

**SITE NAME: OR-NORTH BEND-COOS BAY EAST**  
**SITE NUMBER: PIOR388**  
**SITE TYPE: RAWLAND**

**PROPOSED 120' TALL SELF SUPPORT TOWER WITH  
 NEW ANTENNAS AND EQUIPMENT**

94694 CARLSON HEIGHTS LANE  
 NORTH BEND, OR 97459  
 COOS COUNTY

NOTE:  
 ALL CODES LISTED ARE TO INCLUDE THE RESPECTIVE  
 OREGON AMENDMENTS AND/OR SUPPLEMENTS AS ADOPTED  
 BY THE OREGON DEPARTMENT OF COMMUNITY AFFAIRS,  
 UNLESS OTHERWISE NOTED.



Know what's below.  
 Call before you dig.

**SITE INFORMATION**

SITE ADDRESS: 94694 CARLSON HEIGHTS LANE  
 NORTH BEND, OR 97459

LATITUDE (NAD 83): 43.413731°  
 LONGITUDE (NAD 83): -124.175365°

GROUND ELEVATION: 599.3' (AMSL)

JURISDICTION: CITY OF NORTH BEND  
 COOS COUNTY

JURISDICTION CONTACT: CRYSTAL OOR  
 (541) 396-7770

PARCEL NO.: 25S12W07TL0220000

ZONING: F

PARCEL OWNER: LDNE ROCK TT LANDCO, LLC  
 2323 OLD HIGHWAY 99S  
 ROSEBURG, OR, 97470

TOWER OWNER: PARALLEL INFRASTRUCTURE  
 2320 CASCADE POINT BOULEVARD SUITE 300  
 CHARLOTTE, NC 28208

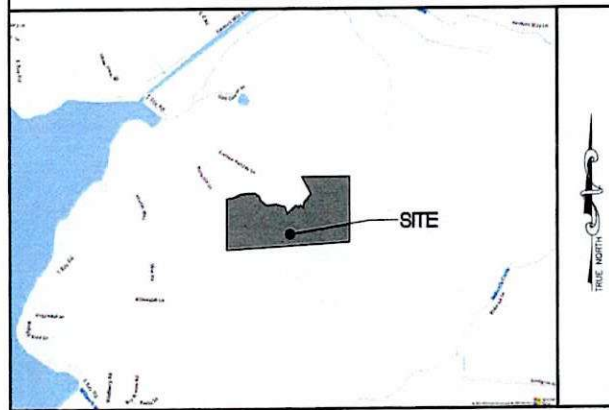
STRUCTURE TYPE: SST

STRUCTURE HEIGHT: 120.0' (AGL)

POWER SUPPLIER: PACIFIC POWER & LIGHT CO  
 (888) 221-7070

TELCO SUPPLIER: FRONTIER COMMUNICATIONS NW  
 (425) 281-5321

**VICINITY MAP**



**DIRECTIONS**

FROM PORTLAND, TAKE I-5 SOUTH TO EXIT 152, OR-99/OR-38 WEST. CONTINUE ON OR-38 FOR APPROX. 50 MILES. AT US-101 JUNCTION, GO SOUTH APPROX. 22 MILES TO E BAY ROAD, TURN LEFT. CONTINUE ON E BAY RD. APPROX. 2 1/2 MILES, TURN RIGHT TO STAY ON E BAY RD FOR APPROX. 1/4 MILE. TAKE 2ND LEFT ONTO CARLSON HEIGHTS LANE. CONTINUE ON CARLSON HEIGHTS LN FOR APPROX. 1 MILE TO GATE. GO THRU GATE, TAKE GRAVEL DRIVEWAY ON RIGHT TO SITE, JUST BEYOND CROWN CASTLE SITE ON LEFT SIDE OF DRIVEWAY.

**BUILDING REQUIREMENTS:**

- International Building Code 2018 Edition, International Residential Code, 2018 Edition
- International Plumbing Code, 2018 Edition
- International Mechanical Code, 2018 Edition
- International Fire Code, 2016 Edition
- International Energy Conservation Code, 2015 Edition
- International Fuel Gas Code, 2018 Edition
- International Property Maintenance Code, 2012 Edition
- International Swimming Pool and Spa Code, 2018 Edition
- National Electrical Code NFPA (National Fire Protection Association), 2018 Edition
- The Code for Safety of Life from Fire in Buildings and Structures as contained in the National Fire Prevention Association Publication 101 (NFPA)

PLUMBING REQUIREMENTS:  
 FACILITY HAS NO PLUMBING.

**DRAWING INDEX**

- T-1 TITLE SHEET
- C-1 PLOT PLAN
- C-2 GRADING PLAN
- C-3 SITE LAYOUT PLAN & TOWER ELEVATION
- C-4 T-MOBILE LEASE AREA LAYOUT PLAN
- D-1 CABLE BRIDGE AND GPS DETAILS
- D-2 UTILITY H-FRAME DETAILS
- D-3 GRAVEL AND FENCING DETAILS
- D-4 ANTENNA PLAN & SCHEDULE (SST)
- D-5 RRH & ANTENNA MOUNTING DETAILS (SST)
- G-1 GROUNDING PLANS AND GROUNDING NOTES
- N-1 GENERAL CONSTRUCTION NOTES

**DRAWING SCALE**

THESE DRAWINGS ARE SCALED TO FULL SIZE AT 22"x34" AND HALF SIZE AT 11"x17". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE DESIGNER/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICE TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.



PROJECT NAME: NORTH BEND

DRAWN BY: BDH

RELEASED BY: JBM

**SUBMITTALS**

DATE	DESCRIPTION
08/11/21	ADDRESSED COMMENTS
05/28/21	ADDRESSED COMMENTS
06/17/21	FOR TOWN SUBMISSION

**NORTH BEND**

94694 CARLSON HEIGHTS LANE  
 NORTH BEND, OR 97459  
 COOS COUNTY

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



CARLTON HEIGHTS LANE

**LEGEND**

- PROPERTY LINE
- - - ADJUTING PROPERTY LINE
- IRON PIN FOUND (AS NOTED)
- MONUMENT (AS NOTED)
- UTILITY POLE
- STONE WALL
- EXISTING TREE LINE
- - - EXISTING CONTOUR
- - - EXISTING OVERHEAD ELECTRIC & TELEPHONE
- - - EXISTING GRAVEL
- - - PROPOSED CONTOUR
- - - PROPOSED OVERHEAD ELECTRIC & TELEPHONE
- - - PROPOSED TREELINE
- - - PROPOSED UTILITY POLE
- - - PROPOSED SALTATION FENCE
- - - PROPOSED CHAIN LINK FENCE
- - - PROPOSED CULVERT
- - - CLEARING LIMIT LINE

DENSE VEGETATION AREA

PROPOSED 50' ACCESS EASEMENT

PROPOSED ACCESS DRIVE (ALONG EXISTING DIRT/GRAVEL ACCESS DRIVE)

PROPOSED TURNAROUND

23'-6"± PROPOSED AREA TO EASTERN LEASE AREA

1130'± PROPOSED AREA TO WESTERN PROPERTY LINE

PROPOSED SELF SUPPORT TOWER

PROPOSED 50' X 50' LEASE AREA/FENCE

NOTE: SITE DOES NOT HAVE SEPTIC SYSTEM OR 100-YEAR FLOODPLAIN

154'± PROPOSED AREA TO SOUTHERN PROPERTY LINE

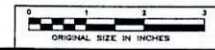
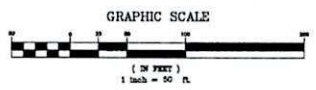
EXISTING LEASE AREA

30' FIREBREAK FROM TOWER LEGS

1665'± PROPOSED AREA TO EASTERN PROPERTY LINE

EXISTING SUBJECT PROPERTY LINE

**SITE PLAN**  
SCALE: 1" = 50'



**Parallel**  
INFRASTRUCTURE  
2320 Cascade Point Boulevard  
Suite 300  
Charlotte, NC 28208

**TILSON**  
18 Middle Street, 4th Floor  
Portland, ME 04101

**AT&T CONSULTING**  
CONSULTING ENGINEERS, ARCHITECTS, PLANNERS & SURVEYORS

**PROFESSIONAL LANDSCAPE ARCHITECT**  
STATE OF NORTH CAROLINA  
EXPIRES: 12.31.21

PROJECT NAME: NORTH BEND

DRAWN BY: BDH

RELEASED BY: JBM

**SUBMITTALS**

DATE	DESCRIPTION
06/11/21	ADDRESSED COMMENTS
05/28/21	ADDRESSED COMMENTS
06/17/21	FOR TOWN SUBMISSION

**NORTH BEND**  
94694 CARLTON HEIGHTS LANE  
NORTH BEND, OR 97459  
COOS COUNTY

SHEET TITLE  
**GRADING PLAN & DETAILS**

SHEET NUMBER  
**C-2**

Z:\Shared\Design\Parallel Infrastructure\Design\North Bend\Sheets\VE North Bend OR C2.dwg Jun 11, 2021 - 1:02pm



PROJECT NAME: NORTH BEND

DRAWN BY: BDH

RELEASED BY: JBM

SUBMITTALS

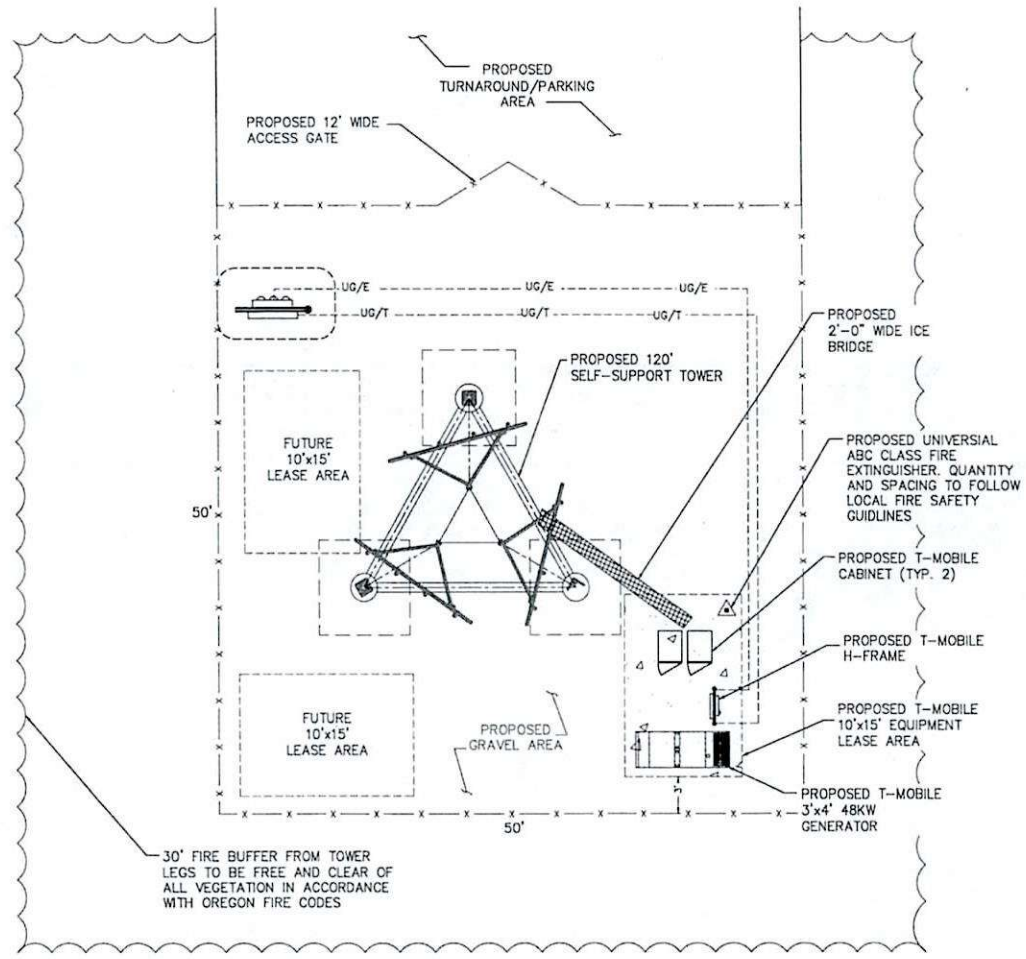
NO.	DATE	DESCRIPTION

▲	06/17/21	ADDRESSED COMMENTS
▲	05/28/21	ADDRESSED COMMENTS
▲	05/17/21	FOR TOWN SUBMISSION

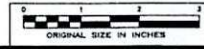
**NORTH BEND**  
8454 CARLSON HEIGHTS LANE  
NORTH BEND, OR 97459  
COOS COUNTY

SHEET TITLE  
**T-MOBILE LEASE AREA LAYOUT PLAN**

SHEET NUMBER  
**C-4**

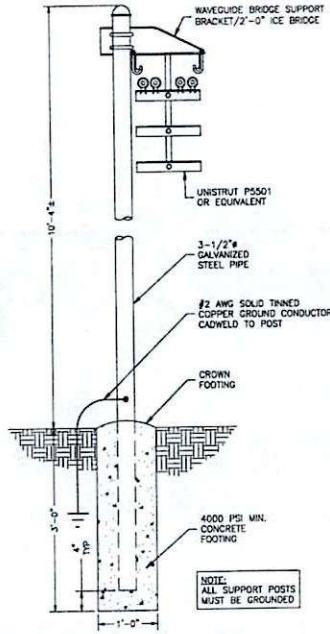


**T-MOBILE LEASE AREA LAYOUT PLAN**  
SCALE: 1"=3'

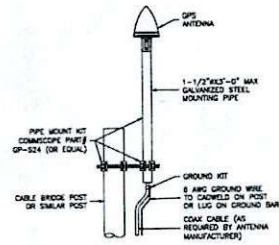


**NOTES:**

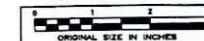
1. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES, INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH MANNER THAT IN THE EVENT OF RAIN THE SITE WILL BE WELL DRAINED AT ALL TIMES.
2. PERFORM ALL SURVEY, LAYOUT, STAKING AND MARKING TO ESTABLISH AND MAINTAIN ALL LINES, GRADES, ELEVATIONS AND BENCHMARKS NEEDED FOR EXECUTION OF THE WORK.
3. LOCATE AND CLEARLY FLAG TREES, VEGETATION AND EXISTING SITE CONDITIONS TO REMAIN UNDISTURBED DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH PROJECT MANAGER TO ESTABLISH INSPECTIONS AND APPROVAL PROCESS FOR ALL SITE WORK.
4. EXCAVATION AND STRUCTURAL BACKFILL FOR TOWER AND EQUIPMENT FOUNDATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. CONTRACTOR IS REQUIRED TO OBTAIN A COPY OF THE REPORT PRIOR TO CONSTRUCTION.
5. SUITABLE NON-STRUCTURAL BACKFILL: EXCAVATED INORGANIC MATERIAL, COHESIVE AND NON-COHESIVE MATERIALS, INCLUDING GRAVEL, SAND, SILT, CLAY, AND COMBINATIONS THEREOF FREE FROM REFUSE, FROZEN LUMPS, STONES OR ROCKS LARGER THAN 3 INCHES.
6. UNSUITABLE BACKFILL: TOP SOIL, HIGH AND MODERATELY PLASTIC SILTS AND CLAY MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3 INCHES.
7. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE AND ONLY THE IMMEDIATE SURROUNDINGS NECESSARY TO COMPLETE THE WORK. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE ORIGINAL GROUND SURFACE: TREES, BRUSH, ROOTS, STUMPS, RUBBERISH AND OTHER DEBRIS AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE SITE AREA.
8. CLEAR BRUSH STRIP AND EXCAVATE FOR THE ACCESS ROAD AND TOWER COMPOUND TO THE LINES AND GRADES INDICATED ON THE DRAWINGS. SCOUR TO A DEPTH OF 6 INCHES AND PROOF-ROLL. ALL DEPRESSIONS, SOFT PLACES AND OTHER DEFECTS SHALL BE FILLED AND COMPACTED WITH SUITABLE FILL.
9. ALL MATERIALS AND DEBRIS RESULTING FROM CLEARING AND GRUBBING OPERATION SHALL BE REMOVED FROM THE SITE AND DISPOSED PROPERLY. BURNING IS NOT PERMITTED.
10. GEOTEXTILE FABRIC SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS.
11. REMOVE ALL FORMWORK RESULTING FROM CONCRETE CONSTRUCTION PRIOR TO BACKFILL.
12. UNDISTURBED SUBGRADE SHALL BE COMPACTED TO A DENSITY EQUAL TO ADJACENT GROUND.
13. ALL SUITABLE FILL MATERIAL SHALL BE INSTALLED IN HORIZONTAL LAYERS NOT EXCEEDING A LOOSE DEPTH OF 9 INCHES AND SHALL BE COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY PER THE MODIFIED PROCTOR TEST, ASTM D1557.
14. WHEN SOFT, YIELDING OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED AT THE REQUIRED TRENCH BOTTOM ELEVATION, OVER EXCAVATE THE TRENCH TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE REQUIRED ELEVATION AND BACKFILL WITH GRANULAR BEDDING MATERIAL.
15. COMPACT FINAL BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN THAT OF THE EXISTING UNDISTURBED MATERIAL IMMEDIATELY ADJACENT TO EXCAVATION BUT NO LESS THAN A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D1557.
16. UTILIZE SUITABLE FILL MATERIALS RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILL ACCESS ROAD, SITE GRADING AND FOR THE REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.
17. SITE AND ACCESS ROAD AGGREGATE SUB-BASE, BASE AND SURFACE COURSES SHALL BE CONSTRUCTED IN LAYERS NOT MORE THAN 6 INCHES THICKNESS AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D1557.
18. PERFORM ALL FINISHED GRADING TO PROVIDE SMOOTH, EVEN SURFACE AND SUBSURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION GRADING SHALL BE COMPATIBLE WITH ALL SURROUNDING TOPOGRAPHY AND STRUCTURES.



1 CABLE BRIDGE DETAIL  
SCALE: N.T.S.



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



SUBMITTALS

NO.	DATE	DESCRIPTION
1	08/11/21	ADDRESSED COMMENTS
2	08/28/21	ADDRESSED COMMENTS
3	08/17/21	FOR TOWN SUBMISSION





**BRIAN A. WILTON**  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF NORTH CAROLINA  
LICENSE NO. 35272



PROJECT NAME: NORTH BEND

DRAWN BY: BDH

RELEASED BY: JBM

SUBMITTALS

NO.	DATE	DESCRIPTION
1	08/11/21	ADDRESSED COMMENTS
2	08/26/21	ADDRESSED COMMENTS
3	08/17/21	FOR TOWN SUBMISSION

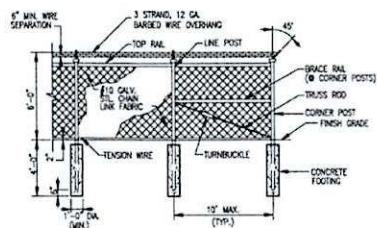
NORTH BEND

94694 CARLSON HEIGHTS LANE  
NORTH BEND, OR 97459  
COOS COUNTY

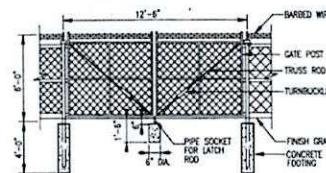
SHEET TITLE  
GRAVEL AND FENCING DETAILS

SHEET NUMBER

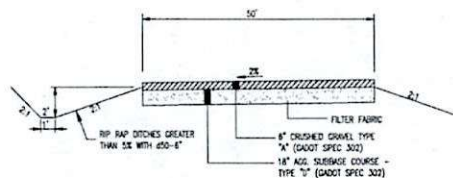
D-3



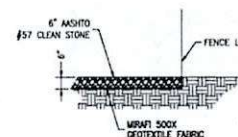
1  
D-3  
TYPICAL FENCE DETAIL  
SCALE: N.T.S.



2  
D-3  
TYPICAL GATE DETAIL  
SCALE: N.T.S.



4  
D-3  
TYPICAL TURNAROUND SECTION  
SCALE: N.T.S.



5  
D-3  
GRAVEL COMPOUND DETAIL  
SCALE: N.T.S.





## EROSION AND SEDIMENT CONTROL PLAN

THIS PLAN HAS BEEN DEVELOPED TO PROVIDE A STRATEGY FOR CONTROLLING SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROPOSED DEVELOPMENT. THIS PLAN IS BASED ON STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION IN DEVELOPING AREAS AS CONTAINED IN STORMWATER MANAGEMENT, EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN MAINE, BEST MANAGEMENT PRACTICES, MARCH 2003.

## SEEDING AND REVEGETATION PLAN

UPON COMPLETION OF SITE CONSTRUCTION, ALL AREAS PREVIOUSLY DISTURBED WILL BE TREATED AS STATED BELOW. THESE AREAS WILL BE CLOSELY MONITORED BY THE CONTRACTOR UNTIL SUCH TIME AS A SATISFACTORY GROWTH OF VEGETATION IS ESTABLISHED.

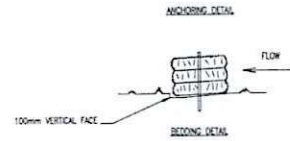
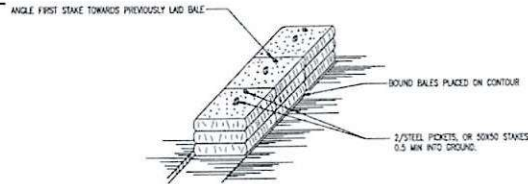
- LOAM WILL BE SPREAD OVER ALL DISTURBED AREAS AND GRADED TO A UNIFORM DEPTH OF 4 INCHES.
- THE FOLLOWING WILL BE INCORPORATED INTO THE SOIL PRIOR TO SEEDING: AGRICULTURAL LIMESTONE AT THE RATE OF 130 POUNDS PER 1,000 SQUARE FEET, FOLLOWED BY 10-10-10 FERTILIZER AT THE RATE OF 14 POUNDS PER 1,000 SQUARE FEET.
- DISTURBED AREAS WILL BE SEEDED AT THE RATE OF 2 LBS/1000 S.F. MDOT ROADSIDE MIXTURE #3 & 1 LB/1000 S.F. CROWNWEED.
- SEEDING WILL BE COMPLETED BETWEEN THE DATES OF APRIL 1 AND SEPTEMBER 15. WATERING MAY BE REQUIRED DURING DRY PERIODS.
- MAY MULCH WILL BE APPLIED AT THE RATE OF 100 LBS. PER 1,000 SQ. FT. FOLLOWING SEEDING. MULCH SHALL BE ANCHORED BY WATERING OR TRACKING BY BULLDOZER FLAT AREAS, USING ANCHORING EMULSION OR TRACKING BY BULLDOZER ON AREAS OF MODERATE SLOPES AND INSTALLING BIODEGRADABLE NETS ON STEEP SLOPES (3:1 AND STEEPER).
- ALL SEDIMENT CONTROL STRUCTURES WILL REMAIN IN PLACE UNTIL VEGETATION IS ESTABLISHED. ESTABLISHED MEANS A MINIMUM OF 75% OF THE AREA IS VEGETATED WITH VIGOROUS GROWTH.

## MONITORING PROGRAM

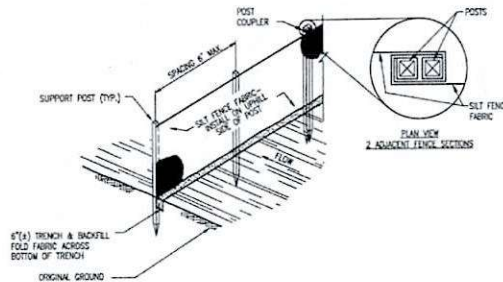
SEDIMENTATION AND EROSION CONTROL STRUCTURES WILL BE INSPECTED CONTINUALLY BY THE CONTRACTOR AND ALL STRUCTURES DAMAGED BY CONSTRUCTION EQUIPMENT, VEHICLES, OR THE ELEMENTS WILL BE REPAIRED IMMEDIATELY. FOLLOWING STORMS AND DURING RUNOFF EVENTS, THE SITE AND ALL STRUCTURES WILL BE INSPECTED FOR EROSION AND DAMAGE. ALL DAMAGED STRUCTURES WILL BE REPAIRED AND/OR ADDITIONAL EROSION CONTROL STRUCTURES WILL BE INSTALLED PRIOR TO CONTINUING THE CONSTRUCTION.

FOLLOWING THE FINAL SEEDING, THE SITE WILL BE INSPECTED TO ENSURE THAT THE VEGETATION HAS BEEN ESTABLISHED. RESEEDING WILL BE CARRIED OUT, WITH FOLLOW-UP INSPECTION, IN THE EVENT OF ANY UNSATISFACTORY GROWTH.

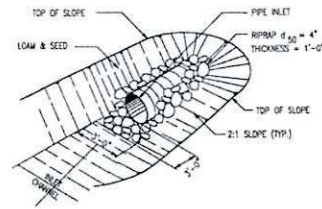
AFTER THE CONSTRUCTION INSPECTOR HAS DETERMINED THAT THE PROJECT AREA HAS STABILIZED, THE CONTRACTOR SHALL REMOVE ALL SILTATION FENCE, AND ANY OTHER TEMPORARY EROSION CONTROL MEASURES.



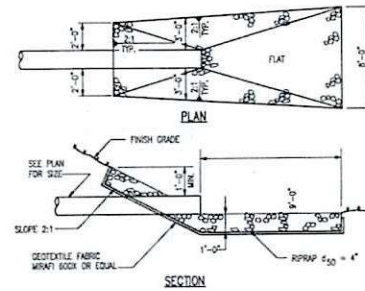
1 STRAW BALE BANK SEDIMENT CONTROL  
SCALE: N.T.S.



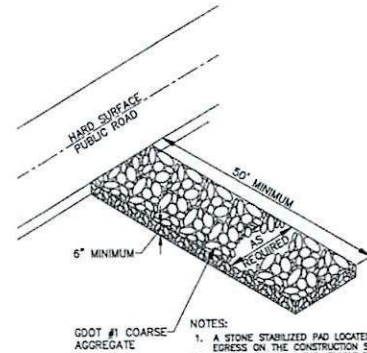
2 SILTATION FENCE INSTALLATION DETAIL  
SCALE: N.T.S.



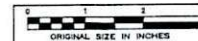
3 TYPICAL DETAIL RIP RAP INLET  
SCALE: N.T.S.



4 TYPICAL DETAIL RIP RAP OUTLET  
SCALE: N.T.S.



5 TEMPORARY GRAVEL CONSTRUCTION ENTRANCE  
SCALE: N.T.S.



**Parallel**  
INFRASTRUCTURE

2320 Cascade Point Boulevard  
Suite 300  
Charlotte, NC 28208

**TILSON**

16 Middle Street, 4th Floor  
Portland, ME 04101



PROJECT NAME: NORTH BEND

DRAWN BY: BOH

RELEASED BY: JDM

### SUBMITTALS

NO.	DATE	DESCRIPTION
1	06/11/21	ADDRESSED COMMENTS
2	06/28/21	ADDRESSED COMMENTS
3	06/27/21	FOR TOWN SUBMISSION

### NORTH BEND

34694 CARLSON HEIGHTS LANE  
NORTH BEND, OR 97459  
COOS COUNTY

SHEET TITLE  
DETAILS AND EROSION CONTROL NOTES

SHEET NUMBER  
D-4

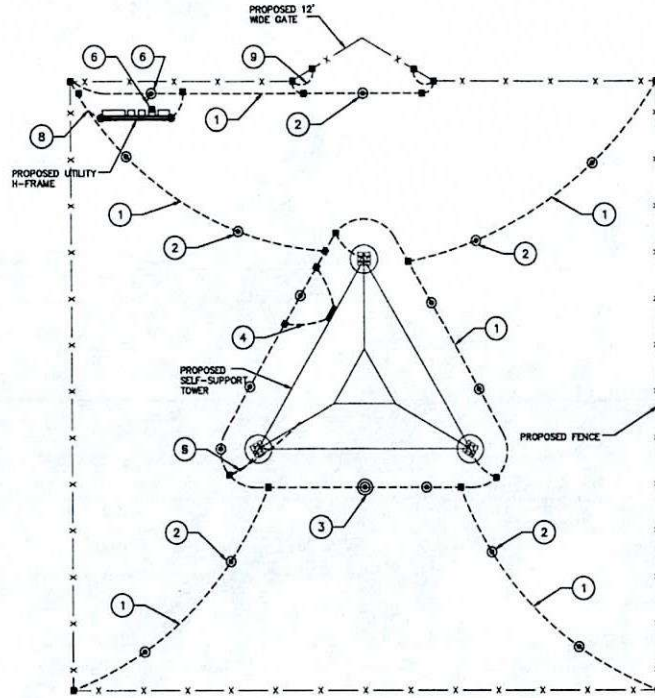


**GROUNDING NOTES:**

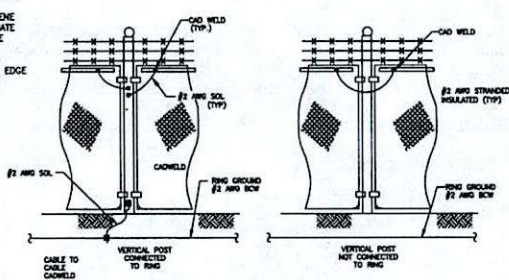
- GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
- ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
- ALL WIRES SHALL BE AWG THRU/THIN COPPER UNLESS NOTED OTHERWISE.
- GROUNDING CONNECTIONS TO GROUND RODS, GROUNDING RING WIRE, TOWER BASE AND FENCE POSTS SHALL BE EXOTHERMIC "CADWELDS" UNLESS NOTED OTHERWISE. CLEAN SURFACES TO SHINY METAL. WHERE GROUND WIRES ARE CADWELDED TO GALVANIZED SURFACES, SPRAY CADWELD WITH GALVANIZED PAINT.
- GROUNDING CONNECTIONS TO GROUND BARS ARE TO BE TWO-HOLE BRASS MECHANICAL CONNECTORS WITH STAINLESS STEEL HARDWARE (INCLUDING SCREW SET) CLEAN GROUND BAR TO SHINY METAL. AFTER MECHANICAL CONNECTION, TREAT WITH PROTECTIVE ANTI-OXIDANT COATING.
- GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH MANUFACTURER'S GROUNDING KITS.
- ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.
- INSTALL #2 AWG GREEN-INSULATED TINNED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 BARE TINNED COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
- REFER TO GROUNDING PLAN FOR GROUND BAR LOCATIONS. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CADWELDS") TO ANTENNA MOUNTS AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
- THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS POSITION ACCORDING TO GROUNDING PLAN. THE GROUND RODS SHALL BE 5/8"x10"-0" COPPER CLAD STEEL, INTERCONNECTED WITH #2 BARE TINNED COPPER WIRE BURIED 36" BELOW GRADE. BURY GROUND RODS A MAXIMUM OF 15' APART, AND MINIMUM OF 8' APART.
- IF ROCK IS ENCOUNTERED GROUND RODS SHALL BE PLACED AT AN OBLOQUE ANGLE NOT TO EXCEED 45°.
- EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH ERCO PRODUCTS BULLETIN 4-8-87.
- CONSTRUCTION OF GROUND RING AND CONNECTION TO EXISTING GROUND RING SYSTEM SHALL BE DOCUMENTED WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PROVIDE PHOTOS TO THE CARPENTER CONSTRUCTION MANAGER.
- ALL GROUND LEADS EXCEPT THOSE TO THE EQUIPMENT ARE TO BE #2 BARE TINNED COPPER WIRE. ALL EXTERIOR GROUND BARS TINNED COPPER.
- PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPR-SHIELD (TM OF JET LINE INC.), PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPR-SHIELD OR EQUAL.
- ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED FIVE OHMS TO GROUND BY MEANS OF "FALL OF POTENTIAL TEST". TEST SHALL BE WITNESSED BY A CARPENTER REPRESENTATIVE, AND RECORDED ON THE "GROUND RESISTANCE TEST" FORM.
- WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN 3/4" PVC SLEEVE, FROM 1" BELOW GRADE AND SEAL TOP WITH SILICONE MATERIAL.
- PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL FOLLOWING CONNECTION, APPLY APPROPRIATE ANTI-OXIDATION PAINT.
- ANY SITE WHERE THE EQUIPMENT (SITE, CABLE BRIDGE, PFC, GENERATOR, ETC.) IS LOCATED WITHIN 6 FEET OF METAL FENCING, THE GROUND RING SHALL BE BONDED TO THE NEAREST FENCE POST USING (3) RUNS OF #2 BARE TINNED COPPER WIRE.

**KEYNOTE TAG**

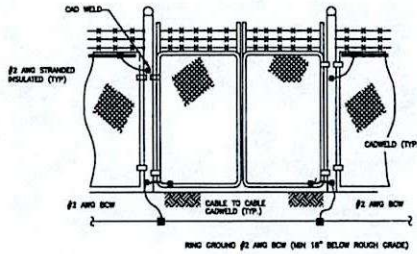
- GROUND RING, #2 SOLID TINNED, BARE COPPER WIRE
- 5/8"x10"-0" COPPER CLAD STEEL GROUND ROD SPACED MIN. 10'-0", MAX. 15'-0" APART.
- GROUND SYSTEM TEST WELL
- #2 SOLID TINNED, BARE COPPER GROUND WIRE FROM LOWER TOWER GROUND BAR TO THE NEW GROUND RING (2 REQUIRED)
- #2 SOLID TINNED, BARE COPPER GROUND WIRE FROM TOWER BASE PLATE TO NEW GROUND RING.
- 5/8"x10"-0" COPPER CLAD GROUND ROD FOR ELECTRICAL SERVICE GROUND.
- #3/0 AWG SOLID TINNED GROUND CONDUCTOR TO GROUND ROD BONDED TO GROUND RING.
- #2 SOLID TINNED, BARE COPPER GROUND WIRE, BOND UTILITY POST W/ VS TYPE CADWELD (1 PER POST REQUIRED)
- A.L.T. OR EQUAL 2/0 GROUNDING CONDUCTOR WITH BLACK NEOPRENE INSULATION & PRE-CAPPED ENDS ATTACHED TO GATE POST AND GATE FRAME WITH VS TYPE EXOTHERMIC. INSTALL WITH WELDS 18" ABOVE FINISH GRADE.
- IN THE EVENT A PAD/PIER FOUNDATION IS INSTALLED, THE BURIED GROUND RING SHALL BE INSTALLED A MINIMUM 2 FEET FROM THE EDGE OF CONCRETE.



**1 TYPICAL COMPOUND GROUNDING**  
D-1 SCALE: N.T.S.



**2 TYPICAL FENCE GROUNDING**  
D-1 SCALE: N.T.S.



**4 TYPICAL FENCE GATE GROUNDING**  
D-1 SCALE: N.T.S.

**GROUNDING LEGEND**

- EXOTHERMIC WELD CONNECTION
- COMPRESSION FITTING CONNECTION
- 5/8"x10" COPPER-CLAD STEEL GROUND ROD
- ⊙ 5/8"x10" COPPER-CLAD STEEL GROUND ROD WITH INSPECTION WELL
- PROPOSED GROUND WIRING
- EXISTING GROUND WIRING
- TINNED COPPER GROUND BAR 1/4"x4"x12" OR 1/4"x4"x20"
- COLLECTOR GROUND BAR
- MAIN GROUND BAR

**Parallel INFRASTRUCTURE**  
2320 Cascade Point Boulevard  
Suite 300  
Charlotte, NC 28208

**TILSON**  
15 Middle Street, 4th Floor  
Portland, ME 04101

**amb consulting**  
1000 W. 10th Street, Suite 100  
Bismarck, ND 58102

**EMAG PROJECT 043**  
ISSUED 12.31.21

**PROJECT NAME: NORTH BEND**  
**DRAWN BY: BDH**  
**RELEASED BY: JBM**

**SUBMITTALS**

DATE	DESCRIPTION
08/17/21	ADDRESSED COMMENTS
08/28/21	ADDRESSED COMMENTS
08/17/21	FOR TOWN SUBMISSION

**NORTH BEND**  
84684 CARLSON HEIGHTS LANE  
NORTH BEND, OR 97459  
COOS COUNTY

**SHEET TITLE**  
GROUNDING PLANS  
AND GROUNDING NOTES

**SHEET NUMBER**  
G-1

