Chinle WWTP Improvements Project

Existing Plant Demolition Plan

The following demolition plan is intended to provide a general overview and guideline for the removal, salvage, relocation, and abandonment of existing wastewater treatment plant equipment and structures as identified in the contract drawings and specifications. Actual procedures, limits, and sequencing will be determined and coordinated in the field in consultation with, and written approval of, the ENGINEER and OWNER to reflect site conditions, safety requirements, and operational constraints. The actual procedures will be documented in writing as they are developed and executed. Any deviation will be documented and accompanied by red line as-builts.

1. General Overview

- The work involves demolition, removal, salvage, relocation, and/or abandonment of existing wastewater treatment facilities and equipment as identified in the drawings.
- All work will be conducted in accordance with paragraph 40.g (entitled "Decommission") of the Partial Consent Decree (PCD).
- All demolition activities should minimize disruption to the ongoing operation of the plant.

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2. Safety Requirements

- All work must comply with Federal, State, and local safety regulations.
- Hazardous materials may be present (e.g., asbestos, lead-based paint, mercury, residual sewage, chemicals). The CONTRACTOR must implement proper handling, removal, and disposal measures.
- CONTRACTOR must ensure that personnel are trained and equipped for all safety risks, including confined spaces, electrical and chemical hazards, and heavy equipment operations.

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3. Coordination

- Only materials identified in drawings or approved by the ENGINEER shall be demolished, salvaged, removed, relocated, or abandoned.
- Provide **minimum four working days' notice** to ENGINEER and OWNER prior to start of work.
- Work involving bypassing or plant shutdowns must be coordinated with the Plant Operator and only the Plant Operator may operate any equipment or modify any plant operations. All work must be performed in a manner that is compliant with the plant's NPDES requirements.
- Protect existing underground utilities and overhead during construction.
- Demolition limits must follow drawings.
- Areas outside demolition limits should remain undisturbed unless necessary for demolition.

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4. Demolition Procedures

4.1 General Demolition

- Remove all materials associated with demolished equipment and structures in accordance with Paragraph 40.g of the PCD. Completion of all decommissioning activities should not exceed July 31, 2027.
- Transport and dispose of all demolished materials offsite, to a permitted landfill; on-site burning or disposal is prohibited.
- Repair any demolition performed in excess of requirements.

4.2 Concrete, CMU, and Reinforcing Steel

- As required, cut concrete cleanly using saws or core drills.
- Cut and cap reinforcing steel as instructed by the ENGINEER and OWNER.
- For any structures abandoned in place, finish surfaces to a uniform, smooth, and level condition.

4.3 Concrete Embedded Items

- Remove anchor bolts, rebar, conduit at least 1 inch below final surface.
- Coat exposed rebar and patch concrete with approved bonding agents and non-shrink grout.
- Plug empty pipes/conduits with fireproof sealant where required.

4.4 Utilities

- In coordination with OWNER, excavate, support, or relocate electrical, water, sanitary, and storm utilities as exposed.
- Permanently close any demolished utility lines per utility owner in coordination with the OWNER.

4.5 Electrical Demolition

- Coordinate with the OWNER to disconnect and remove all electrical equipment.
- Abandon underground conduits and cables in place, in compliance with PCD paragraph 40.g, and labeling as “ABANDONED IN PLACE” on red line as-built.
- Remove conductors from conduits no longer in use; install pull tapes as needed.
- Extend or re-route circuits to remain operational as required.

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5. Salvage and Relocation

- Salvage materials as directed by OWNER; store and protect them during relocation.

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6. Abandonment of Existing Structures

6.1 Structural Abandonment

- Residual liquid remaining in any existing subgrade structures will be pumped into the existing lagoon or removed using a hydrovac and placed into the headworks of the new treatment plant. Only rainwater and static wastewater will be disposed of into the new treatment plant for processing. Any liquids suspected of chemical contamination will be tested and disposed of properly and in accordance with any applicable laws and regulations.
- Remove and salvage mechanical components per NTUA direction.
- Break walls down to 2 feet below grade; core drill floors, catch basins, and slabs to allow drainage.
- Cap and plug all relevant utilities and pipes.
- Backfill below-grade areas with approved material (<3” diameter, free of organic debris) to top of ground.

6.2 Piping and Conduits

- Cap demolished ends with watertight plugs to prevent soil or water entry.
- Pressurized services: install restrained caps or plugs.

- Gravity services: plug with minimum 6-foot concrete caps.

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7. Documentation and Inspection

- CONTRACTOR shall maintain records of demolition, salvage, relocation, and abandonment activities.
- Coordinate final inspection with ENGINEER and OWNER prior to site turnover or backfill completion.

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8. Scope of Work

All equipment identified below shall be demolished, abandoned, or relocated only after NTUA informs Contractor, in writing, that (1) the new plant is operational and (2) no part of the existing lagoon treatment system is further needed. If work takes place prior to new plant being operational, a bypass plan shall be provided to maintain plant operation and treatment. All blowers, generators, control panels, junction boxes, aerators, cables motors, and pumps will be salvaged for reuse or resale.

1. Existing Headworks (Pre CFID)
    a. Refer to Attachment 1: Demolition Plan Set
    b. Remove bar Screen and demolish structure per structural abandonment and demolition procedures.
2. Existing Headworks (CFID System)
    a. Refer to construction note 1 on Attachment 2: CFID Pond System
    b. Remove bar Screen and demolish structure per structural abandonment and demolition procedures.
    c. Relocate existing sampling shed to new headworks location.
3. Parshall Flume (Pre CFID)
    a. Refer to Attachment 1: Demolition Plan Set
    b. Demolish structure per structural abandonment and demolition procedures.
4. Generator & Structure.
    a. Coordinate with NTUA to disconnect power to structure.
    b. Remove all existing electrical equipment including transformer, service entrance panel, meter, disconnect, and weatherhead.
    c. Demolish generator structure; salvage existing generator to NTUA.
5. Existing CL2/SO2 Contact Chamber
    a. Demolish electrical equipment per electrical procedures.
    b. Demolish structure by the above demolition and safety procedures.
    c. Chemicals including gas cylinders of Cl2 and SO2 salvaged for future use at other plants or returned to vendor.
6. Existing Lab Room (at Chlorination Area)
    a. Demolish per demolition procedures.
    b. Coordinate with NTUA to salvage equipment.
7. Existing Effluent Sampler and Shed
    a. Relocate sampler and shed to new disinfection location.
    b. Demolish structure by the above demolition and safety procedures.
8. Existing Chemical Building.
    a. Coordinate chemical disposal with NTUA prior to work.
    b. Demolish per above demolition and safety procedures.
9. Manholes
    a. Refer to Attachment 2: CFID Pond System for locations
    b. Demolish structure by the above demolition and safety procedures.

10. Diversion Box
    a. Remove sluice gates for salvage or disposal.
    b. Demolish structure by the above demolition and safety procedures.
11. Aeration Blowers
    a. Ensure equipment is deenergized.
    b. Demo electrical per demolition procedures.
    c. Remove blowers (3) and store for salvage
12. MLSS Pump Station and Valve Vault
    a. Ensure equipment is deenergized.
    b. Demo electrical per demolition procedures.
    c. Remove for salvage or disposal associated piping, access hatches, pumps, valves and associated structures.
    d. Demolish structure by the above demolition and safety procedures.
13. Discharge Structure
    a. Ensure equipment is deenergized.
    b. Demo electrical per demolition procedures.
    c. Remove for salvage or disposal associated piping, access hatches, pumps, valves and associated structures.
    d. Demolish structure by the above demolition and safety procedures.
14. Cell 4 (CFID Cell)
    a. Ensure equipment is deenergized.
    b. Demo electrical per demolition procedures.
    c. Demolish electrical junction boxes.
    d. Remove suspended aerator and cables.
    e. Remove and dispose of synthetic baffles at approved landfill.
    f. Remove and dispose of floating diffuser hose at approved landfill.
    g. Remove and dispose of floating decanter hose at approved landfill.
    h. Existing liner will be preserved in place for the use in conversion to biosolid disposal facility.
15. Existing contact chamber
    a. Remove liner and exposed piping and dispose of in approved landfill.
    b. Backfill with native soil and restore to grade.

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9. Dewatering and Sludge Handling

Once the replacement activated sludge treatment plant achieves compliance with NPDES permit discharge limits, controlled dewatering of Lagoon Cells 4 shall commence.

1. Liquids from Cell 4 (Existing CFID) shall be pumped to the headworks of the new treatment plant at rates proportional to influent flow to prevent hydraulic overloading or biological upset or into Cell 2 for natural evaporation.
2. Lagoon Cell 2 will be dewatered though natual evaporation. Cell 2 will be retained as the emergency storage lagoon for the new activated sludge treatment plant.
3. Sludge remaining in Cell 4 shall be removed and transported to the new drying beds and stored until sufficiently dried and prepared for final disposal.
4. Prior to final sludge disposal, additional laboratory testing for heavy metals and regulated constituents shall be conducted to confirm compliance with 40 CFR Part 503. All dried sludge from Cell 4, once sufficiently dried and characterized, will be transported back to Cell 4 for permanent disposal following approval and

construction of the biosolids disposal facility.

10. Schedule

Decommissioning Completion Deadline: July 31, 2027.

Start Date – Triggered upon new plant performance. When the new plant begins to discharge.

Dewatering – Immediately when the new plant begins to discharge.

Demolition of existing structures – based on the existing contractor's schedule. Completion within 60 days of the start.

Sludge handling -Completion Deadline: 30 days after dewatering is completed

Biosolid surface disposal facility

NTUA received approval to proceed with the design of the new disposal facility on July 13, 2026. Efforts are currently underway to procure a firm to design and construct the new facility. It is anticipated that construction time will be minimal since the Cell 4 was recently rebuilt in 2024. A detailed schedule will be developed in the future targeted construction completion no later than July 31, 2027.

Attachment: Demolition Plan Set

PROPERTY LINE

FOR ENLARGED PLAN A
SEE SHT 10-GEN-C-1003

EXIST DRAINAGE DITCH

EXIST BERM

EXIST FENCE

EXIST PLANT ROAD

EXIST GENERATOR PAD

EXIST 4' DIAMETER
MANHOLES (P.I.P.)

CELL 1

CELL 2

CELL 3

CELL 4

FOR ENLARGED PLAN C
SEE SHT 10-GEN-C-1003

EXIST PLANT ROAD

EXIST OUTFALL

EXIST OUTFLOW TO
DISCHARGE DITCH

FOR ENLARGED PLAN B
SEE SHT 10-GEN-C-1003

EXIST PARSHALL
FLUME (P.I.P.)

EXIST HEADWORKS (P.I.P.)

EXIST 21" VCP (P.I.P.)

EXIST PLANT ROAD

EXIST JUNCTION
BOX (P.I.P.)

EXIST 18" PVC
BYPASS PIPE (P.I.P.)

EXIST 2"
WATER LINE

EXIST INFLUENT
PIPE (P.I.P.)

EXIST PLANT ROAD

EXIST FENCE

EXIST BERM

EXIST DRAINAGE DITCH

FOR ENLARGED PLAN D
SEE SHT 10-GEN-C-1003

EXIST LAB ROOM

EXIST CHEMICAL BUILDING

EXIST CL2/SO2 CONTACT
CHAMBER

EXIST RESTRICTED
SITE (P.I.P.)

EXIST 2"
WATER LINE

0 30' 60' 120'

SCALE: 1"=60'

wsp

4221 BALLOON PARK RD NE
ALBUQUERQUE, NM 87109

PROJECT:

**CHINLE WWTP
IMPROVEMENTS PROJECT**

**NAVAJO TRIBAL
UTILITY AUTHORITY**

WSP PROJECT No:
2151700033

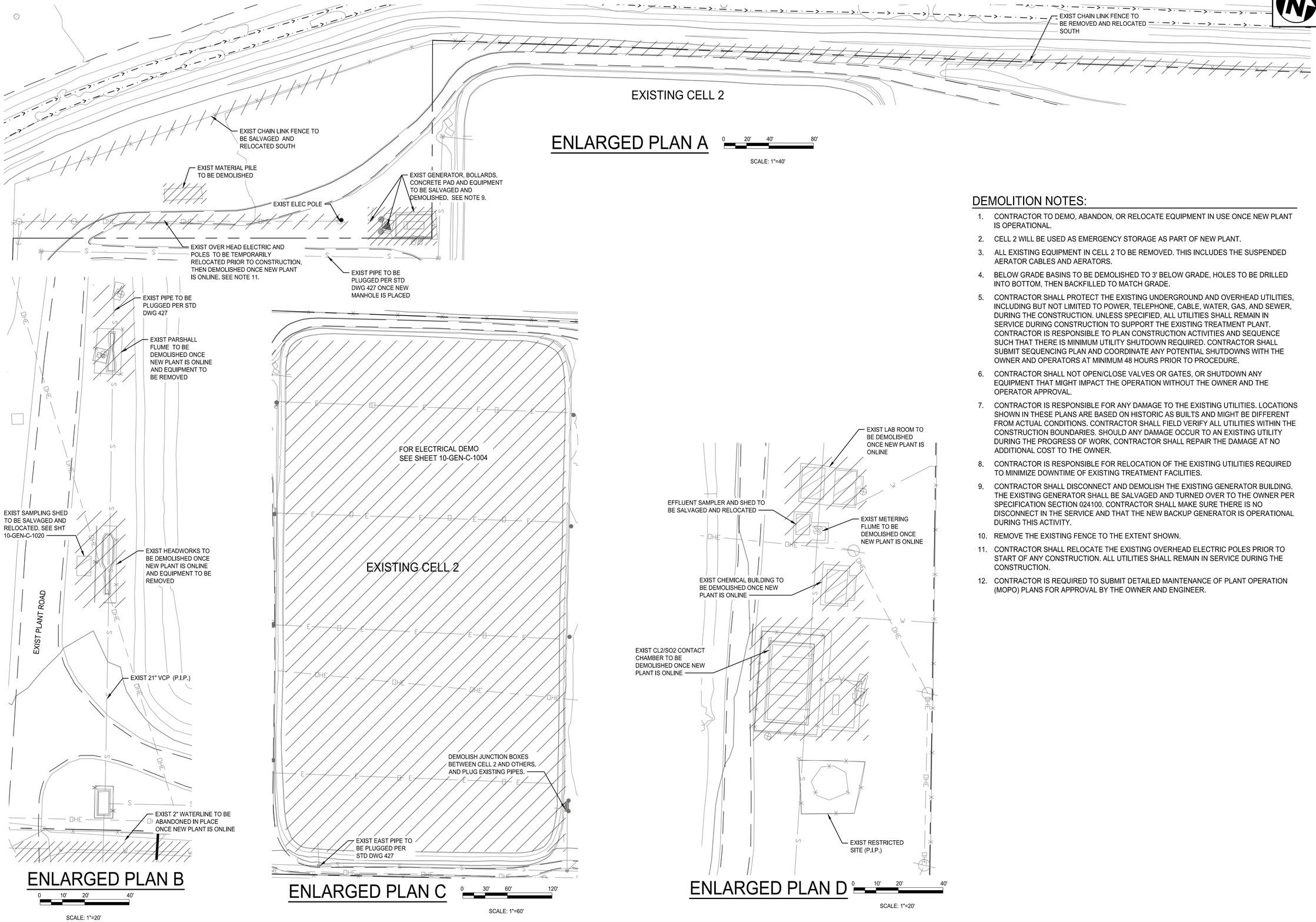
REVISIONS

NO.	DATE	DESCRIPTION

DESIGNED BY:	DDM
DRAWN BY:	DDM
CHECKED BY:	JCB
DATE:	04NOV2022

SHEET TITLE:
EXISTING SITE
PLAN

SHEET NUMBER:	REV. #
10–GEN–C–1002	0
SHEET 9 OF 210	



ENLARGED PLAN A

0 20' 40' 80'

SCALE: 1"=40'

ENLARGED PLAN B

0 10' 20' 40'

SCALE: 1"=20'

ENLARGED PLAN C

0 30' 60' 120'

SCALE: 1"=60'

ENLARGED PLAN D

0 10' 20' 40'

SCALE: 1"=20'

DEMOLITION NOTES:

1. CONTRACTOR TO DEMO, ABANDON, OR RELOCATE EQUIPMENT IN USE ONCE NEW PLANT IS OPERATIONAL.
2. CELL 2 WILL BE USED AS EMERGENCY STORAGE AS PART OF NEW PLANT.
3. ALL EXISTING EQUIPMENT IN CELL 2 TO BE REMOVED. THIS INCLUDES THE SUSPENDED AERATOR CABLES AND AERATORS.
4. BELOW GRADE BASINS TO BE DEMOLISHED TO 3' BELOW GRADE, HOLES TO BE DRILLED INTO BOTTOM, THEN BACKFILLED TO MATCH GRADE.
5. CONTRACTOR SHALL PROTECT THE EXISTING UNDERGROUND AND OVERHEAD UTILITIES, INCLUDING BUT NOT LIMITED TO POWER, TELEPHONE, CABLE, WATER, GAS, AND SEWER, DURING THE CONSTRUCTION. UNLESS SPECIFIED, ALL UTILITIES SHALL REMAIN IN SERVICE DURING CONSTRUCTION TO SUPPORT THE EXISTING TREATMENT PLANT. CONTRACTOR IS RESPONSIBLE TO PLAN CONSTRUCTION ACTIVITIES AND SEQUENCE SUCH THAT THERE IS MINIMUM UTILITY SHUTDOWN REQUIRED. CONTRACTOR SHALL SUBMIT SEQUENCING PLAN AND COORDINATE ANY POTENTIAL SHUTDOWNS WITH THE OWNER AND OPERATORS AT MINIMUM 48 HOURS PRIOR TO PROCEDURE.
6. CONTRACTOR SHALL NOT OPEN/CLOSE VALVES OR GATES, OR SHUTDOWN ANY EQUIPMENT THAT MIGHT IMPACT THE OPERATION WITHOUT THE OWNER AND THE OPERATOR APPROVAL.
7. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING UTILITIES. LOCATIONS SHOWN IN THESE PLANS ARE BASED ON HISTORIC AS BUILTS AND MIGHT BE DIFFERENT FROM ACTUAL CONDITIONS. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES WITHIN THE CONSTRUCTION BOUNDARIES. SHOULD ANY DAMAGE OCCUR TO AN EXISTING UTILITY DURING THE PROGRESS OF WORK, CONTRACTOR SHALL REPAIR THE DAMAGE AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF THE EXISTING UTILITIES REQUIRED TO MINIMIZE DOWNTIME OF EXISTING TREATMENT FACILITIES.
9. CONTRACTOR SHALL DISCONNECT AND DEMOLISH THE EXISTING GENERATOR BUILDING. THE EXISTING GENERATOR SHALL BE SALVAGED AND TURNED OVER TO THE OWNER PER SPECIFICATION SECTION 024100. CONTRACTOR SHALL MAKE SURE THERE IS NO DISCONNECT IN THE SERVICE AND THAT THE NEW BACKUP GENERATOR IS OPERATIONAL DURING THIS ACTIVITY.
10. REMOVE THE EXISTING FENCE TO THE EXTENT SHOWN.
11. CONTRACTOR SHALL RELOCATE THE EXISTING OVERHEAD ELECTRIC POLES PRIOR TO START OF ANY CONSTRUCTION. ALL UTILITIES SHALL REMAIN IN SERVICE DURING THE CONSTRUCTION.
12. CONTRACTOR IS REQUIRED TO SUBMIT DETAILED MAINTENANCE OF PLANT OPERATION (MOPO) PLANS FOR APPROVAL BY THE OWNER AND ENGINEER.

wsp
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ALBUQUERQUE, NM 87109

Registered Professional Engineer
14307
CASEY C. BUSH
11-04-22
ARIZONA, U.S.A.

PROJECT:
CHINLE WWTP IMPROVEMENTS PROJECT

NAVAJO TRIBAL UTILITY AUTHORITY

WSP PROJECT No: 2151700033

REVISIONS

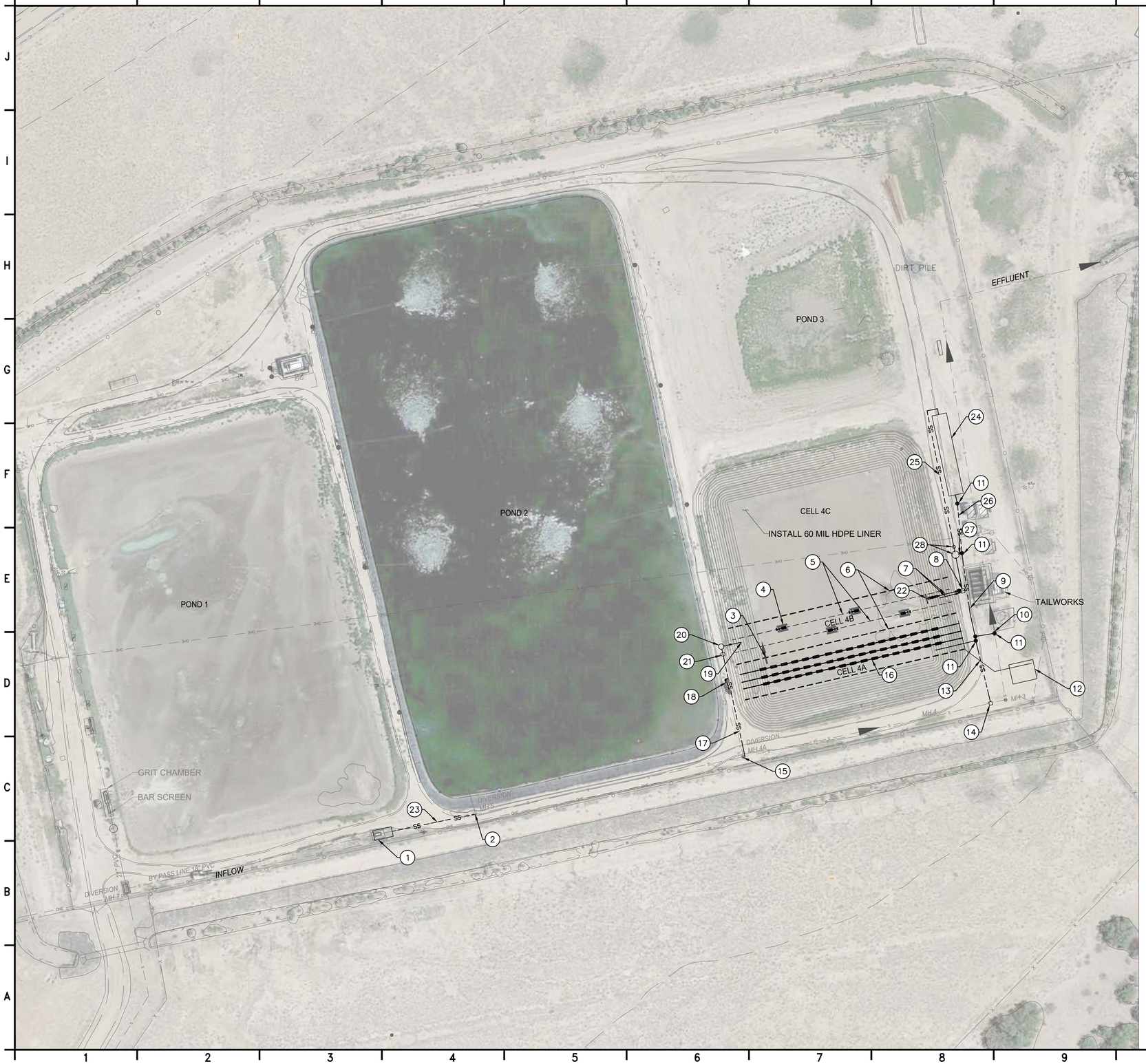
NO.	DATE	DESCRIPTION

DESIGNED BY:	DDM
DRAWN BY:	DDM
CHECKED BY:	JCB
DATE:	04NOV2022

SHEET TITLE:
DEMOLITION PLAN 1

SHEET NUMBER:	REV. #
10-GEN-C-1003	0
SHEET 10 OF 210	

Attachment 2: CFID Pond System



CONSTRUCTION NOTES:

1. NEW HEADWORKS (MANUAL BAR SCREEN), SEE SHEET C-304 AND C-305
2. RE-GROUT MANHOLE INVERT AND INSTALL PORTABLE FLOW METER
3. 4' x 3' WINDOW IN BAFFLE, SEE SHEET C-314
4. INSTALL 4-15 HP AIRE-O2 ASPIRATING AERATOR BY AERATION INDUSTRIES INTERNATIONAL, LLC. INCLUDES AERATORS, ELECTRICAL CABLES, AND MOORING CABLES, ETC.
5. MOORING CABLES FOR AERATORS
6. BAFFLES (FLOATING SYNTHETIC)
7. 20' SECTION - 12" DIP CLASS 350 SANITARY SEWER SECTION WITH MJ GATE VALVE
8. NEW OUTLET BOX. SEE DISCHARGE STRUCTURE DETAILS SHEET C-303
9. NEW 15-INCH SDR 35 PVC SEWER
10. TAP EXISTING SEWER MAIN
11. NEW MANHOLE
12. AERATION BLOWERS WITH CONCRETE PAD, SEE SHEET C-401
13. 14" DUCTILE IRON AIR PIPING
14. 4' X 4' DIVERSION BOX WITH 2 SLUICE GATES, SEE SHEET C-312
15. TAP EXISTING MANHOLE
16. BIOLAC DIFFUSER AIR SYSTEM
17. 6" PVC SCH 40 MLSS RECYCLE LINE
18. 3" PVC WASTE MLSS LINE, SEE SHEET C-312
19. 20' SECTION - 8" DIP WITH MJ GATE VALVE
20. MLSS PUMP STATION, SEE SHEET C-306
21. MLSS VALVE VAULT, SEE SHEET C-307
22. NEW FLOATING DECANTER, SEE SHEET C-311
23. REPLACE 113' SAS WITH 18" SDR 35 PVC
24. DISINFECTION CONTACT EXTENSION CHAMBER, SEE SHEET C-312
25. NEW 12" DIP FORCEMAIN
26. NEW 15" SDR 35 PVC SEWER
27. NEW 12" SDR 35 PVC OVERFLOW
28. EFFLUENT PUMP STATION AND VALVE VAULT, SEE SHEETS C-308 AND C-309

SHEET GENERAL NOTES:

1. UTILITIES ILLUSTRATED ON PLAN ARE PRESENTED FOR CONTRACTOR INFORMATION, IF APPLICABLE. SUBSURFACE UTILITY LOCATES HAVE NOT BEEN FIELD VERIFIED, ACTUAL UTILITIES ARE SUBJECT TO CHANGE AND UNMARKED, UNKNOWN UTILITIES SHOULD BE MITIGATED IN THE FIELD PRIOR TO GROUND DISTURBANCES. COORDINATE WITH NAVAJO TRIBAL UTILITY AUTHORITY (NTUA) IN CHINLE, AZ, AND ARIZONA ONE-CALL UTILITY LOCATE.
2. FOR DETAILS OF NEW CONSTRUCTION SEE FOLLOWING DRAWING SHEETS.

0 120 240 Feet

wsp

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TEL: (505) 821-1801

W. DANIEL BOIVIN
NEW MEXICO
12933
PROFESSIONAL ENGINEER

07/14/2023

FINAL

PROJECT:
CHINLE WWTP
CFID
POND SYSTEM
FINAL DESIGN

NAVAJO TRIBAL UTILITY AUTHORITY
PO BOX 170
FT. DEFIANCE, AZ 86504

WSP PROJECT No:
2151700051

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	WSP – BM
DRAWN BY:	WSP – AO
CHECKED BY:	WSP – DB
APPROVED BY:	WSP – DB
DATE:	07/14/2023

SHEET TITLE:
CFID POND SYSTEM

SHEET NUMBER:	REV. #
C-101	
SHEET 4 OF 52 SHEETS	

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