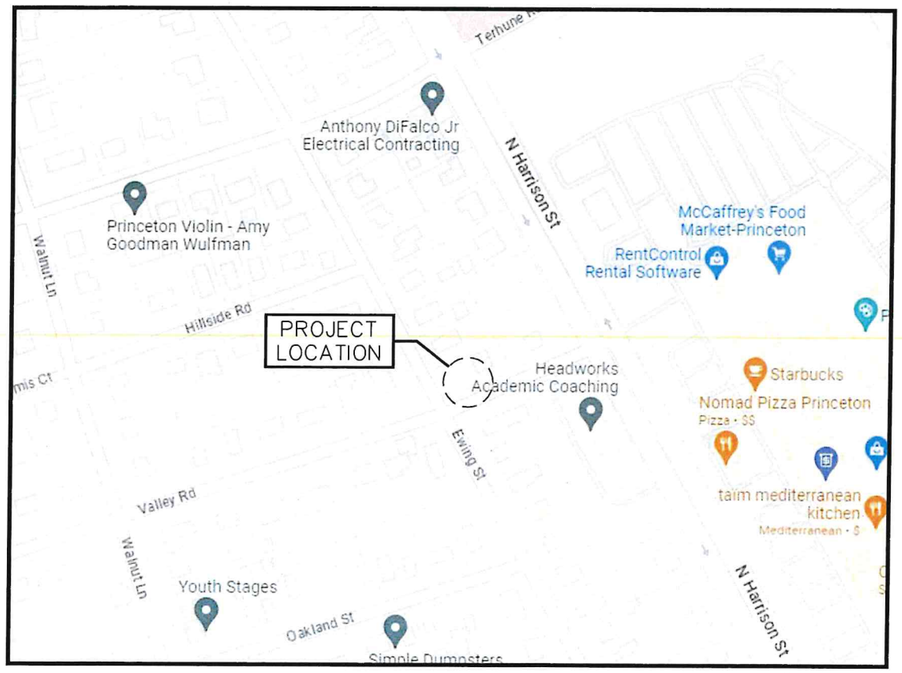
CROWN CASTLE
The Foundation for a Wireless World.

Crown Castle Fiber LLC
246 Valley Rd.
Jurisdiction: Municipality of Princeton
Proposed Small Cell Site

INDEX TO SHEETS	
DWG #	DRAWING TITLE
1	COVER SHEET
2	PROPOSED POLE CONFIGURATION
3	PROPOSED POLE LOCATION PHOTOS (N&S)
4	PROPOSED POLE LOCATION PHOTOS (E&W)
5	PROPOSED EQUIPMENT DETAILS
6	PROPOSED ANTENNA & RADIO DETAILS
7	WIRING DIAGRAM
8	DISCONNECT BOX
9	TRAFFIC CONTROL PLAN
10	TRAFFIC CONTROL NOTES
11	TRAFFIC CONTROL DETAILS - 1
12	TRAFFIC CONTROL DETAILS - 2
13	TRAFFIC CONTROL DETAILS - 3
14	UNDERGROUND UTILITY NOTES
15	UNDERGROUND UTILITY PLAN
16	UNDERGROUND ROUTING DETAILS

N



NOT TO SCALE

LOCATION MAP

Latitude: 40.36389000°N
Longitude: −74.65415000°W
Block: 7203, Lot: 8

811
Know what's **below.**
Call before you dig.

N

NOT TO SCALE

NODE PLACEMENT

246 Valley Rd.
Proposed Crown wood pole
On the North side of
Valley Rd. East of Ewing St.
Pole ID: TBD

NODE ID: PRC−067

SCU #: 528024

PROPOSED POLE CLASS: 2

RECEIVED
AUG 27 2025
PRINCETON PLANNING BOARD

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. DATE
NEW JERSEY PROFESSIONAL ENGINEER NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

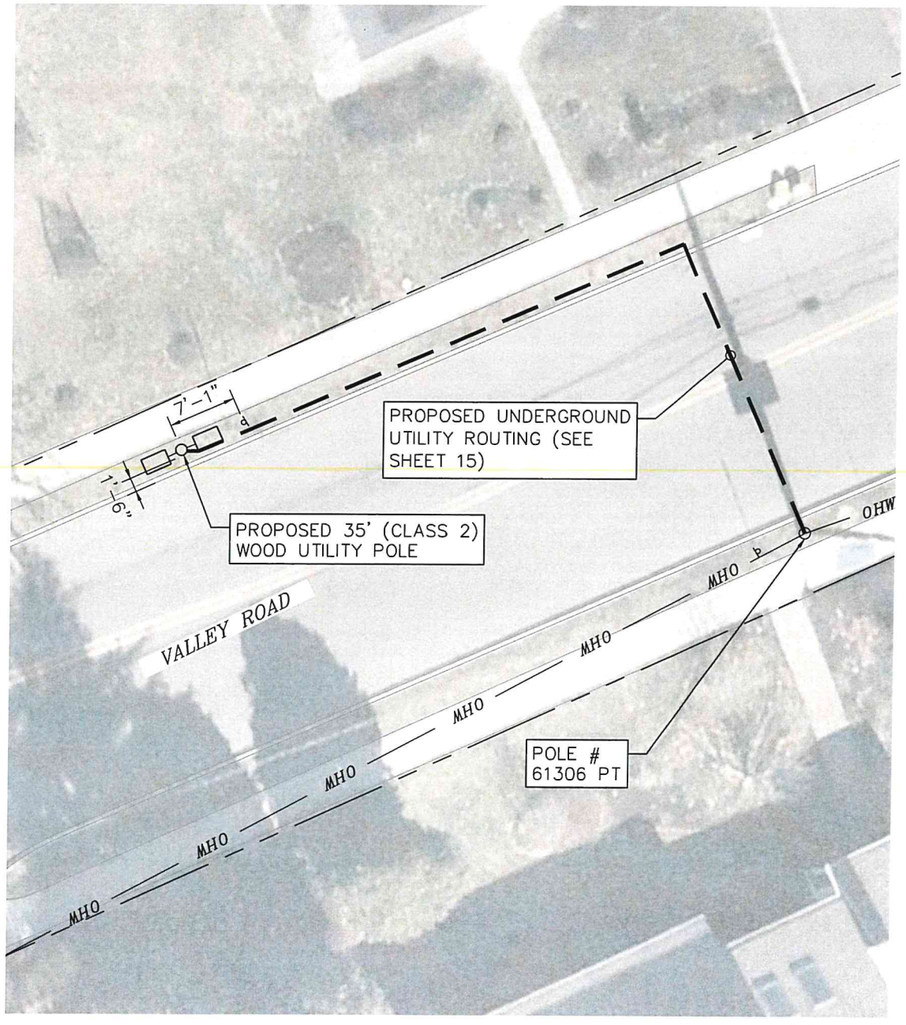
REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC−067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	1 OF 16

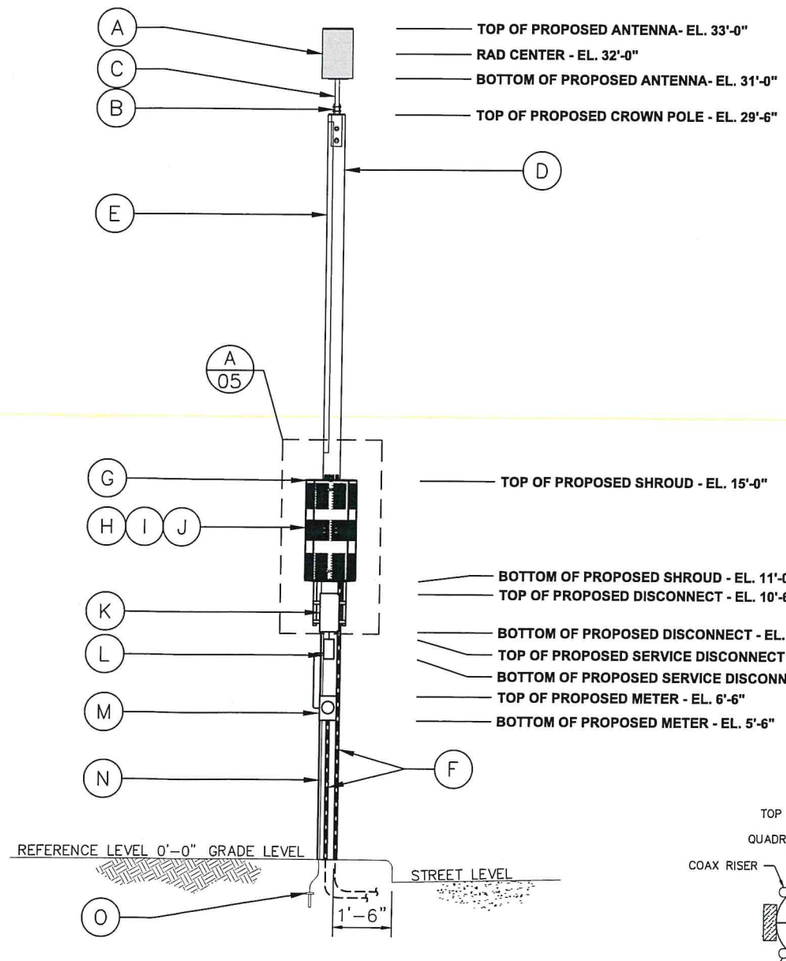
Crown Castle Fiber LLC
PRNCETON, NJ

NOTES:
POINT OF CONTACT FOR POWER AND TELCO TO BE DETERMINED PENDING UTILITY COORDINATION.

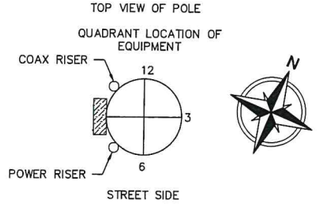


PROPOSED POLE LOCATION

NOT TO SCALE



PROPOSED POLE DETAIL
LOOKING NORTHEAST



NODE ID:
PRC-067

A. PROPOSED ANTENNA:
(1) AMPHENOL 2C6U2VT360X06Fwxys4
24.0"x14.6" (HxD) – 28.0 LBS

B. INSTALL ANTENNA MOUNTING BRACKET

C. INSTALL POLE TOP MOUNT

D. INSTALL NEW 35' CLASS 2 WOOD UTILITY POLE
TOP HEIGHT = 29'-6" (AGL)

E. INSTALL 2" PVC RISER U-GUARD:
PROPOSED #4 AWG GROUND WIRE AND COAX/FIBER CABLES TO BE ROUTED WITHIN

F. INSTALL 3" PVC SCH. 80 POWER RISER CONDUIT FROM METER TO PULLBOX. INSTALL 2" PVC SCH. 80 FIBER RISER CONDUIT FROM SHROUD TO PULLBOX.

G. INSTALL SHROUD CABINET:
RAYCAP RAES-235418-C35
48.0"x24.0"x24.0" (HxWxD) – 433 LBS
INTERNAL ERICSSON COMPONENTS TO BE INSTALLED:
OAD-9-S, PSU AC 08, & FRONTHAUL 6585
EQUIPMENT COLOR: BROWN
TO BE THRU-BOLTED TO POLE

H. INSTALL RADIO UNIT WITHIN NEW SHROUD CABINET:
(1) ERICSSON RADIO 4455 B2/B25 B66A
31.3"x10.9"x5.9" (HxWxD) – 67.2 LBS

I. INSTALL RADIO UNIT WITHIN NEW SHROUD CABINET:
(1) ERICSSON RADIO 8863 B41 W/FAN
18.1"x14.8"x5.7" (HxWxD) – 50.9 LBS

J. INSTALL DIPLEXER WITHIN NEW SHROUD CABINET:
(1) KAELUS DBCT156F1V12-1
4.33"x9.41"x3.51" (HxWxD) – 9.7 LBS

K. INSTALL 100A DISCONNECT:
(1) RAYCAP RSD-FMC-Z16MS-21NN
18.25"x9.10"x6.05" (HxWxD) – 23.6 LBS
EQUIPMENT COLOR: BROWN
TO BE MOUNTED BELOW EQUIPMENT SHROUD

L. INSTALL SERVICE DISCONNECT:
(1) SQUARE D QO2-4L70RB
9.37"x4.88" (HxW) – 5.05 LBS
EQUIPMENT COLOR: BROWN
TO BE MOUNTED BELOW 100A DISCONNECT

M. INSTALL POWER METER:
(1) MILBANK U8569-YL-PSE&G-DES
11.5"x8.0"x3.3" (HxWxD)
EQUIPMENT COLOR: BROWN
TO BE MOUNTED BELOW 100A DISCONNECT

N. INSTALL 1" PVC U-GUARD:
PROPOSED #4 AWG GROUND WIRE ROUTED WITHIN

O. INSTALL 8' GROUND ROD

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. DATE
NEW JERSEY PROFESSIONAL ENGINEER NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

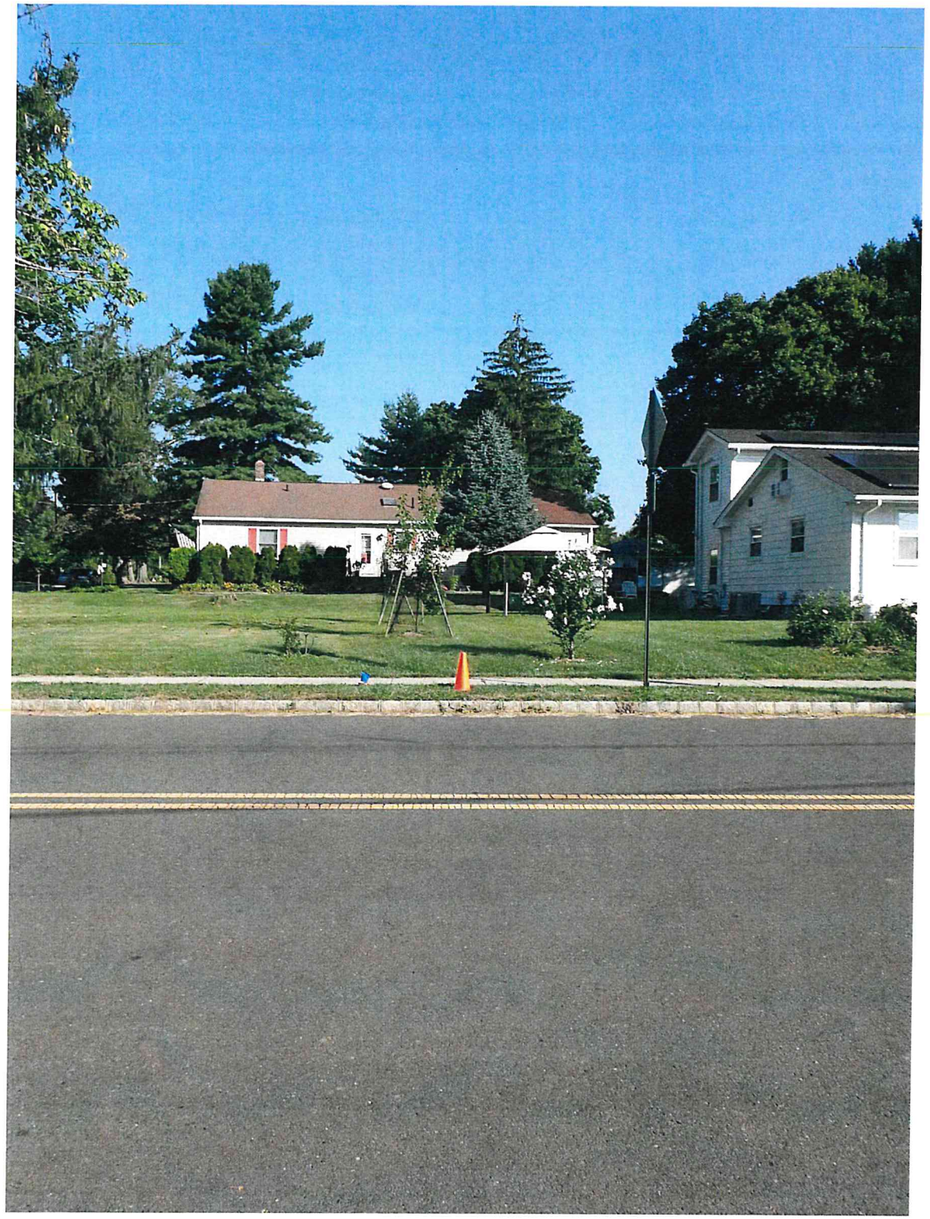
REVISIONS

REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

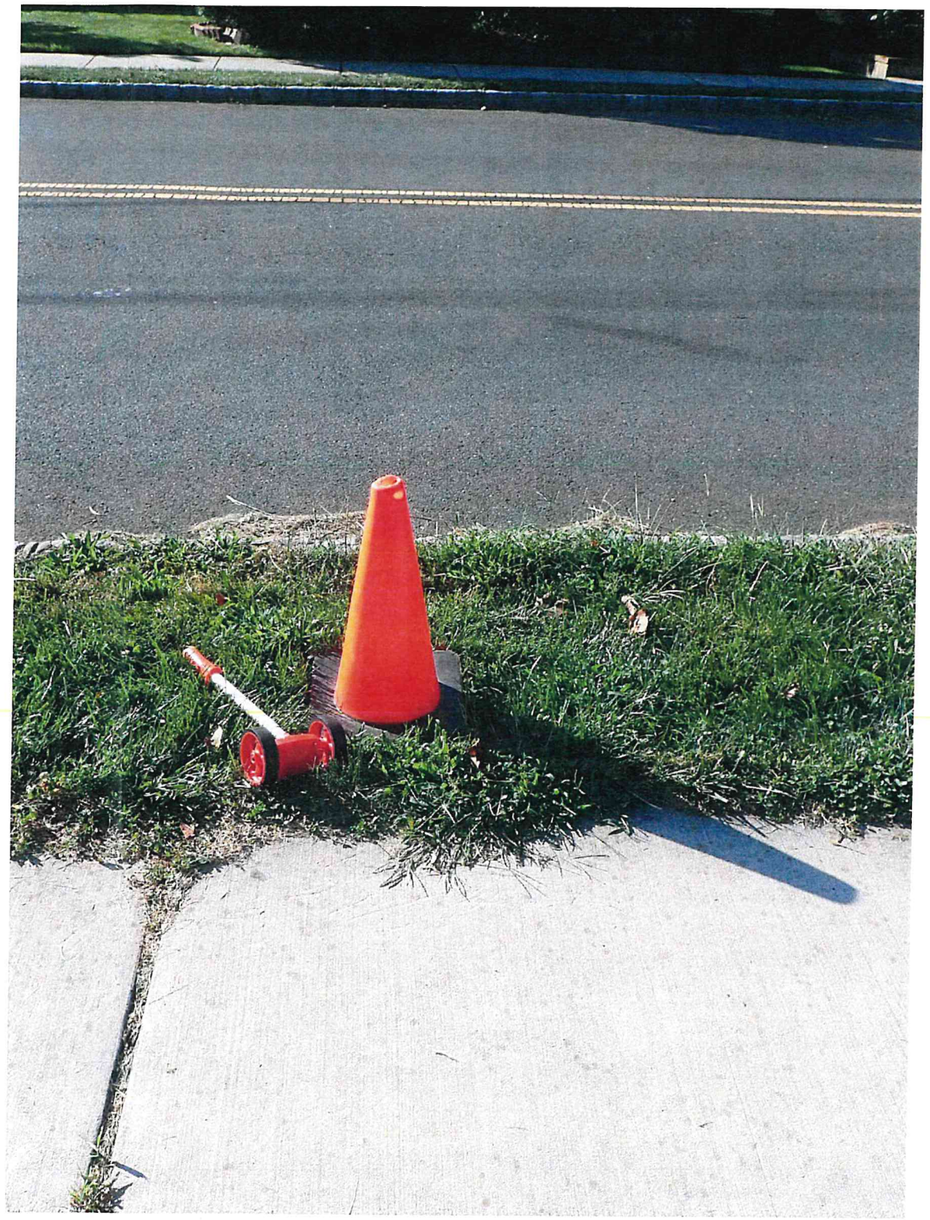
DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	2 OF 16

Crown Castle Fiber LLC
PRNCETON, NJ



PROPOSED POLE PHOTO
LOOKING NORTH



PROPOSED POLE PHOTO
LOOKING SOUTH

NODE ID:
PRC–067

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. DATE
NEW JERSEY PROFESSIONAL ENGINEER NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC–067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	3 OF 16

NODE ID:
PRC-067

PROPOSED POLE PHOTO
LOOKING EAST

PROPOSED POLE PHOTO
LOOKING WEST

Peter J Tardy 08/21/2025
PETER J. TARDY, P.E. DATE
NEW JERSEY PROFESSIONAL ENGINEER NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

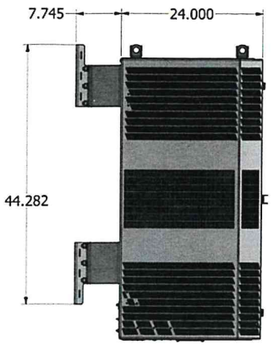
REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

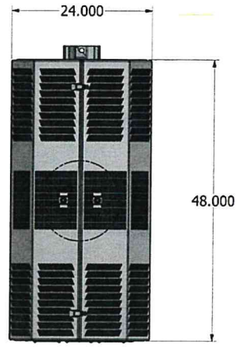
DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

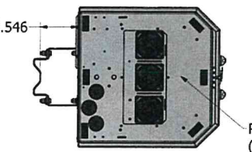
PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	4 OF 16

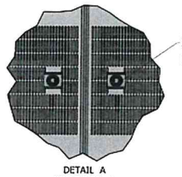
NODE ID:
PRC-067

REVISION HISTORY				
REV	DESCRIPTION	DATE	DRWN BY	APP
0	RELEASED	10/30/2024	JM	







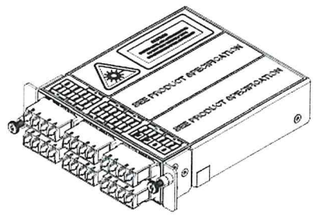


NOTES:
1. MATL: ALUMINUM ENCL. W. STEEL FRAME.
2. COLOR: AS REQUIRED
3. WEIGHT: APPROX. 157LBS (WITHOUT RADIOS)
4. WEIGHT: APPROX. 433LBS (WITH RADIOS)
5. ACTIVE COOLING AS SHOWN.
6. VOLUME: 16 CU FT

DRAWN BY: Designer	7/20/2023	Raycap 46 Sellers St, Kearny, NJ 07032 P:(973) 777 8099	
CHECKED BY:			
MATERIAL:	WEIGHT: 137.185 lbs	DESCRIPTION: MAIN SHROUD ENCLOSURE	
FINISH:		SIZE: D	DWG NO: RAES-23541B-C35_CRD
THICKNESS:		SCALE: NTS	SHEET 1 OF 2

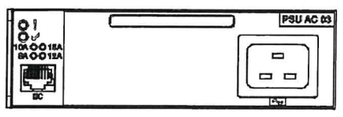
FINAL PLACEMENT OF COMPONENTS PENDING CABLE MANAGEMENT AND THERMAL ANALYSIS

DETAIL A
RAYCAP RAES-235418-C35
SHROUD



MECHANICAL SPECIFICATIONS:
HEIGHT: 1.1 IN.
WIDTH: 4.7 IN.
DEPTH: 4.6 IN.
WEIGHT: 0.66 LBS.

ERICSSON
OAD-9-S



MECHANICAL SPECIFICATIONS:
HEIGHT: 2.72 IN.
WIDTH: 10.79 IN.
DEPTH: 7.09 IN.
WEIGHT: 11.5 LBS.

ERICSSON
PSU AC 08

MECHANICAL SPECIFICATIONS:
HEIGHT: 9.63 IN.
WIDTH: 5.12 IN.
DEPTH: 1.50 IN.
WEIGHT: 1.54 LBS.

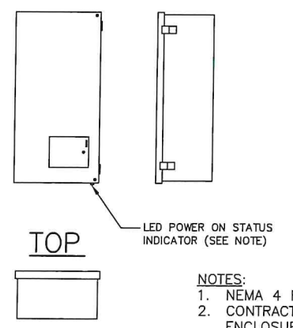
ERICSSON
FRONTHAUL 6585

MECHANICAL SPECIFICATIONS:
HEIGHT: 11.5 IN.
WIDTH: 8.0 IN.
DEPTH: 3.3 IN.

MILBANK U8569-YL-PSEG-DES
METER PAN

MECHANICAL SPECIFICATIONS:
HEIGHT: 9.37 IN.
WIDTH: 4.88 IN.
WEIGHT: 5.05 LBS.

SQUARE D QO2-4L70RB
DISCONNECT



MECHANICAL SPECIFICATIONS:
HEIGHT: 18.25 IN.
WIDTH: 9.10 IN.
DEPTH: 6.05 IN.
WEIGHT: 23.6 LBS.

NOTES:
1. NEMA 4 RATED, UL LISTED
2. CONTRACTOR SHALL ORDER BROWN ENCLOSURE COLOR TO MATCH EXISTING/PROPOSED STRUCTURE

RAYCAP RSD-FMC-Z16MS-21NN
DISCONNECT

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. — DATE
NEW JERSEY PROFESSIONAL ENGINEER — NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

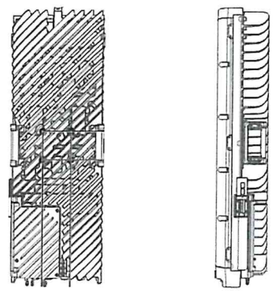
REVISIONS

REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

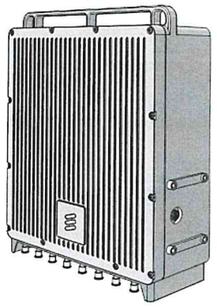
PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	5 OF 16

NODE ID:
PRC-067



MECHANICAL SPECIFICATIONS:
HEIGHT: 31.3 IN.
WIDTH: 10.9 IN.
DEPTH: 5.9 IN.
WEIGHT: 67.2 LBS.

ERICSSON
RADIO 4455 B2/B25 B66A



MECHANICAL SPECIFICATIONS:
HEIGHT: 18.1 IN.
WIDTH: 14.8 IN.
DEPTH: 5.7 IN.
WEIGHT: 50.9 LBS.

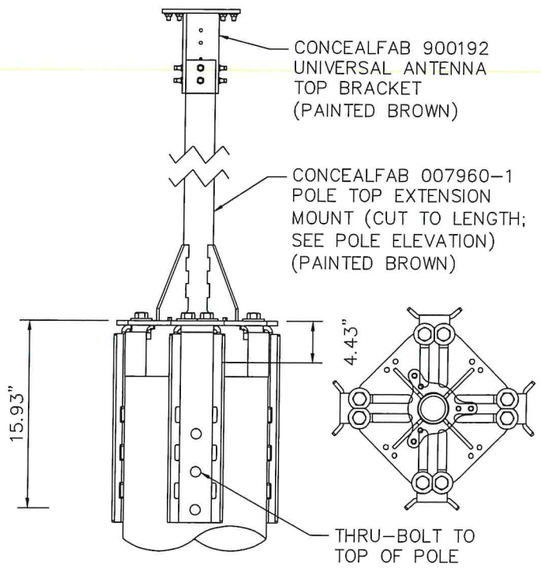
ERICSSON
ERICSSON RADIO 8863 B41 W/FAN

MECHANICAL SPECIFICATIONS:
HEIGHT: 4.33 IN.
WIDTH: 9.41 IN.
DEPTH: 3.51 IN.
WEIGHT: 7.9 LBS.

KAELUS
DBCT156F1V12-1 DIPLEXER

MECHANICAL SPECIFICATIONS:
HEIGHT: 24 IN.
DIAMETER: 14.6 IN.
WEIGHT: 28.0 LBS.

AMPHENOL
2C6U2VT360X06Fwxys4
ANTENNA



ANTENNA MOUNTING DETAIL
CONCEALFAB POLE TOP MOUNT

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. DATE
NEW JERSEY PROFESSIONAL ENGINEER NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

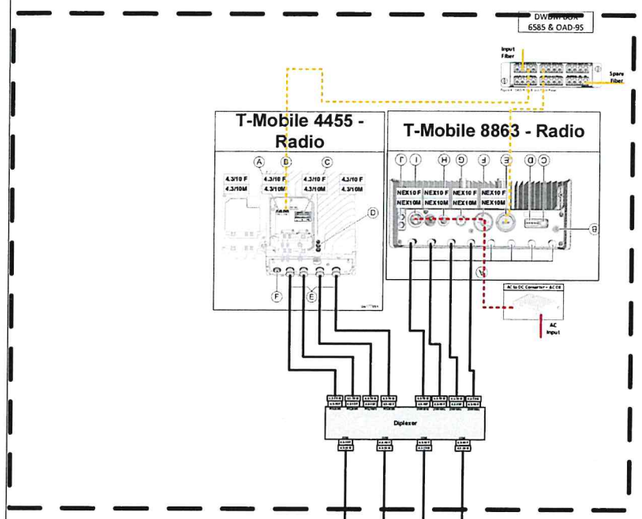
REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

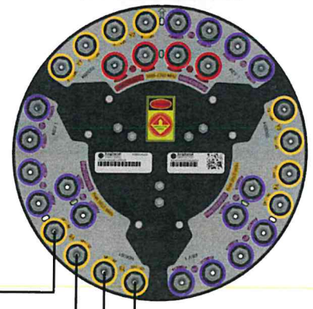
PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	6 OF 16

NODE ID:
PRC-067

Scenario Name:- Scenario 048		CROWN CASTLE	
Project:- Trenton, NJ		Date Created:- 04/13/2023	Cluster Name:- Philly County
Designed by:- Prashant Patel	Customer:- T-Mobile	Revision:- 1	Sheet:- 048



New Antenna



Carrier	Band (MHz)	Band Color	Description	Path 1	Path 2	Comments
Verizon	700		1x Red	Brown	Brown/Brown	
	850		2x Red	Brown	Brown/Brown	Alternatively named Cellular Band
	1900		3x Red	Brown	Brown/Brown	Alternatively named PCS Band
	2100		4x Red	Brown	Brown/Brown	Alternatively named AWS or 1700 Band
AT&T	700		1x Blue	Brown	Brown/Brown	
	850		2x Blue	Brown	Brown/Brown	Alternatively named Cellular Band
	1900		3x Blue	Brown	Brown/Brown	Alternatively named PCS Band
	2100		4x Blue	Brown	Brown/Brown	Alternatively named AWS or 1700 Band
	2300		5x Blue	Brown	Brown/Brown	Alternatively named WCS Band
T-Mobile	700		1x Green	Brown	Brown/Brown	
	1900		3x Green	Brown	Brown/Brown	Alternatively named PCS Band
	2100		4x Green	Brown	Brown/Brown	Alternatively named AWS or 1700 Band
Metro	2100		4x Purple	Brown	Brown/Brown	Alternatively named AWS or 1700 Band
Sprint	700		1x Yellow	Brown	Brown/Brown	
	850		2x Yellow	Brown	Brown/Brown	Alternatively named Cellular Band
	1900		3x Yellow	Brown	Brown/Brown	Alternatively named PCS Band
	2100		4x Yellow	Brown	Brown/Brown	Alternatively named AWS or 1700 Band
	2300		5x Yellow	Brown	Brown/Brown	Alternatively named WCS Band
	2500		6x Yellow	Brown	Brown/Brown	

FREQUENCY	ARRAY	CONNECTOR	CONNECTOR TYPE	FREQUENCY	ARRAY	CONNECTOR	CONNECTOR TYPE
3300-4200 MHz	P1	17-18	(2x) 4.3-10 Female	696-960 MHz	R1	1-2	(2x) 4.3-10 Female
3300-4200 MHz	P2	19-20	(2x) 4.3-10 Female	696-960 MHz	R2	3-4	(2x) 4.3-10 Female
3300-4200 MHz	P3	21-22	(2x) 4.3-10 Female	1695-2700 MHz	Y1	5-6	(2x) 4.3-10 Female
3300-4200 MHz	P4	23-24	(2x) 4.3-10 Female	1695-2700 MHz	Y2	7-8	(2x) 4.3-10 Female
3300-4200 MHz	P5	25-26	(2x) 4.3-10 Female	1695-2700 MHz	Y3	9-10	(2x) 4.3-10 Female
3300-4200 MHz	P6	27-28	(2x) 4.3-10 Female	1695-2700 MHz	Y4	11-12	(2x) 4.3-10 Female
3300-4200 MHz	P7	29-30	(2x) 4.3-10 Female	1695-2700 MHz	Y5	13-14	(2x) 4.3-10 Female
3300-4200 MHz	P8	31-32	(2x) 4.3-10 Female	1695-2700 MHz	Y6	15-16	(2x) 4.3-10 Female

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. DATE
NEW JERSEY PROFESSIONAL ENGINEER NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

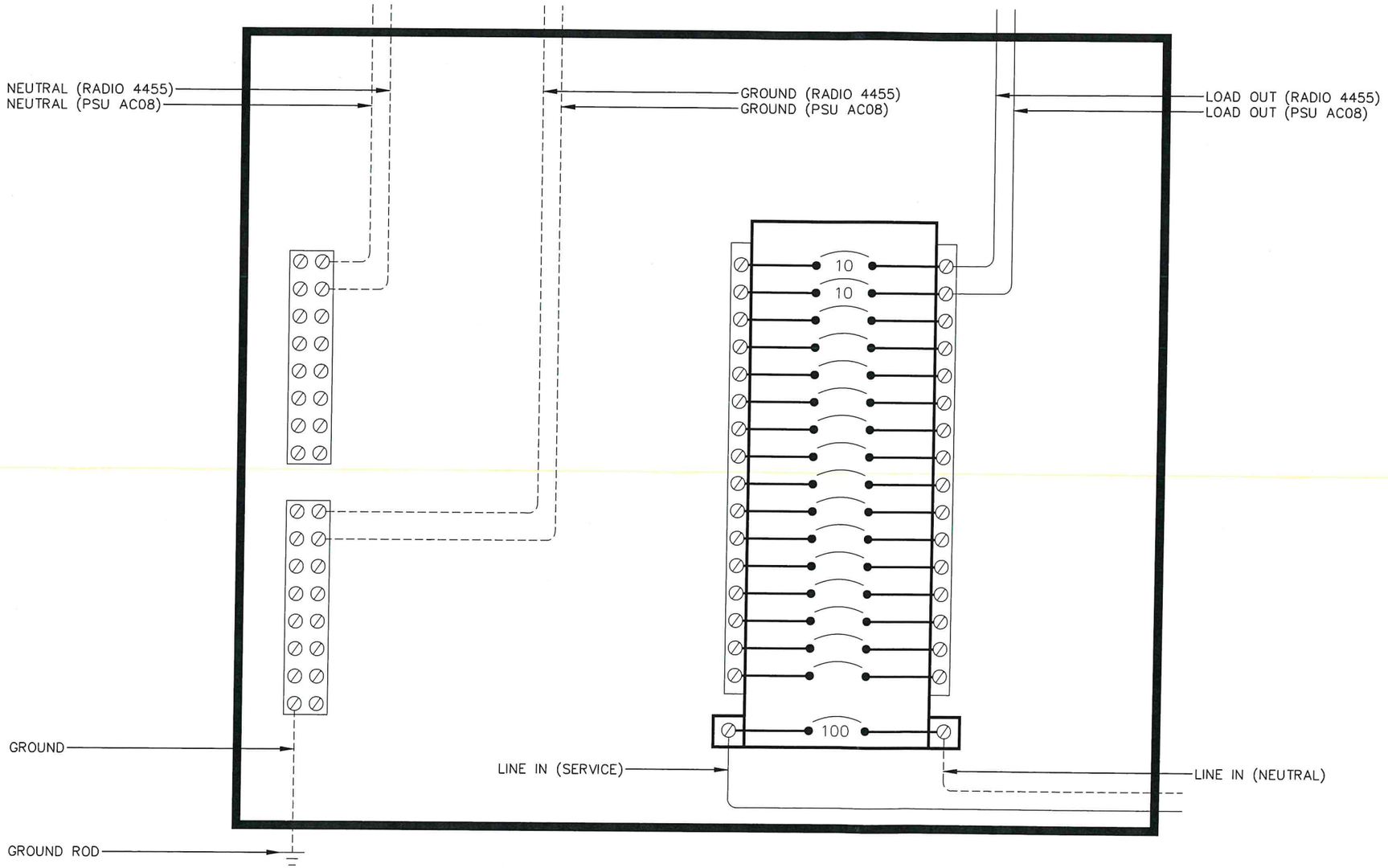
REVISIONS

REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	7 OF 16

NODE ID:
PRC-067



Peter J. Tardy 08/21/2025

PETER J. TARDY, P.E. — DATE
NEW JERSEY PROFESSIONAL ENGINEER — NJ LIC. NO. 41990

ENGINEER:

FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:

CROWN CASTLE
The Foundation for a Wireless World.

TITLE:

Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

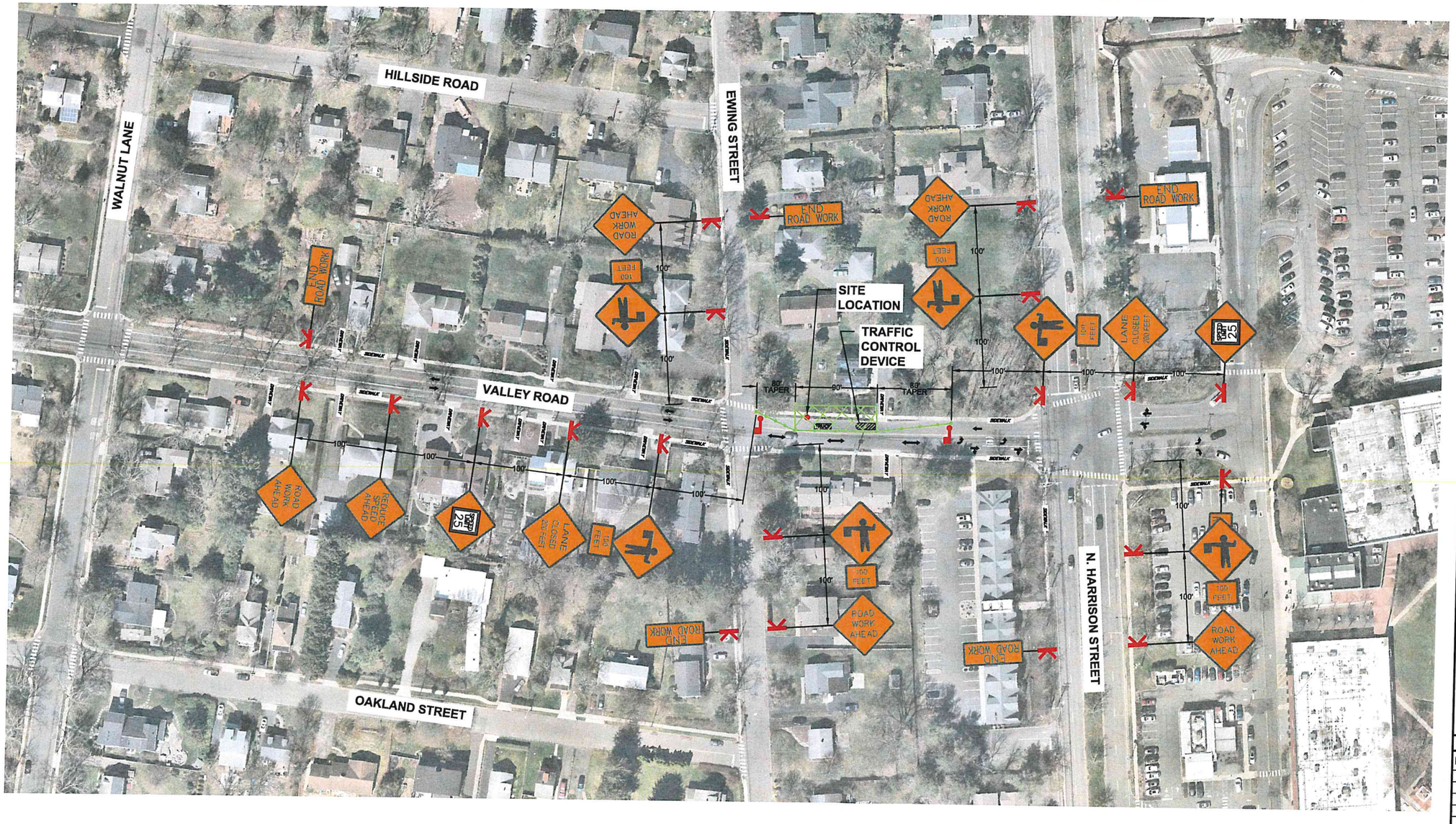
REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	8 OF 16

Crown Castle Fiber LLC
PRNCETON, NJ

NODE ID:
PRC-067



TRAFFIC CONTROL PLAN

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. — DATE
NEW JERSEY PROFESSIONAL ENGINEER — NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	9 OF 16

NODE ID: PRC-067

GENERAL NOTES

1. EXISTING BASE MAP AND UTILITIES ARE SHOWN BASED ON HISTORICAL AERIAL IMAGES AND PHOTOGRAPHICAL EVIDENCE.
2. WORKING HOURS TO BE WITHIN REGULAR COUNTY ROAD WORKING HOURS OF 9:00 AM TO 3:00 PM (NO EXCEPTIONS).
3. PER COUNTY POLICY FOR PERMITS, PERMITS MAY BE REVOKED AT ANY TIME BY THE COUNTY ENGINEER FOR FAILURE TO COMPLY WITH COUNTY POLICY.
4. THE PERMIT HOLDER SHALL SUBMIT FOR APPROVAL OF A TRAFFIC INTERFERENCE REPORT (TIR) TO THE BURLINGTON COUNTY TRAFFIC OPERATIONS CENT R (TOC) BEFORE ANY WORK OR OCCUPANCY OCCURS. THE TIR SHALL BE SUBMITTED NO LESS THAN FIVE (5) BUSINESS DAYS BEFORE THE WORK IS SCHEDULED TO BEGIN.
5. THE STORAGE AND/OR STOCKPILE OF EQUIPMENT AND/OR MATERIALS AT ANY LOCATION WITHIN THE COUNTY RIGHT-OF-WAY OR ON COUNTY PROPERTY OUTSIDE OF WORKING HOURS IS S1RICTLY PROHIBITED.
6. THE COUNTY ENGINEER MAY REQUIRE AN APPLICANT TO RECORD VIDEO OR PHOTOGRAPH ALL AREAS OF PROPOSED OCCUPANCY, WORK. CONSTRUCTION OR EVENT FOR EXTENSIVE OPERATIONS TO PROTECT THE INTERESTS OF THE COUNTY AND ALL ADJOINING PROPERTIES TO THE AREA.
7. IT IS THE SOLE RESPONSIBILITY OF THE PERMIT HOLDER TO IMMEDIATELY NOTIFY THE COUNTY ENGINEER OF ANY DAMAGE TO ANY STRUCTURE WITHIN THE COUNTY RIGHT-OF-WAY. ANY DAMAGE TO A COUNTY-OWNED FACILITY SHALL BE REPLACED IMMEDIATELY AS DIRECTED BY THE COUNTY. ALL COSTS AND EXPENSES ARE THE RESPONSIBILITY OF THE PERMIT HOLDER.
8. IF DURING THE COURSE OF WORK DIFFERING SITE CONDITIONS ARE FOUND THAT NECESSITATE-ALTERING THE PERMITTED WORK. PROCEDURES, EXCAVATION, TRAFFIC CONTROL OR OTHER PERMITTED ACTIVITIES, THE PERMIT SHALL BE DEEMED INVALID AND SHALL BE REVOKED. THE PERMIT HOLDER SHALL IMMEDIATELY NOTIFY THE COUNTY ENGINEER AND ALL WORK SHALL IMMEDIATELY CEASE AND THE SITE SHALL BE RESTORED TO A SAFE CONDITION AS DIRECTED BY THE COUNTY ENGINEER.
9. ALL NON-PROTECTED OPEN EXCAVATIONS MUST BE BACKFILLED IMMEDIATELY AND TEMPORARILY PLATED OR PAVED THE SAME DAY AS THE OPENING IS MADE.
10. THE PERMIT HOLDER SHALL POSSESS ON SITE COPIES OF THE FOLLOWING AT ALL TIMES: APPROVED PERMIT(S)/1 APPROVED PLAN(S)/1 APPROVED TRAFFIC CONTROL PL: AN(S) AND THE APPROVED TIR.
11. OCCUPANCY OF ANY PART OR PORTION OF THE COUN1Y RIGHT-OF-WAY AND/OR IMPACTING OR IN ANY MANNER INTERFERING WITH THE NORMAL FLOW OF TRAFFIC ON A COUNTY ROAD FOR ANY REASON HALL BE FORBIDDEN WHEN CONDITIONS EXIST SUCH AS SNOW, RAIN, OR SEVERE WEATHER.
12. THE PERMIT HOLDER SHALL TAKE APPROPRIATE MEASURES TO ENSURE THAT DURING ME PERFORMANCE OF WORK BOTH VEHICULAR & PEDESTRIAN TRAFFIC SHALL BE MAINTAINED NEARLY AS NORMAL AND SAFE AS PRACTICABLE. THE PERMIT HOLDER SHALL PLAN AND CARRY OUT HIS WORK TO PROVIDE FOR THE SAFE AND CONVENIENT PASSAGE OF SUCH TRAFFIC AND TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE TO ME OCCUPANTS OF ADJOINING PROPERTIES. THE PERMIT HOLDER SHALL NOTIFY THE OWNERS OF ADJOINING PROPERTIES IN WRITING, AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO THE TIME HE PROPOSES TO BEGIN ANY WORK WHICH WILL INTERFERE WITH THEIR NORMAL PASSAGE AND MUST PROVIDE THE COUNTY ENGINEER WITH SUCH NOTICE. CLOSURES OF COUNTY ROADS ARE PROHIBITED.
13. AFTER RECEIPT OF AN APPROVED TIR IT SHALL BE THE RESPONSIBILITY OF THE PERMIT HOLDER TO NOTIFY THE APPROPRIATE POLICE DEPARTMENT, FIRE DEPARTMENT AND EMERGENCY SERVICES, PUBLIC AND SCHOOL BUS TRANSPORTERS, THE BURLINGTON COUNTY OFFICE OF EMERGENCY MANAGEMENT AND BURLINGTON COUNTY CENTRAL COMMUNICATIONS OF ITS PLANS TO OCCUPY THE COUNTY RIGHT-OF-WAY.
14. TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE INSTALLED AND/OR DISPLAYED DURING WORKING HOURS ONLY. IT IS PROHIBITED TO INSTALL/DISPLAY TEMPORARY TRAFFIC CONTROL DEVISES DURING ANY AND AI-L NON-WORKING HOURS. IF TEMPORARY TRAFFIC CONTROL DEVICES ARE INSTALLED/DISPLAYED AT AN INACTIVE WORK ZONE, THE DEPARTMENT OF PUBLIC WORKS SHALL REMOVE SAID TEMPORARY TRAFFIC CONTROL DEVICES AND STORE THEM AT A COUNTY FACILITY. THE PERMIT HOLDER WILL THEN BE CHARGED FIVE HUNDRED DOLLARS ($500) OF EACH SUCH INSTANCE PLUS LABOR AND EQUIPMENT USE COSTS.
15. CONTRACTOR SHOULD BE AWARE OF POLICY, PROCEDURES AND SPECIFICATIONS MANUAL SET FORTH BY THE BURLINGTON COUNTY BOARD OF CHOSEN FREEHOLDERS, IN REFERENCE TO ROADWAY OCCUPANCY AND ROADWAY OPENINGS.
16. MILL AND OVERLAY OF THE WIDTH OF THE ENTIRE LANE IS REQUIRED IF THE TRENCH IS LONGITUDINAL ALONG THE TRAVEL LANE. FULL WIDTH MILL AND OVERLAY OF THE ENTIRE ROAD IS REQUIRED ALONG LONGITUDINAL TRENCHES WITH NON-UNIFORM WIDTH AND/OR WITH MULTIPLE CROSSINGS TO PREVENT ERRATIC TRAVEL OF MOTOR VEHICLES.

NOTES

1. FIGURES AND TABLES ARE FROM THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), EDITION 2009 INCLUDING REVISION 1 AND 2 DATED MAY 2012, AND THE NJDOT WORK ZONE SAFETY SET-UP GUIDE, EDITION 2011.
2. REFER TO SECTION 10 OF THE BURLINGTON COUNTY ROAD OCCUPANCY POLICY FOR COMPLETE REQUIREMENTS.

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. — DATE
NEW JERSEY PROFESSIONAL ENGINEER — NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	10 OF 16

PART 6
TEMPORARY TRAFFIC CONTROL

CHAPTER 6A. GENERAL

Section 6A.01 General

Support:

01 Whenever the acronym "TTC" is used in Part 6, it refers to "temporary traffic control."

Standard:

02 **The needs and control of all road users (motorists, bicyclists, and pedestrians within the highway, or on private roads open to public travel (see definition in Section 1A.13), including persons with disabilities in accordance with the Americans with Disabilities Act of 1990 (ADA), Title II, Paragraph 35.130) through a TTC zone shall be an essential part of highway construction, utility work, maintenance operations, and the management of traffic incidents.**

Support:

03 When the normal function of the roadway, or a private road open to public travel, is suspended, TTC planning provides for continuity of the movement of motor vehicle, bicycle, and pedestrian traffic (including accessible passage); transit operations; and access (and accessibility) to property and utilities.

04 The primary function of TTC is to provide for the reasonably safe and effective movement of road users through or around TTC zones while reasonably protecting road users, workers, responders to traffic incidents, and equipment.

05 Of equal importance to the public traveling through the TTC zone is the safety of workers performing the many varied tasks within the work space. TTC zones present constantly changing conditions that are unexpected by the road user. This creates an even higher degree of vulnerability for the workers and incident management responders on or near the roadway (see Section 6D.03). At the same time, the TTC zone provides for the efficient completion of whatever activity interrupted the normal use of the roadway.

06 Consideration for road user safety, worker and responder safety, and the efficiency of road user flow is an integral element of every TTC zone, from planning through completion. A concurrent objective of the TTC is the efficient construction and maintenance of the highway and the efficient resolution of traffic incidents.

07 No one set of TTC devices can satisfy all conditions for a given project or incident. At the same time, defining details that would be adequate to cover all applications is not practical. Instead, Part 6 displays typical applications that depict common applications of TTC devices. The TTC selected for each situation depends on type of highway, road user conditions, duration of operation, physical constraints, and the nearness of the work space or incident management activity to road users.

08 Improved road user performance might be realized through a well-prepared public relations effort that covers the nature of the work, the time and duration of its execution, the anticipated effects upon road users, and possible alternate routes and modes of travel. Such programs have been found to result in a significant reduction in the number of road users traveling through the TTC zone, which reduces the possible number of conflicts.

09 Operational improvements might be realized by using intelligent transportation systems (ITS) in work zones. The use in work zones of ITS technology, such as portable camera systems, highway advisory radio, variable speed limits, ramp metering, traveler information, merge guidance, and queue detection information, is aimed at increasing safety for both workers and road users and helping to ensure a more efficient traffic flow. The use in work zones of ITS technologies has been found to be effective in providing traffic monitoring and management, data collection, and traveler information.

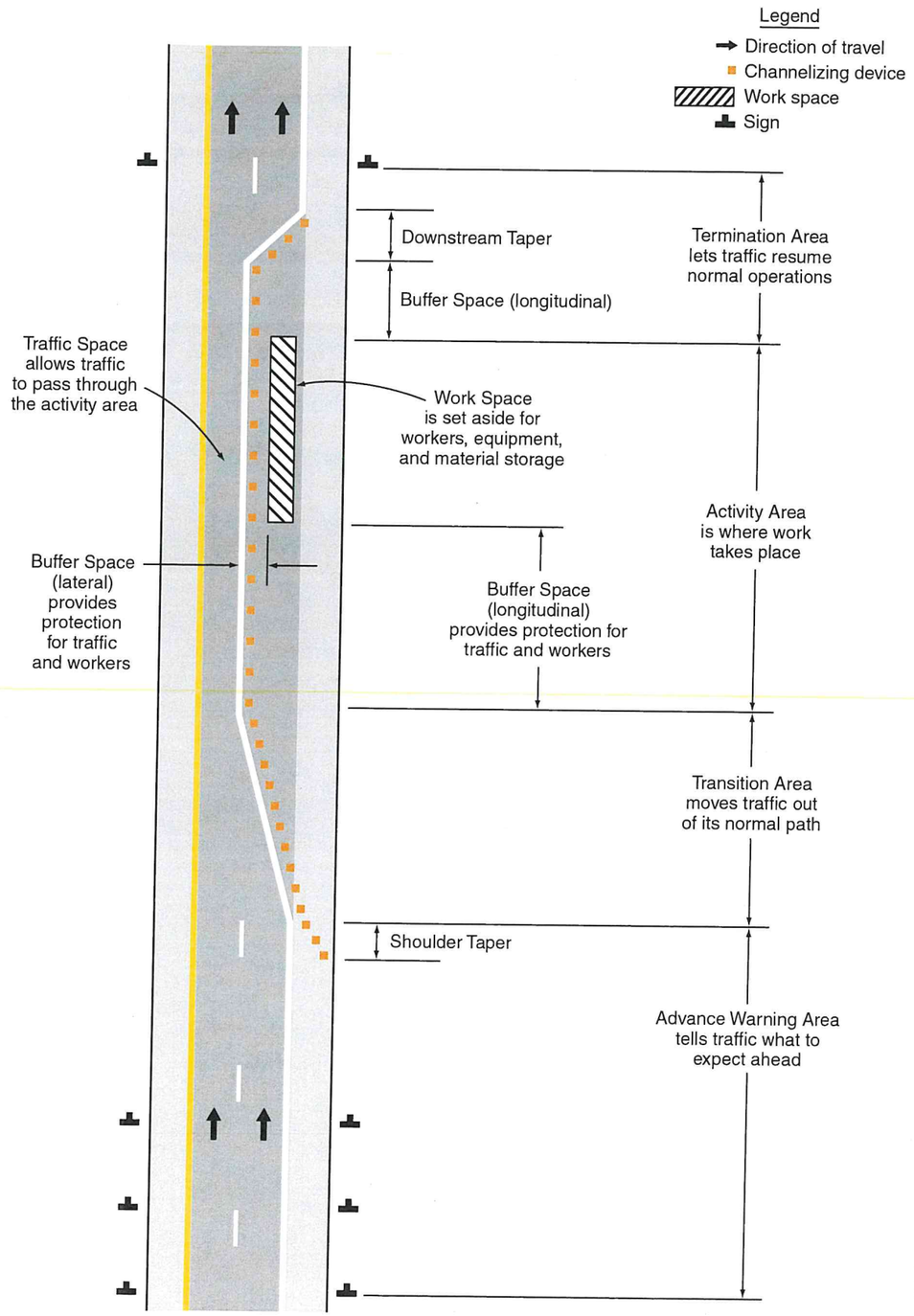
Standard:

10 **TTC plans and devices shall be the responsibility of the authority of a public body or official having jurisdiction for guiding road users. There shall be adequate statutory authority for the implementation and enforcement of needed road user regulations, parking controls, speed zoning, and the management of traffic incidents. Such statutes shall provide sufficient flexibility in the application of TTC to meet the needs of changing conditions in the TTC zone.**

Support:

11 Temporary facilities, including pedestrian routes around worksites, are also covered by the accessibility requirements of the Americans with Disabilities Act of 1990 (ADA) (Public Law 101-336, 104 Stat. 327, July 26, 1990. 42 U.S.C. 12101-12213 (as amended)).

Figure 6C-1. Component Parts of a Temporary Traffic Control Zone



NODE ID: PRC–067

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. DATE
NEW JERSEY PROFESSIONAL ENGINEER NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC–067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	11 OF 16

Figure 6C-2. Types of Tapers and Buffer Spaces

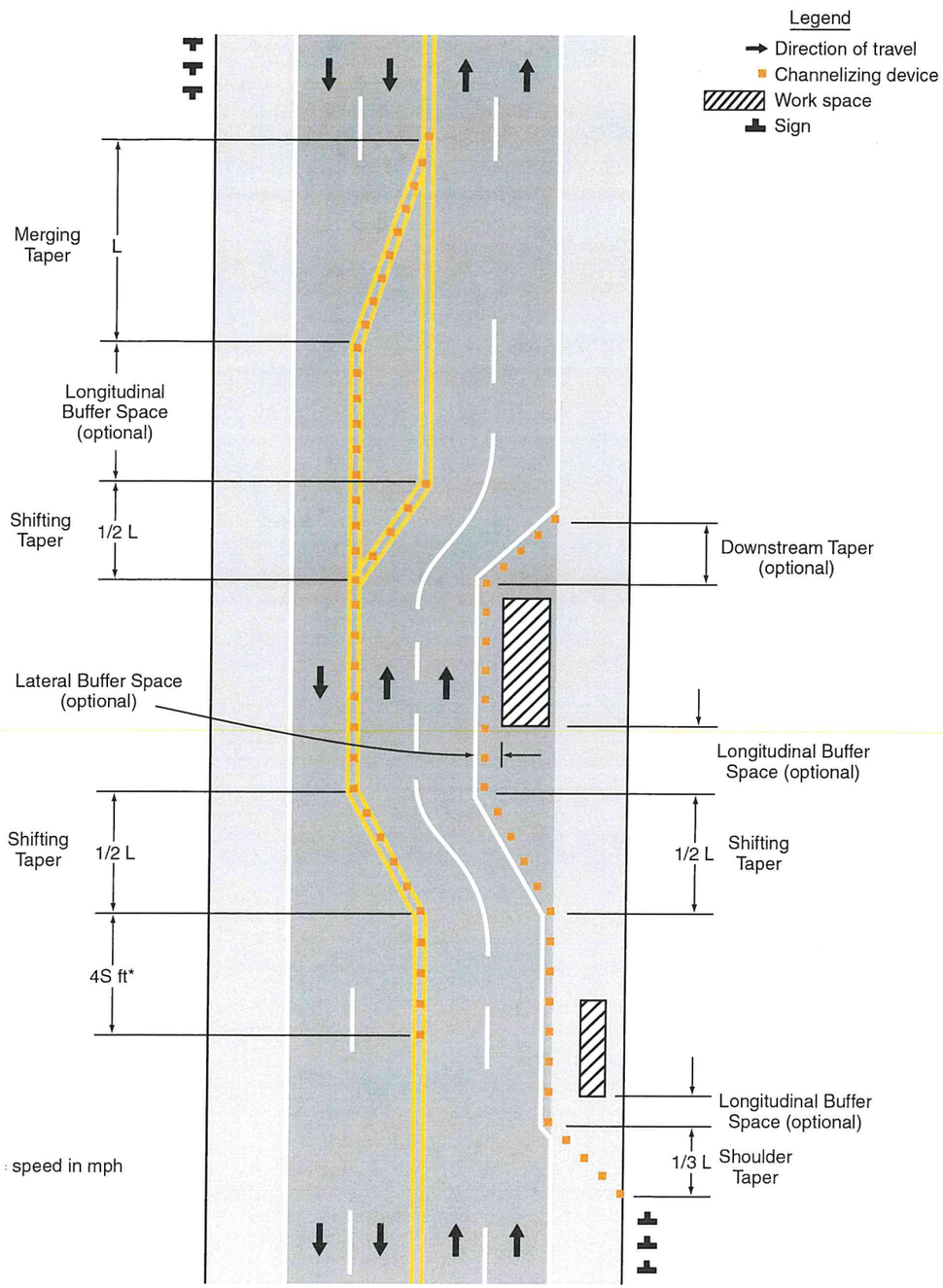
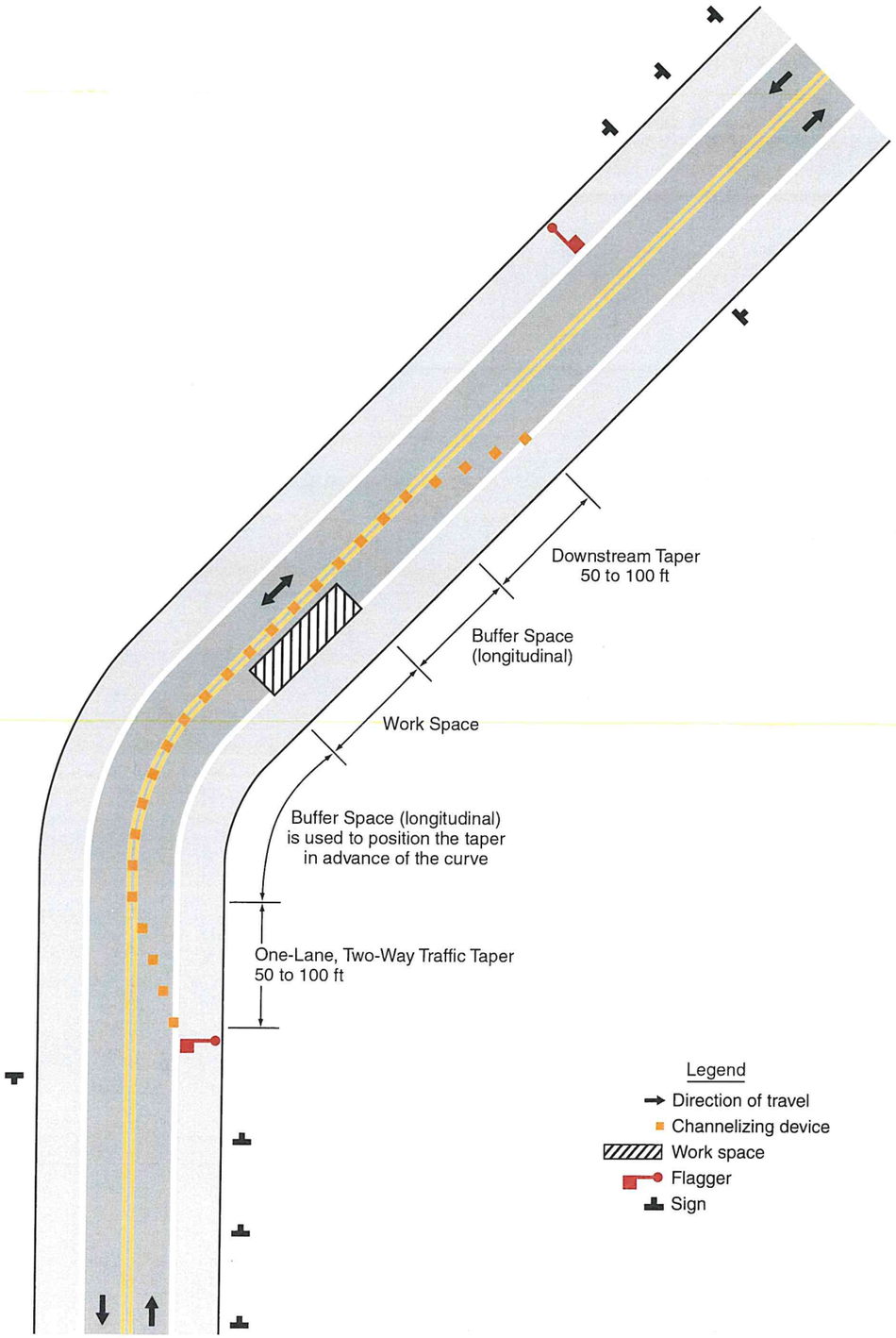


Figure 6C-3. Example of a One-Lane, Two-Way Traffic Taper



NODE ID: PRC–067

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. DATE
NEW JERSEY PROFESSIONAL ENGINEER NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC–067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	12 OF 16

NODE ID: PRC-067

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* Speed category to be determined by the highway agency
** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

Table 6C-3. Taper Length Criteria for Temporary Traffic Control Zones

Type of Taper	Taper Length
Merging Taper	at least L
Shifting Taper	at least 0.5 L
Shoulder Taper	at least 0.33 L
One-Lane, Two-Way Traffic Taper	50 feet minimum, 100 feet maximum
Downstream Taper	50 feet minimum, 100 feet maximum

Note: Use Table 6C-4 to calculate L

Table 6C-4. Formulas for Determining Taper Length

Speed (S)	Taper Length (L) in feet
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	$L = WS$

Where: L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

Table 6H-2. Meaning of Symbols on Typical Application Diagrams

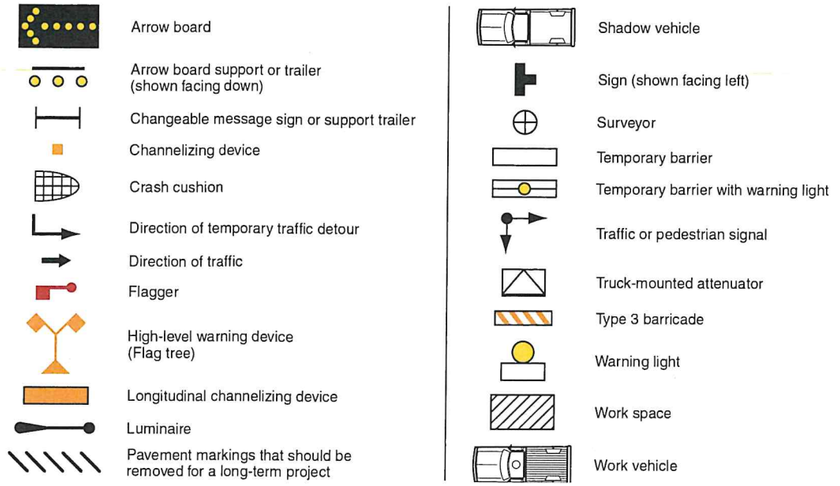


Table 6H-3. Meaning of Letter Codes on Typical Application Diagrams

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* Speed category to be determined by highway agency

** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

Table 6H-4. Formulas for Determining Taper Length

Speed (S)	Taper Length (L) in feet
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	$L = WS$

Where: L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

TAPER LENGTHS AND NUMBER OF CONES CHART

Speed	25 MPH				30 MPH				35 MPH				40 MPH			
Width	Taper		Shoulder Taper		Taper		Shoulder Taper		Taper		Shoulder Taper		Taper		Shoulder Taper	
W (Ft.)	Length L (Ft.)	# of cones	Length S (Ft.)	# of cones	Length L (Ft.)	# of cones	Length S (Ft.)	# of cones	Length L (Ft.)	# of cones	Length S (Ft.)	# of cones	Length L (Ft.)	# of cones	Length S (Ft.)	# of cones
1	20	2	20	3	20	2	20	3	20	2	20	3	40	3	20	3
2	40	3	20	3	40	3	20	3	60	4	20	3	60	4	20	3
3	40	3	20	3	40	3	20	3	80	5	20	3	80	5	40	3
4	60	4	20	3	60	4	20	3	100	6	40	3	120	7	40	3
5	60	4	20	3	80	5	40	3	120	7	40	3	140	8	60	4
6	80	5	40	3	100	6	40	3	140	8	40	3	160	9	60	4
7	80	5	40	3	120	7	40	3	160	9	60	4	200	11	80	5
8	100	6	40	3	120	7	40	3	180	10	60	4	220	12	80	5
9	100	6	40	3	140	8	60	4	200	11	80	5	240	13	80	5
10	120	7	40	3	160	9	60	4	220	12	80	5	280	15	100	6
11	120	7	40	3	180	10	60	4	240	13	80	5	300	16	100	6
12	140	8	60	4	180	10	80	5	260	14	100	6	320	17	120	7

TAPER LENGTHS AND NUMBER OF CONES CHART

Speed	45 MPH				50 MPH				55 MPH				65 MPH			
Width	Taper		Shoulder Taper		Taper		Shoulder Taper		Taper		Shoulder Taper		Taper		Shoulder Taper	
W (Ft.)	Length L (Ft.)	# of cones	Length S (Ft.)	# of cones	Length L (Ft.)	# of cones	Length S (Ft.)	# of cones	Length L (Ft.)	# of cones	Length S (Ft.)	# of cones	Length L (Ft.)	# of cones	Length S (Ft.)	# of cones
1	60	4	20	3	60	4	20	3	60	4	20	3	80	5	40	3
2	100	6	40	3	100	6	40	3	120	7	40	3	140	8	60	4
3	140	8	60	4	160	9	60	4	180	10	60	4	200	11	80	5
4	180	10	60	4	200	11	80	5	220	12	80	5	260	14	100	6
5	240	13	80	5	260	14	100	6	280	15	100	6	340	18	120	7
6	280	15	100	6	300	16	100	6	340	18	120	7	400	21	140	8
7	320	17	120	7	360	19	120	7	400	21	140	8	460	24	160	9
8	360	19	120	7	400	21	140	8	440	23	160	9	520	27	180	10
9	420	22	140	8	460	24	160	9	500	26	180	10	600	31	200	11
10	460	24	160	9	500	26	180	10	560	29	200	11	660	34	220	12
11	500	26	180	10	560	29	200	11	620	32	220	12	720	37	240	13
12	540	28	180	10	600	31	200	11	660	34	220	12	780	40	260	14

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. — DATE
NEW JERSEY PROFESSIONAL ENGINEER — NJ LIC. NO. 41990

ENGINEER:
FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	13 OF 16

GENERAL CONSTRUCTION NOTES

1. CONTACT "NJ ONE CALL" SYSTEM FOR UNDERGROUND UTILITY LOCATES, 72 HOURS PRIOR TO CONSTRUCTION
   NJ PHONE NO.: 1-800-272-1000
2. CONTRACTOR TO FOLLOW ALL OSHA, LOCAL, STATE, AND BUILDING CODES
3. CONTRACTOR TO VERIFY ALL DIMENSIONS & MATERIALS REQUIRED
4. MAINTAIN A MINIMUM 6' SWEEP ON ALL CONDUIT BENDS
5. PLACE PULL ROPES IN ALL CONDUIT & INNERDUCTS
6. CONTRACTOR MUST CLEAN UP WORK AREAS AT THE END OF EACH WORK DAY & REMOVE TRASH & DEBRIS FROM WORK SITE
7. CONTRACTOR WILL GROUT & SEAL ALL BUILDING ENTRANCES WITH APPROVED MATERIALS
8. PLACE BUSHINGS ON ALL CONDUIT ENDS FOR CABLE PROTECTION
9. PLACE TRIPLEX DUCT PLUG & BLANK DUCT PLUGS AT BUILDING ENTRANCE CONDUITS
10. CONTRACTOR IS RESPONSIBLE FOR THE REPAIR/REPLACEMENT OF DAMAGED FACILITIES AND/OR PROPERTY
11. ALL DISTURBED SURFACES WILL BE RESTORED TO ORIGINAL OR BETTER CONDITION
12. ALL WORK TO BE PERFORMED PER CONSTRUCTION SPECIFICATIONS UNLESS OTHERWISE DIRECTED BY CROWN CASTLE
13. THE CONTRACTOR WILL PROVIDE AS-BUILT RECORDS TO BE GIVEN TO MANAGEMENT UPON COMPLETION OF CONSTRUCTION
14. CONTRACTOR TO COMPLY WITH TRAFFIC CONTROL PLAN AS PER NJDOT. USE APPROPRIATE ATTACHMENT
15. CONTRACTOR TO BOND CABLE SUPPORT STRAND WITH #6 AWG SOLID COPPER CONDUCTOR AT ALL POWER VDL(S)
16. CONTRACTOR TO ENSURE THAT ALL FLOOR/WALL PENETRATIONS ARE SEALED WITH APPROVED FIRESTOP

GENERAL CONTRACTOR UNDERGROUND UTILITY AVOIDANCE NOTES

- GENERAL CONTRACTOR IS RESPONSIBLE TO FOLLOW ALL FEDERAL & STATE STATUTES AND REGULATIONS; INDUSTRY BEST PRACTICES; BUILDING AND FIRE CODES; GENERAL CONTRACTOR LICENSES; AND LOCAL LAWS, REGULATION & ORDINANCES. IN THE EVENT A CONFLICT EXISTS BETWEEN THESE REGULATIONS AND THIS DOCUMENT, THE REGULATIONS SHALL CONTROL THE GENERAL CONTRACTORS ACTIONS.
- AT MINIMUM, WHEN NOT IN CONFLICT WITH FEDERAL, STATE, AND LOCAL STATUTES, THE GENERAL CONTRACTOR SHALL FOLLOW THE "COMMON GROUND ALLIANCE (CGA) BEST PRACTICES VERSION 17.0 MANUAL OR LATEST - THE DEFINITIVE GUIDE FOR UNDERGROUND SAFETY & DAMAGE PREVENTION" RECOMMENDATIONS.
- GENERAL CONTRACTOR SHALL PREPARE AN EMERGENCY RESPONSE PLAN, INCLUDING APPROPRIATE CONTACT INFORMATION, ONE-CALL TICKET DETAILS, AND IMMEDIATE CONTACTING DETAILS, IN EVENT OF UNDERGROUND UTILITY DAMAGE, IS AVAILABLE AT THE INSTALLATION SITE.
- GENERAL CONTRACTOR SHALL TAKE NECESSARY MEASURES TO ENSURE ALL ELECTRICAL STRIKE SYSTEMS ARE IN PLACE, IF APPLICABLE, AND HAS BRIEFED THE INSTALLATION CREW ON THE GENERAL CONTRACTORS ELECTRICAL AND GAS LINE STRIKE PROCEDURES EACH DAY PRIOR TO WORK COMMENCING.
- GENERAL CONTRACTOR SHALL WHITE LINE THE PROPOSED CONSTRUCTION ROUTE PRIOR TO CONTACTING THE UTILITY ONE-CALL SYSTEM.
- GENERAL CONTRACTOR SHALL IDENTIFY, PRIOR TO WORK COMMENCEMENT, A COMPETENT PERSON ON THE WORK CREW WHO IS CAPABLE OF IDENTIFYING HAZARDS AND HAS THE AUTHORIZATION TO TAKE PROMPT CORRECTIVE MEASURES, INCLUDING STOP WORK AUTHORITY, TO ELIMINATE THEM, AND SHALL BE ON SITE AT ALL TIMES.
- GENERAL CONTRACTOR SHALL CONTACT THE ONE-CALL FACILITY FOR EXISTING UTILITY LOCATES AS REQUIRED BY LAW AND PRESERVE ALL MARKS UNTIL THE PROJECT IS COMPLETED AND REFRESH THE ONE-CALL IF REQUIRED BY STATE OR JURISDICTIONAL REQUIREMENTS.
- FOR PROJECTS WITH HIGH PRIORITY UTILITIES, OR ANY UNUSUAL OR COMPLEX CONSTRUCTION, THE GENERAL CONTRACTOR SHALL ARRANGE FOR A PRE-EXCAVATION MEETING WITH THE AFFECTED UTILITIES AND/OR THEIR DESIGNATED LOCATING COMPANY TO DISCUSS THE PROJECT. HIGH PRIORITY UTILITIES SHALL INCLUDE, BUT NOT LIMITED TO, HIGH-PRESSURE GAS LINES, HIGH-VOLTAGE ELECTRIC LINES, MAJOR PIPELINES, MAJOR WATER LINES, AND HIGH CAPACITY FIBER OPTIC LINES.
- THE GENERAL CONTRACTOR SHALL ENSURE ANY UTILITIES IDENTIFIED FOR LOCATING WHICH ARE NOT MARKED ON THE GROUND HAVE PROVIDED POSITIVE CONFIRMATION NO CONFLICT EXISTS. IF THERE IS A LACK OF POSITIVE CONFIRMATION, THE GENERAL CONTRACTOR MUST RE-CALL THE ONE-CALL CENTER OR RELEVANT UTILITY DIRECTLY FOR CONFIRMATION.
- IN THE EVENT A UTILITY CANNOT BE LOCATED, WHERE POSITIVE CONFIRMATION IS NOT RECEIVED, OR WHERE THERE IS A LIKELIHOOD OF UNDOCUMENTED UTILITIES, SUCH AS PRIVATE INFRASTRUCTURE, THE GENERAL CONTRACTOR SHALL TAKE THE STEP OF SYSTEMATICALLY UTILIZING A GROUND PENETRATING RADAR (GPR) SYSTEM OR SIMILAR ADVANCED LOCATING TECHNOLOGY WITHIN THE TOLERANCE ZONE TO IDENTIFY AND DOCUMENT ANY UTILITIES WITHIN THE CONSTRUCTION ZONE. ANY UTILITY LOCATED USING GPR SHALL BE PROPERLY LOCATED AND EXPOSED AS OUTLINED WITHIN THIS STANDARD PRIOR TO DIGGING.
- THE GENERAL CONTRACTOR SHALL INSPECT THE AREA PRIOR TO INSTALLATION FOR ANY UNDERGROUND UTILITY INFRASTRUCTURE WHICH MAY HAVE BEEN MISSED BY SURVEYING THE CONSTRUCTION AREA AND SURROUNDING ENVIRONMENT FOR CLEANOUTS, SUNKEN AREAS, RISERS, OUTBUILDINGS, LIGHT POLES, METERS, UTILITY BOXES, PEDESTALS, MANHOLE COVERS, MARKERS, ETC. PARTICULAR ATTENTION SHOULD BE MADE TO IDENTIFY SERVICE FEEDS FROM BUILDINGS AND HOMES THAT ARE MARKED.
- THE GENERAL CONTRACTOR SHALL CONTACT ANY UTILITY WHERE LOCATES ARE IN QUESTION AND/OR UNVERIFIED. NO ASSUMPTIONS SHOULD BE MADE ON LOCATION OR DEPTH OF EXISTING UTILITIES.
- THE GENERAL CONTRACTOR, AT A MINIMUM, SHALL TAKE AND STORE A PHOTO SERIES TO BE SUBMITTED WITH THE CLOSE OUT PACKAGE OF ALL EXCAVATION AREAS ONCE LOCATES ARE COMPLETE AND PRIOR TO EXCAVATION.
- GENERAL CONTRACTOR SHALL MEET ALL FEDERAL, STATE AND LOCAL REGULATIONS REGARDING WORKER SAFETY AND TRAINING WHEN WORKING AROUND UNDERGROUND FACILITIES.
- GENERAL CONTRACTOR SHALL VISUALLY EXPOSE (POT-HOLE) ALL EXISTING UTILITIES CROSSING THE TOLERANCE ZONE AND SHALL POSITIVELY IDENTIFY THEIR LOCATION AND DEPTH USING APPROPRIATE TECHNIQUES WITHIN THE TOLERANCE ZONE.
- GENERAL CONTRACTOR SHALL VISUALLY EXPOSE (POT-HOLE) ALL EXISTING UTILITIES RUNNING PARALLEL WITH THE PROPOSED PATH AT THE APPROPRIATE INTERVALS WITHIN THE TOLERANCE ZONE AND APPROPRIATE BUFFER ZONE. UNLESS MORE STRINGENT REGULATIONS EXIST, THE GENERAL CONTRACTOR SHALL EXPOSE (POT-HOLE) AT MINIMUM ANY PARALLEL UTILITY WITHIN 3' OF THE TOLERANCE ZONE EVERY 25'. AND ANY PARALLEL UTILITY BETWEEN 3' TO 5' OF THE TOLERANCE ZONE EVERY 100'.
- THE TOLERANCE ZONE SHALL BE A MINIMUM OF 30" BEYOND EACH SIDE OF THE INSTALLED PIPE, OR GREATER IF CODE REQUIRES.
- GENERAL CONTRACTOR SHALL USE A DRILL HEAD TRACKING DEVICE WHEN BORING AND TRACK THE DRILL HEAD AT A MINIMUM OF EVERY 5' OR AS REQUIRED BY CODE. A LOG SHALL BE CREATED RECORDING THE LOCATION AND DEPTH AND SUBMITTED WITH THE GENERAL CONTRACTOR AS-BUILT PACKAGE.
- GENERAL CONTRACTOR SHALL ENSURE THESE REQUIREMENTS ARE ENFORCED WITH ALL SUB-CONTRACTORS RETAINED BY THE GENERAL CONTRACTOR.

NODE ID:
PRC-067

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. DATE
NEW JERSEY PROFESSIONAL ENGINEER NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.962.1562
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

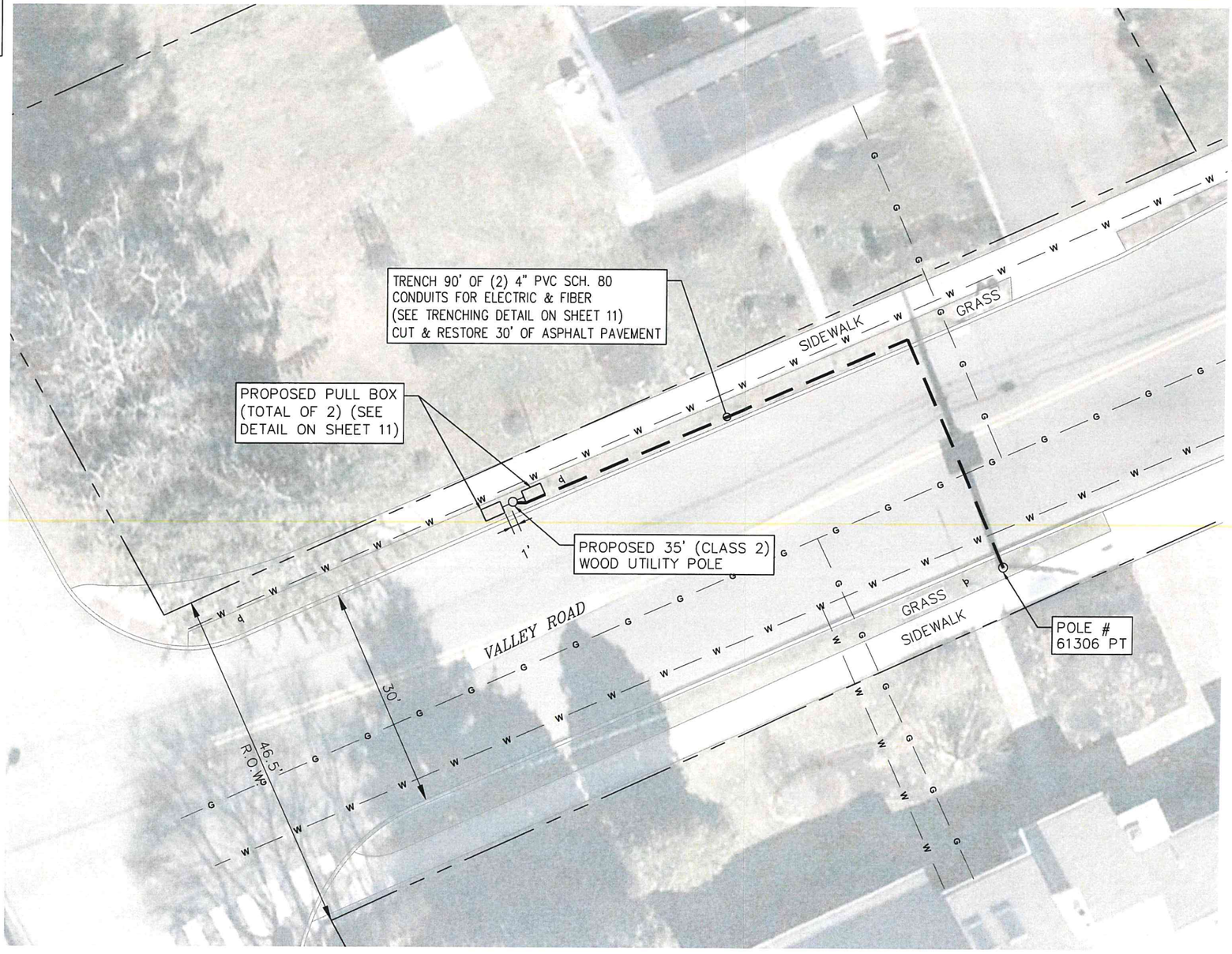
DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	14 OF 16

Crown Castle Fiber LLC
PRNCETON, NJ

NODE ID:
PRC-067

NOTE:
DRAWING NOT FROM ACTUAL SITE PLAN INFORMATION TAKEN FROM BEST AVAILABLE RECORDS CONTRACTOR IS RESPONSIBLE TO VERIFY ALL DIMENSIONS AND MATERIAL REQUIRED FOR CONSTRUCTION.



NOT TO SCALE

N

UNDERGROUND UTILITY PLAN

Peter J. Tardy 08/21/2025
PETER J. TARDY, P.E. — DATE
NEW JERSEY PROFESSIONAL ENGINEER — NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

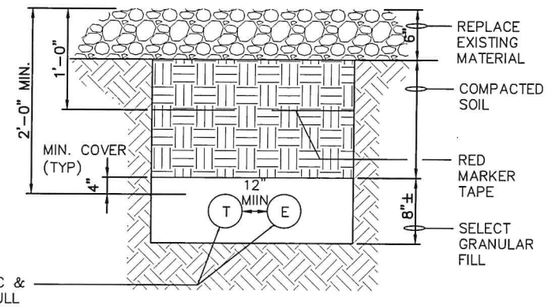
REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	15 OF 16

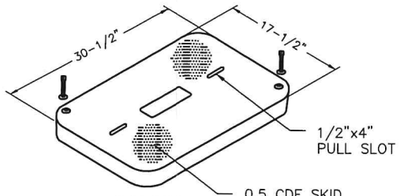
NODE ID:
PRC-067

CONTRACTOR TO LOCATE EXISTING UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF NEW UTILITIES. ANY CONFLICTS TO BE REPORTED TO ENGINEER IMMEDIATELY.

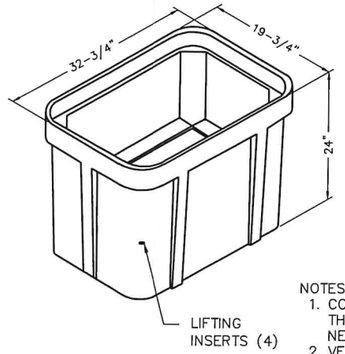


NOTES:
1. REMOVE & HAUL OFF-SITE ALL EXCESS SITE SOIL.
2. RESTORE ALL SURFACES TO ORIGINAL CONDITION.
3. CONDUIT SHALL BE UV-RESISTANT WHERE EXPOSED TO ATMOSPHERE.

UNDERGROUND ELECTRIC AND TELCO DUCT BANK

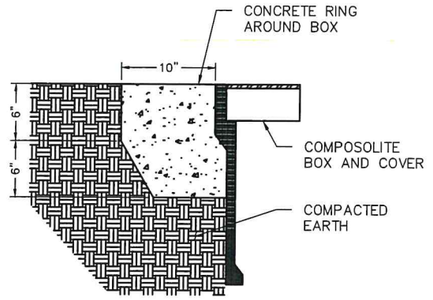


COVER



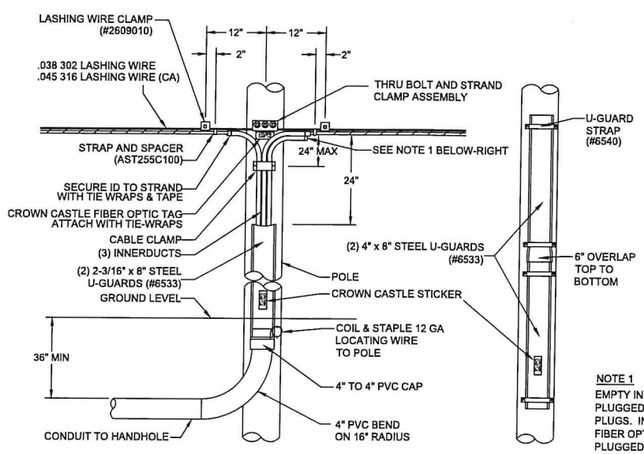
BOX

NOTES:
1. CONTRACTOR TO ORDER HANDHOLE BOX WITH THE CORRECT NUMBER AND SIZE OF KNOCKOUTS NEEDED.
2. VERIFY DIMENSIONS OF UNIT.
3. FINAL PLACEMENT TO BE DETERMINED IN FIELD



NOTES:
1. CONCRETE ENCASEMENT TO BE 3,000 P.S.I. MINIMUM.
2. CONCRETE ENCASEMENT RING DIMENSION, D, TO BE EQUAL TO DESIGN PAVEMENT DEPTH.
3. QUAZITE DOES NOT RECOMMEND THE USE OF CONCRETE OR POLYMER CONCRETE BOXES IN HIGH VOLUME TRAFFIC APPLICATIONS.

PULL BOX DETAIL



NOTE 1
EMPTY INNERDUCTS ENDS SHALL BE PLUGGED WITH EXPANDABLE JACKMOON PLUGS. INNERDUCTS POPULATED WITH FIBER OPTIC CABLE(S) SHALL BE PLUGGED WITH EXPANDING FOAM.

THIS DETAIL SHOWS A TYPICAL RISER ON A TANGENT AERIAL POLE.THOUGH SHOWN ON THE ROAD SIDE OF THE POLE, WHENEVER POSSIBLE, THE ACTUAL RISER SHALL BE ON THE SIDE OF THE POLE OPPOSITE THE DIRECTION OF TRAVEL OF VEHICULAR TRAFFIC.

TYPICAL TANGENT RISER POLE DETAIL

Peter J Tardy 08/21/2025
PETER J. TARDY, P.E. — DATE
NEW JERSEY PROFESSIONAL ENGINEER — NJ LIC. NO. 41990

ENGINEER:
FPA FRENCH & PARRELLO ASSOCIATES
Camden Office:
2 Riverside Drive, Suite 503
Camden, New Jersey 08101
609.862.1582
FPAengineers.com
New Jersey ▲ New York ▲ Pennsylvania ▲ Georgia

OWNER/DEVELOPER:
CROWN CASTLE
The Foundation for a Wireless World.

TITLE:
Crown Castle Fiber LLC
246 VALLEY ROAD
PRINCETON, NJ
JURISDICTION: MUNICIPALITY OF PRINCETON

REVISIONS

REV.	DATE	REVISION DESCRIPTION
1	10/24/23	ISSUED AS FINAL
2	06/13/24	TCP ADDED
3	11/14/24	REVISED PER COMMENTS
4	06/27/25	REVISED PER UG ROUTING
5	08/21/25	REVISED SITE ADDRESS

DRAWN BY:	CHECKED BY:	APPROVED BY:
D.R.	A.R.C.	P.J.T.

PROJECT NUMBER:	2438C.125.007
NODE ID:	PRC-067
SCU # / CASCADE ID:	528024/PH6026BA_21LAB
DATE DRAWN:	09/13/2023
SHEET:	16 OF 16