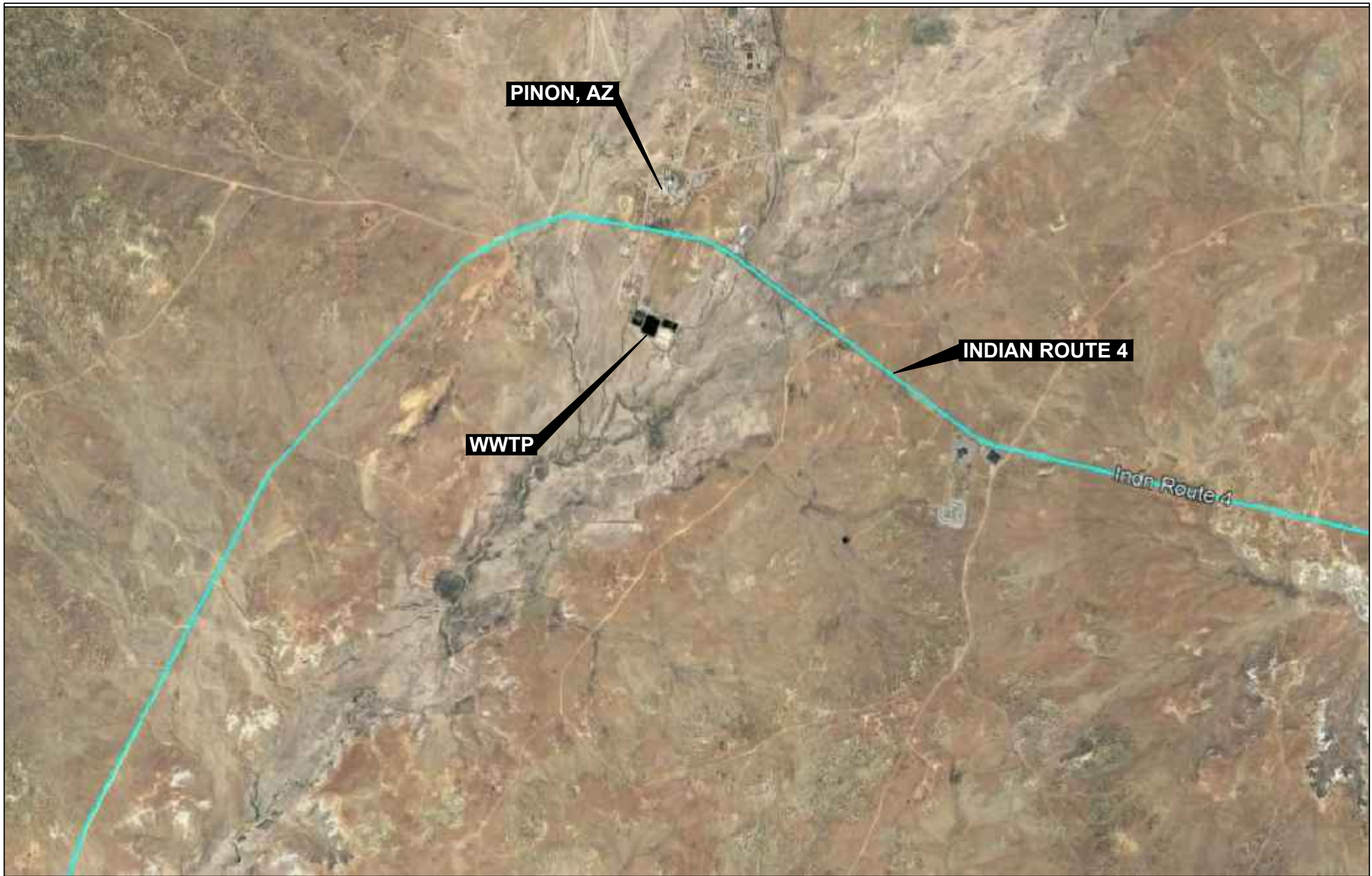


# PINON WWTP EXPANSION FINAL DESIGN

## NAVAJO TRIBAL UTILITY AUTHORITY

### PINON, ARIZONA



SHEET INDEX		
	SHEET NO.	SHEET TITLE
1	G-1	COVER SHEET
2	G-2	RIGHT-OF-WAY SURVEY
3	C-1	SITE MAP & GENERAL NOTES
4	C-2	PLAN, PONDS 5 & 6
5	C-3	PROFILES
6	C-4	BERM BREACH LOCATIONS
7	C-5	DETAILS

**SITE LOCATION**  
NTS

**VICINITY MAP**  
NTS

**DATE OF PREPARATION:**  
ORIGINAL ISSUE: 03/07/2018

**ENGINEER CONSULTANT:**  
WOOD (FORMERLY AMEC FOSTER WHEELER)  
8519 JEFFERSON NE  
ALBUQUERQUE, NM 87113 (505) 821-1801

**GEOTECHNICAL CONSULTANT:**  
WOOD (FORMERLY AMEC FOSTER WHEELER)  
8519 JEFFERSON NE  
ALBUQUERQUE, NM 87113 (505) 821-1801

THIS PLAN SET IS BASED ON AERIAL PHOTOGRAPHY.  
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE EXISTING INFORMATION SHOWN ON THESE PLANS IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE.  
THE CONTRACTOR WILL BE RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND DEPTHS OF EXISTING UTILITIES BEFORE COMMENCING CONSTRUCTION.  
THE CONTRACTOR MUST ALSO CALL 811 AND NAVAJO UTILITY AUTHORITY, P.O. BOX 170, FORT DEFIANCE, AZ, 86504 AT 928-729-5721 AT LEAST 3 WORKING DAYS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

**wood.**

ENVIRONMENT &  
INFRASTRUCTURE SOLUTIONS  
8519 JEFFERSON NE  
ALBUQUERQUE, NM 87113  
TEL: (505) 821-1801



PROJECT:  
**PINON WWTP  
EXPANSION FINAL  
DESIGN**



**NAVAJO TRIBAL  
UTILITY AUTHORITY**  
PO BOX 170  
FT. DEFIANCE, AZ 86504  
WOOD PROJECT No:  
1851700014

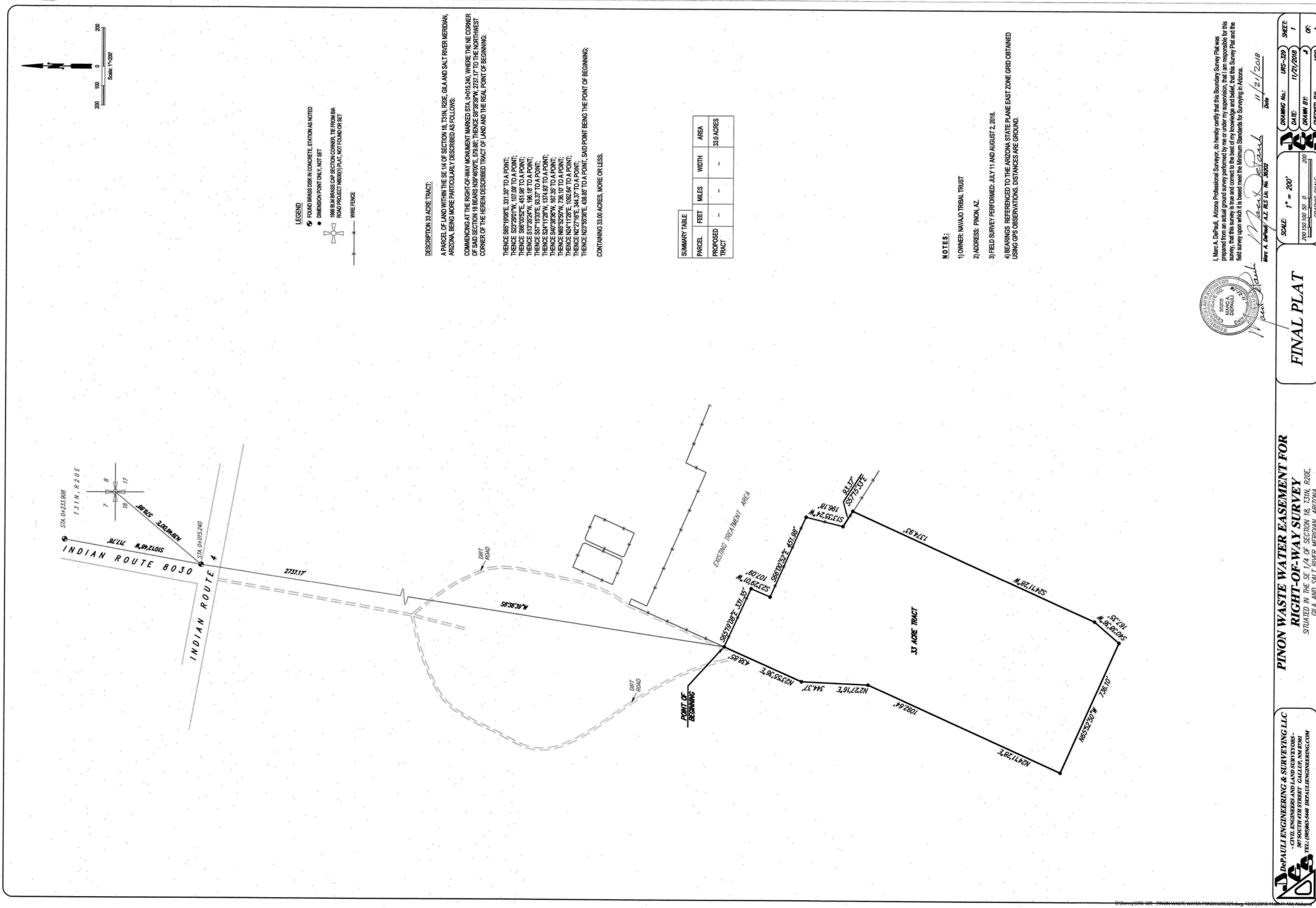
REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	WOOD - BM
DRAWN BY:	WOOD - DM
CHECKED BY:	WOOD - BM
APPROVED BY:	WOOD -
DATE:	08/15/2018

SHEET TITLE:  
**COVER**

SHEET NUMBER:	REV. #
<b>G-1</b>	
SHEET 1 OF 7 SHEETS	





- NOTES:
- 1) OWNER: NAVAJO TRIBAL TRUST
  - 2) ADDRESS: PINON, AZ
  - 3) FIELD SURVEY PERFORMED: JULY 11 AND AUGUST 2, 2018.
  - 4) BEARINGS REFERENCED TO THE ARIZONA STATE PLANE EAST ZONE GRID OBTAINED USING GPS OBSERVATIONS. DISTANCES ARE GROUND.

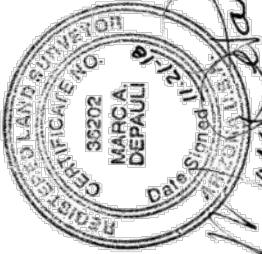
SUMMARY TABLE				
PARCEL	FEET	MILES	WIDTH	AREA
PROPOSED TRACT	-	-	-	33.0 ACRES

DESCRIPTION 33 ACRE TRACT:

A PARCEL OF LAND WITHIN THE SE 1/4 OF SECTION 18, T31N, R20E, G1A AND SALT RIVER MERIDIAN, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE RIGHT-OF-WAY MONUMENT MARKED STA. 0+015.240, WHERE THE NE CORNER OF SAID SECTION 18 BEARS N04°00'40\"/>

THENCE S85°10'06\"/>



I, Marc A. DePaulli, Arizona Professional Surveyor, do hereby certify that this Boundary Survey Plat was prepared from an actual ground survey performed by me or under my supervision, that I am responsible for this survey, that this survey is true and correct to the best of my knowledge and belief, that the Survey Plat and the field survey upon which it is based meet the Minimum Standards for Surveying in Arizona.

*Marc A. DePaulli*  
Marc A. DePaulli, A.Z. RES. Lic. No. 38202  
Date 11/21/2018

<b>FINAL PLAT</b>	SCALE: 1" = 200'	DRAWING No.: UPS-329	SHEET: 1
	200 150 100 50 0	DATE: 11/21/2018	OF: 1
	GRAPHIC SCALE	DRAWN BY: J	CHECKED BY: MDP

PINON WASTE WATER EASEMENT FOR  
RIGHT-OF-WAY SURVEY  
SITUATED IN THE SE 1/4 OF SECTION 18, T31N, R20E,  
G1A AND SALT RIVER MERIDIAN, ARIZONA.

DePAULLI ENGINEERING & SURVEYING LLC  
"CIVIL ENGINEERS AND LAND SURVEYORS"  
307 SOUTH 4TH STREET GALLUP, NM 87301  
TEL: (866) 963-5440 DEPAULLENGINEERING.COM

wood.

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8519 JEFFERSON NE  
ALBUQUERQUE, NM 87113  
TEL: (505) 821-1801



PROJECT:  
PINON WWTP  
EXPANSION FINAL  
DESIGN



NAVAJO TRIBAL  
UTILITY AUTHORITY  
PO BOX 170  
FT. DEFIANCCE, AZ 86504  
WOOD PROJECT No:  
1851700014

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	WOOD - BM
DRAWN BY:	WOOD - DM
CHECKED BY:	WOOD - BM
APPROVED BY:	WOOD -
DATE:	08/15/2018

SHEET TITLE:  
RIGHT-OF-WAY  
SURVEY

SHEET NUMBER:	REV. #
G-2	
SHEET 2 OF 7 SHEETS	



GENERAL NOTES

QUALITY CONTROL

1.0 UNLESS OTHERWISE STATED, INDIAN HEALTH SERVICE (IHS) NAVAJO ENGINEERING AND CONSTRUCTION AUTHORITY (NECA) SPECIFICATIONS (REVISION 1.5) AND INDIAN HEALTH SERVICE STANDARD DETAILS FOR SEWER (REVISION1.7) SHALL CONTROL THE MATERIALS AND WORKMANSHIP OF THIS PROJECT WHETHER SPECIFICALLY CALLED OUT OR NOT. THE IHS NECA SPECIFICATIONS ARE A SEPARATE VOLUME AND NOT ISSUED AS PART OF THE CONSTRUCTION SET. SPECIFICATION SECTIONS AND STANDARD DRAWINGS, WHEN NOTED HEREIN, REFER TO CORRESPONDING PARTS OF THESE DOCUMENTS.

2.0 IF DURING THE COURSE OF WORK THE CONTRACTOR BECOMES AWARE OF A CONTRADICTION IN THE REQUIREMENTS BETWEEN THE STANDARD SPECIFICATIONS AND DRAWINGS AND THESE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

SAFETY

3.0 THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOBSITE SAFETY AND FOR KNOWLEDGE AND COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS AND OTHER FEDERAL, STATE, TRIBAL AND LOCAL SAFETY AND WORKPLACE COMPLIANCE REQUIREMENTS.

EXISTING CONDITIONS

4.0 THE LOCATION OF EXISTING UTILITIES, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR ACCURATE LOCATION IN THE FIELD. COST FOR ACCURATE LOCATION IS INCIDENTAL TO THE WORK AND NO ADDITIONAL COMPENSATION WILL BE MADE.

5.0 IF EVIDENCE OF SUBSURFACE ARCHAEOLOGICAL OR HISTORIC FEATURES ARE OBSERVED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY HALT CONSTRUCTION IN THE AREA, PROTECT THE SITE, AND NOTIFY THE ENGINEER. NO CONSTRUCTION ACTIVITY SHALL OCCUR WITHIN THE 50 FOOT BUFFER AROUND THE EXISTING ARCHAEOLOGICAL SITE UNTIL APPROVED.

PROJECT CONTROL

6.0 LOCAL HORIZONTAL CONTROL: THREE BRASS CAP CONTROL POINTS THAT HAVE BEEN INSTALLED ONSITE ARE THE BASIS OF HORIZONTAL CONTROL. THE CONTROL POINTS SHALL BE MAINTAINED AND REMAIN UNDISTURBED DURING CONSTRUCTION AND WILL SERVE AS HORIZONTAL CONTROL POINTS FOR THE PROJECT. THEY ARE DESCRIBED AS FOLLOWS: CONTROL POINT 1, N 1852713.19', E 682202.76', ELEV. 6302.26', CONTROL POINT 2, N 1851887.79', E 682692.68', ELEV. 6302.42' AND CONTROL PONT 3, N 1851348.14', E 682951.08', ELEV. 6295.16'. THE DATUM USED FOR THE SITE IS NAD 83 ARIZONA STATE PLANE EAST ZONE, US FOOT.

7.0 SCALES IN THESE PLANS ARE VALID WHEN PLOTTED ON 22"x34" (ANSI).

WORK AREA

8.0 THE CONTRACTOR SHALL CONFINE WORK TO WITHIN THE PRESCRIBED CONSTRUCTION LIMITS, EASEMENT, RIGHT-OF-WAY OR PROPERTY.

9.0 THE CONTRACTOR SHALL COORDINATE HIS ACTIVITIES WITH THE OWNER AND ENGINEER TO MINIMIZE ACCESS TO ADJACENT PROPERTIES AND TRAFFIC DISRUPTIONS.

10.0 THE CONTRACTOR SHALL ACQUIRE THE NECESSARY LICENSES OR PERMITS WHEN WORKING WITHIN OR NEAR A RIGHT-OF-WAY, STREET, ROAD OR HIGHWAY, SIDEWALK, TRAIL, OR OTHER PUBLIC THOROUGHFARE AND SHALL INCORPORATE THE REQUIREMENTS OF SAID LICENSE/PERMIT.

11.0 WHEN WORKING IN OR NEAR TRAFFIC THE CONTRACTOR SHALL (AT A MINIMUM) PROVIDE, ADEQUATE SIGNS, BARRICADES, WARNING LIGHTS, AND FLAGGERS TO ENSURE THE SAFETY/PROTECTION OF THE PUBLIC, EMPLOYEES, AND THE WORK IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), LATEST EDITION.

12.0 IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ACCESS TO EXISTING RESIDENCES, BUSINESSES, TURNOUTS AND INTERSECTING ROADS AT ALL TIMES DURING CONSTRUCTION.

13.0 IF A FENCED/SECURE STORAGE AREA FOR MATERIALS AND EQUIPMENT IS DESIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AN AREA OFF THE PROJECT SITE. USING THE AREA FOR STORAGE SHALL COMPLY WITH LOCAL ZONING OR OTHER ORDINANCES AND SHALL BE PERMITTED, IF REQUIRED. OBTAINING A STORAGE AREA SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL PAYMENT WILL BE MADE TO THE CONTRACTOR.

14.0 OVERNIGHT PARKING OF CONTRACTOR'S EQUIPMENT SHALL NOT OBSTRUCT ACCESS OR DESIGNATED TRAFFIC LANES. THE CONTRACTOR SHALL PARK OR STORE EQUIPMENT AT SAFE DISTANCES FROM THE TRAVELED WAY.

15.0 THE CONTRACTOR IS RESPONSIBLE FOR SOIL EROSION, DRAINAGE CONTROL AND DUST DURING CONSTRUCTION AND MUST, WHEN APPLICABLE, PREPARE AND ADHERE TO A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED ACCORDING TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S CONSTRUCTION GENERAL PERMIT (CGP).

OTHER UTILITIES

16.0 THE CARE AND PROTECTION OF OTHER UTILITIES, STREET APPURTENANCES, DRAINAGE STRUCTURES AND OTHER INFRASTRUCTURE, WHETHER PUBLIC OR PRIVATE, THAT ARE NOT PART OF THE INTENDED WORK ARE THE RESPONSIBILITY OF THE CONTRACTOR. IF DAMAGED OR OTHERWISE HARMFULLY DISTURBED, THE ITEMS WILL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

17.0 WHERE TRENCHING AROUND OR BENEATH EXISTING UTILITY LINES OCCURS, THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY OWNER AND FOR SUPPORTING THE UTILITY LINE, AS REQUIRED BY THE UTILITY OWNER, DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASSURING THE UTILITY IS ADEQUATELY SUPPORTED BY COMPACTED BACKFILL OR OTHER MEANS AT THE COMPLETION OF CONSTRUCTION AS REQUIRED BY THE UTILITYOWNER. IF THE TECHNIQUES REQUIRED FOR STABILIZING OTHER UTILITIES CONFLICT WITH THE REQUIREMENTS OF THIS PROJECT THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

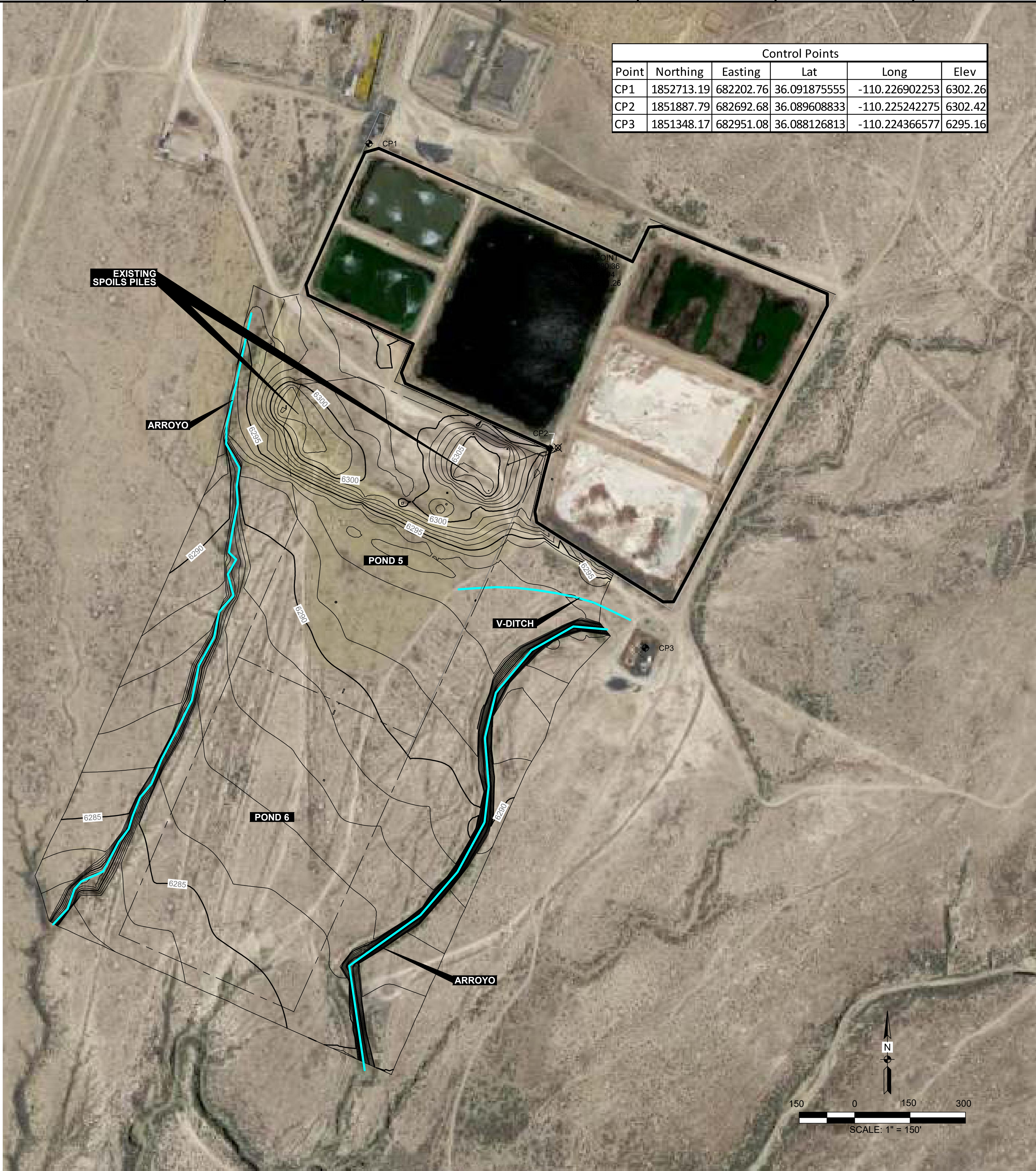
EXCESS MATERIAL & DEBRIS

18.0 ANY EXTRA NATURAL SOIL (CLEAN OF OIL AND CHEMICALS) REMAINING AFTER BACKFILL AND COMPACTION MAY BE DISPOSED AT A SITE APPROVED BY THE OWNER. CONTRACTOR SHALL HAUL DEBRIS AND NON-NATURAL SOILS TO A CERTIFIED LANDFILL. SOIL AND DEBRIS DISPOSAL IS INCIDENTAL TO CONSTRUCTION; NO ADDITIONAL COMPENSATION WILL BE MADE.

RECORD DRAWINGS

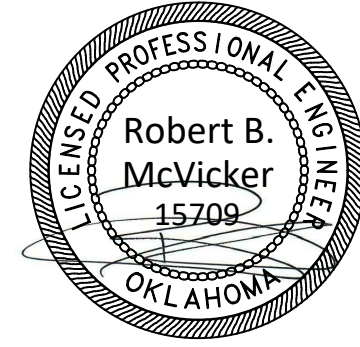
19.0 THE CONTRACTOR SHALL PREPARE AND MAINTAIN AN UP-TO-DATE SET OF RECORD DRAWINGS FOR THE PROJECT. THESE PLANS SHALL BE KEPT CURRENT DAILY AND SHALL BE MADE AVAILABLE FOR REVIEW AS REQUESTED BY THE ENGINEER. THE COST OF PREPARING AND MAINTAINING A RECORD DRAWING SET SHALL BE INCIDENTAL TO THE PROJECT; NO ADDITIONAL COMPENSATION WILL BE MADE.

Control Points					
Point	Northing	Easting	Lat	Long	Elev
CP1	1852713.19	682202.76	36.091875555	-110.226902253	6302.26
CP2	1851887.79	682692.68	36.089608833	-110.225242275	6302.42
CP3	1851348.17	682951.08	36.088126813	-110.224366577	6295.16



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PROJECT:  
PINON WWTP  
EXPANSION FINAL  
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NAVAJO TRIBAL  
UTILITY AUTHORITY

PO BOX 170  
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WOOD PROJECT No:  
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NO.	DATE	BY	APPROVED

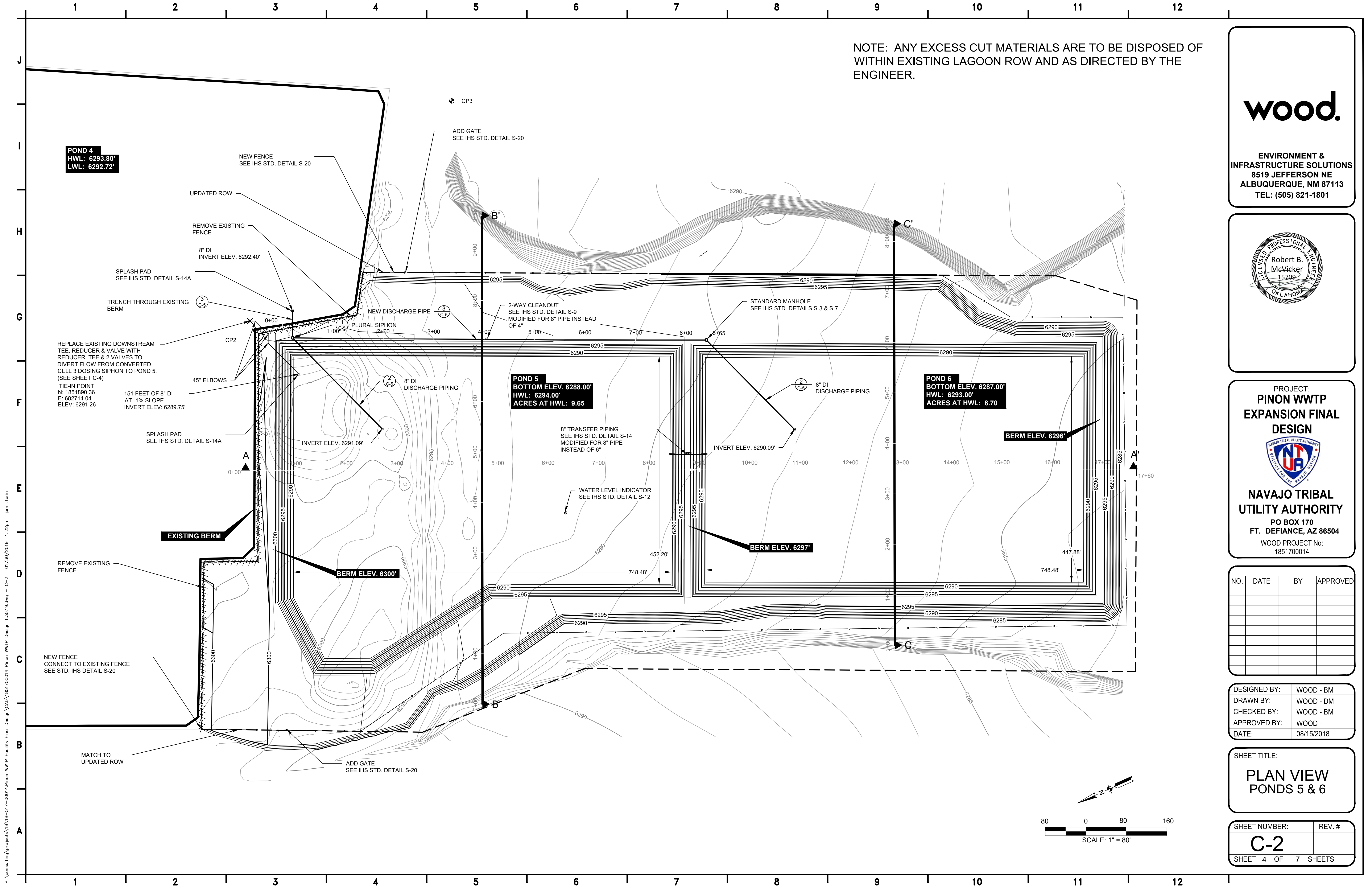
DESIGNED BY:	WOOD - BM
DRAWN BY:	WOOD - DM
CHECKED BY:	WOOD - BM
APPROVED BY:	WOOD -
DATE:	08/15/2018

SHEET TITLE:

SITE MAP

SHEET NUMBER:	REV. #
C-1	
SHEET 3 OF 7 SHEETS	

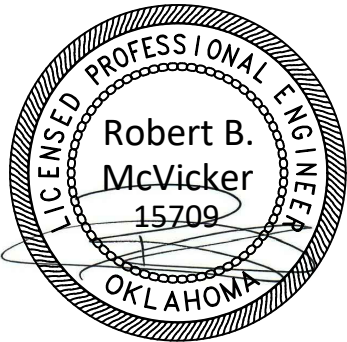




NOTE: ANY EXCESS CUT MATERIALS ARE TO BE DISPOSED OF WITHIN EXISTING LAGOON ROW AND AS DIRECTED BY THE ENGINEER.

wood.

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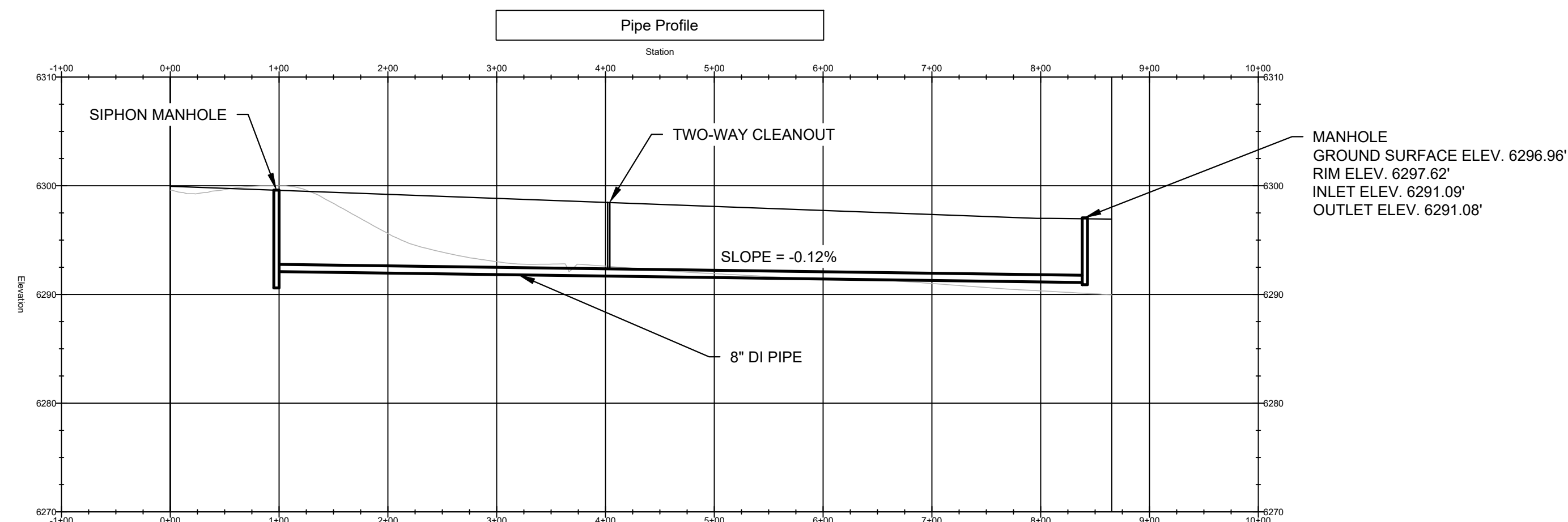
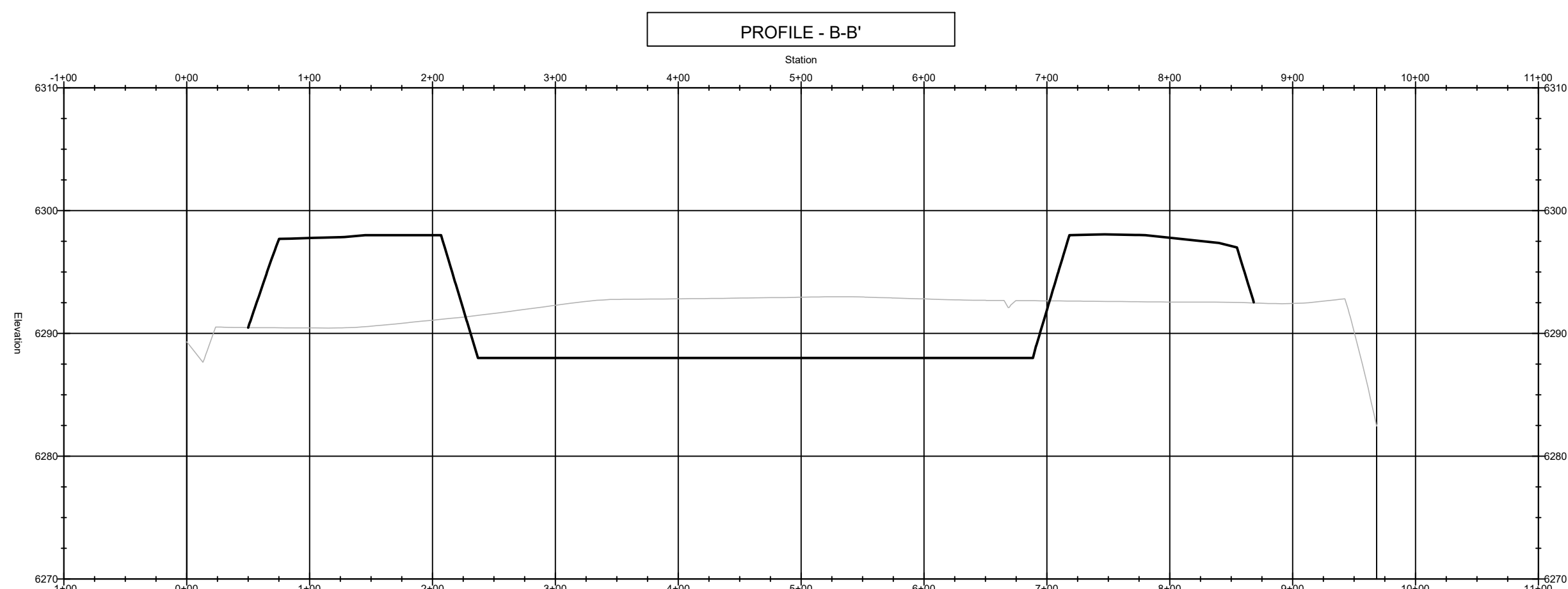
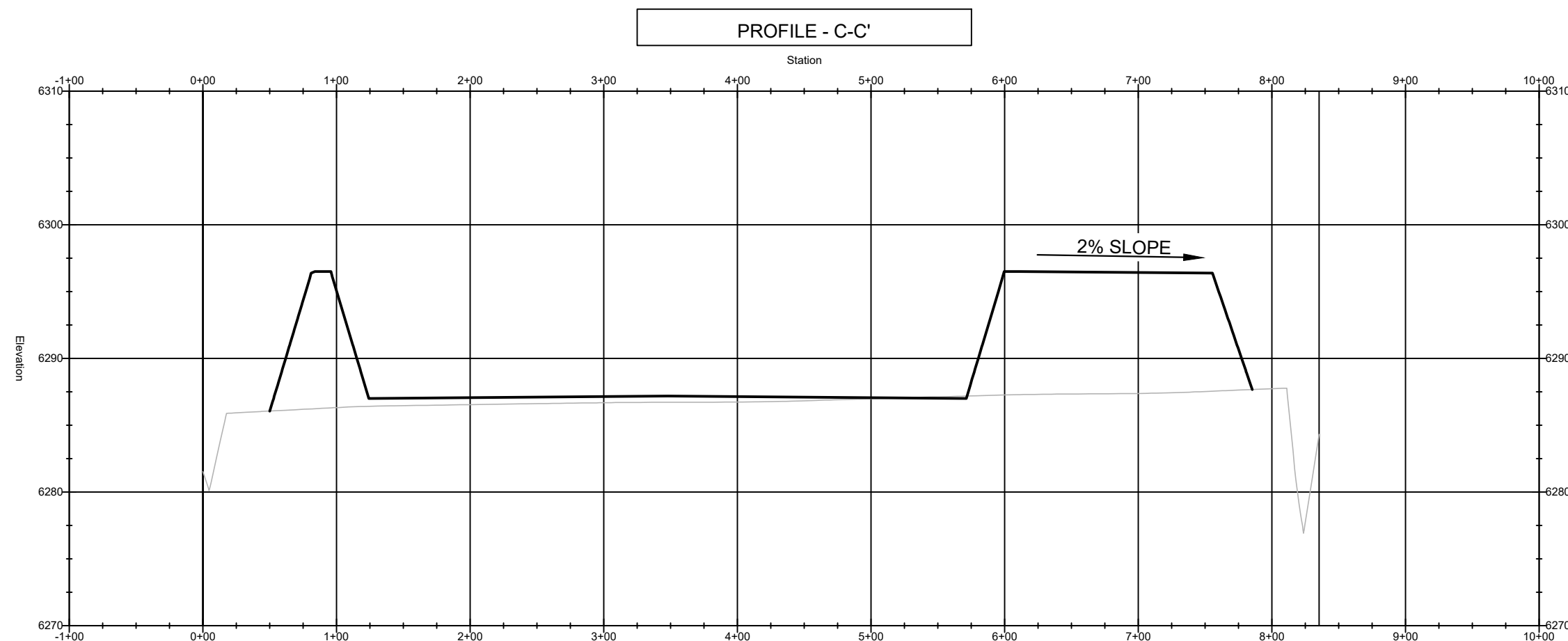
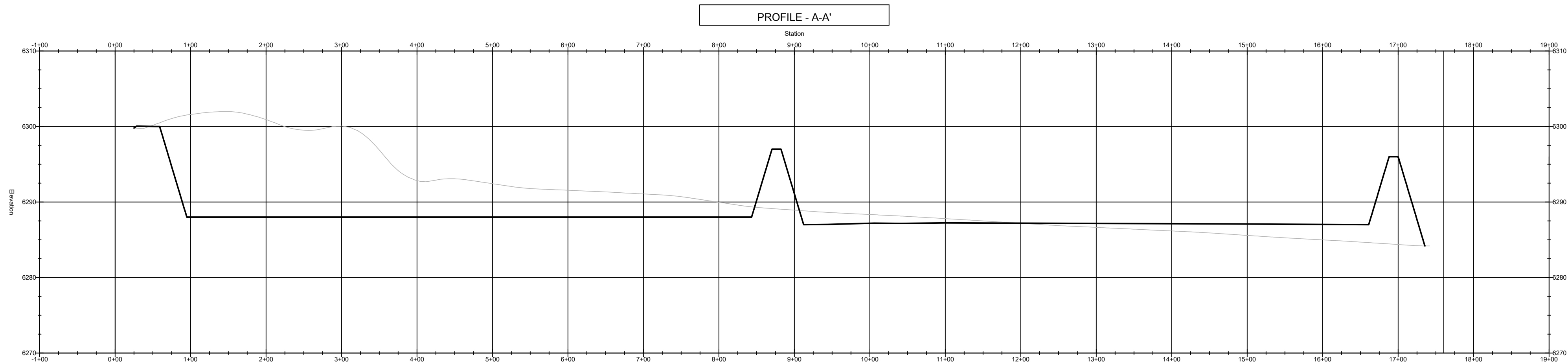
DESIGNED BY:	WOOD - BM
DRAWN BY:	WOOD - DM
CHECKED BY:	WOOD - BM
APPROVED BY:	WOOD -
DATE:	08/15/2018

SHEET TITLE:  
PLAN VIEW  
PONDS 5 & 6

SHEET NUMBER:	REV. #
C-2	
SHEET 4 OF 7 SHEETS	

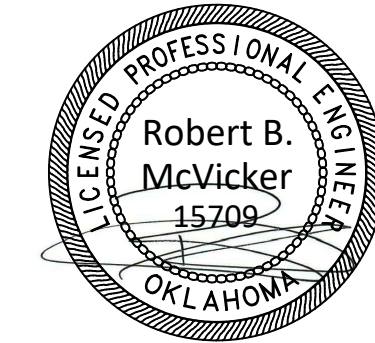


P:\consulting\projects\18\18-517-00014\Pinon WWTP Facility Final Design\CAD\1851700014 Pinon WWTP Facility Final Design - C-3 01/30/2019 1:22pm jmaric.torin



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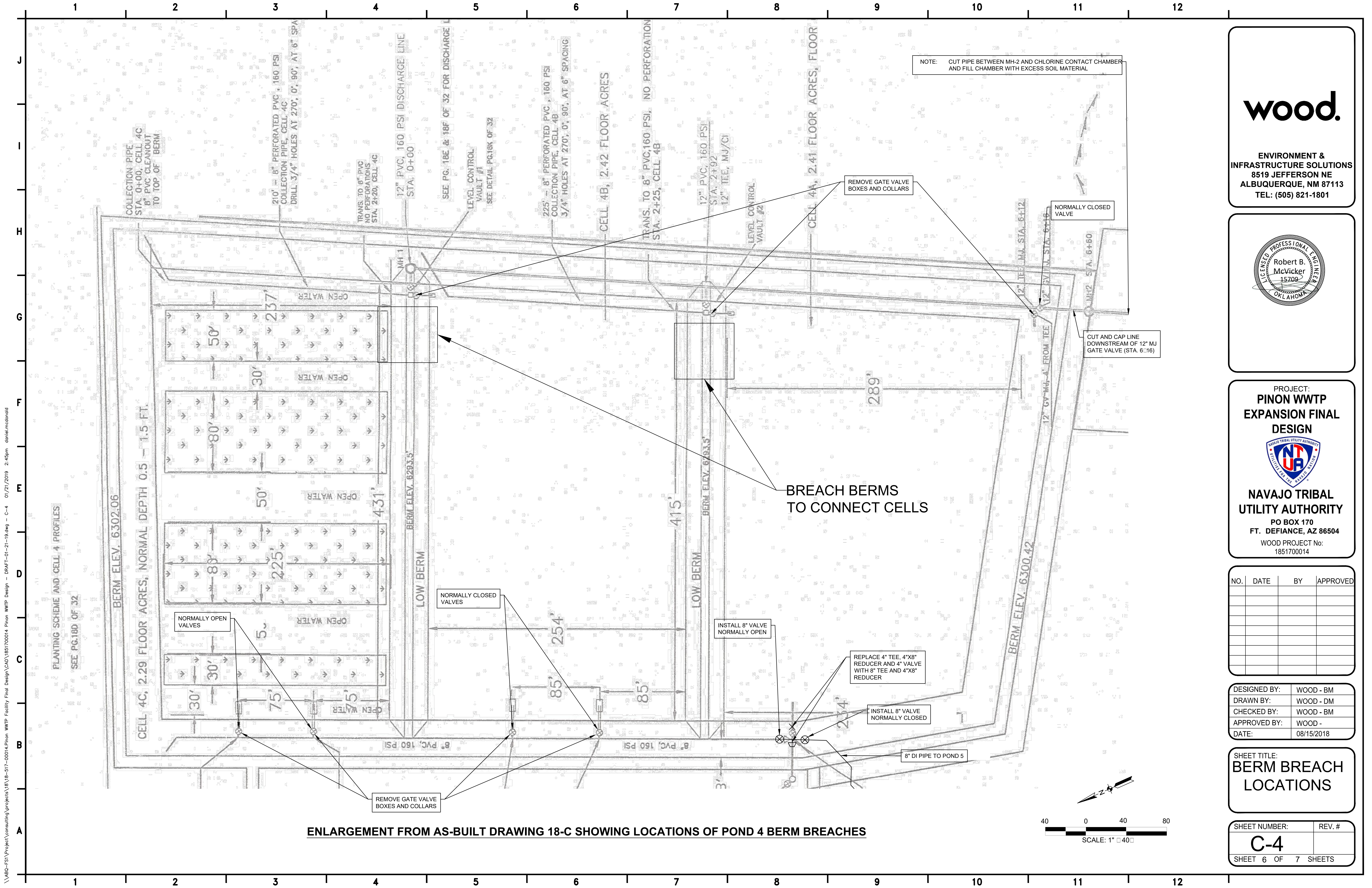
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DESIGNED BY:	WOOD - BM
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APPROVED BY:	WOOD -
DATE:	08/15/2018

SHEET TITLE:  
**PROFILES**

SHEET NUMBER:	REV. #
<b>C-3</b>	
SHEET 5 OF 7 SHEETS	





ENLARGEMENT FROM AS-BUILT DRAWING 18-C SHOWING LOCATIONS OF POND 4 BERM BREACHES

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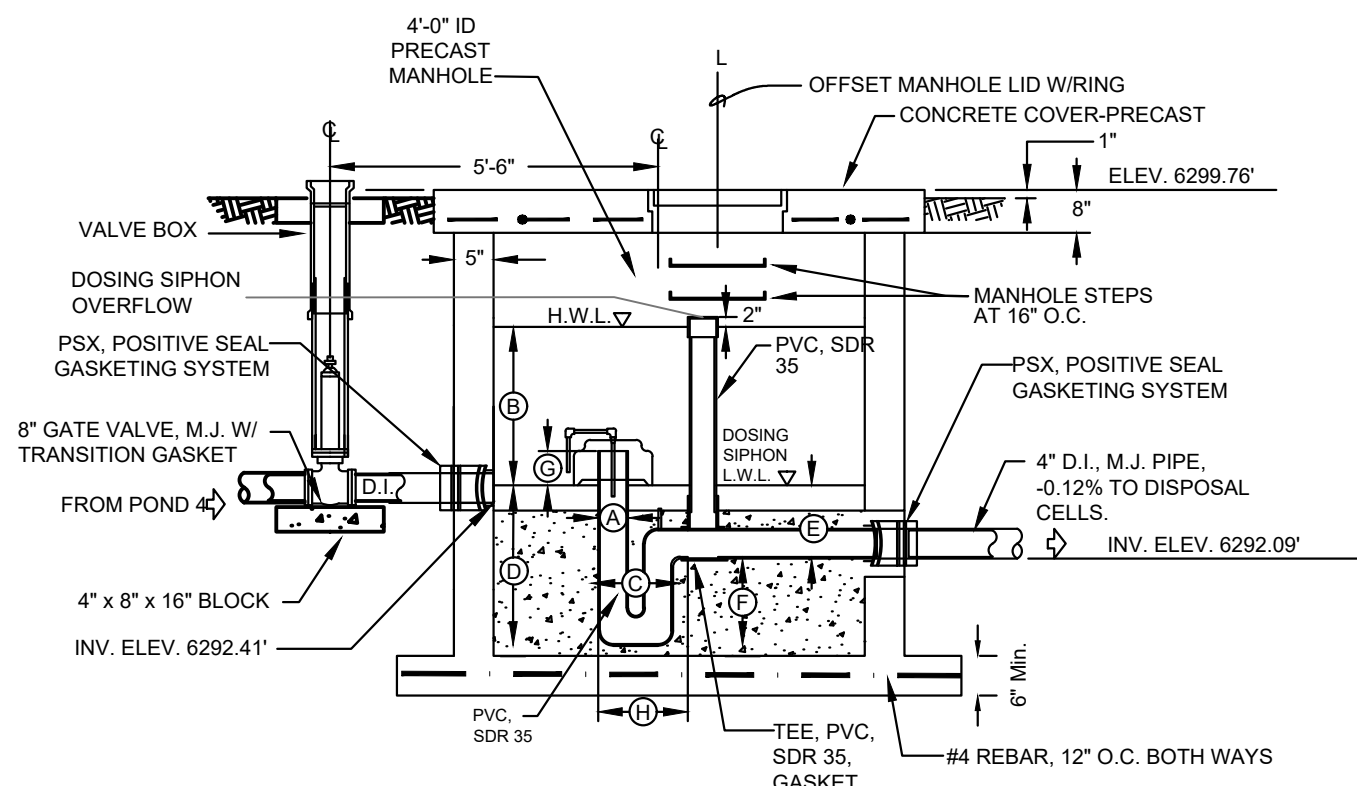
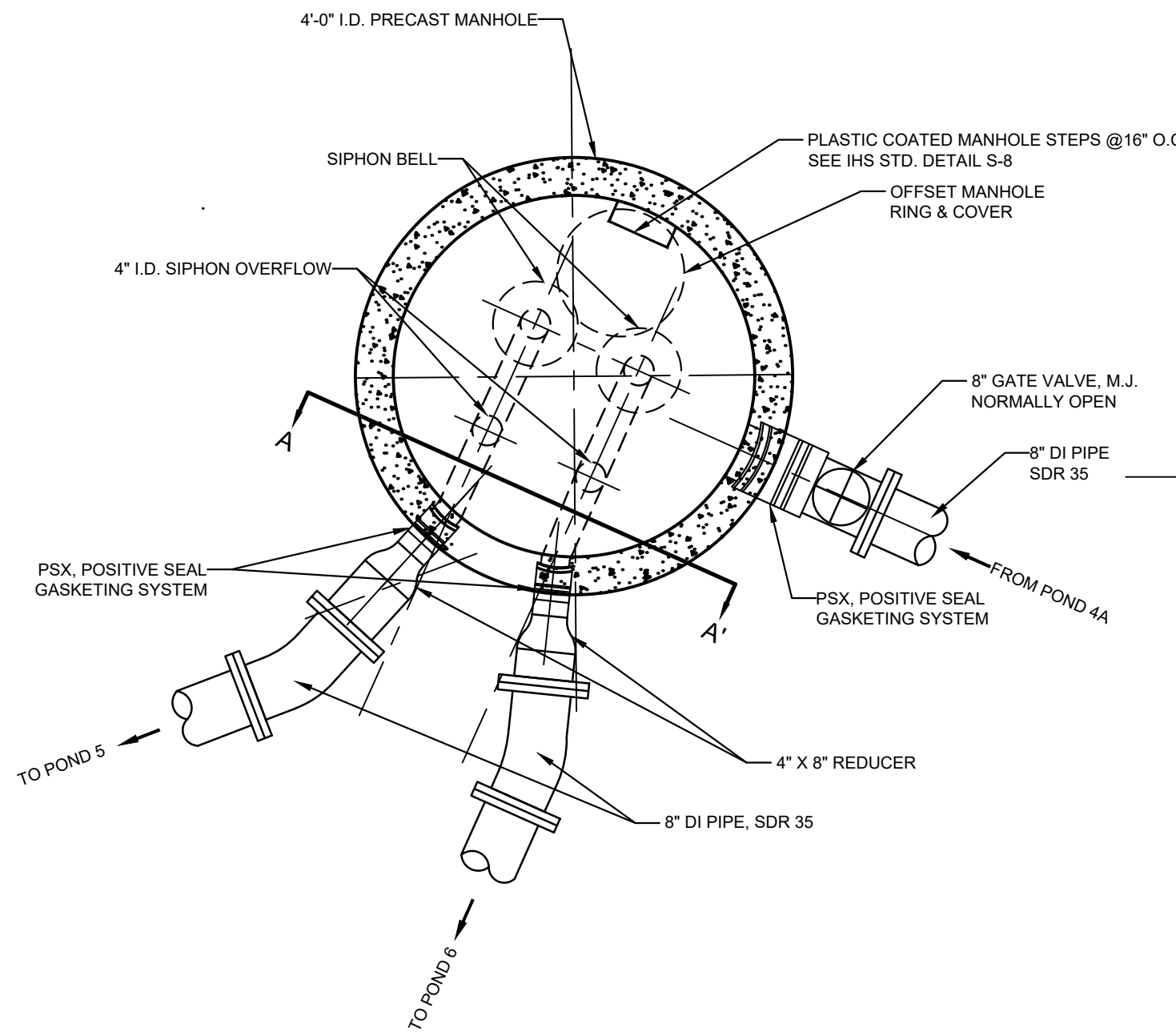
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BERM BREACH  
LOCATIONS

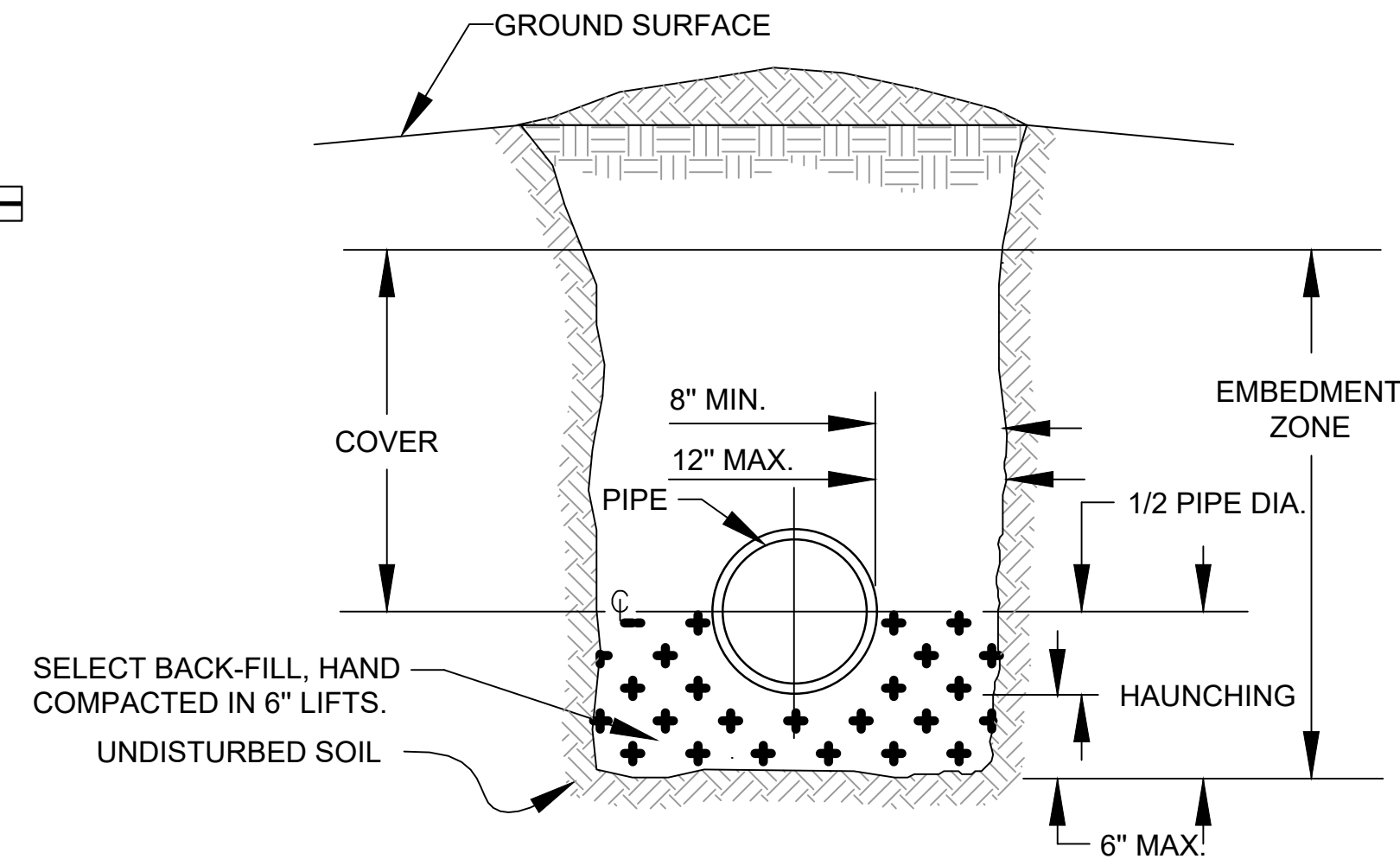
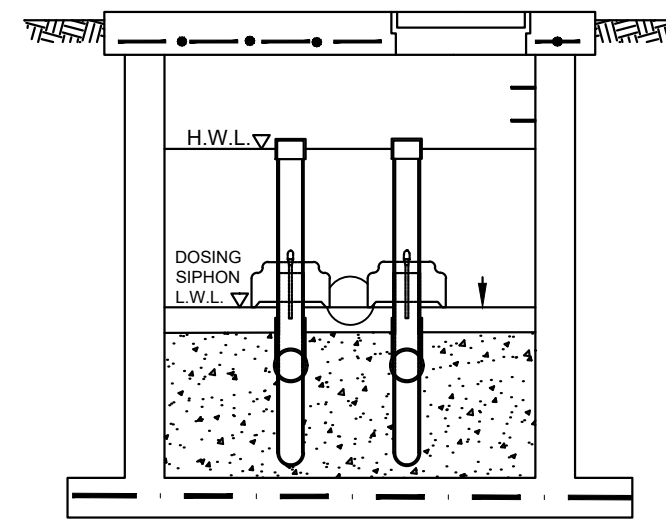
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C-4	
SHEET 6 OF 7 SHEETS	





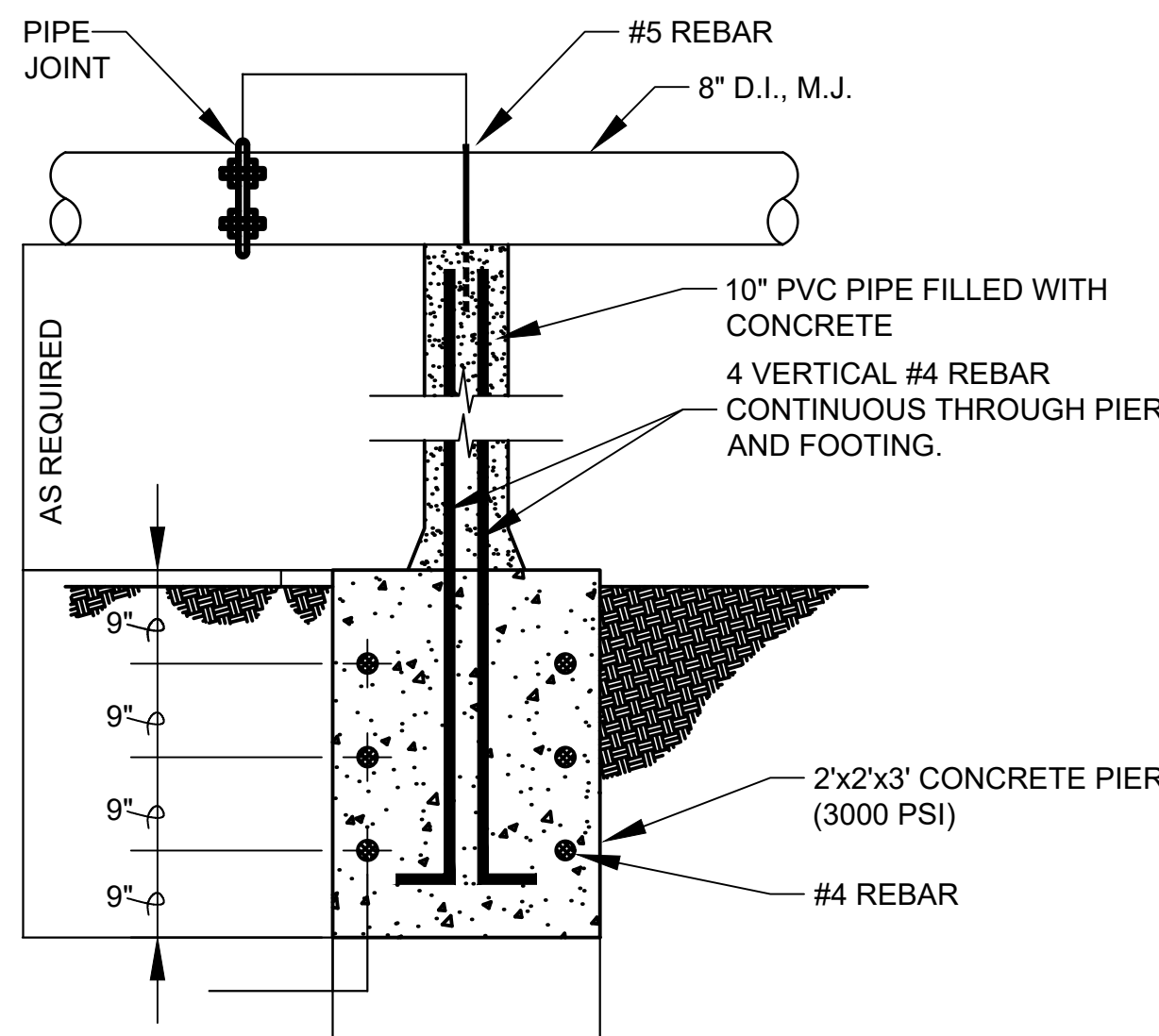
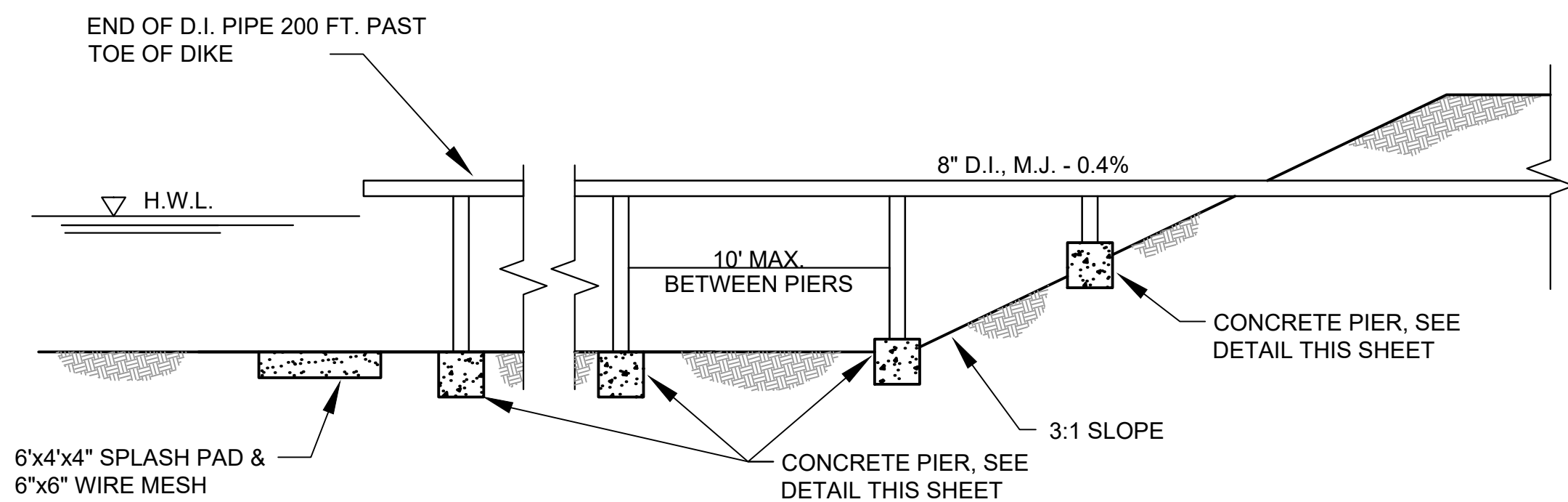
DESCRIPTION	LABEL	INCHES
SIPHON DIAMETER	A	4
DRAW DOWN	B	13
WIDTH OF TRAP	C	10.5
LOW WATER TO BOTTOM OF TRAP	D	19.5
BOTTOM OF DISCHARGE TO LOW WATER LINE	E	7.5
BOTTOM OF TRAP TO BOTTOM OF DISCHARGE	F	12
HEIGHT OF TRAP ABOVE LOW WATER LINE	G	6.3
TRAP TO DISCHARGE	H	16.8
AVERAGE DISCHARGE G.P.M.		140
LOW FLOW DISCHARGE RATE G.P.M.		100

NOTES:  
1. SIPHON SPECIFIED AS FLUID DYNAMIC  
SIPHON MODLE #413 OR EQUIVALENT



#### NOTES:

- KEEP LOWER 5 FEET OF TRENCH VERTICAL IF POSSIBLE. UPPER PART OF TRENCH WILL VARY IN WIDTH TO COMPENSATE FOR UNSTABLE SOIL. APPLICABLE OSHA REQUIREMENTS SHALL BE MET.
- EMBEDMENT ZONE TO BE FREE OF VOIDS.
- COVER SHALL BE DEEP ENOUGH TO PROTECT PIPE DURING PLACEMENT OF FINAL BACKFILL.
- BACKFILL SHALL BE FREE OF ROCKS GREATER THAN 3/4 INCHES IN DIAMETER, DEBRIS, ROOTS, WOOD, SCRAP MATERIAL, VEGETATION, REFUSE, SOFT UNSOUND PARTICLES AND DELETERIOUS OR OBJECTIONABLE MATERIALS.



1 PLURAL SIPHON DETAIL  
N.T.S.

3 TYPICAL TRENCH DETAIL  
N.T.S.

2 TYPICAL DISCHARGE PIPING DETAIL  
N.T.S.

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SHEET NUMBER:	REV. #
C-5	
SHEET 7 OF 7 SHEETS	