



- A. Call to Order
- B. Pledge of Allegiance
- C. Approve Order of Agenda
- D. Approval of Minutes – November 1, 2021 (Pages 3-5)
- E. Building Permits (Pages 6-9)

Consent Agenda - Approve the Following:

- a. Bills (Pages 10-18)
- b. Financial Dashboard as of September 30, 2021 (Pages 19-21)
- c. Resolution Approving Wireless Colocation at 3124 6th Street West (Pages 22-73)
- d. Games of Chance for Packer Backers (West Fargo Packer Boys Hockey). Games to be conducted: Raffle on 12-17-2021 at West Fargo Sports Arena at 520 32nd Ave W (Page 74)
- e. Gaming Site Authorization for Companions for Children. Games to be conducted: Electronic Pull Tab Device from 11-15-2021 to 6-30-2022 at Buffalo Wings and Rings at 695 32nd Ave E (Pages 75-76)
- f. Sponsorship from the City of West Fargo for a Special Road Fund Grant for the West Fargo Park District (Pages 77-79)

Regular Agenda

- 1. Reappointment of Brad Olson to Cass County Planning Commission - 1 Year Term
- 2. Second Reading Zoning Ordinance Amendment Parking - Lisa Sankey, Planner (Pages 80-90)
- 3. Second Reading Zoning Ordinance Amendment to DMU District - Lisa Sankey, Planner (Pages 91-96)
- 4. A21-41 – A Conditional Use Permit for an Oversized Accessory Building, Woodland Estates - Malachi Petersen (Pages 97-110)
- 5. Second Reading of Ordinance No. 1197 relating to Theft of Property, Shoplifting, and Window Tint – John Shockley, City Attorney (Pages 111-115)
- 6. Improvement District No. 2250 - Sheyenne St. Reconstruction (Beaton Dr. to 32nd Ave) – John Shockley & KLJ Engineering
 - Review contractor's NOI submittal regarding the sanitary sewer forcemain installation through the diversion channel.
- 7. Meet in Executive Session pursuant to N.D.C.C. § 44-04-19.1 through 44-04-19.2 for the purpose of attorney client consultation regarding potential claims arising out of or relating to the contractor's NOI submittal regarding the sanitary sewer forcemain installation through the Sheyenne diversion channel.

8. City Administrator's Report
9. Correspondence
10. Non-Agenda Items
11. Adjourn



West Fargo City Commission Meeting
Monday, November 1, 2021
Commission Chambers 5:30 PM

The West Fargo City Commission met on Monday, November 1, 2021, at 5:30 pm. Those present were Commissioners Bernie Dardis, Eric Gjerdevig, Mark Simmons, Brad Olson and Mandy George. President of the Board Bernie Dardis called the meeting to order at 5:30 PM.

Commissioner Gjerdevig moved and Commissioner Olson seconded to approve the order of the agenda as distributed with the amendment that Agenda Item #5 in the Regular Agenda be removed from the agenda. No opposition. Motion carried.

Commissioner Simmons moved and Commissioner George seconded to approve the minutes of October 18, 2021 as presented. No opposition. Motion carried.

Commissioner George moved and Commissioner Olson seconded to approve the Building Permit Reports as distributed. No opposition. Motion carried.

Commissioner Olson moved and Commissioner Gjerdevig seconded to approve the following items from the Consent Agenda:

- a. Bills (Pages 8-19)
- b. Games of Chance for Pink It Forward. Games to be conducted: Bingo on 11-2-2021 and 12-7-2021 at DoubleTree by Hilton West Fargo at 825 E Beaton Dr (Pages 20-21)
- c. Games of Chance for Aurora Elementary. Games to be conducted: Bingo on 11-16-2021 at Aurora Elementary at 3420 9th St W (Page 22)
- d. Games of Chance for Tech Team Wrestling. Games to be conducted: Raffle on 12-21-2021 at Tech Team Training Center at 528 7th Ave NE (Page 23)
- e. Gaming Site Authorization for Prairie Public Broadcasting. Games to be conducted: Raffles, Pull Tab Jar, Prize Board, Twenty-One, and Poker from 11-24-2021 to 11-29-2021 at DoubleTree at 825 E Beaton Dr (Pages 24-25)
- f. Master Service Agreement with Houston Engineering (Pages 26-142)
- g. Pledging of Securities Collateral 3rd Quarter (Pages 143-153)

No opposition. Motion carried.

Lisa Sankey, City Planner appeared before the Commission for the Public Hearing and First Reading - Zoning Ordinance Amendment to 4-434 DMU: Downtown Mixed Use District. Following discussion, Commissioner Olson moved and Commissioner Gjerdevig seconded to approve the first reading of Zoning Ordinance Amendment to 4-434 DMU: Downtown Mixed Use District. No opposition. Motion carried.

Lisa Sankey, City Planner appeared before the Commission for the Public Hearing and First Reading - Zoning Ordinance Amendment to Sections 4- 451.6 Automobile Parking Space Required. Following discussion, Commissioner Simmons moved and Commissioner George seconded to approve the First Reading - Zoning Ordinance Amendment to Sections 4- 451.6 Automobile Parking Space Required. No opposition. Motion carried.

Malachi Petersen, City Planner appeared before the Commission for the Second Reading and Final Approval - Proposed Willow Creek 2nd Subdivision, Plat and Rezone from A: Agricultural to R-1E: Rural Estate District in Auditor's Lot 5 in the SE1/4 of Section 10 T139N, R50W, Cass County, North Dakota. Following discussion, Commissioner Gjerdevig moved and Commissioner Olson seconded to approve the Second Reading and Final Approval - Proposed Willow Creek 2nd Subdivision, Plat and Rezone from A: Agricultural to R-1E: Rural Estate District in Auditor's Lot 5 in the SE1/4 of Section 10 T139N, R50W, Cass County, North Dakota - Malachi Peterson, City Planner. No opposition. Motion carried.

Roger Mammenga from 625 Willow Ct, Horace appeared before the Commission for approval of the Right of Way Encroachment Request for Fargo Packing and Sausage Co. Following discussion, Commissioner Olson moved and Commissioner Gjerdevig seconded to approve moving forward to direct the City Attorney work on the Right of Way Encroachment between Fargo Packing and Sausage Co and the City of West Fargo. No opposition. Motion carried.

Agenda item number five had been moved from the regular agenda.

John Shockley, City Attorney appeared before the Commission for approval of the Resolution Setting Fine Amounts for Parking Violations. Following discussion, Commissioner Gjerdevig moved and Commissioner George seconded to approve the Resolution Setting Fine Amounts for Parking Violations. No opposition. Motion carried.

Tina Fisk, City Administrator appeared before the Commission to request approval of the Commission Financial Guiding Principles. Following discussion, Commissioner Olson moved and Commissioner Gjerdevig seconded to approve the Commission Financial Guiding Principles. No opposition. Motion carried.

Tina Fisk, City Administrator appeared before the Commission for the agenda item of Cost of Living Adjustment Discussion. Following discussion, Commissioner Simmons moved and Commission President Dardis seconded to approve the Cost of Living Adjustment to 3%. Following further discussion, Commissioner Simmons moved and Commissioner Olson seconded to approve the Cost of Living Adjustment to 4%. Commissioner Gjerdevig opposed. Motion carried on a 4:1 vote.

Tina Fisk, City Administrator City Administrator Report:

- a. Updates on the Fire Department calls and staff time
- b. April 5th of this year \$25,000 a year was approved for the Greater Fargo Moorhead Economic Development, contingent on Fargo paying a minimum of \$75,000 a year has been received.
- c. Denis Otterness, Chief of Police gave a brief update surrounding the events within the Police Department within the past week



**West Fargo City Commission Meeting
Monday, November 1, 2021
Commission Chambers 5:30 PM**

There were no correspondence.

There were no non-agenda items.

Commissioner Simmons moved and Commissioner Olson seconded to adjourn the meeting. No opposition. Meeting adjourned at 6:24 PM.

Bernie Dardis, Commission President

Tina Fisk, City Administrator

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**WEST FARGO CITY COMMISSION MEETING
BUILDING DEPARTMENT ACTIVITY REPORT
11/15/2021**

	AS OF 11/3/2021			YEAR TO DATE		
	# PERMITS	# UNITS	VALUATION	# PERMITS	# UNITS	VALUATION
<u>BUILDING NEW</u>						
COMMERCIAL	1		\$ 491,500.00	46		\$ 62,976,119.00
RESIDENTIAL DWELLING	10	10	\$ 3,247,400.00	267	267	\$ 88,700,779.00
RESIDENTIAL TWINHOME				4	4	\$ 837,500.00
RESIDENTIAL TOWNHOME				5	38	\$ 7,883,537.00
RESIDENTIAL MULTIPLE				1	54	\$ 6,500,000.00
PUBLIC				1		\$ 3,150,550.00
CHURCH						
ACCESSORY	6		\$ 62,650.00	166		\$ 1,611,040.00
FOUNDATION ONLY	4		\$ 114,500.00	25		\$ 6,705,500.00
<u>BUILDING REMODEL</u>						
COMMERCIAL	5		\$ 124,500.00	62		\$ 9,630,303.00
RESIDENTIAL	6		\$ 123,140.00	167		\$ 5,118,241.00
PUBLIC				4		\$ 4,950,400.00
CHURCH				1		\$ 458,900.00
ACCESSORY				2		\$ 22,000.00
<u>BUILDING OTHER</u>						
DEMOLITION				4		\$ 40,800.00
MOVE				1		\$ 20,000.00
PERMIT CANCELLATION				2	1	\$ 286,640.00
TOTALS	32	10	\$ 4,163,690.00	754	362	\$ 198,319,029.00

Building Department Report - Summary

NO.	CONTRACTOR	ADDRESS	OWNER	VALUATION	PERMIT FOR
211403	PBL Concrete	122 6th Avenue West	Christopher J Geurts	\$ 4,500.00	Residential - Foundation only
211406	Dabbert Custom Homes	5327 8th Street West	Sara & Kendall Peterson Jr	\$ 290,000.00	Residential Dwelling
211410	Western Products	1609 15th Avenue East	Eladio & Tanya Martinez	\$ 23,640.00	Remodel - Residential - Siding
211411	Dahl's Industrial Tool Co.	602 7th Avenue West	Lorenzo Lunday	\$ 3,750.00	Remodel - Residential - Egress Window
211422	Krasley Services	765 32nd Avenue West	Oakridge Condos, LLC	\$ 491,500.00	Commercial - Office Building
211398	Pro Craftman	5770 Deb Drive West	Christopher Johnson	\$ 5,520.00	Accessory - Deck
211428	Dawson Contracting	936 6th Avenue West	Stacey & Matthew Meshefski	\$ 8,000.00	Remodel - Residential - Lower Level Finish
211431	Dan Savageau Construction	1882 Charleswood Estates Drive	Adrian Orth ETAL	\$ 48,000.00	Remodel - Residential - Master Bath
211436	Thomsen Homes LLC	6053 Martin Lane West	Westport Investments LLC	\$ 173,500.00	Residential Dwelling
211439	Schmit Brothers Construction	3424 2nd Street East	Scott & Donna Seltveit	\$ 15,000.00	Accessory - Deck
211414	Accessory Fabricators LLC	3262 Oak Ridge Loop East	Prairie Hill Investments, LLC	\$ 60,000.00	Remodel - Commercial
211417	James Hohertz	1116 8th Avenue West	Jacob & Brittney Clauson	\$ 15,000.00	Accessory - Deck
211197	Birian Day	3330 Sheyenne Street	Eagle Run Plaza LLP	\$ 500.00	Remodel - Commercial
211426	Cornerstone Specialties	1329 26th Avenue West	Cornerstone Specialties	\$ 180,000.00	Residential Dwelling
211430	Dabbert Custom Homes	6073 Martin Lane West	Dabbert Custom Homes	\$ 287,900.00	Residential Dwelling
211446	Radiant Homes	3724 4th Street East	Krueger Construction	\$ 475,000.00	Residential Dwelling
211447	River Bend Development	2414 Mcleod Drive East	Krueger Construction	\$ 590,000.00	Residential Dwelling
211455	Meridian Commercial Construction	567 32nd Avenue East	Four Horsemen, LLC	\$ 10,000.00	Commercial -Foundation Only
211420	Jordahl Custom Homes	1010 Albert Drive West	Jordahl Custom Homes	\$ 2,500.00	Accessory - Deck
211435	Red Leaf Custom Homes, LLC	5500 11th Street West	Red Leaf Homes, LLC	\$ 280,000.00	Residential Dwelling
211452	Jake Thompson	340 8th Street West	Brick View Apartments	\$ 4,000.00	Remodel - Commercial

Building Department Report - Summary

NO.	CONTRACTOR	ADDRESS	OWNER	VALUATION	PERMIT FOR
211451	Deck Builders	1504 4th Avenue East	Darrell & Cynthia Thibert	\$ 10,470.00	Accessory - Deck
211450	Deck Builders	1428 4th Avenue East	Robert & Amanda Belgarde	\$ 14,160.00	Accessory - Deck
211457	Krasley Services	3314 Oak Ridge Pond	Oakridge Condos, LLC	\$ 50,000.00	Commercial - Foundation only
211458	Krasley Services	3344 Oak Ridge Pond	Oakridge Condos, LLC	\$ 50,000.00	Commercial - Foundation only
211459	Krasley Services	3953 4th Street East	Oakridge Condos, LLC	\$ 30,000.00	Remodel - Commercial - fitup
211460	Krasley Services	3973 4th Street East	Oakridge Condos, LLC	\$ 30,000.00	Remodel - Commercial - fitup
211462	American Concrete & Excavating	514 2nd Street East	Loren Bothun	\$ 3,000.00	Remodel - Residential - Egress Window
211423	Faul Building & Repair	2925 6th Street East	Jill & Nathan Ostby	\$ 36,750.00	Remodel - Residential - Lower Level Finish
211437	Thomsen Homes LLC	858 60th Avenue West	Thomsen Homes LLC	\$ 173,500.00	Residential Dwelling
211438	Thomsen Homes LLC	6191 Martin Lane West	Westport Investments LLC	\$ 172,500.00	Residential Dwelling
211454	Building Concepts	3383 1st Street East	Edwards & Janet Osebold	\$ 625,000.00	Residential Dwelling

**WEST FARGO CITY COMMISSION MEETING
BUILDING DEPARTMENT MONTHLY COMPARISON REPORT
11/15/2021**

	October 2020			October 2021		
	# PERMITS	# UNITS	VALUATION	# PERMITS	# UNITS	VALUATION
<u>BUILDING NEW</u>						
COMMERCIAL	22		\$ 31,892,315.00	46		\$ 62,976,119.00
RESIDENTIAL DWELLING	329	329	\$ 90,764,566.00	259	259	\$ 85,916,879.00
RESIDENTIAL TWINHOME	22	22	\$ 5,992,940.00	4	4	\$ 837,500.00
RESIDENTIAL TOWNHOME				5	38	\$ 7,883,537.00
RESIDENTIAL MULTIPLE	5	35	\$ 4,725,000.00	1	54	\$ 6,500,000.00
PUBLIC				1		\$ 3,150,550.00
CHURCH						
ACCESSORY	233		\$ 1,926,619.00	163		\$ 1,583,910.00
FOUNDATION ONLY	7		\$ 2,336,120.00	22		\$ 6,595,500.00
<u>BUILDING REMODEL</u>						
COMMERCIAL	63		\$ 18,553,002.00	59		\$ 9,566,303.00
RESIDENTIAL	118		\$ 4,169,535.00	165		\$ 5,078,491.00
PUBLIC	5		\$ 2,738,142.00	4		\$ 4,950,400.00
CHURCH				1		\$ 458,900.00
ACCESSORY	12		\$ 109,100.00	2		\$ 22,000.00
<u>BUILDING OTHER</u>						
DEMOLITION	7		\$ 81,022.00	4		\$ 40,800.00
MOVE	1		\$ 1,000.00	1		\$ 20,000.00
PERMIT CANCELLATION	3			2	1	\$ 286,640.00
TOTALS	821	386	\$ 163,289,361.00	735	354	\$ 195,294,249.00

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CITY OF WEST FARGO, ND
Check Register
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Claim Checks

Check #	Type	Vendor #/Name	Check Amount	Date Issued	Period Redeemed	Claim #	Claim Amount
100235	S	305 MOORE ENGINEERING	10106.20	10/27/21			
						CL 100022	10106.20
100236	S	3940 HERITAGE HOMES	2498.00	10/27/21			
						CL 100039	2498.00
100237	S	2646 4IMPRINT INC	412.10	11/02/21			
						CL 100012	412.10
100238	S	808 A & L LANDSCAPING	300.00	11/02/21			
						CL 99941	300.00
100239	S	289 ACME TOOLS	637.25	11/02/21			
						CL 99874	80.60
						CL 99931	136.67
						CL 100078	419.98
100240	S	2544 AIRGAS USA, LLC	288.00	11/02/21			
						CL 99991	288.00
100241	S	3766 ALERT-ALL CORP	1105.00	11/02/21			
						CL 100067	1105.00
100242	S	999999 ALEXANDER KUBE	300.00	11/02/21			
						CL 100033	300.00
100243	S	3869 ALISHA REIS	36.40	11/02/21			
						CL 99955	36.40
100244	S	3490 AMAZON CAPITAL SERVICES	2578.84	11/02/21			
						CL 99910	27.23
						CL 99940	45.50
						CL 99952	931.94
						CL 99967	589.42
						CL 99997	30.48
						CL 100003	123.09
						CL 100028	414.81
						CL 100101	99.96
						CL 100109	316.41
100245	S	865 AMERICAN ENTERPRISES, INC.	1000.00	11/02/21			
						CL 100149	1000.00
100246	S	317 AMERICAN WELDING & GAS, INC.	49.19	11/02/21			
						CL 100054	49.19
100247	S	1926 AUTO OWNER'S INSURANCE	511.01	11/02/21			
						CL 100056	511.01
100248	S	1695 BAKER & TAYLOR	130.08	11/02/21			
						CL 99966	130.08
100249	S	4164 BASKETS BY EILEEN	200.00	11/02/21			
						CL 100050	200.00
100250	S	43 BATTERIESPLUS c/o Bat 34 Inc	683.36	11/02/21			
						CL 99895	71.40
						CL 99949	611.96
100251	S	36 BERT'S TRUCK EQUIPMENT	604.60	11/02/21			
						CL 99948	604.60
100252	S	4153 BIR PERFORMANCE DRIVING SCHOOL	4200.00	11/02/21			
						CL 99881	4200.00

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Claim Checks

Check #	Type	Vendor #/Name	Check Amount	Date Issued	Period Redeemed	Claim #	Claim Amount
100253	S	4165 BOBBI JO NOBLES	15.00	11/02/21			
100254	S	26 BORDER STATES INDUSTRIES INC	3.02	11/02/21		CL 100060	15.00
100255	S	3512 BOUND TREE MEDICAL, LLC	2374.13	11/02/21		CL 100016	3.02
100256	S	73 BRAUN INTERTEC	33848.75	11/02/21		CL 100068	2374.13
100257	S	652 BRENCO CORPORATION	11.45	11/02/21		CL 99919	33848.75
100258	S	2811 BROCK ACKERMAN	44.68	11/02/21		CL 99998	11.45
100259	S	3892 BURGGRAF'S ACE FARGO WEST	34.12	11/02/21		CL 99883	44.68
100260	S	351 BUSINESS ESSENTIALS	963.80	11/02/21		CL 100096	34.12
						CL 99961	117.98
						CL 99984	250.87
						CL 99986	20.10
						CL 100069	179.94
						CL 100077	288.86
						CL 100151	106.05
100261	S	39 BUTLER MACHINERY	159.34	11/02/21		CL 99924	159.34
100262	S	61 CASS COUNTY FINANCE	15514.75	11/02/21		CL 100011	3005.00
						CL 100066	12509.75
100263	S	46 CASS RURAL WATER USERS	31.43	11/02/21		CL 99987	31.43
100264	S	4108 CED	6287.93	11/02/21		CL 99866	3539.93
						CL 100000	2748.00
100265	S	3216 CINTAS	140.01	11/02/21		CL 99947	140.01
100266	S	111 CITY OF FARGO	46065.72	11/02/21		CL 99953	23856.92
						CL 100120	22208.80
100267	S	72 CLASSIC FLORAL	60.00	11/02/21		CL 100121	60.00
100268	S	1904 CODE 4 SERVICES, INC	4973.75	11/02/21		CL 99886	4973.75
100269	S	3245 CORE & MAIN	21309.86	11/02/21		CL 99869	11009.90
						CL 99937	54.84
						CL 99999	10245.12
100270	S	3500 CUMMINS SALES AND SERVICE	2705.88	11/02/21		CL 100072	2705.88
100271	S	65 CURT'S LOCK & KEY	111.48	11/02/21		CL 99911	11.16
						CL 99930	100.32

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Claim Checks

Check #	Type	Vendor #/Name	Check Amount	Date Issued	Period Redeemed	Claim #	Claim Amount
100272	S	999999 CUSTOM GRAPHICS	1000.00	11/02/21			
100273	S	90 DAKOTA UNDERGROUND	651552.81	11/02/21		CL 100110	1000.00
100274	S	856 DAVE'S WEST FARGO TIRE	205.28	11/02/21		CL 99917	321334.97
100275	S	4049 EAPC ARCHITECTS ENGINEERS	45573.74	11/02/21		CL 99989	330217.84
100276	S	3091 EBSCO INFORMATION SERVICES	2429.00	11/02/21		CL 100007	205.28
100277	S	1502 EIDE BAILLY	540.00	11/02/21		CL 100082	45573.74
100278	S	1841 EMERGENCY AUTOMOTIVE TECHNOLOGIES, INC	345.56	11/02/21		CL 99958	2429.00
100279	S	3410 ENGRAPHIX	165.65	11/02/21		CL 100023	225.00
100280	S	3722 ENVIROTECH	3775.80	11/02/21		CL 100059	315.00
100281	S	1578 ESRI, INC	38500.00	11/02/21		CL 100047	345.56
100282	S	2862 ESSENTIA HEALTH	2248.00	11/02/21		CL 100015	165.65
100283	S	3443 ESSENTIA HEALTH	1886.00	11/02/21		CL 100025	3775.80
100284	S	131 FARGO TRACTOR	917.84	11/02/21		CL 100136	38500.00
100285	S	728 FARNAM'S GENUINE PARTS, INC	67.44	11/02/21		CL 100035	777.00
100286	S	151 FEDERAL EXPRESS	34.40	11/02/21		CL 100073	1471.00
100287	S	3523 FIRE SMART PROMOTIONS	760.00	11/02/21		CL 100005	1886.00
100288	S	2046 FMAAR	300.00	11/02/21		CL 99897	917.84
100289	S	3735 FOLKWAYS	3625.00	11/02/21		CL 99927	43.64
100290	S	155 GALLS, LLC	2285.88	11/02/21		CL 100079	23.80
100291	S	93 GATEWAY CHEVROLET	110.67	11/02/21		CL 100014	34.40
100292	S	2558 GOODYEAR COMMERCIAL TIRE	671.26	11/02/21		CL 100095	760.00
						CL 100134	300.00
						CL 100148	3625.00
						CL 99879	598.85
						CL 100008	1687.03
						CL 100044	110.67
						CL 99950	671.26

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Claim Checks

Check #	Type	Vendor #/Name	Check Amount	Date Issued	Period Redeemed	Claim #	Claim Amount
100293	S	556 GRAINGER, INC.	1640.22	11/02/21		CL 99942	59.58
						CL 100026	1509.06
						CL 100118	71.58
100294	S	3534 GRAND FORKS FIRE EQUIPMENT LLC	1502.18	11/02/21		CL 100094	1502.18
100295	S	939 GRAYBAR	2645.38	11/02/21		CL 99926	2307.48
						CL 99962	4.90
						CL 100086	333.00
100296	S	2877 GREATAMERICA FINANCIAL SERVICES	1324.03	11/02/21		CL 99965	442.89
						CL 100106	176.63
						CL 100107	704.51
100297	S	1963 GREATER FARGO MOORHEAD EDC	25000.00	11/02/21		CL 100147	25000.00
100298	S	2737 GREEN EARTH LANDSCAPING	61027.00	11/02/21		CL 99915	61027.00
100299	S	2189 GUARDIAN TRACKING LLC	2811.00	11/02/21		CL 99888	2811.00
100300	S	4161 H D ELECTRONICS INC	295.00	11/02/21		CL 99988	295.00
100301	S	135 HAWKINS WTR TREATMENT	12771.92	11/02/21		CL 100076	12771.92
100302	S	4166 HERCULES TOW ROPES, INC	590.82	11/02/21		CL 100129	590.82
100303	S	1226 HP INC.	1100.00	11/02/21		CL 100102	1100.00
100304	S	358 HUBERT OYE-SONS CONST.	948.30	11/02/21		CL 99932	948.30
100305	S	1245 INDIGO SIGNWORKS, INC	8029.00	11/02/21		CL 99914	8029.00
100306	S	4131 INNOVATIVE INTERFACES, INC	1000.00	11/02/21		CL 99964	1000.00
100307	S	3769 INTERNATIONAL CODE COUNCIL, INC	145.00	11/02/21		CL 100087	145.00
100308	S	1155 JOHN FREEMAN	893.48	11/02/21		CL 99873	893.48
100309	S	3526 JOHN NEEB	137.25	11/02/21		CL 100092	137.25
100310	S	2798 JOHNSON CONTROLS	806.88	11/02/21		CL 100130	806.88
100311	S	344 KARL'S AT THE NODAK CENTER	799.99	11/02/21		CL 100089	799.99
100312	S	3298 KIMBERLY BREDESON	2266.78	11/02/21		CL 99903	2266.78
100313	S	4155 KIRSTEN HENAGIN	17.50	11/02/21		CL 99892	17.50

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100314	S	2735 KLJ ENGINEERING LLC	1710.00	11/02/21		CL 100132	1710.00
100315	S	4114 KRISTIN KRAMER	15.68	11/02/21		CL 99954	15.68
100316	S	2325 KUSTOM KONCEPTS	569.21	11/02/21		CL 99877	569.21
100317	S	260 LAR'S BODY SHOP	1204.38	11/02/21		CL 99872	1204.38
100318	S	2800 LAUREN NEPHEW	17.50	11/02/21		CL 99890	17.50
100319	S	705 LAWSON PRODUCTS	69.87	11/02/21		CL 99943	69.87
100320	S	1668 LEARNING OPPORTUNITIES, INC	41.90	11/02/21		CL 99904	41.90
100321	S	4159 LIBRARY WORKS INC	49.00	11/02/21		CL 99968	49.00
100322	S	999999 LITTLE RED READING BUS	500.00	11/02/21		CL 100111	500.00
100323	S	3418 LOFFLER	625.00	11/02/21		CL 99875	175.00
						CL 100135	450.00
100324	S	3491 LOFFLER COMPANIES INC	190.54	11/02/21		CL 100105	190.54
100325	C S	711 LUTHER FAMILY FORD	0.00	11/02/21		CL 100051	
100326	* S	3284 LYNNWOODS KENNELS, INC	1871.18	11/02/21		CL 99885	1871.18
100327	S	3304 MAC'S - FARGO	99.97	11/02/21		CL 99928	77.99
						CL 100119	21.98
100328	S	3536 MACQUEEN EMERGENCY	588.99	11/02/21		CL 100090	588.99
100329	S	301 MACS INC	67.76	11/02/21		CL 100131	67.76
100330	S	999999 MANISH BALHARA	300.00	11/02/21		CL 100032	300.00
100331	S	4154 MARIA KRAMER	17.50	11/02/21		CL 99893	17.50
100332	S	299 MENARDS	610.94	11/02/21		CL 99918	27.96
						CL 99929	324.40
						CL 100002	78.00
						CL 100020	77.76
						CL 100093	21.30
						CL 100116	81.52
100333	S	323 METRO COG	138.47	11/02/21		CL 100034	138.47

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CITY OF WEST FARGO, ND
Check Register
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Claim Checks

Check #	Type	Vendor #/Name	Check Amount	Date Issued	Period Redeemed	Claim #	Claim Amount
100334	S	1854 MIDWEST TAPE	359.00	11/02/21		CL 99963	197.74
						CL 100042	161.26
100335	S	4163 MIKE DUPREE	600.00	11/02/21		CL 100019	600.00
100336	S	772 MINNKOTA	48.00	11/02/21		CL 100063	48.00
100337	S	305 MOORE ENGINEERING	10435.34	11/02/21		CL 99898	8636.44
						CL 100114	1798.90
100338	S	298 MVTL LABORATORIES	1093.25	11/02/21		CL 99996	1093.25
100339	S	695 NASRO	40.00	11/02/21		CL 99889	40.00
100340	S	986 ND CHIEFS OF POLICE ASSOCIATION	300.00	11/02/21		CL 99884	300.00
100341	S	723 ND POST BOARD	450.00	11/02/21		CL 99993	450.00
100342	S	271 NETCENTER TECHNOLOGIES	7448.00	11/02/21		CL 100103	7448.00
100343	S	2261 NETWORK CENTER INCORPORATED	18760.04	11/02/21		CL 99899	18760.04
100344	S	3094 NFPA (NATIONAL FIRE PROTECTION ASSOC)	175.00	11/02/21		CL 100091	175.00
100345	S	141 NORTH STAR SAFETY, INC	176.06	11/02/21		CL 99867	176.06
100346	S	331 NORTHERN STATES SUPPLY	141.09	11/02/21		CL 99946	141.09
100347	S	1715 NORTHWEST TIRE INC	19.26	11/02/21		CL 100046	19.26
100348	S	330 NORTHWESTERN EQUIP INC.	342.50	11/02/21		CL 100115	342.50
100349	S	322 NOVA FIRE PROTECTION	712.65	11/02/21		CL 99925	712.65
100350	S	753 O'DAY EQUIPMENT	197.00	11/02/21		CL 99896	197.00
100351	S	1774 O'REILLY AUTOMOTIVE STORES, INC	602.02	11/02/21		CL 99939	156.92
						CL 100045	25.35
						CL 100125	419.75
100352	S	3505 OFFICE SIGN COMPANY	87.94	11/02/21		CL 100133	87.94
100353	S	353 OHNSTAD TWICHELL	87840.99	11/02/21		CL 100036	25196.04
						CL 100037	7753.74
						CL 100038	5093.15
						CL 100057	25560.32
						CL 100058	3852.09
						CL 100065	20385.65

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Claim Checks

Check #	Type	Vendor #/Name	Check Amount	Date Issued	Period Redeemed	Claim #	Claim Amount
100354	S	276 OSTROMS ACE HARDWARE	681.85	11/02/21		CL 99870	113.40
						CL 99934	141.80
						CL 99992	13.98
						CL 100017	35.15
						CL 100053	159.56
						CL 100097	193.99
						CL 100117	8.99
						CL 100122	4.99
						CL 100126	9.99
100355	S	3277 OUT FRONT POWER EQUIPMENT	213.60	11/02/21		CL 100048	213.60
100356	S	673 PARSONS ELECTRIC	8016.00	11/02/21		CL 99863	8016.00
100357	S	914 PATRICK & CO.	750.00	11/02/21		CL 100006	750.00
100358	S	4034 PETRO SERVE USA #63	1132.56	11/02/21		CL 100080	1132.56
100359	S	1483 PITNEY BOWES RESERVE ACCOUNT	500.00	11/02/21		CL 100029	500.00
100360	S	411 POWER PLAN OIB	88.40	11/02/21		CL 100123	88.40
100361	S	3391 PPI CONSULTING	475.00	11/02/21		CL 100010	475.00
100362	S	4157 PREMIER CARBIDE SAW & TOOL	17.60	11/02/21		CL 99959	17.60
100363	S	1166 PRODUCTIVITY PLUS ACCOUNT	974.57	11/02/21		CL 99944	293.25
						CL 100049	681.32
100364	S	425 RED RIVER VALLEY FAIR	2000.00	11/02/21		CL 100004	2000.00
100365	S	999999 RYAN PROM	300.00	11/02/21		CL 100031	300.00
100366	S	441 S & S LANDSCAPING	24.00	11/02/21		CL 99936	24.00
100367	S	1881 SAM'S CLUB/SYNCHRONY BANK	353.08	11/02/21		CL 100098	353.08
100368	S	437 SANDY'S DONUTS & COFFEE SHOP	50.40	11/02/21		CL 100085	50.40
100369	S	454 SANITATION PRODUCTS	768.83	11/02/21		CL 99938	768.83
100370	S	4156 SARAH DAVIS	17.50	11/02/21		CL 99891	17.50
100371	S	2632 SARAHANNE SUPLER	158.00	11/02/21		CL 100009	158.00
100372	S	4162 SELMER JORDHEIM	800.00	11/02/21		CL 100018	800.00

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Claim Checks

Check #	Type	Vendor #/Name	Check Amount	Date Issued	Period Redeemed	Claim #	Claim Amount
100373	S	459 SHERWIN WILLIAMS	90.08	11/02/21		CL 99923	90.08
100374	S	2885 SHORTPRINTER	296.33	11/02/21		CL 100013	231.41
						CL 100027	64.92
100375	S	2655 SIMPLIFILE	335.00	11/02/21		CL 100137	335.00
100376	S	3528 SNACKS PLUS VENDING	164.00	11/02/21		CL 99909	164.00
100377	S	4048 SNS AUTO SUPPLY	265.50	11/02/21		CL 99951	265.50
100378	S	465 SPARTAN STORES LLC	20.47	11/02/21		CL 100084	20.47
100379	S	3516 STEIN'S INC	237.56	11/02/21		CL 100083	237.56
100380	S	274 STEVE MOTTINGER	4750.00	11/02/21		CL 99913	4750.00
100381	S	3260 STORM COMBATIVES	799.00	11/02/21		CL 99887	799.00
100382	S	31 STURDEVANT'S AUTO PARTS	827.62	11/02/21		CL 100040	771.93
						CL 100124	55.69
100383	S	733 SWANSTON EQUIPMENT CORP.	52502.19	11/02/21		CL 100001	1335.30
						CL 100021	51166.89
100384	S	634 SWEENEY CONTROLS COMPANY	465.00	11/02/21		CL 99935	465.00
100385	S	2491 TEAM LABORATORY CHEMICAL, LLC	855.00	11/02/21		CL 100055	855.00
100386	S	1907 THE SHOOTING PARK OF HORACE	350.00	11/02/21		CL 100061	350.00
100387	S	3411 THE UPS STORE #6740	422.02	11/02/21		CL 99876	73.08
						CL 99994	348.94
100388	S	2217 TINA FISK	130.62	11/02/21		CL 99995	130.62
100389	S	500 TWIN CITY SHARPENING	40.70	11/02/21		CL 99960	40.70
100390	S	3833 VALLEY GREEN	182.50	11/02/21		CL 99985	182.50
100391	S	3470 VICKERS LAW	270.00	11/02/21		CL 100100	270.00
100392	S	999999 VICKY BURT	300.00	11/02/21		CL 100030	300.00
100393	S	544 WALLWORK TRUCK CENTER	184.80	11/02/21		CL 99933	113.30
						CL 100043	71.50

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Claim Checks

Check #	Type	Vendor #/Name	Check Amount	Date Issued	Period Redeemed	Claim #	Claim Amount
100394	S	686 WDAY	1120.00	11/02/21			
100395	S	2945 WEST FARGO AREA COMMUNITY PROGRAM	3710.69	11/02/21		CL 99912	1120.00
100396	S	3306 WEST FARGO EVENTS, INC	11000.00	11/02/21		CL 99894	3710.69
100397	S	999999 WEST FARGO EXCHANGE CLUB	1000.00	11/02/21		CL 100108	11000.00
100398	S	2625 WEST FARGO POLICE EXPLORER POST	1680.48	11/02/21		CL 100113	1000.00
100399	S	2184 WEST SIDE STEEL	1006.55	11/02/21		CL 99882	1680.48
100400	S	4129 WESTERN NATIONAL MUTUAL INS CO	100.00	11/02/21		CL 99871	163.19
						CL 100052	843.36
100401	S	999999 WESTERN STATE BANK	500.00	11/02/21		CL 100064	50.00
100402	S	338 XCEL ENERGY	2670.07	11/02/21		CL 100081	50.00
						CL 100112	500.00
						CL 99916	77.64
						CL 100024	26.95
						CL 100099	18.26
						CL 100139	44.93
						CL 100140	46.45
						CL 100141	135.03
						CL 100142	67.50
						CL 100143	50.63
						CL 100144	217.84
						CL 100145	67.87
						CL 100146	1916.97
100403	S	566 WEST FARGO PARK DISTRICT	70768.68	11/03/21			
100404	S	3549 WEX	3117.47	11/04/21		CL 100152	70768.68
100405	S	660 FARGO FREIGHTLINER	348.66	11/09/21		CL 100167	3117.47
						CL 100051	348.66

Total for Claim Checks **1359389.60**
Count for Claim Checks 171

* denotes missing check number(s)

of Checks: 171 Total: 1359389.60



Year To Date As of September 30, 2021

Prepared by: Jim Larson

Budgeted Funds		Revenue/Transfers			Expenditure/Transfers			Net			Cash
Fund	Description	Actual	Annual Budget	Variance	Actual	Annual Budget	Variance	Actual	Annual Budget	Variance	
1000	General Fund	\$ 14,339,153	\$ 20,588,861	\$ (6,249,708)	\$ 14,650,818	\$ 20,458,694	\$ 5,807,876	\$ (311,665)	\$ 130,167	\$ (441,832)	\$ 25,316,924
2030	Share of Specials	199,208	202,947	(3,739)	206,056	202,947	(3,109)	(6,848)	-	(6,848)	(37,246)
2060	Fire Dept	3,355,225	3,098,188	257,037	3,425,791	3,099,161	(326,630)	(70,566)	(973)	(69,593)	(135,687)
7000	Library	1,361,334	1,392,904	(31,570)	1,049,328	1,533,006	483,678	312,006	(140,102)	452,108	639,405
7050	Airport	173,110	176,472	(3,362)	83,571	176,150	92,579	89,539	322	89,217	644,881
Total Government		\$ 19,428,030	\$ 25,459,372	\$ (6,031,342)	\$ 19,415,564	\$ 25,469,958	\$ 6,054,394	\$ 12,466	\$ (10,586)	\$ 23,052	\$ 26,428,277
2000	Sales Tax	\$ 10,507,166	\$ 8,418,000	\$ 2,089,166	\$ 10,489,777	\$ 8,400,000	\$ (2,089,777)	\$ 17,389	\$ 18,000	\$ (611)	\$ 2,677,459
2970	Capital Improvements	7,991,879	6,495,000	1,496,879	2,021,196	6,435,000	4,413,804	5,970,683	60,000	5,910,683	21,666,053
2971	Prairie Dog Funds	-	-	-	1,000,000	-	(1,000,000)	(1,000,000)	-	(1,000,000)	1,500,000
2960	Economic Development	2,657,833	2,122,500	535,333	1,906,177	1,830,264	(75,913)	751,656	292,236	459,420	7,056,141
2130	Municipal Highway	1,134,623	1,385,142	(250,519)	-	1,685,142	1,685,142	1,134,623	(300,000)	1,434,623	1,339,238
2110	Gaming	3,035	12,000	(8,965)	-	-	-	3,035	12,000	(8,965)	75,887
2XXX	Tourism & Events	21,889	64,175	(42,286)	22,163	52,500	30,337	(274)	11,675	(11,949)	46,036
2200	Vector Control	151,388	100,000	51,388	51,721	100,000	48,279	99,668	-	99,668	68,785
2210	Forestry	302,405	300,500	1,905	175,890	284,086	108,196	126,516	16,414	110,102	(295,375)
2230	City Utility	132,428	133,000	(572)	88,508	133,000	44,492	43,920	-	43,920	321,124
25XX	Police Special Funds	150,266	5,200	145,066	400,129	5,000	(395,129)	(249,863)	200	(250,063)	299,722
2950	Assets Forfeitures	16,810	30,000	(13,190)	10,775	30,000	19,225	6,035	-	6,035	56,743
2980	South Facility Hookup	-	60,650	(60,650)	-	50,000	50,000	-	10,650	(10,650)	3,374,691
Total Special Funds		\$ 23,069,724	\$ 19,126,167	\$ 3,943,557	\$ 16,166,336	\$ 19,004,992	\$ 2,838,656	\$ 6,903,388	\$ 121,175	\$ 6,782,213	\$ 38,186,504
3000	Total Debt Service	\$ 41,917,527	\$ 30,034,105	\$ 11,883,422	\$ 41,570,808	\$ 25,718,116	\$ (15,852,692)	\$ 346,719	\$ 4,315,989	\$ (3,969,270)	\$ 61,367,760
6010	Sanitation	\$ 3,723,584	\$ 4,702,500	\$ (978,916.46)	\$ 3,616,241	\$ 4,964,610	\$ 1,348,369	\$ 107,343	\$ (262,110)	\$ 369,453	\$ 3,239,136
6020	Water	7,611,514	8,315,000	(703,487)	5,608,179	7,518,555	1,910,376	2,003,335	796,445	1,206,890	8,370,685
6025	Sewer	3,640,589	4,510,000	(869,411)	3,098,158	4,629,903	1,531,745	542,431	(119,903)	662,334	1,751,105
6050	Sewage Surcharge	8,121	-	8,121	-	-	-	8,121	-	8,121	337,963
Total Enterprise		14,983,807		(2,543,693)	12,322,578	17,113,068	4,790,490	2,661,229	414,432	2,246,797	\$ 13,698,888
5000	Tree Fund	64,870	84,000	(19,130)	31,325	35,000	3,675	33,545	49,000	(15,455)	530,980
2050	Park Funds/State Aid	\$ 734,546	\$ 680,999	53,547	734,546	680,999	(53,547)	-	-	-	-
8600	Park District Special Assessment	\$ 429,944	\$ 371,100	58,844	414,397	371,100	(43,297)	15,548	-	15,548	18,275
2141	FM CVB	205,993	147,000	58,993	193,211	147,000	(46,211)	12,782	-	12,782	471
Total Agency		\$ 1,435,352	\$ 1,283,099	\$ 152,253	\$ 1,373,479	\$ 1,234,099	\$ (139,380)	\$ 61,874	\$ 49,000	\$ 12,874	\$ 549,726
Total All Budgeted Funds		\$ 100,834,440	\$ 75,902,743	\$ 24,931,697	\$ 90,848,764	\$ 88,540,233	\$ (2,308,531)	\$ 9,985,675	\$ 4,890,010	\$ 5,095,665	\$ 140,231,155



Year To Date As of September 30, 2021

Prepared by: Jim Larson

Non-Budgeted Funds	Revenue/Transfers			Expenditure/Transfers			Net			Cash Balances
	Actual	Annual Budget	Variance	Actual	Annual Budget	Variance	Actual	Annual Budget	Variance	
4000 Construction	\$ 7,457,653	\$ -	\$ 7,457,653	\$ 15,050,401	\$ -	\$ (15,050,401)	\$ (7,592,747)	\$ -	\$ (7,592,747)	\$ (29,276,544)
2170 Clerk of Court Bond Fund	-	-	-	-	-	-	-	-	-	43,181
2600 Future Building	-	-	-	-	-	-	-	-	-	(32,028)
2XXX Misc. Special Funds	3,121,986	-	3,121,986	584,166	-	(584,166)	2,537,820	-	2,537,820	7,456,092
7XXX Agency Funds	69,175	-	69,175	65,241	-	(65,241)	3,934	-	3,934	394,455
Total Non-Budgeted Funds	\$ 10,648,814	\$ -	\$ 10,648,814	\$ 15,699,807	\$ -	\$ (15,699,807)	\$ (5,050,993)	\$ -	\$ (5,050,993)	\$ (21,414,844)
All Funds Combined	\$ 111,483,254	\$ 75,902,743	\$ 18,053,011	\$ 106,548,572	\$ 88,540,233	\$ (18,008,339)	\$ 4,934,682	\$ 4,890,010	\$ 44,672	\$ 118,816,311

City of West Fargo

Notes to the September 30, 2021 Financial Report

GENERAL FUND

REVENUES

Tax Revenues

- > Tax collections are on track to meet or exceed 2021 budget

Franchise fees

- > Cable TV fees will be short of budget but Electric and Gas should surpass budget and cover the shortfall in the Cable TV Franchise fee

State Aid

- > Projected to exceed budget at year end by approximately \$300,000.

Fines & Forfeits

- Will not make budget by year end, projected to be under budget by \$100,000.
- > This is caused by the jail being closed down due to COVID, staffing challenges in law enforcement (not just West Fargo).

Interest on Investments

- Continues to lag to budget. Rates have not recovered in 2021. Current discussion for interest rates is for the increase in interest rates to begin in towards the end of 2nd quarter 2022. This is good for any debt the City places but provides for a poor return on cash balances.
- >

Transfers

- > There are several annual transfers that will occur in December of 2021. This will meet budget by year end.

EXPENSES

- > Overall the general fund expenses are on or below budget.

UTILITIES

- > Revenues are ahead of budget. This increase was caused by the summer draught causing higher lawn irrigation in 2021.
- > Expenses are higher mostly in the purchased water and sewer from Fargo with the higher summer utilization.

*** Consent Agenda ***

AGENDA ITEM DESCRIPTION
CITY COMMISSION
WEST FARGO, NORTH DAKOTA

1. CONTACT PERSON: Lisa Sankey
2. PHONE NUMBER: 515-5376 DATE: November 2, 2021
3. AGENDA TITLE:
Resolution to approve addition of antennas for commercial wireless telecommunication on existing tower at 3124 6th Street West.
4. PLEASE **BRIEFLY** DESCRIBE YOUR REQUEST:
Allow additional antennas and equipment to existing City Water tower pursuant to requirements of Section 4-449.13 of City Ordinances.
5. SITE ADDRESS OR LEGAL DESCRIPTION (if applicable):
Located at 3124 6th Street West (Lot 1, Block 1 of Eagle Run Plaza 3rd Addition),
City of West Fargo, North Dakota
6. ACTION BEING REQUESTED FROM CITY COMMISSION:
Resolution to Approve Additional Antennas and associated equipment on existing tower and ground equipment at 3124 6th Street West pursuant to Section 4-449.13 of City Ordinances.



11/02/2021

City of West Fargo
800 Fourth Ave. E., Suite #1
West Fargo, ND 58078
(701) 515-5376

RE: DISH Wireless Colocation @ 3124 6th St. W. West Fargo, ND 58078 (MNFAR00012B_ND11779-A)

DISH Wireless intends to collocate antennas and associated equipment on the existing telecommunications tower and ground equipment at the base of the tower at the above-mentioned site.

No additional tower height or compound expansion will be required to accommodate the proposed installation.

In accordance with ordinance 4-449.13, a resolution of the City Commission is requested to allow DISH Wireless to provide excellent wireless coverage to your region. The intent is to bring in 5G for greater upload speeds and better wireless connectivity.

We politely request approval for DISH Wireless installation at this site.

Please see attached final site & building plan and passing structural analysis prepared by a qualified professional engineer.

Thank you,

Sydney Schuch
Site Development Specialist II



SBA Communications Corporation
470 Davidson Road
Pittsburgh, PA 15239

561-579-8812
sschuch@sbsite.com

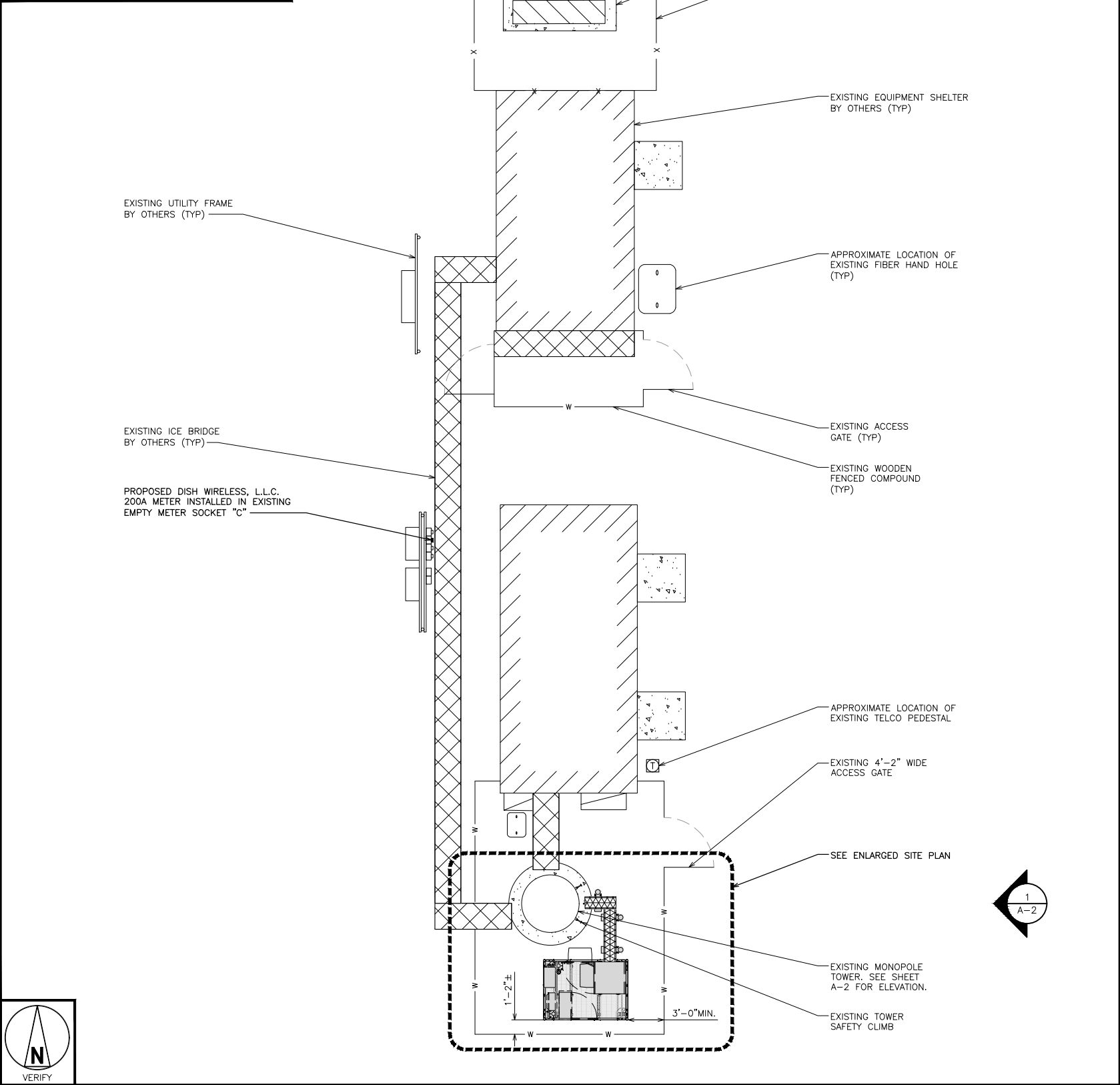
Your Signal Starts Here.

- NOTES
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.

3. SITE PLAN SHOWN IS TAKEN FROM SUPPORTING INFORMATION PROVIDED BY SBA. CONTRACTOR SHALL CONTACT SBA IN THE EVENT SITE PLAN IS NOT CORRECT.

4. THE SUBJECT PROPERTY IS LOCATED IN ZONE "X" (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL FLOOD) ACCORDING TO THE FEMA COMMUNITY PANEL MAP #38017C0758G, EFFECTIVE JANUARY 16, 2015.



PROPOSED OVERALL SITE PLAN

6' 4' 2' 0 5' 10'

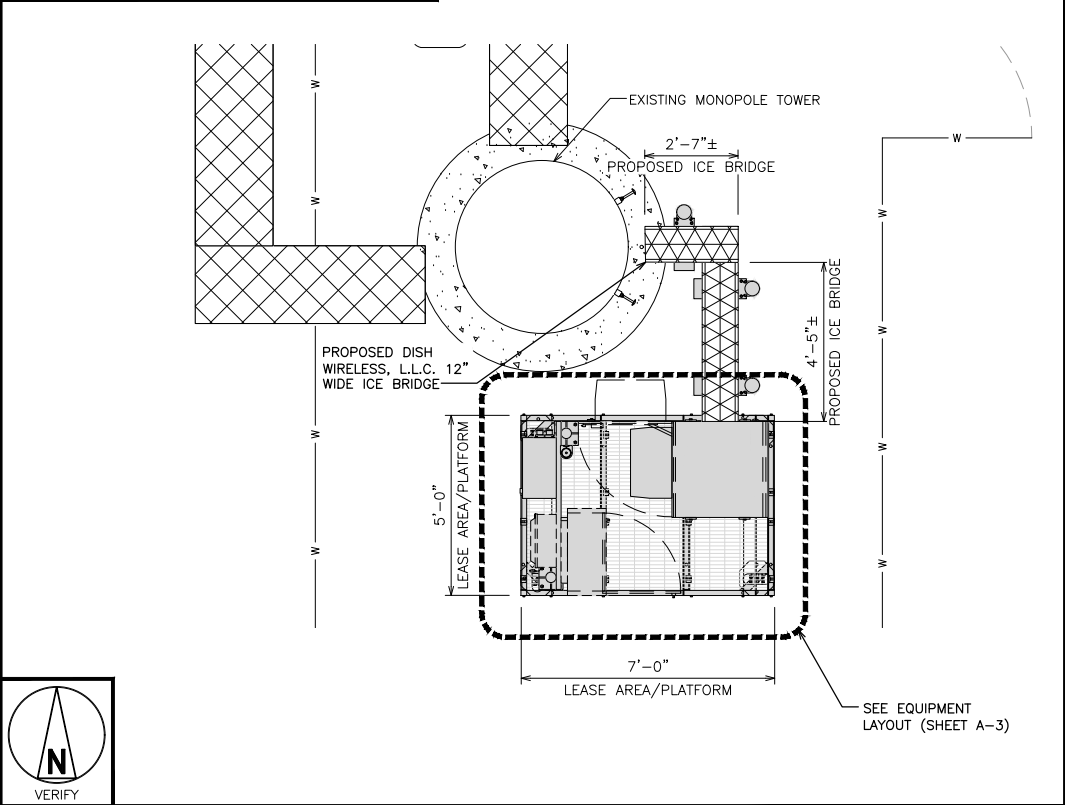
3/16"=1'-0"

1

- NOTES
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.

3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.

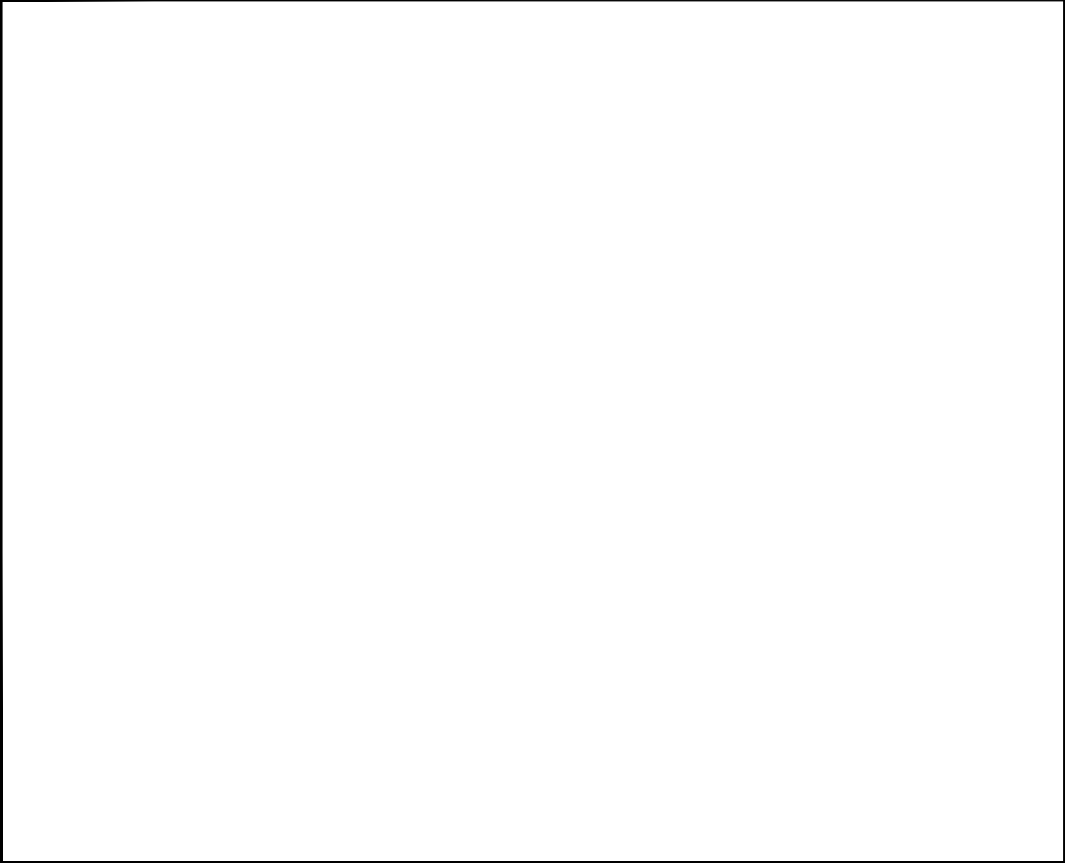


ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5' 6' 7'

3/8"=1'-0"

2



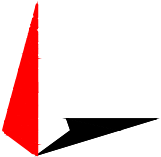
NOT USED

NO SCALE

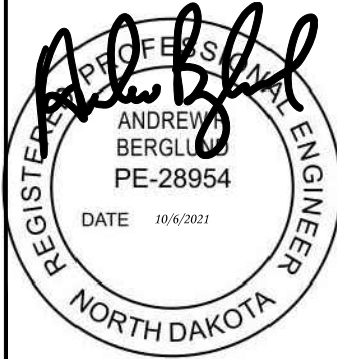
3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351



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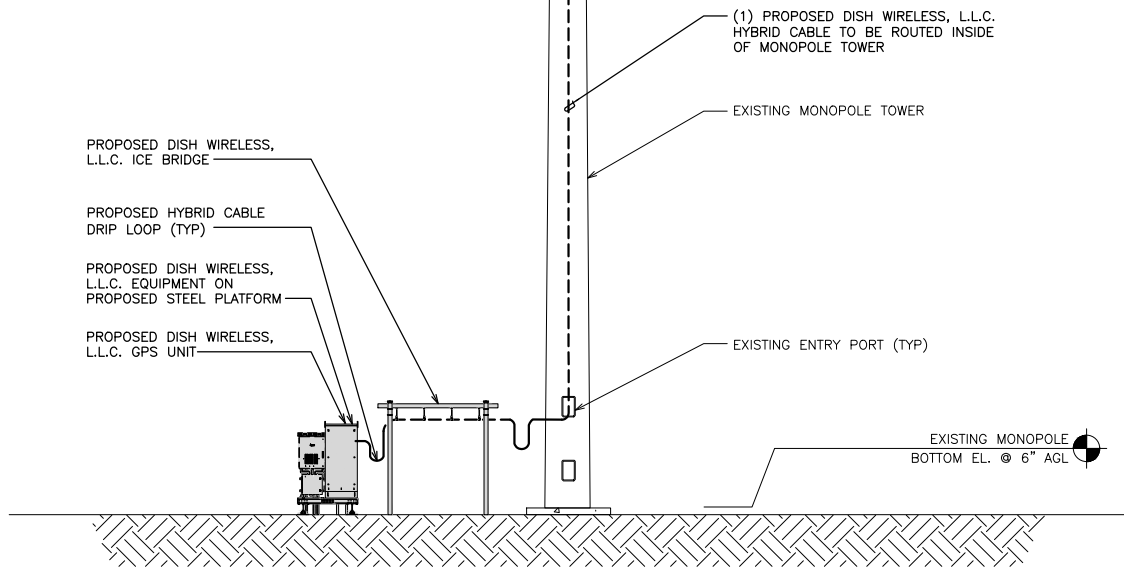
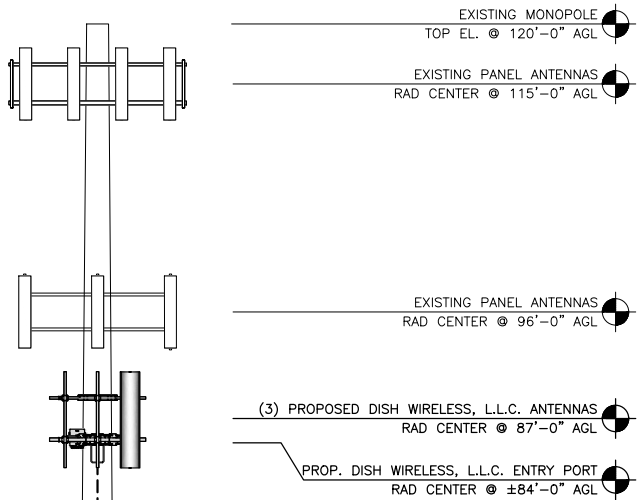
SUBMITTALS		
REV	DATE	DESCRIPTION
A	09-28-21	PRELIMINARY
0	10-06-21	CONSTRUCTION
A&E PROJECT NUMBER		
289180		
DISH WIRELESS, L.L.C. PROJECT INFORMATION		
MNFAR00012B		
3124 6TH ST W		
WEST FARGO, ND 58078		
SHEET TITLE		
OVERALL AND ENLARGED SITE PLAN		
SHEET NUMBER		
A-1		

- NOTES
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

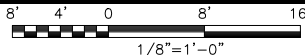
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.

3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.

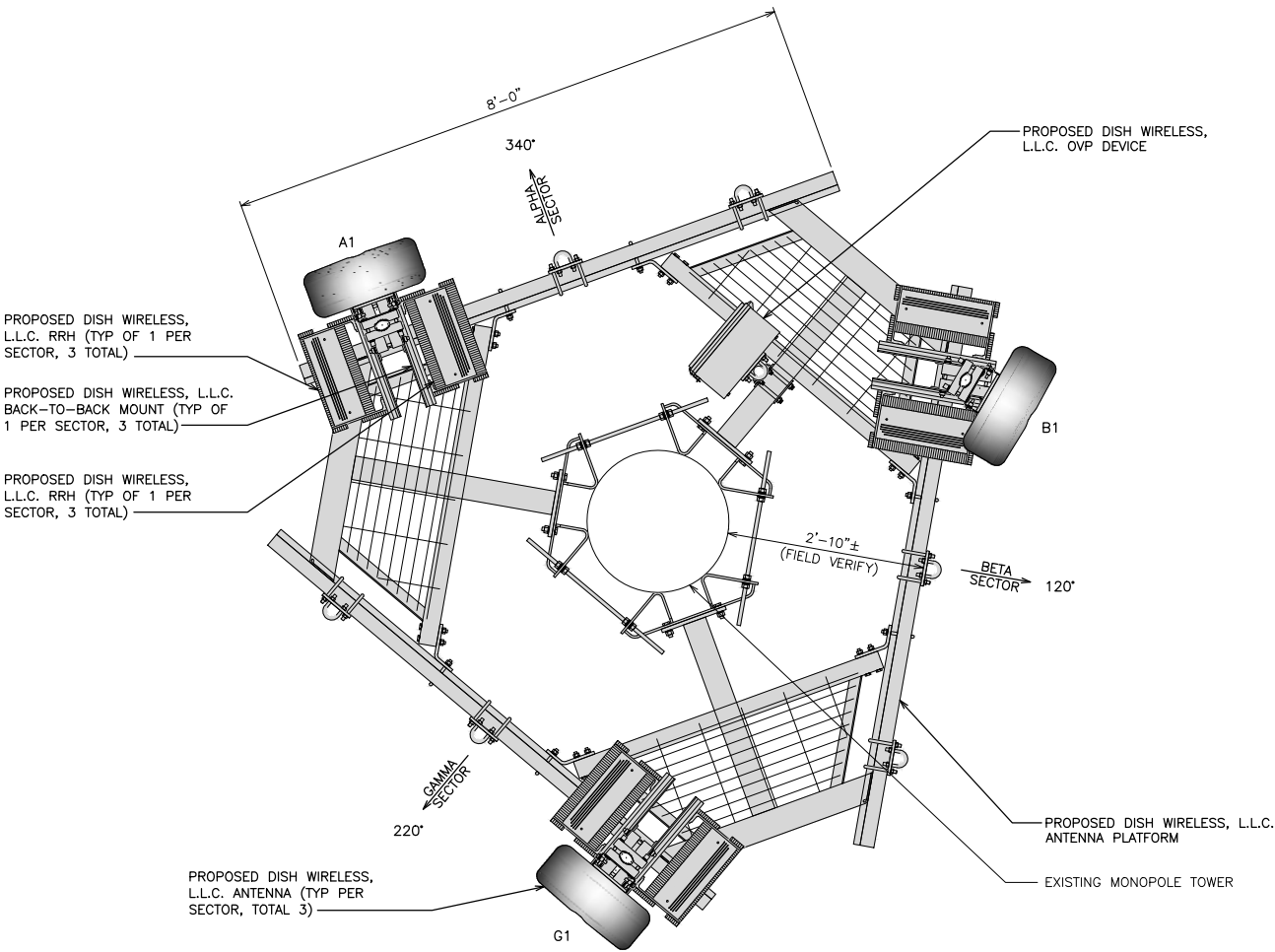
4. PROPOSED CABLE/ROUTING AND PROPOSED EQUIPMENT SHALL BE VERIFIED BY A PASSING SA PRIOR TO CONSTRUCTION.



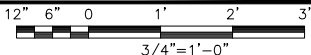
PROPOSED EAST ELEVATION



1



ANTENNA LAYOUT



2

SECTOR	POSITION	ANTENNA							MECH. DOWN TILT	TRANSMISSION CABLE	
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH			
ALPHA	A1	PROPOSED	COMMScope – FFV-65B-R2	5G	72.0" x 20.0"	340°	87'-0"	0°	(1) HIGH-CAPACITY HYBRID CABLE (117' LONG)		
BETA	B1	PROPOSED	COMMScope – FFV-65B-R2	5G	72.0" x 20.0"	120°	87'-0"	0°			
GAMMA	G1	PROPOSED	COMMScope – FFV-65B-R2	5G	72.0" x 20.0"	220°	87'-0"	0°			
SECTOR	POSITION	RRH		NOTES 1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. 2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.							
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY								
ALPHA	A1	FUJITSU – TA08025-B604	5G								
	A1	FUJITSU – TA08025-B605	5G								
BETA	B1	FUJITSU – TA08025-B604	5G								
	B1	FUJITSU – TA08025-B605	5G								
GAMMA	G1	FUJITSU – TA08025-B604	5G								
	G1	FUJITSU – TA08025-B605	5G								

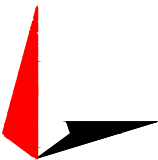
ANTENNA SCHEDULE

NO SCALE

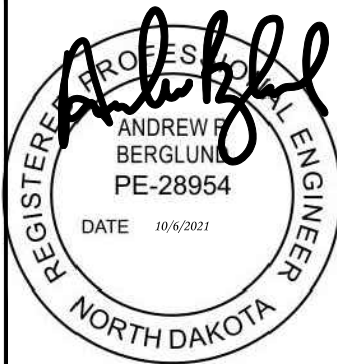
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CDK CP CP

RFDS REV #: TBD

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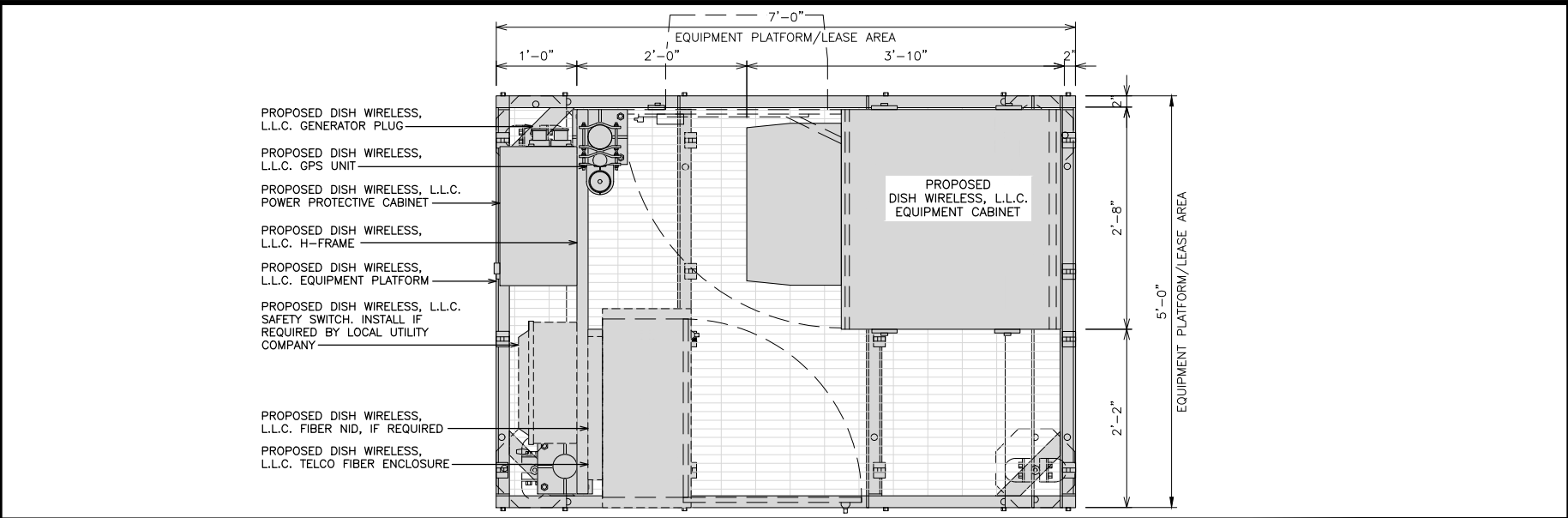
DISH WIRELESS, L.L.C.
PROJECT INFORMATION

MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

A-2

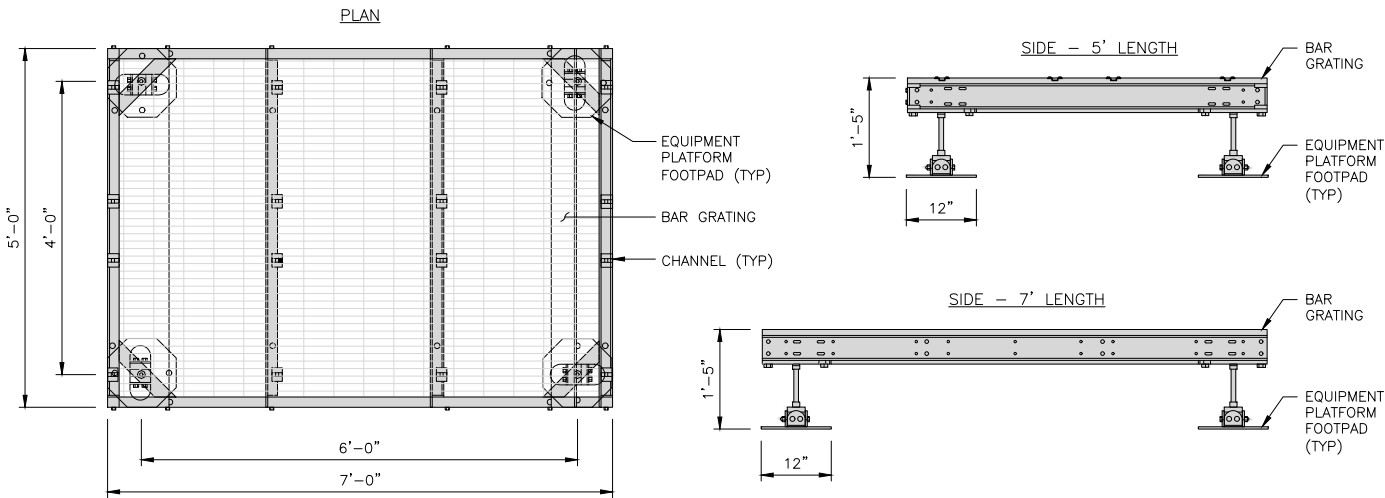


PLATFORM EQUIPMENT PLAN

1

COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

NOTE:
GC TO PROVIDE EXTENDED
THREAD FOR PLATFORM IF
REQUIRED HEIGHT EXCEEDS 17"

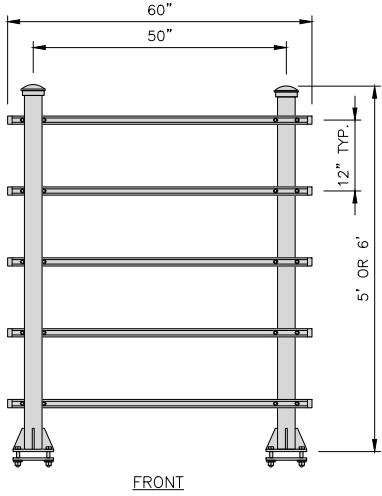
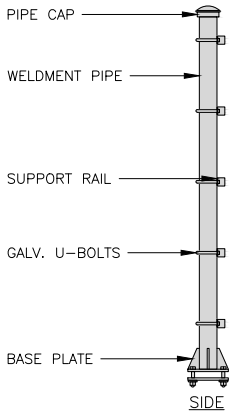


PLATFORM DETAIL

NO SCALE

2

COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs



NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

H-FRAME DETAIL

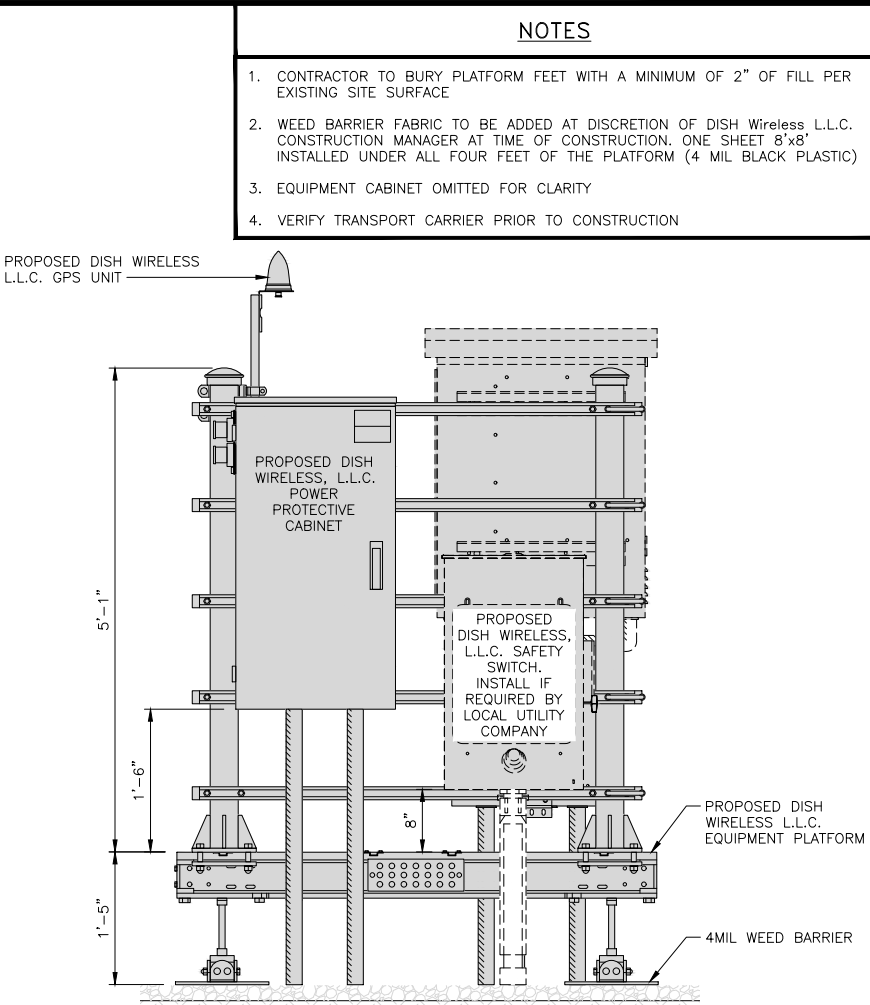
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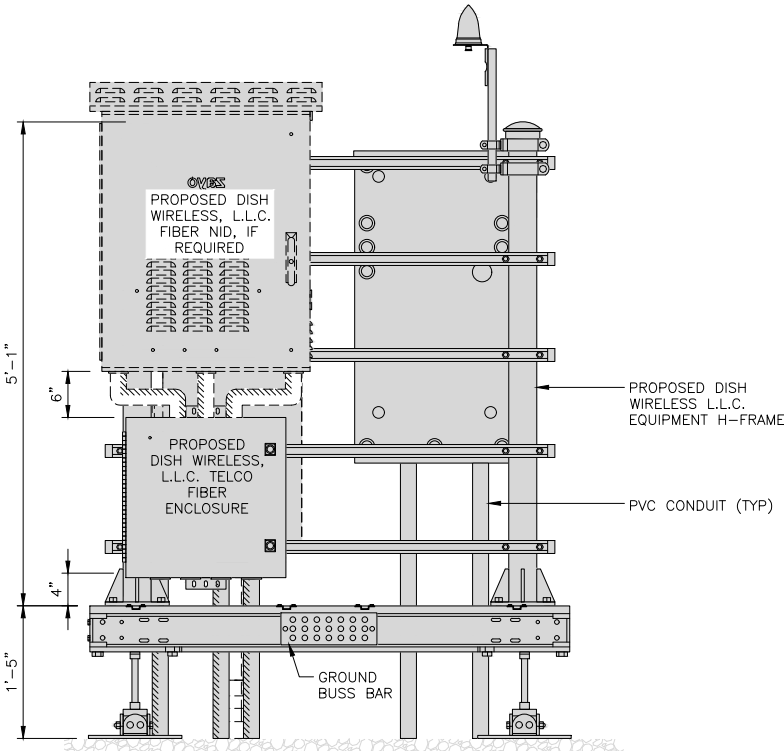
NOT USED

NO SCALE

4

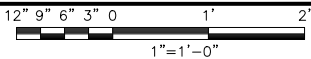


FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION



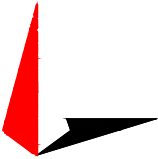
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NOTES

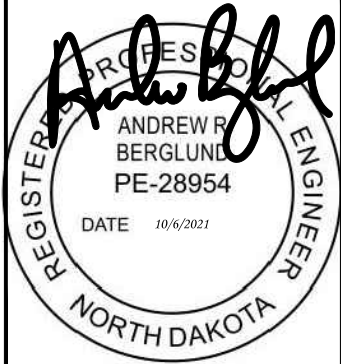
1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless, L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT CABINET OMITTED FOR CLARITY
4. VERIFY TRANSPORT CARRIER PRIOR TO CONSTRUCTION



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PROJECT INFORMATION

MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

A-3

CHARLES INDUSTRY HEX CUBE-PM639155N4

DIMENSIONS (HxWxD)	74"x32"x32"
POWER PLANT	-48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 lbs

PLAN

BACK

SIDE

FRONT

CABINET DETAIL

NO SCALE

1

RAYCAP PPC RDIAC-2465-P-240-MTS

ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593"
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G

TOP

BACK

SIDE

FRONT

SIDE

POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

2

NOT USED

NO SCALE

3

ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE

DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs

BOTTOM

BACK

SIDE

FRONT

FIBER NID ENCLOSURE DETAIL

NO SCALE

5

CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE

ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4

FRONT

SIDE

BACK

FRONT

FIBER TELCO ENCLOSURE DETAIL

NO SCALE

6

COMMSCOPE WB-K110-B WAVEGUIDE BRIDGE KIT

DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

PLAN

FRONT

SIDE

ICE BRIDGE DETAIL

NO SCALE

7

FINISH SLOPE TO DRAIN

PROPOSED 3.5" DIA. SCH 40 PIPE GALVANIZED

PROPOSED 1"-6" DIA. CONCRETE PIER (TYP)

CONCRETE PIER

A-A SECTION

3" DIA SCH 40 PIPE

18" DIA DRILLED PIER FOUNDATION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL

NO SCALE

8

PROPOSED ICE BRIDGE

PROPOSED 1.60" DIA HYBRID CABLE

PROPOSED CABLE CLAMP @ 3'-0" O.C.

EXISTING ENTRY PORT

EXISTING MONOPOLE

HYBRID CABLE RUN

NO SCALE

9

dish

wireless.

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REGISTERED PROFESSIONAL ENGINEER
ANDREW BERGLUND
PE-28954
DATE 10/6/2021
NORTH DAKOTA

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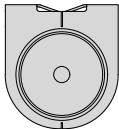
MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE
EQUIPMENT DETAILS

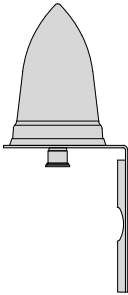
SHEET NUMBER
A-4

Page 28 of 115

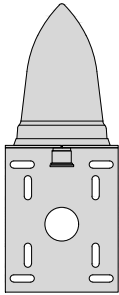
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	0.75 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



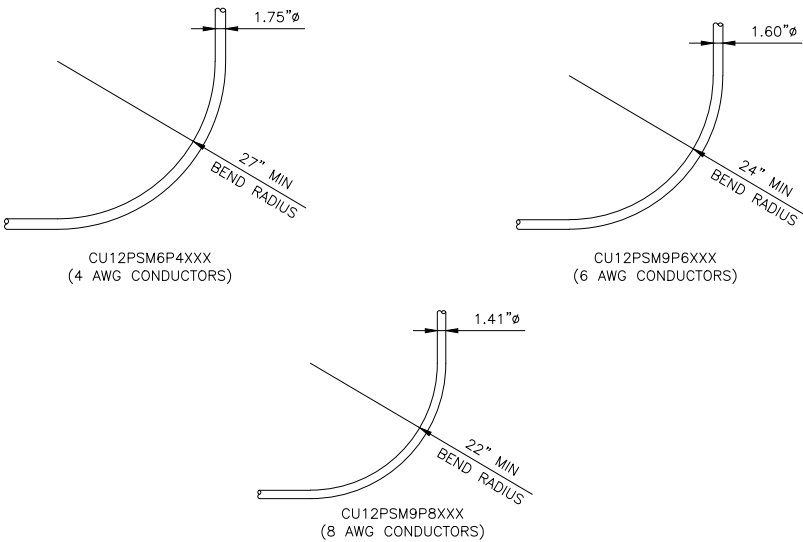
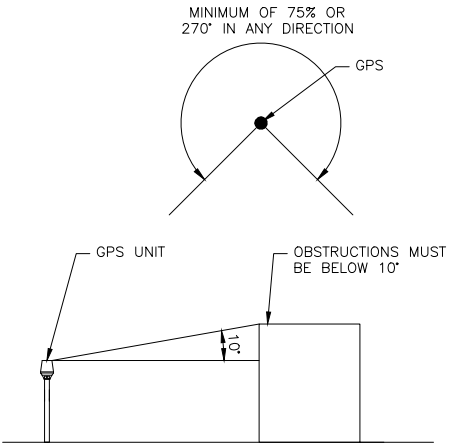
TOP



BACK



SIDE



GPS DETAIL

NO SCALE

1

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2

CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUSES

NO SCALE

3

NOT USED

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

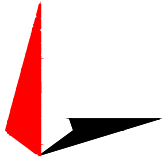
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NO SCALE

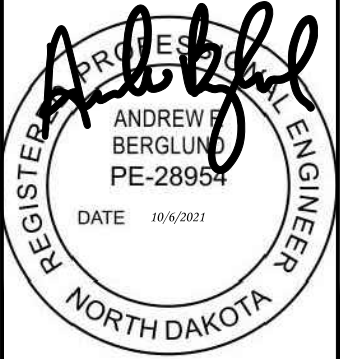
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MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

FUJITSU DUAL BAND
TA08025-B604

DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V

BACK

SIDE

FRONT

PLAN

RRH DETAIL

NO SCALE

1

FUJITSU TRIPLE BAND
TA08025-B605

DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V

BACK

SIDE

FRONT

PLAN

RRH DETAIL

NO SCALE

2

COMMSCOPE
RR-FA2 LARGE STABILIZER

DIMENSIONS (HxWxD)	16.4"x8.5"x18"
WEIGHT	39.2 lbs

BACK

SIDE

FRONT

PLAN

RRH MOUNT DETAIL

NO SCALE

3

DESIGN NOTES:
MOUNT WILL FIT LEGS UP TO:
- 5.6" ROUND
- 6.0" 60° ANGLE
- 4.5" 90° ANGLE

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SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

COMMSCOPE
FFVV-65B-R2

DIMENSIONS (HxWxD)(MM/IN)	1826x498x197 72"x19.6"x7.8"
RF CONNECTOR INTERFACE	4.3-10 FEMALE
WEIGHT	70.8 lbs
WEIGHT WITH BRACKETS	98.1 lbs

BACK

SIDE

FRONT

PLAN

ANTENNA DETAIL

NO SCALE

4

NOT USED

NO SCALE

5

M04 MOUNTING BRACKET
HPA-33R-BUU-H4-K

WIDTH	5"
DEPTH	2"
HEIGHT	8"
TOTAL WEIGHT	1.5 lbs
HOUSING MATERIAL	ASA/ABS/ALUMINUM
RADOME COLOR	LIGHT GRAY
CONNECTOR	1x8-PIN DAISY CHAIN

BACK

SIDE

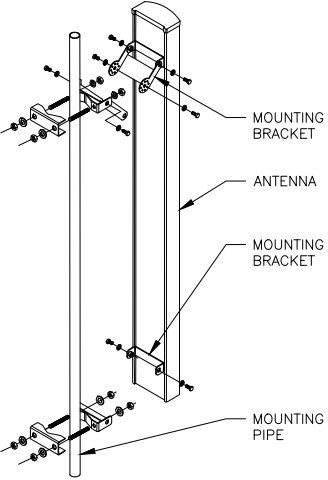
FRONT

PLAN

ANTENNA MOUNTING DETAIL

NO SCALE

6



RAYCAP RDIDC-9181-PF-48
DC SURGE PROTECTION (OVP)

DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS

BACK

SIDE

FRONT

PLAN

SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

7

COMMSCOPE XP-2040
CROSSOVER PLATE

DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

BACK

SIDE

FRONT

PLAN

RRH/OVP MOUNT DETAIL

NO SCALE

8

SABRE C10801018-32788
MONOPOLE PLATFORM

POLE DIAMETER	10"-40"
WEIGHT	1727 LB

BACK

SIDE

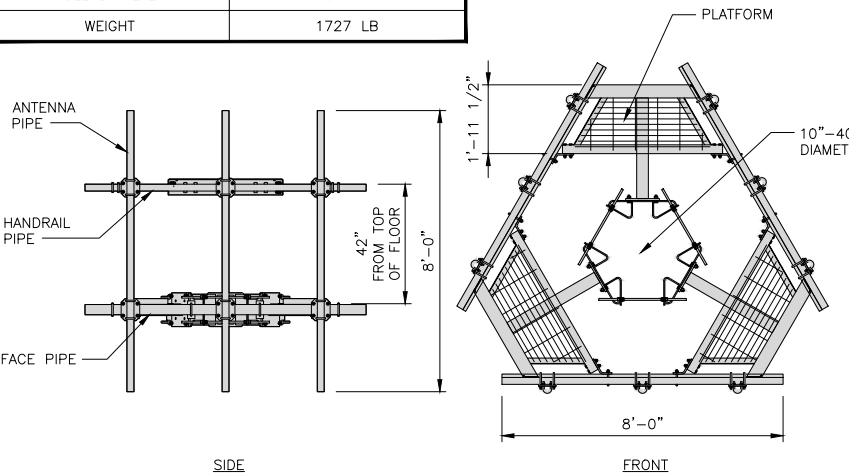
FRONT

PLAN

MONOPOLE PLATFORM DETAIL

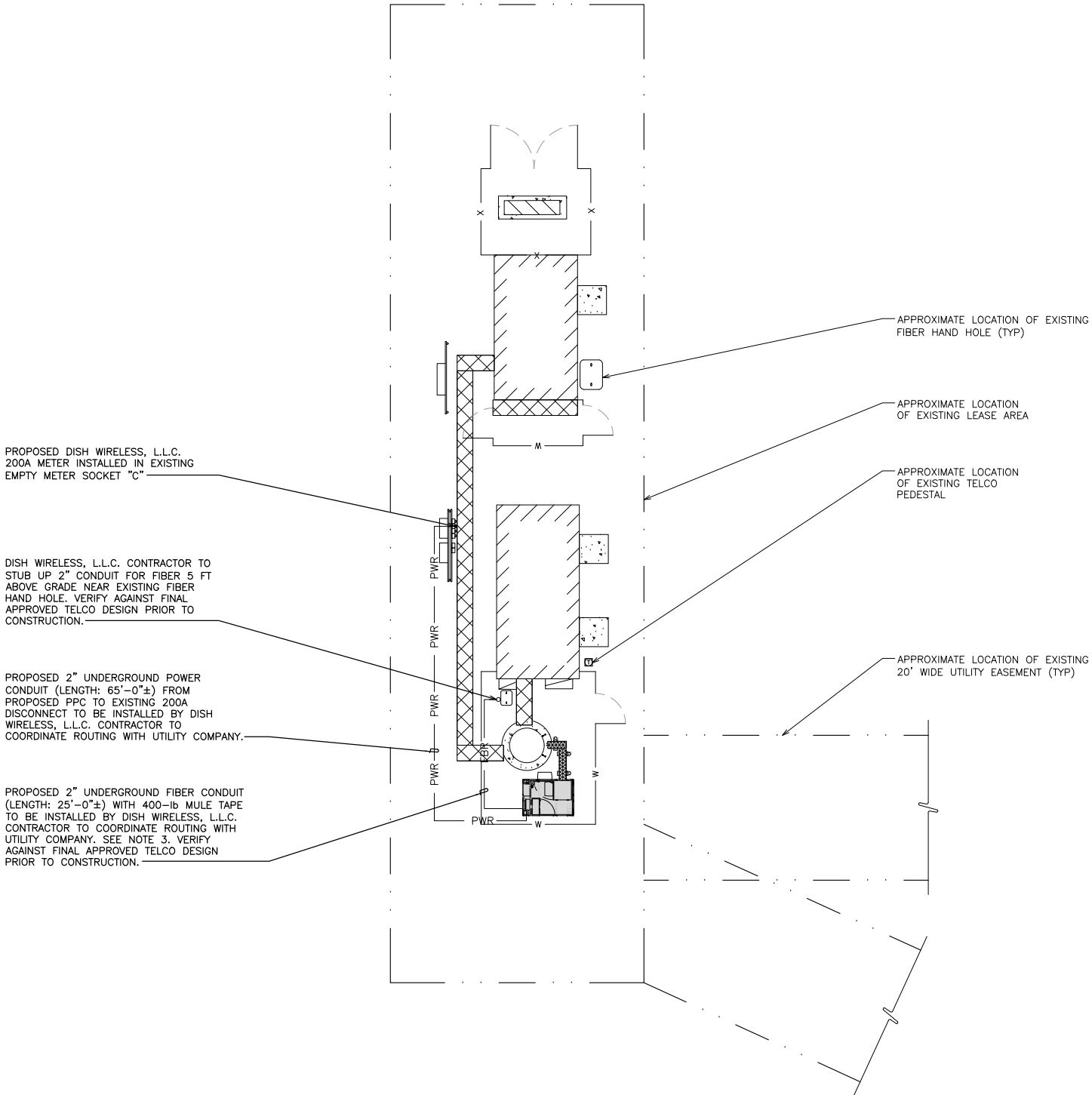
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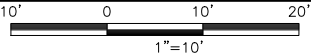


NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. THE GROUND LEASE PROVIDES BROAD/BANKET UTILITY RIGHTS. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS NOT AN OPTION, PLEASE NOTIFY TOWER OWNER AS FURTHER COORDINATION MAY BE NEEDED.



UTILITY ROUTE PLAN



1

DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.
13. ALL TRENCHES IN COMPOUND TO BE HAND DUG.

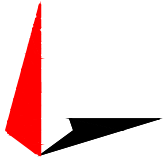
ELECTRICAL NOTES

NO SCALE

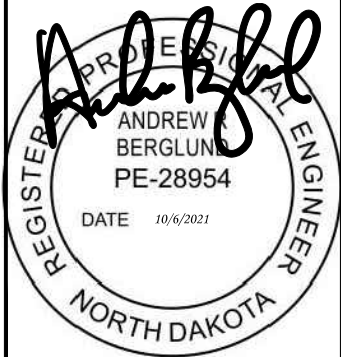
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RFDS REV #: TBD

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09-28-21	PRELIMINARY
0	10-06-21	CONSTRUCTION

A&E PROJECT NUMBER
289180

DISH WIRELESS, L.L.C.
PROJECT INFORMATION

MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER

E-1

CARLON EXPANSION FITTINGS

COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"

VARIES PER PART NUMBER

2'-0"

SLIP JOINT (SEE CHART FOR PART NUMBER)

NOTE: CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

TRENCHING NOTES

1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.

2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.

3. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.

SEE TRENCHING NOTE 1

BACKFILL PER SITE WORK SPECIFICATIONS (SEE GENERAL NOTES)

SLOPE TO SUIT SOIL CONDITION IN ACCORDANCE WITH LOCAL REGULATIONS SEE TRENCHING NOTE 2

1'-0"

30" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER

UTILITY WARNING TAPE

SAND BEDDING PER SITE WORK SPECIFICATIONS

VERTICAL DEPTH SEE TRENCHING NOTE 2

1'-0"

DISH WIRELESS, L.L.C. PROVIDES 12AWG WIRE (6' TAIL)

PROPOSED DISH WIRELESS, L.L.C. UNISTRUT

PROPOSED DISH WIRELESS, L.L.C. 10 AMP DISTRIBUTION BREAKER

PROPOSED DISH WIRELESS, L.L.C. 12 AWG WIRE

PROPOSED DISH WIRELESS, L.L.C. 1-1/2" POWER FROM CABINET

DISH WIRELESS, L.L.C. INSTALLS 1-1/2" CONDUITS FOR POWER AND FIBER TO CABINET

DISH WIRELESS, L.L.C. FIBER DISTRIBUTION PANEL

PROPOSED DISH WIRELESS, L.L.C. TELCO FIBER ENCLOSURE

DISH WIRELESS, L.L.C. FIBER JUMPER TO CABINET WILL NEED TO BE TERMINATED BY FIBER PROVIDER ON OTHER SIDE OF BULKHEAD/LC TO LC CONNECTOR WHERE CIRCUIT IS TERMINATED.

PROPOSED FIBER PROVIDER FIBER LATERAL FROM RIGHT OF WAY TO STREET, TERMINATED TO FDP

PROPOSED DISH WIRELESS, L.L.C. 1-1/2" FIBER TO CABINET

PROPOSED DISH WIRELESS, L.L.C. 2" CONDUIT FROM COMMERCIAL FIBER VAULT

EXPANSION JOINT DETAIL

NO SCALE

1

PROPOSED DISH WIRELESS, L.L.C. UNISTRUT

PROPOSED FIBER PROVIDER 1-1/4" FLEX CONDUITS

FIBER PROVIDER TO TERMINATE POWER TO FIBER PROVIDER NID

PROPOSED DISH WIRELESS, L.L.C. 12 AWG WIRE (6' TAIL)

PROPOSED DISH WIRELESS, L.L.C. 10 AMP DISTRIBUTION BREAKER

PROPOSED DISH WIRELESS, L.L.C. 12 AWG WIRE

PROPOSED DISH WIRELESS, L.L.C. 1-1/2" POWER FROM CABINET

NOTE: FIBER PROVIDER WILL NEED TO PROVIDE AN ADDITIONAL 5FT UNISTRUT, 2 U-BOLTS WITH 4 NUTS, IN THE EVENT THE BRACKET SPACING DOESN'T LINE UP WITH CURRENT SPACING BELOW

IN IN OUT

FIBER PROVIDER TO PUNCH TOP OF TELCO BOX OF NID ENCLOSURE AND INSTALL 1-1/4" LIQUID TIGHT CONNECTORS, UL LISTED, NYLON MATERIAL, WITH O-RING GASKET

FIBER PROVIDER TO INSTALL 1-1/4" FLEX CONDUITS BETWEEN FDP TELCO BOX & NID

PROPOSED DISH WIRELESS, L.L.C. TELCO FIBER ENCLOSURE

PROPOSED DISH WIRELESS, L.L.C. 1-1/2" FIBER TO CABINET

PROPOSED DISH WIRELESS, L.L.C. 2" CONDUIT FROM COMMERCIAL FIBER VAULT

TYPICAL UNDERGROUND TRENCH DETAIL

NO SCALE

2

DARK TELCO BOX – INTERIOR WIRING LAYOUT

NO SCALE

3

LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL)

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9

dish

wireless

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351

REGISTERED PROFESSIONAL ENGINEER
ANDREW BERGLUND
PE-28954
DATE 10/6/2021
NORTH DAKOTA

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DRAWN BY:CDK

CHECKED BY:CP

APPROVED BY:CP

RFDS REV #:TBD

CONSTRUCTION DOCUMENTS

REV

DATE

DESCRIPTION

A

09-28-21

PRELIMINARY

O

10-06-21

CONSTRUCTION

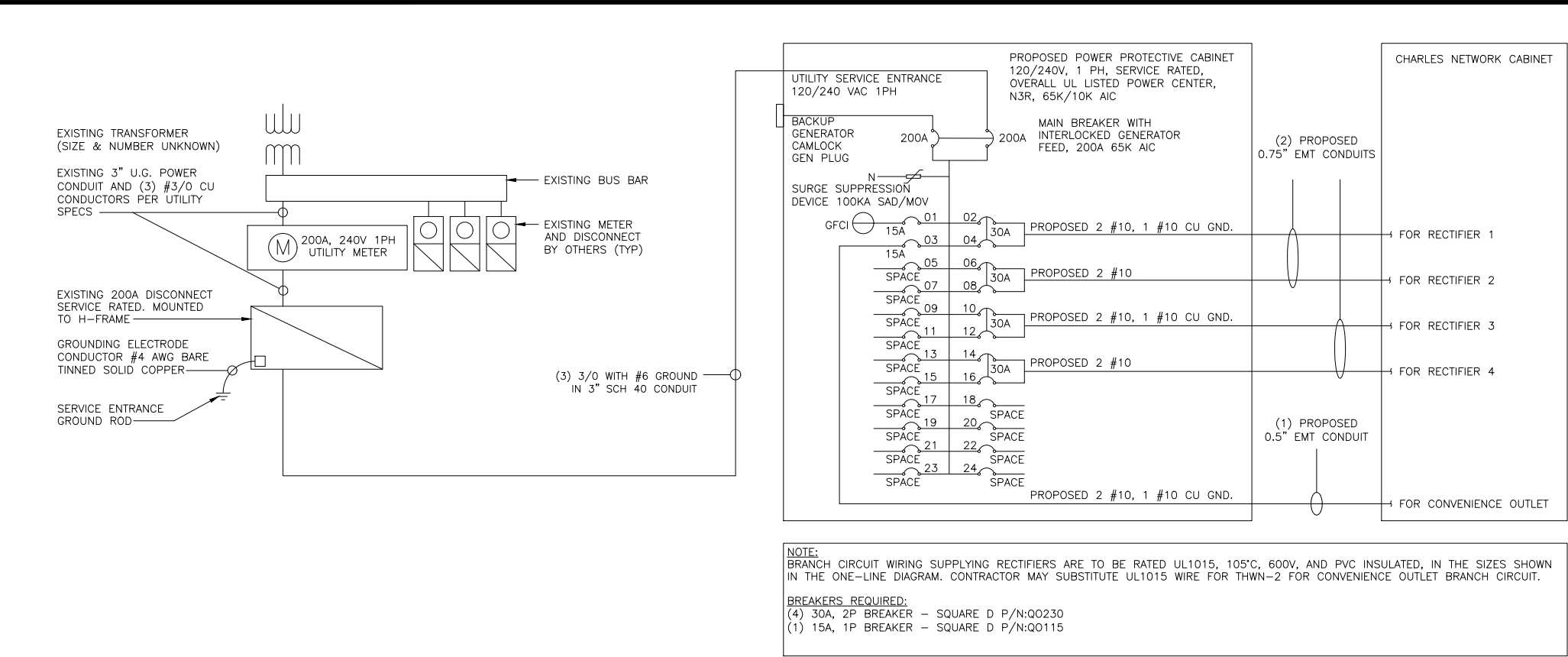
A&E PROJECT NUMBER
289180

DISH WIRELESS, L.L.C.
PROJECT INFORMATION
MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2

Page 32 of 115



NOTES

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(a) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

#12 FOR 15A-20A/1P BREAKER: 0.8 x 30A = 24.0A
#10 FOR 25A-30A/2P BREAKER: 0.8 x 40A = 32.0A
#8 FOR 35A-40A/2P BREAKER: 0.8 x 55A = 44.0A
#6 FOR 45A-60A/2P BREAKER: 0.8 x 75A = 60.0A

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.
0.5" CONDUIT - 0.122 SQ. IN AREA
0.75" CONDUIT - 0.213 SQ. IN AREA
2.0" CONDUIT - 1.316 SQ. IN AREA
3.0" CONDUIT - 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#10 - 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
#10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
TOTAL = 0.0633 SQ. IN

0.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

RECTIFIER CONDUCTORS (2 CONDUITS): USING UL1015, CU.

#10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN
#10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND
TOTAL = 0.1146 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (5) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.

3/0 - 0.2679 SQ. IN X 3 = 0.8037 SQ. IN
#6 - 0.0507 SQ. IN X 1 = 0.0507 SQ. IN <GROUND
TOTAL = 0.8544 SQ. IN

3.0" SCH 40 PVC CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (4) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC ONE-LINE DIAGRAM

NO SCALE

1

PROPOSED CHARLES PANEL SCHEDULE											
LOAD SERVED	VOLT AMPS (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS)		LOAD SERVED	
	L1	L2						L1	L2		
PPC GFCI OUTLET	180		15A	1	A	2		2880		ABB/GE INFINITY RECTIFIER 1	
CHARLES GFCI OUTLET		180	15A	3	B	4	30A	2880	2880	ABB/GE INFINITY RECTIFIER 1	
-SPACE-				5	A	6		2880		ABB/GE INFINITY RECTIFIER 2	
-SPACE-				7	B	8	30A	2880	2880	ABB/GE INFINITY RECTIFIER 2	
-SPACE-				9	A	10		2880		ABB/GE INFINITY RECTIFIER 3	
-SPACE-				11	B	12	30A	2880	2880	ABB/GE INFINITY RECTIFIER 3	
-SPACE-				13	A	14		2880		ABB/GE INFINITY RECTIFIER 4	
-SPACE-				15	B	16	30A	2880	2880	ABB/GE INFINITY RECTIFIER 4	
-SPACE-				17	A	18				-SPACE-	
-SPACE-				19	B	20				-SPACE-	
-SPACE-				21	A	22				-SPACE-	
-SPACE-				23	B	24				-SPACE-	
VOLTAGE AMPS	180	180						11520	11520		
200A MCB, 1φ, 24 SPACE, 120/240V				L1	L2						
MB RATING: 65,000 AIC				11700	11700			VOLTAGE AMPS			
				98	98			AMPS			
				98	98			MAX AMPS			
				123	123			MAX 125%			

PANEL SCHEDULE

NO SCALE

2

NOT USED

NO SCALE

3

dish
wireless

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27603 OFFICE: (919) 661-6351

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CDK	CP	CP

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289180

DISH WIRELESS, L.L.C.
PROJECT INFORMATION

MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE
ELECTRICAL ONE-LINE, FAULT
CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3

TYPICAL EQUIPMENT GROUNDING PLAN

TYPICAL ANTENNA GROUNDING PLAN

NO SCALE

NOTE

ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT
REFERENCING TO A SPECIFIC MANUFACTURER. THIS
LAYOUT IS FOR REFERENCE ONLY.

- EXOTHERMIC CONNECTION

■ MECHANICAL CONNECTION

 GROUND BUS BAR

 GROUND ROD

 TEST GROUND ROD WITH INSPECTION SLEEVE

----- #2 AWG STRANDED & INSULATED

- · - · - · #2 AWG SOLID COPPER TINNED

▲ BUSS BAR INSULATOR

GROUNDING LEGEND

 1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
 2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH WIRELESS, L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
 3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

 - (A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
 - (B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
 - (C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
 - (D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.
 - (E) GROUND ROD: UL LISTED COPPER CLAD STEEL, MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
 - (F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
 - (G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
 - (H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.
 - (J) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
 - (K) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
 - (L) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
 - (M) FENCE AND GATE GROUNDING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
 - (N) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE
 - (O) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.
 - (P) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR
 - (Q) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.

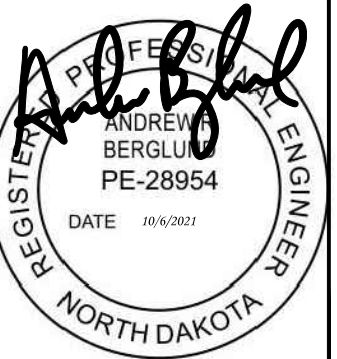
REFER TO DISH WIRELESS, LLC. GROUNDING NOTES.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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CDK	CP	CP
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PROJECT INFORMATION

MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE
GROUNDING PLANS
AND NOTES

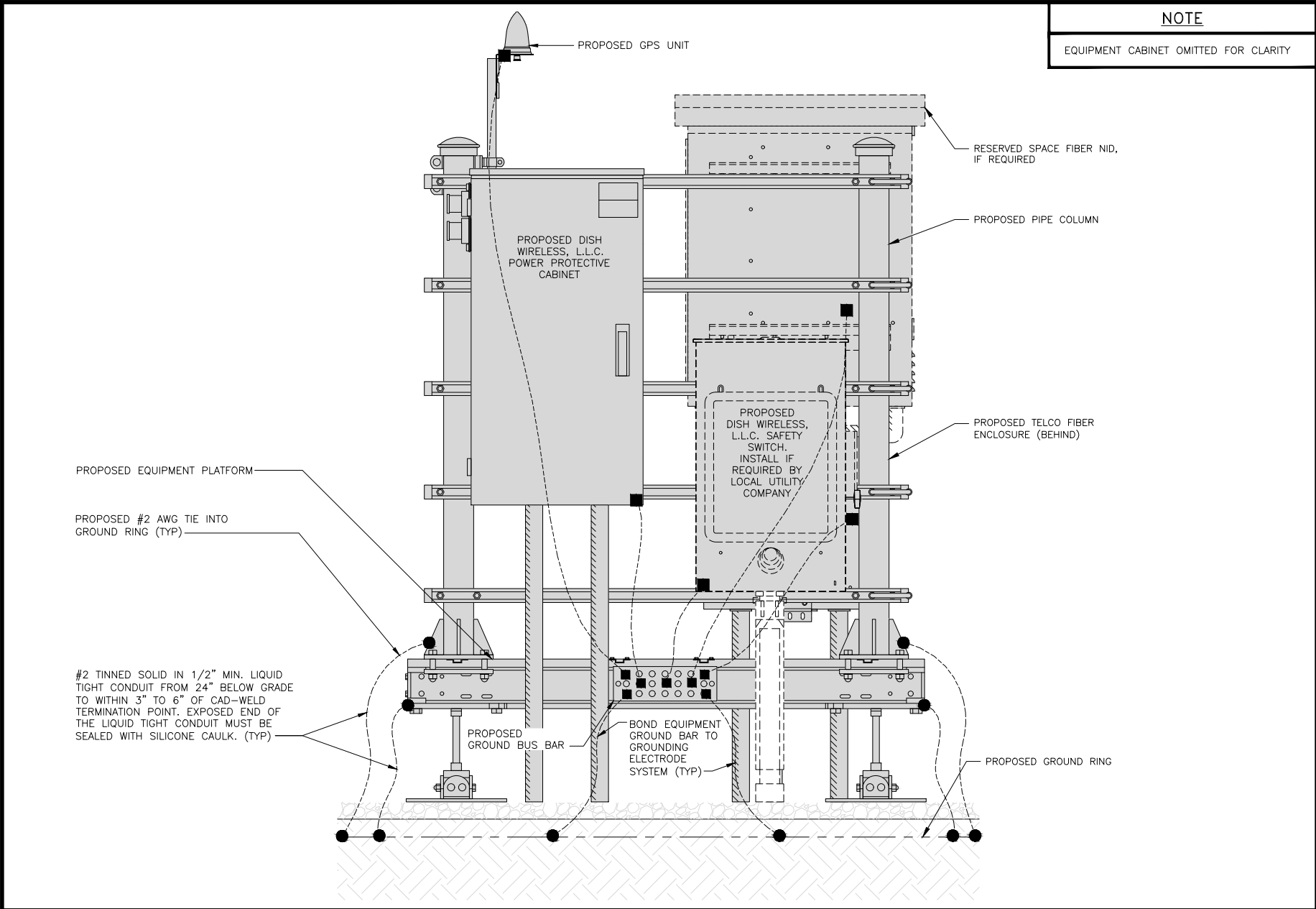
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G-1

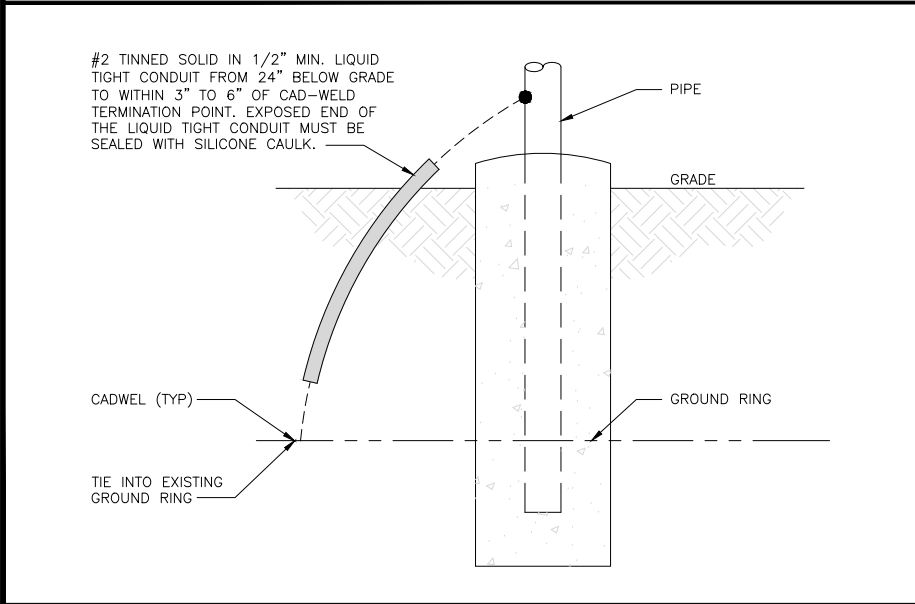
GROUNDING KEY NOTES

NO SCALE

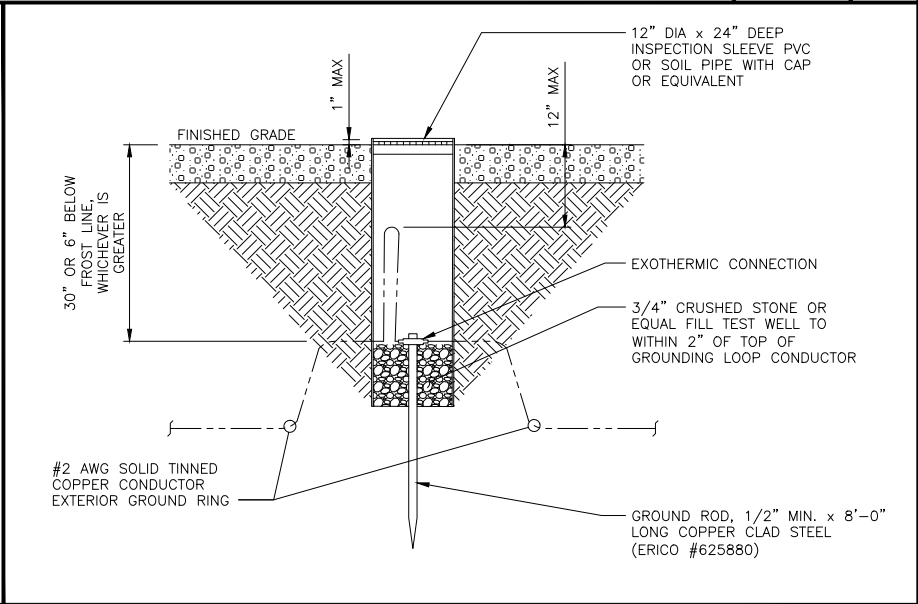
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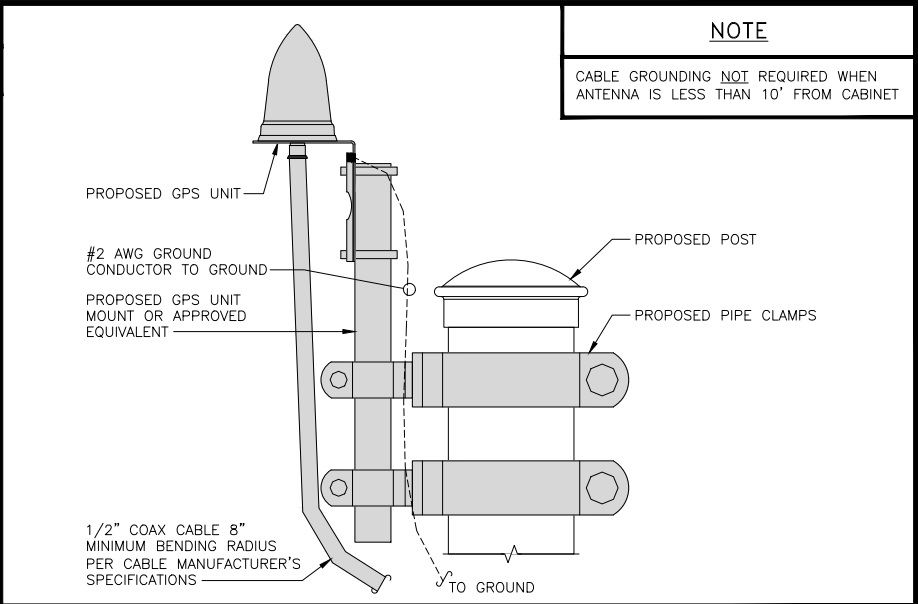
H-FRAME GROUNDING DETAIL NO SCALE 1



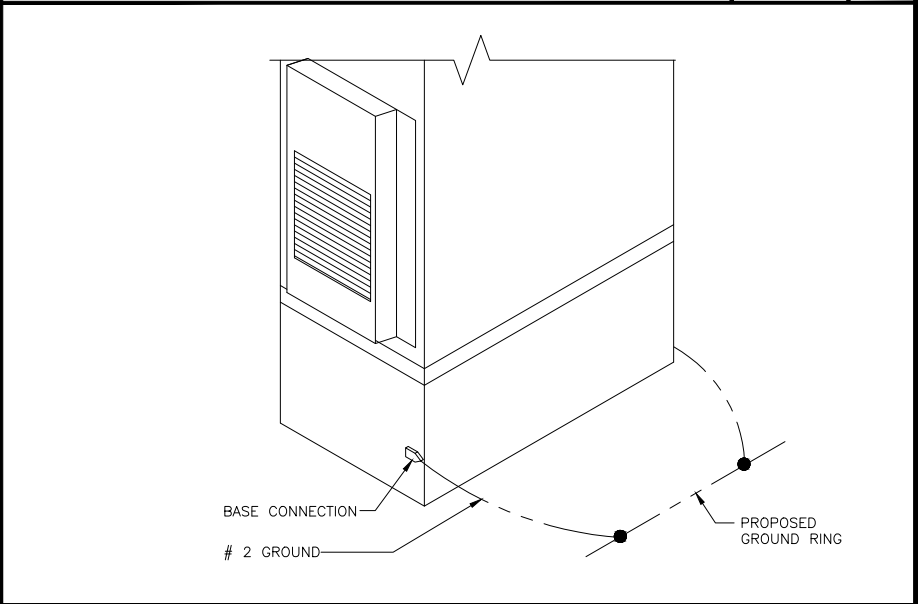
TRANSITIONING GROUND DETAIL NO SCALE 4



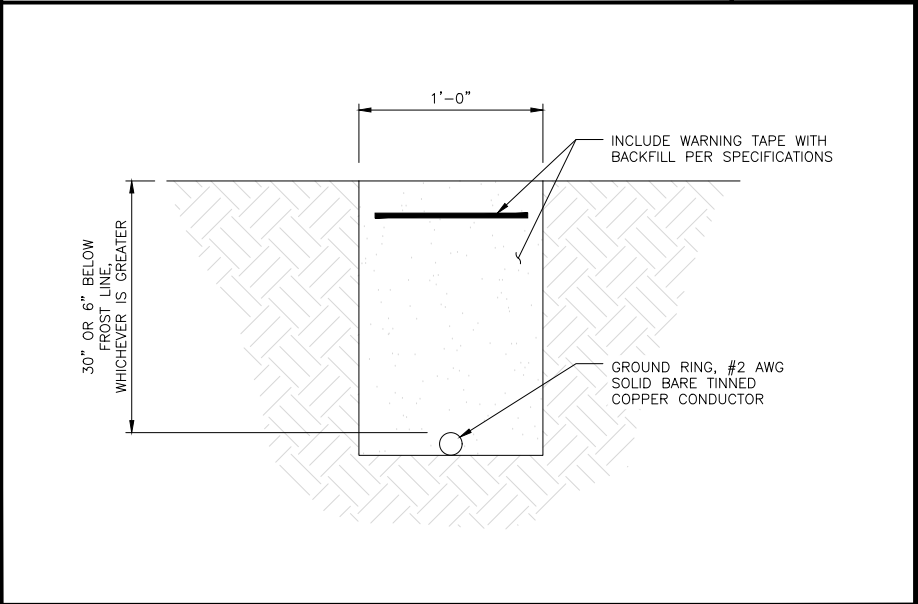
TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE NO SCALE 5



TYPICAL GPS UNIT GROUNDING NO SCALE 2



OUTDOOR CABINET GROUNDING NO SCALE 3



TYPICAL GROUND RING TRENCH NO SCALE 6

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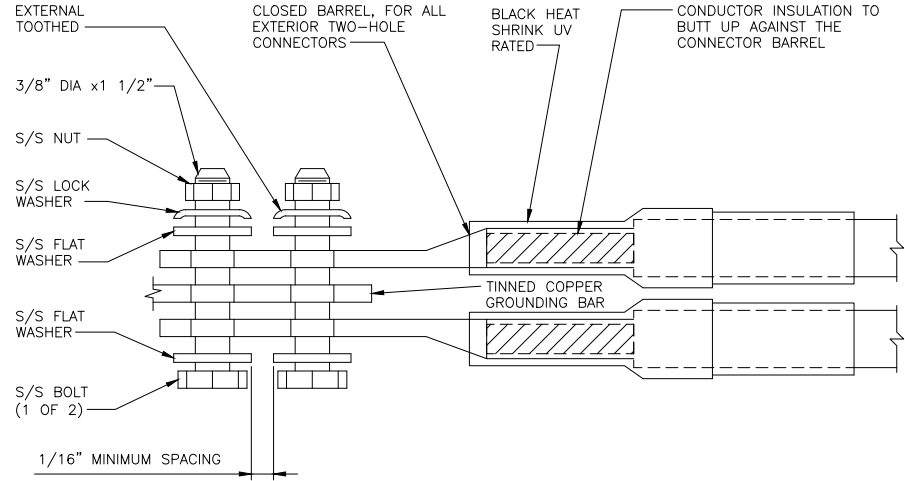
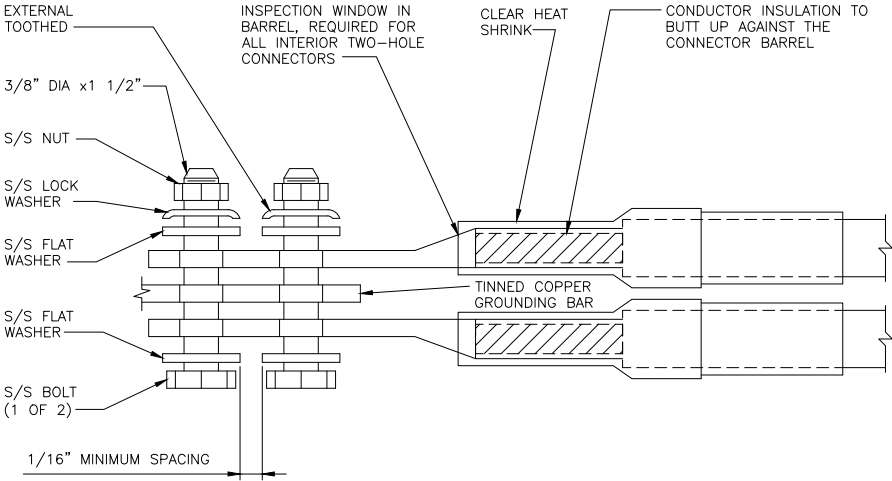
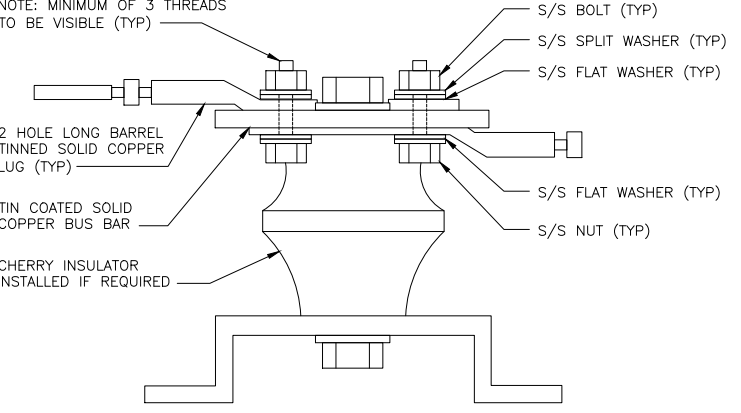
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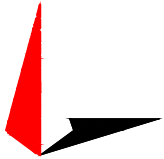
SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2

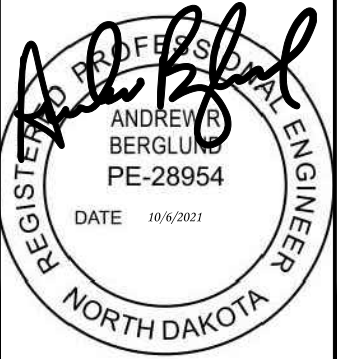
1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD. 2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING. 3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING. 4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS. 5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE. 6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR. 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED. 8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).								
TYPICAL GROUNDING NOTES	NO SCALE	1	TYPICAL EXTERIOR TWO HOLE LUG	NO SCALE	2	TYPICAL INTERIOR TWO HOLE LUG	NO SCALE	3
NOTE: MINIMUM OF 3 THREADS TO BE VISIBLE (TYP) 								
LUG DETAIL	NO SCALE	4	NOT USED	NO SCALE	5	NOT USED	NO SCALE	6
NOT USED	NO SCALE	7	NOT USED	NO SCALE	8	NOT USED	NO SCALE	9



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SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

Page 36 of 115

HYBRID/DISCREET CABLES					3/4" TAPE WIDTHS WITH 3/4" SPACING							
LOW-BAND RRH (600 MHz N71 BASEBAND) + (850 MHz N26 BAND) + (700 MHz N29 BAND) – OPTIONAL PER MARKET ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BAND)	ALPHA RRH				BETA RRH				GAMMA RRH			
	PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT	PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT	PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT
	RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
	ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN
		WHITE (–) PORT	ORANGE	ORANGE		WHITE (–) PORT	ORANGE	ORANGE		WHITE (–) PORT	ORANGE	ORANGE
MID-BAND RRH (AWS BANDS N66+N70) ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BANDS)	RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
	PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
		WHITE (–) PORT	PURPLE	PURPLE		WHITE (–) PORT	PURPLE	PURPLE		WHITE (–) PORT	PURPLE	PURPLE
HYBRID/DISCREET CABLES					EXAMPLE 1	EXAMPLE 2	EXAMPLE 3	CANISTER				
INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.							COAX #1 (ALPHA)	COAX #2 (ALPHA)				
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS.					RED	RED	RED	RED				
EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.					BLUE	BLUE						
EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.					GREEN	GREEN						
					ORANGE	YELLOW						
					PURPLE							
FIBER JUMPERS TO RRHs					LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH		
LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.					RED	RED	BLUE	BLUE	GREEN	GREEN		
					ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE		
POWER CABLES TO RRHs					LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH		
LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY					RED	RED	BLUE	BLUE	GREEN	GREEN		
					ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE		
RET MOTORS AT ANTENNAS					ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND		
RET CONTROL IS HANDLED BY THE MID-BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.					IN	IN	IN	IN	IN	IN		
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.					RED	RED	BLUE	BLUE	GREEN	GREEN		
					PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE		
MICROWAVE RADIO LINKS					FORWARD AZIMUTH OF 0–120 DEGREES		FORWARD AZIMUTH OF 120–240 DEGREES		FORWARD AZIMUTH OF 240–359 DEGREES			
LINKS WILL HAVE A 1.5–2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.					PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY		
ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.					WHITE	WHITE	WHITE	WHITE	WHITE	WHITE		
					RED	RED	BLUE	BLUE	GREEN	GREEN		
					WHITE	WHITE	WHITE	WHITE	WHITE	WHITE		
						RED		BLUE	GREEN	GREEN		
						WHITE		WHITE	WHITE	WHITE		
MICROWAVE CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.												

RF CABLE COLOR CODES

NO SCALE

1

NOT USED

NO SCALE

4

LOW BANDS (N71+N26)
OPTIONAL - (N29)

ORANGE

CBRS TECH
(3 GHz)

YELLOW

AWS
(N66+N70+H-BLOCK)

PURPLE

NEGATIVE SLANT PORT
ON ANT/RRH

WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

GAMMA SECTOR

GREEN

COLOR IDENTIFIER

NO SCALE

2

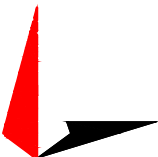
NOT USED

NO SCALE

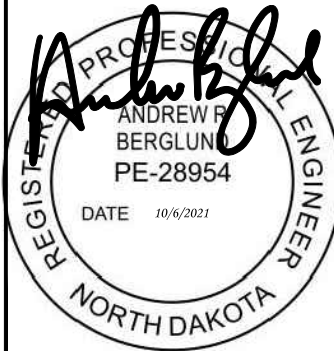
3

dish
wireless

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOWER ENGINEERING PROFESSIONALS
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DRAWN BY: CHECKED BY: APPROVED BY:

CDK

CP

CP

RFDS REV #: TBD

CONSTRUCTION
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09-28-21	PRELIMINARY
0	10-06-21	CONSTRUCTION

A&E PROJECT NUMBER
289180

DISH WIRELESS, L.L.C.
PROJECT INFORMATION

MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

AB	ANCHOR BOLT	IN	INCH
ABV	ABOVE	INT	INTERIOR
AC	ALTERNATING CURRENT	LB(S)	POUND(S)
ADDL	ADDITIONAL	LF	LINEAR FEET
AFF	ABOVE FINISHED FLOOR	LTE	LONG TERM EVOLUTION
AFG	ABOVE FINISHED GRADE	MAS	MASONRY
AGL	ABOVE GROUND LEVEL	MAX	MAXIMUM
AIC	AMPERAGE INTERRUPTION CAPACITY	MB	MACHINE BOLT
ALUM	ALUMINUM	MECH	MECHANICAL
ALT	ALTERNATE	MFR	MANUFACTURER
ANT	ANTENNA	MGB	MASTER GROUND BAR
APPROX	APPROXIMATE	MIN	MINIMUM
ARCH	ARCHITECTURAL	MISC	MISCELLANEOUS
ATS	AUTOMATIC TRANSFER SWITCH	MTL	METAL
AWG	AMERICAN WIRE GAUGE	MTS	MANUAL TRANSFER SWITCH
BATT	BATTERY	MW	MICROWAVE
BLDG	BUILDING	NEC	NATIONAL ELECTRIC CODE
BLK	BLOCK	NM	NEWTON METERS
BLKG	BLOCKING	NO.	NUMBER
BM	BEAM	#	NUMBER
BTC	BARE TINNED COPPER CONDUCTOR	NTS	NOT TO SCALE
BOF	BOTTOM OF FOOTING	OC	ON-CENTER
CAB	CABINET	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CANT	CANTILEVERED	OPNG	OPENING
CHG	CHARGING	P/C	PRECAST CONCRETE
CLG	CEILING	PCS	PERSONAL COMMUNICATION SERVICES
CLR	CLEAR	PCU	PRIMARY CONTROL UNIT
COL	COLUMN	PRC	PRIMARY RADIO CABINET
COMM	COMMON	PP	POLARIZING PRESERVING
CONC	CONCRETE	PSF	POUNDS PER SQUARE FOOT
CONSTR	CONSTRUCTION	PSI	POUNDS PER SQUARE INCH
DBL	DOUBLE	PT	PRESSURE TREATED
DC	DIRECT CURRENT	PWR	POWER CABINET
DEPT	DEPARTMENT	QTY	QUANTITY
DF	DOUGLAS FIR	RAD	RADIUS
DIA	DIAMETER	RECT	RECTIFIER
DIAG	DIAGONAL	REF	REFERENCE
DIM	DIMENSION	REINF	REINFORCEMENT
DWG	DRAWING	REQ'D	REQUIRED
DWL	DOWEL	RET	REMOTE ELECTRIC TILT
EA	EACH	RF	RADIO FREQUENCY
EC	ELECTRICAL CONDUCTOR	RMC	RIGID METALLIC CONDUIT
EL.	ELEVATION	RRH	REMOTE RADIO HEAD
ELEC	ELECTRICAL	RRU	REMOTE RADIO UNIT
EMT	ELECTRICAL METALLIC TUBING	RWY	RACEWAY
ENG	ENGINEER	SCH	SCHEDULE
EQ	EQUAL	SHT	SHEET
EXP	EXPANSION	SIAD	SMART INTEGRATED ACCESS DEVICE
EXT	EXTERIOR	SIM	SIMILAR
EW	EACH WAY	SPEC	SPECIFICATION
FAB	FABRICATION	SQ	SQUARE
FF	FINISH FLOOR	SS	STAINLESS STEEL
FG	FINISH GRADE	STD	STANDARD
FIF	FACILITY INTERFACE FRAME	STL	STEEL
FIN	FINISH(ED)	TEMP	TEMPORARY
FLR	FLOOR	THK	THICKNESS
FDN	FOUNDATION	TMA	TOWER MOUNTED AMPLIFIER
FOC	FACE OF CONCRETE	TN	TOE NAIL
FOM	FACE OF MASONRY	TOA	TOP OF ANTENNA
FOS	FACE OF STUD	TOC	TOP OF CURB
FOW	FACE OF WALL	TOF	TOP OF FOUNDATION
FS	FINISH SURFACE	TOP	TOP OF PLATE (PARAPET)
FT	FOOT	TOS	TOP OF STEEL
FTG	FOOTING	TOW	TOP OF WALL
GA	GAUGE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
GEN	GENERATOR	TYP	TYPICAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UG	UNDERGROUND
GLB	GLUE LAMINATED BEAM	UL	UNDERWRITERS LABORATORY
GLV	GALVANIZED	UNO	UNLESS NOTED OTHERWISE
GPS	GLOBAL POSITIONING SYSTEM	UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
GND	GROUND	UPS	UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
GSM	GLOBAL SYSTEM FOR MOBILE	VIF	VERIFIED IN FIELD
HDG	HOT DIPPED GALVANIZED	W	WIDE
HDR	HEADER	W/	WITH
HGR	HANGER	WD	WOOD
HVAC	HEAT/VENTILATION/AIR CONDITIONING	WP	WEATHERPROOF
HT	HEIGHT	WT	WEIGHT
IGR	INTERIOR GROUND RING		

ABBREVIATIONS

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH WIRELESS, L.L.C. AND TOWER OWNER NOC & THE DISH WIRELESS, L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
2. "LOOK UP" – DISH WIRELESS, L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH WIRELESS, L.L.C. AND DISH WIRELESS, L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH WIRELESS, L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH DISH WIRELESS, L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH WIRELESS, L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH WIRELESS, L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER AUTILITIES 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 CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH WIRELESS, L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER’S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR’S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. 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.

GENERAL NOTES:

1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

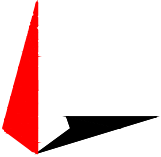
CARRIER:DISH WIRELESS, L.L.C.

TOWER OWNER:TOWER OWNER

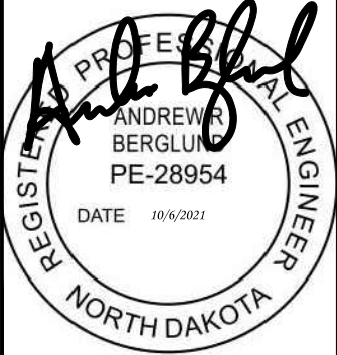
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR’S EXPENSE TO THE SATISFACTION OF DISH WIRELESS, L.L.C. AND TOWER OWNER
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



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LITTLETON, CO 80120



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DRAWN BY:	CHECKED BY:	APPROVED BY:
CDK	CP	CP

RFDS REV #: TBD

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09-28-21	PRELIMINARY
0	10-06-21	CONSTRUCTION

A&E PROJECT NUMBER

289180

DISH WIRELESS, L.L.C.
PROJECT INFORMATION

MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'_c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°F AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (F_y) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi
#5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER:
 - #6 BARS AND LARGER 2"
 - #5 BARS AND SMALLER 1-1/2"
 - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - SLAB AND WALLS 3/4"
 - BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

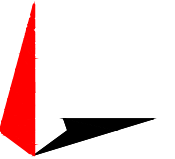
ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. TIE WRAPS ARE NOT ALLOWED.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

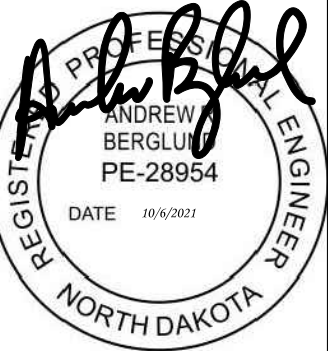
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH WIRELESS, L.L.C., AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH WIRELESS, L.L.C.".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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DRAWN BY: | CHECKED BY: | APPROVED BY:

CDK	CP	CP
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RFDS REV #: TBD

CONSTRUCTION
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09-28-21	PRELIMINARY
0	10-06-21	CONSTRUCTION

A&E PROJECT NUMBER
289180

DISH WIRELESS, L.L.C.
PROJECT INFORMATION

MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

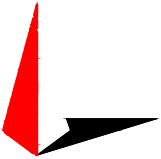
GN-3

GROUNDING NOTES:

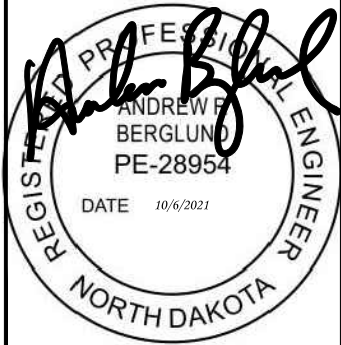
1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES’S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4” NON-METALLIC, FLEXIBLE CONDUIT FROM 24” BELOW GRADE TO WITHIN 3” TO 6” OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.



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DRAWN BY: CHECKED BY: APPROVED BY:

CDK CP CP

RFDS REV #: TBD

CONSTRUCTION
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09-28-21	PRELIMINARY
0	10-06-21	CONSTRUCTION

A&E PROJECT NUMBER

289180

DISH WIRELESS, L.L.C.
PROJECT INFORMATION

MNFAR00012B
3124 6TH ST W
WEST FARGO, ND 58078

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 120 ft Monopole

Customer Name: SBA Communications Corp

Customer Site Number: ND11779-A

Customer Site Name: Eagle Run

Carrier Name: Dish Wireless (App#: 170824, V#2)

Carrier Site ID / Name: MNFAR00012B / MNFAR00012B

Site Location: 3124 6th St. W.

West Fargo, North Dakota

Cass County

Latitude: 46.834100

Longitude: -96.911728

Exp.12/31/2022



Analysis Result:

Max Structural Usage: 89.2% [Pass]

Max Foundation Usage: 64% [Pass]

Additional Usage Caused by New Mount:+6.7%

09/28/2021

Report Prepared By : Mariana Franco

Introduction

The purpose of this report is to summarize the analysis results on the 120 ft Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Ehresmann Engineering, Inc. Dated 06-19-2008. Drawing No 72410E01. Job No 72410.
Foundation Drawing	Original foundation drawings prepared by Ehresmann Engineering, Inc. Dated 06-19-2008. Drawing No 72410E02B. Job No 72410.
Geotechnical Report	Geotechnical report, Midwest Testing Laboratory, Inc. Dated 06-12-2008. Job No 14739.
Modification Drawings	Previous SA: Black & Veatch Corporation. Dated 07-24-2015. Project No 184741.1046.
Mount Analysis	n/a

Analysis Criteria

The comprehensive analysis was performed in accordance with the requirements and stipulations of the TIA-222-H. In accordance with this standard, the structure was analyzed using **TESPoles**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	111.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	60 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2020 North Dakota State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Category:	1
Crest Height:	0 ft

This structural analysis is based upon the tower being classified as a Risk Category II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	115.0	3	CCI HPA-65R-BUU-H6-K - Panel	Platform w/ Hand Rails	(5) 0.82" DC Trunk (2) 0.96" DC (1) 1/2" RET (2) 3/8" Fiber (10) 7/8"	AT&T
2		3	Powerwave P65-16-XLH-RR - Panel			
3		3	ALU 9442 RRH AWS			
4		3	ALU B66A RRH4x45			
5		2	Raycap DC6-48-60-18-8C			
6		6	Powerwave TT19-08BP111-001 TMA's			
7		6	KMW EPBQ-654L8H6-L2 - Panel			
8		3	Alcatel-Lucent RRH4x25-B30			
9		3	Nokia AirScale Dual RRH 4T4R B12/14 320W AHLBA			
10		3	Nokia AirScale Dual RRH 4T4R B25/66 320W AHFIB			
11		3	AirScale RRH 4T4R B5 160W AHCA			
12		2	Raycap DC6-48-60-0-8C			
13	100.0	2	Raycap RxDC-3315-PF-48PF-48	(1) Dual Pipe Ring Mount UGLM-DAC*	(2) 1.55" HFT	Verizon
14		3	Ericsson RRUS32 B4			
15	98.0	3	Ericsson RRUS12 B13	(1) Dual Pipe Ring Mount UGLM-DAC	-	
16		3	Ericsson RRUS32 B66			
17		3	Ericsson RRUS B13 A2 Module			
18	96.0	3	Antel BXA-70090-8CF-EDIN-X - Panel	Platform w/ Hand Rails	(6) 1 5/8"	
19		6	Commscope SBJAHH-1D65C - Panel			

*(1) Dual Pipe Ring Mount UGLM-DAC is at 102'

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
26	87.0	3	JMA Wireless MX08FRO665-21 - Panel	Sabre C10801018-32788 Platform	(1) 1.60" CU12PSM9P6X XX_6AWG	Dish Wireless
27		3	Fujitsu TA08025-B605			
28		3	Fujitsu TA08025-B604			
29		1	Raycap RDIDC-9181-PF-48			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	89.2%	71.5%	62.1%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	1758.0	22.0
Analysis Reactions	2129.8	23.9
Factored Reactions*	2373.3	29.7
% of Design Reactions	89.7%	80.6%

* Per section 15.6.2 of the TIA-222-H standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Service Load Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.5276 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 89.17% at 40.0ft

Structure: ND11779-A-SBA
Site Name: Eagle Run
Height: 120.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-H
Exposure: C
Gh: 1.1

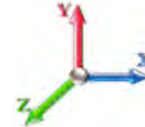
9/27/2021

Page: 1



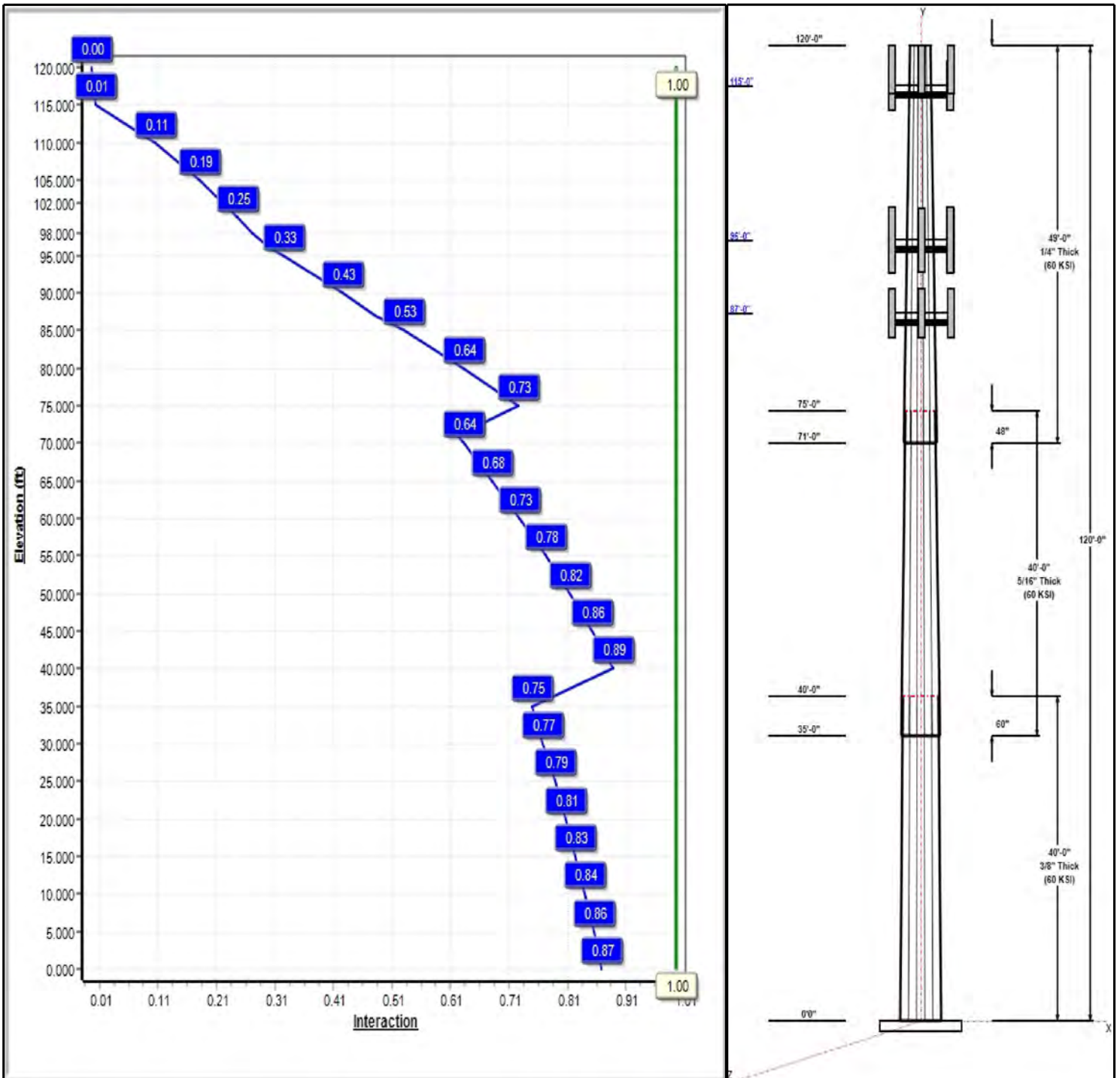
Dead Load Factor: 1.20
Wind Load Factor: 1.00

Load Case : 1.2D + 1.0W 111 mph Wind



Iterations: 24

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Structure: ND11779-A-SBA

Type: Tapered
Site Name: Eagle Run
Height: 120.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 12 Sided
Taper: 0.20000

9/27/2021

Page: 2



Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	40.00	32.00	40.00	0.375		0.20000	60
2	40.00	25.63	33.63	0.313	Slip	0.20000	60
3	49.00	17.13	26.93	0.250	Slip	0.20000	60

Discrete Appurtenances

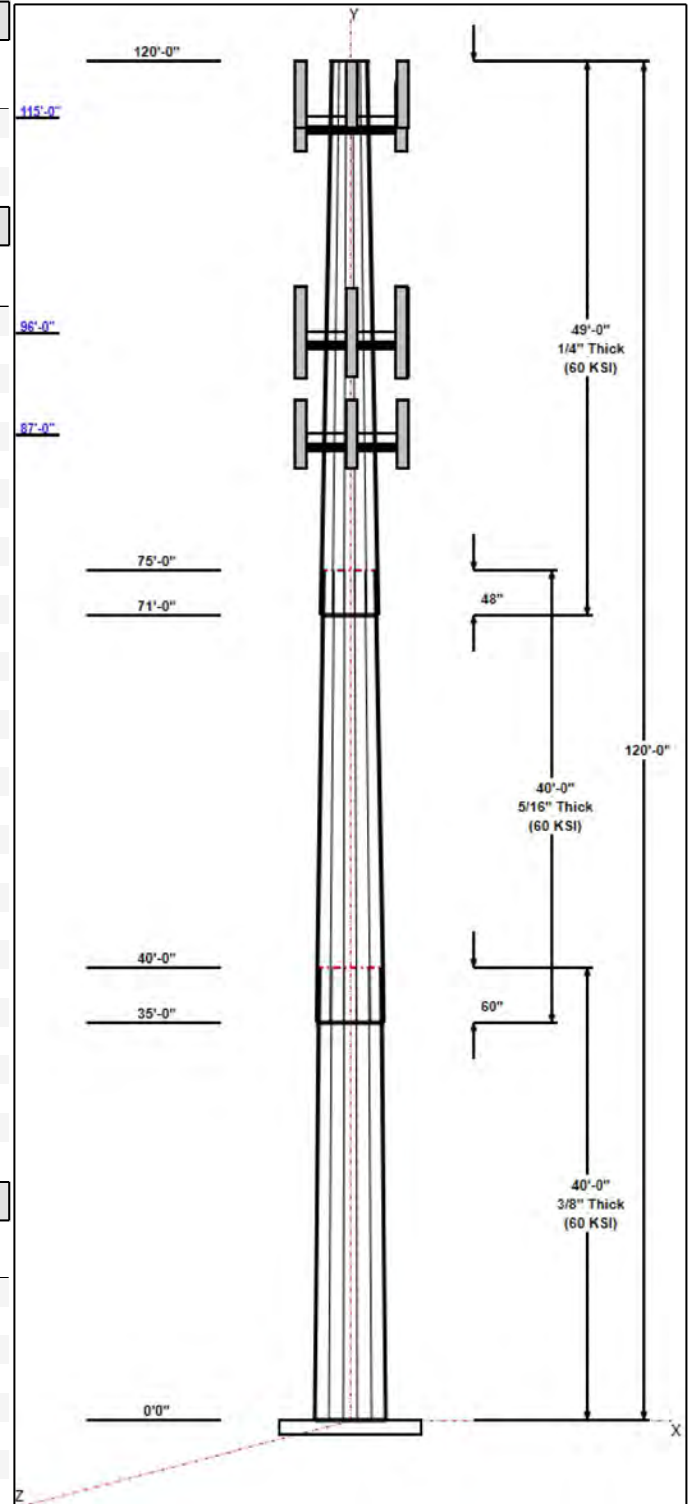
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
120.00	120.00	1	Beacon	---
120.00	123.50	1	Lightning Rod	---
115.00	117.00	3	CCI HPA-65R-BUU-H6-K	AT&T
115.00	117.00	3	Powerwave	AT&T
115.00	117.00	3	ALU 9442 RRH AWS	AT&T
115.00	117.00	3	ALU B66A RRH4x45	AT&T
115.00	117.00	2	Raycap DC6-48-60-18-8C	AT&T
115.00	115.00	6	KMW EPBQ-654L8H6-L2	AT&T
115.00	115.00	3	Alcatel-Lucent	AT&T
115.00	115.00	3	AirScale Dual RRH 4T4R	AT&T
115.00	115.00	3	AirScale Dual RRH 4T4R	AT&T
115.00	115.00	3	AirScale RRH 4T4R B5	AT&T
115.00	115.00	2	DC6-48-60-0-8C	AT&T
115.00	115.00	1	Platform w/ Hand Rails	AT&T
115.00	117.00	6	Powerwave	AT&T
102.00	102.00	1	Site Pro UGLM-DAC	Verizon
100.00	100.00	2	RxxDC-3315-Raycap	Verizon
98.00	98.00	3	Ericsson RRUS32 B4	Verizon
98.00	98.00	3	Ericsson RRUS12 B13	Verizon
98.00	98.00	3	Ericsson RRUS32 B66	Verizon
98.00	98.00	3	Ericsson RRUS B13 A2	Verizon
98.00	98.00	1	Site Pro UGLM-DAC	Verizon
96.00	96.00	1	Platform w/ Hand Rails	Verizon
96.00	96.00	3	Antel	Verizon
96.00	96.00	6	Commscope	Verizon
87.00	87.00	3	MX08FRO665-21	Dish Wireless
87.00	87.00	3	TA08025-B605	Dish Wireless
87.00	87.00	3	TA08025-B604	Dish Wireless
87.00	87.00	1	RDIDC-9181-OF-48	Dish Wireless
87.00	87.00	1	C10801018-32788	Dish Wireless

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
7.00	115.00	Inside	0.82" DC Trunk	AT&T
7.00	115.00	Inside	0.96" DC	AT&T
7.00	115.00	Inside	1/2" RET	AT&T
7.00	115.00	Inside	3/8" Fiber	AT&T
7.00	115.00	Inside	7/8" Coax	AT&T
7.00	100.00	Inside	1.55" HFT	Verizon
7.00	98.00	Inside	1 5/8" Coax	Verizon
0.00	87.00	Inside	1.60"	Dish Wireless

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
12	2.25" 18J	75.0	Radial



Structure: ND11779-A-SBA

Type: Tapered
Site Name: Eagle Run
Height: 120.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 12 Sided
Taper: 0.20000

9/27/2021

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**Base Plate**

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	55.0	50.0	Polygon

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 111 mph Wind	2129.8	23.9	29.0
0.9D + 1.0W 111 mph Wind	2102.1	23.9	21.7
1.2D + 1.0Di + 1.0Wi 60 mph Wind	835.5	9.2	40.3
1.0D + 1.0W 60 mph Wind	553.1	6.3	24.2

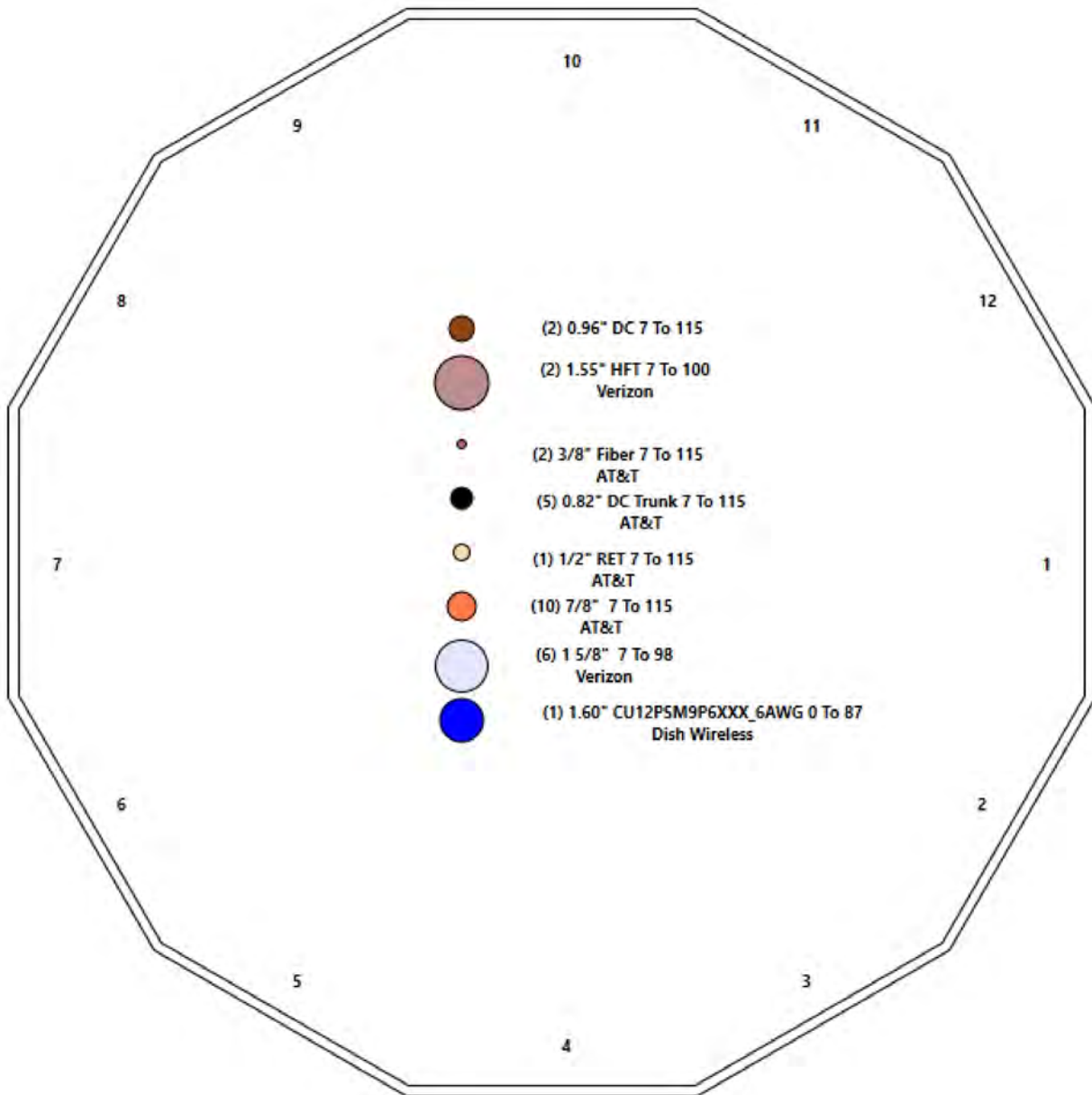
Structure: ND11779-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Eagle Run
Height: 120.00 (ft)

9/27/2021



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Shaft Properties

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	12	40.000	0.3750	60		0.00	5,855
2	12	40.000	0.3125	60	Slip	60.00	4,015
3	12	49.000	0.2500	60	Slip	48.00	2,923
Total Shaft Weight:							12,793

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	40.00	0.00	47.85	9589.17	26.44	106.67	32.00	40.00	38.19	4874.89	20.72	85.33	0.200000
2	33.63	35.00	33.52	4748.03	26.69	107.60	25.63	75.00	25.47	2083.04	19.83	82.00	0.200000
3	26.93	71.00	21.47	1950.27	26.71	107.70	17.13	120.00	13.58	493.76	16.21	68.50	0.200000

Load Summary

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	120.00	Beacon	1	15.00	2.40	1.00	26.38	2.400	1.00	0.00	0.00
2	120.00	Lightning Rod	1	35.00	1.05	1.00	55.48	2.597	1.00	0.00	3.50
3	115.00	CCI HPA-65R-BUU-H6-K	3	51.00	9.66	0.83	202.93	10.528	0.83	0.00	2.00
4	115.00	Powerwave P65-16-XLH-RR	3	53.00	8.13	0.79	160.15	9.943	0.79	0.00	2.00
5	115.00	ALU 9442 RRH AWS	3	43.00	2.16	0.67	82.34	2.841	0.67	0.00	2.00
6	115.00	ALU B66A RRH4x45	3	56.80	2.54	0.67	106.87	2.976	0.67	0.00	2.00
7	115.00	Raycap DC6-48-60-18-8C	2	32.00	1.15	0.67	64.95	2.102	0.67	0.00	2.00
8	115.00	KMW EPBQ-654L8H6-L2	6	78.00	8.82	0.84	204.27	9.097	0.84	0.00	0.00
9	115.00	Alcatel-Lucent RRH4x25-B30	3	70.00	2.90	0.88	127.74	3.347	0.88	0.00	0.00
10	115.00	AirScale Dual RRH 4T4R B12/14	3	101.40	3.68	0.97	177.59	4.938	0.97	0.00	0.00
11	115.00	AirScale Dual RRH 4T4R B25/66	3	88.18	3.68	0.80	137.90	3.043	0.80	0.00	0.00
12	115.00	AirScale RRH 4T4R B5 160W AHCA	3	36.82	1.28	0.85	69.81	1.683	0.85	0.00	0.00
13	115.00	DC6-48-60-0-8C	2	16.00	4.78	1.00	96.33	5.354	1.00	0.00	0.00
14	115.00	Platform w/ Hand Rails	1	1600.00	32.00	1.00	2963.19	50.127	1.00	0.00	0.00
15	115.00	Powerwave TT19-08BP111-001	6	16.00	0.55	0.60	29.14	0.881	0.60	0.00	2.00
16	102.00	Site Pro UGLM-DAC	1	250.00	5.00	1.00	384.34	7.239	1.00	0.00	0.00
17	100.00	RxxDC-3315-Raycap	2	32.00	3.01	1.00	84.20	3.457	1.00	0.00	0.00
18	98.00	Ericsson RRUS32 B4	3	60.00	2.74	0.67	111.49	3.193	0.67	0.00	0.00
19	98.00	Ericsson RRUS12 B13	3	60.00	2.70	0.67	102.82	3.122	0.67	0.00	0.00
20	98.00	Ericsson RRUS32 B66	3	60.00	2.74	0.67	111.49	3.193	0.67	0.00	0.00
21	98.00	Ericsson RRUS B13 A2 Module	3	21.20	1.86	0.67	44.27	2.482	0.67	0.00	0.00
22	98.00	Site Pro UGLM-DAC	1	250.00	5.00	1.00	383.80	7.230	1.00	0.00	0.00
23	96.00	Platform w/ Hand Rails	1	2000.00	40.00	1.00	3335.23	53.352	1.00	0.00	0.00
24	96.00	Antel BXA-70090-8CF-EDIN-X	3	23.00	8.20	0.87	129.13	10.164	0.87	0.00	0.00
25	96.00	Commscope SBJAHH-1D65C	6	57.30	11.47	0.85	214.67	12.544	0.85	0.00	0.00
26	87.00	MX08FRO665-21	3	64.50	12.49	0.74	248.13	13.415	0.74	0.00	0.00
27	87.00	TA08025-B605	3	75.00	1.96	0.67	108.02	2.314	0.67	0.00	0.00
28	87.00	TA08025-B604	3	63.90	1.96	0.67	95.86	2.314	0.67	0.00	0.00
29	87.00	RDIDC-9181-OF-48	1	21.90	2.01	1.00	55.52	2.369	1.00	0.00	0.00
30	87.00	C10801018-32788	1	1727.00	42.43	1.00	2792.57	76.089	1.00	0.00	0.00
Totals:			80	9,750.10			19,225.54				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
7.00	115.00	(5) 0.82" DC Trunk	0.00	Inside
7.00	115.00	(2) 0.96" DC	0.00	Inside
7.00	115.00	(1) 1/2" RET	0.00	Inside
7.00	115.00	(2) 3/8" Fiber	0.00	Inside
7.00	115.00	(10) 7/8" Coax	0.00	Inside
7.00	100.00	(2) 1.55" HFT	0.00	Inside
7.00	98.00	(6) 1 5/8" Coax	0.00	Inside
0.00	87.00	(1) 1.60" CU12PSM9P6XXX_6AWG	0.00	Inside

Shaft Section Properties

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	40.000	47.847	9589.2	26.44	106.67	71.1	463.1	0.0
5.00		0.3750	39.000	46.640	8881.3	25.72	104.00	71.8	439.9	803.8
10.00		0.3750	38.000	45.432	8209.2	25.01	101.33	72.5	417.3	783.3
15.00		0.3750	37.000	44.225	7571.9	24.29	98.67	73.2	395.3	762.7
20.00		0.3750	36.000	43.017	6968.5	23.58	96.00	73.9	373.9	742.2
25.00		0.3750	35.000	41.810	6398.0	22.86	93.33	74.5	353.1	721.6
30.00		0.3750	34.000	40.602	5859.5	22.15	90.67	75.2	332.9	701.1
35.00	Bot - Section 2	0.3750	33.000	39.395	5352.1	21.44	88.00	75.6	313.3	680.5
40.00	Top - Section 1	0.3125	32.625	32.514	4333.1	25.83	104.40	0.0	0.0	1221.7
45.00		0.3125	31.625	31.508	3943.2	24.97	101.20	72.5	240.9	544.6
50.00		0.3125	30.625	30.502	3577.3	24.12	98.00	73.3	225.7	527.5
55.00		0.3125	29.625	29.496	3234.8	23.26	94.80	74.2	210.9	510.4
60.00		0.3125	28.625	28.489	2914.9	22.40	91.60	75.0	196.7	493.3
65.00		0.3125	27.625	27.483	2616.8	21.54	88.40	75.6	183.0	476.2
70.00		0.3125	26.625	26.477	2339.8	20.69	85.20	75.6	169.8	459.0
71.00	Bot - Section 3	0.3125	26.425	26.276	2286.8	20.51	84.56	75.6	167.2	89.8
75.00	Top - Section 2	0.2500	26.125	20.829	1780.0	25.86	104.50	0.0	0.0	640.1
80.00		0.2500	25.125	20.024	1581.5	24.79	100.50	72.7	121.6	347.5
85.00		0.2500	24.125	19.219	1398.3	23.71	96.50	73.7	112.0	333.8
87.00		0.2500	23.725	18.897	1329.2	23.28	94.90	74.1	108.2	129.7
90.00		0.2500	23.125	18.414	1229.9	22.64	92.50	74.8	102.7	190.4
95.00		0.2500	22.125	17.609	1075.5	21.57	88.50	75.6	93.9	306.5
96.00		0.2500	21.925	17.448	1046.3	21.36	87.70	75.6	92.2	59.6
98.00		0.2500	21.525	17.126	989.4	20.93	86.10	75.6	88.8	117.7
100.00		0.2500	21.125	16.804	934.7	20.50	84.50	75.6	85.5	115.5
102.00		0.2500	20.725	16.482	882.0	20.07	82.90	75.6	82.2	113.3
105.00		0.2500	20.125	15.999	806.7	19.43	80.50	75.6	77.4	165.8
110.00		0.2500	19.125	15.194	690.9	18.35	76.50	75.6	69.8	265.4
115.00		0.2500	18.125	14.389	586.8	17.28	72.50	75.6	62.5	251.7
120.00		0.2500	17.125	13.584	493.8	16.21	68.50	75.6	55.7	238.0

12792.5

Wind Loading - Shaft

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

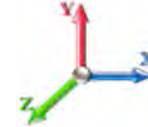


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Load Case: 1.2D + 1.0W 111 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	24.654	27.12	347.45	0.950	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	24.654	27.12	338.77	0.950	0.000	5.00	17.039	16.19	439.0	0.0	964.6
10.00		1.00	0.85	24.654	27.12	330.08	0.950	0.000	5.00	16.608	15.78	427.9	0.0	939.9
15.00		1.00	0.85	24.654	27.12	321.39	0.950	0.000	5.00	16.176	15.37	416.8	0.0	915.2
20.00		1.00	0.90	26.159	28.77	322.11	0.950	0.000	5.00	15.745	14.96	430.4	0.0	890.6
25.00		1.00	0.95	27.417	30.16	320.61	0.950	0.000	5.00	15.313	14.55	438.7	0.0	865.9
30.00		1.00	0.98	28.490	31.34	317.48	0.950	0.000	5.00	14.882	14.14	443.1	0.0	841.3
35.00	Bot - Section 2	1.00	1.01	29.430	32.37	313.18	0.950	0.000	5.00	14.451	13.73	444.4	0.0	816.6
40.00	Top - Section 1	1.00	1.04	30.269	33.30	307.99	0.950	0.000	5.00	14.289	13.57	452.0	0.0	1466.1
45.00		1.00	1.07	31.029	34.13	308.18	0.950	0.000	5.00	13.858	13.16	449.3	0.0	653.6
50.00		1.00	1.09	31.725	34.90	301.76	0.950	0.000	5.00	13.426	12.75	445.1	0.0	633.0
55.00		1.00	1.12	32.368	35.60	294.85	0.950	0.000	5.00	12.995	12.35	439.5	0.0	612.5
60.00		1.00	1.14	32.966	36.26	287.52	0.950	0.000	5.00	12.564	11.94	432.8	0.0	591.9
65.00		1.00	1.16	33.526	36.88	279.83	0.950	0.000	5.00	12.132	11.53	425.0	0.0	571.4
70.00		1.00	1.17	34.053	37.46	271.81	0.950	0.000	5.00	11.701	11.12	416.4	0.0	550.8
71.00	Bot - Section 3	1.00	1.18	34.155	37.57	270.17	0.950	0.000	1.00	2.288	2.17	81.7	0.0	107.7
75.00	Top - Section 2	1.00	1.19	34.552	38.01	263.51	0.950	0.000	4.00	9.154	8.70	330.5	0.0	768.1
80.00		1.00	1.21	35.024	38.53	260.13	0.950	0.000	5.00	11.054	10.50	404.6	0.0	417.0
85.00		1.00	1.22	35.474	39.02	251.37	0.950	0.000	5.00	10.622	10.09	393.8	0.0	400.6
87.00	Appurtenance(s)	1.00	1.23	35.648	39.21	247.81	0.950	0.000	2.00	4.128	3.92	153.8	0.0	155.6
90.00		1.00	1.24	35.904	39.49	242.41	0.950	0.000	3.00	6.063	5.76	227.5	0.0	228.5
95.00		1.00	1.25	36.315	39.95	233.25	0.950	0.000	5.00	9.760	9.27	370.4	0.0	367.7
96.00	Appurtenance(s)	1.00	1.25	36.395	40.03	231.39	0.950	0.000	1.00	1.900	1.81	72.3	0.0	71.6
98.00	Appurtenance(s)	1.00	1.26	36.553	40.21	227.67	0.950	0.000	2.00	3.749	3.56	143.2	0.0	141.2
100.00	Appurtenance(s)	1.00	1.27	36.709	40.38	223.91	0.950	0.000	2.00	3.680	3.50	141.1	0.0	138.6
102.00	Appurtenance(s)	1.00	1.27	36.862	40.55	220.13	0.950	0.000	2.00	3.611	3.43	139.1	0.0	135.9
105.00		1.00	1.28	37.088	40.80	214.41	0.950	0.000	3.00	5.286	5.02	204.9	0.0	199.0
110.00		1.00	1.29	37.453	41.20	204.76	0.950	0.000	5.00	8.466	8.04	331.3	0.0	318.4
115.00	Appurtenance(s)	1.00	1.30	37.805	41.59	194.96	0.950	0.000	5.00	8.034	7.63	317.4	0.0	302.0
120.00	Appurtenance(s)	1.00	1.32	38.145	41.96	185.03	0.950	0.000	5.00	7.603	7.22	303.1	0.0	285.6
Totals:									120.00			9,714.9		15,351.0

Discrete Appurtenance Forces

Structure: ND11779-A-SBA **Code:** EIA/TIA-222-H 9/27/2021
Site Name: Eagle Run **Exposure:** C
Height: 120.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 9



Load Case: 1.2D + 1.0W 111 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	120.00	Beacon	1	38.145	41.960	1.00	1.00	2.40	18.00	0.000	0.000	100.70	0.00	0.00
2	120.00	Lightning Rod	1	38.377	42.214	1.00	1.00	1.05	42.00	0.000	3.500	44.33	0.00	155.14
3	115.00	Raycap DC6-48-60-18-8C	2	37.942	41.737	0.50	0.75	1.16	76.80	0.000	2.000	48.24	0.00	96.47
4	115.00	CCI HPA-65R-BUU-H6-K	3	37.942	41.737	0.62	0.75	18.04	183.60	0.000	2.000	752.93	0.00	1505.86
5	115.00	Powerwave	3	37.942	41.737	0.59	0.75	14.45	190.80	0.000	2.000	603.14	0.00	1206.28
6	115.00	ALU 9442 RRH AWS	3	37.942	41.737	0.50	0.75	3.26	154.80	0.000	2.000	135.90	0.00	271.81
7	115.00	ALU B66A RRH4x45	3	37.942	41.737	0.50	0.75	3.83	204.48	0.000	2.000	159.81	0.00	319.62
8	115.00	Powerwave	6	37.942	41.737	0.45	0.75	1.48	115.20	0.000	2.000	61.98	0.00	123.96
9	115.00	Alcatel-Lucent	3	37.805	41.585	0.66	0.75	5.74	252.00	0.000	0.000	238.78	0.00	0.00
10	115.00	KMW EPBQ-654L8H6-L2	6	37.805	41.585	0.63	0.75	33.34	561.60	0.000	0.000	1386.44	0.00	0.00
11	115.00	AirScale Dual RRH 4T4R	3	37.805	41.585	0.73	0.75	8.03	365.04	0.000	0.000	334.00	0.00	0.00
12	115.00	AirScale Dual RRH 4T4R	3	37.805	41.585	0.60	0.75	6.62	317.45	0.000	0.000	275.46	0.00	0.00
13	115.00	AirScale RRH 4T4R B5	3	37.805	41.585	0.64	0.75	2.45	132.55	0.000	0.000	101.80	0.00	0.00
14	115.00	DC6-48-60-0-8C	2	37.805	41.585	1.00	1.00	9.56	38.40	0.000	0.000	397.56	0.00	0.00
15	115.00	Platform w/ Hand Rails	1	37.805	41.585	1.00	1.00	32.00	1920.00	0.000	0.000	1330.73	0.00	0.00
16	102.00	Site Pro UGLM-DAC	1	36.862	40.548	1.00	1.00	5.00	300.00	0.000	0.000	202.74	0.00	0.00
17	100.00	RxxDC-3315-Raycap	2	36.709	40.380	1.00	1.00	6.02	76.80	0.000	0.000	243.09	0.00	0.00
18	98.00	Ericsson RRUS B13 A2	3	36.553	40.208	0.60	0.90	3.36	76.32	0.000	0.000	135.29	0.00	0.00
19	98.00	Ericsson RRUS32 B66	3	36.553	40.208	0.60	0.90	4.96	216.00	0.000	0.000	199.30	0.00	0.00
20	98.00	Ericsson RRUS12 B13	3	36.553	40.208	0.60	0.90	4.88	216.00	0.000	0.000	196.39	0.00	0.00
21	98.00	Ericsson RRUS32 B4	3	36.553	40.208	0.60	0.90	4.96	216.00	0.000	0.000	199.30	0.00	0.00
22	98.00	Site Pro UGLM-DAC	1	36.553	40.208	1.00	1.00	5.00	300.00	0.000	0.000	201.04	0.00	0.00
23	96.00	Commscope	6	36.395	40.034	0.64	0.75	43.87	412.56	0.000	0.000	1756.41	0.00	0.00
24	96.00	Antel	3	36.395	40.034	0.65	0.75	16.05	82.80	0.000	0.000	642.61	0.00	0.00
25	96.00	Platform w/ Hand Rails	1	36.395	40.034	1.00	1.00	40.00	2400.00	0.000	0.000	1601.37	0.00	0.00
26	87.00	C10801018-32788	1	35.648	39.213	1.00	1.00	42.43	2072.40	0.000	0.000	1663.81	0.00	0.00
27	87.00	RDIDC-9181-OF-48	1	35.648	39.213	1.00	1.00	2.01	26.28	0.000	0.000	78.82	0.00	0.00
28	87.00	TA08025-B604	3	35.648	39.213	0.50	0.75	2.95	230.04	0.000	0.000	115.86	0.00	0.00
29	87.00	TA08025-B605	3	35.648	39.213	0.50	0.75	2.95	270.00	0.000	0.000	115.86	0.00	0.00
30	87.00	MX08FRO665-21	3	35.648	39.213	0.55	0.75	20.80	232.20	0.000	0.000	815.47	0.00	0.00
Totals:								11,700.12	14,139.16					

Total Applied Force Summary

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0W 111 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 24



Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		438.98	975.47	0.00	0.00
10.00		427.87	1006.51	0.00	0.00
15.00		416.75	1018.99	0.00	0.00
20.00		430.40	994.33	0.00	0.00
25.00		438.74	969.68	0.00	0.00
30.00		443.07	945.03	0.00	0.00
35.00		444.42	920.37	0.00	0.00
40.00		451.97	1569.83	0.00	0.00
45.00		449.33	757.30	0.00	0.00
50.00		445.11	736.76	0.00	0.00
55.00		439.54	716.22	0.00	0.00
60.00		432.81	695.67	0.00	0.00
65.00		425.05	675.13	0.00	0.00
70.00		416.38	654.58	0.00	0.00
71.00		81.68	128.45	0.00	0.00
75.00		330.50	851.06	0.00	0.00
80.00		404.57	520.79	0.00	0.00
85.00		393.78	504.35	0.00	0.00
87.00	(11) attachments	2943.60	3028.06	0.00	0.00
90.00		227.47	284.23	0.00	0.00
95.00		370.37	460.56	0.00	0.00
96.00	(10) attachments	4072.65	2985.50	0.00	0.00
98.00	(13) attachments	1074.51	1202.63	0.00	0.00
100.00	(2) attachments	384.24	237.50	0.00	0.00
102.00	(1) attachments	341.82	452.79	0.00	0.00
105.00		204.88	224.26	0.00	0.00
110.00		331.33	360.62	0.00	0.00
115.00	(41) attachments	6144.18	4856.90	0.00	3524.00
120.00	(2) attachments	448.09	345.57	0.00	155.14
Totals:		23,854.07	29,079.15	0.00	3,679.14

Calculated Forces

Structure: ND11779-A-SBA

Code: EIA/TIA-222-H

9/27/2021

Site Name: Eagle Run

Exposure: C

Height: 120.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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Load Case: 1.2D + 1.0W 111 mph Wind

Iterations 24

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-29.01	-23.93	0.00	-2129.8	0.00	2129.81	3061.21	775.12	2559.53	2469.17	0.00	0.000	0.000	0.873
5.00	-27.91	-23.64	0.00	-2010.1	0.00	2010.15	3012.97	755.56	2431.97	2368.35	0.16	-0.307	0.000	0.859
10.00	-26.78	-23.35	0.00	-1891.9	0.00	1891.94	2963.22	736.00	2307.67	2268.36	0.65	-0.620	0.000	0.844
15.00	-25.64	-23.07	0.00	-1775.1	0.00	1775.17	2911.98	716.44	2186.63	2169.30	1.47	-0.937	0.000	0.828
20.00	-24.52	-22.76	0.00	-1659.8	0.00	1659.83	2859.23	696.88	2068.86	2071.26	2.63	-1.260	0.000	0.811
25.00	-23.44	-22.43	0.00	-1546.0	0.00	1546.05	2804.97	677.32	1954.34	1974.33	4.12	-1.587	0.000	0.793
30.00	-22.38	-22.09	0.00	-1433.9	0.00	1433.90	2749.22	657.76	1843.09	1878.60	5.96	-1.918	0.000	0.773
35.00	-21.35	-21.74	0.00	-1323.4	0.00	1323.46	2680.41	638.19	1735.09	1776.51	8.15	-2.253	0.000	0.754
40.00	-19.67	-21.34	0.00	-1214.7	0.00	1214.78	2097.43	526.73	1418.34	1379.29	10.69	-2.590	0.000	0.892
45.00	-18.81	-20.97	0.00	-1108.1	0.00	1108.11	2056.04	510.43	1331.91	1309.83	13.58	-2.929	0.000	0.857
50.00	-17.96	-20.60	0.00	-1003.2	0.00	1003.27	2013.15	494.13	1248.20	1241.14	16.86	-3.310	0.000	0.819
55.00	-17.14	-20.23	0.00	-900.25	0.00	900.25	1968.75	477.83	1167.20	1173.32	20.52	-3.689	0.000	0.778
60.00	-16.35	-19.86	0.00	-799.08	0.00	799.08	1922.85	461.53	1088.92	1106.46	24.59	-4.062	0.000	0.733
65.00	-15.58	-19.49	0.00	-699.78	0.00	699.78	1869.96	445.23	1013.36	1037.60	29.03	-4.428	0.000	0.685
70.00	-14.89	-19.07	0.00	-602.35	0.00	602.35	1801.49	428.93	940.51	962.60	33.86	-4.782	0.000	0.636
71.00	-14.71	-19.03	0.00	-583.28	0.00	583.28	1787.80	425.67	926.27	947.94	34.87	-4.854	0.000	0.626
75.00	-13.80	-18.69	0.00	-507.18	0.00	507.18	1343.17	337.44	727.60	707.32	39.05	-5.125	0.000	0.730
80.00	-13.21	-18.32	0.00	-413.72	0.00	413.72	1309.94	324.39	672.44	662.90	44.58	-5.440	0.000	0.637
85.00	-12.68	-17.93	0.00	-322.13	0.00	322.13	1275.21	311.35	619.46	619.13	50.45	-5.771	0.000	0.534
87.00	-9.93	-14.71	0.00	-286.28	0.00	286.28	1260.90	306.14	598.88	601.82	52.89	-5.895	0.000	0.486
90.00	-9.62	-14.49	0.00	-242.14	0.00	242.14	1238.98	298.31	568.66	576.08	56.65	-6.064	0.000	0.430
95.00	-9.17	-14.10	0.00	-169.67	0.00	169.67	1198.14	285.27	520.03	532.48	63.12	-6.302	0.000	0.329
96.00	-6.64	-9.73	0.00	-155.57	0.00	155.57	1187.19	282.66	510.56	522.73	64.44	-6.345	0.000	0.304
98.00	-5.55	-8.53	0.00	-136.12	0.00	136.12	1165.28	277.45	491.89	503.51	67.11	-6.425	0.000	0.276
100.00	-5.35	-8.13	0.00	-119.05	0.00	119.05	1143.37	272.23	473.57	484.64	69.81	-6.498	0.000	0.251
102.00	-4.93	-7.75	0.00	-102.79	0.00	102.79	1121.46	267.01	455.59	466.14	72.54	-6.566	0.000	0.226
105.00	-4.72	-7.53	0.00	-79.55	0.00	79.55	1088.60	259.19	429.28	439.06	76.69	-6.654	0.000	0.186
110.00	-4.39	-7.16	0.00	-41.91	0.00	41.91	1033.83	246.15	387.17	395.73	83.71	-6.761	0.000	0.111
115.00	-0.29	-0.49	0.00	-2.58	0.00	2.58	979.05	233.11	347.23	354.65	90.80	-6.810	0.000	0.008
120.00	0.00	-0.45	0.00	-0.16	0.00	0.16	924.28	220.07	309.47	315.82	97.92	-6.814	0.000	0.000

Wind Loading - Shaft

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

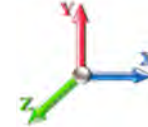


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Load Case: 0.9D + 1.0W 111 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	24.654	27.12	347.45	0.950	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	24.654	27.12	338.77	0.950	0.000	5.00	17.039	16.19	439.0	0.0	723.4
10.00		1.00	0.85	24.654	27.12	330.08	0.950	0.000	5.00	16.608	15.78	427.9	0.0	704.9
15.00		1.00	0.85	24.654	27.12	321.39	0.950	0.000	5.00	16.176	15.37	416.8	0.0	686.4
20.00		1.00	0.90	26.159	28.77	322.11	0.950	0.000	5.00	15.745	14.96	430.4	0.0	667.9
25.00		1.00	0.95	27.417	30.16	320.61	0.950	0.000	5.00	15.313	14.55	438.7	0.0	649.5
30.00		1.00	0.98	28.490	31.34	317.48	0.950	0.000	5.00	14.882	14.14	443.1	0.0	631.0
35.00	Bot - Section 2	1.00	1.01	29.430	32.37	313.18	0.950	0.000	5.00	14.451	13.73	444.4	0.0	612.5
40.00	Top - Section 1	1.00	1.04	30.269	33.30	307.99	0.950	0.000	5.00	14.289	13.57	452.0	0.0	1099.6
45.00		1.00	1.07	31.029	34.13	308.18	0.950	0.000	5.00	13.858	13.16	449.3	0.0	490.2
50.00		1.00	1.09	31.725	34.90	301.76	0.950	0.000	5.00	13.426	12.75	445.1	0.0	474.8
55.00		1.00	1.12	32.368	35.60	294.85	0.950	0.000	5.00	12.995	12.35	439.5	0.0	459.4
60.00		1.00	1.14	32.966	36.26	287.52	0.950	0.000	5.00	12.564	11.94	432.8	0.0	443.9
65.00		1.00	1.16	33.526	36.88	279.83	0.950	0.000	5.00	12.132	11.53	425.0	0.0	428.5
70.00		1.00	1.17	34.053	37.46	271.81	0.950	0.000	5.00	11.701	11.12	416.4	0.0	413.1
71.00	Bot - Section 3	1.00	1.18	34.155	37.57	270.17	0.950	0.000	1.00	2.288	2.17	81.7	0.0	80.8
75.00	Top - Section 2	1.00	1.19	34.552	38.01	263.51	0.950	0.000	4.00	9.154	8.70	330.5	0.0	576.1
80.00		1.00	1.21	35.024	38.53	260.13	0.950	0.000	5.00	11.054	10.50	404.6	0.0	312.8
85.00		1.00	1.22	35.474	39.02	251.37	0.950	0.000	5.00	10.622	10.09	393.8	0.0	300.5
87.00	Appurtenance(s)	1.00	1.23	35.648	39.21	247.81	0.950	0.000	2.00	4.128	3.92	153.8	0.0	116.7
90.00		1.00	1.24	35.904	39.49	242.41	0.950	0.000	3.00	6.063	5.76	227.5	0.0	171.4
95.00		1.00	1.25	36.315	39.95	233.25	0.950	0.000	5.00	9.760	9.27	370.4	0.0	275.8
96.00	Appurtenance(s)	1.00	1.25	36.395	40.03	231.39	0.950	0.000	1.00	1.900	1.81	72.3	0.0	53.7
98.00	Appurtenance(s)	1.00	1.26	36.553	40.21	227.67	0.950	0.000	2.00	3.749	3.56	143.2	0.0	105.9
100.00	Appurtenance(s)	1.00	1.27	36.709	40.38	223.91	0.950	0.000	2.00	3.680	3.50	141.1	0.0	103.9
102.00	Appurtenance(s)	1.00	1.27	36.862	40.55	220.13	0.950	0.000	2.00	3.611	3.43	139.1	0.0	101.9
105.00		1.00	1.28	37.088	40.80	214.41	0.950	0.000	3.00	5.286	5.02	204.9	0.0	149.2
110.00		1.00	1.29	37.453	41.20	204.76	0.950	0.000	5.00	8.466	8.04	331.3	0.0	238.8
115.00	Appurtenance(s)	1.00	1.30	37.805	41.59	194.96	0.950	0.000	5.00	8.034	7.63	317.4	0.0	226.5
120.00	Appurtenance(s)	1.00	1.32	38.145	41.96	185.03	0.950	0.000	5.00	7.603	7.22	303.1	0.0	214.2
Totals:									120.00			9,714.9		11,513.3

Discrete Appurtenance Forces

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



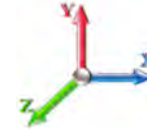
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Load Case: 0.9D + 1.0W 111 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00

Iterations 24



No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	120.00	Beacon	1	38.145	41.960	1.00	1.00	2.40	13.50	0.000	0.000	100.70	0.00	0.00
2	120.00	Lightning Rod	1	38.377	42.214	1.00	1.00	1.05	31.50	0.000	3.500	44.33	0.00	155.14
3	115.00	Raycap DC6-48-60-18-8C	2	37.942	41.737	0.50	0.75	1.16	57.60	0.000	2.000	48.24	0.00	96.47
4	115.00	CCI HPA-65R-BUU-H6-K	3	37.942	41.737	0.62	0.75	18.04	137.70	0.000	2.000	752.93	0.00	1505.86
5	115.00	Powerwave	3	37.942	41.737	0.59	0.75	14.45	143.10	0.000	2.000	603.14	0.00	1206.28
6	115.00	ALU 9442 RRH AWS	3	37.942	41.737	0.50	0.75	3.26	116.10	0.000	2.000	135.90	0.00	271.81
7	115.00	ALU B66A RRH4x45	3	37.942	41.737	0.50	0.75	3.83	153.36	0.000	2.000	159.81	0.00	319.62
8	115.00	Powerwave	6	37.942	41.737	0.45	0.75	1.48	86.40	0.000	2.000	61.98	0.00	123.96
9	115.00	Alcatel-Lucent	3	37.805	41.585	0.66	0.75	5.74	189.00	0.000	0.000	238.78	0.00	0.00
10	115.00	KMW EPBQ-654L8H6-L2	6	37.805	41.585	0.63	0.75	33.34	421.20	0.000	0.000	1386.44	0.00	0.00
11	115.00	AirScale Dual RRH 4T4R	3	37.805	41.585	0.73	0.75	8.03	273.78	0.000	0.000	334.00	0.00	0.00
12	115.00	AirScale Dual RRH 4T4R	3	37.805	41.585	0.60	0.75	6.62	238.09	0.000	0.000	275.46	0.00	0.00
13	115.00	AirScale RRH 4T4R B5	3	37.805	41.585	0.64	0.75	2.45	99.41	0.000	0.000	101.80	0.00	0.00
14	115.00	DC6-48-60-0-8C	2	37.805	41.585	1.00	1.00	9.56	28.80	0.000	0.000	397.56	0.00	0.00
15	115.00	Platform w/ Hand Rails	1	37.805	41.585	1.00	1.00	32.00	1440.00	0.000	0.000	1330.73	0.00	0.00
16	102.00	Site Pro UGLM-DAC	1	36.862	40.548	1.00	1.00	5.00	225.00	0.000	0.000	202.74	0.00	0.00
17	100.00	RxxDC-3315-Raycap	2	36.709	40.380	1.00	1.00	6.02	57.60	0.000	0.000	243.09	0.00	0.00
18	98.00	Ericsson RRUS B13 A2	3	36.553	40.208	0.60	0.90	3.36	57.24	0.000	0.000	135.29	0.00	0.00
19	98.00	Ericsson RRUS32 B66	3	36.553	40.208	0.60	0.90	4.96	162.00	0.000	0.000	199.30	0.00	0.00
20	98.00	Ericsson RRUS12 B13	3	36.553	40.208	0.60	0.90	4.88	162.00	0.000	0.000	196.39	0.00	0.00
21	98.00	Ericsson RRUS32 B4	3	36.553	40.208	0.60	0.90	4.96	162.00	0.000	0.000	199.30	0.00	0.00
22	98.00	Site Pro UGLM-DAC	1	36.553	40.208	1.00	1.00	5.00	225.00	0.000	0.000	201.04	0.00	0.00
23	96.00	Commscope	6	36.395	40.034	0.64	0.75	43.87	309.42	0.000	0.000	1756.41	0.00	0.00
24	96.00	Antel	3	36.395	40.034	0.65	0.75	16.05	62.10	0.000	0.000	642.61	0.00	0.00
25	96.00	Platform w/ Hand Rails	1	36.395	40.034	1.00	1.00	40.00	1800.00	0.000	0.000	1601.37	0.00	0.00
26	87.00	C10801018-32788	1	35.648	39.213	1.00	1.00	42.43	1554.30	0.000	0.000	1663.81	0.00	0.00
27	87.00	RDIDC-9181-OF-48	1	35.648	39.213	1.00	1.00	2.01	19.71	0.000	0.000	78.82	0.00	0.00
28	87.00	TA08025-B604	3	35.648	39.213	0.50	0.75	2.95	172.53	0.000	0.000	115.86	0.00	0.00
29	87.00	TA08025-B605	3	35.648	39.213	0.50	0.75	2.95	202.50	0.000	0.000	115.86	0.00	0.00
30	87.00	MX08FRO665-21	3	35.648	39.213	0.55	0.75	20.80	174.15	0.000	0.000	815.47	0.00	0.00
Totals:									8,775.09			14,139.16		

Total Applied Force Summary

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0W 111 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00

Iterations 24



Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		438.98	731.61	0.00	0.00
10.00		427.87	754.88	0.00	0.00
15.00		416.75	764.24	0.00	0.00
20.00		430.40	745.75	0.00	0.00
25.00		438.74	727.26	0.00	0.00
30.00		443.07	708.77	0.00	0.00
35.00		444.42	690.28	0.00	0.00
40.00		451.97	1177.37	0.00	0.00
45.00		449.33	567.98	0.00	0.00
50.00		445.11	552.57	0.00	0.00
55.00		439.54	537.16	0.00	0.00
60.00		432.81	521.75	0.00	0.00
65.00		425.05	506.35	0.00	0.00
70.00		416.38	490.94	0.00	0.00
71.00		81.68	96.34	0.00	0.00
75.00		330.50	638.30	0.00	0.00
80.00		404.57	390.59	0.00	0.00
85.00		393.78	378.26	0.00	0.00
87.00	(11) attachments	2943.60	2271.04	0.00	0.00
90.00		227.47	213.17	0.00	0.00
95.00		370.37	345.42	0.00	0.00
96.00	(10) attachments	4072.65	2239.13	0.00	0.00
98.00	(13) attachments	1074.51	901.97	0.00	0.00
100.00	(2) attachments	384.24	178.13	0.00	0.00
102.00	(1) attachments	341.82	339.59	0.00	0.00
105.00		204.88	168.19	0.00	0.00
110.00		331.33	270.46	0.00	0.00
115.00	(41) attachments	6144.18	3642.68	0.00	3524.00
120.00	(2) attachments	448.09	259.17	0.00	155.14
Totals:		23,854.07	21,809.36	0.00	3,679.14

Calculated Forces

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0W 111 mph Wind

Iterations 24

Dead Load Factor 0.90

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-21.74	-23.91	0.00	-2102.1	0.00	2102.14	3061.21	775.12	2559.53	2469.17	0.00	0.000	0.000	0.859
5.00	-20.89	-23.58	0.00	-1982.5	0.00	1982.58	3012.97	755.56	2431.97	2368.35	0.16	-0.303	0.000	0.845
10.00	-20.01	-23.26	0.00	-1864.6	0.00	1864.67	2963.22	736.00	2307.67	2268.36	0.64	-0.611	0.000	0.830
15.00	-19.13	-22.94	0.00	-1748.3	0.00	1748.38	2911.98	716.44	2186.63	2169.30	1.45	-0.924	0.000	0.814
20.00	-18.26	-22.59	0.00	-1633.7	0.00	1633.70	2859.23	696.88	2068.86	2071.26	2.59	-1.242	0.000	0.796
25.00	-17.42	-22.24	0.00	-1520.7	0.00	1520.72	2804.97	677.32	1954.34	1974.33	4.06	-1.564	0.000	0.778
30.00	-16.60	-21.87	0.00	-1409.5	0.00	1409.54	2749.22	657.76	1843.09	1878.60	5.88	-1.890	0.000	0.757
35.00	-15.80	-21.49	0.00	-1300.2	0.00	1300.20	2680.41	638.19	1735.09	1776.51	8.03	-2.218	0.000	0.739
40.00	-14.53	-21.07	0.00	-1192.7	0.00	1192.75	2097.43	526.73	1418.34	1379.29	10.53	-2.550	0.000	0.873
45.00	-13.85	-20.68	0.00	-1087.3	0.00	1087.38	2056.04	510.43	1331.91	1309.83	13.38	-2.882	0.000	0.839
50.00	-13.19	-20.30	0.00	-983.95	0.00	983.95	2013.15	494.13	1248.20	1241.14	16.60	-3.256	0.000	0.801
55.00	-12.55	-19.91	0.00	-882.47	0.00	882.47	1968.75	477.83	1167.20	1173.32	20.21	-3.627	0.000	0.760
60.00	-11.94	-19.52	0.00	-782.94	0.00	782.94	1922.85	461.53	1088.92	1106.46	24.20	-3.993	0.000	0.716
65.00	-11.35	-19.13	0.00	-685.36	0.00	685.36	1869.96	445.23	1013.36	1037.60	28.57	-4.352	0.000	0.668
70.00	-10.82	-18.71	0.00	-589.73	0.00	589.73	1801.49	428.93	940.51	962.60	33.31	-4.698	0.000	0.621
71.00	-10.68	-18.65	0.00	-571.02	0.00	571.02	1787.80	425.67	926.27	947.94	34.30	-4.769	0.000	0.610
75.00	-9.98	-18.32	0.00	-496.40	0.00	496.40	1343.17	337.44	727.60	707.32	38.41	-5.034	0.000	0.712
80.00	-9.53	-17.94	0.00	-404.80	0.00	404.80	1309.94	324.39	672.44	662.90	43.84	-5.342	0.000	0.621
85.00	-9.12	-17.54	0.00	-315.13	0.00	315.13	1275.21	311.35	619.46	619.13	49.61	-5.666	0.000	0.519
87.00	-7.12	-14.40	0.00	-280.05	0.00	280.05	1260.90	306.14	598.88	601.82	52.01	-5.787	0.000	0.473
90.00	-6.88	-14.18	0.00	-236.84	0.00	236.84	1238.98	298.31	568.66	576.08	55.69	-5.953	0.000	0.419
95.00	-6.55	-13.79	0.00	-165.94	0.00	165.94	1198.14	285.27	520.03	532.48	62.04	-6.186	0.000	0.319
96.00	-4.75	-9.50	0.00	-152.15	0.00	152.15	1187.19	282.66	510.56	522.73	63.34	-6.228	0.000	0.296
98.00	-3.96	-8.34	0.00	-133.14	0.00	133.14	1165.28	277.45	491.89	503.51	65.96	-6.305	0.000	0.269
100.00	-3.82	-7.95	0.00	-116.45	0.00	116.45	1143.37	272.23	473.57	484.64	68.62	-6.377	0.000	0.244
102.00	-3.51	-7.57	0.00	-100.56	0.00	100.56	1121.46	267.01	455.59	466.14	71.30	-6.443	0.000	0.220
105.00	-3.35	-7.36	0.00	-77.84	0.00	77.84	1088.60	259.19	429.28	439.06	75.37	-6.530	0.000	0.181
110.00	-3.11	-7.00	0.00	-41.06	0.00	41.06	1033.83	246.15	387.17	395.73	82.25	-6.634	0.000	0.108
115.00	-0.21	-0.48	0.00	-2.53	0.00	2.53	979.05	233.11	347.23	354.65	89.22	-6.683	0.000	0.007
120.00	0.00	-0.45	0.00	-0.16	0.00	0.16	924.28	220.07	309.47	315.82	96.20	-6.686	0.000	0.000

Wind Loading - Shaft

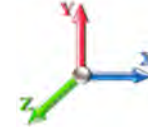
Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 60 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.203	7.92	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.203	7.92	0.00	1.200	0.828	5.00	17.729	21.27	168.6	213.6	1178.2
10.00		1.00	0.85	7.203	7.92	0.00	1.200	0.887	5.00	17.347	20.82	164.9	223.5	1163.4
15.00		1.00	0.85	7.203	7.92	0.00	1.200	0.924	5.00	16.946	20.34	161.1	227.0	1142.2
20.00		1.00	0.90	7.643	8.41	0.00	1.200	0.951	5.00	16.537	19.84	166.8	227.6	1118.2
25.00		1.00	0.95	8.011	8.81	0.00	1.200	0.973	5.00	16.124	19.35	170.5	226.6	1092.5
30.00		1.00	0.98	8.324	9.16	0.00	1.200	0.991	5.00	15.708	18.85	172.6	224.4	1065.7
35.00	Bot - Section 2	1.00	1.01	8.599	9.46	0.00	1.200	1.006	5.00	15.289	18.35	173.5	221.5	1038.1
40.00	Top - Section 1	1.00	1.04	8.844	9.73	0.00	1.200	1.019	5.00	15.138	18.17	176.7	222.1	1688.2
45.00		1.00	1.07	9.066	9.97	0.00	1.200	1.032	5.00	14.717	17.66	176.1	218.1	871.7
50.00		1.00	1.09	9.269	10.20	0.00	1.200	1.042	5.00	14.295	17.15	174.9	213.7	846.8
55.00		1.00	1.12	9.457	10.40	0.00	1.200	1.052	5.00	13.872	16.65	173.2	209.0	821.5
60.00		1.00	1.14	9.632	10.60	0.00	1.200	1.062	5.00	13.448	16.14	171.0	204.0	796.0
65.00		1.00	1.16	9.796	10.78	0.00	1.200	1.070	5.00	13.024	15.63	168.4	198.8	770.2
70.00		1.00	1.17	9.950	10.94	0.00	1.200	1.078	5.00	12.599	15.12	165.5	193.3	744.2
71.00	Bot - Section 3	1.00	1.18	9.980	10.98	0.00	1.200	1.080	1.00	2.468	2.96	32.5	38.4	146.1
75.00	Top - Section 2	1.00	1.19	10.095	11.10	0.00	1.200	1.086	4.00	9.877	11.85	131.6	153.0	921.0
80.00		1.00	1.21	10.234	11.26	0.00	1.200	1.093	5.00	11.964	14.36	161.6	185.4	602.5
85.00		1.00	1.22	10.365	11.40	0.00	1.200	1.099	5.00	11.538	13.85	157.9	179.5	580.1
87.00	Appurtenance(s)	1.00	1.23	10.416	11.46	0.00	1.200	1.102	2.00	4.495	5.39	61.8	70.8	226.5
90.00		1.00	1.24	10.490	11.54	0.00	1.200	1.106	3.00	6.616	7.94	91.6	104.0	332.6
95.00		1.00	1.25	10.611	11.67	0.00	1.200	1.112	5.00	10.686	12.82	149.7	167.1	534.9
96.00	Appurtenance(s)	1.00	1.25	10.634	11.70	0.00	1.200	1.113	1.00	2.086	2.50	29.3	33.2	104.8
98.00	Appurtenance(s)	1.00	1.26	10.680	11.75	0.00	1.200	1.115	2.00	4.120	4.94	58.1	65.3	206.5
100.00	Appurtenance(s)	1.00	1.27	10.726	11.80	0.00	1.200	1.117	2.00	4.052	4.86	57.4	64.3	202.9
102.00	Appurtenance(s)	1.00	1.27	10.771	11.85	0.00	1.200	1.119	2.00	3.984	4.78	56.6	63.3	199.2
105.00		1.00	1.28	10.836	11.92	0.00	1.200	1.123	3.00	5.848	7.02	83.6	92.6	291.6
110.00		1.00	1.29	10.943	12.04	0.00	1.200	1.128	5.00	9.405	11.29	135.9	147.8	466.2
115.00	Appurtenance(s)	1.00	1.30	11.046	12.15	0.00	1.200	1.133	5.00	8.978	10.77	130.9	141.1	443.1
120.00	Appurtenance(s)	1.00	1.32	11.145	12.26	0.00	1.200	1.138	5.00	8.551	10.26	125.8	134.4	420.0
Totals:									120.00			3,848.2		20,014.8

Discrete Appurtenance Forces

Structure: ND11779-A-SBA **Code:** EIA/TIA-222-H 9/27/2021
Site Name: Eagle Run **Exposure:** C
Height: 120.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 17



Load Case: 1.2D + 1.0Di + 1.0Wi 60 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	120.00	Beacon	1	11.145	12.260	1.00	1.00	2.40	24.38	0.000	0.000	29.43	0.00	0.00
2	120.00	Lightning Rod	1	11.213	12.334	1.00	1.00	2.60	53.48	0.000	3.500	32.04	0.00	112.13
3	115.00	Raycap DC6-48-60-18-8C	2	11.086	12.195	0.50	0.75	2.11	112.90	0.000	2.000	25.76	0.00	51.53
4	115.00	CCI HPA-65R-BUU-H6-K	3	11.086	12.195	0.62	0.75	19.66	639.40	0.000	2.000	239.76	0.00	479.51
5	115.00	Powerwave	3	11.086	12.195	0.59	0.75	17.67	370.65	0.000	2.000	215.52	0.00	431.04
6	115.00	ALU 9442 RRH AWS	3	11.086	12.195	0.50	0.75	4.28	220.63	0.000	2.000	52.23	0.00	104.47
7	115.00	ALU B66A RRH4x45	3	11.086	12.195	0.50	0.75	4.49	354.68	0.000	2.000	54.71	0.00	109.42
8	115.00	Powerwave	6	11.086	12.195	0.45	0.75	2.38	159.23	0.000	2.000	29.00	0.00	58.00
9	115.00	Alcatel-Lucent	3	11.046	12.151	0.66	0.75	6.63	359.21	0.000	0.000	80.52	0.00	0.00
10	115.00	KMW EPBQ-654L8H6-L2	6	11.046	12.151	0.63	0.75	34.38	1319.21	0.000	0.000	417.79	0.00	0.00
11	115.00	AirScale Dual RRH 4T4R	3	11.046	12.151	0.73	0.75	10.78	688.71	0.000	0.000	130.94	0.00	0.00
12	115.00	AirScale Dual RRH 4T4R	3	11.046	12.151	0.60	0.75	5.48	466.60	0.000	0.000	66.57	0.00	0.00
13	115.00	AirScale RRH 4T4R B5	3	11.046	12.151	0.64	0.75	3.22	157.78	0.000	0.000	39.11	0.00	0.00
14	115.00	DC6-48-60-0-8C	2	11.046	12.151	1.00	1.00	10.71	139.45	0.000	0.000	130.11	0.00	0.00
15	115.00	Platform w/ Hand Rails	1	11.046	12.151	1.00	1.00	50.13	2683.19	0.000	0.000	609.08	0.00	0.00
16	102.00	Site Pro UGLM-DAC	1	10.771	11.848	1.00	1.00	7.24	234.34	0.000	0.000	85.76	0.00	0.00
17	100.00	RxxDC-3315-Raycap	2	10.726	11.798	1.00	1.00	6.91	141.40	0.000	0.000	81.56	0.00	0.00
18	98.00	Ericsson RRUS B13 A2	3	10.680	11.748	0.60	0.90	4.49	114.93	0.000	0.000	52.75	0.00	0.00
19	98.00	Ericsson RRUS32 B66	3	10.680	11.748	0.60	0.90	5.78	370.46	0.000	0.000	67.86	0.00	0.00
20	98.00	Ericsson RRUS12 B13	3	10.680	11.748	0.60	0.90	5.65	297.35	0.000	0.000	66.34	0.00	0.00
21	98.00	Ericsson RRUS32 B4	3	10.680	11.748	0.60	0.90	5.78	370.46	0.000	0.000	67.86	0.00	0.00
22	98.00	Site Pro UGLM-DAC	1	10.680	11.748	1.00	1.00	7.23	233.80	0.000	0.000	84.94	0.00	0.00
23	96.00	Commscope	6	10.634	11.697	0.64	0.75	47.98	1356.78	0.000	0.000	561.23	0.00	0.00
24	96.00	Antel	3	10.634	11.697	0.65	0.75	19.90	258.10	0.000	0.000	232.72	0.00	0.00
25	96.00	Platform w/ Hand Rails	1	10.634	11.697	1.00	1.00	53.35	3135.23	0.000	0.000	624.08	0.00	0.00
26	87.00	C10801018-32788	1	10.416	11.457	1.00	1.00	76.09	2764.97	0.000	0.000	871.79	0.00	0.00
27	87.00	RDIDC-9181-OF-48	1	10.416	11.457	1.00	1.00	2.37	47.20	0.000	0.000	27.14	0.00	0.00
28	87.00	TA08025-B604	3	10.416	11.457	0.50	0.75	3.49	289.63	0.000	0.000	39.97	0.00	0.00
29	87.00	TA08025-B605	3	10.416	11.457	0.50	0.75	3.49	331.26	0.000	0.000	39.97	0.00	0.00
30	87.00	MX08FRO665-21	3	10.416	11.457	0.55	0.75	22.34	581.50	0.000	0.000	255.91	0.00	0.00
Totals:								18,276.92				5,312.44		

Total Applied Force Summary

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



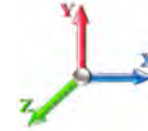
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Load Case: 1.2D + 1.0Di + 1.0Wi 60 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 24



Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		168.58	1189.09	0.00	0.00
10.00		164.95	1230.04	0.00	0.00
15.00		161.14	1245.98	0.00	0.00
20.00		166.85	1221.95	0.00	0.00
25.00		170.50	1196.26	0.00	0.00
30.00		172.60	1169.47	0.00	0.00
35.00		173.54	1141.88	0.00	0.00
40.00		176.73	1791.92	0.00	0.00
45.00		176.12	975.42	0.00	0.00
50.00		174.91	950.50	0.00	0.00
55.00		173.17	925.24	0.00	0.00
60.00		170.99	899.71	0.00	0.00
65.00		168.41	873.92	0.00	0.00
70.00		165.48	847.92	0.00	0.00
71.00		32.52	166.90	0.00	0.00
75.00		131.62	1004.03	0.00	0.00
80.00		161.62	706.20	0.00	0.00
85.00		157.87	683.81	0.00	0.00
87.00	(11) attachments	1296.58	4282.51	0.00	0.00
90.00		91.61	388.25	0.00	0.00
95.00		149.67	627.71	0.00	0.00
96.00	(10) attachments	1447.30	4873.44	0.00	0.00
98.00	(13) attachments	397.83	1630.65	0.00	0.00
100.00	(2) attachments	138.93	366.42	0.00	0.00
102.00	(1) attachments	142.40	450.42	0.00	0.00
105.00		83.65	316.87	0.00	0.00
110.00		135.86	508.41	0.00	0.00
115.00	(41) attachments	2222.01	8156.98	0.00	1233.97
120.00	(2) attachments	187.26	497.83	0.00	112.13
Totals:		9,160.66	40,319.72	0.00	1,346.10

Calculated Forces

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 60 mph Wind

Iterations 24

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-40.31	-9.20	0.00	-835.50	0.00	835.50	3061.21	775.12	2559.53	2469.17	0.00	0.000	0.000	0.352
5.00	-39.10	-9.12	0.00	-789.48	0.00	789.48	3012.97	755.56	2431.97	2368.35	0.06	-0.121	0.000	0.346
10.00	-37.85	-9.03	0.00	-743.90	0.00	743.90	2963.22	736.00	2307.67	2268.36	0.26	-0.243	0.000	0.341
15.00	-36.59	-8.94	0.00	-698.75	0.00	698.75	2911.98	716.44	2186.63	2169.30	0.58	-0.368	0.000	0.335
20.00	-35.35	-8.85	0.00	-654.04	0.00	654.04	2859.23	696.88	2068.86	2071.26	1.03	-0.495	0.000	0.328
25.00	-34.13	-8.74	0.00	-609.81	0.00	609.81	2804.97	677.32	1954.34	1974.33	1.62	-0.624	0.000	0.321
30.00	-32.95	-8.63	0.00	-566.11	0.00	566.11	2749.22	657.76	1843.09	1878.60	2.34	-0.755	0.000	0.314
35.00	-31.79	-8.51	0.00	-522.96	0.00	522.96	2680.41	638.19	1735.09	1776.51	3.21	-0.887	0.000	0.306
40.00	-29.98	-8.38	0.00	-480.39	0.00	480.39	2097.43	526.73	1418.34	1379.29	4.21	-1.021	0.000	0.363
45.00	-28.99	-8.25	0.00	-438.51	0.00	438.51	2056.04	510.43	1331.91	1309.83	5.35	-1.155	0.000	0.349
50.00	-28.02	-8.13	0.00	-397.23	0.00	397.23	2013.15	494.13	1248.20	1241.14	6.64	-1.305	0.000	0.334
55.00	-27.08	-8.01	0.00	-356.57	0.00	356.57	1968.75	477.83	1167.20	1173.32	8.09	-1.455	0.000	0.318
60.00	-26.16	-7.88	0.00	-316.53	0.00	316.53	1922.85	461.53	1088.92	1106.46	9.69	-1.603	0.000	0.300
65.00	-25.27	-7.75	0.00	-277.13	0.00	277.13	1869.96	445.23	1013.36	1037.60	11.45	-1.748	0.000	0.281
70.00	-24.42	-7.59	0.00	-238.39	0.00	238.39	1801.49	428.93	940.51	962.60	13.35	-1.888	0.000	0.262
71.00	-24.25	-7.58	0.00	-230.80	0.00	230.80	1787.80	425.67	926.27	947.94	13.75	-1.917	0.000	0.257
75.00	-23.23	-7.46	0.00	-200.46	0.00	200.46	1343.17	337.44	727.60	707.32	15.40	-2.024	0.000	0.301
80.00	-22.52	-7.33	0.00	-163.14	0.00	163.14	1309.94	324.39	672.44	662.90	17.59	-2.148	0.000	0.264
85.00	-21.83	-7.18	0.00	-126.51	0.00	126.51	1275.21	311.35	619.46	619.13	19.91	-2.279	0.000	0.222
87.00	-17.60	-5.73	0.00	-112.15	0.00	112.15	1260.90	306.14	598.88	601.82	20.88	-2.327	0.000	0.201
90.00	-17.20	-5.64	0.00	-94.97	0.00	94.97	1238.98	298.31	568.66	576.08	22.36	-2.394	0.000	0.179
95.00	-16.58	-5.48	0.00	-66.76	0.00	66.76	1198.14	285.27	520.03	532.48	24.92	-2.487	0.000	0.140
96.00	-11.77	-3.83	0.00	-61.28	0.00	61.28	1187.19	282.66	510.56	522.73	25.44	-2.504	0.000	0.127
98.00	-10.16	-3.37	0.00	-53.62	0.00	53.62	1165.28	277.45	491.89	503.51	26.50	-2.535	0.000	0.115
100.00	-9.80	-3.22	0.00	-46.89	0.00	46.89	1143.37	272.23	473.57	484.64	27.57	-2.564	0.000	0.105
102.00	-9.35	-3.06	0.00	-40.46	0.00	40.46	1121.46	267.01	455.59	466.14	28.65	-2.591	0.000	0.095
105.00	-9.04	-2.97	0.00	-31.28	0.00	31.28	1088.60	259.19	429.28	439.06	30.29	-2.626	0.000	0.080
110.00	-8.53	-2.81	0.00	-16.45	0.00	16.45	1033.83	246.15	387.17	395.73	33.06	-2.668	0.000	0.050
115.00	-0.49	-0.21	0.00	-1.16	0.00	1.16	979.05	233.11	347.23	354.65	35.87	-2.687	0.000	0.004
120.00	0.00	-0.19	0.00	-0.11	0.00	0.11	924.28	220.07	309.47	315.82	38.68	-2.689	0.000	0.000

Wind Loading - Shaft

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



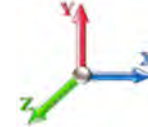
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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

Dead Load Factor 1.00

Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	6.445	7.09	187.81	0.950	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	6.445	7.09	183.12	0.950	0.000	5.00	17.039	16.19	114.8	0.0	803.8
10.00		1.00	0.85	6.445	7.09	178.42	0.950	0.000	5.00	16.608	15.78	111.9	0.0	783.3
15.00		1.00	0.85	6.445	7.09	173.73	0.950	0.000	5.00	16.176	15.37	109.0	0.0	762.7
20.00		1.00	0.90	6.839	7.52	174.11	0.950	0.000	5.00	15.745	14.96	112.5	0.0	742.2
25.00		1.00	0.95	7.168	7.88	173.30	0.950	0.000	5.00	15.313	14.55	114.7	0.0	721.6
30.00		1.00	0.98	7.448	8.19	171.61	0.950	0.000	5.00	14.882	14.14	115.8	0.0	701.1
35.00	Bot - Section 2	1.00	1.01	7.694	8.46	169.29	0.950	0.000	5.00	14.451	13.73	116.2	0.0	680.5
40.00	Top - Section 1	1.00	1.04	7.913	8.70	166.48	0.950	0.000	5.00	14.289	13.57	118.2	0.0	1221.7
45.00		1.00	1.07	8.112	8.92	166.58	0.950	0.000	5.00	13.858	13.16	117.5	0.0	544.6
50.00		1.00	1.09	8.294	9.12	163.12	0.950	0.000	5.00	13.426	12.75	116.4	0.0	527.5
55.00		1.00	1.12	8.462	9.31	159.38	0.950	0.000	5.00	12.995	12.35	114.9	0.0	510.4
60.00		1.00	1.14	8.618	9.48	155.42	0.950	0.000	5.00	12.564	11.94	113.1	0.0	493.3
65.00		1.00	1.16	8.765	9.64	151.26	0.950	0.000	5.00	12.132	11.53	111.1	0.0	476.2
70.00		1.00	1.17	8.902	9.79	146.92	0.950	0.000	5.00	11.701	11.12	108.9	0.0	459.0
71.00	Bot - Section 3	1.00	1.18	8.929	9.82	146.04	0.950	0.000	1.00	2.288	2.17	21.4	0.0	89.8
75.00	Top - Section 2	1.00	1.19	9.033	9.94	142.44	0.950	0.000	4.00	9.154	8.70	86.4	0.0	640.1
80.00		1.00	1.21	9.156	10.07	140.61	0.950	0.000	5.00	11.054	10.50	105.8	0.0	347.5
85.00		1.00	1.22	9.274	10.20	135.88	0.950	0.000	5.00	10.622	10.09	102.9	0.0	333.8
87.00	Appurtenance(s)	1.00	1.23	9.319	10.25	133.95	0.950	0.000	2.00	4.128	3.92	40.2	0.0	129.7
90.00		1.00	1.24	9.386	10.32	131.03	0.950	0.000	3.00	6.063	5.76	59.5	0.0	190.4
95.00		1.00	1.25	9.494	10.44	126.08	0.950	0.000	5.00	9.760	9.27	96.8	0.0	306.5
96.00	Appurtenance(s)	1.00	1.25	9.515	10.47	125.08	0.950	0.000	1.00	1.900	1.81	18.9	0.0	59.6
98.00	Appurtenance(s)	1.00	1.26	9.556	10.51	123.06	0.950	0.000	2.00	3.749	3.56	37.4	0.0	117.7
100.00	Appurtenance(s)	1.00	1.27	9.597	10.56	121.03	0.950	0.000	2.00	3.680	3.50	36.9	0.0	115.5
102.00	Appurtenance(s)	1.00	1.27	9.637	10.60	118.99	0.950	0.000	2.00	3.611	3.43	36.4	0.0	113.3
105.00		1.00	1.28	9.696	10.67	115.90	0.950	0.000	3.00	5.286	5.02	53.6	0.0	165.8
110.00		1.00	1.29	9.791	10.77	110.68	0.950	0.000	5.00	8.466	8.04	86.6	0.0	265.4
115.00	Appurtenance(s)	1.00	1.30	9.883	10.87	105.38	0.950	0.000	5.00	8.034	7.63	83.0	0.0	251.7
120.00	Appurtenance(s)	1.00	1.32	9.972	10.97	100.02	0.950	0.000	5.00	7.603	7.22	79.2	0.0	238.0
Totals:									120.00			2,539.7		12,792.5

Discrete Appurtenance Forces

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 21



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	120.00	Beacon	1	9.972	10.969	1.00	1.00	2.40	15.00	0.000	0.000	26.33	0.00	0.00
2	120.00	Lightning Rod	1	10.033	11.036	1.00	1.00	1.05	35.00	0.000	3.500	11.59	0.00	40.56
3	115.00	Raycap DC6-48-60-18-8C	2	9.919	10.911	0.50	0.75	1.16	64.00	0.000	2.000	12.61	0.00	25.22
4	115.00	CCI HPA-65R-BUU-H6-K	3	9.919	10.911	0.62	0.75	18.04	153.00	0.000	2.000	196.84	0.00	393.67
5	115.00	Powerwave	3	9.919	10.911	0.59	0.75	14.45	159.00	0.000	2.000	157.68	0.00	315.36
6	115.00	ALU 9442 RRH AWS	3	9.919	10.911	0.50	0.75	3.26	129.00	0.000	2.000	35.53	0.00	71.06
7	115.00	ALU B66A RRH4x45	3	9.919	10.911	0.50	0.75	3.83	170.40	0.000	2.000	41.78	0.00	83.56
8	115.00	Powerwave	6	9.919	10.911	0.45	0.75	1.48	96.00	0.000	2.000	16.20	0.00	32.41
9	115.00	Alcatel-Lucent	3	9.883	10.872	0.66	0.75	5.74	210.00	0.000	0.000	62.42	0.00	0.00
10	115.00	KMW EPBQ-654L8H6-L2	6	9.883	10.872	0.63	0.75	33.34	468.00	0.000	0.000	362.45	0.00	0.00
11	115.00	AirScale Dual RRH 4T4R	3	9.883	10.872	0.73	0.75	8.03	304.20	0.000	0.000	87.32	0.00	0.00
12	115.00	AirScale Dual RRH 4T4R	3	9.883	10.872	0.60	0.75	6.62	264.54	0.000	0.000	72.01	0.00	0.00
13	115.00	AirScale RRH 4T4R B5	3	9.883	10.872	0.64	0.75	2.45	110.46	0.000	0.000	26.61	0.00	0.00
14	115.00	DC6-48-60-0-8C	2	9.883	10.872	1.00	1.00	9.56	32.00	0.000	0.000	103.93	0.00	0.00
15	115.00	Platform w/ Hand Rails	1	9.883	10.872	1.00	1.00	32.00	1600.00	0.000	0.000	347.89	0.00	0.00
16	102.00	Site Pro UGLM-DAC	1	9.637	10.600	1.00	1.00	5.00	250.00	0.000	0.000	53.00	0.00	0.00
17	100.00	RxxDC-3315-Raycap	2	9.597	10.556	1.00	1.00	6.02	64.00	0.000	0.000	63.55	0.00	0.00
18	98.00	Ericsson RRUS B13 A2	3	9.556	10.512	0.60	0.90	3.36	63.60	0.000	0.000	35.37	0.00	0.00
19	98.00	Ericsson RRUS32 B66	3	9.556	10.512	0.60	0.90	4.96	180.00	0.000	0.000	52.10	0.00	0.00
20	98.00	Ericsson RRUS12 B13	3	9.556	10.512	0.60	0.90	4.88	180.00	0.000	0.000	51.34	0.00	0.00
21	98.00	Ericsson RRUS32 B4	3	9.556	10.512	0.60	0.90	4.96	180.00	0.000	0.000	52.10	0.00	0.00
22	98.00	Site Pro UGLM-DAC	1	9.556	10.512	1.00	1.00	5.00	250.00	0.000	0.000	52.56	0.00	0.00
23	96.00	Commscope	6	9.515	10.466	0.64	0.75	43.87	343.80	0.000	0.000	459.17	0.00	0.00
24	96.00	Antel	3	9.515	10.466	0.65	0.75	16.05	69.00	0.000	0.000	168.00	0.00	0.00
25	96.00	Platform w/ Hand Rails	1	9.515	10.466	1.00	1.00	40.00	2000.00	0.000	0.000	418.64	0.00	0.00
26	87.00	C10801018-32788	1	9.319	10.251	1.00	1.00	42.43	1727.00	0.000	0.000	434.97	0.00	0.00
27	87.00	RDIDC-9181-OF-48	1	9.319	10.251	1.00	1.00	2.01	21.90	0.000	0.000	20.61	0.00	0.00
28	87.00	TA08025-B604	3	9.319	10.251	0.50	0.75	2.95	191.70	0.000	0.000	30.29	0.00	0.00
29	87.00	TA08025-B605	3	9.319	10.251	0.50	0.75	2.95	225.00	0.000	0.000	30.29	0.00	0.00
30	87.00	MX08FRO665-21	3	9.319	10.251	0.55	0.75	20.80	193.50	0.000	0.000	213.19	0.00	0.00
Totals:									9,750.10			3,696.37		

Total Applied Force Summary

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021	
Site Name: Eagle Run	Exposure: C		
Height: 120.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 22

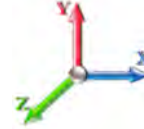


Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 23



Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		114.76	812.89	0.00	0.00
10.00		111.86	838.76	0.00	0.00
15.00		108.95	849.16	0.00	0.00
20.00		112.52	828.61	0.00	0.00
25.00		114.70	808.07	0.00	0.00
30.00		115.83	787.52	0.00	0.00
35.00		116.18	766.98	0.00	0.00
40.00		118.16	1308.19	0.00	0.00
45.00		117.47	631.09	0.00	0.00
50.00		116.36	613.97	0.00	0.00
55.00		114.91	596.85	0.00	0.00
60.00		113.15	579.73	0.00	0.00
65.00		111.12	562.61	0.00	0.00
70.00		108.85	545.49	0.00	0.00
71.00		21.35	107.04	0.00	0.00
75.00		86.40	709.22	0.00	0.00
80.00		105.77	433.99	0.00	0.00
85.00		102.94	420.29	0.00	0.00
87.00	(11) attachments	769.54	2523.38	0.00	0.00
90.00		59.47	236.86	0.00	0.00
95.00		96.82	383.80	0.00	0.00
96.00	(10) attachments	1064.70	2487.92	0.00	0.00
98.00	(13) attachments	280.91	1002.19	0.00	0.00
100.00	(2) attachments	100.45	197.92	0.00	0.00
102.00	(1) attachments	89.36	377.33	0.00	0.00
105.00		53.56	186.88	0.00	0.00
110.00		86.62	300.51	0.00	0.00
115.00	(41) attachments	1606.26	4047.42	0.00	921.27
120.00	(2) attachments	117.14	287.97	0.00	40.56
Totals:		6,236.12	24,232.63	0.00	961.83

Calculated Forces

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

Dead Load Factor 1.00

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-24.23	-6.25	0.00	-553.05	0.00	553.05	3061.21	775.12	2559.53	2469.17	0.00	0.000	0.000	0.232
5.00	-23.41	-6.17	0.00	-521.79	0.00	521.79	3012.97	755.56	2431.97	2368.35	0.04	-0.080	0.000	0.228
10.00	-22.56	-6.09	0.00	-490.94	0.00	490.94	2963.22	736.00	2307.67	2268.36	0.17	-0.161	0.000	0.224
15.00	-21.70	-6.01	0.00	-460.49	0.00	460.49	2911.98	716.44	2186.63	2169.30	0.38	-0.243	0.000	0.220
20.00	-20.87	-5.92	0.00	-430.45	0.00	430.45	2859.23	696.88	2068.86	2071.26	0.68	-0.327	0.000	0.215
25.00	-20.05	-5.83	0.00	-400.84	0.00	400.84	2804.97	677.32	1954.34	1974.33	1.07	-0.412	0.000	0.210
30.00	-19.25	-5.74	0.00	-371.67	0.00	371.67	2749.22	657.76	1843.09	1878.60	1.55	-0.498	0.000	0.205
35.00	-18.48	-5.64	0.00	-342.98	0.00	342.98	2680.41	638.19	1735.09	1776.51	2.11	-0.584	0.000	0.200
40.00	-17.16	-5.54	0.00	-314.76	0.00	314.76	2097.43	526.73	1418.34	1379.29	2.77	-0.672	0.000	0.236
45.00	-16.53	-5.44	0.00	-287.07	0.00	287.07	2056.04	510.43	1331.91	1309.83	3.52	-0.760	0.000	0.227
50.00	-15.90	-5.34	0.00	-259.87	0.00	259.87	2013.15	494.13	1248.20	1241.14	4.37	-0.858	0.000	0.217
55.00	-15.30	-5.24	0.00	-233.16	0.00	233.16	1968.75	477.83	1167.20	1173.32	5.33	-0.956	0.000	0.207
60.00	-14.71	-5.14	0.00	-206.95	0.00	206.95	1922.85	461.53	1088.92	1106.46	6.38	-1.053	0.000	0.195
65.00	-14.15	-5.05	0.00	-181.22	0.00	181.22	1869.96	445.23	1013.36	1037.60	7.53	-1.148	0.000	0.182
70.00	-13.60	-4.94	0.00	-155.99	0.00	155.99	1801.49	428.93	940.51	962.60	8.78	-1.239	0.000	0.170
71.00	-13.49	-4.93	0.00	-151.05	0.00	151.05	1787.80	425.67	926.27	947.94	9.05	-1.258	0.000	0.167
75.00	-12.77	-4.84	0.00	-131.35	0.00	131.35	1343.17	337.44	727.60	707.32	10.13	-1.328	0.000	0.195
80.00	-12.34	-4.74	0.00	-107.15	0.00	107.15	1309.94	324.39	672.44	662.90	11.57	-1.410	0.000	0.171
85.00	-11.91	-4.64	0.00	-83.44	0.00	83.44	1275.21	311.35	619.46	619.13	13.09	-1.496	0.000	0.144
87.00	-9.41	-3.81	0.00	-74.16	0.00	74.16	1260.90	306.14	598.88	601.82	13.72	-1.528	0.000	0.131
90.00	-9.17	-3.75	0.00	-62.73	0.00	62.73	1238.98	298.31	568.66	576.08	14.70	-1.572	0.000	0.116
95.00	-8.79	-3.65	0.00	-43.96	0.00	43.96	1198.14	285.27	520.03	532.48	16.38	-1.633	0.000	0.090
96.00	-6.33	-2.52	0.00	-40.31	0.00	40.31	1187.19	282.66	510.56	522.73	16.72	-1.644	0.000	0.083
98.00	-5.34	-2.21	0.00	-35.27	0.00	35.27	1165.28	277.45	491.89	503.51	17.42	-1.665	0.000	0.075
100.00	-5.14	-2.11	0.00	-30.85	0.00	30.85	1143.37	272.23	473.57	484.64	18.12	-1.684	0.000	0.068
102.00	-4.76	-2.01	0.00	-26.64	0.00	26.64	1121.46	267.01	455.59	466.14	18.83	-1.701	0.000	0.061
105.00	-4.58	-1.95	0.00	-20.62	0.00	20.62	1088.60	259.19	429.28	439.06	19.90	-1.724	0.000	0.051
110.00	-4.28	-1.86	0.00	-10.87	0.00	10.87	1033.83	246.15	387.17	395.73	21.73	-1.752	0.000	0.032
115.00	-0.28	-0.13	0.00	-0.67	0.00	0.67	979.05	233.11	347.23	354.65	23.57	-1.765	0.000	0.002
120.00	0.00	-0.12	0.00	-0.04	0.00	0.04	924.28	220.07	309.47	315.82	25.42	-1.766	0.000	0.000

Final Analysis Summary

Structure: ND11779-A-SBA	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.0W 111 mph Wind	23.9	0.00	29.01	0.00	0.00	2129.81
0.9D + 1.0W 111 mph Wind	23.9	0.00	21.74	0.00	0.00	2102.14
1.2D + 1.0Di + 1.0Wi 60 mph Wind	9.2	0.00	40.31	0.00	0.00	835.50
1.0D + 1.0W 60 mph Wind	6.3	0.00	24.23	0.00	0.00	553.05

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.0W 111 mph Wind	-19.67	-21.34	0.00	-1214.7	0.00	-1214.7	2097.43	526.73	1418.34	1379.29	40.00	0.892
0.9D + 1.0W 111 mph Wind	-14.53	-21.07	0.00	-1192.7	0.00	-1192.7	2097.43	526.73	1418.34	1379.29	40.00	0.873
1.2D + 1.0Di + 1.0Wi 60 mph Wind	-29.98	-8.38	0.00	-480.39	0.00	-480.39	2097.43	526.73	1418.34	1379.29	40.00	0.363
1.0D + 1.0W 60 mph Wind	-17.16	-5.54	0.00	-314.76	0.00	-314.76	2097.43	526.73	1418.34	1379.29	40.00	0.236

Base Plate Summary

Structure: ND11779-A-SB	Code: EIA/TIA-222-H	9/27/2021
Site Name: Eagle Run	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
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Reactions	Base Plate		Anchor Bolts	
Original Design	Yield (ksi):	50.00	Bolt Circle:	48.00
Moment (kip-ft): 1758.00	Width (in):	55.00	Number Bolts:	12.00
Axial (kip): 22.00	Style:	Polygon	Bolt Type:	2.25" 18J
Shear (kip): 22.00	Polygon Sides:	12.00	Bolt Diameter (in):	2.25
Analysis (1.2D + 1.0W)	Clip Length (in):	0.00	Yield (ksi):	75.00
Moment (kip-ft): 2129.81	Effective Len (in):	25.89	Ultimate (ksi):	100.00
Axial (kip): 29.01	Moment (kip-in):	723.37	Arrangement:	Radial
Shear (kip): 23.93	Allow Stress (ksi):	67.50	Cluster Dist (in):	0.00
	Applied Stress (ksi):	41.85	Start Angle (deg):	0.00
	Stress Ratio:	0.62	Compression	
			Force (kip):	180.84
			Allowable (kip):	268.39
			Ratio:	0.67
			Tension	
			Force (kip):	174.13
			Allowable (kip):	243.75
			Ratio:	0.71

	Monopole Mat Foundation Design		Date	
			9/27/2021	
	Customer Name:	Dish Wireless	EIA/TIA Standard:	EIA-222-H
	Site Name:		Structure Height (Ft.):	120
	Site Number:	ND11779-A-SBA	Engineer Name:	M. Franco
	Engr. Number:	116634	Engineer Login ID:	

Foundation Info Obtained from:

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	29.0	Shear Force (Kips):	23.9
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2129.8

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	5.5	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	2.50
Length of Pad (ft.):	22	Width of Pad (ft.):	22

Final Length of pad (ft)	22.0	Final width of pad (ft):	22.0
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Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	28	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	23	Qty. of Rebar in Pad (W):	23
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Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	23	Qty. of Rebar in Pad (W):	23
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Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

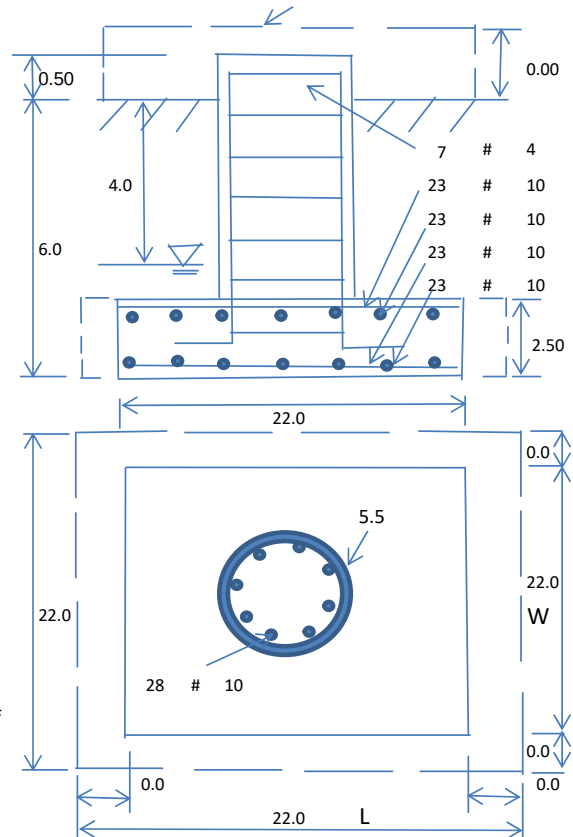
Soil Unit Weight (pcf):	110.0	Soil Buoyant Weight:	37.6	Pcf
Water Table B.G.S. (ft):	4.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	6600	Ultimate Skin Friction:	0	Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No	
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00	
		Angle from Top of Pad:	30	
		Angle from Botm of Pad:	25	
		Angle from Botm of Pad:	25	

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	1610.85	Total Dry Soil Weight (Kips):	177.19
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	177.19	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	337.03	Total Dry Concrete Weight (Kips):	50.55
Total Buoyant Concrete Volume (cu. Ft.):	968.00	Total Buoyant Concrete Weight (Kips):	84.80
Total Effective Concrete Weight (Kips):	135.35	Total Vertical Load on Base (Kips):	341.54

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	2459	<	Allowable Factored Soil Bearing (psf):	4950	0.50	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	3413.2	>	Design Factored Momont (kips-ft):	2191	0.64	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.56					OK!



Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00

Load/
Capacity
Ratio**(1) Concrete Pier:**

Vertical Steel Rebar Area (sq. in./each):	1.27	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	4434.2	> Design Factored Moment (Mu, Kips-F	2225.4	0.50	OK!
Calculated Shear Capacity (Kips):	430.2	> Design Factored Shear (Kips):	23.9	0.06	OK!
Calculated Tension Capacity (Tn, Kips):	1920.2	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	5985.8	> Design Factored Axial Load (Pu Kips):	29.0	0.00	OK!
Moment & Axial Strength Combination:	0.50	OK! Check Tie Spacing (Design/Required):	1		OK!
Pier Reinforcement Ratio:	0.010	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	660.6	> One-Way Factored Shear (L-D. Kips):	183.2	0.28	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	660.6	> One-Way Factored Shear (W-D., Kips)	183.2	0.28	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	637.1	> One-Way Factored Shear (C-C, Kips):	178.4	0.28	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0042	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0042		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	3338.5	> Moment at Bottom (L-Dir. K-Ft):	898.3	0.27	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	3338.5	> Moment at Bottom (W-Dir. K-Ft):	898.3	0.27	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	4682.4	> Moment at Bottom (C-C Dir. K-Ft):	1270.4	0.27	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0042	OK! Upper Steel Reinf. Ratio (W-Dir.):	0.0042		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	3338.5	> Moment at the top (L-Dir K-Ft):	308.7	0.09	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	3338.5	> Moment at the top (W-Dir K-Ft):	308.7	0.09	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	4682.4	> Moment at the top (C-C Dir. K-Ft):	288.6	0.06	OK!

(3).Check Punching Shear Capacity due to Moment in the Pier:

Moment transferred by punching shear:	851.9	k-ft.	Max. factored shear stress $v_{u,CD}$:	5.3	Psi
Max. factored shear stress $v_{u,AB}$:	11.2	Psi	Factored shear Strength ϕv_n :	189.7	Psi
Max. factored shear stress v_u :	11.2	Psi	Check Usage of Punching Shear Capacity:	0.06	OK!

(4).Check Bending Capacity of the Pad Within the Effective Slab Width:

Overturning moment to be transferred by flexure:	638.9	k-ft.	Effective Width for resisting OT moment:	13.0	ft.
Calculated number of Rebar in Effective width:	14		Actual number of Rebar in Effective width:	13	
Steel Pad Moment Capacity (L-Direc. Kips-ft):	1890.2	k-ft.	Check Usage of the Flexure Capacity:	0.34	OK!

**APPLICATION FOR A LOCAL PERMIT OR RESTRICTED EVENT PERMIT**

NORTH DAKOTA OFFICE OF ATTORNEY GENERAL

LICENSING SECTION

SFN 9338 (04-2020)

NOV - 3 2021

Applying for (check one)	
☒ Local Permit	☐ Restricted Event Permit*

Games to be Conducted							
☐ Bingo	☒ Raffle	☐ Raffle Board	☐ Calendar Raffle	☐ Sports Pool	☐ Poker*	☐ Twenty-One*	☐ Paddlewheels*

Poker, Twenty-One, and Paddlewheels may be conducted **Only** with a Restricted Event Permit. Only one permit allowed per year.

Name of Organization or Group of People permit is issued to <i>Packer Backers (West Fargo Packer Boys Hockey)</i>		Dates of Activity <i>12-17-21</i>		If raffle, provide drawing date <i>12-17-21</i>	
Organization or Group Contact Person <i>Jason Bossert</i>		Title or Position <i>President</i>		Telephone Number <i>701-306-7949</i>	
Business Address <i>4735 37th Ave N</i>		City <i>Reiles Acres</i>		State <i>ND</i>	ZIP Code <i>58102</i>
Mailing Address (if different)		City		State	ZIP Code
Site Name (where gaming will be conducted) <i>West Fargo Sports Arena</i>					
Site Address <i>520 32nd Ave W</i>		City <i>West Fargo</i>		ZIP Code <i>58078</i>	County <i>Cass</i>

Description and Retail Value of Prizes to be Awarded

Game Type	Description of Prize	Retail Value of Prize
<i>Raffle</i>	<i>\$1000 cash, \$685 in prizes, \$250 in gift cards</i>	<i>\$1935</i>
Add Row	Delete Row	

Total (limit \$40,000 per year)

Intended Uses of Gaming Proceeds <i>Funding For West Fargo Boys Hockey</i>	
Does the organization presently have a state gaming license? (If yes, the organization is not eligible for a local permit or restricted event permit and should call the Office of Attorney General at 1-800-326-9240) ☐ Yes ☒ No	
Has the organization or group received a restricted event permit from any city or county for the fiscal year July 1-June 30? (If yes, the organization or group does not qualify for a local permit or restricted event permit) ☐ Yes ☒ No	
Has the organization or group received a local permit from any city or county for the fiscal year July 1-June 30? (If yes, indicate the total retail value of all prizes previously awarded) ☒ No ☐ Yes - Total Retail Value: (This amount is part of the total prize limit of \$40,000 per year)	

Organization or Group Contact Person

Name <i>Jason Bossert</i>	Title <i>President</i>	Telephone Number <i>701-306-7949</i>	E-mail Address <i>wf.packerbackers@gmail.com</i>
Signature of Organization or Group's Top Official <i>[Signature]</i>		Title <i>President</i>	Date <i>11-3-21</i>

*\$10.00/cash
Pd 11-3-21*



GAMING SITE AUTHORIZATION
OFFICE OF ATTORNEY GENERAL
SFN 17996 (02/2018)

NOV 10 2021

G - _____ (_____)_____
Site License Number
(Attorney General Use Only)

Full, Legal Name of Gaming Organization

COMPANIONS FOR CHILDREN

The above organization is hereby authorized to conduct games of chance under the license granted by the Attorney General of the State of North Dakota at the following location

Name of Location

Buffalo Wings & Rings

Street

695 32ND AVE E

City

West Fargo

ZIP Code

58078

County

CASS

Beginning Date(s) Authorized

11/15/21 -

Ending Date(s) Authorized

06/30/2022

Number of twenty-one
tables if zero, enter "0":

Specific location where games of chance will be
conducted and played at the site (required)

BAR AREA

If conducting Raffle or Poker activity provide date(s) or month(s) of event(s) if known

RESTRICTIONS (City/County Use Only)

Days of week of gaming operations (if restricted)

Hours of gaming (if restricted)

ACTIVITY TO BE CONDUCTED Please check all applicable games to be conducted at site (required)

☐

Bingo

☐

ELECTRONIC Quick Shot Bingo

☐

Raffles

☐

ELECTRONIC 50/50 Raffle

☐

Pull Tab Jar

☐

Pull Tab Dispensing Device

☒

ELECTRONIC Pull Tab Device

☐

Club Special

☐

Tip Board

☐

Seal Board

☐

Punchboard

☐

Prize Board

☐

Prize Board Dispensing Device

☐

Sports Pools

☐

Twenty-One

☐

Poker

☐

Calcuttas

☐

Paddlewheels with Tickets

☐

Paddlewheel Table

APPROVALS

Attorney General

Date

Signature of City/County Official

Date

PRINT Name and official position of person signing on behalf of city/county above

INSTRUCTIONS:

1. City/County-Retain a **copy** of the Site Authorization for your files.
2. City/County-Return the **original** Site Authorization form to the Organization.
3. Organizations - Send the **original, signed**, Site Authorization to the Office of Attorney General with any other applicable licensing forms for final approval.

RETURN ALL DOCUMENTS TO:

Office of Attorney General
Licensing Section
600 E Boulevard Ave, Dept. 125
Bismarck, ND 58505-0040
Telephone: 701-328-2329 OR 800-326-9240

CK# 1370
Pd 11-10-21
#100



RENTAL AGREEMENT
OFFICE OF ATTORNEY GENERAL
LICENSING SECTION
SFN 9413 (Rev. 08-2019)

License Number (Office Use Only)

Site Owner (Lessor) BWR-West Fargo, Inc.		Site Name Buffalo wings& Rings		Site Phone Number (701) 838-5784
Site Address 695 32nd Ave E	City West Fargo	State ND	Zip Code 58078	County Cass
Organization (Lessee) Companions For Children		Rental Period 11/15/2021 to 06/30/2022		Monthly Rent Amount
1. Is Bingo going to be conducted at this site? 1a. If "Yes" to number 1 above, is Bingo the primary game conducted? If "Yes," enter the monthly rent amount to be paid. Then answer questions 2 - 7 but do not enter any rent amounts.				☒ No ☐ Yes ☐ No ☐ Yes \$
2. Is Twenty-One conducted at this site? Number of Tables with wagers up to \$5 ☒ Rent per Table \$ Number of Tables with wagers over \$5 ☒ Rent per Table \$				☒ No ☐ Yes \$ \$
3. Is Paddlewheels conducted at this site? Number of Tables ☒ Rent per Table \$				☒ No ☐ Yes \$
4. Is Pull Tabs involving either a jar bar, standard, or electronic dispensing device conducted at this site? Please check: ☐ Jar Bar ☐ Standard Dispensing Device				☐ No ☒ Yes \$
☒ Electronic Dispensing Device Number of Electronic Devices 2				\$ 200
Total Monthly Rent				\$ 200

5. If the only gaming activity to be conducted at this site is a raffle drawing, please check here. ☐

TERMS OF RENTAL AGREEMENT:

This RENTAL AGREEMENT is between the Owner (LESSOR) and Organization (LESSEE) that will be leasing the site to conduct games of chance.

The LESSOR agrees that no game will be directly operated as part of the lessor's business.

The LESSOR agrees that the (lessor), (lessor's) spouse, (lessor's) common household members, (management), (management's) spouse, or an employee of the lessor who is in a position to approve or deny a lease may not conduct games at any of the organization's sites and, except for officers and board of directors members who did not approve the lease, may not play games at that site. However, a bar employee may redeem a winning pull tab, pay a prize board cash prize, and award a prize board merchandise prize involving a dispensing device and sell raffle tickets or sports pool chances on a board on behalf of an organization.

The LESSOR agrees that the lessor's on call or temporary or permanent employee will not, directly or indirectly, conduct games at the site as an employee of the lessee on the same day the employee is working in the area of the bar where alcoholic beverages are dispensed or consumed.

If the LESSEE provides the Lessor with a temporary loan of funds for redeeming pull tabs or prize boards, or both, involving a dispensing device, **the Lessor agrees to repay the entire loan immediately when the lessee discontinues using the device at the site.**

The LESSOR agrees not to interfere with or attempt to influence the lessee's selection of games, determination of prizes, including a bingo jackpot prize, or disbursement of net proceeds.

The LESSOR agrees not to loan money to, provide gaming equipment to, or count drop box cash for the lessee.

The LESSOR agrees any advertising by the lessor that includes charitable gaming must include the charitable gaming organization's name.

At the LESSOR'S option, the lessee agrees that this rental agreement may be automatically terminated if the lessee's gaming license is suspended at this site for more than fourteen days or revoked.

DocuSigned by: Signature of Lessor <i>Al Hauk</i>		Title President	Date 11/8/2021
DocuSigned by: Signature of Lessee <i>Heather Cymbaluk</i>		Title Executive Director	Date 11/8/2021



City Commission Agenda Item Request

Please Note: The following information must be completed and submitted before noon on the Wednesday preceding the City Commission Meeting. Failure to comply may delay action being taken on your request.

Office Use:

Regular Agenda Item #:

Consent Agenda Item #:

Agenda Item Information:

Contact Name: *

Barb Erbstoesser

Phone Number: *

7014335360

Email Address:

barb@wfparks.org

Date *

11/8/2021

Topic for Consent or Regular Agenda?

Please select one option:

- ☒ Consent Agenda
☐ Regular Agenda

Please Briefly Describe Your Request *

Request for the City of West Fargo's sponsorship for the Special Roads Fund grant through the NDDOT for park access. Four access points total with 2 accesses from 13th Avenue West, 1 access from 12 Avenue West and 1 access at the very north side of the park Oak/Elm Street.

Site Address or Legal Description (if applicable)

500 13 Avenue West, West Fargo, ND 58078

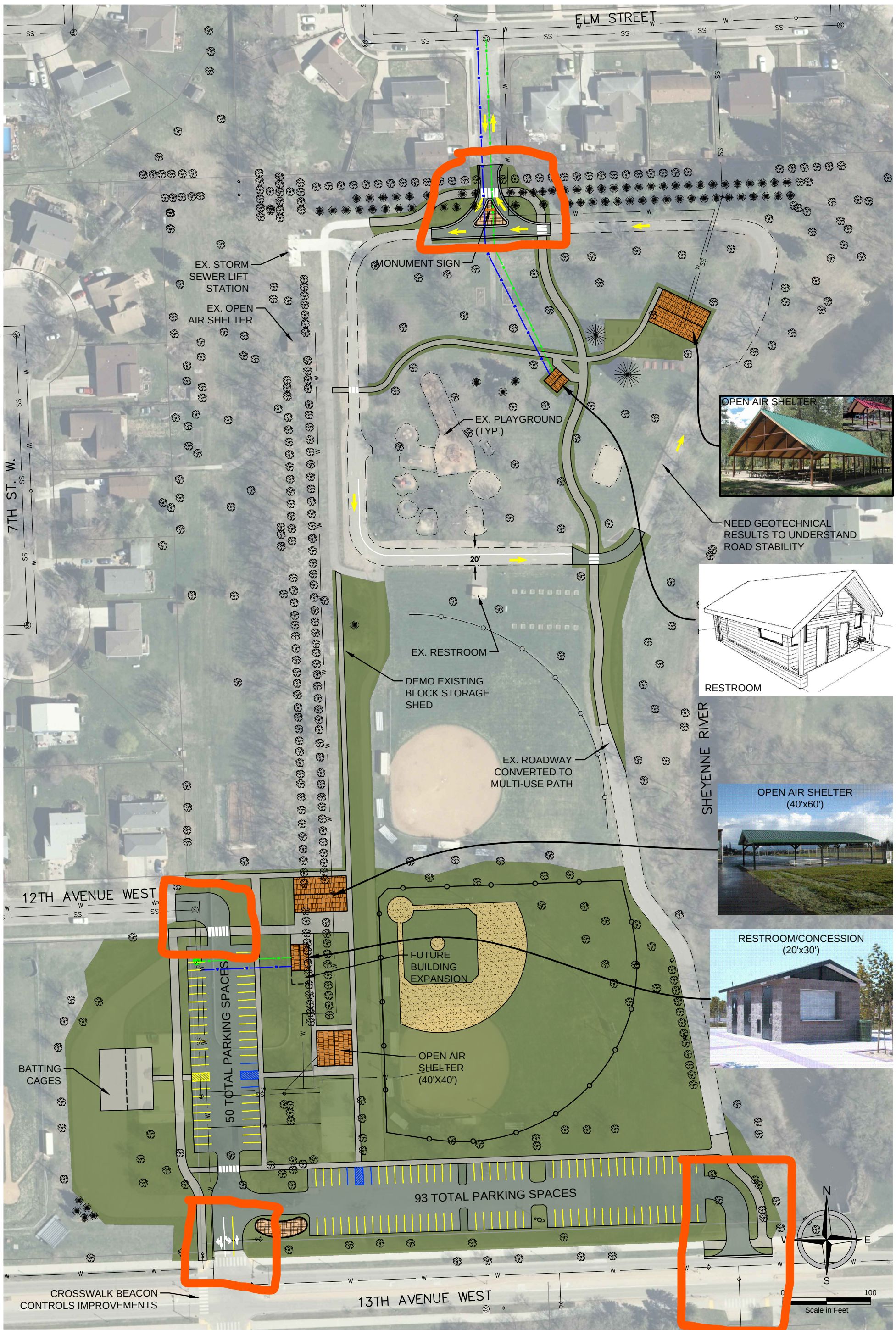
Action Being Requested from City Commission *

Letter of sponsorship from the City of West Fargo for the West Fargo Park District to submit a grant for a Special Roads Fund from the NDDOT for 4 improved access point to North Elmwood Park.

Upload Additional Documentation (Optional):

North Elmwood Concept Review I.pdf

1.93MB



CONCEPTUAL LAYOUT
NORTH ELMWOOD PHASE I & 2 IMPROVEMENTS
PARK IMPROVEMENT DISTRICT NO. 2021-3
WEST FARGO, NORTH DAKOTA

PROJECT No.	21697
DATE:	05.10.21
REVISED:	
DRAFTER:	KAG
REVIEWER:	AJS



November 15, 2021

Pam Wenger, Program Manager
Local Government Division
North Dakota Department of Transportation
608 East Boulevard Avenue
Bismarck, ND 58505-0700

Re: Sponsorship of West Fargo Park District Application for Special Road Fund Program Funding

Dear Ms. Wenger:

It is with distinct pleasure that I provide this letter of support and pledge as a project sponsor for the West Fargo Park District application for Special Road Fund Program funding to complete improvements necessary at North Elmwood Park in the City of West Fargo. The City and the West Fargo Park District enjoy a cooperative and mutually beneficial relationship in serving the citizens of West Fargo.

We thank you for the opportunity to apply for these grants, and look forward to working with our state and federal transportation partners in continuing to provide a safe and efficient transportation network for all of our residents and visitors.

Sincerely,

Bernie L. Dardis, Commission President
City of West Fargo

AGENDA ITEM DESCRIPTION
CITY COMMISSION
WEST FARGO, NORTH DAKOTA

1. CONTACT PERSON: Lisa Sankey
2. PHONE NUMBER: 515-5370 DATE: November 2, 2021
3. AGENDA TITLE:
Second Reading - Zoning Ordinance Amendment to Sections 4-451.6
Automobile Parking Space Required
4. PLEASE **BRIEFLY** DESCRIBE YOUR REQUEST:
Staff proposes the following Zoning Ordinance Amendment to 4-451.6
Automobile Parking Space Required for Office Uses:
General Office Uses: One Space per 300 square feet of gross floor area
Medical Offices and Clinics: One Space per 200 square feet of gross floor area
5. SITE ADDRESS OR LEGAL DESCRIPTION (if applicable):
N/A.
6. ACTION BEING REQUESTED FROM CITY COMMISSION:
Hold Second Reading on the Zoning Ordinance Amendment.

STAFF REPORT

A21-37 ZONING ORDINANCE AMENDMENTS	
Zoning Ordinance Amendment to Sections 4-451.6 Automobile Parking Space Required	
Applicant: City of West Fargo	Staff Contact: Lisa Sankey
Planning and Zoning Commission Public Hearing:	10/12/2021 - Approved
City Commission Public Hearing & 1 st Reading:	11/01/2021
2 nd Reading	11/15/2021

PURPOSE:

Amendments to the Off Street Parking Regulations

DISCUSSION AND OBSERVATIONS:

- During review of parking for office uses in recent years, it has been determined that the parking required for office uses and medical uses may not necessarily reflect national standards or parking need and are higher than our neighboring communities and typically higher than demand.
- Currently, general office uses are required one space per 200 square feet of gross floor area with exceptions for beauty and barber shops of two spaces per operator, plus one space per employee on the largest shift and for medical offices and clinics of five spaces per doctor, plus one space per employee on the largest shift.
- Staff proposes the following Zoning Ordinance Amendment to 4-451.6 Automobile Parking Space Required for Office Uses:
 - o General Office Uses: One Space per 300 square feet of gross floor area
 - o Medical Offices and Clinics: One Space per 200 square feet of gross floor area

NOTICES:

Sent to: Notice in the newspaper and to City Departments

Comments Received:

- None to date.

CONSISTENCY WITH COMPREHENSIVE PLAN AND OTHER APPLICABLE CITY PLANS AND ORDINANCES:

- The proposed amendments do not make major substantive changes to the existing ordinances and are consistent with the Comprehensive Plan.

RECOMMENDATIONS:

Staff is recommending approval of the proposed amendments.

PLANNING AND ZONING RECOMMENDATION:

At their October 12, 2021 meeting the Planning and Zoning Commission recommended approval of the proposed zoning ordinance amendment.

4-450. OFF-STREET PARKING AND LOADING REGULATIONS.

Subsections:

- 4-451. Automobile Parking Space Required.
- 4-452. Plans and Approval Required.
- 4-453. Design Standards.
- 4-454. Required Off-Street Loading Spaces.

4-451. AUTOMOBILE PARKING SPACE REQUIRED. No building shall be erected, enlarged to the extent of increasing the floor area, or changed in use unless there is provided on the lot, space for parking of automobiles as specified below. When sufficient off-street parking cannot be provided on the same lot or a lot contiguous to the principal use because of unique circumstances, and arrangements can be made to provide off-street parking on a noncontiguous lot, such parking arrangements shall be considered by the Planning and Zoning Commission on a case-by-case basis. The Planning and Zoning Commission may grant permission to provide parking on a noncontiguous lot provided traffic or land use problems are not created, and a long-term agreement can be negotiated so the required off-street parking is maintained as long as the principal use exists.

The Planning and Zoning Commission may allow sharing of required off-street parking by two separate uses provided the normal peak parking times of the two uses do not coincide. Only the off-street parking spaces not normally used by the off-peak use shall be counted as off-street parking for the peak use. Each use shall have the total required off-street parking available during their respective periods of peak parking use. A long-term agreement shall be negotiated whereby both uses are bound to the establishment and maintenance of the shared off-street parking.

If it can be demonstrated by the property owner through market studies or other means that the required off-street parking is excessive and/or a lower parking demand is supported by the Institute of Traffic Engineers Parking Generation manual and a lesser requirement justifiable, the City Commission may reduce the number of required spaces by passage of a resolution approved by a majority of the members of the City Commission.

Parking areas shall be so designed that vehicles may enter, circulate, park and exit in a convenient and orderly fashion. Required off-street parking shall be provided in such a manner that vehicles do not encroach on a public right-of-way. The minimum size of each parking stall shall be nine feet by 19 feet, exclusive of aisle width. For any parking area except for single, two-family, and 3-4 unit townhome dwellings, a suitable means of turnaround must be provided at maximum design capacity so no vehicle shall back onto public streets or alleys. Where this cannot be accomplished for parking lots of five (5) or fewer vehicles, the City may consider an alternative design as a conditional use.

Reference herein to "employee(s) on the largest shift" means the maximum number of employees employed at the facility regardless of the time period during which this occurs and regardless of whether

any such person is a full-time employee. The largest shift may be a particular day of the week or a lunch or dinner period in the case of a restaurant.

The term "capacity," as used herein, means the maximum number of persons which may be accommodated by the use as determined by its design or by building or fire code regulations, whichever is greater.

Any use not specifically mentioned below shall meet the requirements for uses most clearly related as determined by the Zoning Enforcement official.

The number of off-street parking spaces which shall be required are as follows:

1. Agricultural Support Uses - One space per employee on the largest shift, plus one space per 200 square feet of gross floor area provided for customer sales and service operations.
2. Residential Uses:
 - a. Single-Family - Two spaces per dwelling.
 - b. Multiple Family Unites - One space per efficiency dwelling unit and two spaces per dwelling unit for one or more bedroom units or the floor area divided by 440, whichever is greater.
3. Institutional, Recreational and Special Residential Uses:
 - a. Camps (Day or Youth) - One space per employee on the largest shift, plus one space per camp vehicle normally stored on the premises.
 - b. Church - One space per three seats of maximum capacity.
 - c. Community and Recreation Center - One space per 250 square feet of gross floor area, or one space per four patrons to the maximum capacity, plus one space per employee on the largest shift.
 - d. Day or Nursery School, Child Care Facility - One space per teacher/employee on the largest shift, plus one per space per ten students for loading and unloading.
 - e. Group Dwellings, Fraternity or Sorority, Boarding or Lodging Houses - One space per bedroom or sleeping room, unless it can be demonstrated that the occupants will not be driving.
 - f. Libraries and Museums - One space per 350 square feet of floor area or one space per four seats to the maximum capacity, whichever is greater, plus one space per employee on the largest shift.

- g. Monasteries, Convents - One space per six residents, plus one space per employee on the largest shift, plus one space per five chapel seats if the public may attend.
 - h. Nursing Homes - One space per six patient beds, plus one space per employee on the largest shift.
 - i. Schools:
 - (1) Elementary and Junior High - One space per teacher and staff member.
 - (2) Senior High - One space per teacher and staff member on the largest shift, plus one space per five students.
 - (3) College, Trade and Vocational - One space per staff member of the largest shift, plus one space per four students of the largest class attendance period.
 - j. Swimming Facility - One space per 100 square feet of gross water area, plus one space per employee on the largest shift.
 - k. Tennis, Racquetball, Handball Courts - Two spaces per court, plus one space per employee on the largest shift.
 - l. Bowling Alley - Three spaces per lane, plus one space per employee on the largest work shift.
 - m. Miniature Golf - One space per hole, plus one space per employee on the largest work shift.
 - n. Outdoor Theatre - One space per four patrons to the maximum capacity of the facility inclusive of both indoor and outdoor capacity.
 - o. Skating Rink, Ice or Roller - One space per 300 square feet of gross floor area.
 - p. Health Club - One space per 100 square feet of gross floor area, plus one space per employee on the largest shift.
 - q. Golf Courses - Five spaces per hole.
 - r. Other Commercial Recreational Uses - One space per four patrons to the maximum capacity of the facility, or one space per 250 square feet of gross floor area, whichever is more appropriate.
5. Commercial and Entertainment Uses, Except as Specifically Designated Below - One space per 250 square feet of gross floor area of customer sales and services, plus one space

per 250 square feet of storage and/or office gross floor area.

- a. Banks - One space per 200 square feet gross floor area.
- b. Eating and Drinking Establishments - One space per four patron seats or one space per 100 square feet of gross floor area, whichever is greater, plus one space per employee on the largest shift.
- c. Fast Food Establishments:
 - (1) With Seating - One space per three patron seats, plus one space per employee on the largest shift.
 - (2) Without Seating - One space per 200 square feet of gross floor area, plus one space per employee on the largest shift.
- d. Funeral Home - One space per four patron seats or 25 spaces per chapel unit, whichever is greater.
- e. Grocery or Supermarket - One space per 200 square feet of gross floor area or customer sales and service, plus one space per 200 square feet gross floor area of storage.
- f. Hospital - One space per three patient beds, plus one space per staff doctor and per employee on the largest shift.
- g. Hotel or Motel - One space per room or suite, plus 50 percent of the spaces otherwise required for accessory uses, e.g. restaurants and bars.
- h. Private Clubs and Lodges - Required parking spaces are to be determined by the specific uses associated with the facility.
- i. Repair Services - A minimum of three spaces shall be provided for the first 2,000 square feet of gross floor area, plus one additional space for each 1,000 square feet of gross floor area thereafter, plus one space per employee on the largest shift.
- j. Furniture and Home Furnishing Stores - One space per 500 square feet of customer sales, plus one space for every 1,000 square feet of storage area.
- k. Self-Service Laundry - One space per three machines.
- l. Assembly or Exhibition Hall, Sports Arenas, Theaters and Auditoriums - One space per five seats based on maximum capacity.

- m. Taverns, Dance Halls, Night Clubs and Lounges - One space per 50 square feet of gross floor area.
 - n. Vehicle Sales - Six parking spaces plus one space per 500 square feet of gross floor area over 1,000 feet.
 - o. Vehicle Repair and Maintenance Services - One space per 400 square feet of gross floor area, plus one space per employee on the largest shift.
 - p. Games of Chance Operations - One space per three patron seats.
6. Offices Uses, Except as Specifically Designated Below - One space per ~~200~~ 300 square feet of gross floor area.
- ~~a. Beauty and Barber Shops - Two spaces per operator, plus one space per employee on the largest shift.~~
 - ~~b. Medical Offices and Clinics - Five spaces per doctor, plus one additional space per employee on the largest shift. One space per 200 square feet of gross floor area.~~
7. Industrial Uses, Except as Specifically Designated Below - One space per employee on the largest shift, plus one space per company vehicle regularly stored on premises.
- a. Veterinary Office - Three spaces per doctor, plus one space per employee on the largest shift.
 - b. Adult Entertainment Center - One space per employee on the largest shift, plus one space per 150 square feet of gross floor area.
8. Nursery Uses - One space per employee on the largest shift, plus one space per 500 square feet gross floor area of inside sales or display.
9. Handicapped Parking - All parking lots must be designed to provide handicapped parking spaces according to standards established under Americans with Disabilities Act (ADA).

Source: Ord. 434, Section 1 (1992); Ord. 458, Sec. 18 (2005); Ord. 1049, Sec. 38 (2015).

4-452. PLANS AND APPROVAL REQUIRED. Plans for improved, new or expanding private driveways and off-street parking spaces, shall be prepared and submitted to the City Building Administrator and City Planner for review and approval. Before approving any private driveway or parking layout, the Building Administrator and City Planner shall satisfy themselves that the driveway and/or spaces provided are usable and meet standard design criteria. All driveways and off-street parking spaces within the City limits shall be improved with a concrete or bituminous surface except for structures which are located on public roads or alleys that are graveled. In lieu of improving all driveways and off-street

parking spaces in industrial areas, a property owner may submit a plan demonstrating that improved driveways and off-street parking spaces will, within reason, retain soils, mud or other loose materials from being carried onto public streets by vehicles or equipment, i.e., by improving with concrete or bituminous surface fifty (50) feet or more of the area on the property where access to the public street(s) is gained. In addition to providing improved driveways and parking areas, industrial areas may need to expand those areas with gravel and/or crushed concrete to avoid carrying soils, mud or other loose materials into the street(s). All required off-street parking spaces shall be clearly marked. All parking lots being hard surfaced must be designed and striped to meet the design standards according to Section 4-453.

Source: Ord. 434, Sec. 2 (1992); Ord. 458, Sec. 19 (2005); Ord. 916, Sec. 48 (2012); Ord. 976, Sec. 4 (2013); Ord. 989, Sec. 1 (2014); Ord. 1066, Sec. 1 (2016)

4-453. DESIGN STANDARDS.

1. In all residential districts, required parking spaces shall be located on the same premises as the use they serve. In other districts, they shall be located on the premises or within 300 feet distance.
2. Parking areas for one or two family dwellings shall be in the garage, in the rear or side yards, or on the driveway leading to the garage only.
3. Parking areas shall be used for automobile parking only, with no sales, dead storage, repair work, dismantling or servicing of any kind permitted.
4. All uses, excluding one and two family residences, where parking or access facilities are located within 20 feet of a one or two family property line shall be required to effectively screen their parking facility from the residential use. Screening may include a sight obscuring fence at least 5 feet in height or plantings of sufficient type, density, and height so as to provide year-round screening. Before a building permit shall be issued, the building official shall approve the screening proposal.
5. Off-street parking areas shall be improved with a durable surface, afford adequate drainage and shall have bumper guards, unless owner can establish to the satisfaction of the Building Official that such guards are not necessary.

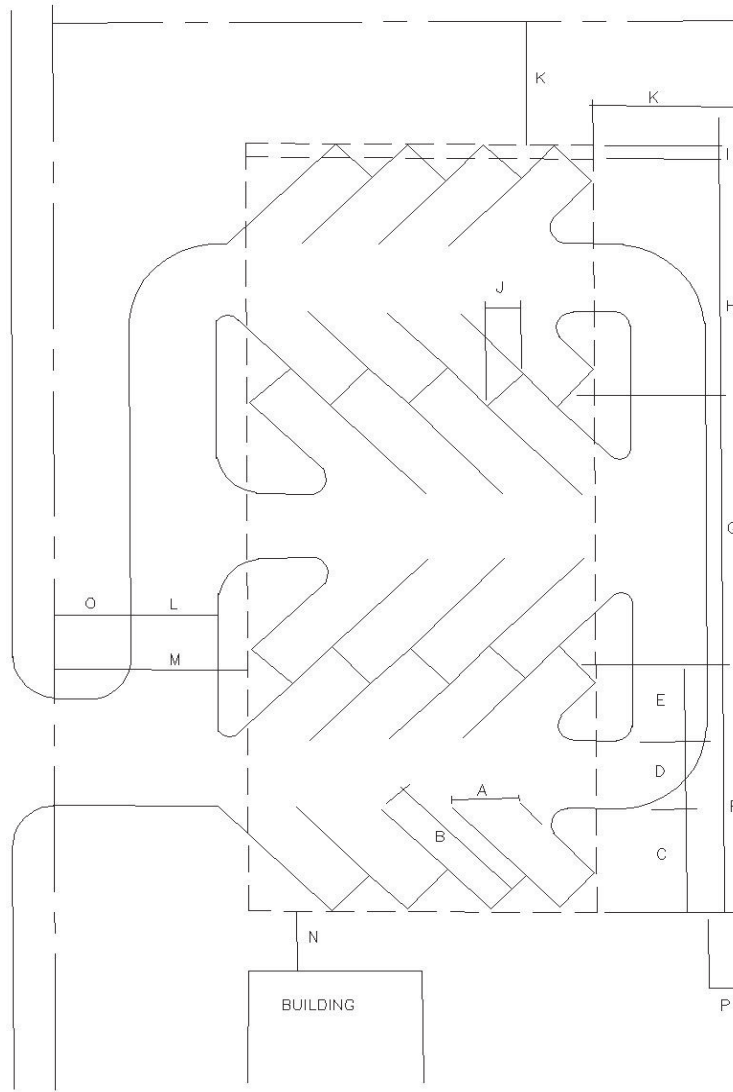
Source: Ord. 1049, Sec. 39 (2015)

PARKING LAYOUT REQUIREMENTS FOR 9 FOOT BY 18.5 FOOT
STALLS AT VARIOUS ANGLES

<u>DIMENSION</u>	<u>ON DIAGRAM</u>	<u>MINIMUM DIMENSIONS (feet)</u>			
		<u>45</u>	<u>60</u>	<u>75</u>	<u>90</u>
Stall width, parallel to aisle	A	12.7	10.4	9.3	9.0
Stall length of line	B	25.0	22.0	20.0	18.5
Stall depth	C	17.5	19.0	19.5	18.5
Driving aisle width between stall lines	D	12.0	16.0	23.0	26.0
Stall depth, interlock	E	15.3	17.5	18.8	18.5
Module, edge of pavement to interlock	F	44.8	52.5	61.3	63.0
Module, interlocking	G	42.6	51.0	61.0	63.0
Module, interlock to curb face	H	42.8	50.2	58.8	60.5
Bumper overhang (typical)	I	2.0	2.3	2.5	2.5
Offset	J	6.3	2.7	0.5	0.0
Side and rear yard setback	K	Lots in Residential & C Districts Which Abut Residential Districts: 5 feet. Other Districts: None			
Cross aisle, one-way	L	14.0	14.0	14.0	14.0
Cross aisle, two-way	-	24.0	24.0	24.0	24.0
Front yard setback (Parking Lots)	M	10' in Residential Districts or for Residential Uses in "C" Districts. Other: None.			
Setback from principal building	N	Residential Districts: 10 feet. Other Districts: 5 feet			
Front lot line to drive (landscape area)	O	10' in Residential Districts or for Residential Uses in "C" Districts. Other: None.			
Side and rear lot line to drive (landscape area)	P	Residential & C Districts: 5 feet. Other Districts: None			

Source: Ord. 334, Sec. 3 (1992); Ord. 455, Sec. 7 (1993); Ord. 916, Sec. 49 (2012).

PARKING LAYOUT DIAGRAM



4-454. REQUIRED OFF-STREET LOADING SPACES. REQUIRED OFF-STREET LOADING SPACES. Commercial and industrial uses shall provide for loading areas on the property which do not affect traffic on public streets. Adequate space shall be provided on the property to allow for ingress into the property, circulation within the property and egress from the property. Loading areas shall be shown on a site plan and approved by the City Planner and Building Administrator as part of the building permit. Loading spaces required under this section shall be at least 50 feet long and 12 feet wide. Every lot used for commercial or industrial purposes and having a building or buildings with a total floor area of at

least 10,000 square feet and every lot used for office or research purposes on which there is a building or buildings having a total floor area of at least 20,000 square feet, shall be provided with an off-street loading space. An additional off-street loading space shall be required for lots used for commercial or industrial purposes where the floor area of all buildings exceeds 100,000 square feet.

Source: Ord. 458, Sec. 20 (2005)

AGENDA ITEM DESCRIPTION
CITY COMMISSION
WEST FARGO, NORTH DAKOTA

1. CONTACT PERSON: Lisa Sankey
2. PHONE NUMBER: 515-5370 DATE: November 2, 2021
3. AGENDA TITLE:
Second Reading - Zoning Ordinance Amendment to 4-434 DMU: Downtown
Mixed Use District
4. PLEASE **BRIEFLY** DESCRIBE YOUR REQUEST:
Zoning Ordinance Amendment Standards to 434.4.2.B DMU: Downtown Mixed
Use District regarding setbacks for new construction. The proposed amendment
states that a minimum side or rear yard setback of 20 feet for each additional
floor above 35 feet is required where new construction is adjacent to one and
two-family zoning districts
5. SITE ADDRESS OR LEGAL DESCRIPTION (if applicable):
N/A.
6. ACTION BEING REQUESTED FROM CITY COMMISSION:
Hold Second Reading on the Zoning Ordinance Amendment.

STAFF REPORT

A21-38 ZONING ORDINANCE AMENDMENTS	
Zoning Ordinance Amendment to 4-434 DMU: Downtown Mixed Use District	
Applicant: City of West Fargo	Staff Contact: Lisa Sankey
Planning and Zoning Commission Public Hearing:	10/12/2021 – Approval
City Commission Public Hearing & 1st Reading:	11/01/2021
2 nd Reading:	11/15/2021

PURPOSE:

Amendment to the DMU: Downtown Mixed Use Mixed Use District

DISCUSSION AND OBSERVATIONS:

- When the DMU: Downtown Mixed Use District was adopted by the City Commission on January 6, 2020 a section regarding setbacks for new construction of multi-use buildings adjacent to residential properties was presented and included in the 2nd reading; however, was not published in the text. This proposed amendment would add this to the current ordinance under Section 4-434.4.2.B.
- The proposed amendment states that a minimum side or rear yard setback of 20 feet for each additional floor above 35 feet is required where new construction is adjacent to one and two-family zoning districts.

NOTICES:

Sent to: Notice in the newspaper and to City Departments

Comments Received:

- None to date.

CONSISTENCY WITH COMPREHENSIVE PLAN AND OTHER APPLICABLE CITY PLANS AND ORDINANCES:

- The proposed amendments do not make major substantive changes to the existing ordinances and are consistent with the Comprehensive Plan. The amendment will increase compatibility with any potential adjacent lower density residential districts.

RECOMMENDATIONS:

Staff is recommending approval of the proposed amendment.

PLANNING AND ZONING RECOMMENDATION:

At their October 12, 2021 meeting the Planning and Zoning Commission recommended approval of the proposed zoning ordinance amendment.

4-434. "DMU" DOWNTOWN MIXED USE DISTRICT.

Source: Ord. 1148, Sec. 3 (2020); Ord. 1186, Sec. 1 (2021)

4-434.1. Statement of Intent. The intent of the DMU District is to provide elements which promote the principles of good planning and design as outlined in West Fargo 2.0. The elements are walkability, connectivity, mixed-use, scale, intensity and hidden parking. New development, redevelopment, or the reuse of existing land and buildings should be encouraged to better meet the local goal of achieving more walkable and bikeable corridors and a better connected village core. Additional growth and development within this connected village core is most desirable due to the presence of existing infrastructure and proximity of services. New development and redevelopment within this district should create and/or contribute to the character of a district that supports the City's goal of providing a cultural core of the community that creates a place residents come to gather and a place that is exciting to visit. New development and redevelopment should encourage civic pride, social and economic activity, and provide for a neighborhood that exemplifies the identity of West Fargo.

4-434.2. Uses. All uses are permitted in the DMU District, except the following uses, as defined in Section 4-200, which are not considered consistent with the intent of the district due to the inability to provide compatibility with the variety of traditional uses found within the district:

1. Adult Entertainment Center
2. Behavioral Health Care Facility
3. Heavy Industrial Uses

4-434.3 Site Design Standards.

1. Building Orientation.

- A. All ground level facades facing a public or approved private street must meet the following requirements.
 - i. Functioning building entries must be provided every 70 feet along street facades. Entries must lead to habitable space.
 - ii. Where a building fronts two or more streets, a secondary façade under 50 feet in length is exempt from the entry requirement.
 - iii. Loading docks and service areas are not permitted facing a street.

- B. Setbacks along public or approved private streets are must be within the range of zero to eight feet and meet the following requirements.
- i. Buildings may be set back from zero to two feet for architectural necessity including footings, cornices, fire risers, balconies, and similar building attachments.
 - ii. Building may be set back at eight feet to provide for an expansion of the public sidewalk.
 - iii. Building setbacks may increase according to the uses of Table 1.

Table 1. Maximum Street Setbacks

<u>MAXIMUM SETBACK</u>	<u>USE</u>
10 Feet	Merchandising
12 Feet	Seating, stoop, public art
18 Feet	Outdoor dining, porch
20 Feet	Public plaza

4-434.4. Lot Design Standards.

1. Parking Areas.

- A. Parking lots are required to be designed to share access with adjoining properties to avoid unnecessary additional access and open space which is difficult to maintain or provides no benefit to the district.
- B. Maximum parking allowed for a use may not exceed the parking minimum requirements found within Section 4-450: Off Street Parking and Loading Regulations.
- C. Parking lots are required to be hidden with first priority to be placed out of sight of a public or approved private street.
- D. On-street parking is encouraged where possible and is to be designed at the discretion of the City Engineer and Director of Planning and Zoning and approved by the City Commission.
- E. Where parking lots front a public or approved private street, a minimum 5 foot decorative buffer is required to include pedestrian friendly areas that also include plantings which hide the parking

area.

2. Building Construction.

- A. Ground floor facades facing a public or approved private street must have a minimum of 50% clear glass.
 - i. Corner lots must have a minimum of 30% clear glass facing the secondary street.
 - ii. Glass percentage is calculated individually for each facade and is measured between two and ten feet in height above grade along the length of the facade.
 - iii. Glass calculations include glass doors, windows, and storefront systems.
 - iv. Glass requirements do not apply to elevations facing an alley.
- B. New construction is required to be a minimum of two stories.
 - i. A minimum side or rear yard setback of 20 feet for each additional floor above 35 feet is required where new construction is adjacent to one and two-family zoning districts.
- C. The remaining ground floor façade is required to consist of durable materials.
- D. Residential lap-siding and corrugated metals or fiberglass siding are not allowed. Downtown building facades must use durable materials. Durable materials include:
 - i. Brick.
 - ii. Stucco - however, EIFS is not permitted within 36 inches of finished grade.
 - iii. Heavy Timber.
 - iv. Cementitious siding.
 - v. Wood.
 - vi. Slate.
 - vii. Architectural panel composed of metal, wood, or fiber cement.

- E. Utilities associated with private and/or public facilities as well as rooftop or tenant spaces are required to be screened from view of the public sidewalk.

3. Signage.

- A. Where a building is meeting the required zero front setback line, an encroachment of a wall sign or protruding wall sign at the ground level floor with a safe clearance may occur with appropriate approval of an encroachment agreement with the City as approved by the City Commission.
- B. Off-premise signage within the district is allowed as a conditional use following the provisions set forth in Section 4-550 of City Ordinances. Signage within the district should take into account the characteristics of its surrounding area and the intent and context of a downtown environment. The Commission should deliberate such items as size, intensity of light or color, and motion to avoid nuisance factors to the public and neighboring uses.

- 4. Streetscape. Improvements within City right of way are to be designed at the discretion of the City Engineer and Director of Planning and Zoning and approved by the City Commission. Any permanent encroachments into City right of way will require review and approval by the City Commission.

4-434.5. Other Applicable Regulations:

Section 4-440 Supplementary District Regulations

Section 4-450 Off-Street Parking and Loading Requirements

Section 4-460 Sign Regulations

STAFF REPORT

A21-41		CONDITIONAL USE PERMIT	
2016 Ann Street			
Lot 4, Block 2 of Woodland Estates Subdivision, Cass County, North Dakota			
Owner/Applicant: Keith and Tiffany Knoke		Staff Contact: Malachi Petersen	
Planning & Zoning Commission Public Hearing:		11-09-2021	
City Commission:		11-15-2021	

PURPOSE:

Construct a 38 x 74 (2,843 square foot) oversized accessory building for personal storage in a rural estate zoned district located in the city's extraterritorial area.

STATEMENTS OF FACT:

Land Use Classification:	G-1 – Sub Urban – Restricted Growth Sector (ETJ)
Existing Land Use:	Single Family Dwelling
Current Zoning District(s):	R-1E: Rural Estate District
Zoning Overlay District(s):	n/a
Total area size:	3.13 Acres
Adjacent Zoning Districts:	R-1E: Rural Estate District
Adjacent street(s):	Ann Street (Local)
Adjacent Bike/Pedestrian Facilities:	None
Available Parks/Trail Facilities:	None
Park Dedication Requirements:	N/A

DISCUSSION AND OBSERVATIONS:

- The applicant has submitted an application for a Conditional Use Permit for the purpose of building a 2,843 square foot oversized accessory building for personal storage in a rural estate zoned district located in the City's extraterritorial (ET) area about 1 ½ miles north of West Fargo City Limits.
- The R-1E: Rural Estate zoning district allows for accessory structures greater than 1,000 ft² as a conditional use provided they are in character with the development pattern of the subdivision they are in.
- The applicant has provided a site plan which shows the new accessory structure will be built in the rear yard.
- There is a 100' required riverbank control setback which the proposed building appears to meet.
- Accessory structures over 1,000 ft² have been conditionally approved in the past for rural subdivisions provided they are in character with the development pattern of the subdivision. The applicant has submitted elevations with his application show the exterior finish would be similar to the primary residence.
- In the past conditional use permits were approved in this area for 2,160 to 2,400 square foot accessory buildings.
- In recent years there have been two 2,400 ft² accessory buildings approved in the Selberg subdivisions, which is ½ mile north of this development

STAFF REPORT

- A conditional use permit agreement is required to be signed prior to issuance of a building permit and may include conditions deemed appropriate by the Commission.
- The area is within a Special Flood Hazard Area (SFHA). According to the Flood Hazard Layer FIRM the majority of the property the applicant intends to build on is located in the AE designated zone and has a Base Flood Elevation of about 899.2 feet. City of West Fargo Floodplain Development Regulations will require the applicant to construct any proposed buildings at 2.5' above BFE. Any development will be required to meet all applicable Federal, State, and Local regulations, which may have changed since the existing home was constructed. Attached is the FIRM map for this location, along with the preliminary flood map for reference.

CRITERIA FOR GRANTING CONDITIONAL USE PERMIT:

With reference to the criteria for granting conditional uses, the following is noted:

1. Ingress and egress to property and proposed structures thereon with particular reference to automotive and pedestrian safety and convenience, traffic flow and control, and access in case of fire or catastrophe.
 - The property has adequate access and the improvements will not affect the current access.
2. Off-street parking and loading areas where required, with particular attention to the items in (1) above and the economic, noise, glare or odor effects of the special exception on adjoining properties and properties generally in the district.
 - No concerns noted
3. Refuse and service areas, with particular reference to the items in (1) and (2) above.
 - No concerns noted.
4. Utilities, with reference of locations, availability, and compatibility.
 - No concerns noted
5. Screening and buffering with reference to type, dimensions, and character.
 - No concerns noted
6. Signs, if any, and proposed exterior lighting with reference to glare, traffic safety, economic effect, and compatibility and harmony with properties in the district.
 - No concerns noted
7. Required yards and other open space.
 - No concerns noted.
8. Soil conditions, as they relate to on-site sewage disposal, water supply, basement excavating, road construction and related land use.
 - No concerns noted.
9. General compatibility with adjacent properties and other property in the district.
 - The land adjacent to this area is R-1E: Rural Estate District and similar style and sized accessory buildings have been previously approved within the subdivision.

NOTICES:

Sent to:	Property Owners within 350 feet; Applicable Agencies and Departments, including Reed Township officials, Cass County Planning and the Cass County Sanitarian.
----------	---

Comments Received:

- Fargo-Cass Public Health reviewed the property and has determined the proposed building will not impact the home's septic system.

STAFF REPORT

- Matthew Kirkwood, who lives at 2120 Ann St, submitted a protest letter (attached) regarding the application.

CONSISTENCY WITH COMPREHENSIVE PLAN AND OTHER APPLICABLE CITY PLANS AND ORDINANCES:

- The Sub-Urban - Restricted Growth Sector includes areas between the current and proposed diversion that may have new development potential should the new diversion be built. The G-1 area identifies significant tracts of land that are currently rural, but where directed and well-planned new development could occur around the identified potential Future Mixed-Use and Employment Centers.
- The application is providing an accessory to an existing use and therefore the application may be considered consistent with the Comprehensive Plan.

RECOMMENDATIONS:

It is recommended that the City approve the proposed application on the basis that it is consistent with City plans and ordinances with recommended conditions of approval as follows:

1. The accessory building is constructed of the same color and materials as the primary residential structure.
2. A Signed Conditional Use Permit Agreement is received.
3. Any building permits should follow the preliminary flood map which will require percent allowable fill on any development.
4. The applicant is to meet all Federal, State, and Local requirements for improvements to the site and structures.

PLANNING AND ZONING RECOMMENDATION:

At their November 15, 2021 meeting the Planning and Zoning Commission recommended approval of the Conditional Use Permit on a 5-1 vote with the staff recommendations noted above.





West Fargo Zoning

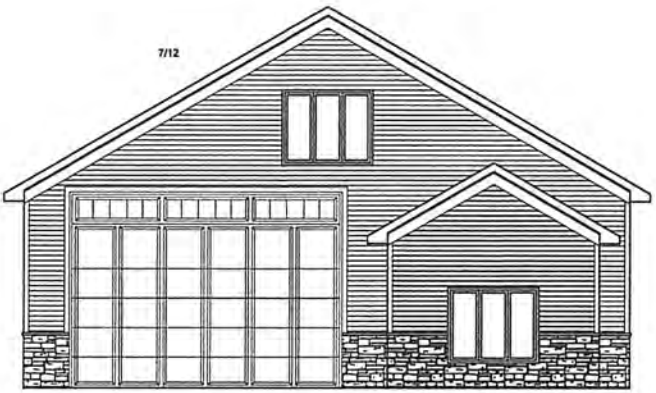
- A: Agricultural
- C: Light Commercial
- C-OP: Commercial Office Park
- DMU: Downtown Mixed Use
- EMU: Entertainment Mixed Use
- HC: Heavy Commercial

- LI: Light Industrial
- M: Heavy Industrial
- P: Public
- PUD: Planned Unit Development
- R-L1A: Large Lot Single Family Dwelling
- R-1A: Single Family Dwelling
- R-1: One and Two Family Dwelling

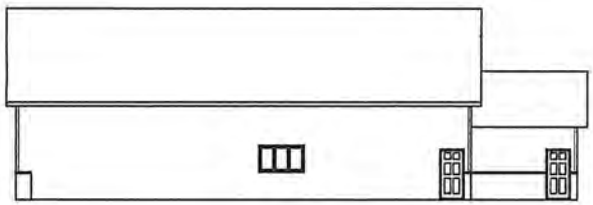
- R-1SM: Mixed One and Two Family Dwelling
- R-2: Limited Multiple Dwelling
- R-3: Multiple Dwelling
- R-4: Mobile Home
- R-5: Manufactured Home Subdivision
- R-1E: Rural Estate
- R-R: Rural Residential



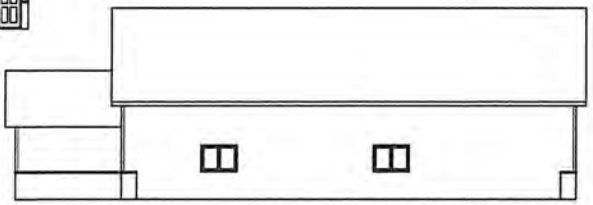




FRONT ELEVATION
SCALE: 1/8" = 1'-0"



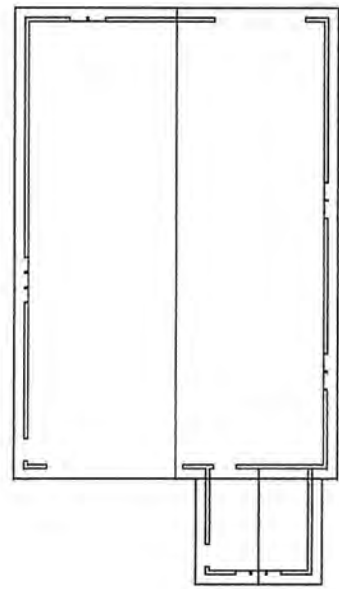
LEFT ELEVATION
SCALE: 1/16" = 1'-0"



RIGHT ELEVATION
SCALE: 1/16" = 1'-0"



REAR ELEVATION
SCALE: 1/16" = 1'-0"



ROOF PLAN
SCALE: 1/16" = 1'-0"

PROJECT	REVISIONS:
GARAGE	
JO3014	5.21.18
MONTE	10.4.18
JASON	11.1.18
DATE:	.
4.21.17	.
TOTAL S.F.	.

Crane Johnson
Lumber Co.
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DISCLAIMER OF WARRANTIES
THIS PLAN IS A PRELIMINARY DESIGN AND NOT A CONTRACT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF THE SITE PRIOR TO CONSTRUCTION. NO WARRANTY IS MADE BY THE ARCHITECT FOR THE ACCURACY OF THE INFORMATION PROVIDED OR FOR THE RESULTS OF THE WORK. THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS PLAN OR FOR ANY CONSEQUENCES THEREOF.

CONTRACTOR
ADDRESS HERE

PRELIMINARY PLAN UNTIL SIGNED
BY CONTRACTOR OR OWNER
I ACCEPT THIS PLAN AS DRAWN
NAME _____ DATE _____

2

KNOKE GARAGE
ADDRESS HERE ?
FARGO, ND

National Flood Hazard Layer FIRMette



96°54'44"W 46°54'41"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

Without Base Flood Elevation (BFE)
Zone A, V, A99

With BFE or Depth *Zone AE, AO, AH, VE, AR*

Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*

Future Conditions 1% Annual Chance Flood Hazard *Zone X*

Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*

Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

NO SCREEN Area of Minimal Flood Hazard *Zone X*

Effective LOMRs

Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

Channel, Culvert, or Storm Sewer

Levee, Dike, or Floodwall

OTHER FEATURES

20.2 Cross Sections with 1% Annual Chance Water Surface Elevation

17.5 Coastal Transect

Base Flood Elevation Line (BFE)

Limit of Study

Jurisdiction Boundary

Coastal Transect Baseline

Profile Baseline

Hydrographic Feature

MAP PANELS

Digital Data Available

No Digital Data Available

Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/3/2021 at 10:34 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOTES TO USERS

This map is for use in determining the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources or small creeks. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Differential Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only to landward of 0.57 North American Vertical Datum of 1988 (NAVD 88). Users of the FIRM should be aware that coastal flood elevations are also provided in the Summary of Differential Elevations table in the Flood Insurance Study report for the jurisdiction. Elevations shown in the Summary of Differential Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for the jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for the jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 16. The horizontal datum was NAD83. GRS-80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FISs for adjacent jurisdictions may result in slight positional differences in map features. Such positional differences, if they exist, do not affect the accuracy of this FIS.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NCEM, NCEM-210
National Geodetic Survey
Spartanburg, SC 29583
1315 Fairview Highway
Silver Spring, MD 20910-0282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was provided by the Cass County GIS Department. Transportation data is current as of 2013. Political boundaries are current as of 2013.

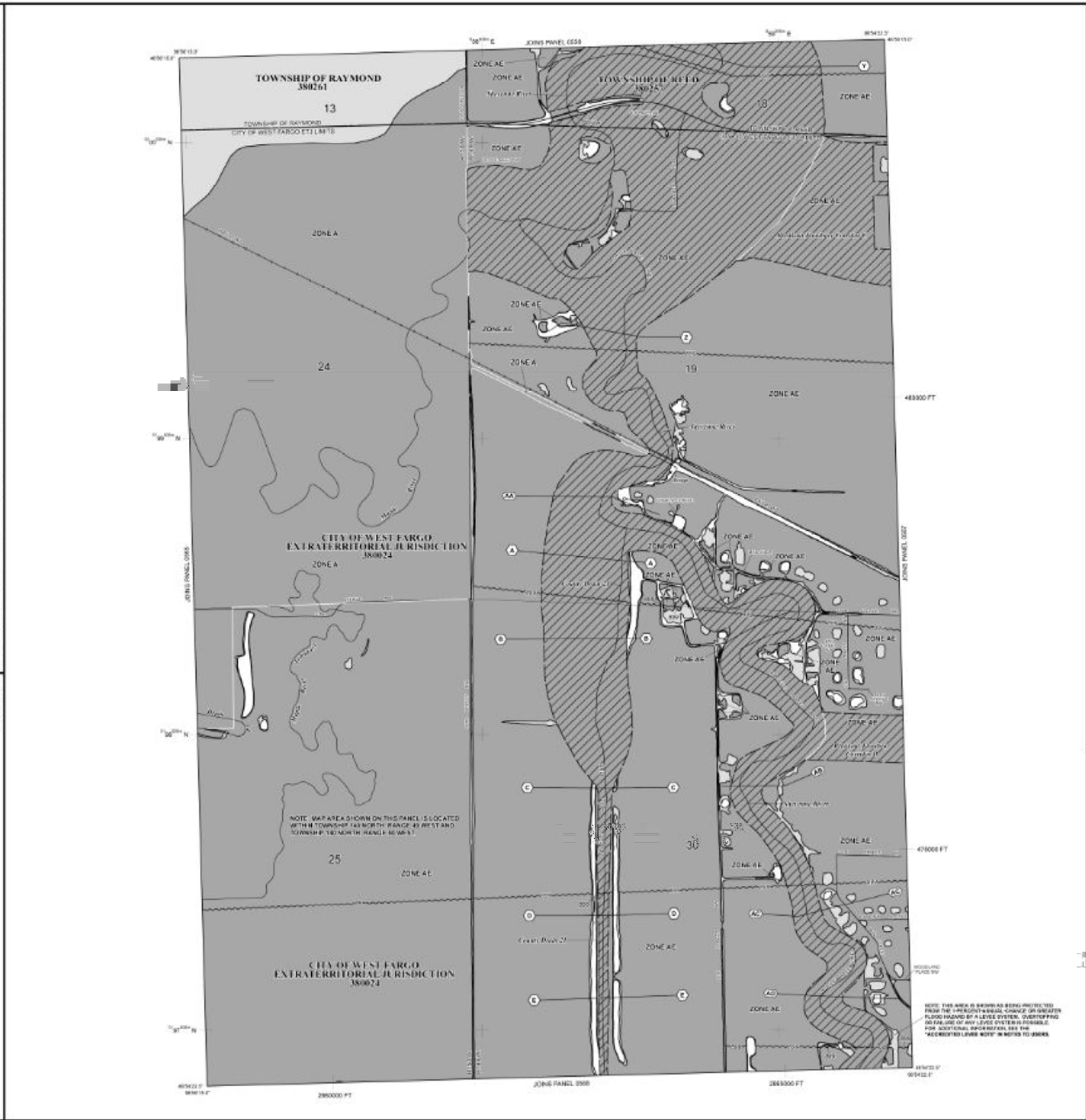
This map may reflect more detailed or up-to-date stream channel configurations than those shown on the previous FIRM. The floodplains and floodways that were delineated from the previous FIRM may have been adjusted to conform to these more stream channel configurations and improved topographic data. The profile boundaries depicted on this map represent the hydraulic modeling boundaries that match the flood profiles and floodway data tables it applies to in the FIS report. As a result, the profile boundaries may deviate significantly from the base map stream channel representation and may appear outside of the floodplains.

Corporate limits shown on this map are based on the best data available at the time of publication. Boundary changes due to annexations or de-annexations may have occurred after this map was published; map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a listing of communities within National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM, including technical services of the FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information Exchange at 1-877-FEMA-9100 (1-877-368-9100) or visit the FEMA Map Service Center website at <http://www.fema.gov>. Available products may include previously issued letters of map change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may approve the current map date for open FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information Exchange.

Accredited License Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent annual chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA website at <http://www.fema.gov/business/firm/index.cfm>.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SHALL BE SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD)

The 1% annual chance flood (100-year flood) also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. Special Flood Hazard Areas in the map subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, AV, and VE. The base flood elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding). Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually areas of ponding). Base Flood Elevations determined.

ZONE AR Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that has subsequently deteriorated. Zone AR indicates that the former flood control system is being retained to provide protection from the 1% annual chance or greater flood.

ZONE AV Areas to be protected from the 1% annual chance flood by a Federal flood protection system under construction. No Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action). No Base Flood Elevations determined.

COASTAL FLOOD ZONE WITH VELOCITY HAZARD (WAVE ACTION) No Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain area that must be kept free of encroachment so that the 1% annual chance flood can be carried without excessive increases in flood heights.

OTHER FLOOD AREAS

ZONE B Areas of 0.2% annual chance flood, areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from the 1% annual chance flood.

OTHER AREAS

ZONE S Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood heights are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (ORPA)

CBRS areas and ORPA areas are normally located within or adjacent to Special Flood Hazard Areas.

BOUNDARY LINES

Shaded boundary Floodway boundary.

Dashed boundary Floodway boundary.

Zone II boundary Zone II boundary.

CBRS and ORPA boundary Boundary defining Special Flood Hazard Areas of different base flood elevations, flood depths or flood velocities.

Base Flood Elevation line and value, elevation in feet

Base Flood Elevation value where uniform within zone, elevation in feet

Reference to the North American Vertical Datum of 1988 (NAVD 88)

Cross section line

Traverse line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

1000-meter Universal Transverse Mercator grid line, zone 14

3000-foot grid line: North-South, State Plane coordinate system, zone 14NAD83 2100, Lambert Conformal Conic

Section mark (see explanation in notes to users section of this FIRM report)

Map Note

MAP INFORMATION

Refer to Map Information for Map Index.

EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP

JANUARY 16, 2015

EFFECTIVE DATE OF COMMUNITY FLOOD INSURANCE RATE MAP

JANUARY 16, 2015

No community map revision history prior to community mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-426-6253.

MAP SCALE 1" = 66'

200 300 400 500 FEET

200 300 400 500 METERS

NFIP PANEL 0566G

FIRM FLOOD INSURANCE RATE MAP

CASS COUNTY, NORTH DAKOTA (ALL JURISDICTIONS)

PANEL 566 OF 565

FOR MAP INDEX FOR FIRM PANEL LAYOUT

CONTING. COMMUNITY	NUMBER	PANEL	OUTLINE
PANORAMA TOWNSHIP OF	56001	5600	0
PEED TOWNSHIP OF	56001	5600	0
WEST FARGO, CITY OF	56001	5600	0

Notes to Users: The Map Number shown below should be used when citing this map. The Community Number shown below should be used in citations appropriate for the subject community.

MAP NUMBER 38017C0566G

EFFECTIVE DATE JANUARY 16, 2015

Federal Emergency Management Agency

Malachi D. Petersen

From: Kirkwood, Matthew <matthew.kirkwood@ndsu.edu>
Sent: Friday, November 5, 2021 4:01 PM
To: Malachi D. Petersen
Subject: FW: Against Proposed Conditional Use Permit for Accessory Building

MATTHEW KIRKWOOD

INAGURAL, former CHAIR and Associate Professor
Department of Landscape Architecture
NORTH DAKOTA STATE UNIVERSITY
matthew.kirkwood@ndsu.edu

~~office 701.231.5793~~ personal 701.730.0955

matthew@kirkwoodenvironmental.com
matthew j Kirkwood, ASLA

From: Kirkwood, Matthew <matthew.kirkwood@ndsu.edu>
Date: Friday, November 5, 2021 at 3:55 PM
To: Malachi.petersonb@westfargond.gov <Malachi.petersonb@westfargond.gov>
Subject: Against Proposed Conditional Use Permit for Accessory Building

Dear Mr. Malachi Peterson,

My family received notice of the Proposed Conditional Use Permit for Accessory Building next to our home at 2120 Ann Street. We are clearly opposed to such a change in neighborhood character. If not controlled the character of the neighborhood will change into an industrial park rather than the current residential neighborhood as zoned.

My family has been in the Woodland Estates Neighborhood for nine years. During our time here the nature and character has changed from a rural neighborhood to a business oriented development. This will not help our residential value for resale. Three new homes have been built along with accessory buildings. The initial buildings were in the one thousand square foot range. The last one was over 2200 square feet, well beyond the 1000 square foot building allowed. These newer structures are used to house commercial businesses disguised as residential.

Support workers for these neighbors park on the 20' wide road. Mr. Knoke has left his commercial trailers on our road for weeks at a time. The city was contacted for non-compliance and we were told that it was a zoning violation not a city parking matter. After pursuing, we discovered that the Cass County Sheriff's office is the agency to oversee parking violations. They were called several times about the parked vehicles and work trailers. This has occurred several times in the last four years since they have built their home. They have several recorded complaints on file.

Ann Street is a private road that requires private contributions for maintenance. The road does not meet county requirements and is not maintained by any governmental agency. We annual pay to have the road leveled and surfaced. We are now being extorted with snow removal from Knoke's own business (see attachment 1). With a residential neighborhood we rarely saw commercial vehicles in our area. Now it is becoming a common occurrence (see attachment 2).

The existing infrastructure is at capacity with stormwater management. The runoff from neighbors runs to our yard where a private pump is required to discharge to the Sheyenne River. More paved surfaces/structures would exacerbate this critical issue.

Please do not approve of such a conditional use for this oversized structure.

Sincerely,

The Kirkwood Family

Ps. I will send files in next correspondence. \

M A T T H E W K I R K W O O D

INAGURAL, former CHAIR and Associate Professor
Department of Landscape Architecture
NORTH DAKOTA STATE UNIVERSITY
matthew.kirkwood@ndsu.edu

~~office 701.231.5793~~ personal 701.730.0955

matthew@kirkwoodenvironmental.com
matthew j Kirkwood, ASLA

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Knoke Seamless Siding & Gut... X

google.com/search?q=Knoke+Seamless+Siding+126+Gutters+LLC+2C+Ann+Street+2C+West+Fargo+ND&hl=en&gclid=CjwK4U9PwP0bODY...

Suggested Sites: Yahoo! Web Site Gallery Apple Google Pictures & Photos Play Free Mahjong Suggested Sites Other Bookmarks

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www.pinterest.com
You might like these new Pins

Tip: Learn how to quickly find apps and files.
Exchange Password Required
Enter your password for "matthew.kirkwood" in Internet Accounts.

Google Knoke Seamless Siding & Gutters LLC, Ann Street, West Fargo, ND

Maps Shopping News Images More Tools

About 187 results (0.18 seconds)

Ad - <https://www.westernproducts.com/> (833) 696-1497
#1 Steel Siding in Fargo, ND - Professional, Durable
Low maintenance, durable, energy efficient **seamless steel siding** from reliable contractors. Free consultation, year round installation, replacement. Best home improvement siding.
Stone Veneer - Seamless Steel Siding - About Us - Service Areas - Contact Us
474 45th St S, Fargo, ND - Open today - 8:00 AM - 5:00 PM

<https://www.knoke Seamless.com>
Knoke Seamless Siding & Gutters LLC | Reroofing West Fargo
Your Go-To Contractor for Excellent Siding, Gutter, and Roofing Services. Ensuring that the exterior of your home or commercial property is attractive and...

<https://www.manta.com> - Siding Materials
Knoke Seamless Siding & Gutters West Fargo ND, 58078
Knoke Seamless Siding And Gutters LLC, 2016 Ann Street, West Fargo, ND 58078 (701) 361-8873 - Visit Website - Map pin Get Directions - Similar Businesses.

<https://www.mapquest.com> - north dakota - knoke-sea...
Knoke Seamless Siding & Gutters LLC - MapQuest
Get directions, reviews and information for Knoke Seamless Siding & Gutters LLC in West Fargo, ND - 2016 Ann St, West Fargo, ND 58078 (701) 361-8873.

<https://www.yellowpages.com> - Siding Materials
Knoke Seamless Siding & Gutters 2016 Ann St, West Fargo, ND ...
Knoke Seamless provides siding, roofing and gutter services, and window and door installations to the states of North Dakota and Minnesota. Hours: Regular Hours...

<https://www.dandb.com> - business directory - knoke-seam...
Knoke Seamless Siding & Gutters LLC
Knoke Seamless provides siding, roofing and gutter services, and window and door installations to the states of North Dakota and Minnesota.

KSSG
See photos

Knoke Seamless Siding & Gutters LLC
Siding contractor in Cass County, North Dakota
Website Directions Save Call
Address: 2016 Ann St, West Fargo, ND 58078
Phone: (701) 361-8873
Suggest an edit - Own this business?
Add missing information
Add business hours
Questions & answers
Be the first to ask a question Ask a question
Reviews
Be the first to review Write a review Add a photo
From Knoke Seamless Siding & Gutters LLC
Knoke Seamless provides siding, roofing and gutter services, and window and door installations to the states of North Dakota and Minnesota.

Mon Nov 8 1:28 PM

ORDINANCE NO. 1197

AN ORDINANCE TO AMEND AND REENACT SECTIONS 12-0205, 13-0209, AND 13-1506 AND TO CREATE SECTION 12-0205.1 OF THE REVISED ORDINANCES OF 1990 OF THE CITY OF WEST FARGO RELATING TO THEFT OF PROPERTY, DRIVING WITHOUT LIABILITY INSURANCE, WINDOW TINT, AND SHOPLIFTING.

BE IT ORDAINED BY THE BOARD OF CITY COMMISSIONERS OF THE CITY OF WEST FARGO, NORTH DAKOTA:

SECTION 1. Section 12-0205 of the Revised Ordinances of 1990 of the City of West Fargo, North Dakota, is hereby amended and reenacted to read as follows:

12-0205. THEFT OF PROPERTY. It is unlawful for any person to:

1. Knowingly takes or exercises unauthorized control over, or make an unauthorized transfer of an interest in, the property of another with intent to deprive the owner thereof;
2. Knowingly obtain the property of another by deception with intent to deprive the owner thereof, or intentionally deprive another of his property by deception; or
3. Knowingly receive, retain, or dispose of property of another which has been stolen, with intent to deprive the owner thereof.

SECTION 2. Section 13-0209 of the Revised Ordinances of 1990 of the City of West Fargo, North Dakota, is hereby amended and reenacted to read as follows:

13-0209. DRIVING WITHOUT LIABILITY INSURANCE PROHIBITED PENALTY.

1. A person may not drive, or the owner may not cause or knowingly permit to be driven, a motor vehicle in this state without a valid policy of liability insurance in effect in order to respond in damages for liability arising out of the ownership, maintenance, or use of that motor vehicle in the amount required by chapter 39-16.1 of the North Dakota Century Code. Upon being stopped by a law enforcement officer for the purpose of enforcing or investigating the possible violation of an ordinance or state law or during the investigation

of an accident, the person driving the motor vehicle shall provide to the officer upon request satisfactory evidence, including written or electronic proof of insurance, of the policy required under this section. If unable to comply with the request, that person may be charged with a violation of this section. If that person produces a valid policy of liability insurance, including written or electronic proof of insurance in effect at the time of violation of this section to the office of the court under which the matter will be heard prosecutor where the matter is pending, that person may not be found in violation of this section. If the driver is not an owner of the motor vehicle, the driver does not violate this section if the driver provides the court with evidence identifying the owner of the motor vehicle and describing circumstances under which the owner caused or permitted the driver to drive the motor vehicle. Violation of this section is ~~an infraction~~ a noncriminal offense, and the sentence imposed must include a fine of ~~at least~~ one hundred fifty dollars (\$150) which may not be suspended. ~~A person convicted for a second or subsequent violation of driving without liability insurance within a thirty-six month period must be fined at least three hundred dollars, which may not be suspended.~~

2. A person convicted for a second or subsequent violation of driving without liability insurance within a thirty-six (36) month period must be fined at least three hundred dollars (\$300), which may not be suspended.

23. For a violation of this section or equivalent ordinance, the person shall provide proof of motor vehicle liability insurance to the department in the form of a written or electronically transmitted certificate from an insurance carrier authorized to do business in this state. This proof must be provided for a period of three years (3) and kept on file with the department. If the person fails to provide this information, the department shall suspend that person's driving privileges and may not issue or renew that person's operator's license unless that person provides proof of insurance.

34. A person who has violated this section or equivalent ordinance shall surrender that person's operator's license and purchase a duplicate operator's license with a notation requiring that person to keep proof of liability insurance on file with the department. The fee for this license is fifty dollars (\$50), and the fee to remove this notation is fifty dollars (\$50).

- ~~45.~~ When an insurance carrier has certified a motor vehicle liability policy, the insurance carrier shall notify the director no later than ten (10) days after cancellation or termination of the certified insurance policy by filing a notice of cancellation or termination of the certified insurance policy; except that a policy subsequently procured and certified shall, on the effective date of its certification, terminate the insurance previously certified with respect to any motor vehicle designated in both certificates.
56. For a second or subsequent violation of subsection 1 or equivalent ordinance, the court shall order the motor vehicle number plates of the motor vehicle owned and operated by the person at the time of the violation to be impounded until that person provides proof of insurance and a twenty dollar (\$20) fee to the court. The person shall deliver the number plates to the court without delay at a time certain as ordered by the court. The court shall deliver the number plates to the office of the police officer that made the arrest and notify the department of the order. A person who does not provide the number plates to the court at the appropriate time is guilty of a class B misdemeanor.
- ~~6. If a person causes damage to another or another's property with a motor vehicle while in violation of this section, at a minimum the court shall order that person to pay to the other person the amount of the deductible on that person's insurance.~~

SECTION ~~23~~. Section 13-1506 of the Revised Ordinances of 1990 of the City of West Fargo, North Dakota, is hereby amended and reenacted to read as follows:

13-1506. WINDSHIELDS MUST BE UNOBSTRUCTED AND EQUIPPED WITH WIPERS - TINTED WINDOWS.

1. A motor vehicle must be equipped with a windshield. No person shall drive a motor vehicle with any sign, poster, frost, condensation, or other nontransparent material upon or in place of the front windshield, side wings, side or rear windows of such motor vehicle, other than a certificate or other paper required to be so displayed by law.
2. The windshield on every motor vehicle shall be equipped with a device for cleaning rain, snow or other moisture from the windshield, which device shall be so constructed as to be controlled or operated by the driver of the vehicle.

3. Every windshield wiper upon a motor vehicle ~~shall~~ must be maintained in good working order.
4. An individual may not operate a motor vehicle with any object, material, or tinting displayed, affixed, or applied on the front windshield or any window unless the object, material, or tinting in conjunction with the windshield upon which it is displayed, affixed, or applied has a light transmittance of at least seventy percent or the object, material, or tinting in conjunction with a window other than the windshield upon which it is displayed, affixed, or applied has a light transmittance of at least fifty percent. This subsection does not apply to windows behind the operator if the motor vehicle is equipped with outside mirrors on both sides that meet the requirements of Section 13-1505.

(Source: North Dakota Cent. Code § 39-21-39)

SECTION ~~34~~. Section 12-0205.1 of the Revised Ordinances of 1990 of the City of West Fargo, North Dakota, is hereby created and enacted to read as follows:

12-0205.1. - SHOPLIFTING. It is unlawful for any person to commit shoplifting or retail theft as referred to in chapter 51-21 of the North Dakota Century Code within the jurisdiction of the City of West Fargo. Shoplifting or retail theft shall be subject to the following:

1. Presumption. Any person concealing upon his person or among his belongings, or causing to be concealed upon the person or among the belongings of another, unpurchased merchandise displayed, held, offered, or stored for sale in a retail mercantile establishment and removing it to a point beyond the last station for receiving payments in that retail mercantile establishment shall be prima facie presumed to have so concealed such merchandise with the intention of permanently depriving the merchant of possession of the full retail value of such merchandise, all as provided in § 51-21-02 of the North Dakota Century Code.
2. Definitions. For purposes of this chapter, in addition to the definitions contained in this chapter, all of the definitions contained in § 51-21-01 of the North Dakota Century Code are hereby adopted by reference.

3. Detention of Suspect - Procedure - Immunity. The provisions of §§ 51-21-03 and 51-21-04 of the North Dakota Century Code are hereby adopted by reference.

SECTION ~~4~~5. Effective Date. This ordinance shall be in full force and effect from and after the date of its final passage and publication.

President of Board of City
Commissioners of the City of
West Fargo, North Dakota

ATTEST:

City Auditor

Date of First Reading:

Date of Second Reading:

Date of Publication: