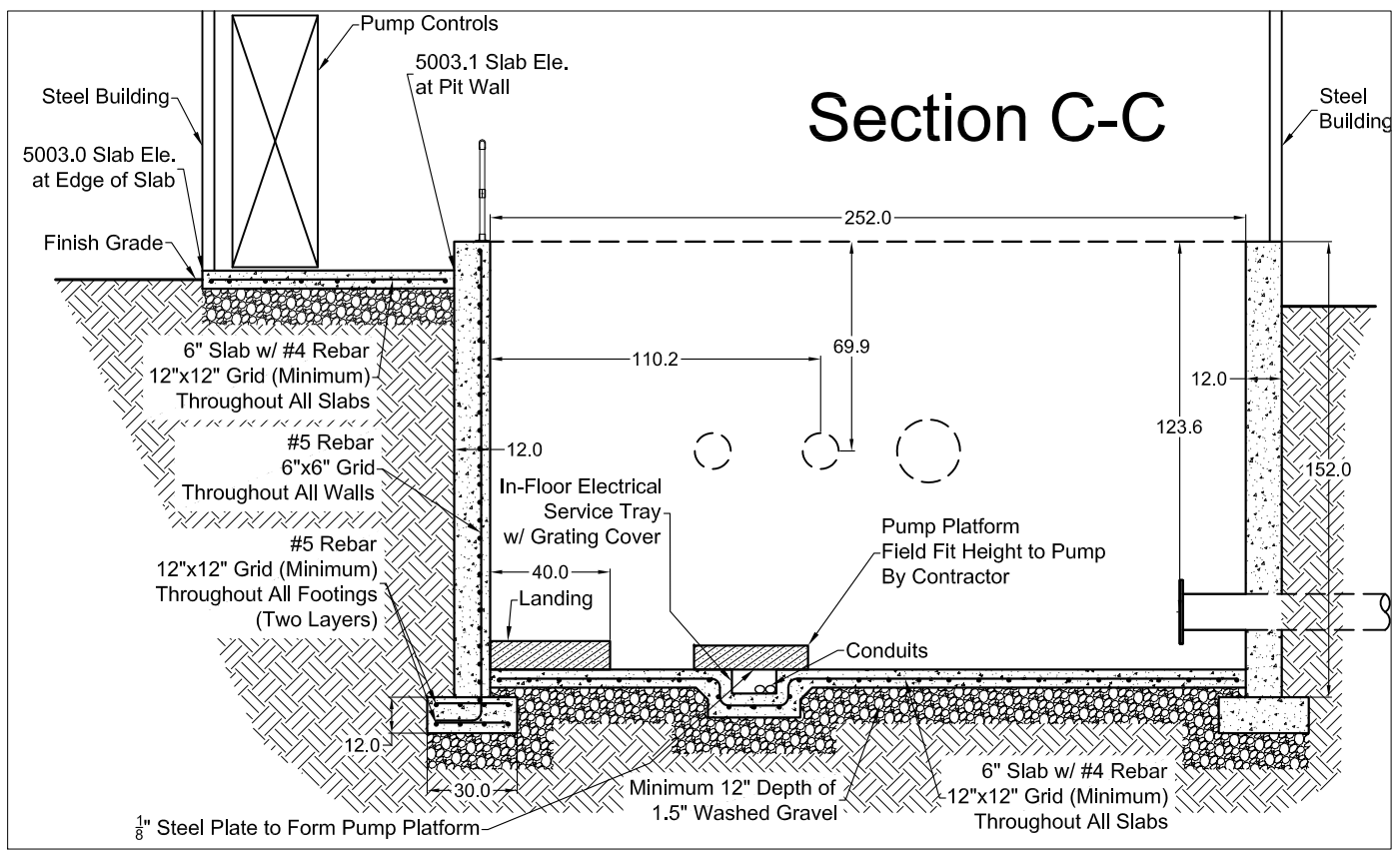
Irrigation & Water Resources
78 E. Center Logan, Utah 84321

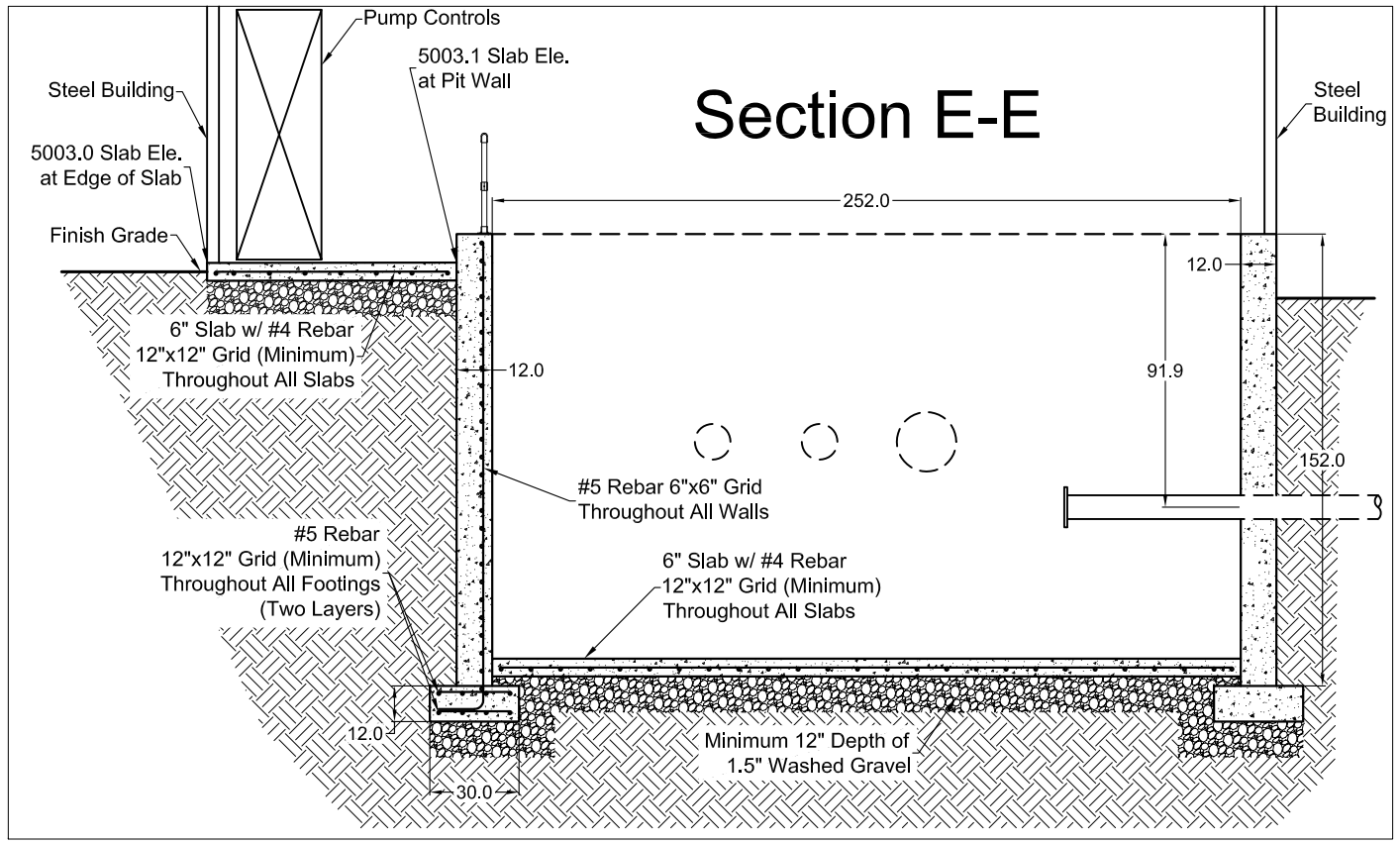
Navajo Nation Department of Water Resources
Hogback Pumping Plant
Pump House Concrete Details

Job No. NNDWR
Date: 04/01/16
Sheet 12 of 24
DRAWING NO. H-D105
REV 0









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#	Verson/Revisions	Date (MM/DD/YY)	Design	Draw	Check	Approved
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SCALE OF : NTS

Coordinate System:
Datum:
Survey Data Source:
File Name:

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Irrigation & Water Resources
78 E. Center Logan, Utah 84321

Navajo Nation Department of Water Resources

Hogback Pumping Plant

Pump House Concrete Sections

Job No. NNDWR
Date: 04/01/16
Sheet 13 of 24
DRAWING NO. H-D106
REV 0

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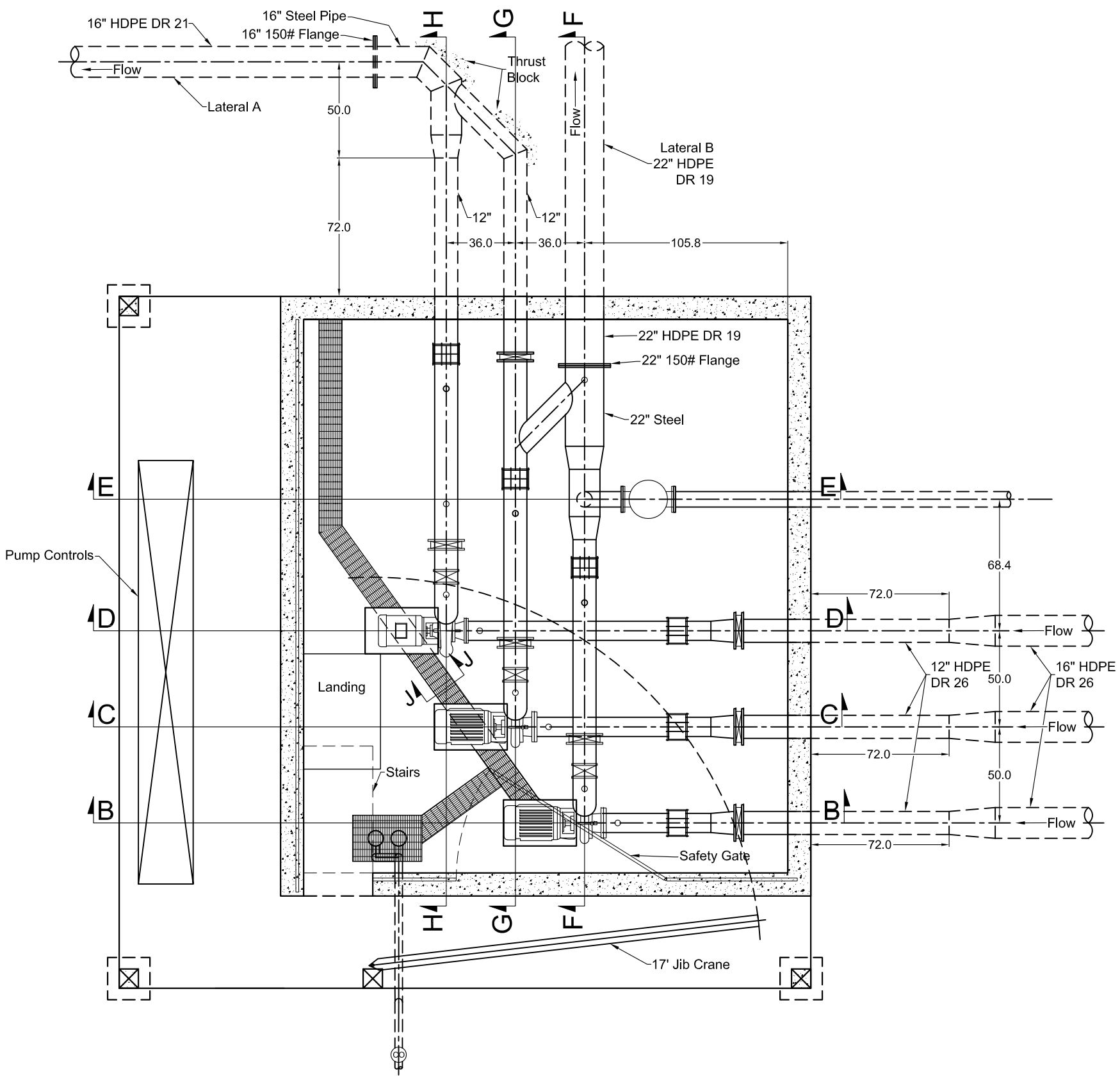

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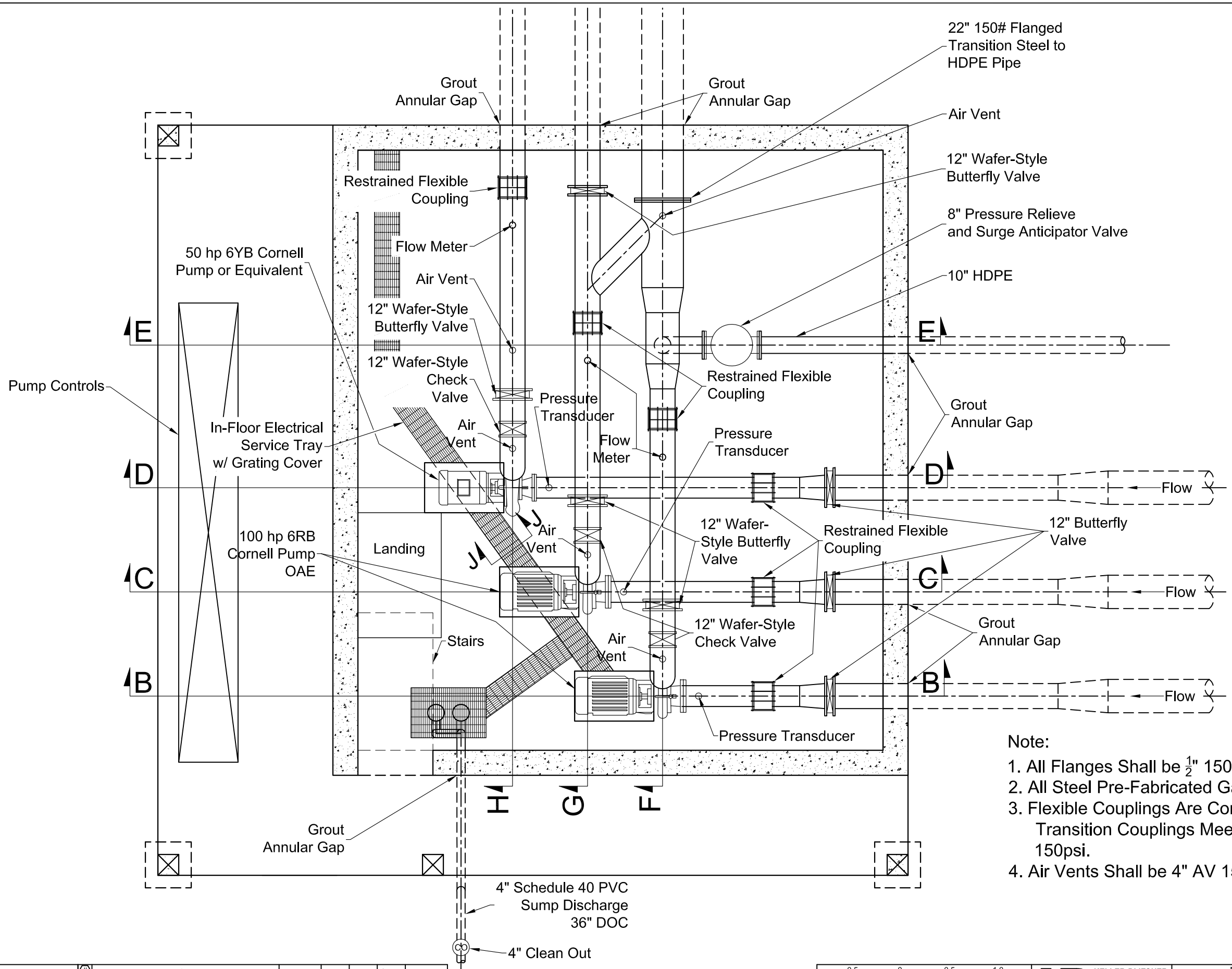
KELLER-BLIESNER ENGINEERING, LLC.
Irrigation & Water Resources
78 E. Center Logan, Utah 84321

Navajo Nation Department of Water Resources
Hogback Pumping Plant
Pump House Floor Plan

Job No. NNDWR
Date: 04/01/16
Sheet 14 of 24
DRAWING NO. H-D107
REV 0



Note:

1. All Flanges Shall be $\frac{1}{2}$" 150# Flanges
2. All Steel Pre-Fabricated Galvanized Steel Fittings 10 Gauge
3. Flexible Couplings Are Compression Style Ductile Iron Bolted Transition Couplings Meeting AWWA C219 and Rated for 150psi.
4. Air Vents Shall be 4" AV 150 (or Approved Equal)

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Irrigation & Water Resources
78 E. Center Logan, Utah 84321

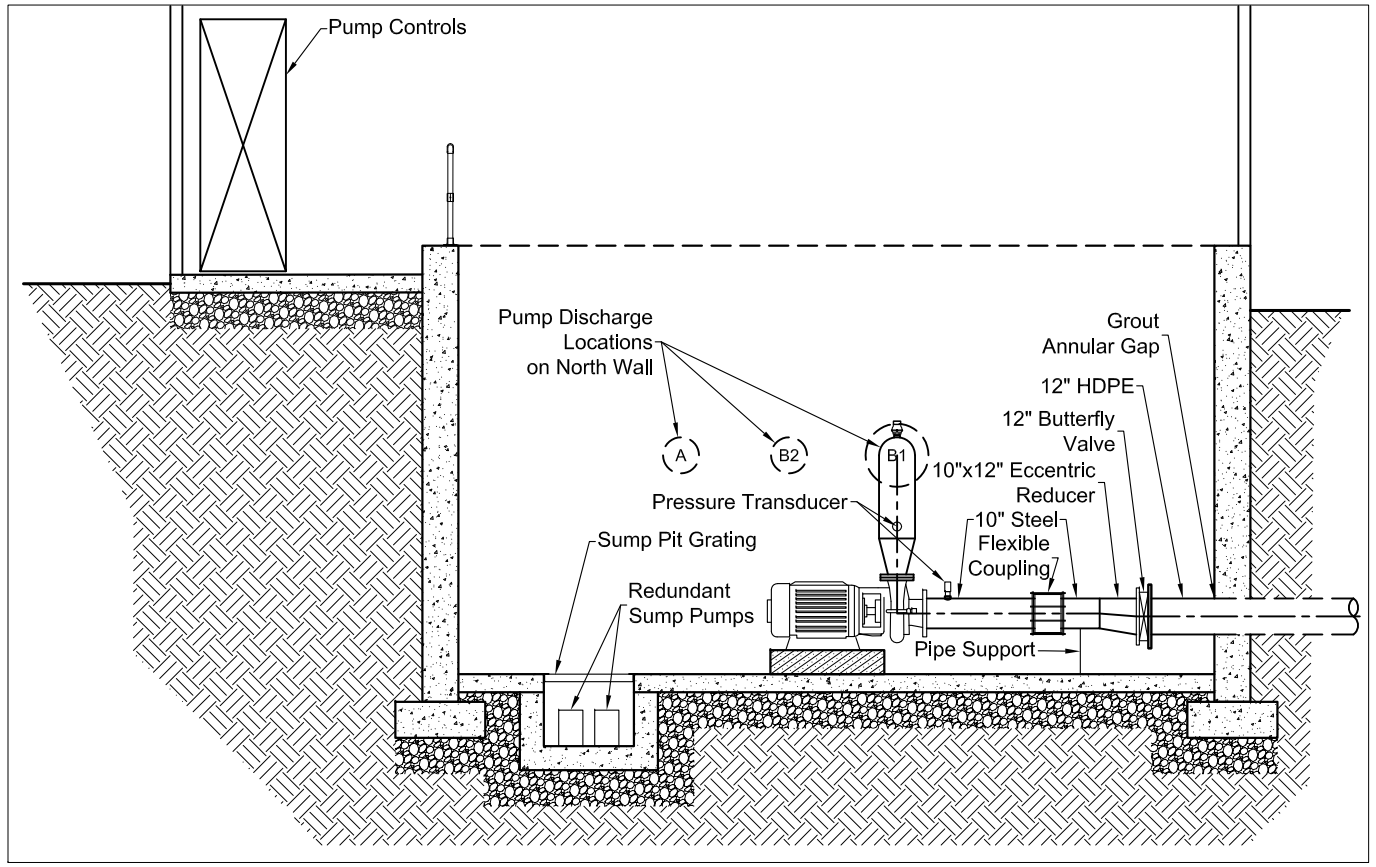
Navajo Nation Department of Water Resources

Hogback Pumping Plant

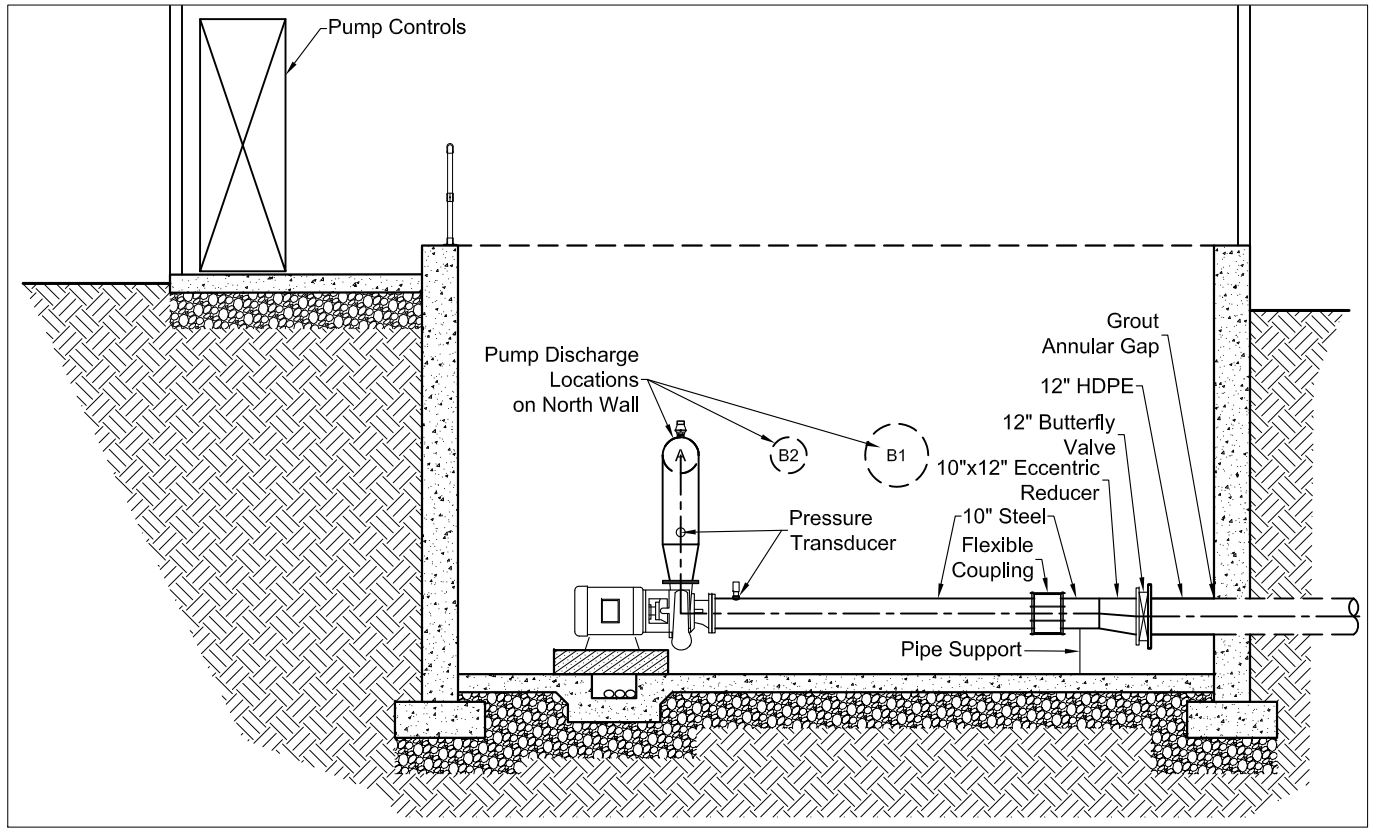
Pump House Pit Plan

Job No. NNDWR
Date: 04/01/16
Sheet 15 of 24
DRAWING NO. H-D108
REV 0

Section B-B



Section D-D



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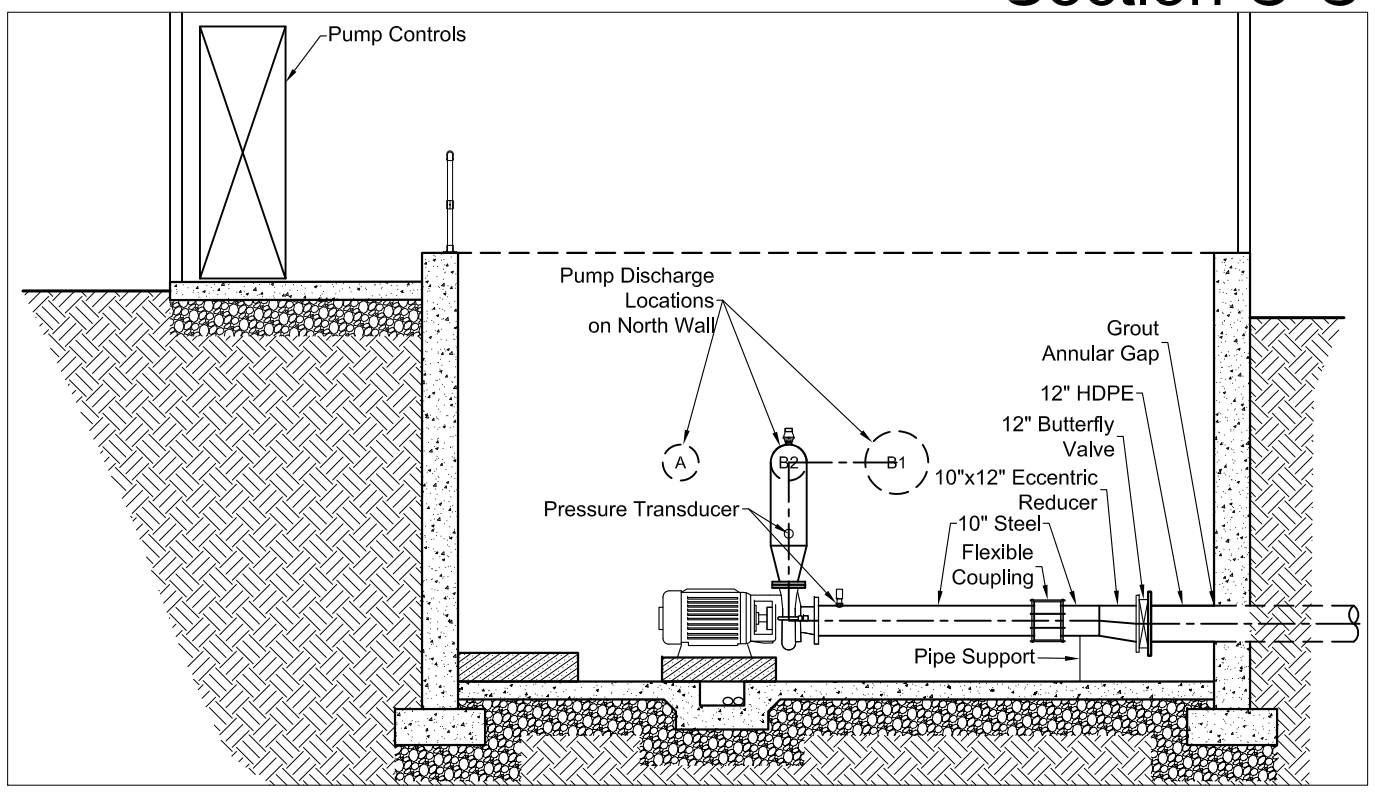

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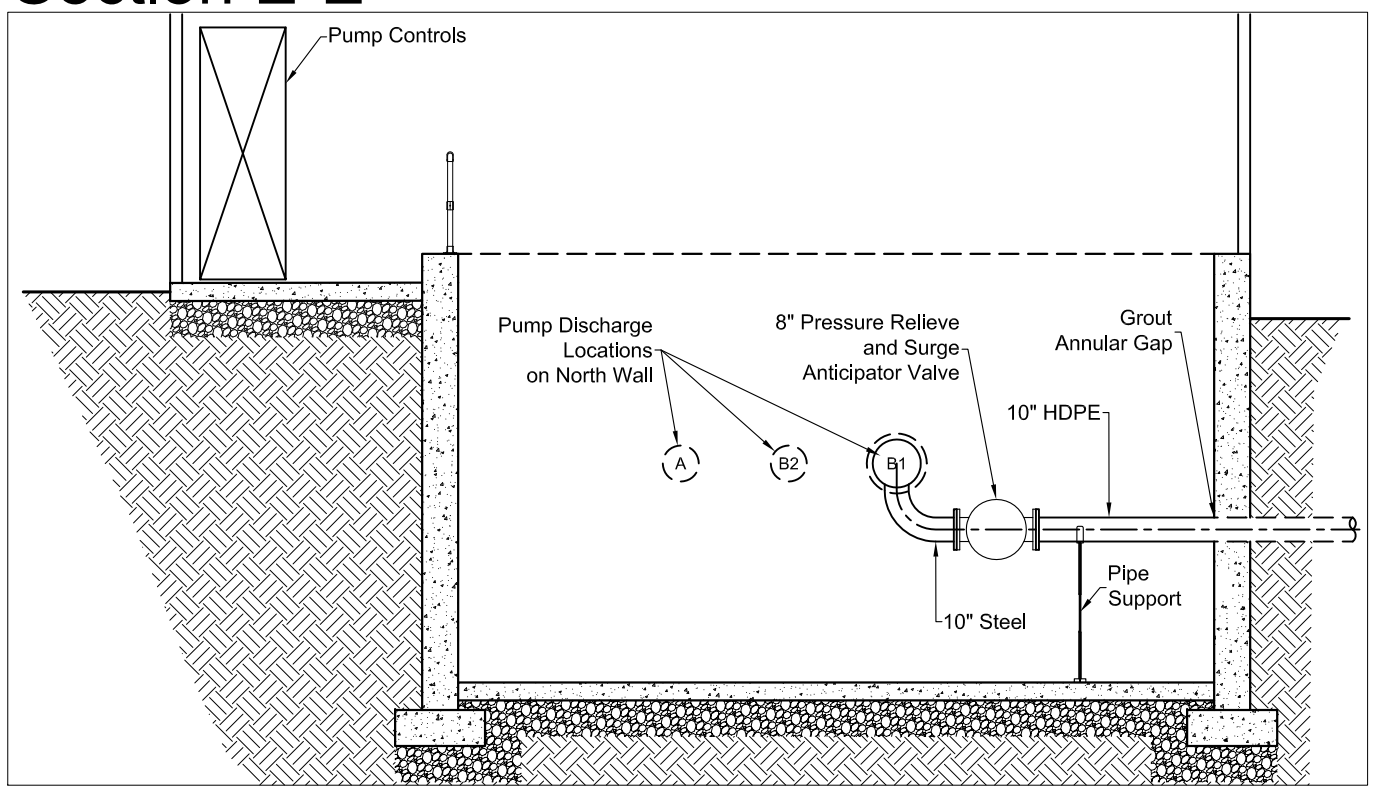

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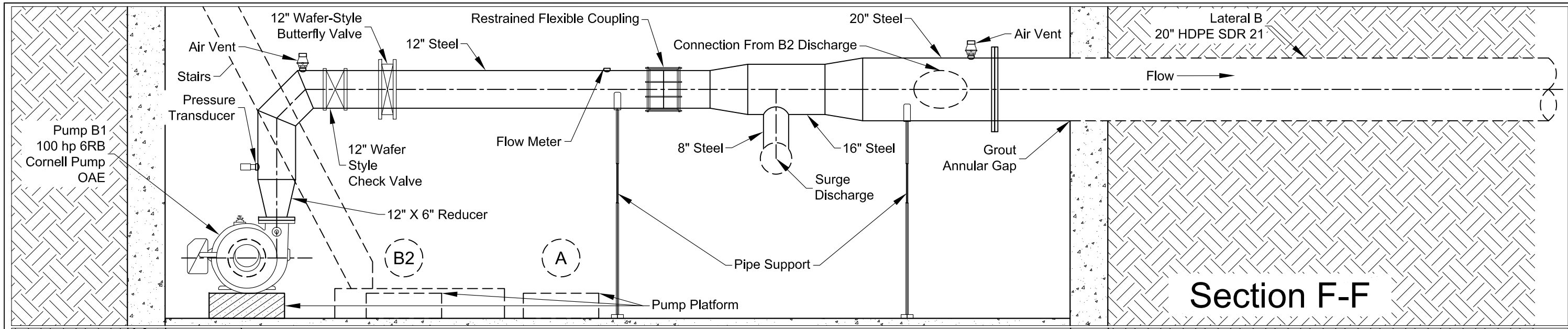
78 E. Center Logan, Utah 84321

Navajo Nation Department of Water Resources

Hogback Pumping Plant

Pump House Pipe Sections 1

Job No. NNDWR
Date: 04/01/16
Sheet 16 of 24
DRAWING NO. H-D109
REV 0



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Irrigation & Water Resources
78 E. Center Logan, Utah 84321

Navajo Nation Department of Water Resources

Hogback Pumping Plant

Pump House Pipe Sections 2

Job No. NNDWR
Date: 04/01/16
Sheet 17 of 24
DRAWING NO. H-D110
REV 0

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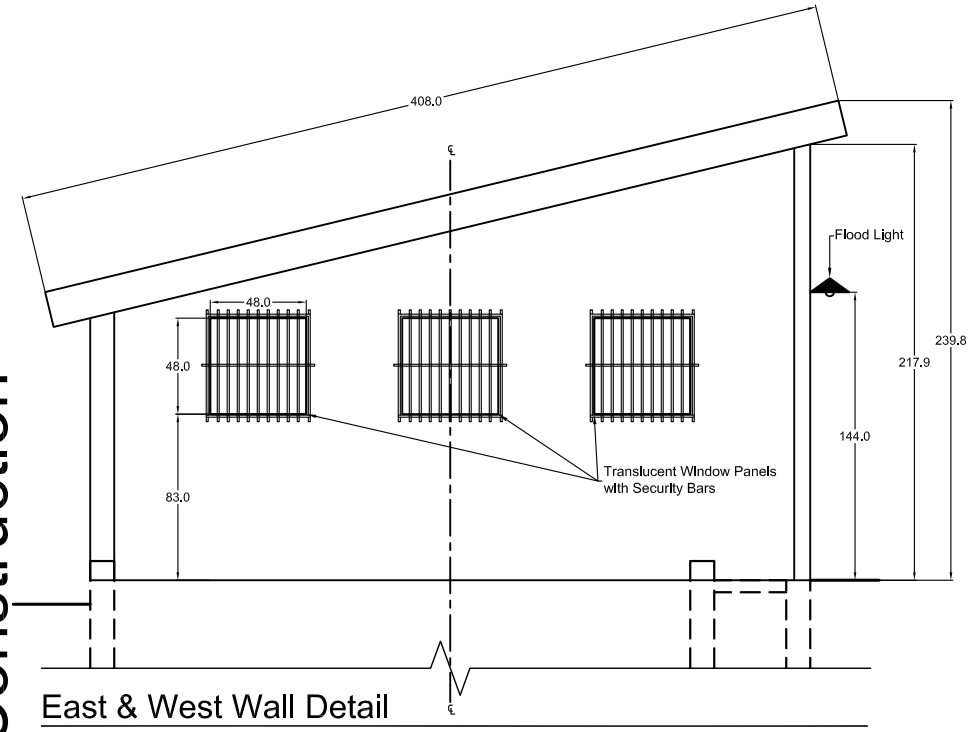
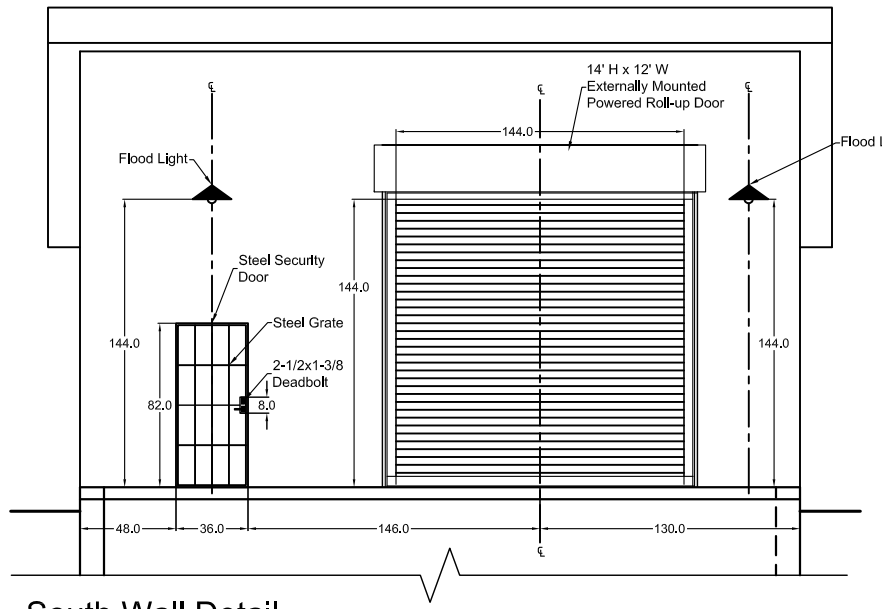
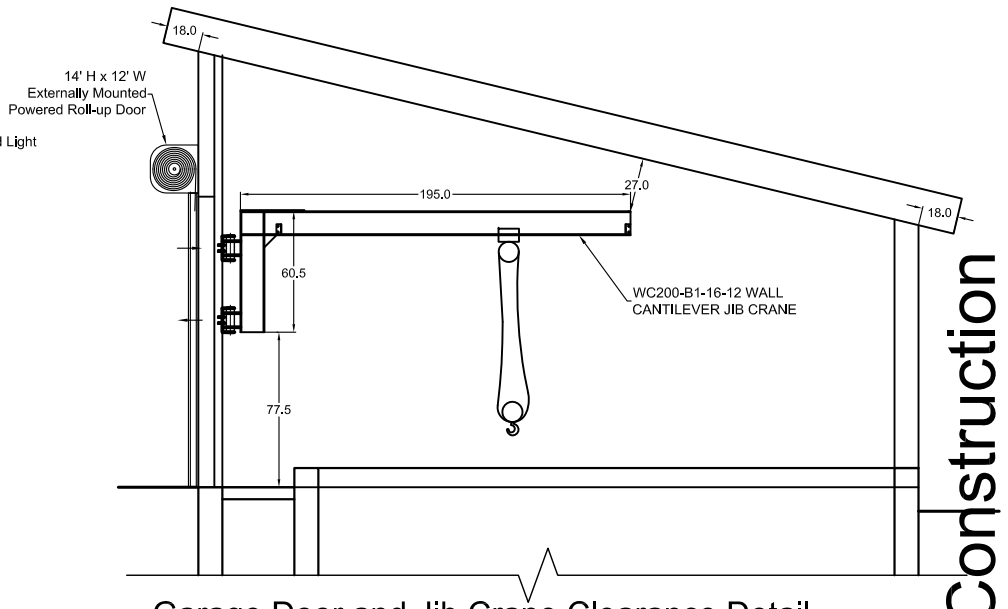


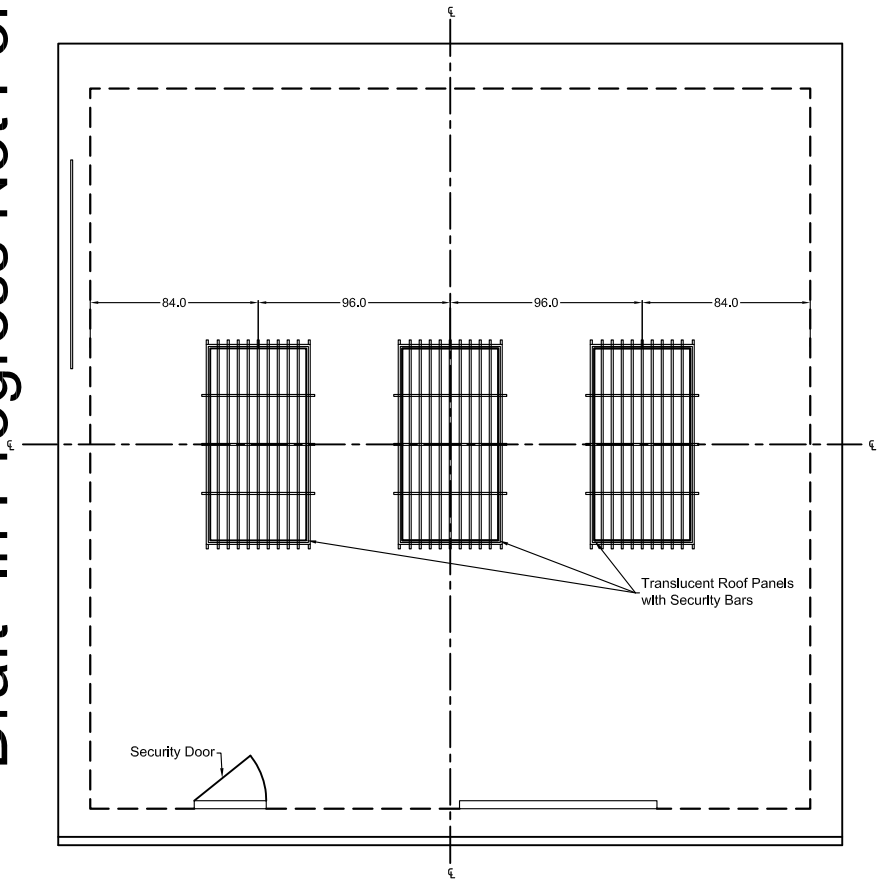
East & West Wall Detail



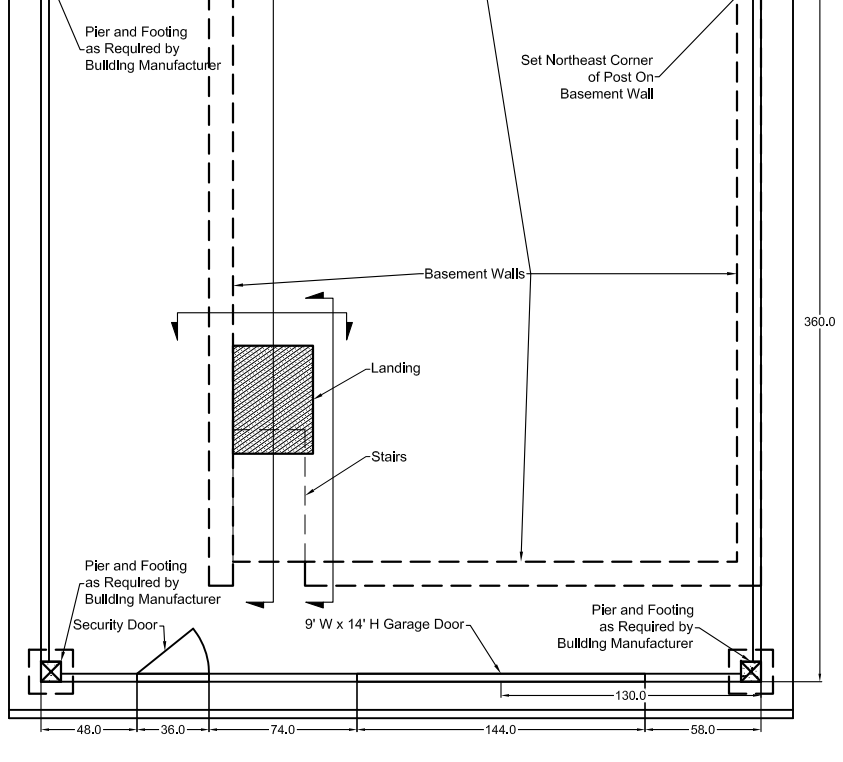
South Wall Detail



Garage Door and Jib Crane Clearance Detail



Roofing Detail



Steel Building

Notes:
1. Building Design by Contractor
2. Electrical Lighting and Outlets Design by Contractor
3. (1) 110V 15 amp outlet in control room. (1) 110V 15 amp outlet in pit. (1) electric service for 1 ton Jib Crane. (1) electric service for two 1/4 hp submersible pump (115 V). Minimum interior lighting is 10 foot-candles. Outdoor lighting 400W.
4. 0.01875 inch or 26 gauge (AISI Standard) Min Steel Panel Thickness

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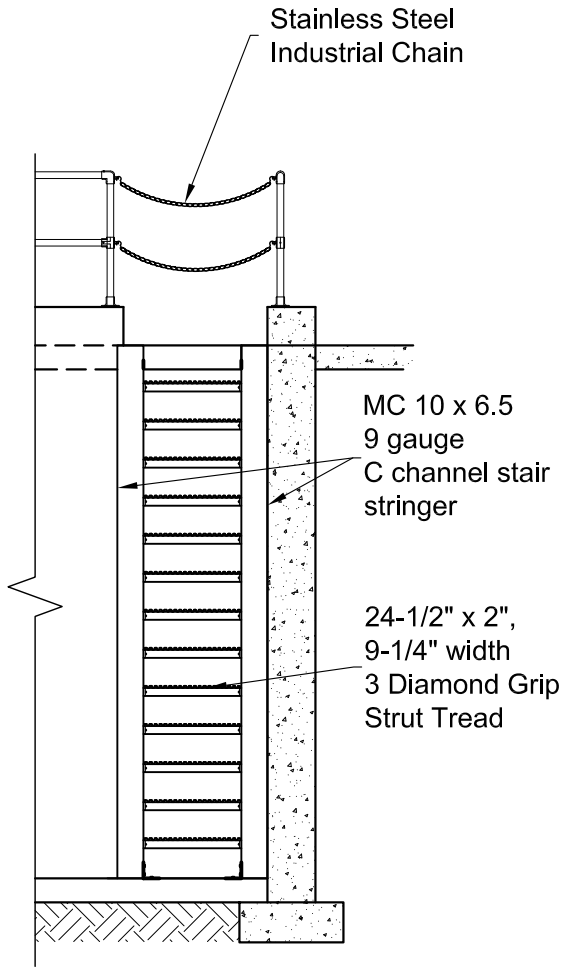
Irrigation & Water Resources
78 E. Center Logan, Utah 84321

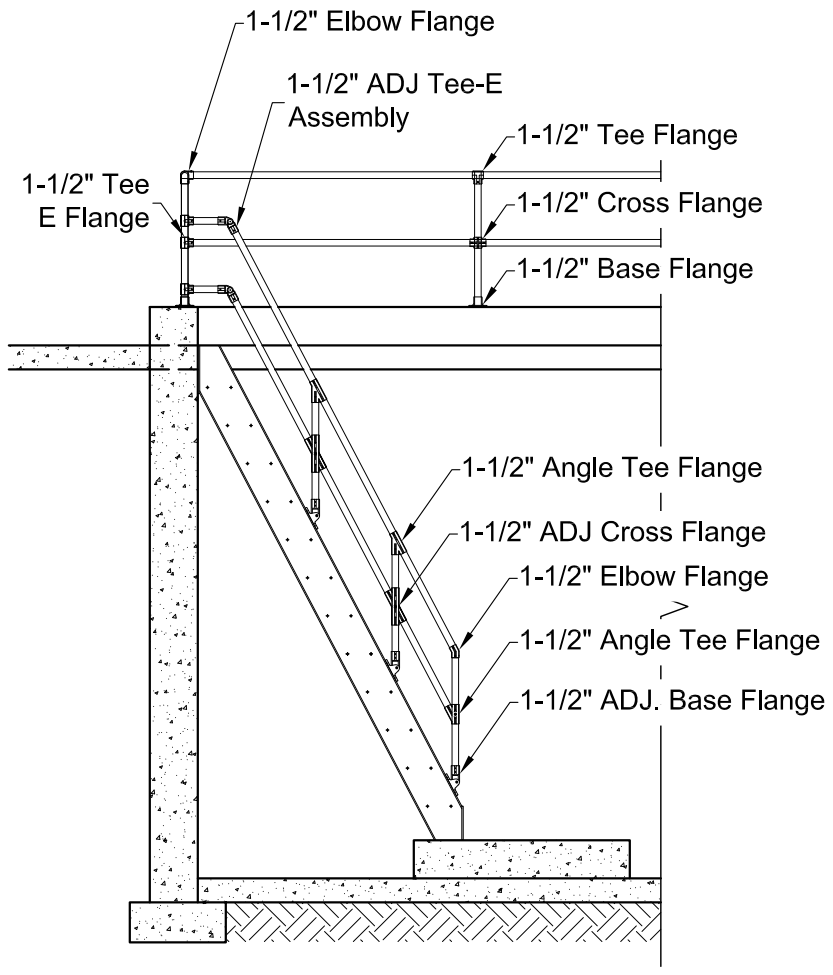
Navajo Nation Department of Water Resources

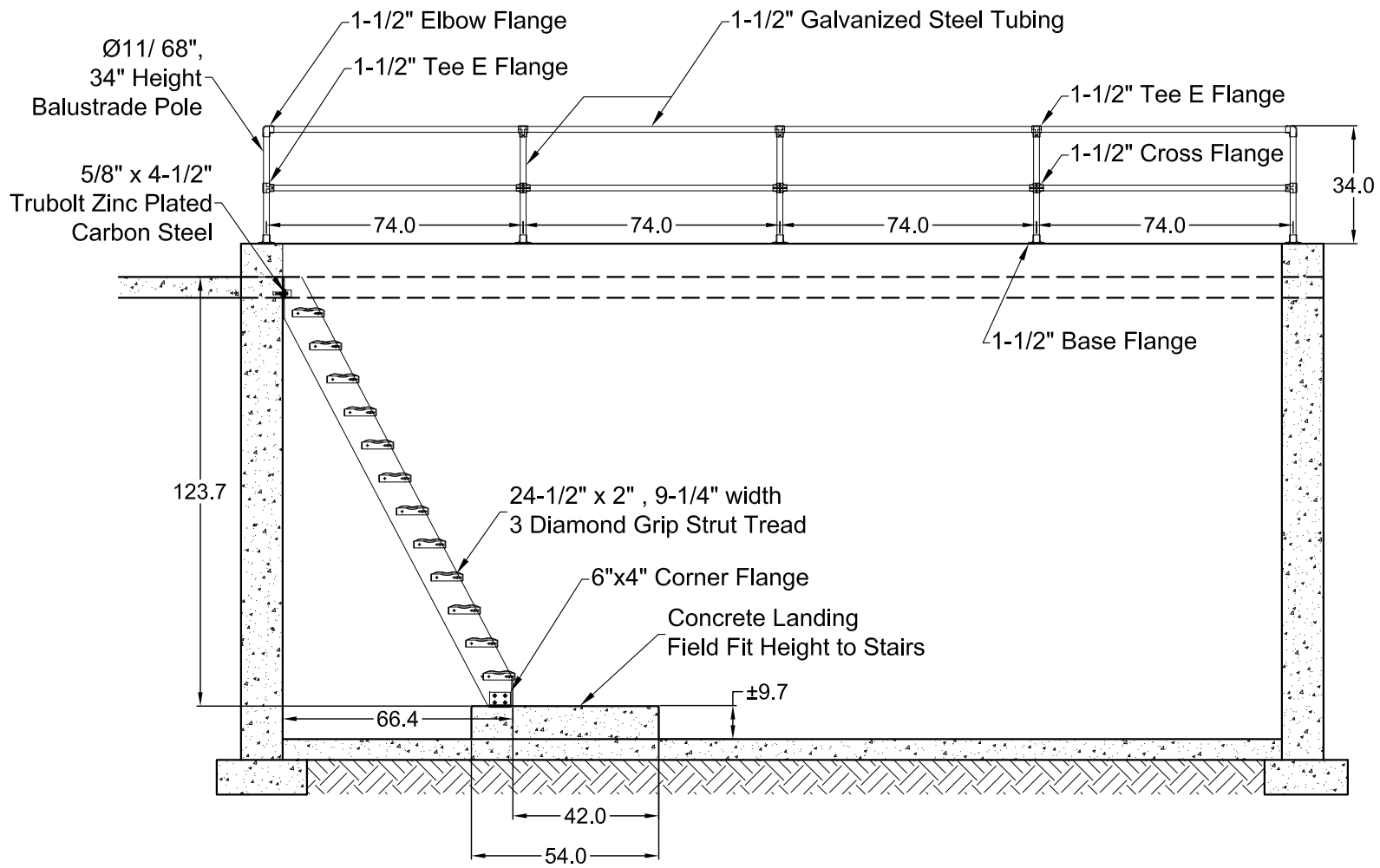
Hogback Pumping Plant

Pump House Building

Job No. NNDWR
Date: 04/01/16
Sheet 18 of 24
DRAWING NO. H-D111
REV 0







Notes:

1. Railing 1-1/2" Galvanized 14 ga Steel
2. Contractor to Design Stairs for Minimum 40 psi Load

#	Verson/Revisions	Date (MM/DD/YY)	Design	Draw	Check	Approved
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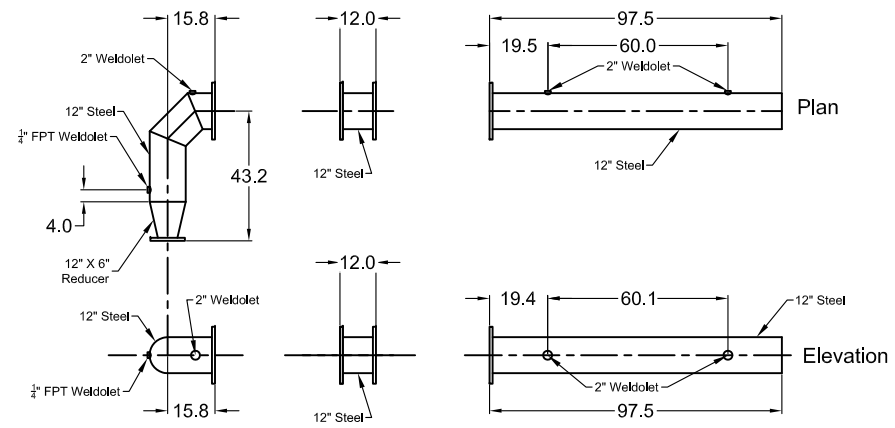
78 E. Center Logan, Utah 84321

Navajo Nation Department of Water Resources

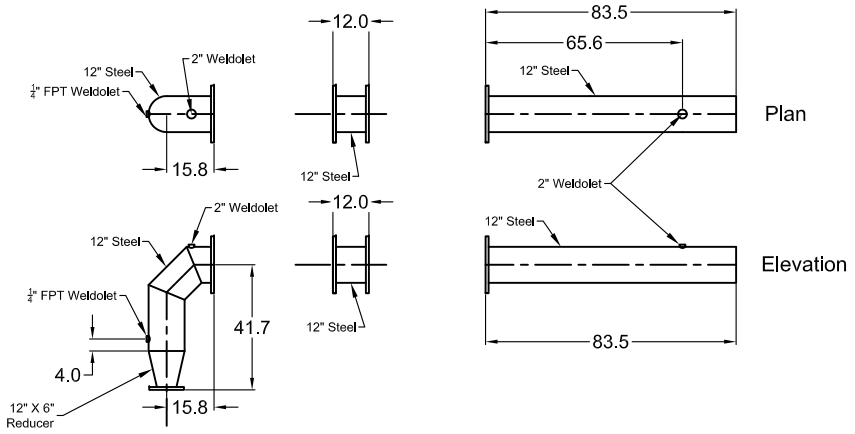
Hogback Pumping Plant

Pump House Stairs & Railings

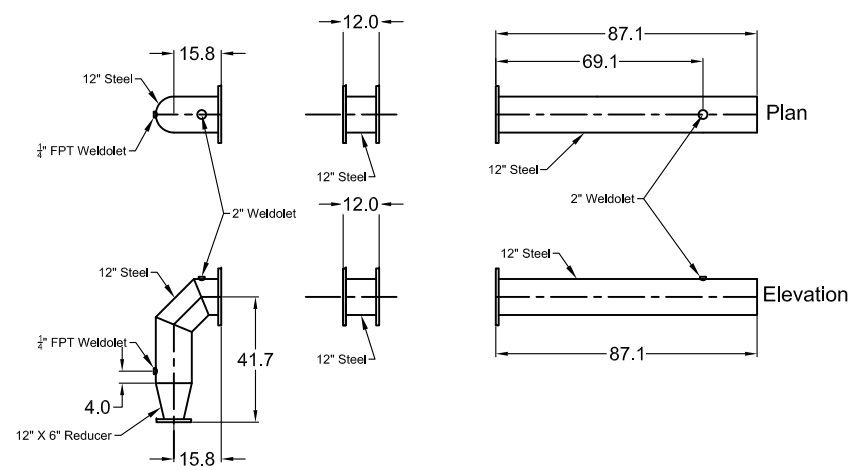
Job No. NNDWR
Date: 04/01/16
Sheet 19 of 24
DRAWING NO. H-D112
REV 0



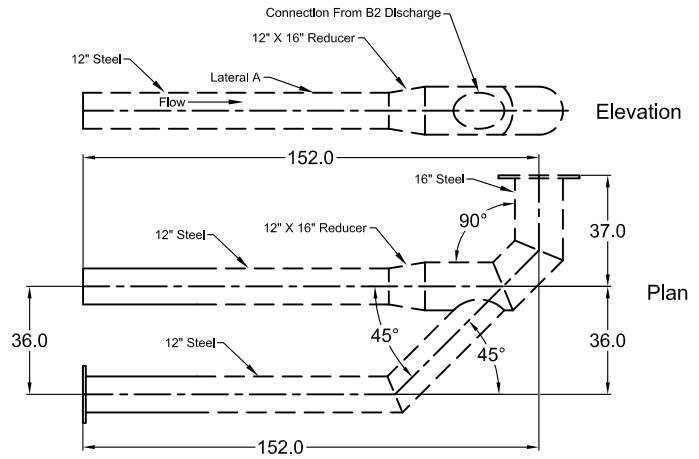
A Discharge Pipes



B2 Discharge Pipes



B1 Discharge Pipes



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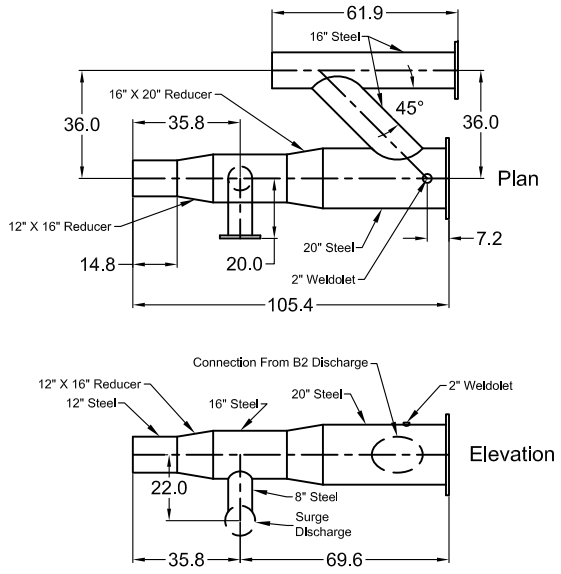
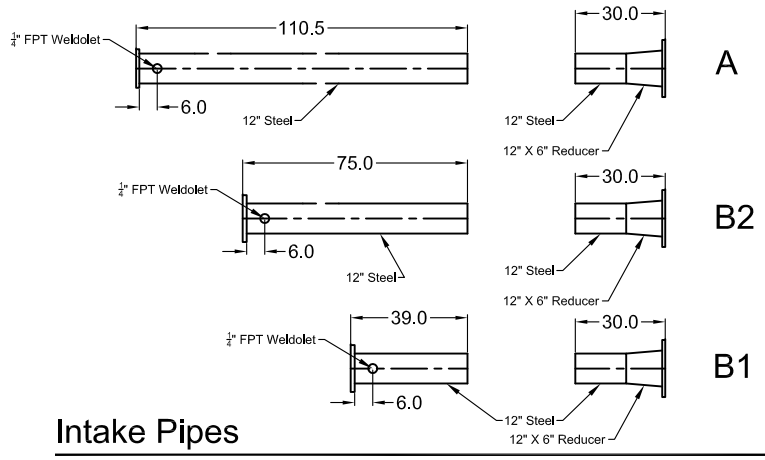
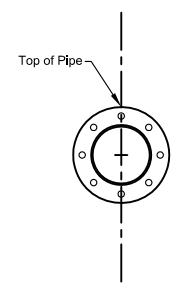


B1 to B2 Manifold



Intake Pipes



Note: Bolt holes Centered on Top Of Pipe
Regardless of Pipe Size or Number of Holes

Flange Timing (NTS)

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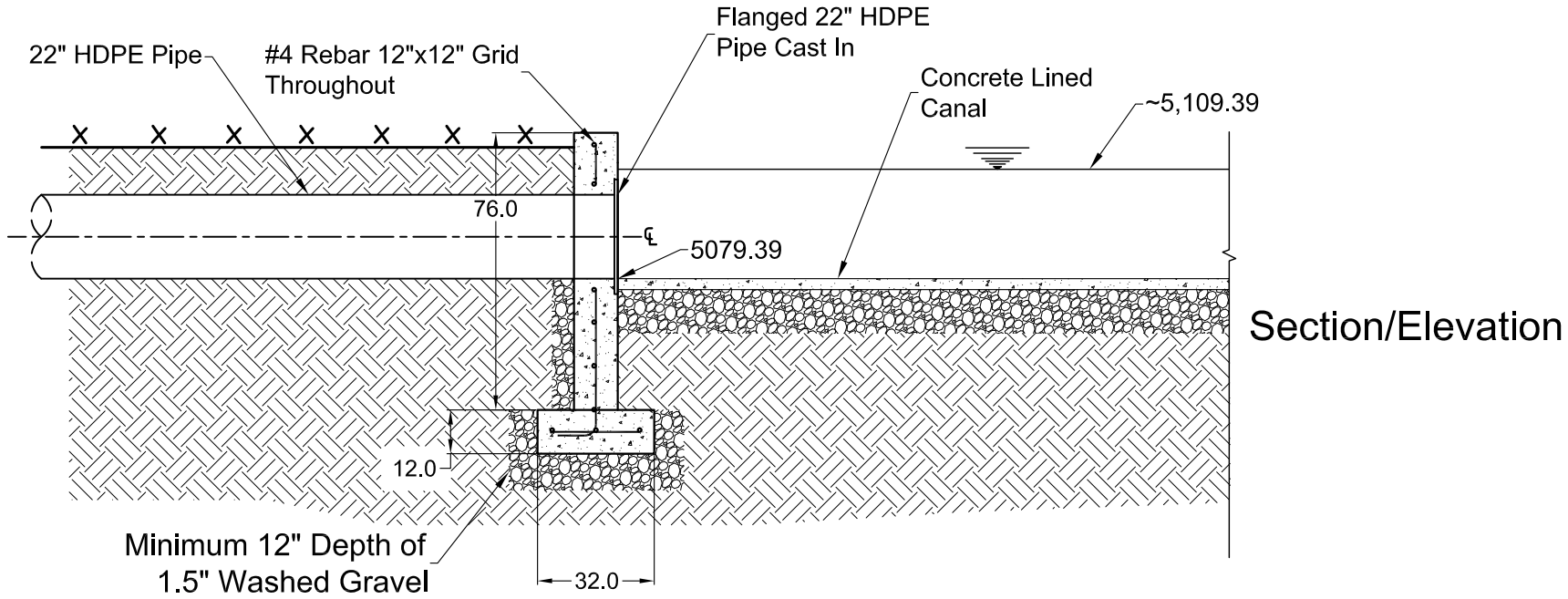
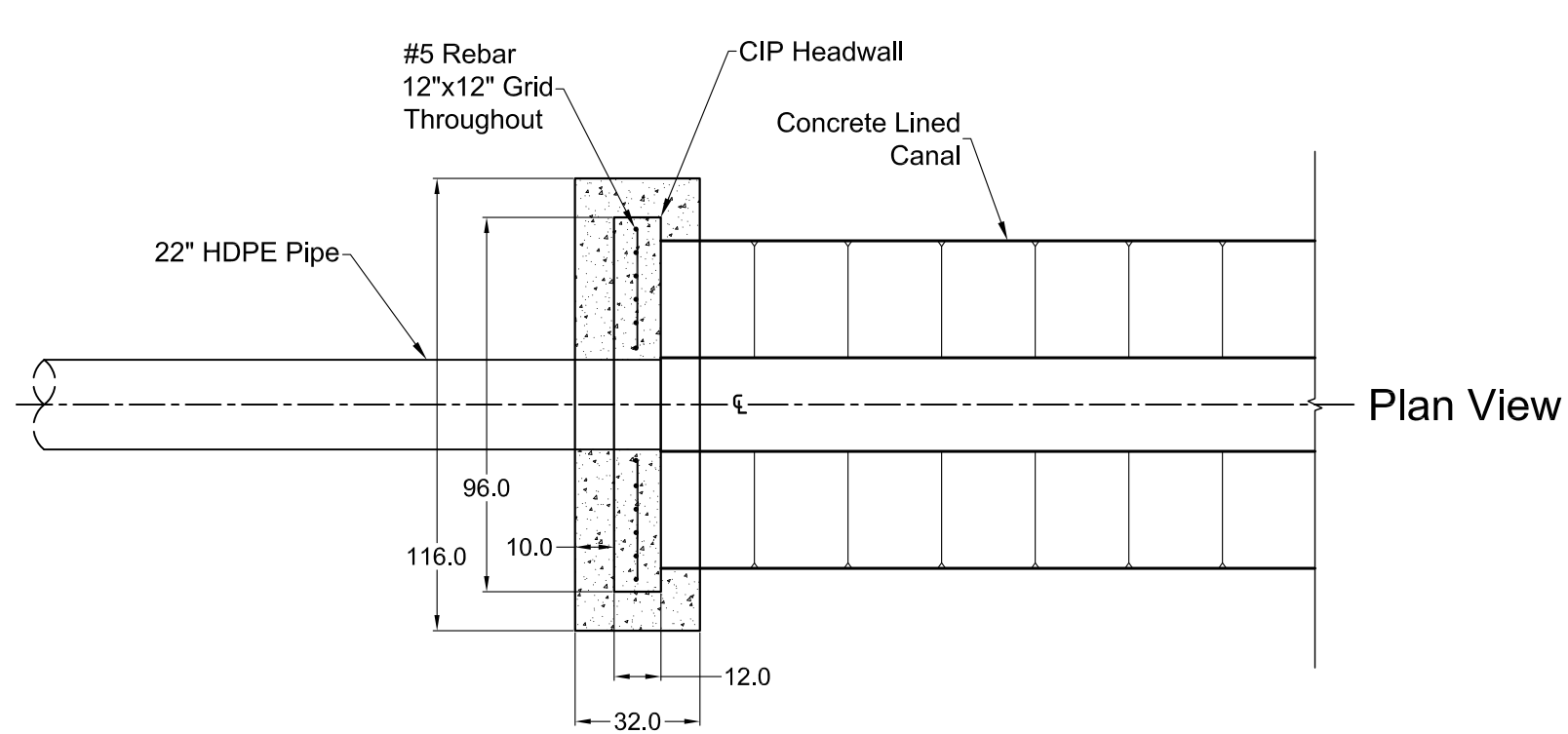
78 E. Center Logan, Utah 84321

Navajo Nation Department of Water Resources
Hogback Pumping Plant
Prefabricated Steel
Pipe Assemblies

Job No. NNDWR
Date: 04/01/16
Sheet 23 of 24
DRAWING NO. H-D116
REV 0



Section/Elevation



Plan View

Lateral B Pipeline Discharge

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78 E. Center Logan, Utah 84321

Navajo Nation Department of Water Resources
Hogback Pumping Plant
Lateral B Pipeline Discharge

Job No. NNDWR
Date: 04/01/16
Sheet 24 of 24
DRAWING NO. H-D122
REV 0