Draft Plan of Development
D'Andrea Water Tank #2
BLM Right-of-Way Request
(NVN 093727)

Prepared for:

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1 Purpose and Need for the Facility

Manhard Consulting, on behalf of Truckee Meadows Water Authority (TMWA), has prepared this Draft Plan of Development (POD) at the direction of the Bureau of Land Management (BLM), Carson City District, Sierra Front Field Office.

1.1 What Will Be Built

The proposed D'Andrea Water Tank #2 is to be an approximately 300,000 gallon welded steel above ground tank with a pad elevation of 5,192 feet. Also proposed to be included in the ROW is the tank's 20 foot access road, the associated roadside ditch for drainage and tank overflow, and a 12 inch diameter ductile iron and PVC pipe used to fill the tank.

1.2 What Is Its Use

The tank is necessary to allow for construction of the future residential phases of the D'Andrea master plan community. The tank was identified in the D'Andrea 3 & 4 Pressure Zones and Tank Discovery dated June 16, 2014 (Appendix B). Also occurring within the ROW will be TMWA general maintenance of the facility including; visual inspection on a weekly basis, inspection of tank coatings every 5-7 years and replacement of the exterior and interior coatings as needed basis. The access road and cut slopes will be maintained/repaired on an as-needed basis and weed abatement and general cleanup of tank site will be performed 1-2 times per growing season. The tank itself will be surrounded by chain link fencing and the access road leading to the tank will be gated as to limit vehicular access to the facility.

1.3 Why Is It Necessary to Use Public Lands

An acceptable tank site at the approximate pad elevation of 5,192 does not exist within the D'Andrea master planned community or on the adjacent private property, therefore we are proposing to locate the tank on the adjacent BLM property to the east APN: 084-020-03 (Section 31, T20N, R21E).

1.4 Design Specifics

Table 1: Project Specifics	
Total Square Footage of ROW Request:	3.5 Acres (762 feet x 200 feet)
Total Disturb Area	1.8 Acres
Estimated Size of Tank	27 ft in height & 46 ft in diameter
Estimated Length of Roadway	870 LF (Including pavement surrounding tank)
Width of Road Surface:	20 ft

1.5 Proposed Construction Timeline

It is anticipated that construction will begin shortly following the approvals of both the BLM Right of Way request and the Washoe County Special Use Permit. It is anticipated that construction of the tank will take approximately six (6) months to complete.

1.6 Temporary or Permanent

The right of way (ROW) authorization would be permanent.

1.7 Reasonable Alternatives

We identified two (2) viable sites at our BLM pre-application meeting and stated we would conduct a site selection process to determine which of these sites would be preferable. A field site selection meeting was conducted prior to the submittal of a Standard Form 299. The selection meeting included engineers and planners from both the City of Sparks and Washoe County, BLM was invited but did not attend the meeting. At the conclusion of the site selection meeting, it was determined that Alternative 1 was the preferred site location based on limited visual impact as compared to Alternative 2 (Figure 2).

2 Right-of-Way Location

2.1 Legal Description

The 3.5 acre portion included as part of this Right of Way request is contained completely on public land.

All that certain Right-of-Way situated within the SW 1/4 of Section 31, T.20N., R.21E., M.D.M., within Washoe County, State of Nevada, and being more particularly described as follows:

COMMENCING at the East 1/4 corner of Section 36, T. 20N., R.20E., M.D.M., as marked by a 5/8" rebar with "Tri-State Control" cap, shown on Parcel Map No. 4896, recorded March 27, 2008 as File No. 3634271 in the Official Records of Washoe County, Nevada;

THENCE along the West line of said Section 31, also being the East line of said Section 36, North 00°47'31" East, 44.25 feet to the **POINT OF BEGINNING;**

THENCE continuing along said common line, North 00°47'31" East, 71.82 feet to the beginning of a non-tangent curve to the right;

THENCE departing said common line and along the following nine (9) courses:

1. from a tangent bearing of North 80°38'10" East, 93.81 feet along the arc of a 185.00 foot radius curve through a central angle of 29°03'16";
2. South 70°18'34" East, 246.99 feet to the beginning of a tangent curve to the right;
3. 106.03 feet along the arc of a 135.00 foot radius curve through a central angle of 45°00'00";
4. South 25°18'34" East, 98.98 feet to the beginning of a non-tangent curve to the right;
5. From a tangent which bears North 81°38'54" East, 682.95 feet along the are a of a 120.00 foot radius curve through a central angle of 326°05'04";
6. North 25°18'34" West, 98.98 feet to the beginning of a tangent curve to the left;51.05
7. feet along the arc of a 65.00 foot radius curve through a central angle of 45°00'00";
8. North 70°18'34" West, 246.99 feet to the beginning of a tangent curve to the left;
9. 9) 71.01 feet along the arc of a 115.00 foot radius curve through a central angle of 35°22'38" to the aforementioned common section line and the **POINT OF BEGINNING.**

The basis of bearings for this description is identical to said Parcel Map No. 4896.

2.2 Maps Tied to Section Corners and Drawings

Figure 3 illustrates the location of the ROW request.

3 Facility Design Factors

3.1 Minimum and Maximum Engineering Standards

3.1.1 Tank

- 0.30 MG AWWA/NAC 445A welded steel tank
- Required Tank Pad Elevation = 5,192 feet
- Tank Dimensions = 24' wall height, 46' diameter, 3' radius knuckle roof
- Overflow Design Flow = 1,500 gpm
- Required Appurtenances include, but are not limited to mushroom vent(s), two 36" diameter manways, silt stop/trap, cathodic monitoring system, exterior ladder assembly with safety cage and top landing safety grating and handrails, 30" square roof access hatch, intrusion alarm, liquid level/sample line and pressure transducer inside the valve vault.
- Coating System = Epoxy interior (2-coat, 8-10 mils total system minimum dry film thickness - MDFT), Polyurethane exterior (7 mils MDFT) with additional 3 mil clear coat on 100 percent of exterior surface. Color selected by developer and approved by TMWA (unless specified by City of Sparks).
- Inlet/Outlet and Overflow Piping = Schedule 40 Steel with fusion-bonded shop applied epoxy coating on interior and exterior. Steel pipe to extend 5' outside the tank footing and transition to Feeder/Drain lines with Flng x Flng double ball joints (O/F pipe may terminate in an above grade air gap if discharging into a drainage structure located next to the tank).

3.1.2 Site Appurtenances

Liquid Level Transducer/Sample/Valve Vault, Common RTU/Power/Telecom pedestal, Irrigation pump/controller/meter vault, backflow assembly, two post hydrants.

3.1.3 Access Road

- Maximum Grade of 10%
- Road Surfacing will be Asphalt.
- Length and Width of Road will consist of approximately 870 LF of 20 foot wide roadway (Including pavement around the tank).

3.1.4 Pipeline

The pipeline will be subsurface approximately 3 to 4 feet below the surface of the road. The max slope of the pipe will max that of the roadway 10%. The pipe will be surrounded by standard bedding material and gravel.

3.1.5 Water Tank Pad

The perimeter of the tank itself will sit on a concrete stem wall and the tank floor will sit on a layer of sand over compacted base rock material. The shaded area within the access road ROW and the tank site will be paved with asphalt.

3.2 Detailed Engineering Plans for Major Structures

- The Developer will design the tank site plan (including grading, site piping, access road, etc.), feeder main plan & profile (with U/G electric and phone conduits, boxes, vaults, etc.), drain line plan & profile, landscaping plan, electrical site plan and details. Developer submits 50% level design review set to TMWA.
- TMWA provides tank detail drawings and technical specifications (except for landscaping and electrical) and returns package to Developer with 50% design level review comments.
- Developer submits 90% level design review set to TMWA for final comments.
- Developer submits final bid/construction level package to TMWA.
- Developer submits applications and pays all fees and/or contract costs for new electrical service to SPPC and new phone service to SBC.

3.3 Temporary Use Areas

No temporary use areas are proposed with this request.

4 Additional Components

4.1 Access to ROW

For security purposes access to the tank site will be restricted. A 6-foot high security fence (6' high chain link with an additional 1' high, 3-strand barbed wire top) will begin approximately where the ROW "bulb" begins and be installed around the tank pad cut slope and/or toe of slope. A 20-foot wide double swing gate will be located across the access road at the "bulb". The gate will be provided with a high-security latch and will be locked. Typically, TMWA is the only one with a key. If a contractor is working at the tank site, we will typically interlock a temporary combination lock with our lock to provide temporary access.

4.2 Location of Equipment Storage Areas

Equipment used during construction phase will be stored on the adjacent private property. Equipment required for maintenance will be stored off site.

5 Government Agencies Involved

The proposed tank site requires a special use permit to be processed through Washoe County prior to issuance of any grading or building permit.

6 Construction of the Facilities

6.1 Construction Description

The ultimate construction plan for the project will be determined by the tank contractor who at this preliminary stage has not been selected. In an attempt to balance the grading on-site, the preliminary design follows the existing contours and requires approximately 6,700 cubic yards of both cut and fill material and therefore import and export of material should not be required.

It is anticipated that the proposed project will utilize the following equipment during construction;

- One (1) Excavator
- One (1) Bulldozer
- One (1) Compactor
- One (1) Water Truck

6.2 Work Force

The estimated work force should be limited no more than twenty (20) personnel on site at any given time.

6.3 Access To and Along ROW during Construction

Access to the ROW is currently provided via the adjacent mass graded subdivision. During construction this access is not anticipated to be modified in any way.

6.4 Estimated Construction Costs

According to the TMWA Discovery (Appendix B), the estimated facility costs for the proposed storage tank is $450,000 excluding land, tank main and access road costs.

7 Resource Values and Environmental Concerns

Existing trails are present surrounding the proposed tank site. With construction, it is not anticipated access to these areas will be limited in any way.

Environmental impacts relating to air quality and noise level will be minimal and limited to construction. There will be no impacts on water quality or quantity or a change to any body of water. Careful consideration was taken during the site selection process to reduce the visual impact and limit any disturbance associated with the surface of the land.

Kautz Environmental Consultants have conducted a cultural resources inventory of the proposed site and the surrounding property as required (Appendix C).

8 Stabilization and Rehabilitation

Any disturbed slope areas will be re-vegetated utilizing an approved BLM seed mix.

9 Termination and Restoration

Termination of the tank site is not anticipated. Storage is required to provide emergency supply and fire suppression water to the customers located within the pressure zone created by the tank's hydraulic grade line elevation. Once TMWA establishes a tank zone, it is highly unlikely that the tank would ever be removed or retired. In the unlikely event that the tank was retired TMWA would demolish and remove the tank and fencing from the site; cut slopes and roads would be reclaimed/re-contoured as much as practicable; and the site would be reseeded.