Clark County Water Reclamation DISTRICT

December 6, 2022

RE: DEPRECIATION OF THE U.S. SURVEY FOOT AND THE DEFINITION OF UNITS USED ON PLAN SUBMITTALS

To Whom it May Concern:

Effective January 1, 2023, the Clark County Water Reclamation District (CCWRD) Development Services will be requiring plan submittals to include a clear definition of the units used on plan submittals. This update will assist in record keeping especially during the transitory time when the federal government no longer accepts U.S. Survey Foot, but the State of Nevada still utilizes it. The following will be initiated on this date:

1. Until the State of Nevada updates the NRS for the International foot, Civil Improvement Plans (Plans) sent in for review to CCWRD will continue to utilize the U.S. Survey Foot.
2. Plans must clearly state the unit and datum being utilized. For more information refer to the attached or on our website at: https://www.cleanwaterteam.com/services/development-services/plan-review
    a. The Benchmark on Plans must include:
        i. The Benchmark ID.
        ii. The Vertical Datum used (NAVD88).
        iii. The Geoid or Clark County Survey Benchmark Book Version used to establish the elevations.
        iv. The unit that the plan elevations are based upon (U.S. Survey Foot).
    b. The Basis of Bearing on Plans must include:
        i. The Basis of Bearing Statement used to establish the site.
        ii. The unit that the plan distances are based upon (U.S. Survey Foot).
        iii. The Horizontal Datum of reference.
        iv. The Combined Scale Factor and translation factor between project coordinates and Nevada State Plane East, if the Plans are not on Nevada State Plane East.
3. Plans which do not clearly state this information will be rejected, this applies to all submissions.

Please feel free to contact Development Services, at (702) 668-8160 or at email developmentservices@cleanwaterteam.com with any further questions you may have.

Sincerely,

Leslie Long

Leslie Long, P.E.
Development Services Manager

LL:ap

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DEFINITIONS

US Survey Foot

The currently utilized definition of a foot by the United States and the State of Nevada. Defined as 1 meter = 39.37 inches, NRS 327.030.3

International Foot

The foot definition used by much of the world and what the federal government will be transitioning to on 1/1/2023. Defined as 1 foot = 0.3048 meter 84 FR 55562 in the Federal Register

Benchmark Statement

A record and description of the vertical point of reference used to elevate the site. See below for examples with the new requirements:

1.

BENCHMARK

CLARK COUNTY NEVADA 2018 BENCHMARK ID: 2C2023N4

RIVET & SQUARE ALUMINUM PLATE IN ELECTRICAL PAD, SOUTH SIDE OF PEBBLE ROAD, 120 FEET EAST OF TORREY PINES DRIVE

ELEVATION: 765.041 (METERS)
2509.97 (US SURVEY FEET)

CLARK COUNTY BENCHMARKS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

2.

BENCHMARK

PROJECT BENCHMARK: 5C11 16SWW6_2005, RIVET AND ROUND ALUMINIM PLATE IN TOP OF CURB, EAST SIDE OF LAS VEGAS BLVD, IN FRONT OF 3555 LAS VEGAS BLVD. (OSHEAS CASINO) = 2105.281SFT, GPS DERIVED, USING GEOID 12B, BASED ON NAVD88 (MYSC2) AS OBSERVED FROM CORS STATION NVCA. THE PUBLISHED ELEVATION FOR THIS BENCHMARK IS 641.729M (2105.410 FEET) PER THE PUBLISHED CLARK COUNTY SURVEY 2018 BENCHMARK LIST, AVAILABLE ON THE CLARK COUNTY SURVEY WEBSITE.

3.

BENCHMARK

CLARK COUNTY CONTROL STATION 0C2614SE62000, RIVET AND ROUND ALUMINUM PLATE IN A CONCRETE PAD #FC4310 IN FRONT OF THE CLARK COUNTY SANITATION DISTRICT AT 2255 BRUCE WOODBURY DRIVE.

ELEVATION = 190.895 METERS
ELEVATION = 626.295 U.S. SURVEY FEET (NAVD88 V. 2018)

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Basis of Bearings, Geodetic datum, and conversion equations

A record and description of the bearing system, horizontal datum used to establish the bearings, distances, and coordinates of a site, along with any necessary conversion equations to relate ground coordinates to Nevada State Plane East (NAD 83). See below for examples with the new requirements:

1.

BASIS OF BEARING

THE BEARINGS SHOWN ON THIS PLAT WERE TRANSFERRED FROM A FIELD TRAVERSE ORIGINATING FROM AND TYING TO CLARK COUNTY SECTION CORNER MONUMENTS, INCLUDING A LINE BETWEEN THE NORTHEAST CORNER OF SECTION 9, TOWNSHIP 21 SOUTH, RANGE 16 EAST AND THE CENTER QUARTER CORNER OF SECTION 29, TOWNSHIP 21 SOUTH, RANGE 61 EAST, WHICH HAS A BEARING OF SOUTH 21°16'04" WEST AS CALCULATED PER COORDINATED FROM THE RECORD OF SURVEY RECORDED IN BOOK 149, PAGE 88 OF CLARK COUNTY RECORDS.

THE UNITS ON THIS PLAN REFER TO SURVEY FEET. TO TRANLATE TO NAD83 ZONE EAST AN ADDITIVE FACTOR OF 735,891.67 IN THE NORTHING AND 1,697,343.03 MUST BE APPLIED.

2.

SPCS 2701 BASIS OF BEARINGS

THE BASIS OF BEARINGS SHOWN HEREON REPRESENTS A TRUE MERIDIAN PASSING THROUGH NV EAST ZONE CENTRAL MERIDIAN AT LATITUDE 34º45'00"N, LONGITUDE 115º35'00"W AS DETERMINED BY GEODETIC MEANS.

THE UNITS ON THIS PLAN REFER TO U.S. SURVEY FEET.

3.

GEODETIC DATUM

THE GEODETIC DATUM DEPLOYED FOR THIS CONTROL SHEET IS THE NATIONAL GEODETIC SURVEY NAD 83 BASED LOCALLY UPON CONTINUOUSLY OPERATING REFENCE STATIONS (CORS) "NVCA" AND "NVTP" USING PID DATASHEETS.

THIS PLAN IS RELATED TO NEVADA STATE PLANE EAST U.S. SURVEY FEET.

4.

BASIS OF BEARINGS

GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS), LAS VEGAS AND LAS VEGAS HIGH ELEVATION ZONES, NORTH AMERICAN DATUM OF 1983 (NAD83); SAID MERIDIAN BEING COINCIDENT WITH 114°58' WEST OF THE GREENWICH MERIDIAN.

TO CONVERT TO NAD83 NEVADA STATE PLANE EAST
NORTHING + 26,136,468.20 SFT = EAST NORTHING
EASTING + 510,304.87 SFT = EAST NORTHING

5.

BASIS OF BEARINGS

TO CONVERT FROM NEVADA EAST ZONE NAD 83 (2011 EPOCH) STATE PLANE GRID COORDINATES (NCS 83) TO PROJECT COORDINATES

POINT OF ORIGIN = POINT NO. 3 (ALL DISTANCES AT GROUND)
NAD 83 NVE 2701 EPOCH 2010
NORTHING = 26712059.213 U.S. FT
EASTING = 769829.523 U.S. FT

PROJECT COMBINED FACTORS:
GRID TO GROUND -1.0001962938
GROUND TO GRID – 0.999807099

(PCFT): GRID NORTHING -26,000,000 = PROJECT NORTHING IN U.S. SURVEY FEET
GRID EAST – 600,000 = PROJECT EASTING IN U.S. SURVEY FEET

TO CONVERT FROM PROJECT COORDINATES TO NEVADA EAST ZONE STATE PLANE GRID COORDINATES (NCS 83)
[(PCFT NORTHING + 26,000,000 = GRID NORTHING [(PCFT EASTING + 600,000 = GRID EASTING

If you have any questions regarding the information in this notice, please email developmentservices@cleanwaterteam.com or call (702)668-8160.

Sincerely,

Leslie Long

Leslie Long, P.E.
Development Services Manager