



AGENDA

Regular Town Board Meeting (VIRTUAL)

December 21, 2020 - 6:00 PM

HOSTED FROM TOWN HALL (101 Huntersville-Concord Road)

Virtual Meeting Information *This meeting will be held both in person at the Huntersville Recreation Center located at 11836 Verhoeff Drive, Huntersville, NC 28078, and virtually via livestream at <https://www.facebook.com/HuntersvilleNCTownGovernment>. The Board of Commissioners will participate remotely. The public is invited to attend and comment during public comment (1) in person at the Huntersville Recreation Center, 11836 Verhoeff Drive, Huntersville, NC 28078 or (2) by telephonic communication in accordance with instructions sent to persons who have registered with the Town Clerk no later than 3 p.m. on December 21, 2020 to speak by telephonic communication. The public may also submit comments by email to the Town Clerk at jpierson@huntersville.org. The Town Clerk may be reached by email to jpierson@huntersville.org or by phone at (704) 766-2202.*

1. **Call to Order**
2. **Invocation - Moment of Silence**
3. **Pledge of Allegiance**
4. **Mayor and Commissioner Reports-Staff Questions**
5. **Public Comments, Requests, or Presentations** - *Speakers are limited to 3 minutes. The Mayor reserves the right to shorten the time limit for speakers when an unusually large number of persons have signed up to speak. Speakers may not give all or a portion of their time to other speakers.*
 - 5.A. Harold Rice, CEO of Ada Jenkins Center.
 - 5.B. Transportation Projects Update. (*Stephen Trott*)
6. **Agenda Changes**
7. **Public Hearings**

8. Other Business

- 8.A. Consider adopting the Huntersville 2040 Community Plan. *(Dave Hill)*
- 8.B. Consider adopting Resolution Conveying Real Property to a Non-profit Corporation (Holding Hope). *(Emily Sloop)*
- 8.C. Consider adopting Resolution Conveying Real Property to a Non-profit Corporation (Habitat). *(Emily Sloop)*
- 8.D. Consider adopting Resolution to award the bid for the Waymer Park Athletic Field Lighting Project and approve the construction contract. *(Michael Jaycocks)*
- 8.E. Consider adopting Resolution Approving Design-Build Criteria and Design-Build Contract Method for New Town Hall Project. *(Anthony Roberts)*
- 8.F. Consider adopting Resolution Authorizing Purchase of Surveillance Platform and Equipment from Sole Source. *(Chief Hoyle)*
- 8.G. Consider approving budget amendment appropriating Asset Forfeiture revenue in the amount of \$194,000 to the Asset Forfeiture Capital account for the public safety camera network system. *(Chief Hoyle/Pattie McGinnis)*

9. Consent Agenda

- 9.A. Approve the minutes of the November 16, 2020 Regular Town Board Meeting. *(Janet Pierson)*
- 9.B. Approve Budget Amendment appropriating Park Capital reserve revenue in the amount of \$75,000 to the Athletic Field Lighting expense for the Waymer baseball field. *(Pattie McGinnis)*

10. Closing Comments

11. Adjourn

**Town of Huntersville
Town Board
December 21, 2020**

To: Town Board

From: David Hill, Principal Planner

Date: December 21, 2020

Subject: Consider adopting the Huntersville 2040 Community Plan. *(Dave Hill)*

EXPLAIN REQUEST:

Action on this resolution was postponed to December 21st from the November 16th Board of Commissioners meeting. A December 7th Pre-Meeting discussion was held to discuss the draft 2040 Plan amendments recommended by the Planning Board.

ACTION RECOMMENDED:

Staff recommends adoption of the 2040 Plan.

FINANCIAL IMPLICATIONS:

The budget for the project was approved through a professional services contract in September 2019.

ATTACHMENTS:

1. Draft Resolution - 2040 Plan Adoption 21Dec2020
2. 2040 Plan Amendment Options - For Town Bd Mtg - Dec 21 2020

A RESOLUTION ADOPTING THE HUNTERSVILLE 2040 COMMUNITY PLAN

WHEREAS, the Town of Huntersville, North Carolina adopted the Huntersville 2030 Community Plan on June 20, 2011; and

WHEREAS, the 2030 Community Plan comprehensively assessed the impacts of rapid growth and created a vision for land use and development within the Town of Huntersville for a period of 20 years; and

WHEREAS, in January 2019, the Huntersville Town Board of Commissioners instructed staff to prepare an update of the 2030 Community Plan; and

WHEREAS, from September 2019 through October 2020, the Planning Department staff and a consultant team conducted a process to update the 2030 Plan; and

WHEREAS, the Huntersville 2040 Plan Steering Committee provided oversight to the development of the Huntersville 2040 Community Plan (the "2040 Plan"), which included three public surveys, several public meetings, seven Steering Committee meetings, extensive website public outreach that resulted in 11,570 individual engagements, and distribution of a newsprint copy of the draft 2040 Plan to every Huntersville household; and

WHEREAS, the Huntersville Planning Board reviewed different aspects of the draft 2040 Plan on four separate occasions, resulting in a recommendation of approval of the draft 2040 Plan on October 27, 2020; and

WHEREAS, a joint public hearing was conducted by the Huntersville Board of Commissioners and the Huntersville Planning Board on October 19, 2020; and

WHEREAS, the Huntersville 2040 Community Plan has been produced and subjected to a review and approval process that is compliant with the North Carolina General Statutes;

NOW, THEREFORE BE IT RESOLVED BY THE TOWN OF HUNTERSVILLE BOARD OF COMMISSIONERS:

1. The Huntersville 2040 Community Plan is hereby adopted and is effective immediately.
2. The Huntersville 2040 Community Plan now replaces the Huntersville 2030 Community Plan.
3. Should a conflict arise, the Huntersville 2040 Community Plan takes precedence over all Small Area Plans adopted by the Town of Huntersville.
4. Prior to publication of the final 2040 Plan, staff is instructed to make any non-substantive revisions needed to correct errors and omissions.

Draft Huntersville 2040 Community Plan Amendment Options

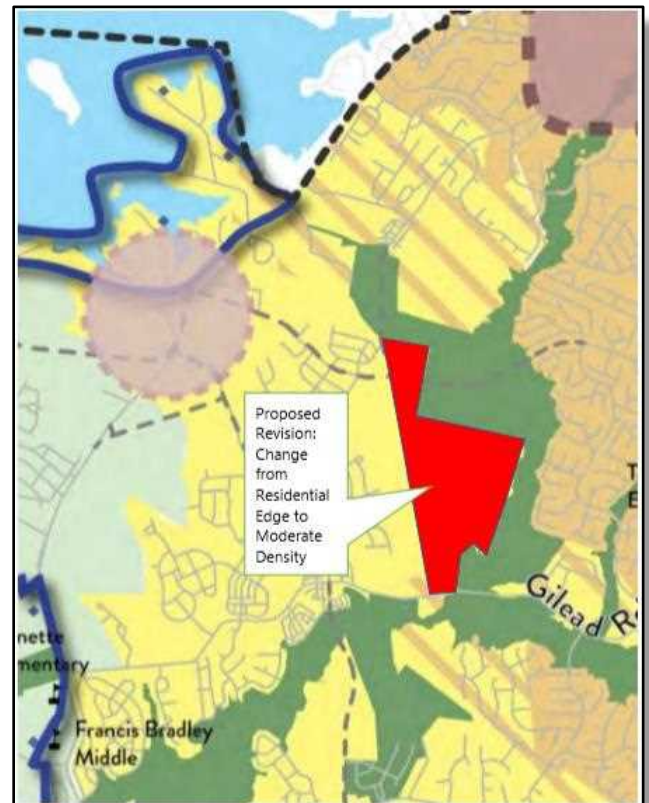
Prepared for the December 21, 2020 Town Board of Commissioners Meeting

The amendment options below are suggested for the Huntersville Draft 2040 Community Plan, dated October 21, 2020. A digital copy of the October 21, 2020 Draft 2040 Plan can be found online at the following address: <https://www.huntersville2040.com/>

Town Board Revision

Revise the Future Land Use map to designate the property shown above from 'Residential Edge' to 'Moderate Density', with the following changes:

- Add the following sentence to the Moderate Density character area description: *"Exact density of future development should vary based on context and site constraints including potential conflicts with adjacent development, access, and the presence of natural and/or cultural resources."* (page 53)
- Make the following changes to three policies (LU 7.1, LU 9.2 and EOS-2):
 - Add Moderate Density to areas where natural resources and elements that contribute to rural character should be preserved (3rd bullet, page 63).
 - LU 9.2: Add Moderate Density to area where conservation design is encouraged (page 65).
 - EOS-2: Add Moderate Density to area where conservation design is encouraged (page 80).



Changes Requested By Planning Board

1. Planning Board Request: Add recommendations for update to Small Area Plan(s) for NC 73.

- **Option Recommended:**

- P. 61: Add sub-bullet to LU 1.4:
 - Priorities for updating small area plans include the NC 73 corridor and downtown.
- *Note: An action item is included in the plan on page 102: LU 1.4: Prepare new and/or update existing Small Area Plans as needed.*

2. Planning Board Request: Add policy and recommendations to specifically address senior housing.

- **Option Recommended:**

- Add a recommendation under LU-7.2:
 - Consider amending the Town's Zoning Ordinance to identify locations where attached senior housing products may be allowed and determine appropriate design and development standards.
- P. 65: Add a Strategy under Policy LU-10:
 - LU 10.5: Facilitate the creation of and provide guidelines for senior and age-restricted housing.
 - Update zoning ordinance to address where different forms of attached senior housing products are allowed and what design and development standards apply.
 - New, larger-scale senior housing structures (e.g. congregate care facilities, apartments and condos) should be located within Mixed Use Centers, Activity Centers or the Town Core future land use areas and should have a maximum height of 4 stories.
 - Evaluate the creation of a Senior Residential (SR) zoning district. Development within this new district should be appropriate for Huntersville and meet criteria of form-based code.
 - Large-scale, highway oriented senior housing in Moderate Density and lower density future land use areas is not appropriate.
 - Age-targeted housing in Residential Edge and Rural Conservation areas may be appropriate. Rezoning to the TND Rural zoning district can utilize provisions that allow flexibility in lot sizes and housing options. Overall density of these developments should be low to reflect the context.

3. Planning Board Request: Emphasize the 10|10|10 goal for Downtown in the plan.

- **Option Recommended:**

- P 47: Change page that ties goals to livability principles to a "measuring success page" that shows how to track progress towards goals.



- P. 78: Add mention of 10|10|10 goal to Big Moves for Downtown Huntersville
- P. 103: Add to action item track progress towards the 10|10|10 goal of having 10 places that serve food, 10 retail establishments (non-chain and not thrift stores) and 10 businesses open after 6pm.

4. Planning Board Request: Further integrate the greenway plan into the 2040 Community Plan.

- **Option Recommended:**

- Add planned greenways to the downtown concept.
- Add call outs or labels to show and describe key greenway and pedestrian connections through downtown. Labels should also show the location of key projects and infill opportunities.
- *Note: An action item exists on P. 105: T 3.2: Coordinate with other departments to implement the Huntersville Bicycle Master Plan*

5. Planning Board Request: Prioritize update of the small area plan for downtown.

- **Option Recommended:**

- P. 61: Add sub-bullet to LU 1.4:
 - Priorities for updating small area plans include the NC 73 corridor and downtown.
- P. 74: Reword DT 10.3
 - Current strategy: Prepare a public realm master plan.
 - Revised strategy: Update the Downtown Small Area Plan to build on recommendations in the 2040 Community Plan.
 - This plan update could be coordinated with conceptual design of streetscape or public realm improvements to build on the 2040 plan.
 - It could also include the study of refinements to zoning districts, the Regulating Plan and policies related to housing and transitions between redevelopment and infill projects and existing residential areas.
- P. 102 or 103: Add Action Item related to Small area Plan for downtown.

6. Planning Board Request: Focus on the development of measureable criteria such as the nonresidential tax base to maintain economic vitality.

- **Option Recommended:**

- Add recommendation to the Economic Vitality section to maintain or exceed 22.6% of non-residential property taxes.



- Add recommendation to consider a build-out study to develop/refine measurable targets for residential and non-residential tax base.
- Add action item to regularly measure percentage of non-residential tax base and report to Town Board.

Other Discussion by Planning Board

1. Final clean up. Page references should be updated.

2. The plan needs to address transportation and traffic more directly.

- Options
 - T-6: Maybe add a recommendation about address traffic hot spots through study, town-led projects and coordination with NCDOT
 - Discuss the larger role for town related to transportation projects and local funding.
 - Re-state planned projects, funds used, or prioritize transportation in budget.
 - Mention public feedback: 1st in priorities in first survey, but when asked about investment 2nd priority when asked about investment in second survey, behind Greenways, trails, biking and sidewalk improvements.
 - Recommendation or action item to lobby for change related to impact fees.

Staff Change Recommended:

1. Add action item to review action plan once a year.

**Town of Huntersville
Town Board
December 21, 2020**

To: Town Board

From: Emily Sloop, Town Attorney

Date: December 21, 2020

Subject: Consider adopting Resolution Conveying Real Property to a Non-profit Corporation (Holding Hope). *(Emily Sloop)*

EXPLAIN REQUEST:

Per Board direction, this Resolution approves the conveyance of four lots in the Norman Park Subdivision to Holding Hope, Inc.

ACTION RECOMMENDED:

Approval

FINANCIAL IMPLICATIONS:

ATTACHMENTS:

1. Resolution Approving Conveyance of Property to Holding Hope
2. Hope Parcels Exhibit A
3. Hope Letter Exhibit B

**Resolution Approving Conveyance of Property to Nonprofit Organization
Pursuant to N.C.G.S. 160A-279**

WHEREAS, the Town of Huntersville (the “Town”) owns certain real property located within the Norman Park Subdivision as depicted on Exhibit A attached hereto and incorporated herein, that was conveyed to the Town in that deed recorded in Deed Book 10935 at Page 421 of the Mecklenburg County Registry, said lots being more particularly described as follows:

Lots 1, 2, 23, and 24, Block F of Norman Park Subdivision as shown on Map Book 10 at Page 321, Mecklenburg County Registry with respective Parcel IDs of 01515313, 01515314, 01515311, and 01515312; and

WHEREAS, Holding Hope, Inc. is a non-profit corporation whose purpose is to build and provide affordable housing units for low and moderate-income persons and families in North Mecklenburg County, including Huntersville; and

WHEREAS, N.C. Gen. Stat. § 157-2 declared that the provision of safe and sanitary housing accommodations for persons of low and moderate income is a public purpose for which public monies may be spent by municipal housing authorities; and

WHEREAS, N.C. Gen. Stat. § 160A-456(b) authorizes the Town to exercise any of those powers granted to a municipal housing authority in Chapter 157 of the North Carolina General Statutes; and

WHEREAS, in lieu of the appropriation of funds, N.C. Gen Stat. § 160A-279 authorizes the Town to convey real property by private sale, with or without consideration, to a non-profit corporation for the purpose of carrying out a public purpose; and

WHEREAS, the Huntersville Board of Commissioners (the “Board of Commissioners”) desires to convey the above-described property to Holding Hope, Inc. for the public purpose of building and providing affordable housing units for low and moderate-income families thereon in accordance with the letter submitted by Holding Hope, Inc. attached hereto and incorporated herein as Exhibit B and;

NOW THEREFORE, BE IT RESOVLED AS FOLLOWS:

1. The Board of Commissioners hereby approves the conveyance of the above-described property to Holding Hope, Inc. for the purpose of building and providing affordable housing for low to moderate-income persons and families in North Mecklenburg County in accordance with the submitted letter.
2. Notice of this resolution and a summary of its contents shall be published as required by N.C. Gen. Stat. § 160A-267 and conveyance of the above-described property shall occur no earlier than 10 days after publication of said notice.
3. Pursuant to N.C. Gen. Stat. § 160A-279, the instruments of conveyance shall be subject to restrictions to ensure that the conveyed property is used for the above-stated public purpose.

4. The Town Manager and Town Attorney are hereby authorized to take necessary actions and to execute such documents as may be necessary to complete the conveyance of the property as approved herein.

Adopted this the _____ day of December 2020.

Attest:

Clerk to the Board

Mayor, Town of Huntersville

Approved as to Form:

Town Attorney



Parcel ID: 01515311
Land Area: 0.181 Acres

Parcel ID: 01515314
Land Area: 0.171 Acres

Parcel ID: 01515313
Land Area: 0.162 Acres

Parcel ID: 01515312
Land Area: 0.170 Acres



December 10th, 2020

Mr. Anthony Roberts
Town Manager, Town of Huntersville
101 Huntersville-Concord Rd
Huntersville, NC 28078

Dear Anthony,

Thank you very much for the consideration of the Town of Huntersville's support to donate lots 1,2,23 and 24 of Norman Park subdivision to Holding Hope, LLC to address housing instability for low income families in our community.

The intent of Holding Hope is to build Cottages on the property that will afford families an opportunity to overcome obstacles and barriers to housing success. This model of housing referred to as a Progressive model allows families who have experienced housing insecurity to create a path of housing stability through a network of collaborative wrap around services that supports the whole family in achieving their goals. This innovative model involves the commitment of the community with partnerships that incorporate multi-sector collaborations made up of non-profits, private, public, civic, corporate and faith based community whose partnership support the vision. Families who previously had experienced low income obstacles can rebuild their social capital and financial resources with these wrap around services to achieve housing stability. These homes will be the property of Holding Hope and will be managed through the Hope House Foundation.

Many thanks again for partnering with Holding Hope to help us make Hope happen for members of our great community, Huntersville NC.

Sincerely,

Debbie J. O'Handley
Executive Director
The Hope House Foundation
dohandley@hopehousefoundation.org

**Town of Huntersville
Town Board
December 21, 2020**

To: Town Board

From: Emily Sloop, Town Attorney

Date: December 21, 2020

Subject: Consider adopting Resolution Conveying Real Property to a Non-profit Corporation (Habitat). *(Emily Sloop)*

EXPLAIN REQUEST:

Per Board direction, this Resolution approves the conveyance of six lots in the Norman Park Subdivision to Habitat for Humanity of the Charlotte Region, Inc.

ACTION RECOMMENDED:

Approval

FINANCIAL IMPLICATIONS:

ATTACHMENTS:

1. Resolution Approving Conveyance of Property to HHCR
2. Habitat Parcels Exhibit A
3. Habitat Exhibit B

**Resolution Approving Conveyance of Property to Nonprofit Organization
Pursuant to N.C.G.S. 160A-279**

WHEREAS, the Town of Huntersville (the “Town”) owns certain real property located within the Norman Park Subdivision as depicted on Exhibit A attached hereto and incorporated herein, that was conveyed to the Town in that deed recorded in Deed Book 10935 at Page 421 of the Mecklenburg County Registry, said lots being more particularly described as follows:

Lots 13 and 14 in Block G of Norman Park Subdivision as shown on Map Book 10 at Page 321, Mecklenburg County Registry with respective Parcel IDs of 01515401 and 01515402.

Lots 11, 12, 13 and 14, Block H of Norman Park Subdivision as shown on Map Book 10 at Page 321, Mecklenburg County Registry with respective Parcel IDs of 01515523, 01515524, 01515501, 01515502; and

WHEREAS, Habitat for Humanity of the Charlotte Region, Inc. (“HHCR”) is a non-profit corporation whose purpose is to build and provide affordable housing units for low and moderate-income persons and families in North Mecklenburg County, including Huntersville; and

WHEREAS, N.C. Gen. Stat. § 157-2 declared that the provision of safe and sanitary housing accommodations for persons of low and moderate income is a public purpose for which public monies may be spent by municipal housing authorities; and

WHEREAS, N.C. Gen. Stat. § 160A-456(b) authorizes the Town to exercise any of those powers granted to a municipal housing authority in Chapter 157 of the North Carolina General Statutes; and

WHEREAS, in lieu of the appropriation of funds, N.C. Gen Stat. § 160A-279 authorizes the Town to convey real property by private sale, with or without consideration, to a non-profit corporation for the purpose of carrying out a public purpose; and

WHEREAS, the Huntersville Board of Commissioners (the “Board of Commissioners”) desires to convey the above-described property to HHCR for the public purpose of building and providing affordable housing units for low and moderate-income families thereon in accordance with the plan submitted by HHCR attached hereto and incorporated herein as Exhibit B and;

NOW THEREFORE, BE IT RESOVLED AS FOLLOWS:

1. The Board of Commissioners hereby approves the conveyance of the above-described property to HHCR for the purpose of building and providing affordable housing for low to moderate-income persons and families in North Mecklenburg County in accordance with the submitted plan.
2. This resolution rescinds and replaces resolution number R-2019-32 dated October 21, 2019.

3. Notice of this resolution and a summary of its contents shall be published as required by N.C. Gen. Stat. § 160A-267 and conveyance of the above-described property shall occur no earlier than 10 days after publication of said notice.
4. Pursuant to N.C. Gen. Stat. § 160A-279, the instruments of conveyance shall be subject to restrictions to ensure that the conveyed property is used for the above-stated public purpose.
5. The Town Manager and Town Attorney are hereby authorized to take necessary actions and to execute such documents as may be necessary to complete the conveyance of the property as approved herein.

Adopted this the _____ day of December 2020.

Attest:

Clerk to the Board

Mayor, Town of Huntersville

Approved as to Form:

Town Attorney



Parcel ID: 01515401
Land Area: 0.160 Acres

Parcel ID: 01515402
Land Area: 0.173 Acres

Parcel ID: 01515502
Land Area: 0.178 Acres

Parcel ID: 01515501
Land Area: 0.164 Acres

Parcel ID: 01515524
Land Area: 0.162 Acres

Parcel ID: 01515523
Land Area: 0.177 Acres



3816 Latrobe Drive
Charlotte, NC 28211
704.376.2054
habitatCLTregion.org

Exhibit B

November 12, 2020

Mr. Anthony Roberts, Huntersville Town Manager

P.O. Box 664
Huntersville, NC 28070

Mr. Roberts:

Thank you for sharing your draft resolution concerning the Town of Huntersville's desire to partner with Habitat for Humanity of the Charlotte Region on a housing project (as defined in N.C.G.S. 157-3(12)) for the Norman Park lots. We look forward to returning to Norman Park, where we have constructed quite a few homes in recent years. Paragraph 4 of the resolution outlines various expectations for the project plan. Following are comments on how we can/will comply with each.

a. The proposed number of affordable housing units to be provided:

The resolution specifies 6 lots owned by the town. Habitat Charlotte Region previously met with Jack Simoneau, Huntersville Planning Director on July 9, 2019 concerning zoning standards applicable in Norman Park. Pairs of the lots in question will need to be combined to form lots adequate to meet current zoning standards. Consequently, we anticipate a total of 3 homes may be constructed as part of the project.

b. Whether the housing units will be purchased or leased:

The current plan is to sell the homes to Persons of Low or Moderate Income, as defined in 157-3(15a) (15b). Separately, we are also currently partnering with Hope House Foundation and the Ada Jenkins Center to rehab/construct additional transitional housing in North Mecklenburg. It is possible that Habitat Charlotte Region could subsequently approach the town to repurpose one or two of the homes to help meet that critical need as well.

c. The eligibility of households to purchase or lease the housing units to be provided based on household income:

The family's gross income, adjusted for household size must be greater than 30% of Area Median Income, but less than 80%, as determined by HUD. In recent years the vast majority of our homeowners have had household income below 60%. I have attached a copy of our Homeowner Selection Guidelines for your reference.

d. The affordability level of the housing units as a percentage of household income:

As a policy, we will not place someone in a home if the total housing costs, minus expected utilities, exceed 30% of gross income, or if total long-term debt payments exceed 40%.

e. The sources of funding for the construction of the housing units:

Habitat enjoys a mix of public and private funding sources. Public funding programs include: SHOP, HOME, and CDBG. Private funding originates within corporate and faith community partners, as well as several local foundations. In addition, Habitat Charlotte Region conducts ongoing community fundraising from individuals and other local organizations. We also operate three profitable thrift stores that contribute to our affordable housing ministry. The specific mix of funding varies for each home, and will not be known in detail on any given home until we are prepared to begin construction. We have attached a copy of our 2019 Community Impact Report for your reference, where you can find additional information on various funding sources of Habitat Charlotte Region.

f. Timing and phasing of construction of the housing units:

We anticipate beginning the first two Norman Park homes in our fiscal year ending June 30, 2021. Timing of the final home is uncertain until the road frontage is paved.

g. The process to be used to identify and verify eligibility of persons to purchase or lease the housing units:

Please refer to the attached Homeowner Selection Guidelines. In addition to these guidelines, applicants also go through a rigorous credit underwriting process (including credit bureau reports, income and employment verification), and criminal background checks. Applicants must also complete at least 300

hours of “sweat equity” volunteering, along with the completion of personal financial training.

h. The proposed control period (number of years) for which the housing units must be used to benefit low to moderate income families:

Our standard “period of affordability” deed restriction is 45 years, with the stipulation that the affordability period resets upon each sale or transfer, unless a more restrictive period is required by a funding source being used.

i. The method to ensure that the housing units will be used to benefit low-moderate income for the entirety of the control period:

Recorded deed restrictions, and a right of first purchase giving Habitat of the Charlotte Region the first opportunity to either repurchase or match a bona-fide offer upon resale.

j. The methodology that will be used by Habitat to ensure that the rental rates or sale price of the units will be at the lowest possible rates, consistent with providing decent, safe and sanitary dwelling accommodations as required by N.C.G.S. § 157-29:

All newly constructed or renovated homes receive an independent appraisal prior to closing with the homeowner, and the purchase price never exceeds appraised value. Additionally, we provide affordable mortgages and other necessary subsidies to ensure that no homeowner is put into a “cost burdened” situation where their housing costs exceed 30% of their gross household income.

k. The methodology that will be used by Habitat to ensure that the revenues derived from the sale or rental of the housing units will not be used to support other activities of the Town or Habitat as required by N.C.G.S. § 157-29:

Habitat Charlotte Region constructs and sells decent, safe, and sanitary homes, and issues affordable below-market mortgages in return. Over time, as payments are collected on the mortgages, they are plowed back into the operation of Habitat Charlotte Region, including the construction of other future



strength.
stability.
self-reliance.
shelter.

homes. There is no linkage to any other programs operated by the Town of Huntersville.

l. The methodology that will be used by Habitat to prevent the fraudulent rental or purchase of the Habitat Lots.

Applicants must have lived in North Mecklenburg for a minimum of one year before their initial application will be accepted. Applicants go through a rigorous and lengthy (two additional years) application and qualification process. This process includes in-person interviews, credit underwriting, employment verification, criminal background checks, and several hundred hours of documented volunteering before they are placed in a home.

m. Our commitment to serve the residents of Huntersville through affordable homeownership opportunities.

To ensure that residents of Huntersville and the surrounding areas have the first opportunities to purchase these homes, Habitat for Humanity of the Charlotte Region will initially offer these homes exclusively to those qualified applicants residing in our Northern Service Area (North Mecklenburg and Iredell County) for the first 60 days of availability. Should a home remain unselected after the 60-day period, it will then be made available to qualified applicants throughout our service area.

Best Regards,

Christopher B. Barton,
Director of Land Acquisition & Development



2020 FAMILY SERVICES DEPARTMENT POLICY MANUAL



Family Services Department Mission Statement

THE FAMILY SERVICES TEAM WORKS IN PARTNERSHIP WITH FAMILIES, THE COMMUNITY AND THE ENTIRE STAFF OF HABITAT FOR HUMANITY IN RECRUITING, TRAINING AND SUPPORTING FAMILIES THROUGH HOMEOWNERSHIP TO HELP IMPROVE THEIR QUALITY OF LIFE SO THAT THEY CAN GROW INTO ALL THAT GOD INTENDED.

Approved

Habitat Charlotte Family Services Policy Manual - Table of Contents

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1.0 Purpose

The purpose of this policy is to define Habitat Charlotte's homeowner partner selection criteria as well as to emphasize that Habitat Charlotte complies with the provisions of federal housing law and Habitat International requirements.

2.0 Policy

Federal Laws

Habitat for Humanity of Charlotte, Inc (HFHC) must comply with the Fair Housing Act (FHA) and all Fair Housing Laws, the Equal Credit Opportunity Act (ECOA), the Fair Credit Reporting Act (FCRA), the Privacy Act of 1974, the Americans with Disabilities Act (ADA), the Real Estate Settlement Procedures Act (RESPA) from the U.S. Department of Housing and Urban Development (HUD), the Federal Trade Commission (FTC) and any local applicable laws.

NEED FOR HOUSING: HFHC defines "need" as families who are paying more than 30% of their gross monthly income towards rent, living in overcrowded conditions, living in subsidized or public housing, living in sub-standard conditions, or credit score less than 650 (or no credit score). Families must meet at least one of the "need" conditions in order to qualify in this area.

ABILITY TO PAY: HFHC makes all reasonable efforts to serve applicants whose gross incomes fall between 30% - 80% of HUD Area Median Income (AMI) for Mecklenburg County at the time of the Initial Application. Income of the entire household must be disclosed on the application. Additionally, the lowest HFHC mortgage payment for their family size and their total monthly debt servicing cannot exceed 40% of their gross monthly income (Debt-to-Income Ratio).

All delinquent debt with the exception of medical collections must be paid off prior to approval, move-in and closing. Medical collections must not exceed \$10,000. Outstanding debt, other than car loans, secured loans and student loans, must be less than \$1,000. Applicants will be required to participate in various educational activities and continue to meet ability to pay requirements throughout the process.

WILLINGNESS TO PARTNER: Homeowners-in-Process are required to work a minimum of 21 hours of Sweat Equity a month. The minimum amount of hours is 250 for existing homes and 300 for a new home. While helpers are allowed to work alongside HIPs and contribute to the overall total of sweat equity hours, an applicant must be present and working alongside a helper. Hours must be completed prior to moving into the home. Each applicant must work a minimum of 50 hours of construction sweat equity.

All household members 16 years old and older must pass a criminal background check and sex offender registry check based on a risk scorecard. Families must maintain stable employment (if employed) and rental history. All families must be legal U.S. residents.

DESELECTION: Families will be deselected only in the event of demonstrated fraud on the application, failure to complete requirements set forth in the Family Participation Contract, negative change in financial condition that would significantly impact the ability to pay, or presence on a sexual offender database.

Appendix 1.1 MILITARY VETERANS SELECTION

The **Veterans Initiative** would make concessions for employment, and rental history. Habitat Charlotte will give priority consideration for Transitional Housing to military veterans based on availability of housing.

Employment

We will count active duty military service as a part of employment history as long as the service ended within the last 24 months and the discharge was other than dishonorable. When military service is used in qualifying an applicant, we will require the applicant to be on the current job at least 6 months at the time of application and can be considered for approval by the Homeowner Selection Committee after 12 months on the current job.

Rental History

Military veterans are required to have at least 12 months of living independently and paying rent on time prior to Homeowner Selection Committee approval. We will count rental history while a veteran was on active duty only if the veteran actually paid rent/mortgage and as long as we are able to verify it. Previous rental history prior to the veteran serving on active duty will be considered if it was within the last 5 years and we are able to verify it. Priority Transitional Housing will be considered for veterans who do not currently meet rental history requirements. If a transitional house is available and the veteran seems to meet most of the other requirements, we will give them priority to rent a home from us for 12 months to meet the rental history requirement prior to them being approved.

Appendix 1.2 HOMEOWNER PARTNER SELECTION DETAILS

Need For Housing

Applicants must demonstrate one or more of the following to be considered for homeownership:

1. Cost-burdened—paying more than 30% of gross income on rent
2. Overcrowded—adults sharing rooms with children, school-age children of opposite sex sharing a room, more than 2 people sharing a room
3. Living in subsidized or public housing
4. Living in sub-standard conditions, as defined by HUD guidelines
5. Be unable to qualify for other/conventional mortgage financing (defined as credit score < 650 or no credit score)

Ability to Pay

I. INCOME/CREDIT SITUATION AT THE TIME OF INITIAL APPLICATION

INCOME CRITERIA

- An applicant will be considered whose gross income falls between **30% - 80%** of the HUD Gross Area Median Income (AMI) for Mecklenburg County at the time of the Initial Application. Income of the entire household must be disclosed on the application. Pay Raises after the Initial Application Review will not automatically disqualify an applicant, but decreases in income that causes an applicant to fall below the income requirement will be a disqualifying factor. All eligible income for all applicants (excluding pay raises), must continue to meet minimum criteria through the Final Underwriting phase.
- Applicants making less than 30% Gross AMI will not be considered, unless they are qualified participants of the Charlotte Housing Authority's HAP (Housing Assistance Payment) Voucher program.
- **Overtime, bonus, and incentives pay** will be excluded from the initial calculation of gross income.
- Income calculation for 10-month employees will be calculated as earned over 12 months.
- Only income earned by the individuals who will be on the deed will be considered toward qualifying for the Habitat Homebuyer program.
- If adults (regardless of relation to the applicant) whose names will not be on the deed will be living in the home, their income will not be considered toward qualifying for the Habitat Homebuyer program but may be considered for special government funding programs.
- Non-earned income such as court-ordered child support, SSI (survivor benefits and disability), Work First, retirement income, etc., will be evaluated regarding stability and likelihood of continuation for the next 5 years from date of application approval (3 years from estimated closing date). Child support must be stable for at least 12 months leading up to application approval. In order to count SSI as a part of the income, the applicant or co-applicant's name must be listed as the beneficiary or caregiver for the recipient.

DELINQUENT DEBT

- Applications will not be considered if the applicant family has more than \$1,200 in non-medical delinquent debt. Applicants with up to \$1,200 in delinquent debt must pay the debt off within 90 days of application or they will be asked to reapply when they have reduced the debt to \$0. All delinquent debt must be down to \$0 before final underwriting approval.

Medical collections must total less than \$10,000 at all times during the application process and Homeowner-In-Process stages.

OUTSTANDING DEBT

- Applicants will not be considered if they have more than **\$1,000** in outstanding debt excluding car loans, student loans, and other secured debt. Monthly payments on car loans, student loans, and other secured debt will be factored into the monthly debt servicing calculations to determine debt-to-income ratio.
- Applicants will **only** be considered if the lowest monthly Habitat mortgage payment for their family size and total monthly debt servicing expenses combined is **less** than **40%** of their gross income. (Debt-to-Income Ratio). Debt servicing expenses is the amount of money used each month to pay things such as credit card debt, car payments, student loans, furniture payments, Child support payments, loans or any other revolving credit debt.

If the lowest Habitat mortgage payment for an applicant's family size is more than 30% of their monthly gross income, HFHC will subsidize the mortgage up to the amount of the lowest monthly mortgage payment.

- Student loan payment will not be counted against monthly debt if it is deferred, or in forbearance (12 months). If it is not deferred, the actual monthly payment or income-based payment will be factored into debt-to-income ratio.

Typically, only debt with 12 months or more remaining to pay off will be counted towards monthly debt servicing. Debts lasting less than 12 months must be included if the amount of the debt will affect the borrower's ability to pay the mortgage during the months immediately after loan closing, especially if the borrower will have limited or no cash assets after loan closing.

****HUD Policy on Projected Obligations****

If a debt payment, such as a student loan, is scheduled to begin within 12 months of the mortgage loan closing, the lender must include the anticipated monthly obligation in the underwriting analysis, unless the borrower provides written evidence that the debt will be deferred to a period outside this timeframe. Similarly, balloon notes that come due within 1 year of loan closing must be considered in the underwriting analysis.

BANKRUPTCY

- If an applicant has been in bankruptcy, the bankruptcy must have been discharged fully or Chapter 13 plan completed. The applicant must have re-established good credit (or chosen not to incur new credit obligations) and demonstrated an ability to manage financial affairs. A **minimum of 2 years** must have lapsed between discharge of the bankruptcy and the application. An application will be considered in 12 months if the applicant is able to document extenuating circumstances beyond his/her control and that his/her current situation is such that the events leading to the bankruptcy are not likely to recur and has since exhibited an ability to manage financial affairs. All necessary documentation must be submitted with the application.

II. CREDIT SITUATION AT TIME OF (FINAL UNDERWRITING)

DELINQUENT DEBT

An application will not be pre-approved if an applicant has more than \$0 in total collections, judgments, charged off accounts, and/or accounts that are past due. They must reduce the delinquent debt within 60 days or the application will be declined. They may reapply after they have been able to reduce their debt level to meet our requirements. All delinquent debt must remain at \$0 through underwriting and pre-approval. Medical debt must still be at or below \$10,000.

OUTSTANDING DEBT

An application will not be pre-approved if an applicant has more than \$1,000 in unsecured outstanding debt, excluding car and/or student loan balances, and/or other secured debt; and if their debt payments exceed 40% of their gross monthly income.

III. CREDIT SITUATION AT THE TIME OF SELECTION AND CLOSING

DELINQUENT DEBT

All delinquent debt must remain at \$0 before selection of a lot, move-in or purchase of an existing home.

OUTSTANDING DEBT

Applicants will not be able to select a lot, move in, or close if they have more than \$1000 unsecured outstanding debt, excluding car and/or student loans, and if their debt payments exceed 40% of their gross income.

IV. CREDIT SITUATION AT THE TIME OF MOVE-IN & CLOSING

DELINQUENT DEBT

All delinquent debt must remain at \$0 before selection of a lot, move-in or purchase of an existing home.

OUTSTANDING DEBT

Applicants will not be able to select a lot, move in or close if they have more than \$1000 unsecured outstanding debt, excluding car and/or student loans, and if their debt payments exceed 40% of their gross income.

****Habitat Charlotte staff reserves the right to make adjustments to loan terms prior to closing due to factors such as changes in a family's household makeup, employment, income, and/or debt.**

Willingness to Partner

I. MARITAL STATUS

All married persons are encouraged to file a joint application and to hold title to the property as co-owners. If a married person chooses not to file a joint application, one of the following must occur.

1. Have obtained a notarized and recorded Free Trader Agreement; **or**
2. Have obtained a binding separation agreement duly recorded in the local registry providing for a release or waiver of the spouse's marital interest in any property acquired after the recording of the separation agreement; **or**
3. Have obtained a final decree of divorce; or
4. The spouse not intending to be a co-borrower on the mortgage loan, must still sign the deed of trust at closing.

II. LEGAL RESIDENCY

An applicant must have lived or worked in Charlotte or Mecklenburg County for a minimum of 12 months prior to application. Applicants who don't meet this requirement, will be referred to a Habitat affiliate in their local area.

An applicant must be a **Legal Resident** of the United States at the time of application. These are the documents we will consider as proof of legal residency in the U.S.:

Birth Certificate - Shows proof that individual was born in U.S.

I-94 Arrival/Departure Record- Shows that individual left their country and arrived in the U.S. legally. This card has an expiration date that may be extended. The card has an expiration date or will acknowledge that the individual may stay in the U.S. indefinitely.

Resident Alien Card (Green Card) - Shows that individual is in a position to apply for permanent legal residency in the U.S. This card has an expiration date (usually 5 years from the date that the individual physically came into the U.S.). The individual may apply for permanent residency after the 5-year period.

Special Naturalization Provisions - Provisions covering special classes of persons whom may be naturalized even though they do not meet all the general requirements for naturalization. Such special provisions allow: Wives or husbands of U.S. citizens to file for naturalization after 3 years of lawful permanent residence instead of the prescribed 5 years;

A surviving spouse of a U.S. citizen who served in the armed forces to file his or her naturalization application in any district instead of where he/she resides; and Children of U.S. citizen parents to be naturalized without meeting certain requirements or taking the oath, if too young to understand the meaning. Other classes of persons who may qualify for special consideration are former U.S. citizens, servicemen, seamen, and employees of organizations promoting U.S. interests abroad.

Note: More information may be found on the U.S. Citizenship and Immigration Services website (<http://uscis.gov>).

III. RENTAL HISTORY

Applicants must demonstrate an ability to manage the financial obligations of maintaining a home for a minimum of 12 of the last 18-consecutive months prior to application.

- Applicants must demonstrate a stable rental history. If an applicant has been living in the current residence for less than 1 year, he/she must provide the address of his/her previous residence and the name, address, and telephone number of the previous landlord/rental agent. He/she must have a positive rental reference from both places.
- Applicants must demonstrate the ability to pay rent on time. An applicant with more than 20% of rent payments made late within the past 12 months will be declined. An applicant may reapply when he/she can show 80% on-time payments in the past 12 months.
- In the absence of 12 months of rental history in the last 18 months, an applicant may demonstrate a history of financial responsibility by scoring at least 50 points on the Financial Responsibility Checklist.

FINANCIAL RESPONSIBILITY CHECKLIST

minimum point requirement = 50 points		
Has applicant had a lease in his/her name for at least 6 months in the last 18 months? [required: copy of lease and no balance owed (per credit report) if lease has ended]	YES NO	25 0
Does applicant have at least \$1400 in savings? (required: past 90 days bank statements, showing balance of \$1400 for at least last 60 days)	YES NO	25 0
Does applicant have a credit score of at least 680?	YES NO	25 0
Does applicant have proof of having contributed at least \$250 to rent payment for 12 of last 18 months? (required: cancelled checks, bank statements showing draft, money order receipts, or payment receipts showing name)	YES NO	25 0
Has applicant had at least 1 bill in his/her name <u>or</u> proof of payment for last 12 of 18 months? (required: cancelled checks, bank statements showing draft, money order receipts, or copy of bill showing name and status of bill being current)	YES NO	25 0
	TOTAL:	

Other NOTES

- Selection is not limited to first time homebuyers.
- Applicants who currently own a home will not be considered unless it is shared ownership through inheritance. Other situations will be considered on a case by case basis.
- Applicants who own land/property that is not a home will be considered but HFH will not be obligated to build on that property.
- HFH Charlotte homeowners will only be served once in our homebuyer program unless the applicant previously served as a co-applicant and is no longer on the deed and 5 years have passed since the original purchase prior to a new application being submitted.
- Ownership of a mobile home will not be considered ownership of a home as long as the applicant does not own the property/land where the mobile home resides. Ownership would be construed as a deed of trust for the property in the applicant's name.
- Applicant and co-applicant are not required to live together prior to application but both must demonstrate financial stability by meeting the rental history requirements.
- At the time of application, all persons that will be living in the house must be listed on the application. Adding persons for the sole purpose of increasing house size will not be permitted. House size will be determined based on the need of the family at the time of application and at the discretion of the Family Services Department. *Considerations may be made on a case by case basis if there is proof of a permanent change in the family makeup prior to lot selection.*
- If an applicant has family members still living in another country and those family members plan to relocate to the U.S. and become part of the household, the applicant must provide documentation showing that those family members are in process of relocating to the U.S. and the applicant must meet the income requirements that includes those family members as occupants of the home. In this case, house size will be determined at the discretion of the Family Services Department.
- An application will be considered stale and void 6 months from applicant's signed attestation.

IV. EMPLOYMENT/NON-EARNED INCOME HISTORY PRIOR TO PRE-APPROVAL

An applicant must have an Employment History of at least **2 consecutive years** and is required to be employed by their current employer for at least 12 months prior to **underwriting pre-approval**; unless they are receiving non-earned income as defined in Section I. Income/Credit Situation At The Time Of Initial Application: Income Criteria.

An **exception** to the above may be made if the applicant has changed jobs during the 12 months prior to underwriting pre-approval if the job change was due to cut backs, better pay, better benefits, or other valid reasons determined by Habitat staff on a case-by-case basis. The applicant (s) must be employed in the new job for a minimum of 6-months at the time of underwriting pre-approval.

No temporary employment will be considered to meet the employment criteria.

If a gap in employment has occurred in the last 24 months, we will still consider the application as long as there was only 1 gap which was less than 60 days, and the applicant has been on the current job for at least 1 year.

V. EMPLOYMENT CHANGES AFTER APPROVAL:

If there is a job loss after approval, at least 1 member who will be on the deed must meet income requirement for the household. Applicants must be on the new job at least three months and must be permanent hire.

No employment with a temp agency will be considered suitable employment. Applicants will be given 6 months to find suitable employment before they will be asked to reapply.

If the applicant left the job for better pay or benefits, the application will be considered after 3 months on the job and positive verification.

If the applicant or co-applicant is out of work for any extended period of time for any reason, the process will be put on hold until they return to work and can provide adequate pay stubs verifying proof and stability of income. Applicants will be given 6 months to go back to work or find suitable employment.

****All of the adult family members who will be on the deed must meet these employment requirements including part-time jobs. All individuals in the household over 18 years of age must be working, in school, have young children at home, disabled, or have other valid reasons for not being employed outside the home which will be evaluated on a case-by-case basis by Habitat staff. All children under 16 must be in school and Habitat may request that a parent obtain written attendance records from a child's school on school letterhead and/or permission from the parent or guardian to verify school attendance.****

Appendix 1.3 REPAIR PROGRAM SELECTION and APPLICATION POLICIES

All HCHR policies and criteria must be in compliance with Federal and North Carolina regulations and laws at all times and are subject to immediate change and implementation without the Family Selection Committee or Board of Directors approval. Staff, Volunteers, and Board members must be notified of any changes within 30 days.

NEED FOR REPAIRS

Critical Need

Applicants must have a critical need for repair, defined as one of the following:

- failed or rotted floor system
- plumbing leak that will result in structural damage
- electrical hazard
- roof replacement or repair
- termite and/or rot damage
- HVAC replacement, upgrades
- handicap accessibility (limited to exterior ramp access and bathroom accessibility)

Inspection & Estimates

Construction staff will conduct an assessment of the property to determine whether there is a need for critical repairs and feasibility for inclusion in the Critical Home Repair program

Property Requirements:

- The property must be located within the City limits of Charlotte or Pineville. Properties in non-incorporated areas will be considered on a case-by-case basis.
- The building must be a Single-Family home (we will not repair duplexes, townhouses, multifamily, mobile homes, or sheds).
- The building must be at least 10 years old.
- The tax value of the building cannot exceed \$175,000.
- The applicant must be the owner of the property as listed on the title.
- The applicant must occupy property as the primary residence.
 - * Exception: An exception may be allowed for families that have been displaced within 18 months from the date of the application. Acceptable reasons for being displaced would be due to health and/or safety issues in the home.
- Deed/Title must show ownership for a minimum of 2 years.

Title requirements:

- Partner Families financing payments over 5 years: The applicant MUST own the home or be the sole beneficiary of a living trust which holds title to the property. Revocable Trusts and Life Estates will be reviewed on a case-by-case basis.
- Partner Families not financing payments: Titles including Life Estates, Living Trusts, and Revocable Trusts will be allowed since the repair project is contract work and is not secured by a mortgage where the homeowner must have property signing rights.
- The applicant (s) cannot own multiple properties.
- The property must not be in danger of foreclosure process.
- The property must not be more than 90 days delinquent on mortgage payments, nor have liens on the property that are more than 2 years delinquent.

Insurance Requirements

The homeowner must provide documentation of homeowner's insurance or construction insurance prior to work beginning on the home unless the homeowner is unable to obtain insurance due to the condition of the home.

ABILITY TO PAY

HFHC makes all reasonable efforts to serve homeowners whose gross household income is no more than 80% of the HUD Median Income for Mecklenburg County. Income of the entire household must be disclosed on the application. All income will be considered regardless of length of time received.

Repayment Criteria

Partner Families will be charged a program fee based on the homeowner's income. The program fee will be waived for homeowners earning up to 30% of area median income.

Homeowners who earn 60% or less of the area median income will be charged at a subsidized rate. Their program fee will be broken into 12 monthly payments to be paid off within 1 year.

Homeowners who earn 61-80% of the area median income may qualify to finance the program fee at 0% interest over 5 years. The homeowner will sign a promissory note and Deed of Trust. If they choose not to finance, they will receive a 25% discount on the program fee for paying in full at the time the repair work is complete.

Homeowners who earn 61-80% of the area median income who do not qualify for financing will be placed on hold after the construction assessment. They will be given 6 months to pay their program fee before the repair work begins. They will receive a 25% discount on the program fee for paying in advance of the repair work.

Targeted outreach populations, such as Veterans, will be charged the lowest, subsidized program fee.

Homeowner Income	Program Fee	MonthlyPayment	
	<i>Subsidized</i>	<i>for 12 months</i>	
=30%	\$0	\$0	
31-35%	\$900	\$75	
36-40%	\$1,080	\$90	
41-45%	\$1,260	\$105	
46-50%	\$1,440	\$120	
51-55%	\$1,620	\$135	
56-60%	\$1,800	\$150	
	<i>Financed</i>	<i>for 60 months</i>	<i>Paid in Full / In Advance</i>
61-65%	\$4,500	\$75.00	\$3,375.00
66-70%	\$6,000	\$100.00	\$4,500.00
71-75%	\$7,500	\$125.00	\$5,625.00
76-80%	\$9,000	\$150.00	\$6,750.00
	<i>Subsidized</i>	<i>for 12 months</i>	
Targeted Outreach	\$900	\$75	

Credit Criteria for Financing: Credit will be assessed for each title holder to determine eligibility for 5 year financing. To qualify for financing, applicants must meet the following criteria:

- Debt-to-Income Ratio - Any mortgage, auto, student loan payments and total monthly debt servicing expenses (i.e. credit card payments), cannot exceed 50% of the homeowner's monthly gross income.
- Bankruptcy – If the applicant (s) have had a bankruptcy, it must be discharged at least two (2) years prior to application. *An application will be considered twelve (12) months after bankruptcy if the applicant is able to document extenuating circumstances beyond his/her control. All necessary documentation must be submitted with the application.
- Delinquent Debt - Have no more than \$10,000 in total Collections, Judgments, and/or Charged-Off accounts..
- Outstanding Debt - Have no more than \$10,000 in Outstanding and Unsecured Debt. Unsecured/Outstanding Debt is debt other than auto loans, mortgage, secured loans and student loans. Auto, Mortgage, and Student Loan payments will be calculated toward the Debt-to-Income ratio calculation.
- Medical Debt - Medical Debt will not be considered for program participation.

WILLINGNESS TO PARTNER

Family Requirements: Partner Families must be willing to partner with Habitat by meeting the following requirements:

- Applications must be returned fully completed, signed, and with all requested documentation included. The application will automatically be declined if this condition is not met.
- All household members living or staying at the property must be listed on the application.
- The Partner Family must be able to understand the program guidelines and requirements. The homeowner must be able to understand legal documents or have another responsible adult acting as their Power of Attorney. The homeowner must be 18 years old or older.
- The Partner Family must notify Family Services staff of any changes to household members or income, which may or may not affect whether the family can continue in program.
- If it is discovered that the Partner Family has provided any false or fraudulent information at any time during the Home Repair Process (from application through repairs), the Partner Family will automatically be deselected and disqualified indefinitely from the Critical Home Repair Program.
- Criminal Background: All household members over the age of 16 years old must consent to a criminal background check. **See Policy 3 Criminal Background Check** for the policy, procedure, and disqualification criteria.

Commitment to the Community

- Habitat Charlotte is responsible to the community to help preserve neighborhoods and has a fiduciary responsibility to its donors to make the best use of their funds. As such Partner Families must commit to a drug-free environment. If anyone in the household is under the influence of alcohol or illegal drugs while Habitat is in the home, the Partner Family will immediately be dropped from the program.

Community Service Requirement

- Partner Families must complete 75 hours of Community Service by the time the repair work on their home is complete.
- Community Service does not have to be completed by volunteering with Habitat.
- Homeowners do not have to complete all of the hours on their own. Hours will be counted for up to 2 people working at the same time.
- An exception to this requirement can be made at the discretion of Habitat staff if the Partner Family is physically unable to do Community Service and has no one able to volunteer on their behalf.

Period of Affordability

- To protect our investment in affordable housing, Partner Families are required to maintain their home as affordable housing for a period of affordability after the repairs on their home have been completed. During this Period of Affordability:
 - * The house may only be used as the principal residence of the homeowner and/or their successors and assigns.
 - * The property may only be sold, transferred, or conveyed to a low-income person or family (defined by HUD as a family having a combined household yearly income that does not exceed 80% of the area median income).
- The homeowner must sign a Promissory Note, a Deed Restriction, or other document (determined by the primary funding source for their repairs) agreeing to these terms for the duration of the period of affordability.

Disqualification and reapplication:

- Any application can be disqualified if any of the above criteria are not met. Once the criteria are met, the homeowner (s) is welcome to reapply and proceed with the application process. There is no time limit for reapplying.

APPLYING TO BE SERVED MORE THAN ONCE

Allowable Timeline

- Homeowners may re-apply five years after initial work was completed.

Eligible Repairs

- Applicants must have a new concern and a critical qualifier.
- We will not make additional repairs to any item that was repaired in the initial work (as indicated by original job scope/work complete), unless the need is as a result of a construction defect in original repair work performed (as determined by construction staff).
 - * Exception: If the repair work is funded by a grant that requires certain repairs be made, this requirement will supersede this policy.

Financial Criteria

- Homeowners re-applying for HCHR must have no outstanding balance on previous HCHR payments. Their previous loan must be paid in full or written off.
- Homeowners re-applying for HCHR service who had 3 or more late payments in last 2 years of their previous payment term will not be eligible to finance payments during the 2nd service.

The selection of families are served by Habitat for Humanity is done by the Family Selection Committee using these criteria in a way that does not discriminate on the basis of race, sex, color, age, handicap, religion, national origin, family status or marital status, or because all or part of income is derived from any public assistance program.



Policy 2 Sex Offender Registry Check

1.0 Purpose

As a ministry, Habitat for Humanity of Charlotte values the safety of children, our employees, volunteers and the families we serve. We want to take prudent measures to protect our human and material resources.

2.0 Policy

Habitat for Humanity of Charlotte requires that sex offender registry checks be conducted for all potential partner families, board members, employees and key volunteers, and in particular, those who may have unsupervised contact with a child, the elderly or persons with disabilities. Habitat for Humanity of Charlotte reserves the right to recheck sex offender status at any time during the homebuilding process, course of employment and/or service.

Any person who does not consent to a sex offender registry check will not be permitted to become a partner family, work and/or volunteer with Habitat for Humanity of Charlotte.

2.1 Disqualification Criteria

A sex offender registry finding may disqualify an applicant from homeownership or service with Habitat for Humanity of Charlotte. In determining eligibility, Habitat for Humanity of Charlotte uses a points system to rank the level of risk and in its sole discretion, may consider several factors, including without limitation, 1 or more of the following:

- nature of the conviction and whether children were involved;
- time elapsed since the offense;
- age of the candidate when the illegal activity occurred;
- number of convictions (if more than 1);
- any information produced by the person, or produced on the person's behalf demonstrating rehabilitation and good conduct;
- whether partnering with the applicant would pose risk to the organization;
- whether the state's public policy encourages homeownership of persons who have been convicted of crimes;
- the nature of the build, i.e., proximity of houses, mixed use communities, etc.; and/or
- any other factor that the affiliate deems relevant to the decision.

2.2 Examples of Disqualification Warranted

If a person withholds information or falsifies information pertaining to a sex offense, the person may be disqualified from further consideration. Utilization of the points system will determine disqualification. Disqualification may extend to any partner family member.

Habitat for Humanity of Charlotte will make good faith efforts to comply with the following procedures when conducting sex offender checks:

- utilize the National Sex Offender Public Website (<http://www.nsopw.gov>) as a resource and check all states in which the person has resided for the last ten (10) years;
- ensure all recruitment information, applications, announcements, and descriptions state the partner family relationship requires a sex offender registry check;
- seek prior written approval (even if not required by law);
- notify the individual under consideration that their status is conditioned on successful completion of the sex offender registry check, and that falsification of information submitted may be cause for corrective action, up to and including dismissal and/or elimination from the homeownership program; and/or
- review sex offender registry checks that reveal convictions and determine within a reasonable time whether such convictions disqualify individuals from family partnership.

4.0 Denial of Application, Termination or Reassignment

Based on any or all of the criteria outlined in this policy, Habitat for Humanity of Charlotte may, in its sole discretion, decide that a partner family will be denied homeownership.

Practical Tips

- Limit the people who view the sex offender registry check results to a “need-to-know” basis.
- Provide an opportunity for the applicant to supply information that refutes the charge, i.e., disposition from the court.
- Limit the number of business days in which an individual may provide evidence of the inaccuracy of a sex offender registry check report.
- Sex offender registry checks are only 1 part of the partner family and/or onboarding process.

Applicant _____

Sex Offender Status (Ability to Partner)

Risk to Partnership: 15=HIGH 10=MODERATE 5=LOW 0=LITTLE OR NO RISK	
10 0	A. Applicant or family member registered on the sex offender registry? Yes (10 pts)
15 0	B. Life Registration? Yes (15 points) No (0 points)
15 10 5 0	C. Time since registered: Less than 2 years (15 points) 3-5 years (10 points) 6-10 years (5 points) More than 10 years (0 points)
10 0	D. Off Probation/Supervision? No (10 points) Yes (0 points)
	E. History of repeat offenses? If yes, immediate disqualification.
	Restrictions on where offender can live? If yes, immediate disqualification.
	Nature of offense: Offense with a child? If yes, immediate disqualification.
15 10 5 0	H. Nature of offense: Assault with minor (any degree) (15 points)
	First degree Assault (15 points)
	Second, Third, Fourth Degree Assault (10 Points)
	Sexual Misconduct w/minor (10 points)
	Sexual Misconduct (5 points)
	Misconduct with minor—proximate age (0 points)
	I. Designated as sexual predator: Immediate disqualification.
Total: _____	(Maximum of 30 to Qualify)

Policy 3 Criminal Background Check

1.0 Purpose

As a ministry, Habitat for Humanity of Charlotte values the safety of children, our employees, volunteers and the families we serve. We want to take prudent measures to protect our human and material resources.

2.0 Policy

Habitat for Humanity of Charlotte requires that criminal background checks be conducted for all potential partner families. Habitat for Humanity of Charlotte reserves the right to recheck criminal backgrounds at any time during the homebuilding process.

Any person who does not consent to a criminal background check will not be permitted to become a partner family with Habitat for Humanity of Charlotte.

2.1 Disqualification Criteria

A previous conviction may disqualify an applicant from homeownership with Habitat for Humanity of Charlotte. In determining eligibility, Habitat for Humanity of Charlotte uses a points system to rank levels of risk and in its sole discretion, may consider several factors, including, without limitation, the:

- nature of the conviction and whether children were involved;
- time elapsed since the offense;
- age of the candidate when the illegal activity occurred;
- number of convictions (if more than 1);
- any information produced by the person, or produced on the person's behalf demonstrating rehabilitation and good conduct;
- whether partnering with the applicant and/or candidate would pose a risk to the organization;
- whether the state's public policy encourages homeownership of persons who have been convicted of crimes;
- the nature of the build, i.e., proximity of houses, mixed use communities, etc.; and/or
- any other factor that Habitat Charlotte deems relevant to the decision.

2.2 Examples of Disqualification Warranted

If a person withholds information or falsifies information pertaining to previous convictions, the person may be disqualified from further consideration. Disqualification will be determined based on the points system. All occupants of the home, 16 years old and older, will have a background check conducted.

Habitat for Humanity of Charlotte reserves the right to weigh disqualification criteria on a case-by-case basis and to make selection decisions in its sole discretion. Disqualification may extend to any partner family member. Support Centers.

Procedure

Habitat for Humanity of Charlotte will make good faith efforts to comply with the following procedures when conducting criminal background checks:

- check all states in which the person has resided for the last 10 years;
- ensure all recruitment information, applications, announcements, and descriptions state the position or partner family relationship requires a criminal background check;
- seek prior written approval in accordance with applicable laws, and in particular, where third party vendors are retained to conduct criminal background checks;
- notify the individual under consideration that their status is conditioned on successful completion of the criminal background check, and that falsification of information submitted may be cause for corrective action, up to and including dismissal and/or elimination from the homeownership program; and/or
- review criminal background checks that reveal convictions and determine within a reasonable time whether such convictions disqualify individuals from positions and/or family partnership.

4.0 Denial of Application, Termination or Reassignment

Based on any or all of the criteria outlined in this policy, Habitat for Humanity of Charlotte may, in its sole discretion, decide that a partner family will be denied homeownership.

Practical Tips

- Comply with the Federal Fair Credit Reporting Act requirements if a third-party vendor is used to conduct the background checks. Review the HFHI Legal Advisory for more information: <http://my.habitat.org/kc/download-detail/g32e58/HFHI-Legal-Advisory--Denial-for-Credit-Reasons-under-Fair-Credit-Reporting-Act-FCRA-Jan-2013>.
- Limit the people who view the criminal background check results to a “need-to-know” basis.
- Provide an opportunity for the applicant to supply information that refutes the charge, i.e., disposition from the court.
- Limit the number of business days in which an individual may provide evidence of the inaccuracy of a criminal background check report.
- Criminal background checks are only 1 part of the partner family and/or on-boarding process. Affiliates may also perform reference checks, verify prior employment, obtain copies of licenses or certificates required for the specific position, and conduct credit checks when appropriate.

CRIMINAL STATUS (Ability to Partner)

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Risk to Partnership: 15=HIGH 10=MODERATE 5=LOW 0=LITTLE OR NO RISK

10 0	A. Applicant <u>convicted</u> of a crime? Yes (10 pts) No (0 pts)
5 0	B. Applicant <u>charged</u> with a crime? Yes (5 pts) No (0 pts)
15 10 5 0	B. Age of applicant at time of commission of the crime: <16 years old (0 pts) 18-20 years old (10 pts) 16-17 years old (5 pts) 21 years or older (15 pts)
15 10 5 0	C. Time since conviction/charge: Less than 2 years (15 points) 6-10 years (5 points) 3-5 years (10 points) More than 10 years (0 points)
10 0	D. Off Probation/Supervision? No (10 pts) Yes (0 pts)
15 10 5 0	E. Nature of offense: Felony (15 pts) Misdemeanor (5 pts) Gross Misdemeanor (10 pts) Petty misdemeanor (0 pts)
10 0	F. More than one conviction? Yes (10 pts) No (0 pts)
0 -5	H. Is there evidence of rehabilitation, i.e., Certificate of Rehabilitation or Good Conduct? Fine paid/Restitution? Voluntary Dismissal? Yes (-5 pts) No (0 pts)
Total: _____	<u>(Maximum of 50 to Qualify)</u> Comments:

Policy 4 FAMILY SUPPORT

1.0 Purpose

To ensure that systems and policies are in place at Habitat for Humanity of Charlotte, Inc. to effectively support, guide and encourage each homeowner to a successful home buying and owning experience.

2.0 Policy

Habitat for Humanity of Charlotte, Inc. has the human resources and mechanisms to provide for quality “family support.” The minimum program features include:

- **Homeownership process** that is organized, easily understood and communicated to everyone in the affiliate, including approved applicants. The process is explained to approved applicants and a contract is signed upon approval. Pertinent information and resources are available in alternative languages when appropriate.
- **Letter of acceptance or Family Participation Contract** that is used to provide all approved applicants an orientation to expectations and next steps. The document must be signed by each homebuyer and the affiliate. The letter will include a Basic House Description, which outlines in writing the features that will be included in the home to be built or renovated.
- **Broad-based homebuyer education program** (delivered either by the affiliate or by a community-based strategic ally) that would include pre- purchase counseling. Families are required to attend a series of Homeowner-In-Process (HIP) classes totaling more than 30 hours of various topics aimed at successful homeownership.
- **Sweat equity program** with clearly defined minimum requirements of sweat equity hours and a system to track and report hours completed.
- **Grievance procedure** to resolve conflicts and is communicated to all. Clear channels of communication and decision-making processes exist to effectively and confidentially address issues as they arise.

Sweat Equity, Education, and Lot/House Selection

A. Sweat Equity

Homeowners-in-Process are required to work a minimum of 21 hours of Sweat Equity a month. The minimum amount of hours is 250 for existing homes and 300 for a new home. While helpers are allowed to work alongside HIPs and contribute to the overall total of sweat equity hours, an applicant must be present and working alongside a helper. Hours must be completed prior to moving into the home. Each applicant must work at least 50 hours of construction sweat equity, unless funding program requires more.

If a Homeowner-in-Process is unable to complete their sweat equity requirement due to physical limitation, Family Services staff may approve a proxy on a case-by-case basis.

B. Education

Each partner family will attend a required series of HIP classes at a designated dates and times or equivalent if partner family is unavailable at the designated dates and times.

They will attend required financial counseling sessions as determined by Habitat. Each partner family will participate in at least one counseling session with designated non-profit credit counselor, or more if required by Homebuyer Education Coordinator.

¹Self-help Homeownership Opportunity Program (SHOP)

SHOP awards grant funds to eligible national and regional non-profit organizations and consortia to purchase home sites and develop or improve the infrastructure needed to set the stage for sweat equity and volunteer-based homeownership programs for low-income persons and families. SHOP funds must be used for eligible expenses to develop decent, safe and sanitary non-luxury housing for low-income persons and families who otherwise would not become homeowners. Homebuyers must be willing to contribute significant amounts of their own sweat equity toward the construction or rehabilitation of their homes.

C. Lot /Home Selection

Homeowners in Process can select an existing house or a lot upon which to build a new house when they have worked at least 75 hours of Sweat Equity and meet the following requirements: have no bad debts; any outstanding debts are less than \$1000; income that is at least 30% of the HUD median income per family size; and have been on current job for at least 3 months. Family Services staff reserve the right to adjust the Sweat Equity requirement by 25 hours as needed based on available inventory.

Homeowners in Process will be able to choose from up to 8 lots/houses before making a selection. Once 8 lots/houses have been made available for a HIP to choose from, and he or she has not found a satisfactory option, he or she may either wait for at least 4 new selections to come available or for 6 months whichever occurs first. At this point, a HIP must either choose a lot/house or be de-selected from the program (eligible to reapply in 1 year). If a HIP is uninterested in seeing a lot/house available for selection for any reason, that house/lot still counts as one of the 8 available options.

Homeowners in Process must make a \$200 deposit to confirm their selection of a lot / house. These funds are applied towards closing costs but are not refundable if HIP drops out or is de-selected from the HFHC homeownership program.

D. House Size - see Appendix 4.5

E. Finish Details

HIPs building a new home may choose up to \$1500 in additional options which is included in the house price and may choose to pay for other options if they wish. Existing homes may have more limited options than new homes based on the scope of work to be performed. HIPs must pay for any additional options prior to the start of construction. Certain handicap accessibility modifications are made to house plans upon request. Extra costs for handicap accommodations can be included with the cost of the house and do not need to be paid for in advance.

F. Construction Schedule

HIPs are presented with a House Start Letter with construction schedule for their home as soon as possible following lot / house selection. HIPs who have chosen an existing house may not receive such a letter / schedule as planning for an existing house is more short-term.

G. Sales Contract

HIPs are presented with a Sales Contract, Good Faith Estimate and other required documents as soon as possible following selection of a house / lot. HIPs who have chosen to purchase an existing house may not receive documents until renovations and appraisal have been completed.

H. Closing

HIPs must have no bad debts (excluding medical debts) and have less than \$1000 in outstanding debts in order to go to closing. They must have sufficient income (at least 30% of the HUD median income per family size) and have been on their current job for at least 3 months at the time of closing. [Closing and Servicing; see Policy 6.]

I. De-Selection

Families may be de-selected at any time prior to closing only in specific situations. If any of these circumstances arise, the matter will be investigated by Family Services Staff and thoroughly documented in the individual HIP's file:

- demonstrated fraud on the application,
- failure to complete requirements set forth in the letter of acceptance,
- negative change in financial condition which would significantly impact the ability to pay, and /or
- presence on a sexual offender database.

HIPs who are de-selected for fraud or presence on a sexual offender database would not be eligible to re-apply. Otherwise, they would be eligible to re-apply after 1 year. De-Selection due to a change in a HIP's financial condition would be a last resort only after the affiliate has worked with them to the fullest extent possible.

3.0 Rationale

Family Support is critical to the success of the Habitat home ownership model. Therefore, when first affiliated, each U.S. HFH Affiliate is required to have in place a Family Support Program. It is the cornerstone of an effective long-term homeownership program. In addition, expanding research in the homeownership industry points to the need for pre- and post-purchase counseling to assist low- and very low-income buyers achieve success.

Supporting resources:

Affiliate Operations Manual: Family Support, Understanding Issues in Family Support Paper HFHU
e-courses: Overview of Family Support and Principles of Family Support

Appendix 5.1 Sample Letter of Acceptance

Appendix 5.2 Family Participation Contract

Appendix 5.3 Time Card

Appendix 5.4 Lot Selection

Appendix 5.5 House Size

Appendix 5.6 Finish Details

Appendix 5.7 House Start Letter

Appendix 5.8 Other Homeownership Support Programs/Activities

D. House Size

HOUSE SIZE POLICY

<u>Household size</u>	<u>Bedrooms</u>
Single adult or couple with no children	2
Single adult or couple with 1 child	3
Single adult or couple with 2 children	3
Single adult or couple with 3 children	4
Single adult or couple with 4 children (children of the same gender who are under 13 yrs old and fewer than 4 yrs apart in age could be required to share a room)	4
Single adult or couple with 5 or more chil- dren	5
Single adult or couple with 4 children where age (13 or over), age difference (4 yrs or more apart), or gender doesn't allow sharing	5

Ages of children = age 6 months from date
of lot selection

**House sizes for households with multiple
adults or adults who are not married will
be considered on a case-by-case basis**

Appendix 4.1

GRIEVANCE Procedures

1.0 Purpose

To establish a documented procedure that our homeowners can follow if they have differences with staff or policy that need to be addressed.

2.0 Policy

- A. Homeowners, Homeowners-in-Process, Transitional Housing Participants and applicants to the Habitat for Humanity program may at any time file a grievance with Habitat for Humanity of Charlotte.
- B. If any partner family or individual feels that a conflict has occurred that needs attention or resolution from the staff at Habitat for Humanity, they should file a grievance with the VP, Family Services. The grievance should be in writing or in person to the VP, Family Services, and should contain all pertinent information, including the specific incident, the date, time, and persons involved.
- C. The VP, Family Services will respond within one week to the person or persons filing the grievance.
- D. The VP, Family Services will make all attempts possible to resolve the conflict with the homeowner and any other party that may be involved. This may occur by phone, writing or in-person meetings.
- E. If the conflict is not resolved with the VP, Family Services, the grievance may be taken to the President/CEO or Board of Directors of HFHC in order to resolve the conflict.
- F. All grievances, responses, and final resolutions will be documented in the homeowner's file.

3.0 Rationale

Trust and respect between the Habitat staff and its homeowners is critical to the continued success of this organization.

Policy 5 Sale of the Housing Unit

1.0 Purpose

The purpose of this policy is to clarify rules for transfer of title and servicing of mortgages.

2.0 Policy

2.0.1 Sales Price

The Sales Price of HFHC housing unit is its Fair Market Value (FMV), except when applicable laws or funding program requirements require a different methodology. An independent appraisal will be obtained for each unit to determine the FMV.

2.0.2 Affordability

Mortgages will be structured to be affordable to the homeowner with the use of down payment assistance programs and mortgage terms up to 30 years. The total initial monthly mortgage payment will not exceed 30% of the homeowner's monthly gross income and total debt servicing including the mortgage will not exceed 40% of the homeowner's gross monthly income.

2.0.3 Finance of Certain Closing Costs

The sum of all mortgages originated in connection with the purchase and sale of the home will not exceed the FMV except to the extent of customary and reasonable closing costs that are financed. HFHC does not finance closing costs.

2.2 Structuring the Sale

2.2.1 Timing of Title Transfer

Title to the home must be transferred upon occupancy or within a specified time after occupancy. The specified time must be in writing. Reasons for title not being transferred upon occupancy may include timing of funding sources, negative changes to the family's ability to pay or other unforeseen circumstances. HFHC reserves the right not to facilitate the application to additional funding sources if the purchaser fails to provide items necessary for application by specified due dates.

2.2.2 Marketable and Insurable Title

A title search is performed and an owner's title insurance policy is issued; HFHC agrees to provide insurable title to the purchaser upon closing.

2.2.3 First Right to Purchase

HFHC has a Right of First Refusal written into the deed restrictions to allow for us to match any bona-fide offer to repurchase the property. We consider all offers to repurchase.

2.2.4 Shared Appreciation

HFHC incorporates a Shared Appreciation Clause attached to the warranty deed at closing with similar verbiage to the following:

Shared Appreciation:

In the event the property shall be sold (including, without limitation, any foreclosure sale, or transfer by deed in lieu of foreclosure, or sale to satisfy a judgment lien, tax lien or assessment lien, or any similar proceeding), refinanced or otherwise encumbered by Grantee, there shall be due and payable to Grantor, in addition to the then unpaid principal balance under the Notes (as defined below) and any other then unpaid sums secured by the property, a share of the Appreciation in Value (as defined below) of the property as interest hereunder.

Such share and such Appreciation in Value shall be computed as follows:

- a) From the proceeds of sale net of normal sales and closing costs or from the proceeds of a new mortgage loan shall be subtracted the ownership basis of Grantee, which shall be the sum of the initial purchase price of the property to Grantee and the cost of such improvements as shall be approved in writing by Grantor and paid for by Grantee. The difference, if any, is the Appreciation in Value. Notwithstanding the foregoing, the entire proceeds of any secondary or junior mortgage loan shall be deemed Appreciation in Value.
- b) If such a sale, refinancing or encumbrancing shall occur within five years from the date of the Deed to which this exhibit is attached, all of such Appreciation in Value shall be payable to Grantor. After five years from the date of said Deed, Grantee shall be entitled to retain that percentage of the Appreciate in Value, if any, equal to 4% per full year of ownership. For example, if ownership has been held for 10 full years from the date of the Deed to which this exhibit is attached, Grantee shall retain twenty percent (20%) of the Appreciation in Value. The balance of the Appreciation in Value shall be due and payable to Grantor and any remaining proceeds of sale (after payment of the balance of the Notes) shall be retained by Grantee or otherwise disbursed in accordance with applicable law.

2.2.5 Certain Prohibited Transfer Techniques

Contracts for deed, land contracts, installment land contracts and their equivalent are prohibited.

2.3 Closings and Record Retention

2.3.1 Supervision

All HFHC closings must be supervised by a NC licensed attorney or other real estate professional who is licensed to perform real estate closings in NC.

2.3.2 Pre-Closing and Closing Disclosures

All appropriate steps are taken to ensure the partner family has received and has reasonable opportunity to understand all relevant information describing the sale and financing. Interpreters are utilized for families with limited English-speaking abilities. All pre-closing and closing requirements are adhered to.

2.3.3 Privacy—In compliance with The Privacy Act of 1974, Habitat for Humanity of Charlotte is committed to keeping applicants' information private. We recognize the importance homeowners place on their privacy and confidentiality. While new technologies allow us to more efficiently serve our customers, we are committed to maintaining privacy standards that are synonymous with our established and trusted name.

1. When collecting, storing, and retrieving applicant, homeowner-in-process, tenant, or homeowner data – such as tax returns, pay stubs, credit reports, employment verifications, and payment histories – internal controls are maintained throughout the process to ensure security and confidentiality. We collect non-public personal information about applicants from the following sources:
 - information received on applications or other forms;
 - information about transactions with us, our affiliates, or others, and
 - information received from a consumer credit reporting agency and public records including background checks.
2. Habitat for Humanity Charlotte employees and volunteers are subject to a written policy regarding confidentiality, and access to applicant data is restricted to staff and volunteers on a need-to-know basis. Information is used for lawful business purposes and is never shared with third parties without applicants' consent, except as permitted by law. Habitat for Humanity has no affiliates or marketing experts with whom we share personal information.

2.3.4 Records Retention- Habitat for Humanity of Charlotte's Family Services Department must archive the following records either electronically or hard copy. The records to be retained should include but are not limited to:

- | | |
|---|---------------------------|
| • Minutes from committee meetings | permanently |
| • Family Selection applications (not chosen) | 25 months past decision |
| • Family Selection applications (in program) | permanently |
| • Contracts, mortgages, notes and leases (expired)
end | 4 years after obligations |
| • Contracts still in effect, including family selection | permanently |
| • Correspondence (general) | 2 years |
| • Correspondence on legal matters | permanently |
| • Deeds, mortgages, bills of sale | permanently |
| • Delinquency letters to homeowners
file | permanently part of their |
| • Insurance policies for homeowners | permanently |
| • Sweat equity logs | 25 months |
| • Scrapbooks, photo albums (electronic or hard copy) | permanently |
| • Mortgage Year End Closeout and Borrower Ledger Cards | permanently |

Policy 6 Mortgage Loan Servicing

1.0 Purpose

The purpose of this policy is to outline requirements and standards for mortgages originated and/or serviced by HFHC.

2.0 Policy

2.1 Legal Requirements and Governance

HFHC is committed to providing affordable mortgage financing to all HFHC homebuyers.

2.1.1 HFHC staff and board of directors must have a complete understanding of the affiliate's delinquency, default, loss mitigation and foreclosure policies and procedures and those policies and procedures must be reviewed and approved annually.

2.1.2 HFHC staff must understand and be aware of Consumer Finance Protection Bureau (CFPB) rules and regulations.

2.1.3 HFHC must be aware and comply with all federal, state and local laws regarding mortgage servicing.

2.1.4 HFHC must have board-approved policies that govern all aspects of mortgage servicing to include loss mitigation options and foreclosure activities.

2.1.5 Closing Procedures and File Storage/Security

1. Closings are supervised by either an attorney or another qualified, state-recognized real estate professional. HFHC utilizes properly recorded, enforceable mortgages or other appropriate security interests in place, with marketable title transferred to the homeowner. Closings must be conducted in compliance with applicable state and federal law.
2. HFHC will convey insurable title to the homeowner at closing. The original warranty deed will be transferred to the homeowner.
3. HFHC must maintain originals of the promissory note and mortgage document or trust deed. Documents must be kept in a centrally located fireproof safe, in a secure location that is accessible by an appropriate number of Habitat for Humanity representatives. HFHC must maintain copies of all other recorded documents. See Policy 1, Privacy / Record Retention.
4. Only authorized personnel will have access to the mortgage servicing database.

B. Mortgage Servicing

1. HFHC may service its own mortgages or may outsource to a third-party servicer. Loan servicing fees may be passed along to the homeowner to help cover the cost of servicing but those fees may not be marked up above the actual cost. The homeowner's initial monthly payment, including loan servicing fees must not exceed 30% of the homebuyer's gross income.
2. HFHC must comply with Real Estate Settlement Procedures Act (RESPA). RESPA requires certain disclosures prior to closing, escrow requirements and other notices.
3. Habitat Charlotte must have board-approved policies and procedures that meet all legal requirements set forth for the state of North Carolina and Charlotte. That policy should have definite times after which the loan is called and Habitat Charlotte may foreclose.
4. All payments are due on the 1st day of each month. A payment is "late" if it is not received by the 1st day of each month. A late fee of 4% of the principal is assessed if the payment is not received by the 16th day of the month in which it is due. If the 16th day falls on a Sunday or holiday, then the late fee will be assessed if the payment is not received by the end of the first business day after the 16th. Late fees will continue to be assessed monthly until the account is brought current. Management reserves the right to waive late fees at any time on a case by case basis.
5. A \$10 fee is charged for checks or ACH payments that are returned due to insufficient funds (NSF). Homeowners will be suspended from paying with checks or ACH if they have two returns for NSF within 12 months and will be required to submit money orders or certified bank funds only.

C. Mortgage Delinquency/Foreclosure

The following is action to be taken on past due accounts that do not have payment plans in place or have failed to adhere to the payment plans. Accounts will be monitored and collection efforts will continue on a minimal basis as long as the homeowner is on a plan and is abiding by the plan and/or communicating with us on a plan.

Written plans are not required if the homeowner has a verbal agreement to bring the account current within 60 days. Details of the verbal agreement will be annotated in the mortgage servicing database.

All Habitat Charlotte Loans are reported to the credit bureau monthly regardless of the status.

Stage One

First Late Notice (15 Days Late): Late notices are sent by the Mortgage Servicing Department between the 16th day and the 18th day of the month to those who have not made their payment for the month that is due.

Second Late Notice (25 Days Late): A second late notice is sent to remind the homeowner that we still have not received their payment and that their account will be reported to the credit bureau.

Payment Received Less Than Amount Due: If the homeowner continues to send less than total amount due, a letter is mailed to inform them that future payments may be returned if the total amount due is not paid or if payment arrangements are not made. Management reserves the right to return a payment to the homeowner in an attempt to have them communicate with us on a plan to bring their account current.

Stage Two

(31 Days Late): The account is reported to the credit bureau.

First 60-Day Letter (40-45 Days Late): Stronger delinquency notices are sent to all homeowners who failed to bring the account current or failed to make payment arrangements. The homeowner is also reminded that their negative payment history has been reported to the credit bureau. They are asked to call the office immediately to make payment arrangements. Phone calls continue.

Second 60-Day Letter (45-50 Days Late): Stronger delinquency notices are sent to all homeowners who failed to bring the account current or failed to make payment arrangements. This letter informs them of the amount past due and offers an opportunity to discuss options. Phone calls continue.

Stage Three

Pre-Demand Letter (61 Days Late): Another letter will be sent regular mail. This letter includes the date by when the customer became delinquent and also informs them of risks and expenses associated with the delinquency and possible legal action. It also provides for the account history of the previous 6 months since the account was current. Phone calls are also being made.

Demand Letter (75 Days Late): Another letter will be sent via First Class and Certified Mail. This letter lays the groundwork to initiate foreclosure. Homeowner will be offered an opportunity to call to discuss options and will also be referred to foreclosure prevention counseling agencies.

Stage Four

91+ Days Late: The account is referred to an attorney to begin foreclosure unless there is a verbal or written plan in place to bring the account current within 90 days or on a track for loan modification. Loans in bankruptcy, with scheduled disability hearings or under review for foreclosure prevention funds are handled on a case-by-case basis.

Policy 7 MORTGAGE ORIGINATION

1.0 Purpose

The purpose of this policy is to outline requirements for origination of mortgages by HFHC.

2.0 Policy

2.1 Who may originate and hold mortgages on Habitat housing units?

2.1.1 The first mortgage may be originated by HFHC or a third-party lender.

2.1.2 Subordinate soft second or third mortgages will not be pledged or sold.

2.1.3 Third-party subsidy providers are permitted to originate and hold the subordinate mortgages.

2.2 Mortgage Origination Legal Requirements and Governance

2.2.1 Habitat Charlotte complies with laws and regulations that are governed by the Consumer Finance Protection Bureau (CFPB).

2.3 Origination of First Mortgages– HFHC provides homebuyers with an affordable mortgage based on their income so that the monthly mortgage payment (including property taxes, homeowner's insurance, association dues/fees and interest if applicable) is no more than 30% of the homeowner's total monthly income at the time of sale.

Mortgages will either be originated by third-party lender and carry below market interest rates, or mortgages will be originated by HFHC if third-party financing is not available. All mortgages are subject to a maximum term of 30 years, and will fully amortize over the stated terms; there will be no balloon payments.

2.4 Mortgage Origination of Soft Subordinate Mortgages– Soft second or other subordinate mortgages should be used to cover the remaining balance of FMV after senior mortgages. HFHC will track soft mortgages via a mortgage servicing system with balances being provided to borrowers periodically. Action to collect or to forgive any portion of the mortgages will only be taken based on the language outlined in the note and/or deed of trust.

2.5 Loan to Value Ratio– Combined loan to value ratio will not exceed 100%.

2.6 Mortgage Insurance– HFHC may require mortgage insurance if the loan to value ratio exceeds 80% but may not do so if the value is below 80%.

2.7 Leveraging– In the event of mortgage leveraging, HFHC will include language that requires the purchasing entity to notify HFHC of a default by the borrower and must have the ability to substitute or purchase the non-performing loan back from the entity.

Fair Housing Act (“FH Act”) “Equal Housing Lender” sign must be posted wherever you meet with families. [FH Act]

FH Act “Equal Housing Opportunity” logo must be on all applications, advertisements and marketing materials. [FH Act]

Must provide access to applications at times other than open houses. [ECOA/FH Act]

If applications provided electronically, ensure compliance with Electronic Signatures in Global and National Commerce-E-Sign Act (Federal E-Sign Act).

No unfair, deceptive, misleading, or abusive advertisements, marketing or promotional materials. [UDAAP and TILA]

No written or oral statements to applicants or prospective applicants that would discourage on a prohibited basis a reasonable person from making or pursuing an application. [ECOA]

Equal Credit Opportunity Act (“ECOA”)

Unfair, Deceptive or Abusive Acts or Practices (“UDAAP”)

Truth in Lending Act (“TILA”)

<http://portal.hud.gov/hudportal/documents/huddoc?id=928.1.pdf>

<http://portal.hud.gov/hudportal/HUD?src=/library/bookshelf/1/hudgraphics/fheologo>

<http://my.habitat.org/kc/download-detail/3f5ef/Legal-Advisory---Mortgage-Rules-and-Regulations> (see *Electronic Signatures in Commerce-E-Sign Act* section)

Policy 8 EQUAL TREATMENT OF HABITAT HOMEBUYERS

1.0 Purpose

To require that Habitat Charlotte implements a policy of equal treatment of Habitat homebuyers to ensure, at a minimum, that Internal Revenue Service laws governing donations to non-profit entities are not violated.

2.0 Policy

Habitat Charlotte must provide equal treatment of Habitat homebuyers to encourage equitable treatment of partner families and to ensure that HFHC will not receipt as a “donation” any gift made to a particular individual or family by a third party.

- A. Prior to closing, donors may provide no personal gift or value to a homeowner in excess of \$100. No contribution receipt will be provided to the donor for any such gift donation.
- B. After closing, Habitat Charlotte will discourage personal gifts to be made by donors to homeowners with the exception of small gifts on special occasions such as holidays, birthdays, etc. HFHC will not be involved in any ongoing relationship between the sponsor and family and will not provide a donation receipt for any personal gifts.

3.0 Rationale

As outlined in *Affiliate Operations Manual: Family Selection* regarding gifts, “Habitat for Humanity builds relations and fosters generosity. Our program, however, can be undermined when a house sponsor or other partner seeks to add an amenity to the house that is not a part of Habitat Charlotte’s basic house design. Major appliances, rooms of new furniture or other expensive gifts may give the impression that Habitat is running a lottery and could bring about ill feelings among other Habitat homeowners, or create a relationship of dependence and excessive expectations.

In addition, gifts beyond the “dollar value limitation” and/or given to a particular individual or family may not be legally tax deductible due to their hyper-specificity. Habitat Affiliates potentially threaten their tax-exempt status — or the tax-exempt status of Habitat for Humanity International — by receipting as donations gifts that are not specified to Habitat Charlotte but to an individual or particular family instead.

Supporting resources:

Affiliate Operations Manual: Family Support; 4.2, Gift Policy

Policy 9 TRANSITIONAL HOUSING

Habitat Charlotte does not currently offer this program as a part of its services.

Habitat Charlotte may be able to offer a short-term rental solution to assist pre-approved families facing displacement while progressing in the HIP process.

Policy 10 HOME REPURCHASE

1.0 Purpose

The purpose of this policy is to define clear and fair provisions under which HFHC will consider repurchase of homes it sells to homebuyers and shall make these provisions known to the homebuyer prior to the initial sale of the home.

2.0 Policy

Habitat for Humanity of Charlotte will consider repurchase of Habitat homes from families on a case-by-case basis. Primarily the decision will be based upon the financial feasibility on behalf of HFH Charlotte. Factors to consider will be the remaining mortgage balance, cost of the house, physical condition of the house and the ability to resell the house to another family. Habitat Charlotte will consider all offers for repurchase and a decision will be made by the VP, Family Services and VP, Construction Operations.

1.0 Purpose

The purpose of the Family Relocation Policy is to set criteria for offering alternative housing to families who have been victims of violent crime at their Habitat homes within the first 6 months of move-in.

2.0 Policy

A family who **previously had a new house built or had moved into an existing house**, would be allowed to **move to a different existing house based on availability**. Habitat Charlotte reserves the right to decide where the new location would be based on affordability and inventory.

Criteria for Consideration:

- 2 or more break-ins or other violent crimes at the residence within the first 6 months of move-in.
- Recommended safety measures such as alarm system activation did not solve the problem.
- Violence, harassment or serious threats by a neighbor.
- Family has police reports to prove that crime has been reported.
- There is no evidence that the crimes are instigated by relationships of the homeowner, friends, family members or acquaintances.
- Finances including mortgage payments must be in satisfactory status.
- Other situations may be approved by Senior Staff.

Timeline:

Family must choose an option within 30 days of staff deciding that they would be allowed to relocate.

The option to move the family to a different house would only be offered once.

Appeal of Decision:

A family may not appeal a decision on choice of locations available for replacement housing.

A family may appeal a decision if they are denied the option to relocate. The appeal must be in writing to the VP, Family Services.

3.0 Rationale

A lot of time has been invested by the family and staff in preparing for homeownership. In situations where families are dealing with issues regarding their safety, we feel that it is important to offer them another opportunity for homeownership. The ability to approve qualified families is becoming more and more difficult due to the economy and therefore, we think it is a good idea to spend the extra effort in working with those that we've already approved. Family's financial status must be in good standing at the time of our decision to allow them this opportunity.

Disclaimer:

This policy is only in effect as long as there are existing houses in inventory.

Family will be responsible for all additional closing costs.

Staff will work closely with community police to address neighborhood problems before moving another family into the house that has been vacated.

**Resolution of the Board of Commissioners for the Town of Huntersville
to Partner with Our Towns of North Mecklenburg-Iredell Habitat for Humanity, Inc.,
To Develop a Housing Project for Lots Within Norman Park Subdivision
Owned by the Town of Huntersville**

WHEREAS, the legislature for the State of North Carolina, in N.C.G.S. § 157-2 has:

1. Declared that the provision of safe and sanitary dwelling accommodations to persons of low income are public purposes for which public monies may be spent and that it is in the public interest that work on such projects be instituted as soon as possible; and
2. Made a legislative determination that the provision of services and programs authorized by Chapter 57 of the North Carolina General Statutes, Housing Authorities and Projects, is necessary and in the public interest; and
3. Declared that “there is a serious shortage of decent, safe and sanitary housing in North Carolina that can be afforded by persons and families of moderate income . . . and that in undertaking such programs a housing authority is promoting the health, welfare and prosperity of all citizens of the State and is serving a public purpose for the benefit of the general public”; and

WHEREAS, N.C.G.S. § 160A-456(b) authorizes the Town of Huntersville to exercise any of those powers granted to a municipal housing authority in Chapter 157 of the North Carolina General Statutes; and

WHEREAS, pursuant to the United States Department of Housing and Urban Development, the median family income for 2019 for the Charlotte-Concord-Gastonia, NC-SC HUD Metro FMR Area, of which Huntersville is a part, is \$79,000; and

WHEREAS, in arriving at the \$79,000 MFI, the USHUD applied a 1.0629 COP Inflation Factor to the 2016 FMI of \$74,283; and

WHEREAS, Chapter 157 defines persons of low income as persons within a household, the annual income of which, adjusted for family size, is not more than 60% of the local area median family income as defined by the most recent figures published by HUD, which for Huntersville would equal \$47,400 for 2019; and

WHEREAS, Chapter 157 defines persons of moderate income as persons deemed by the Town to require assistance on account of insufficient personal or family income taking into consideration, without limitation, their total familial income, size, eligibility for federal housing assistance, and cost and condition of housing available; and

WHEREAS, the Town Board of Commissioners deems persons of moderate income to be those persons within a household, the annual income of which, adjusted for family size, is not more than 80% of the local area median family income as defined by the most recent figures published by HUD, which for Huntersville would equal \$63,200; and

WHEREAS, the 2018 North Mecklenburg Demographic and Housing Assessment Study (“Housing Study”) performed by the UNC Charlotte Urban Institute, contracted for by the Lake Norman Economic Development Commission, found that in 2016, twenty five percent of the households in Huntersville had an income of less than \$50,000; and

WHEREAS, the Housing Study found that between 2012 and 2016, 17% of all homeowners and 40% of all renters in Huntersville were cost-burdened households (cost of housing exceeds 30% of income); and

WHEREAS, the opinions of the stakeholders interviewed as part of the Housing Study that were most consensual were that:

1. The workforce and low to middle-low income seniors are most in need of affordable housing opportunities;
2. Affordable housing must be subsidized; and
3. The provision of land at “no-cost” or “reduced-cost” is the most effective subsidy that the Town could provide for affordable housing.

WHEREAS, the Town of Huntersville owns lots in Norman Park Subdivision that were conveyed to the Town in that deed recorded in Deed Book 10935 at Page 421 of the Mecklenburg County Registry, said lots being more particularly described as follows:

Lots 53 and 54, Block E of Norman Park Subdivision as shown on Map Book 11 at Page 63, Mecklenburg County Registry;

Lots 1,2,23,and 24, Block F of Norman Park Subdivision as shown on Map Book 10 at Page 321, Mecklenburg County Registry;

Lots 13 and 14 in Block G of Norman Park Subdivision as shown on Map Book 10 at Page 321, Mecklenburg County Registry;

Lots 11, 12, 13 and 14, Block H of of Norman Park Subdivision as shown on Map Book 10 at Page 321, Mecklenburg County Registry (all 12 lots collectively “Norman Park Lots”); and

WHEREAS, N.C.G.S. § 157-9 provides that, when carrying out the powers of a municipal housing authority, the Town may designate an entity to act as its Agent in carrying out the Town’s authority; and

WHEREAS, Our Towns of North Mecklenburg-Iredell Habitat for Humanity, Inc., (“Habitat”) builds affordable housing units for homeownership in North Mecklenburg County, including Huntersville; and

WHEREAS, the Board of Commissioners for the Town wishes to designate Habitat as its agent for developing the Norman Park Lots as a housing project as defined in N.C.G.S. § 157-3(12);

NOW THEREFORE BE IT RESOLVED AS FOLLOWS:

1. The Town Board of Commissioners finds that there is a lack of affordable housing for low-moderate income families, as defined in N.C.G.S. § 157- 3(15a and 15b) within the Town of Huntersville. The Whereas clauses above are specifically incorporated herein as findings.
2. The Town Board of Commissioners, on behalf of the Town of Huntersville, wishes to exercise the powers of a municipal housing authority contained within N.C.G.S. Chapter 157 with respect to the Habitat Lots, to develop a housing project for the Habitat Lots to provide affordable housing to low-moderate income level residents within the Town of Huntersville.
3. The Town Board of Commissioners wishes to designate Habitat as the Town's agent in developing and managing a housing project for the Norman Park Lots to benefit low to moderate income families within the Town of Huntersville.
4. Habitat has submitted a letter, with attachments, outlining a plan for a housing project for the Norman Park Lots to be brought back to the Town Board of Commissioners for approval. The plan includes, at a minimum the following:
 - a. The proposed number of affordable housing units to be provided;
 - b. Whether the housing units will be purchased or leased;
 - c. The eligibility of households to purchase or lease the housing units to be provided based on household income;
 - d. The affordability level of the housing units as a percentage of household income;
 - e. The sources of funding for the construction of the housing units;
 - f. Timing and phasing of construction of the housing units;
 - g. The process to be used to identify and verify eligibility of persons to purchase or lease the housing units;
 - h. The proposed control period (number of years) for which the housing units must be used to benefit low to moderate income families;
 - i. The method to ensure that the housing units will be used to benefit low-moderate income for the entirety of the control period;
 - j. The methodology that will be used by Habitat to ensure that the rental rates of sale price of the units will be at the lowest possible rates, consistent with providing decent, safe and sanitary dwelling accommodations as required by N.C.G.S. § 157-29;
 - k. The methodology that will be used by Habitat to ensure that the revenues derived from the sale or rental of the housing units will not be used to support other activities of the Town or Habitat as required by N.C.G.S. § 157-29; and
 - l. The methodology that will be used by Habitat to prevent the fraudulent rental or purchase of the Habitat Lots.
 - m. Such other terms as deemed appropriate or necessary by Habitat and/or the Town Manager (or designee).
5. The Plan as outlined in Habitat's letter, including attachments, is approved by the Town Board of Commissioners. The Town Board designates Habitat as the Town's agent for purposes of constructing and managing the housing project for the Norman Park Lots.

6. The Board authorizes the Town Manager to approve and enter, on behalf of the Town, a Real Estate Agreement ("Agreement") providing for such construction and management of the housing project for the Norman Park lots by Habitat as the non-monetary consideration for the conveyance of the Norman Park lots to Habitat, and to carry out the terms of contract including but not limited to:
- a. Closing on the conveyance of the Norman Park lots to Habitat in accordance with the terms of the Agreement;
 - b. Execution of a deed conveying the Norman Park lots to Habitat, subject to such restrictions as deemed necessary by the Town Manager to carry out the intent of this Resolution. The Town Clerk and Town Attorney are also authorized to perform such actions as may be necessary to enter into and carry out the terms of the Agreement, closing on the conveyance of the Lots, and subsequent oversight and performance of the Agreement by the Town.
 - c. Providing oversight of the budgets for the construction and management of the project, including the sale price of the homes.
 - d. Approval of the methodology used to ensure that the lots continue to benefit low-to-moderate income families for at least ten (10) years.

A summary of this Resolution shall be published at least 10 days before closing on the conveyance of the lots.

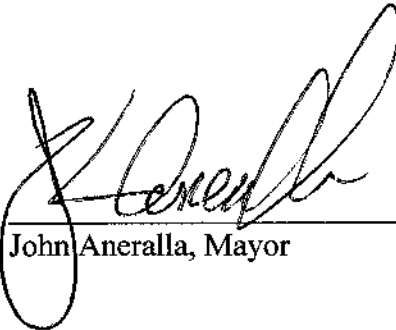
7. This Resolution is not a contract, and nothing herein shall be binding upon the Town Board of Commissioners nor Habitat unless and until a contract is entered into between the Habitat and the Town pursuant to the authority of the Town Manager as specified hereinabove, consistent with the terms of this Resolution.

Resolved this the 21st day of October, 2019.

ATTEST:


Janet Pierson, Town Clerk




John Aneralla, Mayor

Approve as to Form:


Angela Becker, Town Attorney



Our Towns
Habitat
for Humanity®

Building strength, stability and
self-reliance through shelter.

October 9, 2019

Mr. Anthony Roberts, Huntersville Town Manager

P.O. Box 664
Huntersville, NC 28070

Mr. Roberts:

Thank you for sharing your draft resolution concerning the Town of Huntersville's desire to partner with Our Towns Habitat on a housing project (as defined in N.C.G.S. 157-3(12)) for the Norman Park lots. We look forward to returning to Norman Park, where we have constructed quite a few homes in recent years. Paragraph 4 of the resolution outlines various expectations for the project plan. Following are comments on how we can/will comply with each.

a. The proposed number of affordable housing units to be provided:

The resolution specifies 12 lots owned by the town. Our Towns Habitat previously met with Jack Simoneau, Huntersville Planning Director on July 9, 2019 concerning zoning standards applicable in Norman Park. Pairs of the lots in question will need to be combined to form lots adequate to meet current zoning standards. Consequently, we anticipate a total of 6 homes may be constructed as part of the project.

b. Whether the housing units will be purchased or leased:

The current plan is to sell the homes to Persons of Low or Moderate Income, as defined in 157-3(15a) (15b). Separately, we are also currently partnering with Hope House Foundation and the Ada Jenkins Center to rehab/construct additional transitional housing in North Mecklenburg. It is possible that Our Towns Habitat could subsequently approach the town to repurpose one or two of the homes to help meet that critical need as well.

c. The eligibility of households to purchase or lease the housing units to be provided based on household income:

The family's gross income, adjusted for household size must be greater than 35% of Area Median Income, but less than 80%, as determined by HUD. In recent years the vast majority of our homeowners have had household income below 60%. I have attached a copy of our Homeowner Selection Guidelines for your reference.

Serving North Mecklenburg and Iredell Counties

20310 N Main St, Cornelius NC 28031 (office)

PO Box 1088, Davidson, NC 28036 (mailing)

704-896-8957

• ourtownshabitat.org

• 704-896-8065 (fax)

d. The affordability level of the housing units as a percentage of household income:

As a policy, we will not place someone in a home if the total housing costs, including expected utilities, exceed 33% of gross income, or if total long-term debt payments exceed 40%.

e. The sources of funding for the construction of the housing units:

Habitat enjoys a mix of public and private funding sources. Public funding programs include SHOP, HOME, and CDBG. Private funding originates within corporate and faith community partners, as well as several local foundations. In addition, Our Towns Habitat conducts ongoing community fundraising from individuals and other local organizations. We also operate three profitable thrift stores that contribute to our affordable housing ministry. The specific mix of funding varies for each home, and will not be known in detail on any given home until we are prepared to begin construction. We have attached a copy of our 2019 Community Impact Report for your reference, where you can find additional information on various funding sources of Our Towns Habitat.

f. Timing and phasing of construction of the housing units:

We anticipate completing at least the first two Norman Park homes in our fiscal year ending June 30, 2021, and the next two no later than June 30, 2022. Timing of the last two is uncertain until their road frontage is paved.

g. The process to be used to identify and verify eligibility of persons to purchase or lease the housing units:

Please refer to the attached Homeowner Selection Guidelines. In addition to these guidelines, applicants also go through a rigorous credit underwriting process (including credit bureau reports, income and employment verification), and criminal background checks. There is also a lengthy waiting period (currently two years) during which they must complete at least 400 hours of “sweat equity” volunteering, and also complete personal financial training.

h. The proposed control period (number of years) for which the housing units must be used to benefit low to moderate income families:

Our standard “period of affordability” deed restriction is 10 years, unless a more restrictive period is required by a funding source being used.

i. The method to ensure that the housing units will be used to benefit low-moderate income for the entirety of the control period:

Recorded deed restrictions, and a right of first refusal upon resale.

j. The methodology that will be used by Habitat to ensure that the rental rates of sale price of the units will be at the lowest possible rates, consistent with

providing decent, safe and sanitary dwelling accommodations as required by N.C.G.S. § 157-29:

All newly constructed homes receive an independent appraisal prior to closing with the homeowner, and the purchase price never exceeds appraised value. Additionally, our income guidelines discussed above ensure that no homeowner is put into a "cost burdened" situation where their housing costs exceed 33% of their gross household income. Our Towns Habitat provides affordable mortgages at 0% interest. If necessary, homes are discounted below our cost and below appraised value to ensure their affordability for the homeowner.

k. The methodology that will be used by Habitat to ensure that the revenues derived from the sale or rental of the housing units will not be used to support other activities of the Town or Habitat as required by N.C.G.S. § 157-29:

Our Towns Habitat constructs and sells decent, safe, and sanitary homes, and receives 0% mortgages in return. Over time, as payments are collected on the mortgages, they are plowed back into the operation of Our Towns Habitat, including the construction of other future homes. There is no linkage to any other programs operated by the Town of Huntersville.

l. The methodology that will be used by Habitat to prevent the fraudulent rental or purchase of the Habitat Lots.

Applicants must have lived in North Mecklenburg, or Iredell County for a minimum of one year before their initial application will be accepted. At that point, all applicants go through a rigorous and lengthy (two additional years) application and qualification process. This process includes in-person interviews, credit underwriting, employment verification, criminal background checks, and several hundred hours of documented volunteering before they are placed in a home.

Anthony, if there is any additional information that you, your staff or the Commission requires, just let us know. We have been building affordable homes in North Mecklenburg since 1988, and are eager to continue in Norman Park next year.

Best Regards,

A handwritten signature in black ink, appearing to read "Mike Price". The signature is fluid and cursive, with the first name "Mike" being more prominent than the last name "Price".

Mike Price

Vice President of Operations

Our Towns Habitat for Humanity

Homeowner Selection Guidelines

Exceptions to these guidelines may be made by the Homeowner Selection Committee on a case by case basis due to the applicant's situation or special circumstances.

1. Need for Adequate Housing:

An applicant must demonstrate a need for adequate shelter. This criterion will be satisfied if, the applicant lives with any of the following conditions:

A. Irreparable: Current shelter has on-going problems with the heating system, water supply, sewer, electricity, bathroom(s), kitchen, building structures that are not repairable by the family and the landlord is not willing to fix.

B. Unsafe Shelter: Current shelter is unsafe; e.g., an unavoidable danger to children, physical environment contains irremovable hazardous or toxic materials (e.g., mold, lead, etc.), no ready means of egress from bedrooms.

C. Overcrowding: Overcrowded housing; e.g., more than two children per room, adults sharing a room with children, school-age children of different sexes sharing a room.

D. Unsafe Neighborhood: The current neighborhood is unsafe; drugs, violence, etc.

E. Subsidized Housing: Applicant is currently living in government subsidized housing, which has a waiting list of families to receive public assisted housing. Note: accepting a applicant living in assisted housing that opens a housing unit for a family on a waiting list helps meet the affiliate's vision to eliminate substandard housing.

F. Temporary Housing: Applicant is living in temporary housing.

1. The applicant has temporary living arrangements with relatives or friends and has demonstrated that they cannot afford fair market rents/ownership.
2. The applicant is living in a transitional/subsidized housing facility or motel and has demonstrated that they cannot afford fair market rents/ownership.
3. The applicant is living in a house that is in the process of being condemned, sold or moved and has demonstrated that they cannot afford fair market rents/ownership.
4. The applicant, through no fault of their own, is losing its lease, certificate or voucher and has demonstrated that they cannot afford fair market rents/ownership.

G. Cost Burdened: Applicant housing is cost burdened, housing expenses (i.e. rent) exceed 33% of gross monthly income, or housing expenses plus normal utility payments exceed 33% of gross monthly income.

2. Ability to Pay for a Habitat Home

Approved by Homeowner Selection Committee on February 7, 2018

Approved by HFHI on

An applicant must demonstrate the ability to pay for a Habitat home. This criterion will be satisfied if the applicant meets the following requirements:

A. Gross Income: The applicant must have a gross income of at least 35 percent of median family income for the community based upon the current HUD Income Guidelines.

B. Stable Employment: The applicant must have a current, stable, verifiable income; i.e., stable job or income history of at least 1 year (breaks in employment, etc. will not disqualify an applicant if they are temporary in nature and applicant can show stability of income). A job with a temporary agency may be considered as stable employment if employment with agency has been for a minimum of 12 consecutive months, the average monthly gross income during the prior 12-month work history meets Our Towns Habitat minimum income criteria, and the temporary agency confirms the likelihood of continued employment is favorable.

1. Only applicant members 18 and older who will be living in the home will have their employment/income considered. (Note: All applicant members whose income is used to qualify for the loan must be listed as co-applicants for the loan.)
2. Supplementary income, e.g. child support, part-time work, will be considered as long as it can be demonstrated that it has been consistently received and is not likely to be discontinued within the next 3 years.

C. Payment History: The applicant must have demonstrated the ability to make regular monthly payments for rent, utilities, and/or other credit obligations. Credit report reviews will be performed for all applicant members whose income is used to qualify for the home. Timeliness of payments, charge offs, delinquent, or defaulted accounts are the key considerations for determining the applicant's ability to meet credit obligations.

D. Payment Ability: The applicant must have the ability to pay monthly housing costs (mortgage payment, taxes, insurance, and utilities) along with their current debt.

1. The monthly housing costs including utilities should not be greater than 33% of gross income (exceptions to this limitation may be made by the Board of Directors on the basis of household size or special circumstances).
2. Current long-term debt payments (including anticipated Habitat housing costs and monthly re-payment of collections and judgments) should not be greater the 40 % of total income. Long term debt payments are those likely to extend beyond twelve months. The applicant is allotted 12 months to pay off collections and judgments. Up to \$5000.00 of medical debt ONLY is excluded.

E. Employment Eligibility: An applicant must submit proof of employment eligibility in the United States, i.e. each applicant must present proof which satisfies criteria on the INS I-9 form. If an applicant cannot prove I-9 eligibility, that income is not counted toward the minimum income guideline required; however, that income is counted toward the maximum income guideline in order to verify need for housing.

Note: For applicant that do not have a permanent residency card, verification of I-9 eligibility must be current at time the application has been submitted. Verification will also be done prior to the final board approval.

F. Bankruptcy/Foreclosure: An applicant whose credit report reveals a bankruptcy or foreclosure may be approved if:

1. They can prove the bankruptcy was discharged or foreclosure occurred at least 2 years prior to submitting their application.
2. Credit Report must show a clean credit status (pays within 30 days of payment due) for any credit account established after bankruptcy/foreclosure.
3. There cannot be any current collections, judgments, or repossessions following the bankruptcy/foreclosure, (Excluding up to \$5000.00 of medical debt ONLY.)

G. Application Review Guideline: The committee does not review the applications where the income is above or below \$200 from guidelines or debt to income ratio is above 45%.

3. Willingness to Partner with Habitat

An applicant must demonstrate a willingness to partner with Habitat for Humanity. This willingness may be satisfied by the following:

A. Application: In looking at an applicant's willingness to partner with Habitat we look at the eagerness demonstrated by the family through their:

- initiative to obtain an application and fill it out completely,
- providing all necessary documentation at application and on an ongoing basis as required,
- expressing a desire to make one of the communities we serve their permanent home,
- providing complete and honest answers to questions raised during the interviewing and HIP process, and
- their willingness to allow credit, criminal background checks and employer/landlord reference evaluations

B. Criminal Record: The applicant must not have any criminal arrest record that poses a likely risk to their ability to partner with Habitat, with special attention to felony convictions and convictions for violent crimes. All felony convictions, including disciplinary action (restrictive probation, etc.) must be completed at least three years prior to the acceptance of an application. When felonies are on report we will discuss with subcommittee if it's questionable. This will be looked at case by case.

1. Ordinarily, no applicant or applicant member with a conviction for a sexual offense will be accepted.

Approved by Homeowner Selection Committee on February 7, 2018
Approved by HFHI on

2. No applicant will be considered if an applicant member over 16 years old in the house hold has been convicted of a drug related felony offense within the past five years.

C. Community: The applicant must have lived or worked in the Huntersville, Cornelius, Davidson, or Iredell County communities for a minimum of one year immediately before their application will be accepted.

D. Separated/Divorced Applicant: If an applicant is or has been married and is either separated from or divorced from their spouse, the applicant must either:

1. Present a copy of a written separation agreement in which their spouse relinquishes any and all of their rights in any real property that the applicant purchase after the separation agreement has been signed. If a written separation agreement has not been signed, then the applicant's spouse must sign the deed of trust/mortgage so that Habitat's security interest in the property is not affected.
2. Present a certified copy of the divorce decree and any separation agreement incorporated into the decree.

E. Marital Status Affidavit: All families will be required to sign a Marital Status Affidavit at Closing. If an applicant fails to meet these requirements, the applicant will be deemed to have failed their partnering agreement. All separation agreements and divorce papers must be received by the office prior to the end of the scheduled HIP Class.

F. Partnership: Willingness to partner is further demonstrated during the HIP process by the applicant home buyers:

- active participation in the HIP classes,
- completion of required sweat-equity hours as stated in the partnership papers signed by all families selected and outlined below,
- their efforts to resolve all adverse credit and/or debt situations such that their ability to pay is not adversely affected, and
- notifying a Homeowner Services staff member of any material changes in their situation which may affect their application

Sweat Equity Requirements	
Category	Hours
Partnering with others phase	150 minimum
• Homebuyer financial fitness classes	25
• Habitat Restore	25
• Pre-construction (working on someone else's house)	100
Home construction phase	250 minimum
• Fiscal therapy (per household)	50
• Construction (your home)	100

Approved by Homeowner Selection Committee on February 7, 2018
 Approved by HFHI on

Sweat Equity Requirements	
Category	Hours
Other hours (grades, babysitting, family & friends, events, speaking engagements, elective education classes)	100
Total hours	400 minimum

4. Ineligibility

A applicant is ineligible for Our Towns Habitat for Humanity home loan if:

- A. **Income Too High:** The family's maximum household gross income is more than 80% of median family income for the community based on household size.
- B. **Assets:** The applicant has an asset, such as a bank account, land or home, which could be used towards a down payment on a conventional mortgage or to repair existing housing.
- C. **Continued Employment:** There can be no specific information obtained during employment verification process, which indicates the applicant's job is likely to be discontinued within the next three years.



Our Towns Habitat for Humanity is an equal housing opportunity provider. We are pledged to the letter and spirit of U. S. policy for the achievement of equal housing opportunity throughout the nation. We encourage and support an affirmative advertising and marketing program in which there are no barriers to obtaining housing because of race, color, religion, sex, handicap, familial status, or national origin.



Our Towns
Habitat
for Humanity®

community impact report

fiscal year 2019

Building homes, communities and hope...in fresh, new ways.

Our Towns Habitat has been building homes, communities and hope in North Mecklenburg and Iredell Counties for decades now, serving more than 690 families with housing they can afford. And you've been building right alongside us.

In the past year, you have helped us construct 14 new homes, ensuring that 46 adults and children have a safe, decent place to lay their head at night. With your support, we completed the Poole Place neighborhood in Cornelius – a 13-year project that yielded 61 homes. Women Build volunteers dedicated the 11th Women Build Home and the 11th is already in process. Churches across our region raised their hammers and raised the bar on their commitment to affordable homes by funding more than three new homes.

Your generosity helped us make critical repairs to homes of our citizens and others to help them stay in a home they love by making it safe, secure and able to stand up to our North Carolina weather.

You helped us raise more than \$178,000 at Our Towns Habitat Builder's Bash gala and Hopebuilder's events in Statesville and the greater Lake Norman area.

Donating your quality household items and shopping for groceries, you supported ReStores in Cornelius, Mooresville and Statesville, which funded nearly five homes last year.

As we celebrate our 31st birthday this fall, we're working to help more families in more ways than ever.

For example, sometimes a family working to achieve a more

sustainable housing solution needs a decent place to live while on that path. Hope to Home is a new, collaborative effort by Our Towns Habitat, The Ada Jenkins Center, and the Hope House Foundation to provide lasting solutions to housing instability through education, supportive services and in some cases, transitional housing.

In 2019, Our Towns Habitat awarded the first Build Your Career Scholarship to a student who grew up in a Habitat home. This rising college senior will be the first generation in her family to complete a college degree and she plans to use it to help others.

Through our partnership with E2D-Eliminate the Digital Divide, every Our Towns Habitat family received a laptop computer at their home dedication, ensuring that their children have access to critical, at-home technology to help them succeed in school and beyond.

So, while some people think of us as a construction company or a ReStore or a great place to volunteer, you have helped Our Towns Habitat become those things and more. Your partnership as volunteers, donors, board members, homeowners and community partners is helping to make the vision of decent, affordable housing for everyone a reality across all Our Towns. Thank you!

Blessings,

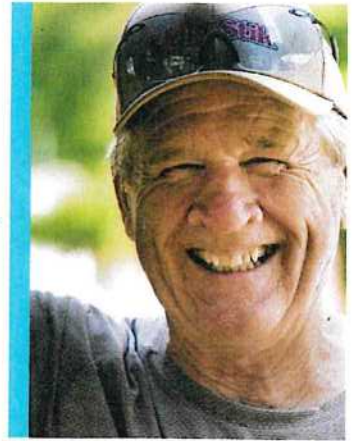


Chris Ahearn
CEO



40 families served
in our community

73 individuals served
internationally



112

individuals
completed
homebuyer
education
classes

Average monthly mortgage payment
for Our Towns homeowners:

\$575

Average monthly rent in
North Mecklenburg & Iredell Counties:

\$900



“

I was so blessed to be a part of the Habitat Homeowners program, it has truly changed my life as well as my children's lives. I am now a homeowner. My home is clean and safe for my girls, which is a blessing in itself. Both of my girls are in great health now thanks to Habitat.

- Tara, Our Towns Habitat Homeowner



I'm so excited to host the weekly prayer service at my new home to praise God for making a way for me to be a homeowner with the help of Our Towns Habitat For Humanity.

- Melissa, Our Towns Habitat Homeowner

”



NEW

&

REPAIRED

HOMES

14

new homes constructed

1,439

new home construction volunteers



16,531

new home construction volunteer hours

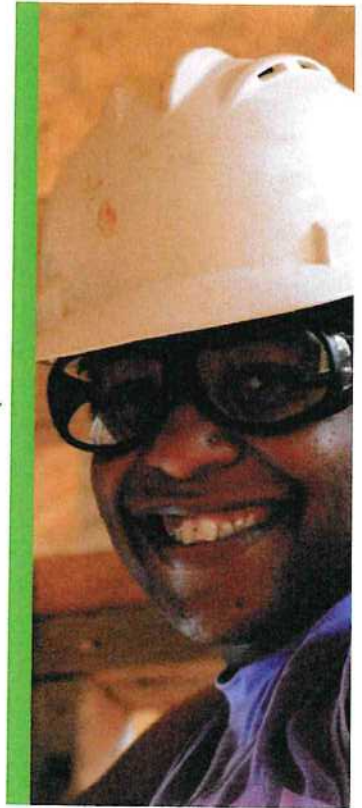


\$399,885

total value of new home
construction volunteer labor

26

Critical Repairs completed



5,600

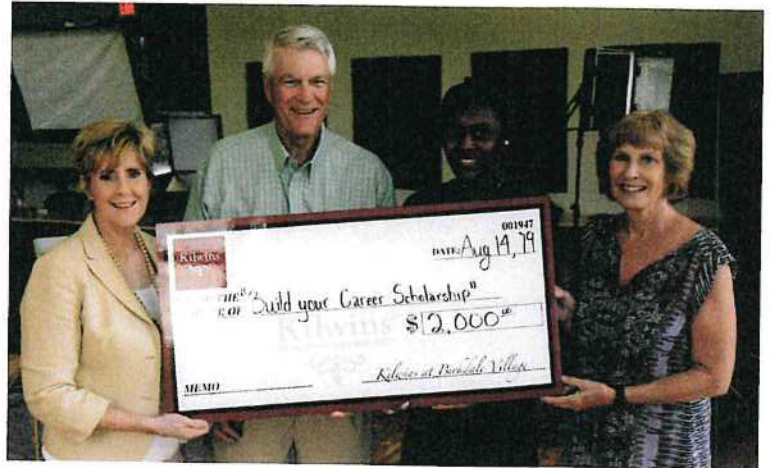
Sweat Equity hours completed
by new home buyers

SCHOLARSHIP RECIPIENT 2019

Thanks to the generosity of founding donors Bill and Donna Kenney, the "Build Your Career" scholarship program launched in January of 2019 for qualified students living in an Our Towns Habitat for Humanity home. This scholarship program provides up to \$2,000 in scholarship funds each year to one or more eligible students.

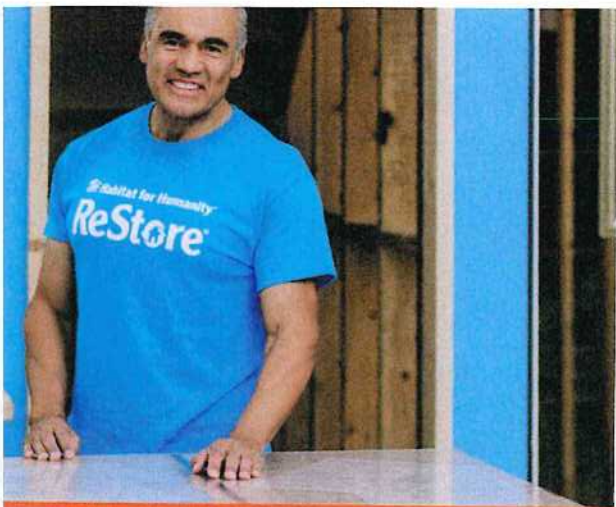
The inaugural recipient of the Build Your Career Scholarship is Shaniya Turner.

"I remember moving a lot as a child and having to switch schools. One of the best days of our lives as a family was when we got the news that we would be getting our very own home. A habitat home. I remember being so full of excitement at being able to finally move out of my grandmother's home where my mother, sister and I were all sharing a bedroom. Habitat for Humanity not only provided my family with our first home, but it is also the only home that we have ever lived in...



Upon graduating from the University of North Carolina at Greensboro, I plan to begin working at a nonprofit organization that deals with housing. I want to work as a case manager for homeless families so that I can help them create plans on how to get back on their feet and into permanent homes. I know first-hand how important shelter and stability are in a family, and I look forward to working with families through their hardships to find the light at the end of the tunnel. As a first generation college student, I am so excited to leave my mark on the community through my work with housing and homeless populations. I hope that my hard work and dedication will motivate my younger sister to go to college and find her own passion, just like I have found mine."

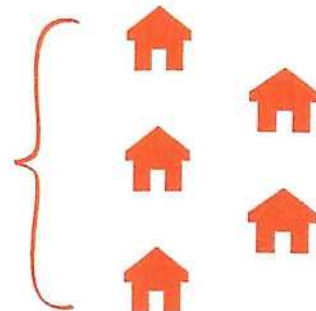
— Shaniya Turner



RETAIL OPERATIONS

5

*homes funded by profit
from retail operations*



432
all volunteers



27,466
retail volunteer hours



\$664,403
total value of retail
volunteer labor



1,764

estimated tons of
donated household
goods diverted
from landfills



Our Towns Habitat partnered with Davidson College in the spring of 2019 to complete a study on the positive long-term impacts of Habitat homeownership. The results show empirically what we've always believed: the benefits of an affordable home go beyond shelter. Habitat homes bring improvements in financial stability, employment, education and health.

the homeowners

291 mailed surveys | **61** homeowner responses {21% response rate}

34% Cornelius | 30% Mooresville | 13% Statesville | 11% Davidson | 1% Huntersville | <1% Troutman

average time in Habitat home: **10.1 years**

since moving into their Habitat home...



45.5%
believe
employment
is more stable



80%
believe they
are in better
financial shape



60.9%
feel child is
performing
better in school

To be a homeowner
really changed my life.
I don't have to worry
about being evicted and
not being able to pay my
low mortgage compared
to rent I used to pay.



50.8%
believe family
is in better
health

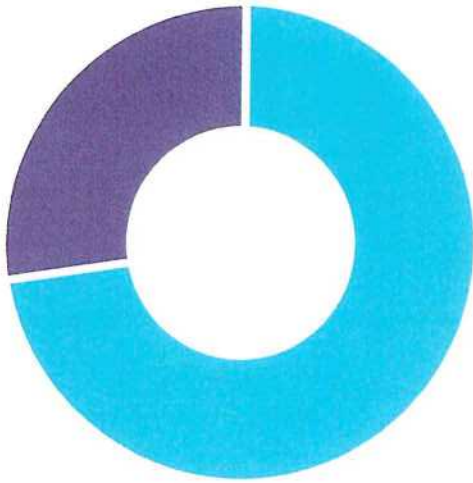


75.5%
reported being
able to meet
expenses



\$2,712,460

Annual Resources Available for Housing Ministry



\$1,968,110

Donations, grants & housing loans

\$744,350

Contribution to Housing Ministry from Operations

\$802,350 – homeowner mortgage payments

\$564,064 – retail net income

\$107,976 – misc. operational income

(\$730,040) – less operations expenses

{ DID YOU KNOW...? }

→ **87 cents** of **every dollar** Our Towns Habitat receives **goes directly back into its programs.**

→ Our Towns Habitat **homeowners** have paid **\$2,797,445** in property taxes since 2001.

OUR DONORS

Thank you to the generous donors and community partners who made it a priority to make an investment in Our Towns Habitat in fiscal year 2019 (July 1, 2018 – June 30, 2019)!

We are so grateful for the unwavering support of individual donors and those providing in-kind gifts & services.

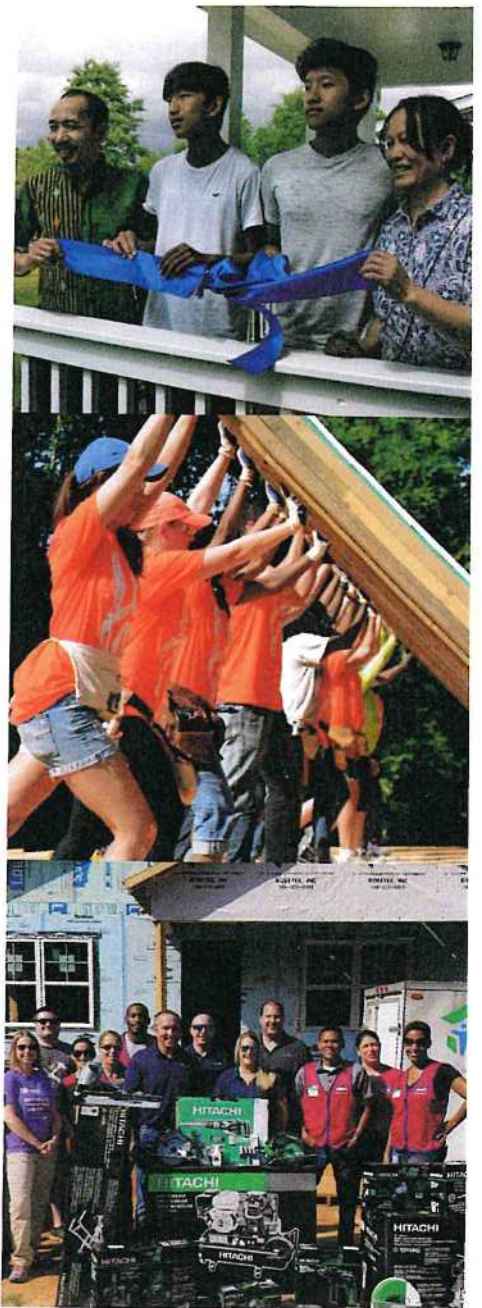
\$106,588 in in-kind contributions

such as...

- auction items
- land & property
- professional services
- construction materials
- gift cards
- & much more!

\$1,292,332 in individual contributions

that's equal to  10 houses!



COMMUNITY PARTNERS

\$75,000+

First Presbyterian Church Mooresville
 First Presbyterian Church Statesville
 Habitat for Humanity International - SHOP Grant
 Lowe's Companies, Inc.
 Mecklenburg County - CDBG
 Merancas Foundation, Inc.
 Town of Mooresville
 United Way of Central Carolinas

\$50,000 - \$74,999

Elevation Church
 The Leon Levine Foundation
 Thrivent Financial
 The Town of Davidson

\$20,000 - \$49,999

Ausura Charitable Trust
 Bank of America
 Davidson College Presbyterian Church
 Davidson United Methodist Church
 The Sherwin Williams Co / Valspar Co
 Trinity Episcopal Church
 Wells Fargo
 Williamson's Chapel United Methodist Church

\$10,000 - \$19,999

Bethel Presbyterian Church
 Brown Brothers Harriman Trust Company, N.A.
 Crosland, Inc.
 Grace Covenant Foursquare Church
 Greenworks Tools
 -77 Mobility Partners

Iredell County Community Foundation
 Publix Super Markets Charities, Inc.
 Saint-Gobain

\$5,000 - \$9,999

Cecile G. Ebert Charitable Foundation
 The Cove Church
 Duke Energy Foundation
 JCB Urban Company, Inc.
 Metrolina Greenhouses
 Mt. Zion United Methodist Church
 Prospect Presbyterian Church, Inc.
 Rocky Mount United Methodist Church
 St. Mark Catholic Church
 St. Patrick's Episcopal Church
 Whirlpool Corporation

\$1000 - \$4999

A&B Crane LLC
 America's Home Place
 Bentz and Associates
 BNY Mellon Corporation's Community Partnership
 Broad Street United Methodist Church Statesville
 The Cashion Family Foundation
 Central United Methodist Church
 CertainTeed
 Christ Community Church Mooresville
 Coca-Cola Bottling Co. Consolidated
 Community in Christ Lutheran Church
 Cotiviti USA, LLC
 The David E. Maguire Foundation, Inc.
 Davidson College

Donna Moffett, LLC
 Dow Chemical Co.
 The Duke Endowment
 Employers Advantage, LLC
 Housing Opportunity Foundation
 Huber Technology
 Huntersville Happy Hour Rotary C
 IBM Employee Services Center
 Kewaunee Scientific
 Layton's Tree and Crane Service
 Mechanix Wear
 Milton H. Callner Foundation
 Mooresville Glass & Mirror Co., Inc.
 North Mecklenburg Woman's Club
 Owens Corning Sales, LLC
 Peoples Bank
 Peter T. Meletis Charitable Fund
 Piedmont Insurance Associates, Inc.
 Positec USA, Inc.
 Quinnipiac University
 Radiant Life Fellowship
 Southwire
 Square D / Schneider Electric
 Statesville Brick Co.
 St. Albans Episcopal
 St. Luke Greek Orthodox Church
 St. Mark's Lutheran
 St. Therese Catholic Church
 TIAA-CREF
 Truist
 United Methodist Foundation
 United Way of the Greater Lehigh Valley
 University of the Sciences



YOU make an immeasurable difference to Our Towns Habitat and your community as a whole. All the annual reports in the world will never truly be able to capture your impact!



20310 N Main Street | Cornelius, NC 28031
704.896.8957

**Town of Huntersville
Town Board
December 21, 2020**

To: Town Board

From: Michael Jaycocks, Director

Date: December 21, 2020

Subject: Consider adopting Resolution to award the bid for the Waymer Park Athletic Field Lighting Project and approve the construction contract. *(Michael Jaycocks)*

EXPLAIN REQUEST:

This project will replace the old wooden pole flood light lighting system on the Waymer Park Softball Field. The Town advertised this project three times and only received one bid all three times. The Town has negotiated on the bid received from Musco Sports Lighting for this project. Musco Sports Lighting is the same sports lighting system that the town has at Bradford Park. This LED low energy system can be controlled remotely from anywhere and you have access to a troubleshooting hotline 24/7 365 days a year. For the last eleven years the Musco System has been by far the best system we have from an operational standpoint and long-term maintenance. The Parks and Recreation Commission recommended to move forward with lighting the Waymer Park Softball Field at their December 16, 2020 meeting.

ACTION RECOMMENDED:

Approve Waymer Park Sports Lighting Contract & Resolution with Musco Sports Lighting, LLC.

FINANCIAL IMPLICATIONS:

\$312,000

ATTACHMENTS:

1. Resolution awarding the contract to Musco Sports Lighting 12-21-2020
2. Musco Bid
3. Musco Contract- Waymer Athletic Field Lighting-12-21-2020
4. Exhibit A- Musco Contract 12-21-2020
5. 2020.11.20 Bid Manual
6. Waymer Park Bid Set
7. Waymer Park Bid Tab



RESOLUTION OF THE TOWN OF HUNTERSVILLE TO AWARD THE BID FOR THE WAYMER PARK ATHLETIC FIELD LIGHTING PROJECT AND APPROVE THE CONSTRUCTION CONTRACT

Whereas, the Town of Huntersville received formal, written, sealed bids for the construction and installation of athletic field lighting at Waymer Park (the "Project"); and

Whereas, the lowest responsive responsible bidder was MUSCO SPORTS LIGHTING, LLC, a Iowa limited liability company located in Oskaloosa, Iowa ("Low Bidder"); and

Whereas, the Town wishes to award the Project to the Low Bidder, accept certain alternates that were bid, and approve and establish administrative authority for the construction contract with the Low Bidder;

NOW THEREFORE, BE IT RESOLVED AS FOLLOWS:

1. The Board of Commissioners awards the Project to the Low Bidder, in accordance with the Bid Proposal submitted, as modified by the Contract Documents, and accepts the alternates bid as follows:

- Base Bid consisting of:

- | | |
|--|-------------------------|
| 1. <u>Waymer Athletic Field Lighting</u> | \$307,000.00 (lump sum) |
| 2. <u>Allowances</u> | \$5,000.00 |

Total Bid Amount: \$312,000.00

2. The draft Construction Contract, attached hereto as Exhibit 1, is hereby approved. As used herein, the Construction Contract is deemed to include Exhibit A, attached thereto, and all Contract Documents identified and incorporated therein by reference.
3. The Board hereby authorizes the Town Manager, acting on advice of counsel, to take any actions necessary to effect the provisions of this Resolution, including signing the Agreement attached with such modification as may be required. Provided a budget amendment is not necessary, the Town Manager shall have the authority to approve change orders to the Construction Contract for time and price, however the total of all change orders approved by the Town Manager may not exceed five percent (5%) of the Total Bid Amount stated in paragraph 1, above.
4. This Resolution shall be effective as of the date its adoption.

Adopted this _____ day of December, 2020.

ATTEST:

TOWN OF HUNTERSVILLE

Town Clerk

Town Mayor

APPROVED AS TO FORM:

Town Attorney

ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING

SINGLE PRIME GENERAL CONSTRUCTION CONTRACT
BID PROPOSAL

ABERNATHY PARK ATHLETIC FIELD LIGHTING
&
WAYMER PARK ATHLETIC FIELD LIGHTING

ALTERING THE FACE OF THIS FORM IN ANY MANNER, OR PROVIDING INFORMATION NOT SPECIFICALLY REQUESTED SHALL RENDER THIS BID PROPOSAL NON-RESPONSIVE AND INELIGIBLE FOR CONSIDERATION BY THE TOWN

Date: 11-30-2020

TO: **Town of Huntersville**
North Carolina

Gentlemen:

The undersigned Bidder, having examined carefully the site, the Invitation to Bid, Instructions to Bidders, Construction Drawings, the form Construction Agreement, Supplementary Documents (if any) and subsequent Addenda (as acknowledged herein) for the Construction of Athletic Field Lighting with Associated Erosion Control and Site Improvements at Abernathy Park and Waymer Park, hereby proposes to furnish all labor, materials, equipment and services necessary to perform the work required in the aforementioned documents for the sum of:

- | | | |
|--|------------------|-------------|
| 1. Waymer Park and Abernathy Park Athletic Field Lighting Complete: \$ | <u>765,000</u> | (LS) |
| 2. Unsuitable Soils (Allowance No. 1) 10-CY @ \$10,000= | | \$10,000 |
| 3. Rock Removal (Allowance No. 2) 10-CY @ \$20,000= | | \$20,000 |
| Total Base Bid: (Item 1 + Item 2 + Item 3) | <u>\$795,000</u> | (LS) |

Town reserves the right to award contract based on Base Bid only, or combination of Base Bid and any/all of the Deduct Bid Items below. If the Deduct is left blank, then the Deduct will not change the Base Bid if accepted. The Bidder agrees to provide the Deducts as described in the Contract Documents for the following prices:

Deduct Bid #1: Remove Waymer Park multipurpose field lights as shown on Sheet E1.02

Deduct \$ 12,000 (LS)

Deduct Bid #2: Remove Waymer Park asphalt as shown on Sheets C0.01, C1.01, C2.01 & C3.01

Deduct \$125,000 (LS)

Deduct Bid #3: Remove Abernathy Park project in its entirety (11 sheets)

Deduct \$245,000 (LS)

ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING

The undersigned further agrees that this Bid Proposal shall be valid for a period of sixty (60) days from the date of receipt of the Bid Proposal and that if this Bid Proposal is accepted by the Town within this period, the Bidder will execute the Construction Agreement provided as part of the Contract Documents.

The undersigned further agrees to begin the work promptly upon receipt of the Notice to Proceed and to pursue the work with an adequate work force to complete the work within 102 calendar days from receipt of the Notice to Proceed. Liquidated Damages of \$200.00 per calendar day are hereby agreed upon as an assessment from the Contractor for failure to complete the work within the time period stated herein.

The undersigned Bidder further proposes and agrees to commence the work promptly upon notice, with an adequate force to satisfactorily complete the Project.

The undersigned acknowledges receipt of the following addenda which will be considered as part of the Contract Documents.

Addendum No. 1 from original bid	Dated 10-16-2020
Notice to rebid as a formal project	Dated 11-05-2020
Notice to rebid as a formal project	Dated 11-20-2020

CONTRACTOR: Musco Sports Lighting, LLC

Contractor is or ☐ is not* a historically underutilized business, registered with the North Carolina Office of Historically Underutilized Businesses. (Must be completed by all Bidders.)

***Musco's installing contractor, Newco Electric, LLC is NC MWBE/HUB certified
Electrical license #15088-U. Total contribution % depends on final scope of work**

ADDRESS: Musco Sports Lighting, LLC

100 1st Avenue West

Oskaloosa, IA 52577

BY:



Dina Neeley

(Signature)

(Typed Name)

TITLE: Musco Field Sales Representative, North Carolina

NC General Contractor's License No. #76348 (Musco), Electrical License #11174-U (Musco)

NC State Sales and Use Tax Registration #600301762 (Musco)

ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING

- X Non-collusion Affidavit has been completed and is attached to this Bid Proposal Form (Required)
(Note: Inclusion of the non-collusion affidavit is mandatory. A bid will be rejected as non-responsive if not included in the bid submission.)

Select One (One or the other must be chosen by the Bidder):

- X Substitution Listing (if substitutions are being proposed) is attached to this Bid Proposal Form.
(Note: Failure to include the Substitution Listing with this Bid Proposal will render the substitutions ineligible for consideration by the Town.) OR
— Substitution Listing is not attached to this Bid Proposal Form (No substitutions are proposed.)

SUBSTITUTION LISTING

TO: Town of Huntersville, North Carolina
Hereinafter called "Owner"

1. A Bidder requesting a substitution must submit this form to the Project Manager and Project Landscape Architect at least five (5) days prior to the time stated for Bid Opening.
2. Pursuant to bidding requirements for the Work titled:

ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING FOR
HUNTERSVILLE PARKS AND RECREATION

The Contract Sum proposed by the undersigned on the Bid Proposal form is for the Work as shown on the Drawings, and otherwise defined in the Contract Documents. However, the undersigned proposes the following substitutions for the Owner's consideration. Should the Owner accept any or all of the proposed substitutions, the Bidder's proposed contract sum will be reduced by the amount shown.

3. Specified Product Or Material	Drawing Number	Proposed Substitution	Proposed Reduction in In contract sum
Open trench and Underground boxes	E1.02	Use directional boring as much as possible	Deduct \$27,000 total if both fields are constructed
Waymer deduct #1	E1.02	Delete Poles/fixtures and associated wiring for L1 fixtures.	Deduct \$35,000 if eliminated

PROVIDE SIGNATURE
IDENTICAL TO THAT

ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING
BIDDER: Musco Sports Lighting LLC

SHOWN ON THE BID FORM

A handwritten signature in dark ink, appearing to be 'Dina Neeley', written in a cursive style.

By Dina Neeley, Musco Field Sales Representative

END OF SUBSTITUTION LISTING

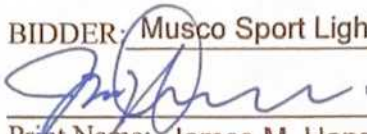
ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING

NON-COLLUSION AFFIDAVIT

I, on behalf of the Bidder, being first duly sworn or as the Contractor, do hereby represent on behalf of the Bidder that the Bid Proposal submitted was made without collusion or fraud and that neither I, nor anyone else affiliated with the Bidder to my knowledge, have offered or received any kickbacks or inducements from any other supplier, manufacturer or subcontractor in connection with their Bid Proposal, and neither I, nor anyone else affiliated with the Bidder to my knowledge, have conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

This the 12 day of October, 2020.

BIDDER: Musco Sport Lighting, LLC



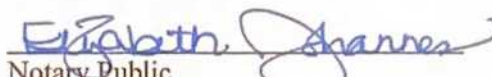
Print Name: James M. Hansen

Print Title: Secretary

State of Iowa
County of Mahaska

Sworn to or subscribed before me this the 12 day of October, 2020.

(Official Seal)


Notary Public
Print Name: Elizabeth Johannes



BID BOND

Principal: Musco Sports Lighting, LLC
Name of Principal Contractor
Surety: Travelers Casualty and Surety Company of America
Name of Surety
Contract Number: DEI Project Number 50129702 County: Mecklenburg
Date of Bid: November 30, 2020

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the Town of Huntersville in the full and just sum of five (5) percent of the total amount bid by the Principal for the project stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

NOW, THEREFORE, the condition of this obligation is: the Principal shall not withdraw its bid within sixty (60) days after the opening of the bids, or within such other time period as may be provided in the proposal, and if the Town of Huntersville shall award a contract to the Principal, the Principal shall, within ten (10) calendar days after written notice of award is received by him, provide bonds with good and sufficient surety, as required for the faithful performance of the contract and for the protection of all persons supplying labor, material, and equipment for the prosecution of the work. In the event the Principal requests permission to withdraw his bid due to mistake in accordance with the provisions of Article 103-3 of the *Standard Specifications for Roads and Structures*, the conditions and obligations of this Bid Bond shall remain in full force and effect until the Town of Huntersville makes a final determination to either allow the bid to be withdrawn or to proceed with award of the contract. In the event a determination is made to award the contract, the Principal shall have ten (10) calendar days to comply with the requirements set forth above. In the event the Principal withdraws its bid after bids are opened except as provided in Article 103-3, or after award of the contract has been made fails to execute such additional documents as may be required and to provide the required bonds within the time period specified above, then the amount of the bid bond shall be immediately paid to the Town of Huntersville as liquidated damages.

* See attached Rider to this bond.

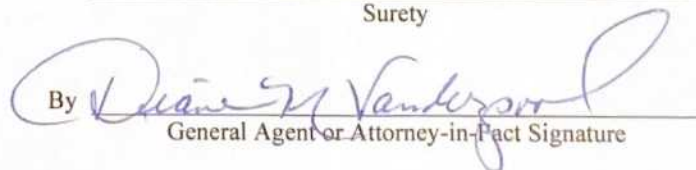
IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed.

This the 30th day of November, 20 20

Travelers Casualty and Surety Company of America

Surety

By



General Agent or Attorney-in-Fact Signature

Diane M. Vanderpool, Attorney-in-Fact

Print or type Signer's Name

Seal of Surety



BID BOND

LIMITED LIABILITY COMPANY

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Musco Sports Lighting LLC

Full name of Firm

100 1st Avenue West, Oskaloosa, IA 52577

Address as prequalified

Signature of Member/
Manager/Authorized Agent



Individually

Brett Nelson, General Manager

Print or type Signer's name

Limited Maintenance Provision

Rider

To be attached to and form part of Bid Bond issued by the **Travelers Casualty and Surety Company of America** on behalf of Musco Sports Lighting LLC in the amount of Five Percent of Bid Amount (5 %) and dated November 30 , 2020 in favor Town of Huntersville, North Carolina for DEI Project Number 50129702

Principal and Surety shall guarantee that the work will be free of defective materials and workmanship for a period of **Twelve (12)** months following completion of the contract. Any additional warranty or guarantee whether expressed or implied is extended by the Principal or Manufacturer only, and the Surety assumes no liability for such a guarantee.

Musco Sports Lighting LLC

By: Brett Nelson

Brett Nelson, General Manager

Travelers Casualty and Surety Company of America

By: Diane M. Vanderpool

Diane M. Vanderpool, Attorney-in-Fact





Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Diane M. Vanderpool** of Des Moines, Iowa, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **3rd** day of **February**, 2017.



State of Connecticut

City of Hartford ss.

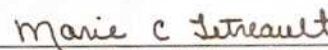
By: 
Robert L. Raney, Senior Vice President

On this the **3rd** day of **February**, 2017, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June**, 2021




Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

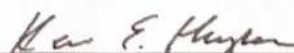
FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this 30th day of November, 2020




Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.

Standard Form Contract



101 Huntersville-
Concord Rd
Huntersville, NC 28078
(704) 875-6541

CONSTRUCTION CONTRACT

CONTRACTOR: Musco Sports Lighting, LLC.
100 1st Avenue West
Oskaloosa, Iowa 52577

PROJECT: Waymer Park Athletic Field Lighting
PROJECT ADDRESS: 14200 Holbrooks Rd,
Huntersville, NC 28078

PROJECT ENGINEER:

Tony Miller, PE, LEED A
9300 Harris Corners Pkwy., Suite 220
Charlotte, NC 28269
704.264.1248

This Construction Contract, and all exhibits, (collectively this "Contract") is entered into this _____ day of _____, 20____ by and between, the Town of Huntersville, a municipal corporation of the State of North Carolina, (the "Town") and, _____ (the "Contractor") having an address of 100 1st Avenue West, Oskaloosa, Iowa 52577.

WITNESSETH:

That for and in consideration of the mutual promises set forth in this Contract, the sufficiency of which is acknowledged by the parties hereto, the parties agree as follows:

1. Scope of Services. The Contractor agrees to provide the professional construction services needed to complete the Project in accordance with the Project Drawings and Specifications and the Contract Documents for the price stated in Exhibit A as attached hereto and incorporated herein and as accepted by the Town.
2. Contract Documents. The Contract Documents consist of, in addition to this Contract, the Invitation to Bid, Instructions to Bidders, Bid Proposal Form, Non-collusion Affidavit, Substitution Listing, all Addenda issued, the Contract Drawings, and the General Conditions of the Construction Contract, all of the foregoing being incorporated herein by reference as if fully set forth herein, and all parties agree to be bound thereby.
3. Time for Performance of the Work. The Work shall be completed within one hundred and two (102) calendar days of receipt of the Notice to Proceed from the Town.
4. Payment for Services. For the performance of the Work Contractor shall be paid the lump sum of three hundred and twelve thousand Dollars (\$312,000) in accordance with the terms and conditions provided in the General Conditions of the Construction Contract.

In witness thereof, the contracting parties, by their authorized agents, affix their signatures this _____ day of _____, 20_____.

CONTRACTOR

BY: _____
BY: _____
Print Name:
Print Title:

TOWN OF HUNTERSVILLE

Print Name:
Print Title:

This instrument has been pre-audited in that manner required by the North Carolina Budget and Fiscal Control Act.

Pattie McGinnis, Finance Director

Purchase Agreement

Date: December 15, 2020

Project Name: Waymer Park Softball

Project #: 206032

1. SELLER NAME AND ADDRESS: Musco Sports Lighting, LLC ("Musco") 100 1 st Avenue West – PO Box 808 Oskaloosa, IA 52577 Attn: Yuli Diaz Email: yuli.diaz@musco.com Telephone: 641-673-0411 800-825-6020 Ext 4073 Fax: 800-374-6402	2. BUYER NAME AND ADDRESS: Town of Huntersville (the "Buyer") 102 Gilead Road PO Box 664 Huntersville, NC 28070 Attn: ☒ _____ Email: ☒ _____ Telephone: ☒ _____ Fax: ☒ _____
3. OWNER NAME AND ADDRESS: Town of Huntersville 102 Gilead Road PO Box 664 Huntersville, NC 28070 Attn: ☒ _____ Email: ☒ _____ Telephone: ☒ _____ Fax: ☒ _____	4. SHIPPING NAME AND ADDRESS: Waymer Park 14200 Holbrooks Road Huntersville, NC 28078 Attn: Michael Jaycocks Email: mjaycocks@huntersville.org Telephone: 704-766-2228 Fax: 704-992-5528
5. WARRANTY CONTACT: Town of Huntersville Parks and Recreation 12600 Old Statesville Road PO Box 2879 Huntersville, NC 28070 Attn: Michael Jaycocks Email: mjaycocks@huntersville.org Telephone: 704-766-2228 Fax: 704-992-5528	6. FACILITY NAME AND ADDRESS: Waymer Park 14200 Holbrooks Road Huntersville, NC 28078

7. **EQUIPMENT DESCRIPTION** – Musco shall sell, transfer, and deliver to Buyer, and Buyer will purchase, accept, and pay for the following goods (the "Equipment") in accordance with the "Total Price" paragraph of this Agreement. Musco's lighting system consisting of:

Light-Structure System™ Foundation-to-Poletop Lighting System

- 6 – pre-cast concrete bases
- 6 – 60 ft galvanized steel poles
- Electrical component enclosures
- Pole length wire harnesses
- 10 – Total Light Control™ TLC-LED-1500 factory-aimed and assembled luminaires
- 17 – Total Light Control™ TLC-LED-1200 factory-aimed and assembled luminaires
- 5 – OSQ Area luminaires with pole mounting brackets

With Controls

- Control-Link® control & monitoring system cabinet
- LED dimming

Built to the following specifications:

- Driver input voltage: 480
- Phase to pole: 3 phase
- Structural integrity: based upon IBC, 2018, 115mph, Exposure C
- Light level(s): 50 footcandles on the infield and 30 footcandles on the outfield

8. **RESPONSIBILITIES OF THE BUYER AND/OR THIRD PARTY** – Buyer/Third Party agrees to:

Reference responsibilities listed under the Installation Scope of Work.



Purchase Agreement

Date: December 15, 2020

Project Name: Waymer Park Softball

Project #: 206032

- 9. MUSCO SERVICES** – Musco agrees to provide design and layout for the lighting system. In addition to the purchase and sale of the Equipment, Musco agrees to provide, itself or through its subcontractors, the following (“Services”):

Control-Link® customer support services: commission the system; monitor and report system alarms; provide automated facility management reports; provide on-off schedules via Control-Link app or website, email, phone call or fax; and provide technical support 24 hours a day, seven days a week.

10. INSTALLATION SCOPE OF WORK

Customer Responsibilities:

1. Complete access to the site for construction using standard 2-wheel drive rubber tire equipment.
2. Locate existing underground utilities not covered by your local utilities. (i.e. water lines, electrical lines, irrigation systems and sprinkler heads). Musco or Subcontractor will not be responsible for repairs to unmarked utilities.
3. Provide signed and sealed electrical design for permitting
4. Pay for extra(allowances) costs associated with foundation excavation in non-standard soils (rock, caliche, high water table, collapsing holes, etc.) or soils not defined in geo-technical report.
Standard soils are defined as soils that can be excavated using standard earth auguring equipment.
5. Pay any necessary power company fees and requirements.
6. Provide area on site for disposal of spoils from foundation excavation

Musco Responsibilities:

1. Provide required foundations, poles, electrical enclosures, luminaires, pole harnesses and control cabinets.
2. Provide layout of pole locations and aiming diagram.
3. Provide Project Management as required.
4. Assist our installing subcontractor and ensure our responsibilities are satisfied.
5. Accommodate structural load for future fixtures if needed
6. Provide Control Link Training to the staff.

Musco Subcontractor Responsibilities

General:

1. Provide labor, equipment and materials to off load equipment at jobsite per scheduled delivery.
2. Provide storage containers for material, (including electrical components enclosures), as needed.
3. Provide necessary waste disposal and daily clean up.



Purchase Agreement

Date: December 15, 2020

Project Name: Waymer Park Softball

Project #: 206032

4. Provide adequate security to protect Musco delivered products from theft, vandalism or damage during the installation.
5. Obtain any required permitting as needed.
6. Demo and disposal of existing lighting system
7. Confirm the existing underground utilities and irrigation systems have been located and are clearly marked in order to avoid damage from construction equipment. Owner responsible for any damage to unmarked utilities and irrigation. Advise owner if any such damage occurs during construction.
8. Keep all heavy equipment off playing fields when possible. Indentations caused by heavy equipment traveling over dry ground would be an example of expected damage.
9. Provide startup and aiming as required to provide complete and operating sports lighting system.

Demolition:

1. Remove and dispose of the existing lighting poles, luminaires, and electrical components not being reused. This will include the recycling of lamps, aluminum reflectors, ballast and steel as necessary.
2. Demolition of existing foundations to approximately 2 ft below grade.
3. Seed and straw as needed after installation in all impacted work areas

Foundations, Poles and Luminaires:

1. Mark and confirm pole locations per the aiming diagram provided. If there are any issues, immediately notify your Musco Project Manager.
2. Provide labor, materials and equipment to install 6 LSS foundations as specified on layout.
3. Remove spoils to owner designated location at jobsite.
4. Provide labor, materials and equipment to assemble Musco TLC-LED luminaires, electrical component enclosures, poles, and pole harnesses.
5. Provide labor, equipment and materials to erect 6 dressed LSS Poles and aim utilizing the pole alignment beam.

Electrical:

1. Provide labor, materials and equipment to install new lockable electrical service panels as required per the electrical plans on a galvanized metal rack.
2. BFDP panel will be Nema 3R rated
3. Provide labor, materials and equipment to install all underground conduit, wiring, pull boxes etc. and terminate wiring as required -OR- as per electrical design.
4. Utilize directional boring wherever possible to minimize site impact and need for in ground hand holes.
5. Provide as-built drawings on completion of installation

Control System:

1. Provide labor, equipment and materials to install 1 Musco Control and Monitoring cabinet and terminate all necessary wiring.
2. Check all Zones to make sure they work in both auto and manual mode.
3. Commission Control-Link® by contacting Control Link Central™ at 877-347-3319.



Purchase Agreement

Date: December 15, 2020

Project Name: Waymer Park Softball

Project #: 206032

11. CONSTANT 25™ WARRANTY & MAINTENANCE PROGRAM (the "Warranty") – Musco shall provide parts, labor, and services as outlined in the Musco Constant 25 Warranty Agreement to maintain operation of lighting equipment for a period of 25 years on the following terms:

- **Warranty service begins:** On the date of product shipment
- **Expiration date:** 25 years from date of shipment
- **Monitoring, maintenance & control services**
- **Light levels** – as specified in Musco design documents
- **Spill light control** – as specified in Musco design documents
- **Energy consumption:** as specified in Musco design documents

12. TOTAL PRICE – Buyer will pay for the above-described Equipment and, if applicable, Services. The Total Price of \$312,000.00 includes applicable taxes, is payable as follows.

- \$312,000.00 within 30 days from invoice date
- Includes \$5,000 contingency

A copy of the payment and performance bond (if applicable) is required prior to shipment.

Monthly progress invoicing and payments will apply.

Final payment shall not be withheld by Buyer on account of delays beyond the control of Musco.

Price includes delivery, unloading, and installation to the address indicated in item #4 of this Agreement. Price does not include sales tax.

Payments not paid when due are subject to a carrying charge for each month past due or will be pro-rated for the portion of the month there is an unpaid balance. Carrying charges shall accrue in the amount of one and one half percent (1½%) per month of any overdue unpaid balance, or the maximum rate permitted by law, whichever is less.

Source of Funds: Buyer agrees that Buyer's payment to Musco is not contingent upon Buyer getting paid by the Owner/End User.

Buyer may not hold back or set off any amounts owed to Musco in satisfaction of any claims asserted by Buyer against Musco. No partial payment by Buyer shall constitute satisfaction of the entire outstanding balance of any invoice of Musco, notwithstanding any notation or statement accompanying that payment.

The Total Price was calculated utilizing parameters outlined in the project specifications. In the event soil conditions vary from those relied upon, or if the soil cannot be readily excavated, Buyer shall be responsible for Musco's additional associated costs, including but not limited to the cost of design, alternate foundations, additional materials, and labor.

13. TAXES – Buyer shall pay all applicable state and local sales taxes, use or any similar tax invoiced appropriately by Musco.

☒ Taxable ☐ Non-Taxable (Copy of resale or exemption certificate must be attached. Note: Just holding a sales tax permit does not, in and of itself, qualify for a non-taxable sale.)

14. PAYMENT/PERFORMANCE BONDING – Is there a bond on this project? ☒ Yes ☐ No

Principal Bond Holder:	
Bonding Company Name:	
Bonding Company Address:	
Bonding Company Address	
Phone Number:	
Bond Number:	



Purchase Agreement

Date: December 15, 2020

Project Name: Waymer Park Softball

Project #: 206032

- 15. DELIVERY** – Normal delivery to the shipping address indicated above is 6 to 8 weeks after submittal approval or release of order, if later. If the Equipment is shipped in multiple lots, Musco shall prepare a separate invoice for the price of the Equipment shipped at the time of each shipment. Buyer shall pay the amount of each such invoice upon the same terms as set out in the “Total Price” paragraph of this Agreement.

All deliveries shall be made by means of a common carrier or some other reasonable means chosen by Musco. All risk of loss to Equipment sold shall pass to Buyer upon Musco’s substantial completion of the Services.

Delivery is subject to Buyer maintaining credit satisfactory to Musco. Musco may suspend or delay performance or delivery at any time pending receipt of assurances, including full or partial prepayment or payment of any outstanding amounts owed adequate to Musco in its discretion, of Buyer’s ability to pay. Failure to provide such assurances shall entitle Musco to cancel this contract without further liability or obligation to Buyer.

- 16. NO RETAINAGE/WARRANTY** – Buyer acknowledges payment in full is required within the agreed terms. Warranty claims and back charges shall not be deducted from contract payments without prior approval of Musco’s Warranty Department (877-347-3319). Musco’s Equipment and its performance are sold subject to Musco’s written warranty. The Warranty provided by Musco shall be in lieu of all other representations, warranties and conditions of any kind, in respect of the Equipment or the Services and Musco disclaims any other representation, warranty or condition whatsoever, whether written or oral, express or implied, statutory or otherwise, including, but not limited to, the implied warranties and conditions of merchantability and fitness for a particular purpose.

Buyer acknowledges that any warranty and/or maintenance guarantee contained within payment/performance bonds issued on Musco’s behalf pursuant to this Agreement and the corresponding liability on behalf of the issuing surety shall apply only to the first 12 months of any warranty and/or maintenance obligation of Musco specified in the written Warranty to be delivered to Buyer. The balance of any warranty and/or maintenance obligation greater than 12 months shall be the sole responsibility of Musco and shall not be guaranteed by a third party.

- 17. EXCLUSION OF SPECIAL DAMAGES** – In no event shall Musco be liable for incidental, special or consequential damages, including without limitation lost revenues and profits, in respect of this Agreement or the Equipment and, if applicable, Services provided hereunder.
- 18. LIMITATIONS PERIOD** – Unless otherwise specified in the Warranty to be delivered to Buyer, any action or proceeding against Musco arising out of or relating to the Equipment or Services will be forever barred unless commenced within the earlier of: (a) one (1) year after delivery of the Equipment or if applicable, completion of the Services; or (b) the period prescribed by the applicable statute of limitation or repose.
- 19. SECURITY AGREEMENT** – In consideration of the promises contained herein, Buyer hereby grants and conveys to Musco, to secure payment and performance of all obligations in full, a purchase money security interest in the Equipment, including all repairs, replacements and accessions thereto and proceeds thereof (collectively referred to as the “Secured Property”). Buyer hereby irrevocably authorizes Musco at any time to register in any registration office in any province (including personal property registries and if applicable, land titles or real property registries) any initial financing statements, financing change statements, notices of security interest or other documents relating to this security interest or this transaction. Buyer further agrees to promptly furnish any information requested by Musco to effectuate the terms of this Agreement. Buyer further agrees to execute any document reasonably required by Musco to perfect the security interest granted herein and to assure the preservation, priority, and enforcement of such security interest. Buyer agrees that value has been given for this security interest and that the parties have not agreed to postpone the time for attachment of the security interest.

Purchase Agreement

Date: December 15, 2020

Project Name: Waymer Park Softball

Project #: 206032

- 20. INSURANCE** – From and after delivery, regardless of the pending performance of the Services, until such time as Buyer has performed in full all obligations contained herein, Buyer shall maintain adequate insurance covering the Equipment in accordance with generally accepted business practices. Buyer shall name Musco as loss payee until such time as Buyer has performed in full all obligations contained herein.
- 21. DEFAULT** – Each of the following shall constitute a default (“Default”) under this Agreement: a) failure to pay, in full, any payment when due hereunder; b) Buyer becomes the subject of a bankruptcy, receivership or insolvency proceeding; c) any warranty, representation or statement made or furnished to Musco by or on behalf of the Buyer proved to have been false in any material respect when made or furnished; d) loss, theft, damage, destruction or encumbrance to, or of, the Secured Property or the making of any levee, seizure or attachment thereof or thereon prior to payment in full; or e) the occurrence or non-occurrence of any event or events which causes Musco, in good faith, to deem itself insecure for any reason whatsoever.
- 22. REMEDIES UPON DEFAULT** – In the event of Default, Musco may, at its option, and without notice or demand: a) declare the entire unpaid balance owing hereunder due and payable at once; b) proceed to recover judgment for the entire unpaid balance due; c) exercise all rights provided to Musco under this Agreement, any applicable personal property security act (or similar legislation), at law or in equity including but not limited to entering the Buyer’s premises and taking possession of the Secured Property. All the remedies described herein are cumulative and may be exercised in any order by Musco. Buyer agrees to pay all costs (including reasonable attorney’s fees and court costs) incurred by Musco in disposing of the Secured Property and collecting any amounts owing hereunder, and such costs shall be part of the obligations secured hereunder.
- 23. FORCE MAJEURE** – Musco shall not be liable for delays or failure to perform in respect of the Equipment or the Services due, directly or indirectly, to (i) causes beyond Musco’s reasonable control, or (ii) acts of God or nature, acts (including failure to act) of any governmental authority, wars (declared or undeclared), strikes or other labor disputes, fires, and natural calamities (such as floods, earthquakes, storms, epidemics).
- 24. EEO COMPLIANCE** – When applicable, Musco and Subcontractor shall comply with the EEO Clause in Section 202 of Executive Order 11246, as amended, which is incorporated herein by specific reference.
- When applicable, Musco and Subcontractor shall abide by the requirements of 41 CFR 60-741.5(a) and 41 CFR 60-300.5(a). These regulations prohibit discrimination against qualified individuals on the basis of disability and against qualified protected veterans, and require affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified individuals with disabilities and qualified protected veterans.

25. CONDITIONS OF AGREEMENT

- a. **APPLICABLE LAW** – This Agreement shall be governed by the laws, including the Uniform Commercial Code, adopted in the State of Iowa as effective and in force on the date of this Agreement.
- b. **EXPENSES/REMEDIES** – Buyer shall pay to Musco the reasonable expenses, including court costs, legal and administrative expenses, and reasonable legal fees (on a solicitor and client basis), paid or incurred by Musco in endeavoring to collect amounts due from Buyer to Musco. It is further understood that if Buyer does not make a payment as due, Musco has the right to forward appropriate notices or claims on jobs with owners, bonding companies, general contractors, or the like, as deemed appropriate by Musco.
- c. **ENTIRE AGREEMENT** – This Agreement, the written Warranty to be delivered to Buyer, and any invoice issued by Musco pursuant to this Agreement constitute the entire agreement between the parties and supersede all prior statements of any kind made by the parties or their representatives. No representative or employee of Musco has any authority to bind Musco to any term, representation, or warranty other than those specifically included in this written Agreement or the written Warranty to be delivered to Buyer in connection with this Agreement. This Agreement may not be amended or supplemented except by written agreement executed by Musco and Buyer.



Purchase Agreement

Date: December 15, 2020

Project Name: Waymer Park Softball

Project #: 206032

- d. **ACCEPTANCE** – This Agreement is subject to the approval of Musco's Credit Department and the written acceptance of this Order by Musco.

TOWN OF HUNTERSVILLE

Acceptance

this _____ day of _____, 20____

Signature

Name and Title

MUSCO SPORTS LIGHTING, LLC

Acceptance

this _____ day of _____, 20____

Signature

Name and Title

Please remember to return all pages of this agreement.



PROJECT MANUAL

ABERNATHY PARK ATHLETIC FIELD LIGHTING & WAYMER PARK ATHLETIC FIELD LIGHTING



SITE ADDRESS (ABERNATHY): 205 GLENDALE DRIVE
HUNTERSVILLE, NC 28078

SITE ADDRESS (WAYMER): 14200 HOLBROOKS ROAD
HUNTERSVILLE, NC 28078

PROJECT MANAGER:

Town of Huntersville

Michael Jaycocks

704-766-2228

mjaycocks@huntersville.org

DEWBERRY PROJECT MANAGER:

Tony Miller, PE, LEED AP

Dewberry Engineers Inc

9300 Harris Corners Pkwy., Suite 220

Charlotte, NC 28269

NCBELS #F-0929

NCBOLA #C-478

OWNER:

Town of Huntersville

ATTN: Parks and Recreation Department

105 Gilead Road, Third Floor

Huntersville, NC 28078

November 20, 2020

TOWN OF HUNTERSVILLE

ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING

100% CONSTRUCTION DOCUMENTS

September 17, 2020

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ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING

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ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING

INVITATION TO BID

**FOR THE CONSTRUCTION OF
ABERNATHY PARK ATHLETIC FIELD LIGHTING
&
WAYMER PARK ATHLETIC FIELD LIGHTING**

Town of Huntersville, North Carolina

Sealed, single prime bids for the construction of athletic field lighting with associated site improvements at Abernathy Park will be received by the Town of Huntersville Parks and Recreation Department, 105 Gilead Road, 3rd Floor, P.O. Box 2879, Huntersville, NC, 28070 until **2:00 PM, local time, Monday, November 30, 2020**, and there at said office, at said time, publicly opened and read aloud. The bid opening is only open to one representative per bidder due to COVID-19. All attendees will be required to wear a mask when entering the building and at all times within the building. Bid Proposals will be received for

**THE CONSTRUCTION OF ATHLETIC FIELD LIGHTING FOR
HUNTERSVILLE PARKS AND RECREATION**

This Project includes, but is not limited to the construction of athletic field lighting with associated erosion control, seeding, and site improvements at Abernathy Park and Waymer Park.

The Bid Package, consisting of the Invitation to Bid, Instructions to Bidders, Bid Proposal Form, Non-collusion Affidavit, Substitution Listing Form, General Conditions of the Contract, and Contract Drawings may be obtained from the Huntersville Parks and Recreation Department, 105 Gilead Road, 3rd Floor, Huntersville, NC, or may be accessed at the following web address: www.huntersville.org. Contract documents will not be mailed to Bidders.

Copies of the Contract Documents may be examined at the Huntersville Department of Recreation, Huntersville, North Carolina 28078

Each Bid must be accompanied by cash, cashier's check, certified check on a bank or trust company insured by the Federal Deposit Insurance Corporation, or Bid Bond in the amount not less than five percent (5%) of the amount of the Bid in the form and subject to the conditions provided in the Information for Bidders.

1. The Contract Drawings for this Project were provided to the Town by Dewberry Engineers Inc. If awarded, the Project will be awarded to the lowest responsive, responsible Bidder, taking into account quality, performance and time specified in the Contract Documents. The lowest, responsive, responsible bid will be determined based upon the lowest cost to the Town.

The Town reserves the right to waive any informalities in the Bid Proposal and to reject any or all Bid Proposals.

Town of Huntersville
End of Invitation to Bid

INSTRUCTIONS TO BIDDERS:

Project Engineer:

Tony Miller, PE, LEED AP
Dewberry Engineers Inc
9300 Harris Corners Pkwy., Suite 220
Charlotte, NC 28269

PLEASE NOTE: ALL QUESTIONS REGARDING THE CONTRACT DRAWINGS, AND THE CONSTRUCTION SPECIFICATIONS INDICATED ON SAID DRAWINGS SHOULD BE DIRECTED TO THE PROJECT LANDSCAPE ARCHITECT. ALL QUESTIONS AND ANSWERS PROVIDED WILL BE POSTED ON THE TOWN'S WEBSITE AS AN ADDENDUM TO THE CONTRACT DOCUMENTS. BIDDERS WILL BE RESPONSIBLE FOR ENSURING THAT THEY HAVE RECEIVED AND RELIED UPON ALL ADDENDA FOR THE PROJECT IN SUBMITTING THEIR BIDS.

- 1. FAMILIARITY WITH WORK AND CONDITIONS:** Before preparing Bid Proposals, Bidders are urged to visit the site of the Project to inform and familiarize themselves with all conditions involved and under which the Project is to be constructed or apparatus erected or installed. The Town of Huntersville will not be responsible to the Contractor for payments other than as set out in the contract price, should conditions be different than those assumed or contemplated by the Contractor. The Contractor is required to satisfy himself, before bidding, as to the correctness of the site as indicated by the plans.
- 2. FAMILIARITY WITH LAWS, ETC.:** The Bidder is assumed to have made himself familiar with all Federal, State, and Local Laws, ordinances and regulations which may in any manner affect those engaged or employed in work or the materials or equipment in or upon the work, or in any way affect the conduct of the work, and no pleas of misunderstanding will be considered on account of the ignorance thereof. If the Bidder or Contractor shall discover any provisions in the plans, specifications, or contract which are contrary or inconsistent with any such law, ordinance, or regulation, he shall forthwith report it to the Project Engineer in writing before the bid opening.
- 3. INTERPRETATIONS OF PLANS:** If any prospective Bidder is in doubt as to the true meaning of any part of the plans, or other proposed contract documents, he may submit to the Project, a written request for an interpretation thereof, who will either answer or secure an answer based upon their relative expertise. The person submitting such request will be responsible for its prompt delivery. Note, requests for clarification or interpretation must be submitted no later than 12:00 pm on November 25th, 2020. Any interpretation of the proposed documents will be made only by addendum duly issued and posted on the Town's website. The Project Manager will not be responsible for any other explanations or interpretations of the proposed document. The Contractor shall acknowledge receipt of all addenda in the space provided in the Bid Proposal.
- 4. CONTRACT DOCUMENTS:** The Contract Documents consist of the Invitation to Bid, Instructions to Bidders, Bid Proposal Form, Non-collusion Affidavit, Substitution Listing, all Addenda issued, the Contract Drawings, the Town's Standard Form Contract, and the General Conditions of the Construction Contract.
- 5. BID PROPOSAL FORM:** Each Bidder must submit a Bid Proposal on the blank forms herewith provided. Each Bidder must include both the Bid Proposal Form and the Noncollusion Affidavit with

ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING

their Bid Proposal, otherwise the Bid Proposal will not be considered. Each Bidder shall sign his Bid Proposal correctly by one duly authorized, and Bid Proposals may be rejected if they show any omissions, alterations of form, additions not called for, or other irregularities of any kind. Conditioning and unbalancing of bids will not be permitted.

6. **BID PROPOSAL REPRESENTATIONS:** Submission of a Bid Proposal Form shall be a representation of the Bidder of all of the following:
- a. The Bidder has carefully examined the **CONTRACT DOCUMENTS** and fully understands them.
 - b. The Bidder has carefully examined the site or sites of the Project and is familiar with the conditions under which the Work, or any part of it, is to be done, and the conditions which must be fulfilled in the furnishing and/or erection or construction of any or all items of the Project.
 - c. The Bidder has the financial means and stability to provide all materials and all necessary tools, machinery, and all means necessary to do all the Work in the manner prescribed in the Contract Documents and according to the Plans and the requirements of the Town of Huntersville, in a workmanlike manner, consistent with the standards of the profession in and around Huntersville.
 - d. The Bid has been made without connection with any other person, company, or parties making a similar Bid Proposal, and that it is in all respects fair and in good faith, without collusion or fraud.
 - e. The Bidder understands that it is the intention of the Town of Huntersville, North Carolina, to award the Contract on the basis of Bid Proposals received at this letting, however, the Town reserves the right to reject any or all bids.
 - f. If the Bid Proposal is made by a Corporation or Contractor, the Bid Proposal Form has been signed by its proper officers or members, as applicable, in a legal manner and its official address stated therein.
 - g. The Bidder will enter into the Town's Construction Agreement, included as part of the Contract Documents, and will perform all of the work necessary for the construction of facilities outlined in the **CONTRACT DOCUMENTS** for the Town of Huntersville, North Carolina, for the bid price stated in the Bid Proposal Form.
 - h. The Bidder has received and completely understood the Addenda and the bid price stated in the Bid Proposal Form reflects all Addenda.
7. **SUBMISSION OF BID PROPOSALS:** It is the responsibility of each Bidder, without excuse, to ensure that their Bid Proposal is submitted at the right place by the deadline. Each Bid Proposal must be submitted in a sealed envelope, to indicate its contents without being opened. The name of the Bidder, his address and his license number must be marked on the outside of the envelope. **This envelope shall be placed in another one** addressed to the attention of Michael Jaycocks, Town of Huntersville Recreation Department, 105 Gilead Road, P.O. Box 2879, Huntersville, North Carolina, 28070, and if forwarded otherwise than by mail, must be delivered to Mr. Michael Jaycocks at the above address. If the mail is delayed beyond the date and hour set for the Bid Proposal opening, proposals thus delayed will not be considered. The outer envelope must also state the Project Name and the name of the

ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING

Bidder. Bid Proposals will be accepted until 2:00 PM on the date of the Bid Proposal Opening. Bid Proposals submitted after this time cannot be accepted.

- 8. OPENING OF BID PROPOSALS:** Bid Proposals will be opened publicly and read promptly at the time, on the date, and at the place set forth in the “Invitation to Bid”. Bidders or their authorized agents and other interested parties are invited to be present. The bid opening is only open to one representative per bidder due to COVID-19. All attendees will be required to wear a mask when entering the building and at all times within the building. The Bid Proposal shall be deemed valid for a period of sixty (60) calendar days after the opening thereof. The Bidder may request to withdraw their Bid Proposal in writing, received prior to the time for opening of the Bid Proposals, directed to the Town of Huntersville. Bid Proposals may be withdrawn after the opening of the Bid Proposals **for clerical errors or math computational errors only (not for mistakes in judgment)** if the request is made in writing to and received by Michael Jaycocks, Huntersville Parks and Recreation Director, within seventy-two hours after the time for opening Bid Proposals. Such written request of withdrawal must include sufficient documentation of the clerical error or math computational error.
- 9. AWARDING OF CONTRACT:** If awarded, the Town of Huntersville, North Carolina will award the contract conditioned upon funds being made available for such construction. If awarded, the contract will be awarded to the lowest responsive responsible Bidder taking into account quality, performance, and time specified in the Contract Documents. The lowest, responsive, responsible Bid Proposal will be determined based upon the lowest cost to the Town. Consideration will be given only to Bid Proposals of contractors who are experienced in the class of work proposed and who can refer to projects of similar magnitude and/or character as have been completed by them. The Town also reserves to itself the right to reject any or all Bid Proposals and to waive informalities or technicalities, as it may deem to be in the Town’s best interest.
- 10. EXECUTION OF CONTRACT:** The successful Bidder will be required to enter into the Town’s Standard Form Contract, included as part of this Project Manual, and must execute the Contract no later than ten (10) consecutive calendar days following receipt of the Notice of Award from the Town. Failure of a Bidder to execute the Contract within said ten (10) day period shall give the Town the right to reject the Bid Proposal and award the contract to the next lowest responsive, responsible Bidder.
- 11. CHECKS, CASH, OR BID BOND:** Each proposal must be accompanied by a Bid Bond executed by a corporate surety licensed under the laws of North Carolina to execute such bonds, conditioned that the surety will, upon demand forthwith make payment to the Owner if the bidder fails to execute the Contract. The Bid Bond shall be in the amount of five percent (5%) of the total bid plus all of the alternates. The Bid Bond shall be valid for a minimum of ninety (90) calendar days. In lieu of a Bid Bond, a deposit equal to five percent (5%) of the total bid plus all alternates in the form of a Cashier’s Check or Certified Check on some bank or trust company insured by the Federal Deposit Insurance Corporation and payable to the Town of Huntersville may be provided. The purpose of the Bid Deposit or Bid Bond is to ensure that the bidder will enter into a Contract with the Owner with the terms stipulated in the Bid Proposal and the bidder guarantees that a Performance, Labor and Material will be executed. If the Contractor fails to execute a Contract, the Bid Bond or Bid Deposit shall be seized. Bid security shall be submitted separately for each project bid.
- 12. PERFORMANCE BOND:** The successful Bidder shall provide a performance bond equal to 100% of the contract sum, and shall conform to the Owner’s requirements. Bond/surety shall be provided in a form as noted in item 11 above.

- 13. PAYMENT BOND:** The successful Bidder shall provide a payment bond equal to 100% of the contract sum, and shall conform to the Owner's requirements. Bond/surety shall be provided in a form as noted in item 11 above.
- 14. COORDINATION OF WORK:** During the performance of the contract it shall be the responsibility of the successful Bidder to pursue the orderly progress of all work stages throughout the Project and to assure that all work is completed within the time period stipulated herein as the Contract Period. In executing the duties incurred by these responsibilities, the successful Bidder shall provide sufficient executive and supervisory staff in the field to enable efficient and expeditious progress of the work. The Owner relies upon the organization, management, skill, cooperation, and efficiency of the successful Bidder to supervise, direct, control and manage the work and the efforts of the sub-contractors so as to deliver the intended construction to the Contract Documents and within the scheduled time.
- 15. LIQUIDATED DAMAGES:** The successful Bidder is required to complete the Project as outlined in the Project progress schedule and as defined by the Contract Period. Should the successful Bidder fail to assure the completion of the total Project satisfactorily within the time period specified in the contract, the successful Bidder shall be charged with liquidated damages at a rate of **Two Hundred Dollars (\$200.00) per calendar day** until the total Project is successfully completed.
- If in the event the successful Bidder is granted substantial completion by the Project Manager and fails to complete and/or correct all of the remaining list of items to be corrected within **30** days of the date of substantial completion, the successful Bidder shall be charged with **liquidated damages at a rate of Two Hundred Dollars (\$200.00) per calendar day** until all of the remaining items on the list are completed and corrected and approved by the Project Manager or Landscape Architect.
- The successful Bidder shall indemnify the Owner for any claim or legal action against the Owner by any subcontractor or supplier as a result of injury or damages caused by that Contractor to others, including paying judgements against the Owner, all costs and expenses, legal or otherwise, incurred by the Owner in defending the suit.
- 16. CONTRACT REDUCTION:** The Town of Huntersville retains the exclusive right to reduce any or all of the scope of work within the Contract Documents after award of the contract for budgetary or other reasons. Should the Town of Huntersville choose to reduce any or all of said scope of work, the successful Bidder shall not be allowed any claims for anticipated profit or overhead on such deleted work.
- 17. CONTRACTORS LICENSE:** All Bidders must possess an up to date North Carolina General Contractors License to do work in North Carolina as required by N.C.G.S. Chapter 87, plus any other applicable licenses. A copy of these requirements is included in the bid documentation.
- 18. TIME OF CONSTRUCTION:** The Successful Bidder shall begin work on the date specified in the Notice to Proceed and shall pursue all necessary phases of construction in order to substantially complete the base bid work within **102 consecutive calendar days**. This time of construction shall be defined as the Contract Period.
- 19. TECHNICAL SPECIFICATIONS.** Technical specifications are included both on the Contract Drawings themselves, and within the Project Manual and are included in the bid documents. It is up to

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each Bidder to satisfy themselves that these technical specifications are sufficient to enable them to perform the Work. If a Bidder determines that the technical specifications are not sufficient, the Bidder should pose appropriate questions to the Project Engineer who will secure answers from the Project Landscape Architect. All such inquiries and answers will be put out in the form of an Addendum prior to the time for opening bids.

- 20. SUBSTITUTIONS:** Requests for approval of substitutions for specified products or “or equal” or “equivalent” submittals other than those listed as acceptable products will be considered only upon submission of samples and manufacturers’ data, in triplicate, of both the product specified and the product intended for substitution. All such requests for substitutions must be received for consideration by the Engineer no later than 5 days prior to the Bid Proposal opening. All substitutions approved will be put into an Addendum. The Town reserves the right to consider and accept any and all substitutions proposed in determining the lowest responsible bidder.

END OF INSTRUCTIONS TO BIDDERS

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&
WAYMER PARK ATHLETIC FIELD LIGHTING**

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The undersigned further agrees that this Bid Proposal shall be valid for a period of sixty (60) days from the date of receipt of the Bid Proposal and that if this Bid Proposal is accepted by the Town within this period, the Bidder will execute the Construction Agreement provided as part of the Contract Documents.

The undersigned further agrees to begin the work promptly upon receipt of the Notice to Proceed and to pursue the work with an adequate work force to complete the work within 102 calendar days from receipt of the Notice to Proceed. Liquidated Damages of \$200.00 per calendar day are hereby agreed upon as an assessment from the Contractor for failure to complete the work within the time period stated herein.

The undersigned Bidder further proposes and agrees to commence the work promptly upon notice, with an adequate force to satisfactorily complete the Project.

The undersigned acknowledges receipt of the following addenda which will be considered as part of the Contract Documents.

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

CONTRACTOR: _____
(Company)

Contractor is or is not a historically underutilized business, registered with the North Carolina Office of Historically Underutilized Businesses. (Must be completed by all Bidders.)

ADDRESS: _____

BY: _____
(Signature) (Typed Name)

TITLE: _____

NC General Contractor's License No. _____

NC State Sales and Use Tax Registration _____

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Non-collusion Affidavit has been completed and is attached to this Bid Proposal Form (Required)

(Note: Inclusion of the non-collusion affidavit is mandatory. A bid will be rejected as non-responsive if not included in the bid submission.)

Select One (One or the other must be chosen by the Bidder):

Substitution Listing (if substitutions are being proposed) is attached to this Bid Proposal Form.

(Note: Failure to include the Substitution Listing with this Bid Proposal will render the substitutions ineligible for consideration by the Town.) OR

Substitution Listing is not attached to this Bid Proposal Form (No substitutions are proposed.)

SUBSTITUTION LISTING

TO: Town of Huntersville, North Carolina
Hereinafter called "Owner"

1. A Bidder requesting a substitution must submit this form to the Project Manager and Project Landscape Architect at least five (5) days prior to the time stated for Bid Opening.
2. Pursuant to bidding requirements for the Work titled:

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HUNTERSVILLE PARKS AND RECREATION

The Contract Sum proposed by the under signed on the Bid Proposal form is for the Work as shown on the Drawings, and otherwise defined in the Contract Documents. However, the undersigned proposes the following substitutions for the Owner's consideration. Should the Owner accept any or all of the proposed substitutions, the Bidder's proposed contract sum will be reduced by the amount shown.

3.	Specified Product Or Material	Drawing Number	Proposed Substitution	Proposed Reduction In Contract Sum

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PROVIDE SIGNATURE
IDENTICAL TO THAT
SHOWN ON THE BID FORM

BIDDER:

By _____

END OF SUBSTITUTION LISTING
Standard Form Contract



101 Huntersville-Concord Rd
Huntersville, NC 28078
(704) 875-6541

CONSTRUCTION CONTRACT

CONTRACTOR:

PROJECT: **Abernathy And Waymer Park Athletic Field
Lighting**

PROJECT ADDRESS: **205 Glendale Dr. and 14200 Holbrooks Rd,
Huntersville, NC 28078**

PROJECT ENGINEER:

Tony Miller, PE, LEED A
9300 Harris Corners Pkwy., Suite 220
Charlotte, NC 28269
704.264.1248

This Construction Contract, and all exhibits, (collectively this "Contract") is entered into this ____ day of _____, 20____ by and between, the Town of Huntersville, a municipal corporation of the State of North Carolina, (the "Town") and, _____ (the "Contractor") having an address of _____.

WITNESSETH:

That for and in consideration of the mutual promises set forth in this Contract, the sufficiency of which is acknowledged by the parties hereto, the parties agree as follows:

1. Scope of Services. The Contractor agrees to provide the professional construction services needed to complete the Project in accordance with the Project Drawings and Specifications and the Contract Documents for the price stated in the Contractors Proposal Form, plus or minus the substitutions listed on the Substitution Listing which are accepted by the Town.
2. Contract Documents. The Contract Documents consist of, in addition to this Contract, the Invitation to Bid, Instructions to Bidders, Bid Proposal Form, Non-collusion Affidavit, Substitution Listing, all Addenda issued, the Contract Drawings, and the General Conditions of the Construction Contract, all of the foregoing being incorporated herein by reference as if fully set forth herein, and all parties agree to be bound thereby.
3. Time for Performance of the Work. The Work shall be completed within one hundred and two (102) calendar days of

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receipt of the Notice to Proceed from the Town.

4. Payment for Services. For the performance of the Work Contractor shall be paid the lump sum of _____ Dollars (\$_____) in accordance with the terms and conditions provided in the General Conditions of the Construction Contract.

In witness thereof, the contracting parties, by their authorized agents, affix their signatures this _____ day of _____, 20_____.

CONTRACTOR

BY: _____
Print Name:
Print Title:

TOWN OF HUNTERSVILLE

BY: _____
Print Name:
Print Title:

This instrument has been pre-audited in that manner required by the North Carolina Budget and Fiscal Control Act.

Pattie McGinnis, Finance Director

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NON-COLLUSION AFFIDAVIT

I, on behalf of the Bidder, being first duly sworn or as the Contractor, do hereby represent on behalf of the Bidder that the Bid Proposal submitted was made without collusion or fraud and that neither I, nor anyone else affiliated with the Bidder to my knowledge, have offered or received any kickbacks or inducements from any other supplier, manufacturer or subcontractor in connection with their Bid Proposal, and neither I, nor anyone else affiliated with the Bidder to my knowledge, have conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

This the _____ day of _____, 2020.

BIDDER: _____

Print Name:

Print Title:

State of _____

County of _____

Sworn to or subscribed before me this the _____ day of _____, 2020.

(Official Seal)

Notary Public

Print Name: _____

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GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

1. DEFINITIONS

Owner: "Owner" shall mean, The State of North Carolina through (Mecklenburg County)

Contractor: "Contractor" shall mean the entity that will provide the services for the Owner.

Designer: The designer(s) are those referred to within the Contract documents, or their authorized representatives. The Designer(s), as referred to herein, shall mean landscape architect and/or engineer responsible for preparing the Project plans and specifications. They will be referred to hereinafter as if each were of the singular number, masculine gender.

2. Scope of Services. The Contractor agrees to perform for the Town the following services according to the following requirements:

The Contractor agrees to complete the construction of the Project in accordance with the Contract Documents. Such construction of the Project shall constitute the "Work." The Contractor agrees to provide all of the personnel, contract personnel, subcontractors, financial resources, materials, supplies, and equipment necessary to complete the Work in a timely and professional manner in accordance with the standards of the profession for similar work in the Mecklenburg County area at the time of the performance of the Work.

3. Contract Documents. The Contract Documents consist of the Invitation to Bid, Instructions to Bidders, Bid Proposal Form, Non-collusion Affidavit, Substitution Listing, all Addenda issued, the Contract Drawings, the Town's Standard Form Contract, and the General Conditions of the Construction Contract. The drawings and specifications are complementary, one to the other. That which is shown on the drawings or called for in the specifications shall be as binding as if it were both called for and shown. The intent of the drawings and specifications is to establish the scope of all labor, materials, transportation, equipment, and any and all other things necessary to provide a complete job. In case of discrepancy or disagreement in the Contract Documents, the order of precedence shall be the Construction Contract, the Bid Proposal Form, the Substitution Listing (only those items accepted by the Town), Addenda, the Contract Drawings, the Instructions to Bidders, the General Conditions of the Contract, the Invitation to Bid, and the Non-collusion Affidavit.
4. Licensure Required. The Contractor must be a licensed General Contractor as required by North Carolina General Statutes Section 87-1, and must have a good ethical and professional standing with the North Carolina General Contractor's Licensing Board. The Contractor will be responsible for providing properly qualified, licensed (if required) personnel to complete the Work in accordance with the standard of care ordinarily used by members of the Contractor's profession practicing under similar circumstances and at the same time in Mecklenburg County.
5. Coordination With Others. The Contractor agrees to coordinate its Work with the work of any other unaffiliated contractors or with the work of the Town's own forces to avoid delaying or interfering with their work.
6. Contract Insurance. Contractor shall be required to purchase and maintain during its performance under this Contract insurance coverage as shown on the Insurance Requirements as stated in Exhibit A, which is incorporated herein by reference. With the exception of Worker's Compensation and Professional Liability policies, all insurance purchased shall have a specific endorsement, copy of which shall be provided to the Town, naming the Town as an additional insured and for all insurance purchased, an endorsement providing that such insurance will not be cancelled without providing thirty (30) days advance written notice to the Town.
7. Time for Performance of the Work. The Work will begin within ten (10) days of receipt of the Notice to Proceed from the Town. The Contractor will have 120 consecutive calendar days to complete the Work from the date of Contractor's receipt of the Notice to Proceed.
8. Payment for Services. In consideration of the above services, the Town will pay the Contractor, in accordance with the Contractor's, plus reimbursable expenses at the Contractor's actual cost (without markup). Contractor will submit monthly Requests for Payment for Work performed to the Project Manager who will forward them to the Project Landscape Architect for Review. The Request for payment shall be based upon the Contractor's estimate of the percentage of the total Work completed during the period represented on the Request for Payment. The Project Landscape Architect must certify that the Work represented in the Contractor's Request for Payment has been completed in accordance with the Contract Documents, and certify that the Request for Payment is appropriate for payment before the Town shall be obligated to make such payment to the Contractor. If any Request for Payment is disputed by the Town, in whole or in part, the Town shall provide a written explanation for such dispute to Contractor

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within five days of receipt of the certified Request for Payment from the Architect and shall pay all undisputed amounts therein.

a. The designer with the approval of the Owner may withhold payment for the following reasons:

- (1) Faulty work not corrected.
- (2) The unpaid balance on the contract is insufficient to complete the work in the judgment of the designer.
- (3) To provide for sufficient contract balance to cover liquidated damages that will be assessed.
- (4) The secretary of the Department of Administration may authorize the withholding of payment for the following reasons:
- (5) Claims filed against the Contractor or evidence that a claim will be filed.
- (6) Evidence that subcontractors have not been paid.
- (7) When grounds for withholding payments have been removed, payment will be released. Delay of payment due the Contractor without cause will make owner liable for payment of interest to the Contractor as provided in G.S. 143-134.1. As provided in G.S. 143-134.1(e), the owner shall not be liable for interest on payments withheld by the owner for unsatisfactory job progress, defective construction not remedied, disputed work, or third-party claims filed against the owner or reasonable evidence that a third-party claim will be filed.

b. Final payment will be made within forty-five (45) consecutive days after acceptance of the work, receipt of marked-up "as-built" drawings and specifications and the submission both of notarized Contractor's affidavit and final pay request. All pay requests shall be submitted to the Designer/Owner for approval.

THE CONTRACTOR'S FINAL PAYMENT AFFIDAVIT SHALL STATE: "THIS IS TO CERTIFY THAT ALL COSTS OF MATERIALS, EQUIPMENT, LABOR, SUBCONTRACTED WORK, AND ALL ELSE ENTERING INTO THE ACCOMPLISHMENT OF THIS CONTRACT, INCLUDING PAYROLLS, HAVE BEEN PAID IN FULL."

9. Acceptance. Execution of the Contract constitutes an agreement to the terms contained within the Contract Documents. The terms and provisions set forth in the Contract Documents shall constitute the entire agreement between Contractor and the Town with respect to the performance of the Work as described in the Contract Documents. The agreements set forth in the Contract Documents are sometimes referred to herein as the "Contract." Except as provided herein, no additional or supplemental provision or provisions in variance with the Contract Documents that may appear in Contractor's proposal, acknowledgment, Requests for Payment, or in any other communication from Contractor to the Town shall be deemed accepted by or binding on the Town. The Town hereby expressly rejects all such provisions which supplement, modify or otherwise vary from the terms of the Contract Documents, and such provisions are superseded by the terms and conditions stated in the Contract Documents, unless and until the Town's authorized representatives expressly assent, in writing, to such provisions. Stenographic and clerical errors and omissions by the Town are subject to correction.
10. Working Drawings And Specifications At The Job Site. The Contractor shall maintain, in readable condition at his job site one complete set of working drawings and specifications for his work including all shop drawings. Such drawings and specifications shall be available for use by the owner, designer or his authorized representative. The Contractor shall also maintain at the job site, a day-to-day record of work-in-place that is at variance with the contract documents. Such variations shall be fully noted on Project drawings by the Contractor and submitted to the designer upon Project completion and no later than 30 days after acceptance of the Project.
11. Materials, Equipment, Employees. The Contractor shall, unless otherwise specified, supply and pay for all labor, transportation, materials, tools, apparatus, lights, power, fuel, heat, sanitary facilities, water, scaffolding and incidentals necessary for the completion of his work, and shall install, maintain and remove all equipment of the construction, other utensils or things, and be responsible for the safe, proper and lawful construction, maintenance and use of same, and shall construct in the best and most workmanlike manner, a complete job and everything incidental thereto, as shown on the plans, stated in the specifications, or reasonably implied therefrom, all in accordance with the contract documents.
 - a. All materials shall be new and of quality specified, except where reclaimed material is authorized herein and approved for use. Workmanship shall at all times be of a grade accepted as the best practice of the particular trade involved, and as

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stipulated in written standards of recognized organizations or institutes of the respective trades except as exceeded or qualified by the specifications.

- b. Upon notice, the Contractor shall furnish evidence as to quality of materials.
 - c. Products are generally specified by ASTM or other reference standard and/or by manufacturer's name and model number or trade name. When specified only by reference standard, the Contractor may select any product meeting this standard, by any manufacturer. When several products or manufacturers are specified as being equally acceptable, the Contractor has the option of using any product and manufacturer combination listed. However, the Contractor shall be aware that the cited examples are used only to denote the quality standard of product desired and that they do not restrict bidders to a specific brand, make, manufacturer or specific name; that they are used only to set forth and convey to bidders the general style, type, character and quality of product desired; and that equivalent products will be acceptable. Request for substitution of materials, items, or equipment shall be submitted to the designer for approval or disapproval; the designer prior to the opening of bids shall make such approval or disapproval. Alternate materials may be requested after the award if it can clearly be demonstrated that it is an added benefit to the owner and the designer and owner approves.
 - d. The designer is the judge of equality for proposed substitution of products, materials or equipment.
 - e. If at any time during the construction and completion of the work covered by these contract documents, the language, conduct, or attire of any workman of the various crafts be adjudged a nuisance to the owner or designer, or if any workman be considered detrimental to the work, the Contractor shall order such parties removed immediately from grounds.
 - f. The Contractor shall cooperate with the designer and the owner in coordinating construction activities.
 - g. The Contractor shall maintain qualified personnel and effective supervision at the site at all times during the Project, and exercise the appropriate quality control program to ensure compliance with the Project drawings and specifications. The designer is responsible for determining compliance with the drawings and specifications.
12. Cleaning Up And Restoration Of Site. The Contractor shall keep the sites and surrounding area reasonably free from rubbish at all times and shall remove debris from the site from time to time or when directed to do so by the Owner. Before final inspection and acceptance of the Project, the Contractor shall thoroughly clean the sites, and completely prepare the Project and site for use by the Owner. At the end of construction, the Contractor shall oversee and implement the restoration of the construction site to its original state. Restoration includes but not limited to walks, drives, lawns, trees and shrubs, corridors, stairs and other elements shall be repaired, cleaned or otherwise restored to their original state.
13. Codes, Permits And Inspections. The Contractor shall obtain the required permits, if required, give all notices, and comply with all laws, ordinances, codes, rules and regulations bearing on the conduct of the work under this contract. If the Contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the Designer in writing. All work under this contract shall conform to the current North Carolina Building Code and other state and national codes as are applicable. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, codes, rules and regulations, and without such notice to the Owner, he shall bear all cost arising there from.
- All fire alarm work shall be in accordance with the latest State Construction Office (SCO) Guidelines for Fire Alarm Installation (NFPA72). Where the contract documents are in conflict with the SCO guidelines, the SCO guidelines shall govern. The Contractor shall be responsible for all the costs for the correction of the work where he installs it in conflict with the latest edition of the SCO Guidelines for Fire Alarm Installation.
14. Protection Of Work, Property, The Public And Safety. The Contractor shall be solely responsible for the entire site and the building or construction of the same and provide all the necessary protections, as required by the owner or designer, and by laws or ordinances governing such conditions. The Contractor shall be responsible for any damage to the owner's property or of that of others on the job, by them, their personnel, or their subcontractors, and shall make good such damages. The Contractor shall be responsible for and pay for any damages caused to the owner. Contractor shall have access to the Project at all times.
- a. The Contractor shall provide cover and protect all portions of the structure when the work is not in progress, provide and set all temporary roofs, covers for doorways, sash and windows, and all other materials necessary to protect all the work on the building, whether set by him, or any of the subcontractors. Any work damaged through the lack of proper protection or from any other cause, shall be repaired or replaced without extra cost to the owner.
 - b. No fires of any kind will be allowed inside or around the operations during the course of construction without special permission from the designer and owner.
 - c. The Contractor shall protect all trees and shrubs designated to remain in the vicinity of the operations by building substantial boxes around it. He shall barricade all walks, roads, etc., as directed by the designer to keep the public away from the

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construction. All trenches, excavations or other hazards in the vicinity of the work shall be well barricaded and properly lighted at night.

- d. The Contractor shall provide all necessary safety measures for the protection of all persons on the job, including the requirements of the A.G.C. Accident Prevention Manual in Construction, as amended, and shall fully comply with all state laws or regulations and North Carolina State Building Code requirements to prevent accident or injury to persons on or about the location of the work. He shall clearly mark or post signs warning of hazards existing, and shall barricade excavations, elevator shafts, stairwells and similar hazards. He shall protect against damage or injury resulting from falling materials and he shall maintain all protective devices and signs throughout the progress of the work.
- e. The Contractor shall adhere to the rules, regulations and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry (Title 29, Code of Federal Regulations, Part 1926, published in Volume 39, Number 122, Part II, June 24, 1974, Federal Register), and revisions thereto as adopted by General Statutes of North Carolina 95-126 through 155.
- f. In the event of emergency affecting the safety of life, the protection of work, or the safety of adjoining properties, the Contractor is hereby authorized to act at his own discretion, without further authorization from anyone, to prevent such threatened injury or damage. Any compensation claimed by the Contractor on account of such action shall be determined as provided for under Article 13(b).

Any and all costs associated with correcting damage caused to adjacent properties of the construction site or staging area shall be borne by the Contractor. These costs shall include but not be limited to flooding, mud, sand, stone, debris, and discharging of waste products.

15. As-Built Marked-Up Construction Documents. Contractor shall provide one complete set of legible "as-built" marked-up construction drawings and specifications recording any and all changes made to the original design during the course of construction. In the event no changes occurred, submit construction drawings and specifications set with notation "No Changes." The Designer/Owner must receive "As-built" marked-up construction drawings and specifications before the final pay request can be processed.
16. Entire Agreement. The Contract Documents constitute and represent the complete and entire agreement between the Town and Contractor and supersede all previous communications, either written or verbal with respect to the subject matter of this Contract.
17. Changes, Additions, Deletions. No changes, additions, deletions or modifications (other than substitutions accepted by the Town at the time the contract is awarded) of the scope of work, specifications, terms and conditions, quantity, unit of issue, delivery date, delivery charges or price will be permitted unless the same are incorporated into a written Change Order, signed by the Town and the Contractor. However, the Contractor will not be liable for delays caused by circumstances beyond its control including without limitation, delays caused by acts of God, the Town or its other consultants/contractors, federal, state, and local government authorities, strikes, riots, civil unrest, war, or unknown or concealed conditions, and if such delays occur, the Contractor will be entitled to an equitable adjustment in the time for the performance of the Work and compensation.
18. Change Orders. Change orders shall be submitted by the Contractor in writing to the owner/designer for review and approval. The Contractor will provide such proposal and supporting data in suitable format. The designer shall verify correctness. Delay in the processing of the change order due to lack of proper submittal by the Contractor of all required supporting data shall not constitute grounds for a time extension or basis of a claim. Within five (5) days after receipt of the Contractor's accepted proposal including all supporting documentation required by the designer, the designer shall prepare the change order and forward to the Contractor for his signature or otherwise respond, in writing, to the Contractor's proposal. Within five (5) days after receipt of the change order executed by the Contractor, the designer shall, certify the change order by his signature, and forward the change order and all supporting data to the owner for the owner's signature. The owner shall execute the change order, within five (5) days of receipt.
 - a. A change order, when issued, shall be full compensation, or credit, for the work included, omitted or substituted. It shall show on its face the adjustment in time for completion of the Project as a result of the change in the work.
 - b. If, during the progress of the work, the owner requests a change order and the Contractor's terms are unacceptable, the owner, may require the Contractor to perform such work on a time and material basis whereupon the Contractor shall proceed and keep accurately on such form as specified by the Designer or owner, a correct account of cost together with all proper invoices, payrolls and supporting data. Upon completion of the work a change order will be prepared with allowances for overhead and profit per paragraph d. above and "net cost" and "cost" per paragraph e. above. Without prejudice, nothing in this paragraph shall preclude the owner from performing or to have performed that portion of the work requested in the change order.

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19. Relationship of the Parties. The Contractor is an independent Contractor and not an affiliate of the Town. The conduct and control of the work will lie solely with the Contractor. The Contract shall not be construed as establishing a joint venture, partnership or any principal-agent relationship for any purpose between the Contractor and the Town. Employees of the Contractor shall remain subject to the exclusive control and supervision of the Contractor, which is solely responsible for their compensation.
20. Sales Taxes. Any applicable sales taxes shall be invoiced as a separate item.
21. Substitutions. Substitutions proposed by the Contractor on the Substitution Listing Form, submitted with the Contractor's Bid Proposal, which are accepted by the Town shall be considered a modification to the Contract Documents. No other substitutions shall be made by the Contractor unless the same is put into a Change Order, signed by the Owner and Contractor.
22. Indemnification. To the greatest extent allowed by the law the Contractor shall indemnify and hold harmless the Town, its officers, agents, employees and assigns from and against all claims, losses, costs, damages, expenses, attorneys' fees ("Claims"), but only to the extent the fault of the Consultant or its derivative parties (as defined in N.C.G.S §22B-1) is a proximate cause of the Claim. In the event that any portion of the Work performed under the Contract shall be defective in any respect whatsoever, the Contractor shall indemnify and save harmless the Town, its officers, agents, employees and assigns from all loss or the payment of all sums of money, but only to the extent the fault of the Consultant or its derivative parties (as defined in N.C.G.S §22B-1) is a proximate cause of the Claim.
23. Anti-Discrimination. During the performance of the Contract, the Contractor shall not discriminate against or deny the Contract's benefits to any person on the basis of sexual orientation, national origin, race, ethnic background, color, religion, gender, age or disability.
24. Insurance. The Contractor shall provide the insurance coverages shown on Exhibit A, attached hereto and incorporated herein by reference. The Contractor shall provide the Town with a North Carolina Certificate of Insurance and such endorsements as may be required by the Contract Documents PRIOR to the commencement of any work under the Contract and agrees to maintain such insurance until the completion of the Contract. Such certificates of insurance shall be considered part of the Contract.
25. Ethics in Public Contracting. By submitting their prices and acceptance of this Contract, the Contractor certifies that their proposal was made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other supplier, manufacturer or subcontractor in connection with their proposal, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.
26. Applicable Laws and Courts. This Contract shall be governed in all respects by the laws of the State of North Carolina. All matters, whether sounding in contract or tort relating to the validity, construction, interpretation and enforcement of the Contract, shall be governed in all respects by the laws of the State of North Carolina and venue shall be proper only in a court of competent jurisdiction located in Mecklenburg County, North Carolina. The Contractor represents and warrants that it shall comply with all applicable federal, state and local laws, regulations and orders.
27. Strict Compliance. The Town may at any time insist upon strict compliance with these terms and conditions notwithstanding any previous course of dealing or course of performance between the parties to the contrary.
28. Assignment. The Contractor shall not assign, subcontract or otherwise transfer any interest in the Contract without the prior written approval of the Town.
29. General Provisions. The Town's remedies as set forth herein are not exclusive. Any delay or omission by the Town in exercising any right hereunder, or any waiver by the Town of any single breach or default hereunder, shall not be deemed to be a waiver of such right or of any other right, breach, or default.
30. Risk of Loss. Risk of Loss for all supplies, materials, the Work performed, and the Project as it is being constructed, shall be on the Contractor until such time as substantial completion is achieved, certified by the Architect, and approved by the Town.
31. Warranties. The Contractor warrants it shall adhere to all applicable laws, codes, ordinances, and regulations of the United States, the State of North Carolina, the County of Mecklenburg, and the Town of Huntersville in the performance of the Work outlined in this Contract and any attached specifications. The Contractor warrants that any finished Work completed hereunder shall also adhere to all applicable laws, codes, ordinances, and regulations of the United States, the State of North Carolina, the County of Mecklenburg, and the Town of Huntersville. The Contractor warrants that all Work will be performed in accordance with this Contract and the standard of care ordinarily used by members of the Contractor's engineering profession practicing under similar circumstances and at the same time in Mecklenburg County. The Contractor makes no additional warranties, express or implied,

ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING

in connection with the Work. In addition to any other rights available at law or in equity, the Town shall be entitled to consequential and incidental damages.

32. Default. In the event of a breach by the Contractor, addition to any other remedies available to the Town in law or equity, the Town may procure upon such terms as the Town shall deem appropriate, construction services substantially similar to those so terminated, in which case the Contractor shall be liable to the Town for any excess costs for such similar services and any expenses incurred in connection therewith. This Contract shall not terminate if the alleged default is cured within a ten (10) day notice period. In the event this Contract is terminated by the Town for the default of the Contractor, the Town shall be entitled to keep and use Work, including materials and supplies on site provided by the Contractor in finishing the construction of the Project.
33. Termination for Convenience. The Town shall have the right, without assigning any reason therefore, to terminate any Work under the Contract, in whole or in part, at any time at its complete discretion by providing ten (10) day notice in writing from the Town to the Contractor. If the Contract is terminated by the Town in accordance with this paragraph, the Contractor will be paid for all Work performed and reimbursable expenses incurred up to the effective date of the termination. The Town will not be liable to the Contractor for any costs for materials acquired or contracted for, if such costs were incurred prior to the date of this Contract.
34. Assignment. Contractor may not assign, pledge, or in any manner encumber the Contractor's rights under this Contract, or delegate the performance of any of its obligations hereunder, without the Town's prior, express written consent. Hiring a subcontractor to perform any portion of the Work shall be at the Contractor's discretion; however Contractor shall remain liable and responsible to the Town for all such Work completed by subcontractors.
35. No Third Party Beneficiaries. There shall be no intended nor incidental third party beneficiaries of this Contract. The Contractor shall include in all contracts, subcontracts or other agreements relating to the Contract an acknowledgment by the contracting parties that the Contract creates no third party beneficiaries.
36. Valid Contract. In order for this Contract to be valid, it must be executed by the Town Manager or his or her authorized designee, and must be preaudited in that manner required by the Local Government Budget and Fiscal Control Act, as the same may be amended.
37. Verification of Work Authorization. The Contractor shall comply with, and require all contractors and subcontractors to comply with, the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes, "Verification of Work Authorization," sometimes known as E-verify for all contractors and subcontractors.
38. Iran Divestment List. With the execution hereof, Contractor, certifies that they are not on the Iran Final Divestment List created by the N.C. State Treasurer pursuant to N.C.G.S. § 147-86.58, and will not contract with anyone on such List in performance of the work hereunder.
39. Severability. If any provision of this Contract is found to be invalid or unlawful, then remainder of this Agreement shall not be affected thereby, and each remaining provision shall be valid and enforced to the fullest extent permitted by law.
40. Dispute Resolution. As a precondition for filing a lawsuit related to a dispute under this Agreement, a party must comply with the Town of Huntersville Rules Implementing Mediated Settlement Conferences for Town of Huntersville Construction Projects, the "Dispute Resolution Procedure."

ABERNATHY AND WAYMER PARK ATHLETIC FIELD LIGHTING

EXHIBIT A

MINIMUM INSURANCE REQUIREMENTS

The Work under this Contract shall not commence until the Firm has obtained all required insurance and verifying certificates of insurance have been approved in writing by the Town. The Town shall be named as additional insured on all policies, except Worker's Compensation and Professional Liability policies. These certificates shall document that coverages afforded under the policies will not be cancelled until at least thirty (30) days after mailing written notice, by certified mail, return receipt requested, to the insured and the Town of such cancellation. If endorsements are needed to comply with the notification or other requirements of this article copies of the endorsements shall be submitted with the certificates.

a. Worker's Compensation and Employer's Liability

The Firm shall provide and maintain, until final acceptance, workmen's compensation insurance, as required by law, as well as employer's liability coverage with minimum limits of \$100,000.

b. Comprehensive General Liability Insurance

The Firm shall provide and maintain, until final acceptance, comprehensive general liability insurance, including coverage for premises operations, independent contractors, completed operations, products and contractual exposures, as shall protect such contractors from claims arising out of any bodily injury, including accidental death, as well as from claims for property damages which may arise from operations under this contract, whether such operations be by the Firm or by any subcontractor, or by anyone directly or indirectly employed by either of them and the minimum limits of such insurance shall be as follows:

Bodily Injury: \$1,000,000 per occurrence / \$2,000,000 aggregate

Property Damage: \$100,000 per occurrence / \$300,000 aggregate

Or,

Bodily Injury and Property Damage, combined single limit (CSL): \$1,000,000 per occurrence / \$2,000,000 aggregate

Such coverage for completed operations must be maintained for at least two (2) years following final acceptance of the Work performed under the contract.

c. Deductible

Any deductible, if applicable to loss covered by insurance provided, is to be borne by the Firm.

d. Other Insurance

The Firm shall obtain such additional insurance as may be required by the Town or by the General Statutes of North Carolina including motor vehicle insurance, in amounts not less than the statutory limits.

e. Proof of Carriage

The Firm shall furnish the Town with satisfactory proof of carriage of the insurance required before written approval is granted by the Town



BID BOND

Principal: _____
Name of Principal Contractor

Surety: _____
Name of Surety

Contract Number: _____ County: _____

Date of Bid: _____

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the Town of Huntersville in the full and just sum of five (5) percent of the total amount bid by the Principal for the project stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

NOW, THEREFORE, the condition of this obligation is: the Principal shall not withdraw its bid within sixty (60) days after the opening of the bids, or within such other time period as may be provided in the proposal, and if the Town of Huntersville shall award a contract to the Principal, the Principal shall, within ten (10) calendar days after written notice of award is received by him, provide bonds with good and sufficient surety, as required for the faithful performance of the contract and for the protection of all persons supplying labor, material, and equipment for the prosecution of the work. In the event the Principal requests permission to withdraw his bid due to mistake in accordance with the provisions of Article 103-3 of the *Standard Specifications for Roads and Structures*, the conditions and obligations of this Bid Bond shall remain in full force and effect until the Town of Huntersville makes a final determination to either allow the bid to be withdrawn or to proceed with award of the contract. In the event a determination is made to award the contract, the Principal shall have ten (10) calendar days to comply with the requirements set forth above. In the event the Principal withdraws its bid after bids are opened except as provided in Article 103-3, or after award of the contract has been made fails to execute such additional documents as may be required and to provide the required bonds within the time period specified above, then the amount of the bid bond shall be immediately paid to the Town of Huntersville as liquidated damages.

IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed.

This the _____ day of _____, 20 _____

Surety

By _____
General Agent or Attorney-in-Fact Signature

Seal of Surety

Print or type Signer's Name

BID BOND

CORPORATION

SIGNATURE OF CONTRACTOR (Principal)

Full name of Corporation

Address as prequalified

By

Signature of **President, Vice President, Assistant Vice President**
Select appropriate title

Print or type Signer's name

Affix Corporate Seal

Attest

Signature of **Secretary, Assistant Secretary**
Select appropriate title

Print or type Signer's name

BID BOND

LIMITED LIABILITY COMPANY

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Full name of Firm

Address as prequalified

**Signature of Member/
Manager/Authorized Agent**

Individually

Print or type Signer's name

BID BOND

INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Individual Name

Trading and doing business as

Full name of Firm

Address as prequalified

Signature of Contractor

Individually

Print or type Signer's name

Signature of Witness

Print or type Signer's name

BID BOND

INDIVIDUAL DOING BUSINESS IN HIS OWN NAME

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Print or type Individual Name

Address as prequalified

Signature of Contractor

Individually

Print or type Signer's name

Signature of Witness

Print or type Signer's name

BID BOND

PARTNERSHIP

SIGNATURE OF CONTRACTOR (Principal)

Full name of Partnership

Address as prequalified

By

Signature of Partner

Print or type Signer's name

Signature of Witness

Print or type Signer's name

BID BOND
JOINT VENTURE (2 or 3)
SIGNATURE OF CONTRACTORS (Principal)

Instructions to Bidders: **2 Joint Ventures**, Fill in lines (1), (2) and (3) and execute. **3 Joint Venturers** Fill in lines (1), (2), (3), (4) and execute. Line (1), print or type the name of Joint Venture. On line (2), print or type the name of one of the joint venturers and execute below in the appropriate manner required by Article 102-8 of the *Specifications*. On Line (3), print or type the name of second joint venturer and execute below in the appropriate manner required by said article of the Specifications. On Line (4), print or type the name of the third joint venturer, if applicable and execute below in the appropriate manner required by said article of the Specifications. This form of execution must be strictly followed.

(1) _____
Name of Joint Venture

(2) _____
Name of Contractor

Address as prequalified

Signature of Witness or Attest By Signature of Contractor

Print or type Signer's name Print or type Signer's name

If Corporation, affix Corporate Seal

and

(3) _____
Name of Contractor

Address as prequalified

Signature of Witness or Attest By Signature of Contractor

Print or type Signer's name Print or type Signer's name

If Corporation, affix Corporate Seal

and

(4) _____
Name of Contractor *(for 3 Joint Venture only)*

Address as prequalified

Signature of Witness or Attest By Signature of Contractor

Print or type Signer's name Print or type Signer's name

If Corporation, affix Corporate Seal

If the Contractor is delayed at any time in the progress of its work by any act or negligence of the Town; by Town changes ordered in the work; by labor disputes at the project site; by abnormal weather conditions not reasonably anticipated for the locality where the work is performed; by unavoidable casualties; by a pandemic outbreak, war, Act of God or other force majeure causes beyond the contractor's control; or by any other causes which the Town determine may justify the delay, then the contract time may be extended by change order for the time which Town may determine is reasonable and is supported by schedule analysis from the Contractor demonstrating delays/impacts to completing critical path activities in the construction schedule as approved by the Town.

Time extensions will not be granted for rain, wind, snow or other natural phenomena of normal intensity for the locality where work is performed. For purpose of determining extent of delay attributable to unusual weather phenomena, a determination shall be made by comparing the weather for the contract period involved with the average of the preceding five (5) year climatic range during the same time interval based on the National Oceanic and Atmospheric Administration National Weather Service statistics for the locality where work is performed and on daily weather logs kept on the job site by the Contractor reflecting the effect of the weather on progress of the work and initialed by the designer's representative. Time extensions for weather delays do not entitle the Contractor to "extended overhead" recovery.

Time extensions for labor disputes at the project site; abnormal weather conditions not reasonably anticipated for the locality where the work is performed; unavoidable casualties; a pandemic outbreak, war, Act of God or other force majeure causes beyond the Town's control shall not entitle the Contractor compensable damages for delays. Any claim for compensable damages for delays is limited to delays caused solely by the negligence of the Town. In the case of concurrent delays, Contractor caused delays shall be accounted for before negligently caused Town delays.

Request for extension of time shall be made in writing within twenty (20) days following cause of delay and shall include supporting schedule analysis referenced above and/or as required in supplemental general conditions and/or specifications. In case of continuing cause for delay, the Contractor shall notify the Town of the delay within twenty (20) days of the beginning of the delay and only one claim is necessary.

The Contractor shall notify all of its sureties in writing of extension of time granted.

PROJECT TECHNICAL MANUAL

ABERNATHY PARK ATHLETIC FIELD LIGHTING



SITE ADDRESS: 205 GLENDALE DRIVE
HUNTERSVILLE, NC 28078

PROJECT MANAGER:

Town of Huntersville

Michael Jaycocks

704-766-2228

mjaycocks@huntersville.org

DEWBERRY PROJECT MANAGER:

Tony Miller, PE, LEED AP

Dewberry Engineers Inc

9300 Harris Corners Pkwy., Suite 220

Charlotte, NC 28269

NCBELS #F-0929

NCBOLA #C-478

OWNER:

Town of Huntersville

ATTN: Parks and Recreation Department

105 Gilead Road, Third Floor

Huntersville, NC 28078

September 17, 2020

TOWN OF HUNTERSVILLE
ABERNATHY PARK ATHLETIC FIELD LIGHTING

100% CONSTRUCTION DOCUMENTS
September 17, 2020

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II. Geotechnical Report

None

TOWN OF HUNTERSVILLE
ABERNATHY PARK ATHLETIC FIELD LIGHTING
DEI PROJECT NUMBER: 50129702

SECTION 00 01 07 – SEALS PAGE

1.1 DESIGN PROFESSIONALS OF RECORD

ELECTRICAL
ENGINEER

Kyle L. Pittman
North Carolina Professional Engineer License # 049995



LANDSCAPE
ARCHITECT

Tristan M. McMannis
North Carolina Registered Landscape Architect License # 1622



END OF SECTION 00 01 07

SECTION 260100 - BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this and the other sections of Division 26.
- B. All sections of Division 26 are interrelated. Where materials are required to complete work associated with equipment in a specific section, but the materials are not specified within that specific section, the requirements for those materials shall be as specified elsewhere in Division 26.

1.2 SUMMARY

- A. This Section includes general administrative and procedural requirements for electrical installations. The following administrative and procedural requirements are included in this Section to expand the requirements specified in Division 01:
 - 1. Submittals.
 - 2. Coordination drawings.
 - 3. Record documents.
 - 4. Maintenance manuals.
 - 5. Rough-ins.
 - 6. Electrical installations.
 - 7. Cutting and patching.
 - 8. Inspections
- B. Related Sections: The following sections contain requirements that relate to this section:
 - 1. Division 26 Section "Basic Electrical Materials and Methods," for materials and methods common to the remainder of Division 26.

1.3 SUBMITTALS

- A. General: Follow the procedures specified in Division 01 Section "Submittal Procedures".
- B. Specific Requirements to Electrical Product Data and Shop Drawing Submittals:
 - 1. Submit newly prepared information, drawn to scale where applicable. Do not reproduce Contract Documents or use Contract Document images in the preparation of submittals.
 - 2. Any deviations from Contract Documents shall be clearly noted and highlighted, encircled, or otherwise visually identified.
 - 3. Product Data and Shop Drawings are separate items and shall be submitted with separate submittal numbers. Where both Product Data and Shop Drawings are required by the same specification section (i.e. Fire alarm) both items shall be submitted for review at the same

time. Product Data and Shop Drawings will be reviewed separately by Engineer, but Engineer reserves the right to withhold review until both items have been received.

4. Submittal Document Binding: Submittals shall be submitted in 'PDF' format, per specification section.

C. Substitution of Equivalent Products: Where individual sections require submittal for substitution of manufacturers and products equivalent to those listed under Manufacturers paragraph, submittals shall be in accordance with that section. Engineer has final authority on equivalence and acceptance.

1. Submittal of Substitution Request Forms are permitted by Prime Bidders only. Substitution Request Forms submitted by a vendor, distributor, or sub-contractor will not be accepted or reviewed.

1.4 RECORD DOCUMENTS

A. Prepare record documents in accordance with the requirements in Division 01 Section "Closeout Procedures." In addition to the requirements specified in Division 01, indicate installed conditions for:

1. Major raceway systems, size and location, for both exterior and interior; locations of control devices; distribution and branch electrical circuitry; and fuse and circuit breaker size and arrangements.
2. Equipment locations (exposed and concealed), dimensioned from prominent building lines.
3. Approved substitutions, Contract Modifications, and actual equipment and materials installed.

1.5 OPERATION & MAINTENANCE MANUALS

A. Prepare maintenance manuals in accordance with Division 01 Section "Closeout Procedures" In addition to the requirements specified in Division 01, include the following information for equipment items:

1. Product data for all equipment installed during construction. Product data shall be manufacturer literature, cut-sheets, and/or catalogs and shall clearly depict manufacturer and model number along with standard features and optional features where applicable.
2. Where available for installed equipment, Contractor shall include manufacturer's published Installation and/or Owner's manuals.
3. Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of replacement parts.
4. Programming report/summary for all systems with conditional logic programming (i.e. fire alarm, lighting control system, and PLCs)
5. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.
6. Warranty Information: Copies of documentation for all additional and secondary warranties shall be included.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels, and other information needed for identification.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 ROUGH-IN

- A. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected.
- B. Refer to equipment specifications in Divisions 26 for rough-in requirements.

3.2 ELECTRICAL INSTALLATIONS

- A. General: Sequence, coordinate, and integrate the various elements of electrical systems, materials, and equipment. Comply with the following requirements:
 - 1. Coordinate electrical systems, equipment, and materials installation with other building components.
 - 2. Verify all dimensions by field measurements.
 - 3. Arrange for chases, slots, and openings in other building components during progress of construction, to allow for electrical installations.
 - 4. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed.
 - 5. Sequence, coordinate, and integrate installations of electrical materials and equipment for efficient flow of the Work.
 - 6. Where mounting heights are not detailed or dimensioned, install systems, materials, and equipment to provide the maximum headroom possible.
 - 7. Coordinate connection of electrical systems with exterior underground utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.
 - 8. Install systems, materials, and equipment to conform with approved submittal data, including coordination drawings, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect.
 - 9. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other building systems and components, where installed exposed in finished spaces.
 - 10. Install electrical equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
 - 11. Install systems, materials, and equipment giving right-of-way priority to systems required to be installed at a specified slope.

12. Contract documents were prepared based on all work being performed de-energized; unless otherwise noted. Contractor shall be responsible for coordinating with the Owner and Utilities to ensure that existing equipment is de-energized prior to work.
- B. Basis of Design: Where specific systems and products are shown or specified with a Basis of Design, the supporting work and appurtenances are shown and specified uniquely for the Basis of Design. Where systems and products other than the Basis of Design are installed, Contractor shall adjust circuiting, raceway infrastructure, cable type, wire size, supporting means, backbox type, and any other appurtenance as required for a complete, fully functional and operational system or product.

3.3 CUTTING AND PATCHING

- A. General: Perform cutting and patching in accordance with the following requirements:
 1. Perform cutting, fitting, and patching of electrical equipment and materials required to:
 - a. Remove and replace defective Work.
 - b. Remove and replace Work not conforming to requirements of the Contract Documents.
 - c. Upon written instructions from the Engineer, uncover and restore Work to provide for Engineer observation of concealed Work.
 2. Cut, remove, and legally dispose of selected electrical equipment, components, and materials as indicated, including but not limited to removal of electrical items indicated to be removed and items made obsolete by the new Work.
 3. Protect the structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.
 4. Protection of Installed Work: During cutting and patching operations, protect adjacent installations. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
 5. Patch existing finished surfaces and building components using new materials matching existing materials and experienced Installers. Installers' qualifications refer to the materials and methods required for the surface and building components being patched.

3.4 TESTING

- A. Coordinate with the Owner any testing specified to be conducted after final acceptance.

3.5 INSPECTIONS

- A. Authority Having Jurisdiction: Notify and schedule all inspections, with a minimum of 10 days notice in writing prior, to the Authority Having Jurisdiction.

END OF SECTION 260100

SECTION 260500 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Electrical Equipment Installation.
 - 2. Concrete equipment bases.
 - 3. Cutting and patching for electrical construction.
 - 4. Touchup painting.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.
- C. Electrical equipment shall be new and manufactured within the last 12 months unless otherwise noted and approved by the engineer.

1.4 COORDINATION

- A. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work.
- B. Coordinate electrical service connections to components furnished by utility companies.
 - 1. Coordinate installation and connection of exterior underground and overhead including provision for electricity-metering components.
 - 2. Comply with requirements of authorities having jurisdiction and of utility company providing electrical power and other services.

PART 2 - PRODUCTS

2.1 CONCRETE BASES

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DEI PROJECT NUMBER: 50129702

- A. Concrete: 3000-psi (20.7-MPa), 28-day compressive strength.

2.2 TOUCHUP PAINT

- A. For Equipment: Equipment manufacturer's paint selected to match installed equipment finish.
- B. Galvanized Surfaces: Zinc-rich paint recommended by item manufacturer.

PART 3 - EXECUTION

3.1 ELECTRICAL EQUIPMENT INSTALLATION

- A. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide the maximum possible headroom.
- B. Materials and Components: Install level, plumb, and parallel and perpendicular to other systems and components, unless otherwise indicated.
- C. Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations. Provide any additional supporting means not provided by manufacturer to install equipment.

3.2 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated, but not less than 4 inches (100 mm) larger, in both directions, than supported unit. Follow supported equipment manufacturer's anchorage recommendations and setting templates for anchor-bolt and tie locations, unless otherwise indicated. Use 3000-psi (20.7-MPa), 28-day compressive-strength concrete.

3.3 CUTTING AND PATCHING

- A. Cut, channel, chase, and drill surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.
- B. Repair and refinish disturbed finish materials and other surfaces to match adjacent undisturbed surfaces.

3.4 REFINISHING AND TOUCHUP PAINTING

- A. Refinish and touch up paint.
 - 1. Clean damaged and disturbed areas and apply primer, intermediate, and finish coats to suit the degree of damage at each location.
 - 2. Follow paint manufacturer's written instructions for surface preparation and for timing and application of successive coats.

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3. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
4. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

3.5 CLEANING AND PROTECTION

- A. On completion of installation, including outlets, fittings, and devices, inspect exposed finish. Remove burrs, dirt, paint spots, and construction debris.
- B. Protect equipment and installations and maintain conditions to ensure that coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.

END OF SECTION 260510

SECTION 260519 - CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Building wires and cables rated 600 V and less.
 - 2. Connectors, splices, and terminations rated 600 V and less.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports: Submit all cable tests reports to Engineer ten days prior to Final Inspection.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. American Insulated Wire Corp.; a Leviton Company.
 - 2. General Cable Corporation.
 - 3. Southwire Company.
- B. Conductors: Comply with NEMA WC 70.

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- C. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN and XHHW.

2.2 CONNECTORS AND SPLICES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Thomas & Betts Corporation.
 - 2. Ideal Industries, Inc.
 - 3. 3M; Electrical Products Division.
 - 4. Tyco Electronics Corp.
- B. Description: UL listed, factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated. Splices in solid conductors shall be made using Ideal Wirenuts, 3M Scotchlocks, or T&B Marrette pressure type wire connectors. Permanent crimp connectors are not acceptable.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- C. Minimum Size: No. 12 AWG for power and lighting circuits.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Service Entrance: Type THHN-THWN or XHHW, single conductors in raceway.
- B. Exposed Feeders: Type THHN-THWN or XHHW, single conductors in raceway.
- C. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN or XHHW, single conductors in raceway.
- D. Exposed Branch Circuits: Type THHN-THWN or XHHW, single conductors in raceway.
- E. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN or XHHW, single conductors in raceway.
- F. Class 1 Control Circuits: Type THHN-THWN or XHHW, in raceway.
- G. Class 2 Control Circuits: Type THHN-THWN or XHHW, single conductors in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- B. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- C. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- D. Voltage Drop: Conductor size shall be increased to account for voltage drop as follows:
 - 1. Where the conductor length from the panel to the first outlet on a 277V circuit exceeds 125 feet, the branch circuit conductors from the panel to the first outlet shall not be smaller than #10 AWG.
 - 2. Where the conductor length from the panel to the first outlet on a 120V circuit exceeds 50 feet, the branch circuit conductors from the panel to the first outlet shall not be smaller than #10 AWG. Increase an additional wire size for every additional 50' to first outlet.
 - 3. Proportionally increase size of equipment ground conductors wherever ungrounded conductor sizes are increased for voltage drop.
- E. Dedicated Neutrals: Provide dedicated neutral for all single-pole branch circuits, unless otherwise noted on plans. All neutrals shall be uniquely identified at splices or taps to correspond with their ungrounded circuit conductors.
- F. Identify and color-code conductors and cables according to Division 26 Section "Identification for Electrical Systems."

3.4 CONNECTIONS

- A. Keep conductor splices to a minimum. No feeders shall be spliced. No splicing shall be made except within outlet or junction boxes, troughs, or gutters.
- B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
 - 1. Splices shall be made using with pre-insulated spring/coil connectors (wire nuts), insulated barrel mechanical lugs, or box mounted insulated terminal strips.
 - 2. Push-in type, permanent crimp-on type, and split-bolt type are prohibited.
 - 3. Use oxide inhibitor in each splice and tap conductor for aluminum conductors.

3.5 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.
- B. Testing Technician

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1. The testing technicians shall be trained in all the methods of correctly and safely conducting the required test. The technician shall have regular experience conducting the required tests and they must have the knowledge to determine the serviceability of a specific piece of equipment.
- C. Tests and Inspections: After installing conductors and cables and before electrical circuitry has been energized, test conductors for compliance with following requirements.
1. Physical Inspection and Testing
 - a. Verify cable ratings and data correspond to drawings and specifications.
 - b. Verify electrical connections are made to provide the electrical system described in the drawings and specifications.
 - c. Inspect cable connectors to verify they are correctly installed.
 - d. Verify all cables are identified and arranged according to the drawings and specifications.
 - e. Verify that all cable jackets and insulation are in good condition and did not sustain damage during installation.
 2. Electrical Inspection and Testing
 - a. For all existing (wiring to poles) and new feeder current-carrying phase conductors and neutrals: test the insulation resistance with respect to ground for one minute. Cables rated for 300 volts shall be tested with 500 volts DC and cables rated for 600 volts shall be tested with 1000 volts DC. All insulation resistance data gathered shall comply with manufacturer's documentation; if documentation does not exist, comply with the values found in Table 100.1 in the ANSI/NETA ATS-2009.
- D. Remove and replace malfunctioning units and retest as specified above.
- E. Test Reports: Prepare a written report to record the following:
1. Test procedures used.
 2. Test results that comply with requirements.
 3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes methods and materials for grounding systems and equipment.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
 - 1. Solid Conductors: ASTM B 3.
 - 2. Stranded Conductors: ASTM B 8.
 - 3. Bonding Cable: stranded conductor sized per NEC 250 requirements.
 - 4. Bonding Conductor: stranded conductor sized per NEC 250 requirements.
 - 5. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; sized per NEC 250 requirements.

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- C. Grounding Bus: Rectangular bars of annealed copper, 1/4 by 2 inches (6 by 50 mm) in cross section, unless otherwise indicated; with insulators and stand-off brackets.

2.2 CONNECTORS

- A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts.
 - 1. Pipe Connectors: Clamp type, sized for pipe.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.3 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet (19 mm by 3 m) in diameter.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger, unless otherwise indicated.
- B. Underground Grounding Conductors: Install bare copper conductor, No. 3/0 AWG minimum. Bury at least 24 inches (600 mm) below grade.
- C. Conductor Terminations and Connections:
 - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
 - 2. Underground Connections: Welded connectors.

3.2 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits. The raceway shall not be relied on for ground continuity.

3.3 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Rods: Drive rods until tops are 6 inches (50 mm) below finished floor or final grade, unless otherwise indicated.
 - 1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating, if any.
- C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.
 - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
 - 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.
 - 3. Provide exothermic-welded connection to building structural steel.
 - 4. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.
- D. Grounding Bushings and Jumpers: Boxes provided with concentric, eccentric or over-sized knockouts shall be provided with bonding bushings and jumpers lugged to box.

3.4 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections and prepare test reports:
 - 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
- B. Testing Technician
 - 1. The testing technicians shall be trained in all the methods of correctly and safely conducting the required test. The technician shall have regular experience conducting the required tests and they must have the knowledge to determine the serviceability of a specific piece of equipment.
- C. Physical Inspection and Testing
 - 1. Inspect grounding system to verify that it complies with the requirements in the drawings and specifications, as well as, NFPA 70 *National Electric Code Article 250*.
 - 2. Inspect the physical and mechanical condition and verify that it complies with manufacturer's standards. All portions of the grounding system shall be free of corrosion.
 - 3. Confirm bolted electrical connections are provided with low impedance using one of the following means:

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- a. Measure the resistance with a low-resistance ohmmeter. Bolted electrical connection resistances shall be compared to resistances measured on similar connections. Any similar resistance values that deviate more than 50 percent should be investigated.
 - b. Inspect the bolted connection and verify that it is at the manufacturer's rated torque using a calibrated torque wrench.
4. Verify that adequate anchorage is in place for the grounding system.
- D. Electrical Inspection and Testing
 1. Conduct tests for fall of potential as defined by ANSI/IEEE 81 on the grounding system.
 2. Determine the resistance to ground throughout grounding system including equipment frames, systems neutral, and equipment grounding bars. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance. Perform ground resistance in all of, but not limited to, the areas listed below:
 - a. Main electrical distribution ground bar: 15 ohms
 - b. Lightning protection path to ground: 5 ohms.
- E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.
 1. Retest required to show compliance with above value.
- F. Remove and replace malfunctioning units and retest as specified above.
- G. Test Reports: Prepare a written report to record the following:
 1. Test procedures used.
 2. Test results that comply with requirements.
 3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

END OF SECTION 260526

SECTION 260533 - RACEWAY AND BOXES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes interior and exterior raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. FMC: Flexible metal conduit.
- C. IMC: Intermediate metal conduit.
- D. LFMC: Liquidtight flexible metal conduit.
- E. RNC: Rigid nonmetallic conduit.
- F. RSC: Rigid steel conduit.

1.4 SUBMITTALS

- A. Product Data: For raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Allied Tube & Conduit; a Tyco International Ltd. Co.
 - 2. O-Z Gedney; a unit of General Signal.
 - 3. Wheatland Tube Company.
- B. Rigid Steel Conduit: ANSI C80.1.
- C. IMC: ANSI C80.6.
- D. EMT: ANSI C80.3.
- E. LFMC: Flexible steel conduit with PVC jacket.
- F. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
 - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.
 - 2. Fittings for EMT: Plated-steel hexagonal compression type. Cast, pot metal, set-screw, or crimp type fittings are not acceptable.
 - a. Couplings shall be “concrete tight” where concealed in masonry.
 - b. Box connectors shall be insulated throat type.
- G. Joint Compound for Rigid Steel Conduit or IMC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

2.2 NONMETALLIC CONDUIT AND TUBING

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. AFC Cable Systems, Inc.
 - 2. Arnco Corporation.
 - 3. Lamson & Sessions; Carlon Electrical Products.
 - 4. Thomas & Betts Corporation.
- B. RNC: NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.
- C. LFNC: UL 1660.
- D. Fittings for ENT and RNC: NEMA TC 3; match to conduit or tubing type and material.
- E. Fittings for LFNC: UL 514B.

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2.3 METAL WIREWAYS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Cooper B-Line, Inc.
 - 2. Hoffman.
 - 3. Square D; Schneider Electric.
 - 4. Austin Electrical Enclosures
- B. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 1, unless otherwise indicated.
- C. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- D. Wireway Covers: Hinged type.
- E. Finish: Manufacturer's standard enamel finish.

2.4 BOXES, ENCLOSURES, AND CABINETS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
 - 2. EGS/Appleton Electric.
 - 3. Hoffman.
 - 4. RACO; a Hubbell Company.
 - 5. Thomas & Betts Corporation.
- B. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
- C. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- D. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
 - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
- E. Cabinets:
 - 1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
 - 2. Hinged door in front cover with flush latch and concealed hinge.
 - 3. Key latch to match panelboards.
 - 4. Metal barriers to separate wiring of different systems and voltage.
 - 5. Accessory feet where required for freestanding equipment.

2.5 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

- A. Fiberglass Reinforced Concrete Handholes: Constructed of polymer concrete and reinforced by heavy-weave fiberglass. Composite material shall be rated for no less than 8,000 lbs. Over a 10"x10" area and tested to temperatures of -50°F. Compressive strength should be no less than 11,000 psi. Covers shall have a minimum coefficient of friction of .5 and have a design load of minimum 15,000 lbs per 10"x10" area. Unit, when buried, shall be designed to support AASHTO H10 loading.
- B. Cover Legend: "ELECTRIC".

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
 - 1. Exposed Conduit: Rigid steel conduit.
 - 2. Concealed Conduit, Aboveground: Rigid steel conduit.
 - 3. Underground Conduit:
 - a. Service Entrance: RNC, Type EPC-40-PVC.
 - b. Feeders: RNC, Type EPC-40-PVC,
 - c. Branch Circuit: RNC, Type EPC-40-PVC, direct buried.
 - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
 - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 4.
- B. Raceway Fittings: Compatible with raceways and suitable for use and location.
 - 1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.

3.2 INSTALLATION

- A. Install raceways, boxes, enclosures, and cabinets as indicated, according to manufacturer's written instructions.
- B. Minimum Raceway Size:
 - 1. Interior: 3/4-inch trade size.
 - 2. Exterior, below grade: 1-inch trade size.
- C. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- D. Install raceways level and square and at proper elevations. Provide adequate headroom.
- E. Complete raceway installation before starting conductor installation.
- F. Support raceways as specified in Division 26 Section "Supporting Devices."

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- G. Use temporary closures to prevent foreign matter from entering raceways.
- H. Make bends and offsets so ID is not reduced. Keep legs of bends in the same plane and straight legs of offsets parallel, unless otherwise indicated.
- I. Use raceway fittings compatible with raceways and suitable for use and location. For intermediate steel conduit, use threaded rigid steel conduit fittings, unless otherwise indicated.
- J. Run concealed raceways, with a minimum of bends, in the shortest practical distance considering the type of building construction and obstructions, unless otherwise indicated.
- K. Terminations: Where raceways are terminated with locknuts and bushings, align raceways to enter squarely and install locknuts with dished part against the box. Where terminations are not secure with 1 locknut, use 2 locknuts: 1 inside and 1 outside the box.
 - 1. Where concentric, eccentric, or over-sized knock outs are encountered, a grounding-type insulated bushing shall be provided.
- L. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into the hub so the end bears against the wire protection shoulder. Where chase nipples are used, align raceways so the coupling is square to the box and tighten the chase nipple so no threads are exposed.
- M. Install pull wires in empty raceways. Use No. 14 AWG zinc-coated steel or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of the pull wire.
- N. Stub-up Connections: Where underground raceways are required to turn up into equipment, cabinets, etc., the elbow and stub-up shall be rigid steel. Install with an adjustable top or coupling threaded inside for plugs set flush with the finished floor. Extend to equipment with rigid steel conduit; FMC may be used 6 inches above grade.
- O. Install hinged-cover enclosures and cabinets plumb. Support at each corner.

3.3 INSTALLATION OF UNDERGROUND CONDUIT

- A. Direct-Buried Conduit:
 - 1. Excavate trench bottom to provide firm and uniform support for conduit.
 - 2. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction.
 - 3. Install manufactured rigid steel conduit elbows for stub-ups at base of all lighting poles.
 - a. Couple steel conduits with adapters designed for this purpose.
 - 4. Warning Tape: Provide underground-line warning tape specified in Division 26 Section "Electrical Identification." Install 6 to 8" below finished grade.

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3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

- A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.
- B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch (12.5-mm) sieve to No. 4 (4.75-mm) sieve and compacted to same density as adjacent undisturbed earth.
- C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch (25 mm) above finished grade.
- D. Field-cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

3.5 PROTECTION

- A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

END OF SECTION 260533

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes electrical identification materials and devices required to comply with ANSI C2, NFPA 70, OSHA standards, and authorities having jurisdiction.

1.3 SUBMITTALS

- A. Product Data: For each electrical identification product indicated.
- B. Identification Schedule: An index of nomenclature of all electrical equipment and system components used in identification signs and labels. Schedule shall depict preliminary printouts of proposed equipment labels for review prior to order.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI C2.
- B. Comply with NFPA 70.
- C. Comply with ANSI A13.1 and NFPA 70 for color-coding.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

PART 2 - PRODUCTS

2.1 RACEWAY AND CABLE LABELS

- A. Colored Adhesive Tape: Self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide (0.08 mm thick by 25 to 51 mm wide).
- B. Underground-Line Warning Tape: Permanent, bright-colored, continuous-printed, vinyl tape.

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1. Not less than 6 inches wide by 4 mils thick (152 mm wide by 0.102 mm thick).
 2. Compounded for permanent direct-burial service.
 3. Embedded continuous metallic strip or core.
 4. Printed legend indicating type of underground line.
- C. Tape Markers: Vinyl or vinyl-cloth, self-adhesive, wraparound type with preprinted numbers and letters.

2.2 NAMEPLATES AND SIGNS

- A. Engraved Plastic Nameplates and Signs: Engraving stock, melamine plastic laminate, minimum 1/16 inch (1.6 mm) thick for signs up to 20 sq. in. (129 sq. cm) and 1/8 inch (3.2 mm) thick for larger sizes.
1. Punched or drilled for mechanical fasteners.
- B. Exterior, Metal-Backed, Butyrate Signs: Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch (1-mm) galvanized-steel backing; and with colors, legend, and size required for the application. 1/4-inch (6.4-mm) grommets in corners for mounting.
- C. Fasteners for Nameplates and Signs: Self-tapping, stainless-steel screws or No. 10/32, stainless-steel machine screws with nuts and flat and lock washers.

2.3 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Cable Ties: Fungus-inert, self-extinguishing, one-piece, self-locking, Type 6/6 nylon cable ties.
1. Minimum Width: 3/16 inch (5 mm).
 2. Tensile Strength: 50 lb (22.3 kg) minimum.
 3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
 4. Color: According to color-coding.
- B. Paint: Formulated for the type of surface and intended use.
1. Primer for Galvanized Metal: Single-component acrylic vehicle formulated for galvanized surfaces.
 2. Primer for Concrete Masonry Units: Heavy-duty-resin block filler.
 3. Primer for Concrete: Clear, alkali-resistant, binder-type sealer.
 4. Enamel: Silicone-alkyd or alkyd urethane as recommended by primer manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Identification Materials and Devices: Install at locations for most convenient viewing without interference with operation and maintenance of equipment.

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- B. Lettering, Colors, and Graphics: Coordinate names, abbreviations, colors, and other designations with corresponding designations in the Contract Documents or with those required by codes and standards. Use consistent designations throughout Project.
 - 1. General 277/480V and 120/240V Equipment: Black label with white core.
- C. Sequence of Work: If identification is applied to surfaces that require finish, install identification after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before applying.
- E. Install painted identification according to manufacturer's written instructions and as follows:
 - 1. Clean surfaces of dust, loose material, and oily films before painting.
 - 2. Prime surfaces using type of primer specified for surface.
 - 3. Apply one intermediate and one finish coat of enamel.
- F. Circuit Identification Labels on Outlet Boxes, Junction Boxes and Pull Boxes: Install labels externally.
 - 1. Exposed junction boxes: Pressure-sensitive, self-adhesive plastic label on faceplate. Use clear label with black letters.
 - 2. Concealed junction and pull boxes: Neat handwritten label using permanent black marker.
 - 3. Labeling Legend: Permanent, waterproof listing of panel and circuit number or equivalent.
 - 4. Future Use Circuits: Circuits for future use shall be identified as such and list panel and circuit number of source.
- G. Secondary Service, Feeder, and Branch-Circuit Conductors: Color-code throughout the secondary electrical system.
 - 1. Color-code 240/120-V system as follows:
 - a. Phase A: Black.
 - b. Phase B: Red.
 - c. Neutral: White.
 - d. Ground: Green.
 - 2. Color-code 480/277-V system as follows:
 - a. Phase A: Brown.
 - b. Phase B: Orange.
 - c. Phase C: Yellow.
 - d. Neutral: Gray.
 - e. Ground: Green.
 - 3. Factory apply color the entire length of all conductors, except the following field-applied, color-coding methods may be used instead for service conductors:
 - a. Colored, pressure-sensitive plastic tape in half-lapped turns for a distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Use 1-inch- (25-mm-) wide tape in colors specified. Adjust tape bands to avoid obscuring cable identification markings.
 - b. Colored cable ties applied in groups of three ties of specified color to each wire at each terminal or splice point starting 3 inches (76 mm) from the terminal and spaced 3 inches (76 mm) apart. Apply with a special tool or pliers, tighten to a snug fit, and cut off excess length.

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- H. Apply identification to conductors as follows:
 - 1. Conductors to Be Extended in the Future: Indicate source and circuit numbers.
 - 2. Multiple Power or Lighting Circuits in the Same Enclosure: Identify each conductor with source, voltage, circuit number, and phase. Use color-coding to identify circuits' voltage and phase.
- I. Apply warning, caution, and instruction signs as follows:
 - 1. Warnings, Cautions, and Instructions: Install to ensure safe operation and maintenance of electrical systems and of items to which they connect. Install engraved plastic-laminated instruction signs with approved legend where instructions are needed for system or equipment operation. Install metal-backed butyrate signs for outdoor items.
- J. Equipment Identification Labels: Engraved plastic laminate. Install on each unit of equipment, including central or master unit of each system. Locate label on exterior of any enclosure. This includes power, lighting, signal, and alarm systems, unless units are specified with their own self-explanatory identification. Unless otherwise indicated, provide three lines of text with 1/4-inch high lettering on 1-1/2-inch high label; where four lines of text are required, use labels 2 inches high. Use surface and core colors as listed in Part 2 above. Provide labels for all electrical equipment listed below. In general, all labels shall include riser diagram ID, amperage, voltage, number of phases/poles, and equipment served from (source). Provide additional information as listed below:
 - 1. Panelboards: MCB/MLO.
 - 2. Transformers: equipment served by.
 - 3. Disconnect switches: equipment served by.
 - a. Provide label for all disconnects provide by Division 23, 24 or 26.
 - 4. Enclosed circuit breakers: equipment served by.
 - a. Provide label for all disconnects provide by Division 23
 - 5. Service Entrances: Provide placard at service entrance disconnects indicating maximum fault current and date of calculation per NEC Article 110.24. Maximum fault current shall be coordinated with utility and placard installed prior to energization

END OF SECTION 260553

SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Distribution panelboards.
 - 2. Lighting and appliance branch-circuit panelboards.

1.3 DEFINITIONS

- A. SVR: Suppressed voltage rating.
- B. TVSS: Transient voltage surge suppressor.

1.4 SUBMITTALS

- A. Product Data: For each type of panelboard, switching and overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
 - 2. Detail enclosure types and details for types other than NEMA 250, Type 1.
 - 3. Detail bus configuration, current, and voltage ratings.
 - 4. Short-circuit current rating of panelboards and overcurrent protective devices.
 - 5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
- C. Field Quality-Control Reports:
 - 1. Test procedures used.
 - 2. Test results that comply with requirements.
 - 3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

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- D. Panelboard Schedules: For installation in panelboards. Room names and numbers shall match the final signage at the site. Submit final versions prior to installation in panelboard.
- E. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:
 - 1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.
- B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- D. Comply with NEMA PB 1.
- E. Comply with NFPA 70.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Handle and prepare panelboards for installation according to NEMA PB 1.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations:
 - 1. Do not deliver or install panelboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above panelboards is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.8 COORDINATION

- A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 3. Siemens Energy & Automation, Inc.
 4. Square D; a brand of Schneider Electric.

2.2 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Enclosures: Flush- and surface-mounted cabinets as noted on schedules.
1. Rated for environmental conditions at installed location.
 - a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
 - b. Outdoor Locations: NEMA 250, Type 4.
 - c. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
 2. Front Cover: For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
 - a. Surface Mounted Panelboards: Entire front trim hinged to box. Continuous piano hinge. Provide standard door with front trim.
 3. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
 4. Finishes:
 - a. Panels and Trim: Steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
 - b. Back Boxes: Galvanized steel.
 5. Directory Card: Inside panelboard door, mounted in metal frame with transparent protective cover.
 6. Main Overcurrent Protective Devices: Molded-case circuit breakers.
 - a. Center Mounted Main: Branch mounted main breakers are not allowed.
 7. Branch Overcurrent Protective Devices: Molded-case circuit breakers.
 - a. Center mounted branch devices and sub-feed branch devices are not allowed.
- B. Incoming Mains Location: Top and bottom.
- C. Phase, Neutral, and Ground Buses: Hard-drawn copper, 98 percent conductivity

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1. Neutral Bus: Neutral bus rated 100 percent of phase bus.
 2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box. For branch circuit panelboards provide a minimum of 21 terminals.
- D. Main and Neutral Lugs: Mechanical type suitable for use with conductor material.
- E. Feed-through Lugs: Not acceptable.
- F. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices. Future devices indicated as "SPACE" on drawings.
- G. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals. Series rating of equipment is not acceptable.

2.3 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- B. Mains: Circuit breaker, unless otherwise noted on drawings.
- C. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.
- D. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

2.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with full interrupting capacity to meet available fault currents.
1. Electronic Trip Circuit Breakers: Electronic trip circuit breakers with RMS sensing; field-replaceable rating plug or field-replicable electronic trip and individually field-adjustable long time, short time, and instantaneous trip pickup level settings. Trip unit shall also have adjustable long time and short time delay settings. Provide for circuit-breaker frame sizes 250A and larger.
 - a. Ground Fault Protection: Any circuit breaker serving as the service entrance overcurrent protective device for a structure shall have ground fault pickup and time delay settings in addition to overcurrent trip settings indicated above.
 2. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Field adjustable instantaneous trip setting for circuit-breaker frame sizes 100 A to 225A.
 3. GFCI Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip).
 4. Ground-Fault Equipment Protection (GFEP) Circuit Breakers: Class B ground-fault protection (30-mA trip).
 5. Molded-Case Circuit-Breaker (MCCB) Features and Accessories:

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- a. Standard frame sizes, trip ratings, and number of poles.
- b. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
- c. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge (HID) lighting circuits.
- d. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.
- e. Handle Clamp: Loose attachment, for holding circuit-breaker handle in on position.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Receive, inspect, handle, and store panelboards according to NEMA PB 1.1.
- B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.
- C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install panelboards and accessories according to NEMA PB 1.1.
- B. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from panelboards.
- C. Mount top of trim 90 inches (2286 mm) above finished floor unless otherwise indicated.
- D. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.
- E. Install filler plates in unused spaces.
- F. Arrange conductors in gutters into groups and bundle and wrap with wire ties.
- G. Comply with NECA 1.

3.3 IDENTIFICATION

- A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Division 26 Section "Identification for Electrical Systems."

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- B. Create a directory to indicate installed circuit loads; incorporate Owner's Pole designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."
- D. Device Nameplates: Label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

3.4 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Testing Technician

- a. The testing technicians shall be trained in all the methods of correctly and safely conducting the required test. The technician shall have regular experience conducting the required tests and they must have the knowledge to determine the serviceability of a specific piece of equipment.

2. Physical inspection and Testing

- a. Verify equipment rating correspond to drawings and specifications.
- b. Inspect the physical and mechanical condition and verify that it complies with manufacturer's standards.
- c. Verify equipment is properly secured and aligned with the required clearances as specified in the drawings and specifications. Assure that the equipment is properly grounded.
- d. Verify that all packing materials have been removed and the equipment has been cleaned.
- e. Confirm all breaker sizes, quantities, and configurations correspond to the drawings and specifications.
- f. Confirm bolted and mechanical lug electrical connections are low impedance using one of the following means:
 - 1) Measure the resistance with a low-resistance ohmmeter. Bolted electrical connection resistances shall be compared to resistances measured on similar connections. Any similar resistance values that deviate more than 50 percent should be investigated.
 - 2) Inspect the bolted connection and verify that it is at the manufacturer's rated torque using a calibrated torque wrench. If manufacturer's data is not available verify the torque meets the requirements of Table 100.12 in the ANSI/NETA ATS-2009.

3. Electrical Inspection and Testing

- a. Test each bus section for insulation resistance for one minute on phase to phase and phase to ground connections. Verify the test results comply with manufacturer's

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documentation or the requirements established in Table 100.1 of the ANSI/NETA ATS-2009.

- b. Verify all meters functionality and accuracy after testing and calibrating all inputs.
 - c. Verify instrument transformers meet all the requirements of the drawings and specifications.
 - 1) Test transformer wiring integrity and proper transformer operation.
 - 2) Verify transformer output voltage is at the specified level.
4. Test Reports: Prepare a written report to record the following:
- a. Test procedures used.
 - b. Test results that comply with requirements.
 - c. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- B. Panelboards will be considered defective if they do not pass tests and inspections.

3.5 ADJUSTING

- A. Set field-adjustable circuit-breaker trip ranges. Unless otherwise noted, trip settings shall mimic trip characteristics for thermal magnetic circuit-breakers of similar trip rating.
- B. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.
- 1. Measure as directed during period of normal system loading.
 - 2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.
 - 3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
 - 4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

END OF SECTION 262416

SECTION 265668 - EXTERIOR ATHLETIC LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes lighting for the following outdoor sports venues:
 - 1. Softball fields.

1.3 DEFINITIONS

- A. Coefficient of Variation (CV): A statistical measure of the weighted average of all relevant illumination values for the playing area, expressed as the ratio of the standard deviation for all illuminance values to the mean illuminance value.
- B. Fixture: See "Luminaire."
- C. Illuminance: The metric most commonly used to evaluate lighting systems. It is the density of luminous flux, or flow of light, reaching a surface divided by the area of that surface.
 - 1. Horizontal Illuminance: Measurement in foot-candles (lux), on a horizontal surface 36 inches (914 mm) above ground unless otherwise indicated.
 - 2. Target Illuminance: Average maintained illuminance level, calculated by multiplying initial illuminance by LLF.
 - 3. Vertical Illuminance: Measurement in foot-candles (lux), in two directions on a vertical surface, at an elevation coinciding with plane height of horizontal measurements.
- D. LC: Lighting Certified.
- E. Light-Loss Factor (LLF): A factor used in calculating the level of illumination after a given period of time and under given conditions. It takes into account temperature, dirt accumulation on the luminaire, lamp depreciation, maintenance procedures, and atmospheric conditions. An LLF includes a recoverable light-loss factor.
- F. Luminaire: A complete lighting unit, internally lighted exit sign, or emergency lighting unit. Luminaires include lamps and the parts required to distribute light, position and protect lamps, and connect lamps to power supply. Note that "fixture" and "luminaire" may be used interchangeably and the "IES Lighting Handbook" uses "luminaire" over "fixture."
- G. Pole: Luminaire support structure, including tower used for large area illumination.

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- H. Uniformity Gradient (UG): The rate of change of illuminance on the playing field, expressed as a ratio between the illuminances of adjacent measuring points on a uniform grid.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of lighting product.

1. Fixture Schedule Matrix: At the front of the product data submittal provide a matrix that lists the fixture manufacturer and model number, driver manufacturer and model number, LED module manufacturer and model number for each fixture type in schedule.
2. Arrange in order of luminaire designation.
3. Include data on features, accessories, and finishes.
4. Include physical description and dimensions of the luminaires.
5. Driver, including efficiency, UL listing and recognition, ANSI certification, and Energy Independence and Security Act of 2007 compliance.
6. LED modules, including life, output (lumens, CCT, and CRI), and energy-efficiency data.
7. Photometric data and adjustment factors based on laboratory tests, complying with IES "Lighting Measurements Testing and Calculation Guides," of each lighting luminaire type. The adjustment factors shall be for lamps, ballasts, and accessories identical to those indicated for the luminaire as applied in this Project.
 - a. Testing Agency Certified Data: For indicated luminaires, photometric data certified by a qualified independent testing agency. Photometric data for remaining luminaires shall be certified by manufacturer.
 - b. Manufacturer Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the NVLAP for Energy Efficient Lighting Products.
8. Photoelectric relays.
9. Means of attaching luminaires to supports and indication that attachment is suitable for components involved.

- B. Shop Drawings: For nonstandard or custom luminaires.

1. Include plans, elevations, sections, and mounting and attachment details.
2. Include details of luminaire assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include diagrams for power, signal, and control wiring.

- C. Product Schedule: For luminaires and lamps.

- D. Delegated-Design Submittal: For exterior athletic lighting indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1. Drawings and specifications for construction of lighting system.
2. Manufacturer's determination of LLF used in design calculations.
3. Lighting system design calculations for the following:

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- a. Target illuminance.
 - b. Point calculations of horizontal and vertical illuminance, CV, and UG at minimum grid size and area.
 - c. Point calculations of horizontal and vertical illuminance in indicated areas of concern for spill light.
 - d. Calculations of source intensity of luminaires observed at eye level from indicated properties near the playing fields.
4. Wiring requirements, including required conductors, cables, and wiring methods.
 5. Structural analysis data and calculations used to verify existing poles provide sufficient support.
 - a. Manufacturer Wind-Load Strength Certification: Submit certification that selected total support system, including poles, complies with AASHTO LTS-6-M for location of Project.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Plans drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 1. Luminaires.
 2. Luminaire support structures.
 3. Limits of athletic fields.
 4. Proposed underground utilities and structures.
 5. Underground utilities and structures.
 6. Athletic field support structures.
- B. Welding certificates.
- C. Product Certificates:
 1. For each type of driver from manufacturer.
 2. For support structures, including brackets, arms, appurtenances, from manufacturer.
- D. Field quality-control reports.
- E. Sample warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For luminaires to include in operation and maintenance manuals.
 1. Provide a list of all lamp types used on Project. Use ANSI and manufacturers' codes.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Fuses: Ten for every 100 of each type and rating installed. Furnish at least one of each type.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Manufacturer Qualifications: Manufacturer's responsibilities include fabricating sports lighting and providing professional engineering services needed to assume engineering responsibility.
 - 1. Engineering Responsibility: Preparation of delegated-design submittals and comprehensive engineering analysis by a qualified professional engineer.
- C. Luminaire Photometric Data Testing Laboratory Qualifications: Luminaire manufacturers' laboratory accredited under the NVLAP for Energy Efficient Lighting Products.
- D. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7, accredited under the NVLAP for Energy Efficient Lighting Products and complying with applicable IES testing standards.
- E. Field Testing Agency Qualifications: An independent testing agency that is accredited under the NVLAP for Energy Efficient Lighting Products, a member company of NETA, or an NRTL as defined in 29 CFR 1910.7, with the experience and capability to conduct field testing according to IES LM-5.
- F. Field Testing Agency Qualifications: A qualified independent professional engineer not associated with Contractor or lighting equipment manufacturer.
- G. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1/D1.1M.
 - 2. AWS D1.2/D1.2M.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

1.10 WARRANTY

- A. Warranty Period: 25 years from date of Substantial Completion.

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- B. Special Warranty: Each manufacturer shall supply a signed warranty covering the entire system for the warranty period from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty may exclude weather condition events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.
- C. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for the warranty period from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, the manufacturers offering products that may be incorporated into the Work include the following:
 - 1. Musco Sports Lighting

2.2 PERFORMANCE REQUIREMENTS

- A. Facility Type: Amateur Soft Ball.
- B. Illumination Criteria:
 - 1. Minimum average target illuminance level for each lighted area for each sports venue and for the indicated class of play according to IES RP-6.
 - 2. CV and maximum-to-minimum uniformity ratios for each lighted area equal to or less than those listed in IES RP-6 for the indicated class of play.
 - 3. UG levels within each lighted area equal to or less than those listed in IES RP-6 for the indicated speed of sport.
- C. Illumination Criteria:
 - 1. Infield:
 - a. Minimum Average Target Illumination: 30 footcandles (300 Lux).
 - b. CV: 0.21 or less.
 - c. Maximum-to-Minimum Uniformity Ratio: 2.5:1 or less.
 - d. Upper limit of UG Level: 1.7.
 - 2. Outfield:
 - a. Minimum Average Target Illumination: 20 footcandles (200 Lux).
 - b. CV: 0.25 or less.
 - c. Maximum-to-Minimum Uniformity Ratio: 3:1 or less.
 - d. Upper limit of UG Level: 2.5.

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- D. Illumination Calculations: Computer-analyzed point method complying with IES RP-6 to optimize selection, location, and aiming of luminaires.
1. Grid Pattern Dimensions: For playing areas of each sport and areas of concern for spill-light control, correlate and reference calculated parameters to the grid areas. Each grid point represents the center of the grid area defined by the length and width of the grid spacing.
 2. Determine LLF according to IES RP-6 and manufacturer's test data.
 - a. LLF shall not be higher than 85 percent and may be lower when determined by manufacturer after application of the optical system output according to IES RP-6.
 3. Luminaire-Mounting Height: Comply with IES RP-6, with consideration for requirements to minimize spill light and glare.
 4. Luminaire Placement: Luminaire clusters shall be outside the glare zones defined by IES RP-6.
- E. Softball Fields:
1. IES RP-6: Class of Play IV.
 2. Speed of Sport: Slow.
 3. Grid Pattern Dimensions: 20 by 20 feet (6 by 6 m).
- F. Lighting Control: Manual, low voltage, or digital; providing the following functions, integrated into a single control station per softball field as indicated:
1. Lighting Controls:
 - a. The Control Station is a lighting contactor cabinet constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Provide control station with the following features:
 - 1) Instant on/off capabilities via a Key-operated manual off-on-auto switch
 - 2) System status indicator lights mounted on control station.
 - 3) Remote monitoring system: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).
 - b. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports for facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for IOS, Android and Blackberry devices.
 - 1) Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.
 - a) Cumulative hours: shall be tracked to show the total hours used by the facility.
 - b) Report hours saved by using early off and push buttons by users.
 - c. Communication Costs: Manufacturer shall include communication costs for operating the controls and monitoring system for a period of 25 years.

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G. Electric Power Distribution Requirements:

1. Electric Power to the Site: 120/240 V; Single phase.
2. Electrical Power to Each individual pole lighting system: 240 V; Single Phase

H. Life-Cycle Cost Criteria:

1. Estimated life-cycle cost of lighting system for period of 25 years based on the parameters below:
 - a. Energy Cost.
 - b. Lamp Replacement Cost.
 - c. General Maintenance.
2. Life-Cycle Cost Criteria: Manufacturers shall provide all preventative and spot maintenance, including parts and labor for the entire length of the life-cycle cost period from the date of equipment shipment. Individual outages shall be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

2.3 LUMINAIRES, LAMPS, AND DRIVERS

A. Luminaires: Complying with requirements listed below:

1. Listed and labeled, by an NRTL acceptable to authorities having jurisdiction, for compliance with UL 1598 for installation in wet locations.
2. Doors, Frames, and Other Internal Access: Smooth operating, free from light leakage under operating conditions, and arranged to permit relamping without using tools. Arrange doors, frames, lenses, diffusers, and other pieces to prevent their accidental falling during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lens. Designed to disconnect ballast when door opens.
3. Exposed Hardware: Stainless-steel latches, fasteners, and hinges.
4. Spill-Light Control Devices: Internal louvers and external baffles furnished by manufacturer and designed for secure attachment to specific luminaire.
5. Luminaires for softball fields shall be bracket-mounted, full-cutoff type with integral ballasts.
6. Lamps for Softball Field Luminaires: LED, ratings vary based on mounting height. Refer to drawings.

B. Driver Mounting: Grouped in cabinets, remote from location of associated luminaires unless otherwise indicated.

2.4 SUPPORT STRUCTURES

- A. Support Structures for Softball: Galvanized Steel Poles and cross-arm assembly. Alternate: A precast concrete base (minimum 28-day 4,500 psi concrete) specified by precast manufacturer with flowable fill backfill will be an acceptable alternative provided building code, wind speed, and foundation designs per specifications are adhered to with project specific signed and sealed foundation drawings. Flowable fill backfill shall attain a minimum compressive strength of 200 psi prior to pole installation and shall bear on and against firm, undisturbed soil.

1. Non-approved pole technology:

a. Square static cast concrete poles will not be accepted.

b. Direct buried steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long-term performance concerns. No exposed steel below grade including inverted anchor bolt base will be accepted.

2. Lighting systems shall use concrete foundations. See Section 2.5 for details.

- a. For a cast-in-place concrete pier foundation, the concrete shall be air-entrained with a minimum compressive design strength at 28 days of 4,500 psi. The steel pole shall attach to the concrete pier with a base plate and cast-in-place anchor bolts specified by the pole manufacturer. Pole designer shall provide project specific signed and sealed foundation drawings detailing pier and anchor designs. Pier shall bear on and against firm, undisturbed soil.
- b. Concrete shall attain a minimum compressive strength of 3,000 psi prior to pole installation and fixture mounting.

2.5 STRUCTURAL PARAMETERS

- A. Wind Loads: Wind loads shall be based on the 2018 North Carolina Building Code. Wind loads to be calculated using ASCE 7-10, a design wind speed of 115, exposure category C.
- B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2013 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-6) and all associated errata and interim revisions.
- C. Foundation Design: The foundation design shall be based on soils that meet or exceed those of a Class 5 material as defined by 2015 IBC Table 1806.2.

2.6 DURABILITY

- A. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware

and fasteners shall be stainless steel of 18-8 grade or better, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing).

2.7 LIGHTNING PROTECTION

- A. Lighting Protection: All structures shall be equipped with lightning protection meeting NFPA 780 standards. Contractor shall supply and install a grounding electrode of not less than 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.

2.8 CONTROL WIRING

- A. Wiring Method for Control Wiring: Underground nonmetallic raceway.
- B. Overhead-, pole-, or structure-supported wiring and transformers are not permitted.
- C. Electrical Enclosures Exposed to Weather: NEMA 250, Type 3R enclosure constructed from corrosion-resistant material, with hinged doors fitted with padlock hasps or lockable latches.

2.9 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Variations in finishes are unacceptable in the same piece. Variations in finishes of adjoining components are acceptable if they are within the range of approved Samples and if they can be and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for luminaire electrical and communications conduit to verify actual locations of connections before pole or luminaire installation.
- C. Examine foundations for suitable conditions where luminaires will be installed.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with NECA 1.
- B. Wiring Method: Install cables in raceways, except when cables are installed within boxes and poles. Conceal raceways and cables.
 - 1. Comply with requirements in Section 260519 "Conductors and Cables" and 260533 "Raceways and Boxes" for wiring connections and wiring methods.
- C. Coordination layout and installation of luminaires with other construction.
- D. Use web fabric slings (not chain or cable) to raise and set structural members. Protect equipment during installation to prevent corrosion.
- E. Install poles and other structural units level, plumb, and square.
- F. Install luminaires at height and aiming angle as indicated on Drawings.
- G. Install drivers in cabinets mounted on poles at least 10 feet (3 m) above finished grade. Install controls in cabinet mounted on support structures as indicated on drawings.

3.3 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Perform the following tests and inspections:
 - 1. After installing sports lighting system and after electrical circuits have been energized, perform proof-of-performance field measurements and analysis for compliance with requirements. The illumination measurements shall be conducted in accordance with IESNA LM-5-04.
 - 2. Playing and Other Designated Areas: Make field measurements at intersections of grids, dimensioned and located as specified in "Performance Requirements" Article and as described below:
 - a. Softball Fields: Measure at least 16 points of the infield and 48 points of the outfield. Extend the grid 15 feet (5 m) outside the foul lines, extending to outfield boundary.
 - 3. Make field measurements at established test points in areas of concern for glare.
 - 4. Perform analysis to demonstrate correlation of field measurements with specified illumination quality and quantity values and corresponding computer-generated values that were submitted with engineered design documents. Submit a report of the analysis.

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For computer-generated values, use manufacturer's lamp lumens that are adjusted to lamp age at time of field testing.

- C. Correction of Illumination Deficiencies for Playing Areas: Make corrections to illumination quality or quantity, measured in field quality-control tests, that varies from specified illumination criteria by plus or minus 10 percent.
 - 1. Add or replace luminaires; change mounting height and aiming; or install louvers, shields, or baffles.
 - 2. If luminaires are added or mounting height is changed, revise aiming and recalculate and modify or replace support structures if indicated.
 - 3. Do not replace luminaires with units of higher or lower wattage without Engineer's approval.
 - 4. Retest as specified above after repairs, adjustments, or replacements are made.
 - 5. Report results in writing.
- D. Sports lighting will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

3.5 ADJUSTING

- A. Adjust luminaires and supports to maintain orientation and aiming as recommended by manufacturer.

END OF SECTION 265668

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Supplemental General Conditions, and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Prior to beginning construction, the Geotechnical Designer of Record should evaluate the subgrade soils for suitability based on observations of proofrolling with a loaded dump truck or other method considered acceptable to the Geotechnical Designer of Record. Fill meeting the requirements herein shall then be placed to the grade shown.

1.3 REFERENCE SECTIONS

- A. Section 012200 – Unit Prices

1.4 DEFINITIONS

- A. Excavation consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.
- B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- C. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations.
- D. Subbase Course: The layer placed between the subgrade and surface of a pavement or walk.
- E. Design Subgrade: Elevation of bearing for foundations, bottom of porous fill beneath slabs on grade (4" below bottom of slab), bottom of turn down slabs, and bottom most portion of stairs and ramps.
- F. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of pore water.
- G. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the Designer of Record. Unauthorized excavation, as well as remedial work directed by the Designer of Record, shall be at the Contractor's expense.
- H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.
- I. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

1.5 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Test Reports: In addition to test reports required under field quality control, submit the following:

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1. Laboratory analysis (including grain size and plasticity analyses) of each soil material proposed for fill and backfill from on-site and borrow sources.
2. One Standard Proctor compaction test (moisture density relationship) in accordance with ASTM D698 for each soil material.

1.6 QUALITY ASSURANCE

- A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction. These include, but are not limited to, Town of Huntersville, Mecklenburg County, North Carolina Department of Environment and Natural Resources, and the State of North Carolina.
- B. Testing and Inspection Service: Owner shall employ a qualified independent geotechnical Designer of Recording testing agency to classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing.

1.7 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Designer of Record and then only after acceptable temporary utility services have been provided.
 1. Provide a minimum 10 day notice to the Town and receive written notice to proceed before interrupting any utility.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. If utilities cannot be removed due to existing field conditions they shall be filled with flowable fill (minimum 200psi) and noted as "Abandoned" on as-built drawings. However, in all cases the contractor shall demolish all utilities within the footprint of any proposed structure and within the area extending 5' from the proposed footprint. Coordinate with utility companies to shutoff services if lines are active.
- C. Excavation support system design and details for trench excavation, shall be sealed and signed by a professional Engineer licensed in the State of North Carolina, copy of design shall be filed with DESIGNER OF RECORD.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations. Contractor is responsible for locating appropriate off-site borrow areas.
- B. Satisfactory Soil Materials:
 1. Structural Fill: Select material classifying ML, CL, SM, SP, SW, GM, GP, or GW in accordance with ASTM D 2487 with a sand content of at least 30 percent and a maximum plasticity index of 15. The maximum particle size should not exceed 3 inches. Fill should be free of debris, waste, frozen materials, vegetation, and any other deleterious matter. Off-site borrow materials should have a CBR value no less than 6 percent.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, OL, CH, MH, OH, and PT according to ASTM D 2487 or a combination of these groups.

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1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.
- F. Structural Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- H. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.
- I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and 0 to 5 percent passing a No. 4 sieve.
- J. Sand: ASTM C 33; fine aggregate, natural, or manufactured sand.
- K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 GEOTEXTILE FABRIC

- A. Medium Duty Geotextile Fabric as follows:
 1. Weight: 6.0 oz/sy as per ASTM D-3776-79.
 2. Grab Strength: 300 lbs as per ASTM D-4632-86.
 3. Grab Elongation: 15% as per ASTM D-4632-86.
 4. Trapezoid Tear Strength: 115 lbs as per ASTM D-4533-85.
 5. Mullen Burst Strength: 600 psi as per ASTM D-3786-87.
 6. Puncture Strength: 145 lbs as per ASTM D-4833-88.
 7. Wide Width Strip Tensile: 200x230 lbs/in as per ASTM D-4595-86.
 8. Wide Width Strip Elongation: 15x15 % as per ASTM D-4595-86.
 9. Thickness: 25 mils as per ASTM D-1777-64.
 10. Permittivity: .1 sec(-1) as per ASTM D-4491-85.
 11. Water Flow Rate: 9.2 gal/min/sf as per ASTM D-4491-85.
 12. Apparent Opening Size: 30-70 U.S. Std Sieve as per ASTM D-4751-87.
 13. Ultraviolet Stability: 90% as per ASTM D-4355-84.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- D. Prior to proceeding with construction, all topsoil and other deleterious, non-soil materials shall be stripped from proposed construction area. Stripping shall be limited to the maximum extent practicable, and stripping of unsatisfactory soils shall be as identified by the Geotechnical Engineer.
- E. Subgrades which are to support slabs, pavements, or compacted fill shall be proofrolled using a Scraper (i.e., Pan) or a loaded dump truck having an axle weight of at least 10 tons to identify areas of localized soft soil or unsuitable soil. Any soft or unsuitable material encountered during proofrolling shall be removed and replaced with structural fill. The Geotechnical Engineer shall observe all proofrolling operations.

3.2 DEWATERING

- A. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
- C. Dewatering disposal shall be in accordance with Erosion and Sediment Control permit.

3.3 EXCAVATION

- A. Explosives: Do not use explosives.

3.4 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 0.10 foot. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections.
 - 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
 - 2. Excavation for Mechanical or Electrical Appurtenances: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 0.10 foot. Do not disturb bottom of excavations intended for bearing surface.

3.5 APPROVAL OF SUBGRADE

- A. Notify Geotechnical Engineer when excavations have reached required subgrade.

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- B. When Geotechnical Engineer determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Designer of Record.

3.6 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill or flowable fill may be used to bring elevations to proper position.

3.7 STORAGE OF SOIL MATERIALS

- A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust. Stockpiles may be placed next to proposed utility trenches.

3.8 BACKFILL

- A. Backfill excavations promptly, but not before completing the following:
 - 1. Acceptance of construction below finish grade including, where applicable, damp-proofing, waterproofing, and perimeter insulation.
 - 2. Surveying locations of underground utilities for record documents.
 - 3. Testing, inspecting, and approval of underground utilities.
 - 4. Concrete form-work removal.
 - 5. Removal of trash and debris from excavation.
 - 6. Removal of temporary shoring and bracing, and sheeting.
 - 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

3.9 FILL

- A. Preparation: Remove vegetation, topsoil, debris, wet, and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
 - 1. Plow strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface.
- B. When subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to 8 inches, pulverize, moisture-condition, or aerate soil and recompact to required density.
- C. Place fill material in layers to required elevations for each location listed below.
 - 1. Under grass, use General Site Fill.
 - 2. Under walks and pavements, use aggregate base to the required depth and, General Site Fill.
 - 8. Under steps and ramps, aggregate base.
 - 9. Under building slabs, use porous fill to the required depth, and General Site Fill.
 - 10. Under footings and foundations, use Structural Fill, aggregate base, or flowable fill.
 - 11. Behind below-grade walls, use Structural Fill or porous fill.

3.10 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air-dry satisfactory soil material that is too wet to compact to specified density.
 - a. Stockpile or spread and dry removed wet satisfactory soil material.
 - b. If excavation must remain open overnight or rainfall becomes imminent while the bearing soils are exposed, place a 1 to 3 inch thick “mud mat” of lean concrete be placed on the bearing soils before the placement of reinforcing steel.
 - c. Costs associated with removing and replacing previously approved backfill due to being too wet shall be borne by the CONTRACTOR.

3.11 COMPACTION

- A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698.
 - 1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 98 percent.
 - 2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 98 percent.
 - 3. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 90 percent.
 - 4. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent.

3.12 GRADING

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between existing adjacent grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Lawn or Unpaved Areas: Plus or minus 0.10 foot.
 - 2. Walks: Plus or minus 0.10 foot.

3.13 POROUS FILL

- A. Under slabs-on-grade, place porous fill course on prepared subgrade.
 - 1. Compact porous fill to required cross sections and thickness.

3.14 FIELD QUALITY CONTROL

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- A. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.
 - 1. Perform field in-place density tests according to ASTM D 6938, (nuclear method) provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 6938.
 - a. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the Designer of Record.
 - 2. Footing Subgrade: The Geotechnical Engineer shall observe all subgrades and determine suitability to support design loads.
 - 3. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, perform at least one field in-place density test for every 2,500 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
 - 4. Foundation Wall Backfill: In each compacted backfill layer, perform at least one field in-place density test for each 100 feet or less of wall length, but no fewer than two tests along a wall face.
- B. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required density is obtained.

3.15 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace material to depth directed by the Geotechnical Engineer; reshape and recompact at optimum moisture content to the required density.
- C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.
- D. Costs associated with restoration or replacement of backfill which has not been protected shall be borne by the CONTRACTOR.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waster material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property. Contractor is responsible for all costs associated with disposal and for all erosion and sediment control measures at off-site disposal areas.

END OF SECTION 312000

SECTION 312216- FINE GRADING

PART 1 - GENERAL

1.1 Related Documents:

- A. Drawings and general provisions of the Bidding and Contract Requirements, and Division I - General Requirements shall govern the work under this section.

1.2 Work Included:

- A. Provide all labor, materials, necessary equipment and services to complete the Fine Grading work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

1.3 Related Work:

Earthwork - Section 31 00 00

Turf and Grasses - Section 32 92 00

1.4 Site Inspection:

- A. The contractor shall visit the site and acquaint himself with all existing conditions. The contractor shall be responsible for his own subsurface investigations, as necessary, to satisfy requirements of this Section. All subsurface investigations shall be performed only under time schedules and arrangements approved in advance by the Town's Representative.

1.5 Topography:

- A. Obtain drawings showing proposed final grading from Town's Representative.
- B. Verify that contours and grades established during rough grading and earthwork are within two tenths (.2) of a foot of proposed grades shown on grading plans. Make whatever corrections and/or repairs necessary to make finish grades consistent with the requirements of the grading drawings and specifications.

1.6 Utilities:

- A. Before starting site operations verify that the earlier contractors have disconnected all temporary utilities which might interfere with the fine grading work.
- B. Locate all existing, active utility lines traversing the site and determine the requirements for their protection. Observe in operating condition all active utilities adjacent to or transversing the site that are designated to remain.
- C. Observe rules and regulations governing respective utilities in working under requirements of this section. Adequately protect utilities from damage, remove or relocate as indicated, specified or required. Remove, plug or cap inactive or abandoned utilities encountered in excavation. Record location of active utilities.

1.7 Quality Assurance:

- A. Requirements of all applicable building codes and other public agencies shall have jurisdiction upon the work.
- B. Primary emphasis should be given to the aesthetic appearance and functioning of athletic field grades and paved trails/walkways, as directed by the Town's Representative. The contractor shall employ skilled personnel and any necessary equipment to insure that finish grading is smooth, aesthetically pleasing, drains well and is ideal for receiving grass and plant materials.

PART 2 - MATERIALS

2.1 Existing Soil:

- A. Use on-site material, unless otherwise directed by Town's Representative, free from debris, sod, biodegradable materials, and other deleterious materials. The Contractor shall insure that all existing soil has sufficient percolation and surface drainage to support grasses and plant material and that compaction occurs only in areas to insure stabilization for pavements and structures.

PART 03 - EXECUTION

3.1 Job Conditions:

- A. Dust control: Use all means necessary to prevent dust from construction operations from being a nuisance to adjacent property owners. Methods used for dust control are subject to approval by the Town's Representative.
- B. Burning: On-site burning will not be permitted.
- C. Protection: Use all means necessary to protect curbs, gutters, sprinklers, utilities and vegetation designated to remain, and, in the event of damage, immediately make all repairs, replacements and dressings to damaged plants necessary to the approval of the Town's Representative. Contractor shall incur all cost for the replacement of damaged objects and vegetation.

3.2 Scheduling:

- A. Schedule all work in a careful manner with all necessary consideration for adjoining property owners and the public.
- B. Coordinate schedule with other contractors to avoid conflicts with their work.

3.2 Excavation:

- A. Excavate where necessary to obtain subgrades, percolation and surface drainage as required.

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- B. Materials to be excavated are unclassified.
- C. Remove entirely any existing obstructions after approval by the Town's Representative.
- D. Remove from site and dispose of debris and excavated material not required.

3.4 Grading:

- A. The contractor shall establish finished grades as shown on the grading plans and as directed by the Town's Representative, including areas where the existing grade has been disturbed by other work.
- B. Grades of proposed pavement shall conform to the lines and grades shown on the plans and contractor shall take care to ensure paved trails and sidewalks meet the requirements of the 2010 ADA Guidelines, and ANSI A117.1 (2017) for cross slope, and that any walks over 5% but not to exceed 8.3% shall have handrails along their entire length, and landings every 2.5-vertical feet with a minimum depth of 5' and a slope not greater than 2% in any direction. Contractor shall notify Designer of Record immediately in the event existing grades or grades shown on proposed plans may make conformance with the 2010 ADA Guidelines or ANSI A117.1 impracticable. Note, no walkway shall be allowed to be constructed with a running slope greater than 8.3%.
- C. Finished grading shall be smooth, aesthetically pleasing, drain well and ready to receive seed and other plant material to full satisfaction of Town's Representative.

3.5 Compaction:

- A. Compact each layer of fill in designated areas with approved equipment to achieve a maximum density at optimum moisture, as defined by ASTM D-698.
 - 1. Under paved trails and walkways, compaction shall be to 95% of maximum dry density.
 - 2. Under seeded area, compaction shall not exceed 90% of maximum dry density.
- B. Compaction in limited areas shall be obtained by the use of mechanical tampers or approved hand tampers. When hand tampers are used, the materials shall be deposited in layers not more than four inches thick. The hand tampers used shall be suitable for this purpose and shall have a face area of not more than 100 square inches.

3.6 Correction of Grade:

- A. Bring to required grade levels areas where settlement, erosion or other grade changes occur. Adjust grades as required to carry drainage to prevent ponding.
- B. Remove all rock or objectionable material larger than ¾" any direction prior to commencing landscaping.
- C. Contractor shall be responsible for stabilizing grades by approved methods prior to landscaping, and shall be responsible for correction of grades as mentioned above, and cleanup of any wash outs or erosion.

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END OF SECTION 312216

SECTION 312500 - EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 Related Documents:

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.

1.2 Description of Work:

- A. Work Included in This Section:
Temporary Sedimentation and Erosion Control Devices
- B. Related Work Specified Elsewhere:
Fine Grading (31 22 16)
Turf and Grasses (32 92 00)

1.3 Existing Conditions:

- A. Site Conditions:
Contractor shall visit the site, familiarize himself with actual conditions and verify existing conditions in the field.

1.4 Protection:

- A. Benchmarks, existing utilities and existing vegetation shall be identified prior to mobilization and shall be protected by this Contractor.

1.5 Quality Assurance:

- A. The Sedimentation Pollution Control Act of 1973 governs the activities herein specified. As this is a performance oriented law, it is the Contractor's responsibility to execute and to maintain erosion control measures to prevent visible off-site sedimentation.

PART 2 - PRODUCTS

2.1 Rip Rap Stone:

- A. Rip Rap Stone for erosion control shall be Class A or Class I as defined by NCDOT Standard Specifications for Roads and Structures, latest edition, Section 1042, as indicated on the plans.

2.2 Filter Stone:

- A. Filter stone for silt basins, check dams, etc., shall be NCDOT No. 57 stone.

2.3 Silt Fencing:

- A. Silt Fence shall conform to NCDEQ Erosion and Sediment Control Planning and Design Manual. See Detail on drawings.

2.4 Grassing:

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- A. Permanent grassing shall be as shown on plans and as specified in Section 32 92 00 of these specifications. Temporary grassing shall be as specified in Table 8.02 of the Erosion and Sediment Control Planning and Design Manual, latest edition.

PART 3 - EXECUTION

3.1 Silt Fencing:

- A. Silt fence shall be installed per NCDEQ Erosion and Sediment Control Planning and Design Manual. See Detail on drawings.

3.2 Temporary Gravel Construction Entrance:

- A. Construction entrances, where shown on plan shall be constructed per details and specifications on plans and in Section 6.60, NCDEQ Erosion and Sediment Control Planning and Design Manual, latest edition.

3.3 Temporary Rock Check Dam:

- A. Check dams in temporary or permanent ditches, shall be constructed per Section 6.83 of the NCDEQ Erosion and Sediment Control Planning and Design Manual, latest edition, as shown on plans and details.

3.4 Temporary Dewatering:

- A. Temporary dewatering if necessary shall be provided using the details shown on the plans. All dewatering shall discharge to an approved BMP per the NCDEQ.

3.5 Temporary Diversion Swales:

- A. Temporary diversion swales shall be constructed to convey runoff into silt basins and to prevent offsite sedimentation.

3.6 Inlet Protection for Storm Drainage:

- A. Storm drain inlets shall be protected from siltation by one or more measures as described in Sections 6.50 - 6.53 of the NCDEQ Erosion and Sediment Control Planning and Design Manual, latest edition, as shown on plans and details.

3.7 Outlet Protection:

- A. Storm drainage outlets shall be permanently protected as shown on plans and details and as specified in Section 6.40 - 6.41 of the NCDEQ Erosion and Sediment Control Planning and Design Manual, latest edition.

3.8 Maintenance:

- A. All temporary sedimentation and erosion control measures shall be maintained at 50% minimum capacity. Once basins, swales, silt fences, check dams, etc., have reached 50% capacity, Contractor shall clean silt out of devices, distribute silt on site in an approved manner or dispose of in a legal manner off site as determined by the Consultant.

3.9 Clean-Up:

- A. Once site is fine graded, stabilized, and has been approved by the Consultant and the Environment Inspector, all temporary erosion control measures shall be removed and disposed of off-site in a legal manner. All areas disturbed in clean-up shall be fine graded and stabilized by grassing, planting, etc., as shown on plan. All permanent erosion control measures shall be completed at this time. Prior to final acceptance, site shall be clean, stabilized and all drainage facilities clean and functioning at 100%.

END OF SECTION 312500

SECTION 329200 – TURF AND GRASSES

PART 1 - GENERAL

1.1 Related Documents

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.

1.2 Description of Work:

- A. The work in this section is the furnishing and installation of turf.

1.3 Work Included in This Section:

- A. Sodding to repair athletic fields, and seeding of areas outside lawn areas.

1.4 Related Work Specified Elsewhere:
Earthwork and Site Grading (31 00 00)
Fine Grading (31 22 16)

1.5 Substitutions:

- A. The species or varieties, materials, or products specified herein by botanical and common name, shall be provided as specified. Substitutions will be permitted only upon written application by the Contractor to the Designer of Record, and when approved by said Designer of Record in writing. Request for permission to substitute will not be entertained unless adequate evidence substantiating the unavailability of the specified item accompanies the request for substitution.

PART 2 - PRODUCTS

2.1 Shipment and Delivery:

- A. Promptly notify the Designer of Record in advance, when the seed, fertilizer, and soil amendments are to be delivered and the manner of shipment.
- B. Furnish therewith an itemized list of the actual quantities. Materials shall be delivered to the site in sealed standard size containers, showing weight, analysis, name of vendor, and germination test. Materials which have become wet, moldy, or otherwise damaged will not be acceptable. Deliver the necessary inspection certificates to accompany each seed, fertilizer, and soil amendment bag.
- C. When shipment is made by truck, pack all materials to provide adequate protection against climate and breakage during transit.
- D. When shipment is made by rail, pack boxcars carefully and adequately ventilate materials to prevent “sweating” of materials during transit.

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- E. Use a suitable method to handle to insure careful, workmanlike delivery of materials.

2.2 Soil Materials

- A. Planting Mix: Planting mix shall be made up of three (3) parts topsoil and one (1) part peat, thoroughly mixed by mechanical means. Peat shall be decomposed Canadian peat, with a water absorption capacity of not less than 30% of its weight when oven dried at 110 degrees centigrade. Fertilizer shall be thoroughly incorporated in the mix at a rate specified herein.
- B. Topsoil: Shall be natural, fertile, agricultural soil, capable of sustaining vigorous turf growth. It shall be of uniform composition throughout, with admixture of subsoil. It shall be free of stones, lumps, live plants, roots, sticks, and any other material toxic to plant growth. Topsoil shall not be installed while in a frozen or muddy condition.
- C. Topsoil shall contain the following specified percentages of constituents:
Maximum 30% clay (red clay, well pulverized); clay shall be sterile
Minimum 5% well-rotted sawdust, leaf mold or other approved partially decomposed organic matter.
Maximum 50% silt.
Maximum 45% coarse sand free of rock
- D. Topsoil shall have an acidity range of pH 6.5 to 7.0 and shall contain not less than six percent (6%) organic matter, as determined by loss on ignition of moisture free samples dried at 65 degrees centigrade.
- E. A sample of the proposed topsoil and planting mix shall be submitted to the Designer of Record three working days prior to installation and be approved prior to installation.

2.3 Fertilizer:

- A. Lime shall be ground limestone (Dolomite) containing not less than 85% total carbonates and shall be ground to such fineness that 50% will pass through a 100-mesh sieve and 90% will pass through a 20 mesh sieve.

- B. The following is a list of acceptable starter fertilizer for new lawn:

FERTILIZER PRODUCT	ANALYSIS	APPL.RATE	VENDOR
Lesco Starter	18-24-12	200 lbs./acre or 4.2 lbs/1000 sq. ft.	Local Garden Center
Eastern Plant Food Co.	18-24-10	250 lbs./acre or 6 lbs./1000 sq. ft.	Local Garden Center
Sta-Green	18-24-10	250 lbs./acre or 6 lbs./1000 sq. ft.	Local Garden Center

- C. Or equal fertilizer approved by the Designer of Record.

- D. Commercial fertilizer applied at seeding time shall be per analysis listed above in which $\frac{1}{2}$ of the nitrogen is slowly available. All fertilizer shall be uniform in composition, dry, free flowing and shall be delivered to the site in the original unopened container, each bearing the manufacturer's guaranteed analysis. Any fertilizer becoming caked or damaged will not be accepted.
- 2.4 Sod: Sod shall be used for repair of trenching and disturbance within athletic fields. Sod shall be Tifway 419 or Tiftuf Bermuda Sod. Sod shall be provided in rolls, have uniform coverage, and have been mown to $\frac{3}{4}$ " ht prior to delivery. Delivery of sod shall be coordinated with installation so that sod does not remain stored on-site for a period of more than 4 hours prior to installation. Note, if approved by the Town's representative, existing sod over proposed trench areas may be cleanly cut, pulled to the side, then reinstalled as work progresses. However, this work may be performed only instances where the cut sod will be installed within 4 hours from the time of cutting.
- 2.5 Seed: Seed shall only be used outside of athletic fields. Grass seed shall be a drought resistant tall fescue, unless specified otherwise on the plant list. New varieties will be considered for review. Seed shall have a 97% minimum purity and 85% minimum germination, and be free of noxious weed seeds, as certified by the North Carolina Co-op Improvement Association or its approved equivalent by the Designer of Record.

This mix shall be used in all disturbed areas not designated for Sod (see below).

- 2.6 Water: Clean, fresh, and free from harmful substances shall be provided by contractor. Water turf thoroughly until final acceptance of project. Contractor shall verify with owner if an existing irrigation system is available to meet watering requirements listed below. Contractor shall utilize existing irrigation system if available. In the event an on-site water source is not available the contractor shall provide water until final acceptance of project at the rate specified below.

Provide water to new turf areas as follows:

0-14 days	170 gallons/1,000 s.f. every day
15-28 days	225 gallons/1,000 s.f. every other day
29-42 days	340 gallons/1,000 s.f. every three days
43-84 days	680 gallons/1,000 s.f. once per week
After 84 days	As needed to maintain acceptable turf

In the event the project is accepted prior to the watering requirements being fulfilled, the contractor will be required to provide water until the turf is established.

- 2.7 Mulch: Lawn mulch shall be cleaned threshed wheat or oat straw from the latest available harvest crop and shall be free of noxious weed seeds and foreign materials.
- 2.8 Tack Coat: Shall be an asphaltic emulsion tack coat applied sufficiently over the mulch to prevent displacement. Provide tack coat on slopes 3:1 or greater.

PART 3 – EXECUTION

- 3.1 Turf Bed Preparation: The contractor shall take representative samples of existing soil conditions where turf is to be installed and have soil tested by a qualified soils testing lab. Test results shall be submitted to owner for review, and soil deficiencies corrected by the contractor. Any re-testing cost shall be at the contractor's expense.

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- 3.2 Fine grading of Seedbed: Unless otherwise approved by the Designer of Record, all other site work required by this contract shall be complete and in place before grassing operations are begun. Work may be completed in parts if so requested by the contractor and approved by the Designer of Record. Prior to planting operations, all proposed turf areas shall be scarified to 8" depth and pulverized until the surface is smooth, friable, and of a uniformly fine texture. Remove stones and foreign material over one inch in diameter, and grade for positive drainage as required to prevent ponding of water.

Lime shall be broadcast and worked into the soil at all areas at the rate dictated by the soil test. Provide a PH level in the range of 6.5-7.0.

- 3.3 Lawn Operations: Seed, fertilizer, and lime may be applied with a mechanical hand spreader in two (2) successive sowings with the second perpendicular to the first. The rate of each sowing shall be ½ the total seed rate specified. Immediately after seeding, all lawn areas shall be lightly rolled. If slope is too excessive then seed shall be raked into top ¼" of soil. Seed shall be installed uniformly over the entire area at the rates listed below:

<u>Season</u>	<u>Type of Seed</u>	<u>Date</u>	<u>Rate</u>
Fall	Tall Fescue	September 1 – November 15	8 lbs./1000 sf
Winter	Tall Fescue Annual	November 15 – March 1	5 lbs./1000 sf
	Rye	November 15 – March 1	3 lbs./1000 sf
Spring	Tall Fescue	March 1 – June 1	8 lbs./1000 sf

Written requests for a variance must be approved by the Designer of Record.

After seeding installation apply fertilizer, mulch, tack, and water as specified herein.

- 3.4 Hydroseeding:

- A. Hydraulic Mulching: Hydraulic mulching shall consist of the mixing of wood fiber mulch, grass seed, fertilizer, and/or other additives with water. It shall be mixed in standard hydraulic mulching equipment to form homogeneous slurry. This slurry shall be sprayed, under pressure, uniformly over the soil surface at the material application rate recommended by the manufacturer. The hydraulic mulching equipment shall contain a continuous agitation system that keeps all materials in uniform suspension throughout mixing and distribution cycle.

- B. Application: Using standard hydraulic mulching equipment, the wood fiber mulch, seed and fertilizer slurry shall be applied as listed below evenly over the soil surface in a one step operation.

Slope	Mulch Application Rate
Less than 3:1	1,500 lbs./acre (minimum rate)
3:1 – 2:1	2,000 lbs./acre
2:1 or greater	2,500 lbs./acre

- C. Any areas susceptible to erosion or drought shall receive the maximum application rate.

- D. The mulch material shall consist of virgin wood fibers manufactured expressly from whole wood

chips. The chips shall be processed in such manner as to contain no growth or germination inhibiting factors. Fibers shall not be produced from recycled material such as sawdust, paper, cardboard, or residue from pulp and paper plants.

- E. The wood cellulose fibers of the mulch must maintain uniform suspension in water under agitation. Upon application, the mulch material shall form a blotter like mat covering the ground. This mat shall have the characteristics of moisture absorption and percolation and shall cover and hold grass seed in contact with the soil.
- F. The wood fiber mulch shall conform to the following specifications:
- | | |
|-------------------------------|--|
| Moisture content: | 10.0%, +/-3.0% |
| Organic matter (wood fiber): | 99.2%, +/- 0.8% oven dried basis |
| Ash content: | 0.8%, +/-0.2% |
| PH | 4.8%, +/-0.5% |
| Water holding capacity (min.) | 1,000 grams of water/100 grams of fiber) |

After installation apply water as specified herein.

- 3.5 Maintenance: The contractor is immediately responsible for all maintenance of turf until final acceptance. This includes all necessary watering, fertilizing, mowing, trimming, pruning, leaf removal, and any necessary weed control. Also, this includes any erosion repair, reseeding, and incidental operations necessary to establish a vigorous, healthy and uniform stand of grass. All areas which fail to show a uniform stand of grass for any reason shall be treated repeatedly until a uniform stand of at least 90% coverage is attained with no bare areas greater than five square feet.

Grass mowing operations shall be done by the contractor until final acceptance of work. Mowing shall be done only when the grass is dry. Mowing of fescue shall take place whenever grass height is 6", and shall be cut to a height of 3 1/2". Mowing of Bermuda grass shall take place whenever grass height is 4", and shall be cut to a height of 2".

When directed by the Designer of Record, contractor shall top-dress turf areas as described in Section 886 of NCDOT Standard Specifications for Roads and Structures.

- 3.6 Guarantee: The contractor shall guarantee all new turf area materials and workmanship for a period of twelve(12) months from the date of final acceptance by the owner. Damage prior to final acceptance is the contractor's responsibility. Turf replacements shall be as specified here in.
- 3.7 Clean-Up: During installation, the contractor shall be required to keep all areas cleaned. Any defacements, stains, dirt, debris, or other trash caused by landscape operations shall be disposed by contractor. The contractor shall remove construction equipment, excess materials, tools, and all other debris and rubbish from the site.
- 3.8 Final Acceptance: Upon completion of planting operations, including clean-up, the contractor shall notify the Designer of Record for inspection of work. Any items found to be unsatisfactory shall be corrected. The one year guarantee period begins at the date of final acceptance.

END OF SECTION 329200

PROJECT TECHNICAL MANUAL

WAYMER PARK ATHLETIC FIELD LIGHTING



SITE ADDRESS: 14200 HOLBROOKS ROAD
HUNTERSVILLE, NC 28078

PROJECT MANAGER:
Town of Huntersville
Michael Jaycocks
704-766-2228
mjaycocks@huntersville.org

DEWBERRY PROJECT MANAGER:
Tony Miller, PE, LEED AP
Dewberry Engineers Inc
9300 Harris Corners Pkwy., Suite 220
Charlotte, NC 28269
NCBELS #F-0929
NCBOLA #C-478

OWNER:
Town of Huntersville
ATTN: Parks and Recreation Department
105 Gilead Road, Third Floor
Huntersville, NC 28078
September 17, 2020

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100% CONSTRUCTION DOCUMENTS
September 17, 2020

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None

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SECTION 00 01 07 – SEALS PAGE

1.1 DESIGN PROFESSIONALS OF RECORD

ELECTRICAL
ENGINEER

Kyle L. Pittman
North Carolina Professional Engineer License # 049995



LANDSCAPE
ARCHITECT

Tristan M. McMannis
North Carolina Registered Landscape Architect License # 1622



END OF SECTION 00 01 07

SECTION 260100 - BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this and the other sections of Division 26.
- B. All sections of Division 26 are interrelated. Where materials are required to complete work associated with equipment in a specific section, but the materials are not specified within that specific section, the requirements for those materials shall be as specified elsewhere in Division 26.

1.2 SUMMARY

- A. This Section includes general administrative and procedural requirements for electrical installations. The following administrative and procedural requirements are included in this Section to expand the requirements specified in Division 01:
 - 1. Submittals.
 - 2. Coordination drawings.
 - 3. Record documents.
 - 4. Maintenance manuals.
 - 5. Rough-ins.
 - 6. Electrical installations.
 - 7. Cutting and patching.
 - 8. Inspections
- B. Related Sections: The following sections contain requirements that relate to this section:
 - 1. Division 26 Section "Basic Electrical Materials and Methods," for materials and methods common to the remainder of Division 26.

1.3 SUBMITTALS

- A. General: Follow the procedures specified in Division 01 Section "Submittal Procedures".
- B. Specific Requirements to Electrical Product Data and Shop Drawing Submittals:
 - 1. Submit newly prepared information, drawn to scale where applicable. Do not reproduce Contract Documents or use Contract Document images in the preparation of submittals.
 - 2. Any deviations from Contract Documents shall be clearly noted and highlighted, encircled, or otherwise visually identified.
 - 3. Product Data and Shop Drawings are separate items and shall be submitted with separate submittal numbers. Where both Product Data and Shop Drawings are required by the same specification section (i.e. Fire alarm) both items shall be submitted for review at the same

time. Product Data and Shop Drawings will be reviewed separately by Engineer, but Engineer reserves the right to withhold review until both items have been received.

4. Submittal Document Binding: Submittals shall be submitted in 'PDF' format, per specification section.

C. Substitution of Equivalent Products: Where individual sections require submittal for substitution of manufacturers and products equivalent to those listed under Manufacturers paragraph, submittals shall be in accordance with that section. Engineer has final authority on equivalence and acceptance.

1. Submittal of Substitution Request Forms are permitted by Prime Bidders only. Substitution Request Forms submitted by a vendor, distributor, or sub-contractor will not be accepted or reviewed.

1.4 RECORD DOCUMENTS

A. Prepare record documents in accordance with the requirements in Division 01 Section "Closeout Procedures." In addition to the requirements specified in Division 01, indicate installed conditions for:

1. Major raceway systems, size and location, for both exterior and interior; locations of control devices; distribution and branch electrical circuitry; and fuse and circuit breaker size and arrangements.
2. Equipment locations (exposed and concealed), dimensioned from prominent building lines.
3. Approved substitutions, Contract Modifications, and actual equipment and materials installed.

1.5 OPERATION & MAINTENANCE MANUALS

A. Prepare maintenance manuals in accordance with Division 01 Section "Closeout Procedures" In addition to the requirements specified in Division 01, include the following information for equipment items:

1. Product data for all equipment installed during construction. Product data shall be manufacturer literature, cut-sheets, and/or catalogs and shall clearly depict manufacturer and model number along with standard features and optional features where applicable.
2. Where available for installed equipment, Contractor shall include manufacturer's published Installation and/or Owner's manuals.
3. Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of replacement parts.
4. Programming report/summary for all systems with conditional logic programming (i.e. fire alarm, lighting control system, and PLCs)
5. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.
6. Warranty Information: Copies of documentation for all additional and secondary warranties shall be included.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels, and other information needed for identification.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 ROUGH-IN

- A. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected.
- B. Refer to equipment specifications in Divisions 26 for rough-in requirements.

3.2 ELECTRICAL INSTALLATIONS

- A. General: Sequence, coordinate, and integrate the various elements of electrical systems, materials, and equipment. Comply with the following requirements:
 - 1. Coordinate electrical systems, equipment, and materials installation with other building components.
 - 2. Verify all dimensions by field measurements.
 - 3. Arrange for chases, slots, and openings in other building components during progress of construction, to allow for electrical installations.
 - 4. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed.
 - 5. Sequence, coordinate, and integrate installations of electrical materials and equipment for efficient flow of the Work.
 - 6. Where mounting heights are not detailed or dimensioned, install systems, materials, and equipment to provide the maximum headroom possible.
 - 7. Coordinate connection of electrical systems with exterior underground utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.
 - 8. Install systems, materials, and equipment to conform with approved submittal data, including coordination drawings, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect.
 - 9. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other building systems and components, where installed exposed in finished spaces.
 - 10. Install electrical equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
 - 11. Install systems, materials, and equipment giving right-of-way priority to systems required to be installed at a specified slope.

12. Contract documents were prepared based on all work being performed de-energized; unless otherwise noted. Contractor shall be responsible for coordinating with the Owner and Utilities to ensure that existing equipment is de-energized prior to work.

- B. Basis of Design: Where specific systems and products are shown or specified with a Basis of Design, the supporting work and appurtenances are shown and specified uniquely for the Basis of Design. Where systems and products other than the Basis of Design are installed, Contractor shall adjust circuiting, raceway infrastructure, cable type, wire size, supporting means, backbox type, and any other appurtenance as required for a complete, fully functional and operational system or product.

3.3 CUTTING AND PATCHING

- A. General: Perform cutting and patching in accordance with the following requirements:
 1. Perform cutting, fitting, and patching of electrical equipment and materials required to:
 - a. Remove and replace defective Work.
 - b. Remove and replace Work not conforming to requirements of the Contract Documents.
 - c. Upon written instructions from the Engineer, uncover and restore Work to provide for Engineer observation of concealed Work.
 2. Cut, remove, and legally dispose of selected electrical equipment, components, and materials as indicated, including but not limited to removal of electrical items indicated to be removed and items made obsolete by the new Work.
 3. Protect the structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.
 4. Protection of Installed Work: During cutting and patching operations, protect adjacent installations. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
 5. Patch existing finished surfaces and building components using new materials matching existing materials and experienced Installers. Installers' qualifications refer to the materials and methods required for the surface and building components being patched.

3.4 TESTING

- A. Coordinate with the Owner any testing specified to be conducted after final acceptance.

3.5 INSPECTIONS

- A. Authority Having Jurisdiction: Notify and schedule all inspections, with a minimum of 10 days notice in writing prior, to the Authority Having Jurisdiction.

END OF SECTION 260100

SECTION 260500 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Electrical Equipment Installation.
 - 2. Concrete equipment bases.
 - 3. Cutting and patching for electrical construction.
 - 4. Touchup painting.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.
- C. Electrical equipment shall be new and manufactured within the last 12 months unless otherwise noted and approved by the engineer.

1.4 COORDINATION

- A. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work.
- B. Coordinate electrical service connections to components furnished by utility companies.
 - 1. Coordinate installation and connection of exterior underground and overhead including provision for electricity-metering components.
 - 2. Comply with requirements of authorities having jurisdiction and of utility company providing electrical power and other services.

PART 2 - PRODUCTS

2.1 CONCRETE BASES

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- A. Concrete: 3000-psi (20.7-MPa), 28-day compressive strength.

2.2 TOUCHUP PAINT

- A. For Equipment: Equipment manufacturer's paint selected to match installed equipment finish.
- B. Galvanized Surfaces: Zinc-rich paint recommended by item manufacturer.

PART 3 - EXECUTION

3.1 ELECTRICAL EQUIPMENT INSTALLATION

- A. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide the maximum possible headroom.
- B. Materials and Components: Install level, plumb, and parallel and perpendicular to other systems and components, unless otherwise indicated.
- C. Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations. Provide any additional supporting means not provided by manufacturer to install equipment.

3.2 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated, but not less than 4 inches (100 mm) larger, in both directions, than supported unit. Follow supported equipment manufacturer's anchorage recommendations and setting templates for anchor-bolt and tie locations, unless otherwise indicated. Use 3000-psi (20.7-MPa), 28-day compressive-strength concrete.

3.3 CUTTING AND PATCHING

- A. Cut, channel, chase, and drill surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.
- B. Repair and refinish disturbed finish materials and other surfaces to match adjacent undisturbed surfaces.

3.4 REFINISHING AND TOUCHUP PAINTING

- A. Refinish and touch up paint.
 - 1. Clean damaged and disturbed areas and apply primer, intermediate, and finish coats to suit the degree of damage at each location.
 - 2. Follow paint manufacturer's written instructions for surface preparation and for timing and application of successive coats.

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3. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
4. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

3.5 CLEANING AND PROTECTION

- A. On completion of installation, including outlets, fittings, and devices, inspect exposed finish. Remove burrs, dirt, paint spots, and construction debris.
- B. Protect equipment and installations and maintain conditions to ensure that coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.

END OF SECTION 260510

SECTION 260519 - CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Building wires and cables rated 600 V and less.
 - 2. Connectors, splices, and terminations rated 600 V and less.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports: Submit all cable tests reports to Engineer ten days prior to Final Inspection.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. American Insulated Wire Corp.; a Leviton Company.
 - 2. General Cable Corporation.
 - 3. Southwire Company.
- B. Conductors: Comply with NEMA WC 70.

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- C. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN and XHHW.

2.2 CONNECTORS AND SPLICES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Thomas & Betts Corporation.
 - 2. Ideal Industries, Inc.
 - 3. 3M; Electrical Products Division.
 - 4. Tyco Electronics Corp.
- B. Description: UL listed, factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated. Splices in solid conductors shall be made using Ideal Wirenuts, 3M Scotchlocks, or T&B Marrette pressure type wire connectors. Permanent crimp connectors are not acceptable.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- C. Minimum Size: No. 12 AWG for power and lighting circuits.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Service Entrance: Type THHN-THWN or XHHW, single conductors in raceway.
- B. Exposed Feeders: Type THHN-THWN or XHHW, single conductors in raceway.
- C. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN or XHHW, single conductors in raceway.
- D. Exposed Branch Circuits: Type THHN-THWN or XHHW, single conductors in raceway.
- E. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN or XHHW, single conductors in raceway.
- F. Class 1 Control Circuits: Type THHN-THWN or XHHW, in raceway.
- G. Class 2 Control Circuits: Type THHN-THWN or XHHW, single conductors in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- B. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- C. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- D. Voltage Drop: Conductor size shall be increased to account for voltage drop as follows:
 - 1. Where the conductor length from the panel to the first outlet on a 277V circuit exceeds 125 feet, the branch circuit conductors from the panel to the first outlet shall not be smaller than #10 AWG.
 - 2. Where the conductor length from the panel to the first outlet on a 120V circuit exceeds 50 feet, the branch circuit conductors from the panel to the first outlet shall not be smaller than #10 AWG. Increase an additional wire size for every additional 50' to first outlet.
 - 3. Proportionally increase size of equipment ground conductors wherever ungrounded conductor sizes are increased for voltage drop.
- E. Dedicated Neutrals: Provide dedicated neutral for all single-pole branch circuits, unless otherwise noted on plans. All neutrals shall be uniquely identified at splices or taps to correspond with their ungrounded circuit conductors.
- F. Identify and color-code conductors and cables according to Division 26 Section "Identification for Electrical Systems."

3.4 CONNECTIONS

- A. Keep conductor splices to a minimum. No feeders shall be spliced. No splicing shall be made except within outlet or junction boxes, troughs, or gutters.
- B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
 - 1. Splices shall be made using with pre-insulated spring/coil connectors (wire nuts), insulated barrel mechanical lugs, or box mounted insulated terminal strips.
 - 2. Push-in type, permanent crimp-on type, and split-bolt type are prohibited.
 - 3. Use oxide inhibitor in each splice and tap conductor for aluminum conductors.

3.5 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.
- B. Testing Technician

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1. The testing technicians shall be trained in all the methods of correctly and safely conducting the required test. The technician shall have regular experience conducting the required tests and they must have the knowledge to determine the serviceability of a specific piece of equipment.
- C. Tests and Inspections: After installing conductors and cables and before electrical circuitry has been energized, test conductors for compliance with following requirements.
1. Physical Inspection and Testing
 - a. Verify cable ratings and data correspond to drawings and specifications.
 - b. Verify electrical connections are made to provide the electrical system described in the drawings and specifications.
 - c. Inspect cable connectors to verify they are correctly installed.
 - d. Verify all cables are identified and arranged according to the drawings and specifications.
 - e. Verify that all cable jackets and insulation are in good condition and did not sustain damage during installation.
 2. Electrical Inspection and Testing
 - a. For all existing (wiring to poles) and new feeder current-carrying phase conductors and neutrals: test the insulation resistance with respect to ground for one minute. Cables rated for 300 volts shall be tested with 500 volts DC and cables rated for 600 volts shall be tested with 1000 volts DC. All insulation resistance data gathered shall comply with manufacturer's documentation; if documentation does not exist, comply with the values found in Table 100.1 in the ANSI/NETA ATS-2009.
- D. Remove and replace malfunctioning units and retest as specified above.
- E. Test Reports: Prepare a written report to record the following:
1. Test procedures used.
 2. Test results that comply with requirements.
 3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes methods and materials for grounding systems and equipment.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
 - 1. Solid Conductors: ASTM B 3.
 - 2. Stranded Conductors: ASTM B 8.
 - 3. Bonding Cable: stranded conductor sized per NEC 250 requirements.
 - 4. Bonding Conductor: stranded conductor sized per NEC 250 requirements.
 - 5. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; sized per NEC 250 requirements.

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- C. Grounding Bus: Rectangular bars of annealed copper, 1/4 by 2 inches (6 by 50 mm) in cross section, unless otherwise indicated; with insulators and stand-off brackets.

2.2 CONNECTORS

- A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts.
 - 1. Pipe Connectors: Clamp type, sized for pipe.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.3 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet (19 mm by 3 m) in diameter.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger, unless otherwise indicated.
- B. Underground Grounding Conductors: Install bare copper conductor, No. 3/0 AWG minimum. Bury at least 24 inches (600 mm) below grade.
- C. Conductor Terminations and Connections:
 - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
 - 2. Underground Connections: Welded connectors.

3.2 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits. The raceway shall not be relied on for ground continuity.

3.3 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Rods: Drive rods until tops are 6 inches (50 mm) below finished floor or final grade, unless otherwise indicated.
 - 1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating, if any.
- C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.
 - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
 - 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.
 - 3. Provide exothermic-welded connection to building structural steel.
 - 4. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.
- D. Grounding Bushings and Jumpers: Boxes provided with concentric, eccentric or over-sized knockouts shall be provided with bonding bushings and jumpers lugged to box.

3.4 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections and prepare test reports:
 - 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
- B. Testing Technician
 - 1. The testing technicians shall be trained in all the methods of correctly and safely conducting the required test. The technician shall have regular experience conducting the required tests and they must have the knowledge to determine the serviceability of a specific piece of equipment.
- C. Physical Inspection and Testing
 - 1. Inspect grounding system to verify that it complies with the requirements in the drawings and specifications, as well as, NFPA 70 *National Electric Code Article 250*.
 - 2. Inspect the physical and mechanical condition and verify that it complies with manufacturer's standards. All portions of the grounding system shall be free of corrosion.
 - 3. Confirm bolted electrical connections are provided with low impedance using one of the following means:

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- a. Measure the resistance with a low-resistance ohmmeter. Bolted electrical connection resistances shall be compared to resistances measured on similar connections. Any similar resistance values that deviate more than 50 percent should be investigated.
 - b. Inspect the bolted connection and verify that it is at the manufacturer's rated torque using a calibrated torque wrench.
4. Verify that adequate anchorage is in place for the grounding system.
- D. Electrical Inspection and Testing
 1. Conduct tests for fall of potential as defined by ANSI/IEEE 81 on the grounding system.
 2. Determine the resistance to ground throughout grounding system including equipment frames, systems neutral, and equipment grounding bars. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance. Perform ground resistance in all of, but not limited to, the areas listed below:
 - a. Main electrical distribution ground bar: 15 ohms
 - b. Lightning protection path to ground: 5 ohms.
- E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.
 1. Retest required to show compliance with above value.
- F. Remove and replace malfunctioning units and retest as specified above.
- G. Test Reports: Prepare a written report to record the following:
 1. Test procedures used.
 2. Test results that comply with requirements.
 3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

END OF SECTION 260526

SECTION 260533 - RACEWAY AND BOXES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes interior and exterior raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. FMC: Flexible metal conduit.
- C. IMC: Intermediate metal conduit.
- D. LFMC: Liquidtight flexible metal conduit.
- E. RNC: Rigid nonmetallic conduit.
- F. RSC: Rigid steel conduit.

1.4 SUBMITTALS

- A. Product Data: For raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Allied Tube & Conduit; a Tyco International Ltd. Co.
 - 2. O-Z Gedney; a unit of General Signal.
 - 3. Wheatland Tube Company.
- B. Rigid Steel Conduit: ANSI C80.1.
- C. IMC: ANSI C80.6.
- D. EMT: ANSI C80.3.
- E. LFMC: Flexible steel conduit with PVC jacket.
- F. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
 - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.
 - 2. Fittings for EMT: Plated-steel hexagonal compression type. Cast, pot metal, set-screw, or crimp type fittings are not acceptable.
 - a. Couplings shall be "concrete tight" where concealed in masonry.
 - b. Box connectors shall be insulated throat type.
- G. Joint Compound for Rigid Steel Conduit or IMC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

2.2 NONMETALLIC CONDUIT AND TUBING

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. AFC Cable Systems, Inc.
 - 2. Arnco Corporation.
 - 3. Lamson & Sessions; Carlon Electrical Products.
 - 4. Thomas & Betts Corporation.
- B. RNC: NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.
- C. LFNC: UL 1660.
- D. Fittings for ENT and RNC: NEMA TC 3; match to conduit or tubing type and material.
- E. Fittings for LFNC: UL 514B.

2.3 METAL WIREWAYS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Cooper B-Line, Inc.
 - 2. Hoffman.
 - 3. Square D; Schneider Electric.
 - 4. Austin Electrical Enclosures
- B. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 1, unless otherwise indicated.
- C. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- D. Wireway Covers: Hinged type.
- E. Finish: Manufacturer's standard enamel finish.

2.4 BOXES, ENCLOSURES, AND CABINETS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
 - 2. EGS/Appleton Electric.
 - 3. Hoffman.
 - 4. RACO; a Hubbell Company.
 - 5. Thomas & Betts Corporation.
- B. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
- C. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- D. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
 - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
- E. Cabinets:
 - 1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
 - 2. Hinged door in front cover with flush latch and concealed hinge.
 - 3. Key latch to match panelboards.
 - 4. Metal barriers to separate wiring of different systems and voltage.
 - 5. Accessory feet where required for freestanding equipment.

2.5 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

- A. Fiberglass Reinforced Concrete Handholes: Constructed of polymer concrete and reinforced by heavy-weave fiberglass. Composite material shall be rated for no less than 8,000 lbs. Over a 10"x10" area and tested to temperatures of -50°F. Compressive strength should be no less than 11,000 psi. Covers shall have a minimum coefficient of friction of .5 and have a design load of minimum 15,000 lbs per 10"x10" area. Unit, when buried, shall be designed to support AASHTO H10 loading.
- B. Cover Legend: "ELECTRIC".

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
 - 1. Exposed Conduit: Rigid steel conduit.
 - 2. Concealed Conduit, Aboveground: Rigid steel conduit.
 - 3. Underground Conduit:
 - a. Service Entrance: RNC, Type EPC-40-PVC.
 - b. Feeders: RNC, Type EPC-40-PVC,
 - c. Branch Circuit: RNC, Type EPC-40-PVC, direct buried.
 - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
 - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 4.
- B. Raceway Fittings: Compatible with raceways and suitable for use and location.
 - 1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.

3.2 INSTALLATION

- A. Install raceways, boxes, enclosures, and cabinets as indicated, according to manufacturer's written instructions.
- B. Minimum Raceway Size:
 - 1. Interior: 3/4-inch trade size.
 - 2. Exterior, below grade: 1-inch trade size.
- C. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- D. Install raceways level and square and at proper elevations. Provide adequate headroom.
- E. Complete raceway installation before starting conductor installation.
- F. Support raceways as specified in Division 26 Section "Supporting Devices."

- G. Use temporary closures to prevent foreign matter from entering raceways.
- H. Make bends and offsets so ID is not reduced. Keep legs of bends in the same plane and straight legs of offsets parallel, unless otherwise indicated.
- I. Use raceway fittings compatible with raceways and suitable for use and location. For intermediate steel conduit, use threaded rigid steel conduit fittings, unless otherwise indicated.
- J. Run concealed raceways, with a minimum of bends, in the shortest practical distance considering the type of building construction and obstructions, unless otherwise indicated.
- K. Terminations: Where raceways are terminated with locknuts and bushings, align raceways to enter squarely and install locknuts with dished part against the box. Where terminations are not secure with 1 locknut, use 2 locknuts: 1 inside and 1 outside the box.
 - 1. Where concentric, eccentric, or over-sized knock outs are encountered, a grounding-type insulated bushing shall be provided.
- L. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into the hub so the end bears against the wire protection shoulder. Where chase nipples are used, align raceways so the coupling is square to the box and tighten the chase nipple so no threads are exposed.
- M. Install pull wires in empty raceways. Use No. 14 AWG zinc-coated steel or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of the pull wire.
- N. Stub-up Connections: Where underground raceways are required to turn up into equipment, cabinets, etc., the elbow and stub-up shall be rigid steel. Install with an adjustable top or coupling threaded inside for plugs set flush with the finished floor. Extend to equipment with rigid steel conduit; FMC may be used 6 inches above grade.
- O. Install hinged-cover enclosures and cabinets plumb. Support at each corner.

3.3 INSTALLATION OF UNDERGROUND CONDUIT

- A. Direct-Buried Conduit:
 - 1. Excavate trench bottom to provide firm and uniform support for conduit.
 - 2. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction.
 - 3. Install manufactured rigid steel conduit elbows for stub-ups at base of all lighting poles.
 - a. Couple steel conduits with adapters designed for this purpose.
 - 4. Warning Tape: Provide underground-line warning tape specified in Division 26 Section "Electrical Identification." Install 6 to 8" below finished grade.

3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

- A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.
- B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch (12.5-mm) sieve to No. 4 (4.75-mm) sieve and compacted to same density as adjacent undisturbed earth.
- C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch (25 mm) above finished grade.
- D. Field-cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

3.5 PROTECTION

- A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

END OF SECTION 260533

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes electrical identification materials and devices required to comply with ANSI C2, NFPA 70, OSHA standards, and authorities having jurisdiction.

1.3 SUBMITTALS

- A. Product Data: For each electrical identification product indicated.
- B. Identification Schedule: An index of nomenclature of all electrical equipment and system components used in identification signs and labels. Schedule shall depict preliminary printouts of proposed equipment labels for review prior to order.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI C2.
- B. Comply with NFPA 70.
- C. Comply with ANSI A13.1 and NFPA 70 for color-coding.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

PART 2 - PRODUCTS

2.1 RACEWAY AND CABLE LABELS

- A. Colored Adhesive Tape: Self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide (0.08 mm thick by 25 to 51 mm wide).
- B. Underground-Line Warning Tape: Permanent, bright-colored, continuous-printed, vinyl tape.

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1. Not less than 6 inches wide by 4 mils thick (152 mm wide by 0.102 mm thick).
 2. Compounded for permanent direct-burial service.
 3. Embedded continuous metallic strip or core.
 4. Printed legend indicating type of underground line.
- C. Tape Markers: Vinyl or vinyl-cloth, self-adhesive, wraparound type with preprinted numbers and letters.

2.2 NAMEPLATES AND SIGNS

- A. Engraved Plastic Nameplates and Signs: Engraving stock, melamine plastic laminate, minimum 1/16 inch (1.6 mm) thick for signs up to 20 sq. in. (129 sq. cm) and 1/8 inch (3.2 mm) thick for larger sizes.
1. Punched or drilled for mechanical fasteners.
- B. Exterior, Metal-Backed, Butyrate Signs: Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch (1-mm) galvanized-steel backing; and with colors, legend, and size required for the application. 1/4-inch (6.4-mm) grommets in corners for mounting.
- C. Fasteners for Nameplates and Signs: Self-tapping, stainless-steel screws or No. 10/32, stainless-steel machine screws with nuts and flat and lock washers.

2.3 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Cable Ties: Fungus-inert, self-extinguishing, one-piece, self-locking, Type 6/6 nylon cable ties.
1. Minimum Width: 3/16 inch (5 mm).
 2. Tensile Strength: 50 lb (22.3 kg) minimum.
 3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
 4. Color: According to color-coding.
- B. Paint: Formulated for the type of surface and intended use.
1. Primer for Galvanized Metal: Single-component acrylic vehicle formulated for galvanized surfaces.
 2. Primer for Concrete Masonry Units: Heavy-duty-resin block filler.
 3. Primer for Concrete: Clear, alkali-resistant, binder-type sealer.
 4. Enamel: Silicone-alkyd or alkyd urethane as recommended by primer manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Identification Materials and Devices: Install at locations for most convenient viewing without interference with operation and maintenance of equipment.

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- B. Lettering, Colors, and Graphics: Coordinate names, abbreviations, colors, and other designations with corresponding designations in the Contract Documents or with those required by codes and standards. Use consistent designations throughout Project.
 - 1. General 277/480V and 120/240V Equipment: Black label with white core.
- C. Sequence of Work: If identification is applied to surfaces that require finish, install identification after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before applying.
- E. Install painted identification according to manufacturer's written instructions and as follows:
 - 1. Clean surfaces of dust, loose material, and oily films before painting.
 - 2. Prime surfaces using type of primer specified for surface.
 - 3. Apply one intermediate and one finish coat of enamel.
- F. Circuit Identification Labels on Outlet Boxes, Junction Boxes and Pull Boxes: Install labels externally.
 - 1. Exposed junction boxes: Pressure-sensitive, self-adhesive plastic label on faceplate. Use clear label with black letters.
 - 2. Concealed junction and pull boxes: Neat handwritten label using permanent black marker.
 - 3. Labeling Legend: Permanent, waterproof listing of panel and circuit number or equivalent.
 - 4. Future Use Circuits: Circuits for future use shall be identified as such and list panel and circuit number of source.
- G. Secondary Service, Feeder, and Branch-Circuit Conductors: Color-code throughout the secondary electrical system.
 - 1. Color-code 240/120-V system as follows:
 - a. Phase A: Black.
 - b. Phase B: Red.
 - c. Neutral: White.
 - d. Ground: Green.
 - 2. Color-code 480/277-V system as follows:
 - a. Phase A: Brown.
 - b. Phase B: Orange.
 - c. Phase C: Yellow.
 - d. Neutral: Gray.
 - e. Ground: Green.
 - 3. Factory apply color the entire length of all conductors, except the following field-applied, color-coding methods may be used instead for service conductors:
 - a. Colored, pressure-sensitive plastic tape in half-lapped turns for a distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Use 1-inch- (25-mm-) wide tape in colors specified. Adjust tape bands to avoid obscuring cable identification markings.
 - b. Colored cable ties applied in groups of three ties of specified color to each wire at each terminal or splice point starting 3 inches (76 mm) from the terminal and spaced 3 inches (76 mm) apart. Apply with a special tool or pliers, tighten to a snug fit, and cut off excess length.

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- H. Apply identification to conductors as follows:
 - 1. Conductors to Be Extended in the Future: Indicate source and circuit numbers.
 - 2. Multiple Power or Lighting Circuits in the Same Enclosure: Identify each conductor with source, voltage, circuit number, and phase. Use color-coding to identify circuits' voltage and phase.
- I. Apply warning, caution, and instruction signs as follows:
 - 1. Warnings, Cautions, and Instructions: Install to ensure safe operation and maintenance of electrical systems and of items to which they connect. Install engraved plastic-laminated instruction signs with approved legend where instructions are needed for system or equipment operation. Install metal-backed butyrate signs for outdoor items.
- J. Equipment Identification Labels: Engraved plastic laminate. Install on each unit of equipment, including central or master unit of each system. Locate label on exterior of any enclosure. This includes power, lighting, signal, and alarm systems, unless units are specified with their own self-explanatory identification. Unless otherwise indicated, provide three lines of text with 1/4-inch high lettering on 1-1/2-inch high label; where four lines of text are required, use labels 2 inches high. Use surface and core colors as listed in Part 2 above. Provide labels for all electrical equipment listed below. In general, all labels shall include riser diagram ID, amperage, voltage, number of phases/poles, and equipment served from (source). Provide additional information as listed below:
 - 1. Panelboards: MCB/MLO.
 - 2. Transformers: equipment served by.
 - 3. Disconnect switches: equipment served by.
 - a. Provide label for all disconnects provide by Division 23, 24 or 26.
 - 4. Enclosed circuit breakers: equipment served by.
 - a. Provide label for all disconnects provide by Division 23
 - 5. Service Entrances: Provide placard at service entrance disconnects indicating maximum fault current and date of calculation per NEC Article 110.24. Maximum fault current shall be coordinated with utility and placard installed prior to energization

END OF SECTION 260553

SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Distribution panelboards.
 - 2. Lighting and appliance branch-circuit panelboards.
 - 3. Combination panel/transformer.

1.3 DEFINITIONS

- A. SVR: Suppressed voltage rating.
- B. TVSS: Transient voltage surge suppressor.

1.4 SUBMITTALS

- A. Product Data: For each type of panelboard, switching and overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
 - 2. Detail enclosure types and details for types other than NEMA 250, Type 1.
 - 3. Detail bus configuration, current, and voltage ratings.
 - 4. Short-circuit current rating of panelboards and overcurrent protective devices.
 - 5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
- C. Field Quality-Control Reports:
 - 1. Test procedures used.
 - 2. Test results that comply with requirements.

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3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

D. Panelboard Schedules: For installation in panelboards. Room names and numbers shall match the final signage at the site. Submit final versions prior to installation in panelboard.

E. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.

B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Comply with NEMA PB 1.

E. Comply with NFPA 70.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Handle and prepare panelboards for installation according to NEMA PB 1.

1.7 PROJECT CONDITIONS

A. Environmental Limitations:

1. Do not deliver or install panelboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above panelboards is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.8 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces.

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Maintain required workspace clearances and required clearances for equipment access doors and panels.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 3. Siemens Energy & Automation, Inc.
 4. Square D; a brand of Schneider Electric.

2.2 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Enclosures: Flush- and surface-mounted cabinets as noted on schedules.
1. Rated for environmental conditions at installed location.
 - a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
 - b. Outdoor Locations: NEMA 250, Type 4.
 - c. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
 2. Front Cover: For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
 - a. Surface Mounted Panelboards: Entire front trim hinged to box. Continuous piano hinge. Provide standard door with front trim.
 3. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
 4. Finishes:
 - a. Panels and Trim: Steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
 - b. Back Boxes: Galvanized steel.
 5. Directory Card: Inside panelboard door, mounted in metal frame with transparent protective cover.
 6. Main Overcurrent Protective Devices: Molded-case circuit breakers.
 - a. Center Mounted Main: Branch mounted main breakers are not allowed.
 7. Branch Overcurrent Protective Devices: Molded-case circuit breakers.
 - a. Center mounted branch devices and sub-feed branch devices are not allowed.
- B. Incoming Mains Location: Top and bottom.

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- C. Phase, Neutral, and Ground Buses: Hard-drawn copper, 98 percent conductivity
 - 1. Neutral Bus: Neutral bus rated 100 percent of phase bus.
 - 2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box. For branch circuit panelboards provide a minimum of 21 terminals.
- D. Main and Neutral Lugs: Mechanical type suitable for use with conductor material.
- E. Feed-through Lugs: Not acceptable.
- F. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices. Future devices indicated as "SPACE" on drawings.
- G. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals. Series rating of equipment is not acceptable.

2.3 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- B. Mains: Circuit breaker, unless otherwise noted on drawings.
- C. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.
- D. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

2.4 COMBINATION PANEL AND TRANSFORMER (MINI-POWER ZONE)

A. Rating

- 1. KVA and voltage ratings shall be as shown on the drawings.
- 2. Units shall be designed for continuous operation at rated kVA, for 24 hours a day, 365 days a year operation, with normal life expectancy as defined in ANSI C57.96.
- 3. Transformer sound levels shall not exceed the following ANSI and NEMA levels for self cooled ratings:
 - Up to 9 kVA 40 db
 - 10 to 30 kVA 45 db

B. Construction

- 1. Each mini-power center shall include a primary main breaker, an encapsulated dry-type transformer and a panelboard with secondary main breaker.
- 2. Primary main, secondary main and feeder breakers shall be enclosed with a padlockable hinged door.
- 3. Mini-power centers shall be suitable for service entrance application and labeled as such.

C. Insulation Systems

1. Transformers shall be insulated with a 180 degrees C insulation system and rated at 115 degrees C temperature rise
2. Required performance shall be obtained without exceeding the above-indicated temperature rise in a 40 degrees C maximum ambient, with a 30 degrees C average over 24 hours
3. All insulation materials shall be flame-retardant and shall not support combustion as defined in ASTM Standard Test Method D635

D. Core and Coil Assemblies

1. Transformer core shall be constructed with high-grade, non-aging, silicon steel with high magnetic permeability, and low hysteresis and eddy current losses. Maximum magnetic flux densities shall be substantially below the saturation point. The transformer core volume shall allow efficient transformer operation at 10% above the nominal tap voltage. The core laminations shall be tightly clamped and compressed. Coils shall be wound of electrical grade aluminum [copper optional] with continuous wound construction.
2. The core and coil assembly shall be completely encapsulated in a proportioned mixture of resin and aggregate to provide a moisture proof, shock-resistant seal. The core and coil encapsulation system shall minimize the sound level.
3. The core of the transformer shall be grounded to the enclosure
4. Provide two (2) 5% FCBN taps

E. Bus

1. Secondary bus shall be aluminum.

F. Wiring/terminations

1. All interconnecting wiring between the primary breaker and transformer, secondary main breaker and transformer and distribution section shall be factory installed.
2. All transformers shall be equipped with a wiring compartment suitable for conduit entry and large enough to allow convenient wiring.

G. Main devices

1. Each mini-power center shall include a primary main breaker with an interrupting rating of 35kA at 277/480 volts; and a secondary main breaker with an interrupting rating of 10kA at 120/240 volts, and a panelboard.

H. Feeder devices

1. The secondary distribution section shall accommodate one-inch bolt-on breakers with 10 kA interrupting capacity.

I. Enclosure

1. The enclosure shall be made of heavy-gauge steel and the maximum temperature of the enclosure shall not exceed 90 degrees C.
2. The enclosure shall be totally enclosed, nonventilated, NEMA 3R, with lifting provisions.

2.5 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with full interrupting capacity to meet available fault currents.
1. Electronic Trip Circuit Breakers: Electronic trip circuit breakers with RMS sensing; field-replaceable rating plug or field-replicable electronic trip and individually field-adjustable long time, short time, and instantaneous trip pickup level settings. Trip unit shall also have adjustable long time and short time delay settings. Provide for circuit-breaker frame sizes 250A and larger.
 - a. Ground Fault Protection: Any circuit breaker serving as the service entrance overcurrent protective device for a structure shall have ground fault pickup and time delay settings in addition to overcurrent trip settings indicated above.
 2. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Field adjustable instantaneous trip setting for circuit-breaker frame sizes 100 A to 225A.
 3. GFCI Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip).
 4. Ground-Fault Equipment Protection (GFEP) Circuit Breakers: Class B ground-fault protection (30-mA trip).
 5. Molded-Case Circuit-Breaker (MCCB) Features and Accessories:
 - a. Standard frame sizes, trip ratings, and number of poles.
 - b. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
 - c. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge (HID) lighting circuits.
 - d. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.
 - e. Handle Clamp: Loose attachment, for holding circuit-breaker handle in on position.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Receive, inspect, handle, and store panelboards according to NEMA PB 1.1.
- B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.
- C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install panelboards and accessories according to NEMA PB 1.1.
- B. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from panelboards.
- C. Mount top of trim 90 inches (2286 mm) above finished floor unless otherwise indicated.
- D. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.
- E. Install filler plates in unused spaces.
- F. Arrange conductors in gutters into groups and bundle and wrap with wire ties.
- G. Comply with NECA 1.

3.3 IDENTIFICATION

- A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Division 26 Section "Identification for Electrical Systems."
- B. Create a directory to indicate installed circuit loads; incorporate Owner's Pole designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."
- D. Device Nameplates: Label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

3.4 FIELD QUALITY CONTROL

- A. Tests and Inspections:
 - 1. Testing Technician
 - a. The testing technicians shall be trained in all the methods of correctly and safely conducting the required test. The technician shall have regular experience conducting the required tests and they must have the knowledge to determine the serviceability of a specific piece of equipment.
 - 2. Physical inspection and Testing
 - a. Verify equipment rating correspond to drawings and specifications.

- b. Inspect the physical and mechanical condition and verify that it complies with manufacturer's standards.
- c. Verify equipment is properly secured and aligned with the required clearances as specified in the drawings and specifications. Assure that the equipment is properly grounded.
- d. Verify that all packing materials have been removed and the equipment has been cleaned.
- e. Confirm all breaker sizes, quantities, and configurations correspond to the drawings and specifications.
- f. Confirm bolted and mechanical lug electrical connections are low impedance using one of the following means:
 - 1) Measure the resistance with a low-resistance ohmmeter. Bolted electrical connection resistances shall be compared to resistances measured on similar connections. Any similar resistance values that deviate more than 50 percent should be investigated.
 - 2) Inspect the bolted connection and verify that it is at the manufacturer's rated torque using a calibrated torque wrench. If manufacturer's data is not available verify the torque meets the requirements of Table 100.12 in the ANSI/NETA ATS-2009.

3. Electrical Inspection and Testing

- a. Test each bus section for insulation resistance for one minute on phase to phase and phase to ground connections. Verify the test results comply with manufacturer's documentation or the requirements established in Table 100.1 of the ANSI/NETA ATS-2009.
- b. Verify all meters functionality and accuracy after testing and calibrating all inputs.
- c. Verify instrument transformers meet all the requirements of the drawings and specifications.
 - 1) Test transformer wiring integrity and proper transformer operation.
 - 2) Verify transformer output voltage is at the specified level.

4. Test Reports: Prepare a written report to record the following:

- a. Test procedures used.
- b. Test results that comply with requirements.
- c. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

B. Panelboards will be considered defective if they do not pass tests and inspections.

3.5 ADJUSTING

- A. Set field-adjustable circuit-breaker trip ranges. Unless otherwise noted, trip settings shall mimic trip characteristics for thermal magnetic circuit-breakers of similar trip rating.
- B. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.

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1. Measure as directed during period of normal system loading.
2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.
3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

END OF SECTION 262416

SECTION 265100 - LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Lighting fixtures, lamps, and ballasts.
 - 2. Emergency lighting units.
 - 3. Lighting fixture supports.

1.3 DEFINITIONS

- A. CRI: Color-rendering index.
- B. HID: High-intensity discharge.

1.4 SUBMITTALS

- A. Product Data:
 - 1. Fixture Schedule Matrix: At the front of the product data submittal provide a matrix that lists the fixture manufacturer and model number, ballast manufacturer and model number, lamp manufacturer and model number for each fixture type in schedule.
 - 2. Light Fixtures: For each type of lighting fixture in schedule, arranged in order of fixture designation. Provide manufacturer's published literature which includes data on features, accessories, and the following:
 - a. Dimensions of fixtures.
 - b. Manufacturer and type of ballasts.
 - c. Manufacturer and types of lamps.
 - d. For fixtures (non-exit) with LED light source submit the manufacturer's IESNA LM-79 Photometric Report and IESNA LM-80 Lumen Maintenance Report.
 - e. Method of emergency ballast installation (integral, external, or remote).
 - 3. Emergency Ballasts: For each type of emergency ballast installed in a scheduled lighting fixture, provide manufacturer's published literature containing lumen output, time duration, battery type, ballast dimensions, and mounting. Also provide wiring diagram.
- B. Shop Drawings:

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1. Site Lighting Illumination Plan: Provide computer generated isofootcandle plot diagrams for both initial and maintained footcandles on all horizontal patio, landing, walkway, roadway, and parking surfaces which show composite values of illuminance projected from the arrangement of all building mounted and non-building mounted light fixtures. Use manufacturer's published maintenance factors in calculating maintained footcandles. Calculation grid shall be 2' x 2' on pedestrian surfaces and 5' x 5' on vehicular surfaces. Also provide spill light isofootcandle plot diagrams for both horizontal and vertical maintained footcandles along property/LEED boundary and 10' beyond property/LEED boundary. Calculation grid shall be 10' on center along boundary. Plans depicting building mounted lighting and egress pedestrian surfaces shall be scaled no greater than 1"=10'. Plans depicting vehicular surfaces and property boundary shall be scaled no greater than 1"=30'.
- C. Warranty Information: Include in submittals warranty information for emergency lighting units in schedule fixtures.
- D. Test Reports: Report of operation test for emergency lighting units, emergency ballasts, and battery-powered lighting signs. See Field Quality Control paragraph below.
- E. Maintenance Data: For lighting fixtures to include in maintenance manuals specified in Division 1. Provide revised and updated Fixture Schedule Matrix. Include all warranty information and documentation with maintenance data.

1.5 QUALITY ASSURANCE

- A. Fixtures, Emergency Lighting Units, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

1.6 COORDINATION

- A. Fixtures, Mounting Hardware, and Trim: Coordinate layout and installation of lighting fixtures with ceiling system and other construction.

1.7 WARRANTY

- A. Special Warranty for Electronic Ballasts: Written warranty, executed by manufacturer agreeing to replace fluorescent electronic ballasts that fails in materials or workmanship within 5 years from date of manufacturer, but not less than 4 years from date of Final Acceptance.
- B. Special Warranty for Emergency Lighting Units: Written warranty, executed by manufacturer agreeing to replace entire unit that fails within 3 years from date of Final Acceptance. The batteries within unit shall be covered for an additional 2 years by a pro-rated warranty.

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1.8 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Lamps: 10 for every 100 of each type and rating installed. Furnish at least two of each type.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers and Products: Subject to compliance with requirements, manufacturers and respective products that may be incorporated into the Work are indicated on the drawings in Light Fixture Schedule.
 - 1. It is the intent of the Light Fixture Schedule to denote the Basis of Design and quality standard of product desired and not to restrict bidders to a specific brand, make, manufacturer or specific name. The manufacturers and products listed in Schedule are used only to set forth and convey to bidders the general style, type, character, and quality of product desired. However, the use of products by a manufacturer not listed in Schedule is considered a substitution. Substitution of equivalent products will be acceptable according to the following paragraph.
- B. Substitution of Equivalent Products: Substitution of manufacturers and products equivalent to those listed in Light Fixture Schedule shall be submitted to the Engineer for approval through the product/shop drawing submittal review process.
- C. Equivalent fixtures, poles, ballasts, and other materials and equipment shall be products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship. Products shall be a standard product offering as shown on manufacturer's published printed literature for appearance, mounting, light distribution and lamping (ballast and lens options are excluded from this requirement). Cut-sheets prepared for submittal are not considered published printed literature. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2-year period. Where two or more items of the same type or class of fixture are required, these items shall be products of a single manufacturer.

2.2 FIXTURES AND FIXTURE COMPONENTS, GENERAL

- A. Metal Parts: Free from burrs, sharp corners, and edges.
- B. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.
- C. Doors, Frames, and Other Internal Access: Smooth operating, free from light leakage under operating conditions, and arranged to permit relamping without use of tools. Arrange doors,

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frames, lenses, diffusers, and other pieces to prevent accidental falling during relamping and when secured in operating position.

- D. Lenses, Diffusers, Covers, and Globes: 100 percent virgin acrylic plastic or annealed crystal glass, unless otherwise indicated.
 - 1. Plastic: High resistance to yellowing and other changes due to aging, exposure to heat, and ultraviolet radiation.
 - 2. Lens Thickness: 0.125 inch (3 mm) minimum, unless greater thickness is indicated.

2.3 LED DRIVERS

- A. General:
 - 1. Ten-year operational life while operating with a case temperature range of 0 degrees C to 62 degrees C and 90 percent non-condensing relative humidity.
 - 2. Electrolytic capacitors to operate at least 20 degrees C below the capacitor's maximum temperature rating when the driver is under fully-loaded conditions and case temperature is 62 degrees C.
 - 3. Designed and tested to withstand electrostatic discharges up to 15,000 V without impairment per IEC 801-2.
 - 4. Maximum inrush current of 2 amperes for 120V and 277 V drivers.
 - 5. Withstand up to a 4,000 volt surge without impairment of performance as defined by ANSI C62.41 Category A.
 - 6. Manufactured in a facility that employ ESD reduction practices in compliance with ANSI/ESD S20.20.
 - 7. Inaudible in a 27 dBA ambient environment.
 - 8. No visible change in light output with a variation of +/- 10 percent line voltage input.
 - 9. Total Harmonic Distortion less than 10 percent and meet ANSI C82.11 maximum allowable THD requirements
- B. Compatibility of driver and LED light engine must be tested and ensured by driver manufacturer.

2.4 EMERGENCY LIGHTING UNIT

- A. General Requirements: Comply with UL 924 and the following:
 - 1. Description: Emergency lighting unit shall be a completely self-contained lighting unit designed to provide emergency illumination upon loss of normal power. Unit contains battery, automatic charger, transfer device, lamps, and testing features.
 - 2. Emergency Operation: When normal voltage drops below 80% nominal, unit shall activate to operate lamps from emergency battery. Lamps are off during normal operation.
 - 3. Testing Features: Units shall be provided with a test switch to simulate the operation of the unit upon loss of normal power. It shall also be provided with pilot light indicating connection of normal power and a pilot indicating high rate charging status.
 - 4. Emergency Lighting Units shall be third party listed as emergency lighting equipment.

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- B. Emergency Battery: Battery shall be 12V sealed, maintenance-free nickel-cadmium sized for a minimum of 90 minutes operating endurance. It shall also be a high temperature type with an operating range of 0°C to 60°C and contain a resealable pressure vent. Exterior units shall be rated to a minimum temperature operating range of -18°C/0°F. Battery shall have normal life expectancy of 10 years. See Warranty requirements Part 1.
- C. Battery Charger: Battery charger shall be fully automatic solid state type, full wave rectifying, with current limiting. Charger shall restore the battery to its full charge within 24 hours after a discharge of 90 minutes under full rated load.

2.5 FINISHES

- A. Fixtures: Manufacturers' standard, unless otherwise indicated.
 - 1. Paint Finish: Applied over corrosion-resistant treatment or primer, free of defects.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Fixtures: Set level, plumb, and square and secure according to manufacturer's written instructions and approved submittal materials. Install lamps in each fixture.

3.2 CONNECTIONS

- A. Ground equipment.
 - 1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.3 FIELD QUALITY CONTROL

- A. Inspect each installed fixture for damage. Replace damaged fixtures and components.
- B. Provide instruments to make and record test results.
- C. Tests: As follows:
 - 1. Verify normal operation of each fixture after installation.
 - 2. Emergency Lighting: Interrupt electrical supply to demonstrate proper operation.
 - a. Contractor shall perform a test on each battery unit after it is permanently installed and charged for a minimum of 24 hours. Battery units shall be tested for 90 minutes and shall maintain not less than 60% of the initial emergency illumination or 87-1/2% of initial battery voltage for the duration of the test. Any unit which fails the test must be repaired or replaced, and tested again. Copy of testing report for each unit shall be sent to the Engineer.
 - b. All battery tests shall be complete a minimum of 10 days prior to final inspection.

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3. Verify operation of photoelectric controller and contactor.
4. Verify normal transfer to battery source and retransfer to normal.
5. Report results in writing.

D. Malfunctioning Fixtures and Components: Replace or repair, then retest. Repeat procedure until units operate properly.

E. Corrosive Fixtures: Replace during warranty period.

3.4 CLEANING AND ADJUSTING

A. Clean fixtures internally and externally after installation. Use methods and materials recommended by manufacturer.

B. Adjust aimable fixtures to provide required light intensities.

END OF SECTION 265100

SECTION 265668 - EXTERIOR ATHLETIC LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes lighting for the following outdoor sports venues:
 - 1. Softball fields.

1.3 DEFINITIONS

- A. Coefficient of Variation (CV): A statistical measure of the weighted average of all relevant illumination values for the playing area, expressed as the ratio of the standard deviation for all illuminance values to the mean illuminance value.
- B. Fixture: See "Luminaire."
- C. Illuminance: The metric most commonly used to evaluate lighting systems. It is the density of luminous flux, or flow of light, reaching a surface divided by the area of that surface.
 - 1. Horizontal Illuminance: Measurement in foot-candles (lux), on a horizontal surface 36 inches (914 mm) above ground unless otherwise indicated.
 - 2. Target Illuminance: Average maintained illuminance level, calculated by multiplying initial illuminance by LLF.
 - 3. Vertical Illuminance: Measurement in foot-candles (lux), in two directions on a vertical surface, at an elevation coinciding with plane height of horizontal measurements.
- D. LC: Lighting Certified.
- E. Light-Loss Factor (LLF): A factor used in calculating the level of illumination after a given period of time and under given conditions. It takes into account temperature, dirt accumulation on the luminaire, lamp depreciation, maintenance procedures, and atmospheric conditions. An LLF includes a recoverable light-loss factor.
- F. Luminaire: A complete lighting unit, internally lighted exit sign, or emergency lighting unit. Luminaires include lamps and the parts required to distribute light, position and protect lamps, and connect lamps to power supply. Note that "fixture" and "luminaire" may be used interchangeably and the "IES Lighting Handbook" uses "luminaire" over "fixture."
- G. Pole: Luminaire support structure, including tower used for large area illumination.

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- H. Uniformity Gradient (UG): The rate of change of illuminance on the playing field, expressed as a ratio between the illuminances of adjacent measuring points on a uniform grid.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of lighting product.

1. Fixture Schedule Matrix: At the front of the product data submittal provide a matrix that lists the fixture manufacturer and model number, driver manufacturer and model number, LED module manufacturer and model number for each fixture type in schedule.
2. Arrange in order of luminaire designation.
3. Include data on features, accessories, and finishes.
4. Include physical description and dimensions of the luminaires.
5. Driver, including efficiency, UL listing and recognition, ANSI certification, and Energy Independence and Security Act of 2007 compliance.
6. LED modules, including life, output (lumens, CCT, and CRI), and energy-efficiency data.
7. Photometric data and adjustment factors based on laboratory tests, complying with IES "Lighting Measurements Testing and Calculation Guides," of each lighting luminaire type. The adjustment factors shall be for lamps, ballasts, and accessories identical to those indicated for the luminaire as applied in this Project.
 - a. Testing Agency Certified Data: For indicated luminaires, photometric data certified by a qualified independent testing agency. Photometric data for remaining luminaires shall be certified by manufacturer.
 - b. Manufacturer Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the NVLAP for Energy Efficient Lighting Products.
8. Photoelectric relays.
9. Means of attaching luminaires to supports and indication that attachment is suitable for components involved.

- B. Shop Drawings: For nonstandard or custom luminaires.

1. Include plans, elevations, sections, and mounting and attachment details.
2. Include details of luminaire assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include diagrams for power, signal, and control wiring.

- C. Product Schedule: For luminaires and lamps.

- D. Delegated-Design Submittal: For exterior athletic lighting indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1. Drawings and specifications for construction of lighting system.
2. Manufacturer's determination of LLF used in design calculations.
3. Lighting system design calculations for the following:

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- a. Target illuminance.
 - b. Point calculations of horizontal and vertical illuminance, CV, and UG at minimum grid size and area.
 - c. Point calculations of horizontal and vertical illuminance in indicated areas of concern for spill light.
 - d. Calculations of source intensity of luminaires observed at eye level from indicated properties near the playing fields.
4. Wiring requirements, including required conductors, cables, and wiring methods.
5. Structural analysis data and calculations used to verify existing poles provide sufficient support.
 - a. Manufacturer Wind-Load Strength Certification: Submit certification that selected total support system, including poles, complies with AASHTO LTS-6-M for location of Project.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Plans drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 1. Luminaires.
 2. Luminaire support structures.
 3. Limits of athletic fields.
 4. Proposed underground utilities and structures.
 5. Underground utilities and structures.
 6. Athletic field support structures.
- B. Welding certificates.
- C. Product Certificates:
 1. For each type of driver from manufacturer.
 2. For support structures, including brackets, arms, appurtenances, from manufacturer.
- D. Field quality-control reports.
- E. Sample warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For luminaires to include in operation and maintenance manuals.
 1. Provide a list of all lamp types used on Project. Use ANSI and manufacturers' codes.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Fuses: Ten for every 100 of each type and rating installed. Furnish at least one of each type.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Manufacturer Qualifications: Manufacturer's responsibilities include fabricating sports lighting and providing professional engineering services needed to assume engineering responsibility.
 - 1. Engineering Responsibility: Preparation of delegated-design submittals and comprehensive engineering analysis by a qualified professional engineer.
- C. Luminaire Photometric Data Testing Laboratory Qualifications: Luminaire manufacturers' laboratory accredited under the NVLAP for Energy Efficient Lighting Products.
- D. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7, accredited under the NVLAP for Energy Efficient Lighting Products and complying with applicable IES testing standards.
- E. Field Testing Agency Qualifications: An independent testing agency that is accredited under the NVLAP for Energy Efficient Lighting Products, a member company of NETA, or an NRTL as defined in 29 CFR 1910.7, with the experience and capability to conduct field testing according to IES LM-5.
- F. Field Testing Agency Qualifications: A qualified independent professional engineer not associated with Contractor or lighting equipment manufacturer.
- G. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1/D1.1M.
 - 2. AWS D1.2/D1.2M.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

1.10 WARRANTY

- A. Warranty Period: 25 years from date of Substantial Completion.

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- B. Special Warranty: Each manufacturer shall supply a signed warranty covering the entire system for the warranty period from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty may exclude weather condition events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.
- C. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for the warranty period from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, the manufacturers offering products that may be incorporated into the Work include the following:
 - 1. Musco Sports Lighting

2.2 PERFORMANCE REQUIREMENTS

- A. Facility Type: Amateur Soft Ball.
- B. Illumination Criteria:
 - 1. Minimum average target illuminance level for each lighted area for each sports venue and for the indicated class of play according to IES RP-6.
 - 2. CV and maximum-to-minimum uniformity ratios for each lighted area equal to or less than those listed in IES RP-6 for the indicated class of play.
 - 3. UG levels within each lighted area equal to or less than those listed in IES RP-6 for the indicated speed of sport.
- C. Illumination Criteria:
 - 1. Infield:
 - a. Minimum Average Target Illumination: 50 footcandles (500 Lux).
 - b. CV: 0.17 or less.
 - c. Maximum-to-Minimum Uniformity Ratio: 2.1:1 or less.
 - d. Upper limit of UG Level: 1.5.
 - 2. Outfield:
 - a. Minimum Average Target Illumination: 30 footcandles (300 Lux).
 - b. CV: 0.25 or less.
 - c. Maximum-to-Minimum Uniformity Ratio: 2.5:1 or less.
 - d. Upper limit of UG Level: 1.7.

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- D. Illumination Calculations: Computer-analyzed point method complying with IES RP-6 to optimize selection, location, and aiming of luminaires.
1. Grid Pattern Dimensions: For playing areas of each sport and areas of concern for spill-light control, correlate and reference calculated parameters to the grid areas. Each grid point represents the center of the grid area defined by the length and width of the grid spacing.
 2. Determine LLF according to IES RP-6 and manufacturer's test data.
 - a. LLF shall not be higher than 85 percent and may be lower when determined by manufacturer after application of the optical system output according to IES RP-6.
 3. Luminaire-Mounting Height: Comply with IES RP-6, with consideration for requirements to minimize spill light and glare.
 4. Luminaire Placement: Luminaire clusters shall be outside the glare zones defined by IES RP-6.
- E. Softball Fields:
1. IES RP-6: Class of Play III.
 2. Speed of Sport: Fast.
 3. Grid Pattern Dimensions: 20 by 20 feet (6 by 6 m).
- F. Lighting Control: Manual, low voltage, or digital; providing the following functions, integrated into a single control station per softball field as indicated:
1. Lighting Controls:
 - a. The Control Station is a lighting contactor cabinet constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Provide control station with the following features:
 - 1) Instant on/off capabilities via a Key-operated manual off-on-auto switch
 - 2) System status indicator lights mounted on control station.
 - 3) Remote monitoring system: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).
 - b. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports for facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for IOS, Android and Blackberry devices.
 - 1) Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.
 - a) Cumulative hours: shall be tracked to show the total hours used by the facility.
 - b) Report hours saved by using early off and push buttons by users.
 - c. Communication Costs: Manufacturer shall include communication costs for operating the controls and monitoring system for a period of 25 years.

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G. Electric Power Distribution Requirements:

1. Electric Power to the Site: 120/240 V; Single phase.
2. Electrical Power to Each individual pole lighting system: 240 V; Single Phase

H. Life-Cycle Cost Criteria:

1. Estimated life-cycle cost of lighting system for period of 25 years based on the parameters below:
 - a. Energy Cost.
 - b. Lamp Replacement Cost.
 - c. General Maintenance.
2. Life-Cycle Cost Criteria: Manufacturers shall provide all preventative and spot maintenance, including parts and labor for the entire length of the life-cycle cost period from the date of equipment shipment. Individual outages shall be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

2.3 LUMINAIRES, LAMPS, AND DRIVERS

A. Luminaires: Complying with requirements listed below:

1. Listed and labeled, by an NRTL acceptable to authorities having jurisdiction, for compliance with UL 1598 for installation in wet locations.
2. Doors, Frames, and Other Internal Access: Smooth operating, free from light leakage under operating conditions, and arranged to permit relamping without using tools. Arrange doors, frames, lenses, diffusers, and other pieces to prevent their accidental falling during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lens. Designed to disconnect ballast when door opens.
3. Exposed Hardware: Stainless-steel latches, fasteners, and hinges.
4. Spill-Light Control Devices: Internal louvers and external baffles furnished by manufacturer and designed for secure attachment to specific luminaire.
5. Luminaires for softball fields shall be bracket-mounted, full-cutoff type with integral ballasts.
6. Lamps for Softball Field Luminaires: LED, ratings vary based on mounting height. Refer to drawings.

B. Driver Mounting: Grouped in cabinets, remote from location of associated luminaires unless otherwise indicated.

2.4 SUPPORT STRUCTURES

- A. Support Structures for Softball: Galvanized Steel Poles and cross-arm assembly. Alternate: A precast concrete base (minimum 28-day 4,500 psi concrete) specified by precast manufacturer with flowable fill backfill will be an acceptable alternative provided building code, wind speed, and foundation designs per specifications are adhered to with project specific signed and sealed foundation drawings. Flowable fill backfill shall attain a minimum compressive strength of 200 psi prior to pole installation and shall bear on and against firm, undisturbed soil.

1. Non-approved pole technology:

a. Square static cast concrete poles will not be accepted.

b. Direct buried steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long-term performance concerns. No exposed steel below grade including inverted anchor bolt base will be accepted.

2. Lighting systems shall use concrete foundations. See Section 2.5 for details.

- a. For a cast-in-place concrete pier foundation, the concrete shall be air-entrained with a minimum compressive design strength at 28 days of 4,500 psi. The steel pole shall attach to the concrete pier with a base plate and cast-in-place anchor bolts specified by the pole manufacturer. Pole designer shall provide project specific signed and sealed foundation drawings detailing pier and anchor designs. Pier shall bear on and against firm, undisturbed soil.
- b. Concrete shall attain a minimum compressive strength of 3,000 psi prior to pole installation and fixture mounting.

2.5 STRUCTURAL PARAMETERS

- A. Wind Loads: Wind loads shall be based on the 2018 North Carolina Building Code. Wind loads to be calculated using ASCE 7-10, a design wind speed of 115, exposure category C.
- B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2013 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-6) and all associated errata and interim revisions.
- C. Foundation Design: The foundation design shall be based on soils that meet or exceed those of a Class 5 material as defined by 2015 IBC Table 1806.2.

2.6 DURABILITY

- A. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware

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and fasteners shall be stainless steel of 18-8 grade or better, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing).

2.7 LIGHTNING PROTECTION

- A. Lighting Protection: All structures shall be equipped with lightning protection meeting NFPA 780 standards. Contractor shall supply and install a grounding electrode of not less than 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.

2.8 CONTROL WIRING

- A. Wiring Method for Control Wiring: Underground nonmetallic raceway.
- B. Overhead-, pole-, or structure-supported wiring and transformers are not permitted.
- C. Electrical Enclosures Exposed to Weather: NEMA 250, Type 3R enclosure constructed from corrosion-resistant material, with hinged doors fitted with padlock hasps or lockable latches.

2.9 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Variations in finishes are unacceptable in the same piece. Variations in finishes of adjoining components are acceptable if they are within the range of approved Samples and if they can be and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for luminaire electrical and communications conduit to verify actual locations of connections before pole or luminaire installation.
- C. Examine foundations for suitable conditions where luminaires will be installed.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with NECA 1.
- B. Wiring Method: Install cables in raceways, except when cables are installed within boxes and poles. Conceal raceways and cables.
 - 1. Comply with requirements in Section 260519 "Conductors and Cables" and 260533 "Raceways and Boxes" for wiring connections and wiring methods.
- C. Coordination layout and installation of luminaires with other construction.
- D. Use web fabric slings (not chain or cable) to raise and set structural members. Protect equipment during installation to prevent corrosion.
- E. Install poles and other structural units level, plumb, and square.
- F. Install luminaires at height and aiming angle as indicated on Drawings.
- G. Install drivers in cabinets mounted on poles at least 10 feet (3 m) above finished grade. Install controls in cabinet mounted on support structures as indicated on drawings.

3.3 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Perform the following tests and inspections:
 - 1. After installing sports lighting system and after electrical circuits have been energized, perform proof-of-performance field measurements and analysis for compliance with requirements. The illumination measurements shall be conducted in accordance with IESNA LM-5-04.
 - 2. Playing and Other Designated Areas: Make field measurements at intersections of grids, dimensioned and located as specified in "Performance Requirements" Article and as described below:
 - a. Softball Fields: Measure at least 16 points of the infield and 48 points of the outfield. Extend the grid 15 feet (5 m) outside the foul lines, extending to outfield boundary.
 - 3. Make field measurements at established test points in areas of concern for glare.
 - 4. Perform analysis to demonstrate correlation of field measurements with specified illumination quality and quantity values and corresponding computer-generated values that were submitted with engineered design documents. Submit a report of the analysis.

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For computer-generated values, use manufacturer's lamp lumens that are adjusted to lamp age at time of field testing.

- C. Correction of Illumination Deficiencies for Playing Areas: Make corrections to illumination quality or quantity, measured in field quality-control tests, that varies from specified illumination criteria by plus or minus 10 percent.
 - 1. Add or replace luminaires; change mounting height and aiming; or install louvers, shields, or baffles.
 - 2. If luminaires are added or mounting height is changed, revise aiming and recalculate and modify or replace support structures if indicated.
 - 3. Do not replace luminaires with units of higher or lower wattage without Engineer's approval.
 - 4. Retest as specified above after repairs, adjustments, or replacements are made.
 - 5. Report results in writing.
- D. Sports lighting will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

3.5 ADJUSTING

- A. Adjust luminaires and supports to maintain orientation and aiming as recommended by manufacturer.

END OF SECTION 265668

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Supplemental General Conditions, and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Prior to beginning construction, the Geotechnical Designer of Record should evaluate the subgrade soils for suitability based on observations of proofrolling with a loaded dump truck or other method considered acceptable to the Geotechnical Designer of Record. Fill meeting the requirements herein shall then be placed to the grade shown.

1.3 REFERENCE SECTIONS

- A. Section 012200 – Unit Prices

1.4 DEFINITIONS

- A. Excavation consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.
- B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- C. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations.
- D. Subbase Course: The layer placed between the subgrade and surface of a pavement or walk.
- E. Design Subgrade: Elevation of bearing for foundations, bottom of porous fill beneath slabs on grade (4" below bottom of slab), bottom of turn down slabs, and bottom most portion of stairs and ramps.
- F. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of pore water.
- G. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the Designer of Record. Unauthorized excavation, as well as remedial work directed by the Designer of Record, shall be at the Contractor's expense.
- H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.
- I. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

1.5 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.

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- B. Test Reports: In addition to test reports required under field quality control, submit the following:
 - 1. Laboratory analysis (including grain size and plasticity analyses) of each soil material proposed for fill and backfill from on-site and borrow sources.
 - 2. One Standard Proctor compaction test (moisture density relationship) in accordance with ASTM D698 for each soil material.

1.6 QUALITY ASSURANCE

- A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction. These include, but are not limited to, Town of Huntersville, Mecklenburg County, North Carolina Department of Environment and Natural Resources, and the State of North Carolina.
- B. Testing and Inspection Service: Owner shall employ a qualified independent geotechnical Designer of Recording testing agency to classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing.

1.7 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Designer of Record and then only after acceptable temporary utility services have been provided.
 - 1. Provide a minimum 10 day notice to the Town and receive written notice to proceed before interrupting any utility.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. If utilities cannot be removed due to existing field conditions they shall be filled with flowable fill (minimum 200psi) and noted as "Abandoned" on as-built drawings. However, in all cases the contractor shall demolish all utilities within the footprint of any proposed structure and within the area extending 5' from the proposed footprint. Coordinate with utility companies to shutoff services if lines are active.
- C. Excavation support system design and details for trench excavation, shall be sealed and signed by a professional Engineer licensed in the State of North Carolina, copy of design shall be filed with DESIGNER OF RECORD.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations. Contractor is responsible for locating appropriate off-site borrow areas.
- B. Satisfactory Soil Materials:
 - 1. Structural Fill: Select material classifying ML, CL, SM, SP, SW, GM, GP, or GW in accordance with ASTM D 2487 with a sand content of at least 30 percent and a maximum plasticity index of 15. The maximum particle size should not exceed 3 inches. Fill should be free of debris, waste, frozen materials, vegetation, and any other deleterious matter. Off-site borrow materials should have a CBR value no less than 6

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percent.

- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, OL, CH, MH, OH, and PT according to ASTM D 2487 or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.
- F. Structural Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- H. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.
- I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and 0 to 5 percent passing a No. 4 sieve.
- J. Sand: ASTM C 33; fine aggregate, natural, or manufactured sand.
- K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 GEOTEXTILE FABRIC

- A. Medium Duty Geotextile Fabric as follows:
 - 1. Weight: 6.0 oz/sy as per ASTM D-3776-79.
 - 2. Grab Strength: 300 lbs as per ASTM D-4632-86.
 - 3. Grab Elongation: 15% as per ASTM D-4632-86.
 - 4. Trapezoid Tear Strength: 115 lbs as per ASTM D-4533-85.
 - 5. Mullen Burst Strength: 600 psi as per ASTM D-3786-87.
 - 6. Puncture Strength: 145 lbs as per ASTM D-4833-88.
 - 7. Wide Width Strip Tensile: 200x230 lbs/in as per ASTM D-4595-86.
 - 8. Wide Width Strip Elongation: 15x15 % as per ASTM D-4595-86.
 - 9. Thickness: 25 mils as per ASTM D-1777-64.
 - 10. Permittivity: .1 sec(-1) as per ASTM D-4491-85.
 - 11. Water Flow Rate: 9.2 gal/min/sf as per ASTM D-4491-85.

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- 12. Apparent Opening Size: 30-70 U.S. Std Sieve as per ASTM D-4751-87.
- 13. Ultraviolet Stability: 90% as per ASTM D-4355-84.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- D. Prior to proceeding with construction, all topsoil and other deleterious, non-soil materials shall be stripped from proposed construction area. Stripping shall be limited to the maximum extent practicable, and stripping of unsatisfactory soils shall be as identified by the Geotechnical Engineer.
- E. Subgrades which are to support slabs, pavements, or compacted fill shall be proofrolled using a Scraper (i.e., Pan) or a loaded dump truck having an axle weight of at least 10 tons to identify areas of localized soft soil or unsuitable soil. Any soft or unsuitable material encountered during proofrolling shall be removed and replaced with structural fill. The Geotechnical Engineer shall observe all proofrolling operations.

3.2 DEWATERING

- A. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
- C. Dewatering disposal shall be in accordance with Erosion and Sediment Control permit.

3.3 EXCAVATION

- A. Explosives: Do not use explosives.

3.4 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 0.10 foot. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections.
 - 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
 - 2. Excavation for Mechanical or Electrical Appurtenances: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 0.10 foot. Do not disturb

bottom of excavations intended for bearing surface.

3.5 APPROVAL OF SUBGRADE

- A. Notify Geotechnical Engineer when excavations have reached required subgrade.
- B. When Geotechnical Engineer determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Designer of Record.

3.6 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill or flowable fill may be used to bring elevations to proper position.

3.7 STORAGE OF SOIL MATERIALS

- A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust. Stockpiles may be placed next to proposed utility trenches.

3.8 BACKFILL

- A. Backfill excavations promptly, but not before completing the following:
 - 1. Acceptance of construction below finish grade including, where applicable, damp-proofing, waterproofing, and perimeter insulation.
 - 2. Surveying locations of underground utilities for record documents.
 - 3. Testing, inspecting, and approval of underground utilities.
 - 4. Concrete form-work removal.
 - 5. Removal of trash and debris from excavation.
 - 6. Removal of temporary shoring and bracing, and sheeting.
 - 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

3.9 FILL

- A. Preparation: Remove vegetation, topsoil, debris, wet, and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
 - 1. Plow strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface.
- B. When subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to 8 inches, pulverize, moisture-condition, or aerate soil and recompact to required density.
- C. Place fill material in layers to required elevations for each location listed below.

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1. Under grass, use General Site Fill.
2. Under walks and pavements, use aggregate base to the required depth and, General Site Fill.
8. Under steps and ramps, aggregate base.
9. Under building slabs, use porous fill to the required depth, and General Site Fill.
10. Under footings and foundations, use Structural Fill, aggregate base, or flowable fill.
11. Behind below-grade walls, use Structural Fill or porous fill.

3.10 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
 1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 2. Remove and replace, or scarify and air-dry satisfactory soil material that is too wet to compact to specified density.
 - a. Stockpile or spread and dry removed wet satisfactory soil material.
 - b. If excavation must remain open overnight or rainfall becomes imminent while the bearing soils are exposed, place a 1 to 3 inch thick “mud mat” of lean concrete be placed on the bearing soils before the placement of reinforcing steel.
 - c. Costs associated with removing and replacing previously approved backfill due to being too wet shall be borne by the CONTRACTOR.

3.11 COMPACTION

- A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698.
 1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 98 percent.
 2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 98 percent.
 3. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 90 percent.
 4. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent.

3.12 GRADING

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 1. Provide a smooth transition between existing adjacent grades and new grades.

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2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.
 - B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 1. Lawn or Unpaved Areas: Plus or minus 0.10 foot.
 2. Walks: Plus or minus 0.10 foot.
- 3.13 POROUS FILL
- A. Under slabs-on-grade, place porous fill course on prepared subgrade.
 1. Compact porous fill to required cross sections and thickness.
- 3.14 FIELD QUALITY CONTROL
- A. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.
 1. Perform field in-place density tests according to ASTM D 6938, (nuclear method) provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 6938.
 - a. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the Designer of Record.
 2. Footing Subgrade: The Geotechnical Engineer shall observe all subgrades and determine suitability to support design loads.
 3. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, perform at least one field in-place density test for every 2,500 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
 4. Foundation Wall Backfill: In each compacted backfill layer, perform at least one field in-place density test for each 100 feet or less of wall length, but no fewer than two tests along a wall face.
 - B. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required density is obtained.
- 3.15 PROTECTION
- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
 - B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
 1. Scarify or remove and replace material to depth directed by the Geotechnical Engineer; reshape and recompact at optimum moisture content to the required density.
 - C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.

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1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.
 - D. Costs associated with restoration or replacement of backfill which has not been protected shall be borne by the CONTRACTOR.
- 3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS
- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property. Contractor is responsible for all costs associated with disposal and for all erosion and sediment control measures at off-site disposal areas.

END OF SECTION 312000

SECTION 312216- FINE GRADING

PART 1 - GENERAL

1.1 Related Documents:

- A. Drawings and general provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this section.

1.2 Work Included:

- A. Provide all labor, materials, necessary equipment and services to complete the Fine Grading work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

1.3 Related Work:

Earthwork - Section 31 00 00

Turf and Grasses - Section 32 92 00

1.4 Site Inspection:

- A. The contractor shall visit the site and acquaint himself with all existing conditions. The contractor shall be responsible for his own subsurface investigations, as necessary, to satisfy requirements of this Section. All subsurface investigations shall be performed only under time schedules and arrangements approved in advance by the Town's Representative.

1.5 Topography:

- A. Obtain drawings showing proposed final grading from Town's Representative.
- B. Verify that contours and grades established during rough grading and earthwork are within two tenths (.2) of a foot of proposed grades shown on grading plans. Make whatever corrections and/or repairs necessary to make finish grades consistent with the requirements of the grading drawings and specifications.

1.6 Utilities:

- A. Before starting site operations verify that the earlier contractors have disconnected all temporary utilities which might interfere with the fine grading work.
- B. Locate all existing, active utility lines traversing the site and determine the requirements for their protection. Observe in operating condition all active utilities adjacent to or transversing the site that are designated to remain.
- C. Observe rules and regulations governing respective utilities in working under requirements of this section. Adequately protect utilities from damage, remove or relocate as indicated, specified or required. Remove, plug or cap inactive or abandoned utilities encountered in excavation. Record location of active utilities.

1.7 Quality Assurance:

- A. Requirements of all applicable building codes and other public agencies shall have jurisdiction upon the work.
- B. Primary emphasis should be given to the aesthetic appearance and functioning of athletic field grades and paved trails/walkways, as directed by the Town's Representative. The contractor shall employ skilled personnel and any necessary equipment to insure that finish grading is smooth, aesthetically pleasing, drains well and is ideal for receiving grass and plant materials.

PART 2 - MATERIALS

2.1 Existing Soil:

- A. Use on-site material, unless otherwise directed by Town's Representative, free from debris, sod, biodegradable materials, and other deleterious materials. The Contractor shall insure that all existing soil has sufficient percolation and surface drainage to support grasses and plant material and that compaction occurs only in areas to insure stabilization for pavements and structures.

PART 03 - EXECUTION

3.1 Job Conditions:

- A. Dust control: Use all means necessary to prevent dust from construction operations from being a nuisance to adjacent property owners. Methods used for dust control are subject to approval by the Town's Representative.
- B. Burning: On-site burning will not be permitted.
- C. Protection: Use all means necessary to protect curbs, gutters, sprinklers, utilities and vegetation designated to remain, and, in the event of damage, immediately make all repairs, replacements and dressings to damaged plants necessary to the approval of the Town's Representative. Contractor shall incur all cost for the replacement of damaged objects and vegetation.

3.2 Scheduling:

- A. Schedule all work in a careful manner with all necessary consideration for adjoining property owners and the public.
- B. Coordinate schedule with other contractors to avoid conflicts with their work.

3.2 Excavation:

- A. Excavate where necessary to obtain subgrades, percolation and surface drainage as required.

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- B. Materials to be excavated are unclassified.
- C. Remove entirely any existing obstructions after approval by the Town's Representative.
- D. Remove from site and dispose of debris and excavated material not required.

3.4 Grading:

- A. The contractor shall establish finished grades as shown on the grading plans and as directed by the Town's Representative, including areas where the existing grade has been disturbed by other work.
- B. Grades of proposed pavement shall conform to the lines and grades shown on the plans and contractor shall take care to ensure paved trails and sidewalks meet the requirements of the 2010 ADA Guidelines, and ANSI A117.1 (2017) for cross slope, and that any walks over 5% but not to exceed 8.3% shall have handrails along their entire length, and landings every 2.5-vertical feet with a minimum depth of 5' and a slope not greater than 2% in any direction. Contractor shall notify Designer of Record immediately in the event existing grades or grades shown on proposed plans may make conformance with the 2010 ADA Guidelines or ANSI A117.1 impracticable. Note, no walkway shall be allowed to be constructed with a running slope greater than 8.3%.
- C. Finished grading shall be smooth, aesthetically pleasing, drain well and ready to receive seed and other plant material to full satisfaction of Town's Representative.

3.5 Compaction:

- A. Compact each layer of fill in designated areas with approved equipment to achieve a maximum density at optimum moisture, as defined by ASTM D-698.
 - 1. Under paved trails and walkways, compaction shall be to 95% of maximum dry density.
 - 2. Under seeded area, compaction shall not exceed 90% of maximum dry density.
- B. Compaction in limited areas shall be obtained by the use of mechanical tampers or approved hand tampers. When hand tampers are used, the materials shall be deposited in layers not more than four inches thick. The hand tampers used shall be suitable for this purpose and shall have a face area of not more than 100 square inches.

3.6 Correction of Grade:

- A. Bring to required grade levels areas where settlement, erosion or other grade changes occur. Adjust grades as required to carry drainage to prevent ponding.
- B. Remove all rock or objectionable material larger than ¾" any direction prior to commencing landscaping.
- C. Contractor shall be responsible for stabilizing grades by approved methods prior to landscaping, and shall be responsible for correction of grades as mentioned above, and cleanup of any wash outs or erosion.

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END OF SECTION 312216

SECTION 312500 - EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 Related Documents:

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.

1.2 Description of Work:

- A. Work Included in This Section:
Temporary Sedimentation and Erosion Control Devices
- B. Related Work Specified Elsewhere:
Fine Grading (31 22 16)
Turf and Grasses (32 92 00)

1.3 Existing Conditions:

- A. Site Conditions:
Contractor shall visit the site, familiarize himself with actual conditions and verify existing conditions in the field.

1.4 Protection:

- A. Benchmarks, existing utilities and existing vegetation shall be identified prior to mobilization and shall be protected by this Contractor.

1.5 Quality Assurance:

- A. The Sedimentation Pollution Control Act of 1973 governs the activities herein specified. As this is a performance oriented law, it is the Contractor's responsibility to execute and to maintain erosion control measures to prevent visible off-site sedimentation.

PART 2 - PRODUCTS

2.1 Rip Rap Stone:

- A. Rip Rap Stone for erosion control shall be Class A or Class I as defined by NCDOT Standard Specifications for Roads and Structures, latest edition, Section 1042, as indicated on the plans.

2.2 Filter Stone:

- A. Filter stone for silt basins, check dams, etc., shall be NCDOT No. 57 stone.

2.3 Silt Fencing:

- A. Silt Fence shall conform to NCDEQ Erosion and Sediment Control Planning and Design Manual. See Detail on drawings.

2.4 Grassing:

- A. Permanent grassing shall be as shown on plans and as specified in Section 32 92 00 of these specifications. Temporary grassing shall be as specified in Table 8.02 of the Erosion and Sediment Control Planning and Design Manual, latest edition.

PART 3 - EXECUTION

3.1 Silt Fencing:

- A. Silt fence shall be installed per NCDEQ Erosion and Sediment Control Planning and Design Manual. See Detail on drawings.

3.2 Temporary Gravel Construction Entrance:

- A. Construction entrances, where shown on plan shall be constructed per details and specifications on plans and in Section 6.60, NCDEQ Erosion and Sediment Control Planning and Design Manual, latest edition.

3.3 Temporary Rock Check Dam:

- A. Check dams in temporary or permanent ditches, shall be constructed per Section 6.83 of the NCDEQ Erosion and Sediment Control Planning and Design Manual, latest edition, as shown on plans and details.

3.4 Temporary Dewatering:

- A. Temporary dewatering if necessary shall be provided using the details shown on the plans. All dewatering shall discharge to an approved BMP per the NCDEQ.

3.5 Temporary Diversion Swales:

- A. Temporary diversion swales shall be constructed to convey runoff into silt basins and to prevent offsite sedimentation.

3.6 Inlet Protection for Storm Drainage:

- A. Storm drain inlets shall be protected from siltation by one or more measures as described in Sections 6.50 - 6.53 of the NCDEQ Erosion and Sediment Control Planning and Design Manual, latest edition, as shown on plans and details.

3.7 Outlet Protection:

- A. Storm drainage outlets shall be permanently protected as shown on plans and details and as specified in Section 6.40 - 6.41 of the NCDEQ Erosion and Sediment Control Planning and Design Manual, latest edition.

3.8 Maintenance:

- A. All temporary sedimentation and erosion control measures shall be maintained at 50% minimum capacity. Once basins, swales, silt fences, check dams, etc., have reached 50% capacity, Contractor shall clean silt out of devices, distribute silt on site in an approved manner or dispose of in a legal manner off site as determined by the Consultant.

3.9 Clean-Up:

- A. Once site is fine graded, stabilized, and has been approved by the Consultant and the Environment Inspector, all temporary erosion control measures shall be removed and disposed of off-site in a legal manner. All areas disturbed in clean-up shall be fine graded and stabilized by grassing, planting, etc., as shown on plan. All permanent erosion control measures shall be completed at this time. Prior to final acceptance, site shall be clean, stabilized and all drainage facilities clean and functioning at 100%.

END OF SECTION 312500

SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

- 1.1 Related Documents:
The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.
- 1.2 Work Included in This Section:
Provide subgrade, base course, bituminous concrete surface, concrete pavement, pavement painting and similar items necessary to complete the project.
- 1.3 Related Work Specified Elsewhere:
Earthwork (31 00 00)
Fine Grading (31 22 16)
Appropriate Divisions of NC DOT Standard Specifications for Roads and Structures, latest edition.

PART 2 - PRODUCTS

- 2.1 Asphalt Pavements:
 - A. Aggregate Base Course: Base course for asphalt paving shall be crushed stone conforming to NCDOT Standard Specifications for Roads and Structures, Section 1005 & 520.
 - B. Surface Course shall be 2" Type SF-9.5B conforming with requirements of NCDOT Standard Specifications for Roads and Structures, Section 610.
 - C. Submit product data for approval.

PART 3 - EXECUTION

- 3.1 Subgrade. This item of work shall consist of the construction and preparation of the subgrade for all paved areas.
 - A. In areas where existing gravel trail is being widened to conform with the lines shown on the plans, compaction of newly exposed subgrade shall be as required by the Fine Grading specification 31 22 16. In areas of existing gravel trail, contractor shall verify existing subgrade meets the requirements of Division 31 22 16.
 - B. Protection of Subgrade. Contractor shall protect subgrade in accordance with referenced highway specification except that any vehicle that is not essential to the work being done shall not be permitted on subgrade.
 - C. Contractor shall establish blue top stakes, or other approved grade staking method on the prepared subgrade for all asphalt and concrete paving. Stakes shall be placed at 25 feet on centers at all changes in radii. The alignments and elevations of the stakes must be inspected and approved by Engineer before Contractor proceeds with subsequent work.

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3.2 Shoulders. All shoulders of trail areas shall be constructed to the lines and grades indicated and on the plans.

3.3 Fine Grading Subgrade, and Shoulders shall conform with the requirements of Division 31 22 16.

3.4 Stabilize Aggregate Base Course. After the subgrade has been brought to the lines and grades indicated and has been consolidated to the degree specified, a stabilized aggregate base course conforming with Section 520 of the NCDOT Standard Specifications for Roads and Structures, shall be constructed thereon. Thickness of stabilized aggregate base course shall be as shown on drawings. See plan and details for types and locations.

3.5 Asphalt Pavement

- A. General. Asphalt pavements shall be provided where indicated. Asphalt pavement shall conform with applicable requirements of NCDOT Standard Specifications for Roads and Structures, Division 6, and Contractor shall submit evidence to Engineer that materials proposed for use in the work have been previously approved for highway use. Thickness of bituminous concrete surface course shall be as shown on drawings.

END OF SECTION 321216

SECTION 329200 – TURF AND GRASSES

PART 1 - GENERAL

1.1 Related Documents

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.

1.2 Description of Work:

- A. The work in this section is the furnishing and installation of turf.

1.3 Work Included in This Section:

- A. Sodding to repair athletic fields, and seeding of areas outside lawn areas.

1.4 Related Work Specified Elsewhere:
Earthwork and Site Grading (31 00 00)
Fine Grading (31 22 16)

1.5 Substitutions:

- A. The species or varieties, materials, or products specified herein by botanical and common name, shall be provided as specified. Substitutions will be permitted only upon written application by the Contractor to the Designer of Record, and when approved by said Designer of Record in writing. Request for permission to substitute will not be entertained unless adequate evidence substantiating the unavailability of the specified item accompanies the request for substitution.

PART 2 - PRODUCTS

2.1 Shipment and Delivery:

- A. Promptly notify the Designer of Record in advance, when the seed, fertilizer, and soil amendments are to be delivered and the manner of shipment.
- B. Furnish therewith an itemized list of the actual quantities. Materials shall be delivered to the site in sealed standard size containers, showing weight, analysis, name of vendor, and germination test. Materials which have become wet, moldy, or otherwise damaged will not be acceptable. Deliver the necessary inspection certificates to accompany each seed, fertilizer, and soil amendment bag.
- C. When shipment is made by truck, pack all materials to provide adequate protection against climate and breakage during transit.
- D. When shipment is made by rail, pack boxcars carefully and adequately ventilate materials to prevent “sweating” of materials during transit.

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- E. Use a suitable method to handle to insure careful, workmanlike delivery of materials.

2.2 Soil Materials

- A. Planting Mix: Planting mix shall be made up of three (3) parts topsoil and one (1) part peat, thoroughly mixed by mechanical means. Peat shall be decomposed Canadian peat, with a water absorption capacity of not less than 30% of its weight when oven dried at 110 degrees centigrade. Fertilizer shall be thoroughly incorporated in the mix at a rate specified herein.
- B. Topsoil: Shall be natural, fertile, agricultural soil, capable of sustaining vigorous turf growth. It shall be of uniform composition throughout, with admixture of subsoil. It shall be free of stones, lumps, live plants, roots, sticks, and any other material toxic to plant growth. Topsoil shall not be installed while in a frozen or muddy condition.
- C. Topsoil shall contain the following specified percentages of constituents:
Maximum 30% clay (red clay, well pulverized); clay shall be sterile
Minimum 5% well-rotted sawdust, leaf mold or other approved partially decomposed organic matter.
Maximum 50% silt.
Maximum 45% coarse sand free of rock
- D. Topsoil shall have an acidity range of pH 6.5 to 7.0 and shall contain not less than six percent (6%) organic matter, as determined by loss on ignition of moisture free samples dried at 65 degrees centigrade.
- E. A sample of the proposed topsoil and planting mix shall be submitted to the Designer of Record three working days prior to installation and be approved prior to installation.

2.3 Fertilizer:

- A. Lime shall be ground limestone (Dolomite) containing not less than 85% total carbonates and shall be ground to such fineness that 50% will pass through a 100-mesh sieve and 90% will pass through a 20 mesh sieve.

- B. The following is a list of acceptable starter fertilizer for new lawn:

FERTILIZER PRODUCT	ANALYSIS	APPL.RATE	VENDOR
Lesco Starter	18-24-12	200 lbs./acre or 4.2 lbs/1000 ft.	Local Garden Center
Eastern Plant Food Co.	18-24-10	250 lbs./acre or 6 lbs./1000 sq. ft.	Local Garden Center
Sta-Green	18-24-10	250 lbs./acre or 6 lbs./1000 sq. ft.	Local Garden Center

- C. Or equal fertilizer approved by the Designer of Record.

- D. Commercial fertilizer applied at seeding time shall be per analysis listed above in which $\frac{1}{2}$ of the nitrogen is slowly available. All fertilizer shall be uniform in composition, dry, free flowing and shall be delivered to the site in the original unopened container, each bearing the manufacturer's guaranteed analysis. Any fertilizer becoming caked or damaged will not be accepted.
- 2.4 Sod: Sod shall be used for repair of trenching and disturbance within athletic fields. Sod shall be Tifway 419 or Tiftuf Bermuda Sod. Sod shall be provided in rolls, have uniform coverage, and have been mown to $\frac{3}{4}$ " ht prior to delivery. Delivery of sod shall be coordinated with installation so that sod does not remain stored on-site for a period of more than 4 hours prior to installation. Note, if approved by the Town's representative, existing sod over proposed trench areas may be cleanly cut, pulled to the side, then reinstalled as work progresses. However, this work may be performed only instances where the cut sod will be installed within 4 hours from the time of cutting.
- 2.5 Seed: Seed shall only be used outside of athletic fields. Grass seed shall be a drought resistant tall fescue, unless specified otherwise on the plant list. New varieties will be considered for review. Seed shall have a 97% minimum purity and 85% minimum germination, and be free of noxious weed seeds, as certified by the North Carolina Co-op Improvement Association or its approved equivalent by the Designer of Record.

This mix shall be used in all disturbed areas not designated for Sod (see below).

- 2.6 Water: Clean, fresh, and free from harmful substances shall be provided by contractor. Water turf thoroughly until final acceptance of project. Contractor shall verify with owner if an existing irrigation system is available to meet watering requirements listed below. Contractor shall utilize existing irrigation system if available. In the event an on-site water source is not available the contractor shall provide water until final acceptance of project at the rate specified below.

Provide water to new turf areas as follows:

0-14 days	170 gallons/1,000 s.f. every day
15-28 days	225 gallons/1,000 s.f. every other day
29-42 days	340 gallons/1,000 s.f. every three days
43-84 days	680 gallons/1,000 s.f. once per week
After 84 days	As needed to maintain acceptable turf

In the event the project is accepted prior to the watering requirements being fulfilled, the contractor will be required to provide water until the turf is established.

- 2.7 Mulch: Lawn mulch shall be cleaned threshed wheat or oat straw from the latest available harvest crop and shall be free of noxious weed seeds and foreign materials.
- 2.8 Tack Coat: Shall be an asphaltic emulsion tack coat applied sufficiently over the mulch to prevent displacement. Provide tack coat on slopes 3:1 or greater.

PART 3 – EXECUTION

- 3.1 Turf Bed Preparation: The contractor shall take representative samples of existing soil conditions where turf is to be installed and have soil tested by a qualified soils testing lab. Test results shall be submitted to owner for review, and soil deficiencies corrected by the contractor. Any re-testing cost shall be at the contractor's expense.

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- 3.2 Fine grading of Seedbed: Unless otherwise approved by the Designer of Record, all other site work required by this contract shall be complete and in place before grassing operations are begun. Work may be completed in parts if so requested by the contractor and approved by the Designer of Record. Prior to planting operations, all proposed turf areas shall be scarified to 8" depth and pulverized until the surface is smooth, friable, and of a uniformly fine texture. Remove stones and foreign material over one inch in diameter, and grade for positive drainage as required to prevent ponding of water.

Lime shall be broadcast and worked into the soil at all areas at the rate dictated by the soil test. Provide a PH level in the range of 6.5-7.0.

- 3.3 Lawn Operations: Seed, fertilizer, and lime may be applied with a mechanical hand spreader in two (2) successive sowings with the second perpendicular to the first. The rate of each sowing shall be ½ the total seed rate specified. Immediately after seeding, all lawn areas shall be lightly rolled. If slope is too excessive then seed shall be raked into top ¼" of soil. Seed shall be installed uniformly over the entire area at the rates listed below:

<u>Season</u>	<u>Type of Seed</u>	<u>Date</u>	<u>Rate</u>
Fall	Tall Fescue	September 1 – November 15	8 lbs./1000 sf
Winter	Tall Fescue Annual	November 15 – March 1	5 lbs./1000 sf
	Rye	November 15 – March 1	3 lbs./1000 sf
Spring	Tall Fescue	March 1 – June 1	8 lbs./1000 sf

Written requests for a variance must be approved by the Designer of Record.

After seeding installation apply fertilizer, mulch, tack, and water as specified herein.

- 3.4 Hydroseeding:

- A. Hydraulic Mulching: Hydraulic mulching shall consist of the mixing of wood fiber mulch, grass seed, fertilizer, and/or other additives with water. It shall be mixed in standard hydraulic mulching equipment to form homogeneous slurry. This slurry shall be sprayed, under pressure, uniformly over the soil surface at the material application rate recommended by the manufacturer. The hydraulic mulching equipment shall contain a continuous agitation system that keeps all materials in uniform suspension throughout mixing and distribution cycle.

- B. Application: Using standard hydraulic mulching equipment, the wood fiber mulch, seed and fertilizer slurry shall be applied as listed below evenly over the soil surface in a one step operation.

Slope	Mulch Application Rate
Less than 3:1	1,500 lbs./acre (minimum rate)
3:1 – 2:1	2,000 lbs./acre
2:1 or greater	2,500 lbs./acre

- C. Any areas susceptible to erosion or drought shall receive the maximum application rate.

- D. The mulch material shall consist of virgin wood fibers manufactured expressly from whole wood

TOWN OF HUNTERSVILLE
WAYMER PARK ATHLETIC FIELD LIGHTING
DEI PROJECT NUMBER: 50129702

chips. The chips shall be processed in such manner as to contain no growth or germination inhibiting factors. Fibers shall not be produced from recycled material such as sawdust, paper, cardboard, or residue from pulp and paper plants.

- E. The wood cellulose fibers of the mulch must maintain uniform suspension in water under agitation. Upon application, the mulch material shall form a blotter like mat covering the ground. This mat shall have the characteristics of moisture absorption and percolation and shall cover and hold grass seed in contact with the soil.
- F. The wood fiber mulch shall conform to the following specifications:
- | | |
|-------------------------------|--|
| Moisture content: | 10.0%, +/-3.0% |
| Organic matter (wood fiber): | 99.2%, +/- 0.8% oven dried basis |
| Ash content: | 0.8%, +/-0.2% |
| PH | 4.8%, +/-0.5% |
| Water holding capacity (min.) | 1,000 grams of water/100 grams of fiber) |

After installation apply water as specified herein.

- 3.5 Maintenance: The contractor is immediately responsible for all maintenance of turf until final acceptance. This includes all necessary watering, fertilizing, mowing, trimming, pruning, leaf removal, and any necessary weed control. Also, this includes any erosion repair, reseeding, and incidental operations necessary to establish a vigorous, healthy and uniform stand of grass. All areas which fail to show a uniform stand of grass for any reason shall be treated repeatedly until a uniform stand of at least 90% coverage is attained with no bare areas greater than five square feet.

Grass mowing operations shall be done by the contractor until final acceptance of work. Mowing shall be done only when the grass is dry. Mowing of fescue shall take place whenever grass height is 6", and shall be cut to a height of 3 1/2". Mowing of Bermuda grass shall take place whenever grass height is 4", and shall be cut to a height of 2".

When directed by the Designer of Record, contractor shall top-dress turf areas as described in Section 886 of NCDOT Standard Specifications for Roads and Structures.

- 3.6 Guarantee: The contractor shall guarantee all new turf area materials and workmanship for a period of twelve(12) months from the date of final acceptance by the owner. Damage prior to final acceptance is the contractor's responsibility. Turf replacements shall be as specified here in.
- 3.7 Clean-Up: During installation, the contractor shall be required to keep all areas cleaned. Any defacements, stains, dirt, debris, or other trash caused by landscape operations shall be disposed by contractor. The contractor shall remove construction equipment, excess materials, tools, and all other debris and rubbish from the site.
- 3.8 Final Acceptance: Upon completion of planting operations, including clean-up, the contractor shall notify the Designer of Record for inspection of work. Any items found to be unsatisfactory shall be corrected. The one year guarantee period begins at the date of final acceptance.

END OF SECTION 329200

DRAWING INDEX

GENERAL

T1.01 COVER SHEET
G1.01 APPENDIX B

CIVIL

C0.01 GENERAL NOTES
C1.01 EXISTING CONDITIONS, DEMO, AND PHASE 1 ESC PLAN
C2.01 SITE, UTILITY, AND PHASE 2 ESC PLAN
C3.01 EROSION CONTROL DETAILS

ELECTRICAL

E1.01 ELECTRICAL DEMOLITION SITE PLAN
E1.02 ELECTRICAL NEW WORK SITE PLAN
E1.03 ELECTRICAL LIGHTING PHOTOMETRICS
E2.01 ELEVATION, RISER DIAGRAMS, & SCHEDULES
E3.01 ELECTRICAL DETAILS

PROJECT / BUILDING INFORMATION:

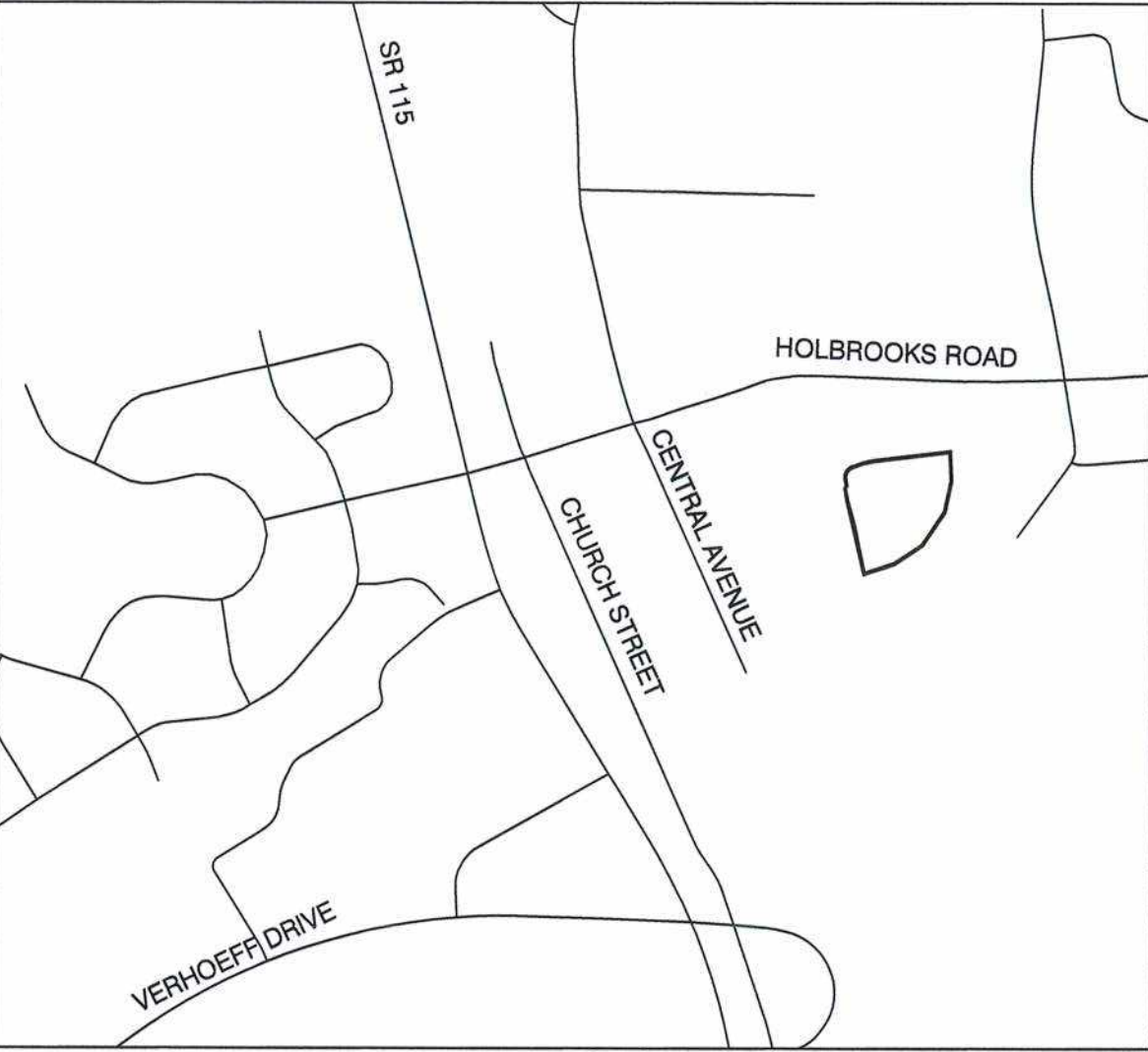
SCOPE OF WORK: ATHLETIC FIELD LIGHTING
PROJ. OCCUPANT LOAD: 0
FIRE ALARMS: NO
PARCEL NUMBER: 019-093-05
SITE AREA: 12.62 AC
PROJECT AREA: .20 AC
DENUDED LIMITS: .20 AC

CODE REFERENCES

CODE GOVERNING WORK: NORTH CAROLINA STATE BUILDING CODE – 2018
CODE MODIFICATIONS: NONE
AMERICANS WITH DISABILITIES ACT – ACCESSIBILITY GUIDELINES, 2010 (ADAAG)
THE NATIONAL ELECTRICAL CODE – 2017
MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-10)

LOCATION MAP

SCALE: NTS



CONTACTS

OWNER:
TOWN OF HUNTERSVILLE
MICHAEL JAYCOCKS
DIRECTOR OF PARKS & RECREATION
ADMINISTRATIVE OFFICES
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PH. (704) 766-2228
FAX (704) 992-5528
MJAYCOCKS@HUNTERSVILLE.ORG

ENGINEER:
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ADMILLER@DEWBERRY.COM

LANDSCAPE ARCHITECT:
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TMCMANNIS@DEWBERRY.COM

SUBMITTAL		SET NUMBER
☐ PRELIMINARY	☒ CONSTRUCTION	
☐ APPROVAL	☐ REVISION	
☐ BIDDING	☐ RECORD	

VICINITY MAP

SCALE: 1" = 100'



WAYMER PARK
ATHLETIC FIELD LIGHTING

100% CONSTRUCTION DOCUMENTS
HUNTERSVILLE, NORTH CAROLINA



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REVISIONS			
No.	DATE	BY	Description

DRAWN BY DLV
APPROVED BY TMM
CHECKED BY TMM
DATE SEPTEMBER 17, 2020
TITLE

COVER SHEET

DEI PROJECT NO: 50129702

SHEET NO.

T1.01

A

G1.01

- EROSION CONTROL & WATER QUALITY INSPECTOR:**
ANNE LOFTIN
(704) 579-1090
- LAND DEVELOPMENT INSPECTOR:**
CECIL TALBOT
(704) 579-1163
- ZONING INSPECTOR:**
AU'DARIUS BLACKWOOD
(704) 301-9969

3

ADJACENT PROPERTY

IT DOES NOT APPEAR ADJACENT PROPERTIES SHALL BE AFFECTED BY THE PERFORMANCE OF WORK ASSOCIATED WITH THIS PROJECT

CRITICAL AREAS DO NOT APPEAR TO BE LOCATED WITHIN THE PROJECT LIMITS.

1. CONSTRUCTION SHALL BE SEQUENCED SO THAT DISTURBANCE, CONSTRUCTION, AND STABILIZATION CAN BE ACHIEVED AS SOON AS PRACTICABLE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
3. AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY EROSION & SEDIMENT CONTROLS SHALL BE REMOVED IMMEDIATELY AND ANY RESULTING DISTURBED AREAS STABILIZED.

THE INTENT OF THE EROSION AND SEDIMENT CONTROLS SHOWN ON THESE DRAWINGS IS TO GUIDE THE CONTRACTOR IN IMPLEMENTING ACCEPTABLE MEASURES, INFRASTRUCTURE, AND MAINTENANCE PROGRAMS THAT WILL MINIMIZE THE AMOUNT OF EROSION AND RESULTING SEDIMENT THAT WILL TAKE PLACE DURING THE CONSTRUCTION OF THIS PROJECT.

IN GENERAL, ALL THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED WEEKLY AND AFTER EACH $\frac{1}{2}$ " RAINFALL TO ENSURE THEY ARE IN WORKING ORDER. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:

- ## EROSION AND SEDIMENT CONTROL NOTES

1. ALL "STD." NUMBERS REFER TO TOWN OF HUNTERSVILLE STANDARD DRAWINGS.

9. A 10-FOOT UNDISTURBED BUFFER SHALL BE PROVIDED AROUND THE OUTSIDE EDGE OF DRAINAGE FEATURES SUCH AS INTERMITTENT AND PERENNIAL STREAMS, PONDS, AND WETLANDS. INCIDENTAL DRAINAGE IMPROVEMENTS OR REPAIRS WILL BE PERMITTED WITHIN THE BUFFER AS APPROVED BY TOWN STAFF. THESE WOULD INCLUDE ANY ALLOWANCES STATED IN THE SWIM BUFFER AND/OR PCCO ORDINANCES, IF APPLICABLE.

1. SET UP AN ON-SITE PRE-CONSTRUCTION CONFERENCE WITH THE DESIGNER OF RECORD, TOWN REPRESENTATIVE, AND LAND DEVELOPMENT INSPECTOR AND ZONING INSPECTOR. FAILURE TO SCHEDULE SUCH CONFERENCE 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY IS SUBJECT TO FINE.

4. COORDINATE WITH EROSION CONTROL INSPECTOR PRIOR TO ADJUSTMENT OR REMOVAL OF EROSION CONTROL MEASURES BEFORE PROCEEDING TO PHASE 2.

1. CONTRACTOR SHALL CONTACT REPRESENTATIVE OF TOWN AND DESIGNER OF RECORD PRIOR TO COMMENCING WITH PHASE 2, AND COORDINATE ON-SITE MEETING IF REQUESTED BY TOWN OR DESIGNER OF RECORD.

3. ADJUST AND INSTALL SILT FENCE, INLET PROTECTION, TREE PROTECTION, STRAW WATTLES, AND OTHER MEASURES AS SHOWN ON PLANS.

4

-  EXISTING BUSH
 EXISTING TREE
 EXISTING TREE LINE
 EXISTING TRASH CAN
 EXISTING WATER FOUNTAIN
 EXISTING WATER VALVE
 EXISTING BASE
 EXISTING BENCH

- | | | |
|---|---|--|
|  |  | PROPOSED TEMPORARY CONSTRUCTION ENTRANCE |
|  | | PROPOSED TEMPORARY CONCRETE WASHOUT |
|  |  | PROPOSED INLET PROTECTION AND SILT SACK |
|  | | PROPOSED MULCHING |
|  | | PROPOSED TEMPORARY SEEDING |
|  | | PROPOSED PERMANENT SEEDING |
|  | | PROPOSED REMOVAL OF UTILITY POLE |
|  | | PROPOSED STADIUM LIGHT POLE |
|  | | PROPOSED ELECTRICAL HANDHOLE |

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NCBOLA #C-478

100% CONSTRUCTION DOCUMENTS

— PROJECT AREA

An aerial photograph showing a residential area with several houses and trees. A black line is drawn vertically across the image, pointing to a specific location.

SCALE:

[illegible]DRAWN BY DLV

APPROVED BY TMM

CHECKED BY TMM

DATE SEPTEMBER 17, 2020

TITLE

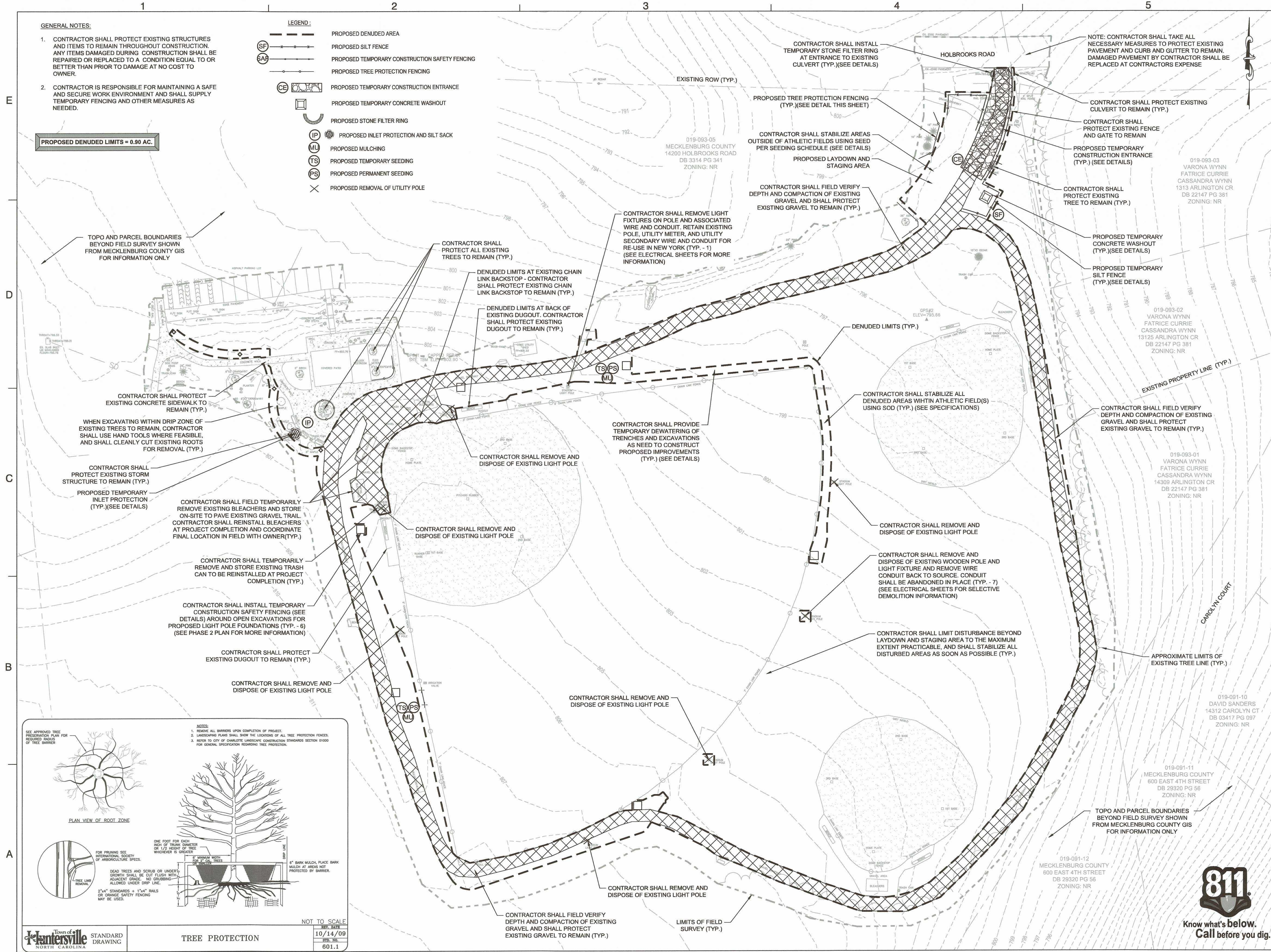
DEI PROJECT NO: 50129702

SHEET NO.



Know what's below.
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CO.01



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WAYMER PARK
ATHLETIC FIELD LIGHTING

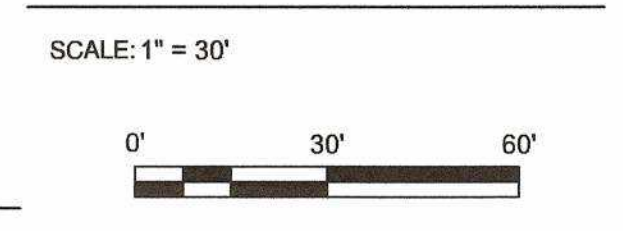
100% CONSTRUCTION DOCUMENTS

14200 HOLBROOKS ROAD
HUNTERSVILLE, NORTH CAROLINA 28078

SEAL

KEY PLAN:

PROJECT AREA



REVISIONS			
NO.	DATE	BY	DESCRIPTION

DRAWN BY: DLV

APPROVED BY: TMM

CHECKED BY: TMM

DATE: SEPTEMBER 17, 2020

TITLE

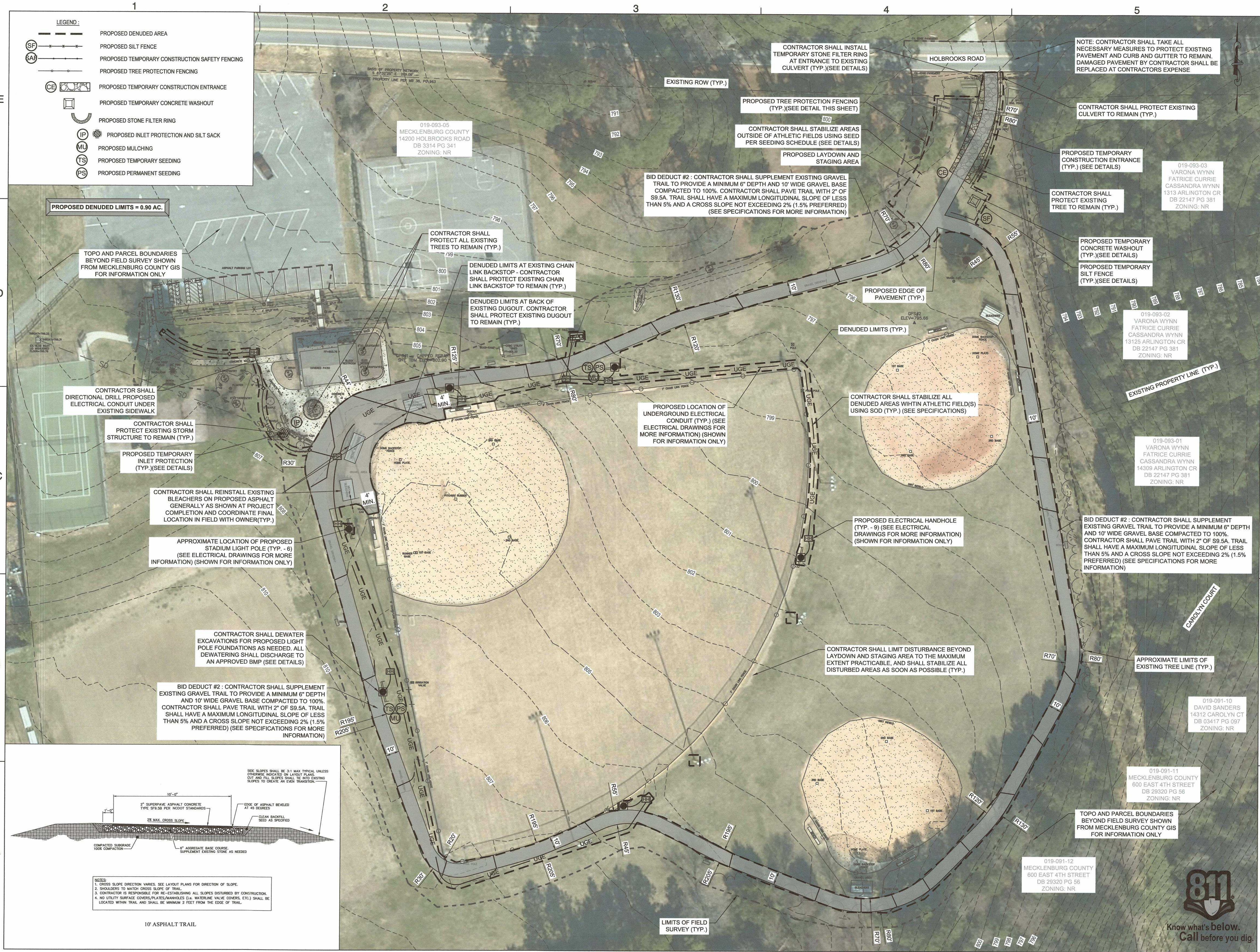
EXISTING
CONDITIONS, DEMO,
AND PHASE 1
ESC PLAN

DEI PROJECT NO: 50129702

SHEET NO.

C1.01

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WAYMER PARK
ATHLETIC FIELD LIGHTING

100% CONSTRUCTION DOCUMENTS

14200 HOLBROOKS ROAD
HUNTERSVILLE, NORTH CAROLINA 28078

SEAL

KEY PLAN: PROJECT AREA

SCALE: 1" = 30'

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DRAWN BY DLV

APPROVED BY TMM

CHECKED BY TMM

DATE SEPTEMBER 17, 2020

TITLE

SITE, UTILITY,
AND
PHASE 2 ESC

DEI PROJECT NO: 50129702

SHEET NO.

C2.01

Know what's below.
Call before you dig.

1

2

E

D

GENERAL NOTES:

1. FILTER FABRIC FENCE SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
2. WOVEN FILTER FABRIC BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.
3. STEEL POSTS SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.
4. TURN SILT FENCE UP SLOPE AT ENDS.
5. ORANGE SAFETY FENCE IS REQUIRED AT BACK OF SILT FENCE WHEN GRADING IS ADJACENT TO SWIM BUFFERS, STREAMS OR WETLANDS. (REFER TO SWIM BUFFER GUIDELINES). THE COLOR ORANGE IS RESERVED FOR VISUAL IDENTIFICATION OF ENVIRONMENTALLY SENSITIVE AREAS.
6. DRAINAGE AREA CAN NOT BE GREATER THAN 1/4 ACRE PER 100 FT OF FENCE.
7. SLOPE LENGTHS CAN NOT EXCEED CRITERIA SHOWN IN TABLE 6.82A NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
8. DO NOT INSTALL SEDIMENT FENCE ACROSS STREAMS, DITCHES, WATERWAYS OR OTHER AREAS OF CONCENTRATED FLOW.

MAINTENANCE NOTES:

1. FILTER BARRIERS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROX. HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

NOT TO SCALE

STANDARD DRAWING

TEMPORARY SILT FENCE

REV. DATE

10/14/09

STD. NO.

507.1

3

CE

NOTES:

1. A STABILIZED ENTRANCE PAD OF #5 WASHED STONE OR RAIL ROAD BALLAST SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
2. FILTER FABRIC OR COMPACTED CRUSHER RUN STONE SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS MUST BE REMOVED IMMEDIATELY.
5. WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN SEE STD. NO. 515.1.
6. TOWN MAY REQUIRE A STANDARD COMMERCIAL DRIVEWAY (STD. 108.1 - 118.1) TO ACCESS THE CONSTRUCTION SITE IF THE DRIVEWAY IS ON A THOROUGHFARE.

NOT TO SCALE

STANDARD DRAWING

STABILIZED CONSTRUCTION ENTRANCE

REV. DATE

10/14/09

STD. NO.

514.1

4

IP

NOTES:

1. INLET MAINTENANCE SHALL BE DOCUMENTED IN PROJECT LOG BOOK.
2. FILTER TYPES SHALL BE APPROVED BY THE INSPECTOR PRIOR TO INSTALLATION.
3. FILTER BAGS MAY BE REMOVED WHEN SITE IS STABILIZED AT THE DIRECTION OF THE ENGINEER.
4. FILTER BAGS SHALL BE REMOVED PRIOR TO STREET ACCEPTANCE.
5. FILTER BAGS SHALL BE CLEANED OR REPLACED ON A REGULAR BASIS (NOT BE MORE THAN HALF FULL AT ANY TIME).
6. FILTER BAGS SHALL NOT BE ALLOWED IN EXISTING TOWN OR NCDOT ROADS.

NOT TO SCALE

STANDARD DRAWING

CATCH BASIN INLET PROTECTION

REV. DATE

10/14/09

STD. NO.

519.1

C

NOTE 1
Ground Cover--Protective cover must be established on all disturbed areas within 14 calendar days after land disturbing activity is completed or has temporarily ceased.

NOTE 2
Graded slopes and fills--Protective cover must be established on all graded slopes and fills within 7 calendar days after a phase of grading is completed or has temporarily ceased.

NOTE 3
Enhanced Controls--Protective cover must be established on all disturbed areas, graded slopes, and fills within 5 calendar days after land disturbing activity or a phase of grading is completed or has temporarily ceased.

NOT TO SCALE

STANDARD DRAWING

SEEDING SCHEDULE

REV. DATE

08/01/17

STD. NO.

521.1

C

NOTE 1
Ground Cover--Protective cover must be established on all disturbed areas within 14 calendar days after land disturbing activity is completed or has temporarily ceased.

NOTE 2
Graded slopes and fills--Protective cover must be established on all graded slopes and fills within 7 calendar days after a phase of grading is completed or has temporarily ceased.

NOTE 3
Enhanced Controls--Protective cover must be established on all disturbed areas, graded slopes, and fills within 5 calendar days after land disturbing activity or a phase of grading is completed or has temporarily ceased.

NOT TO SCALE

STANDARD DRAWING

SEEDING SCHEDULE (SEASONAL)

REV. DATE

10/14/09

STD. NO.

522.1

B

A

NOTE:

1. PRIOR TO INSTALLATION, MANUFACTURER SPECIFICATIONS OF FILTER MEDIA SHALL BE PROVIDED TO THE EROSION CONTROL INSPECTOR FOR APPROVAL AND USE. DISCHARGE FROM FILTER MEDIA SHALL MEET OR EXCEED THE PROVISIONS OF THE CLEAN WATER ACT.
2. ENSURE THAT PUMP PRESSURE DOES NOT EXCEED FILTER MEDIA PRESSURE RATING.
3. FILTER MEDIA MAY BE, BUT NOT LIMITED TO, SAND MEDIA FILTRATION DEVICES, RATED FILTER FABRIC BAGS OR POLYMER BASED DEWATERING PRACTICES.
4. PUMP STRAINER SHALL NOT BE IN CONTACT WITH BOTTOM OF POND.

NOT TO SCALE

STANDARD DRAWING

EROSION CONTROL DEWATERING

STD. NO.

REV.

B

A

GENERAL NOTES:

1. GRAVEL AND RIP RAP FILTER BERM BASIN SHOULD BE USED TO PROTECT EXISTING PIPE INVERTS THAT DRAIN 5 ACRES OR LESS.
2. DIMENSIONS SHOWN ARE THE MINIMUM ACCEPTED UNLESS OTHERWISE NOTED.
3. CLEANOUT PRIOR TO SEDIMENT REACHING HALF OF BERM HEIGHT.

NOT TO SCALE

STANDARD DRAWING

GRAVEL AND RIPRAP FILTER BERM BASIN

REV. DATE

10/14/09

STD. NO.

516.1

C

CWA INSTALLATION NOTES

1. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON THE SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (8 IN. MIN THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINES ABOVE GROUND STORAGE SHOULD BE USED.
2. CWA SHALL BE INSTALLED PRIOR TO ANY CONCRETE INSTALLATION.
3. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' WITH SLOPES COMING OUT AT 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
4. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE A MINIMUM HEIGHT OF 1'.
5. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
6. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
7. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

CWA MAINTENANCE NOTES

1. INSPECT BMP'S EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMP'S SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMP'S AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMP'S IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMP'S HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN PIT SHALL BE REMOVED ONCE MATERIALS HAVE REACHED A DEPTH OF 2'.
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE, AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE USED FOR THE PROJECT HAS BEEN PLACED.
7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED, AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

CONCRETE WASHOUT AREA
N.T.S.
(WITHOUT WIRE SUPPORT)

TEMPORARY CONSTRUCTION FENCE
N.T.S.

NOT TO SCALE

STANDARD DRAWING

CONCRETE WASHOUT AREA

REV. DATE

10/14/09

STD. NO.

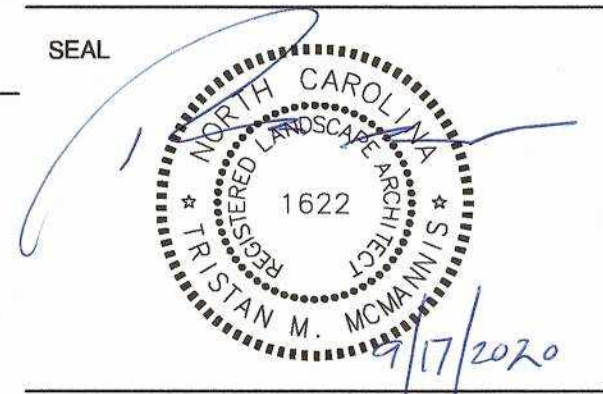
516.1



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HUNTERSVILLE, NORTH CAROLINA 28078



SCALE:

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DRAWN BY DLV
APPROVED BY TMM
CHECKED BY TMM
DATE SEPTEMBER 17, 2020
TITLE

EROSION CONTROL
DETAILS

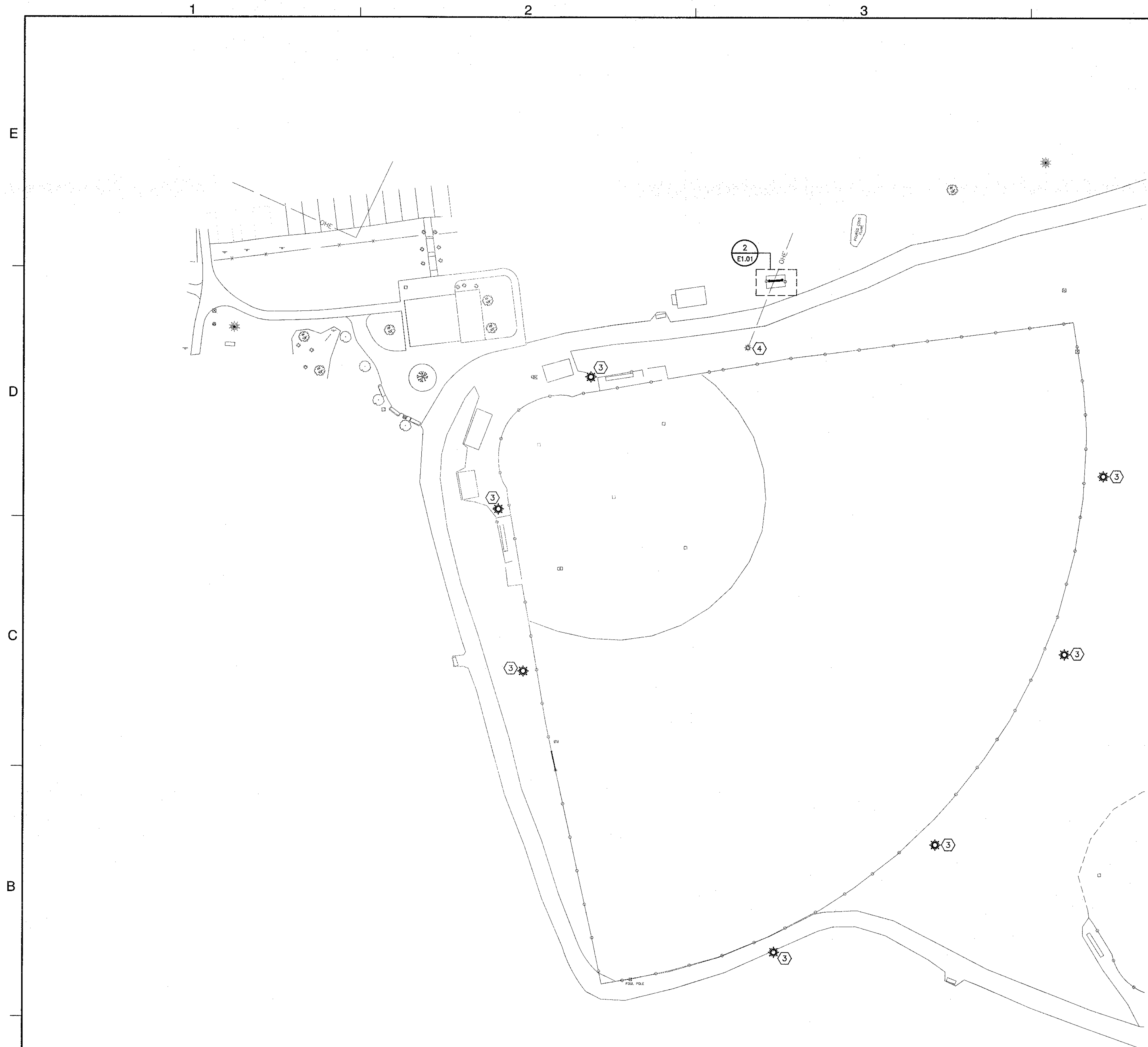
DEI PROJECT NO: 50129702

SHEET NO.

C3.01



Know what's below.
Call before you dig.



① DEMOLITION SITE PLAN
SCALE: 1" = 30'

GENERAL NOTES — DEMOLITION:

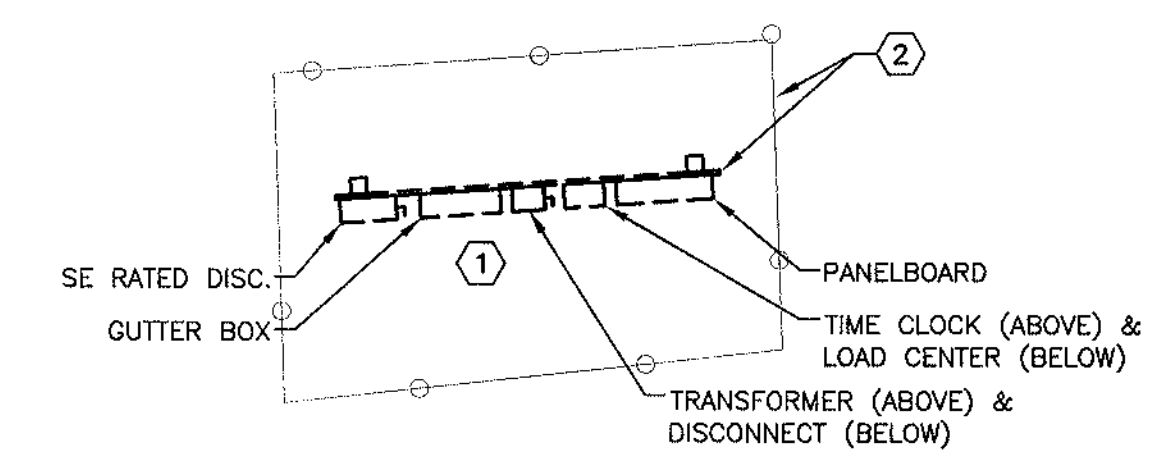
1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2017 NEC, APPLICABLE CODES AND THE GOVERNMENTAL AUTHORITIES HAVING JURISDICTION.
2. DEMOLITION WORK SHOWN BOLD AND DASHED. EXISTING TO REMAIN WORK SHOWN LIGHT AND CONTINUOUS.
3. NOT ALL ELECTRICAL DEVICES AND EQUIPMENT ARE SHOWN. LOCATIONS AND ASSOCIATED CIRCUITS OF EXISTING DEVICES AND EQUIPMENT SHOWN ARE BASED IN PART UPON PREVIOUS DRAWINGS, FIELD OBSERVATIONS AND INFORMATION FURNISHED BY OTHERS AND SHALL BE CONSIDERED APPROXIMATE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
4. ALL EXISTING DEVICES AND EQUIPMENT SHALL REMAIN IN PLACE AND OPERATIONAL UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUITY OF ALL EXISTING CIRCUITS AND SYSTEMS TO REMAINING DEVICES AND EQUIPMENT WHICH MAY BE AFFECTED BY AREA OF WORK. MATCH AND EXTEND CONDUIT, CONDUCTORS, CABLES, ETC. AS NECESSARY TO MAINTAIN CIRCUIT INTEGRITY.
6. ALL EXISTING RACEWAY AND WIRING THAT ARE TO REMAIN IN THE AREA OF WORK SHALL BE RELOCATED AS REQUIRED TO PROVIDE OR MAINTAIN ACCESSIBILITY AND TO ACCOMMODATE THE PROPOSED CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY ALL RACEWAY AND WIRING TO REMAIN PRIOR TO COMMENCING WORK. ALL RELOCATION SHALL BE COORDINATED WITH THE OWNER OR OWNER'S REPRESENTATIVE. PROVIDE TEMPORARY CONNECTIONS TO EQUIPMENT AND DEVICES TO MAINTAIN EQUIPMENT AND SYSTEMS IN SERVICE. ALL DOWNTIME REQUIRED FOR INSTALLATION OF TEMPORARY CONNECTIONS SHALL BE COORDINATED WITH THE OWNER OR OWNER'S REPRESENTATIVE.
7. CONTRACTOR SHALL COORDINATE POWER SHUTDOWN REQUIREMENTS WITH OWNER OR OWNER'S REPRESENTATIVE AT LEAST 72 HOURS IN ADVANCE OF DEMOLITION AND/OR TIE-IN WORK. SHUTDOWN WORK SHALL BE MINIMIZED TO AVOID INTERFERENCE WITH OWNER'S NORMAL OPERATING SCHEDULE.
8. UNLESS NOTED OTHERWISE, DEMOLISH ALL POWER DEVICES AND LIGHT FIXTURES SCHEDULED FOR DEMOLITION. FOR ALL DEMOLISHED DEVICES AND FIXTURES, COMPLETELY REMOVE ALL BRANCH CIRCUITS AND ASSOCIATED WIRING, CONDUIT AND ACCESSORIES. WHERE COMPLETE DEMOLITION IS NOT POSSIBLE, CONTRACTOR SHALL INFORM THE ENGINEER AND OWNER AND DEMOLISH ITEMS SUCH THAT IT DOES NOT DISTURB EXISTING ELEMENTS.
9. CONTRACTOR SHALL PROTECT, PRESERVE AND MAINTAIN ANY DEVICES TO BE REUSED OR RELOCATED AND SHALL REINSTALL WHERE INDICATED ON PLANS.
10. EXCEPT WHERE NOTED OTHERWISE, ALL REMOVED ELECTRICAL EQUIPMENT, DEVICES, CONDUIT, CONDUCTORS, BOXES, LUMINAIRES AND ASSOCIATED ITEMS SHALL BE PROPERLY DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.
11. PRIOR TO REMOVAL OF CIRCUIT FROM A PANEL, CONTRACTOR SHALL VERIFY NO OTHER DEVICES EXIST ON THE CIRCUIT. IN THE EVENT OF A CONFLICT, DEVIATION OR DISCREPANCY, CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ENGINEER OF RECORD FOR CLARIFICATION PRIOR TO REMOVAL.
12. ONCE A CIRCUIT HAS BEEN REMOVED, THE REMAINING BREAKER SHALL BE LABELED SPARE, TURNED OFF, AND MADE READY FOR USE UNDER NEW WORK.

KEYED NOTES DEMO: ⑦

1. CONTRACTOR SHALL DEMOLISH EXISTING EQUIPMENT MOUNTED ON EQUIPMENT BOARD. RETAIN EXISTING SERVICE ENTRANCE CONDUCTORS FOR RE-USE IN NEW WORK. REFER TO RISER DIAGRAM FOR DETAILS.
2. CONTRACTOR SHALL DEMOLISH EXISTING WOODEN EQUIPMENT RACK AND CHAIN LINK FENCE.
3. CONTRACTOR SHALL DEMOLISH EXISTING WOODEN POLE AND LIGHT FIXTURE. DEMOLISH WIRE CONDUIT BACK TO SOURCE. CONDUIT SHALL BE ABANDONED IN PLACE.
4. CONTRACTOR SHALL DEMOLISH LIGHT FIXTURES ON POLE AND ASSOCIATED WIRE AND CONDUIT. RETAIN EXISTING POLE, UTILITY METER, AND UTILITY SECONDARY WIRE AND CONDUIT FOR RE-USE IN NEW WORK. REFER TO RISER DIAGRAM FOR DETAILS.

ELECTRICAL SITE LEGEND:

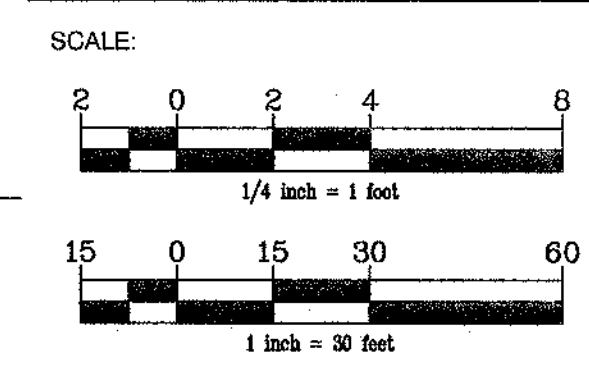
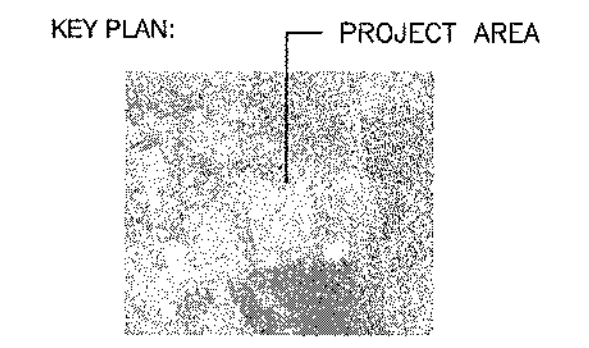
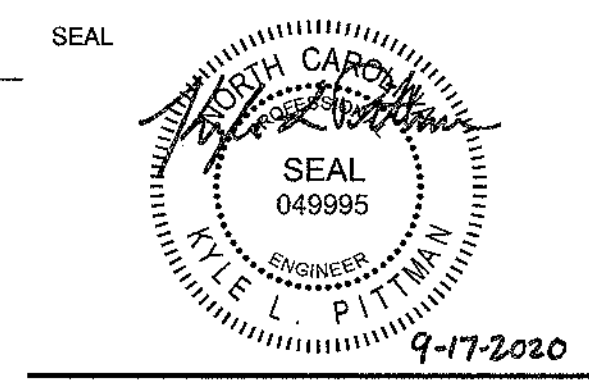
- ☼ EXISTING SPORTS FIELD LIGHTS AND POLE
- OHE --- EXISTING OVERHEAD ELECTRICAL



② ENLARGED DEMO EQUIPMENT PLAN
SCALE: 1/4" = 1'-0"

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8300 Harris Corners Pkwy - Suite 220
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NCBELS #1-0829
NCBCLA #C-478

WAYMER PARK
ATHLETIC FIELD LIGHTING
100% CONSTRUCTION DOCUMENTS
14200 HOLBROOKS ROAD
HUNTERSVILLE, NORTH CAROLINA 28078



REVISIONS			
NO.	DATE	BY	DESCRIPTION

DRAWN BY: TLW
APPROVED BY: KLP
CHECKED BY: JGW
DATE: SEPTEMBER 17, 2020

TITLE
**ELECTRICAL
DEMOLITION
SITE PLAN**

DEI PROJECT NO: 50129702

SHEET NO.

E1.01



LIGHT FIXTURE SCHEDULE												
TYPE	DESCRIPTION	SIZE	MOUNTING	MANUFACTURER	LIGHT SOURCE	COLOR TEMP.	LPW	CONTROL TYPE	CRI	NOTES	VOLTAGE	VA
1L	LED POST TOP WITH EMERGENCY BATTERY PACK, TYPE I DISTRIBUTION, COMFORT OPTICS, DIE-CAST HOUSING, NATURAL ALUMINUM FINISH, 5" DIAMETER ROUND ALUMINUM POLE.	5" DIAMETER 12' TALL	POLE MOUNT	GARCO: POLE #PRA5-STB-12-NA FIXTURE: #PPT-140L-1675-NW-G2-T3-1-EBPC-277 OR APPROVED EQUAL	LED - 6574 LUMENS	4000K	87		70	N/A	277	75

GENERAL NOTES - NEW WORK:

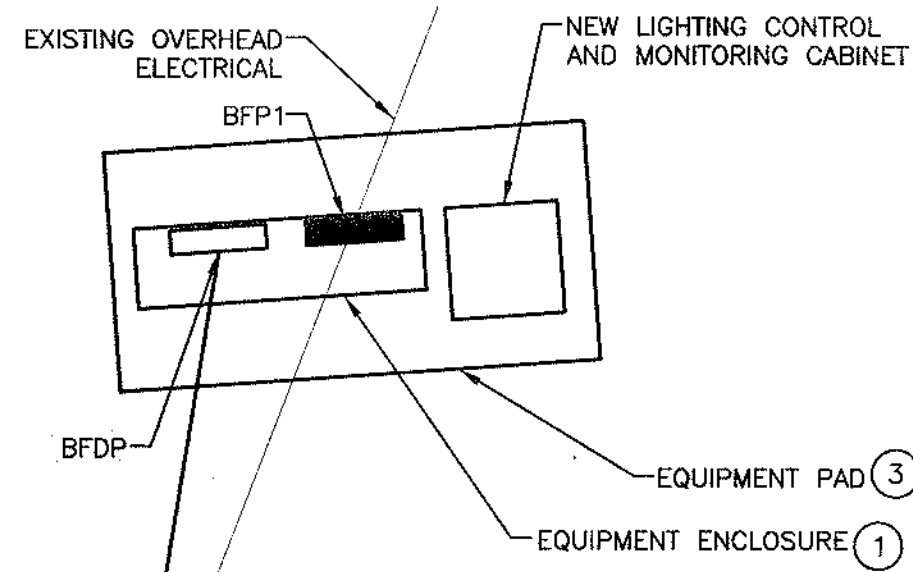
- ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2017 NEC, APPLICABLE CODES AND THE GOVERNMENTAL AUTHORITIES HAVING JURISDICTION.
- ELECTRICAL PLANS ARE GENERALLY DIAGRAMMATIC IN NATURE AND DO NOT CONVEY ALL DETAILS REQUIRED FOR A COMPLETE INSTALLATION. HOWEVER, THESE PLANS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE FOR GENERAL ARRANGEMENT AND LOCATION OF EQUIPMENT. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO COMMENCING WORK. CONTRACTOR SHALL ARRANGE WORK TO MEET THESE CONDITIONS AND PROVIDE SUCH EQUIPMENT AND ACCESSORIES AS MAY BE REQUIRED. IN THE EVENT OF A CONFLICT, DEVIATION OR DISCREPANCY FOUND WITHIN THE PLANS OR SPECIFICATIONS, CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ENGINEER OF RECORD FOR CLARIFICATION PRIOR TO COMMENCING WORK.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, MANUFACTURERS' RECOMMENDED INSTALLATION PROCEDURES, THE AMERICANS WITH DISABILITIES ACT, ACT, ANSI A117.1, THE NATIONAL ELECTRICAL CODE, THE NATIONAL FIRE ALARM AND SIGNALING CODE AND ALL OTHER APPLICABLE LOCAL AND STATE CODES AS ADOPTED AND MODIFIED BY THE AUTHORITIES HAVING JURISDICTION.
- AN ELECTRICAL FOREMAN SHALL BE ON-SITE, SUPERVISING ALL WORK PERFORMED.
- CONTRACTOR SHALL COORDINATE WITH OWNER FOR ACCESS TO AREA OF WORK AND FOLLOW ALL OWNER ENVIRONMENTAL, HEALTH, SAFETY AND SECURITY PROTOCOLS.
- CONTRACTOR SHALL COORDINATE ELECTRICAL WORK WITH ALL OTHER TRADES PRIOR TO COMMENCING WORK TO ENSURE ELECTRICAL WORK DOES NOT INTERFERE WITH OTHER TRADES. LINES AND SYSTEMS THAT REQUIRE SLOPE SHALL TAKE PRECEDENCE OVER ELECTRICAL WORK.
- PRIOR TO EQUIPMENT INSTALLATION, CONTRACTOR SHALL CONDUCT FIELD MEASUREMENTS TO ENSURE ALL ELECTRICAL EQUIPMENT AND ACCESSORIES WILL FIT INTO LOCATION(S) AS INDICATED ON PLANS. IN THE EVENT OF A CONFLICT, DEVIATION OR DISCREPANCY, CONTRACTOR SHALL PROVIDE A PROPOSED SKETCH OF REVISED ARRANGEMENT TO ENGINEER OF RECORD FOR ACCEPTANCE PRIOR TO COMMENCING WORK.
- CONTRACTOR SHALL NOT BACKFILL EXCAVATIONS OR OBSOLETE ELECTRICAL INSTALLATIONS PRIOR TO INSPECTION AND ACCEPTANCE BY AUTHORITIES HAVING JURISDICTION.
- CONTRACTOR SHALL REMOVE ALL DIRT AND DEBRIS FROM ALL ELECTRICAL ENCLOSURES AND DEVICE, JUNCTION AND PULL BOXES PRIOR TO INSTALLATION OF DEVICES, COVERPLATES AND LIDS.
- CONTRACTOR SHALL LABEL ALL COVERPLATES, EQUIPMENT, JUNCTION BOXES, AND PULL BOXES WITH CIRCUIT AND PANEL DESIGNATIONS. REFER TO DETAILS AND SPECIFICATIONS FOR SPECIFIC LABEL AND IDENTIFICATION REQUIREMENTS.
- ALL BRANCH AND FEEDER CIRCUITS SHALL ORIGINATE FROM PANELS AND SERVE DEVICES AND EQUIPMENT AS INDICATED ON PLANS AND SCHEDULES. IN THE EVENT OF A CONFLICT, DEVIATION OR DISCREPANCY, CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ENGINEER OF RECORD FOR CLARIFICATION PRIOR TO COMMENCING WORK.
- ALL BRANCH CIRCUITS SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR, UNLESS NOTED OTHERWISE. THE USE OF A COMMON NEUTRAL FOR MULTIPLE BRANCH CIRCUITS IS STRICTLY PROHIBITED.
- ALL RACEWAYS CONTAINING A FEEDER OR BRANCH CIRCUIT SHALL BE PROVIDED WITH AN INSULATED EQUIPMENT GROUNDING CONDUCTOR. FOR RACEWAYS CONTAINING MORE THAN ONE BRANCH CIRCUIT, SIZE OF EQUIPMENT GROUNDING CONDUCTOR SHALL BE BASED ON THE LARGEST CIRCUIT'S OVERCURRENT PROTECTIVE DEVICE.
- REFER TO E2.01 FOR EQUIPMENT LISTING AND POLE DESIGNATIONS.

KEYED NOTES NEW: #

- CONTRACTOR SHALL INSTALL NEW METAL ENCLOSURE. INSTALL NEW PANEL 'BFP1' AND NEW MPZ 'BFP1' INSIDE NEW ENCLOSURE AND INSTALL NEW LIGHTING CONTROL PANEL. SEE ELEVATION & RISER DIAGRAM FOR CONNECTION DETAILS.
- CONTRACTOR SHALL INSTALL NEW FEEDER AND PROVIDE A NEW HANDHOLE. PROVIDE A NEW FEEDER FROM HANDHOLE TO DRIVER ENCLOSURE ON POLE. REFER TO ELEVATION & RISER DIAGRAM FOR WIRE SIZE AND DETAILS.
- PROVIDE A 4" THICK CONCRETE PAD TO SUPPORT CONTROL CABINET. THE CONCRETE PAD SHALL EXTEND A MINIMUM OF 3" BEYOND CONTROL CABINET PERIMETER.
- LOCATION OF EXISTING POLE, UTILITY METER, AND UTILITY SECONDARY WIRE AND CONDUIT RETAINED DURING DEMOLITION.
- CONTRACTOR SHALL TRENCH UNDER GRAVEL PATHWAY FOR NEW UNDERGROUND CONDUIT. REPAIR ANY DAMAGE TO GRAVEL PATHWAY.
- MULTIPLE HOMERUNS TO PANEL SHOWN FOR CLARITY ONLY. AREA LIGHTS ON BFPD-20,22 SHALL BE CIRCUITED TOGETHER ON SINGLE BRANCH CIRCUIT. REFER TO LIGHTING SCHEDULE FOR FIXTURE DETAILS.
- CONTRACTOR SHALL TRENCH UNDER CONCRETE PATHWAY FOR NEW UNDERGROUND CONDUIT. REPAIR ANY DAMAGE TO CONCRETE PATHWAY.
- DEDUCT BID #1: MULTIPURPOSE SPORTS FIELD FIXTURES AND ASSOCIATED CONDUCTORS.

ELECTRICAL SITE LEGEND:

- SPORTS FIELD LIGHTS AND POLE. NEW ELECTRICAL ENCLOSURE, AND FIXTURES PROVIDED BY E.C.
- HOMERUN TO NEW PANEL. SEE RISER DIAGRAM AND PANEL SCHEDULE FOR DETAILS.
- HANDHOLE. FIELD VERIFY LOCATION. SUBSCRIPT INDICATES HANDHOLE SIZE. SEE DETAIL ON SHEET E3.01 FOR ADDITIONAL INFORMATION.
- DUCTBANK SECTION
- UNDERGROUND ELECTRICAL DUCTBANK
- EXISTING OVERHEAD ELECTRICAL
- TYPE 1L AREA LIGHT AND POLE. NEW FIXTURES AND POLE PROVIDED BY E.C.



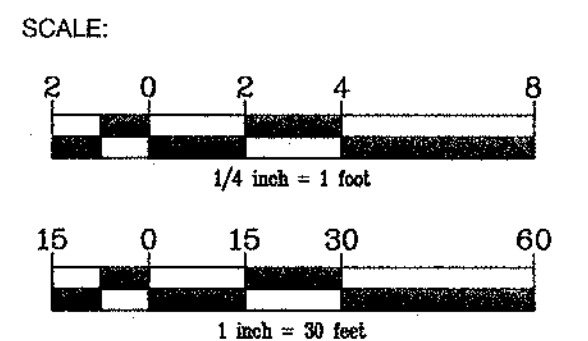
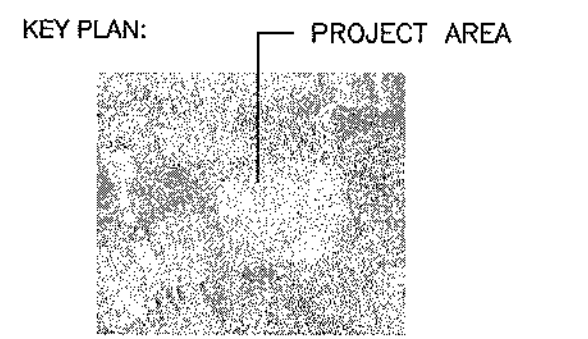
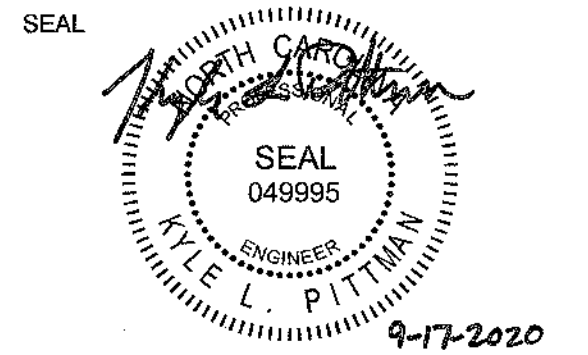
1 NEW WORK SITE PLAN
SCALE: 1" = 30'

2 ENLARGED NEW CABINET PLAN
SCALE: 1/4" = 1'-0"



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REVISIONS			
NO.	DATE	BY	DESCRIPTION

DRAWN BY: TLW
APPROVED BY: KLP
CHECKED BY: JGW
DATE: SEPTEMBER 17, 2020

TITLE
ELECTRICAL
NEW WORK
SITE PLAN

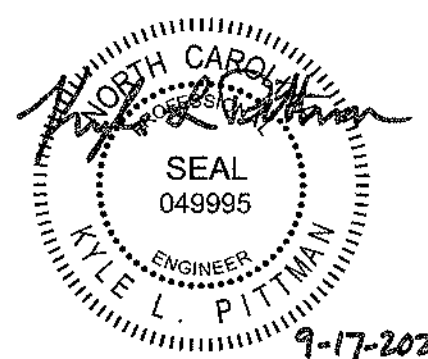
DEI PROJECT NO.: 50129702

SHEET NO.

E1.02

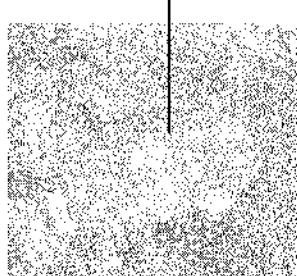
WAYMER PARK
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SEAL

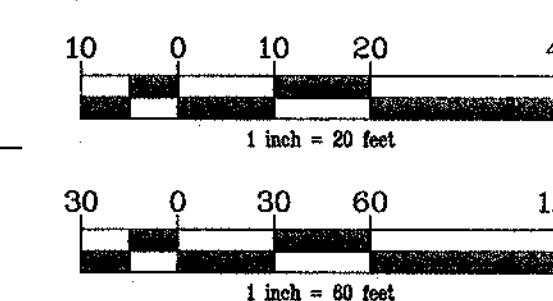


KEY PLAN:

— PROJECT AREA



SCALE:



REVISIONS

[illegible]

DRAWN BY TLW

APPROVED BY KLP

CHECKED BY JGW

DATE SEPTEMBER 17, 2020

TITLE

LIGHTING PHOTOMETRICS

DEI PROJECT NO: 50129702

SHEET NO.

E1.03



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

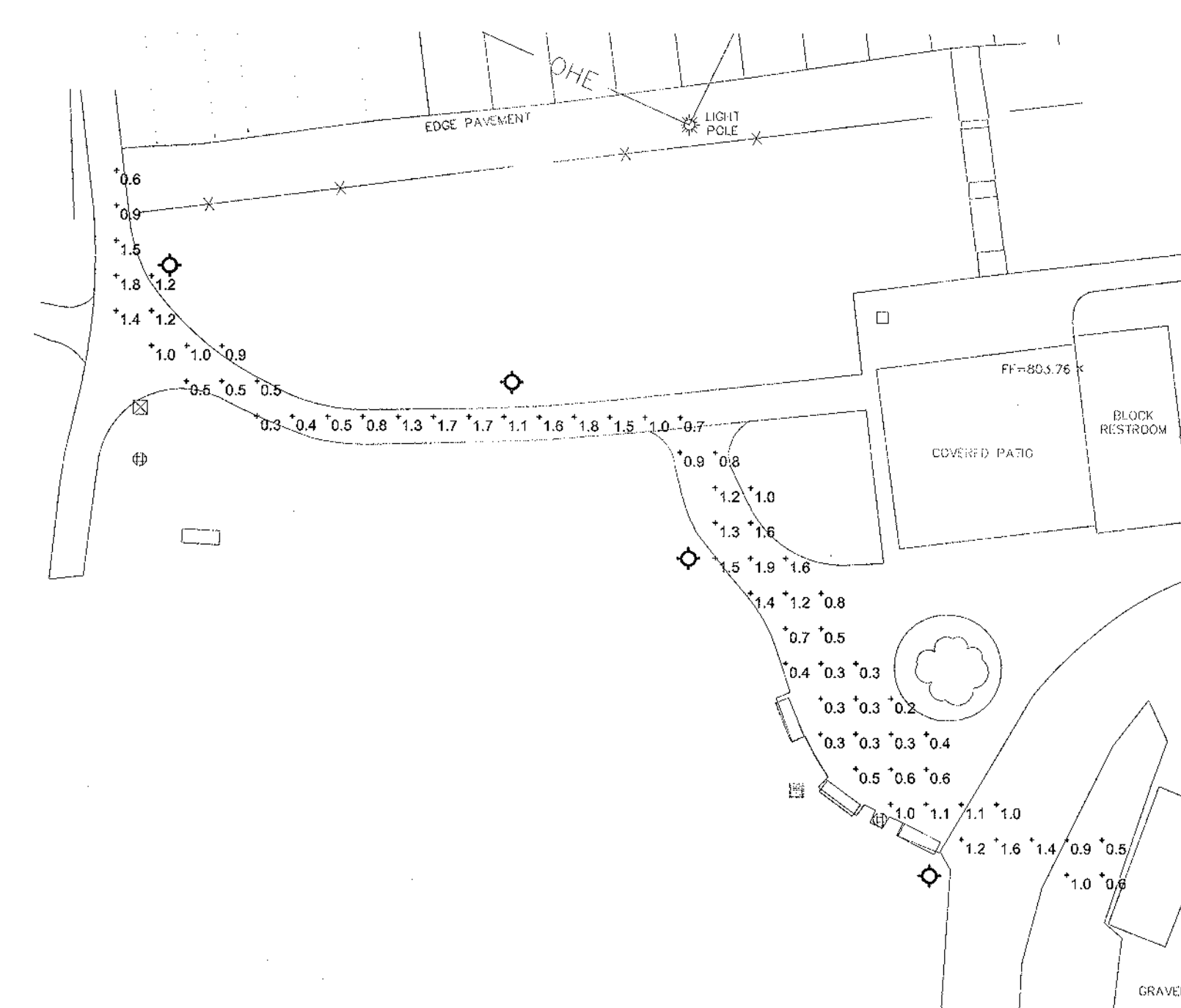
GENERAL NOTES – LIGHTING PHOTOMETRICS:

1. ALL SPORTS FIELD LIGHTING PHOTOMETRICS ARE SHOWN AT THE NEIGHBORING PROPERTY LINES. LIGHT TRESPASS SHALL BE LIMITED TO 0.1 FOOT-CANDL (MEASURED AT THE PROPERTY LINE). LIGHT FIXTURES SHALL BE INSTALLED WITH AIMING ANGLES THAT PERMIT NO GREATER THAN 5% OF LIGHT EMITTED BY EACH FIXTURE TO PROJECT ABOVE THE HORIZONTAL.
2. REFER TO THE TOWN OF HUNTERVILLE PARKS AND RECREATION LIGHTING ORDINANCES (ARTICLES 8.26 & 9.21).
3. ALL EGRESS LIGHTING POINT CALCULATIONS ARE SHOWN WITH THE FIXTURES ON BATTERY POWER.

ELECTRICAL SITE LEGEND:

SPORTS FIELD LIGHTS AND POLE. NEW ELECTRICAL ENCLOSURE, AND
FIXTURES PROVIDED BY E.C.

—OHE— EXISTING OVERHEAD ELECTRICAL

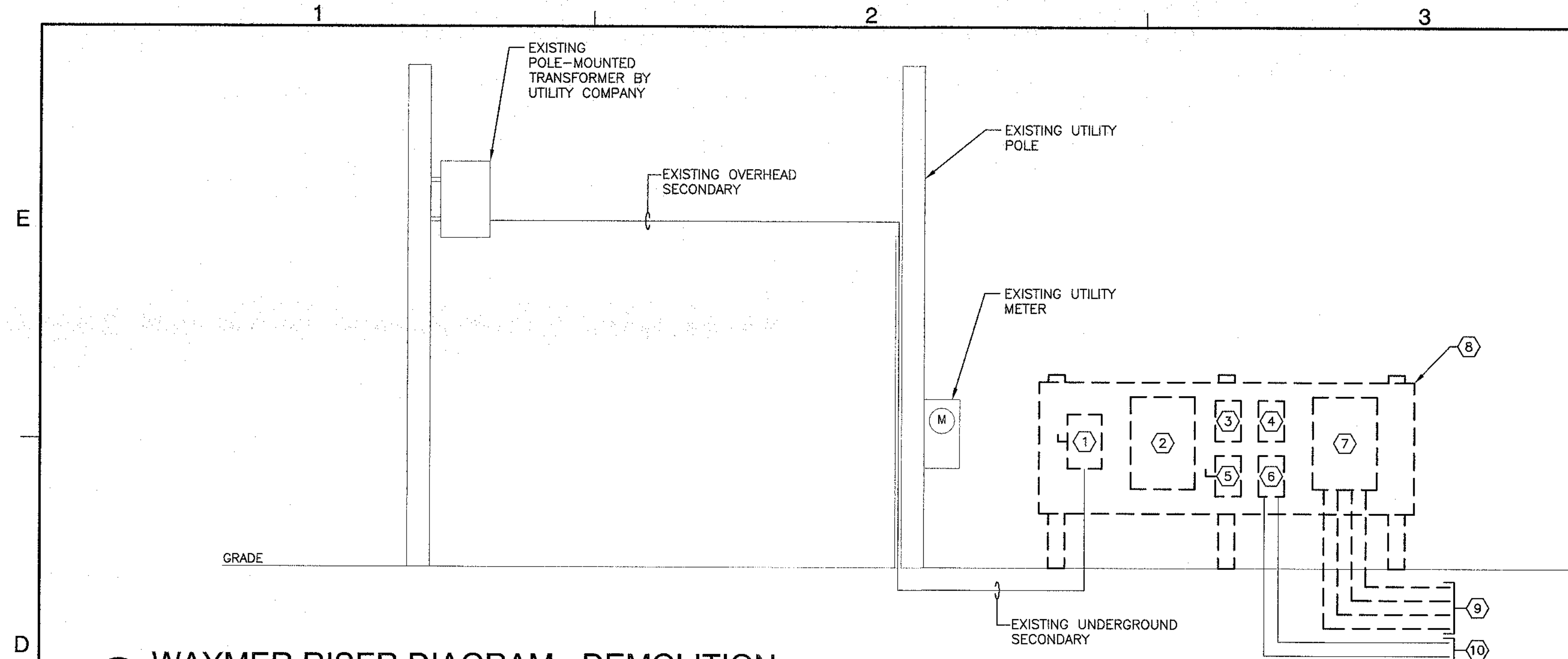


1 EGRESS LIGHTING PHOTOMETRICS

SCALE: 1" = 20'

1 LIGHTING PHOTOMETRICS AT PROPERTY LINES

SCALE: 1" = 60'



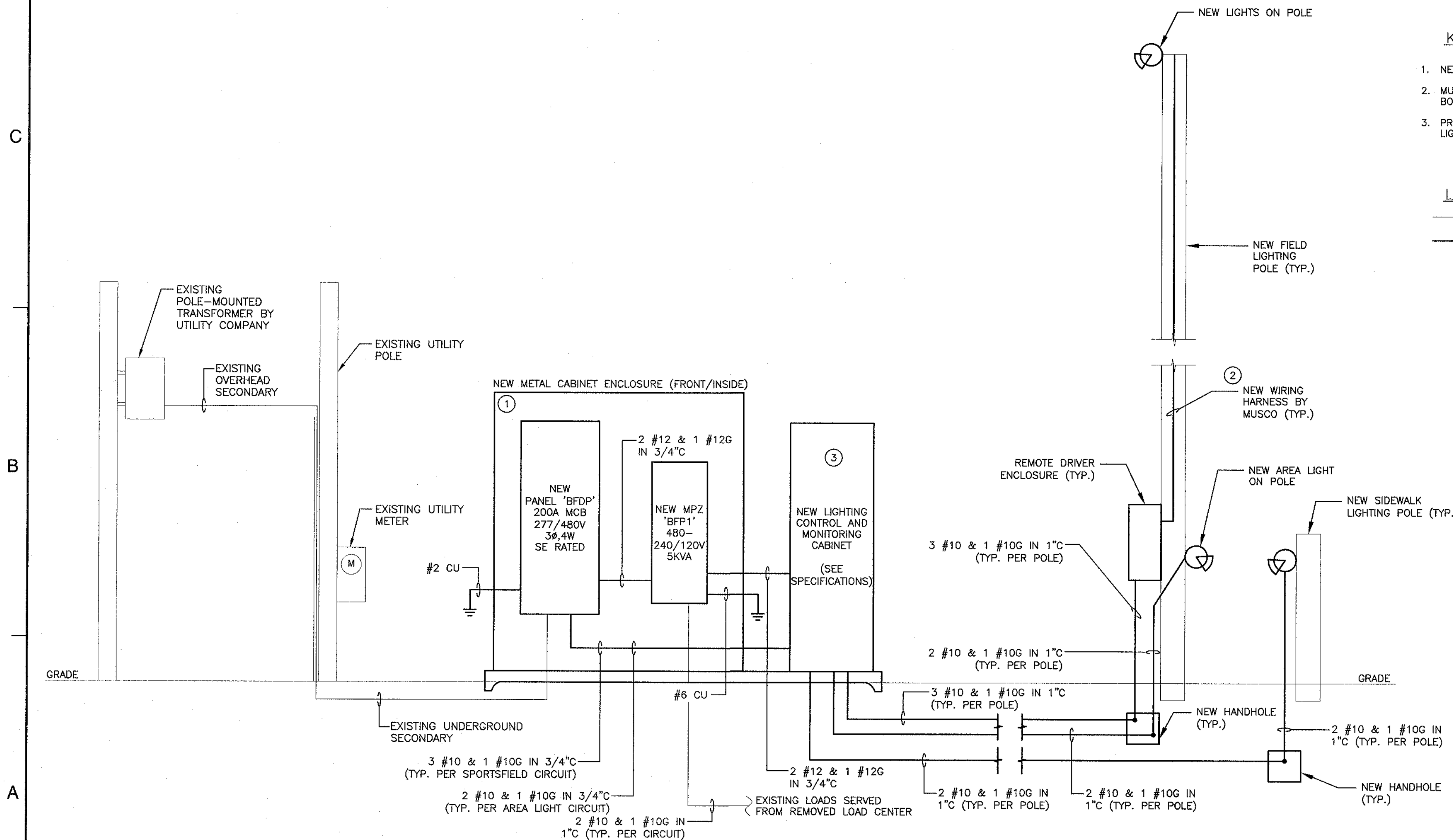
1 WAYMER RISER DIAGRAM - DEMOLITION
SCALE: NOT TO SCALE

KEYED NOTES DEMOLITION: (X)

- DEMOLISH EXISTING SERVICE ENTRANCE DISCONNECT. THE EXISTING SERVICE ENTRANCE CONDUCTORS SHALL REMAIN. CAP EXISTING CONDUIT IN PREPARATION FOR NEW WORK. ALL DOWNSTREAM RACEWAY AND CONDUCTORS SHALL BE DEMOLISHED, UNLESS OTHERWISE NOTED.
- DEMOLISH EXISTING GUTTER BOX AND ASSOCIATED RACEWAY AND CONDUCTORS.
- DEMOLISH EXISTING TRANSFORMER.
- DEMOLISH EXISTING ASTRONOMICAL TIME CLOCK.
- DEMOLISH EXISTING TRANSFORMER PRIMARY DISCONNECT.
- DEMOLISH EXISTING 120V/240V LOAD CENTER. THE EXISTING DOWN STREAM CIRCUITS SHALL REMAIN. CAP EXISTING CONDUIT IN PREPARATION FOR NEW WORK.
- DEMOLISH EXISTING 480Y/277V PANELBOARD.
- DEMOLISH EXISTING WOODEN EQUIPMENT RACK AND CHAIN LINK FENCE.
- DEMOLISH EXISTING CIRCUITS TO LIGHT POLES.
- EXISTING 120V CIRCUIT SHALL REMAIN. CAP EXISTING CONDUIT IN PREPARATION FOR NEW WORK.

LINE TYPE LEGEND

- EXISTING TO REMAIN
--- EXISTING TO BE DEMOLISHED



2 WAYMER RISER DIAGRAM - NEW WORK
SCALE: NOT TO SCALE

KEYED NOTES NEW: (N)

- NEW 90"Hx72"Wx20"D METAL CABINET ENCLOSURE SCE-907220FSD.
- MUSCO TO PROVIDE AND ROUTE WIRING HARNESS FROM REMOTE DRIVER BOX TO TOP OF POLE FOR NEW LIGHT FIXTURES.
- PROVIDE CONTACTOR FOR ALL SPORTFIELD POLE LIGHT CIRCUITS, AREA LIGHT CIRCUITS AND WALKWAY LIGHT CIRCUITS.

LINE TYPE LEGEND

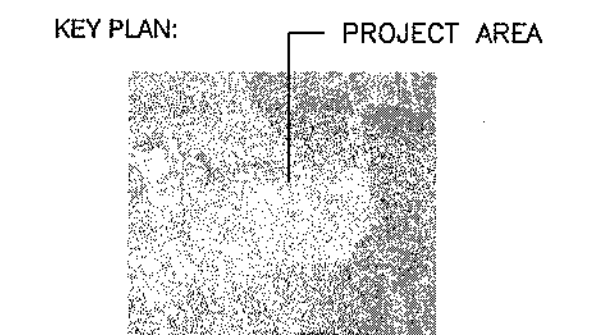
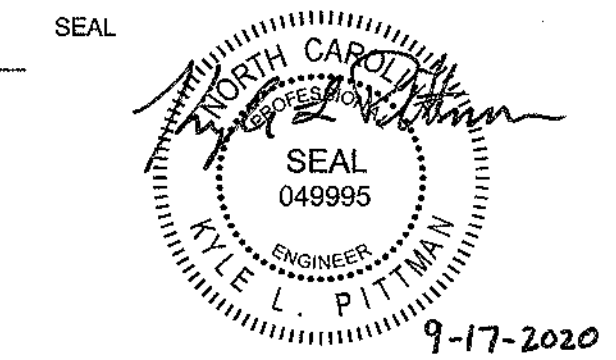
- EXISTING TO REMAIN
— NEW WORK

DEDUCT BID #1

EQUIPMENT LISTING						
POLE COUNT	POLE LOCATION	MOUNTING HEIGHT	POLE SIZE	FIXT. /UNIT	KILOW TOTAL	
1	A1	16'	60'	1	0.58	
1	A1	60'	60'	3	3.51	
1	A1	30'	60'	1	0.13	
1	A2	16'	60'	1	0.58	
1	A2	60'	60'	3	3.51	
1	A2	30'	60'	1	0.13	
1	B1	16'	60'	1	0.58	
1	B1	60'	60'	5	7.15	
1	B1	30'	60'	1	0.13	
1	B2	16'	60'	1	0.58	
1	B2	60'	60'	5	7.15	
1	B2	30'	60'	1	0.13	
1	C1	16'	60'	2	1.15	
1	C1	60'	60'	4	4.68	
1	C2	16'	60'	2	1.15	
1	C2	60'	60'	4	4.68	
1	C2	30'	60'	1	0.13	

LOAD SERVED					VA/PHASE					CB	P	CKT	CKT	P	CB	VA/PHASE					LOAD SERVED																		
					A	B	C										A	B	C																				
POLE A1 (SOFTBALL FIELD)					1363			20	3	1	2	3	20				1363			POLE A2 (SOFTBALL FIELD)																			
						1363													1363																				
							1363																																
POLE B1 (SOFTBALL FIELD)					2577			20	3	9	10	3	20			2577		1363	POLE B2 (SOFTBALL FIELD)																				
						2577												2577							2577														
							2577																																
POLE C1 (SOFTBALL FIELD)					1943			20	3	13	14	3	20			1943			POLE C2 (SOFTBALL FIELD)																				
						1943												1943							1943														
							1943																																
POLES 1L (WALKWAY)					300			20	1	19	20				1170			POLE B2 (MULTIPURPOSE FIELD) DEDUCT BID #1																					
MINI POWER ZONE BFP1								20	2	21	22	3	20			1170																							
						1500					23					24							1170																
SPARE								20	3	25	26	2	20			325			WALKING TRACK AREA LIGHTS																				
											27					28		325																					
											29					30																							
SPARE								20	3	31	32								SPACE																				
											33	34																											
											35	36																											
SPACE										37	38								SPACE																				
SPACE										39	40									SPACE																			
SPACE										41	42									SPACE																			
VOLTAGE RATING 277/480					MAIN BREAKER? YES					TOTAL LOAD (VA)					13561					14761					13436					PANEL DESIGNATION					BFPDP				
# OF PHASES 3					BREAKER RATING 200A					DEMAND FACTOR										1.25										NOTES:									
# OF WIRES 4					BUS RATING 225A					DEMAND LOAD (VA)					16951					18451					16795					SEE RISER DIAGRAM FOR WIRE SIZES									
MOUNTING? SURFACE					NEUTRAL RATING 100%					DEMAND AMPS					61					67					61														
SE RATED? YES					MINIMUM KAIC 35																																		

LOAD SERVED										LOAD SERVED										
		VA/PHASE			CB	P	CKT	CKT	P	CB	VA/PHASE			CB	P	CKT	CKT	P	CB	
		A	B								A	B								
CONTROL & MONITORING CAB.		500			20	1	1	2	1	20	500									EXISTING CIRCUIT
SPARE					20	1	3	4	1	20		500								EXISTING CIRCUIT
SPARE					20	1	5	6	1	20			500							EXISTING CIRCUIT
SPARE					20	1	7	8	1	20										SPARE
SPARE					20	1	9	10	1	20										SPARE
VOLTAGE RATING		480-120/240		MAIN BREAKER?		YES		TOTAL LOAD (VA)		1500		500		1.00		PANEL DESIGNATION		BFP1		
# OF PHASES		1		BREAKER RATING		30A		DEMAND FACTOR								NOTES:				
# OF WIRES		3		BUS RATING		30A		DEMAND LOAD (VA)		1500		500				SKVA MINI POWER ZONE				
MOUNTING?		SURFACE		NEUTRAL RATING		100%		DEMAND AMPS		13		4				PRIMARY XFMR CB IS 20A				
SE RATED?		NO		MINIMUM KAIC		10										SEC XFMR CB IS 30A				



SCALE:

REVISIONS			
NO.	DATE	BY	DESCRIPTION

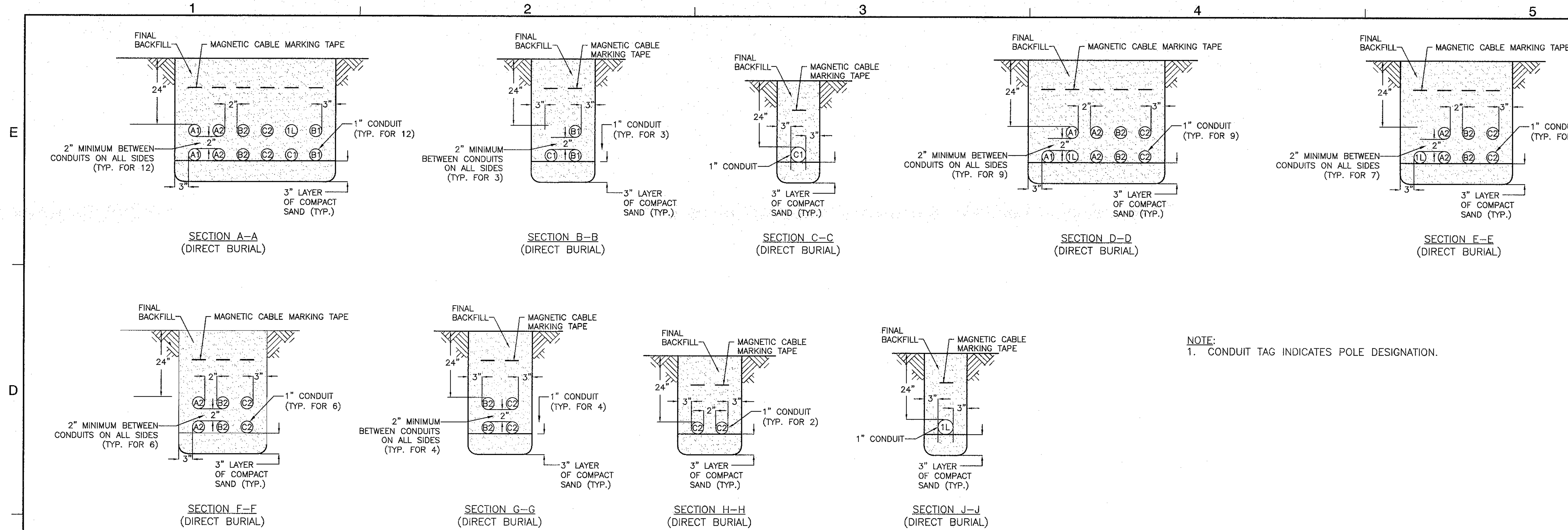
DRAWN BY TLW
APPROVED BY KLP
CHECKED BY JGW
DATE SEPTEMBER 17, 2020

TITLE
ELEVATION,
RISER DIAGRAMS,
& SCHEDULES

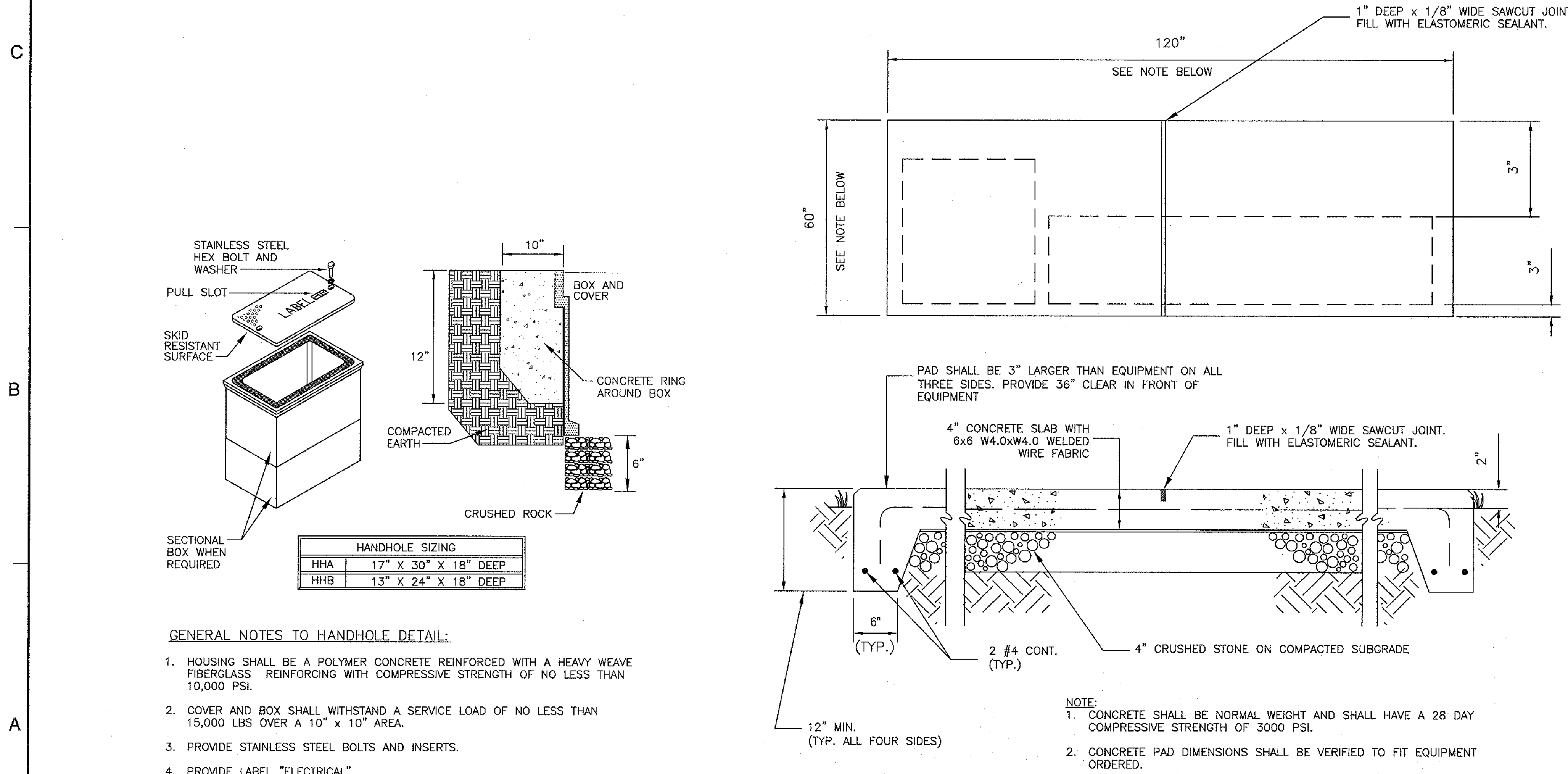
DEI PROJECT NO: 50129702

SHEET NO.

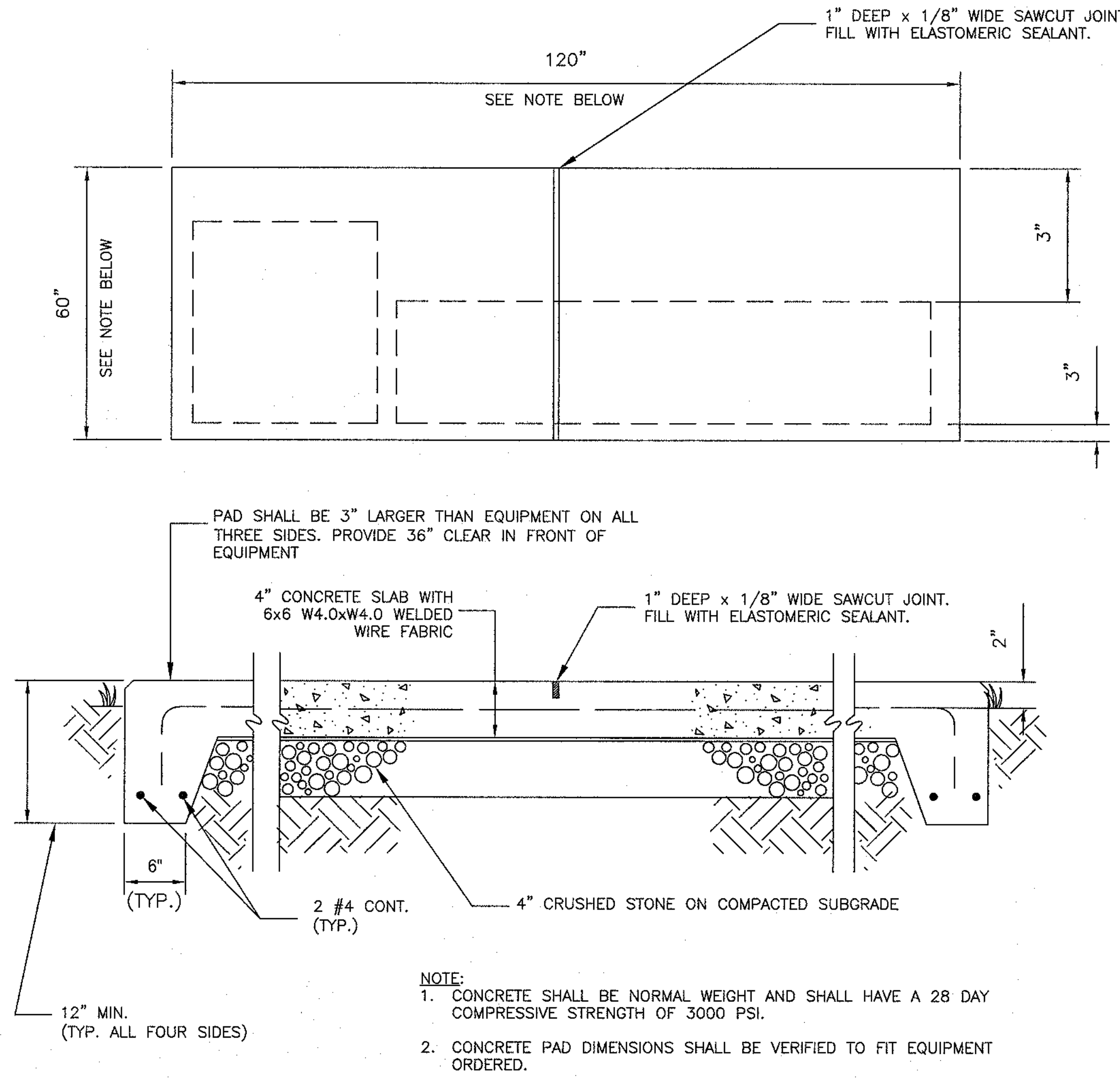
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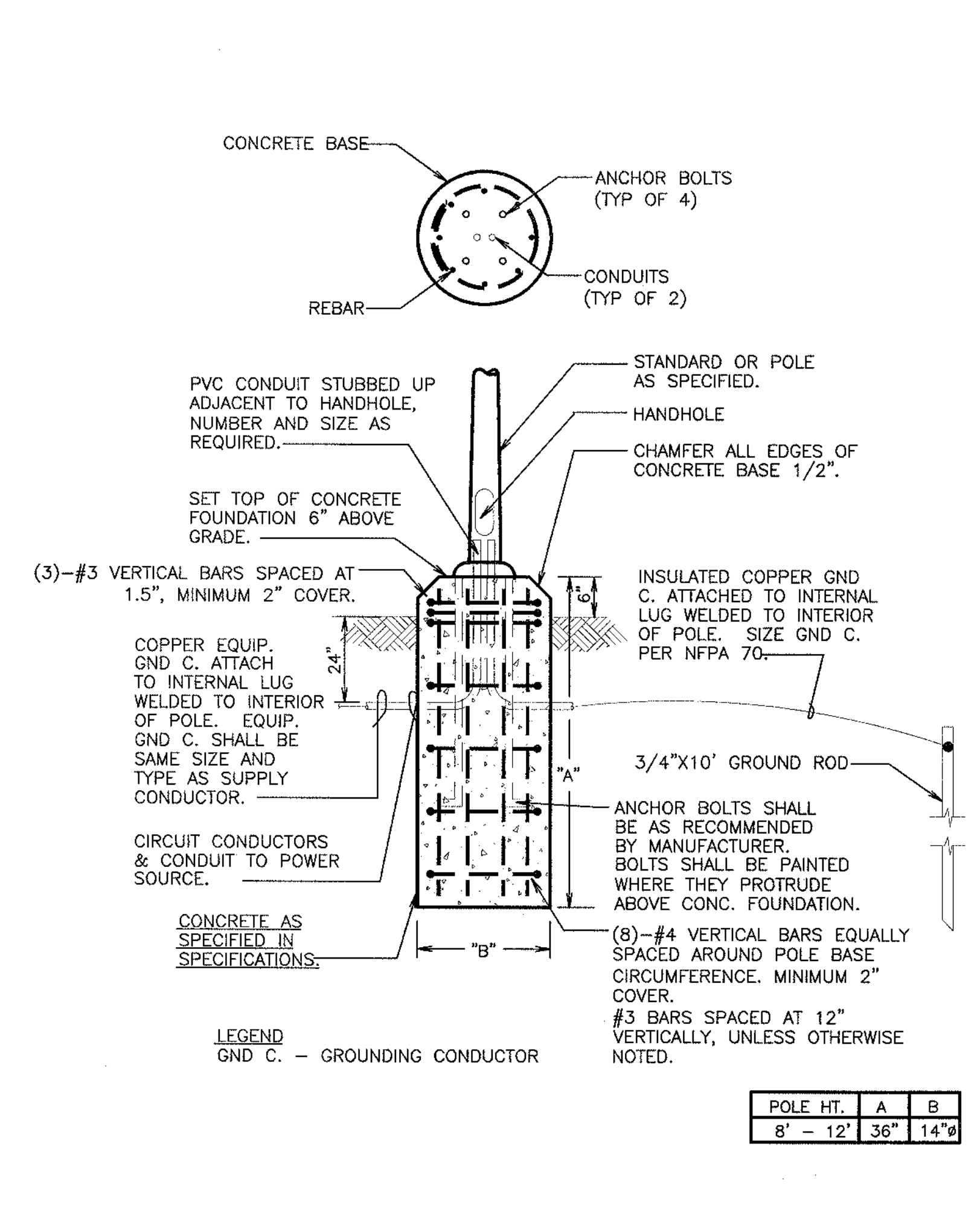
1 TYPICAL DUCTBANK SECTIONS
SCALE: NOT TO SCALE



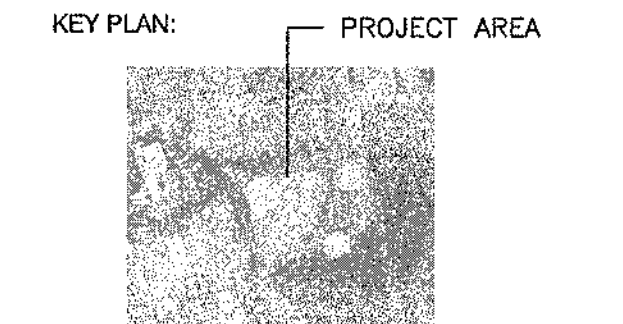
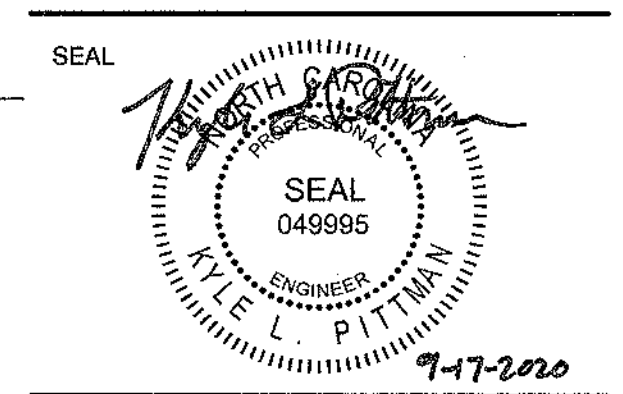
2 HANDHOLE DETAIL
SCALE: NOT TO SCALE



3 LIGHTING CONTROL CABINET PAD
SCALE: NOT TO SCALE



4 POLE BASE DETAIL - LIGHTS 1L ONLY
SCALE: NOT TO SCALE



SCALE:

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DRAWN BY: TLW
APPROVED BY: KLP
CHECKED BY: JGW
DATE: SEPTEMBER 17, 2020
TITLE:



Dewberry

Bid Tab

Owner:

Town of Huntersville Parks and Rec

Project Name: Abernathy Park Athletic Field Lighting & Waymer Park

Athletic Field Lighting

Date:

November 30, 2020

Dewberry Project Number: 50129702

[illegible]

**Town of Huntersville
Town Board
December 21, 2020**

To: Town Board

From: Emily Sloop, Town Attorney

Date: December 21, 2020

Subject: Consider adopting Resolution Approving Design-Build Criteria and Design-Build Contract Method for New Town Hall Project. (*Anthony Roberts*)

EXPLAIN REQUEST:

Consider adopting Resolution Approving Design-Build Criteria and Design-Build Contract Method for New Town Hall Project.

ACTION RECOMMENDED:

FINANCIAL IMPLICATIONS:

ATTACHMENTS:

1. Town Criteria for Using Design Build EAS (005)
2. Resolution to Use Design Build EAS -122120

Under G.S. 143-128.1A, a unit of government must establish written criteria for determining when design-build is appropriate for a project and adopt that criteria for each project.

The established criteria for selecting the Design-Build method for capital projects, met by RFQ 2020-XXXX, is as follows:

- 1) The extent to which the Town of Huntersville can adequately and thoroughly define the project requirements prior to the issuance of the request for qualifications for a design-builder.

RFQ 2020-XXXX adequately and thoroughly defines the project requirements.

- 2) The time constraints for the delivery of the project.

The new Huntersville Town Hall project fulfills the promise for an expanded town hall and public plaza space envisioned in the Town's 2006 Downtown Master Plan. The Town previously built its Town Center building on the corner adjacent to the current town hall and this new civic space will complete the vision of a new civic core for services that will spur additional development and reinvestment in downtown Huntersville. The Town has outgrown its current town hall from no more room to add additional staff to overflowing seating and standing frequently during town board meetings. This new town hall will offer needed space to meet growing staff levels and allow the Town to effectively carry out operations. The Town is utilizing Design-Build via RFQ to secure a firm to propose and construct a complementary structure as intended 14 years ago. When the Town Center building was constructed, the site was graded for a pad and all necessary stormwater was put into place.

- 3) The ability to ensure that a quality project can be delivered.

Staff possess graduate level coursework in public contract management. Additionally, the Design-Build RFQ requires submitters to assign a project manager to oversee both the design and construction phases of the project.

- 4) The capability of the Town of Huntersville to manage and oversee the project, including the availability of experienced staff or outside consultants who are experienced with the design-build method of project delivery.

The Town Manager and assigned staff will oversee the project. Furthermore, the town will utilize a diverse project team to communicate regularly with the design-builder to share unique questions and perspectives and coordinate any and all issues as they arise. Additionally, RFQ 2020-XXXX requires submitters to assign a project manager experienced with the design-build method of project delivery to oversee both the design and construction phases of the project.

- 5) A good-faith effort to comply with G.S. 143-128.2, G.S. 143-128.4, and to recruit and select small business entities.

RFQ 2020-XXXX does not limit or otherwise preclude any respondent from submitting a response so long as the respondent, itself or through its proposed team, is properly licensed and qualified to perform the work defined by the public notice issued in relation to this design-build project. The Town of Huntersville will make a good-faith effort to comply with G.S. 143-128.2, G.S. 143-

128.4, and to recruit and select small business entities by actively recruiting such businesses through bid list serves and purchasing forums.

6) The criteria utilized by the Town of Huntersville, including a comparison of the advantages and disadvantages of using the design-build delivery method for a given project in lieu of the delivery methods identified in subdivisions (1), (2), and (4) of G.S. 143-128(a1).

Advantages:

One fundamental difference between design-build and construction management at risk (CMR) is that, under CMR, the local government is required to contract separately with an architect and/or engineer for design services, while a design-build project involves a single contract with both the design professional and the contractor encompassing the design and construction phases of the project. Under CMR, the designer works for the public owner; under design-build, the designer works for the contractor, reducing the project management burden on Town staff. The design will not be completed in a vacuum without input from the builder/contractor as they will work together from the start, and hopefully the Town will realize cost savings due to limited need for revisions (i.e. change orders) in the plan.

Under the design-build method, project specifications are not drawn prior to initiating the procurement process. Instead, the project owner advertises general information about the project and selects the design-builder based on the firm's (or individual's) qualifications to design and construct the project. Once under contract, the design-builder (oftentimes a team comprised of the designer and the general contractor) works with the owner to design the project based on the owner's project criteria, usually by preparing a preliminary design followed by detailed specifications after the owner's approval of the preliminary design. The design work can be done in phases, allowing construction to commence and proceed in phases to expedite project completion, or the design work can be finalized prior to construction. Under both systems, the designer continues to work with the builder throughout the project addressing unforeseen issues or design revisions as the project proceeds.

Disadvantages:

Because a firm, individual, or team must provide both design and construction service in one contract, the Design-Build method places a higher standard and professional burden on submitting firms. The Design-Build method requires the design-builder to certify that each licensed designer and sub-consultant who is a member of the design-build team is selected based on "demonstrated competence and qualifications" under the qualifications-based selection process of the Mini-Brooks Act (G.S. 143-64.31).

Because it is unlikely that one, or a few, individuals will possess the required competence and qualifications of all the trades necessary for the contract, the Design-Build method may be difficult for smaller firms. Larger firms, or smaller firms with established subcontracting relationships, are more likely to respond to a Design-Build RFQ. This may have the effect of limiting the pool of firms that will bid on the Town Hall project.

However, staff believes that the advantages of the Design-Build method outweigh the disadvantages for the Town Hall project. This method will enable the Town to secure a team in

order to utilize the existing graded site and adequate stormwater to construct the type of building that was previously envisioned next to Town Center. Staff does not have extensive capacity to manage multiple contracts through a further elongated project. The Design-Build method provides for one expedited contract whereby the submitting firm manages the project from start to finish. Furthermore, the higher standard required by the method may have the effect of encouraging more experienced or more qualified firms to participate in the bidding process, which is essential for the quality of our new town hall.

Staff recommends the Design-Build contracting method for the Town Hall and that Commissioners approve RFQ – 2020-XXXX Town Hall Design-Build Project and direct staff to move forward with seeking NC Local Government Commission Approval as necessary, investigating methods of financing, and advertising RFQ 2020-XXXX.

RESOLUTION
Establishment of Criteria Used for Determining the Circumstances
Under Which the Design-Build Method of Contracting is Appropriate

WHEREAS, N.C. Gen. Stat. § 143-128(a1)(6) grants authority to local governments to contract for capital projects using the design-build method pursuant to G.S. § 143-128.1A; and

WHEREAS, the Town of Huntersville (the “Town”) wishes to utilize the design-build method to contract for the design and construction of a new town hall (the “new Town Hall project”); and

WHEREAS, G.S. § 143-128.1A requires local governments who wish to utilize the design-build method of contracting to first establish criteria to determine if the design-build method is appropriate for the desired project; and

WHEREAS, the Town wishes to establish the criteria contained in Exhibit A as attached hereto and incorporated herein to determine whether the design-build method is appropriate for the new town hall project; and

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS:

1. The Town of Huntersville Board of Commissioners (the “Board of Commissioners”) hereby adopts the criteria contained in Exhibit A for purposes of determining whether the design-build method of contracting is appropriate for the new Town Hall project.
2. The Board of Commissioners determines that the design-build method of contracting is appropriate for the New Town Hall project.
3. The Board of Commissioners authorizes the Town Manager to advertise request for qualifications and take necessary actions to execute a design-build contract for the new Town Hall project.

Adopted this the _____ day of _____, 2020.

John Aneralla, Mayor

Attest:

Clerk to the Board

Approved as to Form:

Town Attorney

**Town of Huntersville
Town Board
December 21, 2020**

To: Town Board

From: Janet Pierson, Town Clerk

Date: December 21, 2020

Subject: Consider adopting Resolution Authorizing Purchase of Surveillance Platform and Equipment from Sole Source. (*Chief Hoyle*)

EXPLAIN REQUEST:

Consider adopting Resolution Authorizing Purchase of Surveillance Platform and Equipment from Sole Source. This Resolution authorizes HPD to contract with Verkada, Inc. for the purchase of a video surveillance platform and related hardware.

ACTION RECOMMENDED:

FINANCIAL IMPLICATIONS:

ATTACHMENTS:

1. EUA (Verkada - Town of Huntersville) FINAL Attachment A
2. Sole Source Resolution for Surveillance Equipment

END USER AGREEMENT

This End User Agreement (“**Agreement**”) governs the purchase and use of Verkada’s enterprise video surveillance platform for video security (“**Software**”) and related hardware (“**Hardware**”) (collectively, the “**Products**”), between Verkada, Inc. (“**Verkada**”) and Town of Huntersville, a municipal corporation organized under the laws of the State of North Carolina, the end customer and user of Verkada’s Products (“**Customer**”), and is effective as of the date last signed below.

Verkada and Customer hereby agree as follows.

1. DEFINITIONS

The definitions of certain capitalized terms used in this Agreement are set forth below. Others are defined in the body of the Agreement.

“**Customer Data**” means data (e.g., video and audio recordings) provided by Customer via the Software.

“**Documentation**” means the online documentation regarding the Hardware, available at www.verkada.com/products.

“**License**” has the meaning ascribed to it in Section 2.1.

“**License Term**” means the length of time indicated in the License SKU set forth on the applicable Purchase Order.

“**Partner**” means a third-party authorized by Verkada to resell the Products, from whom Customer has entered into a Purchase Order for such Products.

“**Products**” means, collectively, the Software, Hardware, Documentation, and all modifications, updates, and upgrades thereto and derivative works thereof.

“**Purchase Order**” means each order document submitted to Verkada by Customer (or a Partner), and accepted by Verkada, indicating Customer’s (or Partner’s) firm commitment to purchase the Products and for the prices listed thereon.

“**Service Level Agreement**” means the Service Level Agreement set forth on Exhibit A hereto.

“**Support**” means the technical support services and resources available at www.verkada.com/support.

“**Users**” means employees of Customer, or other third parties, each of whom are authorized by Customer to use the Products.

2. LICENSE AND RESTRICTIONS

2.1 License to Customer. Subject to the terms of this Agreement, Verkada grants Customer a royalty-free, nonexclusive, nontransferable, worldwide right during each License Term to use the Software, subject to the terms of this Agreement (“**License**”). Customer must purchase a License to the Software for at least the number of Hardware units it manages with the Software. Accordingly, Customer may only use the Software with up to the number and type of Hardware units specified on the applicable Purchase Order, however Customer may authorize an unlimited number of Users to

access and use the Software. If Customer purchases additional Licenses, the License Term will be modified such that the License Term for all Licenses purchased will terminate on the same date. The Products are not intended to be used as part of any life-saving or emergency systems, and Customer will not use the Products in any such environment.

2.2 License to Verkada. During the License Term, Customer will transfer Customer Data to Verkada while using the Products. Customer grants Verkada a non-exclusive right and license to use, reproduce, modify, store, and process Customer Data solely to provide the Products to Customer. Customer represents and warrants that it possesses the necessary rights and consents to grant Verkada the rights set forth in this Section 2.2 with respect to Customer Data.

2.3 Restrictions. Customer will not: (i) use (or allow a third party to use) the Products in order to monitor their availability, security, performance, or functionality, or for any other benchmarking or competitive purposes (other than for routine product comparison purposes) without Verkada's express written consent; (ii) market, sublicense, resell, lease, loan, transfer, or otherwise commercially exploit the Products; (iii) modify, create derivative works, decompile, reverse engineer, attempt to gain access to the source code, or copy the Products or any of their components; or (iv) use the Products to conduct any fraudulent, malicious, or illegal activities or otherwise in contravention of any applicable laws or regulations (each of (i) through (iv), a "**Prohibited Use**").

3. HARDWARE WARRANTIES; RETURNS

3.1 General. Verkada represents to the original purchaser of the Hardware that for a period of 10 years from the date of shipment to the location specified on the Purchase Order, the Hardware will be substantially free of defects in materials and workmanship ("**Hardware Warranty**").

3.2 Remedies. Customer's sole and exclusive remedy and Verkada's (and its suppliers' and licensors') sole and exclusive liability for a breach of the Hardware Warranty will be, in Verkada's sole discretion, to replace the non-conforming Hardware. Replacement may be made with a new or refurbished product or components. If the Hardware or a component within it is no longer available, then Verkada may replace the Hardware unit with a similar product of similar function. Any Hardware unit that has been replaced under the Hardware Warranty will be covered by the terms of the Hardware Warranty for the longer of (a) 90 days from the date of the delivery, or (b) the remainder of the original 10-year Hardware Warranty period.

3.3 Returns. Customer may return the Products within 30 days from the date of the applicable Purchase Order for any reason. Thereafter, to request a return under the Hardware Warranty, Customer must notify Verkada (or if the Products were purchased by Customer through a Partner, Customer may notify the Partner) within the Hardware Warranty period. To initiate a return directly to Verkada, Customer must send a return request to Verkada at support@verkada.com and clearly state details on where and when Customer purchased the Hardware, the serial numbers of the applicable Hardware unit(s), Customer's reason for returning the Hardware, and Customer's name, mailing address, email address, and daytime phone number. If approved in Verkada's sole discretion, Verkada will provide Customer with a Return Materials Authorization ("**RMA**") and prepaid shipping label via email that must be included with Customer's return shipment to Verkada. Customer must return the Hardware unit(s) listed in the RMA with all included accessories with the RMA within the 14 days following the day on which Verkada issued the RMA. Verkada will replace the Hardware in its sole discretion.

4. VERKADA OBLIGATIONS

4.1 General. Verkada is responsible for providing the Products in conformance with this Agreement, the Purchase Order(s), and applicable Documentation.

4.2 Availability. Verkada uses its best efforts to ensure that the Software it hosts as a cloud-based solution is available in accordance with the terms of the Service Level Agreement, which sets forth

Customer's remedies for any interruptions in the availability of the Software.

4.3 Support. If Customer experiences any errors, bugs, or other issues in its use of the Products, then Verkada will provide Support in order to resolve the issue or provide a suitable workaround. The fee for Support is included in the cost of the License. As part of Verkada's delivery of Support and training, Customer understands that Verkada may access and use Customer's account at its request.

5. CUSTOMER OBLIGATIONS

5.1 Compliance. Customer will use the Products only in accordance with the Documentation and in compliance with all applicable laws, including the export laws and regulations of the United States or any other country. Customer will ensure that none of the Products are directly or indirectly exported, re-exported, or used to provide services in violation of such export laws and regulations. If Customer operates in a regulated industry, Customer has obtained all necessary local and state licenses and/or permits necessary to operate its business and is in compliance (and will use its best efforts to remain in compliance) with all local, state, and (if applicable) federal regulations regarding the conduct of its business. Verkada reserves the right to suspend use of any Products operating in violation of such laws, following written notice to Customer (which may take the form of an email).

5.2 Computing Environment. Customer is responsible for the maintenance and security of its own network and computing environment that it uses to access the Software.

6. TERM AND TERMINATION

6.1 Term. The term of this Agreement will commence on the Effective Date and will continue for so long as Customer maintains any active Licenses.

6.2 Termination for Cause. Either party may terminate this Agreement or any License Term for cause (i) upon 30 days written notice to the other party of a material breach if such breach remains uncured at the expiration of the 30-day period, or (ii) if the other party becomes the subject of a petition in bankruptcy or any other proceeding relating to insolvency, receivership, liquidation or assignment for the benefit of creditors.

6.3 Effect of Termination. If Customer terminates this Agreement or any License Term in accordance with Section 6.2, then Verkada will refund Customer a pro rata portion of any prepaid fees allocable to the remaining License Term. The following provisions will survive any expiration or termination of the Agreement: Sections 8, 9, 10, 12, and 13, and any other provisions that, by their nature, would reasonably be considered intended to survive.

7. FEES AND SHIPPING

7.1 Fees. If Customer purchases the Products directly from Verkada, then Customer will pay the fees for the Products set forth on the applicable Purchase Order as specified in this Section 7. Any terms included by Customer on a Purchase Order that conflict with the terms of this Agreement will not be binding on Verkada. If Customer purchases the Products from a Partner of Verkada, then all payment and shipping terms will be as agreed between Customer and such Partner.

7.2 Shipping. Customer's Purchase Order must state Customer's account number with the intended carrier. Verkada will ship Products pursuant to the applicable Purchase Order under the specified carrier account. If Customer does not provide its carrier account information, Verkada will ship under its account and invoice Customer for all related shipping costs. Following acceptance of the Purchase Order, and shipment of the Products, Verkada will submit an invoice to Customer for the Products, and payment will be due 30 days from the date of the invoice ("**Due Date**"). Verkada will ship all Hardware to the location specified on the Purchase Order Ex Works (INCOTERMS 2010) Verkada's shipping point, at which time title and risk of loss will pass to Customer.

7.3 Overdue Charges. If any undisputed, invoiced amount is not received by Verkada by the Due Date, then (i) those charges may accrue late interest at the rate of 3.0% of the outstanding balance per month, or the maximum rate permitted by law, whichever is lower, and (ii) Verkada may condition the purchase of future Products on receipt of payment for previous Product and/or payment terms shorter than those specified on the previous Purchase Order.

7.4 Taxes. The fees payable hereunder are exclusive of any sales taxes (unless included on the invoice), or similar governmental sales tax type assessments, excluding any income or franchise taxes on Verkada (collectively, "**Taxes**") with respect to the Products provided to Customer. Customer is solely responsible for paying all Taxes associated with or arising from this Agreement and shall indemnify, hold harmless and reimburse Verkada for all Taxes paid or payable by, demanded from, or assessed upon Verkada.

8. CONFIDENTIALITY

8.1 Confidential Information. Except as explicitly excluded below, any information of a confidential or proprietary nature provided by a party ("**Disclosing Party**") to the other party ("**Receiving Party**") constitutes the Disclosing Party's confidential and proprietary information ("**Confidential Information**"). Verkada's Confidential Information includes the Products and any information conveyed to Customer in connection with Support. Customer's Confidential Information includes Customer Data. Confidential Information does not include information which is (i) already known by the receiving party without an obligation of confidentiality other than pursuant to this Agreement; (ii) publicly known or becomes publicly known through no unauthorized act of the Receiving Party; (iii) rightfully received from a third party without a confidentiality obligation to the Disclosing Party; or (iv) independently developed by the Receiving Party without access to the Disclosing Party's Confidential Information.

8.2 Confidentiality Obligations. Each party will use the Confidential Information of the other party only as necessary to perform its obligations under this Agreement, will not disclose the Confidential Information to any third party, and will protect the confidentiality of the Disclosing Party's Confidential Information with the same standard of care as the Receiving Party uses or would use to protect its own Confidential Information, but in no event will the Receiving Party use less than a reasonable standard of care. Notwithstanding the foregoing, the Receiving Party may share the other party's Confidential Information with those of its employees, agents and representatives who have a need to know such information and who are bound by confidentiality obligations at least as restrictive as those contained herein (each, a "**Representative**"). Each party shall be responsible for any breach of confidentiality by any of its Representatives.

8.3 Additional Exclusions. A Receiving Party will not violate its confidentiality obligations if it discloses the Disclosing Party's Confidential Information if required by applicable laws, including by court subpoena or similar instrument so long as the Receiving Party provides the Disclosing Party with written notice of the required disclosure so as to allow the Disclosing Party to contest or seek to limit the disclosure or obtain a protective order. If no protective order or other remedy is obtained, the Receiving Party will furnish only that portion of the Confidential Information that is legally required, and agrees to exercise reasonable efforts to ensure that confidential treatment will be accorded to the Confidential Information so disclosed.

9. DATA PROTECTION

9.1 Security. Verkada secures the Software and Customer Data in accordance with the security practices available at www.verkada.com/trust/#security.

9.2 No Access. Except for the Customer Data, Verkada does not (and will not) collect, process, store, or otherwise have access to any information or data, including personal information, about Users, Customer's network, or users of Customer's products or services.

10. OWNERSHIP

10.1 Verkada Property. Verkada owns and retains all right, title, and interest in and to the Software, and all intellectual property embodied in the Hardware. Except for the limited license granted to Customer in Section 2.1, Verkada does not by means of this Agreement or otherwise transfer any rights in the Products to Customer, and Customer will take no action inconsistent with Verkada's intellectual property rights in the Products.

10.2 Customer Property. Customer owns and retains all right, title, and interest in and to the Customer Data and does not by means this Agreement or otherwise transfer any rights in the Customer Data to Verkada, except for the limited license set forth in Section 2.2.

11. INDEMNIFICATION

11.1 By Verkada. Verkada will indemnify, defend, and hold Customer, its affiliates, and their respective owners, directors, members, officers, and employees (collectively, "**Customer Indemnitees**") harmless from and against any claim, action, demand, suit or proceeding (each, a "**Claim**") made or brought by a third party against any of the Customer Indemnitees alleging that Customer's use of the Products infringes or misappropriates any patent, trademark, copyright, or any other intellectual property of such third party. Verkada will pay any damages finally awarded against any Customer Indemnitees by a court of competent jurisdiction as a result of any such Claim, or any final settlement of such Claim, so long as Customer (i) gives Verkada prompt written notice of the Claim, (ii) gives Verkada sole control of the defense and settlement of the Claim (provided that Verkada may not settle any Claim without the Customer Indemnitee's written consent, which will not be unreasonably withheld), and (iii) provides to Verkada all reasonable assistance, at Verkada's request and expense. If Customer's right to use the Products hereunder is, or in Verkada's opinion is likely to be, enjoined as the result of a Claim, then Verkada may, at Verkada's sole option and expense procure for Customer the right to continue using the Products under the terms of this Agreement, or replace or modify the Products so as to be non-infringing and substantially equivalent in function to the claimed infringing or enjoined Products. Verkada will have no indemnification obligations under this Section 11.1 to the extent that a Claim is based on or arises from: (a) use of the Products in a manner other than as expressly permitted in this Agreement; (b) any alteration or modification of the Products except as expressly authorized by Verkada; (c) the combination of the Products with any other software, product, or services (to the extent that the alleged infringement arises from such combination); or (d) where the Claim arises out of specifications provided by Customer. This Section 11.1 sets forth Verkada's sole and exclusive liability, and Customer's exclusive remedies, for any Claim of infringement or misappropriation of intellectual property.

11.2 By Customer. Customer will indemnify, defend, and hold harmless Verkada, its affiliates, and their respective owners, directors, members, officers, and employees (together, the "**Verkada Indemnitees**") from and against any Claim related to (a) Customer's or a User's engaging in a Prohibited Use, (b) Customer's breach of its obligations in [Section 5.1](#), and (c) any and all acts or omissions of its Users. Customer will pay any settlement of and any damages finally awarded against any Verkada Indemnitee by a court of competent jurisdiction as a result of any such Claim so long as Verkada (i) gives Customer prompt written notice of the Claim, (ii) gives Customer sole control of the defense and settlement of the Claim (provided that Customer may not settle any Claim without Verkada's prior written consent which will not be unreasonably withheld), and (iii) provides to Customer all reasonable assistance, at Customer's request and expense.

12. LIMITATIONS OF LIABILITY

12.1 Disclaimer. EXCEPT FOR THE WARRANTIES EXPLICITLY SET FORTH IN THIS AGREEMENT, VERKADA MAKES NO WARRANTIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, REGARDING OR RELATING TO THE PRODUCTS, OR ANY MATERIALS OR SERVICES FURNISHED OR PROVIDED TO CUSTOMER IN CONNECTION WITH THIS AGREEMENT, INCLUDING UPDATES OR SUPPORT. WITHOUT LIMITING THE FOREGOING, VERKADA HEREBY DISCLAIMS

ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR TITLE. VERKADA DOES NOT WARRANT THAT THE PRODUCTS WILL MEET CUSTOMER'S NEEDS OR EXPECTATIONS, THAT USE OF THE PRODUCTS WILL BE UNINTERRUPTED OR ERROR-FREE, OR THAT DEFECTS WILL BE CORRECTED.

12.2 Limitation of Liability. EACH PARTY HERETO AGREES THAT WITH THE EXCEPTION OF THE INDEMNIFICATION OBLIGATIONS UNDER SECTION 11, THE CONFIDENTIALITY OBLIGATIONS UNDER SECTION 8, AND ANY BREACH RELATED TO VERKADA'S SECURITY OBLIGATIONS SET FORTH IN SECTION 9.1(COLLECTIVELY, "**EXCLUDED CLAIMS**"), AND ABSENT GROSS NEGLIGENCE OR INTENTIONAL MISCONDUCT OF THE OTHER PARTY NEITHER THE OTHER PARTY NOR ITS AFFILIATES NOR THE OFFICERS, DIRECTORS, EMPLOYEES, SHAREHOLDERS, AGENTS OR REPRESENTATIVES OF ANY OF THEM WILL BE LIABLE TO SUCH PARTY FOR ANY INCIDENTAL, INDIRECT, SPECIAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES, WHETHER FORESEEABLE OR UNFORESEEABLE, THAT MAY ARISE OUT OF OR IN CONNECTION WITH THIS AGREEMENT, EVEN IF THE OTHER PARTY HAS BEEN NOTIFIED OF THE POSSIBILITY OR LIKELIHOOD OF SUCH DAMAGES OR COSTS OCCURRING AND WHETHER SUCH LIABILITY IS BASED ON CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY, PRODUCTS LIABILITY OR OTHERWISE.

12.3 Liability Cap. EXCEPT WITH RESPECT TO EXCLUDED CLAIMS, IN NO EVENT WILL THE COLLECTIVE LIABILITY OF EITHER PARTY, OR THEIR RESPECTIVE AFFILIATES, OFFICERS, DIRECTORS, EMPLOYEES, SHAREHOLDERS, AGENTS AND REPRESENTATIVES, TO THE OTHER PARTY FOR ANY AND ALL DAMAGES, INJURIES, AND LOSSES ARISING FROM ANY AND ALL CLAIMS AND CAUSES OF ACTION ARISING OUT OF, BASED ON, RESULTING FROM, OR IN ANY WAY RELATED TO THIS AGREEMENT EXCEED THE TOTAL AMOUNT PAID BY CUSTOMER TO VERKADA UNDER THIS AGREEMENT DURING THE 24-MONTH PERIOD PRECEDING THE DATE OF THE CLAIM. IN THE CASE OF EXCLUDED CLAIMS, SUCH LIMIT WILL BE EQUAL TO THE TWO TIMES THE TOTAL AMOUNT PAID BY CUSTOMER TO VERKADA UNDER THIS AGREEMENT DURING THE TERM. THE EXISTENCE OF MULTIPLE CLAIMS OR SUITS UNDER OR RELATED TO THIS AGREEMENT WILL NOT ENLARGE OR EXTEND THE LIMITATION OF MONEY DAMAGES WHICH WILL BE THE CLAIMANT'S SOLE AND EXCLUSIVE REMEDY.

13. MISCELLANEOUS

This Agreement is the entire agreement between Customer and Verkada and supersedes all prior agreements and understandings concerning the subject matter hereof and may not be amended or modified except by a writing signed by authorized personnel by both parties. Customer and Verkada are independent contractors, and this Agreement will not establish any relationship of partnership, joint venture, or agency between Customer and Verkada. Failure to exercise any right under this Agreement will not constitute a waiver. There are no third-party beneficiaries to this Agreement. This Agreement is governed by the laws of North Carolina without reference to conflicts of law rules. For any dispute relating to this Agreement, the Parties consent to personal jurisdiction and the exclusive venue of the courts in North Carolina. Any notice provided by one party to the other under this Agreement will be in writing and sent either (i) by overnight courier or certified mail (receipt requested), in the case of Customer to Customer's address on record in Verkada's account information and in the case of Verkada, to the address listed above, or (ii) by electronic mail to Customer's email address on record in Verkada's account information or to Verkada at legal@verkada.com. If any provision of this Agreement is found unenforceable, the Agreement will be construed as if such provision had not been included. Neither party may assign this Agreement without the prior, written consent of the other party, except that either party may assign this Agreement without such consent in connection with an acquisition of the assigning party or a sale of all or substantially all of its assets. This Agreement may be executed in two or more counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument. Facsimile or other electronic copies of such signed copies will be deemed to be binding originals.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives.

Town of Huntersville

By: _____

Name: _____

Title: _____

Date: _____

Verkada, Inc.

By: _____

Name: _____

Title: _____

Date: _____

EXHIBIT A

Service Levels

Verkada will use commercially reasonable efforts to make the Software available 99.99% or more of the time during any calendar month. Subject to the exclusions set forth below, an outage will be defined as any time when the Software are not available due to a cause within the control of Verkada. The availability standard does not apply to any feature of the Platform that Verkada identifies as a “beta” feature or service.

Service Credits

If Verkada fails to achieve the availability percentage above, Customer will be eligible to receive a credit (“**Service Credit**”) calculated as a certain number of days added to the end of your paid License Term. The Service Credits increase is based on the amount of aggregate outage as set forth below.

Service Availability	Service Credit
Less than 99.99%	3 days
Less than 99.9%	7 days
Less than 99%	15 days
Less than 90%	30 days

Service Credits are non-transferable. To receive a Service Credit, Customer must contact Verkada in writing within 30 days following the outage and demonstrate to Verkada’s reasonable satisfaction that Customer’s use of the Software was adversely affected as a result of the outage.

Exclusions

Verkada does not include in its calculation of downtime any time the Software is not provided due to:

- Planned maintenance windows where notice of planned unavailability has been given, via the Software, at least two business days prior to the outage, unless in the case of emergency changes;
- Force Majeure Events;
- Actions or inactions on Customer’s part;
- Events arising from Customer’s systems or any Customer websites;
- ISP or Internet outages outside of Verkada’s control; or
- Outages reasonably deemed necessary by Verkada.

Sole Remedy

Notwithstanding any terms to the contrary in the Agreement, the Service Credits are Customer’s sole and exclusive remedy for any outage of the Software.

**RESOLUTION AUTHORIZING PURCHASE OF
SURVEILLANCE PLATFORM AND EQUIPMENT FROM SOLE SOURCE**

WHEREAS, the Huntersville Police Department (the “HPD”) seeks to enter the contract as attached hereto and incorporated herein as Attachment A with Verkada, Inc. for the purchase of a video surveillance platform and related hardware for video security; and

WHEREAS, the Town of Huntersville (the “Town”) previously entered a contract with Verkada Inc. for the purchase of a video surveillance platform and related hardware on the recommendation of the Town’s IT Department; and

WHEREAS, continuing to use the video surveillance platform and related hardware supplied by Verkada, Inc. will ensure standardization or compatibility with the video surveillance platform and hardware currently used by the Town; and

WHEREAS, pursuant to N.C.G.S. § 143-129(e)(6), the Town of Huntersville Board of Commissioners (the “Board”) as the governing board of a political subdivision of the State is required to approve the purchase of apparatus, supplies, materials, or equipment when the product is available from a sole source; and

WHEREAS, the Board is of the opinion that it is in the best interests of the citizens and residents of the Town to authorize this purchase.

NOW, THEREFORE, BE IT RESOLVED by the Board as follows:

1. The HPD is authorized to contract with Verkada, Inc. for the purchase of a video surveillance platform and related hardware from Verkada, Inc. to ensure capability with the platform and related hardware currently used by the Town for video security.
2. The contract with Verkada, Inc. is approved by the Board as a sole source purchase in accordance with N.C.G.S. § 143-129(e)(6).
3. That this resolution shall be effective upon its adoption.

This the _____ of December, 2020.

ATTEST

BOARD OF COMMISSIONERS
FOR THE TOWN OF
HUNTERSVILLE

Janet Pierson, Clerk

By: _____
John Aneralla, Mayor

APPROVED AS TO FORM

Town Attorney

**Town of Huntersville
Town Board
December 21, 2020**

To: Town Board

From: Pattie Ellis

Date: December 21, 2020

Subject: Consider approving budget amendment appropriating Asset Forfeiture revenue in the amount of \$194,000 to the Asset Forfeiture Capital account for the public safety camera network system. (*Chief Hoyle/Pattie McGinnis*)

EXPLAIN REQUEST:

Appropriate Asset forfeiture revenue (403421.9999.14007) of \$194,000 to the Asset forfeiture capital account (405100.0500.14007) for the public safety camera network system.

ACTION RECOMMENDED:

Approve Budget Amendment

FINANCIAL IMPLICATIONS:

No net impact to fund balance; offsetting revenue and expense.

ATTACHMENTS:

None

**Town of Huntersville
Town Board
December 21, 2020**

To: Town Board

From: Janet Pierson, Town Clerk

Date: December 21, 2020

Subject: Approve the minutes of the November 16, 2020 Regular Town Board Meeting.
(*Janet Pierson*)

EXPLAIN REQUEST:

Consider approving the minutes of the November 16, 2020 Regular Town Board Meeting.

ACTION RECOMMENDED:

Approve Minutes

FINANCIAL IMPLICATIONS:

N/A

ATTACHMENTS:

1. 111620DraftForBoard

**TOWN OF HUNTERSVILLE
TOWN BOARD MEETING
MINUTES**

**November 16, 2020 (Virtual)
6:00 p.m. – Hosted From Huntersville Town Hall**

PRE-MEETING

None

**REGULAR MEETING (VIRTUAL)
TOWN OF HUNTERSVILLE
BOARD OF COMMISSIONERS**

The Regular Meeting of the Huntersville Board of Commissioners (Virtual) was hosted from the Huntersville Town Hall at 6:00 p.m. on November 16, 2020.

GOVERNING BODY MEMBERS PRESENT: Mayor John Aneralla; Commissioners Melinda Bales, Dan Boone, Brian Hines, Lance Munger, Stacy Phillips and Nick Walsh.

Mayor Aneralla stated this meeting is being held both in person at the Huntersville Recreation Center on Verhoeff Road as well as livestreamed on Facebook Live. The Board of Commissioners are participating remotely. The public has been invited to attend and comment during the public comments or during any of the public hearings (1) in person at the Huntersville Recreation Center or (2) by telephonic communication in accordance with instructions sent to persons who have registered with the Town Clerk no later than 3 p.m. today. The public may also submit comments by e-mail to the Town Clerk at jpierson@huntersville.org.

Mayor Aneralla called the meeting to order.

Mayor Aneralla called for a Moment of Silence.

Mayor Aneralla led the Pledge of Allegiance.

MAYOR AND COMMISSIONER REPORTS – STAFF QUESTIONS

Mayor Aneralla

- Congratulated those that won the election and expressed appreciation to those who have either served or going to serve and those that ran.
- Expressed appreciation to the Public Works Department and first responders for their work during the recent storms.
- Expressed appreciation to the Parks & Recreation staff for the Veterans Day ceremony.
- Meetings on Wednesday include Investment Advisory Committee, Metropolitan Transit Commission and Charlotte Regional Transportation Planning Organization.
- Ribbon cutting for the new turf fields at Richard Barry Park is tomorrow.
- Mayor's Luncheon is tomorrow.

Commissioner Bales

- Expressed appreciation to everyone who voted and congratulated those who will be sworn-in in a few months.
- Lake Norman Economic Development Corporation is currently working on 32 projects, 14 of which are in Huntersville. The breakdown for those 14 are as follows: 8 are first contact, 2 are follow-ups, 2 visits and we are the finalist for 2 companies. Further breakdown also shows that 11 of the 14 are new businesses, while 3 are existing businesses looking to expand.
- Reminded everyone to continue to wear your mask, social distance, and wash your hands often.

Commissioner Boone

- The Huntersville Ordinances Advisory Board discussed tree mitigation and how the Planning Board will oversee that process at the last meeting. The next meeting is December 3
- Provided update from the Lake Norman Chamber of Commerce.
- Expressed appreciation to the first responders for their work during the recent storms.
- Huntersville Police Sargent Jennifer Sprague has been promoted to lieutenant.

Commissioner Hines

- Provided update from Charlotte Regional Transportation Planning Organization.

Commissioner Munger

- Veterans Day Ceremony as well attended
- Wished everyone a happy Thanksgiving and encouraged people to be sensible regarding gathering with friends and family during these times.
- Consider supporting local non-profits.

Commissioner Phillips

- Encouraged citizens to shop local.

Commissioner Walsh

- Next meeting of the Greenway, Trail and Bikeway Commission is tomorrow night and the next meeting of the Parks & Recreation Commission is Wednesday night. Applications are being accepted for the Greenway, Trail and Bikeway Commission, Parks & Recreation Commission, and the Public Art Commission.
- Encouraged everyone to wear a mask, social distance and keep gatherings down.

PUBLIC COMMENTS, REQUESTS, OR PRESENTATIONS

Mayor Aneralla we have a lot of concern over the August Colonial Pipeline gas spill and we have from Colonia Pipeline Angie Kolar.

Angie Kolar, Vice President of Operation Services and Chief Risk Officer for Colonial Pipeline, updated the Board on the gasoline spill. Since the incident began, Colonial's number one priority has been on protecting the safety of the people in your community, as well as the environment. I did want to note that we really regret the inconvenience and the concern that this incident has caused to the neighbors in the community and we are deeply committed to keeping them informed throughout the process. We've been in the community for more than 50 years and we remain committed to protecting the safety of the people and the environment in your area. I just wanted to give you a quick update on the operations and environmental front. On the operation side, last weekend we began the process of

removing the section of pipe that was impacted to send that off for metallurgical analysis. In advance of that project, we communicated to the community a couple of different ways. We sent a letter to the area homeowners that were impacted and offered temporary relocation for them to have time away so they wouldn't be impacted or inconvenienced by the traffic or the noise from that operation. We also communicated and coordinated with 911, the police, fire department, ahead of that activity as well.

Since then we have removed the impacted pipe segment. We took it out on November 10 and that segment of pipe was shipped to an independent laboratory for metallurgical analysis. FEMSA, who is our federal regulator, was there alongside NCDEQ. They were both on location when that segment of pipe was removed. I do just want to point out that cut out and replacement was not required. We had already put in a permanent repair at that site, but we did want to remove that section and send it off for the analysis so that we could better understand the why, again giving us an opportunity to learn from that pipe to make sure that we don't have that type of an event again.

The final phase of that work is ongoing over the next several weeks and then that site will transition to environmental remediation phase only. On the environmental front we are continuing to remediate and recover product at that site. We've installed over 100 monitoring and recovering wells. We're working very closely with the NCDEQ on really all aspects of the remediation and you'll hear from them as well. We continue our weekly testing of the residential drinking water wells and today we have not had any detects of petroleum constituents in those drinking water wells.

Again, we are committed to remaining on site until all of the required remediation work is done, again in conjunction with NCDEQ. I want to reiterate that we appreciate you guys letting us join you tonight and we're committed to staying there as long as it takes to remediate the site.

Commissioner Boone said one of the options that the homeowners had that lived within 1,500' of the original breakage was going with Charlotte Water. Have any of those homeowners opted for that option.

Ms. Kolar said yes, they have. There have been a few homeowners that have opted to transition their drinking water wells over to city water and we've taken care of that for them.

Commissioner Boone said do you have a number by chance.

Ms. Kolar said I do not have a number.

Commissioner Bales said of the drinking water wells that have moved over to Charlotte Water, has any product been found in the wells that have been capped.

Ms. Kolar said no. What happens is when you close a drinking water well, it's no longer used, so those get transitioned over into the city water, so we don't test them further as a drinking water well, but we have not seen any dissolve or any kind of petroleum constituents in any of those drinking water wells.

Commissioner Bales said with all the heavy rain last week, how has that affected Colonial Pipeline's recovery process.

Ms. Kolar said the rain essentially doesn't impact the recovery process. The system is set up ongoing, continued recovery from each of those wells, so the rain doesn't necessary impact the recovery process. I mentioned that we've installed over 100 monitoring and recovery wells, so we test those wells and

again in coordination with NCDEQ, any sort of changes that would result from a weather impact like a large rain event would be considered in the data that we pull from those wells, so if needed to adjust our remediation efforts as a result of that rain we would do so in conjunction with the DEQ but from a process standpoint in how we go about the remediation efforts, the rain does not impact that.

Commissioner Bales said would you take a moment and explain the purpose of the incinerator that you all have installed on the site. I think that would be helpful for the residents who are listening.

Ms. Kolar said essentially it takes any sort of vapors or fumes that are associated with the product that we are pulling out of the ground and eliminates it from the site.

Commissioner Bales said how long do you think that you all are going to be there. How long do you think it will take to remediate all of this – clean it all up and put it back the way that it was.

Ms. Kolar said we are still in the assessment and recovery phase of the response, so it's really too soon to give a date as far as how long we think we'll be there. Going back to what we mentioned earlier, we'll be there as long as it takes and the further that this progresses and the more data that we are able to obtain and the more that we are able to coordinate with the DEQ....again, as time progresses we'll be able to estimate that more properly, but it's too soon for us to really have a timeline.

Commissioner Munger said can you tell me how many gallons have been recovered at this time.

Ms. Kolar said we are continuing to recover 3,000 to 5,000 a day, so as of November 3 we had recovered 267,000 gallons as reported to the DEQ.

Commissioner Munger said can you tell me if you know what you believe the final count will be in terms of gallons.

Ms. Kolar said we are continuing to coordinate with the DEQ to determine the estimated total volume of the release. As I have mentioned a couple of times, we're there as long as it takes to remove all of the product regardless of the volume, so we're interested in that number as well and there's a tremendous amount of effort that's going on on that front. We've engaged a number of third-party experts to help us determine that. It's very technical, includes geotechnical analysis, geophysical analysis. I mentioned earlier the segment of pipe that's being cut out, that's part of the analysis from a metallurgical standpoint on that front, as well as the operations analysis and environmental analysis. So there's a number of data points that go into assessing that calculation or that figure, so we are working through that now and again continuing to coordinate with the DEQ to determine that volume number and we'll release the volume when we believe that it's accurate and verified through multiple models.

Commissioner Munger said I apologize this is secondhand so I don't have any documentation specific to this, but it is my understanding that in order to transition to Charlotte Water from the well water, homeowners needed to renounce some property rights to do this. Can you explain this and how this process was worked, what they had to give up in order to transition to Charlotte Water.

Ms. Kolar said it's my understanding that essentially what we were looking to do is transition them to city water just from the standpoint of ensuring that their wells, that we didn't need to do anything in addition for them, so I'll have to circle back and get a little bit more information on that.

Commissioner Phillips said I was wondering how often you guys are in communication with the citizens that are impacted.

Ms. Kolar for the neighbors that are in close proximity that we are testing their water wells, we're in communication with them any time we get data back from their respective monitoring wells.

Commissioner Phillips said do they ever receive just general updates because I have had citizens from that area reach out saying that they wished that they heard more even if it was situations like no news is good news. I don't know if this is like overstepping, but they have offered to collect their e-mail addresses and get them to me, and I would be happy to get them to you guys just so you have another form of communication.

Ms. Kolar said typically what we have done is we communicate via our emergency response site that's external facing that anybody has access to and that includes those routine kinds of updates and then again if there's anything specific to those homeowners in the area that they especially need to know about, so for example when we had the cut-out work or those types of things, we've communicated with them directly, but typically what we would do is any sort of on-going updates are available on that emergency response website that we've had ongoing since August 14.

Commissioner Boone said I understand that recovery draw points helps the product from spreading. What are you doing to keep the product from going into the [inaudible].

Ms. Kolar said we are continuing our evaluation via the monitoring wells and again continuing to drill wells on-site including, so that work is ongoing and part of our assessment work related to each of these 100+ wells is to analyze that data, so if we see anything that starts to migrate we can jump in and take a different path to mitigate that before it transitions to another area. And as I mentioned earlier, NCDEQ is involved in all of that work as well from a process standpoint so they are really an excellent partner so if either of us sees anything that we feel like needs additional effort we can jump on it. I just wanted to mention as a follow-up to Ms. Phillips' question, the neighbors in that area also have direct contacts with our right-of-way agents that are out there, so if there are any specific concerns, they can reach out to them as well.

Commissioner Bales said I was a little surprised that the initial abatement report was turned in more than two weeks early. Was there a specific reason for the report getting turned in that early.

Ms. Kolar said not a reason other than we want to remain fully transparent with our regulator. The data was ready, so we went ahead and sent it over early. I think it was 12 days in advance of the required date.

Commissioner Bales said I guess the next report is due in January, is that correct.

Ms. Kolar said yes.

Scott Bullock, NCDEQ, said as of November 12, 2020, 61 monitoring wells and 40 recovery wells have been installed at the release area and as of November 12, 310,824 gallons of free product and 37,160 gallons of petroleum contact water have been recovered. The water supply well sampling is continuing on a weekly basis. To date the petroleum contaminant has not been detected in any of the water supply wells. As of November 12, three water supply wells have been closed and properties hooked up and additional water supply wells may be abandoned in the future. The air monitoring is continuing.

There's been no exceedance reported to us. Also, noise monitoring is continuing. We haven't received any exceedances as well. The horizontal extent of the free product has been well defined, as well as the horizontal extent of the dissolved groundwater contamination. The next phase would be the comprehensive site assessment which will be submitted January 20, 2021. That will include the vertical extent of contamination as well. For surface water sampling, they are sampling every week and then after rain events of greater than 1" during a 24-hour period. They are also checking the surface water. So far no petroleum contaminants have been detected in the surface water. As you all discussed earlier, the vapors are being treated but it's not an incinerator. I just wanted to clarify that because some people get real upset if they hear the word incinerator. Also, there's discussion about how much release has occurred at the site and the amount and continued rate of free product recovery. The data submitted by Colonial Pipeline indicate that the spill is larger than initially reported. DEQ is requiring Colonial Pipeline to recalculate the estimated release and they will verify with the third-party consultant in order to provide an accurate estimation of the release volume. Also, DEQ is requiring Colonial Pipeline to take all the appropriate actions to protect the community and will do so throughout the process. DEQ continues to have meetings twice a week with Colonial Pipeline, the county, as well as the Department of Health and Human Services. Also, DEQ has initiated weekly site visits.

Wayne Randolph said I can explain the incinerator a little bit more. If you can picture whenever they pull the free product out of the ground it goes into tanks and there's going to be vapor involved in that, so that's channeled through a device that burns off that vapor so it's not emitting into the air. If you want to think about it like that, it gives a little bit better picture of what's actually happening.

Commissioner Walsh said has the horizontal extent and I assume you mean that's kind of from the center out in all directions, has that grown at all.

Scott said so far it hasn't gone past the monitoring well network that's been installed at the site.

Commissioner Walsh said when we say this is larger than initially reported, you're not saying it's grown, it's just more product has been released than initially thought.

Mr. Bullock said that's correct.

Commissioner Walsh said just for clarification, there have been no water wells, drinking wells affected, but three people have voluntarily gone to city water. Is that correct.

Mr. Bullock said three people have hooked up to the city water and closed their wells. No petroleum products have been detected in any of the wells.

Commissioner Hines said when you were talking about the incinerator where it burns off the vapors, is there still product that's being shipped offsite once it runs through piece of machinery or does it burn it all up.

Mr. Randolph said liquid is being removed from the site. The incinerator only burns off the fumes that come off of the gasoline. As it is being pulled out of the ground it goes into a frac tank and the vapors of that are incinerated, but the liquid itself is being removed from the site by tractor trailers to a recycling center in Ohio.

Commissioner Hines said are there any other agencies out there assisting you all, or are you all the only ones on site at this point.

Mr. Randolph said we're the agency in charge of the environmental clean-up, so there's other departments involved. If we have questions about the toxicology of the ground water or if certain residents have questions, we'll rely on the county or DHHS for aid in communicating with the public in that dealing with the soil and ground water, that's DEQ Division of Waste Management working on that.

Commissioner Bales said what direct oversight is DEQ providing.

Mr. Randolph said we have meetings with them twice a week and they give us reports of the daily activities that are being conducted. They also give us the information of where the wells are, any analytical results from any of the groundwater sampling. We review that data and then we discuss that in the meetings and advise whether more wells need to be sampled or installed in different directions if need be. Right now we are in the assessment aspect of it, so it's a lot of them gathering the data and supplying it to us and us digesting it and then discussing the next step forward, so that's the role that's being played right now. The comprehensive site assessment plan that was discussed that's going to be submitted in January, that will have more information and then we will be more involved with moving forward with the corrective action aspect of it after that is submitted.

Commissioner Bales said how often is DEQ staff actually on site.

Mr. Randolph said one of our staff members lives very close to the site, so he goes over whenever we need eyes on the site, whenever something comes up and we need to have someone present, he's there at least once a week as of right now.

Commissioner Bales said I believe Mr. Bullock stated that weekly site visits are starting to occur or have been occurring.

Mr. Bullock said yes, they have been occurring.

Commissioner Bales said so basically once a week.

Mr. Randolph said at a minimum.

Commissioner Munger said what is the impact to the plant and animal species in the area and is this being monitored at all.

Mr. Bullock said right now we are still assessing the potential impacts to human health and the environment and so far no impacts to human health or the environment have been documented.

Commissioner Boone said I don't know if this goes to Mr. Randolph, but I'll throw it out there. You said that the collated product that was being taken to the state of Ohio. The soil that is contaminated, can you tell me where that soil is being processed at.

Mr. Bullock said it's at the Charlotte Motor Speedway the BFI – I think it's 4,000 tons that have been taken.

Mayor Aneralla said I have a question. I'm not sure if you all will be able to answer, but if it's 3,000 to 5,000 a day today, I'm sure you have daily remediation numbers. Has it peaked, has it stayed the same.

Is it going up. That would give you some confidence of how much longer the remediation or the capture phase will take.

Mr. Randolph said they have 50 recovery wells in the ground and there's dedicated pumps in each of those wells that are pumping 24 hours a day going into three frac tanks and the frac tanks are just large containers. That's where we get the 3,000 to 5,000 gallons per day. They've done it twice so far to gage how much is left in those wells. It's a 4" well, the pump takes up all that space inside the well, so you really can't gage the free product when the pump is in the well. All the pumps have to be pulled out, the gaging then has to be done.....go around let the groundwater stabilize, go out and then measure all that free product and then at that point then you're able to say at the beginning of the month we had this many feet in these recovery wells. We pump on it for 20 days, we pull the wells look at them again and if you see a decrease at that point you know that you are starting to decrease the overall volume or if it stays the same you just keep pumping, so to be able to answer that question, there's been two gaging events. We don't have that information yet. Colonial Pipeline has gathered that information. That hasn't been submitted to us yet to be able to look at that. That will be submitted in the next report, but that's how we are able to gage that.

Mayor Aneralla said I guess we'll have to wait until the 20th of January for that.

Mr. Randolph said the 20th of January is the submittal date for the comprehensive site assessment. They should be submitting that information by the end of the month, so we'll be able to review that in a monthly report because we've asked for those types of reports just as a more information flow.

Mayor Aneralla said I think that would be helpful and start giving some people peace of mind if the number is starting to decline.

Robert Kerns, 301 Hillcrest Drive, said my subject tonight is really about infrastructure. After the huge rain event we had last week it came to mind that Thursday the 12th I took a walk around Greenfield Park neighborhood between the hours of 9 and 10 in the morning. What I saw was pretty amazing and what brought me out there was this sound of rushing water, which of course was the sewer fountain just across the park from me and it was in full bloom and of course it was draining into the local creek which eventually goes to Torrence Creek, McDowell Creek and into Mountain Island Lake where we get our drinking water. Within a week or so we should be testing some of that. That's disturbing enough and I know that Charlotte Water has been out probably seven times trying to work on this problem. They haven't been successful so far and I think they are working on the wrong end of things. The question in my mind is why is storm water going into the sanitary sewer. Those should be separate systems and I know this is sanitary and sewer, it's marked as such and when it overflows it brings all the things you would expect it to bring and now Mr. Puckett's grass is full of tissue paper. This is not too good and it flows from his house down the creek and past the back of my house where my grandkids play in the creek. I don't like this very much. I know we are trying to work on this, so the thing is, I think we are on the wrong end of the system. I think the problem is that those pipes have been in the ground since the 1960's and they haven't been improved and so that's why I want to talk about infrastructure. You know that my subject really is about the North State development and the impact of that on our neighborhood, so I'm concerned about the infrastructure and it started to occur to me, maybe I'm talking to the wrong people. North State is not responsible for that infrastructure. They could be responsible for some impacts on it and we're concerned about that. Our group has had some talks with North State over the last week, very amicable. We hope we can arrive at some sort of solution or mitigation that makes both groups happy. We meet again Wednesday and will hope for the best. But as for the infrastructure while I was walking around, okay sewer is one thing, we've also got I know just

today we called Charlotte Water because we had two water supply problems, water mains broken – one on Hillcrest, one on Dallas.....okay, more of that. You already know what the roads look like. They are crumbling, we are concerned about the increased traffic that's going to come to here. While I was walking about, I took some amazing videos. I would be glad to share them with you, not right now, of the amount of water that's flowing not in creeks or ditches or culverts, but it's flooding across just vast areas. I know it's an unusual event, but we call this a 50-year storm. Unfortunately, they seem to be happening about quarterly and the flood's getting up to that level, it's coming out of the banks, it's coming over the roads, so there's a concern. And it occurs to me how can we consider rezoning for higher density when we haven't done our due diligence, when we haven't done the work upfront to mitigate these problems. The infrastructure is inadequate and it's crumbling. The roads are crumbling, there's no sidewalks, obviously the sewer is not keeping up. I don't know what the solution to that is, but something's up with that. We need to look at that upstream. During that same day I walked the stream all the way up to the parking deck down through the woods and back to my property. Frankly, my position is Huntersville isn't prepared for this level of increased density because of our inadequate and crumbling infrastructure. How can we consider doing this rezoning until we do something about it. We had some good talks with North State. We'll make the best of this, but I think we as a town have sort of dropped the ball on this. It impacts North State, it's bad for them. They're having to fight something that is not of their making but it's still true, we're still going to suffer from it.

AGENDA CHANGES

Commissioner Bales made a motion to adopt the agenda as presented.

Commissioner Boone seconded motion.

Mayor Aneralla called for a roll call vote.

Commissioner Bales – approve
Commissioner Boone – approve
Commissioner Hines – approve
Commissioner Munger – approve
Commissioner Phillips – approve
Commissioner Walsh – approve

PUBLIC HEARINGS

None

OTHER BUSINESS

Hollins Grove Major Revision. Mayor Aneralla said this is a quasi-judicial hearing on the application submitted for the Hollins Grove Major Revision to approved plans.

This hearing is a quasi-judicial evidentiary hearing. That means it is like a court hearing. State law sets specific procedures and rules concerning how this Board must make its decision. These rules are different from other types of land use decisions like rezoning cases.

The Board's discretion is limited. The Board must base its decision on competent, relevant, and substantial evidence in the record.

Competent evidence is evidence that is sufficiently trustworthy and reliable and that is legally fit and acceptable for consideration by the Board. Substantial evidence is more than a scintilla. Evidence is substantial if it is relevant and something that a reasonable mind would regard as sufficient to support specific conclusions. A quasi-judicial decision is not a popularity contest. Participation is limited. This meeting is open to the public. Everyone is welcome to watch. Parties withstanding have rights to participate fully. Generally speaking, evidence that is presented that is not objected to may be considered by the Board, however even if certain evidence is not objected to, it may not be considered by the Board unless presented by an expert witness. Witnesses must swear or affirm their testimony and the Board will now recognize the applicant as a party. Are there any other persons who believe they have standing to participate fully as a party. I don't believe anybody has signed up for that. The parties to this case are entitled to an impartial Board. A Board member may not participate in this hearing if he or she has a fixed opinion about the matter, a financial interest in the outcome of the matter or a close relationship with an affected person. Does any Board member have any partiality disclosure or conflict of interest to offer at tonight's meeting. There being none, the parties in this case have rights for any ex parte communications be disclosed. Ex parte communication is any communication about the case outside of the hearing, that may include site visits as well as conversation with party, staff or the general public. Does any Board member have any ex parte communications or site visits to disclose.

The only thing that I will say is I have driven around Huntersville from time-to-time and I have driven by that neighborhood, but not any reason for this particular case. It probably was 6 or 8 months ago. I'd like to call the Planning Staff for presentation of their Staff Report.

Mayor Aneralla swore in Jack Simoneau (Mr. Simoneau was present at the Huntersville Recreation Center).

Mr. Simoneau said the property in question is Hollins Grove subdivision. It's located just on the north side of Cashion's Road, just to the west of Cashion Woods subdivision. This slide shows you the existing subdivision sketch plan approved in 2016 and the change that they are proposing for now 2020. In summary the 2016 plan had 40 lots on 46.52 acres. The revised plan has 43 lots on 48.28 acres. We enter the Staff Report into the record. *Staff Report and Staff PowerPoint attached hereto as Exhibit No. 1.* It affirms that all Town development standards have been met. This is just showing you the general direction of where the lots are at and also the circle is where some additional land has been added.

Staff recommends approval. The application is complete. It keeps with the spirit of the ordinance. It complies with all ordinance requirements, and as such the staff supports it. The Planning Board on October 27 also recommended unanimous approval and so now we are at the Town Board decision and if there are any questions, I can go over those questions and have the applicant here as well.

Mayor Aneralla said does the applicant want to speak.

Mr. Simoneau said just to answer questions.

Mayor Aneralla said I'll have to swear him in if there's a question, so why don't we do that.

Mayor Aneralla swore in Matt Gallagher (Mr. Gallagher was present at the Huntersville Recreation Center).

Mayor Aneralla said does the Board have any questions.

Commissioner Boone said I would like to make a motion please.

Mayor Aneralla said can I just say it's a little bit out of order. Let me just continue to see if there are any questions and then I'll ask for a motion.

Mayor Aneralla said hearing none, if no other Board members have any other discussion or questions, as a reminder this Board is tasked with deciding if based on the evidence presented at the hearing before this Board this proposal meets the applicable standards. This decision cannot be based on personal preference of Board members, rather the decision must be based on competent material and substantial evidence in the record. The application as originally submitted was considered by the Planning Board and the Planning Board made a recommendation. Because this occurred outside of the hearing before this Board, nothing that occurred at the Planning Board level, including the Planning Board's recommendation, is considered evidence that you should base your decision on. However, the Planning Board's recommendation may be useful to the Board in identifying issues that this Board may want to consider and evaluate based upon the evidence that was presented at the hearing before this Board.

Board members are encouraged to reference the applicable standards and specific evidence in their deliberation so that Staff and I will have enough information to prepare a written decision for the Board.

Is there a motion.

Commissioner Boone said I'd like to make a motion. In considering the Hollins Grove residential subdivision revision, the Town Board approves the plan. The application is complete and the applicant meets or exceeds all applicable requirements and is in keeping with the spirit and the intent of the Town's future land use plan for the area. The applicant has agreed on all minor site plan comments made by the Planning Staff.

Commissioner Bales seconded motion.

Mayor Aneralla called for a roll call vote.

Commissioner Bales – Approve
Commissioner Boone – Approve
Commissioner Hines – Approve
Commissioner Munger – Approve
Commissioner Phillips – Approve
Commissioner Walsh – Approve

Petition #R19-18. Petition #R19-18 - Huntersville Market REVISION is a request by Cambridge Properties, LLC to rezone +/- 28.569 acres located north of the Eastfield Road and Prosperity Church Road intersection (Parcel #s 02119101, 02119168, 0211969, 02119170, 02119171, 02119172, 02119173, 02119174, 02119175) from an existing Highway Commercial - Conditional District to a REVISED Highway Commercial - Conditional District to permit 190 age-restricted, active adult housing units and to eliminate a proposed public street.

David Peete, Principal Planner, entered the Staff Report into the record. *Staff Report and Staff PowerPoint attached hereto as Exhibit No. 2.*

Mr. Peete said the only thing that I have to mention for tonight is from the public hearing. The applicant has agreed to all of the recommendations and requirements from the Staff Report, with the exception of the height modification. The Planning Board recommended approval by unanimous vote 8-0 based upon the conditions of the Staff Report. They did support the height modification. They were supportive of the four stories.

Commissioner Walsh made a motion in considering the proposed rezoning application R19-18, Huntersville Market Conditional District Rezoning Revision, the Town Board approves the rezoning as it is consistent with Implementation Goals H-2, H-4, H-5, H-9, PF-2, T-6 and T-8 of the 2030 Community Plan, as well as the recommended future land use for Planning Zone 3 of the Eastfield Road Small Area Plan. The property is located within a mixed-use development node of the 2030 Comprehensive Plan and the reduction of commercial space for an age-restricted, active adult housing is supported by the Town's long-range plans of creating a mixed-use development at the intersection of the two major thoroughfares. The Town Board approves with the following modifications to the ordinance requirements.

- Modification 1 to the block length stems from multiple elements added to the site plan together to reduce the mass and scale of the proposed apartment building. Various elements added to the streetscape along Hylas Lane will minimize the impact to the building and create a walkable, pedestrian-oriented environment for the residents.
- Modification 2 of the building height is supported due to the streetscape elements proposed along Hylas Lane combined with the architecture features of the building creating visual interest to break-up a perceived length along the street and the elimination of repetitive façade features that will reduce the impact of the fourth story added to the building.
- Modification 3 – right-of-way abandonment is required to support the rezoning plan and modifications.
- Modification 4 – parking screening will be supported creating a walkable streetscape along Hylas Lane.

Recommendation of the approval is also based on all remaining provisions outlined in Part 6 Staff Recommendation being addressed as indicated, with the exception of the building height, which is approved at four stories. With those provisions, it is reasonable and in the public interest to revise the Huntersville Market Conditional District Rezoning Plan to remove 54,750 sq. ft. of commercial space and permit no more than 175 age-restricted, active adult housing because it is consistent with the 2030 Comprehensive Plan and the Eastfield Road Small Area Plan as outlined above and applicable provisions of the Zoning Ordinance can be adequately addressed with staff recommendations in Section 6, with the exception, of course, of the building height which is approved at four stories.

Commissioner Bales seconded motion.

Mayor Aneralla called for a roll call vote.

Commissioner Bales – Approve
Commissioner Boone – Approve
Commissioner Hines – Approve
Commissioner Munger – Approve

Commissioner Phillips – Approve
Commissioner Walsh – Approve

2040 Community Plan. The Huntersville 2040 Community Plan was recommended for approval by the Huntersville Planning Board on October 27, 2020. Prior to that, a public hearing for the 2040 Plan was held on October 19, 2020. All state law requirements have been met to allow the Board of Commissioners to consider adoption of the 2040 Plan by ordinance. Documents provided for Town Board review include: (1) The Draft 2040 Plan; (2) an analysis of the recommendations made by the Planning Board on October 27, 2020; and (3) a list of all edits made to the draft plan during the review and refinement process.

Dave Hill, Transportation Planner, said we have presented to you a document that we have named the Town Board Revision. *Refer to Exhibit No. 3.* This is property that is actually located on the west side of town. It is fairly close to an activity center that has already been designated for the intersection of NC 73 and Beatties Ford Road. We have park land and existing development subdivisions and it extends all the way down to Gilead Road. This is approximately 200 acres and the current draft of the plan shows it as residential edge as the character area that it's been designated. We've been asked to consider that it be changed to moderate density and there is no objection on the part of staff to doing that. The only thing that we would ask is that you consider making some changes to some policies simply to make sure that should there be a consideration of a zoning change, that there be some kind of way to be able to look at and analyze any proposals as far as how big, impact to rural character or environmental resources.

Another item that came up for discussion and this is more for information purposes, is that for both the downtown plan and the transportation sections of the plan, staff would intend to make a clarification simply to note the status of showing that some segments that are shown in white here do not indicate future roadway connections, so we may correct that by simply taking these out and then for those areas where there actually are linkages that are proposed, we would clarify the status of that to make it clear that there are other things needed to be able to secure official alignments as part of the thoroughfare plan and even going further in terms of indicating that rights-of-way have not been acquired.

Commissioner Munger made a motion to delay adopting a resolution adopting the Huntersville 2040 Community Plan until December 7, 2020.

Commissioner Walsh seconded motion.

Commissioner Boone said will we be having a December 21 Town Board Meeting. Has that been decided. The reason why I ask that is the first meeting in December is going to be a lengthy meeting and I would like to know if we are going to have a December 21 meeting that might be a little bit better time to discuss this.

Mayor Aneralla said I have not heard anything. I'll defer to Mr. Roberts. I thought we had at least one public hearing on the agenda for that night.

Mr. Roberts said right now for the 21st we have slated, if you will recall R20-04 Palillo mixed-use project on Statesville road was originally on December 7 and we pushed that back to the 21st. I know our policy talks about not having public hearings on the second meeting, I think they are typically on the first meeting, but right now that has been pushed back to December 21. That's the only planning item that I'm aware of right now.

Commissioner Boone said then I would like to ask Commissioner Munger and Commissioner Walsh if they would amend their motion from the 7th to the 21st.

Commissioner Munger amended his motion to delay the vote on a resolution adopting the Huntersville 2040 community plan until December 21. The meeting will be held virtually or in person at the Huntersville Parks & Rec Center.

Commissioner Walsh seconded amended motion.

Commissioner Hines said is the reason for the delay just to take time to digest the Planning Board recommendations or is there another reason we are pushing this off until the 21st of December.

Commissioner Munger said there were a number of changes suggested by the Planning Board and I as well as others have stated that we would like a little bit more time just to review those. This is a once every 10 years type of thing, we want to make sure we get it right and get everything covered and do what's best for everyone.

Mayor Aneralla called for a roll call vote.

Commissioner Bales – Approve
Commissioner Boone – Approve
Commissioner Hines – Approve
Commissioner Munger – Approve
Commissioner Phillips – Approve
Commissioner Walsh – Approve

Resolution Authorizing Upset Bid Procedures. Emily Sloop, Town Attorney, stated you have before you a resolution to adopt upset bid procedures pursuant to 160A-269. The property is approximately 1.671 acres. We currently have an offer from 760 Craft Works LLC.

Commissioner Walsh requested Ms. Sloop explain the upset bid process.

Ms. Sloop stated the upset bid process allows bidders to upset the current bid that we have in place by offering 10 percent of the first \$1,000 that is being offered in addition to 5% of the remaining purchase price. That process would go on with bids being received until we have had no upset bid for 10 days.

Commissioner Boone made a motion to adopt Resolution authorizing the upset bid process under NCGS 160A-269 for the disposal of surplus property.

Commissioner Walsh seconded motion.

Commissioner Hines said I know in this we are reserving an easement for additional public parking for our greenway head there. Is there also going to be a maintenance agreement for those four spaces or are we just going to give an easement and the new property owner would be maintaining those parking spots for the Town.

Ms. Sloop said the contract as drafted contemplates an easement agreement as well as a joint parking agreement and then there would also be certain restrictions included in the contract as well. However, in terms of the maintenance, I would have to defer to the Town Manager on that.

Anthony Roberts, Town Manager, said we did chat about that, so as part of those agreements we would probably include some type of maintenance agreement in there.

Commissioner Phillips said if we expand Gilead Road, will we be buying back our own property and why are we paying for demolition of a building.

Mr. Roberts said the building itself we are looking to take down, I'm going to call it the old dental office, is something that's been discussed for at least a year. We've sort of held off on it, but whether this project goes through or not, the Board had instructed me to go ahead and demolish that building. As part of this we've asked for right-of-way, if it's not already existing, to the back of the sidewalk. The problem is we don't know what that road is going to look like. If it turns out to be two lanes on each side or four lane divided road, then of course that would probably demolish downtown, but we would be inside some of the buildings, not only this building, probably Cashion's etc. If that happens that will be part of the process this Board and a future Board would be involved in to determine what that roadway segment looks like, so I can't ask for something I really don't know what it's going to look like. I don't know how wide the road is going to be, so what we did is asked for the maximum which is to the back of the sidewalk which literally after that puts you inside the building.

Mayor Aneralla called for a roll call vote

Commissioner Bales – Approve
Commissioner Boone – Approve
Commissioner Hines – Approve
Commissioner Munger – Approve
Commissioner Phillips – Approve
Commissioner Walsh – Approve

Mayor Aneralla said we've been looking for investments from the private sector and I've spoken with the representatives for the buyer. They are very excited that they are coming to Huntersville, excited to be close to the greenway, so I think through some of the investments that the Town has been making over the last number of years, we are starting to get a return on our investment and we look forward to having a restaurant/brewer in downtown Huntersville.

Resolution attached hereto as Exhibit No. 4.

Resolution – Dispose of Surplus Property. Emily Sloop, Town Attorney, explained this is a resolution asking that we donate some surplus property, including architectural salvage items, from the property at 14707 N. Old Road pursuant to NCGS 160A-280, which allows municipalities to donate personal property to non-profit organizations. In this particular instance, we are asking for the ability to donate the property to Habitat for Humanity of the Charlotte Region as well as any other requesting non-profit organizations.

Commissioner Walsh made a motion to approve the resolution authorizing the Town Manager to dispose of surplus property to a non-profit organization.

Commissioner Munger seconded motion.

Commissioner Boone said I would just like the public to know this is the Dr. Craven House. The address that was given is a new address and I just want to be sure that everybody and the public knows that it is Dr. Craven's house.

Commissioner Phillips said because the language of this motion, I just want to clarify that's the reason I'm voting no. I have opposed demolishing the Dr. Craven House from the beginning and I'm going to oppose it until the end and that has no way, shape or form any influence on how I feel about Habitat For Humanity who I think is doing a great service for our community.

Mayor Aneralla called for a roll call vote.

Commissioner Bales – Approve
Commissioner Boone – Deny
Commissioner Hines – Approve
Commissioner Munger – Approve
Commissioner Phillips – Deny
Commissioner Walsh – Approve

Resolution attached hereto as Exhibit No 5.

CONSENT AGENDA

Commissioner Hines made a motion to approve the Consent Agenda. Commissioner Bales seconded motion.

Mayor Aneralla called for a roll call vote.

Commissioner Bales – Approve
Commissioner Boone – Approve
Commissioner Hines – Approve
Commissioner Munger – Approve
Commissioner Phillips – Approve
Commissioner Walsh – Approve

The following items on the Consent Agenda were approved:

1. Minutes of the October 5, 2020 Regular Town Board Meeting.
2. ElectriCities Write-off. *Refer to Exhibit No. 6.*
3. Budget amendment appropriating PARTF Grant revenue for Rosedale Nature Park to Park Construction.
4. Resolution to amend the Capital Improvement Program and apply for Charlotte Regional Transportation Planning Organization Funding for the Gilead Road Widening Project. *Resolution attached hereto as Exhibit No. 7.*

CLOSING COMMENTS

Commissioner Bales wished everyone a happy Thanksgiving.

CLOSED SESSION

Commissioner Walsh made a motion to go into closed session to instruct staff on real property acquisition pursuant to NCGS 143-318.11(5)

Commissioner Boone seconded motion.

Mayor Aneralla called for a roll call vote.

Commissioner Bales – Approve
Commissioner Boone – Approve
Commissioner Hines – Approve
Commissioner Munger – Approve
Commissioner Phillips – Approve
Commissioner Walsh – Approve

Upon return from closed session, there being no further business, the meeting was adjourned.

Approved this the _____ day of _____.

**Town of Huntersville
Town Board
December 21, 2020**

To: Town Board

From: Pattie Ellis

Date: December 21, 2020

Subject: Approve Budget Amendment appropriating Park Capital reserve revenue in the amount of \$75,000 to the Athletic Field Lighting expense for the Waymer baseball field. (*Pattie McGinnis*)

EXPLAIN REQUEST:

Appropriate Park Capital reserve revenue (103510.9999) of \$75,000 to the Athletic Field lighting expense (105400.0557) for the Waymer baseball field.

ACTION RECOMMENDED:

Approve Budget Amendment

FINANCIAL IMPLICATIONS:

No net impact to fund balance; offsetting revenue and expense.

ATTACHMENTS:

None