

## **First Amendment to Communications Facility Ground Lease**

This **First Amendment** to the above-entitled **Ground Lease** is entered into on April 20, 2022 (“Effective Date”), by and between the **City of Wilsonville**, a municipal corporation (“Lessor”), and **Clackamas 800 Radio Group** (“C800”), an intergovernmental entity formed pursuant to ORS Chapter 190, Milwaukie, Oregon (“Lessee”)[collectively, “the Parties”].

WHEREAS, Lessor is the owner of certain real property located in Clackamas County, State of Oregon, at Tax lot 502, Section 1, T3S, R1W, W.M., Oregon (“the Property”), which is more particularly shown on **Exhibit A** attached to the Ground Lease, and incorporated by reference herein; and

WHEREAS, Lessee leased an approximate three thousand square-foot (3,000 SF) portion of the Property (“Ground Space”) for placement of the Lessee’s equipment shelter, generator, propane tank, and communications tower. The Ground Space is more particularly shown and described on **Exhibit B** attached to the Ground Lease, and incorporated by reference herein. (**Exhibit B** also includes Access Area and Utility Easement area.) The Ground Space was leased for the purpose of erecting, constructing, installing, and operating thereon: an equipment shelter; communications tower for antennas and microwave dish(es); an emergency power generator and propane tank; fencing; and all other necessary associated equipment and facilities (collectively, “the Communications Facility,” as more particularly described in **Exhibit C** attached to the Ground Lease, and incorporated by reference herein); and

WHEREAS, after execution of the Ground Lease it was determined that Lessee placed an electrical transformer and associated power cables (collectively, “Transformer/Cables”) in an unauthorized location in the middle of Lessor’s Property, in violation of the Ground Lease; and

WHEREAS, Lessee desires to immediately cure any violation of the Ground Lease as set forth below;

NOW, THEREFORE, in consideration of the mutual promises contained herein, and incorporating the above Recitals as if fully set forth below, the Parties agree as follows:

1. Ground Space. At Lessee’s option, Lessee shall either immediately remove or relocate the Transformer/Cables to a location agreeable to the Lessor or, in the alternative, Lessor will allow the Transformer/Cables to remain where currently placed, but only if Lessee agrees to the requirements of the First Amendment and completes all of the following within forty five (45) days of the Effective Date of this Amendment:
  - Retain a licensed and bonded surveyor to create a certified and stamped survey of the actual location of the Transformer/Cables, to be titled “Transformer/Cables Area,” attached to this First Amendment as part of **Exhibit D**, and incorporated herein by this reference.

- Require the surveyor to revise **Exhibit B** - descriptions and map to incorporate the actual location of the Transformer/Cables, which revised descriptions and map shall be titled “Revised Exhibit Map”, “Description of Ground Lease”, “Revised Description of Access Area” and “Revised Description of Utility Easement attached to this First Amendment as **Exhibit E**, and incorporated herein by this reference.
  - Require a licensed engineer to update the “as-built” survey , showing the exact location of the Transformer/Cables and any other needed modifications, which updated plans shall be titled “As-Built Survey C800 – Wilsonville Water Tank Tower ,” attached to this First Amendment as **Exhibit F**, and incorporated herein by this reference.
  - Revise Exhibit C – Proposed Communication Facility including final construction drawings for C-4 Wilsonville Tank, last updated 7/23/19 with C-4 Wilsonville Tank “As-Built” Drawings dated 1/4/2021 and updated 5/16/21, labeled as **Exhibit G**, and incorporated herein by this reference.
  - Install fiberglass rods in the ground at the beginning, end, and any significant transition points of the associated power cables.
  - Install two additional bollards on back side of transformer (per construction punch-list dated 7/28/2020)
  - Install warning signs on gate into cell tower area (per construction punch-list dated 7/28/2020)
  - Either provide 24 purple beach trees to the adjoining property owner or provide Lessor with confirmation from the property owner stating the owner no longer want the trees, as provided in the Ground Lease.
2. Future Relocation. If Lessee otherwise complies with all of the requirements of this First Amendment but opts not to cause the Transformer/Cables to be removed or relocated, and for any reason Lessor later deems that the Transformer/Cables must be moved to a different location within the Property, Lessee expressly agrees to move the Transformer/Cables at Lessee’s expense to a location acceptable to Lessor within 120 days of written notice from Lessor to Lessee.
  3. No Other Equipment or Improvements. No other equipment of any nature, may be placed on the Property, and no additional work or improvements may be performed on the Property or within the Ground Space, without the express prior written approval of Lessor’s Public Works Director.
  4. Fencing and Rods. All existing fence lines on the Property shall remain in place and may not be moved or altered in any way by Lessee. No additional fences may be added to the Property by Lessee.

5. Right to Occupancy Suspended. Lessee's right to access the Property shall be suspended pending the completion of all requirements listed in Section 1. Lessee's right of access shall be fully restored upon Lessee's receipt of written acceptance of such requirements from Lessor's Public Works Director.

**Except as provided herein, all other provisions of the Ground Lease shall remain, as written, and in full force and effect. In the event of any inconsistency or ambiguity when read with this First Amendment, this First Amendment will control**

IN WITNESS WHEREOF, the Parties hereto have executed this First Amendment on the Effective Date above written.

**LESSOR:**

City of Wilsonville  
29799 SW Town Center Loop E  
Wilsonville, OR 97070

By:\_\_\_\_\_

Print Name:\_\_\_\_\_

Title:\_\_\_\_\_

APPROVED AS TO FORM:

\_\_\_\_\_  
Ryan Adams  
Wilsonville Assistant City Attorney

**LESSEE:**

Clackamas 800 Radio Group  
11300 SE Fuller Rd  
Milwaukie, OR 97222

By:\_\_\_\_\_

Print Name:\_\_\_\_\_

Title:\_\_\_\_\_

APPROVED AS TO FORM:

\_\_\_\_\_  
Eileen G. Eakins  
Attorney for C800

5. Right to Occupancy Suspended. Lessee's right to access the Property shall be suspended pending completion of all requirements listed in Section 1 . Lessee's right of access shall be fully restored upon Lessee's receipt of written acceptance of such requirements from Lessor's Public Works Director.

**Except as provided herein, all other provisions of the Ground Lease shall remain, as written, and in full force and effect. In the event of any inconsistency or ambiguity when read with this First Amendment, this First Amendment will control**

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**LESSOR:**

City of Wilsonville  
29799 SW Town Center Loop E  
Wilsonville, OR 97070

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

**APPROVED AS TO FORM:**

\_\_\_\_\_  
Ryan Adams  
Wilsonville Assistant City Attorney

**LESSEE:**

Clackamas 800 Radio Group  
11300 SE Fuller Rd  
Milwaukie, OR 97222

By: \_\_\_\_\_

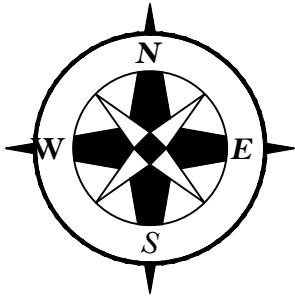
Print Name: Jorge Tru

Title: C800 Board Chair

**APPROVED AS TO FORM:**

\_\_\_\_\_  
Eileen G. Eakins  
Attorney for C800

**EXHIBIT "D"**  
C800 WILSONVILLE  
TRANSFORMER / CABLES AREA



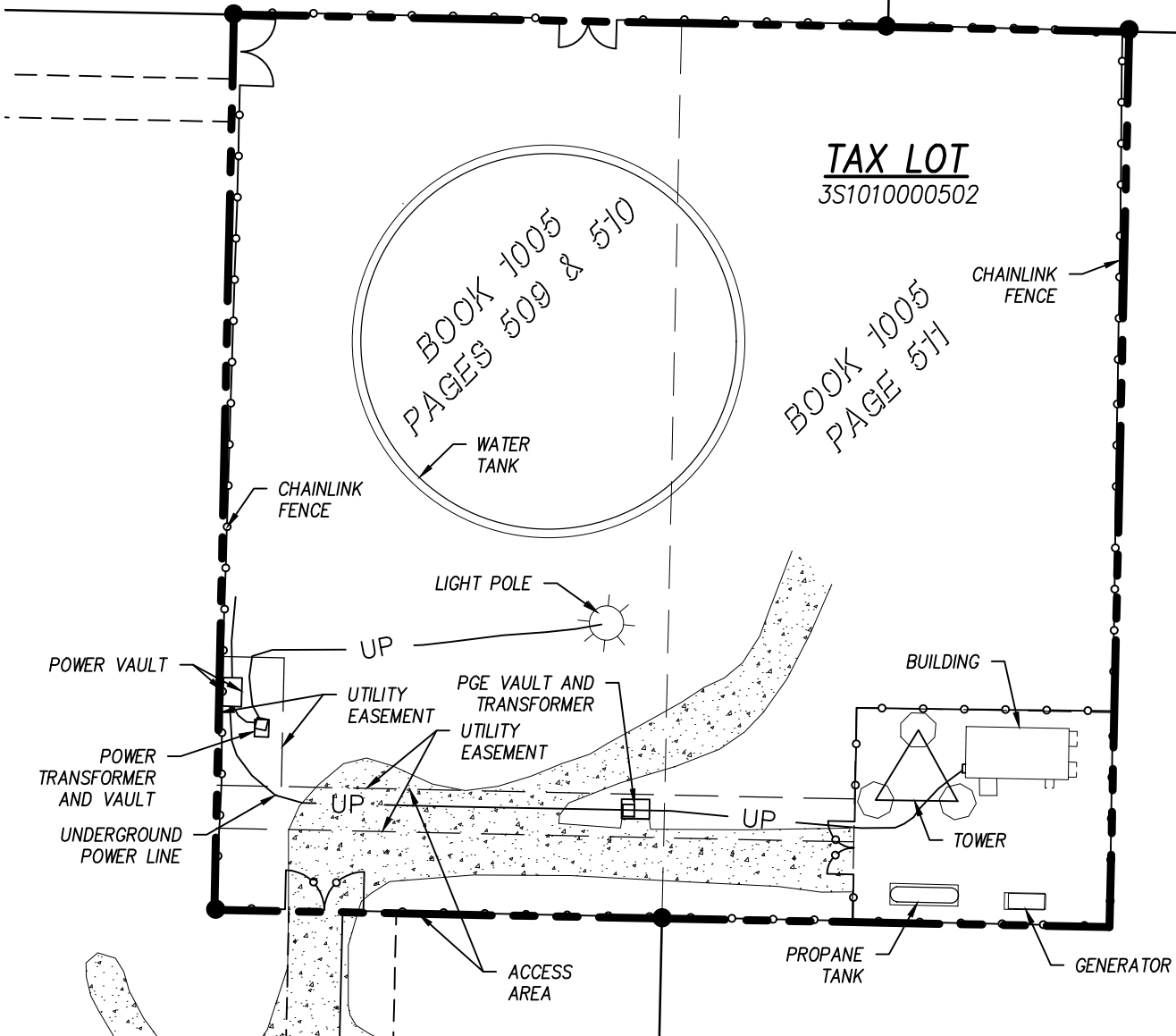
GRAPHIC SCALE  
0 20 40  
1 Inch = 40 ft.

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*Kaid E. McKay*

OREGON  
NOVEMBER 10, 2009  
KAID EDWARD McKAY  
59859

RENEW: 12-31-2022



AS-BUILT SURVEY WAS COMPLETED  
ON AUGUST 31, 2020.

**McKay Consulting, LLC**

Planning - Engineering - Surveying  
205 SE 3rd Avenue, Suite 600 (503) 648-6475  
Hillsboro, Oregon, 97123 contact@mckayconsultingllc.com

DRAWN BY: KAID E. MCKAY

CHECKED BY: KAID E. MCKAY

DATE: MARCH 1, 2022

SHEET

# EXHIBIT "E"

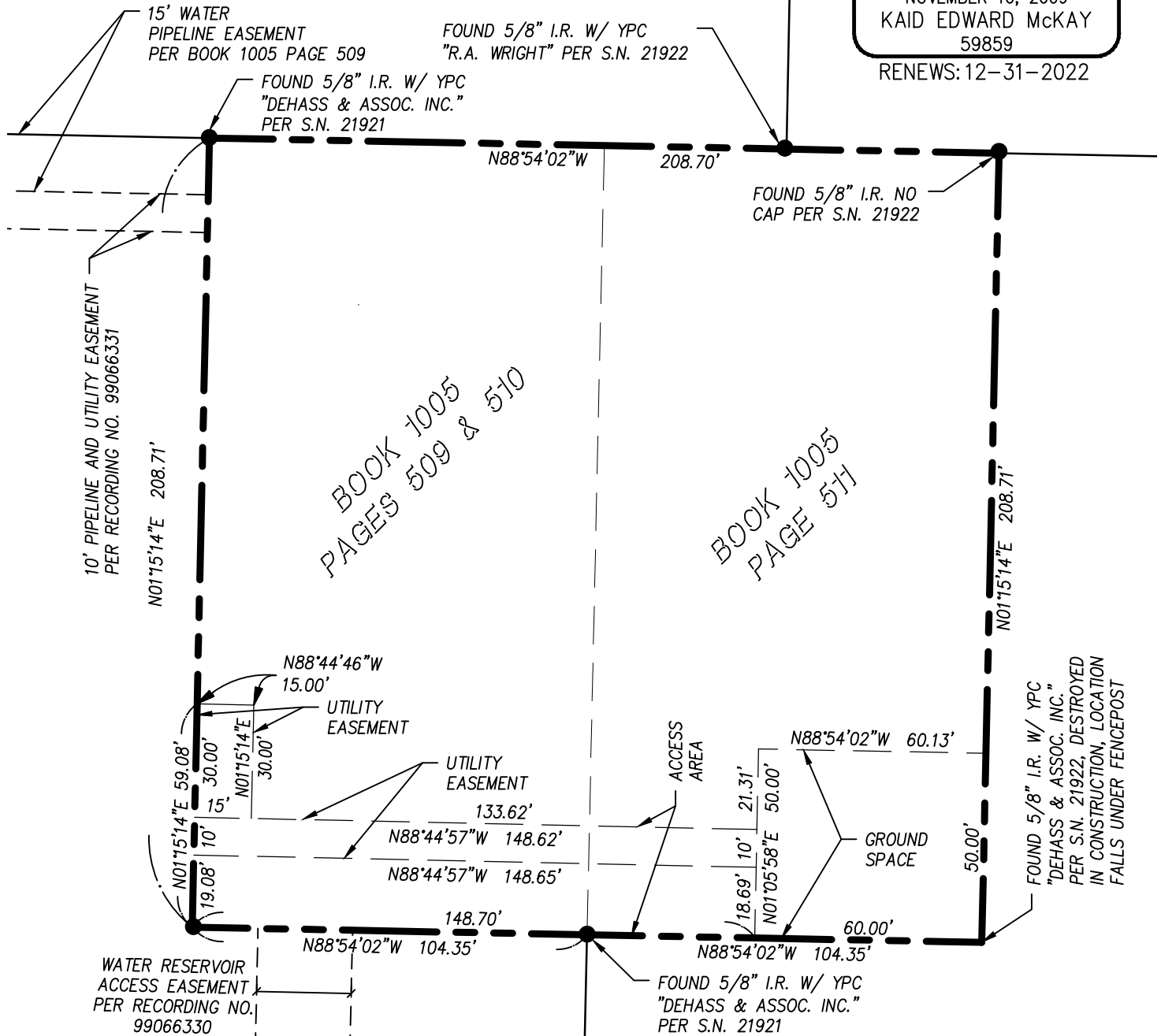
## C800 WILSONVILLE

### REVISED EXHIBIT MAP

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*Kaid E. McKay*

OREGON  
NOVEMBER 10, 2009  
KAID EDWARD MCKAY  
59859  
RENEW: 12-31-2022



Planning - Engineering - Surveying  
205 SE 3rd Avenue, Suite 600 (503) 648-6475  
Hillsboro, Oregon, 97123 contact@mckayconsultingllc.com

DRAWN BY: KAID E. MCKAY

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DATE: MARCH 1, 2022

SHEET

Planning – Engineering - Surveying  
205 SE 3<sup>rd</sup> Avenue, Suite 600  
Hillsboro, OR 97123

[contact@mckayconsultingllc.com](mailto:contact@mckayconsultingllc.com)

## EXHIBIT “E”

### DESCRIPTION OF GROUND SPACE

**MARCH 1, 2022**

A PORTION OF THAT PROPERTY CONVEYED TO THE CITY OF WILSONVILLE BY THE DEED RECORDED IN BOOK 1005 PAGES 511 OF THE DEED RECORDS OF WASHINGTON COUNTY, OREGON, LOCATED IN THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 1 OF TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

**COMMENCING** AT A 5/8" IRON ROD WITH A YELLOW PLASTIC CAP MARKED "DE HAAS & ASSOC. INC." SET IN SURVEY NO. 21,921 FILED IN THE OFFICE OF THE COUNTY SURVEYOR OF SAID COUNTY TO MARK THE SOUTHWEST CORNER OF THE PROPERTY CONVEYED TO THE CITY OF WILSONVILLE BY THAT DEED RECORD IN BOOK 1005 PAGE 509 OF THE DEED RECORDS OF SAID COUNTY, FROM WHICH A 5/8" IRON ROD WITH A YELLOW PLASTIC CAP MARKED "DE HAAS & ASSOC. INC." SET IN SAID SURVEY FOR THE SOUTHEAST CORNER OF SAID PROPERTY, BEARS SOUTH 88°54'02" EAST 104.35 FEET; THENCE ALONG THE SOUTH LINES OF SAID BOOK 1005 PAGE 509 AND BOOK 1005 PAGE 511 SOUTH 88°54'02" EAST 148.70 FEET TO THE **TRUE POINT OF BEGINNING**; THENCE NORTH 01°05'58" EAST 50.00 FEET; THENCE SOUTH 88°54'02" EAST 60.13 FEET TO THE EAST LINE OF SAID BOOK 1005 PAGE 511; THENCE SOUTH 01°15'14" WEST 50.00 FEET TO THE SOUTHEAST CORNER OF SAID BOOK 1005 PAGE 511; THENCE ALONG SAID SOUTH LINE NORTH 88°54'02" WEST 60.00 FEET TO THE **TRUE POINT OF BEGINNING**.

CONTAINS 3003 SQUARE FEET MORE OR LESS

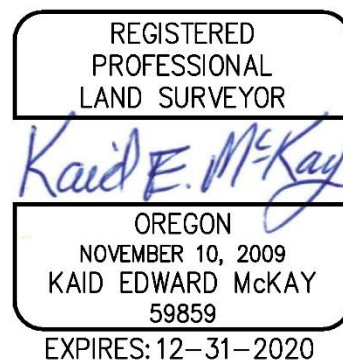


**EXHIBIT “E”****REVISED DESCRIPTION OF ACCESS AREA****MARCH 1, 2022**

A PORTION OF THOSE PROPERTIES CONVEYED TO THE CITY OF WILSONVILLE BY THE DEEDS RECORDED IN BOOK 1005 PAGES 509, 510 & 511 OF THE DEED RECORDS OF WASHINGTON COUNTY, OREGON, LOCATED IN THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 1 OF TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

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CONTAINS 4294 SQUARE FEET MORE OR LESS



Planning – Engineering - Surveying  
205 SE 3<sup>rd</sup> Avenue, Suite 600  
Hillsboro, OR 97123

[contact@mckayconsultingllc.com](mailto:contact@mckayconsultingllc.com)

## EXHIBIT “E”

### REVISED DESCRIPTION OF UTILITY EASEMENT

**MARCH 1, 2022**

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CONTAINS 1936 SQUARE FEET MORE OR LESS



NOTES

1. THE BOUNDARY SHOWN ON THIS SURVEY IS BASED ON MONUMENTATION FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY. THIS IS A SPECIALIZED TOPOGRAPHIC MAP WITH PROPERTY LINES AND EASEMENTS BEING OF GRAPHIC DEPICTION BASED ON INFORMATION GATHERED FROM VARIOUS SOURCES OF RECORD AND AVAILABLE MONUMENTATION FOUND DURING THE FIELD SURVEY. PROPERTY LINES OF TITLE WERE NOT INVESTIGATED NOR SURVEYED EXCEPT AS SHOWN ON THIS PLAN. NO PROPERTY MONUMENTS WERE SET.
2. PROPERTY LINES SHOWN ON THIS SURVEY ARE BASED ON SURVEYS 21921 AND 21922 ON FILE WITH WASHINGTON COUNTY, OREGON.

UTILITY CAUTION

UNDERGROUND UTILITIES SHOWN ON THIS SURVEY WERE LOCATED BASED ON UTILITY MARK OUTS PAINTED FOLLOWING A CALL FOR A FREE UTILITY LOCATE. NOT ALL UTILITIES MAY BE SHOWN. CALL FOR UTILITY LOCATES BEFORE DIGGING.

BENCH MARK

THE DATUM FOR THIS SURVEY IS NAVD 88. AN ELEVATION WAS ESTABLISHED FOR THE PROJECT BENCHMARK USING GPS METHODS AND GEOID12B.

BASIS OF BEARING/LOCAL DATUM PLANE COORDINATES

THE BASIS OF BEARING FOR THIS SURVEY IS THE OREGON STATE PLANE COORDINATE SYSTEM OF 1983, NORTH ZONE (3106) WITH COORDINATES ESTABLISHED USING GPS AND THE OREGON DEPARTMENT OF TRANSPORTATION'S ORGN SERVICE.

LOCAL DATUM PLANE COORDINATES: AN AVERAGE COMBINED SCALE FACTOR OF 1.000120090 WAS USED TO CONVERT GRID COORDINATES TO GROUND COORDINATES SO CALCULATED GRID DISTANCES AND GROUND DISTANCE WOULD MATCH (I.E. - GRID COORDINATE TIMES SCALE FACTOR EQUALS GROUND COORDINATE).

PROPERTY LEGAL DESCRIPTIONS (PER VESTING DEEDS)

BOOK 1005 PAGES 509 & 510

BEGINNING AT THE WEST QUARTER SECTION CORNER OF SECTION 1, TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN; THENCE NORTH ON THE WEST LINE OF SAID SECTION 1321.6 FEET TO AN IRON PIPE DRIVEN AT THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER; THENCE NORTH 89°1' EAST ALONG THE NORTH LINE OF SAID QUARTER SECTION 823.2 FEET TO THE NORTHEAST CORNER OF THE TRACT OF LAND CONVEYED TO ARTHUR L. WHITAKER AND WIFE BY DEED RECORDED DECEMBER 18, 1940 IN BOOK 194, PAGE 650, DEED RECORDS, WHICH IS THE TRUE PLACE OF BEGINNING; THENCE SOUTH 0°46' EAST ALONG THE EAST LINE OF THE WHITAKER TRACT 208.71 FEET; THENCE SOUTH 89°1' WEST PARALLEL WITH THE NORTH LINE OF THE WHITAKER TRACT 104.35 FEET; THENCE NORTH 0°46' WEST PARALLEL WITH THE EAST LINE OF THE WHITAKER TRACT 208.71 FEET TO THE NORTH LINE OF THE WHITAKER TRACT; THENCE NORTH 89°1' EAST A DISTANCE OF 104.35 FEET TO THE TRUE PLACE OF BEGINNING;

BOOK 1005 PAGE 511

BEGINNING AT THE SOUTHEAST CORNER OF GOVERNMENT LOT 1, SECTION 1, TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN; THENCE SOUTH 89°1' WEST ALONG THE SOUTH LINE OF SAID LOT 1 AND A PROLONGATION THEREOF ALONG THE SOUTH LINE OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER 1829.7 FEET TO THE NORTHEAST CORNER OF THAT TRACT CONVEYED TO ARTHUR W. WHITAKER, ET UX, BY DEED RECORDED IN BOOK 194, PAGE 650, DEED RECORDS, WHICH IS THE TRUE PLACE OF BEGINNING; THENCE SOUTH 0°46' EAST ALONG THE EAST LINE OF WHITAKER TRACT 208.71 FEET; THENCE NORTH 89°1' EAST 104.35 FEET; THENCE NORTH 0°46' WEST ON A LINE DRAWN PARALLEL WITH THE EAST LINE OF THE WHITAKER TRACT 208.71 FEET TO THE NORTH LINE OF THE PAULINE BASIER LAIRD TRACT; THENCE SOUTH 89°1' WEST 104.35 FEET TO THE TRUE PLACE OF BEGINNING.

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CONTAINS 3003 SQUARE FEET MORE OR LESS

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CONTAINS 4294 SQUARE FEET MORE OR LESS

LEGAL DESCRIPTION FOR UTILITY EASEMENT

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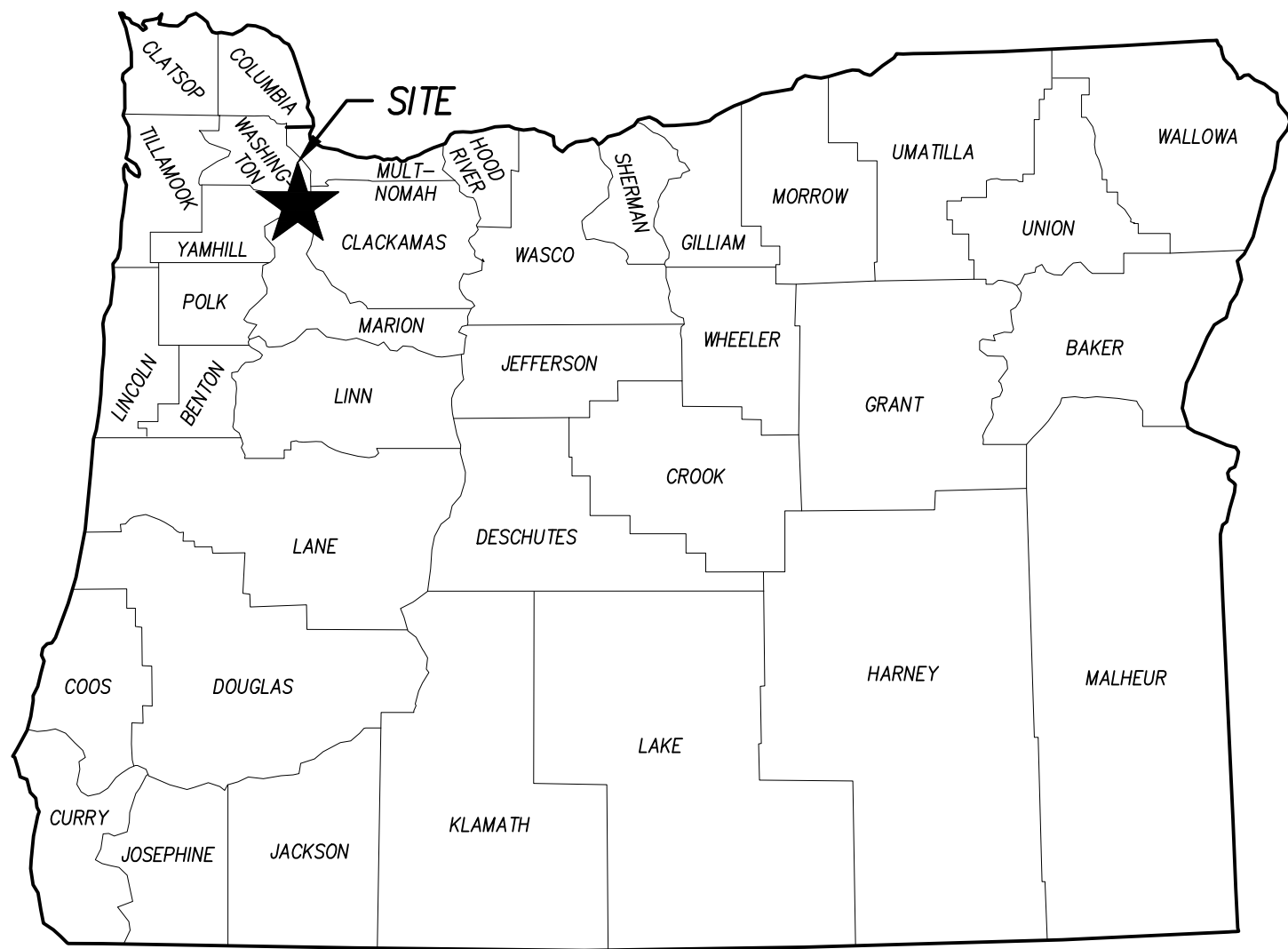
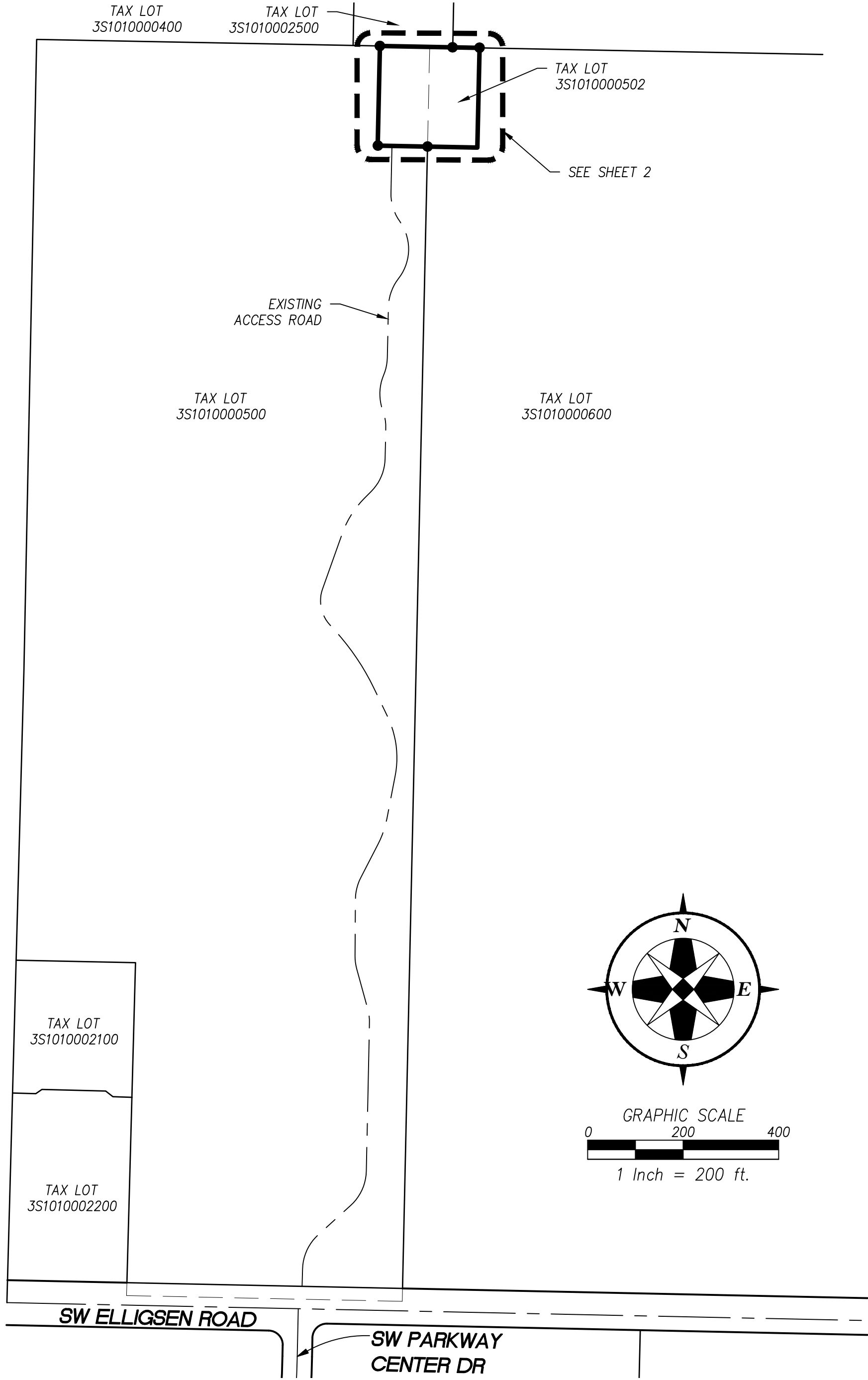
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CONTAINS 1936 SQUARE FEET MORE OR LESS

EXHIBIT F

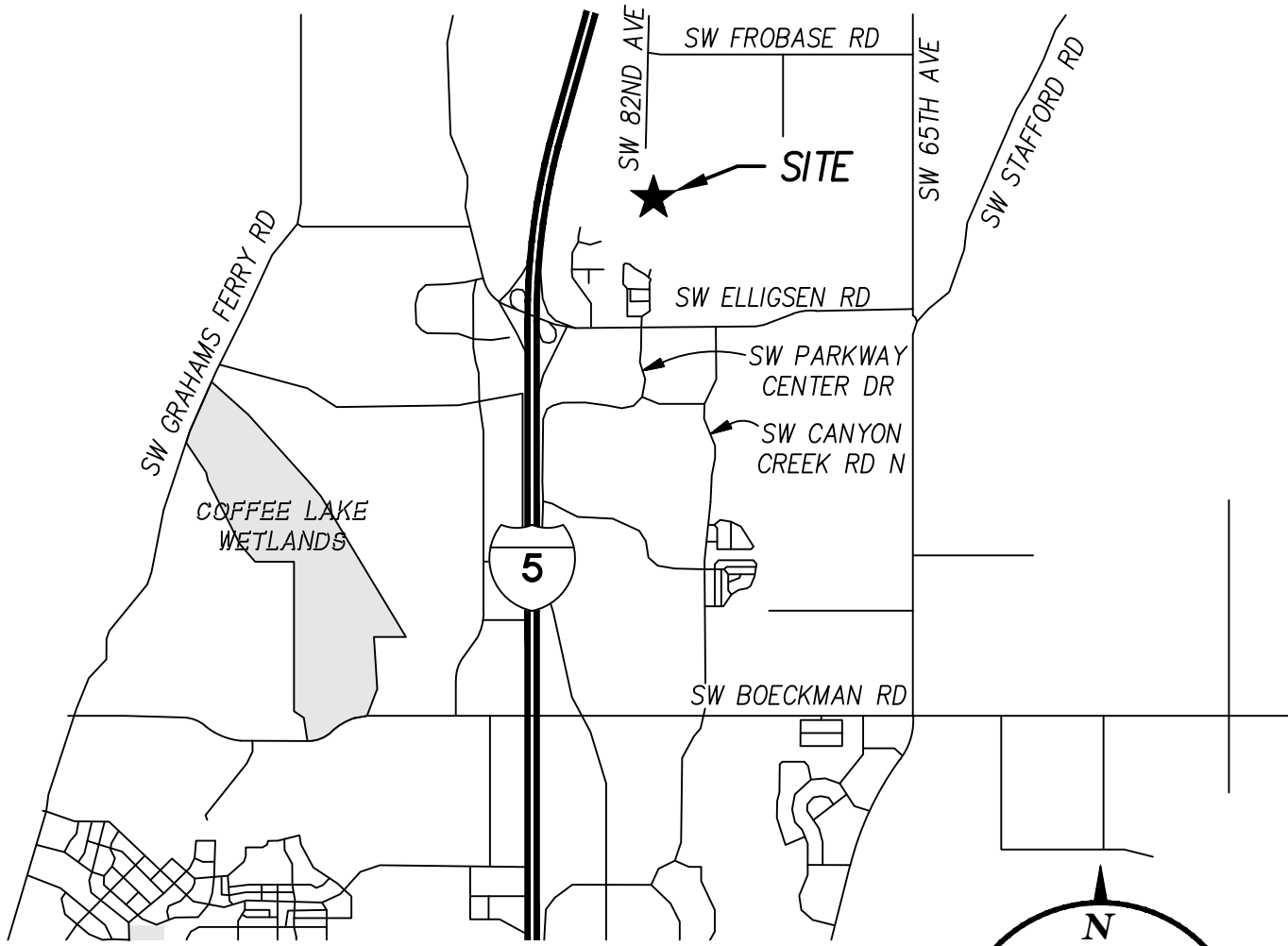
AS-BUILT SURVEY  
C800- WILSONVILLE WATER TANK TOWER

A TRACT OF LAND IN SECTION 1  
TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN  
IN WASHINGTON COUNTY, OREGON  
SURVEYED AUGUST 31, 2020



LOCATION MAP

SCALE: NOT TO SCALE



VICINITY MAP

SCALE: NOT TO SCALE

LEGEND

- PROPERTY BOUNDARY
- RIGHT-OF-WAY
- CENTER LINE
- LOT LINE
- RECORD LINE
- EASEMENT
- SURVEY MONUMENT AS NOTED



RENEWS 12-31-2022

AS-BUILT SURVEY  
C800 - WILSONVILLE WATER TANK TOWER  
WILSONVILLE OR 97070  
TAX LOT 3S1010000502

COMMUNICATIONS SYSTEM UPGRADE PROJECT  
CLACKAMAS 800 RADIO GROUP  
11300 SE FULLER RD., MILWAUKIE, OR 97222

REV.	DATE	DESCRIPTION	BY
1	2022/03/01	REVISED LEGAL DESCRIPTIONS ACCESS AND EASEMENT AREAS	KAID

McKay Consulting, LLC

(503) 648-6475

contact@mckayconsultingllc.com

REGISTERED PROFESSIONAL LAND SURVEYOR  
OREGON  
NOVEMBER 10, 2009  
KAID EDWARD MCKAY  
59859  
RENEWS: 12-31-2022

DESIGNED BY: KAID E. MCKAY  
DRAWN BY: KAID E. MCKAY  
CHECKED BY: KAID E. MCKAY  
DATE: SEPTEMBER 3, 2020  
REVISED ON: MARCH 1, 2022  
JOB NAME: C800 - WILSONVILLE  
JOB #: 16063

1 OF 2

C:\MC Projects\16063 C800 Wilsonville\4 Site Survey\16063AAs-Built.dwg

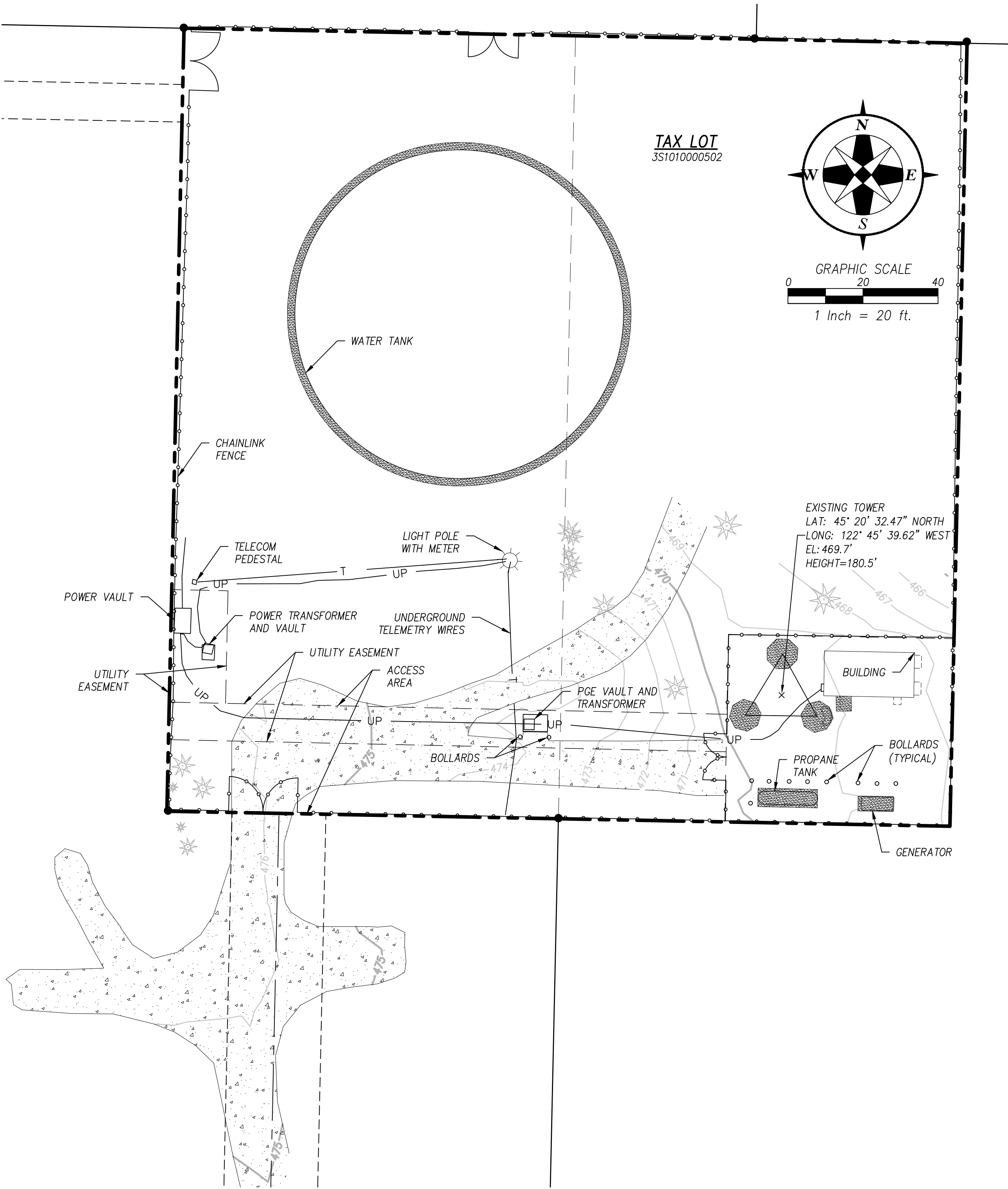
Mar 01, 2022 - 11:24am

EXHIBIT F

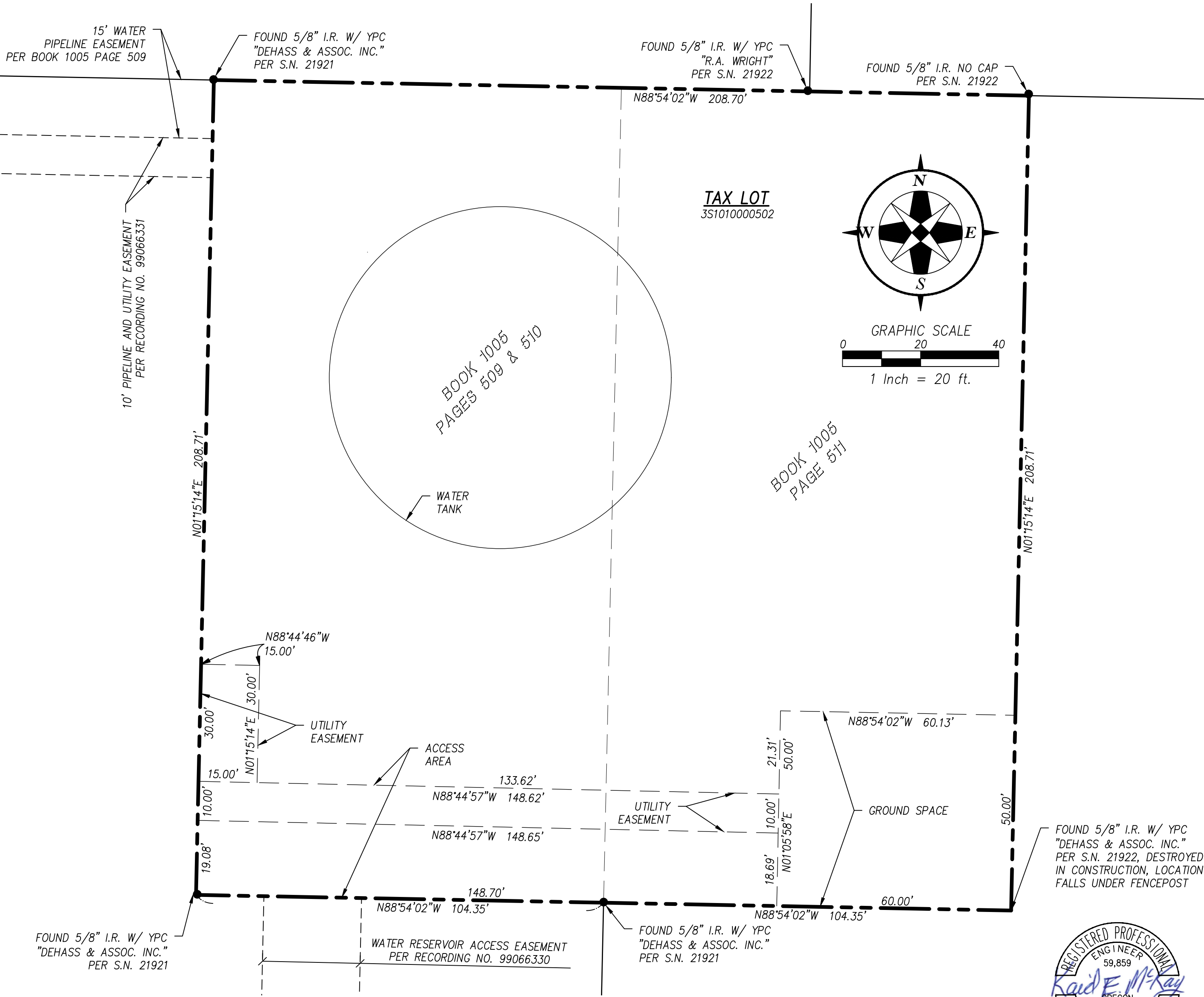
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TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN  
IN WASHINGTON COUNTY, OREGON  
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LEGEND	
	PROPERTY BOUNDARY
	RIGHT-OF-WAY
	CENTER LINE
	LOT LINE
	RECORD LINE
	EASEMENT
	CONTOUR LINE
	CHAINLINK FENCE
	UNDERGROUND POWER
	CONCRETE PAVEMENT
	GRAVEL
	FOUND MONUMENT AS NOTED
	YELLOW PLASTIC CAP
	IRON ROD
	TREE STUMP



TOPOGRAPHIC SURVEY  
SCALE: 1"=20'



LEASE AREA AND EASEMENTS  
SCALE: 1"=20'

AS-BUILT SURVEY  
C800 - WILSONVILLE WATER TANK TOWER  
WILSONVILLE OR 97070  
TAX LOT 351010000502

COMMUNICATIONS SYSTEM UPGRADE PROJECT  
CLACKAMAS 800 RADIO GROUP  
11300 SE FULLER RD., MILWAUKIE, OR 97222

REV.	DATE	DESCRIPTION	BY
1	2022/03/01	REVISED GROUND, ACCESS AND EASIMENT AREAS	KAD

McKay Consulting, LLC

(503) 648-6475

contact@mckayconsultingllc.com

REGISTERED PROFESSIONAL LAND SURVEYOR  
Kaid E. McKay  
OREGON  
NOVEMBER 10, 2009  
Kaid Edward McKay  
59859  
RENEWS: 12-31-2022

DESIGNED BY: Kaid E. McKay  
DRAWN BY: Kaid E. McKay  
CHECKED BY: Kaid E. McKay  
DATE: SEPTEMBER 3, 2020  
REVISED ON: MARCH 1, 2022  
JOB NAME: C800 - WILSONVILLE  
JOB #: 16063

C:\MC Projects\16063 C800 Wilsonville\4 Site Survey\16063As-Built.dwg Mar 01, 2022 - 11:24am

2 OF 2

Exhibit G



SITE NAME:  
WILSONVILLE TANK

LOCATION:  
8323 SW ELLIGSEN ROAD, TUALATIN, OR 97062

”AS–BUILT”

THE "AS-BUILT" INFORMATION ON THIS SHEET WAS PROVIDED BY THE CONTRACTOR. CONDITIONS MAY VARY FROM THESE "AS-BUILT" DRAWINGS.

*John Morfin*

SIGNED

1/4/2021

DATE

Updated 5/16/2022

CLACKAMAS  
800 RADIO  
GROUP

11300 SE Fuller Rd  
Milwaukie, Oregon 97222  
(503) 780-4806

PROJECT INFORMATION:

C-4  
WILSONVILLE  
TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
7/21/17	PRELIM. CONSTRUCTION SUBMITTAL
8/18/17	FINAL CONSTRUCTION SUBMITTAL
9/21/17	UPDATED GEN. & PROP. TANK SHT
1/12/18	FINAL CONSTRUCTION SUBMITTAL
2/23/18	FINAL CONSTRUCTION SUBMITTAL
6/20/19	FINAL CONSTRUCTION SUBMITTAL
7/9/19	FINAL CONSTRUCTION SUBMITTAL
7/18/19	FINAL CONSTRUCTION SUBMITTAL
7/23/19	FINAL CONSTRUCTION SUBMITTAL
9/12/19	PLAN CHECK #1
1/4/21	AS-BUILTS
5/16/22	AS-BUILTS (CLIENT REV.)

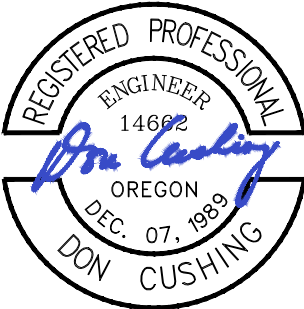
**DRAWING INFORMATION:**  
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**PLANS PREPARED BY:**



**Don Cushing Associates**  
**Civil Engineers**

107 SE WASHINGTON STREET  
SUITE 265  
PORTLAND, OR 97214  
(503) 387-5331  
[www.cushing-engr.com](http://www.cushing-engr.com)

LICENSURE:



RENEWAL DATE 12/31/21

SHEET TITLE:

COVER  
SHEET

SHEET NUMBER:

T-1

SHEET INDEX

- T-1 COVER SHEET
- SURVEY I
- SURVEY II
- SURVEY III
- G-1 GENERAL NOTES
- G-2 SPECIAL INSPECTIONS I
- G-3 SPECIAL INSPECTIONS II
- C-1 EXISTING SITE CONDITIONS PLAN
- C-1.1 PROPOSED DEVELOPMENT SITE PLAN
- C-2 ENLARGED SITE PLAN
- C-3 ELEVATIONS
- C-4 NOT IN USE
- C-5 RF PLAN & SCHEDULE
- C-6 RF DETAILS
- C-7 NOT IN USE
- C-8 TOWER RELATED EQUIPMENT DETAILS I
- C-9 COMPOUND DETAILS I
- C-10 COMPOUND DETAILS II
- C-11 EQUIPMENT SHELTER FOUNDATION PLAN
- C-12 GENERATOR & PROPANE TANK DETAILS
- C-13 NOT IN USE
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- E-1 ELECTRICAL SITE PLAN
- E-2 SITE GROUNDING PLAN AND DETAILS
- E-3 GROUNDING DETAILS I
- E-4 GROUNDING DETAILS II
- E-5 GROUNDING DETAILS III

PROJECT INFORMATION

**PROPERTY OWNER:**  
CITY OF WILSONVILLE  
29799 SW TOWN CENTER LOOP EAST  
WILSONVILLE, OR 97070  
**CONTACT:**  
DELORA KERBER  
503-682-4092  
[kerber@ci.wilsonville.or.us](mailto:kerber@ci.wilsonville.or.us)  
**JURISDICTION:**  
WASHINGTON COUNTY

**COUNTY:**  
WASHINGTON

**ZONING:**  
EFU (EXCLUSIVE FARM USE)

**PARCEL NUMBER(S) & AREA:**  
TAX LOT#: 3S10100 00502, PARCEL #: R584111  
43,560 SQ. FT. ±  
1 ACRES ±

**PROJECT AREA:**  
NEW IMPERVIOUS AREA: 0 SQ. FEET±  
COMPOUND AREA - 3,000 SQ FEET±

**PROJECT AREA:**  
LAT: N 45° 20' 32.52" (45.342367)  
LONG: W 122° 45' 39.58" (-122.760994)  
SOURCE: 1A SURVEY DATED 12/1/16  
DATUM: NAD 83

**UTILITY PROVIDERS:**  
TELCO PROVIDER: MICROWAVE  
POWER PROVIDER: PGE

**GENERAL INFORMATION:**  
1. TRAFFIC IS UNAFFECTED  
2. SITE IS UNMANNED AND HANDICAP ACCESS IS NOT REQUIRED  
3. TECHNICIAN PARKING IS PROVIDED

**CODE INFORMATION:**  
1. IBC-2015, INTERNATIONAL BUILDING CODE  
2. NEC-2014 NATIONAL ELECTRIC CODE  
3. 2014 OREGON STRUCTURAL SPECIALTY CODE  
4. 2017 NFPA 56 LPG CODE  
5. OCCUPANCY GROUP: U  
6. CONSTRUCTION TYPE: II-B

OREGON APPROVED PREFABRICATED STRUCTURE  
OREGON PLAN # M231-17-5868D

PROJECT INFORMATION CONTINUED

**APPLICANT:**  
CLACKAMAS 800 RADIO GROUP (C800)  
11300 SE FULLER RD  
MILWAUKIE, OR 97222  
**CONTACT:**  
JOHN HARTSOCK  
503-780-4806

**PROJECT MANAGER:**  
BJORN MORFIN  
503-781-9762

**ZONING CONTACT:**  
SKIP GREENE  
SECURASITE LLC  
6233 SW ORCHID DR  
PORTLAND, OR 97219  
503-866-5111  
[skip.greene@comcast.net](mailto:skip.greene@comcast.net)

**SITE ACQUISITION:**  
BJORN MORFIN  
SECURASITE LLC  
1631 NE BROADWAY, PMB 100  
PORTLAND, OR 97232  
503-781-9762  
[bmorfin@securasite.net](mailto:bmorfin@securasite.net)

**PROJECT DESCRIPTION:**  
CLACKAMAS COUNTY 800 RADIO GROUP PROPOSES TO CONSTRUCT A NEW UNSTAFFED ESSENTIAL PUBLIC COMMUNICATIONS SERVICE FACILITY CONSISTING OF A NEW 180' TALL SELF SUPPORTING LATTICE TOWER, A PRE-FABRICATED EQUIPMENT SHELTER, A GENERATOR AND A PROPANE TANK BOTH ON CONCRETE PADS ALL WITHIN A NEW 60' X 50' ALARMED 6' TALL SECURITY FENCED LEASE AREA. ACCESS TO SITE IS VIA EXISTING ACCESS ROAD FROM ELLIGSEN ROAD.

LOCATOR MAP



DRIVING DIRECTIONS

FROM C800 OFFICE;

HEAD SOUTHWEST ON SE FULLER RD TOWARD SE MICHAEL DR 0.2 MI

TURN LEFT ONTO SE MONTEREY AVE 0.2 MI

TURN RIGHT ONTO OR-213 1.6 MI

MERGE ONTO I-205 S/STATE HWY 213 S/WAR VETERANS MEMORIAL FWY (SIGNS FOR STATE HWY 224) 12.2 MI

USE THE LEFT 2 LANES TO TAKE THE INTERSTATE 5 S EXIT TOWARD SALEM 1.0 MI

MERGE ONTO I-5 S 1.5 MI

TAKE EXIT 286 FOR ELLIGSEN ROAD/BOONES FERRY ROAD 0.2 MI

USE THE LEFT 2 LANES TO TURN LEFT ONTO SW ELLIGSEN RD (SIGNS FOR ELLIGSEN RD) 0.5 MI

TURN LEFT AT SW PARKWAY CENTER DR 0.2 MI

FOLLOW ROAD NORTH ONTO DIRT ACCESS ROAD FOR 1/4 MILE TO THE SITE

EST. TIME: 23 MINS  
EST. MILEAGE: 17.7 MI

DOCUMENT REVIEW

SIGNATURE DATE

SITE ACQ: \_\_\_\_\_  
BJORN MORFIN (503) 781-9762

ZONING: \_\_\_\_\_  
SKIP GREENE (503) 866-5111

APPLICANT: \_\_\_\_\_  
JOHN HARTSOCK (503) 780-4806

PROJECT MGR: \_\_\_\_\_  
BJORN MORFIN (503) 781-9762

NOTES

1. THE BOUNDARY SHOWN ON THIS SURVEY IS BASED ON MONUMENTATION FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY. THIS IS A SPECIALIZED TOPOGRAPHIC MAP WITH PROPERTY LINES AND EASEMENTS BEING OF GRAPHIC DEPICTION BASED ON INFORMATION GATHERED FROM VARIOUS SOURCES OF RECORD AND AVAILABLE MONUMENTATION FOUND DURING THE FIELD SURVEY. PROPERTY LINES OF TITLE WERE NOT INVESTIGATED NOR SURVEYED EXCEPT AS SHOWN ON THIS PLAN. NO PROPERTY MONUMENTS WERE SET.
2. PROPERTY LINES SHOWN ON THIS SURVEY ARE BASED ON SURVEYS 21921 AND 21922 ON FILE WITH WASHINGTON COUNTY, OREGON.

UTILITY CAUTION

UNDERGROUND UTILITIES SHOWN ON THIS SURVEY WERE LOCATED BASED ON UTILITY MARK OUTS PAINTED FOLLOWING A CALL FOR A FREE UTILITY LOCATE. NOT ALL UTILITIES MAY BE SHOWN. CALL FOR UTILITY LOCATES BEFORE DIGGING.

BENCH MARK

THE DATUM FOR THIS SURVEY IS NAVD 88. AN ELEVATION WAS ESTABLISHED FOR THE PROJECT BENCHMARK USING GPS METHODS AND GEOID12B.

BASIS OF BEARING/LOCAL DATUM PLANE COORDINATES

THE BASIS OF BEARING FOR THIS SURVEY IS THE OREGON STATE PLANE COORDINATE SYSTEM OF 1983, NORTH ZONE (3106) WITH COORDINATES ESTABLISHED USING GPS AND THE OREGON DEPARTMENT OF TRANSPORTATION'S ORGN SERVICE.

LOCAL DATUM PLANE COORDINATES: AN AVERAGE COMBINED SCALE FACTOR OF 1.000120090 WAS USED TO CONVERT GRID COORDINATES TO GROUND COORDINATES SO CALCULATED GRID DISTANCES AND GROUND DISTANCE WOULD MATCH (I.E. - GRID COORDINATE TIMES SCALE FACTOR EQUALS GROUND COORDINATE).

PROPERTY LEGAL DESCRIPTIONS (PER VESTING DEEDS)

BOOK 1005 PAGES 509 & 510

BEGINNING AT THE WEST QUARTER SECTION CORNER OF SECTION 1, TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN; THENCE NORTH ON THE WEST LINE OF SAID SECTION 1321.6 FEET TO AN IRON PIPE DRIVEN AT THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER; THENCE NORTH 89°1' EAST ALONG THE NORTH LINE OF SAID QUARTER SECTION 823.2 FEET TO THE NORTHEAST CORNER OF THE TRACT OF LAND CONVEYED TO ARTHUR L. WHITAKER AND WIFE BY DEED RECORDED DECEMBER 18, 1940 IN BOOK 194, PAGE 650, DEED RECORDS, WHICH IS THE TRUE PLACE OF BEGINNING; THENCE SOUTH 0°46' EAST ALONG THE EAST LINE OF THE WHITAKER TRACT 208.71 FEET; THENCE SOUTH 89°1' WEST PARALLEL WITH THE NORTH LINE OF THE WHITAKER TRACT 104.35 FEET; THENCE NORTH 0°46' WEST PARALLEL WITH THE EAST LINE OF THE WHITAKER TRACT 208.71 FEET TO THE NORTH LINE OF THE WHITAKER TRACT; THENCE NORTH 89°1' EAST A DISTANCE OF 104.35 FEET TO THE TRUE PLACE OF BEGINNING;

BOOK 1005 PAGE 511

BEGINNING AT THE SOUTHEAST CORNER OF GOVERNMENT LOT 1, SECTION 1, TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN; THENCE SOUTH 89°1' WEST ALONG THE SOUTH LINE OF SAID LOT 1 AND A PROLONGATION THEREOF ALONG THE SOUTH LINE OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER 1829.7 FEET TO THE NORTHEAST CORNER OF THAT TRACT CONVEYED TO ARTHUR W. WHITAKER, ET UX, BY DEED RECORDED IN BOOK 194, PAGE 650, DEED RECORDS, WHICH IS THE TRUE PLACE OF BEGINNING; THENCE SOUTH 0°46' EAST ALONG THE EAST LINE OF WHITAKER TRACT 208.71 FEET; THENCE NORTH 89°1' EAST 104.35 FEET; THENCE NORTH 0°46' WEST ON A LINE DRAWN PARALLEL WITH THE EAST LINE OF THE WHITAKER TRACT 208.71 FEET TO THE NORTH LINE OF THE PAULINE BASIER LAIRD TRACT; THENCE SOUTH 89°1' WEST 104.35 FEET TO THE TRUE PLACE OF BEGINNING.

LEGAL DESCRIPTION FOR GROUND SPACE

A PORTION OF THAT PROPERTY CONVEYED TO THE CITY OF WILSONVILLE BY THE DEED RECORDED IN BOOK 1005 PAGES 511 OF THE DEED RECORDS OF WASHINGTON COUNTY, OREGON, LOCATED IN THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 1 OF TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A 5/8" IRON ROD WITH A YELLOW PLASTIC CAP MARKED "DE HAAS & ASSOC. INC." SET IN SURVEY NO. 21,921 FILED IN THE OFFICE OF THE COUNTY SURVEYOR OF SAID COUNTY TO MARK THE SOUTHWEST CORNER OF THE PROPERTY CONVEYED TO THE CITY OF WILSONVILLE BY THAT DEED RECORD IN BOOK 1005 PAGE 509 OF THE DEED RECORDS OF SAID COUNTY, FROM WHICH A 5/8" IRON ROD WITH A YELLOW PLASTIC CAP MARKED "DE HAAS & ASSOC. INC." SET IN SAID SURVEY FOR THE SOUTHEAST CORNER OF SAID PROPERTY, BEARS SOUTH 88°54'02" EAST 104.35 FEET; THENCE ALONG THE SOUTH LINES OF SAID BOOK 1005 PAGE 509 AND BOOK 1005 PAGE 511 SOUTH 88°54'02" EAST 148.70 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 01°05'58" EAST 50.00 FEET; THENCE SOUTH 88°54'02" EAST 60.13 FEET TO THE EAST LINE OF SAID BOOK 1005 PAGE 511; THENCE SOUTH 01°15'14" WEST 50.00 FEET TO THE SOUTHEAST CORNER OF SAID BOOK 1005 PAGE 511; THENCE ALONG SAID SOUTH LINE NORTH 88°54'02" WEST 60.00 FEET TO THE TRUE POINT OF BEGINNING.

CONTAINS 3003 SQUARE FEET MORE OR LESS

LEGAL DESCRIPTION FOR ACCESS AREA

A PORTION OF THOSE PROPERTIES CONVEYED TO THE CITY OF WILSONVILLE BY THE DEEDS RECORDED IN BOOK 1005 PAGES 509, 510 & 511 OF THE DEED RECORDS OF WASHINGTON COUNTY, OREGON, LOCATED IN THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 1 OF TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

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CONTAINS 4294 SQUARE FEET MORE OR LESS

LEGAL DESCRIPTION FOR UTILITY EASEMENT

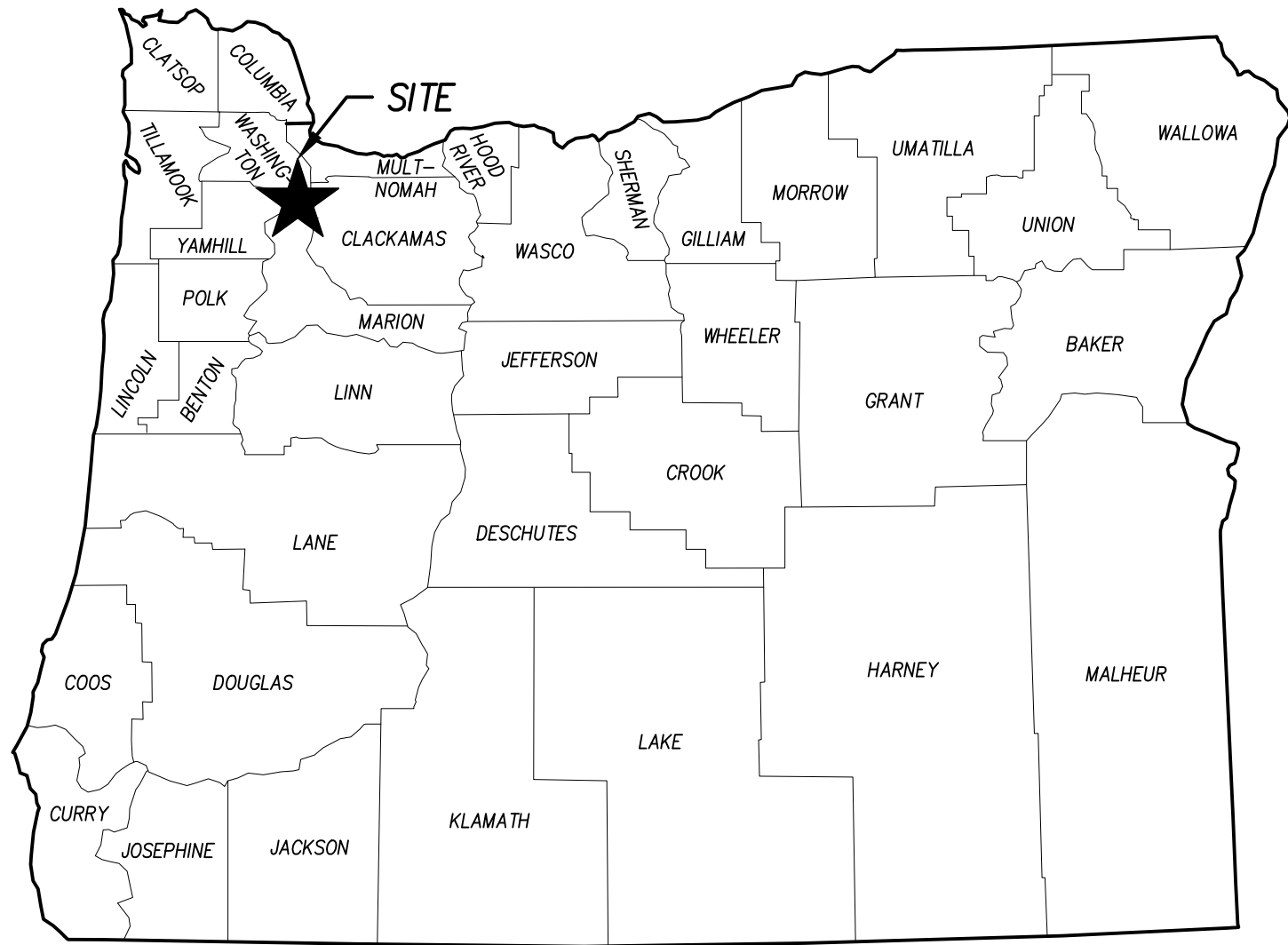
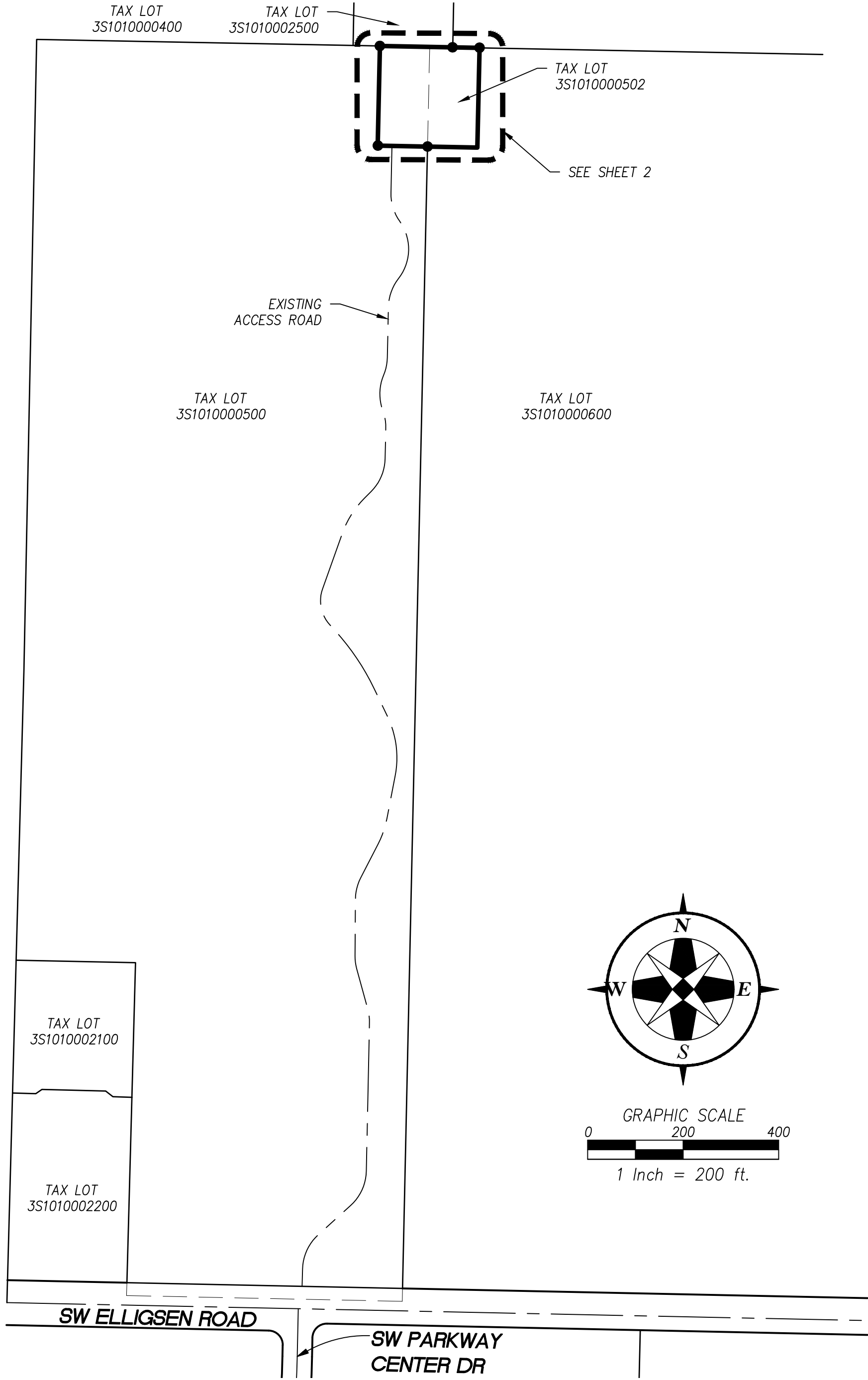
A PORTION OF THOSE PROPERTIES CONVEYED TO THE CITY OF WILSONVILLE BY THE DEEDS RECORDED IN BOOK 1005 PAGES 509, 510 & 511 OF THE DEED RECORDS OF WASHINGTON COUNTY, OREGON, LOCATED IN THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 1 OF TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

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CONTAINS 1936 SQUARE FEET MORE OR LESS

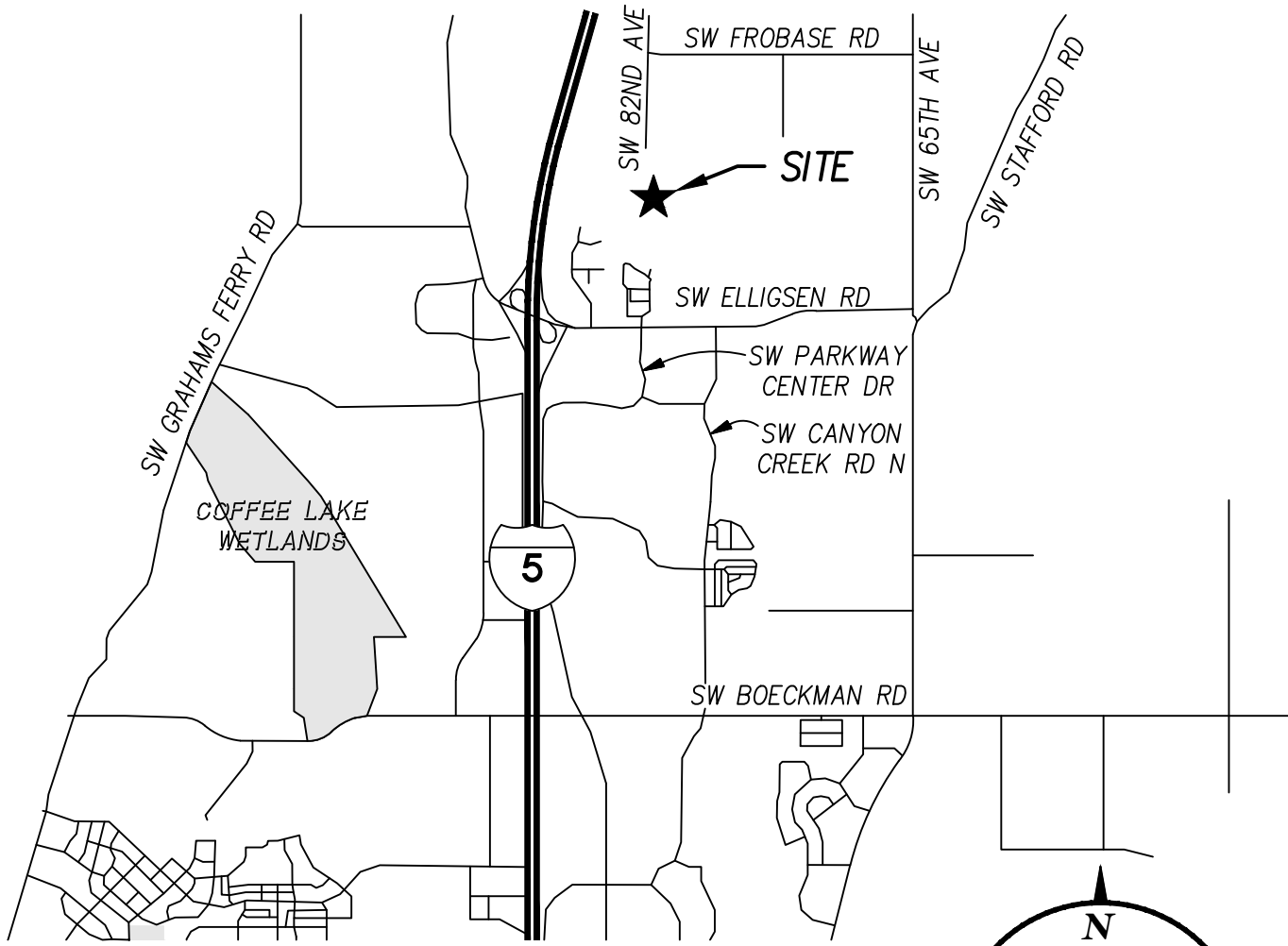
AS-BUILT SURVEY  
C800- WILSONVILLE WATER TANK TOWER

A TRACT OF LAND IN SECTION 1  
TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN  
IN WASHINGTON COUNTY, OREGON  
SURVEYED AUGUST 31, 2020



LOCATION MAP

SCALE: NOT TO SCALE



VICINITY MAP

SCALE: NOT TO SCALE

LEGEND

- PROPERTY BOUNDARY
- RIGHT-OF-WAY
- CENTER LINE
- LOT LINE
- RECORD LINE
- EASEMENT
- SURVEY MONUMENT AS NOTED



RENEWS 12-31-2022

AS-BUILT SURVEY  
C800 - WILSONVILLE WATER TANK TOWER  
WILSONVILLE OR 97070  
TAX LOT 3S1010000502

COMMUNICATIONS SYSTEM UPGRADE PROJECT  
CLACKAMAS 800 RADIO GROUP  
11300 SE FULLER RD., MILWAUKIE, OR 97222

REV.	DATE	DESCRIPTION	BY
1	2022/03/01	REVISED LEGAL DESCRIPTIONS ACCESS AND EASEMENT AREAS	KAID

McKay Consulting, LLC

(503) 648-6475

contact@mckayconsultingllc.com

REGISTERED PROFESSIONAL LAND SURVEYOR  
OREGON  
NOVEMBER 10, 2009  
KAID EDWARD MCKAY  
59859  
RENEWS: 12-31-2022

DESIGNED BY: KAID E. MCKAY
DRAWN BY: KAID E. MCKAY
CHECKED BY: KAID E. MCKAY
DATE: SEPTEMBER 3, 2020
REVISED ON: MARCH 1, 2022
JOB NAME: C800 - WILSONVILLE
JOB #: 16063

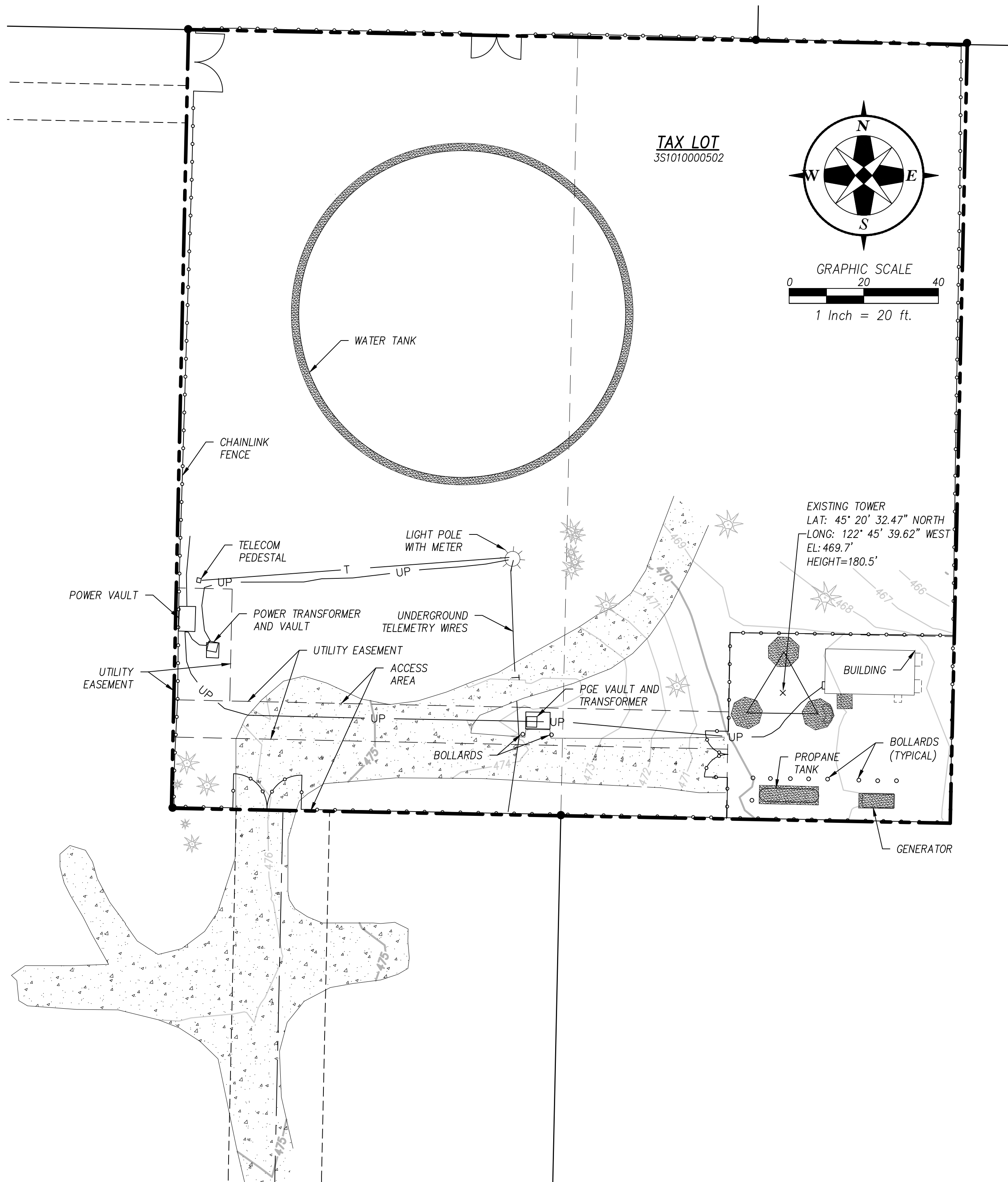
1 OF 2

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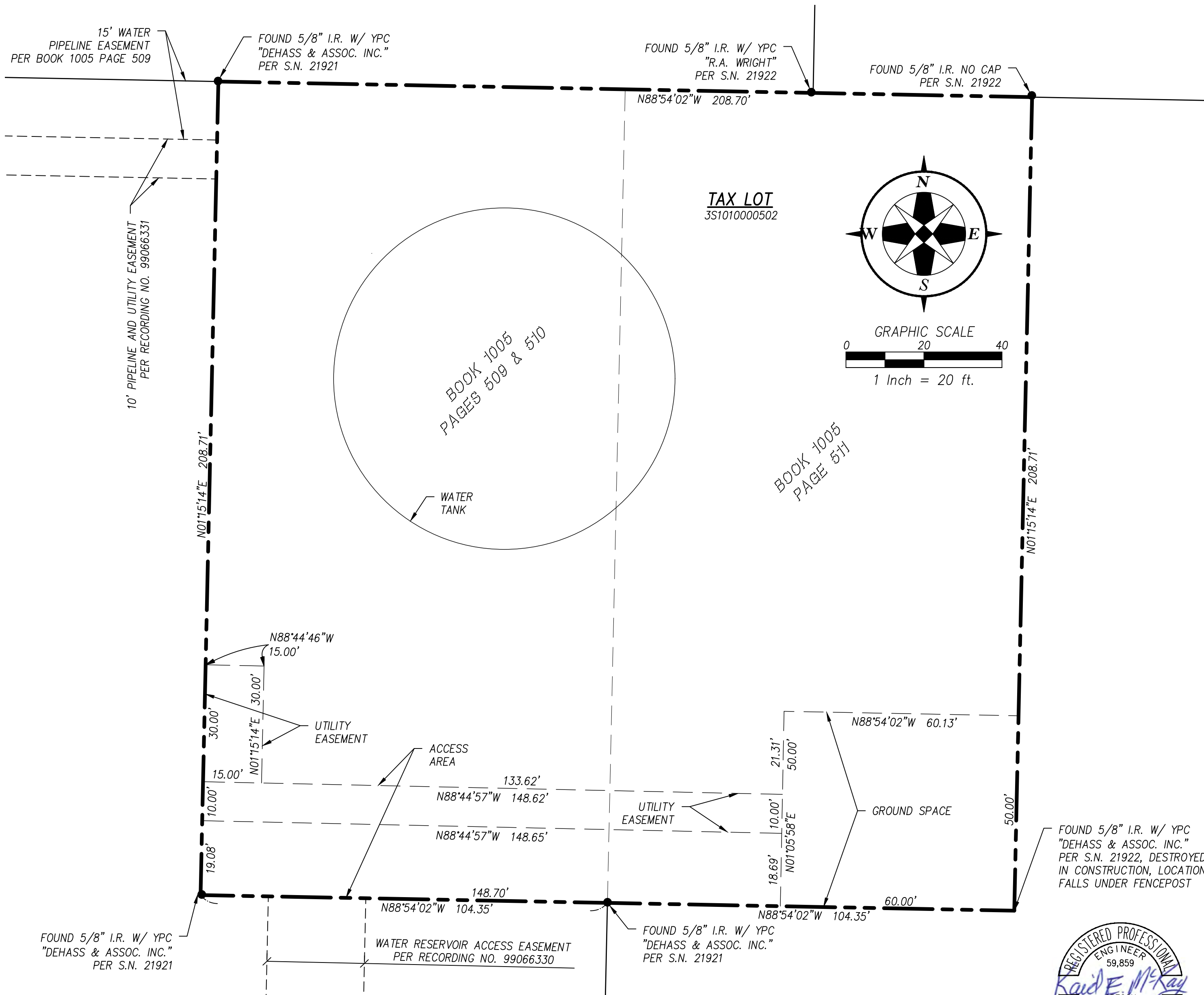
AS-BUILT SURVEY  
C800- WILSONVILLE WATER TANK TOWER

A TRACT OF LAND IN SECTION 1  
TOWNSHIP 3 SOUTH, RANGE 1 WEST OF THE WILLAMETTE MERIDIAN  
IN WASHINGTON COUNTY, OREGON  
SURVEYED AUGUST 31, 2020

LEGEND	
	PROPERTY BOUNDARY
	RIGHT-OF-WAY
	CENTER LINE
	LOT LINE
	RECORD LINE
	EASEMENT
	CONTOUR LINE
	CHAINLINK FENCE
	UP
	UNDERGROUND POWER
	CONCRETE PAVEMENT
	GRAVEL
	FOUND MONUMENT AS NOTED
	YPC
	IR
	YELLOW PLASTIC CAP
	IRON ROD
	TREE STUMP



TOPOGRAPHIC SURVEY  
SCALE: 1"=20'



LEASE AREA AND EASEMENTS  
SCALE: 1"=20'

AS-BUILT SURVEY  
C800 - WILSONVILLE WATER TANK TOWER  
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TAX LOT 351010000502

COMMUNICATIONS SYSTEM UPGRADE PROJECT  
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1	2022/03/01	REVISED GROUND, ACCESS AND EASMENT AREAS	KAD

McKay Consulting, LLC

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Kaid E. McKay  
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2 OF 2

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GENERAL NOTES:

1. DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSED ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE INSTALLATION AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS AND STANDARDIZED DETAILS THAT REQUIRE MODIFICATIONS DUE TO ACTUAL FIELD CONDITIONS AND REQUIREMENTS MUST BE SUBMITTED TO AND APPROVED BY OWNERS REPRESENTATIVE PRIOR TO START OF WORK.
3. PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER VERBALLY AND IN WRITING.
4. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, SAFETY, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.
8. THE CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED IN RED INK "FOR CONSTRUCTION" AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S/ENGINEER'S SIGNED WET STAMP.
9. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THE CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING CONSTRUCTION AND REPAIR ALL DAMAGES TO EQUAL OR BETTER NEW CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER OF ANY DAMAGE TO THE BUILDING SITE OR ANY ADJACENT STRUCTURES AROUND THE PROJECT. THE OWNERS REPRESENTATIVE SHALL BE SOLE AND FINAL JUDGE AS TO THE QUALITY OF THE REPAIRED CONSTRUCTION. ANY ADDITIONAL MODIFICATIONS WHICH MUST BE MADE SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
12. WHERE NEW PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
13. THE CONTRACTOR SHALL MODIFY THE EXISTING FLOORS, WALL, CEILING, OR OTHER CONSTRUCTION AS REQUIRED TO GAIN ACCESS TO AREAS FOR ALL MECHANICAL, PLUMBING, ELECTRICAL, OR STRUCTURAL MODIFICATIONS. WHERE THE EXISTING CONSTRUCTION DOORS, PARTITIONS, CEILING, ETC., ARE TO BE REMOVED, MODIFIED, OR REARRANGED OR WHERE THE EXPOSED OR HIDDEN MECHANICAL, ELECTRICAL, SYSTEMS ARE ADDED OR MODIFIED, THE GENERAL CONTRACTOR SHALL REPAIR, PATCH AND MATCH ALL EXISTING CONSTRUCTION AND FINISHES OF ALL FLOORS WALLS AND CEILINGS. WHERE CONCRETE MASONRY CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL TOOTH IN ALL NEW CONSTRUCTION TO MATCH THE EXISTING BOND. WHERE CONCRETE CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL VERIFY THE EXACT DETAILS TO BE USED FOR CONSTRUCTION. ALL WORK SHALL BE COVERED UNDER THE GENERAL CONTRACT.
14. IF CONTRACTOR OR SUBCONTRACTOR FIND IT NECESSARY TO DEVIATE FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUBCONTRACTOR'S RESPONSIBILITY TO PROVIDE THE PROJECT MANAGER WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.
15. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
16. THIS IS AN ESSENTIAL FACILITY THEREFORE SHALL STRICTLY MEET ALL APPLICABLE CODE AND JURISDICTIONAL REQUIREMENTS.

GENERAL NOTES CONTINUED:

17. THE CONTRACTOR SHALL PERFORM WORK DURING SITE/PROPERTY OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
18. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHAL APPROVED MATERIALS AS APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY LOCATES, SCHEDULING, COORDINATING SPECIAL AND BUILDING DEPARTMENT INSPECTIONS.
21. ROUTING OF ALL CONDUITS, CABLES, CABLE TRAYS ETC ARE INDICATED AS PROPOSED LOCATION ONLY. CONFIRM THE EXACT LOCATION AND ROUTING WITH THE ON SITE PROJECT MANAGER PRIOR TO STARTING WORK.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS (UNO).
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES CLASS "B" AND ALL HOOKS SHALL BE STANDARD (UNO).
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS: CONCRETE CAST AGAINST EARTH - 3 IN. CONCRETE EXPOSED TO EARTH OR WEATHER:  
#6 AND LARGER .....2 IN.  
#5 AND SMALLER & WWF .....1-1/2 IN.
5. A 1/2" TROWELED RADIUS SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE (UNO). HOLES TO RECEIVE EXPANSION/WEDGE ANCHORS SHALL BE 1/8" LARGER IN DIAMETER THAN THE ANCHOR BOLT, DOWEL OR ROD AND SHALL CONFORM TO MFR RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. AVOID CUTTING EXISTING REBAR WHEN DRILLING HOLES IN THE ELEVATED SLAB.
6. INSTALLATION OF CONCRETE EXPANSION AND WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURES.
7. FLOAT SURFACE SHALL BE A SMOOTH FINISH. SURFACE SHALL BE FREE OF ALL OBVIOUS DEPRESSIONS. SURFACE SHALL BE SLOPED AT 2% TO PROMOTE DRAINAGE AWAY FROM EQUIPMENT.

SITE WORK NOTES:

1. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY UNLESS OTHERWISE REQUIRED TO BE LEFT AS DEFINED BY LAND/PROPERTY OWNER.
2. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT, EQUIPMENT SHELTER, GENERATOR, FUEL TANK, TOWER AREAS, AND ADJACENT BUILDINGS, ETC.
3. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
4. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO THE CRUSHED STONE APPLICATION. FABRIC USE AS REQUIRED.
5. ALL APPLICABLE LOCATES SHALL BE PERFORMED PRIOR TO TO ANY EXCAVATION OR SITE GRADING. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND SHALL BE CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.
7. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING, DRIVEWAY OR CRUSHED STONE, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH AS SPECIFIED IN THE SPECIFICATION LANDSCAPE WORK..
8. BEDDING MATERIAL FOR UTILITY LINES, CULVERTS AND PIPING: CLEAN SAND, MEDIUM TP COARSE, SUB ROUNDED NATURAL RIVER OR BANK SAND, WASHED, FREE OF SILT OR CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS, AND ORGANIC MATTER; GRADED IN ACCORDANCE WITH THE FOLLOWING GRAIN SIZE DISTRIBUTION:

SIEVE SIZE	PERCENT PASSING
	100
NO. 4 MESH	60-90
NO. 8 MESH	0-45
NO. 16 MESH	0-25
NO. 100 MESH	0-2
NO. 200 MESH	0-2

9. BMP'S FOR TEMPORARY EROSION/SEDIMENTATION CONTROL SHALL BE IMPLEMENTED PER LOCAL, CITY OR COUNTY GUIDELINES AND PER PLAN IF APPLICABLE.

SITE WORK NOTES CONTINUED:

10. ALL SITE DESIGN AND CONSTRUCTION MUST COMPLY WITH THE MOST CURRENT VERSION OF R56 STANDARDS AND ALIGNED WITH R56 GUIDELINES AS TECHNICALLY APPLICABLE. EACH SITE MUST PASS AN R56 AUDIT OR PM APPROVED BEFORE IT SHALL BE CONSIDERED COMPLETE AND ACCEPTED.
11. IF INADVERTENT DISCOVERIES OF NATIVE AMERICAN CULTURAL MATERIALS OR HUMAN REMAINS ARE MADE DURING CONSTRUCTION, ALL WORK SHOULD CEASE AND POTENTIALLY AFFECTED TRIBES, AS WELL AS THE STATE HISTORIC PRESERVATION OFFICE, SHOULD BE NOTIFIED IMMEDIATELY.

TOWER/POLE NOTES:

1. ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.
2. ALL HARDWARE (NUTS AND BOLTS) BE TIGHTENED AND TORQUED IN ACCORDANCE WITH THE TOWER MANUFACTURER'S AND STRUCTURAL ENGINEER'S SPECIFICATIONS.
3. VERIFICATION THAT THE TOWER/POLE CAN SUPPORT THE PROPOSED ANTENNA LOADING IS TO BE DONE BY OTHERS.
4. PROVIDE SUPPORTS FOR THE ANTENNA COAX CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS. ANTENNA COAX CABLES ARE TO BE SUPPORTED AND RESTRAINED AT THE CENTERS SUITABLE TO THE MANUFACTURER'S REQUIREMENTS.

R56 NOTES:

1. ALL SITE DESIGN AND CONSTRUCTION MUST COMPLY WITH THE MOST CURRENT VERSION OF R56 STANDARDS AND ALIGNED WITH R56 GUIDELINES AS TECHNICALLY APPLICABLE. SITE MUST PASS AN R56 AUDIT BEFORE IT SHALL BE CONSIDERED COMPLETE AND ACCEPTED.

ATTENTION (OREGON SITES ONLY):

CALL 1-800-332-2344 48 HOURS BEFORE YOU DIG. OREGON LAW REQUIRES YOU TO FOLLOW OAR 952-001-0010 THRU 952-001-0090. COPIES ARE AVAILABLE AT THE OREGON UTILITY NOTIFICATION CENTER 503-232-1987

DESIGN LOADS:

PRE-FABRICATED SHELTER DESIGN BY OTHERS - PREFABRICATED STRUCTURES LOCATED IN OR BEING SHIPPED INTO OREGON SHALL REGISTER WITH THE STATE OF OREGON BUILDING CODES DIVISION AND APPROVED WITH STATE INSIGNIA (GOLD SEAL)

WIND DESIGN DATA -	ULTIMATE DESIGN WIND SPEED:	130 MPH
	RISK CATEGORY:	II
	WIND EXPOSURE:	C
	INTERNAL PRESSURE COEFFICIENT:	0.18±
	DESIGN WIND PRESSURES:	
	WIND LOAD HORIZONTAL (MWFRS):	18.36 PSF
	WIND LOAD (UPLIFT) (MWFRS):	39.00 PSF
	WIND LOAD HORIZONTAL (COMPONENT AND CLADDING):	35.09 PSF
EARTHQUAKE DESIGN DATA - (PER GEO. RPT. 11/23/16)	RISK CATEGORY:	IV
	SEISMIC IMPORTANCE FACTOR:	1.5
	MAPPED SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S <sub>s</sub>	0.938
	S <sub>1</sub>	0.406
	SITE CLASS:	C
	DESIGN SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S <sub>0.5</sub>	0.641
	S <sub>0.1</sub>	0.378
	SEISMIC DESIGN CATEGORY:	D
SYSTEM:	BASIC SEISMIC FORCE-RESISTING BEARING WALL	
	DESIGN BASE SHEAR:	0.1W
	SEISMIC RESPONSE COEFFICIENT:	0.3
	RESPONSE MODIFICATION COEFFICIENT:	2.00
	ANALYSIS PROCEDURE USED:	EQUIVALENT LATERAL FORCE PROCEDURE
	DESIGN LOAD-BEARING VALUES OF SOIL:	2000 PSF (GEO. RPT. 11/23/16)
GEOTECHNICAL INFORMATION -		

SYMBOLS LEGEND

	REVISION		ROOM NUMBER
	KEY NOTE DETAIL		SECTION REFERENCE
	REFERENCE ELEVATION		ELEVATION DATUM POINT
	REFERENCE		
CHAINLINK FENCE			
CEDAR FENCE			
POWER			

<div>”AS-BUILT”</div> <div>THE "AS-BUILT" INFORMATION ON THIS SHEET WAS PROVIDED BY THE CONTRACTOR. CONDITIONS MAY VARY FROM THESE "AS-BUILT" DRAWINGS.</div> <div><div>SIGNED</div><div>1/4/2021 DATE</div></div>			
ABBREVIATIONS LEGEND			
A/C ADJ AFF AGL APPROX ASTM	AIR CONDITIONING ADJUSTABLE ABOVE FINISH FLOOR ABOVE GRADE LEVEL APPROXIMATELY AMERICAN SOCIETY FOR TESTING & MATERIALS AMERICAN WIRE GAUGE BUILDING BLOCK BMR B/S CLG CLR CONC CONST CONT DBL DIA, Ø DIAG DIM DN DTL, DETL DWG E EA EL, ELEV ELECT EQ EQUIP E.W. EXIST EXT FIN FLUOR FLR FT GA GALV GC GRND GWB GYP BD HARD'WD HORIZ HR HT HVAC	MET, MTL MFR MGR MIN MISC N NA NIC NTS OC, o/c OD OPG OPP OHP UGP OHT UGT PLYWD PR PROJ PROP PT REQ'D RM R.O. S SHT SIM SPEC SQ SS STL STRUCT SUSP S.V. THRU TNND T.O.C. T.O.M. TYP UBC U.N.O.	METAL MANUFACTURER MANAGER MINIMUM MISCELLANEOUS NORTH NOT APPLICABLE NOT IN CONTRACT NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPENING OPPOSITE OVERHEAD POWER UNDRGRND POWER OVERHEAD TELCO UNDRGRND TELCO PLYWOOD PAIR PROJECT PROPERTY PRESSURE TREATED REQUIRED ROOM ROUGH OPENING SOUTH SHEET SIMILAR SPECIFICATION SQUARE STAINLESS STEEL STEEL STRUCTURAL SUSPENDED SHEET VINYL THROUGH TINNED TOP OF CONCRETE TOP OF MASONRY TYPICAL UNIFORM BUILDING CODE UNLESS NOTED OTHERWISE VERTICAL VERIFY IN FIELD VINYL TILE WEST WITH WINDOW WITHOUT WATERPROOF ANGLE AND CENTER LINE PROPERTY LINE AT NUMBER
OVERHEAD POWER			
TELCO			
POWER/TELCO			
GAS			
WATER			
COAX			
CENTERLINE			
EASEMENT			
PROPERTY LINE			



PROJECT INFORMATION:

C-4  
WILSONVILLE  
TANK  
8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

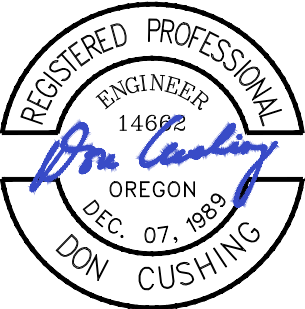
DATE	RELEASE
7/21/17	PRELIM. CONSTRUCTION SUBMITTAL
8/18/17	FINAL CONSTRUCTION SUBMITTAL
9/21/17	UPDATED GEN. & PROP. TANK SHT
1/12/18	FINAL CONSTRUCTION SUBMITTAL
2/23/18	FINAL CONSTRUCTION SUBMITTAL
6/20/19	FINAL CONSTRUCTION SUBMITTAL
7/9/19	FINAL CONSTRUCTION SUBMITTAL
7/18/19	FINAL CONSTRUCTION SUBMITTAL
7/23/19	FINAL CONSTRUCTION SUBMITTAL
9/12/19	PLAN CHECK #1
1/4/21	AS-BUILTS
5/16/22	AS-BUILTS (CLIENT REV.)

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PLANS PREPARED BY:



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PORTLAND, OR 97214  
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LICENSURE:



RENEWAL DATE 12/31/21

SHEET TITLE:

GENERAL  
NOTES

SHEET NUMBER:

G-1

1. THE OWNER SHALL EMPLOY THE ENGINEER REGISTERED IN THE STATE OF OREGON WHO IS RESPONSIBLE FOR THE STRUCTURAL DESIGN TO DO STRUCTURAL OBSERVATION. 72 HOURS NOTICE IS REQUIRED FOR MEETINGS AND OBSERVATIONS.
2. NAME OF ENGINEER RESPONSIBLE FOR THE STRUCTURAL DESIGN : JESSE J. JARAMILLO, REGISTRATION NUMBER OF ENGINEER RESPONSIBLE FOR THE STRUCTURAL DESIGN : 51361PE
3. THE ENGINEER RESPONSIBLE FOR THE STRUCTURAL OBSERVATION THE CONTRACTOR, AND APPROPRIATE SUBCONTRACTORS SHALL HOLD A PRE CONSTRUCTION MEETING TO REVIEW THE DETAILS OF THE STRUCTURAL SYSTEM TO BE STRUCTURALLY OBSERVED.
4. THE FOLLOWING STRUCTURAL ELEMENTS ARE TO BE OBSERVED (BUT ARE NOT LIMITED TO) PRIOR TO THE FOUNDATION INSPECTION BY THE BUILDING DEPARTMENT AND THE PLACEMENT OF THE CONCRETE FOR THE FOUNDATION:
  - a.) SHELTER FOOTING/SLAB SIZES AND REINFORCEMENT PLACEMENT
  - b.) GENERATOR SUPPORT SLAB SIZES AND REINFORCEMENT PLACEMENT
  - c.) PROPANE TANK SUPPORT SLAB SIZES AND REINFORCEMENT PLACEMENT
5. ENGINEER OF RECORD OR THE DESIGNATED ENGINEER SHALL SUBMIT REPORTS ON THE FORM PRESCRIBED BY THE GOVERNING JURISDICTION.

### REQUIRED GEOTECHNICAL SPECIAL INSPECTIONS

REQUIRED GEOTECHNICAL SPECIAL INSPECTIONS					
SYSTEM or MATERIAL	BK CODE REFERENCE	DOSE or STANDARD REFERENCE	INSPECTION FREQUENCY		REMARKS
			Continuous	Periodic	
<b>SOILS</b>					
GEOTECHNICAL INVESTIGATIONS	"TABLE 100.9				GEOTECHNICAL INVESTIGATION SHALL INCLUDE ITEMS OF SPECIAL INSPECTION AND TESTING AS NOTED IN TABLES OF THE SPECIFICATIONS
VERIFY MATERIALS BELOW GROUND	"TABLE 100.9				
FOUNDATIONS ARE AS NOTED TO ACHIEVE THE DESIGN BEARING CAPACITY	"TABLE 100.9		X		BY THE GEOTECHNICAL ENGINEER
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	"TABLE 100.9		X		
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	"TABLE 100.9		X		TESTING OF COMPACTED FILL MATERIALS SEE TABLE 100.9.1
VERIFY USE OF PROPER MATERIALS					
IDENTIFY AND REPORT THICKNESSES OF LAYERS PLACED IN EXCAVATION OR COMPACTION OF COMPACTED FILL	"TABLE 100.9		X		BY THE GEOTECHNICAL ENGINEER
PRIOR TO PLACEMENT OF COMPACTED FILL					
TEST SUBSTRATE AND VERIFY THAT SITE IS AS BEING PREPARED PROPERLY	"TABLE 100.9		X		
<b>CAST-IN-PLACE DEEP FOUNDATION ELEMENTS</b>					
DRILLING AND TESTING	"TABLE 100.9		X		BY THE GEOTECHNICAL ENGINEER
OBSERVE DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT	"TABLE 100.9		X		
VERIFY PLACEMENT DIMENSIONS AND PLACEMENTS OF EACH ELEMENT					
DIMENSIONS IN FEET AND INCHES	"TABLE 100.9		X		
APPLICABLE LIMITS OF EMBEDMENT INTO BED ROCK, IF APPLICABLE, AND ADJUTATE END BEARING CAPACITY RECORDS	"TABLE 100.9				
FOR COMPLETION OF EACH ELEMENT					
ADDITIONAL INSPECTIONS AS ACCORDANCE WITH SECTION 100.9	"TABLE 100.9				

### REQUIRED SPECIAL INSPECTIONS for WIND RESISTANCE

REQUIRED SPECIAL INSPECTIONS FOR WIND RESISTANCE					
SYSTEM or MATERIAL	IBC CODE REFERENCE	CODE or STANDARD REFERENCE	INSPECTION		REMARKS
			FREQUENCY		
			Continuous	Periodic	
NAILING, BOLTING, ANCHORING AND OTHER FASTENING OF COMPONENTS WITHIN THE MAIN WIND-FORCE-RESISTING SYSTEM INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES AND HOLD-DOWNS	1705.10.1			X (a)	SPECIAL INSPECTIONS ARE NOT REQUIRED FOR WOOD SHEAR WALLS AND DIAPHRAGMS WHERE THE FASTENER SPACING IS MORE THAN 4 INCHES ON CENTER OR FOR COLD-FORMED CONSTRUCTION WHERE THE SHEATHING IS GYPSUM BOARD, FIBERBOARD, OR WOOD STRUCTURAL PANEL OR STEEL SHEET ON ONE SIDE ONLY AND FASTENER SPACING IS MORE THAN 4" O.C.
FIELD GLUING OPERATIONS OF ELEMENTS OF THE MAIN WIND-FORCE-RESISTING SYSTEM	1705.10.1		X		
COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION	1705.10.2			X (a)	SPECIAL INSPECTIONS ARE REQUIRED FOR WELDING OPERATIONS OF ELEMENTS OF THE MAIN WIND-FORCE-RESISTING SYSTEM.  SPECIAL INSPECTION IS REQUIRED FOR SCREW ATTACHMENT, BOLTING, ANCHORING AND OTHER FASTENING OF COMPONENTS WITHIN THE MAIN WIND-FORCE-RESISTING SYSTEM, INCLUDING SHEAR WALLS, BRACES, DIAPHRAGMS, COLLECTORS AND HOLD DOWNS
ROOF CLADDING AND WALL CLADDING	1705.10.3			X (a)	

## STRUCTURAL OBSERVATION

SYSTEM or MATERIAL	INSPECTION				REMARKS
	IBC CODE REFERENCE	CODE or STANDARD REFERENCE	FREQUENCY		
			Continuous	Periodic	
AS REQUIRED BY THE DESIGN PROFESSIONAL	1704.5				
SEISMIC RESISTANCE	1704.5.1			X (a)	SEE COMMENTARY
WIND REQUIREMENTS	1704.5.2			X (a)	SEE COMMENTARY

### REQUIRED STRUCTURAL SPECIAL INSPECTIONS

[illegible]

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1/4/2021  
DATE

[illegible]

**PROJECT INFORMATION:**

C-4  
WILSONVILLE  
TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
7/21/17	PRELIM. CONSTRUCTION SUBMITTAL
8/18/17	FINAL CONSTRUCTION SUBMITTAL
9/21/17	UPDATED GEN. & PROP. TANK SHT
11/12/18	FINAL CONSTRUCTION SUBMITTAL
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6/20/19	FINAL CONSTRUCTION SUBMITTAL
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 5/16/22	AS-BUILTS (CLIENT REV.)

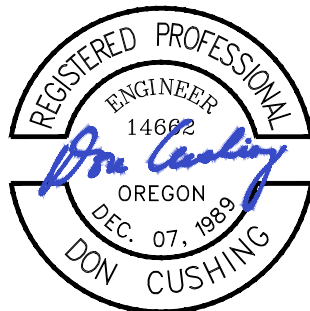
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**PLANS PREPARED BY:**



**Don Cushing Associates**  
**Civil Engineers**

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**LICENSURE:**



RENEWAL DATE 12/31/21

**SHEET TITLE:**

## SPECIAL INSPECTIONS

SHEET NUMBER:

# G-2

TABLE 5 REQUIRED TESTING FOR SPECIAL INSPECTIONS					
SYSTEM or MATERIAL	TESTING				REMARKS
	IBC CODE REFERENCE	CODE or STANDARD REFERENCE	FREQUENCY		
			Continuous	Periodic	
GEOTECHNICAL					
GEOTECHNICAL ENGINEER TO PERFORM TESTING OF COMPACTED FILL MATERIALS	1803	VARIETY, CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS			TESTING PER GEOTECHNICAL REPORT
FILL IN PLACE DENSITY OR WET/PAVED SUBGRADE DENSITY	1705.8			X (a)	BY THE GEOTECHNICAL ENGINEER
MATERIAL VARIATION				X (a)	BY THE GEOTECHNICAL ENGINEER
TENSION ANCHORS	1705.8		PERFORMANCE TEST FIRST ON ANCHORS TO WALLS AND PROOF LOAD REMAINING ANCHORS TO WALLS		PER GEOTECHNICAL REPORT
CONCRETE					
AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PLUS ONE SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	TABLE F 1705.3	ASTM C 170 ASTM C 31 ASTM C 569		X	FABRICATE SPECIMENS AT TIME FRESH CONCRETE IS PLACED
CONCRETE STRENGTH	TABLE 1705.3	ASTM C 39		X	ONCE EACH DAY FOR A GIVEN CLASS OF CONCRETE, OR LESS THAN ONCE FOR EACH 100 YDS OF CONCRETE, OR LESS THAN ONCE FOR EACH 5,000 FT <sup>2</sup> OF SURFACE AREA FOR SLAB WALLS. ONCE EACH SHIFT FROM IN-PLACE WORK OR FROM TEST PANEL AND MINIMUM ONE SPECIMEN FOR EACH 60 CUBIC YARDS AND CONSTRUCTION TESTS AS REQUIRED PER THE BUILDING OFFICIAL.
CONCRETE SLUMP CONCRETE AIR CONTENT CONCRETE TEMPERATURE	TABLE 1705.3	ASTM C 143 ASTM C 231 ASTM C 1064		X X X	
SHOTCRETE STRENGTH	1910.10	ASTM C 42		X	PER 1910.10 - SPECIMENS SHALL BE TAKEN FROM THE IN- PLACE OR FROM TEST PANELS AND SHALL BE TAKEN AT LEAST ONCE EACH SHIFT, BUT NOT LESS THAN ONCE FOR EACH 50 CUBIC YARDS OF SHOTCRETE
STEEL					
MAGNETIC PARTICLE (MT) AND ULTRASONIC (UT) TESTING OF WELDS	1705.2.2	MT - AWS D1.1 6.14.4 UT - AWS D1.1 6.13.8 6.14.3			PER DRAWINGS
PRE CONSTRUCTION TESTING OF WELDING STUDS	1705.2.2	AWS D1.1 7.7.1			EACH SIZE AND TYPE OF STUD EACH SHIFT
STUD APPLICATION QUALIFICATION	1705.2.2	AWS D1.1 7.6			NON-PROQUALIFIED APPLICATIONS
PRE-INSTALLATION VERIFICATION OF PRETENSIONED HIGH STRENGTH BOLTS	1705.2.2	RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A308 BOLTS SECTION 052000-2			EACH COMBINATION OF DIAMETER, LENGTH, GRADE AND LOT TO BE USED IN THE WORK

TABLE 6 REQUIRED SPECIAL INSPECTIONS for SEISMIC RESISTANCE (SEISMIC CATEGORIES C, D, E, F)					
SYSTEM or MATERIAL	INSPECTION			REMARKS	
	IBC CODE REFERENCE	CODE or STANDARD REFERENCE	FREQUENCY		
			Continuous Periodic		
CONCRETE					
CONCRETE TO DETERMINE CRACK PATTERNS (CRACK MAPS) (CRACK SIZE & MAP)	1705.11.11			X (a)	
REINFORCEMENT TO BE PLACED IN SPECIFIC MOMENT RESISTING FRAME AND BOUNDARY ELEMENTS OF SPECIAL MOMENT RESISTING FRAMES AND SPECIAL REINFORCEMENT	1705.12.1 TABLE 1705.3	ACI 318-11.5 AWS D1.1.4 AWS D1.1.2		X	INCE CERTAIN THERE QUALITY TEST REPORTS OF INSTRUMENTED JOINTS, BUT IS NOT LIMITED TO, THE PLACEMENT, STRENGTH, PLACEMENT LOCATION AND VERTICAL POSITION OF REINFORCEMENT IN THE
CRACKING OF REINFORCED CONCRETE IN MOMENT RESISTING FRAMES	1705.11.1 TABLE 1705.3	ACI 318-11.5.1 ACI 318-11.5.2 ACI 318-11.5.3 ACI 318-11.5.4		X	
STEEL					
WELDING OF THE SEISMIC FORCE RESISTING SYSTEM	1705.11.1	AWSD1.1.9 AWSD1.6 AWSD1.6			REFER TO TABLE 2 OF CALIBRATED FORCE APPLICATION AND WELDING OFFICIAL INSPECTION REQUIREMENTS (NUMBER OF INSPECTIONS) TO CLARIFY VARIATE THE DEGREE OF INSPECTIONS ON DRAWINGS
HIGH STRENGTH BOLT INSTALLATION IN THE SEISMIC FORCE RESISTING SYSTEM		AWSD1.1.7 RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A308 BOLTS			REFER TO TABLE 2 OF HIGH STRENGTH BOLT INSPECTION REQUIREMENTS
SEISMIC FORCE RESISTING FRAME SYSTEMS	1705.11.1			X	SEE CON INSPECTION ONLY TO CONFIRM FINISH AND DIMENSIONAL TOLERANCES
SEISMIC FORCE RESISTING SYSTEM PRELIMINARY QUALITY		AWSD1.1.8		X	SEE CON INSPECTION ONLY TO CONFIRM THAT THE ARE NOT USED OR UNAPPROVED ALTERNATE AND DIMENSIONAL TOLERANCES
ELECTRICAL COMPONENTS					
INSTALLATION OF ANCHORS OF ELECTRICAL EQUIPMENT FOR METERS OR STANDARD POWER RECEPTS	1705.11.6			X (a)	
INSTALLATION OF ANCHORS OF ALL ELECTRICAL EQUIPMENT IN SPECIFIC ONLY	1705.11.6			X (a)	
INSTALLATION OF VARIATION OF ELECTRICAL EQUIPMENT TO BE USED TO CONFIRM THE CONSTRUCTION DOCUMENTS REQUIRE A NORMAL CLEARANCE OF 0.25 INCHES FOR ELECTRICAL IN THE EQUIPMENT SUPPORT FRAME AND/OR STRUT	1705.11.6			X (a)	
INSTALLATION OF OTHER EQUIPMENT SUPPORTS OR CONNECTIONS TO OTHER SYSTEMS AND/OR EQUIPMENT	1705.11.6			X (a)	
PROCESS MECHANICAL COMPONENTS					
INSTALLATION OF THERMAL INSULATION ON PROCESS MECHANICAL EQUIPMENT AND/OR INSULATION AND/OR INSULATION ON MECHANICAL UNITS	1705.11.6			X (a)	
INSTALLATION OF OTHER MECHANICAL EQUIPMENT OR CONNECTIONS TO OTHER SYSTEMS AND/OR EQUIPMENT	1705.11.6			X (a)	

”AS-BUILT”

THE "AS-BUILT" INFORMATION ON THIS SHEET WAS PROVIDED BY THE CONTRACTOR. CONDITIONS MAY VARY FROM THESE "AS-BUILT" DRAWINGS.

*John Kelly*

SIGNED \_\_\_\_\_ DATE 1/4/2021

TABLE 7 REQUIRED TESTING for SEISMIC RESISTANCE SPECIAL INSPECTIONS					
SYSTEM or MATERIAL	TESTING				REMARKS
	IBC CODE REFERENCE	CODE or STANDARD REFERENCE	FREQUENCY		
			Continuous	Periodic	
CONCRETE REINFORCEMENT					
TEST AS IS REINFORCEMENT USED TO RESIST EARTHQUAKE INDUCED LOAD IN SPECIAL MOMENT FRAMES SPECIAL STRUCTURAL WALLS AND END COUPLING BEAMS OR RECTANGULAR WALLS IN STRUCTURE ASSIGNED TO SEISMIC DESIGN CATEGORY B, C, D, E AND F	1705.12.1	ACI 318-11.5.2	X (b)	X (a)	NOT REQUIRED WHEN CERTIFIED TALL TEST REPORTS ARE PROVIDED
TEST AS IS REINFORCEMENT FOR WELDABILITY WHEN SUCH REINFORCEMENT IS TO BE WELDED	1705.12.1	ACI 318-11.5.2		X (a)	
STEEL					
UT OF BASE METAL THICKER THAN 1/2" SUBJECT TO THROUGH THICKNESS WELD SHRINKAGE STRAINS	1705.12.2	ASC 341 J6.2e AWS D1.8 AWS D1.1		BEHIND AND ADJACENT TO FUSION LINE OF EACH WELD	
UT OF AREA OF ROLLED WIDE FLANGE COUPLERS ADJACENT TO DOUBLE CONTINUITY STITCHER PLATE WELDS	1705.12.2	ASC 341 J6.2e AWS D1.8 AWS D1.1		EACH PLATE LOCATION	
MAGNETIC PARTICLE (MT) AND ULTRASONIC (UT) TESTING OF COMPLETE JOINT PENETRATION GROOVE COUPLER WELDS IN MATERIALS 3/16" THICK AND GREATER	1705.12.2	ASC 341 J6.2e AWS D1.8 AWS D1.1	UT 100% OF WELDS MT 25% OF WELDS REFER TO DRAWINGS FOR LOCATIONS		IBC 1705.11.1 AND 1705.12.2 REQUIRE SPECIAL INSPECTIONS AND RELATED TESTING FOR STRUCTURAL STEEL. FOR THE SEISMIC FORCE RESISTING SYSTEM TO COMPLY WITH THE REQUIREMENTS OF ASC 341, THE REGISTERED DESIGN PROFESSIONAL IS RESPONSIBLE. CHARGE SPECIFIES THE PLAN WHICH SHOULD BE PROVIDED TO THE CONTRACTOR AS PART OF THE BID DOCUMENTS AND SHOULD BE CLEARLY IDENTIFIED AS SUCH. ASC RECOMMENDS THAT ASC 341 CHAPTER J QUALITY CONTROL AND QUALITY ASSURANCE BE ADOPTED. ASC 341B INCLUDES COMMENTARY WHICH WILL BE HELPFUL TO ENGINEERS SPECIFYING PROJECT PLANS.
PT OR MT OF THERMALLY CUT SURFACES OF BEAM COUPERS AND ACCESS HOLES AT WELDED SPICES AND CONNECTIONS WHEN THE FLANGE THICKNESS EXCEEDS 1 1/2" FOR ROLLED SHAPES OR THE WEB THICKNESS EXCEEDS 1 1/2" FOR BUILT-UP SHAPES	1705.12.2	ASC 341 J6.2e AWS D1.8 AWS D1.1		EACH LOCATION	
UT OF THE WELD AND ADJACENT AREA IN A REDUCED BEAM SECTION (RBS) PLASTIC HINGE REGION REPAIRED BY WELDING OR BY GRINDING OF SHARP NOTCHES	1705.12.2	ASC 341 J6.2e AWS D1.8 AWS D1.1		EACH LOCATION	
UT OF THE ENDS OF FLANGE WELDS FROM WHICH WELD FACES HAVE BEEN REMOVED	1705.12.2	ASC 341 J6.2e AWS D1.8 AWS D1.1		EACH TESTED COUPLER WELD LOCATION	



PROJECT INFORMATION:

C-4  
WILSONVILLE  
TANK  
8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
7/21/17	PRELIM. CONSTRUCTION SUBMITTAL
8/18/17	FINAL CONSTRUCTION SUBMITTAL
9/21/17	UPDATED GEN. & PROP. TANK SHT
11/22/18	FINAL CONSTRUCTION SUBMITTAL
2/23/18	FINAL CONSTRUCTION SUBMITTAL
6/20/19	FINAL CONSTRUCTION SUBMITTAL
7/9/19	FINAL CONSTRUCTION SUBMITTAL
7/18/19	FINAL CONSTRUCTION SUBMITTAL
7/23/19	FINAL CONSTRUCTION SUBMITTAL
7/23/19	PLAN CHECK #1
1/4/21	AS-BUILTS
5/16/22	AS-BUILTS (CLIENT REV.)

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PLANS PREPARED BY:



Don Cushing Associates  
Civil Engineers  
107 SE WASHINGTON STREET  
SUITE 265  
PORTLAND, OR 97214  
(503) 387-5331  
www.cushing-engr.com

LICENSURE:



RENEWAL DATE 12/31/21

SHEET TITLE:

SPECIAL  
INSPECTIONS  
II

SHEET NUMBER:

G-3

NOTE: PER MAY 1999 AS-BUILTS,  
PROPOSED LOCATION OF C800  
COMPOUND DOES NOT INTERFERE  
WITH WATER TANK'S EXISTING  
UNDERGROUND UTILITY SYSTEMS  
(FIELD VERIFY)

”AS-BUILT”

THE "AS-BUILT" INFORMATION ON THIS SHEET WAS  
PROVIDED BY THE CONTRACTOR. CONDITIONS MAY  
VARY FROM THESE "AS-BUILT" DRAWINGS.

*Don Cushing*

SIGNED

1/4/2021  
DATE

ADJACENT PROPERTY  
TAX LOT: 3S1010002500  
ZONING: EFU (EXCLUSIVE  
FARM USE)  
USE: CITY OF TUALATIN  
WATER TANK FACILITY

ADJACENT PROPERTY  
TAX LOT: 3S1010002400  
ZONING: EFU (EXCLUSIVE FARM USE)  
USE: LIGHT FORESTED AREA WITH  
NO BUILDINGS, APPEARS TO BE  
USED FOR HORSE PATHS

**CLATSOP**  
**SUBDIVISION**  
**ENGINEERS**  
11300 SE Fuller Rd  
Milwaukie, Oregon 97222  
(503) 780-4800

PROJECT INFORMATION:

C-4  
WILSONVILLE  
TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
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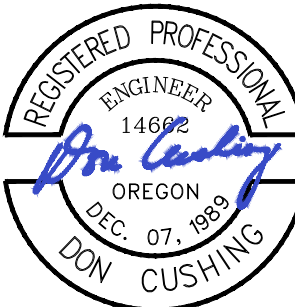
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**PLANS PREPARED BY:**

**cushing**  
Civil Engineers

**Don Cushing Associates**  
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(503) 387-5331  
[www.cushing-engr.com](http://www.cushing-engr.com)

LICENSURE:



RENEWAL DATE 12/31/21

SHEET TITLE:

**EXISTING SITE  
CONDITIONS PLAN**

SHEET NUMBER:

C-1

EXISTING SITE CONDITIONS PLAN

11X17 SCALE: 1" = 10'

22X34 SCALE: 1" = 20'

1

11X17 SCALE: 1" = 150'

22X34 SCALE: 1" = 300'

2

## NOTES:

1. PER MAY 1999 AS-BUILTS, PROPOSED LOCATION OF C800 COMPOUND DOES NOT INTERFERE WITH WATER TANK'S EXISTING UNDERGROUND UTILITY SYSTEMS (FIELD VERIFY)
2. 3 STRAND BARB WIRE SHALL BE INCLUDED ON ALL REPLACED AND RELOCATED PERIMETER FENCING.

ADJACENT PROPERTY  
TAX LOT: 3S1010002500  
ZONING: EFU (EXCLUSIVE FARM USE)  
USE: CITY OF TUALATIN WATER TANK FACILITY

ADJACENT PROPERTY  
TAX LOT: 3S1010002400  
ZONING: EFU (EXCLUSIVE FARM USE)  
USE: LIGHT FORESTED AREA WITH NO BUILDINGS, APPEARS TO BE USED FOR HORSE PATHS



## PROJECT INFORMATION:

## C-4 WILSONVILLE TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
7/21/17	PRELIM. CONSTRUCTION SUBMITTAL
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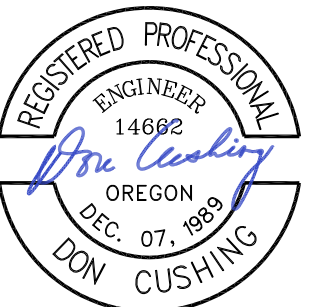
## PLANS PREPARED BY:



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Civil Engineers**

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(503) 387-5331  
[www.cushing-engr.com](http://www.cushing-engr.com)

## LICENSURE:



RENEWAL DATE 12/31/21

## SHEET TITLE:

## PROPOSED SITE DEVELOPMENT PLAN

## SHEET NUMBER:


C-1.1

NOTE: PER MAY 1999 AS-BUILTS, PROPOSED LOCATION OF C800 COMPOUND DOES NOT INTERFERE WITH WATER TANK'S EXISTING UNDERGROUND UTILITY SYSTEMS (FIELD VERIFY)

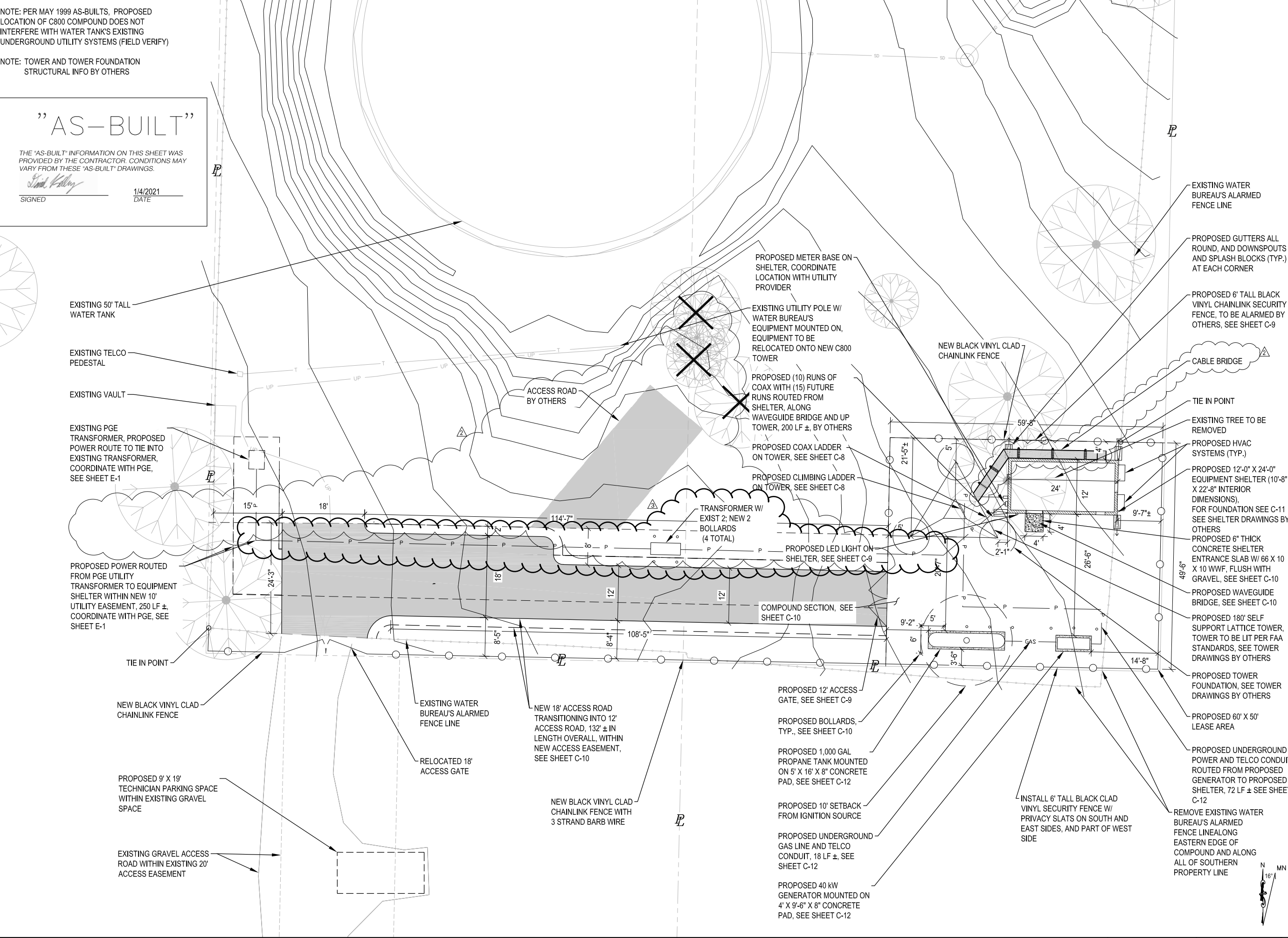
NOTE: TOWER AND TOWER FOUNDATION STRUCTURAL INFO BY OTHERS

”AS-BUILT”

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SIGNED

1/4/2021  
DATE



PROJECT INFORMATION:

C-4  
WILSONVILLE  
TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
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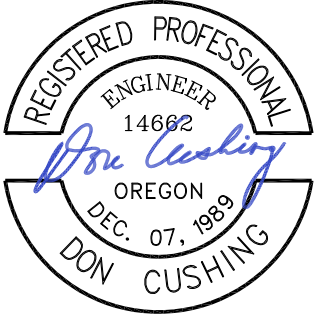
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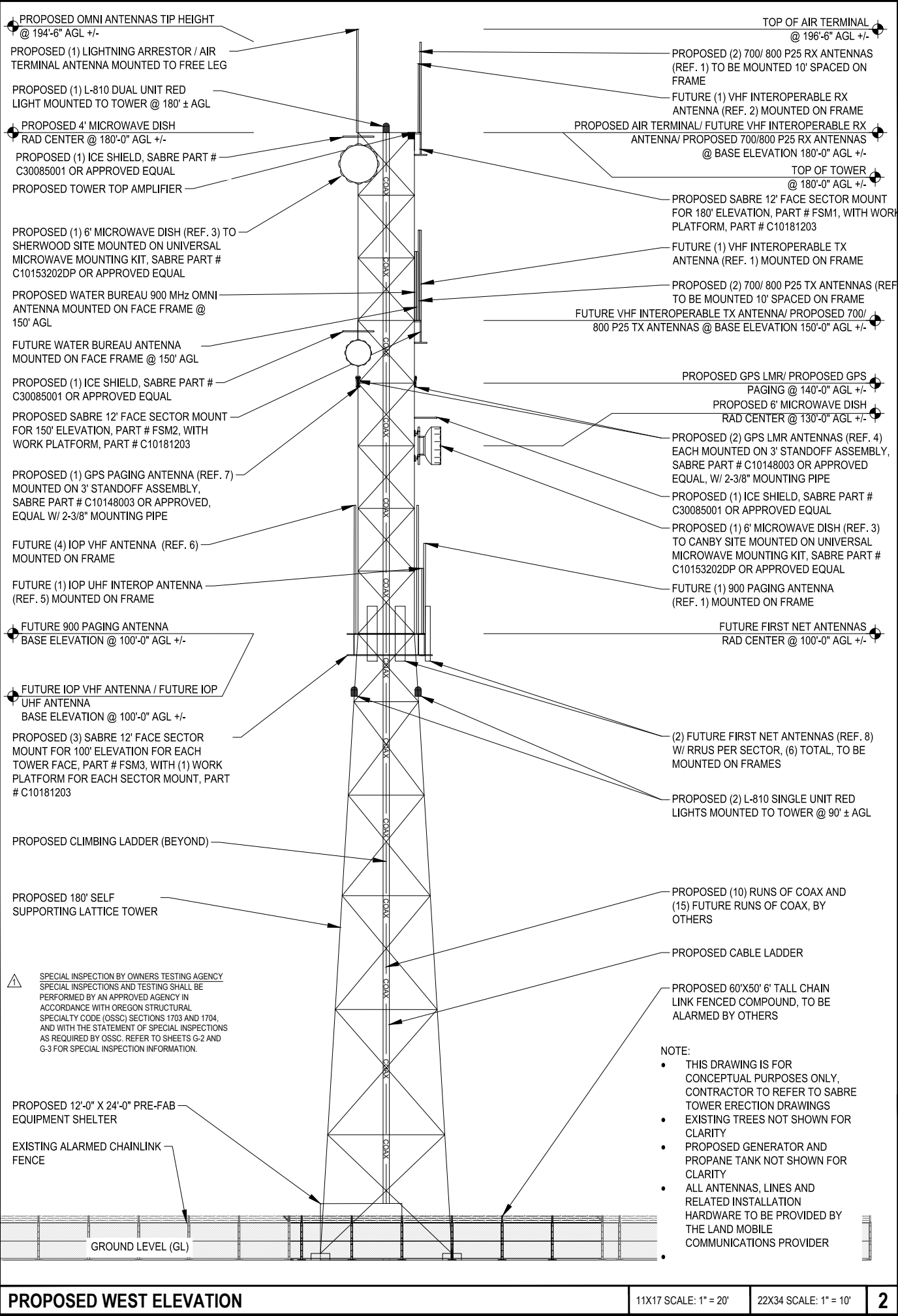
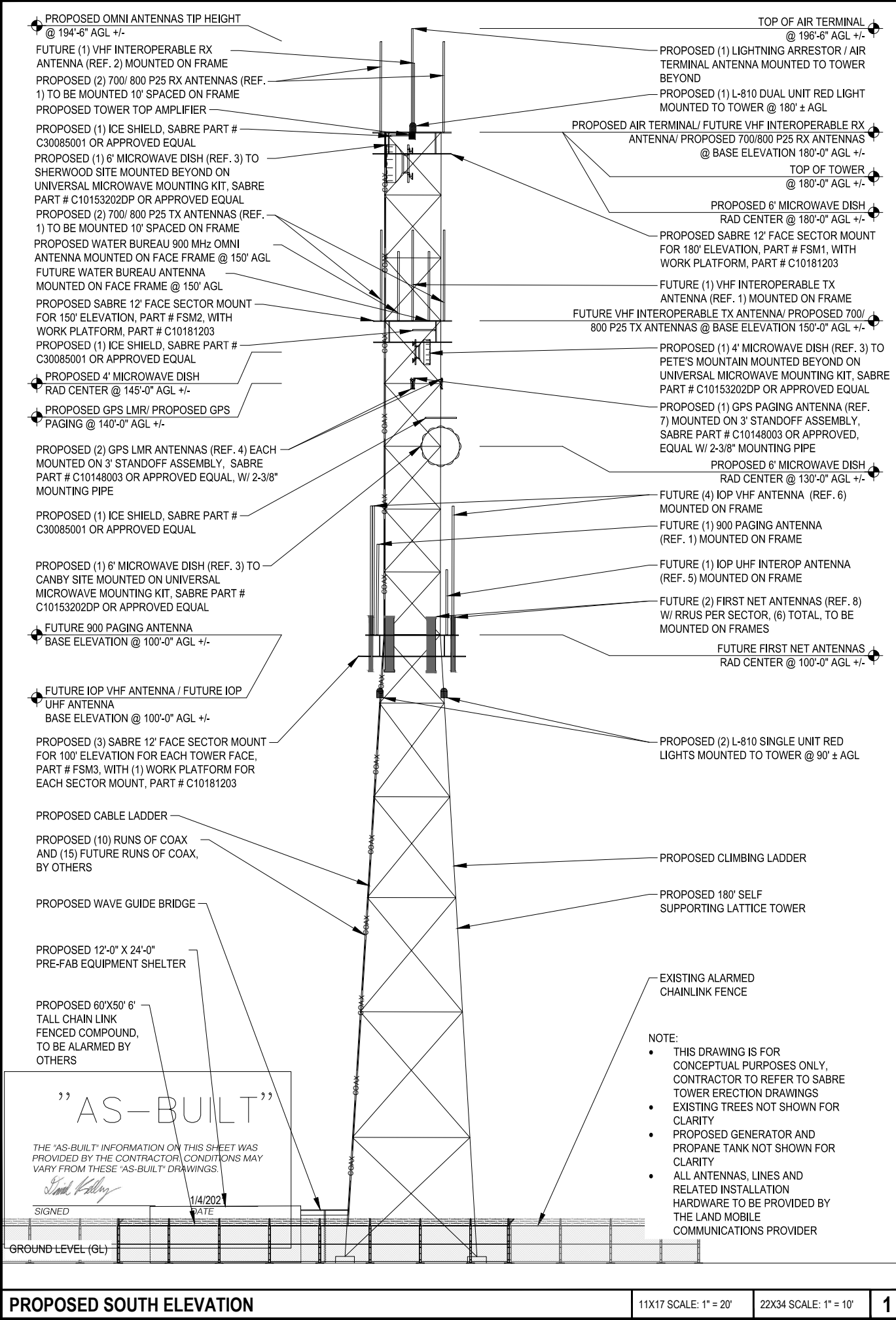
RENEWAL DATE 12/31/21

SHEET TITLE:

ENLARGED  
SITE PLAN

SHEET NUMBER:

C-2



11300 SE Fuller Rd  
Milwaukie, Oregon 97222  
(503) 780-4800

PROJECT INFORMATION:

# C-4 WILSONVILLE TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
7/21/17	PRELIM. CONSTRUCTION SUBMITTAL
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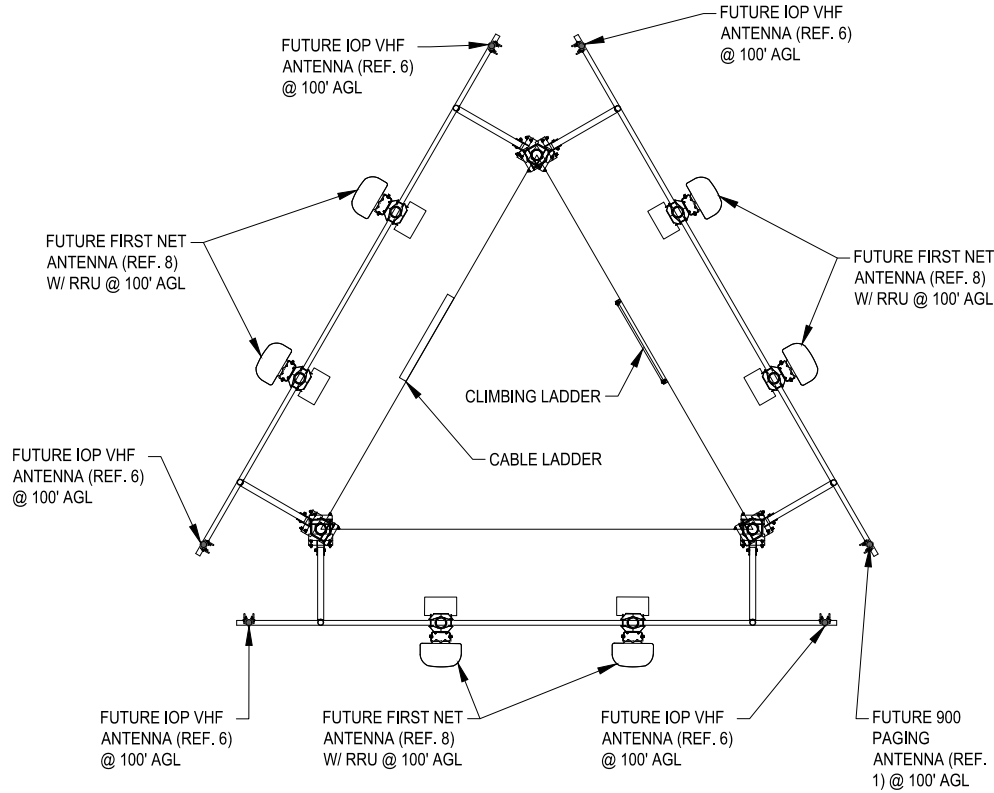
SHEET TITLE:

# ELEVATIONS

SHEET NUMBER:

# C-3

WORK PLATFORM NOT SHOWN FOR CLARITY



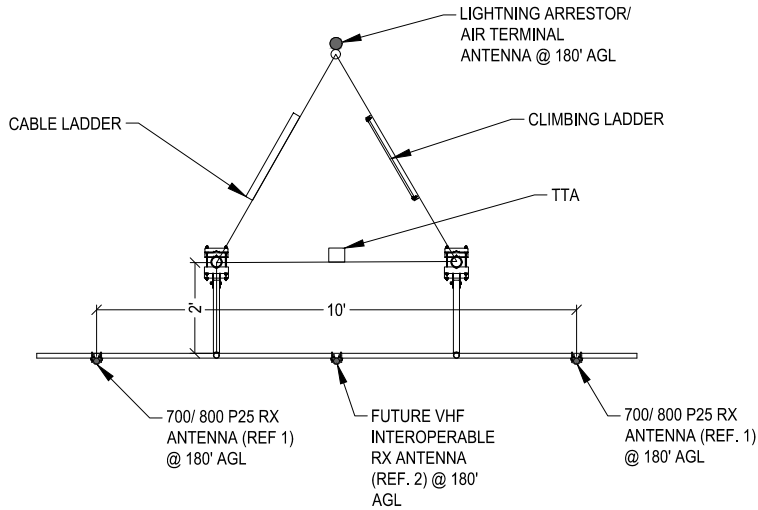
1 AZIMUTH DIAGRAM (100' ELEVATION)  
SCALE: N.T.S.

WORK PLATFORM NOT SHOWN FOR CLARITY

”AS-BUILT”

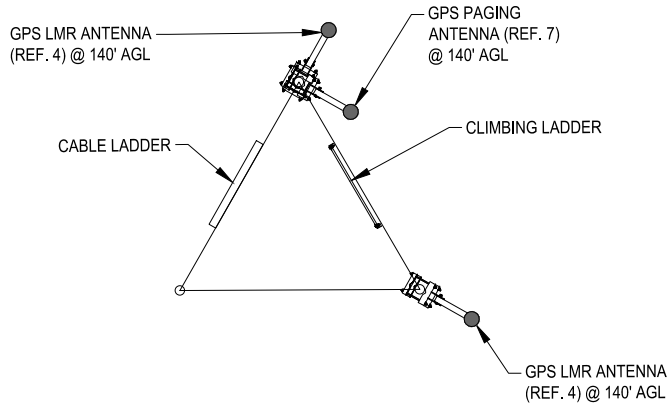
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*David Kelly*  
SIGNED  
1/4/2021  
DATE



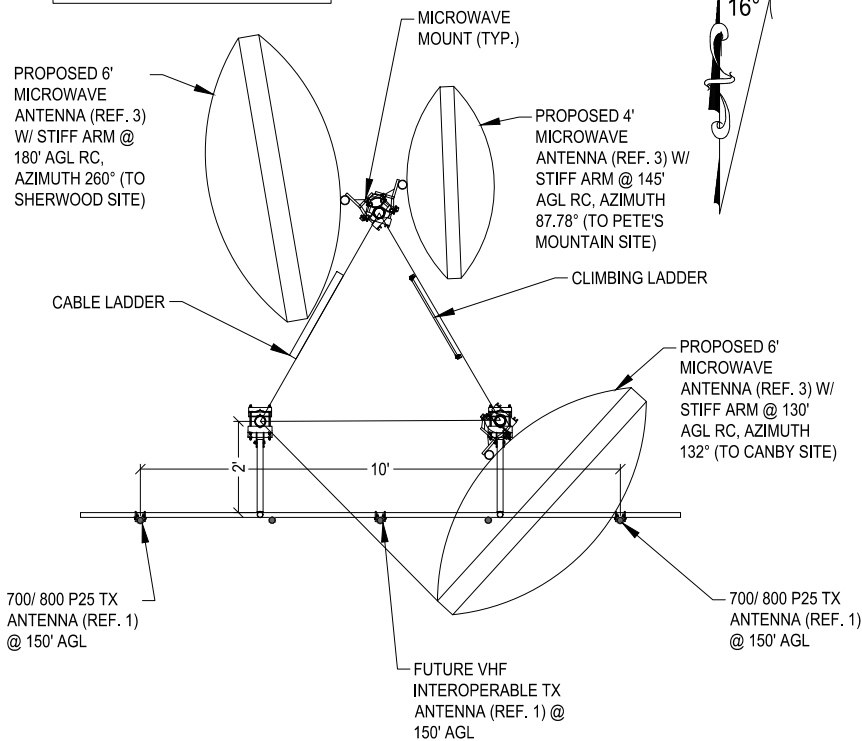
4 AZIMUTH DIAGRAM (RX ELEVATION)  
SCALE: N.T.S.

GENERAL NOTES  
ALL ANTENNAS, LINES AND RELATED  
INSTALLATION HARDWARE TO BE  
PROVIDED BY THE LAND MOBILE  
COMMUNICATIONS PROVIDER.



2 AZIMUTH DIAGRAM (140' ELEVATION)  
SCALE: N.T.S.

NOTE: TOWER AND TOWER  
FOUNDATION STRUCTURAL INFO BY  
OTHERS



MICROWAVE ICE SHIELDS NOT SHOWN FOR CLARITY,  
SEE SHEET C-8  
WORK PLATFORM NOT SHOWN FOR CLARITY

3 AZIMUTH DIAGRAM (TX ELEVATION)  
SCALE: N.T.S.

REF. #	ITEM TYPE	BASE ELEVATION	QUANTITY	MFGR.	MODEL #	DIMENSIONS	WEIGHT	FEED TYPE	QUANTITY OF FEEDS	LENGTH PER RUN	FEED LINE SIZE	FEED LINE WEIGHT
1	700/ 800 P25 RX ANTENNA	180'	2	SINCLAIR	SC479-HL	173.4"x3.5" O.D.	34 lbs	AVA5-50	2	200'	7/8" Ø	0.30 lb/ft
2	VHF INTEROPERABLE RX ANTENNA	180'	1 FUTURE	SINCLAIR	SD310/210D-SF2P2SNM	132"x42.5"x4.5"	19 lbs	AVA5-50A / LDF4-50A	2 FUTURE	200'	7/8" Ø / 1/2" Ø	0.30 lb/ft / 0.15 lb/ft
-	LIGHTNING ARRESTOR	180'	1	SABRE	UNKNOWN	6' x 3/4" O.D.	319 lbs	AVA5-50	1	200'	7/8" Ø	0.30 lb/ft
3	MICROWAVE	180'	1	RFS	PADX6-W59B	72" Ø	141 lbs	EUPEN EU90	1	175'	1.29" x 0.78"	0.34 lb/ft
-	TOWER TOP AMPLIFIER	177'	1	BIRD	437-831-01-T	11.3"x7"x10.2"	25 lbs	LDF4-50A	1	220'	1/2"	0.15 lb/ft
1	VHF INTEROPERABLE TX ANTENNA	150'	1 FUTURE	SINCLAIR	SC479-HL	173.4"x3.5" O.D.	34 lbs	LDF4-50A	1 FUTURE	170'	1/2" Ø	0.15 lb/ft
1	700/ 800 P25 TX ANTENNA	150'	2	SINCLAIR	SC479-HL	173.4"x3.5" O.D.	34 lbs	AVA5-50	2	170'	7/8" Ø	0.30 lb/ft
1	WATER BUREAU 900 MHz OMNI	150'	1	SINCLAIR	SC479-HL	173.4"x3.5" O.D.	34 lbs	AVA5-50	1	170'	7/8" Ø	0.30 lb/ft
1	WATER BUREAU OMNI	150'	1 FUTURE	SINCLAIR	SC479-HL	173.4"x3.5" O.D.	34 lbs	AVA5-50	1 FUTURE	170'	7/8" Ø	0.30 lb/ft
3	MICROWAVE	145'	1	RFS	PADX6-W59B	72" Ø	141 lbs	EUPEN EU90	1	140'	1.29" x 0.78"	0.34 lb/ft
4	GPS LMR ANTENNA	140'	2	TRIMBLE	BULLET III	3.05"x2.61"	7.0 oz	LDF4-50A	2	160'	1/2" Ø	0.15 lb/ft
7	GPS PAGING ANTENNA	140'	1	TRIMBLE	ACCUTIME	3.74"x2.85"	5.4 oz	LDF4-50A	1	160'	1/2" Ø	0.15 lb/ft
3	MICROWAVE	130'	1	RFS	PADX6-W59B	72" Ø	141 lbs	EUPEN EU90	1	140'	1.29" x 0.78"	0.34 lb/ft
6	IOP VHF ANTENNA	100'	5 FUTURE	COMPROD	884-70HDB	246"x31"	78 lbs	LDF4-50A	4 FUTURE	120'	1/2" Ø	0.15 lb/ft
1	900 PAGING ANTENNA	100'	1 FUTURE	SINCLAIR	SC479-HL	173.4"x3.5" O.D.	34 lbs	AVA5-50	1 FUTURE	120'	7/8" Ø	0.30 lb/ft
5	IOP UHF ANTENNA	100'	1 FUTURE	COMPROD	784-70HDB	126"x12.75"	38 lbs	LDF4-50A	1 FUTURE	120'	1/2" Ø	0.15 lb/ft
8	FIRST NET ANTENNA	100'	6 FUTURE	KATHREIN	80010992	105.2"x20"x6.9"	133.4 lbs	HB114-U6S12	6 FUTURE	120'	1.54" Ø	1.7 lb/ft
-	FIRST NET RRUS	100'	6 FUTURE	TBD	TBD	23"x13"x6.7"	60 lbs	N/A	N/A	N/A	N/A	N/A

5 TOWER MOUNTED EQUIPMENT SPECIFICATION CHART  
SCALE: N.T.S.



PROJECT INFORMATION:

## C-4 WILSONVILLE TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
7/21/17	PRELIM. CONSTRUCTION SUBMITTAL
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7/18/19	FINAL CONSTRUCTION SUBMITTAL
7/23/19	FINAL CONSTRUCTION SUBMITTAL
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1/4/21	AS-BUILTS
5/16/22	AS-BUILTS (CLIENT REV.)

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**PLANS PREPARED BY:**



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SUITE 265  
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(503) 387-5331  
[www.cushing-engr.com](http://www.cushing-engr.com)

LICENSURE:



RENEWAL DATE 12/31/21

SHEET TITLE:

## RF PLAN & SCHEDULE

SHEET NUMBER:

C-5

”AS-BUILT”

THE “AS-BUILT” INFORMATION ON THIS SHEET WAS  
PROVIDED BY THE CONTRACTOR. CONDITIONS MAY  
VARY FROM THESE “AS-BUILT” DRAWINGS.

*David Kelly*

SIGNED \_\_\_\_\_

1/4/2021

DATE \_\_\_\_\_

**PROJECT INFORMATION:**

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
1/17	PRELIM. CONSTRUCTION SUBMITTAL
3/17	FINAL CONSTRUCTION SUBMITTAL
4/17	UPDATED GEN. & PROP. TANK SHT
8/18	FINAL CONSTRUCTION SUBMITTAL
8/18	FINAL CONSTRUCTION SUBMITTAL
9/19	FINAL CONSTRUCTION SUBMITTAL
19	FINAL CONSTRUCTION SUBMITTAL
3/19	FINAL CONSTRUCTION SUBMITTAL
9/19	FINAL CONSTRUCTION SUBMITTAL
2/19	PLAN CHECK #1
21	AS-BUILTS
2/22	AS-BUILTS (CLIENT REV.)

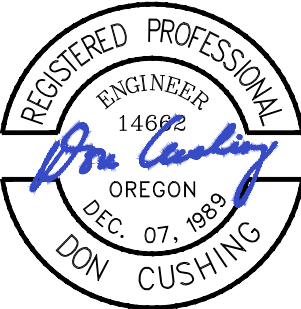
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**PLANS PREPARED BY:**



**Don Cushing Associates**  
**Civil Engineers**

**107 SE WASHINGTON STREET  
SUITE 265  
PORTLAND, OR 97214  
(503) 387-5331  
[www.cushing-engr.com](http://www.cushing-engr.com)**

## LICENSURE



RENEWAL DATE 12/31/21

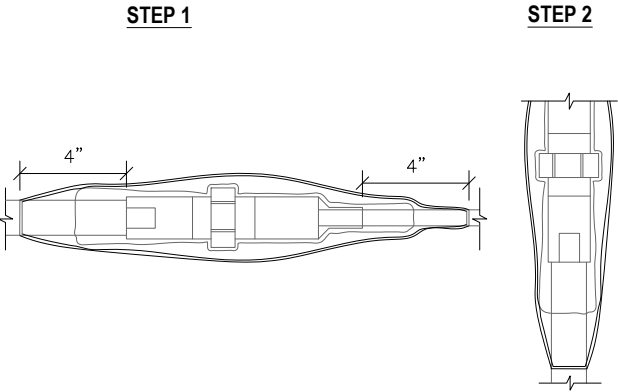
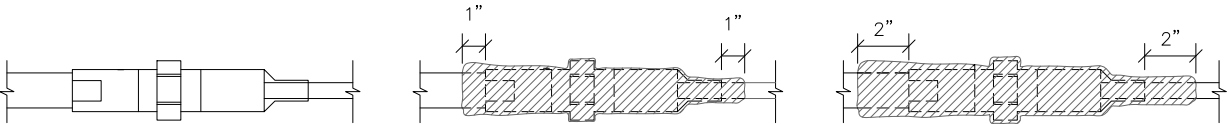
**SHEET TITLE:**

# RF PLAN & SCHEDULE

**SHEET NUMBER:**

## C-5.1

	Proposed Configuration																	
	700/800 P25	TTA Test	Future VHF	900 Paging Future	IOP VHF Future	IOP UHF Future	GPS Paging	GPS LMR	First Net Rx/Tx Antennas Platform Mount Future			Water Bureau	Water Bureau	Microwave	Microwave	Microwave	Beacon	Air Terminal
Equipment Manufacturer																		
Equipment Model #																		
Antenna Data Rx									Alpha	Beta	Gamma	Panel	Omni	Canby	Sherwood	Petes Mtn		
Manufacturer	Sinclair		Sinclair				Trimble	Trimble	Kathrein	Kathrein	Kathrein	Amphenol	Amphenol	RFS	RFS	RFS		Harger
Model	SC479HF1LDFD4NUP		SD310/210D-SF2P2SNM				Accutime	Bullet III	80010992	80010992	80010992	WPA-70063-8CF	BCD-87010-EDN	PADXS-W59B	PADXS-W59B	PADXS-W59B	L-810	CUFATM-10
Weight (lbs)	34		19 (48 w 1/2" ice)				5	5	133.4	133.4	133.4	19	27	141	141	141		43
Dimensions (inches) (H xWxD)	173.4 x 3.5 x 3.5		132 x 4.5				2.85 x 3.74	2.61 x 3.05	105.2 x 20 x 6.9	105.2 x 20 x 6.9	105.2 x 20 x 6.9	94.6 x 11.2 x 5.1	134 x 2.6	72"	72"	72"		216
Wind Load Area (1/2" ice) ft²	See Data Sheet		See Data Sheet				N/A	N/A	See Data Sheet	See Data Sheet	See Data Sheet	See Data Sheet	See Data Sheet	See Data Sheet	See Data Sheet	See Data Sheet		
Gain (dBi)(dBi)	9.5/11.65		2 (4.1)				N/A	30	14.3/16.5	14.3/16.5	14.3/16.5	16.5/18.5	10/12.1	38.9 dBi	38.9 dBi	38.9 dBi		
Number of Antennas (Rx)	2		1				1	3	2	2	2	1	1	1	1	1		
Duplex Rx/Tx	N		N				N	N	Duplex	Duplex	Duplex	?	?	Yes	Yes	Yes		
RAD Center Rx (ft)	187		185				141	141	100	100	100	100	100	130	165	150		
Mounting Elevation Rx (ft)	180-Frame	180-Frame	180-Frame				140	140	100	100	100	100	100	130	165	150	180 / 90	180
Reference Number	1, 2	3	4				20	21 / 22 / TBD	14 / 15	16 / 17	18 / 19		12	24	23	28	26 / 27	25
Azimuth °TN			0				0	0	90	210	330	180	0	132	260	137		
Polarity			Vertical				H	H	X	X	X	Vertical	Vertical					
Horizontal Beamwidth			360				360	360	65	65	65	63	360	1.7	1.7	1.7		
Electrical / Mechanical Tilt °			0						0	0	0	0	0					
Port Number Location (Rx)																		
Tag Identifications																		
Antenna Data Tx																		
Manufacturer	Sinclair		Sinclair	Amphenol	Comprod	Comprod												
Model	SC479HF1LDFD4NUP		SC479-HL	BCD-87010-EDIN	884-70HDB	784-70HDB												
Weight (lbs)	34		34 (86 w/ 1/2" ice)	27	78	38												
Dimensions (inches) (H xWxD)	173.4 x 3.5 x 3.5		173.4 x 3.5 x 3.5	134 x 2.6	246 x 41	125 x 12.75												
Wind Load (@100mph)	See Data Sheet		3.25	125	See Data Sheet	See Data Sheet												
Gain (dBi)(dBi)	9.5		9.5	10dBi (12.1 dBi)	7/9.15	7/9.15												
Number of Antennas (Tx)	2		1	3	3	1												
RAD Center Tx (ft)	157		157	107	110	105												
Mounting Elevation Tx (ft)	150-Frame		150-Frame	100-Frame	100-Frame	100-Frame												
Reference Number	5.6		7	8	9 / 10 / 11	13												
Azimuth °TN			0	0	0	0												
Polarity			Vertical	Vertical	Vertical	Vertical												
Horizontal Beamwidth			360	360	360	360												
Electrical / Mechanical Tilt °			0	0	0	0												
Port Number Location (Rx)																		
Tag Identifications																		
Feed Lines Rx	700/800 P25	TTA Test	Future VHF	900 Paging Future	IOP VHF Future	IOP UHF Future	GPS Paging	GPS LMR	First Net Rx/Tx Antennas Platform Mount			Water Bureau	Water Bureau	Microwave	Microwave	Microwave		
Manufacturer	Commscope	Commscope	Commscope		Commscope	Commscope	Commscope	Commscope	RFS	RFS	RFS	Commscope	Commscope	Eupen	Eupen	Eupen		
Number of Feeders	2	1	2		3	1	1	3	1	1	1	1	1	1	1	1		
Feeder Type	AVAS-50	LDF4-50A	AVAS-50A / LDF4-50A		LDF4-50A	LDF4-50A	LDF4-50A	LDF4-50A	HB114-U6S12	HB114-U6S12	HB114-U6S12	AVAS-50	AVAS-50	EU90	EU90	EU90		
Feeder Length (ft)	200	220	200 / 200		120	120	160	160	120	120	120	120	120	160	185	185		
Number of Jumpers	2	2	1									1	1					
Jumper Type	LDF4-50A	None	LDF4-50A		None	None	None	None	Weight = 1.7 lb/ft	Weight = 1.7 lb/ft	Weight = 1.7 lb/ft	LDF4-50A	LDF4-50A	None	None	None		
Jumper Length (ft)	10	10	10									10	10					
Lightening Arrestor	109-0501W-A(Transtector)																	
Tag Identification (Labeling)	V-W-G-R / V-W-G-V	V-W-G-G	G-W-G-R / V		G-W-B-R/M/G/O	G-W-B-B	V-W-Y-G	V-W-Y-R/V/TBD	O-W-B-R	O-W-B-V	O-W-B-G	B-W-G-R	B-W-G-V	V-W-V-R	V-W-V-V	V-W-V-V		
Entry Port Location																		
Cable Number																		
Overall Insertion Loss																		
Feed Lines Tx																		
Manufacturer	Commscope		Commscope	Commscope														
Number of Feeders	2		1	1														
Feeder Type	AVAS-50		LDF4-50A	AVAS-50														
Feeder Length (ft)	170		170	120														
Number of Jumpers	2			1														
Jumper Type	LDF4-50A		None	LDF4-50A														
Jumper Length (ft)	10			10														
Lightening Arrestor	TSX-DFM-8F(Transtector)																	
Tag Identification (Labeling)	V-W-R-R / V-W-R-V		G-W-R-R	V-W-R-G														
Entry Port Location																		
Cable Number																		
Overall Insertion Loss																		
Miscellaneous Tower Hardware																		
Tower Top Amplifier (TTA) Manufacturer	Bird																	
(TTA) Model	437-831-01-T																	
(TTA) Weight (lbs) / Dimensions (inches)	25 / 11.3 x 7 x 10.2																	
(TTA) Quantity / Mounting Elevation	1 / 177'																	
Remote Radio Head (Elevation)									100 ft	100 ft	100 ft							
Remote Radio Head (Weight) lbs									60	60	60							
Remote Radio Head (H,W,D)									23 x 13 x 6.7	23 x 13 x 6.7	23 x 13 x 6.7							
Lightening Arrestor																		

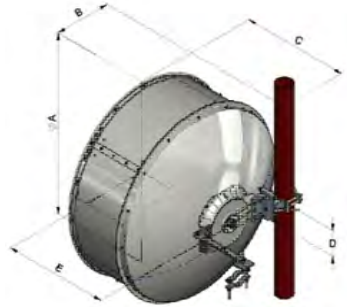


#### 1 COAX CABLE WEATHERPROOFING

SCALE: N.T.S.

\* NOTE:  
ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.

IMAGE MAY DIFFER FROM ACTUAL MICROWAVE DISH



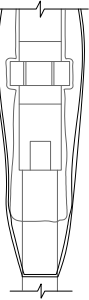
DIMENSIONS IN INCHES					
ANTENNA SIZE, FT	A	B	C	D	E
4	50.8	16	30.2	7.2	29.5

REF. # 3		
MODEL NUMBER	VHLP4-11W-6WH/B	WEIGHT
MANUFACTURER	ANDREW	DIAMETER
		50.8"

#### 5 4' MICROWAVE DISH DETAIL

SCALE: N.T.S.

#### STEP 2



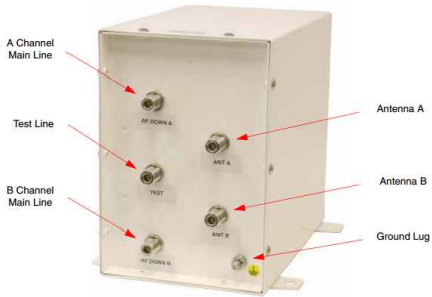
#### INSTALLATION NOTES:

'SCOTCH' 23 ALL-VOLTAGE SPICING TAPE SHOULD BE APPLIED IN SUCCESSIVE, HALF-LAPPED, LEVEL-WOUND LAYERS UNTIL DESIRE BUILDUP IS REACHED. TO ELIMINATE VOIDS IN CRITICAL AREAS, HIGHLY ELONGATE 23 TAPE. STRETCH TAPE IN THESE CRITICAL AREAS JUST SHORT OF ITS BREAKING POINT. DOING SO WILL NOT ALTER ITS PHYSICAL OR ELECTRICAL PROPERTIES. IN LESS CRITICAL AREAS, LESS ELONGATION MAY BE USED. NORMALLY, 23 TAPE IS STRETCHED TO 3/4 OF ITS ORIGINAL WIDTH IN THESE LESS CRITICAL AREAS. ALWAYS ATTEMPT TO HALF-LAP TO PRODUCE A UNIFORM BUILDUP. WHEN USING 23 TAPE FOR SPLICING CABLES FROM 35kv TO 69kv, ALWAYS ELONGATE THE TAPE THROUGHOUT THE ENTIRE SPLICE.

'SCOTCH' VINYL ELECTRICAL TAPE SHALL BE APPLIED IN HALF-LAPPED LAYERS WITH SUFFICIENT TENSION TO PRODUCE A UNIFORM WIND. ON PIGTAIL SPLICES, THE TAPE SHALL BE WRAPPED BEYOND THE END OF THE WIRES AND THEN FOLDED BACK, LEAVING A PROTECTIVE CUSHION TO RESIST CUT-THROUGH. WRAP TAPE UP-HILL, TAPING FROM A SMALLER DIAMETER SURFACE TO A LARGER DIAMETER SURFACE. APPLY THE TAPE WITH NO TENSION ON THE LAST WRAP TO PREVENT FLAGGING.

#### 6 ANTENNA DETAILS

SCALE: N.T.S.



MODEL NUMBER	437-831-01-T	WEIGHT	25 lbs
MANUFACTURER	BIRD TECHNOLOGIES	DIAMETER	11.3"x7"x10.2"

#### 2 TOWER TOP AMPLIFIER DETAIL

SCALE: N.T.S.

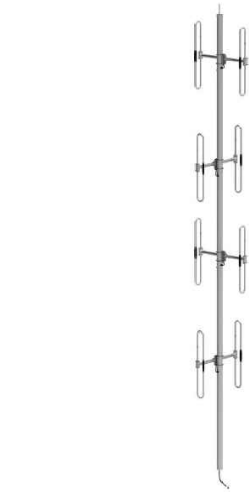


REF. # 7		
MODEL NUMBER	ACCUTIME	WEIGHT
MANUFACTURER	TRIMBLE	DIMENSIONS
		3.74"x2.85"

#### 3 GPS ANTENNA DETAILS

SCALE: N.T.S.

REF. # 4		
MODEL NUMBER	BULLET III	WEIGHT
MANUFACTURER	TRIMBLE	DIMENSIONS
		3.05"x2.61"



REF. # 6		
MODEL NUMBER	884-70HDB	WEIGHT
MANUFACTURER	COMPROD	DIMENSIONS
		246"x31"



REF. # 5		
MODEL NUMBER	784-70HDB	WEIGHT
MANUFACTURER	COMPROD	DIMENSIONS
		126"x12.75"

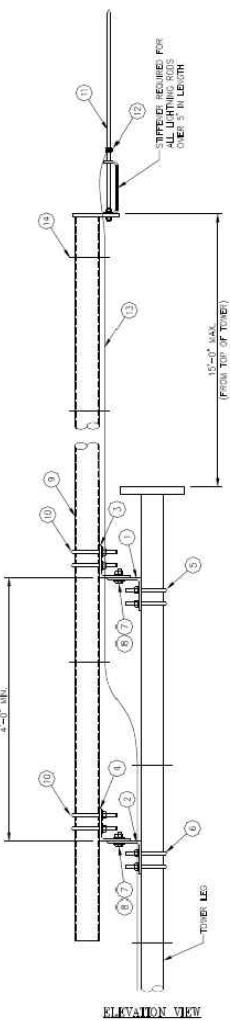
#### FIRST NET ANTENNAS

REF. # 8	MOUNTING ACCESSORIES SEPARATE	
MODEL NUMBER	80010992	WEIGHT
MANUFACTURER	KATHREIN	DIMENSIONS
		105.2"x20"x6.9"

"AS-BUILT"

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SIGNED \_\_\_\_\_ DATE 1/4/2021



SEE TOWER DRAWINGS BY OTHERS FOR DETAILS

#### 4 LIGHTNING ARRESTOR/ AIR TERMINAL DETAILS

SCALE: N.T.S.



#### PROJECT INFORMATION:

### C-4 WILSONVILLE TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
7/21/17	PRELIM. CONSTRUCTION SUBMITTAL
8/18/17	FINAL CONSTRUCTION SUBMITTAL
9/21/17	UPDATED GEN. & PROP. TANK SHT
1/12/18	FINAL CONSTRUCTION SUBMITTAL
2/23/18	FINAL CONSTRUCTION SUBMITTAL
6/20/19	FINAL CONSTRUCTION SUBMITTAL
7/9/19	FINAL CONSTRUCTION SUBMITTAL
7/18/19	FINAL CONSTRUCTION SUBMITTAL
7/23/19	FINAL CONSTRUCTION SUBMITTAL
9/12/19	PLAN CHECK #1
1/4/21	AS-BUILTS
5/16/22	AS-BUILTS (CLIENT REV.)

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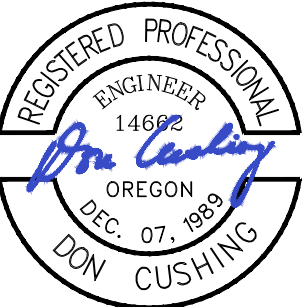
PLANS PREPARED BY:



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107 SE WASHINGTON STREET  
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[www.cushing-engr.com](http://www.cushing-engr.com)

#### LICENSURE:



RENEWAL DATE 12/31/21

#### SHEET TITLE:

### RF DETAILS

#### SHEET NUMBER:

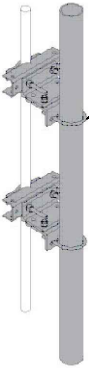
C-6

NOTE:  
ALL MICROWAVE MOUNTING AND ICE SHIELD INSTALLATIONS BY OTHERS



STIFF ARM CONNECTION  
TO MICROWAVE SABRE  
PART # C10179001DP OR  
EQUAL

1 MICROWAVE STIFF ARM DETAIL  
SCALE: N.T.S.

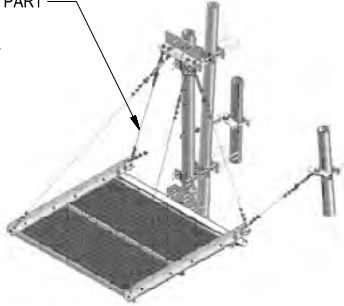


UNIVERSAL MICROWAVE  
MOUNTING KIT SABRE  
PART # C10153202DP OR  
APPROVED EQUAL

5 MICROWAVE MOUNTING DETAILS  
SCALE: N.T.S.

2 NOT IN USE  
SCALE: N.T.S.

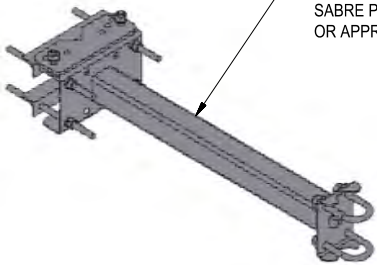
ICE SHIELD SABRE PART  
# C30085001 OR  
APPROVED EQUAL



6 MICROWAVE DISH ICE SHIELD DETAIL  
SCALE: N.T.S.

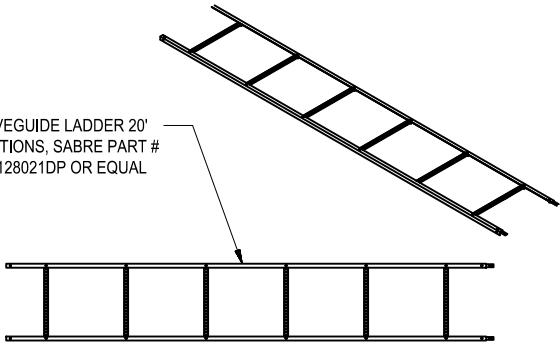
3 NOT IN USE  
SCALE: N.T.S.

3' STANDOFF ASSEMBLY  
SABRE PART # C10148003  
OR APPROVED EQUAL



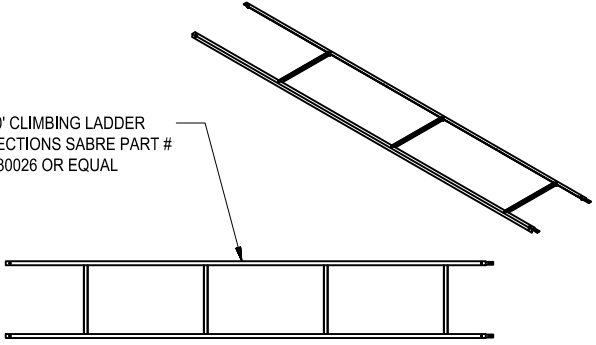
7 GPS ANTENNA MOUNTING DETAIL  
SCALE: N.T.S.

WAVEGUIDE LADDER 20'  
SECTIONS, SABRE PART #  
C20128021DP OR EQUAL



4 WAVEGUIDE LADDER DETAIL  
SCALE: N.T.S.

20' CLIMBING LADDER  
SECTIONS SABRE PART #  
C30026 OR EQUAL



8 SAFETY CLIMBING LADDER DETAIL  
SCALE: N.T.S.

” AS-BUILT ”

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SIGNED 

1/4/2021  
DATE



PROJECT INFORMATION:

C-4  
WILSONVILLE  
TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
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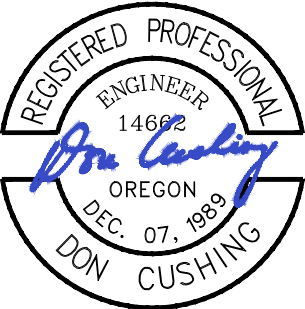
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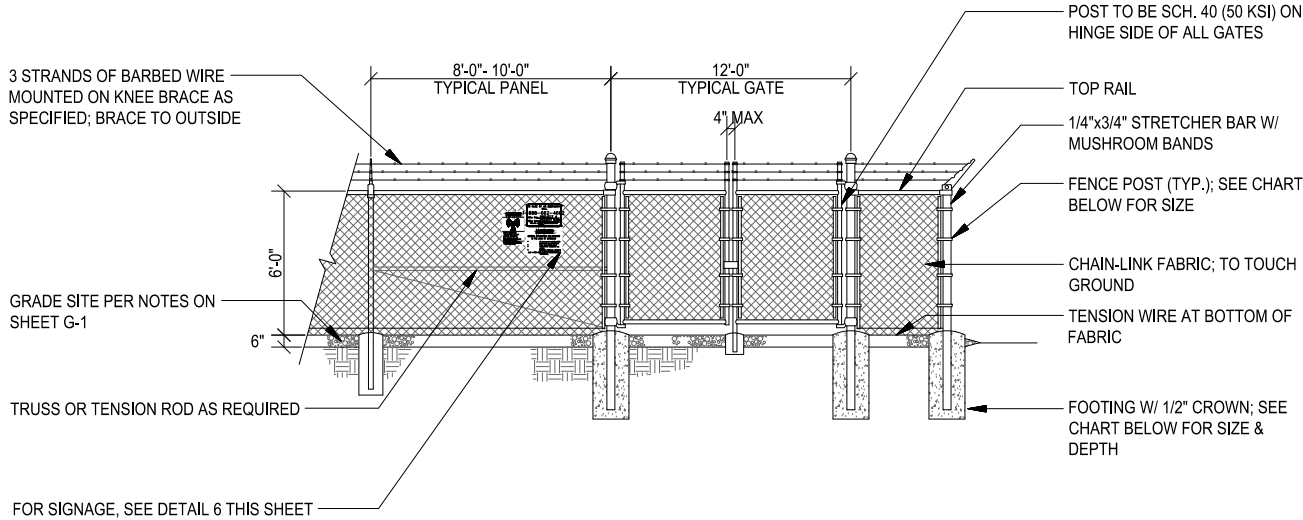
RENEWAL DATE 12/31/21

SHEET TITLE:

TOWER RELATED  
EQUIPMENT  
DETAILS I

SHEET NUMBER:

C-8

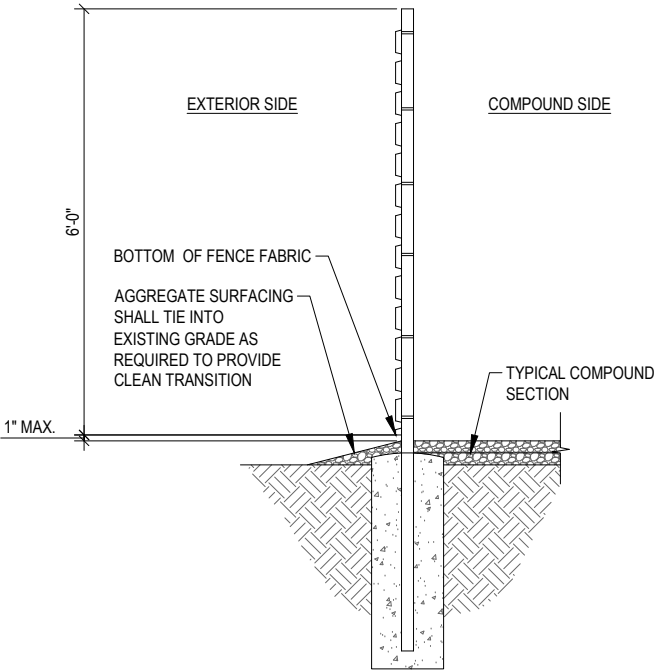


- FENCE & GATE NOTES:
1. GATE FRAME-1-7/8" OD, TOP & BRACE RAIL-1-5/8" OD, SCH. 40 (50 KSI) ASTM-F1083.
  2. FABRIC: 9 GA. CORE WIRE SIZE 2" MESH FABRIC; FABRIC TO TOUCH GRAVEL BASE.
  3. TIE WIRE: MINIMUM 11 GA. GALVANIZED STEEL.
  4. BARBED WIRE: 12" (3) STRAND.
  5. GATE LATCH: SEE DETAIL 5 THIS SHEET; VERIFY WITH CONSTRUCTION MANAGER.

6' HIGH GATE/FENCE			
POST TYPE	POST DIAMETER	FOOTING SIZE	NOTES:
LINE POST	2-3/8"Ø	12"Øx33"	1. ALL POSTS: SCH. 40 (50 KSI) ASTM-F1083 2. ALL FENCING TO BE ENGINEERED BY FENCING MANUFACTURER & APPROVED BY PROJ. MGR. FENCE MANUFACTURER IS TO VERIFY ADEQUACY OF TABULATED POST & FOOTING SIZES
CORNER POST	4"Ø	16"Øx36"	
GATE POST	4"Ø	16"Øx36"	

TYPICAL FENCE ELEVATION

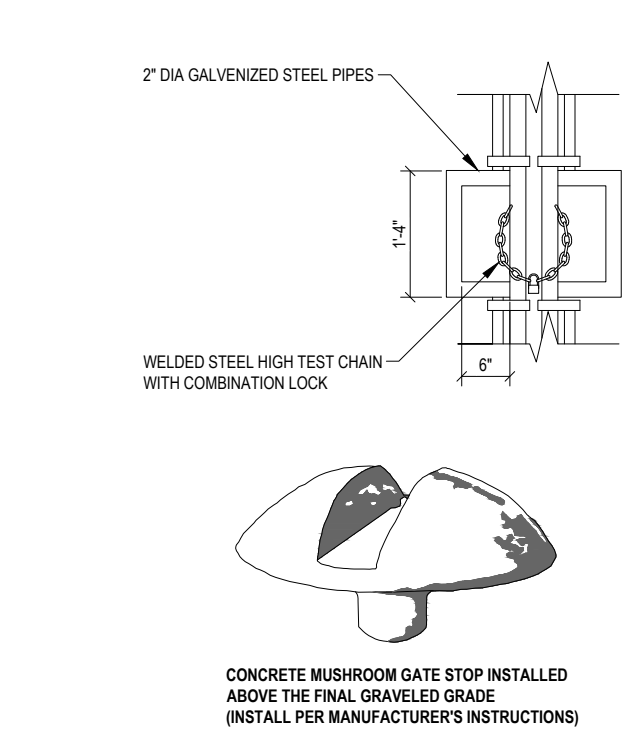
SCALE: NTS 1



NOTE:  
ALL NEW FENCING AND GATES TO BE CONNECTED TO WATER BUREAU'S ALARM SYSTEM, CONTRACTOR TO CONTACT IAN EGLITIS, CITY OF WILSONVILLE UTILITIES, 503-519-9837, FOR DETAILS

TYPICAL FENCE SECTION

SCALE: NTS 4



GATE LOCK & CENTER STOP

SCALE: NTS 5

FENCING NOTES:

1. GATE POST, CORNER, END, OR PULL POST 4" NOMINAL (4" O.D.) SCHEDULE 40 (50 KSI) PIPE, FOR GATE WIDTHS UP TO 6 FEET OR 12 FEET FOR DOUBLE SWING GATE PER ASTM-F1083.
2. LINE POST: 2-3/8" O.D. 3.65 LBS/LIN FT. ASTM-F1083.
3. TOP RAIL AND BRACE RAIL: 1-1/2" (1.9" O.D.) PIPE 2.72 LBS/LIN FT PER ASTM-F1083. INSTALL BRACE AT ALL CORNER LOCATIONS AND ADJACENT TO GATES.
4. GATE FRAME: 1-1/2" (1.9 O.D.) 2.72 LBS/LIN FT. ASTM-F1083.
5. FABRIC SHALL BE TWO-INCH CHAINLINK MESH NO. 9 GAUGE (0.148") WIRE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP SELVAGES. FABRIC SHALL CONFORM TO ASTM A-392 CLASS 1.
6. TIE WIRE: MINIMUM 11Ga. GALVANIZED STEEL. PROVIDE A SINGLE WRAP OF FABRIC, TIE AT POSTS, RAILS, AND AT TENSION WIRE BY HOG RINGS. MAXIMUM SPACING 24" O.C.
7. TENSION WIRE: MINIMUM 7 Ga. GALVANIZED STEEL.
8. U.N.O. BARBED WIRE: DOUBLE STRAND 12 Ga. 1/2" O.D. TWISTED WIRE TO MATCH W/ FABRIC, 14 Ga. 4PT. BARBS SPACED ON APPROX. 5" CENTERS.
9. U.N.O. BARBED WIRE GATE GUARDS SHALL BE FITTED WITH DOME CAPS.
10. U.N.O. BARBED WIRE SUPPORT ARMS SHALL BE PRESSED STEEL COMPLETE WITH SET BOLT AND LOCK WIRE IN THE ARM.
11. PROVIDE TWO 5 FOOT WIDE OUT SWINGING GATES, (UNLESS NOTED OTHERWISE). NO PERSONNEL GATES ARE REQUIRED (UNLESS AS DIRECTED BY THE CONSTRUCTION MANAGER). GATES SHALL BE ABLE TO LOCK.

12. U.N.O. GATE POSTS SHALL BE EXTENDED 12 INCHES, INCLUDING DOME CAP, TO PROVIDE FOR ATTACHMENT OF BARBED WIRE.
13. GATE FRAMES SHALL HAVE A FULL-HEIGHT VERTICAL BRACE, AND A FULL-WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.
14. GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTOR WITH MODEL 6409, 180-DEGREE ATTACHMENT OR APPROVED EQUAL.
15. GATE LATCH: 1-3/8" O.D. PLUNGER ROD W/ MUSHROOM TYPE CATCH.
16. A 6" X 1/2" DIAMETER EYEBOLT TO HOLD TENSION WIRE SHALL BE PLACED AT LINE POSTS.
17. STRETCHER BARS SHALL BE 3/16" OR HAVE EQUIVALENT CROSS-SECTIONAL AREA.
18. U.N.O. ALL POSTS EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAP AND BARBED WIRE SUPPORTING ARM.
19. ALL CAPS SHALL BE MALLEABLE IRON, DOME OR ACORN SHAPED AS REQUIRED BY PIPE SIZE.
20. OTHER HARDWARE MAY INCLUDE BUT NOT BE LIMITED TO TIE CLIPS, BAND CLIPS AND TENSION BAND CLIPS.
21. U.N.O. WHERE THE USE OF CONCERTINA HAS BEEN SPECIFIED, 24" DIAMETER COIL, BARBED TAPE, STAINLESS STEEL, CYCLONE FENCE MODEL G8P TO TYPE III SHALL BE FURNISHED. IT SHALL BE SUPPORTED ABOVE THE TOP RAIL BY USE OF SIX (6) BARBED WIRE ARMS POSITIONED ATOP EACH LINE/CORNER POST.
22. U.N.O. ALL CHAINLINK FENCING COMPONENTS MUST BE HOT DIPPED GALVANIZED.
23. WHEN IN USE, PRIVACY SLATS TO BE A NEUTRAL COLOR.

GENERAL FENCE NOTES

SCALE: NTS 2

EXTERIOR SHELTER LIGHT PROVIDED WITH STATE APPROVED SHELTER



MODEL NUMBER SLIM18/PC	WEIGHT 4.5 lbs
MANUFACTURER RAB LIGHTING	DIMENSIONS 6.5"X8.75"X3.9"

”AS-BUILT”

THE "AS-BUILT" INFORMATION ON THIS SHEET WAS PROVIDED BY THE CONTRACTOR. CONDITIONS MAY VARY FROM THESE "AS-BUILT" DRAWINGS.

SIGNED \_\_\_\_\_ DATE 1/4/2021

LED SHELTER LIGHT

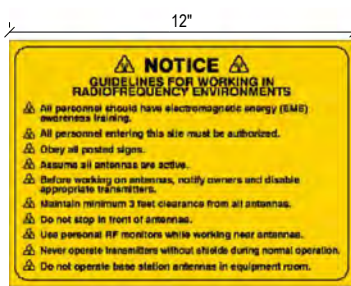
SCALE: NTS 3



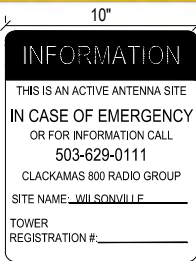
- SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
  2. LETTERING COLOR = BLACK
  3. BACKGROUND COLOR = WHITE / RED



- SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
  2. LETTERING COLOR = BLACK / WHITE
  3. BACKGROUND COLOR = WHITE / BLUE



- SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
  2. LETTERING COLOR = BLACK
  3. BACKGROUND COLOR = YELLOW



- SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
  2. LETTERING COLOR = BLACK / WHITE
  3. BACKGROUND COLOR = WHITE / GREEN

SIGN DETAILS

SCALE: NTS 6



PROJECT INFORMATION:

C-4  
WILSONVILLE  
TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
7/21/17	PRELIM. CONSTRUCTION SUBMITTAL
8/18/17	FINAL CONSTRUCTION SUBMITTAL
9/21/17	UPDATED GEN. & PROP. TANK SHT
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7/9/19	FINAL CONSTRUCTION SUBMITTAL
7/18/19	FINAL CONSTRUCTION SUBMITTAL
7/23/19	FINAL CONSTRUCTION SUBMITTAL
9/12/19	PLAN CHECK #1
1/4/21	AS-BUILTS
5/16/22	AS-BUILTS (CLIENT REV.)

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(503) 387-5331  
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LICENSURE:



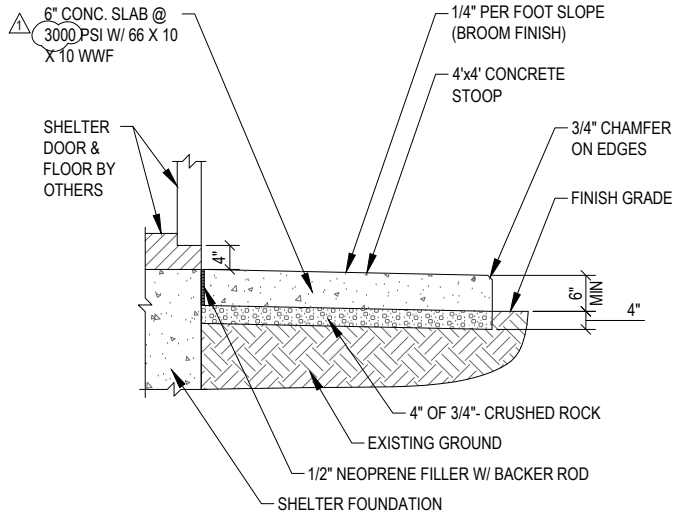
RENEWAL DATE 12/31/21

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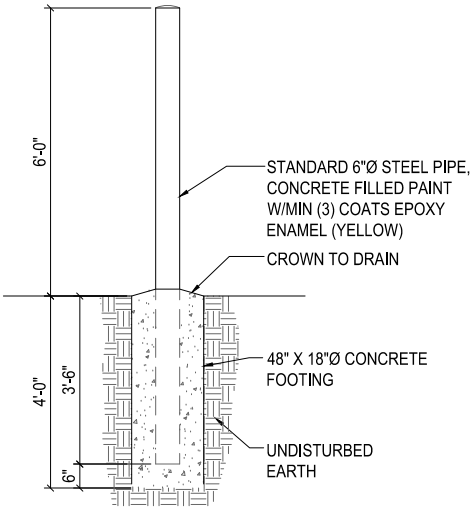
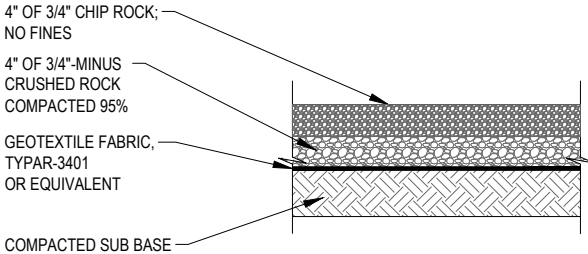
COMPOUND  
DETAILS I

SHEET NUMBER:

C-9



NOTE: STRIP ALL ORGANICS



CONCRETE SHELTER ENTRANCE SECTION DETAIL

SCALE: NTS

1

COMPOUND SECTION DETAIL

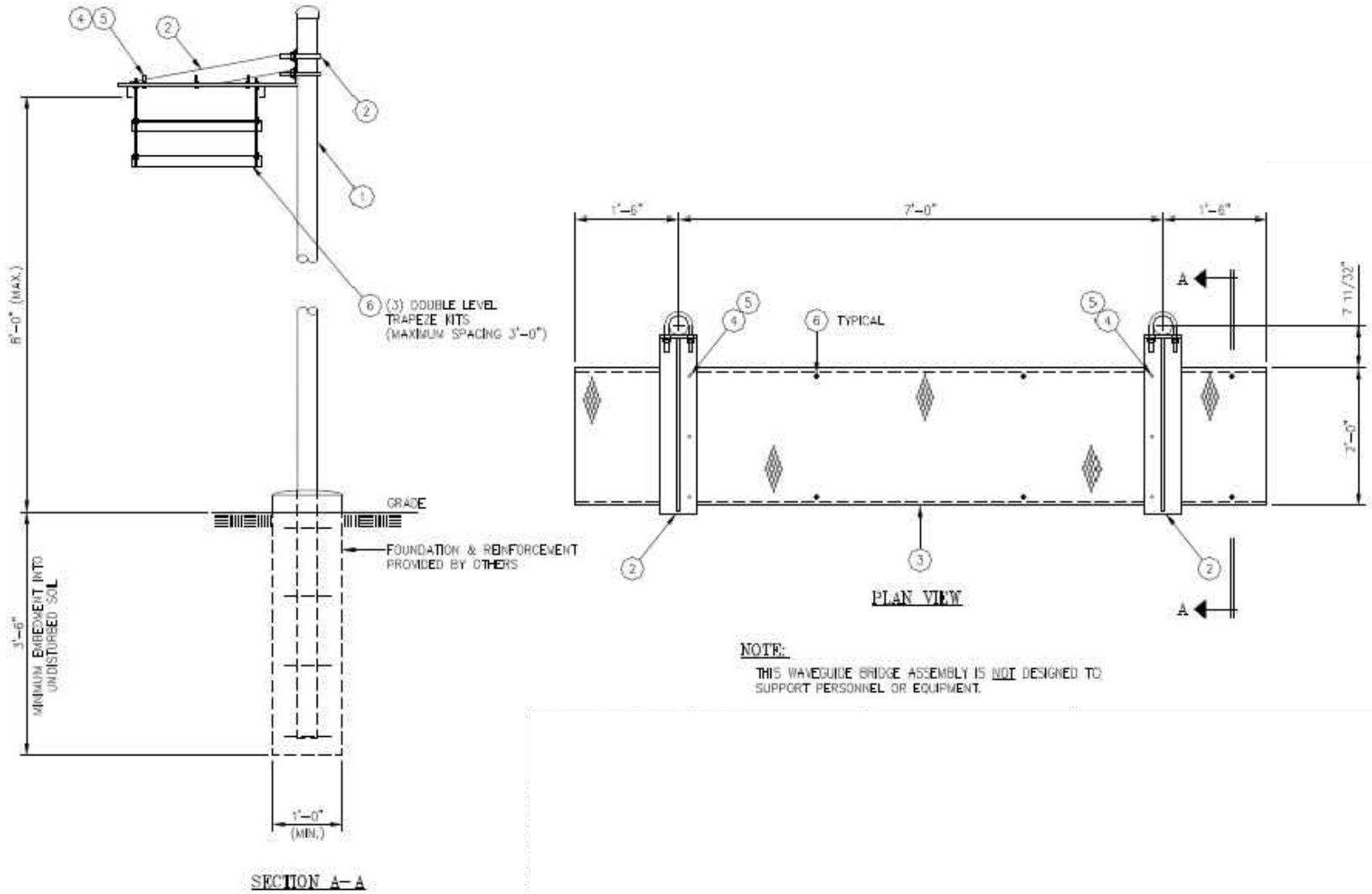
SCALE: NTS

2

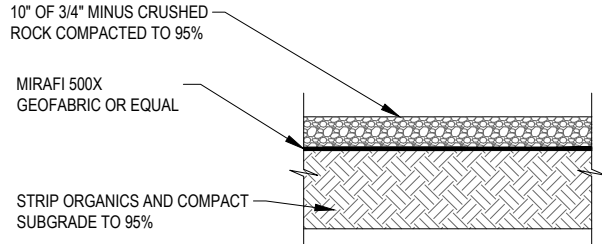
BOLLARD DETAIL

SCALE: NTS

3



NOTE:  
THIS WAVEGUIDE BRIDGE ASSEMBLY IS NOT DESIGNED TO  
SUPPORT PERSONNEL OR EQUIPMENT.



TYPICAL GRAVEL ROAD SECTION

SCALE: NTS

5

”AS-BUILT”

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PROVIDED BY THE CONTRACTOR. CONDITIONS MAY  
VARY FROM THESE “AS-BUILT” DRAWINGS.

Signed \_\_\_\_\_  
DATE

1/4/2021  
DATE

WAVE GUIDE DETAIL

SCALE: NTS

4

NOT IN USE

SCALE: NTS

6



PROJECT INFORMATION:

C-4  
WILSONVILLE  
TANK

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TUALATIN, OR 97062

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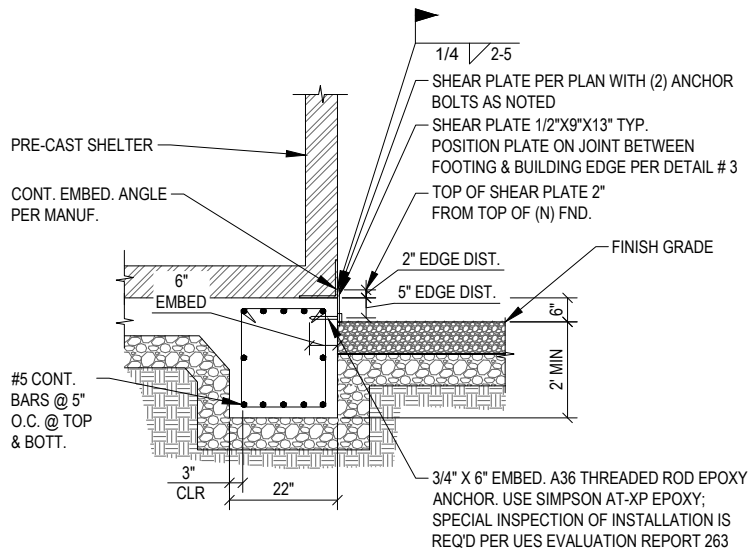
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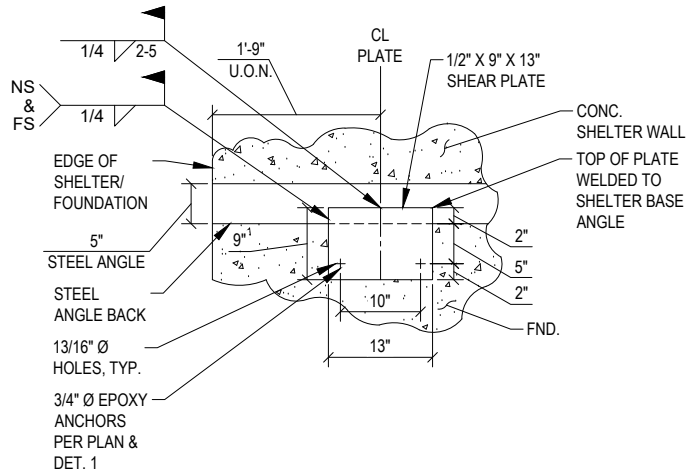
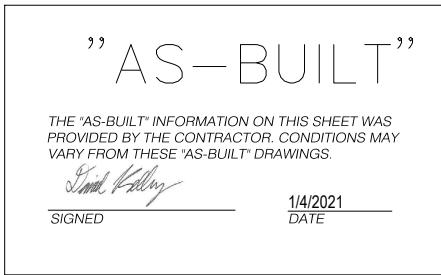
COMPOUND  
DETAILS II

SHEET NUMBER:

C-10



NOTE: SEE DET. 3 FOR ADD'L INFORMATION NOT NOTED



## SHELTER TIE DOWN DETAIL

SCALE: NTS

1

NOT IN USE

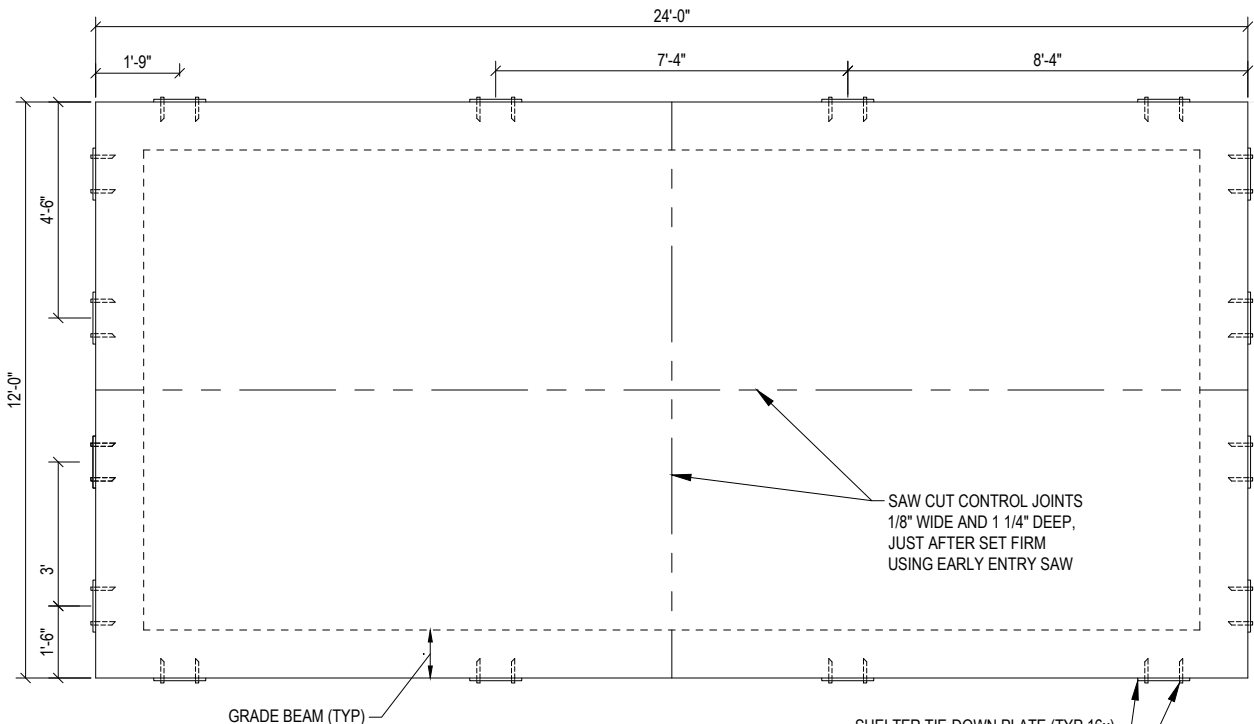
SCALE: NTS

2

SHEAR PLATES

SCALE: NTS

3



### NOTES:

- SEE DETAIL 4 FOR ACTUAL PLACEMENT OF SHELTER SLAB REINFORCEMENT IN ORDER TO AVOID CONTACT WITH SHEAR PLATE EPOXY ANCHORS



SPECIAL INSPECTION BY OWNERS TESTING AGENCY  
SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH OREGON STRUCTURAL SPECIALTY CODE (OSSC) SECTIONS 1703 AND 1704, AND WITH THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY OSSC. REFER TO SHEETS G-2 AND G-3 FOR SPECIAL INSPECTION INFORMATION.

### OREGON APPROVED PREFABRICATED STRUCTURE OREGON PLAN # M231-17-5868D LIGHT GRAY COLOR

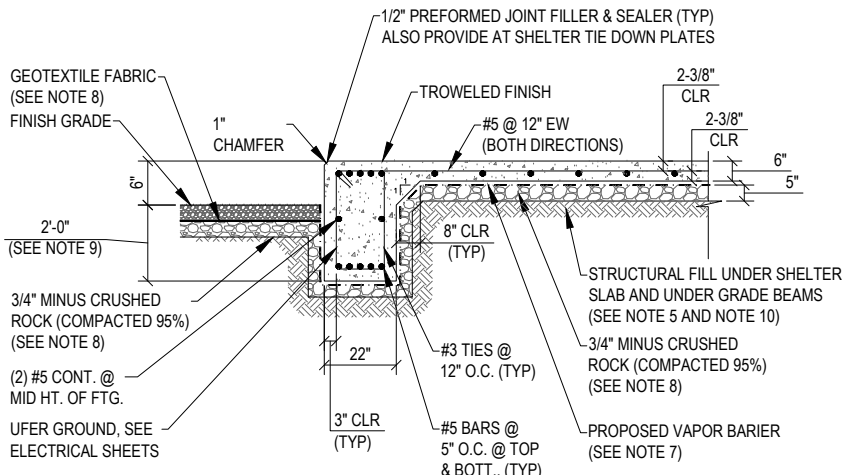
### NOTES:

- ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3000 PSI FOR SHELTER FOUNDATIONS.
- REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 "DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," LATEST EDITION, GRADE 60.
- LAP LENGTH FOR SPLICES SHALL NOT BE LESS THAN CLASS B SPLICE, UNLESS OTHERWISE SPECIFIED. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED.
- CONTRACTOR MAY USE EARTH FORMS FOR UNEXPOSED CONCRETE WHERE SOIL IS FIRM AND STABLE. EARTH FORMS SHALL BE TRENCHED NEATLY AND ACCURATELY. SIDES OF FOUNDATIONS, WHERE EARTH SLOUGHS, SHALL BE FORMED. EARTH FORMS SHALL BE TAMPED FIRM, AND CLEANED OF ALL DEBRIS AND LOOSE MATERIAL, BEFORE DEPOSITING CONCRETE.
- STRUCTURAL FILL USED FOR SITE GRADING SHALL BE FREE FROM TOP SOIL, ORGANIC CONTAMINATED SOIL, AND ROCK FRAGMENTS HAVING A MAXIMUM DIMENSION GREATER THAN 3 INCHES. MATERIAL SHALL BE CLEAN AND SHALL BE SUBJECT TO THE FOLLOWING RESTRICTIONS.

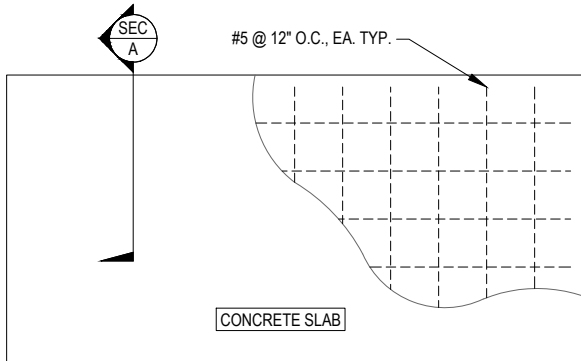
SILT CLAYS OR SANDY CLAY  
PLASTICITY INDEX 10 TO 24  
LIQUID LIMIT <45

CLAYEY SANDS OR SLIGHTLY CLAYEY SILTY SANDS  
PLASTICITY INDEX 3 TO 15  
LIQUID LIMIT <35

- MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED EARTH AND 1-1/2 INCHES FOR TOP BARS ON SIDEWALK AND SHELTER FOUNDATIONS.
- VAPOR BARRIER SHALL BE VAPORBLOCK 10, OR APPROVED EQUAL.
- CRUSHED ROCK AND GEOTEXTILE FABRIC IN THE COMPOUND AREA SHALL MEET THE REQUIREMENTS OF DETAIL 2 ON DWG C-10 AND ALL APPLICABLE GRADING NOTES.
- IN INSTANCES WHERE ROCK IS ENCOUNTERED AT LESS THAN 2'-0", CONCRETE MAY BEAR ON THE ROCK.
- SUBGRADE PREPARATION AND STRUCTURAL FILL SHALL ADHERE TO THE REQUIREMENTS IN THE GEOTECHNICAL REPORT AND SUPPLEMENT COMPLETE BY BLACK MOUNTAIN CONSULTING DATED 6/12/18.
- ALL CONNECTION PLATES ARE TO BE GALVANIZED.
- DESIGN IN ACCORDANCE WITH ESSENTIAL FACILITIES REQUIREMENTS.
- SHEAR PLATE ARE TO BE GALVANIZED 36 KSI STEEL
- EPOXY THREADED ROD ANCHORS, NUTS & WASHERS ARE TO BE GALVANIZED A36. ALL HARDWARE IS TO BE GALVANIZED.



SECTION A



FOUNDATION PLAN

## EQUIPMENT SHELTER FOUNDATION PLAN

SCALE: NTS

4



### PROJECT INFORMATION:

## C-4 WILSONVILLE TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

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1/4/21	AS-BUILTS
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**PLANS PREPARED BY:**



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### LICENSURE:



RENEWAL DATE 12/31/21

### SHEET TITLE:

## EQUIPMENT SHELTER FOUNDATION PLAN

### SHEET NUMBER:

C-11



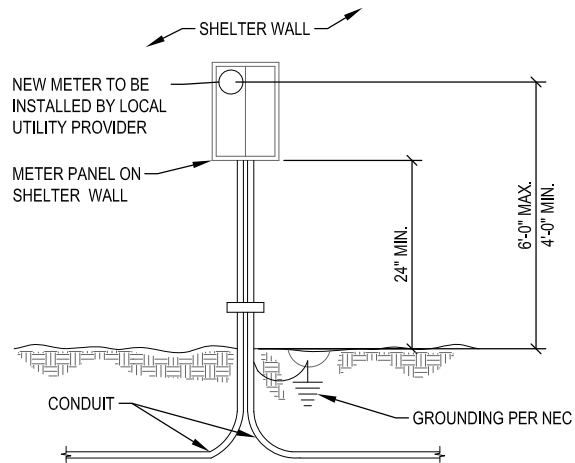
” AS-BUILT ”

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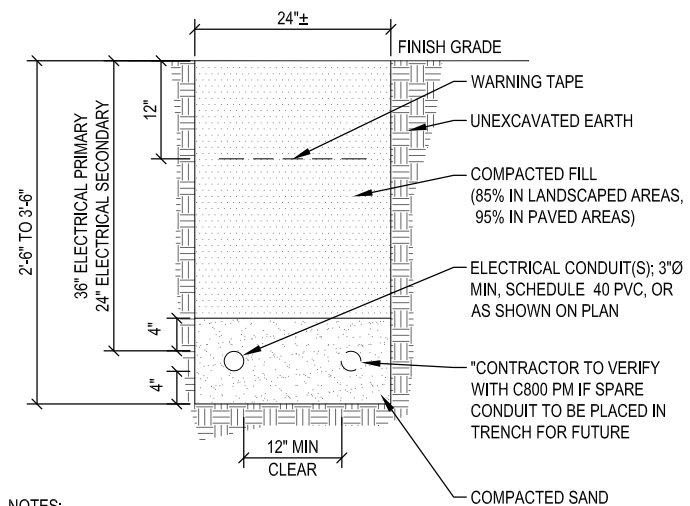
*Linda Kelly*

SIGNED \_\_\_\_\_

1/4/2021  
DATE \_\_\_\_\_



- NOTES:
1. ELECTRICAL LABEL OR PERMIT MUST BE DISPLAYED ON METER BASE.
  2. ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".
  3. MOUNT METER PER LOCAL UTILITY REQUIREMENTS.
  4. LOCAL UTILITY WILL DETERMINE THE EXACT LOCATION OF METER BASE.



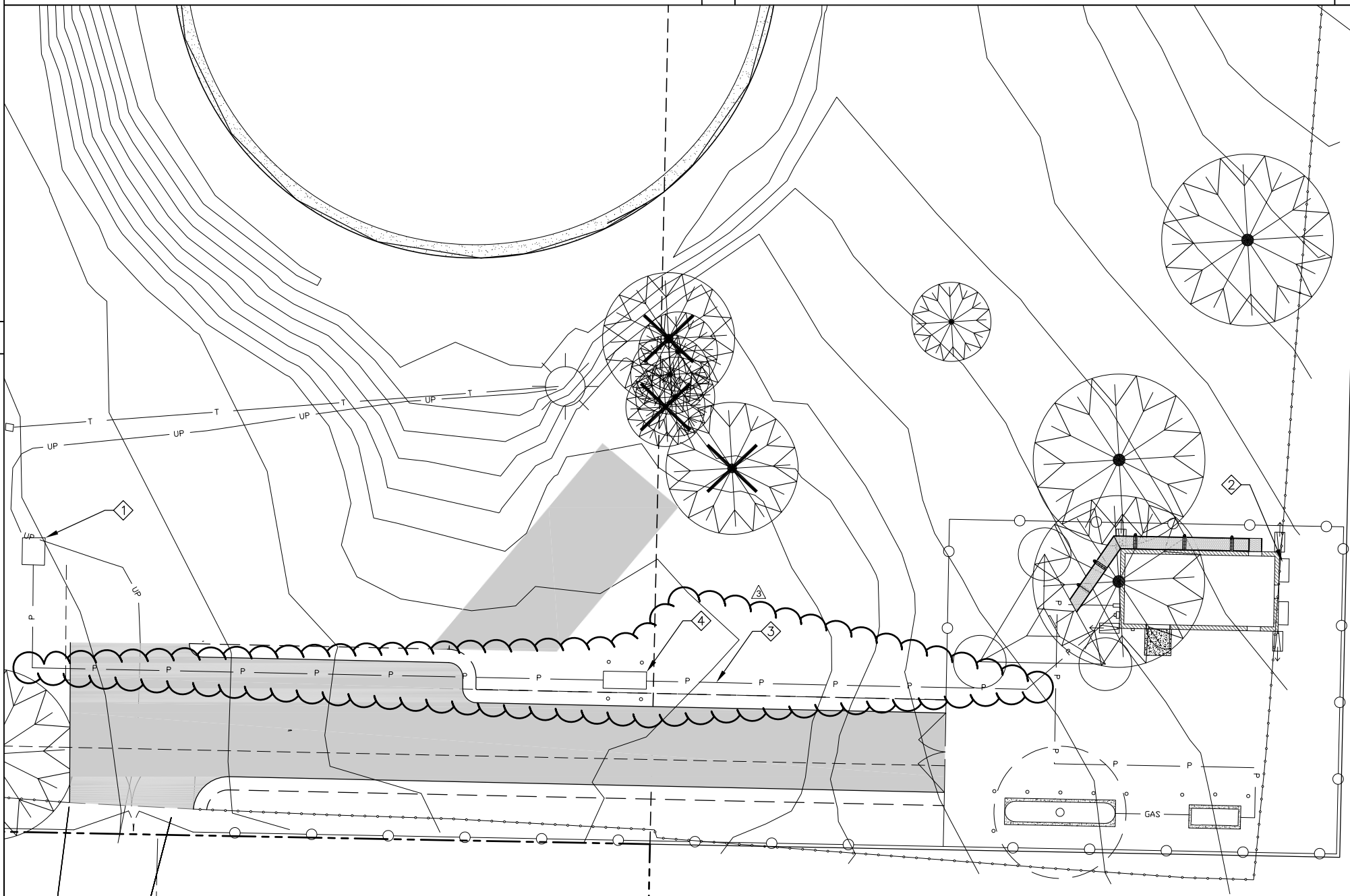
- NOTES:**
1. EXCAVATE TO REQUIRED DEPTH.
  2. VERIFY ALL TRENCHING REQUIREMENTS PER LOCAL UTILITIES.
  3. CONTRACTOR TO PROVIDE (1) 300 POUND NYLON PULL CORD AND CONDUCTORS AS REQUIRED PER CONDUIT.

### METER DETAIL

SCALE: NTS

## POWER TRENCH

SCALE: NTS



**NOT IN USE**

SCALE: NTS

## KEY NOTES

- 
- 1 EXISTING VAULT WITH TRANSFORMER
- 2 NEW WALL MOUNTED METER BASE
- 3 UNDERGROUND POWER ROUTE TO STUB UP AT NEW FACILITIES, 250 LF ±
- 4 NEW TRANSFORMER

## ~~BURIED CONDUITS~~

— P — POWER

**ATTENTION (OREGON SITES ONLY):**

CALL 1-800-332-2344 48 HOURS BEFORE YOU DIG. OREGON LAW REQUIRES YOU TO FOLLOW  
OAR 952-001-0010 THRU 952-001-0090. COPIES ARE AVAILABLE AT THE OREGON UTILITY  
NOTIFICATION CENTER 503-232-1987



## LEGEND

SCALE: NTS

## ELECTRICAL SITE PLAN




SCALE: NTS



**PROJECT INFORMATION:**

C-4  
WILSONVILLE  
TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

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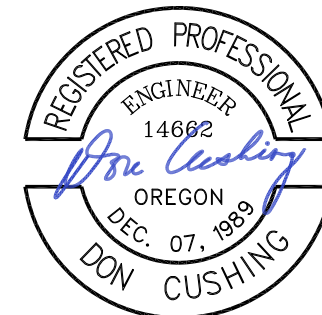
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**LICENSURE:**



RENEWAL DATE 12/31/21

SHEET TITLE:




# ELECTRICAL SITE PLAN

SHEET NUMBER:

**E-1**

- GENERAL NOTES:
- ALL INSTALLATIONS ARE TO BE FIELD VERIFIED.
  - GROUND CONDUCTORS ARE TO BE BURIED AT A MINIMUM 30" BELOW GRADE OR 6" BELOW FREEZE LINE, WHICHEVER IS GREATER.
  - ALL BELOW GRADE GROUNDING CONDUCTORS ARE TO BE ENCOMPASSED IN A 2" X 4" BED OF TERRAFILL SOIL ENHANCEMENT MATERIAL.
  - BONDS TO FENCE POSTS ARE TO BE MADE AT 12" ABOVE GRADE WHERE APPLICABLE.
  - NO CONDUCTOR SHALL HAVE A BEND IN RADIUS OF LESS THAN 12" AND SHALL NOT EXCEED 90 DEGREES.
  - TERRADYNE ELECTROLYTIC GROUND ELECTRODES ARE NOT TO SHARE THE SAME TRENCH AS GROUNDING CONDUCTOR, NOR RUN IN A PARALLEL PATH TO THE CONDUCTOR.
  - ALL GROUND SYSTEMS ARE TO BE MADE COMMON.
  - ALL BONDS ARE TO BE COATED WITH ANTI-OXIDATION COMPOUND.
  - WHERE STANDARD GROUND ELECTRODES ARE UNABLE TO BE DRIVEN, 12" X 12" X 1/8" COPPER GROUND PLATES SHALL BE INSTALLED 30" BELOW FINISHED GRADE & ENCOMPASSED IN 50LBS OF TERRAFILL SOIL ENHANCEMENT MATERIAL.

BASED ON PROVIDED SOIL RESISTIVITY TEST DATA DATED 11/4/2016: LEVELS AVG. 16,757 OHM-CM @ 5'	
600' APPROX.	CONDUCTOR, TINNED (2-T)
0	# OF TERRADYNE GROUND ROD, HORIZONTAL (TD-10-H36-2T-36-6F-P)
14	# OF 5/8" X 10' COPPER CLAD GROUND ELECTRODE (5001)
51	BAGS OF TERRAFILL SOIL ENHANCEMENT (TF-50) WITH 4" X 2" BED
SOIL RESISTANCE = < 5 OHMS RESISTANCE TO EARTH VALUE	

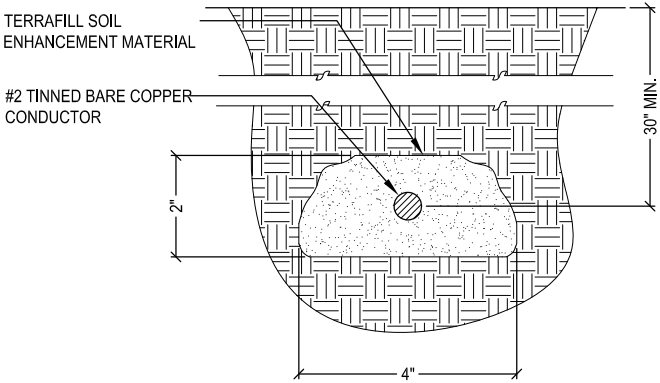
LEGEND:	
	TERRADYNE TD-10-H36-2T-36-3F-P SERIES ELECTRODE W/ INSPECTION WELL
	EXOTHERMIC WELD
	MECHANICAL CONNECTION
— — — — — #2 TINNED SOLID COPPER CONDUCTOR	

”AS-BUILT”

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*David Kelley*

SIGNED \_\_\_\_\_ 1/4/2021  
DATE



NOT IN USE

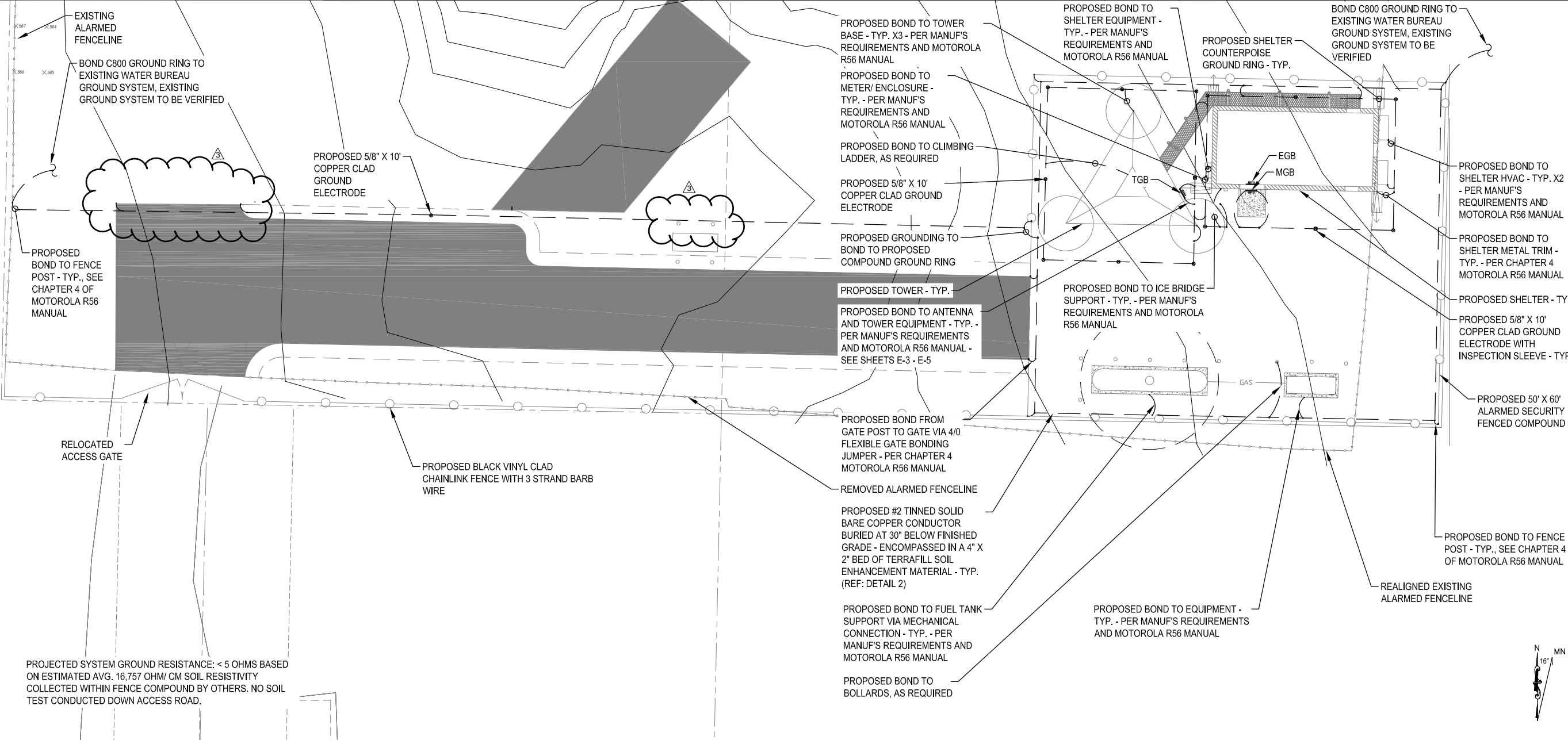
SCALE: NTS

3

SOIL ENHANCEMENT DETAIL

SCALE: NTS

2



SITE COMPOUND GROUNDING PLAN

NTS

1



PROJECT INFORMATION:

C-4  
WILSONVILLE  
TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

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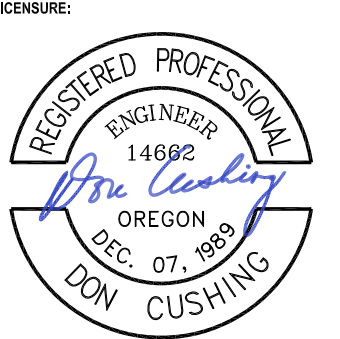
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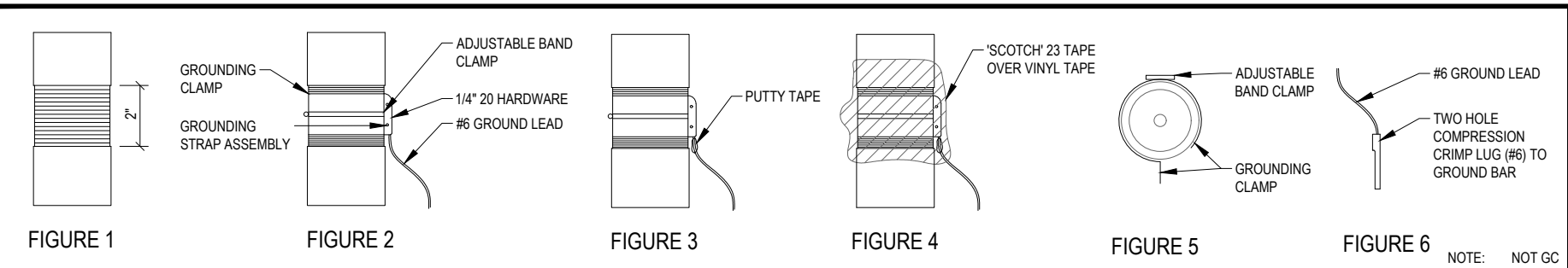
RENEWAL DATE 12/31/21

SHEET TITLE:

**SITE GROUNDING  
PLAN & DETAILS**

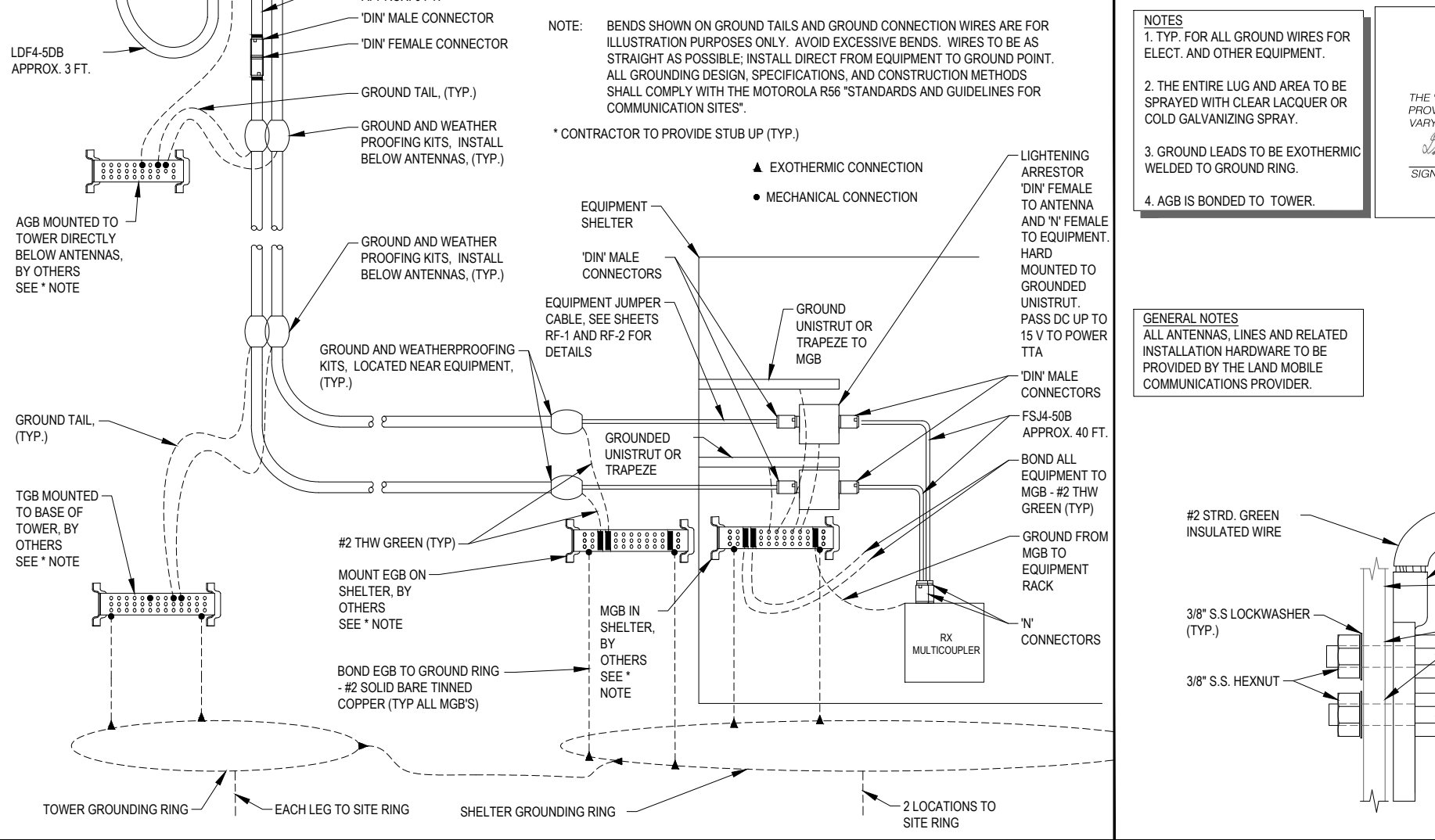
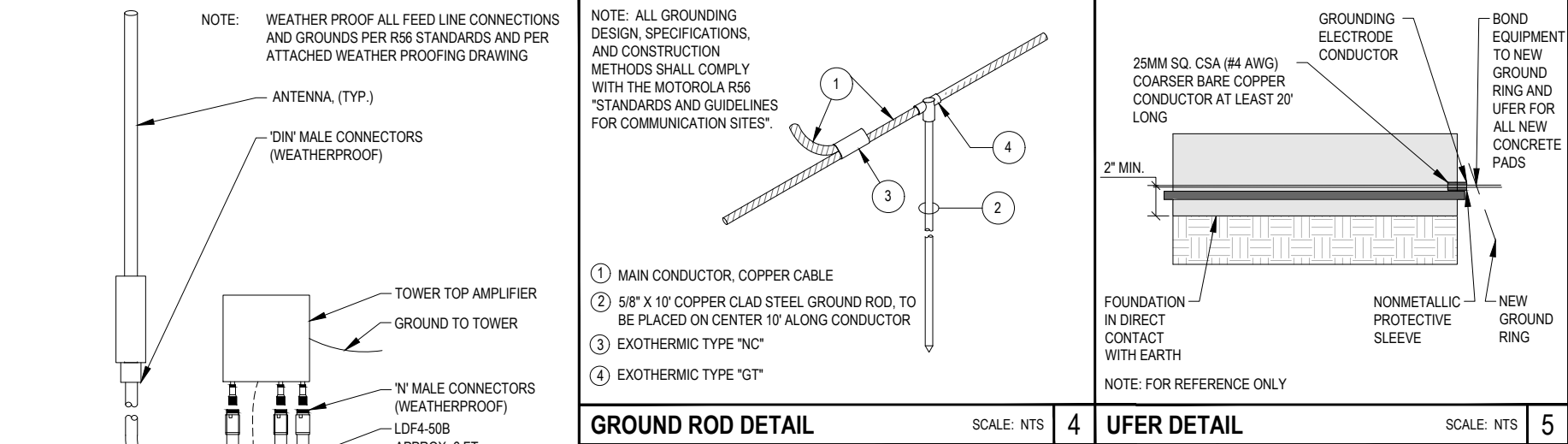
SHEET NUMBER:

**E-2**



FEED LINE CABLE GROUNDING

SCALE: NTS 2

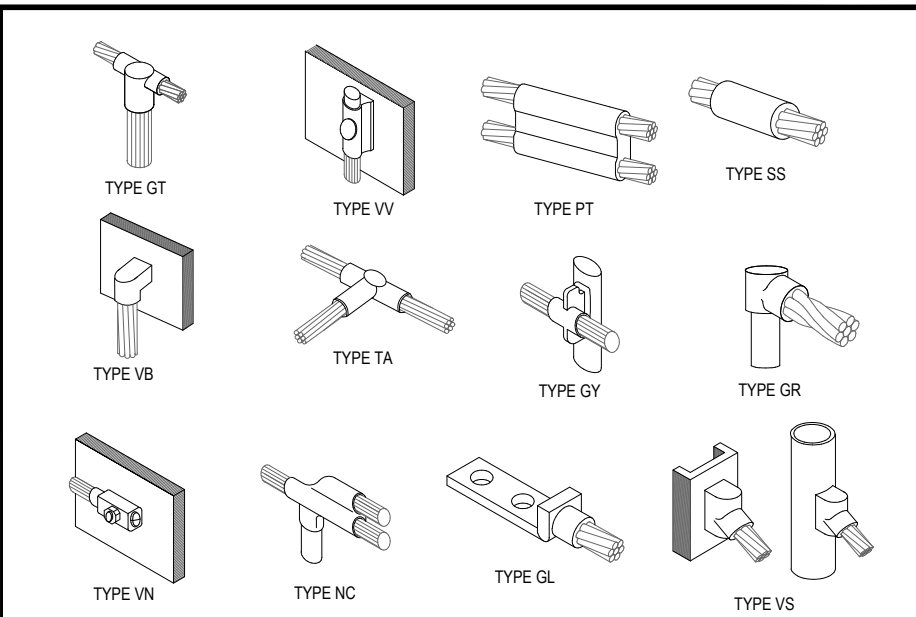


STANDARD RX GROUNDING SCHEMATICS

SCALE: NTS 1

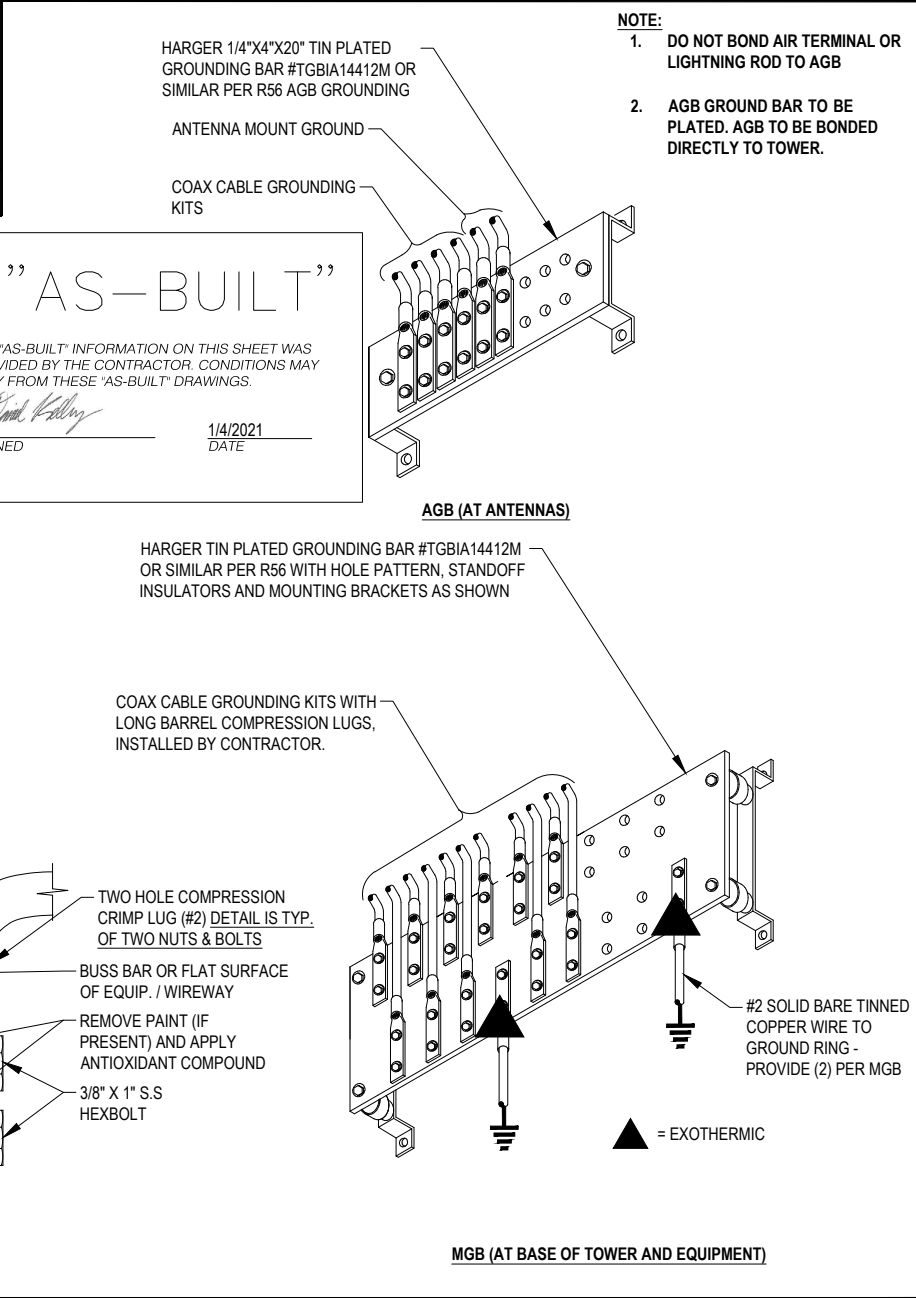
GROUND BAR DETAILS

SCALE: NTS 6



TYPICAL EXOTHERMIC CONNECTION DETAILS

SCALE: NTS 3



**CLATSOP SOUTHERN RADIO GROUP**

11300 SE Fuller Rd  
Milwaukie, Oregon 97222  
(503) 780-4800

PROJECT INFORMATION:

**C-4  
WILSONVILLE  
TANK**

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

DATE	RELEASE
7/21/17	PRELIM. CONSTRUCTION SUBMITTAL
8/18/17	FINAL CONSTRUCTION SUBMITTAL
9/21/17	UPDATED GEN. & PROP. TANK SHT
1/12/18	FINAL CONSTRUCTION SUBMITTAL
2/23/18	FINAL CONSTRUCTION SUBMITTAL
6/20/19	FINAL CONSTRUCTION SUBMITTAL
7/9/19	FINAL CONSTRUCTION SUBMITTAL
7/18/19	FINAL CONSTRUCTION SUBMITTAL
7/23/19	FINAL CONSTRUCTION SUBMITTAL
9/12/19	PLAN CHECK #1
1/4/21	AS-BUILTS
5/16/22	AS-BUILTS (CLIENT REV.)

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**PLANS PREPARED BY:**

**cushing**  
Civil Engineers

**Don Cushing Associates  
Civil Engineers**

107 SE WASHINGTON STREET  
SUITE 265  
PORTLAND, OR 97214  
(503) 387-5331  
[www.cushing-engr.com](http://www.cushing-engr.com)

LICENSURE:

**REGISTERED PROFESSIONAL  
ENGINEER  
14662  
DON CUSHING  
OREGON  
DEC. 07, 1989**

RENEWAL DATE 12/31/21

SHEET TITLE:

**GROUNDING  
DETAILS I**

SHEET NUMBER:

**E-3**

GENERAL NOTES  
ALL ANTENNAS, LINES AND RELATED  
INSTALLATION HARDWARE TO BE  
PROVIDED BY THE LAND MOBILE  
COMMUNICATIONS PROVIDER.

”AS-BUILT”

THE "AS-BUILT" INFORMATION ON THIS SHEET WAS  
PROVIDED BY THE CONTRACTOR. CONDITIONS MAY  
VARY FROM THESE "AS-BUILT" DRAWINGS.

SIGNED

1/4/2021  
DATE

NOTES: ALL GROUNDING DESIGN, SPECIFICATIONS, AND  
CONSTRUCTION METHODS SHALL COMPLY WITH  
THE MOTOROLA R56 "STANDARDS AND GUIDELINES  
FOR COMMUNICATION SITES".  
BENDS SHOWN ON GROUND TAILS AND GROUND  
CONNECTION WIRES ARE FOR ILLUSTRATION  
PURPOSES ONLY. AVOID EXCESSIVE BENDS.  
WIRES TO BE AS STRAIGHT AS POSSIBLE; INSTALL  
DIRECT FROM EQUIPMENT TO GROUND POINT.

\* CONTRACTOR TO PROVIDE STUB UP (TYP.)

CLACKAMAS  
SOLAR  
GROUP  
11300 SE Fuller Rd  
Milwaukie, Oregon 97222  
(503) 780-4800

PROJECT INFORMATION:

C-4  
WILSONVILLE  
TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

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PLANS PREPARED BY:

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LICENSURE:



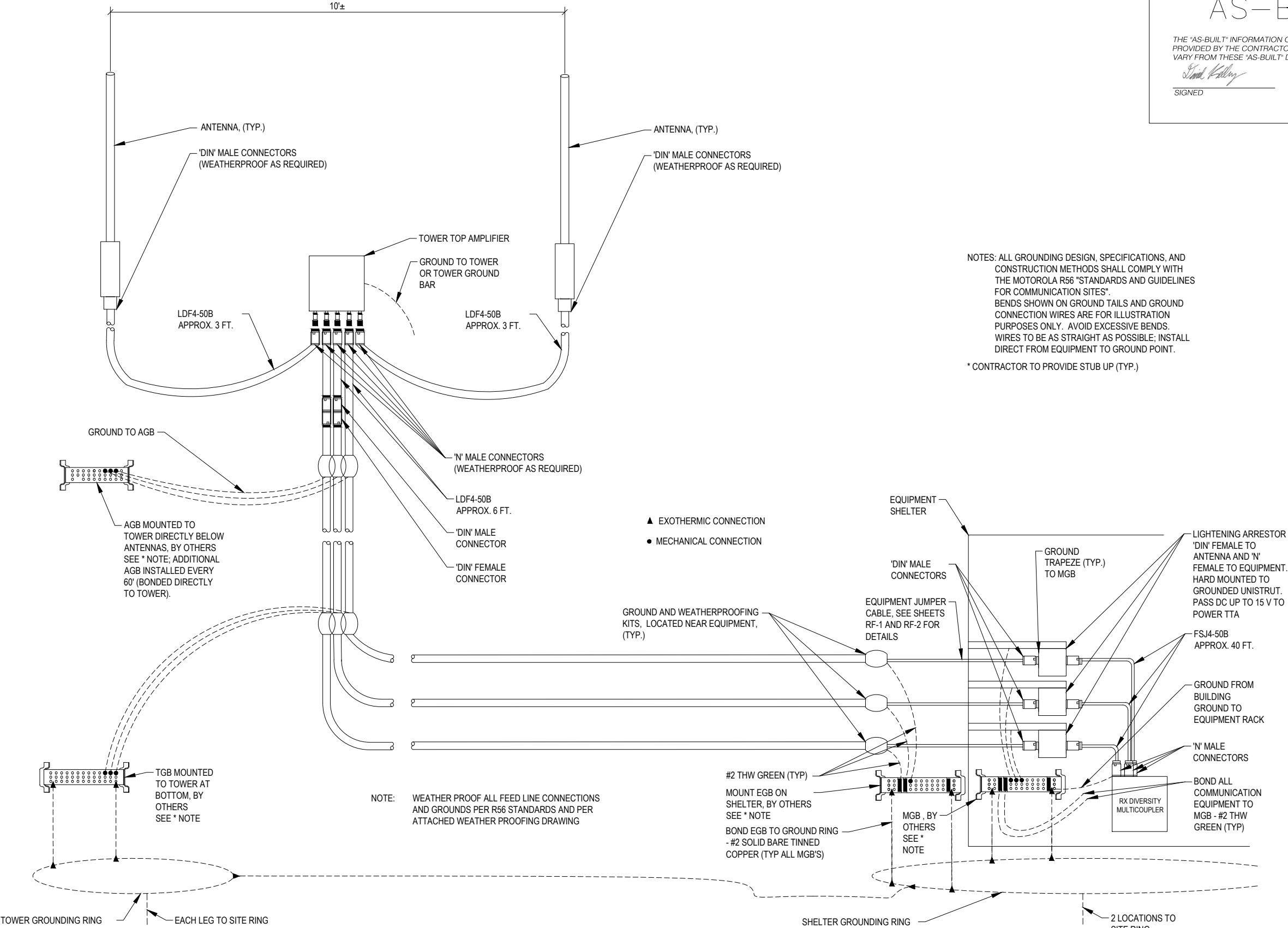
RENEWAL DATE 12/31/21

SHEET TITLE:

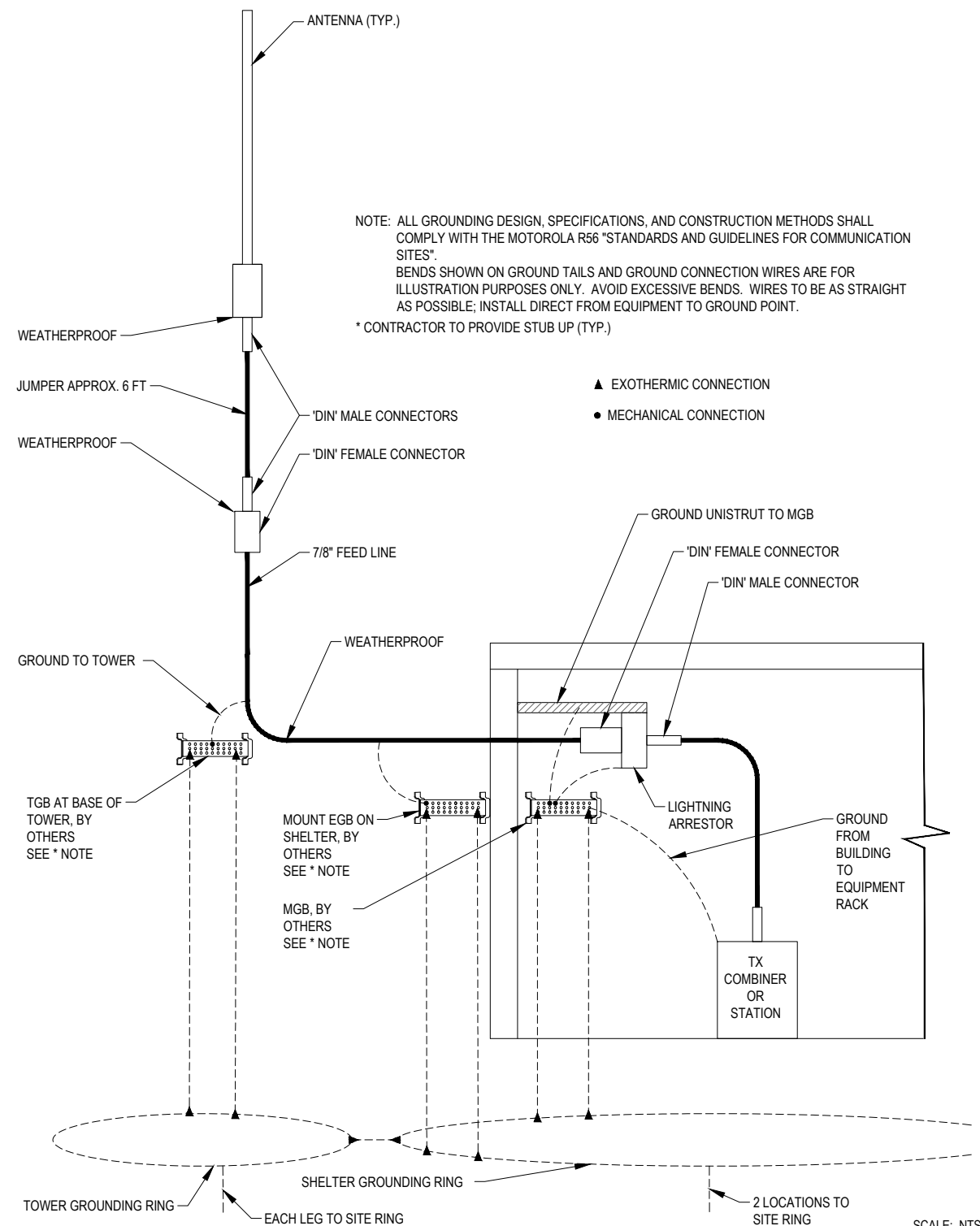
GROUNDING  
DETAILS II

SHEET NUMBER:

E-4



**GENERAL NOTES**  
ALL ANTENNAS, LINES AND RELATED  
INSTALLATION HARDWARE TO BE  
PROVIDED BY THE LAND MOBILE  
COMMUNICATIONS PROVIDER.



## TYPICAL 700/800/UHF/VHF TX ANTENNA WITHOUT TTA, AND TEST ANTENNAS GROUNDING SCHEMATICS



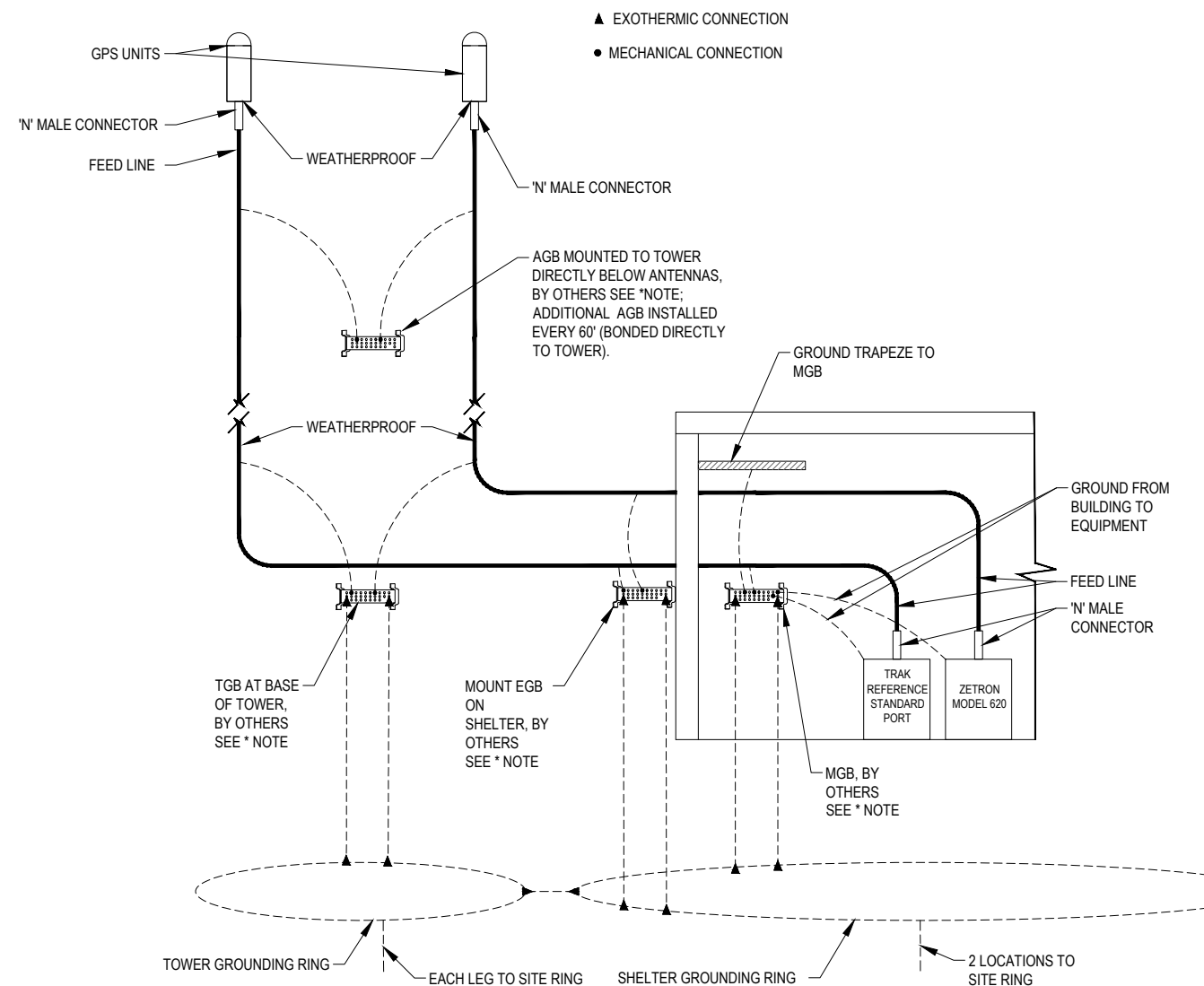
**GENERAL NOTES**  
ALL ANTENNAS, LINES AND RELATED  
INSTALLATION HARDWARE TO BE  
PROVIDED BY THE LAND MOBILE  
COMMUNICATIONS PROVIDER.

NOTE: GPS ANTENNAS MUST HAVE A CLEAR VIEW OF THE SOUTHERN SKY AND ABOVE ANY TREE CANOPY OR ADJACENT STRUCTURES THAT MAY MAY BLOCK THAT VIEW.

ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".

BENDS SHOWN ON GROUND TAILS AND GROUND CONNECTION WIRES ARE FOR ILLUSTRATION PURPOSES ONLY. AVOID EXCESSIVE BENDS. WIRES TO BE AS STRAIGHT AS POSSIBLE; INSTALL DIRECT FROM EQUIPMENT TO GROUND POINT.

\* CONTRACTOR TO PROVIDE STUB UP (TYP.)



## TYPICAL GPS ANTENNA GROUNDING SCHEMATICS

SCALE: NTS



2



**PROJECT INFORMATION:**

C-4  
WILSONVILLE  
TANK

8323 SW ELLIGSEN ROAD  
TUALATIN, OR 97062

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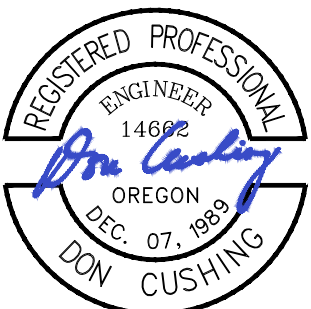
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**LICENSURE:**



RENEWAL DATE 12/31/21

**SHEET TITLE:**

## GROUNDING DETAILS III

**SHEET NUMBER:**

E-5