EXECUTIVE COMMITTEE MEETING
Regular Meeting Agenda

December 6, 2021
5:30 PM
6738 Dixon Street
Milton, FL 32570

1. **Open Meeting**

2. **Invocation**

3. **Pledge of Allegiance**

4. **Approval of Agenda for Additional Items**

   - Recommendation for Additional Items from Staff
   - Recommendation for Additional Items from Council

5. **Recognitions, Special Presentations and Awards**

6. **Public Hearings/Meetings**

7. **Invited Speakers**

8. **Persons to Appear**

9. **City Attorney's Report**

10. **City Clerk's Report**

11. **Agenda Items**

Staff Items

Item # 2021-98
Census Re-Districting Analysis

Item # 2021-101
Historic Preservation Board Vacancies

Item # 2021-102
Commercial Sponsorship Request - Emerald Coast Sports Association

Councilman Vernon Compton

Ward I - Seat I

Item # 1824
MLK Day Parade 2022 & After Party

Councilwoman Shannon Rice
Ward II - Seat I

Item # 1827
Director of Public Relations

Councilman Jeff Snow
Ward III - Seat II

Item # 1817
Hazard Mitigation Grant Program (HMGP) - COVID-19

Item # 1823
Sitework for Joint-Use Training Facility

Item # 1826
Appointment of City Clerk

Item # 1818
Byrom St. Project

Item # 1819
City of Milton Exclusive Gas Territory

Councilwoman Shari Sebastiao
Ward IV - Seat I

Item # 1822
J.B. Turner School Historic Marker

12. Council Reports

13. Mayor Report: Heather Lindsay

14. City Manager's Report

15. Public Input

16. Adjourn/Recess

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting is asked to advise the City at least 48 hours before the meeting by contacting City Hall, 6738 Dixon Street, Milton, or by calling 983-5410.

"If any person decides to appeal any decision made by the board, agency, or commission, with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based." FS 286.0105

Agenda Item # 2021-98

Census Re-Districting Analysis

MEETING DATE	PREPARED BY
December 6, 2021	Tim Milstead, Planning Director

BACKGROUND

The City of Milton Planning Department has continued analyzing the latest data released for the 2020 Census. Census totals are estimates and the Census Bureau has announced that there may be some impacts from the Covid-19 pandemic on the Census data collection. More detailed population data is expected to be released in the coming months. The Council should consider whether changes to the ward populations should necessitate any redistricting.

SUMMARY

The Census estimates that the City of Milton's population grew to approximately 10,197 in 2020. This is on target with the City's estimated growth. City staff have analyzed the population totals in greater detail. The estimated totals for each ward are as follows:
Ward 1: 2069
Ward 2: 2685
Ward 3: 2441
Ward 4: 3002
City Total: 10197
Some discrepancies lie in the boundary between Ward 1 and Ward 4 where ward boundary is not conterminous with the census blocks.

The attached maps show population density of the City and in each Ward. The darker areas on the maps are areas of higher population. The maps clearly show that while Ward 1 has the largest land area of the 4 wards, it also has a significantly lower population. This is largely due to its location as a largely commercial corridor. Based on the population estimates, staff have prepared 4 options for your consideration. The 3 attached maps identify potential areas for redistricting determined based on Census block boundaries and population estimates. The projected population totals for each redistricting option are provided.

Potential growth areas are identified in the first map and should be considered for discussion. Several areas in Ward 1 have been identified for future redevelopment as well as a multi-family residential development. Additional areas identified include Natalie Meadows subdivision in Ward 3, and large areas of vacant land North and East of Ward 4 with potential for annexation. These growth areas have potential to further impact or balance population totals.

Option 1: Take no action.
No action is required, and no statutory law necessitates redistricting for City

government. The rules under 124.01 F.S. regarding County redistricting could be used as a guideline, which simply states that the population of each district should be as even as possible.

Option 2: Redistricting a population of 152 from an area of Ward 4 to Ward 1, south of Munson Hwy and east of Stewart St.

Option 3: Redistricting a population of 349 from an area of Ward 4 to Ward 1, south of North Ave and east of Alabama St.

Option 4: Redistricting a population of 507 from an area of Ward 4 to Ward 1, south of North Ave and east of Stewart St.

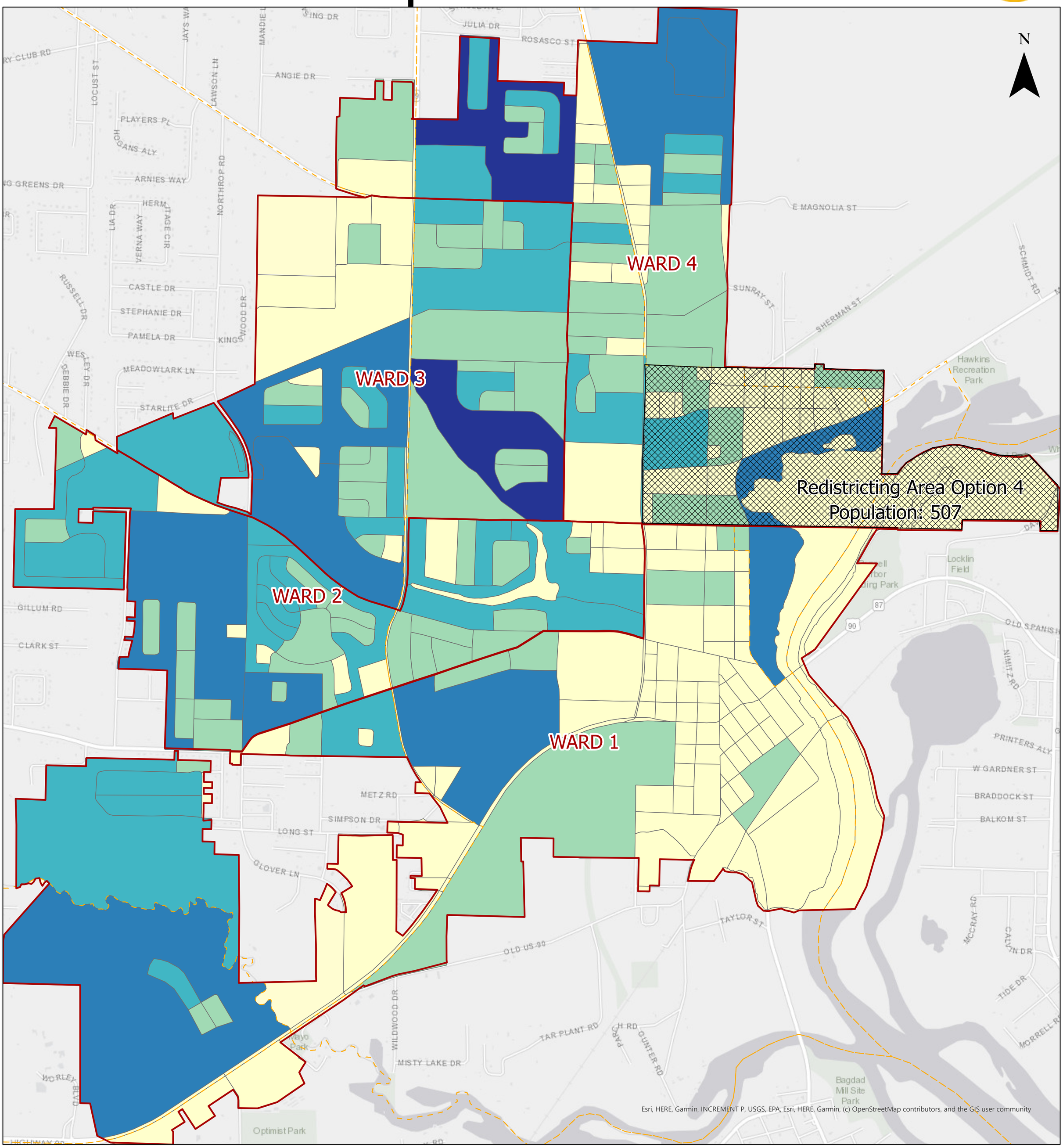
RECOMMENDATION

Staff recommends the Council consider the four options provided to determine if any re-districting of wards is needed.

ATTACHMENTS

1. Option4Map
2. Option3Map
3. Option2Map
4. Option1Map

2020 Census Population



City Wards

Census Tracts

2020 Census Population Density

Block Group Population

- 0 - 21
- 22 - 57
- 58 - 130
- 131 - 328
- 329 - 552

0 0.25 0.5 1 Miles

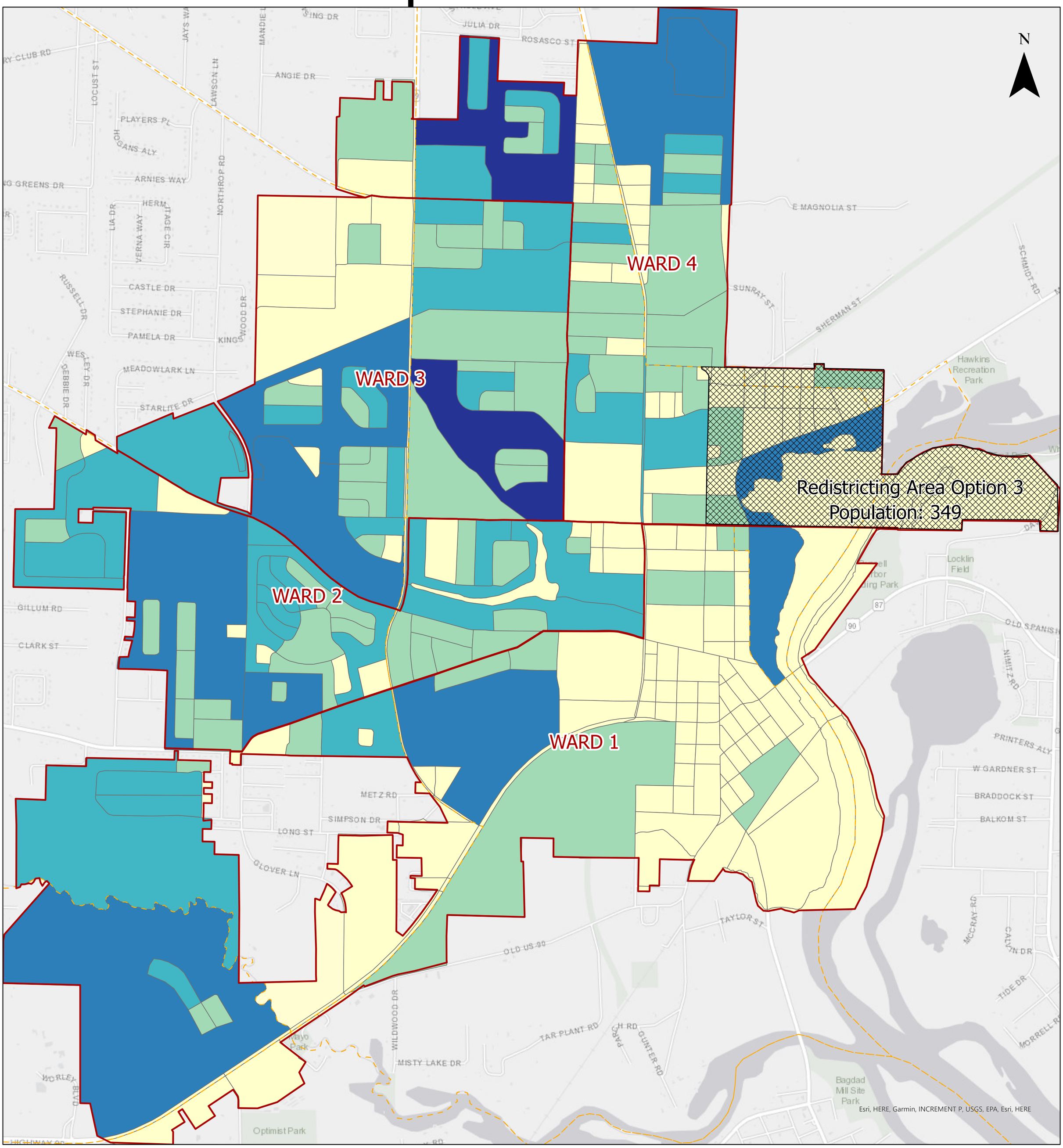
2020 Population Estimates

Ward 1: 2069
Ward 2: 2685
Ward 3: 2441
Ward 4: 3002
City Total: 10,197

Redistricting Estimates:

Ward 1: 2576
Ward 2: 2685
Ward 3: 2441
Ward 4: 2495
City Total: 10,197

2020 Census Population



City Wards

Census Tracts

2020 Census Population Density

Block Group Population

- 0 - 21
- 22 - 57
- 58 - 130
- 131 - 328
- 329 - 552

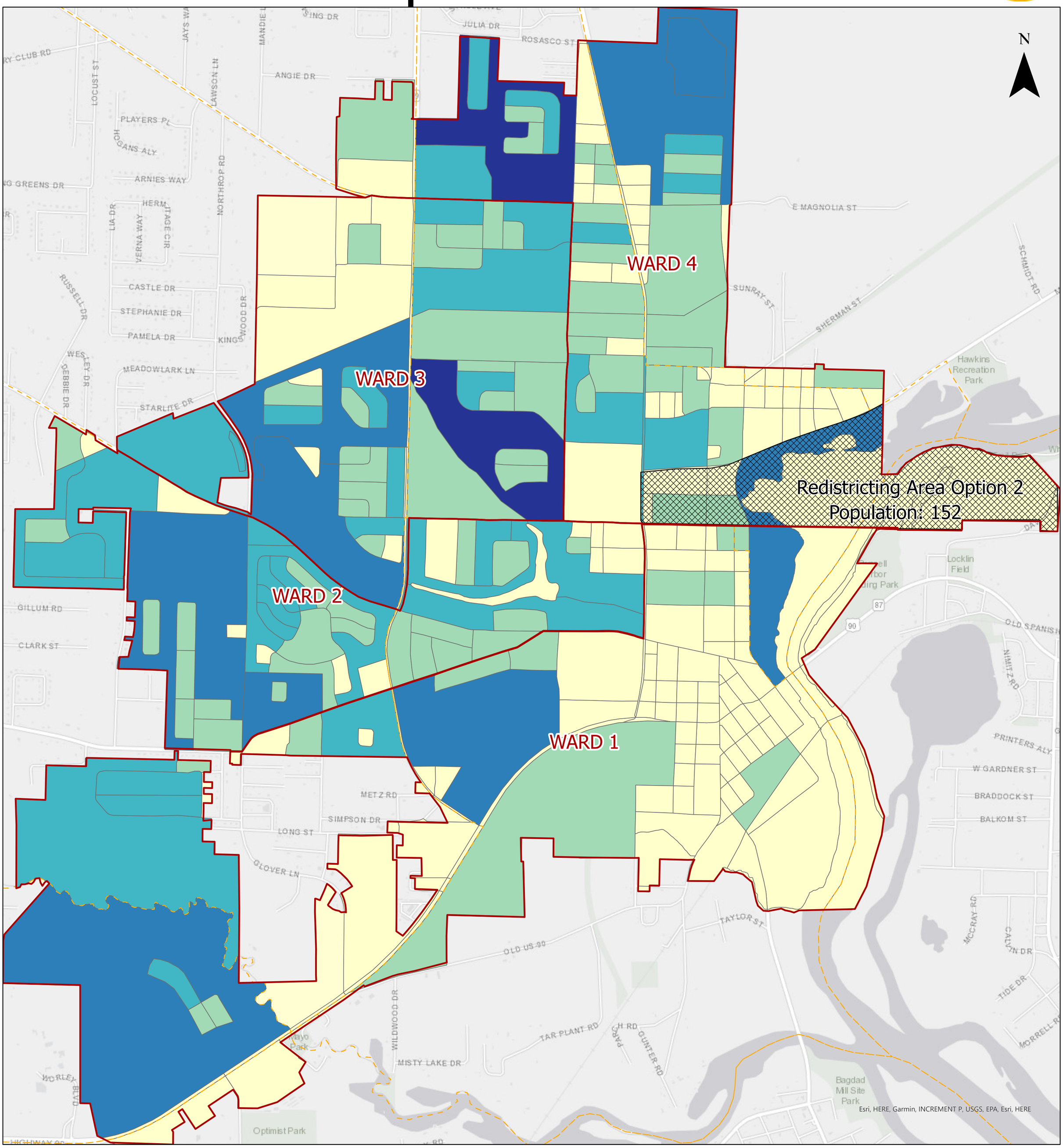
2020 Population Estimates

Ward 1: 2069
Ward 2: 2685
Ward 3: 2441
Ward 4: 3002
City Total: 10,197

Redistricting Estimates:

Ward 1: 2418
Ward 2: 2685
Ward 3: 2441
Ward 4: 2653
City Total: 10,197

2020 Census Population



City Wards

Census Tracts

2020 Census Population Density

Block Group Population

- 0 - 21
- 22 - 57
- 58 - 130
- 131 - 328
- 329 - 552

0 0.25 0.5 1 Miles

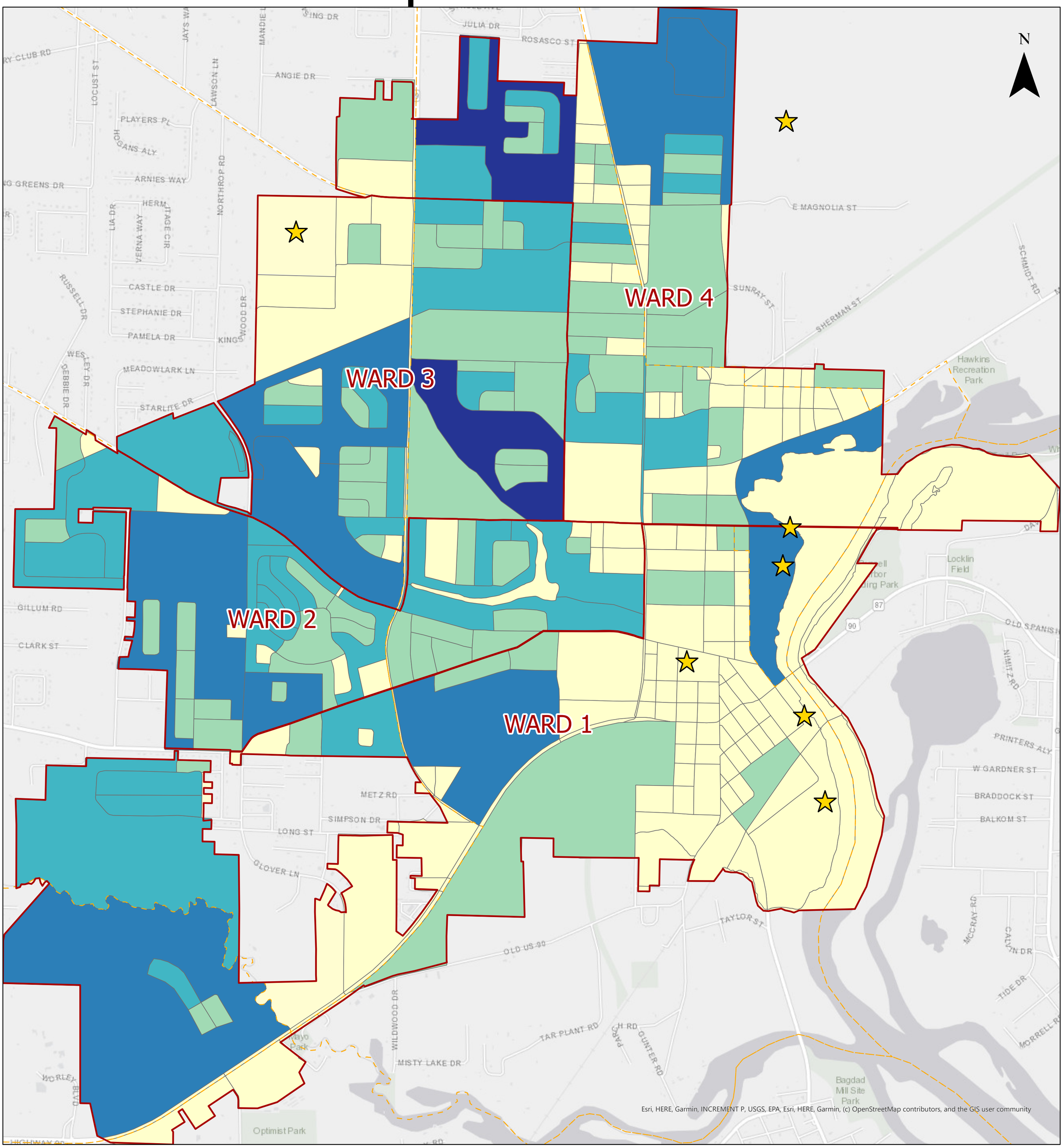
2020 Population Estimates

Ward 1: 2069
Ward 2: 2685
Ward 3: 2441
Ward 4: 3002
City Total: 10,197

Redistricting Estimates:

Ward 1: 2221
Ward 2: 2685
Ward 3: 2441
Ward 4: 2850
City Total: 10,197

2020 Census Population



Legend

- Potential Growth Areas
- Wards
- Census Tracts

Census Blocks

Total Population

- 0 - 21
- 22 - 57
- 58 - 130
- 131 - 328
- 329 - 552

0 0.25 0.5 1 Miles

2020 Population Estimates

Ward 1: 2069
Ward 2: 2685
Ward 3: 2441
Ward 4: 3002
City Total: 10,197

Agenda Item # 2021-101

Historic Preservation Board Vacancies

MEETING DATE	PREPARED BY
December 6, 2021	Tim Milstead, Planning Director

BACKGROUND

The Historic Preservation Board is a seven member board that is charged to act upon plans for the alteration, renovation, or restoration of regulated historic structures to ensure conformance with the U.S. Secretary of the Interior's Standards for Rehabilitation. Recently, Vernon Compton was appointed to the City Council while acting as Chairman of the Board. Mike Lewis's term will expire on December 14th, and he is unable to continue serving. Therefore, two vacancies are open on the Board that need to be filled by the Council.

SUMMARY

Staff has received five applications from eligible candidates to fill the two open positions on the Board. Board members are required to be city residents, or must own property location within the City Limits. The five applicants are Cassandra Sharp, Jason Vance, John David Ellis, Laura Spencer Coleman, and Mike Cusack.

RECOMMENDATION

Staff recommends review of the attached applications for appointment to the Board.

ATTACHMENTS

1. John Ellis HPB Appt Survey Info
2. Cassandra Sharp HPB Appt Survey Info
3. Mike Cusack HPB Appt Survey Info
4. Laura Coleman HPB Appt Survey Info
5. Jason Vance HPB Appt Survey Info

CITY OF MILTON
BOARD APPOINTMENT SURVEY/INFORMATION

Date: 10/31/2021

Name John David Ellis **Phone (hm)** 8503120012

E-mail address johndavidellisjr@gmail.com **Phone (wk/cell)** 8503120012

Address 5 Ruffin Circle, Pensacola, FL 32503 **City Ward** N/A

Education Bachelor of Arts, English, Florida State University 2011

Work Experience: Broker/Owner of Voyage Real Estate - 2016 - present

Community Service Previous member of Pensacola Young Professionals, North Hill Preservation Association, Keep Pensacola Beautiful

Awards Studer Community Institute's Startup of the Year 2017
Studer Community Institute's Runner-up Entrepreneur of the Year 2020

Hobbies, Travel, etc Architecture/Design, Reading/Writing, Cycling and fitness

Other comments that would be helpful in determining appropriate appointment

I own two properties in Downtown Milton and am passionate about its growth and preservation.

Please attach a brief resume.

Please check the Boards that you are interested in.

____ **Milton Housing Authority**
X **Historic Preservation Board**
____ **Civil Service Board**
____ **Board of Adjustments**
____ **Police Pension Board**
____ **Milton Planning Board**
____ **Riverfront Redevelopment Team**
____ **Milton Benevolent Cemetery Board**
____ **General Employees Pension Board**
____ **Firefighters Pension Board**

CITY OF MILTON
BOARD APPOINTMENT SURVEY/INFORMATION

Date: 11-17-21

Name Cassandra Sharp **Phone (hm)**

E-mail address mainstreetcafe02@gmail.com **Phone (wk/cell)** 850-723-4726

Address 3109 Waterview Dr. **City Ward** one (prop. owner)

Education Real Estate, Bus/RE. Law, Hsld several Licenses and certifications

Work Experience: Real Estate, Investment/Property Development + management, Historic Preservation, Adaptive Reuse, Construction, Restaurant + Retail Business Owner.

Community Service 17 yrs of community service, Milton organizations: Santa Rosa Hist. Society Main Street Milton, Santa Rosa Arts + Culture Foundation. Active in Local Govt.

Awards) Several awards for adaptive reuse, hist preservation, bus. awards and food service,

Hobbies, Travel, etc Community service, cooking, entertaining, gardening. I have traveled in the US and abroad

Other comments that would be helpful in determining appropriate appointment I believe in strong community values, preservation of history + places, a vibrant downtown with people, economic opportunities and equality for everyone. My dedication is proven with my investments in the Hist. Dist and my diverse business development + recruitment.

Please attach a brief resume.

Please check the Boards that you are interested in.

____ Milton Housing Authority	____ Milton Planning Board
#1 X Historic Preservation Board	#2 X ~~Riverfront Redevelopment Team~~ CRA/DIB
____ Civil Service Board	____ Milton Benevolent Cemetery Board
____ Board of Adjustments	____ General Employees Pension Board
____ Police Pension Board	____ Firefighters Pension Board

CITY OF MILTON
BOARD APPOINTMENT SURVEY/INFORMATION

Date: 11/22/21

Name Mike Cusack **Phone (hm)** 850 206 4612

E-mail address MIKECUSACK1@GMAIL.COM **Phone (wk/cell)** 850 206 4612

Address 6762 BELLYTHALL ST MILTON FL **City Ward** 1

Education BACHELORS

Work Experience: DIRECTOR

Community Service CIVIL SERVICE BOARD BOARD OF ADJUSTMENTS

Awards

Hobbies, Travel, etc GARDENING SPORTS

Other comments that would be helpful in determining appropriate appointment
LIVE IN HISTORIC DISTRICT AND WOULD BE ACTIVE MEMBER

Please attach a brief resume.

Please check the Boards that you are interested in.

____ Milton Housing Authority
✓ Historic Preservation Board
____ Civil Service Board
____ Board of Adjustments
____ Police Pension Board
____ Milton Planning Board
____ Riverfront Redevelopment Team
____ Milton Benevolent Cemetery Board
____ General Employees Pension Board
____ Firefighters Pension Board

MICHAEL CUSACK

Milton, FL 32570
Cell: 850-206-4612
mikecusack15@gmail.com

SUMMARY

I am interested in being the next City Council Member for Ward 1 for the City of Milton FL. I have been on both the City Charter review committee and past member of the Board of Adjustments. Results-focused professional and a Proactive leader with strengths in communication and collaboration. Adept at managing concurrent objectives to promote efficiency and influence positive outcomes. Having lived here the past 4 plus years,I know I can make a positive impact and do what is right for the citizens of Milton. I am a big advocate of public safety for all of us and continue to promote the Quality of life for our citizens.

SKILLS

Highly successful transportation and logistics professional skilled in providing unsurpassed customer service and revenue growth.

- Leadership training
- Operations oversight

EXPERIENCE

ONE SOURCE FREIGHT SOLUTIONS
PHOENIX, AZ

Director of Special Services 11/2010 to Current

- Managed group of 11 staff members. .
- Planned daily operational strategies, including delivery routing, team workflows and promotional initiatives.
- Worked closely with team members to deliver project requirements, develop solutions and meet deadlines.
- Created and enforced policies and procedures for entire logistics team.
- Researched and capitalized on emerging opportunities to build business and expand customer base.
- Directed day-to-day operations by spearheading implementation of short-term and long-term strategies to achieve business plan and profitability goals.
- Boosted customer base, acquiring new customers and identifying needs to deliver superior customer service. Instrumental in the development of new vertical component for the company.

GULF COAST CAR RENTAL
Pensacola, FL

President 09/2003 to 08/2009

Owned and operated a successful car rental agency.
- Took over a failing agency with revenue of $200,000 annually growing it to just under $1,000,000 in annual revenue in 12 months.
- Increased business thru integrity, hard work, networking and customer focus.

EDUCATION AND TRAINING

BACHELOR OF SCIENCE: MANAGEMENT SCIENCE 12/1981
Arizona State University, Tempe, AZ

CITY OF MILTON
BOARD APPOINTMENT SURVEY/INFORMATION

Date:_____

Name Laura Spencer Coleman Phone (hm)_____

E-mail address_____ Phone (wk/cell) Ward I

Address_____ City Ward I

Education See attached.

Work Experience:_____

_____

Community Service _____

_____

Awards_____

_____

Hobbies, Travel, etc_____

_____

Other comments that would be helpful in determining appropriate appointment_____

_____

Please attach a brief resume.

Please check the Boards that you are interested in.

____ Milton Housing Authority

✓ Milton Planning Board

✓ Historic Preservation Board

____ Riverfront Redevelopment Team

____ Civil Service Board

____ Milton Benevolent Cemetery Board

____ Board of Adjustments

____ General Employees Pension Board

____ Police Pension Board

____ Firefighters Pension Board

CITY OF MILTON
BOARD APPOINTMENT SURVEY/INFORMATION

Name: **Laura Spencer Coleman**

Date: February 3, 2021

Cell ph: (850) 490-9406

Work ph: (850) 626-8520

Email: lsc@lauraspencercoleman.com

Address: 5228 Elmira Street
Milton, Florida 32570

Education: Milton High School Diploma
Florida State University, Bachelor of Science
Cumberland School of Law, Juris Doctorate

Work Experience: I have been engaged in the practice of law since 2001. I purchased property within the City of Milton in 2003, and have maintained my law practice in that location since then. My practice is dedicated almost exclusively to family law. Prior to enrollment in law school I was employed by the State of Florida as a Probation Officer.

Community Service: I serve on the Riverfront Redevelopment Team, I am an active member of First Baptist Church in Milton, and have served in various capacities within the church. I have sponsored multiple youth sports teams.

Awards: I have received a Pro Bono Service Award, I am certified to engage in collaborative negotiations, and I have received recognition in multiple legal venues.

Hobbies, Travel, etc: I love to travel, and have been blessed with the opportunity to travel to Europe Canada, Australia, Hawaii, and many places within the continental United States. I do not have much time for hobbies as I have spent the last twenty years simultaneously running my law practice and raising four children with my husband, Steve.

Other comments that would be helpful in determining appropriate appointment: I am a lifelong resident of Santa Rosa County. I grew up in a home located on Canal Street which was built by my great grandfather, and now I practice law in a home which was also built by my great grandfather, and is situated three houses down the street from the home I grew up in. I lived in Pace for a number of years and I am now in the early stages of building a home on property in Milton which has been owned by my

family for almost 100 years. My family has a multigenerational history in Milton and is responsible for much of the early development of my hometown.

Please attach a resume: I do not have a resume at the present time. As I have been self employed for twenty years, I've not maintained one.

Please check the Boards that you are interested in: I am interested in the Historic Preservation Board primarily, and the Planning Board secondarily. I do presently serve on the Riverfront Redevelopment Team.

CITY OF MILTON
BOARD APPOINTMENT SURVEY/INFORMATION

Date: 2/24/21

Name JASON VANCE Phone (hm) 850-384-5188

E-mail address SVANCE73@GMAIL.COM Phone (wk/cell) 850-554-9127

Address 6015 MAGNOLIA ST. City Ward C. POWELL

Education GRAD. PACE HIGH - 1992
AS CULINARY ARTS, KAISER UNIVERSITY - 2005

Work Experience: 30 YEARS - FOOD AND BEVERAGE, RESTAURANT OWNER - 4 YEARS
CURRENTLY EMPLOYED WITH SODEXO/SANTA ROSA COUNTY SCHOOLS, EXECUTIVE CHEF - OPERATIONS MANAGER.

Community Service SANTA ROSA COUNTY ANIMAL SHELTER '92

Awards COOKING COMPETITIONS

Hobbies, Travel, etc COOKING, CURRENTLY - REMODELING PROJECTS, DESIGN, COOKING CLASSES/FOOD DEMOS., METAL DETECTING/EXPLORING. I WAS A TRAVEL CHEF - S.C, WA, OR., LA, TN. SOUS CHEF FOR ROBERT IRVINE (FOOD NETWORK) 7 YEARS HHI, S.C.

Other comments that would be helpful in determining appropriate appointment ATTENTION TO DETAIL, ORGANIZATION. TEAM PLAYER, APPROPRIATE COMMUNICATION. I LOVE MILTON!

Please attach a brief resume.

Please check the Boards that you are interested in.

- ✓ Milton Housing Authority
- ✓ Milton Planning Board
- ✓ Historic Preservation Board
- ✓ Riverfront Redevelopment Team
- ____ Civil Service Board
- ____ Milton Benevolent Cemetery Board
- ____ Board of Adjustments
- ____ General Employees Pension Board
- ____ Police Pension Board
- ____ Firefighters Pension Board

Agenda Item # 2021-102

Commercial Sponsorship Request - Emerald Coast Sports Association

MEETING DATE	PREPARED BY
December 6, 2021	Stephen Prestesater

BACKGROUND

On November 20th, a gofundme page was organized by Kris Long, to financially support and send the Emerald Coast Cowboys, Mighty Mights Cheer Squad to compete at regionals in Orlando, Florida. At this time, staff was made aware of this request and initial inquires began to determine if this was something the city could support. Staff determined after inquiry that the Emerald Coast Sports Association is a registered 501c3 organization and in good standing with the IRS and state, meaning that the organization is eligible for assistance from the city.

Staff has asked for additional clarification and documentation to be completed. At this time, all we have received is the initial gofundme page information and the official Emerald Coast Sports Association sponsorship application. To confirm, the city's outside agency funding application has not been completed.

We have been informed, however, that Mr. Long and the Director of the program will be in attendance to speak to this request.

SUMMARY

The Emerald Coast Cowboys, Mighty Mights Cheer Squad have been accepted to attend regionals this year in Orlando, Florida. A $500.00 commercial sponsorship from Natural Gas of Milton was requested by Mr. Long and the Emerald Coast Sports Association to assist this team in their efforts to attend this competition.

RECOMMENDATION

Staff seeks guidance from the Council

ATTACHMENTS

1. Emerald Coast Sports Assocation - sponsorship request IRS & State paperwork

Emerald Coast Sports Association

Dear Business Owner:

Let me take this opportunity to introduce you to the Emerald Coast Sports Association. We are a newly established organization in the local area where we focus on teaching the principles of integrity, respect, dedication, accountability and the commitment of excellence through youth sports. Through those principles, we seek to impress upon the young men and women that every life challenge can be conquered with the right frame of mind and steadfast character.

We are offering an opportunity to local businesses like yours to become team sponsors. Your contributions will be targeted exclusively to lessen the growing cost of the teams, enabling all members the chance to participate in all team related activities.

The Emerald Coast Youth Sports Association is guided by a volunteer team of coaches and dedicated parents. Our primary revenue source is registration fees paid by families and donations received from generous individuals and businesses. Since these funds do not cover all our operating expenses, our players' families will have to cover most of the player's sports fees. These fees include equipment, training, travel, and tournament entry fees. The average cost per player per year to participate in all activities is an estimated $1,000. This is particularly difficult for families with more than one player and\or modest means.

In order to make rewarding experiences a reality for our youth in the local area, we are reaching out directly to local businesses, family, and friends by offering the opportunity to help by becoming a team or association sponsor. While any sponsorship level you choose will be greatly appreciated, a donation of $300 or more will earn you a proud team sponsor plaque with a photo of a team to display on your office wall, a valuable marketing tool as well.

Please take a moment to review and select the sponsorship package that best fits your business and budget.

Respectfully yours,

ECSA Leadership Board

Sponsorship Levels

○ 1. ($100.00)
- Name or Logo added to group sponsor sign to be displayed at Sports Complex.

○ 2. ($300.00)
- Team Sponsor Plaque with a photo of a team to display on your office wall.

○ 3. ($400.00)
- 4'x4' professionally printed banner with your Name and/or Logo added to be displayed at Sports Complex.
- Team Sponsor Plaque with a photo of a team to display on your office wall.

○ 4. ($450.00)
- 8'x4' professionally printed banner with your Name and/or Logo added to be displayed at Sports Complex.

○ 5. (550.00)
- 8'x4' professionally printed banner with your Name and/or Logo added to be displayed at Sports Complex.
- Team Sponsor Plaque with a photo of a team to display on your office wall.

○ 6. ($1,000.00)
- (2) 8'x4' professionally printed banners with your Name and/or Logo added to be displayed at Sports Complex.
- Team Sponsor Plaque with a photo of a team to display on your office wall.

Sponsor Name: _____ Phone: _____

Email: _____

Sponsor's Company/Group Name: _____

Sponsor's Address: _____

Team Name/Coach/ Age Group you are Sponsoring: _____

Please email your artwork/logo to: fundraising@eccfootball.com & esca@eccfootball.com

Whitney Perine
ECSA Fundraising Coordinator
Phone: (850) 619-5161
Email: fundraising@eccfootball.com

2021 FLORIDA NOT FOR PROFIT CORPORATION ANNUAL REPORT

DOCUMENT# N20000000104

FILED
Feb 04, 2021
Secretary of State
8374254061CC

Entity Name: EMERALD COAST SPORTS ASSOCIATION, INC

Current Principal Place of Business:

8604 BOBBY BROWN ROAD
MILTON, FL 32583

Current Mailing Address:

5483 CHANTILLY CIR
MILTON, FL 32583 US

FEI Number: 84-4224580

Certificate of Status Desired: No

Name and Address of Current Registered Agent:

WHITFIELD, CARLTON K JR.
5483 CHANTILLY CIR
MILTON, FL 32583 US

The above named entity submits this statement for the purpose of changing its registered office or registered agent, or both, in the State of Florida.

SIGNATURE: _____

Electronic Signature of Registered Agent — Date

Officer/Director Detail :

Title	P	Title	VP
Name	WHITFIELD, CARLTON K JR.	Name	MAXWELL, TERRY
Address	8604 BOBBY BROWN ROAD	Address	8604 BOBBY BROWN ROAD
City-State-Zip:	MILTON FL 32583	City-State-Zip:	MILTON FL 32583
Title	SEC	Title	TR
Name	WOODSON, SHANTEL	Name	REYES, JACQUELINE
Address	8604 BOBBY BROWN ROAD	Address	8604 BOBBY BROWN ROAD
City-State-Zip:	MILTON FL 32583	City-State-Zip:	MILTON FL 32583
Title	DIR	Title	DIR
Name	RUSHING, WAYNE	Name	PERINE, LARRY
Address	8604 BOBBY BROWN ROAD	Address	8604 BOBBY BROWN ROAD
City-State-Zip:	MILTON FL 32583	City-State-Zip:	MILTON FL 32583
Title	DIR		
Name	WALDHOUR, BRITTANY		
Address	8604 BOBBY BROWN ROAD		
City-State-Zip:	MILTON FL 32583		

I hereby certify that the information indicated on this report or supplemental report is true and accurate and that my electronic signature shall have the same legal effect as if made under oath; that I am an officer or director of the corporation or the receiver or trustee empowered to execute this report as required by Chapter 617, Florida Statutes; and that my name appears above, or on an attachment with all other like empowered.

SIGNATURE: CARLTON K. WHITFIELD JR — PRESIDENT — 02/04/2021

Electronic Signature of Signing Officer/Director Detail — Date

INTERNAL REVENUE SERVICE
P. O. BOX 2508
CINCINNATI, OH 45201

DEPARTMENT OF THE TREASURY

Date: FEB 28 2020

EMERALD COAST SPORTS ASSOCIATION
INC
9447 PINE LILLY COURT
NAVARRE, FL 32566-0000

Employer Identification Number:
84-4224580
DLN:
26053424001070
Contact Person:
MRS. GARNER ID# 31731
Contact Telephone Number:
(877) 829-5500
Accounting Period Ending:
December 31
Public Charity Status:
509(a)(2)
Form 990/990-EZ/990-N Required:
Yes
Effective Date of Exemption:
January 6, 2020
Contribution Deductibility:
Yes
Addendum Applies:
No

Dear Applicant:

We're pleased to tell you we determined you're exempt from federal income tax under Internal Revenue Code (IRC) Section 501(c)(3). Donors can deduct contributions they make to you under IRC Section 170. You're also qualified to receive tax deductible bequests, devises, transfers or gifts under Section 2055, 2106, or 2522. This letter could help resolve questions on your exempt status. Please keep it for your records.

Organizations exempt under IRC Section 501(c)(3) are further classified as either public charities or private foundations. We determined you're a public charity under the IRC Section listed at the top of this letter.

If we indicated at the top of this letter that you're required to file Form 990/990-EZ/990-N, our records show you're required to file an annual information return (Form 990 or Form 990-EZ) or electronic notice (Form 990-N, the e-Postcard). If you don't file a required return or notice for three consecutive years, your exempt status will be automatically revoked.

If we indicated at the top of this letter that an addendum applies, the enclosed addendum is an integral part of this letter.

For important information about your responsibilities as a tax-exempt organization, go to www.irs.gov/charities. Enter "4221-PC" in the search bar to view Publication 4221-PC, Compliance Guide for 501(c)(3) Public Charities, which describes your recordkeeping, reporting, and disclosure requirements.

Letter 947

EMERALD COAST SPORTS ASSOCIATION

Sincerely,

Stephen A. Martin

Director, Exempt Organizations
Rulings and Agreements

Agenda Item # 1824

MLK Day Parade 2022 & After Party

MEETING DATE	PREPARED BY
December 6, 2021	Ed Spears

BACKGROUND

The MLK Day Parade is organized by the Fellowship Churches of Santa Rosa County, Inc. and the MLK Day Committee. This annual event did not take place in previous years due to COVID, however, is looking to return to Milton in 2022.

SUMMARY

The event will begin line-up in the Milton High School parking lot off of Raymond Hobbs Street. Once the parade begins, participants will turn and travel south on Stewart Street. The parade will continue on Stewart Street to Elva Street where it will then disband. All roads intersecting the parade route will be closed during the event. The lineup will begin at 8:30 AM, the Parade start time will be at 10:00 AM, and the Parade should be done no later than 11:00 AM.

The After Party will be held near Mt. Pilgram Church on Dr. MLK Dr. from Alice Street to James Street. Road Closure is requested for this block party. Vendors, booths, food, music, and fun are all to be had at the after-party.

In the past, this event has always been paid for by the event organizers. It has been asked that any assistance the city can provide would be greatly appreciated as they are looking to get the event back up and running.

RECOMMENDATION

The Committee of the Whole recommends the approval of this event and sponsorship support of 50% of the event application cost with in-kind support of trash cans, a dumpster, and road closure signs. The committee has also approved the use of the city stage for the post-parade event on Dr. MLK Jr. Drive.

ATTACHMENTS

1. Special Event Permit Application

Special Event Permit Application

City of Milton
6738 Dixon Street, Milton Fl, 32570
850-983-5400 econdev@miltonfl.org

Instructions:

To process this application all applicable pages must be filled out completely and submitted to the City. Pages 1-6 are mandatory with every application. If you are requesting support and/ or sponsorship for your event, the City of Milton Outside Agency Funding Application is required in addition to this application. For questions about requirements, fees or the application process contact the Office of Economic Development.

Applicant & Event Organizer Information

☐ Individual ☐ Not-for Profit ☐ For Profit ☐ Charity

☐ Other: _____

Name of Organization: Fellowship of Churches, Inc

Address: _____ City: _____

Phone: _____ Email: _____

Event POC: Carolyn McCray

Phone: 850-686-1624 Email: _____

Event Information

☐ Concert ☐ Park Festival ☐ Street Festival ☑ Parade/ Procession

☐ Run/ Walk ☐ Sporting Event ☐ Sale/ Market ☐ Private Event/ Wedding

☐ Other _____

Event Name: MLK Day Parade 2022 & After-party*

Event website/ Event Page: _____

Event Location: Stewart Street Event Date(s) 1/17 to 1/17

Time of Event: Day 1 0800 to 1200 (Day 2 - Optional) ____ to ____

Setup Date & Time: 1/17 at 0700 Teardown Date & Time: 1/17 at 11:15

Estimated Attendance: _____ Is the Event Free to attend? ☑ YES ☐ NO

* - After party to be held near Mt. Pilgrim Church on MLK ~~Street~~ Drive. Trash cans, Cones & Street closed sgs needed.

Special Event Questionnaire

Below are questions about the event. Please answer all questions and attach additional documents, if necessary, to the application.

Will a City park be utilized?	(page 3)	☐ YES	☑ NO
Will equipment from the City of Milton be needed?	(page 3)	☑ YES	☐ NO
Will you need the City's Stage?	(page 3)	☐ YES	☑ NO
Will there be amplified sound?	(page 4)	☑ YES	☐ NO
Will you need the City's portable restroom?	(page 3)	☐ YES	☑ NO
Will tents larger than 10'x10' be erected?	(page 4)	☐ YES	☑ NO
Will inflatable bounce houses be erected?	(page 4)	☐ YES	☑ NO
Will you be using water slides?	(page 4)	☐ YES	☑ NO
Will you need City Dumpsters/ Trashcans?	(page 3)	☐ YES	☑ NO
Will there be fireworks?	(page 4)	☐ YES	☑ NO
Will vendors be selling merchandise, food, or wares?	(page 4)	☐ YES	☑ NO
Will food be cooked at the event?	(page 4)	☐ YES	☑ NO
Will alcohol be sold or given away at this event?	(page 4)	☐ YES	☑ NO
Will animals/ pets be allowed at the event?	(page 4)	☐ YES	☐ NO
Will you be using State or County Roads?	(page 4)	☑ YES	☐ NO
Will temporary No Parking Signs be utilized?	(page 4)	☐ YES	☑ NO
Will EMT be on site?	(page 3)	☐ YES	☑ NO
Will you need security?	(page 3)	☐ YES	☑ NO
Will you require power on-site?	(page 3)	☐ YES	☑ NO
Will you require water on-site?	(page 3)	☐ YES	☑ NO

If you have answered YES to any of these questions, please see page 3-4 and select the items you request to use.

Do you have a Marketing Plan and if so, how will you notify surrounding businesses/ residents of your event? Unknown

Have you prepared a to scale event map/ layout that meets all ADA parking and access requirements?

☐ YES ☑ NO

City Fee Sheet

(City Fees are the fixed cost for the use of its facilities, licenses, insurance, parks, equipment, etc.)

Location(s)/ Facility used at event:

☐ North Riverwalk	$150	☐ North Willing Street	
☐ South Riverwalk	$150	☐ South Willing Street	
☐ Entire Riverwalk	$250	☐ North Elmira Street	
☐ N Riverwalk Gazebo	$50	☐ South Elmira Street	
☐ S Riverwalk Pavilion	$50	☐ Imogene Parking Lot	

Jernigan's Landing ***(Downtown event location for the City of Milton. Select all applicable)***

☐ Riverside	$100	☐ Festival Area	$150

☐ Other: _____

Requested Items:		**QTY**			**QTY**
☐ Portable Restroom *(at Jernigan's landing)*	$250		☐ Portable Restroom *(at alternate location)*	$350	
☐ City Stage 14'x28'	$350		☐ City Movie System	$250	
☐ Live Music Licensing *'**	$200		☐ Movie Licensing *'**	$(at cost)	
☐ Event Insurance	$(at cost)		☑ Barricades/ Cones	$100/$10	10
☐ Street Info Sign	$250 per_____		☑ City Garbage Cans & Dumpster	$10 per	5/1
☐ Tables 6ft	$5 per _____		☐ Chairs – 10 at a time	$10	_____
☐ Tables & Chairs D/S/R	$25 _____		☐ Tables & Chairs cleaning	$100	_____
☐ Small Generator's	$100 _____		☐ Large Generator	$250	
☐ Generator power distro	$100		☐ Hose-bid water distro	$100	
☐ City Hydrant tap fee	$50 + meter rate		☐ Fire/EMS (if available)	$30hr / 2hr min	
☐ Police (if available)	$25hr / 4hr min		☐ Public Works Crew	$20hr/ 2hr min	
☐ Other City Staff	$25hr/ 2hr min		☐ Street Sweeping	$250 per sweep	
☐ Electrical Activation	$75 + meter rate		☐ Event Clean-up	~~$100hr~~	
☑ Parade Package (including Police, Public Works, Planning and required street closures)				$1,000	
☐ Concert Package (including light & sound production from our 3rd party vendor)				$1,600	

*Published music, movies, and other electronic art forms are protected by US Copyright and Trademark laws. Unauthorized use of copyrighted work is illegal.

**Must be free event, open to the public and located within the City Limits to access the City's ASCAP, BMI and SESAC License.

Ordinances & Special Requests

Tourism District and Downtown Milton Special Requests:

NOTE: Tourism District Special Request Applications must be received by the city sixty (60) days prior to the event. Events with Alcohol mut submit ninety (90) days prior to the event.

I hereby request waiver of the following ordinances: ***(only available in the Tourism District)***

- ☐ Open Container Ordinance (Section 6-27)
- ☑ Noise Ordinance (LDR Section III-5.16)
- ☐ Animal Control Ordinance (Section 4-37(b))
- ☐ And/ or other Ordinance _____

I hereby request the following regarding the Blackwater River:

- ☐ Activate Boating Restricted Areas
- ☐ Activate 24-hour docking at the Riverwalk

I hereby request the use of Fireworks in the City of Milton:

- ☐ By selecting this box, you must complete the City of Milton Fireworks Display Permit Application

**note – Fireworks are subject to approval by the City Fire Chief and must be done by a licensed and insured pyrotechnics professional. Additional information will be provided.*

Time Period from when these requests will take place:

From: 0900 Date: 1/17/2022 To: 1800 Date: 1/17/2022

I hereby request that vendors be allowed to sell their wares at the event. All vendors know they must abide by all federal, state, county, and local laws regarding resell, sell of their ware. All vendors have their applicable license's available if requested. City will not be held liable. ☐ YES ☑ NO

Will this event require Road Closures? ---------- ☑ YES ☐ NO

Stewart Street requires a separate FDOT application. A scheduled meeting with the Planning Department is required for a State Road Clousure. Ensure you have your date/ time confirmed prior to submitting your information. The City will assist.

If so, please list street names:

Parade – 1) Raymond Hobbs to 2) Elva

After Party – 3) Alice Street to 4) James – Mlk Dr.

Is this an annual Event? ☑ YES ☐ NO

If YES, list the date(s) requested for next year. Please note that requesting the date(s) on this application does not guarantee a hold or act as a confirmation of the requested date(s).

Requested event date(s): 1/16/2023 Alternative Date(s): N/A

Additional Documents Required with Application

All events require an Event Site Map and copy of Insurance Certificate's 10 days prior. Below are additional documents that may be required to be submitted with the application. Application will be considered incomplete without these documents.

For additional information on what is required please contact the Office of Economic Development.

☐ **Event Site Map** ☐ Event Race Route Map ☐ Parade Route & Alternate

Event organizers must provide a site map with vendor locations, portable restrooms, run/ walk route, etc. at the time this application is submitted. A detailed listing of all services is required for public awareness & safety.

☐ **Insurance Certificate(s)** ☐ Fireworks Application ☐ Other *(any other agency)*

☐ Tax Exempt Certificate and 501(c)3 Documentation *(if the entity is claiming tax exempt and/ or non-profit status)*

Rules & Regulations

Application Dates:

- The permit application process should begin at least 60 days prior to the event date. 90 days if alcohol is to be sold or given away. Parade application process should allow 6 months.
- Once all documents have been submitted, City Staff will schedule a meeting to review all information and ensure event organizers have met all requirements. Staff will at this time develop an Agenda Analysis for Councils review. Council will be informed during the Committee of the Whole meeting. This meeting takes place the third Thursday of every month.
- Each event will require Councils approval and organizers should attend *(if requesting support)*.

Cancellation Policy:

- Event application fees are non-refundable if the event is cancelled by the applicant.
- Although event application fees are non-refundable, if an event is cancelled due to inclement weather, the fee may be credited towards an alternate date. Event Organizers must inform the Office of Economic Development when cancelling any event. An alternate date must take place within one year of the original event date.

ADA Accessibility Guidelines:

- Event Organizers must make the event accessible to people with disabilities to the greater extent possible in compliance with the requirements of the American with Disabilities Act (ADA).
- Accessible parking must also be provided for persons with Disabilities. Information regarding accessible parking locations should be included as part of the event site map.

Clean-Up:

- It is understood that clean-up will be performed immediately following the event. Event site must be returned to its pre-event state. Failure to adequately clean-up event site may result in a fee. Adequacy of clean-up will be assessed by City of Milton Code Enforcement.

Hold Harmless Agreement

For and in consideration of having been granted permission by the City of Milton to hold a Special Event within the City of Milton limits, the undersigned hereby agrees on behalf of the organization, to indemnify and hold harmless the City of Milton, its subsidiaries or affiliates, elected and appointed officials, employees, volunteers, representatives and agents from any and all claims, suits, actions, damages, liability and expenses in conjunction with loss of life, bodily injury or personal injury or property damage, including loss of use thereof, directly or indirectly caused by, resulting from, arising out of or occurring in connection with this permitted activity.

The undersigned also agrees to protect and hold harmless the City of Milton, its subsidiaries or affiliates, elected and appointed officials, employees, volunteers, representatives and agents from any and all claims, suits, actions, damages, liability and expenses, present, past or future which may be asserted by this organization, or any member of this organization, or any participant of third party arising out of or occurring in connection with this permitted event.

By the signature to this document the undersigned acknowledges that it understands the contents of this document and is voluntarily agreeing to its terms.

In witness whereof I have here unto set my hand and seal this _____ day of _____ in 20___

Name of Special Event MLK Day Parade 2022

Date(s) of Special Event January 17, 2022 (Monday)

Name of Organization

Event Organizers Name Carolyn McCray

Address of Organization

Phone Number 850-686-1629

Email

Printed Name Carolyn McCray

Signature Carolyn McCray

Internal Signatures Required for Approval:

Office of Economic Development: _____ Planning: _____

Public Works: _____ Police: _____ Fire: _____

Agenda Item # 1827

Director of Public Relations

MEETING DATE	PREPARED BY
December 6, 2021	Randy Jorgenson, City Manager

BACKGROUND

The City of Milton has historically had two full-time positions: the PIO and Events Coordinator. Stephen Prestesater began with the City as the Events Coordinator and quickly assumed additional duties. He was promoted to the Assistant Director of Economic Development, and upon the departure of the PIO, he absorbed those duties.

SUMMARY

Mr. Prestesater currently acts as the City's Events Manager, PIO, and Marketing Director. His contributions to the City far exceed his job description as the Asst. Director of Economic Development.

It is proposed that his position's title be changed to Director of Public Relations and thus be moved to the Administration Department as a direct report to the City Manager. Historically, the PIO position was in the Administration department. His duties will still include PIO, marketing, and event management for the City of Milton.

RECOMMENDATION

The Committee of the Whole recommends approving the Full-Time Equivalent (FTE) transfer from Economic Development to the Administration Department.

ATTACHMENTS

1. FTE Analysis

Current Full Time Equivalents (FTE) FY2022

Current			
Council Approved FY2022 FTE's	**Funded FY2022 FTE's**	**Department/Position**	**Range**
		Administration	
1	1	City Manager	Salary
1	1	Public Works Director	Salary
1	1	Budget Coordinator	Salary
1	1	HR Assistant / City Manager Assistant	18
1	1	Purchasing Agent/Risk Manager	Salary
1	1	HR Coordinator	20
1	1	Purchasing Clerk/Admin. Assistant	18
1	1	Public Wks/Administrative Assistant	18
0.5	0.5	Public Wks/Admin Clerk	14
1	1	Grants/Projects Manager	Salary
9.5	**9.5**		
		Economic Development	
1	1	Economic Development Director	Salary
1	1	Asst. Director of Economic Director	Salary
2	**2**		

Proposed Full Time Equivalents (FTE) FY2022

Proposed			
Council Approved FY2022 FTE's	**Funded FY2022 FTE's**	**Department/Position**	**Range**
		Administration	
1	1	City Manager	Salary
1	1	Public Works Director	Salary
1	1	Budget Coordinator	Salary
1	1	HR Assistant / City Manager Assistant	18
1	1	Purchasing Agent/Risk Manager	Salary
1	1	HR Coordinator	20
1	1	Purchasing Clerk/Admin. Assistant	18
1	1	Public Wks/Administrative Assistant	18
0.5	0.5	Public Wks/Admin Clerk	14
1	1	Grants/Projects Manager	Salary
1	1	Director of Public Relations	Salary
10.5	**10.5**		
		Economic Development	
1	1	Economic Development Director	Salary
1	**1**		

Agenda Item # 1817

Hazard Mitigation Grant Program (HMGP) - COVID-19

MEETING DATE	PREPARED BY
December 6, 2021	Randy Jorgenson, City Manager

BACKGROUND

As a result of the Presidential Disaster Declaration for COVID-19 (FEMA 4486-DR-FL), over 1 million in HMGP Tier 1 funds have been allocated to Santa Rosa County and over 100 million in potential Tier 2 funding statewide. Applications are currently being accepted until December 21, 2021. All applications must have Santa Rosa Local Mitigation Strategy (LMS) endorsement to be eligible for consideration.

SUMMARY

The Santa Rosa LMS's has endorsed the Richardson Street Pond Improvement Project for funding. The City's Comprehensive Stormwater Development Plan includes the Richardson Street Pond Improvement as a priority class 2 project. The project will address major road and developed area flooding by enlarging the existing pond to the north on approximately 8 acres of undeveloped property. The enlarged pond will handle approximately 3 million cubic feet of stormwater and the project will include a pump station to manage any additional volume during storm events.

RECOMMENDATION

Committee of the Whole recommends submitting an HMGP application to fund 75% of the $1,900,000 Richardson Street Pond Improvement Project.

ATTACHMENTS

1. Fiscal Impact Analysis

FISCAL IMPACT ANALYSIS

A. Summary of Fiscal Impact:

Fiscal Years	2021	2022	2023	2024	2025
Capital Expenditures			475,000		
Operating Costs					
External Revenues			1,425,000		
Program Income					
In-Kind Match					
NET FISCAL IMPACT			475,000		
FTE IMPACT					

Is Item Included In Current Budget? Yes ☐ No ☒
Budget Account No.: Fund 0000 Department 0000

B. Recommended Sources of Funds/Summary of Fiscal Impact:

C. Department Fiscal Review: _____

REVIEW COMMENTS

A. Legal Sufficiency: _____
City Attorney

B. Other Department Review: _____

Committee Assignment:

☒ Administration ☐ Finance ☐ Growth & Dev ☐ Parks & Rec
☐ Public Safety ☐ Public Works ☐ Stormwater ☐ LEAP ☐ Econ. Dev.

Committee Recommendation:

☐ Move to Executive ☐ Move to Council ☐ Continue in Committee
☐ Referred to Sub-Committee ☐ Tabled ☐ Closed

Agenda Item # 1823

Sitework for Joint-Use Training Facility

MEETING DATE	PREPARED BY
December 6, 2021	John Reble

BACKGROUND

The City of Milton Fire Department's former training facility, which included a two-story masonry fire training building, was repurposed after Hurricane Ivan to house the city's warehouse and garage facility. The department has since been without access to a suitable training facility. The Insurance Service Office (ISO), which evaluates fire departments' Community Fire Protection Rating as a basis for property insurance rates, has consistently identified the lack of an adequate training facility as a substantial deficiency in this rating. Such a facility is necessary for an adequate in-service training program.

SUMMARY

The department has prepared a comprehensive plan for the development of an adequate joint-use training facility on a parcel of land currently owned by the city off Magnolia Street. Engineering drawings have been prepared for the sitework phase of the project. City personnel will perform site utilities work (water and sewer).

RECOMMENDATION

Committee recommends solicitation of bids for sitework to begin development of joint-use training facility.

ATTACHMENTS

1. Construction & Material Specifications
2. Bid Schedule
3. Fire Training Facility

Construction Specification 2—Clearing and Grubbing

1. Scope

The work consists of clearing and grubbing and disposal of trees, snags, logs, brush, stumps, shrubs, and rubbish from the designated areas.

2. Protection of existing vegetation

Trees and other vegetation designated to remain undisturbed shall be protected from damage throughout the dura- tion of the construction period. Any damages resulting from the contractor's operations or neglect shall be repaired by the contractor.

Earthfill, stockpiling of materials, vehicular parking, and excessive foot or vehicular traffic shall not be allowed within the drip line of vegetation designated to remain in place. Vegetation damaged by any of these or similar ac- tions shall be replaced with viable vegetation of the same species, similar condition, and like size unless otherwise approved by the contracting officer.

Any cuts, skins, scrapes, or bruises to the bark of the vegetation shall be carefully trimmed and local nursery ac- cepted procedures used to seal damaged bark.

Any limbs or branches 0.5 inch or larger in diameter that are broken, severed, or otherwise seriously damaged during construction shall be cut off at the base of the damaged limb or branch flush with the adjacent limb or tree trunk. All roots 1-inch or larger in diameter that are cut, broken, or otherwise severed during construction opera- tions shall have the end smoothly cut perpendicular to the root. Roots exposed during excavation or other opera- tions shall be covered with moist earth or backfilled as soon as possible to prevent the roots from drying out.

3. Marking

The limits of the area(s) to be cleared and grubbed will be marked by stakes, flags, tree markings, or other suitable methods. Trees to be left standing and uninjured will be designated by special markings placed on the trunk about 6 feet above the ground surface.

4. Clearing and grubbing

All trees not marked for preservation and all snags, logs, brush, stumps, shrubs, rubbish, and similar materials shall be cleared from within the limits of the designated areas. Unless otherwise specified, all stumps, roots, and root clusters that have a diameter of 1 inch or larger shall be grubbed out to a depth of at least 2 feet below subgrade for concrete structures and 1 foot below the ground surface at embankment sites and other designated areas.

5. Disposal

All materials cleared and grubbed from the designated areas shall be disposed of at locations shown on the draw- ings or in a manner specified in section 7. The contractor is responsible for complying with all local rules and regu- lations and the payment of any and all fees that may result from disposal at locations away from the project site.

6. Measurement and payment

Method 1—For items of work for which specific units prices are established in the contract, the cleared and grubbed area is measured to the nearest 0.1 acre. Payment for clearing and grubbing is made for the total area within the designated limits at the contract unit price. Such payment will constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

Method 2—For items of work for which specific unit prices are established in the contract, the length of the cleared and grubbed area is measured to the nearest full station (100 feet) along the line designated on the drawing or identified in the specifications. Payment for clearing and grubbing is made for the total length within the des- ignated limits at the contract unit price. Such payment will constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

Method 3—For items of work for which specific unit prices are established in the contract, each tree, stump, and snag having a diameter of 4 inches or larger and each log having a diameter of 4 inches or larger and a length of 10 feet are measured before removal. The size of each tree and snag is determined by measuring its trunk at breast height above the natural ground surface. The size of each log is determined by measuring the butt and by measur- ing its length from butt to tip. The size of each stump is measured at the top. Diameter is determined by dividing the measured circumference by 3.14.

The sum of such payments shall constitute full compensation for clearing and grubbing (including the clearing and grubbing of smaller trees, stumps, snags, logs, brush, shrubs, and roots), applicable permits and associated fees, and rubbish removal. Such payment shall constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

Method 4—For items of work for which specific lump sum prices are established in the contract, payment for clearing and grubbing is made at the contract lump sum price. Such payment shall constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

All Methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identi- fied in section 7.

7. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Bid Item No. 1, Clearing and Grubbing

(1) This item shall consist of the clearing and grubbing of the area required for the installation of the works of improvement as shown on the drawings. The drawings depict an approximation of the significant sized trees. Smaller trees and brush exist that are not shown on the drawings. It is recommended that the bidder visit the site to quantify for themselves.

(2) All cleared and grubbed materials shall become the property and responsibility of the Contractor and shall be disposed of off the job site.

(3) Clearing and grubbing shall be limited only to those areas designated in item (1) above. All other areas shall be left undisturbed.

(4) All clearing and grubbing shall be accomplished in such a manner as to minimize air and water pollution.

(5) Measurement and payment shall be by Method 1.

(6) Prior to clearing and grubbing, the contractor shall document with photos and/or videos the current site conditions to include (but not limited to) all features within the right of way such as roadways, curbing, mailboxes, light poles, manholes, fire hydrants, etc… This documentation shall be submitted to the engineer of record prior to commencement of construction operations.

Construction Specification 3—Structure Removal

1. Scope

The work shall consist of the removal, salvage, and disposal of structures (including fences) from the designated areas.

2. Marking

Method 1—Each structure or structure part to be removed will be marked with stakes, flags, paint, or other suit- able method.

Method 2—The area boundaries from which structures must be removed will be marked using stakes, flags, paint, or other suitable method. Structures to remain undisturbed or to be salvaged will be designated by special markings.

3. Removal

Method 1—All structures designated for removal in the contract shall be removed to the specified extent and depth.

Method 2—Within the areas so marked, all visible and buried structures identified shall be removed to the speci- fied extent and depth.

4. Salvage

Structures or structure parts that are designated to be salvaged shall be carefully removed and neatly placed in the specified or approved storage location. Salvaged structures that are capable of being disassembled shall be disman- tled into individual members or sections. Such structures shall be neatly and systematically match marked with paint before disassembly. All connectors and other parts shall be marked to indicate their proper location within the structure and shall be fastened to the appropriate structural member or packed in suitable containers.

Material from fences designated to be salvaged shall be placed outside the work area on the property on which the fence was originally located. Fence wire shall be rolled into uniform rolls of suitable size and neatly piled with other salvaged materials. Posts and rails shall be neatly stacked.

5. Disposal of refuse materials

Refuse materials resulting from structure removal shall be disposed of in a manner and at locations specified in section 7 of this specification or in an acceptable manner and at locations approved by the contracting officer. Dis- posal by burning shall be in accordance with local rules and regulations.

6. Measurement and payment

Method 1—For items of work for which specific unit prices are established by the contract, payment for the removal of each structure unit, except fences, is made at the contract unit price. Fences removed or removed and salvaged are measured to the nearest linear foot. Payment for fence removal or removal and salvage is made at the contract unit prices for each type and size of fence.

Such payment will constitute full compensation for all labor, equipment, tools, applicable permits and associated fees for burning and disposal of refuse, and all other items necessary and incidental to the completion of the work.

Method 2—For items of work for which specific lump sum prices are established by the contract, payment for structure removal is made at the contract lump sum price.

Such payment will constitute full compensation for all labor, equipment, tools, applicable permits and associated fees for burning and disposal of refuse, and all other items necessary and incidental to the completion of the work.

All Methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed as a contract line item number in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Such items and items to which they are made subsidiary are identified in section 7 of this specification.

7. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Bid Item No. 2, Structure Removal

(1) This item shall consist of the removal of the existing items as required for installation of improvements. This item shall cover removal of curbing at driveway connections and the removal and replacement of chain link fencing that surrounds the existing retention pond and other debris from within the work limits as shown on the drawings.

(2) The demolished debris shall become the property and responsibility of the contractor and shall be disposed of off the job site.

(3) Salvagable items (street signs, mailboxes, light poles, hardscapes, gravel, riprap) removed shall be stockpiled by the contractor and re-installed upon completion of underground improvements in those areas.

(4) Measurement and payment shall be as indicated on the bid schedule.

Construction Specification 5—Pollution Control

1. Scope

The work consists of installing measures or performing work to control erosion and minimize the production of sediment and other pollutants to water and air from construction activities.

2. Material

All material furnished shall meet the requirements of the material specifications listed in section 8 of this specifica- tion.

3. Erosion and sediment control measures and works

The measures and works shall include, but are not limited to, the following:

Staging of earthwork activities—The excavation and moving of soil materials shall be scheduled to minimize the size of areas disturbed and unprotected from erosion for the shortest reasonable time.

Seeding—Seeding to protect disturbed areas shall occur as soon as reasonably possible following completion of that earthwork activity.

Mulching—Mulching to provide temporary protection of the soil surface from erosion.

Diversions—Diversions to divert water from work areas and to collect water from work areas for treatment and safe disposition. They are temporary and shall be removed and the area restored to its near original condition when the diversions are no longer required or when permanent measures are installed.

Stream crossings—Culverts or bridges where equipment must cross streams. They are temporary and shall be removed and the area restored to its near original condition when the crossings are no longer required or when permanent measures are installed.

Sediment basins—Sediment basins collect, settle, and eliminate sediment from eroding areas from impacting properties and streams below the construction site(s). These basins are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed.

Sediment filters—Straw bale filters or geotextile sediment fences trap sediment from areas of limited runoff. Sediment filters shall be properly anchored to prevent erosion under or around them. These filters are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed.

Waterways—Waterways for the safe disposal of runoff from fields, diversions, and other structures or measures. These works are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed.

Other—Additional protection measures as specified in section 8 of this specification or required by Federal, State, or local government.

4. Chemical pollution

The contractor shall provide watertight tanks or barrels or construct a sump sealed with plastic sheets to collect and temporarily contain chemical pollutants, such as drained lubricating or transmission fluids, grease, soaps, concrete mixer washwater, or asphalt, produced as a by-product of the construction activities. Pollutants shall be disposed of in accordance with appropriate State and Federal regulations. At the completion of the construction work, tanks, barrels, and sumps shall be removed and the area restored to its original condition as specified in sec- tion 8 of this specification. Sump removal shall be conducted without causing pollution.

Sanitary facilities, such as chemical toilets, or septic tanks shall not be located next to live streams, wells, or springs. They shall be located at a distance sufficient to prevent contamination of any water source. At the comple- tion of construction activities, facilities shall be disposed of without causing pollution as specified in section 8 of this specification.

5. Air pollution

The burning of brush or slash and the disposal of other materials shall adhere to state and local regulations.

Fire prevention measures shall be taken to prevent the start or spreading of wildfires that may result from project activities. Firebreaks or guards shall be constructed and maintained at locations shown on the drawings.

All public access or haul roads used by the contractor during construction of the project shall be sprinkled or otherwise treated to fully suppress dust. All dust control methods shall ensure safe construction operations at all times. If chemical dust suppressants are applied, the material shall be a commercially available product specifically designed for dust suppression and the application shall follow manufacturer's requirements and recommendations. A copy of the product data sheet and manufacturer's recommended application procedures shall be provided to the engineer 5 working days before the first application.

6. Maintenance, removal, and restoration

All pollution control measures and temporary works shall be adequately maintained in a functional condition for the duration of the construction period. All temporary measures shall be removed and the site restored to near original condition.

7. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, each item is measured to the nearest unit applicable. Payment for each item is made at the contract unit price for that item. For water or chemical suppressant items used for dust control for which items of work are established in section 8 of this speci- fication, measurement for payment will not include water or chemical suppressants that are used inappropriately or excessive to need. Such payment will constitute full compensation for the completion of the work.

Method 2—For items of work for which lump sum prices are established in the contract, payment is made as the work proceeds and supported by invoices presented by the contractor that reflect actual costs. If the total of all progress payments is less than the lump sum contract price for this item, the balance remaining for this item will be included in the final contract payment. Payment of the lump sum contract price will constitute full compensa- tion for completion of the work.

Method 3—For items of work for which lump sum prices are established in the contract, payment will be prorated and provided in equal amounts on each monthly progress payment estimate. The number of months used for pro- rating shall be the number estimated to complete the work as outlined in the contractor's approved construction schedule. The final month's prorate amount will be provided with the final contract payment. Payment as described will constitute full compensation for completion of the work.

All Methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items, and the items to which they are made subsidiary, are identified in section 8 of this specification.

8. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Bid Items No. 3 and 4, Pollution Control

(1) This item shall consist preparation of a proper Stormwater Pollution Prevention Plan (SWPPP) and NPDES permit package as well as obtaining the permit and following all of the requirements as set forth within the permit including required inspections. All sections of the Florida Administrative code and all local, state, and federal regulations shall be adhered to at all times.

(2) The Contractor shall be responsible for containment of pollution sources including, but not limited to the required excavations, clearing and grubbing, earthfill, and other disturbed areas.

(3) Silt Containment and turbidity barriers shall be installed prior to any excavation, structure removal, or placement of any improvements (permanent or temporary, except said barriers) and shall be maintained in effective condition at all locations until construction and vegetative measures are completed.

(4) Measurement and payment shall be by Method 3.

Bid Items No. 5, Pollution Control

(1) This item shall consist of precautions taken by the Contractor to minimize degradation of water quality passing through the job site during construction operations. All necessary precautions shall be taken to ensure compliance with water quality standards of the State of Florida. Adequate silt containment procedures and equipment shall be used to control turbidity at all times. All sections of the Florida Administrative code and all local, state, and federal regulations shall be adhered to at all times.

(2) The Contractor shall be responsible for containment of pollution sources including, but not limited to the required excavations, clearing and grubbing, earthfill, and other disturbed areas.

(3) Silt Containment and turbidity barriers shall be installed prior to any excavation, structure removal, or placement of any improvements (permanent or temporary, except said barriers) and shall be maintained in effective condition at all locations until construction and vegetative measures are completed.

(4) Measurement and payment shall be by Method 3.

Construction Specification 7—Construction Surveys

1. Scope

The work consists of performing all surveys, measurements, and computations required by this specification.

2. Equipment and material

Equipment for construction surveys shall be of a quality and condition to provide the required accuracy. The equip- ment shall be maintained in good working order and in proper adjustment at all times. Records of repairs, calibra- tion tests, accuracy checks, and adjustments shall be maintained and be available for inspection by the engineer.
Equipment shall be checked, tested, and adjusted as necessary in conformance with manufacturer's recommenda- tions.

Material is field notebooks, stakes, templates, platforms, equipment, spikes, steel pins, tools, and all other items necessary to perform the work specified.

3. Quality of work

All work shall follow recognized professional practice and the standards of the industry unless otherwise specified in section 9 of this specification. The work shall be performed to the accuracy and detail appropriate for the type of job. Notes, sketches, and other data shall be complete, recorded neatly, legible, reproducible and organized to facilitate ease in review and allow reproduction of copies for job documentation. Survey equipment that requires little or no manual recording of field data shall have survey information documented as outlined in section 9 of this specification.

All computations shall be mathematically correct and shall include information to identify the bid item, date, and who performed, checked, and approved the computations. Computations shall be legible, complete, and clearly document the source of all information used including assumptions and measurements collected.

If a computer program is used to perform the computations, the contractor shall provide the engineer with the software identification, vendor's name, version number, and other pertinent data before beginning survey activities. Computer generated computations shall show all input data including values assigned and assumptions made.

The elevations of permanent and temporary bench marks shall be determined and recorded to the nearest 0.01 foot. Differential leveling and transit traverses shall be of such precision that the error of vertical closure in feet shall not exceed plus or minus 0.1 times the square root of the traverse distance in miles. Linear measurements shall be accurate to within 1 foot in 5,000 feet, unless otherwise specified in section 9 of this specification. The an- gular error of closure for transit traverses shall not exceed 1 minute times the square root of the number of angles turned.

The minimum requirements for placing slope stakes shall be at 100-foot stations for tangents, as little as 25 feet for sharp curves, breaks in the original ground surface and at any other intermediate stations necessary to ensure
accurate location for construction layout and measurement. Slope stakes and cross sections shall be perpendicular to the centerline. Significant breaks in grade shall be determined for cross sections. Distances shall be measured horizontally and recorded to the nearest 0.1 foot. Side shots for interim construction stakes may be taken with a hand level.

Unless otherwise specified in section 9 of this specification, measurements for stationing and establishing the loca- tion of structures shall be made to the nearest 0.1 foot.

Elevations for concrete work, pipes, and mechanical equipment shall be determined and recorded to the nearest
0.01 foot. Elevations for earth work shall be determined and recorded to the nearest 0.1 foot.

4. Primary control

The baselines and bench marks for primary control, necessary to establish lines and grades needed for construc- tion, are shown on the drawings and have been located on the job site.

These baselines and bench marks shall be used as the origin of all surveys, layouts, and measurements to establish construction lines and grades. The contractor shall take all necessary precautions to prevent the loss or damage of primary control points. Any stakes or control points lost or damaged by construction activity will be reestablished by the contractor or at contractor expense.

5. Construction surveys

Before work starts that requires contractor performed surveys, the contractor shall submit in writing for the engi- neer's review: the name, qualifications, and experience of the individuals to be assigned to the survey tasks.

Method 1—Contractor performed surveys shall include:

- checking and any supplemental or interim staking
- performing quantity surveys, measurements, and computations for progress payment
- other surveys as described in section 9 of this specification

Method 2—Contractor performed surveys shall consist of all work necessary for:

- establishing line and grade for all work
- setting slope stakes for all work
- checking and any supplemental or interim staking
- establishing final grade stakes
- performing quantity surveys, measurements, and computations for progress payment
- other surveys as described in section 9 of this specification

Method 3—Contractor performed surveys shall consist of all work necessary for:

- establishing line and grade for all work
- setting slope stakes for all work
- checking and any supplemental or interim staking
- establishing final grade stakes
- performing quantity surveys, measurements, and computations for progress payments
- performing original (initial) and final surveys for determinations of final quantities
- other surveys as described in section 9 of this specification.

6. Staking

The construction staking required for the item shall be completed before work on any item starts. Construction staking shall be completed as follows or as otherwise specified in section 9 of this specification:

Clearing and grubbing—The boundary of the area(s) to be cleared and grubbed shall be staked or flagged at a maximum interval of 200 feet, closer if needed, to clearly mark the limits of work. When contractor staking is the basis for determining the area for final payment, all boundary stakes will be reviewed by the engineer before start of this work item.

Excavation and fill—Slope stakes shall be placed at the intersection of the specified slopes and ground line. Slope stakes and the reference stakes for slopes shall be marked with the stationing, required cut or fill, slope ratio, and horizontal distance from the centerline or other control line. The minimum requirements for placing slope stakes is outlined in section 3, Quality of work.

Structures—Centerline and offset reference line stakes for location, alignment, and elevation shall be placed for all structures.

7. Records

All survey data shall be recorded in fully identified standard hard-bound engineering survey field notebooks with consecutively numbered pages. All field notes and printed data shall include the purpose or description of the work, the date the work was performed, weather data, sketches, and the personnel who performed and checked the work. Electronically generated survey data and computations shall be bound, page numbered, and cross referenced in a bound field notebook containing the index for all survey activities. All work shall follow recognized professional practice.

The construction survey records shall be available at all times during the progress of the work for examination and use by the engineer and when requested, copies shall be made available. The original field notebooks and other re- cords shall be provided to and become the property of the owner before final payment and acceptance of all work.

Complete documentation of computations and supporting data for progress payments shall be submitted to the en- gineer with each invoice for payment as specified in section 9 of the specification. When the contractor is required to conduct initial and final surveys as outlined in section 5, Construction Surveys, notes shall be provided as soon as possible after completion to the engineer for the purpose of determining final payment quantities.

8. Payment

Method 1—For items of work for which lump sum prices are established in the contract, payment is made as the work proceeds, after presentation of correct and accurate invoices by the contractor showing related costs and evi- dence of the charges of suppliers, subcontractors, and others for supplies furnished and work performed. Invoices for the total amount of the contract price will not be accepted until all surveys are complete and required docu- mentation has been determined complete. If the total of such payments is less than the lump sum contract price
for this item, the unpaid balance will be included in the final contract payment. Payment of the lump sum contract price will constitute full compensation for completion of all work under the bid item.

Method 2—For items of work for which lump sum prices are established in the contract, payment is made as the work proceeds with progress payment amounts determined as a percentage of the total work planned as projected from the contractor's approved construction schedule. Payment of the lump sum contract price will constitute full compensation for completion of all work under this bid item.

All Methods—Payment will not be provided under this item for the purchase price of materials or equipment hav- ing a residual value.

Compensation for any item of work described in the contract, but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and the item to which they are made subsidiary are identified in section 9 of this specification.

9. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details are:

a. Bid Item No. 6, Construction Surveys

(1) In Section 5, Construction Surveys, Method 3 will apply.

(2) The contractor shall notify the Contracting Officer's Representative at least 7 days before beginning any surveys. The contractor shall schedule, with written confirmation, a conference with the Contracting Officer's Representative, prior to beginning any surveys. In this conference the contractor shall outline the details of the proposed surveys.

(3) This item shall consist of performing all work specified herein:

a. establishing permanent references along the proposed alignment as shown on the drawings and at each structure location, berm location, pipe ends, edges (top and toe) of all rip rap, and any other construction item as applicable.

b. Establishing clearing boundaries.

c. Obtaining cross sections of the ground surface prior to construction. Cross sections shall be placed as a minimum at full stations, significant breaks in the original and final ground surface and other intermediate stations as necessary to assure accurate quantities. Proposed locations of sections shall be submitted to the Contracting Officer's Representative for approval at the pre-survey conference.

d. Setting cut stakes for all excavation.

e. Setting line and grade for roads, channels, pipes, conduits, structures, and other appurtances.

f. Setting grades for all concrete work.

g. Setting line, grade, and fill stakes for fills.

h. Checking and supplemental staking of all cuts and fills as the work progresses.

i. Setting "blue tops" for final grading of all fills.

j. Restaking any layout, or references that are removed or destroyed.

k. Making progress payment surveys.

l. Obtaining cross sections of all constructed surfaces that are required for determining the limit of pay quantity.

m. Plotting all sections necessary for quantity computations.

n. Computing and checking all quantities for progress payments and final quantities for final payments.

o. Contract modifications will be made for construction contract modifications that require additional surveys.

p. Certified As-built survey of the work area once all improvements have been installed and construction is complete.

(4) Surveys shall be certified by a surveyor licensed in the State of Florida.

(5) Excavation and fill quantities shall be computed by the average end area method or by acceptable electronic means approved by the Contracting Officer's Representative. Proposed method shall be discussed in the pre-survey conference.

(6) In Section 8, Payment, Method 2 will apply.

Construction Specification 8—Mobilization and Demobilization

1. Scope

The work consists of the mobilization and demobilization of the contractor's forces and equipment necessary for performing the work required under the contract. It does not include mobilization and demobilization for specific items of work for which payment is provided elsewhere in the contract. Mobilization will not be considered as work in fulfilling the contract requirements for commencement of work.

2. Equipment and material

Mobilization shall include all activities and associated costs for transportation of contractor's personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the contractor's operations at the site; premiums paid for performance and payment bonds including coinsur- ance and reinsurance agreements as applicable; and other items specified in section 4 of this specification.

Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not required or included in the contract from the site; including the disassembly, removal, and site cleanup of offices, buildings, and other facilities assembled on the site specifically for this contract.

This work includes mobilization and demobilization required by the contract at the time of award. If additional mobilization and demobilization activities and costs are required during the performance of the contract as a result of changed, deleted, or added items of work for which the contractor is entitled to an adjustment in contract price, compensation for such costs will be included in the price adjustment for the item or items of work changed or added.

3. Payment

Payment will be made as the work proceeds, after presentation of paid invoices or documentation of direct costs by the contractor showing specific mobilization and demobilization costs and supporting evidence of the charges of suppliers, subcontractors, and others. When the total of such payments is less than the lump sum contract price, the balance remaining will be included in the final contract payment. Payment of the lump sum contract price for mobilization and demobilization will constitute full compensation for completion of the work.

Payment will not be made under this item for the purchase costs of materials having a residual value, the purchase costs of materials to be incorporated in the project, or the purchase costs of operating supplies.

4. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Bid Item No. 7, Mobilization and Demobilization

This item shall consist of all work as described in Section 1 above.

Construction Specification 9—Traffic Control

1. Scope

The work shall consist of establishing traffic control and maintaining safe, convenient use of public roads and rights-of-way.

2. Traffic and access

The contractor's operations shall cause no unnecessary inconvenience to the public. The public rights-of-way shall be maintained at all times unless interruption is authorized by proper local authority. Contractor's authorized clos- ing or detour plans shall be provided to the engineer for approval.

Safe and adequate access shall be provided and maintained to all public protection devices and to all critical utility control locations. Facility access shall be continuous and unobstructed unless otherwise approved.

3. Storage of equipment and material in public streets

Construction materials and equipment shall not be stored or parked on public streets, roads, or highways. During any material or equipment loading or unloading activities that may temporarily interfere with traffic, an acceptable detour shall be provided for the duration of the activity. Any associated expense for this activity is the responsibil- ity of the contractor.

Excavated material, including suitable material that is intended for adjacent trench backfill or other earth backfill as specified in section 5 of this specification, shall not be stored on public streets, roads, or highways that remain in service for the public. Any waiver of this requirement must be obtained from the proper local authority and ap- proved by the engineer. All excess and unsuitable material shall be removed from the site as soon as possible. Any spillage shall be removed from roadways before they are used by the public.

4. Street closures, detours, and barricades

The contractor shall comply with the requirements of all applicable responsible units of government for closure of any street, road, or highway. The contractor shall provide the required barriers, guards, lights, signs, temporary bridges, and flaggers together with informing the public of any detours and construction hazards by the most suit-
able means available, such as local newspapers or radio stations. The contractor is also responsible for compliance with additional public safety requirements that may arise during construction. The contractor shall furnish, install, and, upon completion of the work, promptly remove all signs, warning devices, and other materials used in the performance of this work.

Unless otherwise specified, the contractor shall notify, in writing, the fire chief, police chief, county sheriff, state patrol, schools that operate school buses, or any other government official as may be appropriate no less than 7 days before closing, partly closing, or reopening any street, road, or highway.

Unless otherwise specified, the contractor shall furnish to the engineer a written plan showing the proposed meth- od of signing, barricading for traffic control, and safety for street detours and closures.

All temporary detours will be maintained to ensure use of public rights-of-way is provided in a safe manner. This may include dust control, grading, and graveling as required in section 7 of this specification.

5. General and specific references

All signs, signals, barricades, use of flaggers, and other traffic control and public safety devices shall conform to the general requirements set forth in the Manual of Uniform Traffic Control Devices (MUTCD) and the latest edition of Standard Highway Signs and Standard Alphabets for Highway Signs and/or OSHA Construction Industry Standards (29 CFR Part 1926), Subpart G, Signs, Signals, and Barricades unless otherwise specified in section 7 of this specifi- cation.

6. Measurement and payment

For items of work for which specific lump sum prices are established in the contract, payment for the work is made at the contract lump sum price. Progress payments will be made based upon the percentage of estimated total time that traffic control will be required unless otherwise specified in section 7 of this specification. Payment will consti- tute full compensation for all flaggers, labor, materials, equipment, and all other items necessary and incidental to completion of the work.

Compensation for any item of work described in the contract, but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and items to which they are made subsidiary are identified in section 7 of this specification.

7. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Bid Item No. 8, Traffic Control

(1) This item shall consist of providing a traffic control plan and installing proper traffic warning signs and providing traffic control during construction. The contractor and/or their certified traffic personnel shall notify the City of Milton Public Works Department as well as the Police Department, the local Fire Department, and the local Ambulance operator prior to road closures and/or activities that could potentially limit access or delay access to the area.

(2) Warning signs and signals shall be placed in accordance with FDOT Manual on Uniform Traffic Control Devices (MUTCD) and a plan shall be designed and implemented by certified personnel.

(3) Flagmen shall be required when vehicles transporting equipment, materials, and supplies are entering and leaving the construction site.

(4) Proper and adequate ingress and egress shall be maintained to all residences at all times.

Construction Specification 10—Water for Construction

1. Scope

The work consists of furnishing, transporting, measuring, and applying water as specified.

2. Facilities and equipment

The contractor shall install and maintain access and haul roads and furnish, operate, and maintain all pumps, meters, piping, tanks, storage, and other facilities required to load, transport, store, distribute, and use construction water as specified.

These facilities shall be equipped with accurate, work dedicated meters; tanks of known volume; or other devices that provide a correct measurement of water supplied. Meters shall be installed at the point of delivery into water hauling equipment or application system, such as sprinkler systems or flooding systems, as specified.

3. Dust abatement and haul road maintenance

Water for dust abatement and haul road maintenance shall be applied to haul roads and other dust producing areas as needed to prevent air pollution or excessive dust (which causes impaired vision on trafficked roads and in work areas) and to maintain the roads in good condition for safe and efficient operation during periods of use. Roads that may be jointly used with the public and by the contractor's equipment shall have dust abatement provisions ac- ceptable to the public entity that has road maintenance responsibility. Compensation for water used for dust abate- ment and haul road maintenance shall be as specified in section 8 of this specification.

4. Earthfill, drainfill, and rockfill

Water required for proper installation of earthfill, drainfill, and/or rockfill shall be used in the fill materials as speci- fied in the applicable construction specification(s). Compensation for construction water used for earthfill, drain- fill, and/or rockfill shall be as specified in section 8 of this specification.

5. Concrete, mortar, and grout

Water required in the mixing or curing of concrete, shotcrete, roller compacted concrete, or other portland ce- ment mortar or grout shall meet the requirements of the applicable construction specifications and shall be used in conformance with those specifications. Payment for construction water used in these items is covered by the applicable concrete, mortar, or grout specification, or a combination of these.

6. Other construction requiring water

Water required and used for other construction activities under this contract, but not specifically covered by this specification shall be considered subsidiary to the item(s) of work that requires its use.

7. Measurement and payment

Method 1—For water items for which specific unit prices are established in the contract, the volume of water furnished and used in accordance with the specifications will be measured to the nearest 1,000 gallons.

Payment for water is made at the contract unit price. Such payment will constitute full compensation for the direct costs of water. All other costs necessary for transportation, distribution, and application are subsidiary to the items of work with which they are associated.

Method 2—For water items for which specific unit prices are established in the contract, the volume of water furnished and used in accordance with the specifications will be measured to the nearest 1,000 gallons.

Payment for water and the cost associated with transportation, distribution, and application is made at the contract unit price. Such payment will constitute full compensation for completion of the work.

Method 3—For water items for which specific unit prices are established in the contract, the volume of water

used in accordance with the specifications will be measured to the nearest 1,000 gallons.

Payment for water is made at the contract unit price. Such payment, excluding water cost, will constitute full com- pensation for completion of the work.

All methods—The following provisions apply to all methods of measurement and payment:

- The measurement for payment will include all water used except as noted in sections 5, 6, and 8 of this specification. Measurement for payment will not include water that is used inappropriately or in excess of that needed to accomplish the specified task.
- Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 8 of this specification.

8. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

a. Subsidiary Item, Water for Construction

(1) This item shall consist of all water necessary and incidental to curing of concrete, obtaining proper moisture content for compaction of earthfill, proper watering of new vegetation, and other items that require water as required on the drawings and in the specifications.

(2) No separate payment shall be made for this item. Compensation shall be included in the payment for the respective bid item to which it is incidental.

Construction Specification 11—Removal of Water

1. Scope

The work consists of the removal of surface water and ground water as necessary to perform the construction required by the contract in accordance with the specifications. It shall include: (1) constructing, installing, build- ing, and maintaining all necessary temporary water containment facilities, channels, and diversions; (2) furnishing, installing, and operating all necessary pumps, piping, and other facilities and equipment; and (3) removing all such temporary works and equipment after their intended function is no longer required.

2. Diverting surface water

The contractor shall install, maintain, and operate all cofferdams, channels, flumes, sumps, and all other tempo- rary diversion and protective works needed to divert streamflow and other surface water through or around the construction site. Control of surface water shall be continuous during the period that damage to construction work could occur. Unless otherwise specified and/or approved, the diversion outlet shall be into the same drainageway that the water would have reached before being diverted.

The contractor shall furnish the contracting officer, in writing, a proposed plan for diverting surface water before beginning any construction activities for which a diversion is required, unless waived in section 8 of this specifica- tion. Acceptance of this plan or the waiving of the plan requirement will not relieve the contractor of the responsi- bilities related to this activity during the process of completing the work as specified.

3. Dewatering the construction site

Foundations, cutoff trenches, and all other parts of the construction site shall be dewatered and kept free of stand- ing water and muddy conditions as necessary for the proper execution of the work. The contractor shall furnish, install, operate, and maintain all drains, sumps, pumps, casings, well points, and all other equipment required to properly dewater the site as specified. Dewatering systems that cause a loss of soil fines from the foundation areas will not be permitted.

The contractor shall furnish the contracting officer, in writing, a proposed plan for dewatering before commencing with any construction activity for which dewatering may be required, unless waived in section 8 of this specifica- tion. Acceptance of this plan or the waiving of the plan requirement will not relieve the contractor of the responsi- bilities for completing the specified work.

4. Dewatering borrow areas

The contractor shall maintain all borrow areas free of surface water or otherwise provide for timely and effective removal of surface and subsurface water that accumulates within the borrow area, unless waived in section 8 of this specification. Borrow material shall be processed as necessary to achieve proper and uniform moisture con- tent at the time of placement.

If pumping to dewater borrow areas is included as a bid item of work in the bid schedule, each pump discharge pipe shall be equipped with a water meter. The meter shall be such that the measured quantity of water is accurate within 3 percent of the true quantity. The contractor shall provide necessary support to perform accuracy tests of the water meter when requested by the contracting officer.

5. Erosion and pollution control

Removal of water from the construction site, including the borrow areas, shall be accomplished so that erosion and the transporting of sediment and other pollutants are minimized. Dewatering activities shall be accomplished in a manner that the water table water quality is not altered. Pollution control activities shall not conflict with the requirements of Construction Specification 5, Pollution Control, if it is a part of this contract.

6. Removal of temporary works

When temporary works are no longer needed, the contractor shall remove and return the area to a condition similar to that which existed before construction. Areas where temporary works were located shall be graded for sightly appearance with no obstruction to natural surface waterflows or the proper functioning and access to the works of improvement installed. The contractor shall exercise extreme care during the removal stages to minimize the loss of soil sediment and debris that was trapped during construction.

Pipes, casings, and any other material used to dewater the site shall be removed from temporary wells. The wells shall be filled to ground level with clean gravel or other suitable material approved by the contracting officer. The contractor shall exercise extreme care to prevent pollution of the ground water by these actions.

7. Measurement and payment

Method 1—Items of work listed in the bid schedule for removal of water, diverting surface water, and dewatering construction sites and borrow areas are paid for at the contract lump sum prices. Such payment will constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

Method 2—Items of work listed in the bid schedule for removal of water, diverting surface water, dewatering construction sites, and dewatering borrow areas are paid for at the contract lump sum prices. Such payment will constitute full compensation for furnishing, installing, operating, and maintaining the necessary trenches, drains, sumps, pumps, and piping and for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work. The exception is that additional payment for pumping to dewater borrow areas and the removal of water will be made as described in the following paragraph.

If pumping to dewater borrow areas is a contract bid item, payment is made at the contract unit price, which shall be the price per 1,000 gallons shown in the bid schedule. Such payment will constitute full compensation for pump- ing only. Compensation for equipment and preparation and for other costs associated with pumping is included in the lump sum payment for removal of water or the lump sum payment for dewatering the borrow areas. Payment is made only for pumping that is necessary to dewater borrow areas that cannot be effectively drained by gravity or that must have the water table lowered to be usable as a suitable borrow source. Pumping for other purposes will not be included for payment under this item.

All Methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the contract line item to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 8 of this specification.

8. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Bid Item No. 10, Removal of Water

(1) This item shall consist of all works necessary and incidental to the removal of water in the work area as needed to install the works of improvement. It is anticipated that standing water will be present at times within the existing retention pond. Proper timing and scheduling of the work in this area could prevent the need for significant dewatering measures. However, in any case, all areas of work shall be properly prepared to obtain the required compaction as specified in this document and on the drawings.

(2) The dewatering operation shall not create erosive conditions nor cause a condition of polluted water downstream from the work site.

(3) Measurement and payment shall be by Method 1.

Construction Specification 21—Excavation

1. Scope

The work shall consist of the excavation required by the drawings and specifications and disposal of the excavated materials.

2. Classification

Excavation is classified as common excavation, rock excavation, or unclassified excavation in accordance with the following definitions or is designated as unclassified.

Common excavation is defined as the excavation of all materials that can be excavated, transported, and unloaded using heavy ripping equipment and wheel tractor-scrapers with pusher tractors or that can be excavated and dumped into place or loaded onto hauling equipment by excavators having a rated capacity of one cubic yard or larger and equipped with attachments (shovel, bucket, backhoe, dragline, or clam shell) appropriate to the material type, character, and nature of the materials.

Rock excavation is defined as the excavation of all hard, compacted, or cemented materials that require blasting or the use of ripping and excavating equipment larger than defined for common excavation. The excavation and removal of isolated boulders or rock fragments larger than 1 cubic yard encountered in materials otherwise conforming to the definition of common excavation shall be classified as rock excavation. The presence of isolated boulders or rock fragments larger than 1 cubic yard is not in itself sufficient cause to change the classification of the surrounding material.

For the purpose of these classifications, the following definitions shall apply:

Heavy ripping equipment is a rear-mounted, heavy duty, single-tooth, ripping attachment mounted on a track type tractor having a power rating of at least 250 flywheel horsepower unless otherwise specified in section 10.

Wheel tractor-scraper is a self-loading (not elevating) and unloading scraper having a struck bowl capacity of at least 12 cubic yards.

Pusher tractor is a track type tractor having a power rating of at least 250 flywheel horsepower equipped with ap- propriate attachments.

Unclassified excavation is defined as the excavation of all materials encountered, including rock materials, regard- less of their nature or the manner in which they are removed.

3. Unclassified excavation

Excavation designated as *unclassified excavation* shall include all materials encountered regardless of their nature or the manner in which they are removed. When excavation is unclassified, none of the definitions or classifications stated in Section 2, Classification, shall apply.

4. Blasting

The transportation, handling, storage, and use of dynamite and other explosives shall be directed and supervised by a person(s) of proven experience and ability who is authorized and qualified to conduct blasting operations. Blasting shall be done in a manner as to prevent damage to the work or unnecessary fracturing of the underlying rock materials and shall conform to any special requirements in section 10 of this specification. When specified in section 10, the contractor shall furnish the engineer, in writing, a blasting plan before blasting operations begin.

5. Use of excavated material

Method 1—To the extent they are needed, all suitable material from the specified excavations shall be used in the construction of required permanent earthfill or rockfill. The suitability of material for specific purposes is deter- mined by the engineer. The contractor shall not waste or otherwise dispose of suitable excavated material.

Method 2—Suitable material from the specified excavations may be used in the construction of required earthfill or rockfill. The suitability of material for specific purposes is determined by the engineer.

6. Disposal of waste materials

Method 1—All surplus or unsuitable excavated materials are designated as waste and shall be disposed of at the locations shown on the drawings.

Method 2—All surplus or unsuitable excavated materials are designated as waste and shall be disposed of by the contractor at sites of his own choosing away from the site of the work. The disposal shall be in an environmentally acceptable manner that does not violate local rules and regulations.

7. Excavation limits

Excavations shall comply with OSHA Construction Industry Standards (29CFR Part 1926) Subpart P, Excavations, Trenching, and Shoring. All excavations shall be completed and maintained in a safe and stable condition through- out the total construction phase. Structure and trench excavations shall be completed to the specified elevations and to the length and width required to safely install, adjust, and remove any forms, bracing, or supports necessary for the installation of the work. Excavations outside the lines and limits shown on the drawings or specified herein required to meet safety requirements shall be the responsibility of the contractor in constructing and maintaining a safe and stable excavation.

8. Borrow excavation

When the quantities of suitable material obtained from specified excavations are insufficient to construct the speci- fied earthfills and earth backfills, additional material shall be obtained from the designated borrow areas. The extent and depth of borrow pits within the limits of the designated borrow areas shall be as specified in section 10 or as approved by the engineer.

Borrow pits shall be excavated and finally dressed to blend with the existing topography and sloped to prevent ponding and to provide drainage.

9. Overexcavation

Excavation in rock beyond the specified lines and grades shall be corrected by filling the resulting voids with portland cement concrete made of materials and mix proportions approved by the engineer. Concrete that will be exposed to the atmosphere when construction is completed shall meet the requirements of concrete selected for use under Construction Specification 31, Concrete for Major Structures, or 32, Structure Concrete, as appropriate.

Concrete that will be permanently covered shall contain not less than five bags of cement per cubic yard. The con- crete shall be placed and cured as specified by the engineer.

Excavation in earth beyond the specified lines and grades shall be corrected by filling the resulting voids with ap- proved, compacted earthfill. The exception to this is that if the earth is to become the subgrade for riprap, rockfill, sand or gravel bedding, or drainfill, the voids may be filled with material conforming to the specifications for the riprap, rockfill, bedding, or drainfill. Before correcting an overexcavation condition, the contractor shall review the planned corrective action with the engineer and obtain approval of the corrective measures.

9. Measurement and payment

For items of work for which specific unit prices are established in the contract, the volume of each type and class of excavation within the specified pay limits is measured and computed to the nearest cubic yard by the method of average cross-sectional end areas or by methods outlined in section 10 of this specification. Regardless of quanti- ties excavated, the measurement for payment is made to the specified pay limits except that excavation outside the specified lines and grades directed by the engineer to remove unsuitable material is included. Excavation required because unsuitable conditions result from the contractor's improper construction operations, as determined by the engineer, is not included for measurement and payment.

Method 1—The pay limits shall be as designated on the drawings.

Method 2—The pay limits shall be defined as follows:

a. The upper limit shall be the original ground surface as it existed before the start of construction operations except that where excavation is performed within areas designated for previous excavation or earthfill, the upper limit shall be the modified ground surface resulting from the specified previous excavation or earth- fill.

b. The lower and lateral limits shall be the neat lines and grades shown on the drawings.

Method 3 —The pay limits shall be defined as follows:

a. The upper limit shall be the original ground surface as it existed before the start of construction operations except that where excavation is performed within areas designated for previous excavation or earthfill, the upper limit shall be the modified ground surface resulting from the specified previous excavation or earth- fill.

b. The lower and lateral limits shall be the true surface of the completed excavation as directed by the engi- neer.

Method 4—The pay limits shall be defined as follows:

a. The upper limit shall be the original ground surface as it existed before the start of construction operations except that where excavation is performed within areas designated for previous excavation or earthfill, the upper limit shall be the modified ground surface resulting from the specified previous excavation or earth- fill.

b. The lower limit shall be at the bottom surface of the proposed structure.

c. The lateral limits shall be 18 inches outside of the outside surface of the proposed structure or shall be verti- cal planes 18 inches outside of and parallel to the footings, whichever gives the larger pay quantity, except as provided in d below.

d. For trapezoidal channel linings or similar structures that are to be supported upon the sides of the excava- tion without intervening forms, the lateral limits shall be at the underside of the proposed lining or struc- ture.

e. For the purposes of the definitions in b, c, and d, above, any specified bedding or drainfill directly beneath or beside the structure will be considered to be a part of the structure.

All methods—The following provisions apply to all methods of measurement and payment.

Payment for each type and class of excavation is made at the contract unit price for that type and class of excava- tion. Such payment will constitute full compensation for all labor, materials, equipment, and all other items neces- sary and incidental to the performance of the work except that extra payment for backfilling overexcavation will be made in accordance with the following provisions.

Payment for backfilling overexcavation, as specified in section 8 of this specification, is made only if the excavation outside specified lines and grades is directed by the engineer to remove unsuitable material and if the unsuitable condition is not a result of the contractor's improper construction operations as determined by the engineer.

Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made sub- sidiary are identified in section 10 of this specification.

10. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

a. Subsidiary Item, Excavations

(1) This item shall consist of all common excavation necessary and incidental to the installation of improvements to the specified neat lines and grades as shown on the drawings.

(2) All suitable material resulting from the required excavation shall be stockpiled for later use in backfilling operations. All excess unsuitable material shall become the property and responsibility of the Contractor to dispose of off-site.

(3) All excavations shall be performed in a manner so as to minimize siltation and pollution to both air and water.

(4) No separate payment shall be made for this item. Compensation shall be included in the payment for the respective bid item to which it is incidental.

b. Bid Item No. 12, Excavations

(1) This item shall consist of all common excavation necessary and incidental to proper site grading per the drawings. This item shall include excavations necessary for installation of the driving surface and associated features as well as the grassed swale and all drainage patterns to the specified neat lines and grades as shown on the drawings.

(2) Excess material shall be hauled off site and disposed of properly by the contractor.

(3) All excavations shall be performed in a manner so as to minimize siltation and pollution to both air and water.

(4) Measurement and payment shall be by Lump Sum.

Construction Specification 23—Earthfill

1. Scope

The work consists of the construction of earth embankments, other earthfills, and earth backfills required by the drawings and specifications.

Earthfill is composed of natural earth materials that can be placed and compacted by construction equipment oper- ated in a conventional manner.

Earth backfill is composed of natural earth material placed and compacted in confined spaces or adjacent to struc- tures (including pipes) by hand tamping, manually directed power tampers or vibrating plates, or their equivalent.

2. Material

All fill material shall be obtained from required excavations and designated borrow areas. The selection, blending, routing, and disposition of material in the various fills shall be subject to approval by the engineer.

Fill materials shall contain no frozen soil, sod, brush, roots, or other perishable material. Rock particles larger than the maximum size specified for each type of fill shall be removed prior to compaction of the fill.

The types of material used in the various fills shall be as listed and described in the specifications and drawings.

3. Foundation preparation

Foundations for earthfill shall be stripped to remove vegetation and other unsuitable material or shall be excavated as specified.

Except as otherwise specified, earth foundation surfaces shall be graded to remove surface irregularities and shall be scarified parallel to the axis of the fill or otherwise acceptably scored and loosened to a minimum depth of 2 inches. The moisture content of the loosened material shall be controlled as specified for the earthfill, and the surface material of the foundation shall be compacted and bonded with the first layer of earthfill as specified for subsequent layers of earthfill.

Earth abutment surfaces shall be free of loose, uncompacted earth in excess of 2 inches in depth normal to the slope and shall be at such a moisture content that the earthfill can be compacted against them to produce a good bond between the fill and the abutments.

Rock foundation and abutment surfaces shall be cleared of all loose material by hand or other effective means and shall be free of standing water when fill is placed upon them. Occasional rock outcrops in earth foundations for earthfill, except in dams and other structures designed to restrain the movement of water, shall not require special treatment if they do not interfere with compaction of the foundation and initial layers of the fill or the bond be- tween the foundation and the fill.

Foundation and abutment surfaces shall be no steeper than one horizontal to one vertical unless otherwise speci- fied. Test pits or other cavities shall be filled with compacted earthfill conforming to the specifications for the earth- fill to be placed upon the foundation.

4. Placement

Earthfill shall not be placed until the required excavation and foundation preparation have been completed and the foundation has been inspected and approved by the engineer. Earthfill shall not be placed upon a frozen surface nor shall snow, ice, or frozen material be incorporated in the earthfill matrix.

Earthfill shall be placed in approximately horizontal layers. The thickness of each layer before compaction shall not exceed the maximum thickness specified in section 10 or shown on the drawings. Materials placed by dumping in piles or windrows shall be spread uniformly to not more than the specified thickness before being compacted.

Hand compacted earth backfill shall be placed in layers whose thickness before compaction does not exceed the maximum thickness specified for layers of earth backfill compacted by manually directed power tampers.

Earth backfill shall be placed in a manner that prevents damage to the structures and allows the structures to as- sume the loads from the earth backfill gradually and uniformly. The height of the earth backfill adjacent to a struc- ture shall be increased at approximately the same rate on all sides of the structure.

Earthfill and earth backfill in dams, levees, and other structures designed to restrain the movement of water shall be placed to meet the following additional requirements:

(a) The distribution of materials throughout each zone shall be essentially uniform, and the earthfill shall be free from lenses, pockets, streaks, or layers of material differing substantially in texture, moisture con- tent, or gradation from the surrounding material. Zone earthfills shall be constructed concurrently unless otherwise specified.

(b) The surface of each layer shall be scarified parallel to the axis of the fill to a depth of not less than 2 inches before the next layer is placed.

(c) The top surface of embankments shall be maintained approximately level during construction with two exceptions: A crown or cross-slope of about 2 percent shall be maintained to ensure effective drainage, or as otherwise specified for drainfill or sectional zones.

(d) Dam embankments shall be constructed in continuous layers from abutment to abutment except where openings to facilitate construction or to allow the passage of streamflow during construction are specifi- cally authorized in the contract.

(e) Embankments built at different levels as described under (c) or (d) above shall be constructed so that the slope of the bonding surfaces between embankment in place and embankment to be placed is not steeper than 3 feet horizontal to 1 foot vertical. The bonding surface of the embankment in place shall be stripped of all material not meeting the requirements of this specification and shall be scarified, moist- ened, and recompacted when the new earthfill is placed against it. This ensures a good bond with the new earthfill and obtains the specified moisture content and density at the contact of the inplace and new earthfills.

5. Control of moisture content

During placement and compaction of earthfill and earth backfill, the moisture content of the material being placed shall be maintained within the specified range.

The application of water to the earthfill material shall be accomplished at the borrow areas insofar as practicable. Water may be applied by sprinkling the material after placement on the earthfill, if necessary. Uniform moisture distribution shall be obtained by disking.

Material that is too wet when deposited on the earthfill shall either be removed or be dried to the specified mois- ture content prior to compaction.

If the top surface of the preceding layer of compacted earthfill or a foundation or abutment surface in the zone of contact with the earthfill becomes too dry to permit suitable bond, it shall either be removed or scarified and moist- ened by sprinkling to an acceptable moisture content before placement of the next layer of earthfill.

6. Compaction

Earthfill—Earthfill shall be compacted according to the following requirements for the class of compaction speci- fied:

Class A compaction—Each layer of earthfill shall be compacted as necessary to provide the density of the earthfill matrix not less than the minimum density specified in Section 10 or identified on the drawings. The earthfill matrix is defined as the portion of the earthfill material finer than the maximum particle size allowed in the reference compaction test method specified (ASTM D698 or ASTM D1557).

Class B compaction—Each layer of earthfill shall be compacted to a mass density not less than the mini- mum density specified.

Class C compaction—Each layer of earthfill shall be compacted by the specified number of passes of the type and weight of roller or other equipment specified or by an approved equivalent method. Each pass shall consist of at least one passage of the roller wheel or drum over the entire surface of the layer.

Earth backfill—Earth backfill adjacent to structures shall be compacted to a density equivalent to that of the sur- rounding inplace earth material or adjacent required earthfill or earth backfill. Compaction shall be accomplished by hand tamping or manually directed power tampers, plate vibrators, walk-behind, miniature, or self-propelled rollers. Unless otherwise specified heavy equipment including backhoe mounted power tampers or vibrating compactors and manually directed vibrating rollers shall not be operated within 3 feet of any structure. Towed or self-propelled vibrating rollers shall not be operated within 5 feet of any structure. Compaction by means of drop weights operating from a crane or hoist is not permitted.

The passage of heavy equipment will not be allowed:

- Over cast-in-place conduits within 14-days after placement of the concrete
- Over cradled or bedded precast conduits within 7 days after placement of the concrete cradle or bedding
- Over any type of conduit until the backfill has been placed above the top surface of the structure to a height equal to one-half the clear span width of the structure or pipe or 3 feet, whichever is greater, except as may be specified in section 10.

Compacting of earth backfill adjacent to structures shall not be started until the concrete has attained the strength specified in section 10 for this purpose. The strength is determined by compression testing of test cylinders cast by the contractor's quality control personnel for this purpose and cured at the work site in the manner specified in ASTM C 31 for determining when a structure may be put into service.

When the required strength of the concrete is not specified as described above, compaction of earth backfill adja- cent to structures shall not be started until the following time intervals have elapsed after placement of the con- crete.

Structure	Time interval (days)
Vertical or near-vertical walls with earth loading on one side only	14
Walls backfilled on both sides simultaneously	7
Conduits and spillway risers, cast-in-place (with inside forms in place)	7
Conduits and spillway risers, cast-in-place (inside forms removed)	14
Conduits, pre-cast, cradled	2
Conduits, pre-cast, bedded	1
Cantilever outlet bents (backfilled both sides simultaneously)	3

7. Reworking or removal and replacement of defective earthfill

Earthfill placed at densities lower than the specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable earthfill. The replacement earthfill and the foundation, abutment, and earthfill surfaces upon which it is placed shall conform to all requirements of this specification for foundation preparation, approval, placement, moisture control, and compaction.

8. Testing

During the course of the work, the contractor shall perform quality control tests, as applicable, to identify earthfill and earth backfill materials; determine the reference maximum density and optimum moisture content; and docu- ment that the moisture content of material at the time of compaction and the density of earthfill and earth backfill in place conform to the requirements of this specification.

Determining Reference Maximum Density and Optimum Moisture Content—For Class A compaction, the reference maximum density and optimum moisture content shall be determined in accordance with the compaction test and method specified on the drawings or in section 10.

Documenting Specification Conformance—In-place densities of earthfill and earth backfill requiring Class A com- paction shall be measured in accordance with ASTM D1556, D2167, D2937, or D6938. Moisture contents of earthfill and earth backfill at the time of compaction shall be measured in accordance with ASTM D2216, D4643, or D6938. Values of moisture content determined by ASTM D2216 are considered the true value of the soil moisture. Values of moisture content determined by ASTM D4643 or D6938 shall be verified by comparison to values obtained by ASTM D2216. Values of in-place density and moisture content determined by these tests shall be compared to the minimum density and moisture content range specified on the drawings or in section 10.

Correction for Oversize Particles—If the materials to be used for earthfill or earth backfill contain more than 5 percent by dry weight of oversize rock particles (particles larger than those allowed in the specified compaction test and method), corrections for oversize particles shall be made using the appropriate procedures explained in ASTM D4718.

9. Measurement and payment

For items of work for which specific unit prices are established in the contract, the volume of each type and com- paction class of earthfill and earth backfill within the specified zone boundaries and pay limits is measured and computed to the nearest cubic yard by the method of average cross-sectional end areas. Unless otherwise specified in section 10, no deduction in volume is made for embedded items, such as, but not limited to, conduits, inlet struc- tures, outlet structures, embankment drains, sand diaphragm and outlet, and their appurtenances.

The pay limits shall be as defined below, with the further provision that earthfill required to fill voids resulting from overexcavation of the foundation, outside the specified lines and grades, will be included in the measurement for payment only under the following conditions:

- Where such overexcavation is directed by the engineer to remove unsuitable material, and
- Where the unsuitable condition is not a result of the contractor's improper construction operations as determined by the engineer.

Earthfill beyond the specified lines and grades to backfill excavation required for compliance with OSHA require- ments will be considered subsidiary to the earthfill bid item(s).

Method 1—The pay limits shall be as designated on the drawings.

Method 2—The pay limits shall be the measured surface of the foundation when approved for placement of the earthfill and the specified neat lines of the earthfill surface.

Method 3—The pay limits shall be the measured surface of the foundation when approved for placement of the earthfill and the measured surface of the completed earthfill.

Method 4—The pay limits shall be the specified pay limits for excavation and the specified neat lines of the earth- fill surface.

Method 5—The pay limits shall be the specified pay limits for excavation and the measured surface of the completed earthfill.

Method 6—Payment for each type and compaction class of earthfill and earth backfill is made at the contract unit price for that type and compaction class of earthfill. Such payment will constitute full compensation for all labor, material, equipment, and all other items necessary and incidental to the performance of the work.

Method 7—Payment for each type and compaction class of earthfill and earth backfill is made at the contract unit price for that type and compaction class of earthfill. Such payment will constitute full compensation for all labor, material, equipment, and all other items necessary and incidental to the performance of the work except furnish- ing, transporting, and applying water to the foundation and earthfill material. Water applied to the foundation and earthfill material is measured and payment made as specified in Construction Specification 10.

All methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 10 of this specification.

10. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

A. Subsidiary Item, Earthfill

(1) This item shall consist of the loading, hauling, placement and compaction of all earthfill required for the installation of the improvements to the specified neat lines and grades as shown on the drawings. The earthfill is available via the excavations necessary to install the improvements.

(2) Compaction shall be in accordance with the plan details and the city public works manual. The material shall be free from sod, brush, roots, or other perishable materials, large rocks and hard lumps or clods larger than 3 inches in size. Costs associated with proper testing, monitoring, and

other items recommended by the geotechnical engineer shall be included in the bid item for Contractor Quality Control.

(3) All earthfill shall be placed in a manner so as to minimize air and water pollution.

(4) No separate payment shall be made for this item. Compensation shall be included in the payment for the respective bid item to which it is incidental.

B. Bid Item No. 14, Earthfill

(1) This item shall consist of the purchase, loading, hauling, placement and compaction of all earthfill required for the filling, smoothing, shaping, and compaction of the Excavations for structure and pipe installation to the specified neat lines and grades as shown on the drawings. This includes pipe bedding and backfill and structure bedding and backfill.

(2) The source of borrow shall be off-site sources. Source of material shall be verified by the inspector.

(3) Compaction shall be in accordance with the plan details and the city public works manual.

(4) All earthfill shall be placed in a manner so as to minimize air and water pollution.

(5) Measurement and payment shall be made by Lump Sum.

Construction Specification 26—Topsoiling

1. Scope

The work consists of furnishing and spreading topsoil to specified depths at locations shown on the drawings.

2. Quality of topsoil

Topsoil shall consist of friable surface soil reasonably free of grass, roots, weeds, sticks, rocks, or other unsuitable material. Additional quality requirements, if any, are in section 7 of this specification.

3. Furnishing

Method 1—Topsoil shall be salvaged from designated earth surfaces that will be disturbed by construction activi- ties. After designated sites have been cleared and grubbed, the topsoil shall be removed from the designated areas and stockpiled at locations shown on the drawings or acceptable to the engineer. Unsuitable material encountered during removal of topsoil shall be disposed of at locations shown on the drawings or approved by the engineer,
or it will be otherwise hauled and disposed of at locations removed from the construction site. The contractor is responsible for complying with all local rules and regulations and the payment of any and all fees that may result from the disposal at locations outside the construction work limits.

Method 2—Topsoil shall be furnished from an offsite source designated by the contractor. The engineer shall be granted access to the source for inspection and acceptance before delivery to the site. Test results and samples shall be provided when specified in section 7 of this specification.

4. Stockpiling

Stockpiles of topsoil shall not conflict with the requirements of Construction Specification 5, Pollution Control, when made a part of this contract.

5. Spreading

Method 1—Spreading shall not be conducted when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to uniform spreading operations. Surfaces designated to receive a topsoil application shall be lightly scarified just before the spreading operation.

Following the spreading operation, the topsoil surface shall be left reasonably smooth and without ruts or surface irregularities that could contribute to concentrated waterflow downslope.

Method 2—Spreading shall not be performed when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to uniform spreading operations. Surfaces designated to receive a topsoil application shall be lightly scarified just before the spreading operation. Where compacted earthfills are designated to be top- soiled, the topsoil shall be placed concurrently with the earthfill and shall be bonded to the compacted fill with the compacting equipment.

Following the spreading operation, the topsoil surface shall be left reasonably smooth and without ruts or surface irregularities that could contribute to concentrated waterflow downslope.

6. Measurement and payment

Method 1—The total surface covered by topsoil is measured and the area(s) computed to the nearest square yard. Payment for furnishing and placing topsoil is made at the contract unit price.

Method 2—The total surface covered by topsoil, except the surface area of embankments, levees, dikes, and other earthfills not included for payment, is measured and the area(s) computed to the nearest square yard.

Payment for topsoil spread on the surface of embankments, levees, dikes, and other earthfills is included in the measurement and payment for that item of earthfill where topsoil application occurred.

Method 3—For items of work for which specific unit prices are established in the contract, the volume of topsoil furnished and spread is computed to the nearest cubic yard by the method of average cross-sectional end areas from surveys of the excavated topsoil stockpile or, if not stockpiled, cross-sectional surveys of the borrow area(s). Payment for furnishing and spreading topsoil is made at the contract unit price.

All methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 7 of this specification.

All payment methods—Payment will constitute full compensation for all labor, equipment, material, and all other items necessary and incidental to the completion of the work. This includes excavating, stockpiling, hauling, spreading, and the wasting of unsuitable excavated material.

7. Items of work and construction details

B. Bid Item No. 15, Topsoiling

(1) This item shall consist of the loading, hauling, placement and compaction of all topsoil required for the areas to be vegetated with sod to the specified neat lines and grades as shown on the drawings. All disturbed road shoulders shall have top soil applied and graded according to the details on the drawings. The new swale shall have topsoil applied and graded according to the details on the drawings. Slopes within the existing pond shall have topsoil applied according to the details on the drawings. Topsoil shall NOT be applied to pond bottoms.

(2) The source of borrow shall be verified by the inspector prior to applying topsoil material.

(3) All topsoil shall be placed in a manner so as to minimize air and water pollution.

(4) Measurement and payment shall be made by Method 1.

Construction Specification 32—Structure Concrete

1. Scope

The work shall consist of furnishing, forming, placing, finishing, and curing portland cement concrete as required to build the structures described in section 24 of this specification.

2. Material

Aggregates shall conform to the requirements of Material Specification 522, Aggregates for Portland Cement Con- crete, unless otherwise specified. The grading of coarse aggregates shall be as specified in section 24.

Portland cement shall conform to the requirements of Material Specification 531, Portland Cement, for the speci- fied type.

Fly ash shall conform to the requirements of Material Specification 532, Supplementary Cementitious Materials.

Air-entraining admixtures shall conform to the requirements of Material Specification 533, Chemical Admixtures for Concrete. If air-entraining cement is used, any additional air-entraining admixture shall be of the same type as that in the cement.

Water reducing and/or retarding admixtures shall conform to the requirements of Material Specification 533, Chemical Admixtures for Concrete.

Curing compound shall conform to the requirements of Material Specification 534, Concrete Curing Compound.

Preformed expansion joint filler shall conform to the requirements of Material Specification 535, Preformed Expansion Joint Filler.

Waterstops shall conform to the requirements of Material Specifications 537, Nonmetallic Waterstops, and 538, Metal Waterstops, for the specified kinds.

Water used in mixing and curing concrete shall be clean and free from injurious amounts of oil, salt, acid, alkali, organic matter, or other deleterious substances.

3. Class of concrete

Concrete for structure concrete shall be classified as follows:

Class of concrete	Maximum net water content (gal/bag)	Minimum cement content (bags/yd^3)
3000M	6	5.5
4000M	6	6

4. Air content and consistency

Unless otherwise specified, the slump shall be 3 to 5 inches. If air entrainment is specified, the air content, by vol- ume, shall be 4 to 7 percent of the volume of the concrete. When specified, directed, or approved by the engineer, a water-reducing, set-retarding, or other admixture shall be used. High range, water reducing agents (superplasticiz- ers) may be used to increase workability, reduce water content, and control concrete temperature in hot weather. The maximum slump after adding high range water reducing agents shall be 7.5 inches.

5. Design of the concrete mix

The proportions of the aggregates shall be such as to produce a concrete mixture that works readily into the corners and angles of the forms and around reinforcement when consolidated, but does not segregate or exude free water during consolidation.

Fly ash may be used as a partial substitution for portland cement in an amount of no more than 25 percent (by weight) of the cement in the concrete mix, unless otherwise specified.

The maximum water to cement ratio shall be 0.5 unless otherwise specified. When more than one cementitious material is used, the maximum water to cementitious materials ratio shall be 0.5 unless otherwise specified.

Before the concrete is placed, the contractor shall furnish the contracting officer, for approval, a statement of the materials and mix proportions (including admixtures, if any) intended for use. The statement shall include evi- dence satisfactory to the contracting officer that the materials and proportions will produce concrete conforming to this specification. The materials and proportions so stated shall constitute the "job mix." After a job mix has been approved, neither the source, character, or grading of the aggregates nor the type or brand of cement or admixture shall be changed without prior notice to the contracting officer. If such changes are necessary, no concrete contain- ing such new or altered material shall be placed until the contracting officer has approved a revised job mix.

6. Inspection and testing

The engineer shall have free entry to the plant and equipment furnishing concrete under the contract. Proper facili- ties shall be provided for the engineer to inspect materials, equipment, and processes and to obtain samples of the concrete. All tests and inspections will be conducted so as not to interfere unnecessarily with manufacture and delivery of the concrete.

7. Handling and measurement of material

Materials shall be stockpiled and batched by methods that prevent segregation or contamination of aggregates and ensure accurate proportioning of the ingredients of the mix. Except as otherwise provided in section 8, cement and aggregates shall be measured as follows:

Cement shall be measured by weight or in bags of 94 pounds each. When cement is measured in bags, no fraction of a bag shall be used unless weighed.

Aggregates shall be measured by weight. Mix proportions shall be based on saturated, surface-dry weight. The batch weight of each aggregate shall be the required saturated, surface-dry weight plus the weight of surface mois- ture it contains.

Water shall be measured, by volume or by weight, to an accuracy within 1 percent of the total quantity of water required for the batch.

Admixtures shall be measured within a limit of accuracy of 3 percent.

8. Mixers and mixing

Concrete shall be uniform and thoroughly mixed when delivered to the work site. Variations in slump of more than 1 inch within a batch are considered evidence of inadequate mixing and shall be corrected by increasing mixing time or other acceptable alternative.

For stationary mixers, the mixing time after all cement and aggregates are in the mixer drum shall be not less than
1.5 minutes. When concrete is mixed in a truck mixer, the number of revolutions of the drum or blades at mixing speed shall be not less than 70 nor more than l00.

Unless otherwise specified, volumetric batching and continuous mixing at the construction site are permitted. To produce concrete meeting the specified proportioning and uniformity requirements, the batching and mixing equip- ment shall conform to the requirements of ASTM Specification C 685 and shall be demonstrated by tests with the job mix before the concrete is placed. Concrete made by this method shall be produced, inspected, and certified in conformance with sections 6, 7, 8, 13, and 14 of ASTM Specification C 685.

No mixing water in excess of the amount called for by the job mix shall be added to the concrete during mixing or hauling or after arrival at the delivery point.

9. Forms

Forms shall be of wood, plywood, steel, or other approved material and shall be mortar tight. The forms and as- sociated falsework shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and contours. Form surfaces shall be smooth and free from holes, dents, sags, or other irregularities. Forms shall be coated with a nonstaining form release agent before being set into place.

Metal ties or anchorages within the forms shall be equipped with cones, she-bolts or other devices that permit their removal to a depth of at least 1 inch without injury to the concrete. Ties designed to break off below the surface of the concrete shall not be used without cones.

All edges that will be exposed to view when the structure is completed shall be chamfered, unless finished with molding tools as specified in Section l8.

10. Preparation of forms and subgrade

Prior to placement of concrete, the forms and subgrade shall be free of chips, sawdust, debris, water, ice, snow, extraneous oil, mortar, or other harmful substances or coatings and the temperature of all surfaces to be in contact with the new concrete shall be not be less than 40 degrees Fahrenheit. Any oil on the reinforcing steel or other surfaces required to be bonded to the concrete shall be removed. Rock surfaces shall be cleaned by air-water cut- ting, wet sandblasting, or wire brush scrubbing, as necessary, and shall be wetted immediately before placement of concrete. The earth surface shall be firm and damp. Placement of concrete on mud, dried earth, or uncompacted fill or frozen subgrade is not permitted.

Items to be embedded in the concrete shall be positioned accurately and anchored firmly. Weepholes in walls

or slabs shall be formed with nonferrous material.

11. Conveying

Concrete shall be delivered to the site and discharged into the forms within l-1/2 hours after the introduction of the cement to the aggregates. In hot weather or under conditions contributing to quick stiffening of the concrete, the time between the introduction of the cement to the aggregates and discharge shall not exceed 45 minutes.

The engineer may allow a longer time, provided the setting time of the concrete is increased a corresponding amount by the addition of an approved set-retarding admixture. In any case, concrete shall be conveyed from the mixer to the forms as rapidly as practicable by methods that prevent segregation of the aggregates and assure no loss of mortar occurs.

12. Placing

Concrete shall not be placed until the subgrade, forms, steel reinforcement, and embedded items have been inspected and approved. No concrete shall be placed except in the presence of the engineer. The contractor shall give reasonable notice to the engineer each time concrete is to be placed. Such notice shall provide sufficient time for the engineer to inspect the subgrade, forms, steel reinforcement, and other preparations for compliance with the specifications. Other preparations include, but are not limited to, the concrete mixing plant; delivery equipment system; placing, finishing, and curing equipment and system; schedule of work; workforce; and heating or cooling facilities, if applicable. Deficiencies are to be corrected before concrete is delivered for placing.

The concrete shall be deposited as closely as possible to its final position in the forms. It shall be worked into the corners and angles of the forms and around all reinforcement and embedded items in a manner to prevent segre- gation of aggregates or excessive laitance. Formed concrete shall be placed in horizontal layers not more than 20 inches thick. Concrete shall not be dropped more than 5 feet vertically unless suitable equipment is used to prevent segregation. When high range water reducing agents are used, the concrete shall not be allowed to drop more than 10 feet. Hoppers and chutes, pipes, or "elephant trunks" shall be used as necessary to prevent segregation and the splashing of mortar on the forms and reinforcing steel above the layer being placed.

Immediately after the concrete is placed in the forms, it shall be consolidated by spading, hand tamping, or vibra- tion as necessary to ensure a smooth surface and dense concrete. Each layer shall be consolidated to ensure mono- lithic bond with the preceding layer. If the surface of a layer of concrete in place sets to the degree that it will not flow and merge with the succeeding layer when spaded or vibrated, the contractor shall discontinue placing con- crete and shall make a construction joint according to the procedure specified in section 13.

If placing is discontinued when an incomplete horizontal layer is in place, the unfinished end of the layer shall be formed by a vertical bulkhead.

13. Construction joints

Construction joints shall be made at the locations shown on the drawings. If construction joints are needed that are not shown on the drawings, they shall be placed in locations approved by the engineer.

Where a feather edge would be produced at a construction joint, as in the top surface of a sloping wall, an insert form shall be used so that the resulting edge thickness on either side of the joint is not less than 6 inches.

In walls and columns, as each lift is completed, the top surface shall be immediately and carefully protected from any condition that might adversely affect the hardening of the concrete.

Steel tying and form construction adjacent to concrete in place shall not be started until the concrete has cured at least 12 hours. Before new concrete is deposited on or against concrete that has hardened, the forms shall be retightened. New concrete shall not be placed until the hardened concrete has cured at least 12 hours.

The surface of construction joints shall be cleaned of all unsatisfactory concrete, laitance, coatings, or debris by washing and scrubbing with a wire brush or wire broom or by other means approved by the engineer. The surface shall be kept moist for at least 1 hour before the new concrete is placed.

14. Expansion and contraction joints

Expansion and contraction joints shall be made only at locations shown on the drawings.

Exposed concrete edges at expansion and contraction joints shall be carefully tooled or chamfered, and the joints shall be free of mortar and concrete. Joint filler shall be left exposed for its full length with clean and true edges.

Preformed expansion joint filler shall be held firmly in the correct position as the concrete is placed.

When open joints are specified, they shall be constructed by the insertion and subsequent removal of a wooden strip, metal plate, or other suitable template in such a manner that the corners of the concrete are not chipped or broken. The edges of open joints shall be finished with an edging tool before the joint strips are removed.

15. Waterstops

Waterstops shall be held firmly in the correct position as the concrete is placed. Joints in metal waterstops shall be soldered, brazed, or welded. Joints in rubber or plastic waterstops shall be cemented, welded, or vulcanized as recommended by the manufacturer.

16. Removal of forms

Forms shall not be removed without the approval of the engineer. Forms shall be removed in such a way as to pre- vent damage to the concrete. Supports shall be removed in a manner that permits the concrete to take the stresses of its own weight uniformly and gradually.

17. Finishing formed surfaces

Immediately after the forms are removed:

a. All fins and irregular projections shall be removed from exposed surfaces.

b. The holes produced on all surfaces by the removal of form ties, cone-bolts, and she-bolts shall be cleaned, wetted, and filled with a dry-pack mortar. The mortar will consist of one part portland cement, three parts sand that will pass a No. 16 sieve, and just sufficient water to produce a consistency such that the filling is at the point of becoming rubbery when the material is solidly packed.

18. Finishing unformed surfaces

All exposed surfaces of the concrete shall be accurately screeded to grade and then float finished, unless specified otherwise.

Excessive floating or troweling of surfaces while the concrete is soft is not permitted.

Adding dry cement or water to the surface of the screeded concrete to expedite finishing is not allowed.

Joints and edges on unformed surfaces that will be exposed to view shall be chamfered or finished with molding tools.

19. Curing

Concrete shall be prevented from drying for a curing period of at least 7 days after it is placed. Exposed surfaces shall be kept continuously moist for the entire period, or until curing compound is applied as specified below. Moisture shall be maintained by sprinkling, flooding, or fog spraying, or by covering with continuously moistened canvas, cloth mats, straw, sand, or other approved material. Wood forms left in place during the curing period shall be kept continuously wet. A formed surface shall be thoroughly wetted immediately after forms are removed and

shall be kept wet until patching and repairs are completed. Water or covering shall be applied in such a way that the concrete surface is not eroded or otherwise damaged.

Concrete, except at construction joints, may be coated with the approved curing compound instead of continued application of moisture, except as otherwise specified in section 24. The compound shall be sprayed on the moist concrete surface as soon as free water has disappeared, but shall not be applied to any surface until patching, re- pairs, and finishing of that surface are completed. The compound shall be applied at a uniform rate of not less than 1 gallon per 175 square feet of surface and shall form a continuous adherent membrane over the entire surface.
Curing compound shall be thoroughly mixed before applying and continuously agitated during application. Curing compound shall not be applied to a surface requiring bond to subsequently placed concrete, such as construction joints, shear plates, reinforcing steel, and other embedded items. If the membrane is damaged during the curing period, the damaged area shall be resprayed at the rate of application specified above. Any surface covered by the membrane shall not be trafficked unless protected from wear.

20. Removal and replacement or repair

When concrete is honeycombed, damaged, or otherwise defective, the contractor shall remove and replace the structure or structural member containing the defective concrete or, where feasible, correct or repair the defective parts. The contracting officer determines the required extent of removal, replacement, or repair. Before starting re- pair work, the contractor shall obtain the contracting officer's approval of the plan for repairs. The contractor shall perform all repair work in the presence of the engineer.

21. Concreting in cold weather

Concrete shall not be mixed nor placed when the daily minimum atmospheric temperature is less than 40 degrees Fahrenheit unless facilities are provided to prevent the concrete from freezing. The use of accelerators or anti- freeze compounds is not allowed.

22. Concreting in hot weather

The contractor shall apply effective means to maintain the temperature of the concrete below 90 degrees Fahren- heit during mixing, conveying, and placing.

23. Measurement and payment

For items of work for which specific unit prices are established in the contract, concrete is measured to the neat lines shown on the drawings and the volume of concrete is computed to the nearest 0.1 cubic yard. Measurement of concrete placed against the sides of an excavation without using intervening forms is made only to the neatness or pay limits shown on the drawings. No deduction in volume is made for chamfers, rounded or beveled edges, or for any void or embedded item that is less than 5 cubic feet in volume.

Payment for each item of structure concrete is made at the contract unit price or the contract lump sum; whichever is applicable for that item. Such payment constitutes full compensation for all labor, material, equipment, transpor- tation, tools, forms, falsework, bracing, and all other items necessary and incidental to the completion of the work except items listed for payment elsewhere in the contract. Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made sub- sidiary. Such items and the items to which they are made subsidiary are identified in section 24 of this specification.

24. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

A. Bid Item No. 16 thru 18, Structure Concrete

(1) This item shall consist of all concrete and accessories required in the construction and installation of the concrete structures, the curbing and the pipe end treatment to the neat lines and grades as shown on the drawings.

(2) Cement shall be Type II conforming to the Material Specification 531.

(3) Fine aggregate shall conform to the gradation limits as specified in ASTM C 33.

(4) Coarse aggregate shall conform to the gradation limits of size number 57 or 67 as specified in ASTM C 33.

(5) The concrete shall be Class 4000M Concrete (4,000 psi @ 28 days).

(6) The structure shall be FDOT approved pre-cast structure as shown on the drawings. Shop drawings must be submitted to the engineer and approved prior to ordering structures.

(7) Reinforcement shall be steel reinforcement as shown on the drawings and as per this specification.

(8) Payment shall be made at the contract unit price.

(9) The inlet grate shall be H-20 traffic rated.

(10) Concrete slump shall be no greater than 4 inches.

Construction Specification 32-A—Asphalt

1. Scope

The work shall consist of furnishing, placing, and finishing the Asphalt and the base material as required to build the structures described in the "Items of Work…" section of this specification.

2. Asphalt Shoulder and Curbing Construction

All asphalt shoulders and curbing shall be constructed in accordance with the appropriate details on the construction drawings and with the Standard Specifications of the Florida Department of Transportation (Standard Specifications) as applicable.

2.1 Subgrade

Subgrade stabilization shall be done in accordance with applicable portions of the Standard Specifications. Unsuitable material such as roots, stumps, muck, etc., will be removed to at least a depth of 2 feet below the subgrade. The subgrade and shoulders shall be stabilized to a depth of 12 inches and a width of 3 feet beyond the curb. The stabilized area shall be free of muck, roots, stumps, and other objectionable material. The subgrade and shoulders shall be stabilized to obtain a minimum limerock bearing ratio of 40 and compacted to a minimum of 96% and an average of 98% of maximum density as determined by Modified Proctor ASTM D 1557. Compaction tests shall be done for every 500 linear feet of shoulder being constructed.

2.2 Excavation and Embankment

Excavation and embankment shall be done in accordance with appropriate sections of the Standard Specification to lines and grades indicated on the construction plans.

2.3 Curbing

The entire shoulder length along both sides of the roadway shall be constructed with asphalt curbs as indicated on the plans. The curb shall be of the header type, 6" wide and 6" high as indicated on the plans. The curb shall be machine placed with a mold to match the detail on the plans.

2.4 Base

Base shall be 6" thick Limerock as indicated on the plans. The material shall conform to the appropriate section of the Standard Specifications and shall be primed and constructed according to the appropriate section of the Standard Specifications. Thickness and density of the base shall be measured at intervals of not less than 200 feet, in holes through the base of not less than 3 inches in diameter. Where the compacted base in deficient by more than ½ inch, the contractor shall correct such areas by scarifying and adding material for a distance of 100 feet in each direction from the edge of the deficient area, and the affected area shall brought to the required state of compaction and to the required thickness and cross section. The base shall be compacted to 98% of maximum density as determined by Modified Proctor ASTM D 1557. Compaction tests shall be done for every 500 linear feet of shoulder being constructed.

2.5 Surfacing Asphalt

Type S-1 asphalt with a minimum thickness of 1-1/2" shall be installed along both sides of the roadway to create a shoulder as indicated on the plans. The asphalt shall meet all specifications as given in the appropriate section of the Standard Specifications, or equivalent, as determined by the engineer.

2.6 Inspection and Testing

During the construction, a field inspection of each phase will be made by the engineer or his designee. It is the contractor's responsibility to notify the engineer at least 48 hours before each phase of construction will be ready for inspection. All testing of subgrade, base, and asphalt as indicated on the plans and in this specification shall be done by a qualified testing company at the contractor's expense. Certified satisfactory test results must be submitted to the engineer at least 2 weeks prior to request for final payment of this item.

3. Measurement and payment

For items of work for which specific unit prices are established in the contract, asphalt is measured to the neat lines shown on the drawings and is computed to the nearest square yard. No deduction in volume is made for chamfers, rounded or beveled edges, or for any void or embedded item that is less than 5 cubic feet in volume.

Payment for asphalt is made at the contract unit price. Such payment constitutes full compensation for all labor, material, equipment, transportation, tools, forms, falsework, bracing, and all other items necessary and incidental to the completion of the work except items listed for payment elsewhere in the contract. Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 4 of this specification.

4. Items of Work and Construction Details

Items of work to be performed in conformance with this specification and the construction details therefor are:

A. Bid Item No. 19, Roadway Pavement

(1) This item shall consist of furnishing and installing 2" thick, SP-12.5 asphalt with 8" thick sand clay base within the designated driving surface areas to the neat lines and grades as shown on the drawings.

(2) Asphalt shall be Type SP-12.5 conforming to the Standard Specifications.

(3) Base material shall be 8" thick sand clay conforming to the Standard Specifications.

(4) Payment shall be made at the contract unit price.

Construction Specification 34—Steel Reinforcement

1. Scope

The work shall consist of furnishing and placing steel reinforcement for reinforced concrete or pneumatically ap- plied mortar.

2. Material

Steel reinforcement shall conform to the requirements of Material Specification 539, Steel Reinforcement (for con- crete). Before reinforcement is placed, the surface of the bars and fabric and any metal supports shall be cleaned to remove any loose, flaky rust, mill scale, oil, grease, or other undesirable coatings or foreign substances. Epoxy- coated steel reinforcement shall be free of surface damage. After placement, the reinforcement shall be maintained in a clean and serviceable condition until it is completely embedded within the concrete.

3. Bar schedule, lists and diagrams

Any supplemental bar schedules, bar lists or bar-bending diagrams required in section 10 of this specification to accomplish the fabrication and placement of steel reinforcement shall be provided by the contractor. Before rein- forcement is placed, the contractor shall furnish four copies of any such lists or diagrams to the contracting officer for approval. Acceptance of the reinforcement is not based on approval of these lists or diagrams, but on inspec- tion of the steel reinforcement after it has been placed, tied, and supported and is ready to receive concrete.

4. Bending

Reinforcement shall be cut and bent in compliance with the requirements of the American Concrete Institute Standard 315. Bars shall not be bent or straightened in a manner that will injure or weaken the material. Bars with kinks, cracks, or improper bends will be rejected.

5. Splicing bar reinforcement

Method 1—Splices of reinforcement shall be made only at locations shown on the drawings and provided by the steel schedule. Placement of bars at the lap splice locations shown, when not in contact, shall not be farther apart than one-fifth the shown lap length and in any case no greater than 6 inches.

Method 2—Splices of reinforcement shall be limited to those locations shown on the drawings. Splice lengths shall be determined before fabrication and meet the requirements of ACI Standard 318, Building Code Require- ments for Reinforced Concrete, based upon design information in section 10 of this specification. Bar placement drawings and schedules shall be provided for approval before fabrication. The drawings shall show all splice loca- tions, layouts, and lap dimensions.

6. Splicing welded wire reinforcement

Unless otherwise specified, welded wire reinforcement shall be spliced in the following manner:

End-to-end—Adjacent sections shall be spliced end-to-end (longitudinal lap) by overlapping a minimum of one full mesh plus 2 inches plus the length of the two end overhangs. The splice length is measured from the end of the longitudinal wires in one piece of fabric to the end of the longitudinal wire in the lapped piece of fabric.

Side-to-side—Adjacent sections shall be spliced side to side (transverse lap) a minimum of one full mesh plus 2 inches. The splice length shall be measured from the centerline of the first longitudinal wire in one piece of fabric to the centerline of the first longitudinal wire in the lapped piece of fabric.

7. Placing

Reinforcement shall be accurately placed and secured in position to prevent its displacement during the placement of concrete. Tack welding of bars is not permitted. Metal chairs, metal hangers, metal spacers, and concrete chairs may be used to support the reinforcement. Metal hangers, spacers, and ties shall be placed in such a manner that they are not exposed in the finished concrete surface. The legs of metal chairs or side form spacers that may be exposed on any face of slabs, walls, beams, or other concrete surfaces shall have a protective coating or finish. The coating or finish can be hot dip galvanizing, epoxy coating, plastic coating, or stainless steel. Metal chairs and spac- ers not fully covered by a protective coating or finish shall have a minimum cover of 0.75 inch of concrete over the unprotected metal part. The exception is that those with plastic coatings may have a minimum cover of 0.5 inch of concrete over the unprotected metal part. Precast concrete chairs shall be manufactured of the same class of con- crete as specified for the structure and shall have the tie wires securely anchored in the chair or a V-shaped groove at least 0.75 inch in depth molded into the upper surface to receive the steel bar at the point of support. Precast concrete chairs shall be clean and moist at the time concrete is placed.

High density or structural plastic rebar accessories designed to ensure maximum concrete bond may be substi- tuted for metal or concrete accessories in spacer applications as approved by the contracting officer. Exposure of plastic rebar accessories at the finished concrete surface shall be kept to a minimum. Plastic rebar accessories, when used, shall be staggered along adjacent parallel bars and shall be placed at intervals no closer than 12 inches. Plastic rebar accessories shall not be used in concrete sections 6 inches or less in thickness.

Reinforcement shall not be placed until the prepared site has been inspected and approved. After placement of the reinforcement, concrete shall not be placed until the reinforcement has been inspected and approved by the con- tracting officer's technical representative (COTR).

8. Storage

Steel reinforcement stored at the work site shall be placed on platforms, skids, or other supports. This is done so that contact with the ground is avoided and the material is protected from mechanical damage and/or corrosion.

9. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, the weight of steel re- inforcement placed in the concrete in accordance with the drawings is determined to the nearest pound by compu- tation from the placing drawings. Measurement of hooks and bends is based on the requirements of ACI Standard
315. Computation of weights of reinforcement is based on the unit weights established in tables 34–1 and 34–2 of this specification. Computation of weights for welded wire reinforcement not shown in table 34–2 shall be based on ACI Standard 315. The area of welded wire reinforcement placed in the concrete in accordance with the drawings is determined to the nearest square foot by computation from the placing drawings with no allowance for required laps. The weight of steel reinforcing in extra splices or extra-length splices approved for the convenience of the contractor or the weight of supports and ties is not included in the measurement for payment.

Payment for furnishing and placing reinforcing steel is made at the contract unit price. Such payment constitutes full compensation for all labor, material, equipment, and all other items necessary and incidental to the completion of the work including preparing and furnishing bar schedules, lists, or diagrams; furnishing and attaching ties and supports; and furnishing, transporting, storing, cutting, bending, cleaning, and securing all reinforcements.

Method 2—For items of work for which specific unit prices are established in the contract, the weight of bar rein- forcement placed in the concrete in accordance with the drawings is determined to the nearest pound by computa- tion from the placing drawings. Measurement of hooks and bends is based on the requirements of ACI Standard
315. Computation of weights of bar reinforcement is based on the unit weights established in table 34–1 of this specification. The weight of steel reinforcing in extra splices or extra length splices approved for the convenience of the contractor or the weight of supports and ties is not included in the measurement for payment.

The area of welded wire reinforcement placed in the concrete in accordance with the drawings is determined to the nearest square foot by computation from the placing drawings with no allowance for required laps.

Payment for furnishing and placing bar reinforcing steel is made at the contract unit price for bar reinforcement. Payment for furnishing and placing welded wire reinforcing steel is made at the contract unit price for welded wire reinforcement. Such payment constitutes full compensation for all labor, material, equipment, and all other items necessary and incidental to the completion of the work including preparing and furnishing bar schedules, lists, or diagrams; furnishing and attaching ties and supports; and furnishing, transporting, cutting, bending, cleaning, and securing all reinforcement.

All Methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item
of work to which it is made subsidiary. Such items to which they are made subsidiary are identified in section 10 of this specification.

Table 34–1 Standard reinforcing bars

- - Bar size designations - -		Weight (lb/ft)
English	**Metric**	
3	10	0.376
4	13	0.668
5	16	1.043
6	19	1.502
7	22	2.044
8	25	2.670
9	29	3.400
10	32	4.303
11	36	5.313
14	43	7.650
18	57	13.600

1/ The bar diameter (inches) equals the bar size number divided by eight. For example, the diameter of a #4 bar is 4÷8 = 0.5 inch.

2/ The metric bar size has been rounded to a whole number that represents the approximate diameter of the bar in millimeters.

Table 34–2 Rectangular welded wire reinforcement

Style designation [1/]		Weight
by W-number	by steel wire gauge (former designation)	(lb/100 ft²)
6 × 6 – W1.4 × W1.4	6 × 6 – 10 × 10	21
6 × 6 – W2.1 × W2.1	6 × 6 – 8 × 8	30
6 × 6 – W2.9 × W2.9	6 × 6 – 6 × 6	42
6 × 6 – W4.0 × W4.0	6 × 6 – 4 × 4	58
4 × 4 – W1.4 × W1.4	4 × 4 – 10 × 10	31
4 × 4 – W2.1 × W2.1	4 × 4 – 8 × 8	44
4 × 4 – W2.9 × W2.9	4 × 4 – 6 × 6	62
4 × 4 – W4.0 × W4.0	4 × 4 – 4 × 4	85
4 × 12 – W2.1 × W0.9 [2/]	4 × 12 – 8 × 12	25
4 × 12 – W2.5 × W1.1 [2/]	4 × 12 – 7 × 11	31

1/ Style designation is defined in ACI Standard 315 of the American Concrete Institute.

2/ Welded smooth wire reinforcement with wires smaller than size W1.4 is manufactured from galvanized wire.

10. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Subsidiary Item, Steel Reinforcement

(1) This item shall consist of furnishing and placing all reinforcement required in the construction of the improvements to the neat lines and grades as shown on the drawings.

(2) No separate payment shall be made for this item. Compensation shall be included in the payment for the respective bid items to which it is incidental.

Construction Specification 45—Plastic Pipe

1. Scope

The work consists of furnishing and installing plastic pipe (except corrugated polyethylene pipe) and the necessary fittings and appurtenances as shown on the drawings or as specified herein.

2. Material

Pipe, fittings, and gaskets shall conform to the requirements of Material Specification 547, Plastic Pipe, and as specified in section 14 of this specification or as shown on the drawings.

Perforated pipe shall conform to the requirements of Material Specification 547, Plastic Pipe, and as specified in section 14 of this specification or as shown on the drawings.

Unless otherwise specified, concrete shall conform to the requirements of Construction Specification 32, Structure Concrete, and section 8 of this specification.

Unless otherwise specified, earth backfill shall conform to the requirements of Construction Specification 23, Earthfill.

Unless otherwise specified, drainfill shall conform to the requirements of Construction Specification 24, Drainfill.

3. Handling and storage

Pipe shall be delivered to the job site and handled by means that provide adequate support to the pipe and do not subject it to undue stresses or damage. When handling and placing plastic pipe, care shall be taken to prevent im- pact blows, abrasion damage, and gouging or cutting (by metal edges and/or surface or rocks). The manufacturer's special handling requirements shall be strictly observed. Special care shall be taken to avoid impact when the pipe must be handled at a temperature of 40 degrees Fahrenheit or less.

Pipe shall be stored on a relatively flat surface so that the barrels are evenly supported. Unless the pipe is specifi- cally manufactured to withstand exposure to ultraviolet radiation, it shall be covered with an opaque material when stored outdoors for 15 days or longer.

4. Excavation

Excavation shall be in accordance with Construction Specification 21, Excavation, and section 14 of this specifica- tion or as shown on the drawings.

The pipe foundation shall be excavated a minimum of 4 inches lower than the pipe grade shown on the drawings or staked in the field whenever bedrock, boulders, cobbles, or other material that may cause pipe damage is encoun- tered at planned pipe grade.

5. Laying the pipe

Plastic pipe conduits complete with fittings and other related appurtenances shall be installed to the lines and grades shown on the drawings or specified in section 14 of this specification. The pipe shall be installed so that there is no reversal of grade between joints unless otherwise shown on the drawings. The pipe shall not be dropped or dumped on the bedding or into the pipe trench. The ground surface near the pipe trench shall be free of loose rocks and stones greater than 1 inch in diameter. This ensures that rock will not be displaced and impact the pipe.

Just before placement, each pipe section shall be inspected to ensure that all foreign material is removed from in- side the pipe. The pipe ends and the couplings shall be free of foreign material when assembled. At the completion of a work shift, all open ends of the pipeline shall be temporarily closed off using a suitable cover or plug.

Care shall be taken to prevent distortion and damage during hot or cold weather. During unusually hot weather (daytime high temperature of more than 90 °F), the pipe assembled in the trench shall be lightly backfilled or shaded to keep it as near to ground temperature as possible until final backfill is placed. Backfill operations should be performed during daily construction periods when the ground temperature and the temperature of the pipe do not vary more than 40 degrees Fahrenheit.

Perforated pipe shall be installed with the perforations down and oriented symmetrically about the vertical center-line. Perforations shall be clear of any obstructions on the inside and outside of the pipe when the pipe is approved by the engineer for backfill.

During installation, the pipe shall be firmly and uniformly bedded throughout its entire length, to the depth and in the manner specified in section 14 of this specification or as shown on the drawings. Bell-holes shall be placed in bedding material under bells, couplings, and other fittings to assure the pipe is uniformly supported throughout its entire length. Blocking or mounding beneath the pipe to bring the pipe to final grade is not permitted.

6. Pipe embedment

Earth bedding—The pipe shall be firmly and uniformly placed on compacted earthfill bedding or an inplace earth material bedding of ample bearing strength to support the pipe without noticeable settlement. The earth material on which the pipe is placed shall be of uniform density to prevent differential settlement.

Unless otherwise specified, a groove that closely conforms to the outside surface of the pipe shall be formed in the bedding. The depth of the groove shall be equal to or greater than 0.3 of the pipe diameter.

Earth bedding shall be compacted to a density not less than adjacent undisturbed inplace earth material or be com- pacted earth backfill. Earthfill material used for compacted earth bedding shall be free of rocks or stones greater than 1 inch in diameter and earth clods greater than 2 inches in diameter. The pipe shall be loaded sufficiently dur- ing the compaction of bedding under the haunches and around the sides of the pipe to prevent displacement from its final approved placement.

Sand, gravel, or crushed rock bedding—When sand, gravel, or crushed rock bedding is specified, the pipe shall be firmly and uniformly placed on the bedding material. Material for bedding shall not exceed 1 inch in diameter. Unless otherwise specified in section 14 of this specification or shown on the drawings, the coarse-grained bedding material shall be carefully placed and compacted to a depth equal to or greater than 0.3 of the diameter of the pipe above the bottom of the pipe. The pipe shall be loaded sufficiently during backfilling and compaction around the sides to prevent displacement of the pipe from its final approved placement.

Pipe encased in drainfill—The pipe shall be firmly and uniformly placed on bedding of specified drainfill. Drain- fill shall be placed and compacted as specified in section 14 of this specification or as shown on the drawings to form a continuous uniform support around the entire circumference of the pipe. The pipe shall be loaded sufficient- ly during backfilling around the sides and during compaction to prevent displacement of the pipe.

7. Backfill

Initial backfill—Unless otherwise specified, initial backfill to 6 inches above the top of the conduit is required. Earth haunching and initial backfill material shall consist of soil material that is free of rocks, stones, or hard clods more than 1 inch in diameter. Coarse backfill material shall be the specified sand, gravel, crushed rock, or drainfill material.

Initial backfill shall be placed in two stages. In the first stage (haunching), backfill is placed to the pipe spring line (center of pipe). In the second stage, it is placed to 6 inches above the top of the pipe.

The first stage material shall be worked carefully under the haunches of the pipe to provide continuous support throughout the entire pipe length. The haunching backfill material shall be placed in layers that have a maximum thickness of about 6 inches and are compacted as specified in section 14 of this specification or as shown on the drawings. During compaction operations, care shall be taken to ensure that the tamping or vibratory equipment does not come in contact with the pipe and the pipe is not deformed or displaced.

When pressure testing is not specified, the pipe shall be covered with a minimum of 6 inches of backfill material as soon as possible following assembling of the pipe in the trench, but not later than within the same day that place- ment has occurred. When pressure testing is specified, sufficient backfill material shall be placed over the pipe to anchor the conduit against movement during pressure testing activities.

Final backfill—Final backfill shall consist of placing the remaining material required to complete the backfill from the top of the initial backfill to the ground surface, including mounding at the top of the trench. Final backfill mate- rial within 2 feet of the top of the pipe shall be free of debris or rocks larger than 3 inches nominal diameter. Coarse backfill material shall be the specified sand, gravel, crushed rock, or drainfill. Final backfill shall be placed in ap- proximately uniform, compacted layers. Final backfill compaction requirements shall be as specified in section 14 of this specification or as shown on the drawings.

Vehicles or construction equipment shall not be allowed to cross the pipe until the minimum earth cover and re- quired density as specified in section 14 of this specification has been obtained.

8. Pipe encasement in concrete

Concrete encasement shall be carefully placed to form a continuous uniform support around the entire circum- ference of the pipe as specified in section 14 of this specification or as shown on the drawings. Pipes encased in concrete shall be securely anchored to prevent movement of the pipe during concrete placement. A clear distance of 1.5 inch shall be maintained between the pipe and the reinforcing steel.

The concrete for the encasement shall conform to the requirements of Construction Specification 32, Structure Concrete, for Class 3000M concrete unless otherwise specified.

9. Joints

Unless otherwise specified in section 14 of this specification or shown on the drawings, joints shall be either bell and spigot type with elastomeric gaskets, coupling type, solvent cement bell and spigot, or jointed by butt heat fu- sion. When a lubricant is required to facilitate joint assembly, it shall be a type having no deleterious affect on the gasket or pipe material.

Pipe joints shall be watertight at the pressures specified except where unsealed joints are indicated.

Pipe shall be installed and joined in accordance with the manufacturer's recommendations. Laying deflections and joint fitting or stab depths shall be within the manufacturer's recommended tolerances.

When solvent cement joints are specified for PVC or ABS pipe and fittings, they shall be made in accordance with the following ASTMs and the related appendix of each ASTM; D 2855 for PVC pipe and fittings and D 2235 for ABS pipe and fittings.

Flanged, banded, heat-fusion, or elastomeric-sealed mechanical joints shall be used when joining polyethylene (PE) and high density polyethylene (HDPE) pipe and fittings unless otherwise specified in section 14 of this specification or as shown on the drawings.

Pipe ends shall be cut square and be deburred to provide a uniform, smooth surface for the jointing process. Reference marks shall be placed on the spigot ends to assist in determining when proper seating depth has been achieved within the joint.

10. Fittings

Unless otherwise specified, steel fittings, valves, and bolted connections shall be painted or coated as recommend- ed by the manufacturer.

Fittings for nonpressure pipe shall be of the same or similar material as the pipe and shall provide the same dura- bility, watertightness, and strength as the pipe unless otherwise specified.

11. Thrust blocks and anchors

When specified, concrete thrust blocks and anchors shall be installed as shown on the drawings or specified in sec- tion 14 of this specification.

The concrete for the thrust blocks and anchors shall conform to the requirements of Construction Specification 32, Structure Concrete, for Class 3000M concrete unless otherwise specified in section 14 of this specification.

The thrust block cavity shall be hand dug into undisturbed soil or previously placed compacted backfill. The cavity shall be formed with soil or wood to hold the freshly placed concrete without displacement until an initial set has occurred.

When excavation beyond the designated trench widths and depths as shown on the drawings or specified in section 14 of this specification occurs at locations where installation of concrete thrust blocks is required, the contrac-
tor shall install an alternative thrust block provision. The concrete thrust block shall have a thickness of one pipe diameter and a contact face area that shall be formed against the pipe as shown on the drawings or specified in section 14 of this specification. Backfill shall be placed on all sides of the thrust block and to the sides of the exca- vation. It shall be compacted as specified for initial backfill.

12. Pressure testing

Method 1—Pressure testing of the completed conduit is not required.

Method 2—The conduit shall be tested for leaks in the following manner:

a. Before pressure testing:

(1) Joints of the assembled pipeline shall be allowed to cure as recommended by the manufacturer.

(2) Pipeline shall be flushed and cleaned.

(3) All concrete anchors and thrust blocks shall be in place and allowed to cure for a minimum of 3 days.

(4) Earth backfill shall be sufficient to anchor the conduit against movement during the pressure testing and shall be compacted as specified in Section 14 of this specification or as shown on the drawings.

(5) The conduit shall be braced, anchored, or both, at each end to restrict all potential pipe movement.

(6) The ends of the conduit shall be plugged. The upstream plug shall have a standpipe installed vertically having a minimum diameter of 2 inches and shall be equipped with a shutoff valve. All high points in the line shall be vented to evacuate air pockets. The conduit and the standpipe shall be slowly filled with water such that no air is entrapped during the filling operation. After filling is complete, all vents shall be closed.

b. During pressure testing, the water level in the standpipe shall be continuously maintained at a minimum of 10 feet above the highest invert elevation of the conduit for no less than 2 hours unless otherwise specified in section 14 of this specification or as shown on the drawings.

The volume of water leakage in the 2-hour test period shall be recorded. The maximum allowable leakage (L) in gallons per hour shall not exceed 0.02 times the nominal pipe diameter (D) in inches for each 1,000 feet of pipe line, which is about 50 pipe joints (L = 0.02 x D).

c. When observed leakage exceeds the allowable, leaks shall be sealed by replacement of pipe and fittings as necessary. The conduit shall be retested as described above. This procedure shall be repeated until the conduit leakage does not exceed the allowable specified above.

The contractor shall be fully responsible for any and all work required to correct leakage exceeding the amount specified.

Method 3—The conduit shall be tested for leaks in the following manner:

a. Before pressure testing:

(1) Joints of the assembled pipeline shall be allowed to cure as recommended by the manufacturer.

(2) Pipeline shall be flushed and cleaned.

(3) All concrete anchor and thrust blocks shall be in place and allowed to cure for at least 3 days.

(4) Earth backfill shall be sufficient to anchor the conduit against movement during the pressure testing and compacted as specified in section 14 of this specification or as shown on the drawings.

(5) The conduit shall be braced and/or anchored at each end to prevent all potential pipe movement.

(6) The ends of the conduit shall be plugged, and a pressure gauge shall be attached to the upstream and downstream ends. All high points along the pipeline shall be vented to permit the complete removal of all air within the pipeline. The conduit shall be slowly filled with water such that no air is entrapped during the filling operations.

b. The testing pressure specified in section 14 of this specification shall be continuously maintained at the upstream gauge for a minimum of 2 hours. The pressure at the downstream gauge shall not exceed the pressure rating of the pipe.

c. The volume of water leakage for the 2-hour test period shall be recorded. Maximum allowable leakage shall be in accordance with the following:

Allowable leakage for plastic pipe (gal/hr/1,000 feet, or 50 pipe joints) 1/

Nominal (in)	Test pressure in the pipeline (lb/in²) pipe size - - - - - - - - Allowable leakage - - - - - - -			50	100	150	200
4	.19	.27	.33	.38			
6	.29	.41	.50	.57			
8	.38	.54	.66	.76			
10	.48	.68	.83	.96			
12	.57	.81	.99	1.15			
14	.67	.95	1.16	1.34			
15	.72	1.02	1.25	1.44			
16	.76	1.07	1.32	1.52			
18	.86	1.22	1.49	1.72			

1/ Computation basis

$$L = \frac{\sqrt{ND\,P}}{7,400}$$

where:

L = allowable leakage in gallons per hour N = number of joints (pipe and fittings)
D = nominal diameter of pipe in inches
P = test pressure in pounds per square inch

d. When observed leakage exceeds the allowable, leaks shall be sealed by replacement of pipe and fittings as necessary. The conduit shall be retested as described in this section. The procedure shall be repeated until the conduit leakage does not exceed the allowable specified above.

The contractor shall be fully responsible for any and all work required to correct leakage exceeding the amount specified.

13. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, the quantity of each kind, size, and class of pipe is determined to the nearest foot by measurement of the laid length along the crown centerline of the conduit. Payment for each kind, size, and class of pipe is made at the contract unit price for that kind, size, and class. Such payment constitutes full compensation for furnishing, transporting, and installing the pipe including excavation, shoring, backfill, bedding, thrust blocks, and all fittings, appurtenances, and other items necessary and incidental to the completion of the work. Payment for appurtenances listed separately in the bid schedule is made at the contract prices for those items.

Method 2—For items of work for which specific unit prices are established in the contract, the quantity of each kind, size, and class of pipe is determined as the sum of the nominal laying lengths of the sections used. Payment for each kind, size, and class of pipe is made at the contract unit price for the kind, size, and class. Such payment constitutes full compensation for furnishing, transporting, and installing the pipe including excavation, shoring, backfill, bedding, thrust blocks, and all fittings, appurtenances, and other items necessary and incidental to the completion of the work. Payment for appurtenances listed separately in the bid schedule is made at the contract prices for those items.

Method 3—For items of work for which specific unit prices are established in the contract, the quantity of each kind, size, and class of pipe is determined to the nearest foot by measurement of the laid length along the crown centerline of the conduit. Payment for each kind, size, and class of pipe is made at the contract unit price for the kind, size, and class. Such payment constitutes full compensation for furnishing, transporting, and installing the pipe including shoring, all fittings, thrust blocks, appurtenances, and other items necessary and incidental to the completion of the work. Payment for appurtenances listed separately in the bid schedule is made at the contract prices for those items.

Method 4—For items of work for which specific unit prices are established in the contract, the quantity of each kind, size, and class of pipe is determined as the sum of the nominal laying lengths of the pipe sections used. Pay- ment for each kind, size, and class of pipe is made at the contract unit price for that kind, size, and class. Such payment constitutes full compensation for furnishing, transporting, and installing the pipe including shoring, all fittings, thrust blocks, appurtenances, and other items necessary and incidental to the completion of the work. Pay- ment for appurtenances listed separately in the bid schedule is made at the contract prices for those items.

Methods 3 and 4—Excavation, backfill, and bedding is paid separately under their respective bid items.

All measurement and payment methods—Compensation for any items of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Such items and items to which they are made subsidiary are identified in section 14 of this specification.

14. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Bid Item No. 21 – Plastic Pipe

(1) This item shall consist of furnishing and installing all ADS Storm according to the detail and to the neat lines and grades as shown on the drawings.

(2) The pipe shall be installed according to the manufacturer's recommendations.

Construction Specification 61—Rock Riprap

1. Scope

The work shall consist of the construction of rock riprap revetments and blankets, including filter or bedding where specified.

2. Material

Rock riprap shall conform to the requirements of Material Specification 523, Rock for Riprap, or if so specified, shall be obtained from designated sources. It shall be free from dirt, clay, sand, rock fines, and other material not meeting the required gradation limits.

At least 30 days before rock is delivered from other than designated sources, the contractor shall designate in writ- ing the source from which rock material will be obtained and provide information satisfactory to the contracting officer that the material meets contract requirements. The contractor shall provide the contracting officer's techni- cal representative (COTR) free access to the source for the purpose of obtaining samples for testing. The size and grading of the rock shall be as specified in section 8.

Rock from approved sources shall be excavated, selected, and processed to meet the specified quality and grading requirements at the time the rock is installed.

Based on a specific gravity of 2.65 (typical of limestone and dolomite) and assuming the individual rock is shaped midway between a sphere and a cube, typical size/weight relationships are:

Sieve size of rock	Approx. weight of rock	Weight of test pile
16 inches	300 pounds	6,000 pounds
11 inches	100 pounds	2,000 pounds
6 inches	15 pounds	300 pounds

When specified in Section 8 or when it is necessary to verify the gradation of the rock riprap, a particle size analysis shall be performed in accordance with ASTM D5519, Test Method A or B. The analysis shall be performed at the work site on a test pile of representative rock. The mass of the test pile shall be at least 20 times the mass of the largest rock in the pile.

The results of the test shall be compared to the gradation required for the project. Test pile results that do not meet the construction specifications shall be cause for the rock to be rejected. The test pile that meets contract require- ments shall be left on the job site as a sample for visual comparison. The test pile shall be used as part of the last rock riprap to be placed.

Filter or bedding aggregates when required shall conform to Material Specification 521, Aggregates for Drainfill and Filters, unless otherwise specified. Geotextiles shall conform to Material Specification 592, Geotextile.

3. Subgrade preparation

The subgrade surface on which the rock riprap, filter, bedding, or geotextile is to be placed shall be cut or filled and graded to the lines and grades shown on the drawings. When fill to subgrade lines is required, it shall consist of ap- proved material and shall conform to the requirements of the specified class of earthfill.

Rock riprap, filter, bedding, or geotextile shall not be placed until the foundation preparation is completed and the subgrade surface has been inspected and approved.

4. Equipment-placed rock riprap

The rock riprap shall be placed by equipment on the surface and to the depth specified. It shall be installed to the full course thickness in one operation and in such a manner as to avoid serious displacement of the underlying material. The rock for riprap shall be delivered and placed in a manner that ensures the riprap in place is reason- ably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks and spalls filling the voids between the larger rocks. Some hand placing may be required to provide a neat and uniform surface.

Rock riprap shall be placed in a manner to prevent damage to structures. Hand placing is required as necessary to prevent damage to any new and existing structures.

5. Hand placed rock riprap

The rock riprap shall be placed by hand on the surface and to the depth specified. It shall be securely bedded with the larger rocks firmly in contact one to another without bridging. Spaces between the larger rocks shall be filled with smaller rocks and spalls. Smaller rocks shall not be grouped as a substitute for larger rock. Flat slab rock shall be laid on its vertical edge except where it is laid like paving stone and the thickness of the rock equals the speci- fied depth of the riprap course.

6. Filter or bedding

When the contract specifies filter, bedding, or geotextile beneath the rock riprap, the designated material shall be placed on the prepared subgrade surface as specified. Compaction of filter or bedding aggregate is not required, but the surface of such material shall be finished reasonably smooth and free of mounds, dips, or windrows.

7. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, the quantity of each type of rock riprap placed within the specified limits is computed to the nearest ton by actual weight. The volume of each type of filter or bedding aggregate is measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas. For each load of rock riprap placed as specified, the contractor shall furnish to the COTR a statement-of-delivery ticket showing the weight to the nearest 0.1 ton.

Payment is made at the contract unit price for each type of rock riprap, filter, or bedding. Such payment is consid- ered full compensation for completion of the work.

Method 2—For items of work for which specific unit prices are established in the contract, the quantity of each type of rock riprap placed within the specified limits is computed to the nearest 0.1 ton by actual weight. The quantity of each type of filter or bedding aggregate delivered and placed within the specified limits is computed to the nearest 0.1 ton. For each load of rock riprap placed as specified, the contractor shall furnish to the engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton. For each load of filter or bedding aggregate, the contractor shall furnish to the COTR a statement-of-delivery ticket showing the weight to the nearest 0.1 ton.

Payment is made at the contract unit price for each type of rock riprap, filter, or bedding. Such payment is consid- ered full compensation for completion of the work.

Method 3—For items of work for which specific unit prices are established by the contract, the volume of each type of rock riprap and filter or bedding aggregate is measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas.

Payment is made at the contract unit price for each type of rock riprap, filter, or bedding. Such payment is consid- ered full compensation for completion of the work.

Method 4—For items of work for which specific unit prices are established by the contract, the volume of each type of rock riprap, including filter and bedding aggregate, is measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas.

Payment is made at the contract unit price for each type of rock riprap, including filter and bedding. Such payment is considered full compensation for completion of the work.

Method 5—For items of work for which specific unit prices are established by the contract, the quantity of each type of rock riprap placed within the specified limits is computed to the nearest ton by actual weight. For each load of rock for riprap placed as specified, the contractor shall furnish to the COTR a statement-of-delivery ticket show- ing the weight to the nearest 0.1 ton.

Payment is made at the contract unit price for each type of rock riprap, including geotextile used for filter or bed- ding. Such payment is considered full compensation for completion of the work.

Method 6—For items of work for which specific unit prices are established by the contract, the volume of each type of rock riprap is measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas.
Payment is made at the contract unit price for each type of rock riprap, including geotextile used for filter or bed- ding. Such payment is considered full compensation for completion of the work.

All methods—The following provision applies to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identi- fied in section 8.
No separate payment is made for testing the gradation of the test pile. Compensation for testing is included in the appropriate bid item for riprap.

8. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Bid Item No. 22 and 23, Rock Riprap

(1) This item shall consist of furnishing and installing the loose bedding stone and rock riprap to the neat lines and grades as shown on the drawings.

(2) All excavation and shaping required to prepare the foundation for rock placement and backfill around the completed installation shall be considered as included in this item.

(3) Riprap may be equipment placed with hand work to fill voids and provide uniformity. Hand placement of the rock will be required where adjacent to any structure.

(4) The riprap shall be a durable stone with a minimum unit weight of 165 pounds per cubic foot. Riprap gradation shall conform to the requirements of Class 2 riprap, Alabama Highway Department Standard Specification for Highway Construction, Section 814 (Current Edition). Stone for Class 2 riprap shall consist of reasonably well graded durable rock ranging from 6” to 20”. No more than 10% greater than 16”; no more than 50% less than 12”; no more than 10% less than 6”.

(5) The bedding stone shall be a durable stone with a minimum unit weight of 165 pounds per cubic foot. Stone shall be reasonably graded to allow for proper protection of the geotextile while placing the Class 2 riprap. Size shall range between 2 and 6 inches.

(6) Written material certification for the rock riprap will not be required unless there is reasonable doubt that the item proposed for use meets the requirements of this specification.

(7) Measurement and payment shall be by method 5.

Construction Specification 94—Contractor Quality Control

1. Scope

The work consists of developing, implementing, and maintaining a quality control system to ensure that the speci- fied quality is achieved for all materials and work performed.

2. Equipment and materials

Equipment and material used for quality control shall be of the quality and condition required to meet the test specifications cited in the contract. Testing equipment shall be properly adjusted and calibrated at the start of op- erations and the calibration maintained at the frequency specified. Records of equipment calibration tests shall be available to the engineer at all times. Equipment shall be operated and maintained by qualified operators as pre- scribed in the manufacturer's operating instructions, the references specified, and as specified in section 10 of this specification. All equipment and materials used in performing quality control testing shall be as prescribed by the test standards referenced in the contract or in section 10.

All equipment and materials shall be handled and operated in a safe and proper manner and shall comply with all applicable regulations pertaining to their use, operation, handling, storage, and transportation.

3. Quality control system

Method 1—The contractor shall develop, implement, and maintain a system of quality control to provide the speci- fied material testing and verification of material quality before use. The system activities shall include procedures to verify adequacy of completed work, initiate corrective action to be taken, and document the final results. The identification of the quality control personnel and their duties and authorities shall be submitted to the contracting officer in writing within 15 calendar days after notice of award.

Method 2—The contractor shall develop, implement, and maintain a system adequate to achieve the specified quality of all work performed, material incorporated, and equipment furnished before use. The system established shall be documented in a written plan developed by the contractor and approved by the contracting officer. The system activities shall include the material testing and inspection needed to verify the adequacy of completed work and procedures to be followed when corrective action is required. Daily records to substantiate the conduct of the system shall be maintained by the contractor. The quality control plan shall cover all aspects of quality control and shall address, as a minimum, all specified testing and inspection requirements. The plan provided shall be consis- tent with the planned performance in the contractor's approved construction schedule. The plan shall identify the contractor's onsite quality control manager and provide an organizational listing of all quality control personnel and their specific duties. The written plan shall be submitted to the contracting officer within 15 calendar days after notice of award. The contractor shall not proceed with any construction activity that requires inspection until the written plan is approved by the contracting officer.

All methods—The quality control system shall include, but not be limited to, a rigorous examination of construc- tion material, processes, and operation, including testing of material and examination of manufacturer's certifica- tions as required, to verify that work meets contract requirements and is performed in a competent manner.

4. Quality control personnel

Method 1—Quality control activities shall be accomplished by competent personnel. A competent person is: One who is experienced and capable of identifying, evaluating, and documenting that materials and processes being used will result in work that complies with the contract; and, who has authority to take prompt action to remove, replace, or correct such work or products not in compliance. Off-site testing laboratories shall be certified or in- spected by a nationally recognized entity. The Contractor shall submit to the Contracting Officer, for approval, labo- ratory certification or inspection information. The Contractor shall submit to the Contracting Officer, for approval, the names, qualifications, authorities, certifications, and availability of the competent personnel who will perform the quality control activities.

Method 2—Quality control activities shall be accomplished by competent personnel who are separate and apart from line supervision and who report directly to management. A competent person is one who is experienced and capable of identifying, evaluating, and documenting that material and processes being used will result in work that complies with the contract, and who has authorization to take prompt action to remove, replace, or correct
such work or products not in compliance. Offsite testing laboratories shall be certified or inspected by a nationally recognized entity. The Contractor shall submit to the Contracting Officer, for approval, laboratory certification or inspection information. The contractor shall submit to the contracting officer, for approval, the names, qualifica- tions, authorities, certifications, and availability of the competent personnel who will perform the quality control activities.

5. Post-award conference

The contractor shall meet with the contracting officer before any work begins and discuss the contractor's quality control system. The contracting officer and the contractor shall develop a mutual understanding regarding the qual- ity control system, including procedures for correcting quality control issues.

6. Records

The contractor's quality control records shall document both acceptable and deficient features of the work and corrective actions taken. All records shall be on forms approved by the contracting officer, be legible, and be dated and signed by the competent person creating the record.

Unless otherwise specified in section 10 of this specification, records shall include:

a. Documentation of shop drawings including date submitted to and date approved by the contracting officer, results of examinations, any need for changes or modifications, manufacturer's recommendations and certi- fications, if any, and signature of the authorized examiner.

b. Documentation of material delivered including quantity, storage location, and results of quality control examinations and tests.

c. Type, number, date, time, and name of individual performing quality control activities.

d. The material or item inspected and tested, the location and extent of such material or item, and a descrip- tion of conditions observed and test results obtained during the quality control activity.

e. The determination that the material or item met the contract provisions and documentation that the engi- neer was notified.

f. For deficient work, the nature of the defects, specifications not met, corrective action taken, and results of quality control activities on the corrected material or item.

7. Reporting results

The results of contractor quality control inspections and tests shall be communicated to the engineer immediately upon completion of the inspection or test. Unless otherwise specified in section 10, the original plus one copy of all records, inspections, tests performed, and material testing reports shall be submitted to the engineer within one

working day of completion. The original plus one copy of documentation of material delivered shall be submitted to the engineer before the material is used.

8. Access

The contracting officer and the engineer shall be given free access to all testing equipment, facilities, sites, and related records for the duration of the contract.

9. Payment

Method 1—For items of work for which lump sum prices are established in the contract, payment is made as the work proceeds, after presentation by the contractor of invoices showing related costs and evidence of charges by suppliers, subcontractors, and others for furnishing supplies and work performed. If the total of such payments is less than the lump sum contract price for this item, the remaining balance is included in the final contract payment. Payment of the lump sum contract price constitutes full compensation for completion of the work.

Payment is not made under this item for the purchase cost of material and equipment having a residual value.

Method 2—For items of work for which lump sum prices are established in the contract, payment is prorated and paid in equal amounts on each monthly estimate. The number of months used for prorating shall be the number estimated to complete the work. The final month's prorate amount is made with the final payment. Payment as described above constitutes full compensation for completion of the work.

Payment is not made under this item for the purchase cost of material and equipment having a residual value.

All methods—Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 10.

10. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Bid Item No. 24, Contractor Quality Control

(1) This item shall consist of the contractor providing and maintaining an effective quality control program on all items of work included in this contract. This shall include all required testing and all means necessary for verification that the work meets the requirements of the drawings and specifications.
(2) In Section 3, Quality Control System, Method 2 shall apply
(3) In Section 4, Quality Control Personnel, Method 2 shall apply.
(4) The burden of proof that the work performed meets contract requirements is the contractor's.
(5) Inspection is defined as a rigorous examination of construction materials, processes, and operations to verify that work meets contract requirements.
(6) The contractor's inspection system shall be approved by the contracting officer and be operational before commencement of work.
(7) Quality control tests shall be conducted in accordance with the standard test methods identified in the specifications and on the drawings.
(8) Payment shall be made by Method 1.

Construction Specification 95—Geotextile

1. Scope

This work consists of furnishing all material, equipment, and labor necessary for the installation of geotextiles.

2. Quality

Geotextiles shall conform to the requirements of Material Specification 592 and this specification.

3. Storage

Before use, the geotextile shall be stored in a clean, dry location out of direct sunlight, not subject to extremes of either hot or cold temperatures, and with the manufacturer's protective cover undisturbed. Receiving, storage, and handling at the job site shall be in accordance with the requirements listed in ASTM D 4873.

4. Surface preparation

The surface on which the geotextile is to be placed shall be graded to the neat lines and grades as shown on the drawings. It shall be reasonably smooth and free of loose rock and clods, holes, depressions, projections, muddy conditions, and standing or flowing water (unless otherwise specified in section 7 of this specification).

5. Placement

Before the geotextile is placed, the soil surface will be reviewed for quality assurance of the design and construc- tion. The geotextile shall be placed on the approved prepared surface at the locations and in accordance with the details shown on the drawings and specified in section 7 of this specification. It shall be unrolled along the place- ment area and loosely laid, without stretching, in such a manner that it conforms to the surface irregularities when material or gabions are placed on or against it. The geotextile may be folded and overlapped to permit proper placement in designated area(s).

Method 1—The geotextile shall be joined by machine sewing using thread material meeting the chemical require- ments for the geotextile fibers or yarn. The sewn overlap shall be 6 inches, and the sewing shall consist of two parallel stitched rows at a spacing of about 1 inch and shall not cross (except for any required re-stitching). The stitching shall be a lock-type stitch. Each row of stitching shall be located a minimum of 2 inches from the geotex- tile edge. The seam type and sewing machine to be used shall produce a seam strength, in the specified geotextile, that provides a minimum of 90 percent of the tensile strength in the weakest principal direction of the geotextile being used, when tested in accordance with ASTM D 4884. The seams may be factory or field sewn.

The geotextile shall be temporarily secured during placement of overlying material to prevent slippage, folding, wrinkling, or other displacement of the geotextile. Unless otherwise specified, methods of securing shall not cause punctures, tears, or other openings to be formed in the geotextile.

Method 2—The geotextile shall be joined by overlapping a minimum of 18 inches (unless otherwise specified) and secured against the underlying foundation material. Securing pins, approved and provided by the geotextile manufacturer, shall be placed along the edge of the panel or roll material to adequately hold it in place during installation. Pins shall be steel or fiberglass formed as a **U**, **L**, or **T** shape or contain "ears" to prevent total penetra- tion through the geotextile. Steel washers shall be provided on all but the U-shaped pins. The upstream or upslope geotextile shall overlap the abutting downslope geotextile. At vertical laps, securing pins shall be inserted through the bottom layers along a line through approximately the mid-point of the overlap. At horizontal laps and across
slope labs, securing shall be inserted through the bottom layer only. Securing pins shall be placed along a line about

2 inches in from the edge of the placed geotextile at intervals not to exceed 12 feet unless otherwise specified. Ad- ditional pins shall be installed as necessary and where appropriate to prevent any undue slippage or movement of the geotextile. The use of securing pins will be held to the minimum necessary. Pins are to remain in place unless otherwise specified.

Should the geotextile be torn or punctured, or the overlaps or sewn joint disturbed, as evidenced by visible geotex- tile damage, subgrade pumping, intrusion, or grade distortion, the backfill around the damaged or displaced area shall be removed and restored to the original approved condition. The repair shall consist of a patch of the same type of geotextile being used and overlaying the existing geotextile. When the geotextile seams are required to be sewn, the overlay patch shall extend a minimum of 1 foot beyond the edge of any damaged area and joined by sew- ing as required for the original geotextile except that the sewing shall be a minimum of 6 inches from the edge of the damaged geotextile. Geotextile panels joined by overlap shall have the patch extend a minimum of 2 feet from the edge of any damaged area.

Geotextile shall be placed in accordance with the following applicable specification according to the use indicated in section 7:

Slope protection—The geotextile shall not be placed until it can be anchored and protected with the speci- fied covering within 48 hours or protected from exposure to ultraviolet light. In no case shall material be dropped on uncovered geotextile from a height of more than 3 feet.

Subsurface drains—The geotextile shall not be placed until drainfill or other material can be used to pro- vide cover within the same working day. Drainfill material shall be placed in a manner that prevents damage to the geotextile. In no case shall material be dropped on uncovered geotextile from a height of more than 5 feet.

Road stabilization—The geotextile shall be unrolled in a direction parallel to the roadway centerline in a loose manner permitting conformation to the surface irregularities when the roadway fill material is placed on its surface. In no case shall material be dropped on uncovered geotextile from a height of more than 5 feet. Unless otherwise specified, the minimum overlap of geotextile panels joined without sewing shall be 24 inches. The geotextile may be temporarily secured with pins recommended or provided by the manufac- turer, but they shall be removed before the permanent covering material is placed.

6. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, the quantity of geotextile for each type placed within the specified limits is determined to the nearest specified unit by measurements of the covered surfaces only, disregarding that required for anchorage, seams, and overlaps. Payment is made at the contract unit price. Such payment constitutes full compensation for the completion of the work.

Method 2—For items of work for which specific unit prices are established in the contract, the quantity of geotex- tile for each type placed with the specified limits is determined to the nearest specified unit by computing the area of the actual roll size or partial roll size installed. The computed area will include the amount required for overlap, seams, and anchorage as specified. Payment is made at the contract unit price. Such payment constitutes full com- pensation for the completion of the work.

Method 3—For items of work for which specific lump sum prices are established in the contract, the quantity of geotextile is not measured for payment. Payment for geotextiles is made at the contract lump sum price and consti- tutes full compensation for the completion of the work.

All methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 7 of this specification.

7. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Subsidiary Item, Geotextile

(1) This specification covers furnishing all materials and the installation of the geotextile according to the drawings to include (but not limited to) around the pipe joints, beneath the concrete, and beneath the rock rip rap.

(2) Geotextile shall be woven, Class I with a opening of a U.S. Standard Sieve No. 70. The geotextile shall have a minimum unit weight of 5.6 ounces per square yard. The geotextile shall be equal to the Mirafi Filterweave 700. Equal in this case includes the softness and pliability as exhibited by the Filterweave 700.

(3) Placement of the geotextile shall be according to Method 1 as set forth in Section No. 5 of this specification.

(4) The geotextile shall be anchored along all edges as indicated on the drawings. If not indicated on the drawings, the geotextile shall at minimum be anchored by one of the following methods as applicable:

(a) At rock edges: The geotextile shall be lapped into the rock with minimum 1 foot cover and a minimum of 3 feet of embedment.

(b) At structures: The geotextile shall be secured to the structure with liquid nails or equivalent type epoxy.

(c) At pipe joints: The geotextile shall be fastened to the pipe using heavy duty industrial strength tie straps or equivalent.

(5) No separate payment shall be made for this item. Compensation shall be included in the payment for the respective bid items to which it is incidental.

Construction Specification 440—Vegetative Measures

1. Scope

The work shall consist of preparing the area for treatment, and placing seed, sod, mulch, fertilizer, lime, and irrigation as specified in the designated areas.

2. Materials

Seed used shall be in accordance with the rules and regulations under each Florida Seed Law in effect on the date of Invitation of Bids. Each container of seed shall be labeled as follows:

a. lot number
b. name of the kind or kind and variety
c. percentages of pure seed, other crop seed, weed seeds, and inert matter
d. percentage of germination, and hard seeds (if any)
e. date tested (month and year)
f. names and number per pound of noxious weed seed
g. name and address of shipper

All seed shall be furnished in sealed standard containers, unless exception is granted in writing. Seed shall be thoroughly recleaned, and of uniformly good quality and appearance throughout each container. Seed which has become wet, moldy, or otherwise damaged in transit or in storage will not be acceptable. Each lot of seed shall be subject to sampling and testing. The seed shall contain no prohibited noxious weed seed. The total number of all restricted weed shall not exceed 300 per pound. Method of scarification shall be mechanical. Seeds shall conform to the quality requirements as shown in the following table:

Name of Seed or Mixture	Minimum Percent Pure Seed	Minimum Percent Germination and Hard Seed	Maximum Percent Weed Seed
Argentine Bahiagrass (50% scarified)	80	70	1.00
Rye	95	90	0.50
Browntop Millet	98	85	0.50
Common Bermudagrass (Hulled)	80	70	1.00

Argentine Bahiagrass, common bermudagrass, and a nurse crop of rye shall be used if planting is done between September and February. Argentine Bahiagrass, Common Bermudagrass, and a nurse crop of Browntop Millet shall be used if the seeding is done between March and August.

Sod shall be Argentine Bahiagrass and shall be 12-inch by 12-inch squares or other commercially available rectangles. The sod shall be sufficiently thick (minimum thickness of 2 inches) to provide a dense stand of live grass. The sod shall have been grown on a mineral soil. Sod shall be live, fresh, and uninjured at the time of planting and shall be protected from drying out by shading and watering from the time it is dug until it is planted.

Mulch materials, where seeding and mulching will be done, shall be straw or hay from any native clippings or other plants approved by the Engineer. The mulch material shall be air dry, and shall not be musty, moldy, caked or otherwise of low quality. The mulch material shall be free of seeds of competing plants and noxious weeds.

Fertilizer shall be either in the liquid or dry form. Fertilizer shall be uniform in composition, free-flowing and suitable for application with standard equipment. The fertilizer shall conform to the Florida Fertilizer Laws in effect on the date of the Invitation for Bids and shall be delivered in bags, bottles, drums, or other convenient containers, each fully labeled and bearing the name, trademark, analysis, and warranty of the product. Fertilizer equivalent plant food value and shall be mixed with the top 3 or 4 inches of soil.

Lime shall be Dolomitic limestone, and shall be in accordance with rules and regulations of Florida Fertilizer Law in effect on the date for Invitation for Bids.

Staples for sod placed on side slopes steeper than 3:1 shall be black iron wire not smaller than 14 gauge, and bent from a length of wire at least 25 inches long into a "U" with 1-inch width at the crown.

Water used for irrigation may be obtained from any approved source. It shall be free of excess and harmful chemicals, acids, alkalies, or any substance which is harmful to plant growth.

3. Site Preparation

Site preparation shall include preparing seedbeds to a depth of 3 to 4 inches. Fertilizer and lime shall be uniformly spread over the area and incorporated to a depth of 3 to 4 inches. Fertilizer shall be applied at the rate of 800 pounds per acre or 16 pounds per 1000 square feet of 13-13-13 or equivalent. Lime shall be applied at the rate of one ton per acre or 45 pounds per 1000 square feet.

Where sodding will be done, all loose rock, woody material and other obstructions that will interfere with sodding shall be removed and the area shall be reasonably smooth and uniform. Lime and fertilizer shall be applied in the same quantity and manner as for seeding.

4. Vegetative Treatment

Vegetative Treatment required by this specification shall consist of performing the items specified in the manner designated below:

Seeding and Mulching shall consist of site preparation, seeding, and mulching at the rates and manner described in this specification. All disturbed areas not sodded will be seeded and mulched. The seeding rate shall be:

Bahiagrass	- 50 lbs/ac or 1.1 lbs/1000 sq.ft.
Common Bermuda Grass	- 20 lbs/ac or 0.7 lbs/1000 sq.ft.
Sept. – Feb.	
Rye	- 56 lbs/ac or 1.3 lbs/1000 sq.ft.
Mar. – Aug.	
Browntop Millet	- 25 lbs/ac or 0.5 lbs/1000 sq.ft.

The seed shall be uniformly spread over the area and covered ½ to 1-inch deep.

After the seeding has been done, uniformly spread 2 tons of mulch per acre rate over the area so that 25 percent of the ground surface is visible. The mulch shall be anchored into the soil, which may be done by cutting the mulch to a depth of 3 inches with a disc set almost straight, or other similar method acceptable to the Government Representative. Approximately one-half of the mulch material shall be above the soil surface. The area shall be firmed with a cultipacker, roller, or other equipment approved by the engineer. The mulch anchoring and firming of the soil may be done in one operation if good workmanship is accomplished and it is approved by the Government Representative.

Sodding shall consist of site preparation, sodding and irrigating at the rates and manner described in this specification.

The sod strips shall be laid in a staggered pattern with snug even joints. All joints shall be butted tight to prevent voids. Immediately following sod placements, it shall be rolled or tamped to insure solid contact of root mat and soil surface. The sod shall be securely anchored to the soil by pinning with staples or wooden pegs when placed on slopes steeper than 3:1. Pin or peg every 3 feet along each strip of sod.

5. Irrigation Requirements for Sod

All areas to be sodded shall be irrigated with ½ inch of water just prior to placement of the sod if soil moisture is deficient.

6. Measurement Requirements for Sod

For items of work for which specific unit prices area established in the contract, the areas of vegetative treatment will be measured as follows:

SODDING:

Sodding shall be measured to the nearest square yard.

On slopes flatter than 10% (10 horizontal to 1 vertical), area measurements for sodding shall be based on horizontal distances. On slopes of 10% or steeper, area measurements for sodding shall be based on distances measured along the slope.

Payment shall be made at the contract unit price for sodding and shall constitute full compensation for all labor, equipment, materials, tools, and all other items necessary and incidental to the completion of work.

SEEDING AND MULCHING:

METHOD 1: For items of work, for which specific unit prices are established in the contract, each area treated as specified will be measured on a horizontal plane and the area will be calculated to the nearest 0.1 acre. Payment for treatment will be made at the contract unit price for the designated treatment which shall constitute full compensation for all materials, labor, equipment, tools, and other items necessary and incidental to the completion of the work.

METHOD 2: For items of work, for which specific lump sum prices are established in the contract, the quantity of seeding and mulching for protective cover will not be measured for payment. Payment for this item will be made at the contract lump sum price for the item and shall constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

ALL VEGETATIVE MEASURES:

Compensation for any item of work described in the contract, but not listed in the bid schedule, will be included in the payment for the item of work to which it is made subsidiary. Such items and items to which they are made subsidiary are identified in Section 6 of this specification.

7. Items of Work and Construction Details

Items of work to be performed in conformance with this specification and the construction details therefor are:

A. Bid Item No. 27, Vegetative Measures

(1) This item shall consist of furnishing and placing the sod in accordance with the requirements of this specification in the areas designated on the drawings.

(2) The sod shall be Argentine Bahia grass.

B. Bid Item No. 26, Vegetative Measures

(1) This item shall consist of seeding and mulching in accordance with the requirements of this specification, all areas (within limits of work) that are disturbed during construction and not sodded.

(2) Measurement and payment shall be by Method 1.

Material Specification 521—Aggregates for Drainfill and Filters

1. Scope

This specification covers the quality of mineral aggregates for the construction of drainfill and filters.

2. Quality

Drainfill and filter aggregates shall be sand, gravel, or crushed stone or mixtures thereof. Aggregates shall be composed of clean, hard, durable, mineral particles free from organic matter, clay balls, soft particles, or other substances that would interfere with the free-draining properties of the aggregates.

Coarse aggregate may be crushed limestone or other material that has limestone particles included. Aggregates from crushed limestone shall be thoroughly washed and screened to remove limestone dust, limestone fines, and fine soil particles. For coarse aggregate containing limestone, the total portion finer than the No. 4 sieve shall not contain more than 3 percent by weight of limestone. Limestone shall not be used for fine aggregates except in combination with other material, such that not more than 5 percent of the portion finer than the No. 4 sieve shall be limestone.

Aggregates shall be tested for soundness according to ASTM Method C 88 and shall have a weighted aver- age loss in 5 cycles of not more than 12 percent when sodium sulfate is used or 18 percent when magnesium sulfate is used.

3. Grading

Drainfill and filter aggregates shall conform to the specified grading limits after being placed or after being compacted when compaction is specified. Grad- ing shall be determined by ASTM Method C 136. The percentage of material finer than the No. 200 sieve shall be determined by the method in ASTM Designa- tion C 117.

4. Storing and handling

Drainfill and filter aggregates shall be stored and han- dled by methods that prevent segregation of particle sizes or contamination by mixing with other material.

Material Specification 522—Aggregates for Portland Cement Concrete

1. Scope

This specification covers the quality of fine aggregate and coarse aggregate for use in the manufacture of portland cement concrete.

2. Quality

Aggregate shall conform to the requirements of ASTM Specification C 33 for the specified sizes. Aggregates that fail to meet any requirement may be accepted only when either:

a. The specified alternate conditions of acceptance can be proven before the aggregates are used on the job and within a period such that no work under the contract will be delayed by the requirements of such proof,

or

b. The specification for concrete expressly con- tains a provision of special mix requirements to compensate for the effects of the deficiencies.

3. Reactivity with alkalies

The potential reactivity of aggregates with the alkalies in cement shall be evaluated by petrographic examination and, where applicable, the chemical method of test, ASTM Designation C 289, or by the results of previous tests or service records of concrete made from similar aggregates from the same source. The standards for evaluating potential reactivity shall be as described in ASTM Specification C 33, appendix A1.

Aggregates indicated by any of the above to be poten- tially reactive shall not be used except under one of the following conditions:

a. Applicable test results of mortar bar tests made according to ASTM Method C 227 are available which indicate an expansion of less than 0.10 percent at 6 months in mortar bars made with cement containing not less than 0.8 percent alkalies expressed as sodium oxide; or

b. Concrete made from similar aggregates from the same source has been demonstrated to be sound after 3 years or more of service under conditions of exposure to moisture and weather similar to those anticipated for the concrete under these specifications.

Aggregates indicated to be potentially reactive, but within acceptable limits as determined by mortar bar test results or service records, shall be used only with low alkali cement, containing less than 0.60 percent alkalies expressed as sodium oxide.

4. Storing and handling

Aggregates of each class and size shall be stored and handled by methods that prevent segregation of par- ticles sizes or contamination by intermixing with other material.

Material Specification 523—Rock for Riprap

1. Scope

This specification covers the quality of rock to be used in the construction of rock riprap.

2. Quality

Individual rock fragments shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. Except as otherwise specified, the rock fragments shall be angular to subrounded. The least dimension of an individual rock fragment shall be not less than one-third the greatest dimension of the fragment. ASTM D 4992 provides guidance on selecting rock from a source.

Except as otherwise provided, the rock shall be tested and shall have the following properties:

Rock type 1

- *Bulk specific gravity (saturated surface- dry basis)*—Not less than 2.5 when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- *Absorption*—Not more than 2 percent when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- *Soundness*—The weight loss in 5 cycles shall not be more than 10 percent when sodium sulfate is used or more than 15 percent when magnesium sulfate is used.

Rock type 2

- *Bulk specific gravity (saturated surface- dry basis)*—Not less that 2.5 when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- *Absorption*—Not more than 2 percent when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- *Soundness*—The weight loss in 5 cycles shall be not more than 20 percent when sodium sulfate is used or more than 25 percent when magnesium sulfate is used.

Rock type 3

- *Bulk specific gravity (saturated surface-dry basis)*—Not less than 2.3 when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- *Absorption*—Not more than 4 percent when tested in accordance with ASTM C 127 on samples prepared as described for soundness testing.
- *Soundness*—The weight loss in 5 cycles shall be not more than 20 percent when sodium sulfate is used or more than 25 percent when magnesium sulfate is used.

3. Methods of soundness testing

Rock cube soundness—The sodium or magnesium sulfate soundness test for all rock types (1, 2, or 3) shall be performed on a test sample of 5,000 ± 300 grams of rock fragments, reasonably uniform in size and cubical in shape, and weighing, after sampling, about 100 grams each. They shall be obtained from rock samples that are representative of the total rock mass, as noted in ASTM D 4992, and that have been sawed into slabs as described in ASTM D 5121. The samples shall further be reduced in size by sawing the slabs into cubical blocks. The thickness of the slabs and the size of the sawed fragments shall be deter- mined by the size of the available test apparatus and as necessary to provide, after sawing, the approximate 100-gram samples. The cubes shall undergo five cycles of soundness testing in accordance with ASTM C 88.

Internal defects may cause some of the cubes to break during the sawing process or during the initial soaking period. Do not test any of the cubes that break during this preparatory process. Such breakage, including an approximation of the percentage of cubes that break, shall be noted in the test report.

After the sample has been dried following completion of the final test cycle and washed to remove the so- dium sulfate or magnesium sulfate, the loss of weight shall be determined by subtracting from the original weight of the sample the final weight of all fragments that have not broken into three or more fragments.

The test report shall show the percentage loss of the weight and the results of the qualitative examination.

Rock slab soundness—When specified, the rock shall also be tested in accordance with ASTM D 5240. Deterioration of more than 25 percent of the number of blocks shall be cause for rejection of rock from this source. Rock shall also meet the requirements for average percent weight loss stated below.

- For projects located north of the Number 20 Freeze-Thaw Severity Index Isoline (fig. 523–1). Unless otherwise specified, the average percent weight loss for Rock Type 1 shall not exceed 20 percent when sodium sulfate is used or 25 per- cent when magnesium sulfate is used. For Rock Types 2 and 3, the average percent weight loss shall not exceed 25 percent for sodium sulfate soundness or 30 percent for magnesium sulfate soundness.
- For projects located south of the Number 20 Freeze-Thaw Severity Index Isoline, unless otherwise specified, the average percent weight loss for Rock Type 1 shall not exceed 30 per-

Figure 523–1 Number 20 freeze-thaw severity index isoline (map approximates the map in ASTM D 5312)

cent when sodium sulfate is used or 38 percent when magnesium sulfate is used. For Rock Types 2 and 3, the average percent weight loss shall not exceed 38 percent for sodium sulfate soundness or 45 percent for magnesium sulfate soundness.

4. Field durability inspection

Rock that fails to meet the material requirements stated above (if specified), may be accepted only if similar rock from the same source has been demonstrated to be sound after 5 years or more of service under conditions of weather, wetting and drying, and erosive forces similar to those anticipated for the rock to be installed under this specification.

A rock source may be rejected if the rock from that source deteriorates in 3 to 5 years under similar use and exposure conditions expected for the rock to be installed under this specification, even though it meets the testing requirements stated above.

Deterioration is defined as the loss of more than one- quarter of the original rock volume, or severe crack- ing that would cause a block to split. Measurements of deterioration are taken from linear or surface area
particle counts to determine the percentage of deterio- rated blocks. Deterioration of more than 25 percent of the pieces shall be cause for rejection of rock from the source.

5. Grading

The rock shall conform to the specified grading limits after it has been placed within the matrix of the rock riprap. Grading tests shall be performed, as necessary, according to ASTM D 5519, Method A, B, or C, as ap- plicable.

Material Specification 531—Portland Cement

1. Scope

This specification covers the quality of Portland cement.

2. Quality

Portland cement shall conform to the requirements of ASTM Specification C 150 for the specific types of cement. When Type I Portland cement is specified, Type IS Portland blast-furnace slag cement or Type IP Portland-pozzolan cement conforming to the requirements of ASTM Specification C 595 may be used unless prohibited by the specifications.

When air-entraining cement is required, the contrac- tor shall furnish the manufacturer's written statement providing the source, amount, and brand name of the air-entraining component.

3. Storage at the construction site

Cement shall be stored and protected at all times from weather, dampness, or other destructive elements. Ce- ment that is partly hydrated or otherwise damaged will not be accepted.

Material Specification 532—Supplementary Cementitious Materials

1. Scope

This specification covers the quality of supplementary cementitious materials for concrete.

2. Quality

Fly ash used as a partial substitution of Portland cement shall conform to the requirements of ASTM C 618, Class C or F except the loss on ignition shall not exceed 3 percent, unless otherwise specified. Lot-to-lot variation in the loss on ignition shall not exceed 1 percent. When specified, fly ash shall conform to one or more of the supplementary optional physical requirements listed in ASTM C618.

Blast-furnace slag used as a partial substitution of portland cement shall conform to ASTM Standard C 989 for ground granulated blast-furnace slag.

Material Specification 533—Chemical Admixtures for Concrete

1. Scope

This specification covers the quality of chemical admixtures for manufacturer of portland cement concrete.

2. Quality

Air-entraining admixtures shall conform to the requirements of ASTM Specification C 260.

Water-reducing and/or retarding admixtures shall conform to the requirements of ASTM Specification C 494, Types A, B, D, F, or G.

Plasticizing or plasticizing and retarding admixtures shall conform to ASTM C 494, Types F or G, or C 1017 as applicable.

Accelerating or water-reducing and accelerating ad- mixtures shall be noncorrosive and conform to the re- quirements of ASTM Specification C 494, Types C and E. The manufacturer shall provide long-term test data results from an independent laboratory verifying that the product is noncorrosive when used in concrete exposed to continuously moist conditions.

Material Specification 534—Concrete Curing Compound

1. Scope

This specification covers the quality of liquid membrane-forming compounds suitable for spraying on concrete surfaces to retard the loss of water during the concrete curing process.

2. Quality

The curing compound shall meet the requirements of either ASTM Specification C 309 or C 1315. If Type 1 is specified, a fugitive dye shall be used.

3. Delivery and storage

All curing compounds shall be delivered to the site of the work in the original container bearing the name of the manufacturer and the brand name. The compound shall be stored in a manner that prevents damage to the container and protects water-emulsion types from freezing.

Material Specification 535—Preformed Expansion Joint Filler

1. Scope

This specification covers the quality of preformed expansion joint fillers for concrete.

2. Quality

Preformed expansion joint filler shall conform to the requirements of ASTM Specification D 1752, Type I, Type II, or Type III, unless bituminous type is specified. Bituminous type preformed expansion joint filler shall conform to the requirements of ASTM Specification D 994, or D 1751.

Material Specification 536—Sealing Compound for Joints for Concrete and Concrete Pipe

1. Scope

This specification covers the quality of sealing compound for filling joints in concrete pipe and concrete structures.

2. Type

The compound shall be a cold-application material unless otherwise specified and shall be a single component or multiple component type.

3. Quality

The sealing compound shall conform to the requirements of one of the following specifications:

- ASTM Specification C 990—Joints for concrete pipe, manholes, and precast box sections using preformed flexible joint sealants.
- ASTM Specification C 877—External sealing bands for noncircular concrete sewer, storm drain, and culvert pipe.
- ASTM Specification D 6690—Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
- ASTM Specification C 920—Elastomeric joint sealants for cold applied sealing and caulking of joints on mortar and concrete structures not subject to fuel spills. Use type S or M, grade NS for vertical joints; type S or M, grade P or NS for horizontal joints. For class 25, use M, qual- ity materials shall be used for both vertical and horizontal joints unless otherwise specified.

The sealing compound if used with other joint mate- rial, such as fillers or gaskets, shall be compatible.

Material Specification 539—Steel Reinforcement (for concrete)

1. Scope

This specification covers the quality of steel reinforcement for reinforced concrete.

2. Quality

All reinforcement shall be free from loose or flaky rust, soil, oil, grease, paint, or other deleterious matter.

Steel bars for concrete reinforcement shall be grade 40, 50, or 60 deformed bars conforming to one of the following specifications:

- Deformed and plain billet-steel bars for concrete reinforcement—ASTM A615
- Rail-steel deformed bars for concrete reinforcement—ASTM A 996
- Axle-steel deformed bars for concrete reinforcement—ASTM A 996

Dowels shall be plain round bars conforming to the same specifications listed above for steel bars.

Fabricated deformed steel bar mats for concrete reinforcement shall conform to the requirements of ASTM A 184.

Plain steel welded wire reinforcement for concrete reinforcement shall conform to the requirements of ASTM A 185.

Deformed steel welded wire reinforcement for concrete reinforcement shall conform to the requirements of ASTM A 497.

Epoxy-coated steel bars for concrete reinforcement shall conform to the requirements of ASTM A 775.

3. Dimensions of welded wire reinforcement

Gauges, diameters, spacing, and arrangement of wires for welded steel wire fabric shall be as defined for the specified style designations.

4. Storage

Steel reinforcement inventories at the site of the work shall be stored above the ground surface on platforms, skids, or other supports and shall be kept clean and protected from mechanical injury and corrosion.

Material Specification 541—Reinforced Concrete Pressure Pipe

1. Scope

This specification covers the quality of reinforced concrete pressure pipe and fittings.

2. Manufacture and fabrication

The pipe, the material used in its manufacture, and the methods of fabrication shall conform to the requirements of the following specifications applicable to the specified type of pipe.

Steel cylinder type, pre-stressed—AWWA Standard C301 for Pre-stressed Concrete Pressure Pipe, Steel Cylinder Type, for Water and Other Liquids.

Steel cylinder type, not pre-stressed—AWWA Standard C300 for Reinforced Concrete Pressure Pipe, Steel Cylinder Type, for Water and Other Liquids.

Noncylinder type, not pre-stressed—AWWA Standard C302 for Reinforced Concrete Pressure Pipe, Non-Cylinder Type, for Water and Other Liquids.

Steel cylinder type, pre-tensioned—AWWA Standard C303 for Concrete Pressure Pipe, Bar-Wrapped, Steel Cylinder Type for Water and Other Liquids.

Low head pressure pipe—ASTM Specification C 361.

The following specification sections shall not apply:

- AWWA C300 and C301, sections 1.5 and 1.6.
- AWWA C302 and C303, sections 4.2 and 4.3.

3. Design

The actual pipe and fittings shall be designed by the manufacturer to withstand the specified external loads and internal pressures. Designs shall be by either of the following methods as applicable to the type of pipe specified:

Indirect design—ASTM C497 for Standard Test Method for Concrete Pipe, Manhole Sections, or Tile. Pipe design shall be based on the results of external crushing strength tests on a minimum 2-foot length of pipe or a specimen of equivalent size, design, and ma- terial. The test shall demonstrate the following bearing loads:

- For pipe manufactured according to ASTM C361, AWWA C300, or AWWA C302, the load required to produce a 0.01-inch crack 1 foot long.
- For pipe manufactured according to AWWA C301, the load required to produce a 0.001-inch crack 1 foot long or the load 10 percent greater than the specified three-edge bearing strength, whichever occurs first.

In lieu of actual testing for this contract, pipe design may be based on design curve previously approved and published by the Natural Resources Conservation Service.

Direct design—AWWA C304 for Design of Pre-Stressed Concrete Cylinder Pipe or AWWA Manual M9 for Concrete Pressure Pipe. Pipe design shall be based on structural analysis and design calculations.

Standard design—ASTM C361 for Reinforced Con- crete Low Head Pressure Pipe. Pipe design shall be as published in the standard.

4. Steel reinforcement

The steel reinforcements shall conform to the require- ments of the specifications cited in section 2 for the specified type of pipe except that elliptical reinforcing cages or other reinforcements that require special ori- entation of the pipe during placement are not allowed.

5. Joints

The pipe joints shall conform to the requirements of the applicable specification for the pipe. They shall be bell-and-spigot type or double-spigot-and-sleeve type and shall have a positive groove in the spigot to contain the rubber gasket. The size and shape of the groove shall be such that it prevents displacement of the gasket by either internal or external water pressure when the joint is in any position within the required range of movement capability. Joint sleeves, also referred to as collars or coupling bands, shall conform to the requirements for bell rings in the ap- plicable pipe specification.

The joints shall be constructed to permit relative movement of the adjoining pipe sections with no reduction of watertightness. The joint length and the limiting angle defining the required capability of rela- tive movement at each joint shall be no less than speci- fied.

Joint length refers to the permissible axial movement in the joint. It is defined as the maximum distance through which the spigot can move, relative to the bell or sleeve, from the fully engaged to the fully extended condition of the joint when the adjoining pipe sections are in parallel, concentric alignment. The joint is con- sidered to be fully engaged when the spigot is inserted as far as it will go into the bell or sleeve and is fully extended when it is inserted the least amount that will ensure full confinement of the gasket and complete watertightness.

Joint length specified for double-spigot joints refers to the permissible movement in each of the spigot-to- sleeve connections, not the sum of the two.

The limiting angle of the joint is defined as the maxi- mum deflection angle between adjoining pipe sections the joint will permit before the outer surface of the spigot comes into direct contact with inside of the mating bell or sleeve. If both spigot-to-sleeve connec- tions of a double-spigot joint permit angular move- ment, the limiting angle of the joint is the sum of the two deflection angles permitted by the two connec- tions.

6. Gaskets

The pipe joint gaskets shall conform to the require- ments of the specifications cited in section 2 of this specification. They shall be endless rubber gaskets having circular cross section. The cross-sectional diameter of the gaskets shall conform to the pipe manufacturer's recommendation for the type and size of pipe furnished.

7. Marking

All pipe sections and special fittings shall be marked by the manufacturer with the manufacturer's name or trademark, the date of manufacture, the nominal size, design head, design external load, and the structure site for which it was designed and manufactured.

8. Certification

All component material and actual pipe fabrication shall be tested, inspected, and documented as pre- scribed in the manufacturing specifications for the type of pipe specified. All documentation as noted in the manufacturing specifications shall be submitted to the engineer. Documentation shall include current test reports on steel and steel wire reinforcing and compression tests of concrete used in the manufacture of the furnished pipe. Current tests are those that have been conducted within the last year.

For pipe design based on actual external crushing strength tests, the engineer shall witness the actual test.

For pipe design based on published design curves, a copy of the appropriate design curve marked to show the resultant concrete core stress and corresponding three-edge bearing load and a specification sheet showing all data and dimensions necessary to calculate the resultant core stress for the pipe furnished shall be submitted to the engineer.

For pipe design based on structural analysis and calculations, such analysis and calculations shall be submitted to the engineer. Printouts of such calculations by computer programs shall be sufficiently detailed to enable comparison with standardized procedures and methods.

Drawings, details, and descriptions of the pipejoints as necessary to show that the joint conforms to the specified requirements shall also be submitted.

Material Specification 542—Concrete Culvert Pipe

1. Scope

This specification covers the quality of nonreinforced and reinforced concrete culvert pipe.

2. Nonreinforced pipe

Nonreinforced concrete culvert pipe shall conform to the requirements of ASTM Specification C 14 for the class of pipe specified.

3. Reinforced pipe

Round pipe—Round reinforced concrete culvert pipe shall conform to the requirements of ASTM Specification C 76 or ASTM C 655 for the class of pipe specified.

Arch pipe—Reinforced concrete arch culvert pipe shall conform to the requirements of ASTM Specifications C 506 for the class of pipe specified.

Elliptical pipe—Reinforced concrete elliptical cul- vert pipe shall conform to the requirements of ASTM Specification C 507 for the class of pipe specified.

4. Reinforced box sections

Reinforced concrete box sections shall be manufac- tured meeting the requirements of ASTM Specification C 1433.

5. Rubber gasket joints

When rubber gasket joints are specified, the joints and gaskets shall conform to the requirements of ASTM Specification C 443.

Material Specification 547—Plastic Pipe

1. Scope

This specification covers the quality of Poly Vinyl Chloride (PVC), Polyethylene (PE), High Density Polyethylene (HDPE), and Acrylonitrile-Butadiene-Styrene (ABS) plastic pipe, fittings, and joint materials.

2. Material

Pipe—The pipe shall be as uniform as commercially practicable in color, opaqueness, density, and other specified physical properties. It shall be free from visible cracks, holes, foreign inclusions, or other defects. The dimensions of the pipe shall be measured as prescribed in ASTM D 2122.

Unless otherwise specified, the pipe shall conform to the requirements listed in this specification and the applicable reference specifications in table 547–2, the requirements specified in Construction Specification 45, Plastic Pipe, and the requirements shown on the drawings.

Fittings and joints—Fittings and joints shall be of a schedule, SDR or DR, pressure class, external load carrying capacity, or pipe stiffness that equals or exceeds that of the plastic pipe. The dimensions of fittings and joints shall be compatible with the pipe and measured in accordance with ASTM D 2122. Joint and fitting material shall be compatible with the pipe material. The joints and fittings shall be as uniform as commercially practicable in color, opaqueness, density, and other specified physical properties. It shall be free from visible cracks, holes, foreign inclusions, or other defects.

Fittings and joints shall conform to the requirements listed in this specification, the requirements of the applicable specification referenced in the ASTM or AWWA specification for the pipe, the requirements specified in Construction Specification 45, and the requirements shown on the drawings.

Solvents—Solvents for solvent welded pipe joints shall be compatible with the plastic pipe used and shall conform to the requirements of the applicable specification referenced in the ASTM or AWWA specifi- cation for the pipe, fitting, or joint.

Gaskets—Rubber gaskets for pipe joints shall con- form to the requirements of ASTM F 477, Elastomeric Seals (Gaskets) for Jointing Plastic Pipe.

3. Perforations

When perforated pipe is specified, perforations shall conform to the following requirements unless oth- erwise specified in Construction Specification 45 or shown on the drawings:

a. Perforations shall be either circular or slots.

b. Circular perforations shall be 1/4 ± 1/16-inch diameter holes arranged in rows parallel to the axis of the pipe. Perforations shall be evenly spaced along each row such that the center-to-center distance between perforations is not less than eight times the perforation diameter. Perforations may appear at the ends of short and random lengths. The minimum perforation opening per foot of pipe shall be as shown in table 547–1.

Table 547–1 Perforations

Nominal pipe size (in)	Minimum number of rows		Minimum opening/foot (in^2)
	circular	slot	
4	2	2	0.22
6	4	2	0.44
8	4	2	0.44
10	4	2	0.44
12	6	2	0.66

Rows shall be arranged in two equal groups at equal distance from the bottom on each side of the vertical centerline of the pipe. The lower- most rows of perforations shall be separated by an arc of not less than 60 degrees or more than 125 degrees. The uppermost rows of perfora- tions shall be separated by an arc not to exceed 166 degrees. The spacing of rows between these limits shall be uniform. The minimum number of rows shall be as shown in table 547–1.

c. Slot perforations shall be symmetrically located in two rows, one on each side of the pipe centerline. Slot perforations shall be located within the lower quadrants of the pipe with slots no wider than 1/8 inch and spaced not to exceed 11 times the perforation width. Minimum perforation opening per lineal foot of pipe shall be as shown in table 547–1.

d. On both the inside and outside of the pipe, perforations shall be free of cuttings or frayed edges and of any material that would reduce the effective opening.

Table 547–2 Pipe specification

Pipe	Specification
Poly vinyl chloride (PVC) pipe	
Plastic pipe - Schedules 40, 80, 120	ASTM D 1785 ASTM D 2466
Pressure rated pipe - SDR Series	AWWA C 900 ASTM D 2241
Plastic drain, waste, and vent pipe and fittings	ASTM D 2665
Joints for IPS PVC pipe using solvent weld cement	ASTM D 2672
Composite sewer pipe	ASTM D 2680
Type PSM PVC sewer pipe and fittings	ASTM D 3034
Large-diameter gravity sewer pipe and fittings	ASTM F 679
Smooth-Wall Underdrain Systems for Highway, Airport, and Similar Drainage	ASTM F 758
Profile gravity sewer pipe and fittings based on controlled inside diameter	ASTM F 794
Corrugated sewer pipe with a smooth interior and fittings	ASTM F 949
Pressure pipe, 4-inch through 12-inch for water distribution	AWWA C 900
Water transmission pipe, nominal diameters 14-inch through 36-inch	AWWA C 905
Polyethylene (PE) plastic pipe	
Schedule 40	ASTM D 2104
12 to 60-inch annular corrugated profile-wall polyethylene (PE) pipe and fittings	ASTM F 2306
SIDR-PR based on controlled inside diameter	ASTM D 2239
Schedules 40 and 80 Based on outside diameter	ASTM D 2447
SDR-PR based on controlled outside diameter	ASTM D 3035
High density polyethylene (HDPE) plastic pipe	
Plastic pipe and fittings	ASTM D 3350
SDR-PR based on controlled outside diameter	ASTM F 714
Heat joining polyolefin pipe and fittings	ASTM D 2657
Acrylonitrile-butadiene-styrene (ABS) pipe	
Plastic pipe, schedules 40 and 80	ASTM D 1527
Composite sewer pipe	ASTM D 2680

Material Specification 553—Ductile Iron Pipe

1. Scope

This specification covers the quality of ductile-iron pipe and fittings.

2. Pipe

Ductile-iron pipe shall conform to the requirements of ANSI/AWWA C151/A21.51, Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds for Water or Other Liquids, and ANSI/AWWA C115/A21.15, Flanged Ductile-Iron Pipe with Threaded Flanges.

3. Fittings

Ductile-iron pipe fittings shall conform to the requirements of ANSI/AWWA C110/A21.10, Ductile-Iron and Gray-Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids, and ANSI/AWWA C153/A21.53, Ductile-Iron Compact Fittings, 3-inch through 12-inch, for Water and Other Liquids.

4. Joints

Rubber-gasket joints for ductile-iron pipe and fittings where either mechanical or push-on joints are used shall conform to the requirements of ANSI/AWWA C111/A21.11, Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.

5. Lining

Interior lining for ductile-iron pipe and fittings shall conform to the requirements of ANSI/AWWA C104/ A21.4, Cement Mortar Lining for Ductile-Iron Pipe and Fittings for Water.

6. Encasement

Encasement for ductile-iron pipe and fittings shall con- form to the requirements of ANSI/AWWA C105/A21.5- 88, Polyethylene Encasement for Ductile-Iron Pipe for Water and Other Liquids.

Material Specification 592—Geotextile

1. Scope

This specification covers the quality of geotextiles.

2. General requirements

Fibers (threads and yarns) used in the manufacture of geotextile shall consist of synthetic polymers composed of a minimum of 85 percent by weight polypropylenes, polyesters, polyamides, polyethylene, polyolefins, or polyvinylidene-chlorides. They shall be formed into a stable network of filaments or yarns retaining dimensional stability relative to each other. The geo-textile shall be free of defects and conform to the physical requirements in tables 592–1 and 592–2. The geotextile shall be free of any chemical treatment or coating that significantly reduces its porosity. Fibers shall contain stabilizers and/or inhibitors to enhance resistance to ultraviolet light.

Thread used for factory or field sewing shall be of contrasting color to the fabric and made of high strength polypropylene, polyester, or polyamide thread. Thread shall be as resistant to ultraviolet light as the geotextile being sewn.

3. Classification

Geotextiles shall be classified based on the method used to place the threads or yarns forming the fabric. The geotextiles will be grouped into woven and nonwoven types.

Woven—Fabrics formed by the uniform and regular interweaving of the threads or yarns in two directions. Woven fabrics shall be manufactured from monofilament yarn formed into a uniform pattern with distinct and measurable openings, retaining their position relative to each other. The edges of fabric shall be selvedged or otherwise finished to prevent the outer yarn from unraveling.

Nonwoven—Fabrics formed by a random placement of threads in a mat and bonded by heat-bonding, resin-bonding, or needle punching. Nonwoven fabrics shall be manufactured from individual fibers formed into a random pattern with distinct, but variable small openings, retaining their position relative to each other when bonded by needle punching, heat, or resin bonding. The use of nonwovens other than the needle punched geotextiles is somewhat restricted (see note 3 of table 592–2).

4. Sampling and testing

The geotextile shall meet the specified requirements (table 592–1 or 592–2) for the product style shown on the label. Product properties as listed in the latest edi- tion of the "Specifiers Guide," Geosynthetics, (Indus- trial Fabrics Association International, 1801 County Road B, West Roseville, MN 55113-4061 or at *http:// www.geosindex.com*) and that represent minimum average roll values, are acceptable documentation that the product style meets the requirements of these specifications.

For products that do not appear in the above directory or do not have minimum average roll values listed, typical test data from the identified production run of the geotextile will be required for each of the specified tests (tables 592–1 or 592–2) as covered under clause AGAR 452.236-76.

5. Shipping and storage

The geotextile shall be shipped/transported in rolls wrapped with a cover for protection from moisture, dust, dirt, debris, and ultraviolet light. The cover shall be maintained undisturbed to the maximum extend possible before placement.

Each roll of geotextile shall be labeled or tagged to clearly identify the brand, class, and the individual pro- duction run in accordance with ASTM D 4873.

Table 592–1 Requirements for woven geotextiles

Property	Test method	Class I	Class II & III	Class IV
Tensile strength (pounds) 1/	ASTM D 4632 grab test	200 minimum in any principal direction	120 minimum in any principal direction	180 minimum in any principal direction
Elongation at failure (percent) 1/	ASTM D 4632 grab test	<50	<50	<50
Puncture (pounds) 1/	ASTM D 4833	90 minimum	60 minimum	60 minimum
Ultraviolet light (% residual tensile strength)	ASTM D 4355 150-hr exposure	70 minimum	70 minimum	70 minimum
Apparent opening size (AOS)	ASTM D 4751	As specified, but no smaller than 0.212 mm (#70) 2/	As specified, but no smaller than 0.212 mm (#70) 2/	As specified, but no smaller than 0.212 mm (#70) 2/
Percent open area (percent)	CWO-02215-86		4.0 minimum	4.0 minimum
Permitivity sec^{-1}	ASTM D 4491	0.10 minimum	0.10 minimum	0.10 minimum

1/ Minimum average roll value (weakest principal direction). 2/ U.S. standard sieve size.
Note: CWO is a USACE reference.

Table 592–2 Requirements for woven geotextiles

Property	Test method	Class I	Class II	Class III	Class IV [3/]
Tensile strength (lb) [1/]	180 minumum grab test	ASTM D 4632	120 minumum	90 minumum	115 minumum
Elongation at failure(%) [1/]	ASTM D 4632	≥ 50	≥ 50	≥ 50	≥ 50
Puncture (pounds)	80 minumum	ASTM D 4833	60 minumum	40 minumum	40 minumum
Ultraviolet light (% residual tensile strength)	70 minumum 150-hr exposure	ASTM D 4355	70 minumum	70 minumum	70 minumum
Apparent opening size (AOS)	As specified	ASTM D 4751 max. #40 [2/]	As specified max. #40 [2/]	As specified max. #40 [2/]	As specified max. #40 [2/]
Permittivity sec^{-1}	0.70 minumum	ASTM D 4491	0.70 minumum	0.70 minumum	0.10 minu-mum

1/ Minimum average roll value (weakest principal direction).
2/ U.S. standard sieve size.
3/ Heat-bonded or resin-bonded geotextile may be used for classes III and IV. They are particularly well suited to class IV. Needle-punched geotextiles are required for all other classes.

Bid Schedule

For

City Fire Training Facility

Approx. Work Area = 2 acres

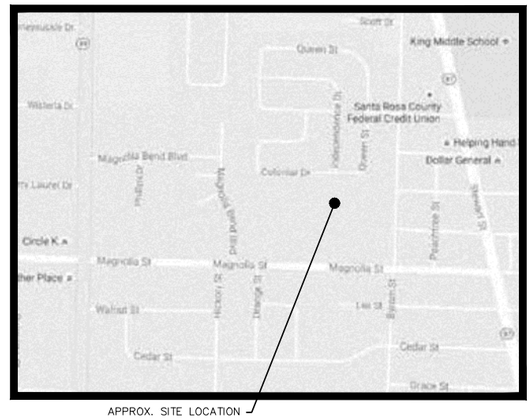
ITEM NO.	SUPPLIES / SERVICES	SPEC NO.	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	Clearing and Grubbing	2	1	Job		
	Within work area. Also includes current condition documentation.					
2	Structure Removal	3	1	Job		
	Misc. for Installation of Improvements					
3	Pollution Control	5	1	Job		
	Prepare SWPPP					
4	Pollution Control	5	1	Job		
	NPDES Permitting (prepare and submit) and Inspections					
5	Pollution Control	5	1	Job		
	Silt Fence, Hay Bales, Dust Control per SWPPP					
6	Construction Surveys	7	1	Job		
	Layout, Progress Payments, As-Builts, Etc….					
7	Mobilization and Demobilization	8	1	Job		
8	Traffic Control	9	1	Job		
	Plan and implementation					
9	Water for Construction	10	XXXXXXX	Subsidiary	XXXXXXX	XXXXXXXX
10	Removal of Water	11	1	Job		
11	Excavation	21	XXXXXXX	Subsidiary	XXXXXXX	XXXXXXXX
	For Installation of Improvements					
12	Excavation	21	1	Job		
	Site Grading					
13	Earthfill	23	XXXXXXX	Subsidiary	XXXXXXX	XXXXXXXX
	For Installation of Improvements					
14	Earthfill	23	1	Job		
	Trench Backfill (Pipe/Structure Bedding)					
15	Topsoiling	26	9400	Sq. Yds.		
	4" Thick - On-site Source					
16	Structure Concrete	32	1	Each		
	Storm Pipe End Treatment					
17	Structure Concrete	32	1500	Lin. Ft.		
	Curbing					
18	Structure Concrete	32	1	Each		
	Storm Inlet					
19	Roadway Pavement	32-A	2500	Sq. Yds.		
	Asphalt and Base					
20	Steel Reinforcement	34	XXXXXXX	Subsidiary	XXXXXXX	XXXXXXXX
	For Concrete Structures					
21	Plastic Pipe	45	54	Lin. Ft.		
	Ads - HP Storm (18" diam)					
22	Rock Riprap	61	3.5	Ton		
	Bedding Stone					
23	Rock Riprap	61	9	Ton		
	Class II					
24	Contractor Quality Control	94	1	Job		
	Testing, Documentation, etc…					
25	Geotextile	95	XXXXXXX	Subsidiary	XXXXXXX	XXXXXXXX
	Beneath Rip Rap & at Pipe Joints (+/- 100 SY)					
26	Vegetative Measures	440	1	Job		
	Seed and Mulch all Bare Areas Not Being Sodded					
27	Vegetative Measures	440	1500	Sq. Yds.		
	Argentine Bahia Sod					
				Total =		

City Fire Training Facility						
Approx. Work Area = 2 acres						
ITEM NO.	SUPPLIES / SERVICES	SPEC NO.	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT

CITY FIRE TRAINING FACILITY
for
CITY OF MILTON
SEPTEMBER, 2016

GENERAL NOTES:

1. ALL ELEVATIONS AND SLOPES PROVIDED IN THESE PLANS ARE TO BE STRICTLY ADHERED TO. THERE CAN BE NO MODIFICATIONS OR REVISIONS TO THESE PLANS WITHOUT PRIOR FIELD INSPECTION AND WRITTEN APPROVAL FROM THE ENGINEER OF RECORD AND APPROVAL FROM ALL REGULATORY AGENCIES.
2. ALL NECESSARY PERMITS AND APPROVALS FROM THE AGENCIES GOVERNING THIS WORK SHALL BE SECURED PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL PERMITS HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION COMMENCEMENT.
3. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF VARIOUS GOVERNMENTAL APPROVALS AND PERMITS.
4. ALL CONSTRUCTION SHALL COMPLY WITH ALL PERMIT REQUIREMENTS. IF THERE ARE ANY DIFFERENCES, THE MOST STRINGENT SHALL PREVAIL.
5. CONTRACTOR SHALL NOTIFY IN WRITING, ALL AGENCIES, AND THE ENGINEER OF RECORD AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION.
6. ALL SUITABLE EXCAVATED MATERIAL IS TO REMAIN ON SITE AND BE STOCK PILED AT LOCATIONS DETERMINED BY THE ENGINEER OF RECORD. UNSUITABLE EXCAVATED MATERIALS ARE TO BE REMOVED FROM THE SITE OR SPREAD EVENLY AT LOCATIONS DETERMINED BY THE ENGINEER OF RECORD.
7. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AT LEAST 72 HOURS PRIOR TO BEGINNING AND COMPLETING EACH PHASE OF CONSTRUCTION, I.E. RETENTION POND CONSTRUCTION, SUB-GRADE PREPARATION, BASE WORK, PAVING, CURBING, ETC. FAILURE TO COMPLY WILL CAUSE DELAY OF DISBURSEMENT OF FUNDS TO THE CONTRACTOR AND DELAY OF FINAL CERTIFICATION BY THE ENGINEER OF RECORD.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING IMPROVEMENTS AND/OR FEATURES, INCLUDING PERMANENT SURVEY MARKERS AND BENCHMARKS, WHICH ARE NOT DESIGNATED TO BE REMOVED OR ALTERED ON THE PLANS. WHERE TREES ARE TO BE REMOVED THE CONTRACTOR SHALL ESTABLISH NEW BENCHMARKS PRIOR TO ANY TREE REMOVAL.
9. ALL DIMENSIONS AND GRADES ON THESE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE RE-DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
10. ALL DISTURBED AREAS WHICH ARE NOT PAVED SHALL BE STABILIZED WITH SEEDING FERTILIZER AND MULCH, OR SOD. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER (PRIOR TO INCORPORATION INTO THE PROJECT) A CERTIFICATION FROM THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES DIVISION OF PLANT INDUSTRY STATING THAT THE SOD/ HAY/STRAW/MULCH/SEED MATERIALS ARE FREE OF NOXIOUS WEEDS INCLUDING TROPICAL SODA APPLE. SOD IS THE RECOMMENDED SLOPE STABILIZATION METHOD.
11. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RECORD DRAWINGS DURING CONSTRUCTION WHICH SHOW "AS-BUILT" CONDITIONS OF ALL WORK INCLUDING PIPING, DRAINAGE STRUCTURES, TOPOGRAPHY OF POND, OUTLET STRUCTURES, DIMENSIONS, ELEVATIONS, GRADING, ETC. THESE DRAWINGS SHALL BE PROVIDED TO THE ENGINEER OF RECORD A MINIMUM OF 1 WEEK PRIOR TO THE REQUEST FOR FINAL INSPECTION.
12. THE ENGINEER OF RECORD TAKES ABSOLUTELY NO RESPONSIBILITY FOR ANY ITEM LABELED "BY OTHERS" OR FOR SUCH ITEMS AS RETAINING WALLS, BUILDINGS, SUB-SURFACE GEOTECHNICAL CONDITIONS, FOUNDATION DESIGN, OR ANY EXISTING WATER AND SEWER UTILITIES.
13. THE COUNTY, ITS' OFFICERS, AND EMPLOYEES SHALL BE HELD HARMLESS FROM ANY DAMAGES TO PERSONS OR PROPERTY WHICH MIGHT RESULT FROM WORK OR ACTIVITY UNDERTAKEN BY THE DEVELOPER AND AUTHORIZED BY THE COUNTY.
14. CONTRACTOR MUST OBTAIN A UTILITY PERMIT FROM SANTA ROSA COUNTY ROAD & BRIDGE PRIOR TO WORK WITHIN THE COUNTY RIGHT-OF-WAY.
15. "INITIAL SUBMITTAL DRAWINGS" ARE FOR REVIEW AND PERMITTING PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR ENSURING ACTUAL CONSTRUCTION IS IN ACCORDANCE WITH THE "FINAL CONSTRUCTION DRAWINGS".
16. CONTRACTOR IS ENCOURAGED TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE ENGINEER TO DISCUSS SCOPE OF WORK, TESTING REQUIREMENTS, INSPECTION PERIODS, AND THE NOTES & CONDITIONS OUTLINED ON THESE PLANS AS WELL AS STANDARDS THAT MAY NOT BE ON THESE PLANS THAT ARE EXPECTED OF THE CONTRACTOR.
17. DENSITY TESTING IS REQUIRED FOR VARIOUS ASPECTS OF CONSTRUCTION. THERE ARE NOTES THROUGHOUT THESE PLANS REFERRING TO THE TESTING REQUIREMENTS FOR EACH ASPECT. IF THERE ARE ANY QUESTIONS PLEASE CONSULT THE ENGINEER PRIOR TO COVERING QUESTIONABLE SURFACE.
18. THE ENGINEER SUGGESTS THAT ITEMS SUCH AS RETENTION PONDS, INLETS, PIPES, LIFT STATIONS, CULVERTS, MANHOLES, GRAVITY SEWER LINES, AND ALL OTHER ITEMS THAT WILL BE COVERED BY A PERMANENT STRUCTURE OR MATERIAL (I.E. ASPHALT, SOD, ETC.) BE SCHEDULED BY THE CONTRACTOR FOR INSPECTION BY THE ENGINEER BEFORE PLACEMENT OF PERMANENT STRUCTURES/MATERIALS. FAILURE TO SCHEDULE AN INSPECTION PRIOR TO PLACEMENT OF PERMANENT STRUCTURES/MATERIALS WILL RESULT IN REMOVAL OF PERMANENT STRUCTURES/MATERIALS TO REPAIR/REPLACE UNDERLYING DEFECTS IF SUCH DEFECTS ARE FOUND TO EXIST.
19. THE CONTRACTOR SHALL ENSURE THAT THE SITE PLAN PERMIT NUMBER IS PROPERLY DISPLAYED ON SITE PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES. THE SITE PLAN PERMIT NUMBER SHALL BE VISIBLE FROM THE ROAD AND BE DISPLAYED AT ALL TIMES.



VICINITY MAP
TO SCALE

LEGAL DESCRIPTION:

(AS PREPARED BY SOUTHERN SURVEYING, INC.)

PARK AREA OF GEORGETOWN ESTATES, A RECORDED IN PLAT BOOK "C", PAGE 81, OF THE PUBLIC RECORDS OF SANTA ROSA COUNTY, FLORIDA.

(O.R. BOOK 3078, PAGE 230)

ONE ACRE SQUARE IN THE SOUTHWEST CORNER OF LOT 17 IN JIM SUNDAY SUBDIVISION IN SECTION 28, TOWNSHIP 2 NORTH, RANGE 28 WEST, SANTA ROSA COUNTY, FLORIDA. LESS AND EXCEPT THE EAST 105 FEET THEREOF.

OWNER:

CITY OF MILTON
P.O. BOX 909
MILTON, FLORIDA 32572
PHONE: (850) 983-5400 (#1220)

SITE ADDRESS:

MILTON, FLORIDA 32570

EXISTING SITE DATA:

PARCEL NO(s):	28-2N-28-1340-00000-PARK
TOTAL AREA:	± 4.68 ACRES
PROJECT AREA:	± 4.68 ACRES
PARCEL ZONING:	R-1AA
CURRENT LAND USE:	MUNICIPAL (008900)
FUTURE LAND USE:	PUB

PROPOSED SITE DATA:

+/-1,650 S.F. BUILDING
12 ADDITIONAL PARKING SPACES
NEW GRAVEL PARKING/DRIVING AREA
NEW GRAVEL ENTRANCE TO SITE
LANDSCAPING IN ACCORDANCE WITH SANTA ROSA COUNTY LDC.
STORMWATER MANAGEMENT SYSTEM

PERVIOUS / IMPERVIOUS AREAS TABLE:

IMPERVIOUS and PERVIOUS AREAS TABLE
PROJECT AREA: +/- 203,722 SQ. FT. - 4.68 ACRES

AREAS OF CALCULATION	PRE-DEVELOPMENT	INCREASE/REDUCTION	POST-DEVELOPMENT
BUILDING	0 SF	+ 792 SF	792 SF
CONCRETE SIDEWALK	0 SF	+ 480 SF	480 SF
GRAVEL DRIVING SURFACE	0 SF	+ 21,141 SF	21,141 SF
TOTAL IMPERVIOUS AREA	0 SF	+ 22,333 SF	22,333 SF
PERVIOUS AREAS	203,722 SF	- 22,333 SF	181,389 SF
PERCENTAGE OF PERVIOUS AREAS	0 %	-10.9 %	89.1 %

SHEET INDEX

SHEET 1 ..... COVER SHEET
SHEET 2 ..... EXISTING - DEMOLITION PLAN
SHEET 3 ..... SITE - SITE, LANDSCAPE & GRADING PLAN
SHEET 4 ..... NOTES & DETAILS
SHEET 5 ..... DETAILS
SHEET 6 ..... DETAILS
SHEET 7 ..... DETAILS

Construction Plans for:
FIRE TRAINING FACILITY
FOR THE CITY OF MILTON

SOUTHERN SITE & UTILITY DESIGN, INC.
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 8983
6556 CADO CENTER STREET MILTON, FLORIDA 32570
PHONE (850) 623-9400 E-MAIL: ssud@bellsouth.net
EROSION CONTROL PLANS * POTABLE WATER & SANITARY SEWER
SITE PLANS * SUBDIVISIONS * STORMWATER MANAGEMENT

DRAWN BY: pRp DATE: 9/6/2016
REVISIONS: 1. – 2. – 3. – 4. –

DATE:
PAUL A. NICCOLI, JR., P.E.
FL. LICENSE NO. 58697
ALAN M. MILLER, P.E.
FL. LICENSE NO. 53577
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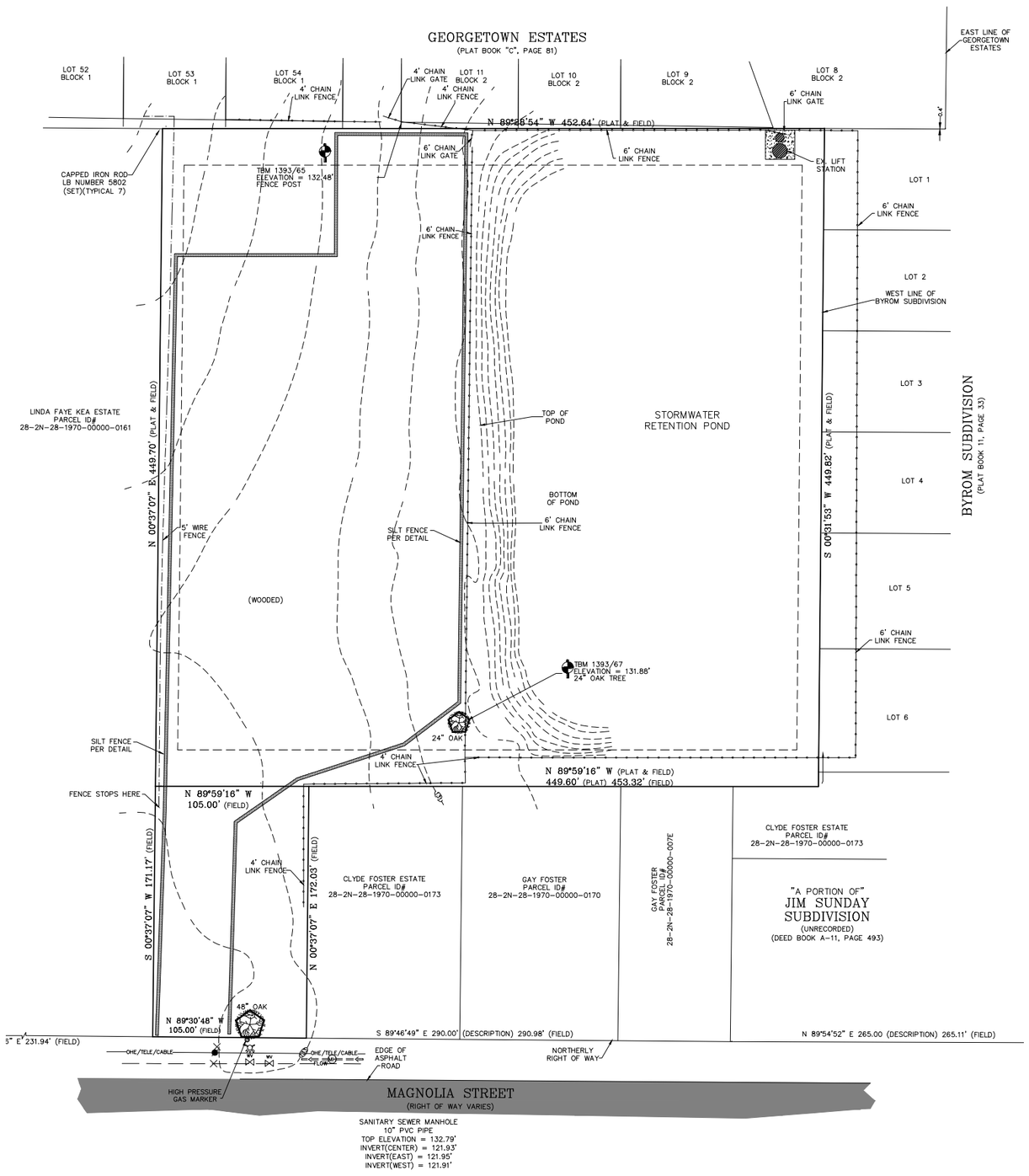
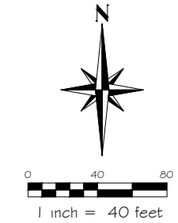
SHEET
1

EXISTING CONDITIONS & DEMOLITION PLAN



OVERALL SITE



LEGEND:

- UTILITY POLE
- TBM = TEMPORARY BENCHMARK
- CONTOUR LINE
- EXISTING CONCRETE
- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING LANDSCAPE AREA
- GUY ANCHOR
- DIRECTION OF WATER FLOW
- EXISTING TREE
- NEW TREE
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- TRAFFIC SIGN
- FIRE HYDRANT
- BACKFLOW PREVENTER
- SILT FENCE
- GUY ANCHOR
- DIRECTION OF WATER FLOW
- TRAFFIC FLOW DIRECTION
- TURN ARROW
- OVERHEAD UTILITY LINES
- SHRUB
- TREE TO BE PROTECTED
- TREE TO BE REMOVED

PRIOR TO CONSTRUCTION:

CONTRACTOR MUST OBTAIN A UTILITY PERMIT FROM SANTA ROSA COUNTY ROAD & BRIDGE PRIOR TO WORK WITHIN THE COUNTY RIGHT-OF-WAY.

48 HOURS BEFORE YOU DIG
STOP
CALL SUNSHINE 800-432-4770

CONTRACTOR SHALL CONTACT SUNSHINE UTILITIES 48 HOURS PRIOR TO CONSTRUCTION WITHIN THE RIGHT-OF-WAY.

Construction Plans for:

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FOR THE CITY OF MILTON

SOUTHERN SITE & UTILITY DESIGN, INC.
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 9983
6555 CADIZ CENT STREET, MILTON, FLORIDA 32570
PHONE (850) 623-0401 E-MAIL southern@southern.net
EROSION CONTROL PLANS * E-MAIL: water&sanitary sewer
SITE PLANS * SUBDIVISIONS * STORMWATER MANAGEMENT

DRAWN BY: pRp DATE: 9/6/2016

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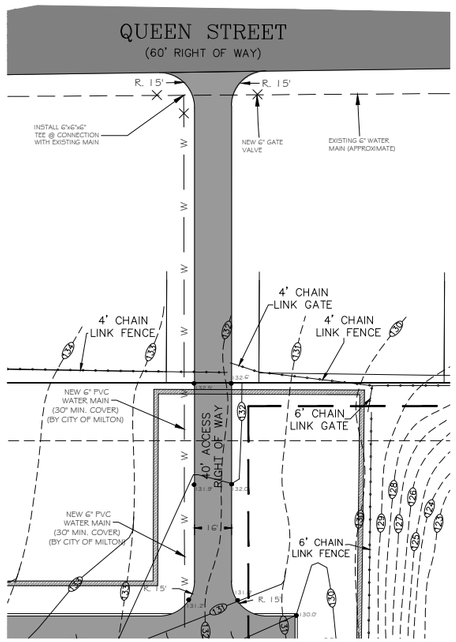
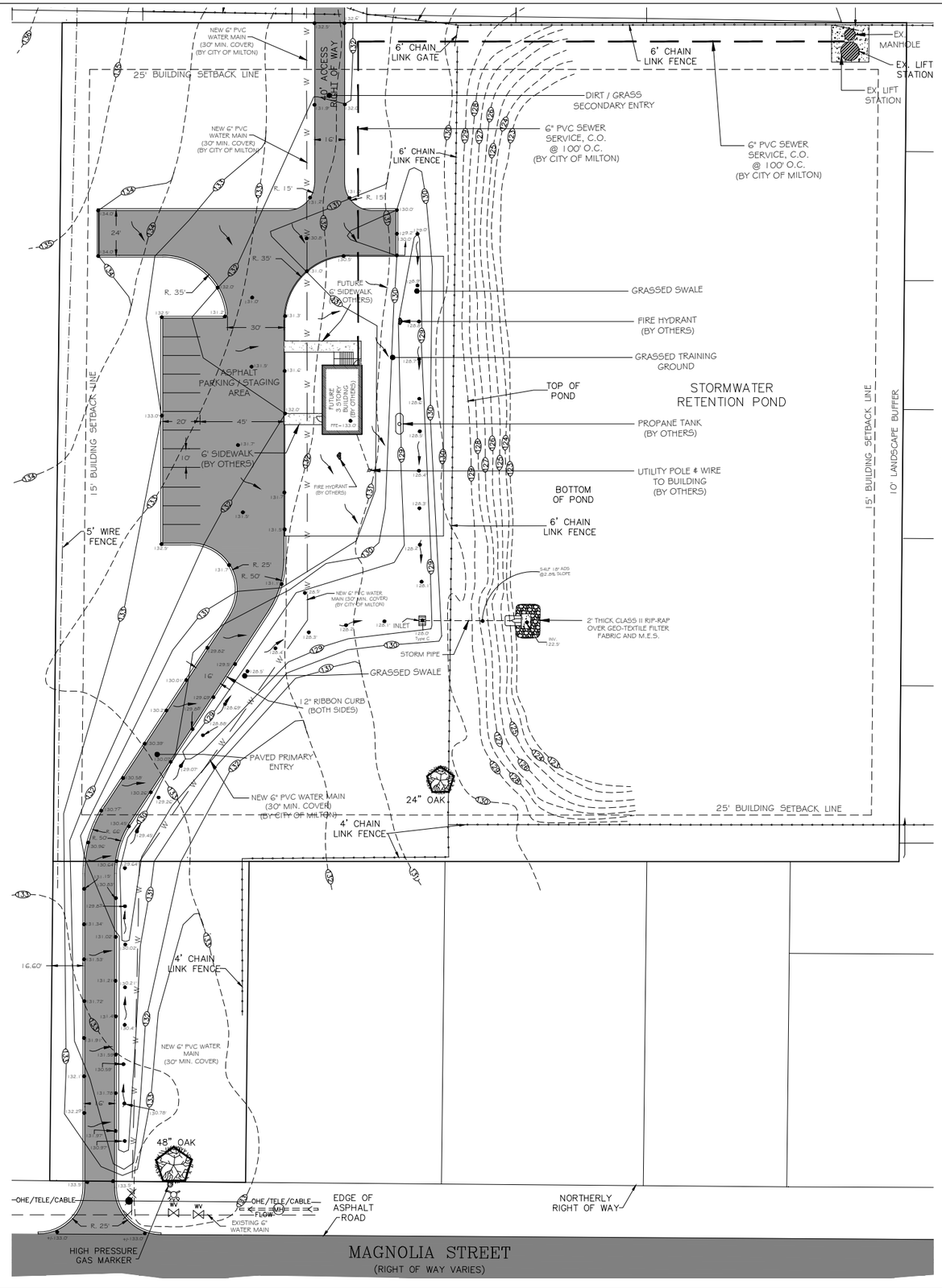
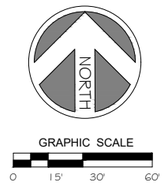
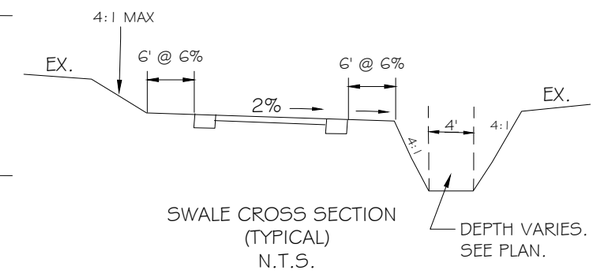
SITE, LANDSCAPING & DRAINAGE PLAN



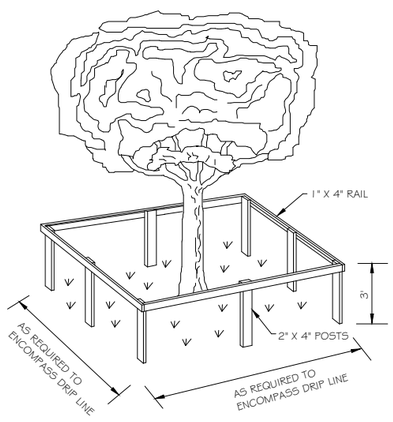
NORTH ENTRY







SWALE CROSS SECTION (TYPICAL) N.T.S.



TREE PROTECTION DETAIL

N.T.S.

LEGEND

- DIRECTION OF WATER FLOW
- FIRE HYDRANT
- STORMWATER INLET
- UTILITY POLE
- HIGH PRESSURE GAS MARKER
- EXISTING WATER VALVE
- PROPOSED WATER VALVE
- SEWER MANHOLE
- 6' WOOD PRIVACY FENCE
- SILT FENCE
- OVERHEAD UTILITY LINES
- STREET SIGN
- PROPOSED CONCRETE
- EXISTING ASPHALT ROADWAY
- PROPOSED ASPHALT ROADWAY
- EXISTING WATER LINE
- PROPOSED WATER LINE
- PROPOSED CONTOURS
- TREE TO BE PROTECTED

LANDSCAPE REQUIREMENTS

- NO PROTECTED TREES ARE PROPOSED TO BE REMOVED DURING THE CONSTRUCTION OF THIS PROJECT.
- EXISTING TREES WITHIN OR ADJACENT TO THE PROJECT LIMITS SHALL BE PROTECTED DURING ALL PHASES OF CONSTRUCTION PER THE DETAIL.
- EXISTING VEGETATION ON-SITE IS PROPOSED TO BE USED TO MEET ALL LANDSCAPE REQUIREMENTS PER THE CITY OF MILTON LAND DEVELOPMENT CODE.

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3

GENERAL NOTES & DETAILS

EXISTING CONDITIONS NOTES:

STORMWATER / EROSION CONTROL NOTES:

1. PRIOR TO COMMENCING CONSTRUCTION, CONTRACTOR SHALL PLACE SILTATION FENCE ON THE SUBJECT PROPERTY WHERE APPLICABLE OR WHERE INDICATED ON THE PLANS. SILTATION FENCE IS TO REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND ALL DISTURBED AREAS ARE STABILIZED.
2. CONTRACTOR IS TO ENSURE THAT ALL SEDIMENT CONTROL MEASURES ARE FULLY FUNCTIONAL DURING RAINFALL EVENTS. ALL HAY-BALES AND SILT FENCES SHALL REMAIN INTACT UNTIL CONSTRUCTION IS COMPLETE. SHOULD A PORTION FAIL, THAT PORTION SHALL BE REPAIRED PRIOR TO THE NEXT STORM EVENT IN ACCORDANCE WITH THE DETAILS SHOWN ON THESE PLANS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED TO ENSURE NO SEDIMENTS ARE TRANSPORTED OFF-SITE VIA STORMWATER RUN-OFF.
4. IT IS RECOMMENDED THAT ALL SIDE SLOPES AND EMBANKMENTS BE SODDED AND PINNED WITH GRASS WHICH IS FREE FROM NOXIOUS WEEDS. ALL OTHER DISTURBED AREAS SHALL BE STABILIZED WITH SOD, HYDRO- SEED, OR SEED AND MULCH. ARGENTINE BAHIA IS THE RECOMMENDED SOD TYPE FOR SLOPES. SEE SEPARATE NOTE REGARDING VEGETATIVE MEASURES.
5. CONTRACTOR SHALL CLEAN OUT ACCUMULATED SILT IN BASINS AND ROADS AT THE END OF CONSTRUCTION WHEN ALL DISTURBED AREAS HAVE BEEN STABILIZED.
6. AREAS CONTAINING BLOCK SOD SHALL BE PINNED.
7. ON ALL CLEARED AREAS WHICH WILL NOT HAVE ACTIVE CONSTRUCTION UNDERTAKEN FOR A PERIOD OF 90 DAYS OR MORE, A GROUND COVER SHALL BE PLANTED OR OTHER FORMS OF STABILIZATION UTILIZED WITHIN 10 WORKING DAYS.
8. FOR DISTURBED AREAS EQUAL TO OR GREATER THAN 1 ACRE, A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PREPARED AND SUBMITTED TO FDEP FOR NPDES PERMITTING. THE SWPPP SHALL BE CONSIDERED A PART OF THESE PLANS AND SHALL BE STRICTLY ADHERED TO. INSPECTIONS ARE REQUIRED ACCORDING TO THIS PERMIT. CONTACT ENGINEER TO ARRANGE INSPECTIONS.
9. AT THE COMPLETION OF CONSTRUCTION, ALL EXPOSED DIRT SHALL BE STABILIZED WITH SOD, A HAY/SEED MIX OR HYDRO-SEED.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING SEDIMENT CONTROL DEVICES (i.e. SILT FENCES) PRIOR TO CONSTRUCTION. PROVIDE SILTATION FENCES AS SHOWN ALONG THE PROPERTY LINES. SEE DETAIL FOR PROPER INSTALLATION.

UTILITY GENERAL NOTES:

GENERAL UTILITY NOTES:

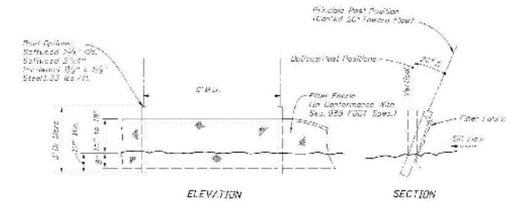
1. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING SUNSHINE UTILITIES 48-HOURS PRIOR TO CONSTRUCTION COMMENCEMENT FOR EXISTING UTILITY LOCATION. (SUNSHINE UTILITIES: 1-800-432-4770) EXISTING UTILITIES, WHICH MAY OR MAY NOT BE INDICATED ON THESE PLANS, ARE SHOWN IN THEIR APPROXIMATE HORIZONTAL LOCATION ONLY. VERTICAL LOCATION HAS NOT BEEN PERFORMED.
2. CONTRACTOR SHALL VERIFY SIZE, LOCATION, AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE WITH NO ADDITIONAL COMPENSATION.
3. UTILITY SYSTEM PERSONNEL SHALL BE PRESENT FOR ALL TAPS TO EXISTING UTILITIES. CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY SYSTEM AT LEAST 48 HOURS PRIOR TO CONNECTION OF PROPOSED FACILITIES TO EXISTING FACILITIES.
4. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY SYSTEM.
5. SITE/UTILITY CONTRACTOR SHALL COORDINATE INSTALLATION OF THE SEWER SERVICE & WATER SERVICE WITH THE PLUMBING PLANS.
6. ALL ONSITE WATER & SEWER FACILITIES SHALL BE PRIVATELY OWNED, OPERATED, AND MAINTAINED.
7. CONTRACTOR IS RESPONSIBLE FOR ADJUSTMENT OF EXISTING UTILITIES IF PROPOSED IMPROVEMENTS IMPACT EXISTING UTILITIES.
8. A SEPARATE UTILITY PERMIT MAY BE REQUIRED AND SHALL BE OBTAINED BY THE SITE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.

GRADING / DRIVEWAY & PARKING AREA NOTES:

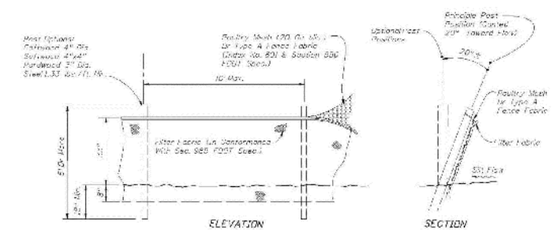
1. CONTRACTOR SHALL PREPARE THE SUB-GRADE TO LINE AND GRADES REQUIRED FOR FINISHED ELEVATIONS AS INDICATED ON THESE PLANS. ORGANIC MATERIALS, HARD PANS, AND OTHER UN-SUITABLE SOILS IN THE SUB-GRADE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD. COMPACT THE SUB-GRADE TO 95% OF THE MODIFIED PROCTOR AS DETERMINED BY A.S.T.M. D 1557.
2. SEED, FERTILIZE, AND MULCH OR SOD SHOULDERS AND UN-PAVED AREAS. ALL WORK SHALL CONFORM TO THE F.D.O.T. SPECIFICATIONS SECTION 570 AND TO THE SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
3. SIDEWALKS AND CURBING SHALL BE CONSTRUCTED WITH 3,000 P.S.I. CONCRETE (28-DAY BREAK) AND SHALL HAVE A FULL DEPTH, ONE-HALF INCH EXPANSION JOINT AT 50 FOOT INTERVALS OR LESS. EXPANSION JOINT MATERIAL SHALL BE A PREFORMED BITUMINOUS EXPANSION MATERIAL. CONTRACTION JOINTS SHALL BE CUT OR TOOLED, 1/4" WIDE x 1/3 THE CONCRETE DEPTH AND PLACED AT 10 FOOT INTERVALS.
4. COMPACT THE BASE TO 98% OF THE MODIFIED PROCTOR AS DETERMINED BY A.S.T.M. D 1557. MATERIAL SHALL MEET THE REQUIREMENTS OF THE F.D.O.T. STANDARD SPECIFICATIONS FOR THE SELECTED BASE MATERIAL. INSTALLATION SHALL BE IN ACCORDANCE WITH F.D.O.T. SPECIFICATIONS, SECTION 240. A MIN. OF 3 DENSITY TESTS SHALL BE PROVIDED TO THE ENGINEER.
5. DRIVING SURFACE SHALL BE CONSTRUCTED PER THE DETAILS.
6. ALL F.D.O.T. INDEX NUMBERS ARE FROM THE F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS MANUAL.
7. ALL ROADWAY, PARKING LOT, AND TRAFFIC MARKINGS / STRIPING SHALL COMPLY WITH THE APPLICABLE SECTIONS OF THE F.D.O.T. STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.
8. TEMPORARY TRAFFIC CONTROL THROUGH THE WORK ZONE SHALL BE IN ACCORDANCE WITH THE F.D.O.T. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
9. ALL NEW BUILDING ROOF DRAINS, DOWNSPOUTS, OR GUTTERS SHALL BE DIRECTED TO CARRY ALL STORMWATER TO A RETENTION POND.
10. ALL COMPONENTS OF THE STORMWATER DRAINAGE SYSTEM AND TRANSPORTATION SYSTEM SHALL BE COMPLETE PRIOR TO ISSUANCE OF A FINAL CERTIFICATE OF OCCUPANCY.

NOTES FOR SILT FENCES

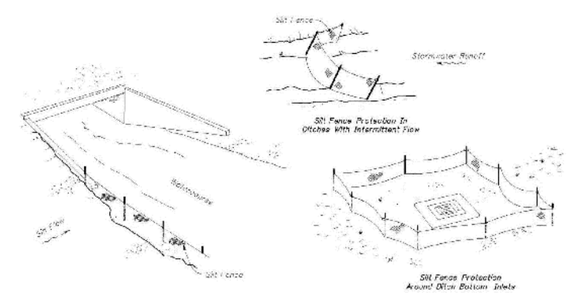
1. Type III Silt Fence to be used at most locations. Where used in ditches, the spacing for Type III Silt fence shall be in accordance with Chart 1, Sheet 1.
2. Type IV Silt Fence to be used where large sediment loads are anticipated. Suggested use is where the slope is 1:2 or steeper and length of slope exceeds 25 feet. Avoid use where the detained water may back into travelled or off the right of way.
3. Do not construct silt fences across permanent flowing watercourses. Silt fences are to be at ground locations and usually barriers used at permanent bodies of water.
4. Where used as slope protection, Silt Fence is to be constructed on 0% longitudinal grade to avoid concentrating runoff along the length of the fence.
5. Silt Fence to be paid for under the contract unit price for Stakes Silt Fence, (L.F.).



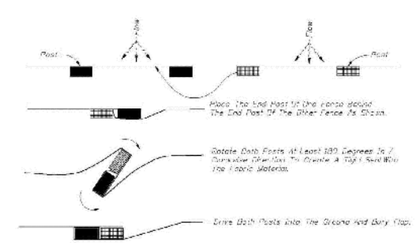
TYPE III SILT FENCE



TYPE IV SILT FENCE



SILT FENCE APPLICATIONS



PLAN VIEW

JOINING TWO SILT FENCES

SILT FENCE DETAILS

N.T.S.

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FL CERTIFICATE OF AUTHORITY NO. 8985
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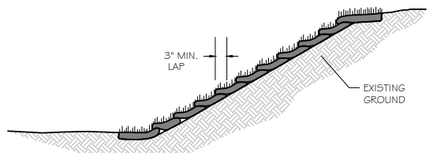
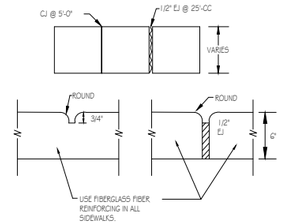
DETAILS



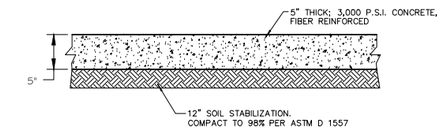
SOD OVERLAP DETAIL

N.T.S.



TYPICAL SIDEWALK DETAIL

NOT TO SCALE



TYPICAL CONCRETE PAVEMENT DETAIL

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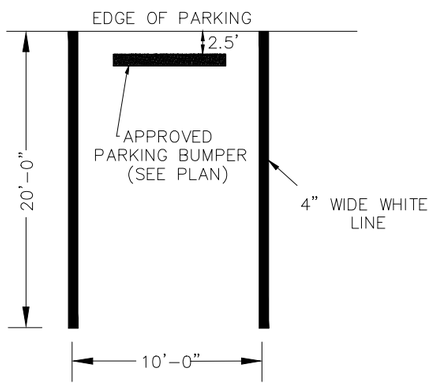

TYPICAL PARKING SPACE

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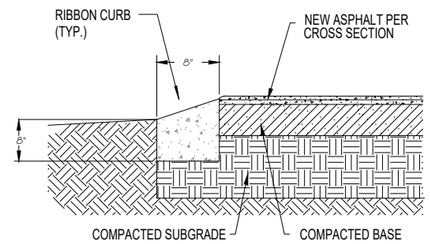

TYPICAL RIBBON CURB DETAIL

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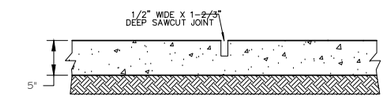
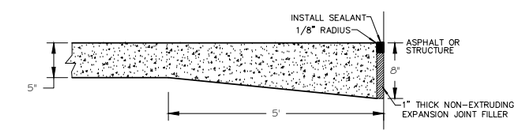


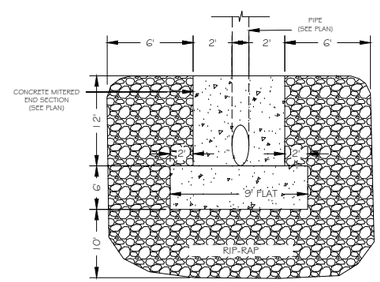
TYPICAL TYPE A EXPANSION JOINT DETAIL

NOT TO SCALE



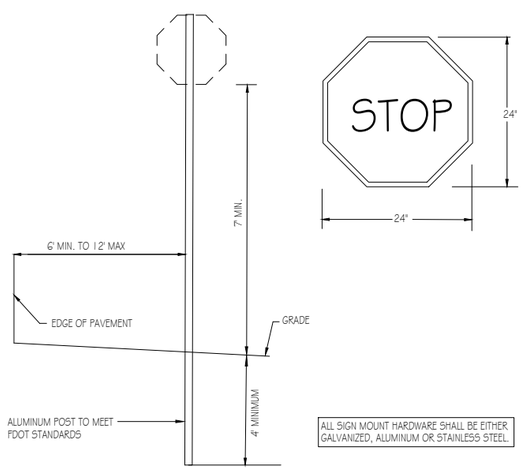
TYPICAL TYPE B EXPANSION JOINT DETAIL

NOT TO SCALE



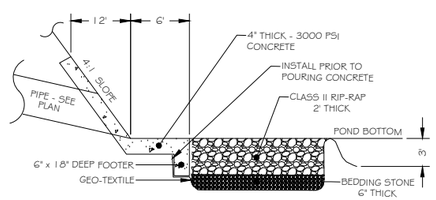
M.E.S. & RIP-RAP DETAIL

NTS



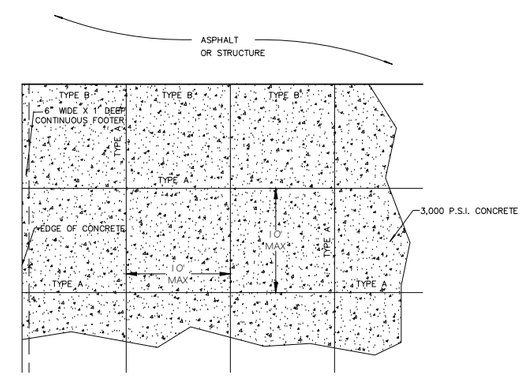
TYPICAL STOP SIGN DETAIL

N.T.S.



PIPE AT POND BOTTOM DETAIL

NTS



NOTE: DIMENSIONS SHALL BE REDUCED TO ACCOMODATE GEOMETRY OF SURFACE. SPACING BETWEEN JOINTS SHALL BE THE SAME IN BOTH DIRECTINOS.

TYPICAL SECTION: 10' X 10' MAXIMUM
ALL INTERIOR JOINTS - TYPE A
ALL JOINTS ADJACENT TO ASPHALT AND BUILDINGS - TYPE B

TYPICAL JOINT PLAN

NOT TO SCALE

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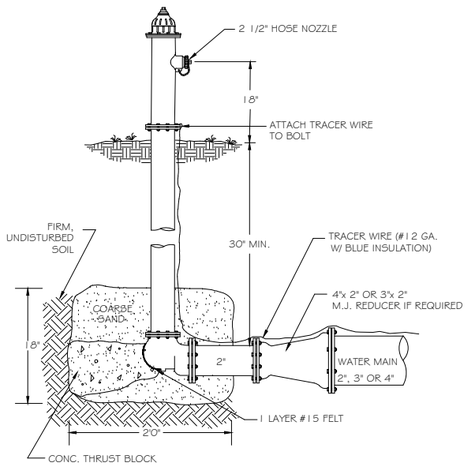
PAUL A. MCLEOD, JR., P.E.
FL LICENSE NO. 56697

DRAWING NOT VALID UNLESS SIGNED AND SEALED BY ENGINEER OF RECORD

SHEET

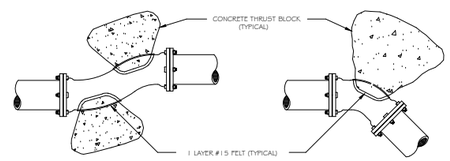
5

DETAILS



TYPICAL 2" FLUSH HYDRANT

N.T.S.



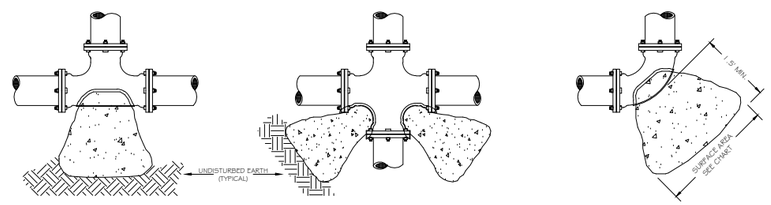
OFFSET - M.J. 45° BEND - M.J.

MINIMUM THRUST BLOCK DIMENSIONS:
SURFACE AREA AGAINST UNDISTURBED SOIL

FITTING / PIPE SIZE	DEAD END OR TEE	90° BEND	45° BEND	22.5° BEND
4"	1' X 2'	1.5' X 1.5'	1' X 1.5'	1' X 1'
6"	2' X 2'	2.5' X 2.5'	2' X 1.5'	1' X 1.5'
8"	2.25' X 3'	3' X 3'	2' X 2.5'	1.5' X 1.5'
10"	3.5' X 3'	4' X 3.75'	2.75' X 3'	2' X 2'
12"	4' X 4'	4' X 5'	3' X 4'	2' X 3'
16"	5' X 5.5'	6' X 6.5'	4' X 5'	3' X3.5'

NOTES:

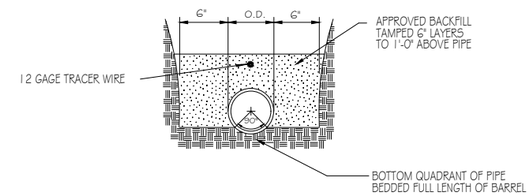
1. ONE LAYER OF #15 FELT TO BE USED TO PREVENT ADHESION OF CONCRETE TO FITTING.
2. ALL THRUST BLOCKS TO BE BACKED BY UNDISTURBED SOIL.
3. MATERIAL FOR THRUST BACKING SHALL BE 2000 PSI CONCRETE.



TEE - M.J. CROSS - M.J. 90° BEND - M.J.

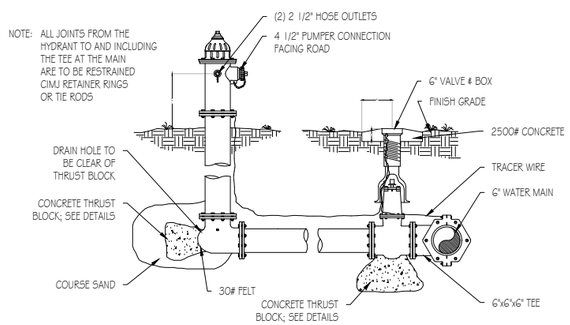
THRUST BLOCK DETAILS

N.T.S.



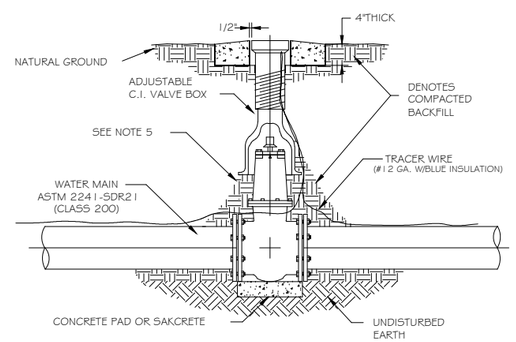
PIPE BEDDING DETAIL

N.T.S.



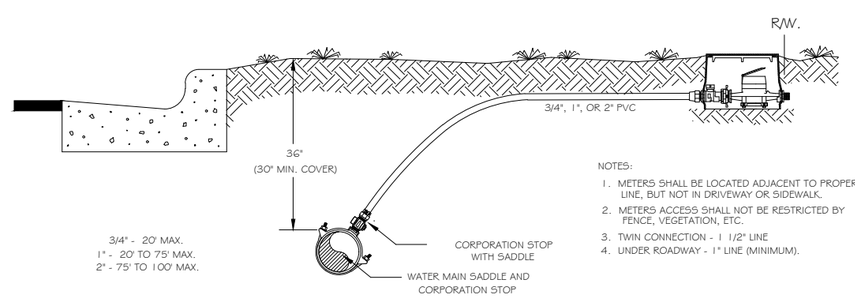
TYPICAL FIRE HYDRANT DETAIL

N.T.S.



TYPICAL VALVE & BOX INSTALLATION

N.T.S.



NOTES:

1. METERS SHALL BE LOCATED ADJACENT TO PROPERTY LINE, BUT NOT IN DRIVEWAY OR SIDEWALK.
2. METERS ACCESS SHALL NOT BE RESTRICTED BY FENCE, VEGETATION, ETC.
3. TWIN CONNECTION - 1 1/2" LINE
4. UNDER ROADWAY - 1" LINE (MINIMUM).

TYPICAL SINGLE SERVICE

N.T.S.

Construction Plans for:

FIRE TRAINING FACILITY
FOR THE CITY OF MILTON

SOUTHERN SITE & UTILITY DESIGN, INC.
FL CERTIFICATE OF AUTHORIZATION NO. 8983
6554 CARDO CIRCLE, MILTON, FLORIDA 32570
PH.(850) 623-9401 E-MAIL: ssud@southlink.net
EROSION CONTROL PLANS * POTABLE WATER * SANITARY SEWER
SITE PLANS * SUBDIVISIONS * STORMWATER MANAGEMENT

DRAWN BY: pRp DATE: 9/6/2016

REVISIONS:
1. -
2. -
3. -
4. -

DATE:

ALAN M. MILLER, P.E.
FL LICENSE NO. 55577

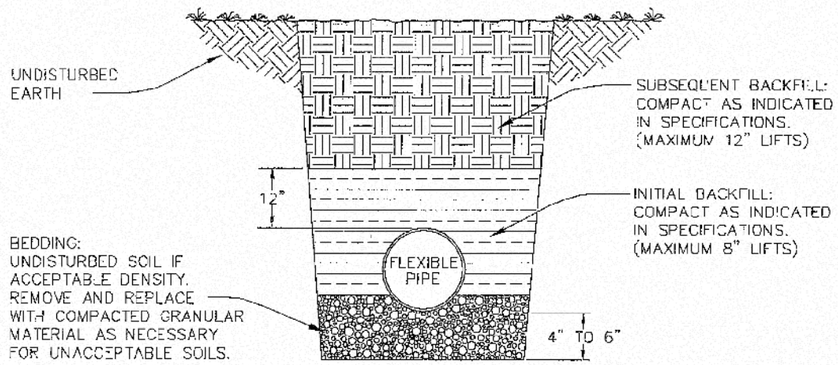
PAUL A. VACCCO, JR., P.E.
FL LICENSE NO. 58697

DRAWING NOT VALID UNLESS SIGNED AND SEALED BY ENGINEER OF RECORD

SHEET

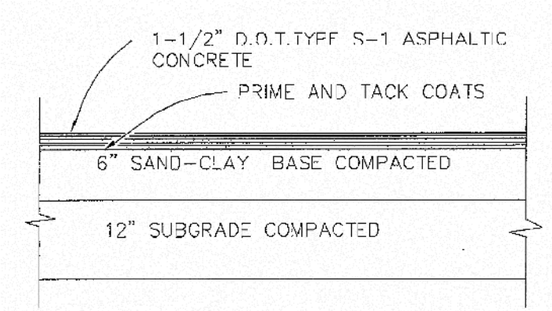
6

DETAILS



FLEXIBLE PIPE BEDDING DETAIL

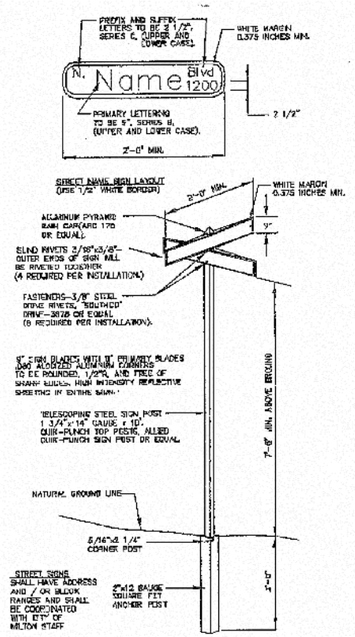
N. T. S.



NOTE: PAVEMENT WITHIN MAIN RIGHT-OF-WAYS TO BE 2" ASPHALTIC CONCRETE WITH 8" SAND-CLAY BASE. MATERIALS ARE TO BE OF THE TYPE AND COMPACTED AS SHOWN ABOVE.

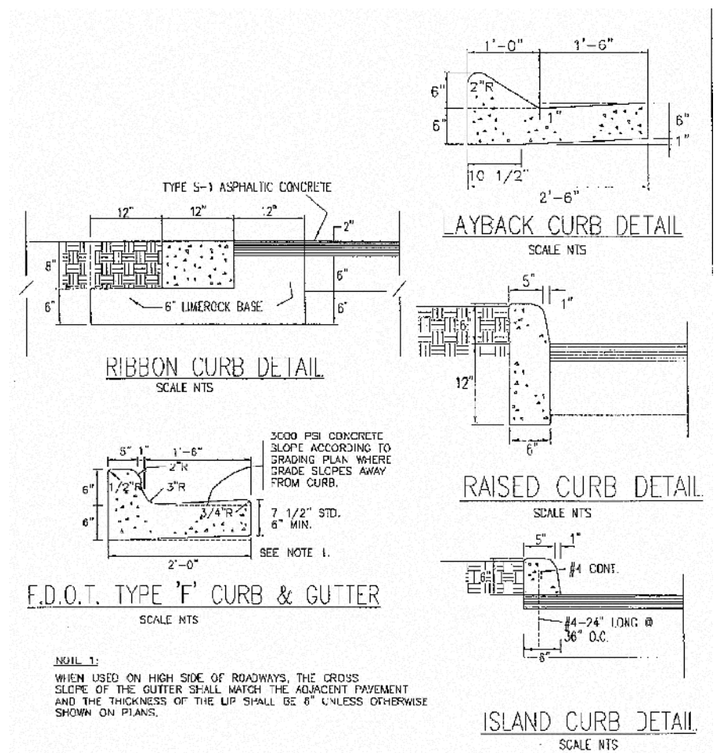
TYPICAL PAVEMENT SECTION

NTS



STREET SIGN DETAIL

NOT TO SCALE



Construction Plans for:

FIRE TRAINING FACILITY
FOR THE CITY OF MILTON

SOUTHERN SITE & UTILITY DESIGN, INC.
FLORIDA CERTIFICATE OF AUTHORITY NO. 8985
6550 CADO CREEK STREET, MILTON, FLORIDA 32570
PHONE (850) 623-9400 E-MAIL southsu@bellsouth.net
EROSION CONTROL PLANS * POTABLE WATER & SANITARY SEWER
SITE PLANS * SUBDIVISIONS * STORMWATER MANAGEMENT

DRAWN BY: pRp DATE: 9/6/2016

REVISIONS:
1.
2.
3.
4.

DATE:

ALAN M. MILLER, P.E.
FL. LICENSE NO. 55377

PAUL A. NICCOLI, JR., P.E.
FL. LICENSE NO. 56807

DRAWING NOT VALID UNLESS SIGNED AND SEALED
BY ENGINEER OF RECORD

SHEET

7

Agenda Item # 1826

Appointment of City Clerk

MEETING DATE	PREPARED BY
December 6, 2021	Randy Jorgenson, City Manager

BACKGROUND

Ms. Dewitt Nobles is retiring from the City Clerk position. Her last working day is December 14, 2021. Staff posted the position and received two highly qualified and experienced applicants.

SUMMARY

Unfortunately, Ms. Leslie Howington accepted the City Clerk position at the City of Century. The second candidate, Ms. Celine Kidwell is no longer available.
The position was re-advertised on December 2, 2021. Staff will continue to recruit an experienced City Clerk. In the interim, staff has identified the essential functions of the position to maintain the set standards of the position. The functions below will be covered until the appointment of a new City Clerk:

1. Agenda Creation and Management
2. Recording and Approval of Minutes
3. Public Records Requests
4. Checks

RECOMMENDATION

Staff recommends the continued search for an experienced City Clerk.

ATTACHMENTS

None

Agenda Item # 1818

Byrom St. Project

MEETING DATE	PREPARED BY
December 6, 2021	Joe Cook

BACKGROUND

Final Change Order for Pensacola Concrete Construction, INC. Amount of $35,194.40

SUMMARY

PCC would like to request an additional 136 days for this change order due to issues with the FDOT permitting to bore under SR 87.

RECOMMENDATION

The Committee of the Whole recommends approving this request for an additional 136 days.

ATTACHMENTS

1. Change Order Request

PENSACOLA CONCRETE CONSTRUCTION CO. INC.
FL License # CUC1224436 • AL License # 12750

P.O. Box 2787
Pensacola, FL 32513
1-850-476-0026
www.pcctrenchless.com

Joe Cook
City of Milton
Milton, FL
Job: Byrom St CDBG

10/13/2021

Change Order Final					
1-5	Remove and Replace Fence (additional)	LF	125	$34.04	$4,255.00
8-6	6-inch PVC (Water Relocate for Storm Piping)	LF	120	$21.51	$2,581.20
8-22	1" Service Connection (short)	EA	12	$1,222.75	$14,673.00
8-23	1" Service Connection (long)	EA	7	$1,589.92	$11,129.44
1	Raise Water Main valve boxes	EA	4	$638.94	$2,555.76
				Sub Total:	**$35,194.40**

Notes:

1) PCC would like to request an additional 136 days for this change order.

If there are any questions concerning this proposal, please feel free to call me at (850) 476 - 0026.

Respectfully Submitted by,

Drew Matthews, Estimator
Pensacola Concrete Construction Company, Inc.

Agenda Item # 1819

City of Milton Exclusive Gas Territory

MEETING DATE	PREPARED BY
December 6, 2021	Joe Cook

BACKGROUND

The City of Milton and Okaloosa Gas has always had overlapping territory.

SUMMARY

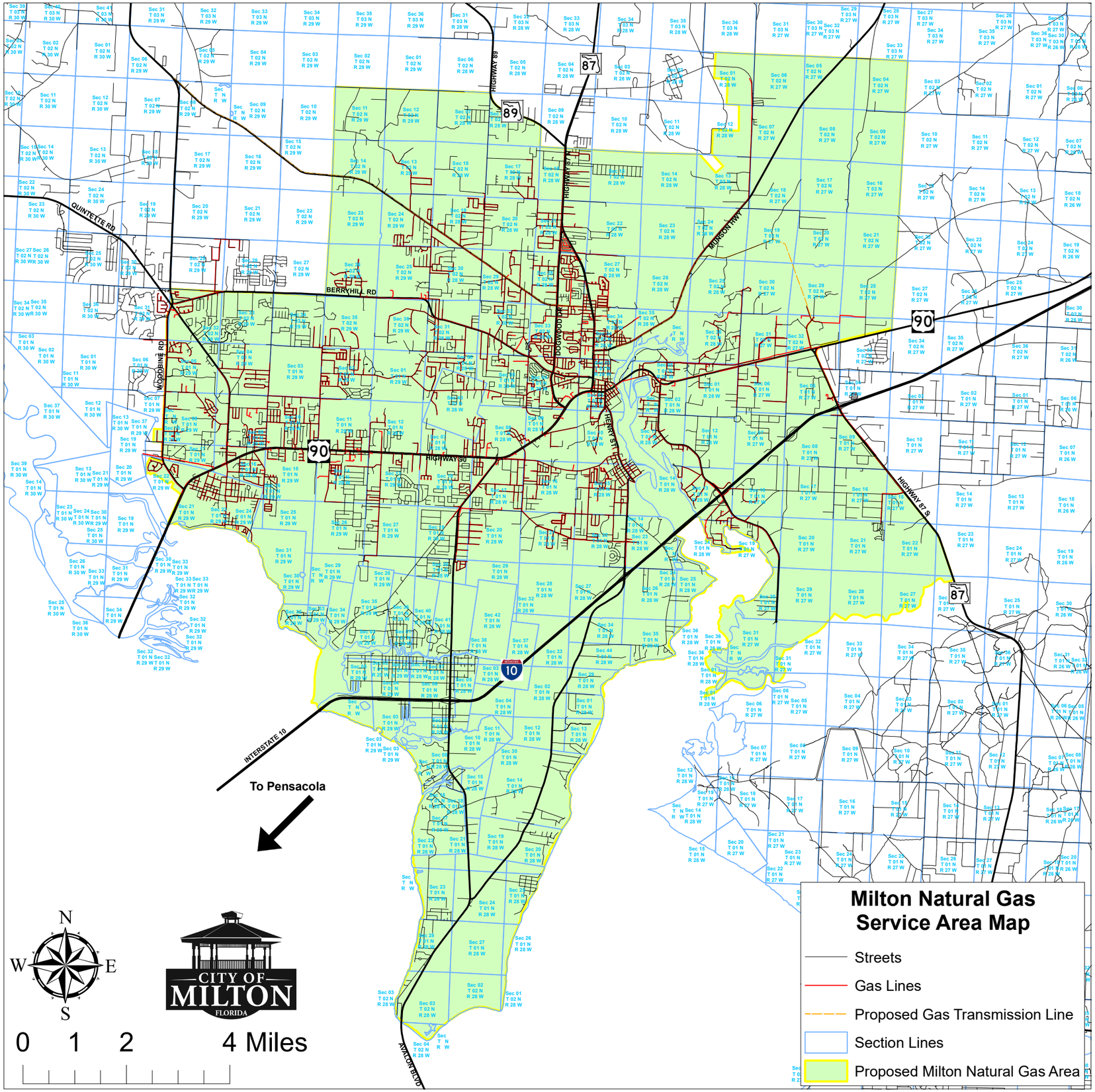
City of Milton will have an exclusive territory, Okaloosa Gas territory will no longer overlap the City of Milton.

RECOMMENDATION

The Committee of the Whole recommends approval.

ATTACHMENTS

1. Milton Natural Gas Service Area Map


Milton Natural Gas
Service Area Map
Streets
Gas Lines
Proposed Gas Transmission Line
Section Lines
Proposed Milton Natural Gas Area
N
S
E
W
0 1 2 4 Miles
CITY OF
MILTON
FLORIDA
To Pensacola
INTERSTATE 10
HIGHWAY 90
HIGHWAY 89
HIGHWAY 87
HIGHWAY 87 S
QUINTETTE RD
BERRYHILL RD
WOODBINE RD
MORSON HWY
HENRY ST
AVALON BLVD

Agenda Item # 1822

J.B. Turner School Historic Marker

MEETING DATE	PREPARED BY
December 6, 2021	Tim Milstead, Planning Director

BACKGROUND

The City of Milton LEAP Committee has researched and provided the following information in support of a historic marker commemorating the J.B. Turner School and requests councils' consideration of the placement.

SUMMARY

The LEAP Committee met on August 26th, 2021, to further discuss the placement of a historic marker for J.B. Turner schoolhouse, the first public school in Santa Rosa County established for African American students. The LEAP Committee previously proposed to place the marker near the historic site on city property at the Lucille Johnson Park. The schoolhouse was historically located at the property on the Northeast corner of Mary St and Walker St. The property is now owned by the Federal government and Milton Housing Authority and is a public housing complex. The LEAP committee meeting heard many comments from members of the public and voted in favor of moving the proposal for placement to the Housing Authority property. This would be contingent on approval from Milton Housing Authority and HUD.

*The City received approval from the Milton Housing Authority stating, "A majority was in attendance and placement of an historical marker was approved, with the understanding that the land upon which it will be placed is still the property of the Milton Housing Authority" At any time in the future, the marker may be removed if mandated by the Department of Housing and Urban Development."

The marker will contain a metal plate image of the schoolhouse and the text of the marker will read as follows:

> J.B. Turner School Circa. 1908
>
> On September 8, 1908, J.B. Turner School (JBTS), the first public school in Santa Rosa County established for colored students (named J.B. Turner Colored High School in the recorded deeds), was erected at this location on land purchased by the Santa Rosa County School Board. It was named in honor of School Board Chairman Dr. J.B. Turner from Bagdad, Florida, who designated a place for African American students from grades 1-9 (Post-Reconstruction Era) to receive a formal education. Before the purchase, these students received informal elementary school education from community institutions, known as "church schools". JBTS educated students during the separate-but-equal Jim Crow era, with many of these students traveling by foot to

attend school. J.B.T.S. thrived under the leadership of the first principal, Mrs. R. Robinson, an African American from East Milton and Superintendent L.C. Word from Jay, Florida. In less than 50 years, JBTS added grades 10-11 (1950-1952), but 12th graders had to transfer to Booker T. Washington High School in Pensacola, Florida to graduate from the 12th grade. Later, the already established T.R. Jackson High School added 12th grade to its curriculum, making the Class of 1953 the first African American class in Milton, Florida to graduate from this school, which was under the leadership of Principal T.R. Jackson. JBTS expanded its curriculum and added facilities, clubs, and sports teams. Graduates of JBTS have served the state and nation with academic and military distinction and locally as leaders in the City of Milton, Florida.
Proud JBTS alumni still chant, “Give me that ole J.B. Spirit. It’s good enough for me!”

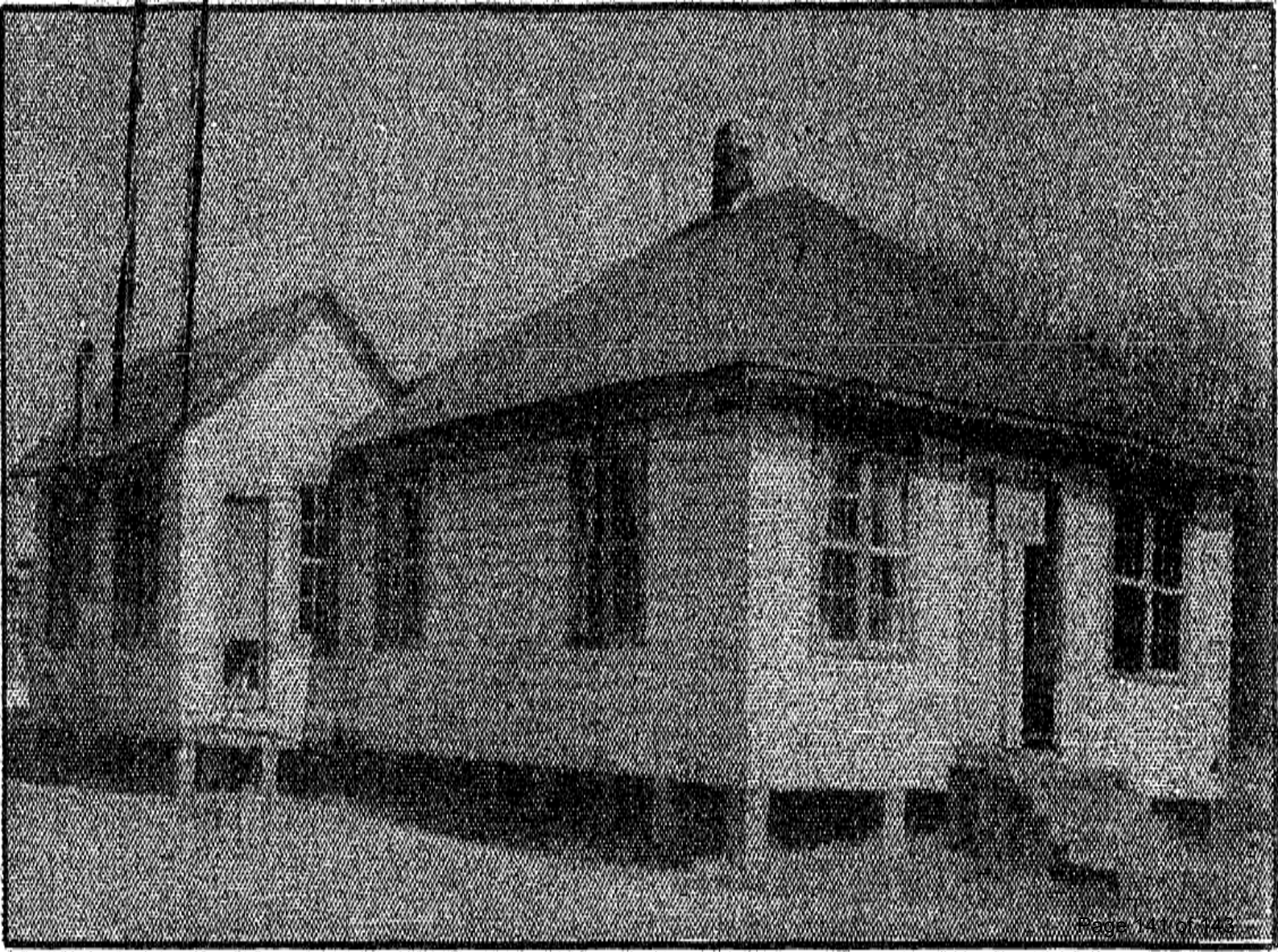
RECOMMENDATION

The Committee of the Whole recommends approval of the proposed placement at the corner of Mary St and Walker St.

ATTACHMENTS

1. 1780-01 Revised Ohio Pattern
2. 1780-02 JB Turner School image
3. Marker-overlay
4. JB-Turner-School-Historic-Marker-DRAFT

NATIONAL HISTORIC DISTRICT
CONNECTICUT WESTERN RESERVE
FOUNDED BY DAVID HUDSON 1799
A GIFT FROM HUDSON HERITAGE ASSOCIATION



J.B. Turner School Circa. 1908
On September 8, 1908, J.B. Turner School (JBTS), the first public school in Santa Rosa County established for colored students (named J.B. Turner Colored High School in the recorded deeds), was erected at the location on land purchased by the Santa Rosa County School Board. It was named in honor of School Board Chairman Dr. J.B. Turner from Bagdad, Florida, who designated a place for African American students from grades 1-9 (Post-Reconstruction Era) to receive a formal education. Before the purchase, these students received informal elementary school education from community institutions, known as "church schools". JBTS educated students during the separate-but-equal Jim Crow era, with many of these students traveling by foot to attend school. J.B.T.S. thrived under the leadership of the first principal, Mrs. R. Robinson, an African American from East Milton and Superintendent L.C. Ward from Jay Florida. In less than 10 years, JBTS added grades 10-11 (1919-1944), but 12th graders had to transfer to Booker T. Washington High School in Pensacola, Florida to graduate from the 12th grade. Later, the already established, T.A. Jackson High School added 10th grade to its curriculum, making the Class of 1948 the first African American class in Milton, Florida to graduate from this school, which was under the leadership of Principal T.R. Jackson. JBTS expanded its curriculum and added facilities, clubs, and sports teams. Graduates of JBTS have served the state and nation with academic and military distinction and locally as leaders in the City of Milton, Florida.
"Proud JBTS alumni still stand, "Give me that old J.B. Spirit. It's good enough for me!"
JB Turner School
Historic Marker

JB Turner School
Historic Maker

DRAFT