WATER & SEWER UTILITY GENERAL NOTES:

1. If there is a contract provision providing water service and water service lines, the contractor shall comply with all requirements of the local water and sewer rules and regulations. The contractor shall also be responsible for providing water and sewer services to the water and sewer lines. The contractor shall be responsible for ensuring that the water and sewer lines do not interfere with the construction of the project.

2. The contractor shall be responsible for ensuring that all underground utility lines are properly identified and protected during the construction of the project. The contractor shall also be responsible for notifying the appropriate utility providers in advance of any work that may affect underground utility lines.

3. The contractor shall be responsible for ensuring that all necessary equipment and tools are available for the construction of the project.

4. The contractor shall be responsible for ensuring that all bids and proposals are prepared in accordance with the terms and conditions of the contract.

5. The contractor shall be responsible for ensuring that all necessary permits are obtained for the construction of the project.

6. The contractor shall be responsible for ensuring that all necessary inspections are conducted during the construction of the project.

7. The contractor shall be responsible for ensuring that all necessary reports are submitted to the appropriate authorities.

8. The contractor shall be responsible for ensuring that all necessary maintenance is performed on the project.

9. The contractor shall be responsible for ensuring that all necessary access permits are obtained for the construction of the project.

10. The contractor shall be responsible for ensuring that all necessary legal documents are prepared and submitted to the appropriate authorities.

11. The contractor shall be responsible for ensuring that all necessary coverage is obtained for the construction of the project.

12. The contractor shall be responsible for ensuring that all necessary bonds are obtained for the construction of the project.

13. The contractor shall be responsible for ensuring that all necessary surety bonds are obtained for the construction of the project.

14. The contractor shall be responsible for ensuring that all necessary testing is conducted during the construction of the project.

15. The contractor shall be responsible for ensuring that all necessary training is provided to the construction personnel.

16. The contractor shall be responsible for ensuring that all necessary records are maintained for the construction of the project.

17. The contractor shall be responsible for ensuring that all necessary materials are procured for the construction of the project.

18. The contractor shall be responsible for ensuring that all necessary permits are obtained for the construction of the project.

19. The contractor shall be responsible for ensuring that all necessary inspections are conducted during the construction of the project.

20. The contractor shall be responsible for ensuring that all necessary reports are submitted to the appropriate authorities.

21. The contractor shall be responsible for ensuring that all necessary maintenance is performed on the project.

22. The contractor shall be responsible for ensuring that all necessary access permits are obtained for the construction of the project.

23. The contractor shall be responsible for ensuring that all necessary legal documents are prepared and submitted to the appropriate authorities.

24. The contractor shall be responsible for ensuring that all necessary coverage is obtained for the construction of the project.

25. The contractor shall be responsible for ensuring that all necessary bonds are obtained for the construction of the project.

26. The contractor shall be responsible for ensuring that all necessary surety bonds are obtained for the construction of the project.

27. The contractor shall be responsible for ensuring that all necessary testing is conducted during the construction of the project.

28. The contractor shall be responsible for ensuring that all necessary training is provided to the construction personnel.

29. The contractor shall be responsible for ensuring that all necessary records are maintained for the construction of the project.

30. The contractor shall be responsible for ensuring that all necessary materials are procured for the construction of the project.

31. The contractor shall be responsible for ensuring that all necessary permits are obtained for the construction of the project.

32. The contractor shall be responsible for ensuring that all necessary inspections are conducted during the construction of the project.

33. The contractor shall be responsible for ensuring that all necessary reports are submitted to the appropriate authorities.

34. The contractor shall be responsible for ensuring that all necessary maintenance is performed on the project.

35. The contractor shall be responsible for ensuring that all necessary access permits are obtained for the construction of the project.

36. The contractor shall be responsible for ensuring that all necessary legal documents are prepared and submitted to the appropriate authorities.

37. The contractor shall be responsible for ensuring that all necessary coverage is obtained for the construction of the project.

38. The contractor shall be responsible for ensuring that all necessary bonds are obtained for the construction of the project.

39. The contractor shall be responsible for ensuring that all necessary surety bonds are obtained for the construction of the project.

40. The contractor shall be responsible for ensuring that all necessary testing is conducted during the construction of the project.

41. The contractor shall be responsible for ensuring that all necessary training is provided to the construction personnel.

42. The contractor shall be responsible for ensuring that all necessary records are maintained for the construction of the project.
KEYED NOTES: SITE

1. NEW MOBILE HOME PARK (30' x 80') SEE DETAIL 3, SHEET C-151.
2. PROPERTY LINE.
3. FUTURE CONCRETE DRIVEWAY (TYP.)
4. INSTALL NEW CHAIN LINK FENCING.
5. FUTURE RV PARKING SPACE AND UTILITY CONNECTIONS. SEE DETAIL 3, THIS SHEET.
6. CONSTRUCT新 BASE COURSE PAVEMENT PER TYPICAL SECTION SHEET C-156.
7. CONSTRUCT NEW GRAVEL PARKING PER TYPICAL SECTION, SEE SHEET C-150.
8. NEW RETENTION POND.
9. NEW 10 INCH 4' DEEP RIP RAP SWALE, SEE DETAIL SHEET C-156.
10. EMERGENCY SPILLWAY. SEE DETAIL SHEET C-150.

LEGEND

- RV Pad
- Base Course Road
- Rip Rap Hatch
- Single
- Future Concrete Driveway
- Future RV Parking Area

STIPULATION FOR REUSE OR ALTERATION:

THESE DRAWINGS ARE THE INSTRUMENT OF SERVICE OF SOUDER, MILLER & ASSOCIATES AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THE REFERENCED PROJECT FOR WHICH THESE DRAWINGS WERE CREATED.

SURVEY NOTE:

THE INFORMATION CONTAINED ON THESE DRAWINGS IS BASED UPON THE PERFORMED SURVEY WORK WHICH WAS COMPLETED BY ROYER SURVEYS. THIS INFORMATION IS NOT INTENDED FOR SURVEYING PURPOSES.

SCALE: 1" = 30'
## Point Table

<table>
<thead>
<tr>
<th>Point #</th>
<th>Northing</th>
<th>Easting</th>
<th>Elevation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>868470.29</td>
<td>5512.00</td>
<td>5513.00</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>2</td>
<td>868480.74</td>
<td>5515.00</td>
<td>5514.50</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>3</td>
<td>868696.66</td>
<td>5514.50</td>
<td>5515.00</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>4</td>
<td>868669.84</td>
<td>5514.50</td>
<td>5516.00</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>5</td>
<td>868661.42</td>
<td>5514.50</td>
<td>5516.73</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>6</td>
<td>868727.91</td>
<td>5514.50</td>
<td>5516.73</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>7</td>
<td>868756.38</td>
<td>5514.50</td>
<td>5515.23</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>8</td>
<td>868877.69</td>
<td>5514.50</td>
<td>5514.05</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>9</td>
<td>868458.28</td>
<td>5514.05</td>
<td>5512.00</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>10</td>
<td>868521.81</td>
<td>5514.05</td>
<td>5512.00</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>11</td>
<td>868496.60</td>
<td>5514.05</td>
<td>5512.00</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>12</td>
<td>868426.25</td>
<td>5514.05</td>
<td>5512.00</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>13</td>
<td>868341.78</td>
<td>5514.05</td>
<td>5512.00</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>14</td>
<td>868430.53</td>
<td>5514.05</td>
<td>5512.00</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>15</td>
<td>868773.01</td>
<td>5514.05</td>
<td>5512.00</td>
<td>MOBILE PAD</td>
</tr>
<tr>
<td>16</td>
<td>868421.52</td>
<td>5514.05</td>
<td>5512.00</td>
<td>MOBILE PAD</td>
</tr>
</tbody>
</table>

## STIPULATION FOR REUSE OR ALTERATION:

These drawings are the property of Souders Miller & Associates Inc. and shall not be used for any purpose other than the referenced project for which these drawings were created. Any unauthorized reproduction, distribution, or use is strictly prohibited.
SEQUENCE OF CONSTRUCTION

1. SEQUENCE ARE STORM WATER CONTROLS INSTALLATION ACTIVITIES THAT MUST TAKE PLACE PRIOR TO CONSTRUCTION
2. INSTALL WATTLES ALONG CONTOURS.
3. INSTALL STRAW WATTLES.
4. INSTALL RETENTION PONDS.
5. PREPARE STORAGE/STAGING AND MASON'S AREAS. UPON IMPLEMENTATION AND INSTALLATION, DENOTE THE FOLLOWING
   CONTAINERS, AND SOLID WASTE CONTAINERS.
6. THE CONTRACTOR SHALL ESTABLISH A CONCRETE WASHOUT PIT BEFORE THE START OF CONSTRUCTION AND MARK ITS
   LOCATION.
7. BEGIN GRADING THE SITE.
8. APPLY QUANTITATIVE LEVELING.
9. APPLY PERMANENT STABILIZATION.
10. KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING. WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA
    BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCES AND WADDLES WHEN IT REACHES ½ THE HEIGHT, OR AS
    NEEDED. WADDLES SHALL BE INSPECTED REGULARLY TO ENSURE THE CONTINUOUS CAPTURE OF SEDIMENT.
11. THE SOIL. WADDLES SHALL BE INSPECTED AT REGULAR INTERVALS TO ENSURE THE CONTINUOUS CAPTURE OF SEDIMENT.
12. WADDLES SHALL BE INSPECTED REGULARLY TO ENSURE THE CONTINUOUS CAPTURE OF SEDIMENT.
13. THE CONTRACTOR SHALL ESTABLISH A COMPREHENSIVE DUST CONTROL PLAN TO LIMIT OFF-SITE SEDIMENTATION BY
    CONTRASTING AND GENERAL CONTROL RELATED PERMITS ON THE SIGN
14. KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING. WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA
    BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCES AND WADDLES WHEN IT REACHES ½ THE HEIGHT, OR AS
    NEEDED. WADDLES SHALL BE INSPECTED REGULARLY TO ENSURE THE CONTINUOUS CAPTURE OF SEDIMENT.
SEQUENCE OF CONSTRUCTION:

CONSTRUCTION PROGRESS AND RECORDED BY THE CONTRACTOR ON THE SOIL EROSION/SEDIMENTATION

1. SEQUENCE OF CONSTRUCTION IS AS FOLLOWS:
   - CLEAR AND GRUB THE SITE.
   - APPLY PERMANENT STABILIZATION.
   - BEGIN GRADING THE SITE.
   - INSTALL SWPPP INFORMATION SIGN.
   - INSTALL RETENTION PONDS.
   - INSTALL STRAW WATTLES.
   - INSTALL SILT FENCE.
   - INSTALL STORM DRAIN.
   - INSTALL PERIMETER FENCE AND MODIFY GROUND.

5. SEQUENTIAL ACTIVITIES ARE STORM WATER CONTROLS INSTALLATION ACTIVITIES THAT MUST TAKE PLACE PRIOR TO CONSTRUCTION.

7. THE CONTRACTOR SHALL ESTABLISH A CONCRETE WASHOUT PIT BEFORE THE START OF CONSTRUCTION AND MARK ITS LOCATION ON THE SITE MAP.
   - THE CONTRACTOR SHALL ESTABLISH A COMPREHENSIVE DUST CONTROL PLAN TO LIMIT OFF-SITE SEDIMENTATION BY THE CONTRACTOR.
   - SANITARY FACILITIES ARE REQUIRED FOR ALL WORK SITES OR CONSTRUCTION AREAS.
   - PERIMETER AROUND IT. LOCATE CHEMICAL STORAGE AREAS AWAY FROM LOW-LEYING AREAS AND DRAINAGE PATHS.
   - BETWEEN THE ROCKS, THE AGGREGATE MUST BE WASHED DOWN AND/OR REPLACED.
   - KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING. WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA, IT MUST BE CHECKED AND REPAIRED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE NPDES/EPA PERMIT REQUIREMENTS.

NOTE:

WHITE COLD MIX IS REQUIRED TO THE SITES. THE LINKS BELOW ARE TO THE PROJECTS WHICH ARE IN ACCORDANCE WITH THE CONTRACT.

EROSION CONTROL PLAN PHASE II

STIPULATION FOR REUSE OR ALTERATION:

THESE DRAWINGS ARE THE INSTRUMENT OF SERVICE OF SOUDER MILLER & ASSOCIATES AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THE REFERENCED PROJECT FOR WHICH THESE DRAWINGS WERE CREATED.
SITE GRADING PLAN

Cut/Fill Summary

<table>
<thead>
<tr>
<th>Name</th>
<th>Cut Factor</th>
<th>Fill Factor</th>
<th>St Area</th>
<th>Cut</th>
<th>Fill</th>
<th>Net</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE:

- REFERENCE PROJECT FOR WHICH THESE DRAWINGS WERE CREATED.
- THESE DRAWINGS ARE THE INSTRUMENT OF SERVICE OF SOUDER MILLER & ASSOCIATES AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THE ONE FOR WHICH THEY WERE PREPARED.
- THE DRAWINGS PERTAIN TO THE PROPERTY OWNED BY NAVAJO TECHNICAL UNIVERSITY, DATED 05/26/2022.
- STIPULATION FOR REUSE OR ALTERATION:

THUS DRAWINGS ARE THE INSTRUMENT OF SERVICE OF SOUDER MILLER & ASSOCIATES AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THE ONE FOR WHICH THEY WERE PREPARED.

CONSTRUCTION SEQUENCE:

- TOTAL DISTURBANCE AREA
- MEET/MATCH
- EASEMENT
- GRADE
- MEET/MATCH
- GRADE
- MEET/MATCH
- GRADE
- MEET/MATCH
- GRADE

NOTE:

- THE PROJECT AREA IS LOCATED WITHIN FEDERAL ENVIRONMENTAL CRITICAL AREAS.
- POSITIVE DRAINAGE TO NORTH
- FUTURE, SEE DETAIL 2 FOR FINAL
- SUPER ELEVATED AREA
- NEW PAD: 5514.50
- NEW PAD: 5515.50
- NEW PAD: 5515.00

SURVEY NOTE:

- REFERENCED PROJECT FOR WHICH THESE DRAWINGS WERE CREATED.
- THESE DRAWINGS ARE THE INSTRUMENT OF SERVICE OF SOUDER MILLER & ASSOCIATES AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THE ONE FOR WHICH THEY WERE PREPARED.
EXISTING STORM DRAIN CULVERT PIPE TO REMAIN 8" W (REC)

EXISTING MEET/MATCH ±5516.94

GRADE BREAK STA = 10+29.07

ELEV =  5516.75'

BVCS: 10+39.07

HIGH PT: STA 10+54.26

HIGH PT ELEV: 5517.01

PVI ELEV: 5517.09'

AD: -2.52%

K: 9.93

GRADE BREAKLINE IN THIS AREA PRIOR TO UTILITY INSTALLATION.

NOTE: CONTRACTOR TO FILL AND COMPACT IN THIS AREA PRIOR TO UTILITY INSTALLATION.

NOTE:

CONTRACTOR TO FILL AND COMPACT IN THIS AREA PRIOR TO UTILITY INSTALLATION.

SCALE: 1" = 30'

NOTE:

INSTALLATION.

CONTRACTOR TO FILL AND COMPACT IN THIS AREA PRIOR TO UTILITY INSTALLATION.

NOTE:

INSTALLATION.

CONTRACTOR TO FILL AND COMPACT IN THIS AREA PRIOR TO UTILITY INSTALLATION.

SCALE: 1" = 30'
5505
5515
5510
5520
SEE DETAIL SHEET
NEW SANITARY SEWER MH
STA: 10+00.00
INV: 5508.06
NEW 10' WIDE SWALE
SEE DETAIL SHEET
INV: 5508.06
RIM: 5511.42
C-150
STA: 10+00.00 0.0' RT
6" INV IN (E): 5508.06
DIFF. = '10+00
8" INV. IN (SW): 5508.07
EG=5511.42'
8" INV. OUT (NE): 5508.04
FG='10+00

108 LF OF 6" SDR-35 PVC
SANITARY SEWER LINE "A"

13+50.00
SINGLE 6" CLEANOUT
INV: 5508.69
@-1.00% SLOPE, SEE SHEET
STA: 10+62.27
TOP: 5511.69
30' ELECTRICAL EXISTING
NEW SINGLE 6" DIA. CLEANOUT
TOP: 5511.69
STA: 10+98.77
INV: 5508.69
EP: 13+50.00
SEE DETAIL WS-13, SHEET C-153

30' ELECTRICAL EXISTING
NEW SINGLE 6" DIA. CLEANOUT
TOP: 5511.69
STA: 11+62.27
INV: 5509.14
STA: 11+58.76
INV: 5509.69
DIFF. = 2.10'
12+00
STA: 12+18.81
INV: 5510.26

POINT OF SAS CONNECTION
PER NTUA STANDARD DWGS WWS-1
C.S. AND WWS-1A, SHEET C-152

13+50.00
SINGLE 6" CLEANOUT
SEE DETAIL WS-13,
6" WYE
STA: 11+07.13 0.0' RT SEWER LINE 'A' =
STA: 13+31.88 0.0' RT SEWER LINE 'B'

HEREON IS BASED UPON THE
LINES ARE SHOWN FOR ORIENTATION ONLY.
THIS IS NOT A BOUNDARY SURVEY OR A RIGHT-OF-WAY SURVEY. ANY
SURVEY NOTE: PER NTUA STANDARD DWGS WWS-1

SCALE: 1" = 20'
5/22/24
www.soudermiller.com
Serving the Southwest & Rocky Mountains
**Typical Rip Rap Swale Section**

1. **CHARACTERISTICS:**
   - **Type:** Rip Rap
   - **Compaction:** 95% ASTM D-1557
   - **Aggregate:** Class A

2. **Slope:**
   - **Gradient:** 4:1
   - **Height:** 14'

3. **Components:**
   - **Top of Berm:** 5514.00
   - **Top of Spillway:** 5513.50
   - **Top of Pond:** 5512.00
   - **Bottom of Pond:** 5510.00

4. **Surveys:**
   - **Existing Flowline:** 10.32" min.
   - **Existing Swale:** 3'-0" wide

**Emergency Spillway Section**

5. **Characteristics:**
   - **Type:** Spillway
   - **Compaction:** 5% ASTM D-1557

6. **Slope:**
   - **Gradient:** 4:1
   - **Height:** 14'

7. **Components:**
   - **Top of Spillway:** 5513.50
   - **Top of Pond:** 5512.20
   - **Bottom of Pond:** 5510.00

8. **Surveys:**
   - **Top of Pond:** 5512.20
   - **Bottom of Pond:** 5510.00

**Proposed Chinle Mobile Roadway (Crown Section)**

9. **Characteristics:**
   - **Type:** Mobile Roadway
   - **Compaction:** As required

10. **Slope:**
    - **Gradient:** 4:1
    - **Height:** 14'

11. **Components:**
    - **Top of Berm:** 5514.00
    - **Top of Spillway:** 5513.50

12. **Surveys:**
    - **Top of Spillway:** 5513.50
    - **Top of Pond:** 5512.20

**Proposed Chinle Mobile Roadway (Super Elevate Section)**

13. **Characteristics:**
    - **Type:** Mobile Roadway
    - **Compaction:** As required

14. **Slope:**
    - **Gradient:** 4:1
    - **Height:** 14'

15. **Components:**
    - **Top of Berm:** 5514.00
    - **Top of Spillway:** 5513.50

16. **Surveys:**
    - **Top of Spillway:** 5513.50
    - **Top of Pond:** 5512.20

---

**Survey Note:**

- Section shown was completed without the benefit of a geotechnical report.
- Exposed materials are designed for temporary exposure, subject to change without notice.
- This document is protected by copyright law. All rights reserved.

---

**Additional Details:**

- **Scale:** 1" = 20'
- **Date:** 4/22/24
- **Drawn:** RJC
- **Checked:** RJS
- **Designed:** SMA
- **Serving:** Souder, Miller & Associates

---

**Contact Information:**

- Souder, Miller & Associates
- Phone: (505) 299-0942
- Fax: (505) 293-3430
- Website: www.soudermiller.com
- Address: 5454 Venice Avenue NE, Suite D, Albuquerque, NM 87113

---

**Copyright:** © 2024 Souder, Miller & Associates - All Rights Reserved
### Miscellaneous Details - Water

**Sheet:**

**Horiz:**

**Scale:**

**Project No:**

**Vert:**

**Date:**

**By:**

**Description**

<table>
<thead>
<tr>
<th>Date</th>
<th>Rev</th>
<th>CHK'D</th>
<th>BY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Designed**

**Checked**

**Drawn**

**NTU MOBILE HOME**

**CHINLE, ARIZONA**

**RJC**

**RJS**

**4/22/24**

**PZR**

**9433231**

**SMA**

**SOUDER, MILLER & ASSOCIATES**

**Engineering**

♦ **Environmental**

♦ **Geomatics**

**Serving the Southwest & Rocky Mountains**

**www.soudermiller.com**

**Phone (505) 299-0942  Fax (505) 293-3430**

**5454 Venice Avenue NE, Suite D**

**Albuquerque, NM 87113**

© Copyright 2024 Souder, Miller & Associates - All Rights Reserved

**ARIZONA, U.S.A.**

**Regrettable Requests**

**File Set**

**P:\9-NTU Chinle Mobile Home Park (9433231)\CAD\Civil\PLAN SET\SITE.dwg**

**4/22/2024 12:24 PM**

**N/A**

**N/A**

**SOUTHERN ARIZONA LOCALITY**

**expires _______**

**6/30/25**

**4/22/24**

---

**Water MainLine **

**FIRE HYDRANT, VALVES, AND WATER MAIN**

**WATER MAINLINE VALVE INSTALLATION**

---

**Water MainLine **

**FIRE HYDRANT, VALVES, AND WATER MAIN**

**WATER MAINLINE VALVE INSTALLATION**
MISCELLANEOUS DETAILS - WATER AND SEWER

C-152

NEW WATERLINE

22.5° MJ VERTICAL BEND W/ THRUST BLOCK PER WS-19

22.5° MJ VERTICAL BEND W/ THRUST BLOCK PER WS-14

EXISTING POND

BOTTOM

4' MIN. TYP
VERIFY KD ST W/ DEPTH

CONNECT TO NEW 45° MJ BEND. SEE SHEET C-121

NOTE:

6/30/25

4/22/24